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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUME 3 - DOWNRANGE

SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
ISSUE DATE: NOVEMBER 2023

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

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FORT LIBERTY, NORTH CAROLINA
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FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

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VOLUME 3 OF 4
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SHEET ID

G-001

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G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\01 GENERAL\B2EG-001_VOL-3.DWG

INDEX OF DRAWINGS

SHEET ID.	TITLE
	VOLUME 1 - SITE
G-001	COVER SHEET
GI001	INDEX OF DRAWINGS
GI002	INDEX OF DRAWINGS
GI003	INDEX OF DRAWINGS
GC101	CIVIL SITE VICINITY AND LOCATION MAPS
GC102	CIVIL SITE CONSTRUCTION LIMITS - SITE
GC103	CIVIL SITE CONSTRUCTION LIMITS - UTILITY
GC104	CIVIL SITE GENERAL NOTES
GC105	CIVIL SITE SYMBOLS AND ABBREVIATIONS
VF101	CIVIL SITE OVERALL EXISTING CONDITIONS
VF102	CIVIL SITE EXISTING CONDITIONS - AREA 'A'
VF103	CIVIL SITE EXISTING CONDITIONS - AREA 'B'
VF104	CIVIL SITE EXISTING CONDITIONS - AREA 'C'
CD101	CIVIL SITE OVERALL DEMOLITION PLAN
CD102	CIVIL SITE DEMOLITION PLAN - AREA 'A'
CD103	CIVIL SITE DEMOLITION PLAN - AREA 'B'
CD104	CIVIL SITE DEMOLITION PLAN - AREA 'C'
CS101	CIVIL SITE OVERALL LAYOUT PLAN
CS102	CIVIL SITE LAYOUT - AREA 'A' BASEBID
CS102A	CIVIL SITE LAYOUT - AREA 'A' OPTIONS
CS103	CIVIL SITE LAYOUT - AREA 'B' BASEBID
CS103A	CIVIL SITE LAYOUT - AREA 'B' OPTIONS
CS104	CIVIL SITE LAYOUT - AREA 'C'
CS201	CIVIL SITE ROADWAY PROFILES - 1
CS202	CIVIL SITE ROADWAY PROFILES - 2
CS501	CIVIL SITE LAYOUT DETAILS
CS502	CIVIL SITE FENCING DETAILS 1
CS503	CIVIL SITE FENCING DETAILS 2
CG101	CIVIL SITE OVERALL GRADING PLAN
CG102	CIVIL SITE GRADING PLAN - AREA 'A'
CG103	CIVIL SITE GRADING PLAN - AREA 'B'
CG104	CIVIL SITE GRADING PLAN - AREA 'C'
CG201	CIVIL SITE STORM DRAINAGE PROFILES
CG501	CIVIL SITE STORM DRAINAGE DETAILS
CG502	CIVIL SITE OUTLET CONTROL STRUCTURE
CP101	CIVIL SITE OVERALL PAVEMENT JOINT PLAN
CP102	CIVIL SITE PAVEMENT JOINT PLAN - AREA 'A'
CP103	CIVIL SITE PAVEMENT JOINT PLAN - AREA 'B'
CP104	CIVIL SITE PAVEMENT JOINT PLAN - AREA 'C'
CP501	CIVIL SITE PAVEMENT DETAILS
CG700	E&SC COVER
CG701	E&SC OVERALL
CG702	E&SC INITIAL PHASE - AREA 'A'
CG703	E&SC INITIAL PHASE - AREA 'B'
CG704	E&SC INITIAL PHASE - AREA 'C'
CG705	E&SC INTERMEDIATE PHASE AREA 'A'
CG706	E&SC INTERMEDIATE PHASE AREA 'B'
CG707	E&SC INTERMEDIATE PHASE AREA 'C'
CG708	E&SC FINAL PHASE - AREA 'A'
CG709	E&SC FINAL PHASE - AREA 'B'
CG710	E&SC FINAL PHASE - AREA 'C'
CG711	E&SC DETAILS
CG712	E&SC DETAILS
ES001	ELECTRICAL SITE LEGEND AND NOTES
ES101	SITE POWER PLAN - OVERALL
ES102	SITE POWER PLAN - AREA A
ES103	SITE POWER PLAN - AREA B
ES104	SITE POWER PLAN - AREA C
ES105	SITE POWER PLAN - AREA D
ES106	SITE POWER PLAN - AREA E
ES107	SITE POWER PLAN - AREA F
ES108	SITE POWER PLAN - AREA G
ES109	SITE POWER PLAN - AREA H
ES110	SITE TELECOMMUNICATIONS PLAN - OVERALL
ES111	SITE TELECOMMUNICATIONS PLAN - AREA A
ES112	SITE TELECOMMUNICATIONS PLAN - AREA B
ES113	SITE TELECOMMUNICATIONS PLAN - AREA C
ES114	SITE TELECOMMUNICATIONS PLAN - AREA D
ES115	SITE TELECOMMUNICATIONS PLAN - AREA E
ES116	SITE TELECOMMUNICATIONS PLAN - AREA F
ES117	SITE TELECOMMUNICATIONS PLAN - AREA G
ES118	SITE TELECOMMUNICATIONS PLAN - AREA H
ES119	SITE LIGHTING PLAN - OVERALL
ES120	SITE LIGHTING PLAN - AREA A
ES121	SITE LIGHTING PLAN - AREA B
ES122	SITE LIGHTING PLAN - AREA C
ES603	TELECOMMUNICATIONS COPPER CABLING ONE-LINE DIAGRAM
ES605	TELECOMMUNICATIONS DUCT BANK ONE-LINE DIAGRAM
ES601	SITE POWER RISER DIAGRAM
ES604	TELECOMMUNICATIONS FOC CABLING ONE-LINE DIAGRAM
ES602	SITE POWER ONE-LINE DIAGRAM
ES123	SITE LIGHTNING PROTECTION PLAN - OVERALL
ES124	SITE LIGHTNING PROTECTION PLAN - AREA A
ES125	SITE LIGHTNING PROTECTION PLAN - AREA B
ES126	SITE LIGHTNING PROTECTION PLAN - AREA C
ES502	SITE TELECOMMUNICATIONS DETAILS
ES501	SITE POWER DETAILS
ES503	SITE LIGHTING CONTACTOR DIAGRAMS
ES504	LIGHTING POLE DETAILS
ES505	CATENARY POLE DETAILS
	VOLUME 2 - BUILDING
G-001	COVER SHEET
GI001	INDEX OF DRAWINGS
GI002	INDEX OF DRAWINGS
GI003	INDEX OF DRAWINGS
GI004	GENERAL NOTES, ABBREVIATIONS
A-802	SITE FIRE PROTECTION
A-803	SITE FIRE PROTECTION
	BUILDING 1 - CONTROL TOWER
S-001	CONTROL TOWER GENERAL STRUCTURAL NOTES
S-002	CONTROL TOWER GENERAL STRUCTURAL NOTES
S-003	CONTROL TOWER COMPONENTS AND CLADDING
S-101	CONTROL TOWER FOUNDATION AND FIRST FLOOR PLANS
S-102	CONTROL TOWER SECOND FLOOR AND ROOF FRAMING PLANS
S-103	PUMP HOUSE PLANS
S-201	CONTROL TOWER FRAME ELEVATIONS
S-202	CONTROL TOWER FRAME ELEVATIONS
SB501	CONTROL TOWER STRUCTURAL DETAILS
SB601	CONTROL TOWER FOUNDATION AND SPLICE LENGTH SCHEDULES
SF501	CONTROL TOWER FRAMING DETAILS
SF502	CONTROL TOWER FRAMING DETAILS
SF503	PUMPHOUSE FRAMING DETAILS
A-101	CONTROL TOWER FLOOR PLANS
A-102	CONTROL TOWER REFLECTED CEILING PLANS
A-103	CONTROL TOWER ROOF PLAN & DETAILS
A-201	CONTROL TOWER NORTH AND SOUTH ELEVATIONS
A-202	CONTROL TOWER EAST AND WEST ELEVATIONS
A-301	CONTROL TOWER BUILDING CROSS SECTION
A-302	CONTROL TOWER WALL SECTIONS
A-303	CONTROL TOWER DETAILS
A-501	CONTROL TOWER ROOF DETAILS
A-601	CONTROL TOWER DOOR SCHEDULE AND DETAILS
A-602	CONTROL TOWER DOOR & WINDOW DETAILS
A-603	CONTROL TOWER DETAILS
A-701	CONTROL TOWER AIR BARRIER BOUNDARY
A-702	CONTROL TOWER AIR BARRIER DETAILS
A-801	CONTROL TOWER LIFE SAFETY ANALYSIS
IN101	CONTROL TOWER FURNITURE PLANS
IN601	CONTROL TOWER ROOM FINISH SCHEDULE & FINISH LEGEND
FA001	CONTROL TOWER FIRE ALARM LEGEND AND OPERATIONS MATRIX
FA101	CONTROL TOWER FIRE ALARM AND MNS PLAN
FA601	CONTROL TOWER FIRE ALARM DIAGRAM
FX001	CONTROL TOWER FIRE PROTECTION LEGEND AND GENERAL NOTES
FX101	CONTROL TOWER FIRE PROTECTION GROUND FLOOR PLAN
FX102	CONTROL TOWER FIRE PROTECTION 1ST FLOOR PLAN
FX103	CONTROL TOWER FIRE PROTECTION 2ND FLOOR PLAN
FX501	CONTROL TOWER FIRE PROTECTIONS DETAILS
M-001	CONTROL TOWER HVAC LEGEND
MH101	CONTROL TOWER HVAC GROUND FLOOR PLAN
MH102	CONTROL TOWER HVAC FIRST FLOOR PLAN
MH103	CONTROL TOWER HVAC SECOND FLOOR PLAN
MH301	CONTROL TOWER HVAC SECTIONS
MH501	CONTROL TOWER HVAC DETAILS
MH601	CONTROL TOWER HVAC SCHEDULES
MI801	CONTROL TOWER HVAC CONTROLS LEGEND
MI802	CONTROL TOWER SYSTEM CONTROLS
E-001	CONTROL TOWER LEGEND AND NOTES
EL101	CONTROL TOWER LIGHTING PLAN
EL501	CONTROL TOWER LIGHT FIXTURE SCHEDULE & DETAILS
EL601	CONTROL TOWER LIGHTING CONTROL SCHEDULES AND DETAILS
EL602	CONTROL TOWER LIGHTING CONTACTOR DIAGRAMS
EP101	CONTROL TOWER POWER PLAN
EP501	CONTROL TOWER ELECTRICAL DETAILS
EP601	CONTROL TOWER POWER RISER DIAGRAM
EP701	CONTROL TOWER PANEL SCHEDULES
EG101	CONTROL TOWER LIGHTNING PROTECTION PLAN
EG501	CONTROL TOWER GROUNDING DETAILS
T-001	CONTROL TOWER LEGEND AND NOTES
TN101	CONTROL TOWER COMMUNICATIONS PLAN
TN501	CONTROL TOWER COMMUNICATIONS DETAILS
TN502	CONTROL TOWER COMMUNICATIONS DETAILS
TN503	CONTROL TOWER COMMUNICATIONS DETAILS
TN601	CONTROL TOWER COMMUNICATIONS DIAGRAMS
TN602	CONTROL TOWER COMMUNICATIONS DIAGRAMS
TN603	CONTROL TOWER COMMUNICATIONS DIAGRAM
	BUILDING 2 - AAR BUILDING
S-001	AAR BUILDING GENERAL STRUCTURAL NOTES
S-002	AAR BUILDING GENERAL STRUCTURAL NOTES
S-003	AAR BUILDING COMPONENTS AND CLADDING
S-101	AAR BUILDING FOUNDATION PLAN
S-102	AAR BUILDING ROOF FRAMING PLAN
S-201	AAR BUILDING BRACED FRAME ELEVATIONS
SB501	AAR BUILDING FOUNDATION AND SLAB DETAILS
SB601	AAR BUILDING FOUNDATION AND SPLICE LENGTH SCHEDULES
SF501	AAR BUILDING FRAMING DETAILS
SF502	AAR BUILDING FRAMING DETAILS
A-101	AAR BUILDING FLOOR PLAN
A-102	AAR BUILDING REFLECTED CEILING PLAN & ROOF PLAN
A-201	AAR BUILDING ELEVATIONS
A-301	AAR BUILDING CROSS & LONGITUDINAL SECTION
A-302	AAR WALL SECTIONS
A-501	AAR ROOF DETAILS
A-502	AAR CEILING DETAILS
A-503	AAR BUILDING INTERIOR DETAILS
A-601	AAR SCHEDULES
A-602	AAR DOOR AND WINDOW DETAILS
A-701	AAR AIR BARRIER BOUNDERY FLOOR PLAN & BUILDING SECTIONS
A-702	AAR BUILDING AIR BARRIER DETAILS
A-801	AAR BUILDING LIFE SAFETY PLAN
IN101	AAR FURNITURE PLAN
IN601	AAR BUILDING ROOM FINISH SCHEDULE & FINISH LEGEND
M-001	AAR BUILDING HVAC LEGEND
MH101	AAR BUILDING HVAC FLOOR PLAN
MH301	AAR BUILDING HVAC SECTIONS
MH501	AAR BUILDING HVAC DETAILS
MH601	AAR BUILDING HVAC SCHEDULES
MI801	AAR BUILDING HVAC CONTROLS LEGEND
MI802	AAR BUILDING SYSTEM CONTROLS
E-001	AAR BUILDING LEGEND AND NOTES
EL101	AAR BUILDING LIGHTING PLAN
EL501	AAR BUILDING LIGHT FIXTURE SCHEDULE & DETAILS
EL601	AAR BUILDING LIGHTING CONTROL SCHEDULES AND DETAILS
EL602	AAR BUILDING LIGHTING CONTROL DIAGRAMS
EP101	AAR BUILDING POWER PLAN
EP501	AAR BUILDING ELECTRICAL DETAILS
EP601	AAR BUILDING POWER RISER DIAGRAM
EP701	AAR BUILDING PANEL SCHEDULES
EG101	AAR BUILDING LIGHTNING PROTECTION PLAN
EG501	AAR BUILDING MISC GROUNDING DETAILS
T-001	AAR BUILDING LEGEND AND NOTES
TN101	AAR BUILDING TELECOMMUNICATIONS PLAN
TN501	AAR BUILDING COMMUNICATIONS DETAILS
TN502	AAR BUILDING COMMUNICATIONS DETAILS
TN601	AAR BUILDING COMMUNICATIONS DIAGRAMS
TN602	AAR BUILDING COMMUNICATIONS CONDUIT RISER DIAGRAM
	BUILDING 3 - OPERATIONS-STORAGE BUILDING (BID OPTION)
S-001	OPERATIONS-STORAGE BUILDING GENERAL STRUCTURAL NOTES
S-002	OPERATIONS-STORAGE BUILDING GENERAL STRUCTURAL NOTES
S-003	OPERATIONS-STORAGE BUILDING COMPONENTS AND CLADDING
S-101	OPERATIONS-STORAGE BUILDING FOUNDATION PLAN
S-102	OPERATIONS-STORAGE BUILDING ROOF FRAMING PLAN
S-201	OPERATIONS-STORAGE BUILDING BRACED FRAME ELEVATIONS
SB501	OPERATIONS-STORAGE BUILDING FOUNDATION AND SLAB DETAILS
SB601	OPERATIONS-STORAGE BUILDING FOUNDATION SCHEDULES
SF501	OPERATIONS-STORAGE BUILDING FRAMING DETAILS
SF502	OPERATIONS-STORAGE BUILDING FRAMING DETAILS
A-101	OPERATIONS-STORAGE BUILDING FLOOR PLAN
A-102	OPERATIONS-STORAGE BUILDING REFLECTED CEILING PLAN & ROOF PLAN
A-201	OPERATIONS-STORAGE BUILDING ELEVATIONS
A-301	OPERATIONS-STORAGE BUILDING CROSS & LONGITUDINAL SECTION
A-302	OPERATIONS-STORAGE BUILDING WALL SECTIONS
A-501	OPERATIONS-STORAGE BUILDING ROOF DETAILS
A-502	OPERATIONS-STORAGE BUILDING CEILING DETAILS
A-503	OPERATIONS-STORAGE BUILDING INTERIOR DETAILS
A-601	OPERATIONS-STORAGE BUILDING SCHEDULES AND DOORS-WINDOW ELEVATIONS
A-602	OPERATIONS-STORAGE BUILDING WINDOW AND LOUVER DETAILS
A-603	OPERATIONS-STORAGE BUILDING DOOR DETAILS
A-701	OPERATIONS-STORAGE BUILDING AIR BARRIER BOUNDERY FLOOR PLAN & BUILDING SECTIONS
A-702	OPERATIONS-STORAGE BUILDING AIR BARRIER DETAILS
A-801	OPERATIONS- STORAGE BUILDING LIFE SAFETY PLAN (FOR REFERENCE ONLY)
IN101	OPERATIONS-STORAGE FURNITURE PLAN
IN601	OPERATIONS-STORAGE ROOM FINISH SCHEDULE & FINISH LEGEND
M-001	OPERATIONS-STORAGE BUILDING HVAC LEGEND
MH101	OPERATIONS-STORAGE BUILDING HVAC FLOOR PLAN
MH301	OPERATIONS-STORAGE BUILDING HVAC SECTIONS
MH501	OPERATIONS-STORAGE BUILDING HVAC DETAILS
MH502	OPERATIONS-STORAGE BUILDING HVAC DETAILS
MH503	OPERATIONS-STORAGE BUILDING HVAC DETAILS
MH601	OPERATIONS-STORAGE BUILDING HVAC SCHEDULES
MI801	OPERATIONS-STORAGE BUILDING HVAC CONTROLS LEGEND
MI802	OPERATIONS-STORAGE BUILDING SYSTEM CONTROLS
E-001	OPERATIONS-STORAGE BUILDING LEGEND AND NOTES
EL101	OPERATIONS-STORAGE BUILDING LIGHTING PLAN
EL501	OPERATIONS-STORAGE BUILDING LIGHT FIXTURE SCHEDULE & DETAILS
EL601	OPERATIONS-STORAGE BUILDING LIGHTING CONTROL SCHEDULES AND DETAILS
EL602	OPERATIONS-STORAGE BUILDING LIGHTING CONTROL DIAGRAMS
EP101	OPERATIONS-STORAGE BUILDING POWER PLAN
EP501	OPERATIONS-STORAGE BUILDING ELECTRICAL DETAILS
EP601	OPERATIONS-STORAGE BUILDING POWER RISER DIAGRAM
EP701	OPERATIONS-STORAGE BUILDING PANEL SCHEDULES
EG101	OPERATIONS-STORAGE BUILDING LIGHTNING PROTECTION PLAN
EG501	OPERATIONS-STORAGE BUILDING MISC GROUNDING DETAILS
T-001	OPERATIONS-STORAGE BUILDING LEGEND AND NOTES
TN101	OPERATIONS-STORAGE BUILDING TELECOMMUNICATIONS PLAN
TN501	OPERATIONS-STORAGE BUILDING COMMUNICATIONS DETAILS
TN502	OPERATIONS-STORAGE BUILDING COMMUNICATIONS DETAILS
TN601	OPERATIONS/STORAGE BUILDING COMMUNICATIONS DIAGRAMS
TN602	OPERATIONS/STORAGE BUILDING CONDUIT RISER DIAGRAM
	BUILDING 4 - BLEACHER ENCLOSURE (BID OPTION)
S-001	BLEACHER ENCLOSURE GENERAL STRUCTURAL NOTES
S-002	BLEACHER ENCLOSURE GENERAL STRUCTURAL NOTES
S-003	BLEACHER ENCLOSURE COMPONENTS AND CLADDING
S-101	BLEACHER ENCLOSURE FOUNDATION AND ROOF PLANS
S-201	BLEACHER ENCLOSURE FRAMING ELEVATIONS
SB501	BLEACHER ENCLOSURE FOUNDATION AND SLAB DETAILS
SB601	BLEACHER ENCLOSURE FOUNDATION SCHEDULES
SF501	BLEACHER ENCLOSURE FRAMING DETAILS
A-101	BLEACHER ENCLOSURE FLOOR PLAN
A-102	BLEACHER ENCLOSURE ROOF PLAN
A-201	BLEACHER ENCLOSURE ELEVATIONS
A-301	BLEACHER ENCLOSURE BUILDING SECTIONS
A-501	BLEACHER ENCLOSURE ROOF DETAILS
A-801	BLEACHER ENCLOSURE LIFE SAFETY ANALYSIS
E-001	BLEACHER ENCLOSURE LEGEND AND NOTES
EL101	BLEACHER ENCLOSURE LIGHTING PLAN
EL501	BLEACHER ENCLOSURE LIGHT FIXTURE SCHEDULE & DETAILS
EL601	BLEACHER ENCLOSURE LIGHTING CONTROL SCHEDULES AND DETAILS
EL602	BLEACHER ENCLOSURE LIGHTING CONTACTOR DIAGRAMS
EP101	BLEACHER ENCLOSURE POWER PLAN
EP601	BLEACHER ENCLOSURE POWER RISER DIAGRAM

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INDEX OF DRAWINGS

SHEET ID
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INDEX OF DRAWINGS CONTINUED

SHEET ID.	TITLE
EP701	BLEACHER ENCLOSURE PANEL SCHEDULES
EG101	BLEACHER ENCLOSURE LIGHTNING PROTECTION PLAN
EG501	BLEACHER ENCLOSURE MISC GROUNDING DETAILS
	BUILDING 5 - COVERED MESS (BID OPTION)
S-001	COVERED MESS GENERAL STRUCTURAL NOTES
S-002	COVERED MESS GENERAL STRUCTURAL NOTES
S-003	COVERED MESS COMPONENTS AND CLADDING
S-101	COVERED MESS FOUNDATION PLAN
S-102	COVERED MESS ROOF FRAMING PLAN
SB501	COVERED MESS FOUNDATION AND SLAB DETAILS
SB601	COVERED MESS FOUNDATION SCHEDULES
SF501	COVERED MESS FRAMING DETAILS
A-101	COVERED MESS FLOOR PLAN & REFLECTED CEILING PLAN
A-102	COVERED MESS ROOF PLAN AND DETAILS
A-201	COVERED MESS ELEVATIONS
A-301	COVERED MESS BUILDING SECTIONS
A-302	COVERED MESS WALL SECTIONS
A-801	COVERED MESS LIFE SAFETY PLAN
E-001	COVERED MESS LEGEND AND NOTES
EL101	COVERED MESS LIGHTING PLAN
EL501	COVERED MESS LIGHT FIXTURE SCHEDULE & DETAILS
EL601	COVERED MESS LIGHTING CONTROL SCHEDULES AND DETAILS
EL602	COVERED MESS LIGHTING CONTACTOR DIAGRAMS
EP101	COVERED MESS POWER PLAN
EP601	COVERED MESS POWER RISER DIAGRAM
EP701	COVERED MESS PANEL SCHEDULES
EG101	COVERED MESS LIGHTNING PROTECTION PLAN
EG501	COVERED MESS MISC GROUNDING DETAILS
	BUILDING 6 - AMMUNITION LOADING DOCK (BID OPTION)
S-001	AMMUNITION LOADING DOCK GENERAL STRUCTURAL NOTES
S-002	AMMUNITION LOADING DOCK GENERAL STRUCTURAL NOTES
S-101	AMMUNITION LOADING DOCK SLAB AND FOUNDATION PLAN
SB501	AMMUNITION LOADING DOCK FOUNDATION AND SLAB DETAILS
SB502	AMMUNITION LOADING DOCK FOUNDATION AND SLAB DETAILS
A-101	AMMUNITION LOADING DOCK FIRST FLOOR PLAN
A-201	AMMUNITION LOADING DOCK ELEVATIONS
	BUILDING 7 - LATRINE ENCLOSURE (BID OPTION)
S-001	LATRINE ENCLOSURE GENERAL STRUCTURAL NOTES
S-002	LATRINE ENCLOSURE GENERAL STRUCTURAL NOTES
S-101	LATRINE ENCLOSURE FOUNDATION AND SLAB PLANS
SB501	LATRINE ENCLOSURE STRUCTURAL DETAILS
SB510	LATRINE ENCLOSURE MASONRY DETAILS
SB601	LATRINE ENCLOSURE FOUNDATION AND SPLICE LENGTH SCHEDULES
A-101	LATRINE ENCLOSURE FIRST FLOOR PLAN
A-201	LATRINE ENCLOSURE EXTERIOR ELEVATIONS
	VOLUME 3 - DOWNRANGE
G-001	COVER SHEET - VOLUME 3 OF 4 - DOWNRANGE
GI001	INDEX OF DRAWINGS
GI002	INDEX OF DRAWINGS
GI003	INDEX OF DRAWINGS
GI005	FORT BRAGG CANTONMENT & VICINITY MAPS
GI006	PROJECT LOCATION AND HAUL ROUTE MAPS
GI007	BID OPTION #3 SITE PLAN & NOTES
GI008	BID OPTION #4 SITE PLAN & NOTES
V-001	EXISTING LEGEND
V-002	SURVEY NOTES
V-600	SURVEY CONTROL POINT DATA
V-601	SURVEY CONTROL POINT DATA
V-602	SURVEY CONTROL POINT DATA
V-603	SURVEY CONTROL POINT DATA
V-604	SURVEY CONTROL POINT DATA
V-605	SURVEY CONTROL POINT DATA
V-606	SURVEY CONTROL POINT DATA
VF120	OVERALL EXISTING SITE PLAN
VF121	EXISTING SITE REFERENCE KEY PLAN
VF123	EXISTING SITE PLAN
VF124	EXISTING SITE PLAN
VF126	EXISTING SITE PLAN
VF127	EXISTING SITE PLAN
VF128	EXISTING SITE PLAN
VF129	EXISTING SITE PLAN
VF130	EXISTING SITE PLAN
VF131	EXISTING SITE PLAN
VF132	EXISTING SITE PLAN
VF133	EXISTING SITE PLAN
VF134	EXISTING SITE PLAN
VF135	EXISTING SITE PLAN
VF136	EXISTING SITE PLAN
VF137	EXISTING SITE PLAN
VF138	EXISTING SITE PLAN
VF139	EXISTING SITE PLAN
VF140	EXISTING SITE PLAN
VF141	EXISTING SITE PLAN
VF142	EXISTING SITE PLAN
VF143	EXISTING SITE PLAN
VF144	EXISTING SITE PLAN
VF145	EXISTING SITE PLAN
VF146	EXISTING SITE PLAN
VF147	EXISTING SITE PLAN
VF148	EXISTING SITE PLAN
VF149	EXISTING SITE PLAN
VF150	EXISTING SITE PLAN
VF151	EXISTING SITE PLAN
VF152	EXISTING SITE PLAN
VF153	EXISTING SITE PLAN
VF154	EXISTING SITE PLAN
VF155	EXISTING SITE PLAN

SHEET ID.	TITLE
VF156	EXISTING SITE PLAN
VF157	EXISTING SITE PLAN
VF158	EXISTING SITE PLAN
VF159	EXISTING SITE PLAN
VF160	EXISTING SITE PLAN
VF161	EXISTING SITE PLAN
VF162	EXISTING SITE PLAN
B-001	SOIL CLASSIFICATION CHART & NOTES
B-123	SOIL BORING PLAN
B-124	SOIL BORING PLAN
B-125	SOIL BORING PLAN
B-129	SOIL BORING PLAN
B-134	SOIL BORING PLAN
B-135	SOIL BORING PLAN
B-136	SOIL BORING PLAN
B-141	SOIL BORING PLAN
B-142	SOIL BORING PLAN
B-143	SOIL BORING PLAN
B-145	SOIL BORING PLAN
B-150	SOIL BORING PLAN
B-151	SOIL BORING PLAN
B-152	SOIL BORING PLAN
B-153	SOIL BORING PLAN
B-154	SOIL BORING PLAN
B-155	SOIL BORING PLAN
B-158	SOIL BORING PLAN
B-161	SOIL BORING PLAN
B-162	SOIL BORING PLAN
B-300	SOIL BORING LOGS
B-301	SOIL BORING LOGS
B-302	SOIL BORING LOGS
B-303	SOIL BORING LOGS
B-304	SOIL BORING LOGS
B-305	SOIL BORING LOGS
B-306	SOIL BORING LOGS
B-307	SOIL BORING LOGS
B-308	SOIL BORING LOGS
B-309	SOIL BORING LOGS
B-310	SOIL BORING LOGS
B-311	SOIL BORING LOGS
B-312	SOIL BORING LOGS
B-313	SOILS LAB DATA
B-314	SOILS LAB DATA
B-315	SOILS LAB DATA
B-600	SOIL BORING DATA CHART
C-001	CIVIL LEGEND AND NOTES
CG120	OVERALL SITE PLAN
CG121	SITE REFERENCE KEY PLAN
CG121A	OVERALL CLEARING & GRUBBING PLAN
CG123	SITE, GRADING, & DRAINAGE PLAN
CG124	SITE, GRADING, & DRAINAGE PLAN
CG126	SITE, GRADING, & DRAINAGE PLAN
CG127	SITE, GRADING, & DRAINAGE PLAN
CG128	SITE, GRADING, & DRAINAGE PLAN
CG129	SITE, GRADING, & DRAINAGE PLAN
CG130	SITE, GRADING, & DRAINAGE PLAN
CG131	SITE, GRADING, & DRAINAGE PLAN
CG132	SITE, GRADING, & DRAINAGE PLAN
CG133	SITE, GRADING, & DRAINAGE PLAN
CG134	SITE, GRADING, & DRAINAGE PLAN
CG135	SITE, GRADING, & DRAINAGE PLAN
CG136	SITE, GRADING, & DRAINAGE PLAN
CG137	SITE, GRADING, & DRAINAGE PLAN
CG138	SITE, GRADING, & DRAINAGE PLAN
CG139	SITE, GRADING, & DRAINAGE PLAN
CG140	SITE, GRADING, & DRAINAGE PLAN
CG141	SITE, GRADING, & DRAINAGE PLAN
CG142	SITE, GRADING, & DRAINAGE PLAN
CG143	SITE, GRADING, & DRAINAGE PLAN
CG144	SITE, GRADING, & DRAINAGE PLAN
CG145	SITE, GRADING, & DRAINAGE PLAN
CG146	SITE, GRADING, & DRAINAGE PLAN
CG147	SITE, GRADING, & DRAINAGE PLAN
CG148	SITE, GRADING, & DRAINAGE PLAN
CG149	SITE, GRADING, & DRAINAGE PLAN
CG150	SITE, GRADING, & DRAINAGE PLAN
CG151	SITE, GRADING, & DRAINAGE PLAN
CG152	SITE, GRADING, & DRAINAGE PLAN
CG153	SITE, GRADING, & DRAINAGE PLAN
CG154	SITE, GRADING, & DRAINAGE PLAN
CG155	SITE, GRADING, & DRAINAGE PLAN
CG156	SITE, GRADING, & DRAINAGE PLAN
CG157	SITE, GRADING, & DRAINAGE PLAN
CG158	SITE, GRADING, & DRAINAGE PLAN
CG159	SITE, GRADING, & DRAINAGE PLAN
CG160	SITE, GRADING, & DRAINAGE PLAN
CG161	SITE, GRADING, & DRAINAGE PLAN
CG162	SITE, GRADING, & DRAINAGE PLAN
CG400	ENLARGED SITE PLAN - LIVE FIRE VILLAGE / URBAN CLUSTER
CG401	ENLARGED GRADING PLAN - LIVE FIRE VILLAGE / URBAN CLUSTER
CG402	ENLARGED SITE PLAN - BORESIGHT / SCREENING PAD & SYNC RAMP
CG403	ENLARGED GRADING PLAN - BORESIGHT / SCREENING PAD & SYNC RAMP
CG404	MASS GRADING - GEOMETRIC CONTROL
CG405	MASS GRADING - GEOMETRIC CONTROL
CG406	MASS GRADING - GEOMETRIC CONTROL
CG407	MASS GRADING - GEOMETRIC CONTROL
CG719	E&SC PLAN COVER SHEET (DOWNRANGE)
490	DELETE

SHEET ID.	TITLE
CG719A	E&SC LEGENDS
CG719B	E&SC LEGENDS
CG720	OVERALL E&SC PLAN
CG721	E&SC SITE REFERENCE KEY PLAN
CG723	E&SC PLAN
CG724	E&SC PLAN
CG726	E&SC PLAN
CG727	E&SC PLAN
CG728	E&SC PLAN
CG729	E&SC PLAN
CG730	E&SC PLAN
CG731	E&SC PLAN
CG732	E&SC PLAN
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CG754	E&SC PLAN
CG755	E&SC PLAN
CG756	E&SC PLAN
CG757	E&SC PLAN
CG758	E&SC PLAN
CG759	E&SC PLAN
CG760	E&SC PLAN
CG761	E&SC PLAN
CG762	E&SC PLAN
CG763	E&SC PLAN - COE STANDARD NOTES
CG764	E&SC PLAN - NARRATIVE, NOTES & SITE DESCRIPTION
CG765	E&SC PLAN - SILT FENCE DETAILS
CG766	E&SC PLAN - CONSTRUCTION EXIT DETAILS
CG767	E&SC PLAN - EROSION CONTROL MATTING & CHANNEL STABILIZATION DETAILS
CG768	E&SC PLAN - CHECK DAM DETAILS
CG769	E&SC PLAN - RIPRAP CHANNEL DETAILS
CG770	E&SC PLAN - ROCK DOUGHNUT INLET PROTECTION DETAILS
CG771	E&SC PLAN - OUTLET STABILIZATION STRUCTURE DETAILS
CG772	E&SC PLAN - OUTLET STABILIZATION STRUCTURE CALCULATIONS
CG772A	E&SC PLAN - OUTLET STABILIZATION STRUCTURE CALCULATIONS
CG773	E&SC PLAN - TEMPORARY SLOPE DRAIN DETAILS
CG774	E&SC PLAN - SEDIMENT BASIN DETAILS
CG775	E&SC PLAN - SKIMMER DETAILS
CG776	E&SC PLAN - POROUS BAFFLE DETAILS
CG777	E&SC PLAN - SEDIMENT BASIN CALCULATIONS
CG778	E&SC PLAN - SEDIMENT BASIN CALCULATIONS
CG779	E&SC PLAN - SEDIMENT BASIN CALCULATIONS
CG780	E&SC PLAN - SEDIMENT BASIN CALCULATIONS
CG781	E&SC PLAN - SEDIMENT BASIN CALCULATIONS
CG782	E&SC PLAN - SEDIMENT BASIN CALCULATIONS
CG783	E&SC PLAN - SEDIMENT BASIN COORDINATES
CG784	E&SC PLAN - SEDIMENT BASIN COORDINATES
CG785	E&SC PLAN - TEMPORARY DIVERSION DETAILS
	VOLUME 4 - DOWNRANGE CONTINUED
G-001	COVER SHEET - VOLUME 4 OF 4 - DOWNRANGE
GI001	INDEX OF DRAWINGS
GI002	INDEX OF DRAWINGS
GI003	INDEX OF DRAWINGS
CP200	ROAD PROFILES - BASELINE ROAD
CP201	ROAD PROFILES - COURSE ROAD No. 1 STA. 0+00 - 25+00
CP202	ROAD PROFILES - COURSE ROAD No. 1 STA. 25+00 - 48+50
CP203	ROAD PROFILES - COURSE ROAD No. 1 STA. 48+50 - 62+25.64
CP204	ROAD PROFILES - COURSE ROAD No. 2 STA. 0+00 - 25+00
CP205	ROAD PROFILES - COURSE ROAD No. 2 STA. 25+00 - 50+00
CP206	ROAD PROFILES - COURSE ROAD No. 2 STA. 50+00 - 60+90.23 & CROSSOVER ROAD
CP207	ROAD PROFILES - TSR No. 1, 2, & 3
CP208	ROAD PROFILES - TSR No. 4, 5, 6, 7, 8, & 9
CP209	ROAD PROFILES - TSR No. 10, 11, 12, 13 & 14
CP210	ROAD PROFILES - TSR No. 15, 16, & 17 STA. 0+00 - 12+00
CP211	ROAD PROFILES - TSR No. 17 STA. 12+00 - 15+55.34, 18, 19, 20, & 21
CP212	ROAD PROFILES - TSR No. 22, 23, & 24
CP213	ROAD PROFILES - TSR No. 25, 26, 27, & 28 STA. 0+00 - 11+00
CP214	ROAD PROFILES - TSR No. 28 STA. 11+00 - 17+29.70, 29, & 30
CP215	ROAD PROFILES - TSR No. 31, 32, 33, 34, 36, & 37
CP216	ROAD PROFILES - TSR No. 38, 39, 40, & 41
CP217	ROAD PROFILES - TSR No. 42 & 43 STA. 0+00 - 8+00
CP218	ROAD PROFILES - TSR No. 43 STA. 8+00 - 14+34.01, 44, 45, & 46
CP219	ROAD PROFILES - TSR No. 47, 48, & 49
CP220	ROAD PROFILES - TSR No. 50, 51, & 52
CP221	ROAD PROFILES - TSR No. 53, 54, & 55
CP222	ROAD PROFILES - TSR No. 56 & 57
CP223	ROAD PROFILES - TSR No. 58, 59, 60, & 61
CP224	PLAN & PROFILE - MOVING ARMOR TARGET (MAT) - M-01
588	DELETE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. HAIRE
DRAWN BY: J. HAIRE
CHECKED BY: J. MCTIERNAN
SUBMITTED BY: J. DICKSON
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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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

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

INDEX OF DRAWINGS

SHEET ID

GI002

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INDEX OF DRAWINGS CONTINUED

SHEET ID.	TITLE
CP225	PLAN & PROFILE - MOVING ARMOR TARGET (MAT) - M-02
CP226	PLAN & PROFILE - MOVING ARMOR TARGET (MAT) - M-03
CP227	PLAN & PROFILE - MOVING ARMOR TARGET (MAT) - M-04
CP228	PLAN & PROFILE - MOVING ARMOR TARGET (MAT) - M-05
CP229	PLAN & PROFILE - MOVING ARMOR TARGET (MAT) - M-06
CP502	ROAD SECTIONS
CP503	ROAD SECTIONS
CP504	CONCRETE PAVING DETAILS
CP505	CONCRETE PAVING JOINT LAYOUTS
CP506	CONCRETE PAVING JOINT LAYOUTS
CS504	PRECAST CONCRETE BLOCK DETAILS
CS505	DEFILADE DETAILS
CS506	DEFILADE DETAILS
CS507	DEFILADE DETAILS
CS508	REVERSE SLOPE BATTLE POSITION DETAILS
CS509	REVERSE SLOPE BATTLE POSITION DETAILS
CS510	REVERSE SLOPE BATTLE POSITION DETAILS
CS511	STATIONARY ARMOR TARGET DETAILS
CS512	POWER CENTER & STATIONARY ARMOR TARGET w/ POWER CENTER DETAILS
CS513	STATIONARY ARMOR TARGET DETAILS
CS514	MOVING ARMOR TARGET DETAILS
CS515	MOVING ARMOR TARGET DETAILS
CS516	STATIONARY INFANTRY TARGET DETAILS
CS517	STATIONARY INFANTRY TARGET CLUSTER DETAILS
CS518	STATIONARY INFANTRY TARGET CLUSTER DETAILS
CS519	MOVING INFANTRY TARGET DETAILS
CS520	STATIONARY & MOVING INFANTRY TARGET CLUSTER DETAILS
CS521	MACHINE GUN BUNKER DETAILS
CS522	MACHINE GUN BUNKER DETAILS
CS523	TRENCH DETAILS
CS524	TRENCH DETAILS
CS525	CAMERA TOWER DETAILS
CS526	RANGE LIMIT MARKER AND BORESIGHT PANEL DETAILS
CS527	BORESIGHT/SCREENING PAD & SYNC RAMP DETAILS
CS528	DRAINAGE DETAILS
CS529	SLOPED PAVED HEADWALL DETAILS
CS530	SECURITY GATE DETAILS
CS531	FLARED END SECTION DETAILS
CS600	DATA CHARTS - ROADS
CS601	DATA CHARTS - ROADS
CS602	DATA CHARTS - ROADS
CS603	DATA CHARTS - ROADS
CS604	DATA CHARTS - ROADS
CS605	DATA CHARTS - ROADS
CS606	DATA CHARTS - ROADS
CS607	DATA CHARTS - ROADS
CS608	DATA CHARTS - ROADS
CS609	DATA CHARTS - ROADS
CS610	DATA CHARTS - MATS
CS611	DATA CHARTS - CONSTRUCTION LIMITS COORDINATES
CS612	DATA CHARTS - SATS AND POWER CENTERS
CS613	DATA CHARTS - SITS & MITS
CS614	DATA CHARTS - DEFILADES & REVERSE SLOPE BATTLE POSITION
CS615	DATA CHARTS - MISCELLANEOUS
CU200	CULVERT PROFILES
CU201	CULVERT PROFILES
CU202	CULVERT PROFILES
CU203	CULVERT PROFILES
CU204	CULVERT PROFILES
CU205	CULVERT PROFILES
CU206	CULVERT PROFILES
CU207	CULVERT PROFILES
CU208	CULVERT PROFILES
CU209	CULVERT PROFILES
CU210	CULVERT PROFILES
CU211	CULVERT PROFILES
CU212	CULVERT PROFILES
CU213	CULVERT PROFILES
CU214	CULVERT PROFILES
CU215	CULVERT PROFILES
CU600	DATA CHARTS - CULVERTS
S-011	GENERAL NOTES
S-012	GENERAL NOTES (CONTINUED)
S-501	TYPICAL DETAILS
SB100	SINGLE-STORY FACADE FOUNDATION AND FLOOR PLANS
SB110	URBAN CLUSTER FOUNDATION AND FLOOR PLANS
SB301	SECTIONS
SF110	URBAN CLUSTER ROOF FRAMING PLANS
SF301	SECTIONS
AE001	ARCHITECTURAL LEGEND AND SYMBOLS
AE100	SINGLE-STORY FACADE FLOOR PLANS
AE110	URBAN CLUSTER MISCELLANEOUS FLOOR PLANS
AE200	SINGLE-STORY FACADE EXTERIOR ELEVATIONS
AE210	URBAN CLUSTER EXTERIOR ELEVATIONS
AE211	URBAN CLUSTER EXTERIOR ELEVATIONS
AE300	SINGLE-STORY FACADE SECTIONS AND DETAILS
AE310	URBAN CLUSTER SECTIONS AND DETAILS
AE510	URBAN CLUSTER DETAILS
ES002	OVERALL ELECTRICAL SITE PLAN
ES135	ELECTRICAL SITE PLAN
ES136	ELECTRICAL SITE PLAN
ES137	ELECTRICAL SITE PLAN
ES138	ELECTRICAL SITE PLAN
ES139	ELECTRICAL SITE PLAN
ES140	ELECTRICAL SITE PLAN
ES141	ELECTRICAL SITE PLAN
ES142	ELECTRICAL SITE PLAN
686	DELETE

SHEET ID.	TITLE
ES143	ELECTRICAL SITE PLAN
ES505	EMPLACEMENT DETAILS - STATIONARY INFANTRY TARGET (SIT)
ES506	EMPLACEMENT DETAILS - STATIONARY INFANTRY TARGET (SIT) RUBBER FLAP
ES507	EMPLACEMENT DETAILS - STATIONARY INFANTRY TARGET (SIT) CLUSTERS
ES508	EMPLACEMENT DETAILS - STATIONARY INFANTRY TARGET (SIT) 3-MAN SIT PLAN AND CLUSTER
ES509	EMPLACEMENT DETAILS - MOVING INFANTRY TARGET(MIT)
ES510	EMPLACEMENT DETAILS - STATIONARY ARMOR TARGET (SAT)
ES511	EMPLACEMENT DETAILS - MOVING ARMOR TARGET (MAT)
ES512	EMPLACEMENT DETAILS - MOVING ARMOR TARGET (MAT) EMPLACEMENT PLAN AND DETAILS
ES513	EMPLACEMENT DETAILS
ES514	BUILDING FACADE FLOOR PLANS
ES515	ELECTRICAL FACADE DETAILS
ES516	DOWNRANGE POWERCENTER EMPLACEMENT DETAILS
ES517	TYPICAL DOWNRANGE POWERCENTER PLAN WITH STATIONARY ARMOR TARGET (SAT)
ES518	DOWNRANGE POWERCENTER PLAN WITH STATIONARY ARMOR TARGET (SAT) PC09
ES519	ELECTRICAL DETAILS - RANGE LIMIT MARKER
ES520	ELECTRICAL DETAILS - BORESIGHT
ES521	ELECTRICAL DETAILS - FLIR CAMERA TOWER
ES522	ELECTRICAL TRENCHING DETAILS
ES606	ELECTRICAL SINGLE LINE DIAGRAM
ES607	ELECTRICAL TARGET RISER DIAGRAM
ES608	ELECTRICAL TARGET PANEL SCHEDULES
ES609	ELECTRICAL TARGET PANEL SCHEDULES
ES610	ELECTRICAL TARGET PANEL SCHEDULES
TN400	ENLARGED DOWNRANGE COMMUNICATIONS SITE PLAN
TN503	EMPLACEMENT DETAILS - COPPER DATA CABLE BREAKOUT BOX (DBB-C)
TN504	EMPLACEMENT DETAILS - FIBER DATA CABLE BREAKOUT BOX (DBB-F)
TN505	EMPLACEMENT DETAILS - MASTER TARGET DATA PANEL TWISTED PAIR CABLES
TN506	EMPLACEMENT DETAILS - FACADE MASTER TARGET DATA PANEL TWISTED PAIR CABLES
TN507	EMPLACEMENT DETAILS - TARGET DATA PANEL CAT.CAT.6 CABLES
TN508	COMMUNICATIONS OUTLET DETAILS
TN509	COMMUNICATIONS CABLE TERMINATIONS
TN604	RANGE DATA SINGLE LINE DIAGRAM

SHEET ID.	TITLE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: J. HAIRE
DRAWN BY: J. HAIRE
CHECKED BY: J. MCTIERNAN
SUBMITTED BY: DISCIPLINE
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.: -
CATEGORY CODE: 175-45-01
FILE NAME: -

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 2 & 4 - DOWNRANGE

INDEX OF DRAWINGS

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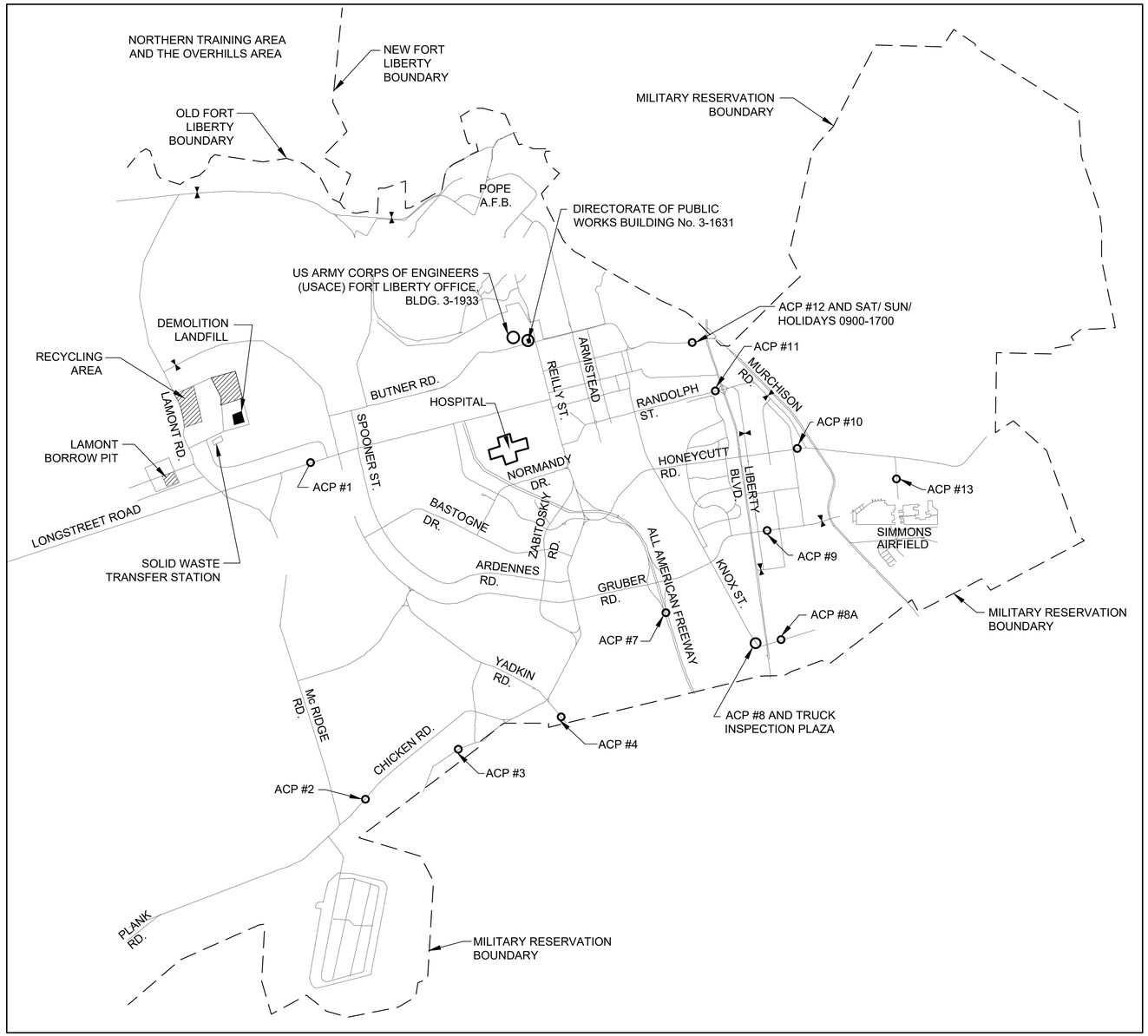
GI003

READY TO ADVERTISE (RTA)



FORT LIBERTY CANTONMENT

N.T.S.

POST ACCESS CONTROL POINT (ACP) PLAN

ACP NUMBERS 1, 4, 7, 8, 11, & 13 OPERATES 24 HRS/ 7 DAYS A WEEK = ALL PROCESSING

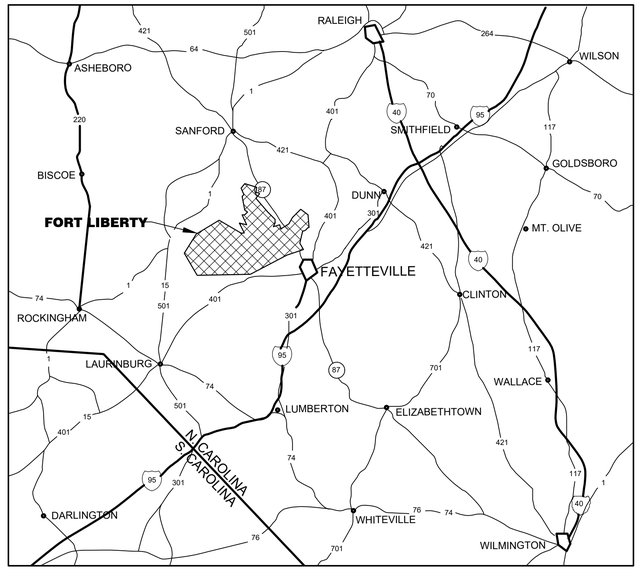
ACP NUMBERS 3, 9, & 10 OPERATES 24 HRS/ 7 DAYS A WEEK = DECALS ONLY

ACP NUMBERS 2, 8A, & 12 OPERATES 16 HRS/ 5 DAYS A WEEK = DECALS ONLY

TRUCK PLAZA OPERATES 24 HRS/ 7 DAYS A WEEK = TRUCK INSPECTION PLAZA

▶◀ = ROAD CLOSED WITH GATES OR BARRIERS

ALL VEHICLES ARE SUBJECT TO SEARCH, REGARDLESS OF WHETHER THEY HAVE A DECAL, HAVE A TEMPORARY PASS, OR HAVE NEITHER. ALL CONTRACTORS COMMERCIAL OR PRIVATELY OWNED VEHICLES REQUIRE VEHICLE REGISTRATION.



VICINITY MAP

N.T.S.

LANDFILL DISPOSAL REQUIREMENTS

1. THE FORT LIBERTY LAMONT CONSTRUCTION AND DEMOLITION (C&D) LANDFILL IS CLOSED AND WILL NOT BE ACEPTING ANY C&D WASTE AND ASBESTOS WASTE.

2. ALL CONTRACTORS SHALL USE A STATE CERTIFIED C&D LANDFILL OR SUB TITLE "D" LANDFILL OFF FORT LIBERTY FOR THE DISPOSAL OF C&D WASTE, ASBESTOS WASTE, CREOSOTE WOOD (EX: TELEPHONE POLES, BRIDGES) AND ANY CONCRETE OR SOIL REMOVED FROM A CONSTRUCTION SITE ON FORT LIBERTY.

3. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN DATA OF ALL WASTE DISPOSED AND MATERIALS RECYCLED OFF FORT LIBERTY. THE DEPARTMENT OF THE ARMY (DA) AND THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NC DEQ) REQUIRES MONTHLY AND ANNUAL REPORTING OF ALL MATERIALS (WASTE AND RECYCLABLES) MANAGED BY FORT LIBERTY. THE FORT LIBERTY ENVIRONMENTAL COMPLIANCE BRANCH, SOLID WASTE/RECYCLING OFFICE IS RESPONSIBLE FOR COMPILING DATA INTO MONTHLY DIRECTORATE REPORTS TO BE CONSOLIDATED INTO REPORTS FOR THE DA AND THE NC DEQ. A PROVIDED FORM FROM THE SOLID WASTE/RECYCLING OFFICE OR A CONTRACTOR FORM SHALL BE FILLED OUT WITH THE TYPE OF WASTE OR RECYCLED MATERIAL, THE WEIGHT OF THE WASTE/MATERIAL (TONS OR POUNDS) AND THE FACILITY THE WASTE OR RECYCLABLES WERE DELIVERED. THIS INFORMATION IS REQUIRED TO BE SENT TO THE FORT LIBERTY SOLID WASTE/RECYCLING OFFICE BY THE SECOND FRIDAY OF EACH MONTH. EMAIL TO SHAWN C HARDY AT SHAWN.C.HARDY.CIV@ARMY.MIL OR FAX TO (910)396-4188, ATTN: SOLID WASTE OFFICE.

4. THE LAMONT LANDFILL FACILITY WILL ACCEPT RECYCLABLES ITEMS. 1) CONCRETE, BRICK, BLOCK AND ASPHALT - SHALL BE TESTED AND FREE OF ASBESTOS AND LEAD BASED PAINT TO BE RECYCLED - SHALL BE NO LARGER THAN 2' BY 2' PIECES OR EQUIVALENT - SHALL BE MINIMAL AMOUNT OF DIRT IN LOAD - SHALL HAVE NO REBAR PROTRUDING OUT OF THE CONCRETE. 2) TREES AND TREE LIMBS - SHALL BE CUT TO 6 FEET OR LESS IN LENGTH-THE LANDFILL NO LONGER EXCEPTS TREE STUMPS.- IF THE TREE HAS A LARGE DIAMETER (EXAMPLE 3 FT. DIA.) IT SHALL BE CUT TO LENGTHS OF 3 FEET OR LESS - WILL EXCEPT GROUND WOOD CHIPS 3) PALLETS - SERVICEABLE AND NON-SERVICEABLE PALLETS 4) SCRAP STEEL - NO ITEMS REQUIRING DEMILITARIZED ACCEPTED - NO ITEMS WITH LIQUIDS IN THEM 5) SCRAP ALUMINUM - NO ITEMS REQUIRING DEMILITARIZED ACCEPTED - NO ITEMS WITH LIQUIDS IN THEM 6) CARDBOARD TO BE RECYCLED CAN BE TAKEN TO THE FORT LIBERTY RECYCLING CENTER AT BLDG 3-1240, BUTNER AND REILLY ROAD - SHALL BE CLEAN OF PLASTICS, STYROFOAM, WOOD, METAL, TRASH,ETC. YOU CAN CONTACT YOUR GOVERNMENT REPRESENTATIVE OR THE SOLID WASTE/RECYCLING PROGRAM AT 910-366-4530, 910-396-2295 FOR ADDITIONAL GUIDANCE.

5. STATE LAW AND FORT LIBERTY REGULATIONS REQUIRES COVERING OF LOADS OF WASTE OR RECYCLABLES TO PREVENT LITTER.

6. ALL WASTE OR RECYCLABLE MATERIAL LOADS ARE SUBJECT TO BE INSPECTED OF THEIR CONTENTS WHILE BEING PRESENT ON FORT LIBERTY.

7. ALL RECYCLABLE MATERIALS GENERATED FROM A CONSTRUCTION OR DEMOLITION JOB IS PROPERTY OF THE GOVERNMENT UNLESS THE CONTRACT SPECIFIES THAT THE CONTRACT CAN OBTAIN THE MATERIALS. ITEMS SUCH AS HVAC UNITS (FREON REMOVED), AIR HANDLERS, PIPING, METALS BEAMS, MOTORS, VALVES, COPPER WIRE, ETC. THESE TYPES OF ITEMS SHALL BE TRANSPORTED TO THE DPW RECYCLING CENTER (BUTNER AND REILLY ROAD) OR THE RECYCLING AREA AT THE LAMONT LANDFILL FACILITY.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

FORT LIBERTY CANTONEMENT AND VICINITY MAPS

SHEET ID
GI005

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\01 GENERAL\B2EGI005.DWG

PROJECT LOCATION AND HAUL ROUTE

N.T.S.

LEGEND

CONSTRUCTION HAUL ROUTE

LANDFILL HAUL ROUTE

NOTES:

1. SEE SHEET GI005 FOR FORT LIBERTY CANTONMENT & VICINITY MAPS.
2. CONSTRUCTION HAUL ROUTE IS RAEFORD VASS ROAD TO PLANK ROAD TO SANDY GROVE ROAD TO THE PROJECT SITE. THE HAUL ROUTE ACCESSES FORT LIBERTY FROM OFF OF THE INSTALLATION AND DOES NOT REQUIRE GOING THROUGH AN ACP.
3. LANDFILL HAUL ROUTE IS SANDY GROVE ROAD TO PLANK ROAD TO PLANK CUTOFF ROAD TO PREACHERS ROAD TO LONGSTREET ROAD TO LAMONT ROAD.
4. COORDINATE w/ RANGE OPERATIONS (910-432-2900) REGARDING OPERATIONS NEAR AND ON THE RANGE.

N

NORTH CAROLINA PROFESSIONAL 11/20/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

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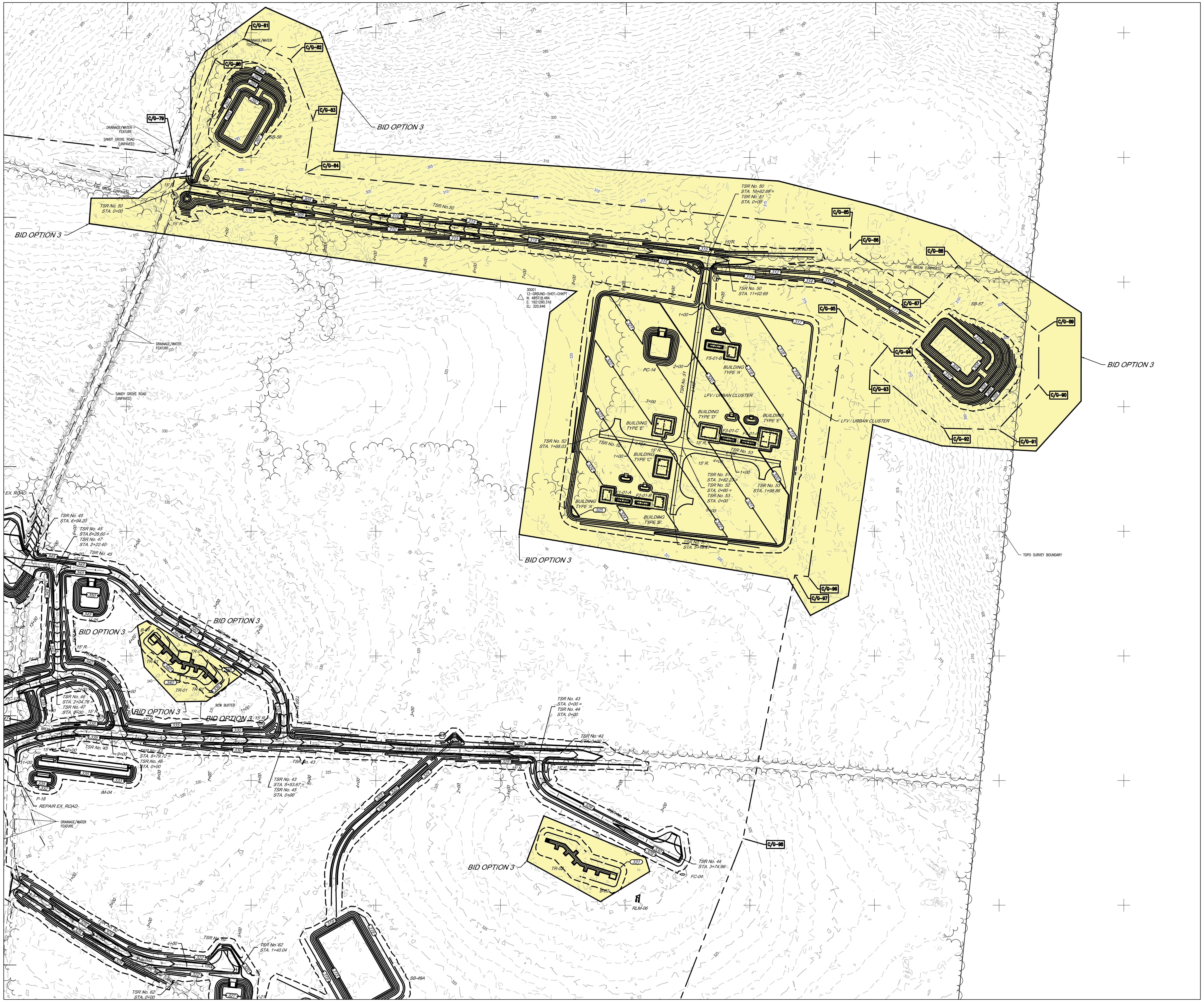
PROJECT LOCATION AND HAUL ROUTE MAPS

SHEET ID

GI006

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\01 GENERAL\B2EGI006.DWG

READY TO ADVERTISE (RTA)



LEGEND

(yellow shaded area)	BID OPTION #3

BID OPTION #3 NOTES:

BID OPTION #3 INCLUDES THE AREA SHOWN INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. FACADES.
2. URBAN CLUSTER BUILDINGS.
3. TRENCHES.
4. MACHINE GUN BUNKERS.
5. TSRs 50 AND 51.
6. SEDIMENT BASINS SB-56 & SB-57.
7. DRAINAGE PIPES 75 & 76.
8. STORM DRAINAGE.
9. EARTHWORK.
10. CLEARING & GRUBBING.
11. EROSION CONTROL.
12. ELECTRICAL/COMMUNICATIONS.

THIS OPTION SHALL INCLUDE ALL WORK IDENTIFIED ON ALL DISCIPLINES OF THE CONTRACT DRAWINGS FOR ITS COMPLETE CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND INCLUDE ALL WORK FROM ALL DISCIPLINES.

GRAPHIC SCALE

100' 50' 0 100' 200'

SCALE: 1" = 100'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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
FILE NAME:
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 178-65-01

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

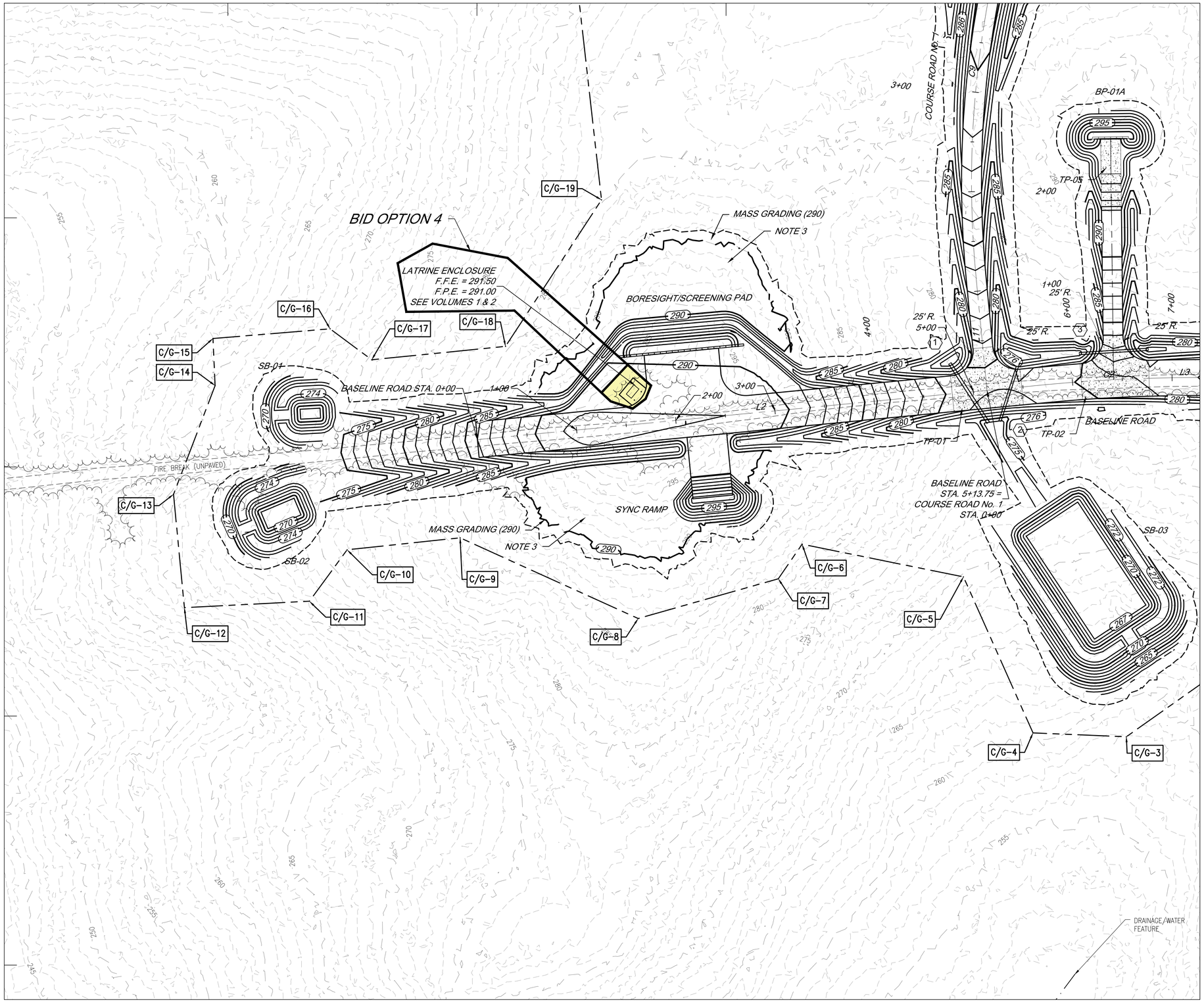
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

BID OPTION #3
SITE PLAN & NOTES

SHEET ID
GI007

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\01 GENERAL\B2EGI007.DWG

READY TO ADVERTISE (RTA)



LEGEND

BID OPTION #4

BID OPTION #4 NOTES:

BID OPTION #4 INCLUDES THE LATRINE ENCLOSURE ALONG BASELINE RD. INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. LATRINE ENCLOSURE.
2. EARTHWORK FOR FOUNDATIONS.

THIS OPTION SHALL INCLUDE ALL WORK IDENTIFIED ON ALL DISCIPLINES OF THE CONTRACT DRAWINGS FOR ITS COMPLETE CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND INCLUDE ALL WORK FROM ALL DISCIPLINES. SEE VOLUMES 1 & 2 FOR LATRINE ENCLOSURE DESIGN.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-45-01
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 96182
VOLUMES 3 & 4 - DOWNRANGE

BID OPTION #4
SITE PLAN & NOTES

SHEET ID

GI008

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28153\76 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\01 GENERAL\B2EGI008.DWG

LEGEND

	VEGETATION LIMITS
Ⓟ	POWER POLE
C	COMMUNICATIONS PEDESTAL
	GUY WIRE
	SIGN
OHP	OVERHEAD ELECTRICAL LINE
	SURVEY CONTROL POINT
	FENCE
	ROAD CENTERLINE
	PAVED ROAD
	UNPAVED ROAD/FIRE BREAK
395	MAJOR CONTOUR W/ LABEL
	MINOR CONTOUR
400.00	SPOT ELEVATION
	PLANTS, T&ES
SD	STORM DRAIN
	DRAINAGE/WATER FEATURE
	WETLANDS

CHKPT	CHECK POINT
CMP	CORRUGATED METAL PIPE
CNR	CORNER
COMMS	COMMUNICATIONS
CONC	CONCRETE
E	EASTING
EL	ELEVATION
INV	INVERT
N	NORTHING
PERM	PERMANENT
PID	PERMANENT IDENTIFIER
RCP	REINFORCED CONCRETE PIPE
T&ES	THREATENED & ENDANGERED SPECIES
TYP	TYPICAL

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-2815376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\02 SURVEY\000 GENERAL\B2EV-001.DWG

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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 #6162
VOLUMES 3 & 4 - DOWNRANGE

EXISTING LEGEND

SHEET ID

V-001

READY TO ADVERTISE (RTA)

SURVEY NOTES:

1. PREPARED BY

SAM, LLC.
4801 SOUTHWEST PARKWAY, BUILDING TWO, SUITE 250
AUSTIN, TX 78735
TX FIRM #10064300 (512) 447-0575

2. NARRATIVE

THIS IMAGERY AND LIDAR WERE COLLECTED SIMULTANEOUSLY AND PROCESSED TO SUPPORT A PROJECT CONTRACTED WITH POLY, INC. LIDAR WAS THE PRIMARY ELEVATION SOURCE FOR SUBSEQUENT TOPOGRAPHIC MAPPING. IMAGERY AND LIDAR WERE COLLECTED USING DIRECT GEOREFERENCING SYSTEMS THAT EMPLOY IMU (INERTIAL MEASUREMENT UNIT) AND GPS TECHNOLOGY TO SOLVE FOR PRECISE DATA LOCATION AND ORIENTATION. IMAGERY AND LIDAR WERE COLLECTED USING A RIEGL VQ-1560II SYSTEM.

THE IMAGERY AND LIDAR WERE PROCESSED THROUGH AN EXTERIOR ORIENTATION REFINEMENT PROCESS TO REMOVE ANY BIAS IN THE EXTERIOR ORIENTATIONS. GROUND CONTROL POINTS SURVEYED IN THE FIELD WERE MEASURED AND AN ADJUSTMENT PERFORMED TO IMPROVE THE DATA ACCURACY. A TOTAL OF 5 SURVEY CONTROL POINTS WERE USED TO CONTROL THE AERIAL MAPPING. ALL OF THE POINTS WERE USED IN HORIZONTAL AND VERTICAL CONTROL ANALYSIS AND HAD THEIR PHOTO COORDINATES MEASURED ON EACH IMAGE ON WHICH THEY APPEARED. IN ADDITION TO THESE, 8 GROUND TRUTHING POINTS WERE ALSO USED TO FURTHER ANALYZE VERTICAL ACCURACY.

UPON COMPLETION OF ALL MEASUREMENTS, AN ADJUSTMENT WAS PERFORMED TO DETERMINE FINAL, REFINED EXTERIOR ORIENTATIONS AND ANY NECESSARY COORDINATE BIAS REMOVED. THE RESULT WAS A REFINED LIDAR POINT CLOUD AND AERIAL PHOTOGRAPHY IN PRECISE ALIGNMENT WITH EACH OTHER AND WITH THE GROUND CONTROL DATA, FROM WHICH SUBSEQUENT TOPOGRAPHIC MAPPING AND ORTHOPHOTO PRODUCTS WERE DERIVED.

THE FINAL ADJUSTMENT PASSED A QUALITY CONTROL CHECK SO A FINAL OUTPUT WAS ACCEPTED AND THE DATA DEEMED SUITABLE TO GENERATE MAPPING TO SUPPORT AN ABSOLUTE HORIZONTAL AND VERTICAL ACCURACY OF 0.5' FOR WELL-DEFINED FEATURES.

3. IMAGERY ACCURACY

THE FINAL ADJUSTMENT RESULTED IN A GROUND CONTROL POINT RMSE; 0.096' 0.064', FOR XY, RESPECTIVELY. COMBINED RMSE IN XY WAS 0.116'.

THE RESULTS ACHIEVED WILL SUPPORT THE PRODUCTION OF 1"=50' DIGITAL PLANIMETRIC MAPPING AND 0.25' GROUND PIXEL RESOLUTION ORTHOPHOTO IMAGERY.

4. LIDAR ACCURACY

THE FINAL ADJUSTMENT RESULTED IN A GROUND CONTROL POINT RMSE OF 0.107' FOR Z FOR WELL-DEFINED POINTS.

THE FINAL ADJUSTMENT RESULTED IN A GROUND TRUTHING POINT RMSE OF 0.061' FOR Z FOR WELL-DEFINED POINTS.

5. PROJECT PARAMETERS

5.1. PROJECT NAME: 59363 --- POLY, INC - FORT BRAGG TRAINING RANGE

5.2. LOCATION: HOKE COUNTY, NC

5.3. SAM PROJECT MANAGEMENT: PROJECT MANAGER: MATT DOTY, CP, CMS-L, GISP

5.4. DIRECT GEO-REFERENCING: LPMASTER V5.5.1.43474, SBET GENERATED WITH POSPAC 8.3.

5.5. EO REFINEMENT: TPHOTO V. 21.002 (WITHIN TERRASOLID SOFTWARE SUITE)

5.6. PHOTOGRAPHY: COLOR, VERTICAL AERIAL PHOTOGRAPHY WAS COLLECTED WITH A PHASE ONE IXM-RS150F CAMERA, SERIAL #: MM010054, AND LIDAR WAS COLLECTED WITH A RIEGL VQ-1560II, SERIAL #: S2224048, AT ~2200' AGL ON MARCH 6, 2021.

5.7. CONTROL

5.7.1. HORIZONTAL DATUM: NAD 83 (2011)
5.7.2. VERTICAL DATUM: NAVD 88 U.S. SURVEY FEET
5.7.3. GEOID MODEL: GEOID 18
5.7.4. COORDINATE SYSTEM: NORTH CAROLINA STATE PLANE
5.7.5. COORDINATE ZONE: NORTH CAROLINA (3200)

5.8. EQUIPMENT: TPHOTO MEASUREMENTS MADE IN MICROSTATION ENVIRONMENT USING AN INTEL® CORE™ I7-4790K CPU @ 4.00 GHZ AND A 64-BIT OPERATING SYSTEM.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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 98162
VOLUMES 3 & 4 - DOWNRANGE

SURVEY NOTES

SHEET ID

V-002

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\000 GENERAL\B2EV-002.DWG

NC VRS CORS STATIONS

NC VRS BASE COORDINATES State Plane Coordinate System - North Carolina 3200 HORIZONTAL DATUM NAD83(2011) -- US Survey Feet			
STATION NAME	**NORTHING**	**EASTING**	**ELEVATION**
PRS545888143191	447419.53	1934765.02	276.50

PHOTO IDENTIFIABLE AERIAL CONTROL – STATE PLANE NAD83/2011

CUMBERLAND COUNTY LiDAR CONTROL (FORT BRAGG TRAINING RANGE) State Plane Coordinate System - North Carolina 3200 HORIZONTAL DATUM NAD83 (CONUS)--US survey Feet VERTICAL DATUM NAVD88--US survey Feet						
STATION NAME	**LATITUDE**	**LONGITUDE**	**NORTHING**	**EASTING**	**ELEVATION**	**ELIPSOID**
1_Target	35.05901	-79.2788	476521.706	1916569.17	222.564	116.322
2_Groundshot	35.05714	-79.23135	475803.828	1930768.318	337.204	230.5
3_PID_cnr_fence	35.05658	-79.23175	475601.522	1930646.735	334.567	227.863
4_TARGET	35.08963	-79.25985	487651.235	1922270.589	279.191	173.026
5_TARGET	35.09423	-79.27708	489337.286	1917119.927	294.488	188.533
6_Ground_Shot	35.05862	-79.2638	476368.899	1921057.893	304.575	198.19
7_TARGET_chkpt	35.07753	-79.26676	483250.837	1920190.197	317.245	211.044
8_Ground_Shot_chkpt	35.08612	-79.27033	486382.392	1919130.288	339.256	233.163
9_Ground_Shot_chkpt	35.06602	-79.27155	479066.533	1918745.25	304.69	198.438
10_Ground_Shot_chkpt	35.07046	-79.26285	480677.678	1921354.516	296.02	189.722
11_Ground_Shot_chkpt	35.07375	-79.27997	481886.488	1916233.126	316.768	210.659
12_Ground_Shot_Chkpt	35.08431	-79.26311	485718.484	1921290.316	320.946	214.767
13_Ground_Shot_Chkpt	35.08678	-79.2766	486626.351	1917256.345	335.612	229.586

PERMANENT MARKERS– STATE PLANE NAD83/2011

CUMBERLAND COUNTY PERMANENT MARKERS (FORT BRAGG TRAINING RANGE) State Plane Coordinate System - North Carolina 3200 HORIZONTAL DATUM NAD83 (2011)--US survey Feet VERTICAL DATUM NAVD88--US survey Feet						
STATION NAME	**LATITUDE**	**LONGITUDE**	**NORTHING**	**EASTING**	**ELEVATION**	**ELIPSOID**
Permanent Marker 1	35.05621	-79.23181	475466.484	1930629.473	330.607	223.901
Permanent Marker 2	35.05902	-79.27077	476517.248	1918972.209	303.658	197.342
Permanent Marker 3	35.07333	-79.26142	481718.004	1921782.986	303.481	197.193
Permanent Marker 4	35.08336	-79.27645	485383.23	1917298.668	334.145	228.087

SAM CONTROL– STATE PLANE NAD83/2011

CUMBERLAND COUNTY SAM LL C CONTROL (FORT BRAGG TRAINING RANGE) State Plane Coordinate System - North Carolina 3200 HORIZONTAL DATUM NAD83 (2011)--US survey Feet VERTICAL DATUM NAVD88--US survey Feet						
STATION NAME	**LATITUDE**	**LONGITUDE**	**NORTHING**	**EASTING**	**ELEVATION**	**ELIPSOID**
SAM CONTROL 5000	35.07621	-79.26576	482770.314	1920489.638	313.508	207.286
SAM CONTROL 5001	35.07521	-79.265	482407.693	1920714.418	315.365	209.127

NOTES:

1. SEE VF120 AND VF121 FOR LOCATION OF CONTROL POINTS.

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME: G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\600 DATA CHARTS\B2\EV-600.DWG

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

SURVEY CONTROL POINT DATA

SHEET ID

V-600

READY TO ADVERTISE (RTA)

POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	1_Target	**CONVERSION:**	US SURVEY FEET
NORTHING:	476521.706	**LATITUDE:**	35.05901	**COMBINED SCALE**	
EASTING:	1916569.170	**LONGITUDE:**	-79.2788	**FACTOR:**	0.9998673450000
ELEVATION:	222.56	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 3 MILES EAST FROM THE INTERSECTION BETWEEN PLANK RD AND KING RD AND ABLOUT 0.5 MILES FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD (DIRT ROAD).

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN GRASS.

CONTROL DIAGRAM AND SKETCH

POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	2_Groundshot	**CONVERSION:**	US SURVEY FEET
NORTHING:	475803.828	**LATITUDE:**	35.05714	**COMBINED SCALE**	
EASTING:	1930768.318	**LONGITUDE:**	-79.23135	**FACTOR:**	0.9998673450000
ELEVATION:	337.20	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 260 FEET FROM THE INTERSECTION BETWEEN PLANK RD AND N VASS RD AND IN A EASTERLY DIRECTION, 50 FEET FROM THE EDGE OF THE DIRT OF N VASS RD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	3_PID_cnr_fence	**CONVERSION:**	US SURVEY FEET
NORTHING:	475601.522	**LATITUDE:**	35.05658	**COMBINED SCALE**	
EASTING:	1930646.735	**LONGITUDE:**	-79.23175	**FACTOR:**	0.9998673450000
ELEVATION:	334.57	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: FENCE POST IS LOCATED APPROXIMATELY 50 FEET FROM THE INTERSECTION BETWEEN PLANK RD AND N VASS RD IN A WESTERLY DIRECTION AND 25 FEET FROM THE EDGE OF THE PAVEMENT OF PLANK RD.

FENCE POST, SOUTH EAST CORNER OF CHAIN LINK FENCE ENCLOSEMENT.

CONTROL DIAGRAM AND SKETCH

NOTES:

1. SEE VF120 AND VF121 FOR LOCATION OF CONTROL POINTS.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\600 DATA CHARTS\B2EV-601.DWG

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
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 99182
VOLUMES 3 & 4 - DOWNRANGE

SURVEY CONTROL POINT DATA

SHEET ID

V-601

READY TO ADVERTISE (RTA)

POLY, INC.

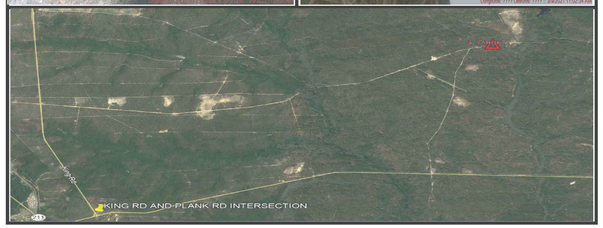
OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	4_TARGET	**CONVERSION:**	US SURVEY FEET
NORTHING:	487651.235	**LATITUDE:**	35.08963	**COMBINED SCALE**	
EASTING:	1922270.589	**LONGITUDE:**	-79.25985	**FACTOR:**	0.9998673450000
ELEVATION:	279.19	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: THE FOLLOWING DIRECTIONS ARE FOR THE LOCATION OF 4_TARGET. FROM THE INTERSECTION BETWEEN KING RD AND PLANK RD HEAD IN A EASTERLY DIRECTION 3.5 MILES AND TURN LEFT TO A DIRT ROAD. CONTNUE ON THE DIRT ROAD FOR 2 MILES. TURN RIGHT AND CONTINUE FOR 0.25 MILES. MONUMENT WILL BE LOCATED BETWEEN THE INTERSECTION OF TWO DIRT ROADS.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN GRASS.

CONTROL DIAGRAM AND SKETCH



POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
TE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	5_TARGET	**CONVERSION:**	US SURVEY FEET
ORTHING:	489337.286	**LATITUDE:**	35.09423	**COMBINED SCALE**	
EASTING:	1917119.927	**LONGITUDE:**	-79.27708	**FACTOR:**	0.9998673450000
LEVATION:	294.49	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: THE FOLLOWING DIRECTIONS ARE FOR THE LOCATION OF 5_TARGET. FROM THE INTERSECTION BETWEEN KING RD AND PLANK RD HEAD IN A EASTERLY DIRECTION 3.5 MILES AND TURN LEFT TO A DIRT ROAD. CONTNUE ON THE DIRT ROAD FOR 2 MILES. TURN RIGHT AND CONTINUE FOR 0.25 MILES, TURN LEFT. CONTINUE 0.8 MILES NORTHWEST AND TURN LEFT IN THE INTERSECTION. MONUMENT WILL BE LOCATED APPROXIMATELY 0.4 MILES WEST FROM THIS INTERSECTION.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	6_Ground_Shot	**CONVERSION:**	US SURVEY FEET
NORTHING:	476368.899	**LATITUDE:**	35.05862	**COMBINED SCALE**	
EASTING:	1921057.893	**LONGITUDE:**	-79.2638	**FACTOR:**	0.9998673450000
ELEVATION:	304.58	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 2000 FEET EAST FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD AND , AND 1.8 MILES FROM THE BETWEEN PLANK RD AND N VASS RD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

NOTES:

1. SEE VF120 AND VF121 FOR LOCATION OF CONTROL POINTS.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 99102
VOLUMES 3 & 4 - DOWNRANGE

SURVEY CONTROL POINT DATA

SHEET ID

V-602

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2\R15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\600 DATA CHARTS\B2EV-602.DWG

POLY, INC.

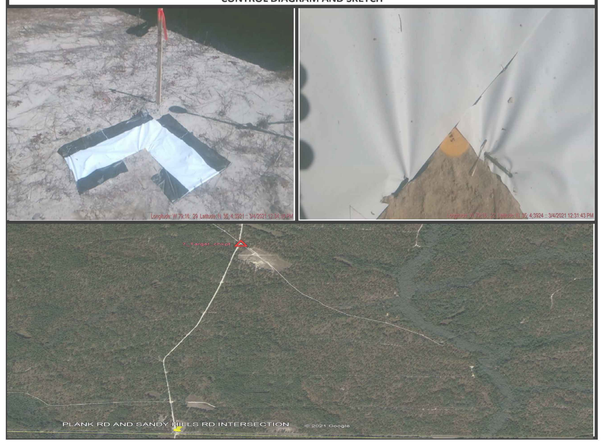
OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	7_TARGET_chkpt	**CONVERSION:**	US SURVEY FEET
NORTHING:	483250.837	**LATITUDE:**	35.07753	**COMBINED SCALE**	
EASTING:	1920190.197	**LONGITUDE:**	-79.26676	**FACTOR:**	0.9998673450000
ELEVATION:	317.25	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 1.3 MILES NORTH FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD AND , AND 25 FEET FROM THE EDGE OF THE DIRT ROAD (RIGHT SIDE OF THE INTERSECTION OF TWO DIRT ROADS, IF HEADING NORTH).

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH



POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
TE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	8_Ground_Shot_chkpt	**CONVERSION:**	US SURVEY FEET
ORTHING:	483250.837	**LATITUDE:**	35.07753	**COMBINED SCALE**	
EASTING:	1920190.197	**LONGITUDE:**	-79.26676	**FACTOR:**	0.9998673450000
LEVATION:	317.25	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 1.3 MILES IN A EASTERLY DIRECTION, STARTING FROM WHERE THE END OF MOORE COUNTY RD MEETS A DIRT ROAD, AND 40 FEET LEFT (LOOKING EAST) FROM THE CENTER OF THE DIRT ROAD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

POLY, INC.

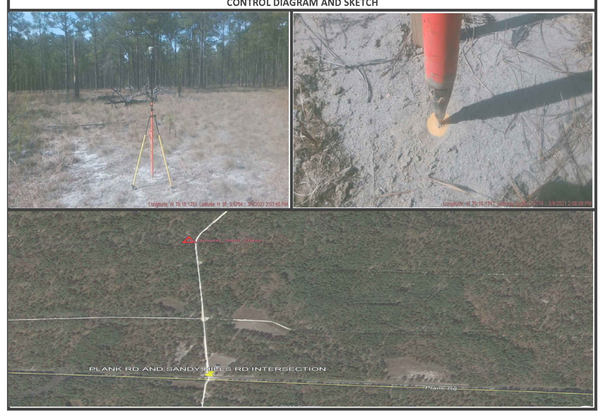
OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	9_Ground_Shot_chkpt	**CONVERSION:**	US SURVEY FEET
NORTHING:	479066.533	**LATITUDE:**	35.06602	**COMBINED SCALE**	
EASTING:	1918745.250	**LONGITUDE:**	-79.27155	**FACTOR:**	0.9998673450000
ELEVATION:	304.69	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 0.5 MILES NORTH FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD AND. TURN LEFT AND HEAD 50 FEET INTO A DIRT ROAD. POINT WILL BE ON THE RIGHT SIDE (LOOKING NORTHWEST).

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH



NOTES:

1. SEE VF120 AND VF121 FOR LOCATION OF CONTROL POINTS.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	178-45-01
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 99162
VOLUMES 3 & 4 - DOWNRANGE

SURVEY CONTROL POINT DATA

SHEET ID

V-603

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\9600 DATA CHARTS\B2EV-603.DWG

POLY, INC.

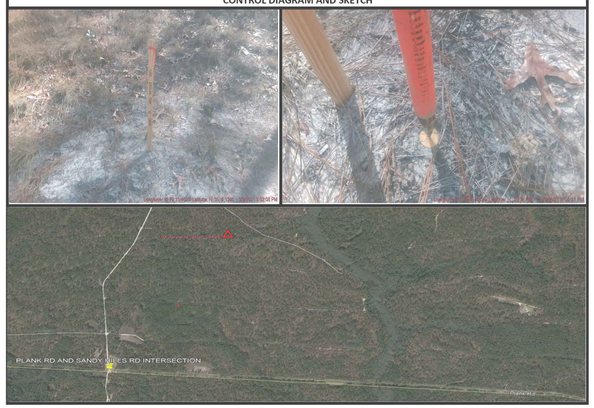
OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	10_Ground_Shot_chkpt	**CONVERSION:**	US SURVEY FEET
NORTHING:	480677.678	**LATITUDE:**	35.07046	**COMBINED SCALE**	
EASTING:	1921354.516	**LONGITUDE:**	-79.26285	**FACTOR:**	0.9998673450000
ELEVATION:	296.02	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 0.85 MILES NORTH FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD AND. TURN RIGHT AND HEAD 1800 FEET INTO A DIRT ROAD. POINT WILL BE ON THE RIGHT SIDE (LOOKING EAST).

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH



POLY, INC.

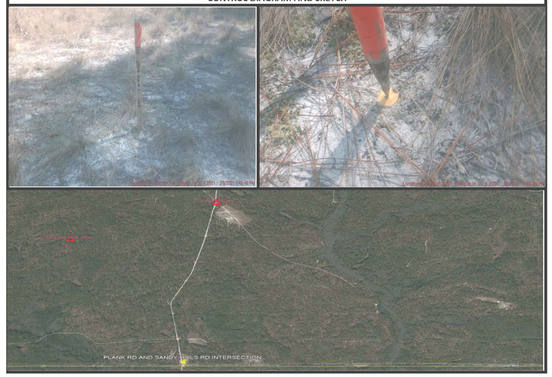
OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	11_Ground_Shot_chkpt	**CONVERSION:**	US SURVEY FEET
NORTHING:	481886.488	**LATITUDE:**	35.07375	**COMBINED SCALE**	
EASTING:	1916233.126	**LONGITUDE:**	-79.27997	**FACTOR:**	0.9998673450000
ELEVATION:	316.77	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 1.25 MILES NORTH FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD AND. TURN LEFT AND HEAD 0.75 MILES INTO A DIRT ROAD. POINT WILL BE ON THE LEFT SIDE (LOOKING WEST), 40 FEET FROM THE CENTER OF THE DIRT ROAD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH



POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	12_Ground_Shot_Chkpt	**CONVERSION:**	US SURVEY FEET
NORTHING:	485718.484	**LATITUDE:**	35.08431	**COMBINED SCALE**	
EASTING:	1921290.316	**LONGITUDE:**	-79.26311	**FACTOR:**	0.9998673450000
ELEVATION:	320.95	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: THE FOLLOWING DIRECTIONS ARE FOR THE LOCATION OF 12_GROUND_SHOT_CHKPT. FROM WHERE THE END OF MOORE COUNTY RD MEETS A DIRT ROAD HEAD NORTH EAST 1.3 MILES. TURN RIGHT INTO A DIRT ROAD AND HEAD APPROXIMATELY 2,300 FEET TO AN OPEN FIELD. THE POINT WILL BE LOCATED ON THE RIGHT SIDE (IF LOOKING EAST) OR SOUTH OF THE DIRT ROAD APPROXIMATELY 120 FEET, WHICH IS ALSO THE ENTRANCE OF THE OPEN FIELD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

NOTES:

1. SEE VF120 AND VF121 FOR LOCATION OF CONTROL POINTS.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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, PH 96162
VOLUMES 3 & 4 - DOWNRANGE

SURVEY CONTROL POINT DATA

SHEET ID

V-604

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\600 DATA CHARTS\B2EV-604.DWG

POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
STATE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	13_Ground_Shot_Chkpt	**CONVERSION:**	US SURVEY FEET
NORTHING:	486626.351	**LATITUDE:**	35.08678	**COMBINED SCALE**	
EASTING:	1917256.345	**LONGITUDE:**	-79.2766	**FACTOR:**	0.9998673450000
ELEVATION:	335.61	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: THE FOLLOWING DIRECTIONS ARE FOR THE LOCATION OF 13_GROUND_SHOT_CHKPT. STARTING AT THE END OF MOORE COUNTY RD, HEAD NORTHWEST 2,100 FEET. TURN RIGHT INTO THE DIRT ROAD AND HEAD IN A EASTERLY DIRECTION APPROXEMATELLY 8270 FEET. POINT WILL BE ON THE RIGHT SIDE OF THE DIRT ROAD (LOOKING EAST), ABOUT 75 FEET FROM THE CENTER OF THE DIRT ROAD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

POLY, INC.

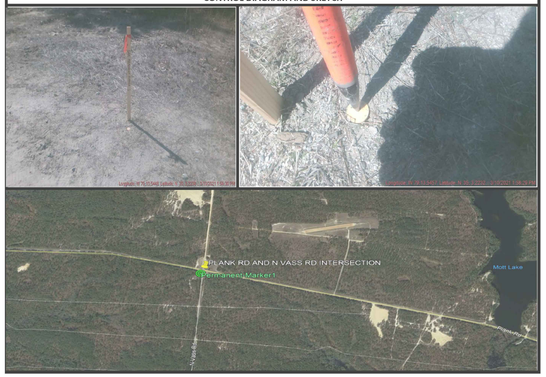
OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
TE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	Permanent Marker 1	**CONVERSION:**	US SURVEY FEET
ORTHING:	475466.484	**LATITUDE:**	35.05621	**COMBINED SCALE**	
EASTING:	1930629.473	**LONGITUDE:**	-79.23181	**FACTOR:**	0.9998673450000
LEVATION:	330.61	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 100 FEET SOUTH FROM THE INTERSECTION BETWEEN PLANK RD AND N VASS RD , AND 40 FEET LEFT (LOOKING NORTH) FROM THE CENTER OF N VASS RD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH



POLY, INC.

OBSERVATION CONTROL SHEET

PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
TE PLANE:	NORTH CAROLINA 3200			**YEAR:**	2021
DATUM:	NAD83	**VERTICAL DATUM:**	NAVD88	**MAP PROJECTION:**	LAMBERT
CITY:	ASHLEY HEIGHTS	**NAME OF STATION:**	Permanent Marker 2	**CONVERSION:**	US SURVEY FEET
ORTHING:	476517.248	**LATITUDE:**	35.05902	**COMBINED SCALE**	
EASTING:	1918972.209	**LONGITUDE:**	-79.27077	**FACTOR:**	0.9998673450000
LEVATION:	303.66	**GEOID:**	12B	**DATE SET:**	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 60 FEET NORTH FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD , AND 50 FEET LEFT (LOOKING NORTH) FROM THE CENTER OF SABDY HILLS RD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

NOTES:

1. SEE VF120 AND VF121 FOR LOCATION OF CONTROL POINTS.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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, PH 96162
VOLUMES 3 & 4 - DOWNRANGE

SURVEY CONTROL POINT DATA

SHEET ID

V-605

READY TO ADVERTISE (RTA)

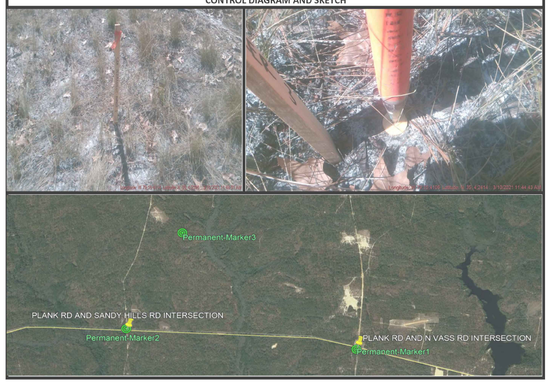
G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\600 DATA CHARTS\B2EV-605.DWG

POLY, INC.					
OBSERVATION CONTROL SHEET					
PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
TE PLANE:	NORTH CAROLINA 3200			YEAR:	2021
DATUM:	NAD83	VERTICAL DATUM:	NAVD88	MAP PROJECTION:	LAMBERT
CITY:	ASHLEY HEIGHTS	NAME OF STATION:	Permanent Marker 3	CONVERSION:	US SURVEY FEET
ORTHING:	481718.004	LATITUDE:	35.07333	COMBINED SCALE	
EASTING:	1921782.986	LONGITUDE:	-79.26142	FACTOR:	0.9998673450000
LEVATION:	303.48	GEOID:	12B	DATE SET:	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 1 MILE NORTH FROM THE INTERSECTION BETWEEN PLANK RD AND SANDY HILLS RD AND. TURN RIGHT AND HEAD 1920 FEET INTO A DIRT ROAD. POINT WILL BE ON THE RIGHT SIDE (LOOKING EAST), 80 FEET FROM THE CENTER OF THE DIRT ROAD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH



POLY, INC.					
OBSERVATION CONTROL SHEET					
PROJECT:	FORT BRAGG TRAINING RANGE AERIAL SURVEY				
TE PLANE:	NORTH CAROLINA 3200			YEAR:	2021
DATUM:	NAD83	VERTICAL DATUM:	NAVD88	MAP PROJECTION:	LAMBERT
CITY:	ASHLEY HEIGHTS	NAME OF STATION:	Permanent Marker 4	CONVERSION:	US SURVEY FEET
ORTHING:	485383.230	LATITUDE:	35.08336	COMBINED SCALE	
EASTING:	1917298.668	LONGITUDE:	-79.27645	FACTOR:	0.9998673450000
LEVATION:	334.15	GEOID:	12B	DATE SET:	3/10/2021

TO REACH: MONUMENT IS LOCATED APPROXIMATELY 1 MILE IN A EASTERLY DIRECTION STARTING FROM WHERE THE END OF MOORE COUNTY RD MEETS A DIRT ROAD, POINT IS ON THE LEFT SIDE (LOOKING NORTHEAST) 30 FEET FROM THE CENTER OF THE ROAD.

MONUMENT IS A 5/8" REBAR WITH YELLOW CAP IN DIRT.

CONTROL DIAGRAM AND SKETCH

NOTES:

1. SEE VF120 AND VF121 FOR LOCATION OF CONTROL POINTS.

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
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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

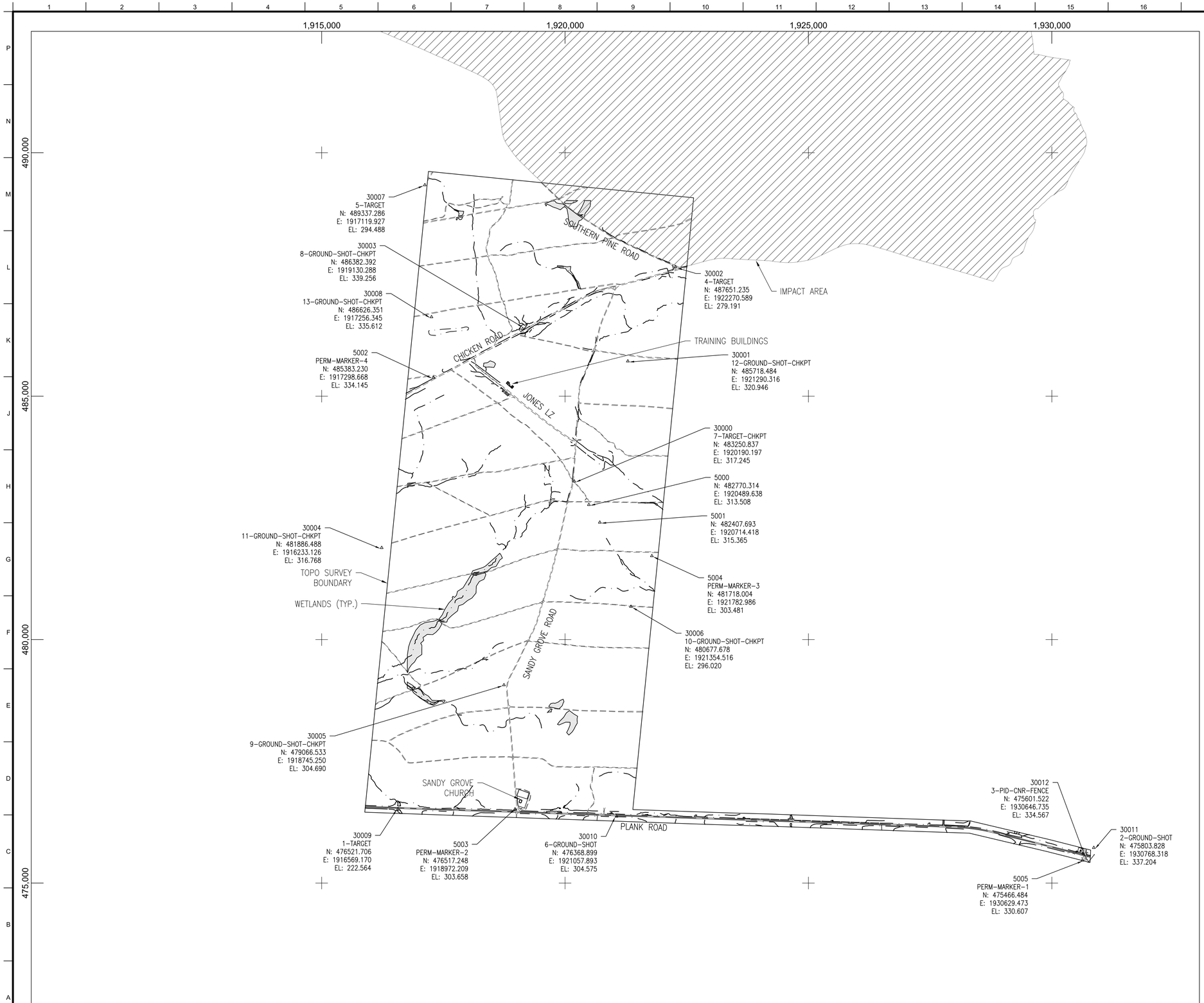
SURVEY CONTROL POINT DATA

SHEET ID

V-606

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\600 DATA CHARTS\B2EV-606.DWG



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.
3. SEE V-600 SERIES OF SHEETS FOR SURVEY CONTROL POINT DATA.

