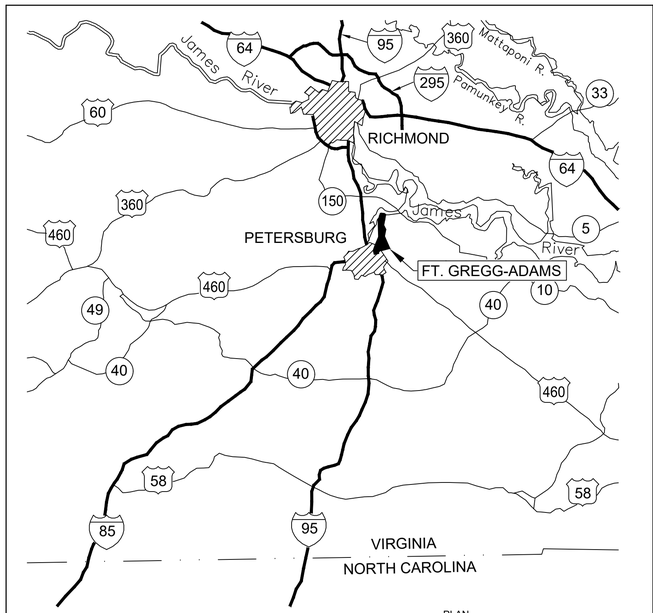
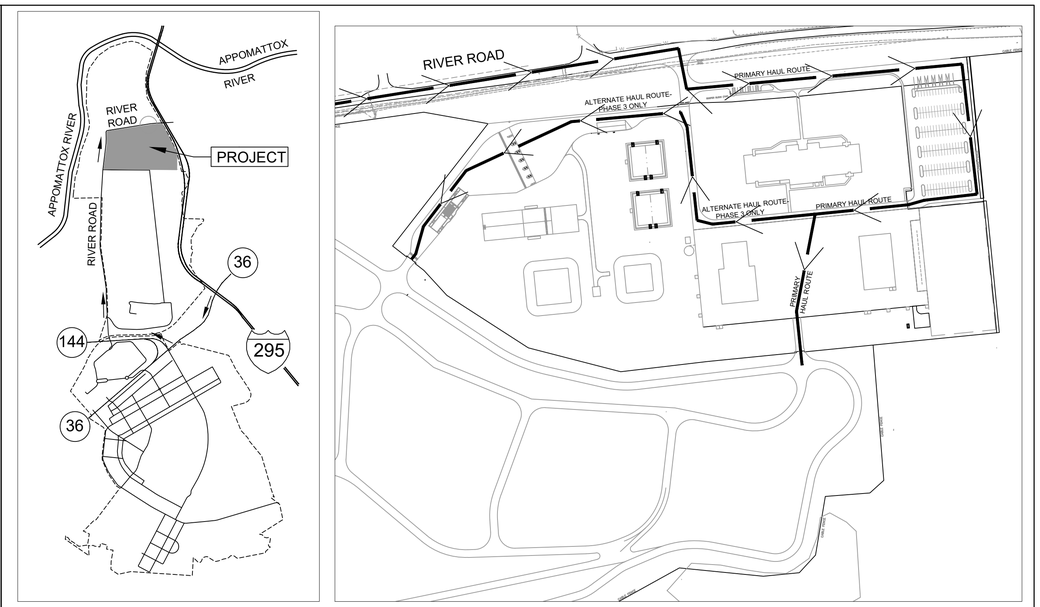
US Army Corps of Engineers®
NORFOLK DISTRICT

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE

P2 - 516440



VICINITY MAP
SCALE: NO SCALE



LOCATION MAP / HAUL ROUTE
SCALE: NO SCALE

SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
ISSUE DATE: NOVEMBER 3, 2025

SIGNATURES AFFIXED BELOW INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL DRAWINGS IN THIS SET AS INDICATED ON INDEX OF DRAWINGS.

RECOMMENDED

ENGINEERING BRANCH DESIGN LEAD

APPROVED

CHIEF, DESIGN BRANCH

APPROVED

CHIEF, ENGINEERING & CONSTRUCTION DIVISION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
COVER SHEET

SHEET ID
G-001

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CD111	DEMOLITION SITE PLAN
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CG111	GRADING PLAN
CG112	GRADING PLAN
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C-502	DETAILS
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C-504	DETAILS
C-505	DETAILS
C-506	DETAILS
C-507	DETAILS
C-508	DETAILS
C-509	DETAILS
C-510	DETAILS
C-511	DETAILS
C-512	DETAILS
C-513	DETAILS

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INDEX OF DRAWINGS

SHEET ID
G-002

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ABBREVIATIONS

L	ANGLE
A/C	AIR CONDITIONING
A/C UNIT	AIR CONDITIONING UNIT
AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ACC	ACCESSIBLE
ACI	AMERICAN CONCRETE INSTITUTE
ACR	ACRYLIC PLASTIC
ACS DR	ACCESS DOOR
ACS PNL	ACCESS PANEL
ACSR	ALUMINUM CABLE STEEL REINFORCED
ACST	ACOUSTIC
ACT	ACOUSTICAL CEILING TILE
ADDM	ADDENDUM
ADH	ADHESIVE
ADJ	ADJACENT, ADJOINING, ADJUSTABLE
ADO	AUTOMATIC DOOR OPERATOR
AFF	ABOVE FINISHED FLOOR
AGGR	AGGREGATE
AHR	ANCHOR
AHU	AIR HANDLING UNIT
AI	AREA INLET
AIC	AMPERE INTERRUPTING CAPACITY
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
A.L.	ACTIVE LEAF
ALT	ALTERNATE
ALUM	ALUMINUM
AMB	AMBIENT
AMP	AMPERE
ANOD	ANODIZE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECT
ARI	AMERICAN REFRIGERATION INSTITUTE
ASB	ASBESTOS
ASC	ABOVE SUSPENDED CEILING
ASPH	ASPHALT
ATC	ACOUSTICAL TILE CEILING
AUTO	AUTOMATIC
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
AWT	ACOUSTICAL WALL TREATMENT
BB	BULLETIN BOARD
BC	BOOKCASE
BD	BOARD
BDRY	BOUNDARY
BEJ	BRICK EXPANSION JOINT
BEV	BEVEL
BITUM	BITUMINOUS
BJT	BED JOINT
BL	BUILDING LINE
BLDG	BUILDING
BLW	BELOW
BM	BENCHMARK
BO	BOTTOM OF
BOT	BOTTOM
BP	BACK PLASTER(ED)
BRCG	BRACING
BRDG	BRIDGING
BRG	BEARING
BRG PL	BEARING PLATE
BRK	BRICK
BRKT	BRACKET
BRZ	BRONZE
BS	BOTH SIDES
BSMT	BASEMENT
Btu	BRITISH THERMAL UNIT
BtuH	BTU PER HOUR
BTWN	BETWEEN
BUR	BUILT-UP ROOFING
BW	BOTH WAYS
CAB	CABINET
CAP	CAPACITY
CB	CATCH BASIN
CCT	CUBICLE CURTAIN TRACK
CCTV	CLOSED CIRCUIT TELEVISION
CE	COVER ELEVATION
CEM	CEMENT
CEM PLAS	CEMENT PLASTER
CER	CERAMIC
CFI	CONDUCTIVE FLOORING
CFLG	COUNTERFLASHING
CFM	CUBIC FEET PER MINUTE
CG	CORNER GUARD
CH BD	CHALKBOARD
CHFR	CHAMFER
CHIMNEY	
CHK	CHECK
CHR PL	CHROME PLATED
CI	CAST IRON
CI	CURB INLET
CIP	CAST-IN-PLACE
CIRC	CIRCULAR
CJ	CONTROL JOINT
CJ	CONSTRUCTION JOINT
CKT	CIRCUIT
CKT BRKR	CIRCUIT BREAKER
CL	CENTER LINE
CLG	CEILING
CLG HT	CEILING HEIGHT
CLGL	CLEAR GLASS
CLL	CONTRACT LIMIT LINE
CLO	CLOSET
CLOS	CLOSURE
CLR	CLEAR(ANCE)
CLWG	CLEAR WIRED GLASS
cm	CENTIMETER(S)
CMP	CORRUGATED METAL PIPE
CMPST	COMPOSITE
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CNL	CONDUCTIVE NEOPRENE LATEX
CNR	CORNER
CNTR	COUNTER
CO	CLEANOUT
CO2	CARBON DIOXIDE
COL	COLUMN
COM	COMMON
COMB	COMBUSTION
COMPT	COMPARTMENT
CONC	CONCRETE
CONN	CONNECT
CONSTR	CONSTRUCTION
CONT	CONTINUE
CONTR	CONTRACTOR
CORR	CORRIDOR
COV	COVER
CPRS	COMPRESSIBLE
CPT	CARPET
CRCMF	CIRCUMFERENCE
CRES	CORROSIVE RESISTANT STEEL
CRG	CROSS GRAIN
CRR	CORROSION RESISTANT REBAR

CRS	COURSE(S)
CS	CAST STONE
CSK	COUNTERSUNK
CSMT	CASEMENT
CT	CERAMIC TILE
CT	CURRENT TRANSFORMER
C TO C	CENTER TO CENTER
CTR	CENTER
CU	CONDENSING UNIT
Cu	COPPER
CU FT	CUBIC FEET
CUH	CABINET UNIT HEATER
CU YD	CUBIC YARDS
CV	CEILING VENT
CVH	CONDUCTIVE VINYL HOMOGENEOUS (SHEET
TYPE)	
CW	COLD WATER
CYL	CYLINDER
d	PENNY (AS IN NAIL - 10D)
DAT	DATUM
DB	DRY BULB
DBL	DOUBLE
DBL ACT DR	DOUBLE ACTING DOOR
DCJ	DOWELED CONTROL JOINT
DCJT	DUMMY CONTROL JOINT
DEG	DEGREE
DEMO	DEMOLITION
DEPR	DEPRESSION
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DH	DUCT HEATER
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISC	DISCONNECT
DISP	DISPENSER
DISTR PNL	DISTRIBUTION PANEL
DIV	DIVISION
DL	DEAD LOAD
DMPF	DAMPPROOFING
DMPR	DAMPER
DMT	DEMOUNTABLE
DN	DOWN
DR	DOOR
DR	DRAIN
DRB	DRAINBOARD
DR CL	DOOR CLOSER
DS	DOUBLE STRENGTH (GLASS)
DS	DOWNSPOUT
DT	DRAIN TILE
DVTL	DOVETAIL
DWG	DRAWING
DWLS	DOWELS
DWR	DRAWER
DWTR	DUMBWAITER
DX	DIRECT EXPANSION
E	EAST
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION - GRADE OR BUILDING
ELEC	ELECTRIC
EM	EXPANDED METAL
EMD	ESTIMATED MAXIMUM DEMAND
EMER	EMERGENCY
ENCL	ENCLOSE(URE)
ENTR	ENTRANCE, ENTERING
EP	ELECTRICAL PANELBOARD
EPRF	EXPLOSION PROOF
EPY	EPOXY COATING
EQ	EQUAL
EQUIP	EQUIPMENT
ESCAL	ESCALATOR
EST	ESTIMATE(D)
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EXC	EXCAVATE
EXH	EXHAUST
EXH A	EXHAUST AIR
EXST	EXISTING
EXP	EXPANSION
EXP	EXPOSED
EXP BT	EXPANSION BOLT
EXT	EXTERIOR
F	FAHRENHEIT
FA	FIRE ALARM
FA	FRESH AIR
FAC	FIRE APPARATUS CLOSET
FAI	FRESH AIR INTAKE
F BRK	FIRE BRICK
FC	FOOT CANDLE
FC BRK	FACE BRICK
FCG	FACING
FCJ	FLOOR CONSTRUCTION JOINT
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDMPR	FIRE DAMPER
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEB	FIRE EXTINGUISHER BRACKET
FEC	FIRE EXTINGUISHER CABINET
FF	FACTORY FINISH
FGL	FIBERGLASS
FH	FIRE HYDRANT
FH	FLAT HEAD
FHC	FIRE HOSE CABINET
FHMS	FLAT HEAD MACHINE SCREW
FHR	FIRE HOSE RACK
FHS	FIRE HOSE STATION
FHWS	FLAT HEAD WOOD SCREW
FIG	FIGURE
FIN	FINISH
FIN FLR	FINISH FLOOR
FIXT	FIXTURE
FJT	FLUSH JOINT
FLASH	FLASHING
FLR	FLOOR
FLEX	FLEXIBLE
FLG	FLOORING
FLR PL	FLOOR PLATE
FLUOR	FLUORESCENT
FN	FENCE
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FP	FIRE PARTITION
FP	FIREPROOF
FPM	FEET PER MINUTE

FR	FIRE RESISTANT
FR	FRAME
FRG	FORGED
FRMG	FRAMING
FRT	FIRE-RETARDANT
FS	FULL SIZE
FSTNR	FASTEN(ER)
FT	FEET
FTG	FOOTING
FURG	FURRING
FUT	FUTURE
FW	FIRE WATER
FWC	FABRIC WALL COVERING
G	NATURAL GAS
GA	GAGE
GAL	GALLON(S)
GALV	GALVANIZED
GALV STL	GALVANIZED STEEL
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GEN	GENERAL
GF	GROUND FACE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFE	GOVERNMENT-FURNISHED EQUIPMENT
GFE/CI	GOVERNMENT-FURNISHED EQUIPMENT
CONTRACTOR INSTALLED	
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GKT	GASKET(ED)
GL	GLASS
GL BLK	GLASS BLOCK
GLF	GLASS FIBER
GLZ	GLAZING
GLZ CMU	GLAZED CONCRETE MASONRY UNITS
G	GROUND
GOVT	GOVERNMENT
GPM	GALLONS PER MINUTE
GPT	GYPSUM TILE
GRAN	GRANITE
GR LN	GRADE LINE
GRTG	GRATING
GST	GLAZED STRUCTURAL TILE
GSU	GLAZED STRUCTURAL UNITS
GT	GROUT
GWT	GLAZED WALL TILE
GYP	GYPSUM
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTER
HB	HOSE BIBB
HC	HOLLOW CORE
HCD	HALON CONTAINMENT DAMPER
HCP	HANDICAPPED
HD	HEAD
HD	HEAVY DUTY
HDBD	HARDBOARD
HD JT	HEAD JOINT
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HES	HIGH EARLY-STRENGTH CEMENT
HEX	HEXAGON
HH	HANDHOLE
HK	HOOK(S)
HM	HOLLOW METAL
HNDRL	HANDRAIL
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HP	HORSEPOWER
HPT	HIGH POINT
HR	HOUR
HS	HIGH STRENGTH
HSGYP	HIGH-STRENGTH GYPSUM PLASTER
HSKPG	HOUSEKEEPING
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HYDR	HYDRAULIC
Hz	HERTZ
IC	INTERCOM
ID	INSIDE DIAMETER
IESNA	ILLUMINATING ENGINEERING SOCIETY OF NORTH
AMERICA	
ILK	INTERLOCK
IN	INCH
INCIN	INCINERATOR
INCL	INCLUDED
INSF	INSULATING FILL
INSUL	INSULATION
INT	INTERIOR
INTM	INTERMEDIATE
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
I.P.S.	INSIDE PIPE SIZE
JAN CLO	JANITOR'S CLOSET
J-BOX	JUNCTION BOX
JCT	JUNCTION
JST	JOIST
JT	JOINT
KIP	KILOPOUND (1000 POUNDS)
KIT	KITCHEN
KOP	KNOCKOUT PANEL
KPL	KICKPLATE
kV	KILOVOLTS
kVA	KILOVOLT AMPERES
kVAR	KILOVOLT AMPERES REACTIVE
kW	KILOWATT
KWY	KEYWAY
LAB	LABORATORY
LAD	LADDER
LAM	LAMINATE
LAT	LEAVING AIR TEMPERATURE
LAU	LAUNDRY
LAV	LAVATORY
LB	LAG BOLT
LB	POUND
LBL	LABEL
LBR	LUMBER
LC	LIGHT CONTROL
LD	LOAD
LDG	LOADING
LG	LENGTH
LH	LEFT HAND(ED)
LIN	LINEAR
LKR	LOCKER
LL	LIVE LOAD
LLD	LEAD-LINED DOOR
LM	LUMEN
LMST	LIMESTONE
LNTL	LINTEL
LOC	LIMITS OF CONSTRUCTION
LOD	LIMITS OF DISTURBANCE
LONG	LONGITUDINAL

