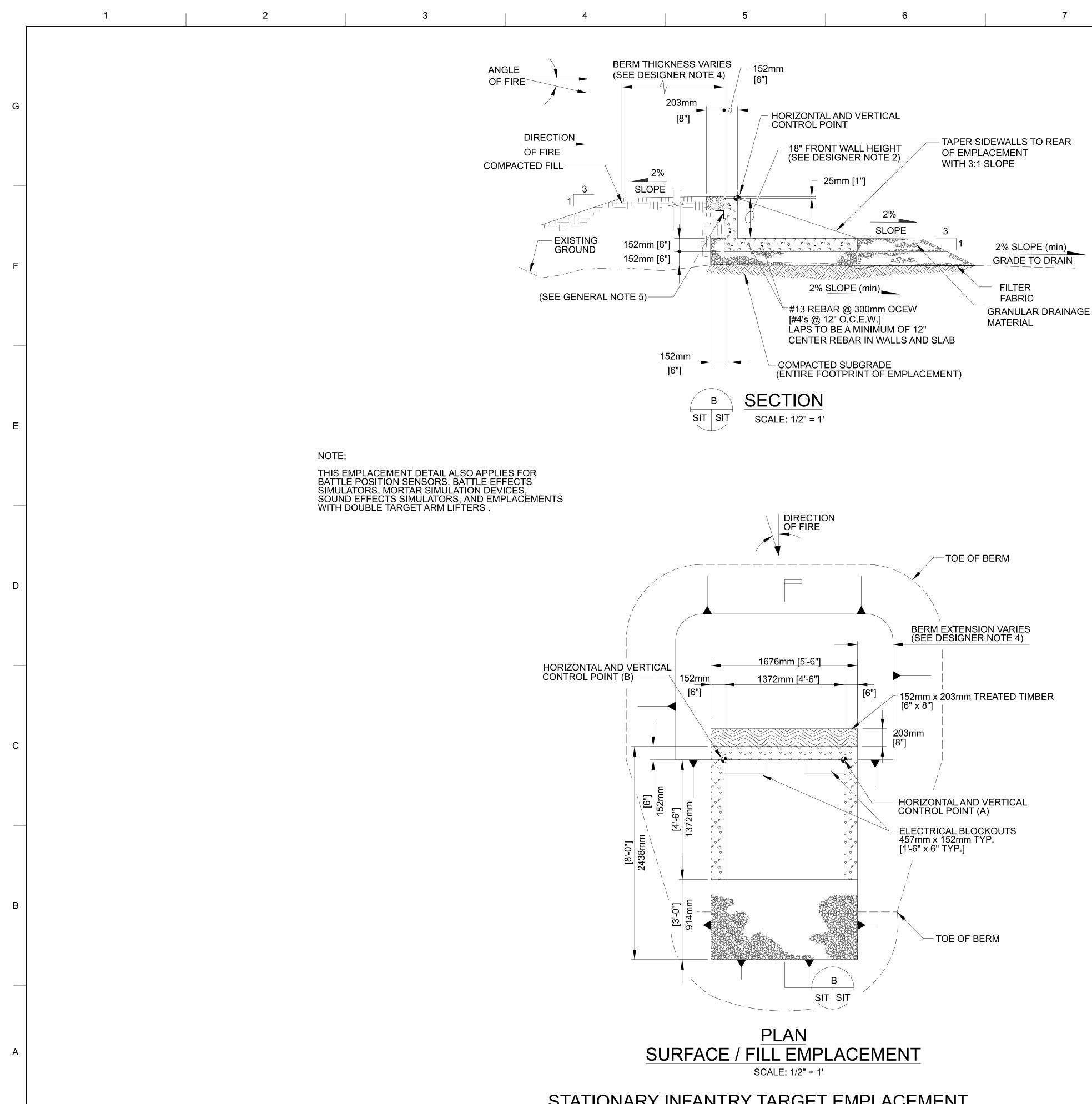
		CIVIL STANDARD DRAWINGS
	SHEET NUMBER	DISCRIPTION
1	SIT	STATIONARY INFANTRY TARGET EMPLACEMENTS
2	W-SIT	WIDENED STATIONARY INFANTRY TARGET EMPLACEMENTS
3	N-SIT	NARROW STATIONARY INFANTRY TARGET EMPLACEMENTS
4	MIT-A	MOVING INFANTRY TARGET (ABOVE GRADE)
5	MIT-B	MOVING INFANTRY TARGET (BELOW GRADE)
6	ITC	INFANTRY TARGET CLUSTER
7	SAT-FR	STATIONARY ARMOR TARGET (FRONTAL)
8	SAT-FL	STATIONARY ARMOR TARGET (FLANK)
9	SAT-PC 01	STATIONARY ARMOR TARGET WITH POWER CENTER
10	SAT-PC 02	STATIONARY ARMOR TARGET WITH POWER CENTER
11	PC	DOWNRANGE POWER CENTER
12	MAT-01	MOVING ARMOR TARGET EMPLACEMENT
13	MAT-01	MOVING ARMOR TARGET EMPLACEMENT
14	BLOCK	CONCRETE BLOCK DETAILS
15	MGB	MACHINE GUN/OBSERVATION BUNKER
16	TRENCH	TRENCH LAYOUT DETAIL
17	BP-01	TURRET-DOWN DEFILADE PLAN AND ELEVATION
18	BP-02	HULL-DOWN DEFILADE PLAN AND ELEVATION
19	BP-03	DEFILADE SECTIONS
20	FP-01	WALK-IN FIGHTING POSITION DETAILS
21	FP-02	FIGHTING POSITIONS PLAN AND ELEVATIONS
22	TP-01	TYPICAL TURNING PAD LAYOUTS
23	TP-02	TYPICAL TURNING PAD LAYOUTS
24	FARP-01	FARP - LAYOUT AND SECTIONS
25	FARP-02	FARP DETAILS
26	CT-01	TYPICAL CAMERA TOWERS
27	CT-02	TYPICAL CAMERA TOWERS
28	CT-03	TYPICAL CAMERA TOWERS
29	AFP-HP	AERIAL FIRING POINT / HOVER PAD
30	GATE	DETAILS SECURITY GATE DETIALS
31	RLM-01	RANGE LIMIT MARKERS AND FLAGPOLE DETAILS
32	RLM-02	RANGE LIMIT MARKER DETIALS
33	SYNC	SYNC RAMP DETIALS
34	MFP	MISFIRE PIT DETAILS
33	SYNC	SYNC RAMP DETIALS

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	U.S. AMMI CONTS OF ENGINEERS ENGINEERING & SUPPORT CENTER	HUNTSVILLE, ALABAMA	COUC AVM	
RANGE AND TRAINING LAND PROGRAM	STANDARD DESIGN MANUAL		RTLP STANDARD	
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STATIONARY INFANTRY TARGET EMPLACEMENT

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GENERAL	NOTES:

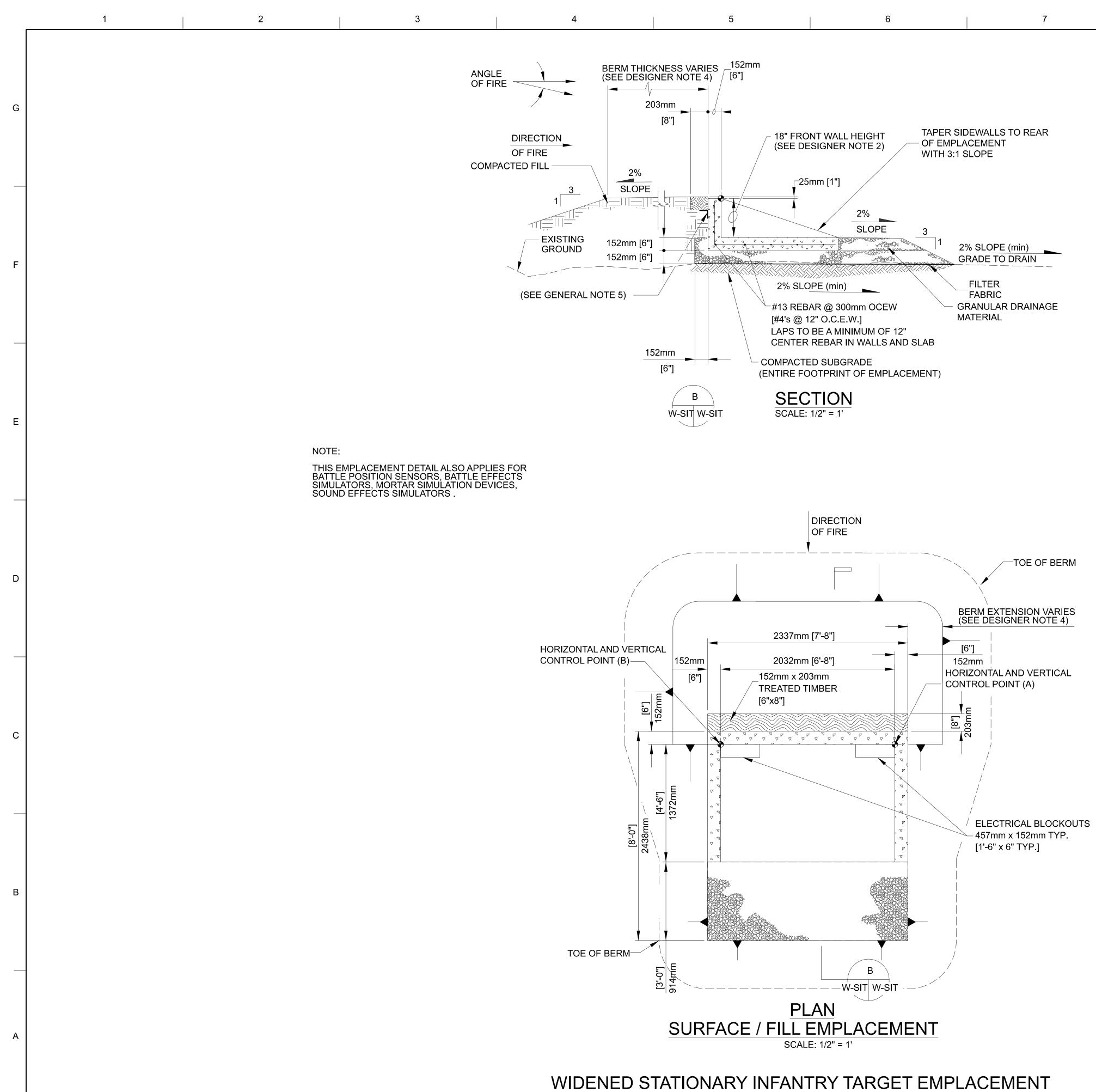
- CONCRETE SHALL DEVELOP A MINIMUM 1 COMPRESSIVE STRENGTH OF 28MPa (4000psi) IN 28 DAYS.
- EMPLACEMENTS SHALL BE CONSTRUCTED OF 2. REINFORCED CONCRETE; CONCRETE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE. PRECAST STRUCTURE WILL HAVE LIFTING EYES CUT FLUSH.
- 3. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
- AREAS DISTURBED BY CONSTRUCTION 4. ACTIVITIES SHALL BE REVEGETATED OR **RESURFACED CONSISTENT WITH THE NATURAL** SURROUNDINGS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
- 5. PLACE TREATED TIMBERS AGAINST CONCRETE WALL ON L102mm x 102MM x 12.7mm x 102mm [4"x4"x¹/₂"x 4"] STEEL ANGLES SPACED A MAXIMUM OF 914mm [3'] ON CENTER. ATTACH ANGLE TO CONCRETE WITH CONCRETE ANCHORS.
- ALL DIMENSIONS ARE INDICATED AS FOLLOWS: 6. METRIC UNITS [ENGLISH] FOR INSTANCE, 1372mm [4'-6"]
- HORIZONTAL CONTROL POINT (A) IS LOCATED 7. ON THE LEFT SIDE OF TARGET ÀS VIEWED FROM THE FIRING POSITION.
- PROVIDE 13mm [1/2"] CHAMFER ON ALL 8. EXPOSED CONCRETE SURFACES.
- LABEL EACH EMPLACEMENT. COORDINATE 9 WITH RANGE CONTROL FOR NUMBERING SCHEME.

DESIGNER NOTES:

- . REFER TO THE STATIONARY INFANTRY TARGETS WRITE-UP IN THE RDG FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- 2. THE MINIMUM FRONT WALL HEIGHT OF 460MM (18") PROVIDES FULL PROTECTION FOR THE TARGETRY AND ELECTRICAL EQUIPMENT FOR AN ANGLE OF FIRE OF +/- 2 DEGREES AND HIDES THE TARGET LIFTER INCLUDING THE TARGET ARMS UP TO A 10 DEGREE DOWN ANGLE OF FIRE, COORDINATE WITH THE INSTALLATION AND THE RTLP-MCX FOR GREATER ANGLES OF FIRE.
- 3. RETAINING WALLS MUST BE CONSTRUCTED OUT OF ADEQUATELY CONNECTED TREATED TIMBERS WITH FILTER FABRIC EXTENDING THE FULL HEIGHT OF WALL DESIGNED BASED ON LOCAL CONDITIONS
- 4. REFER TO THE TARGET EMPLACEMENT PROTECTION SECTION OF THE RDG FOR THE REQUIRED BERM THICKNESS AND BERM EXTENSION REQUIREMENTS. BERM EXTENSIONS OF 1/4 OF THE BERM THICKNESS PROVIDE FULL PROTECTION FOR DIRECTIONS OF FIRE OF UP TO +/- 20 DEGREES AND ADEQUATE PROTECTION UP TO +/- 30 DEGREES.
- 5. THE DESIGN MUST INCLUDE POSITIVE DRAINAGE AWAY FROM THE TARGET, INCLUDING BELOW GRADE EMPLACEMENTS
- 6. THE 3:1 BERM SLOPES SHOWN ARE TYPICAL; ADJUST BASED ON A SITE-SPECIFIC GEOTECHNICAL REPORT.
- 7. THE SIT ELECTRICAL EQUIPMENT AND TARGET LIFTER/SILHOUETTE REQUIRES A MINIMUM OF 2290MM (7'-6") CLEAR SPACE BEHIND THE FRONT WALL FOR TARGET MOVEMENT/LAYDOWN.

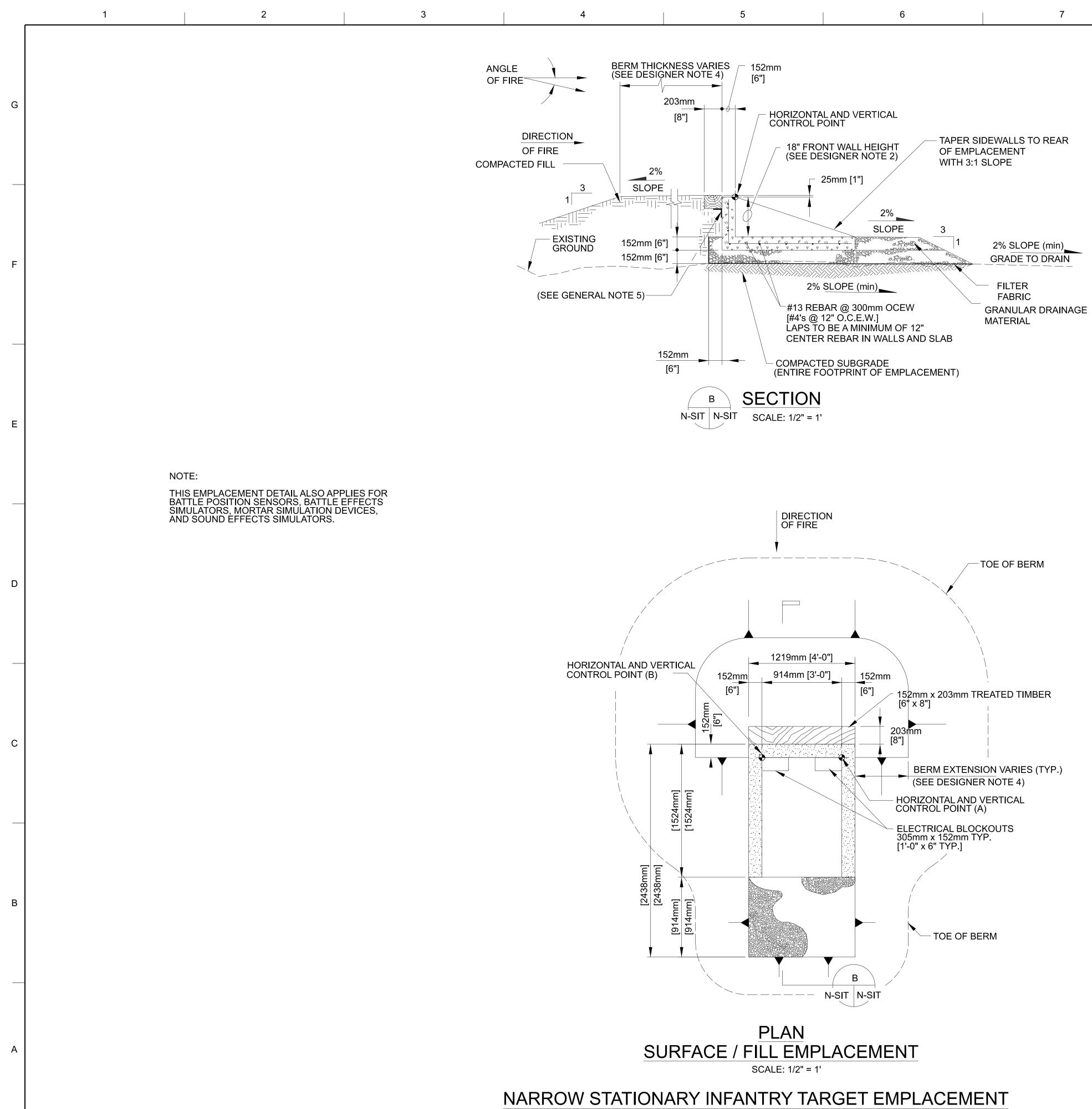
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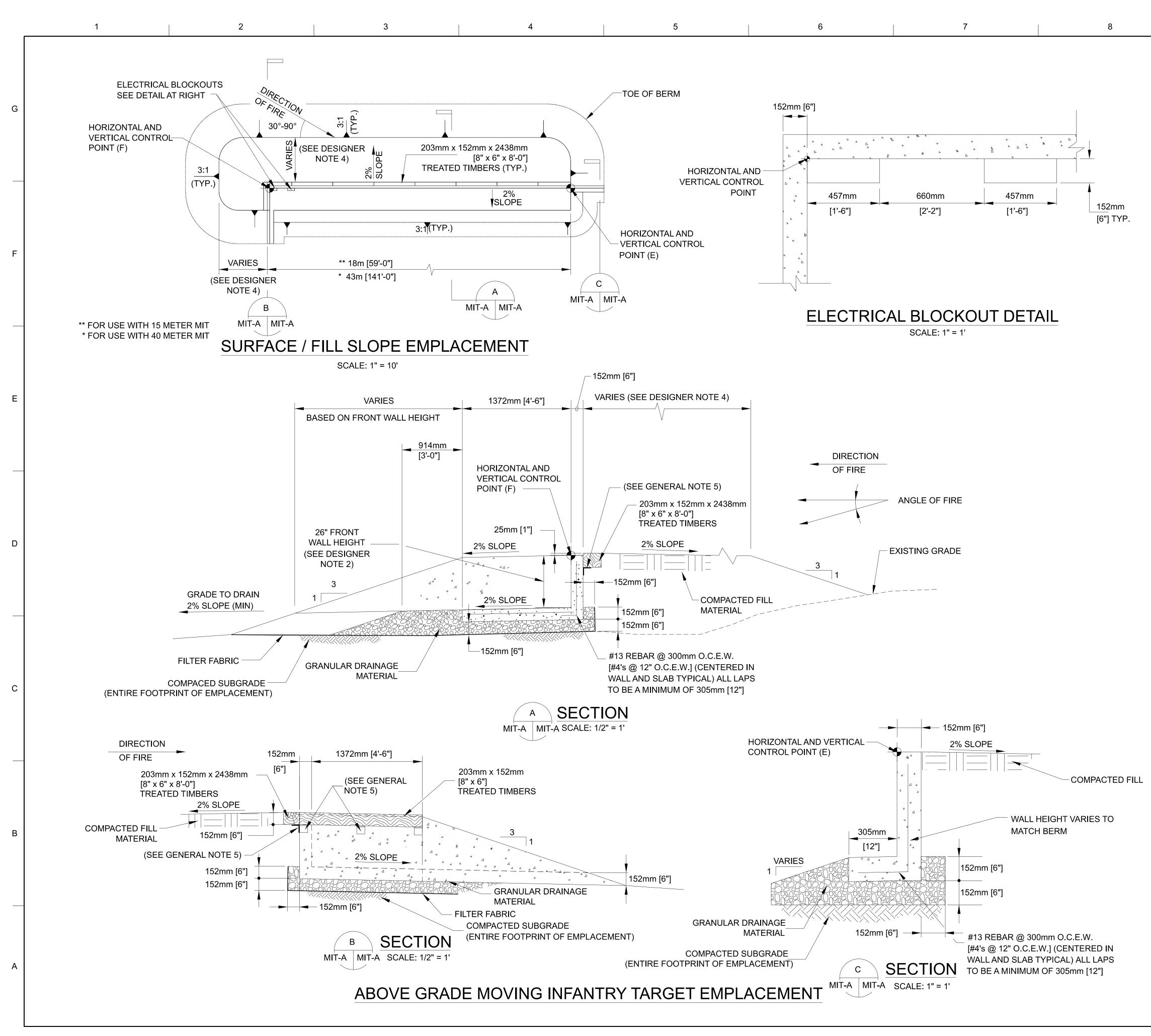
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3.	ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.					
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8.	PROVIDE 13mm [1/2"] CHAMFER ON ALL EXPOSED CONCRETE SURFACES.					
9.	LABEL EACH EMPLACEMENT. COORDINATE WITH RANGE CONTROL FOR NUMBERING SCHEME.					MARK
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ade Fab	AINING WALLS MUST BE CONSTRUCTED OUT OF EQUATELY CONNECTED TREATED TIMBERS WITH FILTER RIC EXTENDING THE FULL HEIGHT OF WALL DESIGNED GED ON LOCAL CONDITIONS		U. S. ARMY CC ENGINEERING	HUNTSVIL		
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FRC	E DESIGN MUST INCLUDE POSITIVE DRAINAGE AWAY OM THE TARGET, INCLUDING BELOW GRADE PLACEMENTS		STANDARD DESIGN MANUA		WIDENED STATIONARY	
	E 3:1 BERM SLOPES SHOWN ARE TYPICAL; ADJUST SED ON A SITE-SPECIFIC GEOTECHNICAL REPORT.		DARD DES		ENED ST.	EMPLACEMENT
LIF1 (7'-6	E SIT ELECTRICAL EQUIPMENT AND TARGET TER/SILHOUETTE REQUIRES A MINIMUM OF 2290MM 3") CLEAR SPACE BEHIND THE FRONT WALL FOR CGET MOVEMENT/LAYDOWN.		STAN			
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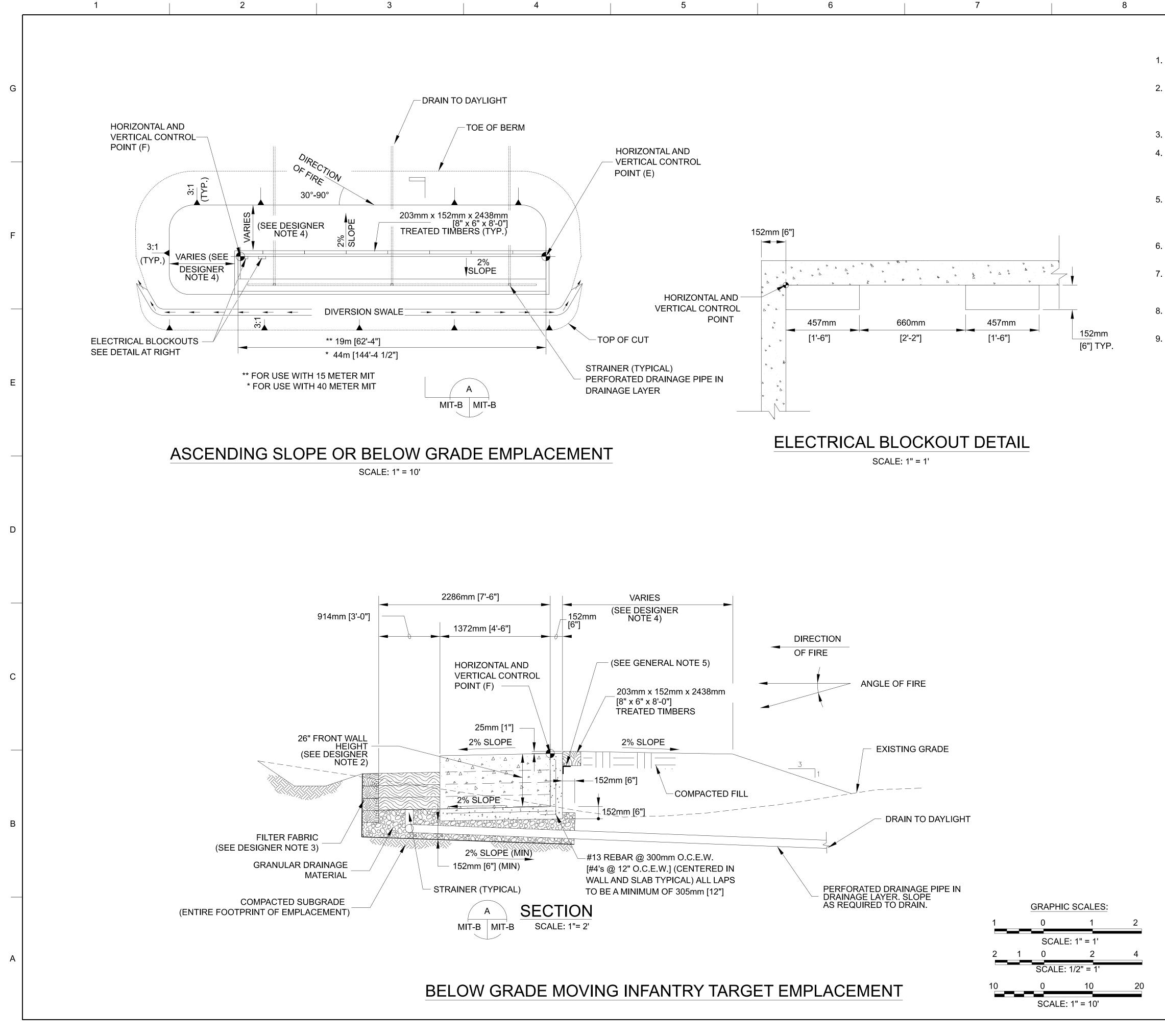
GEN	IERAL NOTES: CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 28MPa (4000psi)		JS A	rmy ngin] / Cor eers	.ps ®
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3.	RETAINING WALLS MUST BE CONSTRUCTED OUT OF ADEQUATELY CONNECTED TREATED TIMBERS WITH FILTER FABRIC EXTENDING THE FULL HEIGHT OF WALL DESIGNED BASED ON LOCAL CONDITIONS	NAA 2 11	ENGINEERING	H		
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5.	THE DESIGN MUST INCLUDE POSITIVE DRAINAGE AWAY FROM THE TARGET, INCLUDING BELOW GRADE EMPLACEMENTS	RANGE AND TRAINING LAND PROGRAM	STANDARD DESIGN MANUAL		NARROW STATIONARY INFANTRY TARGET	
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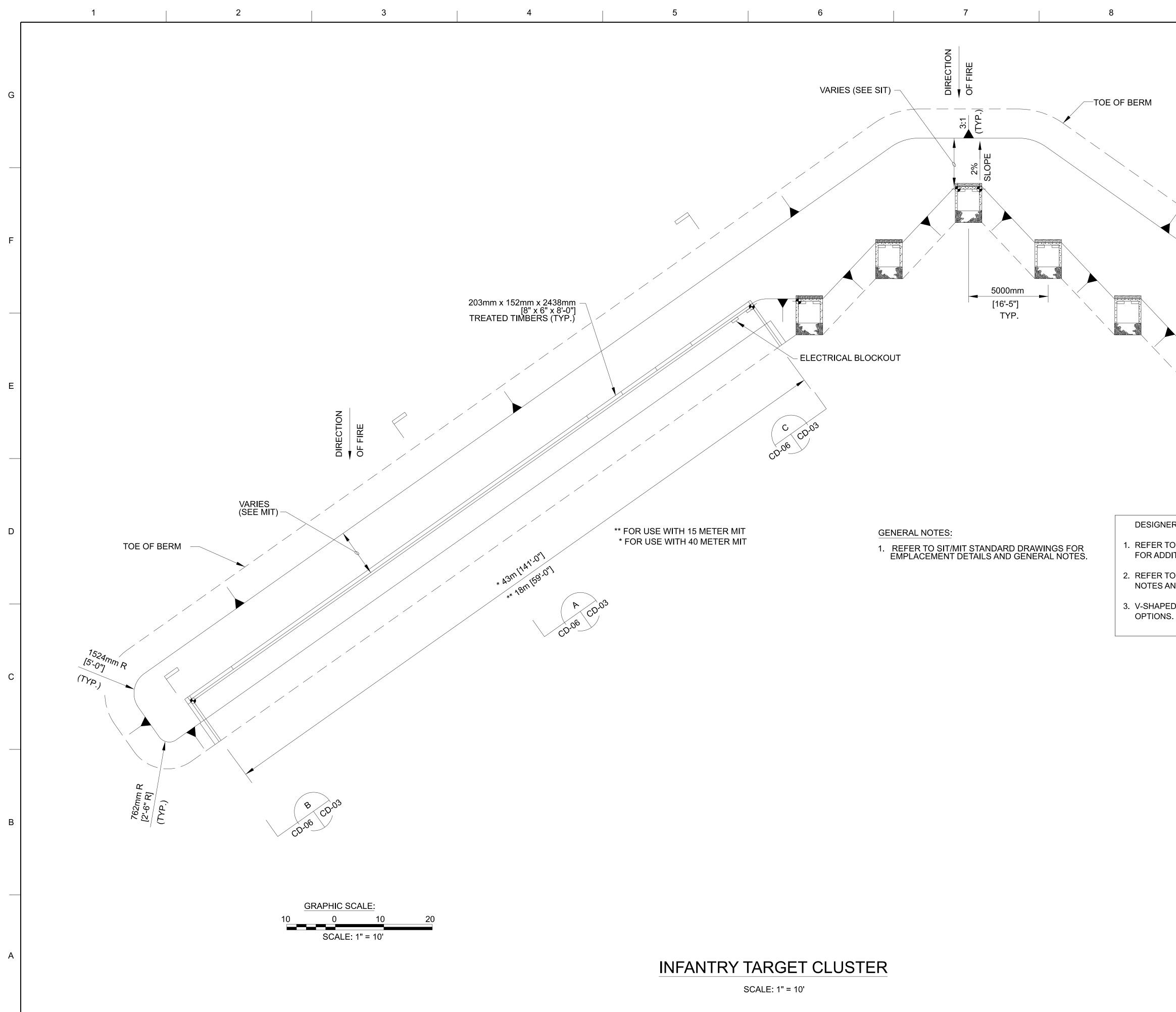
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8.	CURVES. THE MIT TARGET RAIL/LIFTER/SILHOUETTE REQUIRES A MINIMUM OF 2290MM (7'-6") CLEAR SPACE BEHIND THE FRONT WALL FOR TARGET MOVEMENT/LAYDOWN. MIRROR THE MIT EMPLACEMENTS AS REQUIRED TO KEEP ELECTRICAL EQUIPMENT (HOME END) AT THE END CLOSEST TO THE DIRECTION OF FIRE GRAPHIC SCALES:	RANGE AND TRAINING LAND PROGRAM	STANDARD DESIGN MANUAL		MOVING INFANTRY TARGET (AROVE GRADE)	
6. 7.	RDG FOR THE REQUIRED BERM THICKNESS AND BERM EXTENSION REQUIREMENTS. THE DESIGN MUST INCLUDE POSITIVE DRAINAGE AWAY FROM THE TARGET, INCLUDING BELOW GRADE EMPLACEMENTS THE 3:1 BERM SLOPES SHOWN ARE TYPICAL; ADJUST BASED ON A SITE-SPECIFIC GEOTECHNICAL REPORT. MIT EMPLACEMENTS ARE TYPICALLY FLAT ALONG THE DIRECTION OF TARGET TRAVEL. LIMIT SLOPES TO 3 PERCENT WHERE POSSIBLE WITH A MAXIMUM OF 5 PERCENT. DO NOT USE HORIZONTAL OR VERTICAL	U. S. ARMY CORPS OF ENGINEERS ENGINEERING & SUPPORT CENTER HUNTSVILLE, ALABAMA		Ч Ц	MAY 2022	
	AN ANGLE OF FIRE OF +/- 2 DEGREES AND HIDES THE TARGET LIFTER INCLUDING THE TARGET ARMS UP TO AN 8 DEGREE DOWN ANGLE OF FIRE. COORDINATE WITH THE INSTALLATION AND THE RTLP-MCX FOR GREATER ANGLES OF FIRE. WOOD RETAINING WALLS MUST BE CONSTRUCTED OUT OF ADEQUATELY CONNECTED TREATED TIMBERS WITH FILTER FABRIC EXTENDING THE FULL HEIGHT OF WALL DESIGNED BASED ON LOCAL CONDITIONS REFER TO THE TARGET EMPLACEMENT PROTECTION SECTION OF THE	GINEERS	CENTER DRAWN BY:	IA CHECKED BY:	SUBMITTED BY:	SIZE:
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9. I	OF THE TARGET. _ABEL EACH EMPLACEMENT. COORDINATE WITH RANGE CONTROL FOR NUMBERING SCHEME.					RK DESCRIP
 - }.	HERE. THE ELECTRICAL BLOCK OUTS ARE LOCATED AT THE END OF THE EMPLACEMENT NEAREST TO THE ENGAGEMENT POINT. HORIZONTAL CONTROL POINT (F) IS LOCATED ON THE POWER SIDE					IPTION
I	ALL DIMENSIONS ARE METRIC [ENGLISH] UNLESS OTHER WISE NDICATED FOR INSTANCE 1372mm [4'-6"]. THE EMPLACEMENT MAY BE MIRRORED FROM WHAT IS SHOWN					
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	OF 28 MPa (4000PSI) IN 28 DAYS.		IS A	_ .rmy		ps



