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# AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
# FY23, PN 96182
# VOLUME 4 - DOWNRANGE

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CONTRACT NO.:
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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

COVER SHEET
VOLUME 4 OF 4
DOWNRANGE

SHEET ID

G-001

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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96782
VOLUME 3 & 4 - DOWNRANGE

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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96782
VOLUME 3 & 4 - DOWNRANGE

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SHEET ID

GI002

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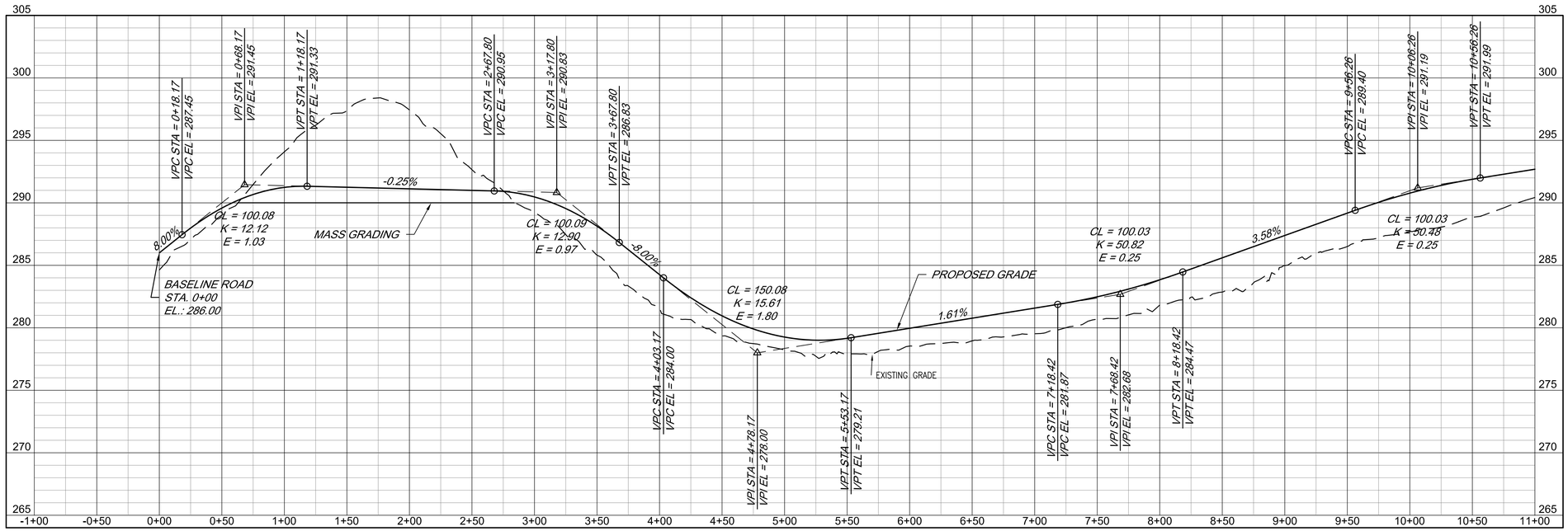
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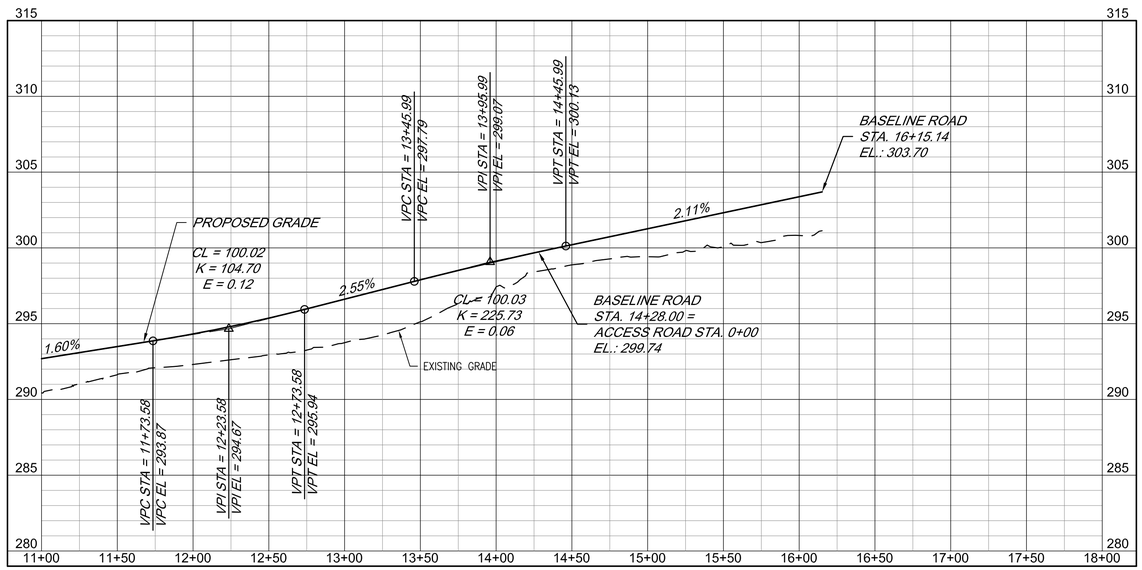
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**BASELINE ROAD**




**BASELINE ROAD**

GRAPHIC SCALE

50 0 50 100

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5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

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SIZE: ANSI D
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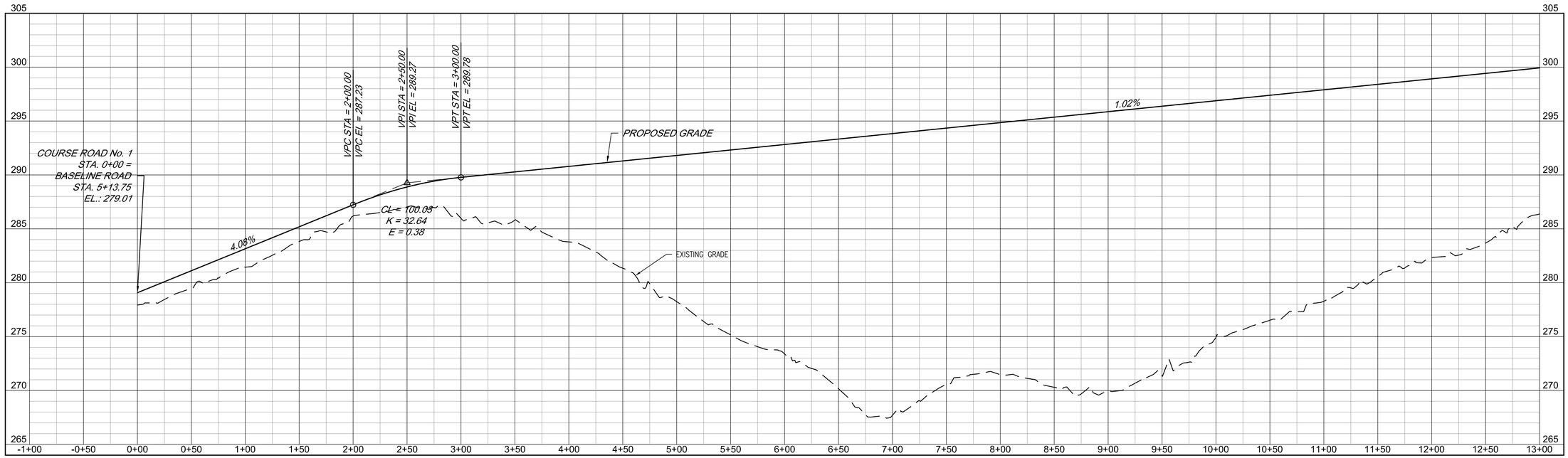
ROAD PROFILES
BASELINE ROAD

SHEET ID

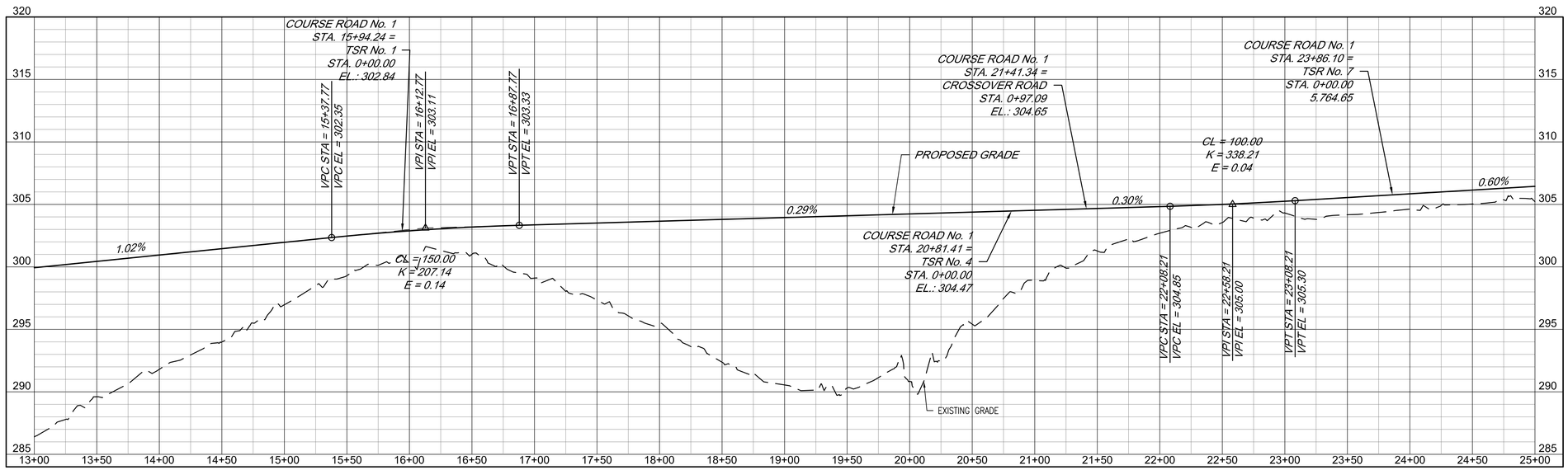
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## COURSE ROAD No. 1




## COURSE ROAD No. 1

GRAPHIC SCALE

50 0 50 100
SCALE: 1" = 50' HORIZ.

5 0 5 10
SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

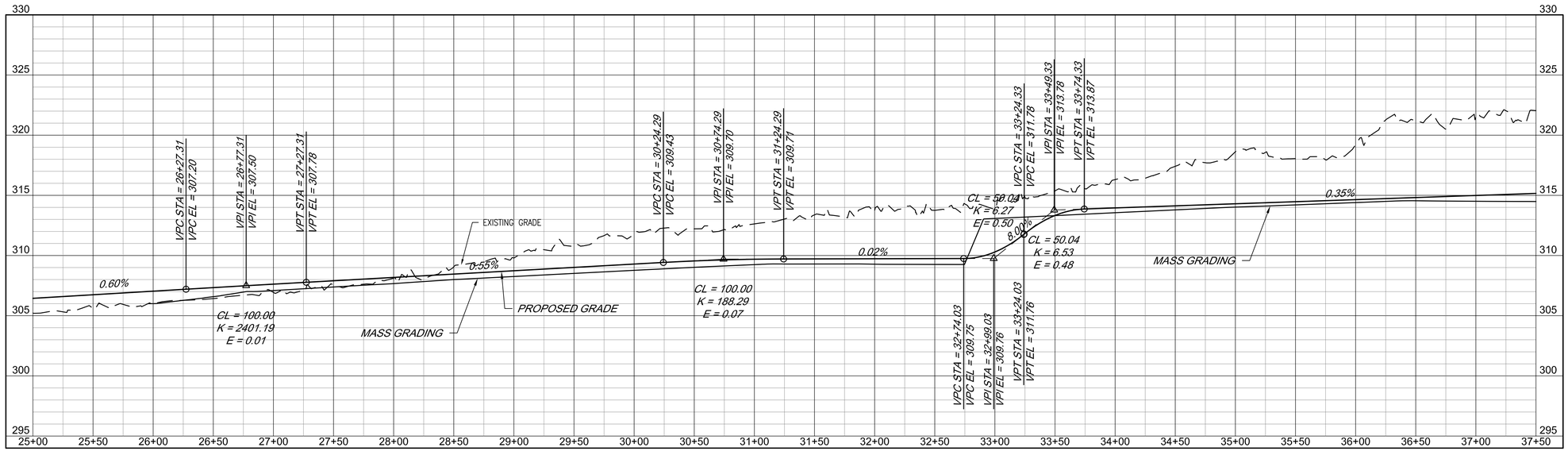
ROAD PROFILES
COURSE ROAD No. 1
STA. 0+00 - 25+00

SHEET ID

CP201

READY TO ADVERTISE (RTA)

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**COURSE ROAD No. 1**




**COURSE ROAD No. 1**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

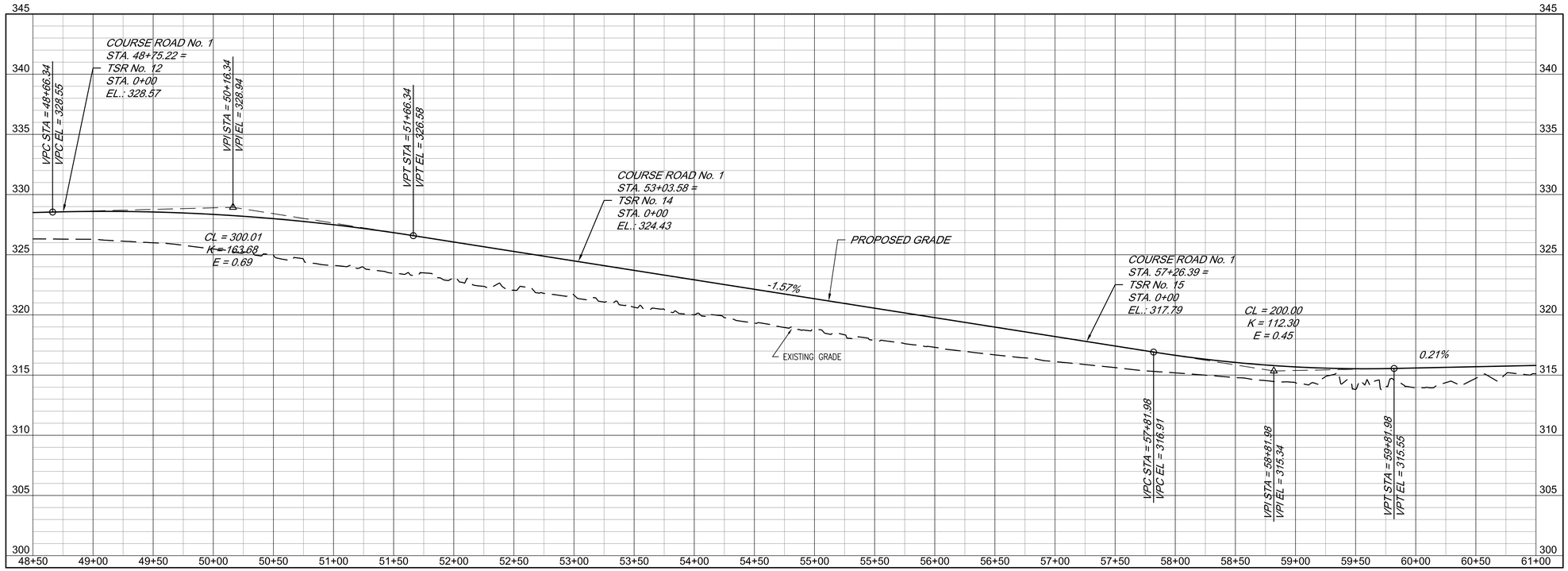
ROAD PROFILES
COURSE ROAD No. 1
STA. 25+00 - 48+50

SHEET ID

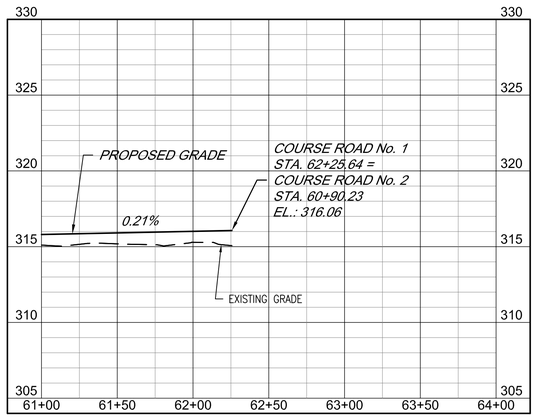
CP202

G:\CLEANST\UFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECP202.DWG

READY TO ADVERTISE (RTA)




**COURSE ROAD No. 1**




**COURSE ROAD No. 1**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

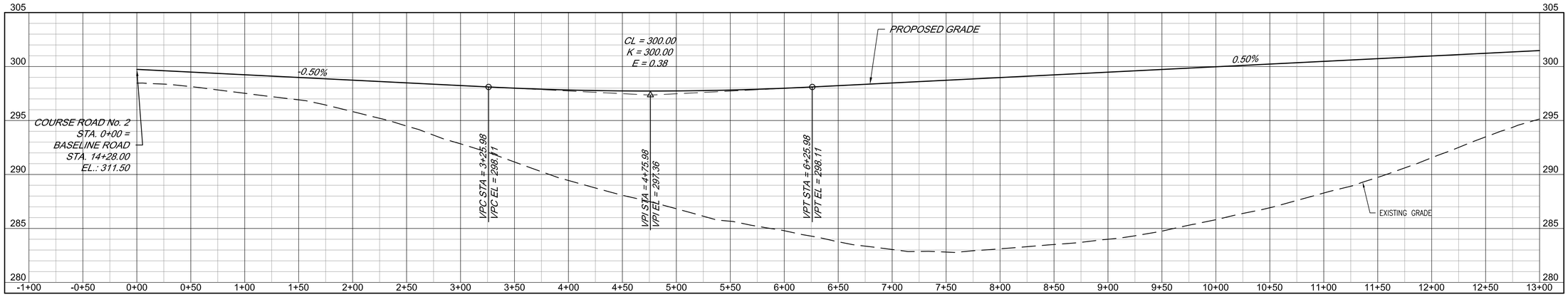
ROAD PROFILES
COURSE ROAD No. 1
STA. 48+50 - 62+25.64

SHEET ID

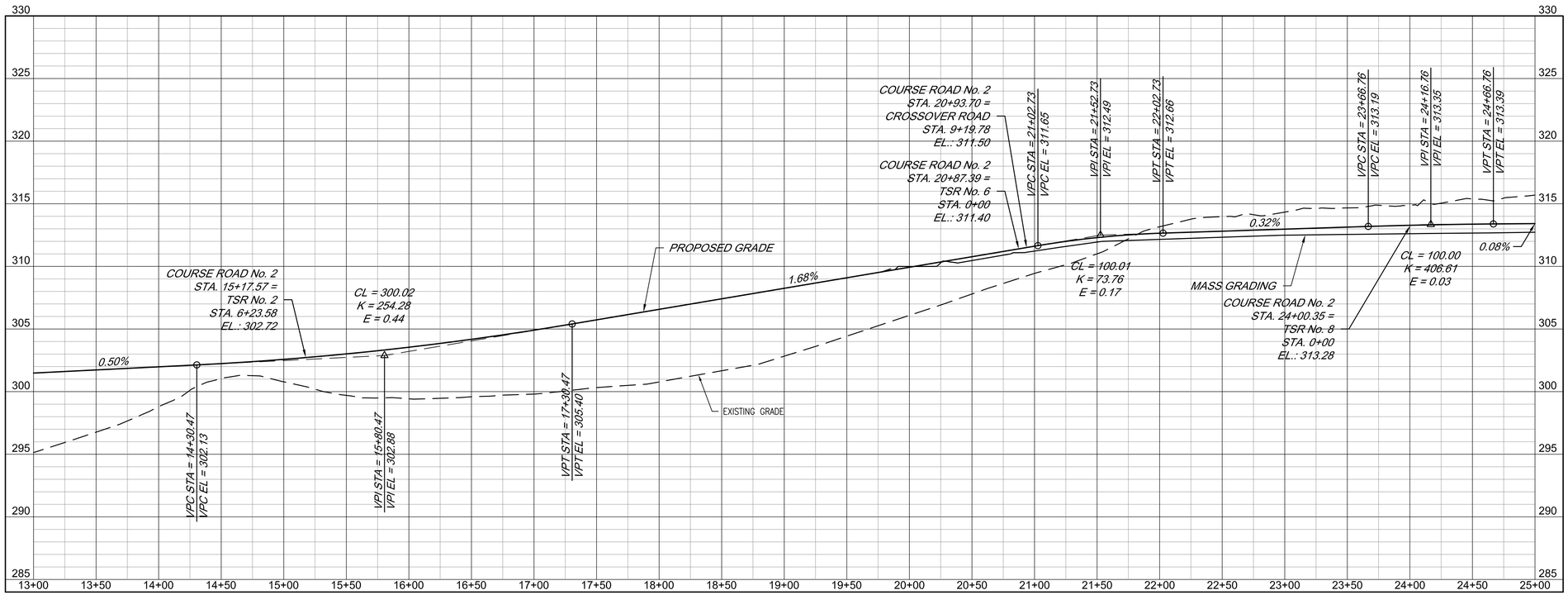
CP203

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\SI2ECP203.DWG




## COURSE ROAD No. 2




## COURSE ROAD No. 2

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

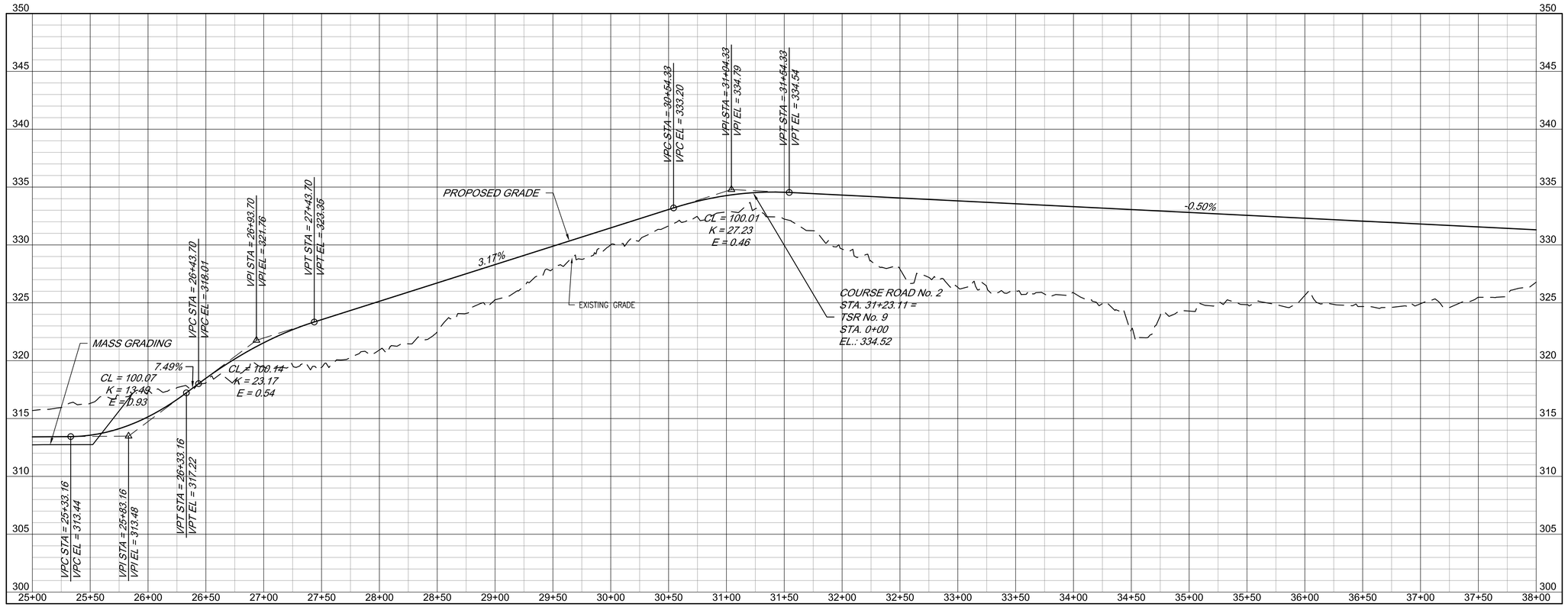
ROAD PROFILES
COURSE ROAD No. 2
STA. 0+00 - 25+00

SHEET ID

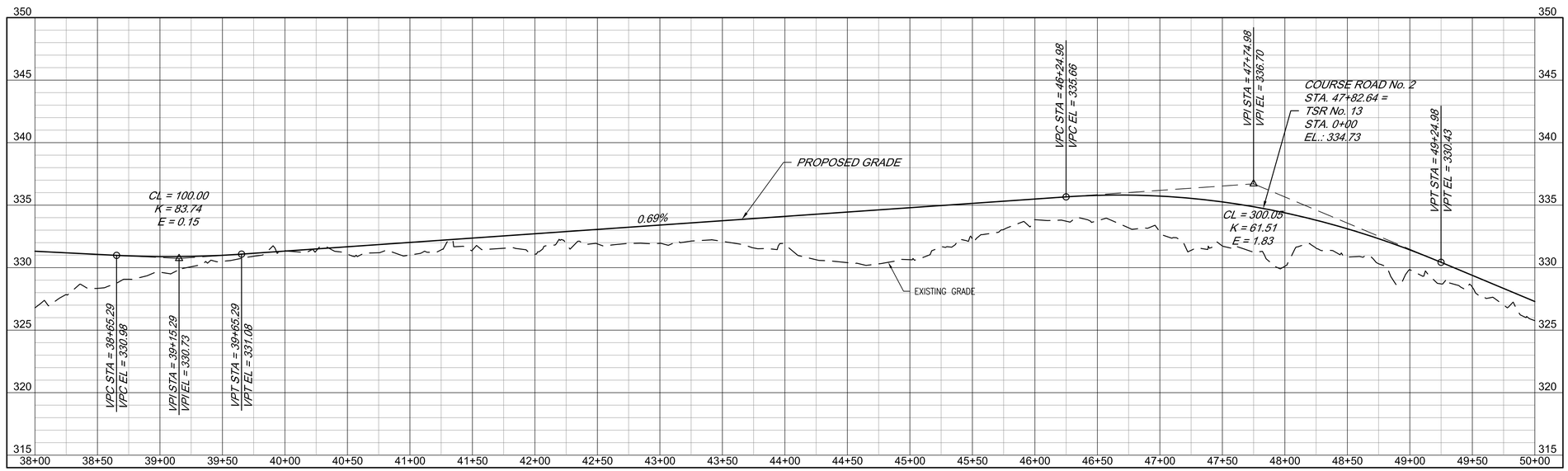
CP204

READY TO ADVERTISE (RTA)

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## COURSE ROAD No. 2




## COURSE ROAD No. 2

GRAPHIC SCALE

50 0 50 100
SCALE: 1" = 50' HORIZ.

5 0 5 10
SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

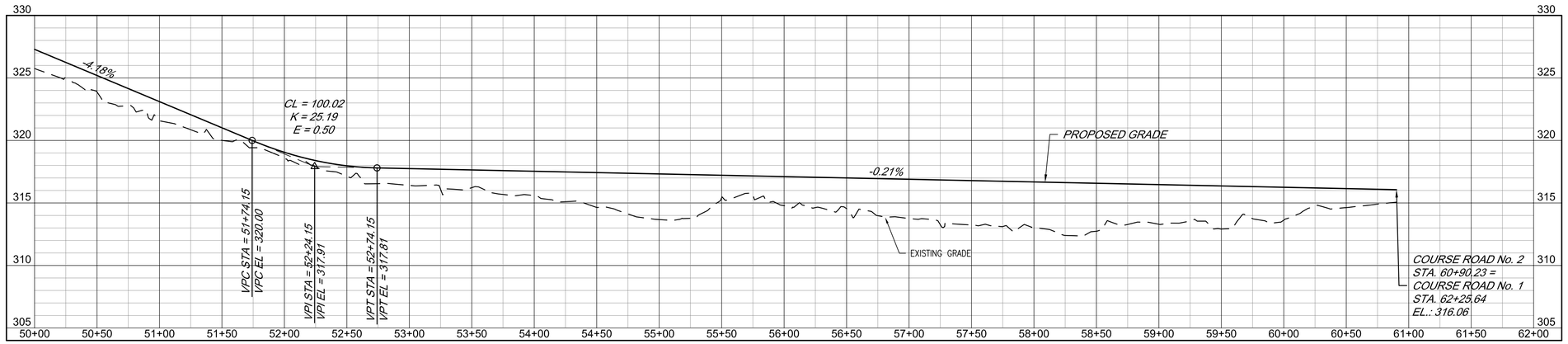
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ROAD PROFILES
COURSE ROAD No. 2
STA. 25+00 - 50+00

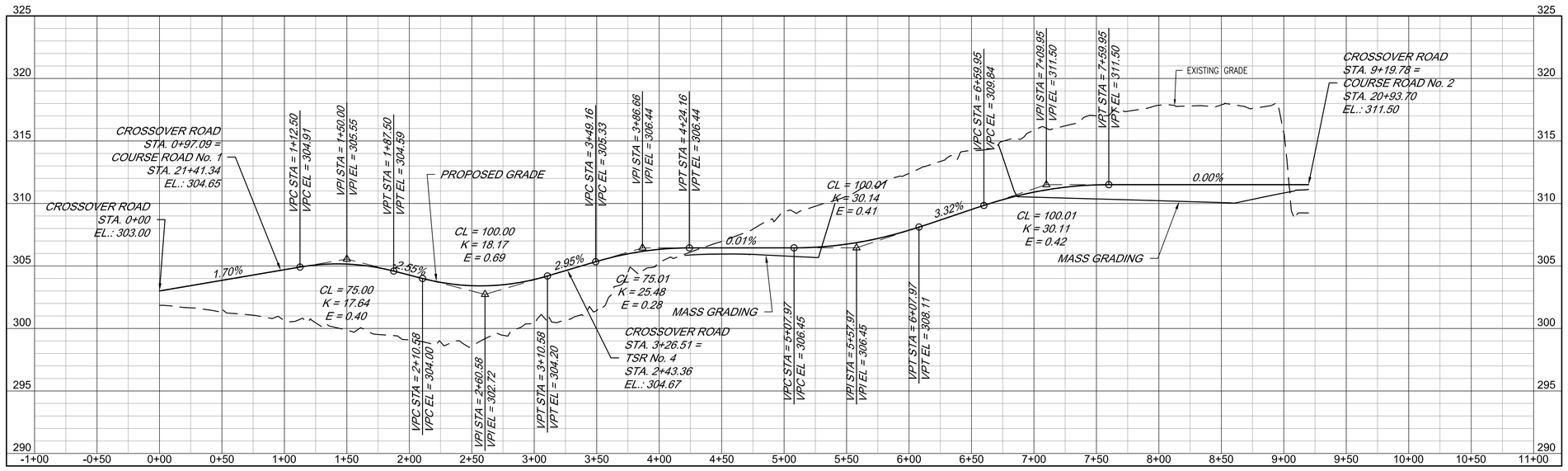
SHEET ID
CP205

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECP205.DWG




## COURSE ROAD No. 2




## CROSSOVER ROAD

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/1/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

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|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: |
| SCALE: ANSI D | FILE NAME: 170-45-01 |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

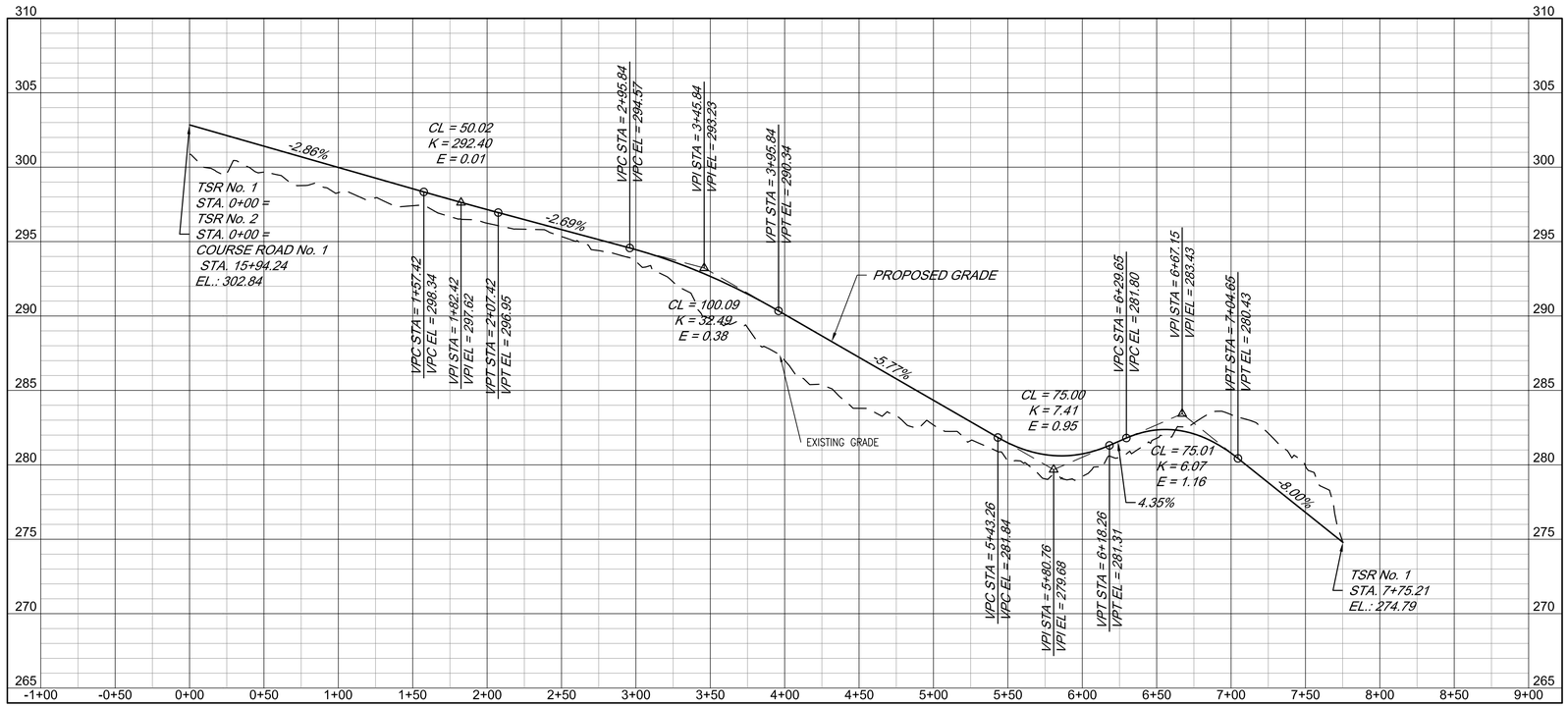
ROAD PROFILES
COURSE ROAD No. 2 STA. 50+00 - 60+90.23 &
CROSSOVER ROAD

SHEET ID

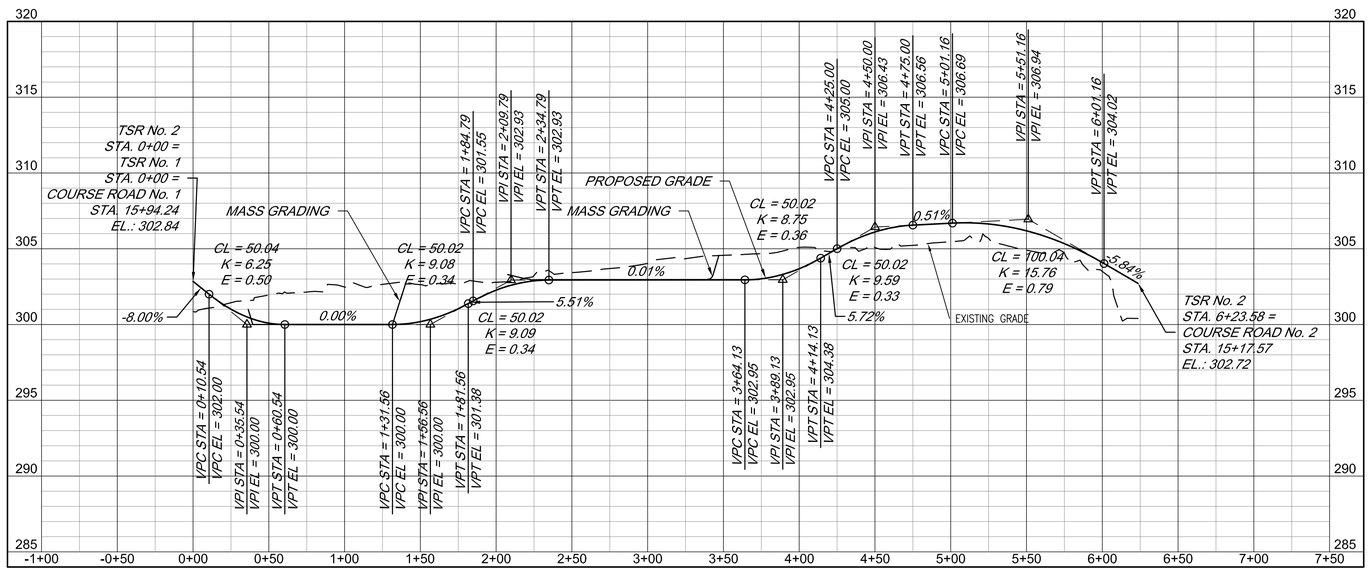
CP206

READY TO ADVERTISE (RTA)

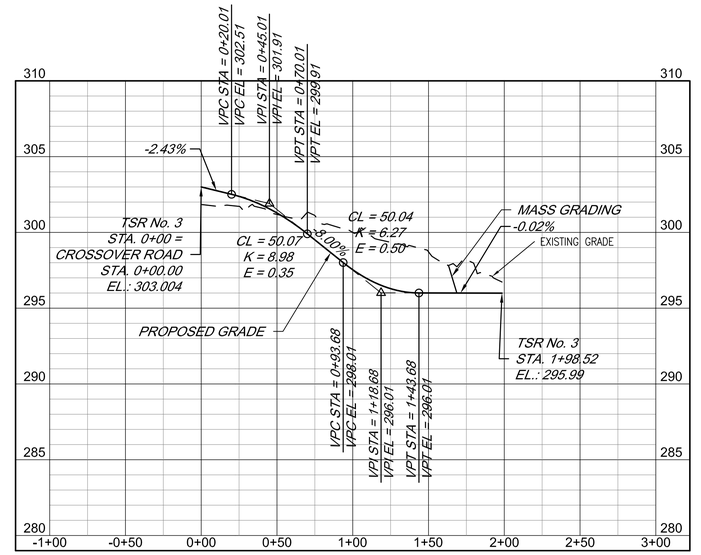
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## TSR No. 1




## TSR No. 2




## TSR No. 3

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

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| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
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| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

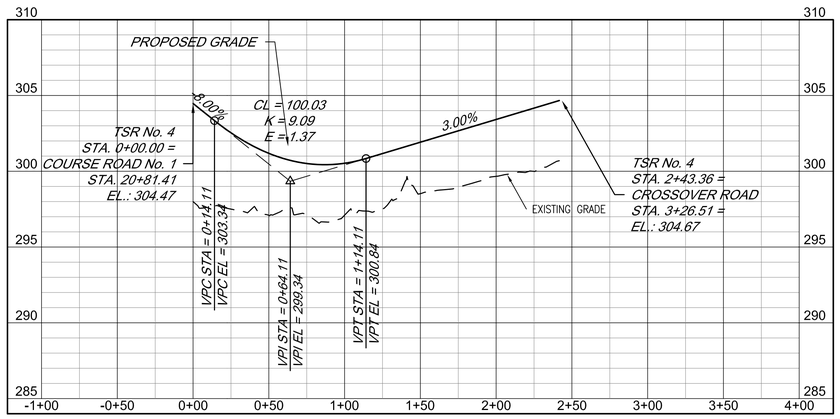
ROAD PROFILES
TSR No. 1, 2, & 3

SHEET ID

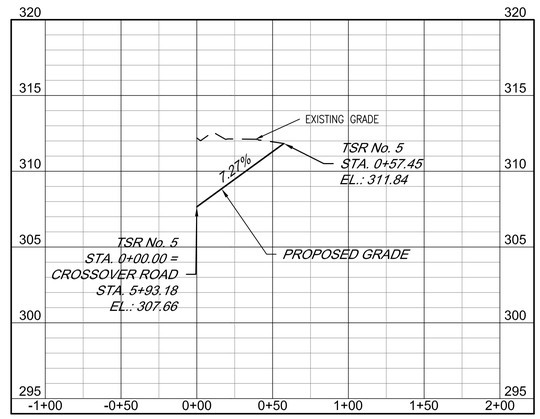
CP207

READY TO ADVERTISE (RTA)

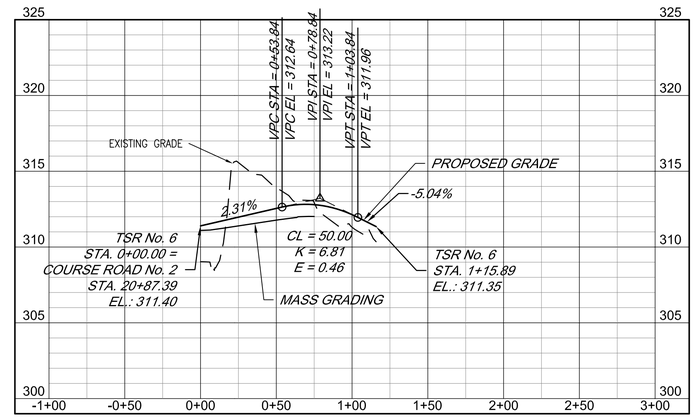
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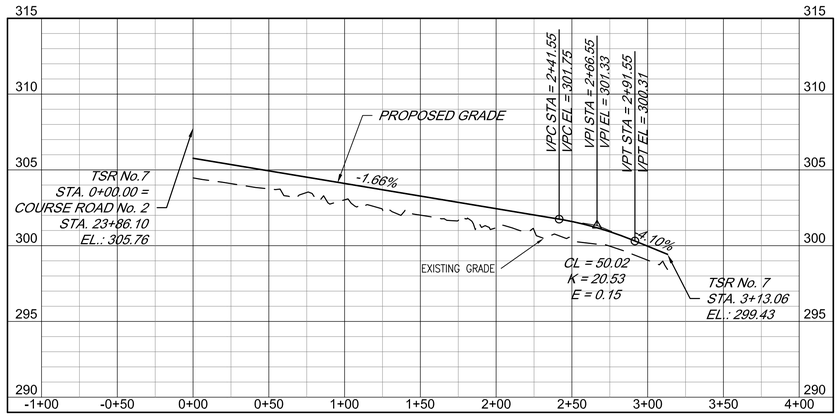

**TSR No. 4**



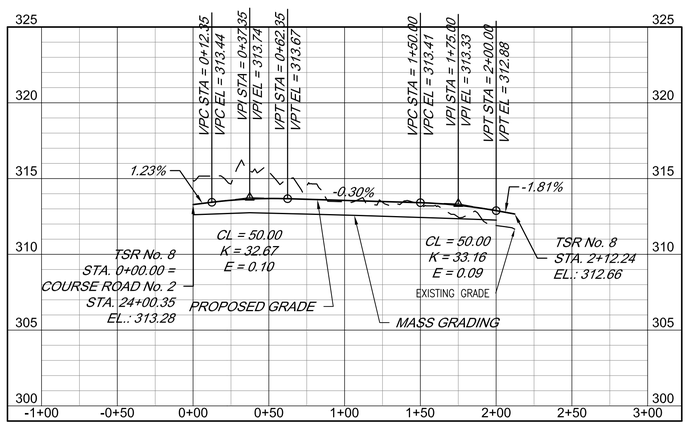

**TSR No. 5**



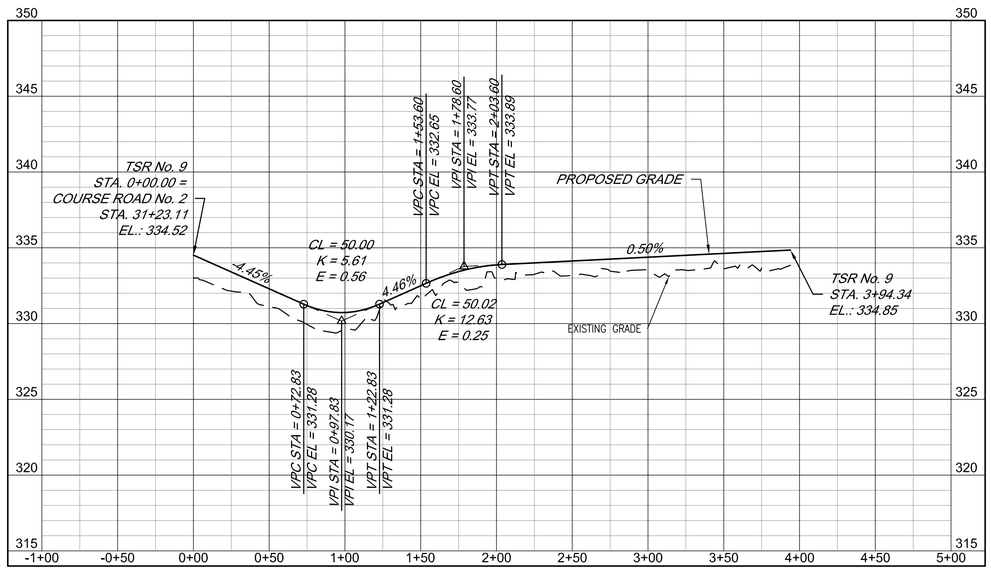

**TSR No. 6**




**TSR No. 7**




**TSR No. 8**




**TSR No. 9**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

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|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

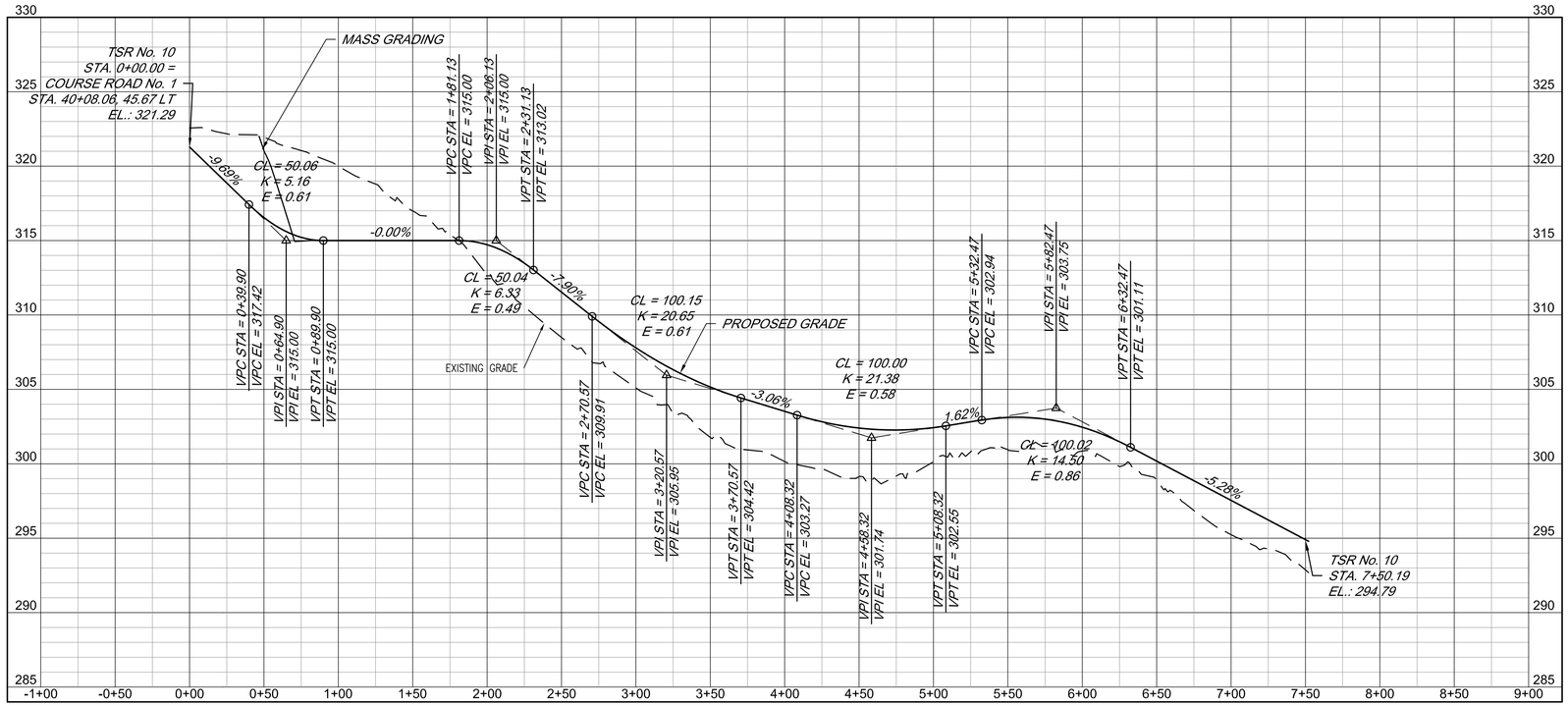
ROAD PROFILES
TSR No. 4, 5, 6, 7, 8, & 9

SHEET ID

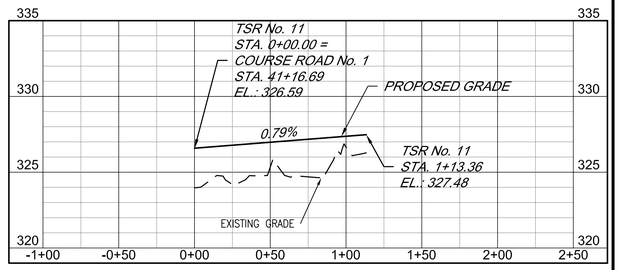
CP208

READY TO ADVERTISE (RTA)

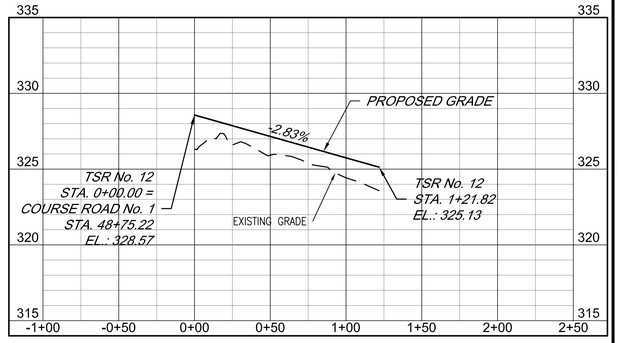
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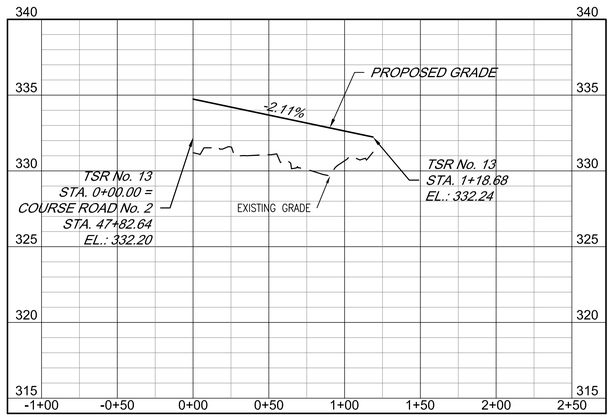

**TSR No. 10**



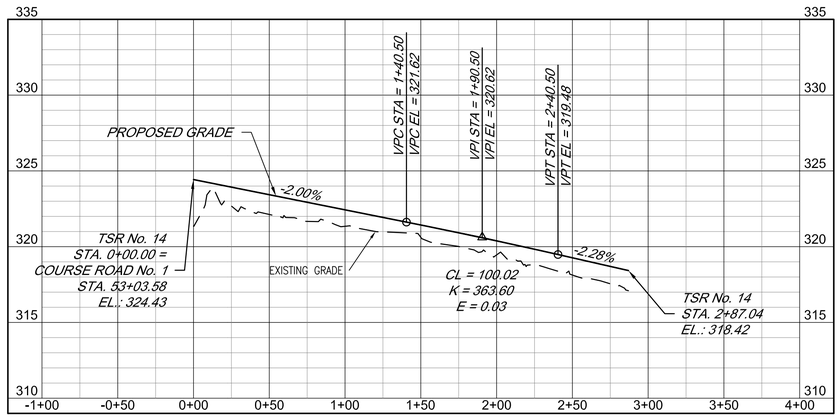

**TSR No. 11**




**TSR No. 12**




**TSR No. 13**




**TSR No. 14**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
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| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

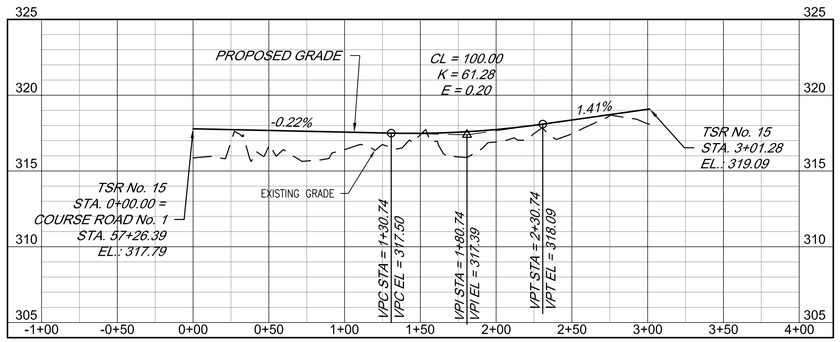
ROAD PROFILES
TSR No. 10, 11, 12, 13, & 14

SHEET ID

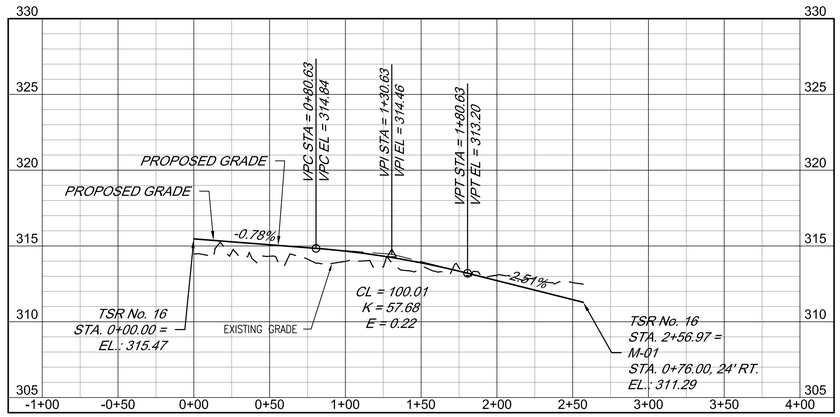
CP209

READY TO ADVERTISE (RTA)

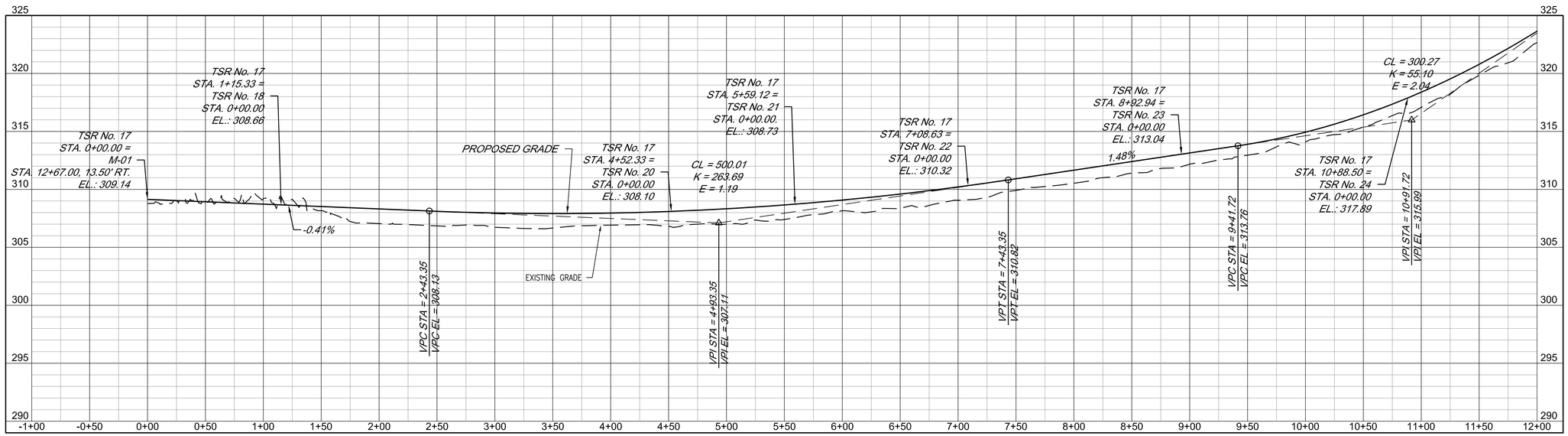
G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECP209.DWG




**TSR No. 15**




**TSR No. 16**




**TSR No. 17**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SCALE: | ANSI D |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

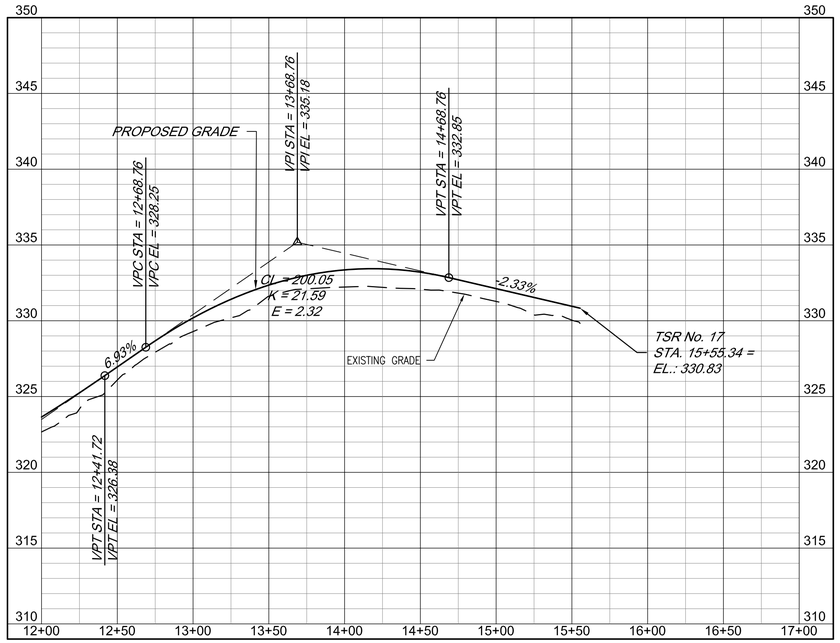
ROAD PROFILES
TSR No. 15, 16, & 17 STA. 0+00 - 12+00

SHEET ID

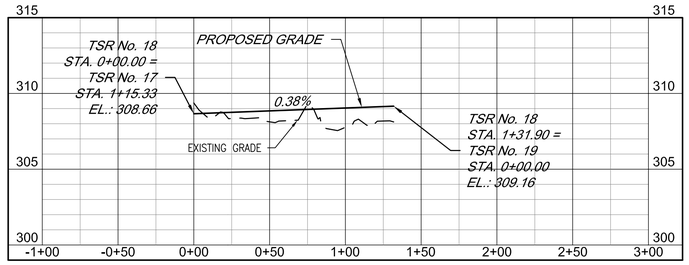
CP210

READY TO ADVERTISE (RTA)

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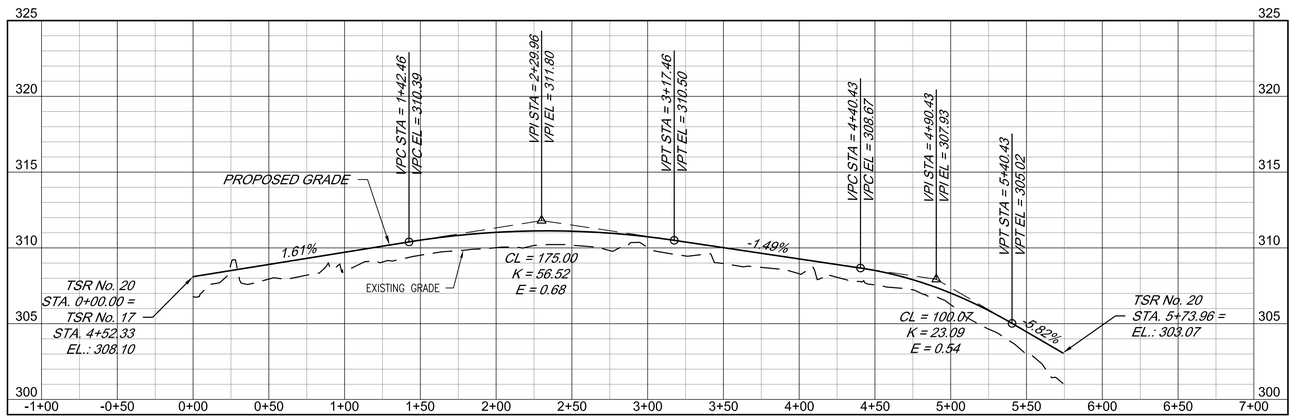

**TSR No. 17**



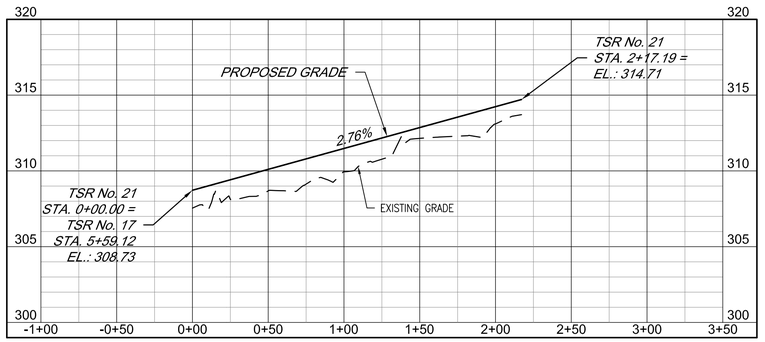

**TSR No. 18**




**TSR No. 19**




**TSR No. 20**




**TSR No. 21**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

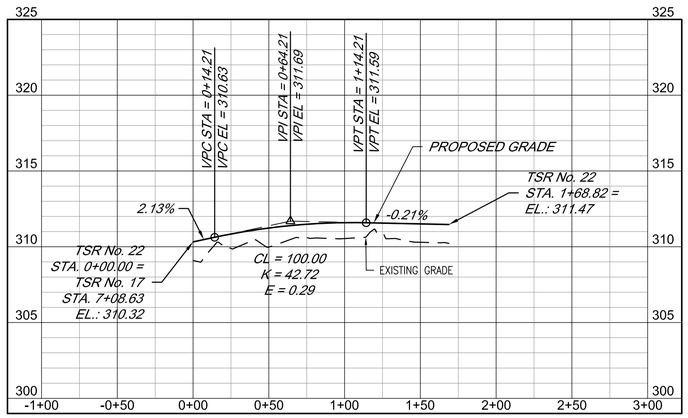
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ROAD PROFILES
TSR No. 17 STA. 12+00 - 15+55.34, 18, 19, 20, & 21

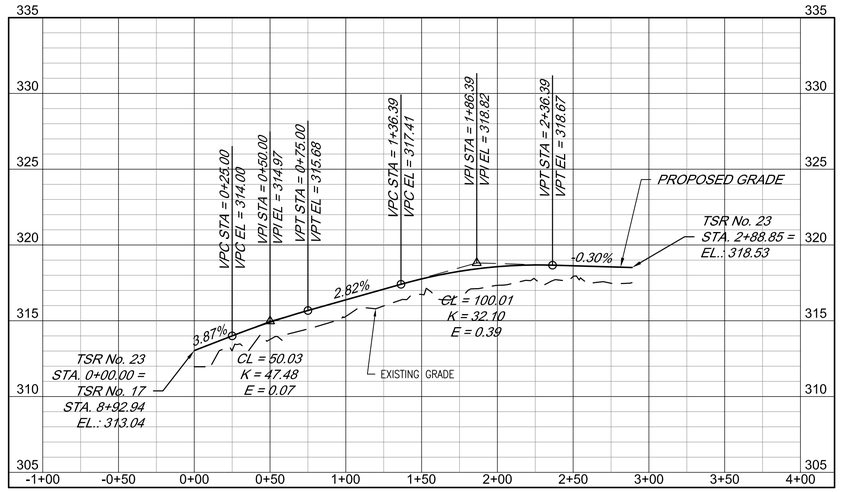
SHEET ID
CP211

READY TO ADVERTISE (RTA)

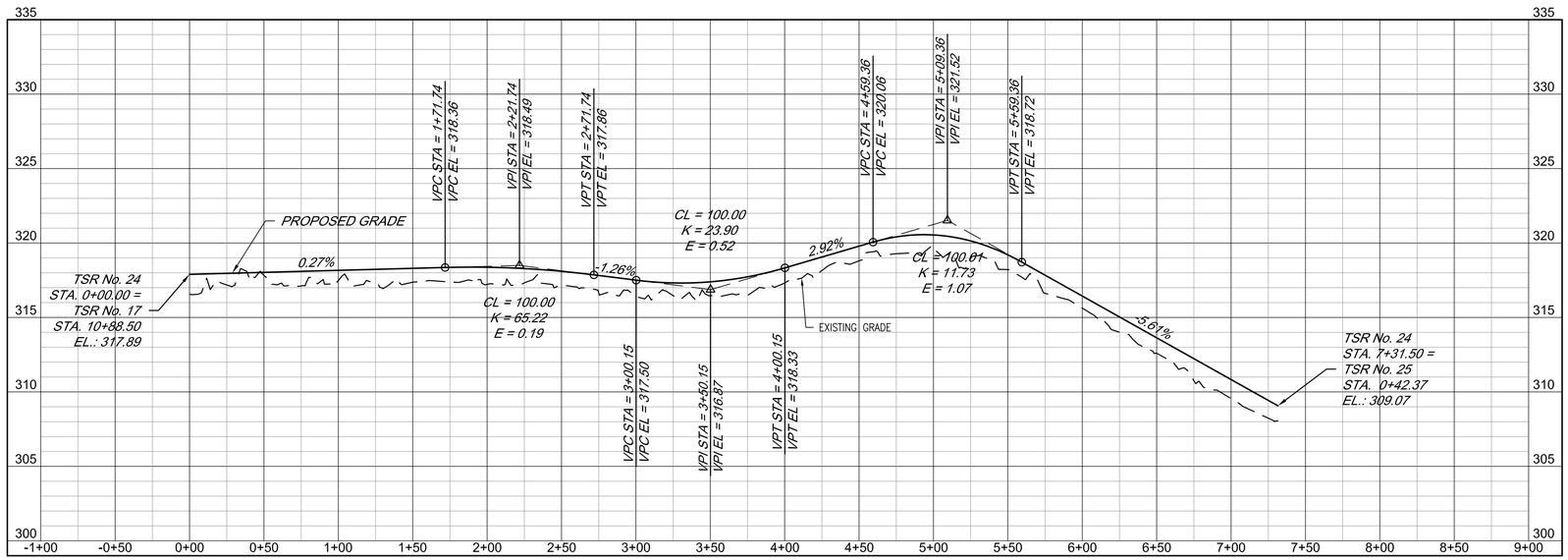
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**TSR No. 22**




**TSR No. 23**




**TSR No. 24**

GRAPHIC SCALE

50 0 50 100
SCALE: 1" = 50' HORIZ.

5 0 5 10
SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

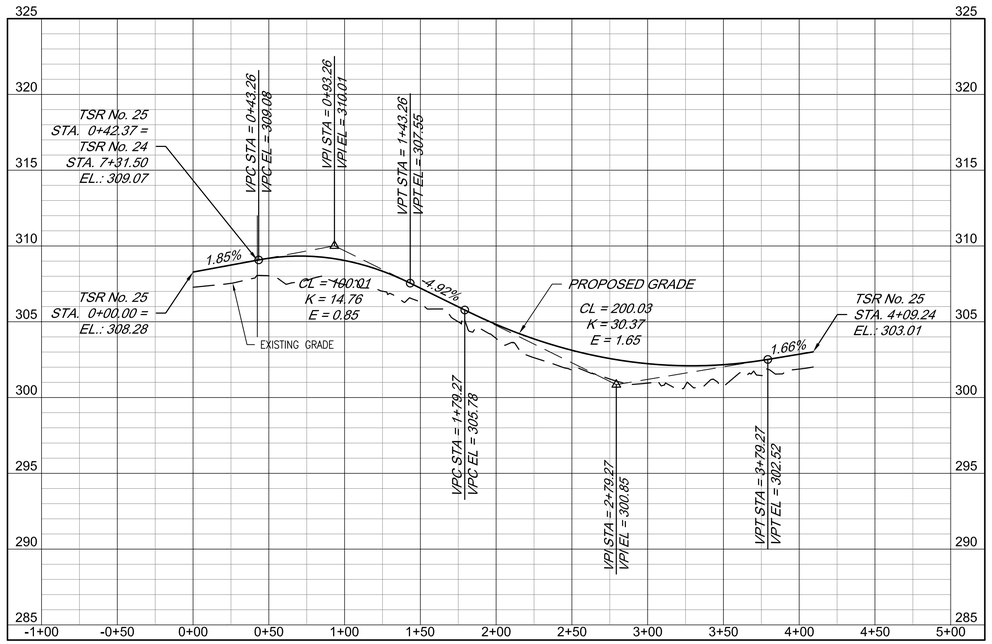
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ROAD PROFILES
TSR No. 22, 23, & 24

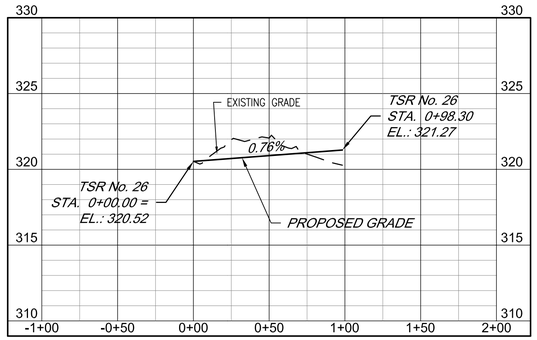
SHEET ID
CP212

READY TO ADVERTISE (RTA)

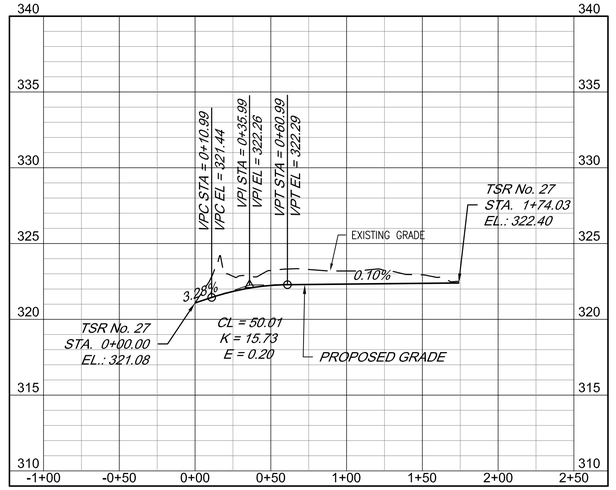
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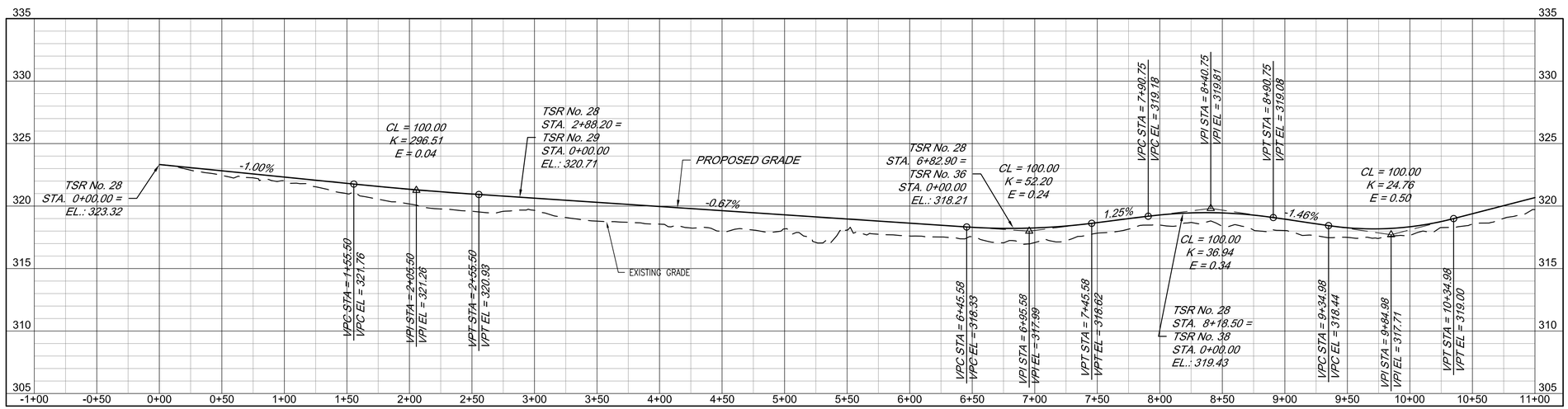

**TSR No. 25**




**TSR No. 26**




**TSR No. 27**




**TSR No. 28**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

US Army Corps of Engineers®

| | |
|---|---|
| DESIGNED BY: | ISSUE DATE: |
| K. SANDERS | JUNE 2023 |
| DRAWN BY: | SOLICITATION NO.: |
| B.J. JOHNSON | W912HN-23-B-3001 |
| CHECKED BY: | CONTRACT NO.: |
| B. BRADLEY | |
| SUBMITTED BY: | CATEGORY CODE: |
| B. BRADLEY | 170-45-01 |
| SIZE: | FILE NAME: |
| ANSI D | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

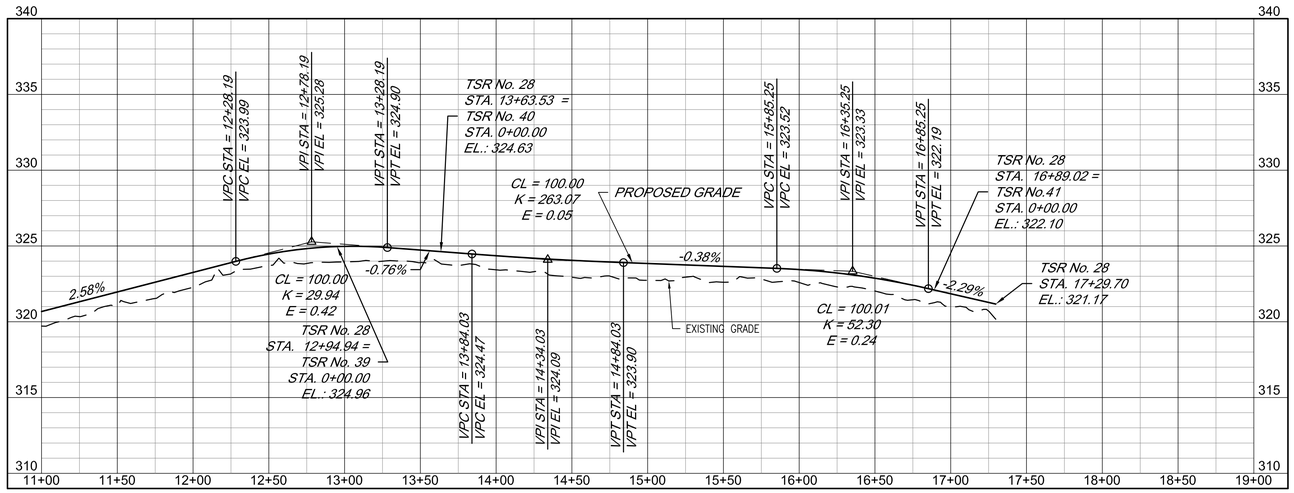
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ROAD PROFILES
TSR No. 25, 26, 27, & 28 STA. 0+00 - 11+00

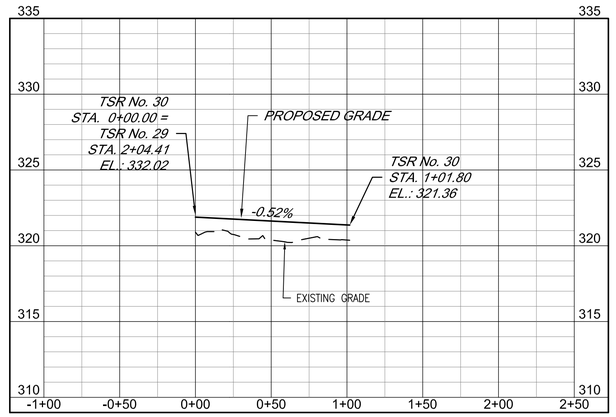
SHEET ID
CP213

READY TO ADVERTISE (RTA)

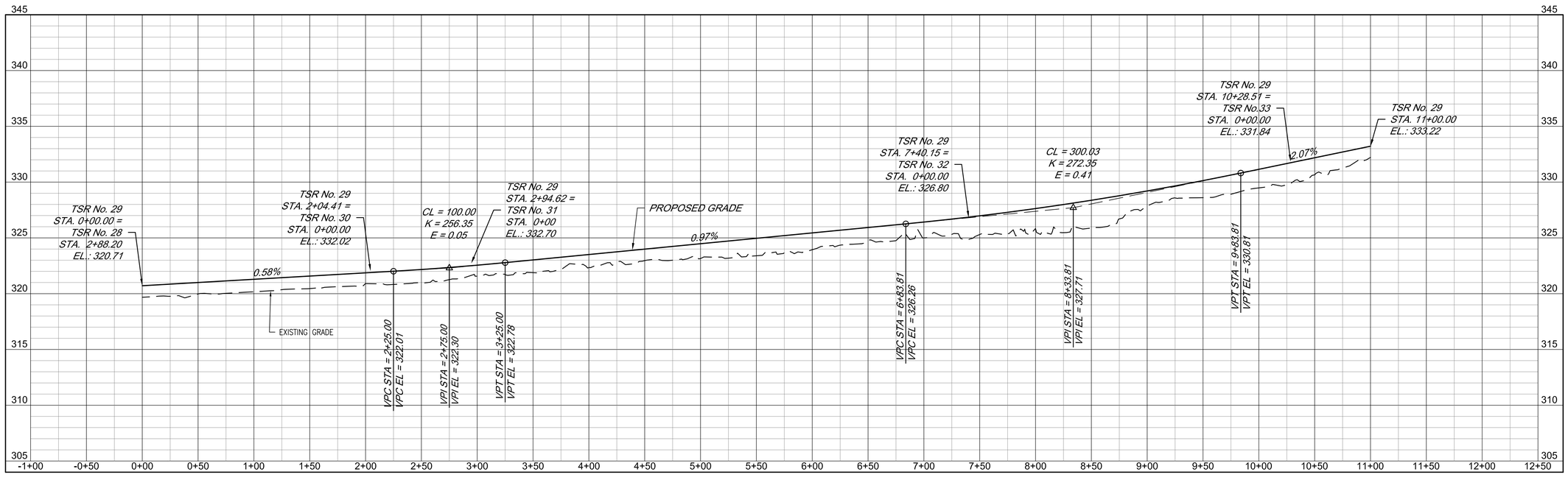
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**TSR No. 28**




**TSR No. 30**




**TSR No. 29**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SPEC. | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PH 86182
VOLUMES 3 & 4 - DOWNRANGE

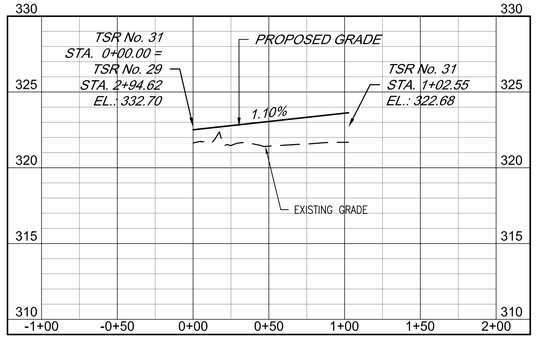
ROAD PROFILES
TSR No. 28 STA. 11+00 - 17+29.70, 29, & 30

SHEET ID

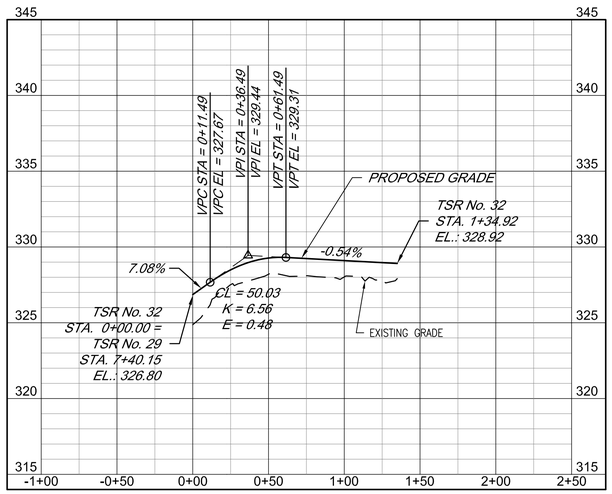
CP214

READY TO ADVERTISE (RTA)

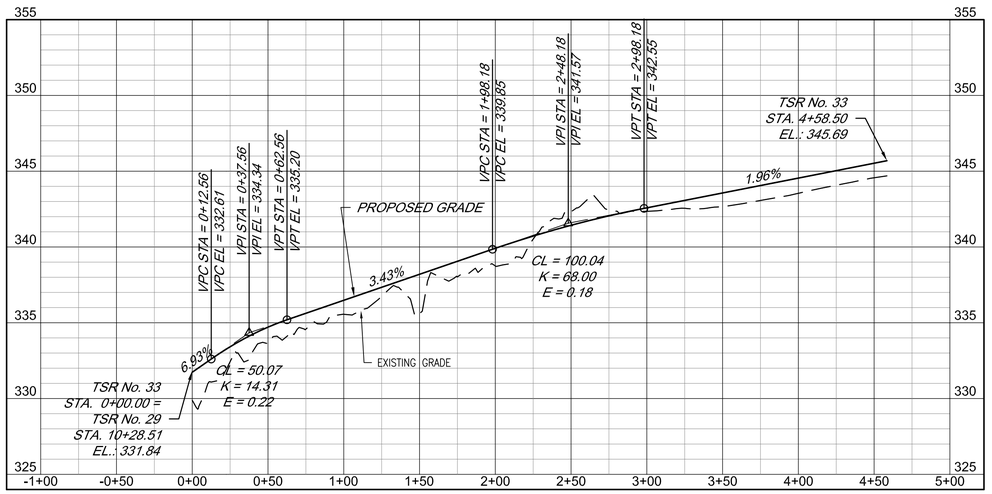
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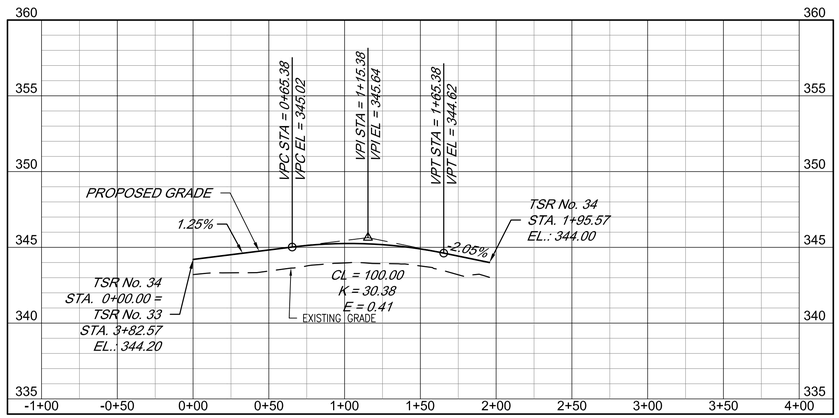

**TSR No. 31**



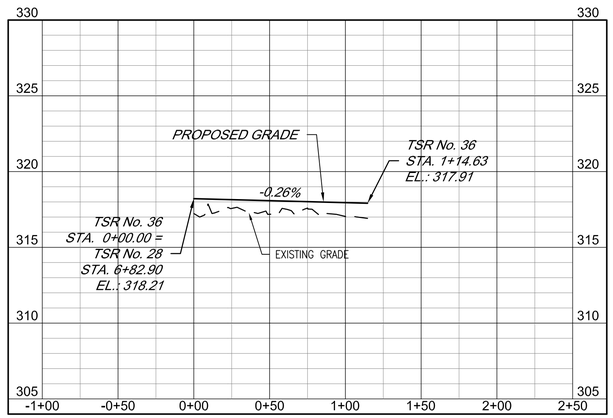

**TSR No. 32**



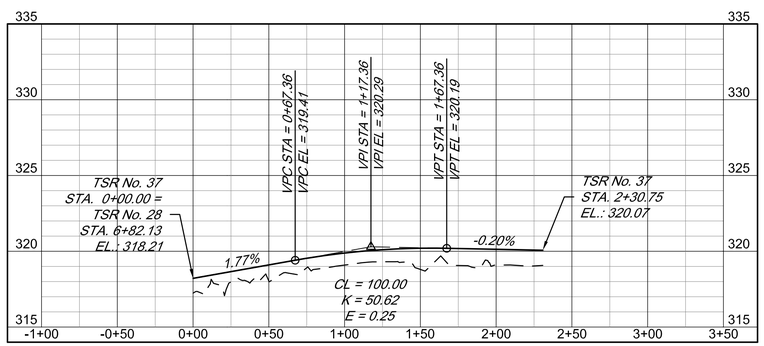

**TSR No. 33**




**TSR No. 34**




**TSR No. 36**




**TSR No. 37**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 4/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

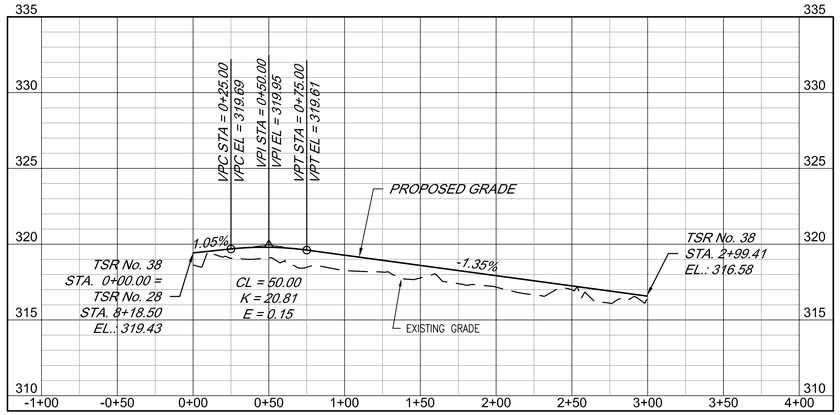
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ROAD PROFILES
TSR No. 31,32, 33, 34, 36, & 37

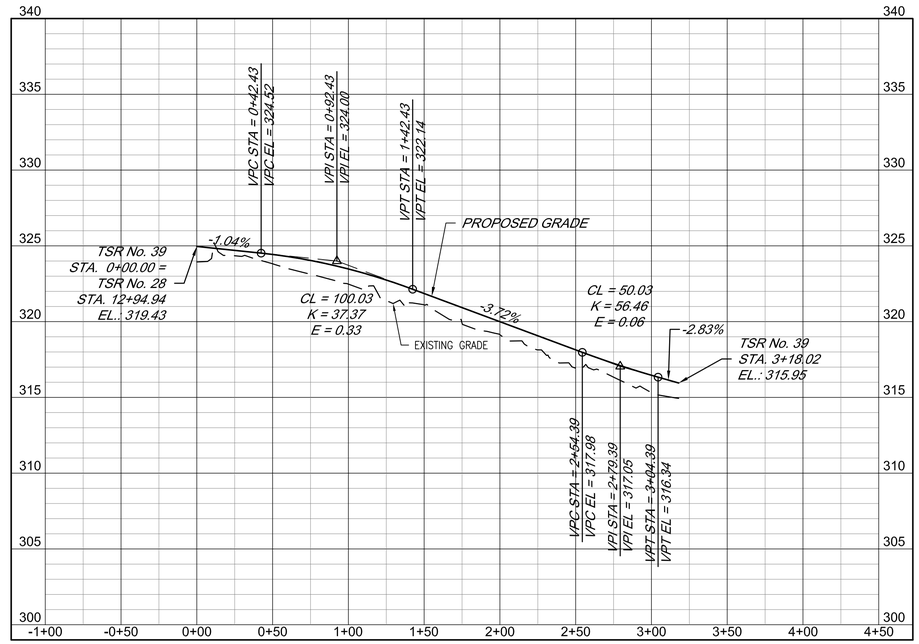
SHEET ID
CP215

READY TO ADVERTISE (RTA)

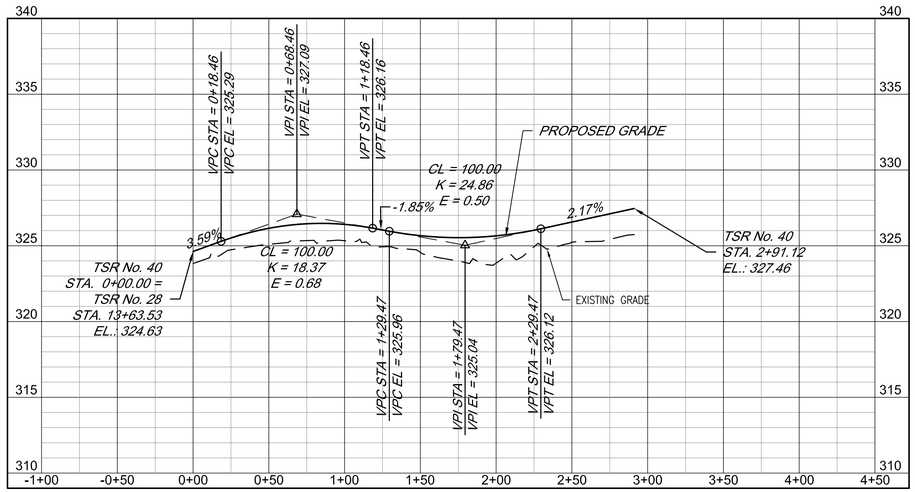
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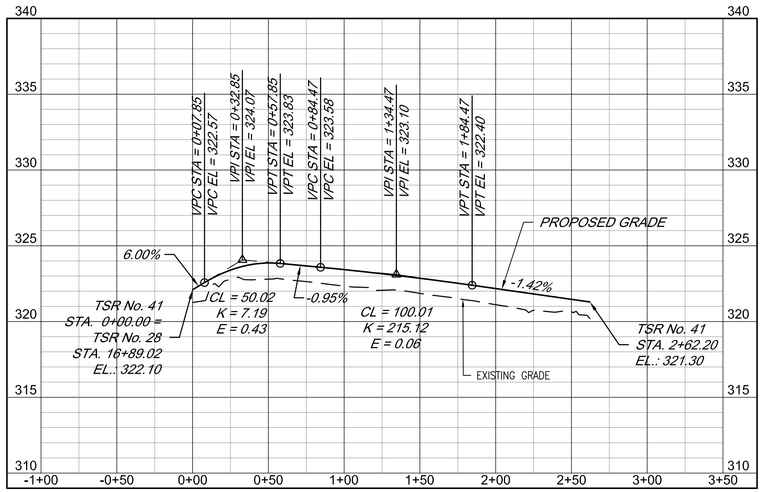

**TSR No. 38**




**TSR No. 39**




**TSR No. 40**




**TSR No. 41**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | ISSUE DATE: |
| K. SANDERS | JUNE 2023 |
| DRAWN BY: | SOLICITATION NO.: |
| B.J. JOHNSON | W912HN-23-B-3001 |
| CHECKED BY: | CONTRACT NO.: |
| B. BRADLEY | |
| SUBMITTED BY: | CATEGORY CODE: |
| B. BRADLEY | 170-45-01 |
| SIZE: | FILE NAME: |
| ANSI D | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

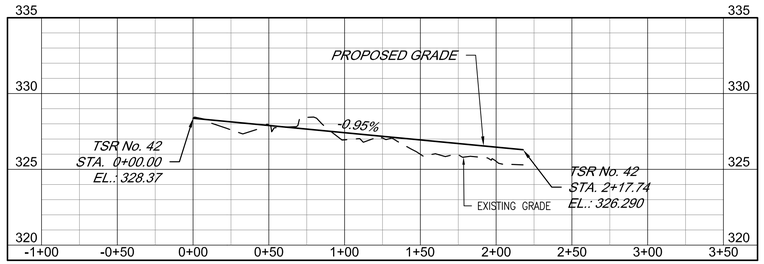
ROAD PROFILES
TSR No. 38, 39, 40, & 41

SHEET ID

CP216

READY TO ADVERTISE (RTA)

G:\CLEANST\UFF-15-2811537\6 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECP216.DWG




**TSR No. 42**




**TSR No. 43**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

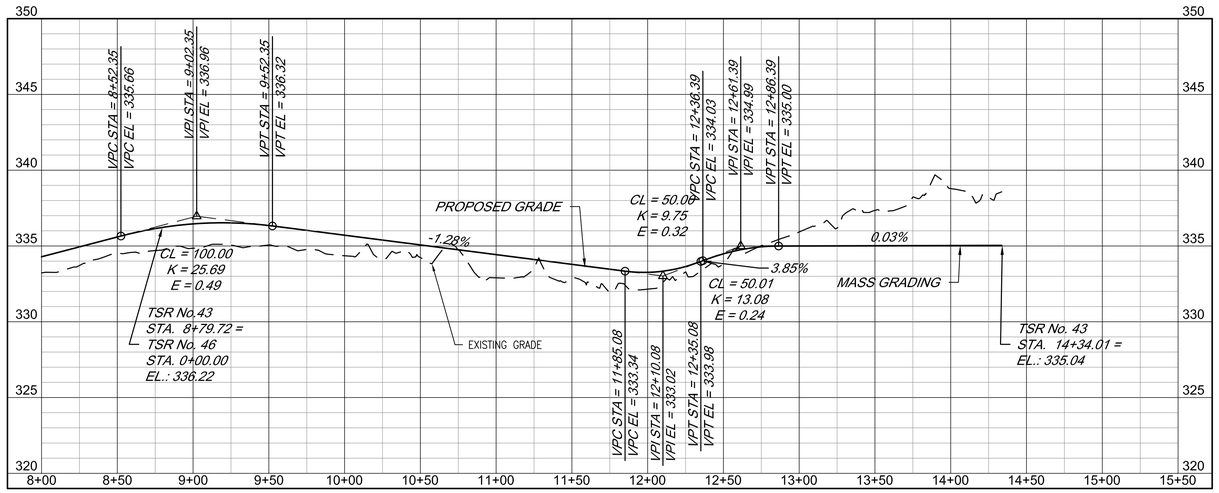
ROAD PROFILES
TSR No. 42 & 43 STA. 0+00 - 8+00

SHEET ID

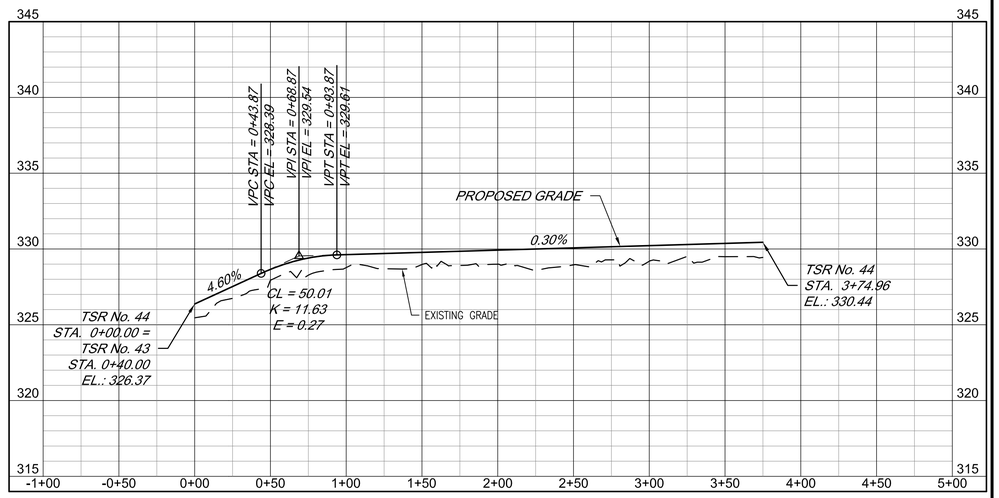
CP217

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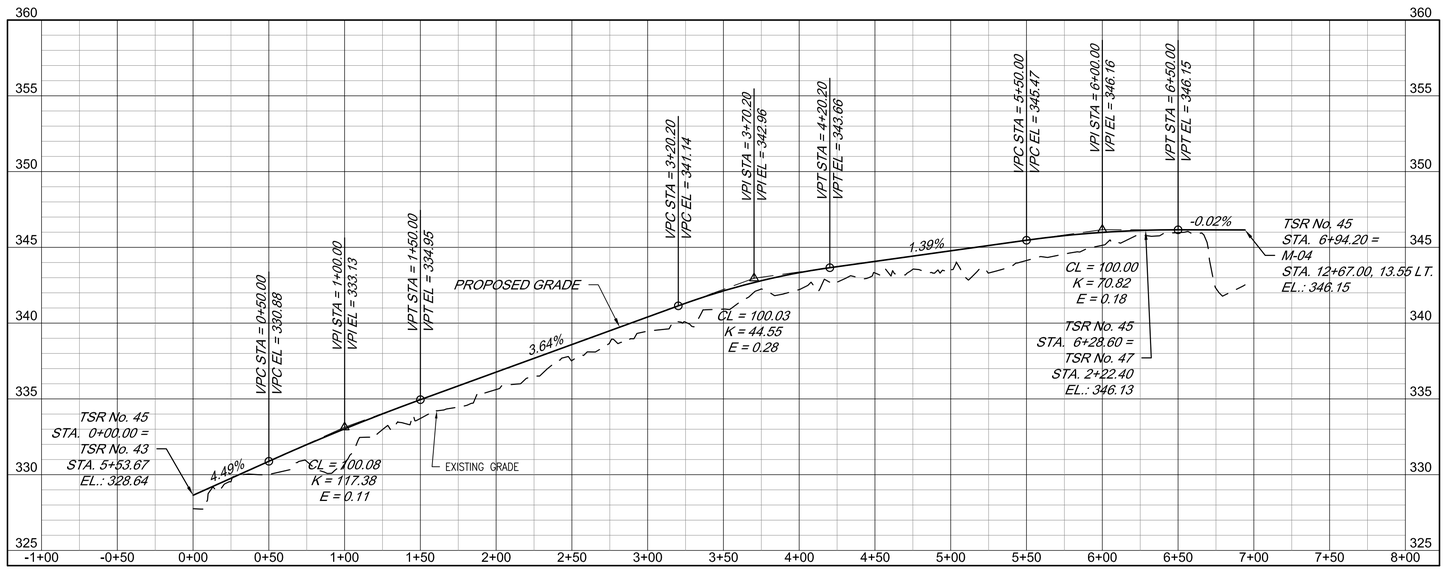
READY TO ADVERTISE (RTA)




**TSR No. 43**




**TSR No. 44**




**TSR No. 45**




**TSR No. 46**

GRAPHIC SCALE

50 0 50 100
SCALE: 1" = 50' HORIZ.

5 0 5 10
SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

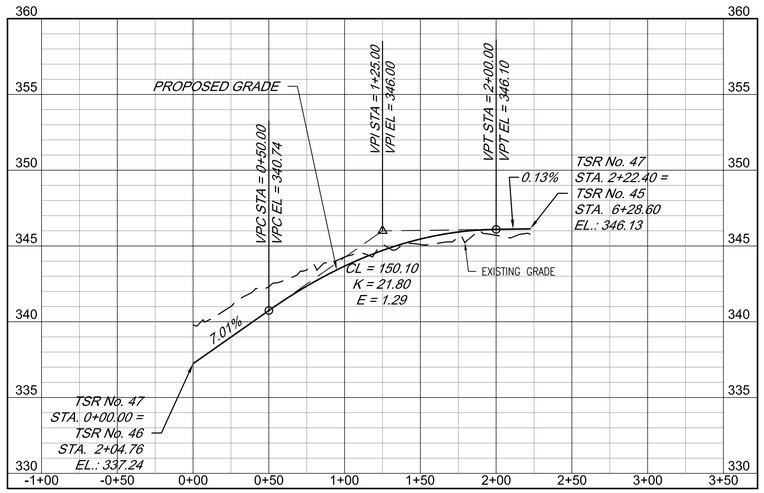
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ROAD PROFILES
TSR No. 43 STA. 8+00 - 14+34.01, 44, 45, & 46

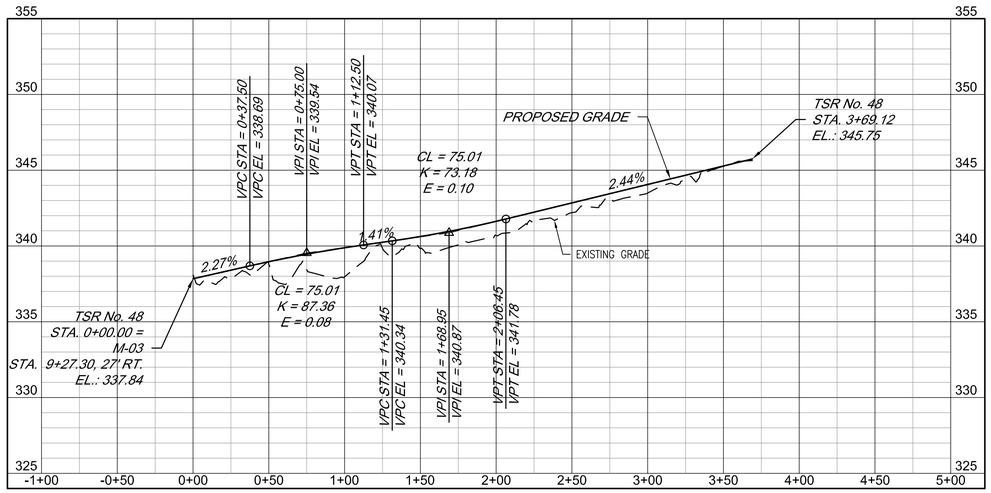
SHEET ID
CP218

READY TO ADVERTISE (RTA)

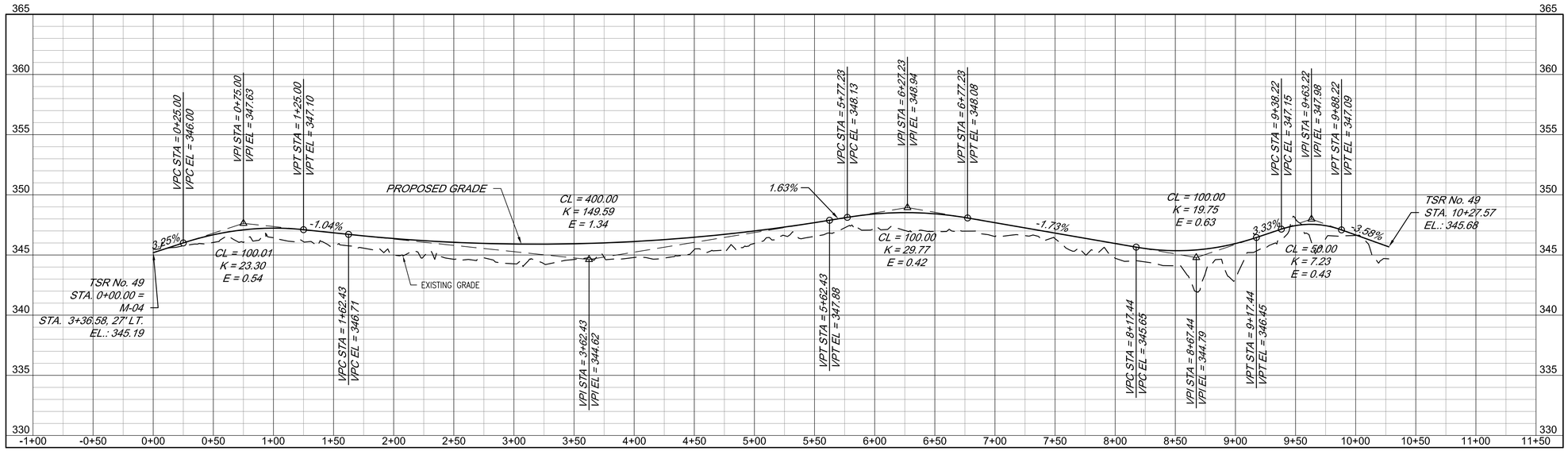
G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\SB2ECP218.DWG




**TSR No. 47**




**TSR No. 48**




**TSR No. 49**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | ANSI D |

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

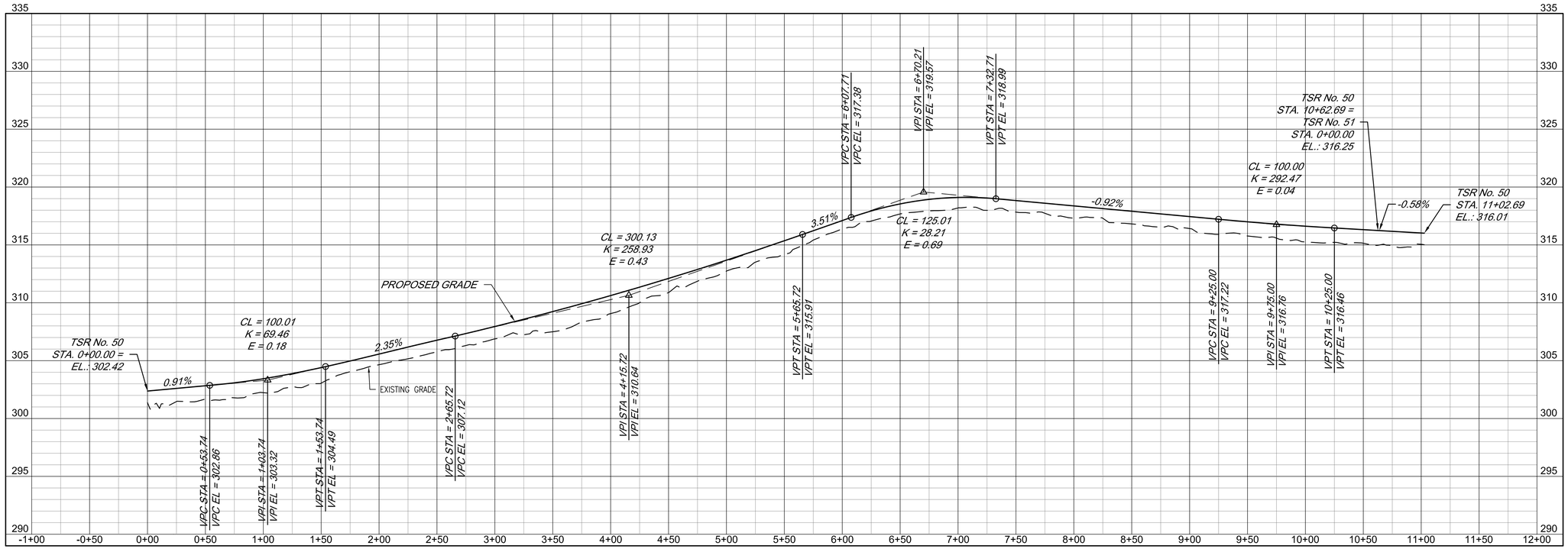
ROAD PROFILES
TSR No. 47, 48, & 49

SHEET ID

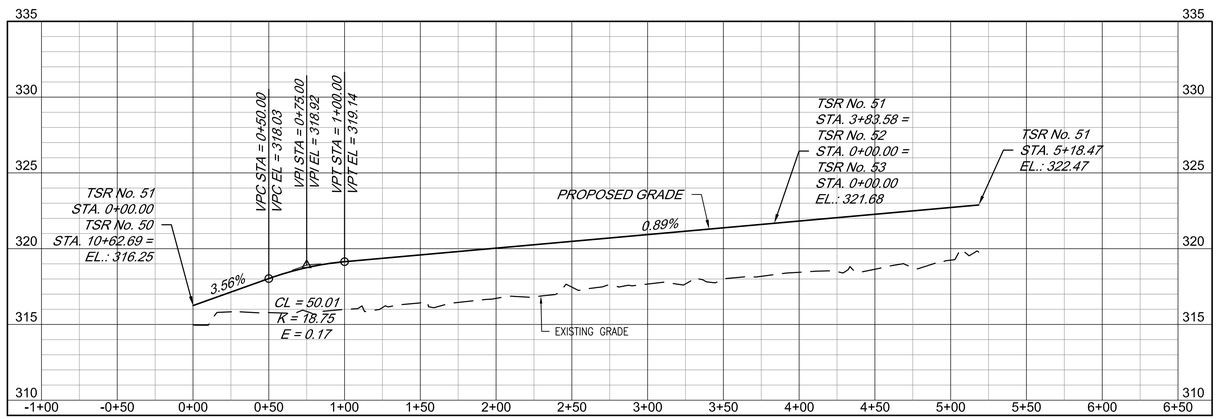
CP219

READY TO ADVERTISE (RTA)

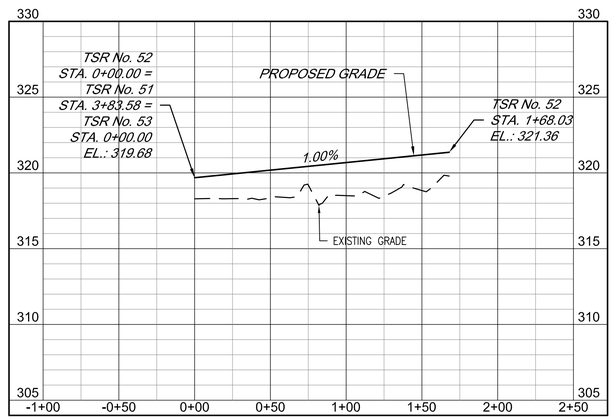
G:\CLEANSTUFF-15-2811537\6 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\SI2ECCP219.DWG




**TSR No. 50**




**TSR No. 51**




**TSR No. 52**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

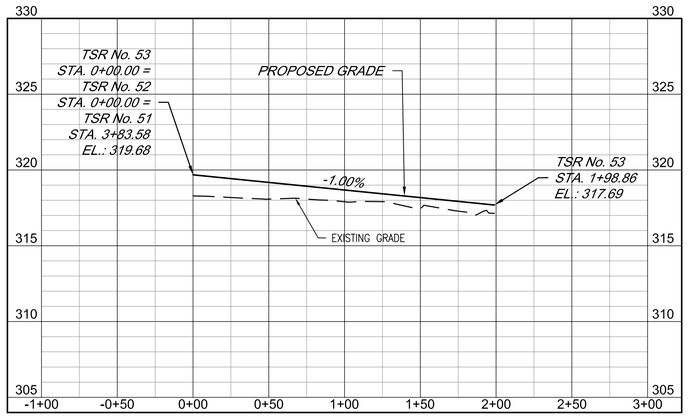
ROAD PROFILES
TSR No. 50, 51, & 52

SHEET ID

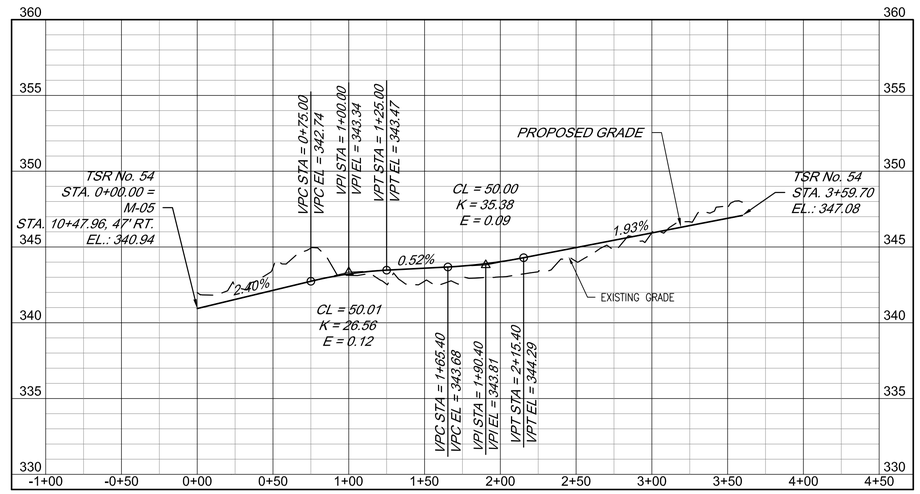
CP220

READY TO ADVERTISE (RTA)

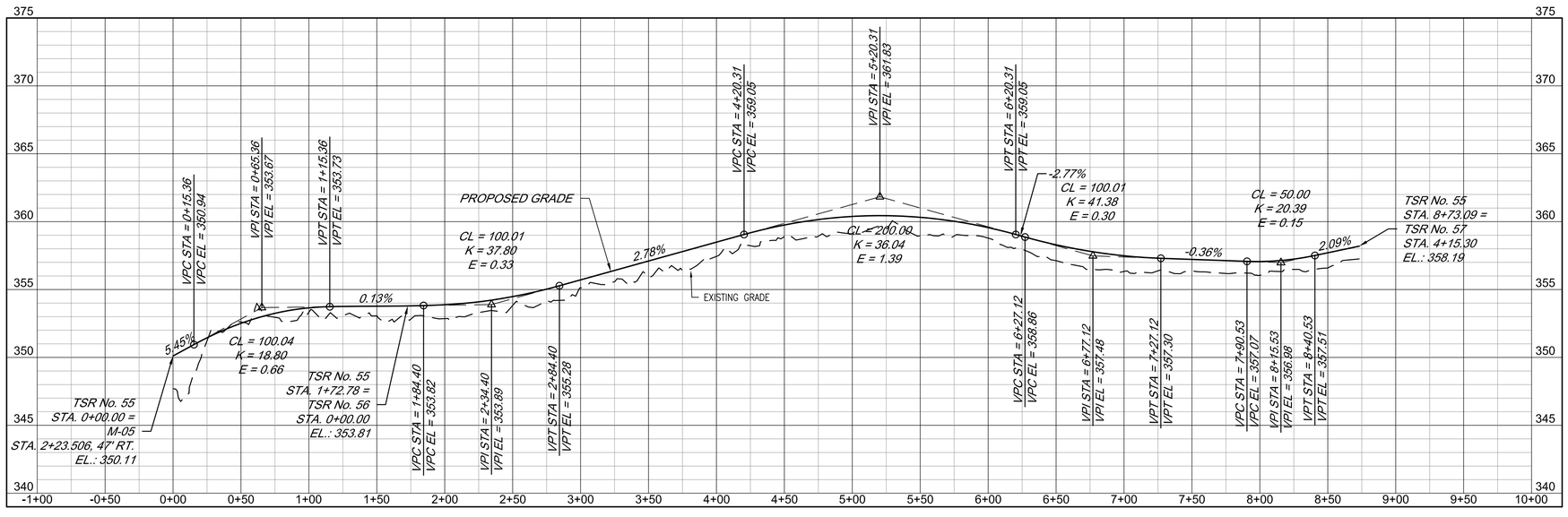
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**TSR No. 53**




**TSR No. 54**




**TSR No. 55**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SPEC. | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

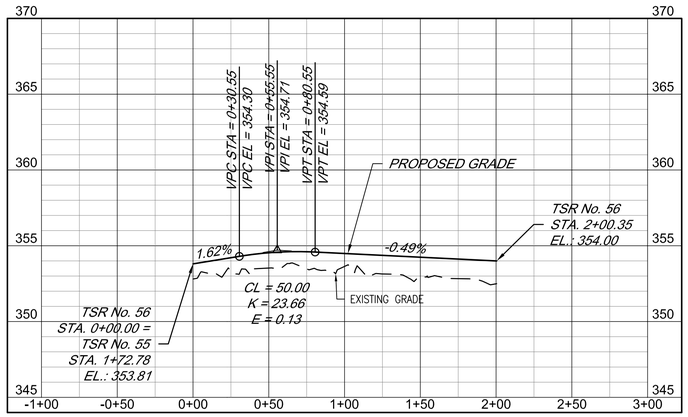
ROAD PROFILES
TSR No. 53, 54, & 55

SHEET ID

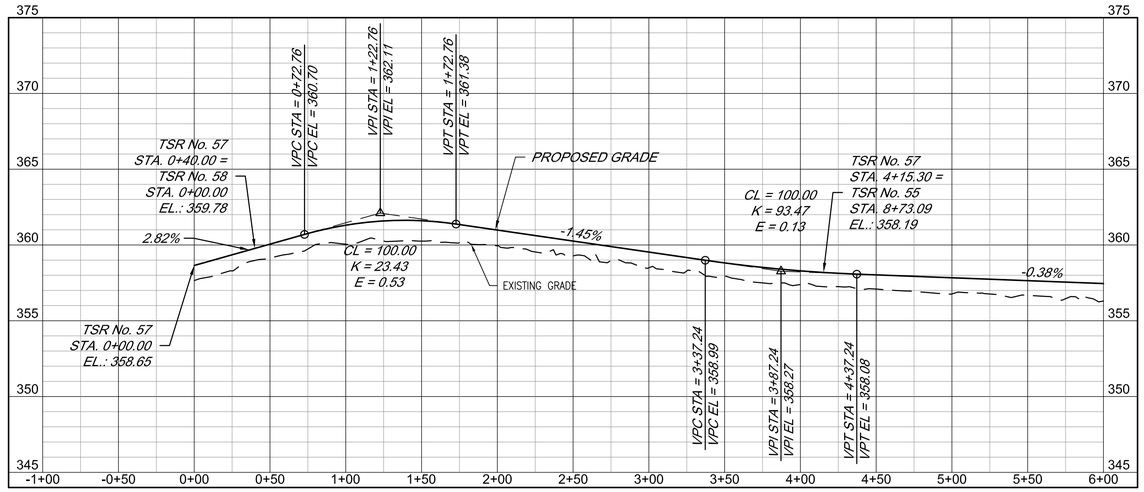
CP221

READY TO ADVERTISE (RTA)

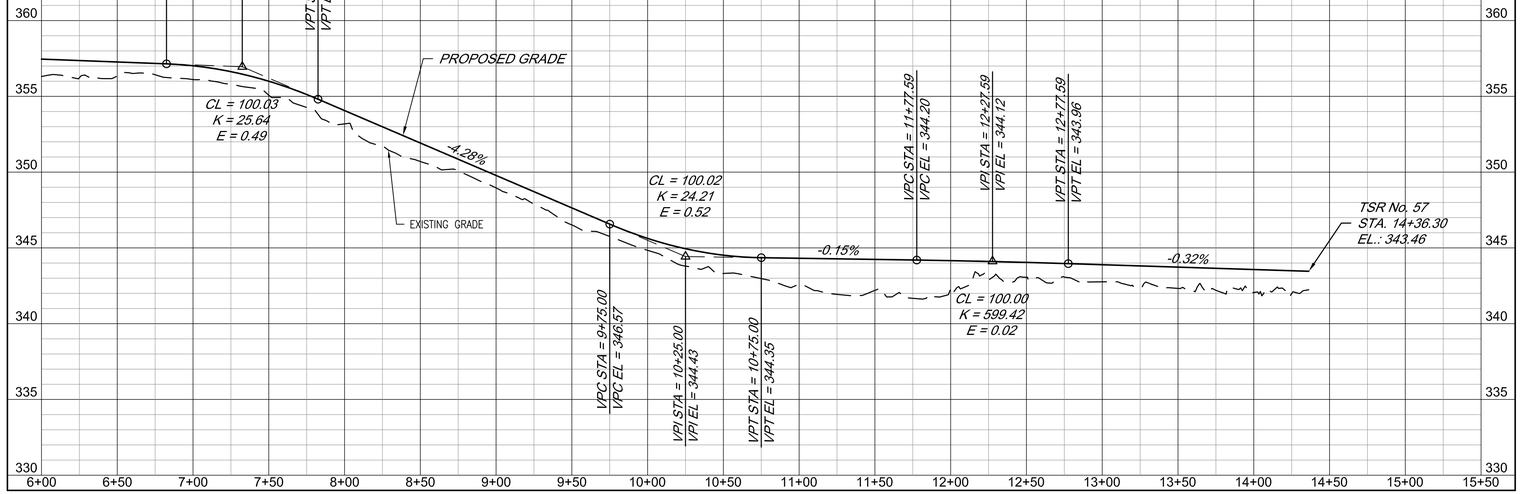
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**TSR No. 56**




**TSR No. 57**




**TSR No. 57**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

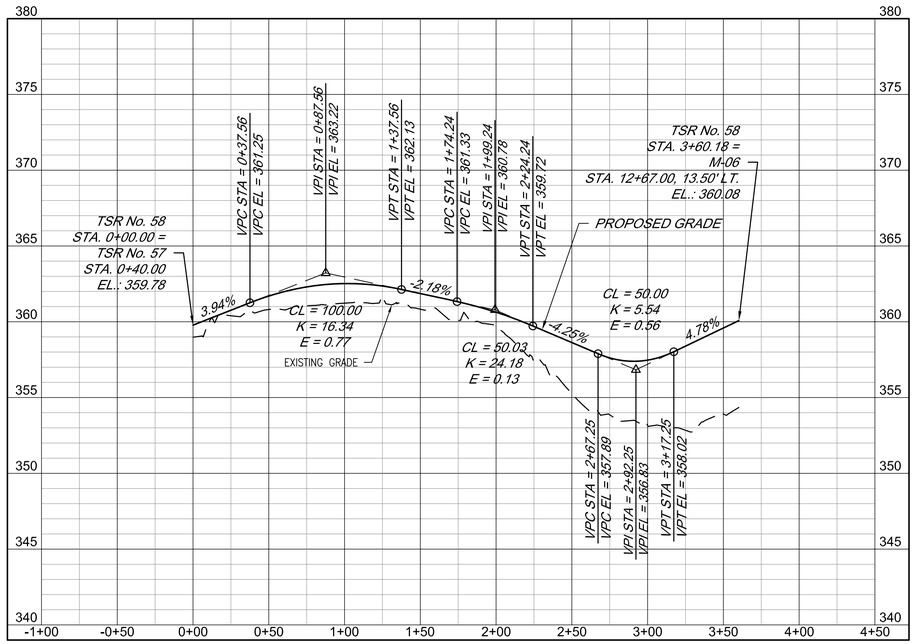
ROAD PROFILES
TSR No. 56 & 57

SHEET ID

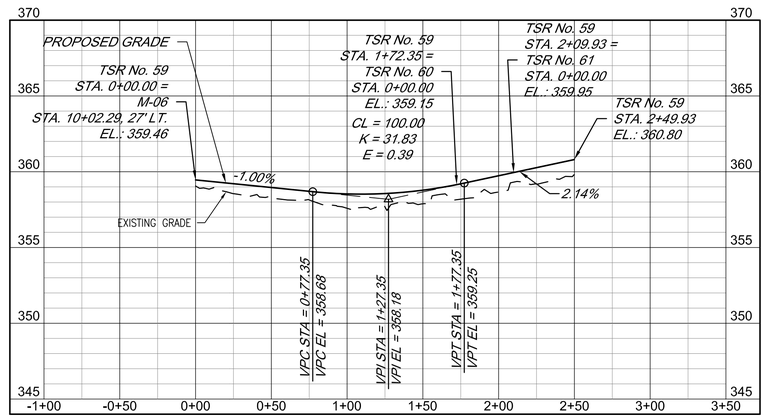
CP222

READY TO ADVERTISE (RTA)

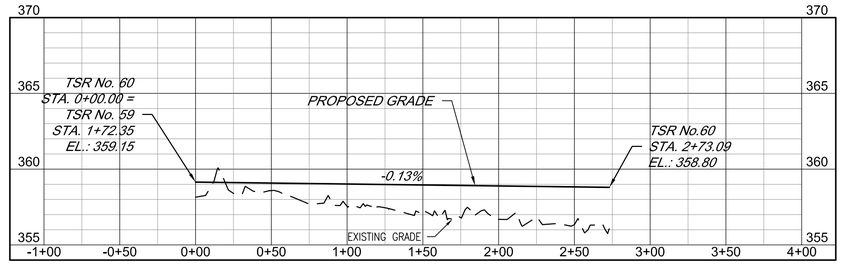
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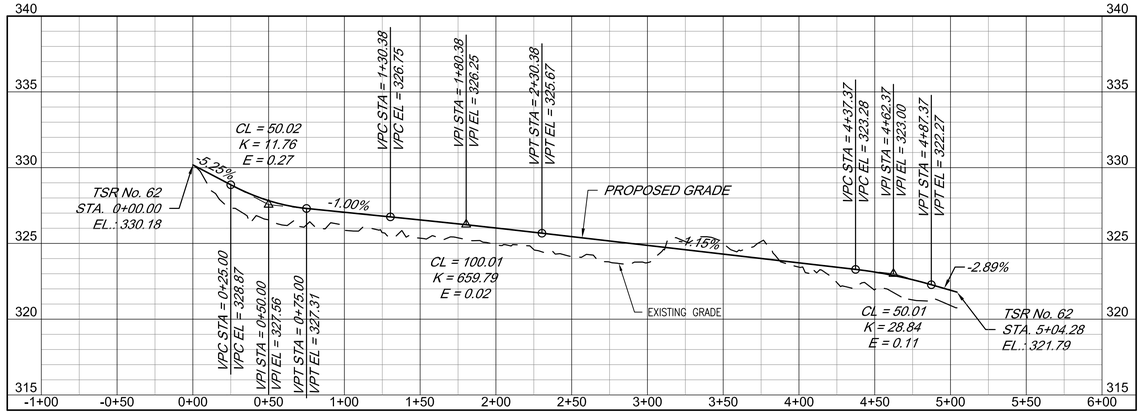

**TSR No. 58**



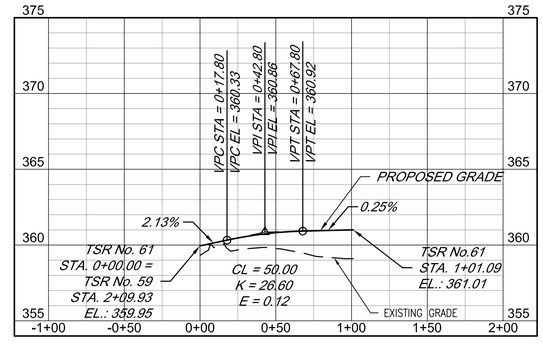

**TSR No. 59**




**TSR No. 60**




**TSR No. 62**




**TSR No. 61**

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

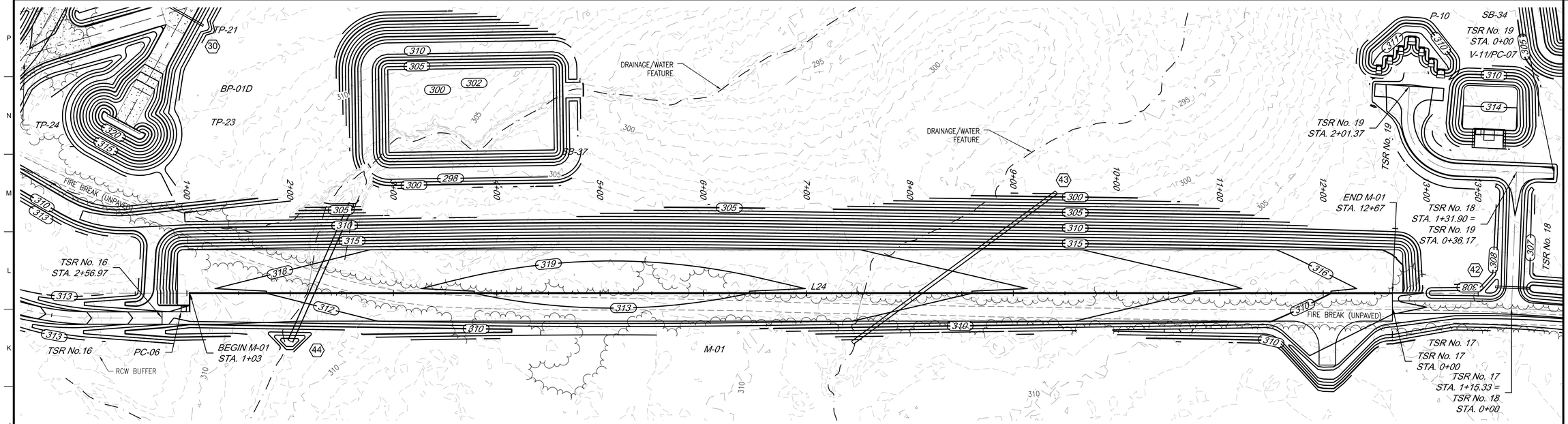
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

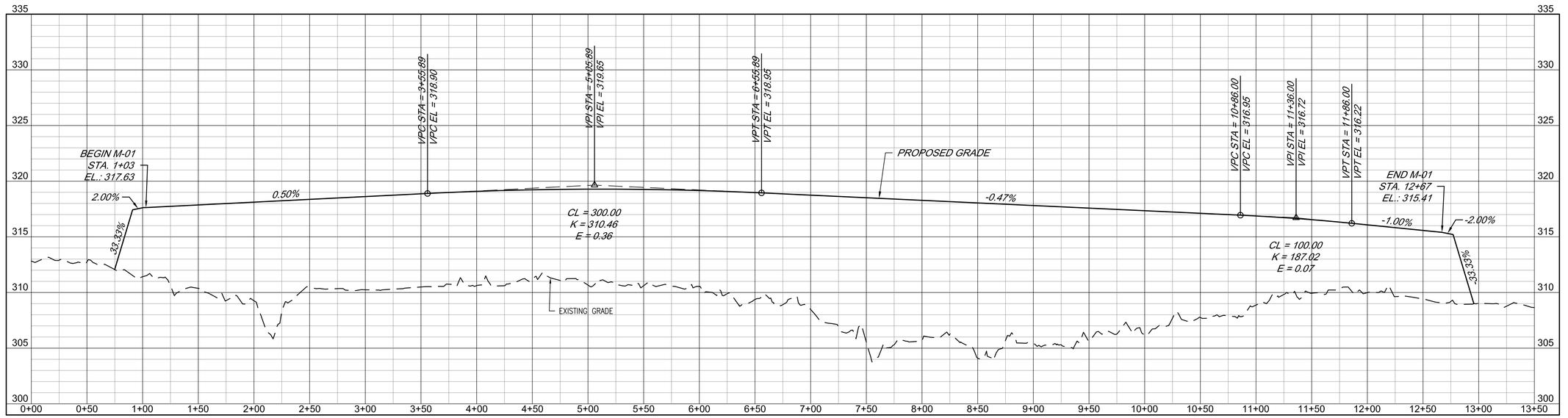
ROAD PROFILES
TSR No. 58, 59, 60, & 61

SHEET ID
CP223

READY TO ADVERTISE (RTA)

G:\CLEANS1\UFF-15-2811537\6 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\SIB2ECP223.DWG




**M-01**

GRAPHIC SCALE

50 0 50 100
SCALE: 1" = 50' HORIZ.