LP	LIGHTPROOF
LPD	LIGHTPROOF DOOR
LPL	LIGHTPROOF LOUVER
LPT	LOW POINT
LR	LIVING ROOM
LS	LAWN SPRINKLER
LT	LIGHT
LT WT	LIGHTWEIGHT
LTG	LIGHTING
LTNG	LIGHTNING
LVR	LOUVER
LWC	LIGHTWEIGHT CONCRETE
LWT	LEAVING WATER TEMPERATURE
m	METER(S)
M&B	MATCHED AND BEADED
MACH	MACHINE
MAS	MASONRY
MATL	MATERIAL(S)
MAX	MAXIMUM
MB	MACHINE BOLTS
MBR	MEMBER
MC	MEDICINE CABINET
MCJ	MASONRY CONTROL JOINT
MCO	METAL-CASED OPENING
MDS	METAL DIVIDER STRIP
MECH	MECHANICAL
MECH RM	MECHANICAL ROOM
MED	MEDIUM
MEMB	MEMBRANE
MES	METAL EDGE STRIP
MFD	METAL FLOOR DECKING
MFG	MANUFACTURING
MFR	MANUFACTURER
MG	MOTOR GENERATOR
MGT	MATTE-GLAZED TILE
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM
MIRR	MIRROR
MISC	MISCELLANEOUS
ML	METAL LATH
ML	MONOLITHIC
MLDG	MOULDING
MLWK	MILLWORK
mm	MILLIMETER(S)
MNIC	MATERIAL NOT IN CONTRACT (INSTALLATION BY
CONTRACTOR)	
MO	MASONRY OPENING
MOD	MODULAR
MOD	MODIFIED
MOT	MOTOR
MP	MOVABLE PARTITION
MR	MOP RECEPTOR
MRB	MARBLE BASE
MRD	METAL ROOF DECKING
MS	MACHINE SCREWS
MT	METAL THRESHOLD
MT	MOUNT
MTD	MOUNTED
MTFR	METAL FURRING
MTL	METAL
MVBL	MOVABLE
MULL	MULLION
N	NORTH
NAT	NATURAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS
ASSOCIATION	
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
Ni	NICKEL
NIC	NOT IN CONTRACT
NL	NAILABLE
N.L.	NEOPRENE LATEX
NM	NONMETALLIC
NO	NORMALLY OPEN
NO	NUMBER
NOM	NOMINAL
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
N"REQD	NOT REQUIRED
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBSC	OBSCURE
OBW	OBSERVATION WINDOW
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
OFC	OFFICE
OGL	OBSCURE GLASS
OH	OVERHEAD
OHMS	OVALHEAD MACHINE SCREW
OHWS	OVALHEAD WOOD SCREW
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPQ	OPAQUE
OPS	OPERATIONS
OS & Y	OUTSIDE SCREW AND YOKE
OWGL	OBSCURE WIRED GLASS
P	POLE
PA	PUBLIC ADDRESS
PAR	PARALLEL
PB	PANIC BAR
PBD	PARTICLE BOARD
PBS	PUSH BUTTON STATION
PC	PIECE
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PCP	CEMENT PLASTER (PORTLAND)
PD	PAVEMENT DRAIN
PED	PEDESTAL
PERF	PERFORATE(D)
PERIM	PERIMETER
PH	PHASE
PHAR	PHARMACY
PI	POINT OF INTERSECTION
PIPU	PREFAB ISOLATION POWER UNIT
PIV	POST INDICATING VALVE
PL	PLATE
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLAT	PLATFORM
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOT
PLG	PILING
PL GL	PLATE GLASS
PLYWD	PLYWOOD
PNL	PANEL
PT	PAINT(ED)
POL	POLISHED
PORC	PORCELAIN
PORT	PORTABLE

PPGL	POLISHED PLATE GLASS
PPM	PARTS PER MILLION
PR	PAIR
PREFAB	PREFABRICATE(D)
PREFIN	PREFINISHED
PREFMD	PREFORMED
PRKG	PARKING
PROJ	PROJECT
PRV	PRESSURE-REGULATING VALVE
PS	PIPE SPACE
P.S.	PRESSED STEEL
PS CONC	PRESTRESSED CONCRETE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PNEUMATIC TUBE
PT.	POINT
PT CONC	POST-TENSIONED CONCRETE
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
PTR	PAPER TOWEL RECEPTACLE
PV	PAVED
PVC	POLYVINYL CHLORIDE
PVG	PAVING
PW	PASS WINDOW
QT	QUARRY TILE
QT.	QUART
QTR	QUARTER
1/4 RND	QUARTER ROUND
QTY	QUANTITY
R	RADIUS
R	RANGE
R	RISER
RA	RETURN AIR
RAB	RABBETED
RA GR	RETURN AIR GRILLE
RAR	RETURN AIR REGISTER
RB	RUBBER BASE, RESILIENT BASE
RBL	RUBBLE STONE
RBR	RUBBER
RC	REMOTE CONTROL
RCP	REINFORCED CONCRETE PIPE
RCVR	RECEIVER
RD	ROOF DRAIN
RDG INS	RIGID INSULATION
RECPT	RECEPTACLE
REC ROOM	RECREATION ROOM
RECT	RECTIFIER
REF	REFERENCE
REFL	REFLECT
REFR	REFRIGERATION
REG	REGISTER
REG	REGLET
REINF	REINFORCE
REM	REMOVE(ABLE)
REQD	REQUIRED
RESIL	RESILIENT
RET	RETURN
REV	REVISION
RFG	ROOFING
RH	RELATIVE HUMIDITY
RH	RIGHT HAND
RH	ROOF HATCH
RK	RACK
RLG	RAILING
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RP	RETRACTABLE PARTITION
RPM	REVOLUTIONS PER MINUTE
RPRT	RAISED PATTERN RUBBER TILE
RTF	RUBBER TILE FLOOR
RVS	REVERSE
RVT	RIVET
RWC	RAINWATER CONDUCTOR
S	SOUTH
SA	SUPPLY AIR
SB	SPLASH BLOCK
S.B.	SECURITY BARS
SC	SOLID CORE
SCHED	SCHEDULE
SCRN	SCREEN
SCT	STRUCTURAL CLAY TILE
SD	STORM DRAIN
SDI	STEEL DOOR INSTITUTE
SECT	SECTION
SEQ	SEQUENCE
SFGL	SAFETY GLASS
SFTU	STRUCTURAL FACING TILE UNIT
SFU	STRUCTURAL FACING UNIT
SG	SHEET GLASS
SHLDR	SHOULDER
SHT	SHEET
SHTHG	SHEATHING
SHV	SHELVING
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SKLT	SKYLIGHT
SLNT	SEALANT
SLV	SLEEVE
SM	SHEET METAL
SMS	SHEET METAL SCREWS
SOV	SHUT OFF VALVE
SPC	SPACER
SPCL	SPECIAL
SPD	SOUNDPROOF DOOR
SPEC	SPECIFICATION
SPF	SOUNDPROOF
SP FIN	SPECIAL FINISH
SPH	SPACE HEATER
SPKR	SPEAKER
SQ	SQUARE
SQHD	SQUARE HEAD
S&R	SHELF AND ROD
SS	SERVICE SINK
SS	STANDING SEAM (ROOF)
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STG	SEATING
STL	STEEL
STOR	STORAGE
ST PR	STATIC PRESSURE
STR	STRINGER
STRUCT	STRUCTURAL
STWY	STAIRWAY
SUB FL	SUBFLOOR
SUSP	SUSPENDED
SV	SHEET VINYL
SW	SWITCH
SWBD	SWITCHBOARD
SYMM	SYMMETRICAL
SYNTH	SYNTHETIC
SYS	SYSTEM

T	TREAD
TAN	TANGENT
TB	TOWEL BAR
TC	TERRA COTTA
TEL	TELEPHONE
TEMP	TEMPERATURE
TEMP	TEMPORARY
TER	TERRAZZO
TERM	TERMINAL
T&G	TONGUE AND GROOVE
TGL	TOGGLE
TH	TRUSS HEAD
THK	THICK(NESS)
THRES	THRESHOLD
TK BD	TACKBOARD
TKS	TACKSTRIP
TO	TOP OF
TOL	TOLERANCE
TOPO	TOPOGRAPHY
TOS	TOP OF SLAB
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TURNING PAD
TPD	TOILET PAPER DISPENSER
TPTN	TOILET PARTITION
TRANS	TRANSOM
TRANS	TRANSVERSE
TSTAT	THERMOSTAT
TV	TELEVISION
TYP	TYPICAL
UC	UNIT COOLER
UGND	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNEX	UNEXCAVATED
UNFIN	UNFINISHED
UPS	UNINTERRUPTABLE POWER SUPPLY
UR	URINAL
UTIL	UTILITY
UV	UNIT VENTILATOR
V	VOLT
VAR	VARNISH
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VCT	VITRIFIED CLAY TILE
VD	VAULT DOOR
VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
VENT	VENTILATOR(TION)
VERT	VERTICAL
VEST	VESTIBULE
VF	VINYL FABRIC
VG	VERTICAL GRAIN
VH	VINYL HOMOGENEOUS
VJ	V-JOINT(ED)
VNR	VENEER
VOL	VOLUME
VR	VAPOR RETARDER
VRM	VERMICULITE
VS	VENT STACK
V.T.	VOLTAGE TRANSFORMER
VTR	VENT THRU ROOF
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
WB	WET BULB
WBL	WOOD BLOCKING
WC	WATER CLOSET
W/C	WHEELCHAIR
WCO	WOOD-CASED OPENING
WD	WOOD
WD	WOOD DOOR
WDSP	WASTE DISPOSER
WDW	WINDOW
WF	WIDE FLANGE
WGL	WIRED GLASS
WH	WALL HUNG
WH	WATER HEATER
WHB	WHEEL BUMPER
WHM	WATT-HOUR METER
WI	WROUGHT IRON
WKSH	WORK SHOP
WM	WIRE MESH
W/O	WITHOUT
WP	WATERPROOF(ING)
WP	WEATHERPROOF
WP	WORKING POINT
WR	WASTE RECEPTACLE
WRB	WARDROBE
WS	WATERSTOP
W.S.	WASTE STACK
WSCT	WAINSCOT
WT	WEIGHT
WTH	WIDTH
W/W	WALL TO WALL
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
WWR	WELDED WIRE REINFORCEMENT
XFMR	TRANSFORMER
YD	YARD
YD	YARD DRAIN

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188
DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
ABBREVIATIONS

SHEET ID
G-003

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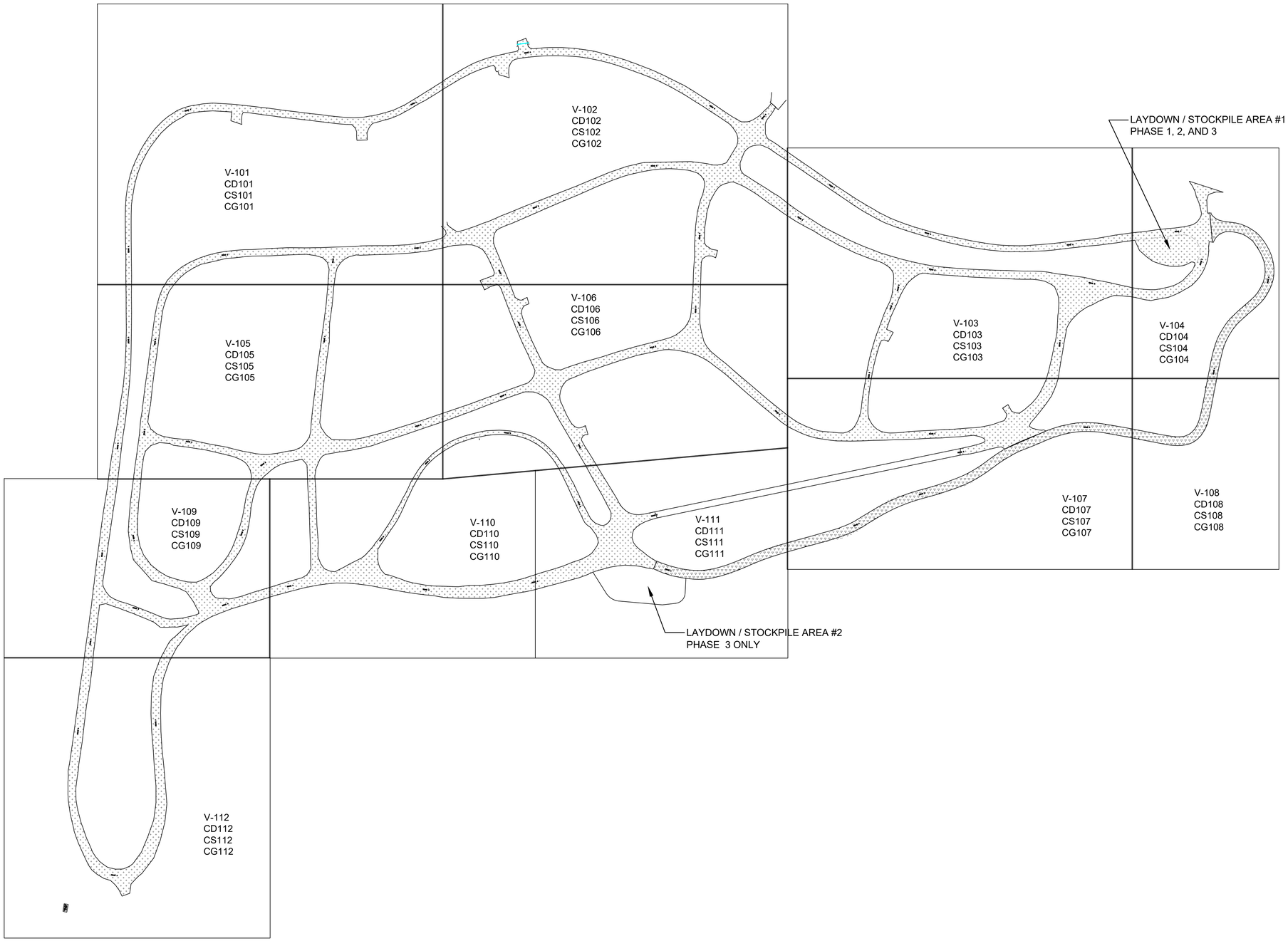