GRAPHIC SCALE

1000' 500' 0 1000' 2000'

SCALE: 1" = 1000'-0"

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

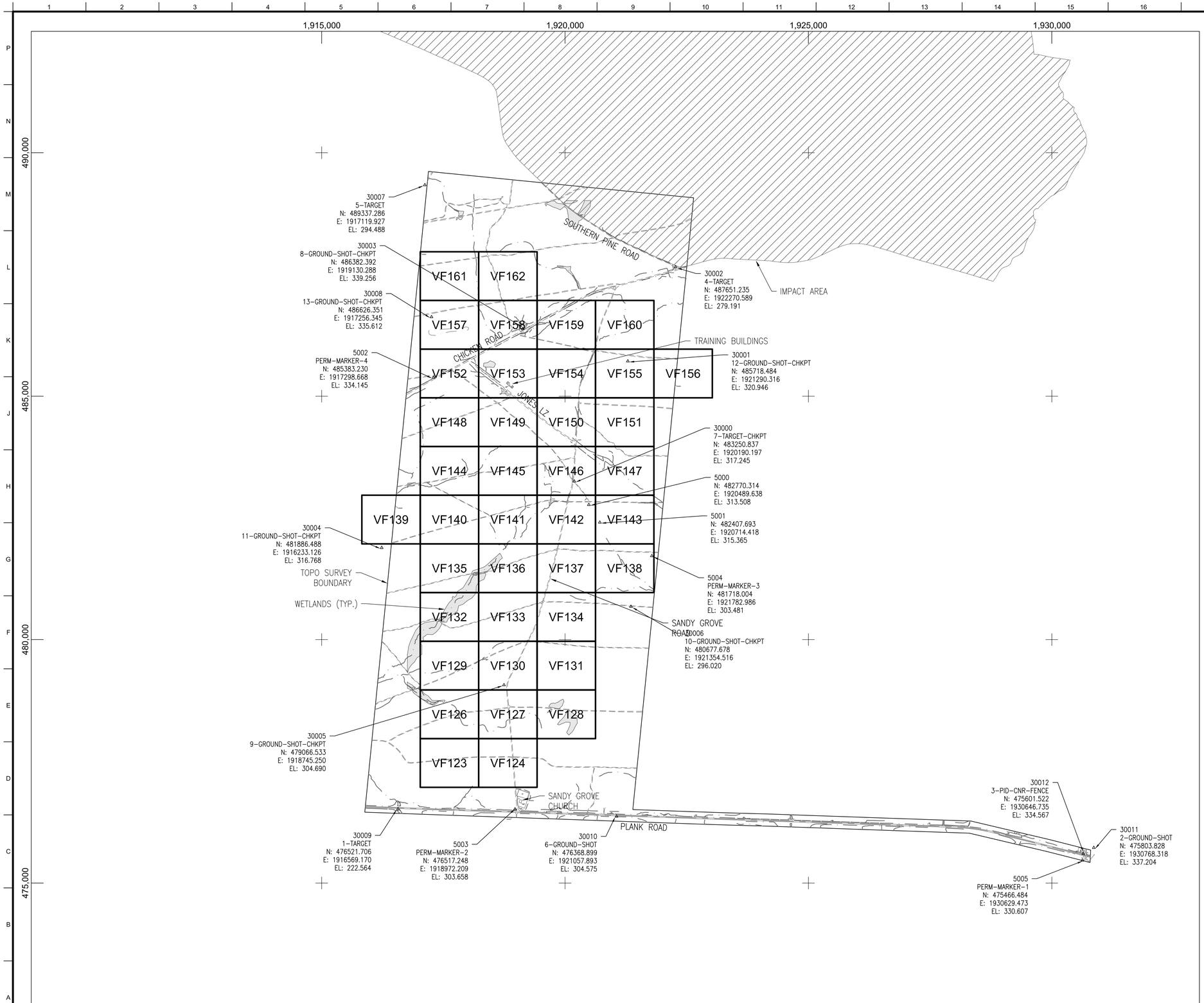
OVERALL EXISTING SITE PLAN

SHEET ID

VF120

READY TO ADVERTISE (RTA)

G:\CLEANS\TUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\X100 PLANS\B2E\VF120.DWG



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.
3. SEE V-600 SERIES OF SHEETS FOR SURVEY CONTROL POINT DATA.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
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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

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1935 HEADLAND AVENUE
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

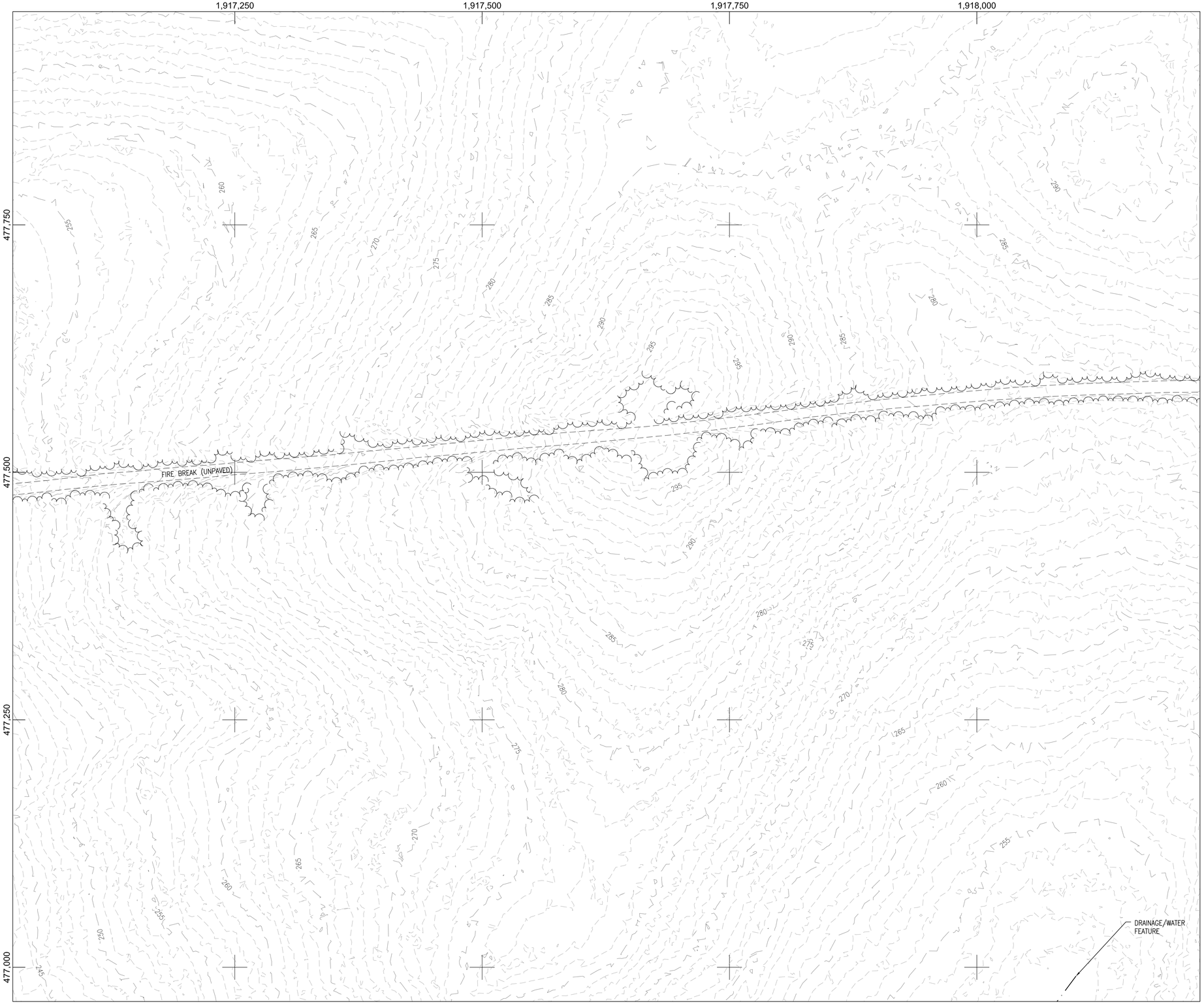
EXISTING SITE REFERENCE KEY PLAN

SHEET ID

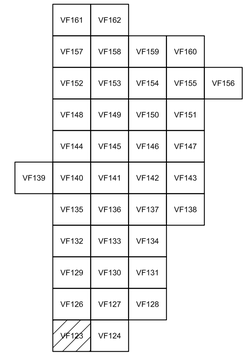
VF121

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2E\VF121.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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

EXISTING SITE PLAN

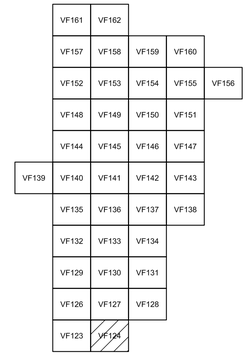
SHEET ID

VF123

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF123.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	170-45-01
FILE NAME:	G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF124.DWG

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

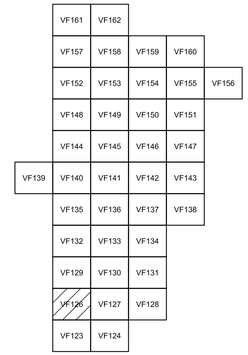
EXISTING SITE PLAN

SHEET ID

VF124

READY TO ADVERTISE (RTA)

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

EXISTING SITE PLAN

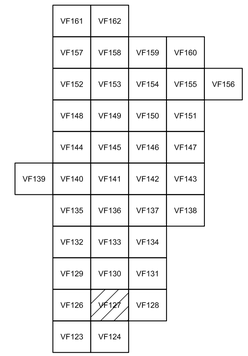
SHEET ID

VF126

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\1100 PLANS\B2EVF126.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 170-45-01
SCALE: ANSI D	FILE NAME:

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

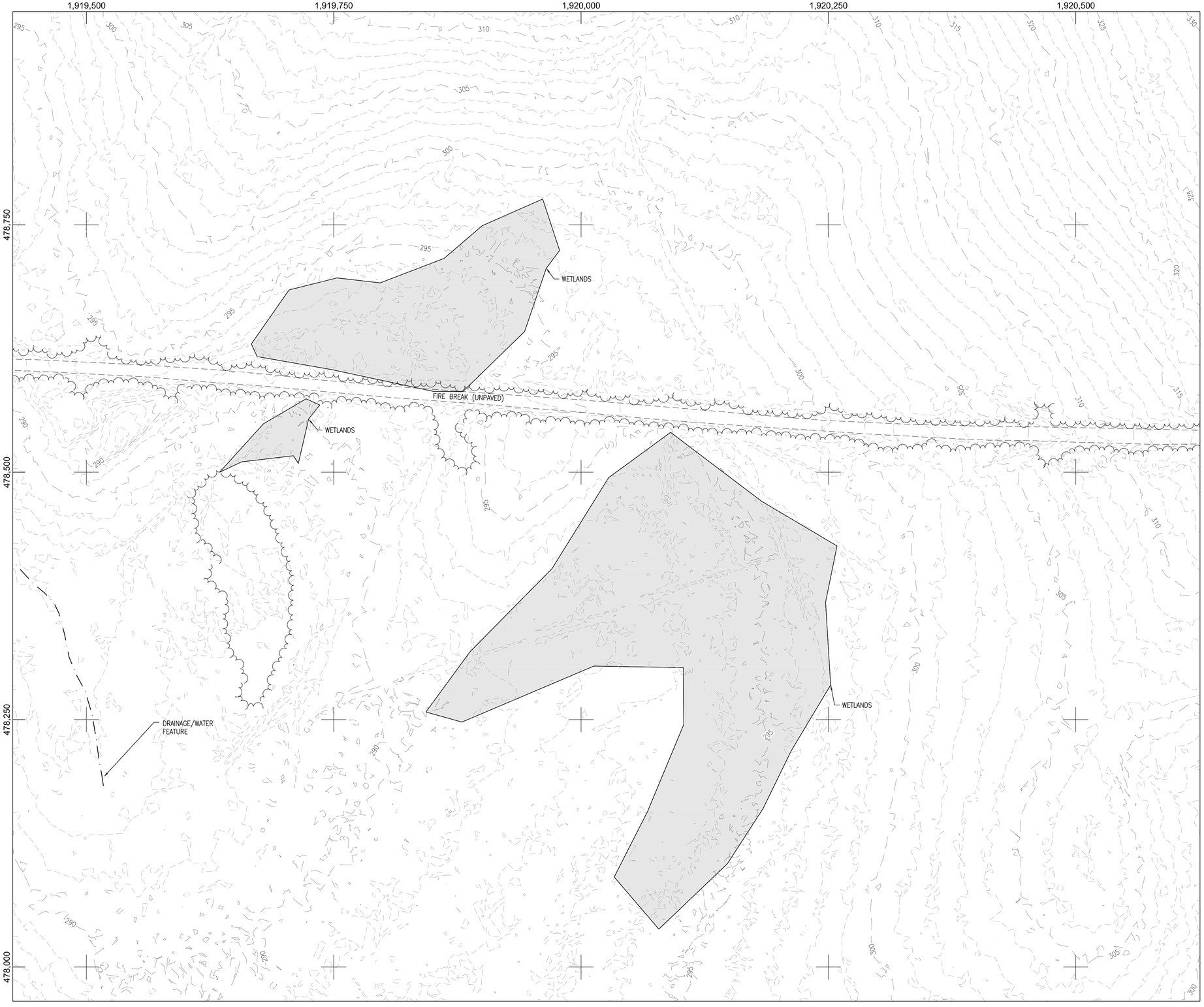
EXISTING SITE PLAN

SHEET ID

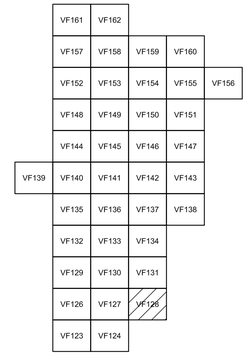
VF127

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF127.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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 96182
VOLUMES 3 & 4 - DOWNRANGE

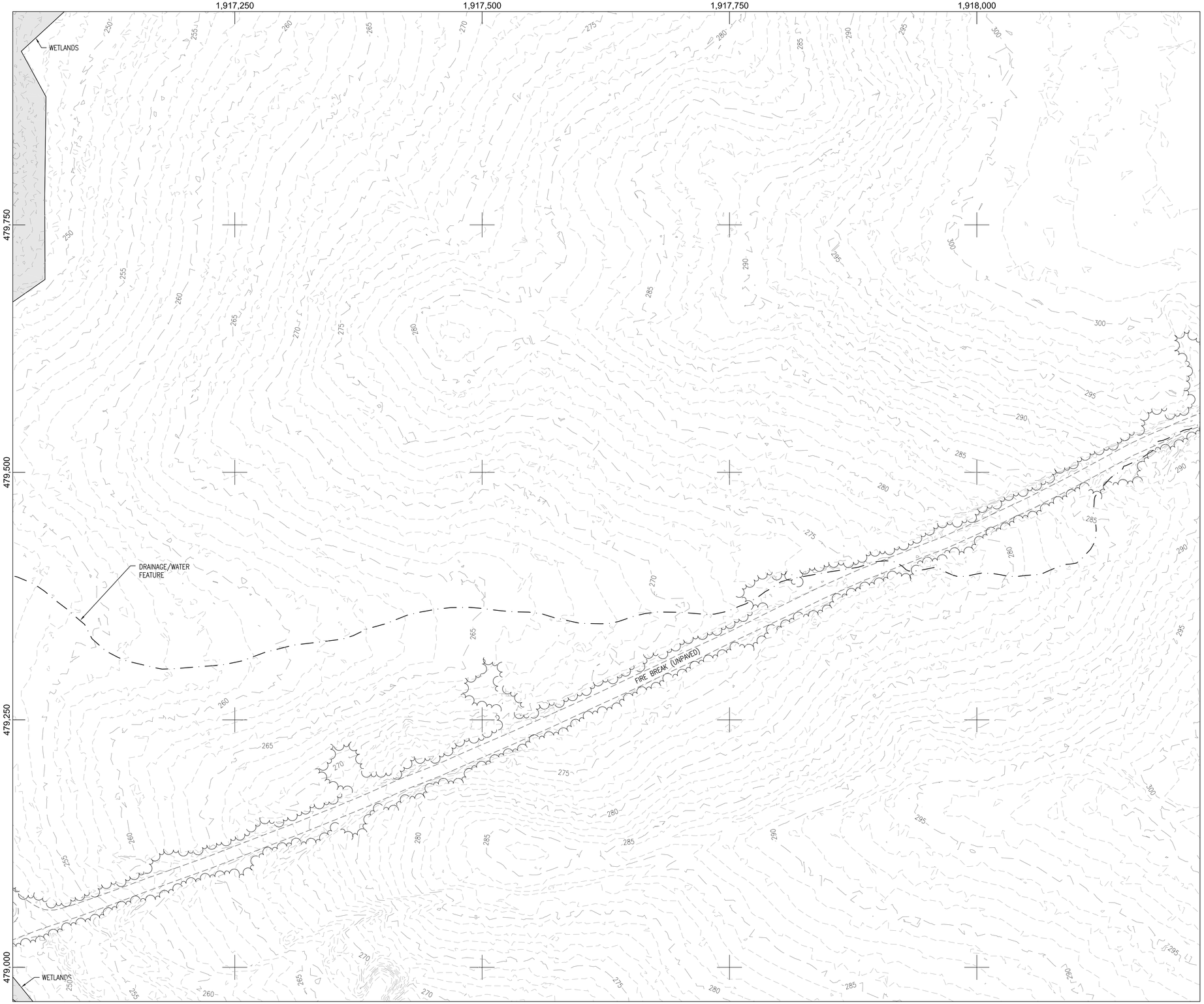
EXISTING SITE PLAN

SHEET ID

VF128

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF128.DWG



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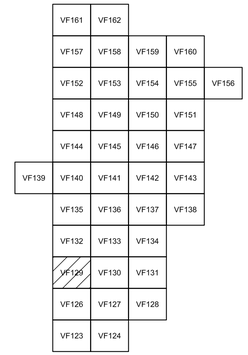

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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

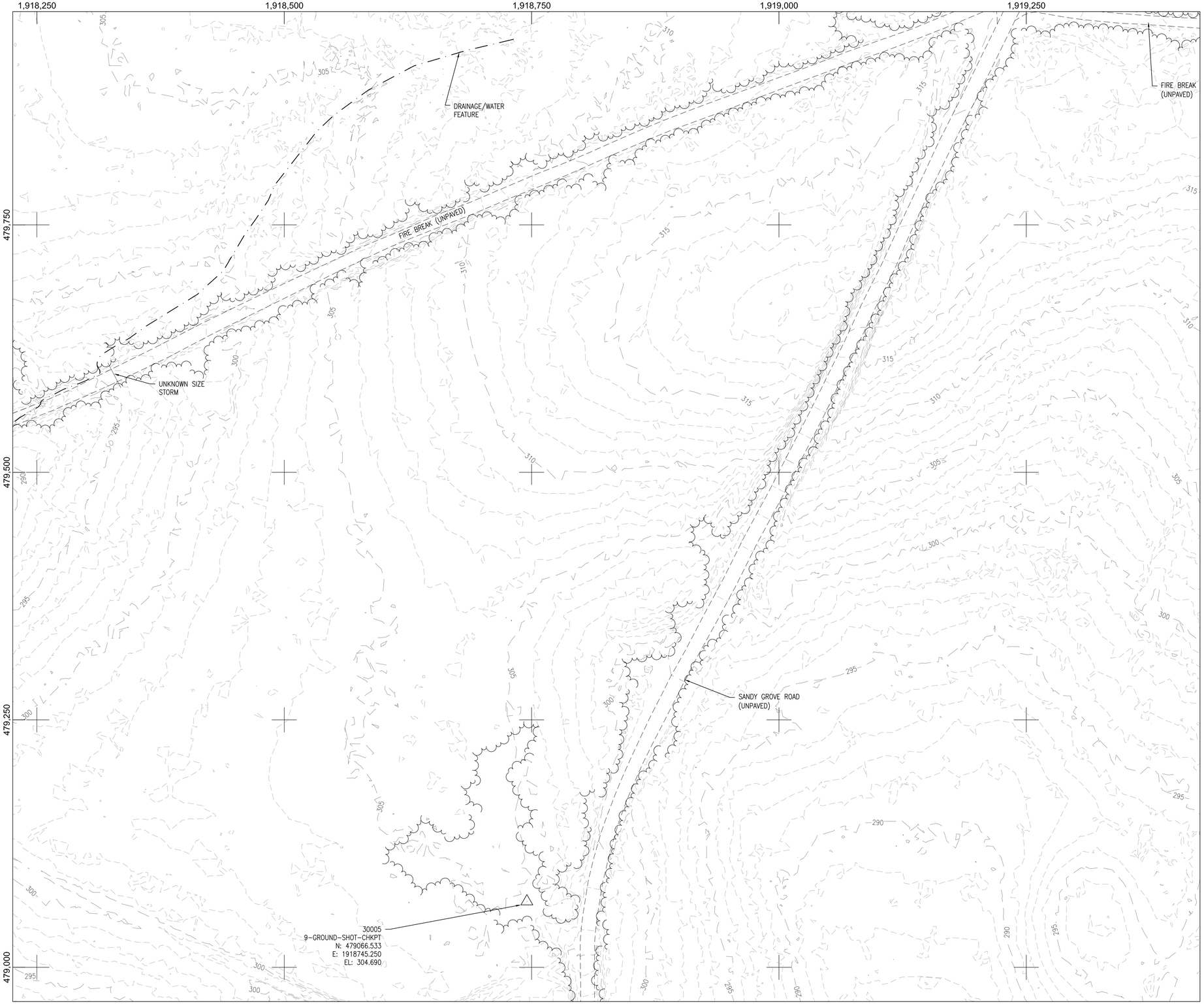
EXISTING SITE PLAN

SHEET ID

VF129

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\1100 PLANS\B2EVF129.DWG



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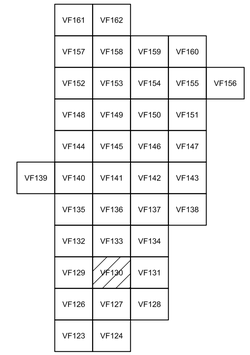

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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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DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

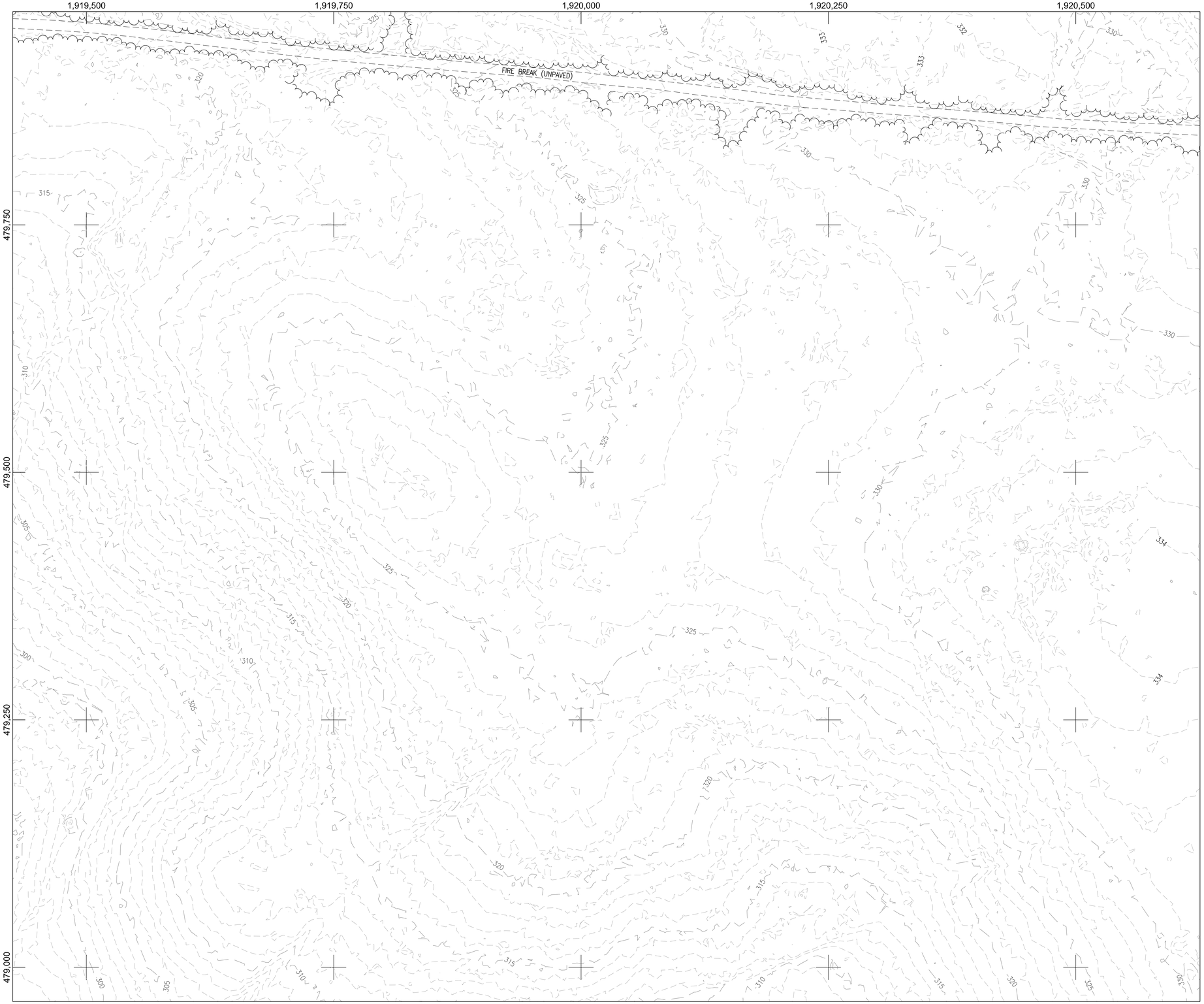
EXISTING SITE PLAN

SHEET ID

VF130

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF130.DWG



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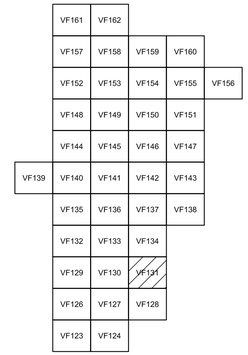

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE:
SIZE: ANSI D	1710-45-01
	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

EXISTING SITE PLAN

SHEET ID

VF131

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\02EVF131.DWG

1,917,250 1,917,500 1,917,750 1,918,000

480,750 480,500 480,250 480,000

DRAINAGE/WATER FEATURE

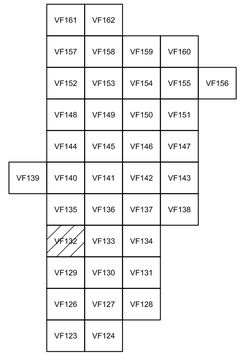
WETLANDS

36" CMP STORM

FIRE BREAK (UNPAVED)

WETLANDS

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

EXISTING SITE PLAN

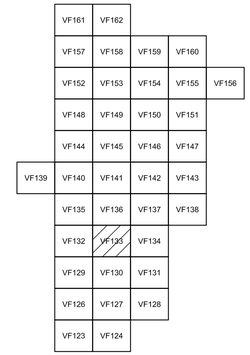
SHEET ID

VF132

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF132.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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

EXITING SITE PLAN

SHEET ID

VF133

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\Y100 PLANS\B2EVF133.DWG

KEY PLAN

VF161	VF162			
VF157	VF158	VF159	VF160	
VF152	VF153	VF154	VF155	VF156
VF148	VF149	VF150	VF151	
VF144	VF145	VF146	VF147	
VF139	VF140	VF141	VF142	VF143
	VF135	VF136	VF137	VF138
	VF132	VF133	VF134	
	VF129	VF130	VF131	
	VF126	VF127	VF128	
	VF123	VF124		

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
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
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

EXISTING SITE PLAN

SHEET ID

VF134

READY TO ADVERTISE (RTA)

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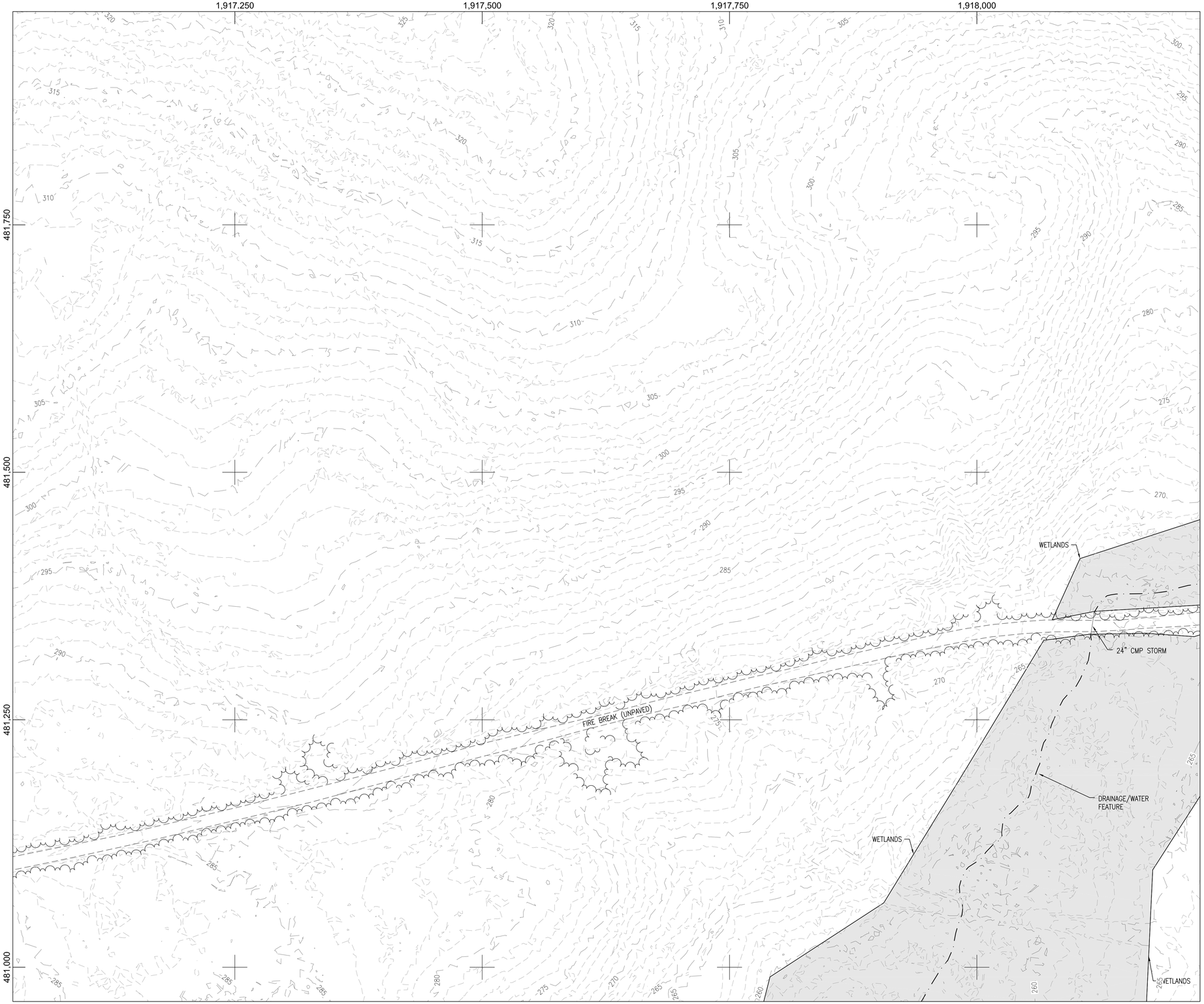
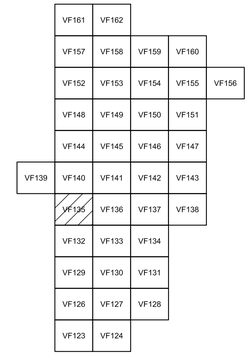


KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

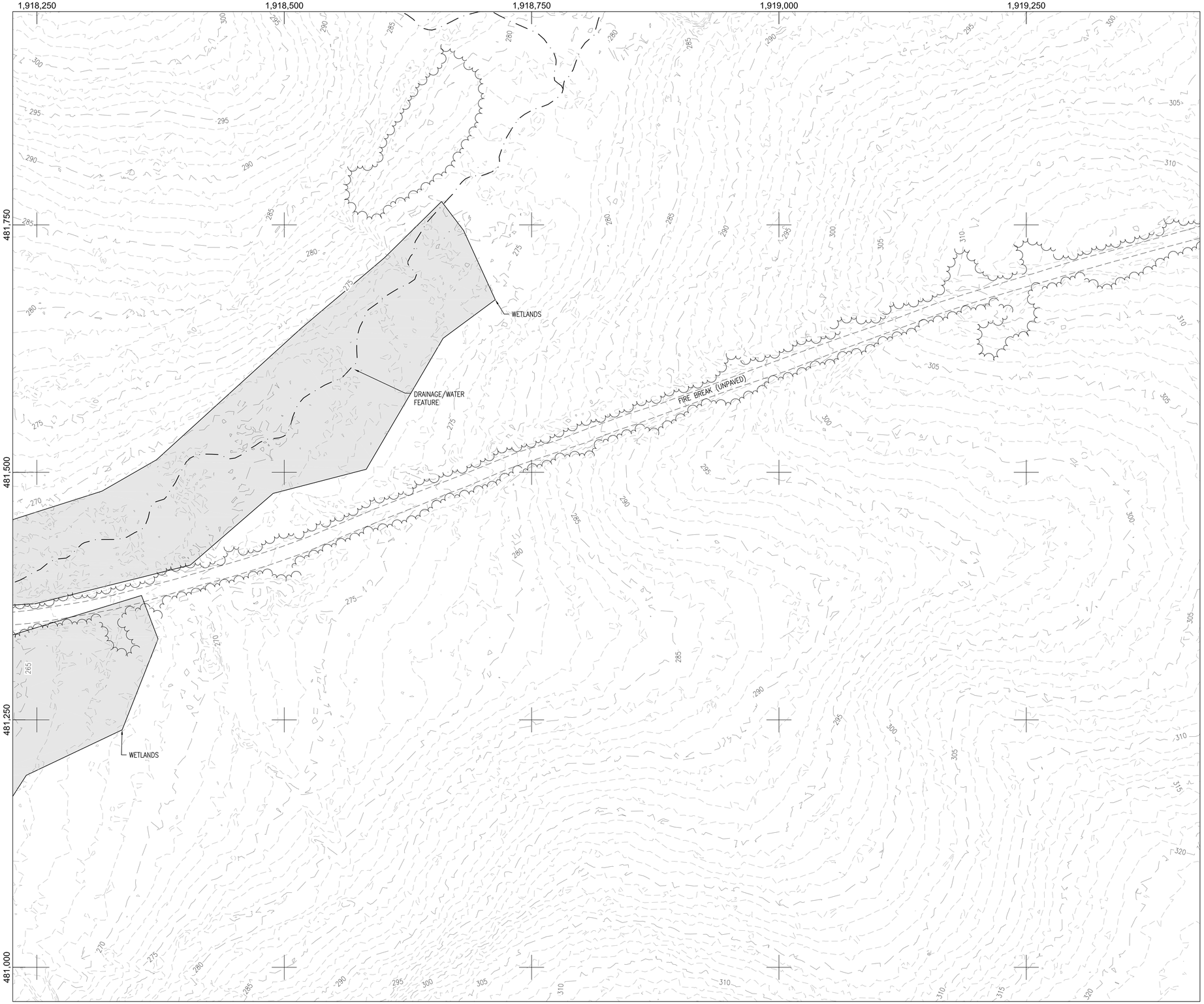
EXISTING SITE PLAN

SHEET ID

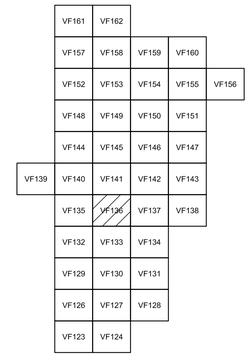
VF135

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\1100 PLANS\B2EVF135.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 95182
VOLUMES 3 & 4 - DOWNRANGE

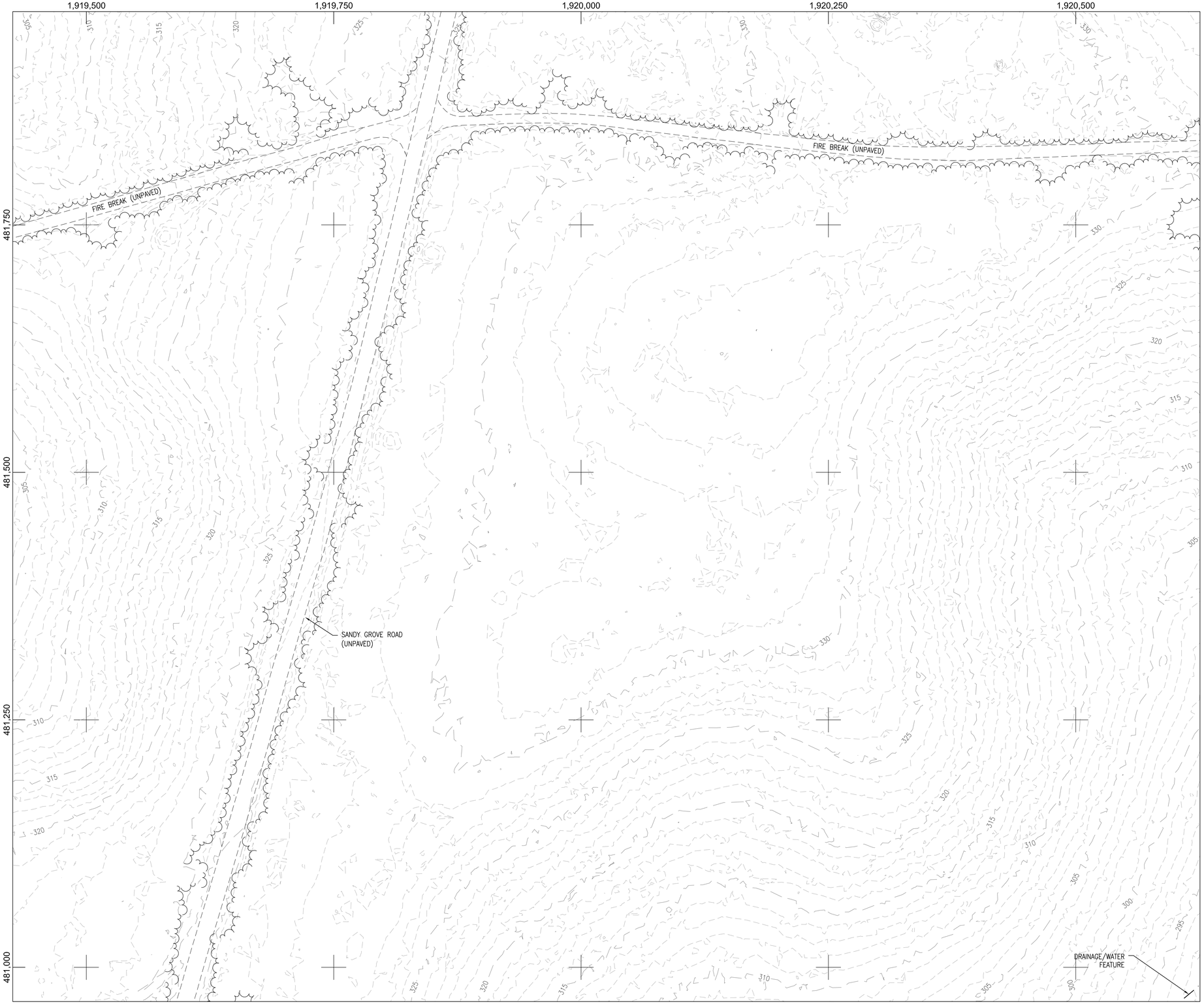
EXISTING SITE PLAN

SHEET ID

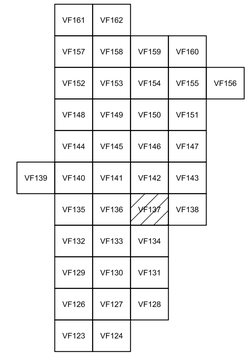
VF136

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF136.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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 86182
VOLUMES 3 & 4 - DOWNRANGE

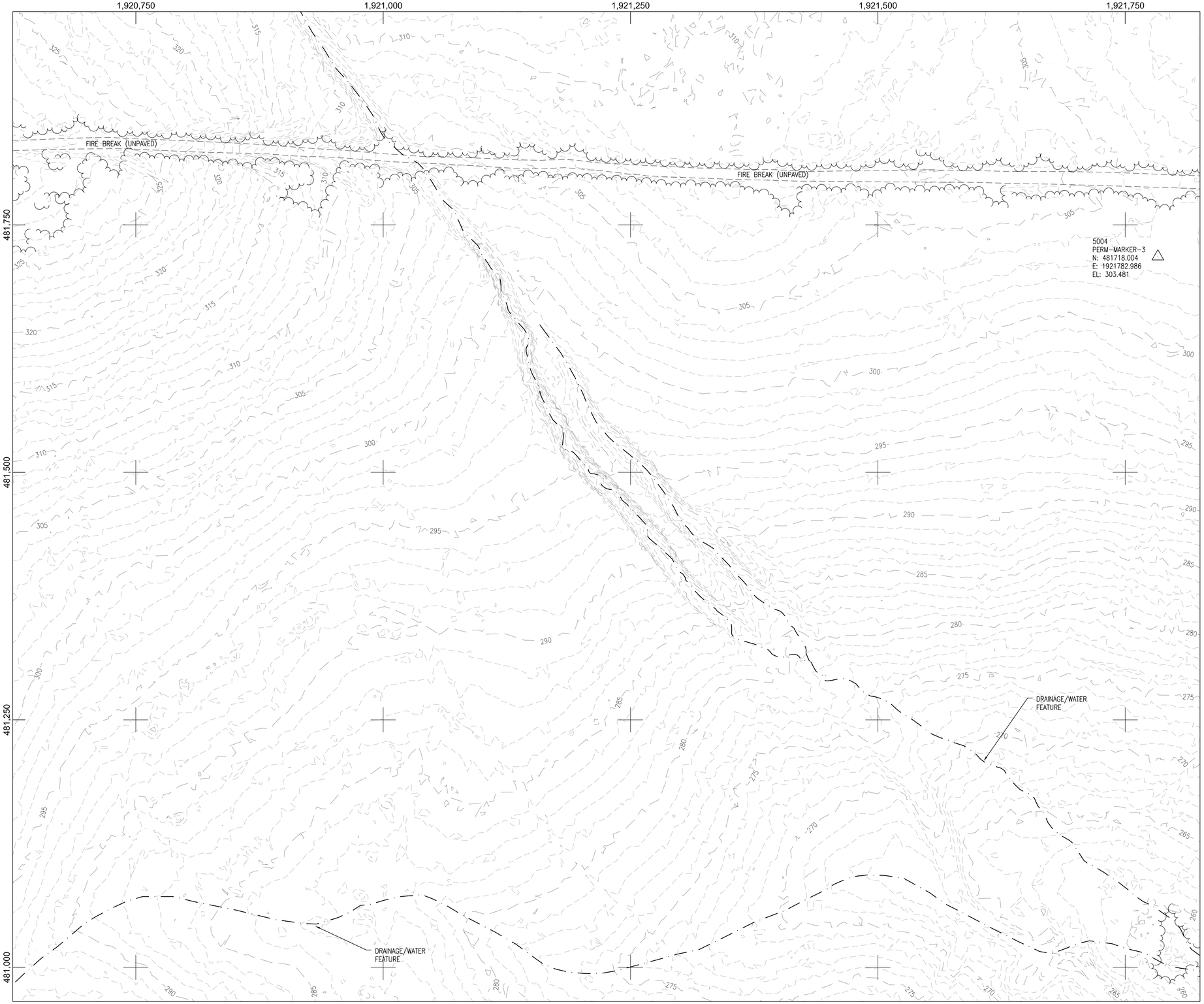
EXISTING SITE PLAN

SHEET ID

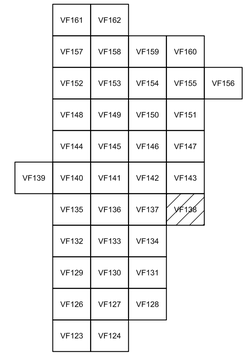
VF137

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF137.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
SIZE: ANSI D	FILE NAME:

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

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

EXISTING SITE PLAN

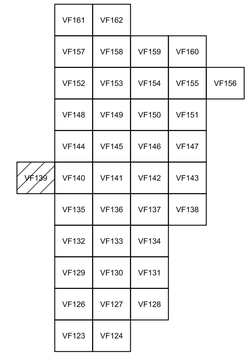
SHEET ID

VF138

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF138.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

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SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

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SUBMITTED BY:	B. BRADLEY
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CONTRACT NO.:	
CATEGORY CODE:	170-45-01
FILE NAME:	

U.S. ARMY CORPS OF ENGINEERS
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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

EXISTING SITE PLAN

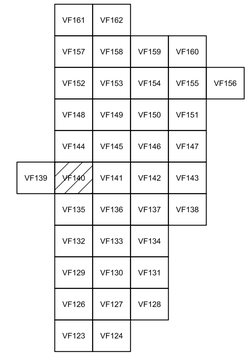
SHEET ID

VF139

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF139.DWG

KEY PLAN



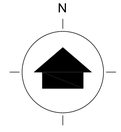
NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"



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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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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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DOTHAN, AL 36303
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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

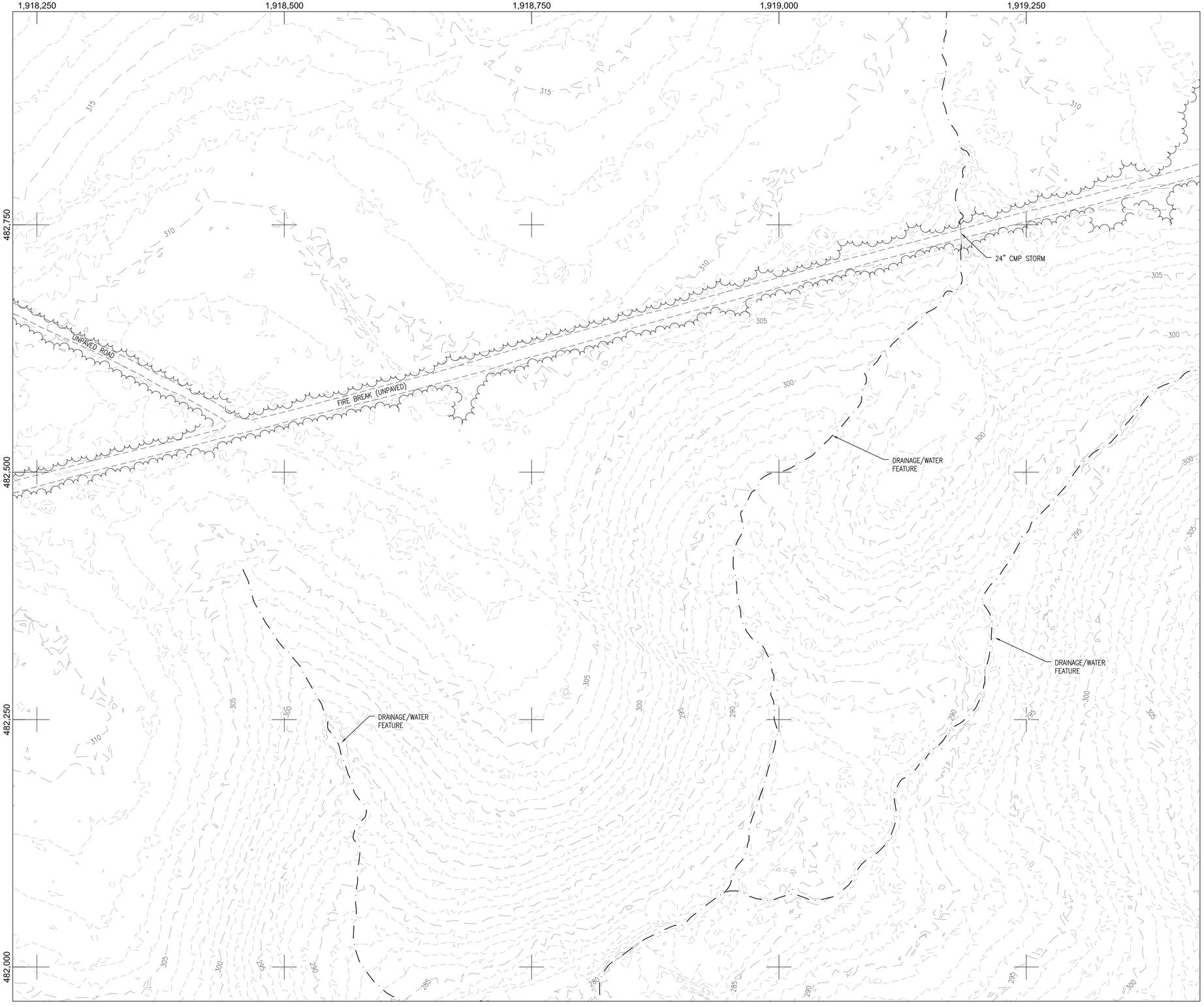
EXISTING SITE PLAN

SHEET ID

VF140

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF140.DWG



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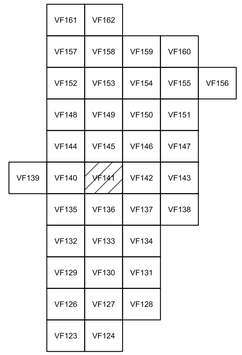

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

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CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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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1935 HEADLAND AVENUE
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

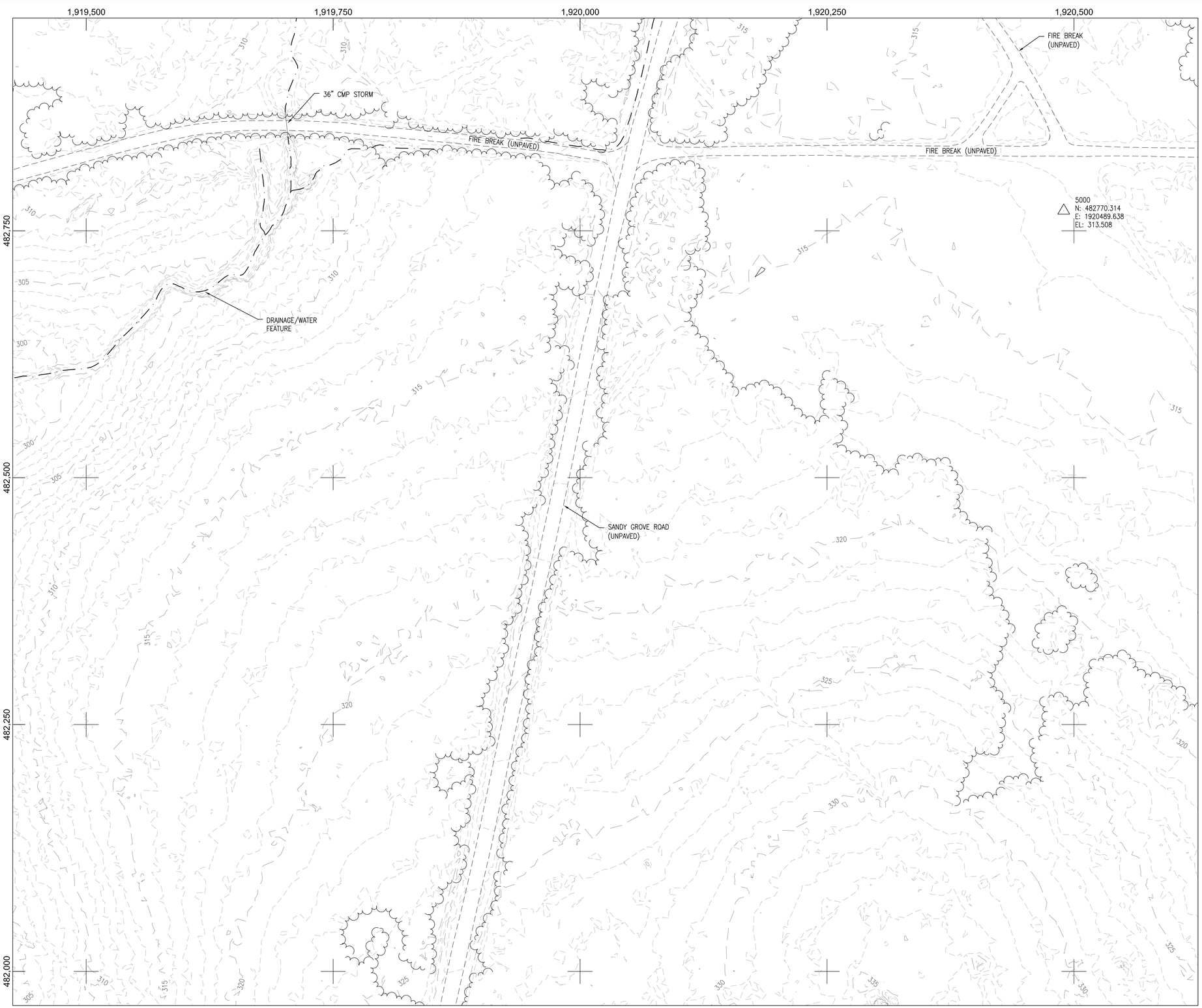
EXISTING SITE PLAN

SHEET ID

VF141

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF141.DWG



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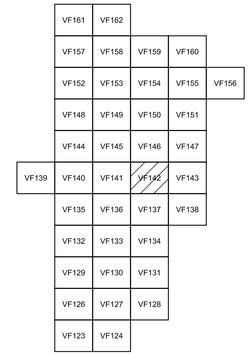

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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US Army Corps of Engineers®

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SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
SIZE: ANSI D	FILE NAME:

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

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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

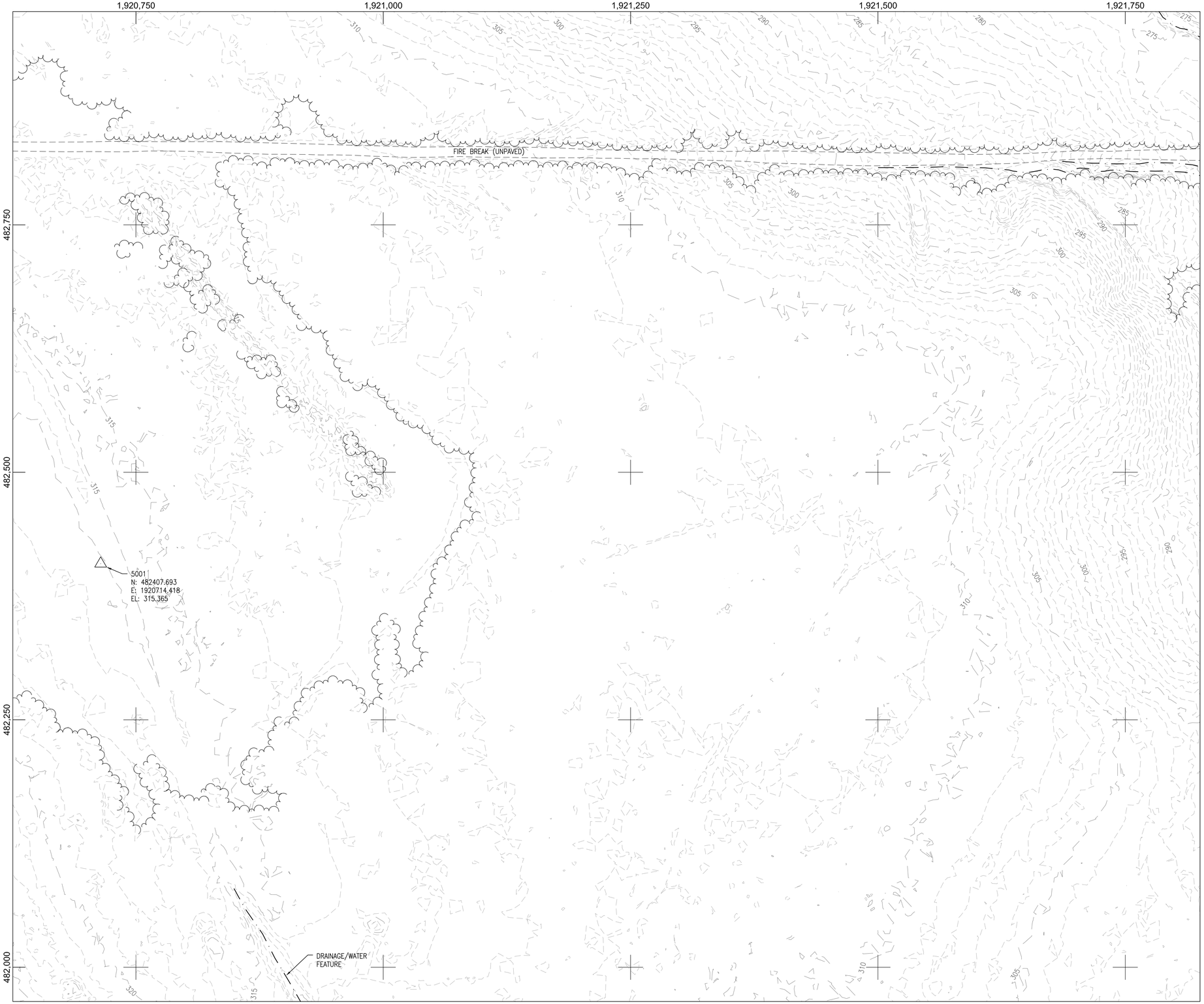
EXISTING SITE PLAN

SHEET ID

VF142

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF142.DWG



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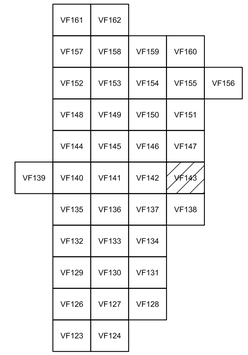


NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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

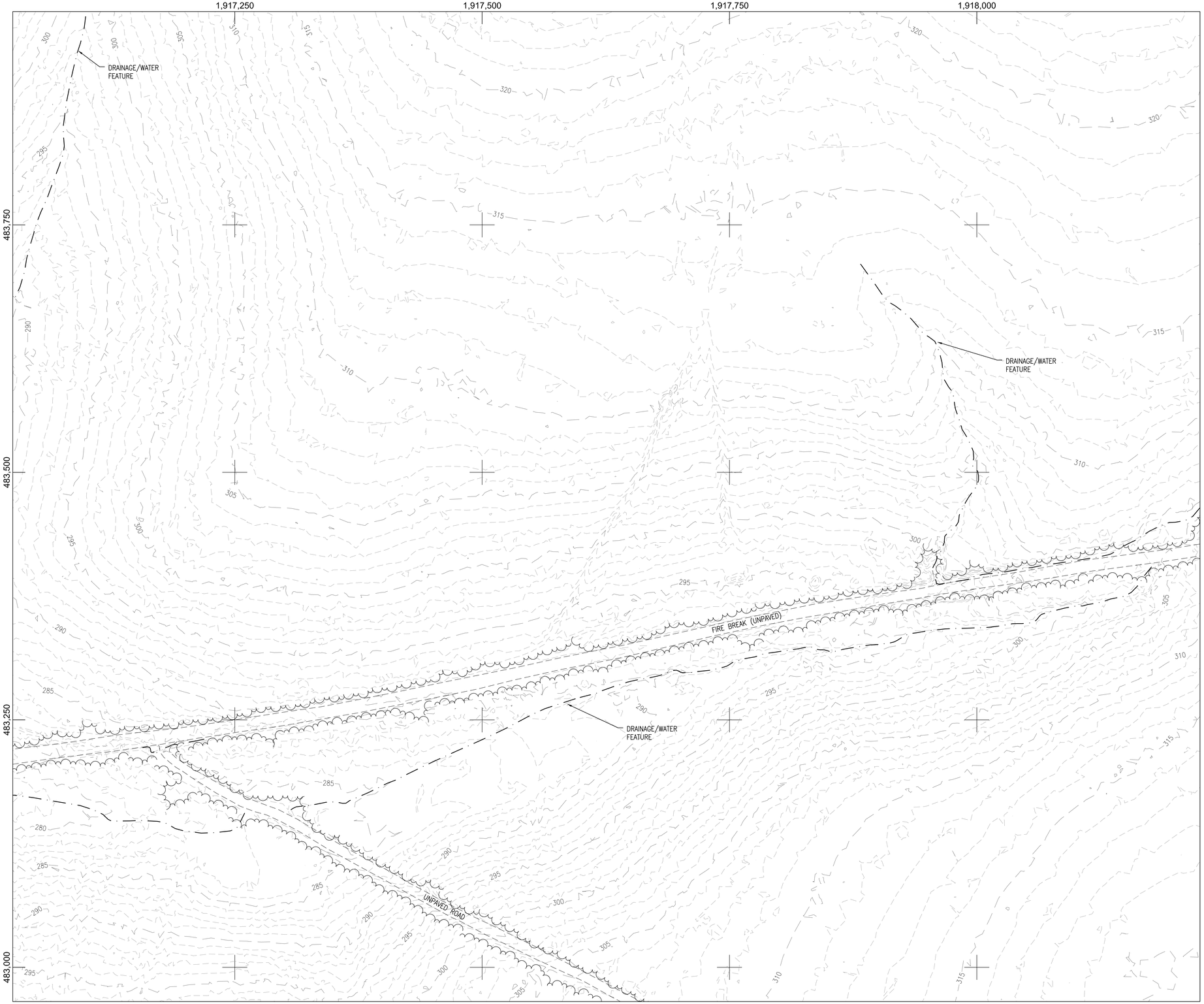
EXISTING SITE PLAN

SHEET ID

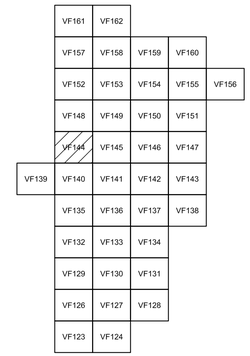
VF143

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF143.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	174-45-01
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

EXISTING SITE PLAN

SHEET ID

VF144

READY TO ADVERTISE (RTA)

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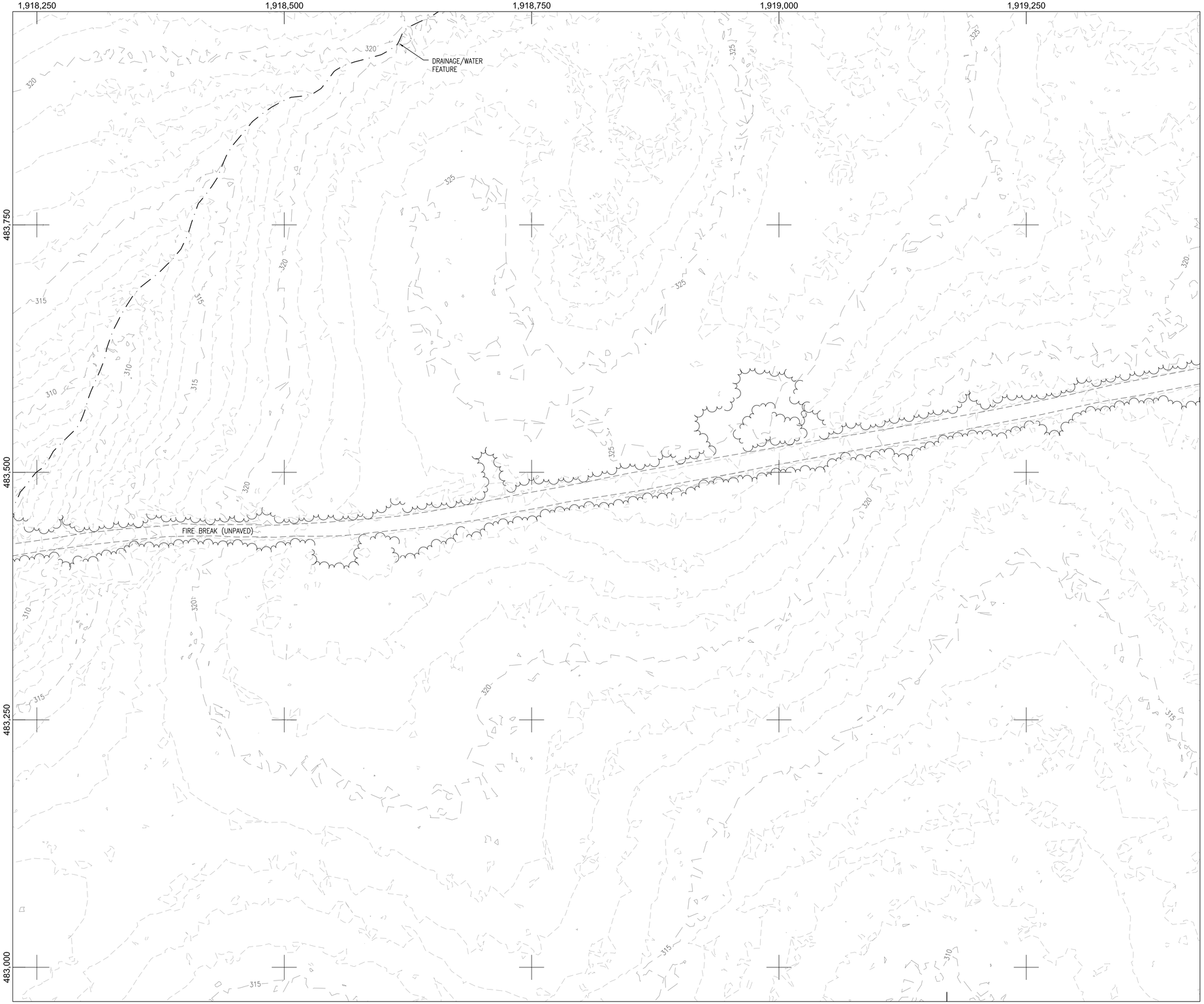
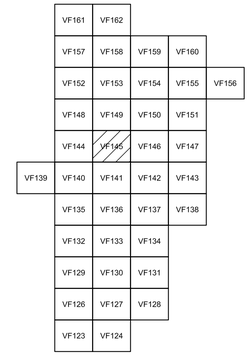


KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

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DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 170-45-01
SCALE: 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
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

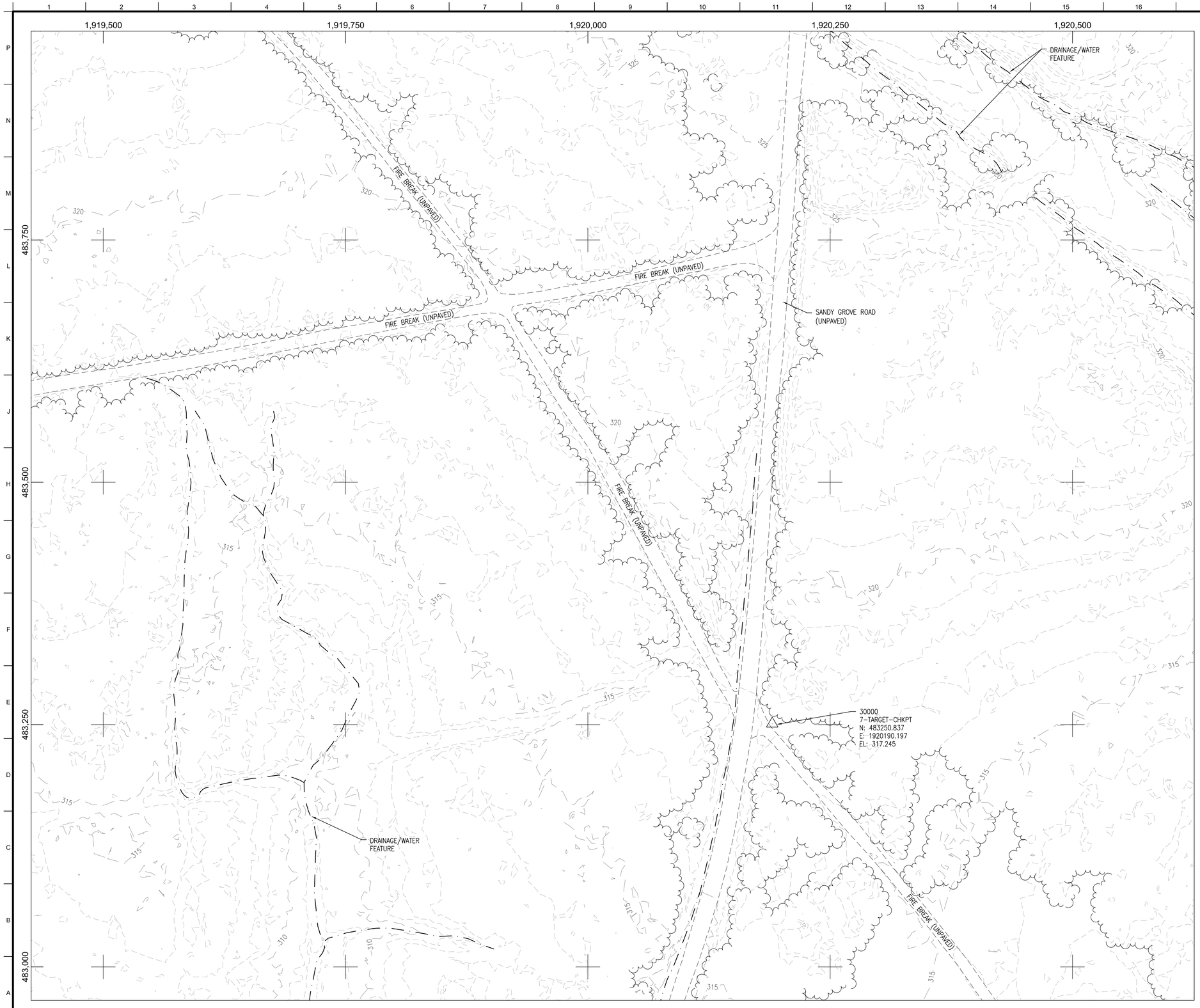
EXISTING SITE PLAN

SHEET ID

VF145

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF145.DWG



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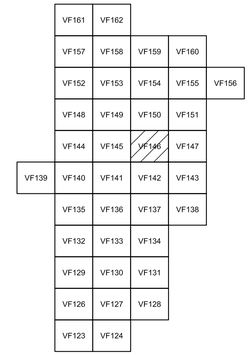

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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US Army Corps of Engineers®

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DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 170-45-01
DATE: ANSI D	FILE NAME:

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

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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

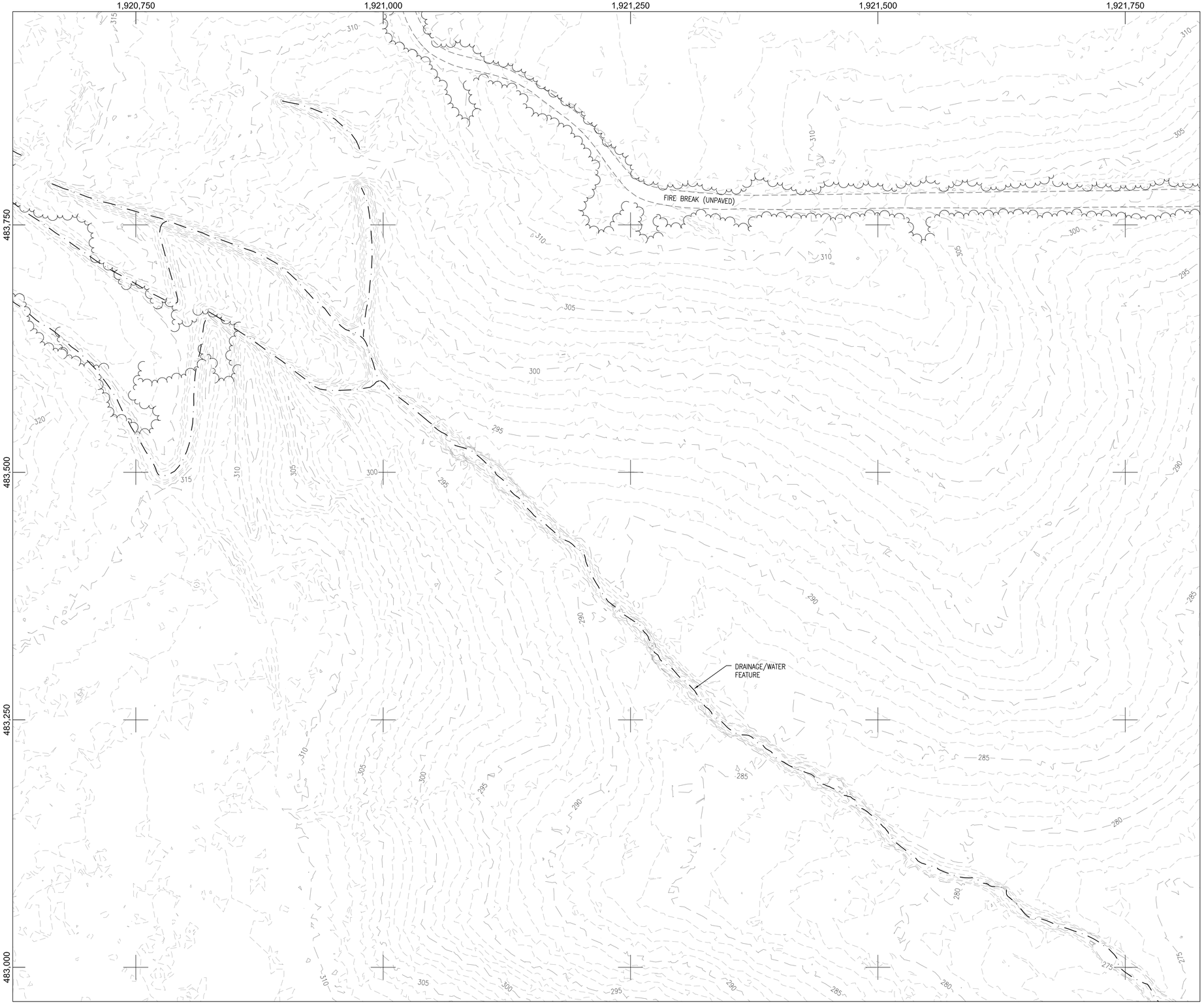
EXISTING SITE PLAN

SHEET ID

VF146

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15\28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF146.DWG



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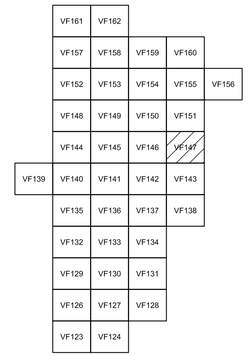

NOTES:

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GRAPHIC SCALE

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SCALE: 1" = 50'-0"

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B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	1710-45-001
SIZE:	FILE NAME:
ANSI D	

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

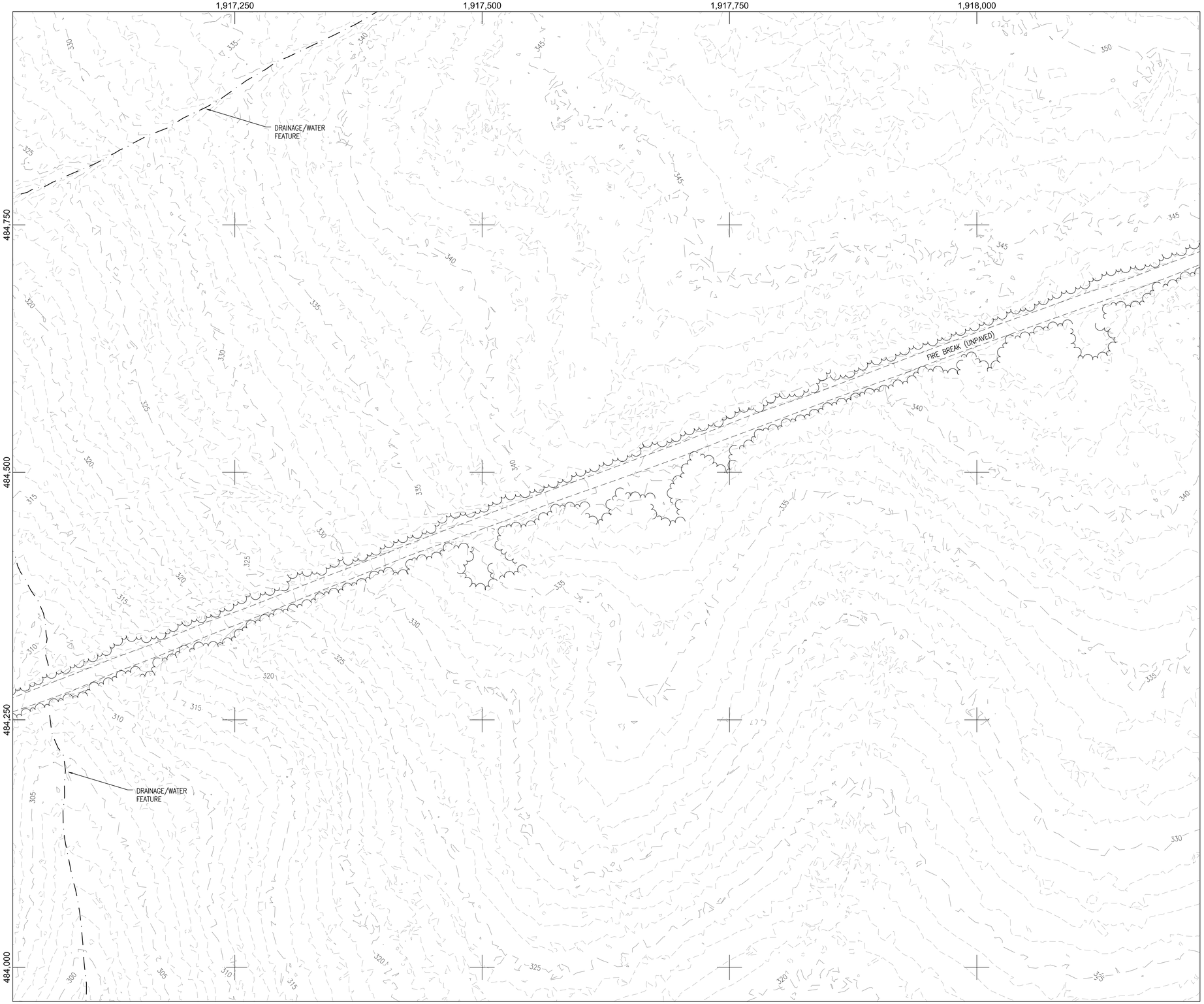
EXISTING SITE PLAN

SHEET ID

VF147

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF147.DWG



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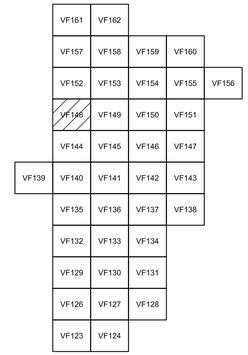

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

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SCALE: 1" = 50'-0"

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US Army Corps of Engineers®

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SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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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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

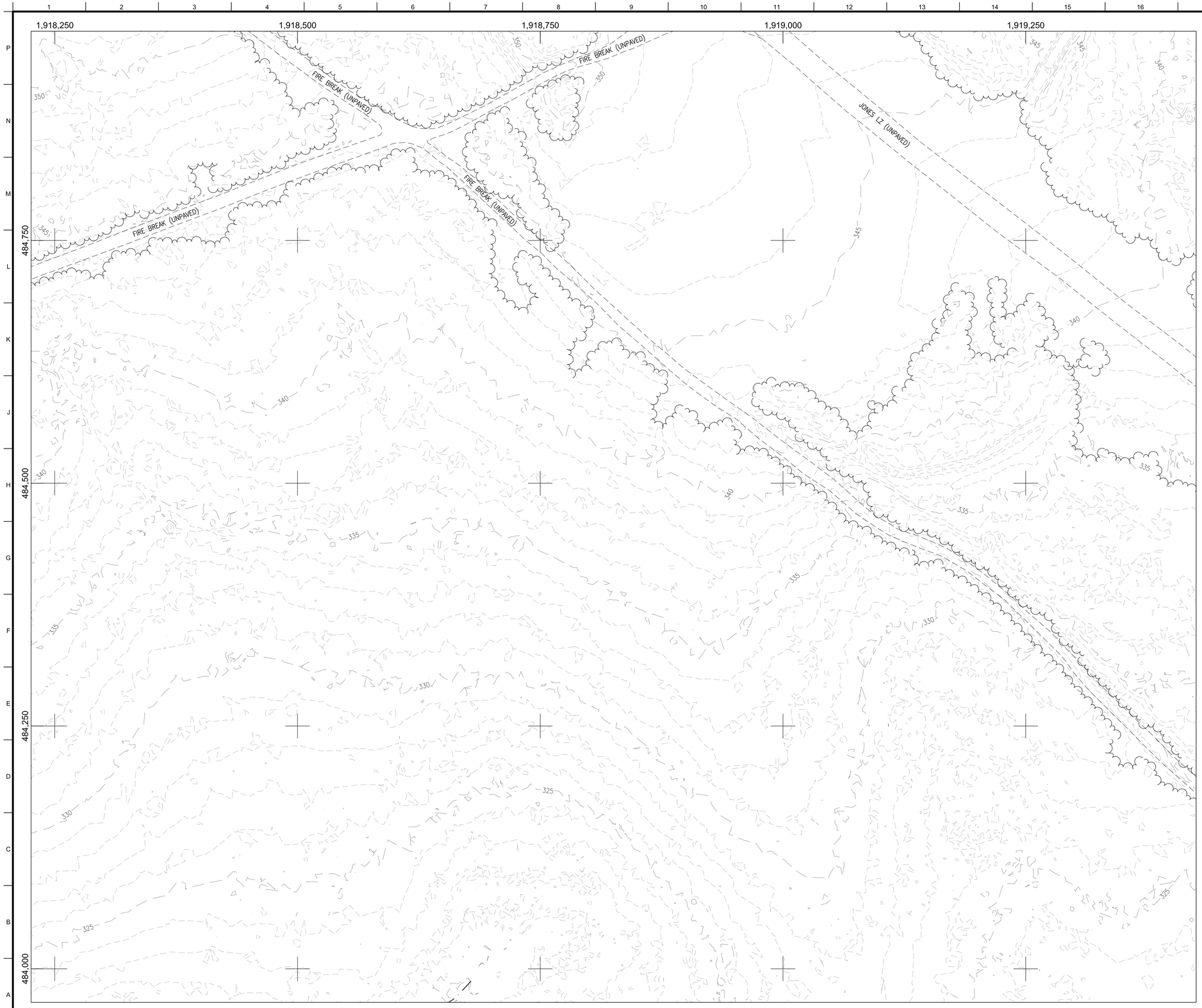
EXISTING SITE PLAN

SHEET ID

VF148

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF148.DWG



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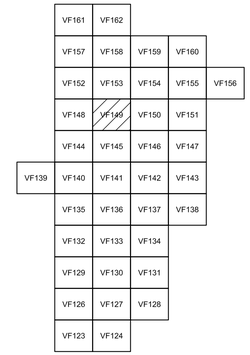

NOTES:

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2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

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SCALE: 1" = 50'-0"

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MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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

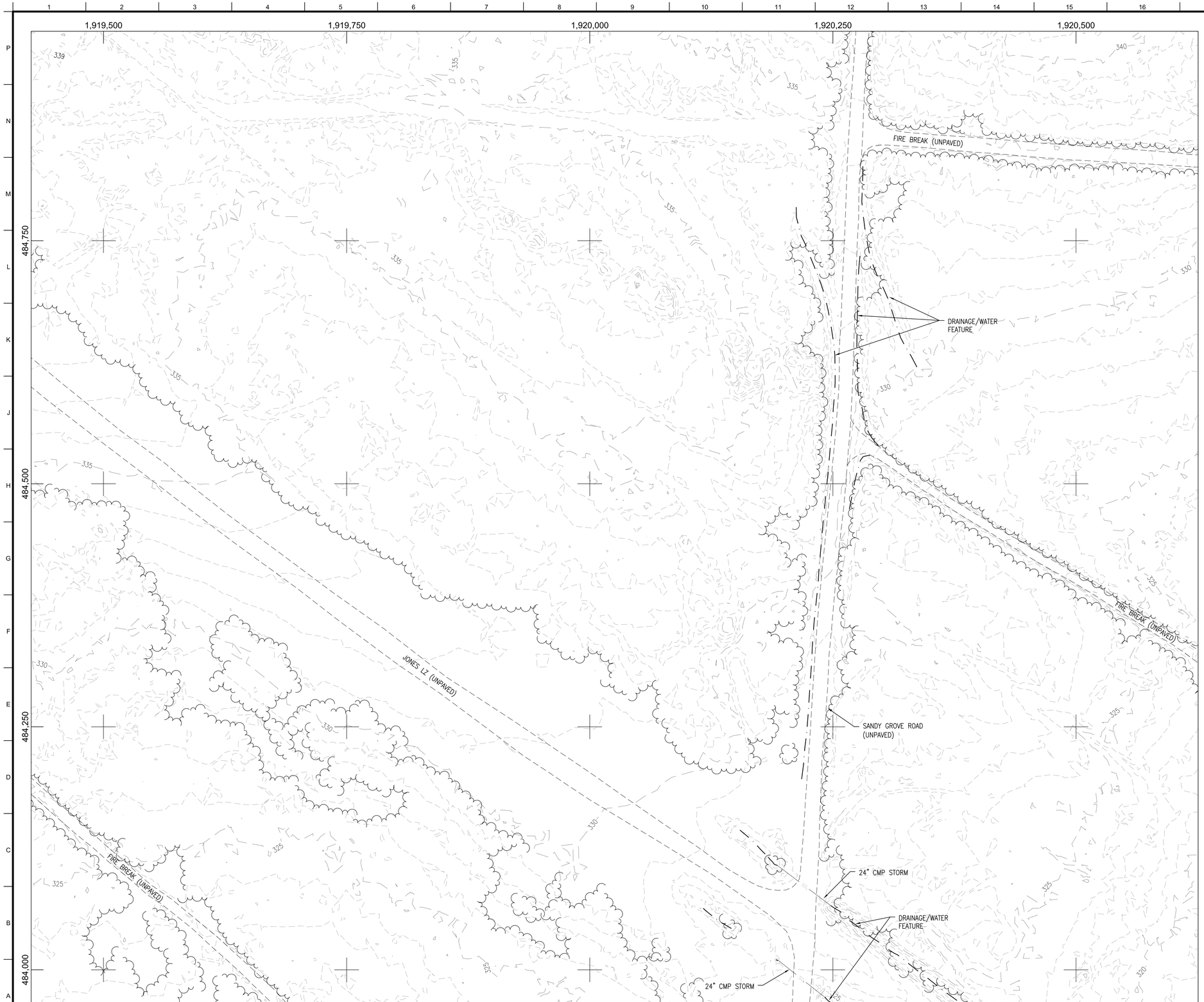
EXISTING SITE PLAN

SHEET ID

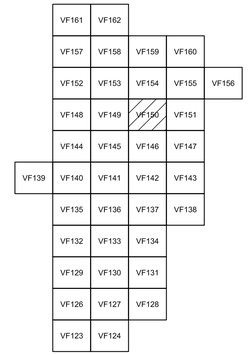
VF149

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF149.DWG

READY TO ADVERTISE (RTA)



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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 95182
VOLUMES 3 & 4 - DOWNRANGE

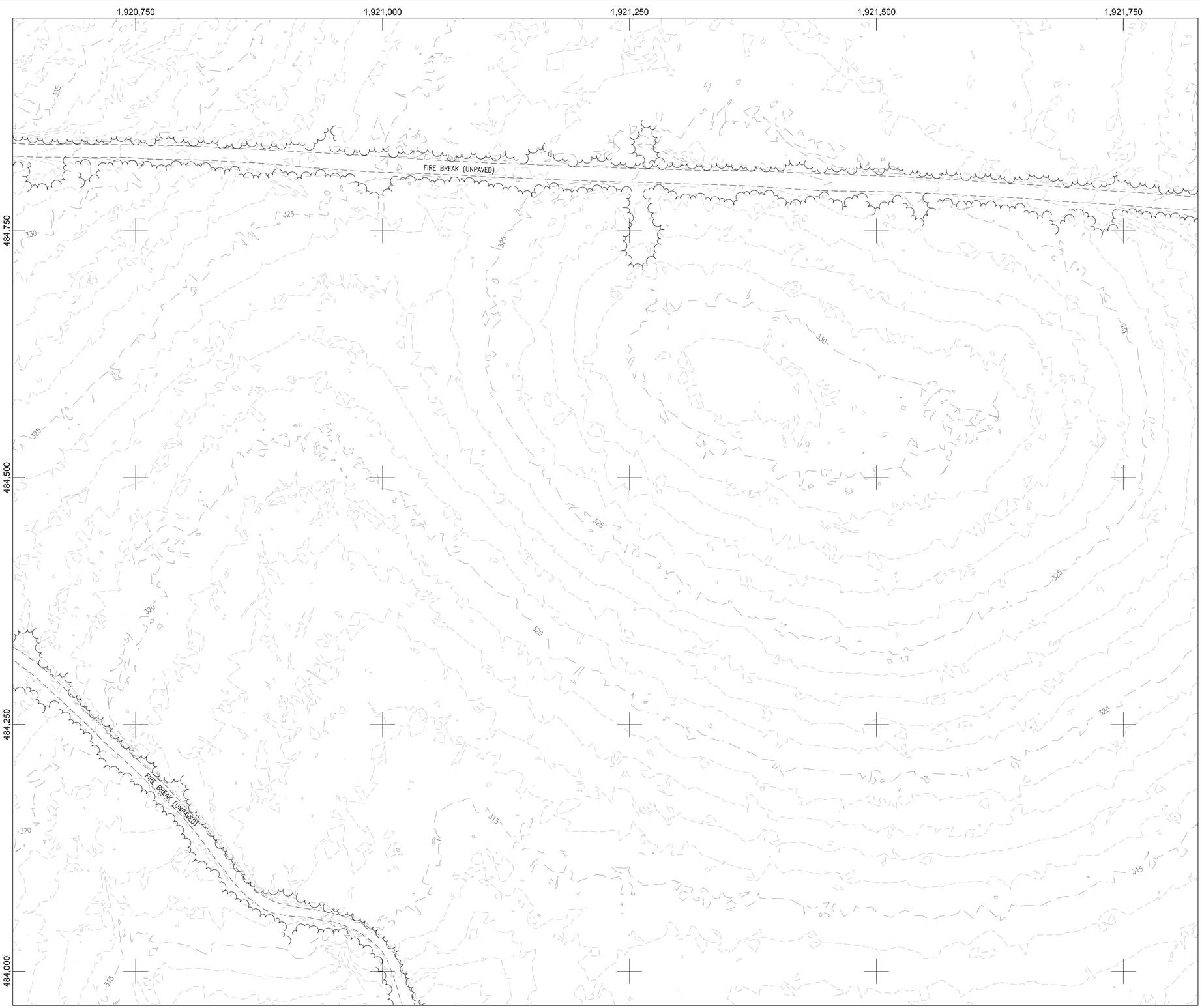
EXISTING SITE PLAN

SHEET ID

VF150

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF150.DWG



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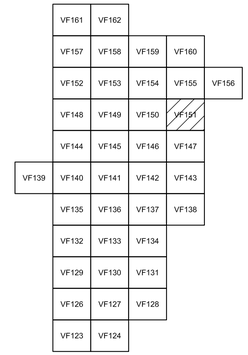

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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

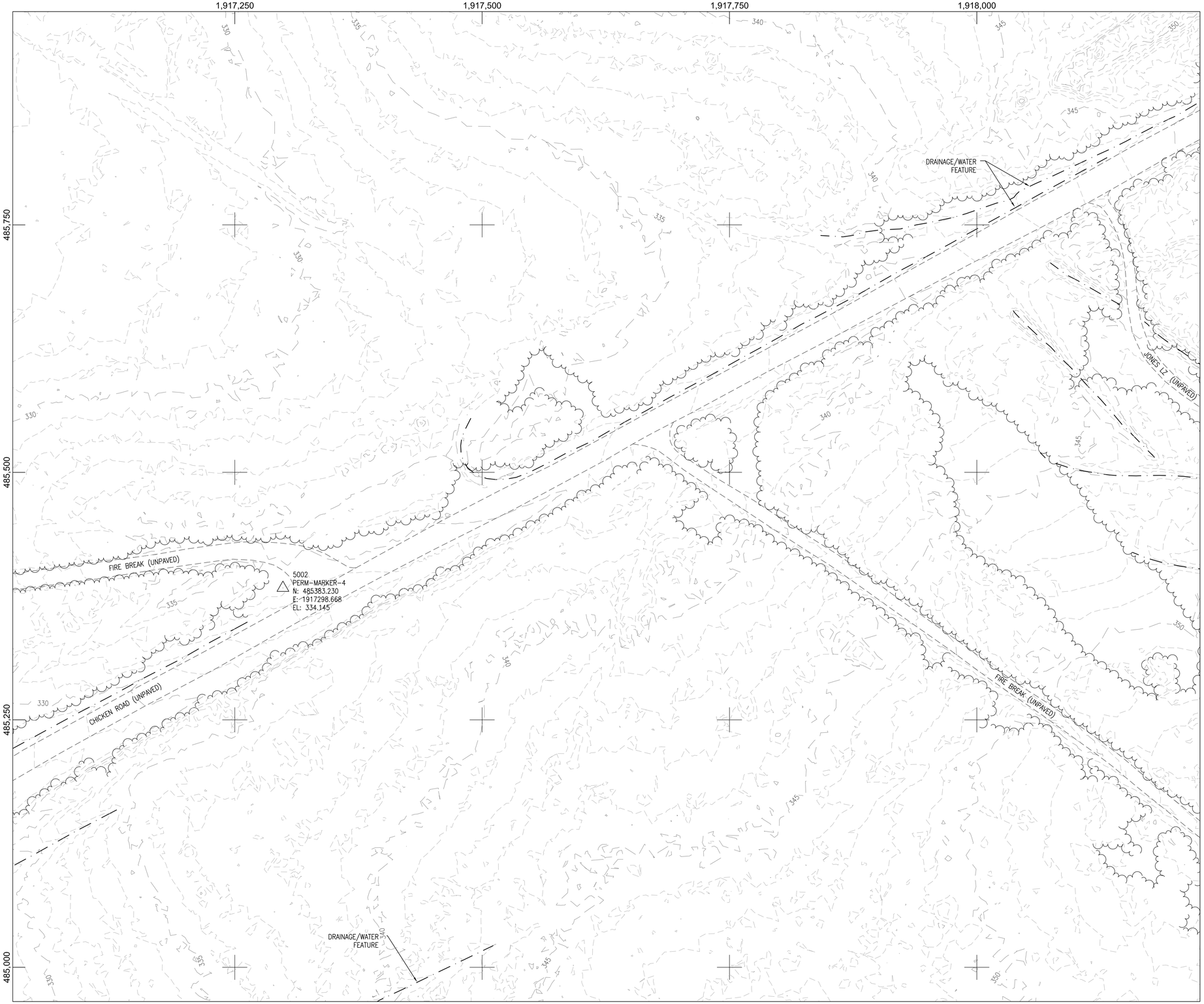
EXISTING SITE PLAN

SHEET ID

VF151

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF151.DWG



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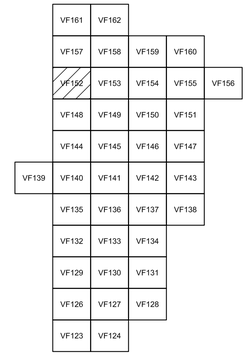


NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
SCALE: 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

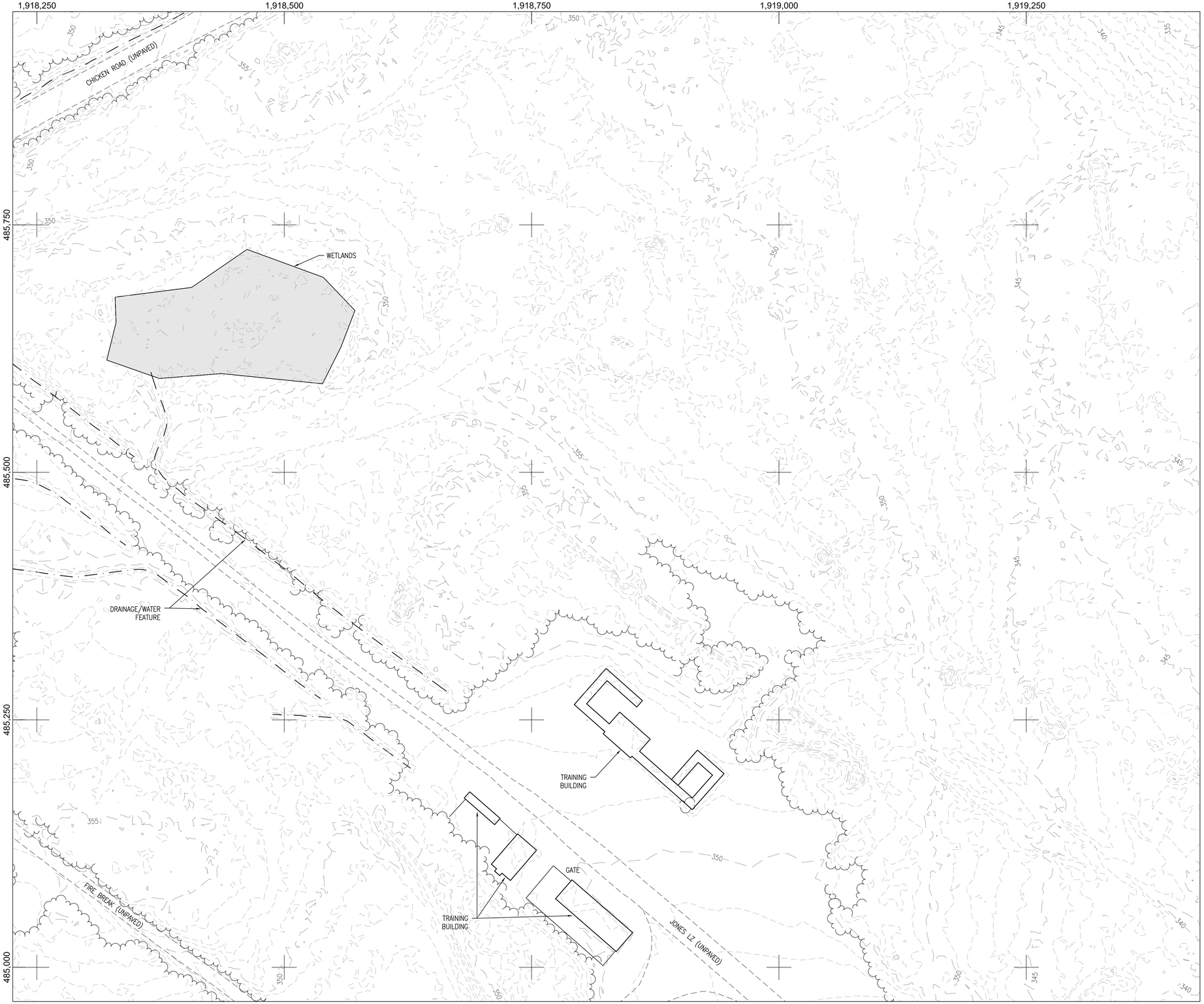
EXISTING SITE PLAN

SHEET ID

VF152

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\1100 PLANS\B2EVF152.DWG



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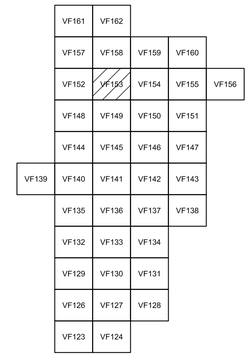


NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
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

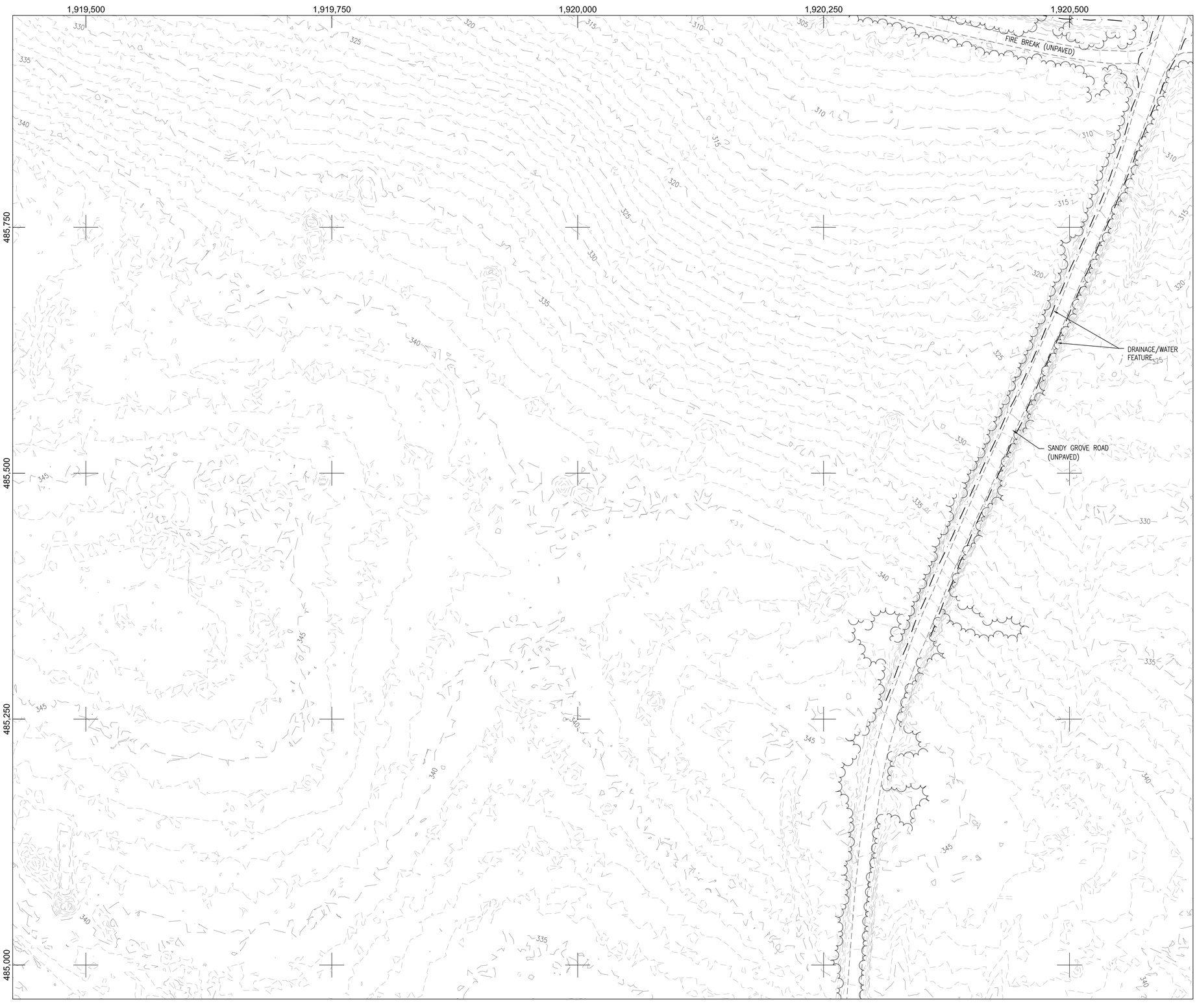
EXISTING SITE PLAN

SHEET ID

VF153

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF153.DWG



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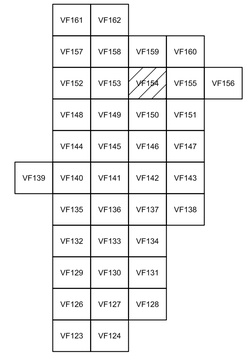

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 170-45-01
SCALE: 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

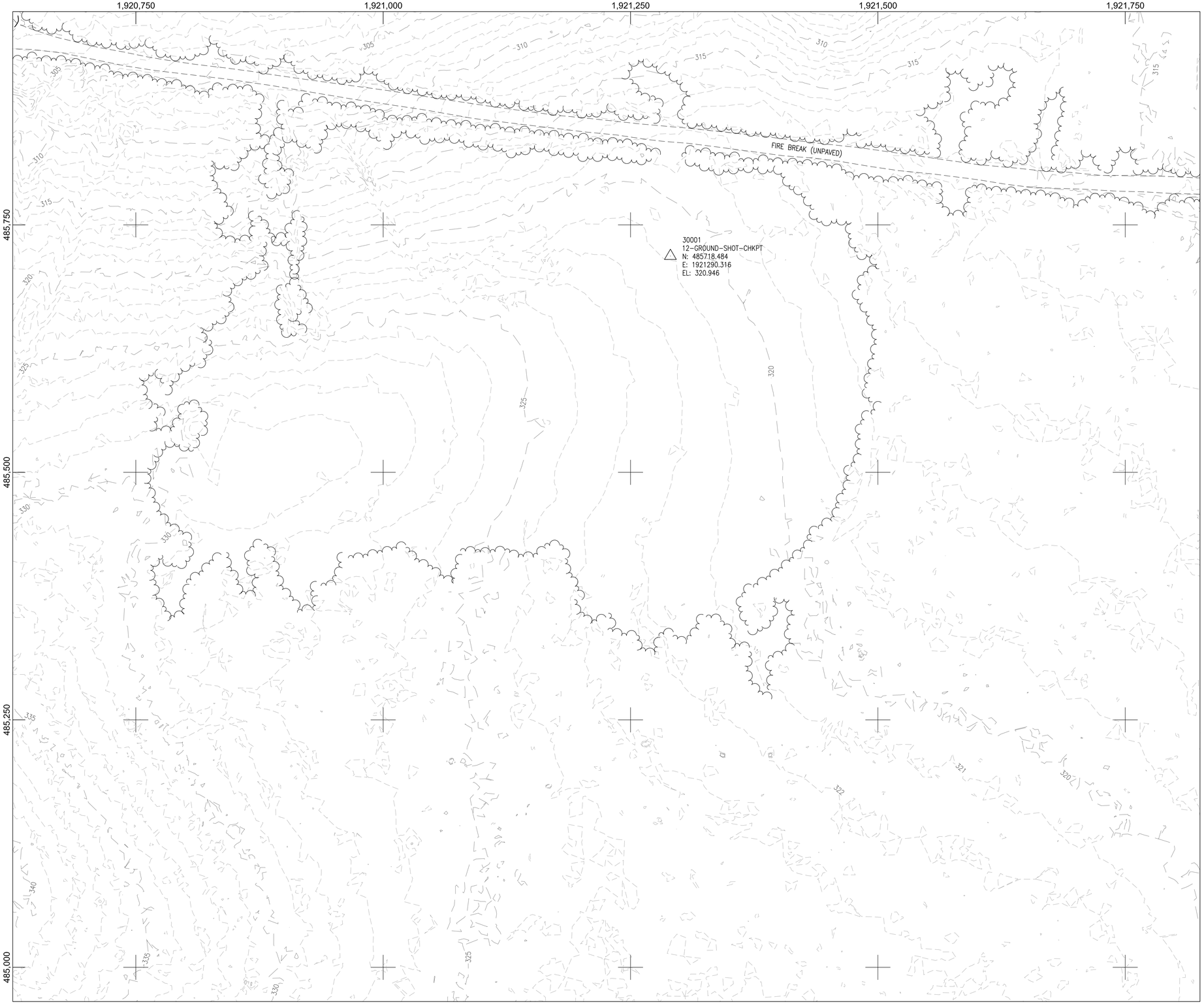
EXISTING SITE PLAN

SHEET ID

VF154

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF154.DWG



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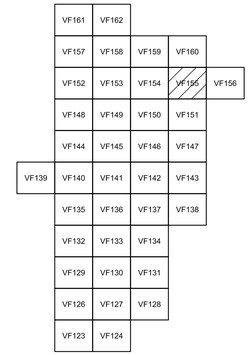


NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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