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CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 28 MPa (4000PSI) IN 28 DAYS.	US Army Corps
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ABEL EACH EMPLACEMENT. COORDINATE WITH RANGE CONTROL FOR NUMBERING SCHEME.	MARK
DESIGNER NOTES	ISSUE DATE: SOLICITATION NO.: CONTRACT NO.: PROJECT NUMBER:
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6. THE 3:1 BERM SLOPES SHOWN ARE TYPICAL; ADJUST BASED ON A SITE-SPECIFIC GEOTECHNICAL REPORT.	U. S. ARMY C ENGINEERING HUNTS
7. MIT EMPLACEMENTS ARE TYPICALLY FLAT ALONG THE DIRECTION OF TARGET TRAVEL. LIMIT SLOPES TO 3 PERCENT WHERE POSSIBLE WITH A MAXIMUM OF 5 PERCENT. DO NOT USE HORIZONTAL OR VERTICAL CURVES.	
8. THE MIT TARGET RAIL/LIFTER/SILHOUETTE REQUIRES A MINIMUM OF 2290MM (7'-6") CLEAR SPACE BEHIND THE FRONT WALL FOR TARGET MOVEMENT/LAYDOWN.	GRAM
9. MIRROR THE MIT EMPLACEMENTS AS REQUIRED TO KEEP ELECTRICAL EQUIPMENT (HOME END) AT THE END CLOSEST TO THE DIRECTION OF FIRE	RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL MOVING INFANTRY TARGET (BELOW GRADE)
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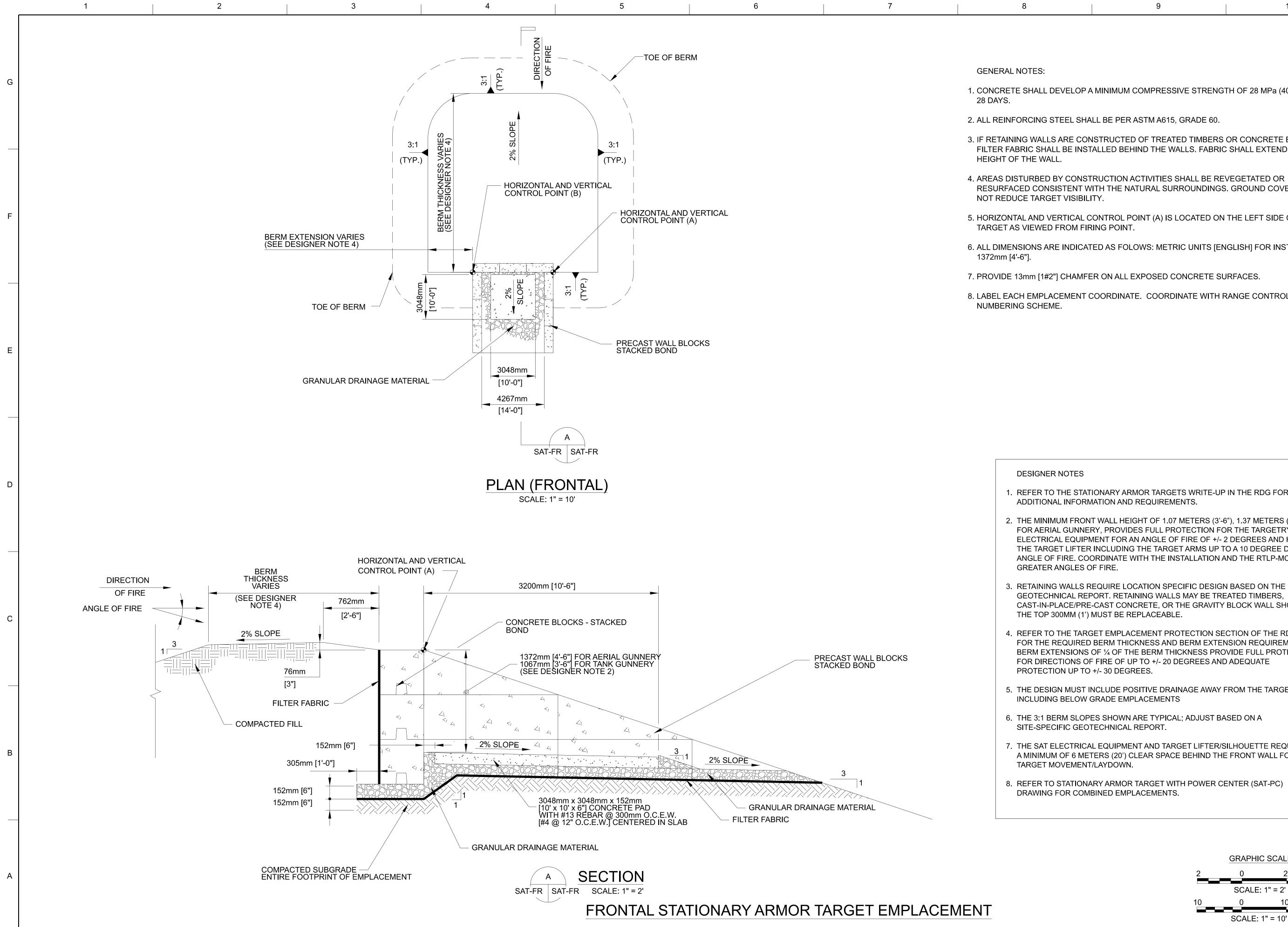
DESIGNER NOTES:

1. REFER TO THE INFANTRY TARGET CLUSTER WRITE-UP IN THE RDG FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

2. REFER TO SIT/MIT STANDARD DRAWINGS FOR ADDITIONAL DESIGNER NOTES AND INFORMATION NOT SHOWN

3. V-SHAPED DESIGN SHOWN. REFER TO WRITE-UP FOR OTHER LAYOUT

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ET, QUIRES DR	RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL STATIONARY ARMOR TARGET (FRONTAL)
. <u>ES:</u> 2 4 0 20	SHEET ID SAT-FR

1. REFER TO THE STATIONARY ARMOR TARGETS WRITE-UP IN THE RDG FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

FOR AERIAL GUNNERY, PROVIDES FULL PROTECTION FOR THE TARGETR ELECTRICAL EQUIPMENT FOR AN ANGLE OF FIRE OF +/- 2 DEGREES AND THE TARGET LIFTER INCLUDING THE TARGET ARMS UP TO A 10 DEGREE I ANGLE OF FIRE, COORDINATE WITH THE INSTALLATION AND THE RTLP-MO

3. RETAINING WALLS REQUIRE LOCATION SPECIFIC DESIGN BASED ON THE GEOTECHNICAL REPORT. RETAINING WALLS MAY BE TREATED TIMBERS, CAST-IN-PLACE/PRE-CAST CONCRETE, OR THE GRAVITY BLOCK WALL SH THE TOP 300MM (1') MUST BE REPLACEABLE.

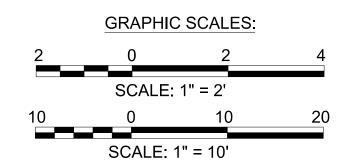
FOR THE REQUIRED BERM THICKNESS AND BERM EXTENSION REQUIREM BERM EXTENSIONS OF 1/4 OF THE BERM THICKNESS PROVIDE FULL PROT FOR DIRECTIONS OF FIRE OF UP TO +/- 20 DEGREES AND ADEQUATE

INCLUDING BELOW GRADE EMPLACEMENTS

SITE-SPECIFIC GEOTECHNICAL REPORT.

7. THE SAT ELECTRICAL EQUIPMENT AND TARGET LIFTER/SILHOUETTE REQU A MINIMUM OF 6 METERS (20') CLEAR SPACE BEHIND THE FRONT WALL FO

8. REFER TO STATIONARY ARMOR TARGET WITH POWER CENTER (SAT-PC) DRAWING FOR COMBINED EMPLACEMENTS.



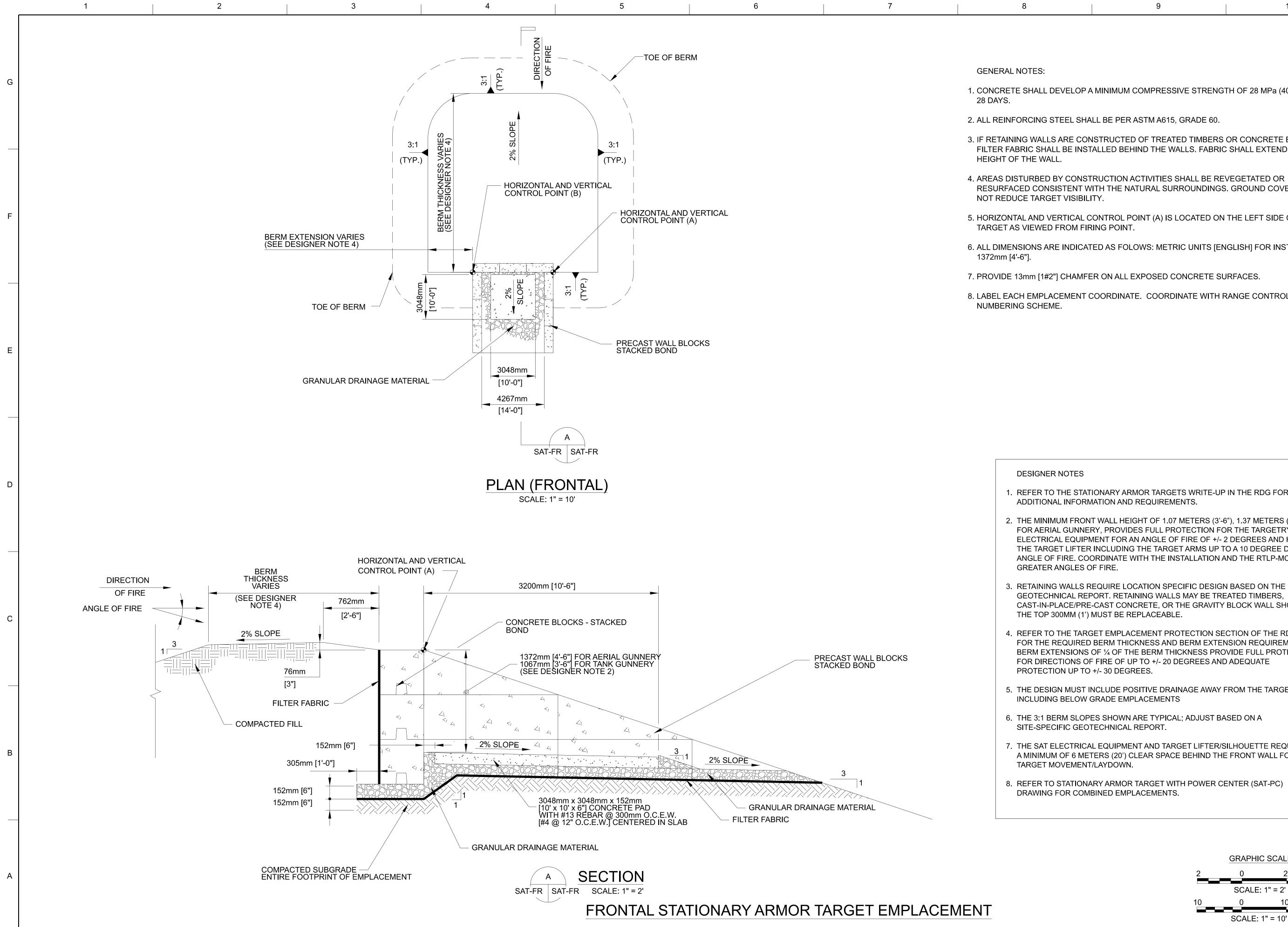
2. THE MINIMUM FRONT WALL HEIGHT OF 1.07 METERS (3'-6"), 1.37 METERS

4. REFER TO THE TARGET EMPLACEMENT PROTECTION SECTION OF THE RI PROTECTION UP TO +/- 30 DEGREES.

5. THE DESIGN MUST INCLUDE POSITIVE DRAINAGE AWAY FROM THE TARGE

6. THE 3:1 BERM SLOPES SHOWN ARE TYPICAL; ADJUST BASED ON A

TARGET MOVEMENT/LAYDOWN.



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٦	DESIGNED BY: DRAWN BY: CHECKED BY: SUBMITTED BY: SIZE:
(4'-6"), Y AND HIDES DOWN CX FOR OWN. DG MENTS. ECTION	U. S. ARMY CORPS OF ENGINEERS ENGINEERING & SUPPORT CENTER HUNTSVILLE, ALABAMA MAY 2022
ET, QUIRES DR	RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL STATIONARY ARMOR TARGET (FRONTAL)
. <u>ES:</u> 2 4 0 20	SHEET ID SAT-FR

1. REFER TO THE STATIONARY ARMOR TARGETS WRITE-UP IN THE RDG FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

FOR AERIAL GUNNERY, PROVIDES FULL PROTECTION FOR THE TARGETR ELECTRICAL EQUIPMENT FOR AN ANGLE OF FIRE OF +/- 2 DEGREES AND THE TARGET LIFTER INCLUDING THE TARGET ARMS UP TO A 10 DEGREE I ANGLE OF FIRE, COORDINATE WITH THE INSTALLATION AND THE RTLP-MO

3. RETAINING WALLS REQUIRE LOCATION SPECIFIC DESIGN BASED ON THE GEOTECHNICAL REPORT. RETAINING WALLS MAY BE TREATED TIMBERS, CAST-IN-PLACE/PRE-CAST CONCRETE, OR THE GRAVITY BLOCK WALL SH THE TOP 300MM (1') MUST BE REPLACEABLE.

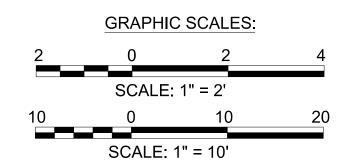
FOR THE REQUIRED BERM THICKNESS AND BERM EXTENSION REQUIREM BERM EXTENSIONS OF 1/4 OF THE BERM THICKNESS PROVIDE FULL PROT FOR DIRECTIONS OF FIRE OF UP TO +/- 20 DEGREES AND ADEQUATE

INCLUDING BELOW GRADE EMPLACEMENTS

SITE-SPECIFIC GEOTECHNICAL REPORT.

7. THE SAT ELECTRICAL EQUIPMENT AND TARGET LIFTER/SILHOUETTE REQU A MINIMUM OF 6 METERS (20') CLEAR SPACE BEHIND THE FRONT WALL FO

8. REFER TO STATIONARY ARMOR TARGET WITH POWER CENTER (SAT-PC) DRAWING FOR COMBINED EMPLACEMENTS.



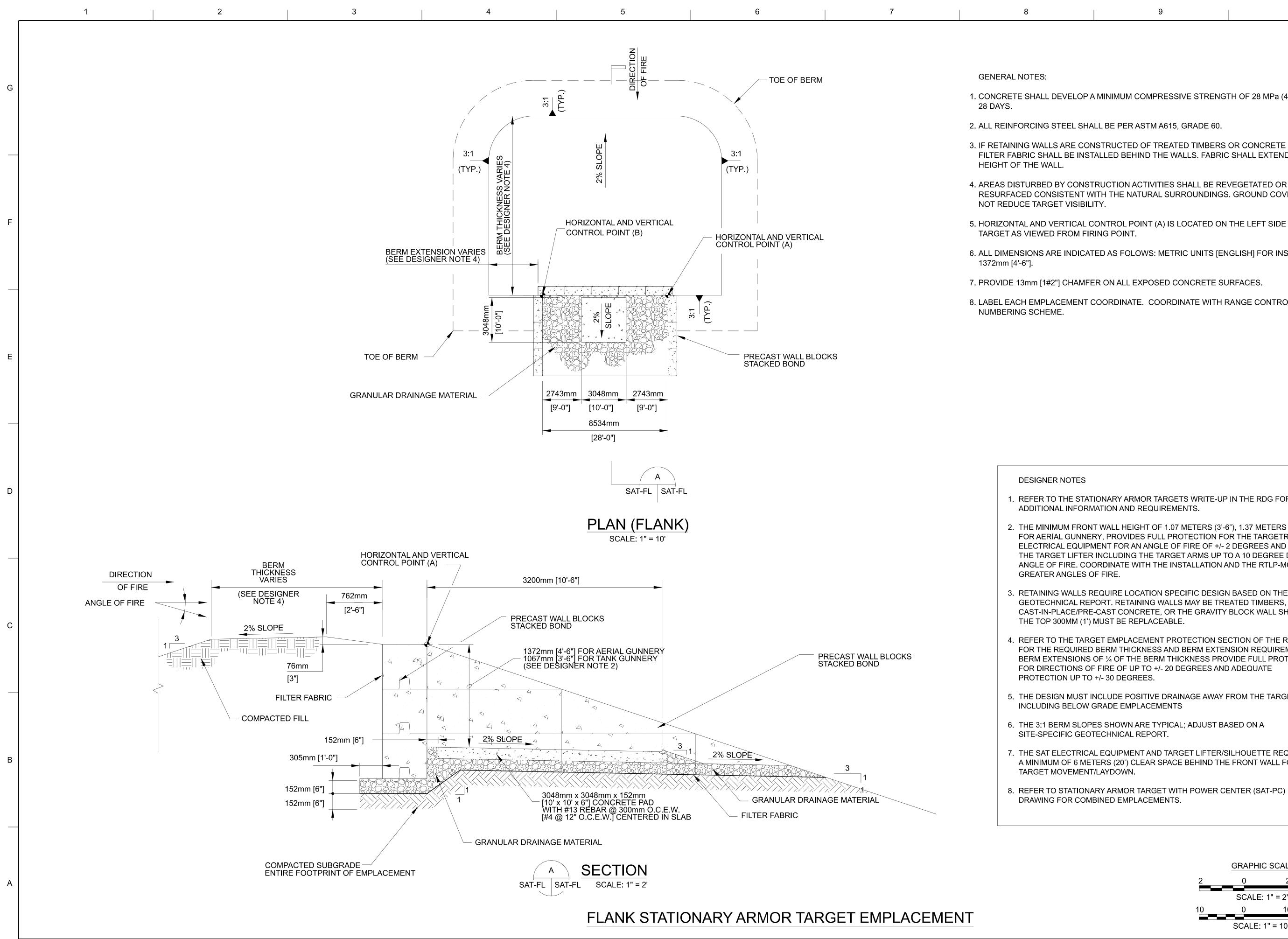
2. THE MINIMUM FRONT WALL HEIGHT OF 1.07 METERS (3'-6"), 1.37 METERS

4. REFER TO THE TARGET EMPLACEMENT PROTECTION SECTION OF THE RI PROTECTION UP TO +/- 30 DEGREES.

5. THE DESIGN MUST INCLUDE POSITIVE DRAINAGE AWAY FROM THE TARGE

6. THE 3:1 BERM SLOPES SHOWN ARE TYPICAL; ADJUST BASED ON A

TARGET MOVEMENT/LAYDOWN.



