DESIGN NOTES

1. Design is based on the assumption that backfill within the reinforced soil mass, methods of construction and quality of materials conform to the requirements of Hilfiker Retaining Walls.

2. Assumed Soil Characteristics:
   Wall Backfill :
   Unit Weight: 125 pcf
   Internal Friction Angle: 34°
   Cohesion = 0 psf
   Retained Backfill:
   Unit Weight: 125 pcf
   Internal Friction Angle: 34°
   Foundation Soils:
   Unit Weight: 125 pcf
   Friction Angle for Sliding: 34°
   Cohesion = 0 psf

   Worst Case Unfactored Bearing Pressure by MSE Wall - @ 12.0' Height - 1950 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.

3. 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.

4. 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.

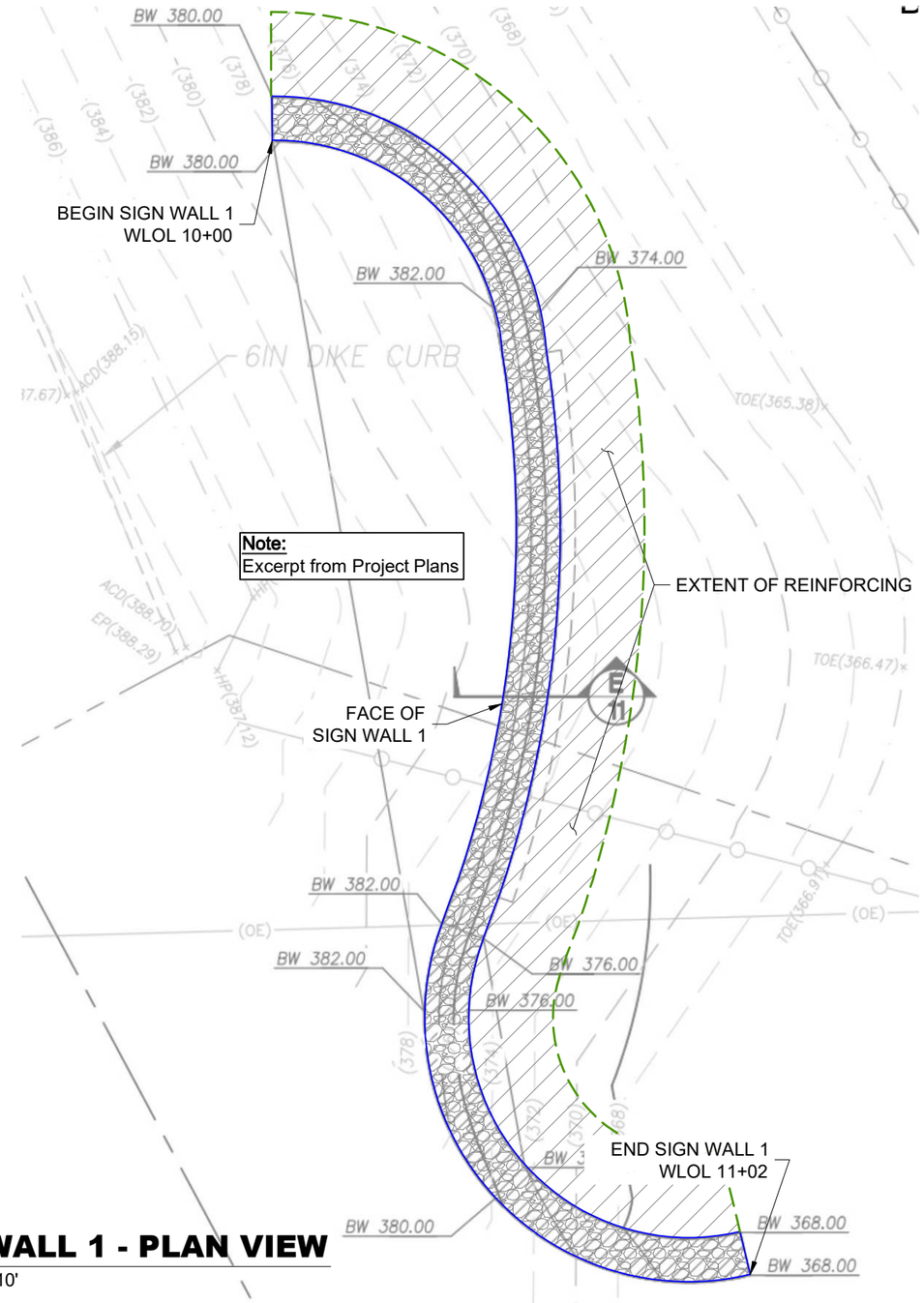
   Drainage control shall be as specified in the project plans and specifications or as directed by the engineer.

5. Design Procedure:
   Mechanically Stabilized Earth walls and Reinforced Soil Slopes, FHWA report No. FHWA-NHI-00-043.

6. All information hereon is derived from the reference drawings, and is subject to geometric and geotechnical confirmation. Field verification of existing ground elevations and bottom of wall elevations should be completed prior to preparation. The applicable Hilfiker construction guide and specifications are an integral part of this submittal.

