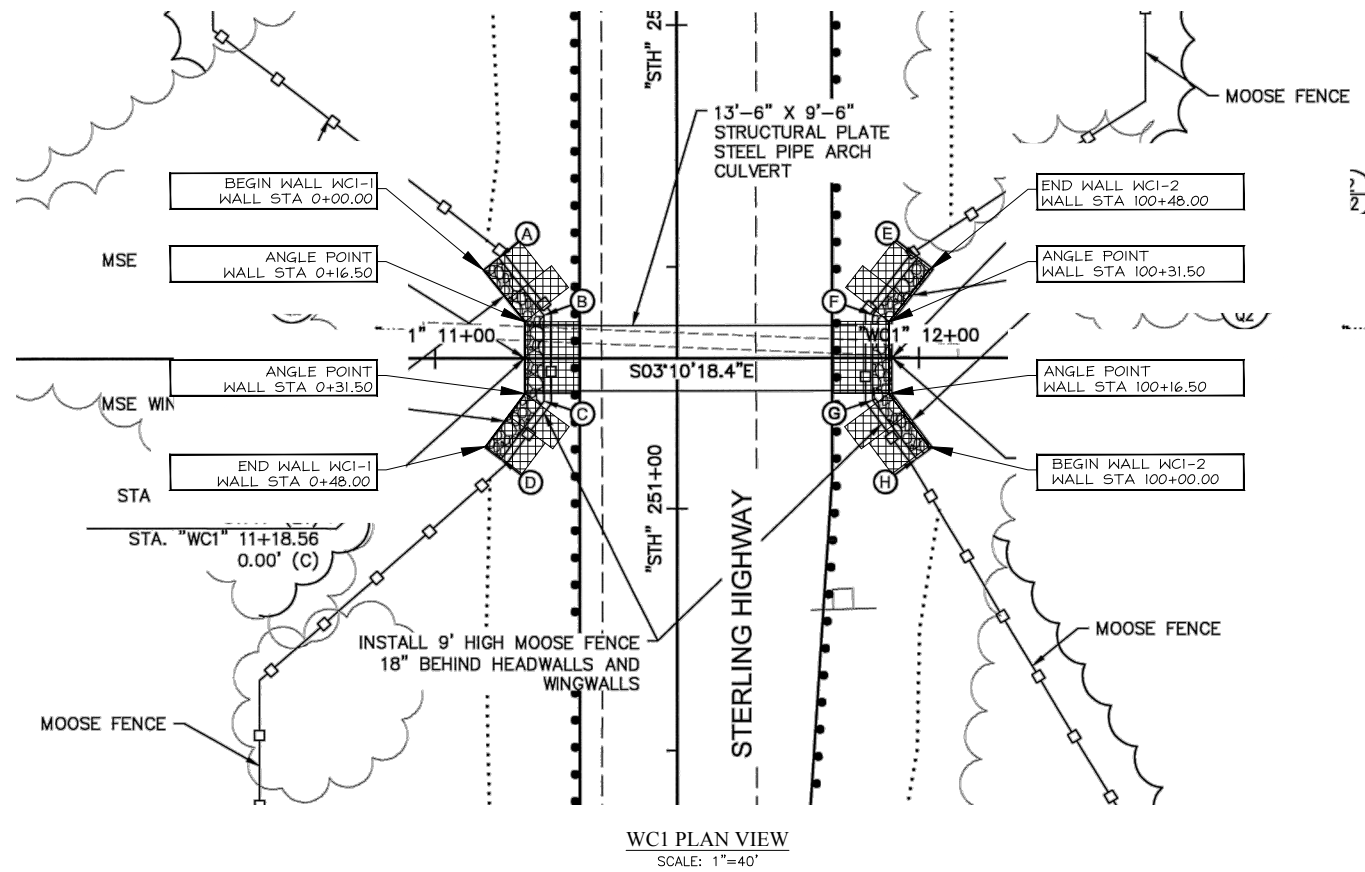


DESIGN NOTES:

- DESIGN IS BASED ON PROJECT PLANS BY DOWL, STERLING HIGHWAY MP 58-79 REHABILITATION, SKILAK LAKE ROAD TO STERLING, STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES, DATED MARCH 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.
- ASSUMED SOIL CHARACTERISTICS (TO BE VERIFIED BY PROJECT ENGINEER):
 WALL BACKFILL:
 UNIT WEIGHT: 144 PCF
 INTERNAL FRICTION ANGLE: 34°
 COHESION: 0 PSF
 RETAINED BACKFILL:
 UNIT WEIGHT: 144 PCF
 INTERNAL FRICTION ANGLE: 34°
 COHESION: 0 PSF
 FOUNDATION SOILS:
 UNIT WEIGHT: 130 PCF
 INTERNAL FRICTION ANGLE: 34° (30° AT WC4 AND WC5)
 COHESION: 0 PSF
- ASSUMED DESIGN LOADS (TO BE VERIFIED BY PROJECT ENGINEER):
 SEISMIC: MAXIMUM GROUND ACCELERATION COEFFICIENT, A: 0.539
 LIVE LOADS: TRAFFIC SURCHARGE LOAD=250 PSF
 GUARDRAIL IMPACT EQUIVALENT LOAD= 150 PLF (APPLIED TO TOP TWO MAT LAYERS)
- WORST CASE FACTORED BEARING PRESSURE (TO BE APPROVED BY PROJECT ENGINEER):
 STATIC: 5,294 PSF
 SEISMIC: 9,094 PSF
 SERVICE: 3,840 PSF
- 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.
- THE DESIGN REQUIRES A NON-SATURATED BACKFILL AND ASSUMES THE WATER TABLE DOES NOT AFFECT THE BEARING CAPACITY OF THE SOIL, EXCEPT AT WC-3 WHERE WATER TABLE IS ASSUMED TO BE AT BASE OF WALL ELEVATION DUE TO DELINEATED WETLANDS IN THE AREA. 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.
- 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.
- SOILS ENCOUNTERED DURING WALL EXCAVATION THAT ARE LOOSE, ORGANIC, OR OTHERWISE INSUFFICIENT FOR THE LOADS IMPOSED BY THE WALL SHALL BE REMOVED AND RE-COMPACTED OR REPLACED WITH GRANULAR BACKFILL AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER.
- DESIGN PROCEDURE: MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES, FHWA REPORT NO. FHWA-NHI-00-043. 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- 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: DOWL, STERLING HIGHWAY MP 58-79 REHABILITATION, SKILAK LAKE ROAD TO STERLING, STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES, DATED MARCH 2017.



WC1 PLAN VIEW
SCALE: 1"=40'

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REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

PACIFIC AFFILIATES
CONSULTING ENGINEERS
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TEL (707) 445-3001



WILDLIFE CROSSING I
HEADWALL/WINGWALL
PLAN
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MECHANICALLY STABILIZED
EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date:
July 18, 2017
Scale:
As Noted NM
Drawn by:

SHEET NUMBER
S-1

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

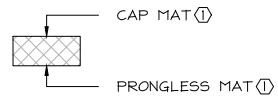
WELDED WIRE SCHEDULE

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

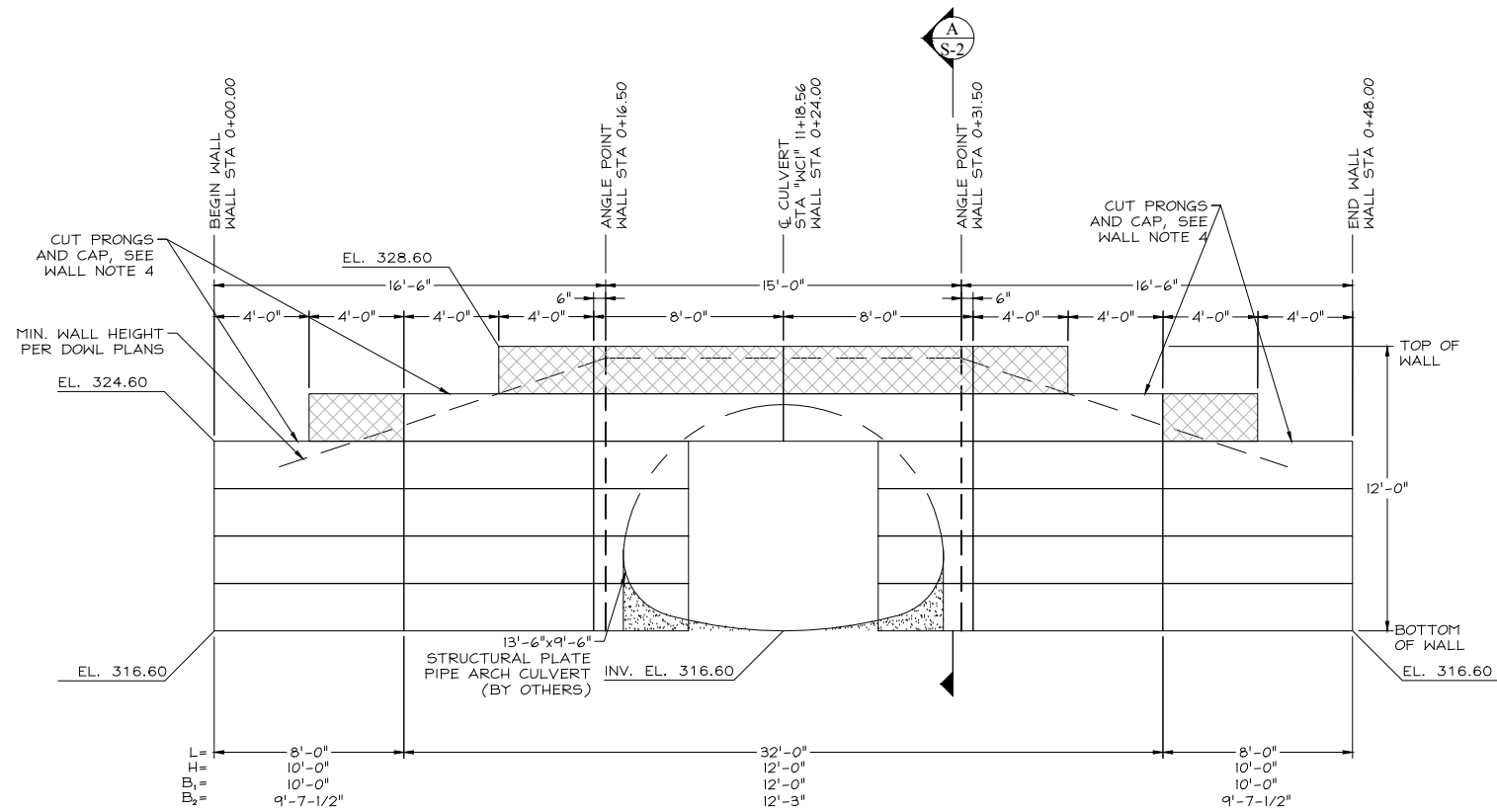
- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

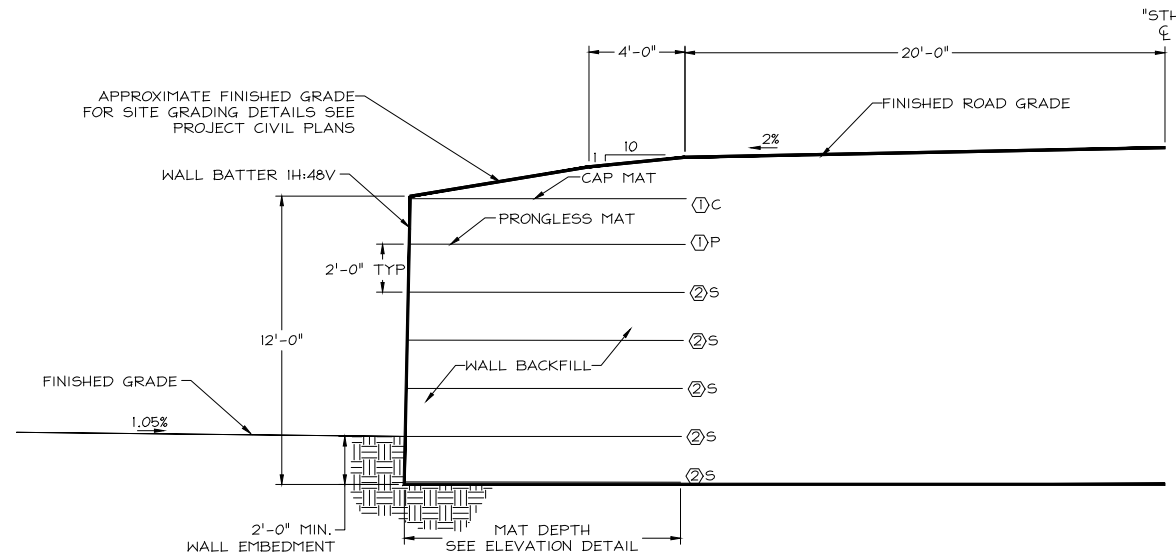
- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)



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



WC1-1 ELEVATION
SCALE: 1/8"=1'-0"



A WC1-1 WALL SECTION
SCALE: 1/8"=1'-0"

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REVISIONS	BY
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2	12-4-17 NM

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TEL (707) 445-3001



WILDLIFE CROSSING 1
HEADWALL/WINGWALL
ELEVATION & SECTION
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MECHANICALLY STABILIZED
EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date:
July 18, 2017
Scale:
As Noted
Drawn by:
NM

SHEET NUMBER
S-2

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

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

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

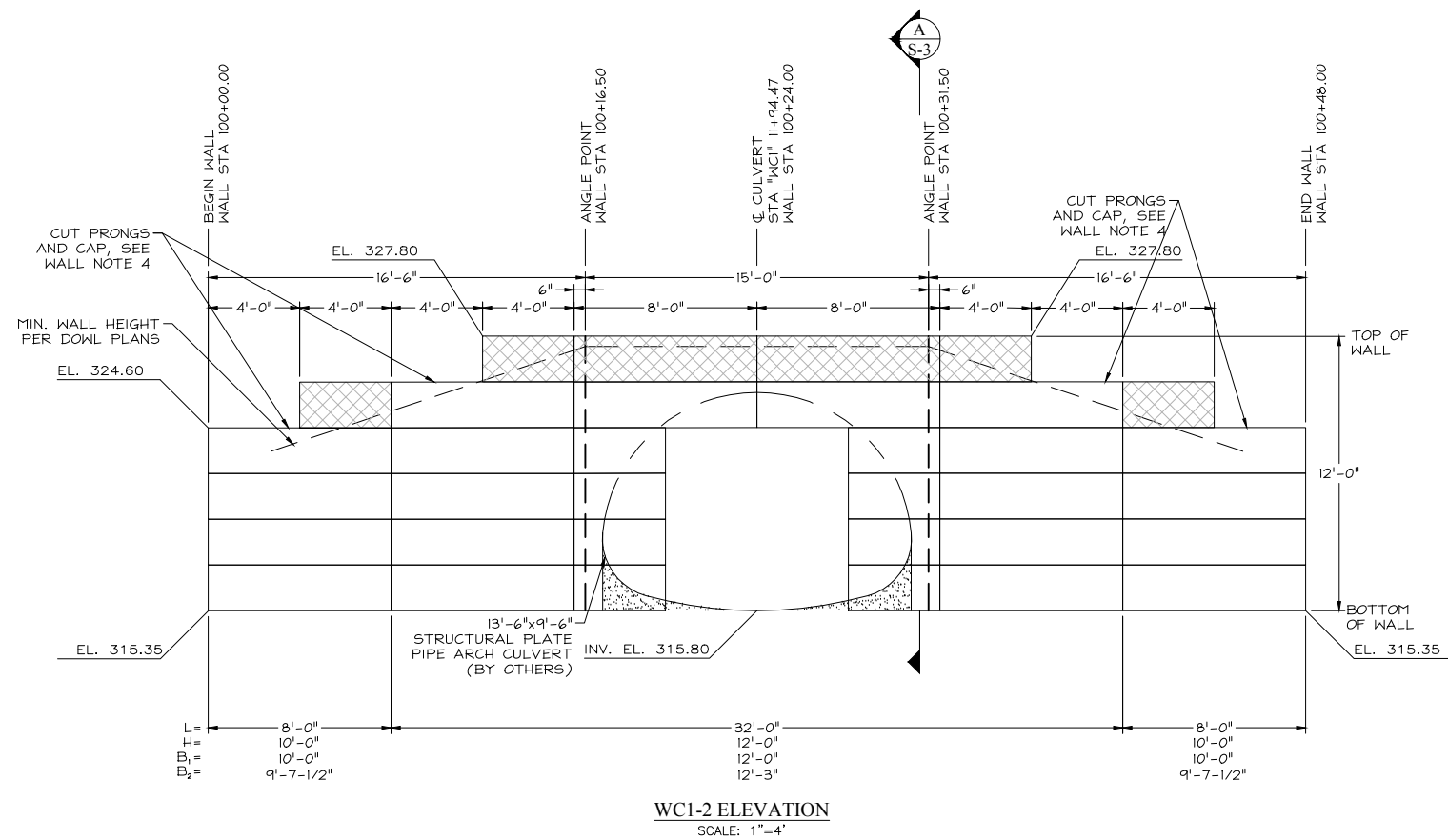
- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/9F, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT ①