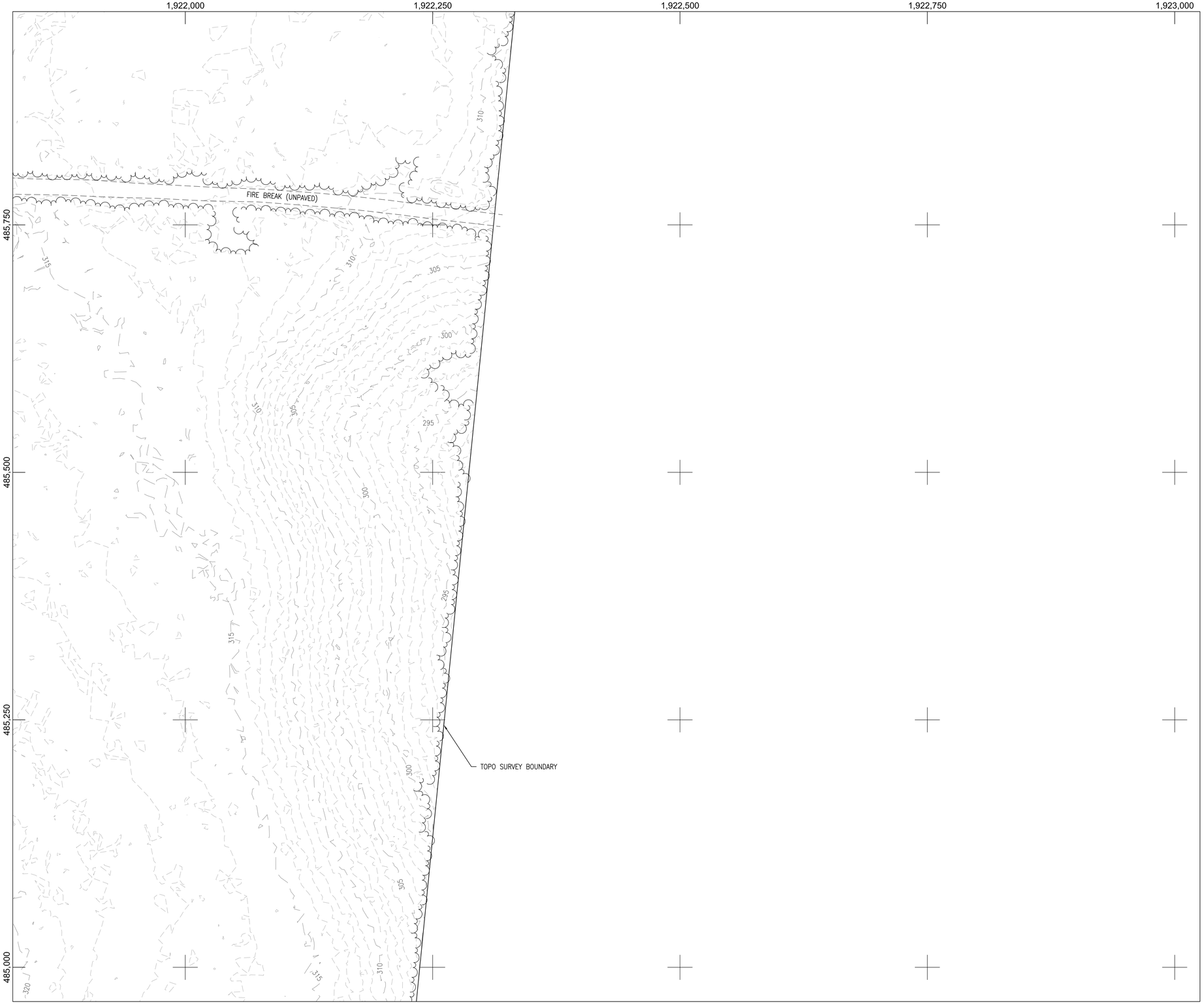
EXISTING SITE PLAN

SHEET ID

VF155

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF155.DWG



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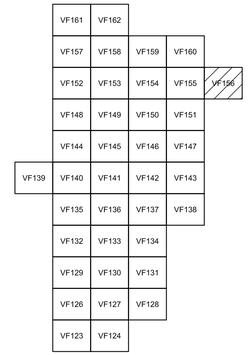

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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 36162
VOLUMES 3 & 4 - DOWNRANGE

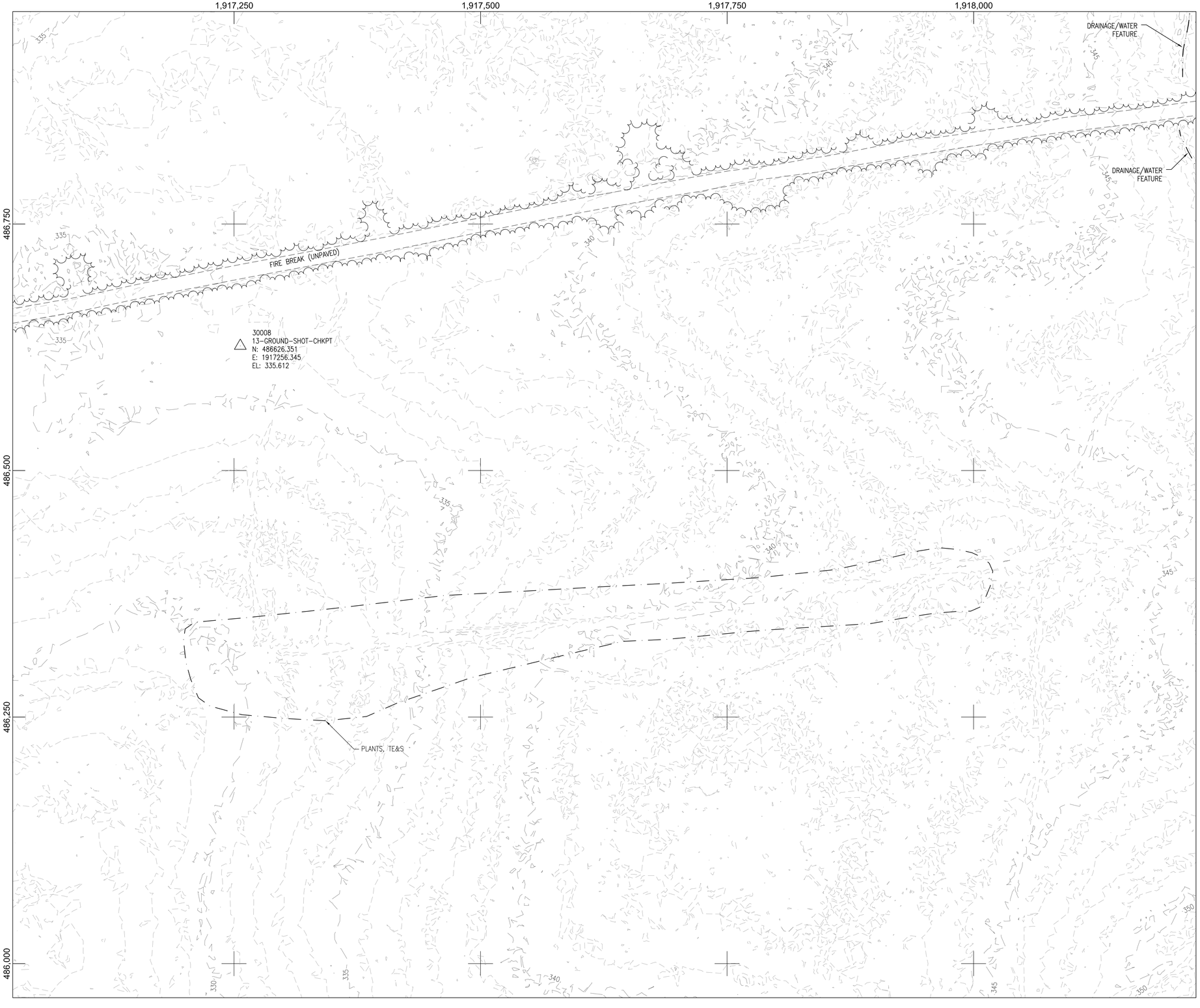
EXISTING SITE PLAN

SHEET ID

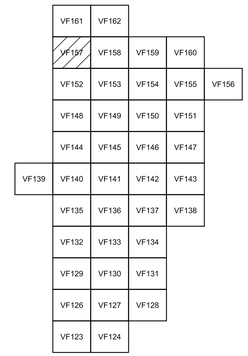
VF156

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\1100 PLANS\B2EVF156.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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 96182
VOLUMES 3 & 4 - DOWNRANGE

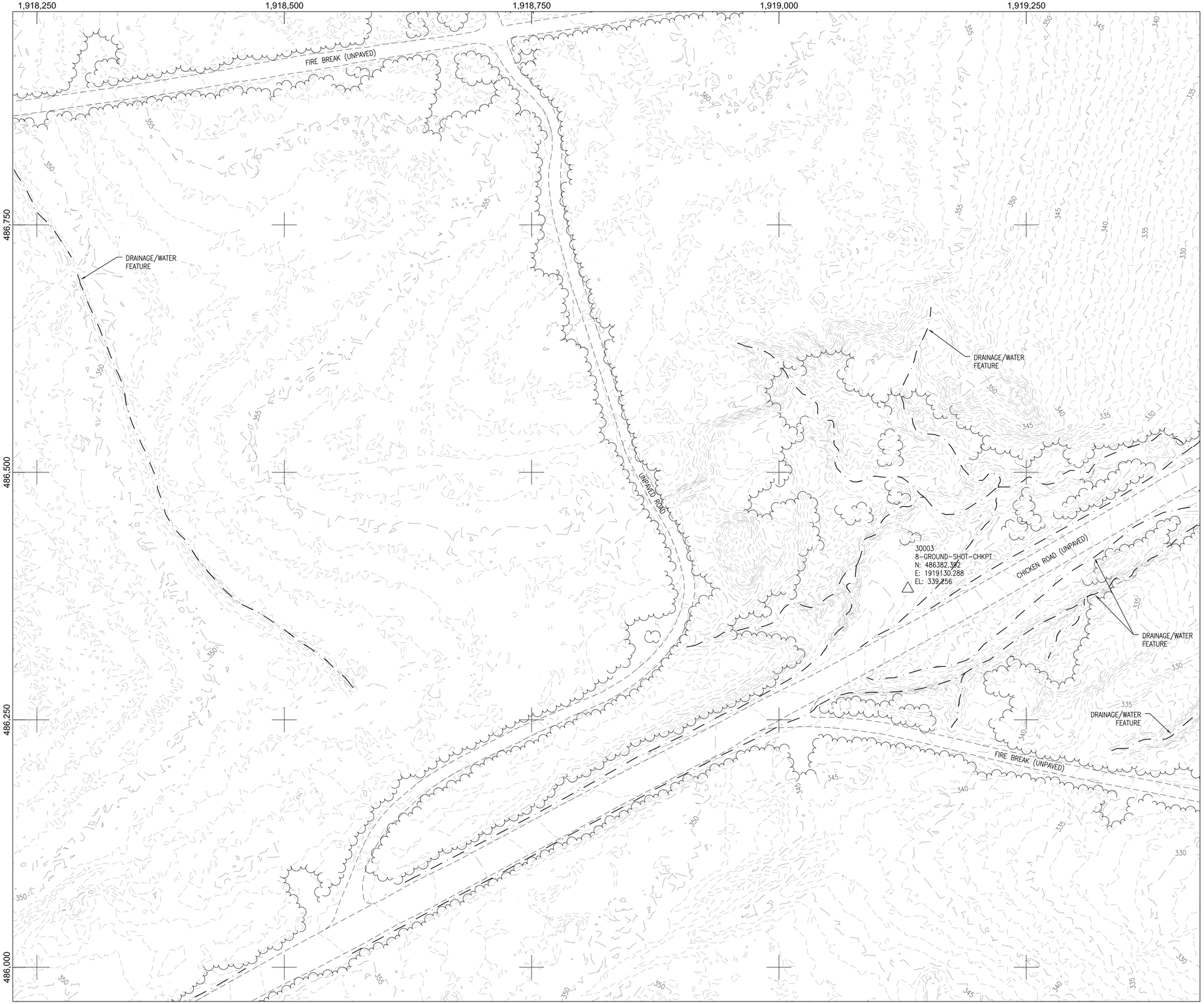
EXISTING SITE PLAN

SHEET ID

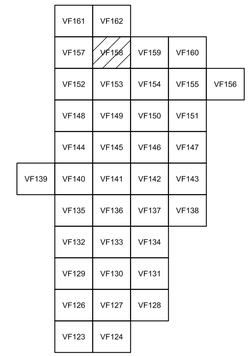
VF157

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF157.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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

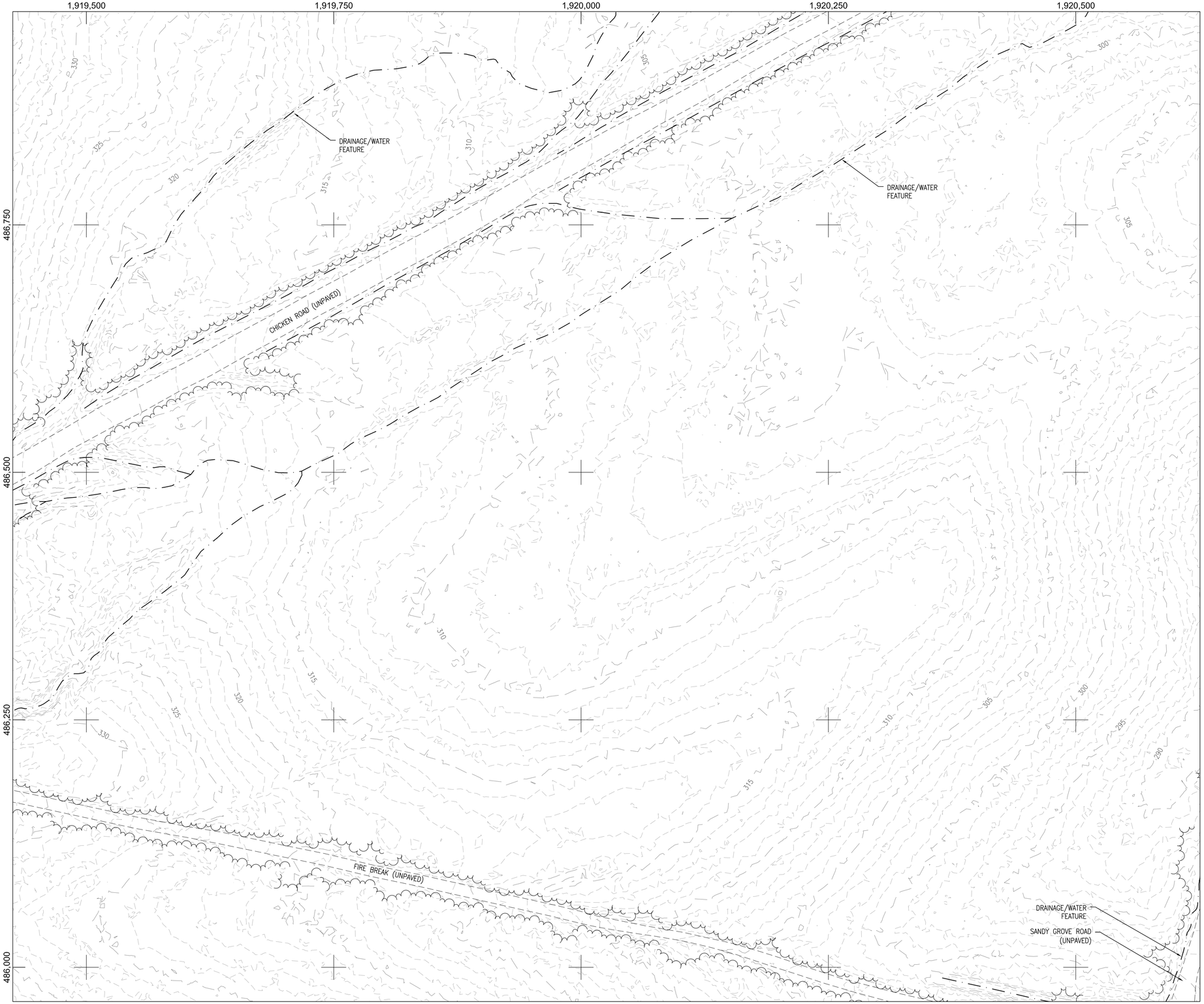
EXISTING SITE PLAN

SHEET ID

VF158

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF158.DWG



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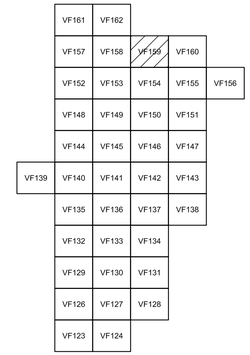

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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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

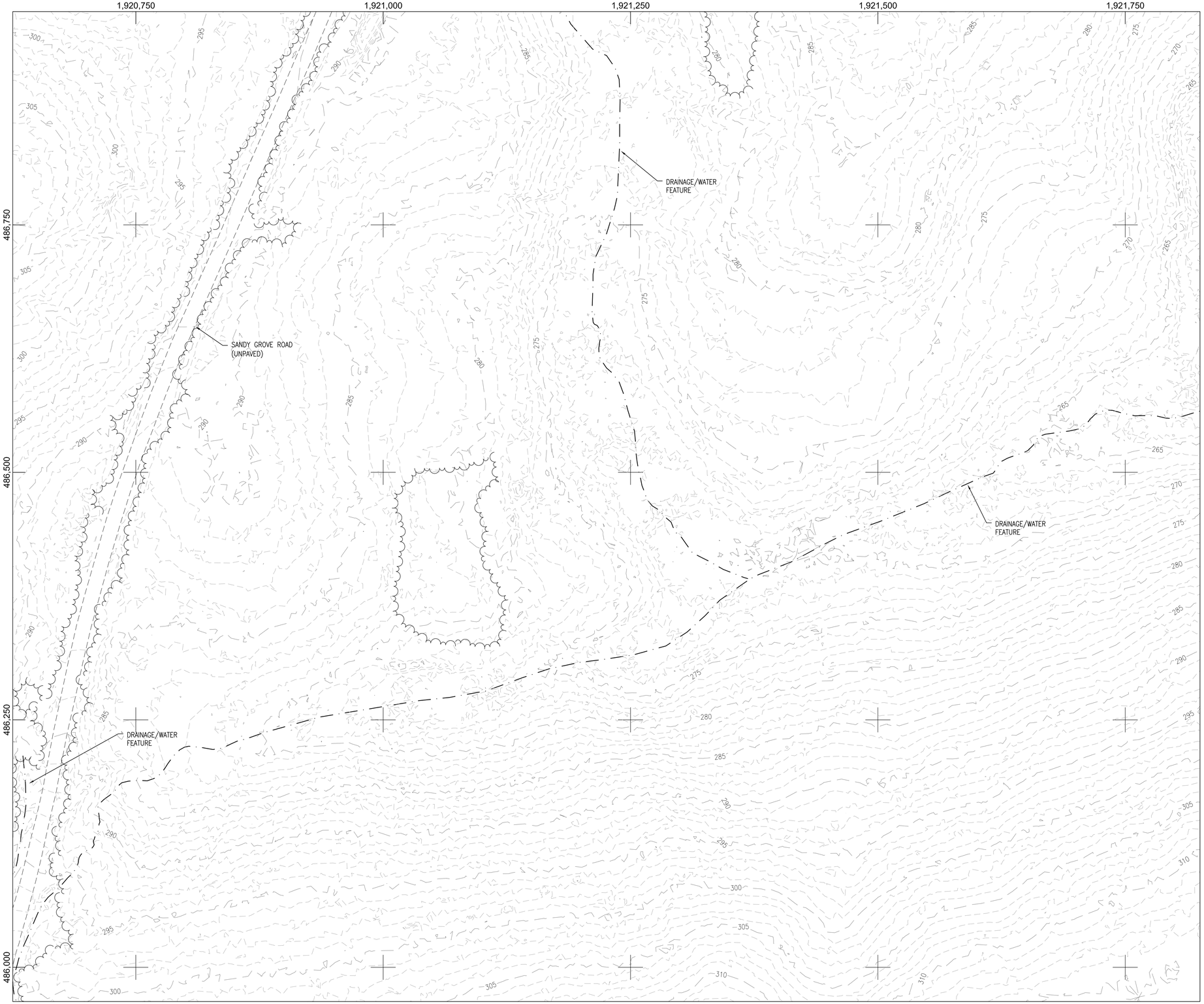
EXISTING SITE PLAN

SHEET ID

VF159

READY TO ADVERTISE (RTA)

G:\CLEANS\TUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\1100 PLANS\B2EVF159.DWG



KEY PLAN

VF161	VF162			
VF157	VF158	VF159	VF160	
VF152	VF153	VF154	VF155	VF156
VF148	VF149	VF150	VF151	
VF144	VF145	VF146	VF147	
VF139	VF140	VF141	VF142	VF143
	VF135	VF136	VF137	VF138
	VF132	VF133	VF134	
	VF129	VF130	VF131	
	VF126	VF127	VF128	
	VF123	VF124		

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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

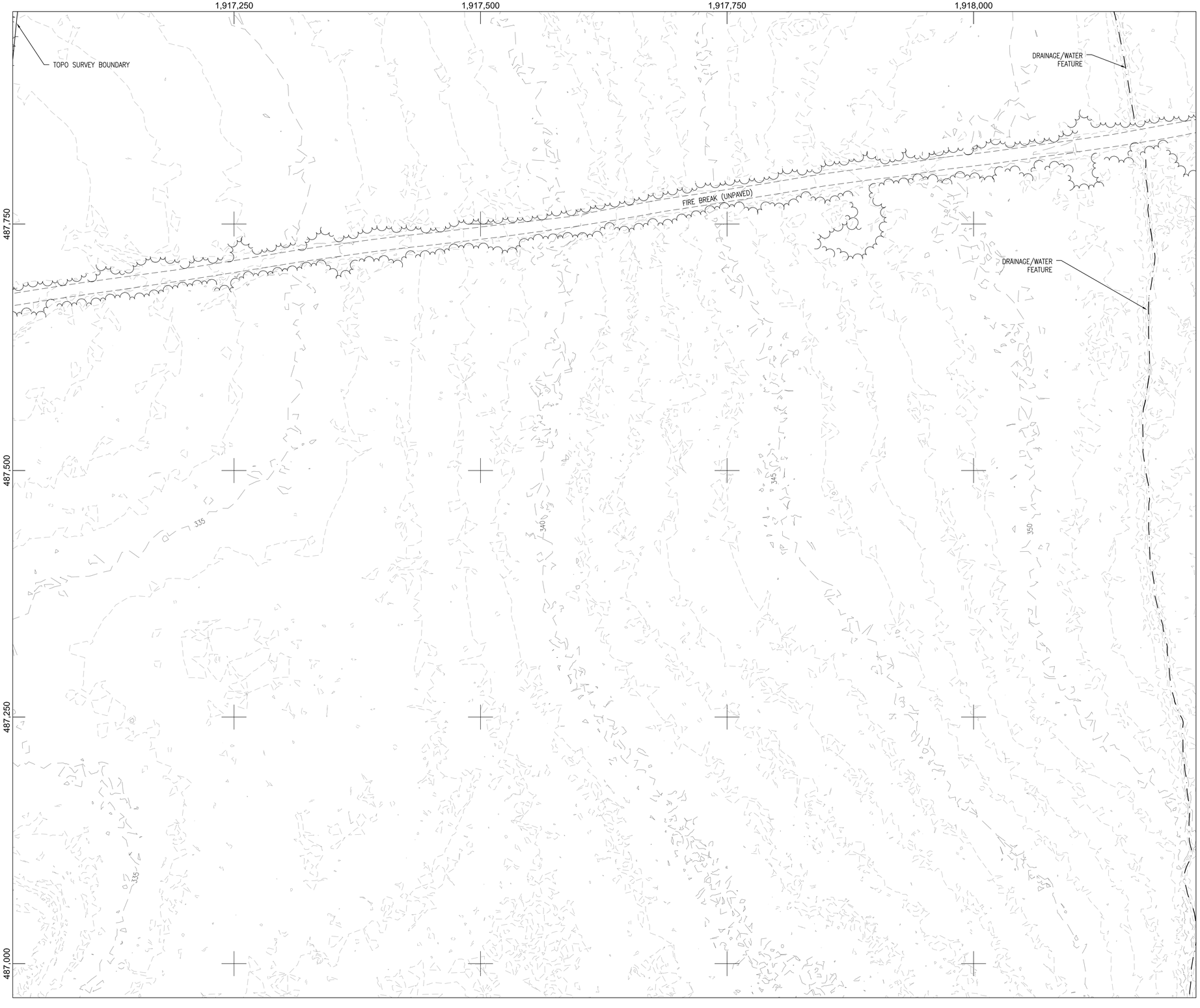
EXISTING SITE PLAN

SHEET ID

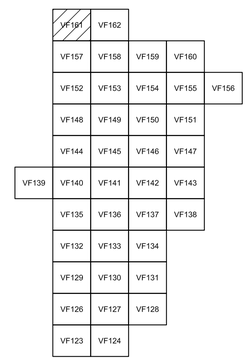
VF160

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\1100 PLANS\B2EVF160.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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

EXISTING SITE PLAN

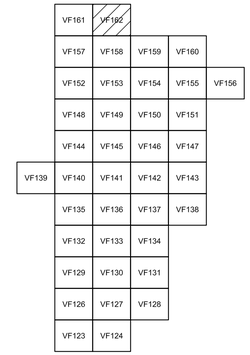
SHEET ID

VF161

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15c2B\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF161.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE V-002 FOR SURVEY NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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SIZE: ANSI D	FILE NAME:

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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

EXISTING SITE PLAN

SHEET ID

VF162

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\02 SURVEY\100 PLANS\B2EVF162.DWG

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

NOTES :

1. SOILS VISUALLY CLASSIFIED IN ACCORDANCE WITH ASTM D2488.
2. N-VALUE: TOTAL BLOWS OVER LAST 1.0 FOOT OF 1.5-FOOT DRIVEN INTERVAL, UNLESS OTHERWISE INDICATED, USING A 1-3/8-INCH ID SPLITSPOON WITH 140-POUND HAMMER FALLING 30 INCHES.
3. THE CME-750X DRILLING RIG UTILIZED AN AUTOMATIC TRIP HAMMER. THE HAMMER EFFICIENCY CORRECTION IS 1.6.
4. COMPONENT PERCENTAGES: MOSTLY - 50-100%; SOME - 30-45%; LITTLE - 15-25%; FEW - 5-10%; TRACE - <5%.
5. CONTRACTOR MAY REQUEST A COPY OF THE GEOTECHNICAL REPORT FROM THE CONTRACTING OFFICER.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\000 GENERAL\B2EB-001.DWG

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

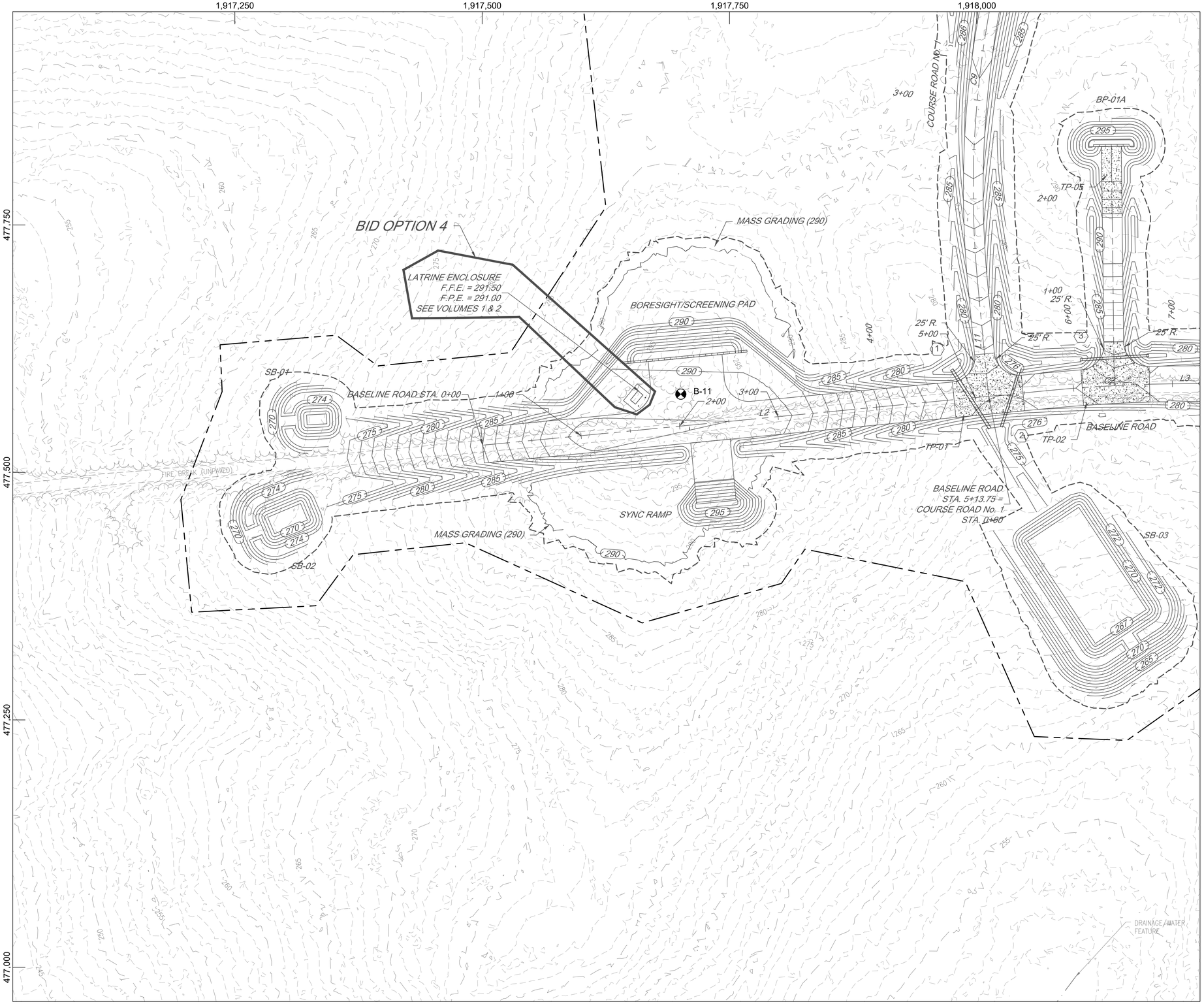
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

SOIL CLASSIFICATION CHART & NOTES

SHEET ID

B-001

READY TO ADVERTISE (RTA)



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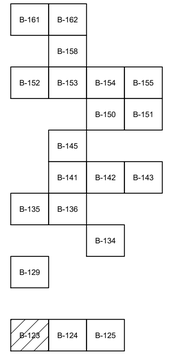

LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 90182
VOLUMES 3 & 4 - DOWNRANGE

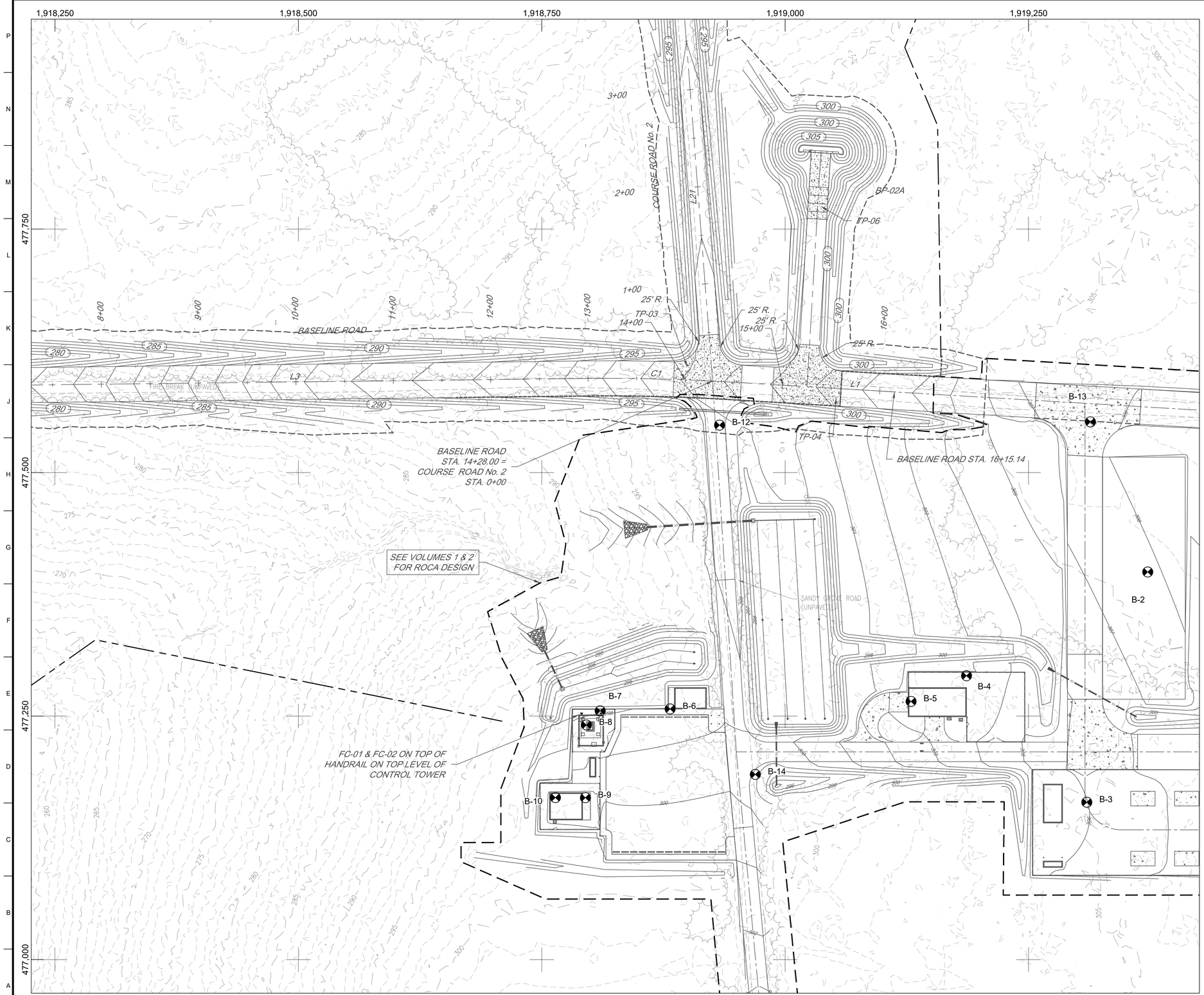
SOIL BORING PLAN

SHEET ID

B-123

G:\CLEANS\TUFF-15-28115376 BRAGG MPTR\WIP\007_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\EB-123.DWG

READY TO ADVERTISE (RTA)



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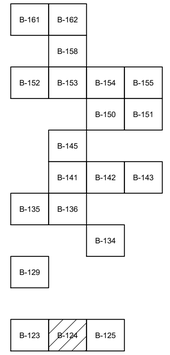


LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

US Army Corps of Engineers®

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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 86182
VOLUMES 3 & 4 - DOWNRANGE

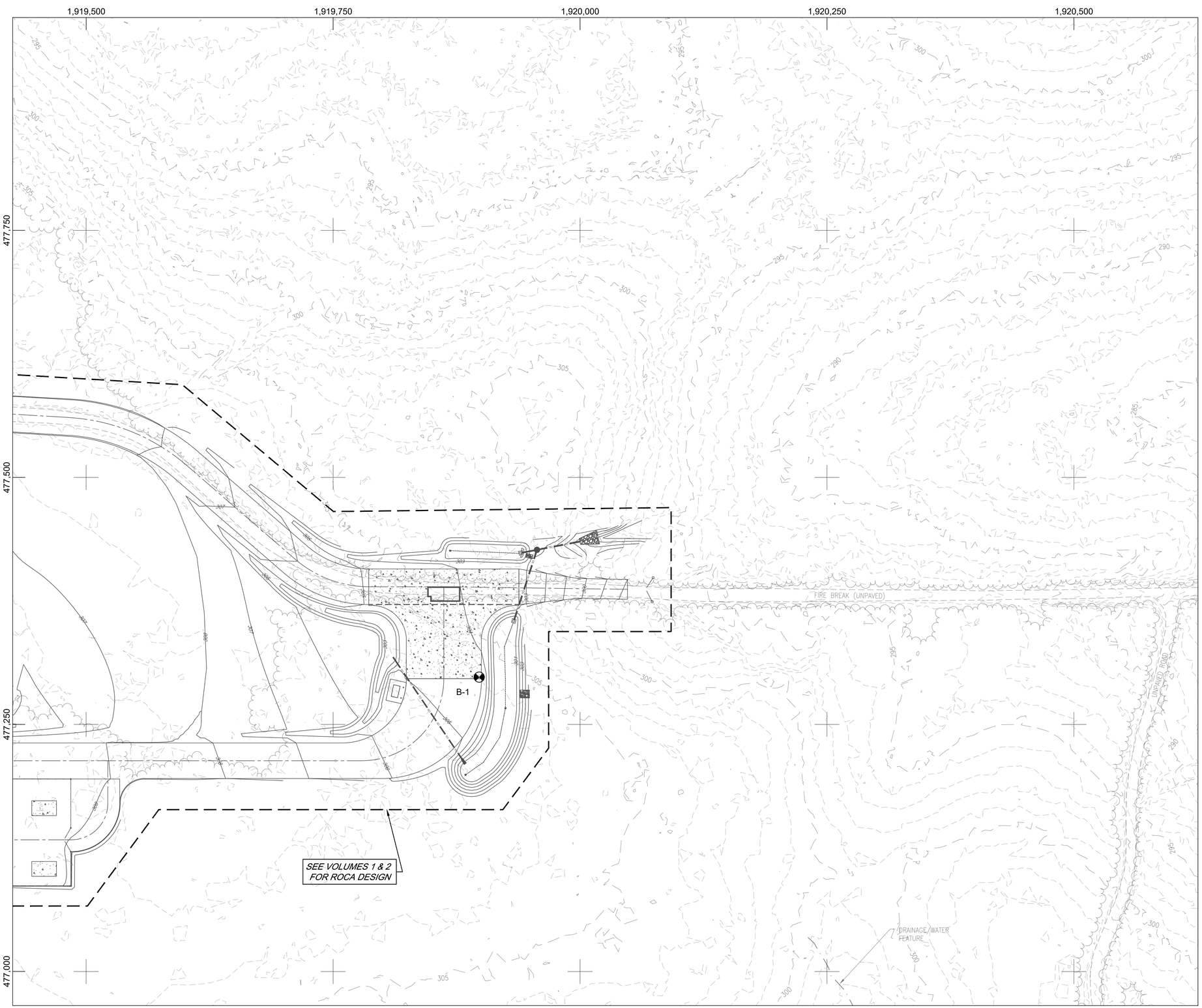
SOIL BORING PLAN

SHEET ID

B-124

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\007_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\B-124.DWG



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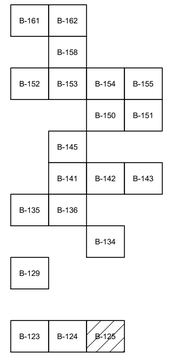


LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 99102
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING PLAN

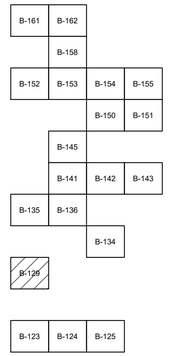
SHEET ID

B-125

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECH\NICAL\100 PLANS\B2\EB-125.DWG

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

US Army Corps of Engineers®

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	B. BRADLEY
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 #6162
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING PLAN

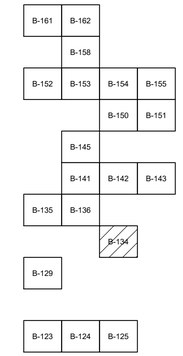
SHEET ID

B-129

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\1100 PLANS\B2\EB-129.DWG

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SOIL BORING PLAN

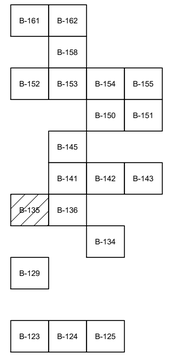
SHEET ID

B-134

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2EB-134.DWG

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

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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

SOIL BORING PLAN

SHEET ID

B-135

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\EB-135.DWG

1,918,250 1,918,500 1,918,750 1,919,000 1,919,250

481,750 481,500 481,250 481,000

SB-29 P-09 305 300 295

WETLANDS

WETLAND IMPACTS - CLEARING

50' WETLAND BUFFER

DRAINAGE/WATER FEATURE

FIRE BREAK (UNPAVED)

WETLAND IMPACTS - CLEARING

WETLANDS

50' WETLAND BUFFER

B-18

TSR No. 10
STA. 7+52.16

SB-24 SB-25 SB-23

V-06 P-06

L60 L61 L62 L58 L40 C41 C39 C42 C38

MASS GRADE (315)

MASS GRADING (311)

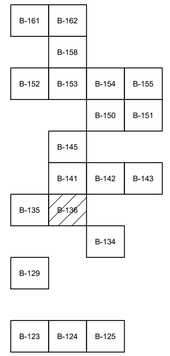
TSR No. 10

TP-14
RSBP-01C
V-07/PC-04

1+00 2+00 3+00 4+00 5+00 6+00 7+00

26

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

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SUBMITTED BY: BRADLEY
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ISSUE DATE: NOVEMBER 2023
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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.
1935 HEADLAND AVENUE
DOTHAN, AL 36303
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 95182
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING PLAN

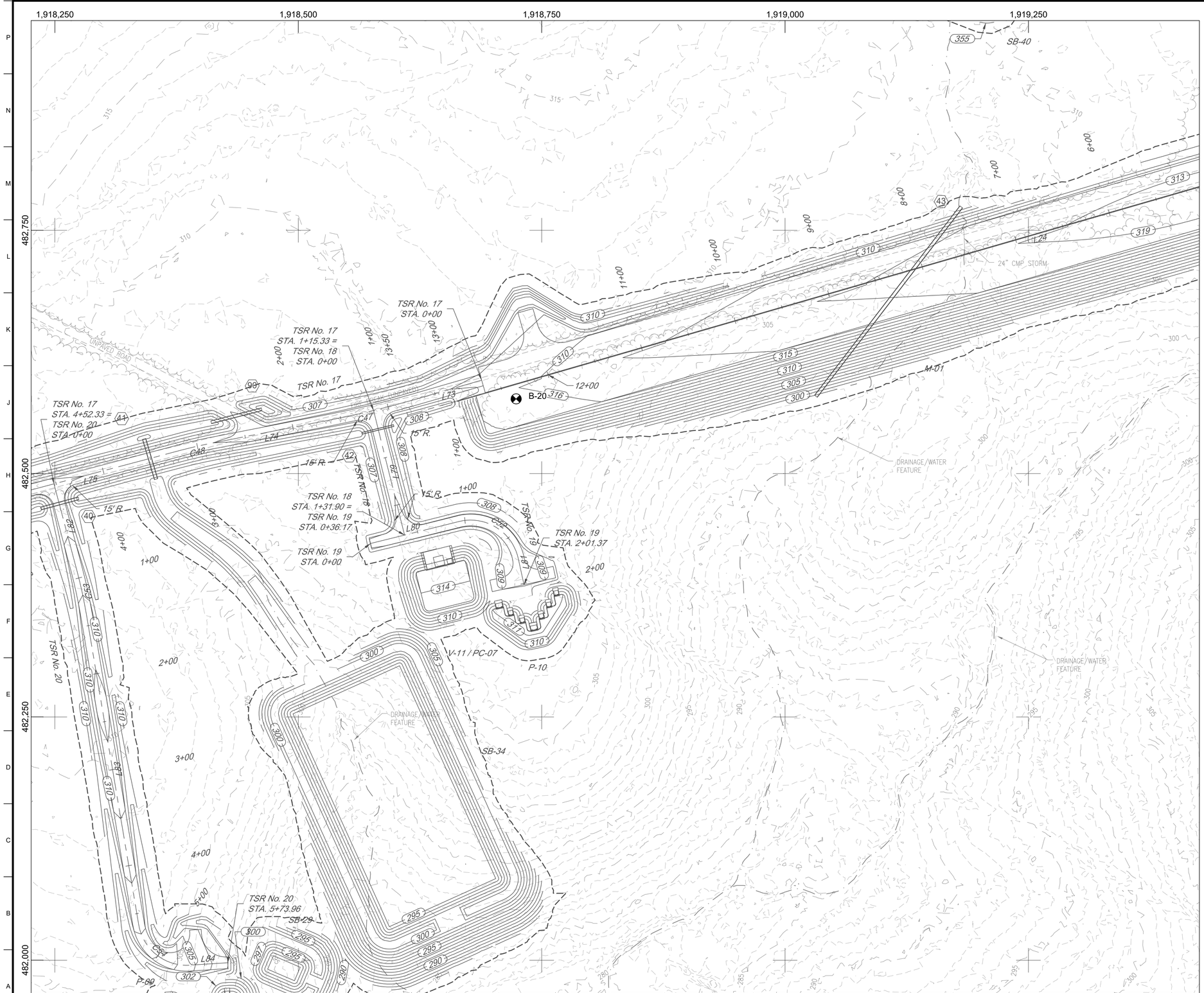
SHEET ID

B-136

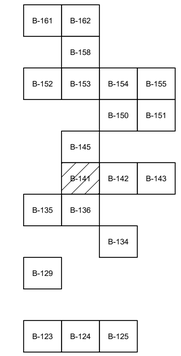
US Army Corps of Engineers®

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2EB-136.DWG

READY TO ADVERTISE (RTA)



KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

READY TO ADVERTISE (RTA)

US Army Corps of Engineers®

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DESIGNED BY:	K. SANDERS
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SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	178-65-01

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

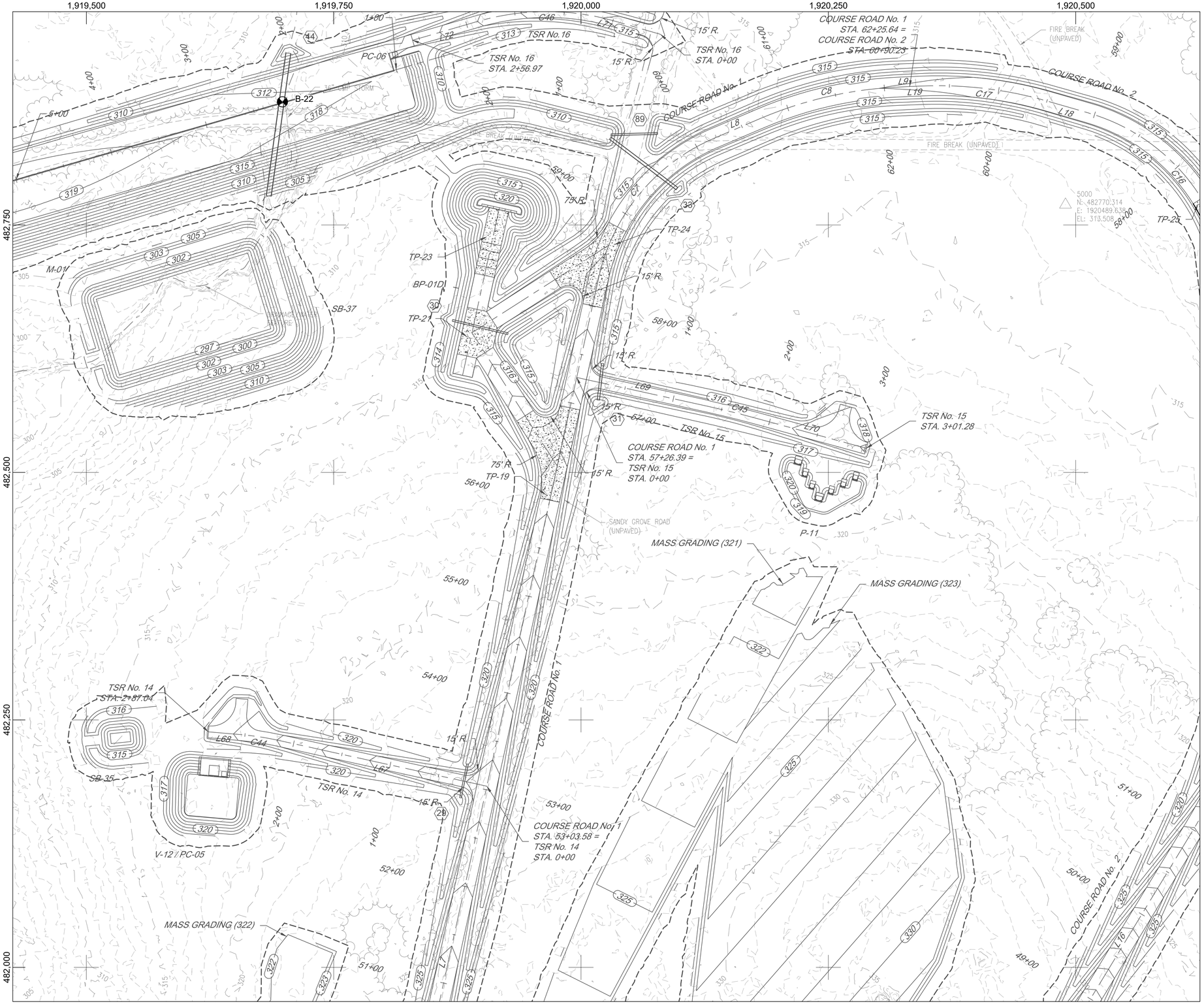
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING PLAN

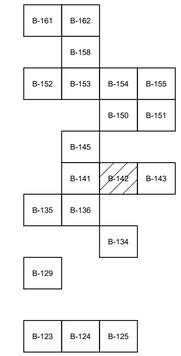
SHEET ID

B-141

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\EB-141.DWG



KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

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

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

SOIL BORING PLAN

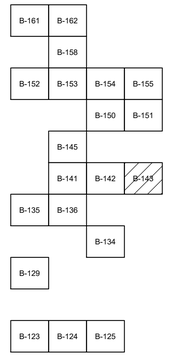
SHEET ID

B-142

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2EB-142.DWG

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
SIZE:	FILE NAME:
ANSI D	

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100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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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

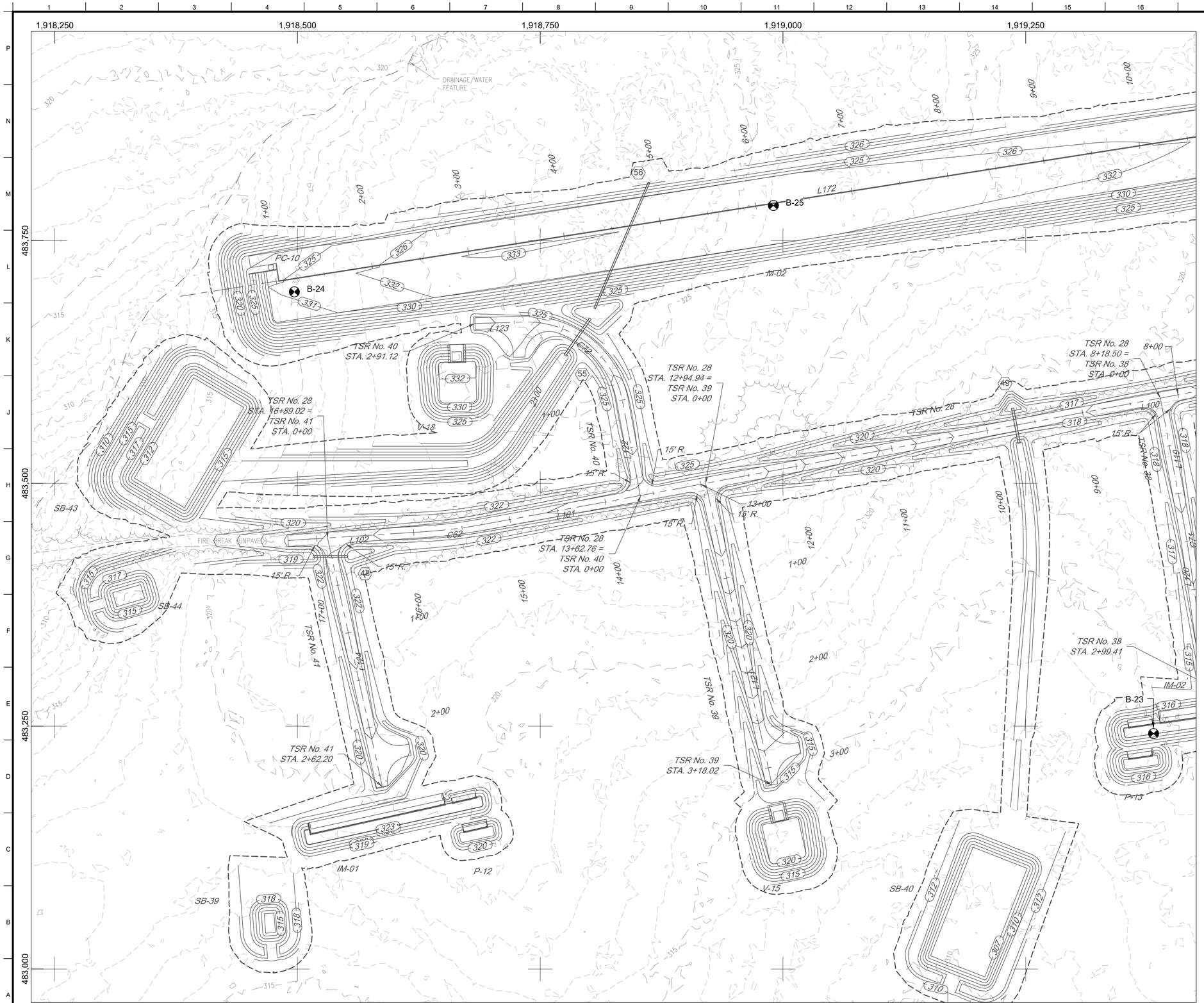
SOIL BORING PLAN

SHEET ID

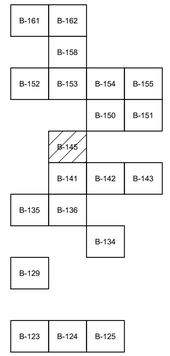
B-143

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\EB-143.DWG



KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

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:	NOVEMBER 2023
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CONTRACT NO.:	
CATEGORY CODE:	178-65-01
FILE NAME:	

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VOLUMES 3 & 4 - DOWNRANGE

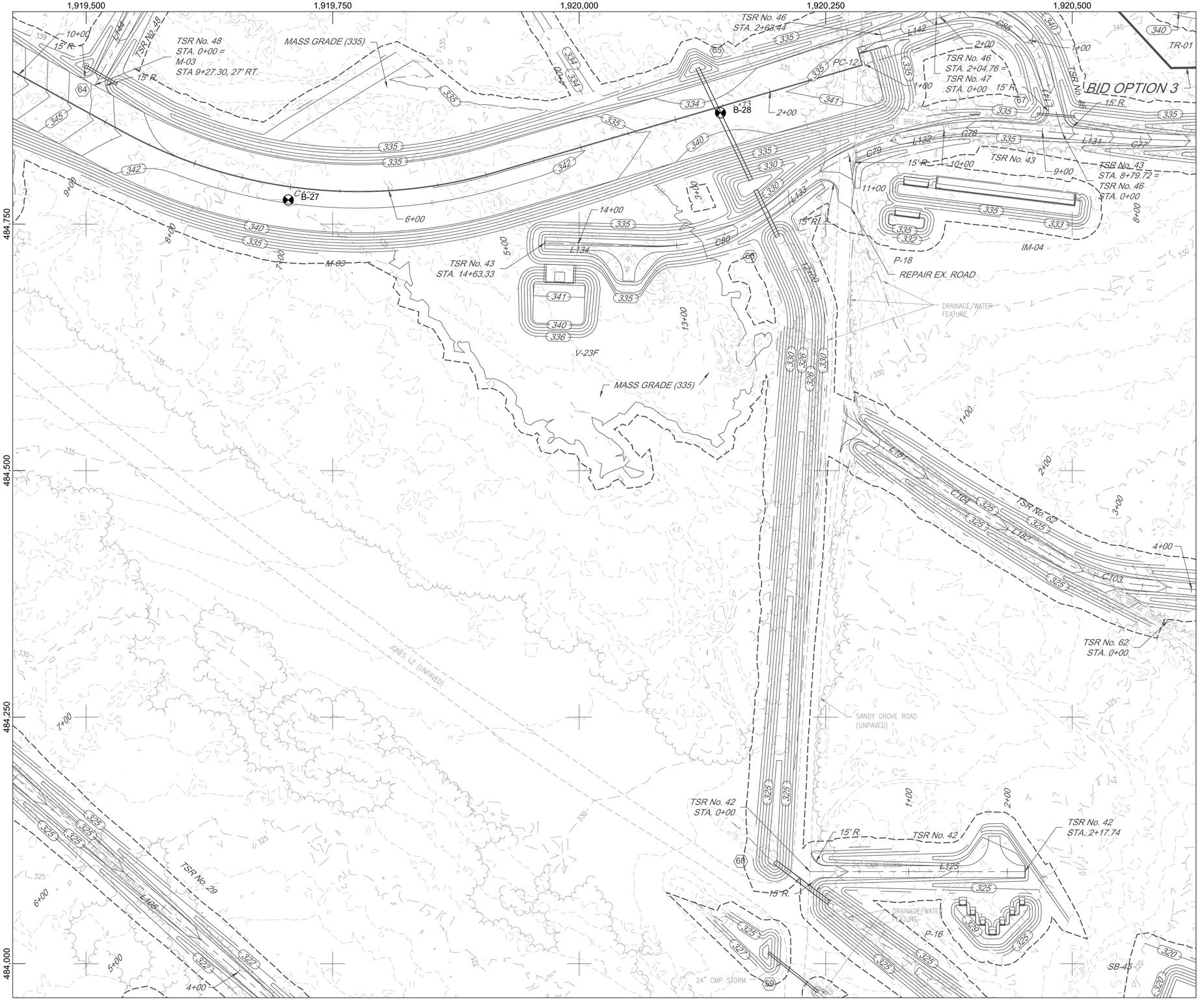
SOIL BORING PLAN

SHEET ID

B-145

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECH\NCAL\100 PLANS\B2\EB-145.DWG



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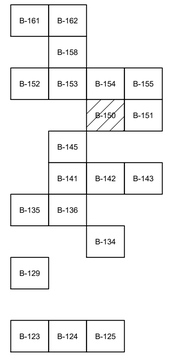

LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

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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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	170-45-01
FILE NAME:	G:\CLEANS\TUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECH\NICAL\100 PLANS\B2\B-150.DWG

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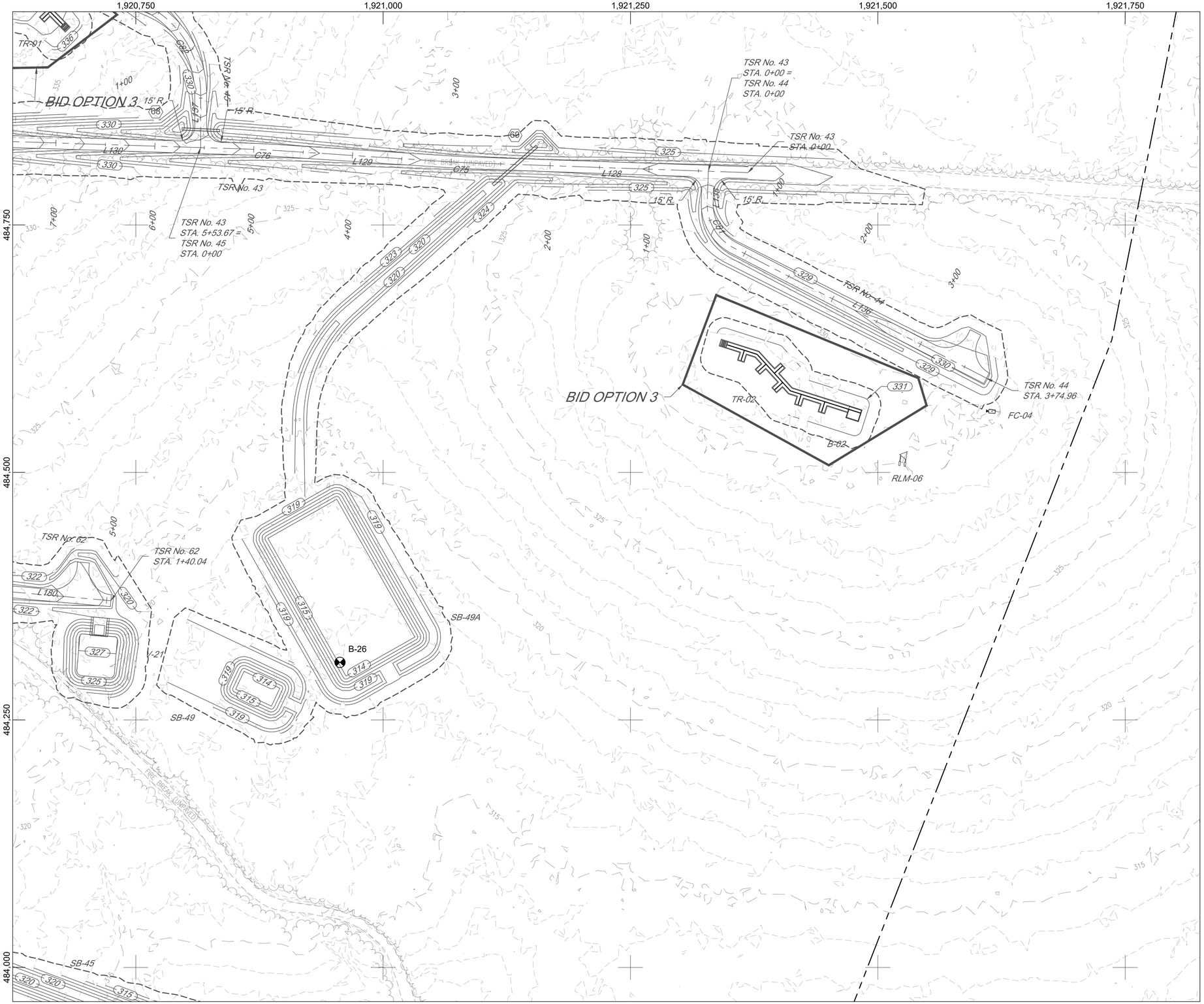
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING PLAN

SHEET ID

B-150

READY TO ADVERTISE (RTA)



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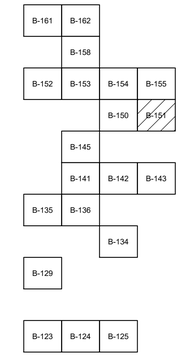

LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	178-65-01
FILE NAME:	

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

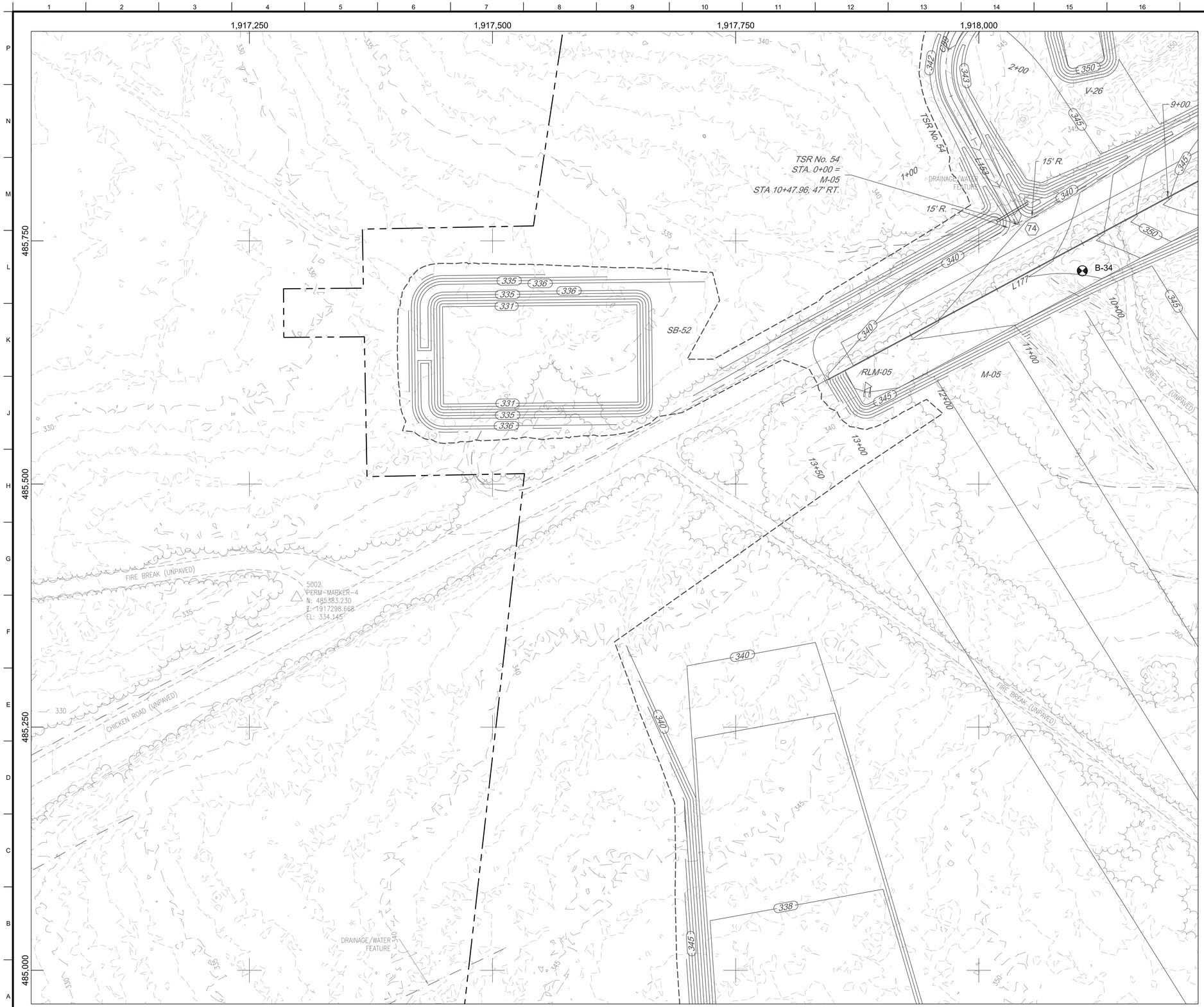
SOIL BORING PLAN

SHEET ID

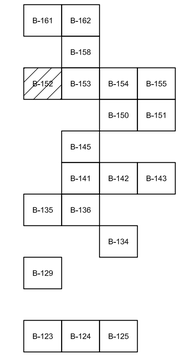
B-151

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\007_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2EB-151.DWG



KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	170-45-01
FILE NAME:	

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

SOIL BORING PLAN

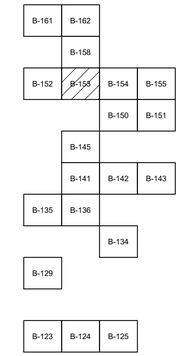
SHEET ID

B-152

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28153\76 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECH\NICAL\100 PLANS\B2EB-152.DWG

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 178-45-01
SIZE: ANSI D	FILE NAME:

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 66162
VOLUMES 3 & 4 - DOWNRANGE

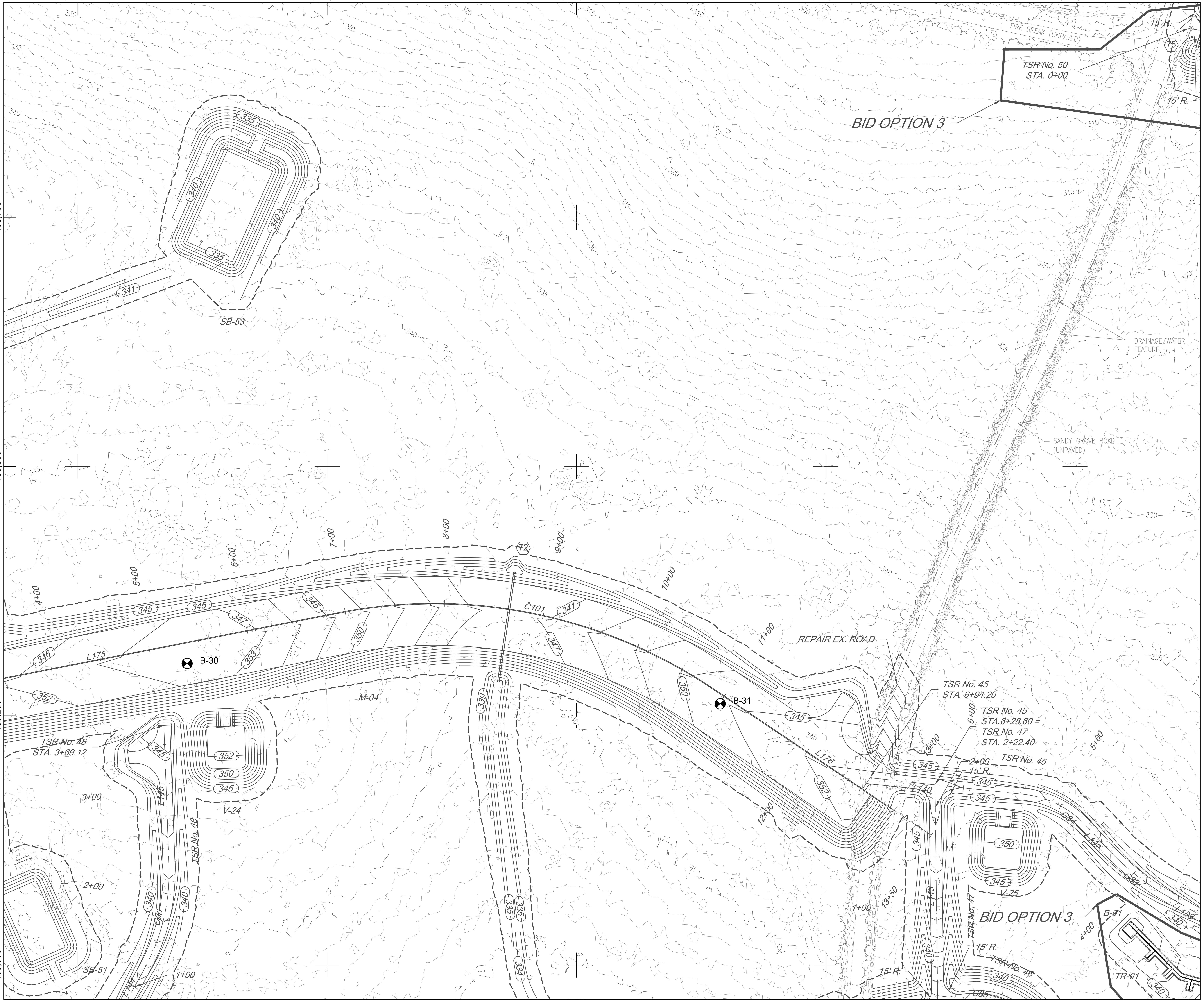
SOIL BORING PLAN

SHEET ID

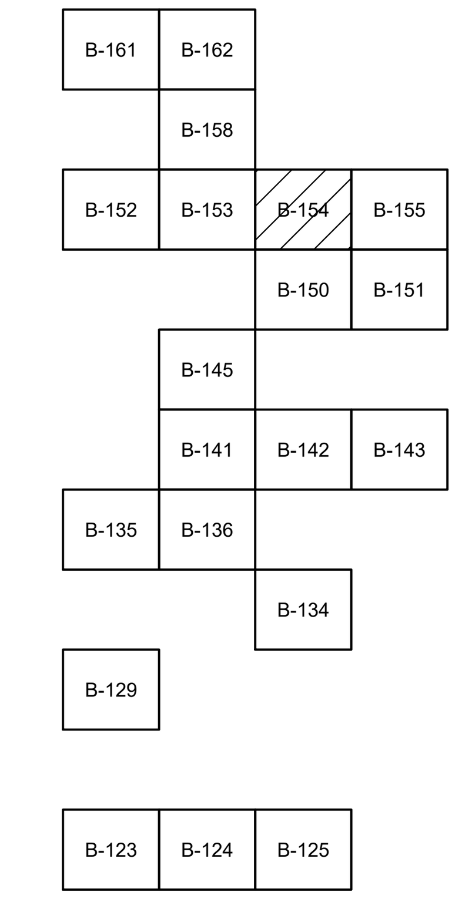
B-153

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\EB-153.DWG



KEY PLAN



LEGEND

⊗ SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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
FILE NAME:

ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 178-65-01

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
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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

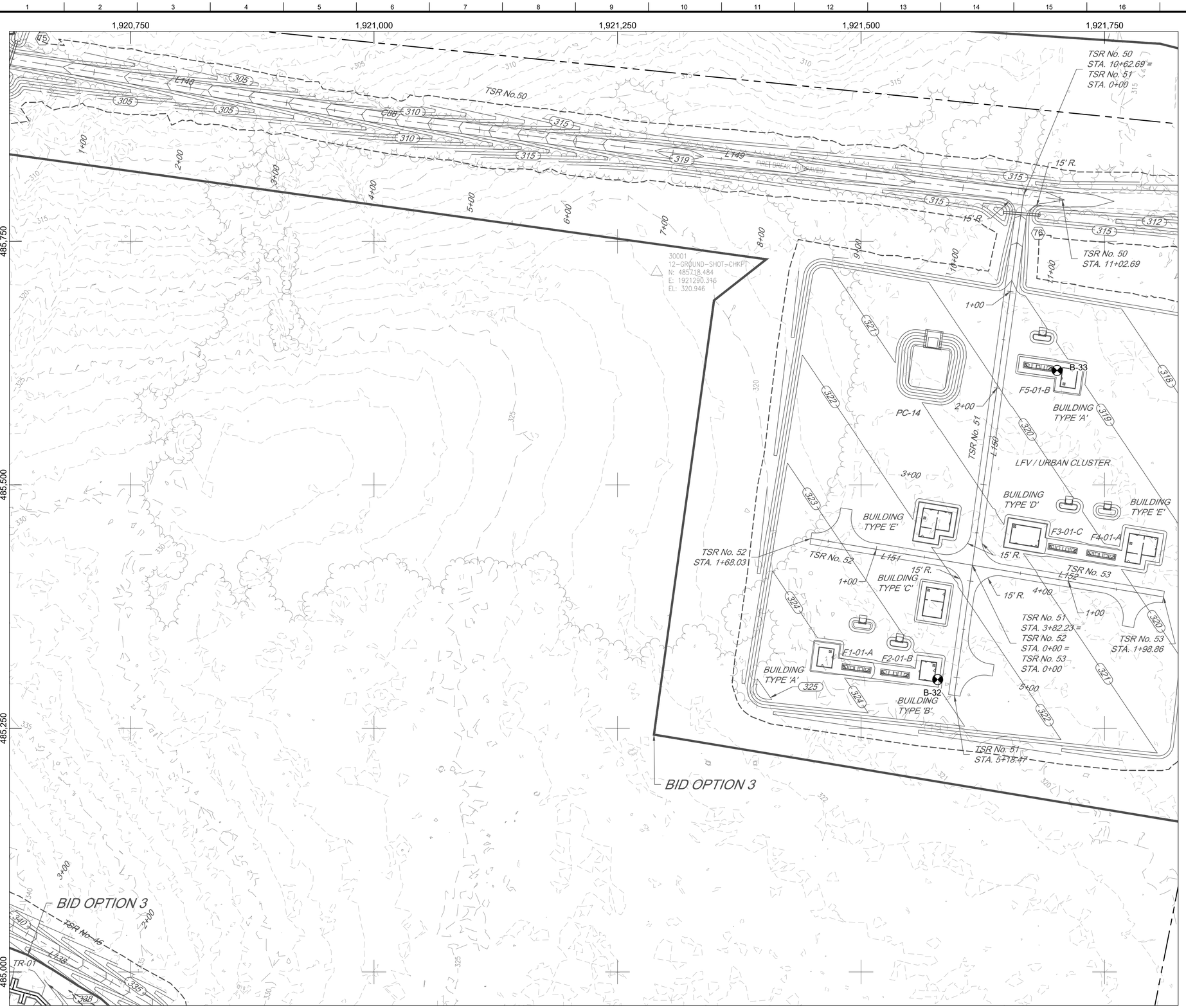
SOIL BORING PLAN

SHEET ID

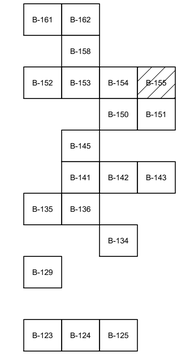
B-154

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2EB-154.DWG



KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	178-65-01
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.
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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

SOIL BORING PLAN

SHEET ID

B-155

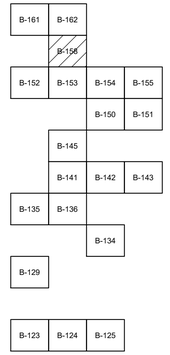
READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2EB-155.DWG

1,918,250 1,918,500 1,918,750 1,919,000 1,919,250

486,750 486,500 486,250 486,000

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 80182
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING PLAN

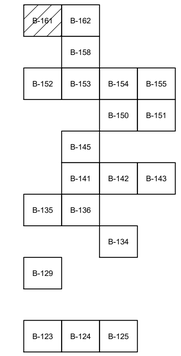
SHEET ID

B-158

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\007_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\EB-158.DWG

KEY PLAN



LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	174-45-01
SIZE:	FILE NAME:
ANSI D	

U.S. ARMY CORPS OF ENGINEERS
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SAVANNAH, GA 31401

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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING PLAN

SHEET ID

B-161

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\1100 PLANS\B2EB-161.DWG

1,918,250 1,918,500 1,918,750 1,919,000 1,919,250

487,750 487,500 487,250 487,000

FIRE BREAK (UNPAVED)

DRAINAGE/WATER FEATURE

REPAIR EX. ROAD

TSR No. 59
STA. 2+49.93
TSR No. 61
15' R.

TSR No. 61
STA. 1+01.09

TSR No. 59
STA. 2+09.93 =
TSR No. 61
STA. 0+00

TSR No. 60
STA. 2+73.09

TSR No. 59
STA. 1+72.35 =
TSR No. 60
STA. 0+00

TSR No. 58
STA. 3+60.18

TSR No. 59
STA. 0+00 =
M-06
STA. 10+02.29, 27' LT.

B-37

SB-63 SB-64 SB-62 SB-61

V-29F V-30

M-06

TSR No. 58

1+00
TSR No. 57
STA. 0+40 =
TSR No. 58
0+00

TSR No. 57
STA. 0+00

L31 L162 L167 L170 L171

KEY PLAN

B-161	B-160		
	B-158		
B-152	B-153	B-154	B-155
		B-150	B-151
	B-145		
	B-141	B-142	B-143
B-135	B-136		
		B-134	
B-129			
B-123	B-124	B-125	

LEGEND

SOIL BORING

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. SANDERS
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CHECKED BY:	B. BRADLEY
SUBMITTED BY:	B. BRADLEY
SIZE:	ANSI D
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CONTRACT NO.:	
CATEGORY CODE:	178-45-01
FILE NAME:	

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

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

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

SOIL BORING PLAN

SHEET ID

B-162

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\100 PLANS\B2\EB-162.DWG

Boring Designation B-1

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-1	LOCATION COORDINATES: N 477297.855 E 1919897.874	11. MANUFACTURER'S DESIGNATION OF DRILL: Geoprobe 7822DT	
3. DRILLING AGENCY: USACE, Savannah District	12. TOTAL SAMPLES: DISTURBED 8	UNDISTURBED 0	
4. NAME OF DRILLER: Ed Ratliff	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: ---	BEARING:	14. ELEVATION GROUND WATER: See Remarks	
		15. DATE BORING: STARTED 3/1/22	COMPLETED 3/1/22
6. THICKNESS OF OVERBURDEN: >25'		16. ELEVATION TOP OF BORING: 306.5'	
7. DEPTH DRILLED INTO ROCK: 0'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
8. TOTAL DEPTH OF BORING: 25'		18. SIGNATURE AND TITLE OF INSPECTOR: Erica Conorozzo, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
306.0	0.5		Topsoil/ Rootmat (approx. 6 inches).					2	
			CLAYEY SAND (SC), light brown, moist, medium dense, mostly fine to medium sand, some clay, little silt.	93	S-1			2	3
								1	
				87	S-2			3	
								5	12
				93	S-3			7	
								5	
								7	17
								10	
				100	S-4			4	
								6	15
298.3	8.3							9	
			LEAN CLAY (CL), light brownish gray, moist, very stiff to hard, mostly clay, little silt, trace fine sand.	87	S-5			4	
								9	24
								15	
				100	S-6			7	
								14	34
								20	
				100	S-7			9	
								16	37
								21	
282.5	24.0							10	
281.5	25.0		CLAYEY SAND (SC), light gray, moist, dense, mostly fine to medium sand, little clay, few silt.	100	S-8			18	39
								21	

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered 3/1/2022

SAS FORM 1836-A FEB 08 — Boring Designation B-1 — SHEET 1 of 1

Boring Designation B-1A

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-1A	LOCATION COORDINATES: N 477388.824 E 1919903.505	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District	12. TOTAL SAMPLES: DISTURBED 8	UNDISTURBED 0	
4. NAME OF DRILLER: Kyle Killebrew	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: ---	BEARING:	14. ELEVATION GROUND WATER: See Remarks	
		15. DATE BORING: STARTED 1/26/22	COMPLETED 1/26/22
6. THICKNESS OF OVERBURDEN: >25'		16. ELEVATION TOP OF BORING: 303'	
7. DEPTH DRILLED INTO ROCK: 0'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
8. TOTAL DEPTH OF BORING: 25'		18. SIGNATURE AND TITLE OF INSPECTOR: Chris Killam, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
			CLAYEY SAND (SC), light gray and light brown, moist, medium dense, mostly fine to medium sand, little clay, trace silt.	55	S-1			3	
								5	13
								8	
				87	S-2			4	
								8	15
299.0	4.0							7	
			LEAN CLAY (CL), light gray mottled with light brown, moist, stiff, mostly silt, little fine to medium sand, few clay.	40	S-3			2	
								7	17
								10	
				56	S-4			8	
								10	25
								15	
				30	S-5			7	
								12	32
								20	
286.2	16.8								
			CLAYEY SAND (SC), light gray mottled with light brown, moist, medium dense, mostly fine sand, little clay.	30	S-6			7	
								16	43
								27	
				30	S-7			3	
								10	24
281.2	21.8							14	
			POORLY GRADED SAND (SP), light gray, moist, medium dense, mostly fine to medium sand, trace silt.	80	S-8			4	
								7	15
278.0	25.0							8	

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered. 1/26/2022

SAS FORM 1836-A FEB 09 — Boring Designation B-1A — SHEET 1 of 1

Boring Designation B-2

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-2	LOCATION COORDINATES: N 477397.904 E 1919372.375	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District	12. TOTAL SAMPLES: DISTURBED 6	UNDISTURBED 0	
4. NAME OF DRILLER: Kyle Killebrew	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: ---	BEARING:	14. ELEVATION GROUND WATER: See Remarks	
		15. DATE BORING: STARTED 1/6/22	COMPLETED 1/6/22
6. THICKNESS OF OVERBURDEN: >15'		16. ELEVATION TOP OF BORING: 306'	
7. DEPTH DRILLED INTO ROCK: 0'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
8. TOTAL DEPTH OF BORING: 15'		18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
305.0	1.0		Topsoil/ Rootmat (approx. 8 to 12 inches).	80	S-1			2	
			SILTY SAND (SM), brown to reddish brown, moist, loose to medium dense, mostly fine sand, little silt.					4	7
				93	S-2			3	
								2	
				33	S-3			3	7
								4	
								3	
								5	12
								7	
298.7	7.3			100	S-4			5	
			LEAN CLAY (CL), light gray, dry, very stiff to hard, mostly clay, some silt, trace fine sand, iron oxide staining.					7	15
								8	
				100	S-5			5	
								13	27
								14	
291.0	15.0			100	S-6			4	
								13	33
								20	

BORING TERMINATED AT 15.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
Completion		Not Encountered 1/6/2022

SAS FORM 1836-A FEB 08 — Boring Designation B-2 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-300.DWG

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	B. BRADLEY
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-65-01
FILE NAME:	

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

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FY23, PN 86182
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING LOGS

SHEET ID

B-300

READY TO ADVERTISE (RTA)

Boring Designation B-3

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range		9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83 / VERTICAL: NAVD88
		10. SIZE AND TYPE OF BIT: 4.25 in. HSA	
2. HOLE NUMBER: B-3	LOCATION COORDINATES: N 477161.514 E 1919309.79	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District		12. TOTAL SAMPLES: DISTURBED 8 / UNDISTURBED 0	
4. NAME OF DRILLER: Kyle Killebrew		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks	
		15. DATE BORING: STARTED 1/6/22 / COMPLETED 1/6/22	
6. THICKNESS OF OVERBURDEN: >25'		16. ELEVATION TOP OF BORING: 305'	
7. DEPTH DRILLED INTO ROCK: 0'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
8. TOTAL DEPTH OF BORING: 25'		18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
304.0	1.0		Topsoil/ Rootmat (approx. 8 to 12 inches).	87	S-1			2 4 3	7
			POORLY GRADED SAND WITH CLAY (SP-SC), brown to light brown, moist, loose, mostly fine to medium sand, few clay, trace silt.	73	S-2			3 4 5	9
301.0	4.0		CLAYEY SAND (SC), light reddish brown, moist, loose to medium dense, mostly fine to medium sand, some clay, iron oxide staining.	93	S-3			3 5 3	8
				93	S-4			3 7 9	16
296.0	9.0		LEAN CLAY (CL), light gray mottled with reddish brown, dry, medium stiff to hard, mostly clay, some silt, trace fine to medium sand, iron oxide staining.	67	S-5		8.5 to 10.0 ft blow counts: WOH, 3, 8	0 3 8	11
				100	S-6			5 13 19	32
282.0	23.0			100	S-7			8 17 26	43
280.0	25.0		POORLY GRADED SAND WITH SILT (SP-SM), light brownish gray, moist, loose, mostly fine sand, few silt.	87	S-8			3 4 3	7

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.
5. Weight of Hammer (WOH) - A weight of hammer event occurs during standard penetration testing when the hammer and drill string (drilling rod and split spoon sampler) are allowed to rest on the bottom of the borehole and they sink under their own weight.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-3 — SHEET 1 of 1

Boring Designation B-4

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range		9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83 / VERTICAL: NAVD88
		10. SIZE AND TYPE OF BIT: 4.25 in. HSA	
2. HOLE NUMBER: B-4	LOCATION COORDINATES: N 477291.412 E 1919186.257	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District		12. TOTAL SAMPLES: DISTURBED 8 / UNDISTURBED 0	
4. NAME OF DRILLER: Kyle Killebrew		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks	
		15. DATE BORING: STARTED 1/7/22 / COMPLETED 1/7/22	
6. THICKNESS OF OVERBURDEN: >25'		16. ELEVATION TOP OF BORING: 302.5'	
7. DEPTH DRILLED INTO ROCK: 0'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
8. TOTAL DEPTH OF BORING: 25'		18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
302.0	0.5		Topsoil / Rootmat (approx. 6 inches).	93	S-1			2 4 3	7
			SILTY SAND (SM), light reddish brown, moist, medium dense, mostly fine to medium sand, little silt, trace clay, iron oxide staining.	87	S-2			2 4 6	10
				67	S-3			1 12 12	24
297.0	5.5		LEAN CLAY (CL), light gray mottled with light reddish brown, moist, stiff to hard, mostly clay, few silt, trace fine sand, iron oxide staining.	87	S-4			3 3 7	10
				100	S-5			7 15 20	35
285.7	16.8		SILTY SAND (SM), light brownish gray, moist, medium dense, mostly fine to coarse sand, some silt, few clay, iron oxide staining.	100	S-6			6 15 25	40
280.7	21.8		POORLY GRADED SAND WITH SILT (SP-SM), light brownish gray, moist, medium dense, mostly fine to medium sand, few silt, trace clay.	100	S-7			4 11 16	27
277.5	25.0			100	S-8			4 7 8	15

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not encountered.

SAS FORM 1836-A FEB 08 — Boring Designation B-4 — SHEET 1 of 1

Boring Designation B-5

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range		9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83 / VERTICAL: NAVD88
		10. SIZE AND TYPE OF BIT: 4.25 in. HSA	
2. HOLE NUMBER: B-5	LOCATION COORDINATES: N 477264.999 E 1919129.328	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District		12. TOTAL SAMPLES: DISTURBED 8 / UNDISTURBED 0	
4. NAME OF DRILLER: Kyle Killebrew		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks	
		15. DATE BORING: STARTED 1/7/22 / COMPLETED 1/7/22	
6. THICKNESS OF OVERBURDEN: >25'		16. ELEVATION TOP OF BORING: 302.5'	
7. DEPTH DRILLED INTO ROCK: 0'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
8. TOTAL DEPTH OF BORING: 25'		18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
301.5	1.0		Topsoil / Rootmat (approx. 12 inches).	87	S-1			2 3 3	6
			SILTY SAND (SM), brown, moist, loose, mostly fine to medium sand, little silt, few clay.	53	S-2			3 6 8	14
298.5	4.0		CLAYEY SAND (SC), light reddish brown mottled with light gray, moist, medium dense, mostly fine to coarse sand, little clay, few silt.	73	S-3			8 9 6	15
297.0	5.5		LEAN CLAY (CL), light gray, moist, very stiff, mostly clay, little silt, trace fine sand.	67	S-4			4 9 10	19
				87	S-5			5 13 16	29
286.5	16.0		POORLY GRADED SAND WITH SILT (SP-SM), light grayish brown, moist, medium dense, mostly fine to medium sand, few silt, trace clay.	100	S-6			4 10 16	26
				80	S-7			6 8 12	20
277.5	25.0			67	S-8			3 7 7	14

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not encountered.

SAS FORM 1836-A FEB 08 — Boring Designation B-5 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-301.DWG

ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W91QHN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-45-01
FILE NAME:	
DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	
SCALE:	AS SHOWN
SIZE:	ANSI D

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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING LOGS

SHEET ID

B-301

READY TO ADVERTISE (RTA)

Boring Designation B-6

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-6 / LOCATION COORDINATES: N 477257.304 E 1918881.833	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x		
3. DRILLING AGENCY: USACE - Savannah District	12. TOTAL SAMPLES:	DISTURBED: 8	UNDISTURBED: 0
4. NAME OF DRILLER: John Howley	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED / DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks		
	15. DATE BORING: STARTED 12/12/21	COMPLETED 12/12/21	
6. THICKNESS OF OVERBURDEN: >25'	16. ELEVATION TOP OF BORING: 296.5'		
7. DEPTH DRILLED INTO ROCK: 0'	17. TOTAL CORE RECOVERY FOR BORING: N/A		
8. TOTAL DEPTH OF BORING: 25'	18. SIGNATURE AND TITLE OF INSPECTOR: Jose Santiago, Geologist		

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Lft. REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
296.0	0.5		Topsoil / Rootmat (approx. 6 inches).					1	
			POORLY GRADED SAND WITH SILT (SP-SM), light brown mottled with reddish brown, moist, medium dense, mostly fine to medium sand, few silt.	93	S-1			1	7
								6	
				87	S-2			5	
								8	15
				100	S-3			7	
								5	
290.7	5.8							6	13
			SANDY LEAN CLAY (CL), light reddish brown, moist, stiff to very stiff, mostly silt, some fine to medium sand, trace clay.					7	
								6	
				100	S-4			9	19
								10	
				100	S-5			5	
								7	14
284.7	11.8							7	
			POORLY GRADED SAND WITH SILT (SP-SM), reddish brown, moist, medium dense to loose, mostly fine to medium sand, few silt, trace clay, trace fine gravel sized iron concretions..					3	
				100	S-6			6	12
								6	
			(becoming) light gray mottled with reddish brown.						
				100	S-7		After removing the auger, the borehole collapsed at 18.2 ft bgs.	2	
								4	9
271.5	25.0							5	
				87	S-8			2	
								3	9
								6	

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not encountered.

SAS FORM 1836-A FEB 08 — Boring Designation B-6 — SHEET 1 of 1

Boring Designation B-7

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 2 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-7 / LOCATION COORDINATES: N 477255.316 E 1918810.009	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x		
3. DRILLING AGENCY: USACE - Savannah District	12. TOTAL SAMPLES:	DISTURBED: 14	UNDISTURBED: 0
4. NAME OF DRILLER: John Howley	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED / DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks		
	15. DATE BORING: STARTED 12/10/21	COMPLETED 12/10/21	
6. THICKNESS OF OVERBURDEN: >55'	16. ELEVATION TOP OF BORING: 296.5'		
7. DEPTH DRILLED INTO ROCK: 0'	17. TOTAL CORE RECOVERY FOR BORING: N/A		
8. TOTAL DEPTH OF BORING: 55'	18. SIGNATURE AND TITLE OF INSPECTOR: Jose Santiago, Geologist		

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Lft. REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
296.0	0.5		Topsoil / Rootmat (approx. 6 inches).					2	
			POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, loose, mostly fine to medium sand, few silt, trace clay.	93	S-1			4	8
								4	
293.3	3.2			73	S-3			4	9
			SILTY SAND (SM), light reddish brown, moist, medium dense to loose, mostly fine to medium sand, little silt, few clay.					5	
				80	S-4			5	11
								6	
				80	S-5			6	13
								7	
				93	S-6			4	
								7	14
								7	
				93	S-7			3	
								3	7
								4	
			(becoming) light gray, mostly fine sand, little silt, few clay.	93	S-8			2	
								3	6
274.7	21.8							3	
			POORLY GRADED SAND (SP), pinkish white, moist, loose, mostly fine to medium sand, trace clay.						
				100	S-9			3	
								7	14
								7	
				100	S-10			2	
								4	9
262.8	33.7							5	
			LEAN CLAY (CL), light gray, moist, hard, mostly clay, trace fine sand.	100	S-11			4	
								13	38
								25	

SAS FORM 1836-A FEB 08 — Boring Designation B-7 — SHEET 1 of 2

Boring Designation B-7

DRILLING LOG (Cont Sheet) | INSTALLATION: Fort Bragg | SHEET 2 OF 2 SHEETS

PROJECT: Automated Multipurpose Training Range	COORDINATE SYSTEM: State Plane	HORIZONTAL: NAD83	VERTICAL: NAVD88
LOCATION COORDINATES: N 477255.316 E 1918810.009	ELEVATION TOP OF BORING: 296.5'		

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Lft. REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
259.7	36.8		LEAN CLAY (CL), light gray, moist, hard, mostly clay, trace fine sand. *(continued)*						
			POORLY GRADED SAND WITH SILT (SP-SM), white, moist to wet, loose, mostly fine to medium sand, few silt, trace clay.					6	
				100	S-12			9	19
								10	
				100	S-13		After removing the auger, the borehole collapsed at 44.0 ft bgs.	3	
								8	16
								8	
				100	S-14			1	
								2	7
								5	
241.5	55.0			87	S-15			2	
								6	13
								7	

BORING TERMINATED AT 55.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
24 hours	44.13 ft	12/11/2021

SAS FORM 1836-A FEB 08 — Boring Designation B-7 — SHEET 2 of 2

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-302.DWG

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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 98162
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING LOGS

SHEET ID
B-302

READY TO ADVERTISE (RTA)

Boring Designation B-8

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-8 | LOCATION COORDINATES: N 477240.797 E 1918795.905
3. DRILLING AGENCY: USACE - Savannah District
4. NAME OF DRILLER: John Howley
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG FROM VERTICAL: --- | BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina | HORIZONTAL: NAD83 | VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 | UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 12/11/21 | COMPLETED 12/11/21
16. ELEVATION TOP OF BORING: 296.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Jose Santiago, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	#/% REC	Sample No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
296.1	0.4		Topsoil / Rootmat (approx. 5 inches).	93	S-1	2		2 4 4	8
294.5	2.0		POORLY GRADED SAND (SP), pale brown, moist, loose, mostly fine to medium sand, trace silt.						
293.0	3.5		POORLY GRADED SAND WITH SILT (SP-SM), pale brown, moist, loose, mostly fine to coarse sand, few silt.	80	S-3			3 5 4	9
			SILTY SAND (SM), orangish brown, moist, loose to medium dense, mostly fine to coarse sand, little silt, few clay.	87	S-4			4 5 6	11
				93	S-5			4 7 10	17
				100	S-6			4 7 7	14
				87	S-7			3 4 5	9
279.7	16.8		POORLY GRADED SAND (SP), white, moist, loose, mostly fine to medium sand, trace clay.	100	S-8		After removing the auger, the borehole collapsed at 20.5 ft bgs.	2 2 4	6
274.7	21.8		LEAN CLAY (CL), light gray, dry, stiff, mostly clay, trace fine sand.						
272.7	23.8		POORLY GRADED SAND (SP), pinkish white, moist, medium dense, mostly fine to medium sand, trace clay.	93	S-9			3 6 6	12
271.5	25.0		BORING TERMINATED AT 25.0 ft						

Water Level Data

Reading	Depth	Notes
After drilling		Not encountered.

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

SAS FORM 1836-A FEB 08 — Boring Designation B-8 — SHEET 1 of 1

Boring Designation B-9

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-9 | LOCATION COORDINATES: N 477166.193 E 1918794.804
3. DRILLING AGENCY: USACE - Savannah District
4. NAME OF DRILLER: John Howley
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG FROM VERTICAL: --- | BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina | HORIZONTAL: NAD83 | VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 | UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 12/11/21 | COMPLETED 12/11/21
16. ELEVATION TOP OF BORING: 298.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Jose Santiago, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	#/% REC	Sample No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
298.1	0.4		Topsoil / Rootmat (approx. 5 inches).	80	S-1	2		3 3 3	6
296.5	2.0		POORLY GRADED SAND (SP), pale yellow, moist, loose, mostly fine to medium sand, trace silt.						
			POORLY GRADED SAND WITH SILT (SP-SM), light brown with grayish brown, moist, loose, mostly fine to medium sand, few silt.	100	S-3			3 4 3	7
				80	S-4			3 5 8	13
293.0	5.5		SILTY SAND (SM), orangish brown, moist, medium dense, mostly fine to coarse sand, little silt, few clay.	100	S-5			5 8 10	18
				100	S-6			5 6 7	13
286.7	11.8		POORLY GRADED SAND WITH SILT (SP-SM), pinkish white, moist, loose to medium dense, mostly fine to medium sand, few silt, trace clay.	100	S-7		After removing the auger, the borehole collapsed at 17.2 ft bgs.	3 3 5	8
			(becoming) pale yellow.	100	S-8			2 3 4	7
273.5	25.0		(becoming) pale brown mottled with white, mostly fine to coarse sand, few silt, trace clay.	100	S-9			3 5 7	12
			BORING TERMINATED AT 25.0 ft						

Water Level Data

Reading	Depth	Notes
After drilling		Not encountered.

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

SAS FORM 1836-A FEB 08 — Boring Designation B-9 — SHEET 1 of 1

Boring Designation B-10

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-10 | LOCATION COORDINATES: N 477166.277 E 1918763.982
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Howley
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG FROM VERTICAL: --- | BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina | HORIZONTAL: NAD83 | VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 | UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 12/11/21 | COMPLETED 12/11/21
16. ELEVATION TOP OF BORING: 298.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Jose Santiago, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	#/% REC	Sample No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
298.1	0.4		Topsoil / Rootmat (approx. 5 inches).	100	S-1	2		2 4 5	9
			POORLY GRADED SAND (SP), light grayish brown, moist, loose to medium dense, mostly fine to medium sand, trace silt.	100	S-3			4 4 4	8
293.0	5.5		SILTY SAND (SM), reddish brown, moist, loose to medium dense, mostly fine to medium sand, little silt.	87	S-4			4 4 6	12
				100	S-5			6 10 11	21
				100	S-6			5 7 8	15
				100	S-7		After removing the auger, the borehole collapsed at 15.8 ft bgs.	3 3 3	6
281.7	16.8		POORLY GRADED SAND WITH CLAY (SP-SC), white, moist, loose, mostly fine to medium sand, few clay.	100	S-8			2 2 2	4
273.5	25.0		BORING TERMINATED AT 25.0 ft	100	S-9			1 4 4	8

Water Level Data

Reading	Depth	Notes
After drilling		Not encountered.