   This design is intended to be responsible for the internal stability of the retaining wall only, and not for global stability or foundation bearing capacity. CES & Hilfiker Retaining Walls are not responsible for job site drainage, safety and fall protection provisions including compliance with OSHA regulations, nor the Competent Person designated for daily inspection.

SUPPLIED QUANTITIES	
WALL DESCRIPTION	FACE AREA
SIGN WALL 1	1,152 SQ. FT.
SIGN WALL 2 - BOTTOM TIER	756 SQ. FT.
SIGN WALL 2 - TOP TIER	972 SQ. FT.
ART WALL 1	360 SQ. FT.
ART WALL 2	288 SQ. FT.
TOTALS	3,528 SQ. FT.



SIGN WALL 1 - PLAN VIEW

SCALE: 1" = 10'

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SIGN WALL 1 - PLAN VIEW & GENERAL NOTES

PROJECT	24-005
DATE	2-14-24
DESIGN	KLC
DRAWN	KLC
SHT	1 OF 8

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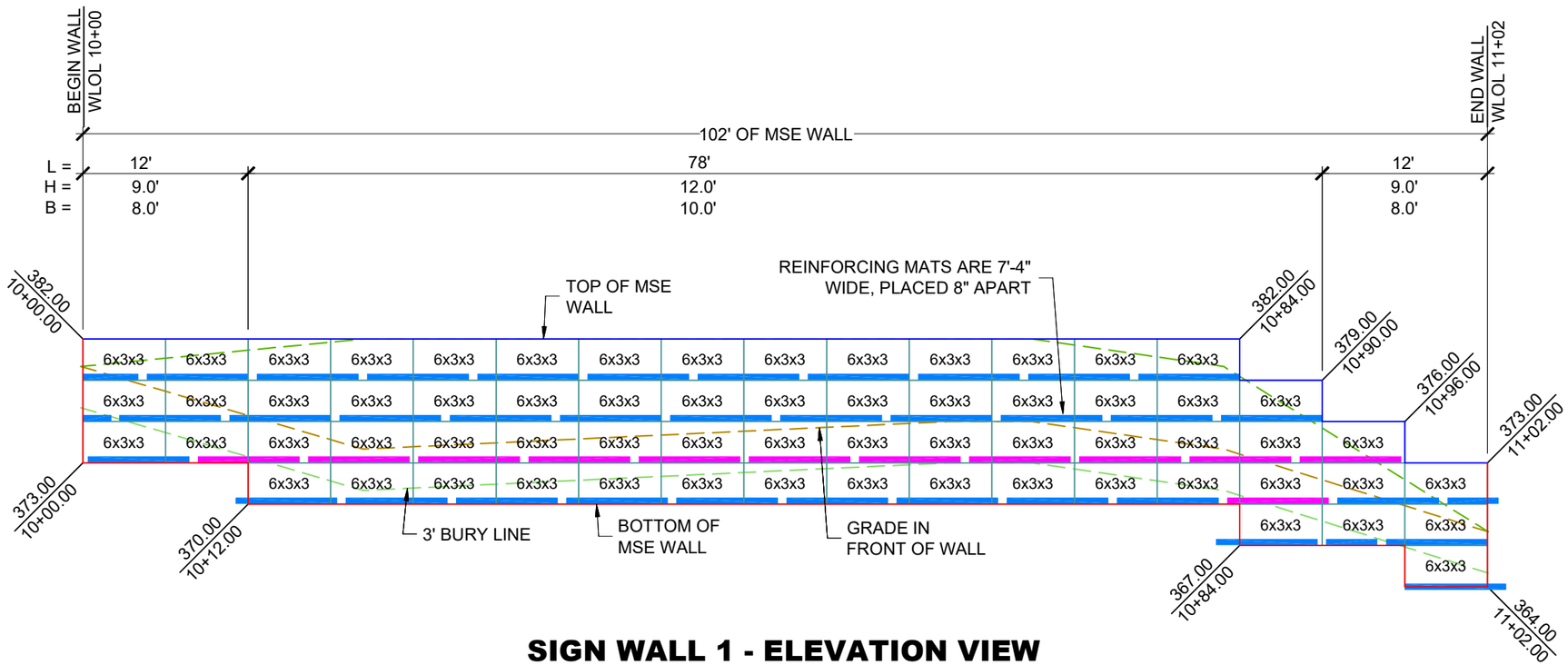

SIGN WALL 1 - ELEVATION VIEW

SCALE: 1" = 10'

WALL WIRE TYPE LEGEND

FINISH: COMMERCIAL GALVANIZED
SERVICE LIFE: 75 YEARS

TYPE 1 - 8X12 W7.0x3.5 MATS (7.33' WIDE)
TYPE 2 - 8x12 W9.5x4.0 MATS (7.33' WIDE)