A7 KEY PLAN

SCALE: 1"= 150'

0 150' 300'

PLAN NORTH

SURVEY NOTES:

1. THE SURVEY INFORMATION CONTAINED IN THIS PLAN SET AND THE FOLLOWING SURVEY NOTES WERE OBTAINED FROM A USACE PROJECT TITLED, "NORTH RANGE COMPLEX", DATED 17 JANUARY 2008. ALL CONDITIONS OF THE SURVEY APPLY TO THE EXISTING CONDITIONS REPRESENTED IN THIS PLAN SET. IN ADDITION, RECENT TOPOGRAPHIC SURVEY WAS PERFORMED BY WATERWAY SURVEYS AND ENGINEERING, LTD DURING JULY AND AUGUST, 2024. SEE ALSO V-001 FOR ADDITIONAL INFORMATION.
2. NORTH MERIDIAN SHOWN HEREON IS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE NAD83/93.
3. THIS SURVEY DOES NOT ADDRESS THE EXISTENCE OR NONEXISTENCE OF WETLANDS, ENVIRONMENTAL HAZARDS, CEMETERIES OR ANY UNDERGROUND STRUCTURE NOT OBSERVED DURING THE COURSE OF THE SURVEY.
4. THIS SURVEY DOES NOT GUARANTEE THE EXISTENCE, SIZE, OR HORIZONTAL LOCATION OF ANY UNDERGROUND UTILITIES. THE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY, IF ANY, WERE ESTABLISHED USING ABOVE GROUND STRUCTURES (VALVES, MANHOLES, ETC.). NO GUARANTEE IS MADE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.
5. ACCURACY OF THE UTILITY INFORMATION SHOWN CANNOT BE GUARANTEED, AND ALL UNDERGROUND UTILITY LOCATIONS SHOWN HEREON SHOULD BE CONSIDERED APPROXIMATE. CONTRACTOR MUST VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.
6. UTILITIES SHOWN WERE PROVIDED BY THE GOVERNMENT IN DWG FORMAT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION.
7. SURVEY UNIT IS U.S SURVEY FEET.
8. ROADS THAT ARE HATCHED REPRESENT THE PROJECT SCOPE OF WORK.

LAYDOWN NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR ANY PERMITS FOR THE STOCKPILE/ LAYDOWN AREAS. THE PRECONSTRUCTION MEETING SHALL PROVIDE ADDITIONAL COORDINATION BETWEEN THE CONTRACTOR AND THE CUSTOMER.
2. LAYDOWN/STOCKPILE AREAS ARE SHOWN. LAYDOWN'STOCKPILE AREA #2, ADJACENT TO TP#2, SHALL BE USED FOR PHASE 3 ONLY. CONTRACTOR SHALL RESTORE THE AREAS TO THEIR PRIOR CONDITION ONCE CONSTRUCTION ACTIVITIES ARE COMPLETED.

LEGEND:

EXISTING ASPHALT PAVEMENT

EXISTING GRAVEL ROAD

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
KEY PLAN

SHEET ID
G-004

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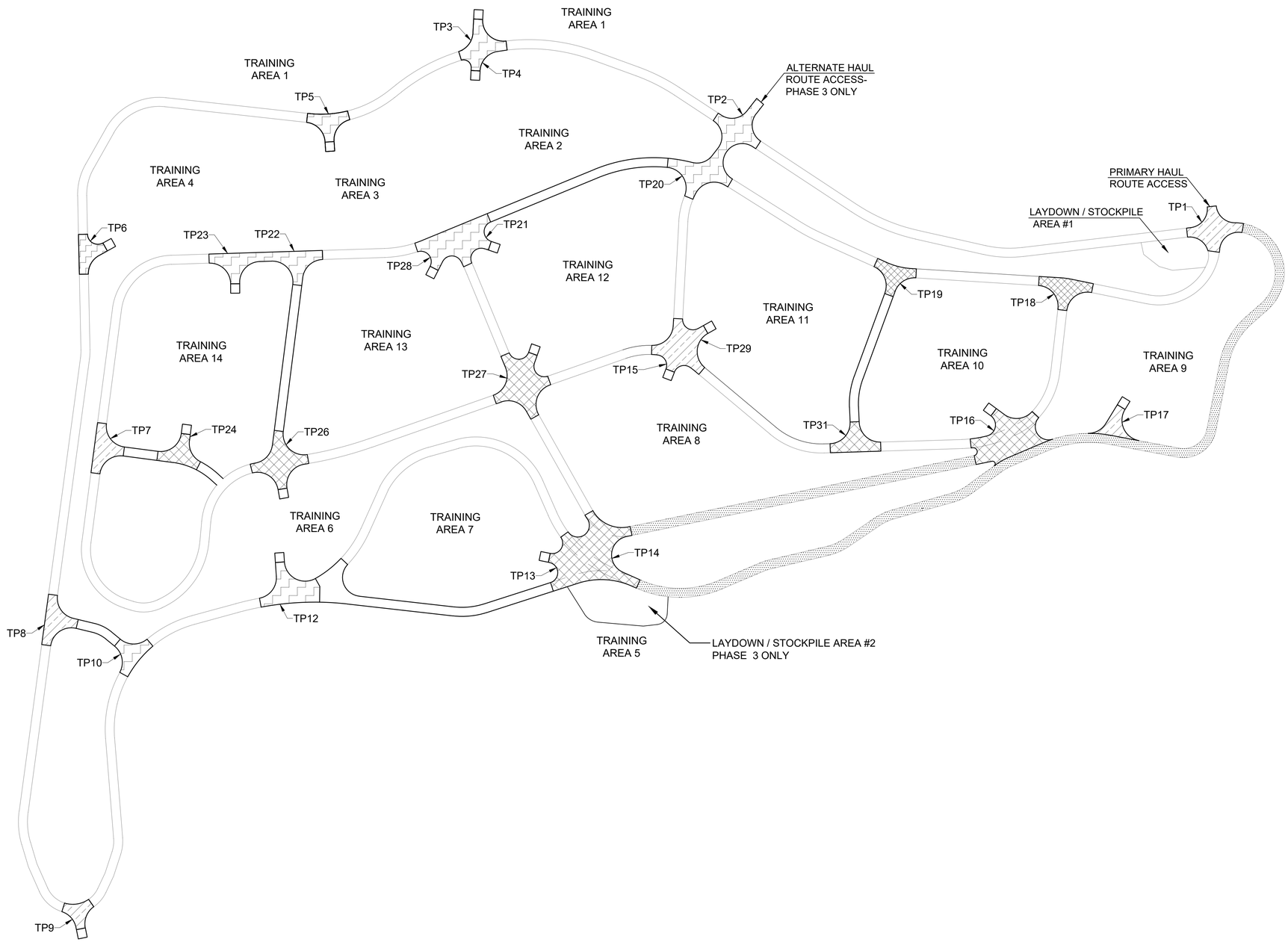

A7 PHASING PLAN
SCALE: 1" = 150'-0"

PLAN NORTH

0 150' 300'

GENERAL NOTES:

1. CONTRACTOR SHALL COMMENCE CONSTRUCTION ACTIVITIES WITH PRIORITY ONE PHASE WHILE PRIORITY PHASES TWO AND THREE REMAIN OPERATIONAL. ONCE COMPLETED, CONTRACTOR SHALL COMMENCE CONSTRUCTION ACTIVITIES IN PRIORITY PHASE TWO WHILE PRIORITY PHASE ONE AND THREE REMAIN OPERATIONAL. ONCE COMPLETED, CONTRACTOR SHALL COMMENCE CONSTRUCTION ACTIVITIES IN PRIORITY PHASE THREE WHILE PRIORITY PHASE ONE AND TWO REMAIN OPERATIONAL.

KEYNOTES:

LEGEND:

- PRIORITY ONE PHASE
- PRIORITY TWO PHASE
- PRIORITY THREE PHASE
- NIC- NOT IN CONTRACT

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N.INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 1188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS: VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
PHASING PLAN

SHEET ID
G-005

EXISTING CONDITIONS SURVEY NOTES

1. TOPOGRAPHIC FEATURES SHOWN HEREON WERE COMPILED FROM FIELD SURVEYS PERFORMED BY WATERWAY SURVEYS & ENGINEERING, LTD. DURING JULY AND AUGUST OF 2024.
2. HORIZONTAL COORDINATES ARE IN U.S. SURVEY FEET AND ARE REFERENCED TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM (SOUTH ZONE) NAD 83. COORDINATE VALUES TIE INTO THE EXISTING FORT GREGG-ADAMS CONTROL MONUMENTS R-3, R-9, AND R-10 AS DESCRIBED IN "PHOTO CONTROL SURVEY FOR U.S. ARMY, FT. LEE", DATED 30 OCTOBER 1996.
3. ELEVATION VALUES ARE IN FEET AND ARE REFERENCED TO NGVD 29 DATUM. THESE VALUES TIE INTO EXISTING FORT GREGG-ADAMS CONTROL MONUMENT R-3 AS DESCRIBED IN "PHOTO CONTROL SURVEY FOR U.S. ARMY, FT. LEE", DATED 30 OCTOBER 1996.
4. EXISTING GROUND CONDITIONS FOR CONTRACTOR USE ONLY. "CD-", "CG-", AND "CS-" SHEETS SHALL BE USED FOR CONSTRUCTION INFORMATION.

COORDINATES OF ON-SITE CONTROL POINTS

MARK	NORTH (Y)	EAST (X)	ELEVATION (Z)
1	3,633,712.27	11,820,014.99	88.59
2	3,632,838.17	11,818,707.82	102.48
3	3,631,682.27	11,818,278.67	111.00
4	3,632,604.36	11,820,063.25	118.94
5	3,632,822.78	11,821,187.63	83.44

LEGEND

- EXISTNG GRAVEL
- EXISTING ASPHALT
- RIP RAP
- GRAVEL ROAD
- DITCH/SWALE
- FENCE
- GUARD RAIL
- U/G ELECTRIC
- UNDERDRAIN PIPE
- E XISTING CONCRETE PIPE
- NEW REINFORCED CONCRETE PIPE
- COMM MH — COMMUNICATION MANHOLE
- SIGN
- LP — LIGHT POLE
- UNDERDRAIN END TREATMENT (UD)
- C_ — CULVERT DESIGNATION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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E4ECEBPH

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMEL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: JULY 8, 2024
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 1188

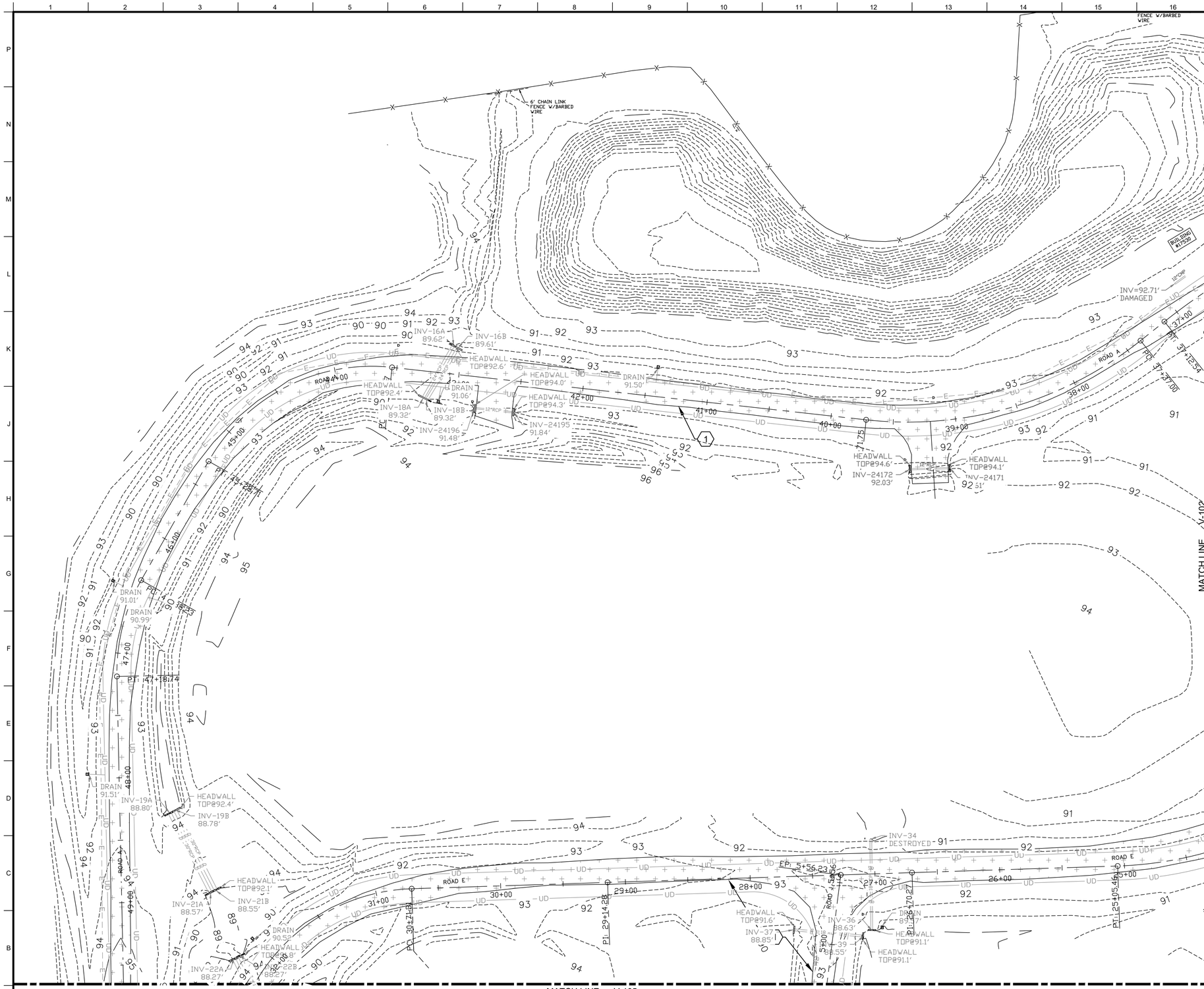
U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