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

SAS FORM 1836-A FEB 08 — Boring Designation B-10 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

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

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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

SOIL BORING LOGS

SHEET ID
B-303

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-303.DWG

READY TO ADVERTISE (RTA)

Boring Designation B-11

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-11 — LOCATION COORDINATES: N 477578.998 E 1917700.713
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Kyle Killebrew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >15'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 15'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 6 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/6/22 — COMPLETED 1/6/22
16. ELEVATION TOP OF BORING: 298.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	#/ REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
297.5	1.0		Topsoil / Rootmat (approx. 8 to 12 inches).	73	S-1			1 1 3	4
297.0	1.5		SILTY SAND (SM), light reddish brown, moist, very loose, mostly fine to medium sand, little silt, trace clay.	100	S-2			6 14 18	32
294.0	4.5		CLAYEY SAND (SC), reddish brown, moist, medium dense to dense, mostly fine to medium sand, little clay, trace silt, iron oxide staining.	100	S-3			11 13 7	20
			LEAN CLAY (CL), light gray, dry, very stiff to hard, mostly clay, little silt, trace fine sand, iron oxide staining.	73	S-4			6 11 15	26
				80	S-5			8 14 18	32
283.5	15.0		BORING TERMINATED AT 15.0 ft	73	S-6			3 7 11	18

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-11 — SHEET 1 of 1

Boring Designation B-12

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-12 — LOCATION COORDINATES: N 477548.68 E 1918932.602
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Kyle Killebrew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >10'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 10'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 5 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/6/22 — COMPLETED 1/6/22
16. ELEVATION TOP OF BORING: 298.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	#/ REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
			POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, medium dense, mostly fine to medium sand, few silt, trace clay, road base.	80	S-1			12 11 11	22
295.0	3.5		CLAYEY SAND (SC), reddish brown to light reddish brown, moist, medium dense, mostly fine sand, some clay, trace silt, iron oxide staining.	73	S-2			5 6 7	13
				87	S-3			4 8 7	15
				93	S-4			4 7 10	17
288.5	10.0		BORING TERMINATED AT 10.0 ft	87	S-5			4 7 6	13

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-12 — SHEET 1 of 1

Boring Designation B-13

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-13 — LOCATION COORDINATES: N 477552.01 E 1919313.544
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Kyle Killebrew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >10'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 10'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 5 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/6/22 — COMPLETED 1/6/22
16. ELEVATION TOP OF BORING: 306.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	#/ REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
			POORLY GRADED SAND WITH SILT (SP-SM), light brown to brown, moist, loose, mostly fine to medium sand, few silt, trace clay.	87	S-1			2 3 3	6
302.5	4.0		POORLY GRADED SAND WITH CLAY (SP-SC), reddish brown, moist, medium dense, mostly fine to medium sand, few clay, trace silt, iron oxide staining.	93	S-2			2 3 3	6
301.0	5.5		LEAN CLAY (CL), light gray, dry, very stiff, mostly clay, little silt, trace fine sand, iron oxide staining.	93	S-3			3 9 11	20
				73	S-4			5 10 11	21
296.5	10.0		BORING TERMINATED AT 10.0 ft	87	S-5			5 11 16	27

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-13 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-304.DWG

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	B. BRADLEY
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-65-01
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

SOIL BORING LOGS

SHEET ID

B-304

READY TO ADVERTISE (RTA)

Boring Designation B-14

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-14 — LOCATION COORDINATES: N 477190.1 E 1918969.328
3. DRILLING AGENCY: USACE - Savannah District
4. NAME OF DRILLER: John Howley
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >10'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 10'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 5 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 12/12/21 — COMPLETED 12/12/21
16. ELEVATION TOP OF BORING: 299.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Jose Santiago, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Ø REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
299.0	0.5		SILTY SAND (SM), reddish brown, moist, loose, mostly fine to medium sand, little silt, few clay.	100	S-1			1 4 4	8
			POORLY GRADED SAND WITH CLAY (SP-SC), light brown, moist, loose, mostly fine to medium sand, few clay, few silt.	100	S-2			2 3 4	7
295.5	4.0		CLAYEY SAND (SC), light brown to reddish brown, moist, loose, mostly fine to medium sand, little clay.	100	S-3			2 4 6	10
293.0	6.5		SILTY SAND (SM), reddish brown, moist, medium dense, mostly fine to medium sand, little silt, few clay, mica.	100	S-4		After removing the auger, the borehole collapsed at 5.9 ft bgs.	5 7 8	15
289.5	10.0			100	S-5			5 5 6	11

BORING TERMINATED AT 10.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-14 — SHEET 1 of 1

Boring Designation B-15

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-15 — LOCATION COORDINATES: N 479135.122 E 1917728.364
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Kyle Killebrew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >15'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 15'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 6 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/5/22 — COMPLETED 1/5/22
16. ELEVATION TOP OF BORING: 286.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Ø REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
286.0	0.5		Topsoil / Rootmat (3 to 6 inches) roots present to 1.5 feet.	80	S-1			2 4 3	7
			CLAYEY SAND (SC), light brown mottled with brown, moist, loose, mostly fine to medium sand, little clay, trace silt.	87	S-2			3 3 4	7
281.0	5.5			100	S-3			2 3 3	6
			LEAN CLAY (CL), light reddish brown, moist, loose, mostly clay, some silt, trace fine sand.	93	S-4			1 3 2	5
274.7	11.8			87	S-5			2 4 3	7
271.5	15.0		CLAYEY SAND (SC), reddish brown, moist, loose, mostly fine to medium sand, little clay, trace silt.	100	S-6			2 4 4	8

BORING TERMINATED AT 15.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-15 — SHEET 1 of 1

Boring Designation B-16

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-16 — LOCATION COORDINATES: N 479867.243 E 1918168.446
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Kyle Killebrew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >10'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 10'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 5 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/5/22 — COMPLETED 1/5/22
16. ELEVATION TOP OF BORING: 302.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Ø REC	Samp No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
301.5	1.0		Topsoil / Rootmat (approx. 8 to 12 inches).	53	S-1		0.0 to 1.5 blow counts: 2, 1, WOH	2 1 0	1
			POORLY GRADED SAND WITH CLAY (SP-SC), light brown to reddish brown, moist, very loose to medium dense, mostly fine to medium sand, few clay, trace fine gravel.	67	S-2			2 1 1	2
				93	S-3			1 3 4	8
				73	S-4			3 5 8	13
292.5	10.0			100	S-5			16 19 17	36

BORING TERMINATED AT 10.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.
5. Weight of Hammer (WOH) - A weight of hammer event occurs during standard penetration testing when the hammer and drill string (drilling rod and split spoon sampler) are allowed to rest on the bottom of the borehole and they sink under their own weight.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-16 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME: G:\CLEANS\TUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-305.DWG

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

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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

SOIL BORING LOGS

SHEET ID
B-305

READY TO ADVERTISE (RTA)

Boring Designation B-17

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range		9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83 / VERTICAL: NAVD88
		10. SIZE AND TYPE OF BIT: 4.25 in. HSA	
2. HOLE NUMBER: B-17	LOCATION COORDINATES: N 480867.654 E 1919789.911	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District		12. TOTAL SAMPLES: DISTURBED 6	UNDISTURBED 0
4. NAME OF DRILLER: Kyle Killebrew		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG FROM VERTICAL: ---	BEARING:	14. ELEVATION GROUND WATER: See Remarks
6. THICKNESS OF OVERBURDEN: >15'		15. DATE BORING: STARTED 1/5/22	COMPLETED 1/5/22
7. DEPTH DRILLED INTO ROCK: 0'		16. ELEVATION TOP OF BORING: 325.5'	
8. TOTAL DEPTH OF BORING: 15'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
		18. SIGNATURE AND TITLE OF INSPECTOR: Ken Diediker, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
325.0	0.5		Topsoil / Rootmat (approx 6 inches).	93	S-1			1, 2, 2	4
			LEAN CLAY WITH SAND (CL), light gray mottled with reddish brown, moist, medium stiff to stiff, mostly clay, little silt, little fine to medium sand.						
322.0	3.5			100	S-2			3, 6, 6	12
			CLAYEY SAND (SC), light gray mottled with reddish brown, moist, medium dense to dense, mostly fine to medium sand, little clay, trace silt.	60	S-3			10, 12, 18	30
				93	S-4			9, 18, 25	43
			Becoming reddish brown.	87	S-5			8, 12, 16	28
310.5	15.0			0	S-6		No Recovery	8, 12, 15	27

BORING TERMINATED AT 15.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-17 — SHEET 1 of 1

Boring Designation B-18

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range		9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83 / VERTICAL: NAVD88
		10. SIZE AND TYPE OF BIT: 4.25 in. HSA	
2. HOLE NUMBER: B-18	LOCATION COORDINATES: N 481119.25 E 1918411.558	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District		12. TOTAL SAMPLES: DISTURBED 7	UNDISTURBED 0
4. NAME OF DRILLER: Ed Ratliff		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG FROM VERTICAL: ---	BEARING:	14. ELEVATION GROUND WATER: See Remarks
6. THICKNESS OF OVERBURDEN: >20'		15. DATE BORING: STARTED 1/11/22	COMPLETED 1/11/22
7. DEPTH DRILLED INTO ROCK: 5'		16. ELEVATION TOP OF BORING: 272.5'	
8. TOTAL DEPTH OF BORING: 20'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
		18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
272.1	0.4		Topsoil / Rootmat (approx. 4 to 6 inches).	73	S-1		0.0 to 1.5 ft blow counts: WOH, 1, WOH	0, 1, 0	1
			SILTY SAND (SM), light brown, moist, very loose to loose, mostly fine to medium sand, little silt, few clay.						
				100	S-2			1, 1, 2	3
				93	S-3			3, 2, 4	6
267.0	5.5		CLAYEY SAND (SC), light brown and reddish brown, moist, loose, mostly fine to medium sand, little clay, few silt, iron oxide staining.	93	S-4			3, 3, 3	6
				73	S-5			3, 4, 3	7
261.5	11.0		POORLY GRADED SAND WITH SILT (SP-SM), light brown and light gray, moist to wet, very loose to loose, mostly fine to medium sand, few silt.	100	S-6			1, 1, 2	3
252.5	20.0		(becoming) reddish brown.	100	S-7			1, 3, 6	9

BORING TERMINATED AT 20.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.
5. Offset approximately 10 ft north due to trees.
6. Weight of Hammer (WOH) - A weight of hammer event occurs during standard penetration testing when the hammer and drill string (drilling rod and split spoon sampler) are allowed to rest on the bottom of the borehole and they sink under their own weight.

Water Level Data

Reading	Depth	Notes
After drilling	13.5 ft	

SAS FORM 1836-A FEB 08 — Boring Designation B-18 — SHEET 1 of 1

Boring Designation B-19

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range		9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83 / VERTICAL: NAVD88
		10. SIZE AND TYPE OF BIT: 4.25 in. HSA	
2. HOLE NUMBER: B-19	LOCATION COORDINATES: N 481569.28 E 1917547.807	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x	
3. DRILLING AGENCY: USACE, Savannah District		12. TOTAL SAMPLES: DISTURBED 6	UNDISTURBED 0
4. NAME OF DRILLER: Ed Ratliff		13. TOTAL NUMBER CORE BOXES: 0	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG FROM VERTICAL: ---	BEARING:	14. ELEVATION GROUND WATER: See Remarks
6. THICKNESS OF OVERBURDEN: >15'		15. DATE BORING: STARTED 1/11/22	COMPLETED 1/11/22
7. DEPTH DRILLED INTO ROCK: 0'		16. ELEVATION TOP OF BORING: 305.5'	
8. TOTAL DEPTH OF BORING: 15'		17. TOTAL CORE RECOVERY FOR BORING: N/A	
		18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist	

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
305.0	0.5		Topsoil / Rootmat (approx. 6 inches).	80	S-1		0.0 to 1.5 blow counts: WOH, 1, 1	0, 1, 1	2
303.7	1.8		POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, very loose, mostly fine to medium sand, few silt, trace clay, iron oxide staining.	100	S-2			5, 11, 15	26
			POORLY GRADED SAND WITH CLAY (SP-SC), reddish brown, moist, medium dense, mostly fine to medium sand, few clay, trace silt.	100	S-3			10, 10, 13	19
299.2	6.3			80	S-4			4, 6, 7	13
			LEAN CLAY (CL), gray mottled with red, moist, stiff to very stiff, mostly clay, some silt, trace fine sand, iron oxide staining.	100	S-5			4, 11, 15	26
290.5	15.0			100	S-6			6, 10, 13	23

BORING TERMINATED AT 15.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.
5. Weight of Hammer (WOH) - A weight of hammer event occurs during standard penetration testing when the hammer and drill string (drilling rod and split spoon sampler) are allowed to rest on the bottom of the borehole and they sink under their own weight.

Water Level Data

Reading	Depth	Notes
During drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-19 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 36162
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING LOGS

SHEET ID
B-306

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-306.DWG

Boring Designation B-20

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
9. COORDINATE SYSTEM: State Plane - North Carolina; HORIZONTAL: NAD83; VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
2. HOLE NUMBER: B-20; LOCATION COORDINATES: N 482576.697 E 1918723.727
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
3. DRILLING AGENCY: USACE, Savannah District
12. TOTAL SAMPLES: DISTURBED 8; UNDISTURBED 0
4. NAME OF DRILLER: Ed Ratliff
13. TOTAL NUMBER CORE BOXES: 0
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: ---; BEARING:
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/12/22; COMPLETED 1/12/22
6. THICKNESS OF OVERBURDEN: >25'
16. ELEVATION TOP OF BORING: 309.5'
7. DEPTH DRILLED INTO ROCK: 0'
17. TOTAL CORE RECOVERY FOR BORING: N/A
8. TOTAL DEPTH OF BORING: 25'
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	# REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
309.0	0.5		Topsoil / Rootmat (approx. 6 inches).					1 1	2
			POORLY GRADED SAND WITH SILT (SP-SM), light brown to reddish brown, moist, very loose to loose, mostly fine to medium sand, few silt, trace clay.	80	S-1			1 1	
				33	S-2			2 2	4
				93	S-3			2 2	5
								1 2	
				93	S-4			2 4	7
								3	
				100	S-5			2 4	8
								4	
				100	S-6			4 4	9
								5	
292.7	16.8		POORLY GRADED SAND WITH CLAY (SP-SC), reddish brown, moist, loose to medium dense, mostly fine to medium sand, few clay, trace silt, iron oxide staining.	100	S-7			2 4	9
								5	
284.5	25.0		BORING TERMINATED AT 25.0 ft	100	S-8			5 7 8	15

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
During drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-20 — SHEET 1 of 1

Boring Designation B-21

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
9. COORDINATE SYSTEM: State Plane - North Carolina; HORIZONTAL: NAD83; VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
2. HOLE NUMBER: B-21; LOCATION COORDINATES: N 482660.719 E 1920761.432
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
3. DRILLING AGENCY: USACE, Savannah District
12. TOTAL SAMPLES: DISTURBED 6; UNDISTURBED 0
4. NAME OF DRILLER: Ed Ratliff
13. TOTAL NUMBER CORE BOXES: 0
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: ---; BEARING:
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/11/22; COMPLETED 1/11/22
6. THICKNESS OF OVERBURDEN: >15'
16. ELEVATION TOP OF BORING: 314.5'
7. DEPTH DRILLED INTO ROCK: 0'
17. TOTAL CORE RECOVERY FOR BORING: N/A
8. TOTAL DEPTH OF BORING: 15'
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	# REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
314.0	0.5		Topsoil / Rootmat (approx. 4 to 6 inches).					1 4	7
			POORLY GRADED SAND WITH SILT (SP-SM), light reddish brown, moist, loose, mostly fine sand, few silt.	100	S-1			3	
312.5	2.0		SILTY SAND (SM), light brown, moist, very loose, mostly fine to medium sand, little silt, few clay.	93	S-2			2 1	3
310.5	4.0		POORLY GRADED SAND (SP), light reddish brown, moist, medium dense, mostly fine to medium sand, trace silt, trace clay.	87	S-3			3 5	8
309.0	5.5		CLAYEY SAND (SC), light brown mottled with reddish brown, moist, medium dense, mostly fine to medium sand, some clay, few silt, iron oxide staining.					8	
				100	S-4			9 11	20
				93	S-5			5 10 11	21
299.5	15.0		BORING TERMINATED AT 15.0 ft	100	S-6			3 6 6	12

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
During drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-21 — SHEET 1 of 1

Boring Designation B-22

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
9. COORDINATE SYSTEM: State Plane - North Carolina; HORIZONTAL: NAD83; VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
2. HOLE NUMBER: B-22; LOCATION COORDINATES: N 482874.296 E 1919698.095
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
3. DRILLING AGENCY: USACE, Savannah District
12. TOTAL SAMPLES: DISTURBED 8; UNDISTURBED 0
4. NAME OF DRILLER: Ed Ratliff
13. TOTAL NUMBER CORE BOXES: 0
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: ---; BEARING:
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/11/22; COMPLETED 1/11/22
6. THICKNESS OF OVERBURDEN: >25'
16. ELEVATION TOP OF BORING: 308'
7. DEPTH DRILLED INTO ROCK: 0'
17. TOTAL CORE RECOVERY FOR BORING: N/A
8. TOTAL DEPTH OF BORING: 25'
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	# REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
307.5	0.5		Topsoil / Rootmat (approx. 6 to 8 inches).					1 1	3
			POORLY GRADED SAND (SP), brown to grayish brown, moist, very loose, mostly fine to medium sand, trace silt.	80	S-1			2	
				93	S-2			2 2	4
304.0	4.0		CLAYEY SAND (SC), light reddish brown mottled with light gray, moist, medium dense, mostly fine to medium sand, little clay, few silt, iron oxide staining.	40	S-3			2 2	5
								3	
				93	S-4			3 5 13	18
				93	S-5			3 8 7	15
296.2	11.8		POORLY GRADED SAND (SP), light reddish brown, moist, loose, mostly fine to medium sand, trace silt, trace clay, iron oxide staining.	100	S-6			1 3 3	6
291.2	16.8		POORLY GRADED SAND (SP), light gray, moist to wet, loose to medium dense, mostly fine to medium sand, trace clay, iron oxide staining.	93	S-7			1 5 6	11
283.0	25.0		BORING TERMINATED AT 25.0 ft	100	S-8			1 2 5	7

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
During drilling	22 ft	

SAS FORM 1836-A FEB 08 — Boring Designation B-22 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SOIL BORING LOGS

SHEET ID
B-307

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-307.DWG

Boring Designation B-23

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-23 — LOCATION COORDINATES: N 483242.367 E 1919381.657
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Ed Ratliff
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/12/22 — COMPLETED 1/12/22
16. ELEVATION TOP OF BORING: 314.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
314.0	0.5		Topsoil / Rootmat (approx. 6 to 8 inches).	87	S-1			1 1 1	2
			SILTY SAND (SM), light reddish brown, moist, very loose to loose, mostly fine to medium sand, little silt, few clay.	67	S-2		Roots likely to 3 feet	2 2 3	5
309.0	5.5			47	S-3			3 4 4	8
307.7	6.8		LEAN CLAY WITH SAND (CL), reddish brown mottled with light gray, moist, medium stiff, mostly clay, little silt, little fine to medium sand, iron oxide staining.	93	S-4			4 7 11	18
			CLAYEY SAND (SC), reddish brown, moist, medium dense, mostly fine to medium sand, some clay, little silt.	100	S-5			5 7 9	16
297.7	16.8		SILTY SAND (SM), light brown, moist, medium dense, mostly fine sand, little silt, trace clay strata or lenses.	100	S-6			4 9 11	20
				100	S-7			4 7 8	15
289.5	25.0			100	S-8			4 7 9	16

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-23 — SHEET 1 of 1

Boring Designation B-24

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-24 — LOCATION COORDINATES: N 483697.159 E 1918496.725
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Ed Ratliff
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/12/22 — COMPLETED 1/12/22
16. ELEVATION TOP OF BORING: 320'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
319.5	0.5		Topsoil / Rootmat (approx. 3 to 6 inches).	80	S-1			1 1 1	2
			POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, very loose, mostly fine to medium sand, few silt, trace clay.	67	S-2			2 2 2	4
316.0	4.0		LEAN CLAY (CL), light reddish brown mottled with light gray, moist, stiff to very stiff, mostly clay, little silt, trace fine sand, iron oxide staining.	100	S-3			2 3 5	8
313.5	6.5		POORLY GRADED SAND WITH SILT (SP-SM), light brown to light gray, moist, medium dense, mostly fine to medium sand, few silt, trace clay, iron oxide staining.	93	S-4			6 12 12	24
				100	S-5			2 8 8	16
				100	S-6			3 5 5	10
				100	S-7			2 6 5	11
295.0	25.0			100	S-8			4 6 5	11

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-24 — SHEET 1 of 1

Boring Designation B-25

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-25 — LOCATION COORDINATES: N 483786.066 E 1918990.013
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Ed Ratliff
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/12/22 — COMPLETED 1/12/22
16. ELEVATION TOP OF BORING: 326'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	ft REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
325.5	0.5		Topsoil / Rootmat (approx. 3 to 6 inches).	87	S-1			1 2 2	4
			POORLY GRADED SAND WITH SILT (SP-SM), brown to light brown, moist, loose, mostly fine sand, few silt.	80	S-2			1 2 5	7
323.0	3.0		LEAN CLAY (CL), reddish brown, moist, stiff to very stiff, mostly clay, little silt, trace fine sand, iron oxide staining.	80	S-3			3 6 8	14
				80	S-4			6 10 16	26
				93	S-5			5 10 18	28
314.2	11.8		POORLY GRADED SAND (SP), light gray to reddish brown, moist, medium dense, mostly fine to medium sand, trace silt, trace clay, iron oxide staining.	100	S-6			3 5 6	11
				100	S-7			1 5 9	14
301.0	25.0			100	S-8			2 5 6	11

BORING TERMINATED AT 25.0 ft

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-25 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

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

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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

SOIL BORING LOGS

SHEET ID
B-308

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-308.DWG

Boring Designation B-26

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-26 — LOCATION COORDINATES: N 484308.115 E 1920956.4
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: Ed Ratliff
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >15'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 15'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 6 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/12/22 — COMPLETED 1/13/22
16. ELEVATION TOP OF BORING: 316.4'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Ø REC.	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
315.9	0.5		Topsoil / Rootmat (approx. 3 to 6 inches).					1 1 1	2
314.4	2.0		POORLY GRADED SAND WITH SILT (SP-SM), brown, moist, very loose, mostly fine sand, few silt.	73	S-1				
			SILTY SAND (SM), reddish brown, moist, loose to medium dense, mostly fine to medium sand, little silt.					2 2 6	8
				87	S-2			4 7 9	16
				100	S-3				
								6 10 10	20
				87	S-4				
				100	S-5			4 8 10	18
				100	S-6			5 5 6	11
301.4	15.0		BORING TERMINATED AT 15.0 ft						

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-26 — SHEET 1 of 1

Boring Designation B-27

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-27 — LOCATION COORDINATES: N 484774.402 E 1919705.027
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/13/22 — COMPLETED 1/13/22
16. ELEVATION TOP OF BORING: 335'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Ø REC.	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
334.5	0.5		Topsoil / Rootmat (approx. 3 to 6 inches).					1 1 1	2
333.2	1.8		POORLY GRADED SAND WITH CLAY (SP-SC), light brown, moist, very loose to medium dense, mostly fine sand, few clay, trace silt.	80	S-1				
			POORLY GRADED SAND WITH SILT (SP-SM), brown, moist, mostly fine to medium sand, few silt, trace clay.	100	S-2			1 2 2	4
331.0	4.0		CLAYEY SAND (SC), reddish brown, moist, medium dense, mostly fine to medium sand, some clay, few silt, iron oxide staining.	87	S-3			2 6 10	16
				100	S-4			5 7 11	18
326.0	9.0		POORLY GRADED SAND WITH CLAY (SP-SC), light reddish brown, moist, medium dense, mostly fine to medium sand, few clay, trace silt, iron oxide staining.	100	S-5			5 12 17	29
				100	S-6			5 11 12	23
				100	S-7			4 8 10	18
313.2	21.8		SILTY SAND (SM), light gray, moist, mostly fine to coarse sand, little silt, trace clay.	100	S-8			3 6 8	14
310.0	25.0		BORING TERMINATED AT 25.0 ft						

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-27 — SHEET 1 of 1

Boring Designation B-28

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-28 — LOCATION COORDINATES: N 484862.749 E 1920143.246
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/13/22 — COMPLETED 1/13/22
16. ELEVATION TOP OF BORING: 334.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Ø REC.	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
334.0	0.5		Topsoil / Rootmat (approx. 3 to 6 inches).					1 2 3	5
			POORLY GRADED SAND WITH SILT (SP-SM), light brown to reddish brown, moist, loose to medium dense, mostly fine to medium sand, few silt, trace clay.	87	S-1		Roots likely to 3 feet		
				100	S-2			2 3 3	5
				100	S-3			2 2 3	5
				100	S-4			3 5 6	11
				100	S-5			4 7 8	15
				100	S-6			8 11 9	20
				100	S-7			3 6 7	13
312.7	21.8		SANDY LEAN CLAY (CL), light gray, moist, stiff, mostly clay, some fine to coarse sand.	93	S-8			3 6 8	14
309.5	25.0		BORING TERMINATED AT 25.0 ft						

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-28 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-65-01
FILE NAME:	

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

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DOTHAN, AL 36303
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 98162
VOLUMES 3 & 4 - DOWNRANGE

SOIL BORING LOGS

SHEET ID
B-309

G:\CLEANS\TUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-309.DWG

READY TO ADVERTISE (RTA)

Boring Designation B-29

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	South Atlantic	Fort Bragg	1 / 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-29 / LOCATION COORDINATES: N 484984.816 E 1919281.08	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x		
3. DRILLING AGENCY: USACE, Savannah District	12. TOTAL SAMPLES:	DISTURBED: 8	UNDISTURBED: 0
4. NAME OF DRILLER: John Haskew	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED / DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks		
	15. DATE BORING:	STARTED: 1/13/22	COMPLETED: 1/13/22
6. THICKNESS OF OVERBURDEN: >25'	16. ELEVATION TOP OF BORING: 344'		
7. DEPTH DRILLED INTO ROCK: 0'	17. TOTAL CORE RECOVERY FOR BORING: N/A		
8. TOTAL DEPTH OF BORING: 25'	18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist		

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
343.5	0.5		Topsoil / Rootmat (approx. 3 to 6 inches).	87	S-1			1 2 8	10
342.2	1.8		LEAN CLAY (CL), light brown, moist, stiff, mostly clay, little fine to medium sand, few silt, iron oxide staining.	100	S-2			3 3 4	7
340.0	4.0		SILTY SAND (SM), light brown, moist, loose, mostly fine sand, little silt.	93	S-3			3 6 7	13
338.5	5.5		LEAN CLAY WITH SAND (CL), reddish brown mottled with light gray, moist, stiff, mostly clay, little fine sand, few silt, iron oxide staining.	100	S-4			11 22 27	49
			CLAYEY SAND (SC), light gray, moist, medium dense to dense, mostly fine to medium sand, some clay, few silt, iron oxide staining.	100	S-5			7 17 18	35
				100	S-6			3 6 6	12
				100	S-7			4 9 18	27
319.0	25.0		BORING TERMINATED AT 25.0 ft	100	S-8			4 10 15	25

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.
5. Boring offset approximately 30 ft SSW due to dense trees.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-29 — SHEET 1 of 1

Boring Designation B-30

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	South Atlantic	Fort Bragg	1 / 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-30 / LOCATION COORDINATES: N 485302.372 E 1919609.526	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x		
3. DRILLING AGENCY: USACE, Savannah District	12. TOTAL SAMPLES:	DISTURBED: 8	UNDISTURBED: 0
4. NAME OF DRILLER: John Haskew	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED / DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks		
	15. DATE BORING:	STARTED: 1/13/22	COMPLETED: 1/14/22
6. THICKNESS OF OVERBURDEN: >25'	16. ELEVATION TOP OF BORING: 346.5'		
7. DEPTH DRILLED INTO ROCK: 0'	17. TOTAL CORE RECOVERY FOR BORING: N/A		
8. TOTAL DEPTH OF BORING: 25'	18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist		

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
346.0	0.5		Topsoil / Rootmat (approx. 3 to 6 inches).	93	S-1			2 2 2	4
343.5	3.0		SILTY SAND (SM), brown, moist, very loose, mostly fine to medium sand, little silt.	87	S-2			1 1 3	4
			LEAN CLAY (CL), reddish brown mottled with light gray, moist, stiff to very stiff, mostly clay, little silt, trace fine sand, iron oxide staining.	93	S-3			3 5 6	11
				100	S-4			3 6 8	14
				73	S-5			5 10 12	22
332.5	14.0		POORLY GRADED SAND WITH CLAY (SP-SC), light brown to reddish brown, moist, loose, mostly fine to medium sand, few clay, trace silt, iron oxide staining.	100	S-6			3 5 5	10
324.7	21.8		POORLY GRADED SAND WITH SILT (SP-SM), light reddish brown, moist, medium dense, mostly fine sand, few silt.	93	S-7			2 4 5	9
321.5	25.0		BORING TERMINATED AT 25.0 ft	100	S-8			5 11 15	26

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-30 — SHEET 1 of 1

Boring Designation B-31

DRILLING LOG	DIVISION	INSTALLATION	SHEET / OF
	South Atlantic	Fort Bragg	1 / 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range	9. COORDINATE SYSTEM: State Plane - North Carolina	HORIZONTAL: NAD83	VERTICAL: NAVD88
	10. SIZE AND TYPE OF BIT: 4.25 in. HSA		
2. HOLE NUMBER: B-31 / LOCATION COORDINATES: N 485261.988 E 1920144.02	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x		
3. DRILLING AGENCY: USACE, Savannah District	12. TOTAL SAMPLES:	DISTURBED: 8	UNDISTURBED: 0
4. NAME OF DRILLER: John Haskew	13. TOTAL NUMBER CORE BOXES: 0		
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED / DEG FROM VERTICAL: --- / BEARING:	14. ELEVATION GROUND WATER: See Remarks		
	15. DATE BORING:	STARTED: 1/14/22	COMPLETED: 1/14/22
6. THICKNESS OF OVERBURDEN: >25'	16. ELEVATION TOP OF BORING: 344'		
7. DEPTH DRILLED INTO ROCK: 0'	17. TOTAL CORE RECOVERY FOR BORING: N/A		
8. TOTAL DEPTH OF BORING: 25'	18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist		

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	% REC	Samp. No.	RQD %	REMARKS	Blows/ 0.5 ft	N-Value
343.7	0.3		Topsoil.	67	S-1			1 3 2	5
342.0	2.0		SILTY SAND (SM), light brown, moist, loose, mostly fine sand, little silt, iron oxide staining.	67	S-2			1 3 4	7
			LEAN CLAY (CL), light reddish brown to light brown, moist, medium stiff to stiff, mostly clay, some silt, few fine sand.	67	S-3			2 4 4	8
				100	S-4			4 5 6	11
332.0	12.0			13	S-5			3 6 4	10
			POORLY GRADED SAND WITH CLAY (SP-SC), reddish brown, moist, loose, mostly fine sand, few clay, trace silt, iron oxide staining.	100	S-6			2 3 3	6
327.2	16.8		POORLY GRADED SAND (SP), reddish brown to light gray, moist, medium dense, mostly fine to medium sand, trace silt, iron oxide staining.	100	S-7			1 2 1	3
319.0	25.0		BORING TERMINATED AT 25.0 ft	87	S-8			2 6 8	14

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-31 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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
CATEGORY CODE: 173-65-01
FILE NAME:
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:

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

SOIL BORING LOGS

SHEET ID
B-310

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-310.DWG

Boring Designation B-32

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-32 — LOCATION COORDINATES: N 485300.019 E 1921578.605
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: [X] VERTICAL [ ] INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/14/22 — COMPLETED 1/14/22
16. ELEVATION TOP OF BORING: 320'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Att. REC.	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
319.5	0.5		Topsoil / Rootmat (approx. 6 to 8 inches).	93	S-1			1 1 2	3
			POORLY GRADED SAND WITH SILT (SP-SM), light reddish brown, moist, very loose, mostly fine to medium sand, few silt, trace clay.	93	S-2			1 1 2	3
				100	S-3			2 2 1	3
314.5	5.5		CLAYEY SAND (SC), reddish brown, moist, medium dense, mostly fine to coarse sand, little clay, few silt.	80	S-4			3 9 12	21
				100	S-5			5 12 14	26
				100	S-6			4 11 13	24
303.2	16.8		POORLY GRADED SAND WITH SILT (SP-SM), light reddish brown, moist, loose, mostly fine sand, few silt, trace clay.	100	S-7			2 5 3	8
298.2	21.8		POORLY GRADED SAND WITH SILT (SP-SM), light gray, moist, medium dense, mostly fine to medium sand, few silt, iron oxide staining.	100	S-8			2 6 5	11
295.0	25.0		BORING TERMINATED AT 25.0 ft						

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-32 — SHEET 1 of 1

Boring Designation B-33

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-33 — LOCATION COORDINATES: N 485617.414 E 1921701.201
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: [X] VERTICAL [ ] INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/14/22 — COMPLETED 1/14/22
16. ELEVATION TOP OF BORING: 317.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Att. REC.	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
316.9	0.6		Topsoil / Rootmat (approx. 8 to 12 inches).	100	S-1			1 1 1	2
315.5	2.0		SILTY SAND (SM), light brown, moist, very loose, mostly fine to medium sand, little silt, trace clay.	100	S-2			1 2 1	3
			POORLY GRADED SAND (SP-SM), grayish brown, moist, loose, mostly fine sand, few silt, trace clay.	73	S-3			2 5	7
312.0	5.5		CLAYEY SAND (SC), reddish brown, moist, medium dense, mostly fine to coarse sand, little clay, few silt, iron oxide staining.	100	S-4			8 11 10	21
			Light gray.	93	S-5			3 8 9	17
305.7	11.8		POORLY GRADED SAND WITH CLAY (SP-SC), light reddish brown, moist, loose, mostly fine sand, few clay, trace silt, iron oxide staining.	100	S-6			2 4 4	8
				100	S-7			1 4 3	7
295.7	21.8		POORLY GRADED SAND (SP), light gray to white, moist, medium dense, mostly fine to medium sand, trace clay, trace silt.	100	S-8			3 5 7	12
292.5	25.0		BORING TERMINATED AT 25.0 ft						

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-33 — SHEET 1 of 1

Boring Designation B-34

DRILLING LOG	DIVISION	INSTALLATION	SHEET
	South Atlantic	Fort Bragg	1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-34 — LOCATION COORDINATES: N 485719.186 E 1918106.488
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: [X] VERTICAL [ ] INCLINED — DEG FROM VERTICAL: --- — BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina — HORIZONTAL: NAD83 — VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 — UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/17/22 — COMPLETED 1/17/22
16. ELEVATION TOP OF BORING: 345'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Att. REC.	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
344.5	0.5		Topsoil / Rootmat (approx. 6 to 8 inches).	87	S-1			1 1 2	3
343.0	2.0		POORLY GRADED SAND (SP), light grayish brown, moist, very loose, mostly fine sand, trace silt, trace clay.	93	S-2			2 3 5	8
341.0	4.0		POORLY GRADED SAND WITH CLAY (SP-SC), light brown and reddish brown, moist, medium dense, mostly fine sand, few clay, iron oxide staining.	73	S-3			3 4 8	12
			SILTY SAND (SM), reddish brown, moist, medium dense, mostly fine sand, little silt, few clay.	80	S-4			6 9 13	22
				93	S-5			4 8 11	19
				100	S-6			4 6 6	12
328.2	16.8		POORLY GRADED SAND (SP), reddish brown, moist, loose, mostly fine to medium sand, trace clay, trace silt.	100	S-7			4 4 4	8
323.2	21.8		POORLY GRADED SAND WITH CLAY (SP-SC), light gray, moist, medium dense, mostly fine to medium sand, few clay, trace silt, few fine gravel sized iron concretions.	100	S-8			8 10 13	23
320.0	25.0		BORING TERMINATED AT 25.0 ft						

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-34 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-311.DWG

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	B. BRADLEY
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SOIL BORING LOGS

SHEET ID
B-311

READY TO ADVERTISE (RTA)

Boring Designation B-35

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-35 | LOCATION COORDINATES: N 486121.184 E 1918825.566
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG FROM VERTICAL: --- | BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina | HORIZONTAL: NAD83 | VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 | UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/17/22 | COMPLETED 1/17/22
16. ELEVATION TOP OF BORING: 350'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Att. REC	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
349.0	1.0		Topsoil / Rootmat (approx. 8 to 12 inches).	93	S-1			1,2,3	5
348.0	2.0		POORLY GRADED SAND WITH SILT (SP-SM), reddish brown, moist, loose, mostly fine sand, few silt.	93	S-2			3,4,4	8
			CLAYEY SAND (SC), light brown, moist, medium dense, mostly fine to medium sand, little clay, few silt.	87	S-3			5,8,9	17
343.0	7.0		LEAN CLAY (CL), light brownish gray, dry, hard to very hard, mostly clay, few silt, few fine sand.	100	S-4			9,14,50	50/5"
				100	S-5			36,50	50/5"
334.0	16.0		POORLY GRADED SAND (SP-SC), light brown, moist, loose, mostly fine to medium sand, few clay, few silt, iron oxide staining.	100	S-6			12,24,43	67
				73	S-7			4,4,5	9
325.0	25.0		BORING TERMINATED AT 25.0 ft	100	S-8			1,4,5	9

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-35 — SHEET 1 of 1

Boring Designation B-36

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-36 | LOCATION COORDINATES: N 487051.534 E 1917854.991
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG FROM VERTICAL: --- | BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina | HORIZONTAL: NAD83 | VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 | UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/18/22 | COMPLETED 1/18/22
16. ELEVATION TOP OF BORING: 340.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Att. REC	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
340.0	0.5		Topsoil / Rootmat (approx. 6 inches).	100	S-1		0.0 to 1.5 blow counts: 1, WOH, 1	1,0,1	1
			SILTY SAND (SM), grayish brown, moist, very loose to loose, mostly fine sand, little silt, trace clay.	100	S-2			1,2,3	5
336.5	4.0		LEAN CLAY (CL), light brown to reddish brown, moist, very stiff, mostly clay, few fine to medium sand, iron oxide staining.	80	S-3			3,5,9	14
				87	S-4			4,8,12	20
328.7	11.8		POORLY GRADED SAND WITH CLAY (SP-SC), light reddish brown, moist, loose, mostly fine to medium sand, trace clay, iron oxide staining.	93	S-5			4,8,9	17
				100	S-6			2,4,3	7
321.5	19.0		LEAN CLAY (CL), light gray, moist, very stiff, mostly clay, little silt, trace fine sand, iron oxide staining.	100	S-7			3,7,12	19
318.5	22.0		POORLY GRADED SAND WITH CLAY (SP-SC), reddish brown, moist, medium dense, mostly fine to medium sand, few clay, iron oxide staining.	100	S-8			2,9,14	23
315.5	25.0		BORING TERMINATED AT 25.0 ft						

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.
5. Weight of Hammer (WOH) - A weight of hammer event occurs during standard penetration testing when the hammer and drill string (drilling rod and split spoon sampler) are allowed to rest on the bottom of the borehole and they sink under their own weight.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-36 — SHEET 1 of 1

Boring Designation B-37

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Fort Bragg | SHEET 1 OF 1 SHEETS

1. PROJECT: Automated Multipurpose Training Range
2. HOLE NUMBER: B-37 | LOCATION COORDINATES: N 487199.645 E 1918652.617
3. DRILLING AGENCY: USACE, Savannah District
4. NAME OF DRILLER: John Haskew
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG FROM VERTICAL: --- | BEARING:
6. THICKNESS OF OVERBURDEN: >25'
7. DEPTH DRILLED INTO ROCK: 0'
8. TOTAL DEPTH OF BORING: 25'
9. COORDINATE SYSTEM: State Plane - North Carolina | HORIZONTAL: NAD83 | VERTICAL: NAVD88
10. SIZE AND TYPE OF BIT: 4.25 in. HSA
11. MANUFACTURER'S DESIGNATION OF DRILL: CME-750x
12. TOTAL SAMPLES: DISTURBED 8 | UNDISTURBED 0
13. TOTAL NUMBER CORE BOXES: 0
14. ELEVATION GROUND WATER: See Remarks
15. DATE BORING: STARTED 1/17/22 | COMPLETED 1/17/22
16. ELEVATION TOP OF BORING: 360.5'
17. TOTAL CORE RECOVERY FOR BORING: N/A
18. SIGNATURE AND TITLE OF INSPECTOR: Tyler Castellaw, Geologist

ELEV	DEPTH	LEGEND	FIELD CLASSIFICATION OF MATERIALS (Description)	Att. REC	Samp. No.	ROD %	REMARKS	Blows/ 0.5 ft	N-Value
358.5	2.0		SILTY SAND (SM), light grayish brown, moist, loose, mostly fine sand, little silt, trace clay.	67	S-1			2,3,2	5
			LEAN CLAY WITH SAND (CL), reddish brown mottled with light gray, moist, stiff to very stiff, mostly clay, little fine to medium sand, little silt, iron oxide staining.	100	S-2			2,5,6	11
				93	S-3			4,5,7	12
352.5	8.0		POORLY GRADED SAND WITH CLAY (SP-SC), light brown, moist, medium dense to loose, mostly fine sand, few clay, trace silt, iron oxide staining.	87	S-4			1,6,13	19
				93	S-5			3,6,7	13
				100	S-6			1,4,4	8
338.7	21.8		LEAN CLAY WITH SAND (CL), light gray, moist, stiff, mostly clay, little silt, little fine to medium sand.	93	S-7			1,2,4	6
335.5	25.0		BORING TERMINATED AT 25.0 ft	100	S-8			5,5,6	11

NOTES:
1. Soils visually classified in accordance with ASTM D2488.
2. N-Value: Total blows over last 1.0 foot of 1.5-foot driven interval, unless otherwise indicated, using a 1 3/8-inch ID splitspoon with 140-pound hammer falling 30 inches.
3. The CME-750x drilling rig utilizes an automatic trip hammer. The hammer effiency correction is 1.6.
4. Component percentages: Mostly - 50-100%; Some - 30-45%; Little - 15-25%; Few - 5-10%; Trace - <5%.

Water Level Data

Reading	Depth	Notes
After drilling		Not Encountered

SAS FORM 1836-A FEB 08 — Boring Designation B-37 — SHEET 1 of 1

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-312.DWG

ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-45-01
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
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SAVANNAH, GA 31401

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

SOIL BORING LOGS

SHEET ID
B-312

READY TO ADVERTISE (RTA)

SUMMARY OF MATERIAL PROPERTIES

PROJECT: AMPTR Fort Bragg, NC LOCATION: Fort Bragg, NC **17-Mar-22**

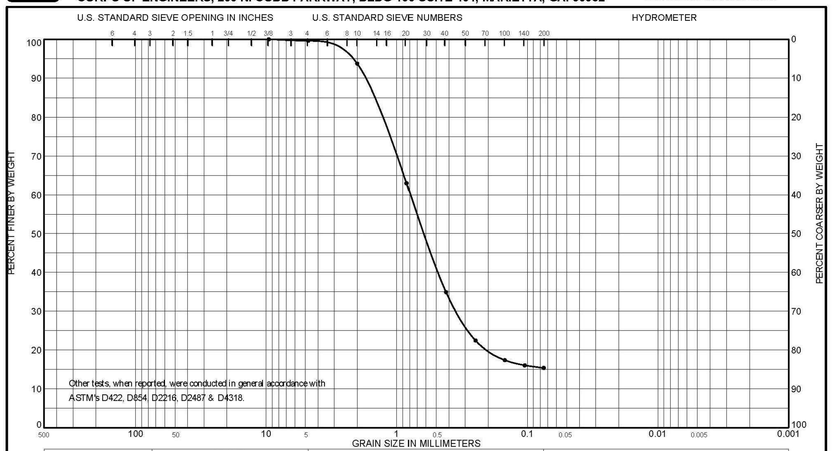
REQUISITION NO: W33SJG12959799 **WORK ORDER:**

LAB Number	Hole Number	Sample Number	Depth (ft)	ASTM D1140 & D6913 Particle Size Analysis - Percent Passing 3/8in %	No.4 %	No.10 %	No.20 %	No.40 %	No.60 %	No.100 %	No.140 %	No.200 %	D4318 Atterberg Limits LL	PL	PI	D2216 M/C%	G1.8.7 Natural Resistivity Ohm-cm	G1.8.7 Saturated Resistivity Ohm-cm	Color	Class.	D2487 Unified Soil Classification System
K6/17714	B-03	S-4	6.0 to 7.5	100	99.6	93.7	63	34.9	22.5	17.4	16.1	15.4				15.17			Yellow	SC	(Visual) Clayey Sand (SC).
K6/17739	B-12	S-4	6.0 to 7.5	100	99.9	98.5	91.8	75.5	56.6	42.1	36.7	34.3	55	23	32	16.28			Yellowish Red & Brownish Yellow	SC-H	Clayey Sand High LL (SC-H), Silty.
K6/17717	B-15	S-3	3.5 to 5.0		100	99.4	86	43.3	21.6	19	18.3	17.9				10.99			Very Pale Brown	SC	(Visual) Clayey Sand (SC).
K6/17718	B-15	S-4	6.0 to 7.5														4.6 x 100K	2.3 x 100K			
K6/17719	B-15	S-6	13.5 to 15.0														5.9 x 100K	3.2 x 100K			
K6/17720	B-17	S-3	3.5 to 5.0	100	99.9	99.4	88.9	69.3	53.1	43.4	41.8	41.1	50	21	29	13.59			White & Pink	SC-H	Clayey Sand High LL (SC-H).
K6/17721	B-19	S-3	3.5 to 5.0														>11 x 100K	5.7 x 100K			
K6/17722	B-19	S-6	13.5 to 15.0														2.1 x 100K	1.5 x 100K			
K6/17740	B-21	S-4	6.0 to 7.5	100	99.8	97.5	82.6	54.7	42.9	37.5	35.3	34	47	20	27	13.4			Very Pale Brown & Brownish Yellow	SC	Clayey Sand (SC).
K6/17723	B-22	S-3	3.5 to 5.0		100	96.5	65	36.2	31.1	27.6	26.4	25.7	40	17	23	13.41			Reddish Yellow	SC	Clayey Sand (SC).
K6/17724	B-22	S-6	13.5 to 15.0														>11 x 100K	5.3 x 100K			
K6/17725	B-24	S-3	3.5 to 5.0														7.7 x 100K	1.9 x 100K			
K6/17726	B-24	S-6	13.5 to 15.0														>11 x 100K	6.0 x 100K			
K6/17727	B-29	S-5	8.5 to 10.0		100	98.5	85.3	68.2	61.9	56.9	52.7	47.3	27	15	12	9.73			White & Reddish Yellow	SC	Clayey Sand (SC).
K6/17728	B-29	S-7	18.5 to 20.0														3.8 x 100K	1.3 x 100K			
K6/17729	B-31	S-3	3.5 to 5.0														10.8 x 100K	2.8 x 100K			
K6/17730	B-31	S-7	18.5 to 20.0														>11 x 100K	5.2 x 100K			
K6/17731	B-32	S-5	8.5 to 10.0		100	99.6	96.2	80.6	43	28.9	27.3	26.6	42	17	25	13.52			White & Reddish Yellow	SC	Clayey Sand (SC).
K6/17732	B-32	S-7	18.5 to 20.0														>11 x 100K	3.1 x 100K			
K6/17733	B-34	S-5	8.5 to 10.0														>11 x 100K	3.7 x 100K			
K6/17734	B-34	S-7	18.5 to 20.0	100	99.2	94.2	60	25.6	17.2	12.2	10.2	9.2	21	14	7	3.25			Reddish Yellow	SW-SC	Well Graded Clayey Sand (SW-SC).
K6/17736	B-37	S-4	6.0 to 7.5														>11 x 100K	2.2 x 100K			
K6/17737	B-37	S-7	18.5 to 20.0														>11 x 100K	6.0 x 100K			

USACE, Savannah District Materials Testing RTCX - Marietta, GA 30062

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER:
REQUISITION: W33SJG12959799



COBBLES	GRAVEL COARSE	GRAVEL FINE	SAND COARSE	SAND MEDIUM	SAND FINE	SILT OR CLAY

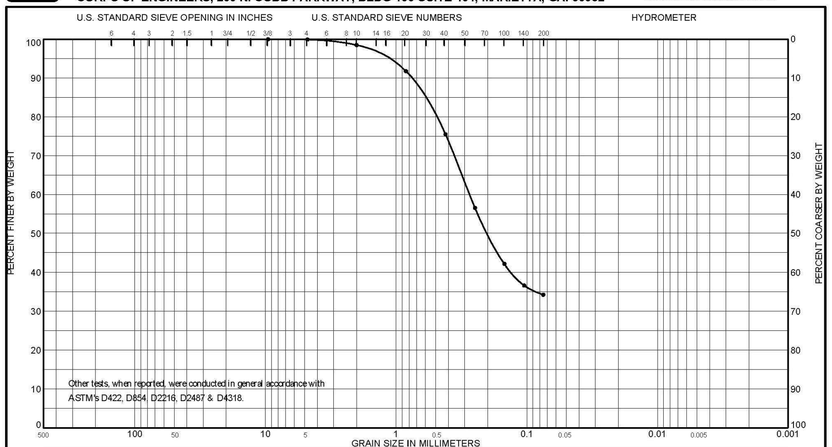
Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-4	6.0 to 7.5	Yellow, (Visual) Clayey Sand (SC).	15.2			

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17714
Hole No. B-03
Date 3/17/22

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER:
REQUISITION: W33SJG12959799



COBBLES	GRAVEL COARSE	GRAVEL FINE	SAND COARSE	SAND MEDIUM	SAND FINE	SILT OR CLAY

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-4	6.0 to 7.5	Yellowish Red & Brownish Yellow, Clayey Sand High LL (SC-H), Silty.	16.3	55	23	32

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17739
Hole No. B-12
Date 3/17/22

GRADATION CURVES

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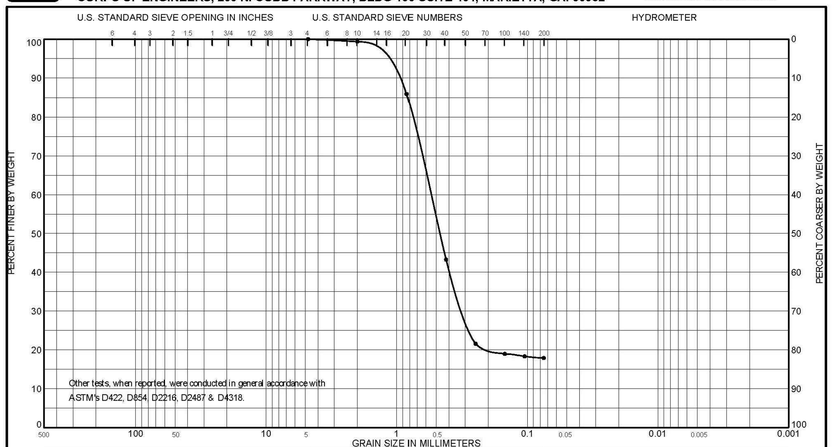
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER:
REQUISITION: W33SJG12959799



COBBLES	GRAVEL COARSE	GRAVEL FINE	SAND COARSE	SAND MEDIUM	SAND FINE	SILT OR CLAY

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-3	3.5 to 5.0	Very Pale Brown, (Visual) Clayey Sand (SC).	11.0			

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17717
Hole No. B-15
Date 3/17/22

GRADATION CURVES

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

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

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

SOILS LAB DATA

SHEET ID
B-313

G:\CLEANS\TUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-313.DWG

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WORK ORDER:
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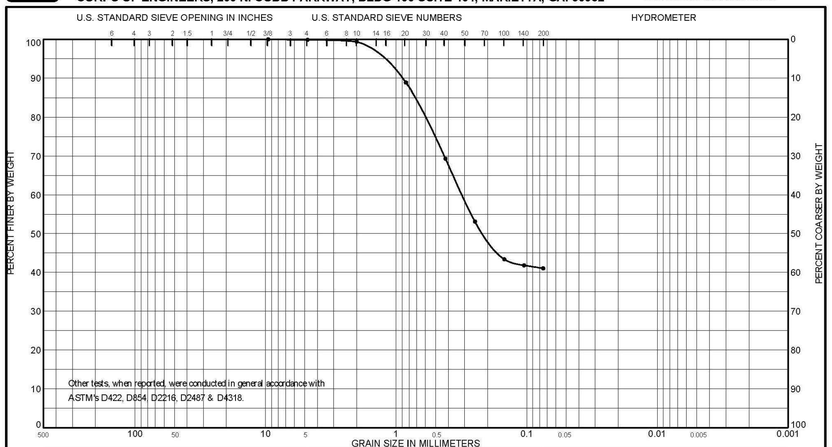

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-3	3.5 to 5.0	White & Pink, Clayey Sand High LL (SC-H).	13.6	50	21	29

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17720
Hole No. B-17
Date 3/17/22

GRADATION CURVES

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CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER:
REQUISITION: W33SJG12959799

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-4	6.0 to 7.5	Very Pale Brown & Brownish Yellow, Clayey Sand (SC).	13.4	47	20	27

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17740
Hole No. B-21
Date 3/17/22

GRADATION CURVES

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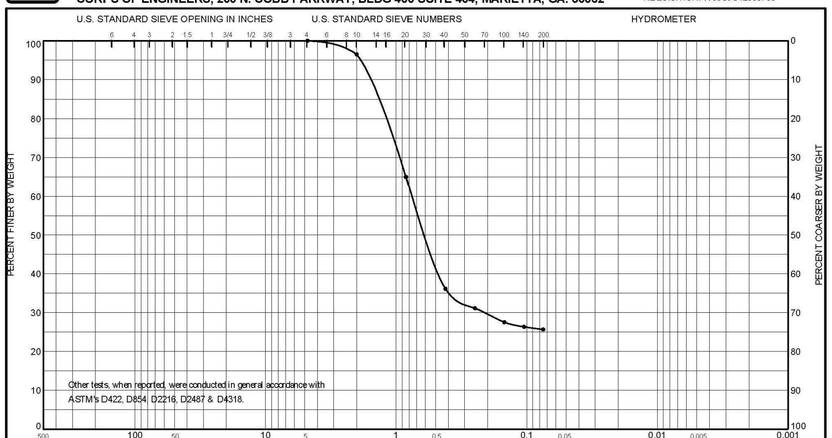
WORK ORDER:
REQUISITION: W33SJG12959799



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-3	3.5 to 5.0	Reddish Yellow, Clayey Sand (SC).	13.4	40	17	23

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17723
Hole No. B-22
Date 3/17/22

GRADATION CURVES

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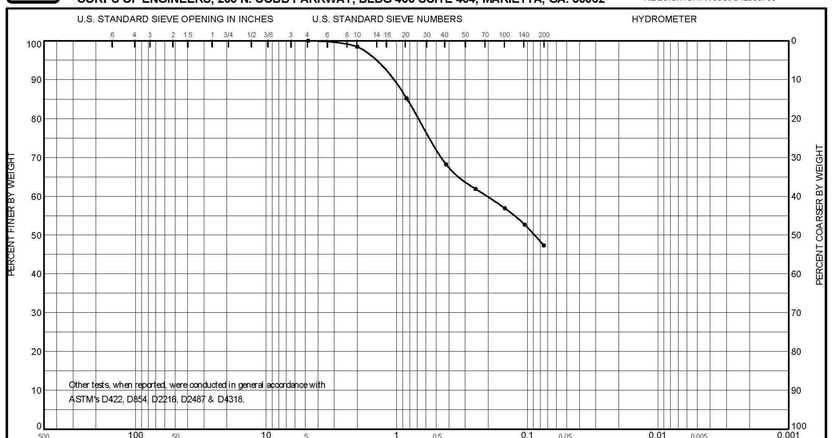
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER:
REQUISITION: W33SJG12959799



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-5	8.5 to 10.0	White & Reddish Yellow, Clayey Sand (SC).	9.7	27	15	12

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17727
Hole No. B-29
Date 3/17/22

GRADATION CURVES

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: BRADLEY	CATEGORY CODE:
SIZE: ANSI D	173-65-01
	FILE NAME:

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

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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

SOILS LAB DATA

SHEET ID
B-314

READY TO ADVERTISE (RTA)

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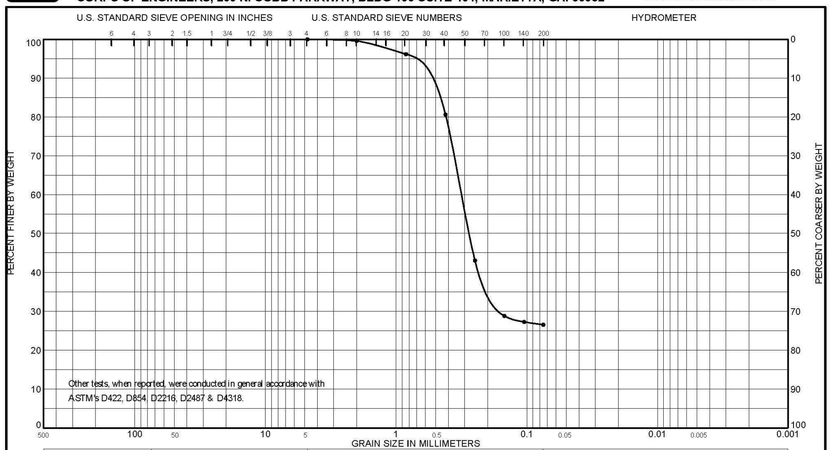
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER:
REQUISITION: W33SJG12959799



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-5	8.5 to 10.0	White & Reddish Yellow, Clayey Sand (SC).	13.5	42	17	25

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17731
Hole No. B-32
Date 3/17/22

GRADATION CURVES

DEPARTMENT OF THE ARMY, SAVANNAH DISTRICT, ENVIRONMENTAL AND MATERIALS UNIT
CORPS OF ENGINEERS, 200 N. COBB PARKWAY, BLDG 400 SUITE 404, MARIETTA, GA. 30062

WORK ORDER:
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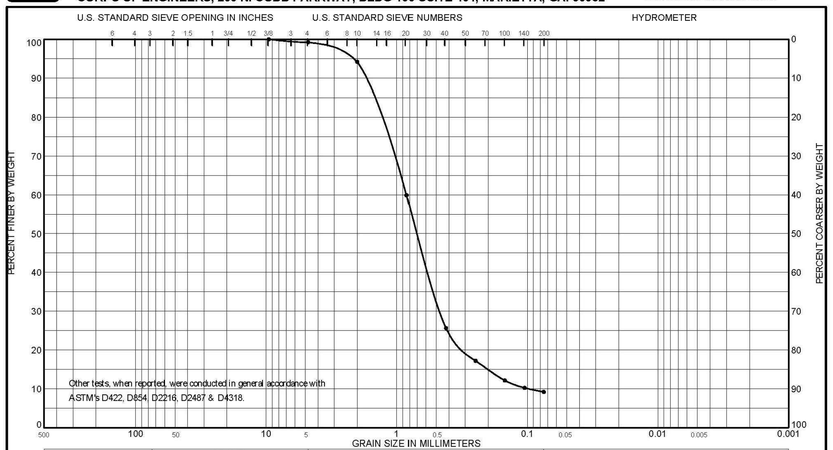

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth (ft)	ASTM D2487 Classification	Nat w%	LL	PL	PI
S-7	18.5 to 20.0	Reddish Yellow, Well Graded Clayey Sand (SW-SC).	3.3	21	14	7

Project AMPTR Fort Bragg, NC
Soil Testing Fort Bragg, NC
Lab No. K6/17734
Hole No. B-34
Date 3/17/22

GRADATION CURVES

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
SIZE:	FILE NAME:
ANSI D	

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

SOILS LAB DATA

SHEET ID

B-315

READY TO ADVERTISE (RTA)

G:\CLE\ANST\UFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\300 BORING LOGS\B2EB-315.DWG

SOIL BORING DATA CHART

BORING	LATITUDE	LONGITUDE	NORTHING	EASTING	SHEET REFERENCE
B-1	35.061167°	-79.267684°	477,297.855	1,919,897.874	B-125
B-2	35.061438°	-79.269441°	477,397.904	1,919,372.375	B-124
B-3	35.060788°	-79.269648°	477,161.514	1,919,309.790	B-124
B-4	35.061144°	-79.270062°	477,291.412	1,919,186.257	B-124
B-5	35.061071°	-79.270252°	477,264.999	1,919,129.328	B-124
B-6	35.061048°	-79.271079°	477,257.304	1,918,881.833	B-124
B-7	35.061042°	-79.271319°	477,255.316	1,918,810.009	B-124
B-8	35.061002°	-79.271366°	477,240.797	1,918,795.905	B-124
B-9	35.060797°	-79.271369°	477,166.193	1,918,794.804	B-124
B-10	35.060797°	-79.271472°	477,166.277	1,918,763.982	B-124
B-11	35.061923°	-79.275029°	477,578.998	1,917,700.713	B-123
B-12	35.061849°	-79.270912°	477,548.680	1,918,932.602	B-124
B-13	35.061861°	-79.269639°	477,552.010	1,919,313.544	B-124
B-14	35.060864°	-79.270786°	477,190.100	1,918,969.328	B-124
B-15	35.066199°	-79.274951°	479,135.122	1,917,728.364	B-129
B-16	35.068214°	-79.273487°	479,867.243	1,918,168.446	B-129
B-17	35.070975°	-79.268077°	480,867.654	1,919,789.911	B-134
B-18	35.071656°	-79.272686°	481,119.250	1,918,411.558	B-136
B-19	35.072886°	-79.275577°	481,569.280	1,917,547.807	B-135
B-20	35.075663°	-79.271656°	482,576.697	1,918,723.727	B-141
B-21	35.075909°	-79.264846°	482,660.719	1,920,761.432	B-143
B-22	35.076488°	-79.268402°	482,874.296	1,919,698.095	B-142
B-23	35.077497°	-79.269463°	483,242.367	1,919,381.657	B-145
B-24	35.078740°	-79.272425°	483,697.159	1,918,496.725	B-145
B-25	35.078988°	-79.270777°	483,786.066	1,918,990.013	B-145
B-26	35.080437°	-79.264209°	484,308.115	1,920,956.400	B-151
B-27	35.081709°	-79.268396°	484,774.402	1,919,705.027	B-150
B-28	35.081955°	-79.266932°	484,862.749	1,920,143.246	B-150
B-29	35.082284°	-79.269815°	484,984.816	1,919,281.080	B-153
B-30	35.083159°	-79.268720°	485,302.372	1,919,609.526	B-154
B-31	35.083052°	-79.266933°	485,261.988	1,920,144.020	B-154
B-32	35.083167°	-79.262138°	485,300.019	1,921,578.605	B-155
B-33	35.084040°	-79.261731°	485,617.414	1,921,701.201	B-155
B-34	35.084293°	-79.273748°	485,719.186	1,918,106.488	B-152
B-35	35.085403°	-79.271348°	486,121.184	1,918,825.566	B-158
B-36	35.087952°	-79.274601°	487,051.534	1,917,854.991	B-161
B-37	35.088365°	-79.271936°	487,199.645	1,918,652.617	B-162

NOTES :

1. SEE SHEET B-001 FOR SOIL CLASSIFICATION CHART AND NOTES.

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SOIL BORING DATA CHART

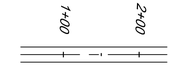
SHEET ID

B-600

READY TO ADVERTISE (RTA)

G:\CLEANS\TUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\03 GEOTECHNICAL\600 DATA CHARTS\B2EB-600.DWG

LEGEND



PROPOSED ROAD WITH ALIGNMENT STATIONING

MAJOR CONTOURS

MINOR CONTOURS

CULVERT

CULVERT IDEN

350.00
X

SPOT ELEVATION

L1

HORIZONTAL LINE NUMBER
(SEE ROAD DATA CHARTS)

C3

HORIZONTAL CURVE NUMBER
(SEE ROAD DATA CHARTS)

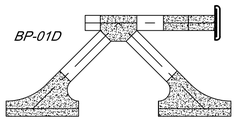
CLEARING & GRUBBING LIMITS

CONSTRUCTION LIMITS

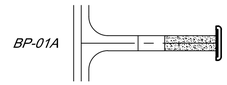
EARTHWORK NOTES:

1. DRAINAGE & DEWATERING: ALL EXCAVATIONS SHALL BE PERFORMED SO THAT THE SITE AND THE AREA IMMEDIATELY SURROUNDING THE SITE WHICH AFFECTS CONSTRUCTION OPERATIONS WILL BE CONTINUALLY AND EFFECTIVELY DRAINED. THE CONTRACTOR SHALL PROVIDE DRAINAGE AND DEWATERING AS REQUIRED TO ENSURE THAT ALL FOOTING EXCAVATIONS ARE ACCOMPLISHED WITH THE SUBGRADE SOILS REMAINING DRY AND FIRM UNTIL AFTER FOOTINGS ARE PLACED AND BACKFILLED. REMOVAL OF SURFACE WATER, GROUNDWATER, AND ANY PERCHED-WATER CONDITIONS, WICH MIGHT BE ENCOUNTERED DURING EXCAVATIONS, SHALL BE ACCOMPLISHED BY APPROVED MEANS. REFER TO SECTION 31 00 00 EARTHWORK FOR ADDITIONAL REQUIREMENTS.

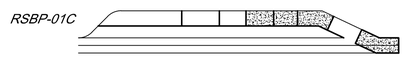
2. WITHIN THE AREA OF THE BUILDING FOOTINGS, THE SOILS SHALL BE TESTED FOR IN-SITU ALLOWABLE BEARING PRESSURE BY METHOD OF HAND AUGER AND DYNAMIC CONE PENTROMETER METHOD, IN ACCORDANCE WITH ASTM SPECIAL TECHNICAL PUBLICATION #399. SOILS WHICH ARE IDENTIFIED TO HAVE A NET ALLOWABLE BEARING PRESSURE BELOW 3,000 PSF, OR WHICH ARE DEEMED TO BE UNSATISFCTORY FOR OTHER REASONS (E.G., EXCESSIVE DEBRIS OR ORGANIC CONTENT), SHALL BE OVER-EXCAVATED AND REPLACED WITH ADDITIONAL CONCRETRE DURING THE CONCRETING OR REPLACED TO DESIGN SUBGRADE WITH NO. 57 OR NO. 67 STONE, COMPACTED TO A NON-YIELDING CONDITION. OVER-EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH EM 385-1-1 AND OSHA 29 CFR 1926.652. BACKFILLING SHALL BE IN ACCORDANCE WITH SECTION 31 00 00 EARTHWORK. IT IS POSSIBLE THAT PERCHED GROUNDWATER WILL BE ENCOUNTERED DURING OVER-EXCAVATION. DEWATERING SHOULD BE DONE IN ACCORDANCE WITH SECTION 31 00 00 EARTHWORK.



DEFILADE
(SEE SHEETS CS505 & CS507 FOR DETAILS)



DEFILADE
(SEE SHEETS CS506 & CS507 FOR DETAILS)



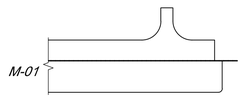
REVERSE SLOPE BATTLE POSITION
(SEE SHEETS CS508 THRU CS510 FOR DETAILS)

STATIONARY ARMOR TARGET (FRONTAL)
(SEE SHEETS CS511 & CS513 FOR DETAILS)

STATIONARY ARMOR TARGET (FLANK)
(SEE SHEETS CS511 & CS513 FOR DETAILS)

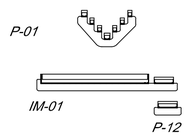
POWER CENTER
(SEE SHEET CS512 & CS513 FOR DETAILS)

STATIONARY ARMOR TARGET WITH POWER CENTER
(SEE SHEETS CS512 & CS513 FOR DETAILS)



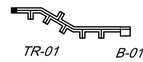
MOVING ARMOR TARGET
(SEE SHEETS CS514 & CS515 FOR DETAILS)

WIDENED STATIONARY INFANTRY TARGET AT EACH FACADE
(SEE SHEET CS516 FOR DETAIL)



STATIONARY INFANTRY TARGET CLUSTER
(7-MAN V)
(SEE SHEET CS517 FOR DETAILS)

STATIONARY AND MOVING INFANTRY TARGET CLUSTER (6-MAN LINEAR SIT & 40M MIT)
(SEE SHEET CS520 FOR DETAILS)



TRENCH & MACHINE GUN BUNKER
(SEE SHEETS CS521 THRU CS524 FOR DETAILS)

FC-03

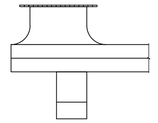
CAMERA TOWER
(SEE SHEET CS525 FOR DETAIL)

RLM-04

RANGE LIMIT MARKER
(SEE SHEET CS526 FOR DETAIL)

BORESIGHT PANEL

BORESIGHT PANEL
(SEE SHEET CS526 FOR DETAIL)



BORESIGHT/SCREENING PAD & SYNC RAMP
(SEE SHEET CS527 FOR DETAIL)

SECURITY GATE
(SEE SHEET CS530 FOR DETAIL)

TP-01

CONCRETE TURNING PAD
(SEE SHEET CP504 FOR DETAIL)

F1-01-A

FACADE, TYPE A
(SEE ARCH SHEETS)

F2-01-B

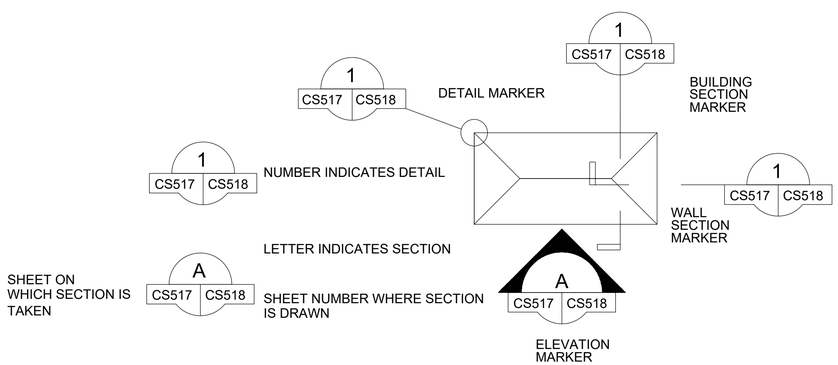
FACADE, TYPE B
(SEE ARCH SHEETS)

F3-01-C

FACADE, TYPE C
(SEE ARCH SHEETS)

ARCH	ARCHITECTURAL
B, B-	BUNKER
BP, BP-	DEFILADE
CONC	CONCRETE
E	EASTING
EL	ELEVATION
ELEC	ELECTRICAL
F, F1-, F2-, F3-	FACADE
FC, FC-	CAMERA TOWER
INV	INVERT
LOS	LINE OF SIGHT
LFV	LIVE FIRE VILLAGE
MAT, M-	MOVING ARMOR TARGET
MECH	MECHANICAL
MIT, IM-	MOVING INFANTRY TARGET
N	NORTHING
PC, PC-	POWER CENTER
RCP	REINFORCED CONCRETE PIPE
RLM, RLM-	RANGE LIMIT MARKER
RSBP, RSBP-	REVERSE SLOPE BATTLE POSITION
SAT, V-	STATIONARY ARMOR TARGET
SIT, P-	STATIONARY INFANTRY TARGET
TP, TP-	CONCRETE TURNING PAD
TR, TR-	TRENCH
TYP	TYPICAL
WWF	WELDED WIRE FABRIC

SECTION \ DETAIL CROSS REFERENCING CONVENTIONS



NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

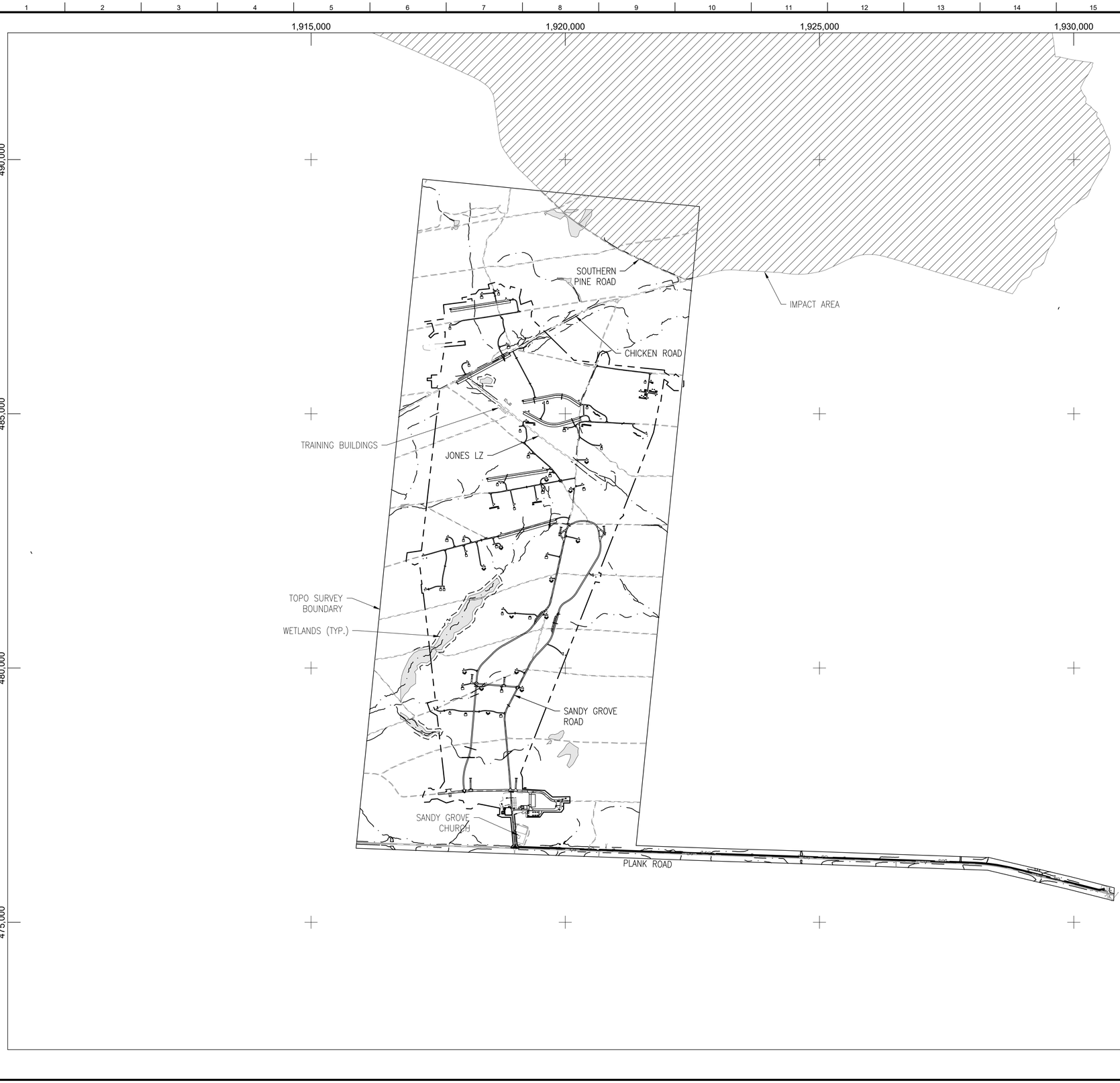
CIVIL LEGEND AND NOTES

SHEET ID

C-001

READY TO ADVERTISE (RTA)

G:\CLEANS\TUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\000 GENERAL\B2ECI-001.DWG



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

1000' 500' 0 1000' 2000'

SCALE: 1" = 1000'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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
WWW.POLY-INC.COM / 334-793-4700

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

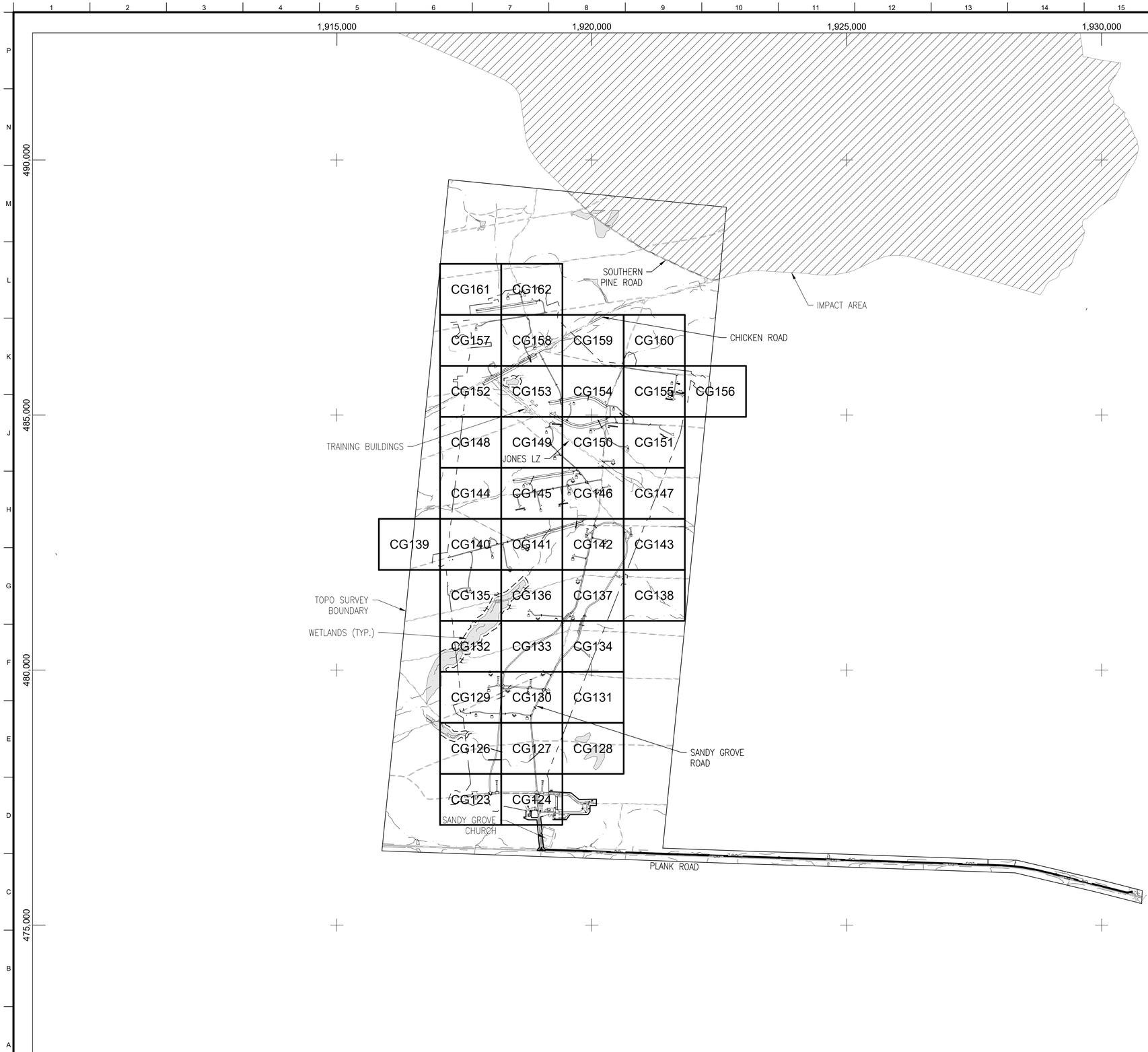
OVERALL SITE PLAN

SHEET ID

CG120

READY TO ADVERTISE (RTA)

G:\CLEANS\TUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG120.DWG



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

1000' 500' 0 1000' 2000'

SCALE: 1" = 1000'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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
WWW.POLY-INC.COM / 334-793-4700

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

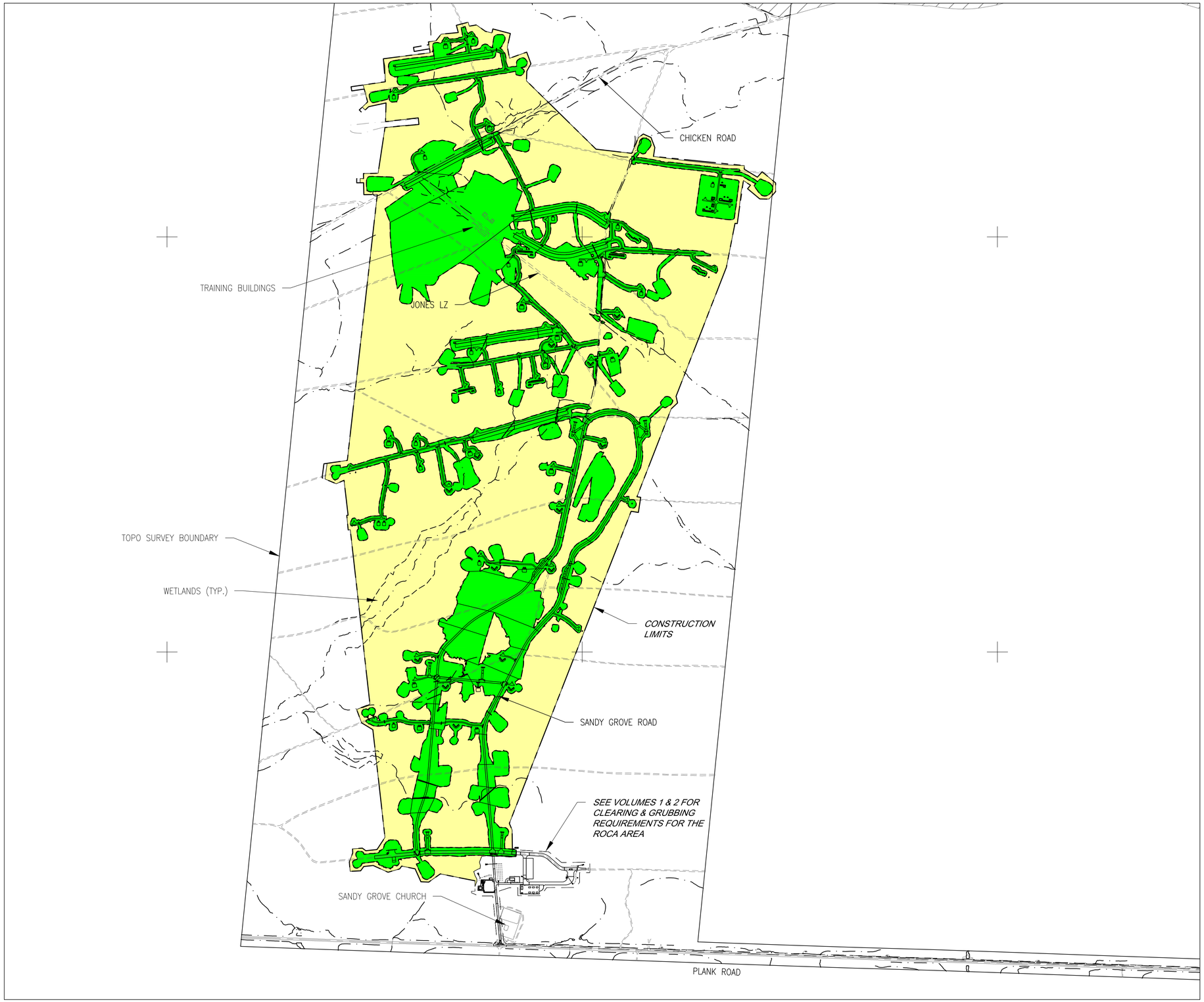
SITE REFERENCE KEY PLAN

SHEET ID

CG121

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG121.DWG



LEGEND

CLEARING ONLY

CLEARING & GRUBBING

NOTES:

1. SEE SECTION 31 11 00 FOR CLEARING AND GRUBBING SPECIFICATION.
2. THIS SHEET IS INTENDED TO GRAPHICALLY REPRESENT THE SCOPE SPECIFIED IN SECTION 31 11 00; HOWEVER, THE LIMITS OF CLEARING AND GRUBBING SHALL BE AS SHOWN ON SHEETS CG123 TO CG162.
3. THE GOVERNMENT WILL HARVEST ALL TIMBER PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE TO REMOVE ALL REMAINING WOOD OR WOOD LIKE MATERIAL REMAINING FROM THE GOVERNMENT'S TIMBER HARVEST CONTRACT. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR ALL REQUIRED GRUBBING AND DISPOSAL THEREOF.
4. THE OVERALL CLEARING LIMITS ARE SHOWN THE "SITE, GRADING, AND DRAINAGE" PLANS ON SHEETS CG123 TO CG162. THESE SHEETS GOVERN THE SCOPE OF REQUIRED CLEARING AND GRUBBING.
5. WITHIN THE OVERALL CLEARING LIMITS, THE CONTRACTOR HAS MULTIPLE RESPONSIBILITIES.

5.1. CLEARING ONLY - CLEAR ALL REMAINING DEBRIS FROM TIMBER HARVEST CONTRACT BETWEEN LIMITS OF CONSTRUCTION AND CLEARING AND GRUBBING LIMITS.
5.2. CLEARING & GRUBBING - CLEAR AND GRUB THE AREA WITHIN THE CLEARING AND GRUBBING LIMITS.
5.3. FINAL CLEARING - REQUIRED IN AREAS DESIGNATED FOR CLEARING ONLY AND CLEARING & GRUBBING.

GRAPHIC SCALE

600' 300' 0 600' 1200'

SCALE: 1" = 600'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
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

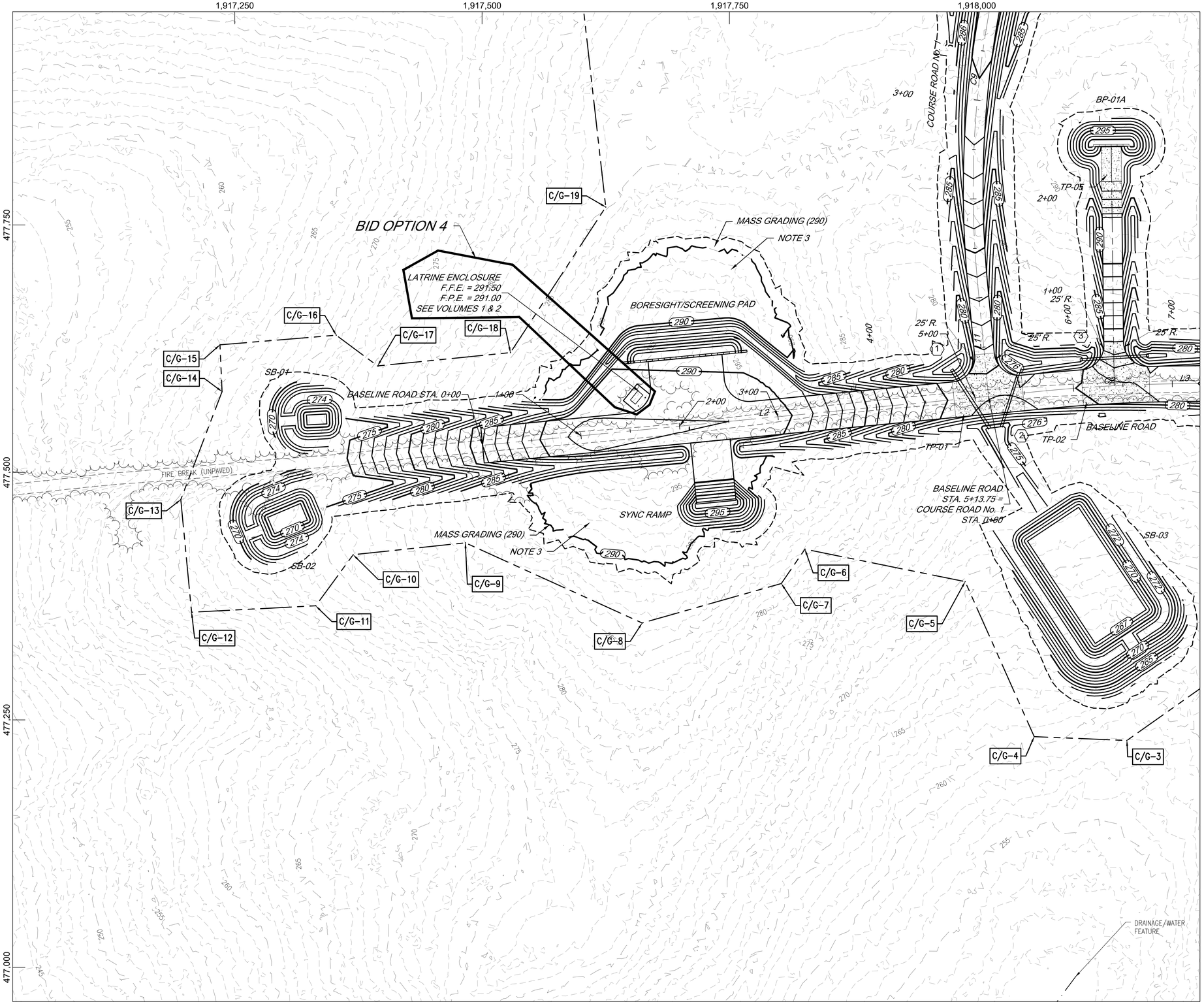
OVERALL CLEARING & GRUBBING PLAN

SHEET ID

CG121A

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\100 SITE PLANS\B2ECG121A.DWG



KEY PLAN

CG161	CG162			
CG157	CG158	CG159	CG160	
CG152	CG153	CG154	CG155	CG156
CG148	CG149	CG150	CG151	
CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143
CG135	CG136	CG137	CG138	
CG132	CG133	CG134		
CG129	CG130	CG131		
CG126	CG127	CG128		
CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG123.DWG

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	B. BRADLEY
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG123

READY TO ADVERTISE (RTA)

1,918,250 1,918,500 1,918,750 1,919,000 1,919,250

477,750 477,500 477,250 477,000

C/G-106
C/G-107
C/G-108
C/G-2
C/G-1

COURSE ROAD No. 2
BASELINE ROAD
SANDY GROVE ROAD (UNPAVED)
FIRE BREAK UNPAVED

3+00 2+00 1+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00

25' R.

BP-02A
TP-03
TP-04
TP-06

L1 L2 L3 L4 C1

BASELINE ROAD STA. 14+28.00 = COURSE ROAD No. 2 STA. 0+00

BASELINE ROAD STA. 16+15.14

SEE VOLUMES 1 & 2 FOR ROCA DESIGN

FC-01 & FC-02 ON TOP OF HANDRAIL ON TOP LEVEL OF CONTROL TOWER

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	K. SANDERS
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 99162
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG124

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG124.DWG

1,917,250 1,917,500 1,917,750 1,918,000

478,750 478,500 478,250 478,000

WETLANDS

STREAM

WETLAND IMPACTS - CLEARING (NOTE 6)

50' WETLAND BUFFER (NOTE 6)

DRAINAGE/WATER FEATURE

FIRE BREAK (UNPAVED)

24" CMP STORM

COURSE ROAD No. 4

14+00 13+00 12+00 11+00 10+00 9+00 8+00 7+00 6+00 5+00 4+00

SB-06 SB-04 SB-04A

L11 L10 L12 L9

KEY PLAN

	CG161	CG162		
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED.
4. OMITTED.
5. OMITTED.
6. SEE CG764 FOR WETLAND NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG126

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG126.DWG

1,918,250 1,918,500 1,918,750 1,919,000 1,919,250

478,750 478,500 478,250 478,000

SB-07 SB-08 SB-04B SB-04A SB-05 SB-05A SB-05B SB-05C

COURSE ROAD No. 1

COURSE ROAD No. 2

13+00 12+00 11+00 10+00 9+00 8+00 7+00 6+00 5+00 4+00

FIRE BREAK (UNPAVED)

DRAINAGE/WATER FEATURE

SANDY GROVE ROAD (UNPAVED)

L22 C19

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	K. SANDERS
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 86182
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

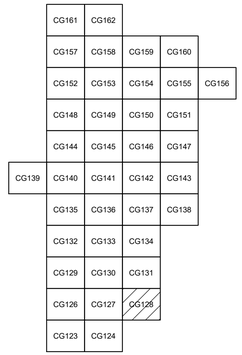
SHEET ID

CG127

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG127.DWG

READY TO ADVERTISE (RTA)

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	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 96182
VOLUMES 3 & 4 - DOWNRANGE

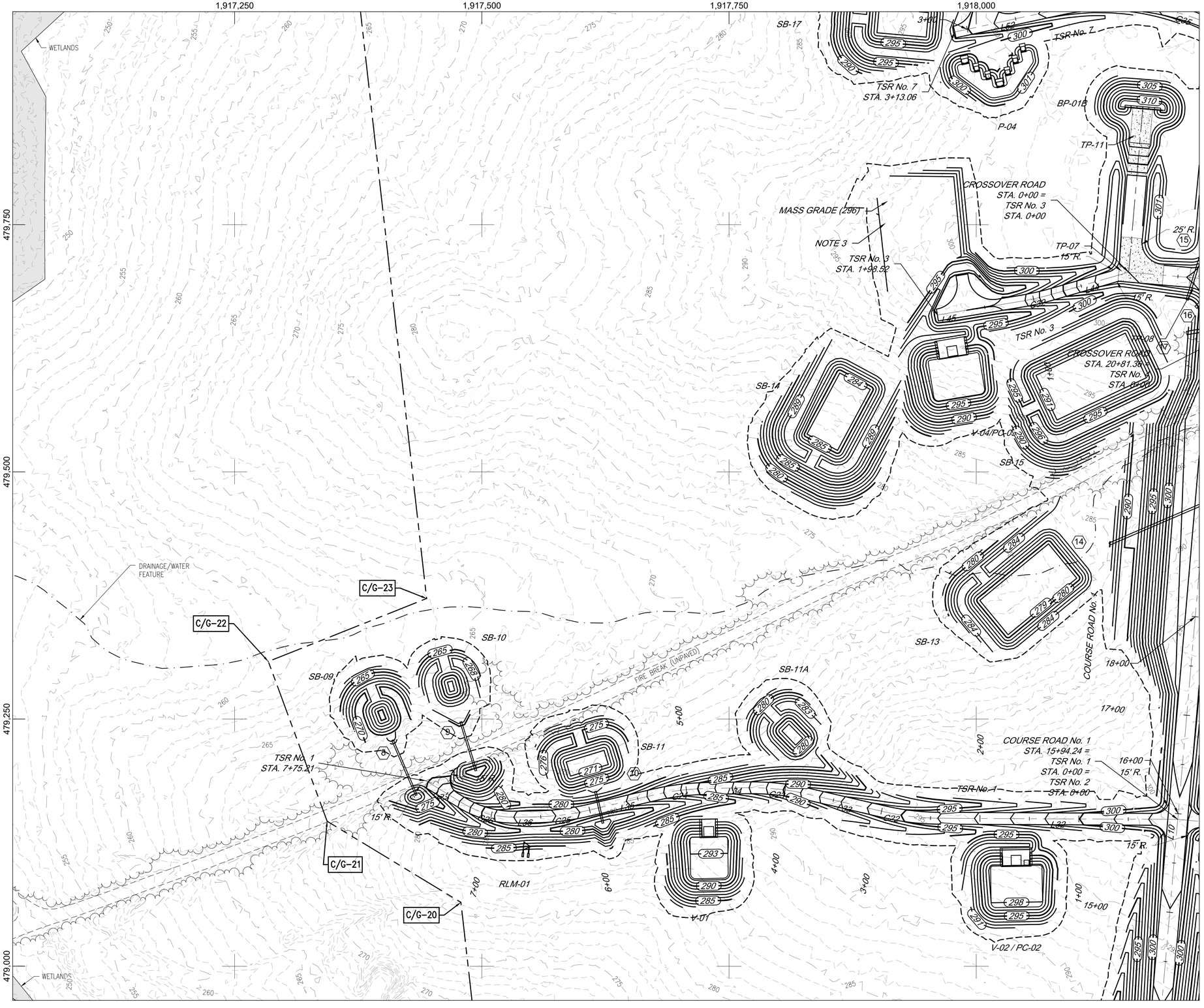
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

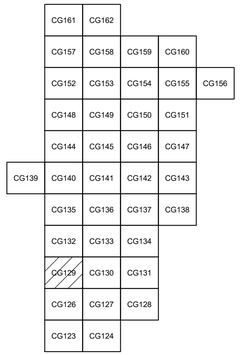
CG128

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG128.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	178-45-01
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

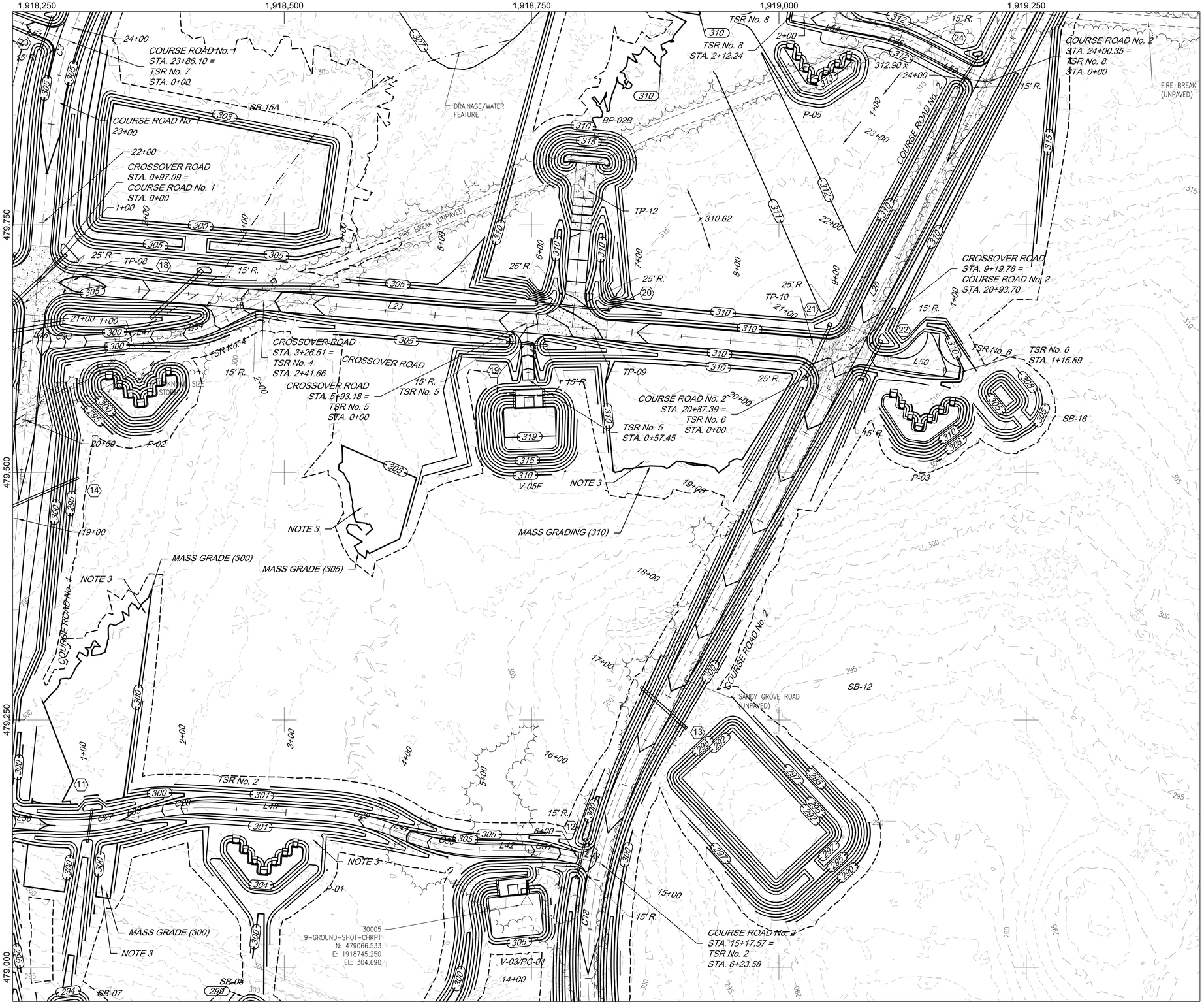
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG129

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG129.DWG

READY TO ADVERTISE (RTA)



KEY PLAN

	CG161	CG162		
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

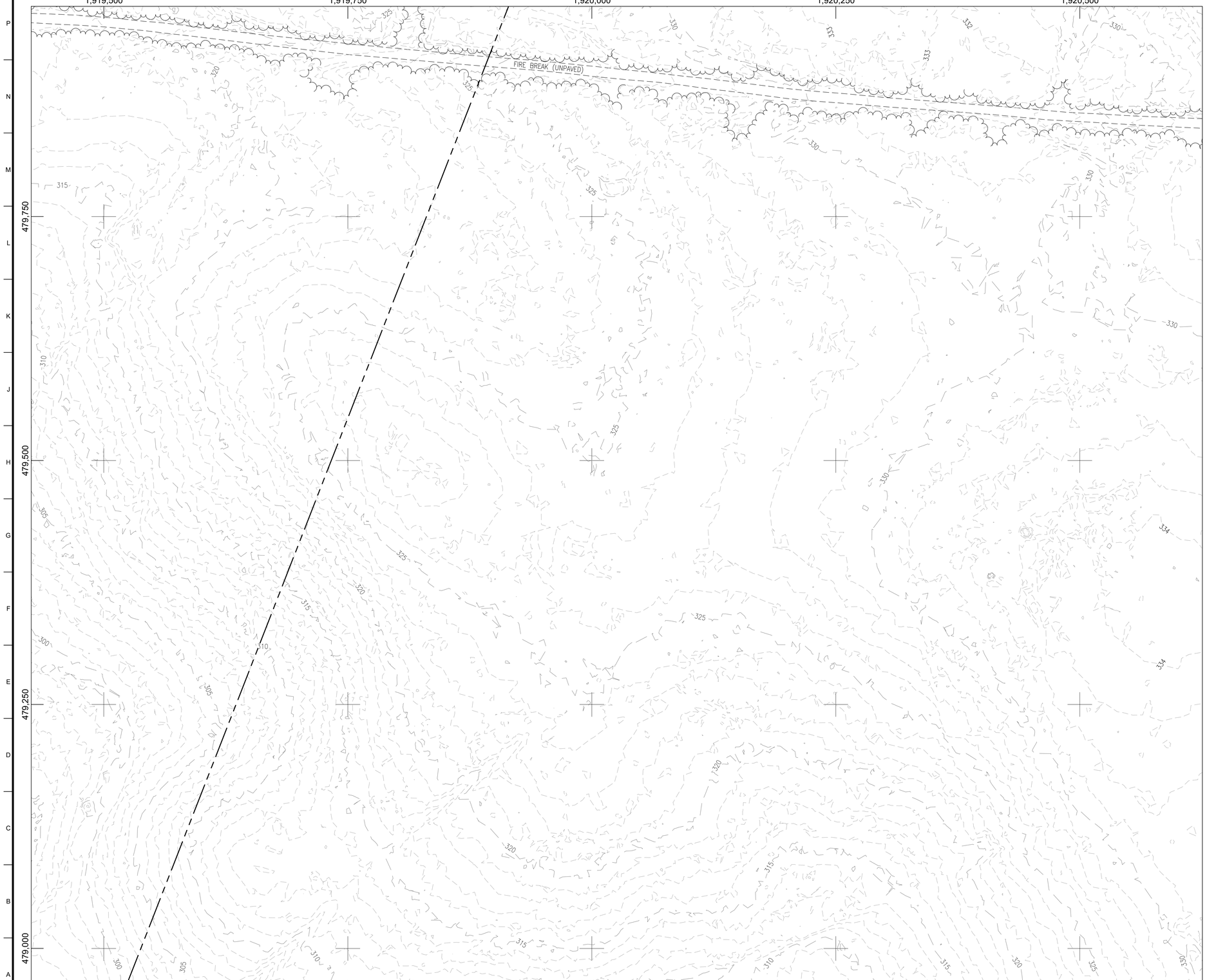
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

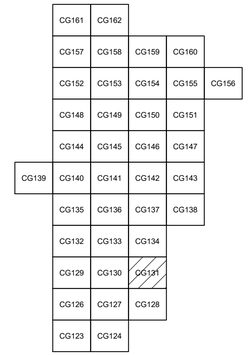
CG130

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\100 SITE PLANS\B2ECG130.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: BRADLEY	CATEGORY CODE:
SIZE: ANSI D	FILE NAME: 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, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG131

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG131.DWG

1,917,250 1,917,500 1,917,750 1,918,000

480,750 480,500 480,250 480,000

DRAINAGE/WATER FEATURE

WETLANDS

WETLAND IMPACTS - CLEARING (NOTE 6)

50' WETLAND BUFFER (NOTE 6)

36" CMP STORM

FIRE BREAK (UNPAVED)

WETLAND IMPACTS - CLEARING (NOTE 6)

50' WETLAND BUFFER (NOTE 6)

WETLANDS

SB-17

TSR No. 2

2+00

1+00

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED.
4. OMITTED.
5. OMITTED.
6. SEE CG764 FOR WETLAND NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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)
FY 23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

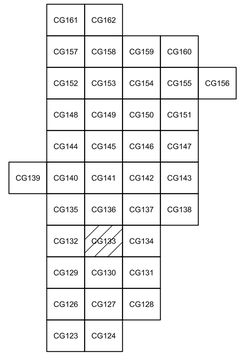
SHEET ID

CG132

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG132.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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

SITE, GRADING, & DRAINAGE PLAN

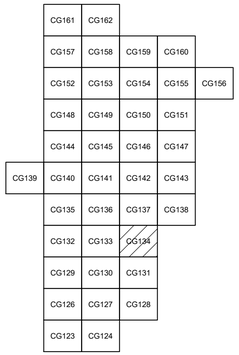
SHEET ID

CG133

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\100 SITE PLANS\B2ECG133.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG134.DWG

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

ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

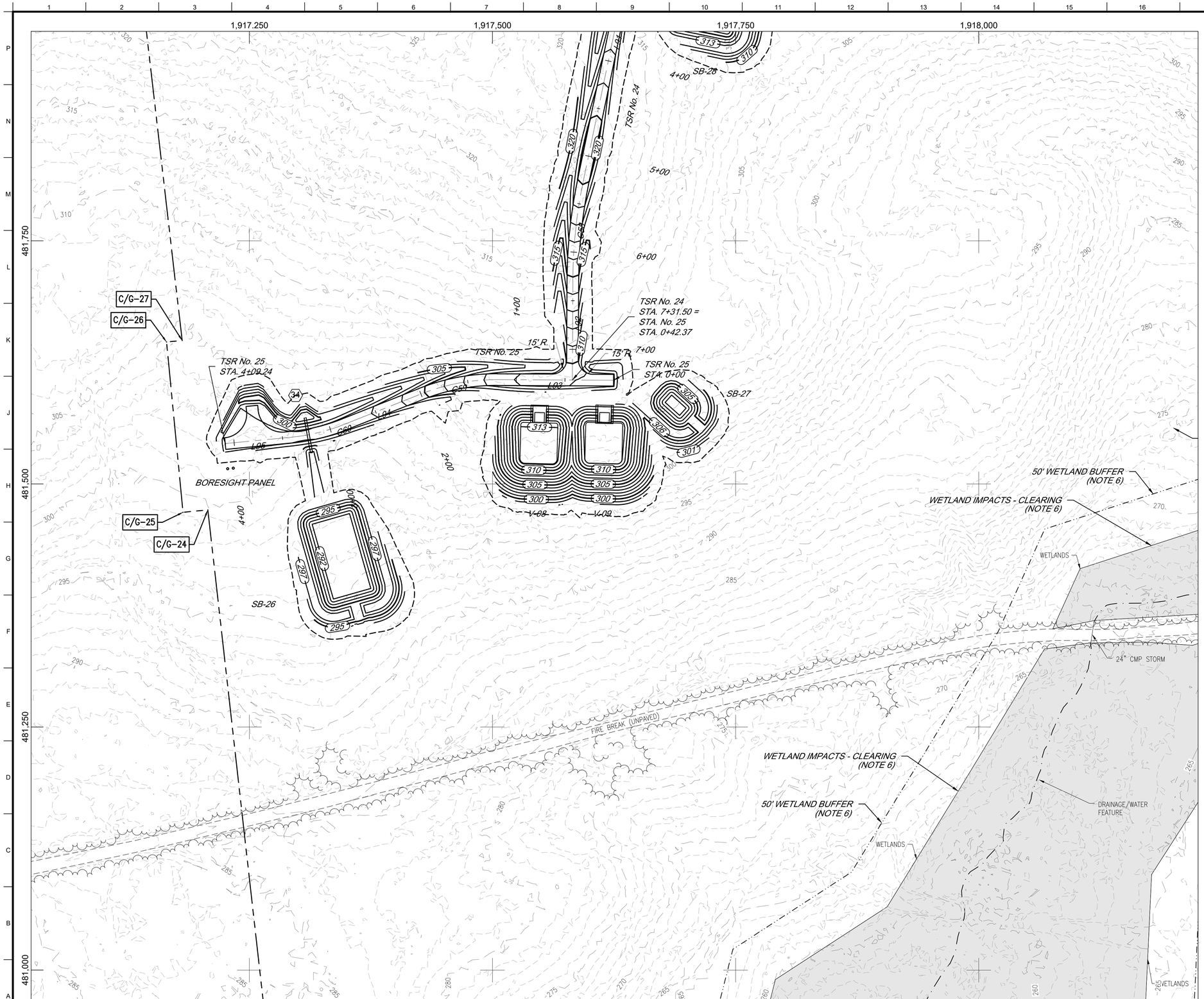
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 36162
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG134

READY TO ADVERTISE (RTA)



KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED.
4. OMITTED.
5. OMITTED.
6. SEE CG764 FOR WETLAND NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	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 96182
VOLUMES 3 & 4 - DOWNRANGE

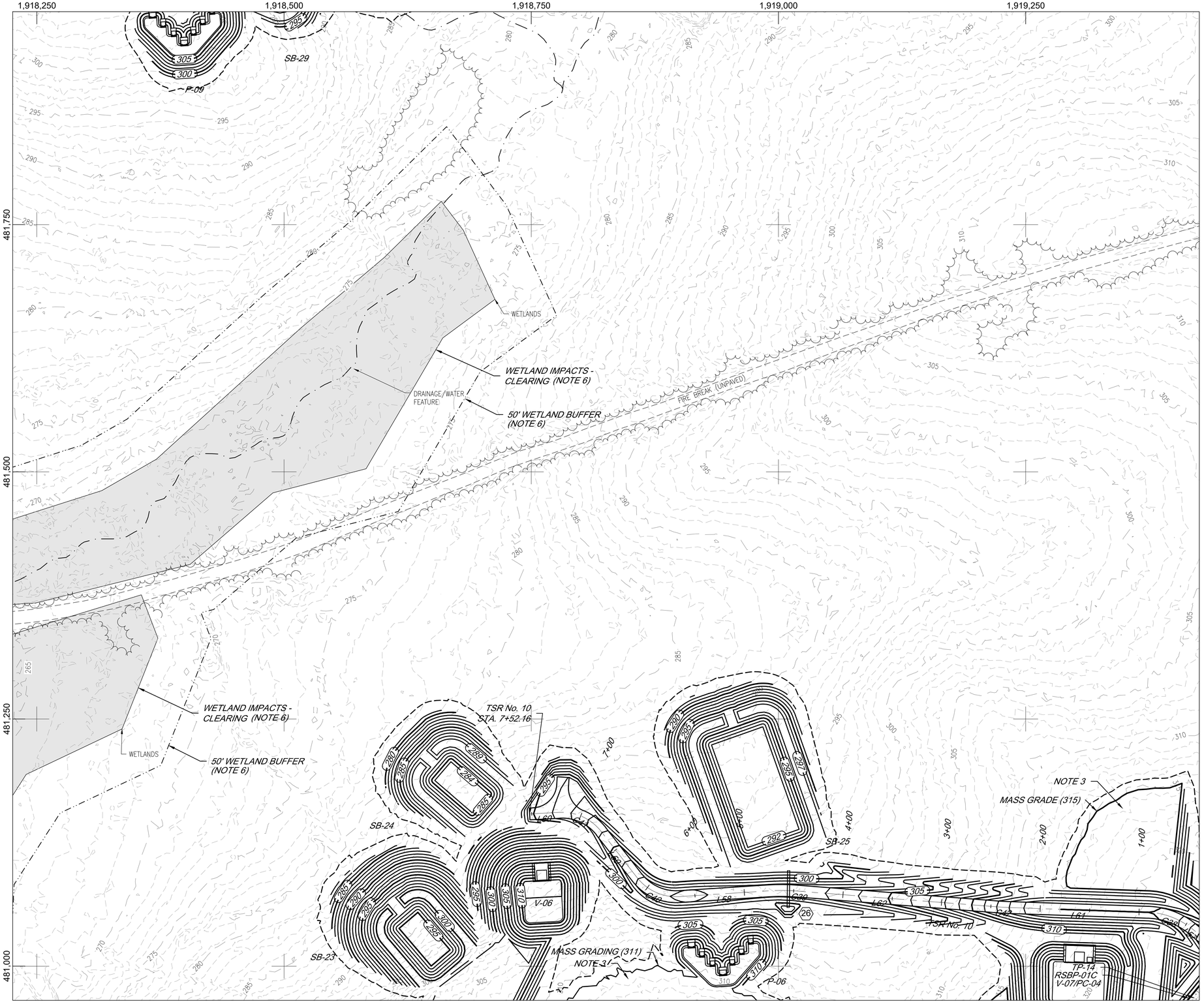
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

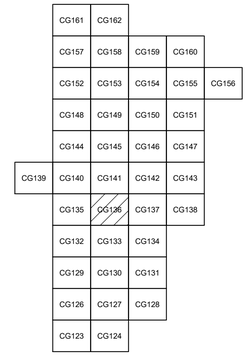
CG135

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG135.DWG

READY TO ADVERTISE (RTA)



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.
4. OMITTED.
5. OMITTED.
6. SEE CG764 FOR WETLAND NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SITE, GRADING, & DRAINAGE PLAN

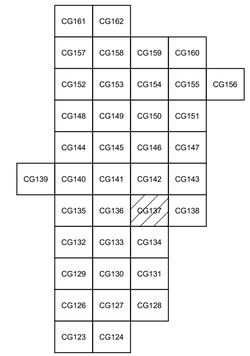
SHEET ID

CG136

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG136.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

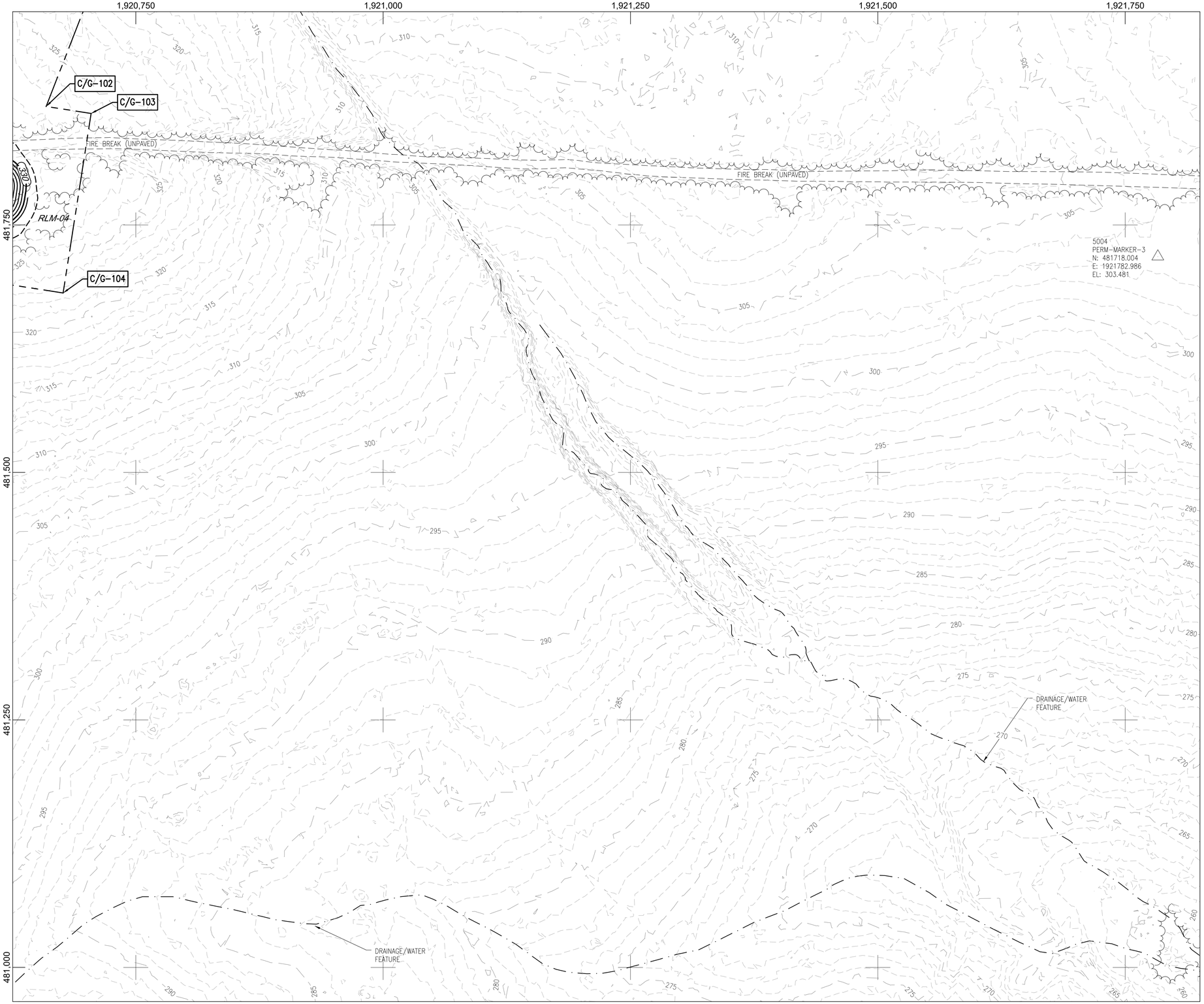
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

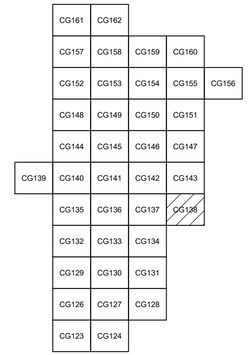
CG137

G:\CLEANS\TUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG137.DWG

READY TO ADVERTISE (RTA)



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

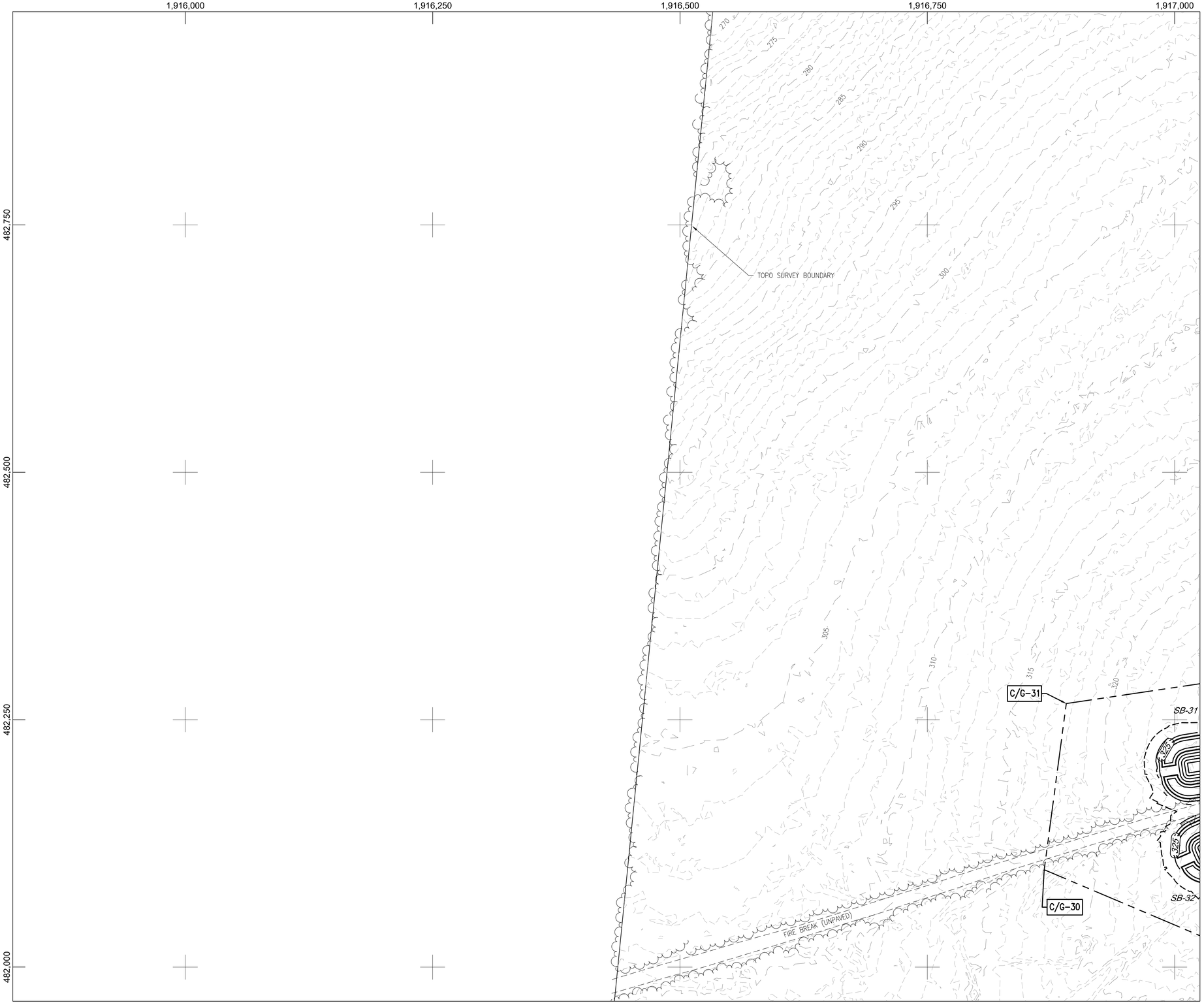
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

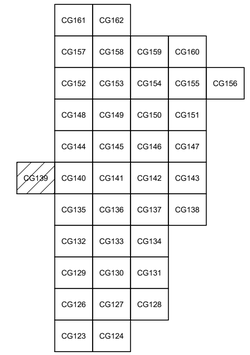
CG138

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG138.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG139

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG139.DWG

1,917,250 1,917,500 1,917,750 1,918,000

482,750 482,500 482,250 482,000

UNPAVED ROAD

SB-33

TSR No. 21
STA. 2+17.19

TSR No. 23
STA. 2+88.85

V-13 / PC-08

TSR No. 17
STA. 10+88.50 =
TSR No. 24
STA. 0+00

TSR No. 17
STA. 15+53.34

TSR No. 17
STA. 5+59.12 =
TSR No. 21
STA. 0+00

TSR No. 17
STA. 8+92.94 =
TSR No. 23
STA. 0+00

TSR No. 22
STA. 1+68.82

TSR No. 24

SB-31

SB-32

SB-28

FC-03

RLM-03

V-14

V-10

C/G-32

C/G-28

C/G-29

15' R.