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(4'-6"), RY AND HIDES DOWN CX FOR CX FOR HOWN. RDG MENTS. FECTION	U. S. ARMY CORPS OF ENGINEERS ENGINEERING & SUPPORT CENTER HUNTSVILLE, ALABAMA MAY 2022
ET, QUIRES OR	RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL STATIONARY ARMOR TARGET (FLANK)
LES: 2 4 0 20	SHEET ID SAT-FL

1. REFER TO THE STATIONARY ARMOR TARGETS WRITE-UP IN THE RDG FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

2. THE MINIMUM FRONT WALL HEIGHT OF 1.07 METERS (3'-6"), 1.37 METERS FOR AERIAL GUNNERY, PROVIDES FULL PROTECTION FOR THE TARGETF ELECTRICAL EQUIPMENT FOR AN ANGLE OF FIRE OF +/- 2 DEGREES AND THE TARGET LIFTER INCLUDING THE TARGET ARMS UP TO A 10 DEGREE ANGLE OF FIRE. COORDINATE WITH THE INSTALLATION AND THE RTLP-M

3. RETAINING WALLS REQUIRE LOCATION SPECIFIC DESIGN BASED ON THE GEOTECHNICAL REPORT. RETAINING WALLS MAY BE TREATED TIMBERS. CAST-IN-PLACE/PRE-CAST CONCRETE, OR THE GRAVITY BLOCK WALL SH

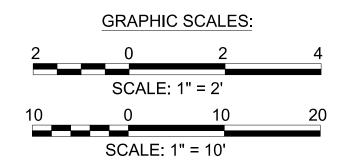
FOR THE REQUIRED BERM THICKNESS AND BERM EXTENSION REQUIREI BERM EXTENSIONS OF 1/4 OF THE BERM THICKNESS PROVIDE FULL PROT FOR DIRECTIONS OF FIRE OF UP TO +/- 20 DEGREES AND ADEQUATE PROTECTION UP TO +/- 30 DEGREES.

INCLUDING BELOW GRADE EMPLACEMENTS

SITE-SPECIFIC GEOTECHNICAL REPORT.

7. THE SAT ELECTRICAL EQUIPMENT AND TARGET LIFTER/SILHOUETTE REC A MINIMUM OF 6 METERS (20') CLEAR SPACE BEHIND THE FRONT WALL FO

8. REFER TO STATIONARY ARMOR TARGET WITH POWER CENTER (SAT-PC) DRAWING FOR COMBINED EMPLACEMENTS.

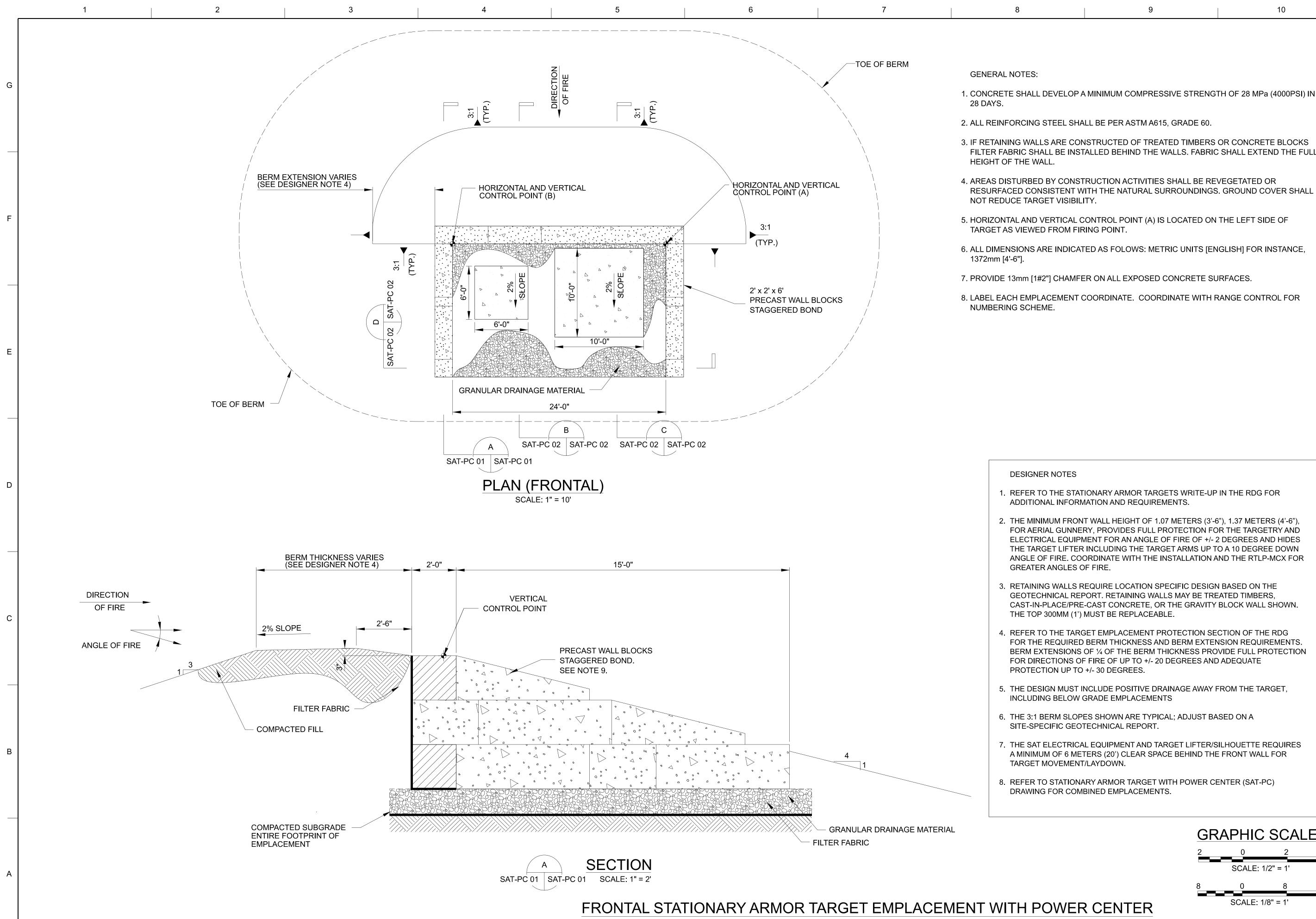


THE TOP 300MM (1') MUST BE REPLACEABLE.

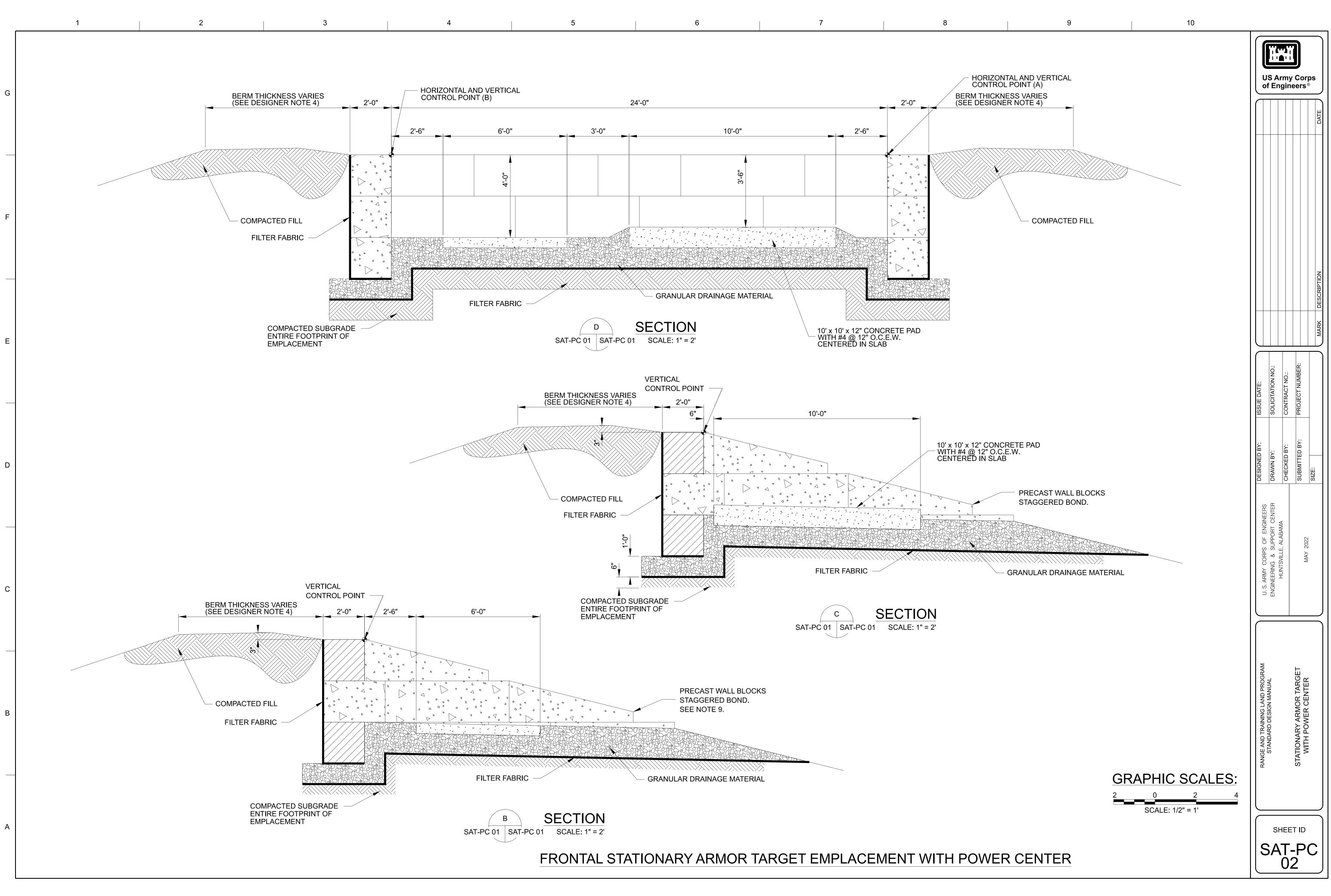
4. REFER TO THE TARGET EMPLACEMENT PROTECTION SECTION OF THE R

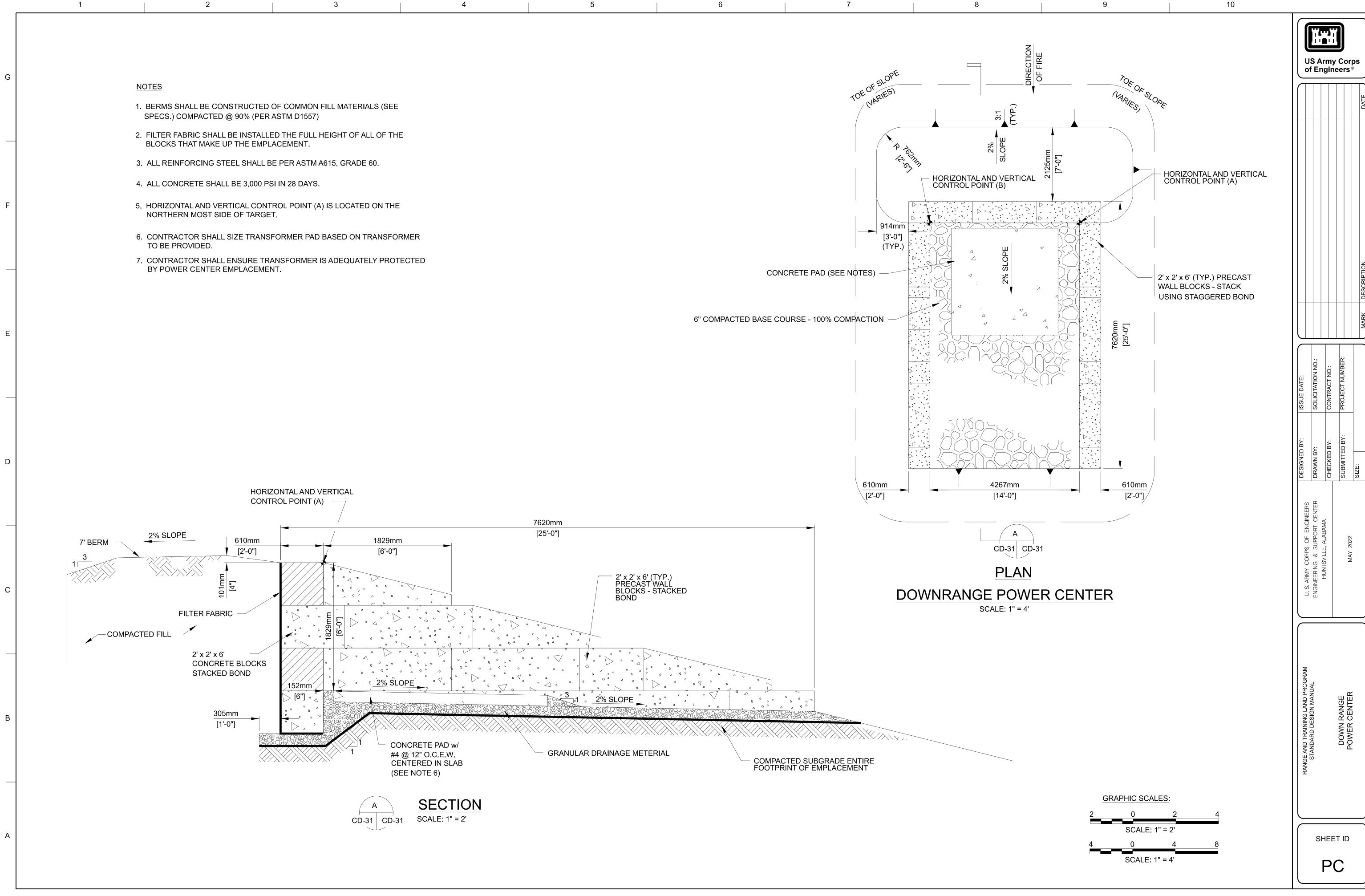
5. THE DESIGN MUST INCLUDE POSITIVE DRAINAGE AWAY FROM THE TARG

6. THE 3:1 BERM SLOPES SHOWN ARE TYPICAL; ADJUST BASED ON A



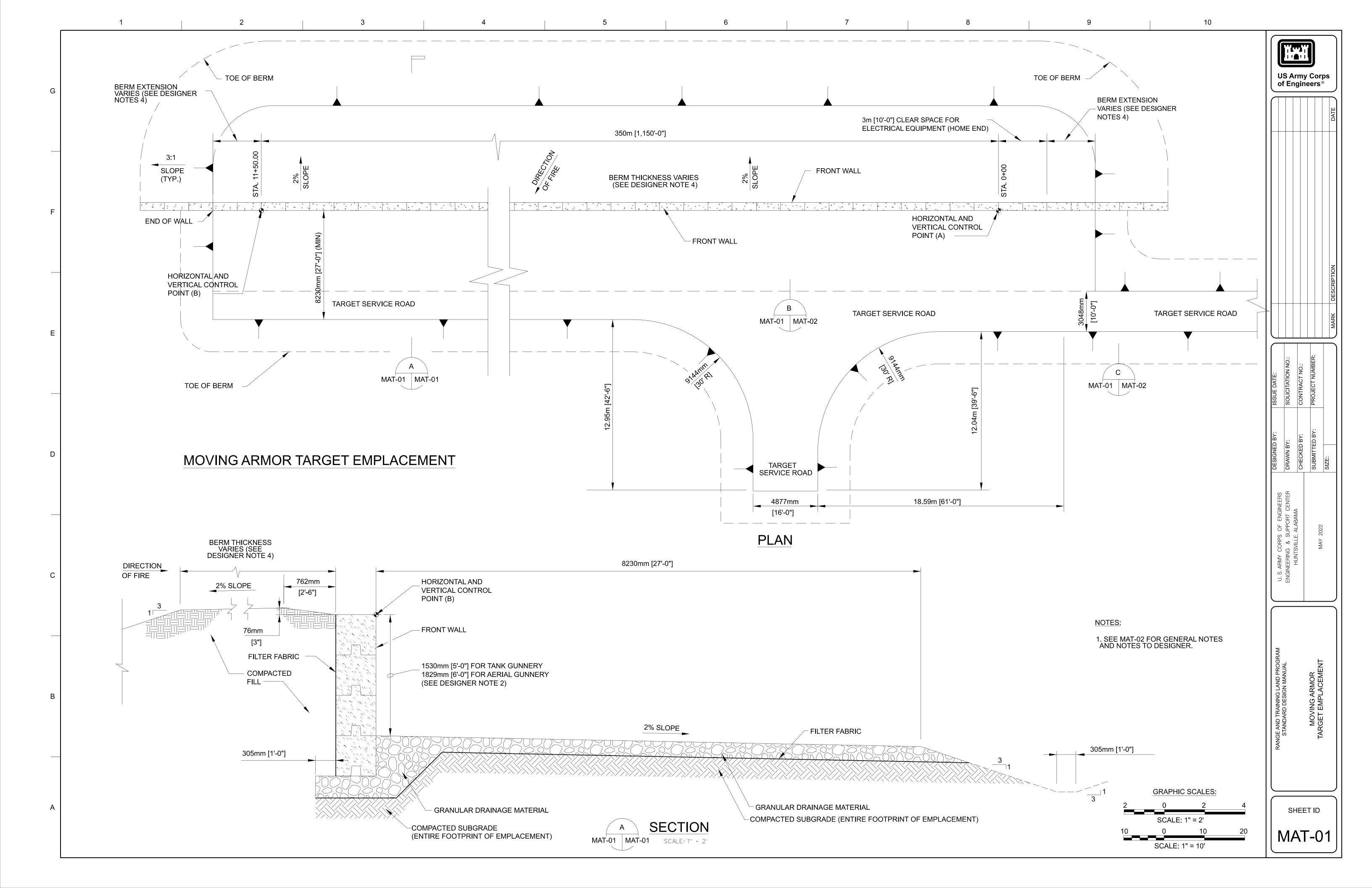
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BERS OR CONCRETE BLOCKS FABRIC SHALL EXTEND THE FULL							
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RS (3'-6"), 1.37 METERS (4'-6"), ION FOR THE TARGETRY AND OF +/- 2 DEGREES AND HIDES S UP TO A 10 DEGREE DOWN TION AND THE RTLP-MCX FOR DESIGN BASED ON THE BE TREATED TIMBERS, RAVITY BLOCK WALL SHOWN.		()	ENGINEERING & SUPPORT CENTER	HUNTSVILLE, ALABAMA		MAY 2022	
ON SECTION OF THE RDG EXTENSION REQUIREMENTS. S PROVIDE FULL PROTECTION ES AND ADEQUATE		U.S.	ENGI]
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VER CENTER (SAT-PC)		RANGE AND TRAINING LAND PROGRAM	SIANUAF		STATIONARY ARMOR TARGET	4 HTIW	
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SCALE: 1/2" = 1' 8 0 8 16 SCALE: 1/8" = 1'		S			₌⊤ια -Ρ)1		