SURVEY NOTES AND LEGEND

SHEET ID
V-001



A7 EXISTING CONDITIONS
SCALE: 1" = 40'-0"

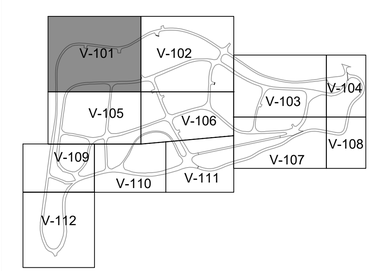
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



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MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIVALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID
V-101

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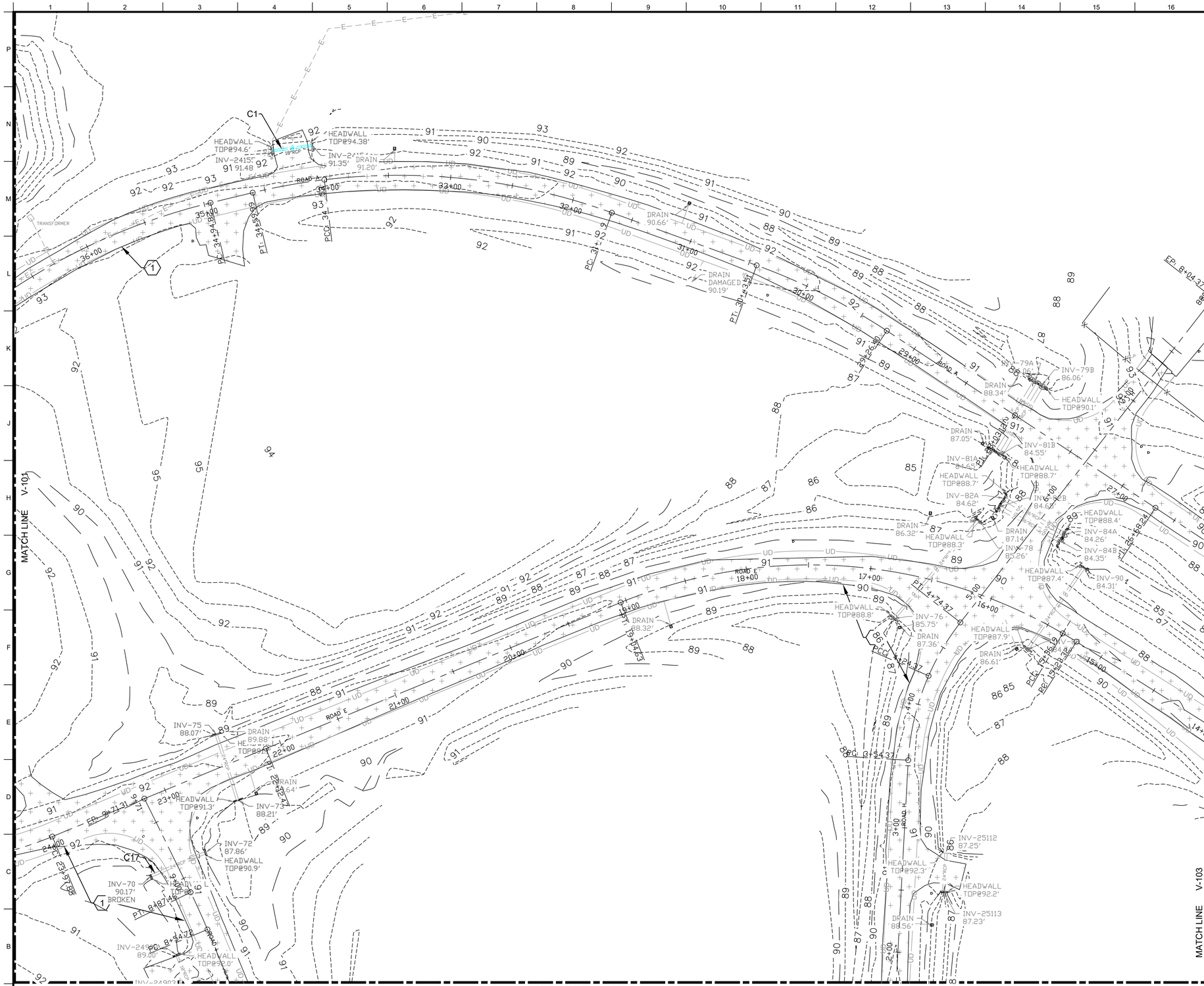


A7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

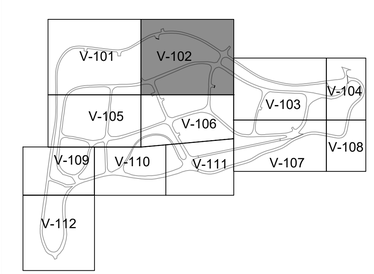
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



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MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: I 1188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID
V-102

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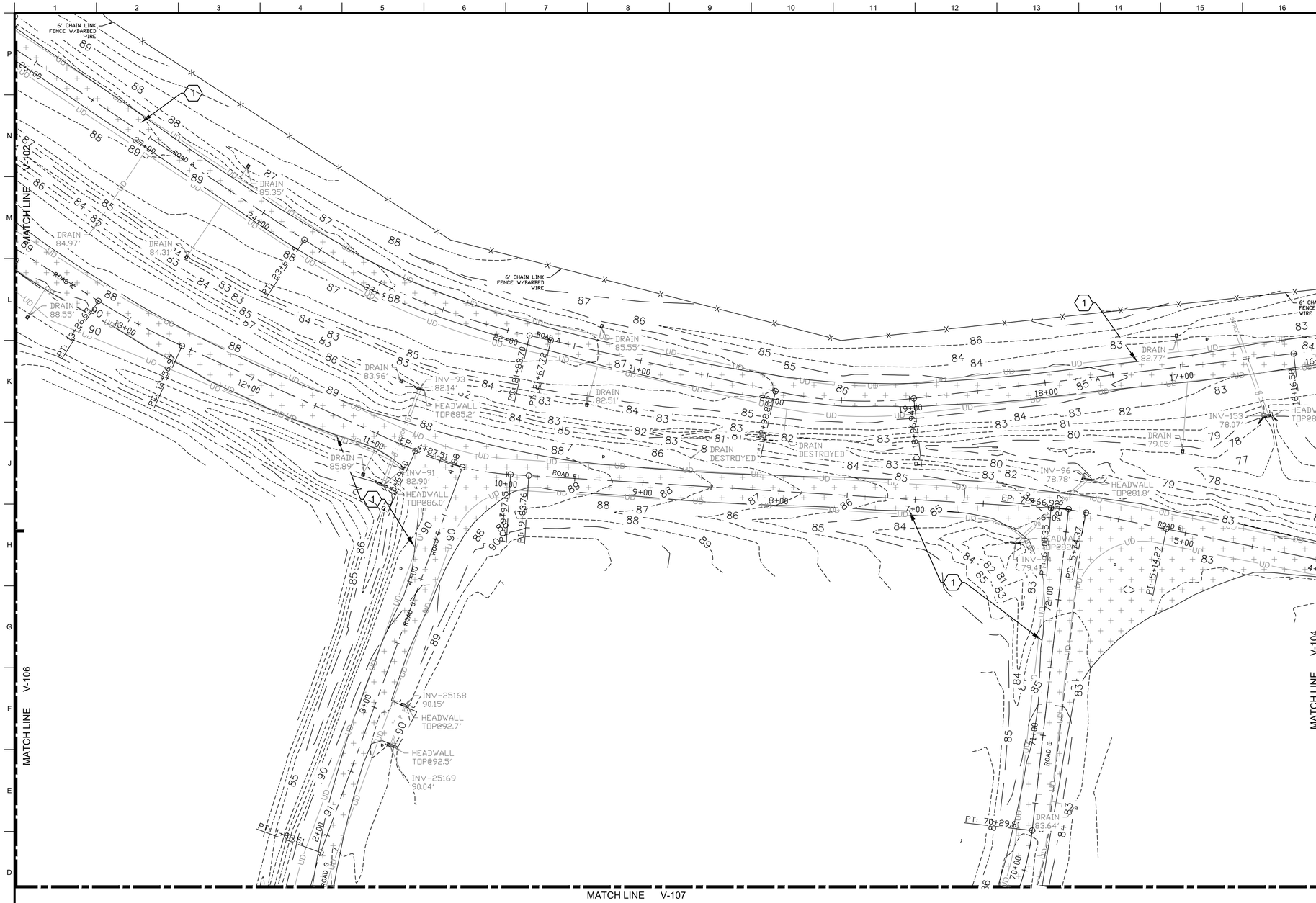


C7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

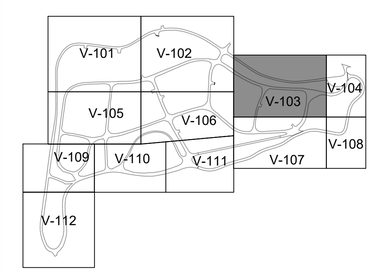
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



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DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID

V-103

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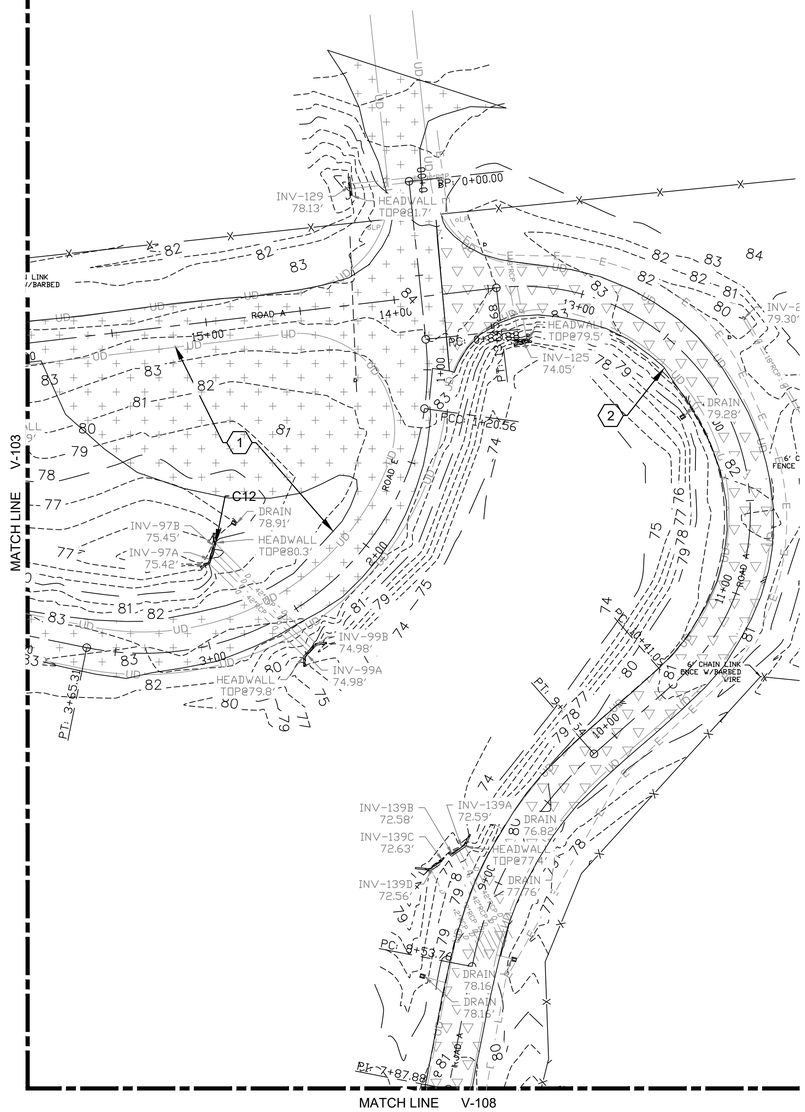


C7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

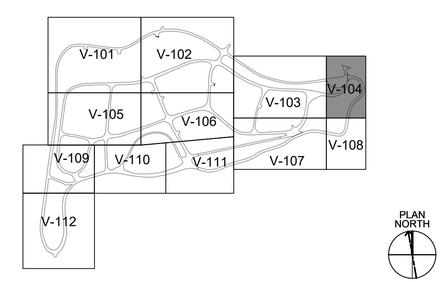
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.
2. EXISTING ASPHALT ROADWAY SECTION, SEE DETAIL A14/C-506.