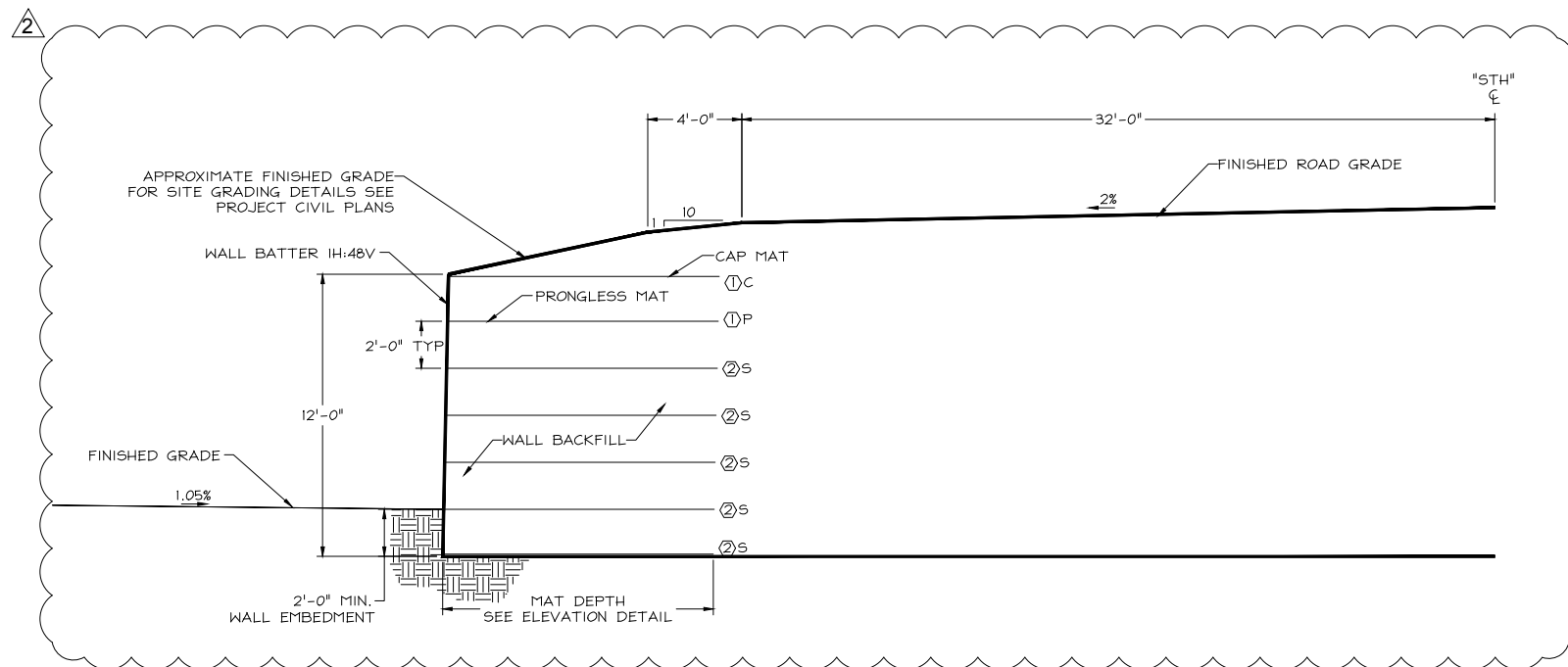


PRONGLESS MAT ②

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



WC1-2 ELEVATION
SCALE: 1"=4'



WC1-2 WALL SECTION
SCALE: 1"=4'

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REVISIONS	BY
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2	12-4-17 NM

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CONSULTING ENGINEERS
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TEL (707) 445-3001



WILDLIFE CROSSING 1
HEADWALL/WINGWALL
ELEVATION & SECTION
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MECHANICALLY STABILIZED
EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date:
July 18, 2017
Scale:
As Noted
Drawn by:
NM

SHEET NUMBER
S-3

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
P PRONGLESS MAT
C CAP MAT
S STANDARD

NOTES:

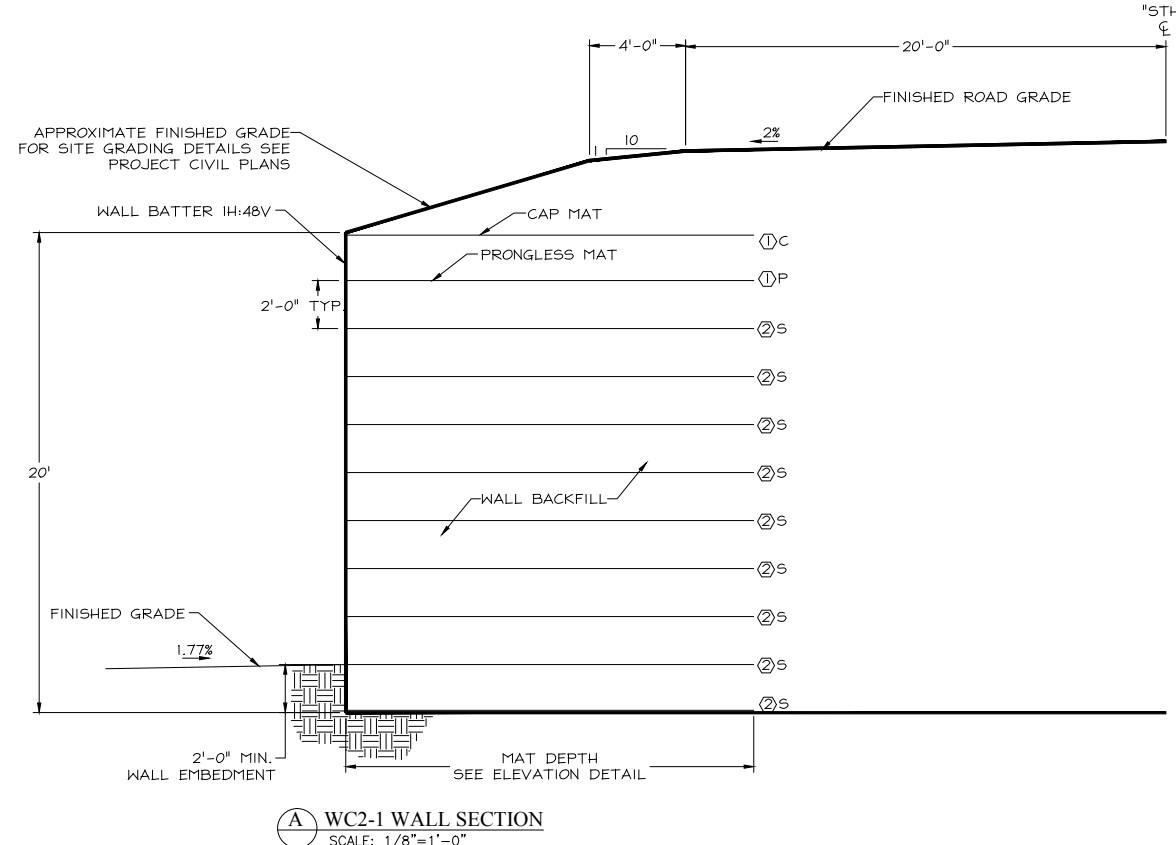
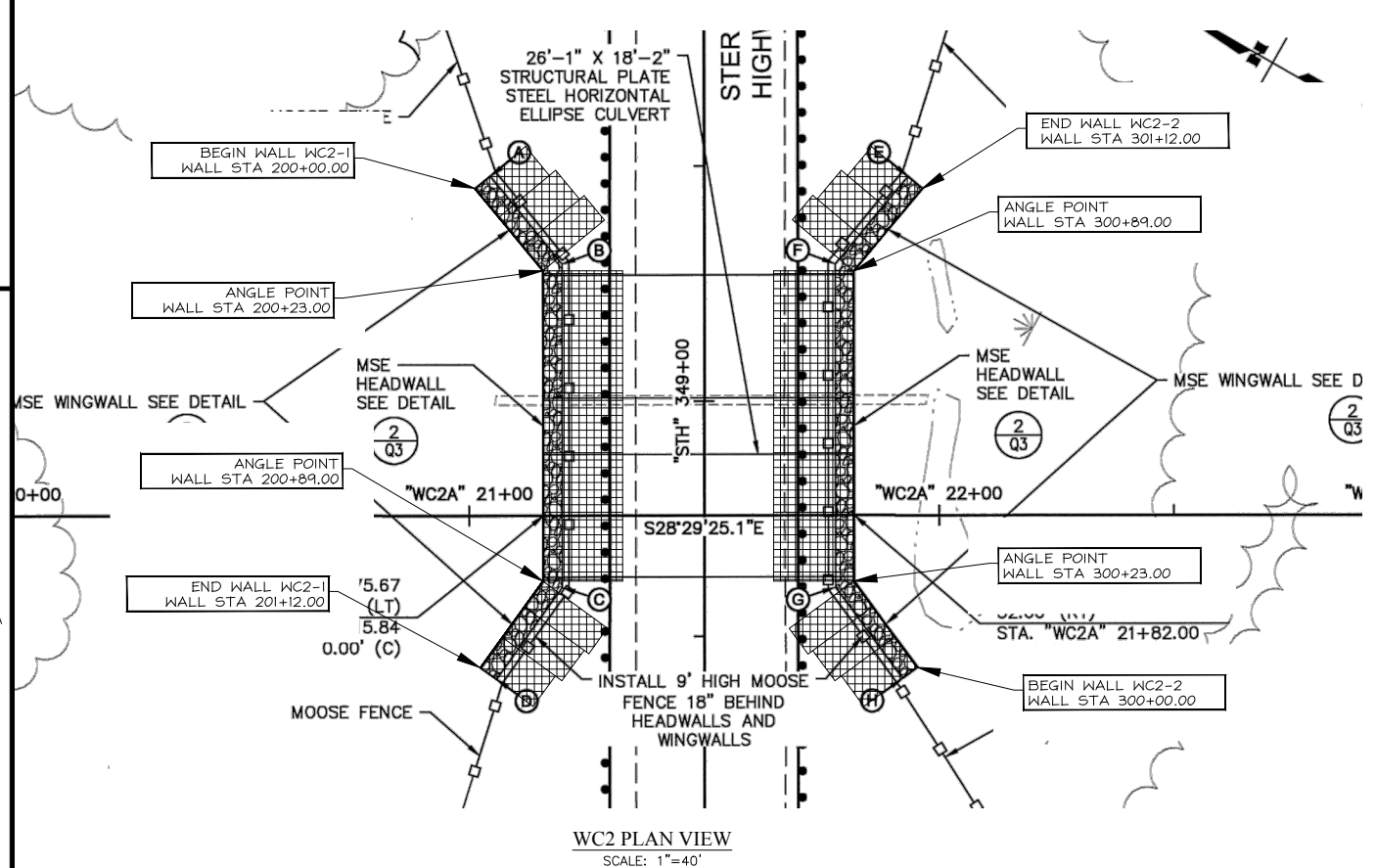
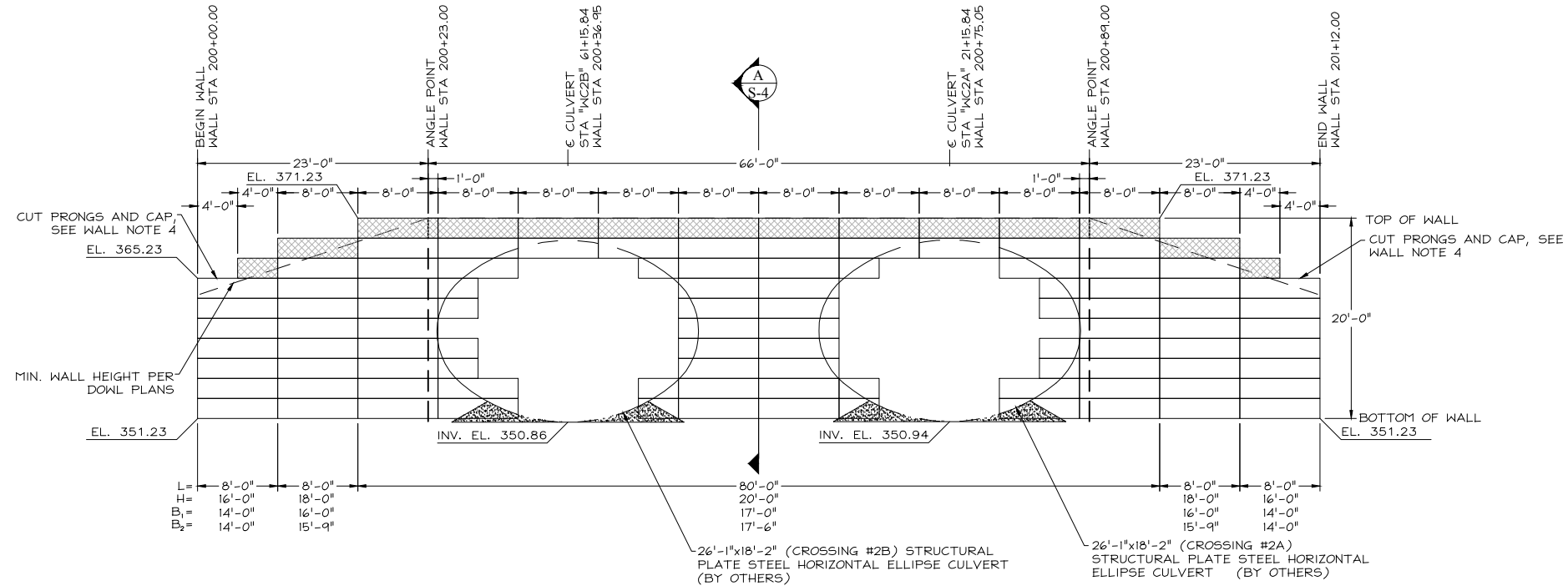
- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT (C)



PRONGLESS MAT (P)

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



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1	8-23-17 NM
2	12-4-17 NM

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WILDLIFE CROSSING 2 HEADWALL/WINGWALL PLAN, ELEVATION & SECTION

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MECHANICALLY STABILIZED EARTH WALL

FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date: July 18, 2017
Scale: As Noted
Drawn by: NM

SHEET NUMBER
S-4

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
P PRONGLESS MAT
C CAP MAT
S STANDARD

NOTES:

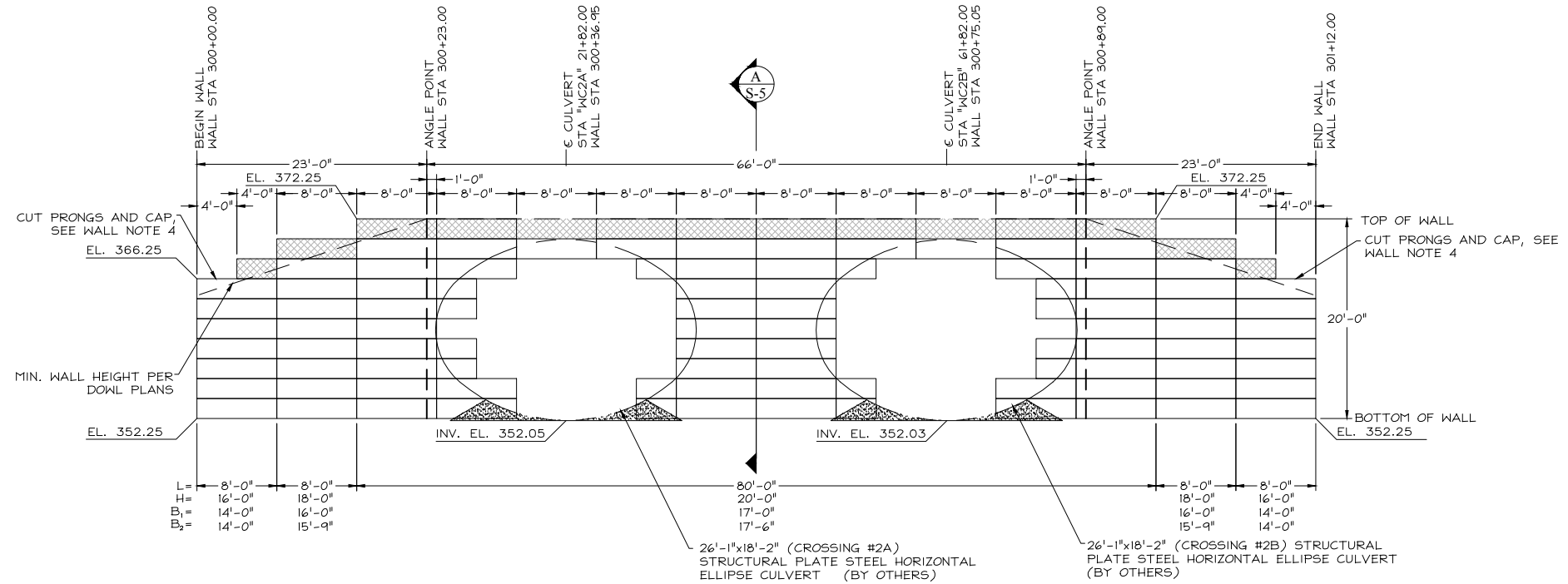
- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT (C)

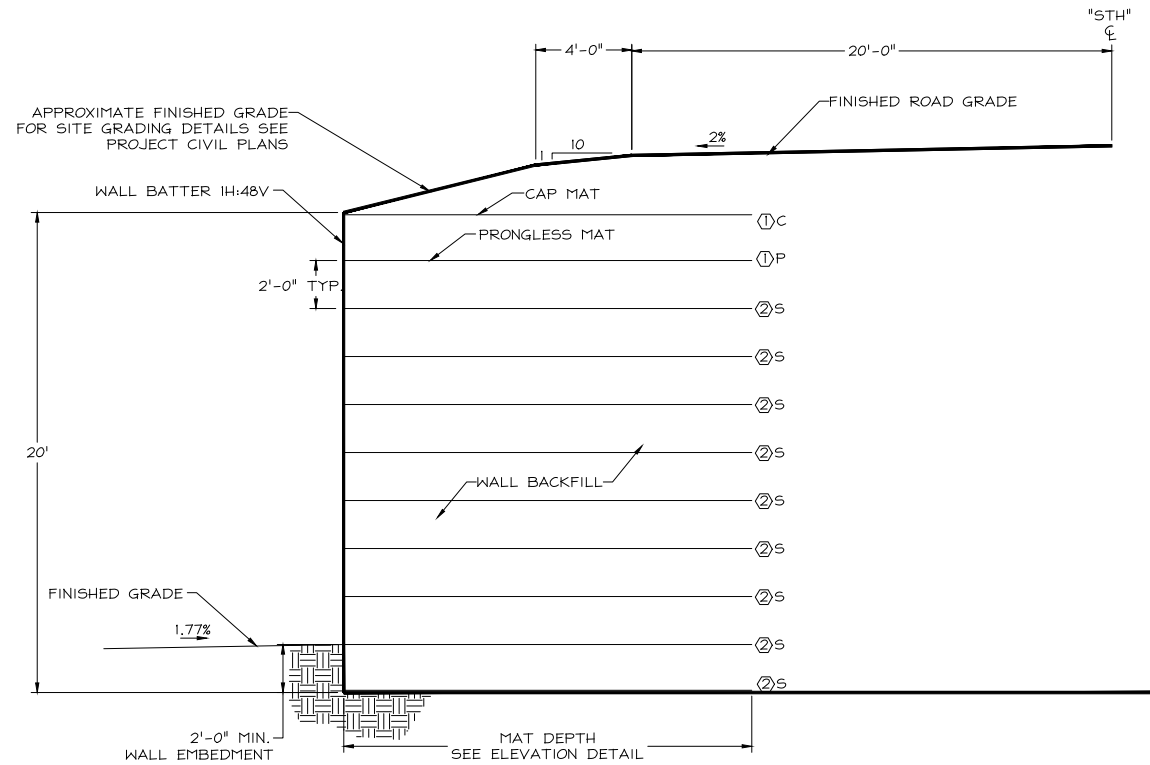


PRONGLESS MAT (P)

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



WC2-2 ELEVATION
SCALE: 1/16"=1'-0"



WC2-2 WALL SECTION
SCALE: 1/8"=1'-0"

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REVISIONS	BY
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2	12-4-17 NM

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TEL (707) 445-3001



WILDLIFE CROSSING 2
HEADWALL/WINGWALL
ELEVATION & SECTION

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MECHANICALLY STABILIZED EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date: July 18, 2017
Scale: As Noted
Drawn by: NM

SHEET NUMBER
S-5

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- ① 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- ② 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

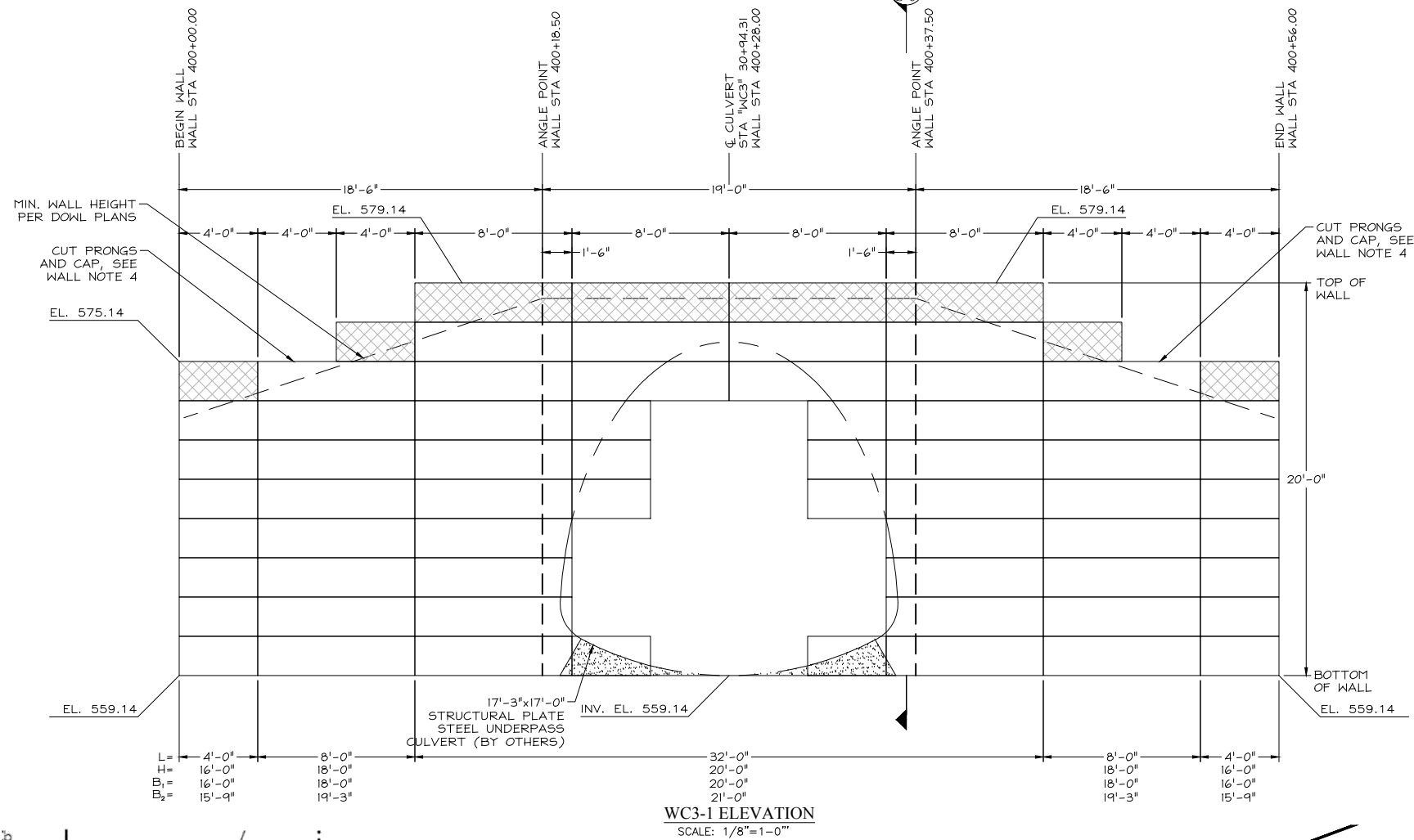
- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT ①

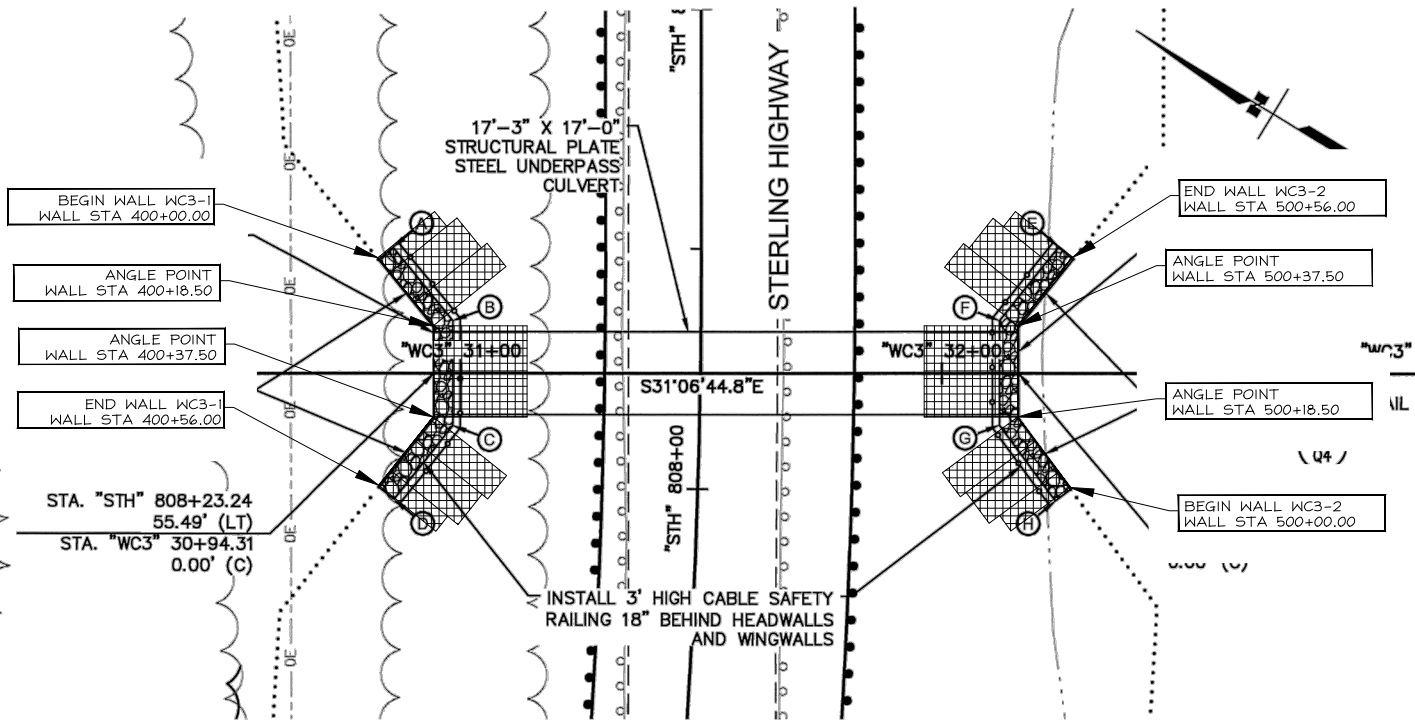


PRONGLESS MAT ②

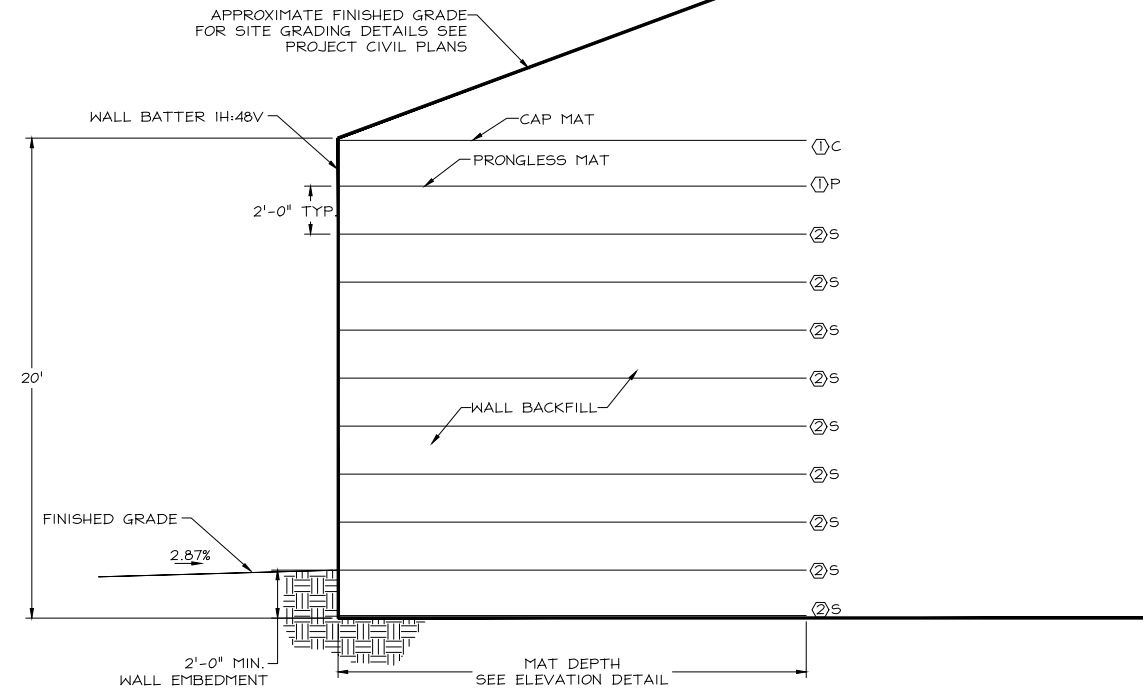
- INTERMEDIATE MATS BETWEEN THE TYPICAL 2 FT INCREMENT ARE TO BE FLAT MATS



WC3-1 ELEVATION
SCALE: 1/8"=1'-0"



WC3 PLAN VIEW
SCALE: 1"=40'



WC3-1 WALL SECTION
SCALE: 1/8"=1'-0"

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2	12-4-17 NM

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CONSULTING ENGINEERS
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TEL (707) 445-3001



WILDLIFE CROSSING 3
HEADWALL/WINGWALL
PLAN, ELEVATION & SECTION
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MECHANICALLY STABILIZED EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date:
July 18, 2017
Scale:
As Noted
Drawn by:
NM