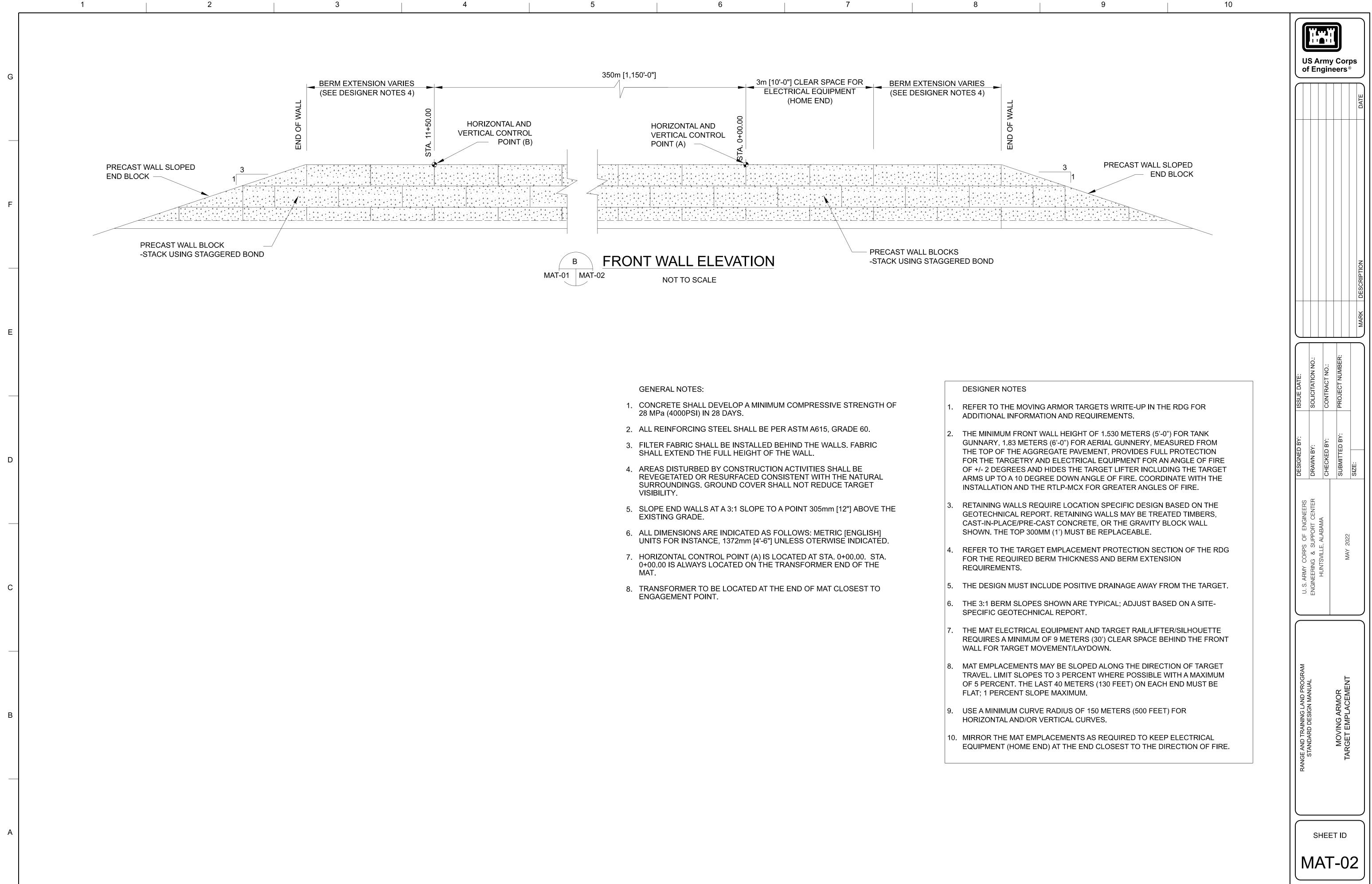


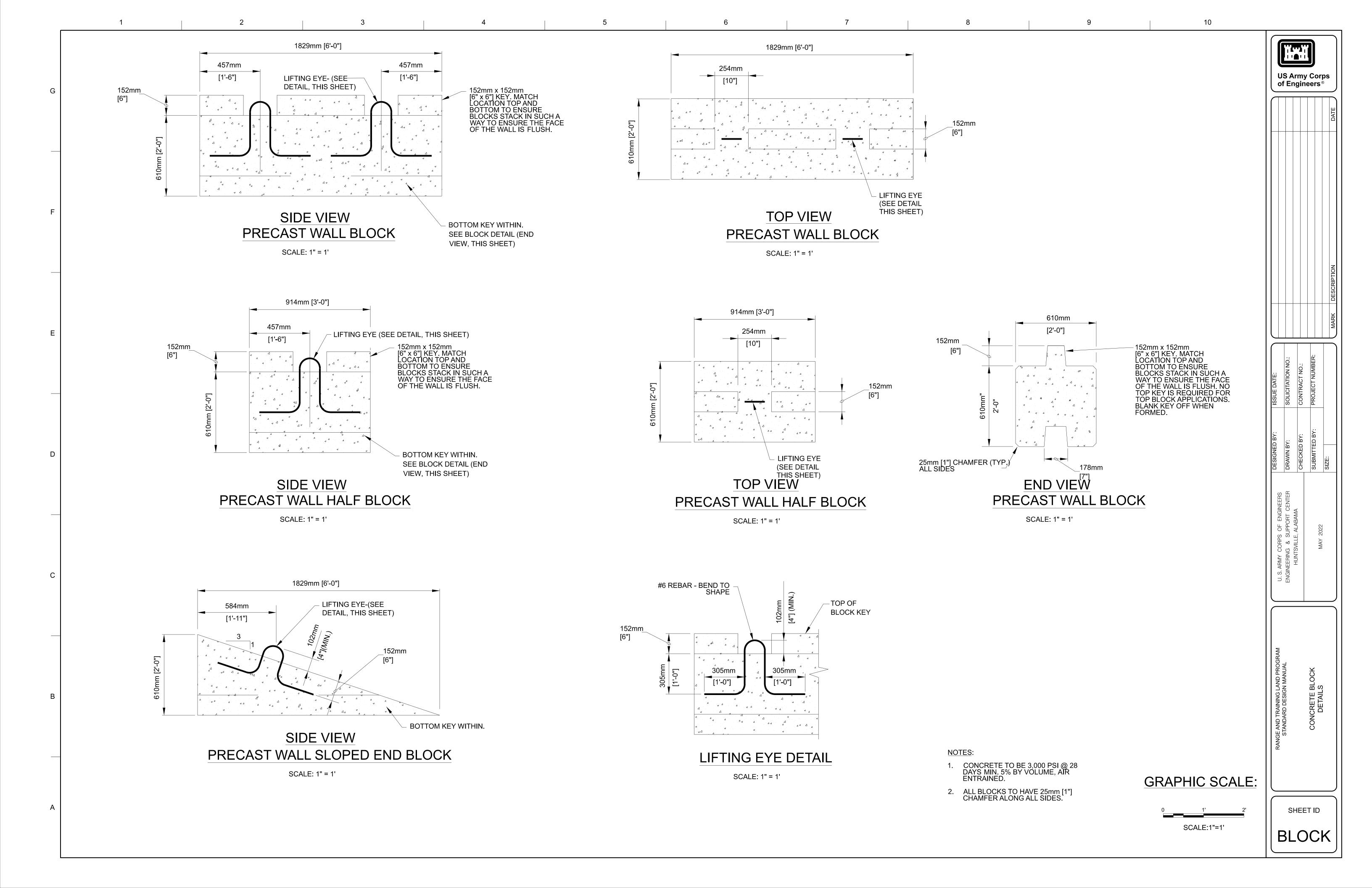


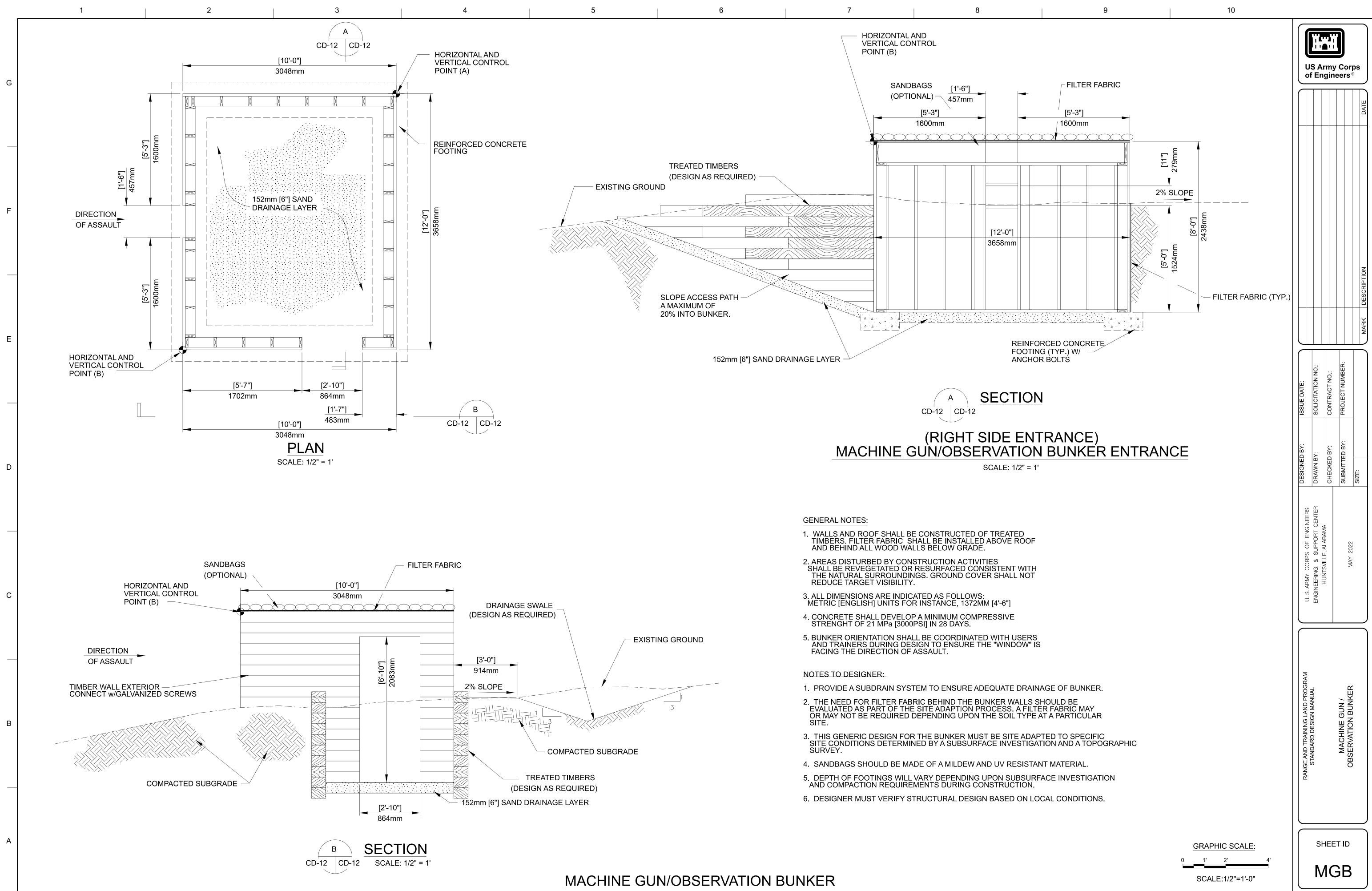


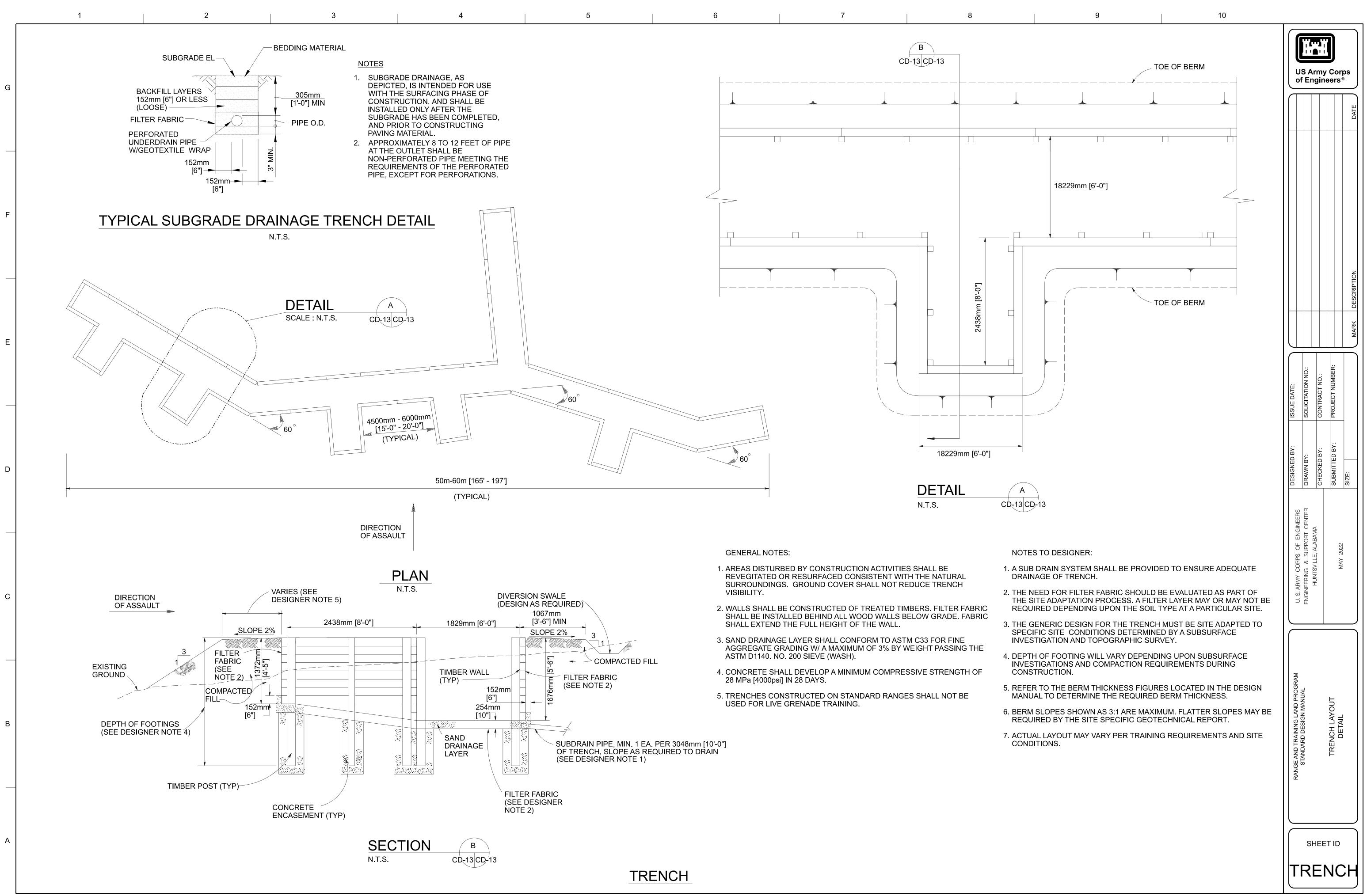


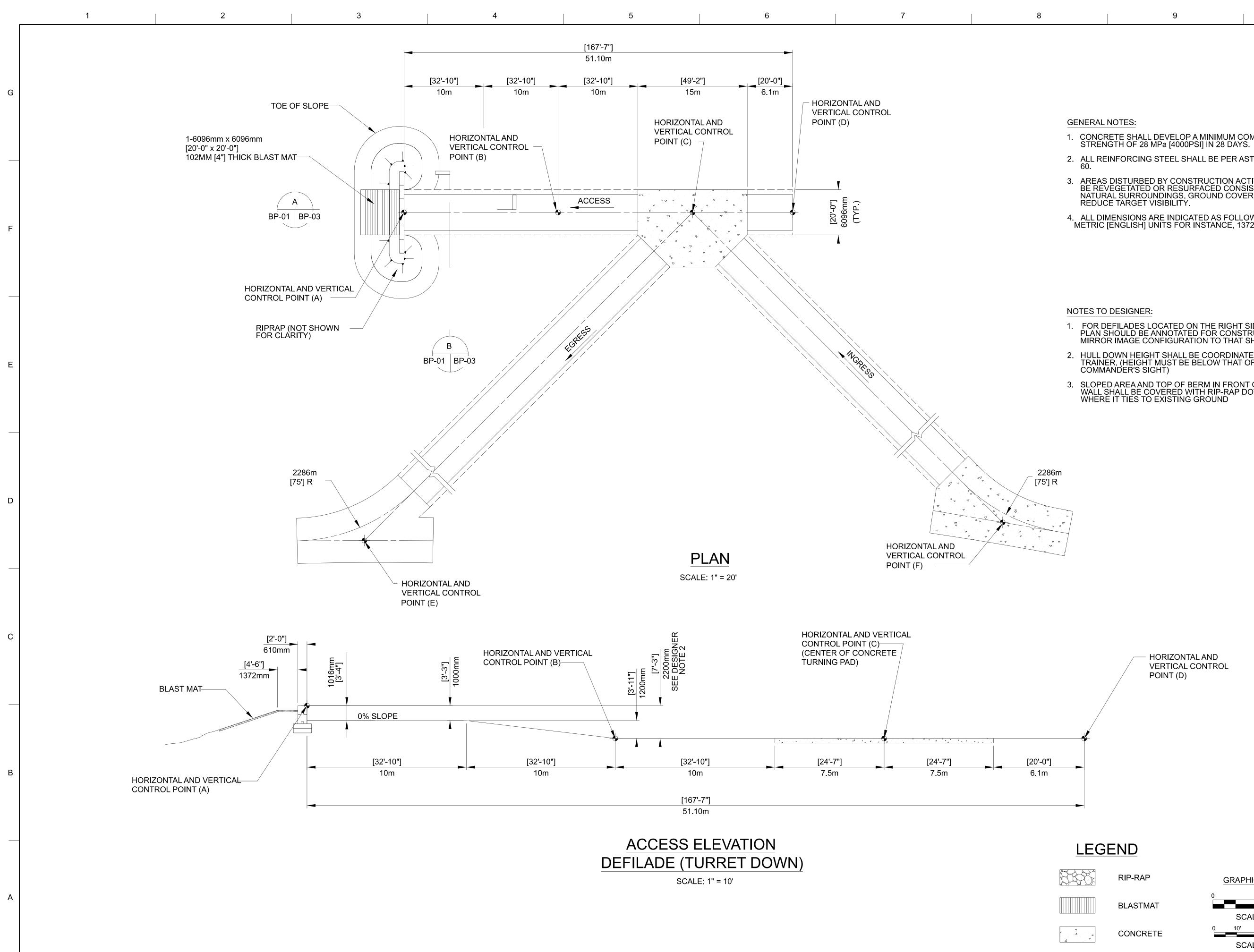




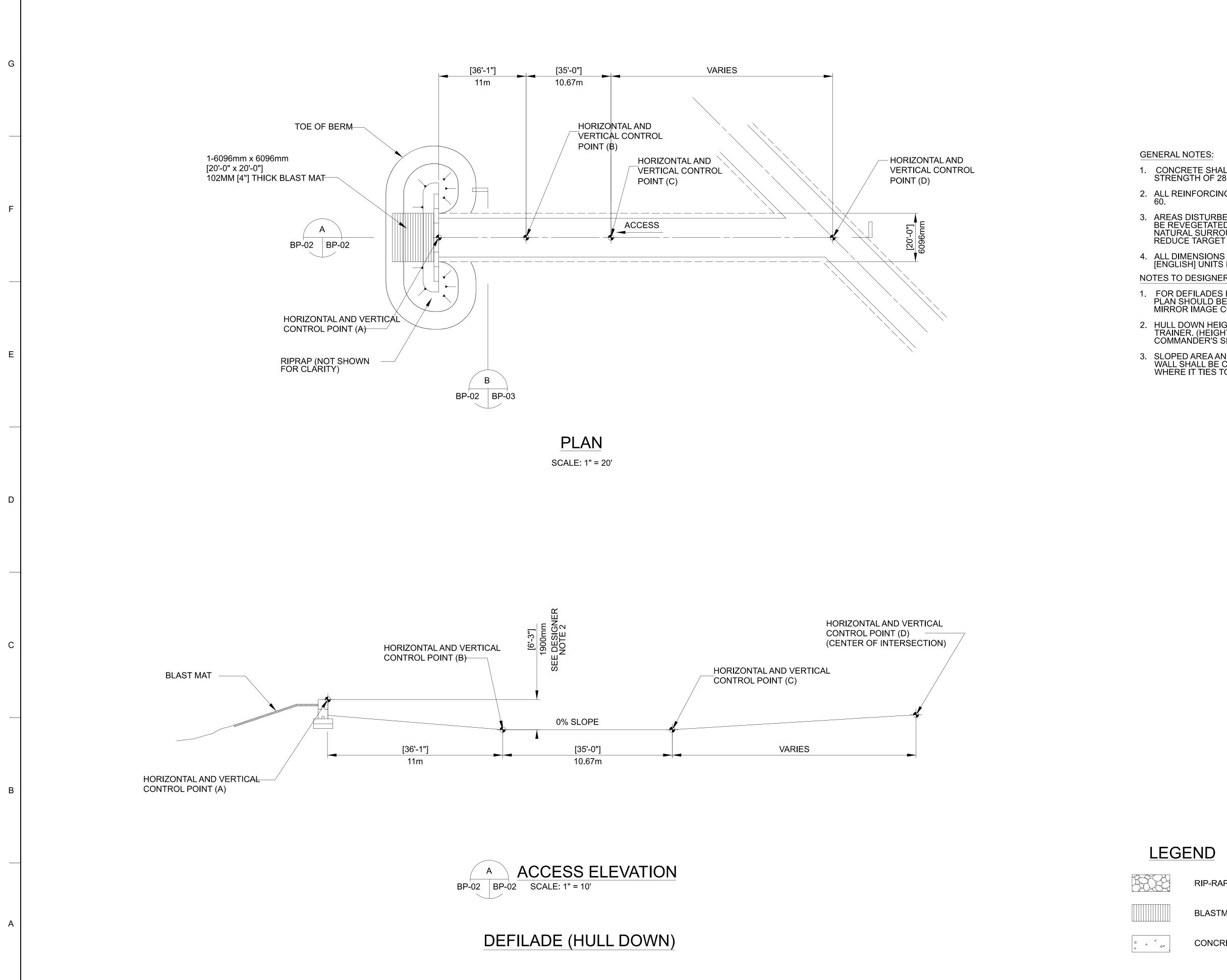








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EG	<u>GR</u> A		<u>S:</u> 20'	RANGE AND TRAINING LAND PROGRAM	STANDARD DESIGN MANUAL			
	ROL				STANDARD DESIGN MANUAL			





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LL DEVELOP A MINIMUM (8 MPa [4000PSI] IN 28 DAY IG STEEL SHALL BE PER A ED BY CONSTRUCTION A(S. STM A615, GRADE						
D OR RESURFACED CONS D OR RESURFACED CONS DUNDINGS. GROUND COV VISIBILITY. FOR INDICATED AS FOLL FOR INSTANCE, 1372mm	SISTENT WITH THE ER SHALL NOT OWS: METRIC						
R: LOCATED ON THE RIGHT E ANNOTATED FOR CONS CONFIGURATION TO THAT GHT SHALL BE COORDINA	SHOWN. TED WITH THE	,					DESCRIPTION
IT MUST BE BELOW THAT SIGHT) ND TOP OF BERM IN FRON COVERED WITH RIP-RAP I O EXISTING GROUND	IT OF RETAINING	т					MARK
			ISSUE DATE:	SOLICITATION NO.:	CONTRACT NO.:	PROJECT NUMBER:	_
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LEGEND

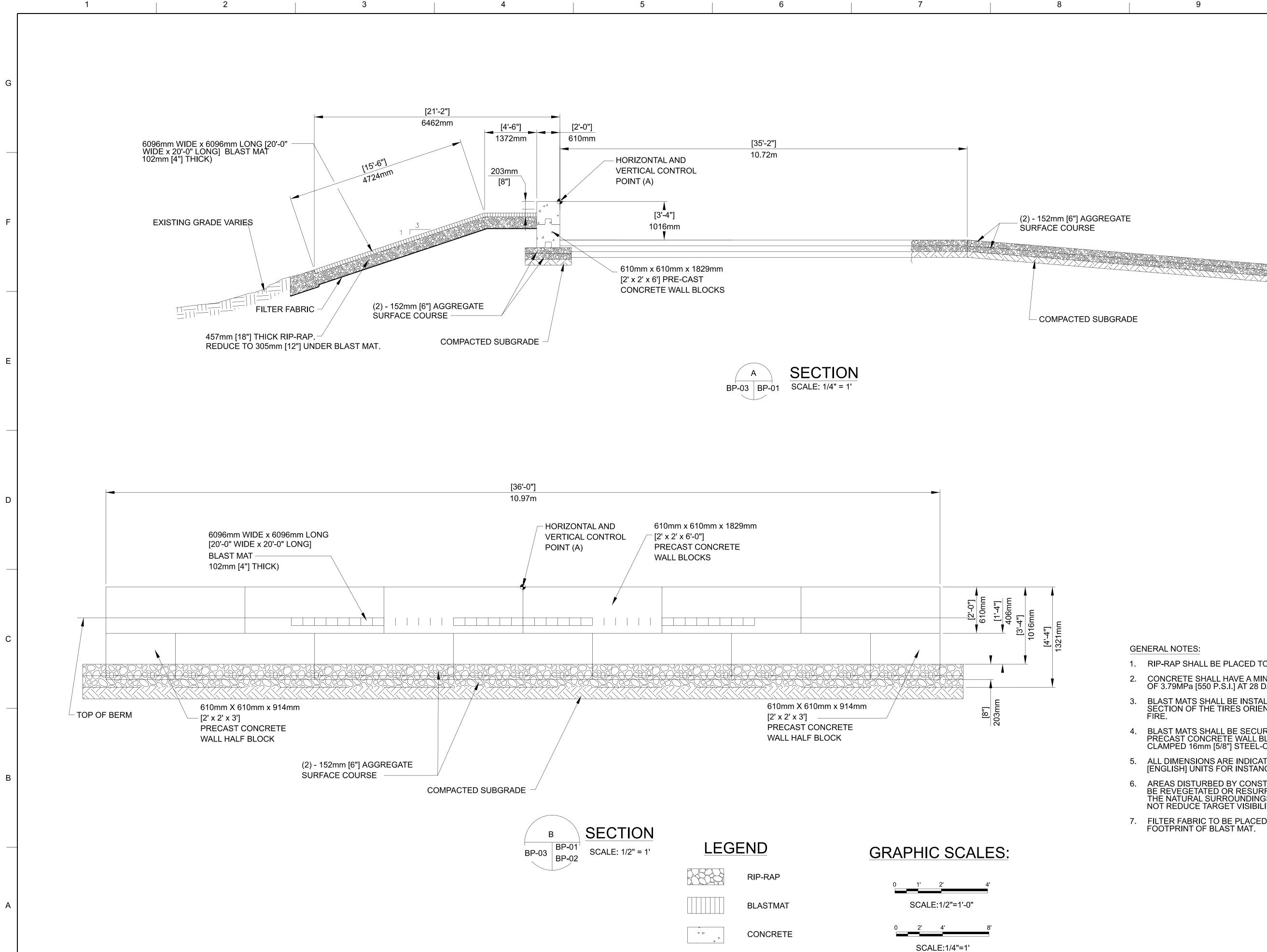
RIP-RAF

BLASTMAT

CONCRETE

SCALE: 1" = 10' 20' SCALE: 1" = 20'

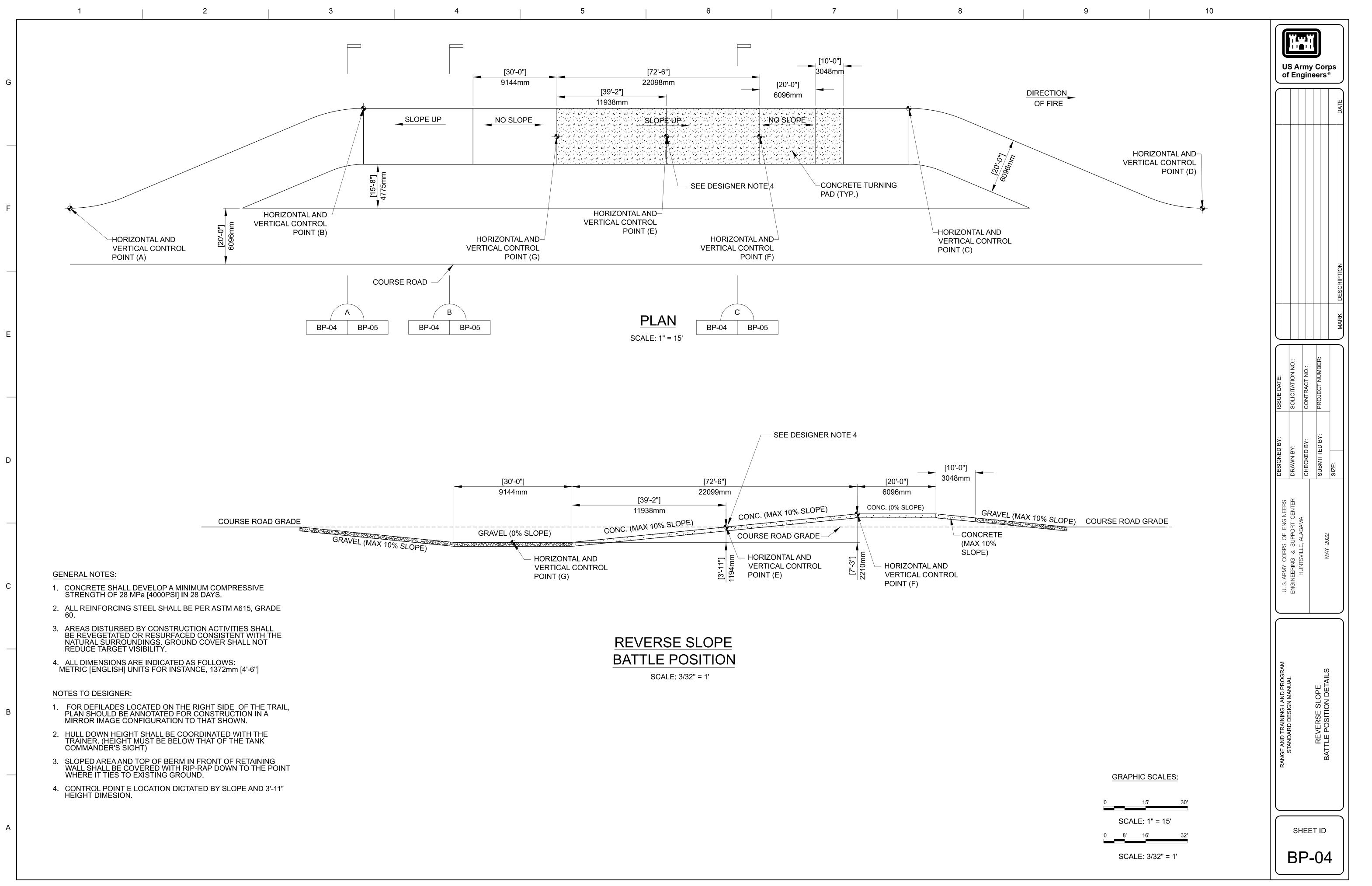
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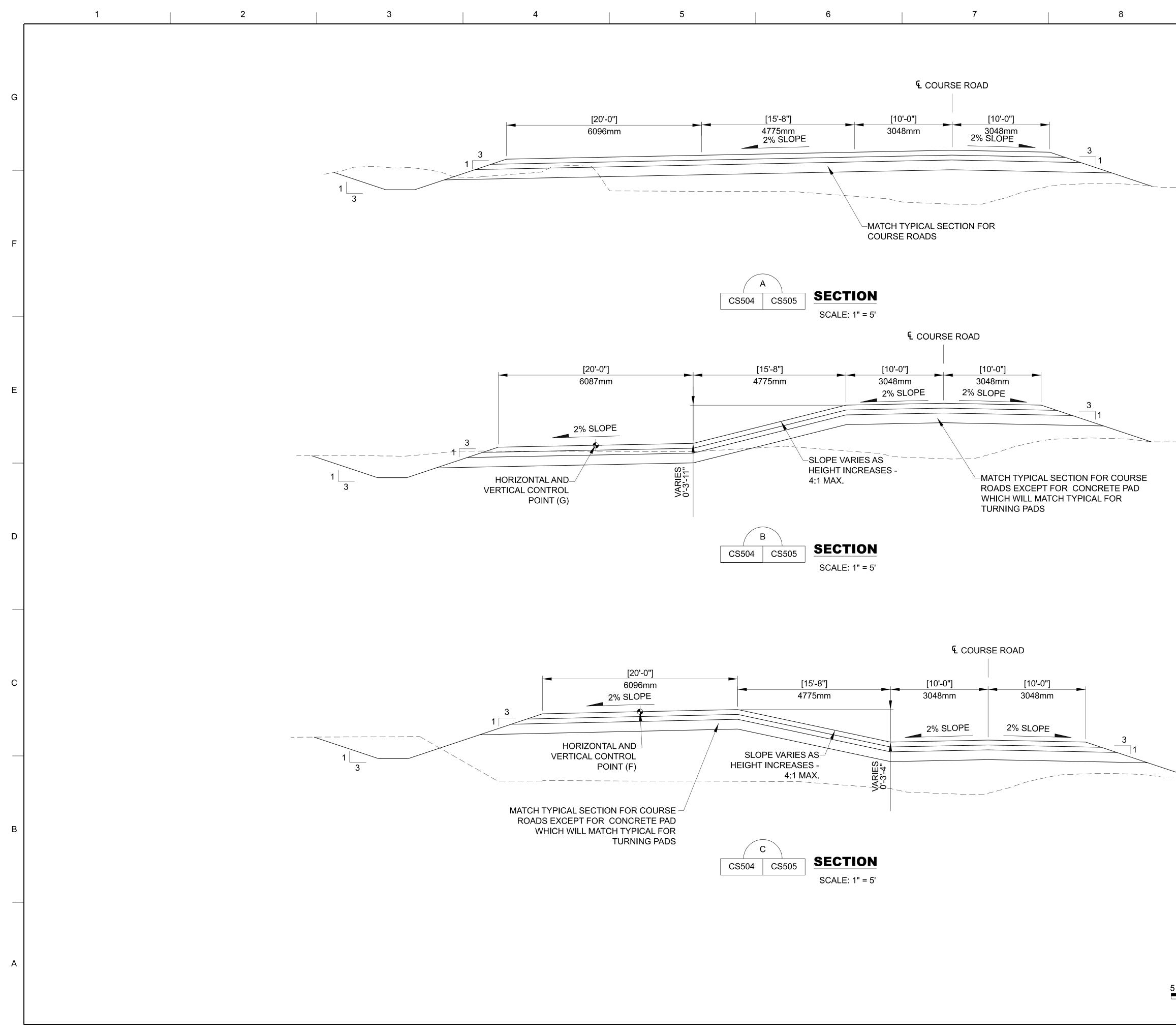