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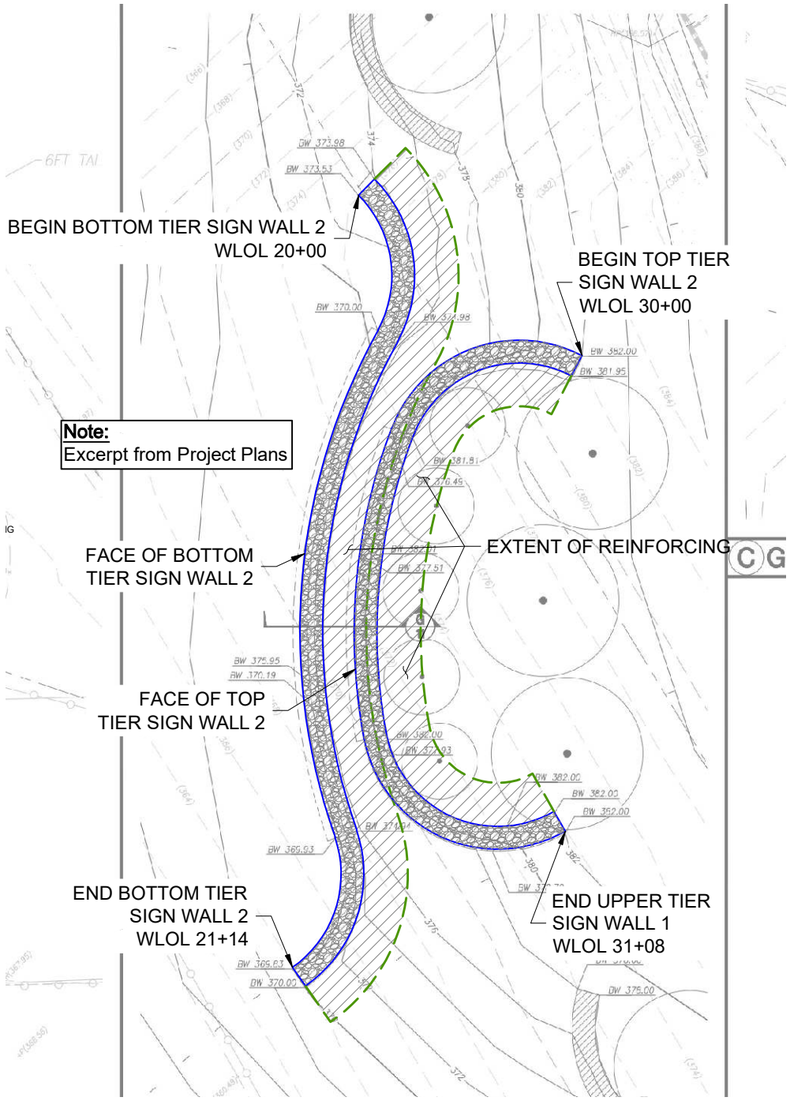
SIGN WALL 1 - ELEVATION VIEW

PROJECT 24-005
DATE 2-14-24
DESIGN KLC
DRAWN KLC

SHT 2 OF 8



SIGN WALL 2 - PLAN VIEW

SCALE: 1" = 20'

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SIGN WALL 2 - PLAN VIEW

PROJECT	24-005
DATE	2-14-24
DESIGN	KLC
DRAWN	KLC

SHT 3 OF 8

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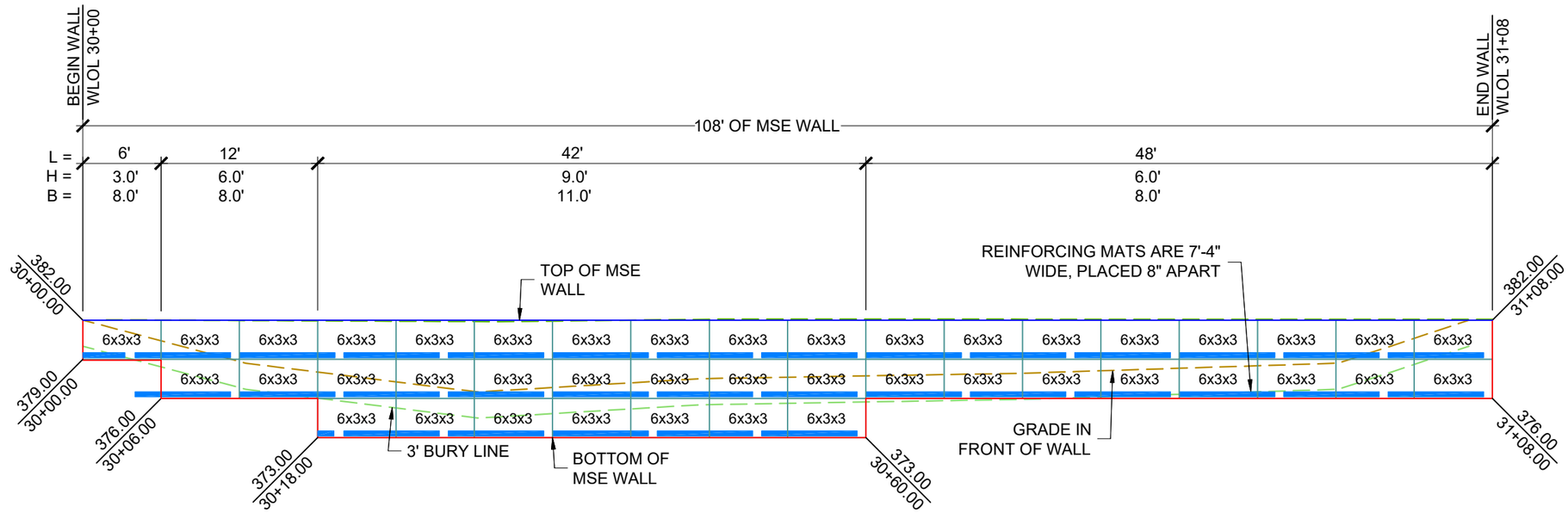