KEY PLAN:



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MARK	DESCRIPTION	DATE

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DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIVALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID

V-104

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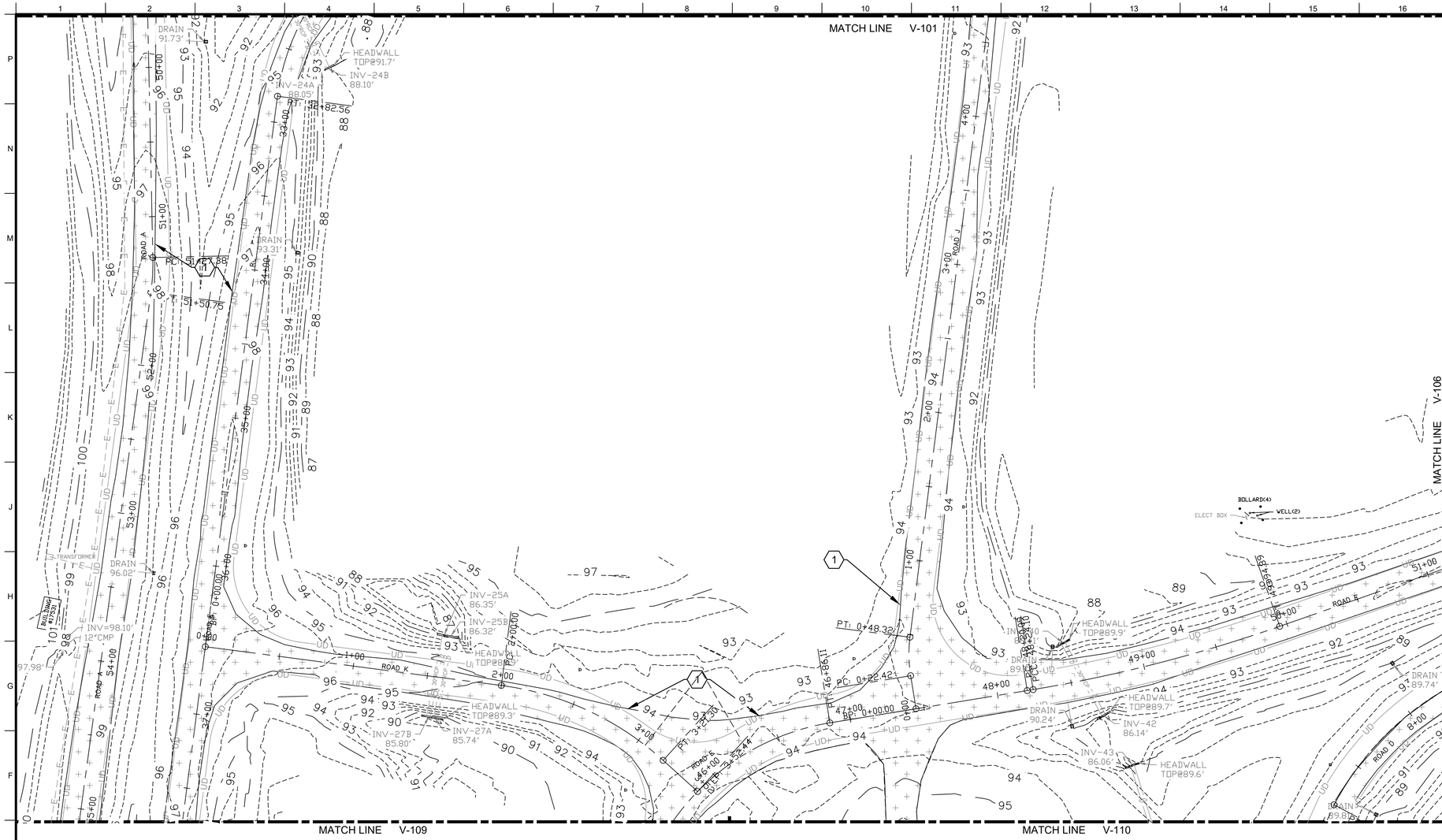


E7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

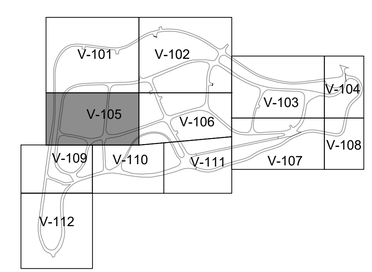
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



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CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
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SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID
V-105

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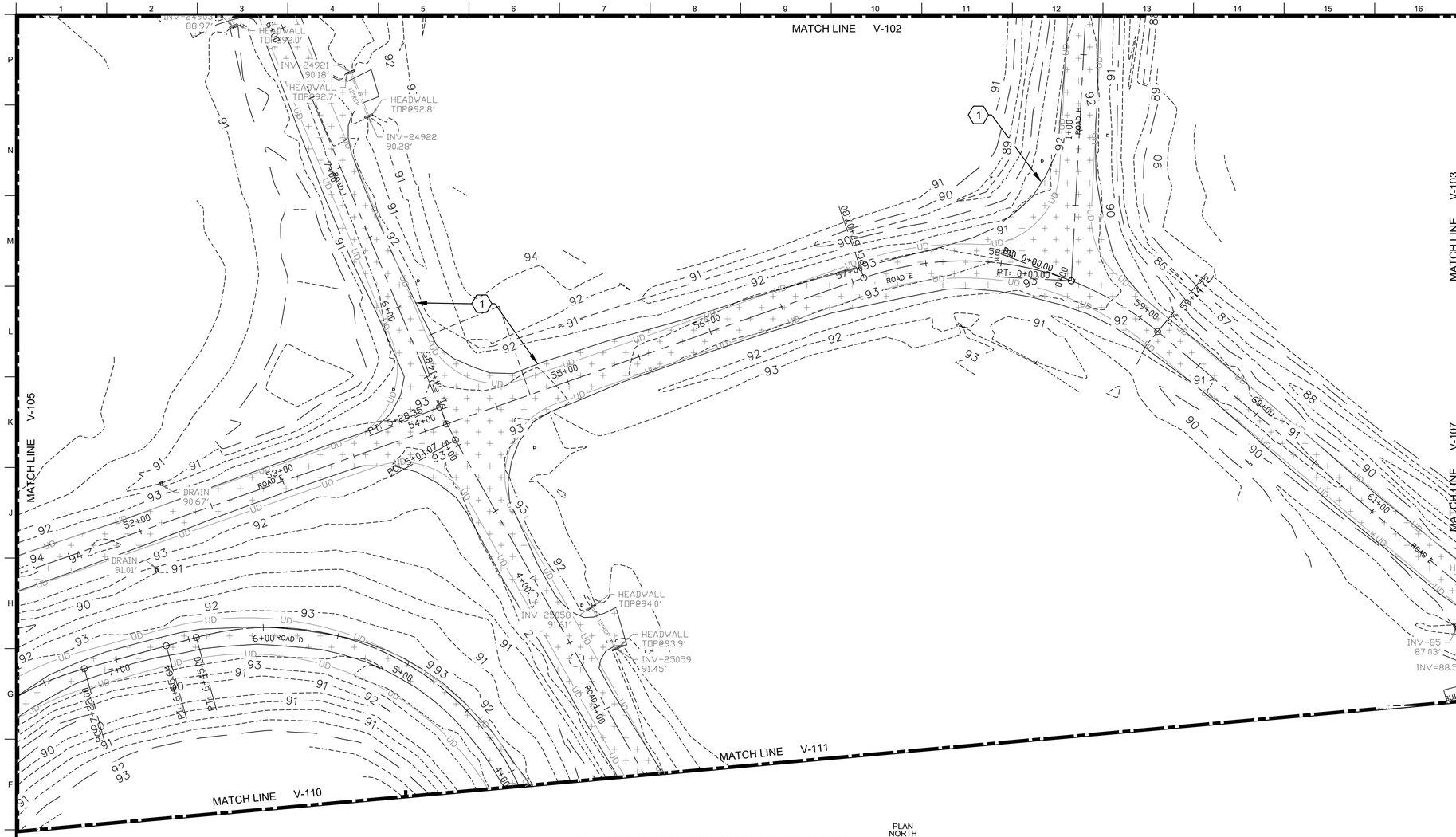


E7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

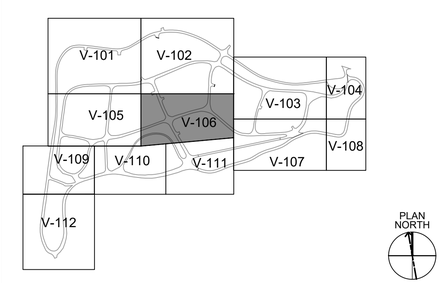
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



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DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID

V-106

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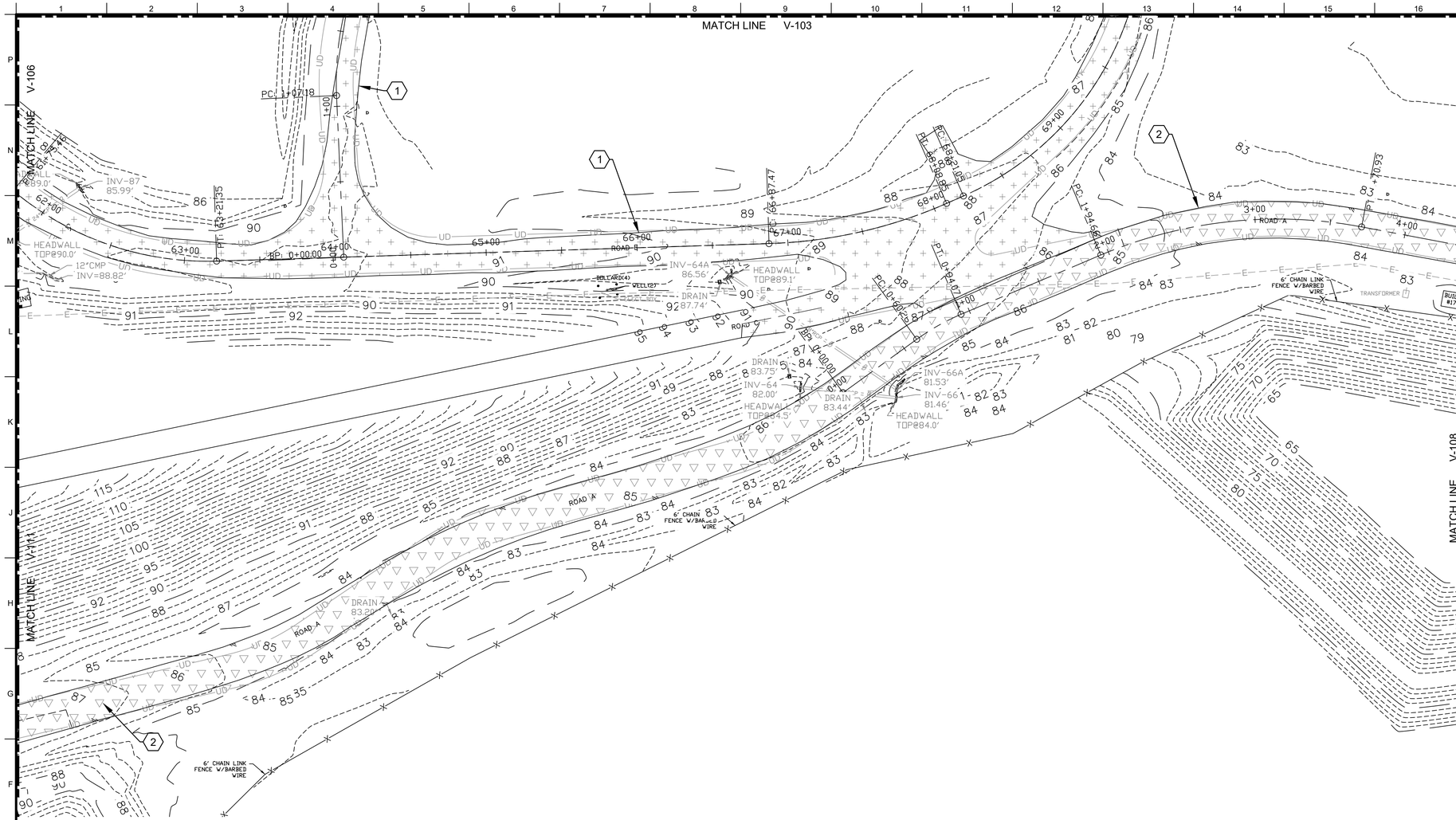


E7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

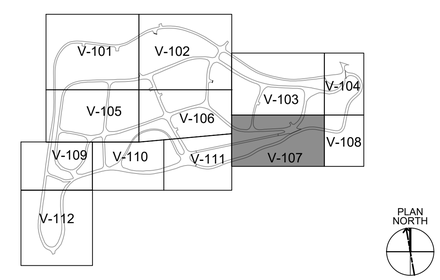
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.
2. EXISTING ASPHALT ROADWAY SECTION, SEE DETAIL A14/C-506.

KEY PLAN:



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID
V-107

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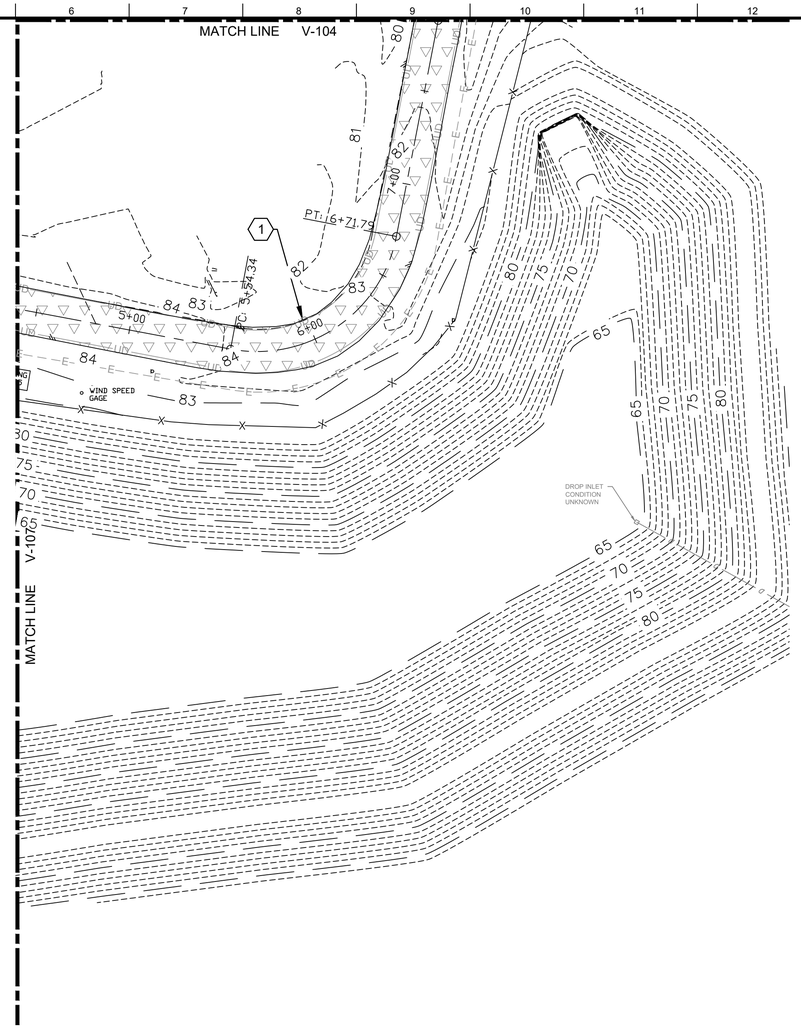


E7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

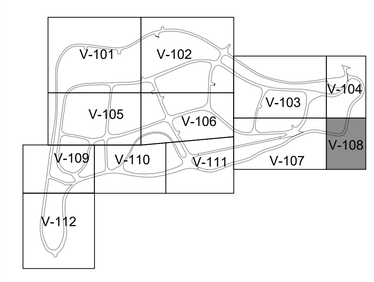
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING ASPHALT ROADWAY SECTION, SEE DETAIL A14/C-506.