5 0 5 10
SCALE: 1" = 5' VERT.

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SCALE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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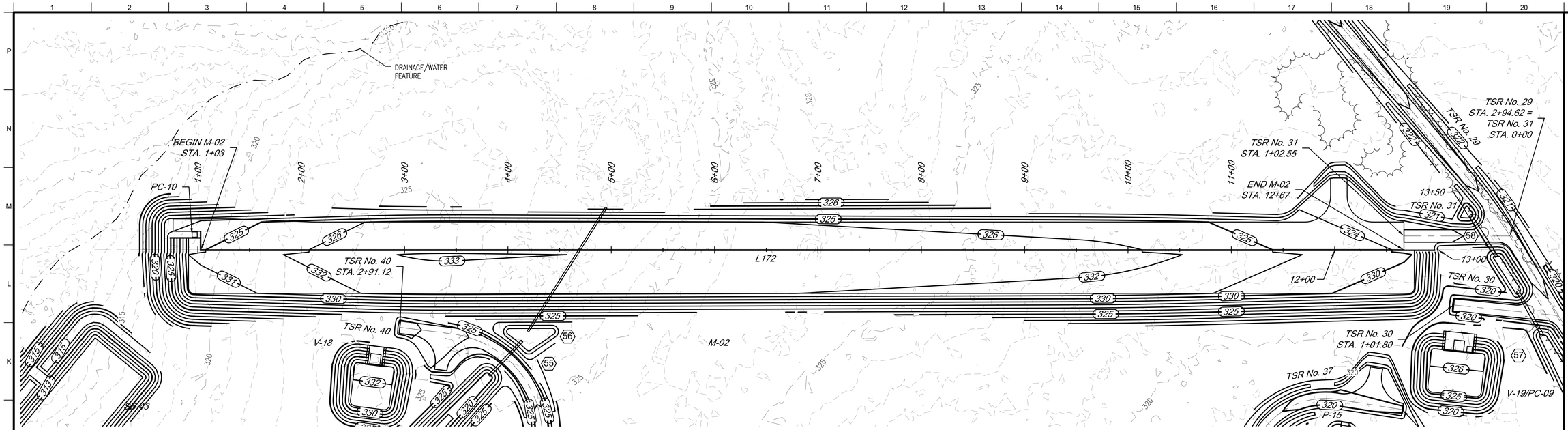
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

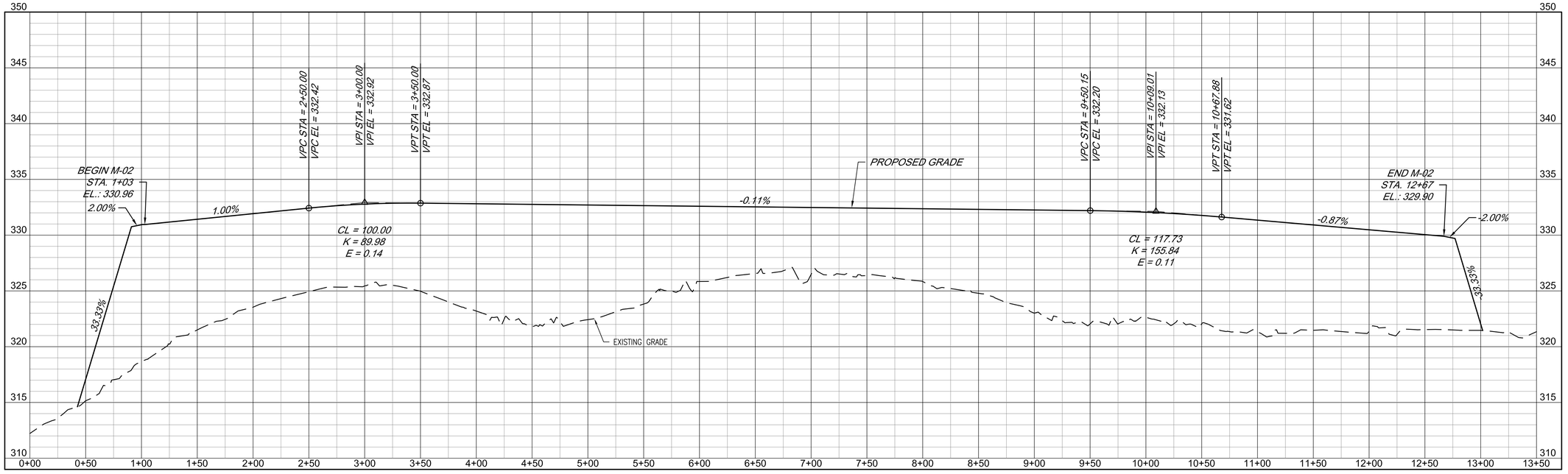
PLAN & PROFILE
MOVING ARMOR TARGET (MAT)
M-01

SHEET ID
CP224

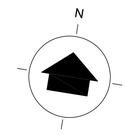
READY TO ADVERTISE (RTA)

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**M-02**




GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

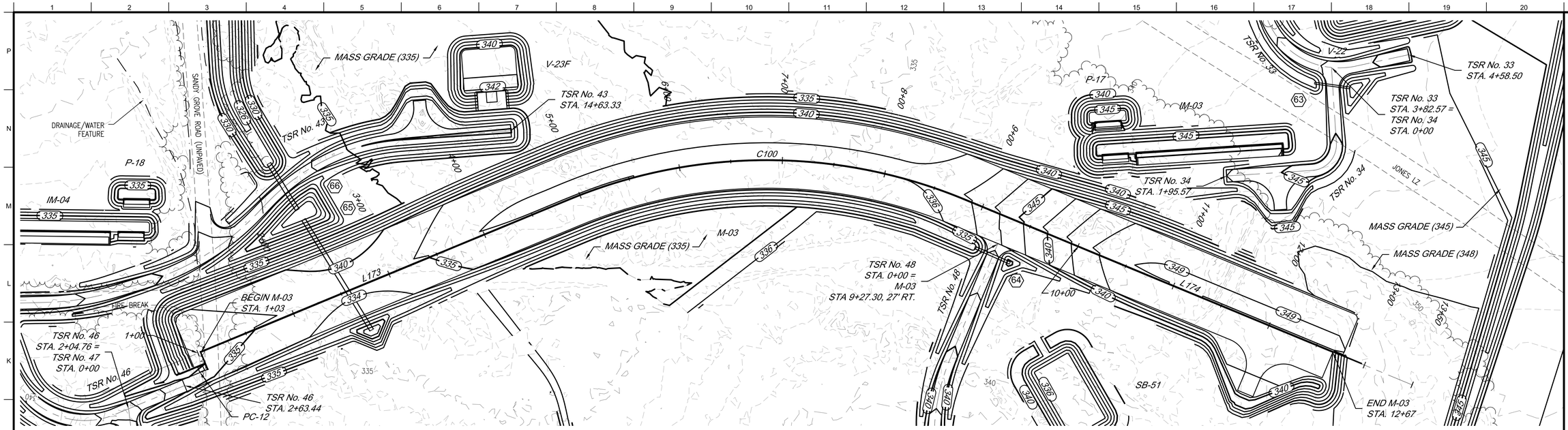
PLAN & PROFILE
MOVING ARMOR TARGET (MAT)
M-02

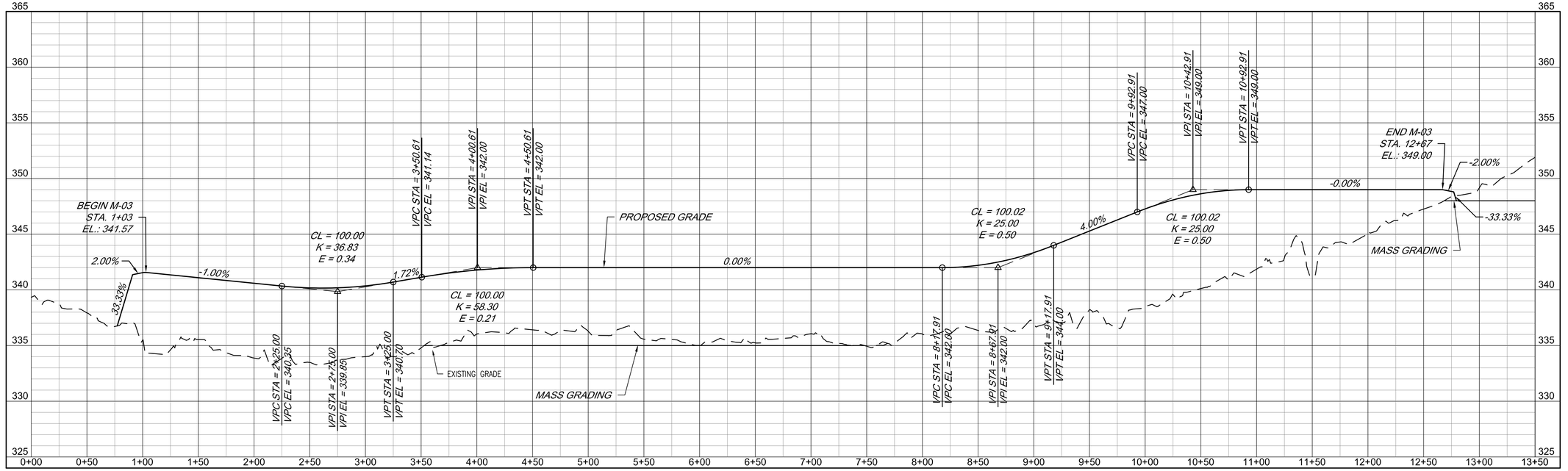
SHEET ID

CP225

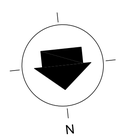
READY TO ADVERTISE (RTA)

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**M-03**




GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

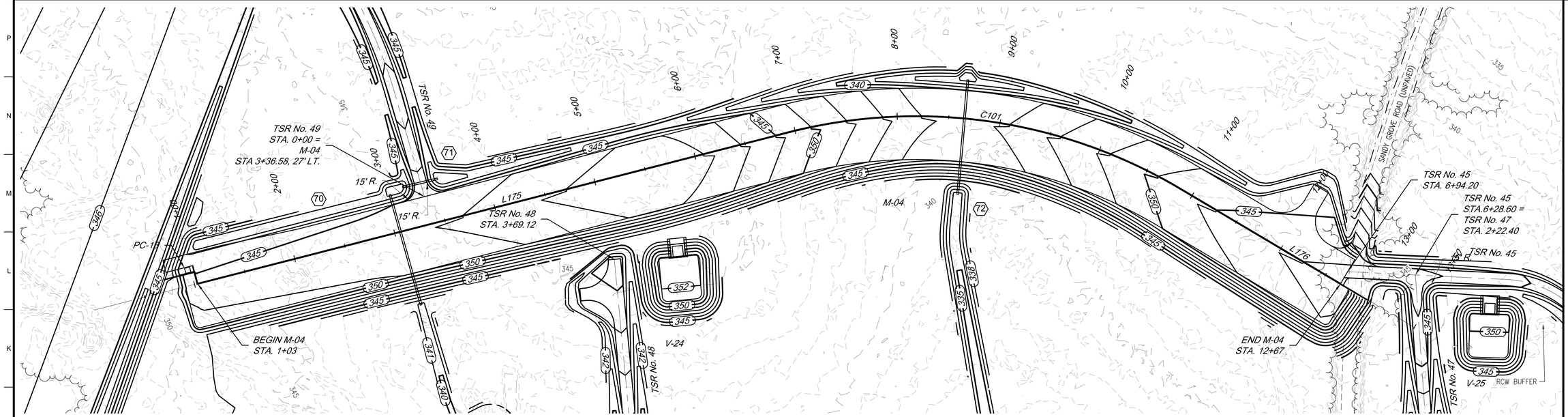
PLAN & PROFILE
MOVING ARMOR TARGET (MAT)
M-03

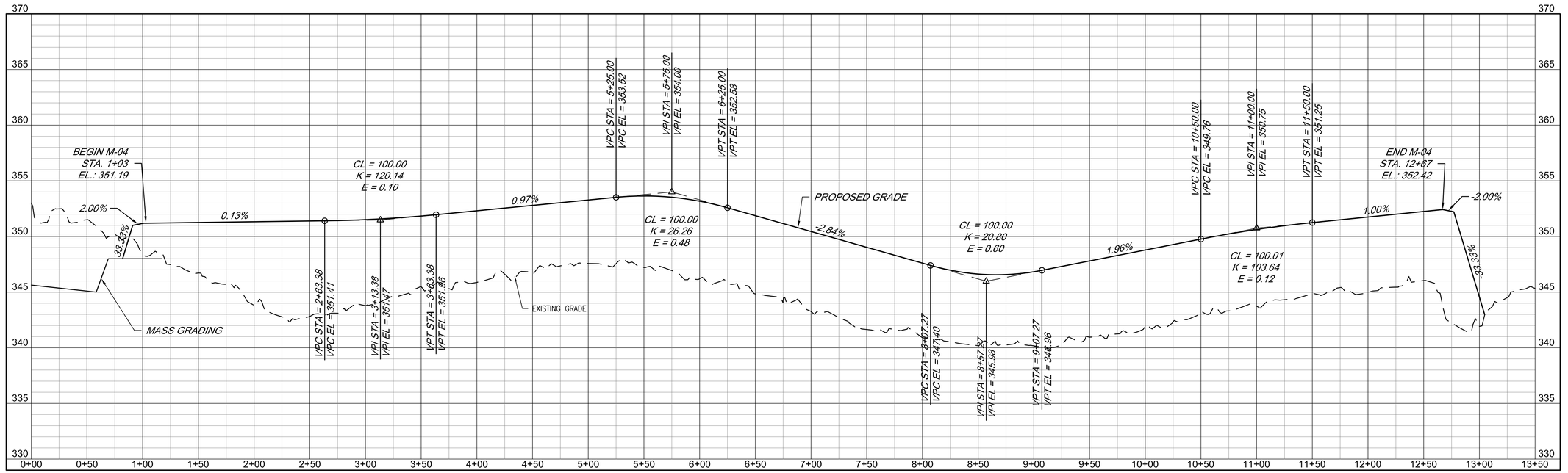
SHEET ID

CP226

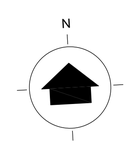
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READY TO ADVERTISE (RTA)




**M-04**




GRAPHIC SCALE

50 0 50 100
SCALE: 1" = 50' HORIZ.

5 0 5 10
SCALE: 1" = 5' VERT.

NORTH CAROLINA
PROFESSIONAL
SEAL
045805
ENGINEER
KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: | ISSUE DATE: |
| K. SANDERS | JUNE 2023 |
| DRAWN BY: | SOLICITATION NO.: |
| B.J. JOHNSON | W912HN-23-B-3001 |
| CHECKED BY: | CONTRACT NO.: |
| B. BRADLEY | |
| SUBMITTED BY: | CATEGORY CODE: |
| B. BRADLEY | 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

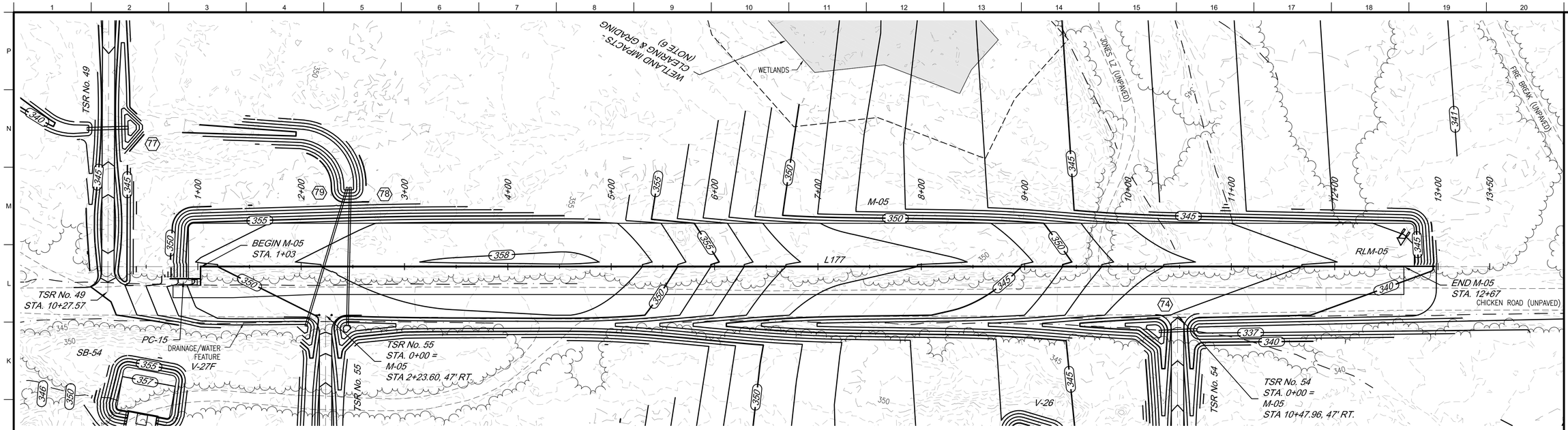
PLAN & PROFILE
MOVING ARMOR TARGET (MAT)
M-04

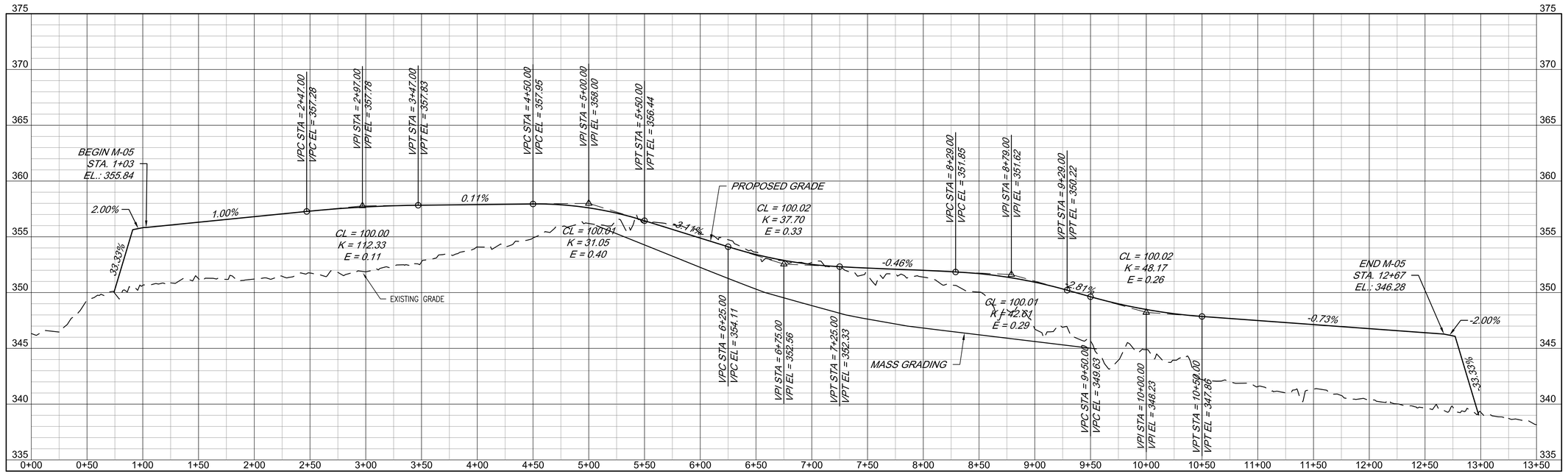
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CP227

READY TO ADVERTISE (RTA)

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**M-05**

GRAPHIC SCALE

SCALE: 1" = 50' HORIZ.

SCALE: 1" = 5' VERT.

N

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

PLAN & PROFILE
MOVING ARMOR TARGET (MAT)
M-05

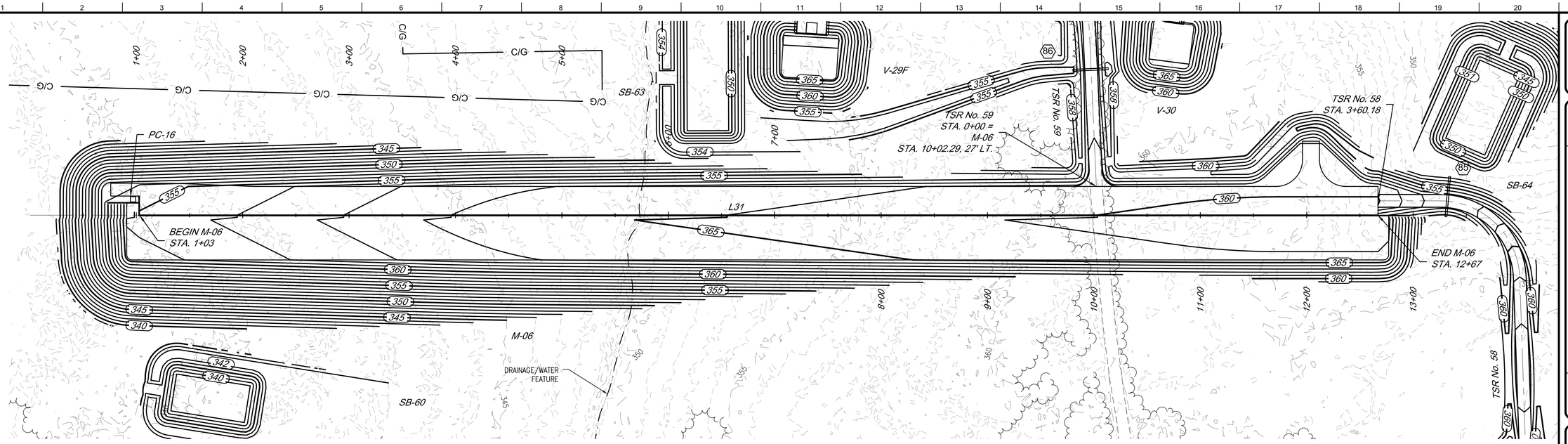
NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

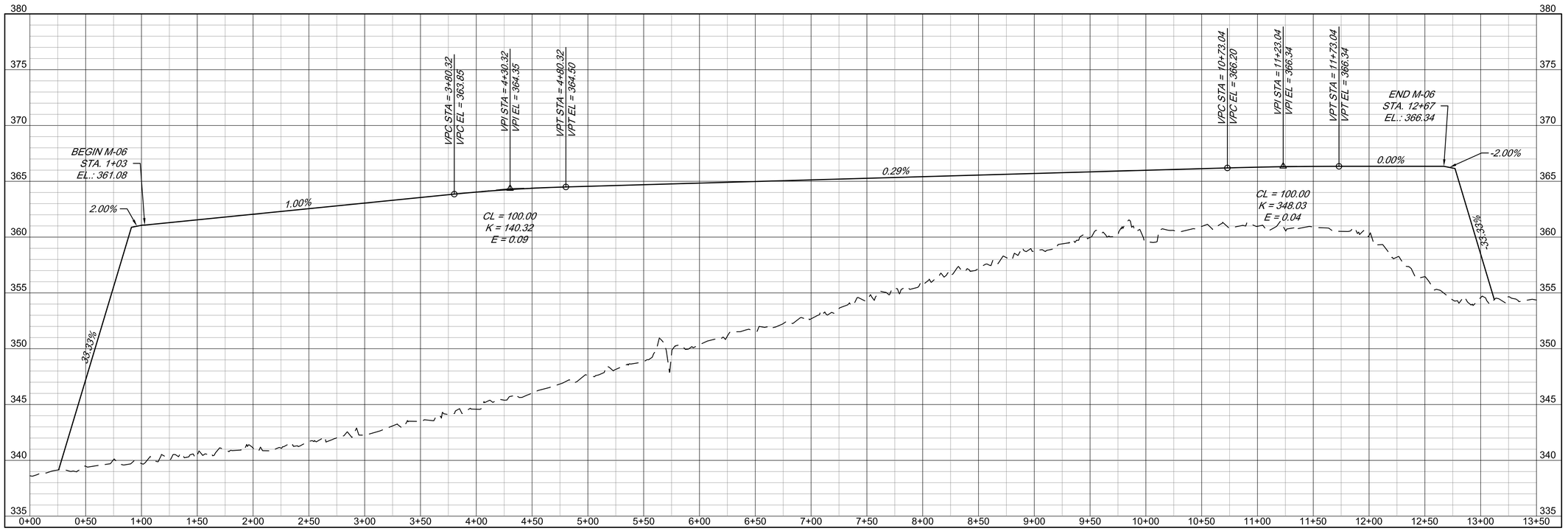
SHEET ID

CP228

READY TO ADVERTISE (RTA)

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**M-06**

N

GRAPHIC SCALE

50 0 50 100

SCALE: 1" = 50' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

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|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

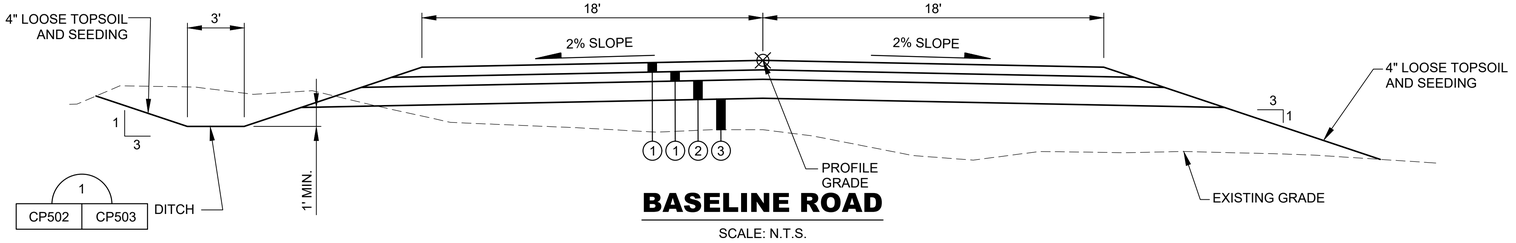
PLAN & PROFILE
MOVING ARMOR TARGET (MAT)
M-06

SHEET ID

CP229

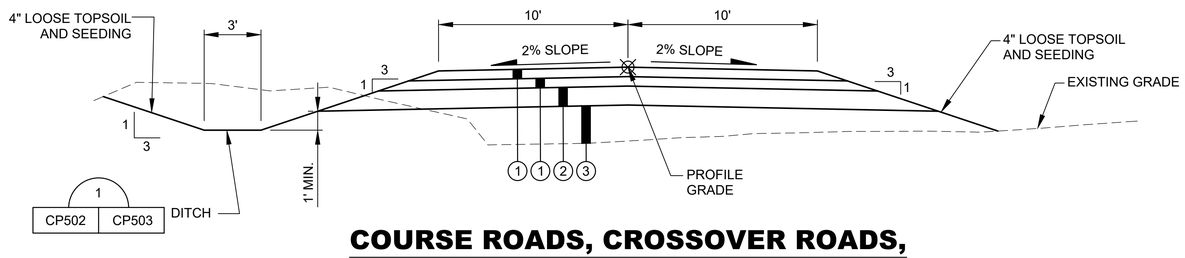
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READY TO ADVERTISE (RTA)



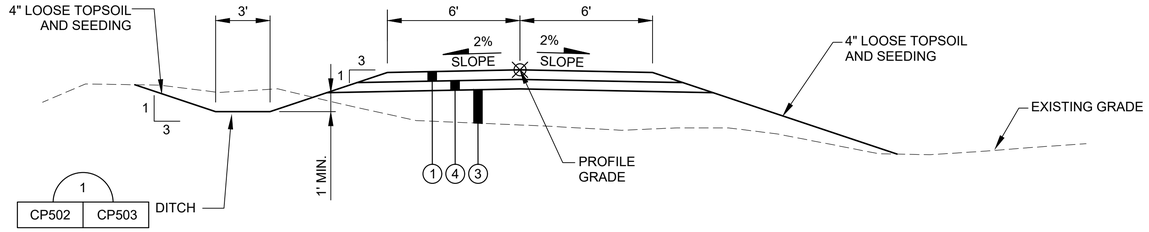

## BASELINE ROAD

SCALE: N.T.S.



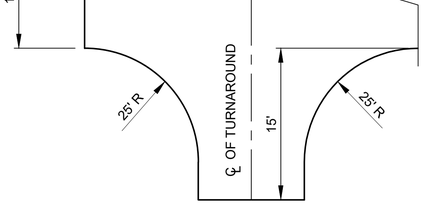

## COURSE ROADS, CROSSOVER ROADS, & DEFILADE ROADS

SCALE: N.T.S.



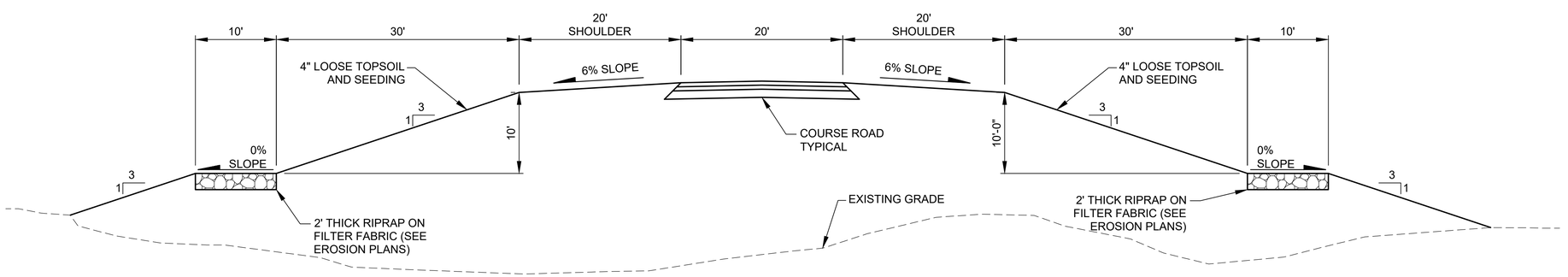

## TARGET SERVICE ROADS (TSR)

SCALE: N.T.S.




## TURNAROUND FOR TSR

SCALE: N.T.S.




## COURSE ROADS IN DEEP FILL SECTIONS

SCALE: N.T.S.

NOTES :

1. DITCHES AND EMBANKMENTS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE END OF CONSTRUCTION AND/OR UNTIL A FULL STAND OF GRASS/GROUND COVER IS PRESENT.
2. THE DEGREE OF COMPACTION REQUIRED FOR SUBGRADE AND PAVEMENT LAYERS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D 1557.
3. SEE SPECIFICATIONS FOR MATERIAL/GRADATION REQUIREMENTS FOR ROAD CONSTRUCTION.
4. THE MOISTURE CONTENT SHALL BE MAINTAINED WITHIN THE LIMITS OF 2% BELOW OPTIMUM TO 1% ABOVE OPTIMUM DURING THE COMPACTION OF THE SUBGRADE.
5. ROAD SECTIONS SHOWN ARE TYPICAL. SEE GRADING PLANS FOR DEVIATIONS FROM THESE SECTIONS.
6. SEE GRADING PLANS FOR EXTENT OF ROADWAY DITCH DESIGN.

## LEGEND

① 6" AGGREGATE BASE COURSE @ 100% COMPACTION (ASTM D 1557)

② 12" SUBGRADE @ 95% COMPACTION (ASTM D 1557)

③ APPROVED BACKFILL MATERIAL @ 95% COMPACTION (ASTM D 1557)

④ 6" SUBGRADE @ 95% COMPACTION (ASTM D 1557)

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECP502.DWG

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: S. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 178-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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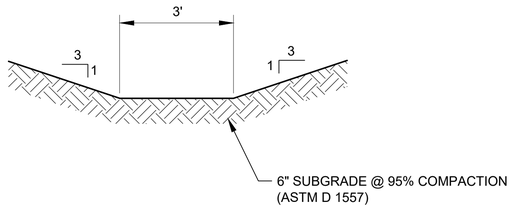
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ROAD SECTIONS

SHEET ID

CP502

READY TO ADVERTISE (RTA)

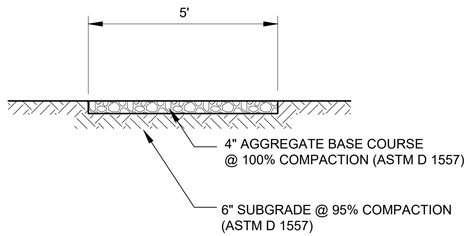



1

| | |
|---|---|
| CP502 | CP503 |
| CS510 | |

## ROADSIDE DITCH

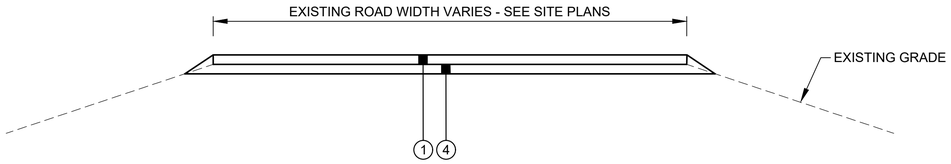
SCALE: N.T.S.




## AGGREGATE WALK/GRAVEL PAD

SCALE: N.T.S.

NOTE: A 5 FT. AGGREGATE WALK/GRAVEL PAD SHALL BE INSTALLED AROUND ALL URBAN CLUSTER STRUCTURES AND FACADES.

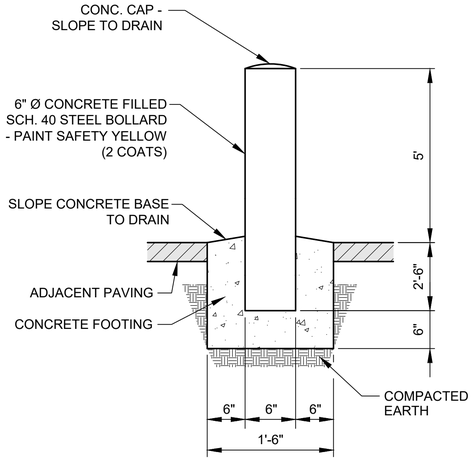



## REPAIR OF EXISTING ROADS

SCALE: N.T.S.

NOTES:

1. WHEN PROPOSED ROADS CROSS OVER EXISTING ROADS, THE EXISTING ROAD SHALL BE REPAIRED WITH THE SECTION SHOWN SUCH THAT THERE IS A SMOOTH TRANSITION FROM THE PROPOSED ROAD TO THE EXISTING ROAD.
2. PROVIDE A MINIMUM TRANSITION LENGTH OF 50 FEET FROM PROPOSED ROAD TO EXISTING ROAD.
3. NO ADDITIONAL LAND DISTURBANCE SHALL RESULT FROM THE REPAIR OF EXISTING ROADS. REPAIR WORK SHALL NOT EXCEED THE EXISTING DISTURBANCE LIMITS.




## PIPE BOLLARD

SCALE: N.T.S

GENERAL NOTES:

1. DITCHES AND EMBANKMENTS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE END OF CONSTRUCTION AND/OR UNTIL A FULL STAND OF GRASS/GROUND COVER IS PRESENT.
2. THE DEGREE OF COMPACTION REQUIRED FOR SUBGRADE AND PAVEMENT LAYERS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D 1557.
3. SEE SPECIFICATIONS FOR MATERIAL/GRADATION REQUIREMENTS FOR ROAD CONSTRUCTION.
4. THE MOISTURE CONTENT SHALL BE MAINTAINED WITHIN THE LIMITS OF 2% BELOW OPTIMUM TO 1% ABOVE OPTIMUM DURING THE COMPACTION OF THE SUBGRADE.
5. ROAD SECTIONS SHOWN ARE TYPICAL. SEE GRADING PLANS FOR DEVIATIONS FROM THESE SECTIONS.
6. SEE GRADING PLANS FOR EXTENT OF ROADWAY DITCH DESIGN.

## LEGEND

(1) 6" AGGREGATE BASE COURSE @ 100% COMPACTION (ASTM D 1557)

(4) 6" SUBGRADE @ 95% COMPACTION (ASTM D 1557)




US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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DOTHAN, AL 36303
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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

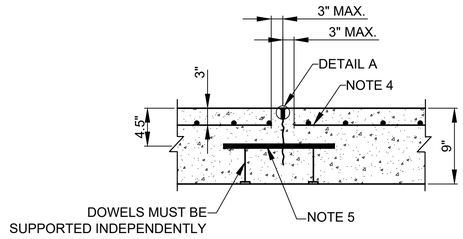
ROAD SECTIONS

SHEET ID

CP503

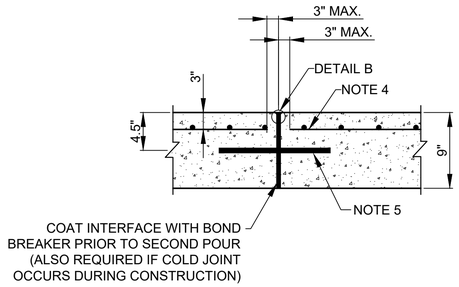
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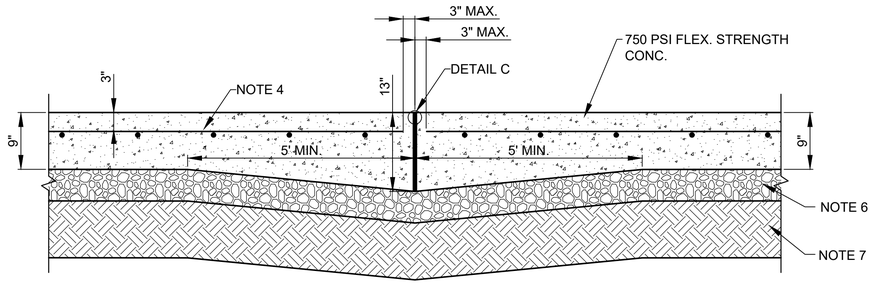

## TRANSVERSE CONTRACTION JOINT (T.C.J.)

SCALE: N.T.S.



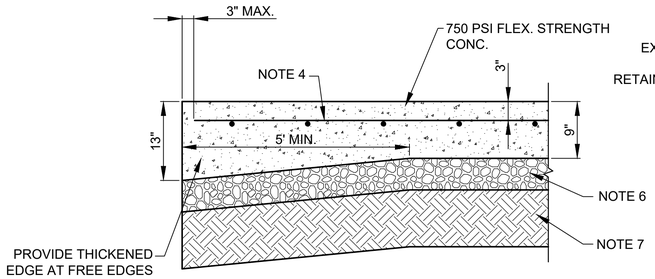

## LONGITUDINAL CONSTRUCTION JOINT (C.J.)

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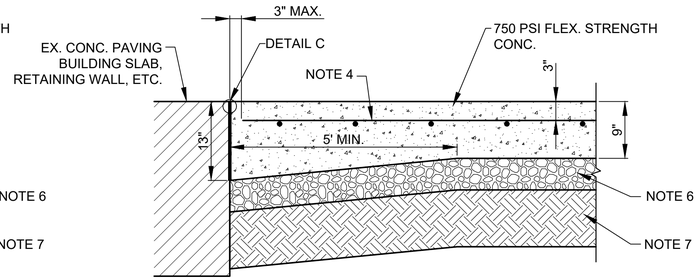

## EXPANSION JOINT (E.J.)

SCALE: N.T.S.



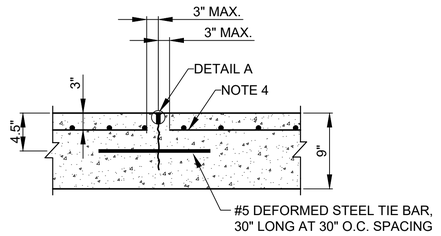

## THICKENED EDGE DETAIL

SCALE: N.T.S



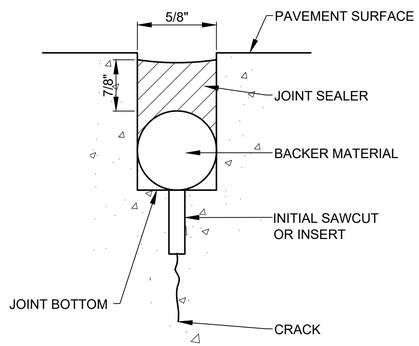

## CONCRETE PAVEMENT TO EX. CONC. PAVING, BUILDING SLAB, RETAINING WALL, GRATE INLET, ETC. JOINT DETAIL

SCALE: N.T.S



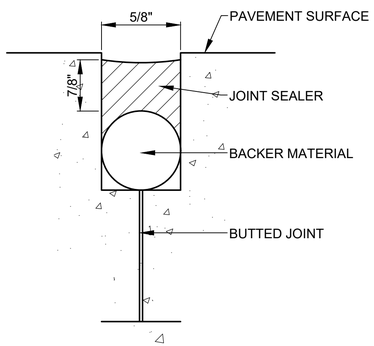

## LONGITUDINAL CONTRACTION JOINT (L.C.J.)

SCALE: N.T.S.



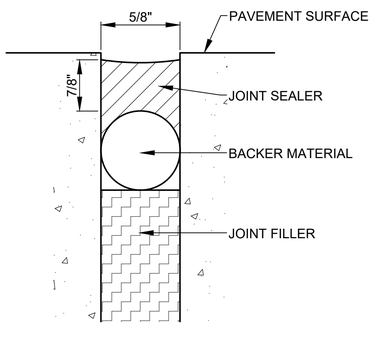

## DETAIL A

SCALE: N.T.S.



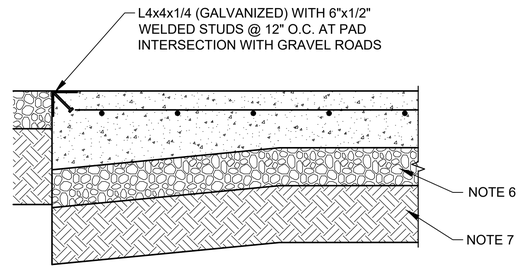

## DETAIL B

SCALE: N.T.S.




## DETAIL C

SCALE: N.T.S.




## ANGLE DETAIL

SCALE: N.T.S.

NOTES:

1. TOP OF SEALANT TO BE 1/8" TO 1/4" BELOW TOP OF PAVEMENT.
2. PROVIDE JOINTS IN CONCRETE PAVEMENT AS SHOWN ON JOINT LAYOUT SHEETS. DO NOT EXCEED 15' O.C.
3. PROVIDE LONGITUDINAL CONSTRUCTION JOINTS AT ALL COLD JOINTS AND AT ALL END OF DAY POURS.
4. PROVIDE #4 REBAR REINFORCING AT 12" O.C.E.W.
5. PROVIDE 1" Ø x 18" LONG SMOOTH DOWELS AT 12" O.C. COAT WITH NON-BONDING AGENT TO PREVENT BONDING TO CONCRETE. DOWELS MUST BE CAREFULLY ALIGNED AND SUPPORTED DURING CONCRETE POUR. MISALIGNED DOWELS CAUSE CRACKING. OK TO POST-INSTALL DOWELS AT LONGITUDINAL CONSTRUCTION JOINTS INTO PREVIOUSLY POURED SLAB. TAKE CARE TO ENSURE PROPER ALIGNMENT.
6. 4" AGGREGATE BASE COURSE @ 100% COMPACTION (ASTM D 1557).
7. 12" COMPACTED SUBGRADE @ 95% COMPACTION (ASTM D 1557).

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

# CONCRETE PAVING JOINT DETAILS

SCALE: N.T.S.

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
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100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

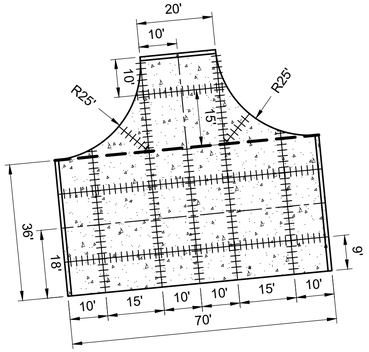
CONCRETE PAVING DETAILS

SHEET ID

CP504

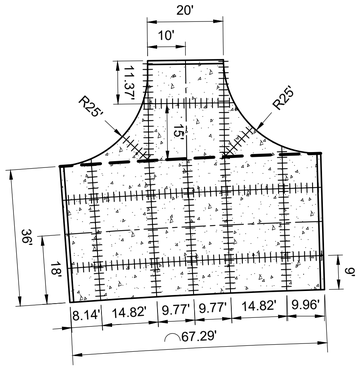
READY TO ADVERTISE (RTA)

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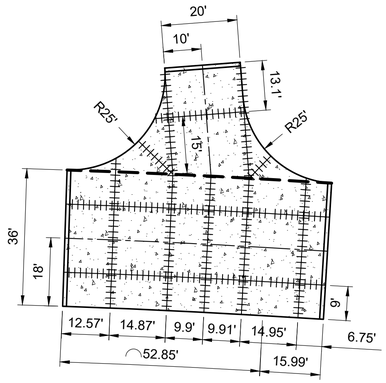

## TP-01

SCALE: 1" = 20'



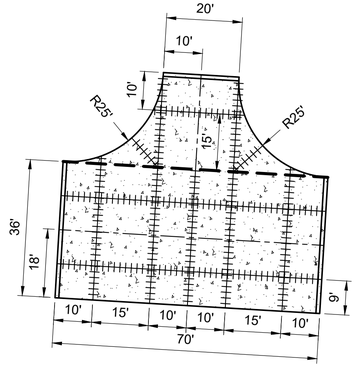

## TP-02

SCALE: 1" = 20'



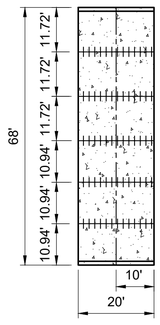

## TP-03

SCALE: 1" = 20'



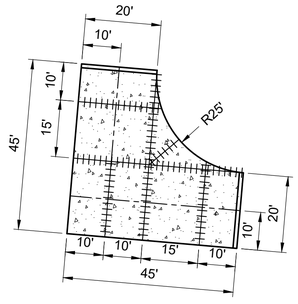

## TP-04

SCALE: 1" = 20'



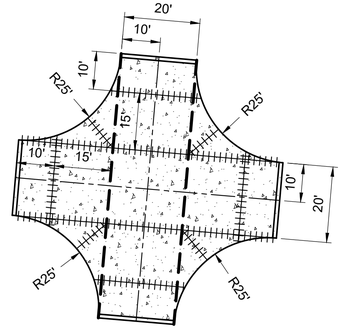

## TP-05, 06, 11, 12, 23, 26

SCALE: 1" = 20'



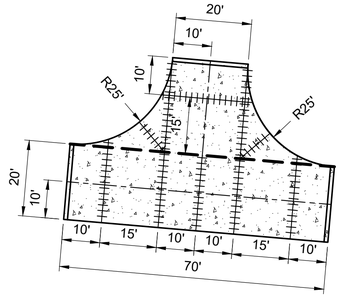

## TP-07

SCALE: 1" = 20'




## TP-08

SCALE: 1" = 20'




## TP-09

SCALE: 1" = 20'

GRAPHIC SCALE

20' 10' 0 20' 40'

SCALE: 1" = 20'-0"

NOTES:

1. LONGITUDINAL CONSTRUCTION JOINTS SHALL BE USED AT ALL COLD JOINTS AND AT ALL END OF DAY POURS.
2. SEE SHEET CP504 FOR CONCRETE PAVING DETAILS.

**LEGEND**

- LONGITUDINAL CONTRACTION JOINT (L.C.J.)
- TRANSVERSE CONTRACTION JOINT (T.C.J.)
- EXPANSION JOINT (E.J.)
- L4x4x1/4 GALVANIZED ANGLE IRON EMBEDDED INTO CONCRETE (TYPICAL AT ALL EDGES)

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

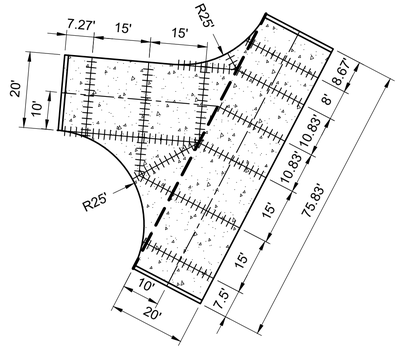
CONCRETE PAVING JOINT LAYOUT

SHEET ID

CP505

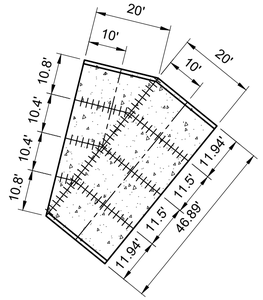
G:\CLEANSTUFF-15-281\5376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECP505.DWG

READY TO ADVERTISE (RTA)



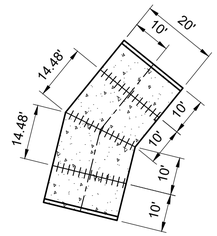

## TP-10

SCALE: 1" = 20'



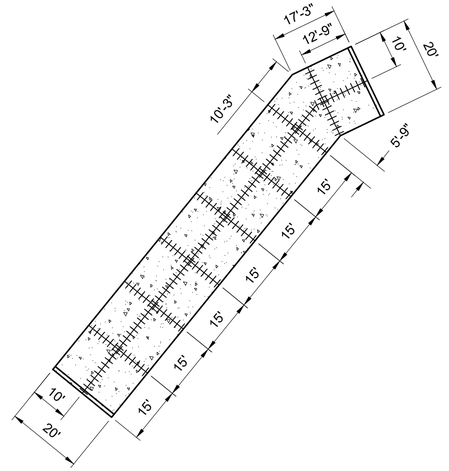

## TP-13

SCALE: 1" = 20'



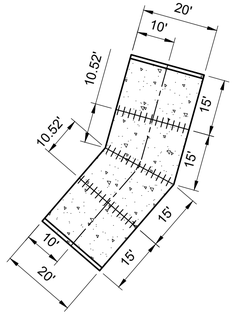

## TP-14

SCALE: 1" = 20'



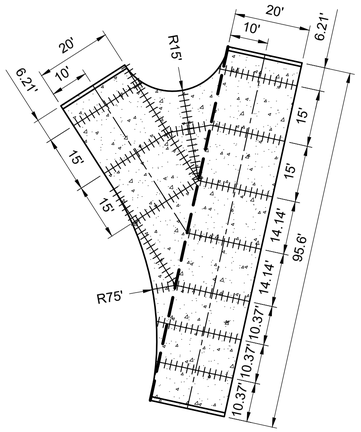

## TP-15, 16

SCALE: 1" = 20'



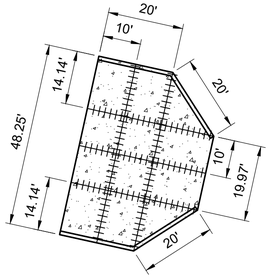

## TP-17, 18

SCALE: 1" = 20'




## TP-19, 20

SCALE: 1" = 20'



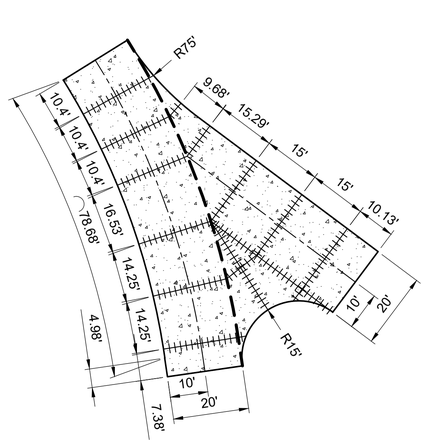

## TP-21, 22

SCALE: 1" = 20'




## TP-24

SCALE: 1" = 20'




## TP-25

SCALE: 1" = 20'

GRAPHIC SCALE

20' 10' 0 20' 40'

SCALE: 1" = 20'-0"

NOTES:

1. LONGITUDINAL CONSTRUCTION JOINTS SHALL BE USED AT ALL COLD JOINTS AND AT ALL END OF DAY POURS.
2. SEE SHEET CP504 FOR CONCRETE PAVING DETAILS.

**LEGEND**

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- L4x4x1/4 GALVANIZED ANGLE IRON EMBEDDED INTO CONCRETE (TYPICAL AT ALL EDGES)

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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| | |
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| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 174-45-01 |
| FILE NAME: | ANSI D |
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.JOHNSON |
| CHECKED BY: | J. BRANNON |
| SUBMITTED BY: | B.BRADLEY |
| SIZE: | ANSI D |

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

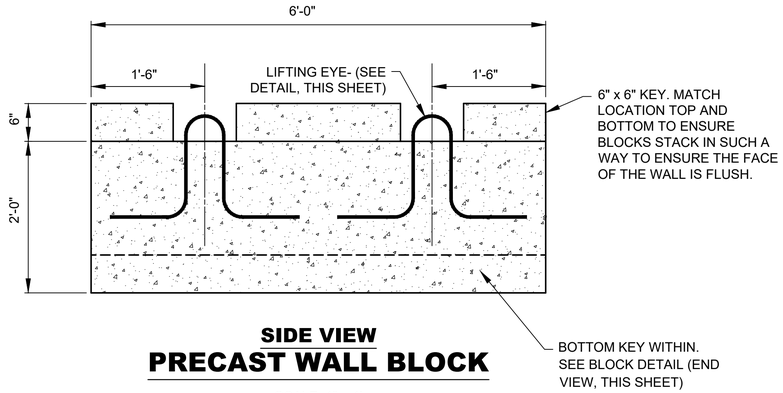
CONCRETE PAVING JOINT LAYOUT

SHEET ID

CP506

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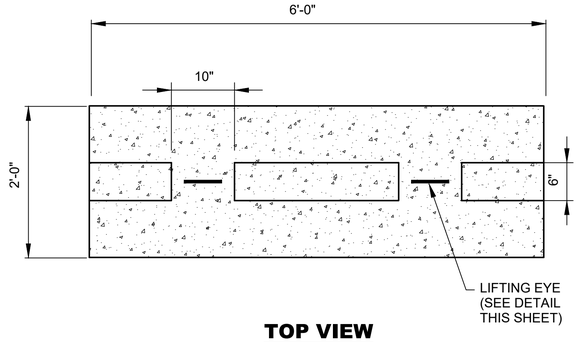
READY TO ADVERTISE (RTA)




**SIDE VIEW**

## PRECAST WALL BLOCK

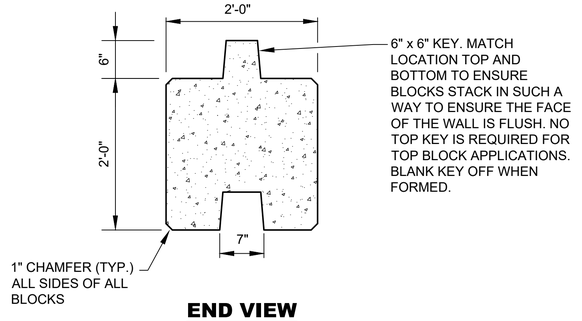
SCALE: 1" = 1'




**TOP VIEW**

## PRECAST WALL BLOCK

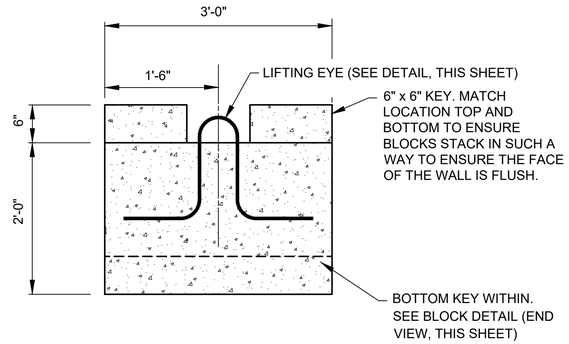
SCALE: 1" = 1'




**END VIEW**

## PRECAST WALL BLOCK

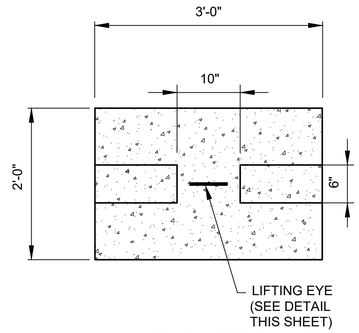
SCALE: 1" = 1'




**SIDE VIEW**

## PRECAST WALL HALF BLOCK

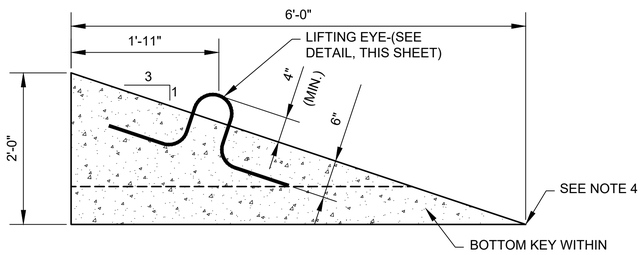
SCALE: 1" = 1'




**TOP VIEW**

## PRECAST WALL HALF BLOCK

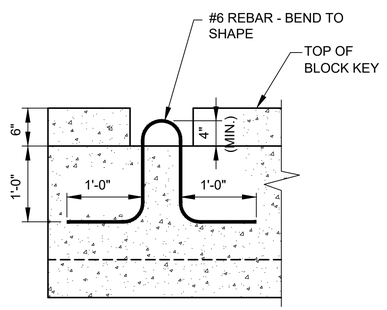
SCALE: 1" = 1'




**SIDE VIEW**

## PRECAST WALL SLOPED END BLOCK

SCALE: 1" = 1'




## LIFTING EYE DETAIL

SCALE: 1" = 1'

NOTES:

1. CONCRETE TO BE 3,000 PSI @ 28 DAYS MIN. 5% BY VOLUME, AIR ENTRAINED.
2. ALL BLOCKS TO HAVE 1" CHAMFER ALONG ALL SIDES.
3. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
4. SLOPED END BLOCK MAY REQUIRE A THICKENED END INSTEAD OF COMING TO AN EXACT POINT AS SHOWN TO PREVENT SPALLING OF CONCRETE. VERIFY WITH BLOCK MANUFACTURER.
5. ALL LIFTING EYES EXPOSED ON TOP OF THE WALLS SHALL BE CUT FLUSH WITH THE TOP OF THE BLOCKS AND THE REMAINING HOLE SHALL BE FILLED WITH NON-SHRINK GROUT.

GRAPHIC SCALE:

1 0 1 2

SCALE: 1" = 1'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY FT | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

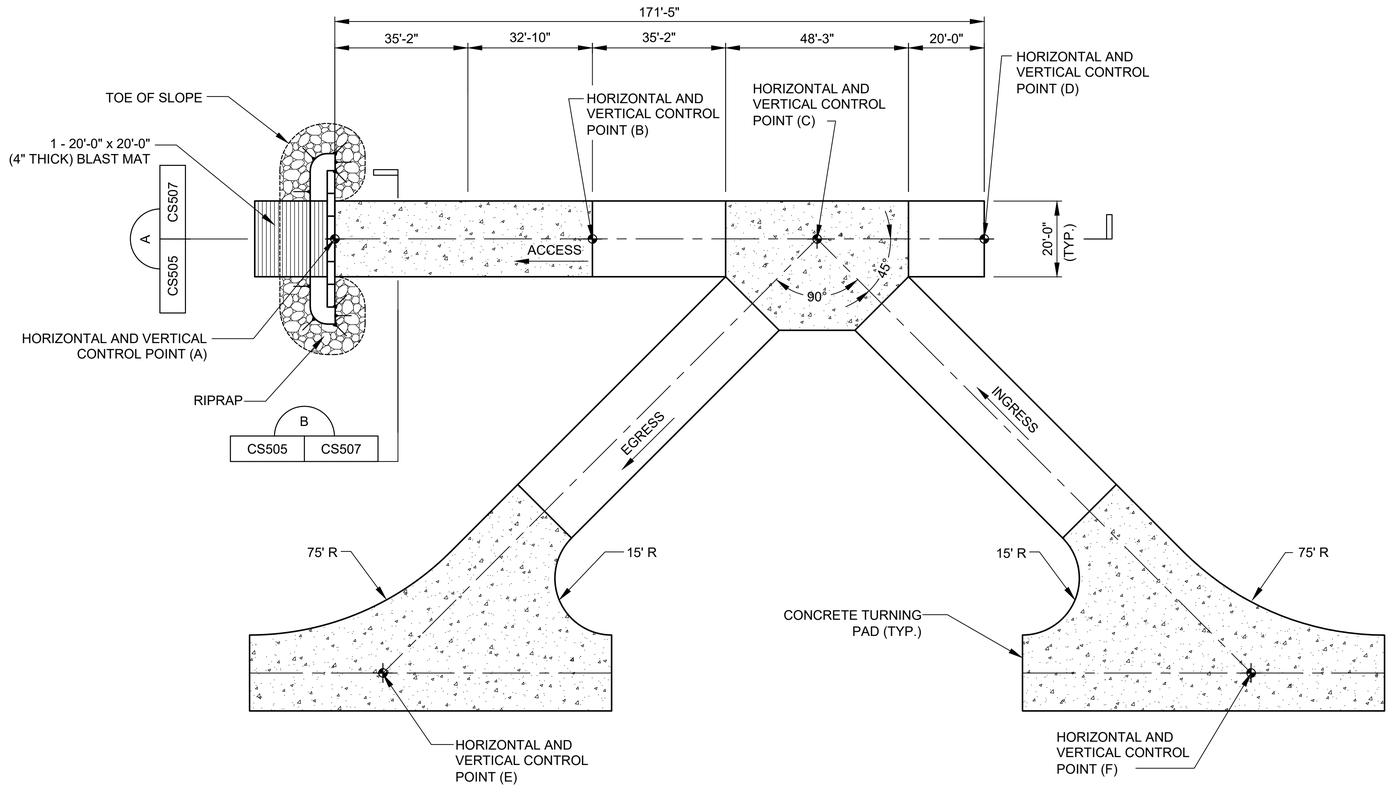
PRECAST CONCRETE BLOCK DETAILS

SHEET ID

CS504

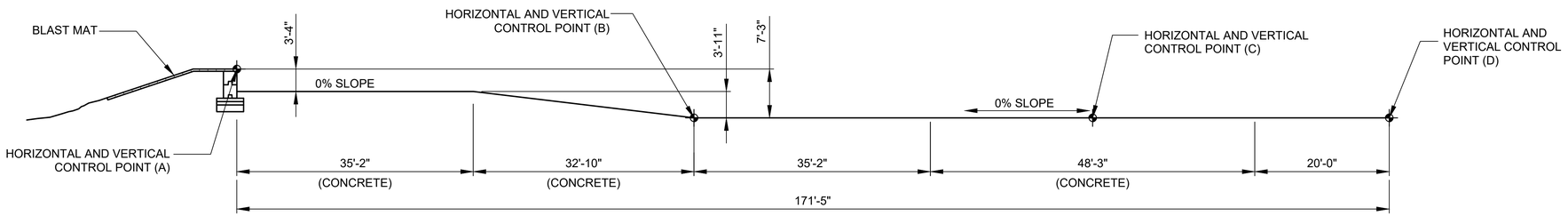
READY TO ADVERTISE (RTA)

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## PLAN

SCALE: 1" = 20'




## ACCESS PROFILE

## DEFILADE (TURRET DOWN)

SCALE: 1" = 10'

NOTES :

1. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
2. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).
3. SEE SHEET CP502 FOR TYPICAL DEFILADE ROADWAY SECTIONS.
4. SEE SHEET CS504 FOR PRECAST CONCRETE BLOCK DETAILS.
5. SEE SHEET CP504 FOR TURNING PAD PAVEMENT SECTION.
6. SEE SHEETS CP505 & CP506 FOR TURNING PAD JOINT LAYOUTS.
7. SEE SHEET CS614 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
8. INGRESS AND EGRESS LENGTHS VARY. SEE SITE PLAN AND CONTROL POINT DATA.
9. OMITTED
10. HORIZONTAL CONTROL POINT (C) EQUALS ENDING STATION ON DEFILADE INGRESS ROAD AND STATION 0+00.00 ON DEFILADE EGRESS ROAD.
11. HORIZONTAL CONTROL POINT (D) EQUALS STA. 0+00.00 ON DEFILADE ACCESS ROAD.
12. HORIZONTAL CONTROL POINT (E) EQUALS ENDING STATION ON DEFILADE EGRESS ROAD.
13. HORIZONTAL CONTROL POINT (F) EQUALS STA. 0+00.00 ON DEFILADE INGRESS ROAD.
14. THIS DETAIL APPLIES TO BP-01D AND BP-02D.

**GRAPHIC SCALES:**

10 0 10 20
SCALE: 1" = 10'

20 0 20 40
SCALE: 1" = 20'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

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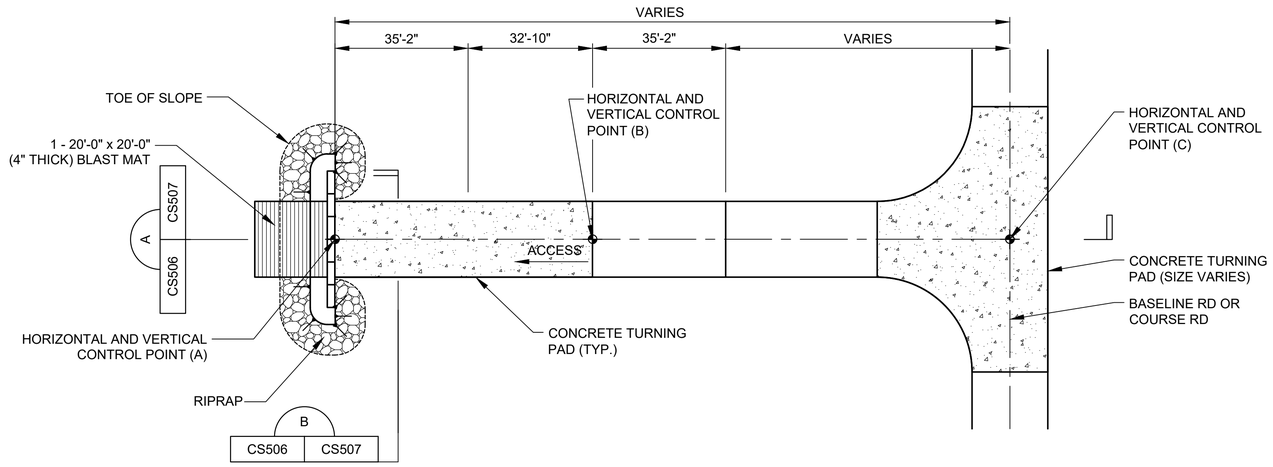
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

DEFILADE DETAILS

SHEET ID
CS505

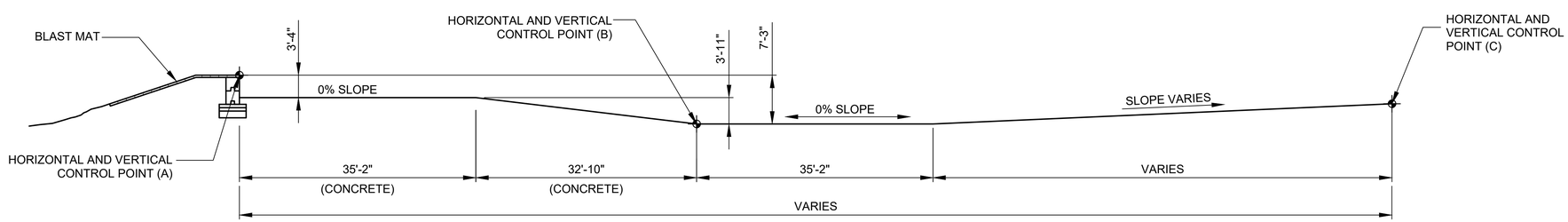
READY TO ADVERTISE (RTA)

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## PLAN

SCALE: 1" = 20'




## ACCESS PROFILE
## DEFILADE (TURRET DOWN)

SCALE: 1" = 10'

NOTES :

1. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
2. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).
3. SEE SHEET CP502 FOR TYPICAL DEFILADE ROADWAY SECTIONS.
4. SEE SHEET CS504 FOR PRECAST CONCRETE BLOCK DETAILS.
5. SEE SHEET CP504 FOR TURNING PAD PAVEMENT SECTION.
6. SEE SHEETS CP505 & CP506 FOR TURNING PAD JOINT LAYOUTS.
7. SEE SHEET CS614 FOR HORIZONTAL AND VERTICAL CONTROL POINT ATA.
8. INGRESS AND EGRESS LENGTHS VARY. SEE SITE PLAN AND CONTROL POINT DATA.
9. THIS DETAIL APPLIES TO BP-01A, BP-01B, BP-02A, AND BP-02B.

**GRAPHIC SCALES:**

10 0 10 20
SCALE: 1" = 10'

20 0 20 40
SCALE: 1" = 20'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

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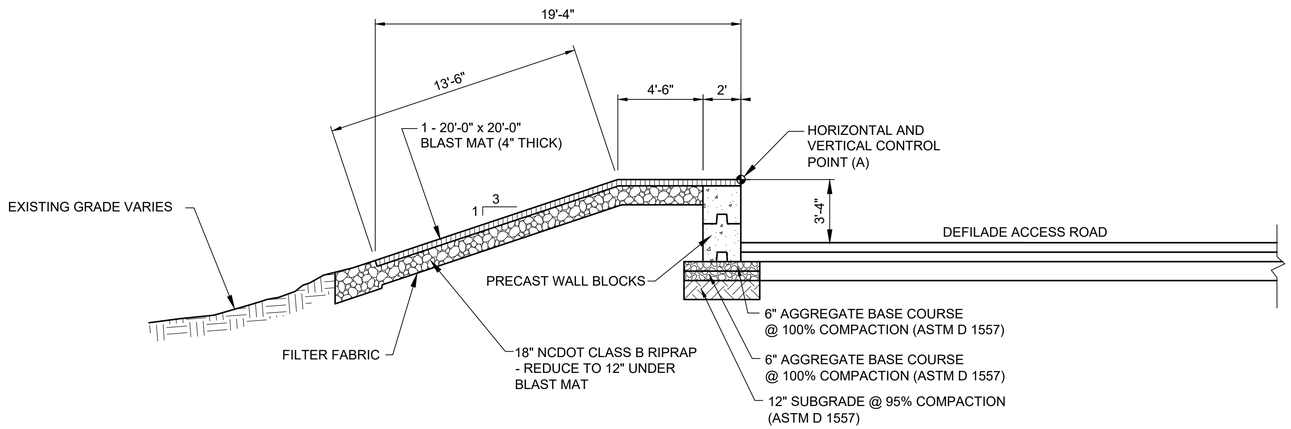
DEFILADE DETAILS

SHEET ID

CS506

READY TO ADVERTISE (RTA)

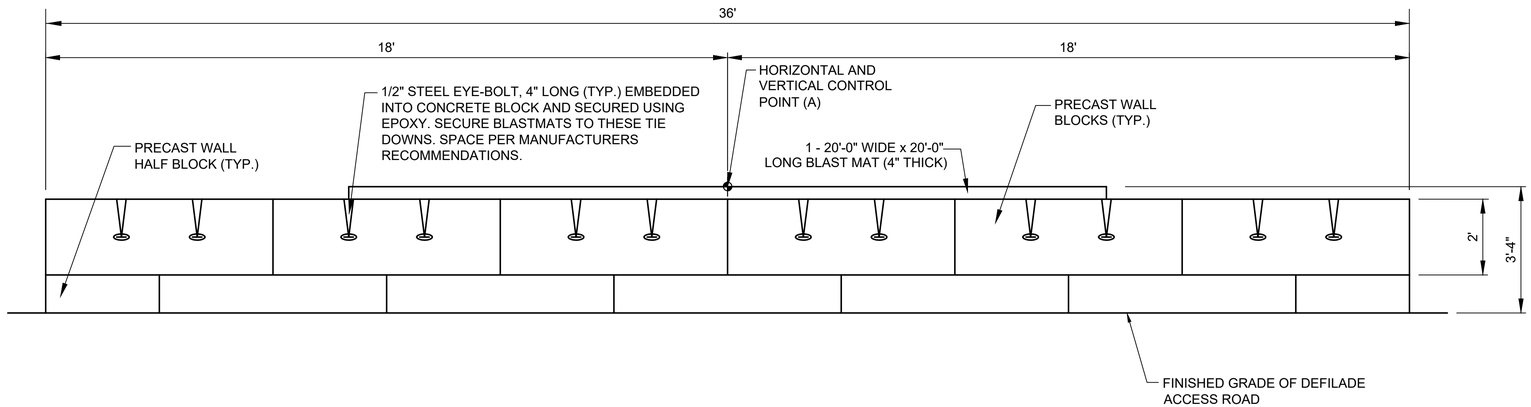
G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECCS506.DWG




A
CS505 | CS507
CS506

**SECTION**

SCALE: 1" = 4'




B
CS505 | CS507
CS506

**ELEVATION**

SCALE: 1" = 2'

NOTES :

1. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
2. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).
3. RIPRAP SHALL EXTEND TO WHERE IT TIES TO EXISTING GROUND AND SHALL BE PLACED TO A TIGHT FIT.
4. BLAST MATS SHALL BE FOUR STAR RUBBER BLASTING MATS, LEBANON JUNCTION, KENTUCKY, OR APPROVED EQUAL.
5. BLAST MATS SHALL BE INSTALLED WITH THE LONGEST SECTION OF THE TIRES ORIENTED IN THE DIRECTION OF FIRE.
6. BLAST MATS SHALL BE SECURED TO EACH OF THE PRECAST CONCRETE WALL BLOCK LIFTING EYES CLAMPED 5/8" STEEL-CORE CABLE.
7. SEE SHEET CP502 FOR TYPICAL DEFILADE ROAD SECTIONS.
8. SEE SHEET CS504 FOR PRECAST CONCRETE BLOCK DETAILS.
9. SEE SHEET CS614 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
10. PERMANENTLY LABEL EACH DEFILADE WALL. STENCIL DEFILADE NUMBERS PER THE CIVIL DESIGNATIONS ON EACH WALL. NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.

**GRAPHIC SCALES:**

2 1 0 2 4
SCALE: 1" = 2'

4 2 0 4 8
SCALE: 1" = 4'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

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SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 178-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

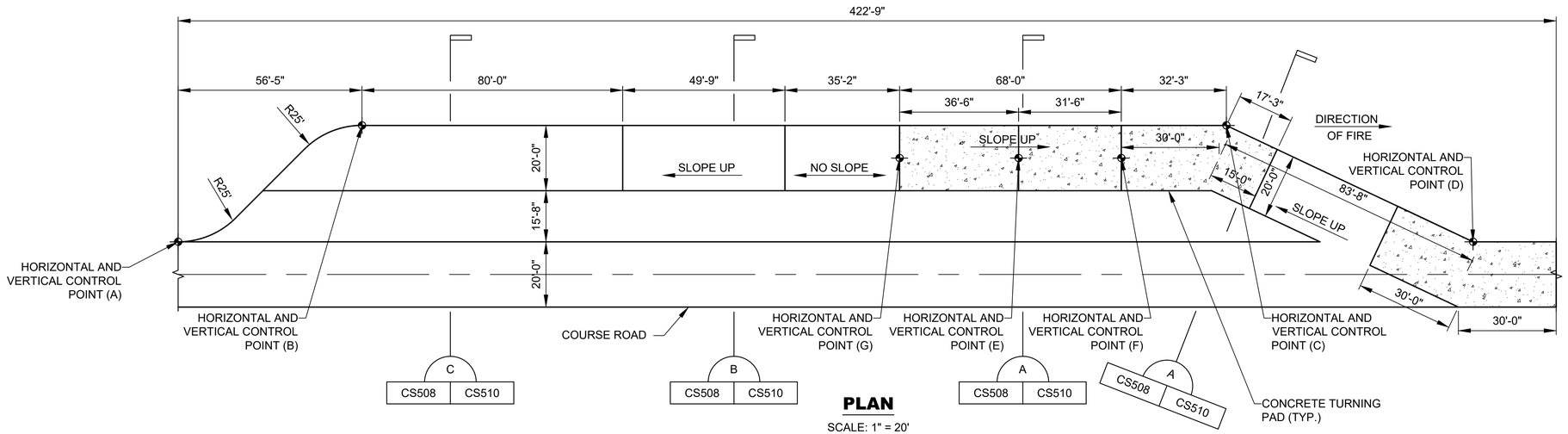
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

DEFILADE DETAILS

SHEET ID
CS507

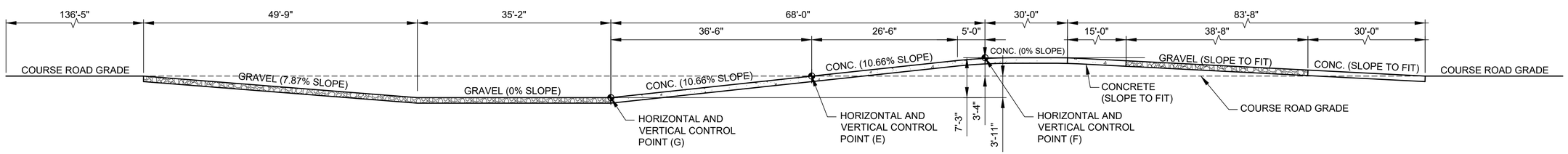
READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECS507.DWG




**PLAN**

SCALE: 1" = 20'




**PROFILE**

SCALE: 1" = 10'

# REVERSE SLOPE BATTLE POSITION

NOTES:

1. DITCHES AND EMBANKMENTS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE END OF CONSTRUCTION AND/OR UNTIL A FULL STAND OF GRASS/GROUND COVER IS PRESENT.
2. THE DEGREE OF COMPACTION REQUIRED FOR SUBGRADE AND PAVEMENT LAYERS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D 1557.
3. SEE SPECIFICATIONS FOR MATERIAL/GRADATION REQUIREMENTS FOR ROAD CONSTRUCTION.
4. THE MOISTURE CONTENT SHALL BE MAINTAINED WITHIN THE LIMITS OF 2% BELOW OPTIMUM TO 1% ABOVE OPTIMUM DURING THE COMPACTION OF THE SUBGRADE.
10. SEE SHEET CP502 FOR AGGREGATE PAVING TYPICAL SECTION.
11. SEE SHEET CP504 FOR CONCRETE PAVING TYPICAL SECTION.
12. SEE SHEETS CP505 & CP506 FOR CONCRETE PAVING JOINT LAYOUTS.
13. SEE SHEET CS614 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
14. THIS DETAIL APPLIES TO RSBP-02C.

**GRAPHIC SCALES:**

10 0 10 20
SCALE: 1" = 10'

20 0 20 40
SCALE: 1" = 20'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY FISH | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

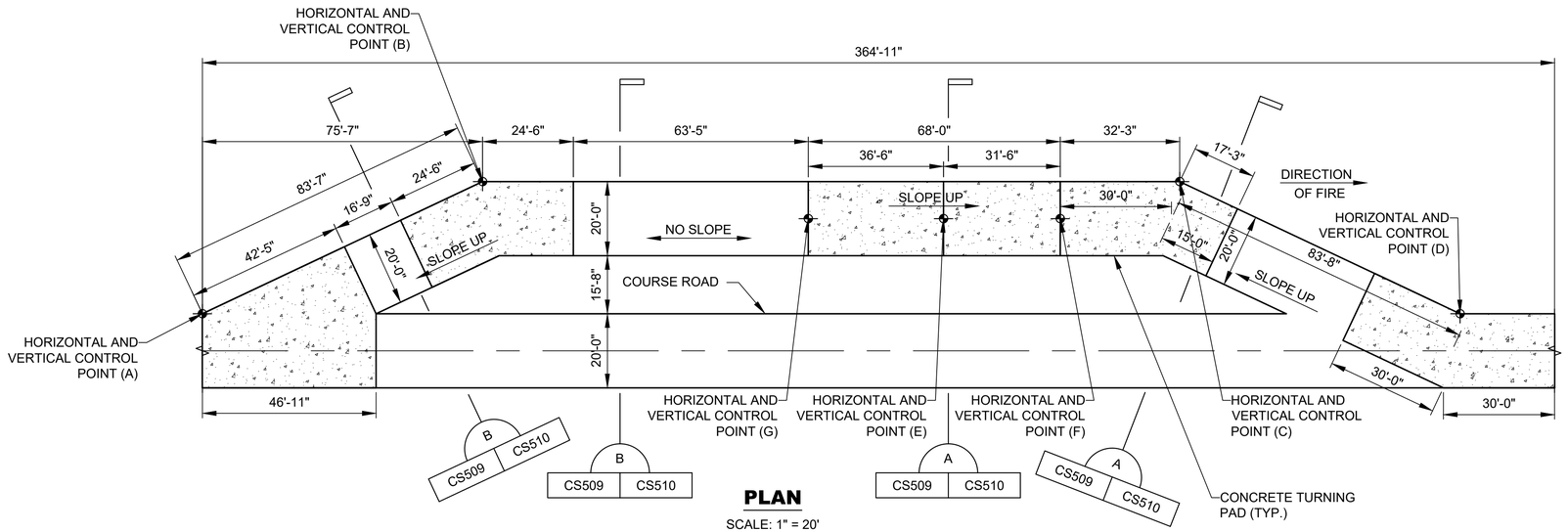
REVERSE SLOPE BATTLE POSITION DETAILS

SHEET ID

CS508

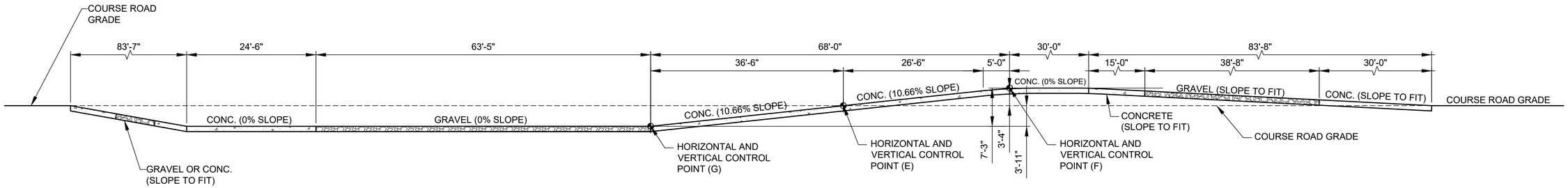
READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECCS508.DWG




**PLAN**

SCALE: 1" = 20'




**PROFILE**

SCALE: 1" = 10'

# REVERSE SLOPE BATTLE POSITION

NOTES:

1. DITCHES AND EMBANKMENTS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE END OF CONSTRUCTION AND/OR UNTIL A FULL STAND OF GRASS/GROUND COVER IS PRESENT.
2. THE DEGREE OF COMPACTION REQUIRED FOR SUBGRADE AND PAVEMENT LAYERS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D 1557.
3. SEE SPECIFICATIONS FOR MATERIAL/GRADATION REQUIREMENTS FOR ROAD CONSTRUCTION.
4. THE MOISTURE CONTENT SHALL BE MAINTAINED WITHIN THE LIMITS OF 2% BELOW OPTIMUM TO 1% ABOVE OPTIMUM DURING THE COMPACTION OF THE SUBGRADE.
10. SEE SHEET CP502 FOR AGGREGATE PAVING TYPICAL SECTION.
11. SEE SHEET CP504 FOR CONCRETE PAVING TYPICAL SECTION.
12. SEE SHEETS CP505 & CP506 FOR CONCRETE PAVING JOINT LAYOUTS.
13. SEE SHEET CS614 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
14. THIS DETAIL APPLIES TO RSBP-01C.

**GRAPHIC SCALES:**

10 0 10 20
SCALE: 1" = 10'

20 0 20 40
SCALE: 1" = 20'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-65-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN #6162
VOLUMES 3 & 4 - DOWNRANGE

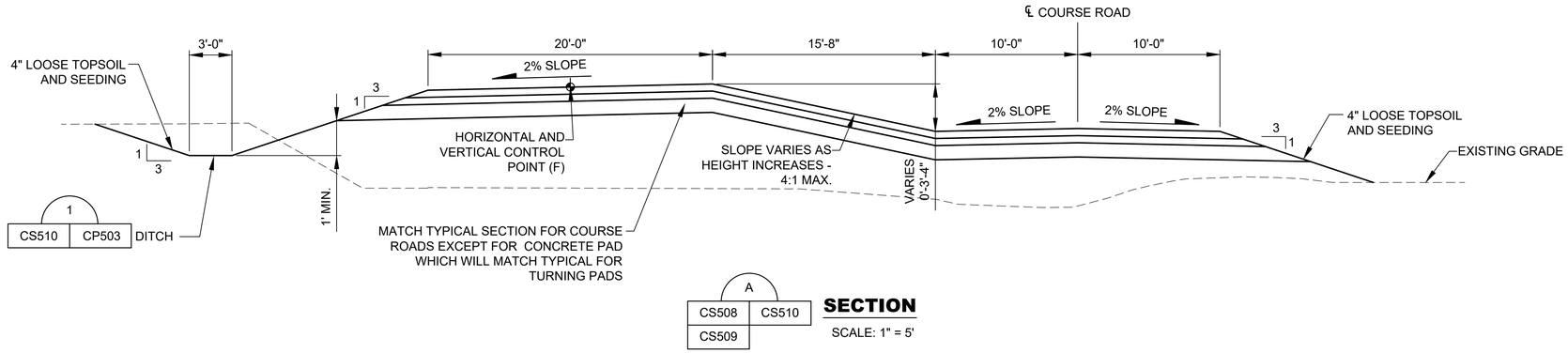
REVERSE SLOPE BATTLE POSITION DETAILS

SHEET ID

CS509

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECCS509.DWG

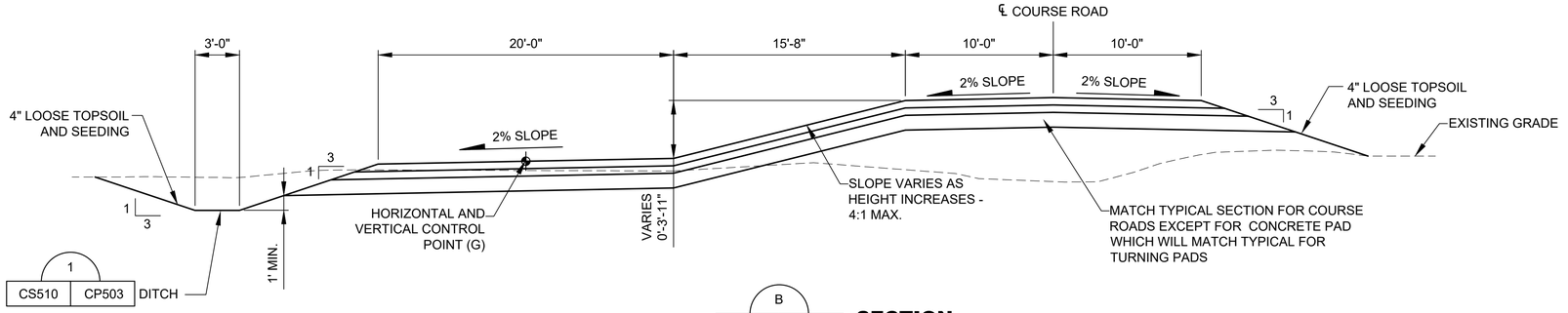
READY TO ADVERTISE (RTA)




A
CS508 | CS510
CS509

**SECTION**

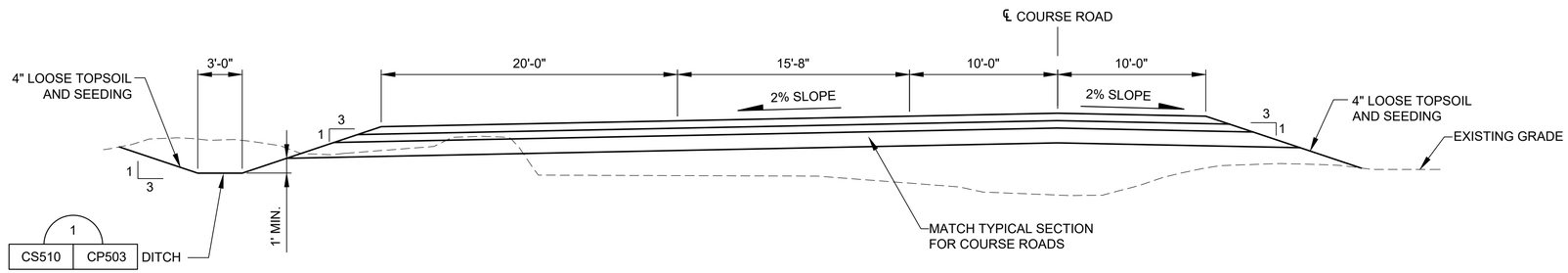
SCALE: 1" = 5'




B
CS508 | CS510
CS509

**SECTION**

SCALE: 1" = 5'




C
CS508 | CS510

**SECTION**

SCALE: 1" = 5'

NOTES:

1. DITCHES AND EMBANKMENTS SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE END OF CONSTRUCTION AND/OR UNTIL A FULL STAND OF GRASS/GROUND COVER IS PRESENT.
2. THE DEGREE OF COMPACTION REQUIRED FOR SUBGRADE AND PAVEMENT LAYERS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D 1557.
3. SEE SPECIFICATIONS FOR MATERIAL/GRADATION REQUIREMENTS FOR ROAD CONSTRUCTION.
4. THE MOISTURE CONTENT SHALL BE MAINTAINED WITHIN THE LIMITS OF 2% BELOW OPTIMUM TO 1% ABOVE OPTIMUM DURING THE COMPACTION OF THE SUBGRADE.
10. SEE SHEET CP502 FOR AGGREGATE PAVING TYPICAL SECTION.
11. SEE SHEET CP504 FOR CONCRETE PAVING TYPICAL SECTION.
12. SEE SHEETS CP505 & CP506 FOR CONCRETE PAVING JOINT LAYOUTS.
13. SEE SHEET CS614 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.

**GRAPHIC SCALES:**

5 0 5 10

SCALE: 1" = 5'

NORTH CAROLINA PROFESSIONAL 6/6/25 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B. JOHNSON |
| CHECKED BY: | J. BRANNON |
| SUBMITTED BY: | BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 173-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

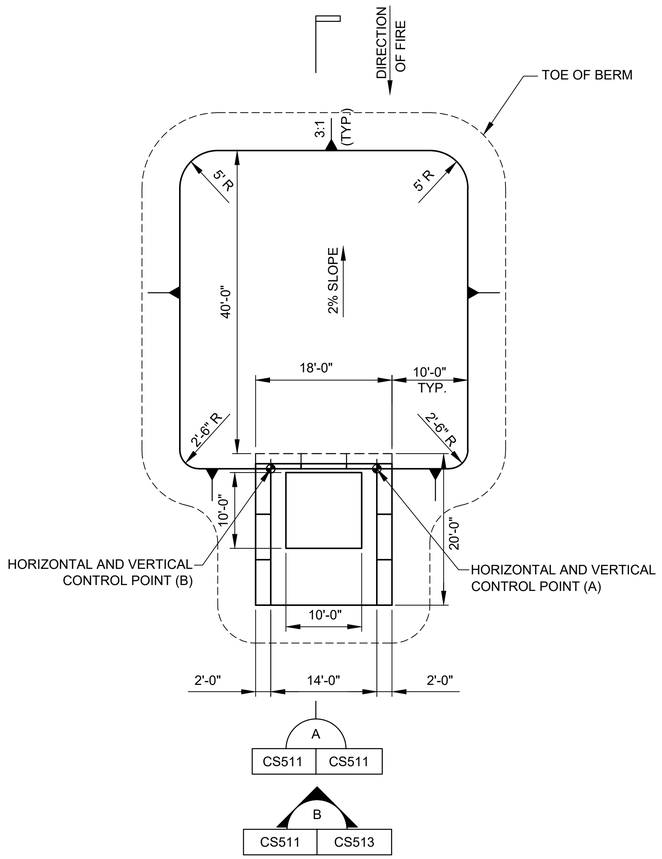
# REVERSE SLOPE BATTLE POSITION DETAILS

SHEET ID

CS510

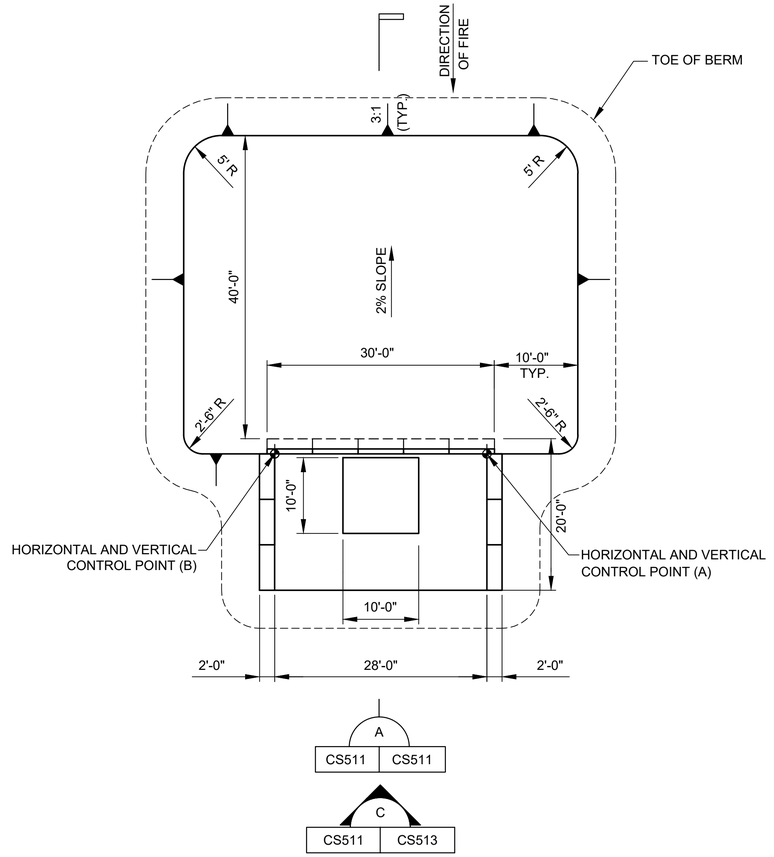
READY TO ADVERTISE (RTA)

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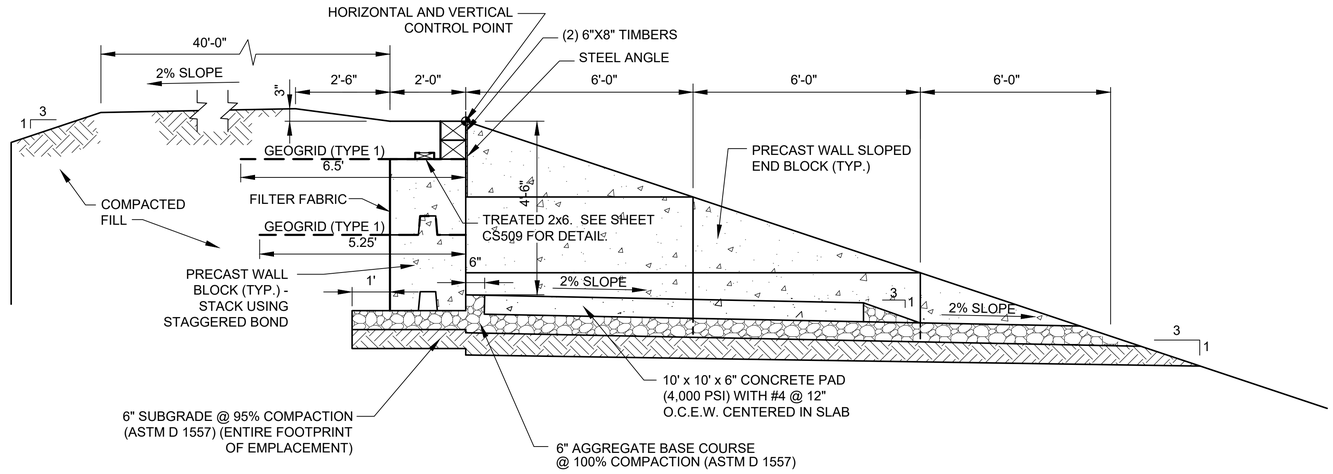

## FRONTAL

SCALE: 1" = 10'




## FLANK

SCALE: 1" = 10'




## SECTION

SCALE: 1" = 2'

NOTES :

1. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
2. FILTER FABRIC SHALL BE INSTALLED BEHIND ALL PRECAST CONCRETE WALL BLOCKS. FABRIC SHALL EXTEND THE FULL HEIGHT OF THE WALL.
3. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
4. HORIZONTAL AND VERTICAL CONTROL POINT (A) IS LOCATED ON THE LEFT SIDE OF THE TARGET AS VIEWED FROM THE FIRING POSITION.
5. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).
6. SEE SHEET CS504 FOR PRECAST CONCRETE BLOCK DETAILS.
7. SEE SHEET CS612 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
8. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON BOTH SIDE WALLS. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
9. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.

GRAPHIC SCALE:

2 0 2 4

SCALE: 1" = 2'

10 0 10 20

SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: BRADLEY FOX
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

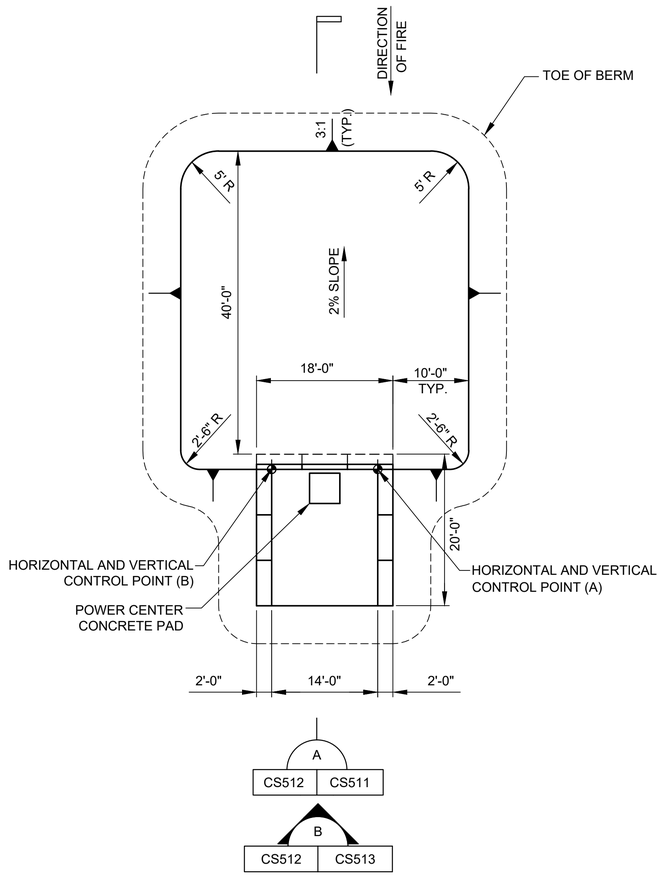
STATIONARY ARMOR TARGET DETAILS

SHEET ID

CS511

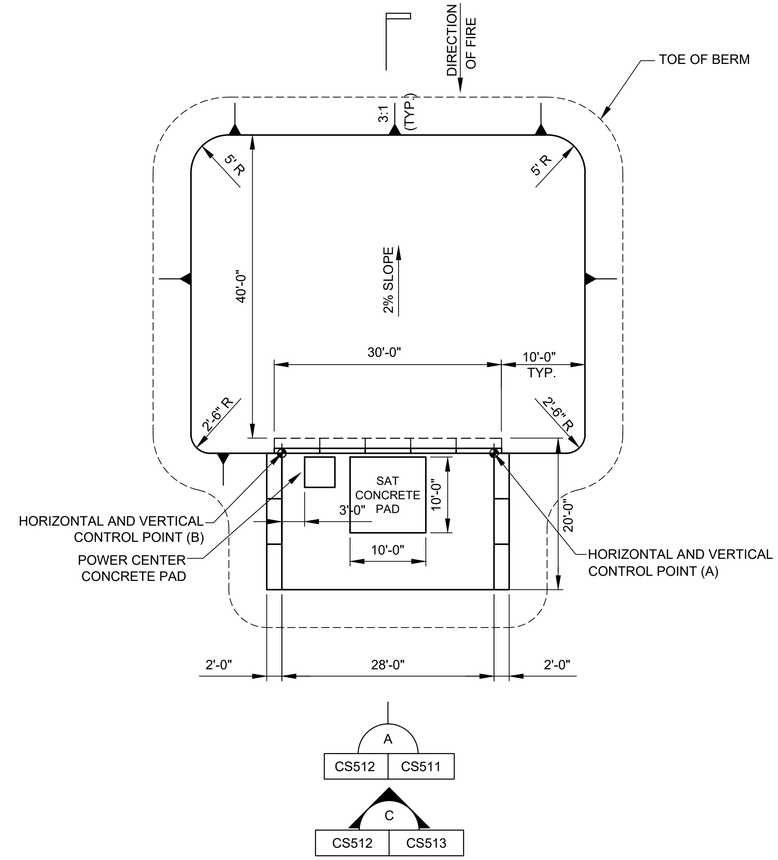
READY TO ADVERTISE (RTA)

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## POWER CENTER

SCALE: 1" = 10'




## STATIONARY ARMOR TARGET WITH POWER CENTER

SCALE: 1" = 10'

NOTES :

1. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
2. FILTER FABRIC SHALL BE INSTALLED BEHIND ALL PRECAST CONCRETE WALL BLOCKS. FABRIC SHALL EXTEND THE FULL HEIGHT OF THE WALL.
3. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
4. HORIZONTAL AND VERTICAL CONTROL POINT (A) IS LOCATED ON THE LEFT SIDE OF THE TARGET AS VIEWED FROM THE FIRING POSITION.
5. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).
6. CONTRACTOR TO SIZE POWER CENTER CONCRETE PAD BASED ON TRANSFORMER TO BE PROVIDED. CONTRACTOR TO COORDINATE WITH PRIVATIZED ELECTRICAL COMPANY (IF APPLICABLE) TO ENSURE ALL OF THEIR REQUIREMENTS ARE MET. THE TRANSFORMER SHALL BE PLACED NO FARTHER AWAY FROM THE SAT WALL THAN 6 INCHES.
7. SEE SHEET CS504 FOR PRECAST CONCRETE BLOCK DETAILS.
8. SEE SHEET CS612 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
9. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON BOTH SIDE WALLS. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
10. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.

GRAPHIC SCALE:

10 0 10 20

SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY FT | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

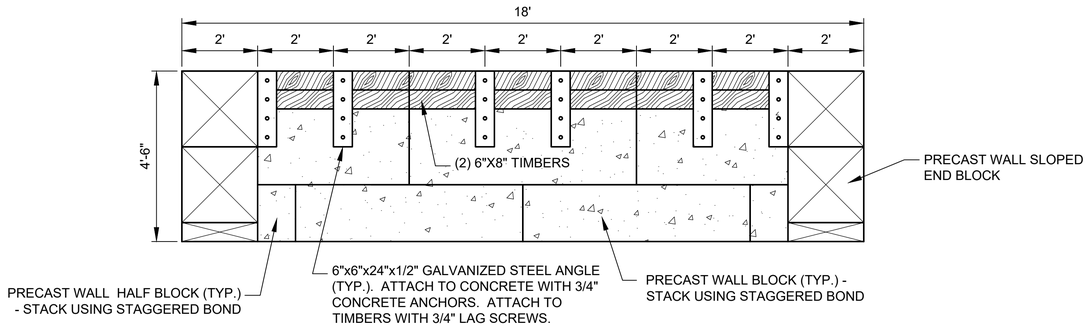
POWER CENTER & STATIONARY ARMOR TARGET w/ POWER CENTER DETAILS

SHEET ID

CS512

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READY TO ADVERTISE (RTA)



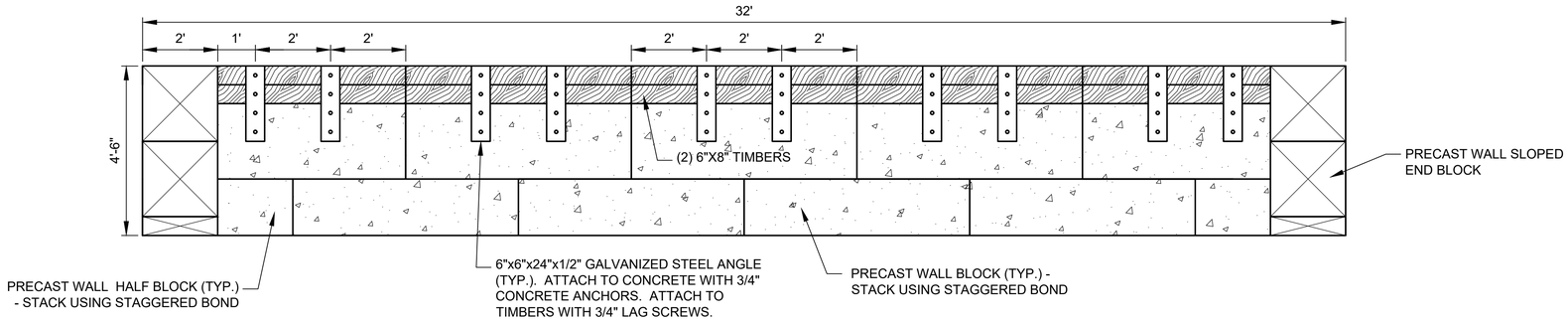

B

CS511 | CS513

CS512

## FRONT WALL ELEVATION

SCALE: 1" = 2'




C

CS511 | CS513

CS512

## FRONT WALL ELEVATION

SCALE: 1" = 2'

GRAPHIC SCALE:

2 0 2 4

SCALE: 1" = 2'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

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| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
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| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-65-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
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100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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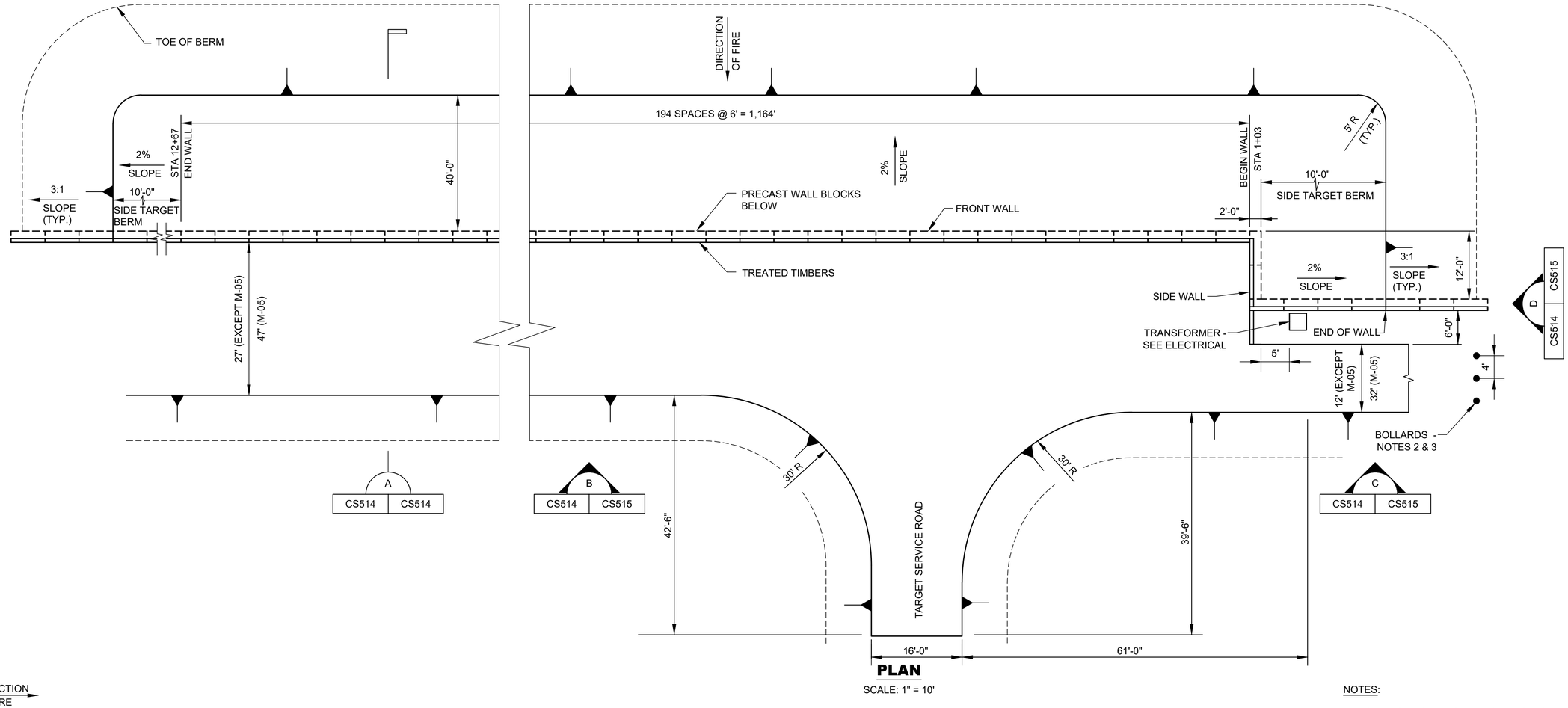
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

STATIONARY ARMOR TARGET DETAILS

SHEET ID

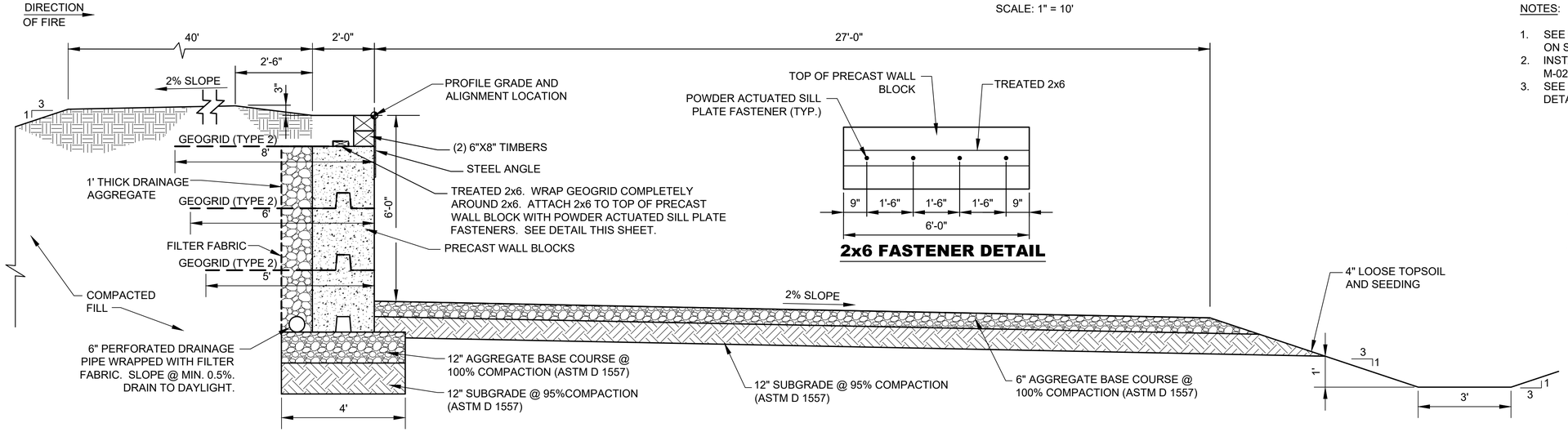
CS513

READY TO ADVERTISE (RTA)




## PLAN

SCALE: 1" = 10'




## 2x6 FASTENER DETAIL

## SECTION

A CS514 CS514

SCALE: 1" = 2'

NOTES:

1. SEE MOVING ARMOR TARGET NOTES ON SHEET CS515.
2. INSTALL BOLLARDS ON POWER END OF M-02 AND M-06 ONLY.
3. SEE SHEET CP503 FOR BOLLARD DETAIL.