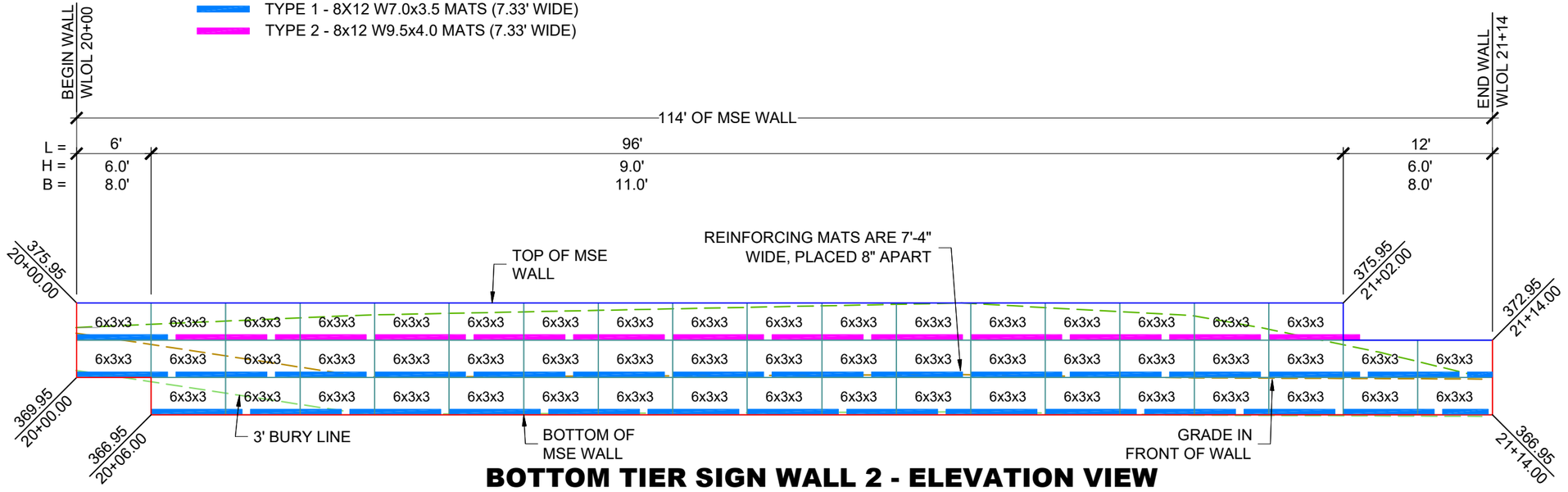
UPPER TIER SIGN WALL 2 - ELEVATION VIEW

SCALE: 1" = 10'

WALL WIRE TYPE LEGEND

FINISH: COMMERCIAL GALVANIZED
SERVICE LIFE: 75 YEARS

TYPE 1 - 8X12 W7.0x3.5 MATS (7.33' WIDE)
TYPE 2 - 8x12 W9.5x4.0 MATS (7.33' WIDE)



BOTTOM TIER SIGN WALL 2 - ELEVATION VIEW

SCALE: 1" = 10'

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SIGN WALLS 2 - ELEVATION VIEW