KEY PLAN:



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID

V-108

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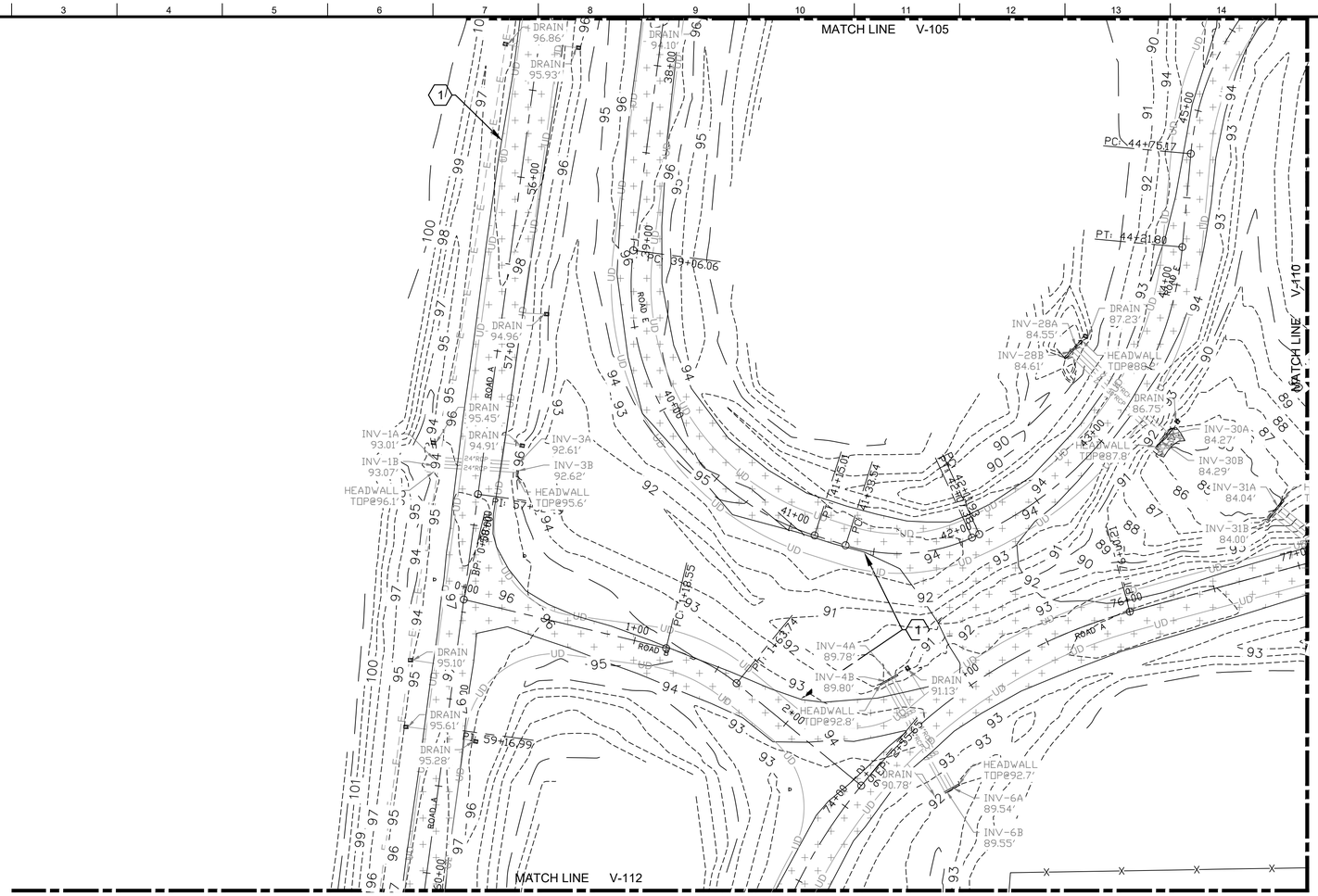


E7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

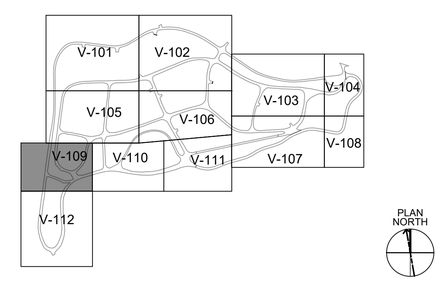
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID

V-109

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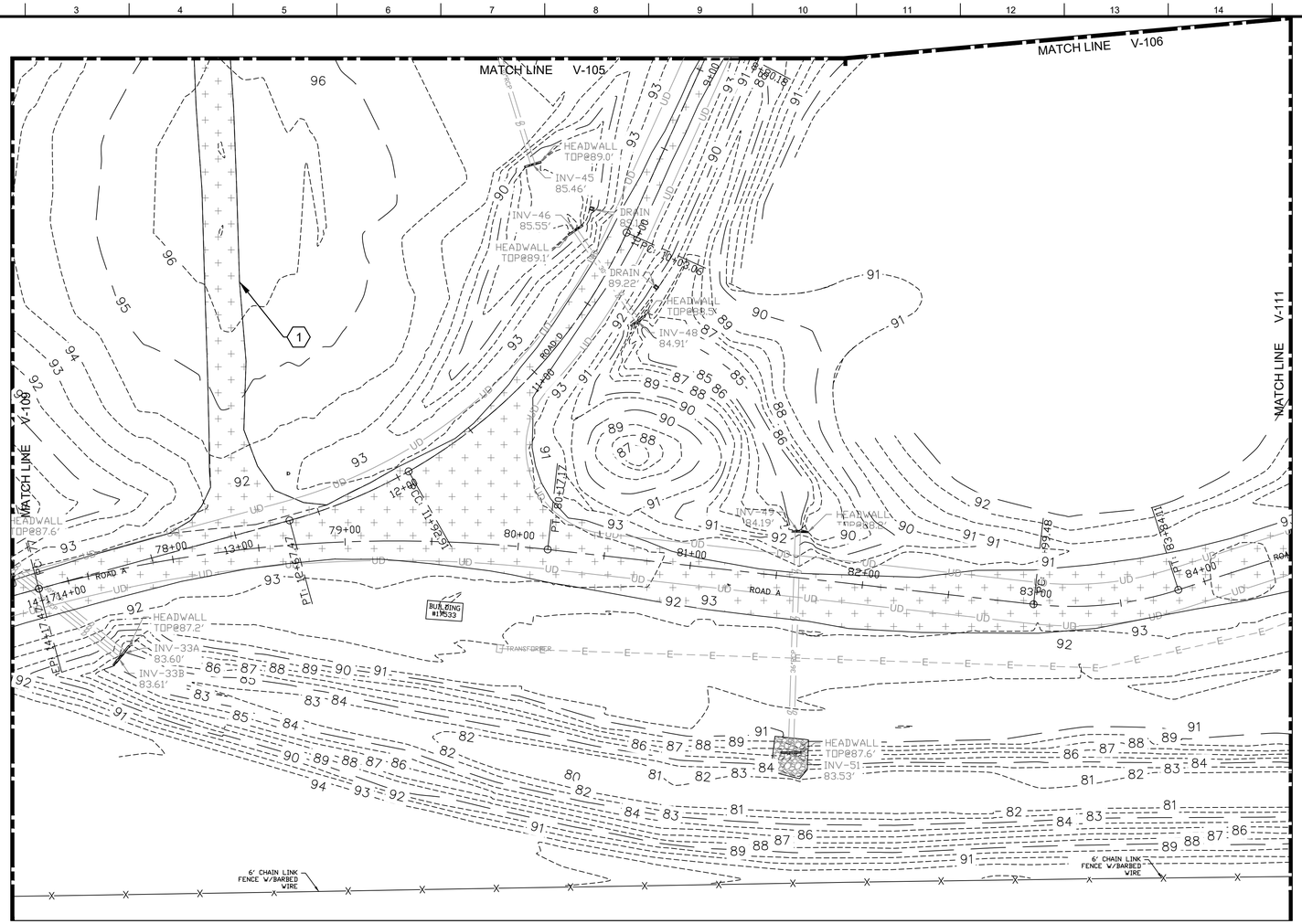


E7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

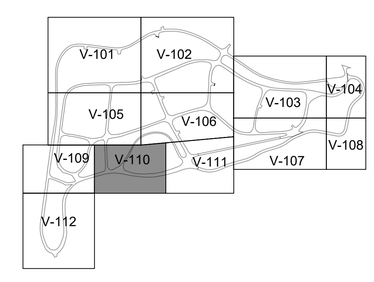
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIVALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID
V-110

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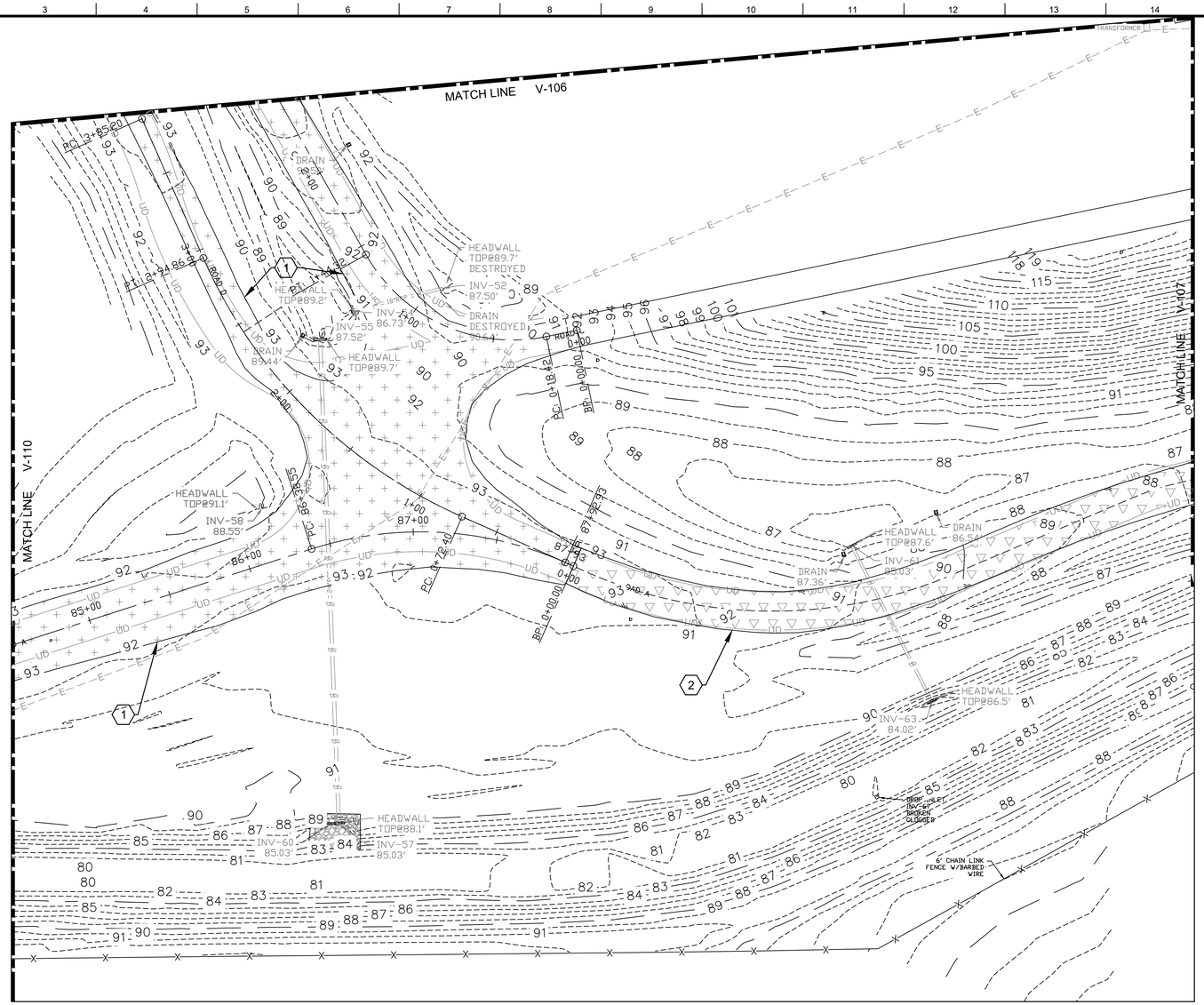


D7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

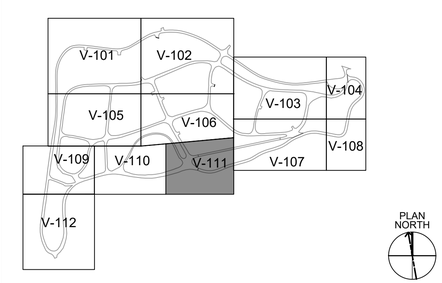
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.
2. EXISTING ASPHALT ROADWAY SECTION, SEE DETAIL A14/C-506.