GRAPHIC SCALE:

2 0 2 4

SCALE: 1" = 2'

10 0 10 20

SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

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DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: BRADLEY
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ISSUE DATE: JUNE 2023
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SAVANNAH, GA 31401

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

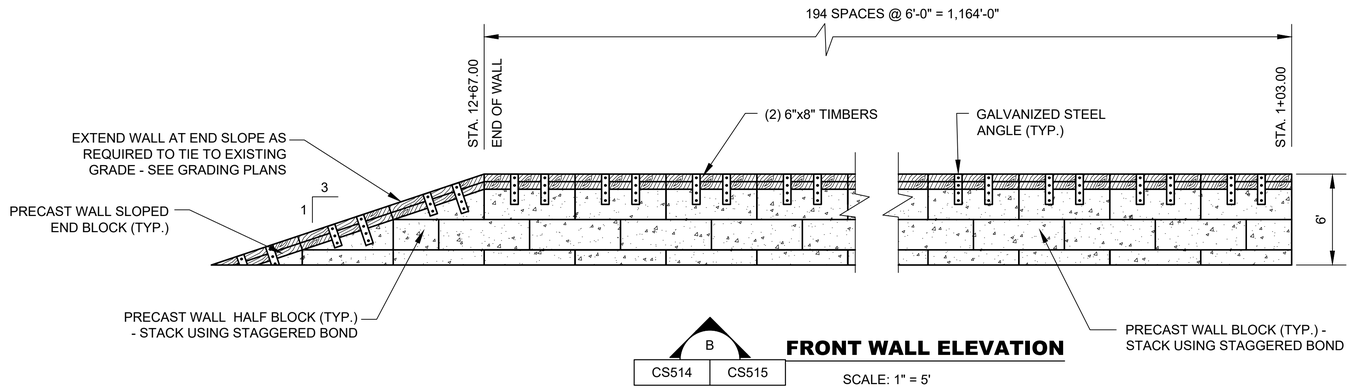
MOVING ARMOR TARGET DETAILS

SHEET ID

CS514

READY TO ADVERTISE (RTA)

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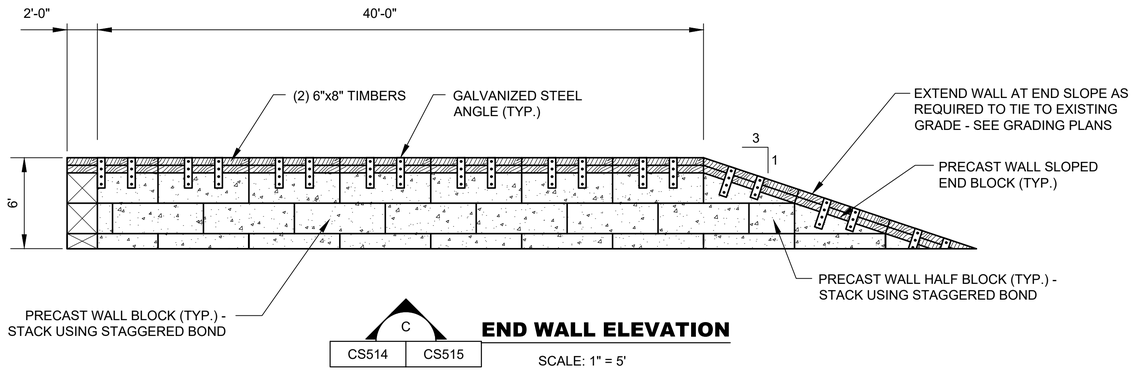



B

CS514 | CS515

**FRONT WALL ELEVATION**

SCALE: 1" = 5'

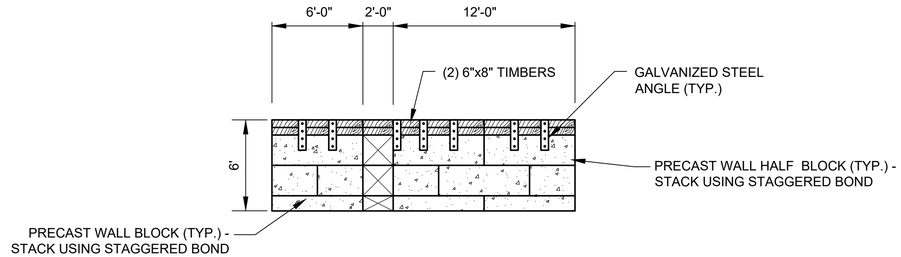



C

CS514 | CS515

**END WALL ELEVATION**

SCALE: 1" = 5'




D

CS514 | CS515

**SIDE WALL ELEVATION**

SCALE: 1" = 5'

NOTES :

1. FILTER FABRIC SHALL BE INSTALLED BEHIND ALL PRECAST CONCRETE WALL BLOCKS. FABRIC SHALL EXTEND THE FULL HEIGHT OF THE WALL.
2. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
3. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 90% (ASTM D 1557).
4. COMPOSITE DRAIN BOARD MAY BE SUBSTITUTED FOR THE DRAINAGE AGGREGATE AND FILTER FABRIC IN ACCORDANCE WITH THE SPECIFICATIONS.
5. SEE SHEET CS513 FOR GALVANIZED STEEL ANGLE DETAILS. ANGLES ON SLOPED END BLOCKS SHALL BE 1.5 FEET LONG.
6. STA 1+03.00 IS ALWAYS LOCATED ON THE TRANSFORMER END OF THE TARGET.
7. SEE PLATE CS504 FOR PRECAST CONCRETE BLOCK DETAILS.
8. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON THE SIDE WALL THAT IS VISIBLE AS IT IS APPROACHED FROM THE SERVICE ROAD. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
9. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.
10. THE TRANSFORMER SHALL BE PLACED NO FARTHER AWAY FROM THE FRONT OF THE MAT WALL THAN 6 INCHES.

GRAPHIC SCALE:

5 0 5 10

SCALE: 1" = 5'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

MARK | DESCRIPTION | DATE

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

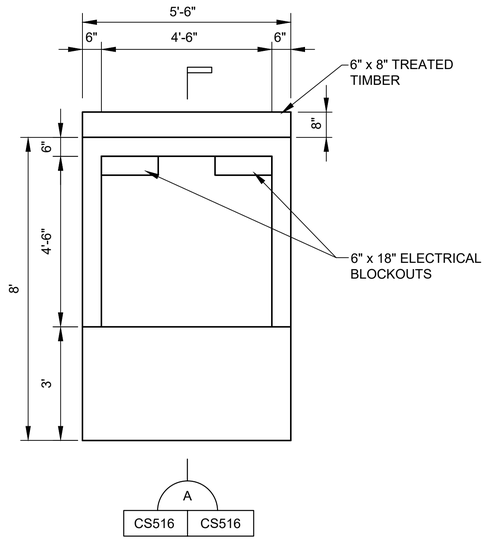
MOVING ARMOR TARGET DETAILS

SHEET ID

CS515

READY TO ADVERTISE (RTA)

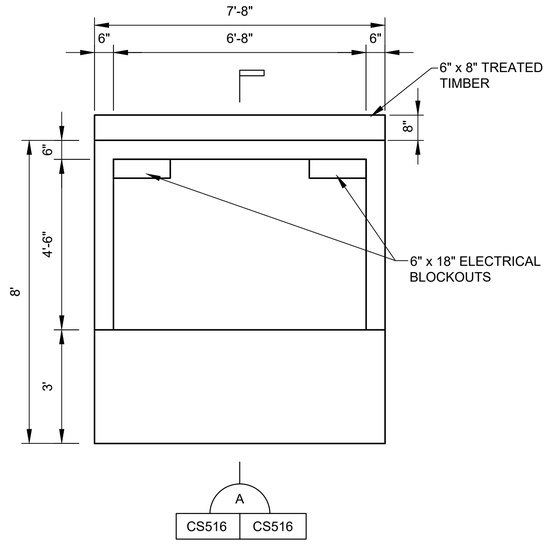
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**PLAN**

## STATIONARY INFANTRY TARGET

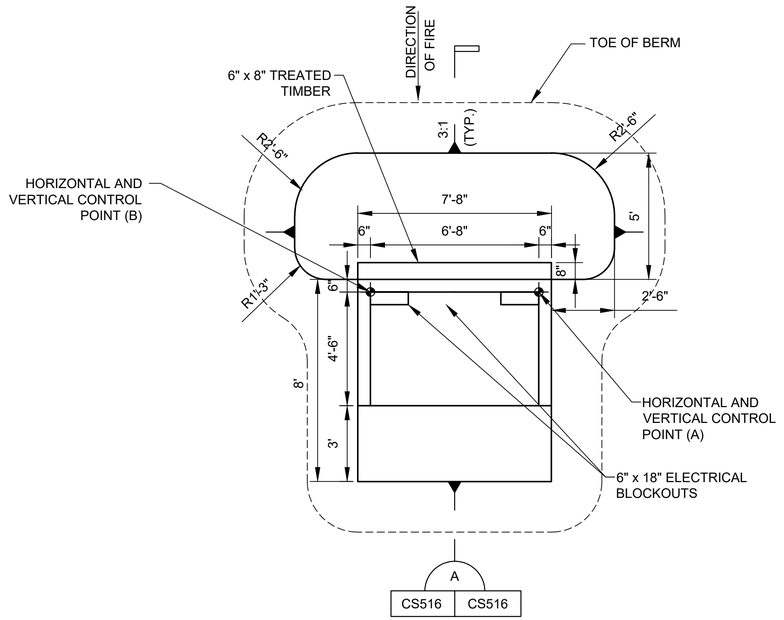
SCALE: 1" = 2'




**PLAN**

## WIDENED STATIONARY INFANTRY TARGET

SCALE: 1" = 2'



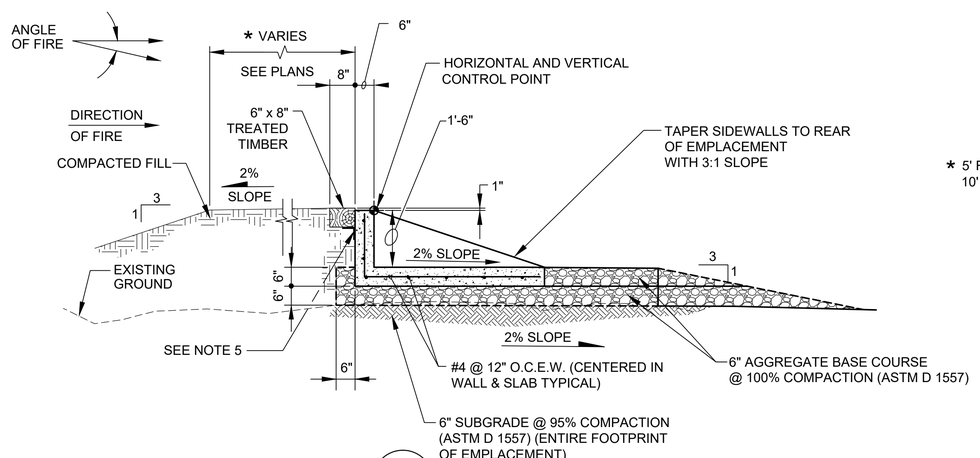

**PLAN**

## WIDENED STATIONARY INFANTRY TARGET AT FACADES

SCALE: 1" = 3'

NOTES :

1. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
2. EMPLACEMENTS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE; CONCRETE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE. PRECAST STRUCTURES SHALL HAVE LIFTING EYES CUT FLUSH AND REMAINING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT.
3. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
4. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
5. PLACE TREATED TIMBERS AGAINST CONCRETE WALL ON 4" x 4" x 1/2" x 4" GALVANIZED STEEL ANGLES SPACED A MAXIMUM OF 3' O.C. ATTACH ANGLE TO CONCRETE WITH CONCRETE ANCHORS.
6. HORIZONTAL AND VERTICAL CONTROL POINT (A) IS LOCATED ON THE LEFT SIDE OF THE TARGET AS VIEWED FROM THE FIRING POSITION.
7. PROVIDE 1/2" CHAMFER ON ALL EXPOSED CONCRETE SURFACES.
8. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).
9. SEE SHEETS CS613 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
10. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON BOTH SIDE WALLS. SERVICE ROAD. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
11. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.




* 5' FOR WIDENED SITs AT FACADES
10' FOR 6-MAN AND 7-MAN CLUSTERS

**SECTION**

SCALE: 1" = 2'

GRAPHIC SCALE:

2 0 2 4

SCALE: 1" = 2'

3 0 3 6

SCALE: 1" = 3'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY FF | CATEGORY CODE: 173-65-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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FORT LIBERTY, NORTH CAROLINA
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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

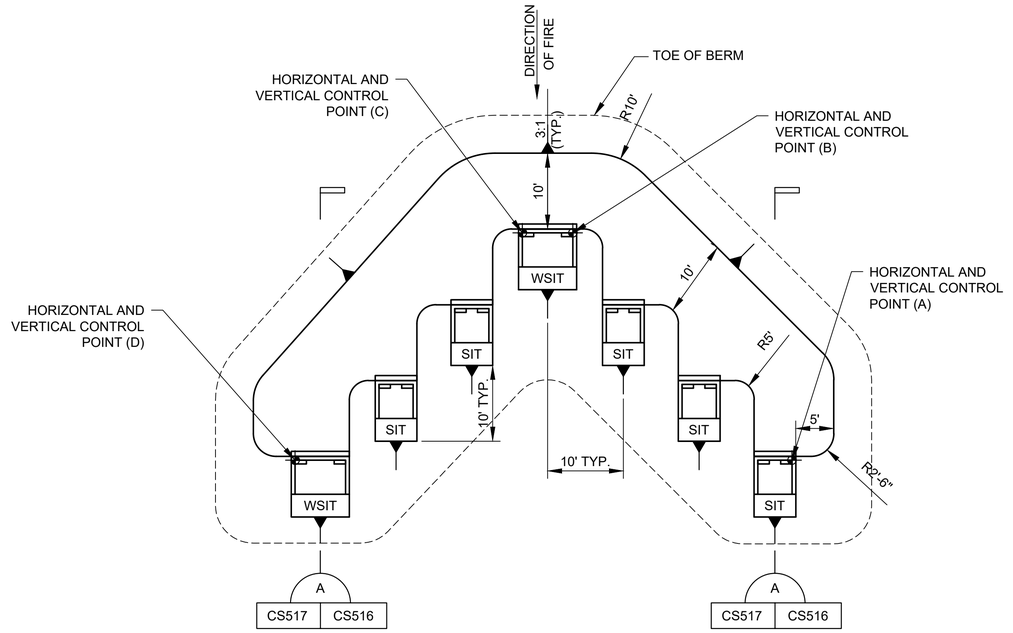
STATIONARY INFANTRY TARGET DETAILS

SHEET ID

CS516

READY TO ADVERTISE (RTA)

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# STATIONARY INFANTRY TARGET CLUSTER (7-MAN V)

SCALE: 1" = 10'

NOTES:

1. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
2. EMPLACEMENTS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE; CONCRETE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE. PRECAST STRUCTURES SHALL HAVE LIFTING EYES CUT FLUSH AND REMAINING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT. PRECAST SECTIONS SHALL BE KEYED OR DOWELED INTO EACH OTHER TO PREVENT DIFFERENTIAL SETTLEMENT. PRECAST SECTIONS SHALL NOT EXCEED 6' LONG. CONTRACTOR SHALL INSTALL 1" EXPANSION JOINTS BETWEEN ALL PRECAST SECTIONS. SUBMIT PLAN FOR KEYING AND/OR DOWELING TO ENGINEER FOR APPROVAL.
3. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
4. HORIZONTAL AND VERTICAL CONTROL POINT (A) IS LOCATED ON THE LEFT SIDE OF THE TARGET AS VIEWED FROM THE FIRING POSITION. WHEN THE TARGET IS MIRRORED, THE CONTROL POINTS ARE MIRRORED AS WELL.
5. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED AT 95% (ASTM D 1557).
6. THE 7-MAN CLUSTER IS NOT CONNECTED TO A MOVING INFANTRY TARGET.
7. SEE SHEET CS516 FOR STATIONARY INFANTRY TARGET NOTES AND DETAILS.
8. SEE SHEET CS613 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
9. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON BOTH SIDE WALLS. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
10. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.
11. SIT = STATIONARY INFANTRY TARGET.
12. WSIT = WIDENED STATIONARY INFANTRY TARGET.

GRAPHIC SCALE:

10 0 10 20

SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

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|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-65-01 |
| SIZE: ANSI D | FILE NAME: |

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
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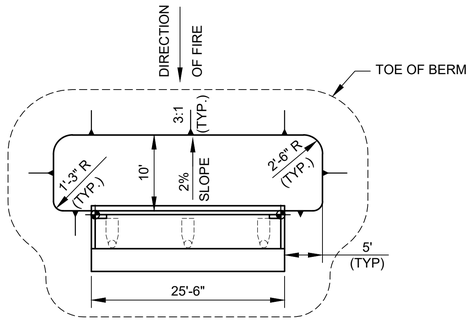
STATIONARY INFANTRY TARGET CLUSTER DETAILS

SHEET ID

CS517

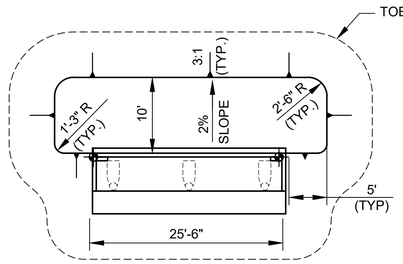
G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECCS517.DWG

READY TO ADVERTISE (RTA)



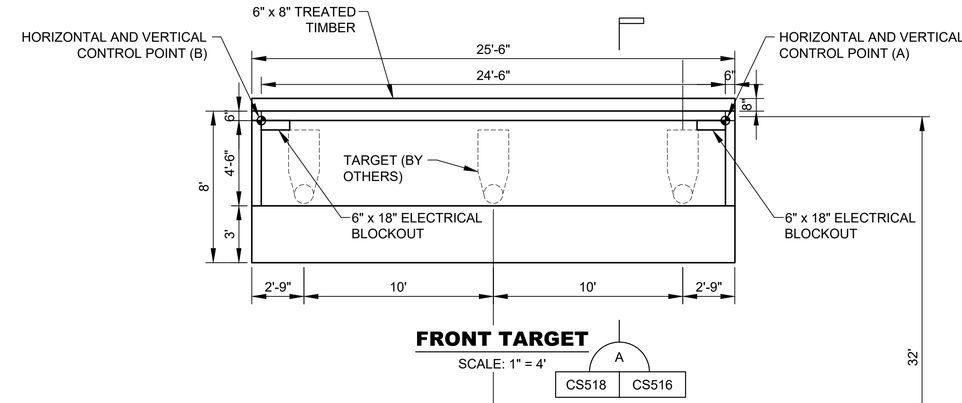

**FRONT TARGET**

SCALE: 1" = 10'




**BACK TARGET**

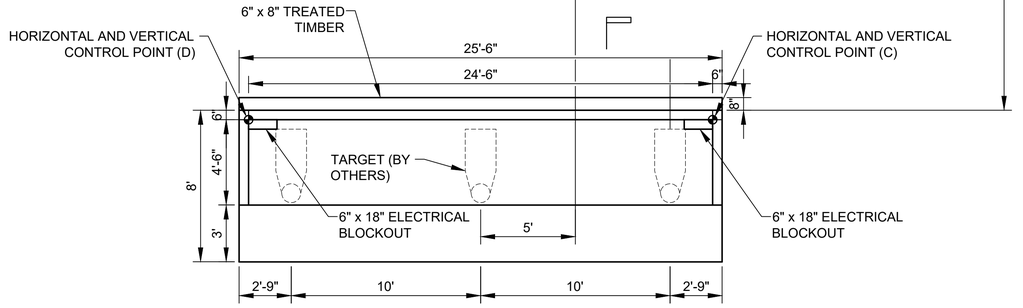
SCALE: 1" = 10'




**FRONT TARGET**

SCALE: 1" = 4'

A | CS518 | CS516




**BACK TARGET**

SCALE: 1" = 4'

A | CS518 | CS516

# STATIONARY INFANTRY TARGET CLUSTER
# (6-MAN LINEAR)

NOTES:

1. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
2. EMPLACEMENTS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE; CONCRETE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE. PRECAST STRUCTURES SHALL HAVE LIFTING EYES CUT FLUSH AND REMAINING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT. PRECAST SECTIONS SHALL BE KEYED OR DOWELED INTO EACH OTHER TO PREVENT DIFFERENTIAL SETTLEMENT. PRECAST SECTIONS SHALL NOT EXCEED 6' LONG. CONTRACTOR SHALL INSTALL 1" EXPANSION JOINTS BETWEEN ALL PRECAST SECTIONS. SUBMIT PLAN FOR KEYING AND/OR DOWELING TO ENGINEER FOR APPROVAL.
3. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
4. HORIZONTAL AND VERTICAL CONTROL POINT (A) IS LOCATED ON THE LEFT SIDE OF THE TARGET AS VIEWED FROM THE FIRING POSITION. WHEN THE TARGET IS MIRRORED, THE CONTROL POINTS ARE MIRRORED AS WELL.
5. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED AT 95% (ASTM D 1557).
6. THE 6-MAN PLAN IS FOR LAYOUT PURPOSES ONLY. ALL 6-MAN EMPLACEMENTS ARE CONNECTED TO A MOVING INFANTRY TARGET.
7. SEE SHEET CS516 FOR STATIONARY INFANTRY TARGET NOTES AND DETAILS.
8. SEE SHEET CS520 FOR STATIONARY AND MOVING INFANTRY TARGET CLUSTER DETAILS.
9. SEE SHEET CS613 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
10. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON BOTH SIDE WALLS. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
11. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.

**GRAPHIC SCALE:**

4 0 4 8

SCALE: 1" = 4'

10 0 10 20

SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B. JOHNSON |
| CHECKED BY: | J. BRANNON |
| SUBMITTED BY: | BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 173-65-01 |
| FILE NAME: | G:\CLEANSTUFF-15-2815376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECCS518.DWG |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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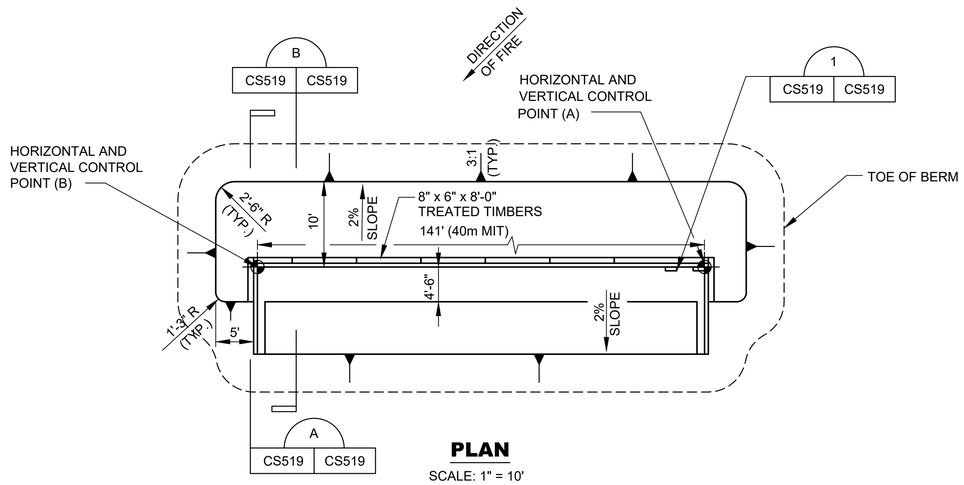
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

STATIONARY INFANTRY TARGET CLUSTER DETAILS

SHEET ID

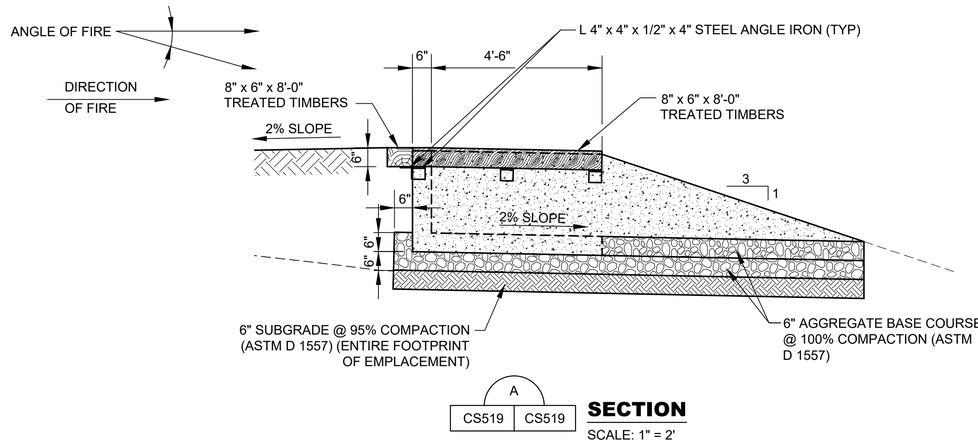
CS518

READY TO ADVERTISE (RTA)



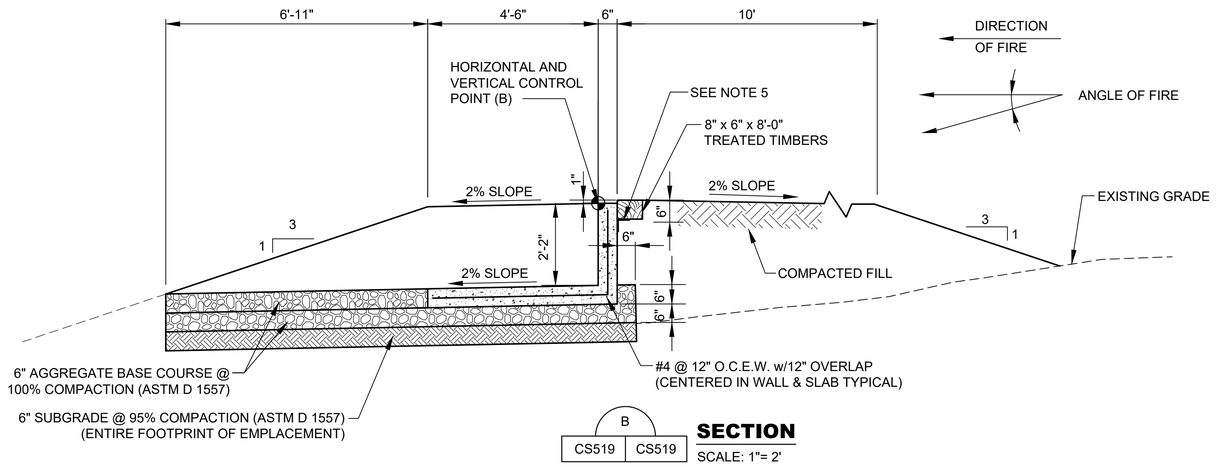

## PLAN

SCALE: 1" = 10'



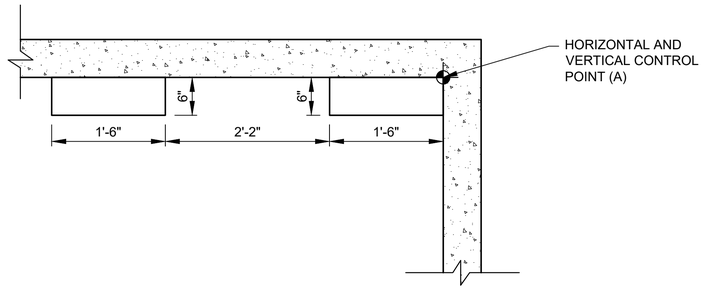

## SECTION

SCALE: 1" = 2'




## SECTION

SCALE: 1"= 2'




## ELECTRICAL BLOCKOUT DETAIL

SCALE: 1" = 1'

1
CS519 CS519

NOTES:

1. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
2. EMPLACEMENTS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE; CONCRETE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE. PRECAST STRUCTURES SHALL HAVE LIFTING EYES CUT FLUSH AND REMAINING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT. PRECAST SECTIONS SHALL BE KEYED OR DOWELED INTO EACH OTHER TO PREVENT DIFFERENTIAL SETTLEMENT. PRECAST SECTIONS SHALL NOT EXCEED 6' LONG. CONTRACTOR SHALL INSTALL 1" EXPANSION JOINTS BETWEEN ALL PRECAST SECTIONS. SUBMIT PLAN FOR KEYING AND/OR DOWELING TO ENGINEER FOR APPROVAL.
3. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
4. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
5. PLACE TREATED TIMBERS AGAINST CONCRETE WALL ON 4" x 4" x 1/2" x 4" GALVANIZED STEEL ANGLES SPACED A MAXIMUM OF 3' O.C. ATTACH ANGLE TO CONCRETE WALL WITH CONCRETE ANCHORS.
6. HORIZONTAL CONTROL POINT (A) IS LOCATED ON POWER SIDE OF TARGET.
7. PROVIDE 1/2" CHAMFER ON ALL EXPOSED CONCRETE SURFACES.
8. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).
9. SEE SHEET CS613 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
10. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON BOTH SIDE WALLS. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
11. OMITTED
12. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.
13. SEE SHEET CS520 FOR STATIONARY AND MOVING INFANTRY TARGET CLUSTER DETAILS.
14. ALL MOVING INFANTRY TARGETS ARE CONNECTED TO 6-MAN LINEAR STATIONARY INFANTRY TARGET CLUSTERS.

GRAPHIC SCALE:

1 0 1 2
SCALE: 1" = 1'

2 0 2 4
SCALE: 1" = 2'

10 0 10 20
SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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| | | |

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DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
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SUBMITTED BY: BRADLEY
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SOLICITATION NO.: W912HN-23-B-3001
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FORT LIBERTY, NORTH CAROLINA
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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

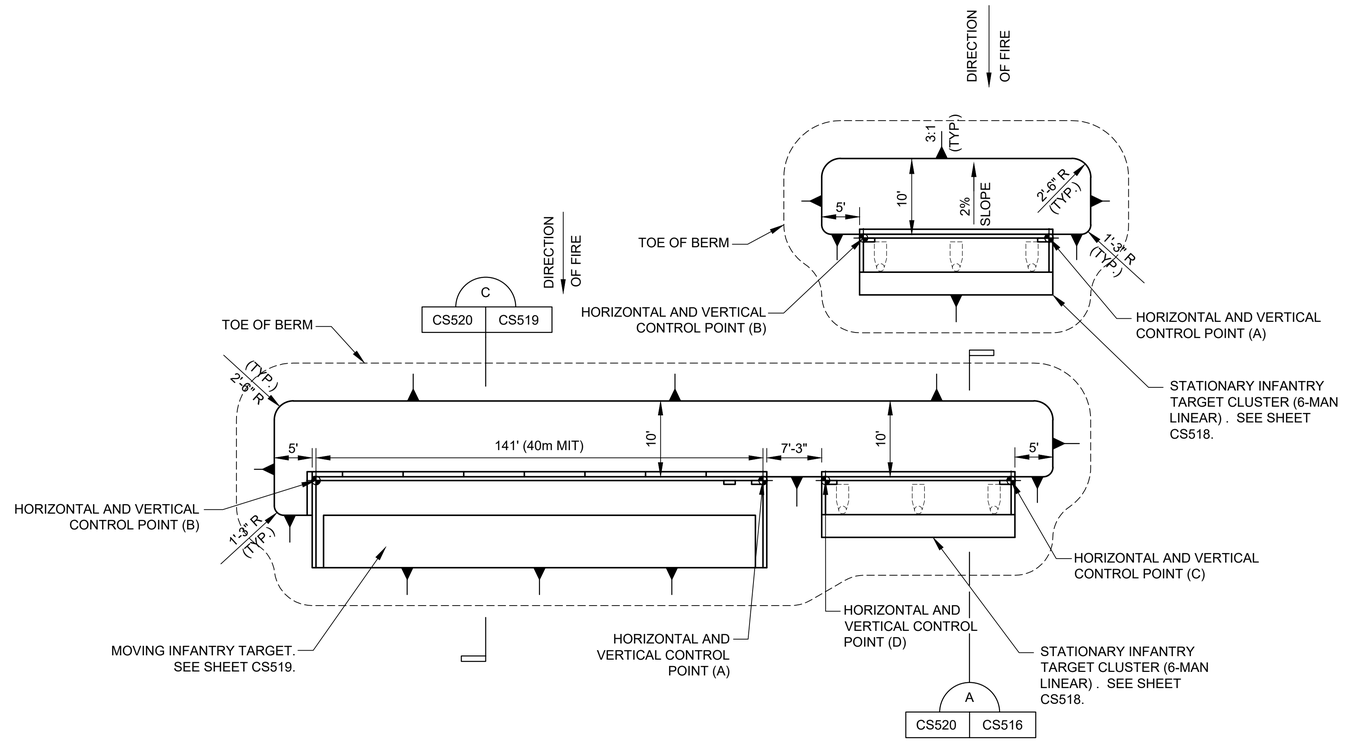
MOVING INFANTRY TARGET DETAILS

SHEET ID
CS519

READY TO ADVERTISE (RTA)

NOTES:

1. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
2. EMPLACEMENTS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE; CONCRETE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE. PRECAST STRUCTURES SHALL HAVE LIFTING EYES CUT FLUSH AND REMAINING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT. PRECAST SECTIONS SHALL BE KEYED OR DOWELED INTO EACH OTHER TO PREVENT DIFFERENTIAL SETTLEMENT. PRECAST SECTIONS SHALL NOT EXCEED 6' LONG. CONTRACTOR SHALL INSTALL 1" EXPANSION JOINTS BETWEEN ALL PRECAST SECTIONS. SUBMIT PLAN FOR KEYING AND/OR DOWELING TO ENGINEER FOR APPROVAL.
3. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
4. HORIZONTAL AND VERTICAL CONTROL POINT (A) IS LOCATED ON THE LEFT SIDE OF THE TARGET AS VIEWED FROM THE FIRING POSITION. WHEN THE TARGET IS MIRRORED, THE CONTROL POINTS ARE MIRRORED AS WELL.
5. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED AT 95% (ASTM D 1557).
6. SEE SHEET CS516 FOR STATIONARY INFANTRY TARGET NOTES AND DETAILS.
7. SEE SHEET CS518 FOR STATIONARY INFANTRY TARGET CLUSTER DETAILS.
8. SEE SHEET CS519 FOR MOVING INFANTRY TARGET DETAILS.
9. SEE SHEET CS613 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
10. OFFSET DIMENSIONS FOR STATIONARY INFANTRY TARGETS ARE AS SHOWN ON SHEET CS518.
11. PERMANENTLY LABEL EACH EMPLACEMENT. STENCIL TARGET NUMBERS PER THE CIVIL DESIGNATIONS ON BOTH SIDE WALLS. TARGET NUMBERS TO BE 4 INCH LETTERS PAINTED BLACK.
12. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.




# STATIONARY AND MOVING INFANTRY TARGET CLUSTER (6-MAN LINEAR SIT & 40m MIT)

SCALE: 1" = 10'

GRAPHIC SCALE:

10 0 10 20

SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

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| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 174-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

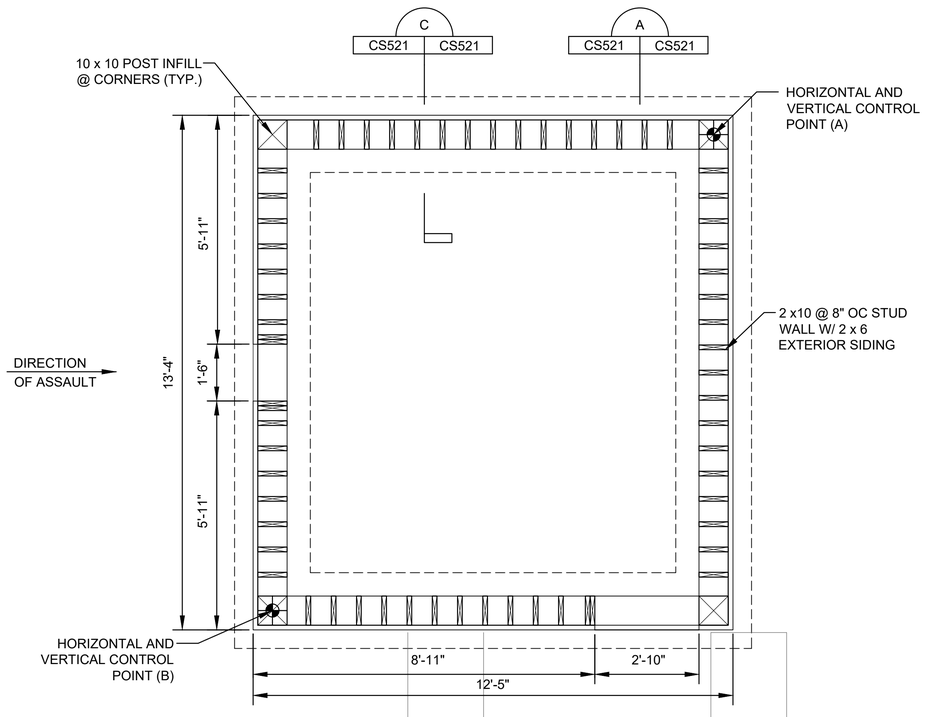
STATIONARY & MOVING INFANTRY TARGET CLUSTER DETAILS

SHEET ID

CS520

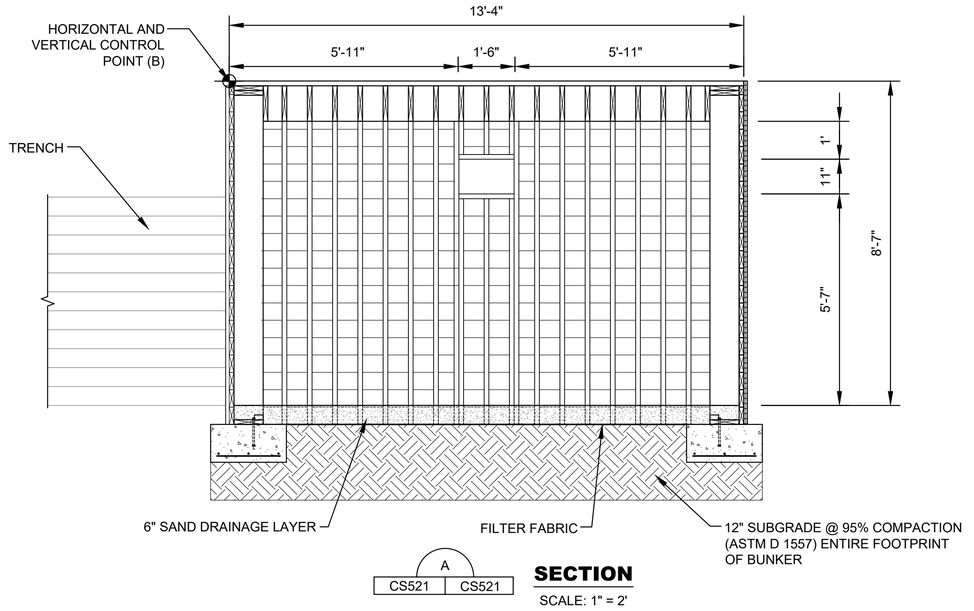
READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECCS520.DWG




## PLAN

SCALE: 1" = 2'



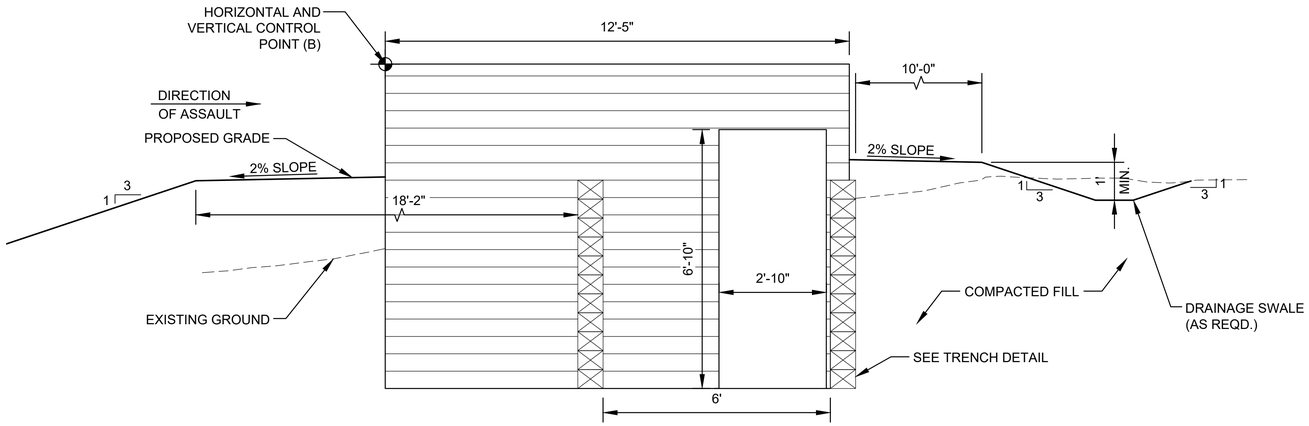

## SECTION

SCALE: 1" = 2'




## SECTION

SCALE: 1" = 1'




## ELEVATION

SCALE: 1" = 2'

NOTES:

1. BUNKER SHALL BE CONSTRUCTED OF TREATED TIMBERS. FILTER FABRIC SHALL BE INSTALLED ABOVE ROOF AND BEHIND ALL WOOD WALLS BELOW GRADE.
2. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
3. 2x6 SIDING ATTACHED AT EACH SUPPORT WITH (3) #10 X 3-1/2" HOT-DIPPED GALVANIZED WOOD SCREWS. PLYWOOD LAYER APPLIED TO SIDING BELOW GRADE TO BE 3/4" UC4B PRESERVATIVE TREATED. PLYWOOD TO BE ATTACHED TO SIDING WITH #7 X 2" HOT-DIPPED GALVANIZED WOOD SCREWS AT 6 INCHES AT ALL FOUR PANEL EDGES AND 12" EACH WAY AT PANEL INTERIOR.
4. THE BUNKER SHALL INCLUDE AN UNDERDRAIN SYSTEM THAT IS AN EXTENSION OF THE TRENCH UNDERDRAIN.
5. SEE SHEETS CS523 AND CS524 FOR TRENCH DETAIL.
6. SEE SHEET CS615 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
7. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.
8. WOOD FRAMING MEMBERS SHALL BE VISUALLY GRADED #2 SOUTHERN PINE OR APPROVED EQUAL. ALL FRAMING SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, USE CATEGORY UC4A / GROUND CONTACT.
9. SAND DRAINAGE LAYER SHALL CONFORM TO ASTM C33 FOR FINE AGGREGATE GRADING WITH A MAXIMUM OF 3% BY WEIGHT PASSING THE NO. 200 SIEVE (WASH).
10. ALL BUNKERS ARE ATTACHED TO TRENCHES.

**GRAPHIC SCALE:**

1 0 1 2
SCALE: 1" = 1'
2 0 2 4
SCALE: 1" = 2'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: S. BRADLEY
ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
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100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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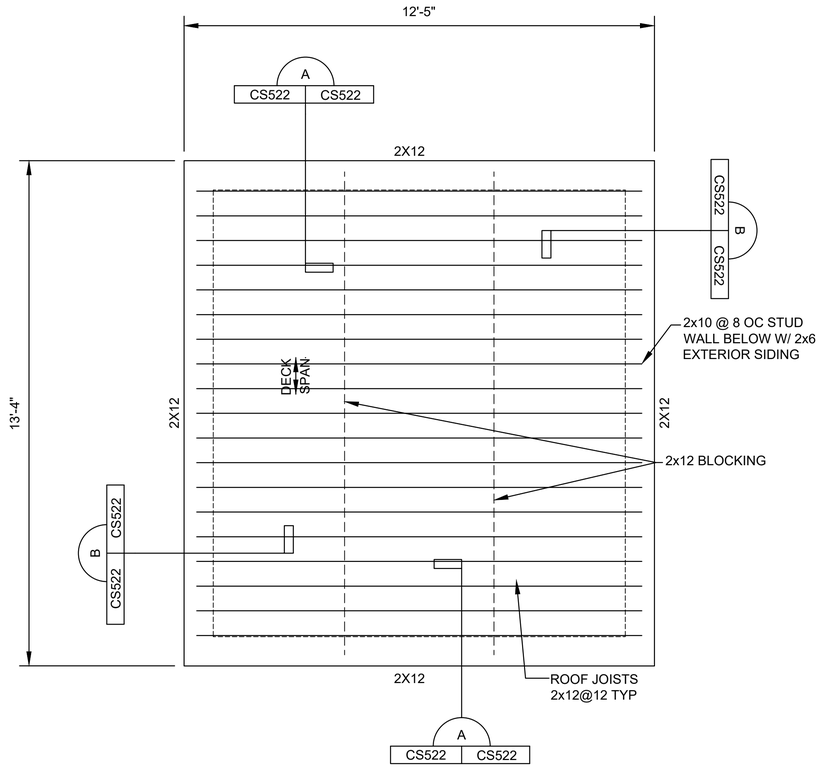
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

# MACHINE GUN BUNKER DETAILS

SHEET ID
CS521

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECS521.DWG




## ROOF FRAMING PLAN

SCALE: 1" = 2'

NOTES:

1. BUNKER SHALL BE CONSTRUCTED OF TREATED TIMBERS. FILTER FABRIC SHALL BE INSTALLED ABOVE ROOF AND BEHIND ALL WOOD WALLS BELOW GRADE.
2. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
3. 2x6 SIDING ATTACHED AT EACH SUPPORT WITH (3) #10 X 3-1/2" HOT-DIPPED GALVANIZED WOOD SCREWS. PLYWOOD LAYER APPLIED TO SIDING BELOW GRADE TO BE 3/4" UC4B PRESERVATIVE TREATED. PLYWOOD TO BE ATTACHED TO SIDING WITH #7 X 2" HOT-DIPPED GALVANIZED WOOD SCREWS AT 6 INCHES AT ALL FOUR PANEL EDGES AND 12" EACH WAY AT PANEL INTERIOR.
4. THE BUNKER SHALL INCLUDE AN UNDERDRAIN SYSTEM THAT IS AN EXTENSION OF THE TRENCH UNDERDRAIN.
5. SEE SHEETS CS523 AND CS524 FOR TRENCH DETAIL.
6. SEE SHEET CS615 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
7. WOOD FRAMING MEMBERS SHALL BE VISUALLY GRADED #2 SOUTHERN PINE OR APPROVED EQUAL. ALL FRAMING SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, USE CATEGORY UC4A / GROUND CONTACT.
8. ALL BUNKERS ARE ATTACHED TO TRENCHES.
9. BUNKER ROOF DESIGN LIVE LOAD = 80 PSF.

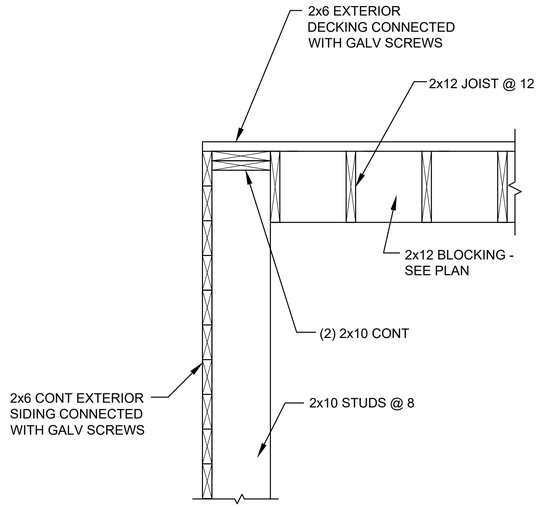
## GRAPHIC SCALE:

1 0 1 2

SCALE: 1" = 1'

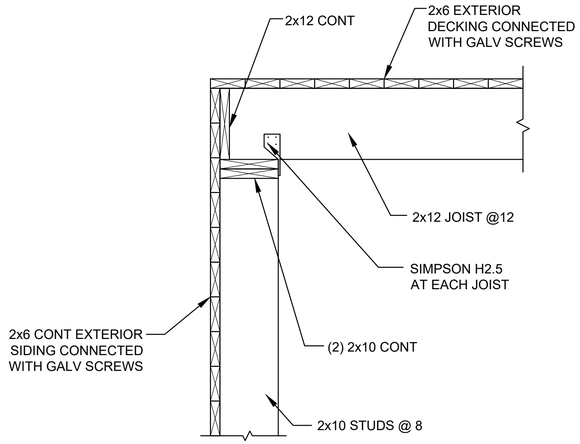
2 0 2 4

SCALE: 1" = 2'




## SECTION

SCALE: 1" = 1'




## SECTION

SCALE: 1" = 1'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

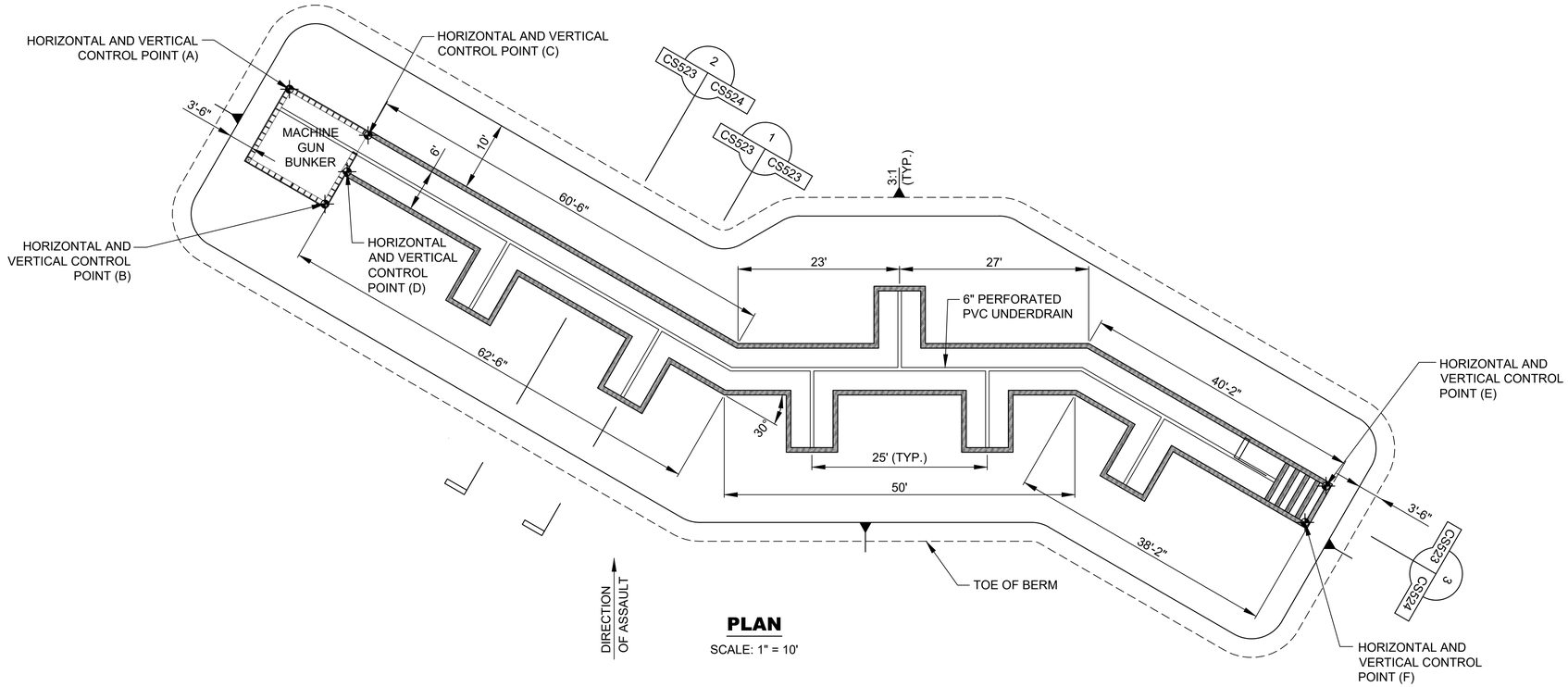
MACHINE GUN BUNKER DETAILS

SHEET ID

CS522

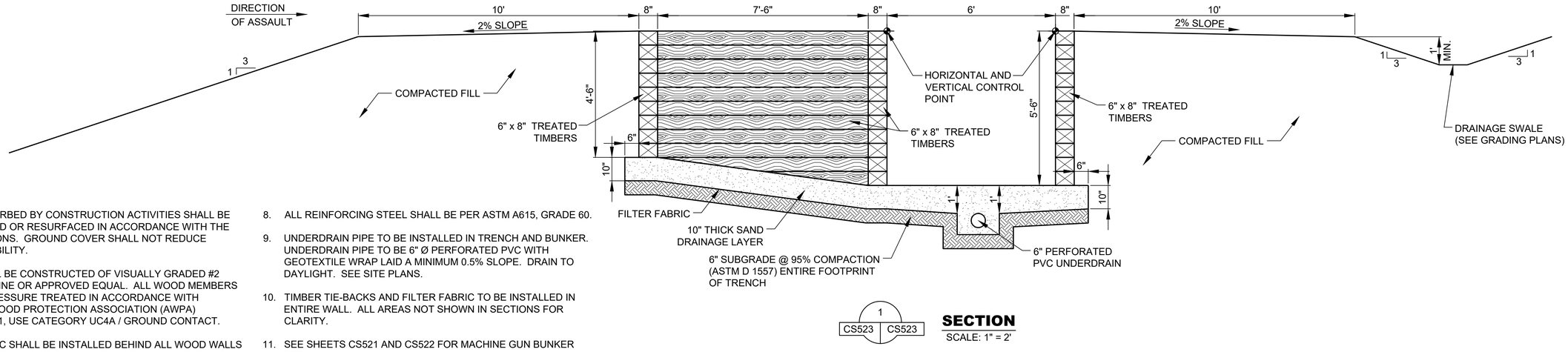
READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECS522.DWG




**PLAN**

SCALE: 1" = 10'




CS523 1 CS523

**SECTION**

SCALE: 1" = 2'

NOTES:

1. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
2. WALLS SHALL BE CONSTRUCTED OF VISUALLY GRADED #2 SOUTHERN PINE OR APPROVED EQUAL. ALL WOOD MEMBERS SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, USE CATEGORY UC4A / GROUND CONTACT.
3. FILTER FABRIC SHALL BE INSTALLED BEHIND ALL WOOD WALLS BELOW GRADE. FABRIC SHALL EXTEND THE FULL HEIGHT OF THE WALL.
4. SAND DRAINAGE LAYER SHALL CONFORM TO ASTM C33 FOR FINE AGGREGATE GRADING WITH A MAXIMUM 3% BY WEIGHT PASSING THE ASTM D1140, NO. 200 SIEVE (WASH).
5. TRENCHES CONSTRUCTED ON STANDARD TRAINING RANGES SHALL NOT BE USED FOR LIVE FIRE GRENADE TRAINING.
6. BERMS SHALL BE CONSTRUCTED OF SAND (SP) OR SAND WITH SILT (SP-SM) AND COMPACTED @ 95% (ASTM D 1557).
7. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.
8. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
9. UNDERDRAIN PIPE TO BE INSTALLED IN TRENCH AND BUNKER. UNDERDRAIN PIPE TO BE 6" Ø PERFORATED PVC WITH GEOTEXTILE WRAP LAID A MINIMUM 0.5% SLOPE. DRAIN TO DAYLIGHT. SEE SITE PLANS.
10. TIMBER TIE-BACKS AND FILTER FABRIC TO BE INSTALLED IN ENTIRE WALL. ALL AREAS NOT SHOWN IN SECTIONS FOR CLARITY.
11. SEE SHEETS CS521 AND CS522 FOR MACHINE GUN BUNKER DETAIL.
12. SEE SHEET CS615 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
13. SEE TIMBER CONNECTION DETAILS ON SHEET CS524.
14. ALL TRENCHES ARE ATTACHED TO MACHINE GUN BUNKERS.
15. RETAINING WALL IS BASED ON THE GEOTECHNICAL REPORT BY USACE SAVANNAH DISTRICT, GEOTECHNICAL & HTRW BRANCH, TITLED SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING REPORT, AUTOMATED MULTIPURPOSE TRAINING RANGE, P.N. 91682, FY-23, FORT BRAGG, NORTH CAROLINA DATED MARCH 2022. THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL REPORT FROM THE CONTRACTING OFFICER AND FOLLOW ALL REQUIREMENTS AND RECOMMENDATIONS.

**GRAPHIC SCALES:**

2 0 2 4
SCALE: 1" = 2'

10 0 10 20
SCALE: 1" = 10'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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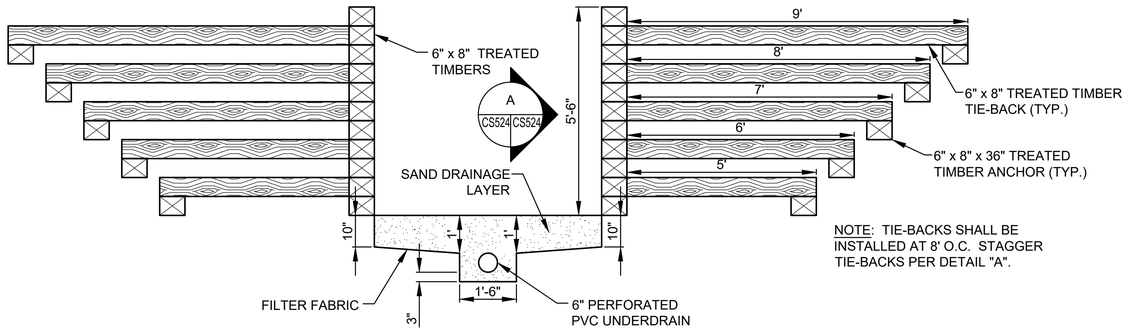
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

TRENCH DETAILS

SHEET ID
CS523

READY TO ADVERTISE (RTA)

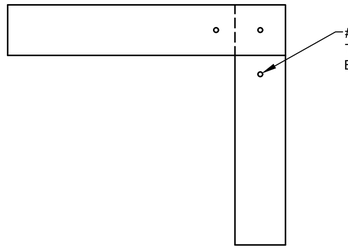
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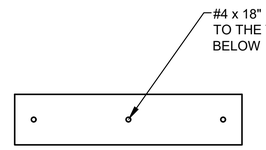

NOTE: TIE-BACKS SHALL BE INSTALLED AT 8' O.C. STAGGER TIE-BACKS PER DETAIL "A".

2
CS523 CS524

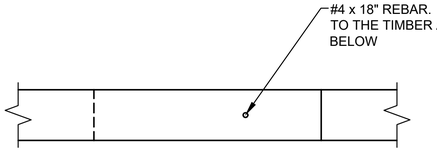
## SECTION
SCALE: 1" = 2'



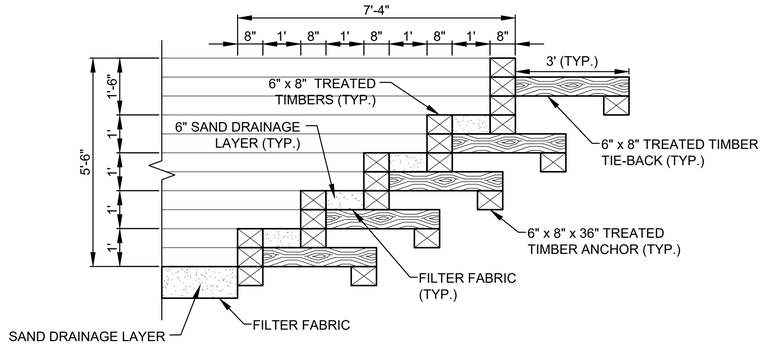

## TIMBER CORNER CONNECTION
SCALE: N.T.S.




## STAIR CONNECTION
SCALE: N.T.S.

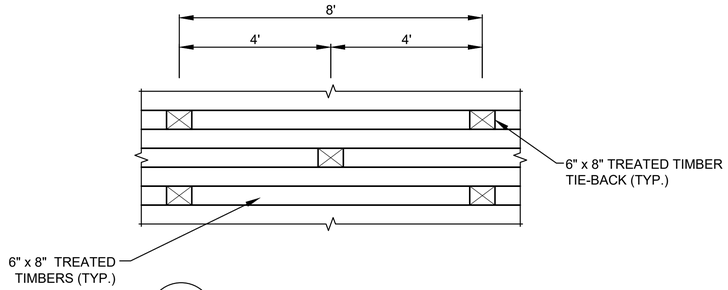



## TIMBER TO TIMBER CONNECTION
SCALE: N.T.S.



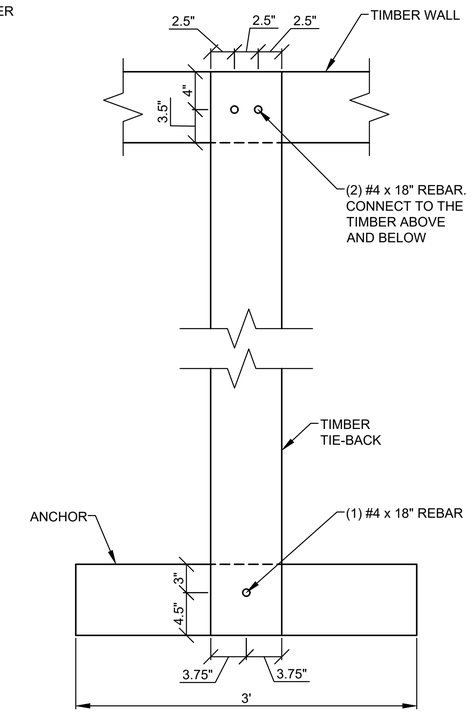

3
CS523 CS524

## SECTION
SCALE: 1" = 2'




A
CS524 CS524

## TIE-BACK STAGGER DETAL
SCALE: 1" = 2'




## TIMBER TIE-BACK CONNECTION
SCALE: N.T.S.

NOTES:

1. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED IN ACCORDANCE WITH THE SPECIFICATIONS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
2. WALLS SHALL BE CONSTRUCTED OF VISUALLY GRADED #2 SOUTHERN PINE OR APPROVED EQUAL. ALL WOOD MEMBERS SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, USE CATEGORY UC4A / GROUND CONTACT.
3. FILTER FABRIC SHALL BE INSTALLED BEHIND ALL WOOD WALLS BELOW GRADE. FABRIC SHALL EXTEND THE FULL HEIGHT OF THE WALL.
4. SAND DRAINAGE LAYER SHALL CONFORM TO ASTM C33 FOR FINE AGGREGATE GRADING WITH A MAXIMUM 3% BY WEIGHT PASSING THE ASTM D1140, NO. 200 SIEVE (WASH).
5. TRENCHES CONSTRUCTED ON STANDARD TRAINING RANGES SHALL NOT BE USED FOR LIVE FIRE GRENADE TRAINING.
6. BERMS SHALL BE CONSTRUCTED OF SAND (SP) OR SAND WITH SILT (SP-SM) AND COMPACTED @ 95% (ASTM D 1557).
7. BERMS SHALL BE CONSTRUCTED TO THE SPECIFIED DENSITY FOR THE FULL THICKNESS BEFORE TOPSOIL IS APPLIED FOR SEEDING.
8. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
9. UNDERDRAIN PIPE TO BE INSTALLED IN TRENCH AND BUNKER. UNDERDRAIN PIPE TO BE 6" Ø PERFORATED PVC WITH GEOTEXTILE WRAP LAID A MINIMUM 0.5% SLOPE. DRAIN TO DAYLIGHT. SEE SITE PLANS.
10. TIMBER TIE-BACKS AND FILTER FABRIC TO BE INSTALLED IN ENTIRE WALL. ALL AREAS NOT SHOWN IN SECTIONS FOR CLARITY.
11. SEE SHEETS CS521 AND CS522 FOR MACHINE GUN BUNKER DETAIL.
12. SEE SHEET CS615 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.
13. OMITTED
14. ALL TRENCHES ARE ATTACHED TO MACHINE GUN BUNKERS.
15. RETAINING WALL IS BASED ON THE GEOTECHNICAL REPORT BY USACE SAVANNAH DISTRICT, GEOTECHNICAL & HTRW BRANCH, TITLED SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING REPORT, AUTOMATED MULTIPURPOSE TRAINING RANGE, P.N. 91682, FY-23, FORT BRAGG, NORTH CAROLINA DATED MARCH 2022. THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL REPORT FROM THE CONTRACTING OFFICER AND FOLLOW ALL REQUIREMENTS AND RECOMMENDATIONS

## GRAPHIC SCALE:
2 0 2 4
SCALE: 1" = 2'

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B. JOHNSON |
| CHECKED BY: | J. BRANNON |
| SUBMITTED BY: | BRADLEY |
| SIZE: | ANSI D |
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POLY, INC.
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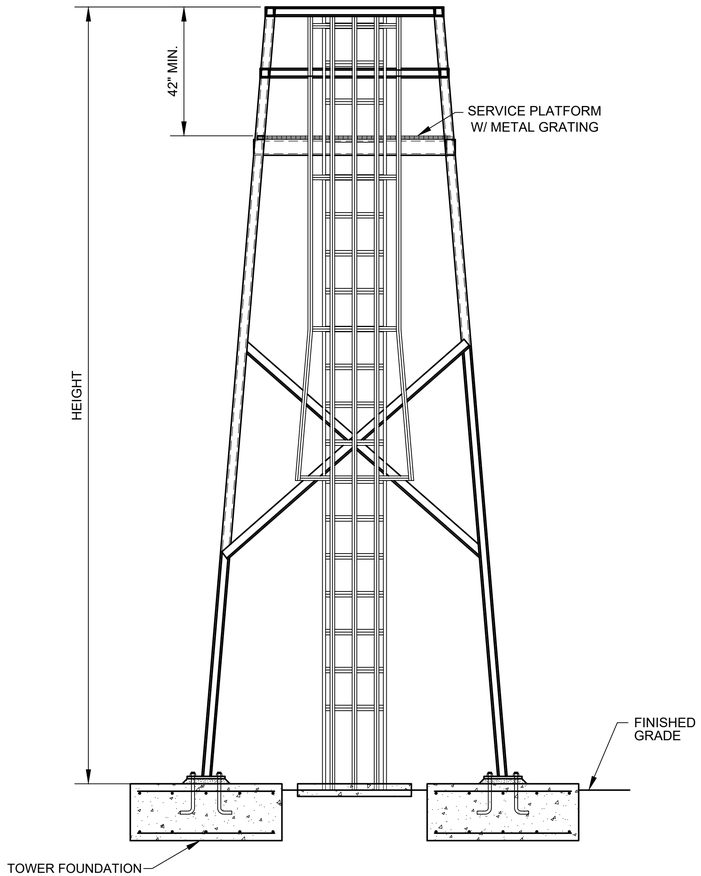
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

TRENCH DETAILS

SHEET ID
CS524

G:\CLEANSTUFF-15-2815376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECS524.DWG

READY TO ADVERTISE (RTA)




**CAMERA TOWER**

SCALE: N.T.S.

NOTES :

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE CAMERA TOWER AND FOUNDATION.
2. THE TOWER SHALL BE DESIGNED TO MEET THE CRITERIA OUTLINED ON THIS SHEET AND PER THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT FOR THIS PROJECT. THE GEOTECHNICAL REPORT IS AVAILABLE FOR REVIEW BY REQUESTING FROM THE CONTRACTING OFFICER.
3. THE TOWER AND FOUNDATION SHOWN ON THIS SHEET ARE TYPICAL AND FOR ILLUSTRATIVE PURPOSES ONLY; HOWEVER, A 4-LEG, DEER STAND TYPE TOWER IS REQUIRED. THE TOWER SHALL HAVE A SERVICE PLATFORM WITH MINIMUM DIMENSIONS OF 5' X 5'.
4. SEE CONTROL POINT DATA FOR REQUIRED TOWER HEIGHT.
5. TOWER DESIGN SHALL CONFORM TO STANDARD EIA/TIA-22-F FOR 125 MPH BASIC WIND SPEED WITH NO ICE.
6. MATERIAL FOR CONSTRUCTION OF THE TOWER SHALL BE AS IS ACCEPTED AS STANDARD PRACTICE WITHIN THE TOWER INDUSTRY. ALL EXPOSED STEEL SHALL BE GALVANIZED.
7. THE TOWER SHALL BE GROUNDED IN ACCORDANCE WITH EIA STANDARDS.
8. THE FOUNDATION SHOWN IS TYPICAL. THE CONTRACTOR SHALL PROVIDE A DESIGN SUBMITTAL PACKAGE TO THE CONTRACTING OFFICER THAT IS STAMPED BY AN ENGINEER REGISTERED IN THE STATE OF CONSTRUCTION.
9. THE TOWER IS TO BE LOCATED AS SHOWN IN THE PLANS. CONTRACTOR SHALL VERIFY SOIL CONDITIONS AND STRENGTHS PRIOR TO THE DESIGN OF THE FOUNDATION.
10. THE FOUNDATION DESIGN PACKAGE SHALL INCLUDE ALL RELATIVE INFORMATION THE ENGINEER USED TO DETERMINE HIS DESIGN, INCLUDING (BUT NOT LIMITED TO) SOIL PRESSURE, CONCRETE STRENGTH, REBAR SIZING AND MATERIAL, EXCAVATION AND BACKFILL REQUIREMENTS, SOIL TYPE, SOIL COHESION, SOIL UNIT WEIGHT, INTERNAL ANGLE OF FRICTION, GROUND WATER ASSUMPTIONS, AND FROST ACTION CONSIDERATIONS.
11. THE CONTRACTOR SHALL COMPLETE TOWER ASSEMBLY DRAWINGS, MATERIAL LISTS, DESIGN CALCULATIONS, TOWER INSTALLATION DETAILS, AND ACCESSORY LISTS AND SUBMIT TO THE CONTRACTING OFFICER FOR APPROVAL.
12. THE TOWER SHALL NOT BE GUYED AND MUST BE FULLY SELF-SUPPORTING UNDER ALL OUTLINED DESIGN CRITERIA.
13. THE TOWER IS LOCATED IN A SEISMIC ZONE AND SHALL BE IN CONFORMANCE WITH ALL LOCAL CODES.
14. THE TOWER SHALL BE DESIGNED TO ALLOW A MAXIMUM SWAY AT THE TOP OF 1/2 INCH FROM DEAD CENTER IN ANY DIRECTION WITH A 60 LB 3 FT CUBE AT 35 MPH SUSTAINED WINDS.
15. LADDERS ARE TO FACE THE INTERIOR OF THE RANGE.
16. TOWER TO INCLUDE CAMERA MOUNTING PLATE IN ONE CORNER OF THE TOP OF THE STRUCTURE. MOUNTING PLATE TO BE PER ELECTRICAL DETAIL FOR CAMERA MOUNTING PLATE ON THE RANGE CONTROL TOWER. SEE ELECTRICAL.
17. SEE SHEET CS615 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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| DRAWN BY: | B. JOHNSON |
| CHECKED BY: | J. BRANNON |
| SUBMITTED BY: | BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 173-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

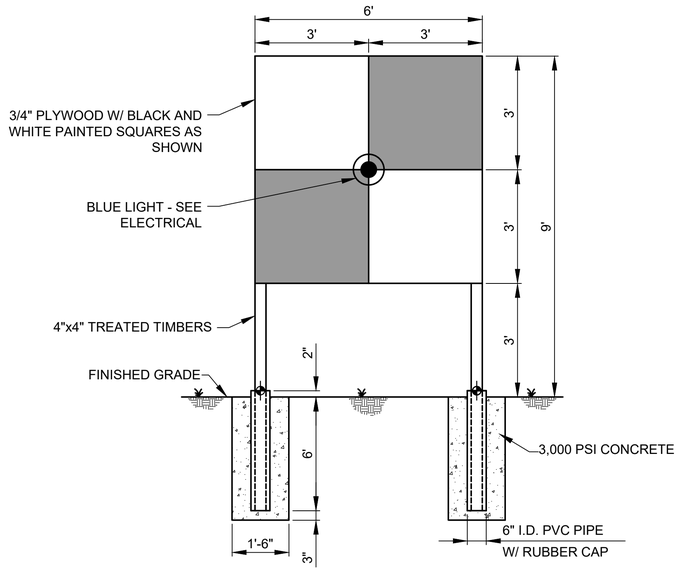
CAMERA TOWER DETAILS

SHEET ID

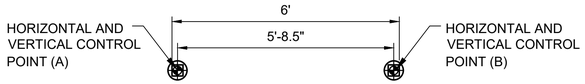
CS525

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECCS525.DWG




## ELEVATION



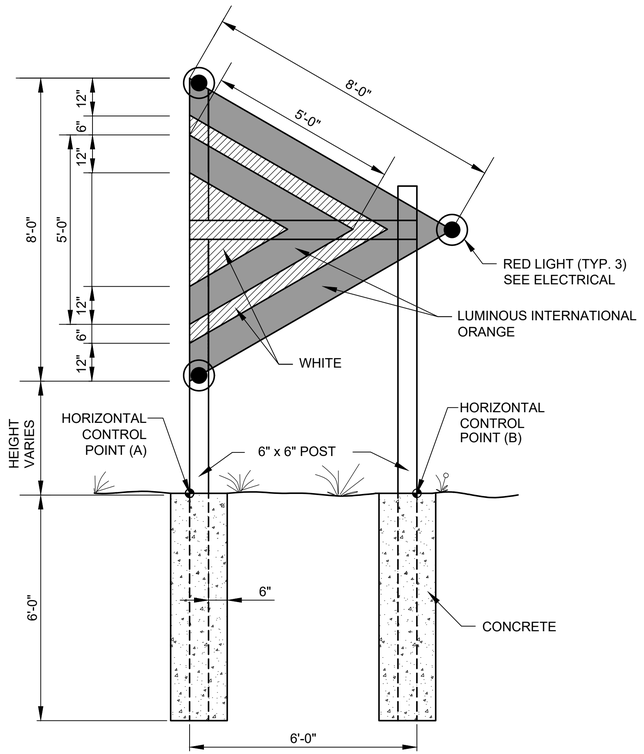

## PLAN

# BORESIGHT PANEL

SCALE: 1" = 2'

NOTES:

1. SEE SHEET CS606 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.




# RANGE LIMIT MARKER

SCALE: 1" = 2'

NOTES :

1. THE LIMIT MARKER PANEL SHALL BE A PLASTIC MOLDING MANUFACTURED BY US MOLDERS OF REYNOLDS, INDIANA OR APPROVED EQUAL.
2. ATTACH LIMIT MARKER PANEL TO POSTS PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL HARDWARE SHALL BE GALVANIZED.
4. ALL WOOD TO BE PRESERVATIVE TREATED.
5. LEFT SIDE MARKER IS SHOWN; RIGHT SIDE MARKER OPPOSITE HAND.
6. HEIGHT IS MEASURED FROM FINISHED GRADE TO THE BASE OF THE TRIANGLE OF THE RLM.
7. SEE ELECTRICAL FOR COORDINATION.
8. SEE SHEET CS615 FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA AND RLM HEIGHT.

## GRAPHIC SCALES:

2 0 2 4

SCALE: 1" = 2'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 98162
VOLUMES 3 & 4 - DOWNRANGE

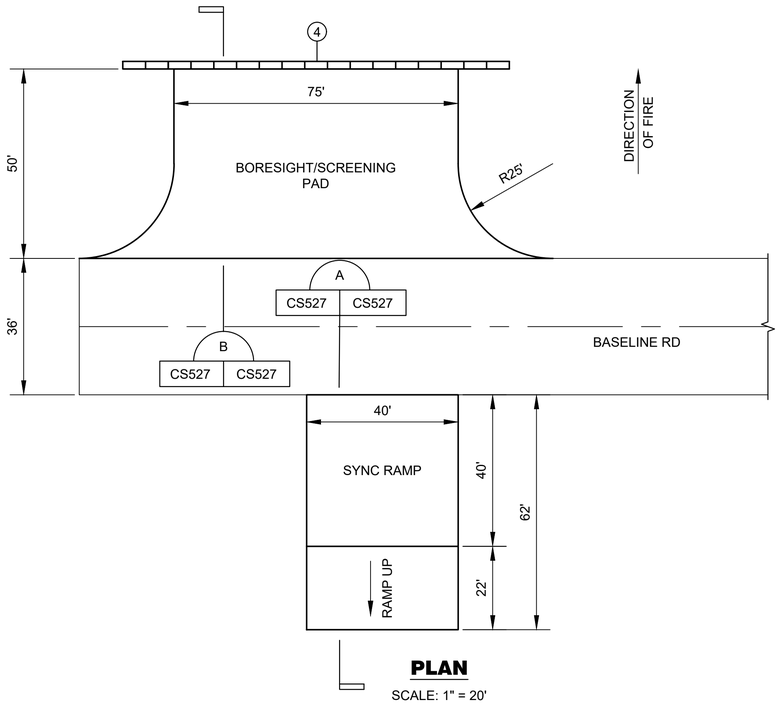
RANGE LIMIT MARKER AND BORESIGHT PANEL DETAILS

SHEET ID

CS526

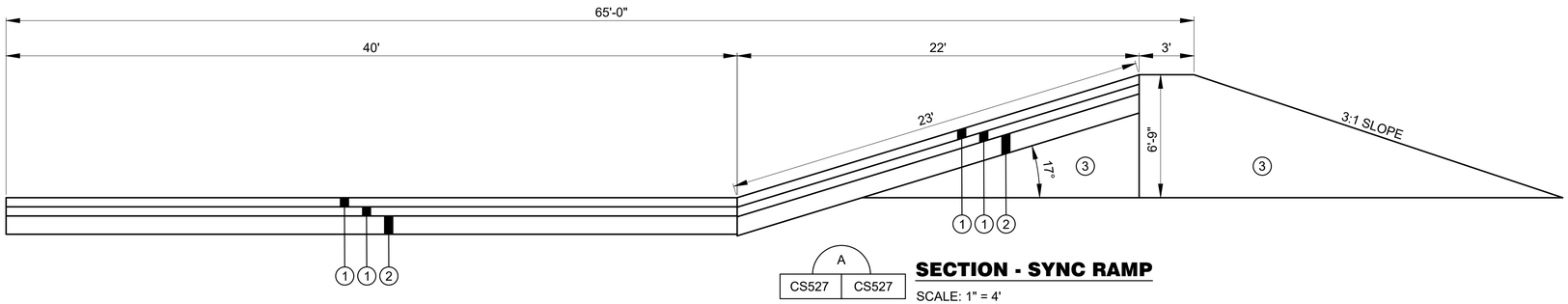
READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECS526.DWG




**PLAN**

SCALE: 1" = 20'




A
CS527 CS527

**SECTION - SYNC RAMP**

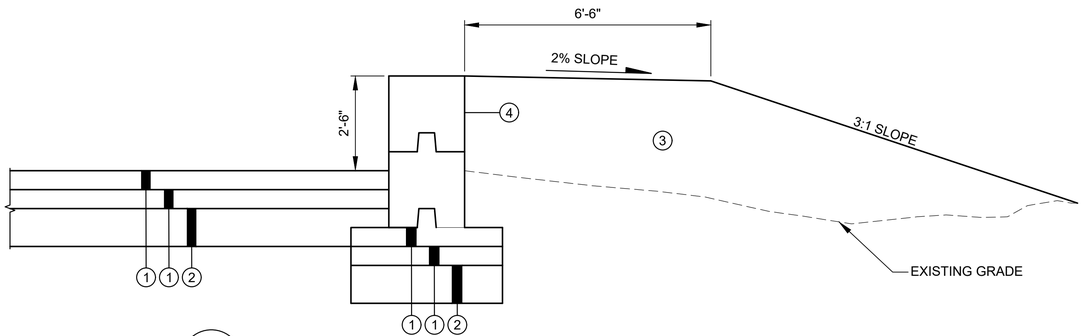
SCALE: 1" = 4'

NOTES:

1. SEE CS504 FOR CONCRETE BLOCK DETAILS.
2. BERMS SHALL BE CONSTRUCTED OF SATISFACTORY FILL MATERIALS AND COMPACTED @ 95% (ASTM D 1557).

## LEGEND

1. 6" AGGREGATE BASE COURSE @ 100% COMPACTION (ASTM D 1557)
2. 12" SUBGRADE @ 95% COMPACTION (ASTM D 1557)
3. APPROVED BACKFILL MATERIAL @ 95% COMPACTION (ASTM D 1557)
4. PRECAST WALL BLOCKS - FINAL 2 BLOCKS ON EACH END SHALL BE SLOPED END BLOCKS




B
CS527 CS527

**SECTION - BORESIGHT/SCREENING**

SCALE: 1" = 2'

GRAPHIC SCALES:

2 0 2 4
SCALE: 1" = 2'

4 0 4 8
SCALE: 1" = 4'

20 0 20 40
SCALE: 1" = 20'

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B. JOHNSON
CHECKED BY: J. BRANNON
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 178-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
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POLY, INC.
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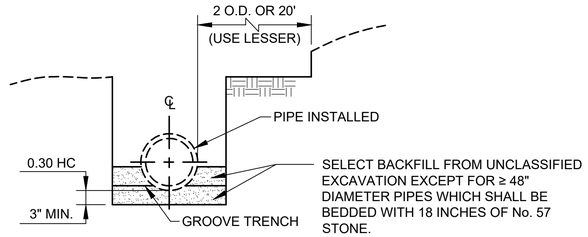
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

BORESIGHT/SCREENING PAD & SYNC RAMP DETAILS

SHEET ID
CS527

READY TO ADVERTISE (RTA)

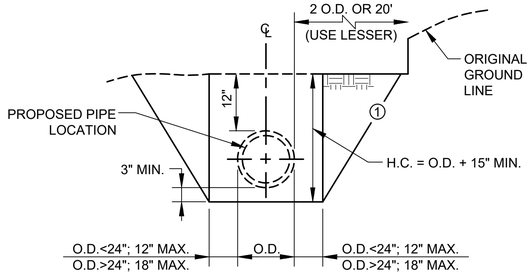
G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\500 DETAILS\B2ECS527.DWG




EXCAVATE GROOVE IN SAND TO CONFORM WITH OUTSIDE OF PIPE. RETAIN A MINIMUM CLEAR DISTANCE FROM OUTSIDE OF PIPE TO TRENCH BOTTOM OF 3".

## PIPE BEDDING IN EARTH DETAIL

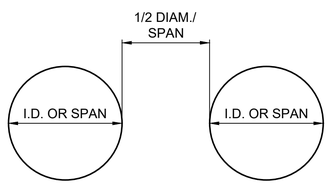
N.T.S.




1 FOR H.C. OVER 48", COMPLY WITH OSHA REQUIREMENTS.

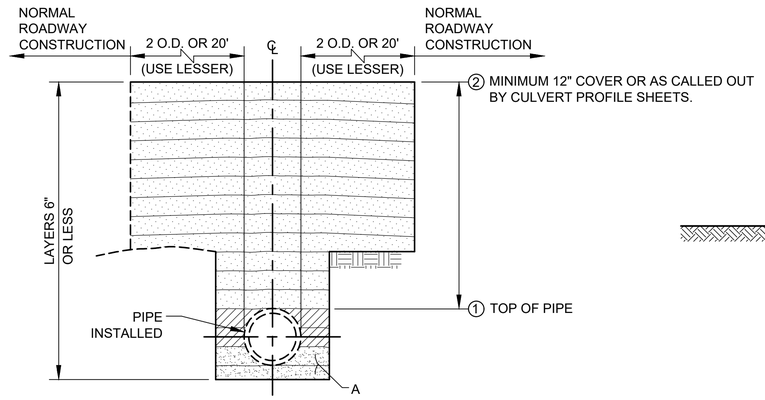
## MINIMUM EARTH TRENCH EXCAVATION

N.T.S.




## MULTIPLE PIPE CULVERT SPACING

N.T.S.



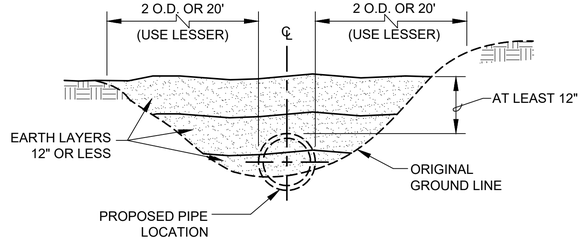

A. COMPACT SELECT BACKFILL IN LAYERS 6" OR LESS TO TOP OF THE PIPE. (ELEVATION 1). FOR ≥ 48" DIAMETER PIPES, BED WITH 18 INCHES OF No. 57 STONE.

B. COMPACT SELECTED FINE SOIL TO ELEVATION 2 ABOVE TOP OF PIPE. MEET DENSITY REQUIREMENTS FOR ADJACENT EMBANKMENTS.

C. PROCEED WITH NORMAL ROADWAY CONSTRUCTION.

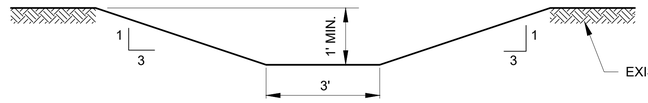
## PIPE BACK FILL DETAIL

N.T.S.




## MINIMUM COMPACTED FILL PRIOR TO TRENCH EXCAVATION

N.T.S.




## DRAINAGE SWALE

SCALE: 1" = 2'

GRAPHIC SCALE:

2 0 2 4

SCALE: 1" = 2'

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

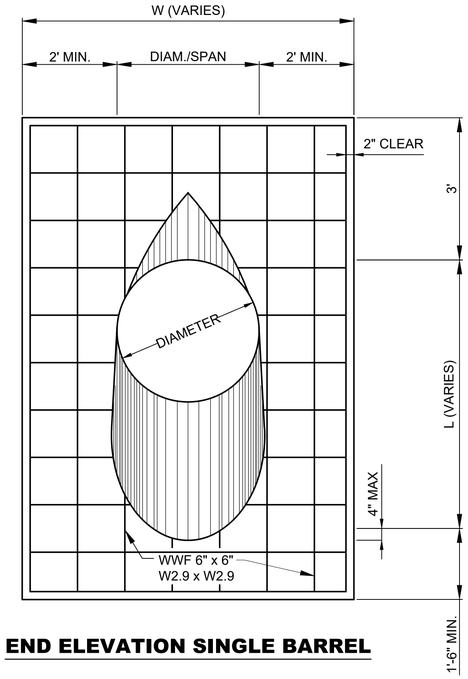
DRAINAGE DETAILS

SHEET ID

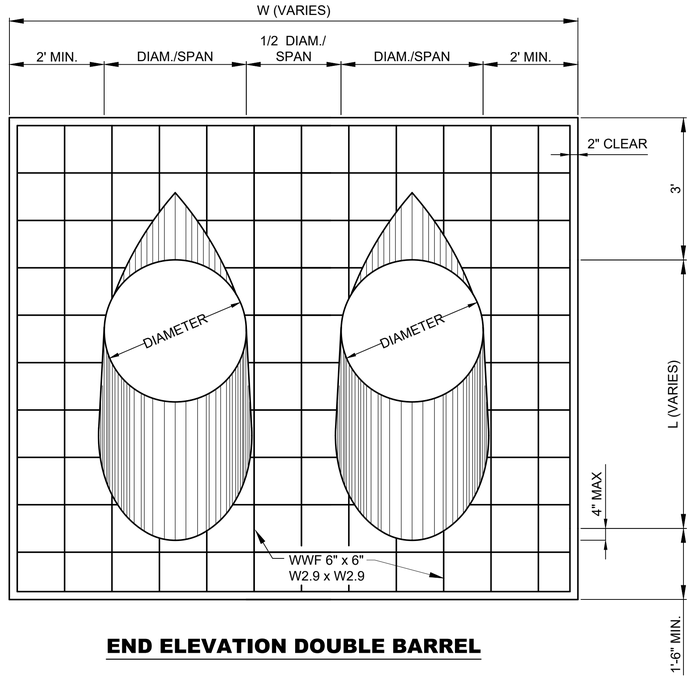
CS528

READY TO ADVERTISE (RTA)

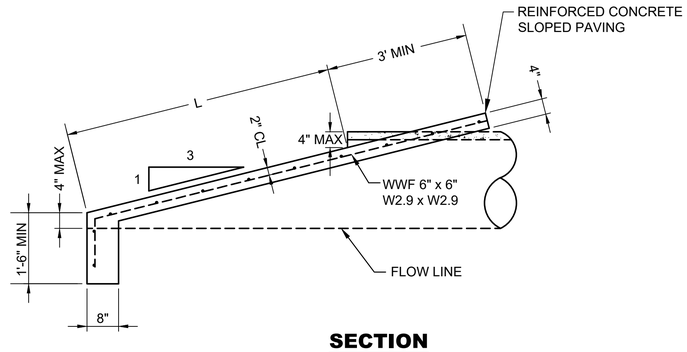
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**END ELEVATION SINGLE BARREL**




**END ELEVATION DOUBLE BARREL**




**SECTION**

# SLOPED PAVED HEADWALL

N.T.S.

NOTES:

1. SLOPED PAVED HEADWALL TO BE INSTALLED AT INLET AND OUTLET OF ALL CULVERTS.
2. THE FILL IS TO BE PLACED AND ALL SHORING REMOVED BEFORE THE SLOPE PAVING IS PLACED.
3. CONCRETE PIPE SHALL BE BEVELED BY SAWING AFTER SLOPE PAVING HAS BEEN PLACED AND SUFFICIENTLY CURED (SOME HAND FINISHING MAY BE NECESSARY).
4. CONTRACTOR SHALL INSURE THROUGH MECHANICAL MEANS OR OTHER APPROVED DEVICES THAT CONNECTION BETWEEN BEVELED PIPE END AND CONCRETE WILL NOT BE DETACHED.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: J. BRANNON | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-65-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

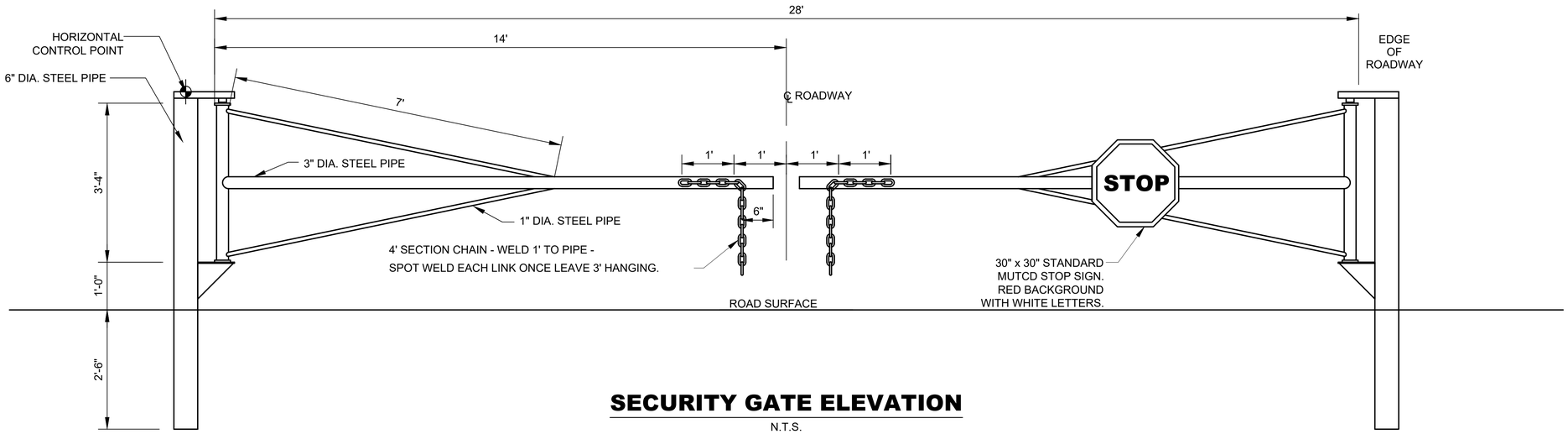
SLOPED PAVED HEADWALL DETAILS

SHEET ID

CS529

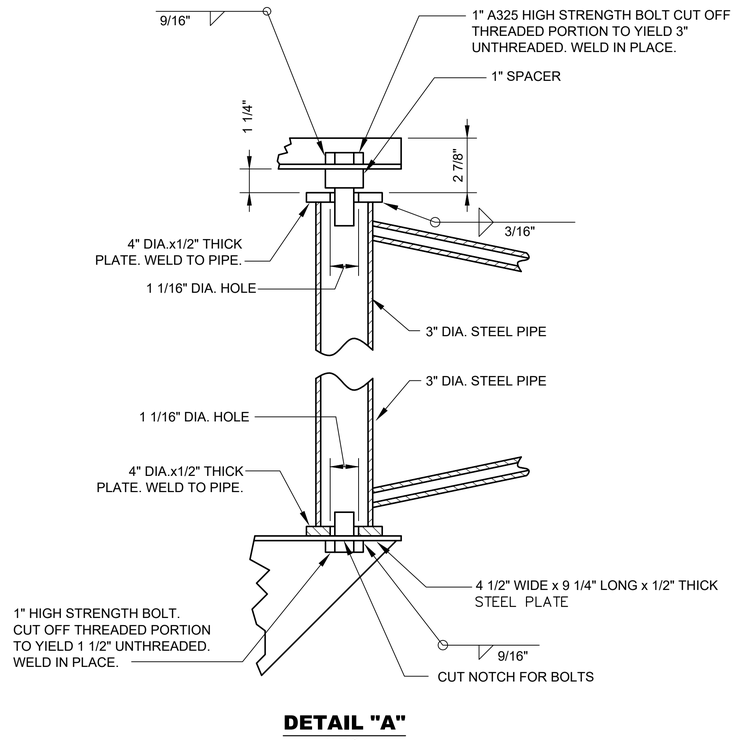
READY TO ADVERTISE (RTA)

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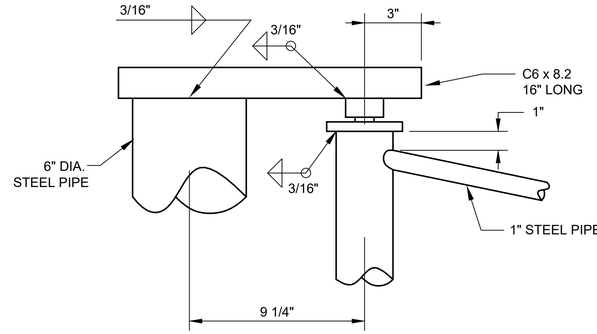

## SECURITY GATE ELEVATION

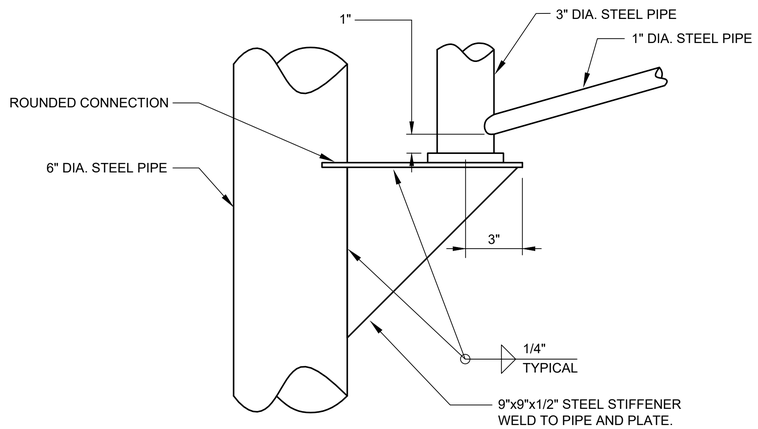
N.T.S.




## DETAIL "A"

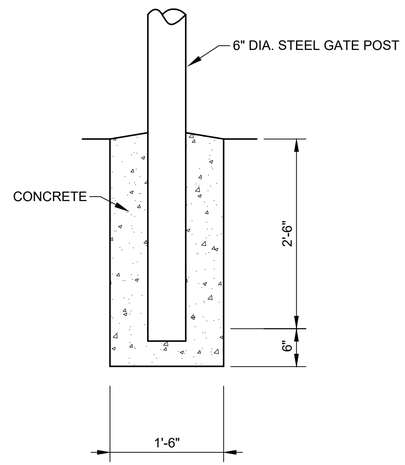
N.T.S.




## DETAIL "B"

N.T.S.




## GATE POST FOUNDATION

N.T.S.

NOTES:

1. ALL GATE PARTS TO BE GALVANIZED.
2. ALL STEEL PIPE TO BE SCHEDULE 40.
3. PROVIDE 2 ADDITIONAL POSTS TO SECURE THE GATE LEAVES TO WHEN IN THE OPEN POSITION. OPEN TO THE INSIDE OF THE RANGE.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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U.S. ARMY CORPS OF ENGINEERS
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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

SECURITY GATE DETAILS

SHEET ID
CS530

READY TO ADVERTISE (RTA)

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## BASELINE ROAD

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L2 | 0+00.00 | 477,527.44 | 1,917,500.47 | 573.79 | N84°28'41"E | 5+73.79 | 477,582.65 | 1,918,071.61 | | | | | | | | | |
| C2 | | | | | N86°53'58"E | | | | 4°50'34" | 3°49'11" | 63.43 | 1,500.00 | 126.78 | 126.74 | 477,588.76 | 1,918,134.74 | 6+37.22 |
| L3 | 7+00.58 | 477,589.51 | 1,918,198.16 | 597.67 | N89°19'14"E | 12+98.25 | 477,596.60 | 1,918,795.79 | | | | | | | | | |
| C1 | | | | | S88°37'58"E | | | | 4°05'36" | 2°51'53" | 71.47 | 2,000.00 | 142.88 | 142.85 | 477,597.44 | 1,918,867.26 | 13+69.72 |
| L1 | 14+41.13 | 477,593.19 | 1,918,938.60 | 174.01 | S86°35'10"E | 16+15.14 | 477,582.83 | 1,919,112.31 | | | | | | | | | |

## COURSE ROAD No. 1

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L11 | 0+00.00 | 477,576.88 | 1,918,011.84 | 113.26 | N5°31'19"W | 1+13.26 | 477,689.61 | 1,918,000.94 | | | | | | | | | |
| C9 | | | | | N6°48'02"E | | | | 24°38'43" | 5°43'46" | 218.45 | 1,000.00 | 430.14 | 426.83 | 477,907.05 | 1,917,979.92 | 3+31.71 |
| L12 | 5+43.41 | 478,113.44 | 1,918,051.49 | 130.90 | N19°07'24"E | 6+74.31 | 478,237.12 | 1,918,094.37 | | | | | | | | | |
| C10 | | | | | N12°01'54"E | | | | 14°11'00" | 5°43'46" | 124.41 | 1,000.00 | 247.54 | 246.91 | 478,354.66 | 1,918,135.13 | 7+98.71 |
| L10 | 9+21.85 | 478,478.61 | 1,918,145.84 | 1,371.85 | N4°56'24"E | 22+93.70 | 479,845.36 | 1,918,263.97 | | | | | | | | | |
| C3 | | | | | N25°06'32"E | | | | 40°20'16" | 14°19'26" | 146.92 | 400.00 | 281.61 | 275.83 | 479,991.74 | 1,918,276.62 | 24+40.62 |
| L4 | 25+75.31 | 480,095.13 | 1,918,381.02 | 272.47 | N45°16'40"E | 28+47.78 | 480,286.86 | 1,918,574.62 | | | | | | | | | |
| C4 | | | | | N52°56'38"E | | | | 15°19'57" | 5°43'46" | 134.61 | 1,000.00 | 267.60 | 266.80 | 480,381.58 | 1,918,670.26 | 29+82.39 |
| L5 | 31+15.38 | 480,447.63 | 1,918,787.54 | 465.35 | N60°36'37"E | 35+80.73 | 480,676.00 | 1,919,193.00 | | | | | | | | | |
| C5 | | | | | N49°50'51"E | | | | 21°31'32" | 11°27'33" | 95.04 | 500.00 | 187.85 | 186.74 | 480,722.64 | 1,919,275.81 | 36+75.77 |
| L6 | 37+68.57 | 480,796.42 | 1,919,335.73 | 503.27 | N39°05'05"E | 42+71.84 | 481,187.06 | 1,919,653.02 | | | | | | | | | |
| C6 | | | | | N25°44'42"E | | | | 26°40'46" | 19°05'55" | 71.14 | 300.00 | 139.69 | 138.43 | 481,242.28 | 1,919,697.87 | 43+42.98 |
| L7 | 44+11.53 | 481,311.75 | 1,919,713.15 | 1,417.95 | N12°24'19"E | 58+29.48 | 482,696.60 | 1,920,017.77 | | | | | | | | | |
| C7 | | | | | N39°38'40"E | | | | 54°28'42" | 28°38'52" | 102.96 | 200.00 | 190.17 | 183.08 | 482,797.15 | 1,920,039.89 | 59+32.44 |
| L8 | 60+19.65 | 482,837.57 | 1,920,134.58 | 50.83 | N66°53'01"E | 60+70.48 | 482,857.53 | 1,920,181.33 | | | | | | | | | |
| C8 | | | | | N77°09'15"E | | | | 20°32'28" | 14°19'26" | 72.48 | 400.00 | 143.40 | 142.64 | 482,885.98 | 1,920,247.99 | 61+42.96 |
| L9 | 62+13.88 | 482,889.24 | 1,920,320.39 | 11.76 | N87°25'29"E | 62+25.64 | 482,889.77 | 1,920,332.14 | | | | | | | | | |

## COURSE ROAD No. 2

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L21 | 0+00.00 | 477,593.93 | 1,918,925.49 | 380.23 | N4°25'06"W | 3+80.23 | 477,973.02 | 1,918,896.20 | | | | | | | | | |
| C19 | | | | | N4°45'33"W | | | | 0°40'54" | 2°17'31" | 14.87 | 2,500.00 | 29.74 | 29.74 | 477,987.85 | 1,918,895.06 | 3+95.10 |
| L22 | 4+09.97 | 478,002.66 | 1,918,893.73 | 952.12 | N5°06'00"W | 13+62.09 | 478,951.01 | 1,918,809.10 | | | | | | | | | |
| C18 | | | | | N11°13'49"E | | | | 32°39'38" | 11°27'33" | 146.50 | 500.00 | 285.02 | 281.17 | 479,096.93 | 1,918,796.07 | 15+08.59 |
| L20 | 16+47.11 | 479,226.80 | 1,918,863.86 | 929.21 | N27°33'38"E | 25+76.31 | 480,050.56 | 1,919,293.79 | | | | | | | | | |
| C11 | | | | | N35°20'03"E | | | | 15°32'49" | 5°43'46" | 136.51 | 1,000.00 | 271.34 | 270.51 | 480,171.58 | 1,919,356.95 | 27+12.82 |
| L13 | 28+47.66 | 480,271.25 | 1,919,450.24 | 269.69 | N43°06'27"E | 31+17.35 | 480,468.14 | 1,919,634.54 | | | | | | | | | |
| C12 | | | | | N29°19'04"E | | | | 27°34'46" | 11°27'33" | 122.72 | 500.00 | 240.68 | 238.36 | 480,557.73 | 1,919,718.40 | 32+40.07 |
| L14 | 33+58.02 | 480,675.97 | 1,919,751.25 | 478.18 | N15°31'41"E | 38+36.21 | 481,136.70 | 1,919,879.27 | | | | | | | | | |
| C13 | | | | | N37°04'08"E | | | | 43°04'53" | 22°55'06" | 98.68 | 250.00 | 187.98 | 183.58 | 481,231.78 | 1,919,905.68 | 39+34.89 |
| L15 | 40+24.19 | 481,283.18 | 1,919,989.92 | 80.44 | N58°36'35"E | 41+04.62 | 481,325.08 | 1,920,058.59 | | | | | | | | | |
| C14 | | | | | N44°57'26"E | | | | 27°18'17" | 11°27'33" | 121.45 | 500.00 | 238.28 | 236.03 | 481,388.33 | 1,920,162.26 | 42+26.07 |
| L16 | 43+42.90 | 481,492.10 | 1,920,225.36 | 760.39 | N31°18'17"E | 51+03.29 | 482,141.79 | 1,920,620.45 | | | | | | | | | |
| C15 | | | | | N11°32'45"E | | | | 39°31'05" | 11°27'33" | 179.61 | 500.00 | 344.86 | 338.06 | 482,295.25 | 1,920,713.78 | 52+82.90 |
| L17 | 54+48.15 | 482,473.01 | 1,920,688.12 | 228.81 | N8°12'47"W | 56+76.96 | 482,699.48 | 1,920,655.43 | | | | | | | | | |
| C16 | | | | | N41°03'35"W | | | | 65°41'37" | 28°38'52" | 129.12 | 200.00 | 229.31 | 216.96 | 482,827.28 | 1,920,636.99 | 58+06.09 |
| L18 | 59+06.28 | 482,863.07 | 1,920,512.92 | 42.94 | N73°54'24"W | 59+49.22 | 482,874.98 | 1,920,471.66 | | | | | | | | | |
| C17 | | | | | N83°14'02"W | | | | 18°39'16" | 14°19'26" | 65.70 | 400.00 | 130.23 | 129.66 | 482,893.19 | 1,920,408.54 | 60+14.92 |
| L19 | 60+79.45 | 482,890.25 | 1,920,342.91 | 10.78 | S87°26'20"W | 60+90.23 | 482,889.77 | 1,920,332.14 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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## CROSSOVER ROAD

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L23 | 0+00.00 | 479,701.93 | 1,918,154.13 | 919.78 | S85°03'36"E | 9+19.78 | 479,622.72 | 1,919,070.49 | | | | | | | | | |

## TSR No. 1

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L32 | 0+00.00 | 479,148.50 | 1,918,203.74 | 241.25 | N89°43'22"W | 2+41.25 | 479,149.67 | 1,917,962.49 | | | | | | | | | |
| C22 | | | | | N83°20'41"W | | | | 12°45'24" | 22°55'06" | 27.95 | 250.00 | 55.66 | 55.55 | 479,149.81 | 1,917,934.54 | 2+69.20 |
| L33 | 2+96.91 | 479,156.11 | 1,917,907.32 | 79.77 | N76°57'59"W | 3+76.68 | 479,174.10 | 1,917,829.60 | | | | | | | | | |
| C23 | | | | | N83°58'59"W | | | | 14°02'01" | 22°55'06" | 30.77 | 250.00 | 61.23 | 61.08 | 479,181.04 | 1,917,799.63 | 4+07.45 |
| L34 | 4+37.92 | 479,180.50 | 1,917,768.86 | 42.31 | S89°00'00"W | 4+80.23 | 479,179.76 | 1,917,726.56 | | | | | | | | | |
| C24 | | | | | S82°53'39"W | | | | 12°12'41" | 22°55'06" | 26.74 | 250.00 | 53.28 | 53.18 | 479,179.30 | 1,917,699.82 | 5+06.97 |
| L35 | 5+33.51 | 479,173.18 | 1,917,673.78 | 67.63 | S76°47'19"W | 6+01.14 | 479,157.73 | 1,917,607.95 | | | | | | | | | |
| C25 | | | | | S82°56'59"W | | | | 12°19'21" | 22°55'06" | 26.99 | 250.00 | 53.77 | 53.66 | 479,151.56 | 1,917,581.67 | 6+28.12 |
| L36 | 6+54.90 | 479,151.14 | 1,917,554.69 | 21.23 | S89°06'40"W | 6+76.14 | 479,150.81 | 1,917,533.46 | | | | | | | | | |
| C26 | | | | | N74°49'17"W | | | | 32°08'06" | 57°17'45" | 28.80 | 100.00 | 56.09 | 55.35 | 479,150.36 | 1,917,504.66 | 7+04.94 |
| L37 | 7+32.22 | 479,165.31 | 1,917,480.04 | 42.99 | N58°45'14"W | 7+75.21 | 479,187.61 | 1,917,443.28 | | | | | | | | | |

## TSR No. 2

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L38 | 0+00.00 | 479,148.51 | 1,918,203.74 | 56.20 | S85°03'18"E | 0+56.20 | 479,143.66 | 1,918,259.73 | | | | | | | | | |
| C27 | | | | | N85°59'16"E | | | | 17°54'52" | 22°55'06" | 39.40 | 250.00 | 78.17 | 77.85 | 479,140.27 | 1,918,298.99 | 0+95.61 |
| L39 | 1+34.37 | 479,149.11 | 1,918,337.39 | 25.49 | N77°01'50"E | 1+59.86 | 479,154.83 | 1,918,362.23 | | | | | | | | | |
| C28 | | | | | N85°21'34"E | | | | 16°39'28" | 22°55'06" | 36.60 | 250.00 | 72.68 | 72.43 | 479,163.05 | 1,918,397.89 | 1+96.46 |
| L40 | 2+32.54 | 479,160.69 | 1,918,434.42 | 104.26 | S86°18'42"E | 3+36.79 | 479,153.98 | 1,918,538.46 | | | | | | | | | |
| C29 | | | | | S77°20'33"E | | | | 17°56'17" | 22°55'06" | 39.46 | 250.00 | 78.27 | 77.95 | 479,151.45 | 1,918,577.83 | 3+76.25 |
| L41 | 4+15.06 | 479,136.90 | 1,918,614.51 | 4.21 | S68°22'25"E | 4+19.27 | 479,135.35 | 1,918,618.43 | | | | | | | | | |
| C30 | | | | | S79°11'13"E | | | | 21°37'35" | 22°55'06" | 47.75 | 250.00 | 94.36 | 93.80 | 479,117.75 | 1,918,662.81 | 4+67.02 |
| L42 | 5+13.64 | 479,117.75 | 1,918,710.56 | 30.08 | N90°00'00"E | 5+43.72 | 479,117.75 | 1,918,740.65 | | | | | | | | | |
| C31 | | | | | S84°01'58"E | | | | 11°56'03" | 28°38'52" | 20.90 | 200.00 | 41.66 | 41.58 | 479,117.75 | 1,918,761.55 | 5+64.62 |
| L43 | 5+85.38 | 479,113.43 | 1,918,782.00 | 38.21 | S78°03'57"E | 6+23.58 | 479,105.53 | 1,918,819.38 | | | | | | | | | |

## TSR No. 3

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L44 | 0+00.00 | 479,701.93 | 1,918,154.13 | 78.87 | S73°54'06"W | 0+78.87 | 479,680.06 | 1,918,078.35 | | | | | | | | | |
| C32 | | | | | S77°17'31"W | | | | 6°46'49" | 19°05'55" | 17.77 | 300.00 | 35.50 | 35.48 | 479,675.13 | 1,918,061.28 | 0+96.64 |
| L45 | 1+14.37 | 479,672.25 | 1,918,043.74 | 84.15 | S80°40'56"W | 1+98.52 | 479,658.63 | 1,917,960.70 | | | | | | | | | |

## TSR No. 4

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L46 | 0+00.00 | 479,633.86 | 1,918,245.69 | 16.90 | S85°03'36"E | 0+16.90 | 479,632.40 | 1,918,262.53 | | | | | | | | | |
| C33 | | | | | S89°22'47"E | | | | 8°38'23" | 28°38'52" | 15.11 | 200.00 | 30.16 | 30.13 | 479,631.10 | 1,918,277.58 | 0+32.01 |
| L47 | 0+47.06 | 479,632.08 | 1,918,292.66 | 99.79 | N86°18'02"E | 1+46.85 | 479,638.52 | 1,918,392.24 | | | | | | | | | |
| C34 | | | | | N74°38'12"E | | | | 23°19'39" | 57°17'45" | 20.64 | 100.00 | 40.71 | 40.43 | 479,639.85 | 1,918,412.84 | 1+67.49 |
| L48 | 1+87.56 | 479,649.23 | 1,918,431.23 | 54.10 | N62°58'23"E | 2+41.66 | 479,673.81 | 1,918,479.42 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 6/6/23 KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 179-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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## TSR No. 5

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L49 | 0+00.00 | 479,650.85 | 1,918,745.10 | 57.45 | S1°43'55"E | 0+57.45 | 479,593.43 | 1,918,746.83 | | | | | | | | | |

## TSR No. 6

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L50 | 0+00.00 | 479,617.13 | 1,919,067.57 | 115.89 | S81°50'01"E | 1+15.89 | 479,600.67 | 1,919,182.29 | | | | | | | | | |

## TSR No. 7

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L51 | 0+00.00 | 479,935.69 | 1,918,282.44 | 60.90 | N69°15'04"W | 0+60.90 | 479,957.26 | 1,918,225.49 | | | | | | | | | |
| C35 | | | | | N85°45'26"W | | | | 33°00'44" | 22°55'06" | 74.08 | 250.00 | 144.04 | 142.06 | 479,983.51 | 1,918,156.22 | 1+34.98 |
| L52 | 2+04.94 | 479,967.77 | 1,918,083.82 | 108.12 | S77°44'11"W | 3+13.06 | 479,944.81 | 1,917,978.18 | | | | | | | | | |

## TSR No. 8

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L53 | 0+00.00 | 479,894.57 | 1,919,212.37 | 80.87 | N62°26'22"W | 0+80.87 | 479,931.99 | 1,919,140.68 | | | | | | | | | |
| C36 | | | | | N70°59'52"W | | | | 17°07'01" | 38°11'50" | 22.57 | 150.00 | 44.81 | 44.65 | 479,942.44 | 1,919,120.67 | 1+03.45 |
| L54 | 1+25.68 | 479,946.53 | 1,919,098.47 | 86.55 | N79°33'22"W | 2+12.24 | 479,962.22 | 1,919,013.35 | | | | | | | | | |

## TSR No. 9

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L55 | 0+00.00 | 480,472.37 | 1,919,638.45 | 90.81 | S67°31'51"E | 0+90.81 | 480,437.66 | 1,919,722.36 | | | | | | | | | |
| C37 | | | | | S56°40'21"E | | | | 21°43'01" | 11°27'33" | 95.91 | 500.00 | 189.51 | 188.38 | 480,401.01 | 1,919,810.99 | 1+86.72 |
| L56 | 2+80.32 | 480,334.16 | 1,919,879.76 | 113.71 | S45°48'50"E | 3+94.03 | 480,254.91 | 1,919,961.30 | | | | | | | | | |

## TSR No. 10

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L57 | 0+00.00 | 481,011.10 | 1,919,451.27 | 42.34 | N50°54'55"W | 0+42.34 | 481,037.79 | 1,919,418.41 | | | | | | | | | |
| C38 | | | | | N69°28'46"W | | | | 37°07'42" | 76°23'40" | 25.19 | 75.00 | 48.60 | 47.75 | 481,053.67 | 1,919,398.86 | 0+67.53 |
| L61 | 0+90.94 | 481,054.53 | 1,919,373.68 | 141.33 | N88°02'37"W | 2+32.27 | 481,059.36 | 1,919,232.44 | | | | | | | | | |
| C42 | | | | | N86°46'05"W | | | | 2°33'05" | 28°38'52" | 4.45 | 200.00 | 8.91 | 8.91 | 481,059.51 | 1,919,227.99 | 2+36.72 |
| L62 | 2+41.17 | 481,059.86 | 1,919,223.55 | 205.61 | N85°29'32"W | 4+46.79 | 481,076.02 | 1,919,018.57 | | | | | | | | | |
| C39 | | | | | N89°35'42"W | | | | 8°12'20" | 28°38'52" | 14.35 | 200.00 | 28.64 | 28.62 | 481,077.15 | 1,919,004.27 | 4+61.13 |
| L58 | 4+75.43 | 481,076.22 | 1,918,989.95 | 90.36 | S86°18'08"W | 5+65.79 | 481,070.40 | 1,918,899.78 | | | | | | | | | |
| C40 | | | | | N65°49'03"W | | | | 55°45'38" | 114°35'30" | 26.45 | 50.00 | 48.66 | 46.76 | 481,068.69 | 1,918,873.39 | 5+92.24 |
| L59 | 6+14.45 | 481,089.55 | 1,918,857.12 | 59.43 | N37°56'14"W | 6+73.88 | 481,136.43 | 1,918,820.59 | | | | | | | | | |
| C41 | | | | | N65°29'51"W | | | | 55°07'15" | 114°35'30" | 26.10 | 50.00 | 48.10 | 46.27 | 481,157.01 | 1,918,804.54 | 6+99.97 |
| L60 | 7+21.98 | 481,155.62 | 1,918,778.48 | 30.18 | S86°56'31"W | 7+52.16 | 481,154.01 | 1,918,748.35 | | | | | | | | | |

## TSR No. 11

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L63 | 0+00.00 | 481,066.63 | 1,919,555.20 | 29.02 | S50°54'55"E | 0+29.02 | 481,048.33 | 1,919,577.73 | | | | | | | | | |
| C43 | | | | | S72°18'27"E | | | | 42°47'03" | 114°35'30" | 19.59 | 50.00 | 37.34 | 36.47 | 481,035.98 | 1,919,592.93 | 0+48.61 |
| L64 | 0+66.36 | 481,037.24 | 1,919,612.48 | 47.00 | N86°18'02"E | 1+13.36 | 481,040.28 | 1,919,659.38 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/25

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME: ANSI D

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D

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SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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SHEET ID
CS602

READY TO ADVERTISE (RTA)

G:\CLE\ANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\600 DATA CHARTS\SIB2ECS602.DWG

## TSR No. 12

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L65 | 0+00.00 | 481,764.61 | 1,919,812.77 | 121.82 | S86°18'02"W | 1+21.82 | 481,756.75 | 1,919,691.20 | | | | | | | | | |

## TSR No. 13

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L66 | 0+00.00 | 481,867.82 | 1,920,453.85 | 118.68 | S58°41'43"E | 1+18.68 | 481,806.16 | 1,920,555.25 | | | | | | | | | |

## TSR No. 14

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L67 | 0+00.00 | 482,182.97 | 1,919,904.79 | 215.40 | N77°35'41"W | 2+15.40 | 482,229.24 | 1,919,694.42 | | | | | | | | | |
| C44 | | | | | N81°19'59"W | | | | 7°28'36" | 19°05'55" | 19.60 | 300.00 | 39.15 | 39.12 | 482,233.46 | 1,919,675.28 | 2+35.00 |
| L68 | 2+54.54 | 482,235.14 | 1,919,655.75 | 32.50 | N85°04'17"W | 2+87.04 | 482,237.93 | 1,919,623.37 | | | | | | | | | |

## TSR No. 15

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L69 | 0+00.00 | 482,595.91 | 1,919,995.62 | 135.43 | S77°35'41"E | 1+35.43 | 482,566.82 | 1,920,127.89 | | | | | | | | | |
| C45 | | | | | S76°09'39"E | | | | 2°52'04" | 5°43'46" | 25.03 | 1,000.00 | 50.05 | 50.05 | 482,561.44 | 1,920,152.33 | 1+60.46 |
| L70 | 1+85.48 | 482,554.84 | 1,920,176.48 | 115.80 | S74°43'37"E | 3+01.28 | 482,524.34 | 1,920,288.19 | | | | | | | | | |

## TSR No. 16

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L71 | 0+00.00 | 482,942.52 | 1,920,080.24 | 47.22 | N73°51'24"W | 0+47.22 | 482,955.65 | 1,920,034.88 | | | | | | | | | |
| C46 | | | | | N89°58'59"W | | | | 32°15'11" | 22°55'06" | 72.28 | 250.00 | 140.73 | 138.88 | 482,975.75 | 1,919,965.45 | 1+19.50 |
| L72 | 1+87.95 | 482,955.69 | 1,919,896.00 | 69.02 | S73°53'25"W | 2+56.97 | 482,936.54 | 1,919,829.69 | | | | | | | | | |

## TSR No. 17

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L73 | 0+00.00 | 482,595.98 | 1,918,688.37 | 73.13 | S73°53'25"W | 0+73.13 | 482,575.69 | 1,918,618.11 | | | | | | | | | |
| C47 | | | | | S76°24'38"W | | | | 5°02'26" | 5°43'46" | 44.02 | 1,000.00 | 87.97 | 87.95 | 482,563.47 | 1,918,575.82 | 1+17.15 |
| L74 | 1+61.11 | 482,555.02 | 1,918,532.63 | 123.50 | S78°55'51"W | 2+84.61 | 482,531.31 | 1,918,411.42 | | | | | | | | | |
| C48 | | | | | S77°02'46"W | | | | 3°46'11" | 11°27'33" | 16.45 | 500.00 | 32.90 | 32.89 | 482,528.15 | 1,918,395.28 | 3+01.06 |
| L75 | 3+17.51 | 482,523.94 | 1,918,379.37 | 707.51 | S75°09'40"W | 10+25.02 | 482,342.74 | 1,917,695.46 | | | | | | | | | |
| C49 | | | | | S75°54'20"W | | | | 1°29'20" | 5°43'46" | 12.99 | 1,000.00 | 25.99 | 25.99 | 482,339.41 | 1,917,682.90 | 10+38.01 |
| L76 | 10+51.00 | 482,336.41 | 1,917,670.25 | 73.27 | S76°39'00"W | 11+24.27 | 482,319.50 | 1,917,598.96 | | | | | | | | | |
| C50 | | | | | S75°17'57"W | | | | 2°42'07" | 5°43'46" | 23.58 | 1,000.00 | 47.16 | 47.15 | 482,314.05 | 1,917,576.02 | 11+47.86 |
| L77 | 11+71.43 | 482,307.53 | 1,917,553.35 | 236.33 | S73°56'54"W | 14+07.75 | 482,242.19 | 1,917,326.24 | | | | | | | | | |
| C51 | | | | | S74°28'32"W | | | | 1°03'16" | 5°43'46" | 9.20 | 1,000.00 | 18.40 | 18.40 | 482,239.64 | 1,917,317.40 | 14+16.96 |
| L78 | 14+26.16 | 482,237.26 | 1,917,308.51 | 129.18 | S75°00'10"W | 15+55.34 | 482,203.83 | 1,917,183.72 | | | | | | | | | |

## TSR No. 18

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L79 | 0+00.00 | 482,564.84 | 1,918,577.34 | 131.90 | S13°57'55"E | 1+31.90 | 482,436.84 | 1,918,609.17 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME: ANSI_D

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
DATE: 6/6/2023

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
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## TSR No. 19

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L80 | 0+00.00 | 482,428.11 | 1,918,574.07 | 93.70 | N76°02'05"E | 0+93.70 | 482,450.72 | 1,918,664.99 | | | | | | | | | |
| C52 | | | | | S58°09'05"E | | | | 91°37'39" | 114°35'30" | 51.44 | 50.00 | 79.96 | 71.71 | 482,463.14 | 1,918,714.91 | 1+45.14 |
| L81 | 1+73.66 | 482,412.88 | 1,918,725.90 | 27.72 | S12°20'16"E | 2+01.37 | 482,385.81 | 1,918,731.83 | | | | | | | | | |

## TSR No. 20

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L82 | 0+00.00 | 482,489.41 | 1,918,249.05 | 92.12 | S14°50'20"E | 0+92.12 | 482,400.36 | 1,918,272.64 | | | | | | | | | |
| C53 | | | | | S12°12'20"E | | | | 5°16'00" | 11°27'33" | 23.00 | 500.00 | 45.96 | 45.94 | 482,378.13 | 1,918,278.53 | 1+15.12 |
| L83 | 1+38.08 | 482,355.46 | 1,918,282.35 | 323.46 | S9°34'20"E | 4+61.54 | 482,036.50 | 1,918,336.14 | | | | | | | | | |
| C54 | | | | | S51°38'32"E | | | | 84°08'24" | 114°35'30" | 45.13 | 50.00 | 73.43 | 67.00 | 481,992.00 | 1,918,343.64 | 5+06.67 |
| L84 | 5+34.96 | 481,994.92 | 1,918,388.68 | 39.00 | N86°17'16"E | 5+73.96 | 481,997.45 | 1,918,427.60 | | | | | | | | | |

## TSR No. 21

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L85 | 0+00.00 | 482,462.06 | 1,918,145.82 | 35.28 | N14°50'20"W | 0+35.28 | 482,496.16 | 1,918,136.78 | | | | | | | | | |
| C55 | | | | | N51°30'19"W | | | | 73°19'58" | 57°17'45" | 74.45 | 100.00 | 127.99 | 119.43 | 482,568.13 | 1,918,117.71 | 1+09.73 |
| L86 | 1+63.27 | 482,570.50 | 1,918,043.31 | 53.92 | N88°10'18"W | 2+17.19 | 482,572.22 | 1,917,989.42 | | | | | | | | | |