PROJECT	24-005
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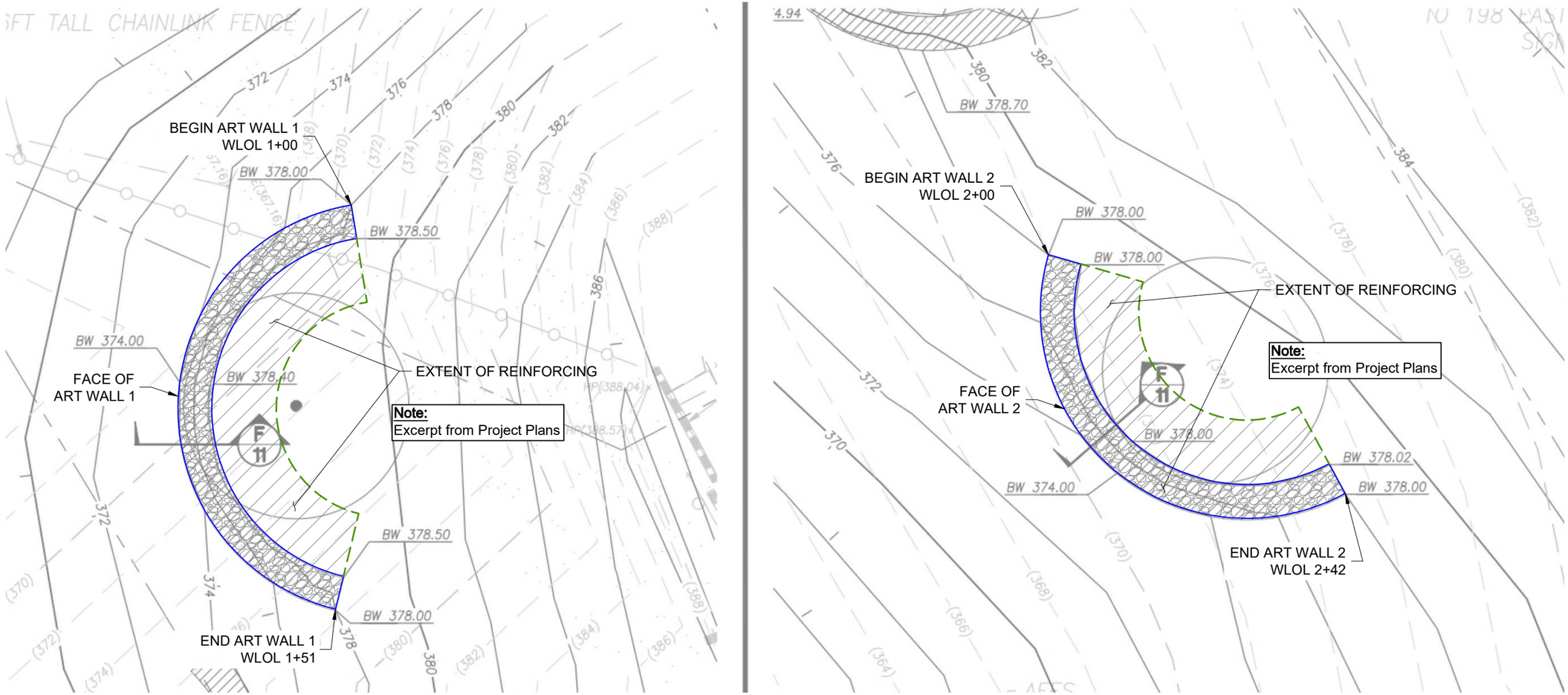
DESIGN	KLC
DRAWN	KLC

SHT 4 OF 8



ART WALL 1 & 2 - PLAN VIEW

SCALE: 1" = 10'

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ART WALL 1 & 2 - PLAN VIEW

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DRAWN	KLC

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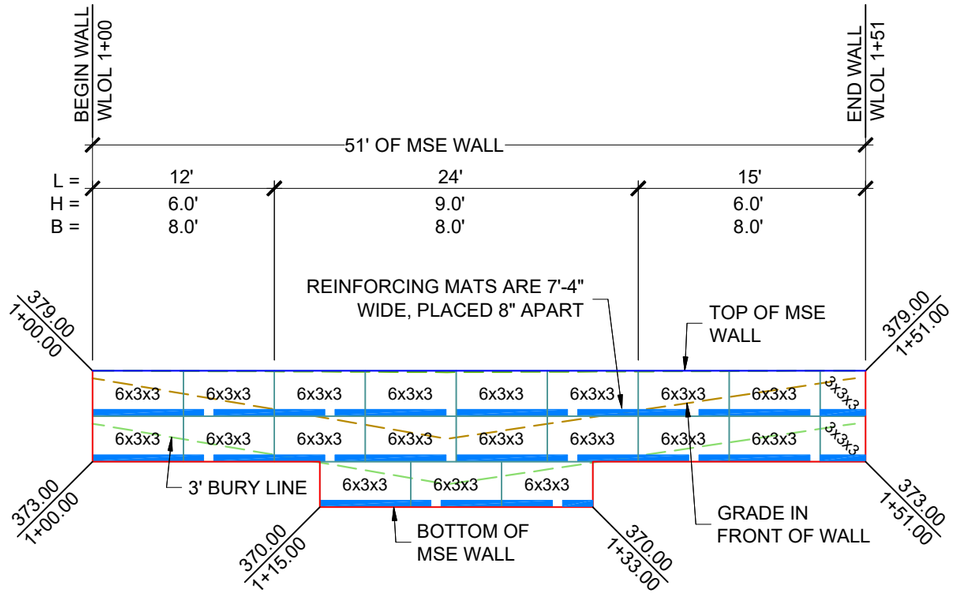

ART WALL 1 - ELEVATION VIEW

SCALE: 1" = 10'