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		PROJECT NUMBER:	CON RACE NO.		SOLICITATION NO .:	ISSUE DATE:
SIZE:		SUBMITTED BY:			DRAWN BY:	DESIGNED BY:
	MAY 2022			HUNTSVILLE, ALABAMA	ENGINEERING & SUPPORT CENTER	U. S. ARMY CORPS OF ENGINEERS
		DEFILADE SECTIONS			STANDARD DESIGN MANUAL	RANGE AND TRAINING LAND PROGRAM
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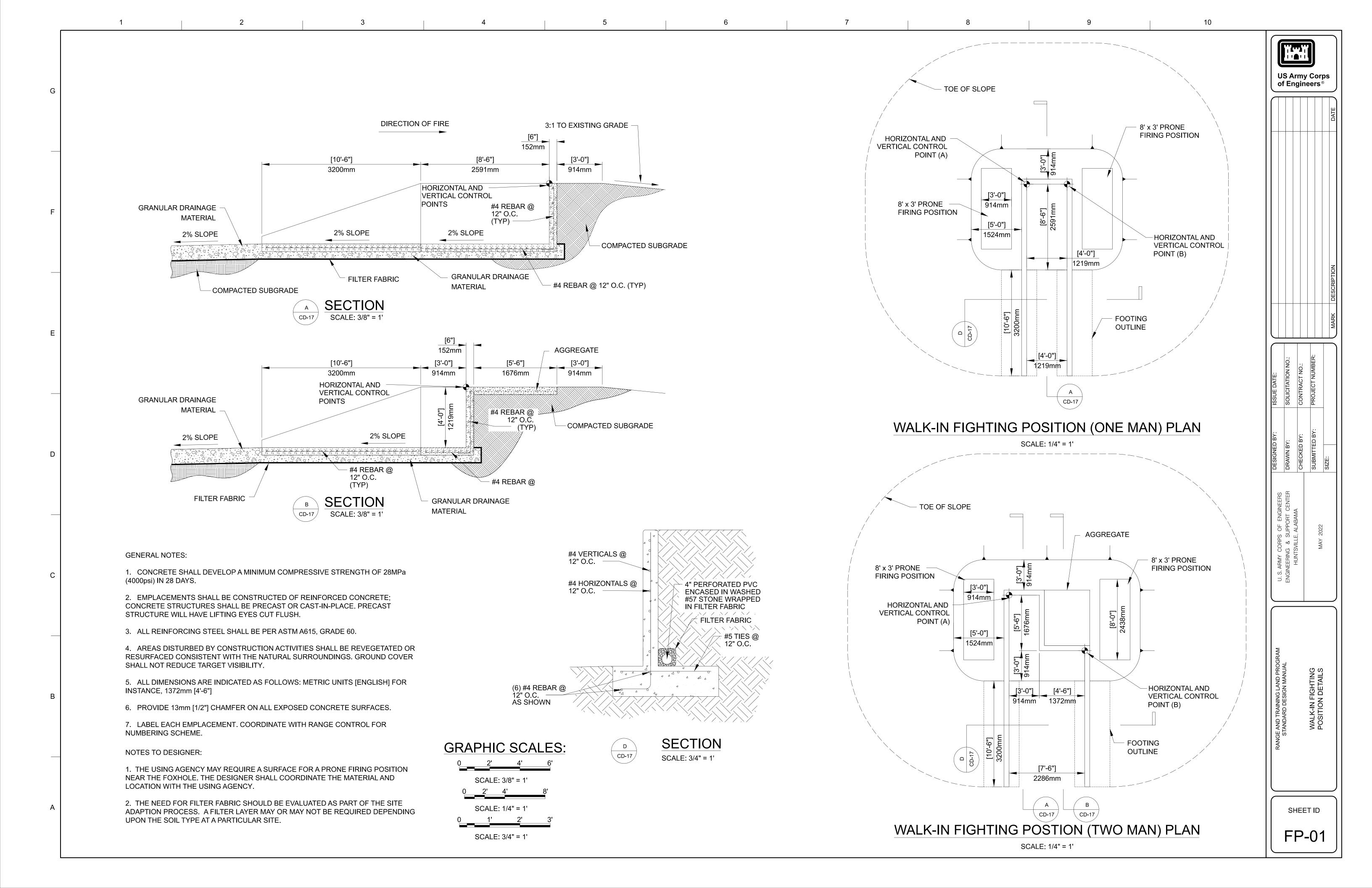
GENERAL NOTES:

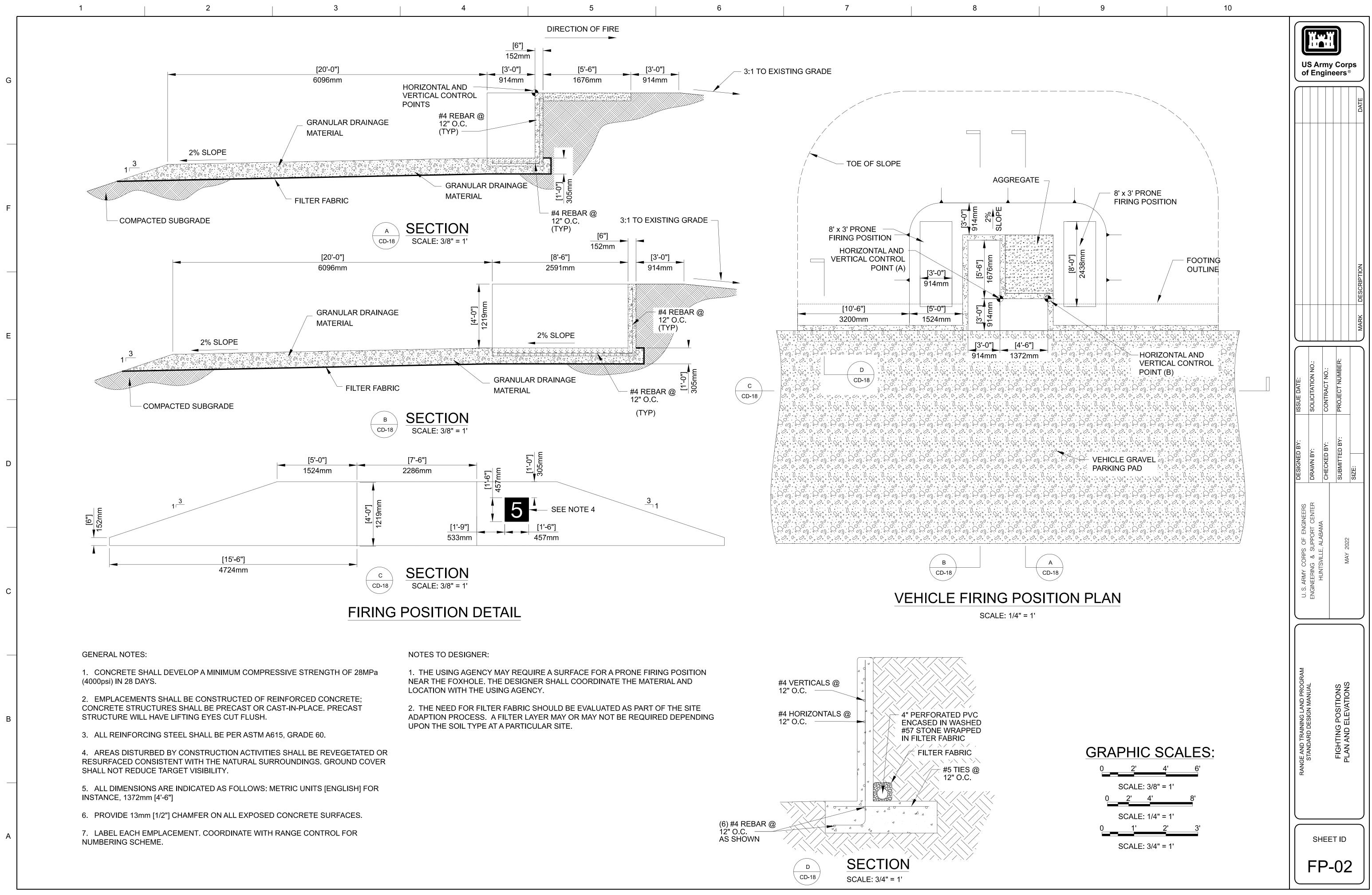
- 1. RIP-RAP SHALL BE PLACED TO A TIGHT FIT.
- CONCRETE SHALL HAVE A MINIMUM FLEXURE STRENGTH OF 3.79MPa [550 P.S.I.] AT 28 DAYS. 2.
- BLAST MATS SHALL BE INSTALLED WITH THE LONGEST SECTION OF THE TIRES ORIENTED IN THE DIRECTION OF FIRE. 3.
- BLAST MATS SHALL BE SECURED TO EACH OF THE PRECAST CONCRETE WALL BLOCK LIFTING EYES CLAMPED 16mm [5/8"] STEEL-CORE CABLE. 4
- 5. ALL DIMENSIONS ARE INDICATED AS FOLLOWS: METRIC [ENGLISH] UNITS FOR INSTANCE, 1372mm [4'-6"]
- 6. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED CONSISTENT WITH THE NATURAL SURROUNDINGS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
- 7. FILTER FABRIC TO BE PLACED UNDER RIP-RAP ENTIRE FOOTPRINT OF BLAST MAT.

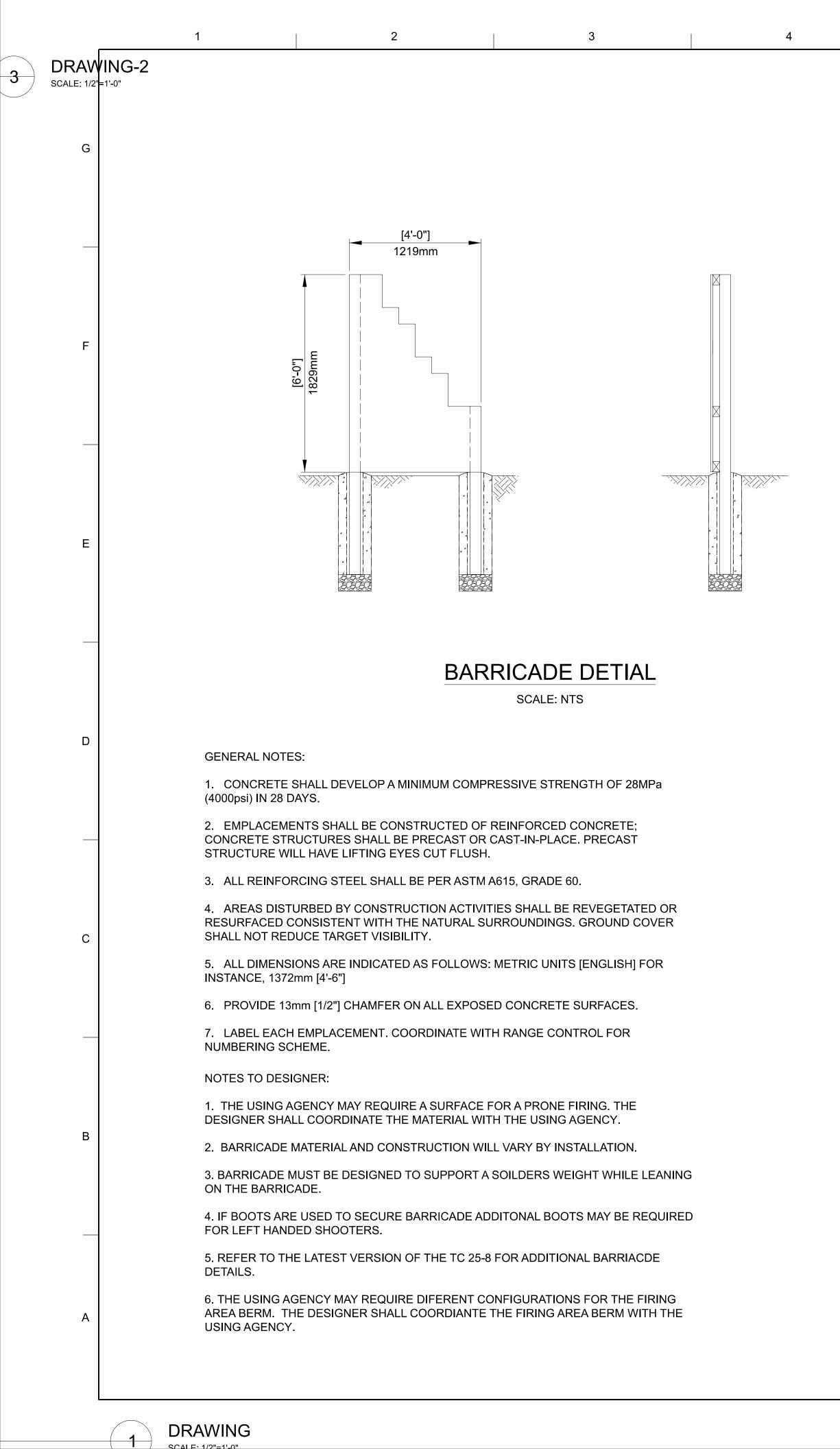


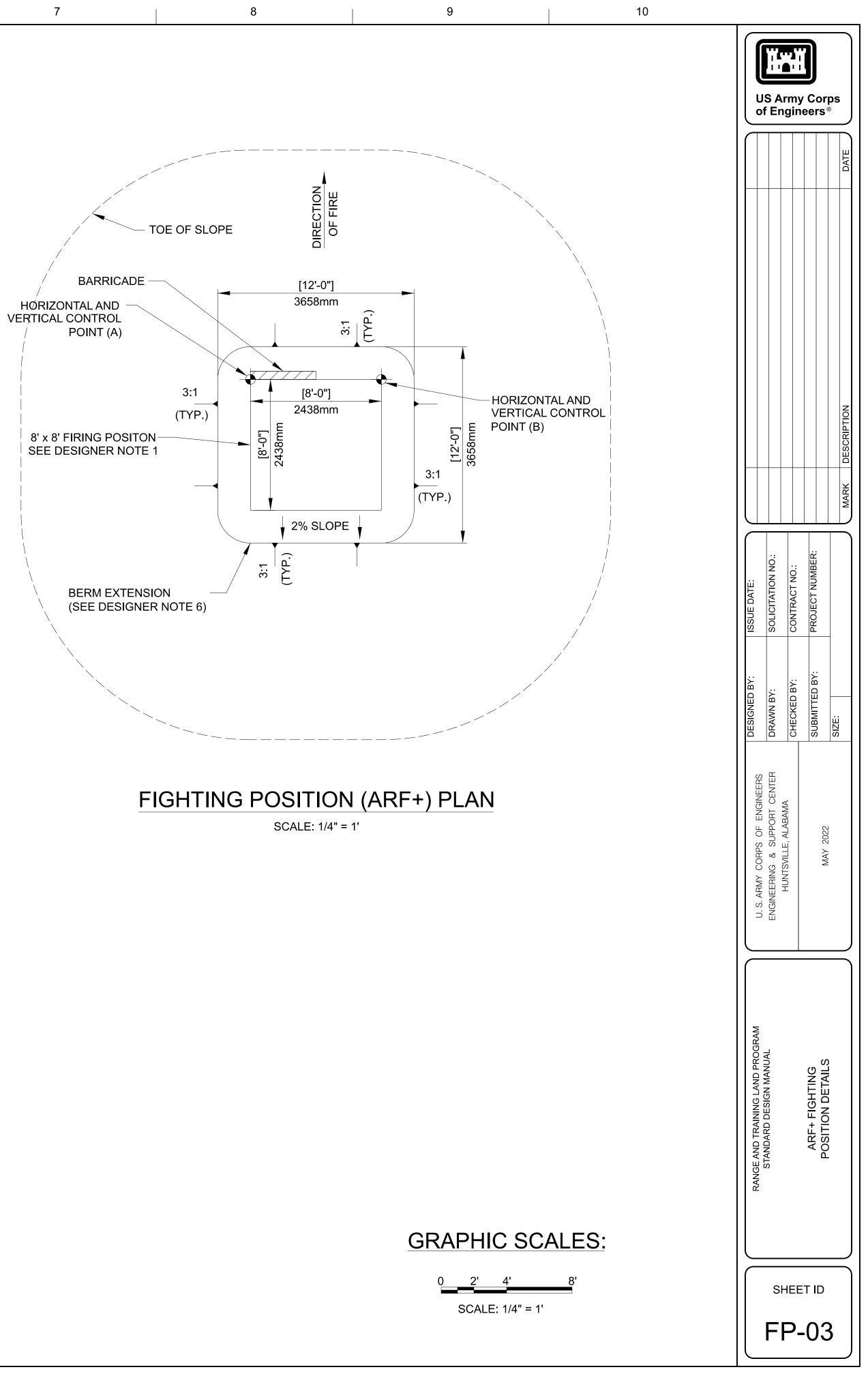


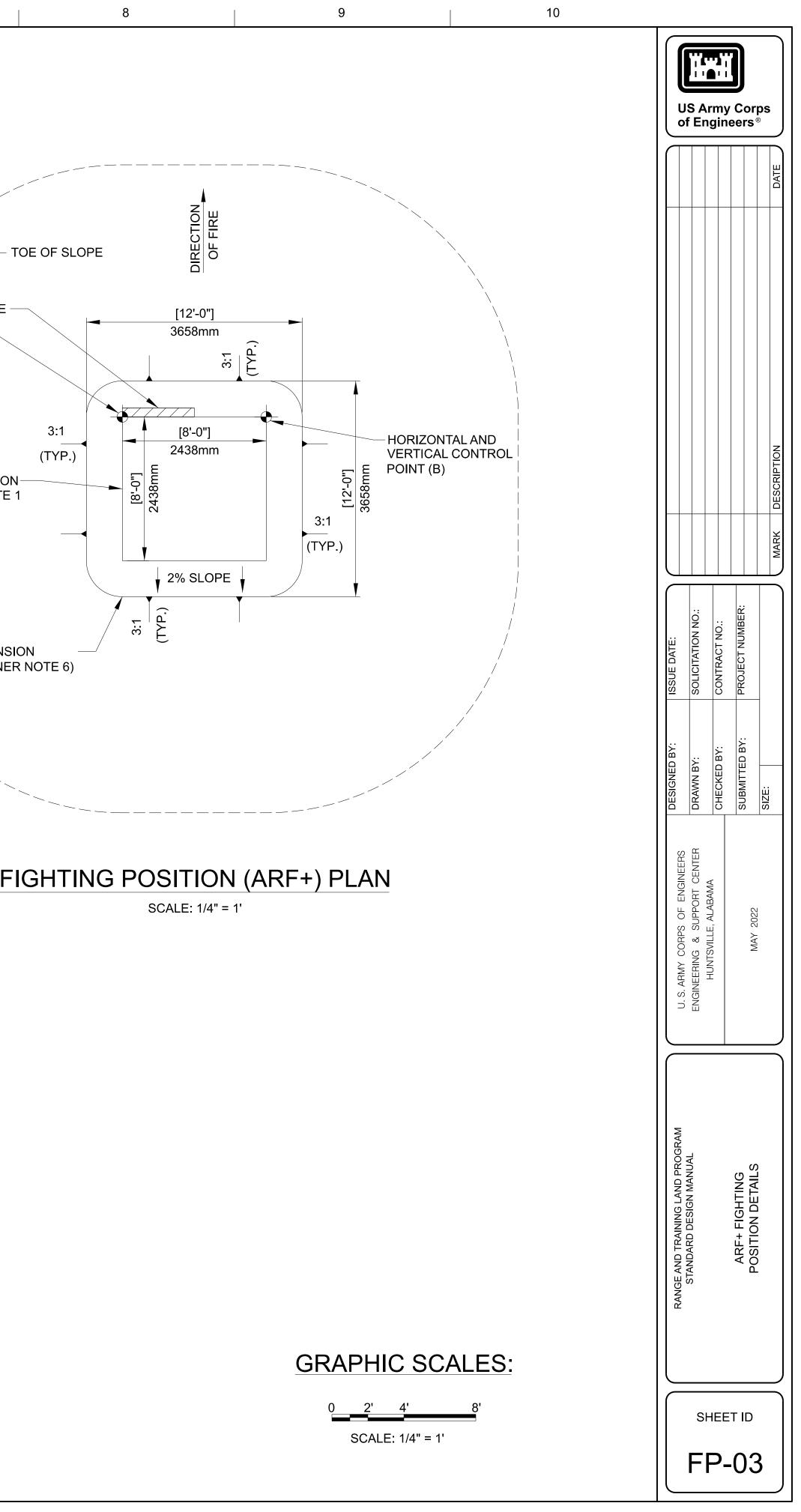
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EXISTING GRADE		DESIGNED BY: ISSUE DATE: DRAWN BY: SOLICITATION NO.: CHECKED BY: CONTRACT NO.:	SUBMITTED BY: PROJECT NUMBER: SIZE: MARK DESCRIPTION
		U. S. ARMY CORPS OF ENGINEERS ENGINEERING & SUPPORT CENTER HUNTSVILLE, ALABAMA	MAY 2022
		RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL	REVERSE SLOPE BATTLE POSTION DETAIL
GRAPHIC SCALES: 5 0 5 10 SCALE: 1" = 5'		SHEE BP	