## TSR No. 22

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L87 | 0+00.00 | 482,423.77 | 1,918,001.29 | 168.82 | S13°57'55"E | 1+68.82 | 482,259.93 | 1,918,042.03 | | | | | | | | | |

## TSR No. 23

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L88 | 0+00.00 | 482,376.57 | 1,917,823.12 | 126.50 | N14°50'20"W | 1+26.50 | 482,498.85 | 1,917,790.73 | | | | | | | | | |
| C56 | | | | | N51°53'26"W | | | | 74°06'13" | 57°17'45" | 75.50 | 100.00 | 129.34 | 120.51 | 482,571.83 | 1,917,771.39 | 2+02.00 |
| L89 | 2+55.84 | 482,573.22 | 1,917,695.91 | 33.01 | N88°56'33"W | 2+88.85 | 482,573.83 | 1,917,662.90 | | | | | | | | | |

## TSR No. 24

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L90 | 0+00.00 | 482,327.76 | 1,917,633.77 | 88.24 | S13°21'00"E | 0+88.24 | 482,241.90 | 1,917,654.14 | | | | | | | | | |
| C57 | | | | | S0°47'10"E | | | | 25°07'40" | 19°05'55" | 66.86 | 300.00 | 131.57 | 130.52 | 482,176.85 | 1,917,669.58 | 1+55.10 |
| L91 | 2+19.81 | 482,111.40 | 1,917,655.93 | 307.19 | S11°46'41"W | 5+27.00 | 481,810.67 | 1,917,593.23 | | | | | | | | | |
| C58 | | | | | S6°01'55"W | | | | 11°29'31" | 11°27'33" | 50.31 | 500.00 | 100.29 | 100.12 | 481,761.42 | 1,917,582.96 | 5+77.31 |
| L92 | 6+27.28 | 481,711.11 | 1,917,582.71 | 104.22 | S0°17'10"W | 7+31.50 | 481,606.90 | 1,917,582.19 | | | | | | | | | |

## TSR No. 25

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L93 | 0+00.00 | 481,606.69 | 1,917,624.56 | 119.58 | N89°42'50"W | 1+19.58 | 481,607.28 | 1,917,504.98 | | | | | | | | | |
| C59 | | | | | S79°20'13"W | | | | 21°53'54" | 27°17'01" | 40.63 | 210.00 | 80.26 | 79.77 | 481,607.49 | 1,917,464.35 | 1+60.21 |
| L94 | 1+99.85 | 481,592.52 | 1,917,426.58 | 85.15 | S68°23'16"W | 2+84.99 | 481,561.16 | 1,917,347.42 | | | | | | | | | |
| C60 | | | | | S76°25'58"W | | | | 16°05'25" | 28°38'52" | 28.27 | 200.00 | 56.17 | 55.98 | 481,550.75 | 1,917,321.14 | 3+13.26 |
| L95 | 3+41.16 | 481,548.03 | 1,917,293.00 | 68.08 | S84°28'41"W | 4+09.24 | 481,541.48 | 1,917,225.24 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME: G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\600 DATA CHARTS\SI\2ECS604.DWG

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86162
VOLUMES 3 & 4 - DOWNRANGE

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SHEET ID
CS604

READY TO ADVERTISE (RTA)

## TSR No. 26

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L96 | 0+00.00 | 483,520.20 | 1,920,177.56 | 98.30 | N89°15'10"W | 0+98.30 | 483,521.48 | 1,920,079.26 | | | | | | | | | |

## TSR No. 27

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L97 | 0+00.00 | 483,578.56 | 1,920,196.30 | 21.08 | S86°25'51"E | 0+21.08 | 483,577.25 | 1,920,217.35 | | | | | | | | | |
| C61 | | | | | N85°28'55"E | | | | 16°10'27" | 57°17'45" | 14.21 | 100.00 | 28.23 | 28.14 | 483,576.36 | 1,920,231.53 | 0+35.29 |
| L98 | 0+49.31 | 483,579.46 | 1,920,245.39 | 124.72 | N77°23'41"E | 1+74.03 | 483,606.68 | 1,920,367.10 | | | | | | | | | |

## TSR No. 28

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L99 | 0+00.00 | 483,735.14 | 1,920,193.75 | 288.20 | S80°04'00"W | 2+88.20 | 483,685.42 | 1,919,909.87 | | | | | | | | | |
| L100 | 2+88.20 | 483,685.42 | 1,919,909.87 | 1,067.91 | S79°23'30"W | 13+56.12 | 483,488.83 | 1,918,860.21 | | | | | | | | | |
| L101 | 13+56.12 | 483,488.83 | 1,918,860.21 | 172.70 | S79°34'22"W | 15+28.81 | 483,457.57 | 1,918,690.36 | | | | | | | | | |
| C62 | | | | | S82°56'34"W | | | | 6°44'25" | 11°27'33" | 29.44 | 500.00 | 58.82 | 58.79 | 483,452.25 | 1,918,661.40 | 15+58.26 |
| L102 | 15+87.63 | 483,450.35 | 1,918,632.02 | 142.07 | S86°18'46"W | 17+29.70 | 483,441.22 | 1,918,490.24 | | | | | | | | | |

## TSR No. 29

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L103 | 0+00.00 | 483,685.42 | 1,919,909.87 | 135.37 | N35°17'33"W | 1+35.37 | 483,795.91 | 1,919,831.66 | | | | | | | | | |
| C63 | | | | | N37°47'10"W | | | | 4°59'13" | 11°27'33" | 21.77 | 500.00 | 43.52 | 43.51 | 483,813.69 | 1,919,819.08 | 1+57.14 |
| L104 | 1+78.89 | 483,830.30 | 1,919,805.00 | 109.29 | N40°16'46"W | 2+88.18 | 483,913.67 | 1,919,734.34 | | | | | | | | | |
| C64 | | | | | N44°31'16"W | | | | 8°29'00" | 11°27'33" | 37.08 | 500.00 | 74.03 | 73.96 | 483,941.97 | 1,919,710.37 | 3+25.26 |
| L105 | 3+62.21 | 483,966.41 | 1,919,682.48 | 347.83 | N48°45'46"W | 7+10.04 | 484,195.69 | 1,919,420.91 | | | | | | | | | |
| C65 | | | | | N46°16'38"W | | | | 4°58'17" | 11°27'33" | 21.70 | 500.00 | 43.38 | 43.37 | 484,210.00 | 1,919,404.59 | 7+31.75 |
| L106 | 7+53.43 | 484,225.67 | 1,919,389.57 | 160.36 | N43°47'30"W | 9+13.78 | 484,341.43 | 1,919,278.60 | | | | | | | | | |
| C66 | | | | | N52°38'21"W | | | | 17°41'42" | 11°27'33" | 77.83 | 500.00 | 154.42 | 153.81 | 484,397.61 | 1,919,224.74 | 9+91.61 |
| L107 | 10+68.20 | 484,434.76 | 1,919,156.35 | 31.80 | N61°29'12"W | 11+00.00 | 484,449.94 | 1,919,128.41 | | | | | | | | | |

## TSR No. 30

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L108 | 0+00.00 | 483,849.77 | 1,919,788.50 | 101.80 | S86°53'11"W | 1+01.80 | 483,844.24 | 1,919,686.85 | | | | | | | | | |

## TSR No. 31

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L109 | 0+00.00 | 483,918.56 | 1,919,730.15 | 102.55 | S81°04'07"W | 1+02.55 | 483,902.64 | 1,919,628.85 | | | | | | | | | |

## TSR No. 32

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L110 | 0+00.00 | 484,216.21 | 1,919,398.89 | 134.92 | S89°45'22"W | 1+34.92 | 484,215.63 | 1,919,263.97 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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## TSR No. 33

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L111 | 0+00.00 | 484,414.45 | 1,919,190.44 | 70.76 | N28°30'48"E | 0+70.76 | 484,476.63 | 1,919,224.22 | | | | | | | | | |
| C67 | | | | | N11°17'04"E | | | | 34°27'28" | 38°11'50" | 46.52 | 150.00 | 90.21 | 88.86 | 484,517.50 | 1,919,246.42 | 1+17.28 |
| L112 | 1+60.97 | 484,563.77 | 1,919,241.60 | 127.22 | N5°56'40"W | 2+88.19 | 484,690.30 | 1,919,228.43 | | | | | | | | | |
| C68 | | | | | N50°56'40"W | | | | 90°00'00" | 76°23'40" | 75.00 | 75.00 | 117.81 | 106.07 | 484,764.89 | 1,919,220.66 | 3+63.19 |
| L113 | 4+06.00 | 484,757.13 | 1,919,146.06 | 52.50 | S84°03'20"W | 4+58.50 | 484,751.69 | 1,919,093.84 | | | | | | | | | |

## TSR No. 34

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L114 | 0+00.00 | 484,755.90 | 1,919,169.36 | 73.26 | N2°31'28"E | 0+73.26 | 484,829.09 | 1,919,172.59 | | | | | | | | | |
| C69 | | | | | N47°31'28"E | | | | 90°00'00" | 229°10'59" | 25.00 | 25.00 | 39.27 | 35.36 | 484,854.07 | 1,919,173.69 | 0+98.26 |
| L115 | 1+12.53 | 484,852.97 | 1,919,198.67 | 83.04 | S87°28'32"E | 1+95.57 | 484,849.31 | 1,919,281.63 | | | | | | | | | |

## TSR No. 36

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L116 | 0+00.00 | 483,612.77 | 1,919,521.92 | 114.63 | S12°36'37"E | 1+14.63 | 483,500.90 | 1,919,546.94 | | | | | | | | | |

## TSR No. 37

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L117 | 0+00.00 | 483,612.91 | 1,919,522.67 | 35.52 | N10°36'30"W | 0+35.52 | 483,647.82 | 1,919,516.14 | | | | | | | | | |
| C70 | | | | | N39°41'57"E | | | | 100°36'54" | 76°23'40" | 90.36 | 75.00 | 131.70 | 115.42 | 483,736.63 | 1,919,499.50 | 1+25.88 |
| L118 | 1+67.22 | 483,736.62 | 1,919,589.86 | 63.53 | S89°59'36"E | 2+30.75 | 483,736.62 | 1,919,653.39 | | | | | | | | | |

## TSR No. 38

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L119 | 0+00.00 | 483,587.80 | 1,919,388.63 | 129.26 | S10°36'30"E | 1+29.26 | 483,460.75 | 1,919,412.43 | | | | | | | | | |
| C71 | | | | | S9°24'30"E | | | | 2°23'58" | 5°43'46" | 20.94 | 1,000.00 | 41.88 | 41.88 | 483,440.16 | 1,919,416.28 | 1+50.21 |
| L120 | 1+71.14 | 483,419.43 | 1,919,419.27 | 128.27 | S8°12'31"E | 2+99.41 | 483,292.48 | 1,919,437.58 | | | | | | | | | |

## TSR No. 39

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L121 | 0+00.00 | 483,500.09 | 1,918,920.34 | 318.02 | S12°24'23"E | 3+18.02 | 483,189.50 | 1,918,988.66 | | | | | | | | | |

## TSR No. 40

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L122 | 0+00.00 | 483,487.49 | 1,918,852.92 | 98.81 | N10°36'30"W | 0+98.81 | 483,584.61 | 1,918,834.73 | | | | | | | | | |
| C72 | | | | | N51°11'08"W | | | | 81°09'16" | 57°17'45" | 85.64 | 100.00 | 141.64 | 130.09 | 483,668.78 | 1,918,818.96 | 1+84.45 |
| L123 | 2+40.45 | 483,666.15 | 1,918,733.36 | 50.68 | S88°14'14"W | 2+91.12 | 483,664.59 | 1,918,682.71 | | | | | | | | | |

## TSR No. 41

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L124 | 0+00.00 | 483,443.83 | 1,918,530.84 | 262.20 | S12°26'04"E | 2+62.20 | 483,187.78 | 1,918,587.30 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
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## TSR No. 42

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L125 | 0+00.00 | 484,093.30 | 1,920,234.14 | 217.74 | S89°59'36"E | 2+17.74 | 484,093.28 | 1,920,451.88 | | | | | | | | | |

## TSR No. 43

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L128 | 0+00.00 | 484,802.82 | 1,921,368.64 | 274.10 | N87°59'30"W | 2+74.10 | 484,812.42 | 1,921,094.71 | | | | | | | | | |
| C75 | | | | | N87°07'20"W | | | | 1°44'19" | 5°43'46" | 15.17 | 1,000.00 | 30.34 | 30.34 | 484,812.95 | 1,921,079.54 | 2+89.28 |
| L129 | 3+04.45 | 484,813.95 | 1,921,064.40 | 169.38 | N86°15'11"W | 4+73.83 | 484,825.01 | 1,920,895.38 | | | | | | | | | |
| C76 | | | | | N87°12'39"W | | | | 1°54'56" | 5°43'46" | 16.72 | 1,000.00 | 33.43 | 33.43 | 484,826.11 | 1,920,878.70 | 4+90.55 |
| L130 | 5+07.26 | 484,826.64 | 1,920,861.99 | 268.92 | N88°10'07"W | 7+76.18 | 484,835.24 | 1,920,593.21 | | | | | | | | | |
| C77 | | | | | N86°44'29"W | | | | 2°51'16" | 5°43'46" | 24.91 | 1,000.00 | 49.82 | 49.81 | 484,836.03 | 1,920,568.31 | 8+01.10 |
| L131 | 8+26.00 | 484,838.07 | 1,920,543.48 | 114.46 | N85°18'51"W | 9+40.46 | 484,847.42 | 1,920,429.40 | | | | | | | | | |
| C78 | | | | | S86°54'23"W | | | | 15°33'32" | 22°55'06" | 34.15 | 250.00 | 67.89 | 67.68 | 484,850.21 | 1,920,395.36 | 9+74.62 |
| L132 | 10+08.35 | 484,843.77 | 1,920,361.81 | 30.48 | S79°07'37"W | 10+38.83 | 484,838.02 | 1,920,331.88 | | | | | | | | | |
| C79 | | | | | S64°32'16"W | | | | 29°10'43" | 22°55'06" | 65.07 | 250.00 | 127.32 | 125.94 | 484,825.74 | 1,920,267.98 | 11+03.90 |
| L133 | 11+66.14 | 484,783.87 | 1,920,218.17 | 14.84 | S49°56'54"W | 11+80.98 | 484,774.33 | 1,920,206.82 | | | | | | | | | |
| C80 | | | | | S70°51'51"W | | | | 41°49'53" | 28°38'52" | 76.44 | 200.00 | 146.02 | 142.80 | 484,725.14 | 1,920,148.31 | 12+57.41 |
| L134 | 13+27.00 | 484,727.51 | 1,920,071.91 | 106.63 | N88°13'12"W | 14+33.63 | 484,730.83 | 1,919,965.33 | | | | | | | | | |

## TSR No. 44

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L135 | 0+00.00 | 484,804.22 | 1,921,328.67 | 31.44 | S2°00'30"W | 0+31.44 | 484,772.80 | 1,921,327.57 | | | | | | | | | |
| C81 | | | | | S30°22'22"E | | | | 64°45'44" | 114°35'30" | 31.71 | 50.00 | 56.52 | 53.55 | 484,741.11 | 1,921,326.45 | 0+63.15 |
| L136 | 0+87.95 | 484,726.60 | 1,921,354.64 | 287.01 | S62°45'14"E | 3+74.96 | 484,595.20 | 1,921,609.81 | | | | | | | | | |

## TSR No. 45

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L137 | 0+00.00 | 484,828.12 | 1,920,815.61 | 54.68 | N0°00'00"E | 0+54.68 | 484,882.80 | 1,920,815.61 | | | | | | | | | |
| C82 | | | | | N30°02'35"W | | | | 60°05'09" | 57°17'45" | 57.83 | 100.00 | 104.87 | 100.13 | 484,940.64 | 1,920,815.61 | 1+12.51 |
| L138 | 1+59.55 | 484,969.48 | 1,920,765.48 | 200.85 | N60°05'09"W | 3+60.39 | 485,069.64 | 1,920,591.39 | | | | | | | | | |
| C83 | | | | | N51°28'42"W | | | | 17°12'54" | 22°55'06" | 37.84 | 250.00 | 75.11 | 74.83 | 485,088.51 | 1,920,558.59 | 3+98.23 |
| L139 | 4+35.51 | 485,116.25 | 1,920,532.84 | 32.22 | N42°52'15"W | 4+67.72 | 485,139.86 | 1,920,510.92 | | | | | | | | | |
| C84 | | | | | N63°22'08"W | | | | 40°59'45" | 57°17'45" | 37.38 | 100.00 | 71.55 | 70.03 | 485,167.26 | 1,920,485.49 | 5+05.11 |
| L140 | 5+39.28 | 485,171.25 | 1,920,448.32 | 154.93 | N83°52'00"W | 6+94.20 | 485,187.80 | 1,920,294.27 | | | | | | | | | |

## TSR No. 46

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L141 | 0+00.00 | 484,842.46 | 1,920,489.94 | 72.39 | N16°29'15"W | 0+72.39 | 484,911.87 | 1,920,469.39 | | | | | | | | | |
| C85 | | | | | N61°23'07"W | | | | 89°47'45" | 76°23'40" | 74.73 | 75.00 | 117.54 | 105.88 | 484,983.53 | 1,920,448.18 | 1+47.12 |
| L142 | 1+89.93 | 484,962.57 | 1,920,376.45 | 73.52 | S73°43'00"W | 2+63.44 | 484,941.96 | 1,920,305.88 | | | | | | | | | |

## TSR No. 47

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L143 | 0+00.00 | 484,958.41 | 1,920,362.21 | 222.40 | N0°41'48"W | 2+22.40 | 485,180.79 | 1,920,359.51 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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## TSR No. 48

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L144 | 0+00.00 | 484,890.42 | 1,919,508.75 | 121.14 | N28°43'00"E | 1+21.14 | 484,996.66 | 1,919,566.96 | | | | | | | | | |
| C86 | | | | | N13°18'10"E | | | | 30°49'41" | 28°38'52" | 55.14 | 200.00 | 107.61 | 106.32 | 485,045.02 | 1,919,593.45 | 1+76.28 |
| L145 | 2+28.75 | 485,100.12 | 1,919,591.42 | 140.37 | N2°06'41"W | 3+69.12 | 485,240.40 | 1,919,586.25 | | | | | | | | | |

## TSR No. 49

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L146 | 0+00.00 | 485,311.49 | 1,919,406.17 | 99.04 | N12°40'58"W | 0+99.04 | 485,408.11 | 1,919,384.43 | | | | | | | | | |
| C87 | | | | | N20°19'47"W | | | | 15°17'37" | 11°27'33" | 67.13 | 500.00 | 133.46 | 133.07 | 485,473.61 | 1,919,369.69 | 1+66.17 |
| L147 | 2+32.50 | 485,532.89 | 1,919,338.20 | 795.07 | N27°58'36"W | 10+27.57 | 486,235.05 | 1,918,965.22 | | | | | | | | | |

## TSR No. 50

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L148 | 0+00.00 | 485,939.34 | 1,920,613.91 | 386.96 | S80°58'59"E | 3+86.96 | 485,878.69 | 1,920,996.09 | | | | | | | | | |
| C88 | | | | | S82°04'09"E | | | | 2°10'21" | 5°43'46" | 18.96 | 1,000.00 | 37.92 | 37.92 | 485,875.72 | 1,921,014.82 | 4+05.92 |
| L149 | 4+24.88 | 485,873.46 | 1,921,033.64 | 677.81 | S83°09'20"E | 11+02.69 | 485,792.68 | 1,921,706.62 | | | | | | | | | |

## TSR No. 51

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L150 | 0+00.00 | 485,797.45 | 1,921,666.91 | 518.47 | S7°53'07"W | 5+18.47 | 485,283.88 | 1,921,595.78 | | | | | | | | | |

## TSR No. 52

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L151 | 0+00.00 | 485,417.49 | 1,921,614.28 | 168.03 | N80°34'35"W | 1+68.03 | 485,445.00 | 1,921,448.52 | | | | | | | | | |

## TSR No. 53

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L152 | 0+00.00 | 485,417.49 | 1,921,614.28 | 198.86 | S80°34'35"E | 1+98.86 | 485,384.93 | 1,921,810.46 | | | | | | | | | |

## TSR No. 54

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L153 | 0+00.00 | 485,766.55 | 1,918,041.99 | 141.88 | N28°10'44"W | 1+41.88 | 485,891.61 | 1,917,974.99 | | | | | | | | | |
| C89 | | | | | N25°05'30"E | | | | 106°32'28" | 76°23'40" | 100.51 | 75.00 | 139.46 | 120.22 | 485,980.21 | 1,917,927.52 | 2+42.39 |
| L154 | 2+81.34 | 486,000.49 | 1,918,025.97 | 78.36 | N78°21'45"E | 3+59.70 | 486,016.29 | 1,918,102.72 | | | | | | | | | |

## TSR No. 55

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L155 | 0+00.00 | 486,155.83 | 1,918,768.64 | 130.15 | N28°10'44"W | 1+30.15 | 486,270.55 | 1,918,707.18 | | | | | | | | | |
| C90 | | | | | N11°27'30"E | | | | 79°16'28" | 22°55'06" | 207.09 | 250.00 | 345.90 | 318.96 | 486,453.10 | 1,918,609.39 | 3+37.24 |
| L156 | 4+76.05 | 486,583.15 | 1,918,770.55 | 7.31 | N51°05'44"E | 4+83.35 | 486,587.74 | 1,918,776.23 | | | | | | | | | |
| C91 | | | | | N17°29'25"E | | | | 67°12'38" | 71°37'11" | 53.16 | 80.00 | 93.84 | 88.55 | 486,621.13 | 1,918,817.60 | 5+36.51 |
| L157 | 5+77.20 | 486,672.20 | 1,918,802.85 | 74.60 | N16°06'54"W | 6+51.79 | 486,743.87 | 1,918,782.14 | | | | | | | | | |
| C92 | | | | | N6°33'13"W | | | | 19°07'22" | 28°38'52" | 33.69 | 200.00 | 66.75 | 66.44 | 486,776.23 | 1,918,772.79 | 6+85.48 |

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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## TSR No. 55 (CONTINUED)

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L158 | 7+18.54 | 486,809.88 | 1,918,774.56 | 26.48 | N3°00'28"E | 7+45.02 | 486,836.32 | 1,918,775.95 | | | | | | | | | |
| C93 | | | | | N20°38'15"W | | | | 47°17'27" | 114°35'30" | 21.89 | 50.00 | 41.27 | 40.11 | 486,858.18 | 1,918,777.10 | 7+66.91 |
| L159 | 7+86.29 | 486,873.85 | 1,918,761.81 | 32.85 | N44°16'59"W | 8+19.13 | 486,897.36 | 1,918,738.88 | | | | | | | | | |
| C94 | | | | | N36°25'22"W | | | | 15°43'13" | 114°35'30" | 6.90 | 50.00 | 13.72 | 13.68 | 486,902.31 | 1,918,734.06 | 8+26.04 |
| L160 | 8+32.85 | 486,908.37 | 1,918,730.76 | 40.24 | N28°33'46"W | 8+73.09 | 486,943.71 | 1,918,711.52 | | | | | | | | | |

## TSR No. 56

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L161 | 0+00.00 | 486,309.66 | 1,918,690.35 | 200.35 | N72°20'34"E | 2+00.35 | 486,370.43 | 1,918,881.26 | | | | | | | | | |

## TSR No. 57

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L162 | 0+00.00 | 487,010.19 | 1,919,121.46 | 708.03 | S80°47'16"W | 7+08.03 | 486,896.84 | 1,918,422.57 | | | | | | | | | |
| C95 | | | | | S81°21'12"W | | | | 1°07'52" | 5°43'46" | 9.87 | 1,000.00 | 19.74 | 19.74 | 486,895.26 | 1,918,412.82 | 7+17.90 |
| L163 | 7+27.77 | 486,893.87 | 1,918,403.05 | 400.33 | S81°55'08"W | 11+28.10 | 486,837.60 | 1,918,006.69 | | | | | | | | | |
| C96 | | | | | S69°01'18"W | | | | 25°47'40" | 22°55'06" | 57.24 | 250.00 | 112.55 | 111.60 | 486,829.55 | 1,917,950.02 | 11+85.35 |
| L164 | 12+40.65 | 486,797.64 | 1,917,902.49 | 59.52 | S56°07'28"W | 13+00.17 | 486,764.47 | 1,917,853.07 | | | | | | | | | |
| C97 | | | | | S72°18'07"W | | | | 32°21'19" | 57°17'45" | 29.01 | 100.00 | 56.47 | 55.72 | 486,748.30 | 1,917,828.99 | 13+29.18 |
| L165 | 13+56.64 | 486,747.53 | 1,917,799.99 | 79.65 | S88°28'47"W | 14+36.30 | 486,745.41 | 1,917,720.36 | | | | | | | | | |

## TSR No. 58

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L166 | 0+00.00 | 487,003.79 | 1,919,081.98 | 186.63 | N10°52'16"W | 1+86.63 | 487,187.07 | 1,919,046.78 | | | | | | | | | |
| C98 | | | | | N54°54'04"W | | | | 88°03'38" | 76°23'40" | 72.50 | 75.00 | 115.27 | 104.26 | 487,258.27 | 1,919,033.11 | 2+59.13 |
| L167 | 3+01.90 | 487,247.01 | 1,918,961.48 | 58.28 | S81°04'07"W | 3+60.18 | 487,237.97 | 1,918,903.91 | | | | | | | | | |

## TSR No. 59

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L168 | 0+00.00 | 487,210.21 | 1,918,640.31 | 142.32 | N11°30'58"W | 1+42.32 | 487,349.66 | 1,918,611.90 | | | | | | | | | |
| C99 | | | | | N13°10'21"W | | | | 3°18'46" | 11°27'33" | 14.46 | 500.00 | 28.91 | 28.91 | 487,363.83 | 1,918,609.01 | 1+56.78 |
| L169 | 1+71.24 | 487,377.81 | 1,918,605.31 | 78.70 | N14°49'45"W | 2+49.93 | 487,453.89 | 1,918,585.17 | | | | | | | | | |

## TSR No. 60

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L170 | 0+00.00 | 487,378.89 | 1,918,605.02 | 273.09 | S84°26'25"W | 2+73.09 | 487,352.43 | 1,918,333.22 | | | | | | | | | |

## TSR No. 61

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L171 | 0+00.00 | 487,415.22 | 1,918,595.40 | 101.09 | N88°28'47"E | 1+01.09 | 487,417.90 | 1,918,696.46 | | | | | | | | | |

## TSR No. 62

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L181 | 0+00.00 | 484,551.04 | 1,920,267.38 | 115.10 | S55°31'17"E | 1+15.10 | 484,485.88 | 1,920,362.27 | | | | | | | | | |
| C104 | | | | | S57°29'52"E | | | | 3°57'10" | 5°43'46" | 34.51 | 1,000.00 | 68.99 | 68.98 | 484,466.34 | 1,920,390.72 | 1+49.61 |
| L182 | 1+84.09 | 484,448.81 | 1,920,420.44 | 73.90 | S59°28'27"E | 2+57.99 | 484,411.28 | 1,920,484.10 | | | | | | | | | |
| C103 | | | | | S72°12'11"E | | | | 25°27'28" | 28°38'52" | 45.18 | 200.00 | 88.86 | 88.14 | 484,388.33 | 1,920,523.01 | 3+03.17 |
| L180 | 3+46.86 | 484,384.34 | 1,920,568.02 | 157.42 | S84°55'55"E | 5+04.28 | 484,370.43 | 1,920,724.82 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 6/6/23 KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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READY TO ADVERTISE (RTA)

## M-01

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L24 | 0+00.00 | 482,934.57 | 1,919,909.37 | 1,350.00 | S73°53'25"W | 13+50.00 | 482,559.98 | 1,918,612.38 | | | | | | | | | |

## M-02

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L172 | 0+00.00 | 483,692.60 | 1,918,379.30 | 1,350.00 | N81°04'07"E | 13+50.00 | 483,902.19 | 1,919,712.94 | | | | | | | | | |

## M-03

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L173 | 0+00.00 | 484,940.23 | 1,920,385.56 | 488.65 | S73°43'00"W | 4+88.65 | 484,803.22 | 1,919,916.51 | | | | | | | | | |
| C100 | | | | | N83°47'00"W | | | | 45°00'00" | 11°27'33" | 207.11 | 500.00 | 392.70 | 382.68 | 484,745.15 | 1,919,717.71 | 6+95.76 |
| L174 | 8+81.35 | 484,844.66 | 1,919,536.08 | 468.65 | N61°17'00"W | 13+50.00 | 485,069.84 | 1,919,125.07 | | | | | | | | | |

## M-04

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L175 | 0+00.00 | 485,220.42 | 1,919,081.03 | 693.40 | N78°56'20"E | 6+93.40 | 485,353.45 | 1,919,761.55 | | | | | | | | | |
| C101 | | | | | S78°33'40"E | | | | 45°00'00" | 11°27'33" | 207.11 | 500.00 | 392.70 | 382.68 | 485,393.19 | 1,919,964.81 | 9+00.51 |
| L176 | 10+86.10 | 485,277.56 | 1,920,136.63 | 263.90 | S56°03'40"E | 13+50.00 | 485,130.22 | 1,920,355.57 | | | | | | | | | |

## M-05

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L177 | 0+00.00 | 486,219.99 | 1,918,987.94 | 1,350.00 | S61°49'16"W | 13+50.00 | 485,582.49 | 1,917,797.94 | | | | | | | | | |

## M-06

| SEGMENT No. | BEGIN STATION | BEGIN NORTHING | BEGIN EASTING | DISTANCE | DIRECTION | END STATION | END NORTHING | END EASTING | DELTA | DEGREE OF CURVE | TANGENT LENGTH | RADIUS | ARC LENGTH | CHORD LENGTH | PI NORTHING | PI EASTING | PI STATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L31 | 0+00.00 | 487,027.92 | 1,917,654.37 | 1,350.00 | N81°04'07"E | 13+50.00 | 487,237.52 | 1,918,988.00 | | | | | | | | | |

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME: G:\CLE\ANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\600 DATA CHARTS\B2ECS610.DWG

U.S. ARMY CORPS OF ENGINEERS
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CS610

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| CLEARING COORDINATES | | |
|---|---|---|
| POINT # | NORTHING | EASTING |
| C/G-1 | 477,244.77 | 1,918,709.00 |
| C/G-2 | 477,328.26 | 1,918,291.61 |
| C/G-3 | 477,229.24 | 1,918,151.66 |
| C/G-4 | 477,233.13 | 1,918,058.03 |
| C/G-5 | 477,389.69 | 1,917,988.25 |
| C/G-6 | 477,422.48 | 1,917,826.31 |
| C/G-7 | 477,387.79 | 1,917,802.42 |
| C/G-8 | 477,347.92 | 1,917,661.79 |
| C/G-9 | 477,428.92 | 1,917,483.08 |
| C/G-10 | 477,416.88 | 1,917,369.71 |
| C/G-11 | 477,365.29 | 1,917,331.84 |
| C/G-12 | 477,358.79 | 1,917,206.43 |
| C/G-13 | 477,472.55 | 1,917,195.50 |
| C/G-14 | 477,581.63 | 1,917,237.23 |
| C/G-15 | 477,628.90 | 1,917,235.09 |
| C/G-16 | 477,638.62 | 1,917,352.64 |
| C/G-17 | 477,607.57 | 1,917,394.38 |
| C/G-18 | 477,621.04 | 1,917,528.67 |
| C/G-19 | 477,768.02 | 1,917,625.01 |
| C/G-20 | 479,064.61 | 1,917,478.86 |
| C/G-21 | 479,146.67 | 1,917,343.61 |
| C/G-22 | 479,308.22 | 1,917,284.13 |
| C/G-23 | 479,371.92 | 1,917,444.22 |
| C/G-24 | 481,473.29 | 1,917,207.35 |
| C/G-25 | 481,470.82 | 1,917,181.84 |
| C/G-26 | 481,645.94 | 1,917,164.91 |
| C/G-27 | 481,647.49 | 1,917,180.94 |
| C/G-28 | 482,068.26 | 1,917,132.29 |
| C/G-29 | 482,026.30 | 1,917,038.39 |
| C/G-30 | 482,098.41 | 1,916,868.13 |
| C/G-31 | 482,266.31 | 1,916,890.43 |
| C/G-32 | 482,307.93 | 1,917,171.63 |
| C/G-33 | 485,510.67 | 1,917,532.86 |
| C/G-34 | 485,507.60 | 1,917,370.98 |
| C/G-35 | 485,651.36 | 1,917,368.26 |
| C/G-36 | 485,650.74 | 1,917,285.44 |

| CLEARING COORDINATES | | |
|---|---|---|
| POINT # | NORTHING | EASTING |
| C/G-37 | 485,700.74 | 1,917,285.07 |
| C/G-38 | 485,701.36 | 1,917,367.31 |
| C/G-39 | 485,762.05 | 1,917,366.16 |
| C/G-40 | 485,765.39 | 1,917,542.12 |
| C/G-41 | 486,316.59 | 1,917,625.42 |
| C/G-42 | 486,353.10 | 1,918,034.30 |
| C/G-43 | 486,432.19 | 1,918,025.72 |
| C/G-44 | 486,387.67 | 1,917,631.78 |
| C/G-45 | 486,612.33 | 1,917,637.65 |
| C/G-46 | 486,567.11 | 1,917,428.96 |
| C/G-47 | 486,492.08 | 1,917,350.70 |
| C/G-48 | 486,528.18 | 1,917,316.09 |
| C/G-49 | 486,624.17 | 1,917,416.22 |
| C/G-50 | 486,779.50 | 1,917,375.28 |
| C/G-51 | 486,757.51 | 1,917,224.63 |
| C/G-52 | 486,806.99 | 1,917,217.40 |
| C/G-53 | 486,867.62 | 1,917,628.76 |
| C/G-54 | 487,144.27 | 1,917,605.51 |
| C/G-55 | 487,216.58 | 1,918,169.20 |
| C/G-56 | 487,264.26 | 1,918,161.50 |
| C/G-57 | 487,232.03 | 1,917,977.15 |
| C/G-58 | 487,281.28 | 1,917,968.54 |
| C/G-59 | 487,313.63 | 1,918,153.53 |
| C/G-60 | 487,347.72 | 1,918,148.02 |
| C/G-61 | 487,360.75 | 1,918,238.61 |
| C/G-62 | 487,439.94 | 1,918,301.23 |
| C/G-63 | 487,460.04 | 1,918,507.69 |
| C/G-64 | 487,547.01 | 1,918,484.67 |
| C/G-65 | 487,584.68 | 1,918,626.96 |
| C/G-66 | 487,537.04 | 1,918,639.57 |
| C/G-67 | 487,551.54 | 1,918,727.35 |
| C/G-68 | 487,475.62 | 1,918,833.91 |
| C/G-69 | 487,454.96 | 1,918,912.31 |
| C/G-70 | 487,503.31 | 1,918,925.04 |
| C/G-71 | 487,448.00 | 1,919,135.02 |
| C/G-72 | 487,286.96 | 1,919,098.68 |

| CLEARING COORDINATES | | |
|---|---|---|
| POINT # | NORTHING | EASTING |
| C/G-73 | 487,150.06 | 1,919,124.97 |
| C/G-74 | 487,224.59 | 1,919,331.59 |
| C/G-75 | 487,083.93 | 1,919,382.32 |
| C/G-76 | 486,996.87 | 1,919,334.25 |
| C/G-77 | 486,878.84 | 1,919,329.13 |
| C/G-78 | 486,055.34 | 1,920,166.96 |
| C/G-79 | 486,005.52 | 1,920,596.05 |
| C/G-80 | 486,196.10 | 1,920,678.17 |
| C/G-81 | 486,238.19 | 1,920,735.41 |
| C/G-82 | 486,196.43 | 1,920,829.11 |
| C/G-83 | 486,075.15 | 1,920,874.27 |
| C/G-84 | 485,968.17 | 1,920,858.56 |
| C/G-85 | 485,857.72 | 1,921,952.36 |
| C/G-86 | 485,814.25 | 1,921,951.17 |
| C/G-87 | 485,718.01 | 1,922,109.26 |
| C/G-88 | 485,783.56 | 1,922,168.10 |
| C/G-89 | 485,648.93 | 1,922,329.54 |
| C/G-90 | 485,544.03 | 1,922,329.31 |
| C/G-91 | 485,454.22 | 1,922,248.16 |
| C/G-92 | 485,456.69 | 1,922,138.49 |
| C/G-93 | 485,579.27 | 1,921,991.50 |
| C/G-94 | 485,621.37 | 1,922,026.61 |
| C/G-95 | 485,678.11 | 1,921,941.55 |
| C/G-96 | 485,159.06 | 1,921,867.24 |
| C/G-97 | 485,162.33 | 1,921,840.26 |
| C/G-98 | 484,633.89 | 1,921,736.49 |
| C/G-99 | 483,079.62 | 1,921,130.87 |
| C/G-100 | 482,999.40 | 1,921,148.76 |
| C/G-101 | 482,927.64 | 1,921,071.65 |
| C/G-102 | 481,869.69 | 1,920,659.43 |
| C/G-103 | 481,862.59 | 1,920,704.88 |
| C/G-104 | 481,681.26 | 1,920,676.57 |
| C/G-105 | 481,694.84 | 1,920,589.56 |
| C/G-106 | 477,936.41 | 1,919,122.88 |
| C/G-107 | 477,856.14 | 1,919,156.58 |
| C/G-108 | 477,618.99 | 1,919,160.01 |

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

DATA CHARTS
CLEARING COORDINATES

SHEET ID
CS611

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\600 DATA CHARTS\B2ECS611.DWG

## STATIONARY ARMOR TARGETS (SAT) - FRONTAL (V)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| V-01-A | CG129 | 479,130.69 | 1,917,722.55 | 293.00 |
| V-01-B | CG129 | 479,130.93 | 1,917,736.55 | 293.00 |
| V-06-A | CG136 | 481,086.21 | 1,918,753.97 | 311.00 |
| V-06-B | CG136 | 481,086.96 | 1,918,767.95 | 311.00 |
| V-08-A | CG135 | 481,563.07 | 1,917,541.26 | 312.75 |
| V-08-B | CG135 | 481,562.73 | 1,917,555.25 | 312.75 |
| V-09-A | CG135 | 481,563.07 | 1,917,608.01 | 312.50 |
| V-09-B | CG135 | 481,562.74 | 1,917,622.00 | 312.50 |
| V-10-A | CG140 | 482,231.11 | 1,918,042.17 | 316.00 |
| V-10-B | CG140 | 482,234.49 | 1,918,055.75 | 316.00 |
| V-14-A | CG140 | 482,528.18 | 1,917,990.01 | 319.00 |
| V-14-B | CG140 | 482,527.73 | 1,918,004.01 | 319.00 |
| V-15-A | CG145 | 483,150.88 | 1,918,989.99 | 320.50 |
| V-15-B | CG145 | 483,153.89 | 1,919,003.67 | 320.50 |
| V-18-A | CG145 | 483,624.83 | 1,918,657.33 | 332.00 |
| V-18-B | CG145 | 483,625.26 | 1,918,671.32 | 332.00 |
| V-21-A | CG151 | 484,335.99 | 1,920,705.70 | 327.00 |
| V-21-B | CG151 | 484,334.75 | 1,920,719.65 | 327.00 |
| V-22-A | CG149 | 484,678.29 | 1,919,103.50 | 341.60 |
| V-22-B | CG149 | 484,679.74 | 1,919,117.42 | 341.60 |
| V-24-A | CG154 | 485,239.05 | 1,919,641.21 | 352.25 |
| V-24-B | CG154 | 485,239.56 | 1,919,655.20 | 352.25 |
| V-25-A | CG154 | 485,139.47 | 1,920,422.17 | 350.00 |
| V-25-B | CG154 | 485,138.23 | 1,920,436.12 | 350.00 |
| V-26-A | CG152 | 485,969.97 | 1,918,095.92 | 351.50 |
| V-26-B | CG152 | 485,972.79 | 1,918,109.64 | 351.50 |
| V-28-A | CG157 | 486,701.48 | 1,917,723.53 | 350.95 |
| V-28-B | CG157 | 486,701.85 | 1,917,737.52 | 350.95 |
| V-30-A | CG162 | 487,373.49 | 1,918,681.64 | 368.40 |
| V-30-B | CG162 | 487,373.86 | 1,918,695.63 | 368.40 |

## STATIONARY ARMOR TARGETS (SAT) - FLANK (V)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| V-05F-A | CG130 | 479,565.02 | 1,918,733.69 | 319.25 |
| V-05F-B | CG130 | 479,565.86 | 1,918,761.67 | 319.25 |
| V-16F-A | CG146 | 483,470.53 | 1,919,539.36 | 322.25 |
| V-16F-B | CG146 | 483,476.59 | 1,919,566.69 | 322.25 |
| V-17F-A | CG146 | 483,532.07 | 1,920,349.91 | 323.40 |
| V-17F-B | CG146 | 483,538.18 | 1,920,377.23 | 323.40 |
| V-23F-A | CG150 | 484,691.40 | 1,919,966.05 | 340.95 |
| V-23F-B | CG150 | 484,690.44 | 1,919,994.03 | 340.95 |
| V-27F-A | CG158 | 486,319.41 | 1,918,866.02 | 357.30 |
| V-27F-B | CG158 | 486,327.90 | 1,918,892.70 | 357.30 |
| V-29F-A | CG162 | 487,308.83 | 1,918,339.48 | 365.90 |
| V-29F-B | CG162 | 487,311.55 | 1,918,367.34 | 365.90 |

## POWER CENTERS (PC)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| PC-14-A | CG155 | 485,641.54 | 1,921,565.94 | 326.50 |
| PC-14-B | CG155 | 485,639.59 | 1,921,579.80 | 326.50 |

## SAT / PC COMBO (V / PC)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| V-02/PC-02-A | CG129 | 479,101.40 | 1,918,026.45 | 298.40 |
| V-02/PC-02-B | CG129 | 479,101.89 | 1,918,054.44 | 298.40 |
| V-03/PC-01-A | CG130 | 479,071.52 | 1,918,717.94 | 307.50 |
| V-03/PC-01-B | CG130 | 479,074.35 | 1,918,745.79 | 307.50 |
| V-04/PC-03-A | CG129 | 479,614.40 | 1,917,962.89 | 297.70 |
| V-04/PC-03-B | CG129 | 479,618.93 | 1,917,990.52 | 297.70 |
| V-07/PC-04-A | CG136 | 481,004.36 | 1,919,290.04 | 315.70 |
| V-07/PC-04-B | CG136 | 481,003.41 | 1,919,318.03 | 315.70 |
| V-11/PC-07-A | CG141 | 482,401.40 | 1,918,632.41 | 314.10 |
| V-11/PC-07-B | CG141 | 482,408.16 | 1,918,659.59 | 314.10 |
| V-12/PC-05-A | CG142 | 482,194.52 | 1,919,614.61 | 324.60 |
| V-12/PC-05-B | CG142 | 482,192.12 | 1,919,642.51 | 324.60 |
| V-13/PC-08-A | CG140 | 482,529.93 | 1,917,657.09 | 324.00 |
| V-13/PC-08-B | CG140 | 482,529.41 | 1,917,685.09 | 324.00 |
| V-19/PC-09-A | CG146 | 483,800.03 | 1,919,684.24 | 326.00 |
| V-19/PC-09-B | CG146 | 483,801.55 | 1,919,712.20 | 326.00 |
| V-20/PC-11-A | CG149 | 484,171.61 | 1,919,259.15 | 333.75 |
| V-20/PC-11-B | CG149 | 484,171.73 | 1,919,287.15 | 333.75 |

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

DATA CHARTS
SATS AND POWER CENTERS

SHEET ID
CS612

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\600 DATA CHARTS\B2ECS612.DWG

## STATIONARY INFANTRY TARGETS (SIT)
## 7 MAN V CLUSTER (P)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| P-01-A | CG130 | 479,126.25 | 1,918,447.89 | 304.25 |
| P-01-B | CG130 | 479,094.38 | 1,918,475.90 | 304.25 |
| P-01-C | CG130 | 479,093.95 | 1,918,482.55 | 304.25 |
| P-01-D | CG130 | 479,122.03 | 1,918,513.34 | 304.25 |
| P-02-A | CG130 | 479,594.26 | 1,918,320.04 | 303.25 |
| P-02-B | CG130 | 479,566.26 | 1,918,351.91 | 303.25 |
| P-02-C | CG130 | 479,566.69 | 1,918,358.57 | 303.25 |
| P-02-D | CG130 | 479,598.49 | 1,918,385.49 | 303.25 |
| P-03-A | CG130 | 479,576.89 | 1,919,112.12 | 312.70 |
| P-03-B | CG130 | 479,542.93 | 1,919,137.55 | 312.70 |
| P-03-C | CG130 | 479,541.99 | 1,919,144.15 | 312.70 |
| P-03-D | CG130 | 479,567.57 | 1,919,177.04 | 312.70 |
| P-04-A | CG129 | 479,912.47 | 1,917,986.27 | 302.90 |
| P-04-B | CG129 | 479,889.54 | 1,918,021.16 | 302.90 |
| P-04-C | CG129 | 479,890.89 | 1,918,027.69 | 302.90 |
| P-04-D | CG129 | 479,925.57 | 1,918,049.57 | 302.90 |
| P-05-A | CG130 | 479,929.18 | 1,919,007.77 | 312.95 |
| P-05-B | CG130 | 479,894.24 | 1,919,031.83 | 312.95 |
| P-05-C | CG130 | 479,893.03 | 1,919,038.39 | 312.95 |
| P-05-D | CG130 | 479,917.29 | 1,919,072.26 | 312.95 |
| P-06-A | CG136 | 481,019.33 | 1,918,908.84 | 312.35 |
| P-06-B | CG136 | 480,991.32 | 1,918,940.72 | 312.35 |
| P-06-C | CG136 | 480,991.75 | 1,918,947.37 | 312.35 |
| P-06-D | CG136 | 481,023.56 | 1,918,974.29 | 312.35 |
| P-07-A | CG137 | 481,002.58 | 1,919,595.59 | 330.25 |
| P-07-B | CG137 | 480,974.58 | 1,919,627.47 | 330.25 |
| P-07-C | CG137 | 480,975.01 | 1,919,634.12 | 330.25 |
| P-07-D | CG137 | 481,006.81 | 1,919,661.04 | 330.25 |

## STATIONARY INFANTRY TARGETS (SIT)
## 7 MAN V CLUSTER (P)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| P-08-A | CG137 | 481,723.35 | 1,919,693.86 | 327.90 |
| P-08-B | CG137 | 481,695.35 | 1,919,725.73 | 327.90 |
| P-08-C | CG137 | 481,695.78 | 1,919,732.39 | 327.90 |
| P-08-D | CG137 | 481,727.59 | 1,919,759.31 | 327.90 |
| P-09-A | CG136 | 481,959.75 | 1,918,364.05 | 306.50 |
| P-09-B | CG136 | 481,931.75 | 1,918,395.92 | 306.50 |
| P-09-C | CG136 | 481,932.18 | 1,918,402.57 | 306.50 |
| P-09-D | CG136 | 481,963.98 | 1,918,429.50 | 306.50 |
| P-10-A | CG141 | 482,361.71 | 1,918,703.53 | 311.00 |
| P-10-B | CG141 | 482,338.81 | 1,918,739.25 | 311.00 |
| P-10-C | CG141 | 482,340.23 | 1,918,745.76 | 311.00 |
| P-10-D | CG141 | 482,375.72 | 1,918,767.60 | 311.00 |
| P-11-A | CG142 | 482,509.58 | 1,920,215.63 | 320.80 |
| P-11-B | CG142 | 482,472.69 | 1,920,236.59 | 320.80 |
| P-11-C | CG142 | 482,470.92 | 1,920,243.02 | 320.80 |
| P-11-D | CG142 | 482,492.16 | 1,920,278.87 | 320.80 |
| P-14-A | CG146 | 483,488.13 | 1,920,067.32 | 323.75 |
| P-14-B | CG146 | 483,457.75 | 1,920,096.93 | 323.75 |
| P-14-C | CG146 | 483,457.66 | 1,920,103.60 | 323.75 |
| P-14-D | CG146 | 483,487.28 | 1,920,132.90 | 323.75 |
| P-15-A | CG146 | 483,708.12 | 1,919,597.46 | 321.75 |
| P-15-B | CG146 | 483,678.12 | 1,919,627.45 | 321.75 |
| P-15-C | CG146 | 483,678.12 | 1,919,634.12 | 321.75 |
| P-15-D | CG146 | 483,708.12 | 1,919,663.04 | 321.75 |
| P-16-A | CG150 | 484,059.78 | 1,920,385.79 | 329.00 |
| P-16-B | CG150 | 484,029.78 | 1,920,415.78 | 329.00 |
| P-16-C | CG150 | 484,029.77 | 1,920,422.45 | 329.00 |
| P-16-D | CG150 | 484,059.77 | 1,920,451.37 | 329.00 |

## STATIONARY INFANTRY TARGETS (SIT)
## 6 MAN LINEAR CLUSTER (P)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| P-12-A | CG145 | 483,146.66 | 1,918,695.36 | 322.75 |
| P-12-B | CG145 | 483,141.39 | 1,918,671.43 | 322.75 |
| P-12-C | CG145 | 483,176.84 | 1,918,683.58 | 323.25 |
| P-12-D | CG145 | 483,171.56 | 1,918,659.66 | 323.25 |
| P-13-A | CG145 | 483,216.62 | 1,919,355.87 | 319.65 |
| P-13-B | CG145 | 483,220.12 | 1,919,380.12 | 319.65 |
| P-13-C | CG145 | 483,249.01 | 1,919,356.25 | 320.15 |
| P-13-D | CG145 | 483,252.50 | 1,919,380.50 | 320.15 |
| P-17-A | CG149 | 484,784.51 | 1,919,402.28 | 345.75 |
| P-17-B | CG149 | 484,785.59 | 1,919,377.80 | 345.75 |
| P-17-C | CG149 | 484,816.70 | 1,919,398.69 | 346.25 |
| P-17-D | CG149 | 484,817.78 | 1,919,374.22 | 346.25 |
| P-18-A | CG150 | 484,759.46 | 1,920,320.35 | 336.25 |
| P-18-B | CG150 | 484,756.48 | 1,920,344.66 | 336.25 |
| P-18-C | CG150 | 484,790.62 | 1,920,329.20 | 336.75 |
| P-18-D | CG150 | 484,787.64 | 1,920,353.52 | 336.75 |

## MOVING INFANTRY TARGETS (MIT) (IM)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| IM-01-A | CG145 | 483,169.78 | 1,918,651.60 | 323.25 |
| IM-01-B | CG145 | 483,139.42 | 1,918,513.91 | 323.25 |
| IM-02-A | CG145/46 | 483,253.68 | 1,919,388.67 | 320.15 |
| IM-02-B | CG145/46 | 483,273.81 | 1,919,528.22 | 320.15 |
| IM-03-A | CG149 | 484,818.15 | 1,919,365.98 | 346.25 |
| IM-03-B | CG149 | 484,824.36 | 1,919,225.11 | 346.25 |
| IM-04-A | CG150 | 484,786.63 | 1,920,361.71 | 336.75 |
| IM-04-B | CG150 | 484,769.48 | 1,920,501.66 | 336.75 |

## STATIONARY INFANTRY TARGETS (SIT)
## @ FACADES (F)

| TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|
| F1-01-SIT-A | CG155 | 485,358.90 | 1,921,498.11 | 325.50 |
| F1-01-SIT-B | CG155 | 485,358.03 | 1,921,504.72 | 325.50 |
| F2-01-SIT-A | CG155 | 485,339.88 | 1,921,535.95 | 325.15 |
| F2-01-SIT-B | CG155 | 485,339.01 | 1,921,542.56 | 325.15 |
| F3-01-SIT-A | CG155 | 485,481.09 | 1,921,709.73 | 322.15 |
| F3-01-SIT-B | CG155 | 485,480.22 | 1,921,716.34 | 322.15 |
| F4-01-SIT-A | CG155 | 485,475.86 | 1,921,749.39 | 321.75 |
| F4-01-SIT-B | CG155 | 485,474.99 | 1,921,756.00 | 321.75 |
| F5-01-SIT-A | CG155 | 485,654.27 | 1,921,682.72 | 321.15 |
| F5-01-SIT-B | CG155 | 485,653.39 | 1,921,689.33 | 321.15 |

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\600 DATA CHARTS\B2ECS613.DWG

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
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CONTRACT NO.:
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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

DATA CHARTS
SITS & MITS

SHEET ID
CS613

READY TO ADVERTISE (RTA)

## DEFILADES (BP)

| | TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|---|
| | BP-01A-A | CG123 | 477,829.28 | 1,918,135.87 | 298.25 |
| | BP-01A-B | CG123 | 477,761.28 | 1,918,136.71 | 291.00 |
| | BP-01A-C | CG123 | 477,587.63 | 1,918,138.87 | 281.17 |
| | BP-01B-A | CG129 | 479,867.34 | 1,918,168.33 | 310.72 |
| | BP-01B-B | CG129 | 479,799.59 | 1,918,162.51 | 303.47 |
| | BP-01B-C | CG129 | 479,701.93 | 1,918,154.13 | 303.00 |
| | BP-01D-A | CG142 | 482,765.44 | 1,919,917.07 | 322.25 |
| | BP-01D-B | CG142 | 482,699.03 | 1,919,902.46 | 315.00 |
| | BP-01D-C | CG142 | 482,641.12 | 1,919,889.74 | 315.00 |
| | BP-01D-D | CG142 | 482,598.03 | 1,919,880.24 | 315.00 |
| | BP-01D-E | CG142 | 482,729.57 | 1,920,028.08 | 315.92 |
| | BP-01D-F | CG142 | 482,506.34 | 1,919,975.92 | 319.23 |
| | BP-02A-A | CG124 | 477,828.22 | 1,919,036.72 | 308.25 |
| | BP-02A-B | CG124 | 477,760.34 | 1,919,032.70 | 301.00 |
| | BP-02A-C | CG124 | 477,588.15 | 1,919,022.49 | 301.80 |
| | BP-02B-A | CG130 | 479,812.28 | 1,918,805.37 | 320.25 |
| | BP-02B-B | CG130 | 479,744.53 | 1,918,799.55 | 313.00 |
| | BP-02B-C | CG130 | 479,646.87 | 1,918,791.16 | 309.16 |
| | BP-02D-A | CG143 | 482,784.48 | 1,920,757.47 | 322.25 |
| | BP-02D-B | CG143 | 482,717.18 | 1,920,767.19 | 315.00 |
| | BP-02D-C | CG143 | 482,658.49 | 1,920,775.64 | 315.00 |
| | BP-02D-D | CG143 | 482,614.82 | 1,920,781.96 | 315.00 |
| | BP-02D-E | CG143 | 482,764.04 | 1,920,634.47 | 316.80 |
| | BP-02D-F | CG143 | 482,530.37 | 1,920,679.84 | 317.31 |

## REVERSE SLOPE BATTLE POSITION (RSBP)

| | TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|---|
| | RSBP-01C-A | CG133/37 | 480,875.34 | 1,919,386.95 | 316.76 |
| | RSBP-01C-B | CG133/37 | 480,956.52 | 1,919,406.94 | 320.86 |
| | RSBP-01C-C | CG133/37 | 481,102.56 | 1,919,525.56 | 328.10 |
| | RSBP-01C-D | CG133/37 | 481,138.80 | 1,919,600.94 | 326.61 |
| | RSBP-01C-E | CG133/37 | 481,046.78 | 1,919,493.13 | 325.41 |
| | RSBP-01C-F | CG133/37 | 481,071.23 | 1,919,512.99 | 328.74 |
| | RSBP-01C-G | CG133/37 | 481,018.45 | 1,919,470.12 | 321.49 |
| | RSBP-02C-A | CG134/37 | 480,685.85 | 1,919,743.62 | 333.28 |
| | RSBP-02C-B | CG134/37 | 480,749.72 | 1,919,724.34 | 332.26 |
| | RSBP-02C-C | CG134/37 | 481,005.19 | 1,919,795.33 | 334.46 |
| | RSBP-02C-D | CG134/37 | 481,068.54 | 1,919,849.95 | 331.30 |
| | RSBP-02C-E | CG134/37 | 480,941.11 | 1,919,787.90 | 332.08 |
| | RSBP-02C-F | CG134/37 | 480,971.46 | 1,919,796.33 | 335.41 |
| | RSBP-02C-G | CG134/37 | 480,905.94 | 1,919,778.13 | 328.16 |

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

DATA CHARTS
DEFILADES &
REVERSE SLOPE BATTLE POSITIONS

SHEET ID

CS614

READY TO ADVERTISE (RTA)

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## MACHINE GUN BUNKER (B)

| | TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|---|
| | B-01-A | CG154 | 485,043.66 | 1,920,555.66 | 346.18 |
| | B-01-B | CG154 | 485,026.54 | 1,920,556.17 | 346.18 |
| | B-02-A | CG151 | 484,562.84 | 1,921,483.59 | 335.08 |
| | B-02-B | CG151 | 484,555.53 | 1,921,468.10 | 335.08 |

## TRENCH (TR)

| | TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|---|
| | TR-01-C | CG151/54 | 485,034.35 | 1,920,564.72 | 343.10 |
| | TR-01-D | CG151/54 | 485,030.14 | 1,920,560.44 | 343.10 |
| | TR-01-E | CG151/54 | 484,949.75 | 1,920,683.05 | 337.60 |
| | TR-01-F | CG151/54 | 484,945.54 | 1,920,678.77 | 337.60 |
| | TR-02-C | CG151 | 484,566.44 | 1,921,471.23 | 332.00 |
| | TR-02-D | CG151 | 484,563.73 | 1,921,470.38 | 332.00 |
| | TR-02-E | CG151 | 484,633.80 | 1,921,342.13 | 332.00 |
| | TR-02-F | CG151 | 484,628.08 | 1,921,340.31 | 332.00 |

## BORESIGHT PANEL (BS)

| | TARGET | SHEET ID | NORTHING | EASTING | ELEVATION |
|---|---|---|---|---|---|
| | BS-A | CG135 | 481,515.60 | 1,917,227.74 | 301.60 |
| | BS-B | CG135 | 481,516.15 | 1,917,233.42 | 301.60 |

## RANGE LIMIT MARKERS (RLM)

| | TARGET | SHEET ID | NORTHING | EASTING | ELEVATION | HEIGHT |
|---|---|---|---|---|---|---|
| | RLM-01-A | CG129 | 479,114.80 | 1,917,541.44 | 286.60 | 4' |
| | RLM-01-B | CG129 | 479,114.17 | 1,917,547.41 | 286.60 | 4' |
| | RLM-02-A | CG134 | 480,248.92 | 1,920,003.32 | 333.95 | 4' |
| | RLM-02-B | CG134 | 480,249.83 | 1,919,997.39 | 333.95 | 4' |
| | RLM-03-A | CG140 | 482,160.47 | 1,917,267.56 | 333.80 | 4' |
| | RLM-03-B | CG140 | 482,159.84 | 1,917,273.52 | 333.80 | 4" |
| | RLM-04-A | CG137 | 481,785.15 | 1,920,602.87 | 340.25 | 4' |
| | RLM-04-B | CG137 | 481,786.08 | 1,920,596.94 | 340.25 | 4' |
| | RLM-05-A | CG152 | 485,593.98 | 1,917,882.36 | 346.25 | 4' |
| | RLM-05-B | CG152 | 485,593.36 | 1,917,888.33 | 346.25 | 4' |
| | RLM-06-A | CG151 | 484,510.10 | 1,921,527.93 | 330.30 | 4' |
| | RLM-06-B | CG151 | 484,511.02 | 1,921,522.00 | 330.30 | 4' |

## CAMERA TOWERS (FC)

| | TARGET | SHEET ID | NORTHING | EASTING | ELEVATION | TOWER HEIGHT |
|---|---|---|---|---|---|---|
| | FC-01 | CG124 | 477,247.67 | 1,918,790.41 | * | * |
| | FC-02 | CG124 | 477,247.67 | 1,918,810.41 | * | * |
| | FC-03 | CG140 | 482,150.68 | 1,917,204.21 | 332.30 | 20' |
| | FC-04 | CG151 | 484,561.62 | 1,921,615.33 | 330.20 | 20' |

NOTE: * FC-01 & FC-02 ARE LOCATED ON THE TOP OF THE HANDRAIL ON THE TOP LEVEL OF THE RANGE CONTROL TOWER. SEE ARCHITECTURAL AND ELECTRICAL.

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DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

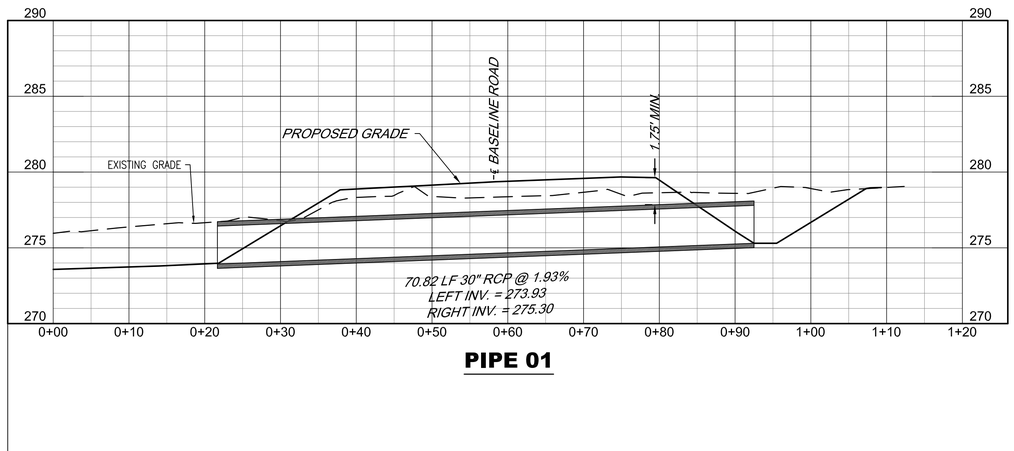
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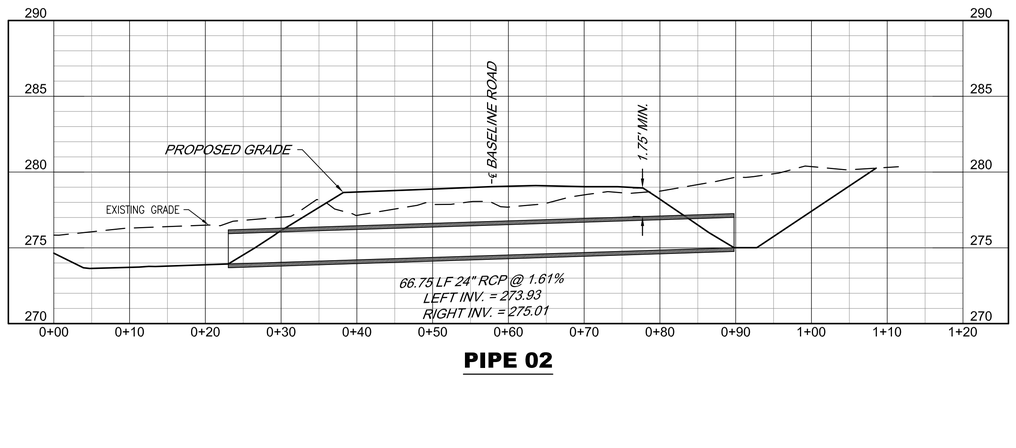
DATA CHARTS
MISCELLANEOUS

SHEET ID
CS615

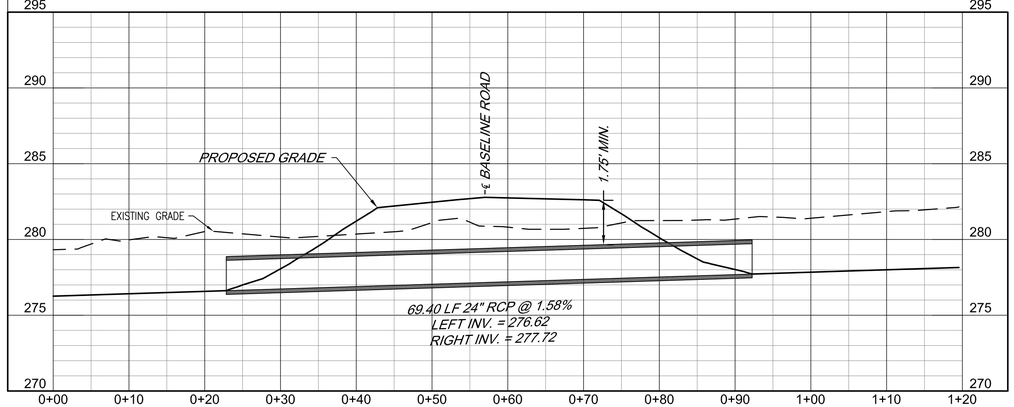
READY TO ADVERTISE (RTA)



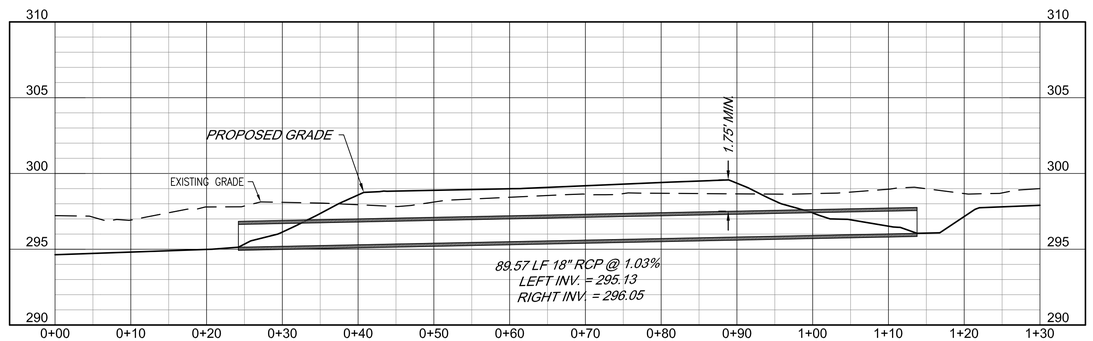

**PIPE 01**




**PIPE 02**




**PIPE 03**




**PIPE 04**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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| | |
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| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |

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SAVANNAH, GA 31401

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VOLUMES 3 & 4 - DOWNRANGE

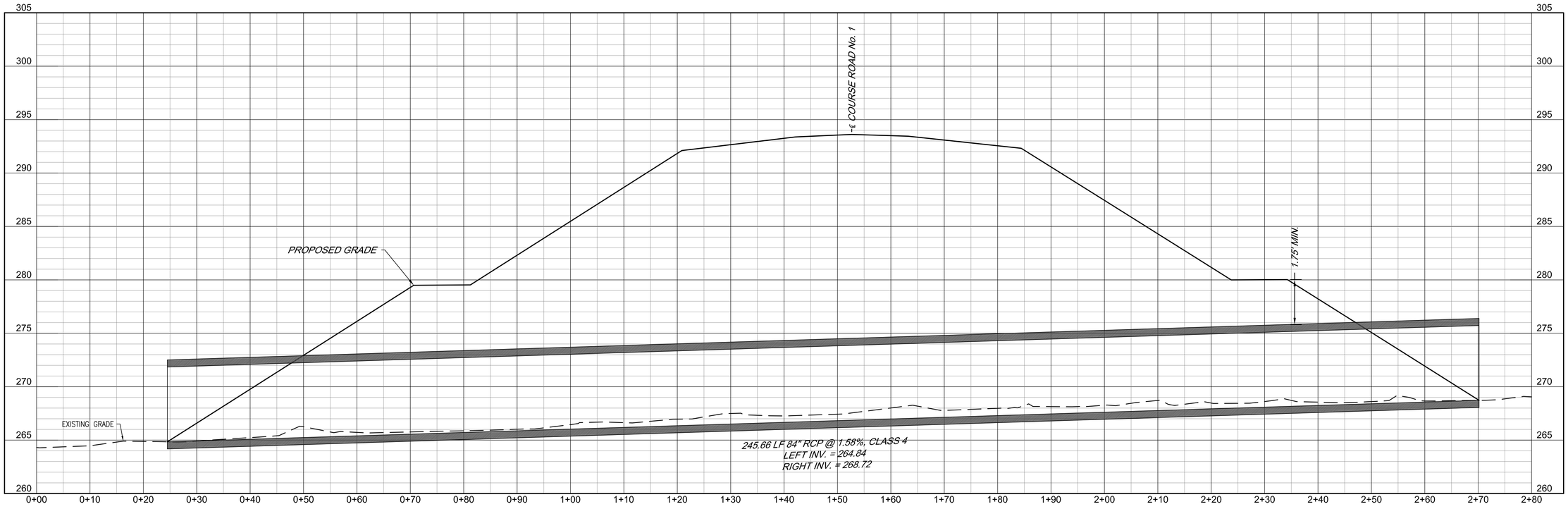
CULVERT PROFILES

SHEET ID

CU200

READY TO ADVERTISE (RTA)

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## PIPE 05

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

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| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 174-45-01 |
| SIZE: ANSI D | FILE NAME: |

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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

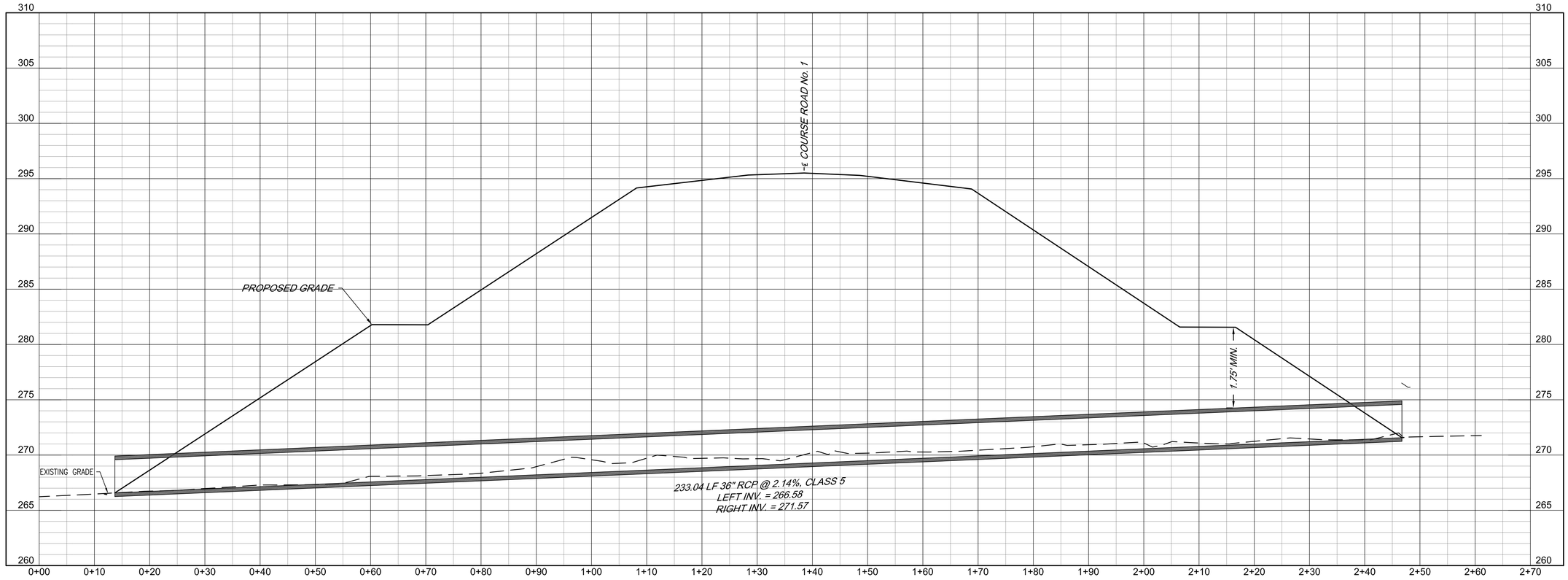
CULVERT PROFILES

SHEET ID

CU201

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECU201.DWG




## PIPE 06

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

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|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME: G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECU202.DWG

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SAVANNAH, GA 31401

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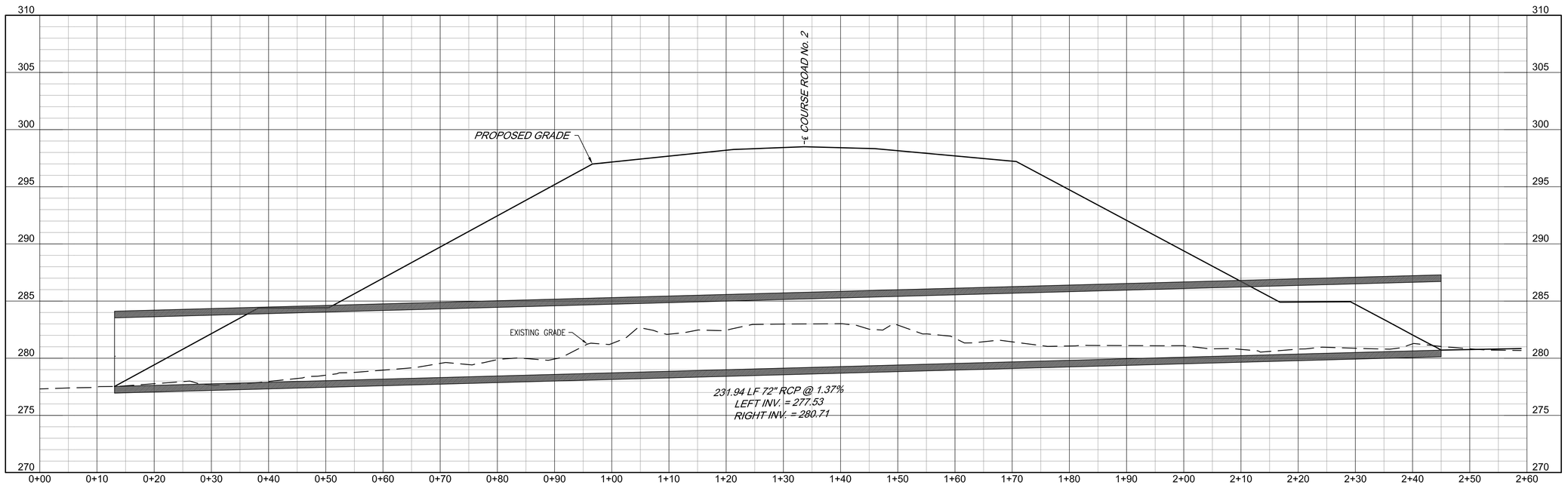
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FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

CULVERT PROFILES

SHEET ID

CU202

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**PIPE 07**

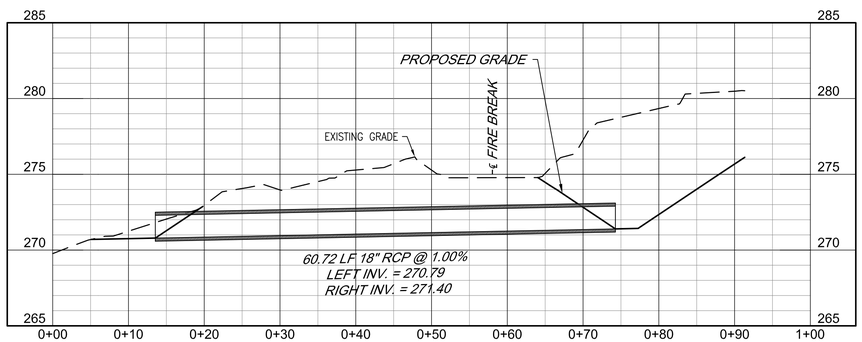
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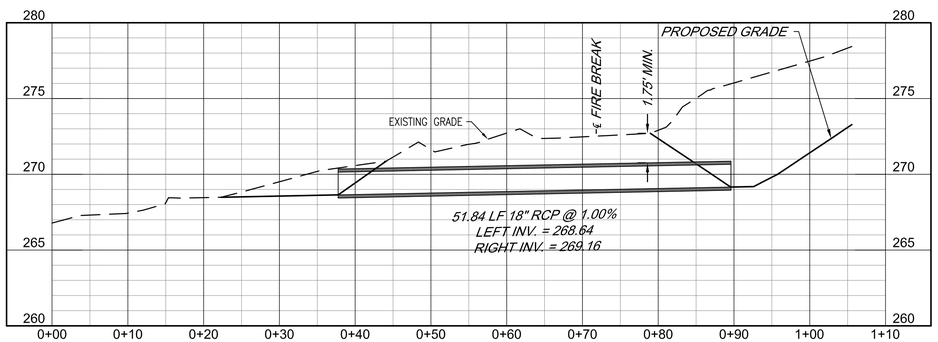
SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.




**PIPE 08**




**PIPE 09**

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|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

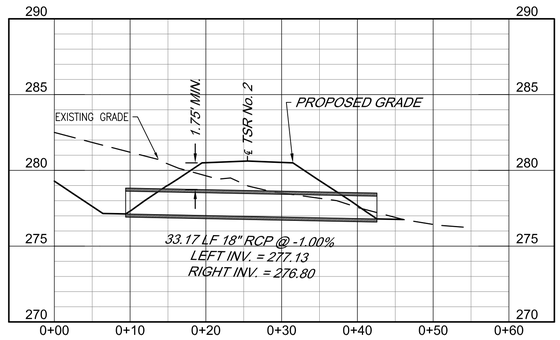
CULVERT PROFILES

SHEET ID

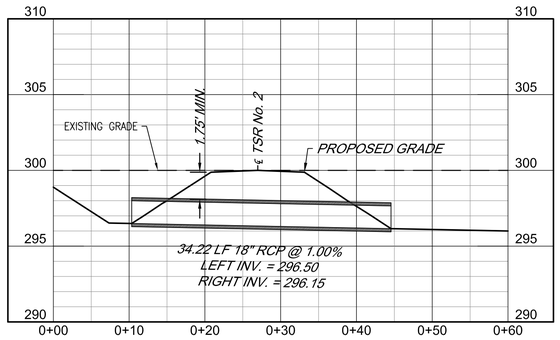
CU203

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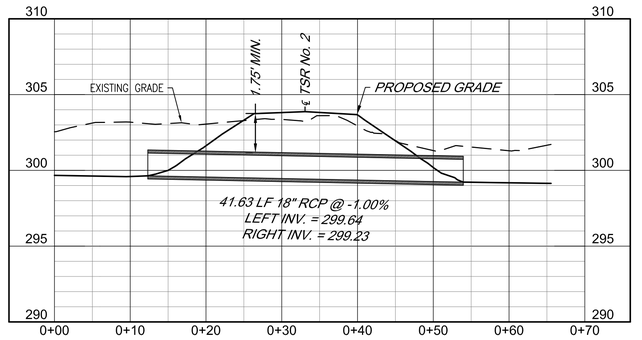
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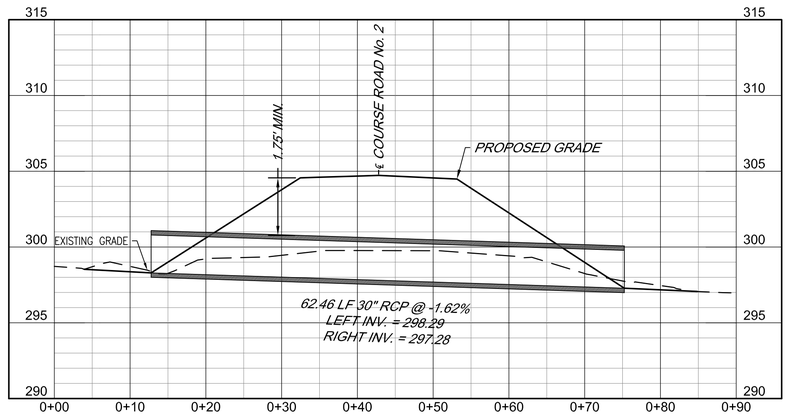

**PIPE 10**



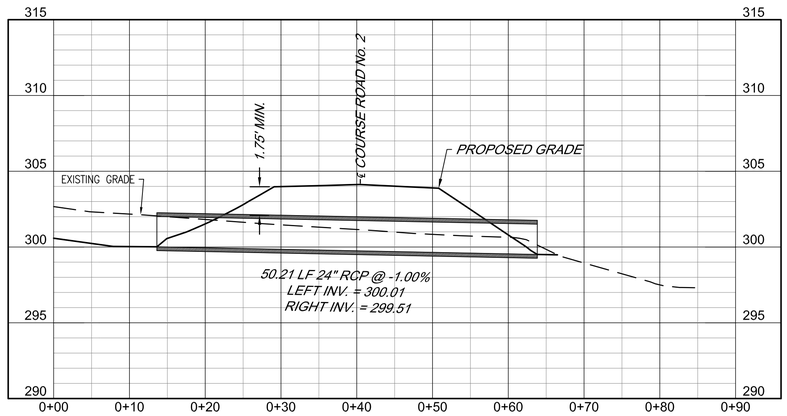

**PIPE 11**



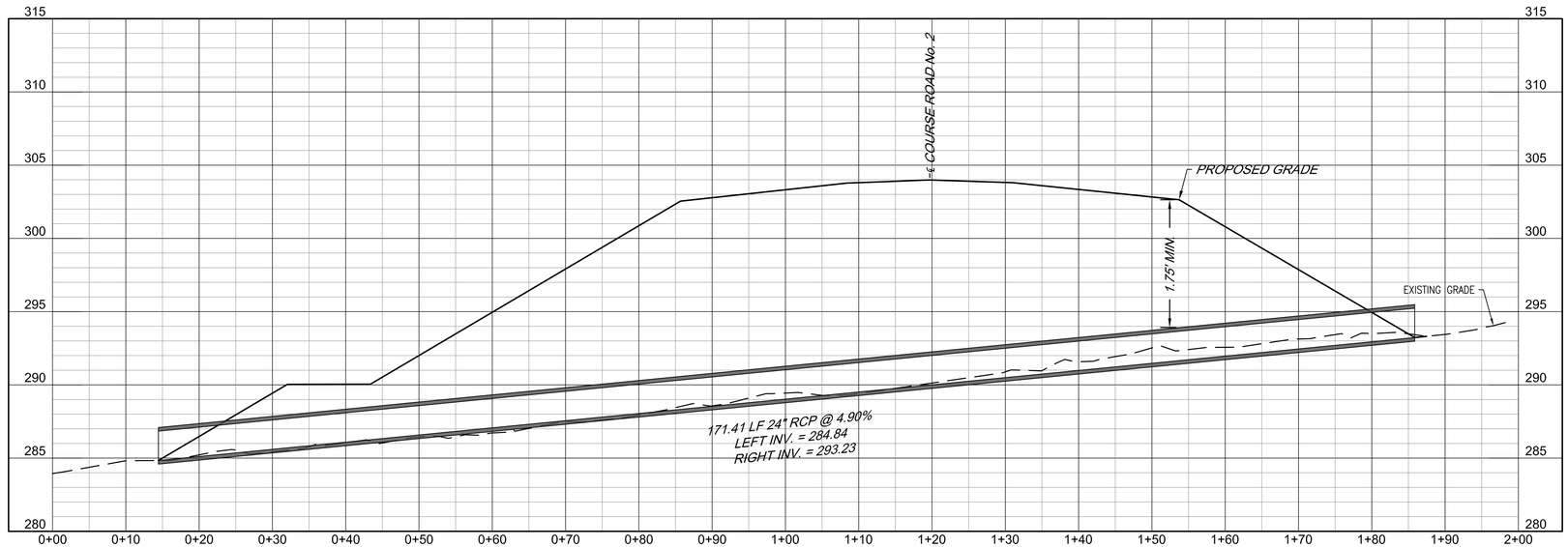

**PIPE 12**




**PIPE 13**




**PIPE 15**




**PIPE 14**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

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|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

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100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

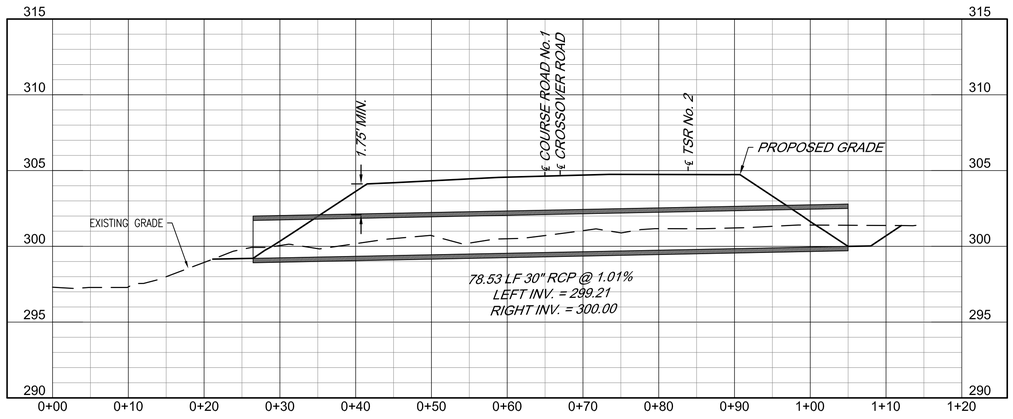
CULVERT PROFILES

SHEET ID

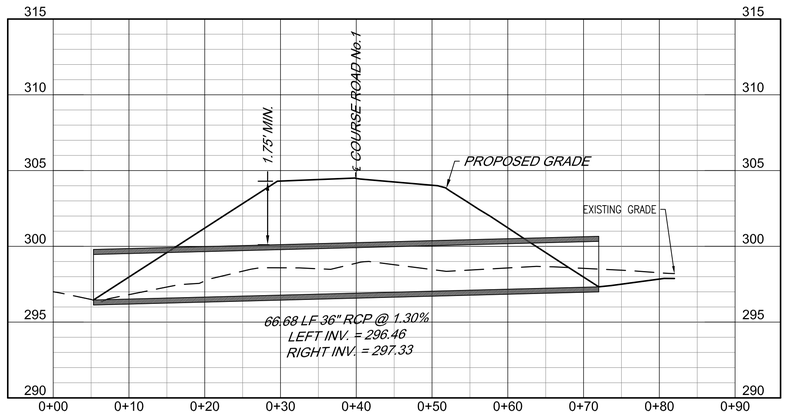
CU204

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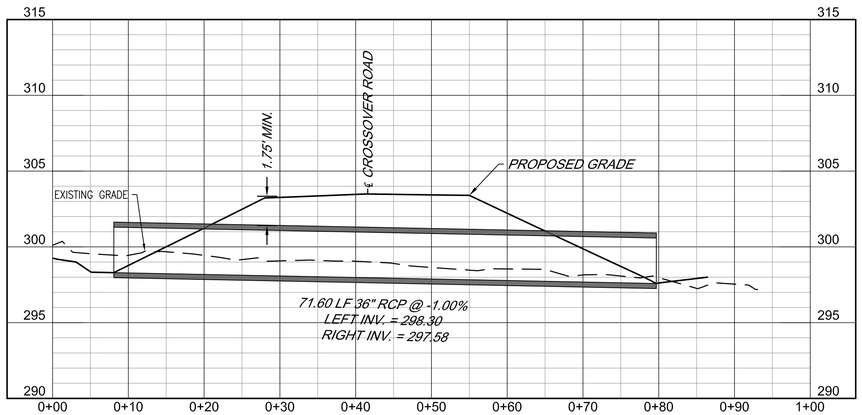
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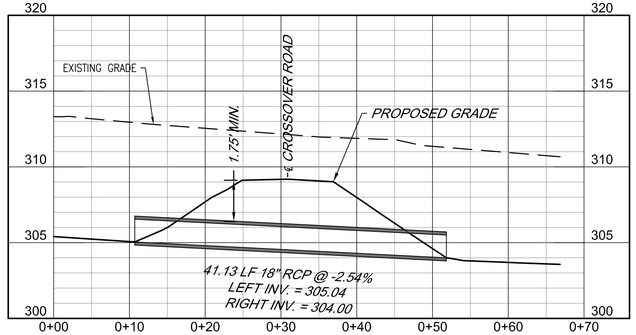

**PIPE 16**




**PIPE 17**




**PIPE 18**




**PIPE 19**

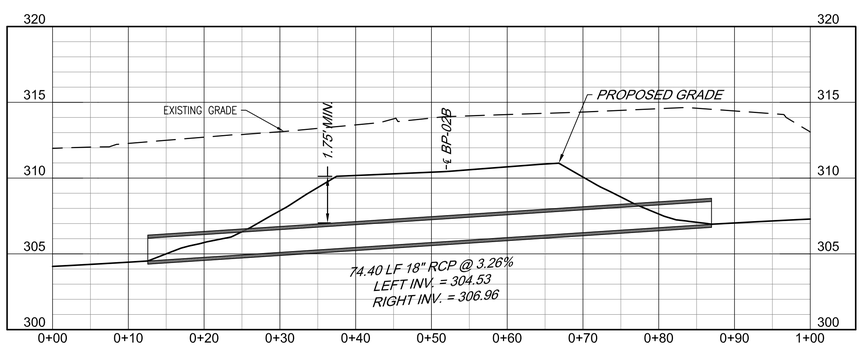
GRAPHIC SCALE

10 0 10 20

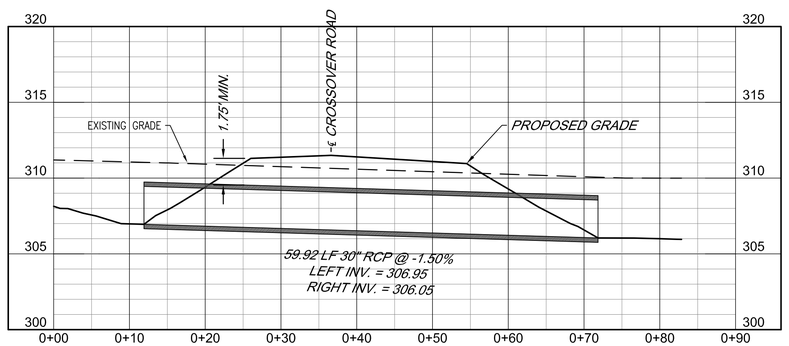
SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.




**PIPE 20**




**PIPE 21**

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECU205.DWG

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D

ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY 23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

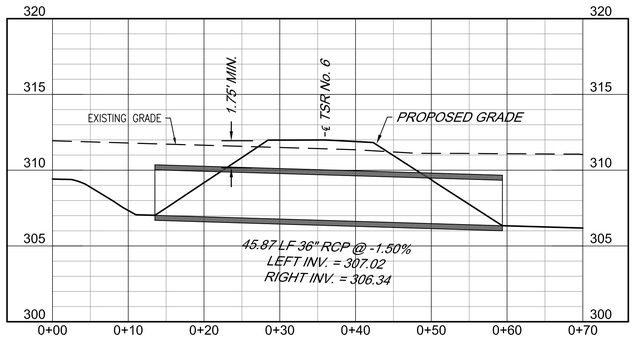
CULVERT PROFILES

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
6/6/23

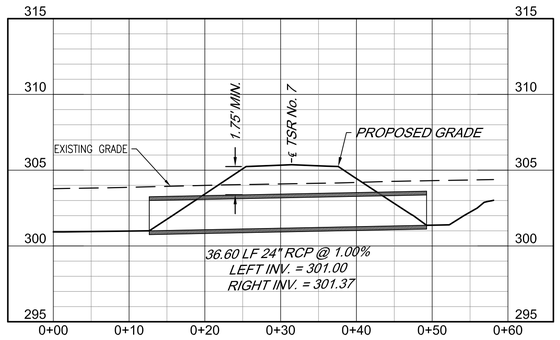
SHEET ID

CU205

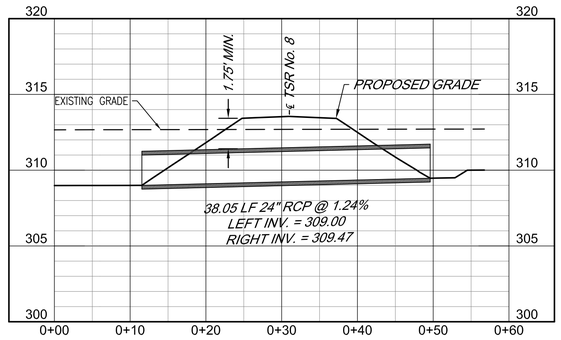
READY TO ADVERTISE (RTA)



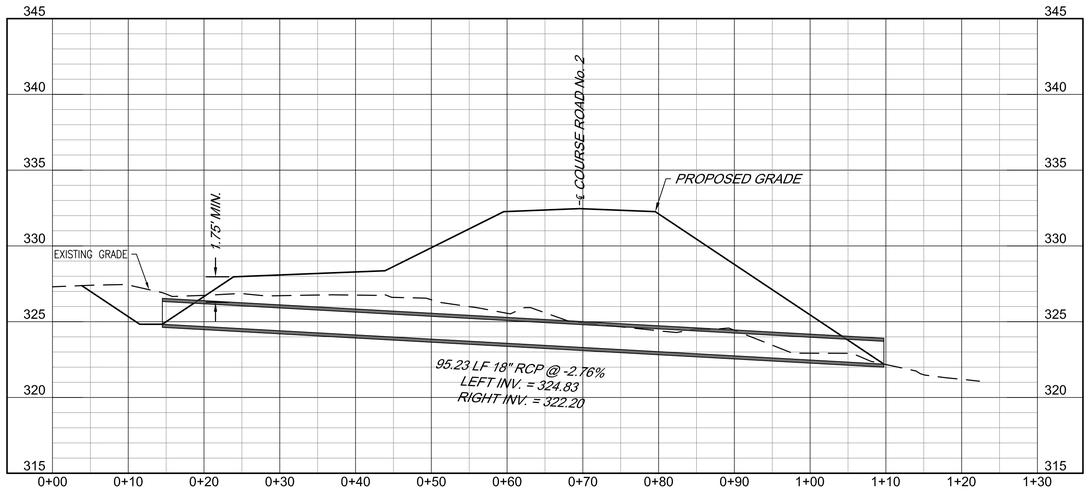

**PIPE 22**



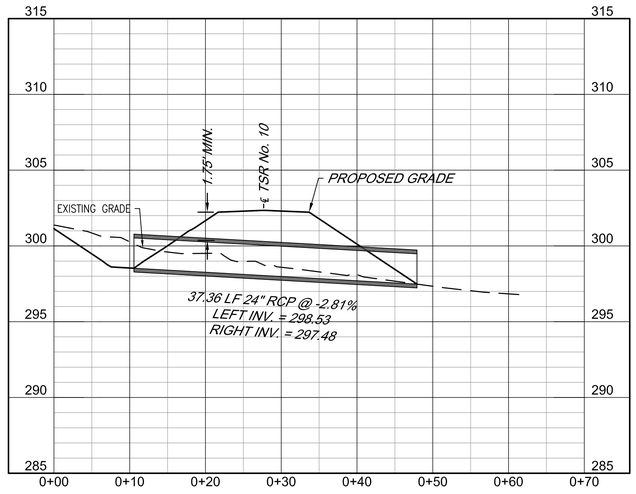

**PIPE 23**



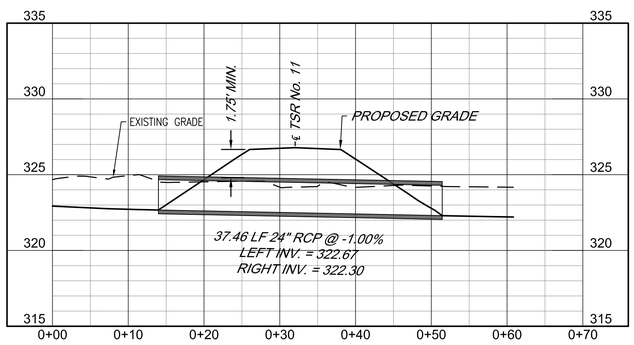

**PIPE 24**



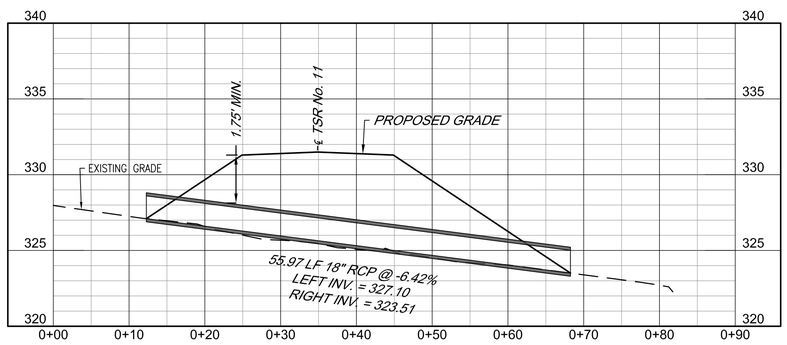

**PIPE 25**




**PIPE 26**




**PIPE 27**




**PIPE 28**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

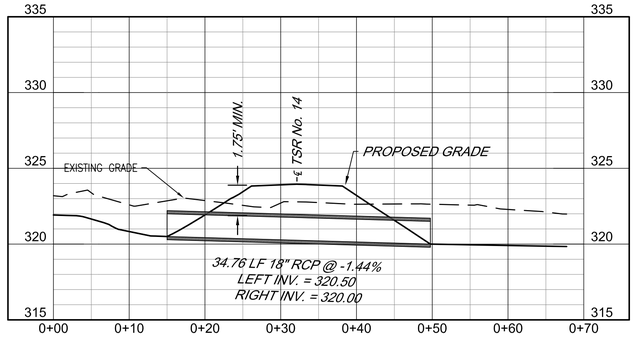
CULVERT PROFILES

SHEET ID

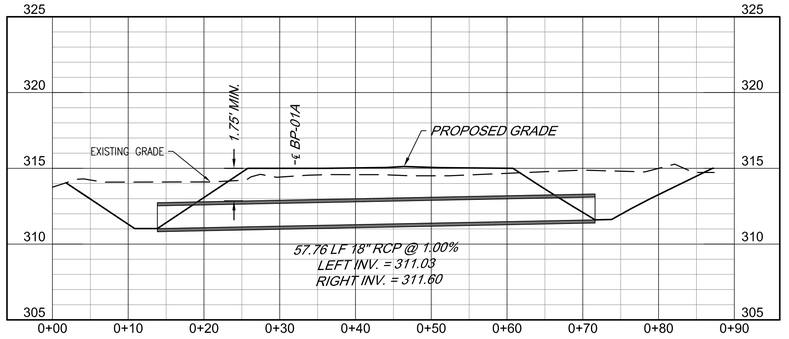
CU206

READY TO ADVERTISE (RTA)

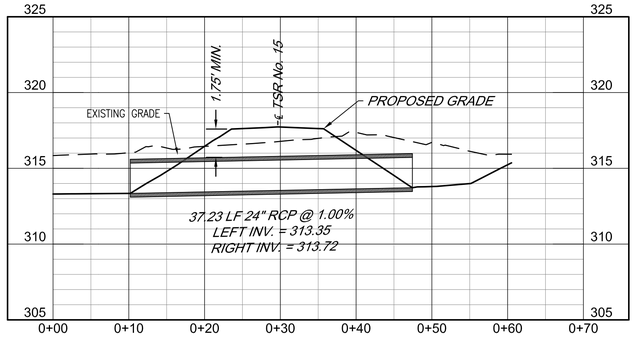
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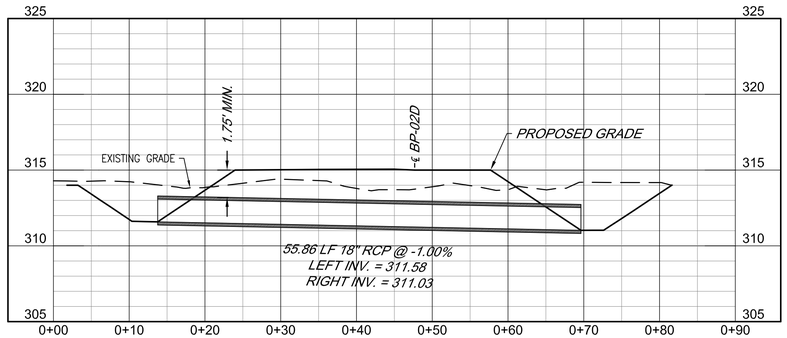

**PIPE 29**



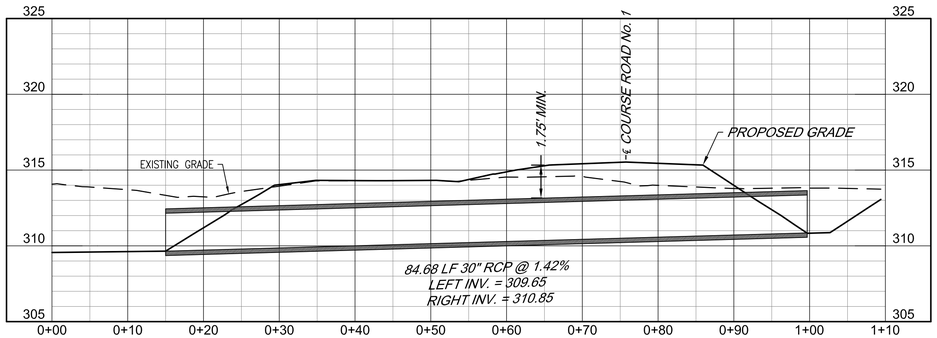

**PIPE 30**




**PIPE 31**




**PIPE 32**




**PIPE 33**

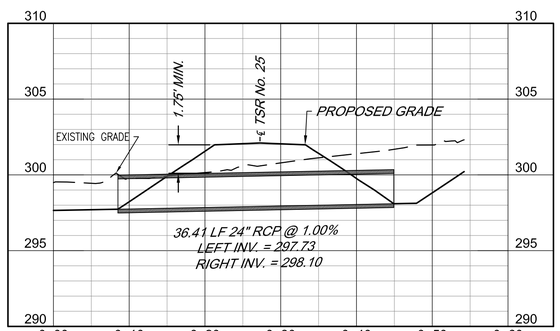
GRAPHIC SCALE

10 0 10 20

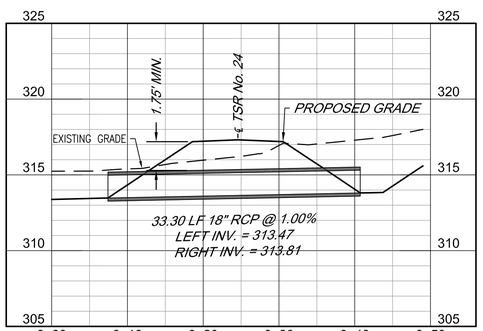
SCALE: 1" = 10' HORIZ.

5 0 5 10

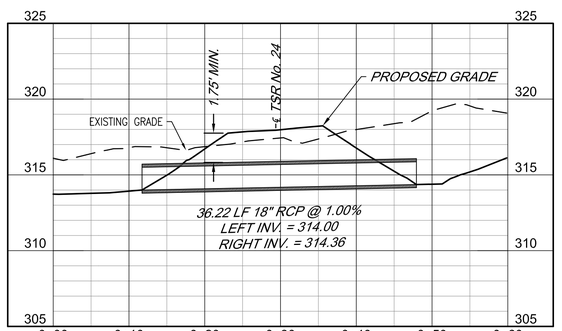
SCALE: 1" = 5' VERT.




**PIPE 34**




**PIPE 35**




**PIPE 36**

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

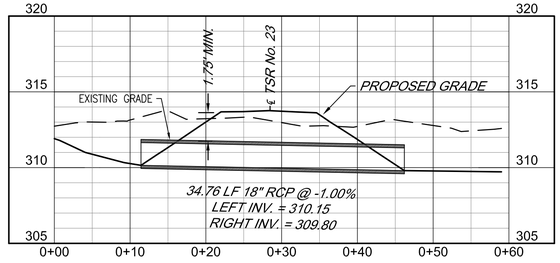
CULVERT PROFILES

SHEET ID

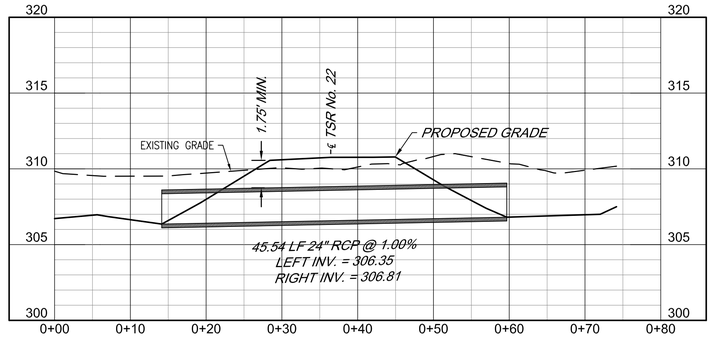
CU207

READY TO ADVERTISE (RTA)

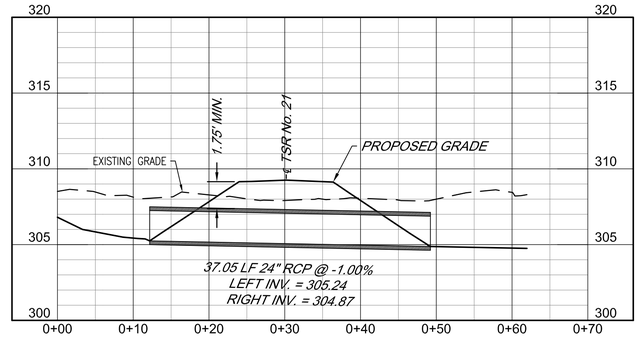
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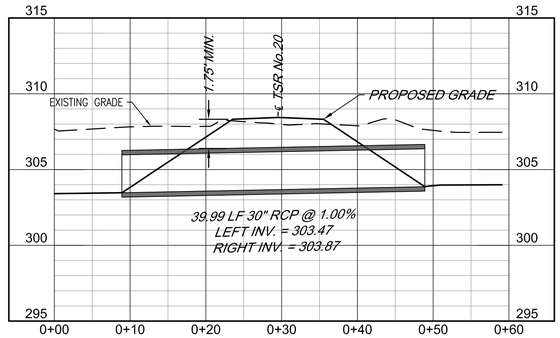

**PIPE 37**



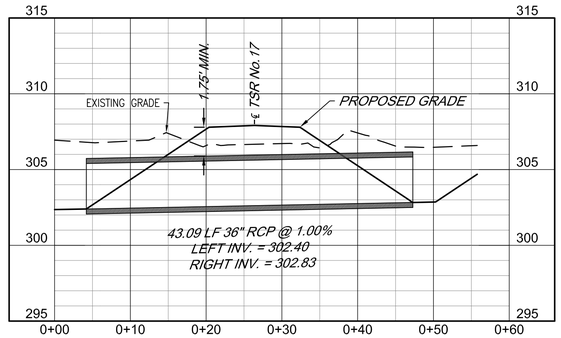

**PIPE 38**



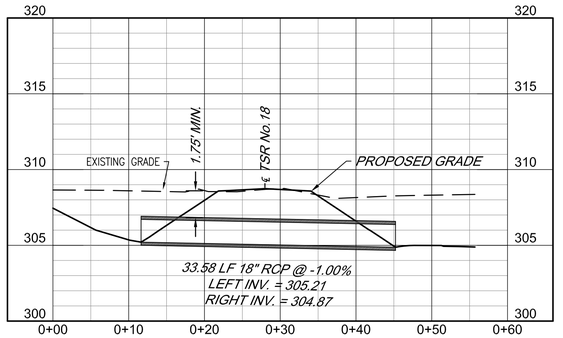

**PIPE 39**




**PIPE 40**




**PIPE 41**




**PIPE 42**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/25

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

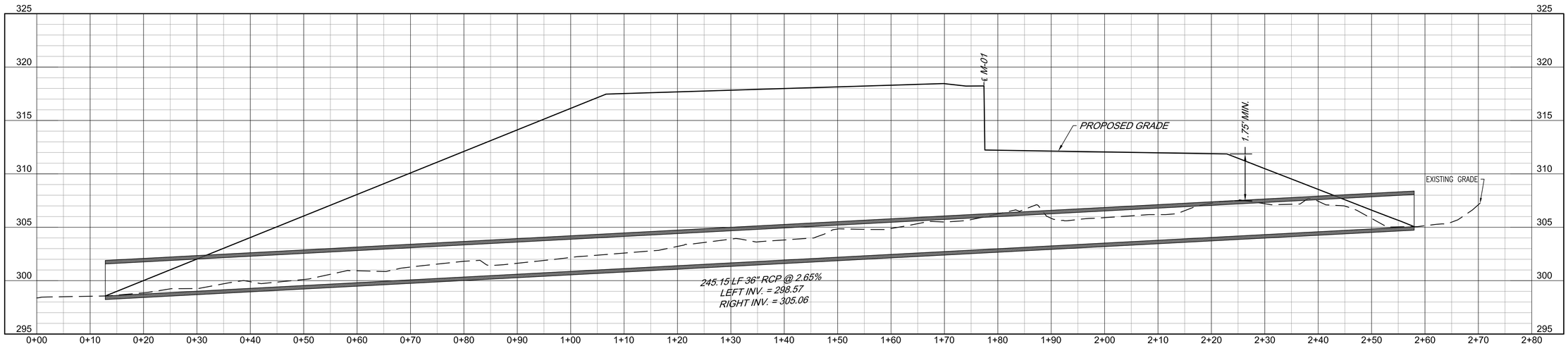
CULVERT PROFILES

SHEET ID

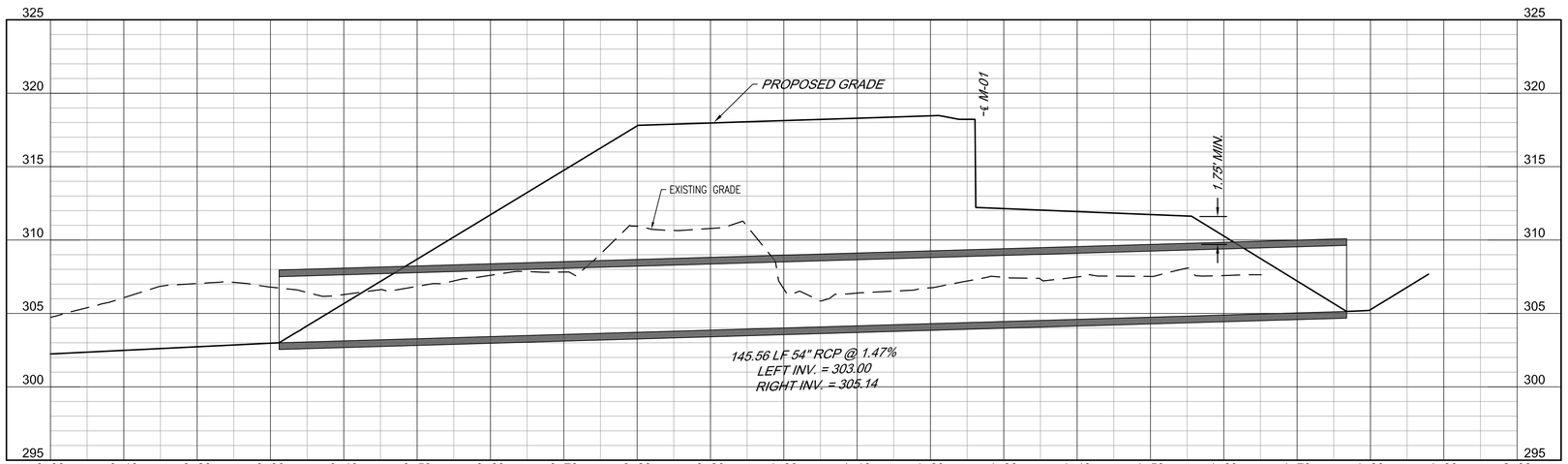
CU208

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECU208.DWG

READY TO ADVERTISE (RTA)




**PIPE 43**




**PIPE 44**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: K. SANDERS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: B.J. JOHNSON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: B. BRADLEY | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

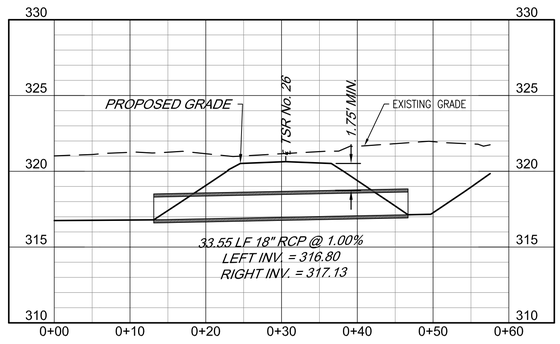
CULVERT PROFILES

SHEET ID

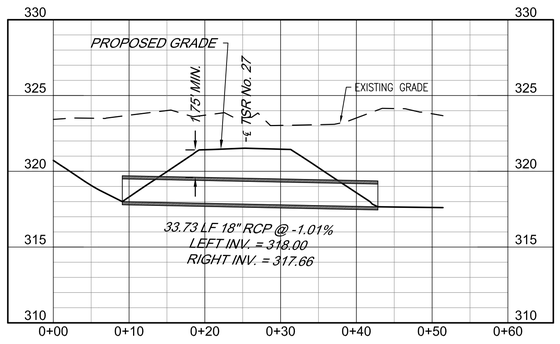
CU209

READY TO ADVERTISE (RTA)

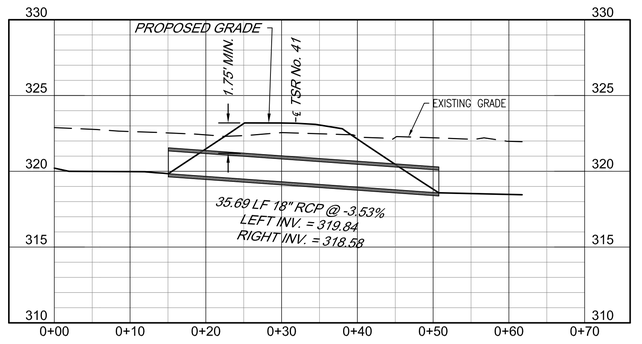
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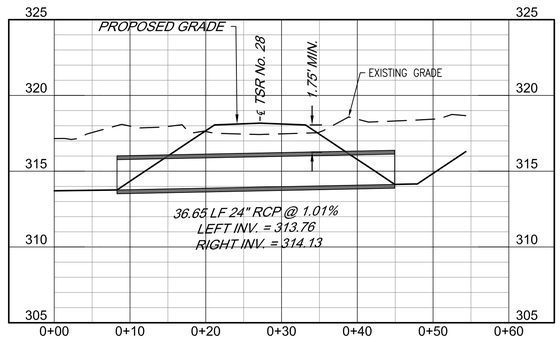

**PIPE 46**



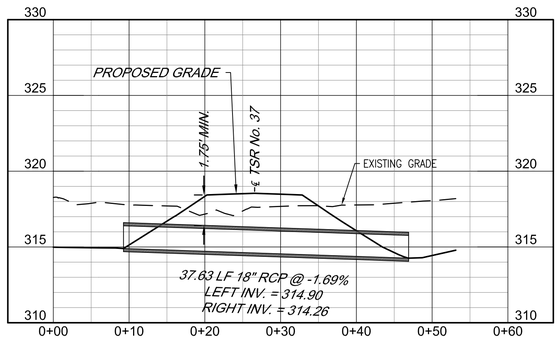

**PIPE 47**



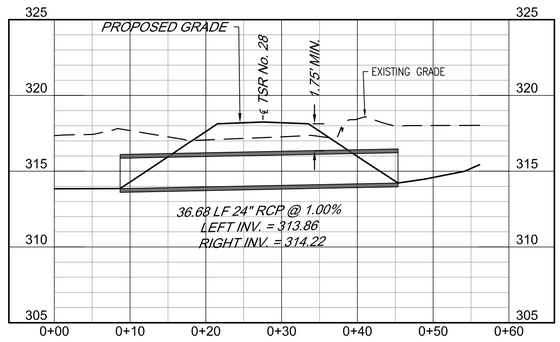

**PIPE 48**



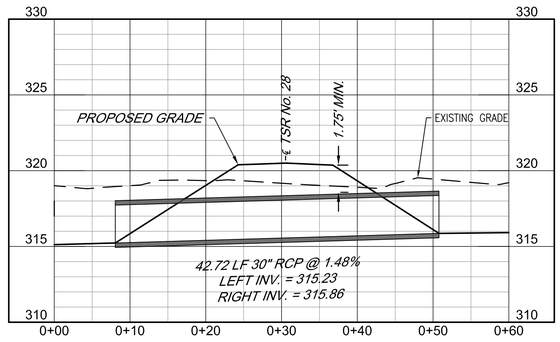

**PIPE 49**



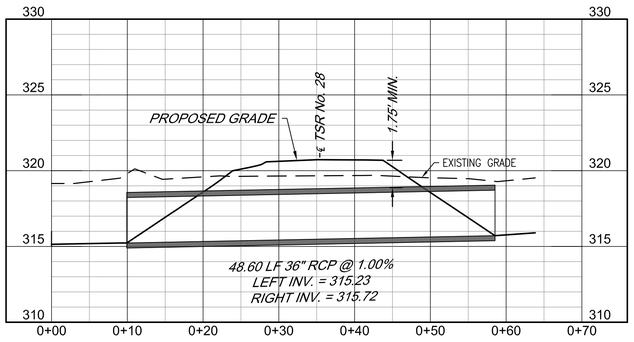

**PIPE 50**



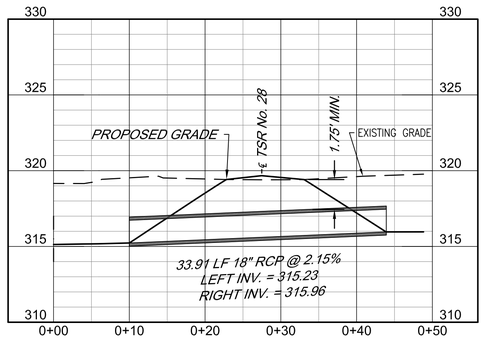

**PIPE 51**




**PIPE 52**




**PIPE 53**




**PIPE 54**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

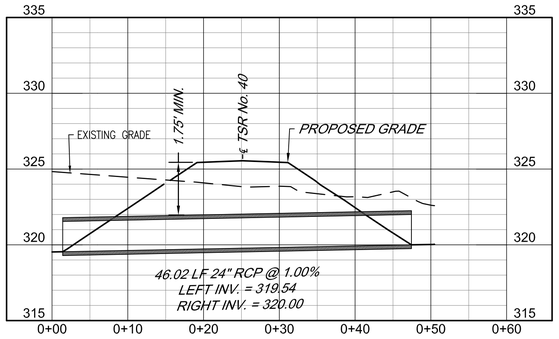
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

CULVERT PROFILES

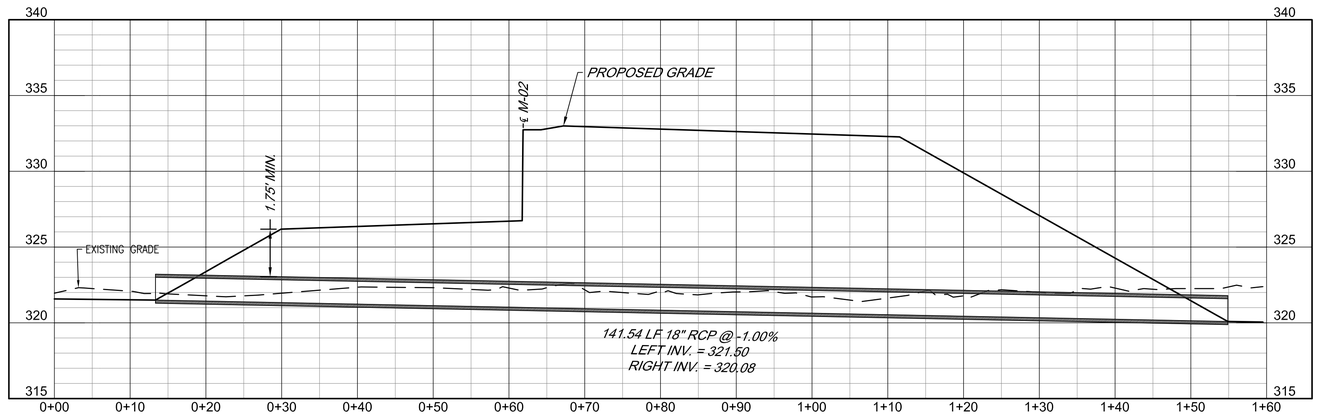
SHEET ID
CU210

READY TO ADVERTISE (RTA)

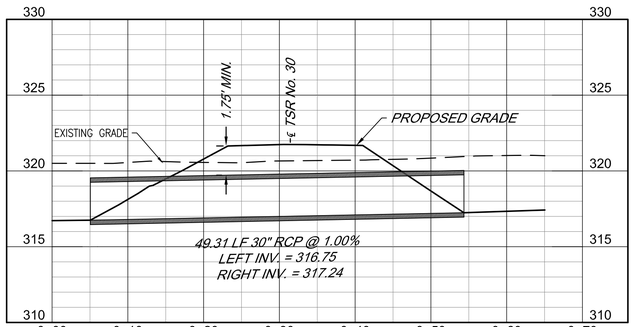
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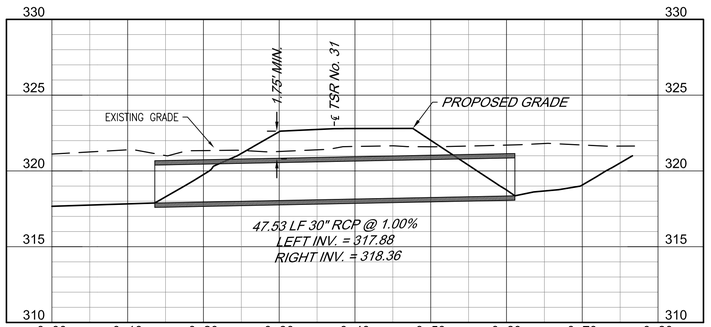

**PIPE 55**



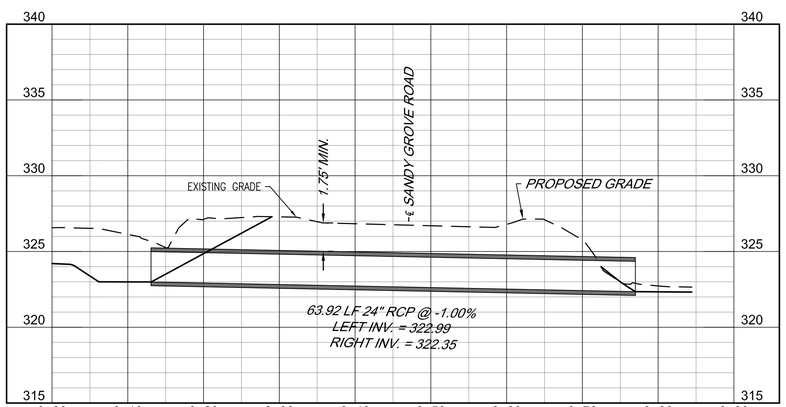

**PIPE 56**



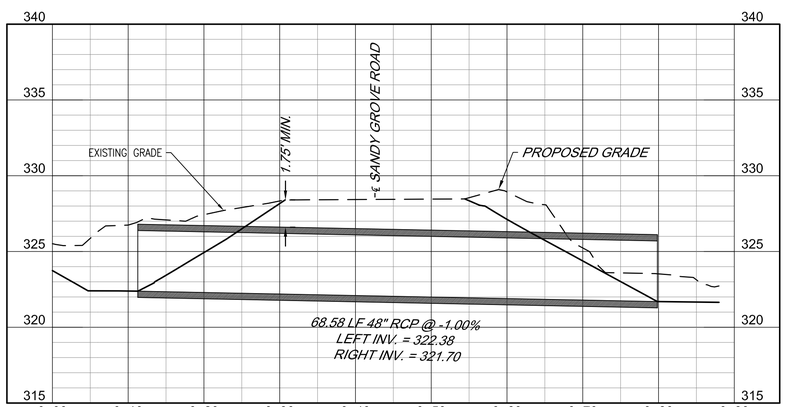

**PIPE 57**




**PIPE 58**




**PIPE 59**




**PIPE 60**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

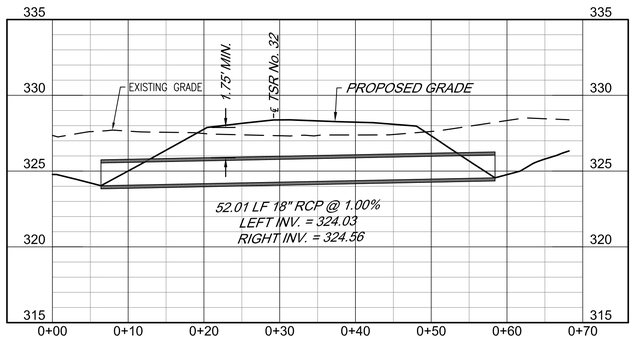
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

CULVERT PROFILES

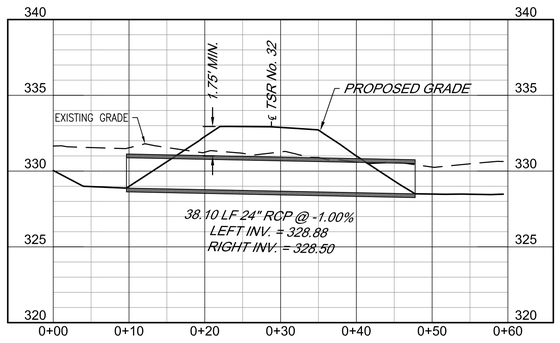
SHEET ID
CU211

READY TO ADVERTISE (RTA)

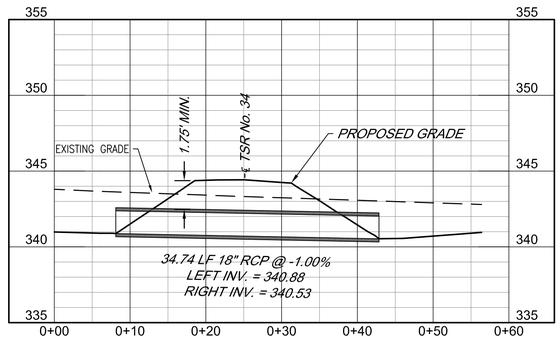
G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECU211.DWG



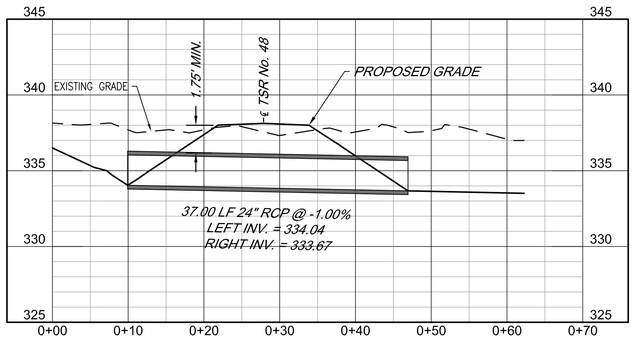

**PIPE 61**



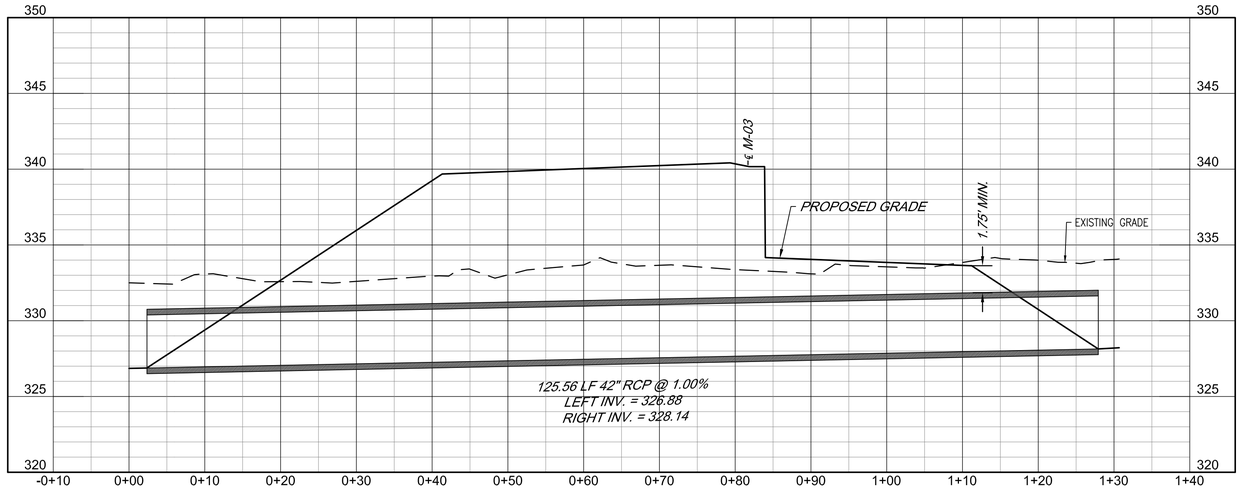

**PIPE 62**



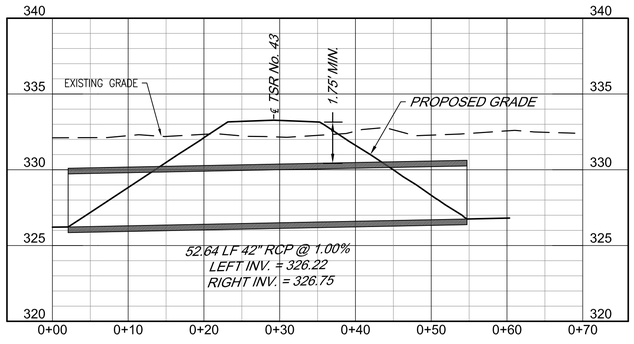

**PIPE 63**



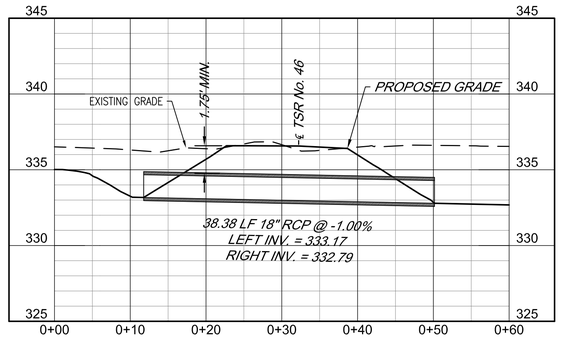

**PIPE 64**



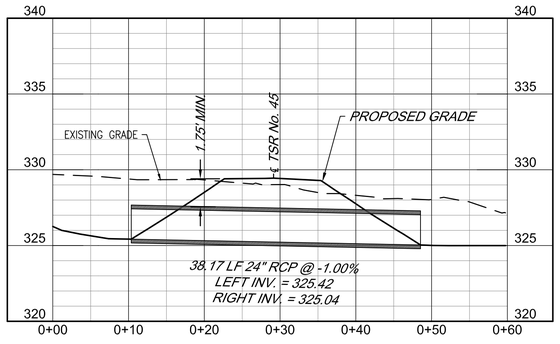

**PIPE 65**




**PIPE 66**




**PIPE 67**




**PIPE 68**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

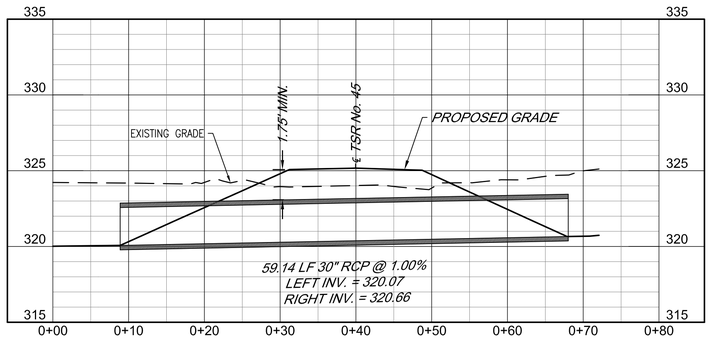
CULVERT PROFILES

SHEET ID

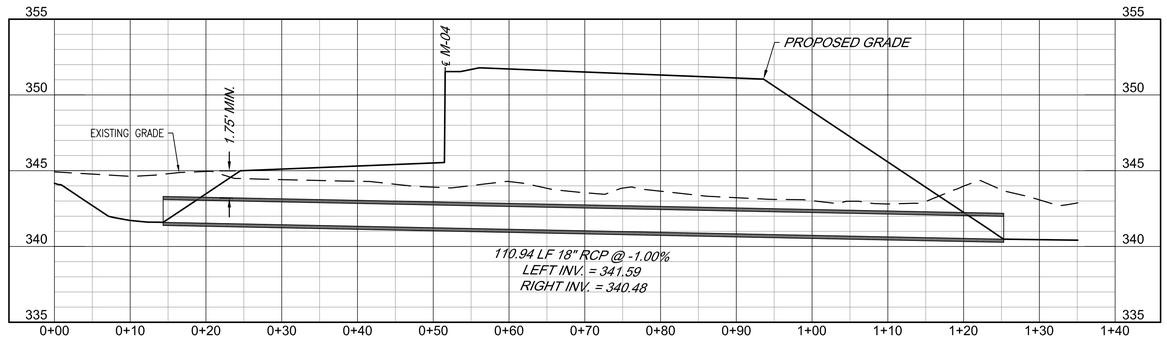
CU212

READY TO ADVERTISE (RTA)

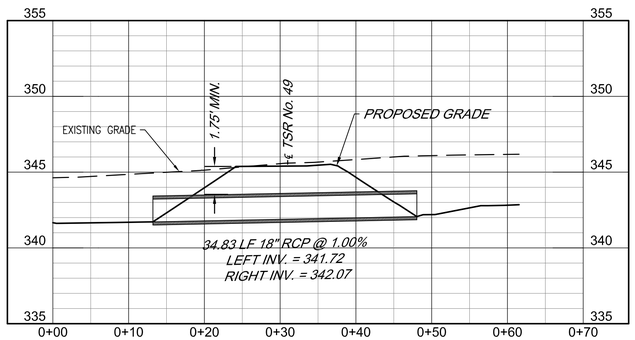
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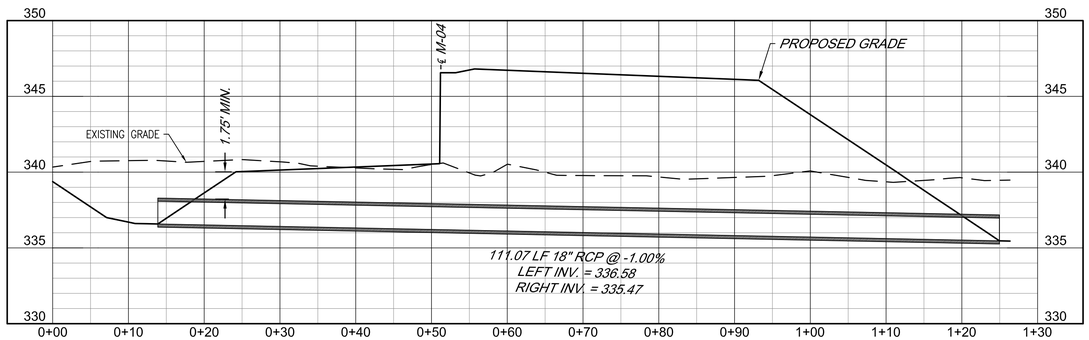

**PIPE 69**




**PIPE 70**




**PIPE 71**




**PIPE 72**

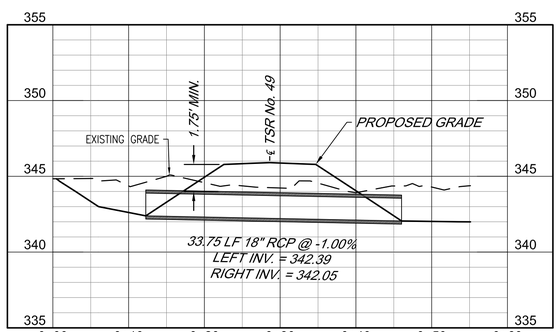
GRAPHIC SCALE

10 0 10 20

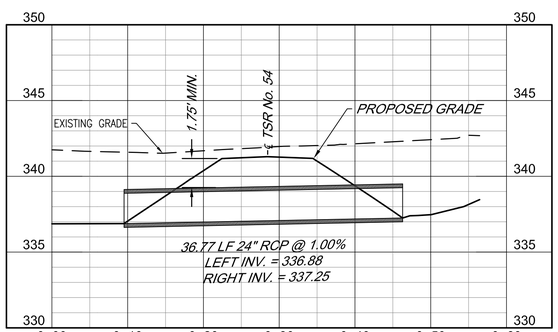
SCALE: 1" = 10' HORIZ.