WALL WIRE TYPE LEGEND

FINISH: COMMERCIAL GALVANIZED
SERVICE LIFE: 75 YEARS

TYPE 1 - 8X12 W7.0x3.5 MATS (7.33' WIDE)
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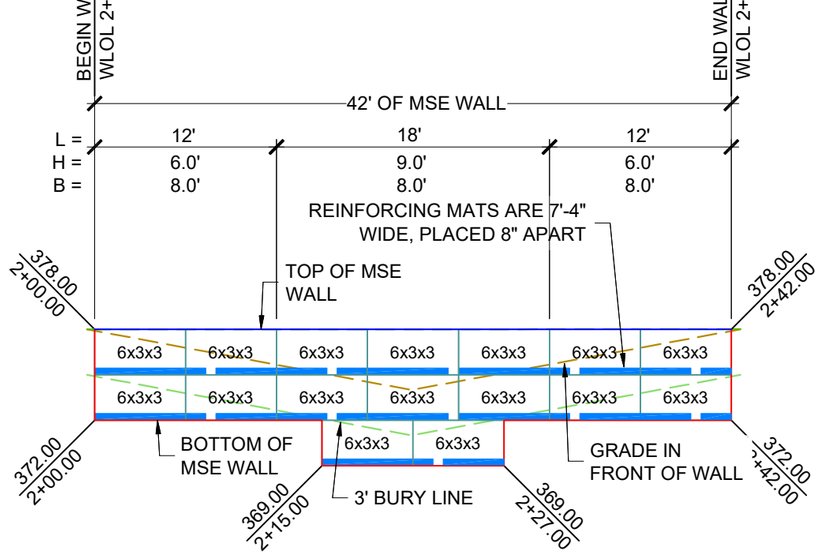

ART WALL 2 - ELEVATION VIEW

SCALE: 1" = 10'

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ART WALLS 1 & 2 - ELEVATION VIEW

PROJECT	24-005
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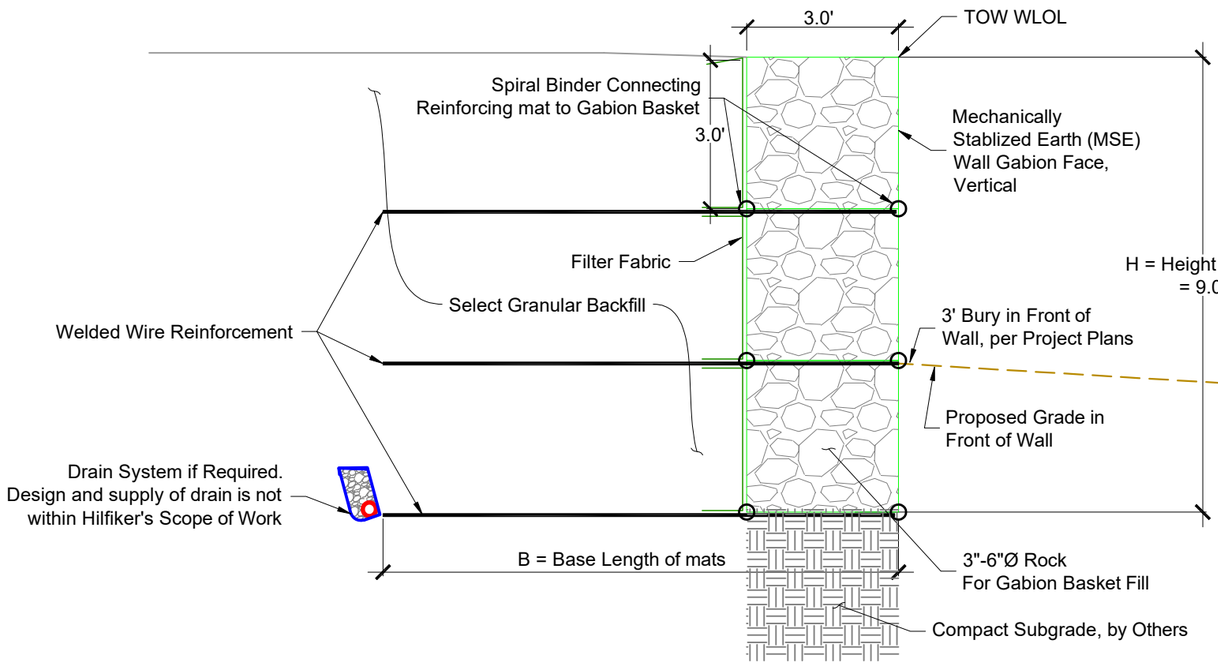
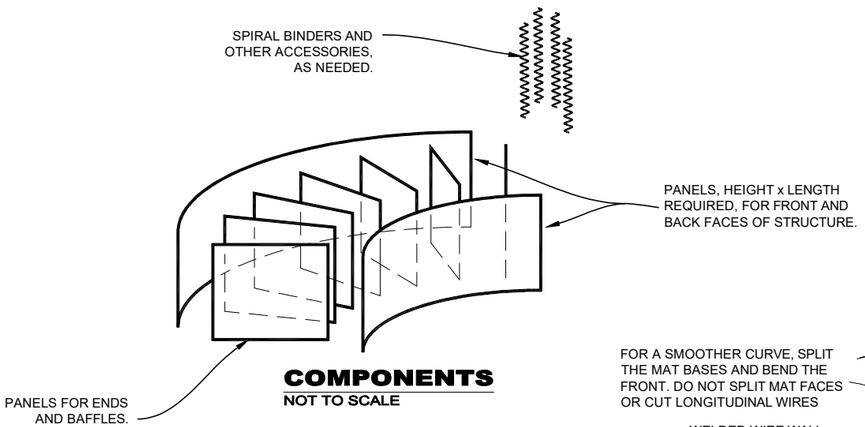