KEY PLAN

CG161	CG162				
CG157	CG158	CG159	CG160		
CG152	CG153	CG154	CG155	CG156	
CG148	CG149	CG150	CG151		
CG144	CG145	CG146	CG147		
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 #6162
VOLUMES 3 & 4 - DOWNRANGE

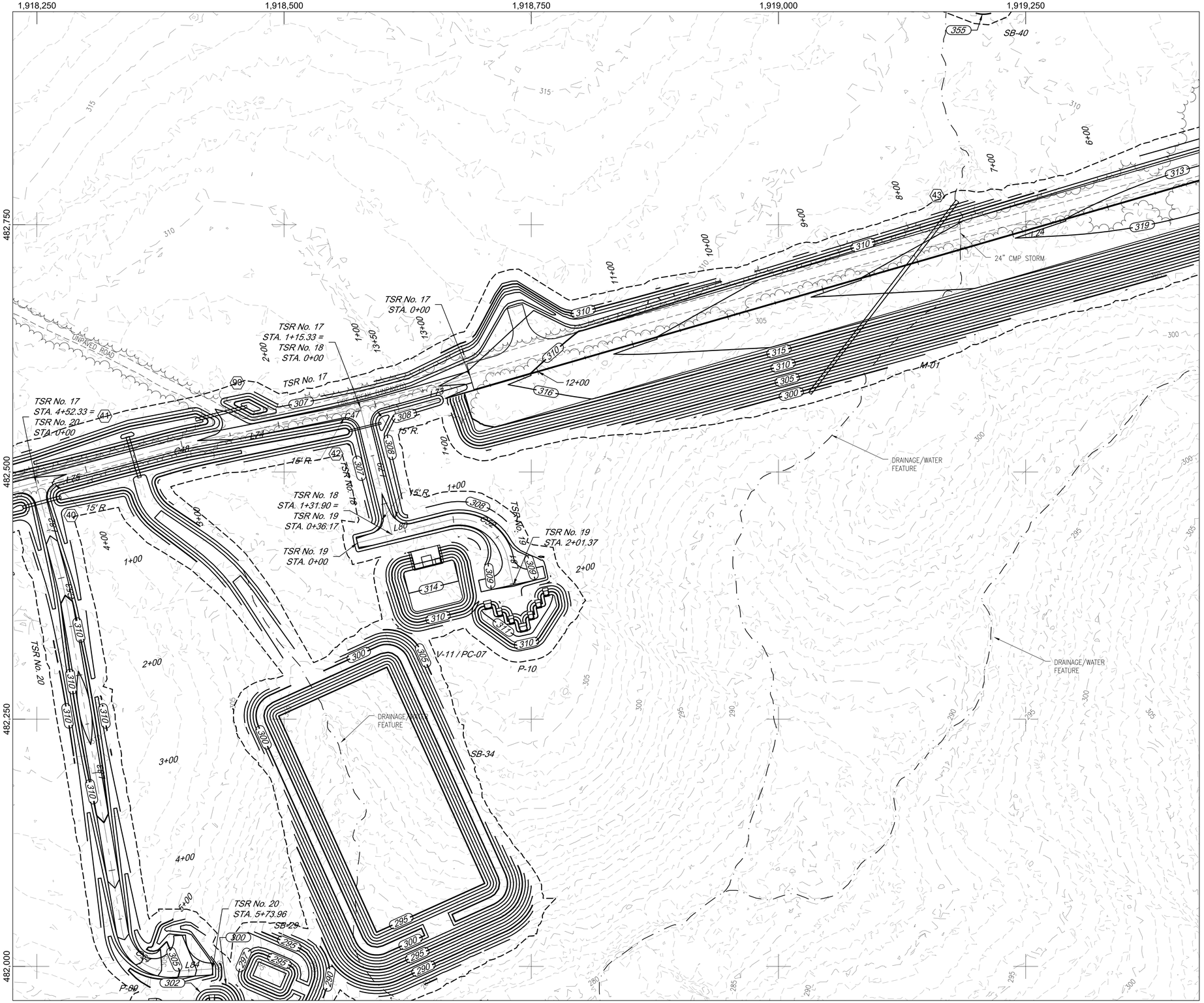
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

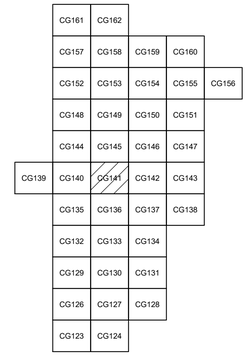
CG140

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG140.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	174-65-01
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

SITE, GRADING, & DRAINAGE PLAN

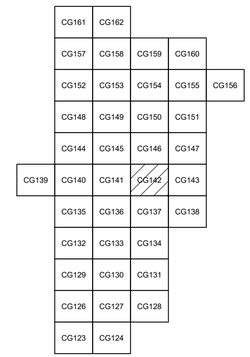
SHEET ID

CG141

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG141.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
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
WWW.POLY-INC.COM / 334-793-4700

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 98162
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

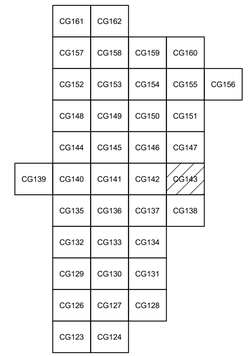
SHEET ID

CG142

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG142.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

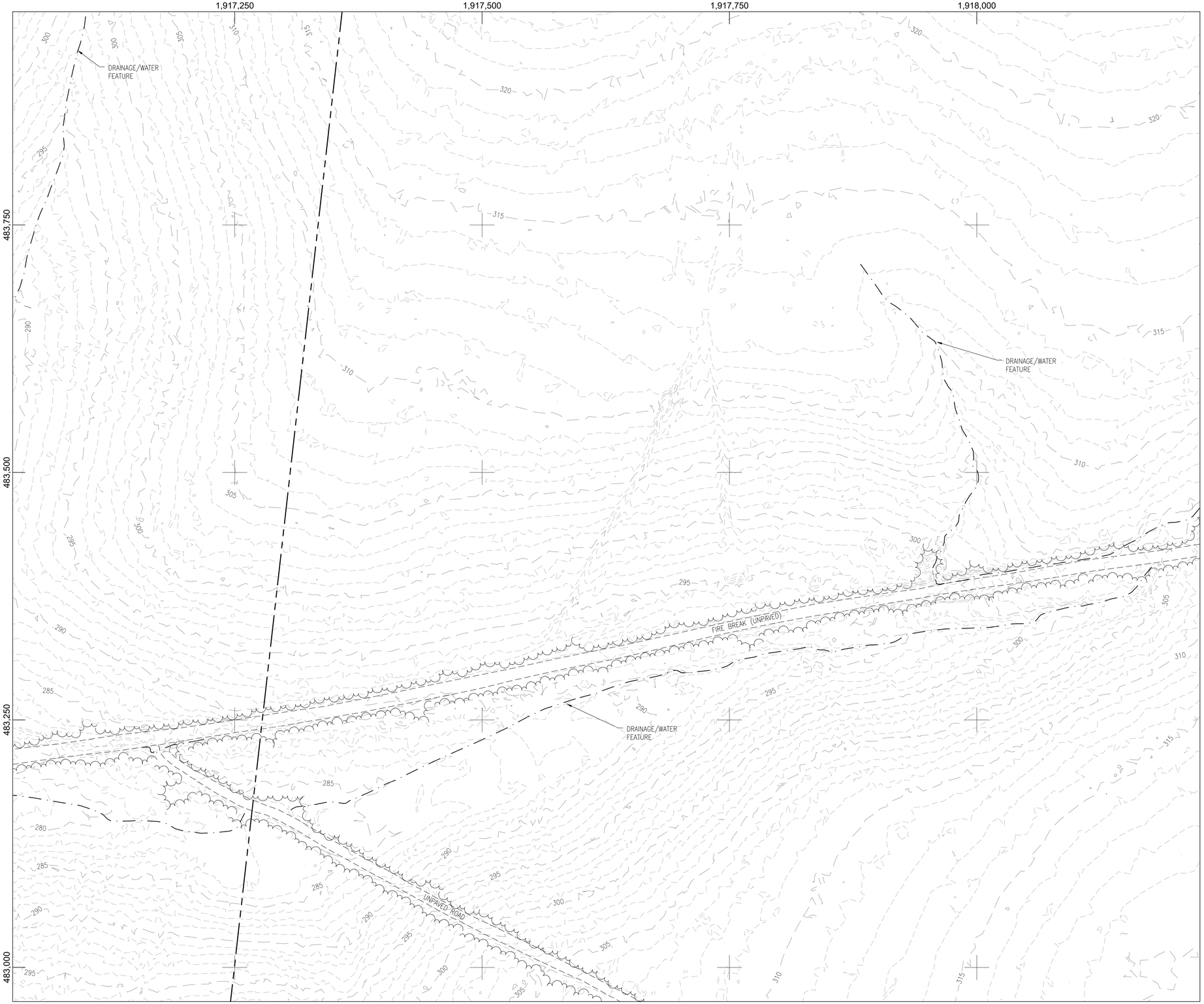
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

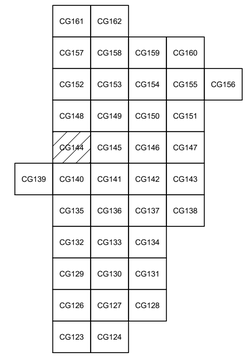
CG143

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG143.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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K. SANDERS	NOVEMBER 2023
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B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG144

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG144.DWG

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

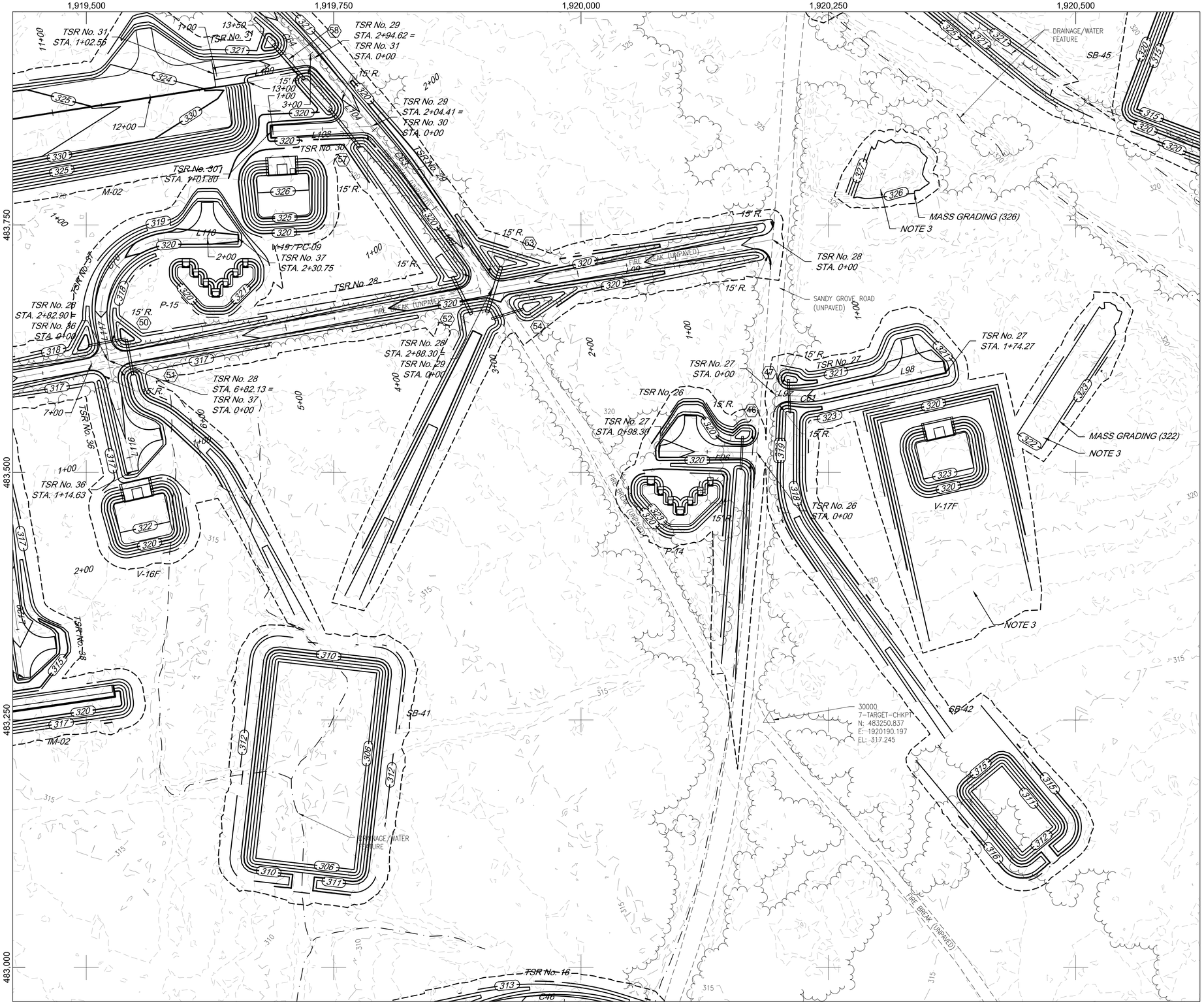
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

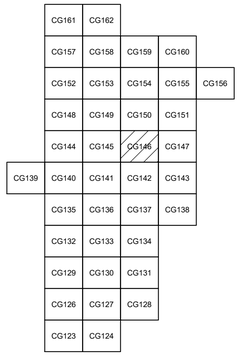
CG145

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG145.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG146.DWG

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	B. BRADLEY
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

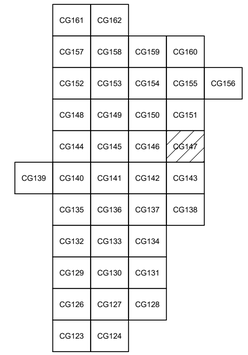
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG146

READY TO ADVERTISE (RTA)

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG147

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG147.DWG

1,917,250
1,917,500
1,917,750
1,918,000
484,750
484,500
484,250
484,000

DRAINAGE/WATER FEATURE

FIRE BREAK (UNPAVED)

MASS GRADING (334)

NOTE 3

SB-48

DRAINAGE/WATER FEATURE

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
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 96182
VOLUMES 3 & 4 - DOWNRANGE

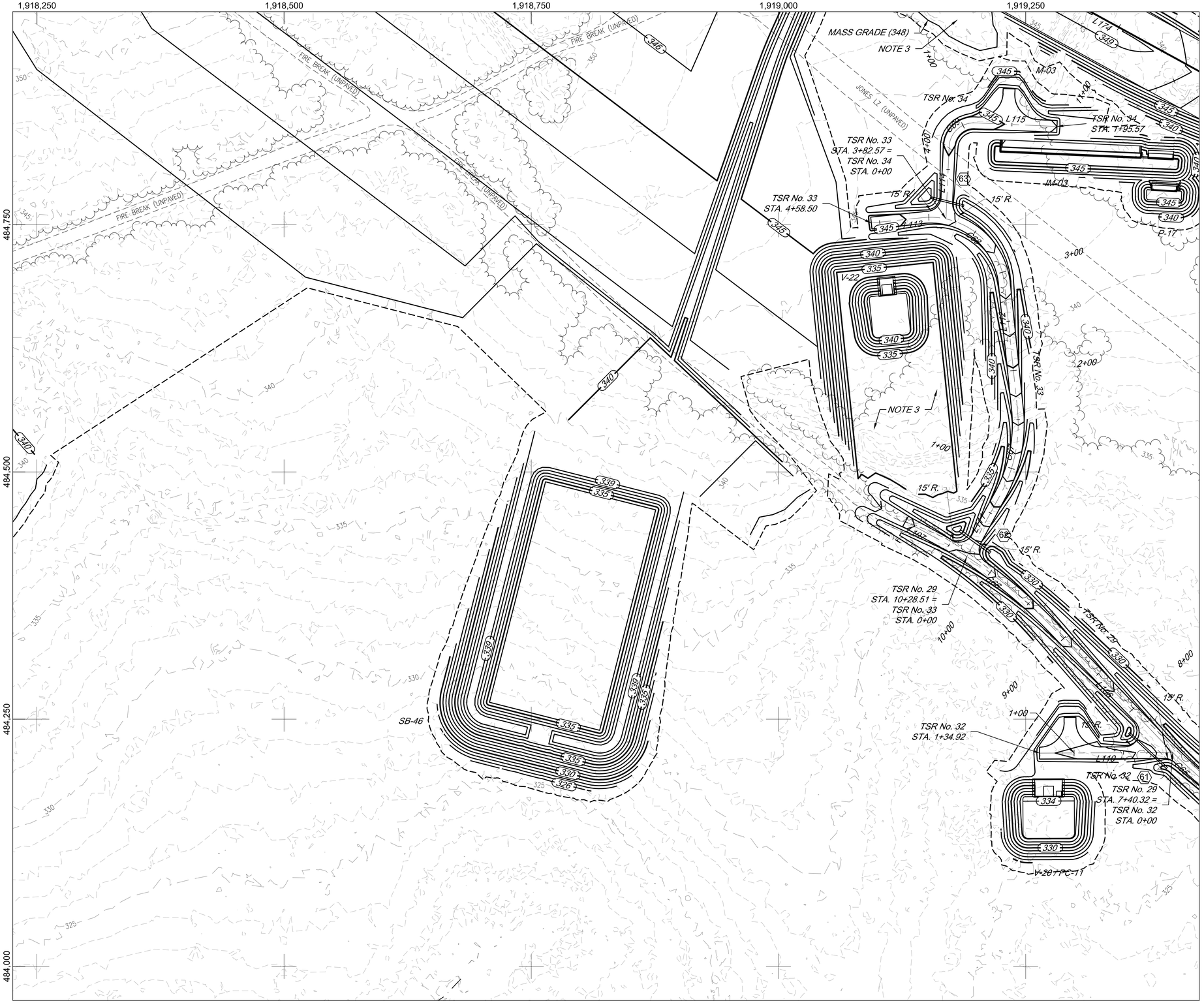
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

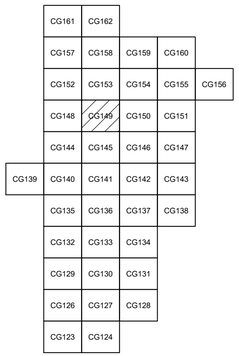
CG148

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG148.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG149.DWG

ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-45-01
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 86182
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG149

READY TO ADVERTISE (RTA)

KEY PLAN

CG161	CG162			
CG157	CG158	CG159	CG160	
CG152	CG153	CG154	CG155	CG156
CG148	CG149	CG150	CG151	
CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143
	CG135	CG136	CG137	CG138
	CG132	CG133	CG134	
	CG129	CG130	CG131	
	CG126	CG127	CG128	
	CG123	CG124		

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 96182
VOLUMES 3 & 4 - DOWNRANGE

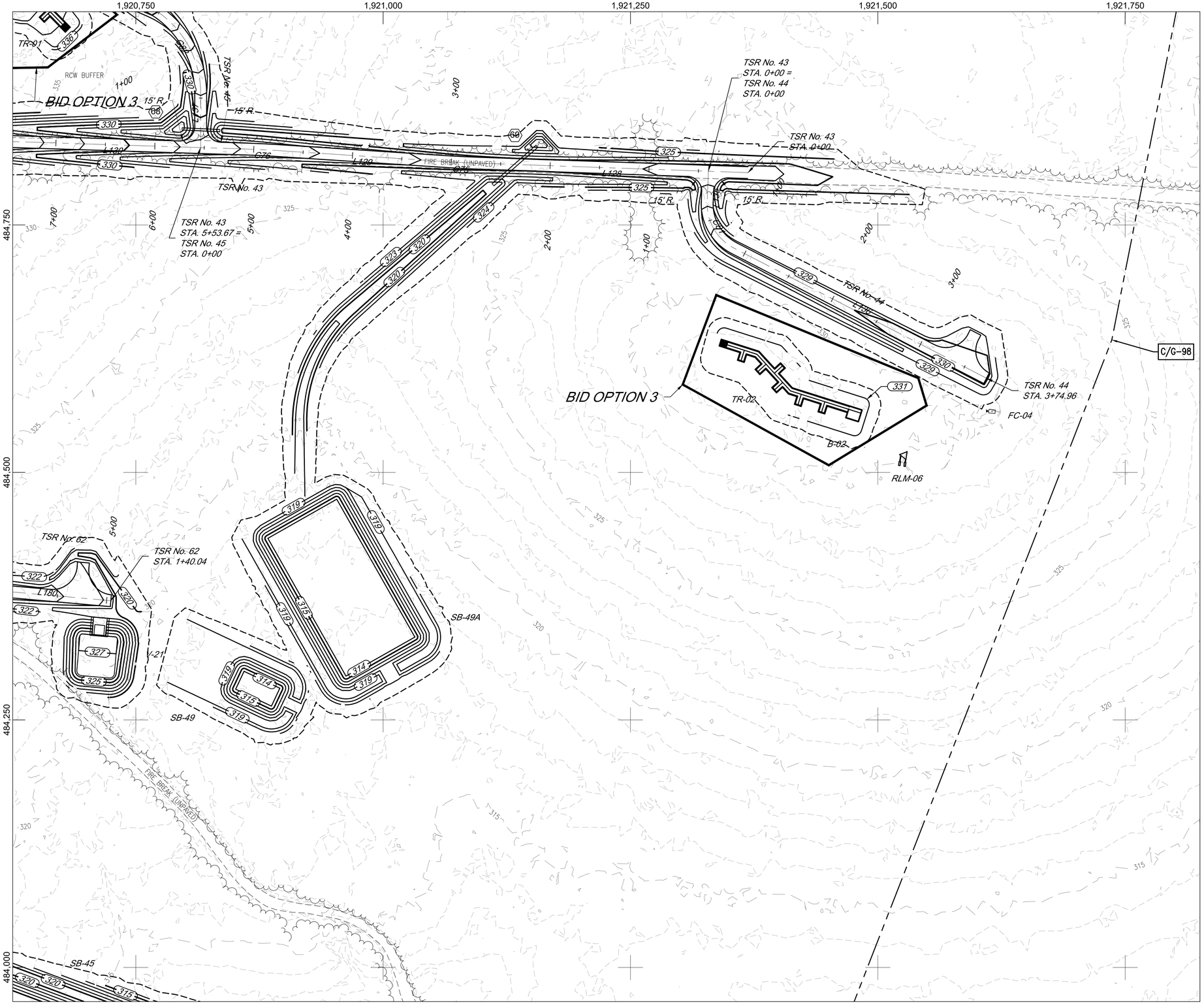
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

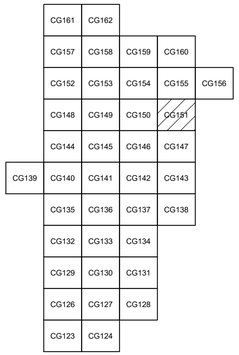
CG150

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG150.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

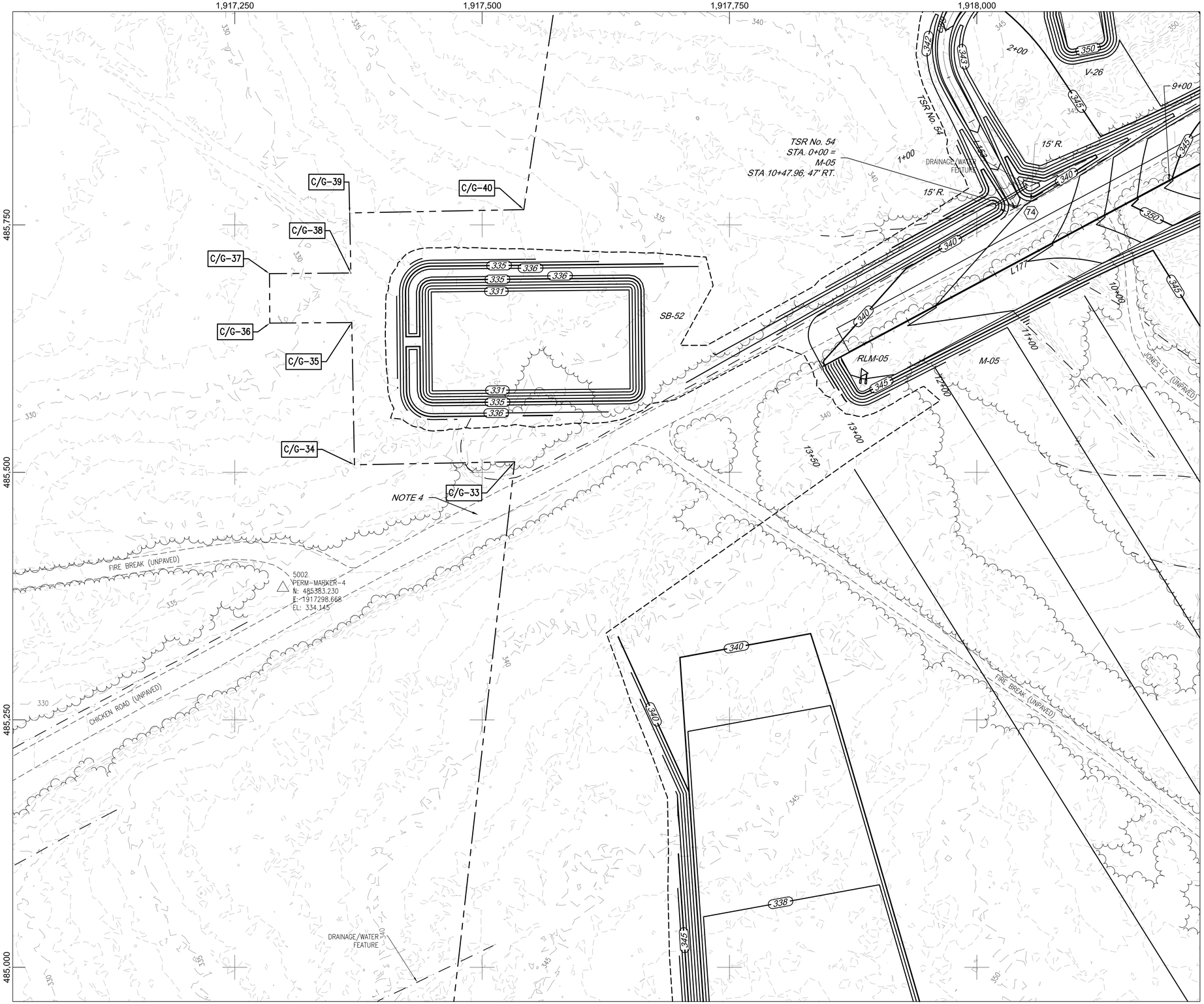
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

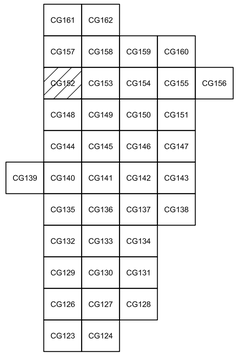
CG151

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2\815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG151.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED
4. INSTALL NEW SECURITY GATE ACROSS CHICKEN ROAD APPROXIMATELY 8855 LINEAR FEET SOUTHWEST OF THE CLEARING AND GRUBBING BOUNDARY.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 170-45-01
SCALE: 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

SITE, GRADING, & DRAINAGE PLAN

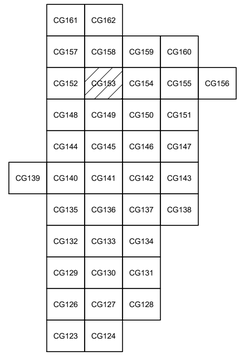
SHEET ID

CG152

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\100 SITE PLANS\B2\ECG152.DWG

KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.
4. TRAINING BUILDINGS TO BE REMOVED BY OTHERS PRIOR TO CONSTRUCTION.
5. OMITTED.
6. SEE CG764 FOR WETLAND NOTES.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
BRADLEY	173-45-01
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG153

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG153.DWG

1,919,500 1,919,750 1,920,000 1,920,250 1,920,500

485,750 485,500 485,250 485,000

FIRE BREAK (UNPAVED)

TSR No. 50
STA. 0+00

15' R.

15' R.

BID OPTION 3

DRAINAGE/WATER FEATURE

SANDY GROVE ROAD (UNPAVED)

SB-53

SB-51

L175

L176

M-04

C101

REPAIR EX. ROAD

TSR No. 48
STA. 3+69.12

TSR No. 45
STA. 6+94.20

TSR No. 45
STA.6+28.60 =
TSR No. 47
STA. 2+22.40

TSR No. 45

TSR No. 47

TSR No. 48

V-24

V-25

B-01

TR-01

BID OPTION 3

15' R.

15' R.

15' R.

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

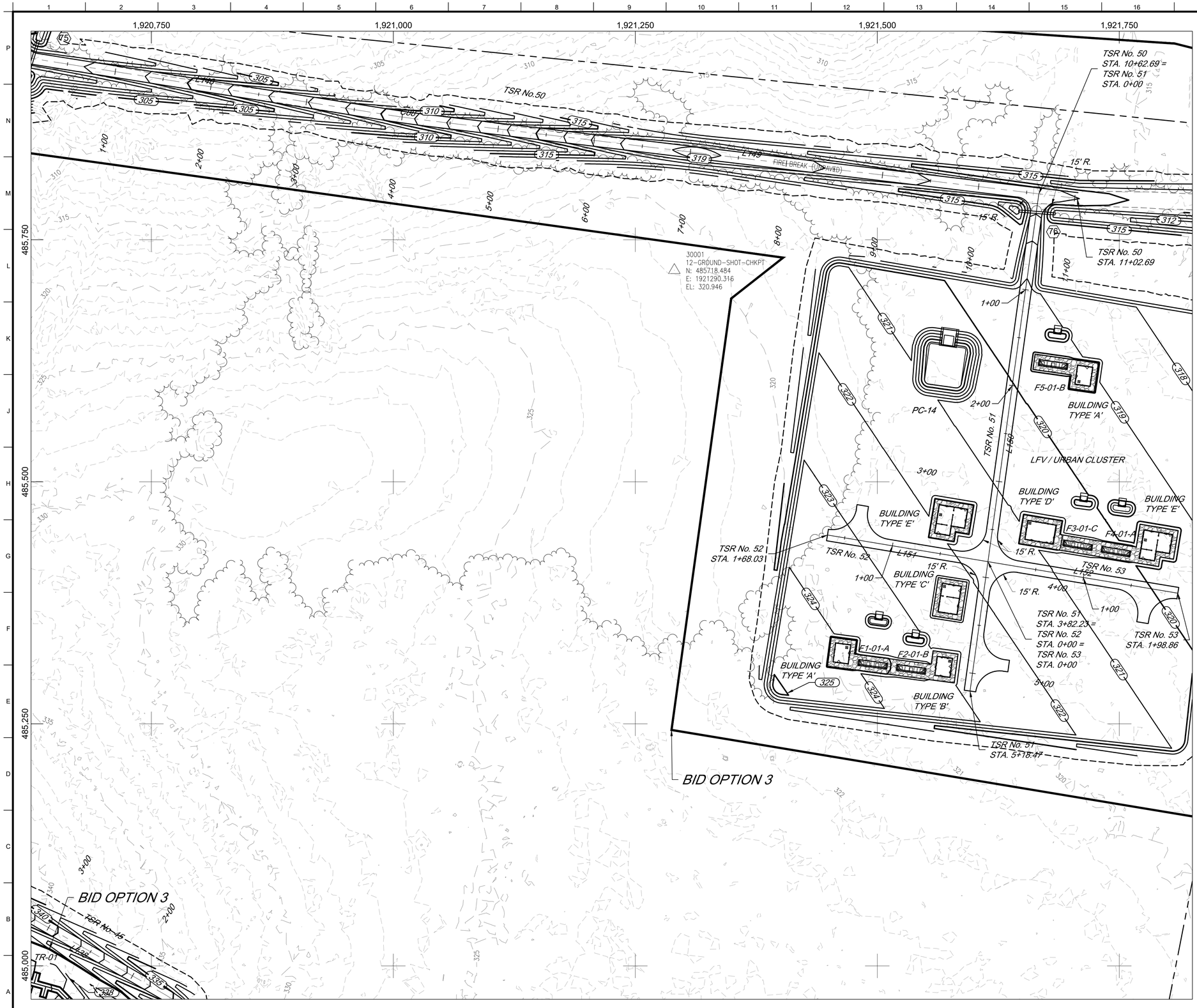
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

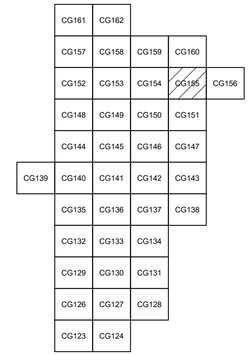
CG154

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG154.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	S. BRADLEY
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 36162
VOLUMES 3 & 4 - DOWNRANGE

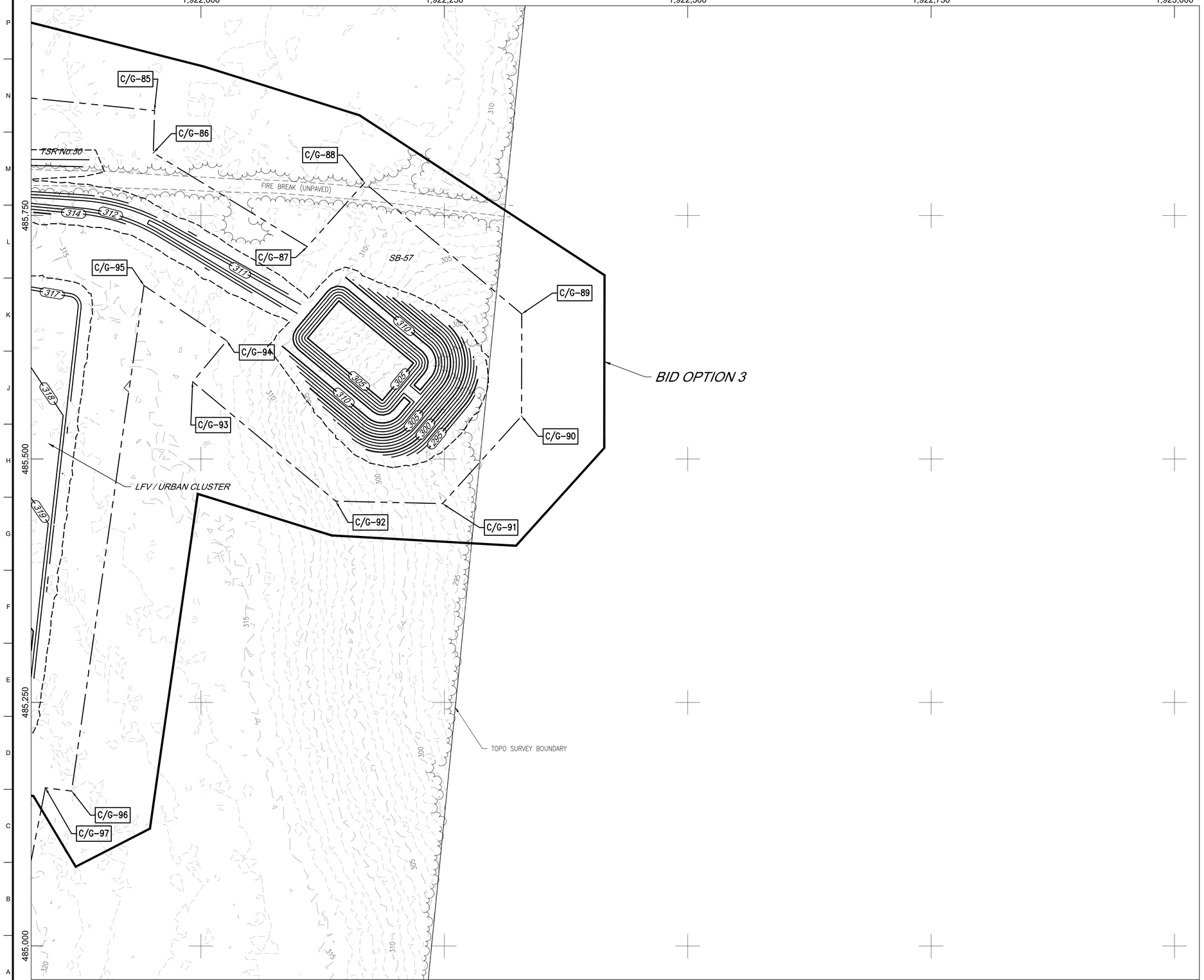
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

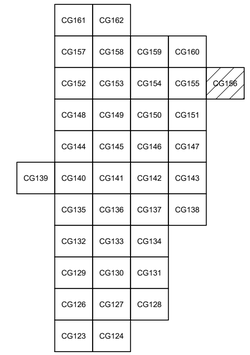
CG155

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2E\CG155.DWG

READY TO ADVERTISE (RTA)



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG156

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG156.DWG

1,917,250 1,917,500 1,917,750 1,918,000

486,750 486,500 486,250 486,000

C/G-53 C/G-52 C/G-51 C/G-50 C/G-49 C/G-48 C/G-47 C/G-46 C/G-45 C/G-44 C/G-43 C/G-42 C/G-41

SB-59 SB-60 V-26 V-28

L154 L162 L163 L164 L165

TSR No. 54 STA. 3+59.70

TSR No. 57

DRAINAGE/WATER FEATURE

FIRE BREAK (UNPAVED)

PLANTS, TE&S

30008
13-GROUND-SHOT-CHKPT
N: 486626.351
E: 1917256.345
EL: 335.612

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 174-45-01
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG157

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\100 SITE PLANS\B2ECG157.DWG

1,918,250 1,918,500 1,918,750 1,919,000 1,919,250

486,750 486,500 486,250 486,000

TSR No. 57
TSR No. 55
STA. 8+73.09 =
TSR No. 57
STA 4+15.30
TSR No. 56
STA. 2+00.35
TSR No. 55
STA. 1+72.78 =
TSR No. 56
STA 0+00
TSR No. 55
STA. 0+00 =
M-05
STA 2+23.60, 47' RT.
TSR No. 49
STA. 10+27.57
V-27F
PC-15
M-05
SB-58
SB-61
SB-55
C/G-77
DRAINAGE/WATER FEATURE
FIRE BREAK (UNPAVED)
UNPAVED ROAD
CHICKEN ROAD (UNPAVED)
30003
B-GROUND-SHOT-CHKPT
N: 486382.392
E: 1919130.288
EL: 339.256

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE
50' 25' 0 50' 100'
SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	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

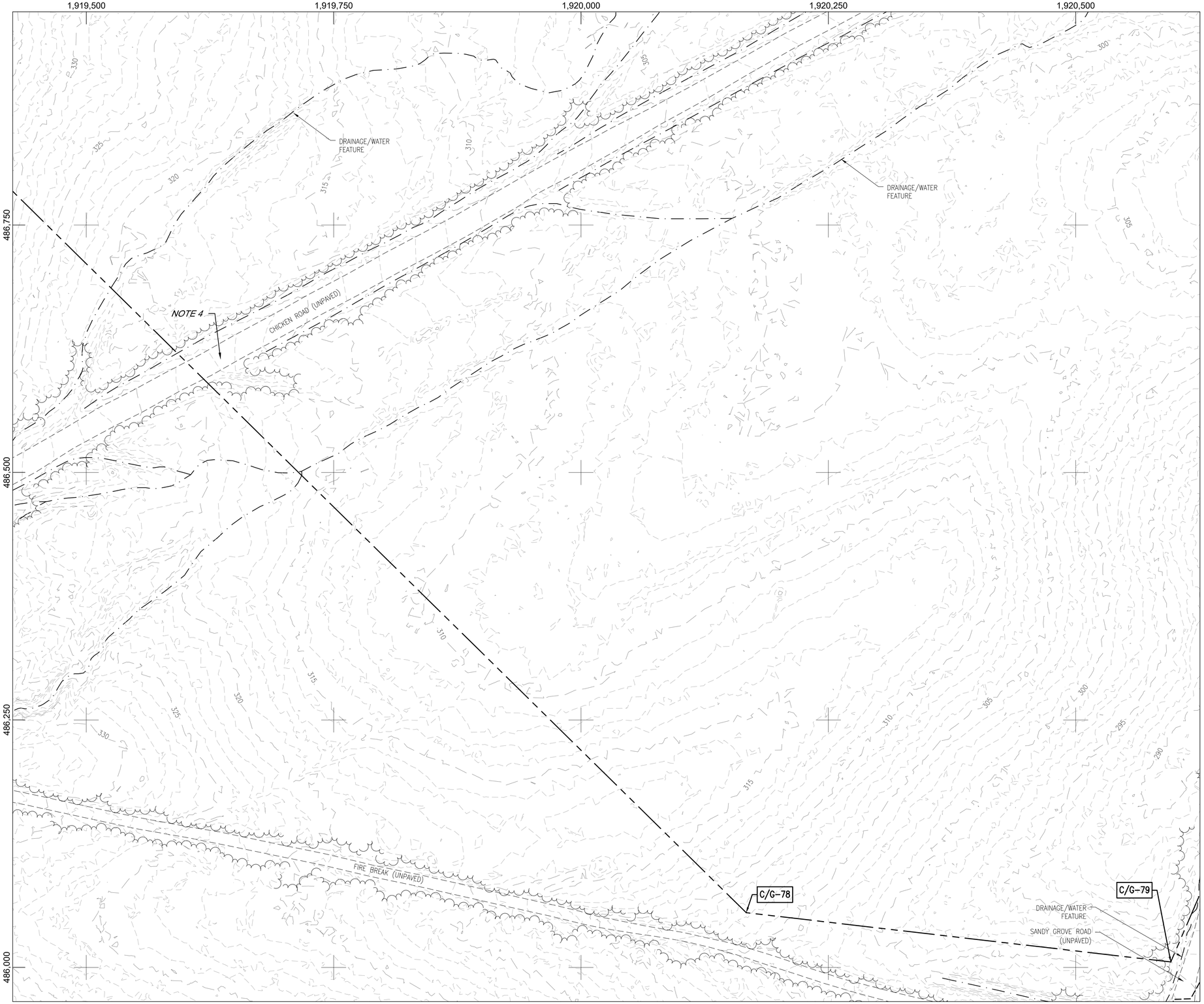
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 80162
VOLUMES 3 & 4 - DOWNRANGE

SITE, GRADING, & DRAINAGE PLAN

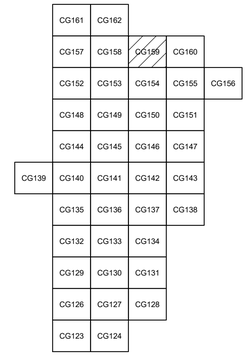
SHEET ID
CG158

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG158.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED.
4. INSTALL NEW SECURITY GATE ACROSS CHICKEN ROAD APPROXIMATELY 10,542 LINEAR FEET NORTHEAST OF THE CLEARING & GRUBBING BOUNDARY.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	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

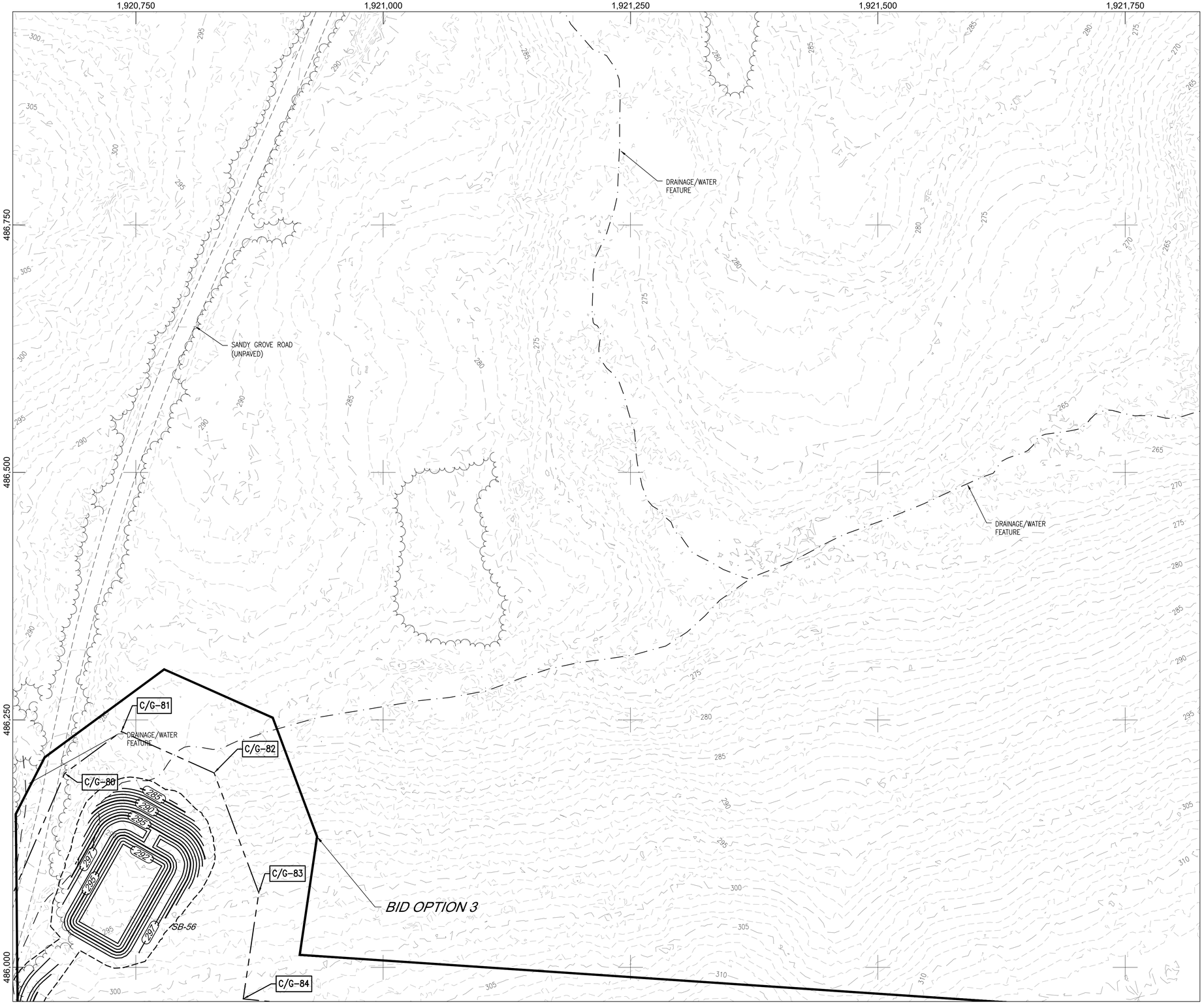
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

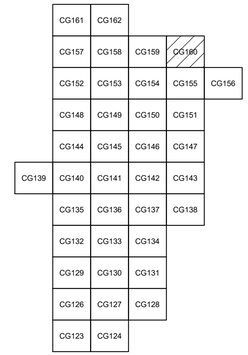
CG159

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG159.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

SITE, GRADING, & DRAINAGE PLAN

SHEET ID

CG160

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG160.DWG

KEY PLAN

	CG161	CG162			
	CG157	CG158	CG159	CG160	
	CG152	CG153	CG154	CG155	CG156
	CG148	CG149	CG150	CG151	
	CG144	CG145	CG146	CG147	
CG139	CG140	CG141	CG142	CG143	
	CG135	CG136	CG137	CG138	
	CG132	CG133	CG134		
	CG129	CG130	CG131		
	CG126	CG127	CG128		
	CG123	CG124			

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
BRADLEY	173-65-01
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 80162
VOLUMES 3 & 4 - DOWNRANGE

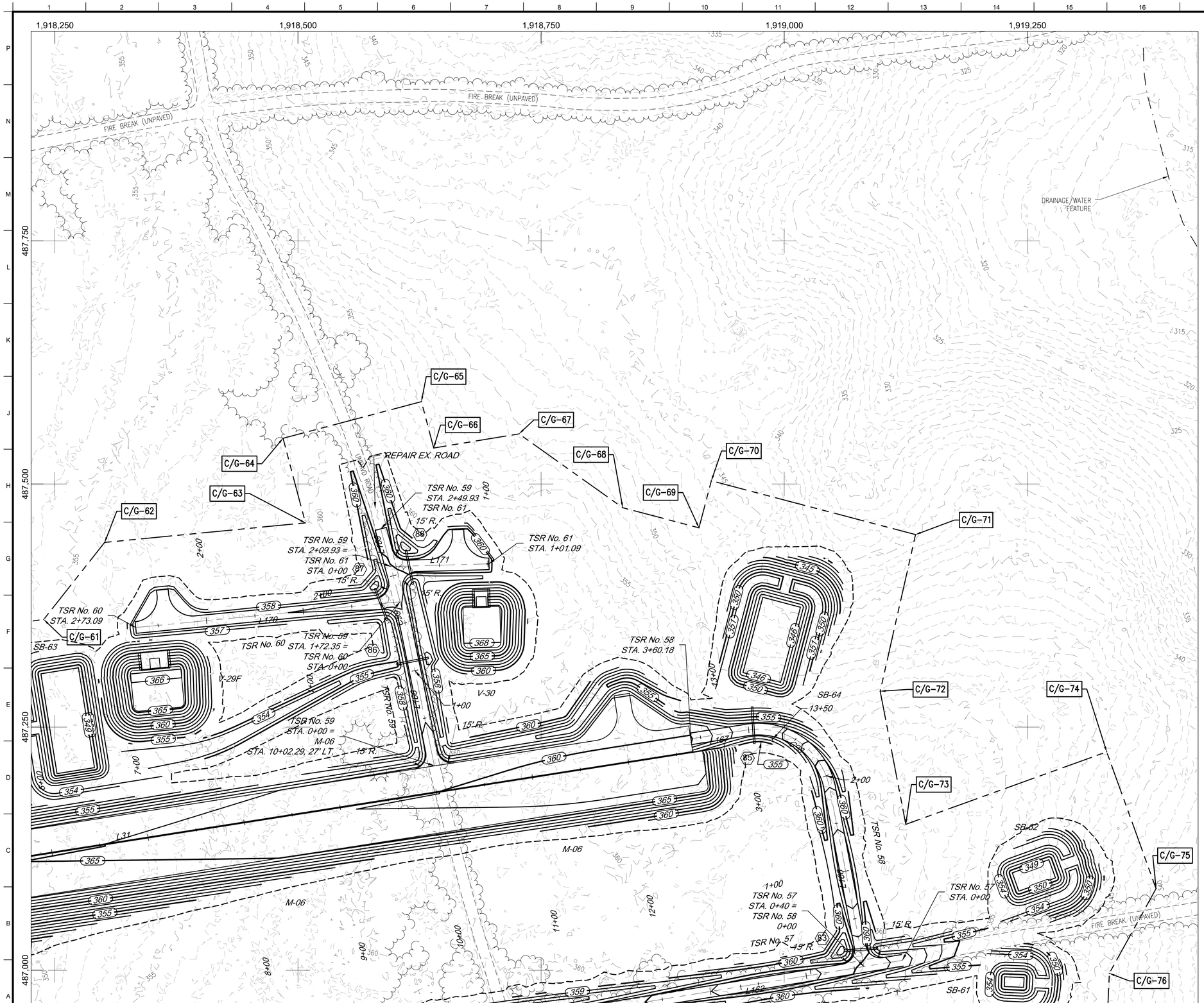
SITE, GRADING, & DRAINAGE PLAN

SHEET ID

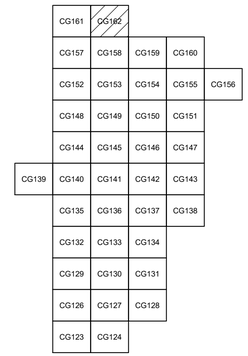
CG161

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG161.DWG



KEY PLAN



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME:

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: S. 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 36162
VOLUMES 3 & 4 - DOWNRANGE

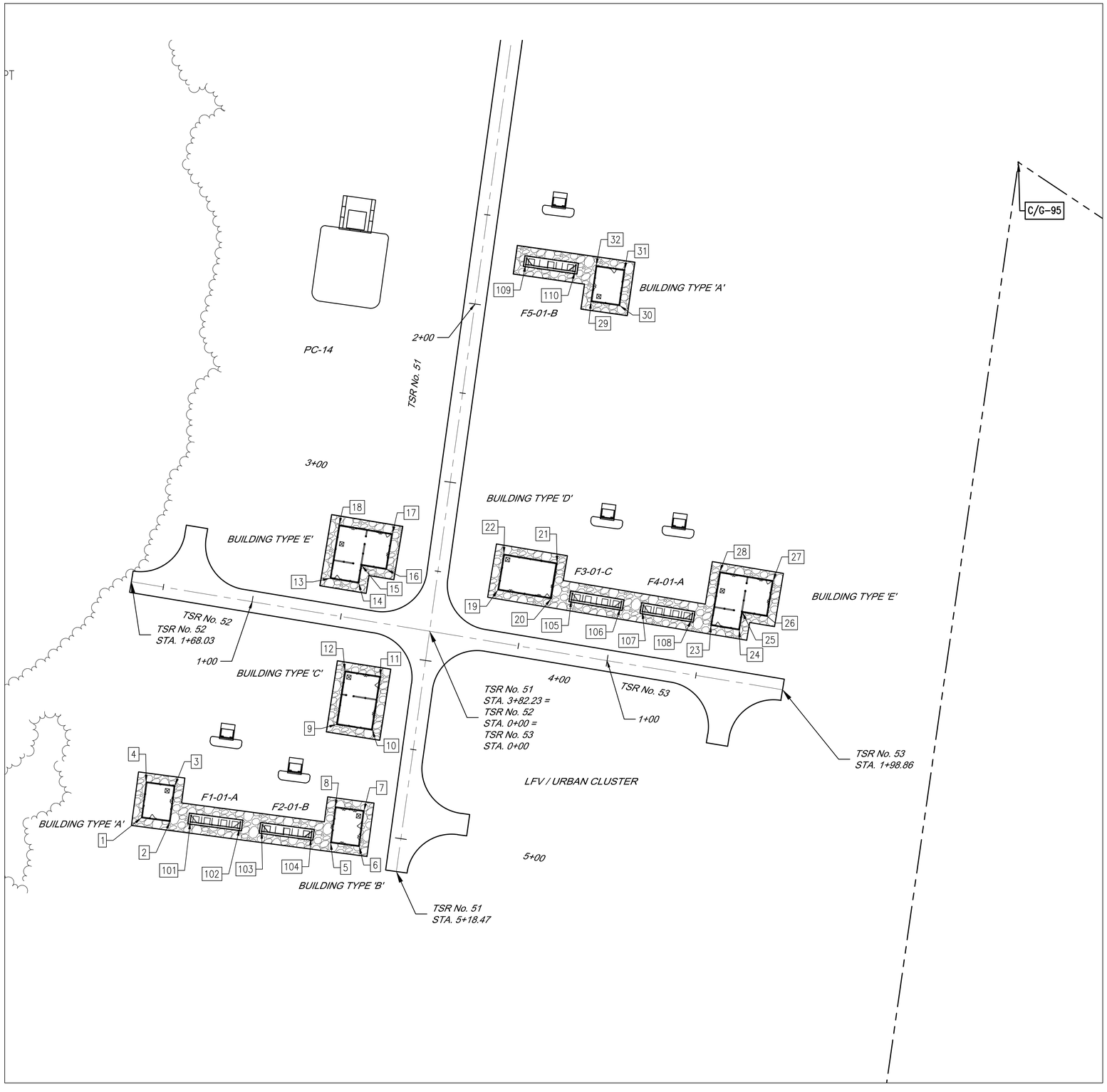
SITE, GRADING, & DRAINAGE PLAN

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

SHEET ID
CG162

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP07_RTA FINAL SUBMITTAL\04 CIVIL\1100 SITE PLANS\B2ECG162.DWG



FACADES

	POINT #	TARGET	NORTHING	EASTING	ELEVATION	TYPE
	101	F1-01-A-A	485,311.46	1,921,481.26	325.15	A
	102	F1-01-A-B	485,307.84	1,921,508.69	325.15	A
	103	F2-01-B-A	485,306.23	1,921,520.92	324.75	B
	104	F2-01-B-B	485,302.61	1,921,548.35	324.75	B
	105	F3-01-C-A	485,434.90	1,921,693.07	321.85	C
	106	F3-01-C-B	485,430.37	1,921,720.36	321.85	C
	107	F4-01-A-A	485,428.35	1,921,732.53	321.45	A
	108	F4-01-A-B	485,423.82	1,921,759.82	321.45	A
	109	F5-01-B-A	485,621.25	1,921,667.73	320.80	B
	110	F5-01-B-B	485,617.36	1,921,695.12	320.80	B

BUILDING COORDINATES

POINT #	NORTHING	EASTING
1	485,313.85	1,921,454.18
2	485,311.76	1,921,470.04
3	485,331.59	1,921,472.65
4	485,333.68	1,921,456.79
5	485,299.98	1,921,559.27
6	485,297.87	1,921,575.13
7	485,317.70	1,921,577.77
8	485,319.81	1,921,561.91
9	485,365.67	1,921,562.59
10	485,362.59	1,921,582.35
11	485,392.23	1,921,586.98
12	485,395.31	1,921,567.22
13	485,446.91	1,921,559.06
14	485,444.30	1,921,574.84
15	485,454.16	1,921,576.48
16	485,451.87	1,921,590.29
17	485,471.60	1,921,593.56
18	485,476.51	1,921,563.97
19	485,440.49	1,921,652.27
20	485,435.58	1,921,681.86
21	485,455.31	1,921,685.14
22	485,460.22	1,921,655.54
23	485,420.84	1,921,770.65
24	485,418.22	1,921,786.43
25	485,428.09	1,921,788.07
26	485,425.80	1,921,801.88
27	485,445.53	1,921,805.15
28	485,450.44	1,921,775.56
29	485,600.77	1,921,704.05
30	485,598.52	1,921,719.89
31	485,618.32	1,921,722.70
32	485,620.57	1,921,706.86

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED.
4. OMITTED.
5. SEE SHEETS CG155 & CG156 FOR 50-SCALE SITE, GRADING, & DRAINAGE SHEETS.

GRAPHIC SCALE

30' 15' 0 30' 60'

SCALE: 1" = 30'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	K. SANDERS
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

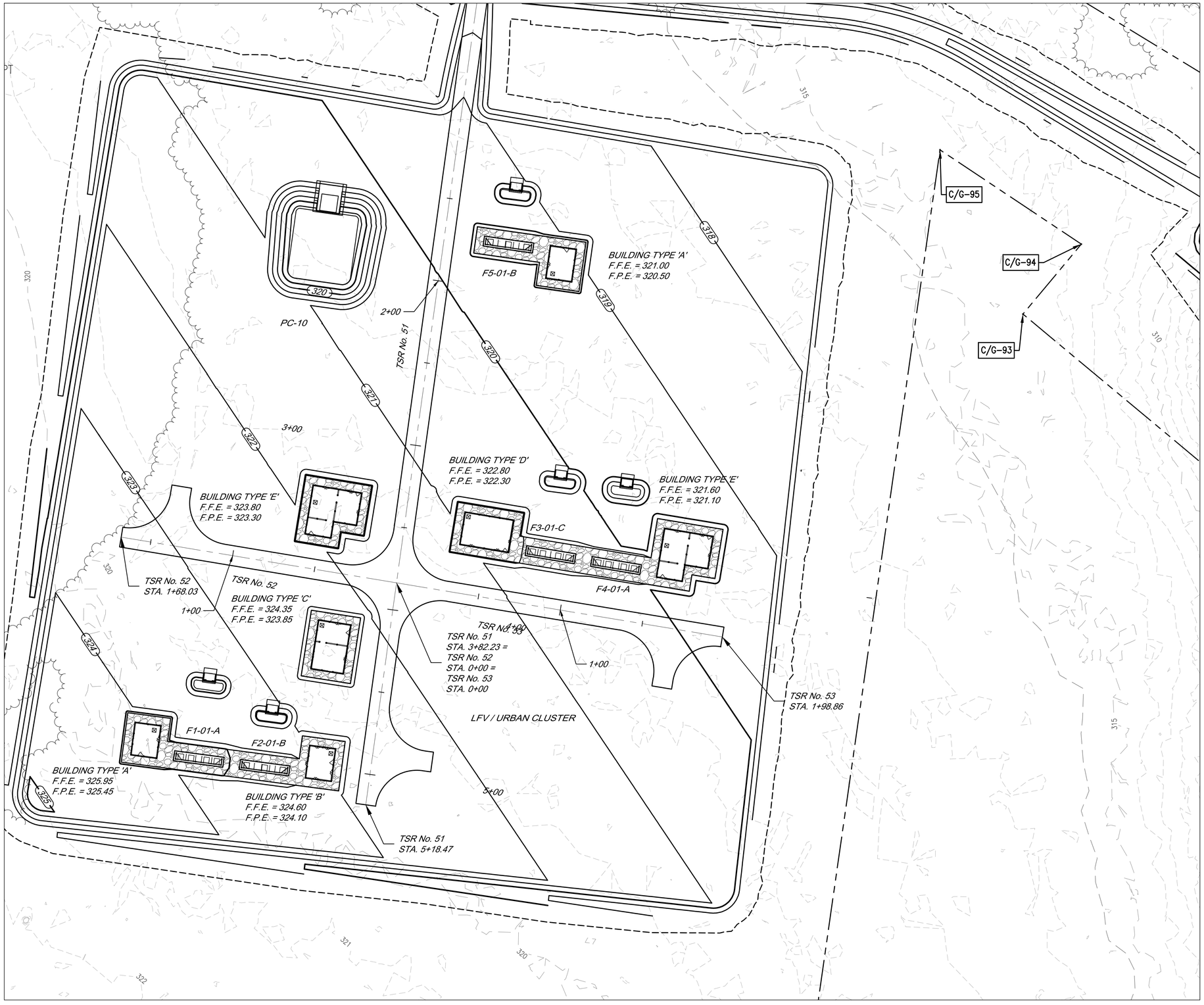
ENLARGED SITE PLAN
LIVE FIRE VILLAGE / URBAN CLUSTER

SHEET ID

CG400

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG400.DWG



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED.
4. OMITTED.
5. SEE SHEETS CG134 & CG135 FOR 50-SCALE SITE, GRADING, & DRAINAGE SHEETS.

GRAPHIC SCALE

30' 15' 0 30' 60'

SCALE: 1" = 30'-0"

N

NORTH CAROLINA PROFESSIONAL 11/30/23 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:	K. SANDERS
SIZE	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

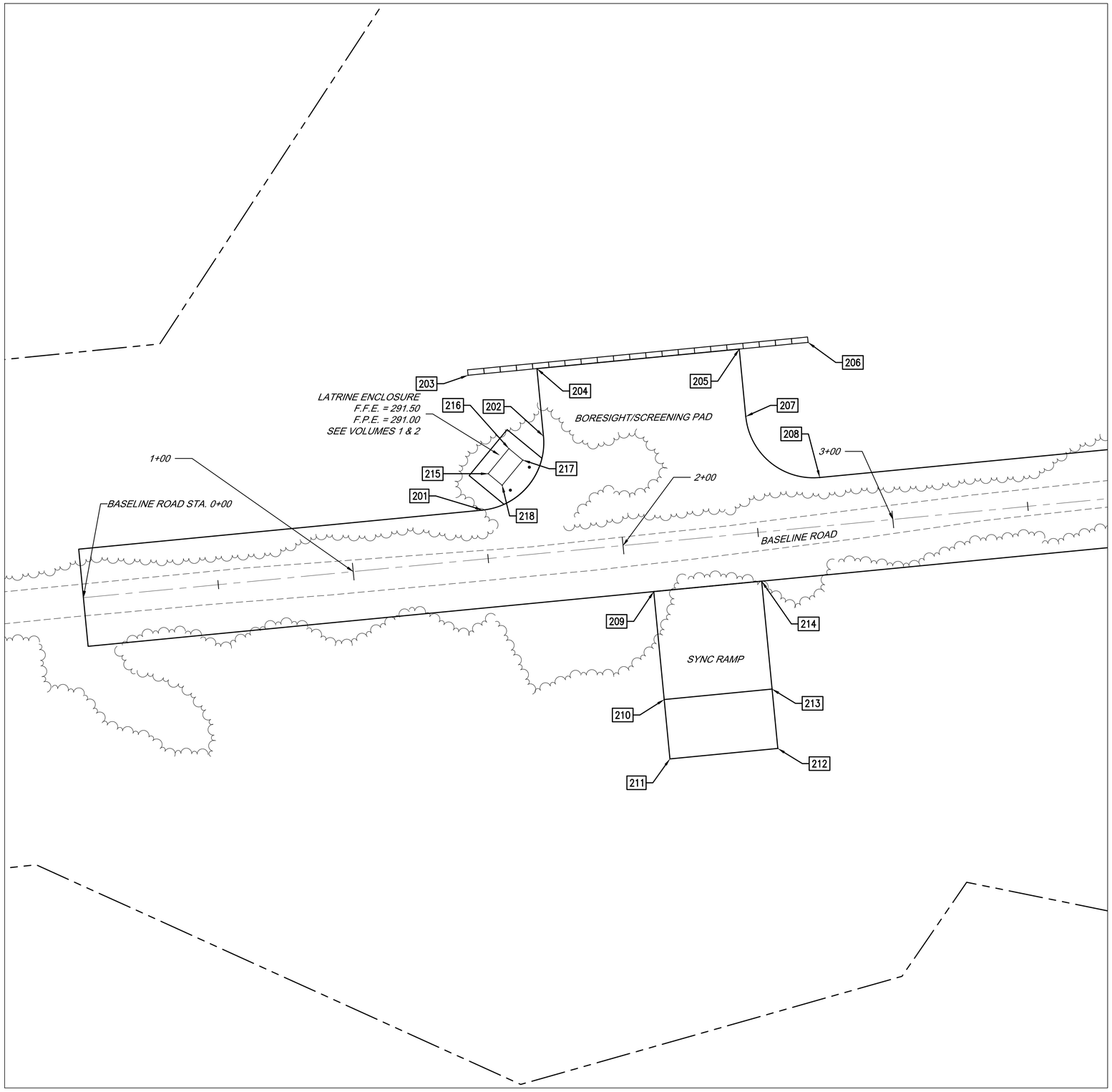
ENLARGED GRADING PLAN
LIVE FIRE VILLAGE / URBAN CLUSTER

SHEET ID

CG401

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG401.DWG



STAKE OUT COORDINATES			
POINT #	NORTHING	EASTING	ELEVATION
201	477,559.76	1,917,647.69	290.89
202	477,587.04	1,917,670.16	290.33
203	477,609.47	1,917,642.38	289.89
204	477,611.93	1,917,667.76	289.83
205	477,619.15	1,917,742.41	289.64
206	477,621.60	1,917,767.79	289.54
207	477,594.26	1,917,744.82	290.14
208	477,571.78	1,917,772.11	290.53
209	477,529.70	1,917,710.87	290.74
210	477,489.88	1,917,714.72	290.75
211	477,467.98	1,917,716.84	297.50
212	477,471.83	1,917,756.65	297.50
213	477,493.73	1,917,754.54	290.75
214	477,533.54	1,917,750.69	290.64
215	477,573.16	1,917,649.81	291.00
216	477,582.42	1,917,657.44	291.00
217	477,578.18	1,917,662.58	291.00
218	477,568.92	1,917,654.95	291.00

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. OMITTED.
4. OMITTED.
5. SEE SHEET CG123 FOR 50-SCALE SITE, GRADING, & DRAINAGE SHEET.

GRAPHIC SCALE

20' 10' 0 20' 40'

SCALE: 1" = 20'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

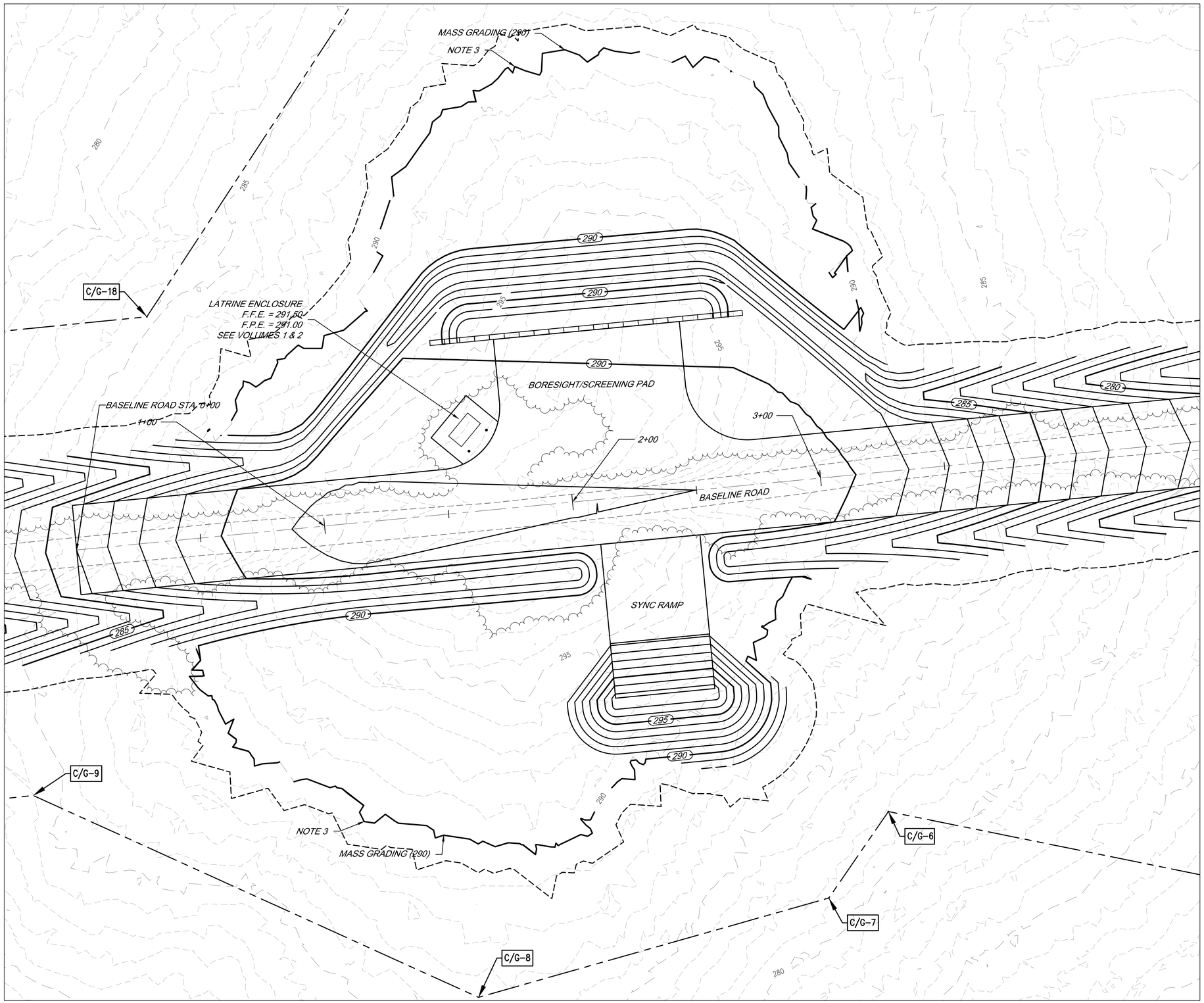
ENLARGED SITE PLAN
BORESIGHT / SCREENING PAD & SYNC RAMP

SHEET ID

CG402

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG402.DWG



NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.
4. OMITTED.
5. SEE SHEET CG123 FOR 50-SCALE SITE, GRADING, & DRAINAGE SHEET.

GRAPHIC SCALE

20' 10' 0 20' 40'

SCALE: 1" = 20'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
SCALE:	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 86182
VOLUMES 3 & 4 - DOWNRANGE

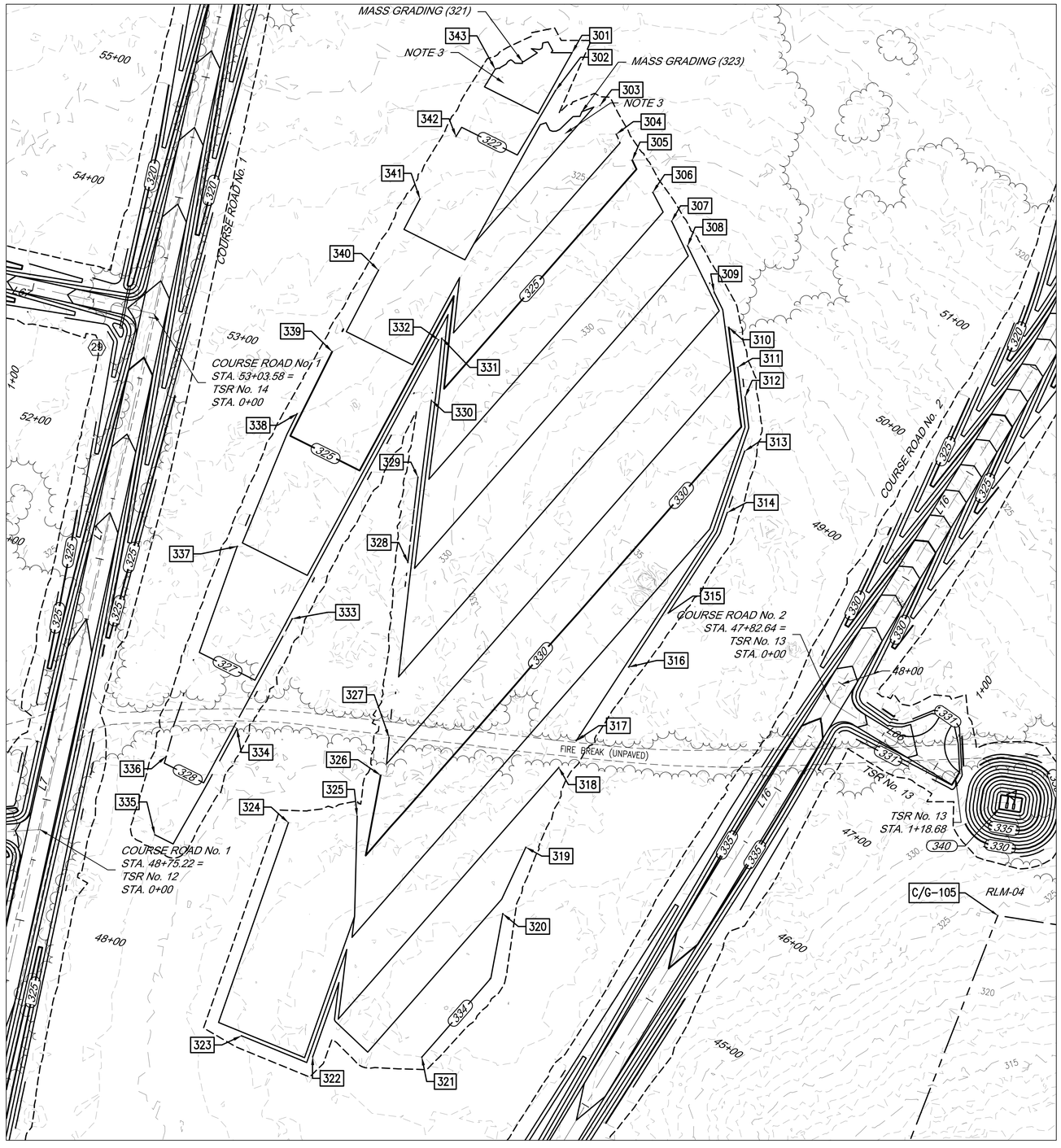
ENLARGED GRADING PLAN
BORESIGHT / SCREENING PAD & SYNC RAMP

SHEET ID

CG403

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG403.DWG



MASS GRADING
IN BETWEEN COURSE ROADS

GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
301	482,394.66	1,920,244.18	321.00
302	482,364.07	1,920,230.87	322.00
303	482,351.83	1,920,266.93	323.00
304	482,328.57	1,920,280.04	324.00
305	482,307.43	1,920,293.06	325.00
306	482,281.39	1,920,309.72	326.00
307	482,257.99	1,920,324.97	327.00
308	482,237.89	1,920,337.90	328.00
309	482,200.52	1,920,359.39	329.00
310	482,171.79	1,920,371.32	330.00
311	482,139.50	1,920,378.57	331.00
312	482,115.38	1,920,384.55	332.00
313	482,071.42	1,920,384.17	333.00
314	482,021.63	1,920,370.08	334.00
315	481,940.11	1,920,322.22	334.00
316	481,896.37	1,920,290.12	333.00
317	481,836.59	1,920,247.58	332.00
318	481,814.93	1,920,233.45	332.00
319	481,750.21	1,920,206.74	333.00
320	481,696.36	1,920,188.05	334.00
321	481,579.98	1,920,122.35	334.00
322	481,580.35	1,920,033.88	333.00
323	481,597.27	1,919,976.14	332.00
324	481,770.11	1,920,014.16	331.00
325	481,775.26	1,920,069.89	331.00

GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
326	481,808.57	1,920,089.01	330.00
327	481,839.28	1,920,095.80	329.00
328	481,981.18	1,920,111.05	329.00
329	482,050.36	1,920,119.25	329.00
330	482,112.69	1,920,130.17	328.00
331	482,163.10	1,920,138.57	327.00
332	482,161.72	1,920,135.95	327.00
333	481,935.53	1,920,017.28	328.00
334	481,846.28	1,919,972.48	329.00
335	481,760.31	1,919,905.84	329.00
336	481,824.01	1,919,915.06	328.00
337	481,994.30	1,919,972.77	327.00
338	482,101.90	1,920,021.27	326.00
339	482,152.14	1,920,049.64	325.00
340	482,218.27	1,920,087.20	324.00
341	482,276.10	1,920,120.87	323.00
342	482,326.65	1,920,150.09	322.00
343	482,381.33	1,920,181.88	321.00

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

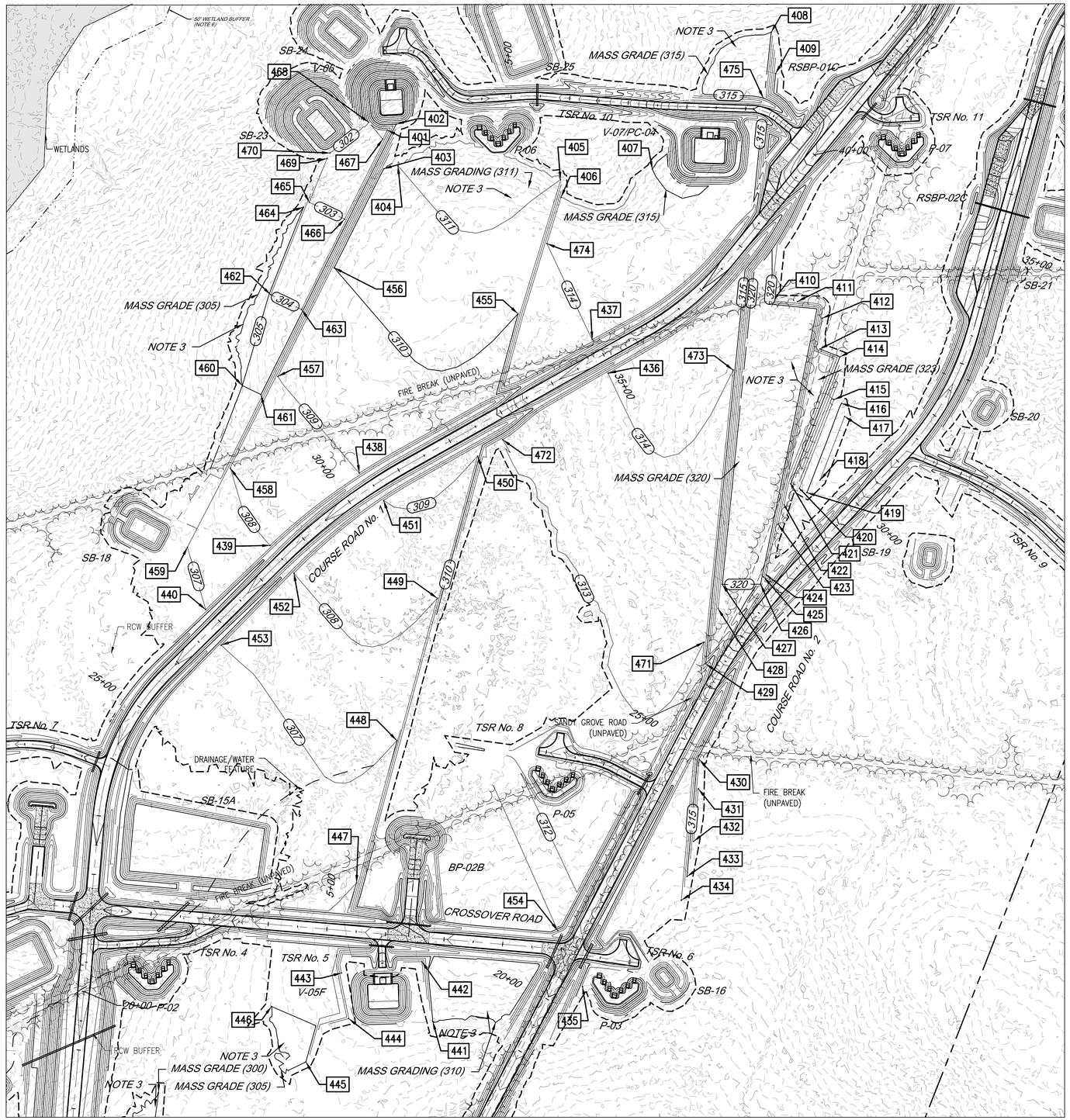
MASS GRADING - GEOMETRIC CONTROL

SHEET ID

CG404

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG404.DWG



MASS GRADING
IN BETWEEN COURSE ROADS

GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
401	481,018.68	1,918,755.20	302.00
402	481,028.49	1,918,770.19	305.00
403	480,952.49	1,918,748.86	310.00
404	480,957.67	1,918,773.18	311.00
405	480,934.11	1,919,049.53	311.00
406	480,904.15	1,919,050.53	314.00
407	480,951.99	1,919,205.76	315.00
408	481,184.96	1,919,408.09	315.00
409	481,114.71	1,919,415.64	320.00
410	480,727.77	1,919,411.23	322.00
411	480,726.68	1,919,452.63	323.00
412	480,698.30	1,919,494.99	324.00
413	480,645.90	1,919,490.61	325.00
414	480,632.58	1,919,525.00	325.00
415	480,559.85	1,919,514.66	329.00
416	480,553.38	1,919,527.58	330.00
417	480,531.26	1,919,532.95	331.00
418	480,422.64	1,919,490.87	331.00
419	480,401.42	1,919,468.71	330.00
420	480,408.83	1,919,456.16	329.00
421	480,416.48	1,919,441.30	325.00
422	480,380.97	1,919,429.90	324.00
423	480,347.53	1,919,419.98	323.00
424	480,262.05	1,919,399.39	322.00
425	480,257.90	1,919,395.44	321.00
426	480,245.78	1,919,389.93	320.00
427	480,245.32	1,919,324.75	320.00
428	480,204.40	1,919,317.61	319.00
429	480,110.20	1,919,296.53	315.00
430	479,947.70	1,919,285.59	316.00
431	479,897.83	1,919,284.07	317.00
432	479,808.25	1,919,276.07	317.00
433	479,748.31	1,919,264.78	315.00
434	479,707.99	1,919,255.22	313.00
435	479,560.88	1,919,087.05	311.00
436	480,604.68	1,919,130.66	314.00
437	480,661.81	1,919,103.60	314.00
438	480,434.70	1,918,707.49	309.00
439	480,311.70	1,918,555.72	308.00
440	480,202.54	1,918,446.08	307.00

GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
441	479,501.31	1,918,832.50	310.00
442	479,603.45	1,918,814.04	313.00
443	479,584.22	1,918,676.90	309.00
444	479,506.57	1,918,689.47	308.00
445	479,432.84	1,918,616.61	305.00
446	479,527.29	1,918,557.97	305.00
447	479,737.53	1,918,702.67	306.00
448	479,979.62	1,918,771.36	307.00
449	480,221.70	1,918,840.06	308.00
450	480,463.79	1,918,908.75	309.00
451	480,388.21	1,918,748.78	309.00
452	480,264.53	1,918,596.17	308.00
453	480,142.03	1,918,472.36	307.00
454	479,655.88	1,919,045.30	311.00
455	480,705.87	1,918,977.44	310.00
456	480,784.18	1,918,664.67	310.00
457	480,599.07	1,918,568.88	309.00
458	480,443.13	1,918,488.00	0.00
459	480,308.63	1,918,415.02	307.00
460	480,583.56	1,918,508.54	305.00
461	480,568.48	1,918,540.17	305.00
462	480,738.28	1,918,556.83	304.00
463	480,713.31	1,918,609.22	304.00
464	480,887.35	1,918,612.57	305.00
465	480,895.50	1,918,622.25	303.00
466	480,866.82	1,918,682.41	303.00
467	481,002.99	1,918,747.34	302.00
468	481,031.72	1,918,723.57	302.00
469	480,970.16	1,918,652.71	303.00
470	480,979.47	1,918,657.64	302.00
471	480,147.21	1,919,293.76	313.00
472	480,491.59	1,918,951.23	313.00
473	480,610.00	1,919,343.40	314.00
474	480,825.26	1,919,026.44	314.00
475	481,072.76	1,919,394.61	315.00

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

GRAPHIC SCALE
100' 50' 0 100' 200'
SCALE: 1" = 100'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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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DOTHAN, AL 36303
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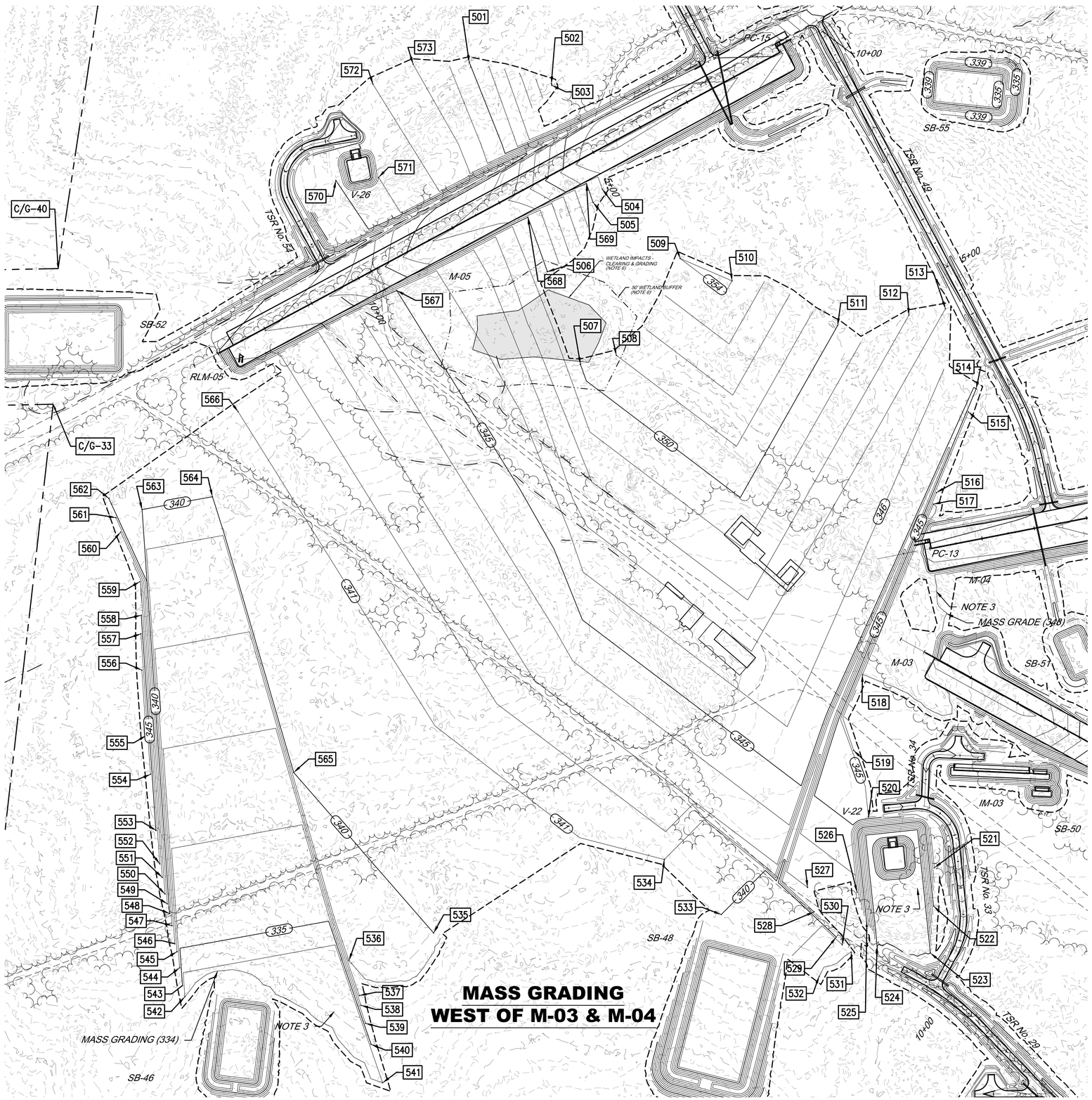
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

MASS GRADING - GEOMETRIC CONTROL

SHEET ID
CG405

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG405.DWG



GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
501	486,152.92	1,918,314.30	350.00
502	486,112.67	1,918,468.58	355.00
503	486,109.47	1,918,469.44	355.00
504	485,914.52	1,918,564.30	356.00
505	485,889.26	1,918,547.39	355.00
506	485,759.66	1,918,461.09	350.00
507	485,585.54	1,918,523.20	350.00
508	485,602.58	1,918,590.72	351.00
509	485,784.42	1,918,710.52	354.00
510	485,742.32	1,918,807.93	354.00
511	485,658.59	1,919,006.26	350.00
512	485,678.01	1,919,140.12	348.00
513	485,690.25	1,919,208.76	347.00
514	485,539.96	1,919,266.55	345.00
515	485,496.45	1,919,251.70	346.00
516	485,344.94	1,919,191.91	347.00
517	485,323.22	1,919,186.12	348.00
518	485,003.02	1,919,052.88	348.00
519	484,860.84	1,919,036.41	347.00
520	484,735.53	1,919,064.15	346.00
521	484,640.49	1,919,187.87	343.00
522	484,568.28	1,919,186.34	340.00
523	484,480.41	1,919,180.40	335.00
524	484,493.26	1,919,080.54	335.00
525	484,536.28	1,919,060.98	340.00
526	484,594.33	1,919,042.87	344.00
527	484,603.61	1,918,949.73	343.00
528	484,557.69	1,918,962.05	342.00
529	484,510.33	1,919,003.74	340.00
530	484,495.86	1,919,014.79	339.00
531	484,482.16	1,919,031.70	338.00
532	484,436.54	1,918,971.47	338.00
533	484,552.60	1,918,787.67	340.00
534	484,656.02	1,918,680.66	341.00
535	484,518.00	1,918,247.49	340.00
536	484,466.32	1,918,088.38	339.00
537	484,400.44	1,918,107.92	338.00
538	484,382.21	1,918,111.04	337.00
539	484,348.43	1,918,119.52	336.00
540	484,308.96	1,918,129.95	335.00

GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
541	484,236.74	1,918,151.68	334.00
542	484,398.19	1,917,780.14	334.00
543	484,419.34	1,917,775.69	335.00
544	484,452.69	1,917,770.42	336.00
545	484,482.86	1,917,765.36	337.00
546	484,497.77	1,917,761.34	338.00
547	484,531.79	1,917,756.02	339.00
548	484,554.70	1,917,751.46	340.00
549	484,572.76	1,917,747.22	341.00
550	484,591.23	1,917,742.96	342.00
551	484,622.25	1,917,737.85	343.00
552	484,647.70	1,917,733.11	344.00
553	484,710.52	1,917,725.83	345.00
554	484,815.94	1,917,715.66	346.00
555	484,888.82	1,917,707.70	347.00
556	485,011.53	1,917,699.36	347.00
557	485,079.66	1,917,697.73	346.00
558	485,114.54	1,917,698.36	345.00
559	485,177.70	1,917,695.70	344.00
560	485,270.81	1,917,659.72	342.00
561	485,297.80	1,917,650.68	341.00
562	485,333.95	1,917,637.45	340.00
563	485,313.04	1,917,699.90	340.00
564	485,337.11	1,917,832.05	340.00
565	484,819.33	1,917,984.62	340.00
566	485,496.79	1,917,880.23	341.00
567	485,724.28	1,918,178.16	345.00
568	485,861.77	1,918,424.48	350.00
569	485,924.85	1,918,534.60	355.00
570	485,930.93	1,918,063.88	345.00
571	485,936.78	1,918,144.14	346.00
572	486,111.56	1,918,133.52	347.00
573	486,149.20	1,918,208.89	348.00

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

N

GRAPHIC SCALE

100' 50' 0 100' 200'

SCALE: 1" = 100'-0"

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

G:\CLEANSTUFF-15-28815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG406.DWG

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

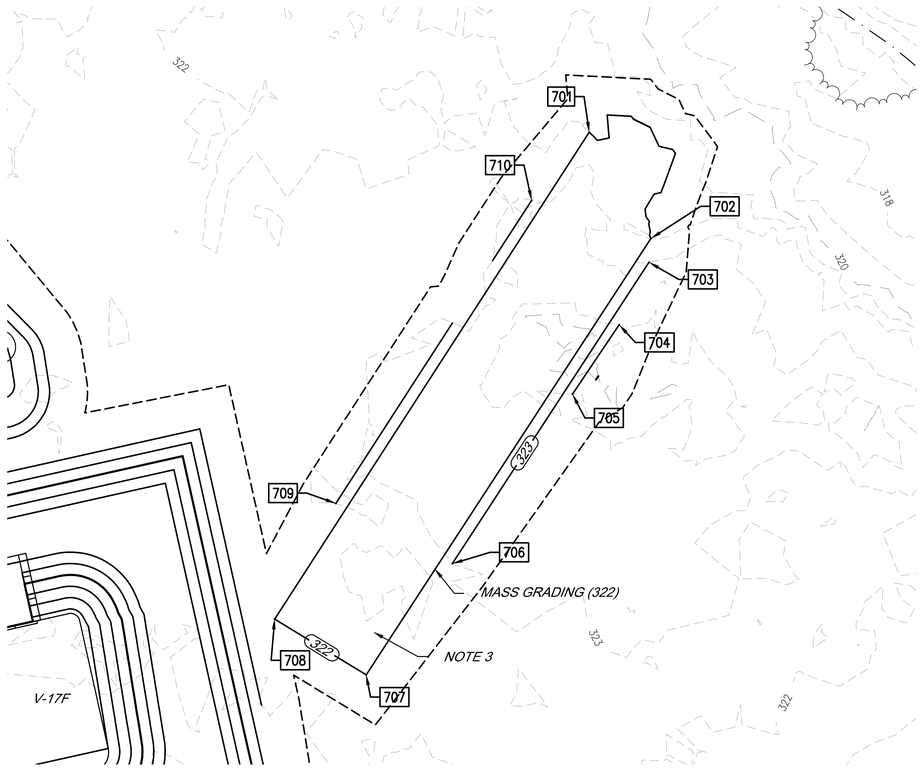
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

MASS GRADING - GEOMETRIC CONTROL

SHEET ID

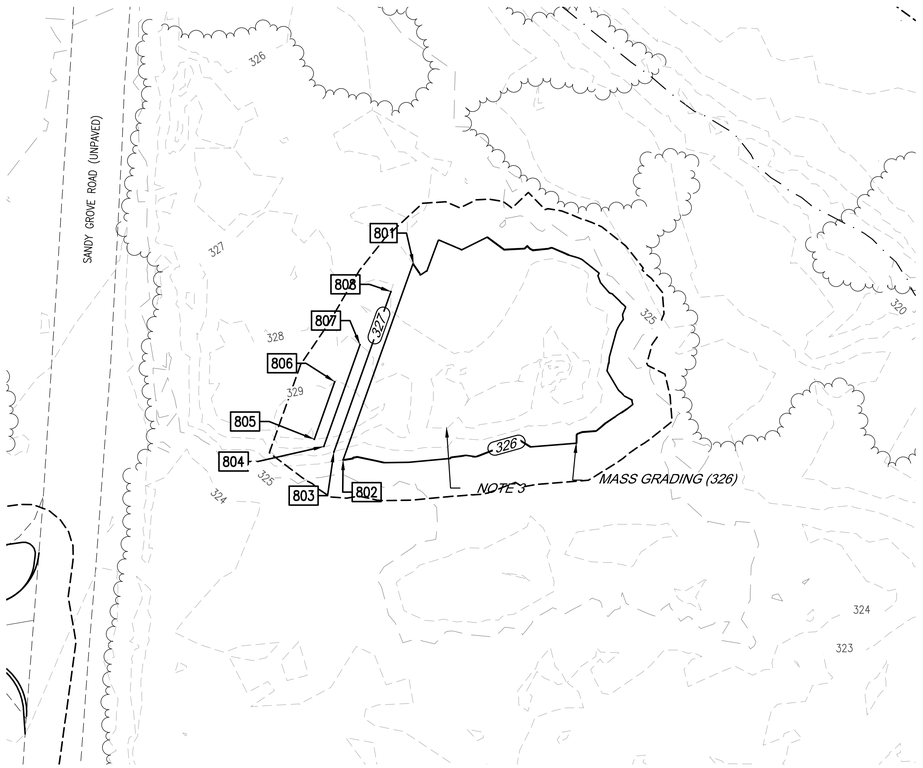
CG406

READY TO ADVERTISE (RTA)



MASS GRADING
EAST OF TSR No. 27

GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
701	483,667.34	1,920,523.99	322.00
702	483,639.29	1,920,540.29	322.00
703	483,633.01	1,920,539.77	323.00
704	483,616.53	1,920,531.89	324.00
705	483,598.19	1,920,519.58	324.00
706	483,553.48	1,920,487.87	323.00
707	483,524.11	1,920,465.13	322.00
708	483,538.84	1,920,440.96	322.00
709	483,569.36	1,920,457.11	323.00
710	483,649.35	1,920,508.80	323.00



MASS GRADING
EAST OF TSR No. 28

GEOMETRIC CONTROL			
	NORTHING	EASTING	ELEVATION
801	483,829.08	1,920,294.00	326.00
802	483,777.44	1,920,275.41	326.00
803	483,779.51	1,920,272.96	327.00
804	483,780.98	1,920,270.30	328.00
805	483,782.88	1,920,267.79	329.00
806	483,798.07	1,920,273.19	329.00
807	483,807.85	1,920,279.85	328.00
808	483,821.86	1,920,288.02	327.00

NOTES:

1. SEE V-001 FOR EXISTING LEGEND.
2. SEE C-001 FOR PROPOSED LEGEND.
3. SLOPE LOW POINT IN MASS GRADING TO PROVIDE POSITIVE DRAINAGE.