5 0 5 10

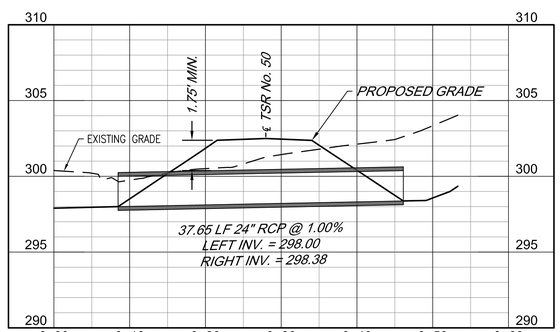
SCALE: 1" = 5' VERT.




**PIPE 73**




**PIPE 74**




**PIPE 75**

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

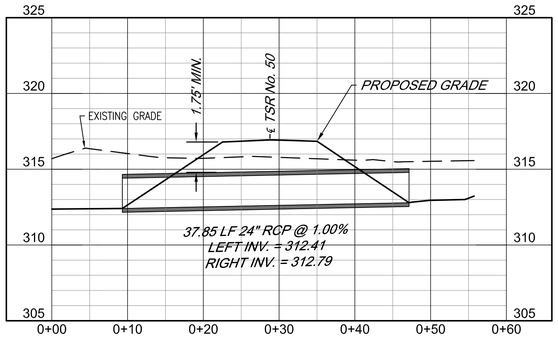
CULVERT PROFILES

SHEET ID

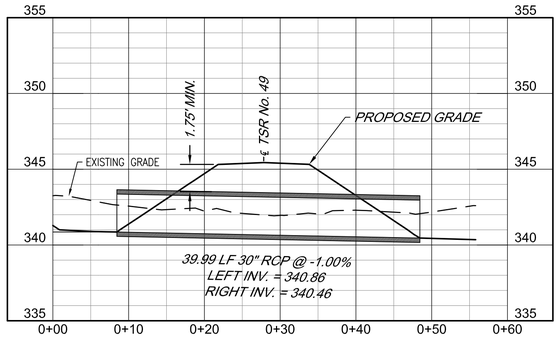
CU213

READY TO ADVERTISE (RTA)

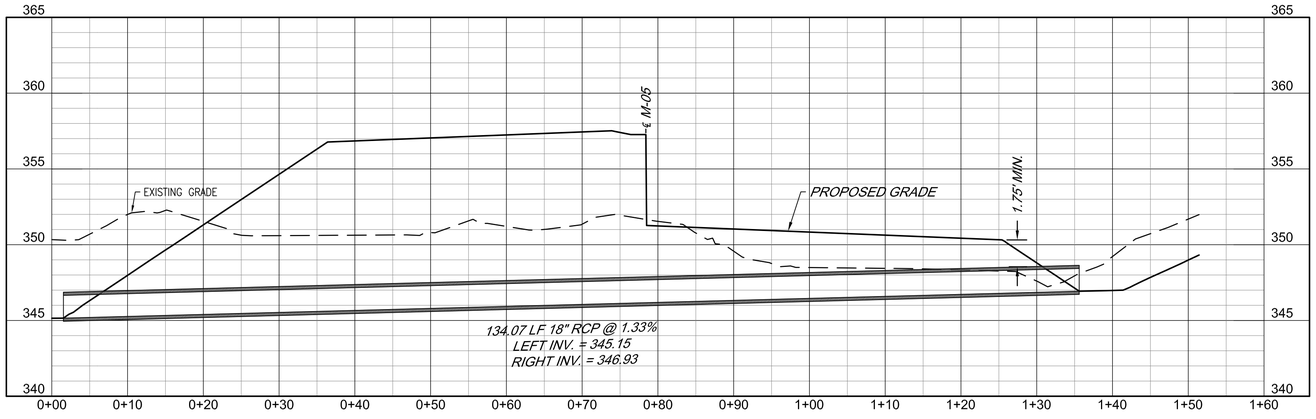
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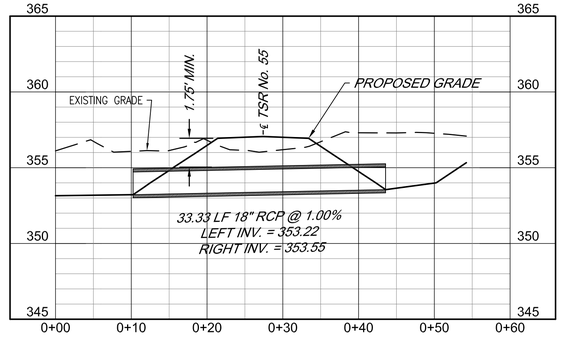

**PIPE 76**



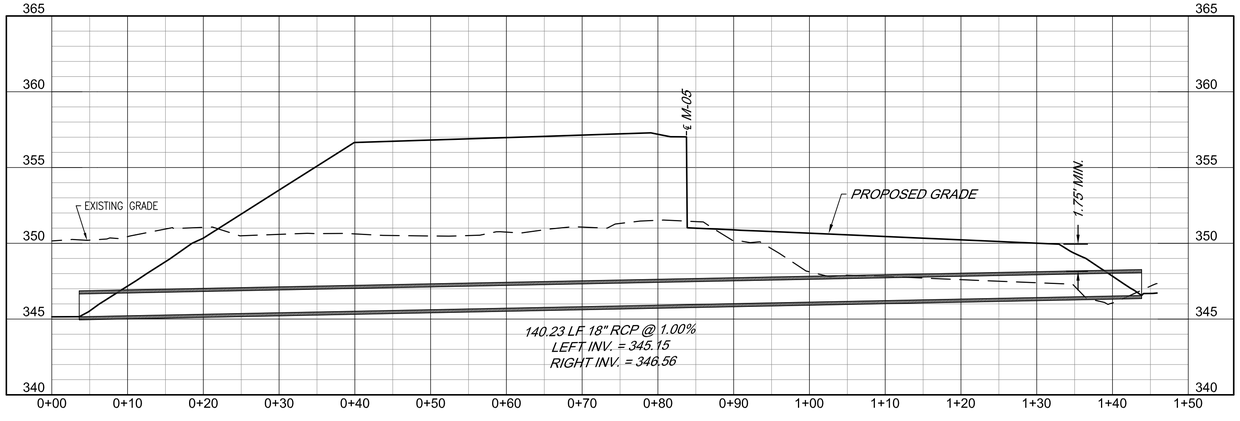

**PIPE 77**



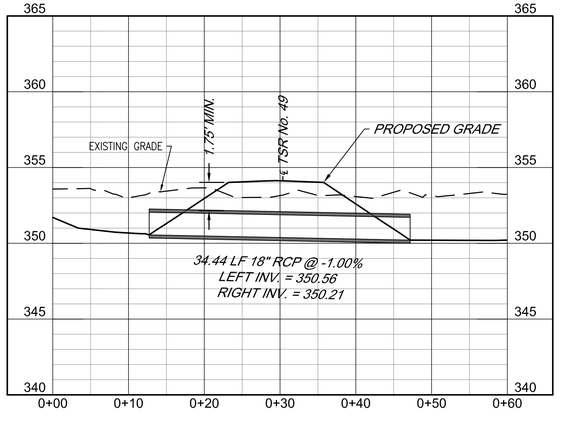

**PIPE 78**




**PIPE 82**




**PIPE 79**




**PIPE 81**

GRAPHIC SCALE

10 0 10 20

SCALE: 1" = 10' HORIZ.

5 0 5 10

SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

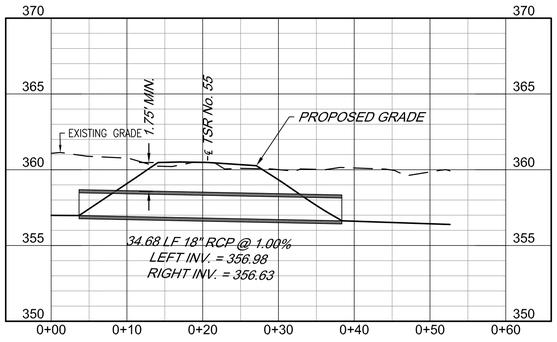
CULVERT PROFILES

SHEET ID

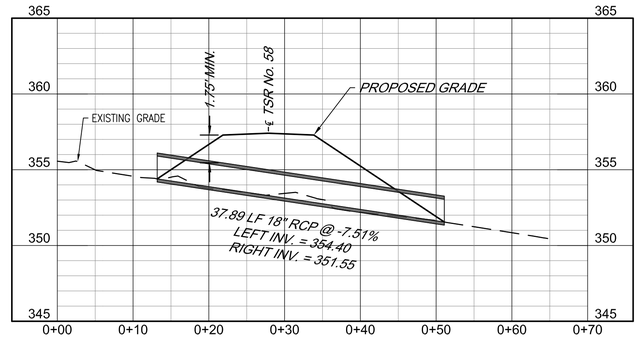
CU214

READY TO ADVERTISE (RTA)

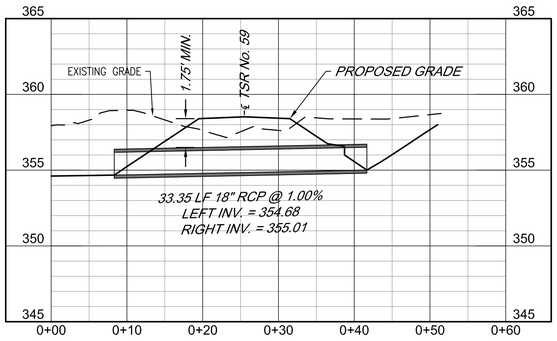
G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECU214.DWG



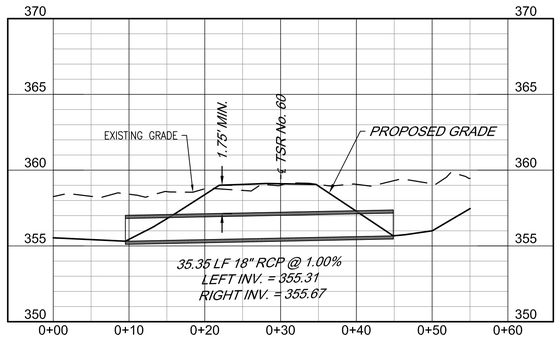

**PIPE 83**



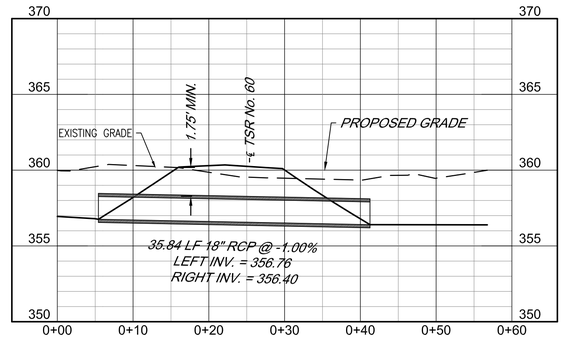

**PIPE 85**



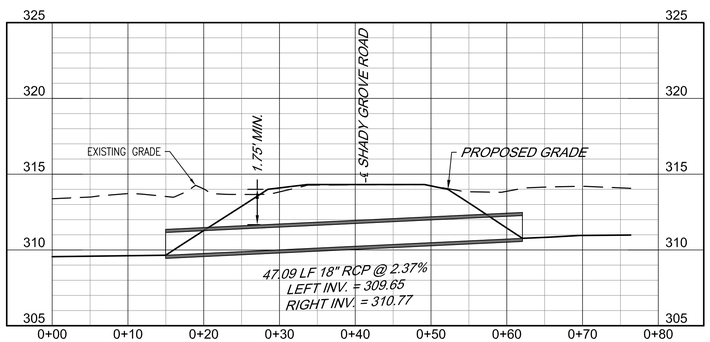

**PIPE 86**



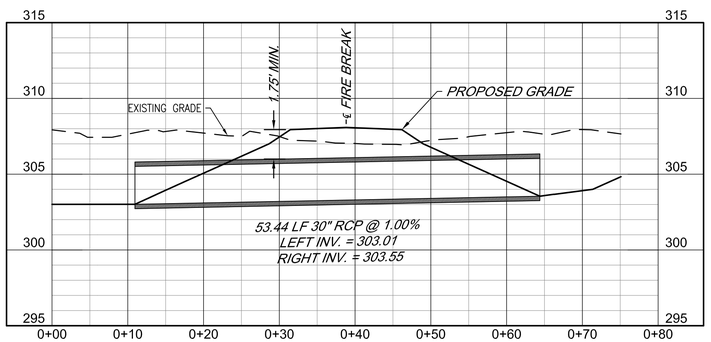

**PIPE 87**




**PIPE 88**




**PIPE 89**




**PIPE 90**

GRAPHIC SCALE

10 0 10 20
SCALE: 1" = 10' HORIZ.

5 0 5 10
SCALE: 1" = 5' VERT.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | K. SANDERS |
| DRAWN BY: | B.J. JOHNSON |
| CHECKED BY: | B. BRADLEY |
| SUBMITTED BY: | B. BRADLEY |
| QUALITY CONTROL BY: | K. SANDERS |
| ANSI D | |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86102
VOLUMES 3 & 4 - DOWNRANGE

CULVERT PROFILES

SHEET ID

CU215

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\200 PROFILES\B2ECU215.DWG

## CULVERTS

| PIPE | SHEET No. | SIZE | NORTHING | EASTING |
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| 01A | CG123 | 30 | 477,603.93 | 1,917,974.63 |
| 01B | CG123 | 30 | 477,544.47 | 1,918,013.10 |
| 02A | CG123 | 24 | 477,609.62 | 1,918,045.15 |
| 02B | CG123 | 24 | 477,546.03 | 1,918,024.86 |
| 03A | CG123 | 24 | 477,613.75 | 1,918,104.44 |
| 03B | CG123 | 24 | 477,618.08 | 1,918,173.71 |
| 04A | CG124 | 18 | 477,565.16 | 1,918,891.33 |
| 04B | CG124 | 18 | 477,559.96 | 1,918,980.75 |
| 05A | CG126 | 84 | 478,239.40 | 1,917,967.30 |
| 05B | CG126 | 84 | 478,241.17 | 1,918,212.95 |
| 06A | CG126/27 | 36 | 478,457.43 | 1,918,019.73 |
| 06B | CG126/27 | 36 | 478,390.36 | 1,918,242.91 |
| 07A | CG127 | 72 | 478,216.44 | 1,918,776.62 |
| 07B | CG127 | 72 | 478,368.71 | 1,918,951.57 |
| 08A | CG129 | 18 | 479,228.75 | 1,917,409.70 |
| 08B | CG129 | 18 | 479,173.02 | 1,917,433.79 |
| 09A | CG129 | 18 | 479,247.28 | 1,917,478.71 |
| 09B | CG129 | 18 | 479,197.59 | 1,917,493.84 |
| 10A | CG129 | 18 | 479,144.62 | 1,917,622.46 |
| 10B | CG129 | 18 | 479,176.91 | 1,917,614.88 |
| 11A | CG130 | 18 | 479,160.20 | 1,918,305.81 |
| 11B | CG130 | 18 | 479,126.32 | 1,918,301.01 |
| 12A | CG130 | 18 | 479,129.88 | 1,918,804.54 |
| 12B | CG130 | 18 | 479,089.27 | 1,918,795.34 |
| 13A | CG130 | 30 | 479,283.20 | 1,918,860.53 |
| 13B | CG130 | 30 | 479,241.19 | 1,918,906.75 |
| 14A | CG129/30 | 24 | 479,427.04 | 1,918,134.64 |
| 14B | CG129/30 | 24 | 479,494.51 | 1,918,292.22 |
| 15A | CG129/30 | 24 | 479,721.77 | 1,918,228.08 |
| 15B | CG129/30 | 24 | 479,673.81 | 1,918,213.23 |
| 16A | CG129/30 | 30 | 479,666.31 | 1,918,221.99 |
| 16B | CG129/30 | 30 | 479,719.85 | 1,918,279.44 |
| 17A | CG129/30 | 36 | 479,640.32 | 1,918,212.66 |
| 17B | CG129/30 | 36 | 479,651.70 | 1,918,278.36 |
| 18A | CG130 | 36 | 479,704.02 | 1,918,417.28 |
| 18B | CG130 | 36 | 479,655.33 | 1,918,364.78 |
| 19A | CG130 | 18 | 479,628.09 | 1,918,765.84 |
| 19B | CG130 | 18 | 479,631.64 | 1,918,724.86 |
| 20A | CG130 | 18 | 479,671.26 | 1,918,753.71 |
| 20B | CG130 | 18 | 479,663.90 | 1,918,827.75 |
| 21A | CG130 | 30 | 479,647.79 | 1,919,051.22 |
| 21B | CG130 | 30 | 479,593.12 | 1,919,026.68 |
| 22A | CG130 | 36 | 479,633.39 | 1,919,103.60 |
| 22B | CG130 | 36 | 479,592.62 | 1,919,082.59 |
| 23A | CG130 | 24 | 479,926.61 | 1,918,253.39 |
| 23B | CG130 | 24 | 479,960.96 | 1,918,266.02 |
| 24A | CG130 | 24 | 479,888.87 | 1,919,181.42 |
| 24B | CG130 | 24 | 479,921.27 | 1,919,201.37 |

## CULVERTS

| PIPE | SHEET No. | SIZE | NORTHING | EASTING |
|---|---|---|---|---|
| 25A | CG134 | 18 | 480,894.95 | 1,919,754.96 |
| 25B | CG134 | 18 | 480,869.00 | 1,919,846.58 |
| 26A | CG136 | 24 | 481,059.38 | 1,919,009.83 |
| 26B | CG136 | 24 | 481,096.74 | 1,919,010.37 |
| 27A | CG137 | 24 | 481,064.22 | 1,919,586.76 |
| 27B | CG137 | 24 | 481,036.31 | 1,919,561.78 |
| 28A | CG137 | 18 | 481,071.89 | 1,919,837.79 |
| 28B | CG137 | 18 | 481,057.72 | 1,919,891.94 |
| 29A | CG142 | 18 | 482,171.29 | 1,919,878.15 |
| 29B | CG142 | 18 | 482,205.31 | 1,919,885.24 |
| 30A | CG142 | 18 | 482,653.56 | 1,919,870.01 |
| 30B | CG142 | 18 | 482,640.07 | 1,919,926.18 |
| 31A | CG142 | 24 | 482,610.00 | 1,920,021.75 |
| 31B | CG142 | 24 | 482,573.01 | 1,920,017.49 |
| 32A | CG143 | 18 | 482,653.25 | 1,920,742.13 |
| 32B | CG143 | 18 | 482,661.22 | 1,920,797.42 |
| 33A | CG142 | 30 | 482,837.66 | 1,920,029.48 |
| 33B | CG142 | 30 | 482,786.58 | 1,920,097.02 |
| 34A | CG135 | 24 | 481,532.10 | 1,917,314.00 |
| 34B | CG135 | 24 | 481,567.91 | 1,917,307.39 |
| 35A | CG140 | 18 | 482,000.02 | 1,917,650.23 |
| 35B | CG140 | 18 | 482,006.82 | 1,917,617.63 |
| 36A | CG140 | 18 | 482,313.51 | 1,917,655.30 |
| 36B | CG140 | 18 | 482,304.70 | 1,917,620.16 |
| 37A | CG140 | 18 | 482,390.21 | 1,917,802.01 |
| 37B | CG140 | 18 | 482,399.19 | 1,917,835.59 |
| 38A | CG140 | 24 | 482,409.15 | 1,918,027.91 |
| 38B | CG140 | 24 | 482,397.93 | 1,917,983.77 |
| 39A | CG140 | 24 | 482,475.94 | 1,918,123.49 |
| 39B | CG140 | 24 | 482,485.52 | 1,918,159.28 |
| 40A | CG141 | 30 | 482,474.54 | 1,918,274.32 |
| 40B | CG141 | 30 | 482,464.16 | 1,918,235.70 |
| 41A | CG141 | 36 | 482,494.26 | 1,918,353.95 |
| 41B | CG141 | 36 | 482,535.56 | 1,918,341.68 |
| 42A | CG141 | 18 | 482,549.34 | 1,918,598.04 |
| 42B | CG141 | 18 | 482,541.36 | 1,918,565.42 |
| 43A | CG141 | 36 | 482,579.43 | 1,919,031.71 |
| 43B | CG141 | 36 | 482,773.95 | 1,919,180.90 |
| 44A | CG142 | 54 | 482,779.30 | 1,919,684.36 |
| 44B | CG142 | 54 | 482,923.51 | 1,919,704.13 |
| 46A | CG146 | 18 | 483,503.00 | 1,920,161.52 |
| 46B | CG146 | 18 | 483,536.50 | 1,920,163.25 |
| 47A | CG146 | 18 | 483,593.85 | 1,920,209.53 |
| 47B | CG146 | 18 | 483,560.16 | 1,920,211.16 |
| 48A | CG145 | 18 | 483,424.79 | 1,918,551.84 |
| 48B | CG145 | 18 | 483,424.91 | 1,918,516.15 |
| 49A | CG145 | 24 | 483,541.36 | 1,919,243.20 |
| 49B | CG145 | 24 | 483,577.38 | 1,919,236.45 |

## CULVERTS

| PIPE | SHEET No. | SIZE | NORTHING | EASTING |
|---|---|---|---|---|
| 50A | CG146 | 18 | 483,628.03 | 1,919,502.24 |
| 50B | CG146 | 18 | 483,634.99 | 1,919,539.22 |
| 51A | CG146 | 24 | 483,598.29 | 1,919,547.04 |
| 51B | CG146 | 24 | 483,634.37 | 1,919,540.42 |
| 52A | CG146 | 30 | 483,659.62 | 1,919,889.32 |
| 52B | CG146 | 30 | 483,697.74 | 1,919,870.03 |
| 53A | CG146 | 36 | 483,661.84 | 1,919,905.01 |
| 53B | CG146 | 36 | 483,708.26 | 1,919,919.39 |
| 54A | CG146 | 18 | 483,655.21 | 1,919,909.65 |
| 54B | CG146 | 18 | 483,665.22 | 1,919,942.05 |
| 55A | CG145 | 24 | 483,631.78 | 1,918,775.40 |
| 55B | CG145 | 24 | 483,669.71 | 1,918,801.46 |
| 56A | CG145 | 18 | 483,680.05 | 1,918,805.88 |
| 56B | CG145 | 18 | 483,809.97 | 1,918,862.04 |
| 57A | CG146 | 30 | 483,828.22 | 1,919,776.40 |
| 57B | CG146 | 30 | 483,866.97 | 1,919,745.90 |
| 58A | CG146 | 30 | 483,896.85 | 1,919,720.48 |
| 58B | CG146 | 30 | 483,932.39 | 1,919,688.93 |
| 59A | CG150 | 24 | 484,011.27 | 1,920,192.00 |
| 59B | CG150 | 24 | 483,971.49 | 1,920,242.04 |
| 60A | CG150 | 48 | 484,103.08 | 1,920,198.62 |
| 60B | CG150 | 48 | 484,061.83 | 1,920,253.40 |
| 61A | CG149 | 18 | 484,200.61 | 1,919,392.78 |
| 61B | CG149 | 18 | 484,235.99 | 1,919,354.66 |
| 62A | CG149 | 24 | 484,440.68 | 1,919,183.20 |
| 62B | CG149 | 24 | 484,418.50 | 1,919,214.17 |
| 63A | CG149 | 18 | 484,777.53 | 1,919,153.61 |
| 63B | CG149 | 18 | 484,769.13 | 1,919,187.32 |
| 64A | CG150 | 24 | 484,910.39 | 1,919,499.25 |
| 64B | CG150 | 24 | 484,891.81 | 1,919,531.25 |
| 65A | CG150 | 42 | 484,794.63 | 1,920,174.13 |
| 65B | CG150 | 42 | 484,908.01 | 1,920,120.19 |
| 66A | CG150 | 42 | 484,737.06 | 1,920,201.52 |
| 66B | CG150 | 42 | 484,784.59 | 1,920,178.91 |
| 67A | CG150 | 18 | 484,861.85 | 1,920,464.29 |
| 67B | CG150 | 18 | 484,858.74 | 1,920,502.55 |
| 68A | CG151 | 24 | 484,847.03 | 1,920,796.84 |
| 68B | CG151 | 24 | 484,845.22 | 1,920,834.97 |
| 69A | CG151 | 30 | 484,790.54 | 1,921,111.01 |
| 69B | CG151 | 30 | 484,829.52 | 1,921,155.48 |
| 70A | CG153 | 18 | 485,315.42 | 1,919,372.99 |
| 70B | CG153 | 18 | 485,207.09 | 1,919,396.94 |
| 71A | CG153 | 18 | 485,321.95 | 1,919,385.60 |
| 71B | CG153 | 18 | 485,327.95 | 1,919,419.91 |
| 72A | CG154 | 18 | 485,394.00 | 1,919,937.84 |
| 72B | CG154 | 18 | 485,284.11 | 1,919,921.69 |
| 73A | CG153 | 18 | 485,588.51 | 1,919,290.33 |
| 73B | CG153 | 18 | 485,599.81 | 1,919,322.13 |

## CULVERTS

| PIPE | SHEET No. | SIZE | NORTHING | EASTING |
|---|---|---|---|---|
| 74A | CG152 | 24 | 485,770.08 | 1,918,018.65 |
| 74B | CG152 | 24 | 485,788.81 | 1,918,050.30 |
| 75A | CG154/55 | 24 | 485,955.79 | 1,920,633.30 |
| 75B | CG154/55 | 24 | 485,919.86 | 1,920,622.06 |
| 76A | CG155 | 24 | 485,776.73 | 1,921,683.67 |
| 76B | CG155 | 24 | 485,779.70 | 1,921,645.95 |
| 77A | CG158 | 30 | 486,085.82 | 1,919,022.56 |
| 77B | CG158 | 30 | 486,105.79 | 1,919,057.21 |
| 78A | CG158 | 18 | 486,035.34 | 1,918,806.02 |
| 78B | CG158 | 18 | 486,154.82 | 1,918,745.19 |
| 79A | CG158 | 18 | 486,036.74 | 1,918,808.46 |
| 79B | CG158 | 18 | 486,174.14 | 1,918,780.49 |
| 81A | CG158 | 18 | 486,331.61 | 1,918,704.16 |
| 81B | CG158 | 18 | 486,299.10 | 1,918,715.53 |
| 82A | CG158 | 18 | 486,872.03 | 1,918,739.61 |
| 82B | CG158 | 18 | 486,894.86 | 1,918,763.89 |
| 83A | CG162 | 18 | 487,020.17 | 1,919,061.68 |
| 83B | CG162 | 18 | 487,022.61 | 1,919,096.27 |
| 85A | CG162 | 18 | 487,233.13 | 1,918,969.28 |
| 85B | CG162 | 18 | 487,270.94 | 1,918,966.86 |
| 86A | CG162 | 18 | 487,314.56 | 1,918,601.52 |
| 86B | CG162 | 18 | 487,321.22 | 1,918,634.20 |
| 87A | CG162 | 18 | 487,359.57 | 1,918,591.81 |
| 87B | CG162 | 18 | 487,392.64 | 1,918,579.30 |
| 88A | CG162 | 18 | 487,432.09 | 1,918,610.98 |
| 88B | CG162 | 18 | 487,396.96 | 1,918,618.07 |
| 89A | CG142 | 18 | 482,841.05 | 1,920,030.31 |
| 89B | CG142 | 18 | 482,842.31 | 1,920,077.38 |
| 90A | CG141 | 36 | 482,552.74 | 1,918,410.55 |
| 90B | CG141 | 36 | 482,566.01 | 1,918,462.31 |

NORTH CAROLINA PROFESSIONAL 6/6/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

DATA CHARTS
CULVERTS

SHEET ID
CU600

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G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\600 DATA CHARTS\B2ECU600.DWG

# General Notes

GN. GENERAL

GN.1 THE STRUCTURAL DRAWINGS AND SPECIFICATIONS ARE A PORTION OF THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR AND SUBCONTRACTORS SHALL REFERENCE AND COORDINATE WITH ALL OTHER DISCIPLINES' DRAWINGS. ANY DISCREPANCIES OR OMISSIONS SHALL BE REPORTED TO THE STRUCTURAL ENGINEER AND ARCHITECT.

GN.2 DESIGN CRITERIA:

A. CODES AND SPECIFICATIONS:

1. GENERAL BUILDING CODE:
INTERNATIONAL BUILDING CODE, 2018 EDITION
WITH AMENDMENTS.

2. DESIGN LOAD CRITERIA:
MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, AMERICAN SOCIETY OF CIVIL ENGINEERS, ASCE 7-16.

3. CONCRETE:
BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AMERICAN CONCRETE INSTITUTE, ACI 318-14.

4. TIMBER:
NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, AMERICAN FOREST & PAPER ASSOCIATION/AMERICAN WOOD COUNCIL, ANSI/AWC NDS-2018.

5. DEPARTMENT OF DEFENSE:
A. UFC 1-200-01 GENERAL BUILDING REQUIREMENTS
B. UFC 3-301-01 STRUCTURAL ENGINEERING

B. DESIGN LOADS (PSF):

1. DEAD LOADS:
ANY CHANGES IN CONSTRUCTION MATERIALS FROM THOSE SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS SHALL BE REPORTED BY THE CONTRACTOR TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOAD-CARRYING CAPACITY OF THE STRUCTURE.

2. LIVE LOADS:
ROOF (REDUCIBLE)----------20

3. SNOW LOAD (URBAN CLUSTER):
GROUND SNOW LOAD (Pg)----------10.0
FLAT-ROOF SNOW LOAD (Pf)----------9.2
SNOW EXPOSURE FACTOR (Ce)----------1.1
SNOW LOAD IMPORTANCE FACTOR (Is)----------1.0
THERMAL FACTOR (Ct)----------1.2

4. WIND LOADS:

WIND LOADS URBAN CLUSTER:
RISK CATEGORY----------II
ULTIMATE DESIGN WIND SPEED (3-SECOND GUST)--118 MPH
WIND EXPOSURE CATEGORY----------C

WIND LOADS AT FACADES:
RISK CATEGORY----------I
ULTIMATE DESIGN WIND SPEED (3-SECOND GUST)--109 MPH
WIND EXPOSURE CATEGORY----------C

INTERNAL PRESSURE COEFFICIENT:
URBAN CLUSTER (PARTIALLY OPEN)----------+/-0.18
FACADES (OPEN)----------0.00

5. SEISMIC LOADS:
SEISMIC IMPORTANCE FACTOR (IE)----------1.0
MAPPED SPECTRAL RESPONSE ACCELERATION:
SS----------0.171
S1----------0.076
SITE CLASS----------D
SPECTRAL RESPONSE COEFFICIENTS:
SDS----------0.182
SD1----------0.122
SEISMIC DESIGN CATEGORY----------B

BASIC SEISMIC-FORCE-RESISTING SYSTEM:

URBAN CLUSTER, FACADES:
LIGHT FRAMED WALLS WITH NON RATED SHEAR WALLS:
SPECTRAL RESPONSE COEFFICIENT (CS)--------0.073
RESPONSE MODIFICATION FACTOR (R)----------2.5
OVER-STRENGTH FACTOR (Oo)----------2.5
DEFLECTION AMPLIFICATION FACTOR (Cd)----------2.5

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE METHOD

GN.3 CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO FABRICATION/CONSTRUCTION. NOTIFY STRUCTURAL ENGINEER AND ARCHITECT OF ANY DISCREPANCIES PRIOR TO FABRICATION/CONSTRUCTION.

GN.4 ALL DETAILS SHOWN ARE TYPICAL. SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS, UNLESS NOTED.

GN.5 THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.

GN.6 CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED ROOFS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT LOADS DO NOT EXCEED THE DESIGN LIVE LOAD.

FD. FOUNDATION

FD.1 THE CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS FOR FOUNDATION AND SLAB ON GRADE PREPARATION NOTED IN SPECIFICATION SECTION 31 00 00.

FD.2 GEOTECHNICAL REPORT: FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY SOILS SECTION, GEOTECHNICAL & HTRW BRANCH, U.S. ARMY ENGINEER DISTRICT, SAVANNAH, TITLED "SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING REPORT, AUTOMATED MULTIPURPOSE TRAINING RANGE, PROJECT NO. 96182, FY-23, FORT BRAGG, NORTH CAROLINA DATED MARCH 2022". THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL REPORT FROM THE OWNER AND FOLLOW ALL REQUIREMENTS AND RECOMMENDATIONS.

FD.3 DESIGN BEARING PRESSURES (PSF):

COLUMN FOOTINGS----------3000
ALL OTHER----------3000

FD.4 ALL FOUNDATION BEARING SURFACES SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE TO ENSURE COMPLIANCE WITH PRESSURES NOTED. THE FINAL BEARING ELEVATIONS MAY VARY AS REQUIRED TO PROVIDE PROPER BEARING CAPACITY IN AN APPROVED BEARING STRATUM AS DETERMINED BY THE GEOTECHNICAL ENGINEER.

FD.5 FOOTINGS SHALL BE PLACED THE SAME DAY AS INSPECTION BY THE GEOTECHNICAL ENGINEER UNLESS EXTENDED TIME IS APPROVED BY THE GEOTECHNICAL ENGINEER.

FD.6 FOOTINGS SHALL BE NEATLY EXCAVATED WHERE POSSIBLE WITH SIDES AND TOP EDGES FREE OF LOOSE OR WET MATERIALS. WHERE NEAT EXCAVATION IS NOT POSSIBLE, FOOTING EXCAVATION SHALL BE FILLED WITH CONCRETE TO THE TOP OF FOOTING. THE BOTTOM EXCAVATION SHALL BE CLEAN AND DRY WITH ALL LOOSE MATERIAL REMOVED FOR AN ESSENTIALLY FLAT BEARING SURFACE. WHERE SOFT OR UNSUITABLE BEARING SURFACES ARE ENCOUNTERED, THE AREA SHALL BE UNDERCUT AS REQUIRED AND REPLACED WITH LEAN CONCRETE OR COMPACTED DENSE GRADED CRUSHED STONE AS DIRECTED BY THE GEOTECHNICAL ENGINEER.

FD.7 COMPACTED FILL SHALL MEET THE REQUIREMENTS NOTED IN THE GEOTECHNICAL REPORT. EXCAVATED MATERIAL MAY BE USED AS BACKFILL MATERIAL WITH WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER STATING THAT SUCH MATERIAL IS SUITABLE AS BACKFILL AND INSTRUCTIONS ARE GIVEN FOR PROPER MOISTURE CONTENT AND COMPACTION.

CN. CONCRETE

CN.1 CONCRETING OPERATIONS SHALL COMPLY WITH ACI STANDARDS.

CN.2 MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS (PSI), TYPE OF CONCRETE, MAXIMUM W/C (WATER/CEMENTITIOUS MATERIALS RATIO), TOTAL AIR CONTENT, SLUMP AND CONCRETE USE:

| STRENGTH | TYPE | W/C | AIR | SLUMP | USE |
|---|---|---|---|---|---|
| 4000 | NORMAL WT. | 0.50 | 4-6% | 3" TO 5" | UNLESS NOTED |

***DO NOT USE AIR ENTRAINING ADMIXTURES IN INTERIOR CONCRETE SLABS TO RECEIVE A HARD TROWEL FINISH.

CN.3 REINFORCING BARS: ASTM A615 GRADE 60.

CN.4 REINFORCING STEEL SHOWN IN SECTIONS AND DETAILS IS A SCHEMATIC INDICATION THAT REINFORCING EXISTS. SEE SCHEDULES, SECTION NOTES AND GENERAL NOTES FOR ACTUAL REINFORCING REQUIRED.

CN.5 REINFORCING BAR PLACING ACCESSORIES TO BE INSTALLED IN ACCORDANCE WITH ACI MANUAL OF STANDARD PRACTICE.

CN.6 DETAIL REINFORCEMENT IN ACCORDANCE WITH ACI SP-066. REINFORCEMENT SHALL NOT BE WELDED UNLESS NOTED OR APPROVED BY THE STRUCTURAL ENGINEER.

CN.7 SPLICES SHALL BE CLASS "B" TENSION LAP SPLICE, UNLESS NOTED.

CN.8 REINFORCING MARKED "CONTINUOUS" SHALL BE SPLICED WITH CLASS "B" TENSION LAP SPLICE, UNLESS NOTED.

CN.9 CONCRETE COVERAGE OF REINFORCEMENT, UNLESS NOTED:

FOOTINGS----------2" TOP & 3" BOTTOM & SIDES
SLABS ON WELL GRADED SUBGRADE:
3/4" TOP & 1 1/2" BOTTOM
CONCRETE SURFACES CAST AGAINST EARTH----------3"

CN.10 SLABS ON GRADE: 5" THICK, REINFORCED WITH #4 @ 12" EACH WAY AT 1.5" FROM TOP OF SLAB, UNLESS NOTED.

WD. WOOD CONSTRUCTION

WD.1 WOOD FRAMING MEMBERS:

UNLESS NOTED OTHERWISE: PRESSURE TREATED VISUALLY GRADED DIMENSIONAL #2 GRADE SOUTHERN PINE.

WD.2 SILL PLATES, SOLE PLATES AND TOP PLATES SHALL BE OF THE SAME SIZE AND SPECIES AS THE STUDS TO WHICH THEY ARE CONNECTED. GRADE AND SPECIES SHALL BE AS SPECIFIED ABOVE.

WD.3 ALL LUMBER TO HAVE A MAXIMUM MOISTURE CONTENT OF 19% AT TIME OF CONSTRUCTION.

WD.4 ALL PRESSURE TREATED SOUTHERN PINE LUMBER SHALL BE PRESSURE TREATED WITH ALKALINE COPPER QUATERNARY (ACQ) IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, COMMODITY SPECIFICATION A.

A. USE CATEGORIES:

1. UC3B/ABOVE GROUND EXPOSED - EXPOSED FRAMING, BEAMS, COLUMNS, ETC.

2. UC4A/GROUND CONTACT OR INCLUSION PER U1, SECTION 2, NOTE 1 - WOOD FOUNDATIONS, ETC.

B. ALL FASTENERS, NAILS AND OTHER METAL PRODUCTS USED WITH LUMBER PRESSURE TREATED WITH ACQ SHALL BE HOT-DIP GALVANIZED, STAINLESS STEEL OR AS RECOMMENDED BY THE ACQ MANUFACTURER. PRESSURE TREATED LUMBER SHALL NOT BE IN DIRECT CONTACT WITH ALUMINUM PRODUCTS.

WD.5 ALL MANUFACTURED WOOD FRAMING CONNECTORS TO BE BY SIMPSON STRONG-TIE COMPANY, INC. OR APPROVED EQUAL. ALL CONNECTORS SHALL BE FASTENED TO FRAMING MEMBERS FILLING THE REQUIRED NUMBER OF CONNECTOR HOLES WITH THE TYPE AND SIZE FASTENERS SPECIFIED BY THE MANUFACTURER. HARDWARE TO BE FASTENED FOR MAXIMUM CAPACITY WHERE MANUFACTURER PROVIDES OPTION.

WD.6 PLYWOOD WALL SHEATHING AT FACADES AND URBAN CLUSTER: 3/4" PLYWOOD, EXTERIOR APA CUSTOM PRODUCT V-611. LONG DIMENSION OF PANEL PERPENDICULAR TO STUDS. ALL PLYWOOD EDGES BACKED WITH TWO INCH NOMINAL OR WIDER FRAMING.

WD.7 PLYWOOD WALL NAILING: 8D HOT-DIPPED GALVANIZED NAILS AT 6 INCHES AT ALL FOUR PANEL EDGES AND 12 INCHES AT INTERMEDIATE MEMBERS.

WD.8 ROOF SHEATHING AT URBAN CLUSTER: 3/4" PLYWOOD UNLESS NOTED, APA RATED SHEATHING, EXPOSURE 1. PANEL IDENTIFICATION INDEX 48/24. PROVIDE ONE H-CLIP AT ALL ADJOINING PANEL JOINTS MIDWAY BETWEEN SUPPORTS. LONG DIMENSION OF PANEL PERPENDICULAR TO SUPPORTS WITH JOINTS STAGGERED

WD.9 ROOF SHEATHING NAILING, UNLESS NOTED: 8D HOT-DIPPED GALVANIZED COMMON NAILS AT 6 INCHES AT DIAPHRAGM BOUNDARIES, 6 INCHES AT PANEL ENDS AND 12 INCHES AT INTERMEDIATE SUPPORTS.

WD.10 REFER TO IBC TABLE 2304.10.1 FOR FASTENING REQUIREMENTS NOT SPECIFICALLY STATED IN DRAWINGS.

WD.11 BOLTS: ASTM A307 GRADE A W/ ASTM A653 HEX NUTS AND WASHERS.

WD.12 NAILS, WIRE BRADS, STAPLES: SHALL CONFORM TO ASTM F1667.

WD.13 POWER DRIVEN FASTENERS: SHALL CONFORM TO NER-272.

WD.14 WOOD SCREWS: SHALL CONFORM TO ASME B18.6.1.

WD.15 LAG BOLTS: SHALL CONFORM TO ASME B18.2.1.

ALABAMA LICENSED ENGINEER
6/6/2023
No. 34063
PROFESSIONAL
Howard N Ward
HOWARD N. WARD

LBYD, Inc.
Civil and Structural Engineers
880 Montclair Road
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Phone (205) 254-4500
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US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: H. WARREN
DRAWN BY: G. AULTMAN
CHECKED BY: W. BISHOP
SUBMITTED BY: B. BRADLEY
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
SIZE: ANSI D
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

GENERAL NOTES

SHEET ID
S-011

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# General Notes (Continued)

WT. WOOD TRUSSES

WT.1 TRUSS LAYOUTS SHOWN ON FRAMING PLANS ARE SCHEMATIC ONLY AND SHOWN FOR GENERAL ARRANGEMENT, UNLESS SPECIFICALLY DIMENSIONED. ACTUAL LAYOUT SHALL BE DETERMINED BY THE TRUSS ENGINEER, BUT SHALL NOT CHANGE SPAN DIRECTIONS, SUPPORT LOCATIONS SHOWN, NOR GO ABOVE THE MAXIMUM SPACING INDICATED. DO NOT BEAR GIRDER TRUSSES ON DOOR OR WINDOW OPENINGS UNLESS NOTED OTHERWISE. COORDINATE TRUSS LAYOUT WITH ARCHITECTURAL REQUIREMENTS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR SHAPES, SIZES, AND STYLES OF TRUSSES REQUIRED.

WT.2 DESIGN, FABRICATE AND ERECT WOOD TRUSSES IN ACCORDANCE WITH THE "DESIGN SPECIFICATION FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES" OF THE TRUSS PLATE INSTITUTE. RESPONSIBILITIES SPECIFICALLY ASSIGNED IN THESE CONSTRUCTION DOCUMENTS SHALL TAKE PRECEDENCE OVER ANSI/TPI CHAPTER 2.

WT.3 THE WOOD TRUSS SYSTEM ENGINEER SHALL DESIGN THE COMPLETE TRUSS SYSTEM. THE TRUSS SYSTEM IS AN ASSEMBLAGE OF TRUSSES AND TRUSS GIRDERS, TOGETHER WITH ALL PERMANENT INDIVIDUAL TRUSS MEMBER BRACING, TRUSS-TO-TRUSS CONNECTIONS, BRACING CONNECTIONS, AND OTHER STRUCTURAL ELEMENTS AND ALL SPACING AND LOCATIONAL CRITERIA THAT, IN COMBINATION, FUNCTION TO SUPPORT THE LOADS APPLICABLE TO THE STRUCTURE.

WT.4 SUBMIT ENGINEERED DRAWINGS AND CALCULATIONS FOR ALL WOOD TRUSS ROOF FRAMING SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED. SUBMITTALS THAT DO NOT BEAR THE ENGINEER'S SEAL WILL BE REJECTED WITHOUT REVIEW.

WT.5 THE TRUSS SUBMITTAL MUST CONTAIN THE FOLLOWING INFORMATION, AS A MINIMUM:

A. SEALED SHOP DRAWINGS INDICATING TRUSS CONFIGURATIONS, DIMENSIONS, BEARING DETAILS, WOOD MEMBER SIZES, SPECIES & GRADES AND METAL CONNECTOR PLATE SIZES, ORIENTATIONS & DETAILS.

B. SEALED CALCULATIONS INDICATING GRAVITY & LATERAL LOADING, APPLICABLE BUILDING CODE, SUPPORT REACTIONS, DEFLECTIONS, MEMBER FORCES, AND LOCATIONS WHERE PERMANENT MEMBER BRACING IS REQUIRED.

C. SEALED ERECTION PLANS INDICATING TRUSS LOCATIONS, TRUSS-TO-TRUSS CONNECTIONS, AND PERMANENT INDIVIDUAL TRUSS MEMBER BRACING DETAILS (CONNECTIONS AND SIZES). INCLUDE DETAILS FOR CONNECTING MULTI-PLY TRUSSES TOGETHER, FOR ATTACHING OVERBUILDS, AND FOR ANY FIELD MODIFICATIONS REQUIRED.

WT.6 TRUSS MANUFACTURER SHALL DESIGN FOR THE FOLLOWING SUPERIMPOSED LOADS:

A. ROOF:

1. TOP CHORD DEAD LOAD ----------10 PSF
2. BOTTOM CHORD DEAD LOAD ----------10 PSF
3. TOP CHORD LIVE LOAD ----------SEE SECTION GN.2.B.2
4. BOTTOM CHORD LIVE LOAD----------10 PSF

WT.7 IN ADDITION TO THE ABOVE LOADS, WOOD TRUSSES SHALL BE DESIGNED FOR CONCENTRATED LOADS HUNG FROM OR SUPPORTED ON TRUSSES. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS FOR LOADING INFORMATION AND LOCATION.

WT.8 TRUSS ENGINEER TO DESIGN ROOF TRUSSES WITH WIND PRESSURES IN ACCORDANCE WITH THE BUILDING CODE.

WT.9 MAXIMUM ALLOWABLE LIVE LOAD DEFLECTIONS ARE AS FOLLOWS:

ROOF TRUSSES----------L/240

WT.10 PERMANENT INDIVIDUAL TRUSS MEMBER BRACING:

A. ALL LOCATIONS OF REQUIRED PERMANENT INDIVIDUAL TRUSS MEMBER BRACING SHALL BE IDENTIFIED IN THE TRUSS SUBMITTAL.

B. STRUCTURAL SHEATHING MAY BE UTILIZED TO PROVIDE OUT-OF-PLANE BRACING FOR TOP CHORD MEMBERS TO WHICH THE SHEATHING IS DIRECTLY ATTACHED. AT PIGGYBACK BASE TRUSSES AND OTHER TRUSSES WHERE THE TOP CHORD IS NOT DIRECTLY ATTACHED TO STRUCTURAL SHEATHING, THE TRUSS ENGINEER SHALL SPECIFY REQUIRED TOP CHORD BRACING, INCLUDING BRACING SIZES AND CONNECTIONS.

C. PROVIDE PERMANENT BOTTOM CHORD BRACING AT ALL TRUSSES AT SPACING NOT TO EXCEED 10'-0" O.C. THE TRUSS ENGINEER SHALL SPECIFY ANY ADDITIONAL PERMANENT MEMBER BRACING REQUIRED.

D. BRACING DESIGN MUST TRANSFER ALL BRACING FORCES INTO THE BUILDING DIAPHRAGMS.

WT.11 PERMANENT INDIVIDUAL TRUSS MEMBER BRACING SHALL NOT BE CONSIDERED BUILDING STABILITY BRACING NOR TEMPORARY ERECTION BRACING.

WT.12 TRUSS MANUFACTURER TO COORDINATE WITH ALL SHEAR WALLS ON PLANS. IT IS THE RESPONSIBILITY OF THE TRUSS ENGINEER TO TRANSFER ALL SHEAR LOADS FROM DIAPHRAGMS AND SHEAR WALLS ABOVE INTO THE SHEAR WALL BELOW. PLACE DRAG TRUSS OR SHEAR PANELS ABOVE ALL SHEAR WALLS, WITH CAPACITIES THAT MATCH OR EXCEED THE TOTAL SHEAR CAPACITY OF THE SHEAR WALL BELOW. SEE STRUCTURAL DRAWINGS FOR SHEAR WALL CAPACITIES.

WT.13 TRUSSES MUST BE TRANSPORTED, UNLOADED, STORED AND HANDLED PER THE TRUSS MANUFACTURER'S WRITTEN INSTRUCTIONS. TEMPORARY ERECTION BRACING OF THE TRUSSES IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR, WHO SHALL ENGAGE A QUALIFIED DESIGN PROFESSIONAL FOR ASSISTANCE. THE PROJECT OWNER, BUILDING DESIGNER, ARCHITECT AND STRUCTURAL ENGINEER OF RECORD ARE NOT RESPONSIBLE FOR TEMPORARY ERECTION BRACING.

WT.14 ALL DAMAGED TRUSSES MUST BE REPAIRED BY THE CONTRACTOR. REPAIR TECHNIQUE FOR EACH DAMAGED TRUSS MUST BE PROVIDED IN WRITING BY THE TRUSS ENGINEER AND SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER.

PA. POST INSTALLED ANCHORS

PA.1 POST INSTALLED ANCHORS SHALL COMPLY WITH ACI-318 APPENDIX D.

PA.2 ACCEPTABLE MANUFACTURERS SHALL INCLUDE BUT ARE NOT LIMITED TO HILTI, INC. AND SIMPSON STRONG-TIE COMPANY, INC. AND DEWALT ANCHORS.

PA.3 CARE SHALL BE TAKEN IN PLACING POST INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR.

PA.4 HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SHOWN SHALL BE SUBMITTED BY THE CONTRACTOR ALONG WITH PREPARED DOCUMENTATION DEMONSTRATING THAT THE PRODUCT IS CAPABLE OF ACHIEVING EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE.

PA.5 THE CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S INSTALLATION GUIDELINES, SPECIFICATIONS, AND RECOMMENDATIONS.

PA.6 CONCRETE ANCHORS:

1. MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI-355.2 AND ICC-ES AC193.

AT. ANTITERRORISM/FORCE PROTECTION (AT/FP)

AT.1 AT/FP PROVISIONS ARE NOT A REQUIRMENT OF THE CONTRACT.

# Abbreviations

| | | | | | |
|---|---|---|---|---|---|
| ABOVE FINISH FLOOR | - AFF | FABRICATOR | - FABR | PARALLEL | - PAR. |
| ADDITIONAL | - ADDNL | FACE TO FACE | - F TO F | PARTITION(S) | - PARTN(S) |
| ADJACENT | - ADJ | FAR SIDE | - FS | PENETRATION | - PEN |
| AIR CONDITIONER | - A/C | FASTENER | - FAS | PERMANENT | - PERM |
| AIR HANDLING UNIT | - AHU | FIELD VERIFY | - FV | PERPENDICULAR | - PERP |
| ALTERNATE | - ALT | FINISH(ED) | - FIN. | PLATE | - PL |
| ANCHOR | - ANC | FINISHED FLOOR | - FF | PLUMBING | - PLBG |
| ANCHOR ROD | - AR | FLANGE | - FLG | PNEUMATIC | - PNEU |
| AND | - & | FLOOR | - FLR | POST-TENSION | - PT |
| ANGLE | - L | FLOOR DRAIN | - FD | POUNDS | - LBS |
| APPROVED | - APPRV | FOOT | - FT | POUNDS PER LINEAL FOOT | - PLF |
| APPROXIMATE | - APPROX | FOOTING | - FTG | POUNDS PER SQUARE INCH | - PSI |
| ARCHITECTURAL | - ARCH. | FOUNDATION | - FDN | POUNDS PER SQUARE FT | - PSF |
| ARCHITECTURALLY EXPOSED STRUCTURAL STEEL | - AESS | FRAMING | - FRMG | POUNDS PER CUBIC YARD | - PCY |
| | | | | POUNDS PER CUBIC INCH | - PCI |
| AT (WHEN INDICATING SPACING ONLY) | - @ | GAGE OR GAUGE | - GA | PRECAST CONCRETE | - PC |
| | | GALVANIZED | - GALV | PREENGINEERED METAL BUILDING | - PEMB |
| | | GENERAL | - GEN | PREFABRICATED | - PREFAB |
| BACK TO BACK | - B TO B | GENERAL CONTRACTOR | - GC | PRELIMINARY | - PRELIM |
| BALANCE | - BAL | GOVERNMENT | - GOVT | PRESSURE INJECTED FOOTING | - PIF |
| BASEMENT | - BSMT | GRADE | - GR | PROJECTION | - PROJ |
| BASE PLATE | - BSPL | GRADE BEAM | - GB | | |
| BEAM | - BM | GROUND | - GRD | RADIUS | - R |
| BEARING | - BRG | | | REFERENCE | - REF |
| BELOW FINISH FLOOR | - BFF | HARD ROCK | - HD RK | REINFORCED CONC PIPE | - RCP |
| BETWEEN | - BTWN | HEADED STUD(S) | - H STUD(S) | REINFORCING | - REINF |
| BLOCK | - BLK | HEIGHT | - HT | REQUIRED | - REQD |
| BLOCKING | - BLKG | HIGH STRENGTH | - HS | RISER | - RIS |
| BOTTOM | - BOT | HOOK | - HK | ROOF | - RF |
| BOTTOM CHORD EXTENSION | - BCX | HORIZONTAL | - HORZ | ROOF DRAIN | - RD |
| BRICK | - BRK | | | ROOF TOP UNIT | - RTU |
| BRIDGING | - BRDG | INFORMATION | - INFO | ROOM | - RM |
| BUILDING | - BLDG | INSIDE DIAMETER | - ID | ROUND | - RND |
| | | INSIDE FACE | - I.F. | | |
| CAST IN PLACE | - CIP | INTERIOR | - INT | SCHEDULE | - SCHED |
| CENTER | - CTR | INTERMEDIATE | - INTM | SECTION | - SECT |
| CENTERLINE | - CL | INVERTED | - INV | SHEAR | - V |
| CENTER TO CENTER | - C TO C | | | SHEET | - SHT |
| CHANNEL | - C | JOINT | - JT | SIMILAR | - SIM |
| CLEAR OR CLEARANCE | - CLR | JOIST(S) | - JST(S) | SPACE | - SP |
| COLUMN | - COL | JOIST GIRDER | - JG | SPECIFICATION(S) | - SPEC(S) |
| COMPLETE JOINT PENETRATION | - CJP | | | SPECIFIED | - SPECD |
| COMPRESSION | - COMP | KIPS (1000 LBS) | - K | SQUARE | - SQ |
| CONCRETE | - CONC | KIPS PER LINEAL FOOT | - KLF | STANDARD | - STD |
| CONCRETE MASONRY UNIT | - CMU | KIPS PER SQUARE INCH | - KSI | STEEL | - STL |
| CONNECTION(S) | - CONN(S) | KIPS PER SQUARE FOOT | - KSF | STIFFENER | - STIFF. |
| CONTINUOUS | - CONT | | | STRAIGHT | - STR |
| CONTRACTOR | - CONTR | LIGHTWEIGHT CONCRETE | - LWT CONC | STIRRUPS | - STIR. |
| CONSTRUCTION | - CONST | LIVE LOAD | - LL | STRUCTURE OR STRUCT'L | - STRUCT |
| CONTROL JOINT | - CJ | LONGITUDINAL | - LONG. | SYMMETRICAL | - SYM |
| CORNER | - COR | LONG LEG HORIZONTAL | - LLH | SUPPORT(S) | - SUPT(S) |
| COORDINATE | - COORD | LONG LEG VERTICAL | - LLV | | |
| COVER PLATE | - COV PL | | | TEMPERATURE | - TEMP |
| | | MANUFACTURE(R) | - MFR | TENSION | - T |
| DEGREE | - DEG OR ° | MASONRY | - MAS | THICK | - THK |
| DEGREE CELSIUS | - C° | MASONRY OPENING | - MO | TONGUE AND GROOVE | - T&G |
| DEGREE FAHRENHEIT | - F° | MATERIAL | - MATL | TOP AND BOTTOM | - T&B |
| DETAIL | - DET | MAXIMUM | - MAX | TOP CHORD EXTENSION | - TCX |
| DEAD LOAD | - DL | MECHANICAL | - MECH | TOP OF BEAM | - TOB |
| DIAGONAL | - DIAG | MEZZANINE | - MEZZ | TOP OF FOOTING | - TOF |
| DIAMETER | - DIA or Ø | MIDDLE | - MID | TOP OF GRADE BEAM | - TOGB |
| DIMENSION(S) | - DIM(S) | MINIMUM | - MIN | TOP OF JOIST | - TOJ |
| DRAWING(S) | - DWG(S) | MISCELLANEOUS | - MISC | TOP OF PEDESTAL | - TOPD |
| DRILLED PIER | - DP | MOMENT | - M | TOP OF PIER | - T.O.P. |
| DOUBLE | - DBL | MOMENT CONNECTION(S) | - MC | TOP OF PILE CAP | - TOPC |
| DOUBLE EXTRA STRONG | - XXS | | | TOP OF STEEL | - TOS |
| DOWEL(S) | - DWL(S) | NEAR FACE | - NF | TOP OF WALL | - TOW |
| DOWN | - DN | NEAR SIDE | - NS | TREAD | - TR |
| | | NOMINAL | - NOM | TYPICAL | - TYP |
| EACH | - EA | NOT IN CONTRACT | - NIC | | |
| EACH FACE | - EF | NOT TO SCALE | - NTS | UNLESS NOTED | - U.N. |
| EACH WAY | - EW | NUMBER | - NO. or # | | |
| EDGE OF DECK | - EOD | | | VERTICAL | - VERT |
| EDGE OF SLAB | - EOS | ON CENTER | - OC | | |
| ELECTRICAL | - ELEC | OPENING(S) | - OPNG(S) | WATERPROOFING | - WPFG |
| ELEVATION | - EL | OPPOSITE | - OPP | WATERSTOP | - WS |
| ELEVATOR | - ELEV | OUTSIDE FACE | - O.F. | WELDED WIRE REINFORCEMENT | - WWR |
| EMBEDMENT | - EMBED. | OUTSIDE DIAMETER | - OD | WIND LOAD | - WL |
| ENGINEER | - ENGR | OUTSTANDING LEG | - OSL | WIND MOMENT CONNECTION | - WC |
| EQUAL | - EQ | | | WINDOW | - WDW |
| EQUIPMENT | - EQUIP. | | | WITH | - W/ |
| EXISTING | - EXIST. | | | WITHOUT | - W/O |
| EXPANSION | - EXP | | | WOOD | - WD |
| EXPANSION ANCHOR | - EXP ANC | | | WORK POINT | - WP |
| EXPANSION JOINT | - EJ | | | WEIGHT | - WT |
| EXTENSION | - EXTN | | | WIDE FLANGE | - WF |
| EXTERIOR | - EXT | | | | |
| EXTRA STRONG | - XS | | | | |


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Project No. 130984.001

US Army Corps of Engineers®

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| | | |

DESIGNED BY: H. WARREN
DRAWN BY: G. AULTMAN
CHECKED BY: W. BISHOP
SUBMITTED BY: S. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 99102
VOLUMES 3 & 4 - DOWNRANGE

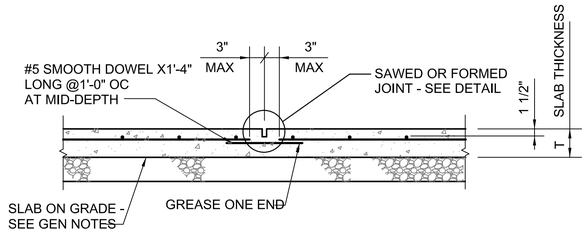
GENERAL NOTES (CONTINUED)

SHEET ID
S-012

ALABAMA LICENSED 6/16/2023 No. 34063 PROFESSIONAL ENGINEER HOWARD N. WARREN

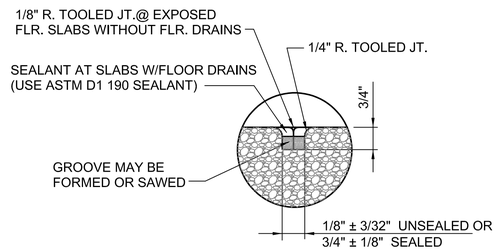
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## Weakened Plane Control Joint Details

Scale: NTS




## Formed Joint and Sealant

## Embedment and Class "B" Tension Lap Splice Lengths

| BAR SIZE | $f'_c$ 4000 | | | |
|---|---|---|---|---|
| | TOP BARS | | OTHER BARS | |
| | CASE 1 | CASE 2 | CASE 1 | CASE 2 |
| #3 | 24" | 37" | 19" | 28" |
| #4 | 32" | 49" | 25" | 37" |
| #5 | 41" | 64" | 31" | 47" |
| #6 | 49" | 73" | 37" | 56" |
| #7 | 70" | 106" | 55" | 82" |
| #8 | 81" | 121" | 63" | 93" |

1. TOP BARS ARE HORIZONTAL REINFORCEMENT WITH MORE THAN 12" OF CONCRETE CAST BELOW THE REINFORCEMENT.
2. CLASS B LAP LENGTHS APPLY WHEN ALL BARS ARE SPLICED AT A LOCATION OF MAXIMUM STRESS IN THE BARS.
3. CASE 1 LENGTHS APPLY TO BEAMS AND COLUMNS WITH CONCRETE COVER EQUAL OR GREATER THAN THE BAR DIAMETER. CLEAR BAR SPACING EQUAL OR GREATER THAN THE BAR DIAMETER AND WITH STIRRUPS OR TIES NOT LESS THAN THE CODE MINIMUM THROUGHOUT THE LENGTH IN THE TABLE; AND FOR OTHER ELEMENTS WITH CONCRETE COVER EQUAL OR GREATER THAN THE BAR DIAMETER AND CLEAR SPACING EQUAL OR GREATER THAN TWO TIMES THE BAR DIAMETER.
4. CASE 2 LENGTHS APPLY TO BEAMS AND COLUMNS WITH CONCRETE COVER LESS THAN THE BAR DIAMETER, AND CLEAR BAR SPACING LESS THAN THE BAR DIAMETER; AND FOR OTHER ELEMENTS WITH CONCRETE COVER LESS THAN THE BAR DIAMETER AND CLEAR BAR SPACING LESS THAN TWO TIMES THE BAR DIAMETER.

GRAPHIC SCALE

1 0 1 2FT

SCALE: 3/4" = 1'-0"

ALABAMA LICENSED 6/16/2023 No. 34063 PROFESSIONAL ENGINEER EDWARD N. WARREN

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| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |
| FILE NAME: | |
| DESIGNED BY: | H. WARREN |
| DRAWN BY: | G. AULTMAN |
| CHECKED BY: | W. BISHOP |
| SUBMITTED BY: | B. BRADLEY |
| SIZE: | ANSI D |

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FY 23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

TYPICAL DETAILS

SHEET ID

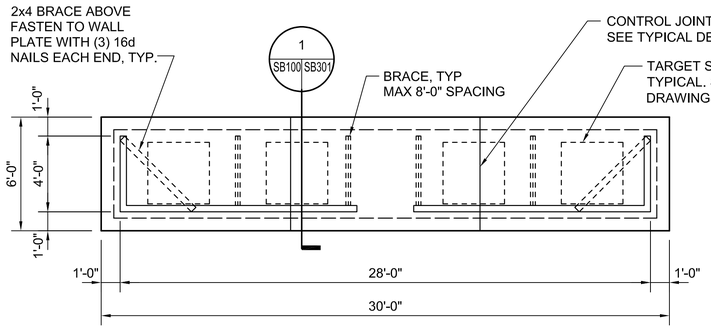
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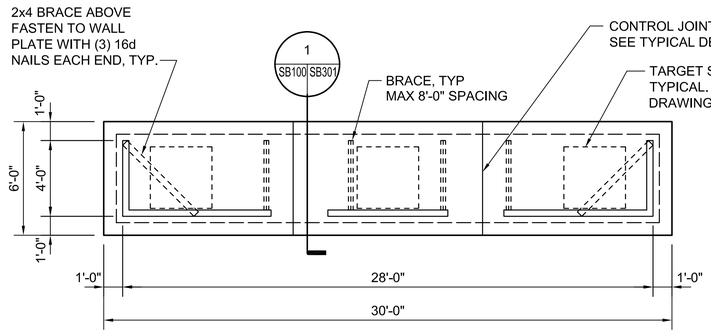
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## FOUNDATION AND FLOOR PLAN - A VERSION

SCALE: 1/4"=1'-0"

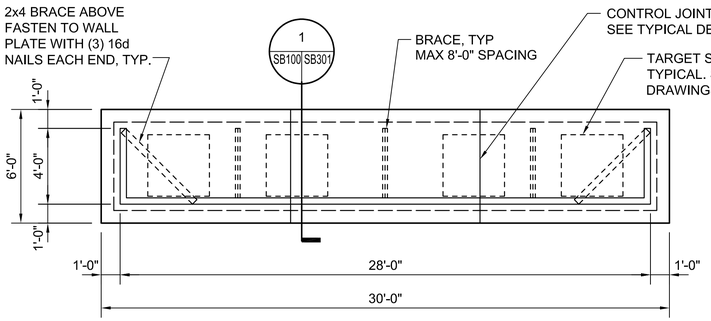
1. TOP OF SLAB 0'-2" ABOVE FINISH GRADE, UNLESS NOTED.
2. FINISH GRADE REFERENCE ELEVATION 0'-0", UNLESS NOTED.
3. SEE 2/SB301 FOR WINDOW FRAMING DETAIL.
4. REFER TO ARCHITECTURAL DRAWINGS FOR OPENING LOCATIONS.




## FOUNDATION AND FLOOR PLAN - B VERSION

SCALE: 1/4"=1'-0"

1. TOP OF SLAB 0'-2" ABOVE FINISH GRADE, UNLESS NOTED.
2. FINISH GRADE REFERENCE ELEVATION 0'-0", UNLESS NOTED.
3. SEE 2/SB301 FOR WINDOW FRAMING DETAIL.
4. REFER TO ARCHITECTURAL DRAWINGS FOR OPENING LOCATIONS.




## FOUNDATION AND FLOOR PLAN - C VERSION

SCALE: 1/4"=1'-0"

1. TOP OF SLAB 0'-2" ABOVE FINISH GRADE, UNLESS NOTED.
2. FINISH GRADE REFERENCE ELEVATION 0'-0", UNLESS NOTED.
3. SEE 2/SB301 FOR WINDOW FRAMING DETAIL.
4. REFER TO ARCHITECTURAL DRAWINGS FOR OPENING LOCATIONS.

GRAPHIC SCALE
4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"

ALABAMA LICENSED
6/16/2023
No. 34063
PROFESSIONAL
Howard N Warren
ENGINEER
HOWARD N. WARREN

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: | H. WARREN |
| DRAWN BY: | G. AULTMAN |
| CHECKED BY: | W. BISHOP |
| SUBMITTED BY: | S. BRADLEY |
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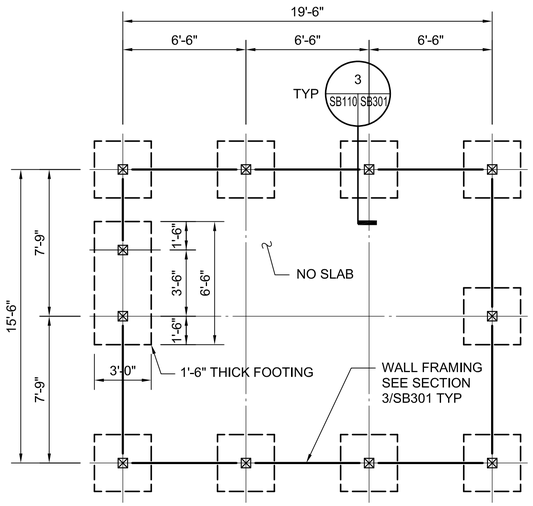
SINGLE-STORY FACADE
FOUNDATION AND FLOOR PLANS

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SB100

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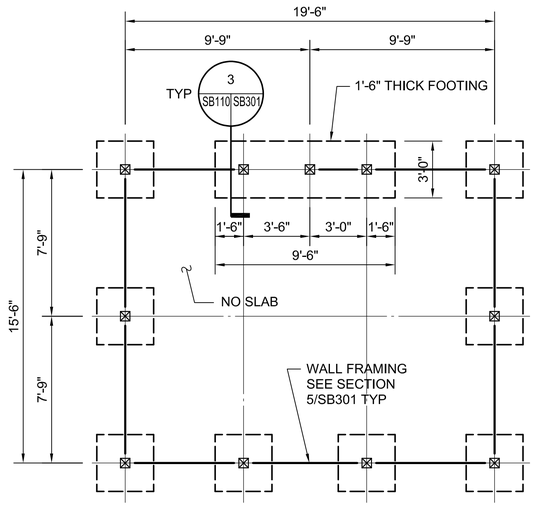
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## URBAN CLUSTER BUILDING "A" FOUNDATION AND FLOOR PLAN

SCALE: 1/4"=1'-0"

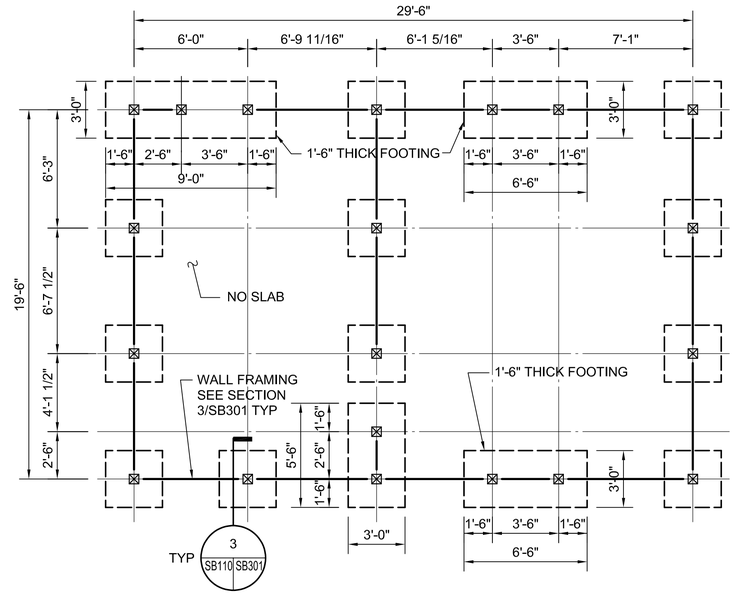
1. FINISH GRADE/REFERENCE ELEVATION 0'-0", UNLESS NOTED.
2. TOP OF FOOTING 0'-2" BELOW FINISH GRADE, UNLESS NOTED.
3. FOOTINGS 3'-0"X3'-0"X1'-6", UNLESS NOTED.




## URBAN CLUSTER BUILDING "B" FOUNDATION AND FLOOR PLAN

SCALE: 1/4"=1'-0"

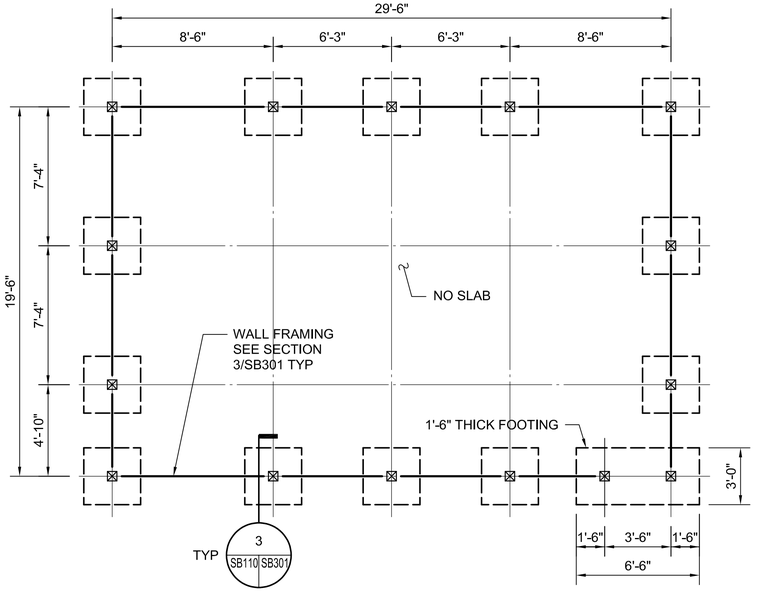
1. FINISH GRADE/REFERENCE ELEVATION 0'-0", UNLESS NOTED.
2. TOP OF FOOTING 0'-2" BELOW FINISH GRADE, UNLESS NOTED.
3. FOOTINGS 3'-0"X3'-0"X1'-6", UNLESS NOTED.




## URBAN CLUSTER BUILDING "C" FOUNDATION AND FLOOR PLAN

SCALE: 1/4"=1'-0"

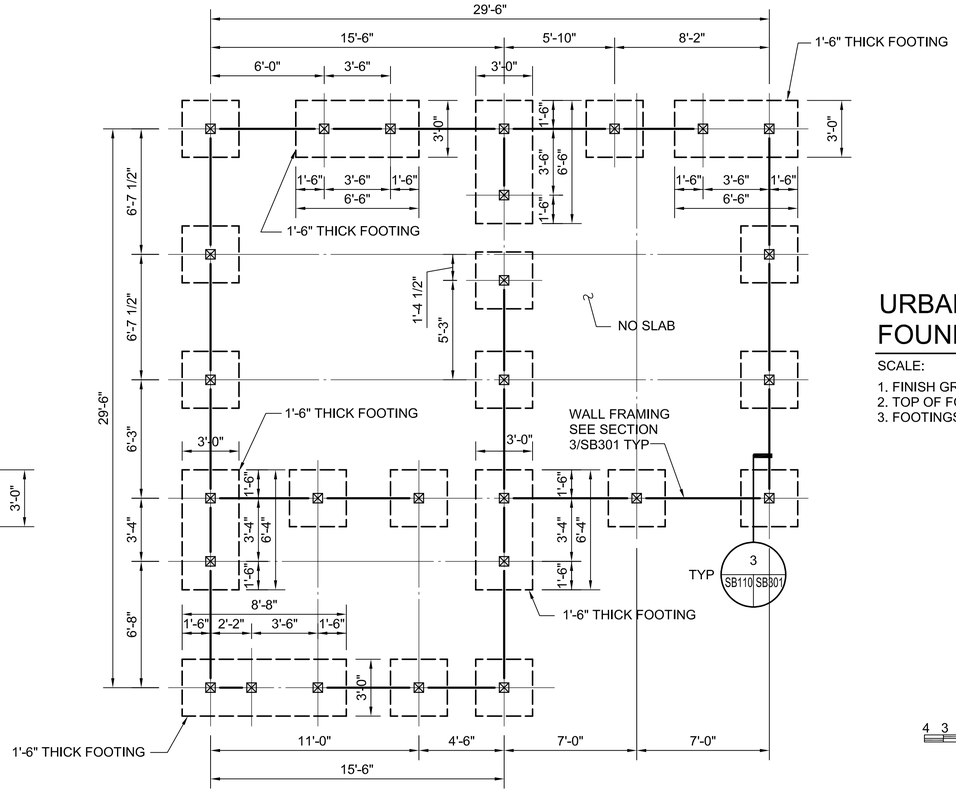
1. FINISH GRADE/REFERENCE ELEVATION 0'-0", UNLESS NOTED.
2. TOP OF FOOTING 0'-2" BELOW FINISH GRADE, UNLESS NOTED.
3. FOOTINGS 3'-0"X3'-0"X1'-6", UNLESS NOTED.




## URBAN CLUSTER BUILDING "D" FOUNDATION AND FLOOR PLAN

SCALE: 1/4"=1'-0"

1. FINISH GRADE/REFERENCE ELEVATION 0'-0", UNLESS NOTED.
2. TOP OF FOOTING 0'-2" BELOW FINISH GRADE, UNLESS NOTED.
3. FOOTINGS 3'-0"X3'-0"X1'-6", UNLESS NOTED.




## URBAN CLUSTER BUILDING "E" FOUNDATION AND FLOOR PLAN

SCALE: 1/4"=1'-0"

1. FINISH GRADE/REFERENCE ELEVATION 0'-0", UNLESS NOTED.
2. TOP OF FOOTING 0'-2" BELOW FINISH GRADE, UNLESS NOTED.
3. FOOTINGS 3'-0"X3'-0"X1'-6", UNLESS NOTED.

GRAPHIC SCALE

4 3 2 1 0 4FT 8FT

SCALE: 1/4" = 1'-0"


**LBYD, Inc.**
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Suite 600
Birmingham, AL 35213
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Project No. 130984.001

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| MARK | DESCRIPTION | DATE |
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|---|---|
| DESIGNED BY: | H. WARREN |
| DRAWN BY: | G. AULTMAN |
| CHECKED BY: | W. BISHOP |
| SUBMITTED BY: | S. BRADLEY |
| SIZE: | ANSI D |
| FILE NAME: | |
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 170-45-01 |

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FY23, PN 98162
VOLUMES 3 & 4 - DOWNRANGE

URBAN CLUSTER FOUNDATION AND FLOOR PLANS

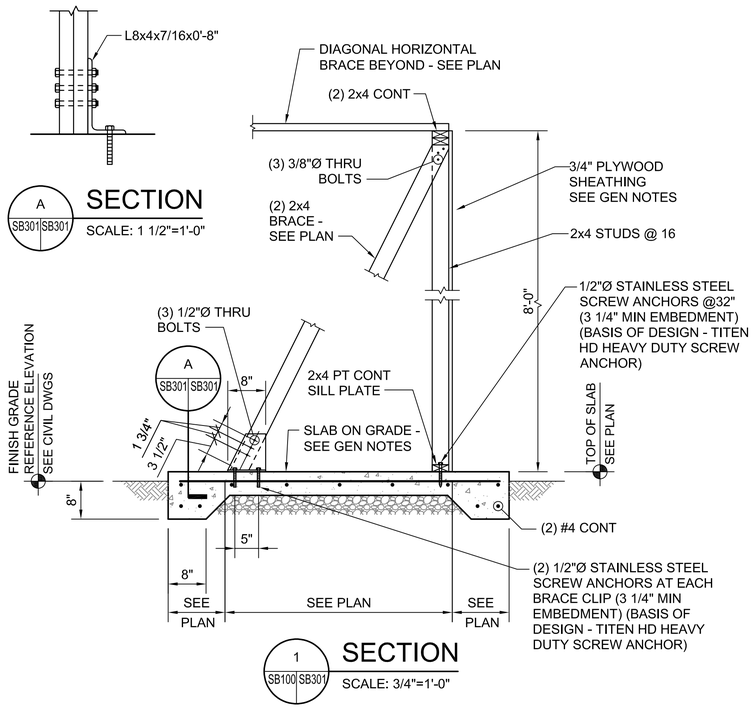
SHEET ID

SB110

ALABAMA LICENSED ENGINEER
6/6/2023
No. 34053
PROFESSIONAL
EDWARD N. WARREN

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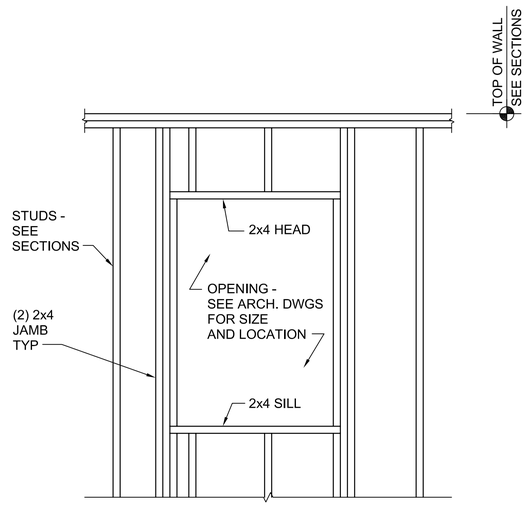



A SB301 SB301 **SECTION**

SCALE: 1 1/2"=1'-0"

1 SB100 SB301 **SECTION**

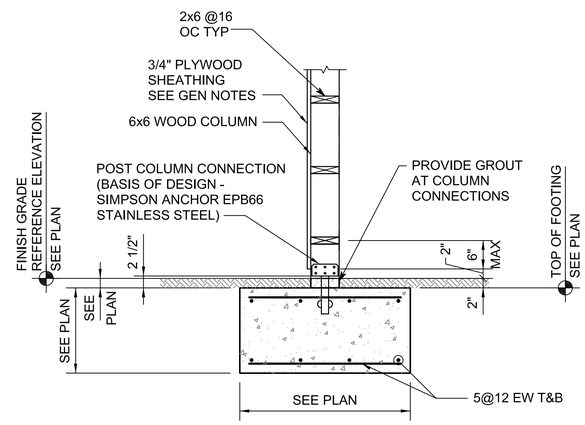
SCALE: 3/4"=1'-0"




2 SB100 SB301 **SECTION**

SCALE: 3/4"=1'-0"

1. DETAIL FOR FACADE WINDOW OPENINGS - FACADE DOOR OPENINGS SIMILAR.




3 SB110 SB301 **SECTION**

SCALE: 3/4"=1'-0"

GRAPHIC SCALE

1 0 1 2FT

SCALE: 3/4" = 1'-0"

ALABAMA LICENSED 6/16/2023 No. 34063 PROFESSIONAL ENGINEER Howard N Warren HOWARD N. WARREN


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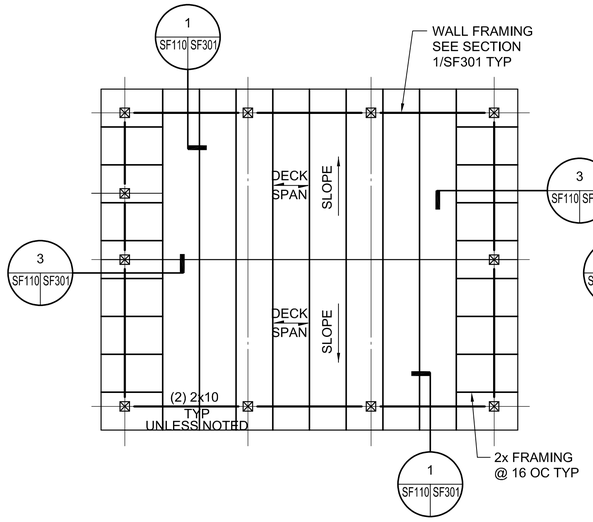
SECTIONS

SHEET ID

SB301

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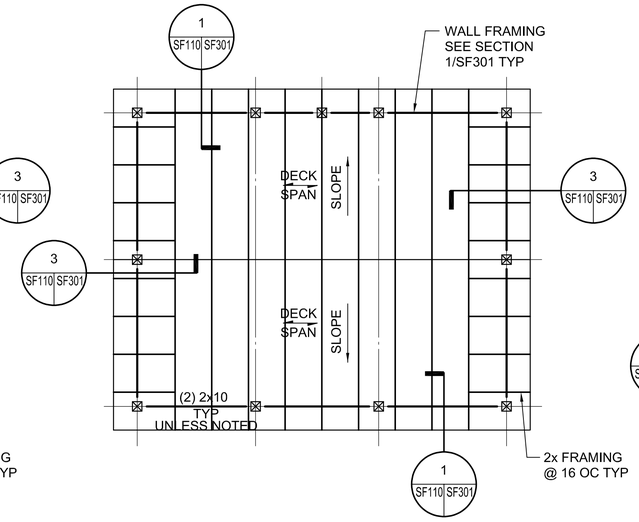
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## URBAN CLUSTER BUILDING "A" ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

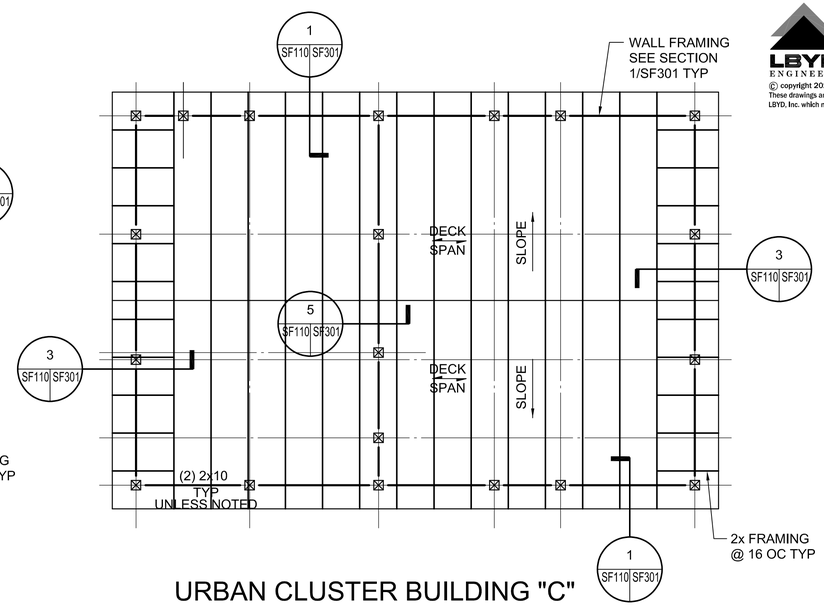
1. TRUSS BEARING ELEVATION 9'-2" ABOVE REFERENCE ELEVATION, UNLESS NOTED.
2. ROOF FRAMING: PREFABRICATED WOOD TRUSSES AT 2'-0" MAXIMUM SPACING UNLESS NOTED.
3. FOR ROOF SHEATHING TYPE AND ATTACHMENT, SEE GENERAL NOTES.
4. SEE ARCHITECTURAL DRAWINGS FOR TRUSS PROFILE.
5. TRUSS MANUFACTURER TO DESIGN TRUSS CONNECTIONS TO THE STRUCTURE FOR A DIAPHRAGM FORCE OF 135 PLF ALONG SUPPORT MEMBERS, CONNECTIONS TO HAVE A MINIMUM OF TWO ANCHORS PER CONNECTION.
6. SEE 4/SF301 FOR TYPICAL WINDOW DETAIL.




## URBAN CLUSTER BUILDING "B" ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

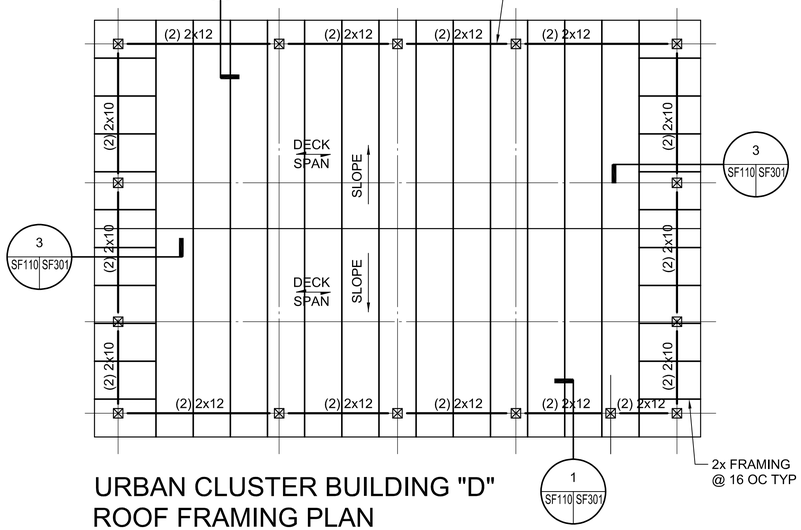
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## URBAN CLUSTER BUILDING "C" ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

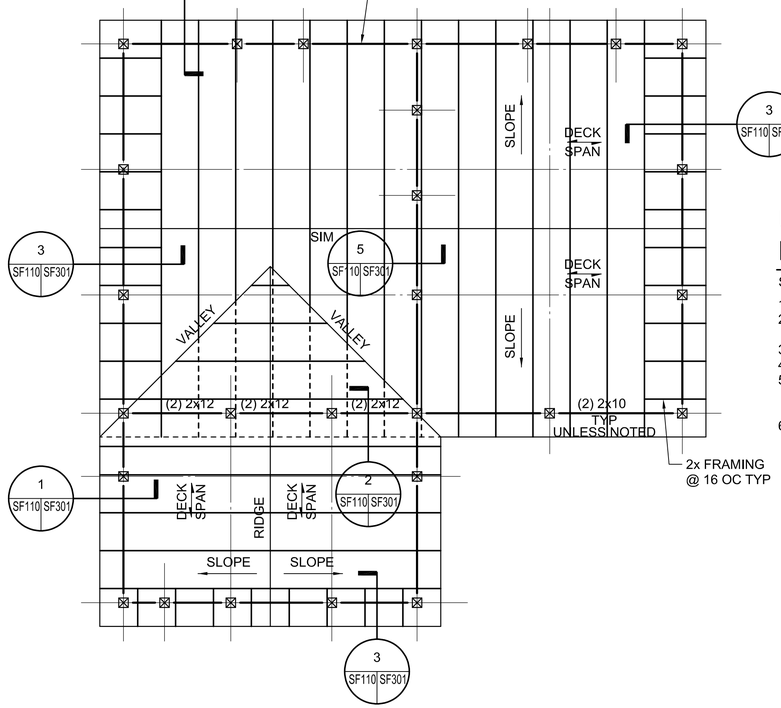
1. TRUSS BEARING ELEVATION 9'-2" ABOVE REFERENCE ELEVATION, UNLESS NOTED.
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6. SEE 4/SF301 FOR TYPICAL WINDOW DETAIL.




## URBAN CLUSTER BUILDING "D" ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

1. TRUSS BEARING ELEVATION 9'-2" ABOVE REFERENCE ELEVATION, UNLESS NOTED.
2. ROOF FRAMING: PREFABRICATED WOOD TRUSSES AT 2'-0" MAXIMUM SPACING UNLESS NOTED.
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## URBAN CLUSTER BUILDING "E" ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

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6. SEE 4/SF301 FOR TYPICAL WINDOW DETAIL.

GRAPHIC SCALE

4 3 2 1 0 4FT 8FT

SCALE: 1/4" = 1'-0"

ALABAMA LICENSED 6/16/2023 No. 34063 PROFESSIONAL ENGINEER EDWARD N. WARREN


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DESIGNED BY: H. WARREN
DRAWN BY: G. AULTMAN
CHECKED BY: W. BISHOP
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

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FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

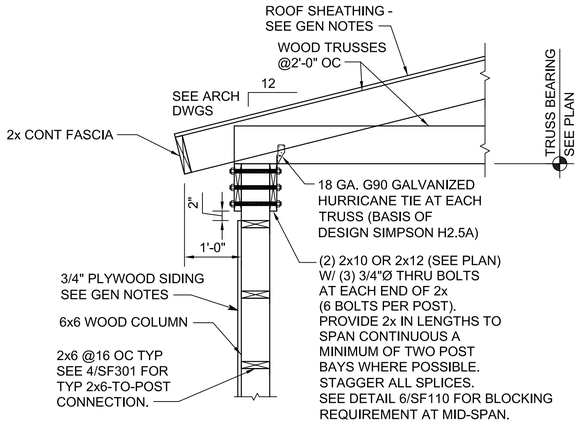
URBAN CLUSTER ROOF FRAMING PLANS

SHEET ID

SF110

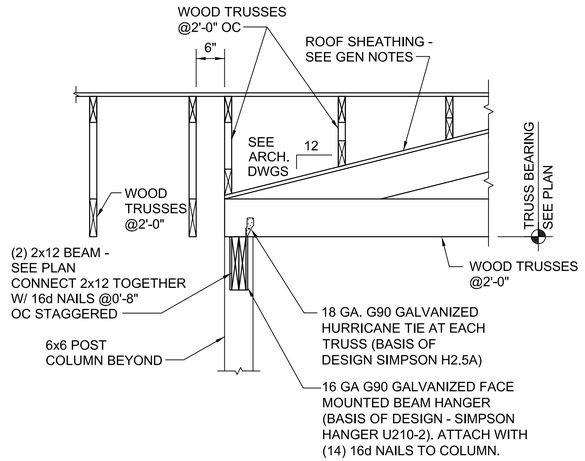
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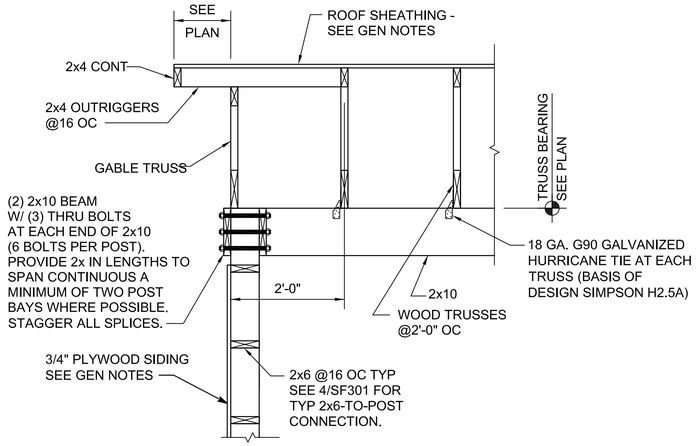

1 SF110 SF301 **SECTION**

SCALE: 3/4"=1'-0"



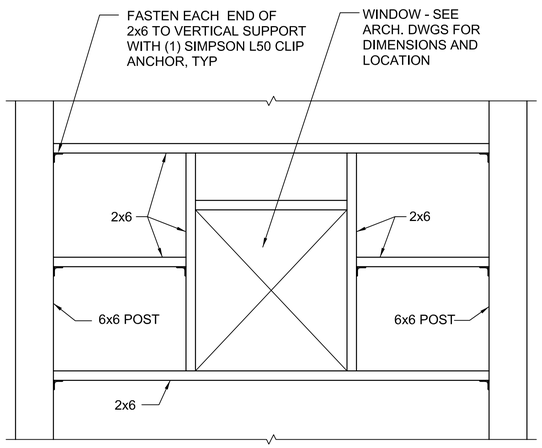

2 SF110 SF301 **SECTION**

SCALE: 3/4"=1'-0"



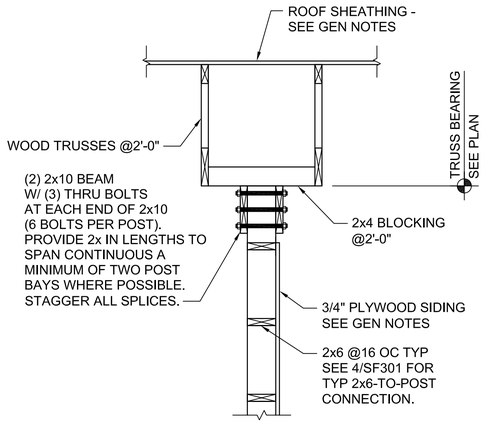

3 SF110 SF301 **SECTION**

SCALE: 3/4"=1'-0"



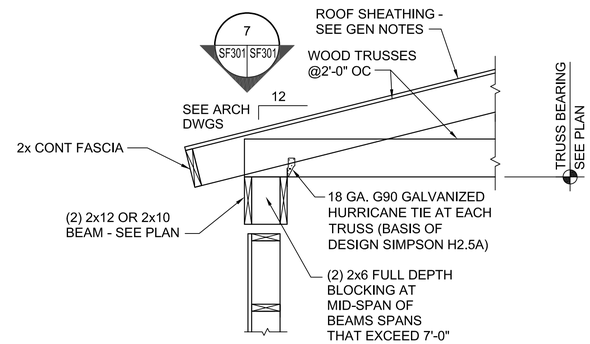

4 SF110 SF301 **SECTION**

SCALE: 3/4"=1'-0"




5 SF110 SF301 **SECTION**

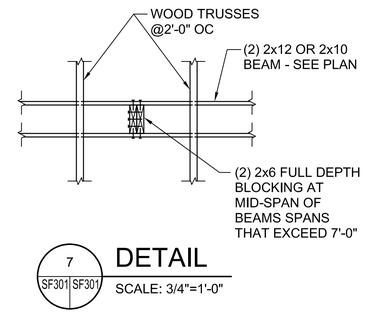
SCALE: 3/4"=1'-0"




6 SF301 SF301 **SECTION**

SCALE: 3/4"=1'-0"

NOTE: APPLICABLE AT BEAMS
SUPPORTING TRUSSES WHERE
BEAM SPAN EXCEEDS 7'-0"




7 SF301 SF301 **DETAIL**

SCALE: 3/4"=1'-0"

GRAPHIC SCALE

1 0 1 2FT

SCALE: 3/4" = 1'-0"

ALABAMA LICENSED
6/16/2023
No. 34063
PROFESSIONAL
Howard N Warren
ENGINEER
HOWARD N. WARREN

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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

SECTIONS

SHEET ID

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# ARCHITECTURAL SYMBOLS

TITLE MARK
SCALE 1" =1'-0"
— TITLE DESCRIPTION MARK AND SCALE CALL OUT SYMBOL

PAGE WHERE LOCATED
1 ?? ??
SECTION
SCALE 1" =1'-0"
PAGE WHERE TAKEN FROM
— SECTION / ELEVATION MARK AND SCALE CALL OUT SYMBOL

PAGE WHERE LOCATED
1 ?? ??
?? MULTIPLE PAGE WHERE TAKEN FROM
??
SECTION
SCALE 1" = 1'-0"
— SECTION / ELEVATION MARK AND SCALE CALL OUT SYMBOL

PAGE WHERE LOCATED
1 ?? ??
PAGE WHERE TAKEN FROM
— SECTION CUT MARK AND PAGE LOCATIONS SYMBOL

A A
SECTION A-A
SCALE 1" = 1'-0"
— SECTION CUT AND TITLE TITLE DESCRIPTION MARK AND SCALE CALL OUT SYMBOL

1 ?? ??
PAGE WHERE TAKEN FROM
1 ?? ??
PAGE WHERE LOCATED
— DETAIL CALLOUTS AND PAGE LOCATIONS SYMBOL

1 ?? ??
— ELEVATION MARK AND PAGE LOCATIONS SYMBOL

1 ?? ??
— DIRECTIONAL ELEVATION MARK AND PAGE LOCATIONS SYMBOL

GRAPHIC SCALE
4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"
— GRAPHIC SCALE SYMBOL (SCALE AS NOTED)

N
— PLAN NORTH ARROW SYMBOL

ROOM NAME
101
— ROOM NAME AND NUMBER CALLOUTS SYMBOL

1
— DOOR NUMBER SYMBOL

A
— WINDOW NUMBER SYMBOL

— ELEVATION TARGET MARK SYMBOL

DIM
— DIMENSION LINE AND TICK MARKS

## COLOR SCHEDULE

SEE EXTERIOR BUILDING ELEVATIONS AND CONFIRM WITH THE CONTRACTING OFFICER.

## ARCHITECTURAL LINE TYPES

— CONTINUOUS LINE TYPE, FOR PROMINENT OBJECTS, LINE WEIGHT BY PRIORITY

— CENTER LINE TYPE, USED TO SHOW OBJECT CENTER OR TO DIFFERENTIATE BETWEEN HIDDEN OBJECTS, LINE WEIGHT BY PRIORITY

— PHANTOM LINE TYPE, FOR DEPICTING OBJECT PATH OR TO DIFFERENTIATE BETWEEN HIDDEN OBJECTS, LINE WEIGHT BY PRIORITY

— HIDDEN LINE TYPE, FOR HIDDEN OBJECTS, LINE WEIGHT BY PRIORITY

— LINE WEIGHTS USED TO CLARIFY IMPORTANCE, DEPTH AND OBJECT TEXTURE

# ARCHITECTURAL ABBREVIATIONS

| | |
|---|---|
| AB | ANCHOR BOLT |
| AC | AIR CONDITIONING |
| AC TL | ACOUSTICAL TILE |
| ACOUST | ACOUSTICAL |
| AFF | ABOVE FINISH FLOOR |
| ADJ | ADJUSTABLE |
| ALT | ALTERNATE |
| ALUM | ALUMINUM |
| ANCH | ANCHOR |
| L | ANGLE |
| APPROX | APPROXIMATE |
| @ | AT |
| BBT | BOND BREAKER TAPE |
| BTM | BOTTOM |
| BRG | BEARING |
| BLK | BLOCK |
| BLKG | BLOCKING |
| BD | BOARD |
| BLDG | BUILDING |
| BR | BACKER ROD |
| C | CHANNEL |
| CJ | CONTROL JOINT |
| CL | CENTER LINE |
| CLG | CEILING |
| CLOS | CLOSET |
| CLR | CLEAR |
| CMU | CONCRETE MASONRY UNIT |
| COL | COLUMN |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CT | CERAMIC TILE |
| DBL | DOUBLE |
| DTL | DETAIL |
| DIA | DIAMETER |
| DN | DOWN |
| DWG(S) | DRAWING / DRAWINGS |
| EA | EACH |
| EIFS | EXTERIOR INSULATION AND FINISH SYSTEM |
| ELEC | ELECTRICAL |
| EL/ELEV | ELEVATION |
| EPS | EXPANDED POLYSTYRENE |
| EWC | ELECTRICAL WATER COOLER |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| EXIST | EXISTING |
| EXP | EXPANSION |
| EXT | EXTERIOR |
| FD | FLOOR DRAIN |
| FEC | FIRE EXTINGUISHER CABINET |
| FIN | FINISH |
| FFE | FINISH FLOOR ELEVATION |
| FE | FIRE EXTINGUISHER |
| FFM | FACTORY FINISHED METAL |
| FR GWB | FIBER-REINFORCED GWB |
| FLR | FLOOR |
| FRM | FRAME |
| FRP | FIBERGLASS REINFORCED PLASTIC WALL PANEL ON PLYWOOD OR OSB SUBSTRATE |
| GALV | GALVANIZED |
| GA | GAUGE |
| GYP BD | GYPSUM BOARD |
| GWB | GYPSUM WALL BOARD |
| GLAZ | GLAZING |
| GRD | GRADE |
| GRN | GROUND |
| HDCP | HANDICAPPED |
| HDW | HARDWARE |
| HM | HOLLOW METAL |
| HORIZ | HORIZONTAL |
| HR | HOUR |
| HSS | HOLLOW STRUCTURAL SECTION (STRUCTURAL STEEL TUBING) |
| HT | HEIGHT |
| INSUL | INSULATION |
| IR | IMPACT RESISTANT |
| JAN | JANITOR |
| JT | JOINT |
| LAM | LAMINATED |
| LTI | LAMINATED/TEMPERED INSULATING GLASS |
| MECH | MECHANICAL |
| MFG | MANUFACTURER |
| MAX | MAXIMUM |
| MTL | METAL |
| MIN | MINIMUM |
| NIC | NOT IN CONTRACT |
| NTS | NOT TO SCALE |
| No | NUMBER |
| OC | ON CENTER |
| OPNG | OPENING |
| PL | PLATE |
| PLWD | PLYWOOD |
| PT | PRESSURE TREATED |
| PTD | PAINTED |
| RATG | RATING |
| REINF | REINFORCING |
| RM | ROOM |
| SCHED | SCHEDULE |
| SF | SQUARE FOOT / FEET |
| SG | SAFETY GLASS |
| SHT | SHEET |
| SIM | SIMILAR |
| SPEC | SPECIFICATIONS |
| SQ FT | SQUARE FOOT / FEET |
| SS | STAINLESS STEEL |
| STL | STEEL |
| STRUCT | STRUCTURAL |
| THK | THICKNESS |
| TMP | TEMPERED |
| TOS | TOP OF SLAB |
| TS | TUBE STEEL |
| TYP | TYPICAL |
| UL | UNDERWRITERS LABORATORY |
| UNO | UNLESS OTHERWISE NOTED |
| VR | VAPOR RETARDER |
| VCT | VINYL COMPOSITION TILE |
| VIF/VF | VERIFY IN FIELD |
| VTR | VENT THROUGH ROOF |
| VERT | VERTICAL |
| WH | WATER HEATER |
| WWF | WELDED WIRE FABRIC |
| W/ | WITH |
| WD | WOOD |

STATE OF ALABAMA
CLAYTON M. WILKS
7609
6/6/23
REGISTERED ARCHITECT

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: C. WILKS
DRAWN BY: J. BRADY
CHECKED BY: L BAE
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

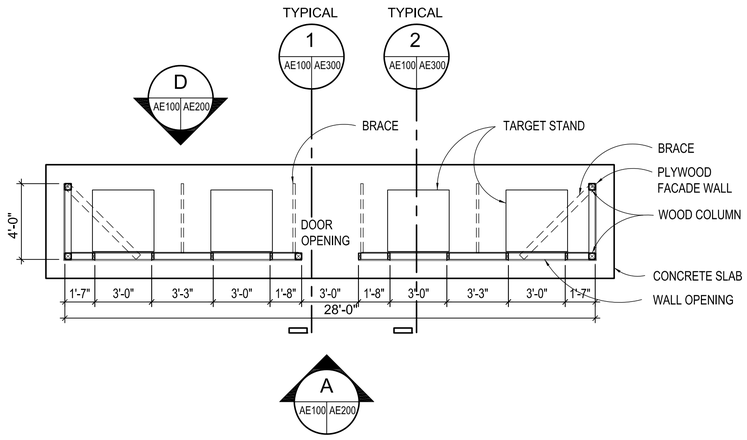
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ARCHITECTURAL LEGEND AND SYMBOLS

SHEET ID
AE001

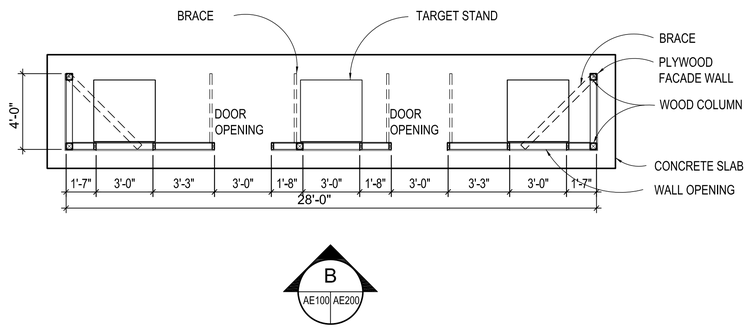
READY TO ADVERTISE (RTA)

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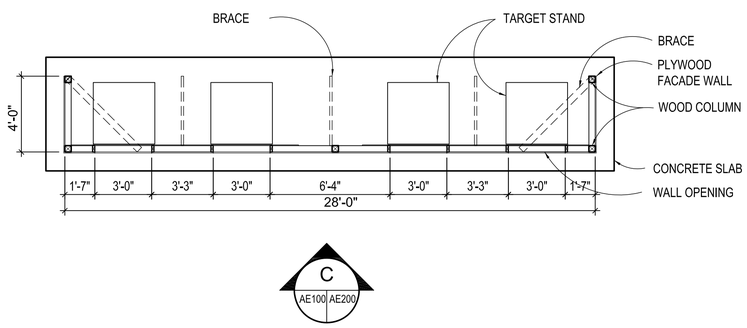

## PLAN VIEW - A VERSION

SCALE 1/4" =1'-0"




## PLAN VIEW - B VERSION

SCALE 1/4" =1'-0"




## PLAN VIEW - C VERSION

SCALE 1/4" =1'-0"

NOTES:

1. ALL WOOD FRAMING AND PLYWOOD TO BE PRESSURE TREATED AND SEALED. (SEE PAINT SPEC.)
2. MINIMUM 2" SHALL BE PROVIDED BETWEEN BOTTOM OF PLYWOOD AND FINISH GRADE.
3. SLOPE SLAB INSIDE TRAINING AREAS FROM WALL OUT 1/4" PER FOOT.
4. TARGETS BY OTHERS.
5. HORIZONTAL AND VERTICAL CONTROL POINT "A" IS ALWAYS ON THE NORTH SIDE OF FACADE.
6. SEE CIVIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.