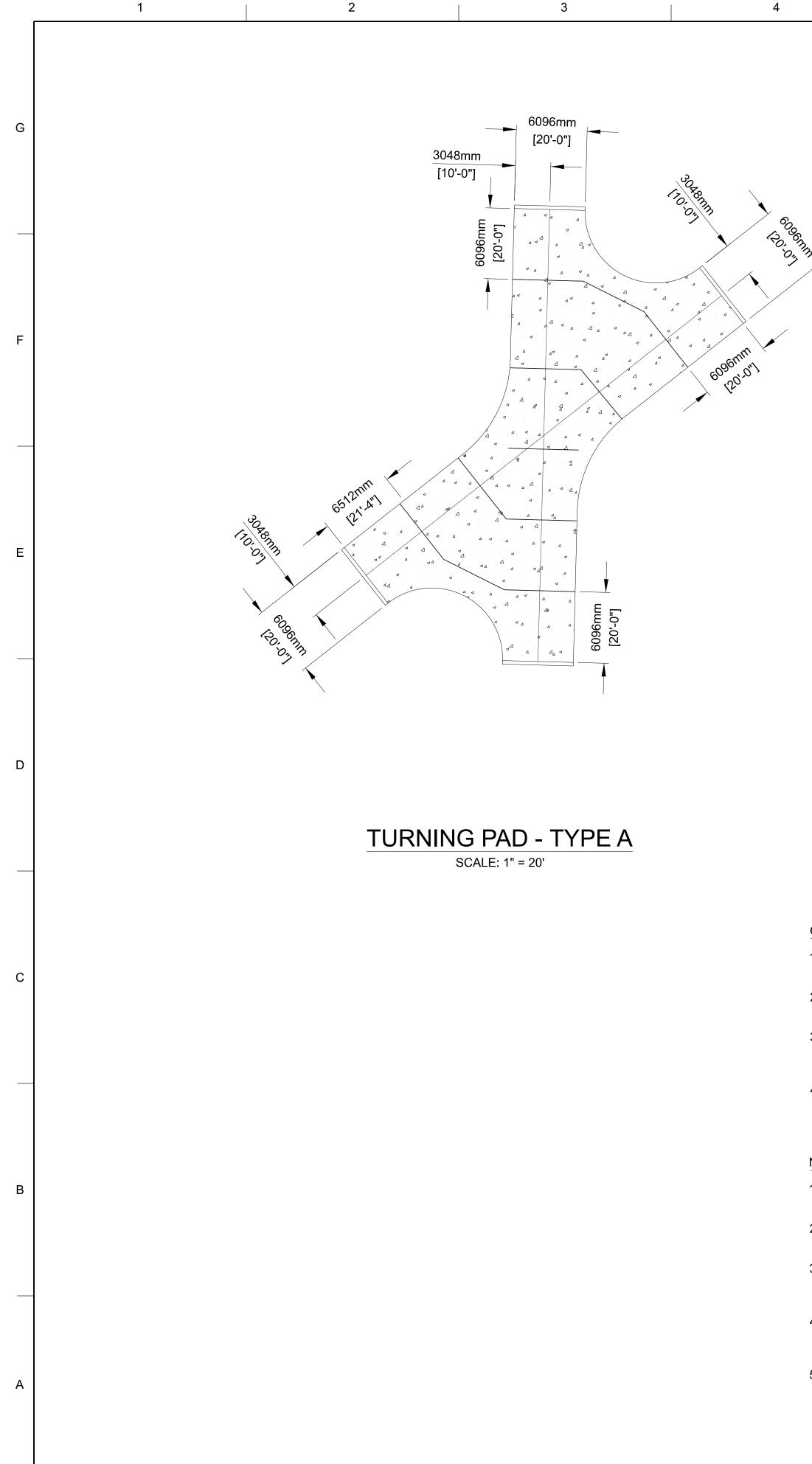


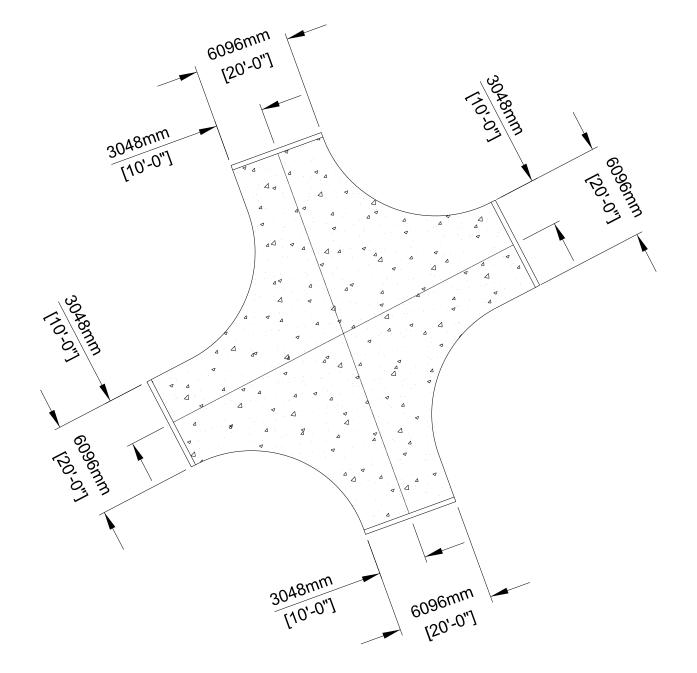




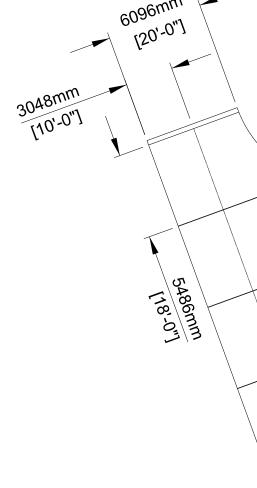








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3048mm [10'-0"]

TURNING PAD - TYPE B

SCALE: 1" = 20'

GENERAL NOTES:

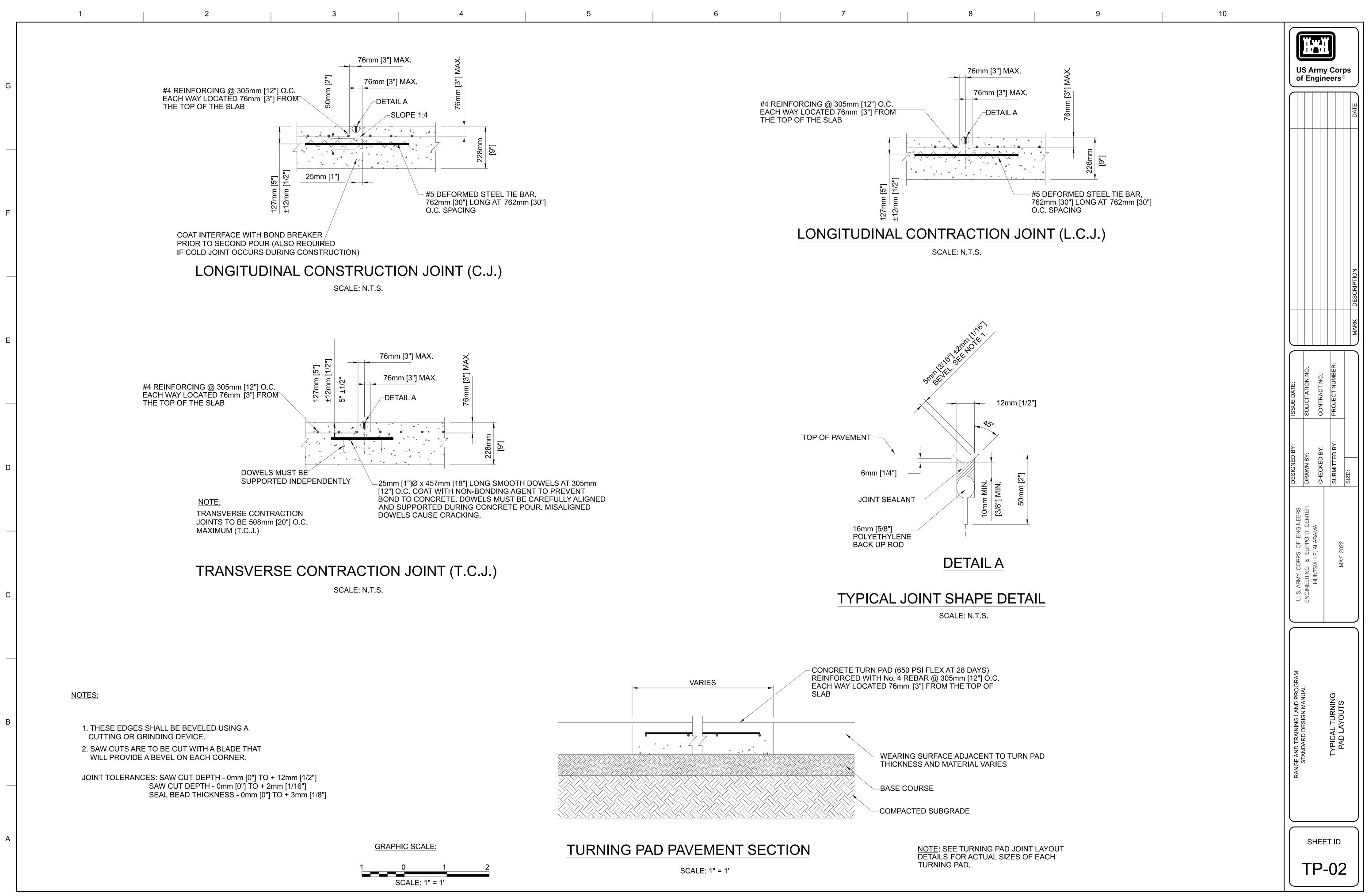
- 1. CONCRETE SHALL DEVELOP A MINIMUM FLEXURAL STRENGTH OF 4.48 MPa (650psi) IN 28 DAYS.
- 2. ALL REINFORCING STEEL SHALL BE PER ASTM A615, GRADE 60.
- 3. ALL DIMENSIONS ARE INDICATED AS FOLLOWS: METRIC UNITS [ENGLISH] FOR INSTANCE, 1372mm [4'-6"]
- 4. PROVIDE 13mm [1/2"] CHAMFER ON ALL EXPOSED CONCRETE SURFACES.

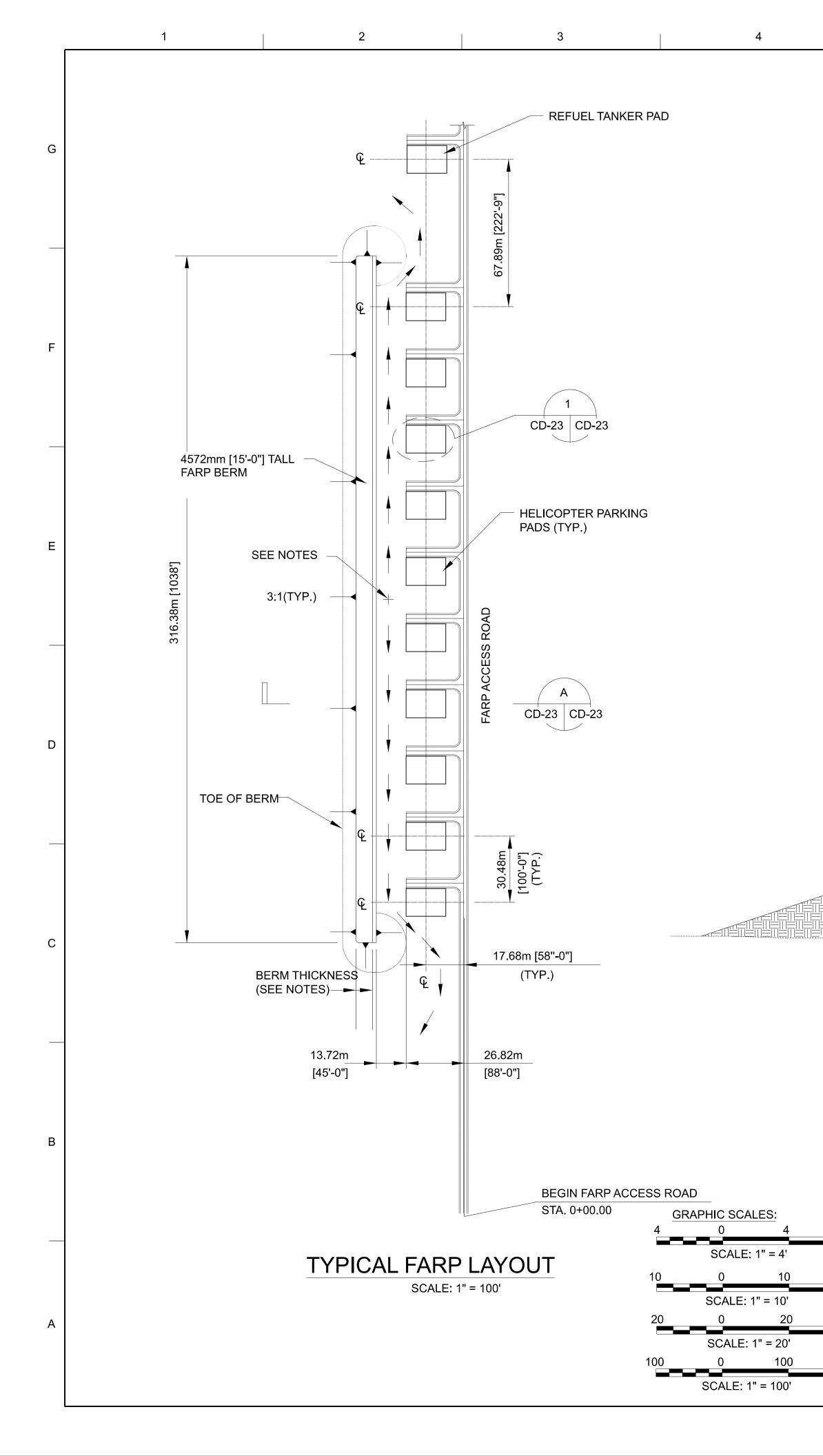
NOTES TO DESIGNER:

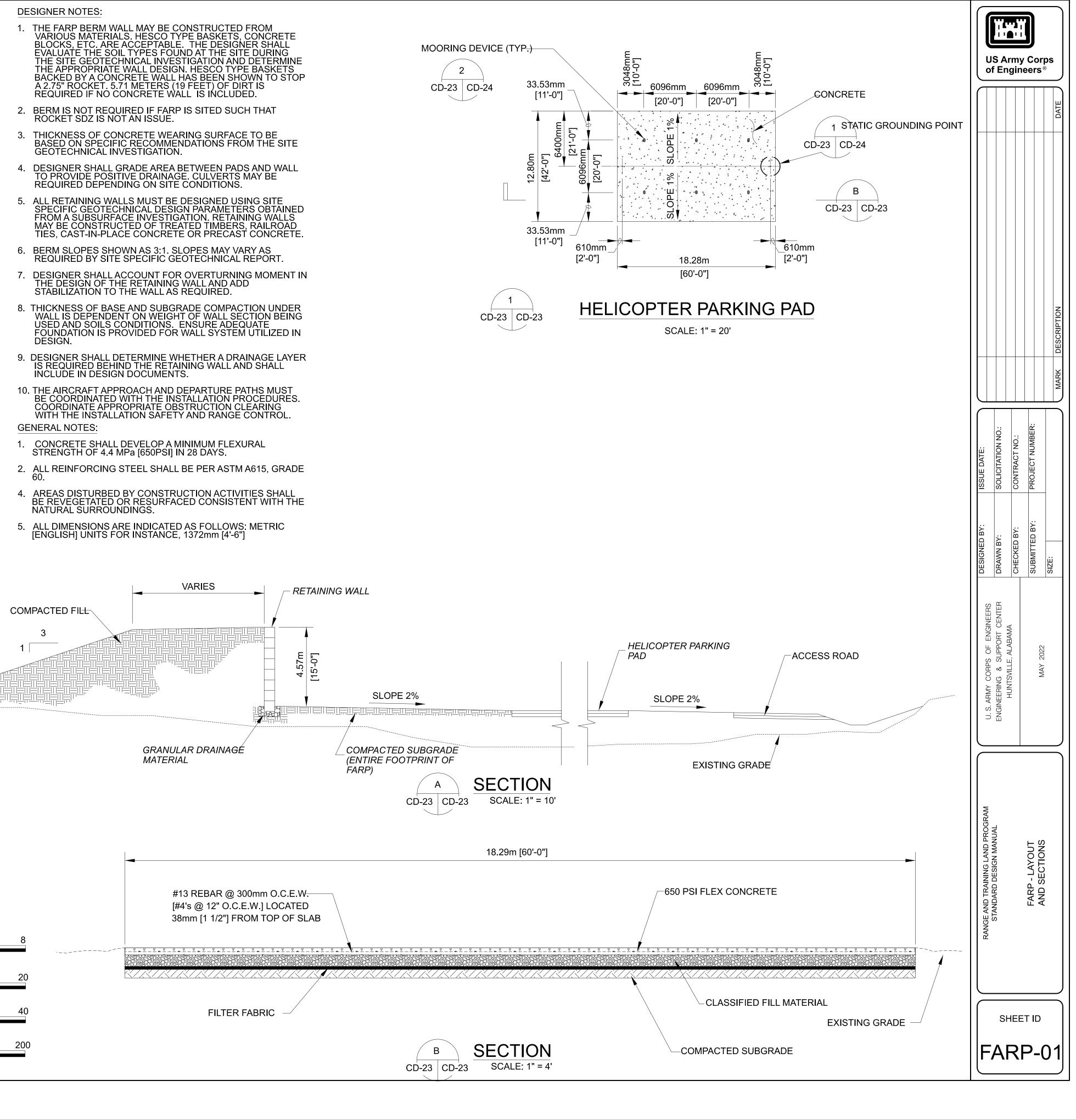
- 1. THE TURNING PAD LAYOUTS AND JOINT SPACING/LAYOUT SHOWN HEREIN ARE TYPICAL IN NATURE.
- 2. DESIGNER OF RECORD MUST BASE LAYOUT ON SPECIFIC SITE CONDITIONS.
- 3. CONCRETE THICKNESS WILL BE DETERMINED BASED ON RECOMMENDATIONS FROM THE SITE SPECIFIC GEOTECHNICAL INVESTIGATION REPORT.
- 4. JOINT SPACING FOR EACH TURNING PAD WILL BE BASED UPON THE SIZE AND OVERALL GEOMETRY OF EACH INDIVIDUAL TURNING PAD.
- 5. ANGLE IRON EDGES ARE PROVIDED TO RESIST CHIPPING AND SPALLING OF CONCRETE EDGES. ANGLE IRON MAY BE OMITTED IF DESIGNER PROVIDES ALTERNATE DESIGN THAT WILL RESIST CHIPPING/SPALLING OF EDGES OF TURN PAD.

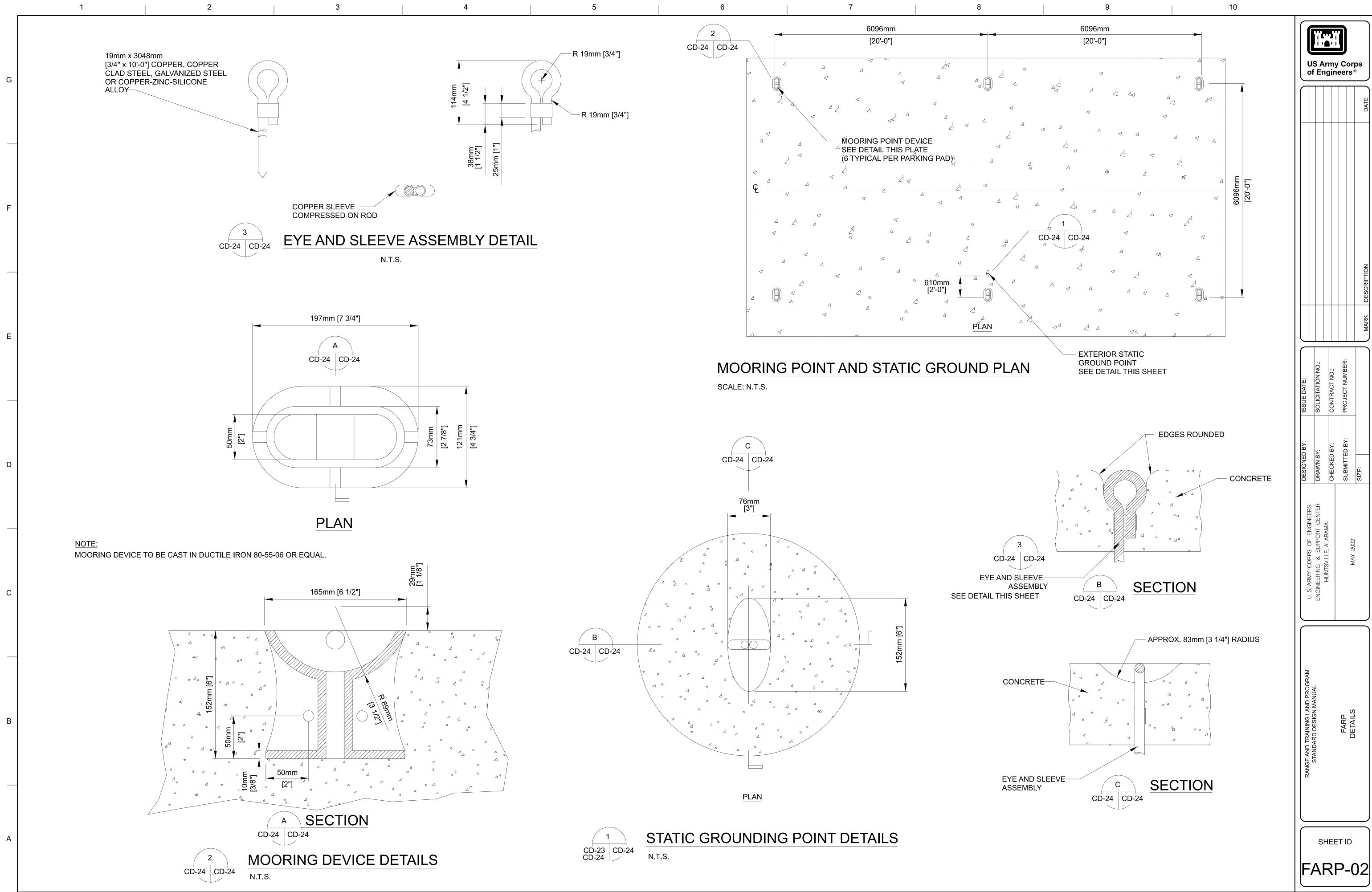
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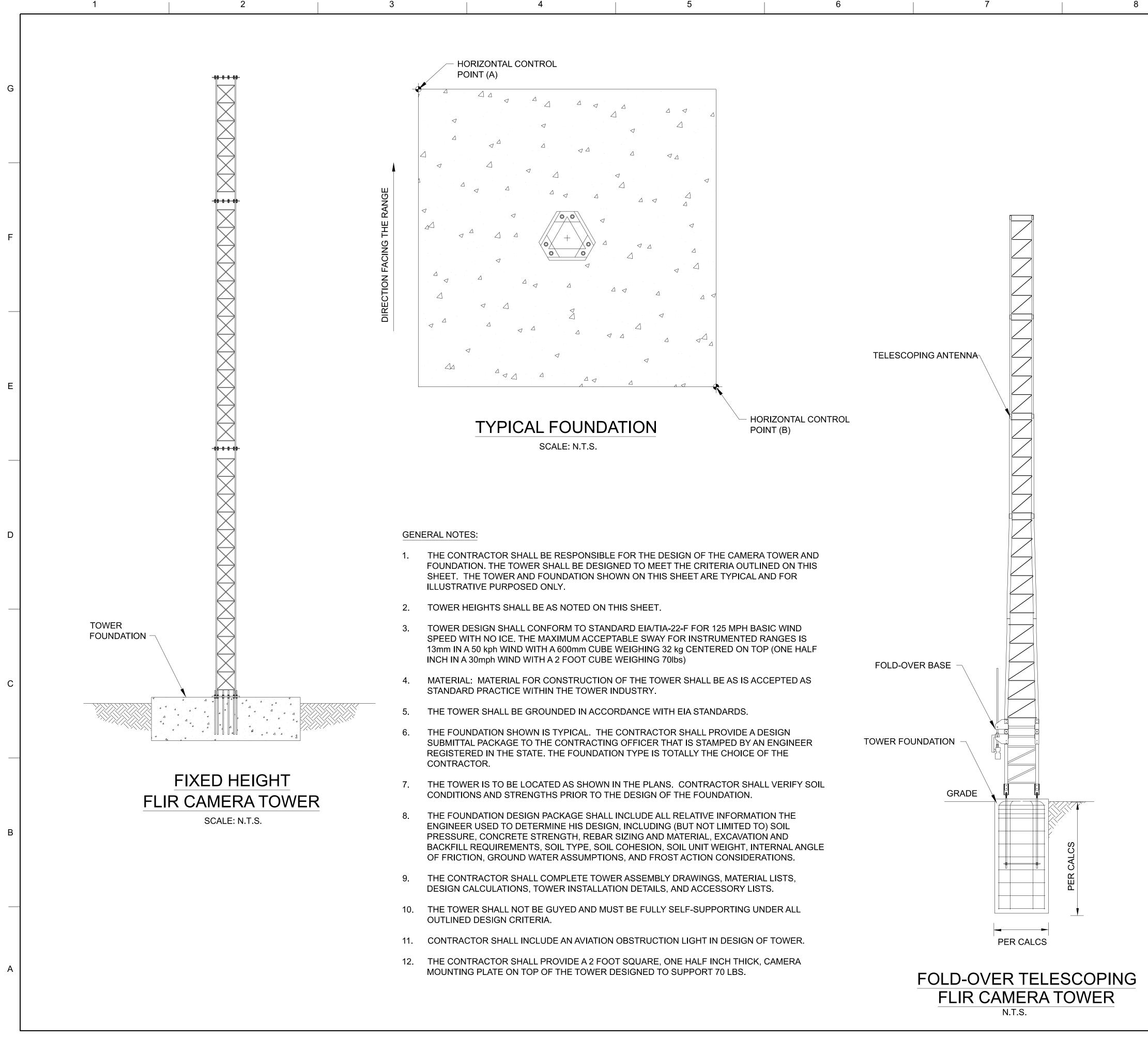
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	US Army Corps of Engineers®	
Bernin Bernin	ISSUE DATE: SOLICITATION NO.: CONTRACT NO.: PROJECT NUMBER: MARK DESCRIPTION	
JRNING PAD - TYPE C SCALE: 1" = 20'	U. S. ARMY CORPS OF ENGINEERS ENGINEERING & SUPPORT CENTER HUNTSVILLE, ALABAMA HUNTSVILLE, ALABAMA MAY 2022 MAY 2022 SIZE:	-
LEGEND		
LONGITUDINAL CONTRACTION JOINT (L.C.J.) LONGITUDINAL CONSTRUCTION JOINTS (C.J.) TRANSVERSE CONTRACTION JOINT (T.C.J.) CONCRETE WITH #4 REINFORCING @ 305mm [12"] O.C. EACH WAY LOCATED 76mm [3"] FROM TOP OF SLAB IN SHADED AREAS 102mm x 102mm x 6mm [4" x 4" x 1/4"] ANGLE IRON EMBEDDED INTO CONCRETE (TYPICAL AT ALL EDGES)	RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL TYPICAL TURNING PAD LAYOUTS	
<u>GRAPHIC SCALE:</u> 0 10' 20' 40' 	SHEET ID)
SCALE:1"=20'	TP-01	