TYPICAL GABION FACED MSE WALL - CROSS SECTION (H=9')

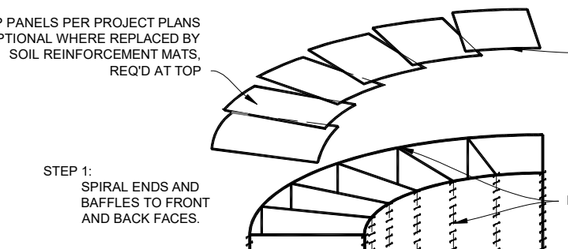
NTS

CURVED GABION STRUCTURES

ONE METHOD TO CONSTRUCT CURVES OF NEARLY ANY RADIUS.



COMPONENTS
NOT TO SCALE



ASSEMBLY
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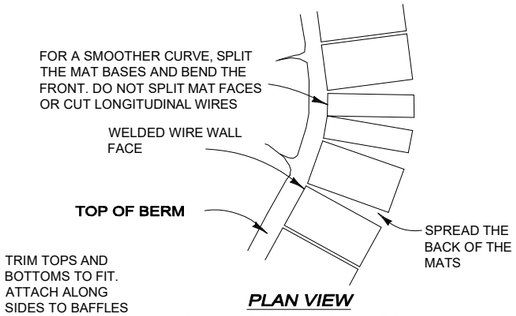
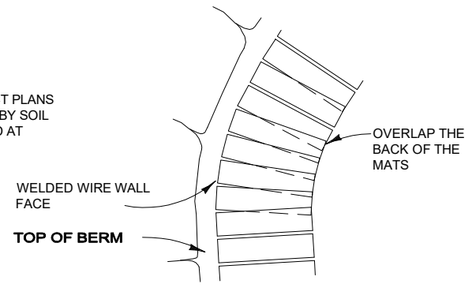


PLAN VIEW
CONCAVE CURVE
NOT TO SCALE



PLAN VIEW
CONVEX CURVE
NOT TO SCALE

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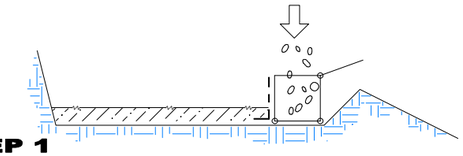
WALL PLAN VIEW & GENERAL NOTES

PROJECT	24-005
DATE	2-14-24
DESIGN	KLC
DRAWN	KLC

SHT 7 OF 8



STEP 1

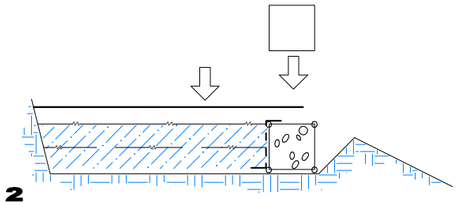
1. PLACE THE FIRST LIFT OF GABIONS AND PERMANENTLY CONNECT THE FRONT EDGE TO THE SOIL REINFORCEMENT MATS WITH A SPIRAL BINDER.

2. INSTALL FILTER FABRIC, IF REQUIRED.

3. PLACE AND COMPACT THE FIRST COURSE OF BACKFILL. BACKFILL TO BE OF SUFFICIENT DEPTH TO PROTECT SOIL REINFORCEMENT MATS FROM DAMAGE OR MOVEMENT BY EQUIPMENT DURING DELIVERY OF ROCK TO THE GABIONS.

4. FILL THE GABIONS WITH SUITABLE ROCK.

5. CLOSE LID AND SECURE WITH SPIRAL BINDERS.



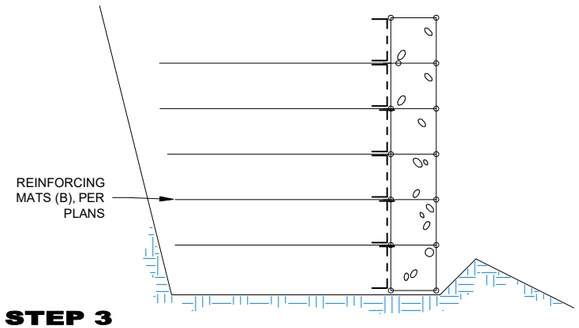
STEP 2

1. PLACE AND COMPACT THE REMAINING BACKFILL IN UNIFORM LIFTS OVER THE SOIL REINFORCING MAT.

2. PLACE SOIL REINFORCEMENT MATS ON THE BACKFILL AND THE TOP OF THE GABION.

3. PLACE THE SECOND LIFT OF GABIONS OVER THE FIRST LIFT AND CONNECT THE GABIONS AND THE SOIL REINFORCEMENT MATS TOGETHER PERMANENTLY WITH SPIRAL BINDERS.