GRAPHIC SCALE

4 3 2 1 0 4FT 8FT

SCALE: 1/4" = 1'-0"

STATE OF ALABAMA
CLAYTON M. WILKS
7609
6/6/23
REGISTERED ARCHITECT

US Army Corps of Engineers®

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| DESIGNED BY: C. WILKS | ISSUE DATE: JUNE 2023 |
| DRAWN BY: J. BRADY | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: I. BAE | CONTRACT NO.: |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

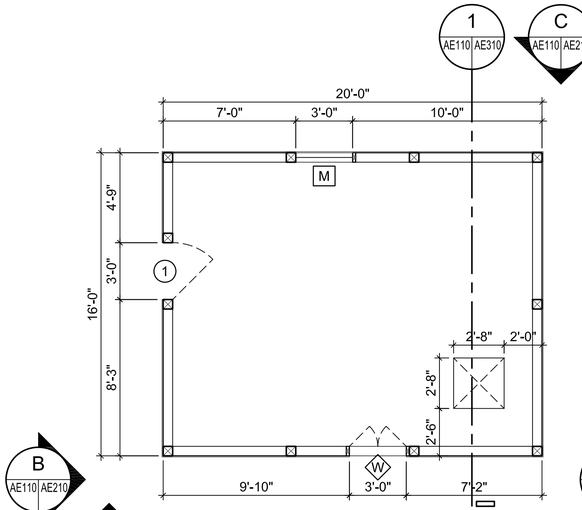
SINGLE STORY FACADE
FLOOR PLANS

SHEET ID

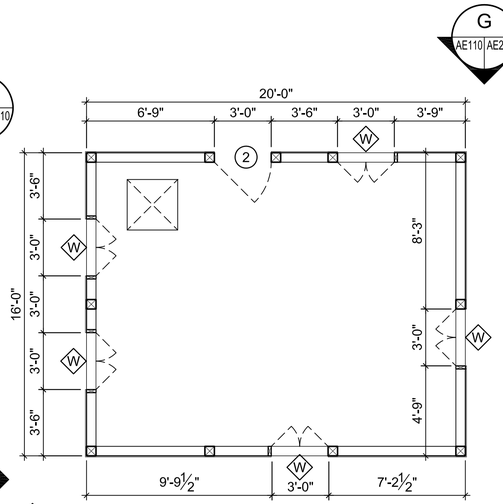
AE100

READY TO ADVERTISE (RTA)

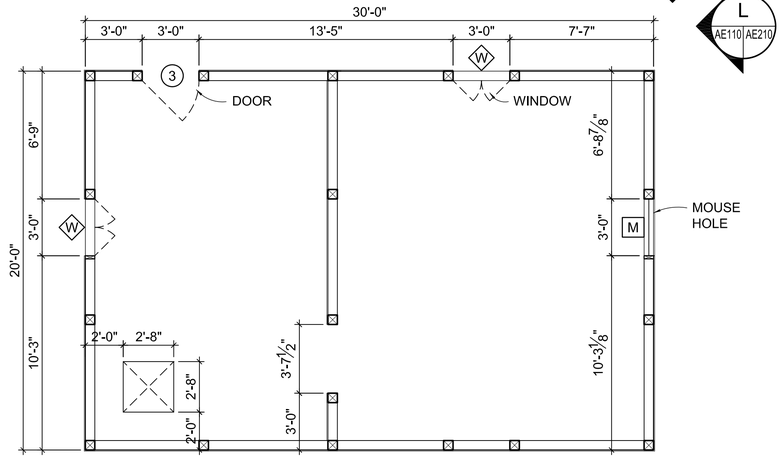
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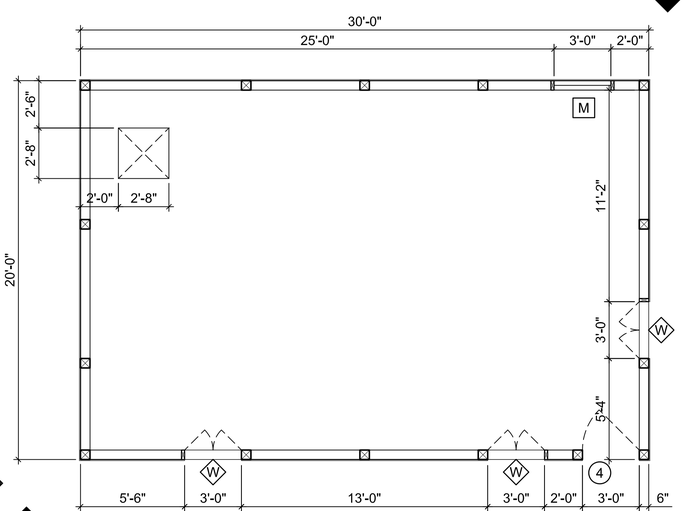

BUILDING TYPE "A"
SCALE 1/4" = 1'-0"



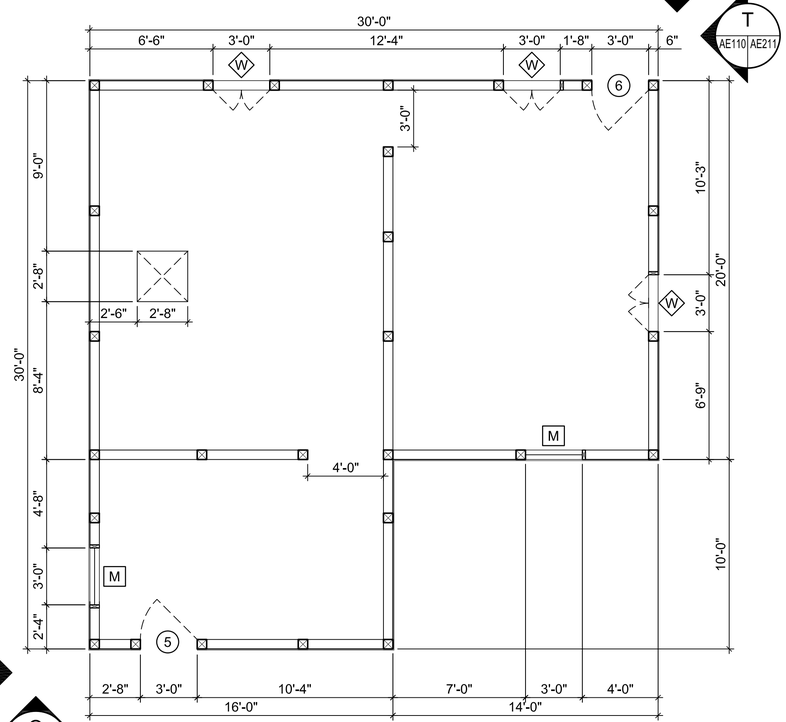

BUILDING TYPE "B"
SCALE 1/4" = 1'-0"




BUILDING TYPE "C"
SCALE 1/4" = 1'-0"




BUILDING TYPE "D"
SCALE 1/4" = 1'-0"




BUILDING TYPES "E"
SCALE 1/4" = 1'-0"

LEGEND:

- (D) WOOD DOOR - SEE SHEET AE510
- (W) WINDOW OPENING - SEE SHEET AE510
- [M] MOUSE HOLE - SEE SHEET AE310
- MOCK CACHE STORE - SEE SHEET AE310

NOTES:

1. ALL WOOD MEMBERS TO BE PRESSURE TREATED AND SEALED.
2. MINIMUM 1" SHALL BE PROVIDED BETWEEN BOTTOM OF PLYWOOD AND FINISH GRADE.
3. SLOPE GRADE INSIDE TRAINING AREAS FROM WALL OUT 1/4" PER FOOT.
4. ALL BUILDING SIGNS TO MEET BASE STANDARDS.

4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"

# ONE STORY BUILDING FLOOR PLANS

STATE OF ALABAMA
CLAYTON M. WILKS
7609
REGISTERED ARCHITECT

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| ISSUE DATE: | JUNE 2023 |
| SOLICITATION NO.: | W912HN-23-B-3001 |
| CONTRACT NO.: | |
| CATEGORY CODE: | 175-45-01 |
| FILE NAME: | |

| | |
|---|---|
| DESIGNED BY: | C. WILKS |
| DRAWN BY: | J. BRADY |
| CHECKED BY: | L. BAE |
| SUBMITTED BY: | S. BRADLEY |
| ANSI D | |

U.S. ARMY CORPS OF ENGINEERS
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SAVANNAH, GA 31401

POLY, INC.
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DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

URBAN CLUSTER
MISCELLANEOUS FLOOR PLANS

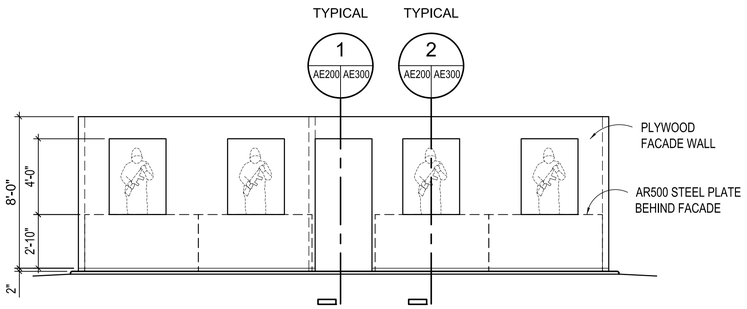
SHEET ID
AE110

READY TO ADVERTISE (RTA)

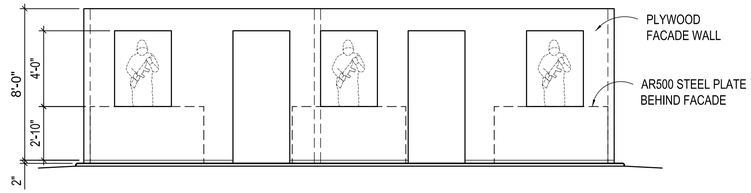
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NOTES:

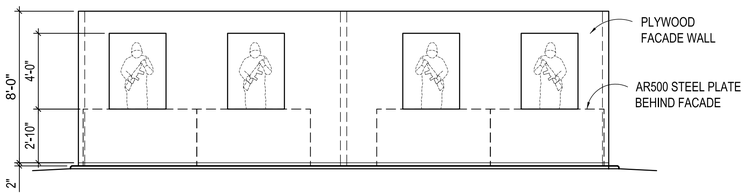
1. ALL WOOD FRAMING AND PLYWOOD TO BE PRESSURE TREATED AND SEALED.
2. MINIMUM 2" SHALL BE PROVIDED BETWEEN BOTTOM OF PLYWOOD AND FINISH GRADE.
3. SLOPE SLAB INSIDE TRAINING AREAS FROM WALL OUT 1/4" PER FOOT.
4. TARGETS BY OTHERS.
5. HORIZONTAL AND VERTICAL CONTROL POINT "A" IS ALWAYS ON THE NORTH SIDE OF FACADE.
6. SEE CIVIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.



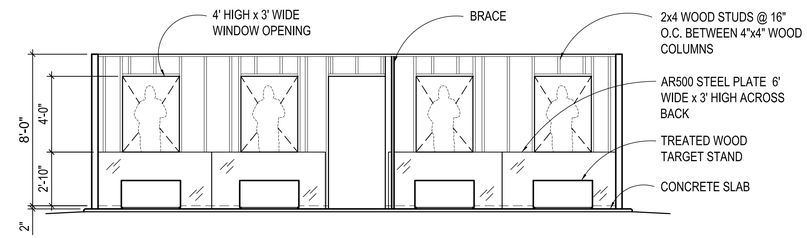

A AE100 AE200 **ELEVATION**
SCALE 1/4" = 1'-0"




B AE100 AE200 **ELEVATION**
SCALE 1/4" = 1'-0"




C AE100 AE200 **ELEVATION**
SCALE 1/4" = 1'-0"




D AE100 AE200 **ELEVATION**
SCALE 1/4" = 1'-0"

GRAPHIC SCALE
4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"

STATE OF ALABAMA
CLAYTON M. WILKS
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US Army Corps of Engineers®

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| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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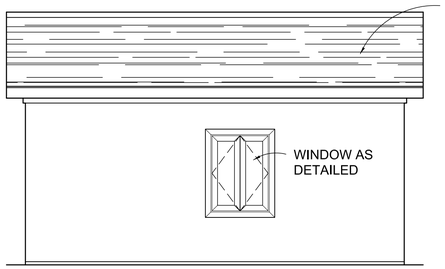
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

SINGLE STORY FACADE
EXTERIOR ELEVATIONS

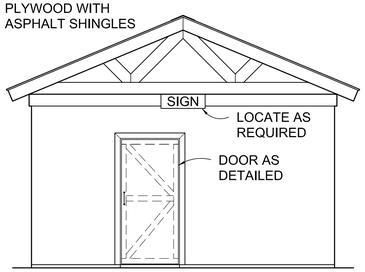
SHEET ID
AE200

READY TO ADVERTISE (RTA)

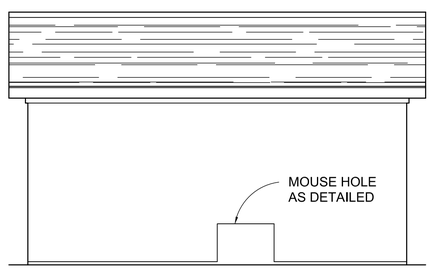
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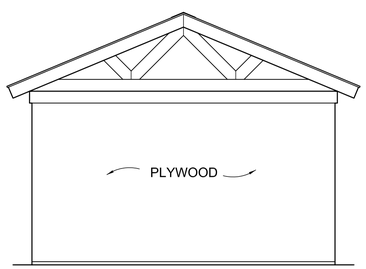

A AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"




B AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



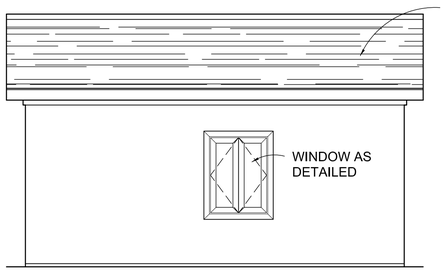

C AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



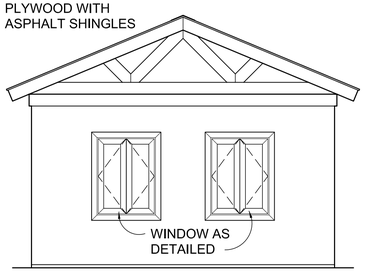

D AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"

SIGN — BUILDING SIGN PLACED AT EACH BUILDING ENTRY - SEE TYPICAL DETAIL ON SHEET AE510

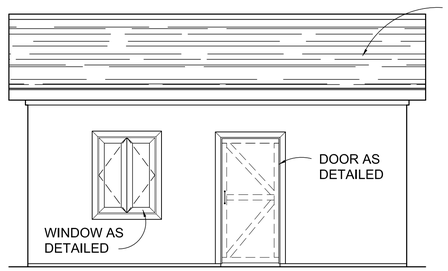
NOTE:
ALL PLYWOOD AND AND WOOD MEMBERS TO BE PRESSURE TREATED AND SEALED.



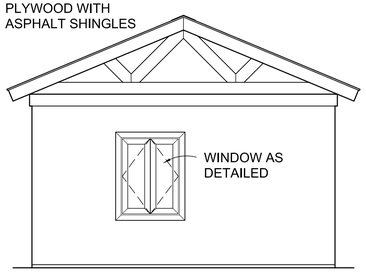

E AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



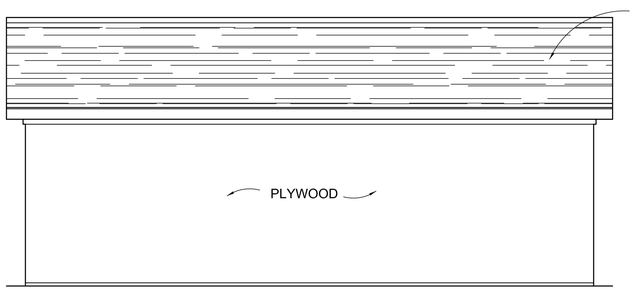

F AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



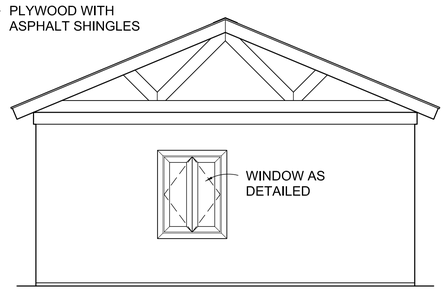

G AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



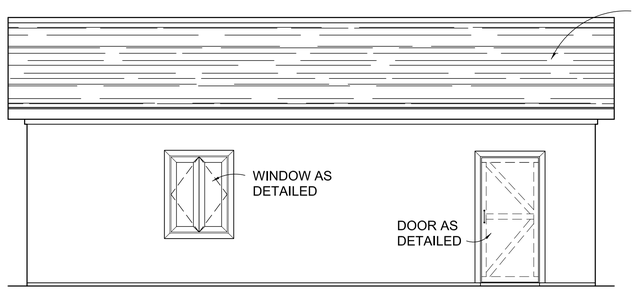

H AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



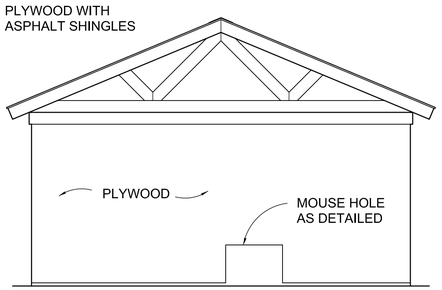

I AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



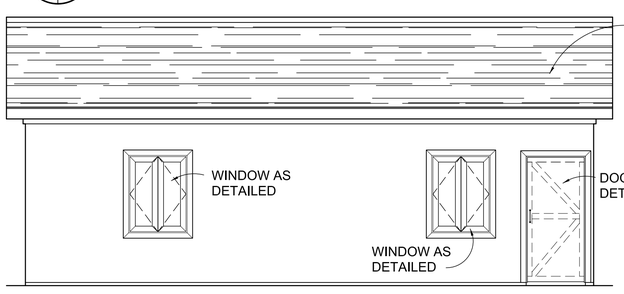

J AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



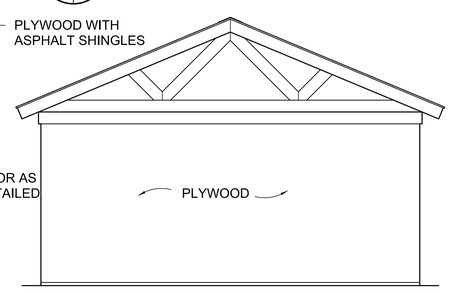

K AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"



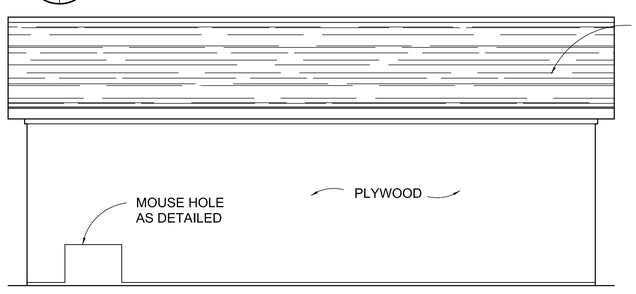

L AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"




M AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"




N AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"




O AE110 AE210 **ELEVATION**
SCALE 1/4" =1'-0"

GRAPHIC SCALE
4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"

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CLAYTON M. WILKS
7609
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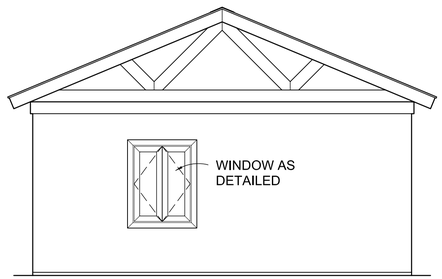
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

URBAN CLUSTER
EXTERIOR ELEVATIONS

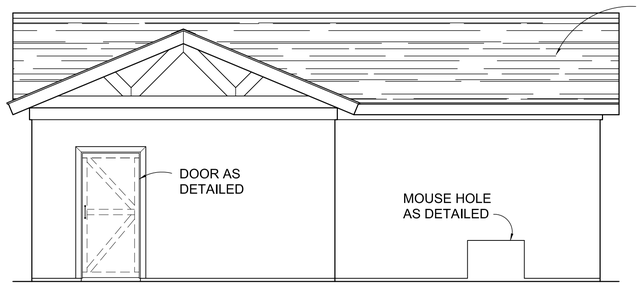
SHEET ID
AE210

READY TO ADVERTISE (RTA)

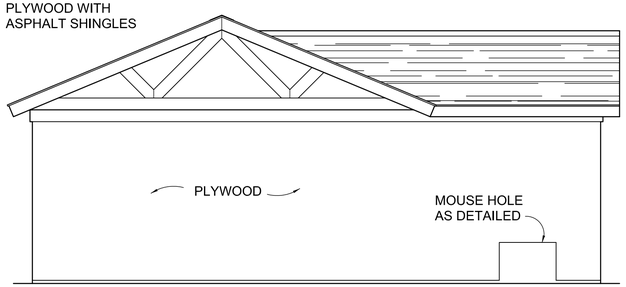
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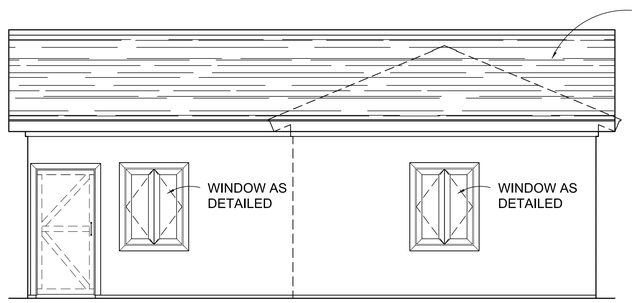

P **ELEVATION**
AE110 | AE211
SCALE 1/4" =1'-0"



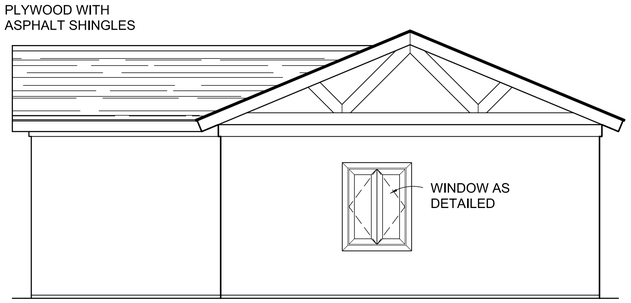

Q **ELEVATION**
AE110 | AE211
SCALE 1/4" =1'-0"




R **ELEVATION**
AE110 | AE211
SCALE 1/4" =1'-0"




S **ELEVATION**
AE110 | AE211
SCALE 1/4" =1'-0"




T **ELEVATION**
AE110 | AE211
SCALE 1/4" =1'-0"

GRAPHIC SCALE
4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"

STATE OF ALABAMA
CLAYTON M. WILKS
7609
6/6/23
REGISTERED ARCHITECT

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: C. WILKS
DRAWN BY: J. BRADY
CHECKED BY: I. BAE
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

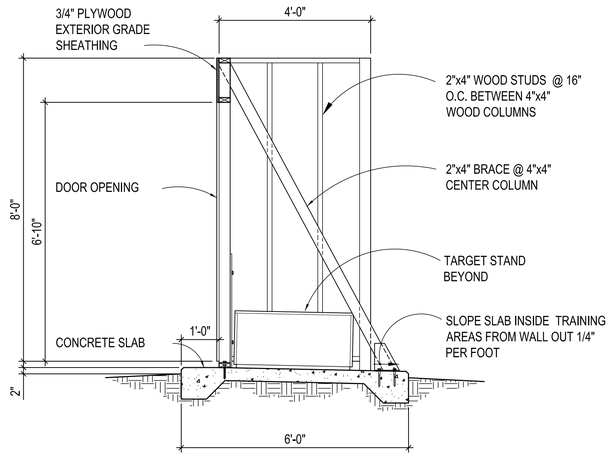
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

URBAN CLUSTER
EXTERIOR ELEVATIONS

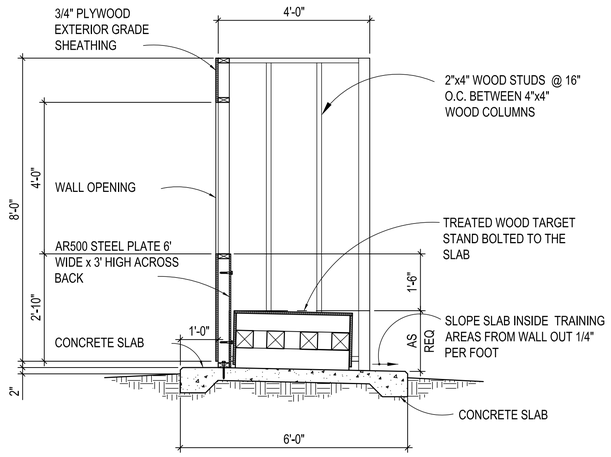
SHEET ID
AE211

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\06 ARCHITECTURAL\200 ELEVATIONS\B2EAE211.DWG



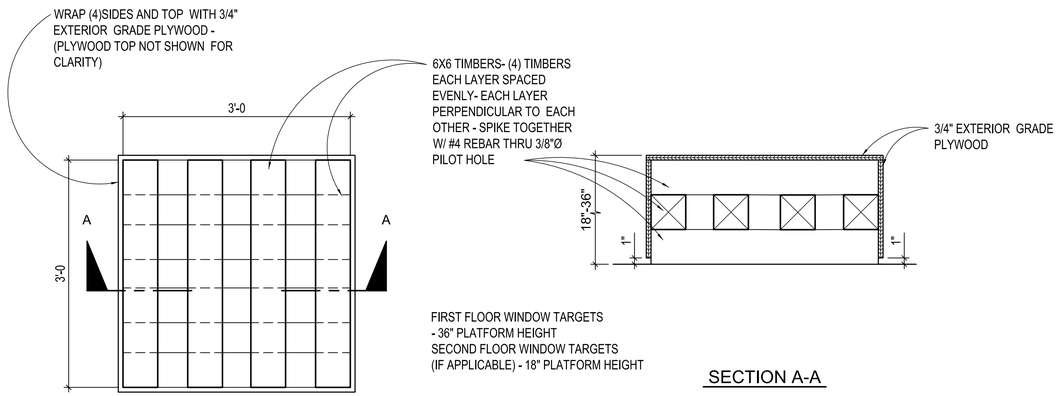

1 **SECTION**
AE100 | AE300 | AE200
SCALE 1/2" =1'-0"




2 **SECTION**
AE100 | AE300 | AE200
SCALE 1/2" =1'-0"

NOTES:

1. ALL WOOD FRAMING AND PLYWOOD TO BE PRESSURE TREATED AND SEALED.
2. MINIMUM 2" SHALL BE PROVIDED BETWEEN BOTTOM OF PLYWOOD AND FINISH GRADE.
3. SLOPE SLAB INSIDE TRAINING AREAS FROM WALL OUT 1/4" PER FOOT.
4. TARGETS BY OTHERS.
5. HORIZONTAL AND VERTICAL CONTROL POINT "A" IS ALWAYS ON THE NORTH SIDE OF FACADE.
6. SEE CIVIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL POINT DATA.




PLAN

SECTION A-A

A **SIT SUPPORT/PLATFORM DETAIL**
AE300 | AE300
SCALE 1" =1'-0"

GRAPHIC SCALE
2 1 0 2 4FT
SCALE: 1/2" = 1'-0"

STATE OF ALABAMA
CLAYTON M. WILKS
7609
6/6/23
REGISTERED ARCHITECT

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | | | |
|---|---|---|---|
| DESIGNED BY: C. WILKS | ISSUE DATE: JUNE 2023 | | |
| DRAWN BY: J. BRADY | SOLICITATION NO.: W912HN-23-B-3001 | | |
| CHECKED BY: I. BAE | CONTRACT NO.: | | |
| SUBMITTED BY: B. BRADLEY | CATEGORY CODE: 170-45-01 | | |
| SIZE: ANSI D | FILE NAME: | | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.,
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

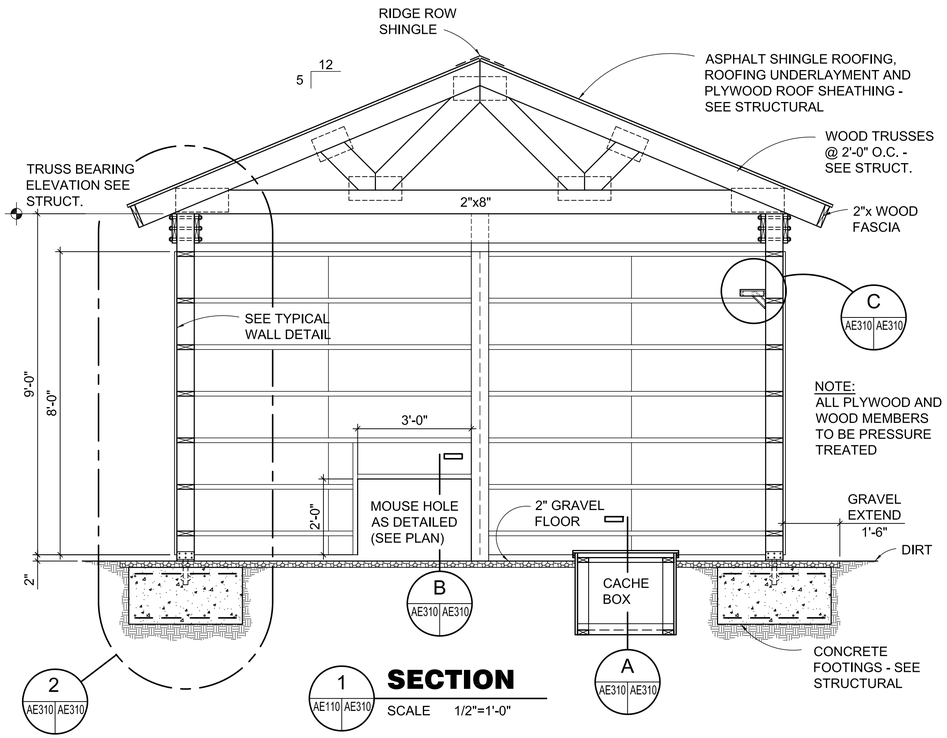
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

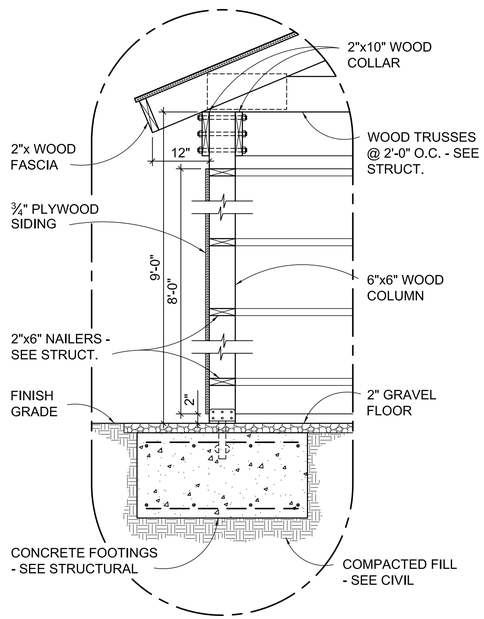
SINGLE STORY FACADE
SECTIONS AND DETAILS

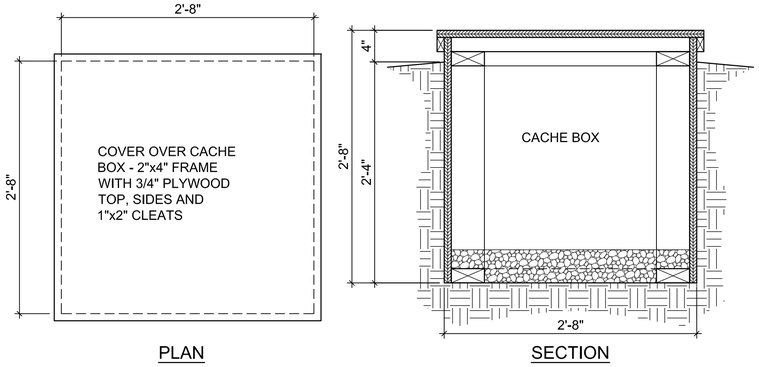
SHEET ID
AE300

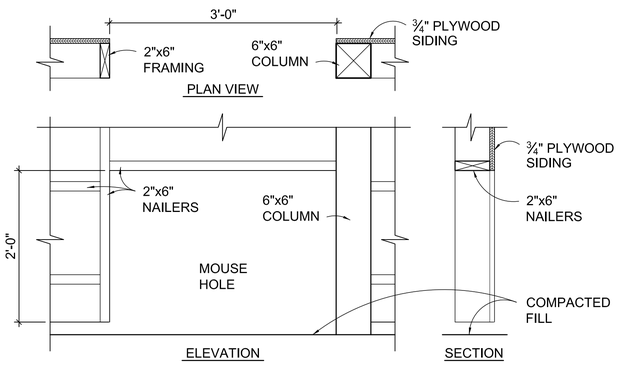
READY TO ADVERTISE (RTA)

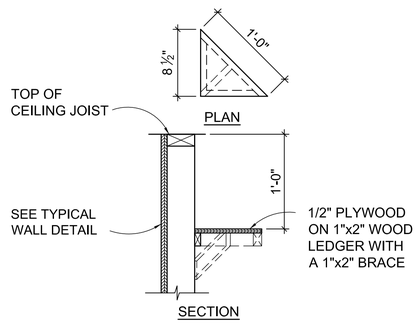
G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\06 ARCHITECTURAL\300 SECTIONS\B2EAE300.DWG




GRAPHIC SCALE

4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"

2 1 0 2 4FT
SCALE: 1/2" = 1'-0"

1 0 1 2FT
SCALE: 3/4" = 1'-0"

1 0 1FT
SCALE: 1 1/2" = 1'-0"

1 6IN 0 1 2FT
SCALE: 1" = 1'-0"

STATE OF ALABAMA
CLAYTON M. WILKS
7609
6/6/23
REGISTERED ARCHITECT

US Army Corps of Engineers®

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DOTHAN, AL 36303
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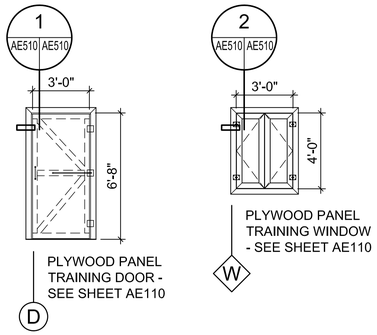
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

URBAN CLUSTER
SECTIONS AND DETAILS

SHEET ID
AE310

G:\CLEANSTUFF-15-28153976 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\06 ARCHITECTURAL\300 SECTIONS\B2\EAE310.DWG

READY TO ADVERTISE (RTA)







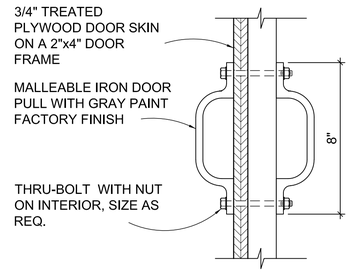
## DOOR AND WINDOW TYPES:

SCALE 1/4" = 1'-0"

## DOOR & FRAME SCHEDULE

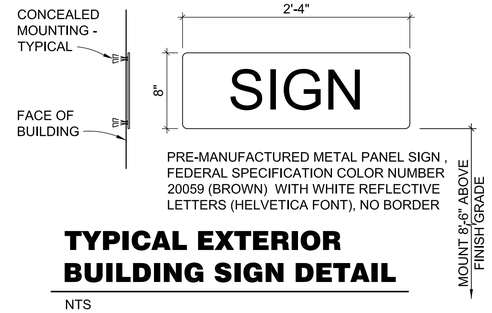
| NO. | DOORS | | | | FRAMES | | | |
|---|---|---|---|---|---|---|---|---|
| | SIZE | GLAZ. | RATG. | TYPE | TYPE | DETAILS HEAD | DETAILS JAMB | DETAILS SILL |
| 1 | 3'0"x6'8" | — | — | D | WD. | 1/AE510 /AE510 | 1/AE510 /AE510 | 1/AE510 /AE510 |
| 2 | 3'0"x6'8" | — | — | D | WD. | 1/AE510 /AE510 | 1/AE510 /AE510 | 1/AE510 /AE510 |
| 3 | 3'0"x6'8" | — | — | D | WD. | 1/AE510 /AE510 | 1/AE510 /AE510 | 1/AE510 /AE510 |
| 4 | 3'0"x6'8" | — | — | D | WD. | 1/AE510 /AE510 | 1/AE510 /AE510 | 1/AE510 /AE510 |
| 5 | 3'0"x6'8" | — | — | D | WD. | 1/AE510 /AE510 | 1/AE510 /AE510 | 1/AE510 /AE510 |
| 6 | 3'0"x6'8" | — | — | D | WD. | 1/AE510 /AE510 | 1/AE510 /AE510 | 1/AE510 /AE510 |
| | | | | | | | | |

H.M.-HOLLOW METAL
WD. - WOOD FRAME




A AE510 AE510 **DETAIL**

SCALE 3" =1'-0"

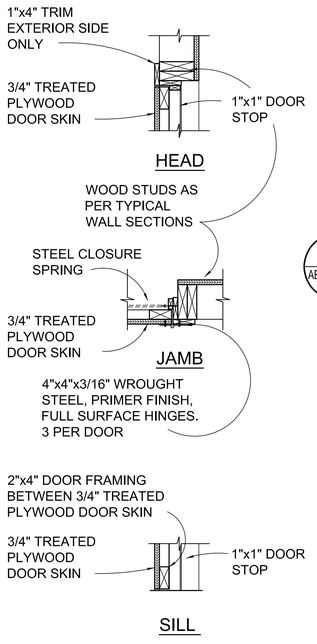


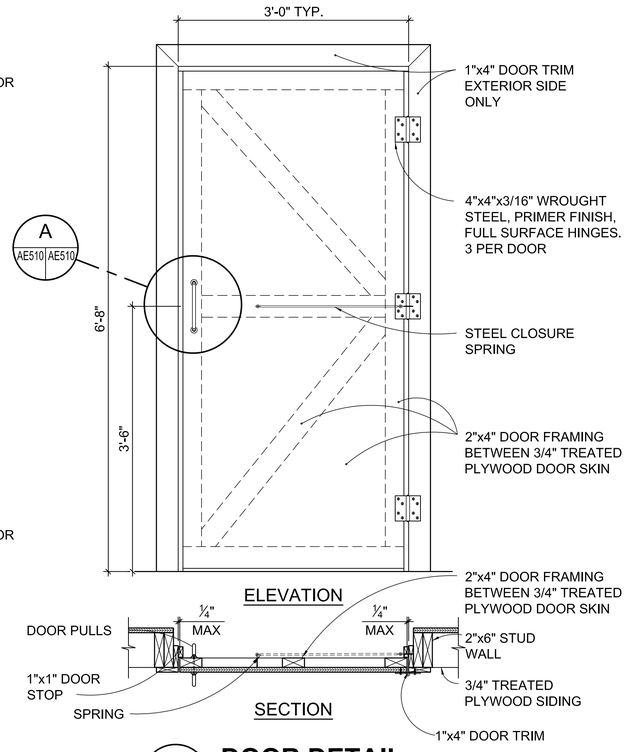

PRE-MANUFACTURED METAL PANEL SIGN , FEDERAL SPECIFICATION COLOR NUMBER 20059 (BROWN) WITH WHITE REFLECTIVE LETTERS (HELVETICA FONT), NO BORDER

## TYPICAL EXTERIOR BUILDING SIGN DETAIL

NTS

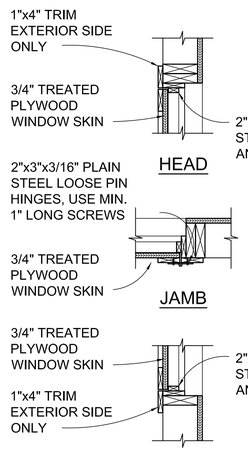
NOTES:
1) SIGN VERBIAGE PER CONTRACTING OFFICER
2) DPW APPROVAL IS REQUIRED PRIOR TO INSTALLATION

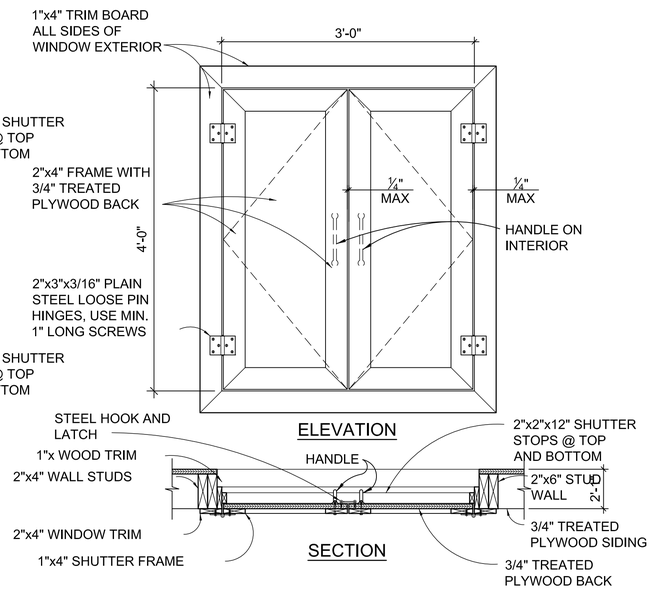



1 AE510 AE510 **DOOR DETAIL**

SCALE 1" =1'-0"




2 AE510 AE510 **WINDOW DETAIL**

SCALE 1" =1'-0"

GRAPHIC SCALE

4 3 2 1 0 4FT 8FT
SCALE: 1/4" = 1'-0"

1 6IN 0 1 2FT
SCALE: 1" = 1'-0"

6 4 2 0 6IN
SCALE: 3" = 1'-0"




US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: C. WILKS
DRAWN BY: J. BRADY
CHECKED BY: L.BAE
SUBMITTED BY: S. BRADLEY
SCALE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 175-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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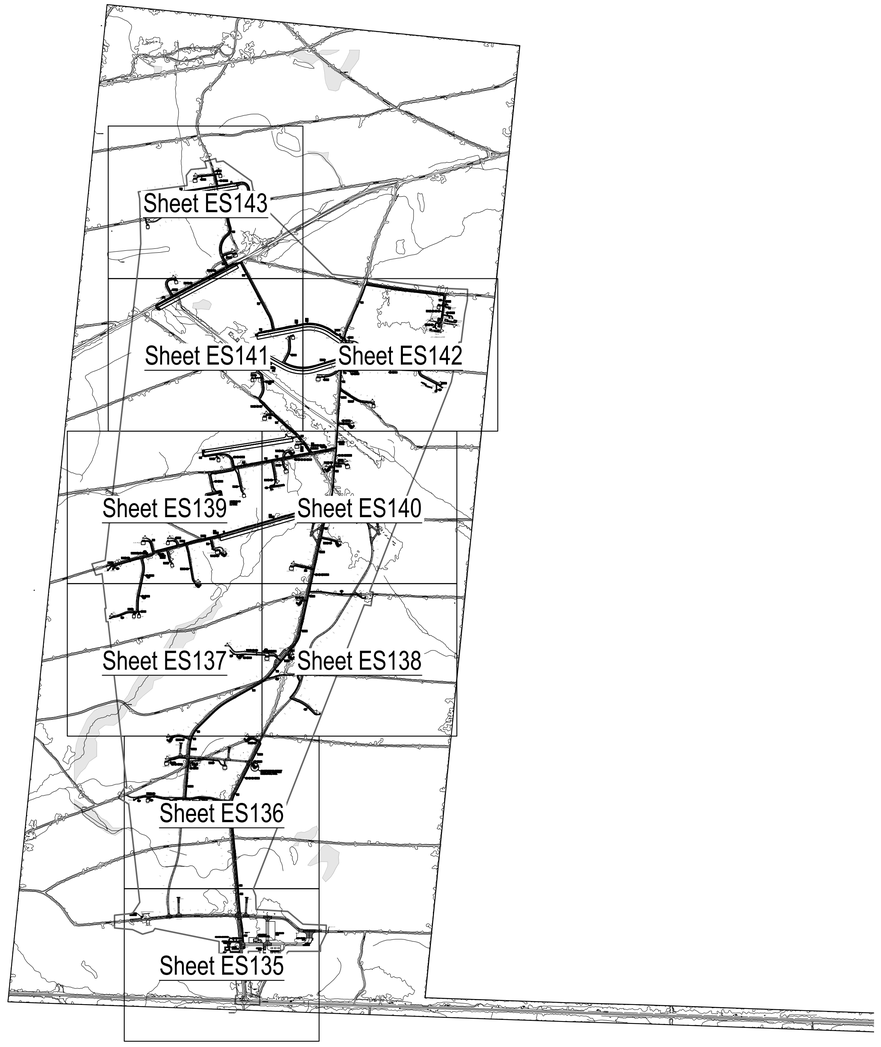
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN #6162
VOLUMES 3 & 4 - DOWNRANGE

URBAN CLUSTER
DETAILS

SHEET ID
AE510

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\06 ARCHITECTURAL\500 DETAILS\B2\AE510.DWG




N

## OVERALL ELECTRICAL SITE PLAN

SCALE: 1" = 1000'-0"

## ELECTRICAL SITE LEGEND

PC-01 ⬓ POWER CENTER DESIGNATION CONSISTING OF PAD MOUNTED TRANSFORMER AND LOW VOLTAGE DISTRIBUTION. LETTERS AND NUMERAL CORRELATES TO LOCATION ON SITE PLAN.

PC-02 ■ POWER CENTER DESIGNATION CONSISTING OF PAD MOUNTED TRANSFORMER AND LOW VOLTAGE DISTRIBUTION LOCATED IN MAT EMPLACEMENT OR IN COMBINATION WITH SAT EMPLACEMENT

SE-01 ⊠ PAD MOUNTED PRIMARY SECTIONALIZING ENCLOSURE

——3ØUP—— UNDERGROUND DIRECT BURIED 15KV 3-PHASE PRIMARY CABLES (3 – 1/C #1/0 15KV WITH CONCENTRIC NEUTRAL). SEE POWER DISTRIBUTION SINGLE LINE DIAGRAM, SHEET ES606.

——2ØUP—— UNDERGROUND DIRECT BURIED 15KV 1-PHASE PRIMARY CABLES (2 – 1/C #1/0 15KV WITH CONCENTRIC NEUTRAL). SEE POWER DISTRIBUTION SINGLE LINE DIAGRAM, SHEET ES606.

——1ØUP—— UNDERGROUND DIRECT BURIED 15KV 1-PHASE PRIMARY CABLE (1 – 1/C #1/0 15KV WITH CONCENTRIC NEUTRAL). SEE POWER DISTRIBUTION SINGLE LINE DIAGRAM, SHEET ES606.

– – –FOC– – – DIRECT BURIED FIBER OPTIC CABLE

——RLM—— DIRECT BURIED RANGE LIMIT MARKER CONTROL CABLE

——BSC—— DIRECT BURIED BORE SIGHT CONTROL CABLE

(S1) 3/C – #8 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE

(S2) 3/C – #6 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE

(S3) 3/C – #4 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE

(S4) 3/C – #2 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE

[F6] 6-STRAND DIRECT BURIED FIBER OPTIC CABLE TO CAMERA TOWERS. ROUTE IN SAME TRENCH AS ELECTRICAL. SEE SITE DATA SINGLE LINE SHEET TN604.

[F48] 48-STRAND DIRECT BURIED FIBER OPTIC BACKBONE CABLE BETWEEN DBB-F PANELS AND TOWER. ROUTE IN SAME TRENCH AS ELECTRICAL. SEE SITE DATA SINGLE LINE SHEET TN604.

[C2] DIRECT BURIED ARMORED CATEGORY 6 COPPER DSL BACKBONE CABLE. NUMERALS INDICATE NUMBER OF CABLES (i.e. C2 IS TWO CABLES) UNLESS OTHERWISE NOTED. ROUTE IN SAME TRENCH AS ELECTRICAL. SEE SITE DATA SINGLE LINE DIAGRAM SHEET TN604.

CONCRETE ENCASEMENT REQUIRED UNDER COURSE ROADS – 4-WAY 4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED. SEE DETAILS, SHEET ES522.

RLM-03 RANGE LIMIT MARKER – SEE DETAIL, SHEET ES519

FC-02 FLIR CAMERA – SEE DETAIL, SHEET ES521

M-01 MOVING ARMOR TARGET

V-03F STATIONARY ARMOR TARGET (FLANK)

P-09 IM-09 6-MAN SITs WITH MIT EMPLACEMENT

V-05 STATIONARY ARMOR TARGET (FRONTAL)

P-25 7-MAN SITs CLUSTER

F1-01 F2-01 FACADE

B-01 TR-01 TRENCH WITH BUNKER

F1-01 FACADE SIT EMPLACEMENT

——C/G—— CLEARING LIMITS

Graphic Scale

1000' 500' 0 1000' 2000'

SCALE 1" = 1000'-0"

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: C. BROWN | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 178-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36182
VOLUMES 3 & 4 - DOWNRANGE

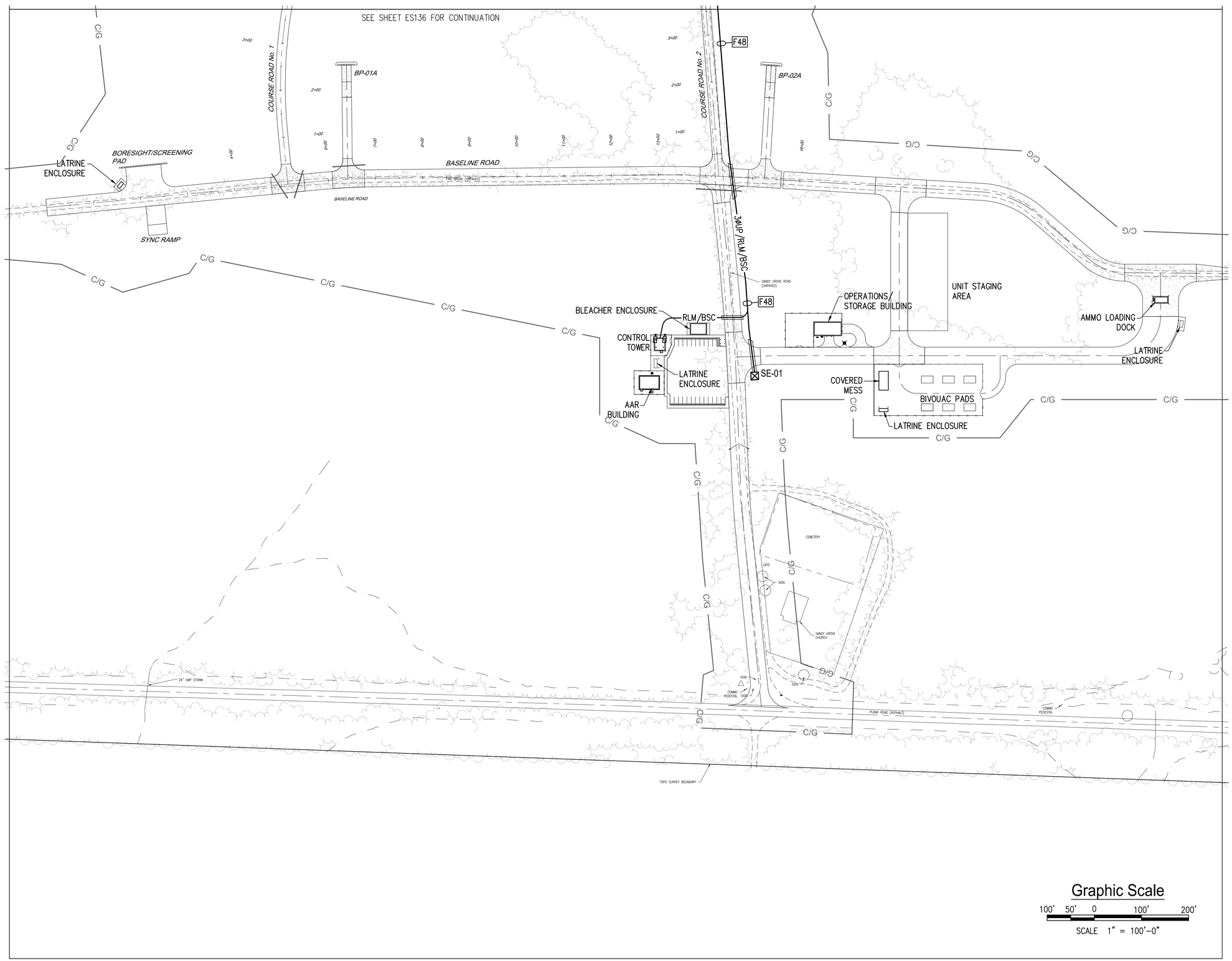
OVERALL ELECTRICAL SITE PLAN

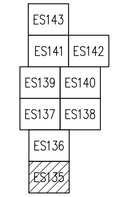
SHEET ID

ES002

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES002 OVERALL ELECTRICAL SITE PLAN.DWG




## Site Key Plan

NOT TO SCALE

## Graphic Scale

100' 50' 0 100' 200'

SCALE 1" = 100'-0"

SAMUEL LEE GUILEY
LICENSE
No. 50007
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
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SOLICITATION NO.: W912HN-23-B-3001
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SAVANNAH DISTRICT
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SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

# ELECTRICAL SITE PLAN

SHEET ID

ES135

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES135 ELECTRICAL SITE PLAN.DWG

READY TO ADVERTISE (RTA)

SEE SHEET ES137 FOR CONTINUATION

SEE SHEET ES135 FOR CONTINUATION

P-04
C1 S3 S3
F48
BP-01B
COURSE ROAD No. 1
F48 C1
TSR No. 3
2ØUP
V-04/PC-03
S2 S2
S3 S3 S3 C1
CROSSOVER ROAD
TSR No. 4
P-02
S2 S2 C1
C2 S3
TSR No. 5
V-05F
P-05
C1 S4 S4
BP-02B
F1 C1
S3 S3 C1
TSR No. 6
P-03
SEE SHEET ES507 FOR STATIONARY INFANTRY TARGET CLUSTER WIRING CONNECTION PLAN, TYPICAL
S3 S3 S4 S4 C2
COURSE ROAD No. 2
3ØUP/RLM/BSC
F48 C3
C1 S3 S2
RLM-01
S3
V-01
S2
TSR No. 1
2ØUP
C1
V-02 / PC-02
F48 C4
C1 S2 S2
TSR No. 2
3ØUP/RLM/BSC
P-01
F48 C5
C2
V-03/PC-01
F48
C/G
FIRE BREAK (UNPAVED)

ES143
ES141 ES142
ES139 ES140
ES137 ES138
ES136
ES135

## Site Key Plan
NOT TO SCALE

## Graphic Scale
100' 50' 0 100' 200'
SCALE 1" = 100'-0"

SAMUEL LEE GULLEY
LICENSE
No. 51007
STATE OF FLORIDA
PROFESSIONAL ENGINEER
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

# ELECTRICAL SITE PLAN

SHEET ID
ES136

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES136 ELECTRICAL SITE PLAN.DWG

SEE SHEET ES139 FOR CONTINUATION

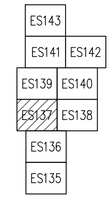
SEE SHEET ES138 FOR CONTINUATION

SEE SHEET ES136 FOR CONTINUATION




## Site Key Plan

NOT TO SCALE




## Graphic Scale

100' 50' 0 100' 200'

SCALE 1" = 100'-0"

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | |
|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: C. BROWN | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL SITE PLAN

SHEET ID

ES137

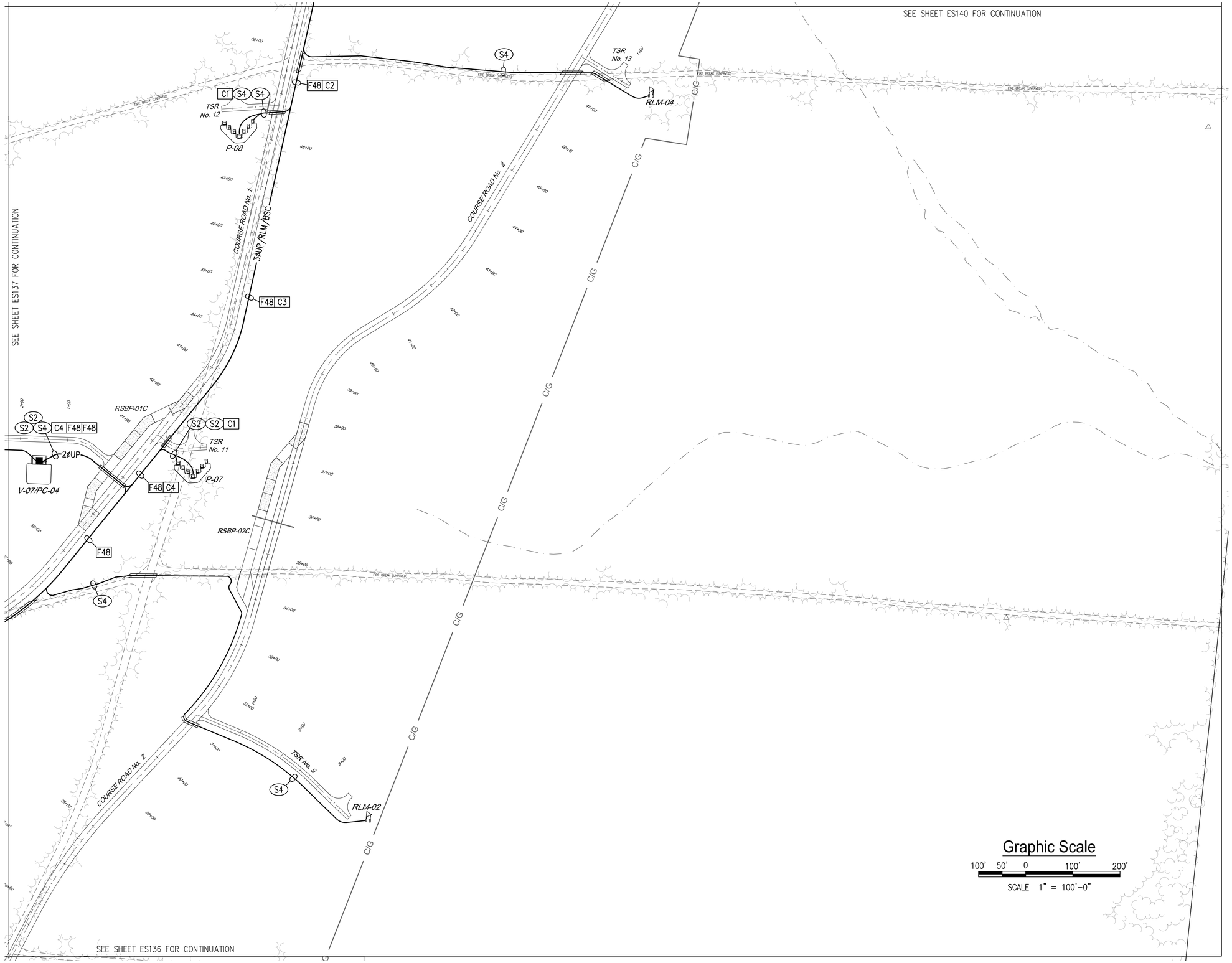
READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2\EES137 ELECTRICAL SITE PLAN.DWG

SEE SHEET ES140 FOR CONTINUATION

SEE SHEET ES137 FOR CONTINUATION

SEE SHEET ES136 FOR CONTINUATION




ES143
ES141 ES142
ES139 ES140
ES137 ES138
ES136
ES135

## Site Key Plan

NOT TO SCALE

## Graphic Scale

100' 50' 0 100' 200'

SCALE 1" = 100'-0"

SAMUEL LEE GULLEY LICENSE No. 57007 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/16/23

US Army Corps of Engineers®

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DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

# ELECTRICAL SITE PLAN

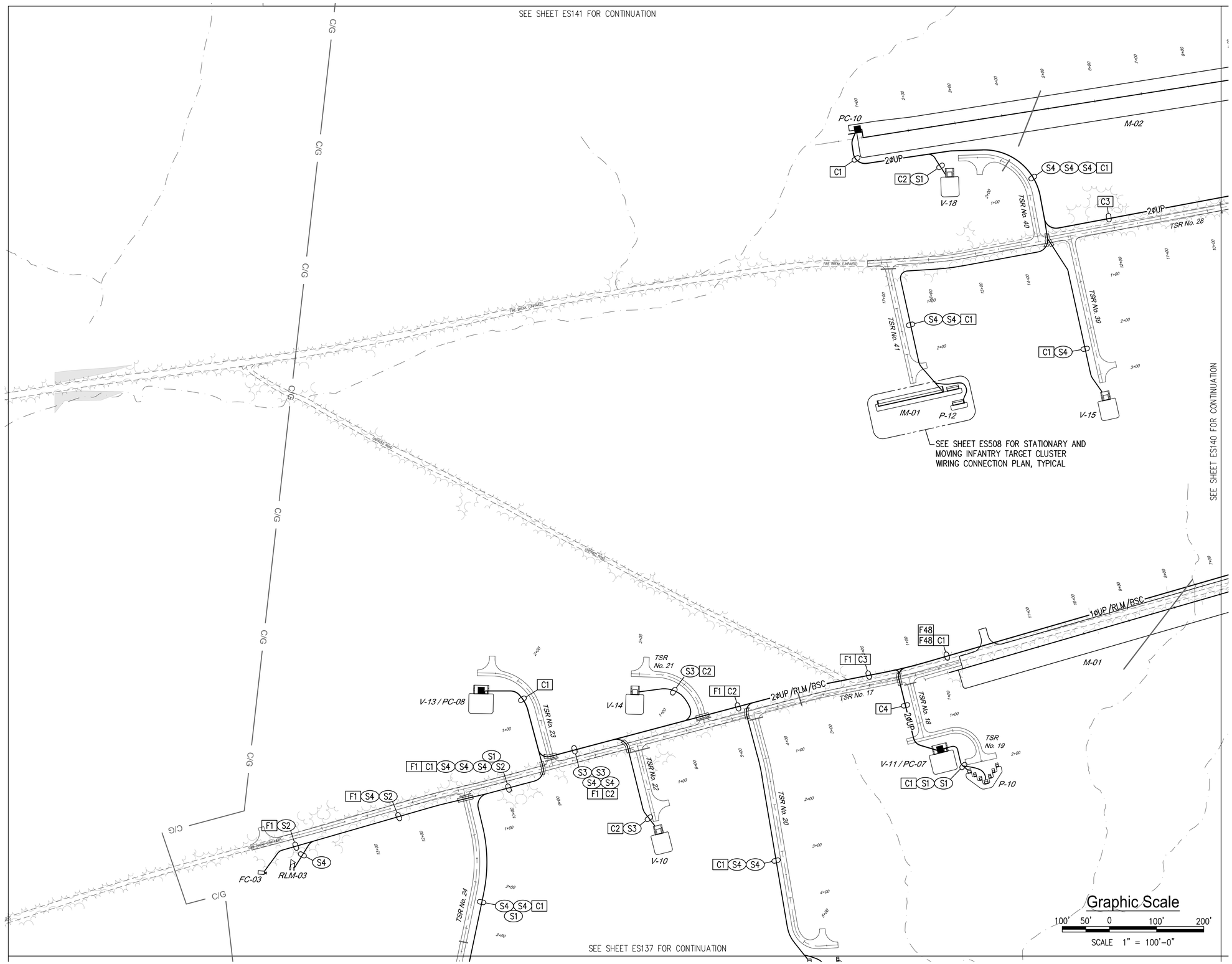
SHEET ID

ES138

READY TO ADVERTISE (RTA)

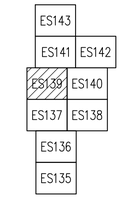
N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES138 ELECTRICAL SITE PLAN.DWG

SEE SHEET ES141 FOR CONTINUATION




## Site Key Plan

NOT TO SCALE




US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: S. GULLEY | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL SITE PLAN

SHEET ID

ES139

SAMUEL LEE GULLEY
LICENSE
No. 56007
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
6/16/23

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES139 ELECTRICAL SITE PLAN.DWG

SEE SHEET ES142 FOR CONTINUATION

SEE SHEET ES139 FOR CONTINUATION

SEE SHEET ES138 FOR CONTINUATION

TSR No. 31
TSR No. 30
TSR No. 29
TSR No. 28
TSR No. 37
TSR No. 36
TSR No. 38
TSR No. 27
TSR No. 26
TSR No. 16
TSR No. 15
TSR No. 14
M-02
M-01
IM-02
V-19 / PC-09
P-15
V-16F
V-17F
P-14
P-13
PC-06
BP-01D
BP-02D
P-11
V-12 / PC-05
C2
C10
C3
C4
C1
C5
F48
C9
2ØUP
2ØUP /RLM/BSC
3ØUP /RLM
3ØUP /RLM/BSC
S3
S4
COURSE ROAD No. 1
COURSE ROAD No. 2
FIRE BREAK (UNPAVED)
C/G

ES143
ES141 ES142
ES139 ES140
ES137 ES138
ES136
ES135

## Site Key Plan
NOT TO SCALE

## Graphic Scale
100' 50' 0 100' 200'
SCALE 1" = 100'-0"

SAMUEL LEE GULLEY LICENSE NO. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY:
SUPERVISOR:
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

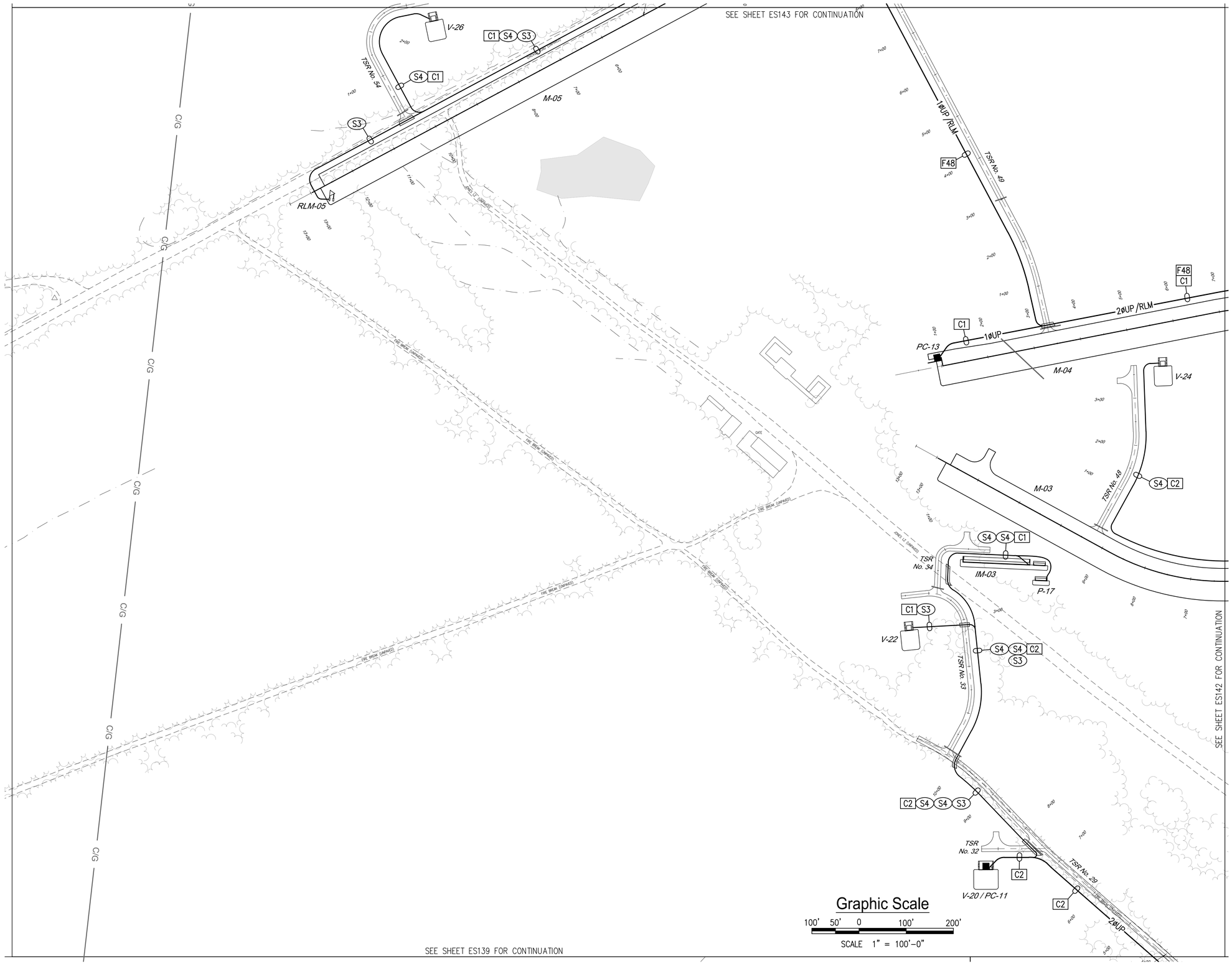
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 98162
VOLUMES 3 & 4 - DOWNRANGE

# ELECTRICAL SITE PLAN

SHEET ID
ES140

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES140 ELECTRICAL SITE PLAN.DWG

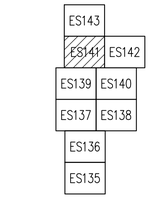
READY TO ADVERTISE (RTA)




## Graphic Scale

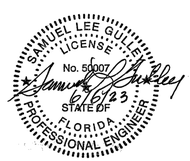
100' 50' 0 100' 200'

SCALE 1" = 100'-0"




## Site Key Plan

NOT TO SCALE




US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | | | |
|---|---|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 | | |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 | | |
| CHECKED BY: C. BROWN | CONTRACT NO.: | | |
| SUBMITTED BY: S. BRADLEY | CATEGORY CODE: 173-45-01 | | |
| SIZE: ANSI D | FILE NAME: | | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 98162
VOLUMES 3 & 4 - DOWNRANGE

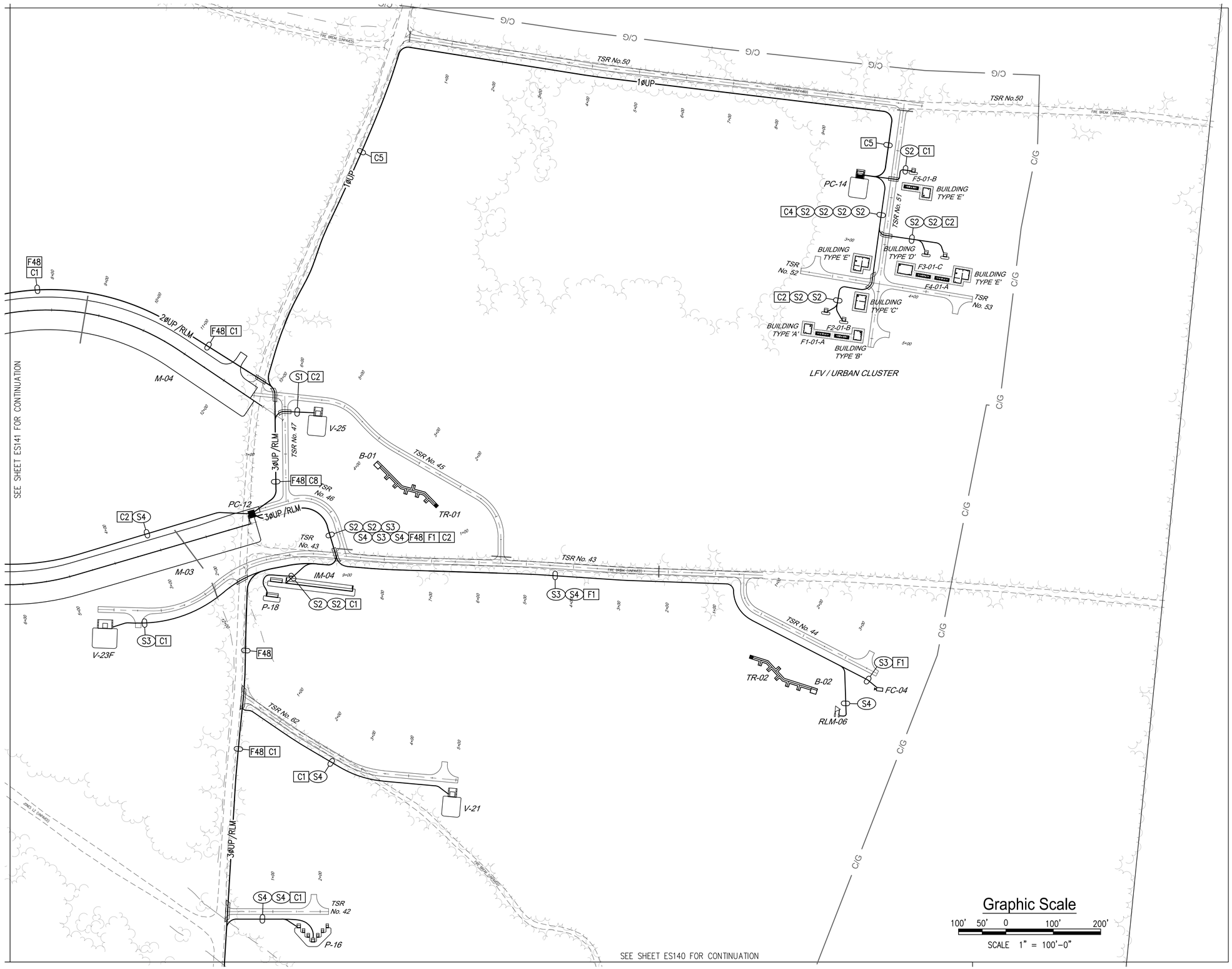
# ELECTRICAL SITE PLAN

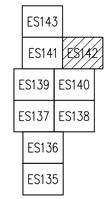
SHEET ID

ES141

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES141 ELECTRICAL SITE PLAN.DWG




## Site Key Plan

NOT TO SCALE

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: S. BRADLEY
ANSI D.
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL SITE PLAN

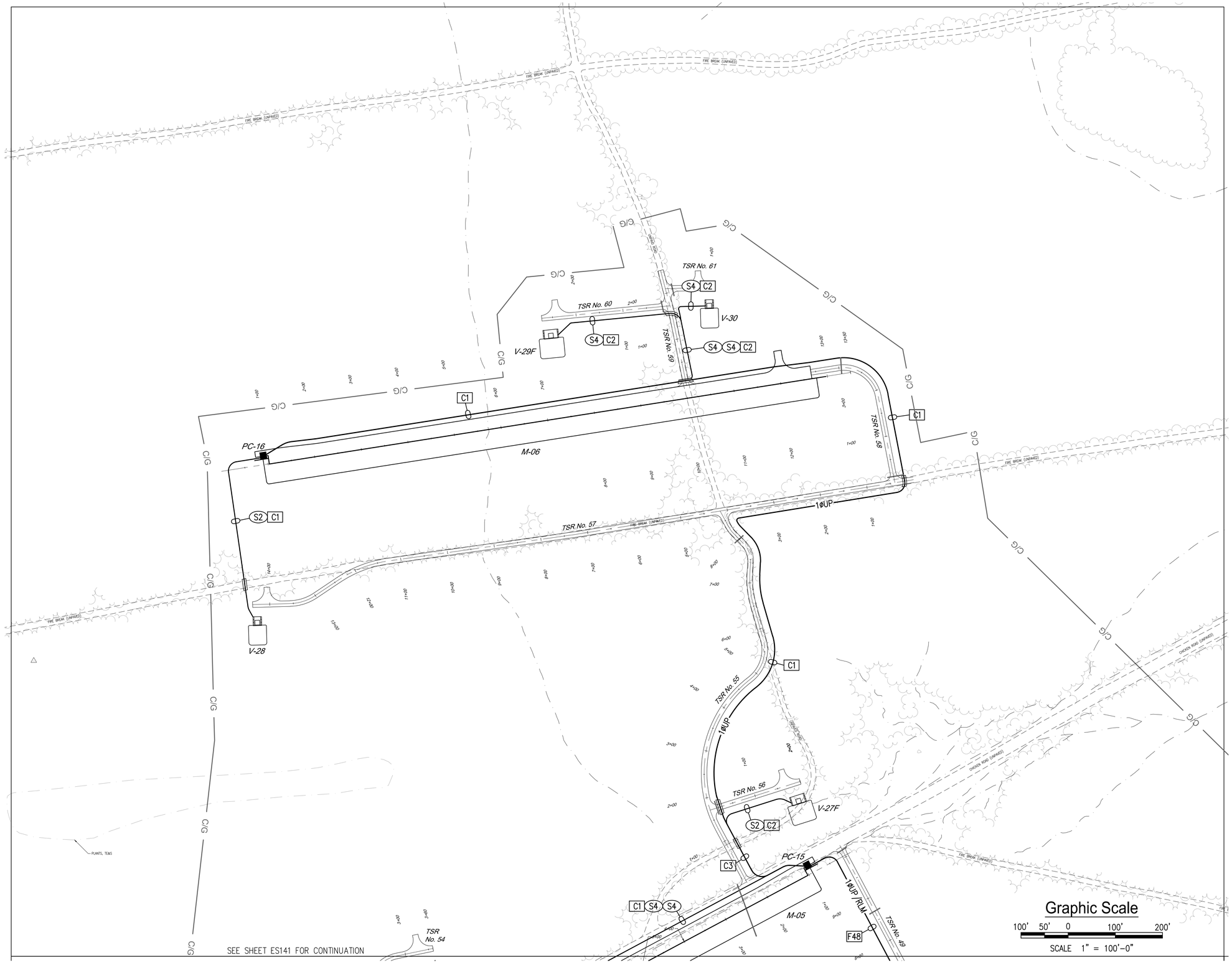
SAMUEL LEE GULLEY LICENSE NUMBER No. 56007 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/6/23

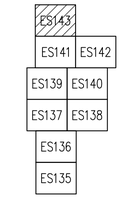
SHEET ID

ES142

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES142 ELECTRICAL SITE PLAN.DWG




## Site Key Plan

NOT TO SCALE

## Graphic Scale

100' 50' 0 100' 200'

SCALE 1" = 100'-0"

SAMUEL LEE GULLEY
LICENSE
No. 51007
6/6/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | |
|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: C. BROWN | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

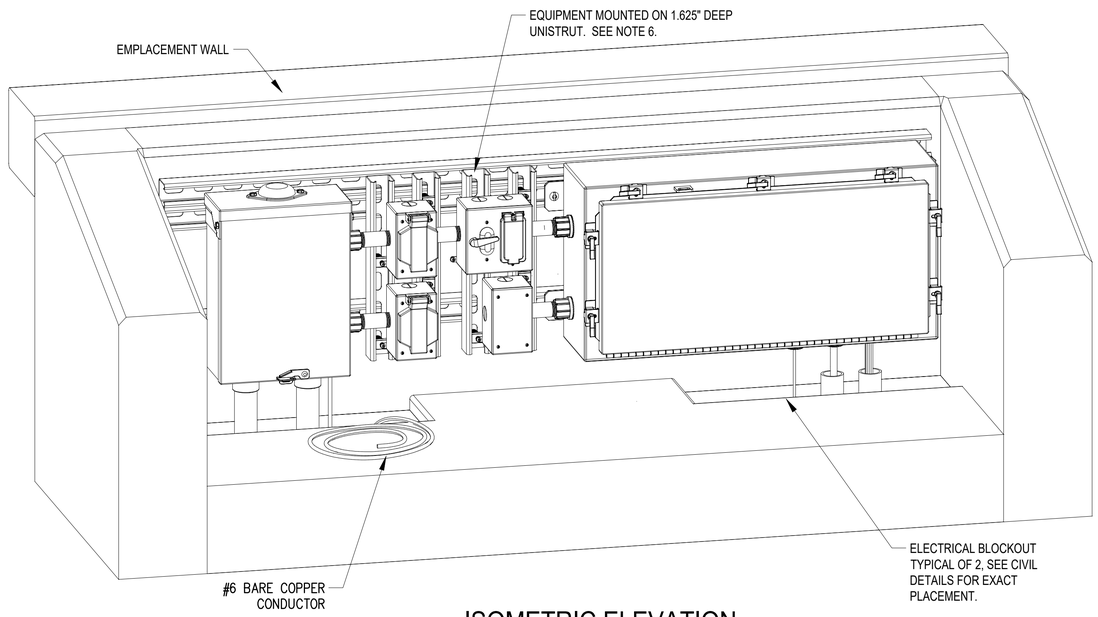
# ELECTRICAL SITE PLAN

SHEET ID

ES143

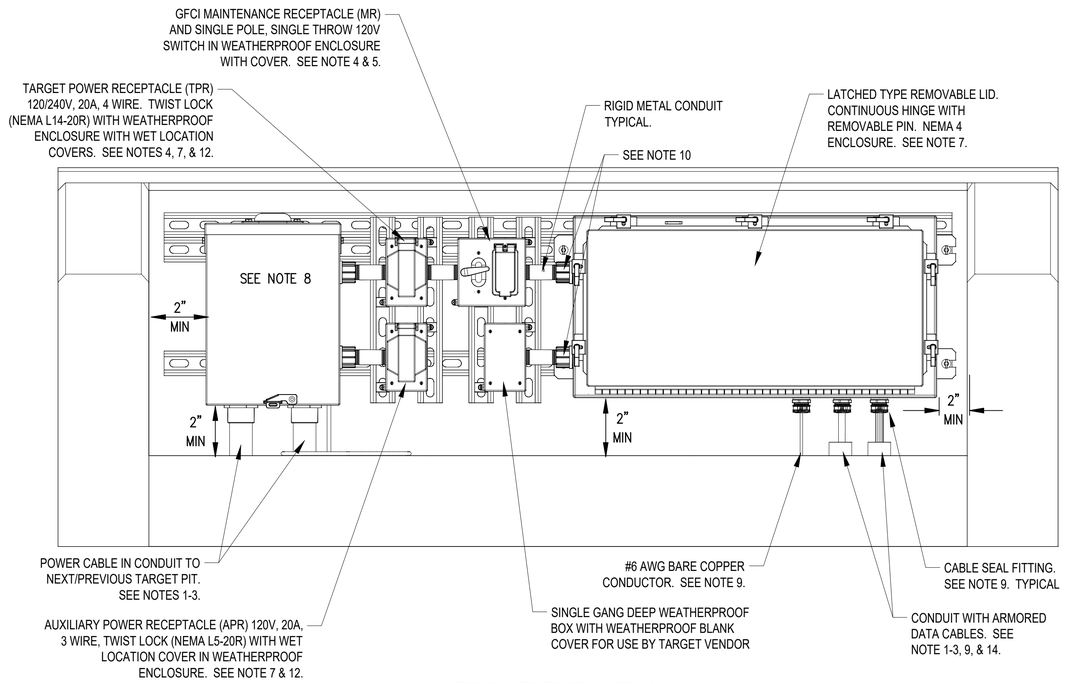
READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES143 ELECTRICAL SITE PLAN.DWG




## ISOMETRIC ELEVATION
## STATIONARY INFANTRY TARGET

NOT TO SCALE




## FRONT ELEVATION
## STATIONARY INFANTRY TARGET

NOT TO SCALE

NOTES:

1. CONDUIT TO EXTEND 5 FEET BEYOND EMPLACEMENT.
2. CABLES/CONDUITS ARE ROUTED FROM SIDE OF BERM TO PREVENT CABLE DAMAGE DURING MAINTENANCE OF BERM.
3. ROUTE UNDER SLAB. POWER AND DATA INSTALLED IN SAME TRENCH.
4. EQUIPMENT SHALL NOT BE MOUNTED HIGHER THAN 2" FROM TOP OF EMPLACEMENT WALL.
5. POWER TO DATA PANEL RECEPTACLE IN MTDP SHALL BE ROUTED THROUGH SINGLE POLE SINGLE THROW SWITCH.
6. ALL EQUIPMENT SHALL BE MOUNTED ON 1.625" DEEP UNISTRUT. NO EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED DIRECTLY TO CONCRETE WALL.
7. TPR, APR AND DPR SHALL NOT BE GFCI PROTECTED.
8. PERMANENTLY LABEL THE EMPLACEMENT ACCORDING TO THE CIVIL AND ELECTRICAL DESIGNATIONS.
9. PROVIDE SEAL FITTINGS AS SHOWN IN CABLE SEAL FITTING DETAIL ON SHEET ES513 FOR ALL CABLE ENTRANCES INTO NEMA 4, 4X, OR 6P RATED ENCLOSURES.
10. INSTALL MYERS TYPE HUBS ON ALL CONDUIT PENETRATIONS TO SIDE OF ENCLOSURE.
11. ALL DIMENSIONS SHOWN IN INCHES UNLESS OTHERWISE NOTED.
12. PROVIDE TARGET AND AUXILIARY OUTLETS WITH NEMA 3R WET LOCATION COVERS MAKING OUTLETS SUITABLE FOR USE IN WET LOCATIONS. SEE DETAIL SHEET ES513 FOR WET LOCATION COVER. IN USE COVERS WITH COVERS INTENDED TO CLOSE OVER THE INSERTED CORD ARE NOT ACCEPTABLE AS THESE COVERS WILL NOT CLOSE OVER TARGET OR AUXILIARY CORDS.
13. DEVIATIONS TO THE EQUIPMENT SIZES, EQUIPMENT NUMBERS, RECEPTACLE COVERS, OR CABLE ENTRY METHODS INTO ENCLOSURES WILL REQUIRE RANGE TRAINING AND LAND PROGRAM HUNTSVILLE CENTER MANDATORY CENTER OF EXPERTISE APPROVAL.
14. CONDUIT STUBBED UP AS CLOSE TO CABLE SEAL FITTING AS POSSIBLE.
15. SEE SHEET TN507 FOR ADDITIONAL INFORMATION ON TARGET DATA PANELS. SEE SHEET TN507 FOR ADDITIONAL INFORMATION ON MASTER TARGET DATA PANELS.

PANELBOARD: PB-xx  LOCATION: SIT  MOUNTED: SURFACE  FEED: BOTTOM

125 MAIN  MAIN LUGS ONLY  ASYM A.I.C MIN.: 10,000

VOLTAGE: 240/120  PHASE: 1  WIRE: 3  RATING: NEMA 3R

| LOAD SERVED | NO. POLES | TRIP AMPS | WIRE SIZE | VA/PHASE A | VA/PHASE B | CKT NO. | CKT NO. | VA/PHASE A | VA/PHASE B | WIRE SIZE | TRIP AMPS | NO. POLES | LOAD SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SURGE ARRESTOR | 2 | – | – | – | | 1 | 2 | 480 | | 12 | 20 | 2 | SIT (NEMA L14-20R, 1-NEMA L5-20R) |
| | | | | | – | | | | 480 | | | | |
| SUB FEED THRU LUGS | 2 | – | – | – | | 5 | 6 | 50 | | 12 | 20 | 1 | TDP AND MR |
| | | | | | – | | 8 | | – | – | 20 | 1 | SPARE |
| | | | | 0 | 0 | | | 530 | 480 | | | | |

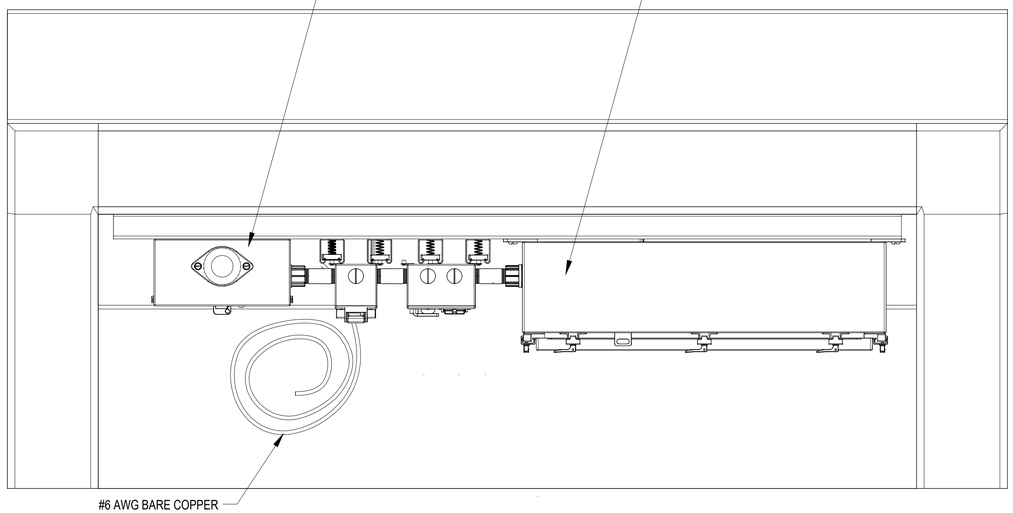
TOTAL VA PHASE A: 530
TOTAL VA PHASE B: 480

TOTAL CONNECTED WATTAGE: 1,010
DEMAND WATTAGE: 960
TOTAL DEMAND AMPS: 4

SUPPLIED FROM: TRSF-XX

GENERAL NOTE:

THIS EMPLACEMENT DETAIL ALSO APPLIES FOR BATTLE EFFECTS SIMULATORS, MORTAR SIMULATION DEVICES, AND SOUND EFFECTS SIMULATORS.




## TOP ELEVATION
## STATIONARY INFANTRY TARGET

NOT TO SCALE




US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

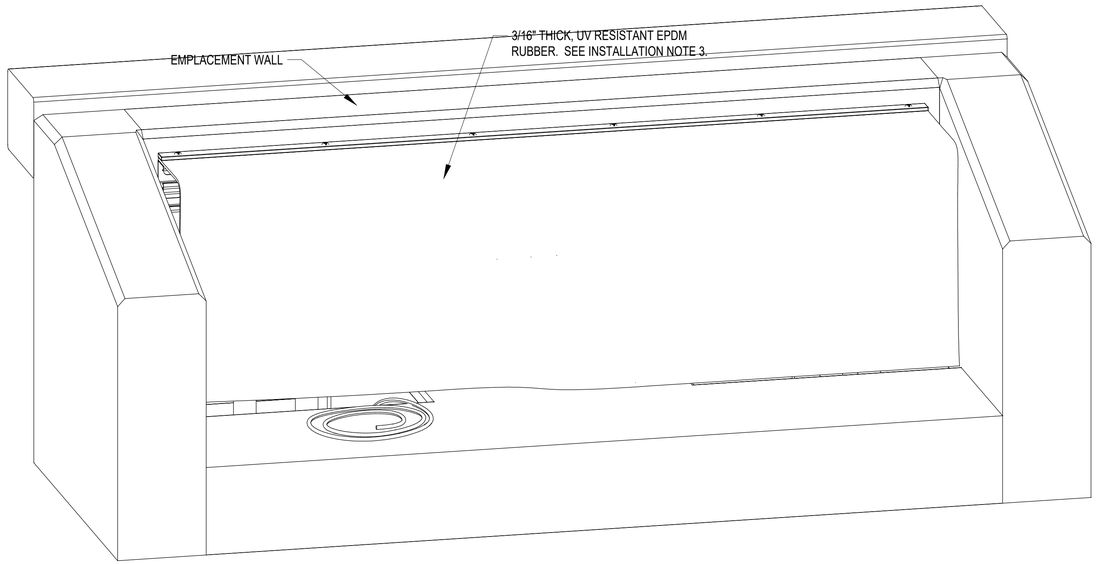
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

EMPLACEMENT DETAILS
STATIONARY INFANTRY TARGET
(SIT)

SHEET ID
ES505

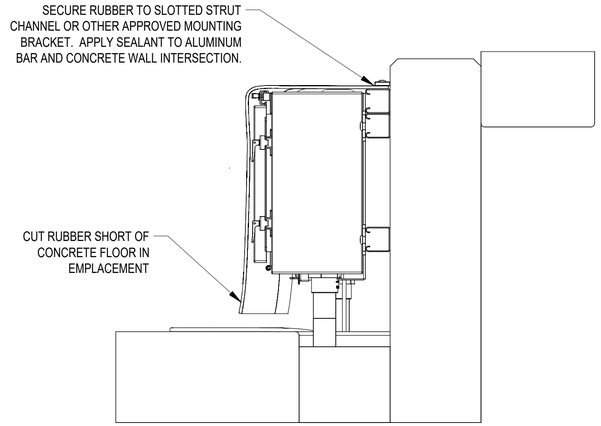
N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES505 SIT EMPL.DWG

READY TO ADVERTISE (RTA)




## SIT EMPLACEMENT WITH RUBBER FLAP

NOT TO SCALE




## RUBBER FLAP SIDE VIEW

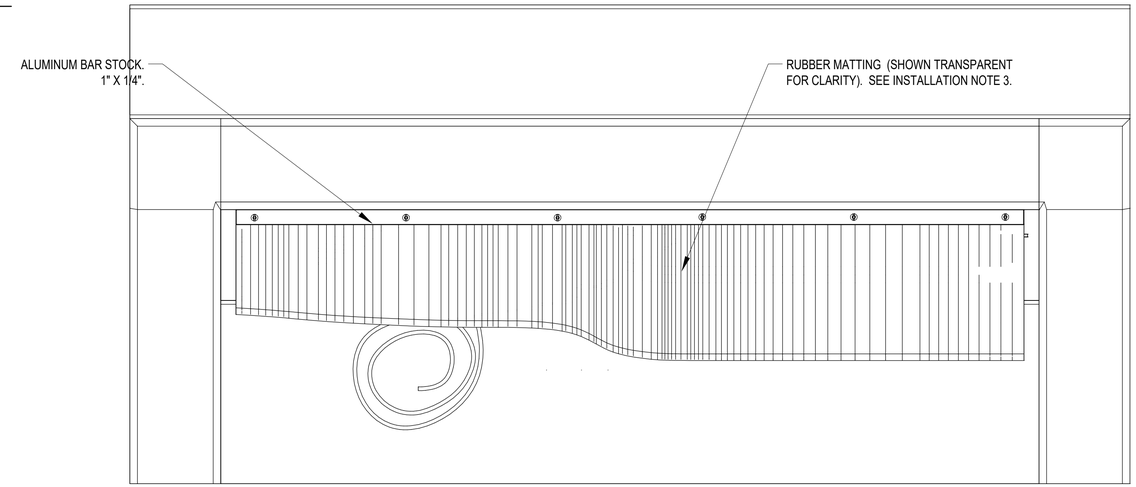
NOT TO SCALE

INSTALLATION NOTES:

1. INSTALL RUBBER MATTING OVER THE ENTIRE EMPLACEMENT TO BLOCK MOISTURE AND DIRECT SUNLIGHT TO ALL COMMUNICATIONS AND ELECTRICAL EQUIPMENT. MOUNT RUBBER MAT TO CONCRETE EMPLACEMENT ABOVE DATA ENCLOSURE WITH ALUMINUM BAR STOCK AND APPROVED CONCRETE FASTENERS. RUBBER MAT SHALL DRAPE OVER DATA ENCLOSURE AND BE CUT TO A HEIGHT JUST ABOVE THE CONCRETE EMPLACEMENT FLOOR. A CONTINUOUS BEAD OF APPROVED SEALANT SHALL BE APPLIED TO ALUMINUM FLASHING (BAR STOCK) AT CONCRETE WALL TO PREVENT WATER SEEPAGE BETWEEN MATTING AND WALL.
2. THE DETAILS PRESENTED ON THIS PLAN ARE REPRESENTATIONAL ONLY. DETAILS DO NOT REFLECT ALL OF THE OUTLETS AND BOXES THAT ARE REQUIRED. EMPLACEMENTS SHALL BE INSTALLED AS PRESENTED ON THE EMPLACEMENT DETAIL PLANS. RUBBER MATS MUST COVER ALL OF THE INSTALLED EQUIPMENT.
3. RUBBER MATTING FLAP SHALL BE PROVIDED FOR ALL TYPES OF TARGET EMPLACEMENTS.

MATERIALS:

1. RUBBER MATTING SHALL BE ONE PIECE, 54" WIDE X 30" HIGH 3/16" THICK, UV RESISTANT EPDM RUBBER. (HTTP://WWW.RUBBERCAL.COM.HTML OR FUNCTIONALLY APPROVED EQUAL).
2. BAR STOCK SHALL BE SOLID ALUMINUM 54" WIDE X 1" HIGH X 1/4" THICK, INSTALLED USING APPROVED CONCRETE FASTENERS.
3. SEALANT SHALL BE A FLEXIBLE BUTYL RUBBER PRODUCT TO PROVIDE A 100% WATERTIGHT SEAL.




## RUBBER FLAP TOP VIEW

NOT TO SCALE

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

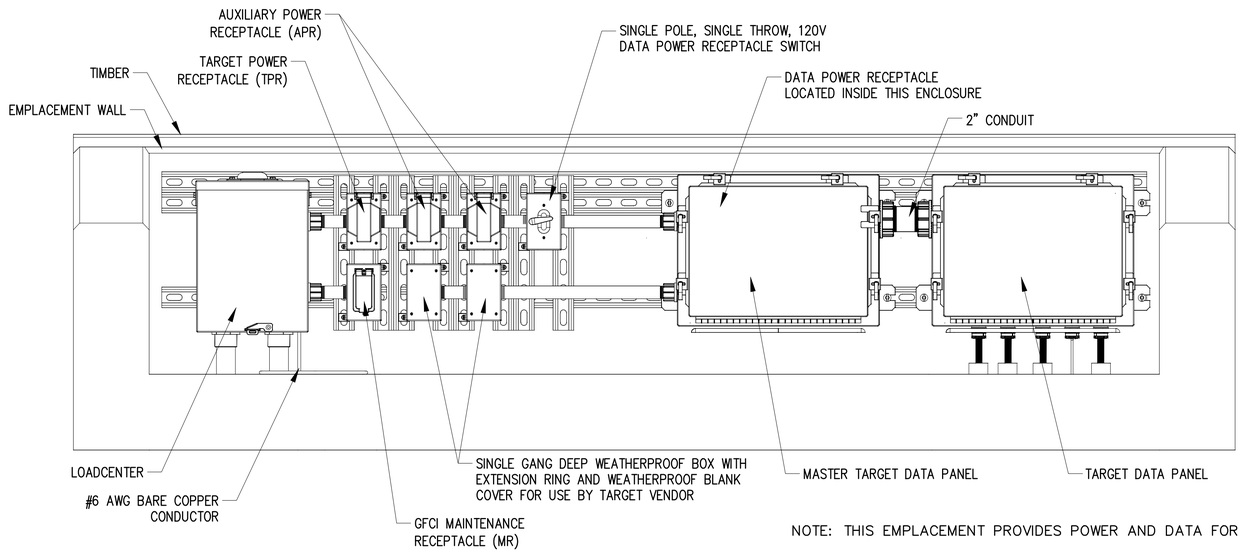
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

EMPLACEMENT DETAILS
STATIONARY INFANTRY TARGET (SIT)
RUBBER FLAP

SHEET ID
ES506

READY TO ADVERTISE (RTA)

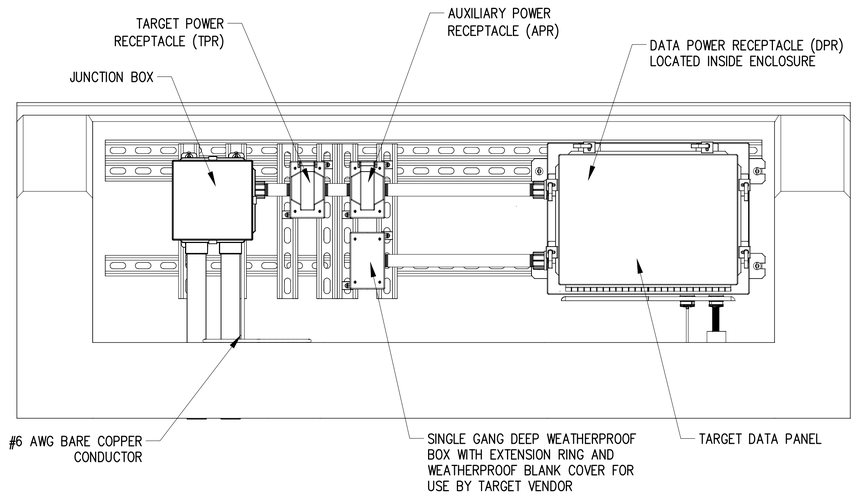
N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES506 SIT FLAP.DWG




NOTE: THIS EMPLACEMENT PROVIDES POWER AND DATA FOR BES

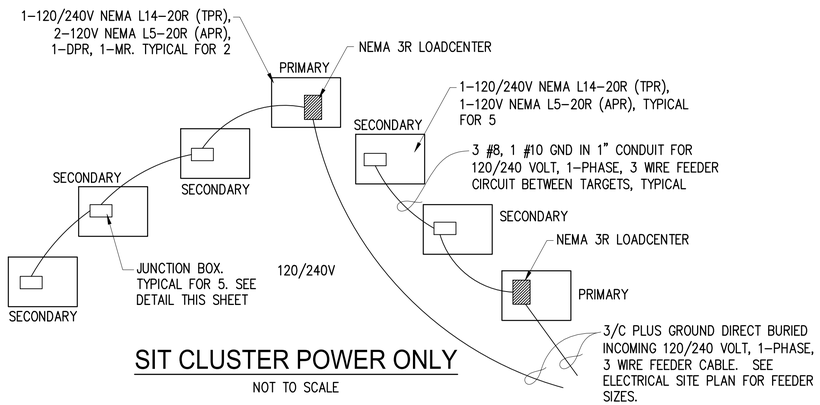
## STATIONARY INFANTRY TARGET CLUSTER PRIMARY TARGET ELEVATION

NOT TO SCALE



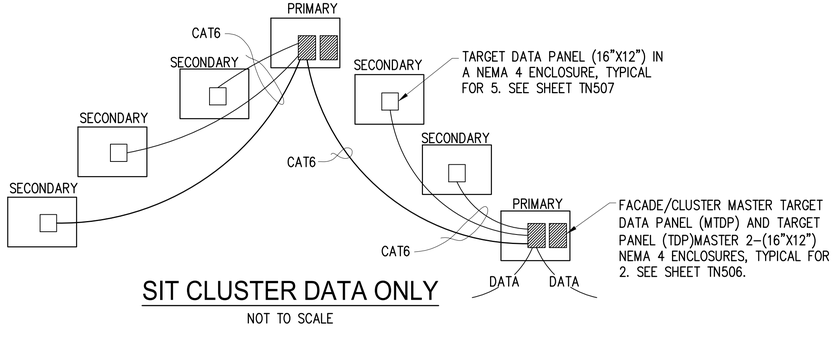

## STATIONARY INFANTRY TARGET CLUSTER SECONDARY TARGET ELEVATION

NOT TO SCALE



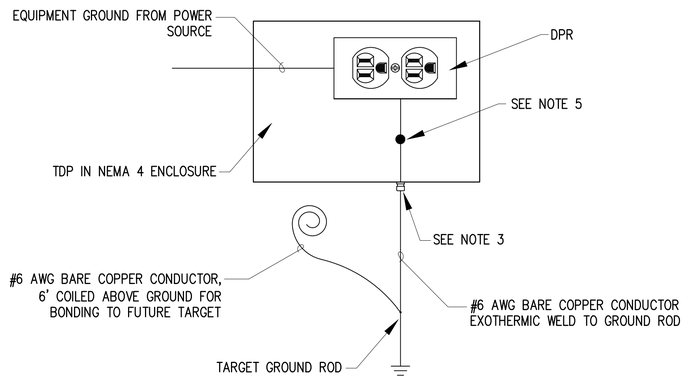

## SIT CLUSTER POWER ONLY

NOT TO SCALE




## SIT CLUSTER DATA ONLY

NOT TO SCALE




## SECONDARY EMPLACEMENT GROUNDING DETAIL

NOT TO SCALE

NOTE

DETAIL APPLICABLE TO SECONDARY EMPLACEMENT ONLY. SEE DETAIL SHEET ES513 FOR GROUNDING DETAIL FOR PRIMARY DETAIL EMPLACEMENT.

NOTES:

1. CABLES/CONDUITS ARE ROUTED FROM SIDE OF BERM TO PREVENT CABLE DAMAGE DURING MAINTENANCE OF BERM.
2. ALL EQUIPMENT SHALL NOT BE MOUNTED HIGHER THAN 2" FROM TOP OF EMPLACEMENT WALL.
3. PROVIDE SEAL FITTINGS AS SHOWN IN DETAIL ON SHEET ES513 FOR ALL NEMA 4, 4X, OR 6P RATED ENCLOSURES.
4. PROVIDE TARGET AND AUXILIARY OUTLETS WITH WET LOCATION COVERS MAKING OUTLETS SUITABLE FOR USE IN WET LOCATIONS. SEE DETAIL ON SHEET ES513 FOR WE LOCATION COVER. STANDARD IN USE COVERS FOR REGULAR DUPLEX OUTLETS WILL NOT CLOSE OVER TARGET PLUG AND CORD.
5. BOND EQUIPMENT GROUND FROM POWER SOURCE TO TARGET DATA PANEL (TDP).
6 SEE SHEET TN506 FOR CLUSTER MTDP DESIGN AND TN507 FOR TDP DESIGN.

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/9/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

| | | |
|---|---|---|
| DESIGNED BY: | S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: | T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: | C. BRWON | CONTRACT NO.: |
| SUBMITTED BY: | | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: | |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
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WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PH 86102
VOLUMES 3 & 4 - DOWNRANGE

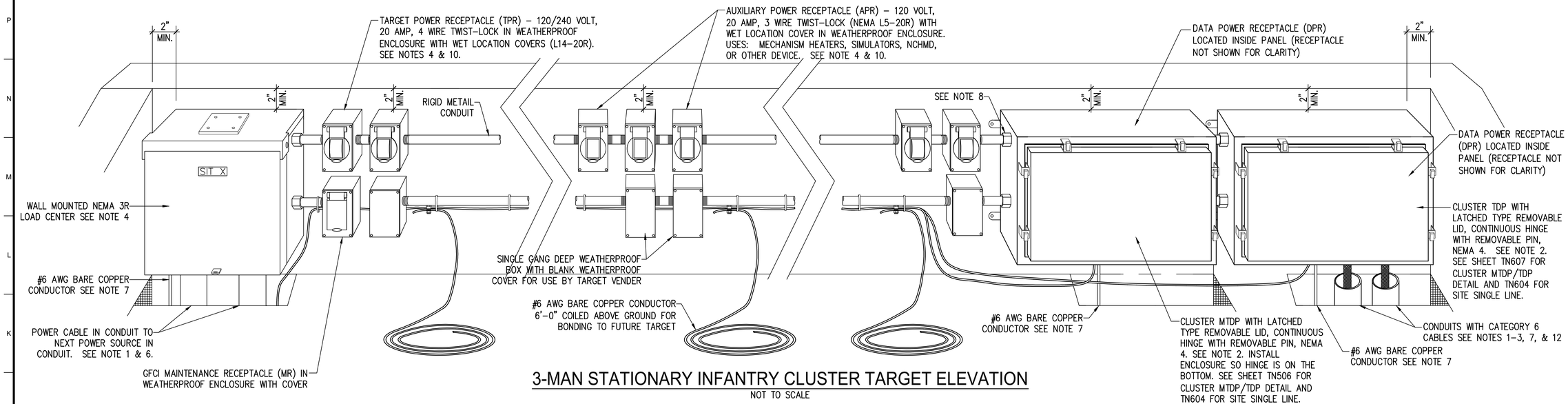
EMPLACEMENT DETAILS
STATIONARY INFANTRY TARGET (SIT) CLUSTERS

SHEET ID

ES507

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES507 SIT CLUSTER.DWG

READY TO ADVERTISE (RTA)




## 3-MAN STATIONARY INFANTRY CLUSTER TARGET ELEVATION

NOT TO SCALE

3-Man Target Cluster Loadcenter

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

SIT TARGET LOADCENTER, 120/240 VOLT AC, 1–PHASE, 3 WIRE, 125 AMP, MAIN LUGS ONLY – SURFACE MOUNTED

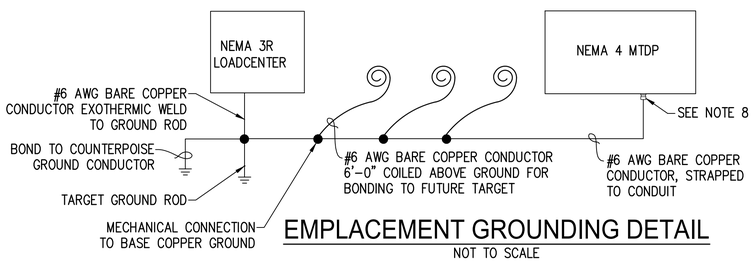
| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURGE ARRESTER [SI] | | 2 | | | 1 | 2 | 1440 | | 2 | 20 | SIT (NEMA L14–20R, NEMA L5–20R) |
| | | | | | 3 | 4 | | 1440 | | | |
| FEED THRU PROVISIONS | | 2 | | | 5 | 6 | 50 | | 1 | 20 | DPR & MR |
| | | | | | 7 | 8 | | | 1 | | SPARE BREAKER |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT – AMPS | 1,490 | 1,440 | = 2,930 VA / 12.21 AMPS |

TOTAL DEMAND VOLT–AMPS = 2,930 VA / 12.21 AMPS

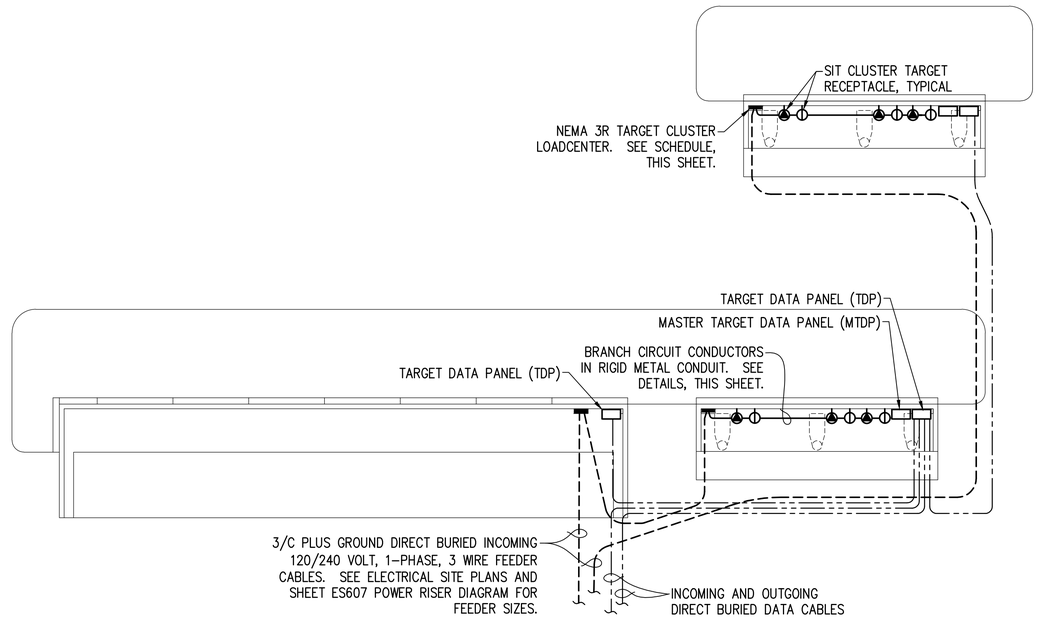
## Notes

1. CONDUIT TO EXTEND 5 FEET BEYOND EMPLACEMENT.
2. CABLES/CONDUITS ARE ROUTED FROM SIDE OF BERM TO PREVENT CABLE DAMAGE DAMAGE DURING MAINTENANCE OF BERM.
3. ROUTE UNDER SLAB POWER AND DATA INSTALLED IN SAME TRENCH.
4. ALL EQUIPMENT SHALL NOT BE MOUNTED HIGHER THAN 2" FROM TOP OF EMPLACEMENT WALL.
5. WIRE THE DTR AHEAD OF THE GFCI MAINTENANCE RECEPTACLE TO AVOID NUISANCE TRIPPING.
6. PERMANENTLY LABEL THE EMPLACEMENT ACCORDING TO THE CIVIL AND ELECTRICAL DESIGNATIONS.
7. PROVIDE SEAL FITTINGS AS SHOWN IN CABLE SEAL FITTING DETAIL ON ALL CABLE ENTRANCES INTO NEMA 4, 4X, OR 6P RATED ENCLOSURES.
8. INSTALL MYERS TYPE HUBS ON ALL CONDUIT PENETRATIONS TO SIDE OF ENCLOSURE.
9. ALL DIMENSIONS SHOWN IN INCHES UNLESS OTHERWISE NOTED.
10. PROVIDE TARGET AND AUXILIARY OUTLETS WITH NEMA 3R WET LOCATION COVERS MAKING OUTLETS SUITABLE FOR USE IN WET LOCATIONS.
11. DEVIATIONS TO THE EQUIPMENT SIZES, NUMBERS, RECEPTACLE COVERS, OR CABLE ENTRY METHODS INTO ENCLOSURES WILL REQUIRE RANGE TRAINING AND LAND PROGRAM HUNTSVILLE CENTER MANDATORY CENTER OF EXPERTISE APPROVAL
12. CONDUIT STUBBED UP AS CLOSE TO CABLE SEAL FITTINGS AS POSSIBLE.




## EMPLACEMENT GROUNDING DETAIL

NOT TO SCALE




## STATIONARY AND MOVING INFANTRY TARGET CLUSTER
## 6-MAN LINEAR SIT & 40m MIT

SCALE: 1/8" = 1'–0"

Graphic Scales

8ft 4 0 8 16ft

SCALE: 1/8" = 1'–0"

SAMUEL LEE GUILEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

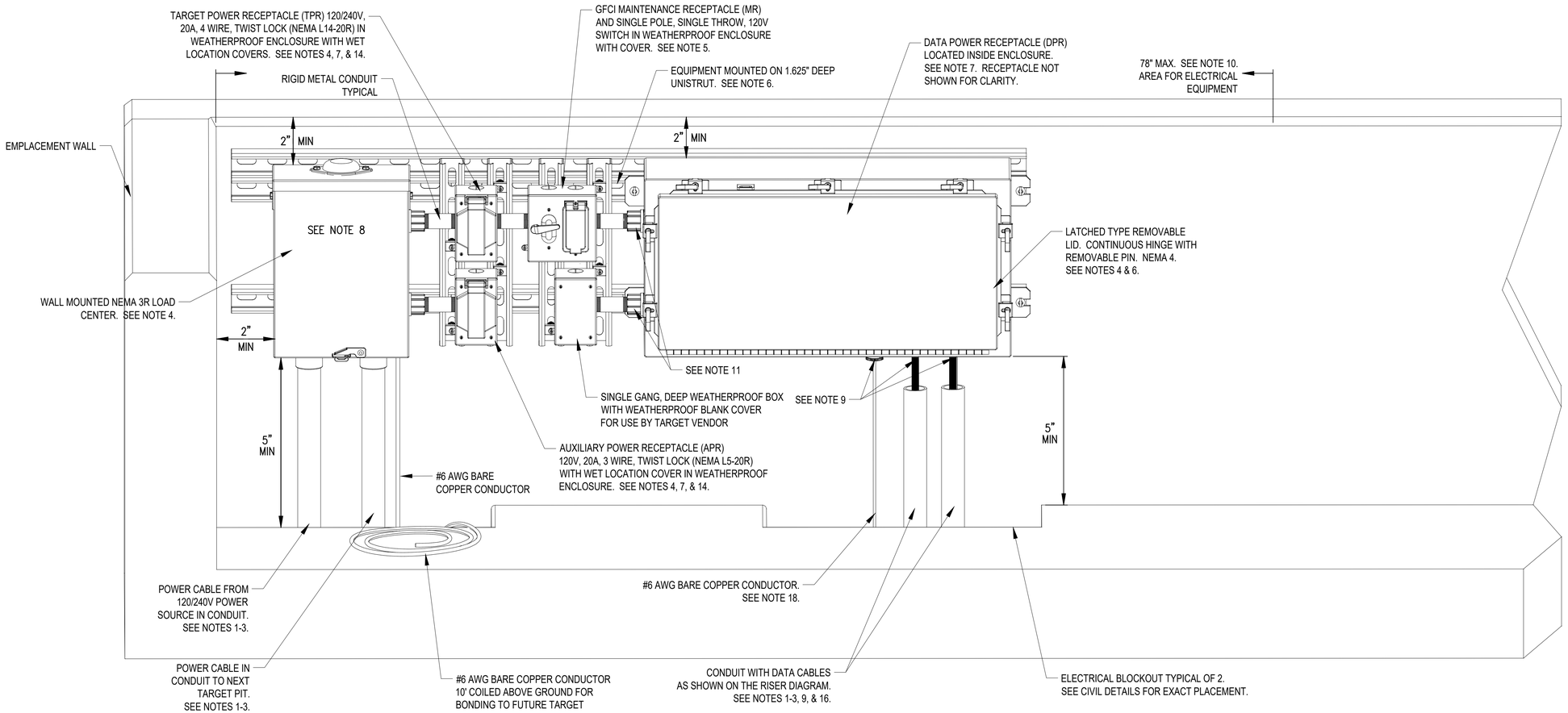
EMPLACEMENT DETAILS
STATIONARY INFANTRY TARGET (SIT)
3-MAN SIT PLAN AND CLUSTER

SHEET ID

ES508

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EESS08 SIT 3-MAN CLUSTER.DWG

READY TO ADVERTISE (RTA)




# ELEVATION
# MOVING INFANTRY TARGET

NOT TO SCALE

PANELBOARD: MIT LOCATION: XXXXXXX MOUNTED: SURFACE FEED: BOTTOM

125 MAIN MAIN LUGS OR FEED THRU LUGS ASYM A.I.C MIN.: XXXXX

VOLTAGE: 240/120 PHASE: 1 WIRE: 3 RATING: NEMA 3R

| | | | | VA/PHASE | | | | VA/PHASE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOAD SERVED | NO. POLES | TRIP AMPS | WIRE SIZE | A | B | CKT NO. | CKT NO. | A | B | WIRE SIZE | TRIP AMPS | NO. POLES | LOAD SERVED |
| SURGE ARRESTOR | 2 | – | – | – | | 1 | 2 | 1000 | | 12 | 20 | 2 | MIT (NEMA L14-20R, 1-NEMA L5-20R) |
| | | | | | – | | | | 1000 | | | | |
| FEED THRU PROVISIONS | 2 | – | – | – | | 5 | 6 | 50 | | 12 | 20 | 1 | TDP AND MR |
| | | | | | – | | 8 | | – | – | 20 | 1 | SPARE |
| SPARE | 1 | 20 | – | | | 9 | 10 | | | | | | SPACE |
| SPACE | | | | | | 11 | 12 | | | | | | SPACE |
| | | | | 0 | 0 | | | 1050 | 1000 | | | | |

TOTAL VA PHASE A: 1050
TOTAL VA PHASE B: 1000

TOTAL CONNECTED WATTAGE: 2,050
DEMAND WATTAGE: 2,000
TOTAL DEMAND AMPS: 8

SUPPLIED FROM: TRSF-XX

NOTES:

1. CONDUIT TO EXTEND 5 FEET BEYOND EMPLACEMENT.
2. CABLES/CONDUITS ARE ROUTED FROM SIDE OF BERM TO PREVENT CABLE DAMAGE DURING MAINTENANCE OF BERM.
3. ROUTE UNDER SLAB. POWER AND DATA INSTALLED IN SAME TRENCH.
4. EQUIPMENT SHALL NOT BE MOUNTED HIGHER THAN 2" FROM TOP OF EMPLACEMENT WALL.
5. POWER TO DATA PANEL RECEPTACLE IN MTDP SHALL BE ROUTED THROUGH SINGLE POLE SINGLE THROW SWITCH.
6. ALL EQUIPMENT SHALL BE MOUNTED ON 1.625" DEEP UNISTRUT. NO EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED DIRECTLY TO CONCRETE WALL.
7. TPR, APR AND DPR SHALL NOT BE GFCI PROTECTED.
8. PERMANENTLY LABEL THE EMPLACEMENT ACCORDING TO THE CIVIL AND ELECTRICAL DESIGNATIONS.
9. PROVIDE SEAL FITTINGS AS SHOWN IN CABLE SEAL FITTING DETAIL FOR ALL CABLE ENTRANCES INTO NEMA 4, 4X, OR 6P RATED ENCLOSURES.
10. INSTALL POWER AND DATA ON THE FIRST 78" OF THE FRONT WALL CLOSEST TO THE DIRECTION OF FIRE.
11. INSTALL MYERS TYPE HUBS ON ALL CONDUIT PENETRATIONS INTO THE SIDE OF THE DATA ENCLOSURE.
12. ALL DIMENSIONS SHOWN IN INCHES UNLESS OTHERWISE NOTED.
13. IF TARGET IS BATTERY OPERATED WITH NO AC POWER PROVIDED, THE TARGET GROUND ROD SHALL BE INSTALLED WITH A 6' COILED #6 AWG BARE COPPER GROUND CABLE FOR FUTURE BONDING TO THE TARGET MECHANISM.
14. PROVIDE TARGET AND AUXILIARY OUTLETS WITH NEMA 3R WET LOCATION COVERS MAKING OUTLETS SUITABLE FOR USE IN WET LOCATIONS. SEE DETAIL SHEET ES513 FOR WET LOCATION COVER. IN USE COVERS WITH COVERS INTENDED TO CLOSE OVER THE INSERTED CORD ARE NOT ACCEPTABLE AS THESE COVERS WILL NOT CLOSE OVER THE TARGET POWER OR AUXILIARY CORDS.
15. DEVIATIONS TO THE EQUIPMENT SIZES, EQUIPMENT NUMBERS, RECEPTACLE COVERS, OR CABLE ENTRY METHODS INTO ENCLOSURES WILL REQUIRE RANGE TRAINING LAND PROGRAM, HUNTSVILLE CENTER MANDATORY CENTER OF EXPERTISE APPROVAL.
16. STUB UP CONDUIT AS CLOSE AS PRACTICAL TO CABLE FITTING.
17. SEE SHEET TN507 FOR ADDITIONAL INFORMATION ON TARGET DATA PANELS. SEE SHEET TN505 FOR ADDITIONAL INFORMATION ON MASTER TARGET DATA PANELS.
18. PROVIDE GROUNDING IN ACCORDANCE WITH EMPLACEMENT GROUNDING DETAIL ON SHEET ES513.