N

GRAPHIC SCALE

20' 10' 0 20' 40'

SCALE: 1" = 20'-0"

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

MASS GRADING - GEOMETRIC CONTROL

SHEET ID

CG407

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\400 ENLARGED PLANS\B2ECG407.DWG

US Army Corps of Engineers
Savannah District

PREPARED BY:

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

FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
EROSION & SEDIMENTATION CONTROL PLAN

NCDEQ PROJECT ID = _____
PROJECT AREA = 702 ACRES
DISTURBED AREA = 176 ACRES

PHASE OF WORK:

THIS E&SC PLAN ONLY COVERS WORK IN THE DOWNRANGE AREA WHICH INCLUDES BASELINE ROAD AND ALL AREAS NORTH. THE AREAS SOUTH OF THE BASELINE AND UTILITY INSTALLATION ALONG PLANK ROAD ARE DESIGNED BY USACE IN VOLUMES 1 AND 2 OF THESE CONTRACT PLANS.

Signature	Signature	Signature	Signature	Signature
Kenneth L. Sanders				
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Project Engineer	USACE Project Engineer	DPW Project Manager	Environmental Compliance	Water Management Branch

Professional Certification: I hereby certify that these documents were prepared and approved by me and that I am a dully licensed professional engineer under the laws of the State of North Carolina, License #045805 expiration date December 31, 2022.

SEDIMENT AND EROSION CONTROL SHALL BE STRICLY ENFORCED.

STATUS: RTA SUBMITTAL
DATE: NOVEMBER 2023

SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
ISSUE DATE: NOVEMBER 2023

CONSTRUCTION ACTIVITY SCHEDULE

ITEM	DESCRIPTION	MONTHS OF CONSTRUCTION ACTIVITY																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	CONSTRUCTION EXIT	X	X																						
2	INITIAL PERIMETER BMPs	X	X																						
3	TEMPORARY SEDIMENT BASINS	X	X																						
4	ROCK FILTER DAMS	X	X																						
5	CLEARING AND GRUBBING	X	X	X	X																				
6	GRADING		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	STORM DRAINAGE IMPROVEMENTS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	ELECTRICAL UTILITIES		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	EROSION CONTROL MATTING INSTALLATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	CHANNEL STABILIZATION INSTALLATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	DISTURBED AREA STABILIZATION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	FINAL GRASSING AND REMOVAL OF TEMPORARY STRUCTURES																							X	X
13	MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
COVER SHEET
(DOWNRANGE)

SHEET ID
CG719

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG719.DWG

E&SC

PRACTICE 6.62	SF	SILT FENCE (SEE DETAIL SHEET CG765)
PRACTICE 6.06		CONSTRUCTION EXIT (SEE DETAIL SHEET CG766)
PRACTICE 6.17		CHANNEL STABILIZATION (SEE DETAIL SHEET CG767)
PRACTICE 6.17		EROSION CONTROL MATTING (SEE DETAIL SHEET CG767) 7-DAY GROUND COVER AREAS
PRACTICE 6.83		STONE CHECK DAM (SEE DETAIL SHEET CG768)
PRACTICE 6.31		RIP RAP CHANNEL (SEE DETAIL SHEET CG769)
PRACTICE 6.54		ROCK DOUGHNUT INLET PROTECTION (SEE DETAIL SHEET CG770)
PRACTICE 6.41		OUTLET STABILIZATION STRUCTURE (SEE DETAIL SHEET CG771)
PRACTICE 6.31		TEMPORARY SLOPE DRAIN (SEE DETAIL SHEET CG773)
PRACTICE 6.61		SEDIMENT BASIN (SEE DETAIL SHEET CG774)
PRACTICE 6.65		SKIMMER (SEE DETAIL SHEET CG775) POROUS BAFFLES (SEE DETAIL SHEET CG776)
PRACTICE 6.62		TEMPORARY DIVERSION (SEE DETAIL SHEET CG785)
PRACTICE N/A		CLEARING & GRUBBING LIMITS
PRACTICE N/A		CONSTRUCTION LIMITS
PRACTICE 6.84	DC	DUST CONTROL
PRACTICE 6.14	M	MULCHING
PRACTICE 6.10	TS	TEMPORARY SEEDING
PRACTICE 6.11	PS	PERMANENT SEEDING
PRACTICE 6.51		HARDWARE CLOTH & GRAVEL INLET PROT.
PRACTICE 6.60		TEMP. SEDIMENT TRAP
PRACTICE N/A		CONCRETE WASHOUT
PRACTICE 6.55		ROCK PIPE INLET PROTECTION

CIVIL - PROPOSED

BP-01D		DEFILADE (SEE SHEETS CS505 & CS507 FOR DETAILS)
BP-01A		DEFILADE (SEE SHEETS CS506 & CS507 FOR DETAILS)
RSBP-01C		REVERSE SLOPE BATTLE POSITION (SEE SHEETS CS508 THRU CS510 FOR DETAILS)
V-06		STATIONARY ARMOR TARGET (FRONTAL) (SEE SHEETS CS511 & CS513 FOR DETAILS)
V-07F		STATIONARY ARMOR TARGET (FLANK) (SEE SHEETS CS511 & CS513 FOR DETAILS)
PC-10		POWER CENTER (SEE SHEET CS512 & CS513 FOR DETAILS)
V-26/PC-01		STATIONARY ARMOR TARGET WITH POWER CENTER (SEE SHEETS CS512 & CS513 FOR DETAILS)
M-01		MOVING ARMOR TARGET (SEE SHEETS CS514 & CS515 FOR DETAILS)
		WIDENED STATIONARY INFANTRY TARGET AT EACH FACADE (SEE SHEET CS516 FOR DETAIL)
P-01		STATIONARY INFANTRY TARGET CLUSTER (7-MAN V) (SEE SHEET CS517 FOR DETAILS)
IM-01 P-08		STATIONARY AND MOVING INFANTRY TARGET CLUSTER (6-MAN LINEAR SIT & 40M MIT) (SEE SHEET CS520 FOR DETAILS)
TR-01 B-01		TRENCH & MACHINE GUN BUNKER (SEE SHEETS CS521 THRU CS524 FOR DETAILS)
FC-03		CAMERA TOWER (SEE SHEET CS525 FOR DETAIL)
RLM-04		RANGE LIMIT MARKER (SEE SHEET CS526 FOR DETAIL)
BORESIGHT PANEL		BORESIGHT PANEL (SEE SHEET CS526 FOR DETAIL)
		BORESIGHT/SCREENING PAD & SYNC RAMP (SEE SHEET CS527 FOR DETAIL)
		SECURITY GATE (SEE SHEET CS530 FOR DETAIL)
TP-01		CONCRETE TURNING PAD (SEE SHEET CP504 FOR DETAIL)
F-01		FACADE, TYPE A (SEE ARCH SHEETS)
F-02		FACADE, TYPE B (SEE ARCH SHEETS)
F-03		FACADE, TYPE C (SEE ARCH SHEETS)
1+00 2+00		PROPOSED ROAD WITH ALIGNMENT STATIONING
300		MAJOR CONTOURS
		MINOR CONTOURS
		CULVERT
C		CULVERT IDEN
350.00 X		SPOT ELEVATION
L1		HORIZONTAL LINE NUMBER (SEE ROAD DATA CHARTS)
C3		HORIZONTAL CURVE NUMBER (SEE ROAD DATA CHARTS)
C/G		CLEARING LIMITS

ABBREVIATONS

ARCH	ARCHITECTURAL	MECH	MECHANICAL
B, B-	BUNKER	MIT, IM-	MOVING INFANTRY TARGET
BP, BP-	DEFILADE	N	NORTHING
CONC	CONCRETE	PC, PC-	POWER CENTER
E	EASTING	RCP	REINFORCED CONCRETE PIPE
EL	ELEVATION	RLM, RLM-	RANGE LIMIT MARKER
ELEC	ELECTRICAL	RSBP, RSBP-	REVERSE SLOPE BATTLE POSITION
F, F1-, F2-, F3-	FACADE	SAT, V-	STATIONARY ARMOR TARGET
FC, FC-	CAMERA TOWER	SIT, P-	STATIONARY INFANTRY TARGET
INV	INVERT	TP, TP-	CONCRETE TURNING PAD
LOS	LINE OF SIGHT	TR, TR-	TRENCH
LFV	LIVE FIRE VILLAGE	TYP	TYPICAL
MAT, M-	MOVING ARMOR TARGET	WWF	WELDED WIRE FABRIC

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

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

E&SC LEGENDS

SHEET ID
CG719A

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2811\376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG719A.DWG

EXISTING LEGEND

	VEGETATION LIMITS
Ⓟ	POWER POLE
C	COMMUNICATIONS PEDESTAL
	GUY WIRE
	SIGN
OHP	OVERHEAD ELECTRICAL LINE
	SURVEY CONTROL POINT
	FENCE
	ROAD CENTERLINE
	PAVED ROAD
	UNPAVED ROAD/FIRE BREAK
395	MAJOR CONTOUR W/ LABEL
	MINOR CONTOUR
400.00	SPOT ELEVATION
	PLANTS, T&ES
SD	STORM DRAIN
	DRAINAGE/WATER FEATURE
	WETLANDS

CHKPT	CHECK POINT
CMP	CORRUGATED METAL PIPE
CNR	CORNER
COMMS	COMMUNICATIONS
CONC	CONCRETE
E	EASTING
EL	ELEVATION
INV	INVERT
N	NORTHING
PERM	PERMANENT
PID	PERMANENT IDENTIFIER
RCP	REINFORCED CONCRETE PIPE
T&ES	THREATENED & ENDANGERED SPECIES
TYP	TYPICAL

NORTH CAROLINA PROFESSIONAL 11/20/23 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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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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AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

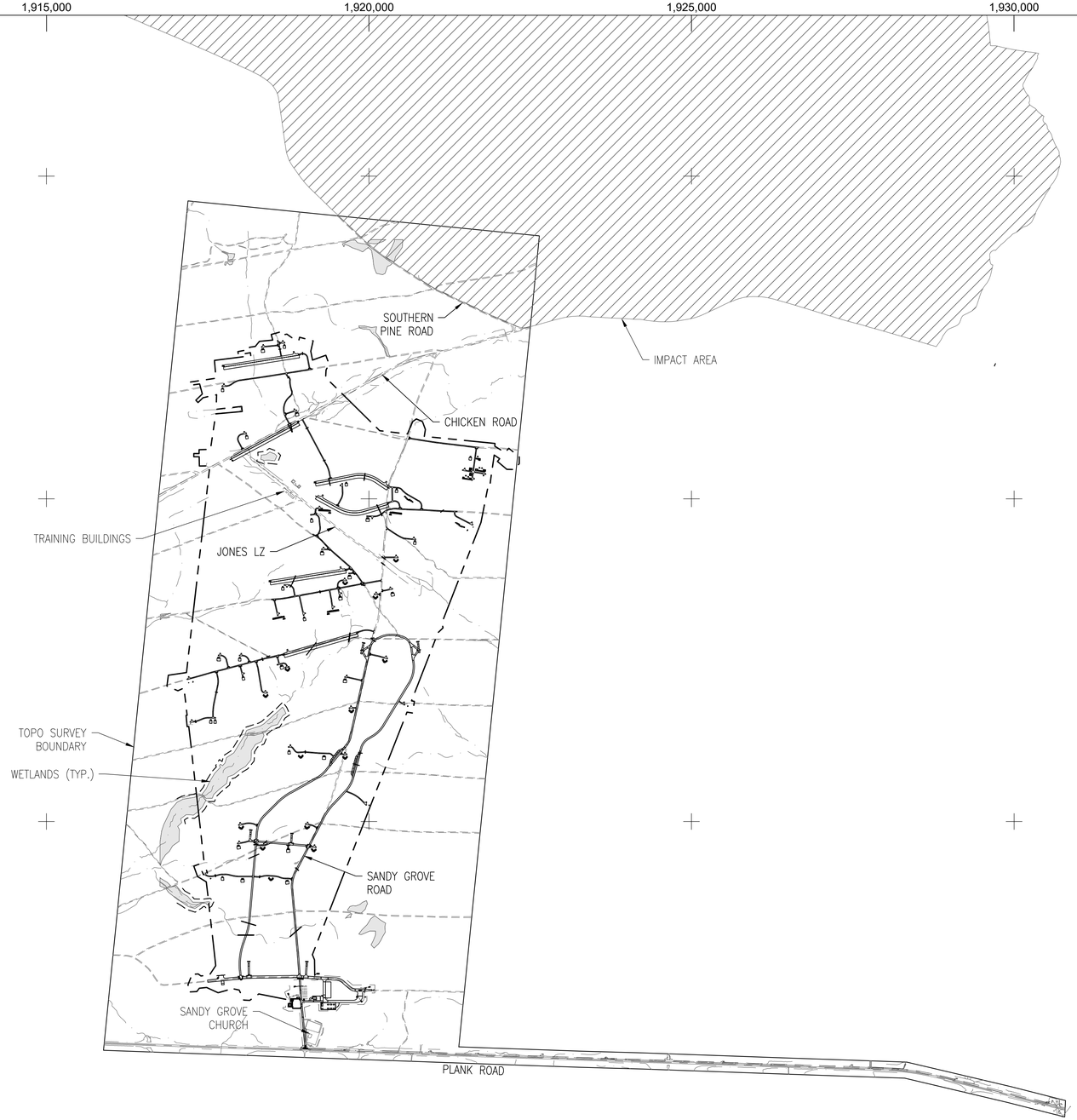
E&SC LEGENDS

SHEET ID

CG719B

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28116376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG719B.DWG



NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.

GRAPHIC SCALE

1000' 500' 0 1000' 2000'

SCALE: 1" = 1000'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: K. SANDERS	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

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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 99162
VOLUMES 3 & 4 - DOWNRANGE

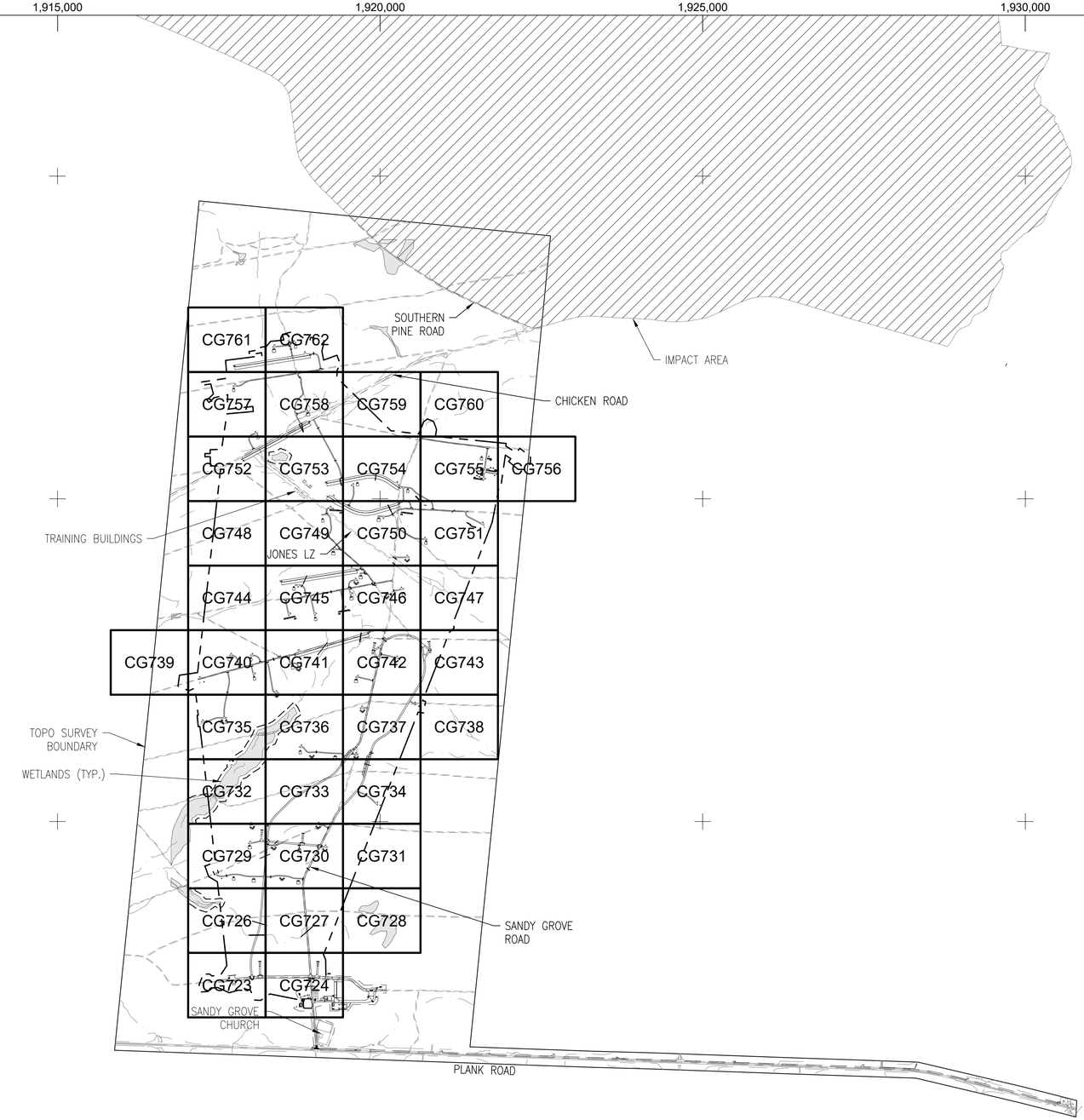
OVERALL E&SC PLAN

SHEET ID

CG720

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG IMPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG720.DWG



NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.

GRAPHIC SCALE

1000' 500' 0 1000' 2000'

SCALE: 1" = 1000'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	K. SANDERS
DRAWN BY:	B.J. JOHNSON
CHECKED BY:	B. BRADLEY
SUBMITTED BY:	K. SANDERS
SIZE:	ANSI D
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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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FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 66162
VOLUMES 3 & 4 - DOWNRANGE

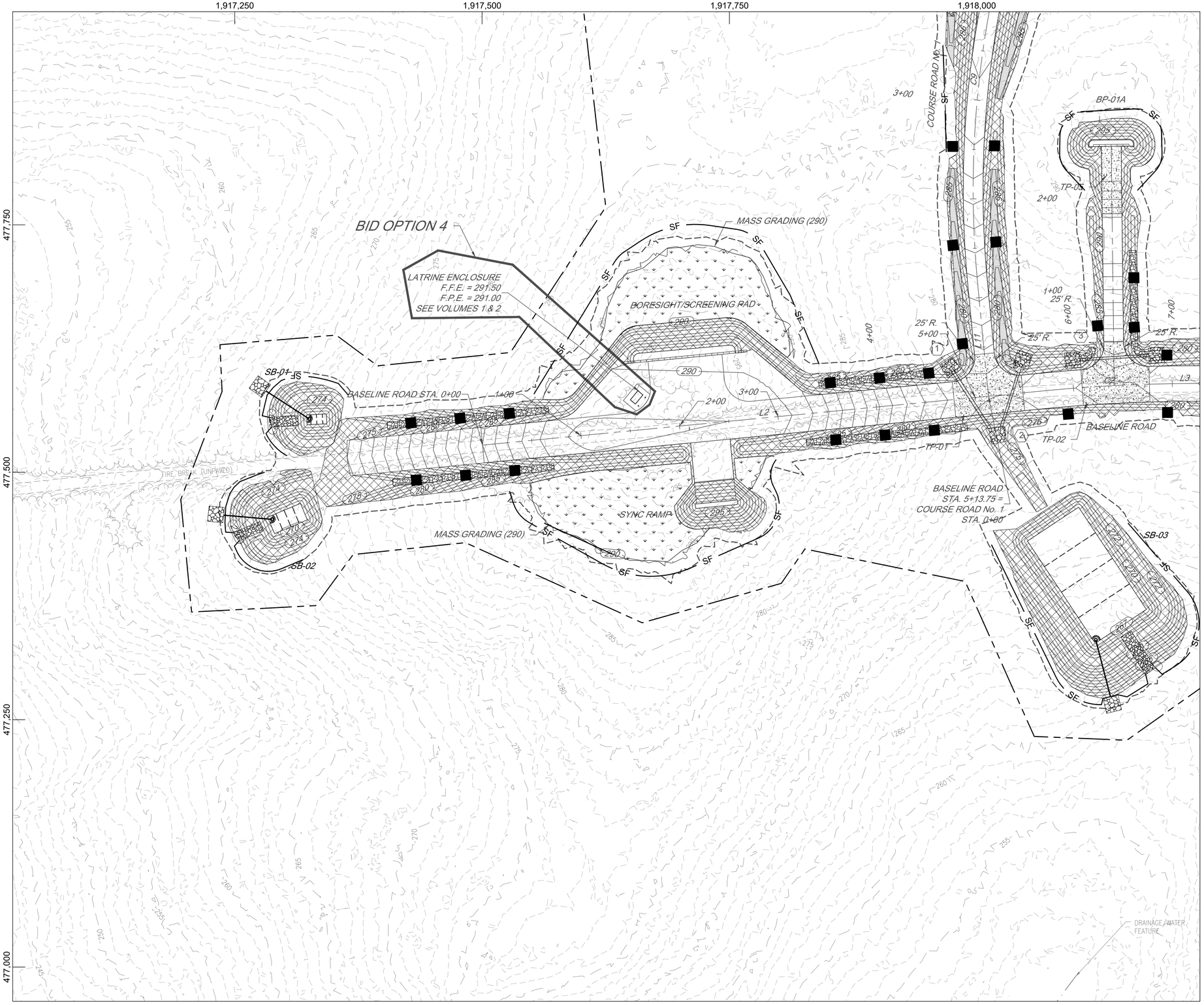
E&SC SITE REFERENCE KEY PLAN

SHEET ID

CG721

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG IMPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG721.DWG



KEY PLAN

	CG761	CG762			
	CG757	CG758	CG759	CG760	
	CG752	CG753	CG754	CG755	CG756
	CG748	CG749	CG750	CG751	
	CG744	CG745	CG746	CG747	
CG739	CG740	CG741	CG742	CG743	
	CG735	CG736	CG737	CG738	
	CG732	CG733	CG734		
	CG729	CG730	CG731		
	CG726	CG727	CG728		
	CG723	CG724			

NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	170-45-01
FILE NAME:	G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG723.DWG

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

E&SC PLAN

SHEET ID

CG723

READY TO ADVERTISE (RTA)

1,918,250 1,918,500 1,918,750 1,919,000 1,919,250

477,750 477,500 477,250 477,000

BASELINE ROAD

COURSE ROAD No. 2

3+00 2+00 1+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00

25' R.

TP-03 TP-04 TP-06

BP-02A

L1 L2 L3 C1

FIRE BREAK (UNPAVED)

SF

BASELINE ROAD STA. 14+28.00 = COURSE ROAD No. 2 STA. 0+00

BASELINE ROAD STA. 16+15.14

SEE VOLUMES 1 & 2 FOR ROCA DESIGN

SANDY CREEK ROAD (UNPAVED)

FC-01 & FC-02 ON TOP OF HANDRAIL ON TOP LEVEL OF CONTROL TOWER

DC TS M PS

KEY PLAN

	CG761	CG762		
	CG757	CG758	CG759	CG760	
	CG752	CG753	CG754	CG755	CG756
	CG748	CG749	CG750	CG751	
	CG744	CG745	CG746	CG747	
CG739	CG740	CG741	CG742	CG743	
	CG735	CG736	CG737	CG738	
	CG732	CG733	CG734		
	CG729	CG730	CG731		
	CG726	CG727	CG728		
	CG723	CG724			

NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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

ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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 99162
VOLUMES 3 & 4 - DOWNRANGE

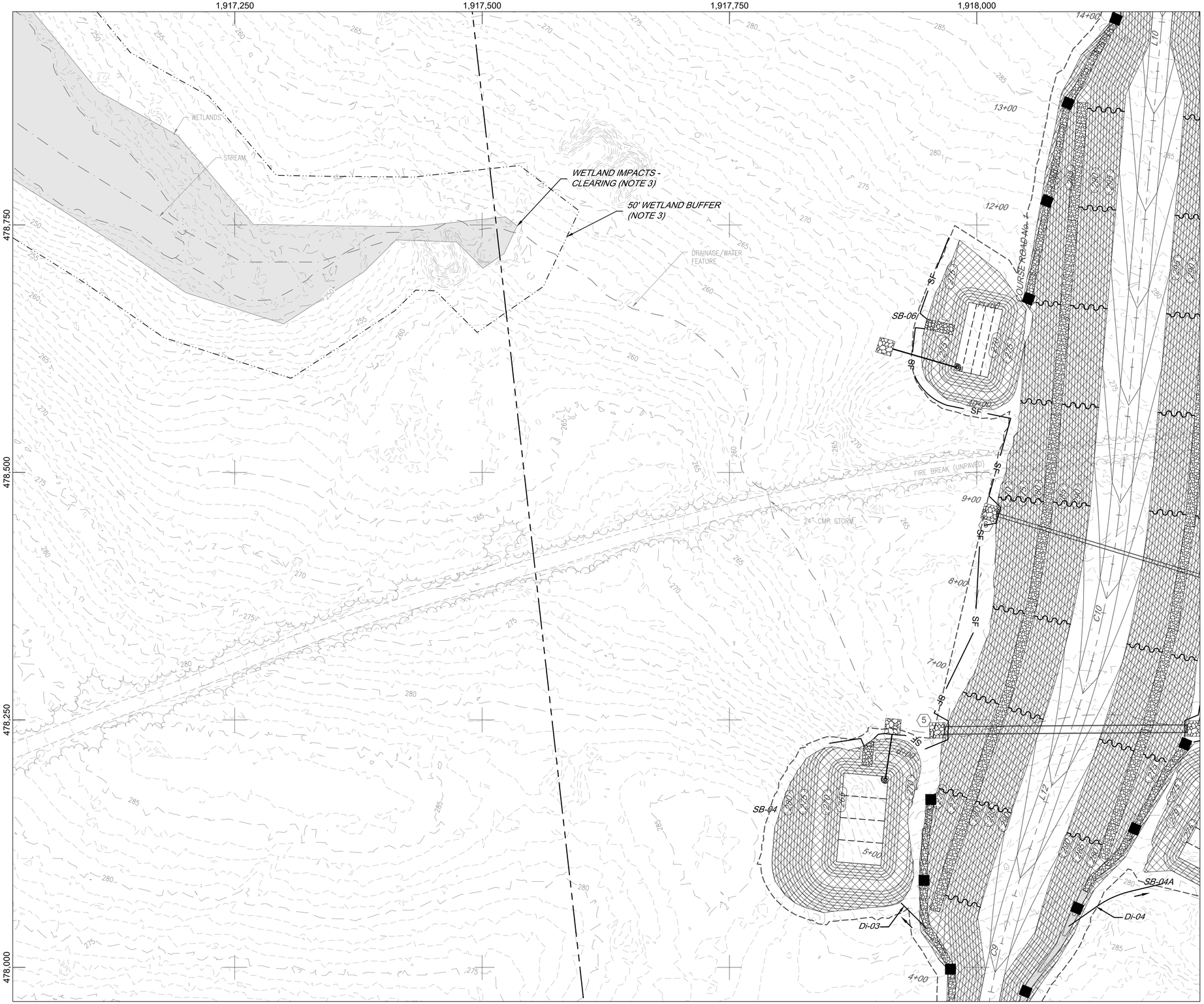
E&SC PLAN

SHEET ID

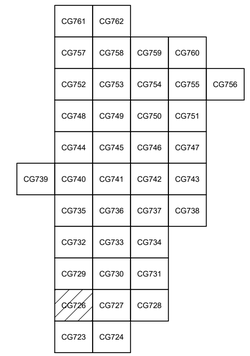
CG724

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG724.DWG

READY TO ADVERTISE (RTA)



KEY PLAN



NOTES :

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.
3. SEE CG764 FOR WETLAND NOTES.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	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

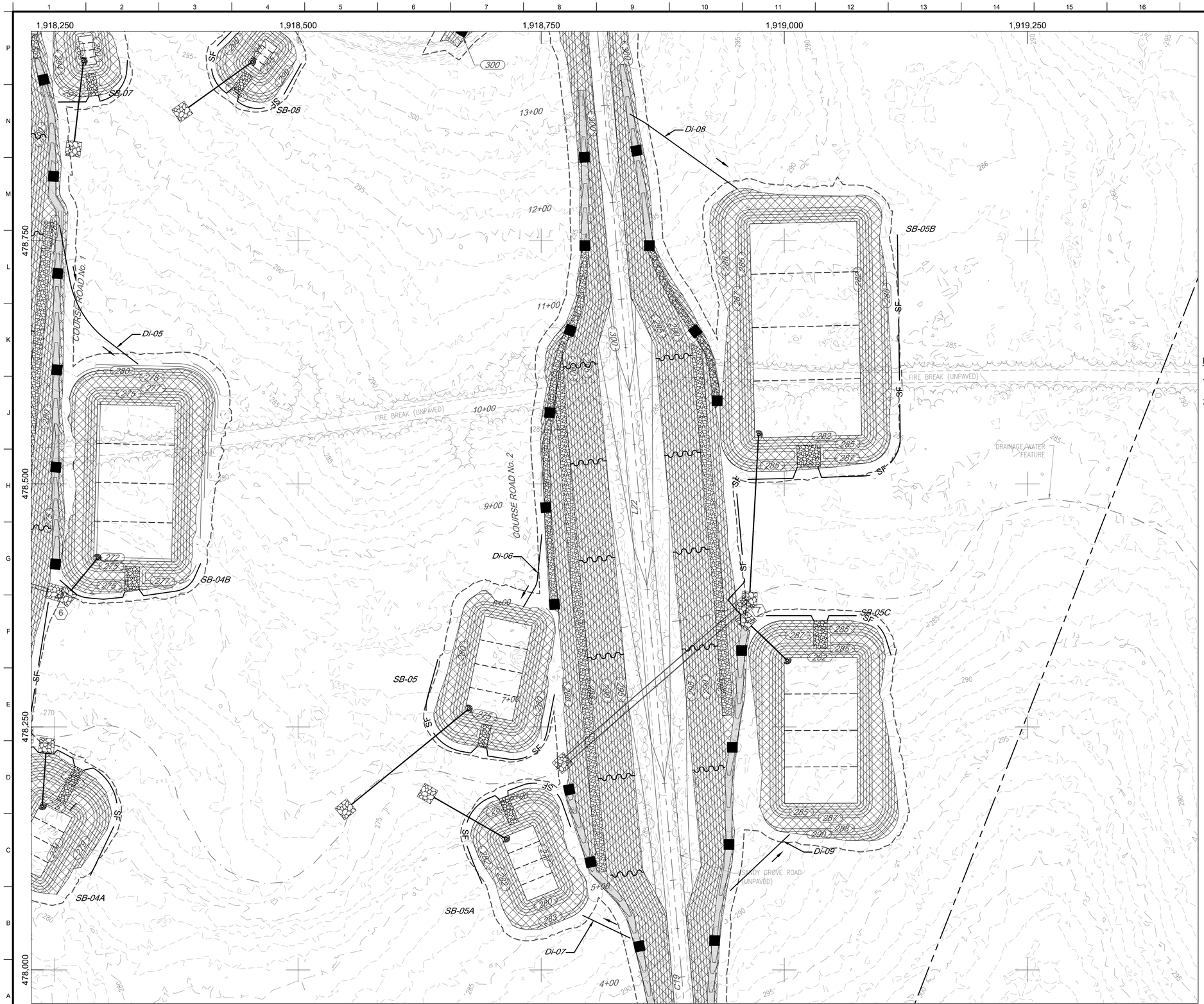
E&SC PLAN

SHEET ID

CG726

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2\ECG726.DWG



KEY PLAN

	CG761	CG762		
	CG757	CG758	CG759	CG760	
	CG752	CG753	CG754	CG755	CG756
	CG748	CG749	CG750	CG751	
	CG744	CG745	CG746	CG747	
CG739	CG740	CG741	CG742	CG743	
	CG735	CG736	CG737	CG738	
	CG732	CG733	CG734		
	CG729	CG730	CG731		
	CG726	CG727	CG728		
	CG723	CG724			

NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

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
ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	174-45-01
FILE NAME:	ANSI D

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

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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

E&SC PLAN

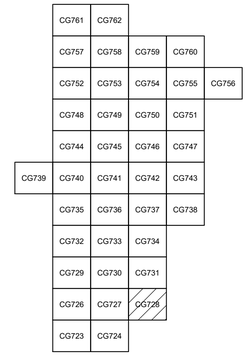
SHEET ID

CG727

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2\ECG727.DWG

KEY PLAN



NOTES

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL 11/20/23 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: BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
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FILE NAME:

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

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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

E&SC PLAN

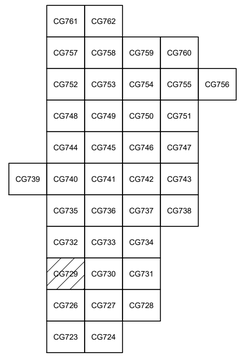
SHEET ID

CG728

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2\ECG728.DWG

KEY PLAN



NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

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DESIGNED BY: K. SANDERS
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SUBMITTED BY: BRADLEY
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100 W. OGLETHORPE AVE
SAVANNAH, GA 31401

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E&SC PLAN

SHEET ID

CG729

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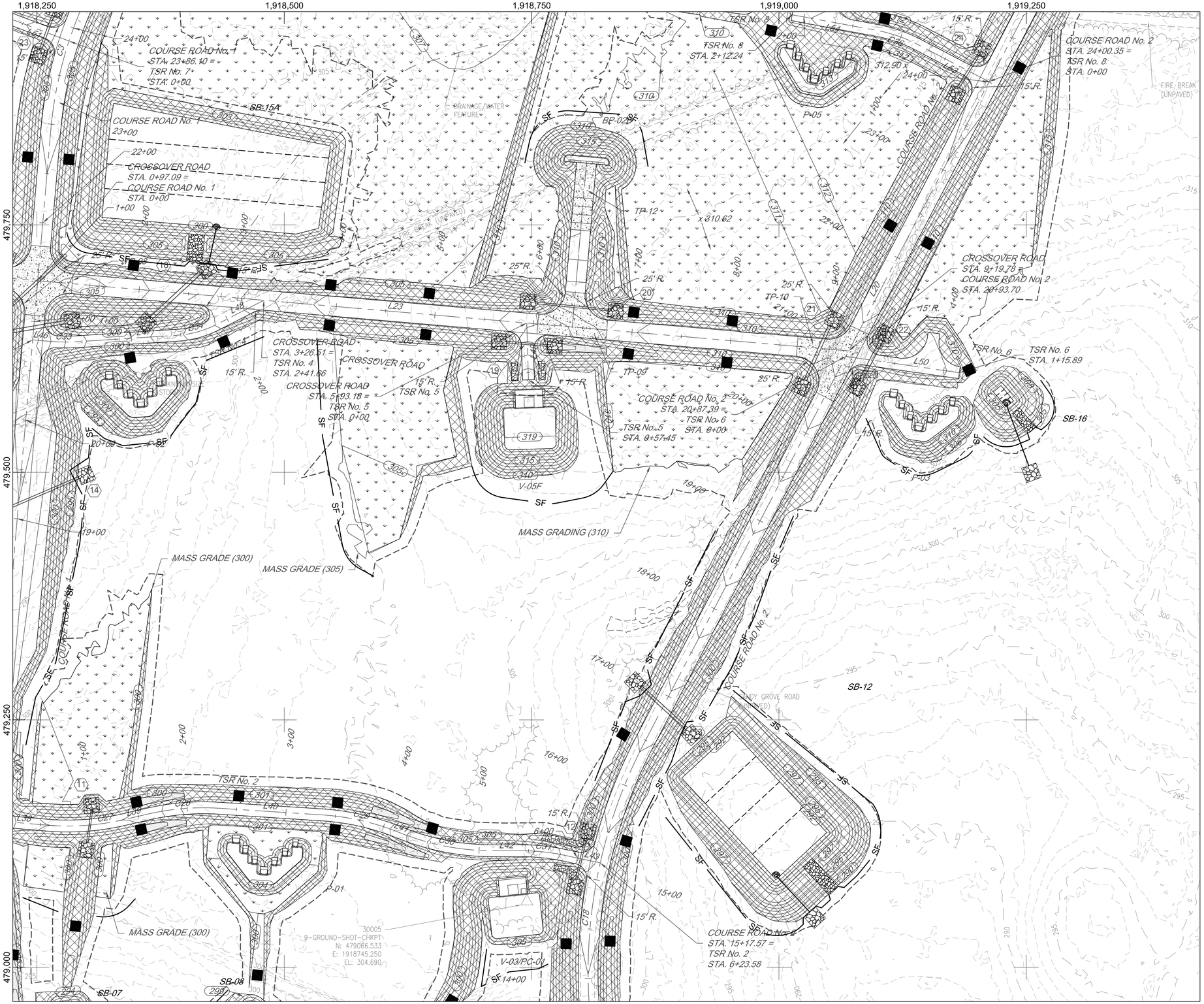

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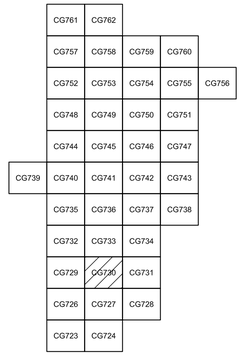

NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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
ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
100 W. OGLETHORPE AVE
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CG730

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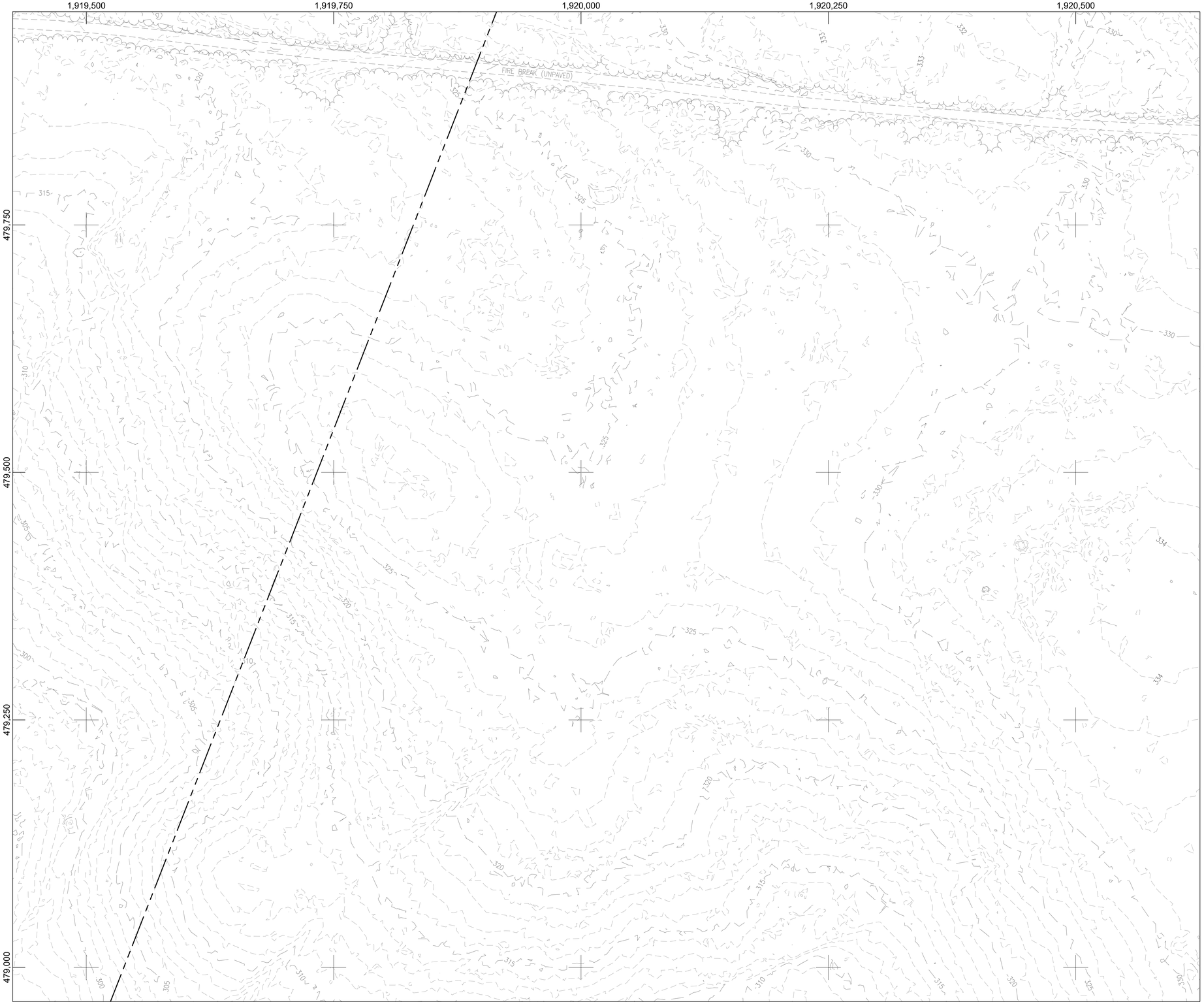

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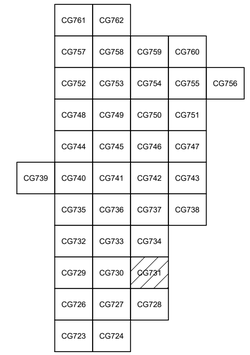

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7-DAY GROUND COVER AREAS

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GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE:
SIZE: ANSI D	FILE NAME: 173-65-01

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SHEET ID

CG731

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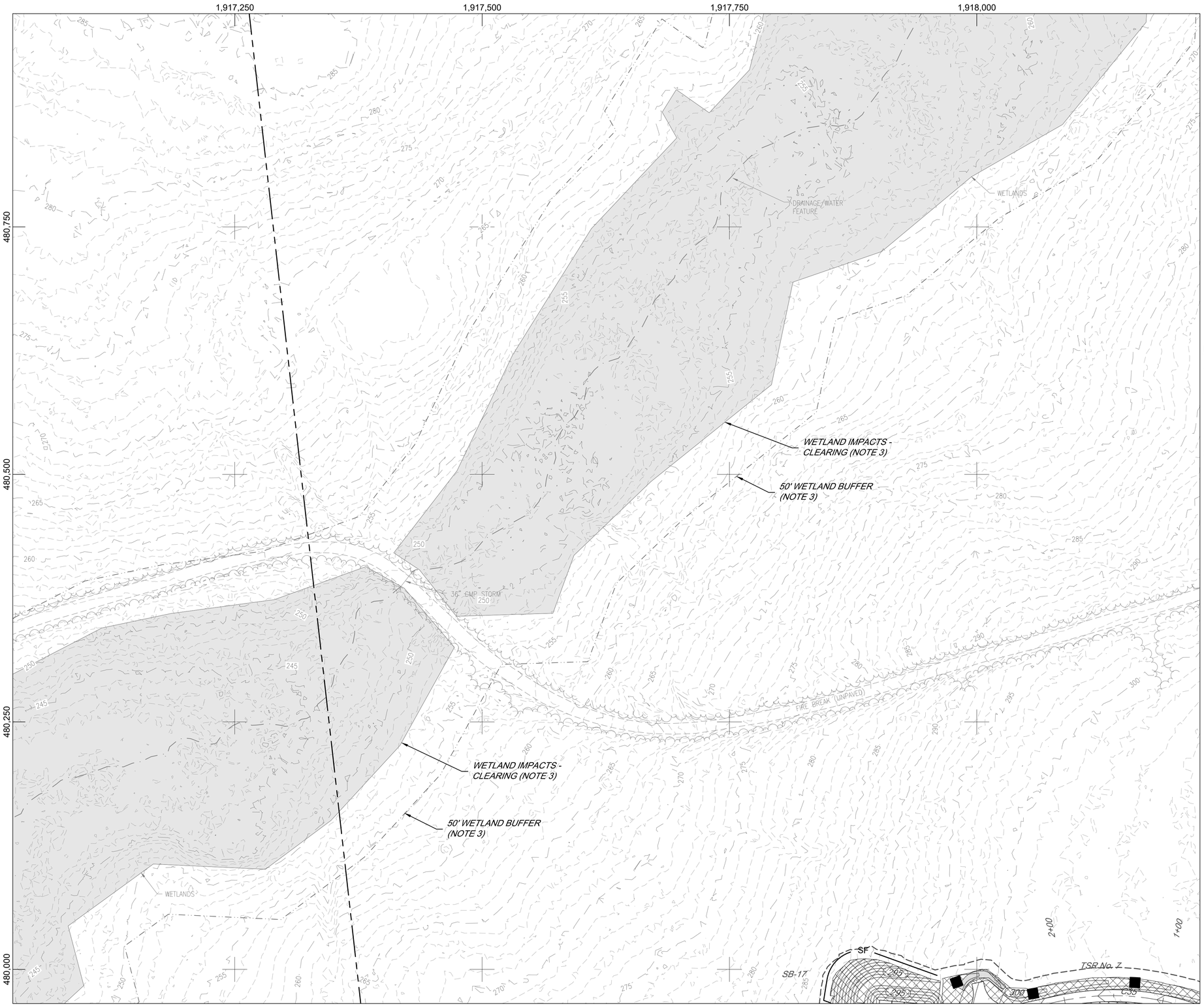

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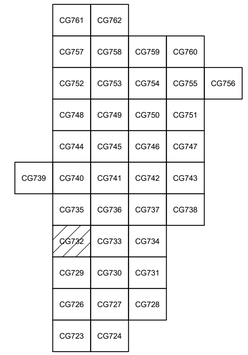

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3. SEE CG764 FOR WETLAND NOTES.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME: ANSI D

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

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SHEET ID
CG732

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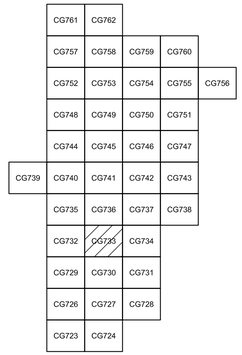
KEY PLAN



NOTES:

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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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US Army Corps of Engineers®

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DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
SCALE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 170-45-01
FILE NAME:

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SHEET ID

CG733

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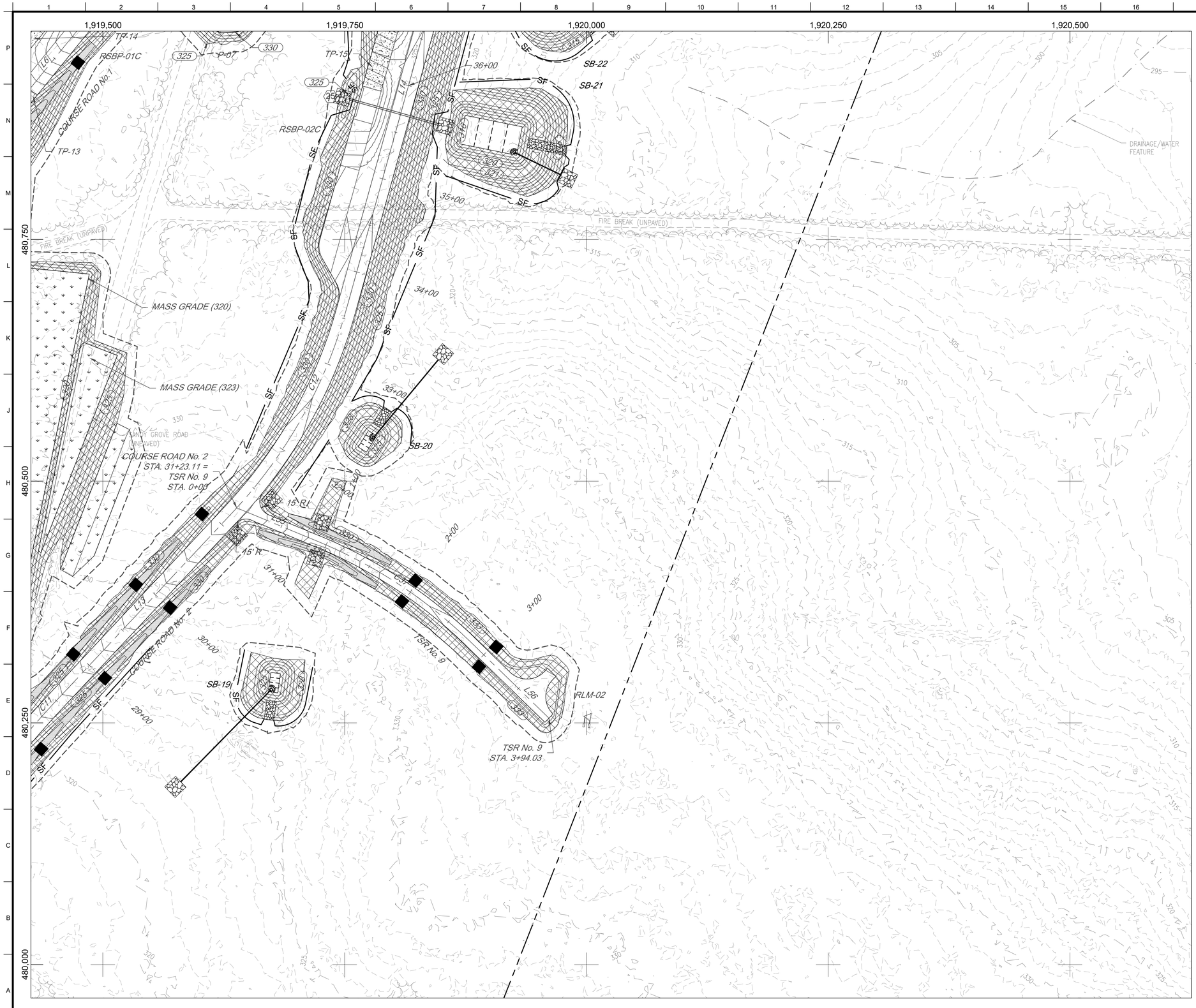

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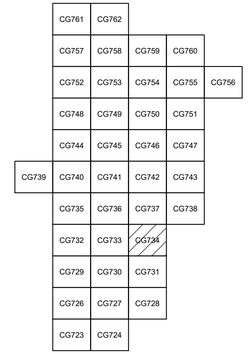

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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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MARK	DESCRIPTION	DATE

ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-45-01
FILE NAME:	

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

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SHEET ID

CG734

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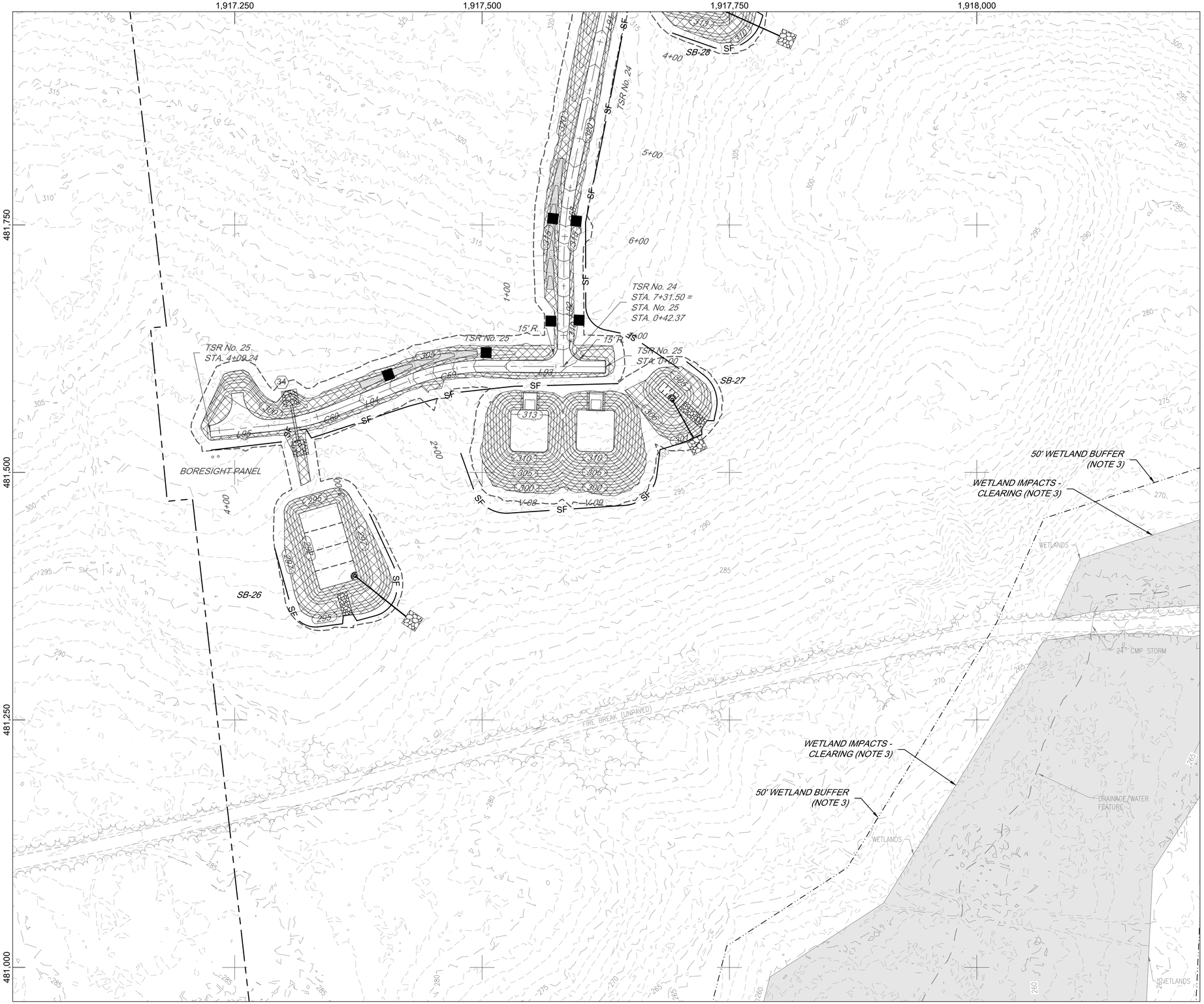

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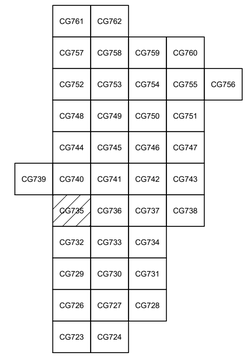

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3. SEE CG764 FOR WETLAND NOTES.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	173-45-01
FILE NAME:	

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CG735

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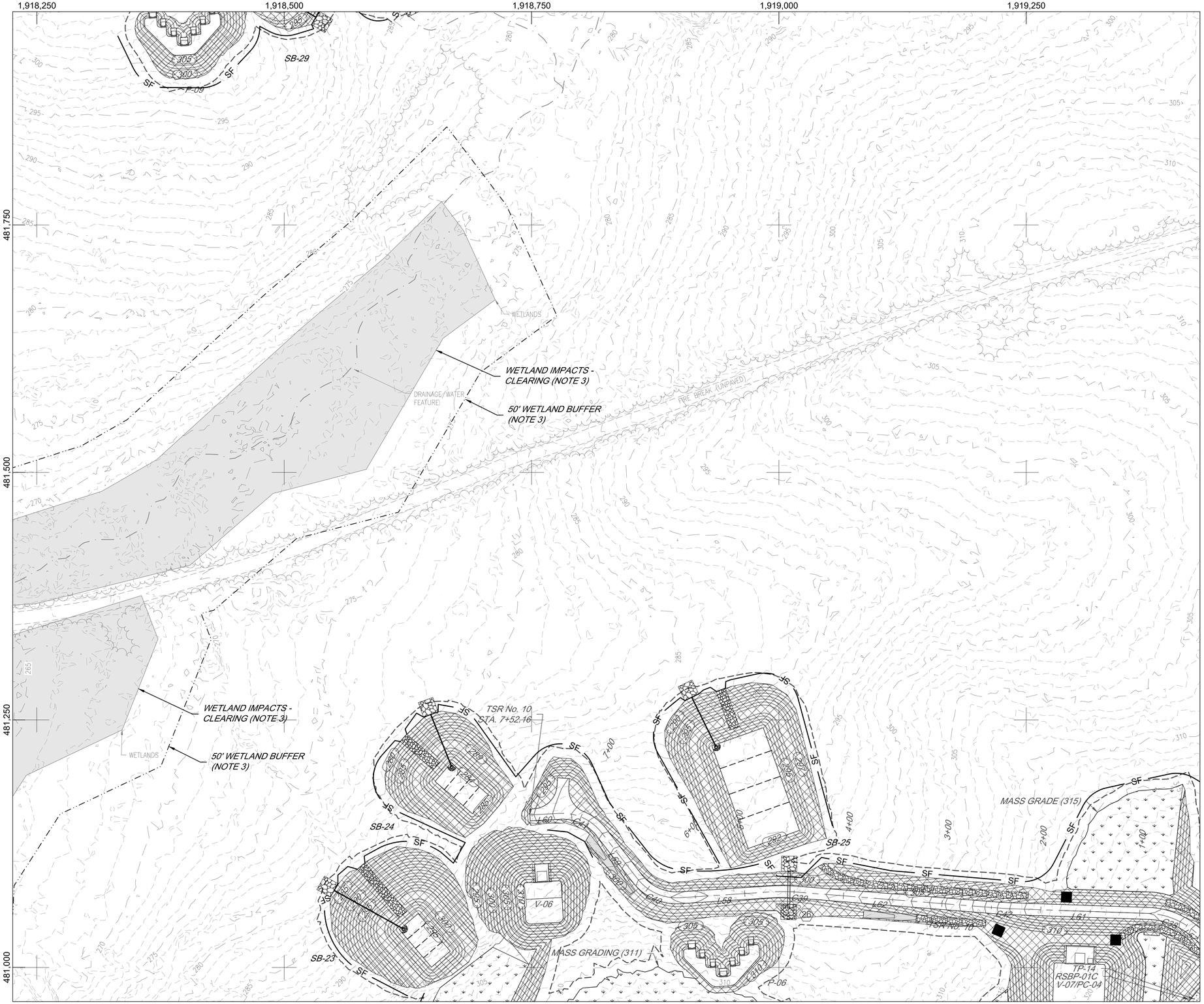

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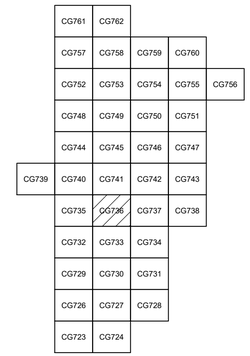

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3. SEE CG764 FOR WETLAND NOTES.

7-DAY GROUND COVER AREAS

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GRAPHIC SCALE

50' 25' 0 50' 100'

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US Army Corps of Engineers®

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CG736

READY TO ADVERTISE (RTA)

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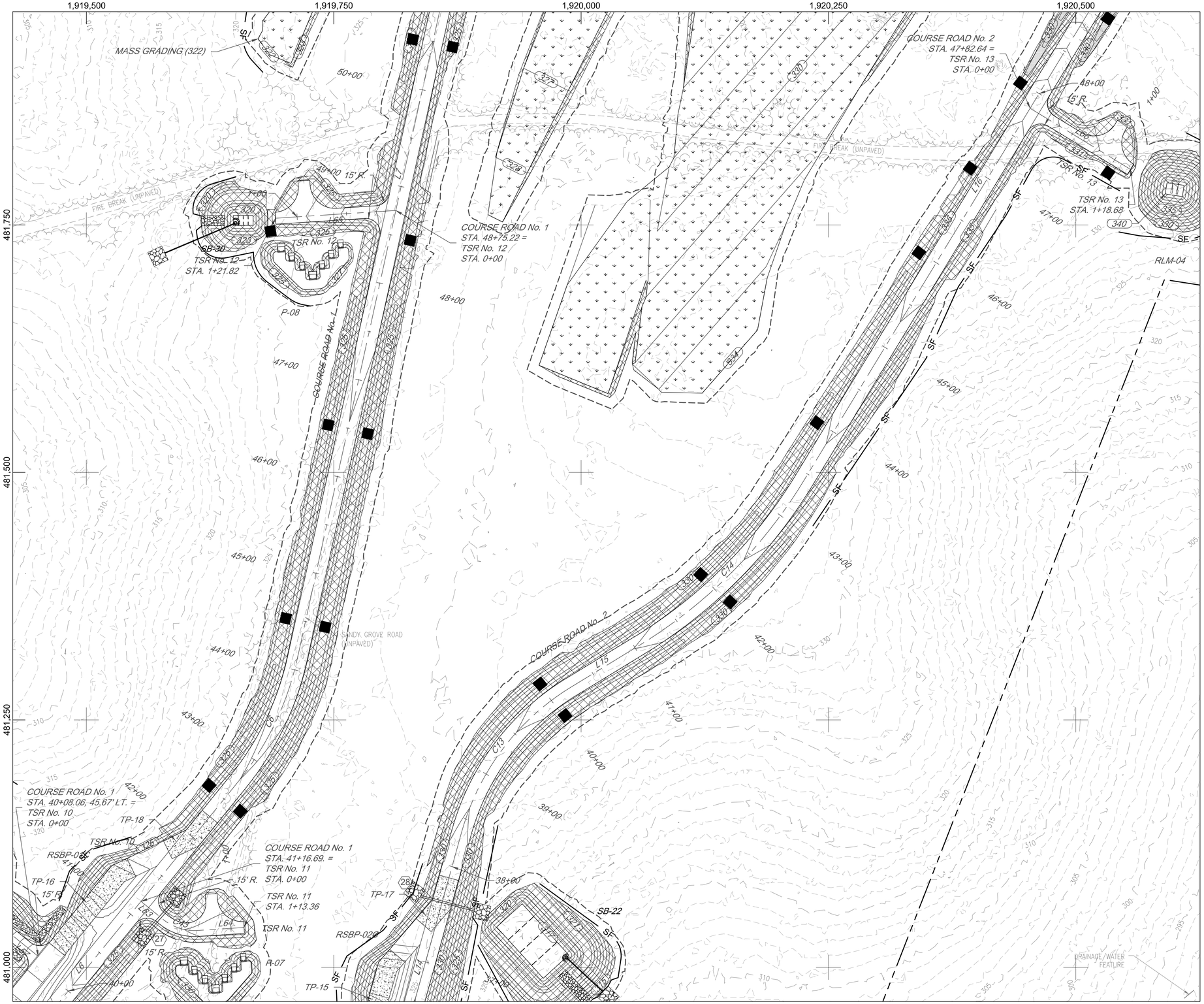

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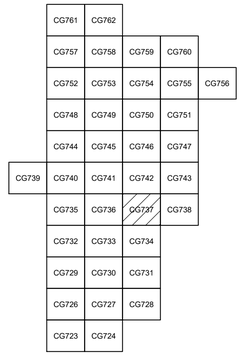

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GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/25

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	172-45-01
SCALE: ANSI D	FILE NAME:

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

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CG737

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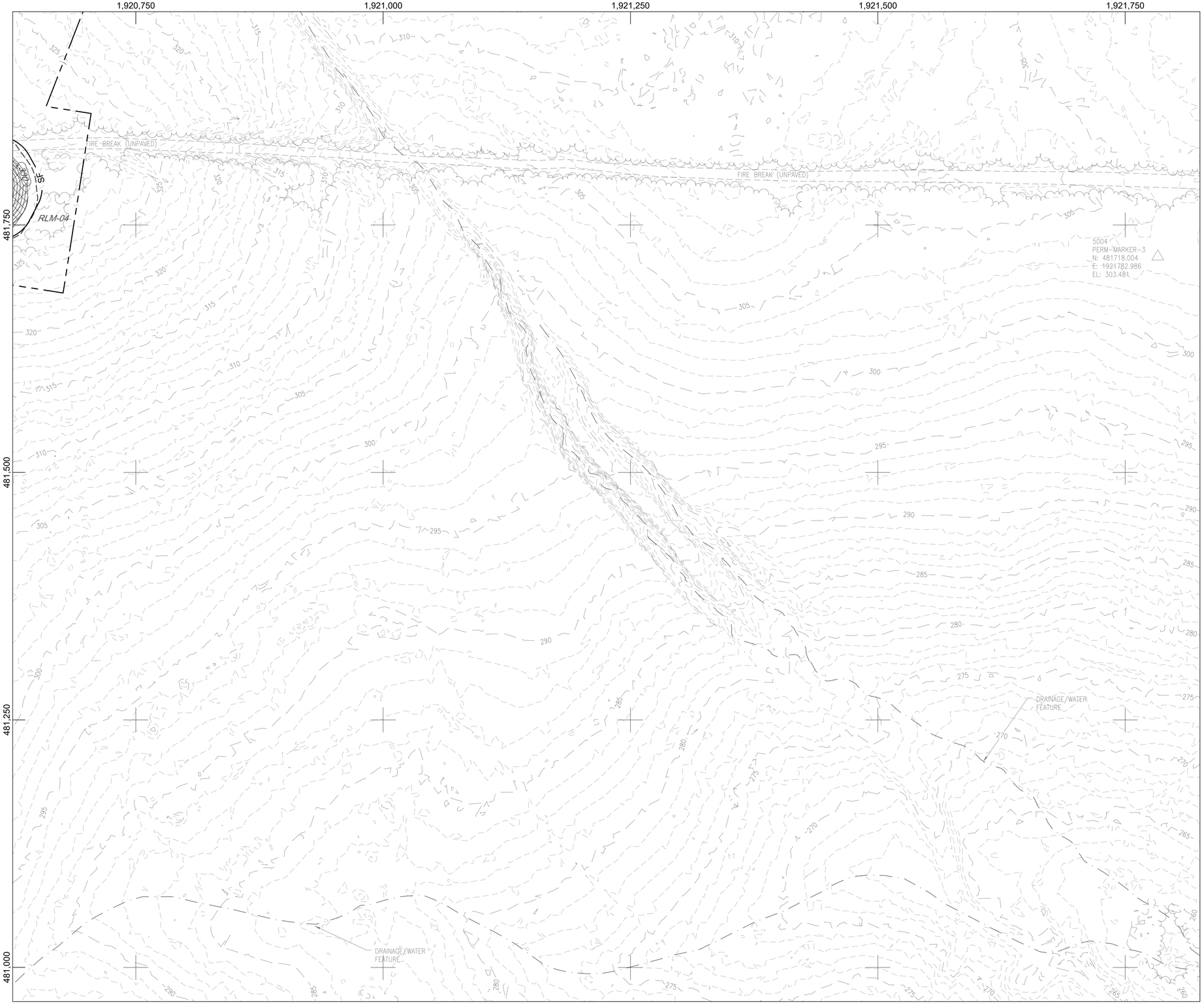

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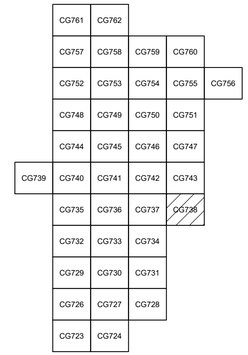

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50' 25' 0 50' 100'

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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

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DRAWN BY: B.J. JOHNSON
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SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
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U.S. ARMY CORPS OF ENGINEERS
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E&SC PLAN

SHEET ID

CG738

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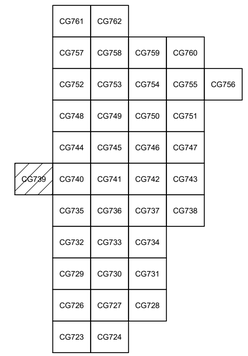
KEY PLAN



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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

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US Army Corps of Engineers®

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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

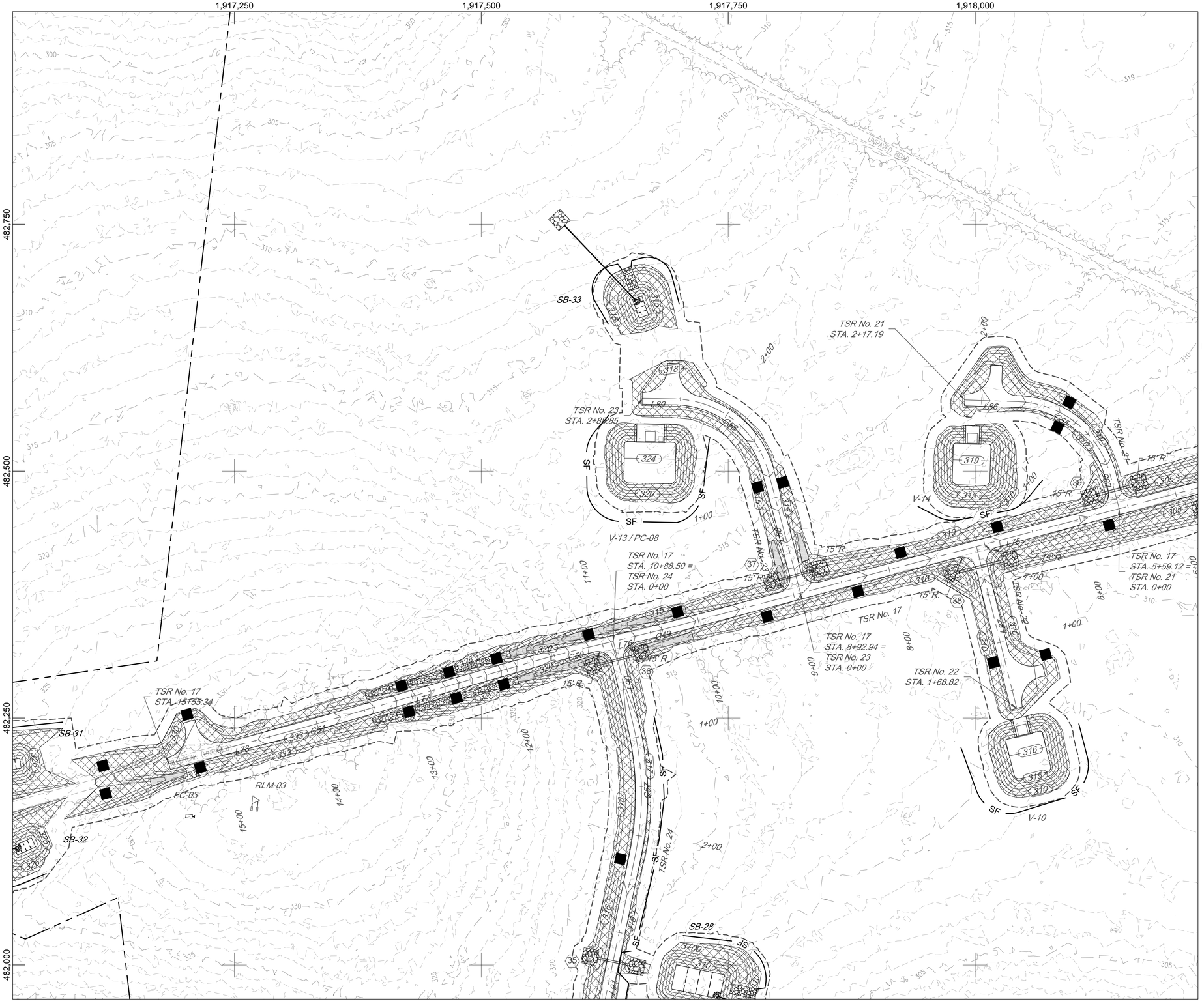
E&SC PLAN

SHEET ID

CG739

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG739.DWG



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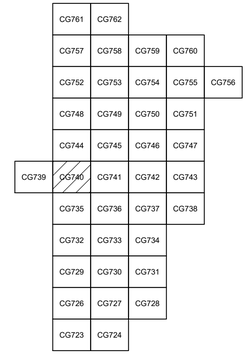

NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
CONTRACT NO.:	
CATEGORY CODE:	178-65-01
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

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SHEET ID

CG740

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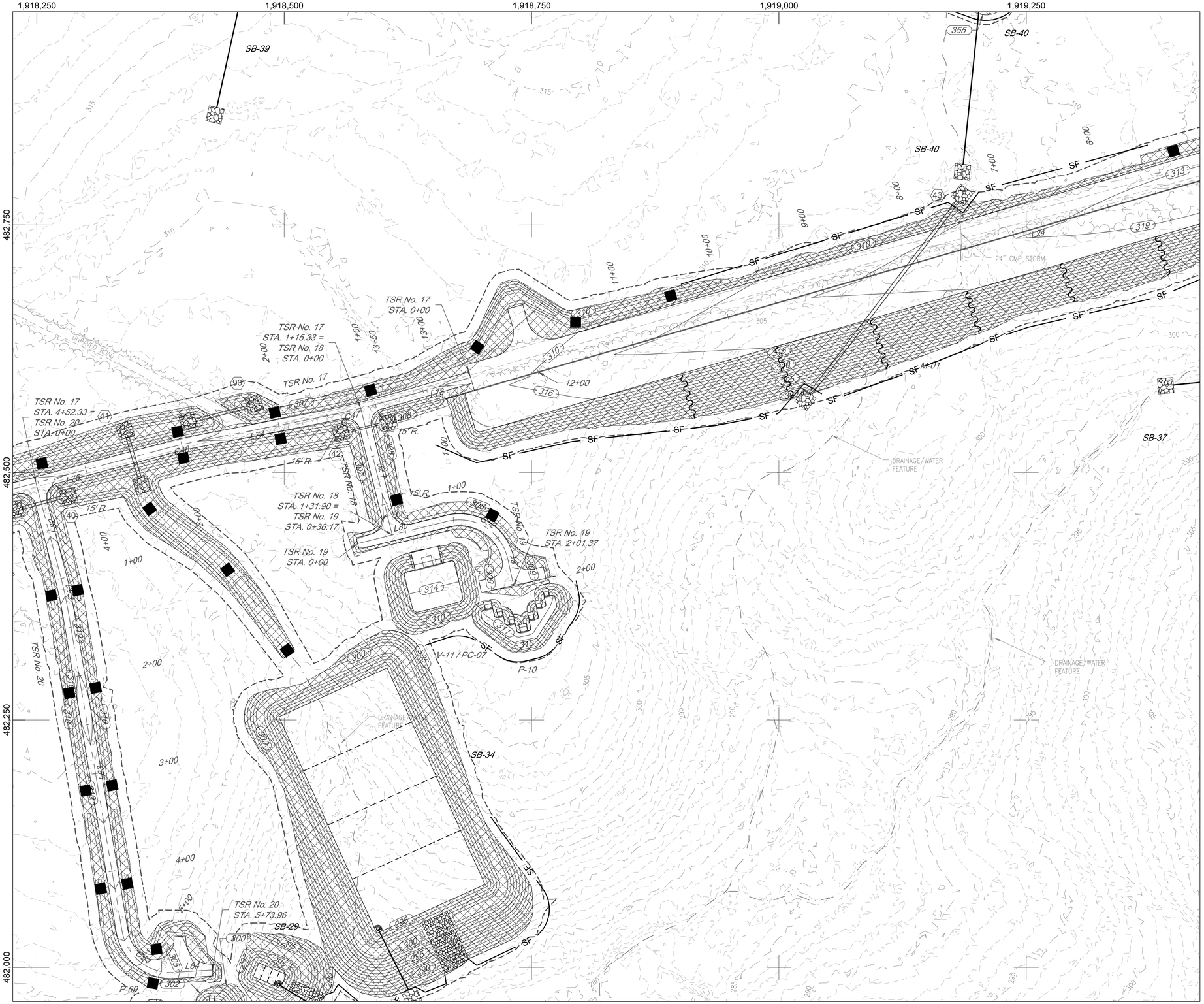

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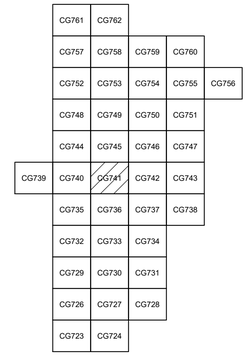

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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS
(SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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SHEET ID

CG741

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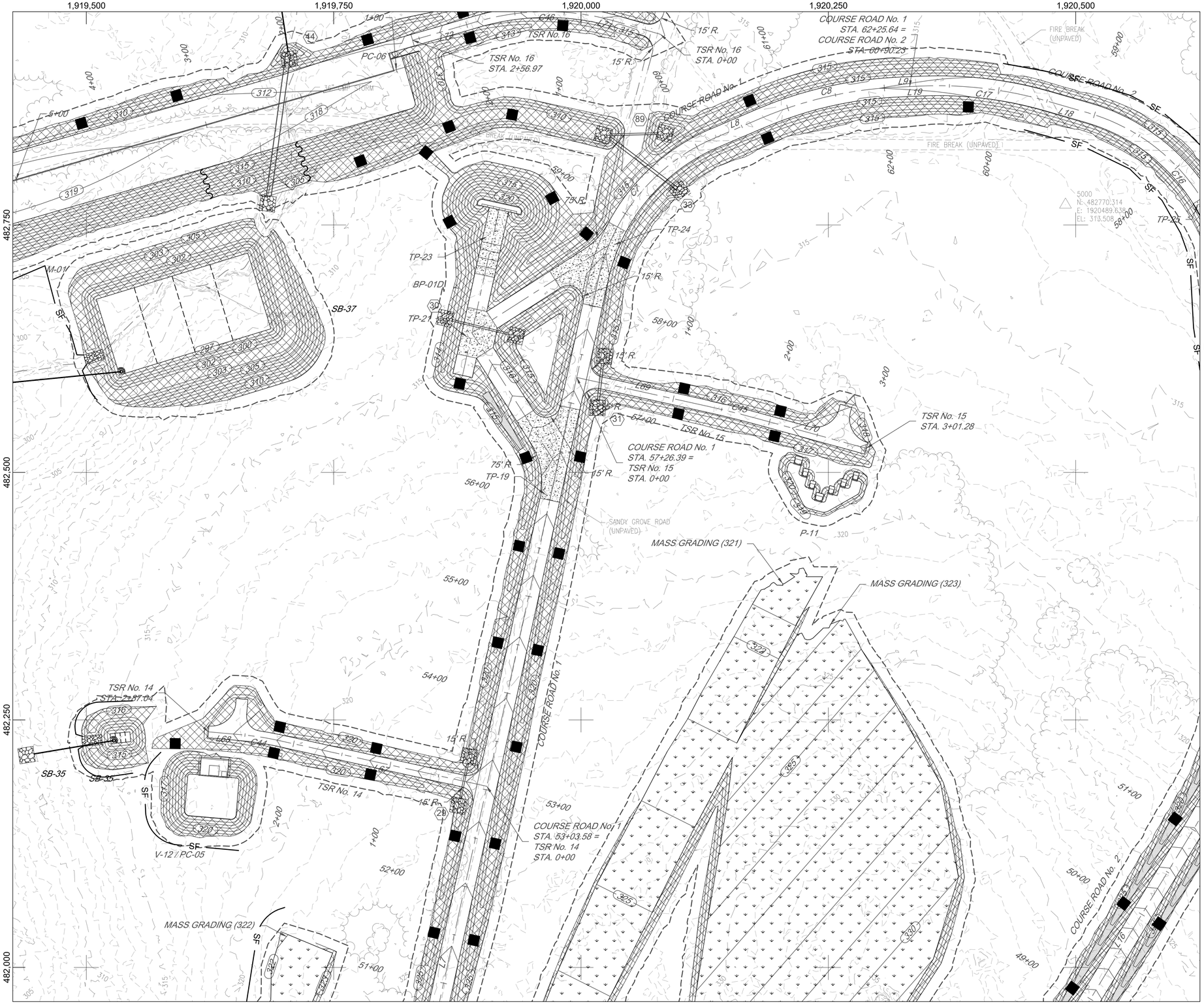

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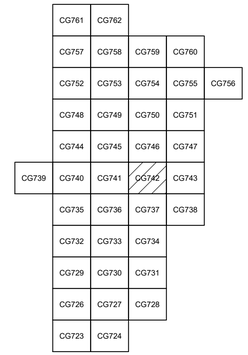

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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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US Army Corps of Engineers®

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SUBMITTED BY:	B. BRADLEY
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CONTRACT NO.:	
CATEGORY CODE:	173-45-01
FILE NAME:	

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SHEET ID

CG742

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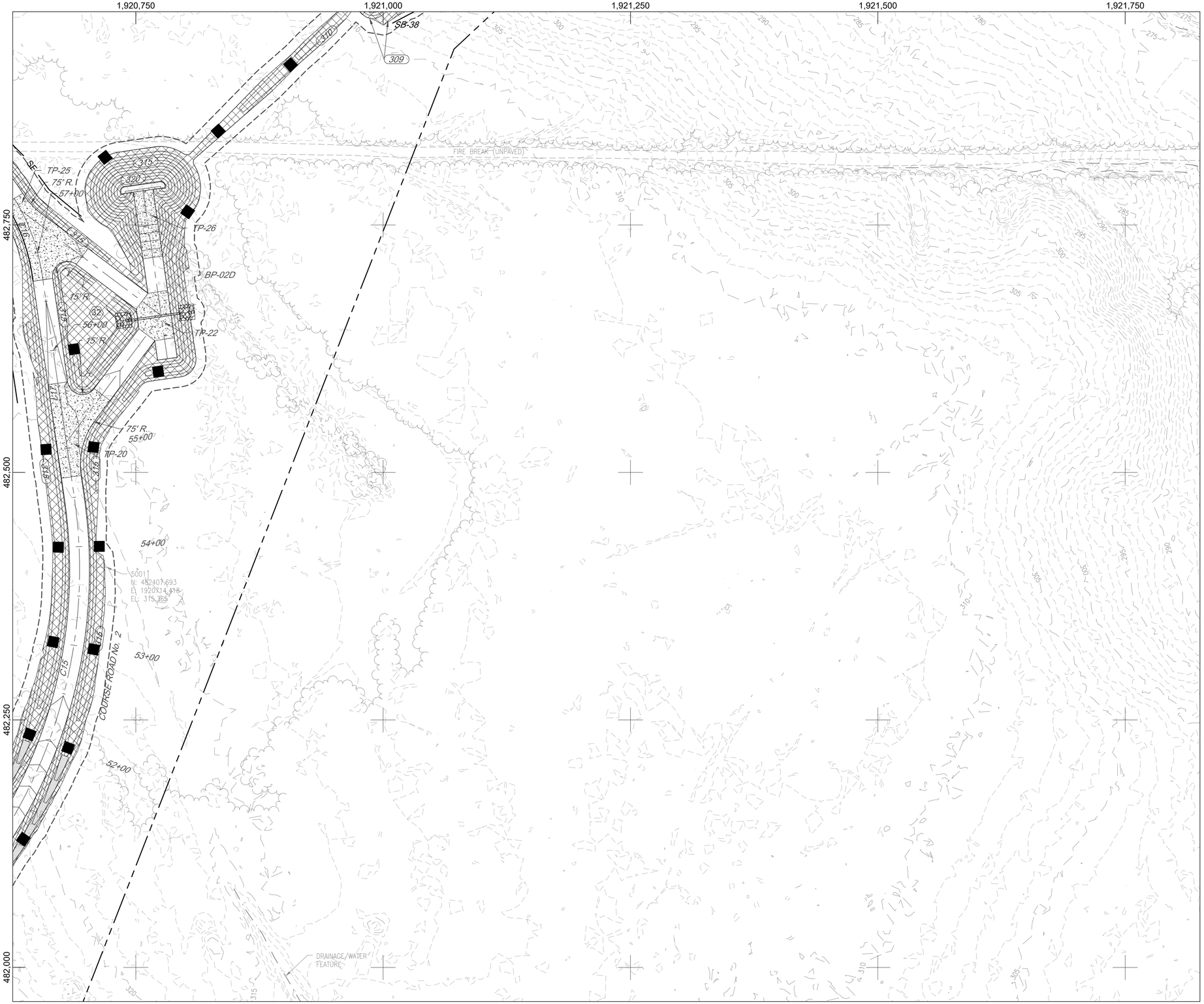

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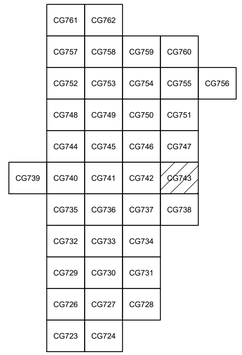

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7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

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SCALE: 1" = 50'-0"

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CHECKED BY: B. BRADLEY
SUBMITTED BY: BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-65-01
FILE NAME:

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SHEET ID

CG743

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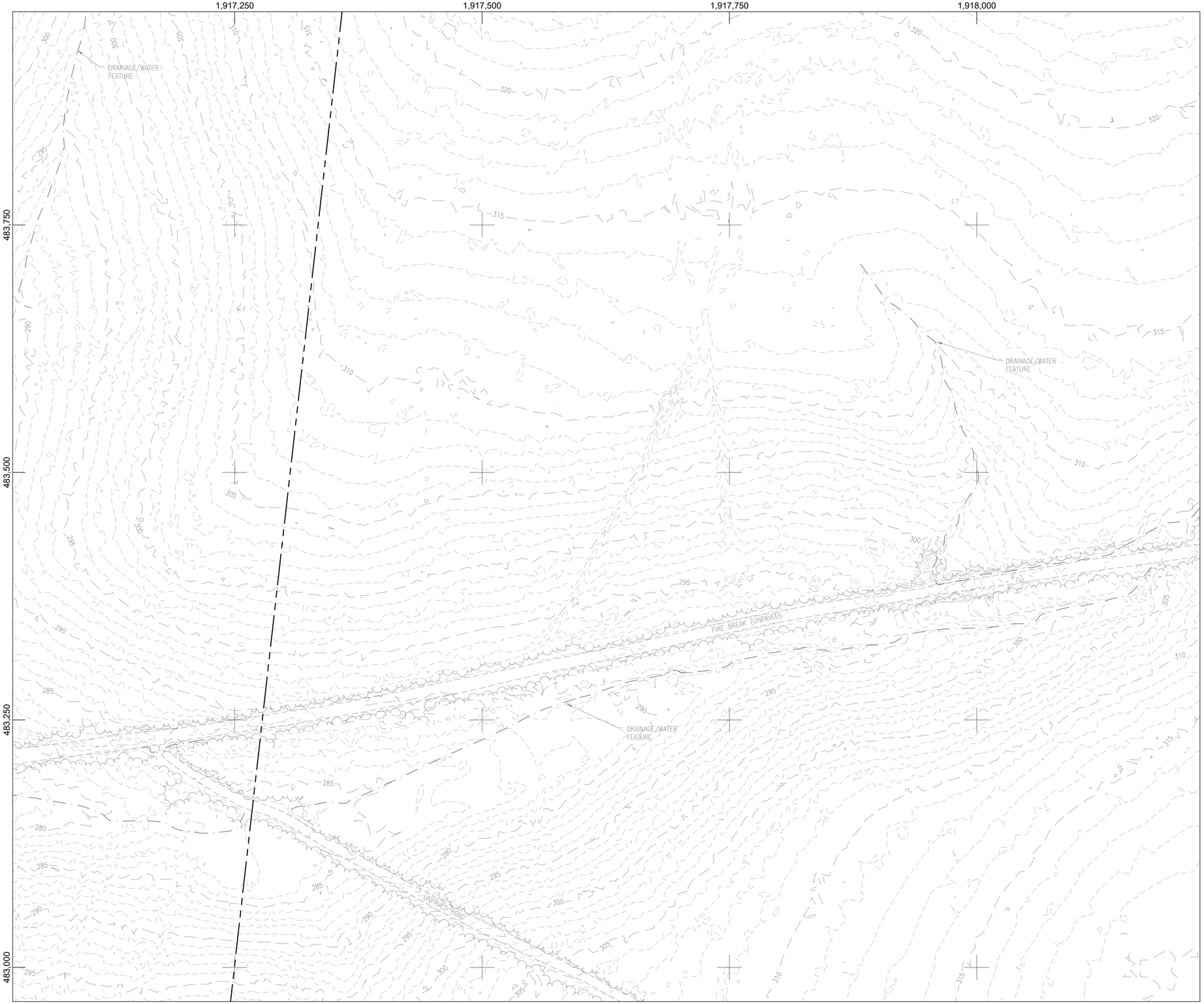

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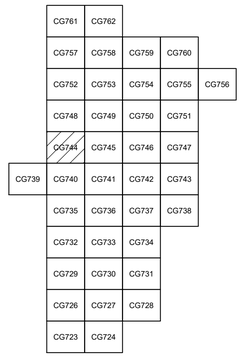

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7-DAY GROUND COVER AREAS

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GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

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DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	173-45-01
SIZE:	FILE NAME:
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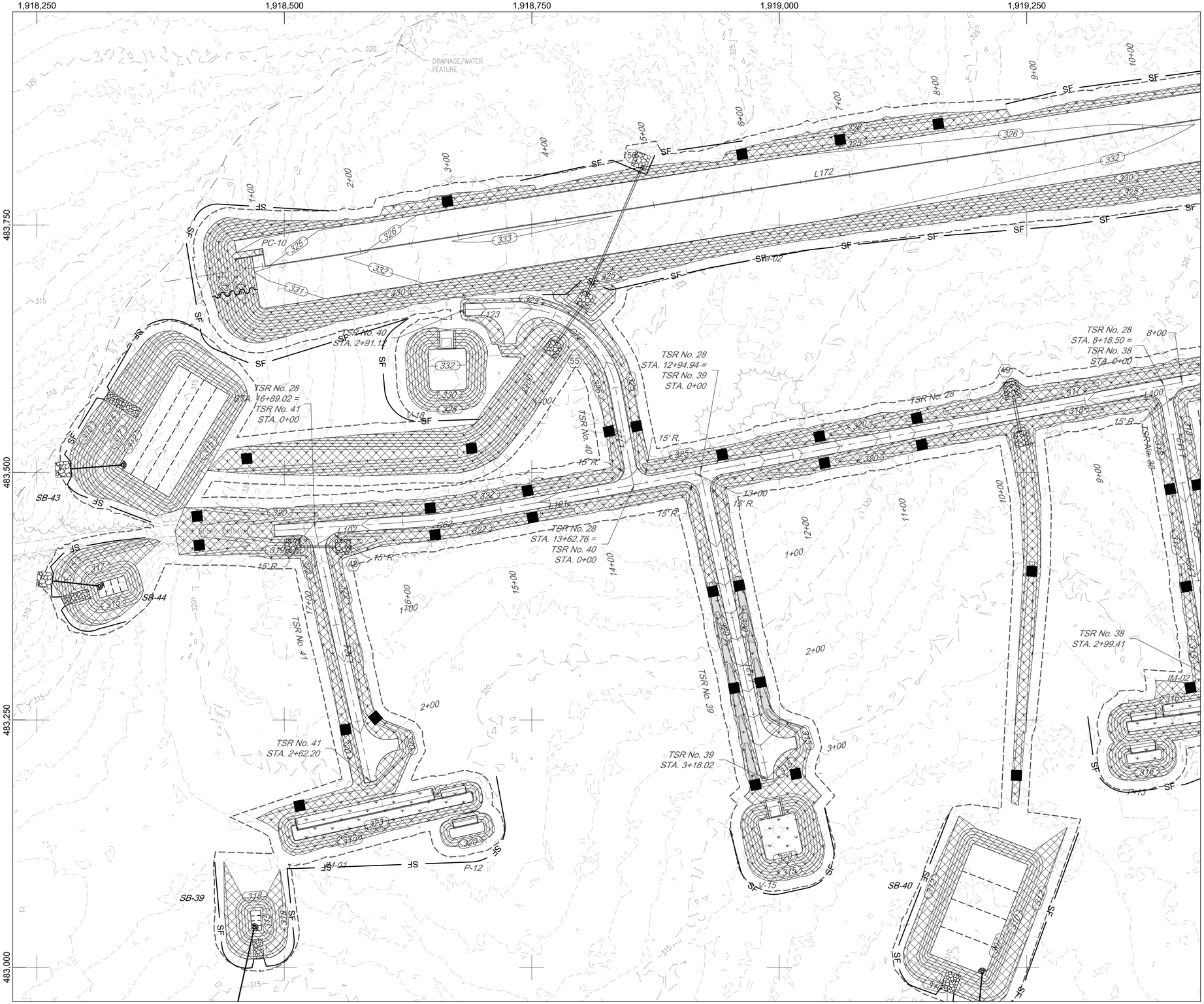
E&SC PLAN

SHEET ID

CG744

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG744.DWG



KEY PLAN

	CG761	CG762		
	CG757	CG758	CG759	CG760
	CG752	CG753	CG754	CG755	CG756
	CG748	CG749	CG750	CG751
	CG744	CG745	CG746	CG747
CG739	CG740	CG741	CG742	CG743
	CG735	CG736	CG737	CG738
	CG732	CG733	CG734	
	CG729	CG730	CG731	
	CG726	CG727	CG728	
	CG723	CG724		

NOTES:

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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
K. SANDERS	NOVEMBER 2023
DRAWN BY:	SOLICITATION NO.:
B.J. JOHNSON	W912HN-24-B-3002
CHECKED BY:	CONTRACT NO.:
B. BRADLEY	
SUBMITTED BY:	CATEGORY CODE:
B. BRADLEY	174-65-01
SIZE:	FILE NAME:
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FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

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SHEET ID

CG745

READY TO ADVERTISE (RTA)

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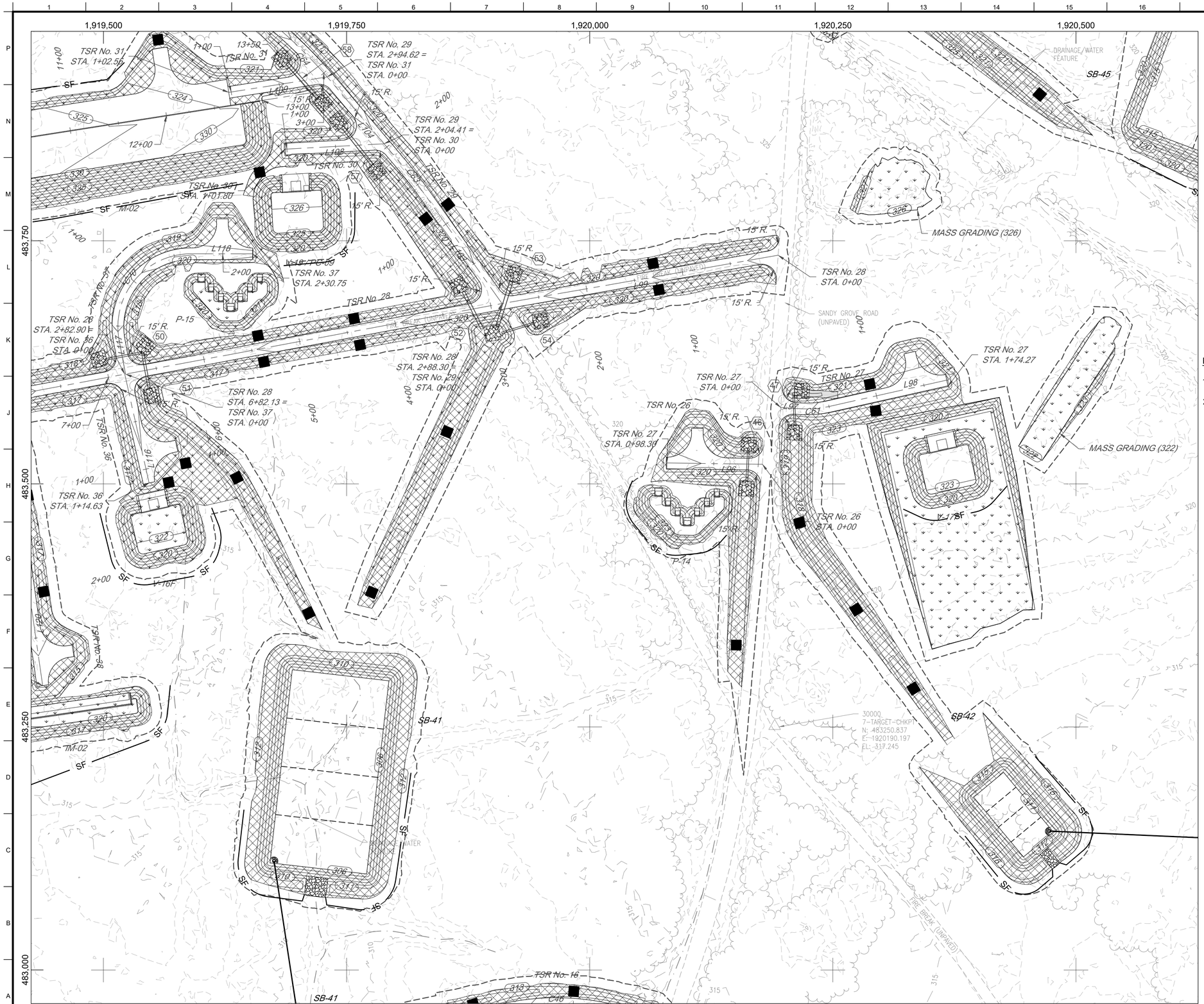

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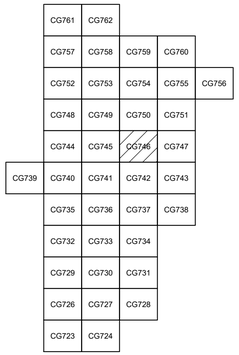

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GRAPHIC SCALE

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CONTRACT NO.:	
CATEGORY CODE:	178-45-01
FILE NAME:	