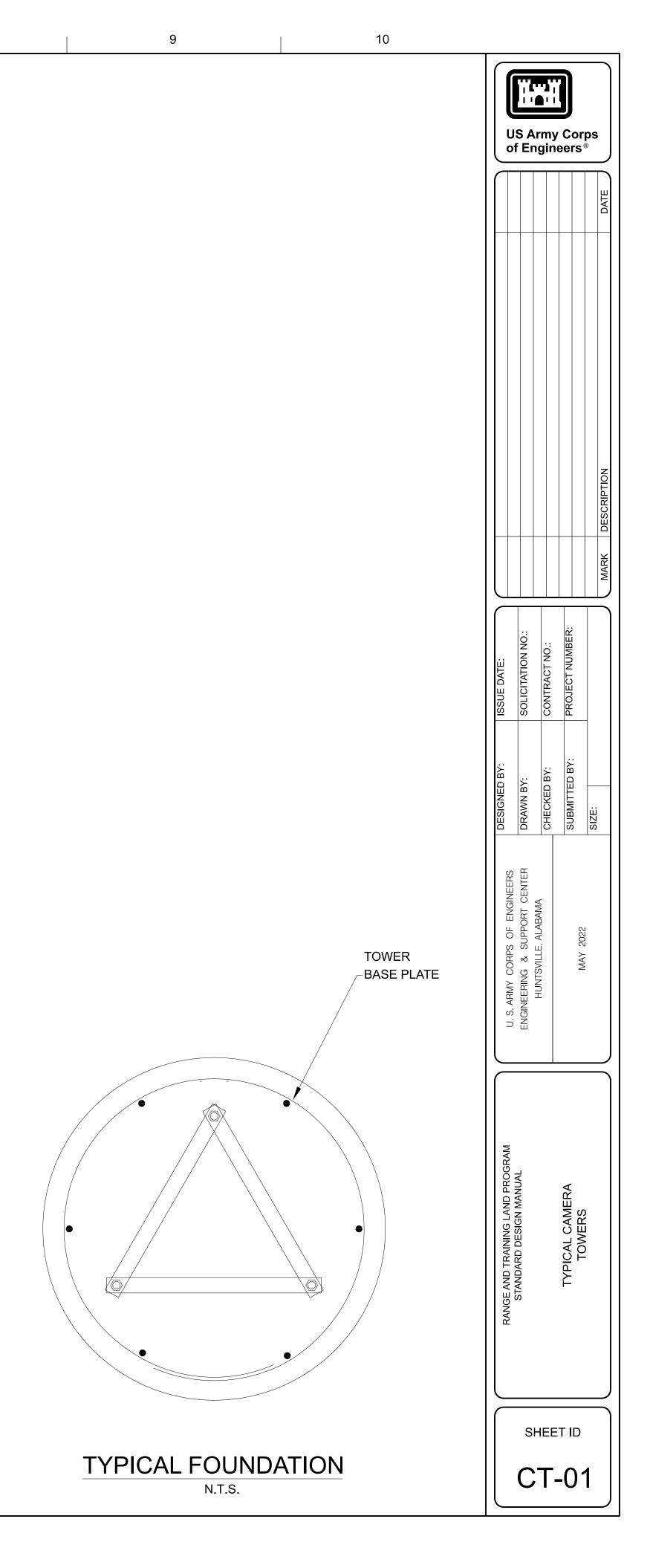


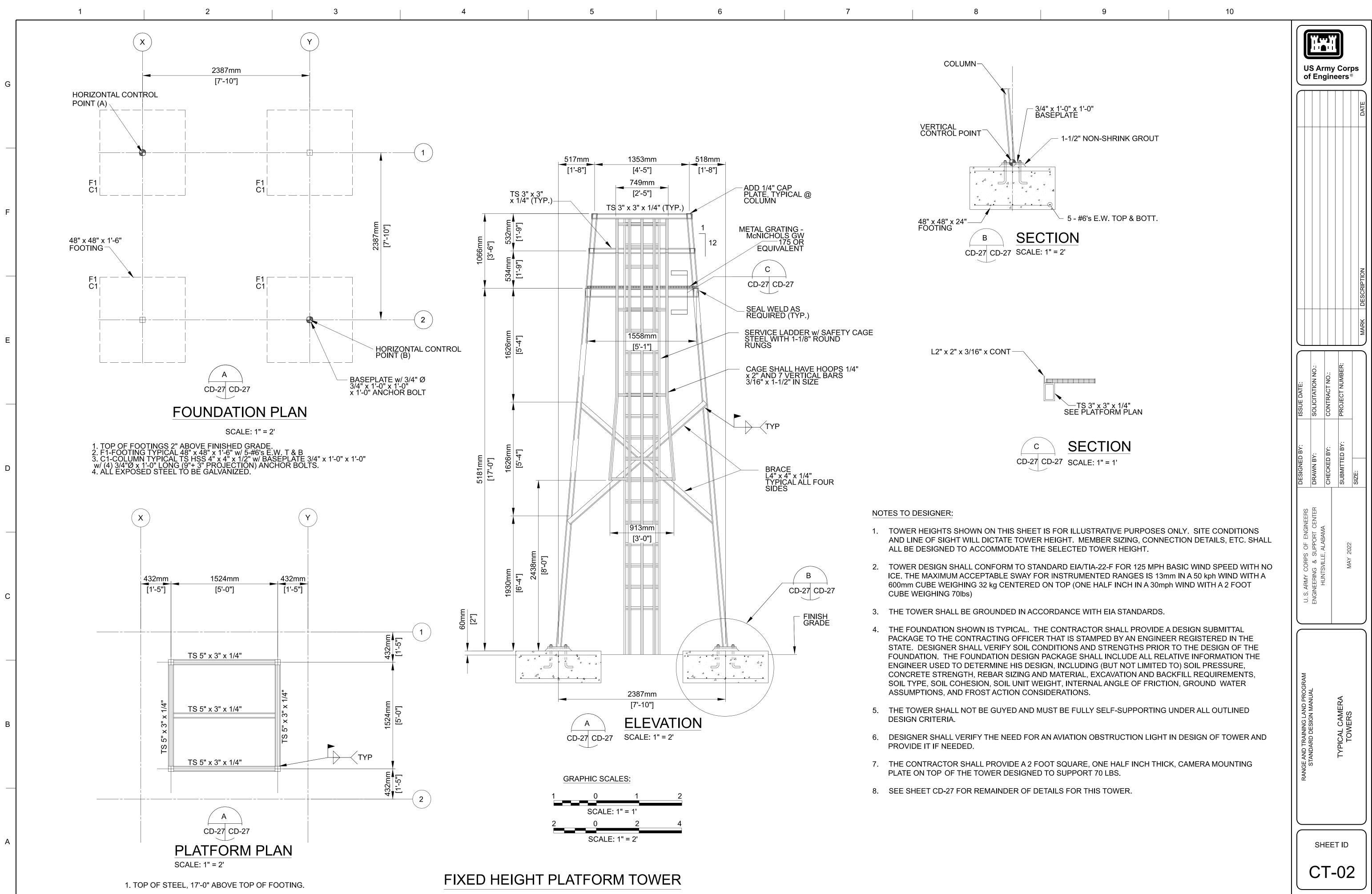


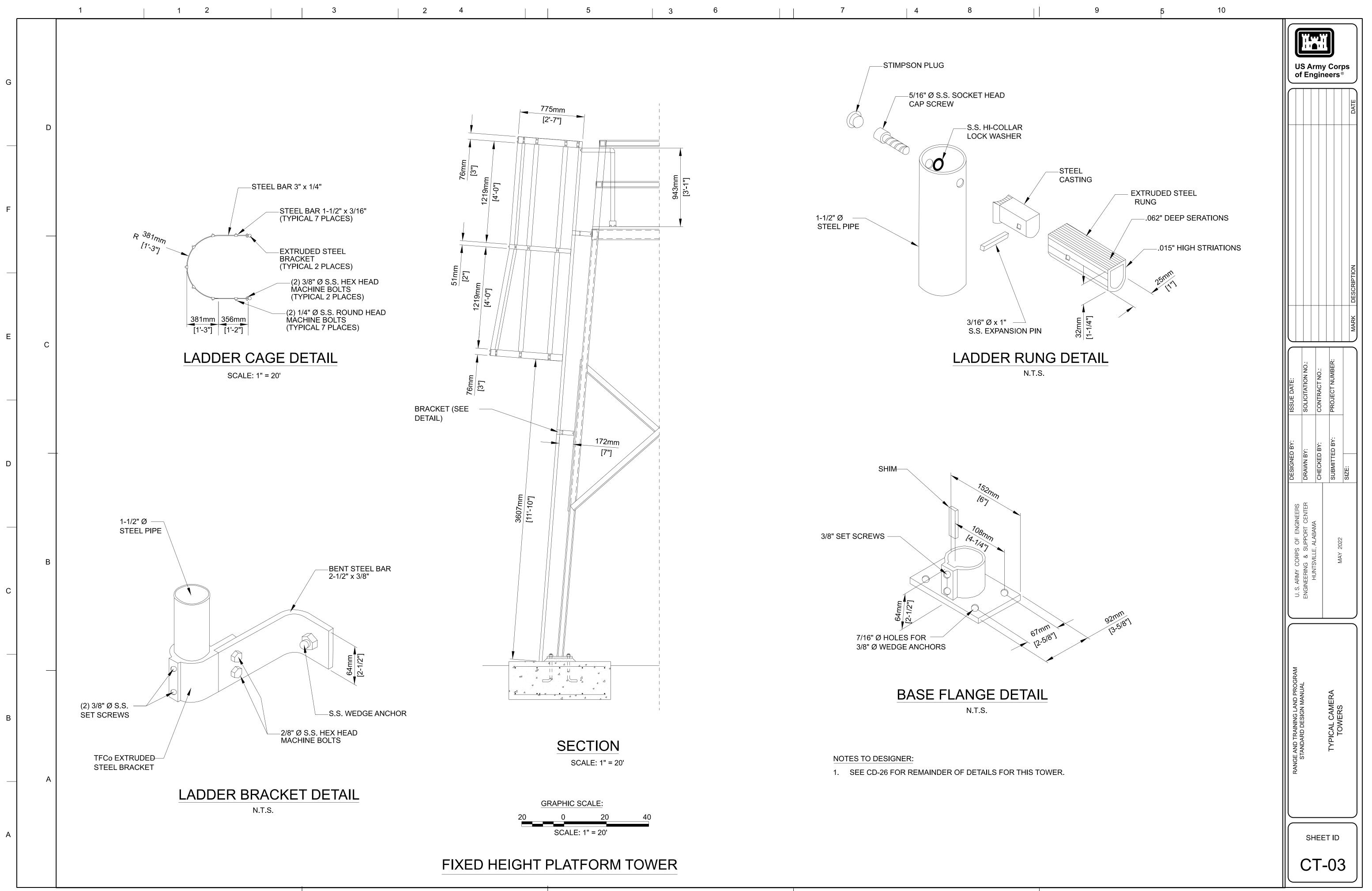


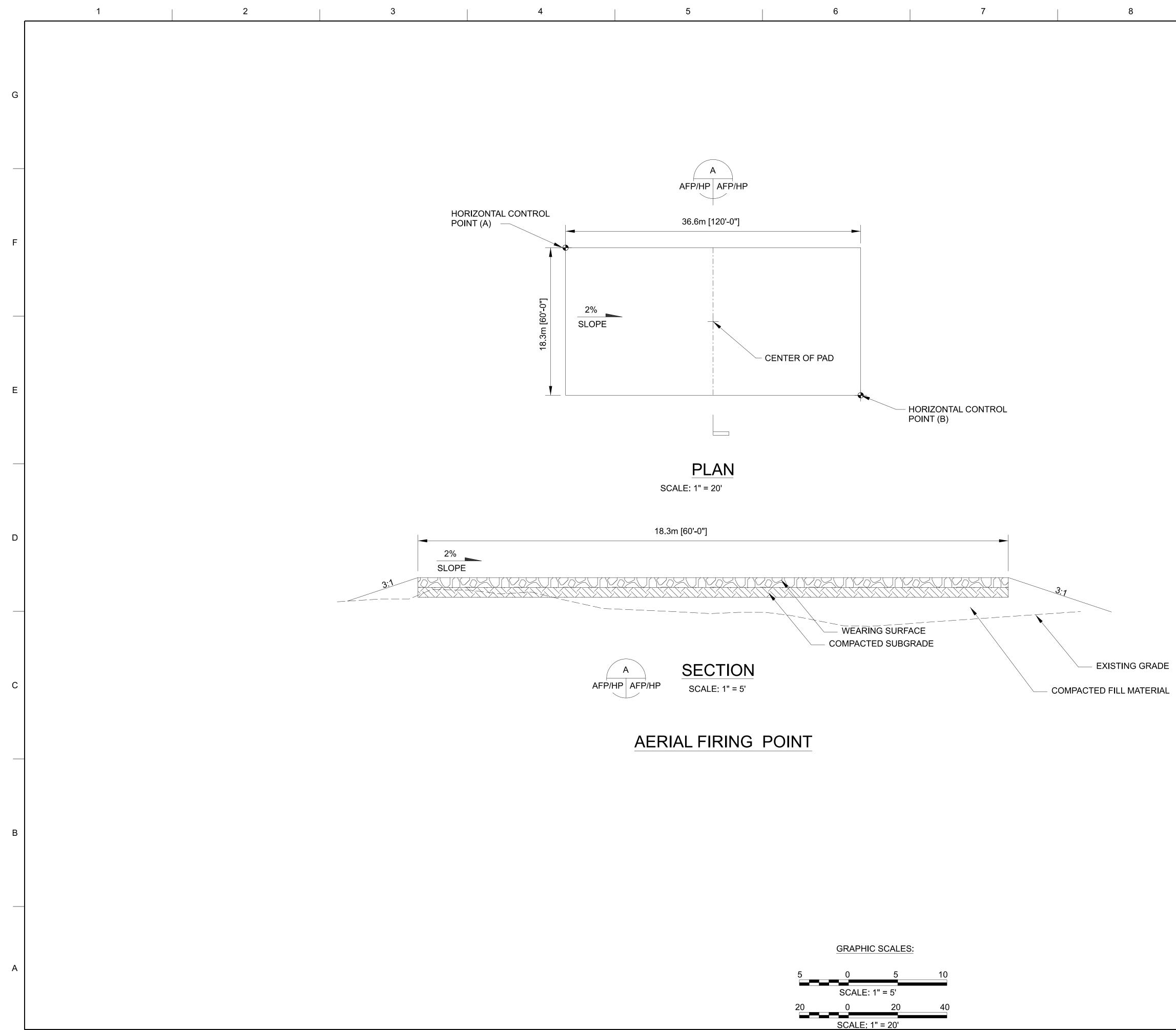


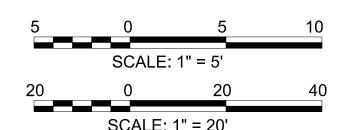












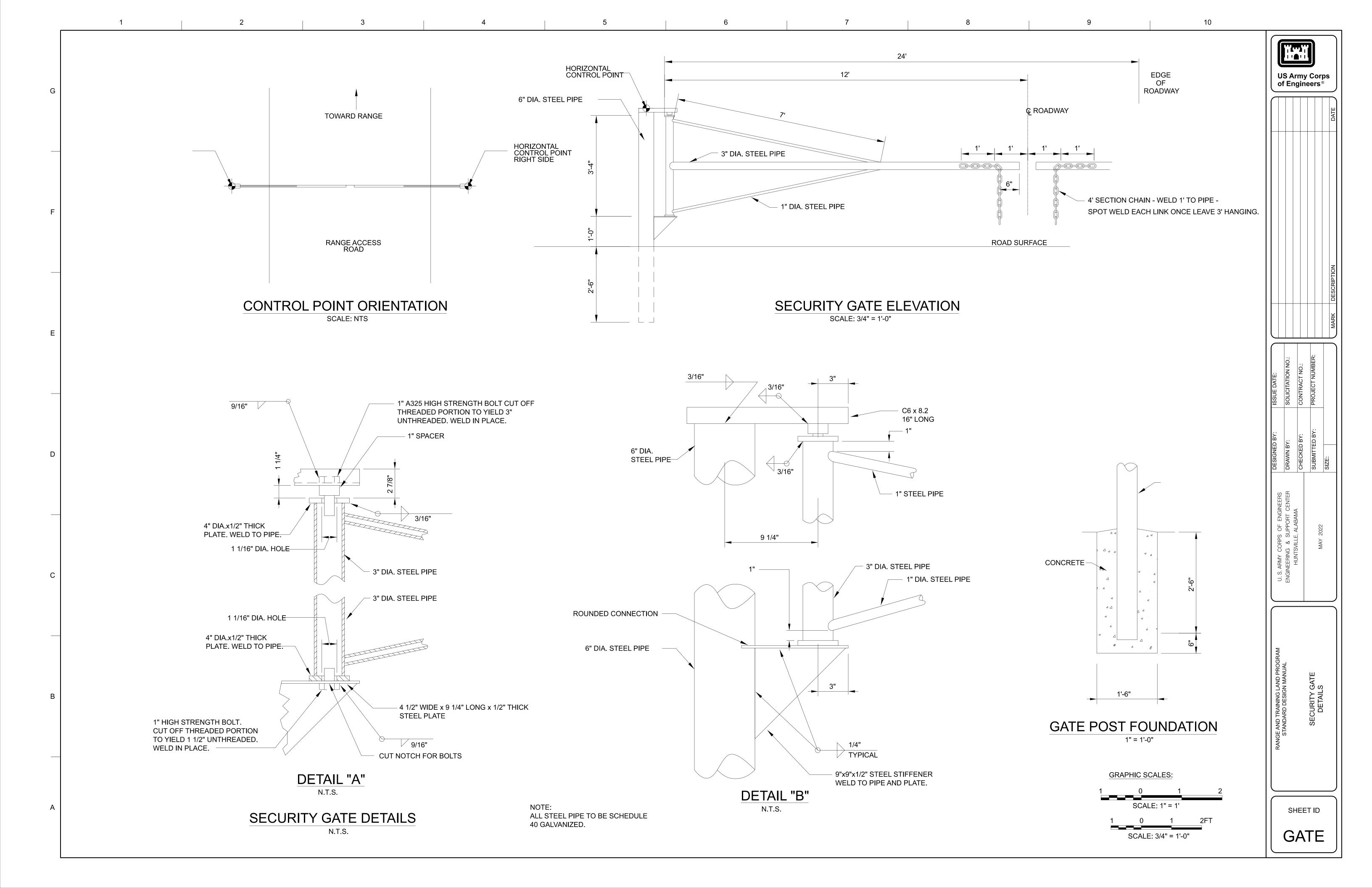
GENERAL NOTES:

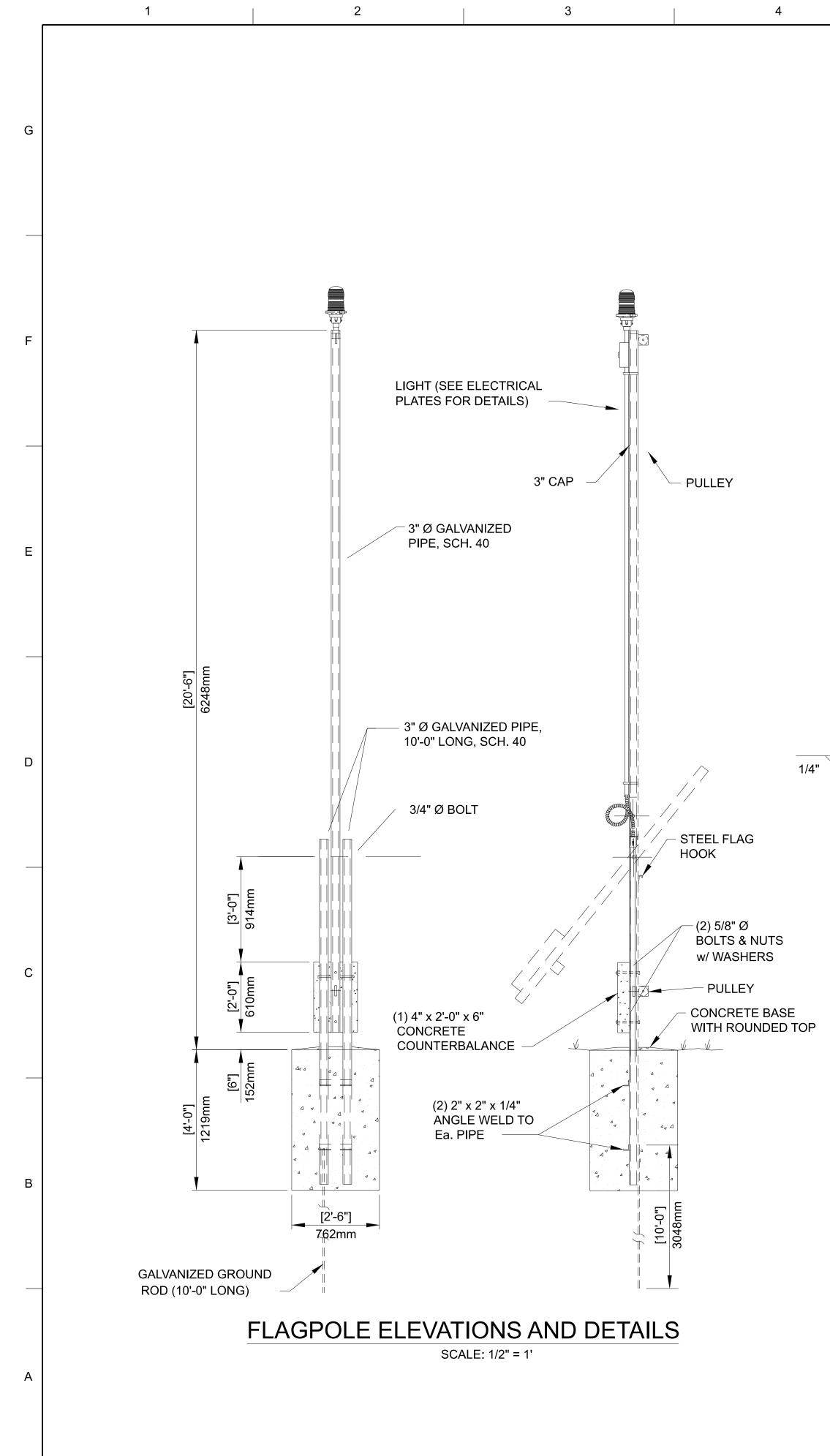
- HORIZONTAL CONTROL POINT (A) IS LOCATED ON THE NORTHWEST SIDE OF THE AERIAL FIRING PAD.
- 2. AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED CONSISTENT WITH THE NATURAL SURROUNDINGS. GROUND COVER SHALL NOT REDUCE TARGET VISIBILITY.
- 3. ALL DIMENSIONS ARE INDICATED AS FOLLOWS: METRIC UNITS [INCHES] FOR INSTANCE, 1372mm [4'-6"]

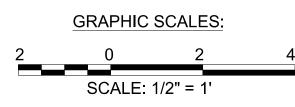
DESIGNER NOTES:

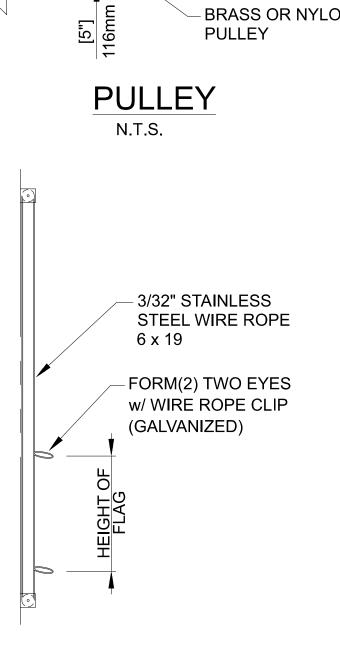
- 1. THE NEED FOR FILTER FABRIC SHOULD BE EVALUATED BASED UPON THE SOIL TYPES FOUND AT THE SITE DURING THE SITE GEOTECHNICAL INVESTIGATION.
- 2. AGGREGATE (2" DIAMETER MINIMUM) WEARING SURFACE SHOWN AS TYPICAL. HOWEVER, CONCRETE OR ASPHALT MAY BE USED BASED ON SPECIFIC REQUIREMENTS AT EACH SITE. THICKNESS OF WEARING SURFACE TO BE BASED ON SPECIFIC RECOMMENDATIONS FROM THE SITE GEOTECHNICAL INVESTIGATION.
- 3. DEPTH AND COMPACTION OF SUBGRADE SECTION SHALL BE BASED ON SPECIFIC RECOMMENDATIONS FROM THE SITE GEOTECHNICAL INVESTIGATION.
- 4. FILL SLOPES SHOWN AS 3:1 ARE MAXIMUM. FLATTER SLOPES MAY BE REQUIRED BASED ON SITE SPECIFIC FACTORS.
- 5. PAD ELEVATIONS ARE SET AT THE CORNERS OF THE PAD.
- 6. PAD MUST BE SLOPED AS SHOWN TO PROVIDE POSITIVE DRAINAGE.