SAMUEL LEE GUILEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/2023

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
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CATEGORY CODE: 173-65-01
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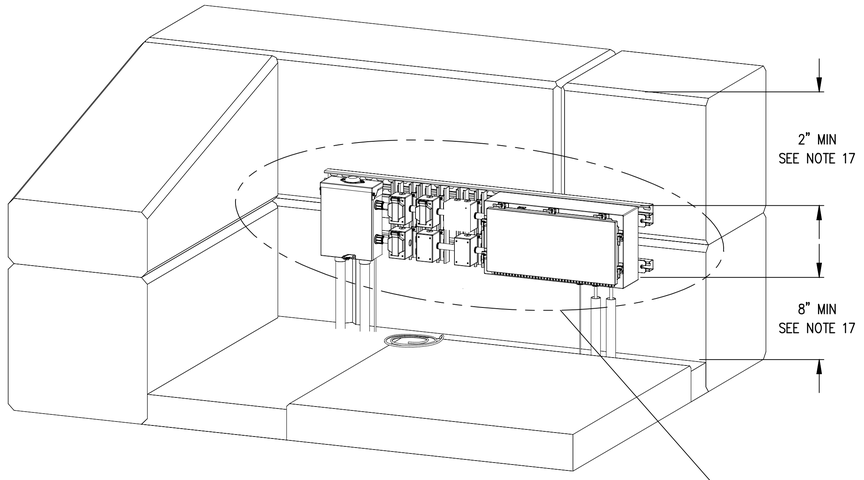
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

EMPLACEMENT DETAILS
MOVING INFANTRY TARGET (MIT)

SHEET ID
ES509

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES509 MIT EMPL.DWG

READY TO ADVERTISE (RTA)




## PARTIAL SAT TARGET ELEVATION

NOT TO SCALE

PANEL BOARD: **SAT** LOCATION: **XXXXXXX** MOUNTED: **SURFACE** FEED: **BOTTOM**

**XXXX** MAIN MAIN LUGS ONLY ASYM A.I.C MIN.: **XXXXX**

VOLTAGE: **240/120** PHASE: **1** WIRE: **3** RATING: **NEMA 3R**

| | | | | VA/ PHASE | | | | VA/ PHASE | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOAD SERVED | NO. POLES | TRIP AMPS | WIRE SIZE | A | B | CKT NO. | CKT NO. | A | B | WIRE SIZE | TRIP AMPS | NO. POLES | LOAD SERVED |
| SURGE ARRESTOR | 2 | ---- | --- | --- | | 1 | 2 | 1400 | | 12 | 20 | 2 | SAT (NEMA L14-20R, 2-NEMA L5-20R) |
| | | | | | --- | | | | 1400 | | | | |
| SPARE | 1 | 20 | --- | --- | | 5 | 6 | 50 | | 12 | 20 | 1 | TDP AND MR |
| SPACE | | | | | | 7 | 8 | | --- | --- | 20 | 1 | SPARE |
| SPACE | | | | | | 9 | 10 | | | | | 1 | SPACE |
| SPACE | | | | | | 11 | 12 | | | | | 1 | SPACE |
| | | | | 0 | 0 | | | 1450 | 1400 | | | | |

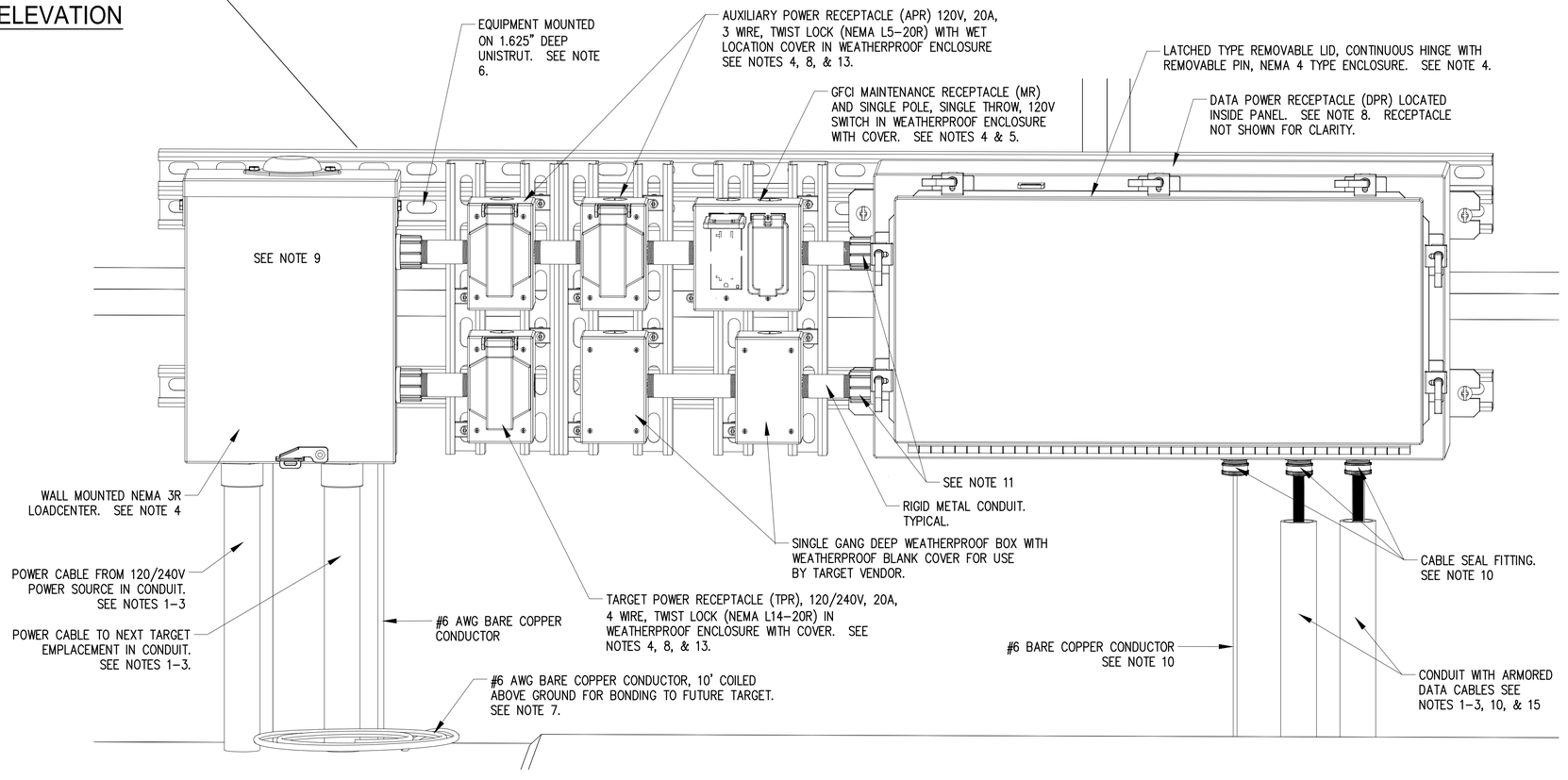
TOTAL VA PHASE A: **1450**
TOTAL VA PHASE B: **1400**

TOTAL CONNECTED WATTAGE: **2,850**
DEMAND WATTAGE: **2,800**
TOTAL DEMAND AMPS: **12**

SUPPLIED FROM: **TRSF-XX**

NOTES:

1. CONDUIT TO EXTEND 5 FEET BEYOND EMPLACEMENT.
2. CABLES/CONDUITS ARE ROUTED FROM SIDE OF BERM TO PREVENT CABLE DAMAGE DURING MAINTENANCE OF BERM.
3. ROUTE UNDER SLAB. POWER AND DATA INSTALLED IN SAME TRENCH.
4. EQUIPMENT SHALL NOT BE MOUNTED HIGHER THAN 2" FROM TOP OF EMPLACEMENT WALL.
5. POWER TO DATA PANEL RECEPTACLE IN MTDP SHALL BE ROUTED THROUGH SINGLE POLE, SINGLE THROW SWITCH.
6. ALL EQUIPMENT SHALL BE MOUNTED ON 1.625" DEEP UNISTRUT. NO EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED DIRECTLY TO CONCRETE WALL.
7. FOR FLANK TYPE SAT TARGET INCREASE THE LENGTH OF GROUND CABLE TO 18 FT.
8. TPR, APR AND DPR SHALL NOT BE GFCI PROTECTED.
9. PERMANENTLY LABEL THE EMPLACEMENT ACCORDING TO THE CIVIL AND ELECTRICAL DESIGNATIONS.
10. PROVIDE SEAL FITTINGS AS SHOWN IN DETAIL ON SHEET ES509 FOR ALL CABLE PENETRATIONS TO NEMA 4, 4X, OR 6P RATED ENCLOSURES.
11. INSTALL MYERS TYPE HUBS ON ALL CONDUIT PENETRATIONS TO SIDE OF ENCLOSURE.
12. ALL DIMENSIONS SHOWN IN INCHES UNLESS OTHERWISE NOTED.
13. PROVIDE TARGET AND AUXILIARY OUTLETS WITH NEMA 3R WET LOCATION COVERS MAKING OUTLETS SUITABLE FOR USE IN WET LOCATIONS. SEE DETAIL SHEET ES513 FOR WET LOCATION COVER. IN USE COVERS WITH COVERS INTENDED TO CLOSE OVER THE INSERTED CORD ARE NOT ACCEPTABLE AS THESE COVERS WILL NOT CLOSE OVER THE TARGET POWER OR AUXILIARY CORDS.
14. DEVIATIONS TO THE EQUIPMENT SIZES, EQUIPMENT NUMBERS, RECEPTACLE COVERS, OR CABLE ENTRY METHODS INTO ENCLOSURES WILL REQUIRE RANGE TRAINING AND LAND PROGRAM HUNTSVILLE CENTER MANDATORY CENTER OF EXPERTISE APPROVAL.
15. CONDUIT STUBBED UP AS CLOSE TO CABLE SEAL FITTING AS POSSIBLE.
16. SEE SHEET TN507 FOR ADDITIONAL INFORMATION ON TARGET DATA PANELS. SEE SHEET TN505 FOR ADDITIONAL INFORMATION ON MASTER TARGET DATA PANELS.
17. PREFERRED MOUNTING HEIGHT IS AT THE MINIMUM MOUNTING HEIGHT SHOWN FOR EQUIPMENT INSTALLED ABOVE FINISHED GRADE IN THE TARGET ELEVATION.




## SAT TARGET ENLARGED ELECTRICAL EQUIPMENT ELEVATION

NOT TO SCALE

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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DRAWN BY: T. BOLTON
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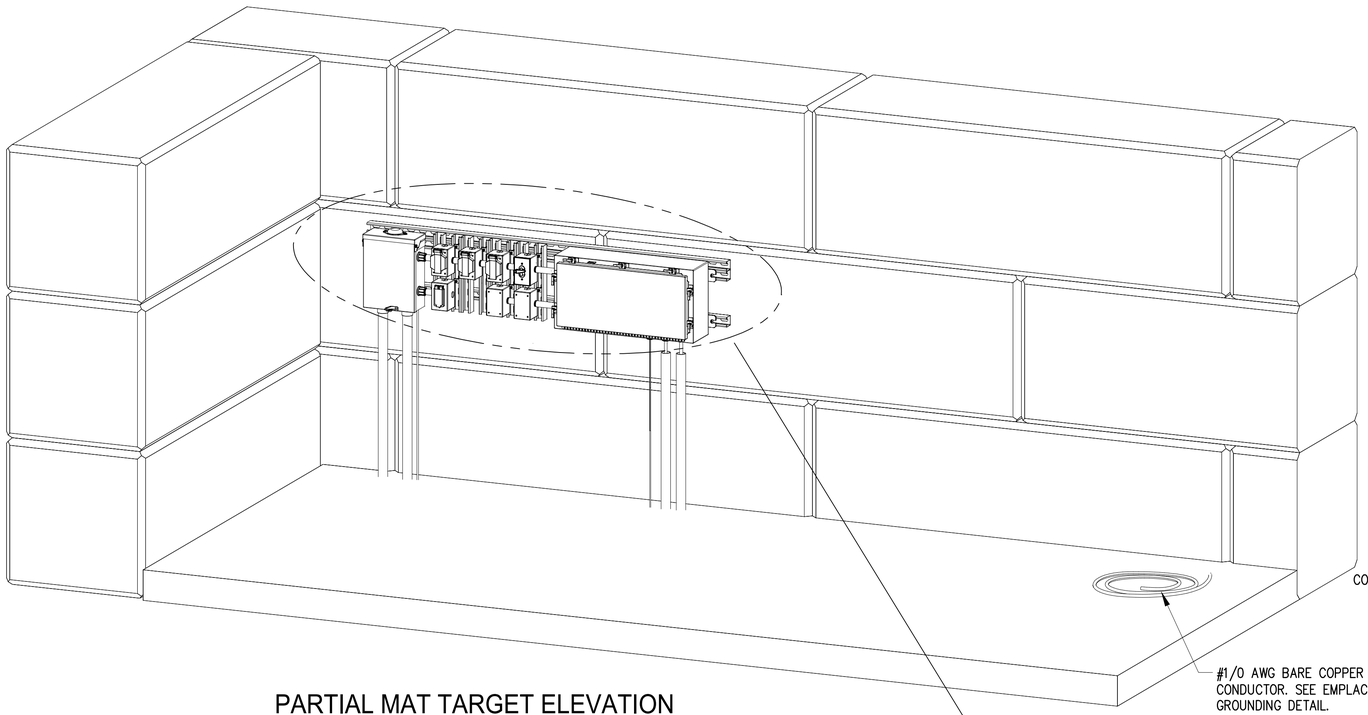
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

EMPLACEMENT DETAILS
STATIONARY ARMOR TARGET (SAT)

SHEET ID
ES510

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES510 SAT EMPL.DWG



#1/0 AWG BARE COPPER CONDUCTOR. SEE EMPLACEMENT GROUNDING DETAIL.

## PARTIAL MAT TARGET ELEVATION

NOT TO SCALE

PANEL BOARD: **MAT** LOCATION: **XXXXXXX** MOUNTED: **SURFACE** FEED: **BOTTOM**

**XXXX** MAIN MAIN LUGS ONLY ASYM A.I.C MIN.: **XXXXX**

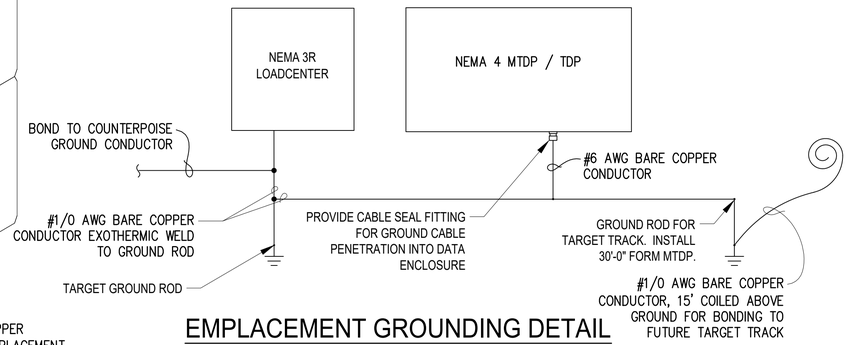
VOLTAGE: **240/120** PHASE: **1** WIRE: **3** RATING: **NEMA 3R**

| LOAD SERVED | NO. POLES | TRIP AMPS | WIRE SIZE | VA/ PHASE A | VA/ PHASE B | CKT NO. | CKT NO. | VA/ PHASE A | VA/ PHASE B | WIRE SIZE | TRIP AMPS | NO. POLES | LOAD SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SURGE ARRESTOR | 2 | ---- | --- | --- | | 1 | 2 | 1900 | | 12 | 20 | 2 | MAT (NEMA L14-20R, 2-NEMA L5-20R) |
| | | | | | --- | | | | 1900 | | | | |
| SPARE | 1 | 20 | --- | --- | | 5 | 6 | 50 | | 12 | 20 | 1 | TDP AND MR |
| SPACE | | | | | | 7 | 8 | | --- | --- | 20 | 1 | SPARE |
| SPACE | | | | | | 9 | 10 | | | | | 1 | SPACE |
| SPACE | | | | | | 11 | 12 | | | | | 1 | SPACE |
| | | | | 0 | 0 | | | 1950 | 1900 | | | | |

TOTAL VA PHASE A: **1950**
TOTAL VA PHASE B: **1900**

TOTAL CONNECTED WATTAGE: **3,850**
DEMAND WATTAGE: **3,800**
TOTAL DEMAND AMPS: **16**

SUPPLIED FROM: **TRSF-XX**

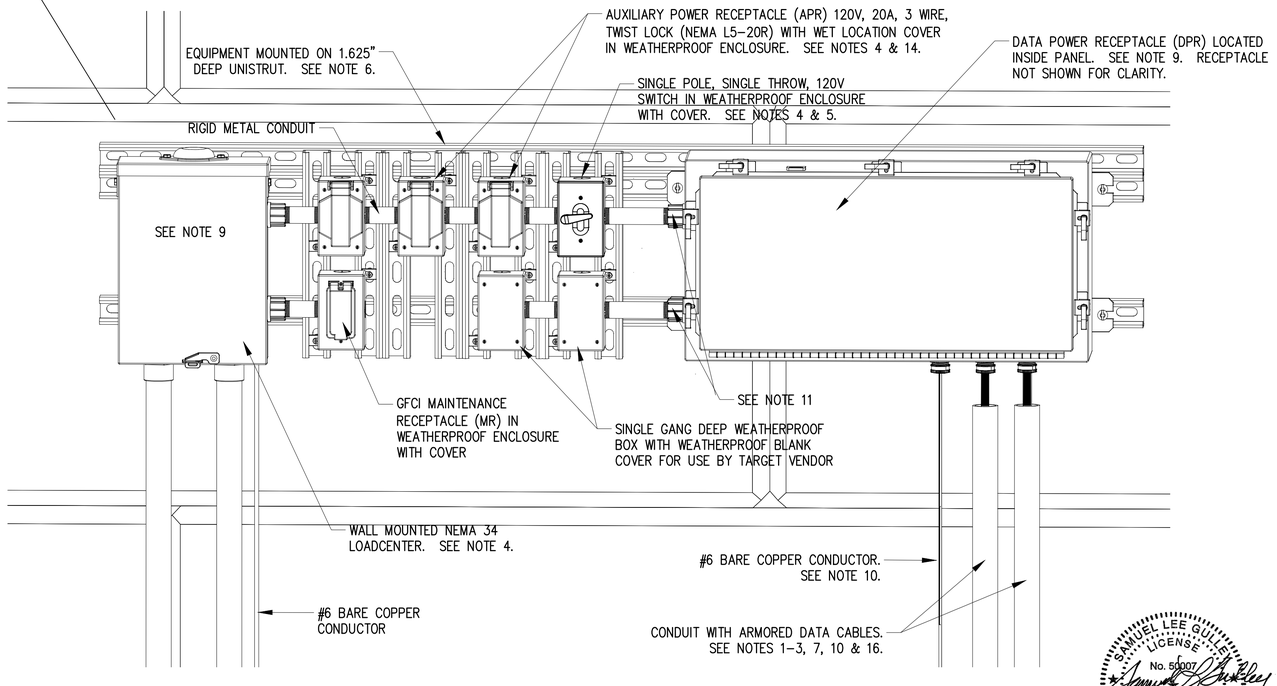



## EMPLACEMENT GROUNDING DETAIL

NOT TO SCALE

NOTES:

1. CONDUIT TO EXTEND 5 FEET BEYOND EMPLACEMENT.
2. CABLES/CONDUITS ARE ROUTED FROM SIDE OF BERM TO PREVENT CABLE DAMAGE DURING MAINTENANCE OF BERM.
3. ROUTE UNDER SLAB. POWER AND DATA INSTALLED IN SAME TRENCH.
4. EQUIPMENT SHALL NOT BE MOUNTED HIGHER THAN 2" FROM TOP OF EMPLACEMENT WALL.
5. POWER TO DATA PANEL RECEPTACLE IN MTDP SHALL BE ROUTED THROUGH SINGLE POLE, SINGLE THROW SWITCH.
6. ALL EQUIPMENT SHALL BE MOUNTED ON 1.625" DEEP UNISTRUT. NO EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED DIRECTLY TO THE CONCRETE WALL.
7. THE ENDS OF THE CAT6 CABLES SHALL BE TERMINATED WITH A DATA SURGE PROTECTOR.
8. TPR, APR AND DPR SHALL NOT BE GFCI PROTECTED.
9. PERMANENTLY LABEL THE EMPLACEMENT ACCORDING TO THE CIVIL AND ELECTRICAL DESIGNATIONS.
10. PROVIDE SEAL FITTINGS AS SHOWN IN DETAIL ON SHEET ES513 FOR ALL CABLE PENETRATIONS TO NEMA 4, 4X, OR 6P RATED ENCLOSURES.
11. INSTALL MYERS TYPE HUBS ON ALL CONDUIT PENETRATIONS TO SIDE OF ENCLOSURE.
12. ALL DIMENSIONS SHOWN IN INCHES UNLESS OTHERWISE NOTED.
13. IF TARGET IS BATTERY OPERATED WITH NO AC POWER PROVIDED, THE TARGET GROUND ROD SHALL BE INSTALLED WITH A 15' COILED #1/0 AWG BARE COPPER GROUND CABLE FOR FUTURE BONDING TO THE TARGET MECHANISM.
14. PROVIDE TARGET AND AUXILIARY OUTLETS WITH NEMA 3R WET LOCATION COVERS MAKING OUTLETS SUITABLE FOR USE IN WET LOCATIONS. SEE DETAIL SHEET ES513 FOR WET LOCATION COVER. IN USE COVERS WITH COVERS INTENDED TO CLOSE OVER THE INSERTED CORD ARE NOT ACCEPTABLE AS THESE COVERS WILL NOT CLOSE OVER THE TARGET POWER OR AUXILIARY CORDS.
15. DEVIATIONS TO THE EQUIPMENT SIZES, EQUIPMENT NUMBERS, RECEPTACLE COVERS, OR CABLE ENTRY METHODS INTO ENCLOSURES WILL REQUIRE RANGE TRAINING AND LAND PROGRAM HUNTSVILLE CENTER MANDATORY CENTER OF EXPERTISE APPROVAL.
16. CONDUIT STUBBED UP AS CLOSE TO CABLE SEAL FITTING AS POSSIBLE.
17. EQUIPMENT IS SHOWN AT THE PREFERRED MOUNTING HEIGHT. UNDER NO CIRCUMSTANCE SHOULD ANY EQUIPMENT BE INSTALLED SUCH THAT THE TOP OF THE EQUIPMENT IS LESS THAN 2" FROM THE TOP OF THE EMPLACEMENT WALL.
18. SEE SHEET TN507 FOR ADDITIONAL INFORMATION ON TARGET DATA PANELS. SEE SHEET TN505 FOR ADDITIONAL INFORMATION ON MASTER TARGET DATA PANELS.
19. LENGTH OF 157" IS FOR MAT WITH STANDARD EQUIPMENT SHOWN. INCREASE LENGTH TO 236" WHEN SECTIONALIZING ENCLOSURE IS REQUIRED IN DESIGN. COORDINATE WITH CIVIL DESIGN.




## MAT TARGET ENLARGED ELECTRICAL EQUIPMENT ELEVATION

NOT TO SCALE

SAMUEL LEE GULLEY LICENSE No. 50007 6/16/23 STATE OF FLORIDA PROFESSIONAL ENGINEER

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: D FILE NAME: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PH 99102
VOLUMES 3 & 4 - DOWNRANGE

EMPLACEMENT DETAILS
MOVING ARMOR TARGET (MAT)

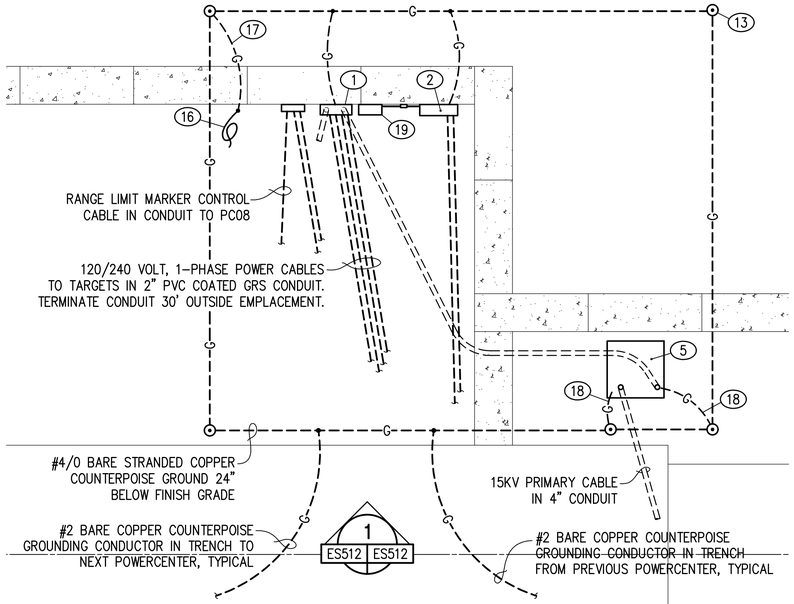
SHEET ID
ES511

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2\ES511 MAT EMPL.DWG

## MAT Emplacement Key Notes

1. 120/240 VOLT, 1–PHASE, 3 WIRE PANELBOARD WITH A NEMA 3R ENCLOSURE (MINIMUM 20" WIDE).
2. MASTER TARGET DATA PANEL (MTDP) OR TDP IN NEMA 4 ENCLOSURE. SEE DETAILS, SHEETS TN505 AND TN507.
3. WEATHERPROOF ENCLOSURE AND WET LOCATION COVER WITH 125/250 VOLT, 3 POLE, 4 WIRE GROUNDING TYPE TWIST–LOCK (NEMA L14–20R) TARGET POWER RECEPTACLE. SEE DETAILS, SHEET ES513.
4. NOT USED
5. LOW PROFILE PAD MOUNTED TRANSFORMER AND CONCRETE PAD – 7200 – 240/120 VOLT, 1–PHASE, 3 WIRE PROVIDED BY SANDHILLS UTILITY SERVICES. SEE POWER DISTRIBUTION SINGLE LINE DIAGRAM, SHEET ES606.
6. DATA POWER RECEPTACLE (DPR) LOCATED INSIDE PANEL – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TYPE DUPLEX
7. GFCI MAINTENANCE RECEPTACLE (MR) IN WEATHERPROOF ENCLOSURE WITH COVER.
8. POWER CABLES IN 2" PVC COATED GALVANIZED RIGID STEEL CONDUIT FROM 120/240 VOLT POWER PANEL TO OTHER TARGET EMPLACEMENTS.
9. MAIN SECONDARY SERVICE FEEDER FROM PAD MOUNTED TRANSFORMER. SEE POWER DISTRIBUTION SINGLE LINE DIAGRAM, SHEET ES606.
10. #6 BARE COPPER IN 1" CONDUIT. BOND TO GROUND BAR OF MTDP OR TDP. EXOTHERMIC WELD TO THE COUNTERPOISE GROUND.
11. RANGE LIMIT MARKER JUNCTION BOX AT M–01/PC06 ONLY. SEE CONTROL DIAGRAM, SHEET ES518.
12. ARMORED DATA CABLES AS REQUIRED IN 1–1/2" PVC COATED GALVANIZED RIGID STEEL CONDUIT STUB OUT 10'–0" BEYOND EDGE OF EMPLACEMENT BERM OR GRAVEL.
13. 3/4" DIA x 10'–0" COPPERCLAD STEEL GROUND ROD. EXOTHERMIC WELD ROD TO COUNTERPOISE MINIMUM 24" BELOW FINISH GRADE, TYPICAL. INSTALL BEYOND TARGET BERM.
14. WEATHERPROOF ENCLOSURE AND WET LOCATION COVER WITH 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TWIST–LOCK (NEMA L5–20R) AUXILIARY POWER RECEPTACLE
15. SERVICE GROUND CONDUCTOR 1 #6 IN 3/4" CONDUIT (MINIMUM) TO COUNTERPOISE
16. #1/0 AWG BARE COPPER CONDUCTOR – 15'–0" COILED FOR GROUNDING TO TARGET
17. CONNECT #1/0 AWG BARE COPPER CONDUCTOR IN 3/4" PVC COATED GALVANIZED RIGID STEEL CONDUIT TO COUNTERPOISE GROUND ROD. COORDINATE LOCATION WITH TARGET INSTALLER.
18. #1/0 AWG BARE COPPER CONDUCTOR FROM TRANSFORMER TO COUNTERPOISE
19. TARGET LOADCENTER PANEL
20. SURGE PROTECTIVE DEVICE IN NEMA 4 ENCLOSURE. CONNECT TO PANELBOARD WITH 4 #10 IN 3/4" SHORT NIPPLE CONDUIT.
21. RANGE LIMIT MARKER CONTROL CABLE IN 1–1/4" PVC COATED GALVANIZED RIGID STEEL CONDUIT TO 10'–0" BEYOND EDGE OF EMPLACEMENT BERM OR GRAVEL.
22. SINGLE POLE, SINGLE THROW 120 VOLT SWITCH IN WEATHERPROOF ENCLOSURE WITH COVER.
23. 6"x6"x36" LONG NEMA 3R WIREWAY WITH GASKETED SCREW COVER
24. PROVIDE TWO (2) 3–1/2" GALVANIZED RIGID STEEL CONDUIT NIPPLE
25. EIGHT (8) BRANCH CIRCUIT POWER CABLES TO TARGETS IN 2" GALVANIZED RIGID STEEL CONDUITS
26. RANGE LIMIT MARKER CONTROLLER
27. POWER CABLE TO RANGE LIMIT MARKER IN 1–1/2" PVC COATED GALVANIZED RIGID STEEL CONDUIT STUBBED OUT MINIMUM 10'–0" BEYOND EDGE OF BERM OR GRAVEL
28. BRANCH CIRCUIT CONDUIT AND CONDUCTORS FROM POWER PANEL FOR 120 VOLT, 1–PHASE SERVICE TO LIMIT MARKER




## TYPICAL MOVING ARMOR TARGET EMPLACEMENT PLAN

SCALE: 1/4" = 1'–0"

NOTES

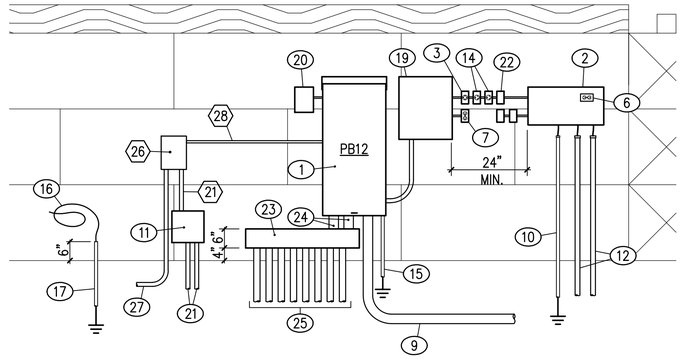
DO NOT RUN CONDUITS IN COMPACTED FILL FOR BERM. ALL CONDUITS SHALL ENTER THE EMPLACEMENT FROM THE REAR OR SIDES ONLY.

GROUND RESISTANCE OF THE TARGET EMPLACEMENT GROUNDING SYSTEM SHALL BE 25 ohms OR LESS.

SEAL OPENINGS IN CONDUITS AROUND CABLES WHERE DIRECT BURIED CABLES ENTER STUBBED OUT CONDUITS.

PROVIDE WATERTIGHT FITTINGS FOR ALL CONDUIT AND CABLE ENTRIES.

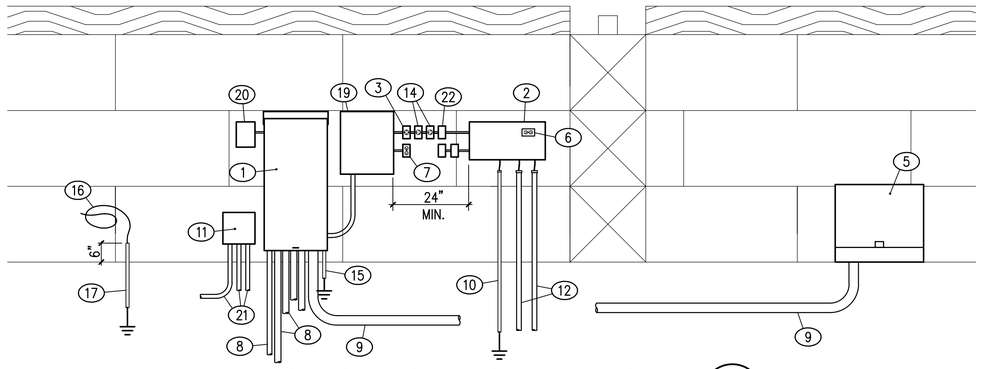
DO NOT INSTALL COUNTERPOISE SYSTEM UNDER TARGET BERM.




## MOVING ARMOR TARGET ELEVATION

SCALE: 1/2" = 1'–0"

**PC-12 (M-03)**



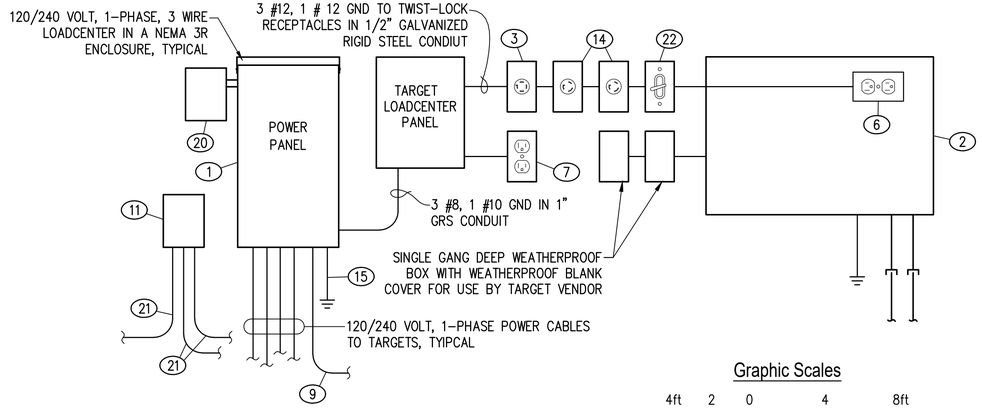

## MOVING ARMOR TARGET ELEVATION

SCALE: 1/2" = 1'–0"

1 ES512 ES512

NOTE

ALL EXPOSED CONDUITS SHALL BE GALVANIZED RIGID STEEL. ALL UNDERGROUND CONDUITS SHALL BE PVC COATED GALVANIZED RIGID STEEL.




## MAT EMPLACEMENT POWER RISER DIAGRAM

NOT TO SCALE

Graphic Scales

4ft 2 0 4 8ft

SCALE: 1/4" = 1'–0"

2ft 1 0 2 4ft

SCALE: 1/2" = 1'–0"

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: S. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

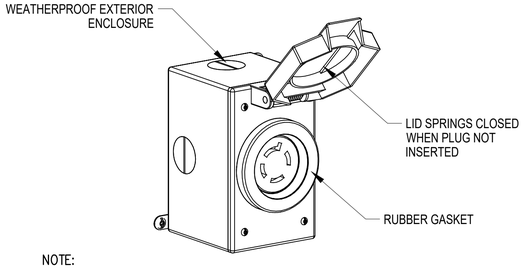
EMPLACEMENT DETAILS
MOVING ARMOR TARGET (MAT)
EMPLACEMENT PLAN AND DETAILS

SHEET ID

ES512

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES512 MAT PLAN & ELEV.DWG

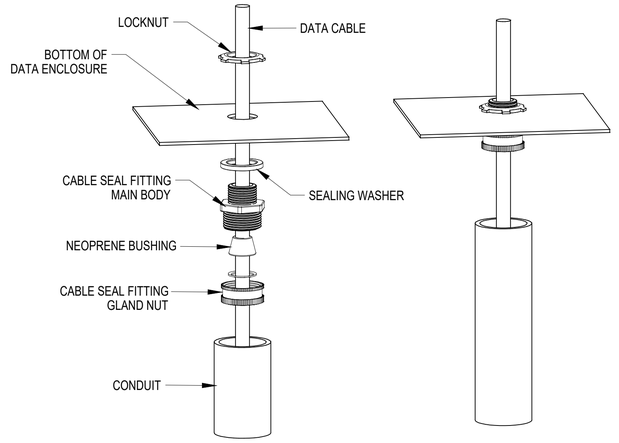



NOTE:

WEATHERPROOF, IN-USE WET LOCATION COVERS SHALL BE PROVIDED WITH ETHYLENE PROPYLENE RUBBER GASKETS AROUND THE FACE OF THE RECEPTACLE TO PREVENT THE ENTRANCE OF MOISTURE AND DIRT WITH COVER OPEN AND PLUG INSERTED. COVER SHALL ACCEPT MALE PLUG WITH DIAMETER OF 1.8" – 1.95".

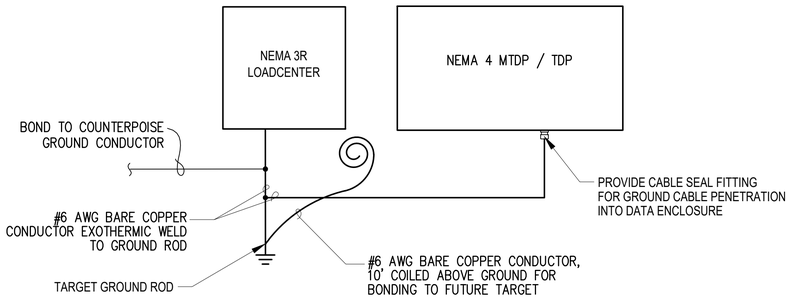
## WET LOCATION RECEPTACLE COVER

NOT TO SCALE



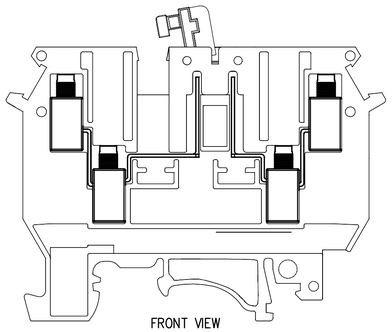

## CABLE SEAL FITTING DETAIL

NOT TO SCALE




## EMPLACEMENT GROUNDING DETAIL

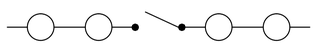
NOT TO SCALE



FRONT VIEW



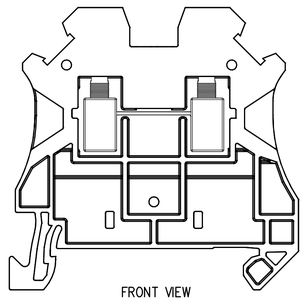
TOP VIEW



WIRING DIAGRAM
SCREW CONNECTIONS, 4 TERMINALS, CENTER DISCONNECT

## KNIFE DISCONNECT TERMINAL BLOCK

NOT TO SCALE



FRONT VIEW



TOP VIEW



WIRING DIAGRAM
SCREW CONNECTIONS, 2 TERMINALS, FEED-THROUGH TYPE

## FEED-THROUGH TERMINAL BLOCK

NOT TO SCALE

SAMUEL LEE GULLEY
LICENSE
No. 50007
6/16/23
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

US Army Corps of Engineers®

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| | |
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| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: C. BROWN | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
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SAVANNAH, GA 31401

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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
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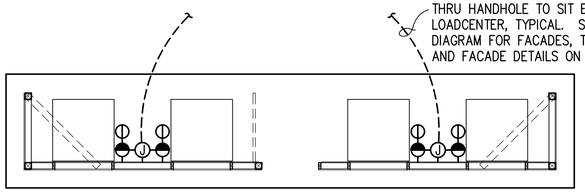
EMPLACEMENT DETAILS

SHEET ID

ES513

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES513 DETAILS.DWG

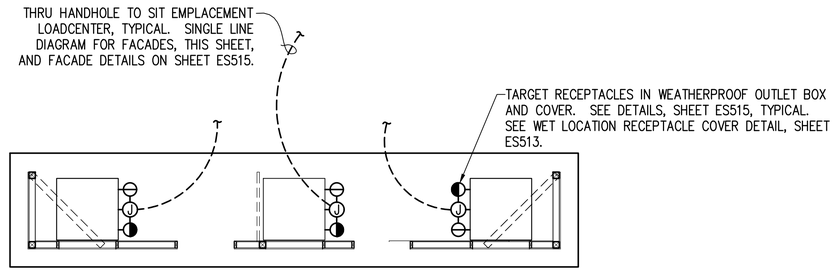
READY TO ADVERTISE (RTA)




## ELECTRICAL FACADE PLAN - A VERSION

SCALE: 1/4" = 1'-0"

**FACADES F1-01A AND F4-01A**



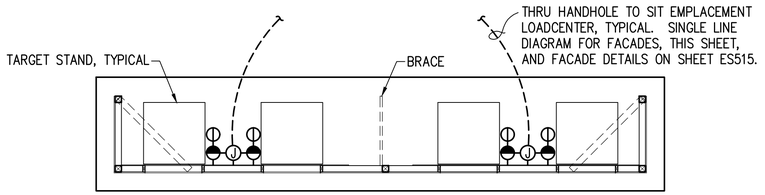

## ELECTRICAL FACADE PLAN - B VERSION

SCALE: 1/4" = 1'-0"

**FACADES F2-01B AND F5-01B**

## ELECTRICAL LEGEND - FACADES

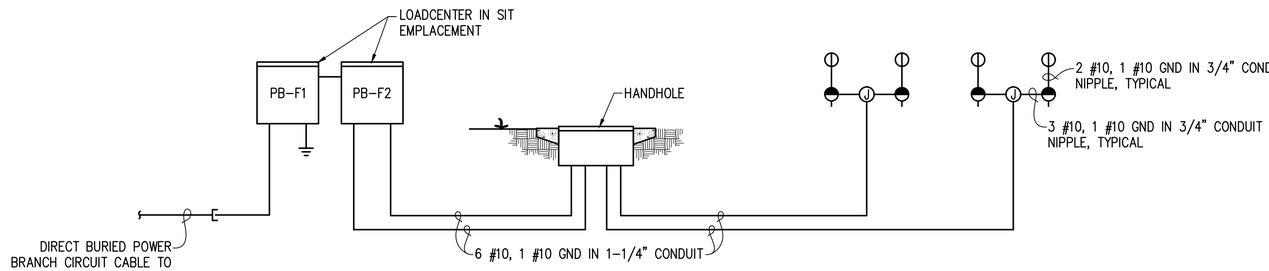
- TARGET RECEPTACLE – 20 AMP, 125/250 VOLT, 3-POLE, 4 WIRE GROUNDING TYPE, NEMA L14-20R IN WET LOCATION BOX AND COVER. SEE MOUNTING DETAILS, SHEET ES515.
- SINGLE RECEPTACLE – 20 AMP, 125 VOLT, 2-POLE, 3 WIRE GROUNDING TYPE, NEMA L5-20R. SEE MOUNTING DETAILS, SHEET ES515.
- POWER JUNCTION BOX – SEE DETAILS FOR MOUNTING AND OUTLET CONFIGURATION, SHEET ES515.
- BRANCH CIRCUIT CONDUIT AND CONDUCTORS. RUN CONCEALED UNDERGROUND.




## ELECTRICAL FACADE PLAN - C VERSION

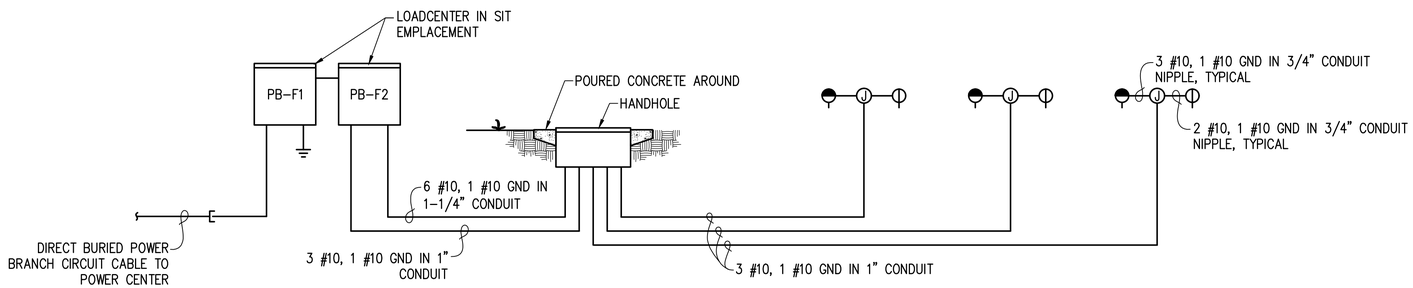
SCALE: 1/4" = 1'-0"

**FACADE F3-01C**




## SINGLE LINE DIAGRAM - TYPICAL FOR "A" & "C" VERSIONS

NOT TO SCALE




## SINGLE LINE DIAGRAM - "B" VERSION

NOT TO SCALE

Graphic Scale

4 3 2 1 0 4FT 8FT

SCALE: 1/4" = 1'-0"

SAMUEL LEE GUILEY LICENSE No. 56007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
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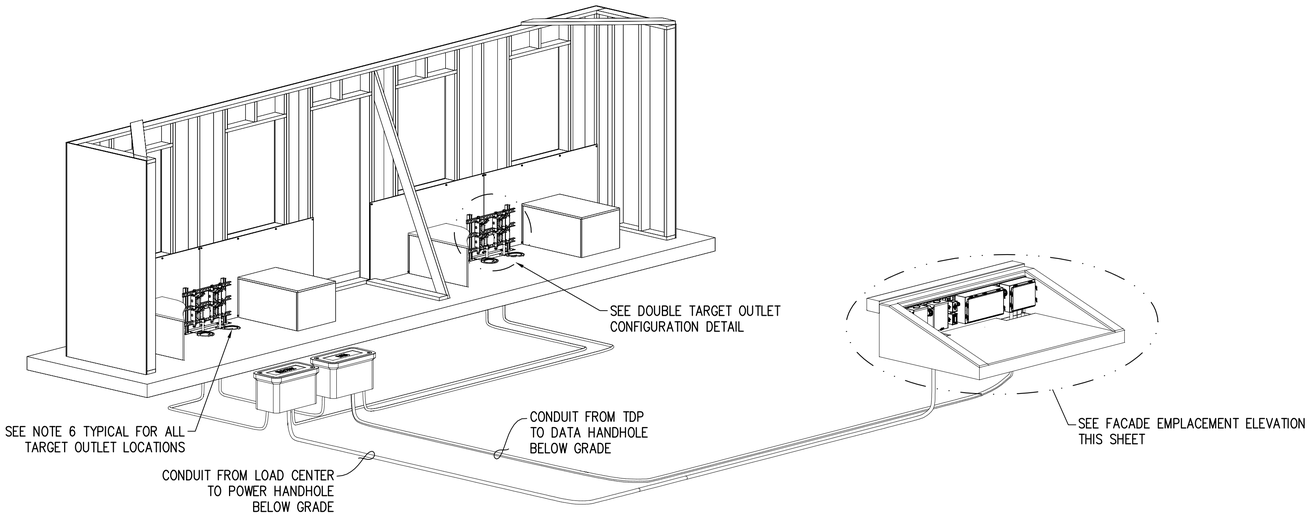
BUILDING FACADE FLOOR PLANS

SHEET ID

ES514

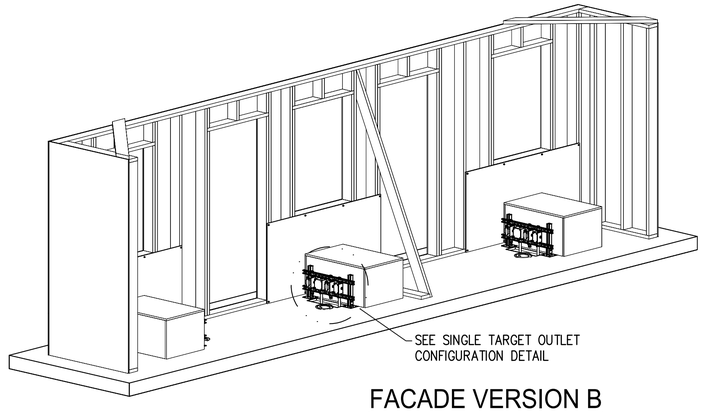
READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES514 ELECTRICAL FACADE BUILDINGS.DWG



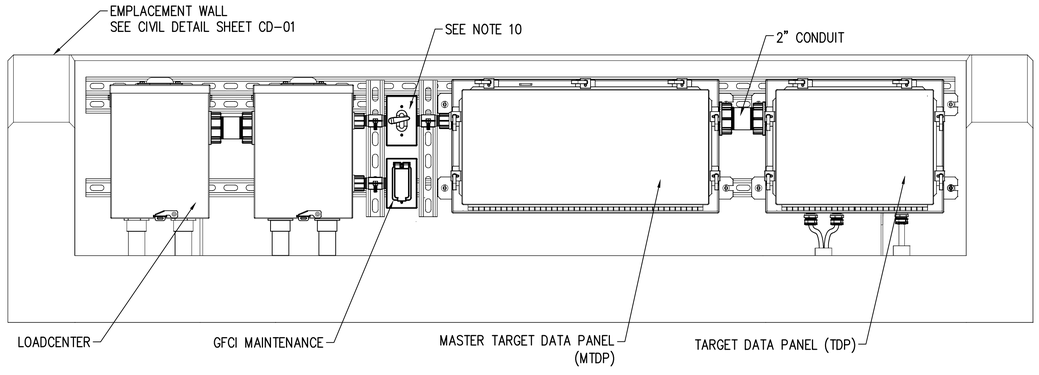

## FACADE VERSIONS A & C

NOT TO SCALE




## FACADE VERSION B

NOT TO SCALE




## FACADE EMPLACEMENT ELEVATION

NOT TO SCALE

NOTES:

1. SEE FAC-1-02 FOR FACADE VERSION CONFIGURATIONS.
2. PROVIDE FACADE VERSIONS A, C, AND V WITH TWO SETS OF POWER AND DATA OUTLETS IN THE DOUBLE TARGET OUTLET CONFIGURATION. PROVIDE FACADE VERSION B WITH THREE SETS POWER AND DATA OUTLETS IN THE SINGLE TARGET OUTLET CONFIGURATION.
3. CONNECT SIT, HAND HOLES AND POWER AND DATA OUTLETS WITH UNDERGROUND CONDUIT AS SHOWN. INSTALL TWO, EIGHT-CIRCUIT LOAD CENTERS; ONE 12"X24" MTDP; AND ONE 12"X16" TDP IN THE WSIT AS SHOWN.
4. ALL DATA CABLES ROUTED TO THE FACADE AND OTHER EMPLACEMENTS SHALL BE TERMINATED INSIDE THE TDP IN THE FACADE EMPLACEMENT. THE MTDP SHALL BE DEDICATED FOR TARGET NETWORKING EQUIPMENT. PROVIDE MTDP WITH DATA POWER RECEPTACLE AND GROUND LUGS ON BACK PLATE, LOCATED TO ALLOW MAXIMUM SPACE FOR TARGET NETWORKING EQUIPMENT.
5. SEE SHEET ES507 AND TN506 FOR FACADE MTDP/TDP REQUIREMENTS.
6. LEAVE A 6 FOOT #6 AWG BARE COPPER COIL AT EACH TARGET LOCATION FOR FUTURE CONNECTION TO TARGET MECHANISM. COPPER COIL MUST BE ELECTRICALLY CONTINUOUS TO GROUNDING ELECTRODE IN WSIT EMPLACEMENT BEHIND FACADE. GROUNDING PATHWAY MUST BE VIA #6 AWG COPPER GROUND CABLE.
7. ALL L14-20R AND L5-20R TARGET OUTLETS SHALL BE PROVIDED IN WET LOCATION COVERS AS SHOWN IN RECEPTACLE WET LOCATION COVER DETAIL ON SHEET ES513.
8. PROVIDE A SHIELDED MALE RJ45 CONNECTOR ON THE END OF EACH CAT 6 OR BETTER DATA CABLE INSTALLED IN OUTLET BOXES. PROVIDE BOXES WITH EXTENSION RINGS AND BLANK FACE PLATE. (GOVERNMENT WILL PROVIDE AND INSTALL DATA CONNECTOR IN OUTLET FACEPLATE). PROVIDE 6" TO 12" OF CABLE BEHIND FACE PLATE TO ALLOW FOR CONNECTION OF DATA CABLE TO FUTURE DATA CONNECTOR.
9. PROVIDE GROUNDING FOR FACADE EMPLACEMENT DETAIL AS SHOWN IN EMPLACEMENT GROUNDING DETAIL ON SHEET ES513. PROVIDE A #6 AWG COPPER GROUND CONNECTION BETWEEN MTDP AND TDP.
10. POWER TO DATA PANEL RECEPTACLE IN MTDP SHALL BE ROUTED THROUGH SINGLE POLE SINGLE THROW SWITCH.

PANEL BOARD: PB-F1xx LOCATION: XXXXXXX MOUNTED: SURFACE FEED: BOTTOM
100 MINIMUM MAIN LUGS ONLY ASYM A.I.C. MIN.:10,000
VOLTAGE: 240/120 PHASE: 1 WIRE: 3 RATING: NEMA 3R

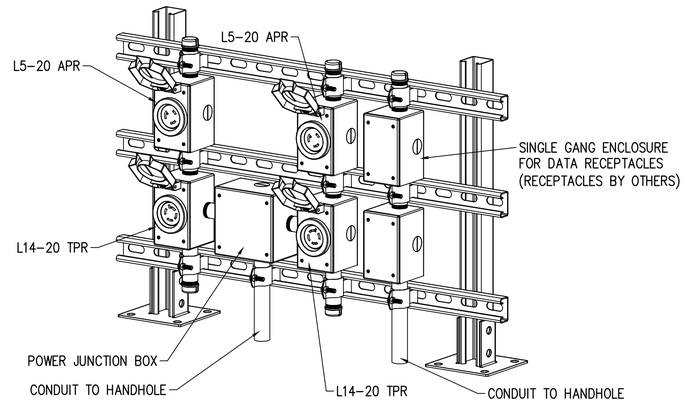
| LOAD SERVED | NO. POLES | TRIP AMPS | WIRE SIZE | VA/ PHASE A | VA/ PHASE B | CKT NO. | CKT. NO. | VA/ PHASE A | VA/ PHASE B | WIRE SIZE | TRIP AMPS | NO. POLES | LOAD SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SURGE ARRESTOR | 2 | --- | --- | --- | --- | 1 | 2 | 1920 | | 12 | 20 | 2 | PANEL BOARD PB-F2XX |
| | | | | | | | | | 1920 | | | | |
| FEED THRU PROVISIONS | 2 | --- | --- | --- | --- | 5 | 6 | 50 | | 12 | 20 | 1 | DPR AND MR |
| | | | | | | | 8 | | --- | --- | 20 | 1 | SPARE |
| | | | | 0 | 0 | | | 1970 | 1920 | | | | |

TOTAL VA PHASE: A: 1970
TOTAL VA PHASE: B: 1920
TOTAL CONNECTED WATTAGE: 3890
95% DEMAND WATTAGE: xxx
SUPPLIED FROM: TRSF-XX
TOTAL DEMAND AMPS: xx

PANEL BOARD: PB-F2xx LOCATION: XXXXXXX MOUNTED: SURFACE FEED: BOTTOM
100 MINIMUM MAIN LUGS ONLY ASYM A.I.C. MIN.:10,000
VOLTAGE: 240/120 PHASE: 1 WIRE: 3 RATING: NEMA 3R

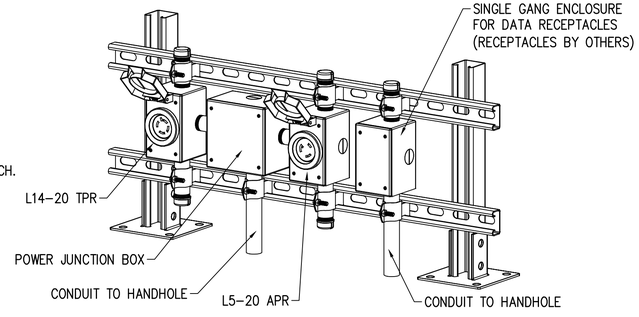
| LOAD SERVED | NO. POLES | TRIP AMPS | WIRE SIZE | VA/ PHASE A | VA/ PHASE B | CKT NO. | CKT. NO. | VA/ PHASE A | VA/ PHASE B | WIRE SIZE | TRIP AMPS | NO. POLES | LOAD SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SIT (NEMA L14-20R, NEMA L5-20R) | 2 | 20 | 12 | 480 | | 1 | 2 | 480 | | 12 | 20 | 2 | SIT (NEMA L14-20R, NEMA L5-20R) |
| | | | | | 480 | | | | 480 | | | | |
| SIT (NEMA L14-20R, NEMA L5-20R) | 2 | 20 | 12 | 480 | | 5 | 6 | 480 | | 12 | 20 | 2 | SIT (NEMA L14-20R, NEMA L5-20R) |
| | | | | | 480 | | 8 | | 480 | | | | |
| | | | | 960 | 960 | | | 960 | 960 | | | | |

TOTAL VA PHASE: A: 1920
TOTAL VA PHASE: B: 1920
TOTAL CONNECTED WATTAGE: 3840
95% DEMAND WATTAGE: xx
SUPPLIED FROM: PB-F1xx
TOTAL DEMAND AMPS: xx




## DOUBLE TARGET OUTLET CONFIGUATION

NOT TO SCALE VERSIONS "A" & "C"




## SINGLE TARGET OUTLET CONFIGURATION

NOT TO SCALE VERSIONS "B"

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: SHRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

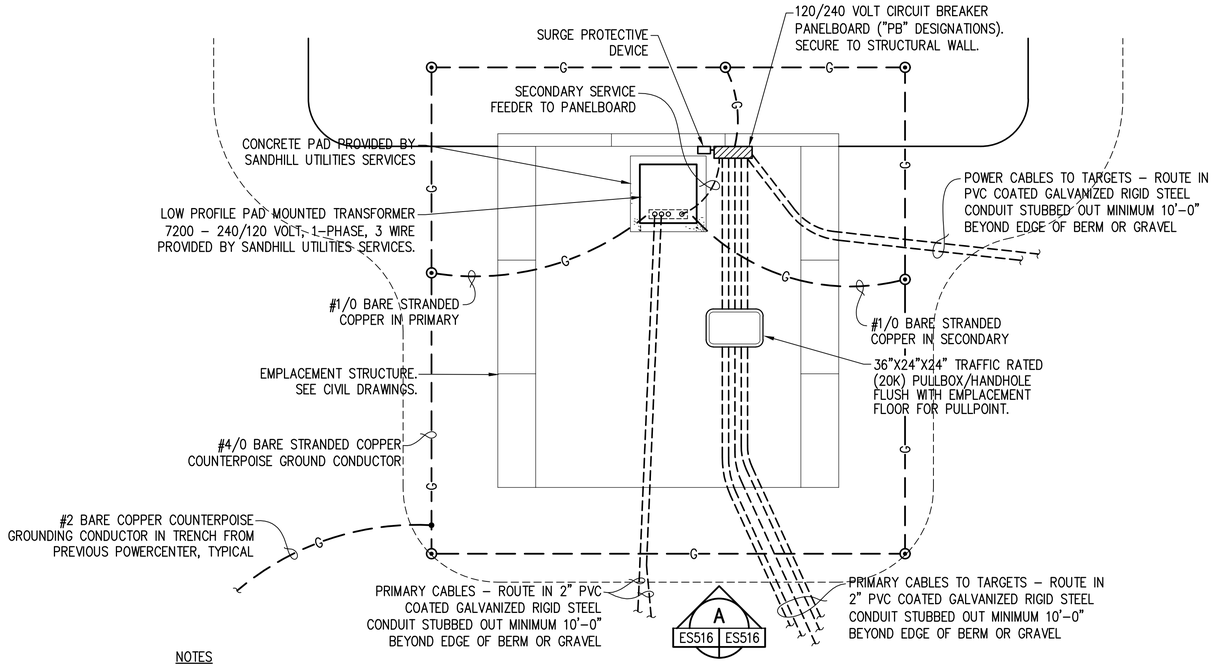
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL FACADE DETAILS

SHEET ID
ES515

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EESS15 FACADE.DWG



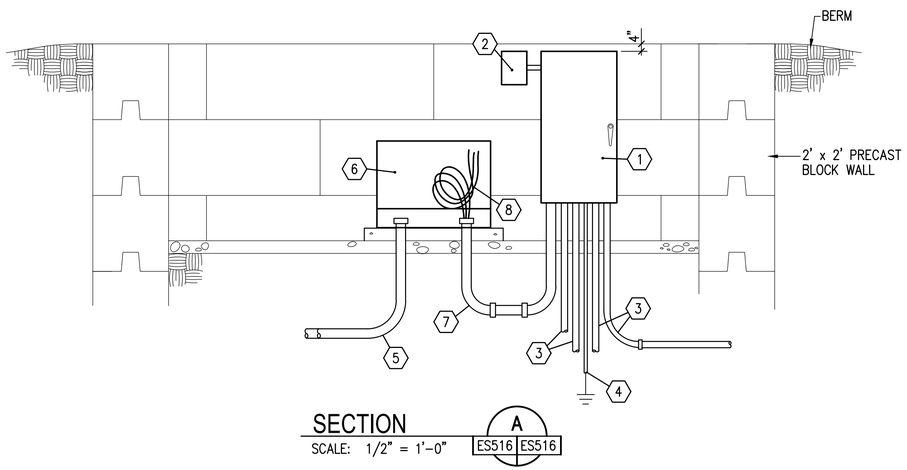

## DOWNRANGE POWERCENTER PLAN - PC-14

SCALE: 1/4" = 1'–0"

NOTES

ALL UNDERGROUND CABLES SHALL ENTER POWERCENTER FORM THE BACK (OPEN SIDE) OR FROM THE SIDE OF THE POWERCENTER. DO NOT RUN CABLE THROUGH FRONT OR IN PROTECTIVE BERM.

SEAL OPENINGS IN CONDUITS AROUND CABLES WHERE DIRECT BURIAL CABLES ENTER STUBBED OUT CONDUITS, TYPICAL.




## SECTION A

SCALE: 1/2" = 1'–0"

ES516 | ES516

## Key Notes

1. 120/240 VOLT, 1–PHASE, 3 WIRE CIRCUIT BREAKER PANELBOARD. SECURE TO STEEL CHANNELS.
2. SURGE PROTECTIVE DEVICE IN NEMA 4 ENCLOSURE. CONNECT TO PANELBOARD WITH SHORT CONDUIT NIPPLE (4 #10 IN 3/4" CONDUIT).
3. 120/240 VOLT BRANCH CIRCUIT POWER CABLES TO TARGETS IN MINIMUM 2" PVC COATED GALVANIZED RIGID STEEL CONDUIT. PROVIDE NUMBER OF CONDUITS REQUIRED FOR CIRCUITS INDICATED ON SITE PLANS. STUB OUT 10'–0" BEYOND EDGE OF BERM OR GRAVEL.
4. MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR IN CONDUIT TO COUNTERPOISE
5. INCOMING AND OUTGOING PRIMARY CABLES ROUTED IN 4" PVC COATED GALVANIZED RIGID STEEL CONDUITS TO 10'–0" BEYOND EDGE OF BERM OR GRAVEL
6. LOW PROFILE PAD MOUNTED TRANSFORMER AND CONCRETE PAD PROVIDED BY SANDHILLS UTILITY SERVICES
7. 120/240 VOLT, 1–PHASE, 3 WIRE UNDERGROUND SECONDARY SERVICE FEEDER CONDUCTORS IN PVC COATED GALVANIZED RIGID STEEL CONDUIT
8. LEAVE 10'–0" SLACK WIRE IN SECONDARY SERVICE FEEDER FOR CONNECTION TO PAD MOUNTED TRANSFORMER SECONDARY LUGS BY SANDHILLS UTILITY SERVICES

## Graphic Scales

4ft 2 0 4 8ft

SCALE: 1/4" = 1'–0"

2ft 1 0 2 4ft

SCALE: 1/2" = 1'–0"

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
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| | |
|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: C. BROWN | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-65-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

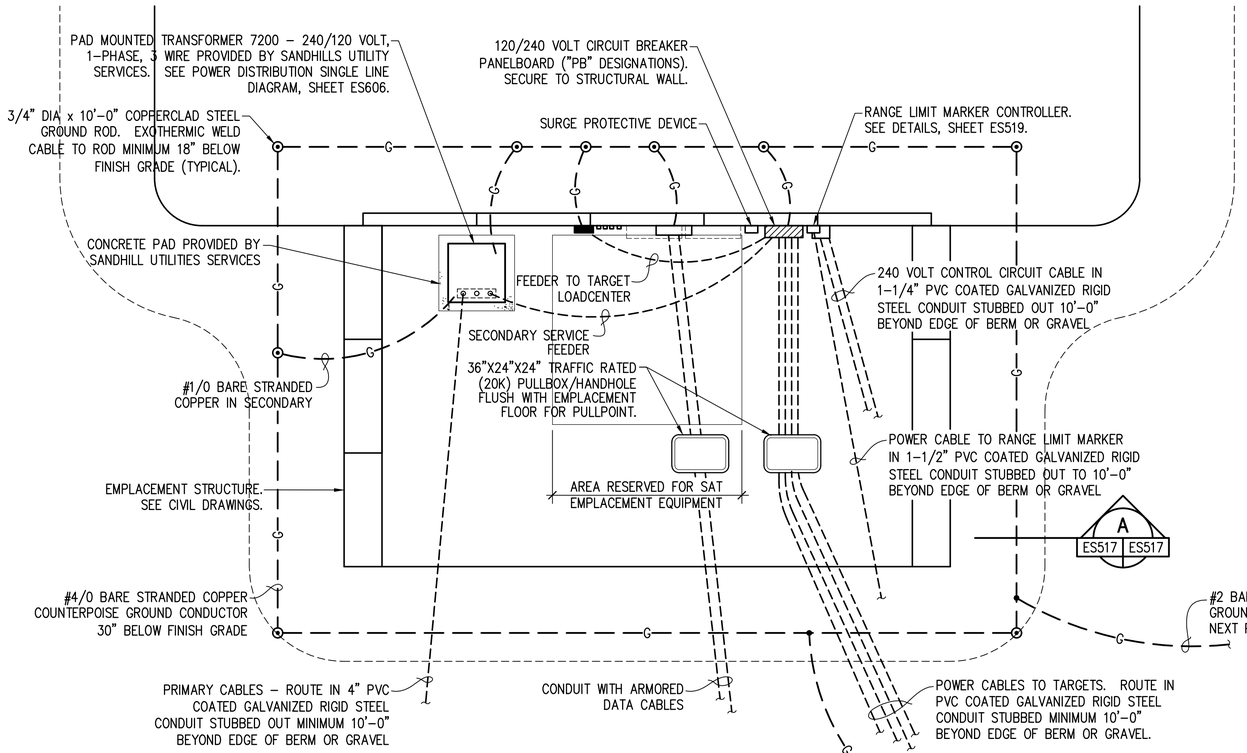
DOWNRANGE POWERCENTER EMPLACEMENT DETAILS

SHEET ID

ES516

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES516 DOWNRANGE POWERCENTER DETAIL.DWG



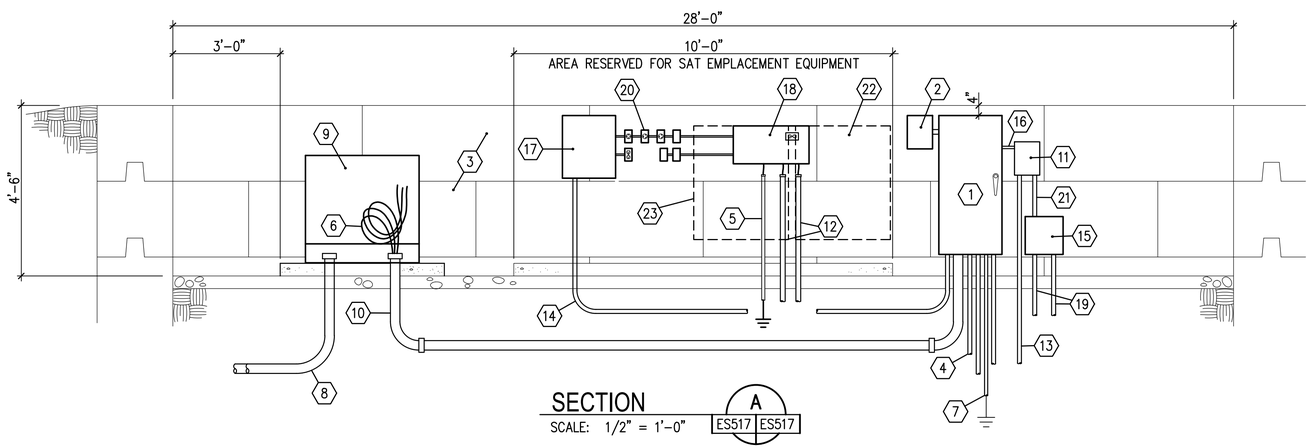

## TYPICAL DOWNRANGE POWERCENTER PLAN WITH STATIONARY ARMOR TARGET

SCALE: 1/4" = 1'–0"

NOTES

ALL UNDERGROUND CABLES SHALL ENTER POWER CENTER FROM THE BACK (OPEN SIDE) OR FROM THE SIDE OF THE POWER CENTER. DO NOT RUN CABLE THROUGH FRONT OR IN PROTECTIVE BERM.

SEAL OPENINGS IN CONDUITS AROUND CABLES WHERE DIRECT BURIAL CABLES ENTER STUBBED OUT CONDUITS, TYPICAL.




## SECTION

SCALE: 1/2" = 1'–0"

A
ES517 ES517

## Key Notes

1. 120/240 VOLT, 1–PHASE, 3 WIRE CIRCUIT BREAKER PANELBOARD. SECURE TO STEEL CHANNELS.
2. SURGE PROTECTIVE DEVICE IN NEMA 4 ENCLOSURE. CONNECT TO PANELBOARD WITH SHORT CONDUIT NIPPLE.
3. CONCRETE BLOCK EMPLACEMENT WALL – SEE CIVIL DRAWINGS FOR DETAILS
4. 120/240 VOLT BRANCH CIRCUIT POWER CABLES TO TARGETS IN MINIMUM 2" PVC COATED GALVANIZED RIGID STEEL CONDUIT. PROVIDE NUMBER OF CONDUITS REQUIRED FOR CIRCUITS INDICATED ON SITE PLANS. STUB CONDUIT 10'–0" BEYOND EDGE OF BERM OR GRAVEL.
5. GROUNDING CONDUCTOR TO COUNTERPOISE
6. LEAVE 15'–0" SLACK WIRE IN SECONDARY SERVICE FEEDER FOR CONNECTION TO PAD MOUNTED TRANSFORMER SECONDARY LUGS BY SANDHILLS UTILITY SERVICE
7. MAIN SERVICE GROUNDING ELECTRODE IN CONDUIT TO COUNTERPOISE
8. INCOMING AND OUTGOING PRIMARY CABLES ROUTED IN 4" PVC COATED GALVANIZED RIGID STEEL CONDUIT
9. PAD MOUNTED TRANSFORMER AND CONCRETE PAD
10. 120/240 VOLT, 1–PHASE, 3 WIRE UNDERGROUND SECONDARY SERVICE FEEDER CONDUCTORS IN PVC COATED GALVANIZED RIGID STEEL CONDUIT. SEE POWER DISTRIBUTION SINGLE LINE DIAGRAM, SHEET ES606.
11. RANGE LIMIT MARKER CONTROLLER – SECURE TO EMPLACEMENT WALL WITH MOUNTING TABS ON OUTSIDE OF ENCLOSURE
12. ARMORED DATA CABLE IN 2" PVC COATED GALVANIZED RIGID STEEL CONDUIT STUBBED OUT MINIMUM 10'–0" BEYOND EDGE OF BERM OR GRAVEL
13. POWER CABLE TO RANGE LIMIT MARKER IN 1–1/2" PVC COATED GALVANIZED RIGID STEEL CONDUIT STUBBED OUT MINIMUM 10'–0" BEYOND EDGE OF BERM OR GRAVEL
14. 3 #8, 1 #10 GND IN 1" PVC COATED GALVANIZED RIGID STEEL CONDUIT SERVICE FEEDER TO TARGET LOADCENTER
15. 12"x12"x4" WEATHERPROOF JUNCTION BOX WITH BLANK SCREW COVER FOR RANGE LIMIT MARKER CONTROL CABLE
16. BRANCH CIRCUIT CONDUIT AND CONDUCTORS FROM POWER PANEL FOR 120 VOLT, 1–PHASE SERVICE TO LIMIT MARKER
17. NEMA 3R LOADCENTER
18. NEMA 4 MTDP/TDP – SEE STATIONARY ARMOR TARGET DETAILS, SHEET ES509
19. 240 VOLT CONTROL CIRCUIT CABLE IN 1–1/4" PVC COATED GALVANIZED RIGID STEEL CONDUIT STUBBED OUT MINIMUM 10'–0" BEYOND EDGE OF BERM OR GRAVEL
20. TARGET EMPLACEMENT RECEPTACLES – SEE DETAILS, SHEET ES510
21. 2 #6, 1 #10 GND IN 1" GALVANIZED RIGID STEEL CONDUIT FOR CONTROL
22. FIBER DATA BREAKOUT BOX (DBB–F) AT POWER CENTERS PC–01, PC–04, PC–07, PC–12 & PC13. SEE DATA SINGLE LINE TN604 FOR LOCATIONS. PROVIDE 2" CONDUIT BETWEEN DBB–F AND DBB–C. PROVIDE POWER IN ENCLOSURE, SEE DETAIL ON SHEET TN504.
23. COPPER DATA BREAKOUT BOX (DBB–C) AT POWER CENTERS PC–01, PC–04, PC–07, PC–12 & PC13. SEE DATA SINGLE LINE TN604 FOR LOCATIONS. PROVIDE 2" CONDUIT BETWEEN DBB–C AND DBB–F. PROVIDE POWER IN ENCLOSURE, SEE DETAIL ON SHEET TN503. AT LOCATIONS WHERE DBB–C IS REQUIRED, MTDP IS NOT UTILIZED. TARGET OUTLET AND BES OUTLET TO BE SERVED FROM DBB–C WHEN MTDP IS NOT REQUIRED.

### Graphic Scales

4ft 2 0 4 8ft
SCALE: 1/4" = 1'–0"
2ft 1 0 2 4ft
SCALE: 1/2" = 1'–0"

SAMUEL LEE GUILEY LICENSE No. 58007 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: S. GULLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

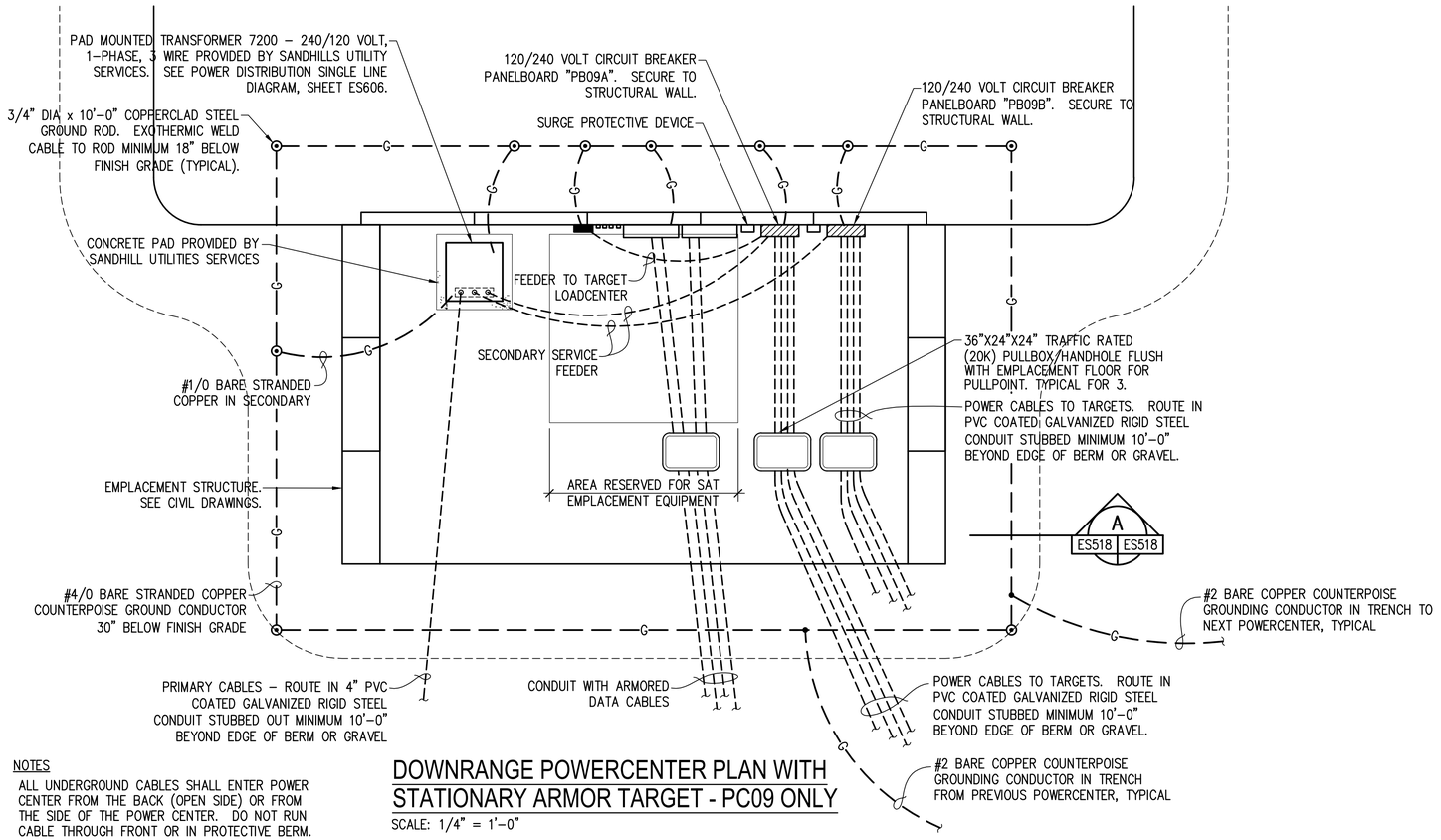
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

TYPICAL DOWNRANGE POWERCENTER PLAN WITH STATIONARY ARMOR TARGET (SAT)

SHEET ID
ES517

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES517 SAT POWERCENTER DETAIL.DWG



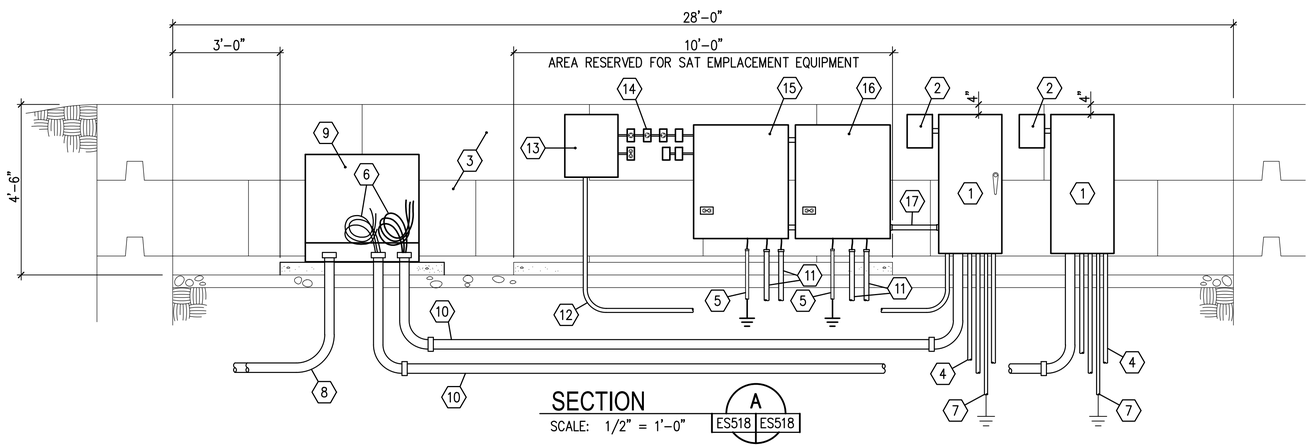

## DOWNRANGE POWERCENTER PLAN WITH STATIONARY ARMOR TARGET - PC09 ONLY

SCALE: 1/4" = 1'–0"

NOTES

ALL UNDERGROUND CABLES SHALL ENTER POWER CENTER FROM THE BACK (OPEN SIDE) OR FROM THE SIDE OF THE POWER CENTER. DO NOT RUN CABLE THROUGH FRONT OR IN PROTECTIVE BERM.

SEAL OPENINGS IN CONDUITS AROUND CABLES WHERE DIRECT BURIAL CABLES ENTER STUBBED OUT CONDUITS, TYPICAL.




## SECTION

SCALE: 1/2" = 1'–0"

A
ES518 ES518

## Key Notes

1. 120/240 VOLT, 1–PHASE, 3 WIRE CIRCUIT BREAKER PANELBOARD. SECURE TO STEEL CHANNELS.
2. SURGE PROTECTIVE DEVICE IN NEMA 4 ENCLOSURE. CONNECT TO PANELBOARD WITH SHORT CONDUIT NIPPLE.
3. CONCRETE BLOCK EMPLACEMENT WALL – SEE CIVIL DRAWINGS FOR DETAILS
4. 120/240 VOLT BRANCH CIRCUIT POWER CABLES TO TARGETS IN MINIMUM 2" PVC COATED GALVANIZED RIGID STEEL CONDUIT. PROVIDE NUMBER OF CONDUITS REQUIRED FOR CIRCUITS INDICATED ON SITE PLANS. STUB CONDUIT 10'–0" BEYOND EDGE OF BERM OR GRAVEL.
5. GROUNDING CONDUCTOR TO COUNTERPOISE
6. LEAVE 15'–0" SLACK WIRE IN SECONDARY SERVICE FEEDER FOR CONNECTION TO PAD MOUNTED TRANSFORMER SECONDARY LUGS BY SANDHILLS UTILITY SERVICE
7. MAIN SERVICE GROUNDING ELECTRODE IN CONDUIT TO COUNTERPOISE
8. INCOMING AND OUTGOING PRIMARY CABLES ROUTED IN 4" PVC COATED GALVANIZED RIGID STEEL CONDUIT
9. PAD MOUNTED TRANSFORMER AND CONCRETE PAD
10. 120/240 VOLT, 1–PHASE, 3 WIRE UNDERGROUND SECONDARY SERVICE FEEDER CONDUCTORS IN PVC COATED GALVANIZED RIGID STEEL CONDUIT. SEE POWER DISTRIBUTION SINGLE LINE DIAGRAM, SHEET ES606.
11. ARMORED DATA CABLE IN 2" PVC COATED GALVANIZED RIGID STEEL CONDUIT STUBBED OUT MINIMUM 10'–0" BEYOND EDGE OF BERM OR GRAVEL
12. 3 #8, 1 #10 GND IN 1" PVC COATED GALVANIZED RIGID STEEL CONDUIT SERVICE FEEDER TO TARGET LOADCENTER
13. NEMA 3R LOADCENTER
14. TARGET EMPLACEMENT RECEPTACLES – SEE DETAILS, SHEET ES510
15. COPPER DATA BREAKOUT BOX (DBB–C). SEE DATA SINGLE LINE TN604 FOR LOCATIONS. PROVIDE 2" CONDUIT BETWEEN DBB–C AND DBB–F. PROVIDE POWER IN ENCLOSURE, SEE DETAIL ON SHEET TN503. AN MTDP IS NOT UTILIZED. TARGET OUTLET AND BES OUTLET TO BE SERVED FROM DBB–C.
16. FIBER DATA BREAKOUT BOX (DBB–F). SEE DATA SINGLE LINE TN604 FOR LOCATIONS. PROVIDE 2" CONDUIT BETWEEN DBB–F AND DBB–C. PROVIDE POWER IN ENCLOSURE, SEE DETAIL ON SHEET TN504.
17. 2 #12, 1 #12 GND IN 3/4" CONDUIT FROM 20 AMP, 1 POLE BREAKER IN POWER PANEL TO 125 VOLT DUPLEX RECEPTACLES IN DATA BREAKOUT BOXES.

Graphic Scales

4ft 2 0 4 8ft
SCALE: 1/4" = 1'–0"

2ft 1 0 2 4ft
SCALE: 1/2" = 1'–0"

SAMUEL LEE GULLEY LICENSE No. 58007 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES518 PC09 SAT POWERCENTER DETAIL.DWG

| | |
|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 |
| CHECKED BY: C. BROWN | CONTRACT NO.: |
| SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01 |
| SIZE: ANSI D | FILE NAME: |

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
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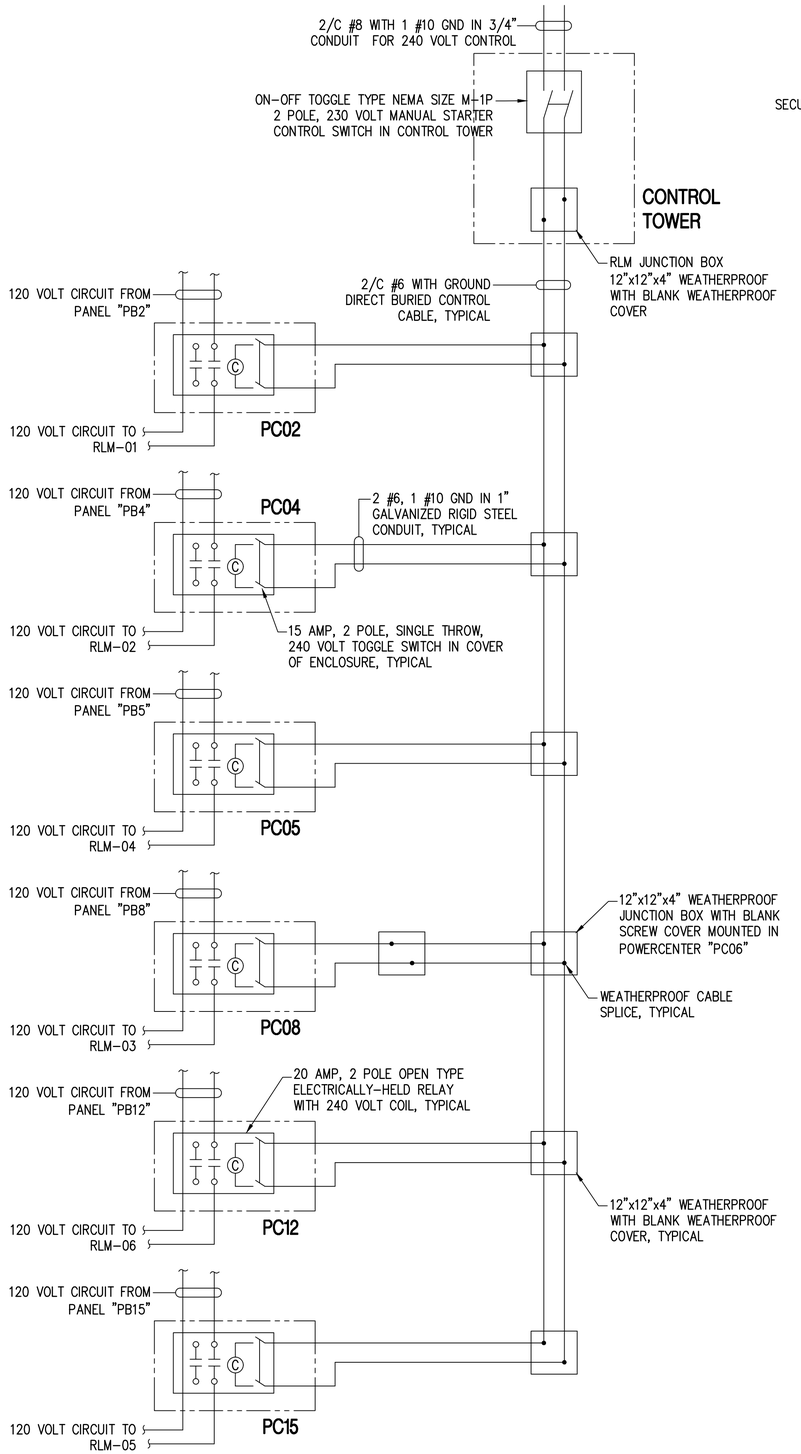
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 98162
VOLUMES 3 & 4 - DOWNRANGE

DOWNRANGE POWERCENTER PLAN WITH STATIONARY ARMOR TARGET (SAT) PC09

SHEET ID

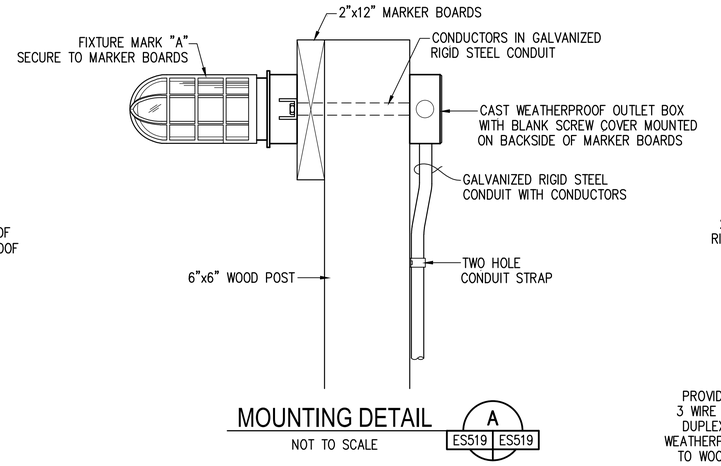
ES518

READY TO ADVERTISE (RTA)




## RANGE LIMIT MARKER CONTROL DIAGRAM

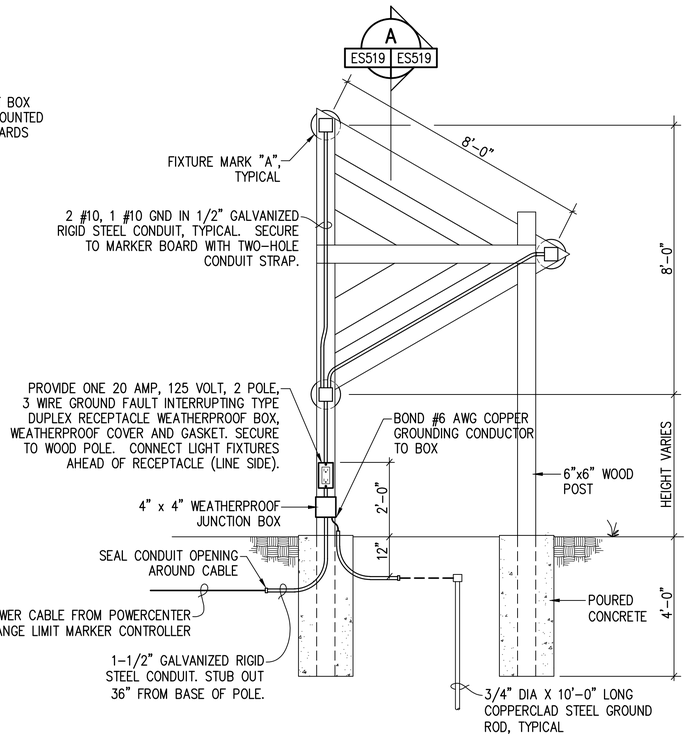
NOT TO SCALE




## MOUNTING DETAIL A

ES519 ES519

NOT TO SCALE

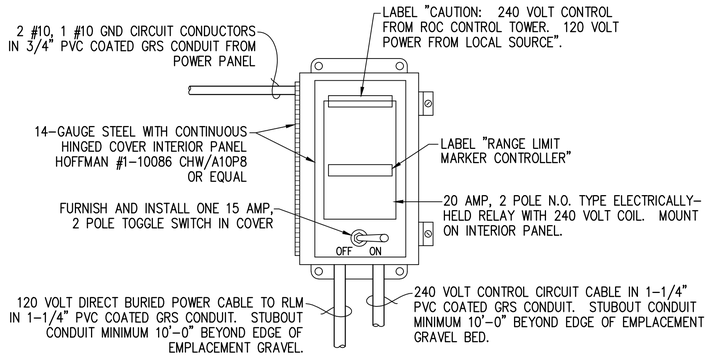



## RANGE LIMIT MARKER POWER AND LIGHT FIXTURE MOUNTING DETAIL

NOT TO SCALE

NOTES

1. SEE CIVIL DRAWINGS FOR CONSTRUCTION DETAILS OF LIMIT MARKER.
2. MOUNT ALL EQUIPMENT INCLUDING CONDUIT, RECEPTACLE AND OUTLET BOXES ON THE BACK SIDE OF RANGE LIMIT MARKER. MOUNT LIGHT FIXTURE ON FRONT SIDE OF MARKER AS INDICATED IN MOUNTING DETAIL.




## DETAIL - RANGE LIMIT MARKER CONTROLLER

NOT TO SCALE




US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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1935 HEADLAND AVENUE
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FY23, PN 96182
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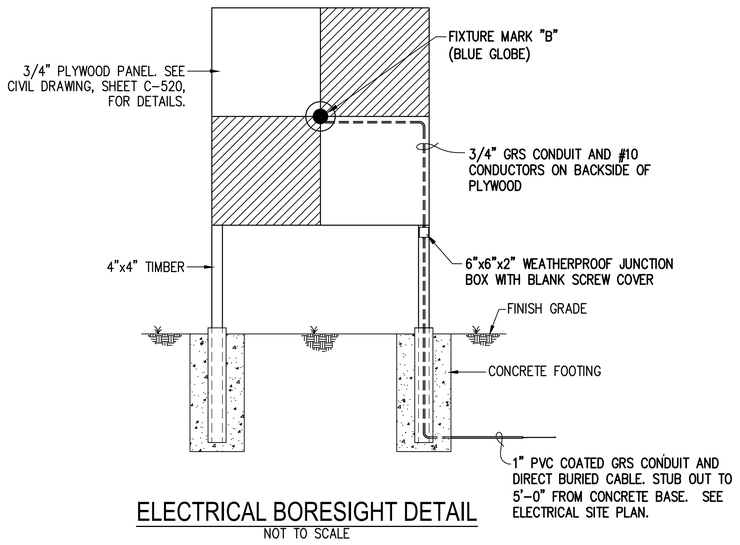
ELECTRICAL DETAILS
RANGE LIMIT MARKER

SHEET ID

ES519

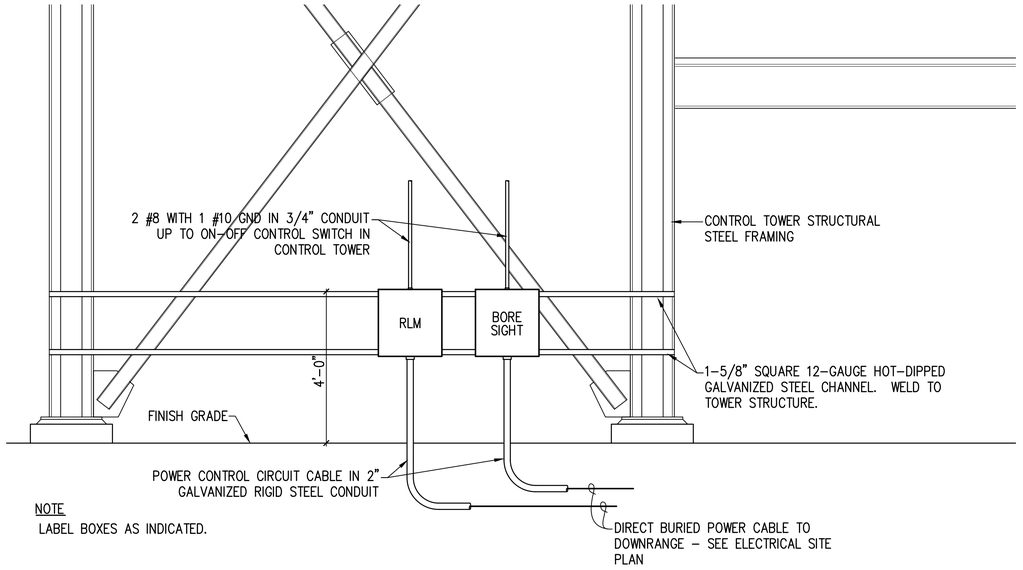
READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2E\ES519 RANGE LIMIT MARKER.DWG




## ELECTRICAL BORESIGHT DETAIL

NOT TO SCALE

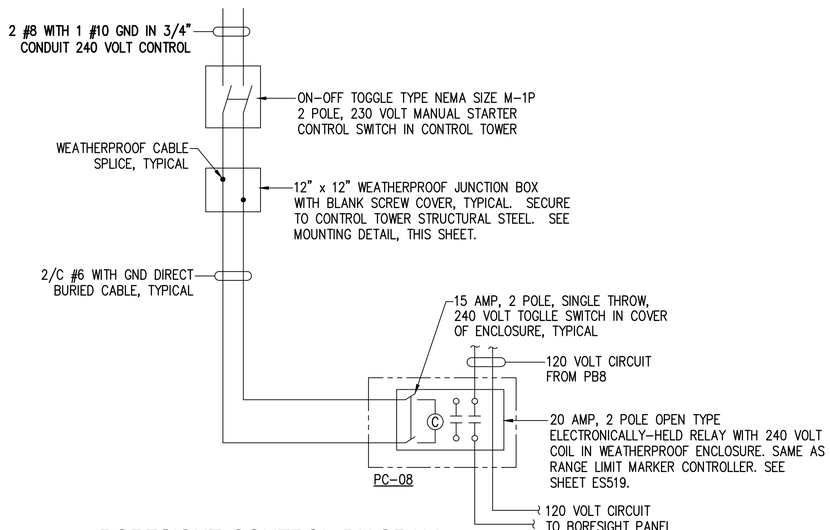



NOTE

LABEL BOXES AS INDICATED.

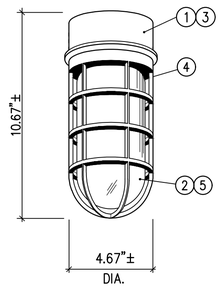
## MOUNTING DETAIL - RLM & BORESIGHT JUNCTION BOXES

SCALE: 1/2" = 1'-0"




## BORESIGHT CONTROL DIAGRAM

NOT TO SCALE




1. COPPER-FREE CAST ALUMINUM FIXTURE BODY CONSTRUCTION FOR ATTACHMENT OF GLOBE AND GUARD.
2. CLEAR TEMPERED GLASS GLOBE WITH GASKETED SEAL TO BODY U.L. LISTED WET LOCATION LABEL
3. MULTIVOLT DRIVER FOR OPERATION ON ANY LINE VOLTAGE WITH 4KV SURGE PROTECTION.
4. COPPER-FREE CAST ALUMINUM GUARD TO PROTECT GLOBE AND LAMP
5. 4000K CCT LED WITH 600 LUMEN OUTPUT OPERATING AT INPUT OF 15W.

PROVIDE FIXTURE MARK "A" WITH A RED GLOBE

PROVIDE FIXTURE MARK "B" WITH A BLUE GLOBE

## FIXTURES MARK "A" AND "B"

NOT TO SCALE

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

| | | | |
|---|---|---|---|
| DESIGNED BY: S. GULLEY | ISSUE DATE: JUNE 2023 | | |
| DRAWN BY: T. BOLTON | SOLICITATION NO.: W912HN-23-B-3001 | CONTRACT NO.: | |
| CHECKED BY: C. BROWN | CATEGORY CODE: 173-45-01 | | |
| SUBMITTED BY: BRADLEY | FILE NAME: | | |
| SIZE: ANSI D | | | |

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SAVANNAH DISTRICT
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SAVANNAH, GA 31401

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

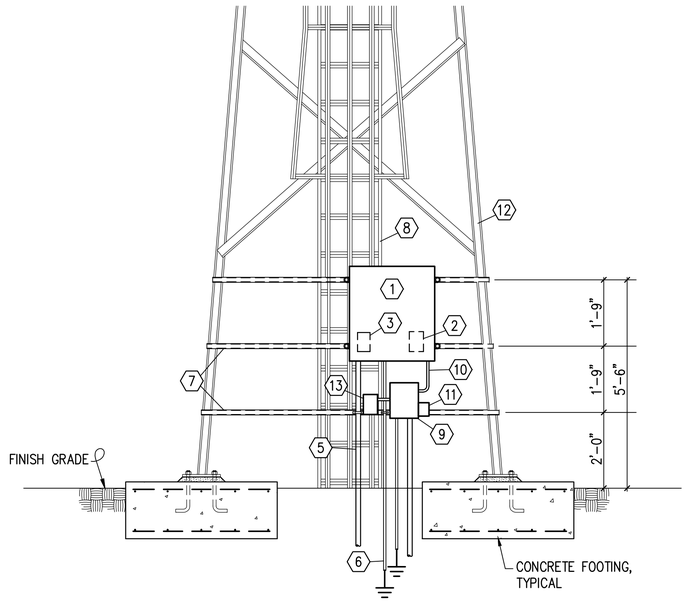
ELECTRICAL DETAILS
BORESIGHT

SHEET ID

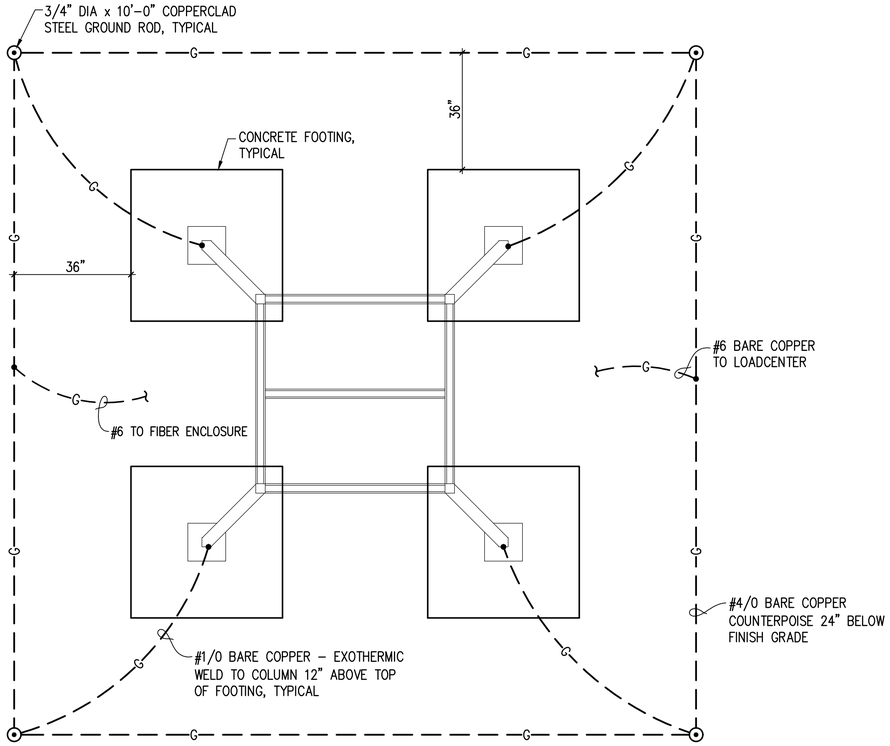
ES520

READY TO ADVERTISE (RTA)

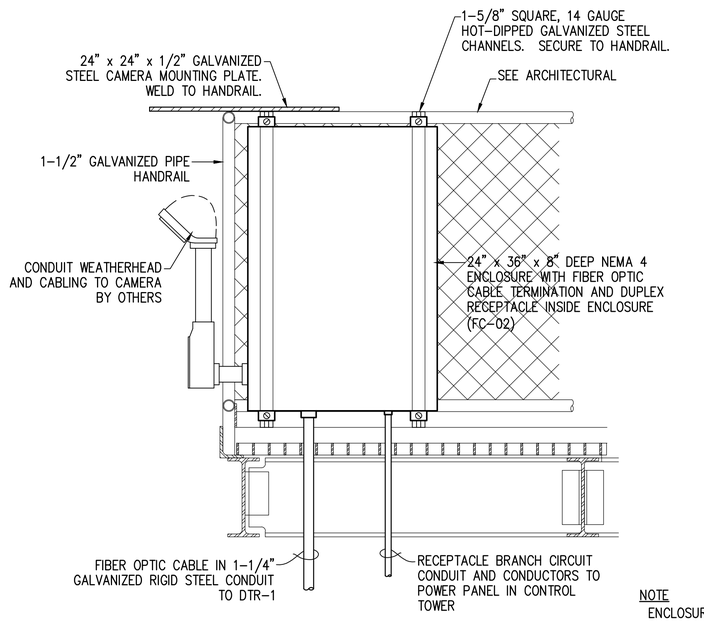
N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES520 BORE SIGHT.DWG




## FLIR CAMERA DETAIL
## POWER AND FIBER INSTALLATION
NOT TO SCALE




## FLIR CAMERA GROUNDING PLAN
NOT TO SCALE




## CONTROL TOWER
## CAMERA PLATE MOUNTING DETAIL
NOT TO SCALE

NOTE
ENCLOSURE SHALL BE IDENTICAL TO THE REQUIREMENTS SHOWN IN THE FLIR CAMERA POWER AND FIBER INSTALLATION SHOWN, THIS SHEET.

## Key Notes - FLIR Camera Detail

1. 24"W x 36"H x 8"D NEMA 4 ENCLOSURE FOR FIBER AND INSTRUMENTATION AT CAMERA TOWER. PROVIDE ENCLOSURE WITH FULL METALLIC BACKPLATE. SECURE TO STEEL CHANNEL SUPPORTS UTILIZING ENCLOSURE MOUNTING TABS.
2. 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TYPE DUPLEX RECEPTACLE IN STANDARD OUTLET BOX AND DEVICE COVER. MOUNT INSIDE NEMA 4 ENCLOSURE. INSTALL IN ENCLOSURE AS LOW AS POSSIBLE TO PROVIDE MAXIMUM AMOUNT OF SPACE FOR EQUIPMENT PROVIDED BY OTHERS.
3. 6-PORT PATCH PANEL WITH SC TYPE CONNECTORS FOR FIBER OPTIC CABLE TERMINATION. INSTALL IN ENCLOSURE AS LOW AS POSSIBLE TO PROVIDE MAXIMUM AMOUNT OF SPACE FOR EQUIPMENT PROVIDED BY OTHERS.
4. BRANCH CIRCUIT CONDUIT AND CONDUCTORS FOR LOADCENTER PANEL SECURE CONDUIT TO STEEL CHANNEL SUPPORTS WITH TWO-HOLE PIPE CLAMPS.
5. 6-STRAND SINGLE-MODE FIBER OPTIC CABLE IN 1-1/2" CONDUIT. STUB CONDUIT OUT 5'-0" FROM TOWER FOUNDATION AND SEAL OPENING IN CONDUIT AROUND CABLE.
6. 1 #6 GROUND IN 3/4" GALVANIZED RIGID STEEL CONDUIT. CONNECT TO COUNTERPOISE. TERMINATE ON GROUND BAR IN ENCLOSURE.
7. 1-5/8" SQUARE 12-GAUGE HOT-DIPPED GALVANIZED STEEL CHANNEL. WELD TO TOWER COLUMNS.
8. FLIR CAMERA STEEL COLUMN OF CAMERA TOWER. SEE STRUCTURAL DETAILS.
9. CIRCUIT BREAKER LOADCENTER - SECURE TO TOWER MOUNTING CHANNELS. SEE PANEL SCHEDULE, THIS SHEET.
10. 2 #12, 1 #12 GND IN 1/2" GALVANIZED RIGID STEEL CONDUIT FROM 20 AMP, 1 POLE BREAKER IN LOADCENTER TO DUPLEX RECEPTACLE.
11. SURGE PROTECTIVE DEVICE - SEE SPECIFICATIONS. CONNECTION TO 30 AMP, 2 POLE CIRCUIT BREAKER IN PANEL WITH 4 #10 IN 3/4" CONDUIT NIPPLE.
12. CAMERA TOWER - SEE CIVIL DRAWING SHEET CS520 FOR DETAILS.
13. MAINTENANCE RECEPTACLE - 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TYPE DUPLEX RECEPTACLE WITH WET LOCATION COVER IN WEATHERPROOF ENCLOSURE.

Typical FLIR Camera Tower Panel

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE — BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL "FC" 240/120 VOLT AC, 1-PHASE, 3 WIRE, 50 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FLIR CAMERA RECEPTACLE | 20 | 1 | 1500 | | 1 | 2 | | | 2 | 30 | SURGE PROTECTIVE DEVICE |
| MAINTENANCE RECEPTACLE | 20 | 1 | | 50 | 3 | 4 | | | | | |
| SPACE ONLY | | 1 | | | 5 | 6 | | | 1 | | SPACE ONLY |
| SPACE ONLY | | 1 | | | 7 | 8 | | | 1 | | SPACE ONLY |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 1,500 | 50 | = 1,550 VA |

TOTAL DEMAND VOLT - AMPS = 1,500 VA / 12.5 AMPS

SAMUEL LEE GULLEY LICENSE No. 54007 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
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POLY, INC.
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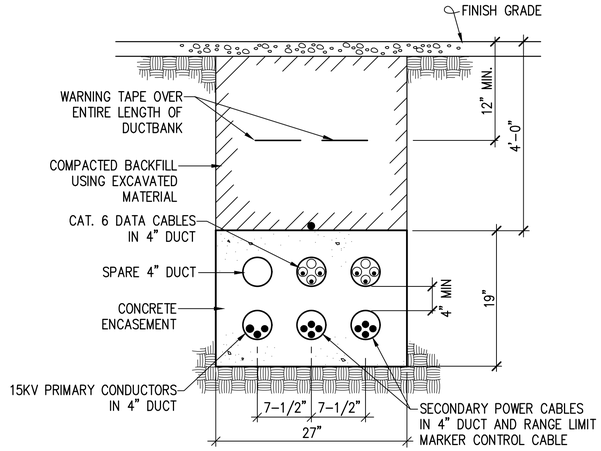
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL DETAILS
FLIR CAMERA TOWER

SHEET ID
ES521

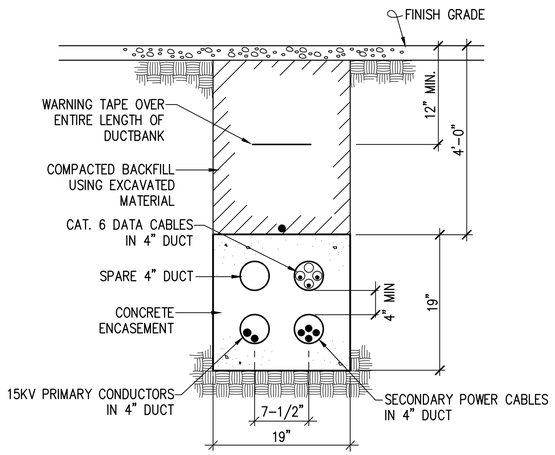
READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EESS21 FLIR CAMERA DETAILS.DWG



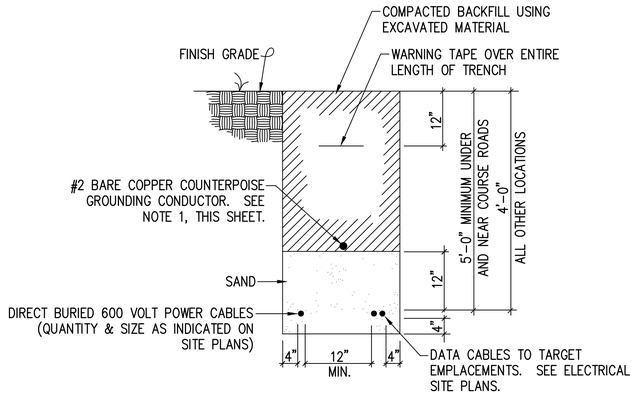

## 6-WAY CONCRETE ENCASED DUCTBANK DETAIL - ROAD CROSSING

NOT TO SCALE




## 4-WAY CONCRETE ENCASED DUCTBANK DETAIL - ROAD CROSSING

NOT TO SCALE

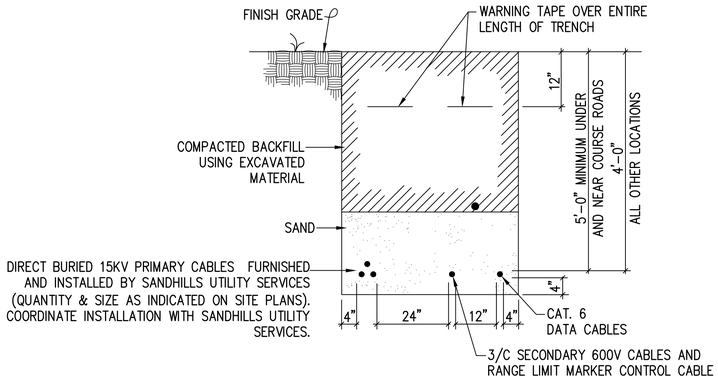



## TYPICAL TRENCH DETAIL SECONDARY POWER & DATA

NOT TO SCALE

NOTES

1. RUN CONTINUOUS FROM POWERCENTER TO TARGET EMPLACEMENT. BOND TO TARGET GROUND RODS AND POWERCENTER COUNTERPOISE GROUND CONDUCTOR, TYPICAL.
2. COUNTERPOISE GROUNDING CONDUCTOR SHALL BE PROVIDED IN TRENCH AND CONNECTED POWERCENTER-TO-POWERCENTER.




## TRENCH DETAIL 15KV PRIMARY/SECONDARY POWER/DATA/RLM CABLE

NOT TO SCALE

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: S. BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 178-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

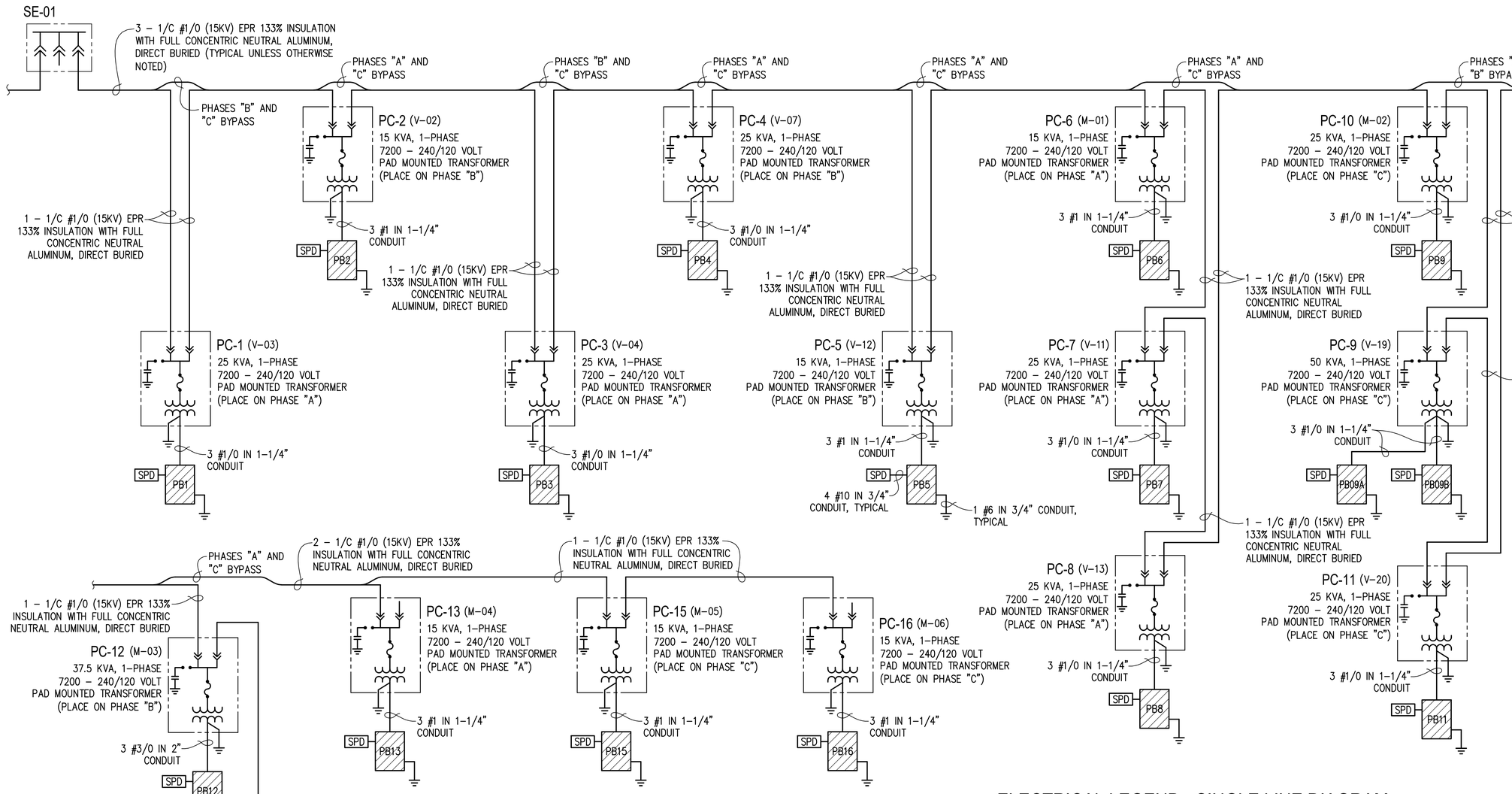
ELECTRICAL TRENCHING DETAILS

SAMUEL LEE GULLEY LICENSE No. 56007 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/6/23

SHEET ID
ES522

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EESS22 ELECTRICAL TRENCHING DETAILS.DWG




## POWER DISTRIBUTION SINGLE LINE DIAGRAM

NOT TO SCALE

### Notes

SANDHILLS UTILITY SERVICES SHALL PROVIDE AND INSTALL ALL PRIMARY POWER EQUIPMENT INCLUDING:

(1) 15KV PRIMARY CABLE
(2) PAD MOUNT SECTIONALIZING EQUIPMENT
(3) PAD MOUNTED TRANSFORMER AND CONCRETE PADS
(4) METERING EQUIPMENT

CONTRACTOR SHALL PROVIDE AND INSTALL:

(a) CONDUIT UNDERGROUND FOR PRIMARY CABLE AT POWER CENTERS

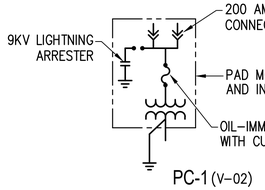
(b) ALL SECONDARY SERVICE EQUIPMENT INCLUDING SECONDARY SERVICE CONDUIT AND CONDUCTORS, PANELS, DISCONNECTS, ETC.