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

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E&SC PLAN

SHEET ID

CG746

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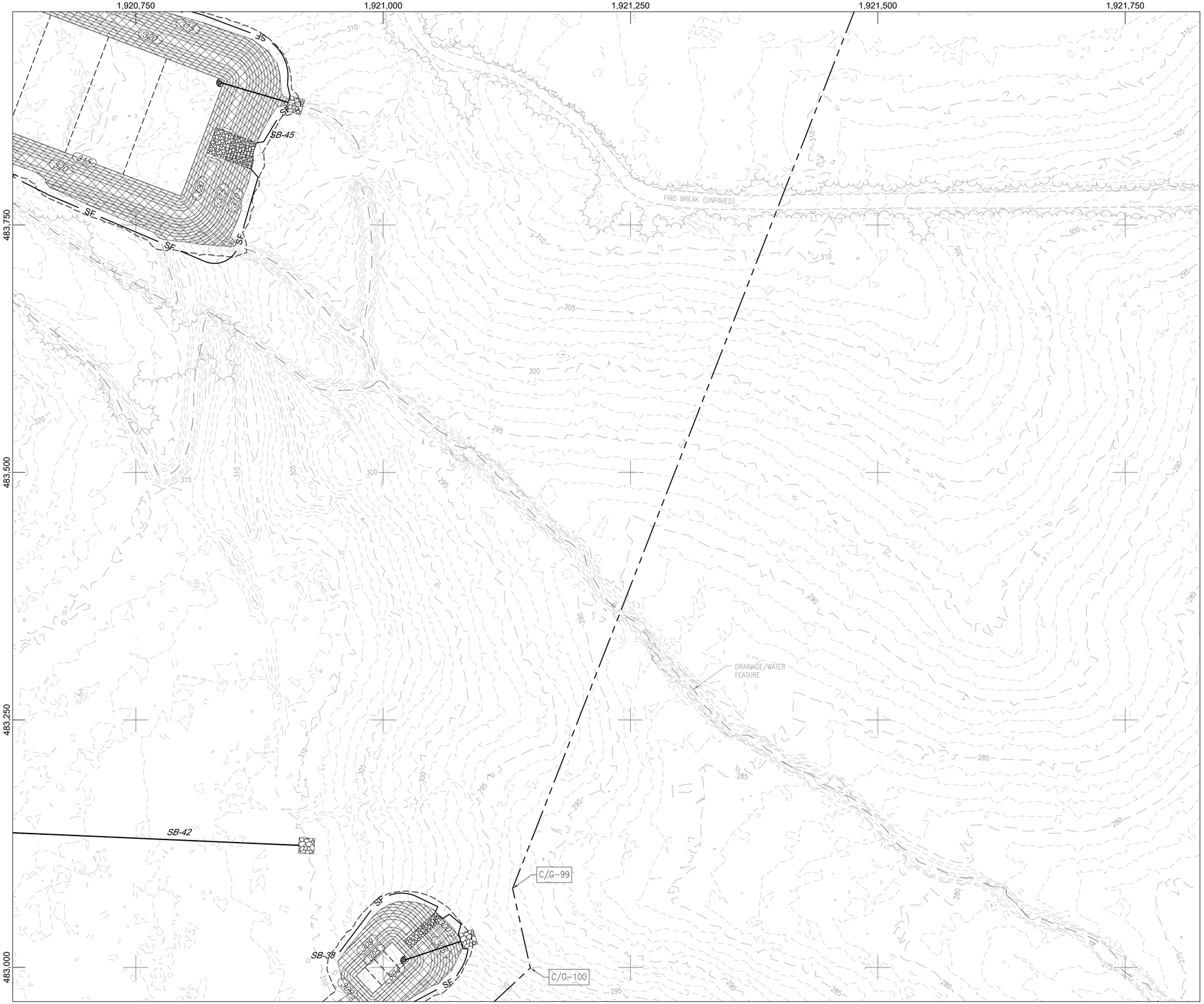

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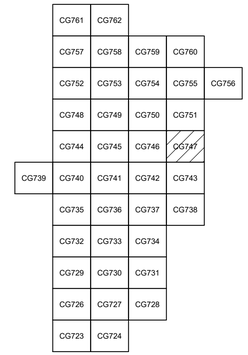

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GRAPHIC SCALE

50' 25' 0 50' 100'

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U.S. ARMY CORPS OF ENGINEERS
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CG747

READY TO ADVERTISE (RTA)

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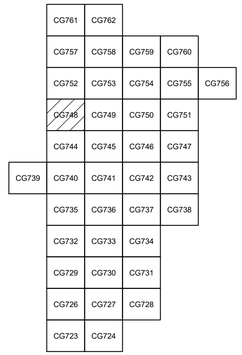
KEY PLAN



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7-DAY GROUND COVER AREAS

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GRAPHIC SCALE

50' 25' 0 50' 100'

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US Army Corps of Engineers®

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SUBMITTED BY: B. BRADLEY
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CATEGORY CODE: 174-45-01
SIZE: ANSI D
FILE NAME: G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG748.DWG

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E&SC PLAN

SHEET ID

CG748

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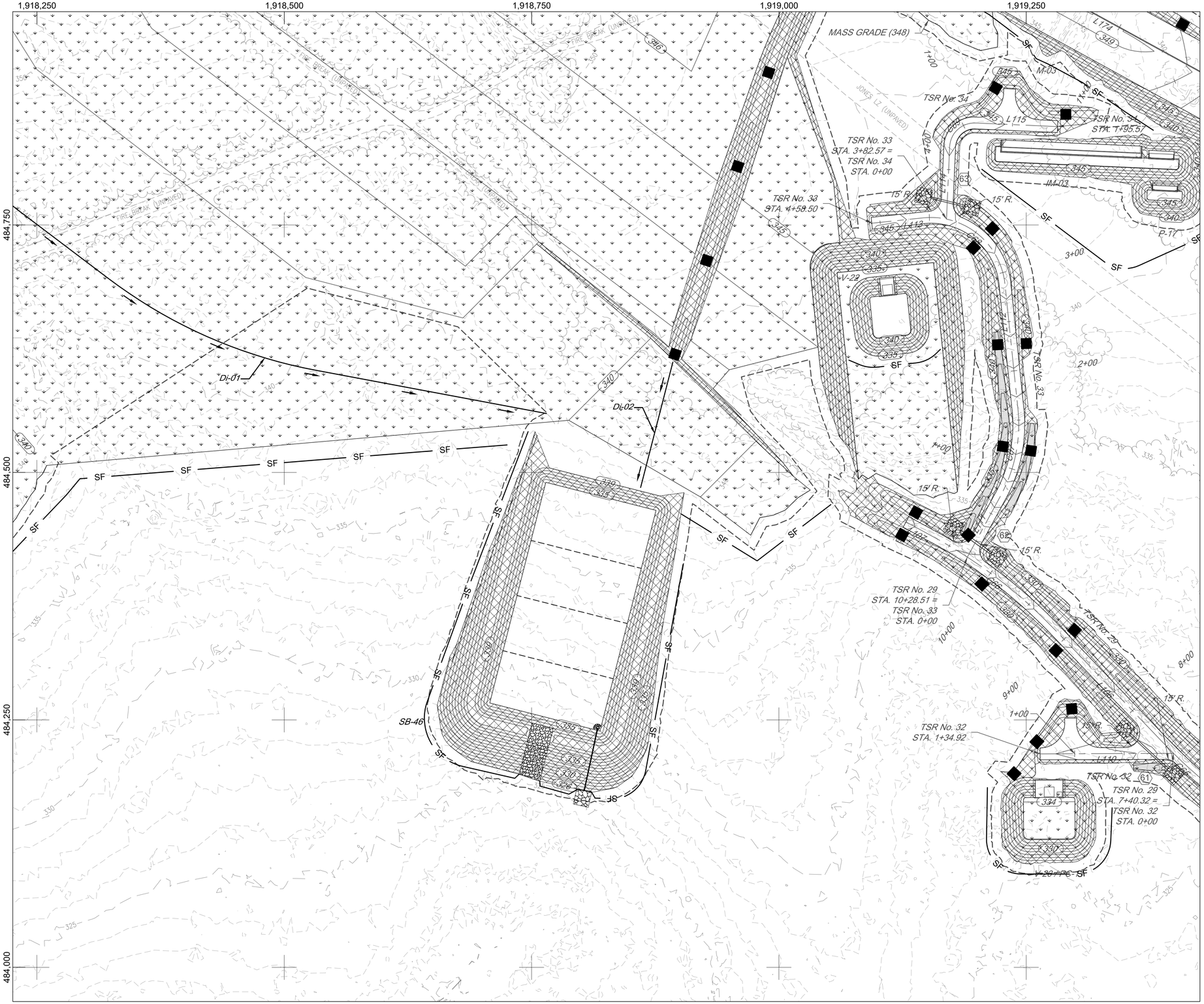

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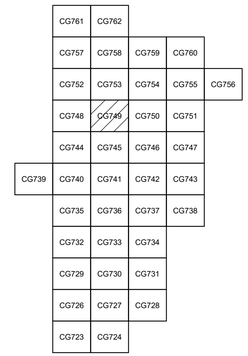

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GRAPHIC SCALE

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SCALE: 1" = 50'-0"

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US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-45-01
FILE NAME: ANSI D

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

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

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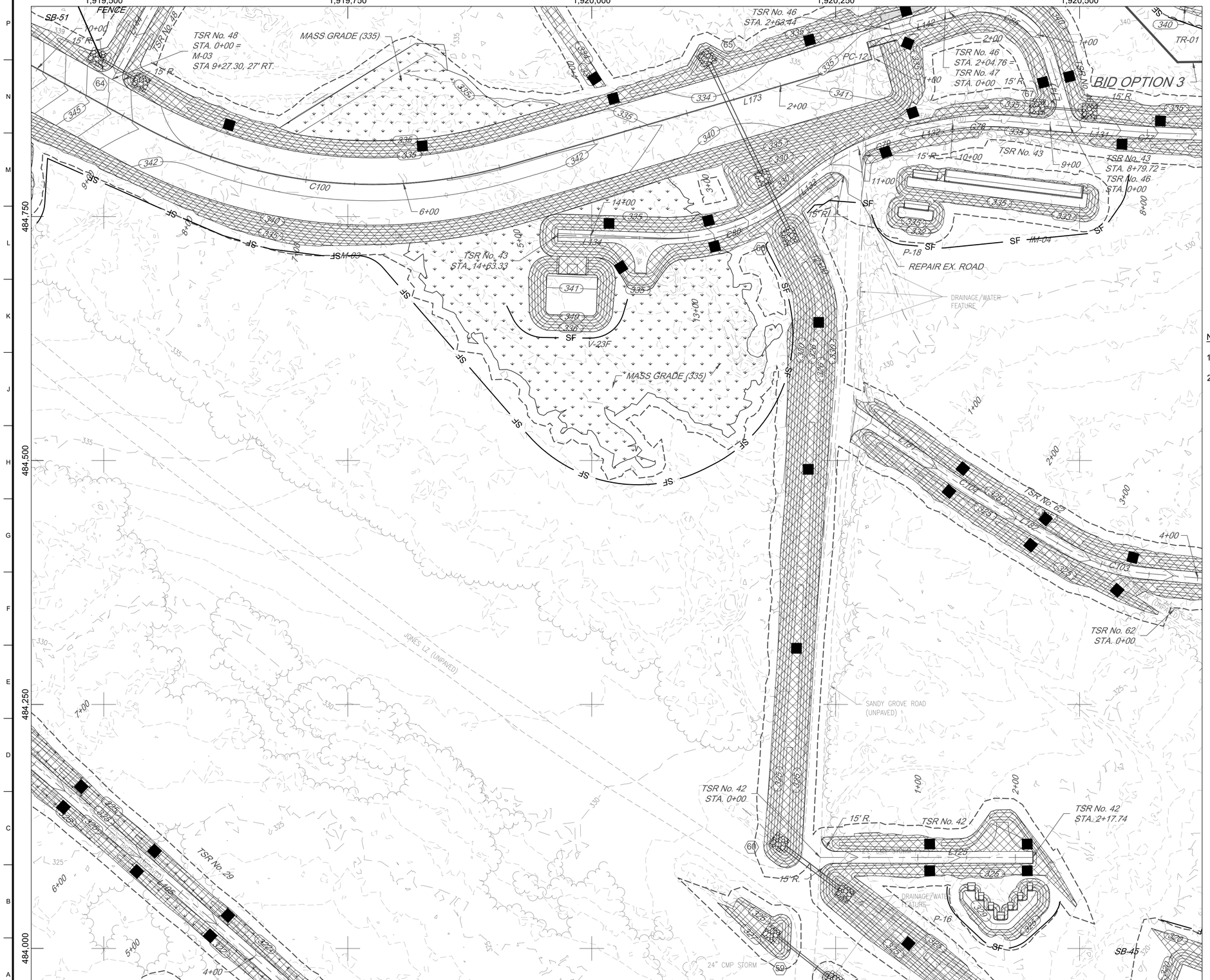
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN

SHEET ID
CG749

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2\ECG749.DWG



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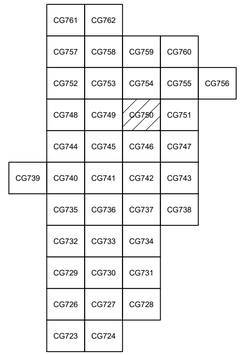

NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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
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SHEET ID

CG750

READY TO ADVERTISE (RTA)

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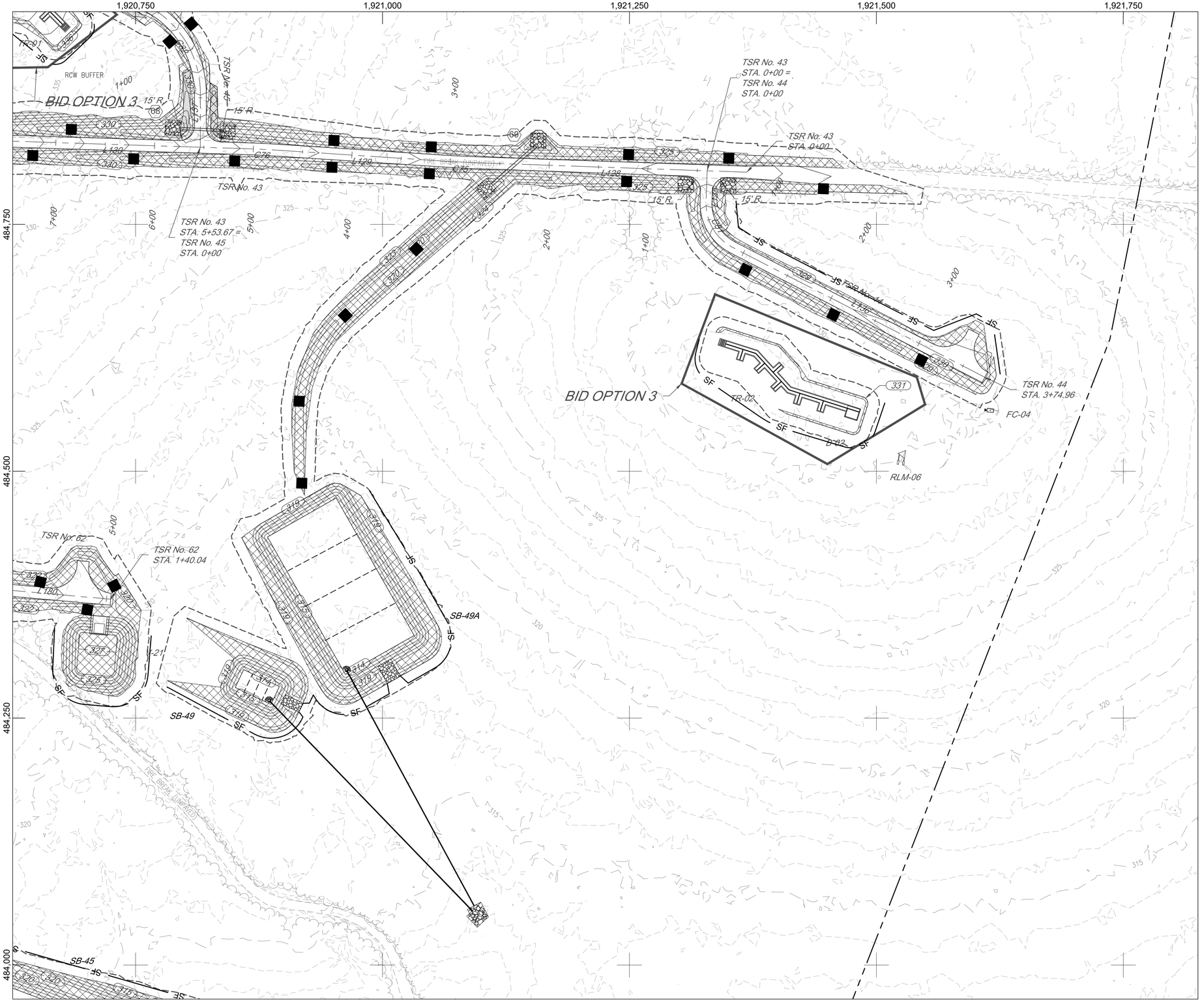

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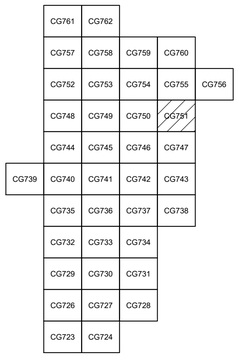

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7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

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E&SC PLAN

SHEET ID

CG751

READY TO ADVERTISE (RTA)

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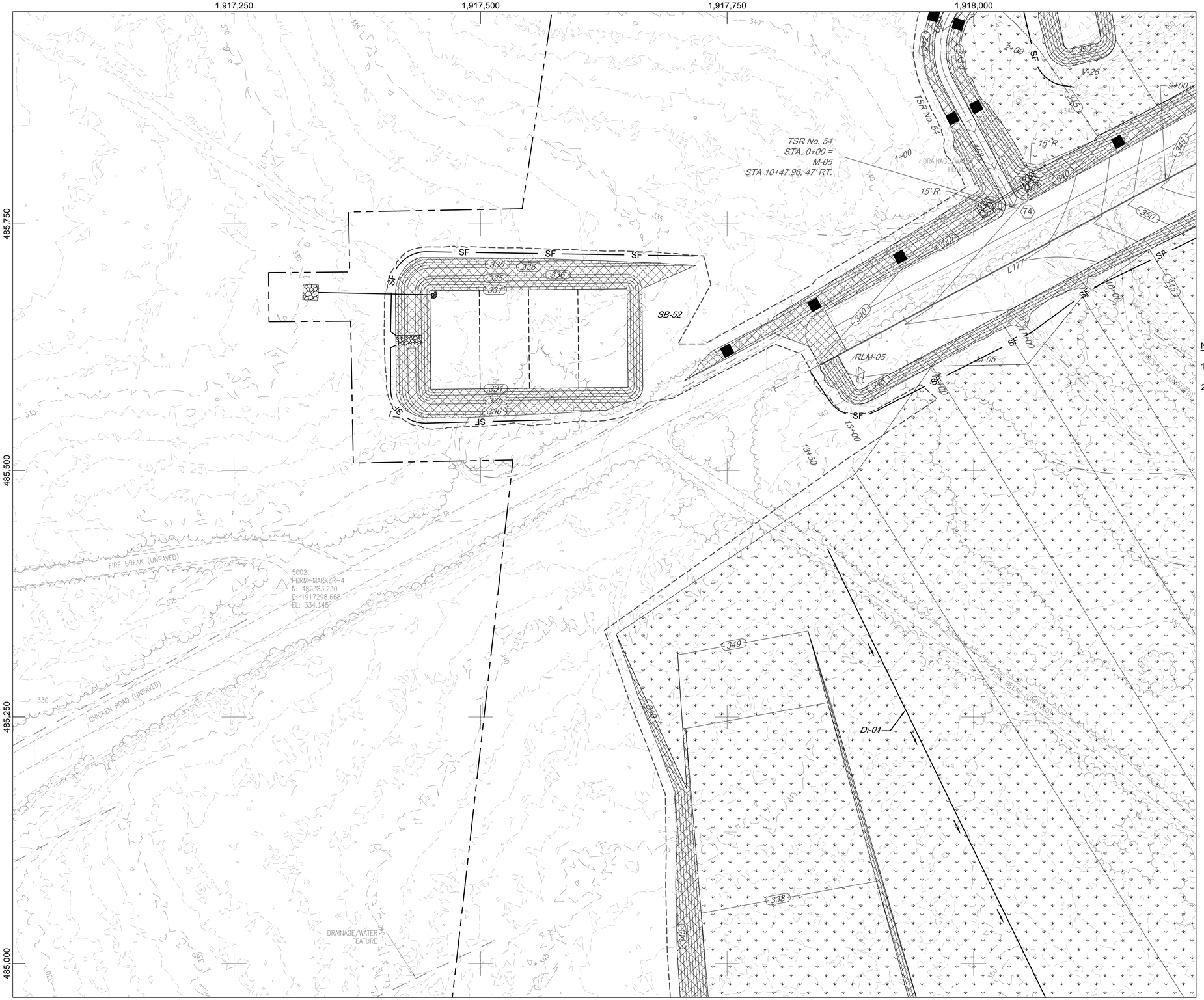

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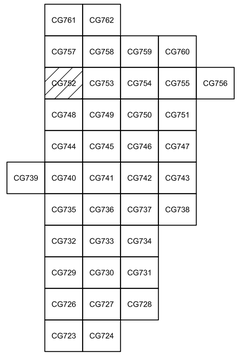

NOTES:

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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

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E&SC PLAN

SHEET ID

CG752

READY TO ADVERTISE (RTA)

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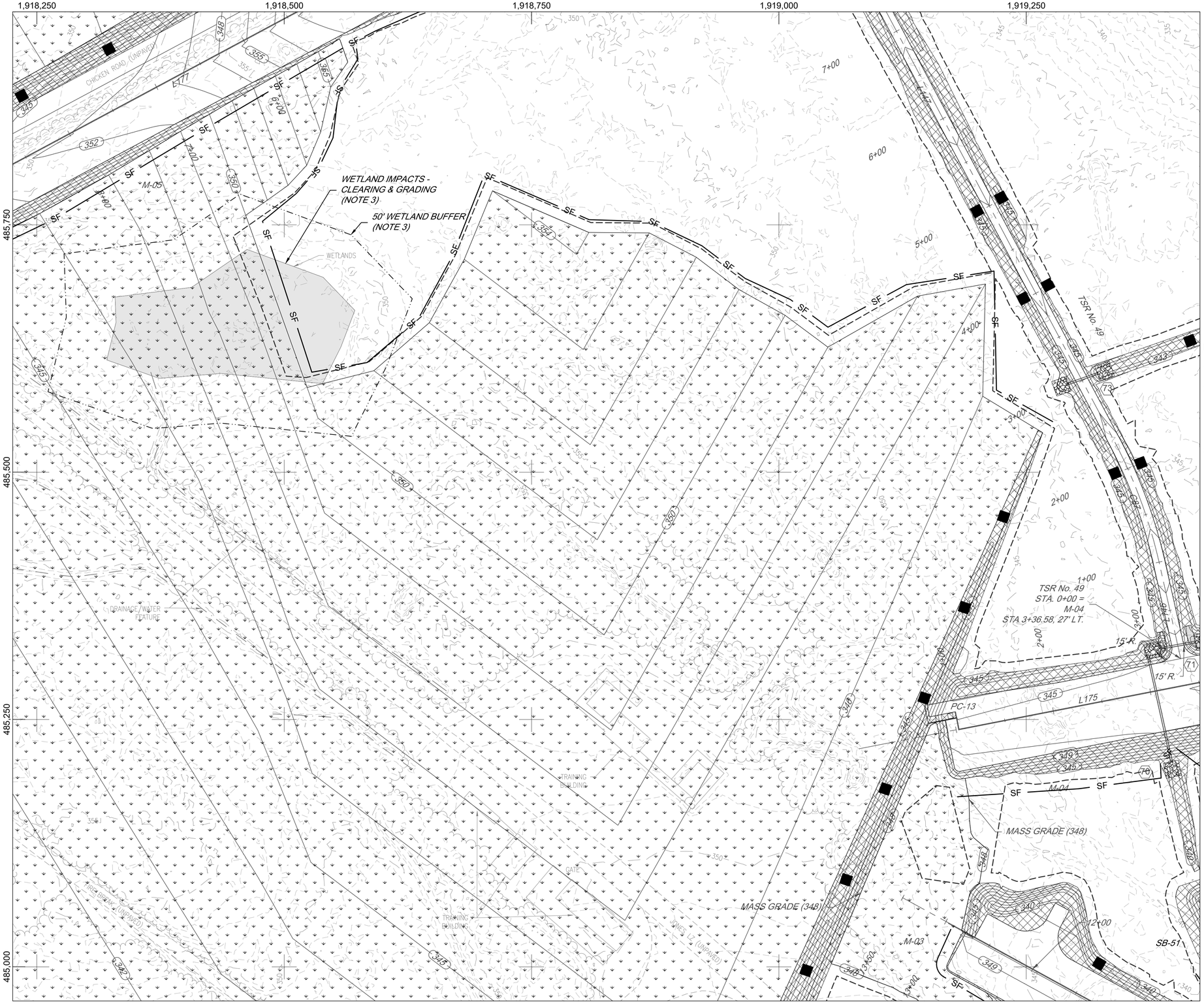

KEY PLAN

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	CG757	CG758	CG759	CG760	
	CG752	CG753	CG754	CG755	CG756
	CG748	CG749	CG750	CG751	
	CG744	CG745	CG746	CG747	
CG739	CG740	CG741	CG742	CG743	
	CG735	CG736	CG737	CG738	
	CG732	CG733	CG734		
	CG729	CG730	CG731		
	CG726	CG727	CG728		
	CG723	CG724			

NOTES :

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3. SEE CG764 FOR WETLAND NOTES.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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SUBMITTED BY: BRADLEY
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VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN

SHEET ID

CG753

READY TO ADVERTISE (RTA)

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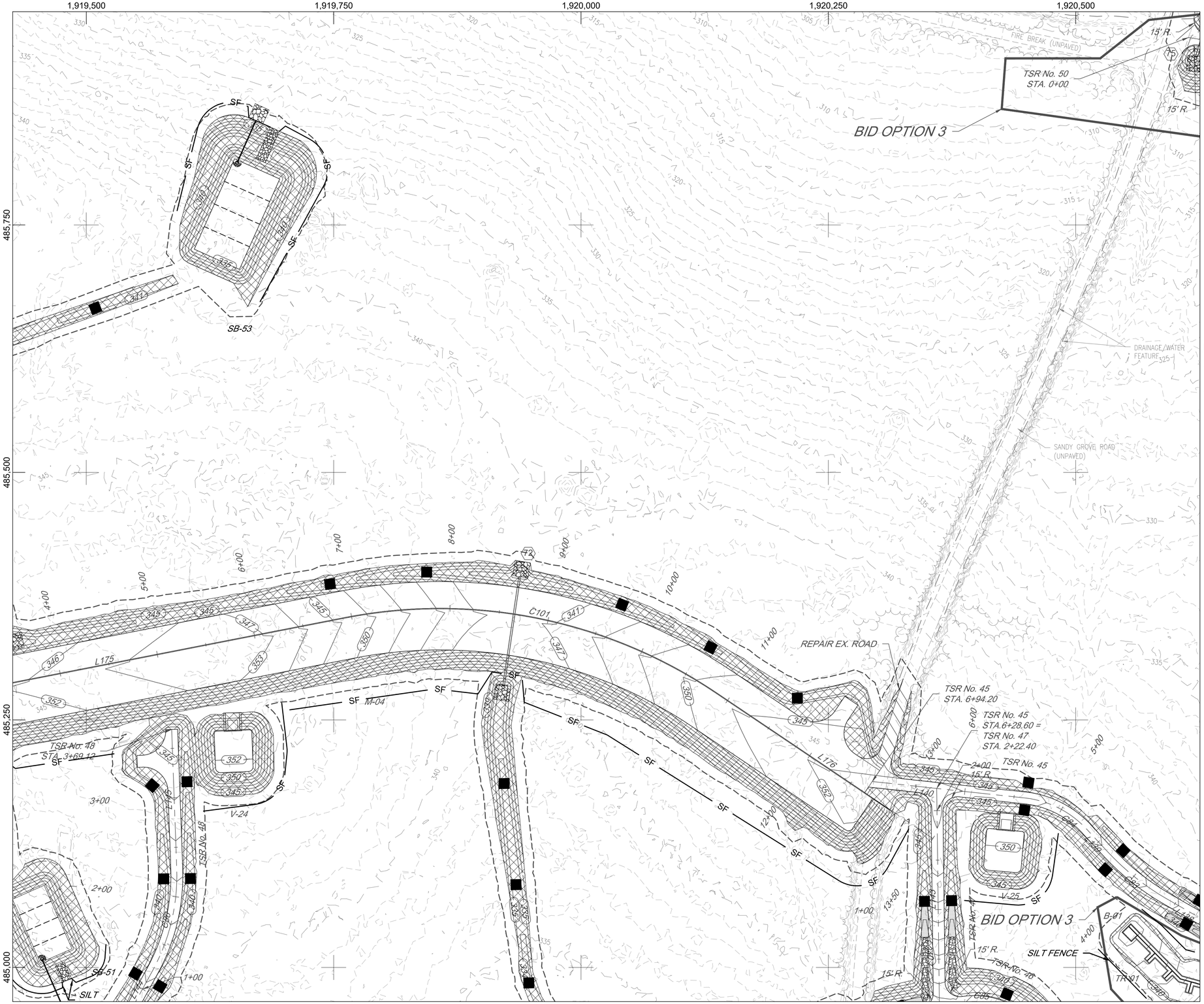

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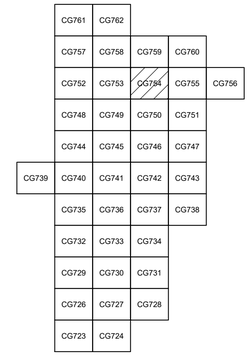

NOTES:

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7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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CHECKED BY: B. BRADLEY	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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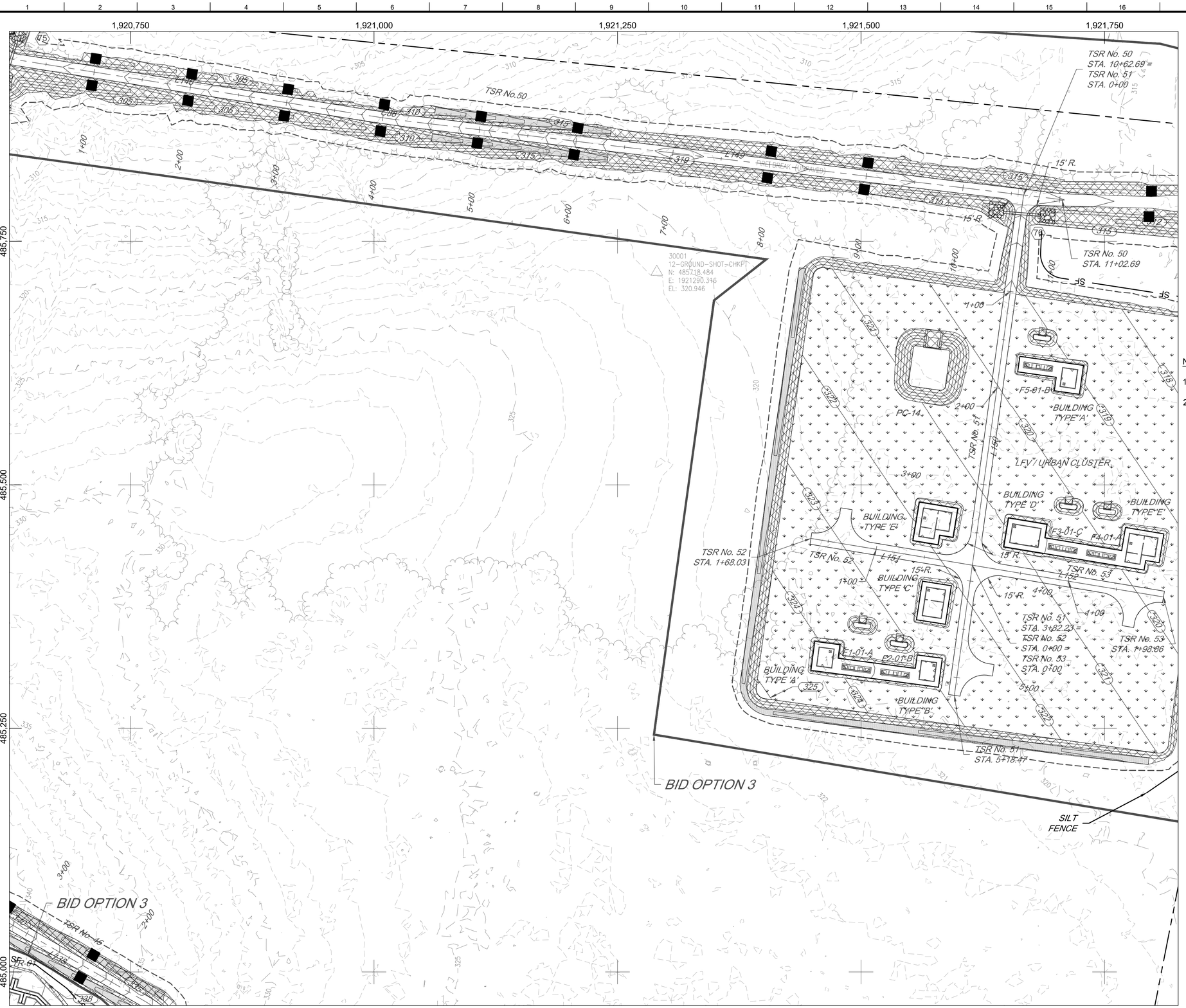
E&SC PLAN

SHEET ID

CG754

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG754.DWG



KEY PLAN

	CG761	CG762		
	CG757	CG758	CG759	CG760
	CG752	CG753	CG754	CG755 CG756
	CG748	CG749	CG750	CG751
	CG744	CG745	CG746	CG747
CG739	CG740	CG741	CG742	CG743
	CG735	CG736	CG737	CG738
	CG732	CG733	CG734	
	CG729	CG730	CG731	
	CG726	CG727	CG728	
	CG723	CG724		

NOTES:

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GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

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FY23, PN 98162
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E&SC PLAN

SHEET ID

CG755

READY TO ADVERTISE (RTA)

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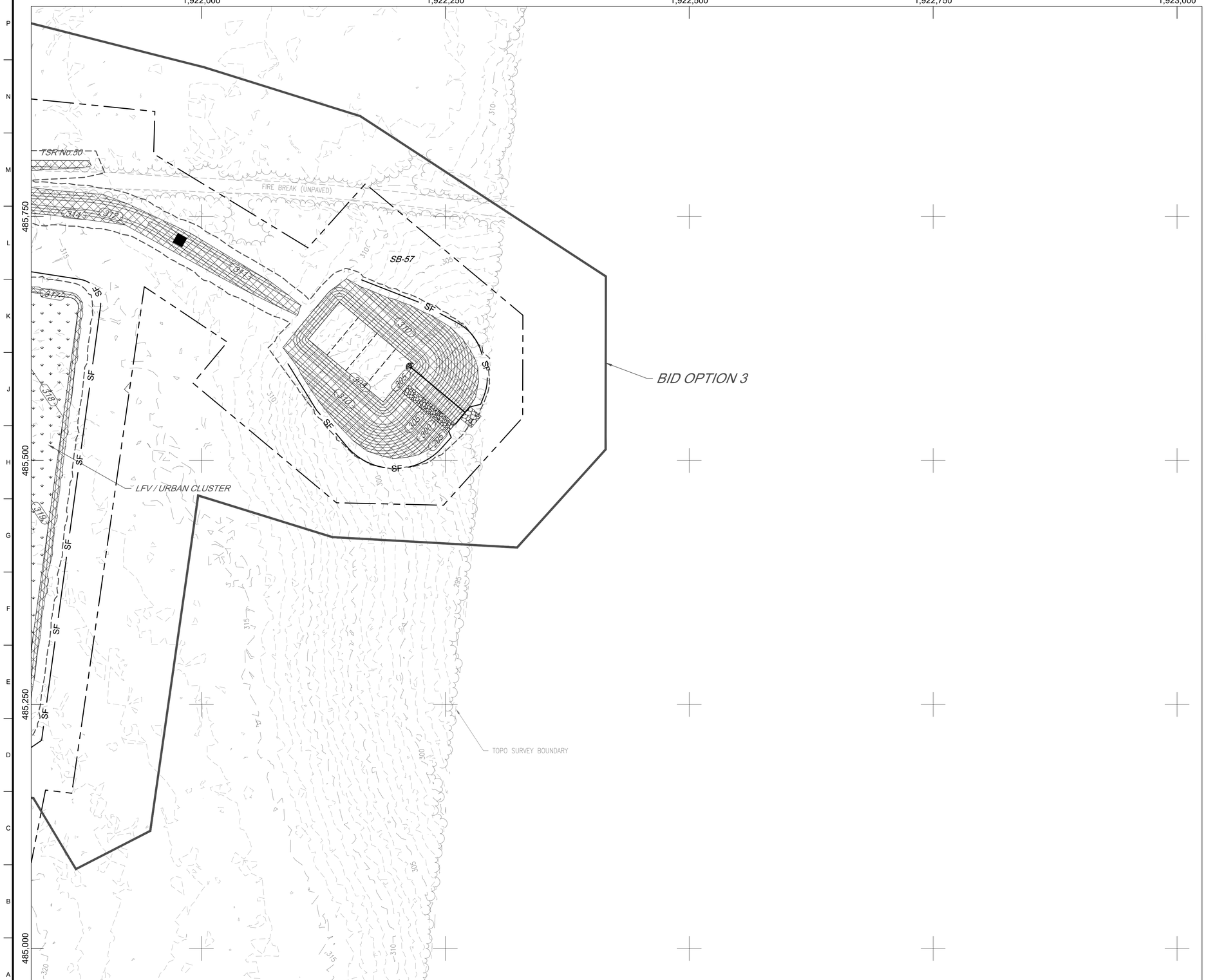

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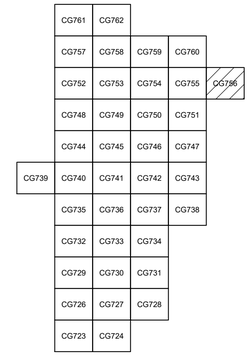

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VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN

SHEET ID

CG756

READY TO ADVERTISE (RTA)

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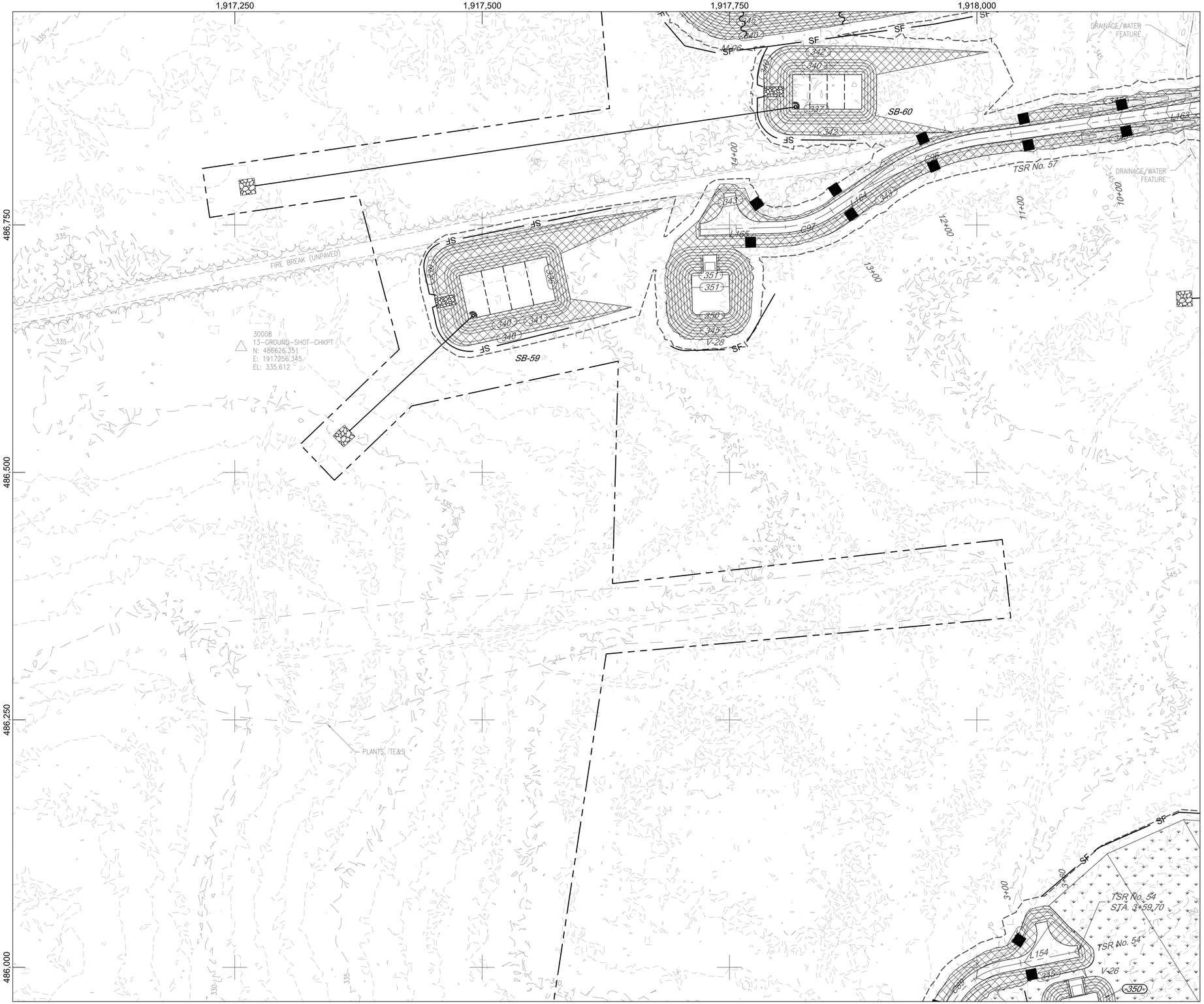

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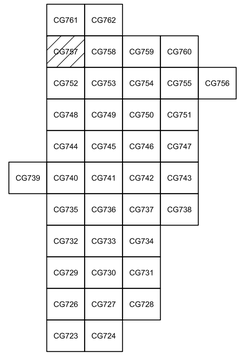

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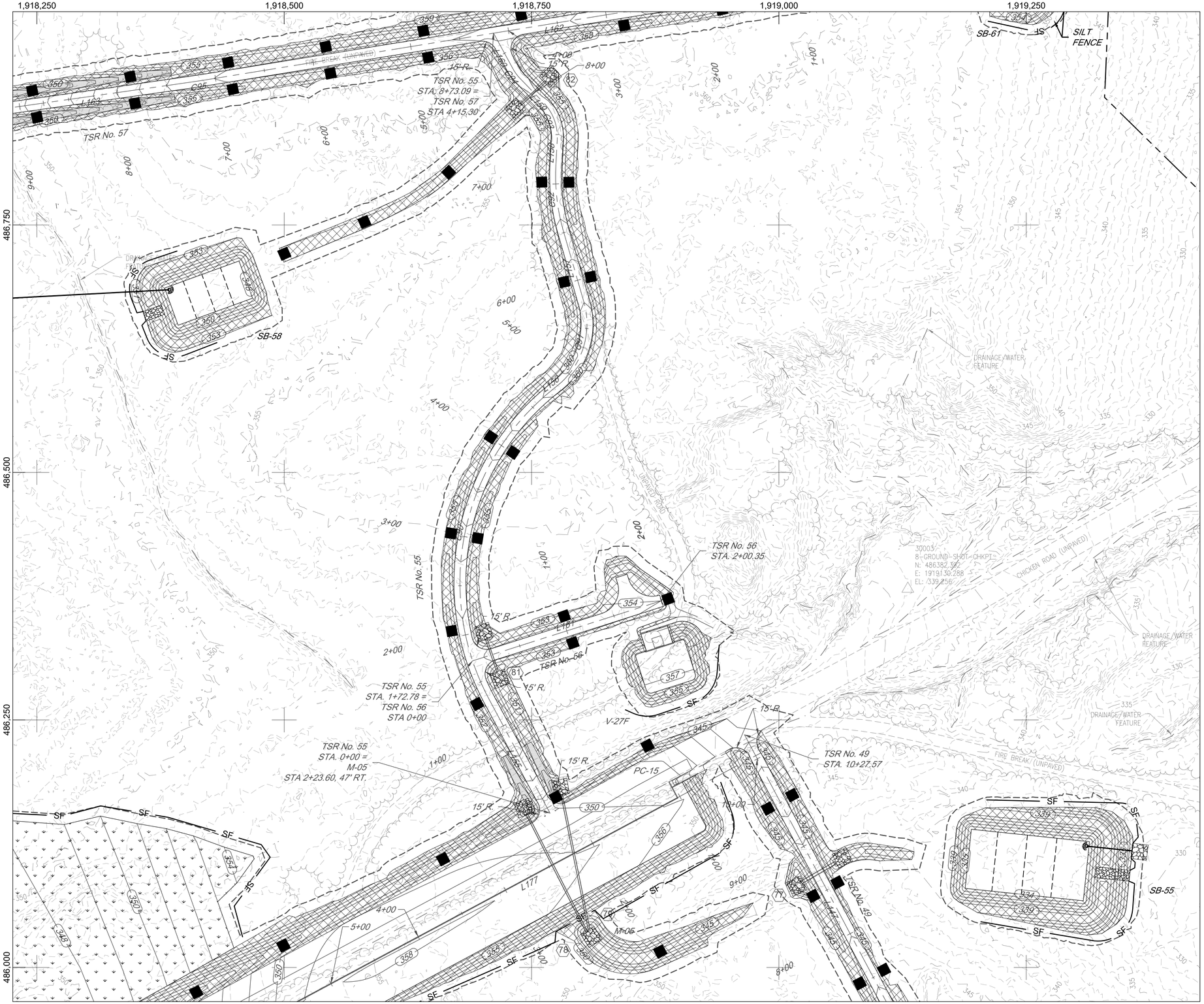
E&SC PLAN

SHEET ID

CG757

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG757.DWG



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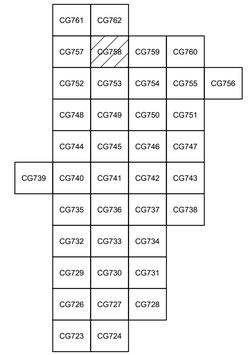

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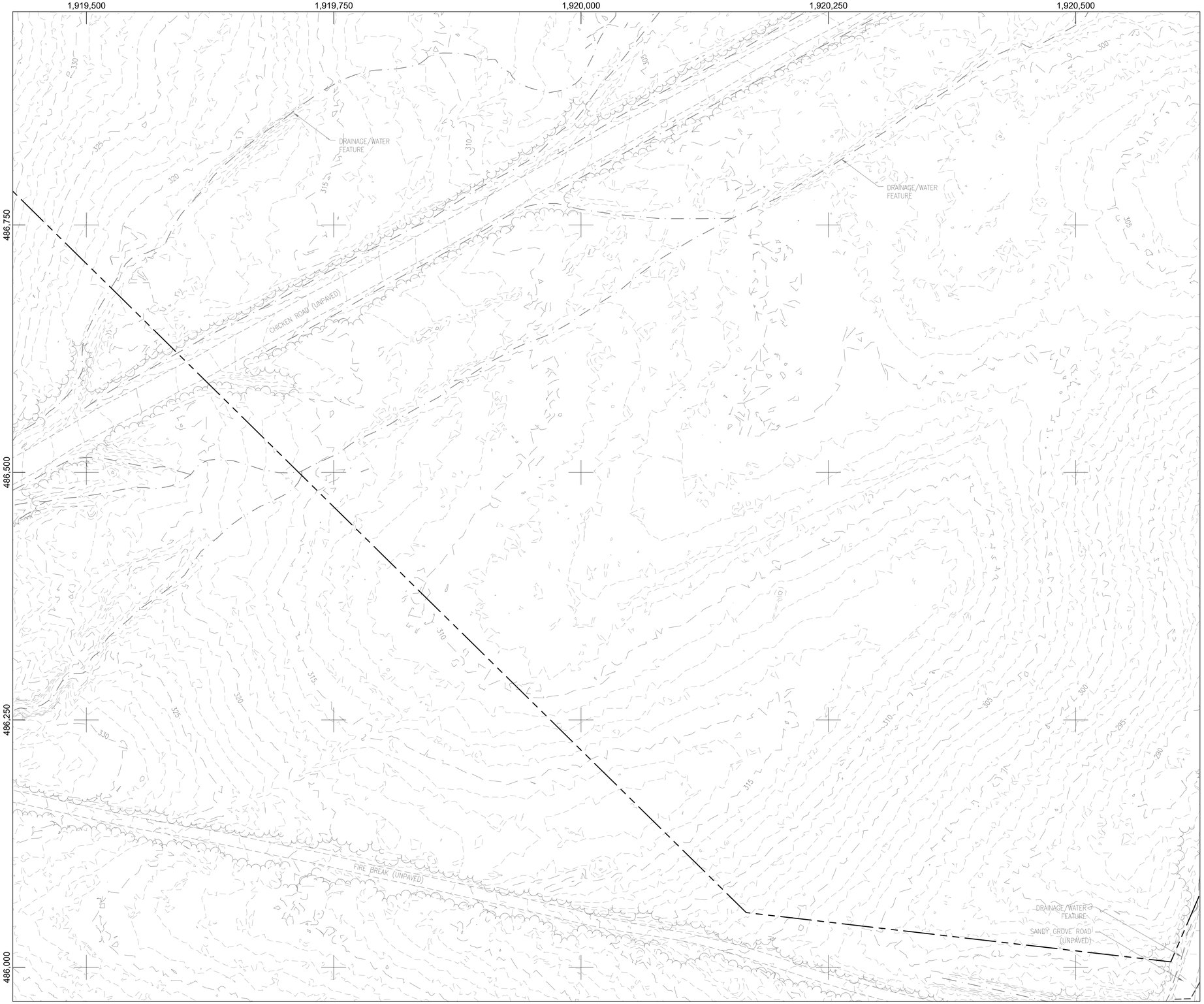
E&SC PLAN

SHEET ID

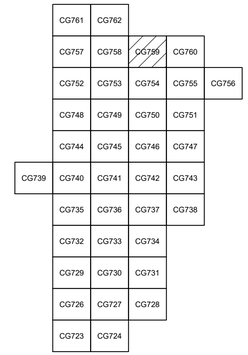
CG758

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG758.DWG



KEY PLAN



NOTES:

1. SEE SHEET CG719A FOR E&SC LEGEND.
2. ALL DISTURBED AREAS SHALL BE STABILIZED TEMPORARILY AND PERMANENTLY USING APPROVED SEEDING MIXTURES LISTED IN SPECIFICATION SECTION 32 92 19. SEE ALSO THE GROUND STABILIZATION CHART ON SHEET CG764.

7-DAY GROUND COVER AREAS

7-DAY GROUND COVER AREAS (SYMBOL ALSO DENOTES EROSION CONTROL MATTING - SEE EROSION CONTROL LEGEND ON SHEET CG719A)

GRAPHIC SCALE

50' 25' 0 50' 100'

SCALE: 1" = 50'-0"

N

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	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)
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E&SC PLAN

SHEET ID

CG759

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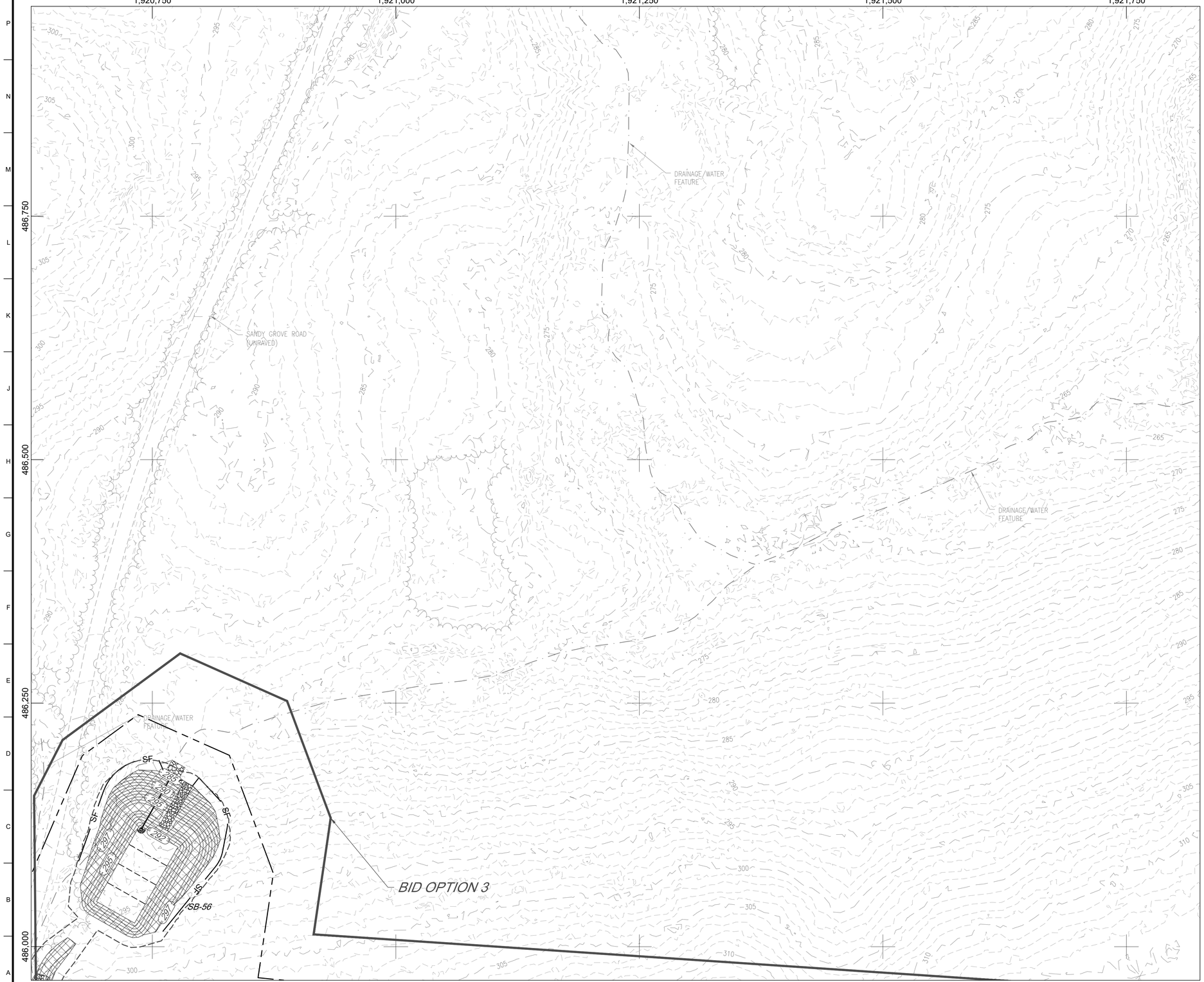

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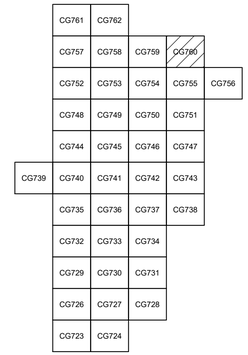

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GRAPHIC SCALE

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SCALE: 1" = 50'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

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CG760

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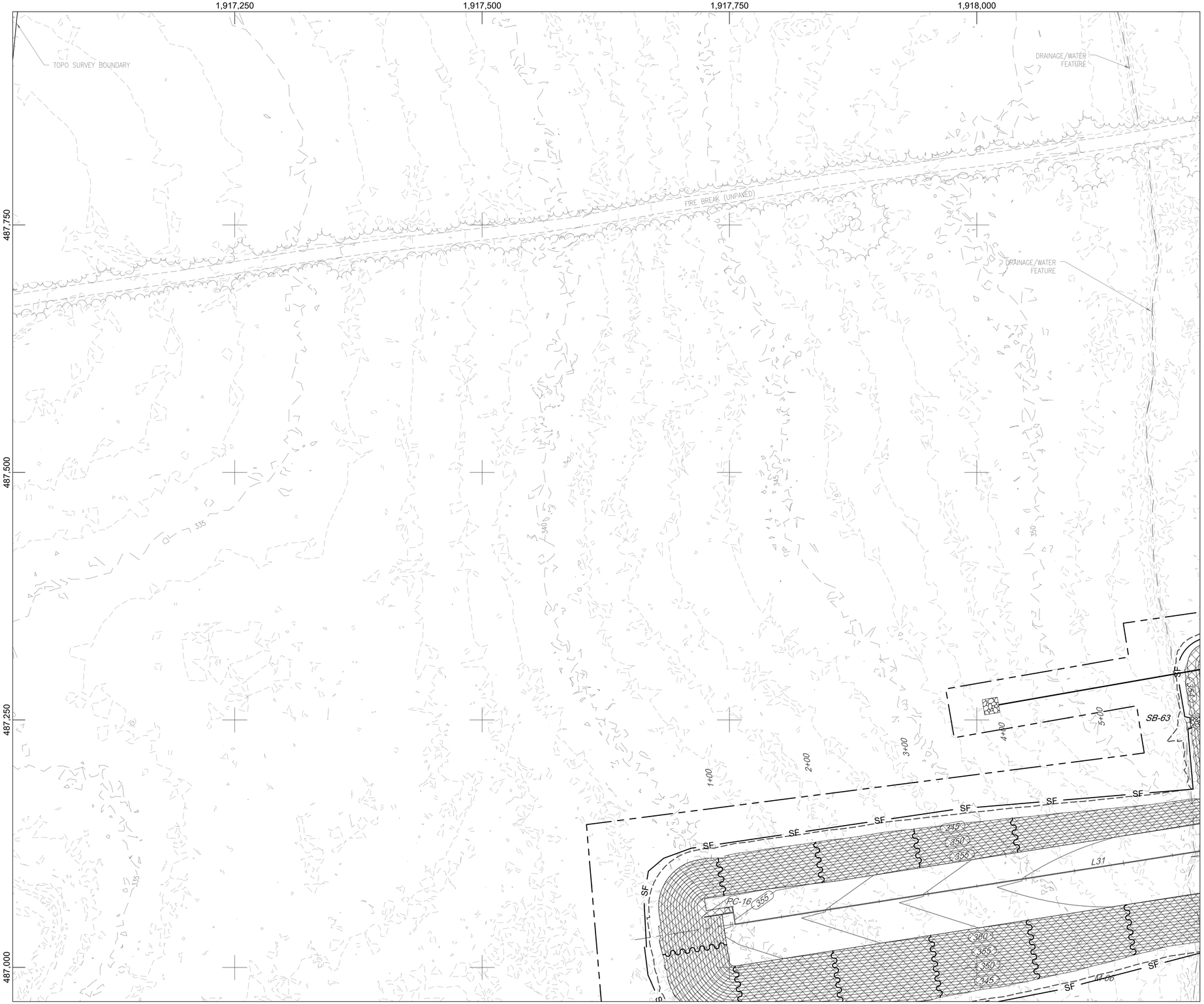

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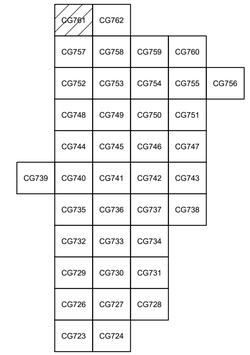

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GRAPHIC SCALE

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US Army Corps of Engineers®

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DRAWN BY: B.J. JOHNSON
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SOLICITATION NO.: W912HN-24-B-3002
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SHEET ID
CG761

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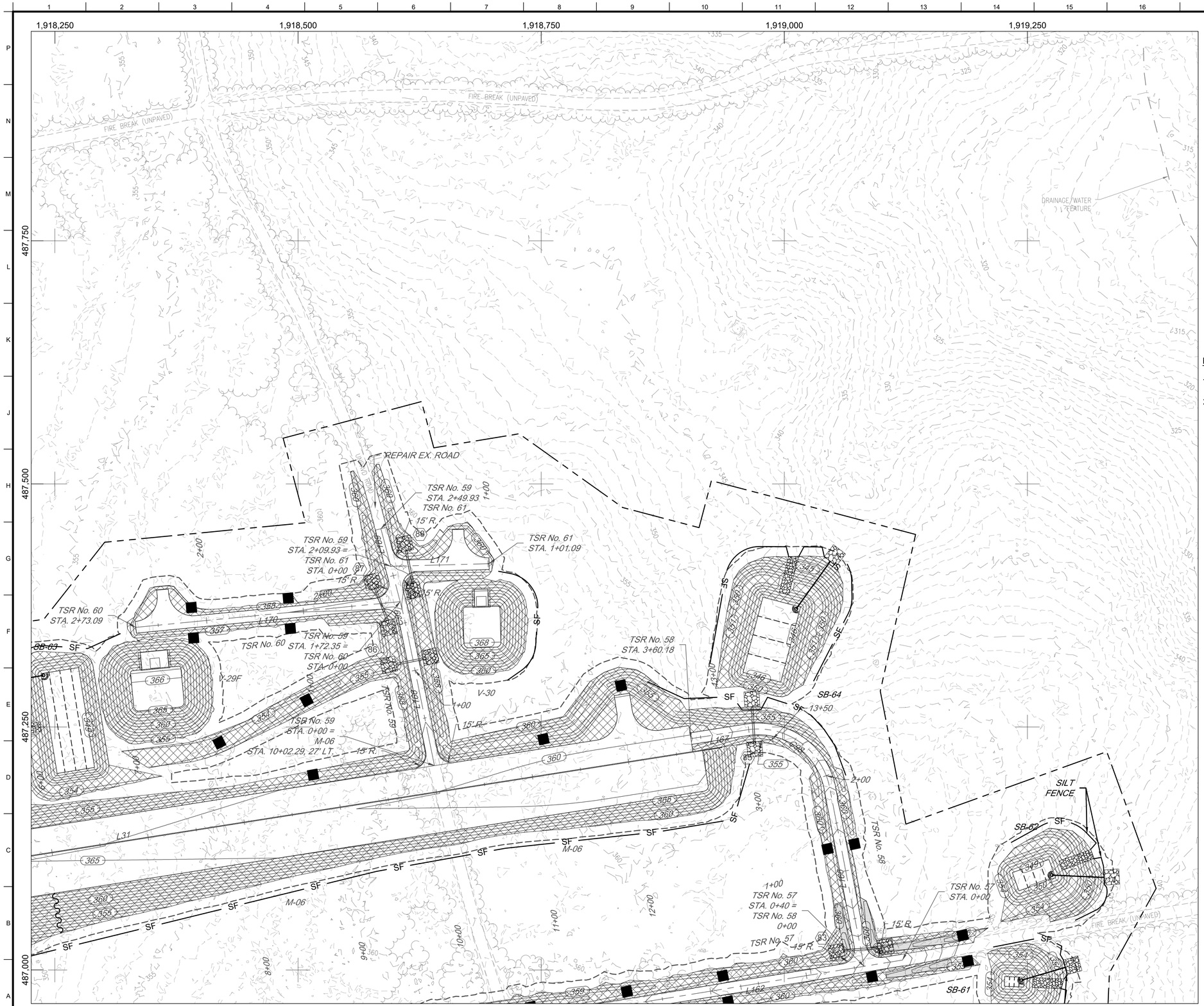

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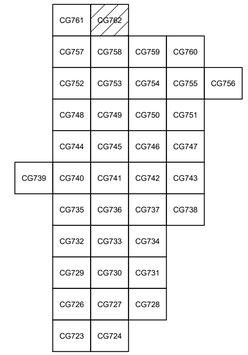

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DESIGNED BY: K. SANDERS
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QUALITY CONTROL BY: ANS/D

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E&SC PLAN

SHEET ID

CG762

READY TO ADVERTISE (RTA)

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COE STANDARD EROSION AND SEDIMENT CONTROL NOTES

THE CORPS OF ENGINEERS REQUIRES THAT THESE NOTES, IN THEIR ENTIRETY, BE INCLUDED ON THE EROSION AND SEDIMENT CONTROL PLAN. IT IS RECOGNIZED THAT EVERY NOTE MAY NOT APPLY TO ALL PROJECTS. THE REQUIREMENT OF ANY INDIVIDUAL NOTE NOT APPLICABLE TO THE SUBJECT PROJECT IS NOT BINDING UPON THE APPLICANT OR THE APPLICANT'S CONTRACTOR.

1. THE CONTRACTOR SHALL NOTIFY THE COE ENVIRONMENTAL SPECIALIST AT (910-396-1211 X 223) SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE COE, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF COE.

2. THE CONTRACTOR MUST NOTIFY COE IN WRITING AND BY TELEPHONE AT THE FOLLOWING POINTS:

   2.A. THE REQUIRED PRE-CONSTRUCTION MEETING.

   2.B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES.

   2.C. DURING THE INSTALLATION OF SEDIMENT BASINS (TO BE CONVERTED INTO PERMANENT STORMWATER MANAGEMENT STRUCTURES) AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION OF EACH STEP IS MANDATORY.

   2.D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).

   2.E. PRIOR TO REMOVAL OF ALL SEDIMENT CONTROL DEVICES.

   2.F. PRIOR TO FINAL ACCEPTANCE.

3. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE AND SHALL HAVE THEM INSPECTED AND APPROVED BY THE SEDIMENT AND EROSION CONTROL INSPECTOR PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES. MINOR SEDIMENT CONTROL DEVICE LOCATION ADJUSTMENTS MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE COE INSPECTOR. THE CONTRACTOR SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM COE INSPECTOR. THE CONTRACTOR MUST OBTAIN PRIOR COE APPROVAL FOR CHANGES TO THE SEDIMENT CONTROL PLAN AND / OR SEQUENCE OF CONSTRUCTION.

4. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.

5. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIMES AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM COE INSPECTOR. ALL SEDIMENT BASINS EMBANKMENTS AND SLOPES, PERIMETER DIKES, SWALES AND ALL DISTURBED SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES, AS SOON AS POSSIBLE BUT NO LATER THAN (7 TO14) CALENDAR DAYS AFTER ESTABLISHMENT. ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT FOR STABILIZATION MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.)

6. THE CONTRACTOR SHALL APPLY SOD OR SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS AND STOCKPILES WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED IN THE AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. (REQUIREMENT MAY BE REDUCED TO THREE (3) DAYS FOR SENSITIVE AREAS.) NOTE: EARTHEN MATERIAL STOCKPILES MUST BE LOCATED 50 FEET FROM STORM DRAINS AND STREAMS.

7. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE CONTRACTOR SHALL STABILIZE AND HAVE ESTABLISHED PERMANENT STABILIZATION FOR ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHERE THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS (3:1 OR FLATTER) BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE, BUT NOT LATER THAN 14 CALENDAR DAYS AFTER ESTABLISHMENT. DPW FORT BRAGG SEEDING SPECS SHALL BE USED FOR ALL TEMPORARY AND PERMANENT SEEDING WITH THE EXCEPTION OF ANY DISTURBANCE IN WETLAND AREAS. FOR WETLAND AREAS THE ENDANGERED SPECIES BRANCH WILL GIVE GUIDANCE AND HAS THEIR OWN SEED SPECS TO BE USED IN WETLAND AREAS.

8. THE SITE'S APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, DAILY LOG BOOKS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF COE, WMB AND NCDENR RESPONSIBLE FOR PROJECT.

9. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING PROTECTIVE DEVICES TO CONVEY THE WATER DOWNSLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF A CUT OR FILL SLOPE UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. PROTECTIVE METHODS MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

10. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING, RIP-RAP, OR BY OTHER APPROVED STABILIZATION MEASURES. TEMPORARY SEDIMENT CONTROL DEVICES MAY BE REMOVED, WITH PERMISSION OF THE SEDIMENT AND EROSION CONTROL INSPECTOR, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

11. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.

12. FOR FINISHED GRADING, THE CONTRACTOR SHALL PROVIDE ADEQUATE GRADIENTS TO PREVENT WATER FROM PONDING FOR MORE THAN TWENTY FOUR (24) HOURS AFTER THE END OF A RAINFALL EVENT. DRAINAGE COURSES AND SWALE FLOW AREAS MAY TAKE AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL EVENT TO DRAIN. AREAS DESIGNED TO HAVE STANDING WATER SHALL NOT BE REQUIRED TO MEET THIS REQUIREMENT.

13. SEDIMENT BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A FOUNDATION THAT EXISTS OR IS UNDER CONSTRUCTION. NO STRUCTURE MAY BE CONSTRUCTED WITHIN 20 FEET OF AN ACTIVE SEDIMENT BASIN.

14. THE SEDIMENT AND EROSION CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SAFETY OR SEDIMENT CONTROL MEASURES, IF DEEMED NECESSARY.

15. ALL BASIN DEPTH DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. ALL BASINS MUST HAVE A STABLE OUTFALL. ALL BASINS SHALL HAVE STABLE INFLOW POINTS.

16. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. REFER TO APPROPRIATE FORT BRAGG SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, SODDING, AND GROUND COVERS.

17. SEDIMENT SHALL BE REMOVED AND BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE QUARTER OF THE TOTAL DEPTH OF THE TRAP OR BASIN. TOTAL DEPTH SHALL BE MEASURED FROM THE BASIN BOTTOM TO THE CREST OF THE OUTLET.

18. SEDIMENT REMOVED FROM SEDIMENT SKIMMER BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN, WETLAND OR TREE-SAVE AREA. WHEN PUMPING SEDIMENT LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO A SEDIMENT TRAPPING DEVICE PRIOR TO RELEASE FROM THE SITE. A SUMP PIT MAY BE USED IF SEDIMENT SKIMMER BASINS THEMSELVES ARE BEING PUMPED OUT. ALL WATER REMOVED FROM EXCAVATED AREAS (E.G. UTILITY TRENCHES) SHALL BE PASSED THROUGH AN APPROVED DEWATERING PRACTICE OR PUMPED TO A SEDIMENT TRAP OR BASIN PRIOR TO DISCHARGE FROM THE SITE (I.E. VIA FUNCTIONAL STORM DRAIN SYSTEM OR TO STABLE GROUND SURFACE).

19. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY ENGINEER OR COE INSPECTOR:

   19.A. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH.

   19.B. TRENCHES FOR UTILITY INSTALLATION SHALL BE BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY, UNLESS;

   19.C. TEMPORARY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

20. WHERE DEEMED APPROPRIATE BY THE ENGINEER OR INSPECTOR, SEDIMENT SKIMMER BASINS MAY NEED TO BE SURROUNDED WITH AN APPROVED SAFETY FENCE. THE FENCE MUST CONFORM TO LOCAL ORDINANCES AND REGULATIONS. THE DEVELOPER OR OWNER SHALL CHECK WITH LOCAL BUILDING OFFICIALS ON APPLICABLE SAFETY REQUIREMENTS. WHERE SAFETY FENCE IS DEEMED APPROPRIATE AND LOCAL ORDINANCES DO NOT SPECIFY FENCING SIZES AND TYPES, THE FOLLOWING SHALL BE USED AS A MINIMUM STANDARD: THE SAFETY FENCE MUST BE MADE OF WELDED WIRE AND AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THAN 2 INCHES IN WIDTH AND 4 INCHES IN HEIGHT WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED AND IN GOOD CONDITION AT ALL TIMES.

21. OFF-SITE SPOIL OR BORROW AREAS ON STATE OR FEDERAL PROPERTY MUST HAVE PRIOR APPROVAL BY COE AND OTHER APPLICABLE STATE, FEDERAL, AND LOCAL AGENCIES; OTHERWISE APPROVAL MUST BE GRANTED BY THE LOCAL AUTHORITIES. ALL WASTE AND BORROW AREAS OFF-SITE MUST BE PROTECTED BY SEDIMENT CONTROL MEASURES AND STABILIZED.

22. SITES WHERE INFILTRATION DEVICES ARE USED FOR THE CONTROL OF STORMWATER, EXTREME CARE MUST BE TAKEN TO PREVENT RUNOFF FROM UN-STABILIZED AREAS FROM ENTERING THE STRUCTURE DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES PLACED IN INFILTRATION AREAS MUST HAVE BOTTOM ELEVATIONS AT LEAST TWO (2) FEET HIGHER THAN THE FINISH GRADE BOTTOM ELEVATION OF THE INFILTRATION PRACTICE. WHEN CONVERTING A SEDIMENT BASIN TO AN INFILTRATION DEVICE, ALL ACCUMULATED SEDIMENT MUST BE REMOVED AND DISPOSED OF PRIOR TO FINAL GRADING OF INFILTRATION DEVICE.

23. WHEN A STORM DRAIN SYSTEM OUTFALL IS DIRECTED TO A SEDIMENT SKIMMER BASIN AND THE SYSTEM IS TO BE USED FOR TEMPORARILY CONVEYING SEDIMENT LADEN WATER, ALL STORM DRAIN INLETS IN NON-SUMP AREAS SHALL HAVE TEMPORARY ASPHALT BERMS CONSTRUCTED AT THE TIME OF BASE PAVING TO DIRECT GUTTER FLOW INTO THE INLETS TO AVOID SURCHARGING AND OVERFLOW OF INLETS IN SUMP AREAS.

24. PURSUANT TO G.S. 113A-57(2), THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION DEVICES OR STRUCTURES. IN ANY EVENT PERIMETER DIKES, SWALES, DITCHES, 3:1 SLOPES AND HIGH QUALITY WATER ZONES WILL WITHIN 7 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUNDCOVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

25. PURSUANT TO G.S. 113A-57(3), PROVISIONS FOR PERMANENT GROUNDCOVER SUFFICIENT TO RESTRAIN EROSION FOR ALL DISTURBED AREAS WITH SLOPES 3:1 OR FLATTER MUST BE INITIATED WITHIN 14 WORKING DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

26. SITE INFORMATION:

   26.A. TOTAL AREA OF FACILITY (BASE, CAMPUS, PARK, ETC.) = 702 ACRES

   26.B. TOTAL AREA OF PROJECT SITE = 702 ACRES

   26.C. AREA DISTURBED = 176 ACRES

   26.D. AREA TO BE ROOFED = 0 ACRES. AREA TO BE PAVED (ASPHALT+ CONCRETE) = 1.27 ACRES.

   26.E. TOTAL CUT = LUMP SUM BID

   26.F. TOTAL FILL = LUMP SUM BID

   26.G. OFF-SITE WASTE / BORROW AREA LOCATION = N/A. ALL EXCAVATION MATERIAL WILL BE OBTAINED ON-SITE WITHIN THE CONSTRUCTION LIMITS.

27. CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, AND STREAMS. NO PAINT OR LIQUID WASTES IN STORM DRAINS OR STREAMS.

28. NOTE: LAND QUALITY EROSION CONTROL PERMIT AND DWQ NCG01 PERMIT ARE TWO VERY SEPARATE PERMITS WITH SPECIFIC REQUIREMENTS FOR EACH. THESE ARE TWO SEPARATE SETS OF RECORDS TO BE MAINTAINED AT THE CONTRACTOR'S OFFICE SUBJECT TO PERIODIC INSPECTIONS.

29. PLEASE NOTATE ON THE PLAN DRAWINGS THE RESPONSIBLE PARTY FOR CONTINUING TO MAINTAIN THE ON-SITE RAIN GAUGE & DATA AND STORMWATER INSPECTION LOG SHEETS IN THE CONTRACT SPECIFICATIONS AND ON THE DRAWINGS. THESE NCLQ & NCDWQ PERMITS INFORMATION MUST BE COLLECTED AND MAINTAINED UNTIL NCDENR LAND QUALITY HAS CLOSED THE PROJECT WHICH COULD TAKE UP TO A YEAR AFTER COMPLETED CONSTRUCTION.

GENERAL SEDIMENT STORAGE CALCULATIONS			
DISTURBED AREA	REQUIRED STORAGE	TOTAL SEDIMENT STORAGE REQUIRED	TOTAL SEDIMENT STORAGE PROVIDED
176 ACRES	67 CY/ACRE	11,792 CY	25,947 CY

NOTES :

1. SEE SHEETS CG777 THROUGH CG782 FOR SEDIMENT BASIN CALCULATIONS.

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.
2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL 11/20/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

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U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT
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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

E&SC PLAN
COE STANDARD NOTES

SHEET ID
CG763

G:\CLEANSTUFF-15-28115376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG763.DWG

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CONSTRUCTION SEQUENCE NARRATIVE

1. THE CONTRACTOR SHALL NOTIFY THE USACE AREA OFFICE ENVIRONMENTAL COORDINATOR AT (910-396-1211 EXTENSION 223) SEVEN (7) DAYS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN USACE PROJECT REPRESENTATIVES AND A REPRESENTATIVE OF DPW WATER MANAGEMENT BRANCH (WMB).
2. INSTALL GRAVEL CONSTRUCTION ENTRANCES PER E&SC PLANS.
3. CLEAR VEGETATION NECESSARY TO INSTALL PERIMETER CONTROL BMPs TO INCLUDE SILT FENCE AND SEDIMENT BASINS.
4. INSTALL PERIMETER SILT FENCE AND SEDIMENT BASINS PER E&SC PLANS.
5. REQUEST INSPECTION OF INSTALLED CONTROLS BY USACE AND WMB.
6. AS SOON AS SILT FENCE AND SEDIMENT BASIN INSTALLATION HAS BEEN APPROVED, THE CONTRACTOR MAY PROCEED WITH DEMOLITION, CLEARING, AND GRADING OPERATIONS.
7. DURING THE GRADING PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL:
   a. INSTALL SILT FENCE IN ADDITION TO THE PERIMETER FENCE ALREADY INSTALLED REGARDING CONSTRUCTION OF TARGETS, FIRING POSITIONS, AND BUILDINGS.
   b. INSTALL EROSION CONTROL NETTING AND TEMPORARY SEEDING ON SLOPES 3:1 AND GREATER.
   c. INSTALL INLET AND OUTLET STABILIZATION AS WELL AS ROCK PIPE INLET PROTECTION FOR CULVERTS IMMEDIATELY AFTER PLACEMENT.
   d. INSTALL CHECK DAMS IN ROADSIDE DITCHES.
   e. INSTALL TEMPORARY SEEDING TO ANY DISTURBED AREA PER THE GROUND STABILIZATION CHART ON THIS SHEET TO PREVENT EROSION. THE CONTRACTOR MAY ELECT TO INSTALL BOTH TEMPORARY AND PERMANENT SEEDING SIMULTANEOUSLY.
8. CONTRACTOR SHALL INSPECT ALL DEVICES DAILY AND AFTER EVERY RAIN EVENT AND SHALL MAINTAIN THE DEVICES ACCORDING TO THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL. ANY REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
9. INSTALL PERMANENT SEEDING TO ALL DISTURBED AREAS.
10. REQUEST INSPECTION OF GRADED AREAS BY USACE AND WMB.
11. AFTER DISTURBED AREAS ARE STABILIZED, AS APPROVED BY THE CONTRACTING OFFICER, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY BMPs. THE CONTRACTOR SHALL STABILIZE THE AREAS DISTURBED DURING THE REMOVAL OPERATION BY PLACING PERMANENT VEGETATION IN ALL DISTURBED AREAS.

PROJECT REQUIREMENT & DESCRIPTION

REQUIREMENT

FORT BRAGG WAS SELECTED TO RECEIVE THE MOBILE PROTECTED FIREPOWER (MPF) VEHICLE IN 2024 AND CURRENTLY HAS NO FACILITY TO SUPPORT MOUNTED GUNNERY OF ANY TYPE. UNITS ARE CURRENTLY REQUIRED TO TRAVEL AWAY FROM FORT BRAGG IN ORDER TO TRAIN ON MOUNTED GUNNERY. FORT BRAGG CURRENTLY HAS A REQUIREMENT FOR 4 MPTRs, BUT HAS ZERO ON HAND. CURRENT RANGES CANNOT SUPPORT THE TRAINING REQUIREMENT DUE TO THE NUMBER OF MOUNTED UNITS STATIONED AT FORT BRAGG. RANGE REQUIREMENTS HAVE INCREASED DRASTICALLY OVER THE LAST 10 YEARS DUE TO CHANGES IN FORCE STRUCTURE.

DESCRIPTION

THE MPTR IS USED TO TRAIN AND TEST CREWS AND DISMOUNTED INFANTRY SQUADS ON THE SKILLS NECESSARY TO DETECT, IDENTIFY, ENGAGE, AND DEFEAT STATIONARY AND MOVING TARGETS IN A TACTICAL ARRAY. IT WILL SATISFY THE TRAINING AND QUALIFICATION REQUIREMENTS FOR MOUNTED GUNNERY AND MPF SECTION TRAINING AND QUALIFICATION. THE MPTR WILL SUPPORT TRAINING REQUIREMENTS OF THE ARMY ON MOUNTED 7.62, .50 CAL, MK19, AND NEXT GENERATION SQUAD WEAPONS.

PHASE OF WORK

THIS E&SC PLAN ONLY COVERS WORK IN THE DOWNRANGE AREA WHICH INCLUDES BASELINE ROAD AND ALL AREAS NORTH. THE AREAS SOUTH OF THE BASELINE AND UTILITY INSTALLATION ALONG PLANK ROAD ARE DESIGNED BY USACE IN VOLUMES 1 AND 2 OF THESE CONTRACT PLANS.

SITE DESCRIPTION

EXISTING CONDITIONS

THE PROJECT SITE IS LOCATED APPROXIMATELY 2.25 MILES WEST OF THE INTERSECTION OF RAEFORD VASS ROAD AND PLANK ROAD IN THE WESTERNMOST RANGE COMPLEX IN FORT BRAGG, HOKE COUNTY, NORTH CAROLINA.

THE SITE IS MOSTLY UNDEVELOPED AND IS HEAVILY WOODED. THERE ARE 3 ESTABLISHED DIRT/GRAVEL ROADS IN THE FOOTPRINT INCLUDING SANDY GROVE ROAD (RUNS NORTH/SOUTH), CHICKEN ROAD (RUNS EAST/WEST), AND SOUTHERN PINE ROAD (RUNS NORTHWEST/SOUTHEAST). SANDY GROVE ROAD BISECTS THE PROJECT ALONG A RIDGE LINE. FIRE BREAKS RUNNING EAST/WEST ARE SPACED APPROXIMATELY 1,000 FEET APART THROUGHOUT. THERE ARE EXISTING TRAINING BUILDINGS ALONG THE EXISTING JONES LZ IN THE NORTHWEST QUADRANT OF THE SITE.

THE SITE INCLUDES VARIOUS ENVIRONMENTAL FEATURES INCLUDING WETLANDS, RCW TREES, HISTORICAL/ARCHEOLOGICAL SITES, AND T&ES PLANTS. IMPACTS TO EACH ARE BEING ANALYZED BY FORT BRAGG IN AN ENVIRONMENTAL ASSESSMENT.

TERRAIN IS ROLLING AND DROPS OFF SHARPLY ON EITHER SIDE OF SANDY GROVE ROAD. ELEVATIONS RANGE FROM 210 TO 362 FEET MAKING MANY AREAS UNUSABLE WITHOUT MASSIVE EARTHWORK. THE SITE GENERALLY DRAINS FROM THE RIDGE LINE TO THE EAST TO UNNAMED TRIBUTARIES TO JUNIPER CREEK AND TO THE WEST TO UNNAMED TRIBUTARIES TO ROCKFISH CREEK.

DEMOLITION

NO REAL PROPERTY WILL BE DEMOLISHED TO SUPPORT THIS PROJECT. ONLY MINOR DEMOLITION OF NON-REAL PROPERTY IS ANTICIPATED.

CLEARING IS REQUIRED TO ENSURE LOS FROM DEFENSIVE AND OFFENSIVE BATTLE POSITIONS TO TARGETS, FROM DEFENSIVE AND OFFENSIVE BATTLE POSITIONS TO RANGE LIMIT MARKERS, AND FROM CAMERA TOWERS TO RANGE FEATURES. TO MEET THIS REQUIREMENT, THE ENTIRE PROJECT FOOTPRINT WILL BE CLEAR-CUT. GRUBBING IS ONLY REQUIRED IN AREAS OF INTRUSIVE WORK. BEFORE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR WILL BE REQUIRED TO CLEAR ANY VEGETATION THAT HAS GROWN BACK SINCE THE INITIAL PHASE OF CONSTRUCTION. THIS IS NECESSARY TO ENSURE UNOBSTRUCTED LOS.

FORT BRAGG FORESTRY WILL HARVEST ALL MERCHANTABLE TIMBER BY SEPARATE CONTRACT. THEY WILL NOT PERFORM ANY GRUBBING.

PROPOSED SITE

THE PROPOSED SITE IN THE DOWNRANGE AREA INCLUDES CONSTRUCTION OF STATIONARY INFANTRY TARGETS, MOVING INFANTRY TARGETS, STATIONARY ARMOR TARGETS, MOVING ARMOR TARGETS, FACADES, TRENCHES, MACHINE GUN BUNKERS, URBAN CLUSTER, RANGE LIMIT MARKERS, CAMERA TOWERS, BORESHIGHT PANEL, SCREENING/BORESIGHT PAD, AGGREGATE ROADS, CONCRETE TURNING PADS, DOWNRANGE ELECTRICAL AND COMMUNICATIONS, STORM DRAINAGE, EARTHWORK, EROSION CONTROL, CLEARING AND GRUBBING, AND ALL OTHER APPURTENANCES NOT SPECIFICALLY LISTED HERE.

GROUND STABILIZATION

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

WETLANDS

IMPACTS

1. 0.31 ACRES OF IMPACTS DUE TO EARTHWORK / GRADING JUST SOUTH OF MAT M-05. THIS IS NECESSARY FOR LINE OF SIGHT.
2. 8.81 ACRES OF IMPACTS DUE TO CLEARING. IT IS RANGE CONTROL'S DESIRE TO CLEAR CUT THE ENTIRE RANGE FOOTPRINT FOR LINE OF SIGHT.
3. TOTAL WETLAND IMPACTS IS 9.12 ACRES.

PERMITTING

1. USACE 404 PERMIT - USACE WILMINGTON DETERMINED THAT THE 0.31 ACRES OF IMPACT DUE TO EARTHWORK / GRADING TO BE ISOLATED AND NON-JURISDICTIONAL; THEREFORE, NO 404 PERMIT IS REQUIRED. NO 404 PERMIT IS REQUIRED FOR THE 8.81 ACRES OF IMPACTS DUE TO CLEARING.
2. NCDEQ PERMIT - THE 0.31 ACRES OF ISOLATED WETLAND IMPACTS IS COVERED UNDER THE STATE GENERAL PERMIT FOR IMPACTS TO ISOLATED AND OTHER NON-404 JURISDICTIONAL WETLANDS AND SUFACE WATERS (PERMIT # IWGP100000) DATED DECEMBER 1, 2017. NCDEQ WILL NOT REGULATE THE 8.81 ACRES OF IMPACTS DUE TO CLEARING AS LONG AS THERE IS NO SOIL DISTURBANCE OR FILL (GRADING AND GRUBBING) IN THOSE AREAS.

RESTRICTIONS

1. FOR WORK IN THE 0.31 ACRES OF ISOLATED WETLAND IMACTS WHERE EARTHWORK / GRADING IS NECESSARY TO COMPLETE THE WORK, THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE GENERAL PERMIT FOR IMPACTS TO ISOLATED AND OTHER NON-404 JURISDICTIONAL WETLANDS AND SUFACE WATERS (PERMIT # IWGP100000) DATED DECEMBER 1, 2017.
2. FOR WORK IN THE 8.81 ACRES OF WETLAND IMPACTS WHERE CLEARING IS NECESSARY TO COMPLETE THE WORK, NO SOIL DISTURBANCE OR FILL (GRADING AND GRUBBING) IS ALLOWED.
3. CONTRACTOR SHALL COORDINATE WITH DPW ENVIRONMENTAL MANAGEMENT BRANCH (EMB) THROUGH THE CONTRACTING OFFICER BEFORE BEGINNING ANY ASPECT OF CONSTRUCTION IN ANY AREA WHERE THE RESTRICTIONS NOTED IN THIS ARTICLE APPLY.

GROUNDWATER TABLES

1. GROUNDWATER TABLES NEAR AND IN THE WETLAND AREAS MAY BE HIGH DURING CONSTRUCTION. IF THIS IS ENCOUNTERED, DEWATERING TO LOWER AND CONTROL GROUNDWATER TABLE LEVELS TO FACILITATE CONSTRUCTION WILL BE REQUIRED PER SPECIFICATION SECTION 31 00 00.

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.
2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 173-45-01
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E&SC PLAN
NARRATIVE, NOTES, & DESCRIPTIONS

SHEET ID
CG764

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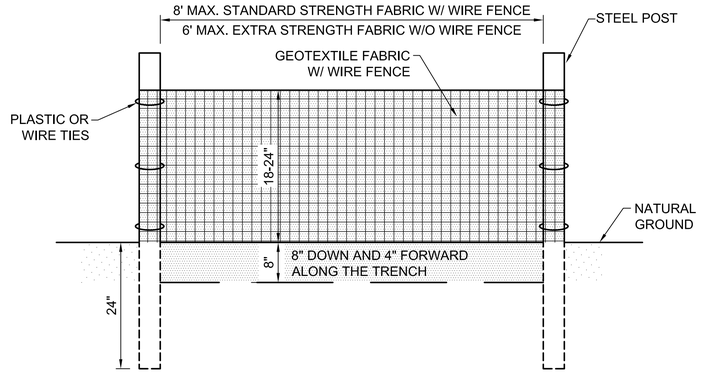

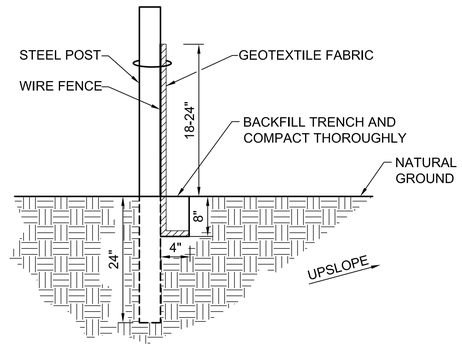

SILT FENCE (PRACTICE 6.62)

N.T.S.

NOTES:

1. USE A SYNTHETIC FIBER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461. SYNTHETIC FIBER SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120° F.
2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/LINEAR FT STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING TO FABRIC.
3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM OF 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.
4. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
5. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.
6. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
7. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
8. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
9. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
10. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
11. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
12. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
13. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.
14. SLICING METHOD - INSTEAD OF EXCAVATING A TRENCH, PLACING FABRIC AND THEN BACKFILLING TRENCH, SEDIMENT FENCE MAY BE INSTALLED USING SPECIALLY DESIGNED EQUIPMENT THAT INSERTS FABRIC INTO A CUT SLICED IN THE GROUND WITH A DISC.
15. THE BASE OF BOTH END POSTS SHOULD BE AT LEASE ONE FOOT HIGHER THAN THE MIDDLE OF THE FENCE. CHECK WITH A LEVEL IF NECESSARY.
16. INSTALL POSTS 4 FEET APART IN CRITICAL AREAS AND 6 FEET APART ON STANDARD APPLICATIONS.
17. INSTALL POSTS 2 FEET DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC, ENABLING POSTS TO SUPPORT THE FABRIC FROM UPSTREAM WATER PRESSURE.
18. INSTALL POSTS WITH THE NIPPLES FACING AWAY FROM THE SILT FABRIC.
19. ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITHIN THE TOP 8 INCHES OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART. ALSO, EACH TIE SHOULD BE POSITIONED TO HAND ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.
20. WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
21. NO MORE THAN 24 INCHES OF A 36 INCH FABRIC IS ALLOWED ABOVE GROUND LEVEL.
22. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION.
23. COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQUARE INCH. COMPACT THE UPSTREAM SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF 4 TRIPS.
24. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
25. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IF PROMPTLY.
26. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
27. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.
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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE: 170-45-01
SIZE: ANSI D	FILE NAME:

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E&SC PLAN
SILT FENCE DETAILS

SHEET ID
CG765

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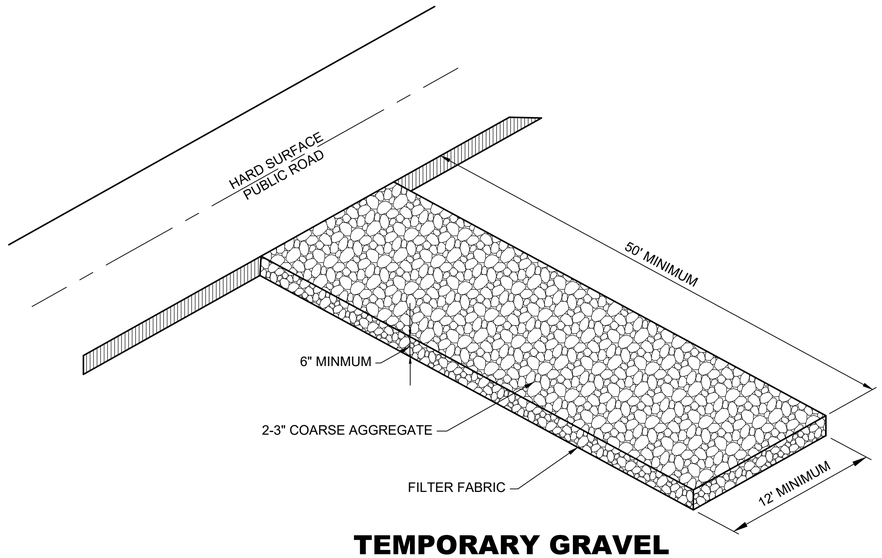

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT (PRACTICE 6.06)

N.T.S.

NOTES:

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATION SUBJECT TO SEEPAGE OR HIGH WATER TABLE.
5. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

NOTES:

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E&SC PLAN
CONSTRUCTION EXIT DETAILS

SHEET ID

CG766

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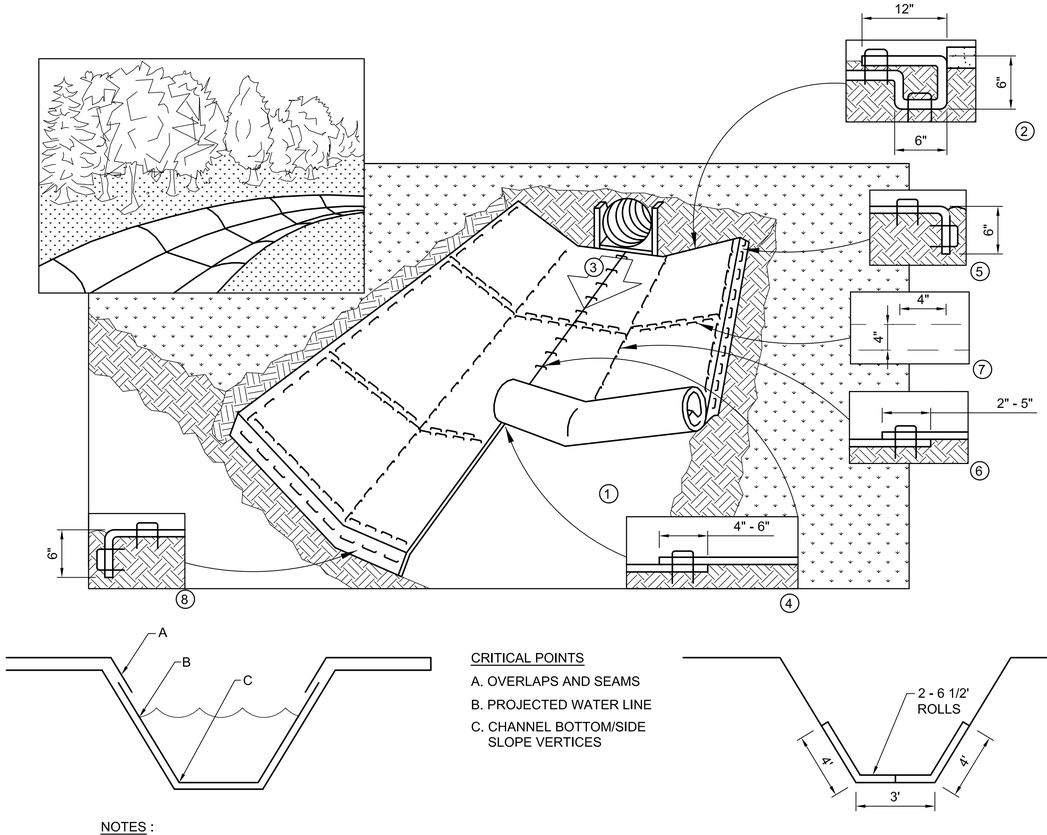
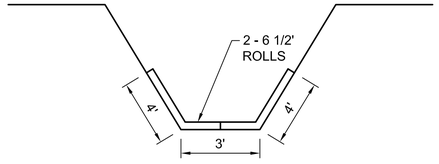


CRITICAL POINTS

A. OVERLAPS AND SEAMS

B. PROJECTED WATER LINE

C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

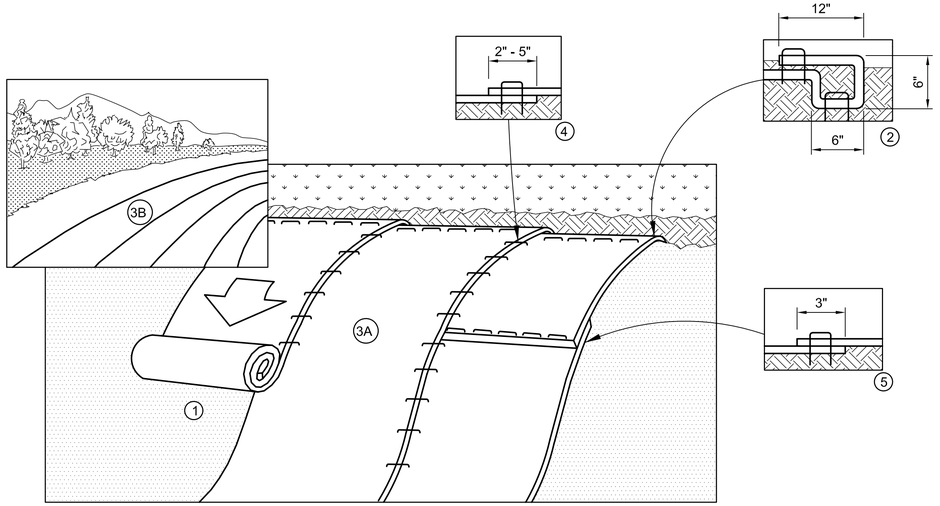


NOTES :

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL BLANKETS IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE MANUFACTURER'S INSTRUCTIONS.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4" - 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (DEPENDING ON BLANKET TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' - 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
9. HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
10. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS. FOLLOW THE MANUFACTURER'S INSTRUCTIONS.
11. CHANNEL STABILIZATION SHALL BE INSTALLED IN ALL DITCHES EXCEEDING 3% BUT NOT GREATER THAN 6% GRADE.
12. CHANNEL STABILIZATION SHALL BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL.
13. INSPECT ROLLED EROSION CONTROL PRODUCTS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. REPAIR IMMEDIATELY.
14. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED, AND EROSION MUST NOT OCCUR BENEATH THE RECP.
15. ANY AREAS OF THE RECP THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
16. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
17. MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

CHANNEL STABILIZATION (PRACTICE 6.17)

N.T.S.



NOTES :

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE MANUFACTURER'S INSTRUCTIONS.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS. FOLLOW THE MANUFACTURER'S INSTRUCTIONS.
7. EROSION CONTROL MATTING SHALL BE INSTALLED ON ALL SLOPES 3:1 AND GREATER AND IN ANY OTHER AREAS AS SHOWN ON THE EROSION CONTROL PLAN SHEETS.
8. EROSION CONTROL MATTING SHALL BE NORTH AMERICAN GREEN S75 OR APPROVED EQUAL.
9. INSPECT ROLLED EROSION CONTROL PRODUCTS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. REPAIR IMMEDIATELY.
10. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED, AND EROSION MUST NOT OCCUR BENEATH THE RECP.
11. ANY AREAS OF THE RECP THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
12. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
13. MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

EROSION CONTROL MATTING (PRACTICE 6.17)

N.T.S.

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.

2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL 11/20/23 SEAL 045805 ENGINEER KENNETH L. SANDERS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS	ISSUE DATE: NOVEMBER 2023
DRAWN BY: B.J. JOHNSON	SOLICITATION NO.: W912HN-24-B-3002
CHECKED BY: B. BRADLEY	CONTRACT NO.:
SUBMITTED BY: B. BRADLEY	CATEGORY CODE:
SIZE: ANSI D	FILE NAME: 170-45-01

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

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

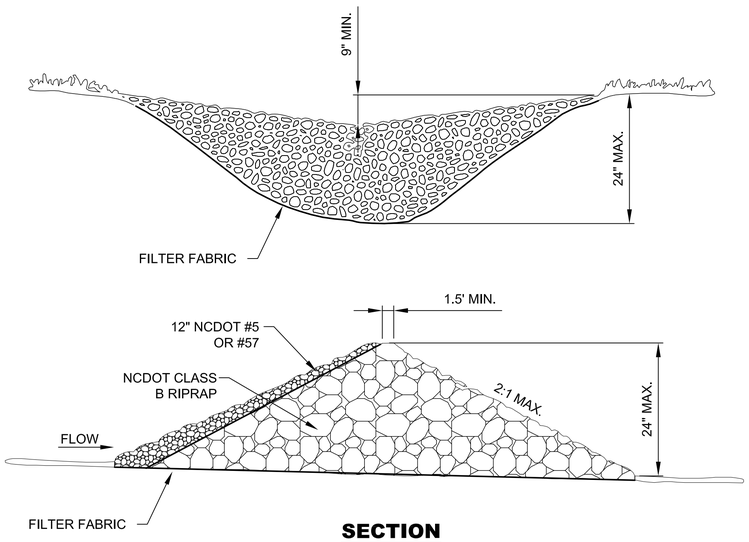
E&SC PLAN
EROSION CONTROL MATTING &
CHANNEL STABILIZATION DETAILS

SHEET ID

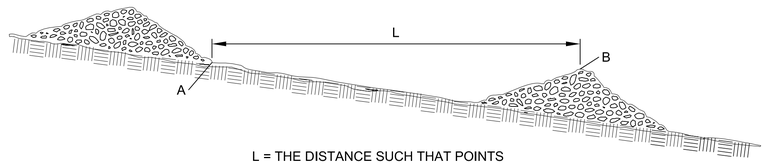
CG767

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTRWIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG7767.DWG



SECTION



L = THE DISTANCE SUCH THAT POINTS
A AND B ARE OF EQUAL ELEVATION

SPACING BETWEEN CHECK DAMS

CHECK DAM (PRACTICE 6.83)

N.T.S.

NOTES:

1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
2. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
3. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
4. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOE ELEVATION OF THE UPPER DAM.
5. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.
6. MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
7. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
8. INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
9. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN SUCH AS, INSTALLING A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL.
10. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.
2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

US Army Corps of Engineers®

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

E&SC PLAN
CHECK DAM DETAILS

SHEET ID

CG768

READY TO ADVERTISE (RTA)

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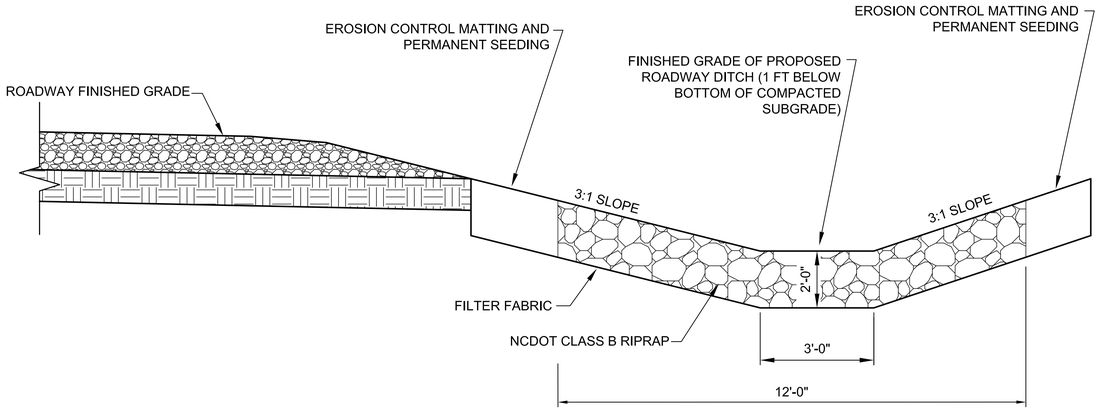

RIPRAP CHANNEL (PRACTICE 6.31)

SCALE: N.T.S.

NOTES :

1. CLEAR THE FOUNDATION AREA OF TREES, STUMPS, ROOTS, LOOSE ROCK, AND OTHER OBJECTIONABLE MATERIAL.

2. EXCAVATE THE CROSS SECTION TO THE LINES AND GRADES OF THE FOUNDATION OF THE LINER AS SHOWN ON THE PLANS. BRING OVER-EXCAVATED AREAS TO GRADE BY INCREASING THE THICKNESS OF TH ELINER OR BY BACKFILLING WITH MOIST SOIL COMPACTED TO THE DENSITY OF THE SURROUNDING MATERIAL.

3. PLACE FILTER FABRIC IMMEDIATELY AFTER SLOPE PREPARATION. PLACE THE FILTER FABRIC DIRECTLY ON THE PREPARED FOUNDATION. OVERLAP THE EDGES 12 INCHES MINIMUM, AND SPACE ANCHOR PINS EVERY 3 FT ALONG THE OVERLAP. BURY THE UPSTREAM END OF THE FABRIC A MINIMUM OF 12 INCHES BELOW GROUND AND WHERE NECESSARY, BURY THE LOWER END OF THE FABRIC OR OVERLAP WITH THE NEXT SECTION AS REQUIRED. TAKE CARE NOT TO DAMAGE THE FABRIC WHEN PLACING RIPRAP. IF DAMAGE OCCURS, REMOVE THE RIPRAP AND REPAIR THE SHEET BY ADDING ANOTHER LAYER OF FABRIC WITH A MINIMUM OVERLAP OF 12 INCHES AROUND THE DAMAGED AREA. IF EXTENSIVE DAMAGE IS SUSPECTED, REMOVE AND REPLACE THE ENTIRE SHEET.

4. PLACEMENT OF RIPRAP SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF FILTER FABRIC. PLACE RIPRAP SO THAT IT FORMS A DENSE, WELL-GRADED MASS OF STONE WITH A MINIMUM OF VOIDS. THE DESIRED DISTRIBUTION OF STONES THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY AND CONTROLLED DUMPING DURING FINAL PLACEMENT. PLACE RIPRAP TO ITS FULL THICKNESS IN ONE OPERATION. DO NOT PLACE RIPRAP BY DUMPING THROUGH CHUTES OR OTHER METHODS THAT CAUSE SEGREGATION OF STONE SIZES. TAKE CARE NOT TO DISLODGE THE UNDERLYING FILTER FABRIC WHEN PLACING STONES.