SHEET NUMBER
S-6

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

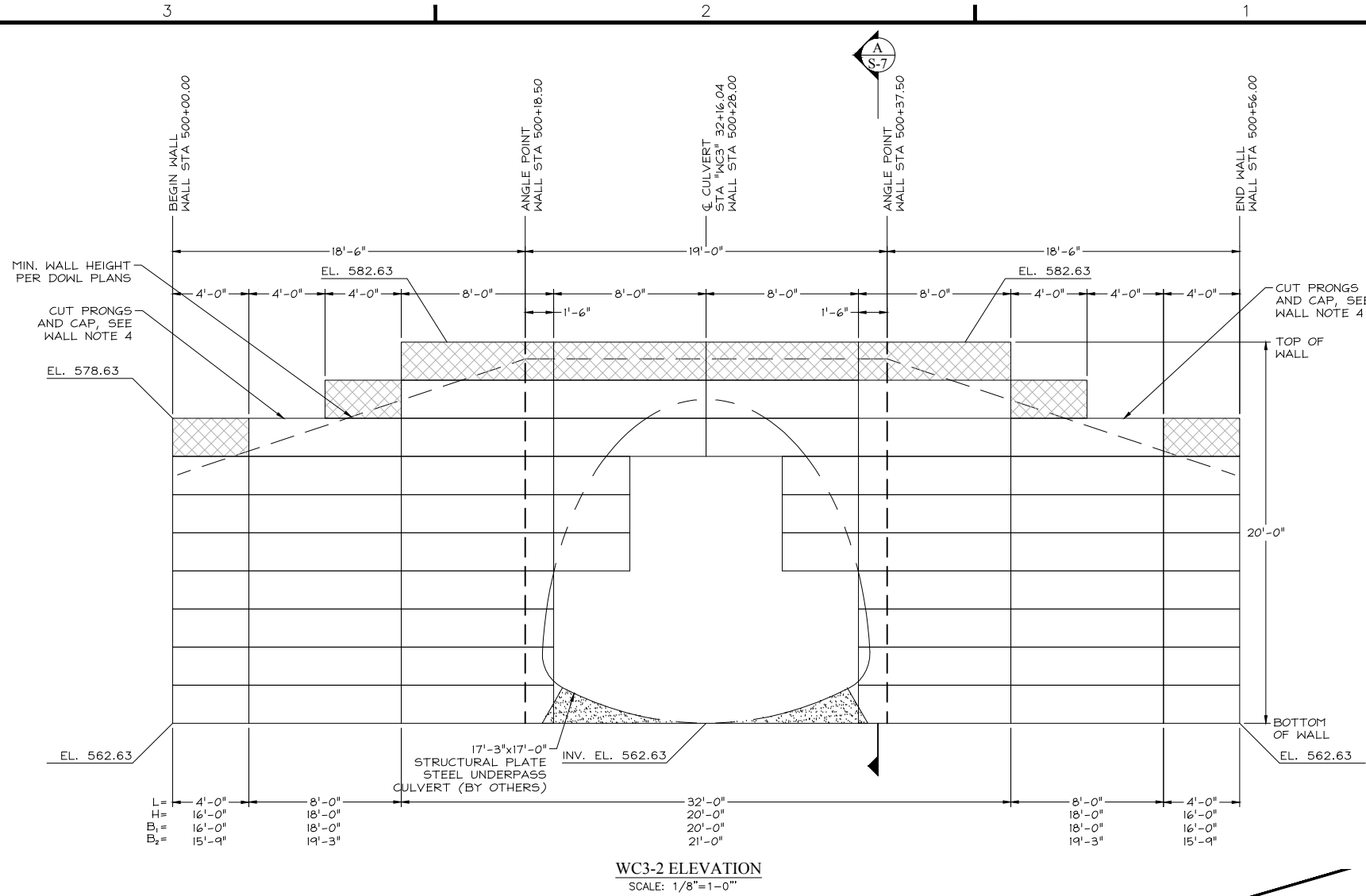
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- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT (1)

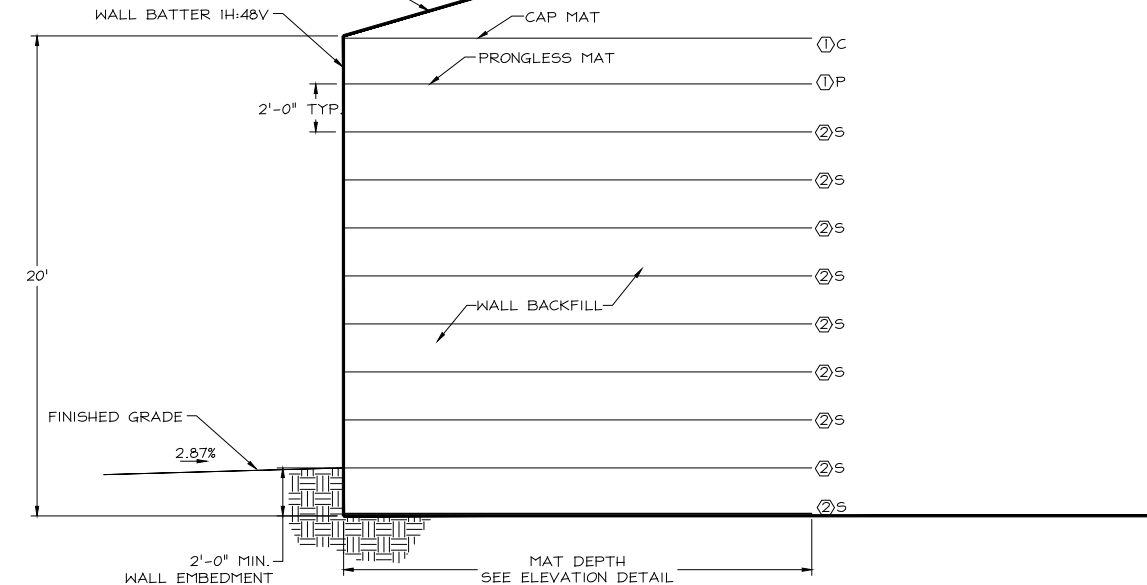


PRONGLESS MAT (1)

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



APPROXIMATE FINISHED GRADE FOR SITE GRADING DETAILS SEE PROJECT CIVIL PLANS



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REVISIONS	BY
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2	12-4-17 NM

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TEL (707) 445-3001



WILDLIFE CROSSING 3
HEADWALL/WINGWALL
ELEVATION & SECTION

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MECHANICALLY STABILIZED
EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date: July 18, 2017
Scale: As Noted
Drawn by: NM

SHEET NUMBER
S-7

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- ① 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- ② 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

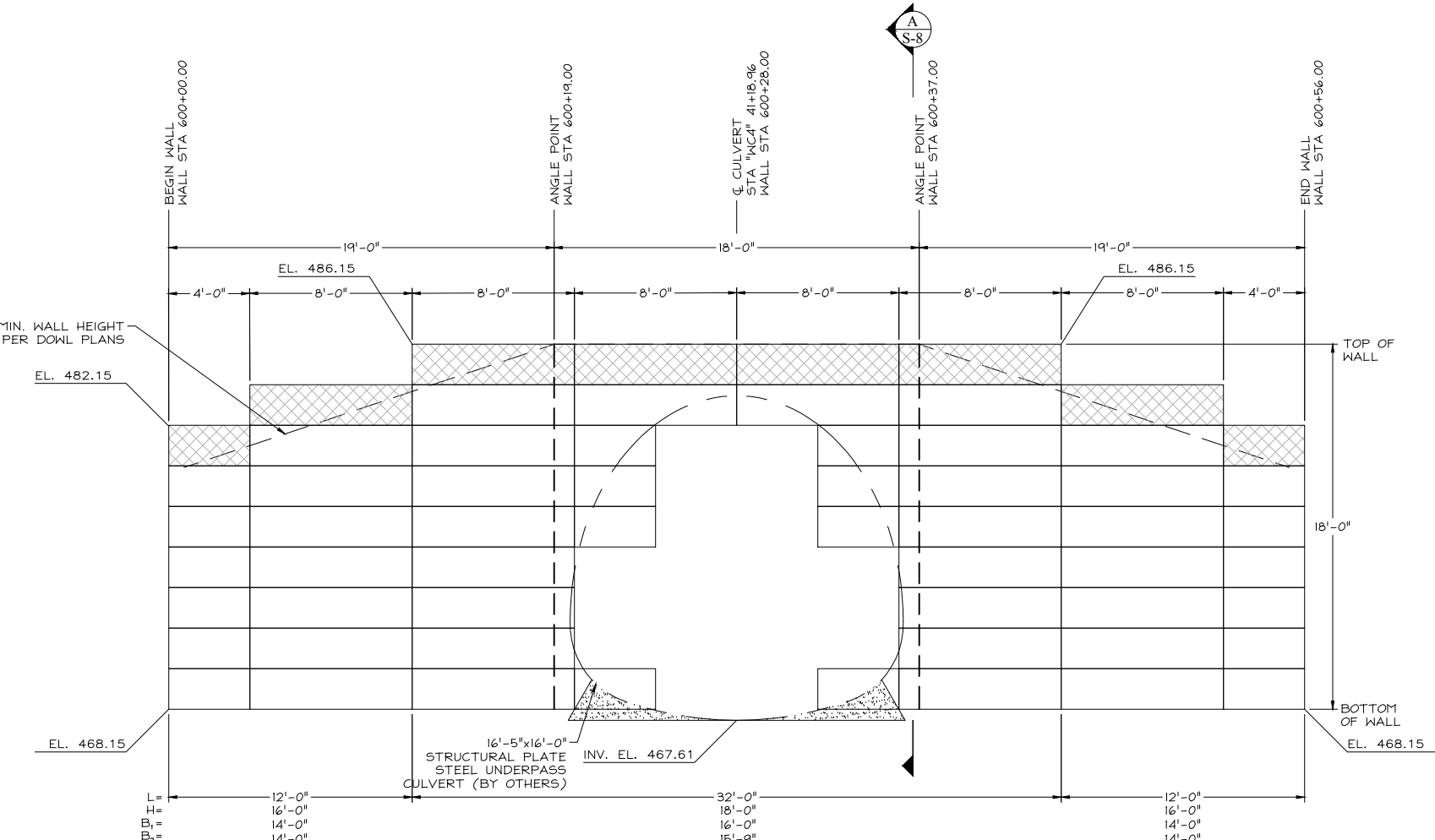
NOTES:

- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

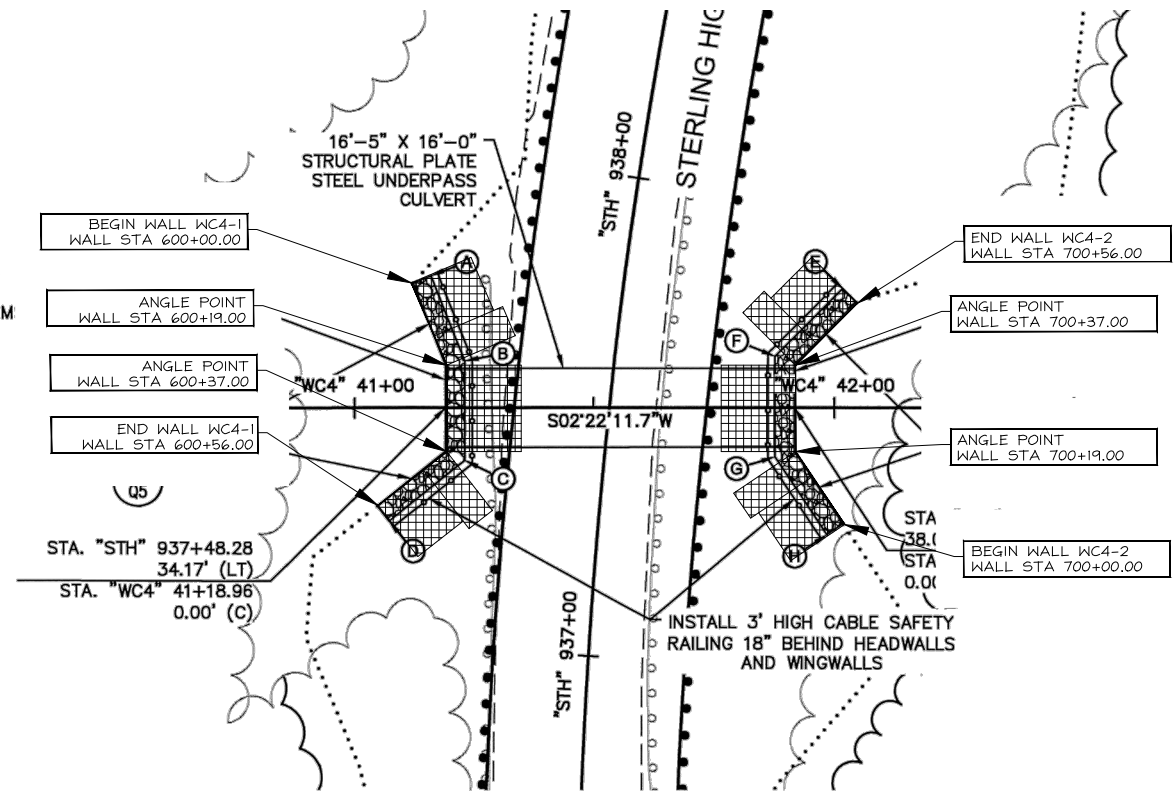
CAP MAT ①

PRONGLESS MAT ②

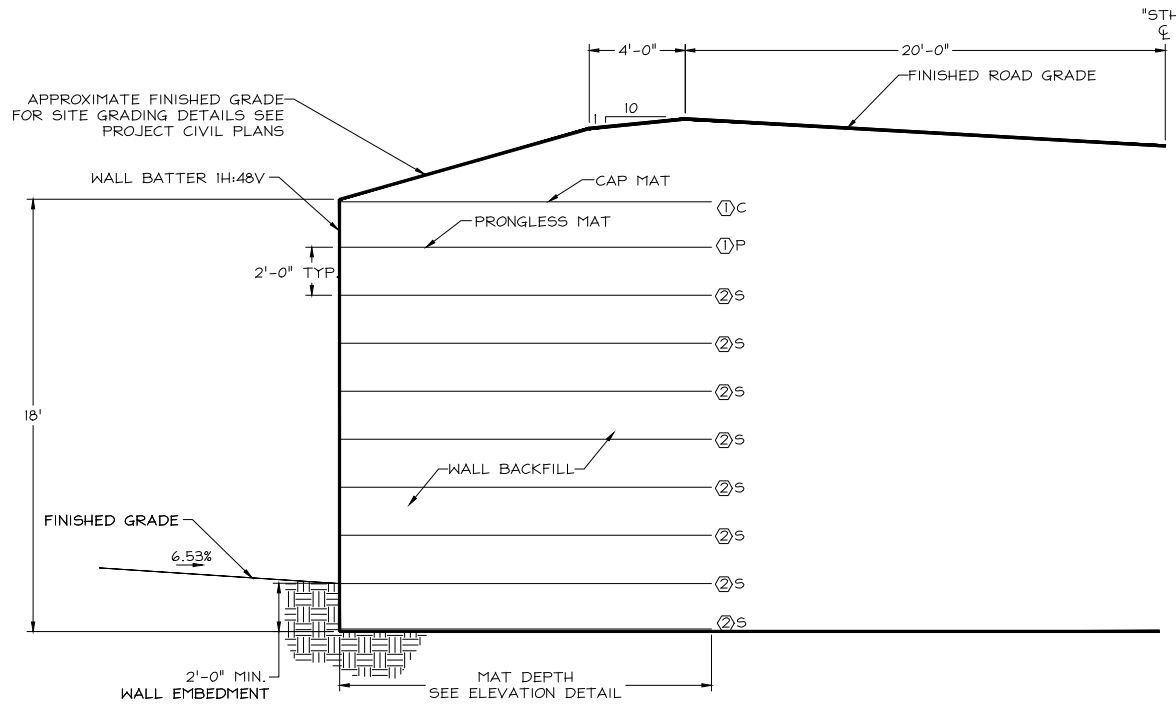
- INTERMEDIATE MATS BETWEEN THE TYPICAL 2 FT INCREMENT ARE TO BE FLAT MATS



WC4-1 ELEVATION
SCALE: 1/8"=1'-0"



WC4 PLAN VIEW
SCALE: 1"=40'



WC4-1 WALL SECTION
SCALE: 1/8"=1'-0"

FOR PLAN REVIEW ONLY - NOT FOR CONSTRUCTION

REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

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



WILDLIFE CROSSING 4 HEADWALL/WINGWALL PLAN, ELEVATION & SECTION
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MECHANICALLY STABILIZED EARTH WALL FOR:
HILFIKER RETAINING WALLS REHABILITATION STERLING HIGHWAY MP 58-79 STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date: July 18, 2017
Scale: As Noted
Drawn by: NM