(c) CONCRETE ENCASED DUCTBANKS

(d) TRENCHING AND BACKFILLING

(e) LEAVE 15'–0" OF SLACK CABLE IN SECONDARY SERVICE FEEDERS FOR CONNECTION TO PAD MOUNTED TRANSFORMER BY SANDHILL UTILITY SERVICE, TYPICAL

## ELECTRICAL LEGEND - SINGLE LINE DIAGRAM



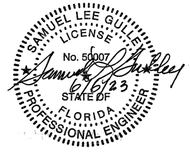

PC-1 (V-02) — POWER CENTER DESIGNATION CONSISTING OF PAD MOUNTED TRANSFORMER AND LOW VOLTAGE DISTRIBUTION EQUIPMENT AS SHOWN LOCATED IN STATIONARY ARMOR TARGET EMPLACEMENT POWERCENTER "PC–1" LOCATED IN SAT "V–02" INDICATED

SPD — SURGE PROTECTIVE DEVICE

LOADBREAK SEPARABLE CONNECTOR FURNISHED AND INSTALLED BY SANDHILLS UTILITY SERVICES

PB2 — PANELBOARD WITH MAIN BREAKER – 120/240 VOLT, 1–PHASE WITH NEMA 3R ENCLOSURE UNLESS OTHERWISE NOTED

SE-01 — PRIMARY CABLE TERMINATING/SECTIONALIZING ENCLOSURE 3–PHASE, 3–WAY OR 4–WAY AS NOTED, PAD MOUNTED DEAD–FRONT, 200 AMP, 15KV JUNCTIONS FURNISHED AND INSTALLED BY SANDHILLS UTILITY SERVICES




US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY:
S. GULLEY
FILE NAME:
ANSI D

ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01

U.S. ARMY CORPS OF ENGINEERS
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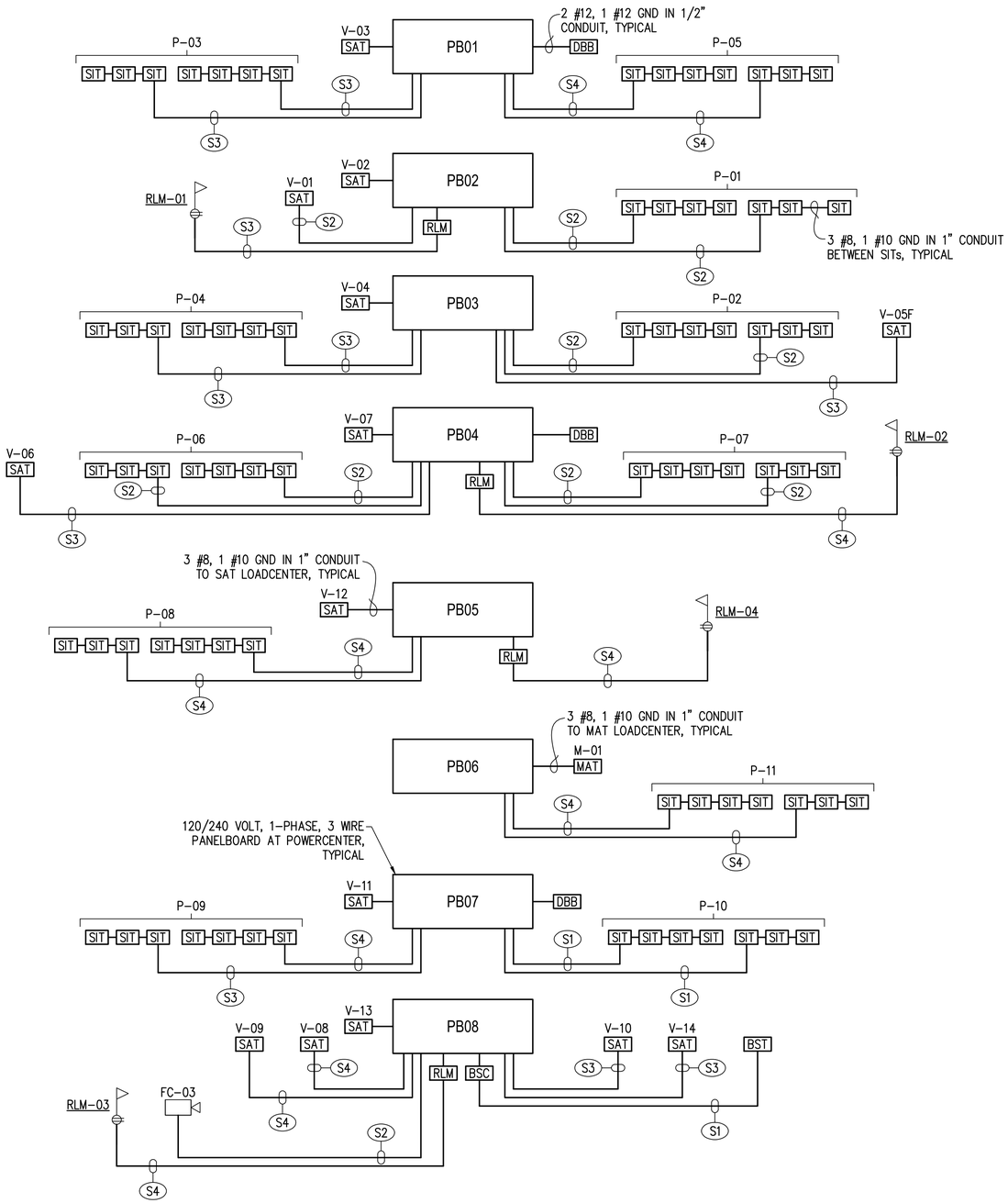
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

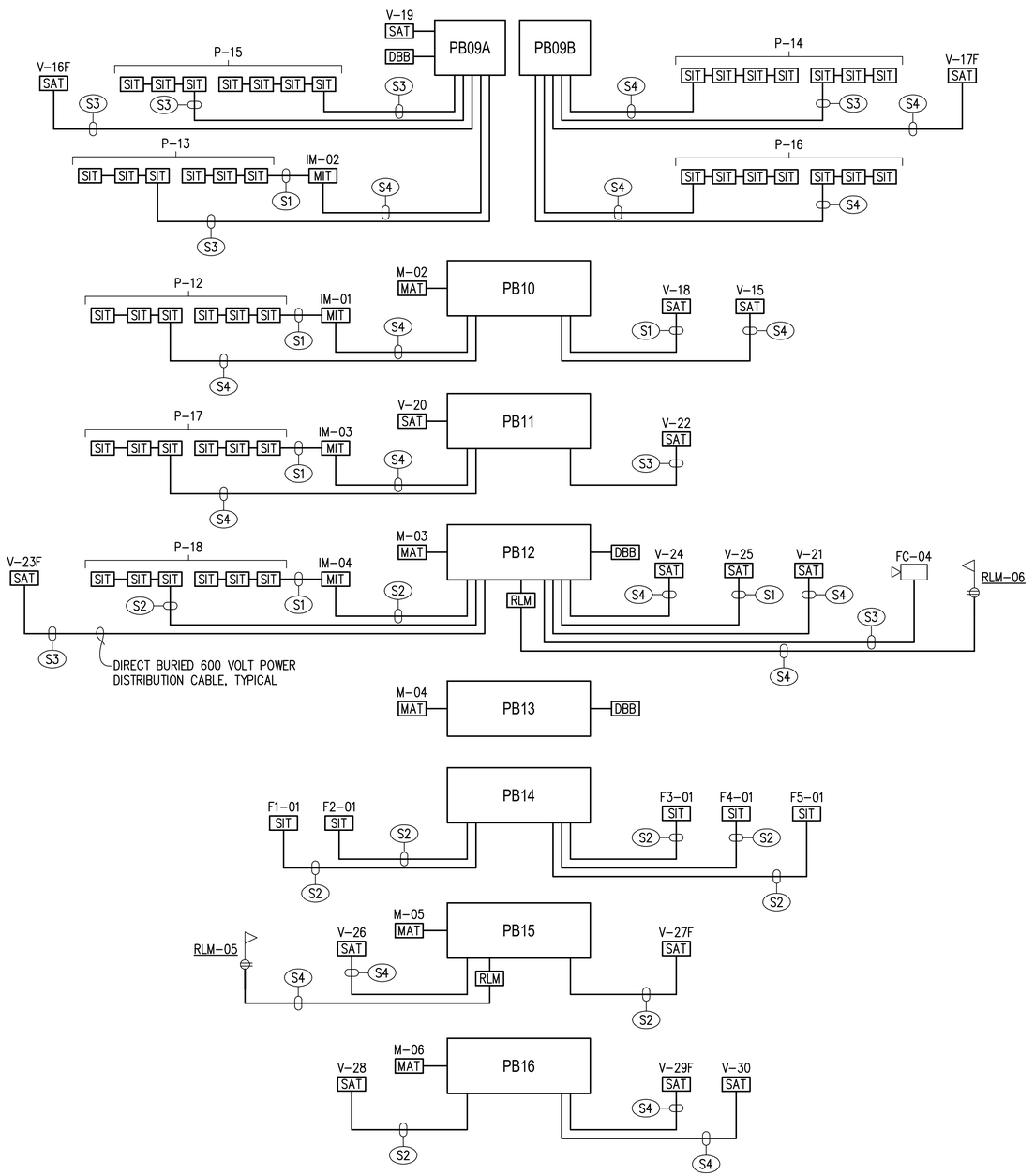
ELECTRICAL SINGLE LINE DIAGRAM

SHEET ID
ES606

READY TO ADVERTISE (RTA)

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES606 ELECTRICAL SINGLE LINE DIAGRAM.DWG




## Underground Cable Identification Label

- (S1) 3/C – #8 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE
- (S2) 3/C – #6 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE
- (S3) 3/C – #4 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE
- (S4) 3/C – #2 WITH GROUND DIRECT BURY 600 VOLT POWER CABLE

## ELECTRICAL TARGET POWER RISER DIAGRAM

NOT TO SCALE

NOTE:
PROVIDE PERMANENT TAGS ATTACHED TO EACH CABLE INSIDE BOX DIRECTLY ABOVE CONDUIT OPENING TO IDENTIFY THE CABLE DESTINATION.

## LEGEND

| | |
|---|---|
| SIT | STATIONARY INFANTRY TARGET |
| SAT | STATIONARY ARMOR TARGET |
| MAT | MOVING ARMOR TARGET |
| MIT | MOVING INFANTRY TARGET |
| BST | BORESIGHT |
| BSC | BORESIGHT CONTROLLER |
| RLM | RANGE LIMIT MARKER CONTROLLER |
| DBB | DATA BREAKOUT BOX |
| PB01 | POWER PANEL AT POWER CENTER |
| | FLIR CAMERA |
| RLM-05 | RANGE LIMIT MARKER |

SAMUEL LEE GULLEY LICENSE No. 56007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2EES607 ELECTRICAL TARGET RISER DIAGRAM.DWG

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: S. GULLEY, P.E.
SIZE: ANSI D
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL TARGET RISER DIAGRAM

SHEET ID
ES607

READY TO ADVERTISE (RTA)

| BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM. | PANEL SCHEDULE | NEMA 3R ENCLOSURE | BRACED FOR MINIMUM 10,000 AMPS SYM. |
|---|---|---|---|

PANEL PB01 120/240 VOLT AC, 1-PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V-03 | 35 | 2 | 1450 | | 1 | 2 | 2120 | | 2 | 35 | P-05 |
| | | | | 1400 | 3 | 4 | | 1920 | | | |
| P-03 | 35 | 2 | 2120 | | 5 | 6 | 1590 | | 2 | 35 | P-05 |
| | | | | 1920 | 7 | 8 | | 1440 | | | |
| P-03 | 35 | 2 | 1590 | | 9 | 10 | 100 | | 1 | 20 | DATA BREAKOUT BOX |
| | | | | 1440 | 11 | 12 | | | 1 | 20 | SPARE BREAKER |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPARE BREAKER | 35 | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 8,970 | 8,120 | = 17,090 VA / 71.21 AMPS |

TOTAL DEMAND VOLT - AMPS = 16,240 VA / 67.67 AMPS

| BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM. | PANEL SCHEDULE | NEMA 3R ENCLOSURE | BRACED FOR MINIMUM 10,000 AMPS SYM. |
|---|---|---|---|

PANEL PB04 120/240 VOLT AC, 1-PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V-07 | 35 | 2 | 1450 | | 1 | 2 | 2120 | | 2 | 35 | P-07 |
| | | | | 1400 | 3 | 4 | | 1920 | | | |
| P-06 | 35 | 2 | 2120 | | 5 | 6 | 1590 | | 2 | 35 | P-07 |
| | | | | 1920 | 7 | 8 | | 1440 | | | |
| P-06 | 35 | 2 | 1590 | | 9 | 10 | 1800 | | 1 | 20 | RLM-02 |
| | | | | 1440 | 11 | 12 | | 100 | 1 | 20 | DATA BREAKOUT BOX |
| V-06 | 35 | 2 | 1450 | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | 1400 | 15 | 16 | | | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 17 | 18 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 12,120 | 9,620 | = 21,740 VA / 90.17 AMPS |

TOTAL DEMAND VOLT - AMPS = 20,840 VA / X AMPS

| BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM. | PANEL SCHEDULE | NEMA 3R ENCLOSURE | BRACED FOR MINIMUM 10,000 AMPS SYM. |
|---|---|---|---|

PANEL PB02 120/240 VOLT AC, 1-PHASE, 3 WIRE, 100 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V-02 | 35 | 2 | 1450 | | 1 | 2 | 2120 | | 2 | 35 | P-01 |
| | | | | 1400 | 3 | 4 | | 1920 | | | |
| V-01 | 35 | 2 | 1450 | | 5 | 6 | 1590 | | 2 | 35 | P-01 |
| | | | | 1400 | 7 | 8 | | 1440 | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 9 | 10 | 1800 | | 1 | 20 | RLM-01 |
| | | | | | 11 | 12 | | | 1 | 20 | SPARE BREAKER |
| SPARE BREAKER | 35 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 8,410 | 6,160 | = 14,570 VA / 60.71 AMPS |

TOTAL DEMAND VOLT - AMPS = 12,320 VA / 51.33 AMPS

| BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM. | PANEL SCHEDULE | NEMA 3R ENCLOSURE | BRACED FOR MINIMUM 10,000 AMPS SYM. |
|---|---|---|---|

PANEL PB05 120/240 VOLT AC, 1-PHASE, 3 WIRE, 100 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V-12 | 35 | 2 | 1450 | | 1 | 2 | 1800 | | 1 | 20 | RLM-04 |
| | | | | 1400 | 3 | 4 | | | 1 | 20 | SPARE BREAKER |
| P-08 | 35 | 2 | 2120 | | 5 | 6 | | | 2 | 35 | SPARE BREAKER |
| | | | | 1920 | 7 | 8 | | | | | |
| P-08 | 35 | 2 | 1590 | | 9 | 10 | | | 2 | 35 | SPARE BREAKER |
| | | | | 1440 | 11 | 12 | | | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 6,960 | 4,760 | = 11,720 VA / 48.83 AMPS |

TOTAL DEMAND VOLT - AMPS = 11,320 VA / 47.17 AMPS

| BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM. | PANEL SCHEDULE | NEMA 3R ENCLOSURE | BRACED FOR MINIMUM 10,000 AMPS SYM. |
|---|---|---|---|

PANEL PB03 120/240 VOLT AC, 1-PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V-04 | 35 | 2 | 1450 | | 1 | 2 | 2120 | | 2 | 35 | P-02 |
| | | | | 1400 | 3 | 4 | | 1920 | | | |
| P-04 | 35 | 2 | 2120 | | 5 | 6 | 1590 | | 2 | 35 | P-02 |
| | | | | 1920 | 7 | 8 | | 1440 | | | |
| P-04 | 35 | 2 | 1590 | | 9 | 10 | 1450 | | 2 | 35 | V-05F |
| | | | | 1440 | 11 | 12 | | 1400 | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 10,320 | 9,520 | = 19,840 VA / 82.67 AMPS |

TOTAL DEMAND VOLT - AMPS = 19,040 VA / 79.33 AMPS

| BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM. | PANEL SCHEDULE | NEMA 3R ENCLOSURE | BRACED FOR MINIMUM 10,000 AMPS SYM. |
|---|---|---|---|

PANEL PB06 120/240 VOLT AC, 1-PHASE, 3 WIRE, 100 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M-01 (NEMA L14-20R, | 35 | 2 | 1950 | | 1 | 2 | 2120 | | 2 | 35 | P-11 |
| 2-NEMA L5-20R, DPR) | | | | 1900 | 3 | 4 | | 1920 | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 5 | 6 | 1590 | | 2 | 35 | P-11 |
| | | | | | 7 | 8 | | 1440 | | | |
| SPARE BREAKER | 35 | 2 | | | 9 | 10 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 11 | 12 | | | | | |
| SPARE BREAKER | 35 | 2 | | | 13 | 14 | | | 2 | | SPACE ONLY |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 5,660 | 5,260 | = 10,920 VA / 45.50 AMPS |

TOTAL DEMAND VOLT - AMPS = 10,520 VA / 43.83 AMPS

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
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ELECTRICAL TARGET
PANEL SCHEDULES

SHEET ID
ES608

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BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB07 120/240 VOLT AC, 1–PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER – SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V–11 | 35 | 2 | 1450 | | 1 | 2 | 2120 | | 2 | 35 | P–10 |
| | | | | 1400 | 3 | 4 | | 1920 | | | |
| P–09 | 35 | 2 | 2120 | | 5 | 6 | 1590 | | 2 | 35 | P–10 |
| | | | | 1920 | 7 | 8 | | 1440 | | | |
| P–09 | 35 | 2 | 1590 | | 9 | 10 | 100 | | 1 | 20 | DATA BREAKOUT BOX |
| | | | | 1440 | 11 | 12 | | | 1 | 20 | SPARE BREAKER |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT – AMPS | 8,970 | 8,120 | = 17,090 VA / 71.21 AMPS |

TOTAL DEMAND VOLT – AMPS = 16,240 VA / 67.67 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB10 120/240 VOLT AC, 1–PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER – SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M–02 (NEMA L14–20R, | 35 | 2 | 1950 | | 1 | 2 | 1450 | | 2 | 35 | V–18 |
| 2–NEMA L5–20R, DPR) | | | | 1900 | 3 | 4 | | 1400 | | | |
| IM–01 & P–12 | 35 | 2 | 2640 | | 5 | 6 | 1450 | | 2 | 35 | V–15 |
| | | | | 2440 | 7 | 8 | | 1400 | | | |
| P–12 | 35 | 2 | 1590 | | 9 | 10 | | | 2 | 30 | SURGE PROTECTIVE DEVICE |
| | | | | 1440 | 11 | 12 | | | | | |
| SPARE BREAKER | 35 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPARE BREAKER | 35 | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT – AMPS | 9,080 | 8,580 | = 17,660 VA / 73.58 AMPS |

TOTAL DEMAND VOLT – AMPS = 15,160 VA / 63.17 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB08 120/240 VOLT AC, 1–PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER – SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V–13 | 35 | 2 | 1450 | | 1 | 2 | 1450 | | 2 | 35 | V–10 |
| | | | | 1400 | 3 | 4 | | 1400 | | | |
| V–08 | 35 | 2 | 1450 | | 5 | 6 | 1450 | | 2 | 35 | V–14 |
| | | | | 1400 | 7 | 8 | | 1400 | | | |
| FC–03 | 35 | 2 | 1500 | | 9 | 10 | 1450 | | 2 | 35 | V–09 |
| | | | | 50 | 11 | 12 | | 1400 | | | |
| RLM–03 | 20 | 1 | 1800 | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| BORESIGHT | 20 | 1 | | 100 | 15 | 16 | | | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 17 | 18 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT – AMPS | 10,550 | 7,150 | = 17,700 VA / 73.75 AMPS |

TOTAL DEMAND VOLT – AMPS = 17,350 VA / 72.29 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB11 120/240 VOLT AC, 1–PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER – SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V–20 | 35 | 2 | 1450 | | 1 | 2 | 1450 | | 2 | 35 | V–22 |
| | | | | 1400 | 3 | 4 | | 1400 | | | |
| IM–03 & P–17 | 35 | 2 | 2640 | | 5 | 6 | 1590 | | 2 | 35 | P–17 |
| | | | | 2440 | 7 | 8 | | 1440 | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 9 | 10 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 11 | 12 | | | | | |
| SPARE BREAKER | 35 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT – AMPS | 7,130 | 6,680 | = 13,810 VA / 57.54 AMPS |

TOTAL DEMAND VOLT – AMPS = 13,360 VA / 55.67 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB09A 120/240 VOLT AC, 1–PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER – SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V–19 | 35 | 2 | 1450 | | 1 | 2 | 1590 | | 2 | 35 | IM–02 & P–13 |
| | | | | 1400 | 3 | 4 | | 1440 | | | |
| P–15 | 35 | 2 | 2120 | | 5 | 6 | 1590 | | 2 | 35 | P–13 |
| | | | | 1920 | 7 | 8 | | 1440 | | | |
| P–15 | 35 | 2 | 1590 | | 9 | 10 | 100 | | 1 | 20 | DATA BREAKOUT BOX |
| | | | | 1440 | 11 | 12 | | | 1 | 20 | SPARE BREAKER |
| V–16F | 35 | 2 | 1450 | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | 1400 | 15 | 16 | | | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT – AMPS | 9,890 | 9,040 | = 18,930 VA / 78.88 AMPS |

TOTAL DEMAND VOLT – AMPS = 17,889 VA / 74.54 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL P09B 120/240 VOLT AC, 1–PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER – SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P–14 | 35 | 2 | 2120 | | 1 | 2 | 2120 | | 2 | 35 | P–16 |
| | | | | 1920 | 3 | 4 | | 1920 | | | |
| P–14 | 35 | 2 | 1590 | | 5 | 6 | 1590 | | 2 | 35 | P–16 |
| | | | | 1440 | 7 | 8 | | 1440 | | | |
| V–17F | 35 | 2 | 1450 | | 9 | 10 | | | 2 | 35 | SPARE BREAKER |
| | | | | 1400 | 11 | 12 | | | | | |
| SPARE BREAKER | 20 | 1 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT – AMPS | 8,870 | 8,120 | = 16,990 VA / 70.79 AMPS |

TOTAL DEMAND VOLT – AMPS = 16,140 VA / 67.25 AMPS

SAMUEL LEE GUILEY LICENSE No. 56007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL TARGET
PANEL SCHEDULES

SHEET ID
ES609

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BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB12 120/240 VOLT AC, 1-PHASE, 3 WIRE, 200 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M-03 (NEMA L14-20R, | 35 | 2 | 1950 | | 1 | 2 | 1450 | | 2 | 35 | V-24 |
| 2-NEMA L5-20R, DPR) | | | | 1900 | 3 | 4 | | 1400 | | | |
| IM-04 & P-18 | 35 | 2 | 2640 | | 5 | 6 | 1450 | | 2 | 35 | V-25 |
| | | | | 2440 | 7 | 8 | | 1400 | | | |
| V-23F | 35 | 2 | 1450 | | 9 | 10 | 1500 | | 2 | 35 | FC-04 |
| | | | | 1400 | 11 | 12 | | 50 | | | |
| RLM-06 | 20 | 1 | 1800 | | 13 | 14 | 1590 | | 2 | 35 | P-18 |
| DATA BREAKOUT BOX | 20 | 1 | | 100 | 15 | 16 | | 1440 | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 17 | 18 | 1450 | | 2 | 35 | V-21 |
| | | | | | 19 | 20 | | 1400 | | | |
| SPARE BREAKER | 35 | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 15,280 | 11,530 | = 26,810 VA / 111.71 AMPS |

TOTAL DEMAND VOLT - AMPS = 26,191 VA / 109.13 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB15 120/240 VOLT AC, 1-PHASE, 3 WIRE, 100 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M-05 (NEMA L14-20R, | 35 | 2 | 1950 | | 1 | 2 | 1450 | | 2 | 35 | V-27F |
| 2-NEMA L5-20R, DPR) | | | | 1900 | 3 | 4 | | 1400 | | | |
| V-26 | 35 | 2 | 1450 | | 5 | 6 | 1800 | | 1 | 20 | RLM-05 |
| | | | | 1400 | 7 | 8 | | 100 | 1 | 20 | DATA BREAKOUT BOX |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 9 | 10 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 11 | 12 | | | | | |
| SPARE BREAKER | 35 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 6,750 | 4,700 | = 11,450 VA / 47.71 AMPS |

TOTAL DEMAND VOLT - AMPS = 11,200 VA / 46.67 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB13 120/240 VOLT AC, 1-PHASE, 3 WIRE, 100 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M-04 (NEMA L14-20R, | 35 | 2 | 1950 | | 1 | 2 | | | 1 | 20 | SPARE BREAKER |
| 2-NEMA L5-20R, DPR) | | | | 1900 | 3 | 4 | | | 1 | 20 | SPARE BREAKER |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 5 | 6 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 7 | 8 | | | | | |
| SPACE ONLY | | 2 | | | 9 | 10 | | | 2 | | SPACE ONLY |
| | | | | | 11 | 12 | | | | | |
| SPACE ONLY | | 2 | | | 13 | 14 | | | 2 | | SPACE ONLY |
| | | | | | 15 | 16 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 1,950 | 1,900 | = 3,850 VA / 16.04 AMPS |

TOTAL DEMAND VOLT - AMPS = 3,850 VA / 16.04 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB16 120/240 VOLT AC, 1-PHASE, 3 WIRE, 100 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M-06 (NEMA L14-20R, | 35 | 2 | 1950 | | 1 | 2 | 1450 | | 2 | 35 | V-29F |
| 2-NEMA L5-20R, DPR) | | | | 1900 | 3 | 4 | | 1400 | | | |
| V-28 | 35 | 2 | 1450 | | 5 | 6 | 1450 | | 2 | 35 | V-30 |
| | | | | 1400 | 7 | 8 | | 1400 | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 9 | 10 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 11 | 12 | | | | | |
| SPARE BREAKER | 35 | 2 | | | 13 | 14 | | | 2 | 35 | SPARE BREAKER |
| | | | | | 15 | 16 | | | | | |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 6,300 | 6,100 | = 12,400 VA / 51.67 AMPS |

TOTAL DEMAND VOLT - AMPS = 12,200 VA / 50.83 AMPS

BREAKER INTERRUPTING CAPACITY 10,000 AMPS SYM.

## PANEL SCHEDULE

NEMA 3R ENCLOSURE

BRACED FOR MINIMUM 10,000 AMPS SYM.

PANEL PB14 120/240 VOLT AC, 1-PHASE, 3 WIRE, 125 AMP, 2 POLE MAIN BREAKER - SURFACE MOUNTED

| EQUIPMENT SERVED | CKT. BKR. TRIP | CKT. BKR. POLE | VA/PHASE A | VA/PHASE B | CKT. No. | CKT. No. | VA/PHASE A | VA/PHASE B | CKT. BKR. POLE | CKT. BKR. TRIP | EQUIPMENT SERVED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F1-01 | 35 | 2 | 2120 | | 1 | 2 | 2120 | | 2 | 35 | F3-01 |
| | | | | 1920 | 3 | 4 | | 1920 | | | |
| F2-01 | 35 | 2 | 2120 | | 5 | 6 | 2120 | | 2 | 35 | F4-01 |
| | | | | 1920 | 7 | 8 | | 1920 | | | |
| SURGE PROTECTIVE DEVICE | 30 | 2 | | | 9 | 10 | 2120 | | 2 | 35 | F5-01 |
| | | | | | 11 | 12 | | 1920 | | | |
| SPARE BREAKER | 35 | 2 | | | 13 | 14 | 100 | | 1 | 20 | DATA BREAKOUT BOX |
| | | | | | 15 | 16 | | | 1 | 20 | SPARE BREAKER |
| SPACE ONLY | | 2 | | | 17 | 18 | | | 2 | | SPACE ONLY |
| | | | | | 19 | 20 | | | | | |
| SPACE ONLY | | 2 | | | 21 | 22 | | | 2 | | SPACE ONLY |
| | | | | | 23 | 24 | | | | | |

| | A | B | |
|---|---|---|---|
| TOTAL CONNECTED VOLT - AMPS | 10,700 | 9,600 | = 20,300 VA / 84.58 AMPS |

TOTAL DEMAND VOLT - AMPS = 18,180 VA / 75.75 AMPS

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

| MARK | DESCRIPTION | DATE |
|---|---|---|
| | | |

DESIGNED BY: S. GULLEY
DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

POLY, INC.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

ELECTRICAL TARGET
PANEL SCHEDULES

SHEET ID
ES610

READY TO ADVERTISE (RTA)

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## BACKBONE CABLE IDENTIFICATION NOMENCLATURE

ORIGIN — DESTINATION

57026.102.2.D–MRFCL.101.1.A–002.06.C3

- 57026 — BUILDING IDENTIFIER
- 102 — ROOM NUMBER
- 2 — CABINET NUMBER
- D — FIBER DRAWER/PATCH PANEL
- 002 — CABLE IDENTIFIER
- 06 — NUMBER OF STRANDS OR PAIRS
- C3 — CABLE TYPE

CABLE TYPES:

| | |
|---|---|
| SM | SINGLEMODE FIBER OPTIC |
| MM | MULTIMODE FIBER OPTIC |
| C3 | CATEGORY 3 COPPER CABLE |
| C5 | CATEGORY 5 COPPER CABLE |
| C5E | CATEGORY 5E COPPER CABLE |
| C6 | CATEGORY 6 COPPER CABLE |

EXAMPLE: LABEL 57026.102.2.D–MRFCL.101.1.A–002.06.C3 INDICATES A 6 PAIR COPPER BACKBONE CABLE NUMBER '002' TERMINATED IN 'BUILDING 57026' ROOM 102, CABINET '2', VOICE BLOCK 'D'. THE OTHER END OF THE CABLE IS TERMINATED AT 'MRF CLASSROOM BUILDING' IN ROOM '101', CABINET '1', VOICE BLOCK 'A'.

NOTE:
DESTINATION CAN BE A BUILDING OR MTDP/TDP.

# GENERAL UNDERGROUND CONDUIT AND CABLING NOTES:

1. LOCATION AND ROUTING OF NEW UNDERGROUND CONDUIT IS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE THE FINAL LOCATION AND ROUTING OF CONDUIT TO AVOID CONFLICTS WITH EXISTING BURIED UTILITIES AND OTHER OBSTRUCTIONS. CHANGES TO CONDUIT ROUTING SHALL REQUIRE THE APPROVAL OF THE ENGINEER.

2. BURIED WARNING AND IDENTIFICATION TAPE: ALL WARNING TAPE SHALL BE POLYETHYLENE (PE) PLASTIC TAPE, A MINIMUM WIDTH OF 6 INCHES, IAW APWA UNIFORM COLOR CODE, AND IMPRINTED WITH THE WORDS "WARNING – TELECOMMUNICATION CABLE BELOW" AT NOT MORE THAN 48 INCH INTERVALS. MINIMUM THICKNESS OF THE TAPE SHALL BE 0.004". TAPE SHALL HAVE A MINIMUM STRENGTH OF 1750 POUNDS PER SQUARE INCH (PSI) LENGTHWISE AND 1500 PSI. TAPE SHALL BE MANUFACTURED WITH INTEGRAL WIRES, FOIL BACKING, OR OTHER MEANS OF ENABLING DETECTION BY A METAL DETECTOR OR UNDERGROUND CABLE DETECTOR TYPICALLY USED IN THE OSP INDUSTRY WHEN TAPE IS BURIED UP TO 3 FEET DEEP. THE MATERIALS IN THE WARNING TAPE SHALL BE CHEMICALLY INERT AND WILL NOT DEGRADE WHEN EXPOSED TO ACIDS, ALKALIS, AND OTHER DESTRUCTIVE SUBSTANCES FOUND IN SOIL. DETECTABLE WARNING TAPE SHALL BE INSTALLED A MINIMUM OF 12 INCHES TO 18 INCHES ABOVE ALL NEW NON METALLIC CONDUIT FORMATIONS AND DB CABLE INSTALLATIONS AND SHALL NOT EXCEED THE MANUFACTURER'S RECOMMENDED DEPTH BELOW GRADE. TAPE SHALL BE PLACED AT A DEPTH OF NO LESS THAN 12 INCHES BELOW SURFACE GRADE. BURIED CABLES INCLUDE CABLES PLACED IN OPEN TRENCHES AND CABLES PLACED BY PLOWING.

3. PERMANENT TRACER WIRE: PERMANENT TRACER WIRE SHALL BE INSTALLED IN ALL NEW DUCT BANKS (THE CONDUITS MAY CONTAIN A TONEABLE CABLE TODAY, BUT IT MIGHT BE REMOVED IN THE NEAR FUTURE). ONE TRACER WIRE SHALL BE INSTALLED PER DUCT BANK. THE TRACER WIRE SHALL BE PLACED CENTRICALLY AS POSSIBLE IN THE TOP CONDUIT FORMATION. WHEN DIELECTRIC CABLE IS INSTALLED IN EXISTING CONDUIT FORMATIONS THAT DO NOT CONTAIN TONEABLE CABLES, A TRACER WIRE SHALL BE INSTALLED ALONG WITH THE DIELECTRIC CABLE. SPLICES IN THE TRACER WIRE SHALL BE CONNECTED BY MEANS OF A COMPRESSION TYPE CONNECTOR TO ENSURE CONTINUITY. WIRE NUTS SHALL NOT BE USED. AFTER INSTALLATION, TRACER WIRE SHALL BE TESTED TO VERIFY CONTINUITY OF THE TRACER WIRE SYSTEM AND A REPORT INDICATING CONTINUITY SHALL BE SUBMITTED TO THE PERMITTING AUTHORITY AS PART OF THE AS–BUILT CONSTRUCTION RECORDS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL EXISTING BURIED UTILITIES PRIOR TO COMMENCING ANY EXCAVATION REQUIRED FOR WORK UNDER THE PROJECT. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITIES THAT OCCURS AS A RESULT OF OPERATIONS PERFORMED UNDER THIS CONTRACT AT NO ADDITIONAL COST TO THE OWNER. REPAIRS SHALL BE MADE USING MATERIALS & METHODS TO MATCH EXISTING CONSTRUCTION AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO RE–COVERING.

5. LOCATION OF HANDHOLES SHOWN IS INTENDED TO PLACE HANDHOLES IN ACCESSIBLE SODDED, PLANTED OR PAVED AREAS. COORDINATE LOCATIONS WITH SIDEWALKS, OTHER OUTSIDE STRUCTURES, AND LANDSCAPING TO AVOID CONFLICTS.

6. PROVIDE HANDHOLES IN UNDERGROUND CONDUIT AS INDICATED AND ADDITIONAL HANDHOLES AS REQUIRED DUE TO CHANGES IN CONDUIT DIRECTION. INSTALL A HANDHOLE IN EACH CONDUIT RUN OF LONGER THAN 500 FEET OR CONTAINING THE EQUIVALENT OF MORE THAN TWO 90° BENDS. INSTALL HANDHOLES AFTER BENDS AS INDICATED. DO NOT USE HANDHOLES TO MAKE A CHANGE IN DIRECTION.

7. RESTORE TO THEIR ORIGINAL ELEVATION AND CONDITION UNPAVED SURFACES DISTURBED DURING INSTALLATION OF UNDERGROUND CONDUIT. PRESERVE AND REPLACE SOD OR TOPSOIL AFTER INSTALLATION IS COMPLETED. REPLACE SOD THAT IS DAMAGED WITH SOD OF TYPE AND QUALITY EQUAL TO THAT REMOVED.

8. WHERE TRENCHES OR OTHER EXCAVATIONS ARE MADE IN AREAS OF EXISTING ROADWAYS OR WALKWAYS WHERE SURFACE TREATMENT OF ANY KIND EXISTS, RESTORE SUCH SURFACE TREATMENT TO THE SAME THICKNESS AND IN THE SAME KIND AS PREVIOUSLY EXISTED (EXCEPT AS OTHERWISE INDICATED) AND TO MATCH AND TIE INTO THE ADJACENT AND SURROUNDING SURFACES.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXTENT OF EXISTING SURFACE TREATMENT SUCH AS CONCRETE OR ASPHALTIC PAVING. THE DRAWINGS SHALL NOT BE CONSTRUED AS PROVIDING ACCURATE REPRESENTATION OF THE TYPE, LOCATION OR EXTENT OF SURFACE TREATMENT OF ANY KIND.

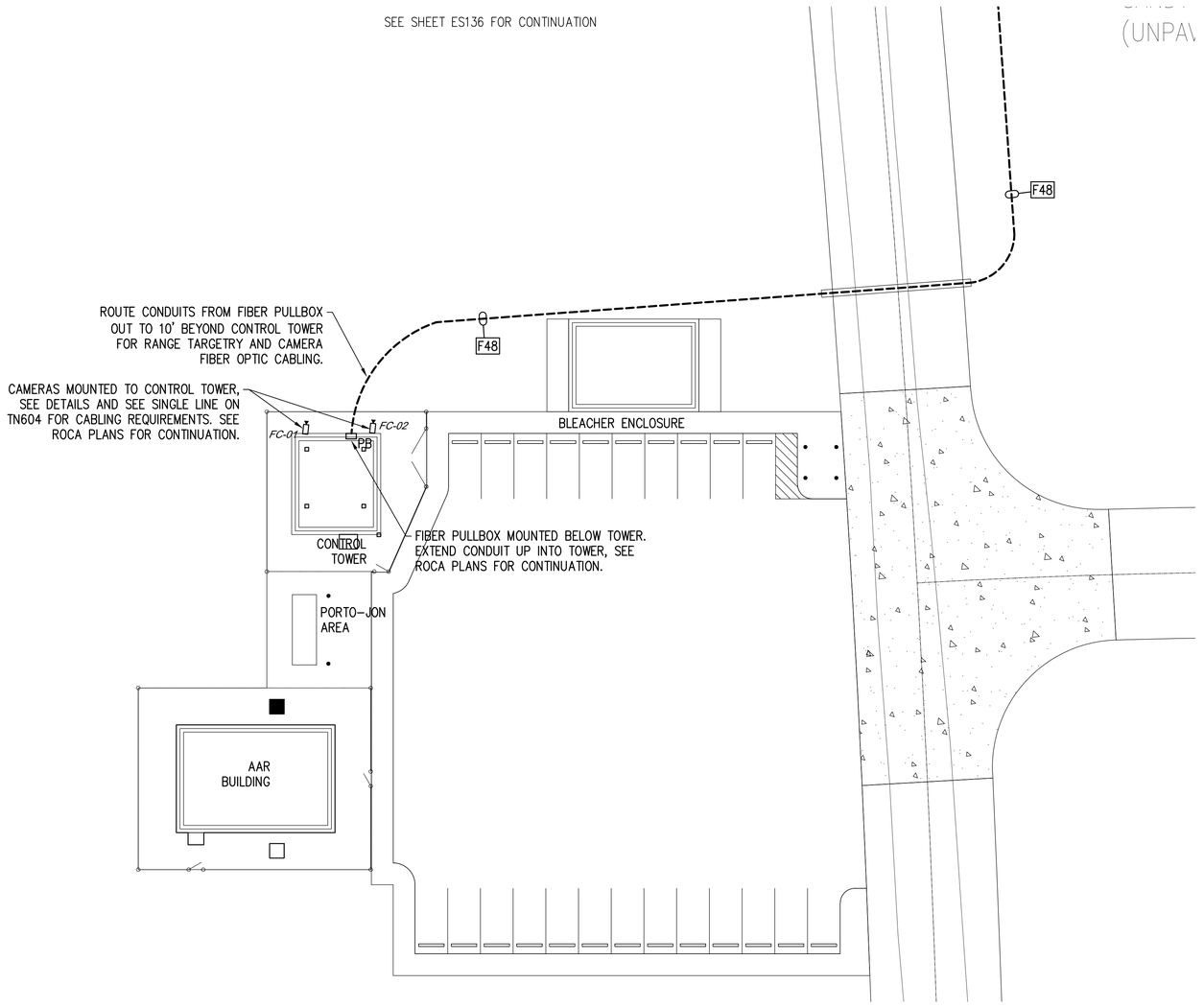
10. THE MINIMUM BEND RADIUS FOR ALL UNDERGROUND CONDUITS SHALL BE 10 TIMES THE INTERNAL CONDUIT DIAMETER.

11. RUN ALL CABLES CONTINUOUS BETWEEN TERMINATION POINTS INDICATED WITH NO INTERMEDIATE SLICES OR TERMINATIONS EXCEPT AT POWER CENTER CROSS–CONNECTS (AS INDICATED) OR MTDP.

12. UNLESS OTHERWISE INDICATED, ALL TARGETRY CABLES ARE TO BE INSTALLED IN THE SAME TRENCH AS ELECTRICAL, SEE ELECTRICAL SITE PLANS FOR TARGET AND TRENCHING LAYOUT.

13. DIRECT BURIED CABLE: WARNING SIGNS OR ROUTE MARKERS SHALL BE PROVIDED AT INTERVALS NO GREATER THAN EVERY 250FT OR AT EACH CHANGE IN ROUTE DIRECTION, ON BOTH SIDES OF STREET CROSSINGS, ON PIPLINES AND ON BURIED POWER CABLES. COLOR–CODED WARNING SIGNS OR MARKERS SHALL BE ORANGE IN COLOR AND SHALL BE INSTALLED IN ACCORDANCE TO I3A (FEB 2010).

SEE SHEET ES136 FOR CONTINUATION




N

## COMMUNICATIONS SITE PLAN - DOWNRAGE OUTSIDE PLANT - ENLARGED ROCA AREA

SCALE: 1" = 20'–0"

## GENERAL NOTES:

THOROUGHLY REVIEW ALL DESIGN DOCUMENTS TO ENSURE THAT COMMUNICATIONS INSTALLATION CONFORMS TO ALL REQUIREMENTS OF THE BASE STANDARDS, TECHNICAL GUIDE FOR INSTALLATION INFORMATION INFRASTRUCTURE ARCHITECTURE (I3A), THE UNIFIED FACILITIES CRITERIA, NFPA, EIA/TIA STANDARDS AND OTHER LOCAL CODES AS THEY APPLY.

COMMUNICATIONS TIE–IN LOCATIONS AND ROUTES ARE APPROXIMATE BASED ON THE LATEST INFORMATION AVAILABLE. CONTRACTOR TO COORDINATE EXACT LOCATION, ROUTES AND PAIR/STRAND CONNECTIONS IN THE FIELD WITH CONTRACTING OFFICER'S REPRESENTATIVE PRIOR TO CONSTRUCTION. NO CONNECTIONS ARE TO BE MADE TO EXISTING CABLES WITHOUT WRITTEN APPROVAL FROM THE CONTRACTING OFFICER'S REPRESENTATIVE.

CONFIRM ALL TIE–IN CABLE TYPES AND PAIR/FIBER COUNTS PRIOR TO ORDERING OR INSTALLING RELATED CABLES/EQUIPMENT.

GRAPHIC SCALE

20 10 0 20FT 40FT

SCALE: 1" = 20'–0"

SAMUEL LEE GUILEY LICENSE No. 56007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

US Army Corps of Engineers®

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|---|---|---|
| | | |

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DRAWN BY: T. BOLTON
CHECKED BY: C. BROWN
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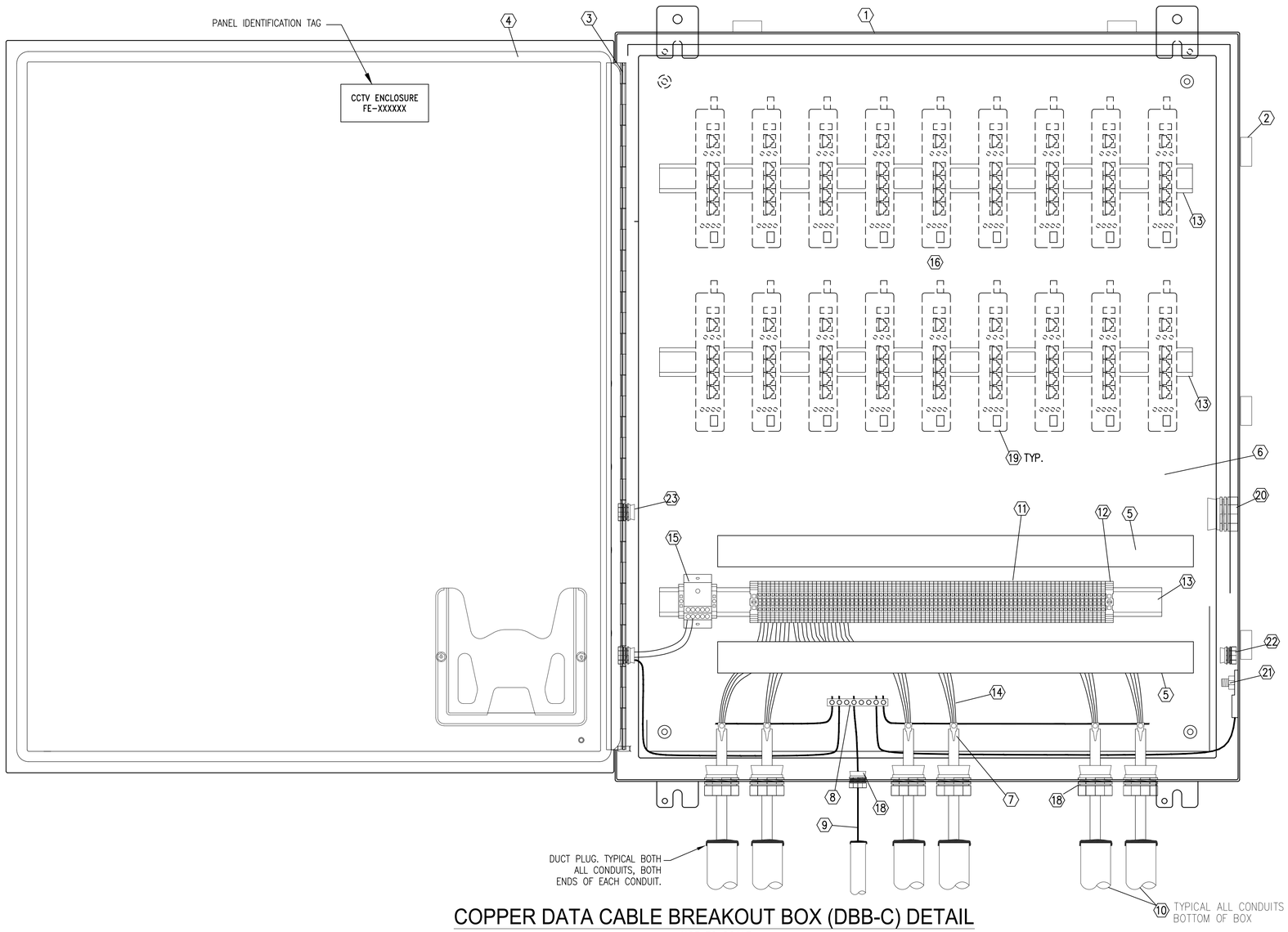
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ENLARGED DOWNRANGE COMMUNICATIONS SITE PLAN

SHEET ID
TN400

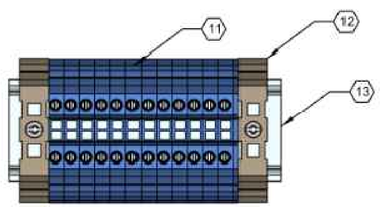
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## COPPER DATA CABLE BREAKOUT BOX (DBB-C) DETAIL

NOT TO SCALE



## TYPICAL TERMINAL BLOCK SECTION DETAIL

NOT TO SCALE

GENERAL NOTES:

1. DBB SHALL BE 36"H X 30"H X 8"D MINIMUM.
2. NOT ALL WIRE AND CABLE CONTAINED IN THE DBB ARE SHOWN IN THIS DETAIL. SEE THE DOWNRANGE 1-LINE DIAGRAM FOR THE NUMBER OF DATA CABLES RUNNING FROM THE DBB TO DOWNRANGE TARGETS.
3. PROVIDE CABLE IDENTIFICATION DIRECTORY ON INSIDE OF COVER.
4. LABEL ALL CABLES WITH ADHESIVE POLYETHYLENE WRAP AROUND LASER PRINTED LABELS INDICATING CABLE DESTINATION AND CABLE TYPE.
5. ALL COMPONENTS INSTALLED INSIDE DBB ENCLOSURES SHALL BE SECURED BY MECHANICAL MEANS. ADHESIVES ARE NOT ALLOWED FOR SECURING COMPONENTS INSIDE DBB ENCLOSURES.

KEYED NOTES REPRESENTED WITH ⟨#⟩:

1. ENCLOSURE SHALL BE 16 GAUGE MINIMUM GALVANIZED STEEL SHEET METAL WITH WALL MOUNT BRACKETS. ENCLOSURE SHALL CARRY A NEMA 4 RATING AND BE TESTED BY UL OR OTHER APPROVED TESTING AGENCY.
2. PROVIDE ENCLOSURE WITH CLAMPS ON THREE SIDES OF THE DOOR. NUMBER OF CLAMPS AS REQUIRED BY MANUFACTURER TO MEET NEMA 4 REQUIREMENTS.
3. PROVIDE ENCLOSURE WITH REMOVABLE HEAVY GAUGE STAINLESS STEEL CONTINUOUS HINGE PIN. HINGES SHALL ALLOW THE DOOR TO BE REMOVED FROM THE ENCLOSURE.
4. PROVIDE ENCLOSURE DOOR WITH A SEAMLESS FOAM-IN-PLACE GASKET. ADHESIVE BACK FOAM STYLE GASKETS ARE NOT ACCEPTABLE.
5. CABLE MANAGEMENT WIRE WAY FOR TWISTED PAIRS.
6. METAL BACK PLATE TO SECURE COMPONENTS INSIDE ENCLOSURE.
7. METALLIC CABLE SHEATH GROUNDING CLAMP AND GROUNDING CONNECTOR, BOND CABLE ARMOR/SHIELD TO DBB BACK PLATE GROUNDING BAR. ALL GROUND CABLES NOT SHOWN FOR CLARITY.
8. GROUND BAR – SECURE TO METAL BACK PLATE.
9. #6 AWG BARE COPPER GROUNDING CONDUCTOR.
10. CONDUITS WITH DIRECT BURIAL GRADE CATEGORY 6 TWISTED PAIR ARMORED CABLE. NOT ALL WIRES AND CONDUIT ARE SHOWN. PROVIDE NUMBER AND SIZE OF CONDUITS AS DEFINED IN THE DOWNRANGE DATA 1-LINE DIAGRAM. FOR DBB-C WITH LARGE AMOUNTS OF INCOMING CONDUITS, PROVIDE SEVERAL LARGER CONDUITS FROM EMPLACEMENT HANDHOLE AND FEED MULTIPLE CATEGORY 6 CABLES IN EACH CONDUIT.
11. DIN RAIL MOUNTED FEED-THROUGH TERMINAL BLOCK SECTIONS WITH 2 SCREW TYPE CONNECTIONS. LENGTH OF DIN RAIL SHALL BE AS REQUIRED TO ACCOMMODATE TERMINAL BLOCK SECTIONS AND SUPPORT BRACKETS. TERMINAL BLOCK SECTION SHALL ACCEPT WIRE SIZES OF #24 AWG. PROVIDE NUMBER OF SECTIONS TO ACCOMMODATE ALL TWISTED WIRE PAIRS. SEE DOWNRANGE DATA 1-LINE DIAGRAM FOR NUMBER OF TWISTED PAIRS.
12. SUPPORT BRACKET FOR DATA CABLE TERMINAL BLOCK. PROVIDE ONE SUPPORT BRACKET ON EACH END OF TERMINAL BLOCKS.
13. STANDARD PROFILE DIN RAIL. LENGTH SHALL BE AS REQUIRED TO ACCOMMODATE TERMINAL BLOCK SECTIONS AND SUPPORT BRACKETS OR DSL MODEMS.
14. TWISTED WIRE PAIRS FROM DOWNRANGE BURIAL GRADE CATEGORY 6 ARMORED DATA CABLE. NOT ALL WIRES ARE SHOWN. SEE DOWNRANGE DATA 1-LINE DIAGRAM FOR NUMBER OF WIRE PAIRS REQUIRED IN DBB-C.
15. 20 AMP, 600 VOLT, DIN RAIL MOUNT TERMINAL BLOCK FOR 120 VOLT POWER TO DBB COMPONENTS.
16. MAXIMIZE AVAILABLE SPACE AT THE TOP OF THE DBB BACK PLATE FOR THE MOUNTING OF DBB COMPONENTS BY THE TARGET VENDOR.
17. PROVIDE WEATHERPROOF CONDUIT CONNECTIONS FOR ALL CONDUIT PENETRATIONS INTO THE DBB. CONNECTON TO BE A MYERS HUB TYPE OR EQUIVALENT.
18. PROVIDE A CABLE SEAL FITTING FOR ALL CABLES ENTERING INTO THE DBB. SEE "TYPICAL CABLE SEAL FITTING DETAIL". SHEET ES513.
19. TARGET SUPPLIER PROVIDED DSL MODEMS AND/OR SWITCHES. RESERVE AS MUCH SPACE AS POSSIBLE FOR TARGET SUPPLIER EQUIPMENT.
20. 2" CONDUIT BETWEEN THIS ENCLSOURE (DBB-C) AND FIBER ENCLOSURE (DBB-F) FOR DATA. PROVIDE MYERS TYPE HUBS ON CONDUIT PENETRATION.
21. ENCLOSURE GROUNDING LUG, BOND TO GROUND BAR.
22. 3/4" CONDUIT BETWEEN THIS ENCLSOURE (DBB-C) AND FIBER ENCLOSURE (DBB-F) FOR POWER. PROVIDE MYERS TYPE HUBS ON CONDUIT PENETRATION.
23. CONDUIT FOR TARGET OUTLET AND BES OUTLET, SEE POWER CENTER DETAILS ES517 AND ES518 AND SITE SINGLE LINE DIAGRAM SHEET TN604.

SAMUEL LEE GULLEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

US Army Corps of Engineers®

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|---|---|---|
| | | |

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DRAWN BY: J. OKSANEN
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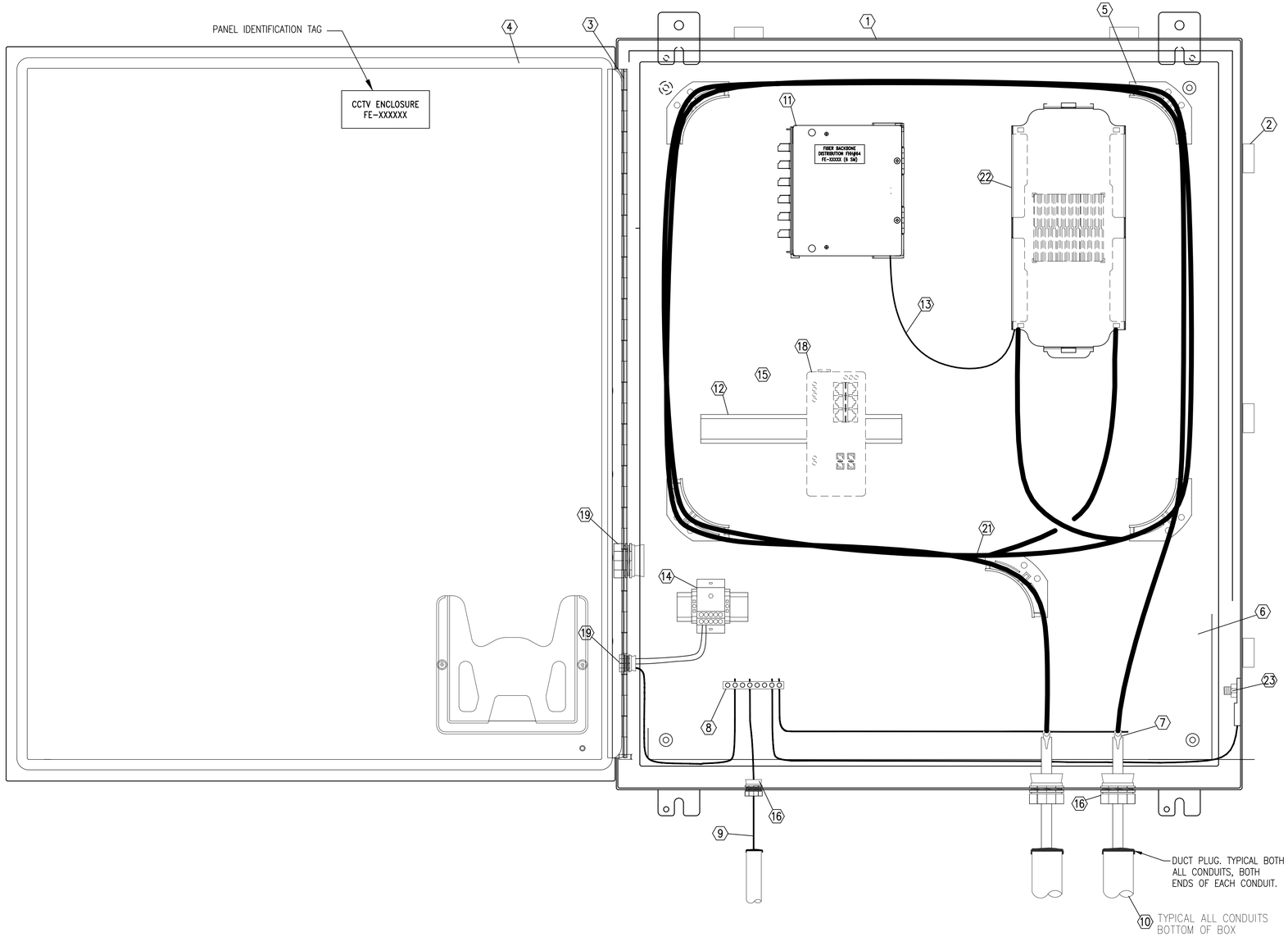
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

EMPLACEMENT DETAILS
COPPER DATA CABLE BREAKOUT BOX (DBB-C)

SHEET ID
TN503

READY TO ADVERTISE (RTA)

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## FIBER DATA CABLE BREAKOUT BOX (DBB-F) DETAIL

NOT TO SCALE

KEYED NOTES REPRESENTED WITH (#):

1. ENCLOSURE SHALL BE 16 GAUGE MINIMUM GALVANIZED STEEL SHEET METAL WITH WALL MOUNT BRACKETS. ENCLOSURE SHALL CARRY A NEMA 4 RATING AND BE TESTED BY UL OR OTHER APPROVED TESTING AGENCY.
2. PROVIDE ENCLOSURE WITH CLAMPS ON THREE SIDES OF THE DOOR. NUMBER OF CLAMPS AS REQUIRED BY MANUFACTURER TO MEET NEMA 4 REQUIREMENTS.
3. PROVIDE ENCLOSURE WITH REMOVABLE HEAVY GAUGE STAINLESS STEEL CONTINUOUS HINGE PIN. HINGES SHALL ALLOW THE DOOR TO BE REMOVED FROM THE ENCLOSURE.
4. PROVIDE ENCLOSURE DOOR WITH A SEAMLESS FOAM-IN-PLACE GASKET. ADHESIVE BACK FOAM STYLE GASKETS ARE NOT ACCEPTABLE.
5. CABLE MANAGEMENT RADIUS CONTROL GUIDES FOR FIBER OPTIC CABLES.
6. METAL BACK PLATE TO SECURE COMPONENTS INSIDE ENCLOSURE.
7. METALLIC CABLE SHEATH GROUNDING CLAMP AND GROUNDING CONNECTOR, BOND CABLE ARMOR/SHIELD TO DBB BACK PLATE GROUNDING BAR. ALL GROUND CABLES NOT SHOWN FOR CLARITY.
8. GROUND BAR – SECURE TO METAL BACK PLATE.
9. #6 AWG BARE COPPER GROUNDING CONDUCTOR.
10. CONDUITS WITH DIRECT BURIAL GRADE ARMORED SINGLE MODE FIBER OPTIC CABLE. NOT ALL WIRES AND CONDUITS ARE SHOWN. PROVIDE NUMBER AND SIZE OF CONDUITS AS DEFINED IN THE DOWNRANGE DATA 1-LINE DIAGRAM.
11. FIBER CASSETTE WITH PRETERMINATED PIGTAILS ON FIBER PATCH PANEL WITH SC CONNECTORS, FUSION SPLICE ALL REQUIRED FIBER STRANDS TO PIGTAILS. PROVIDE ENGRAVED TAG WITH NUMBER OF FIBERS AND TERMINATION LOCATION. PROVIDE QUANTITY OF FIBER CASSETTES AS NEEDED FOR FIBERS TERMINATED. SEE SITE SINGLE LINE DIAGRAM, SHEET TN604.
12. STANDARD PROFILE DIN RAIL. LENGTH SHALL BE AS REQUIRED TO ACCOMMODATE TARGET SUPPLIER SWITCHES.
13. BREAK OUT 6 STRANDS FROM FIBER OPTIC BACKBONE CABLE FOR DBB-C AND 6 STRANDS FOR EACH CAMERA TOWER SERVED FROM THIS DBB-F. NOT ALL CABLES OR STRANDS ARE SHOWN. SEE DOWNRANGE DATA SINGLE DIAGRAM FOR NUMBER OF 6-STRAND TERMINATIONS ARE REQUIRED IN DBB-F. PROVIDE 2' BUFFER TUBE SLACK EACH END.
14. 20 AMP, 600 VOLT, DIN RAIL MOUNT TERMINAL BLOCK FOR 120 VOLT POWER TO DBB COMPONENTS.
15. MAXIMIZE AVAILABLE SPACE ON THE DBB BACK PLATE FOR THE MOUNTING OF DBB COMPONENTS BY THE TARGET VENDOR.
16. PROVIDE WEATHERPROOF CONDUIT CONNECTIONS FOR ALL CONDUIT PENETRATIONS INTO THE DBB. CONNECTO TO BE A MYERS HUB TYPE OR EQUIVALENT.
17. PROVIDE A CABLE SEAL FITTING FOR ALL CABLES ENTERING INTO THE DBB. SEE "TYPICAL CABLE SEAL FITTING DETAIL". SHEET ES513.
18. TARGET SUPPLIER PROVIDED FIBER SWITCH(ES). RESERVE AS MUCH SPACE AS POSSIBLE FOR TARGET SUPPLIER EQUIPMENT.
19. 2" CONDUIT BETWEEN THIS ENCLSOURE (DBB-F) AND COPPER ENCLOSURE (DBB-C) FOR DATA. PROVIDE MYERS TYPE HUBS ON CONDUIT PENETRATION
20. ENCLOSURE GROUNDING LUG, BOND TO GROUND BAR.
21. FIBER SERVICE LOOP, MINIMUM 15', WRAP AROUND RADIUS CONTROL GUIDES POSITIONED TO KEEP CLEAR OF PANEL EQUIPMENT.
22. FIBER OPTIC SPLICE TRAY. SPLICE ALL FIBERS BETWEEN INCOMING AND OUTGOING CABLES.
23. 3/4" CONDUIT BETWEEN THIS ENCLSOURE (DBB-F) AND FIBER ENCLOSURE (DBB-C) FOR POWER. PROVIDE MYERS TYPE HUBS ON CONDUIT PENETRATION.

SAMUEL LEE GUILES
LICENSE
No. 50007
STATE OF FLORIDA
PROFESSIONAL ENGINEER
6/16/23

US Army Corps of Engineers®

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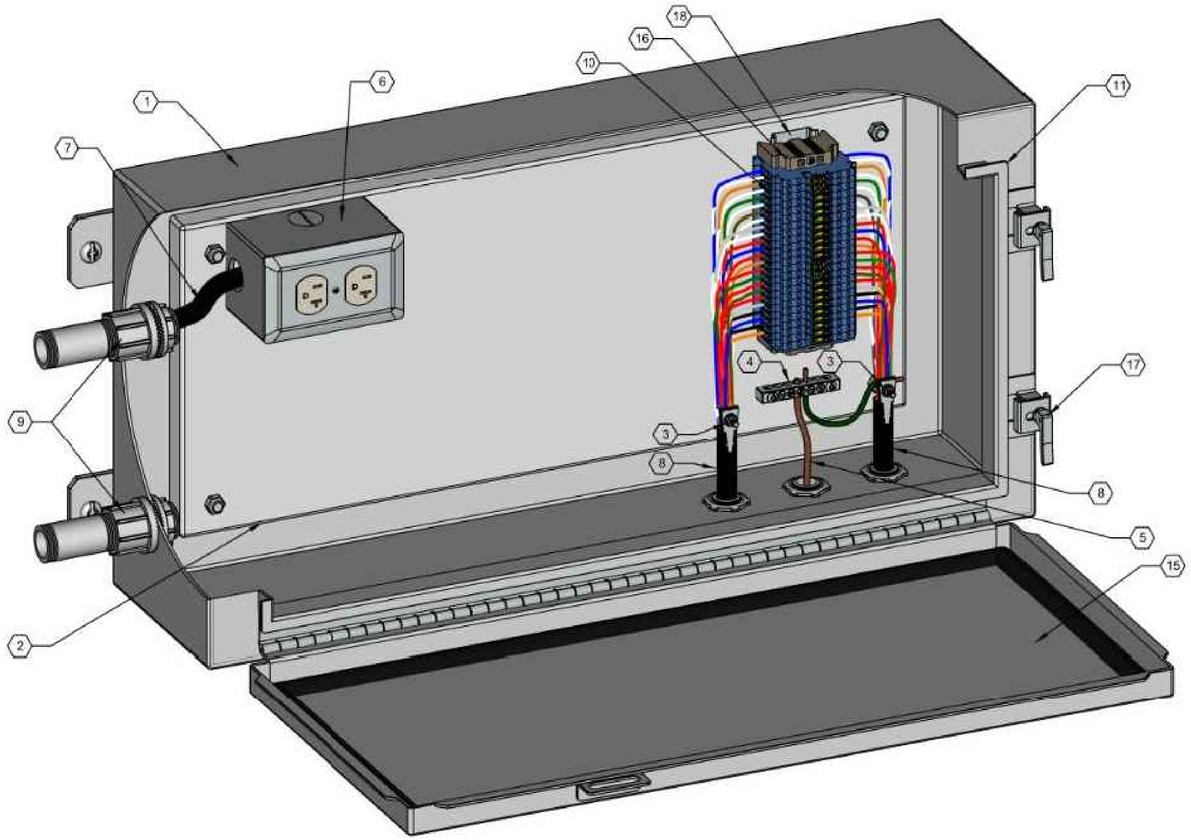
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VOLUMES 3 & 4 - DOWNRANGE

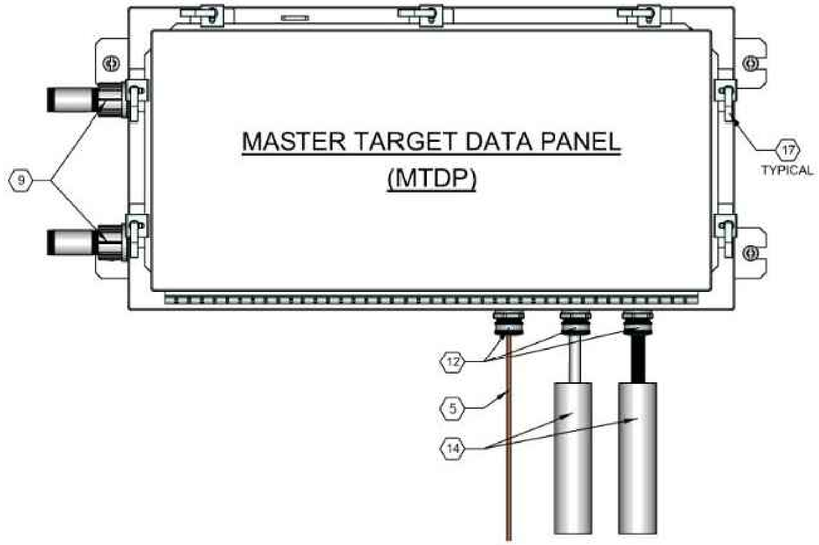
EMPLACEMENT DETAILS
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SHEET ID
TN504

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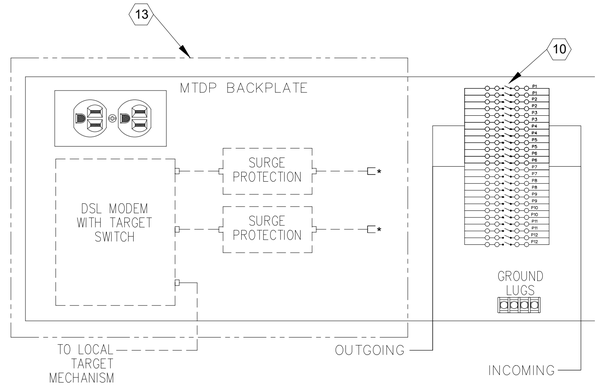




# TYPICAL MASTER TARGET DATA PANEL (MTDP) DETAIL AT TARGET EMPLACEMENT

NOT TO SCALE

KEYED NOTES REPRESENTED WITH ⟨#⟩:

1. ENCLOSURE SHALL BE 16 GAUGE MINIMUM GALVANIZED STEEL SHEET METAL WITH WALL MOUNT BRACKETS. ENCLOSURE SHALL CARRY A NEMA 4 RATING AND BE TESTED BY UL OR OTHER APPROVED TESTING AGENCY. (SEE GENERAL NOTE 3.)
2. METAL BACK PLATE TO SECURE COMPONENTS INSIDE ENCLOSURE.
3. METALLIC CABLE SHEATH GROUNDING CLAMP AND GROUNDING CONNECTOR, BOND CABLE ARMOR/SHIELD TO BACK PLATE GROUND BAR. ALL CABLES IN ENCLOSURE MUST BE BONDED TO GROUND. ALL CABLE GROUNDS MAY NOT BE SHOWN IN THIS DETAIL
4. GROUND BAR – SECURE TO METAL BACK PLATE.
5. #6 AWG BARE COPPER GROUNDING CONDUCTOR.
6. DATA PANEL RECEPTACLE (DPR) – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TYPE IN A STANDARD SINGLE-GANG METAL BOX AND GALVANIZED STEEL DEVICE PLATE. DPR SHALL NOT BE GFCI PROTECTED.
7. 2/C #12 WITH GROUND CORD IN CONDUIT FROM SINGLE POLE SINGLE THROW SWITCH FOR 120 VOLT, 1-PHASE SERVICE TO DUPLEX RECEPTACLE. SEE TARGET EMPLACEMENT ELECTRICAL DETAIL FOR SWITCH LOCATIONS
8. DIRECT BURIAL GRADE CATEGORY 6 ARMORED CABLES. BOND CABLE SHIELD TO TDP BACK PLATE GROUNDING. ALL CABLES NOT SHOWN FOR CLARITY.
9. PROVIDE MYERS HUB TYPE FITTING AT CONDUIT PENETRATION.
10. KNIFE DISCONNECT TERMINAL BLOCK SECTIONS WITH 4 SCREW TYPE CONNECTIONS. NUMBER OF TERMINALS AS REQUIRED BY DATA CABLES, ONE TERMINAL BLOCK FOR EACH WIRE. SEE DETAIL SHEET TN503.
11. MTDP SHALL HAVE A ROLLED FLANGE AROUND PERIMETER OF OPENING.
12. PROVIDE ONE CABLE SEAL FITTING FOR EACH CABLE. SEE "TYPICAL CABLE SEAL FITTING DETAIL." SHEET ES513.
13. 14" X 10" SPACE FOR INSTALLATION OF TARGET COMMUNICATIONS EQUIPMENT. POWER OUTLET AND GROUND LUG ARE ONLY COMPONENTS INSTALLED IN THIS SPACE THAT IS NOT BY THE TARGET VENDOR. AREA MEASURED FROM SIDE OF ENCLOSURE NOT EDGE OF BACKPLATE.
14. CONDUIT WITH DIRECT BURIAL CATEGORY 6 ARMORED CABLES, SEE TARGET EMPLACEMENT PLAN AND ELEVATION. STUB CONDUIT UP ABOVE SLAB AND SEAL WATERTIGHT WITH DUCT SEALANT – FOAM IS NOT ACCEPTABLE.
15. HINGED COVER WITH CORROSION-RESISTANT STAINLESS STEEL CAPTIVE CLAMPS. HINGE MUST HAVE REMOVABLE PIN. PROVIDE A SEAMLESS FOAM-IN-PLACE GASKET FOR A WATERTIGHT AND DUST TIGHT SEAL.
16. SUPPORT BRACKET FOR BUSBAR TERMINAL BLOCK. PROVIDE ONE SUPPORT BRACKET ON EACH END OF TERMINAL BLOCKS.
17. PROVIDE ENCLOSURE WITH FAST OPERATING CLAMP ASSEMBLY. BOLT TYPE CLAMPS ARE NOT ACCEPTABLE.
18. STANDARD PROFILE DIN RAIL. LENGTH SHALL BE AS REQUIRED TO ACCOMMODATE TERMINAL BLOCK SECTIONS AND SUPPORT BRACKETS.




## WIRING SCHEMATIC

———— PROVIDED BY CONSTRUCTION CONTRACTOR

– – – – – – PROVIDED BY TARGET VENDOR

* CONNECTION TO DATA CABLE BY TARGET VENDOR

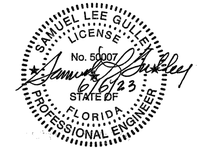
GENERAL NOTES:

1. PROVIDE CABLE IDENTIFICATION DIRECTORY ON INSIDE OF COVER.
2. LABEL ALL CABLES WITH ADHESIVE POLYETHYLENE WRAP AROUND LASER PRINTED LABELS INDICATING CABLE DESTINATION AND CABLE TYPE.
3. MTDP SHALL BE 24"W X 12"H X 6"D.
4. ALL COMPONENTS INSTALLED INSIDE MTDP ENCLOSURES SHALL BE SECURED BY MECHANICAL MEANS. ADHESIVES ARE NOT ALLOWED FOR SECURING COMPONENTS INSIDE MTDP ENCLOSURES.

## WIRING PAIRS

| | | |
|---|---|---|
| P1 | PAIR ONE | WHITE/BLUE |
| P2 | PAIR TWO | WHITE/ORANGE |
| P3 | PAIR THREE | WHITE/GREEN |
| P4 | PAIR FOUR | WHITE/BROWN |
| P5 | PAIR FIVE | WHITE/SLATE |
| P6 | PAIR SIX | RED/BLUE |
| P7 | PAIR SEVEN | RED/ORANGE |
| P8 | PAIR EIGHT | RED/GREEN |
| P9 | PAIR NINE | RED/BROWN |
| P10 | PAIR TEN | RED/SLATE |
| P11 | PAIR ELEVEN | BLACK/BLUE |
| P12 | PAIR TWELVE | BLACK/ORANGE |

UN-TERMINATED WIRE PAIRS SHALL BE CONNECTED TO GROUND




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DRAWN BY: J. OKSANEN | SOLICITATION NO.: W912HN-23-B-3001
CHECKED BY: C. BROWN | CONTRACT NO.:
SUBMITTED BY: BRADLEY | CATEGORY CODE: 173-45-01
SIZE: ANSI D | FILE NAME:

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SAVANNAH, GA 31401

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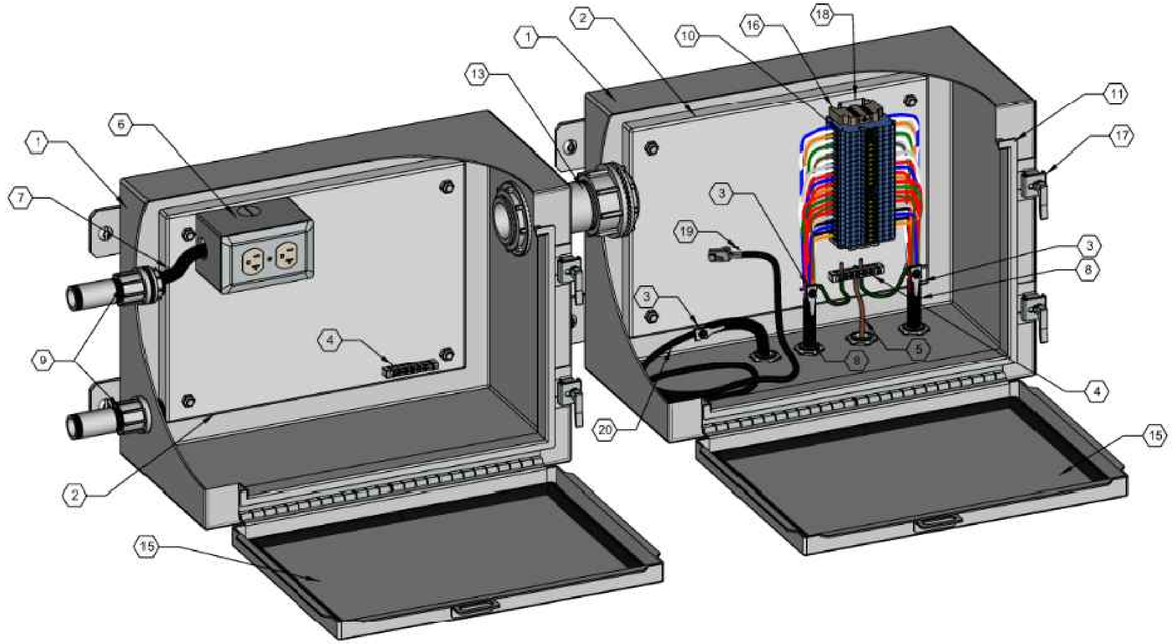
EMPLACEMENT DETAILS
MASSTER TARGET DATA PANEL
TWISTED PAIR CABLES

SHEET ID

TN505

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N:\2021 JOBS\21014 FORT BRAGG MPTR - POLY\DWG\B2ETN505 MTDP LANE ISOLATION.DWG

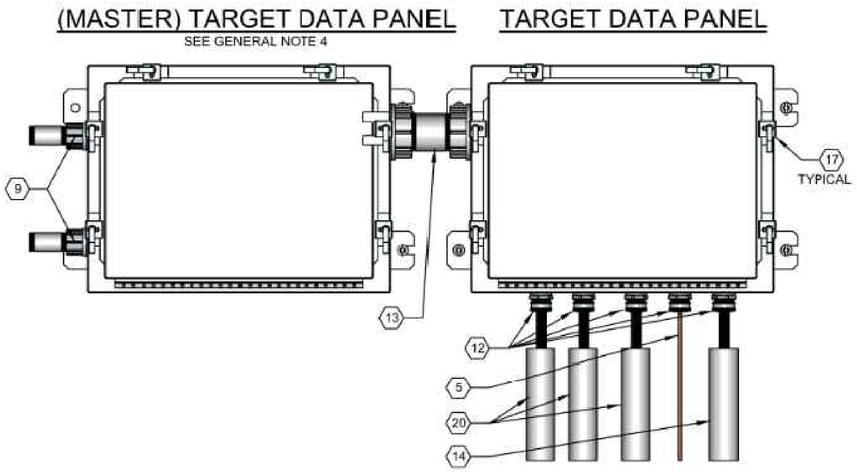


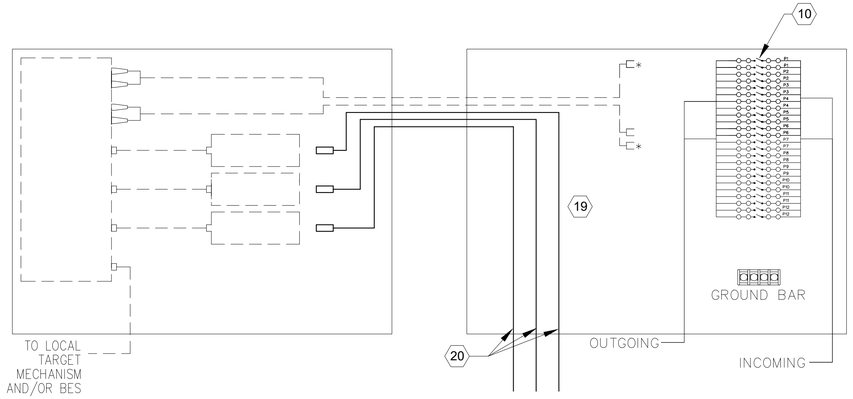

## TYPICAL FACADE/CLUSTER MASTER TARGET DATA PANEL (MTDP) DETAIL AT TARGET EMPLACEMENT

NOT TO SCALE

KEYED NOTES REPRESENTED WITH ⟨#⟩:

1. ENCLOSURE SHALL BE 16 GAUGE MINIMUM GALVANIZED STEEL SHEET METAL WITH WALL MOUNT BRACKETS. ENCLOSURE SHALL CARRY A NEMA 4 RATING AND BE TESTED BY UL OR OTHER APPROVED TESTING AGENCY. (SEE GENERAL NOTE 3.)
2. METAL BACK PLATE TO SECURE COMPONENTS INSIDE ENCLOSURE.
3. METALLIC CABLE SHEATH GROUNDING CLAMP AND GROUNDING CONNECTOR, BOND CABLE ARMOR/SHIELD TO BACK PLATE GROUND BAR. ALL CABLES IN ENCLOSURE MUST BE BONDED TO GROUND. ALL CABLE GROUNDS MAY NOT BE SHOWN IN THIS DETAIL
4. GROUND BAR – SECURE TO METAL BACK PLATE. BOND ALL GROUND BARS TOGHETER WITH A #6 AWG GROUND CONDUCTOR. GROUND CABLE NOT SHOWN ON THIS DETAIL.
5. #6 AWG BARE COPPER GROUNDING CONDUCTOR.
6. DATA PANEL RECEPTACLE (DPR) – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TYPE IN A STANDARD SINGLE-GANG METAL BOX AND GALVANIZED STEEL DEVICE PLATE. DPR SHALL NOT BE GFCI PROTECTED.
7. 2/C #12 WITH GROUND CORD IN CONDUIT FROM SINGLE POLE SINGLE THROW SWITCH FOR 120 VOLT, 1-PHASE SERVICE TO DUPLEX RECEPTACLE. SEE TARGET EMPLACEMENT ELECTRICAL DETAIL FOR SWITCH LOCATIONS
8. DIRECT BURIAL GRADE CATEGORY 6 ARMORED CABLES. BOND CABLE SHIELD TO TDP BACK PLATE GROUNDING. ALL CABLES NOT SHOWN FOR CLARITY.
9. PROVIDE MYERS HUB TYPE FITTING AT CONDUIT PENETRATION.
10. KNIFE DISCONNECT TERMINAL BLOCK SECTIONS WITH 4 SCREW TYPE CONNECTIONS. NUMBER OF TERMINALS AS REQUIRED BY DATA CABLES, ONE TERMINAL BLOCK FOR EACH WIRE. SEE DETAIL SHEET TN503.
11. MTDP SHALL HAVE A ROLLED FLANGE AROUND PERIMETER OF OPENING.
12. PROVIDE ONE CABLE SEAL FITTING FOR EACH CABLE. SEE "TYPICAL CABLE SEAL FITTING DETAIL." SHEET ES513.
13. 2" CONDUIT WITH MYERS TYPE HUBS WHERE CONDUIT PENETRATES EACH ENCLOSURE. CONDUIT USE BY TARGET INSTALLER.
14. CONDUIT WITH DIRECT BURIAL GRADE CATEGORY 6 ARMORED CABLES, SEE TARGET EMPLACEMENT PLAN AND ELEVATION. STUB CONDUIT UP ABOVE SLAB AND SEAL WATERTIGHT WITH DUCT SEALANT – FOAM IS NOT ACCEPTABLE.
15. HINGED COVER WITH CORROSION-RESISTANT STAINLESS STEEL CAPTIVE CLAMPS. HINGE MUST HAVE REMOVABLE PIN. PROVIDE A SEAMLESS FOAM-IN-PLACE GASKET FOR A WATERTIGHT AND DUST TIGHT SEAL.
16. SUPPORT BRACKET FOR BUSBAR TERMINAL BLOCK. PROVIDE ONE SUPPORT BRACKET ON EACH END OF TERMINAL BLOCKS.
17. PROVIDE ENCLOSURE WITH FAST OPERATING CLAMP ASSEMBLY. BOLT TYPE CLAMPS ARE NOT ACCEPTABLE.
18. STANDARD PROFILE DIN RAIL. LENGTH SHALL BE AS REQUIRED TO ACCOMMODATE TERMINAL BLOCK SECTIONS AND SUPPORT BRACKETS.
19. CATEGORY 6 CABLE TERMINATED WITH SHIELDED RJ-45 CONNECTOR. PROVIDE ENOUGH CABLE (APPROXIMATELY 3') TO ROUTE EACH CABLE THROUGH 2" CONDUIT AND CONNECT TO TARGET VENDOR EQUIPMENT (DSL MODEM OR ETHERNET SWITCH PORT). SEE SIT CLUSTER DETAILS ON SHEETS ES507 AND ES508 FOR MORE INFORMATION.
20. DIRECT BURIAL GRADE CATEGORY 6 SHIELDED CABLES. COIL 3' SLACK AND PROVIDE STRAIN RELIEF. BOND CABLE SHIELD TO BACK PLATE GROUNDING LUGS.




## MTDP DATA WIRING SCHEMATIC

——— PROVIDED BY MCA CONTRACTOR

– – – – – – PROVIDED BY CPA VENDOR

* CONNECTION TO DATA CABLE PAIRS BY CPA CONTRACTOR

GENERAL NOTES:

1. PROVIDE CABLE IDENTIFICATION DIRECTORY ON INSIDE OF COVER.
2. LABEL ALL CABLES WITH ADHESIVE POLYETHYLENE WRAP AROUND LASER PRINTED LABELS INDICATING CABLE DESTINATION AND CABLE TYPE.
3. ENCLOSURES SHALL BOTH BE 16"W X 12"H X 6"D FOR SIT CLUSTER CONFIGURATION. FOR FACADE EMPLACEMENT ENCLOSURES SHALL BE 24"W X 12"H X 6"D AND 16"W X 12"H X 6"D RESPECTIVELY.
4. ALL COMPONENTS INSTALLED INSIDE MTDP ENCLOSURES SHALL BE SECURED BY MECHANICAL MEANS. ADHESIVES ARE NOT ALLOWED FOR SECURING COMPONENTS INSIDE MTDP ENCLOSURES.
5. CAT 6 DATA CABLES PROVIDE THE MINIMUM PERFORMANCE REQUIREMENTS FOR COPPER DATA CABLES. DATA CABLES THAT EXCEED CAT 6 PERFORMANCE REQUIREMENTS MAY BE USED AS LONG AS ALL PHYSICAL REQUIREMENTS SPECIFIED HEREIN ARE MAINTAINED.

SAMUEL LEE GULLEY LICENSE No. 56007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/16/23

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DESIGNED BY: J. OKSANEN
DRAWN BY: J. OKSANEN
CHECKED BY: C. BROWN
SUBMITTED BY:
SCALE: AS NOTED
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 178-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

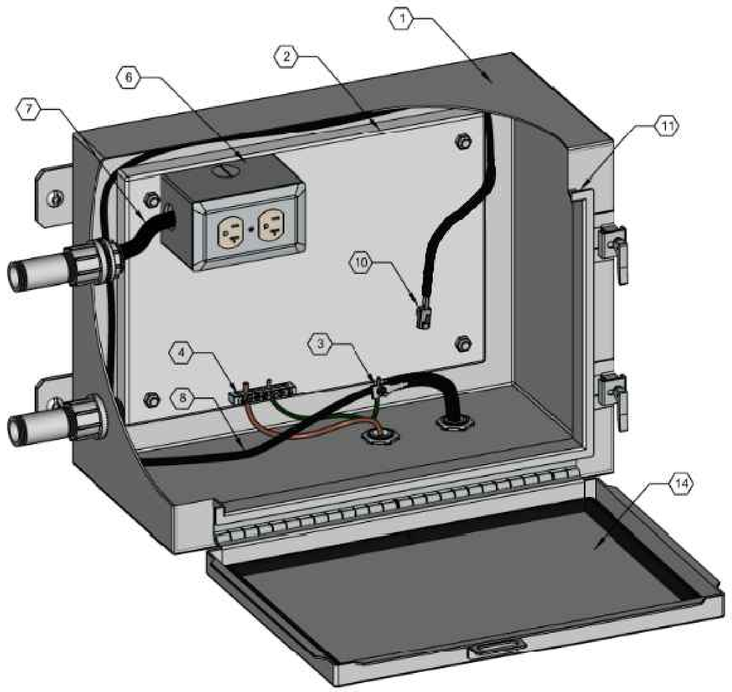
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FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

EMPLACEMENT DETAILS
FACADE MASTER TARGET DATA PANEL
TWISTED PAIR CABLES

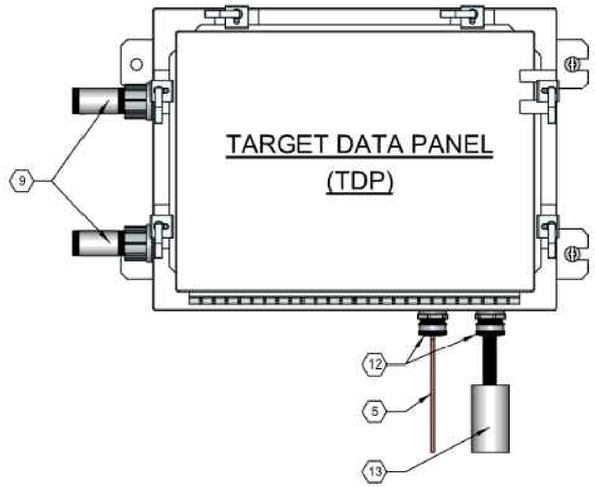
SHEET ID
TN506

READY TO ADVERTISE (RTA)



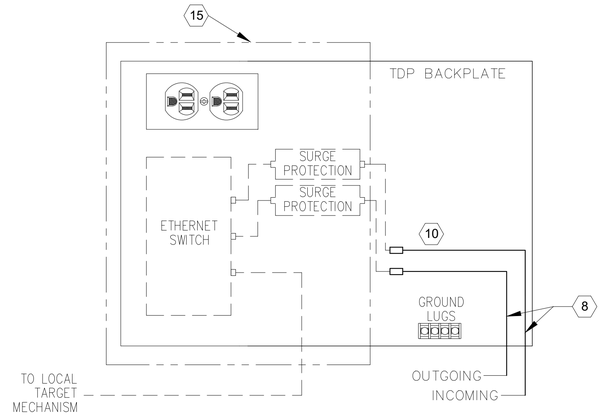

TYPICAL TARGET DATA PANEL (TDP) DETAIL AT TARGET EMPLACEMENT

NOT TO SCALE




KEYED NOTES REPRESENTED WITH ⟨#⟩:

1. ENCLOSURE SHALL BE 16 GAUGE MINIMUM GALVANIZED STEEL SHEET METAL WITH WALL MOUNT BRACKETS. ENCLOSURE SHALL CARRY A NEMA 4 RATING AND BE TESTED BY UL OR OTHER APPROVED TESTING AGENCY. PROVIDE ENCLOSURE WITH FAST OPERATING CLAMP ASSEMBLY. BOLT TYPE CLAMPS ARE NOT ACCEPTABLE. (SEE GENERAL NOTE 3.)
2. METAL BACK PLATE TO SECURE COMPONENTS INSIDE ENCLOSURE.
3. METALLIC CABLE SHEATH GROUNDING CLAMP AND GROUNDING CONNECTOR, BOND CABLE ARMOR/SHIELD TO TDP BACK PLATE GROUNDING BAR. ALL GROUND CABLES NOT SHOWN FOR CLARITY.
4. GROUND BAR – SECURE TO METAL BACK PLATE.
5. #6 AWG BARE COPPER GROUNDING CONDUCTOR.
6. DATA PANEL RECEPTACLE (DPR) – 20 AMP, 125 VOLT, 2 POLE, 3 WIRE GROUNDING TYPE IN A STANDARD SINGLE-GANG METAL BOX AND GALVANIZED STEEL DEVICE PLATE. CONNECT DPR AHEAD OF GFCI MAINTENANCE RECEPTACLE TO AVOID NUISANCE TRIPPING.
7. 2/C #12 WITH GROUND CORD IN CONDUIT FROM CIRCUIT BREAKER LOADCENTER FOR 120 VOLT, 1-PHASE SERVICE TO DUPLEX RECEPTACLE. RECEPTACLE SHALL NOT BE FED FROM ANY GROUND FAULT INTERRUPTING DEVICE.
8. DIRECT BURIAL GRADE CATEGORY 6 SHIELDED CABLES. COIL 3' SLACK IN TDP AT EACH END AND PROVIDE STRAIN RELIEF. BOND CABLE SHIELD TO TDP BACK PLATE GROUNDING. ALL CABLES NOT SHOWN FOR CLARITY.
9. PROVIDE MYERS HUB TYPE FITTING AT CONDUIT PENETRATION.
10. CATEGORY 6 CABLE TERMINATED WITH SHIELDED RJ-45 CONNECTOR. PROVIDE ENOUGH CABLE TO CONNECT TO TARGET VENDOR EQUIPMENT (DSL MODEM OR ETHERNET SWITCH PORT). SEE SIT CLUSTER DETAILS ON SHEETS ES507 AND ES508 FOR MORE INFORMATION. AT SECONDARY CLUSTER EMPLACEMENTS, PROVIDE ENOUGH CATEGORY 6 CABLE TO ROUTE THROUGH THE CONDUIT TO THE TARGET OUTLET BOX PLUS 6" TO ALLOW CONNECTION TO TARGET VENDOR INSTALLED AMPHENOL OUTLET. TYPICAL FOR EACH TARGET OUTLET.
11. TDP SHALL HAVE A ROLLED FLANGE AROUND PERIMETER OF OPENING.
12. PROVIDE ONE CABLE SEAL FITTING FOR EACH CABLE. SEE "TYPICAL CABLE SEAL FITTING DETAIL" SHEET ES513.
13. CONDUIT WITH DIRECT BURIAL GRADE CAT 6 CABLES, SEE TARGET EMPLACEMENT PLAN AND ELEVATION. STUB CONDUIT UP ABOVE SLAB AND SEAL WATERTIGHT WITH DUCT SEALANT – FOAM IS NOT ACCEPTABLE.
14. HINGED COVER WITH CORROSION-RESISTANT STAINLESS STEEL CAPTIVE CLAMPS. HINGE MUST HAVE REMOVABLE PIN. PROVIDE A SEAMLESS FOAM-IN-PLACE GASKET FOR A WATERTIGHT AND DUST TIGHT SEAL.
15. 10" X 10" SPACE FOR INSTALLATION OF TARGET COMMUNICATIONS EQUIPMENT. POWER OUTLET AND GROUND LUG ARE ONLY COMPONENTS INSTALLED IN THIS SPACE THAT IS NOT BY THE TARGET VENDOR. AREA MEASURED FROM SIDE OF ENCLOSURE NOT EDGE OF BACKPLATE.




MTDP DATA WIRING SCHEMATIC

——— PROVIDED BY MCA CONTRACTOR

– – – – – – PROVIDED BY CPA VENDOR

GENERAL NOTES:

1. PROVIDE CABLE IDENTIFICATION DIRECTORY ON INSIDE OF COVER.
2. LABEL ALL CABLES WITH ADHESIVE POLYETHYLENE WRAP AROUND LASER PRINTED LABELS INDICATING CABLE DESTINATION AND CABLE TYPE.
3. TDP SHALL BE 16"W X 12"H X 6"D.
4. ALL COMPONENTS INSTALLED INSIDE TDP ENCLOSURES SHALL BE SECURED BY MECHANICAL MEANS. ADHESIVES ARE NOT ALLOWED FOR SECURING COMPONENTS INSIDE TDP ENCLOSURES.
5. CAT 6 DATA CALBES PROVIDE THE MINIMUM PERFORMANCE REQUIREMENTS FOR COPPER DATA CABLES. DATA CABLES THAT EXCEED CAT 6 PERFORMANCE REQUIREMENTS MAY BE USED AS LONG AS ALL PHYSICAL REQUIREMENTS SPECIFIED HEREIN ARE MAINTAINED.




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DESIGNED BY: J. OKSANEN
DRAWN BY: J. OKSANEN
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
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U.S. ARMY CORPS OF ENGINEERS
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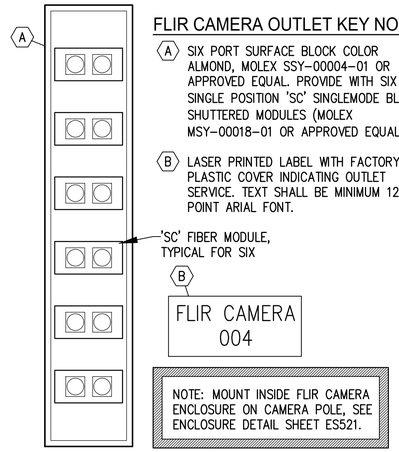
EMPLACEMENT DETAILS
TARGET DATA PANEL
CAT.CAT.6 CABLES

SHEET ID

TN507

READY TO ADVERTISE (RTA)

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## FLIR CAMERA OUTLET KEY NOTES:

(A) SIX PORT SURFACE BLOCK COLOR ALMOND, MOLEX SSY-00004-01 OR APPROVED EQUAL. PROVIDE WITH SIX SINGLE POSITION 'SC' SINGLEMODE BLUE SHUTTERED MODULES (MOLEX MSY-00018-01 OR APPROVED EQUAL)

(B) LASER PRINTED LABEL WITH FACTORY PLASTIC COVER INDICATING OUTLET SERVICE. TEXT SHALL BE MINIMUM 12 POINT ARIAL FONT.

'SC' FIBER MODULE, TYPICAL FOR SIX

NOTE: MOUNT INSIDE FLIR CAMERA ENCLOSURE ON CAMERA POLE, SEE ENCLOSURE DETAIL SHEET ES521.

# TYPICAL FLIR CAMERA OUTLET DETAIL

NOT TO SCALE

## UTO IDENTIFICATION NOMENCLATURE

UTO.F10.2.B

- UTO: UNIVERSAL TARGET OUTLET
- F10: EMPLACEMENT MTDP F-10. MAY REFER TO ANY EMPLACEMENT TYPE.
- 2: FLOOR NUMBER
- B: OUTLET IDENTIFIER (LOCATION WITH TWO OR MORE OUTLETS ONLY)

EXAMPLE: LABEL UTO.F10.2.B INDICATES 'UTO' 'B' SERVED FROM MTDP AT FACADE F-10, SECOND FLOOR.

## INSTALLATION NOTES:

COMMUICATIONS CABLING, CONDUITS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/TIA/EIA STANDARDS AS WELL AS UFC 3-580-01 TELECOMMUNICATIONS INTERIOR INFRASTRUCTURE DATED 01 JUNE 2016, CHANGE 1.

IN ADDITION TO ALL LABELING REQUIREMENTS STATED IN THESE DOCUMENTS, LABEL ALL CABINETS, CONDUITS AND CABLES AS "COMMON USER" OR "TRAINING" BASED ON DESIGNATED USAGE.

## LABELING NOTES:

1. CONTRACTOR PROVIDE ANNOTATED ADOBE .PDF FILES OF AS-BUILT DRAWINGS, ALL 'TEL' SHEETS. PROVIDE 3 BOUND 1/2 SIZE HARD COPY PLOTS AND 3 CD'S WITH .PDF FILES. STORE IN DOCUMENTATION SHELF IN CER.
2. SEE FLOOR PLANS AND RACK ELEVATIONS FOR LABELING OF HORIZONTAL PATCH PANELS.

## LABELING NOTE:

ALL COMMUNICATIONS OUTLETS, EQUIPMENT AND CABLING SHALL BE LABELED IN ACCORDANCE WITH UFC 3-580-01 TELECOMMUNICATIONS INTERIOR INFRASTRUCTURE DATED 01 JUNE 2016, CHANGE 1, TIA/EIA-606 AND EXISTING BASE STANDARDS. ALL LABELING SHALL BE APPROVED BY BASE NEC.

SAMUEL LEE GUILEY LICENSE No. 50007 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/6/23

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| DESIGNED BY: J. OKSANEN | ISSUE DATE: JUNE 2023 |
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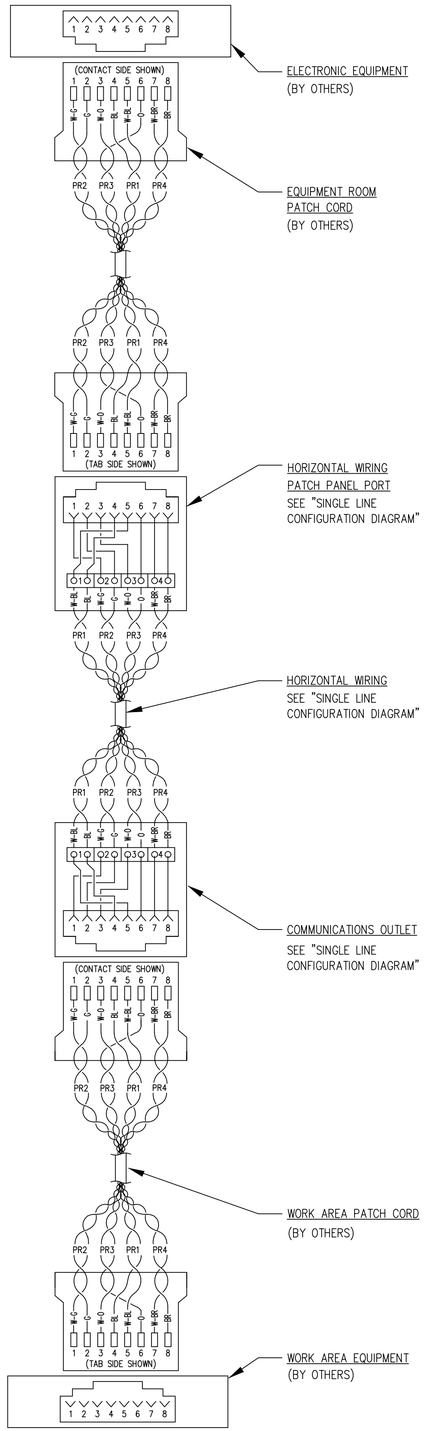
COMMUNICATIONS OUTLET DETAILS

SHEET ID

TN508

READY TO ADVERTISE (RTA)

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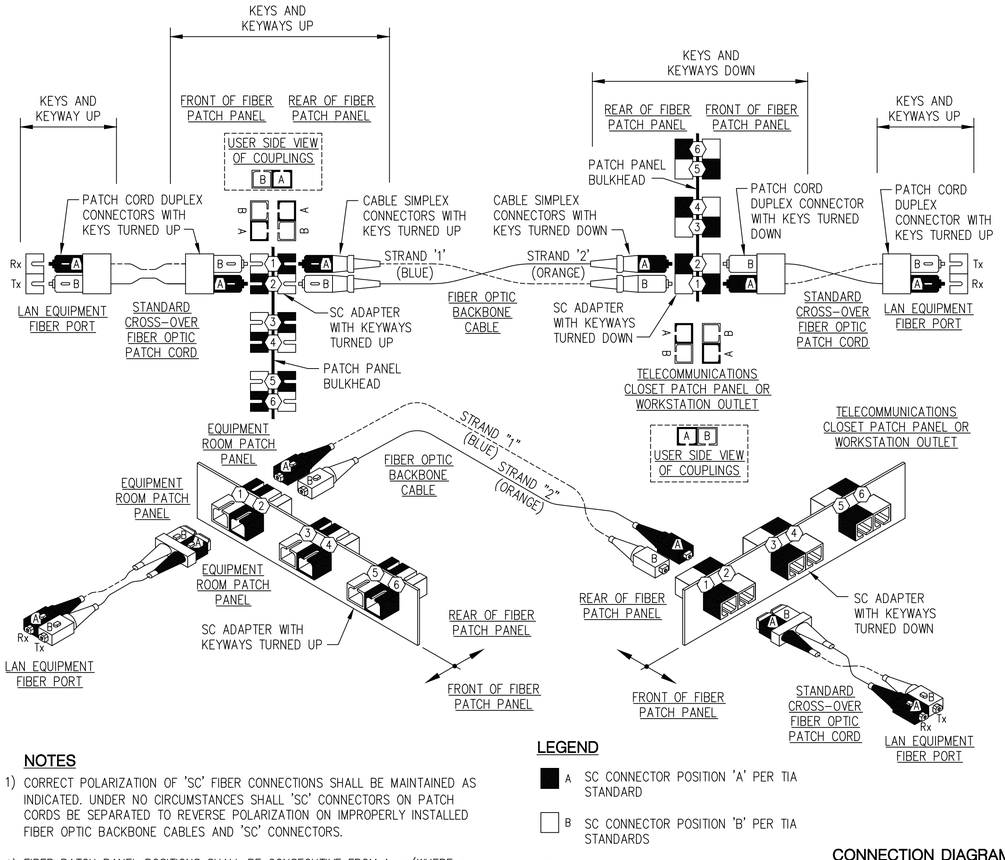



TYPICAL POINT-TO-POINT WIRING DIAGRAM
COMMUNICATIONS OUTLETS
CATEGORY 6 "HORIZONTAL TELECOMMUNICATIONS CHANNEL"

NOT TO SCALE (TIA 568A PINOUT/PUNCHDOWN)

## CATEGORY 6 TERMINATION NOTE:

MAKE ALL TERMINATIONS IN STRICT ACCORDANCE WITH TIA GUIDELINES AS WELL AS THE MANUFACTURER'S PRINTED INSTRUCTIONS FOR BOTH THE CABLE AND THE TERMINATION DEVICE FOR ALL FIELD CONNECTIONS IN THE "HORIZONTAL TELECOMMUNICATIONS LINK". STRIP CABLE JACKET BACK A MAXIMUM OF 1 INCH FROM THE POINT OF TERMINATION. MAINTAIN FACTORY SYMMETRICAL CABLE TWISTS TO WITHIN 0.5 INCHES (13 MM MAXIMUM) OF THE POINT OF TERMINATION. PROVIDE CABLE SLACK AT EACH END TO ALLOW MINIMUM OF FIVE (5) FUTURE RETERMINATIONS WITHOUT RE-ROUTING CABLE. SEE CO MOUNTING DETAILS, BACKBOARD ELEVATIONS, AND CP DETAILS.




## NOTES

1) CORRECT POLARIZATION OF 'SC' FIBER CONNECTIONS SHALL BE MAINTAINED AS INDICATED. UNDER NO CIRCUMSTANCES SHALL 'SC' CONNECTORS ON PATCH CORDS BE SEPARATED TO REVERSE POLARIZATION ON IMPROPERLY INSTALLED FIBER OPTIC BACKBONE CABLES AND 'SC' CONNECTORS.

2) FIBER PATCH PANEL POSITIONS SHALL BE CONSECUTIVE FROM 1–n (WHERE n EQUALS THE TOTAL NUMBER OF PATCH PANEL POSITIONS) WITH POSITION 1 ON THE LEFT SIDE WHEN FACING THE FRONT OF THE PATCH PANEL. STANDARD COLOR CODING SHALL BE FOLLOWED AT EACH END.

3) PATCH CORDS AND FIBER BACKBONE CABLING SHALL BE ORIENTED IN A CROSS–OVER MANNER AS INDICATED. FOR EXAMPLE, FOR THE FIRST PAIR OF FIBERS LEAVING THE CER AND EXTENDING TO A CC OR CP, STRAND '1' (BLUE) IS TERMINATED ON PATCH PANEL POSTION "1" AND CONNECTOR POSITION "A" IN THE EQUIPMENT ROOM, AND ON PATCH PANEL POSITION 1 IN THE COMMUNICATIONS CLOSET, BUT ON CONNECTOR POSITION "B".

## LEGEND

- ■ A — SC CONNECTOR POSITION 'A' PER TIA STANDARD
- □ B — SC CONNECTOR POSITION 'B' PER TIA STANDARDS
- ⟨1⟩ — PATCH PANEL POSITION – ALL ODD NUMBER FIBER STRANDS
- ⟨2⟩ — PATCH PANEL POSITION – ALL EVEN NUMBER FIBER STRANDS
- -------- FIBER OPTIC CABLE – ALL ODD NUMBER FIBER STRANDS
- ——— FIBER OPTIC CABLE – ALL EVEN NUMBER FIBER STRANDS

## CONNECTION DIAGRAM OVERVIEW:

PER TIA STANDARDS... EACH PREMISES CABLING SEGMENT SHALL BE INSTALLED IN A PAIR–WISE CROSS–OVER ORIENTATION SUCH THAT ODD NUMBERED FIBERS ARE POSITION "A" AT ONE END AND POSITION "B" AT THE OTHER END WHILE EVEN NUMBERED FIBERS ARE POSITION "B" AT ONE END AND POSITION "A" AT THE OTHER END... ...THE CROSS OVER SHALL BE ACHIEVED BY USING CONSECUTIVE FIBER NUMBERING ON BOTH ENDS OF AN OPTICAL FIBER LINK, BUT THE 568SC ADAPTERS SHALL BE INSTALLED IN OPPOSITE MANNERS ON EACH END (I.E. A–B ON ONE END, B–A ON THE OTHER).

## STANDARD FIBER OPTIC CABLE COLOR CODE

| STRAND NUMBER | STRAND COLOR |
|---|---|
| ⟨1⟩ | BLUE |
| ⟨2⟩ | ORANGE |
| ⟨3⟩ | GREEN |
| ⟨4⟩ | BROWN |
| ⟨5⟩ | SLATE |
| ⟨6⟩ | WHITE |
| ⟨7⟩ | RED |
| ⟨8⟩ | BLACK |
| ⟨9⟩ | YELLOW |
| ⟨10⟩ | VIOLET |
| ⟨11⟩ | ROSE |
| ⟨12⟩ | AQUA |
| ⟨13⟩ | BLUE w/ STRIPE |
| ⟨14⟩ | ORANGE w/ STRIPE |
| ⟨15⟩ | GREEN w/ STRIPE |
| ⟨16⟩ | BROWN w/ STRIPE |
| ⟨17⟩ | SLATE w/ STRIPE |
| ⟨18⟩ | WHITE w/ STRIPE |
| ⟨19⟩ | RED w/ STRIPE |
| ⟨20⟩ | BLACK w/ STRIPE |
| ⟨21⟩ | YELLOW w/ STRIPE |
| ⟨22⟩ | VIOLET w/ STRIPE |
| ⟨23⟩ | ROSE w/ STRIPE |
| ⟨24⟩ | AQUA w/ STRIPE |

FIBER OPTIC CABLE POINT-TO-POINT CONNECTION DIAGRAM - SC CONNECTORS

NOT TO SCALE

SAMUEL LEE GUILLE
LICENSE
No. 52007
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
6/16/23

US Army Corps of Engineers®

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DESIGNED BY: J. OKSANEN
DRAWN BY: J. OKSANEN
CHECKED BY: C. BROWN
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: JUNE 2023
SOLICITATION NO.: W912HN-23-B-3001
CONTRACT NO.:
CATEGORY CODE: 170-65-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
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COMMUNICATIONS CABLE TERMINATIONS

SHEET ID
TN509

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## LABELING NOTE:

LABEL ALL CABLES WITH ADHESIVE POLYETHYLENE WRAP–AROUND LASER PRINTED LABELS INDICATING CABLE DESTINATION AND CABLE TYPE. LABEL ALL MTDP AND TDP PANELS ENGRAVED 3" WIDE x 1" TALL STANLESS STEEL TAG WITH 3/4" HIGH LETTERS, FASTEN TO PANEL WITH INDUSTRIAL ADHESIVE, DO NOT PENETRATE PANEL WITH FASTENERS. SEE TARGET DATA PANEL IDENTIFICATION NOMENCLATURE, THIS SHEET FOR CABLE AND PANEL LABELING NOMENCLATURE.

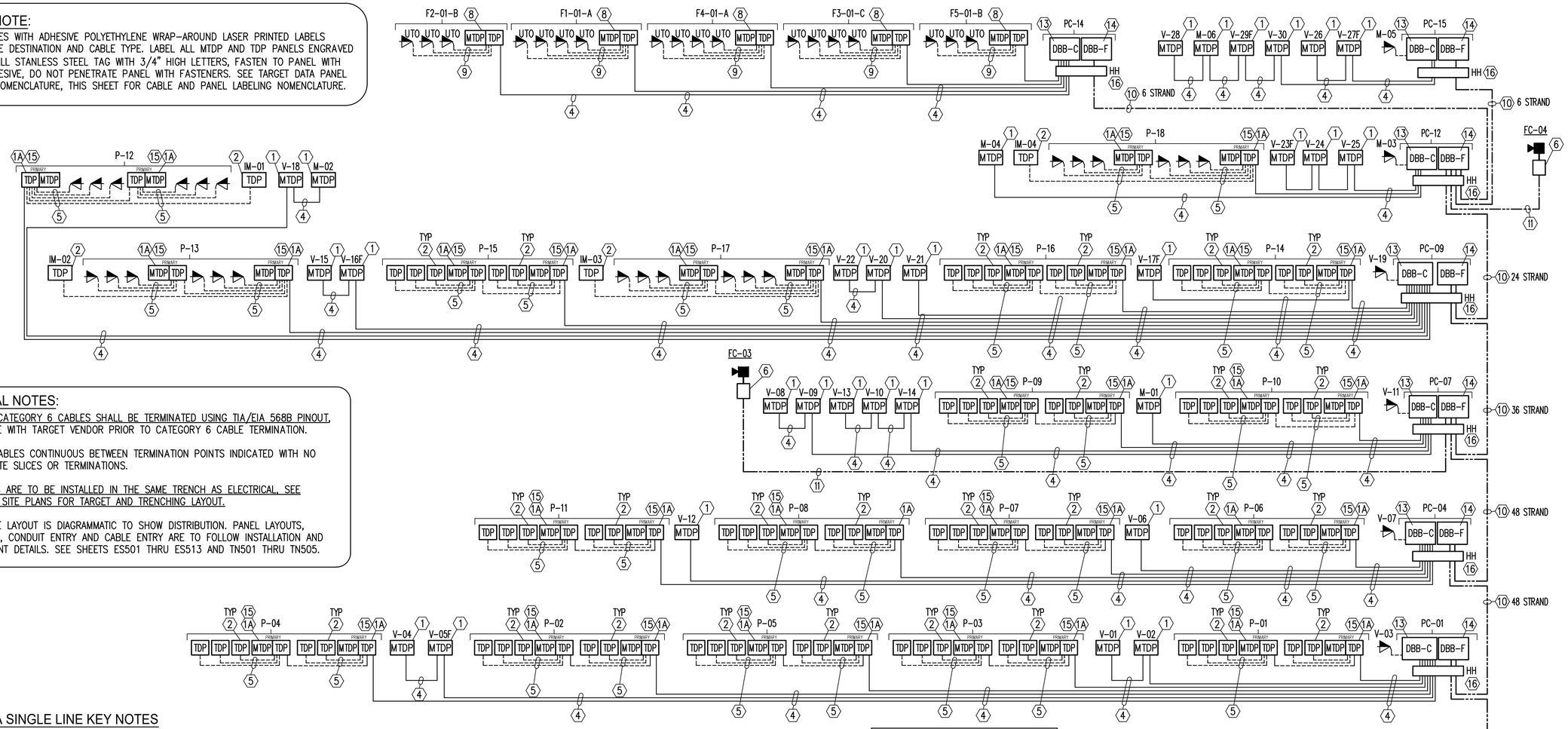
## GENERAL NOTES:

TARGETRY CATEGORY 6 CABLES SHALL BE TERMINATED USING TIA/EIA 568B PINOUT, COORDINATE WITH TARGET VENDOR PRIOR TO CATEGORY 6 CABLE TERMINATION.

RUN ALL CABLES CONTINUOUS BETWEEN TERMINATION POINTS INDICATED WITH NO INTERMEDIATE SLICES OR TERMINATIONS.

ALL CABLES ARE TO BE INSTALLED IN THE SAME TRENCH AS ELECTRICAL, SEE ELECTRICAL SITE PLANS FOR TARGET AND TRENCHING LAYOUT.

SINGLE LINE LAYOUT IS DIAGRAMMATIC TO SHOW DISTRIBUTION. PANEL LAYOUTS, POSITIONING, CONDUIT ENTRY AND CABLE ENTRY ARE TO FOLLOW INSTALLATION AND EMPLACEMENT DETAILS. SEE SHEETS ES501 THRU ES513 AND TN501 THRU TN505.

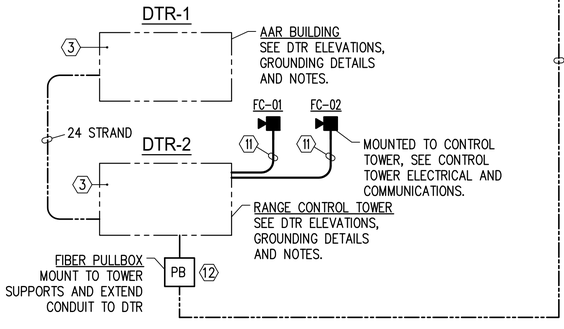



## RANGE DATA SINGLE LINE KEY NOTES

1. MASTER TARGET DATA PANEL (MTDP) NEMA 4 ENCLOSURE. SEE DETAILS, SHEET TN505.
1A. FACADE/CLUSTER MASTER TARGET DATA PANEL (MTDP) NEMA 4 ENCLOSURES. SEE DETAILS, SHEET TN506.
2. TARGET DATA PANEL (TDP) NEMA 4 ENCLOSURE. SEE DETAILS, SHEET TN507.
3. FLOOR MOUNT COMMUNICATIONS EQUIPMENT CABINET FOR FIBER DRAWERS AND TARGET INSTRUMENTATION EQUIPMENT, SEE ROCA DETAILS AND DRAWINGS FOR TERMINATION AND GROUNDING REQUIREMENTS.
4. 4–PAIR DIRECT BURIAL GRADE ARMORED SHIELDED TWISTED PAIR CATEGORY 6 CABLES, SUPERIOR ESSEX ENDURAGAIN OSP SHIELDED (WITH ALUMINUM INTERLOCK ARMOR AND POLYETHYLENE OUTER JACKET) OR APPROVED EQUAL, TERMINATE ON TERMINAL BLOCKS. SURGE PROTECTION BY TARGET INSTALLER. SEE MTDP/TDP NOTES AND DETAILS, SHEET TN505 THRU TN507. TYPICAL BETWEEN DBB, MTDP AND TDP, ALL LOCATIONS.
5. 1" CONDUIT WITH NYLON PULL CORD AND 4–PAIR DIRECT BURIAL GRADE SHIELDED CATEGORY 6 DATA CABLES, SUPERIOR ESSEX BBDGE OR APPROVED EQUAL. GROUND SHIELD. SURGE PROTECTION BY TARGET INSTALLER. SEE MTDP/TDP NOTES.
6. 24" x 36" x 8" DEEP NEMA 4 ENCLOSURE AT BASE OF CAMERA TOWER. SEE DETAIL, SHEET ES521.
7. FIBER SPLICE ENCLOSURE AT CAMERA TOWER PROVIDE NEMA 4 ENCLOSURE SIMILAR TO MTDP, MINIMUM 24"x24"x8", SIZED FOR TYPE AND QUANTITY OF CABLE. FUSION SPLICE ALL CABLES IN PANEL MOUNTED SPLICE TRAY SIZED FOR TOTAL STRANDS ENTERING AND LEAVING ENCLOSURE.
8. FACADE WITH MTDP AND UNIVERSAL TARGET OUTLETS (UTO), SEE SHEET ES514 FOR UTO AND CABLE LOCATIONS.
9. 4–PAIR DIRECT BURIAL GRADE SHIELDED TWISTED PAIR CATEGORY 6 DATA CABLES, SUPERIOR ESSEX ENDURAGAIN OSP SHIELDED (WITH ALUMINUM INTERLOCK ARMOR AND POLYETHYLENE OUTER JACKET) OR APPROVED EQUAL IN 1" CONDUIT, ONE CABLE TO EACH UTO, SEE SHEET ES514 FOR UTO AND CABLE LOCATIONS. GROUND SHIELD. SURGE PROTECTION BY TARGET SUPPLIER. SEE MTDP/TDP NOTES AND DETAILS, SHEET TN506. TYPICAL BETWEEN MTDP AND TDP, ALL LOCATIONS.
10. FIBER OPTIC BACKBONE CABLE, LOOSE TUBE DIRECT BURIAL GRADE DOUBLE JACKET SINGLE ARMORED GEL FILLED CONSTRUCTION, MDPE JACKET, FIBER COUNT AS INDICATED, 8.3/125 SINGLEMODE, DUAL WINDOW (1310 AND 1550 NM) GENERAL CABLE AQ0064H1F–DWB (MAXIMUM ATTENTUATION 0.5 DB/KM @ 1310 NM AND 0.4 DB/KM @ 1550 NM) OR APPROVED EQUAL BY SIECOR, COMMSCOPE OR HITACHI. DOUBLE SECURE CABLE OUTER JACKET TO DRAWER USING FACTORY HARDWARE. TERMINATE ALL FIBERS WITH 'SC' CONNECTORS. AT CONTROL TOWER END GROUND CABLE SHIELD TO BULLET BOND AND FIBER DRAWER GROUNDING STUD WITH NO. 6 AWG GREEN INSULATED CONDUCTOR TERMINATED WITH HEAVY DUTY CRIMP–ON LUGS SECURED WITH STAINLESS STEEL LOCKING NUTS AND WASHERS. COIL 3' SLACK BUFFERED FIBER IN DRAWER USING FACTORY HARDWARE. TERMINATE ALL FIBERS AT DBB–F END IN FIBER ENCLOSURE IN SPLICE TRAYS, SPLICE FIBERS NOT USED IN ENCLOSURE TO OTHER INCOMING/OUTGOING MULTI–STRAND CABLE. RUN ALL FIBER OPTIC CABLES CONTINUOUS FROM SOURCE TO DESTINATION WITH NO INTERMEDIATE SPLICES OR TERMINATIONS EXCEPT WITHIN DBB–F ENCLOSURES.
11. FIBER OPTIC BACKBONE CABLE, LOOSE TUBE DIRECT BURIAL GRADE DOUBLE JACKET SINGLE ARMORED GEL FILLED CONSTRUCTION, MDPE JACKET, 6 FIBER COUNT, 8.3/125 SINGLEMODE, DUAL WINDOW (1310 AND 1550 NM) GENERAL CABLE AQ0064H1F–DWB (MAXIMUM ATTENTUATION 0.5 DB/KM @ 1310 NM AND 0.4 DB/KM @ 1550 NM) OR APPROVED EQUAL BY SIECOR, COMMSCOPE OR HITACHI. AT DBB–F END, TERMINATE FIBERS WITH 'SC' CONNECTORS AND CROSS–CONNECT TO FIBER CASSETTE PATCH PANEL. GROUND CABLE SHIELDS AT BOTH ENDS. TERMINATE CAMERA TOWER END IN FIBER ENCLOSURE. RUN ALL FIBER OPTIC CABLES CONTINUOUS FROM SOURCE TO DESTINATION WITH NO INTERMEDIATE SPLICES OR TERMINATIONS.
12. FIBER PULLBOX, NEMA 4 ENCLOSURE FOR SERVICE LOOP, SAME ENCLOSURE AS FIBER DATA CABLE BREAKOUT BOX (DBB–F) SEE DETAIL ON SHEET TN504. PROVIDE ENCLOSURE, RADIUS GUIDES AND BACKPANEL. POWER, GROUNDING OR SPACE FOR OTHER EQUIPMENT NOT REQUIRED.
13. DATA CABLE BREAKOUT BOX (DBB–C) NEMA 4 ENCLOSURE FOR CAT 6 TERMINATIONS. SEE DETAILS, SHEET TN503. PROVIDE ADDITIONAL DATA OUTLET AT THIS LOCATION FOR BES OUTLET.
14. DATA CABLE BREAKOUT BOX (DBB–F) NEMA 4 ENCLOSURE FOR FIBER BACKBONE TERMINATIONS. SEE DETAILS, SHEET TN504.
15. PROVIDE ADDITIONAL DATA OUTLET AT EACH PRIMARY WIDENED EMPLACEMENT FOR BES OUTLET.
16. 36"x24"x24" TRAFFIC RATED (20K) PULLBOX/HANDHOLE IN POWER CENTER EMPLACEMENT, FLUSH WITH EMPLACEMENT FLOOR FOR PULLPOINT. FOR POWER CENTERS WITH MANY CONDUITS AND CABLES, ENLARGE CONDUITS FROM HANDHOLE TO DBB PANELS TO PULL MULTIPLE CABLES IN EACH CONDUIT.

## LEGEND

- MTDP — MASTER TARGET DATA PANEL (MTDP)
- TDP — TARGET DATA PANEL (TDP)
- DBB PC3 — DATA BREAKOUT BOX AT POWER CENTER
- FIBER OPTIC CABLE(S)
- SHIELDED CATEGORY 6 CABLE(S) IN CONDUIT
- SHIELDED CATEGORY 6 CABLE(S) DIRECT BURIED
- UTO — UNIVERSAL TARGET OUTLET AT FACADE
- TARGET OUTLET AT CLUSTER OR POWER CENTER DBB
- BES — BES OUTLET AT POWER CENTER OR CLUSTER
- FLIR CAMERA
- HH — PULLBOX/HANDHOLE




## RANGE DATA/ SINGLE LINE DIAGRAM

NOT TO SCALE

## TARGET DATA PANEL IDENTIFICATION NOMENCLATURE

MTDP.V–23

- MTDP.V–23 — PANEL TYPE (MTDP OR TDP)
- MTDP.V–23 — TARGET IDENTIFICATION NUMBER (FROM CIVIL PLANS).

EXAMPLE: LABEL MTDP.V–23 INDICATES PANEL 'MTDP' LOCATED AT TARGET "V–23."

SAMUEL LEE GUILES — LICENSE — No. 50007 — STATE OF FLORIDA — PROFESSIONAL ENGINEER — 6/16/23

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DRAWN BY: J. OKSANEN
CHECKED BY: C. BROWN
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RANGE DATA SINGLE LINE DIAGRAM

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