5. THE TOE OF THE RIPRAP SLOPE SHOULD BE KEYED TO A STABLE FOUNDATION AS ITS BASE. THE TOE SHOULD BE EXCAVATED TO A DEPTH OF 1.5 TIMES THE DESIGN THICKNESS OF THE RIPRAP AND SHOULD EXTEND HORIZONTALLY FROM THE SLOPE.

6. THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL STONE OR CLUSTERS OF LARGE STONES. HAND PLACING MAY BE NECESSARY TO ACHIEVE THE PROPER DISTRIBUTION OF STONE SIZES TO PRODUCE A RELATIVELY SMOOTH, UNIFORM SURFACE. THE FINISHED GRADE OF THE RIPRAP SHOULD BLEND WITH THE SURROUNDING AREA. NO OVERFALL OR PROTRUSION OF RIPRAP SHOULD BE APPARENT.

7. PERFORM ALL CHANNEL CONSTRUCTION TO KEEP EROSION AND WATER POLLUTION TO A MINIMUM. IMMEDIATELY UPON COMPLETION OF THE CHANNEL, VEGETATE ALL DISTURBED AREAS OR OTHERWISE PROTECT THEM AGAINST SOIL EROSION. WHERE CHANNEL CONSTRUCTION WILL TAKE LONGER THAN 30 DAYS, STABILIZE CHANNELS BY REACHES.

8. INSPECT CHANNELS AT REGULAR INTERVALS AS WELL AS AFTER MAJOR RAINS, AND MAKE REPAIRS PROMPTLY. GIVE SPECIAL ATTENTION TO THE OUTLET AND INLET SECTIONS AND OTHER POINTS WHERE CONCENTRATED FLOW ENTERS. CAREFULLY CHECK STABILITY AT ROAD CROSSINGS, AND LOOK FOR INDICATIONS OF PIPING, SCOUR HOLES, OR BANK FAILURES. MAKE REPAIRS IMMEDIATELY. MAINTAIN ALL VEGETATION ADJACENT TO THE CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR DURING OUT-OF-BAN FLOW.

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.

2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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:	NOVEMBER 2023
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VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
RIPRAP CHANNEL DETAILS

SHEET ID

CG769

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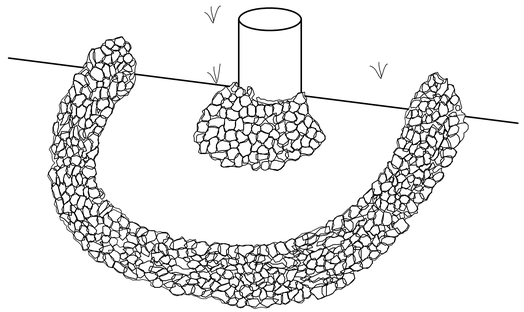

ROCK DOUGHNUT INLET PROTECTION
(PRACTICE 6.54)

SCALE: N.T.S.

NOTES :

1. CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SOIL.
2. GRADE SHALLOW DEPRESSION UNIFORMLY TOWARDS THE PIPE INVERT WITH SIDE SLOPES NO GREATER THAN 2:1. GRADE A 1-FOOT WIDE LEVEL AREA SET 4 INCHES BELOW THE AREA ADJACENT TO THE PIPE INVERT.
3. INSTALL THE CLASS B OR CLASS 1 RIPRAP IN A HORSESHOE AROUND THE INLET. THE MINIMUM CREST WIDTH OF THE RIPRAP SHOULD BE 19 INCHES, WITH A MINIMUM BOTTOM WIDTH OF 7.5 FEET. THE MINIMUM HEIGHT OF THE STONE IS 2 FEET.
4. THE OUTSIDE FACE OF THE RIPRAP IS THEN LINED WITH 12 INCHES OF NC DOT #5 OR #57 WASHED STONE.
5. INSPECT AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY.
6. TO PROVIDE SATISFACTORY INLET PROTECTION EFFICIENCY, REMOVE SEDIMENT FROM THE SEDIMENT POOL AREA WHEN THE VOLUME IS DECREASED BY HALF. STABILIZE EXCAVATED MATERIAL APPROPRIATELY.
7. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE STRUCTURE DURING SEDIMENT REMOVAL. REMOVE DEBRIS FROM THE INLET AND REPLACE WITH STONE AS NEEDED.
8. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND DISPOSE OF SEDIMENT PROPERLY. BRING THE DISTURBED AREA TO THE GRADE OF THE DROP INLET. SMOOTH AND COMPACT AS NEEDED.
9. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET WITH PERMANENT VEGETATION.
10. INSTALL ROCK DOUGHNUT INLET PROTECTION AT BASE OF RISER PIPES IN ALL SEDIMENT BASINS.
11. INSPECT AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY.
12. TO PROVIDE SATISFACTORY INLET PROTECTION EFFICIENCY, REMOVE SEDIMENT FROM THE SEDIMENT POOL AREA WHEN THE VOLUME IS DECREASED BY HALF. THIS WILL HELP PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN. STABILIZE EXCAVATED MATERIAL APPROPRIATELY.
13. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE STRUCTURE DURING SEDIMENT REMOVAL. REMOVE DEBRIS FROM THE INLET AND REPLACE STONE AS NEEDED. IF THE INLET WAS COVERED WITH WIRE MESH, THE MESH SHOULD BE CLEANED OF DEBRIS.
14. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND DISPOSE OF SEDIMENT PROPERLY. BRING THE DISTURBED AREA TO THE GRADE OF THE INLET. SMOOTH AND COMPACT AS NEEDED.
15. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET WITH GROUND COVER.

NOTES:

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

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DRAWN BY: B.J. JOHNSON
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ROCK DOUGHNUT INLET PROTECTION DETAILS

SHEET ID
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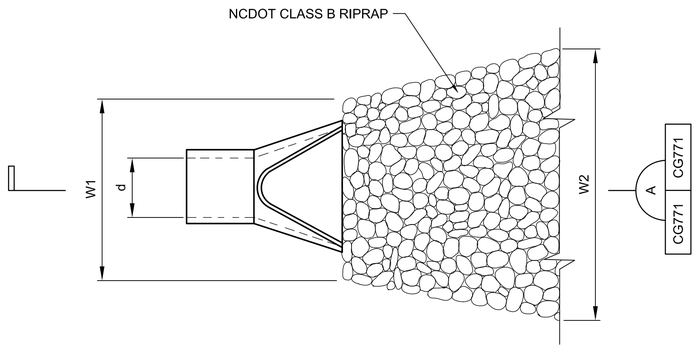

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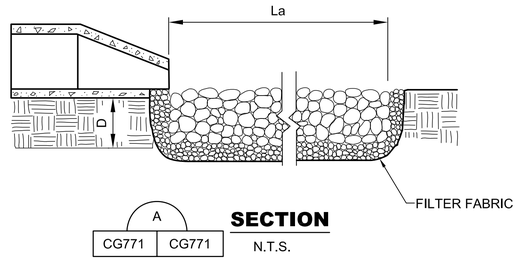
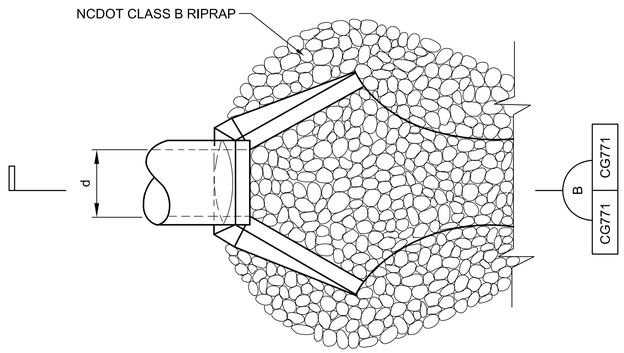


SECTION

N.T.S.

NO WELL-DEFINED CHANNEL



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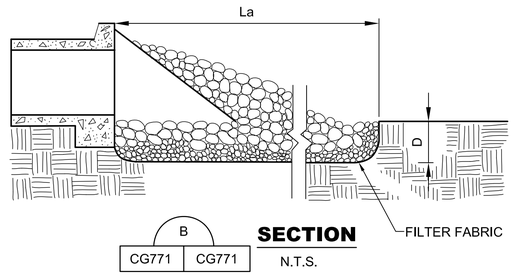

SECTION

N.T.S.

WELL-DEFINED CHANNEL

OUTLET STABILIZATION STRUCTURE (PRACTICE 6.41)

N.T.S.

NOTES:

1. RIPRAP SHALL BE PLACED IN ACCORDANCE WITH NOTES FOR RIPRAP CHANNELS ON SHEET CG769.
2. CONSTRUCT THE APRON ON ZERO GRADE WITH NO OVERFILL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.
3. ENSURE THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM AND PREFERABLY STRAIGHT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON.
4. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION.
5. PROVIDE INLET STABILIZATION ON THE INLET SIDE OF ALL CULVERTS. INLET STABILIZATION SHALL BE THE SAME SIZE AND SPECIFICATIONS AS THE OUTLET STABILIZATION, EXCEPT THAT La SHALL BE HALF THE LENGTH.
6. SEE SHEET CG772 & CG772A FOR CALCULATIONS.
7. INSPECT WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

NOTES:

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E&SC PLAN
OUTLET STABILIZATION STRUCTURE DETAILS

SHEET ID

CG771

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CULVERT #	d (IN)	FLOW RATE (CFS)	VELOCITY (FPS)	TAILWATER CONDITION	La (FT)	W1 (FT)	W2 (FT)	d50 (IN)	D (IN)	DEFINED CHANNEL
1	30	28.62	11.60	MIN	25	NOTE 7	NOTE 7	6	24	YES
2	24	17.11	9.52	MIN	20	NOTE 7	NOTE 7	6	24	YES
3	24	11.01	8.46	MIN	15	NOTE 7	NOTE 7	6	24	YES
4	18	0.40	2.83	MIN	10	NOTE 7	NOTE 7	6	24	YES
5	84	425.03	21.04	MIN	50	21	57	6	36	NO
6	36	57.79	14.36	MIN	30	9	33	6	24	NO
7	72	348.08	18.96	MIN	50	18	56	6	36	NO
8	18	0.87	3.58	MIN	10	4.5	11.5	6	24	NO
9	18	0.43	2.83	MIN	10	4.5	11.5	6	24	NO
10	18	3.18	5.15	MIN	10	4.5	11.5	6	24	NO
11	18	1.83	4.37	MIN	10	NOTE 7	NOTE 7	6	24	YES
12	18	4.24	5.62	MIN	10	NOTE 7	NOTE 7	6	24	YES
13	30	35.99	11.40	MIN	25	7.5	27.5	6	24	NO
14	24	16.94	14.19	MIN	20	6	22	6	24	NO
15	24	20.20	8.14	MIN	20	6	22	6	24	NO
16	30	28.79	9.07	MIN	25	7.5	27.5	6	24	NO
17	36	45.84	11.21	MIN	30	9	33	6	24	NO
18	36	43.85	10.02	MIN	30	NOTE 7	NOTE 7	6	24	YES
19	18	2.01	6.39	MIN	10	NOTE 7	NOTE 7	6	24	YES
20	18	9.60	10.67	MIN	15	NOTE 7	NOTE 7	6	24	YES
21	30	22.05	9.87	MIN	25	NOTE 7	NOTE 7	6	24	YES
22	36	48.28	12.00	MIN	30	NOTE 7	NOTE 7	6	24	YES
23	24	16.57	7.80	MIN	20	NOTE 7	NOTE 7	6	24	YES
24	24	20.27	8.90	MIN	20	NOTE 7	NOTE 7	6	24	YES
25	18	6.77	9.18	MIN	15	4.5	16.5	6	24	NO
26	24	13.36	11.01	MIN	20	6	22	6	24	NO
27	24	10.57	7.05	MIN	20	NOTE 7	NOTE 7	6	24	YES
28	18	7.88	13.09	MIN	15	4.5	16.5	6	24	NO
29	18	1.30	4.47	MIN	10	NOTE 7	NOTE 7	6	24	YES
30	18	2.51	4.83	MIN	10	NOTE 7	NOTE 7	6	24	YES
31	24	12.54	7.38	MIN	20	NOTE 7	NOTE 7	6	24	YES
32	18	1.78	4.35	MIN	10	NOTE 7	NOTE 7	6	24	YES
33	30	33.34	10.71	MIN	25	NOTE 7	NOTE 7	6	24	YES
34	24	13.67	7.52	MIN	20	6	22	6	24	NO
35	18	6.74	6.22	MIN	15	4.5	16.5	6	24	NO
36	18	5.43	5.93	MIN	15	NOTE 7	NOTE 7	6	24	YES
37	18	6.12	6.08	MIN	15	NOTE 7	NOTE 7	6	24	YES
38	24	16.84	7.83	MIN	20	NOTE 7	NOTE 7	6	24	YES
39	24	9.99	6.94	MIN	20	NOTE 7	NOTE 7	6	24	YES
40	30	23.99	8.63	MIN	25	NOTE 7	NOTE 7	6	24	YES
41	36	59.19	10.63	MIN	30	NOTE 7	NOTE 7	6	24	YES
42	18	2.38	4.72	MIN	10	NOTE 7	NOTE 7	6	24	YES
43	36	52.93	15.18	MIN	30	9	33	6	24	NO
44	54	140.27	17.01	MIN	40	13.5	44.5	6	36	NO
45	OMITTED									

CULVERT #	d (IN)	FLOW RATE (CFS)	VELOCITY (FPS)	TAILWATER CONDITION	La (FT)	W1 (FT)	W2 (FT)	d50 (IN)	D (IN)	DEFINED CHANNEL
46	18	1.06	3.79	MIN	10	NOTE 7	NOTE 7	6	24	YES
47	18	1.86	4.44	MIN	10	NOTE 7	NOTE 7	6	24	YES
48	18	1.49	6.51	MIN	10	NOTE 7	NOTE 7	6	24	YES
49	24	11.09	7.11	MIN	20	NOTE 7	NOTE 7	6	24	YES
50	18	7.97	7.92	MIN	15	NOTE 7	NOTE 7	6	24	YES
51	24	17.57	7.90	MIN	20	NOTE 7	NOTE 7	6	24	YES
52	30	28.64	10.48	MIN	25	NOTE 7	NOTE 7	6	24	YES
53	36	55.28	10.48	MIN	30	NOTE 7	NOTE 7	6	24	YES
54	18	0.83	4.52	MIN	10	NOTE 7	NOTE 7	6	24	YES
55	24	13.98	7.53	MIN	20	NOTE 7	NOTE 7	6	24	YES
56	18	8.46	6.61	MIN	15	NOTE 7	NOTE 7	6	24	YES
57	30	27.75	8.91	MIN	25	NOTE 7	NOTE 7	6	24	YES
58	30	27.42	8.89	MIN	25	NOTE 7	NOTE 7	6	24	YES
59	24	0.95	3.52	MIN	20	NOTE 7	NOTE 7	6	24	YES
60	48	105.49	12.47	MIN	40	NOTE 7	NOTE 7	6	36	YES
61	18	1.97	4.56	MIN	10	NOTE 7	NOTE 7	6	24	YES
62	24	11.42	7.14	MIN	20	NOTE 7	NOTE 7	6	24	YES
63	18	2.93	5.09	MIN	10	NOTE 7	NOTE 7	6	24	YES
64	24	16.70	7.86	MIN	20	NOTE 7	NOTE 7	6	24	YES
65	42	74.69	11.38	MIN	35	NOTE 7	NOTE 7	6	24	YES
66	42	82.97	11.68	MIN	35	NOTE 7	NOTE 7	6	24	YES
67	18	0.61	3.11	MIN	10	NOTE 7	NOTE 7	6	24	YES
68	24	17.26	7.89	MIN	20	NOTE 7	NOTE 7	6	24	YES
69	30	24.15	8.72	MIN	25	NOTE 7	NOTE 7	6	24	YES
70	18	6.06	6.13	MIN	15	NOTE 7	NOTE 7	6	24	YES
71	18	2.53	4.87	MIN	10	NOTE 7	NOTE 7	6	24	YES
72	18	8.33	6.58	MIN	15	NOTE 7	NOTE 7	6	24	YES
73	18	6.89	6.30	MIN	15	NOTE 7	NOTE 7	6	24	YES
74	24	13.51	7.51	MIN	20	NOTE 7	NOTE 7	6	24	YES
75	24	17.33	7.92	MIN	20	NOTE 7	NOTE 7	6	24	YES
76	24	17.98	7.96	MIN	20	NOTE 7	NOTE 7	6	24	YES
77	30	25.59	8.77	MIN	25	NOTE 7	NOTE 7	6	24	YES
78	18	5.97	6.72	MIN	15	NOTE 7	NOTE 7	6	24	YES
79	18	3.86	5.44	MIN	10	NOTE 7	NOTE 7	6	24	YES
80	OMITTED									
81	18	2.77	4.94	MIN	10	NOTE 7	NOTE 7	6	24	YES
82	18	6.62	6.21	MIN	15	NOTE 7	NOTE 7	6	24	YES
83	18	1.86	4.44	MIN	10	NOTE 7	NOTE 7	6	24	YES
84	OMITTED									
85	18	6.00	12.62	MIN	15	4.5	16.5	6	24	NO
86	18	3.52	5.33	MIN	10	NOTE 7	NOTE 7	6	24	YES
87	18	0.73	3.34	MIN	10	NOTE 7	NOTE 7	6	24	YES
88	18	0.74	3.38	MIN	10	NOTE 7	NOTE 7	6	24	YES
89	18	0.44	3.93	MIN	10	NOTE 7	NOTE 7	6	24	YES
90	30	39.41	9.50	MIN	25	NOTE 7	NOTE 7	6	24	YES

NOTES:

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2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NOTES :

1. d = PIPE DIAMETER
2. La = APRON LENGTH
3. W1 = WIDTH OF THE APRON AT THE PIPE OUTLET
4. W2 = DOWNSTREAM WIDTH OF THE APRON
5. d50 = AVERAGE STONE DIAMETER
6. D = RIPRAP DEPTH
7. FOR PIPES DISCHARGING DIRECTLY INTO WELL-DEFINED CHANNELS, THE APRON SHALL EXTEND ACROSS THE CHANNEL BOTTOM AND UP THE CHANNEL BANKS TO THE TOP OF THE BANK.
8. PROVIDE INLET STABILIZATION ON THE INLET SIDE OF ALL CULVERTS. INLET STABILIZATION SHALL BE THE SAME SIZE AND SPECIFICATIONS AS THE OUTLET PROTECTION, EXCEPT THAT La SHALL BE HALF THE LENGTH.
9. SEE DETAILS ON SHEET CG771.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L SANDERS
11/20/23

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
ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

E&SC PLAN
OUTLET STABILIZATION STRUCTURE CALCULATIONS

SHEET ID
CG772

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG772.DWG

SB #	La (FT)	W1 (FT)	W2 (FT)	d50 (IN)	D (IN)	DEFINED CHANNEL
SB-01	15	5	15	6	24	NO
SB-02	15	5	15	6	24	NO
SB-03	15	5	15	6	24	NO
SB-04	15	5	15	6	24	NO
SB-04A	15	5	15	6	36	NO
SB-04B	15	5	15	6	24	NO
SB-05	15	5	15	6	36	NO
SB-05A	15	5	15	6	24	NO
SB-05B	15	5	15	6	24	NO
SB-05C	15	5	15	6	24	NO
SB-06	15	5	15	6	24	NO
SB-07	15	5	15	6	24	NO
SB-08	15	5	15	6	24	NO
SB-09	15	5	15	6	24	NO
SB-10	15	5	15	6	24	NO
SB-11	15	5	15	6	24	NO
SB-11A	15	5	15	6	24	NO
SB-12	15	5	15	6	24	NO
SB-13	15	5	15	6	24	NO
SB-14	15	5	15	6	24	NO
SB-15	15	5	15	6	24	NO
SB-15A	15	5	15	6	24	NO
SB-16	15	5	15	6	24	NO
SB-17	15	5	15	6	24	NO
SB-18	15	5	15	6	24	NO
SB-19	15	5	15	6	24	NO
SB-20	15	5	15	6	24	NO
SB-21	15	5	15	6	24	NO
SB-22	15	5	15	6	24	NO
SB-23	15	5	15	6	24	NO
SB-24	15	5	15	6	24	NO
SB-25	15	5	15	6	24	NO
SB-26	15	5	15	6	24	NO
SB-27	15	5	15	6	24	NO
SB-28	15	5	15	6	24	NO
SB-29	15	5	15	6	24	NO
SB-30	15	5	15	6	24	NO
SB-31	15	5	15	6	24	NO
SB-32	15	5	15	6	24	NO
SB-33	15	5	15	6	24	NO
SB-34	15	5	15	6	24	NO
SB-35	15	5	15	6	24	NO
SB-37	15	5	15	6	24	NO
SB-38	15	5	15	6	36	NO
SB-39	15	5	15	6	24	NO

SB #	La (FT)	W1 (FT)	W2 (FT)	d50 (IN)	D (IN)	DEFINED CHANNEL
SB-40	15	5	15	6	24	NO
SB-41	15	5	15	6	24	NO
SB-42	15	5	15	6	24	NO
SB-43	15	5	15	6	24	NO
SB-44	15	5	15	6	24	NO
SB-45	15	5	15	6	24	NO
SB-46	15	5	15	6	24	NO
SB-48	15	5	15	6	24	NO
SB-49	15	5	15	6	24	NO
SB-49A	15	5	15	6	24	NO
SB-50	OMITTED					
SB-51	15	5	15	6	24	NO
SB-52	15	5	15	6	24	NO
SB-53	15	5	15	6	24	NO
SB-54	OMITTED					
SB-55	15	5	15	6	24	NO
SB-56	15	5	15	6	24	NO
SB-57	15	5	15	6	24	NO
SB-58	15	5	15	6	24	NO
SB-59	15	5	15	6	24	NO
SB-60	15	5	15	6	24	NO
SB-61	15	5	15	6	24	NO
SB-62	15	5	15	6	24	NO
SB-63	15	5	15	6	24	NO
SB-64	15	5	15	6	24	NO

NOTES:

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9. SEE DETAILS ON SHEET CG771.

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/30/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

E&SC PLAN
OUTLET STABILIZATION STRUCTURE CALCULATIONS

SHEET ID
CG772A

READY TO ADVERTISE (RTA)

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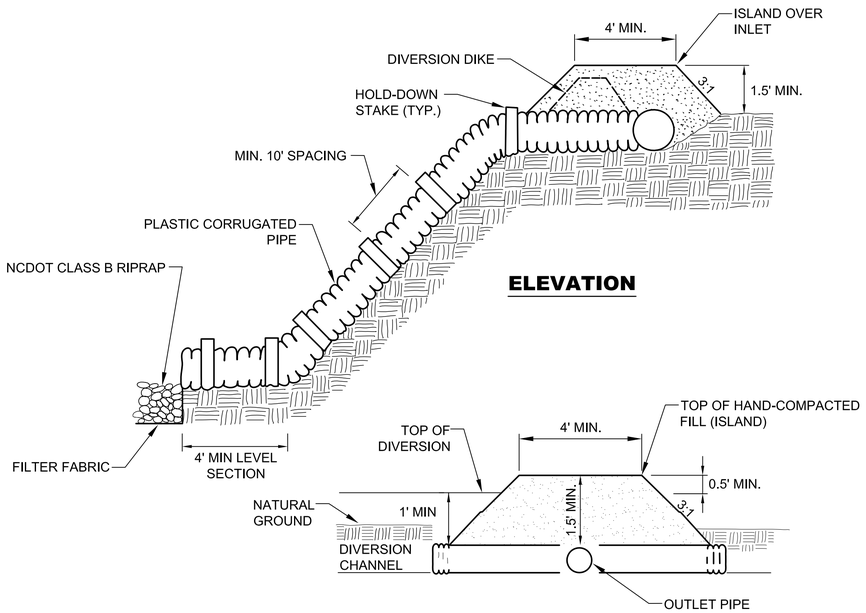

ELEVATION

INLET

TEMPORARY SLOPE DRAIN (PRACTICE 6.32)

SCALE: N.T.S.

NOTES:

1. A COMMON FAILURE OF SLOPE DRAINS IS CAUSED BY WATER SATURATING THE SOIL AND SEEPING ALONG THE PIPE. THIS CREATES VOIDS FROM CONSOLIDATION AND PIPING CAUSES WASH-OUTS. PROPER BACKFILLING AROUND AND UNDER THE PIPE "HAUNCHES" WITH STABLE SOIL MATERIAL AND HAND COMPACTING IN 6-INCH LIFTS TO ACHIEVE FIRM CONTACT BETWEEN THE PIPE AND THE SOIL AT ALL POINTS WILL ELIMINATE THIS TYPE OF FAILURE.

   1.1. PLACE SLOPE DRAINS ON UNDISTURBED SOIL OR WELL-COMPACTED FILL AT LOCATIONS AND ELEVATIONS SHOWN ON THE PLAN.

   1.2. SLIGHTLY SLOPE THE SECTION OF PIPE UNDER THE DIKE TOWARD ITS OUTLET.

   1.3. HAND TAMP THE SOIL UNDER AND AROUND THE ENTRANCE SECTION IN LIFTS NOT TO EXCEED 6 INCHES.

   1.4. ENSURE THAT FILL OVER THE DRAIN AT THE TOP OF THE SLOPE HAS MINIMUM DIMENSIONS OF 1.5 FT. DEPTH, 4 FT. TOP WIDTH, AND 3:1 SIDE SLOPES.

   1.5. ENSURE THAT ALL SLOPE DRAIN CONNECTIONS ARE WATERTIGHT.

   1.6. ENSURE THAT ALL FILL MATERIAL IS WELL-COMPACTED. SECURELY FASTEN THE EXPOSED SECTION OF THE DRAIN WITH GROMMETS OR STAKES SPACED NO MORE THAN 10 FEET APART.

   1.7. PLACE THE DRAIN SLIGHTLY DIAGONALLY ACROSS THE SLOPE, EXTENDING THE DRAIN BEYOND THE TOE OF THE SLOPE. CURVE THE OUTLET UPHILL AND ADEQUATELY PROTECT THE OUTLET FROM EROSION.

   1.8. IF THE DRAIN IS CONVEYING SEDIMENT-LADEN RUN-OFF, DIRECT ALL FLOWS INTO A SEDIMENT TRAP OR SEDIMENT BASIN.

   1.9. MAKE THE SETTLED, COMPACTED DIKE RIDGE NO LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AT EVERY POINT.

   1.10. IMMEDIATELY STABILIZE ALL DISTURBED AREAS FOLLOWING CONSTRUCTION.

2. MAINTENANCE

   INSPECT THE SLOPE DRAIN AND SUPPORTING DIVERSION AFTER EVERY RAINFALL AND PROMPTLY MAKE NECESSARY REPAIRS. WHEN THE PROTECTED AREA HAS BEEN PERMANENTLY STABILIZED AND THE PERMANENT STORMWATER DISPOSAL SYSTEM IS FULLY FUNCTIONAL, TEMPORARY MEASURES MAY BE REMOVED, MATERIALS DISPOSED OF PROPERLY, AND ALL DISTURBED AREAS STABILIZED APPROPRIATELY.

3. DOWNDRAIN SIZES AND VELOCITY DISSIPATION

   3.1. ALL DOWNDRAINS SHALL BE 18" DIAMETER.

   3.2. A 15' WIDE X 15' LONG X 2' THICK RIPRAP DISSIPATION PAD SHALL BE INSTALLED AT THE OUTLET OF EACH DOWNDRAIN. THE PAD SHALL BE PLACED ON FILTER FABRIC AND CONSTRUCTED IN ACCORDANCE WITH THE NOTES SHOWN ON SHEET CG769 FOR RIPRAP CHANNELS.

4. PIPE MATERIAL AND STAKING

   PIPE MATERIAL FOR DRAINS SHALL BE NON-PERFORATED CORRUGATED PLASTIC PIPE. USE REINFORCED, HOLD-DOWN GROMMETS OR STAKES TO ANCHOR THE PIPE AT INTERVALS NOT TO EXCEED 10 FEET WITH THE OUTLET END SECURELY FASTENED IN PLACE. THE PIPE MUST EXTEND BEYOND THE TOE OF THE SLOPE.

NOTES:

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2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
	7	

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: B. BRADLEY
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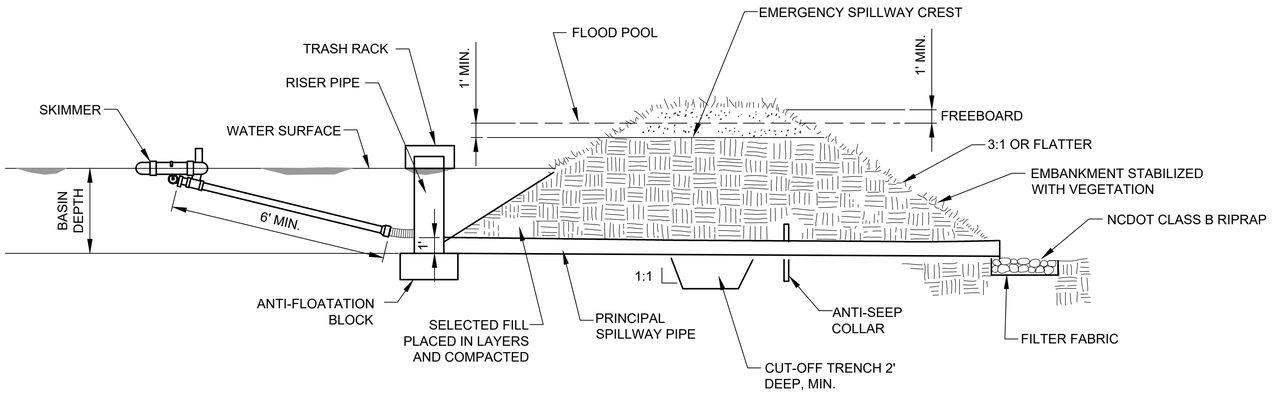
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
TEMPORARY SLOPE DRAIN DETAILS

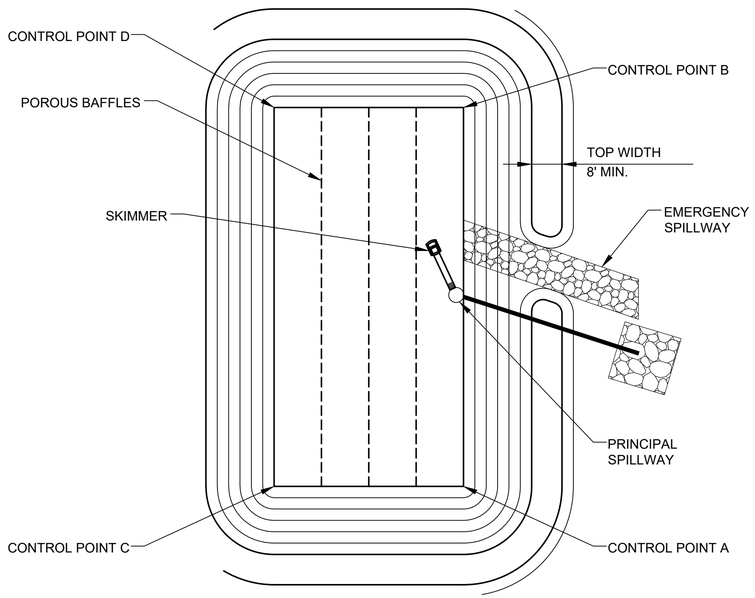
SHEET ID
CG773

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG773.DWG



SECTION



PLAN

SEDIMENT BASIN (PRACTICE 6.61)

SCALE: N.T.S.

NOTES :

1. CLEAR, GRUB, AND STRIP TOPSOIL FROM AREAS UNDER THE EMBANKMENT TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEARING THE POOL AREA UNTIL THE DAM IS COMPLETE AND THEN REMOVE BRUSH, TREES, AND OTHER OBJECTIONABLE MATERIALS TO FACILITATE SEDIMENT CLEANOUT. STOCKPILE ALL TOPSOIL OR SOIL CONTAINING ORGANIC MATTER FOR USE ON THE OUTER SHELL OF THE EMBANKMENT TO FACILITATE VEGETATIVE ESTABLISHMENT. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW THE BASIN AS NEEDED.
2. EXCAVATE A CUT-OFF TRENCH ALONG THE CENTERLINE OF THE EARTH FILL EMBANKMENT. CUT THE TRENCH TO STABLE SOIL MATERIAL, BUT IN NO CASE MAKE IT LESS THAN 2 FT DEEP. THE CUT-OFF TRENCH MUST EXTEND INTO BOTH ABUTMENTS TO AT LEAST THE ELEVATION OF THE RISER CREST. MAKE THE MINIMUM BOTTOM WIDTH WIDE ENOUGH TO PERMIT OPERATION OF THE EXCAVATION AND COMPACTION EQUIPMENT BUT IN NO CASE LESS THAN 2 FEET. MAKE THE SIDE SLOPES OF THE TRENCH NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS ARE THE SAME AS THOSE FOR THE EMBANKMENT. KEEP THE TRENCH DRY DURING BACKFILLING AND COMPACTION OPERATIONS.
3. CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION.
4. SEDIMENT BASINS MAY ATTRACT CHILDREN AND CAN BE DANGEROUS. AVOID STEEP SIDE SLOPES, AND FENCE AND MARK BASINS WITH WARNING SIGNS IF TRESPASSING IS LIKELY. FOLLOW ALL STATE AND LOCAL SAFETY REQUIREMENTS.
5. PLACE THE BARREL ON A FIRM AND IMPERVIOUS SOIL FOUNDATION. DO NOT USE SAND OR GRAVEL AS BACKFILL AROUND THE PIPE.
6. PROVIDE A MINIMUM OF THREE (3) POROUS BAFFLES SPANNING THE BASIN LENGTH AND PERPENDICULAR TO THE INFLOW. TWO BAFFLES MAY BE USED PROVIDED THE BASIN LENGTH IS LESS THAN 20 FEET.
7. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.
8. THE SKIMMER IS TO BE INSTALLED IN THE CELL ADJACENT TO THE BASIN OUTLET.
9. SKIMMER SHALL BE FARICLOTH TYPE OR APPROVED EQUAL. ANY SKIMMER THAT DEWATERS FROM THE SURFACE AT A CONTROLLED RATE IS ACCEPTABLE.
10. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURER'S INSTRUCTIONS.
11. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT FOR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.
12. ENSURE ALL CONDUIT CONNECTIONS ARE WATERTIGHT. ROD AND LUG TYPE CONNECTOR BANDS WITH GASKETS ARE PREFERRED FOR CORRUGATED METAL PIPE TO ASSURE WATERTIGHTNESS UNDER MAXIMUM LOADING AND INTERNAL PRESSURE. DO NO USE DIMPLE (UNIVERSAL) CONNECTORS UNDER ANY CIRCUMSTANCES.
13. INSTALL A TRASH GUARD ON THE TOP OF THE RISER TO PREVENT TRASH AND OTHER DEBRIS FROM CLOGGING THE CONDUIT.
14. EMERGENCY SPILLWAY SHALL BE NCDOT CLASS B RIPRAP. RIPRAP SHALL BE PLACED IN ACCORDANCE WITH NOTES FOR RIPRAP CHANNELS ON SHEET CG769.
15. SEE SHEET CG777 THRU CG782 FOR CALCULATIONS.
16. MANY SEDIMENT BASINS ARE LOCATED ADJACENT TO A ROADSIDE DITCH TO CAPTURE SEDIMENT LADEN FLOW. IN THESE AREAS, THE ROADSIDE DITCH MUST BE FLARED OUT SO THAT THE SEDIMENT LADEN FLOW WILL ENTER THE SEDIMENT BASIN.
17. INSPECT SKIMMER BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.
18. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.
19. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED. IF SO, REMOVE THE DEBRIS.
20. IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.
21. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.
22. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.
23. SEDIMENT BASINS ARE PERMANENT FEATURES UNLESS THEY ARE OTHERWISE SHOWN TO BE CONVERTED TO ANOTHER PERMANENT FEATURE. AFTER ALL UPSTREAM AREAS FROM THE SEDIMENT BASINS ARE PERMANENTLY STABILIZED, REMOVE ALL ACCUMULATED SEDIMENT AND RETURN SEDIMENT BASINS TO DESIGN GRADES. REMOVE BAFFLES. ALL OTHER ITEMS ARE TO REMAIN. PERMANENTLY STABILIZE SEDIMENT BASINS.

NOTES:

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2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: K. SANDERS
DRAWN BY: B.J. JOHNSON
CHECKED BY: B. BRADLEY
SUBMITTED BY: S. BRADLEY
SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

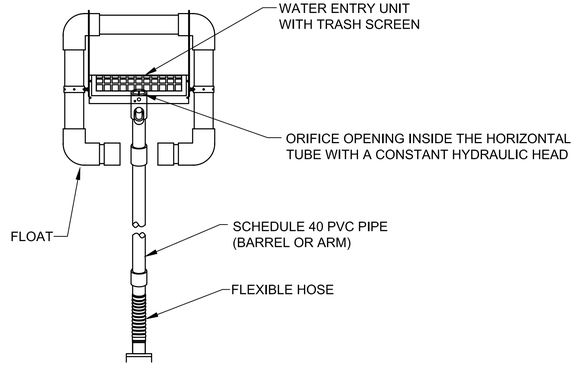
FORT LIBERTY, NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
SEDIMENT BASIN DETAILS

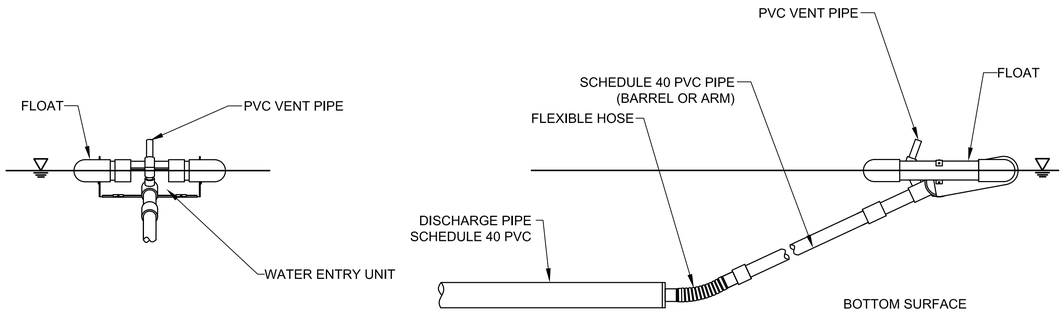
SHEET ID
CG774

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28\15376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG774.DWG



PLAN VIEW



END VIEW

SIDE VIEW

SKIMMER

SCALE: N.T.S.

NOTES :

1. SKIMMER IS TO BE FAIRCLOTH TYPE OR APPROVED EQUAL. ANY SKIMMER THAT DEWATERS FROM THE SURFACE AT A CONTROLLED RATE IS ACCEPTABLE.
2. SEE NOTES ON SHEET CG774 FOR SEDIMENT BASIN.
3. SEE SEDIMENT BASIN CALCULATIONS ON SHEETS CG777 THRU CG782 FOR SKIMMER AND ORIFICE SIZE.

NOTES:

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SKIMMER DETAILS

SHEET ID
CG775

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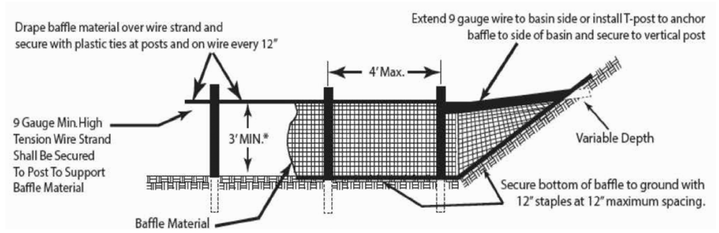
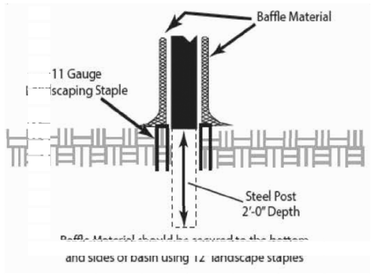
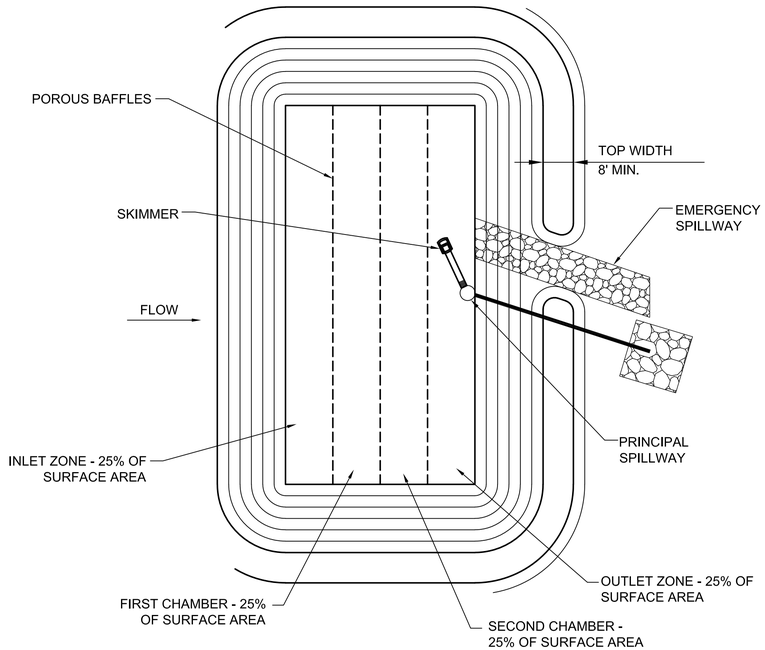


CROSS SECTION IN SEDIMENT BASIN



STAPLE DETAIL



PERCENT OF SURFACE AREA

POROUS BAFFLE (PRACTICE 6.65)

SCALE: N.T.S.

NOTES :

1. USE MATTING MADE OF 100% COCONUT FIBER (COIR) TWINE WOVEN INTO HIGH STRENGTH MATRIX WITH THE FOLLOWING PROPERTIES:
   - 1.1. THICKNESS - 0.30 INCHES MIN.
   - 1.2. TENSILE STRENGTH (WET) - 900 X 680 LB/FT MIN.
   - 1.3. ELONGATION (WET) - 69% X 34% MAX.
   - 1.4. FLOW VELOCITY - 10-12 FT/SEC.
   - 1.5. WEIGHT - 20 OZ/SY (680 G/SM) MIN.
   - 1.6. MINIMUM WIDTH - 6.5 FEET.
   - 1.7. OPEN AREA - 50% MAX.
2. STAPLES SHOULD BE MADE OF 0.125 INCH DIAMETER NEW STEEL WIRE FORMED INTO A "U" SHAPE NOT LESS THAN 12 INCHES IN LENGTH WITH A THROAT OF 1 INCH IN WIDTH. THE STAPLES ANCHOR THE POROUS BAFFLES INTO THE SIDES AND BOTTOM OF THE BASIN.
3. STEEL POSTS SHOULD BE OF SUFFICIENT HEIGHT TO SUPPORT BAFFLES AT DESIRED HEIGHT. POSTS SHOULD BE APPROXIMATELY 1-3/8" WIDE MEASURED PARALLEL TO THE FENCE AND HAVE A MINIMUM WEIGHT OF 1.25 LB/LINEAR FT. THE POSTS MUST BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14.0 SQUARE INCHES AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE TO HAVE A MEANS OF RETAINING WIRE AND COIR FIBER MAT IN THE DESIRED POSITION WITHOUT DISPLACEMENT.
4. USE 9-GAUGE HIGH TENSION WIRE FOR SUPPORT WIRE.
5. GRADE THE BASIN SO THAT THE BOTTOM IS LEVEL FRONT TO BACK AND SIDE TO SIDE.
6. INSTALL THE COIR FIBER BAFFLES IMMEDIATELY UPON EXCAVATION OF THE BASIN.
7. INSTALL POSTS ACROSS THE WIDTH OF THE BASIN.
8. STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF 24 INCHES, SPACED A MAXIMUM OF 4 FEET APART. THE TOP OF THE FABRIC SHOULD BE A MINIMUM OF 6 INCHES HIGHER THAN THE INVERT OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE EARTHEN EMBANKMENT.
9. INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE INLET AND OUTLET DISCHARGE POINT. BASINS LESS THAN 20 FEET IN LENGTH MAY USE 2 BAFFLES.
10. ATTACH A 9 GAUGE HIGH TENSION WIRE TO THE STEEL POSTS AT A HEIGHT OF 6 INCHES ABOVE THE SPILLWAY ELEVATION WITH PLASTIC TIES OR WIRE FASTENERS TO PREVENT SAGGING. IF THE BASIN WILL BE CONVERTED TO A PERMANENT STORMWATER BASIN OF A GREATER DEPTH, THE BAFFLE HEIGHT SHOULD BE BASED ON THE POOL DEPTH DURING USE AS A TEMPORARY SEDIMENT BASIN.
11. EXTEND 9 GAUGE MINIMUM HIGH TENSION WIRE STRAND TO SIDE OF BASIN OR INSTALL STEEL T-POSTS TO ANCHOR BAFFLE TO SIDE OF BASIN AND SECURE TO VERTICAL END POSTS AS DETAILED.
12. DRAPE THE COIR FIBER MAT OVER THE WIRE STRAND MOUNTED AT A HEIGHT 6 INCHES ABOVE THE SPILLWAY ELEVATION. SECURE THE COIR FIBER MAT TO THE WIRE STAND WITH PLASTIC TIES OR WIRE FASTENERS. ANCHOR THE MATTING TO THE SIDES AND FLOOR OF THE BASIN WITH 12 INCH WIRE STAPLES, APPROXIMATELY 1 FT APART, ALONG THE BOTTOM AND SIDE SLOPES OF THE BASIN.
13. DO NOT SPLICE THE FABRIC, BUT USE A CONTINUOUS PIECE ACROSS THE BASIN.
14. ADJUSTMENTS MAY BE REQUIRED IN THE STAPLING REQUIREMENTS TO FIT INDIVIDUAL SITE CONDITIONS.
15. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
16. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
17. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.
18. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

NOTES:

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NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

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CONTRACT NO.:
CATEGORY CODE: 170-45-01
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FY 23, PN 96162
VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
POROUS BAFFLE DETAILS

SHEET ID
CG776

READY TO ADVERTISE (RTA)

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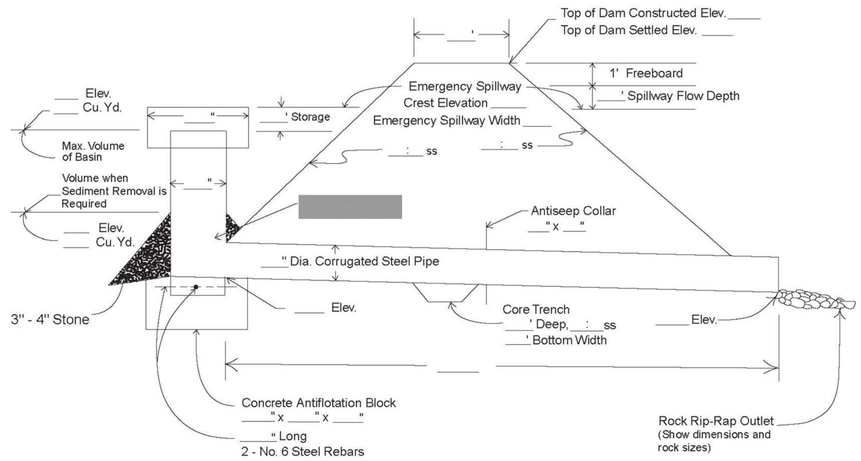
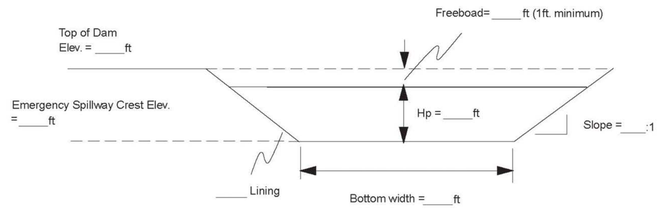
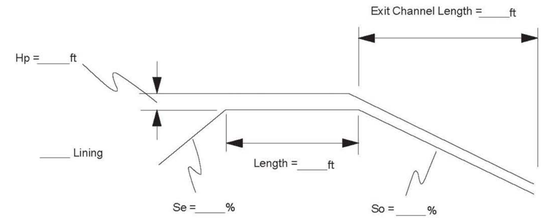


NOTE: THIS FIGURE IS USED TO ILLUSTRATE ITEMS SHOWN IN THE TABLE ON THE FOLLOWING SHEET OR SHEETS. PLEASE NOTE THAT PERFORATED RISERS ARE NO LONGER ACCEPTABLE IN NORTH CAROLINA FOR SEDIMENT BASINS. THE SEDIMENT BASIN IS TO BE EQUIPPED WITH A SKIMMER. SEE DETAIL ON SHEET CG774.

Cross-Sectional Detail of Emergency Spillway



Profile Along Centerline



Emergency Spillway

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VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
SEDIMENT BASIN CALCULATIONS

SHEET ID

CG777

READY TO ADVERTISE (RTA)

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SEDIMENT BASIN CALCULATIONS

	SB-01	SB-02	SB-03	SB-04	SB-04A	SB-04B	SB-05	SB-05A	SB-05B	SB-05C	SB-06	SB-07	SB-08	SB-09	SB-10	SB-11	SB-11A
DISTURBED AREA (AC)	0.22	0.42	3.24	0.36	0.43	1.07	0.99	1.29	1.27	1.29	0.93	0.70	0.39	0.12	0.08	0.03	0.13
REQD STORAGE (CF)	397.98	759.78	5,861.16	651.24	777.87	1,935.63	1,790.91	2,333.61	2,297.43	2,333.61	1,682.37	1,266.30	705.51	217.08	144.72	54.27	235.17
REQD CLEANOUT VOL (CF)	198.99	379.89	2,930.58	325.62	388.94	967.82	895.46	1,166.81	1,148.72	1,166.81	841.19	633.15	352.76	108.54	72.36	27.14	117.59
PROVIDED STORAGE (CF)	903.96	2,087.91	17,751.96	9,863.91	6,303.96	28,624.05	11,943.99	6,303.96	52,503.93	25,344.09	6,303.96	1,584.09	1,584.09	423.90	423.90	2,003.94	903.96
PROVIDED CLEANOUT STORAGE (CF)	451.98	1,043.96	8,875.98	4,931.96	3,151.98	14,312.03	5,972.00	3,151.98	26,251.97	12,672.05	3,151.98	792.05	792.05	211.95	211.95	1,001.97	451.98
BOTTOM OF BASIN ELEV (FT)	269.00	269.00	267.00	265.00	274.00	272.00	275.00	277.00	282.00	282.00	270.00	289.00	294.00	265.00	263.00	271.00	278.00
BASIN DESIGN DEPTH (HEIGHT OF RISER) (FT)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CLEANOUT ELEV (FT)	270.00	270.00	268.00	266.00	275.00	273.00	276.00	278.00	283.00	283.00	271.00	290.00	295.00	266.00	264.00	272.00	279.00
RISER CREST ELEV (FT)	271.00	271.00	269.00	267.00	276.00	274.00	277.00	279.00	284.00	284.00	272.00	291.00	296.00	267.00	265.00	273.00	280.00
SKIMMER SIZE (IN)	1.50	2.00	6.00	2.00	2.00	4.00	4.00	4.00	4.00	4.00	3.00	2.00	2.00	1.50	1.50	1.50	1.50
SKIMMER ORIFICE DIAMETER (IN)	0.50	0.50	1.25	0.50	0.50	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.50	0.25	0.25	0.25	0.25
EMERGENCY SPILLWAY CREST ELEV (FT)	272.00	272.00	270.00	268.00	277.00	275.00	278.00	280.00	285.00	285.00	273.00	292.00	297.00	268.00	266.00	274.00	281.00
EMERGENCY SPILLWAY BOTTOM WIDTH (FT)	4.00	4.00	6.00	4.00	4.00	9.00	4.00	4.00	18.00	8.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
EMERGENCY SPLLWAY LENGTH (FT)	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
EMERGENCY SPILLWAY EXIT CHANNEL LENGTH (FT)	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
EMERGENCY SPILLWAY LINING MATERIAL	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP
EMERGENCY SPILLWAY EMBANKMENT SLOPE (Se, %)	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPILLWAY OUTLET CHANNEL SLOPE (So, %)	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPLILLWAY HEAD (Hp, FT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FREEBOARD (FT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOP OF BERM CONSTRUCTED ELEV (FT)	274.00	274.00	272.00	270.00	279.00	277.00	280.00	282.00	287.00	287.00	275.00	294.00	299.00	270.00	268.00	276.00	283.00
TOP OF BERM SETTLED ELEV (FT)	273.90	273.90	271.90	269.90	278.90	276.90	279.90	281.90	286.90	286.90	274.90	293.90	298.90	269.90	267.90	275.90	282.90
TOP OF BERM WIDTH (FT)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
OUTLET PIPE DIAMETER (IN)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
OUTLET PIPE LENGTH (FT)	52.00	49.00	59.00	46.00	55.00	43.00	156.00	85.00	162.00	51.00	68.00	83.00	80.00	50.00	85.00	68.00	51.00
OUTLET PIPE INLET INLET ELEV (FT)	269.00	269.00	267.00	265.00	274.00	272.00	275.00	277.00	282.00	282.00	270.00	289.00	294.00	265.00	263.00	271.00	278.00
OUTLET PIPE OUTLET INVERT ELEV (FT)	268.00	268.00	261.00	264.50	270.00	271.00	274.00	276.00	281.00	281.00	269.00	288.00	293.00	263.00	262.00	270.00	277.00
CORE TRENCH DEPTH (FT)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CORE TRENCH SIDE SLOPES (H:V)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CORE TRENCH BOTTOM WIDTH (FT)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
RISER DIAMETER (IN)	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
CONCRETE ANTIFLOTATION BLOCK WIDTH (FT)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK LENGTH (FT)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK DEPTH (FT)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
ANTISEEP COLLAR WIDTH (FT)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
ANTISEEP COLLAR LENGTH (FT)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
BASIN BOTTOM WIDTH (FT)	10.00	18.00	62.00	45.00	35.00	80.00	50.00	35.00	110.00	75.00	35.00	15.00	15.00	5.00	5.00	15.00	10.00
BASIN BOTTOM LENGTH (FT)	20.00	36.00	124.00	90.00	70.00	160.00	100.00	70.00	220.00	150.00	70.00	30.00	30.00	10.00	10.00	30.00	20.00
BASIN WIDTH AT DESIGN WATER ELEV (FT)	22.00	30.00	74.00	57.00	47.00	92.00	62.00	47.00	122.00	87.00	47.00	27.00	27.00	17.00	17.00	27.00	22.00
BASIN LENGTH AT DESIGN WATER ELEV (FT)	32.00	48.00	136.00	102.00	82.00	172.00	112.00	82.00	232.00	162.00	82.00	42.00	42.00	22.00	22.00	52.00	32.00
BASIN INFLOW RATE, 10YR (CFS)	1.60	3.05	22.64	12.65	6.96	32.68	14.49	7.06	61.26	31.69	7.97	2.25	2.27	0.69	0.35	2.95	1.49
BASIN INFLOW RATE, 25YR (CFS)	1.96	3.73	29.02	16.25	8.90	41.67	15.29	9.26	80.62	42.60	10.13	1.53	1.71	1.19	0.43	0.55	1.90
RAINFALL INTENSITY, 10YR, 24HR (IN/HR)	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44
RAINFALL INTENSITY, 25YR, 24HR (IN/HR)	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49
COMPOSITE CURVE NUMBER (CN)	89.00	89.00	79.00	79.00	80.00	80.00	81.00	74.00	76.00	70.00	81.00	58.00	79.00	79.00	87.00	82.00	80.00

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.

2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
CONTRACT NO.:
CATEGORY CODE: 1754-65-01
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

E&SC PLAN
SEDIMENT BASIN CALCULATIONS

SHEET ID
CG778

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG778.DWG

SEDIMENT BASIN CALCULATIONS

	SB-12	SB-13	SB-14	SB-15	SB-015A	SB-16	SB-17	SB-18	SB-19	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25	SB-26	SB-27
DISTURBED AREA (AC)	4.53	0.90	0.86	3.87	10.98	0.09	0.40	1.95	0.17	0.22	0.63	1.13	2.79	0.44	1.13	0.43	0.10
REQD STORAGE (CF)	8,194.77	1,628.10	1,555.74	7,000.83	19,862.82	162.81	723.60	3,527.55	307.53	397.98	1,139.67	2,044.17	5,047.11	795.96	2,044.17	777.87	180.90
REQD CLEANOUT VOL (CF)	4,097.39	814.05	777.87	3,500.42	9,931.41	81.41	361.80	1,763.78	153.77	198.99	569.84	1,022.09	2,523.56	397.98	1,022.09	388.94	90.45
PROVIDED STORAGE (CF)	22,263.93	9,863.91	6,303.96	11,943.99	43,744.05	903.96	3,544.02	3,544.02	903.96	903.96	4,824.09	6,303.96	6,303.96	3,544.02	14,223.87	7,983.90	903.96
PROVIDED CLEANOUT STORAGE (CF)	11,131.97	4,931.96	3,151.98	5,972.00	21,872.03	451.98	1,772.01	1,772.01	451.98	451.98	2,412.05	3,151.98	3,151.98	1,772.01	7,111.94	3,991.95	451.98
BOTTOM OF BASIN ELEV (FT)	292.00	279.00	284.00	291.00	300.00	303.00	292.00	301.00	323.00	323.00	316.00	317.00	295.00	284.00	292.00	292.00	301.00
BASIN DESIGN DEPTH (HEIGHT OF RISER) (FT)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CLEANOUT ELEV (FT)	293.00	280.00	285.00	292.00	301.00	304.00	293.00	302.00	324.00	324.00	317.00	318.00	296.00	285.00	293.00	293.00	302.00
RISER CREST ELEV (FT)	294.00	281.00	286.00	293.00	302.00	305.00	294.00	303.00	325.00	325.00	318.00	319.00	297.00	286.00	294.00	294.00	303.00
SKIMMER SIZE (IN)	6.00	3.00	3.00	4.00	8.00	1.50	2.50	2.50	1.50	1.50	3.00	3.00	4.00	2.00	4.00	2.00	1.50
SKIMMER ORIFICE DIAMETER (IN)	1.25	0.75	0.75	1.25	2.00	0.25	0.50	1.00	0.50	0.50	0.50	0.75	1.25	0.50	0.75	0.50	0.25
EMERGENCY SPILLWAY CREST ELEV (FT)	295.00	282.00	287.00	294.00	303.00	306.00	295.00	304.00	326.00	326.00	319.00	320.00	298.00	287.00	295.00	295.00	304.00
EMERGENCY SPILLWAY BOTTOM WIDTH (FT)	7.00	4.00	4.00	4.00	16.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
EMERGENCY SPLLWAY LENGTH (FT)	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
EMERGENCY SPILLWAY EXIT CHANNEL LENGTH (FT)	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
EMERGENCY SPILLWAY LINING MATERIAL	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP
EMERGENCY SPILLWAY EMBANKMENT SLOPE (Se, %)	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPILLWAY OUTLET CHANNEL SLOPE (So, %)	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPLILLWAY HEAD (Hp, FT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FREEBOARD (FT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOP OF BERM CONSTRUCTED ELEV (FT)	297.00	284.00	289.00	296.00	305.00	308.00	297.00	306.00	328.00	328.00	321.00	322.00	300.00	289.00	297.00	297.00	306.00
TOP OF BERM SETTLED ELEV (FT)	296.90	283.90	288.90	295.90	304.90	307.90	296.90	305.90	327.90	327.90	320.90	321.90	299.90	288.90	296.90	296.90	305.90
TOP OF BERM WIDTH (FT)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
OUTLET PIPE DIAMETER (IN)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
OUTLET PIPE LENGTH (FT)	50.00	45.00	63.00	51.00	38.00	66.00	54.00	51.00	134.00	105.00	54.00	50.00	81.00	57.00	56.00	66.00	44.00
OUTLET PIPE INLET INLET ELEV (FT)	292.00	279.00	284.00	291.00	300.00	303.00	292.00	301.00	323.00	323.00	316.00	317.00	295.00	284.00	292.00	292.00	301.00
OUTLET PIPE OUTLET INVERT ELEV (FT)	289.00	278.00	277.00	287.00	299.00	302.00	288.00	300.00	322.00	322.00	312.00	313.00	282.00	279.00	287.00	291.00	300.00
CORE TRENCH DEPTH (FT)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CORE TRENCH SIDE SLOPES (H:V)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CORE TRENCH BOTTOM WIDTH (FT)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
RISER DIAMETER (IN)	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
CONCRETE ANTIFLOTATION BLOCK WIDTH (FT)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK LENGTH (FT)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK DEPTH (FT)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
ANTISEEP COLLAR WIDTH (FT)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
ANTISEEP COLLAR LENGTH (FT)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
BASIN BOTTOM WIDTH (FT)	70.00	45.00	35.00	50.00	100.00	10.00	25.00	25.00	10.00	10.00	30.00	35.00	35.00	25.00	55.00	40.00	10.00
BASIN BOTTOM LENGTH (FT)	140.00	90.00	70.00	100.00	200.00	20.00	50.00	50.00	20.00	20.00	60.00	70.00	70.00	50.00	110.00	80.00	20.00
BASIN WIDTH AT DESIGN WATER ELEV (FT)	82.00	57.00	47.00	62.00	112.00	22.00	37.00	37.00	22.00	22.00	42.00	47.00	47.00	37.00	67.00	52.00	22.00
BASIN LENGTH AT DESIGN WATER ELEV (FT)	152.00	102.00	82.00	112.00	212.00	32.00	62.00	62.00	32.00	32.00	72.00	82.00	82.00	62.00	122.00	92.00	32.00
BASIN INFLOW RATE, 10YR (CFS)	26.75	11.86	7.04	15.19	54.21	0.60	4.52	1.22	1.14	1.25	5.96	7.63	2.84	4.41	17.61	10.47	0.67
BASIN INFLOW RATE, 25YR (CFS)	35.99	16.95	8.93	16.13	72.64	0.75	5.70	2.18	1.42	1.60	0.84	2.49	4.39	5.59	9.29	13.67	0.84
RAINFALL INTENSITY, 10YR, 24HR (IN/HR)	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44
RAINFALL INTENSITY, 25YR, 24HR (IN/HR)	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49
COMPOSITE CURVE NUMBER (CN)	72.00	63.00	81.00	70.00	72.00	85.00	82.00	51.00	85.00	78.00	85.00	76.00	58.00	81.00	84.00	76.00	85.00

NOTES:

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2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

E&SC PLAN
SEDIMENT BASIN CALCULATIONS

SHEET ID
CG779

READY TO ADVERTISE (RTA)

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SEDIMENT BASIN CALCULATIONS

	SB-28	SB-29	SB-30	SB-31	SB-32	SB-33	SB-34	SB-35	SB-37	SB-38	SB-39	SB-40	SB-41	SB-42	SB-43	SB-44	SB-45
DISTURBED AREA (AC)	0.17	0.34	0.14	0.14	0.13	0.09	3.53	0.24	0.24	0.97	0.31	1.61	2.34	0.25	2.35	0.32	10.48
REQD STORAGE (CF)	307.53	615.06	253.26	253.26	235.17	162.81	6,385.77	434.16	434.16	1,754.73	560.79	2,912.49	4,233.06	452.25	4,251.15	578.88	18,958.32
REQD CLEANOUT VOL (CF)	153.77	307.53	126.63	126.63	117.59	81.41	3,192.89	217.08	217.08	877.37	280.40	1,456.25	2,116.53	226.13	2,125.58	289.44	9,479.16
PROVIDED STORAGE (CF)	3,544.02	1,584.09	903.96	903.96	903.96	903.96	62,064.09	903.96	28,624.05	3,544.02	903.96	27,264.06	43,744.05	7,983.90	16,704.09	1,584.09	67,143.87
PROVIDED CLEANOUT STORAGE (CF)	1,772.01	792.05	451.98	451.98	451.98	451.98	31,032.05	451.98	14,312.03	1,772.01	451.98	13,632.03	21,872.03	3,991.95	8,352.05	792.05	33,571.94
BOTTOM OF BASIN ELEV (FT)	308.00	292.00	318.00	321.00	321.00	311.00	295.00	311.00	297.00	304.00	313.00	307.00	306.00	311.00	312.00	312.00	315.00
BASIN DESIGN DEPTH (HEIGHT OF RISER) (FT)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CLEANOUT ELEV (FT)	309.00	293.00	319.00	322.00	322.00	312.00	296.00	312.00	298.00	305.00	314.00	308.00	307.00	312.00	313.00	313.00	316.00
RISER CREST ELEV (FT)	310.00	294.00	320.00	323.00	323.00	313.00	297.00	313.00	299.00	306.00	315.00	309.00	308.00	313.00	314.00	314.00	317.00
SKIMMER SIZE (IN)	1.50	1.50	1.50	1.50	1.50	1.50	8.00	1.50	1.50	3.00	1.50	6.00	4.00	1.50	6.00	1.50	8.00
SKIMMER ORIFICE DIAMETER (IN)	0.50	0.50	0.50	0.50	0.50	0.50	3.50	0.50	0.50	0.75	0.50	0.75	1.00	0.50	1.00	0.50	2.00
EMERGENCY SPILLWAY CREST ELEV (FT)	311.00	295.00	321.00	324.00	324.00	314.00	298.00	314.00	300.00	307.00	316.00	310.00	309.00	314.00	315.00	315.00	318.00
EMERGENCY SPILLWAY BOTTOM WIDTH (FT)	4.00	4.00	4.00	4.00	4.00	4.00	22.00	4.00	9.00	4.00	4.00	9.00	16.00	4.00	4.00	4.00	24.00
EMERGENCY SPLLWAY LENGTH (FT)	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
EMERGENCY SPILLWAY EXIT CHANNEL LENGTH (FT)	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
EMERGENCY SPILLWAY LINING MATERIAL	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP
EMERGENCY SPILLWAY EMBANKMENT SLOPE (Se, %)	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPILLWAY OUTLET CHANNEL SLOPE (So, %)	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPLILLWAY HEAD (Hp, FT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FREEBOARD (FT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOP OF BERM CONSTRUCTED ELEV (FT)	313.00	297.00	323.00	326.00	326.00	316.00	300.00	316.00	302.00	309.00	318.00	312.00	311.00	316.00	317.00	317.00	320.00
TOP OF BERM SETTLED ELEV (FT)	312.90	296.90	322.90	325.90	325.90	315.90	299.90	315.90	301.90	308.90	317.90	311.90	310.90	315.90	316.90	316.90	319.90
TOP OF BERM WIDTH (FT)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
OUTLET PIPE DIAMETER (IN)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
OUTLET PIPE LENGTH (FT)	68.00	44.00	78.00	84.00	115.00	106.00	69.00	82.00	138.00	60.00	176.00	185.00	189.00	443.00	52.00	48.00	72.00
OUTLET PIPE INLET INLET ELEV (FT)	308.00	292.00	318.00	321.00	321.00	311.00	295.00	311.00	297.00	304.00	313.00	307.00	306.00	311.00	312.00	312.00	315.00
OUTLET PIPE OUTLET INVERT ELEV (FT)	307.00	291.00	317.00	320.00	320.00	310.00	285.50	310.00	296.00	298.00	312.00	306.00	305.00	310.00	309.00	310.00	305.00
CORE TRENCH DEPTH (FT)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CORE TRENCH SIDE SLOPES (H:V)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CORE TRENCH BOTTOM WIDTH (FT)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
RISER DIAMETER (IN)	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
CONCRETE ANTIFLOTATION BLOCK WIDTH (FT)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK LENGTH (FT)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK DEPTH (FT)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
ANTISEEP COLLAR WIDTH (FT)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
ANTISEEP COLLAR LENGTH (FT)	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
BASIN BOTTOM WIDTH (FT)	25.00	15.00	10.00	10.00	10.00	10.00	120.00	10.00	80.00	25.00	10.00	60.00	100.00	40.00	60.00	15.00	125.00
BASIN BOTTOM LENGTH (FT)	50.00	30.00	20.00	20.00	20.00	20.00	240.00	20.00	160.00	50.00	20.00	120.00	200.00	80.00	120.00	30.00	250.00
BASIN WIDTH AT DESIGN WATER ELEV (FT)	37.00	27.00	22.00	22.00	22.00	22.00	132.00	22.00	92.00	37.00	22.00	72.00	112.00	52.00	72.00	27.00	137.00
BASIN LENGTH AT DESIGN WATER ELEV (FT)	62.00	42.00	32.00	32.00	32.00	32.00	252.00	32.00	172.00	62.00	32.00	212.00	212.00	92.00	132.00	42.00	262.00
BASIN INFLOW RATE, 10YR (CFS)	4.97	2.28	0.71	0.73	0.70	0.33	73.13	1.32	35.13	4.34	1.39	32.86	54.21	9.60	19.17	1.91	81.01
BASIN INFLOW RATE, 25YR (CFS)	6.47	2.84	0.93	0.95	0.90	0.46	96.01	1.71	159.72	4.22	2.21	32.35	19.83	2.35	11.61	1.15	3.43
RAINFALL INTENSITY, 10YR, 24HR (IN/HR)	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44
RAINFALL INTENSITY, 25YR, 24HR (IN/HR)	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49
COMPOSITE CURVE NUMBER (CN)	70.00	85.00	74.00	75.00	76.00	65.00	69.00	77.00	68.00	65.00	54.00	74.00	68.00	51.00	72.00	58.00	53.00

NOTES:

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2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

E&SC PLAN
SEDIMENT BASIN CALCULATIONS

SHEET ID
CG780

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG780.DWG

SEDIMENT BASIN CALCULATIONS

	SB-46	SB-48	SB-49	SB-49A	SB-50	SB-51	SB-52	SB-53	SB-54	SB-55	SB-56	SB-57	SB-58	SB-59	SB-60	SB-61	SB-62
DISTURBED AREA (AC)	29.06	9.34	0.73	1.71	OMITTED	1.53	4.30	0.72	OMITTED	1.70	0.68	2.93	0.43	0.58	0.50	0.12	0.16
REQD STORAGE (CF)	52,569.54	16,896.06	1,320.57	3,093.39		2,767.77	7,778.70	1,302.48		3,075.30	1,230.12	5,300.37	777.87	1,049.22	904.50	217.08	289.44
REQD CLEANOUT VOL (CF)	26,284.77	8,448.03	660.29	1,546.70		1,383.89	3,889.35	651.24		1,537.65	615.06	2,650.19	388.94	524.61	452.25	108.54	144.72
PROVIDED STORAGE (CF)	57,184.11	19,384.11	2,464.02	28,624.05		6,303.96	11,943.99	11,943.99		16,704.09	9,863.91	11,943.99	7,983.90	9,863.91	6,303.96	903.96	2,464.02
PROVIDED CLEANOUT STORAGE (CF)	28,592.06	9,692.06	1,232.01	14,312.03		3,151.98	5,972.00	5,972.00		8,352.05	4,931.96	5,972.00	3,991.95	4,931.96	3,151.98	451.98	1,232.01
BOTTOM OF BASIN ELEV (FT)	334.00	327.00	314.00	314.00		335.50	331.00	335.00		334.00	292.00	305.00	348.00	336.00	337.00	349.00	349.00
BASIN DESIGN DEPTH (HEIGHT OF RISER) (FT)	2.00	2.00	2.00	2.00		2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CLEANOUT ELEV (FT)	335.00	328.00	315.00	315.00		336.50	332.00	336.00		335.00	293.00	306.00	349.00	337.00	338.00	350.00	350.00
RISER CREST ELEV (FT)	336.00	329.00	316.00	316.00		337.50	333.00	337.00		336.00	294.00	307.00	350.00	338.00	339.00	351.00	351.00
SKIMMER SIZE (IN)	8.00	6.00	3.00	6.00		4.00	4.00	3.00		5.00	4.00	4.00	3.00	3.00	3.00	1.50	1.50
SKIMMER ORIFICE DIAMETER (IN)	3.25	2.00	0.75	0.75		1.00	1.50	0.75		1.00	0.50	1.25	0.50	0.50	0.50	0.25	0.50
EMERGENCY SPILLWAY CREST ELEV (FT)	337.00	330.00	317.00	317.00		338.50	334.00	338.00		337.00	295.00	308.00	351.00	339.00	340.00	352.00	352.00
EMERGENCY SPILLWAY BOTTOM WIDTH (FT)	16.00	4.00	4.00	9.00		4.00	4.00	4.00		5.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
EMERGENCY SPLLWAY LENGTH (FT)	14.00	14.00	14.00	14.00		14.00	14.00	14.00		14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
EMERGENCY SPILLWAY EXIT CHANNEL LENGTH (FT)	25.00	25.00	25.00	25.00		25.00	25.00	25.00		25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
EMERGENCY SPILLWAY LINING MATERIAL	RIPRAP	RIPRAP	RIPRAP	RIPRAP		RIPRAP	RIPRAP	RIPRAP		RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP	RIPRAP
EMERGENCY SPILLWAY EMBANKMENT SLOPE (Se, %)	33.33	33.33	33.33	33.33		33.33	33.33	33.33		33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPILLWAY OUTLET CHANNEL SLOPE (So, %)	33.33	33.33	33.33	33.33		33.33	33.33	33.33		33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.33
EMERGENCY SPLILLWAY HEAD (Hp, FT)	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FREEBOARD (FT)	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TOP OF BERM CONSTRUCTED ELEV (FT)	339.00	332.00	319.00	319.00		340.50	336.00	340.00		339.00	297.00	310.00	353.00	341.00	342.00	354.00	354.00
TOP OF BERM SETTLED ELEV (FT)	338.90	331.90	318.90	318.90		340.40	335.90	339.90		338.90	296.90	309.90	352.90	340.90	341.90	353.90	353.90
TOP OF BERM WIDTH (FT)	8.00	8.00	8.00	8.00		8.00	8.00	8.00		8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
OUTLET PIPE DIAMETER (IN)	18.00	18.00	18.00	18.00		18.00	18.00	18.00		18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
OUTLET PIPE LENGTH (FT)	65.00	44.00	296.00	272.00		105.00	117.00	47.00		47.00	62.00	73.00	167.00	171.00	552.00	47.00	54.00
OUTLET PIPE INLET INLET ELEV (FT)	334.00	327.00	314.00	314.00		335.50	331.00	335.00		334.00	292.00	305.00	348.00	336.00	337.00	349.00	349.00
OUTLET PIPE OUTLET INVERT ELEV (FT)	326.00	326.00	313.00	313.00		335.00	330.00	333.00		332.00	285.00	294.00	347.00	335.00	336.00	347.00	345.00
CORE TRENCH DEPTH (FT)	2.00	2.00	2.00	2.00		2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
CORE TRENCH SIDE SLOPES (H:V)	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CORE TRENCH BOTTOM WIDTH (FT)	4.00	4.00	4.00	4.00		4.00	4.00	4.00		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
RISER DIAMETER (IN)	36.00	36.00	36.00	36.00		36.00	36.00	36.00		36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
CONCRETE ANTIFLOTATION BLOCK WIDTH (FT)	3.50	3.50	3.50	3.50		3.50	3.50	3.50		3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK LENGTH (FT)	3.50	3.50	3.50	3.50		3.50	3.50	3.50		3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK DEPTH (FT)	1.50	1.50	1.50	1.50		1.50	1.50	1.50		1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
ANTISEEP COLLAR WIDTH (FT)	5.50	5.50	5.50	5.50		5.50	5.50	5.50		5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
ANTISEEP COLLAR LENGTH (FT)	5.50	5.50	5.50	5.50		5.50	5.50	5.50		5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
BASIN BOTTOM WIDTH (FT)	115.00	65.00	20.00	80.00		35.00	50.00	50.00		60.00	45.00	50.00	40.00	45.00	35.00	10.00	20.00
BASIN BOTTOM LENGTH (FT)	230.00	130.00	40.00	160.00		70.00	100.00	100.00		120.00	90.00	100.00	80.00	90.00	70.00	20.00	40.00
BASIN WIDTH AT DESIGN WATER ELEV (FT)	127.00	77.00	32.00	92.00		47.00	62.00	62.00		72.00	57.00	62.00	52.00	57.00	47.00	22.00	32.00
BASIN LENGTH AT DESIGN WATER ELEV (FT)	242.00	142.00	52.00	172.00		82.00	112.00	112.00		132.00	102.00	112.00	92.00	102.00	82.00	32.00	52.00
BASIN INFLOW RATE, 10YR (CFS)	54.88	18.97	3.79	33.56		8.61	13.47	15.63		21.72	12.49	14.82	9.31	12.64	7.51	1.28	3.00
BASIN INFLOW RATE, 25YR (CFS)	75.55	26.09	4.95	20.56		5.37	4.26	14.38		3.45	2.22	6.20	7.22	16.93	9.86	1.61	1.94
RAINFALL INTENSITY, 10YR, 24HR (IN/HR)	5.44	5.44	5.44	5.44		5.44	5.44	5.44		5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44
RAINFALL INTENSITY, 25YR, 24HR (IN/HR)	6.49	6.49	6.49	6.49		6.49	6.49	6.49		6.49	6.49	6.49	6.49	6.49	6.49	6.49	6.49
COMPOSITE CURVE NUMBER (CN)	69.00	69.00	75.00	64.00		69.00	75.00	70.00		72.00	58.00	54.00	50.00	71.00	74.00	83.00	81.00

NOTES:

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045805 KENNETH L. SANDERS 11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

E&SC PLAN
SEDIMENT BASIN CALCULATIONS

SHEET ID
CG781

READY TO ADVERTISE (RTA)

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SEDIMENT BASIN CALCULATIONS		
	SB-63	**SB-64**
DISTURBED AREA (AC)	1.00	0.53
REQD STORAGE (CF)	1,809.00	958.77
REQD CLEANOUT VOL (CF)	904.50	479.39
PROVIDED STORAGE (CF)	9,863.91	7,983.90
PROVIDED CLEANOUT STORAGE (CF)	4,931.96	3,991.95
BOTTOM OF BASIN ELEV (FT)	349.00	346.00
BASIN DESIGN DEPTH (HEIGHT OF RISER) (FT)	2.00	2.00
CLEANOUT ELEV (FT)	350.00	347.00
RISER CREST ELEV (FT)	351.00	348.00
SKIMMER SIZE (IN)	4.00	4.00
SKIMMER ORIFICE DIAMETER (IN)	0.75	0.50
EMERGENCY SPILLWAY CREST ELEV (FT)	352.00	349.00
EMERGENCY SPILLWAY BOTTOM WIDTH (FT)	4.00	4.00
EMERGENCY SPLLWAY LENGTH (FT)	14.00	14.00
EMERGENCY SPILLWAY EXIT CHANNEL LENGTH (FT)	25.00	25.00
EMERGENCY SPILLWAY LINING MATERIAL	RIPRAP	RIPRAP
EMERGENCY SPILLWAY EMBANKMENT SLOPE (Se, %)	33.33	33.33
EMERGENCY SPILLWAY OUTLET CHANNEL SLOPE (So, %)	33.33	33.33
EMERGENCY SPLILLWAY HEAD (Hp, FT)	1.00	1.00
FREEBOARD (FT)	1.00	1.00
TOP OF BERM CONSTRUCTED ELEV (FT)	354.00	351.00
TOP OF BERM SETTLED ELEV (FT)	353.90	350.90
TOP OF BERM WIDTH (FT)	8.00	8.00
OUTLET PIPE DIAMETER (IN)	18.00	18.00
OUTLET PIPE LENGTH (FT)	220.00	61.00
OUTLET PIPE INLET INLET ELEV (FT)	349.00	346.00
OUTLET PIPE OUTLET INVERT ELEV (FT)	348.00	340.00
CORE TRENCH DEPTH (FT)	2.00	2.00
CORE TRENCH SIDE SLOPES (H:V)	1.00	1.00
CORE TRENCH BOTTOM WIDTH (FT)	4.00	4.00
RISER DIAMETER (IN)	36.00	36.00
CONCRETE ANTIFLOTATION BLOCK WIDTH (FT)	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK LENGTH (FT)	3.50	3.50
CONCRETE ANTIFLOTATION BLOCK DEPTH (FT)	1.50	1.50
ANTISEEP COLLAR WIDTH (FT)	5.50	5.50
ANTISEEP COLLAR LENGTH (FT)	5.50	5.50
BASIN BOTTOM WIDTH (FT)	39.00	40.00
BASIN BOTTOM LENGTH (FT)	104.00	80.00
BASIN WIDTH AT DESIGN WATER ELEV (FT)	51.00	52.00
BASIN LENGTH AT DESIGN WATER ELEV (FT)	116.00	92.00
BASIN INFLOW RATE, 10YR (CFS)	11.26	10.76
BASIN INFLOW RATE, 25YR (CFS)	10.44	7.67
RAINFALL INTENSITY, 10YR, 24HR (IN/HR)	5.44	5.44
RAINFALL INTENSITY, 25YR, 24HR (IN/HR)	6.49	6.49
COMPOSITE CURVE NUMBER (CN)	75.00	83.00

NOTES:

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SIZE: ANSI D
ISSUE DATE: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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 86182
VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
SEDIMENT BASIN CALCULATIONS

SHEET ID
CG782

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-28115376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG782.DWG

SEDIMENT BASIN COORDINATES (SB)

BASIN #	SHEET ID	NORTHING	EASTING	ELEVATION
SB-01-A	CG723	477,557.96	1,917,322.56	269.00
SB-01-B	CG723	477,547.98	1,917,323.10	269.00
SB-01-C	CG723	477,559.03	1,917,342.54	269.00
SB-01-D	CG723	477,549.04	1,917,343.07	269.00
SB-02-A	CG723	477,454.62	1,917,283.28	269.00
SB-02-B	CG723	477,438.02	1,917,290.25	269.00
SB-02-C	CG723	477,468.56	1,917,316.47	269.00
SB-02-D	CG723	477,451.97	1,917,323.44	269.00
SB-03-A	CG723	477,327.16	1,918,119.76	267.00
SB-03-B	CG723	477,361.44	1,918,171.42	267.00
SB-03-C	CG723	477,430.48	1,918,051.20	267.00
SB-03-D	CG723	477,464.76	1,918,102.86	267.00
SB-04-A	CG726	478,192.53	1,917,910.52	265.00
SB-04-B	CG726	478,196.32	1,917,865.68	265.00
SB-04-C	CG726	478,102.85	1,917,902.94	265.00
SB-04-D	CG726	478,106.64	1,917,858.10	265.00
SB-04A-A	CG726, CG727	478,156.65	1,918,267.53	274.00
SB-04A-B	CG726, CG727	478,172.99	1,918,236.58	274.00
SB-04A-C	CG726, CG727	478,094.74	1,918,234.85	274.00
SB-04A-D	CG726, CG727	478,111.08	1,918,203.90	274.00
SB-04B-A	CG727	478,424.61	1,918,292.99	272.00
SB-04B-B	CG727	478,422.67	1,918,372.97	272.00
SB-04B-C	CG727	478,584.56	1,918,296.87	272.00
SB-04B-D	CG727	478,582.62	1,918,376.84	272.00
SB-05-A	CG727	478,266.25	1,918,671.49	275.00
SB-05-B	CG727	478,256.03	1,918,720.44	275.00
SB-05-C	CG727	478,364.14	1,918,691.93	275.00
SB-05-D	CG727	478,353.93	1,918,740.87	275.00
SB-05A-A	CG727	478,148.83	1,918,741.78	277.00
SB-05A-B	CG727	478,135.71	1,918,709.33	277.00
SB-05A-C	CG727	478,083.93	1,918,768.01	277.00
SB-05A-D	CG727	478,070.81	1,918,735.56	277.00
SB-05B-A	CG727	478,547.42	1,918,969.69	282.00
SB-05B-B	CG727	478,550.04	1,919,079.66	282.00
SB-05B-C	CG727	478,767.36	1,918,964.45	282.00
SB-05B-D	CG727	478,769.98	1,919,074.42	282.00
SB-05C-A	CG727	478,321.56	1,919,074.81	282.00
SB-05C-B	CG727	478,321.24	1,918,999.81	282.00
SB-05C-C	CG727	478,171.56	1,919,075.44	282.00
SB-05C-D	CG727	478,171.24	1,919,000.44	282.00
SB-06-A	CG726	478,671.88	1,917,992.08	270.00
SB-06-B	CG726	478,603.56	1,917,976.85	270.00
SB-06-C	CG726	478,664.26	1,918,026.24	270.00
SB-06-D	CG726	478,595.94	1,918,011.01	270.00
SB-07-A	CG727	478,930.00	1,918,278.05	289.00
SB-07-B	CG727	478,932.01	1,918,292.91	289.00
SB-07-C	CG727	478,958.00	1,918,274.03	289.00
SB-07-D	CG727	478,961.74	1,918,288.89	289.00

SEDIMENT BASIN COORDINATES (SB)

BASIN #	SHEET ID	NORTHING	EASTING	ELEVATION
SB-08-A	CG727	478,937.93	1,918,442.61	294.00
SB-08-B	CG727	478,920.18	1,918,466.80	294.00
SB-08-C	CG727	478,950.02	1,918,451.48	294.00
SB-08-D	CG727	478,932.28	1,918,475.67	294.00
SB-09-A	CG729	479,257.74	1,917,394.81	265.00
SB-09-B	CG729	479,248.41	1,917,398.42	265.00
SB-09-C	CG729	479,259.54	1,917,399.47	265.00
SB-09-D	CG729	479,250.22	1,917,403.08	265.00
SB-10-A	CG729	479,278.83	1,917,472.61	263.00
SB-10-B	CG729	479,288.47	1,917,469.98	263.00
SB-10-C	CG729	479,277.51	1,917,467.78	263.00
SB-10-D	CG729	479,287.16	1,917,465.16	263.00
SB-11-A	CG729	479,218.39	1,917,623.56	271.00
SB-11-B	CG729	479,206.66	1,917,585.32	271.00
SB-11-C	CG729	479,204.05	1,917,627.96	271.00
SB-11-D	CG729	479,192.32	1,917,589.72	271.00
SB-11A-A	CG729	479,244.97	1,917,810.60	278.00
SB-11A-B	CG729	479,237.99	1,917,803.44	278.00
SB-11A-C	CG729	479,230.65	1,917,824.56	278.00
SB-11A-D	CG729	479,223.67	1,917,817.40	278.00
SB-12-A	CG730	479,088.57	1,918,997.03	292.00
SB-12-B	CG730	479,136.22	1,919,048.31	292.00
SB-12-C	CG730	479,191.15	1,918,901.74	292.00
SB-12-D	CG730	479,238.79	1,918,953.03	292.00
SB-13-A	CG729	479,427.21	1,918,073.03	279.00
SB-13-B	CG729	479,369.97	1,918,003.58	279.00
SB-13-C	CG729	479,392.48	1,918,101.65	279.00
SB-13-D	CG729	479,335.24	1,918,032.19	279.00
SB-14-A	CG729	479,538.27	1,917,828.83	284.00
SB-14-B	CG729	479,521.70	1,917,859.66	284.00
SB-14-C	CG729	479,599.93	1,917,861.97	284.00
SB-14-D	CG729	479,583.36	1,917,892.80	284.00
SB-15-A	CG729	479,597.63	1,918,060.30	291.00
SB-15-B	CG729	479,552.42	1,918,081.67	291.00
SB-15-C	CG729	479,640.36	1,918,150.71	291.00
SB-15-D	CG729	479,595.16	1,918,172.08	291.00
SB-15A-A	CG730	479,754.82	1,918,312.59	301.00
SB-15A-B	CG730	479,737.71	1,918,512.17	301.00
SB-15A-C	CG730	479,744.10	1,918,537.30	301.00
SB-15A-D	CG730	479,853.47	1,918,321.07	301.00
SB-15A-E	CG730	479,875.12	1,918,331.16	301.00
SB-15A-F	CG730	479,832.19	1,918,550.13	301.00
SB-16-A	CG730	479,565.92	1,919,229.45	303.00
SB-16-B	CG730	479,572.30	1,919,237.15	303.00
SB-16-C	CG730	479,581.31	1,919,216.69	303.00
SB-16-D	CG730	479,587.70	1,919,224.38	303.00
SB-17-A	CG729, CG732	479,968.97	1,917,901.81	292.00
SB-17-B	CG729, CG732	479,944.06	1,917,899.58	292.00

SEDIMENT BASIN COORDINATES (SB)

BASIN #	SHEET ID	NORTHING	EASTING	ELEVATION
SB-17-C	CG729, CG732	479,964.51	1,917,951.61	292.00
SB-17-D	CG729, CG732	479,939.61	1,917,949.38	292.00
SB-18-A	CG733	480,360.35	1,918,326.80	301.00
SB-18-B	CG733	480,338.33	1,918,314.95	301.00
SB-18-C	CG733	480,336.64	1,918,370.82	301.00
SB-18-D	CG733	480,314.63	1,918,358.97	301.00
SB-19-A	CG734	480,282.48	1,919,670.88	323.00
SB-19-B	CG734	480,281.05	1,919,680.77	323.00
SB-19-C	CG734	480,302.28	1,919,673.74	323.00
SB-19-D	CG734	480,300.84	1,919,683.64	323.00
SB-20-A	CG734	480,546.94	1,919,783.11	323.00
SB-20-B	CG734	480,552.25	1,919,774.63	323.00
SB-20-C	CG734	480,529.99	1,919,772.49	323.00
SB-20-D	CG734	480,535.31	1,919,764.01	323.00
SB-21-A	CG734	480,837.06	1,919,927.75	316.00
SB-21-B	CG734	480,866.47	1,919,933.68	316.00
SB-21-C	CG734	480,848.93	1,919,868.93	316.00
SB-21-D	CG734	480,878.34	1,919,874.87	316.00
SB-22-A	CG737	480,989.01	1,919,961.74	317.00
SB-22-B	CG737	481,012.60	1,919,987.59	317.00
SB-22-C	CG737	481,040.72	1,919,914.56	317.00
SB-22-D	CG737	481,064.31	1,919,940.41	317.00
SB-23-A	CG736	481,054.44	1,918,635.38	295.00
SB-23-B	CG736	481,038.19	1,918,616.38	295.00
SB-23-C	CG736	481,016.44	1,918,667.88	295.00
SB-23-D	CG736	481,000.19	1,918,648.88	295.00
SB-24-A	CG736	481,206.81	1,918,668.79	284.00
SB-24-B	CG736	481,187.88	1,918,652.45	284.00
SB-24-C	CG736	481,174.13	1,918,706.63	284.00
SB-24-D	CG736	481,155.21	1,918,690.29	284.00
SB-25-A	CG736	481,242.15	1,918,984.12	292.00
SB-25-B	CG736	481,223.80	1,918,932.27	292.00
SB-25-C	CG736	481,138.44	1,919,020.81	292.00
SB-25-D	CG736	481,120.10	1,918,968.96	292.00
SB-26-A	CG735	481,381.59	1,917,336.46	292.00
SB-26-B	CG735	481,392.53	1,917,374.94	292.00
SB-26-C	CG735	481,458.54	1,917,314.59	292.00
SB-26-D	CG735	481,469.48	1,917,353.06	292.00
SB-27-A	CG734	481,570.48	1,917,692.40	301.00
SB-27-B	CG734	481,577.90	1,917,699.10	301.00
SB-27-C	CG734	481,583.88	1,917,677.55	301.00
SB-27-D	CG734	481,591.30	1,917,684.25	301.00
SB-28-A	CG735, CG740	481,965.61	1,917,741.26	308.00
SB-28-B	CG735, CG740	481,990.10	1,917,746.31	308.00
SB-28-C	CG735, CG740	481,975.71	1,917,692.29	308.00
SB-28-D	CG735, CG740	482,000.19	1,917,697.34	308.00
SB-29-A	CG736, CG141	481,978.99	1,918,496.13	292.00
SB-29-B	CG736, CG141	481,992.77	1,918,502.05	292.00

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

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: NOVEMBER 2023
SOLICITATION NO.: W912HN-24-B-3002
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

E&SC PLAN
SEDIMENT BASIN COORDINATES

SHEET ID
CG783

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG783.DWG

SEDIMENT BASIN COORDINATES (SB)

BASIN #	SHEET ID	NORTHING	EASTING	ELEVATION
SB-29-C	CG736, CG741	481,990.83	1,918,468.57	292.00
SB-29-D	CG736, CG741	482,004.61	1,918,474.49	292.00
SB-30-A	CG737	481,759.41	1,919,648.48	318.00
SB-30-B	CG737	481,749.41	1,919,648.55	318.00
SB-30-C	CG737	481,759.56	1,919,668.47	318.00
SB-30-D	CG737	481,749.56	1,919,668.55	318.00
SB-31-A	CG739, CG740	482,206.07	1,917,012.89	321.00
SB-31-B	CG739, CG740	482,196.19	1,917,014.47	321.00
SB-31-C	CG739, CG740	482,209.23	1,917,032.64	321.00
SB-31-D	CG739, CG740	482,199.36	1,917,034.22	321.00
SB-32-A	CG739, CG740	482,120.58	1,917,026.49	321.00
SB-32-B	CG739, CG740	482,111.44	1,917,030.53	321.00
SB-32-C	CG739, CG740	482,128.67	1,917,044.78	321.00
SB-32-D	CG739, CG740	482,119.53	1,917,048.82	321.00
SB-33-A	CG740	482,677.37	1,917,662.46	311.00
SB-33-B	CG740	482,673.99	1,917,653.05	311.00
SB-33-C	CG740	482,658.54	1,917,669.22	311.00
SB-33-D	CG740	482,655.16	1,917,659.81	311.00
SB-34-A	CG741	482,034.45	1,918,593.52	295.00
SB-34-B	CG741	482,083.88	1,918,702.86	295.00
SB-34-C	CG741	482,253.14	1,918,494.65	295.00
SB-34-D	CG741	482,302.57	1,918,604.00	295.00
SB-35-A	CG742	482,236.02	1,919,524.03	311.00
SB-35-B	CG742	482,226.07	1,919,525.01	311.00
SB-35-C	CG742	482,237.99	1,919,543.93	311.00
SB-35-D	CG742	482,228.04	1,919,544.92	311.00
SB-37-A	CG742	482,674.88	1,919,510.09	297.00
SB-37-B	CG742	482,598.36	1,919,533.44	297.00
SB-37-C	CG742	482,721.58	1,919,663.12	297.00
SB-37-D	CG742	482,645.06	1,919,686.47	297.00
SB-38-A	CG743, CG747	483,007.36	1,921,026.12	304.00
SB-38-B	CG743, CG747	483,025.66	1,921,009.09	304.00
SB-38-C	CG743, CG747	482,973.30	1,920,989.52	304.00
SB-38-D	CG743, CG747	482,991.60	1,920,972.49	304.00
SB-39-A	CG745	483,036.96	1,918,467.23	313.00
SB-39-B	CG745	483,037.71	1,918,477.20	313.00
SB-39-C	CG745	483,056.90	1,918,465.73	313.00
SB-39-D	CG745	483,057.65	1,918,475.70	313.00
SB-40-A	CG745	483,013.67	1,919,151.98	307.00
SB-40-B	CG745	482,991.86	1,919,207.87	307.00
SB-40-C	CG745	483,125.46	1,919,195.60	307.00
SB-40-D	CG745	483,103.65	1,919,251.50	307.00
SB-41-A	CG746	483,110.22	1,919,671.29	306.00
SB-41-B	CG746	483,098.77	1,919,770.63	306.00
SB-41-C	CG746	483,308.90	1,919,694.19	306.00
SB-41-D	CG746	483,297.45	1,919,793.54	306.00
SB-42-A	CG746	483,116.31	1,920,445.98	311.00
SB-42-B	CG746	483,141.93	1,920,476.70	311.00

SEDIMENT BASIN COORDINATES (SB)

BASIN #	SHEET ID	NORTHING	EASTING	ELEVATION
SB-42-C	CG746	483,177.74	1,920,394.74	311.00
SB-42-D	CG746	483,203.36	1,920,425.46	311.00
SB-43-A	CG745	483,608.75	1,918,393.03	312.00
SB-43-B	CG745	483,505.46	1,918,331.95	312.00
SB-43-C	CG745	483,578.21	1,918,444.68	312.00
SB-43-D	CG745	483,474.92	1,918,383.59	312.00
SB-44-A	CG745	483,387.41	1,918,309.56	312.00
SB-44-B	CG745	483,373.01	1,918,313.76	312.00
SB-44-C	CG745	483,395.80	1,918,338.36	312.00
SB-44-D	CG745	483,381.40	1,918,342.56	312.00
SB-45-A	CG746 CG147	483,778.98	1,920,795.61	315.00
SB-45-B	CG746 CG147	483,895.98	1,920,839.63	315.00
SB-45-C	CG746 CG147	483,867.00	1,920,561.62	315.00
SB-45-D	CG746 CG147	483,984.00	1,920,605.63	315.00
SB-46-A	CG749	484,267.06	1,918,707.71	334.00
SB-46-B	CG749	484,238.74	1,918,819.17	334.00
SB-46-C	CG749	484,489.98	1,918,764.35	334.00
SB-46-D	CG749	484,461.66	1,918,875.81	334.00
SB-48-A	CG748	484,251.22	1,917,844.88	327.00
SB-48-B	CG748	484,243.13	1,917,909.37	327.00
SB-48-C	CG748	484,380.21	1,917,861.07	327.00
SB-48-D	CG748	484,372.12	1,917,925.56	327.00
SB-49-A	CG751	484,263.93	1,920,887.09	314.00
SB-49-B	CG751	484,282.02	1,920,895.63	314.00
SB-49-C	CG751	484,281.00	1,920,850.92	314.00
SB-49-D	CG751	484,299.09	1,920,859.45	314.00
SB-49A-A	CG751	484,294.26	1,920,962.48	314.00
SB-49A-B	CG751	484,333.73	1,921,032.06	314.00
SB-49A-C	CG751	484,433.43	1,920,883.54	314.00
SB-49A-D	CG751	484,472.90	1,920,953.13	314.00
SB-51-A	CG753, CG754	485,004.76	1,919,453.51	335.50
SB-51-B	CG753, CG754	485,018.84	1,919,485.56	335.50
SB-51-C	CG753, CG754	485,068.84	1,919,425.35	335.50
SB-51-D	CG753, CG754	485,082.92	1,919,457.40	335.50
SB-52-A	CG752	485,682.27	1,917,448.59	331.00
SB-52-B	CG752	485,582.28	1,917,449.59	331.00
SB-52-C	CG752	485,684.28	1,917,648.58	331.00
SB-52-D	CG752	485,584.29	1,917,649.58	331.00
SB-53-A	CG754	485,796.43	1,919,695.52	335.00
SB-53-B	CG754	485,816.79	1,919,649.86	335.00
SB-53-C	CG754	485,705.10	1,919,654.79	335.00
SB-53-D	CG754	485,725.46	1,919,609.13	335.00
SB-55-A	CG758	486,067.34	1,919,307.59	334.00
SB-55-B	CG758	486,127.01	1,919,313.84	334.00
SB-55-C	CG758	486,079.84	1,919,188.24	334.00
SB-55-D	CG758	486,139.52	1,919,194.50	334.00
SB-56-A	CG760	486,102.37	1,920,776.25	292.00
SB-56-B	CG760	486,124.59	1,920,737.12	292.00

SEDIMENT BASIN COORDINATES (SB)

BASIN #	SHEET ID	NORTHING	EASTING	ELEVATION
SB-56-C	CG760	486,024.11	1,920,731.80	292.00
SB-56-D	CG760	486,046.34	1,920,692.67	292.00
SB-57-A	CG756	485,559.99	1,922,186.37	305.00
SB-57-B	CG756	485,598.39	1,922,218.39	305.00
SB-57-C	CG756	485,624.04	1,922,109.57	305.00
SB-57-D	CG756	485,662.44	1,922,141.59	305.00
SB-58-A	CG758	486,686.29	1,918,379.10	348.00
SB-58-B	CG758	486,648.69	1,918,392.75	348.00
SB-58-C	CG758	486,713.58	1,918,454.31	348.00
SB-58-D	CG758	486,675.98	1,918,467.95	348.00
SB-59-A	CG757	486,698.68	1,917,476.80	336.00
SB-59-B	CG757	486,654.70	1,917,486.33	336.00
SB-59-C	CG757	486,717.73	1,917,564.76	336.00
SB-59-D	CG757	486,673.76	1,917,574.29	336.00
SB-60-A	CG757	486,901.96	1,917,813.78	337.00
SB-60-B	CG757	486,866.96	1,917,813.72	337.00
SB-60-C	CG757	486,901.84	1,917,883.78	337.00
SB-60-D	CG757	486,866.84	1,917,883.72	337.00
SB-61-A	CG762	486,982.48	1,919,246.18	349.00
SB-61-B	CG762	486,992.47	1,919,246.61	349.00
SB-61-C	CG762	486,983.35	1,919,226.20	349.00
SB-61-D	CG762	486,993.34	1,919,226.63	349.00
SB-62-A	CG762	487,094.94	1,919,278.89	349.00
SB-62-B	CG762	487,113.75	1,919,272.10	349.00
SB-62-C	CG762	487,081.37	1,919,241.26	349.00
SB-62-D	CG762	487,100.18	1,919,234.47	349.00
SB-63-A	CG761, CG767	487,290.55	1,918,235.02	350.00
SB-63-B	CG761, CG767	487,201.70	1,918,249.37	350.00
SB-63-C	CG761, CG767	487,297.72	1,918,279.45	350.00
SB-63-D	CG761, CG767	487,208.87	1,918,293.79	350.00
SB-64-A	CG762	487,373.30	1,919,016.65	346.00
SB-64-B	CG762	487,383.49	1,918,977.97	346.00
SB-64-C	CG762	487,295.94	1,918,996.27	346.00
SB-64-D	CG762	487,306.13	1,918,957.59	346.00

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS
11/20/23

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:	NOVEMBER 2023
SOLICITATION NO.:	W912HN-24-B-3002
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

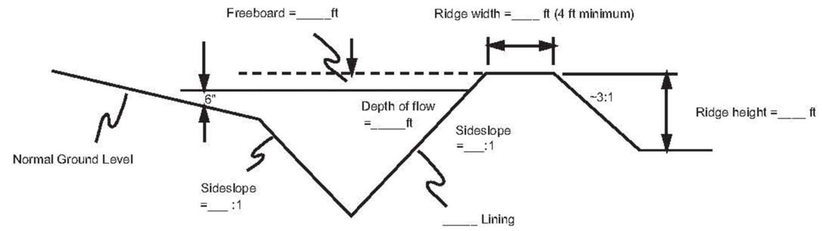
FORT LIBERTY; NORTH CAROLINA
AUTOMATED MULTIPURPOSE TRAINING RANGE (MPTR)
FY23, PN 96182
VOLUMES 3 & 4 - DOWNRANGE

E&SC PLAN
SEDIMENT BASIN COORDINATES

SHEET ID
CG784

READY TO ADVERTISE (RTA)

G:\CLEANSTUFF-15-2815376 BRAGG MPTR\WIP\07_RTA FINAL SUBMITTAL\04 CIVIL\700 EROSION CONTROL\B2ECG784.DWG



TEMPORARY DIVERSION (PRACTICE 6.20)

N.T.S.

NOTES:

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.
6. INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.
7. CHANNEL STABILIZATION TO BE PER SHEET CG767.
8. RIPRAP CHANNEL TO BE PER SHEET CG769.

DIVERSION CALCULATIONS

Di #	DRAINAGE AREA (ACRES)	Q10 (CFS)	LENGTH (FT)	RIDGE WIDTH (FT)	RIDGE HEIGHT (FT)	CHANNEL SHAPE	DEPTH OF FLOW (FT)	CHANNEL BOTTOM WIDTH (FT)	CHANNEL SIDE SLOPES (H:V)	TOP WIDTH (FT)	FREEBOARD (FT)	LINING
Di-01	17.78	31.33	1,347.00	4.00	1.00	TRIANGULAR	2.00	N/A	3:1	12.00	0.30	CHANNEL STABILIZATION
Di-02	7.13	12.57	131.00	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	CHANNEL STABILIZATION
Di-03	0.24	1.06	39	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	RIPRAP CHANNEL
Di-04	0.33	1.52	106	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	RIPRAP CHANNEL
Di-05	0.81	4.81	172	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	CHANNEL STABILIZATION
Di-06	1.16	8.51	78	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	RIPRAP
Di-07	0.20	1.01	63	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	CHANNEL STABILIZATION
Di-08	0.34	0.66	135	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	RIPRAP
Di-09	0.32	1.42	84	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	RIPRAP
Di-10	OMITTED											
Di-11	1.95	1.22	139	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	CHANNEL STABILIZATION
Di-12	5.34	13.96	171	4.00	1.00	TRIANGULAR	1.50	N/A	3:1	9.00	0.30	CHANNEL STABILIZATION

NOTES:

1. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA "EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL", LATEST EDITION.
2. **SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.**

NORTH CAROLINA PROFESSIONAL SEAL 045805 ENGINEER KENNETH L. SANDERS 11/20/23

US Army Corps of Engineers®

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