SHEET NUMBER
S-8

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- ① 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- ② 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

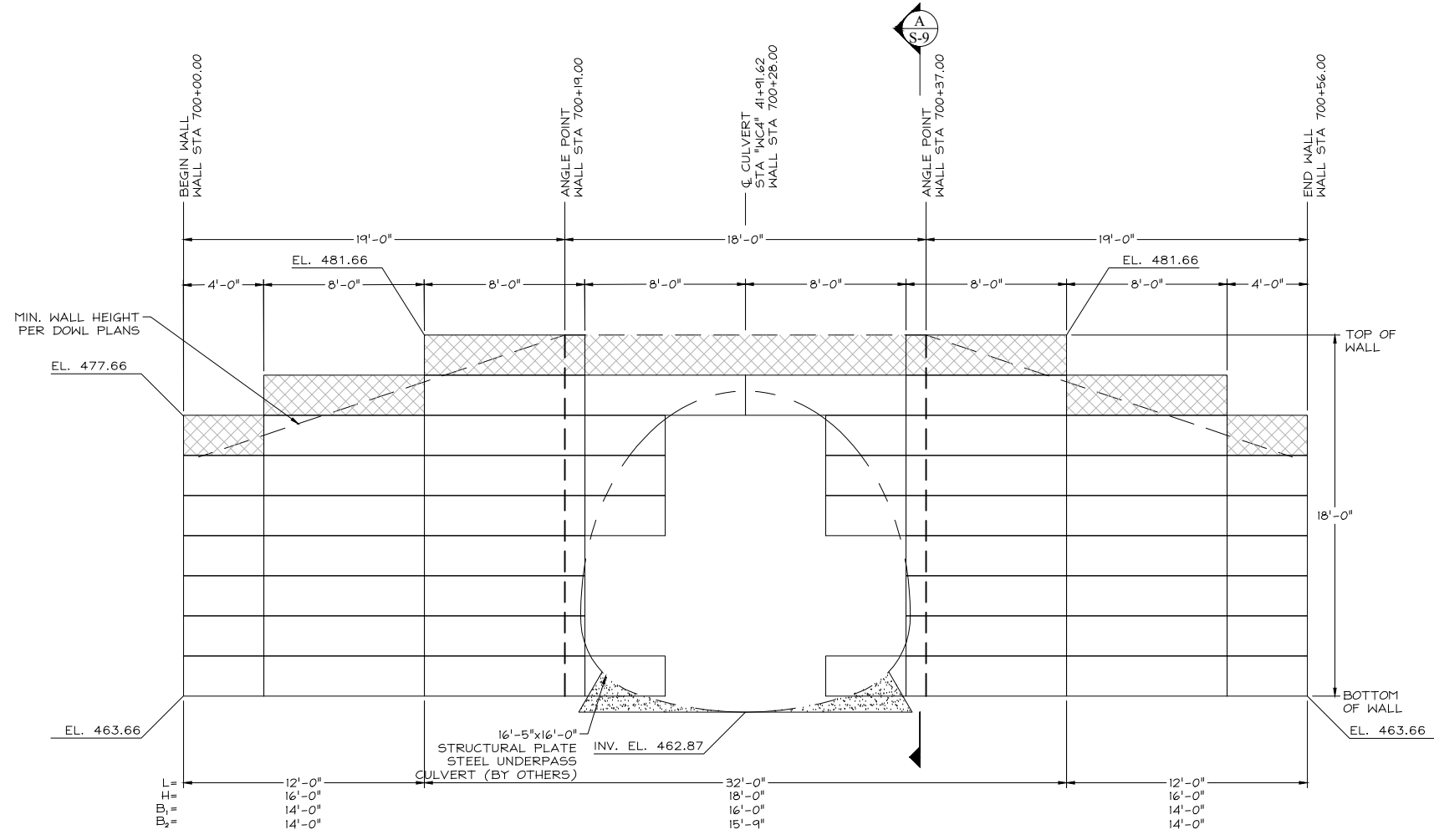
- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT ①

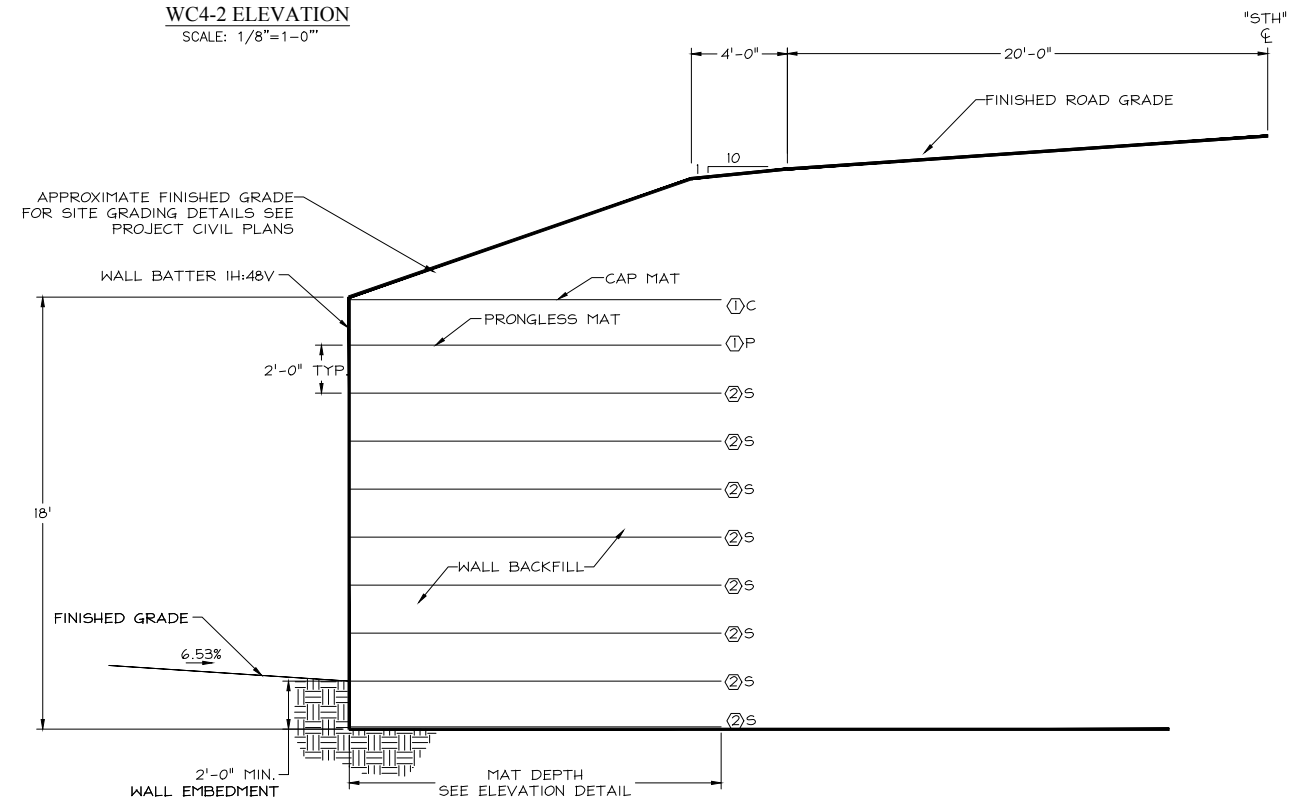


PRONGLESS MAT ②

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



WC4-2 ELEVATION
SCALE: 1/8"=1'-0"



WC4-2 WALL SECTION
SCALE: 1/8"=1'-0"

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REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

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CONSULTING ENGINEERS
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TEL (707) 445-3001



WILDLIFE CROSSING 4
HEADWALL/WINGWALL
ELEVATION & SECTION
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MECHANICALLY STABILIZED
EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date:
July 18, 2017
Scale:
As Noted
Drawn by:
NM

SHEET NUMBER
S-9

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

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

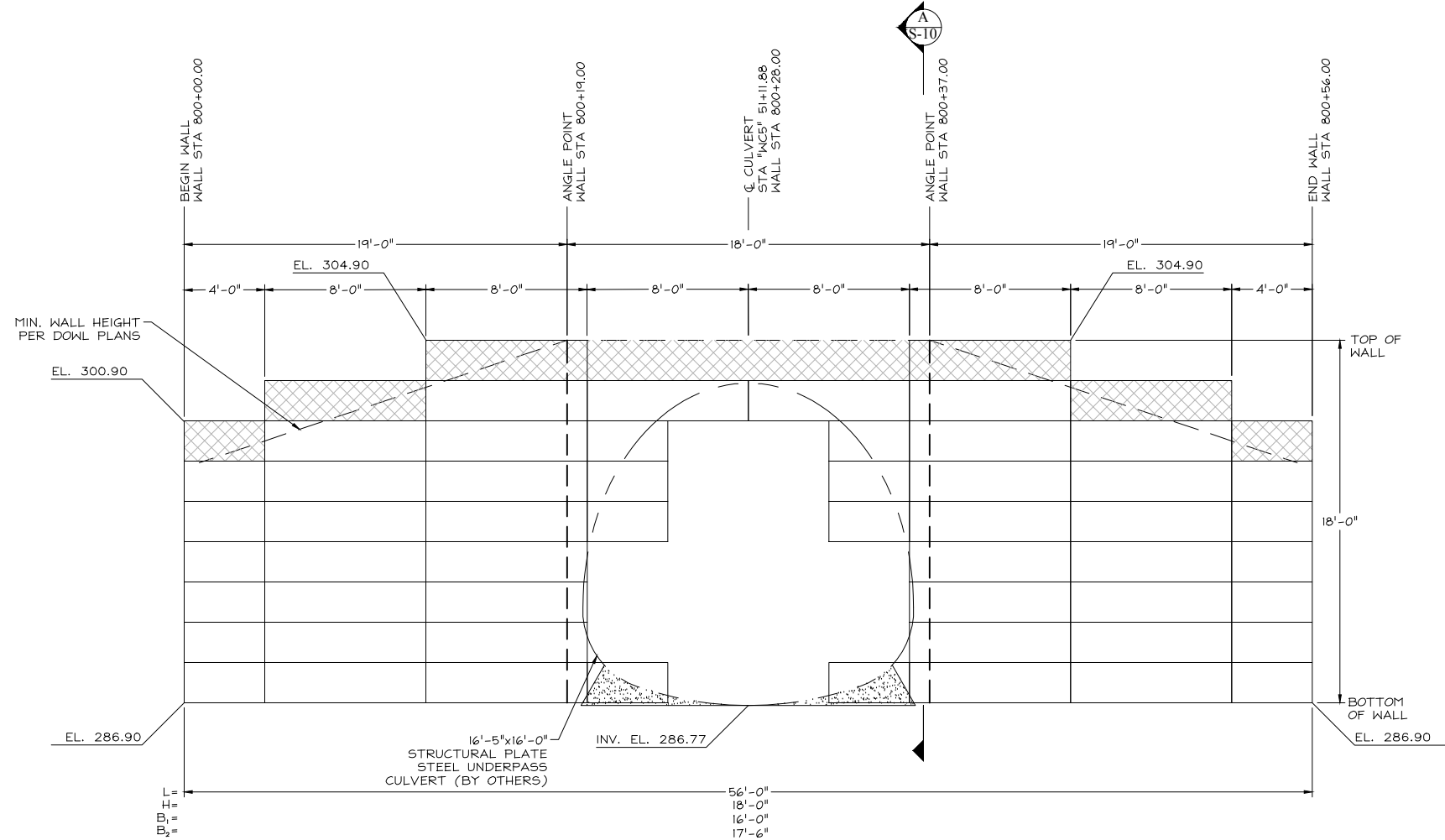
- TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT ①