KEY PLAN:



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID
V-111

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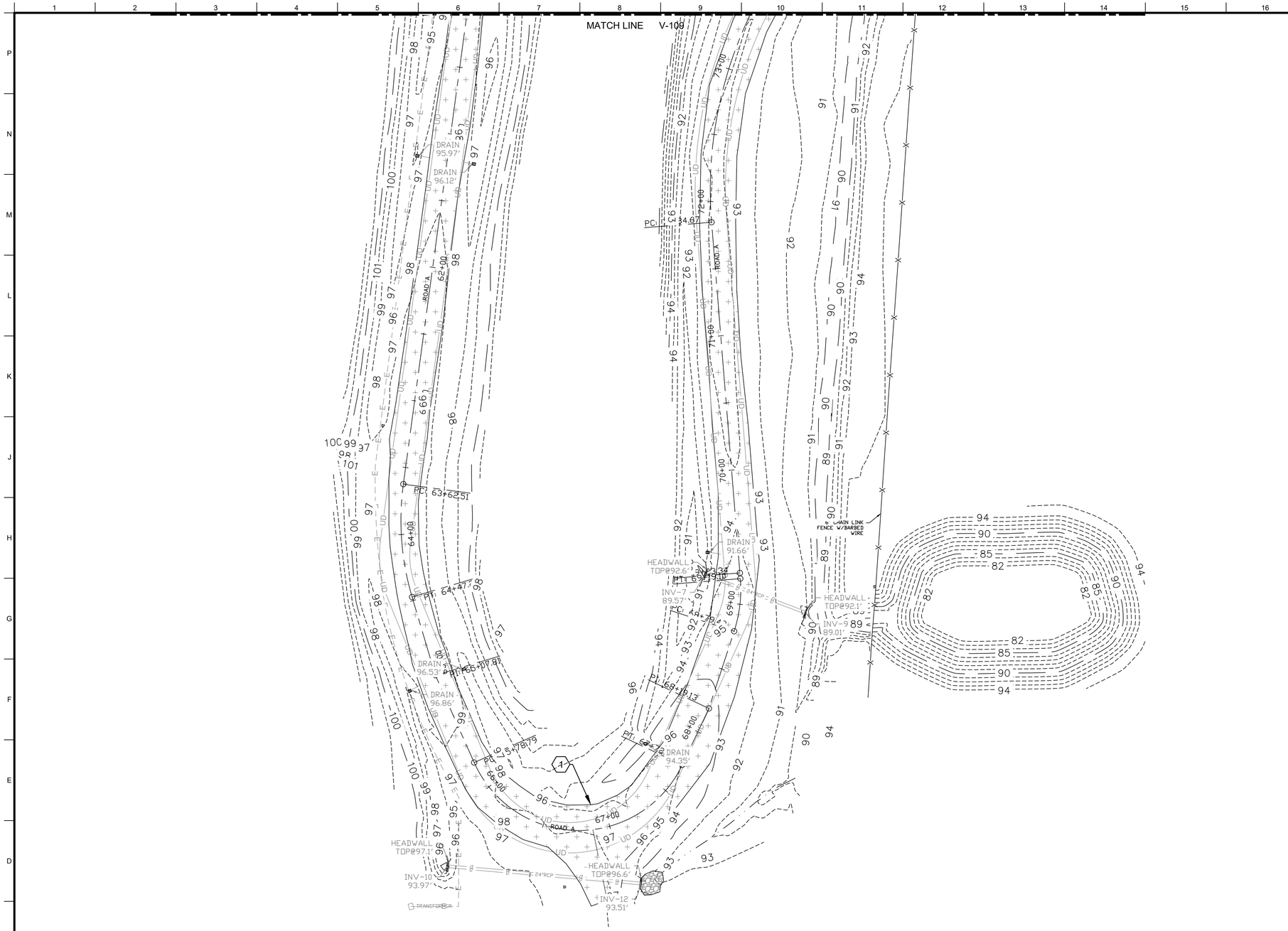


A7 EXISTING CONDITIONS

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

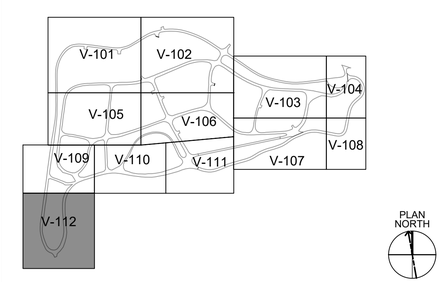
GENERAL NOTES:

1. SEE SHEET V-001 FOR GENERAL SURVEY NOTES AND LEGEND.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.

KEYNOTES:

1. EXISTING GRAVEL ROADWAY SECTION, SEE DETAIL D14/C-506.

KEY PLAN:



US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. WALL
SIZE:

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

EXISTING CONDITIONS

SHEET ID
V-112

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A7 DEMOLITION SITE PLAN
SCALE: 1" = 40'-0"

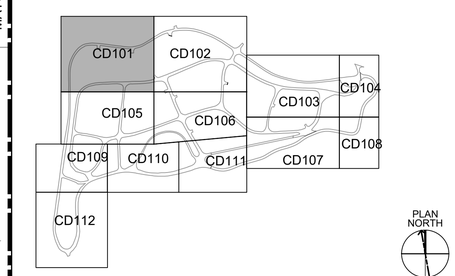
GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. DRAINAGE STRUCTURES LABELED TO BE REMOVED SHALL REMOVE THE STRUCTURE, PIPE, AND RIPRAP. CONTRACTOR SHALL FILL THE EXCAVATED AREA, COMPACT PER SPECIFICATIONS, INSTALL MUCH, AND APPLY PERMANENT SEEDING.
3. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME.

KEYNOTES:

1. REMOVE AND REPLACE DAMAGED STORM CULVERT. MATCH INVERTS.
2. REMOVE EXISTING CULVERT AND HEADWALLS.
3. REMOVE EXISTING ENTRANCE.
4. REMOVE DAMAGED INVERT BY REMOVING THE AFFECTED JOINT(S) OF OF PIPE. RESTORE AND REPAIR INFLOW CHANNEL AS REQUIRED.

KEY PLAN:



LEGEND:

- DEMOLITION
- SF — SILT FENCE SEE DETAIL E2/C-503
- MU — MULCHING SEE DETAIL G15/C-503
- TS — TEMPORARY SEEDING SEE DETAIL A15/C-503
- CIP — CULVERT INLET PROTECTION SEE DETAIL G1/C-504
- DRAINAGE BOUNDARY
- FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R.TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J.WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
DEMOLITION SITE PLAN

SHEET ID
CD101

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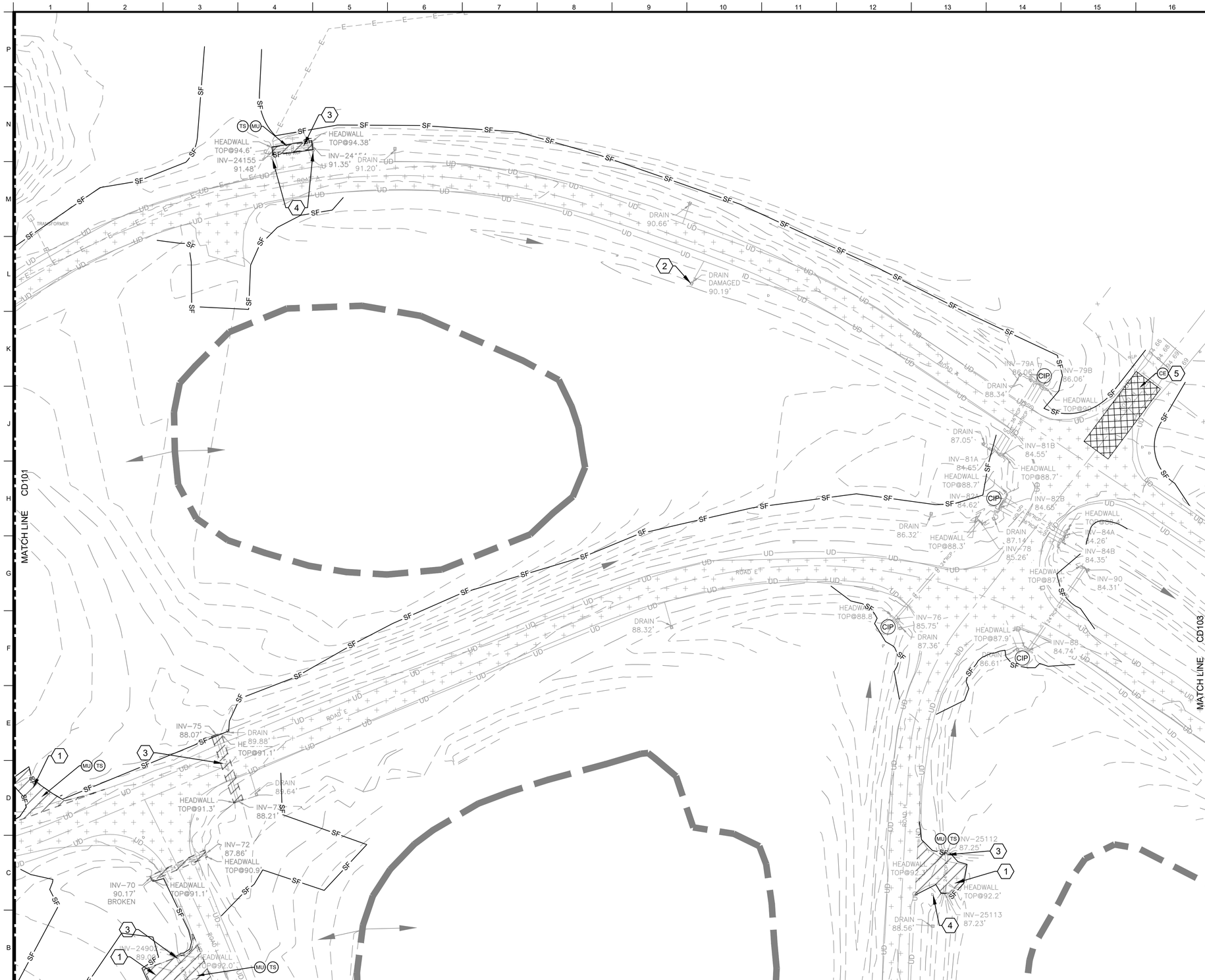


MATCH LINE CD106

A7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

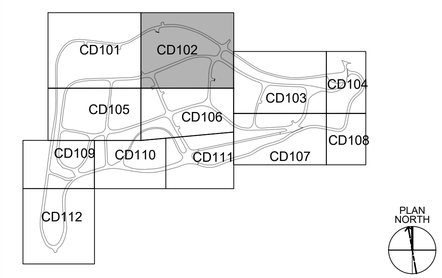
GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. DRAINAGE STRUCTURES LABELED TO BE REMOVED SHALL REMOVE THE STRUCTURE, PIPE, AND RIPRAP. CONTRACTOR SHALL FILL THE EXCAVATED AREA, COMPACT PER SPECIFICATIONS, INSTALL MUCH, AND APPLY PERMANENT SEEDING.
3. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME.

KEYNOTES:

1. REMOVE ENTRANCE.
2. REMOVE UNDERDRAIN.
3. REMOVE CULVERT AND HEADWALLS.
4. REMOVE SIGN; PROVIDE TO OWNER.
5. INSTALL CONSTRUCTION ENTRANCE.

KEY PLAN:



LEGEND:

CE	CONSTRUCTION ENTRANCE SEE DETAIL G7/C-503
	DEMOLITION
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
	DRAINAGE DIVIDE
	FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN SOLICNUM
CONTRACT NO.: +AEC_MAN CONTRNUM
NAO FILE NO.: 1188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
CD102

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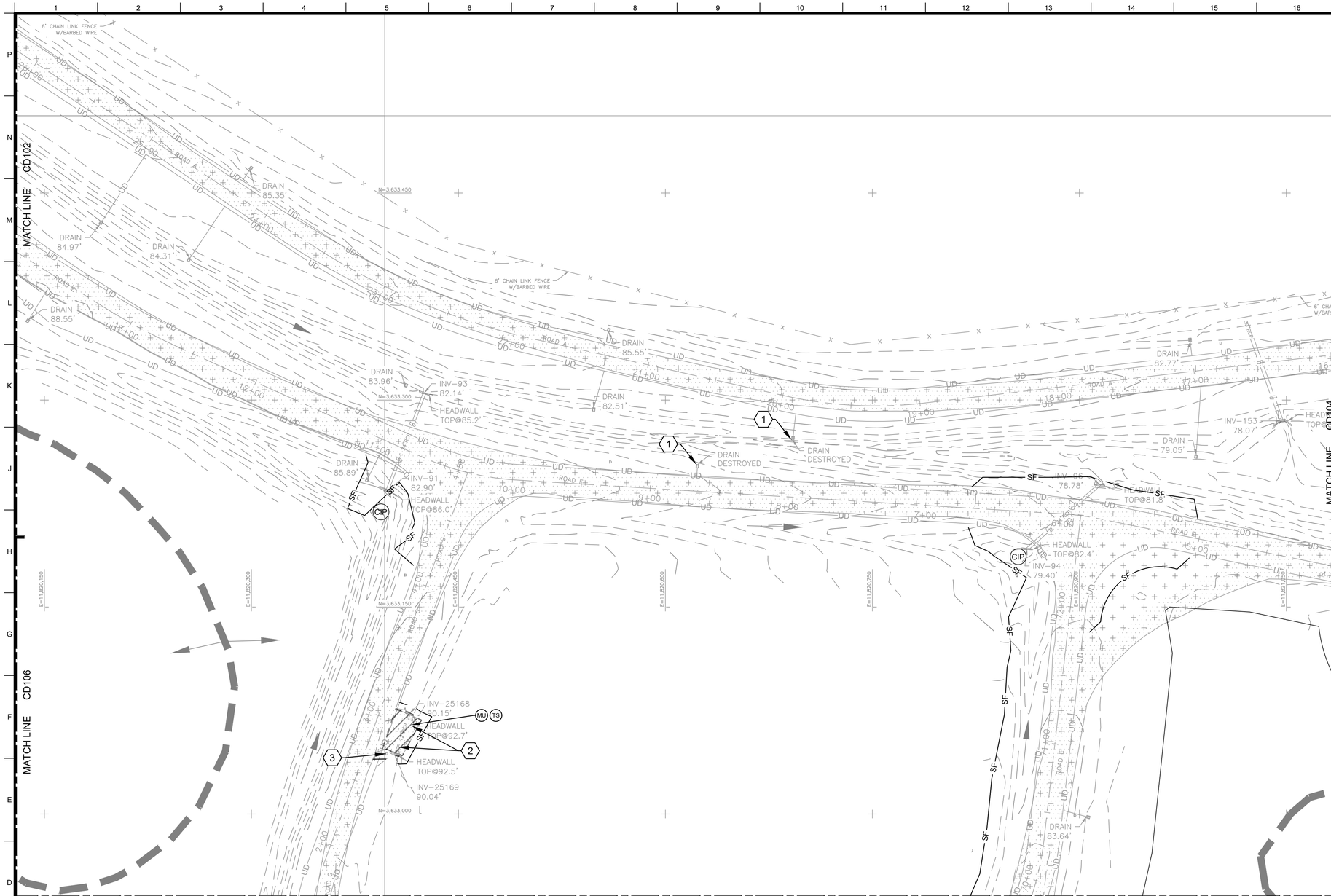


C7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

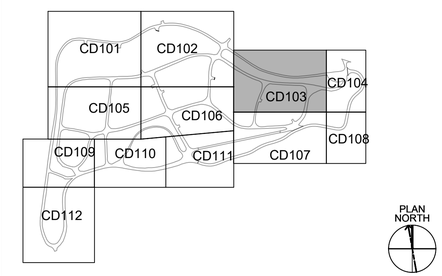
GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. DRAINAGE STRUCTURES LABELED TO BE REMOVED SHALL REMOVE THE STRUCTURE, PIPE, AND RIPRAP. CONTRACTOR SHALL FILL THE EXCAVATED AREA, COMPACT PER SPECIFICATIONS, INSTALL MUCH, AND APPLY PERMANENT SEEDING.
3. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME.