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STATES A STATES OF ENGINEERS	ENGINEERING & SUPPORT CENTER	HUNTSVILLE, ALABAMA			MAY 2022		
RANGE AND TRAINING LAND PROGRAM	STANDARD DESIGN MANUAL			ARIAL FIRING POINT /	HOVER PAD DETAIL		
	S	HE F	ET				



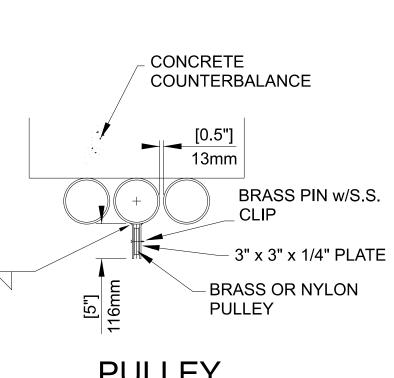




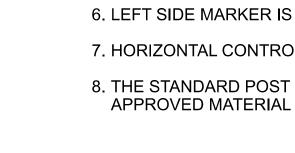


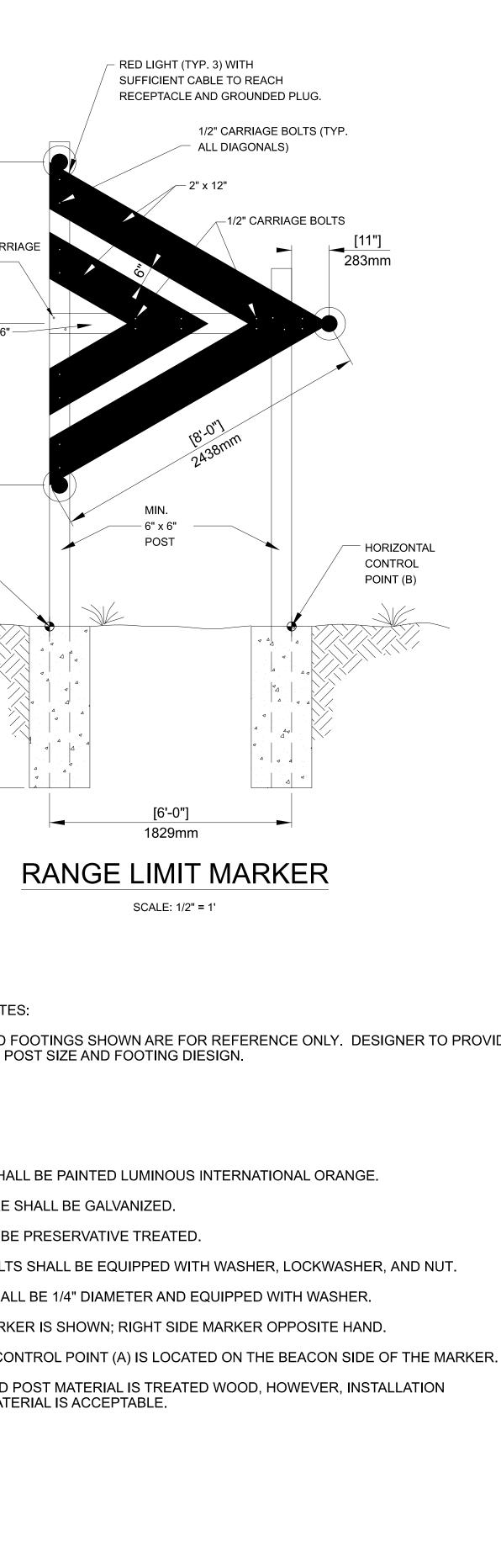
HALYARD

N.T.S.



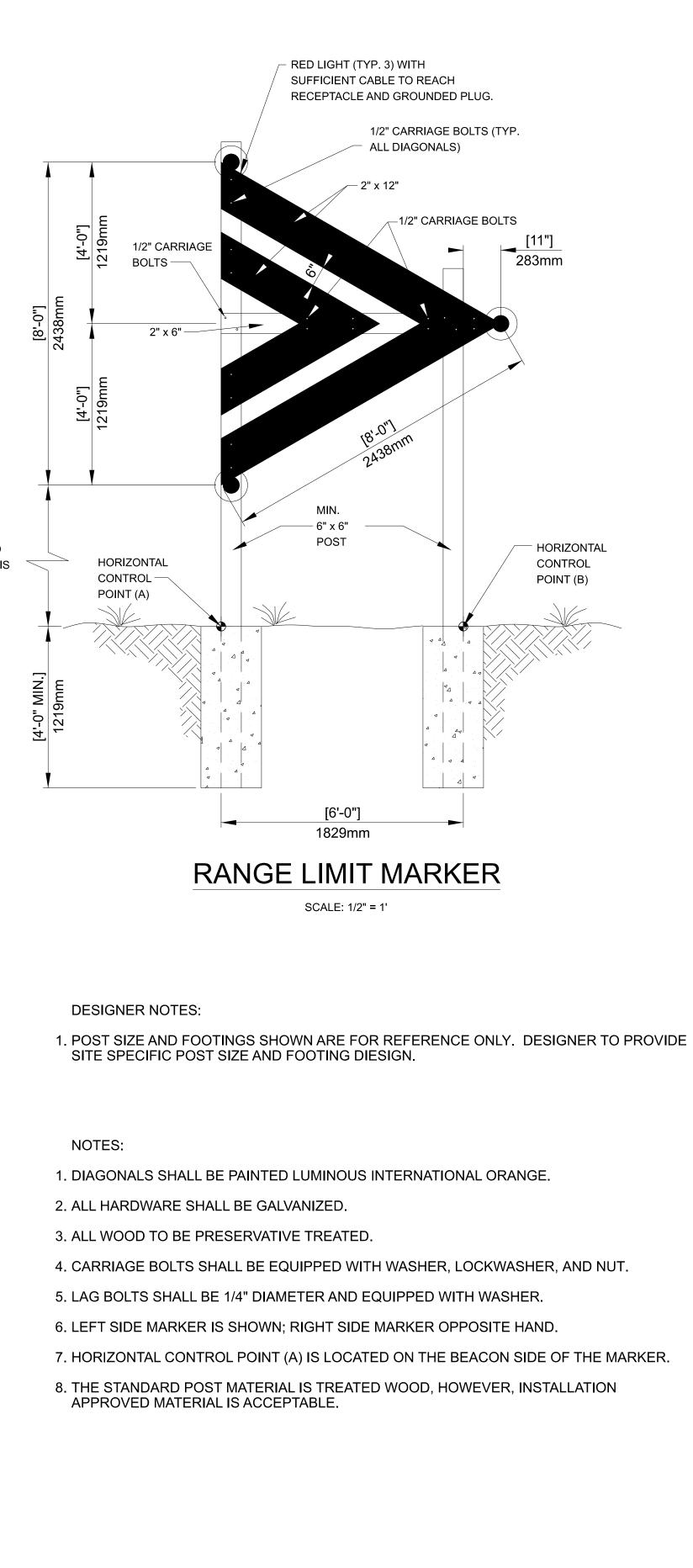
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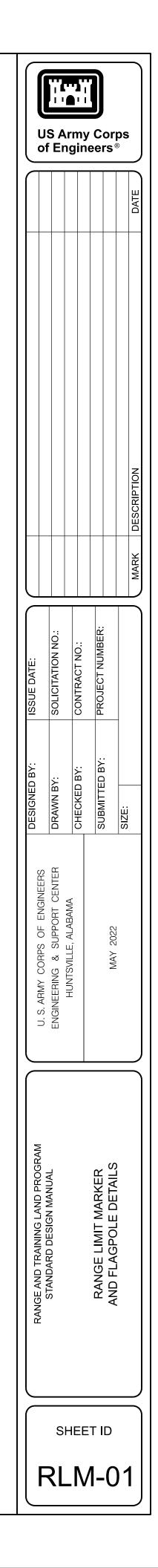


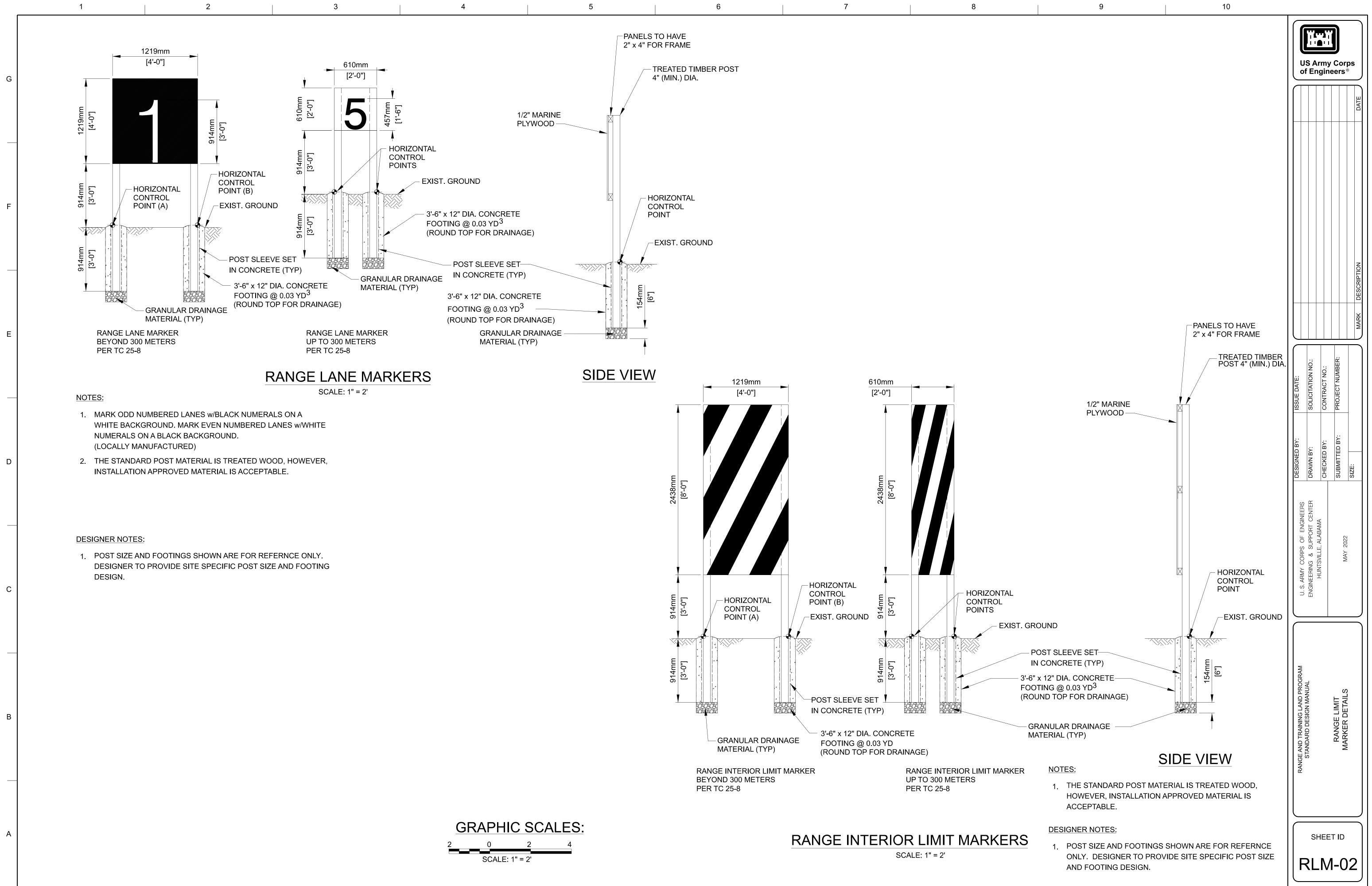


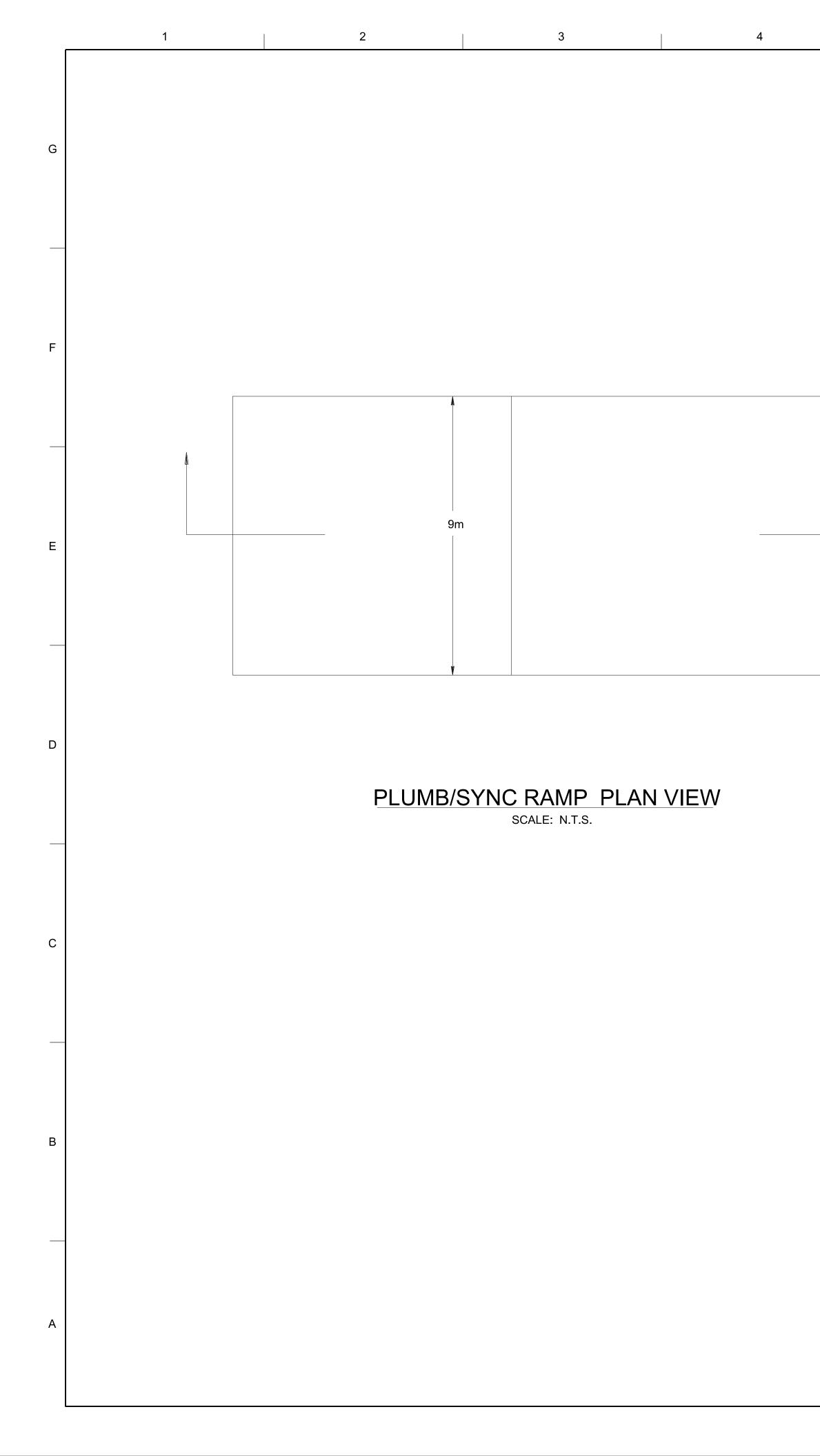
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HEIGHT AS DETERMINED BY LINE OF SIGHT ANALYSIS





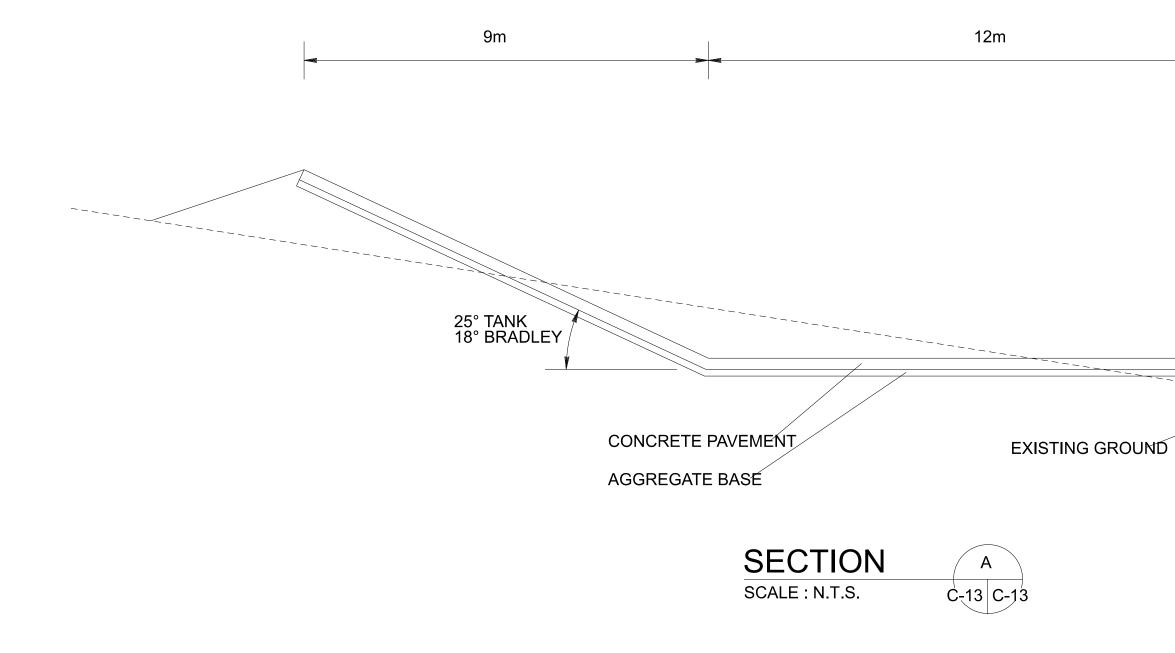




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	NOTES TO DESIGNER	:				GENERAL	IOTES:		
1. SEE UFC-3-250-01 FOR SPACING REQUIREMENTS AND DETAILS FOR CONSTRUCTION & CONTRACTION JOINTS.						1. CONCRETE SHALL DEVELOP A MINIM 28 DAYS.			
	2. SEE UFC-3-230-18 AND UFC-3-250-01 FOR DESIGN OF RIGID PAVEMENT.					2. RAMP SHALL NOT CONTAIN ANY REIN OR METAL JOINT MATERIAL.			
						3. AREAS DISTURBED BY CONSTRUCTIO			

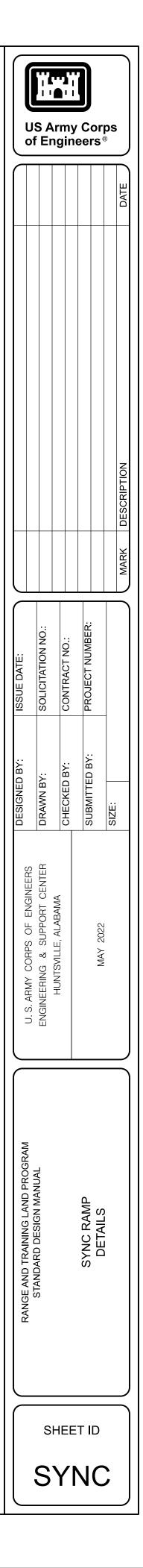
3. FILL SLOPES SHOWN AS 3:1 ARE MAXIMUM. FLATTER SLOPES MAY BE REQUIRED BY SITE SPECIFIC GEOTECHNICAL REPORT.

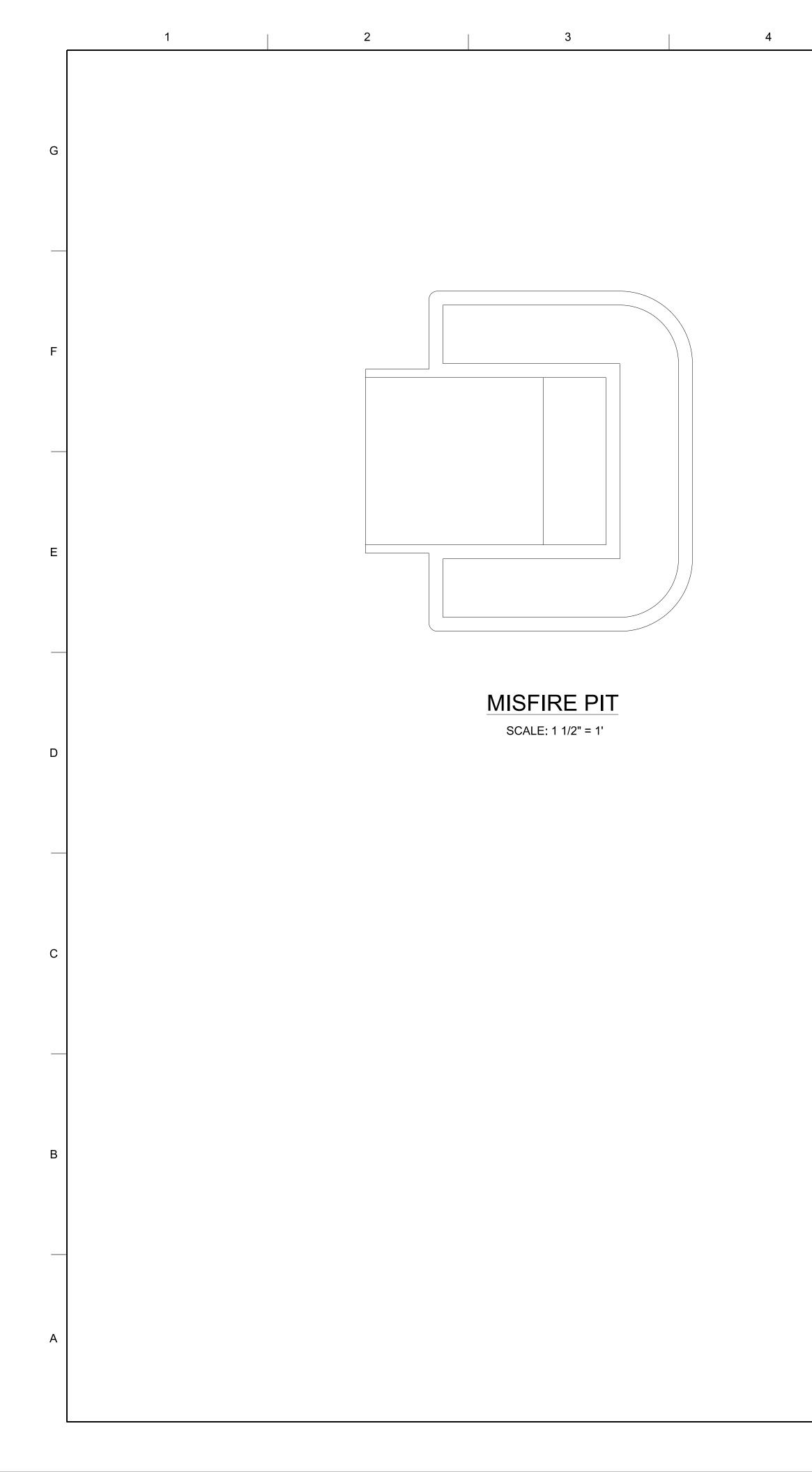
A C-13 C-13 AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED CONSISTENT WITH THE NATURAL SURROUNDINGS.
CLEARING TO INCLUDE STRIPPING ALL VEGETATION ABOVE EXISTING GROUND INCLUDING GRASS, WEEDS, BRUSH, ETC.



NIMUM COMPRESSIVE STRENGTH OF 28 MPa (4000psi) IN

REINFORCING STEEL





5	

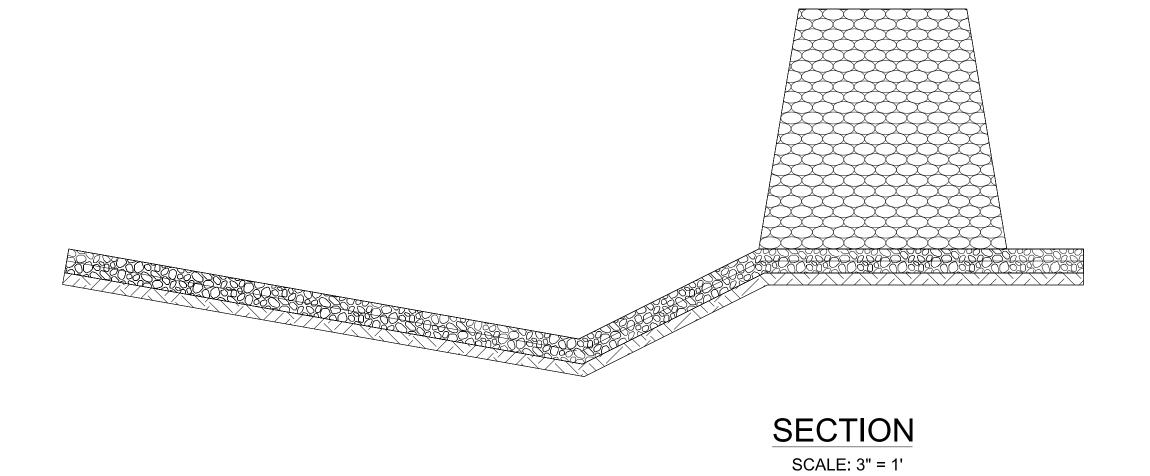
NOTES TO DESIGNER:

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1. SEE UFC-3-250-01 FOR SPACING REQUIREMENTS AND DETAILS FOR CONSTRUCTION & CONTRACTION JOINTS.

GENERAL NOTES:

- 2. RAMP SHALL NOT CONTAIN ANY REINFORCING STEEL OR METAL JOINT MATERIAL.
- 4. CLEARING TO INCLUDE STRIPPING ALL VEGETATION ABOVE EXISTING GROUND INCLUDING GRASS, WEEDS, BRUSH, ETC.
- 2. SEE UFC-3-230-18 AND UFC-3-250-01 FOR DESIGN OF RIGID PAVEMENT. 3. FILL SLOPES SHOWN AS 3:1 ARE MAXIMUM. FLATTER SLOPES MAY BE REQUIRED BY SITE SPECIFIC GEOTECHNICAL REPORT.



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ISSUE DATE:	SOLICITATION NO -		CONTRACT NO.:	PROJECT NUMBER-		-	
DESIGNED BY:	DRAWN BY-		CHECKED BY:			SIZE:	
	U.S.AHMY CORPS OF ENGINEERS ENGINFERING & SLIPPORT CENTER				MAY 2022		
RANGE AND TRAINING I AND PROGRAM	STANDARD DESIGN MANUAL			MISFIRE PIT	DETAILS		
MFP							J

1. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 28 MPa (4000psi) IN 28 DAYS.

AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REVEGETATED OR RESURFACED CONSISTENT WITH THE NATURAL SURROUNDINGS.