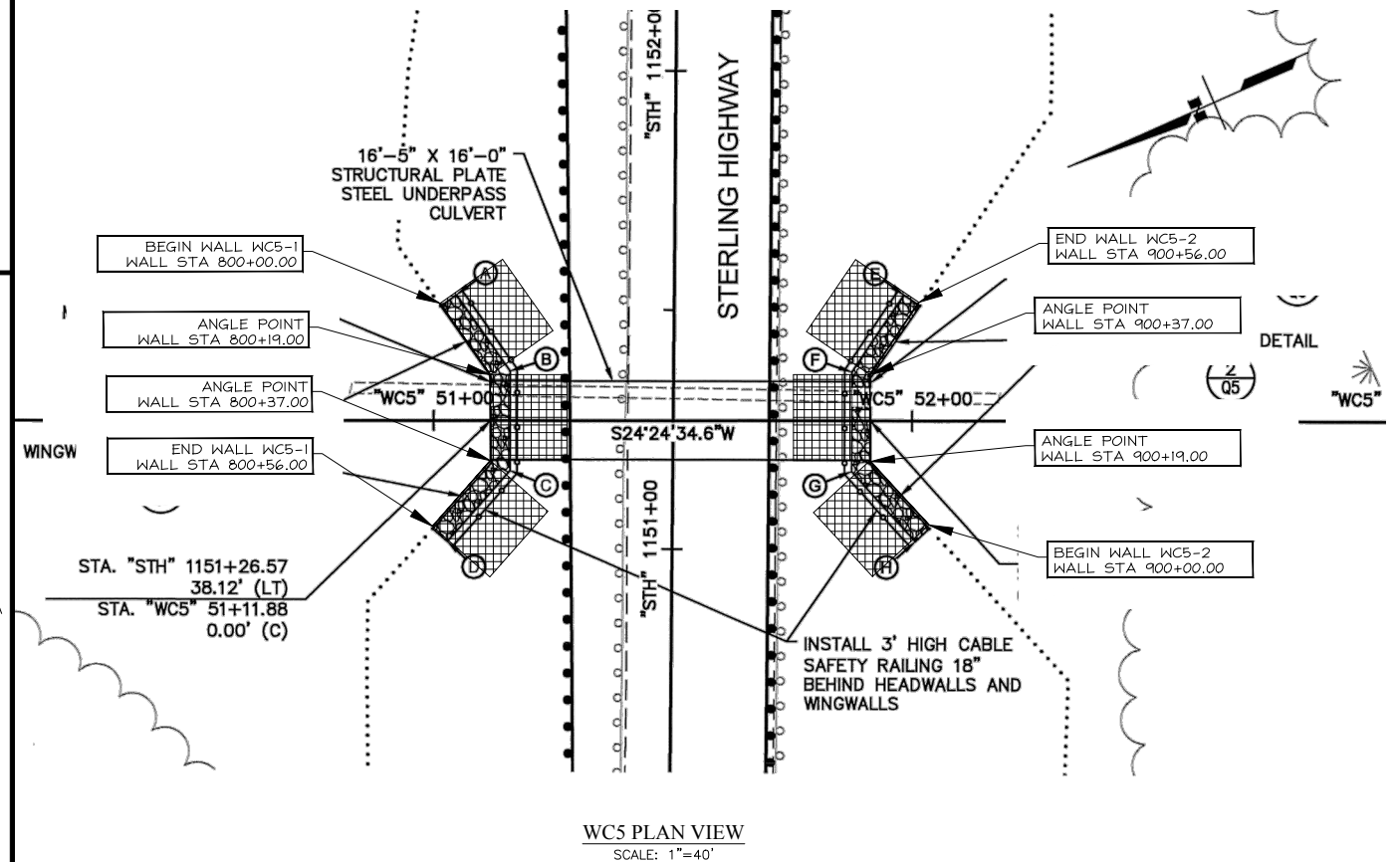


PRONGLESS MAT ②

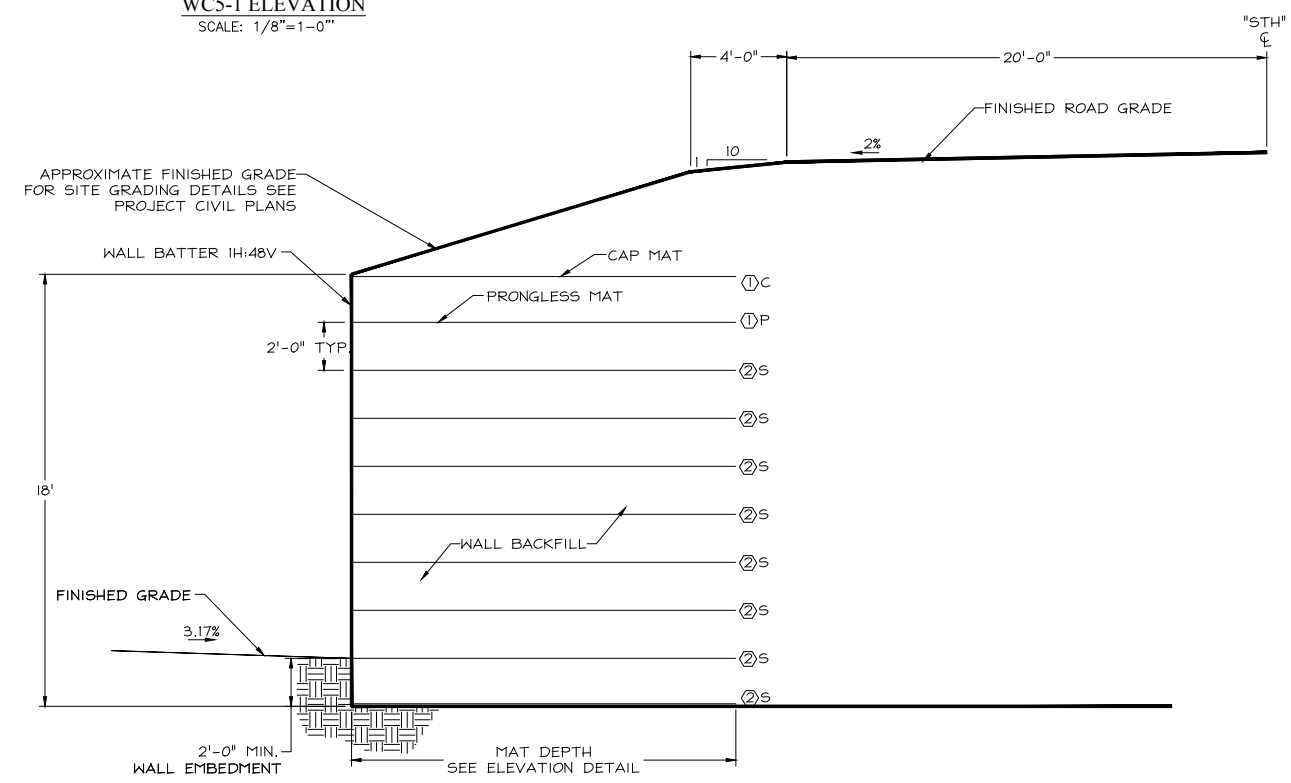
- INTERMEDIATE MATS BETWEEN THE TYPICAL 2 FT INCREMENT ARE TO BE FLAT MATS



WC5-1 ELEVATION
SCALE: 1/8"=1'-0"



WC5 PLAN VIEW
SCALE: 1"=40'



WC5-1 WALL SECTION
SCALE: 1/8"=1'-0"

FOR PLAN REVIEW ONLY - NOT FOR CONSTRUCTION

REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

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



WILDLIFE CROSSING 5
HEADWALL/WINGWALL
PLAN, ELEVATION & SECTION
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MECHANICALLY STABILIZED EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date:
July 18, 2017
Scale:
As Noted
Drawn by:
NM

SHEET NUMBER
S-10

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.

WELDED WIRE SCHEDULE

- ① 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- ② 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

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

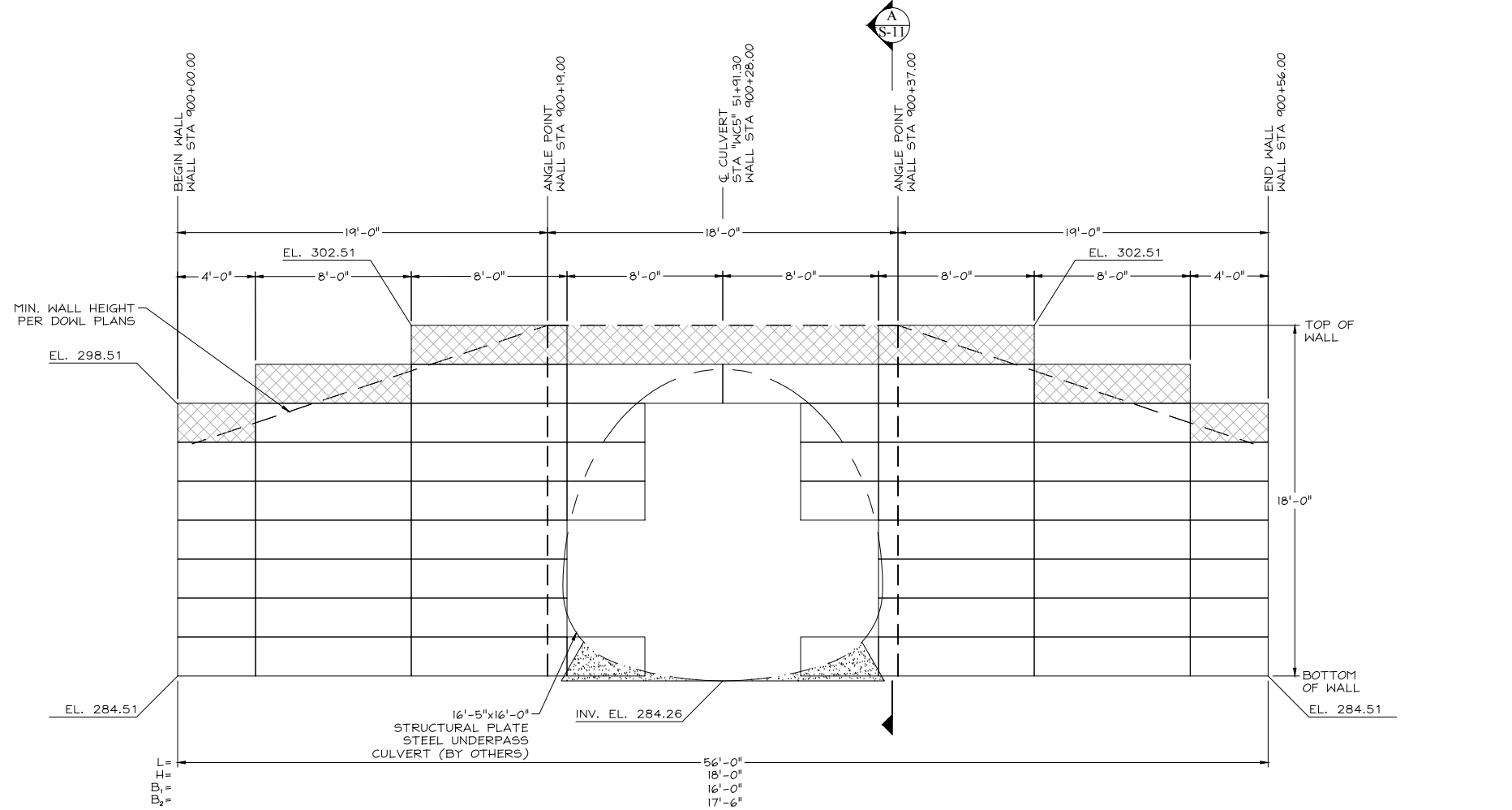
- TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT ①

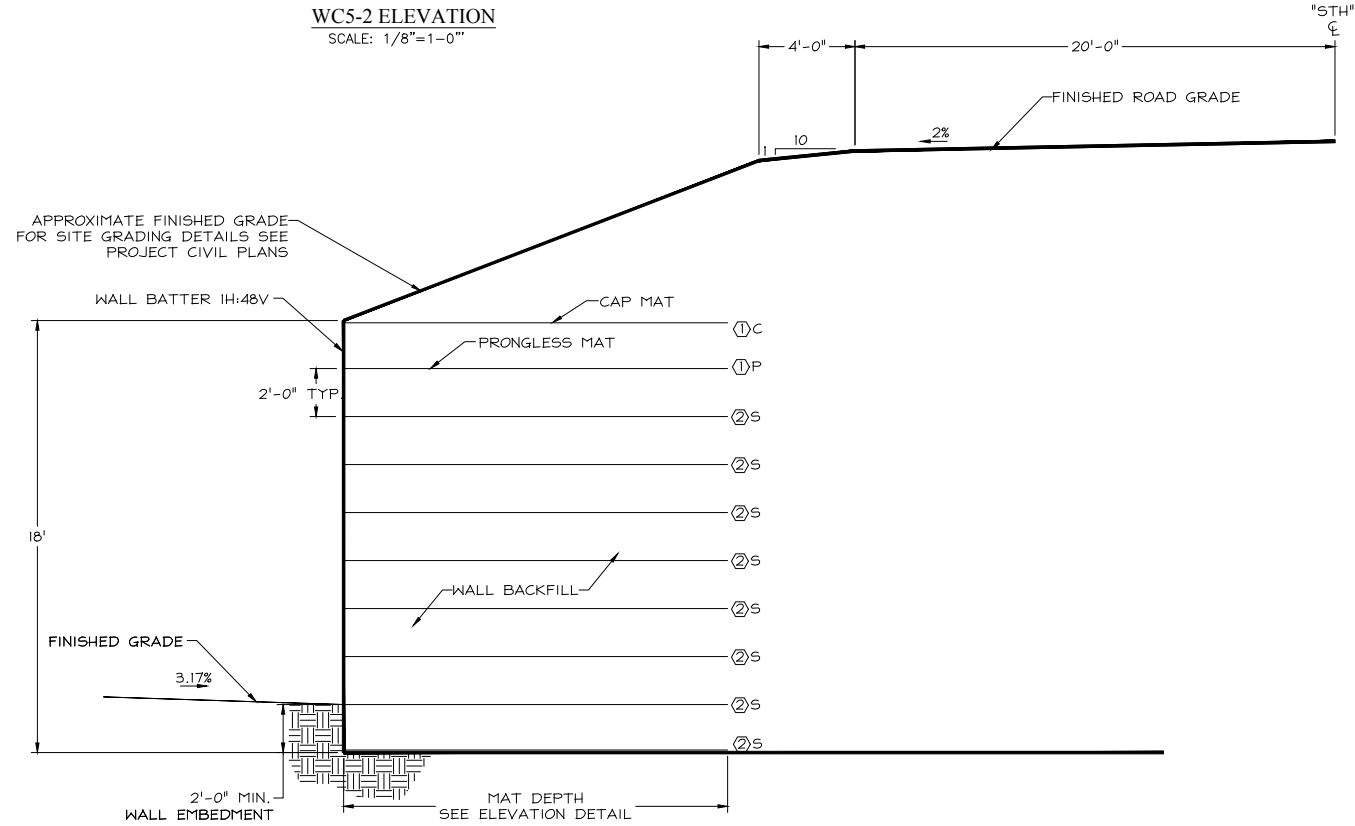


PRONGLESS MAT ②

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



WCS-2 ELEVATION
SCALE: 1/8"=1'-0"



WCS-2 WALL SECTION
SCALE: 1/8"=1'-0"

FOR PLAN REVIEW ONLY - NOT FOR CONSTRUCTION

REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

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



WILDLIFE CROSSING 5
HEADWALL/WINGWALL
PLAN, ELEVATION & SECTION
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MECHANICALLY STABILIZED EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date:
July 18, 2017
Scale:
As Noted
Drawn by:
NM

SHEET NUMBER
S-11

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.
- CAP MAT CAN BE GENTLY SLOPED DOWN (15' MAX) TO ACHIEVE 1'-6" COVER AT BACK OF MAT.

WELDED WIRE SCHEDULE

- 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

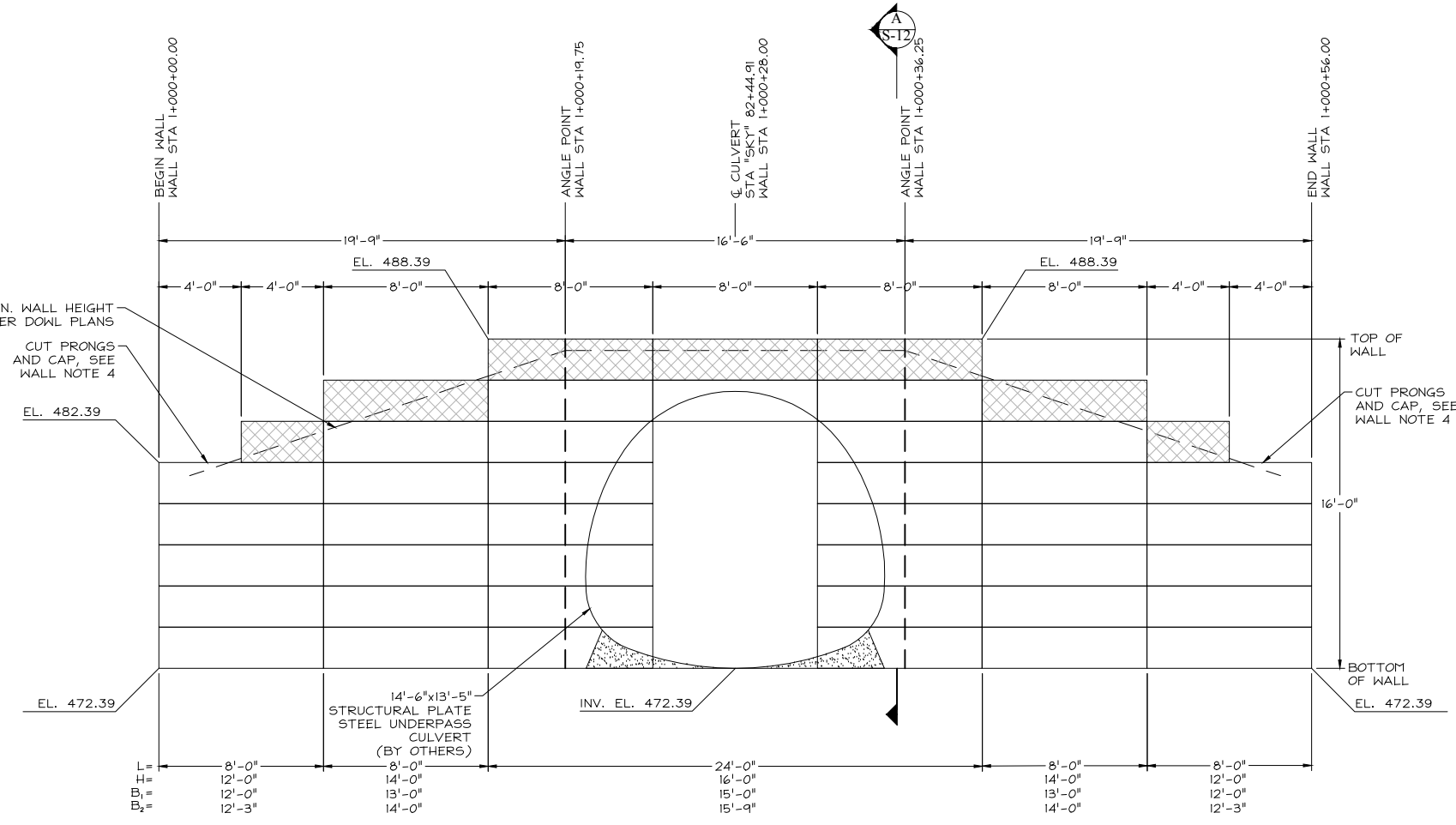
NOTES:

- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

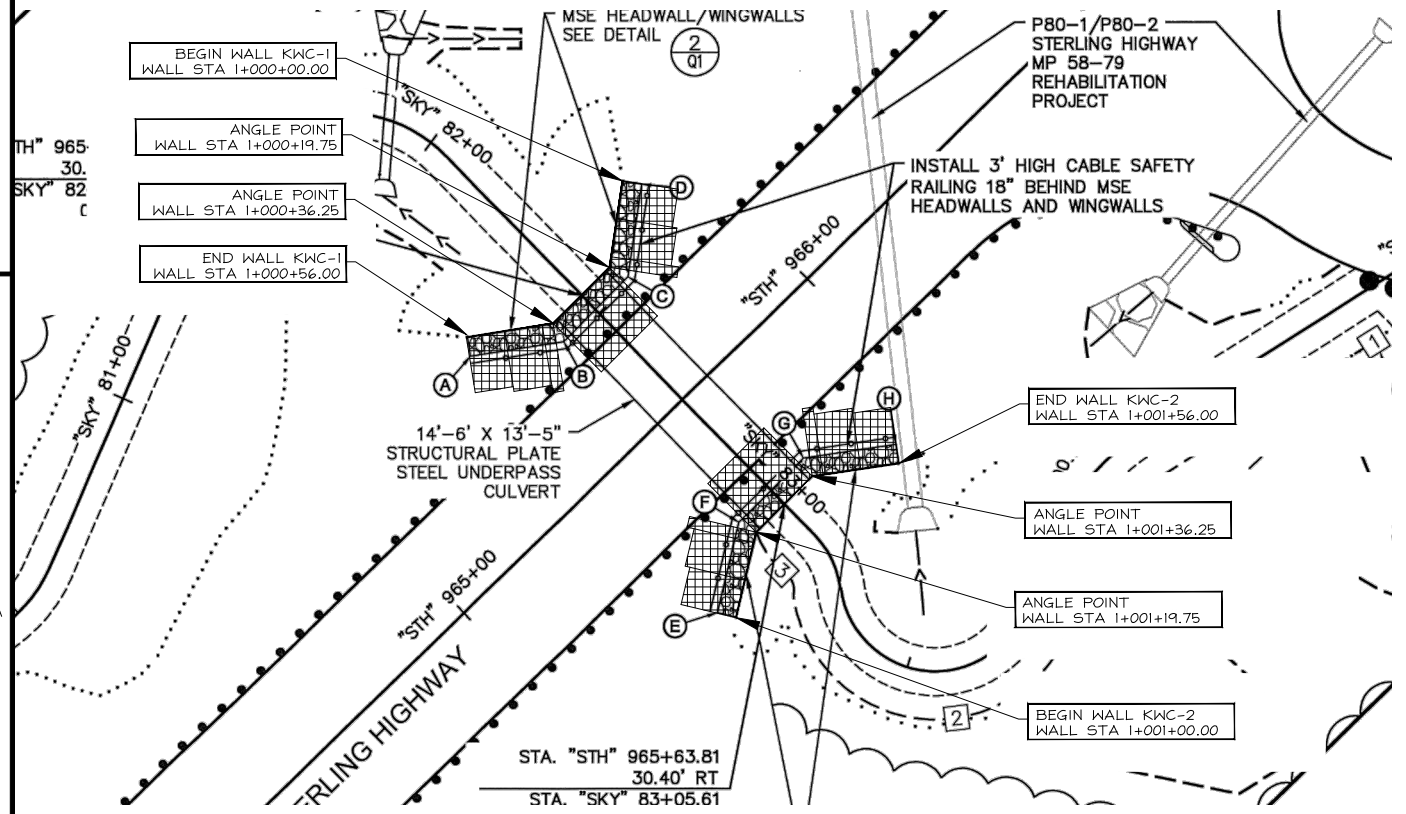
CAP MAT ①

PRONGLESS MAT ②

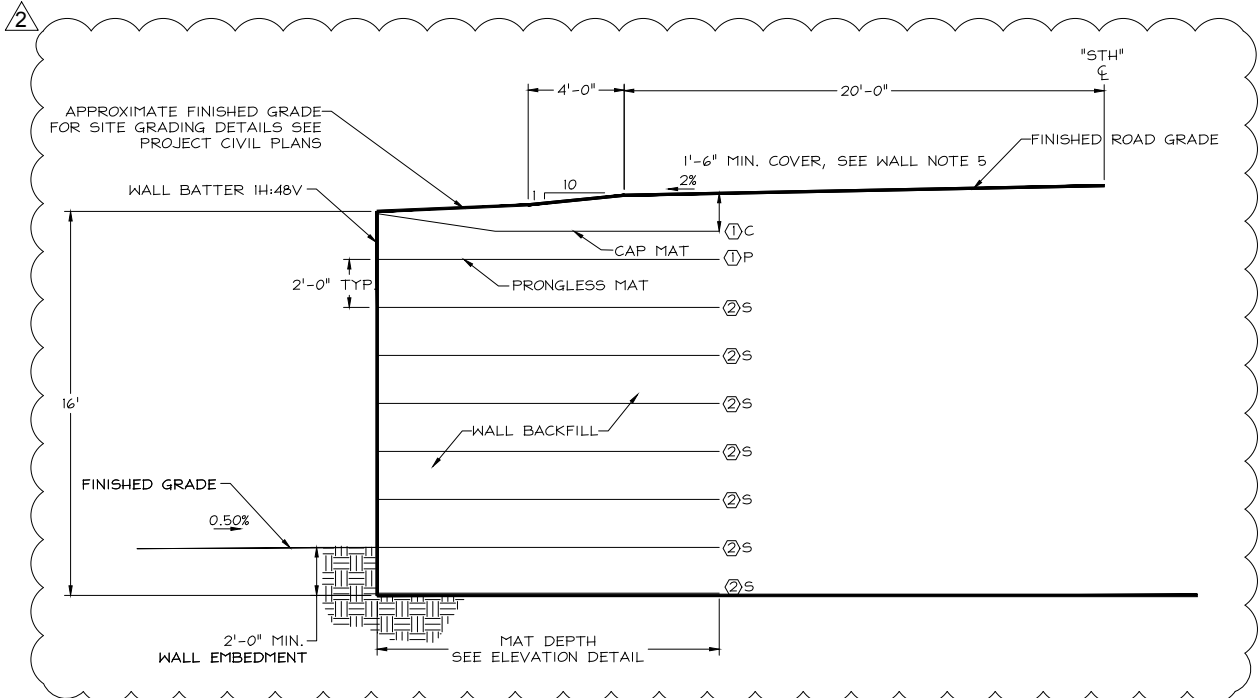
- INTERMEDIATE MATS BETWEEN THE TYPICAL 2 FT INCREMENT ARE TO BE FLAT MATS



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



KWC PLAN VIEW
SCALE: 1"=40'



KWC-1 WALL SECTION
SCALE: 1/8"=1'-0"

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REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

PACIFIC AFFILIATES
CONSULTING ENGINEERS
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TEL (707) 445-3001



KENAI WILDLIFE CROSSING HEADWALL/WINGWALL PLAN, ELEVATION & SECTION
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MECHANICALLY STABILIZED EARTH WALL FOR:
HILFIKER RETAINING WALLS REHABILITATION STERLING HIGHWAY MP 58-79 STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date: July 18, 2017
Scale: As Noted
Drawn by: NM

SHEET NUMBER
S-12

JOB NUMBER
17-2118

WALL NOTES:

- ALL MATS SHOWN ARE STANDARD WIDTH (8 FT) OR HALF WIDTH (4 FT), WHICH ARE FIELD CUT OUT OF A STANDARD MAT.
- BOTTOM OF WALL CAN BE STEPPED UP PROVIDED TWO FOOT EMBEDMENT OF TOE IS MAINTAINED AND FOUNDATION STEP IS APPROVED BY GEOTECHNICAL ENGINEER OF RECORD.
- TOP OF WALL CAN BE STEPPED DOWN PROVIDED A MINIMUM SLOPE OF 1.5H:1V IS MAINTAINED TO DESIGN FINISH GRADE.
- WHERE TOP OF STANDARD MAT IS EXPOSED AND WILL BE CAPPED, CUT PRONGS OFF PER "WALL COMPONENTS DETAIL", HILFIKER STANDARD DRAWINGS, SHEET S-14.
- CAP MAT CAN BE GENTLY SLOPED DOWN (15° MAX) TO ACHIEVE 1'-6" COVER AT BACK OF MAT.

WELDED WIRE SCHEDULE

- ① 8x12 - W7.0xW3.5 - B₁ = MAT DEPTH
- ② 8x21 - W7.0xW4.0 - B₂ = MAT DEPTH

- F FLAT MAT
- P PRONGLESS MAT
- C CAP MAT
- S STANDARD

NOTES:

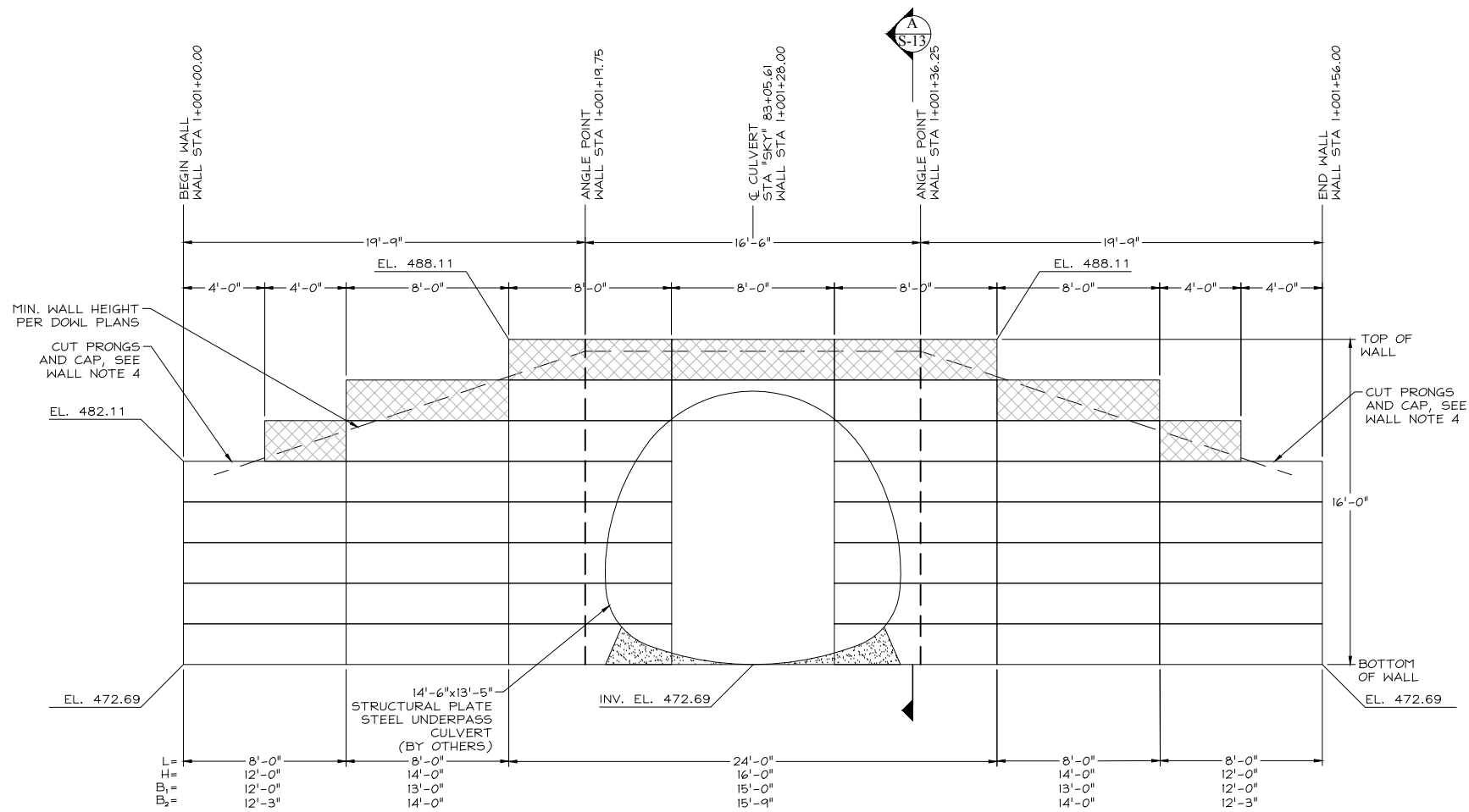
- ALL WIRE TO BE HOT DIPPED GALVANIZED (2.0 OZ/SF, ASTM A-123)
- DESIGN SERVICE LIFE = 75 YEARS
- ALL MATS ARE STANDARD EXCEPT AT THE FOLLOWING LOCATIONS:
 - TOP OF WALL (DENOTED BY HATCHED AREA SHOWN BELOW)

CAP MAT ①

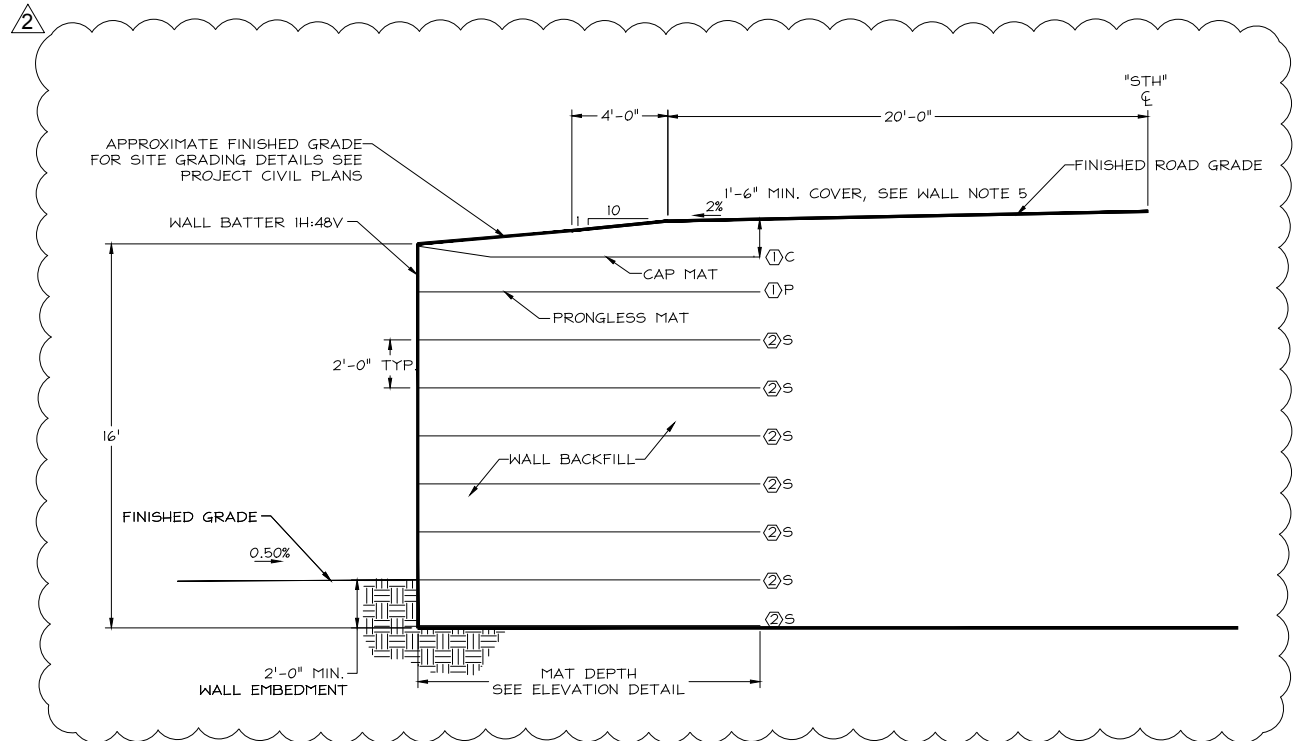


PRONGLESS MAT ②

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



KWC-2 ELEVATION
SCALE: 1/8"=1'-0"

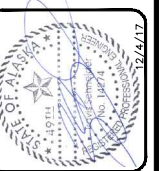


KWC-2 WALL SECTION
SCALE: 1/8"=1'-0"

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REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

PACIFIC AFFILIATES
CONSULTING ENGINEERS
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TEL (707) 445-3001



KENAI WILDLIFE CROSSING HEADWALL/WINGWALL ELEVATION & SECTION
FOR: HILFIKER RETAINING WALLS REHABILITATION STERLING HIGHWAY MP 58-79 STERLING, ALASKA PROJECT NO. HRW 150923AW