4. PLACE AND COMPACT BACKFILL AT THE TOE OF THE WALL PER YOUR PROJECT PLANS.



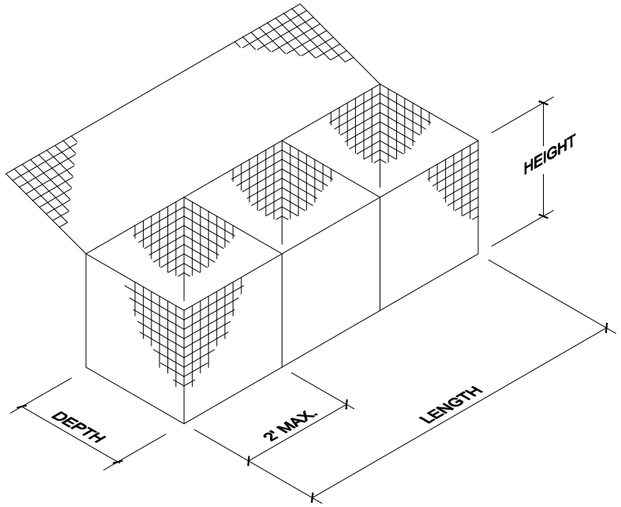
STEP 3

1. REPEAT STEP 2 TO THE TOP LIFT OF GABIONS.

2. PLACE THE FINAL LIFT OF BACKFILL PER PROJECT PLANS.

CONSTRUCTION SEQUENCE

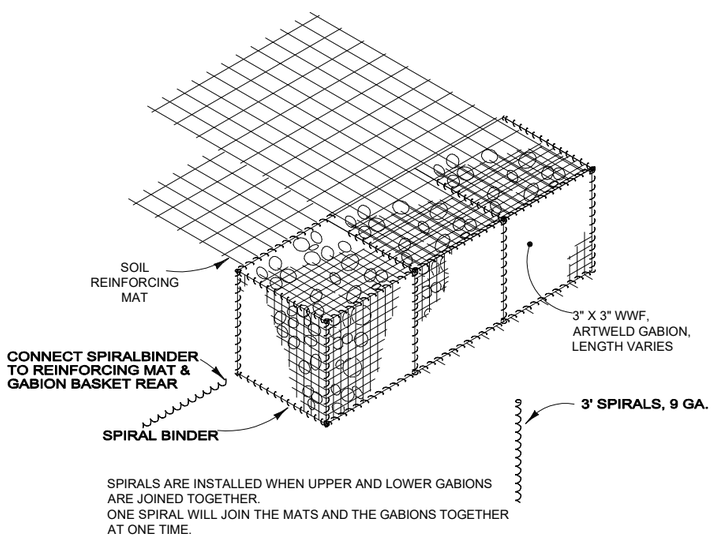
NOT TO SCALE



TYPICAL GABION

NOT TO SCALE

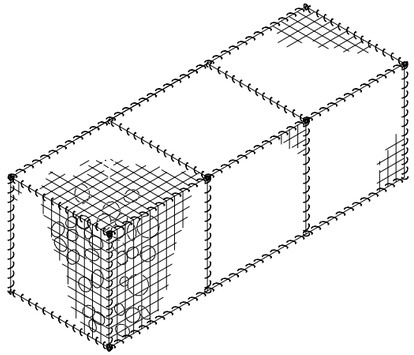
GABIONS ARE MANUFACTURED OF 3"x3" WELDED WIRE MESH, 9 GA. WITH 0.9 OZ/SF ZINC COATING.



SPIRALS ARE INSTALLED WHEN UPPER AND LOWER GABIONS ARE JOINED TOGETHER.
ONE SPIRAL WILL JOIN THE MATS AND THE GABIONS TOGETHER AT ONE TIME.

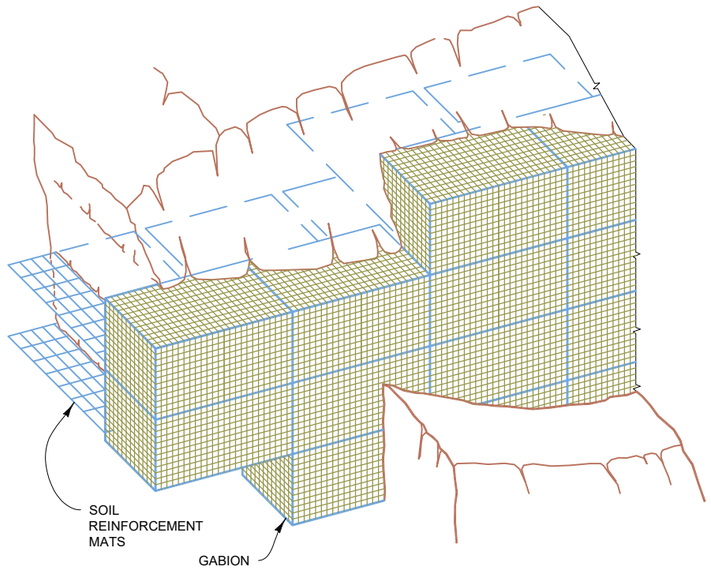
ISOMETRIC OF WALL COMPONENTS

NOT TO SCALE



TYPICAL ASSEMBLED GABION

NOT TO SCALE



PICTORIAL ELEVATION

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WALLS CONSTRUCTION SEQUENCE & DETAILS

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