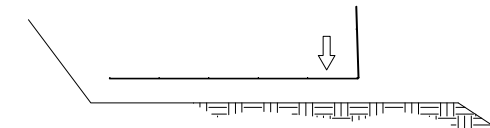
MECHANICALLY STABILIZED EARTH WALL
FOR: HILFIKER RETAINING WALLS REHABILITATION STERLING HIGHWAY MP 58-79 STERLING, ALASKA PROJECT NO. HRW 150923AW

Date: July 18, 2017
Scale: As Noted
Drawn by: NM

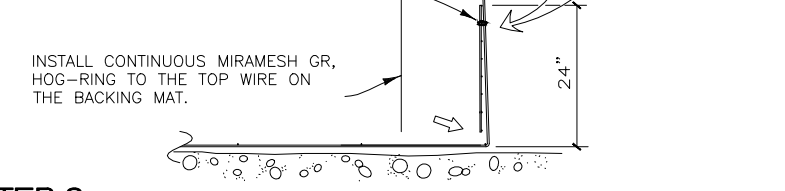
SHEET NUMBER
S-13

JOB NUMBER
17-2118

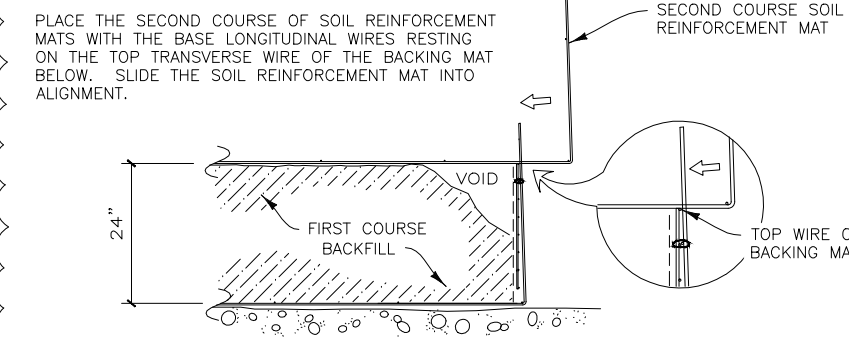
STEP 1
PLACE THE FIRST COURSE OF SOIL REINFORCEMENT MATS ON PREPARED FOUNDATION



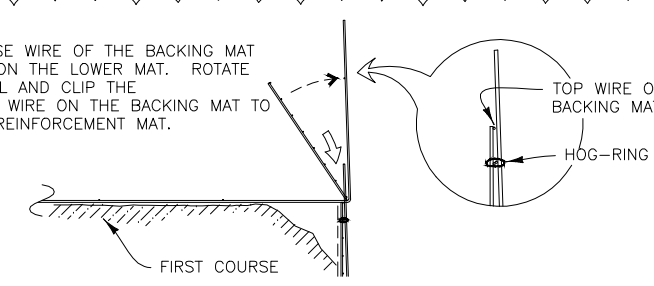
STEP 2
PLACE THE BACKING MAT AGAINST THE INSIDE FACE OF THE SOIL REINFORCEMENT MAT. CLIP THE SECOND-TO-TOP TRANSVERSE WIRE ON THE BACKING MAT TO THE TOP TRANSVERSE WIRE ON THE SOIL REINFORCEMENT MAT.



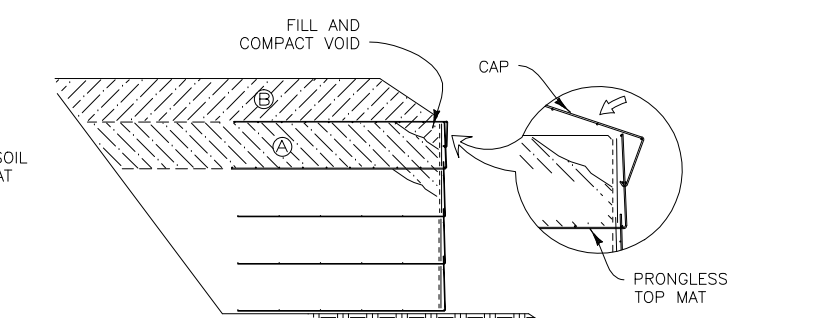
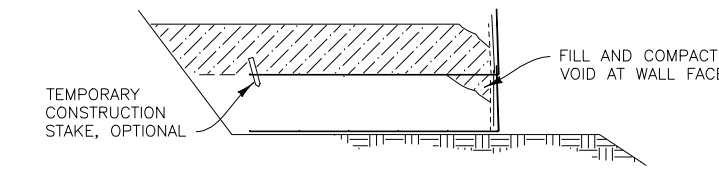
STEP 3
PLACE AND COMPACT THE BACKFILL IN LAYERS AND DENSITIES AS SPECIFIED IN THE PROJECT PLANS. LEAVE A VOID AT THE FACE AS SHOWN.



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.



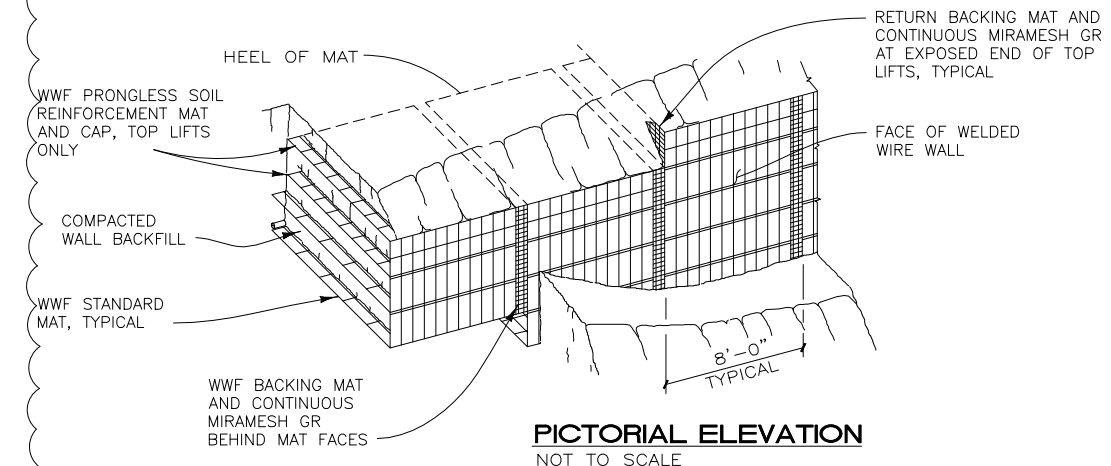
STEP 5
INSTALL THE CONTINUOUS MIRAMESH GR. PLACE AND COMPACT THE BACKFILL TO THE BASE ELEVATION OF THE NEXT MAT. REPEAT STEPS 3 THROUGH 5 TO THE TOP LIFT.



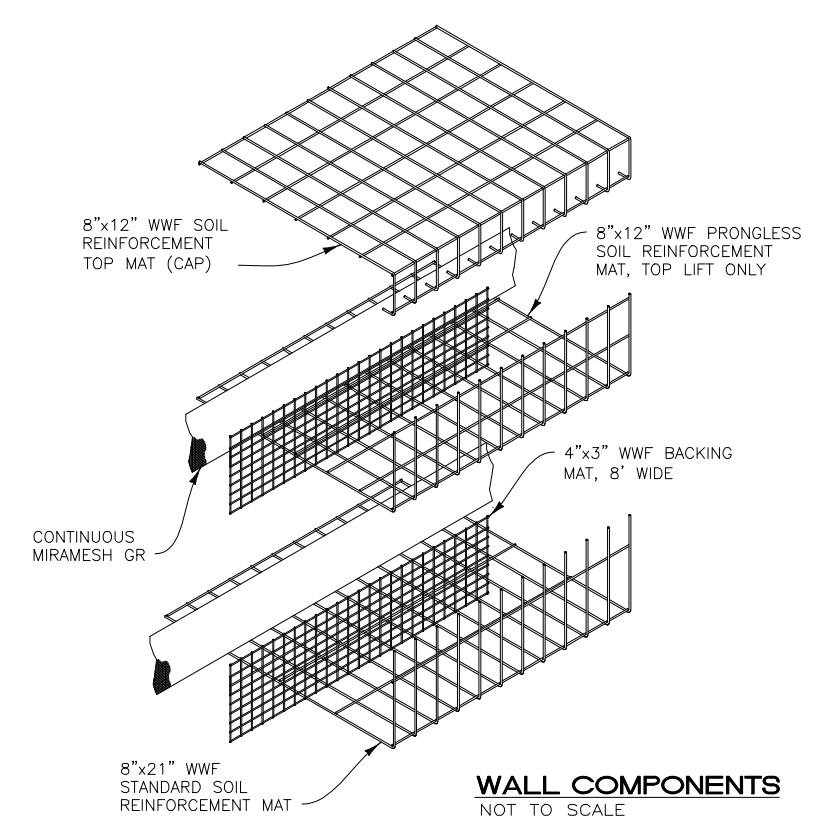
STEP 6: TOP LIFT
PLACE THE TOP LIFT PRONGLESS MAT, BACKING MAT AND CONTINUOUS MIRAMESH GR. PLACE AND COMPACT BACKFILL IN AREA "A". HOOK THE CAP OVER THE MIDDLE TRANSVERSE WIRE ON THE PRONGLESS MAT, AND ROTATE INTO PLACE. BACKFILL "B" TO 1'-6" MIN. COVER OVER THE CAP.



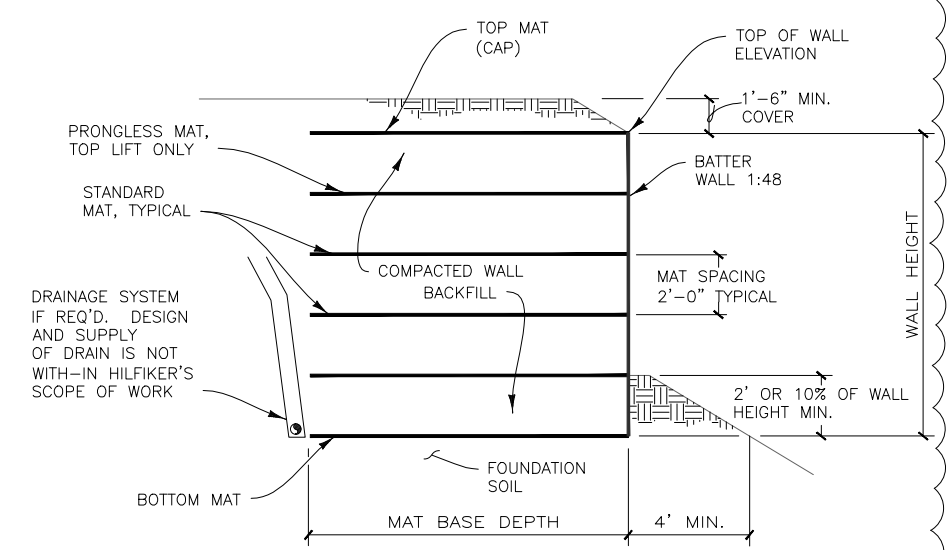
CONSTRUCTION SEQUENCE
NOT TO SCALE



PICTORIAL ELEVATION
NOT TO SCALE



WALL COMPONENTS
NOT TO SCALE



TYPICAL SECTION
NOT TO SCALE

FOR PLAN REVIEW ONLY - NOT FOR CONSTRUCTION

REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

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



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MECHANICALLY STABILIZED EARTH WALL
FOR:
HILFIKER RETAINING WALLS
STERLING HIGHWAY MP 58-79
REHABILITATION
STERLING, ALASKA
PROJECT NO. HRW 150923AW

Date: July 18, 2017
Scale: As Noted
Drawn by: NM

SHEET NUMBER
S-14

JOB NUMBER
17-2118

REVISIONS	BY
1	8-23-17 NM
2	12-4-17 NM

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



STANDARD HILFIKER DETAILS

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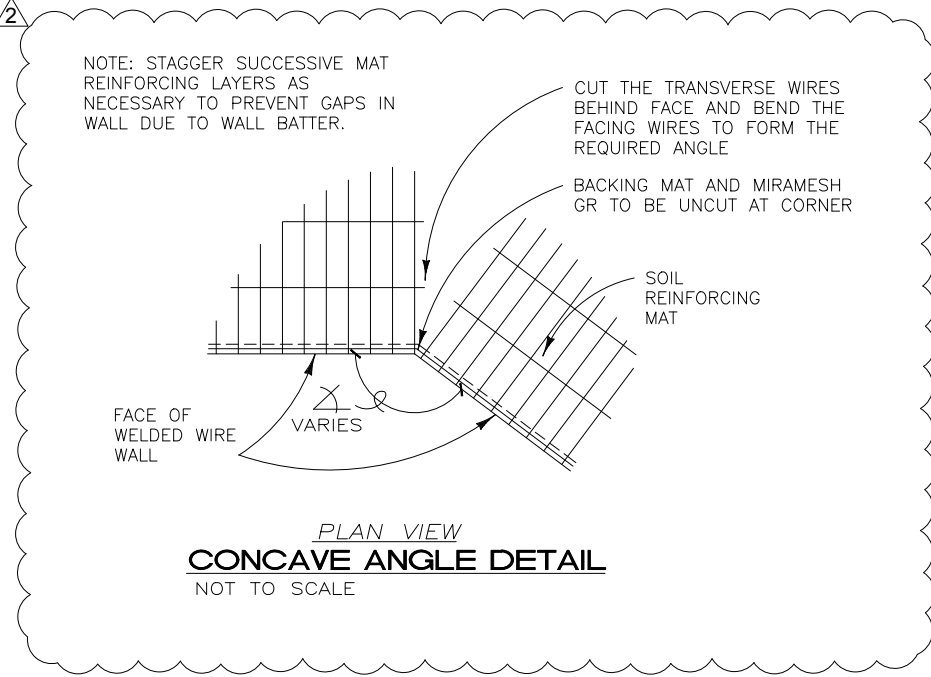
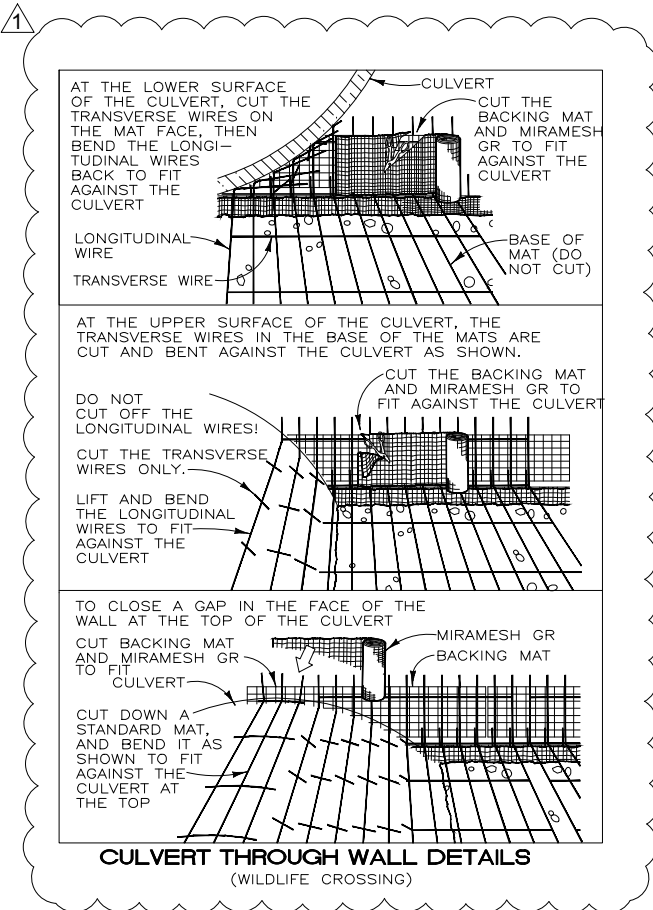
MECHANICALLY STABILIZED EARTH WALL
 FOR:
 HILFIKER RETAINING WALLS
 STERLING HIGHWAY MP 58-79
 REHABILITATION
 STERLING, ALASKA
 PROJECT NO. HRW 150923AW

Date: July 18, 2017
 Scale: As Noted
 Drawn by: NM

1 SHEET NUMBER
S-15

JOB NUMBER
 17-2118

FOR PLAN REVIEW ONLY - NOT FOR CONSTRUCTION



C

B

A