KEYNOTES:

1. REMOVE DAMAGED OR DESTROYED UNDERDRAIN ENDWALL. EXPOSED DAMAGED OR DESTROYED UNDERDRAIN PIPING SHALL BE REMOVED TO THE NEAREST JOINT AND REPLACED.
2. REMOVE ENTRANCE AND CULVERT.
3. REMOVE SIGN; PROVIDE TO OWNER.

KEY PLAN:



LEGEND:

- DEMOLITION
- SF — SILT FENCE SEE DETAIL E2/C-503
- MU — MULCHING SEE DETAIL G15/C-503
- TS — TEMPORARY SEEDING SEE DETAIL A15/C-503
- CIP — CULVERT INLET PROTECTION SEE DETAIL G1/C-504
- DRAINAGE BOUNDARY
- FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
CD103

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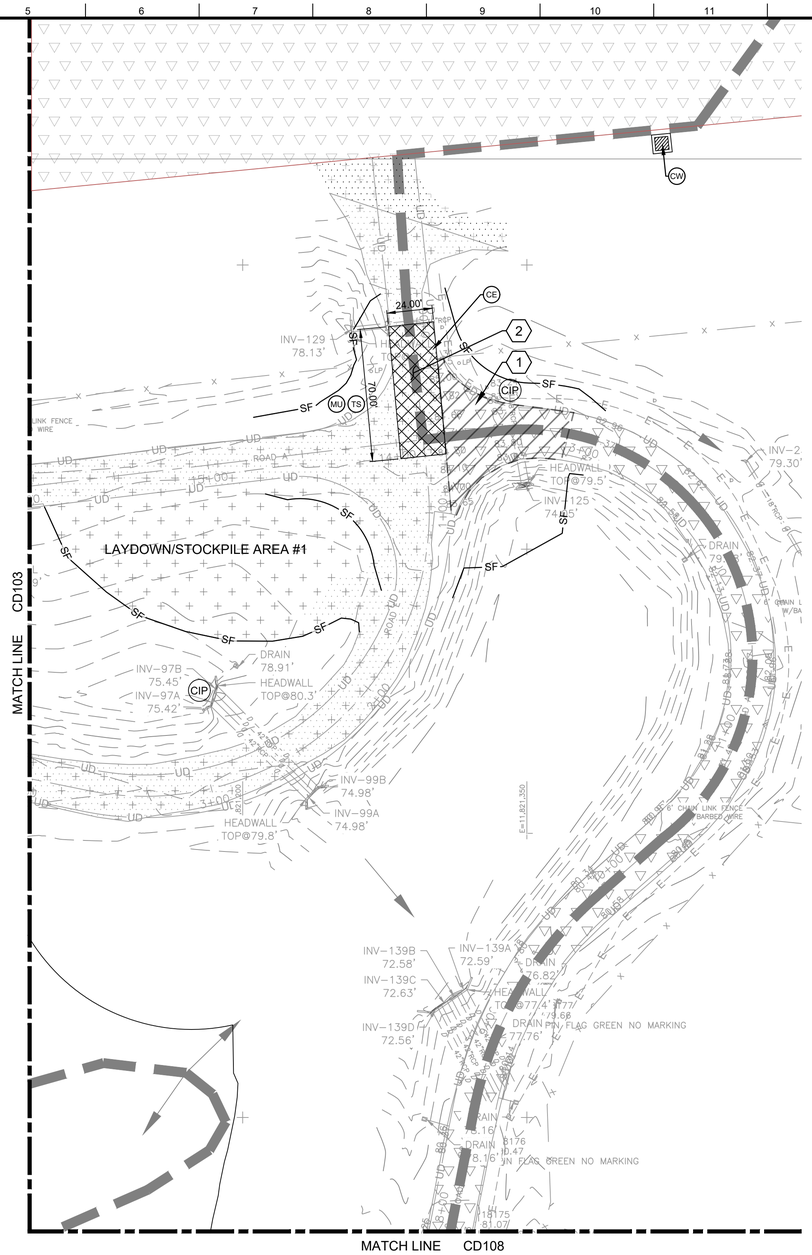


C7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

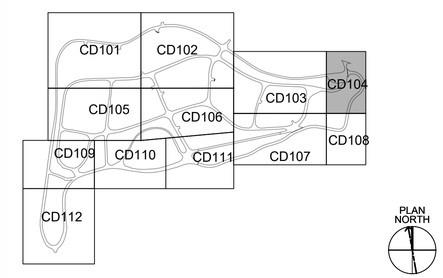
GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME.

KEYNOTES:

1. DEMOLISH ASPHALT.
2. INSTALL CONSTRUCTION ENTRANCE.
3. INSTALL CONCRETE WASHOUT.
4. STOCKPILE AND LAYDOWN AREA.

KEY PLAN:



LEGEND:

CE	CONSTRUCTION ENTRANCE SEE DETAIL G7/C-503
	DEMOLITION
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
CW	CONCRETE WASHOUT SEE DETAIL A9/C513
	DRAINAGE DIVIDE
	FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100%SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
CD104

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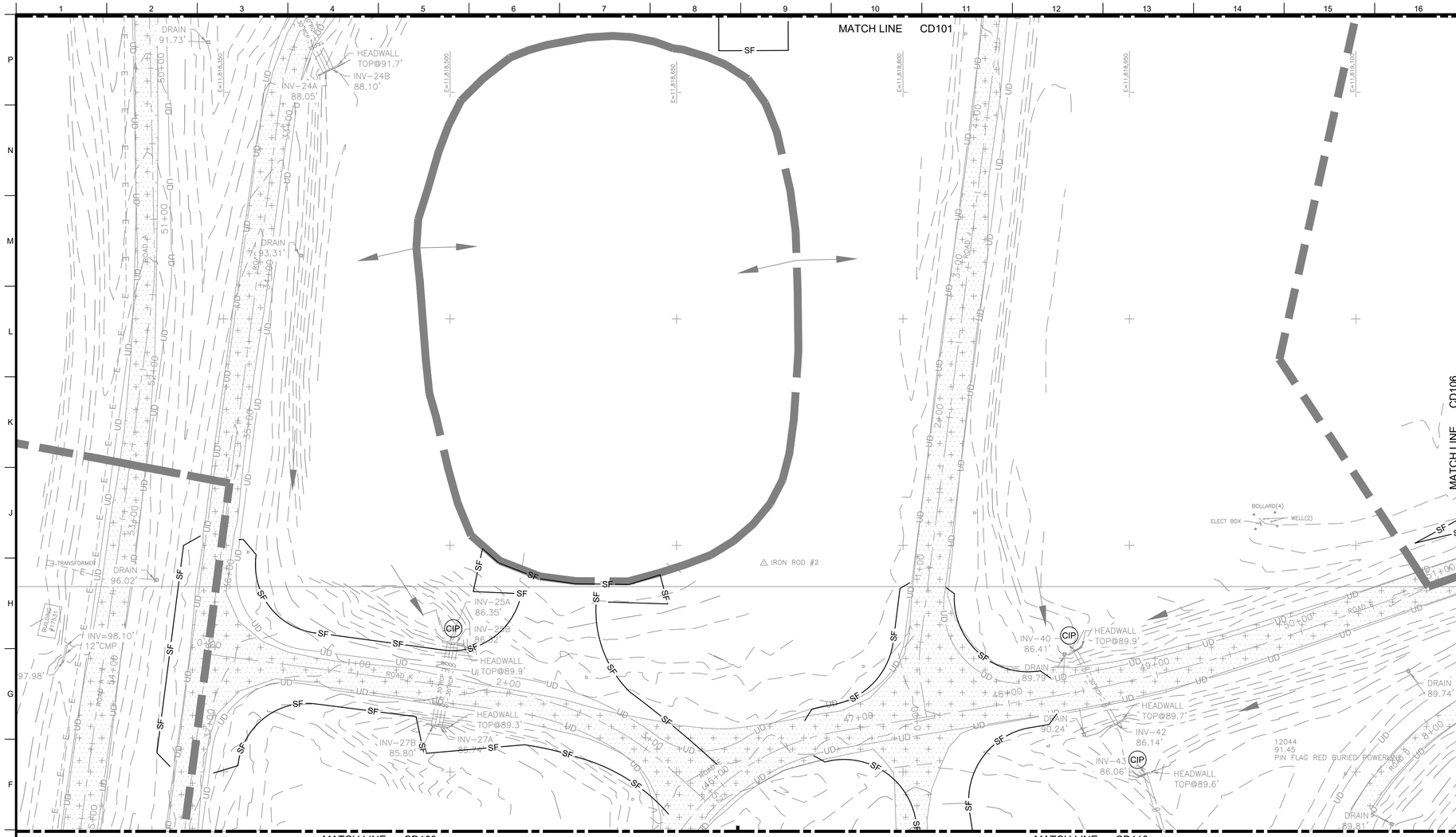


E7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

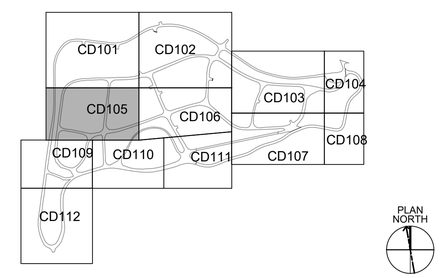
0 40' 80'

GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME.

KEYNOTES:

KEY PLAN:



LEGEND:

	DEMOLITION
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
	DRAINAGE BOUNDARY
	FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
CD105

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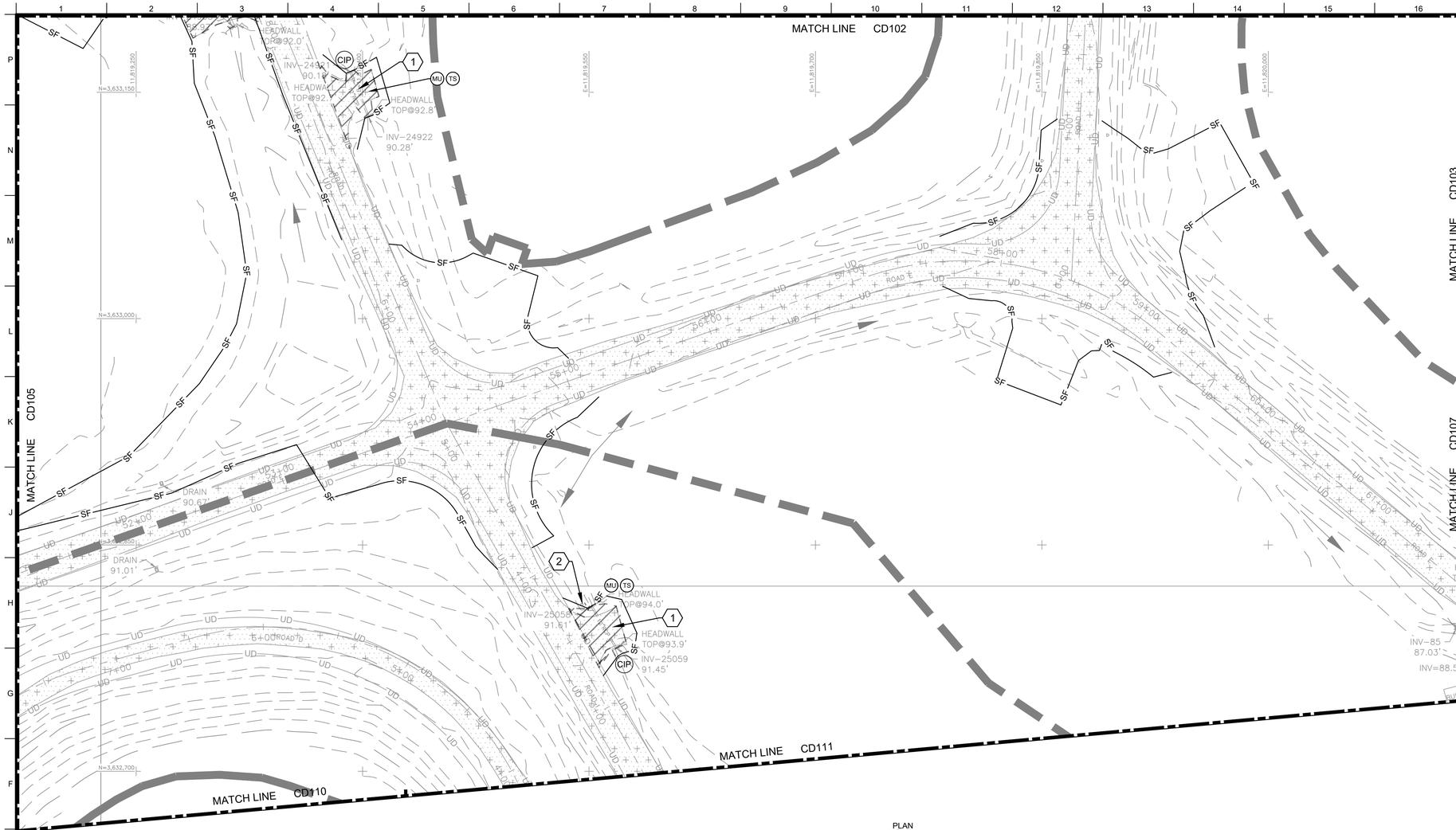


E7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

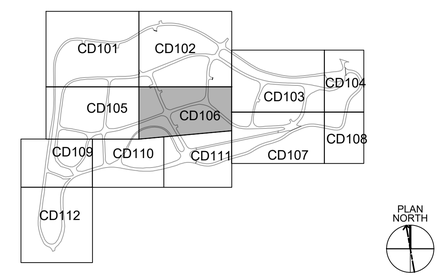
GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION..
2. DRAINAGE STRUCTURES LABELED TO BE REMOVED, SHALL REMOVE THE STRUCTURE, PIPE, AND RIPRAP. CONTRACTOR SHALL FILL THE EXCAVATED AREA, COMPACT PER SPECIFICATIONS, INSTALL MUCH, AND APPLY PERMANENT SEEDING.
3. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME.

KEYNOTES:

1. DEMOLISH ENTRANCE, CULVERT, AND HEADWALLS.
2. REMOVE SIGN; PROVIDE TO OWNER.

KEY PLAN:



LEGEND:

	DEMOLITION
SF	SILT FENCE SEE DETAIL E2/C-503
	LIMITS OF CONSTRUCTION
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
	DRAINAGE BOUNDARY
	FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 1188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID

CD106

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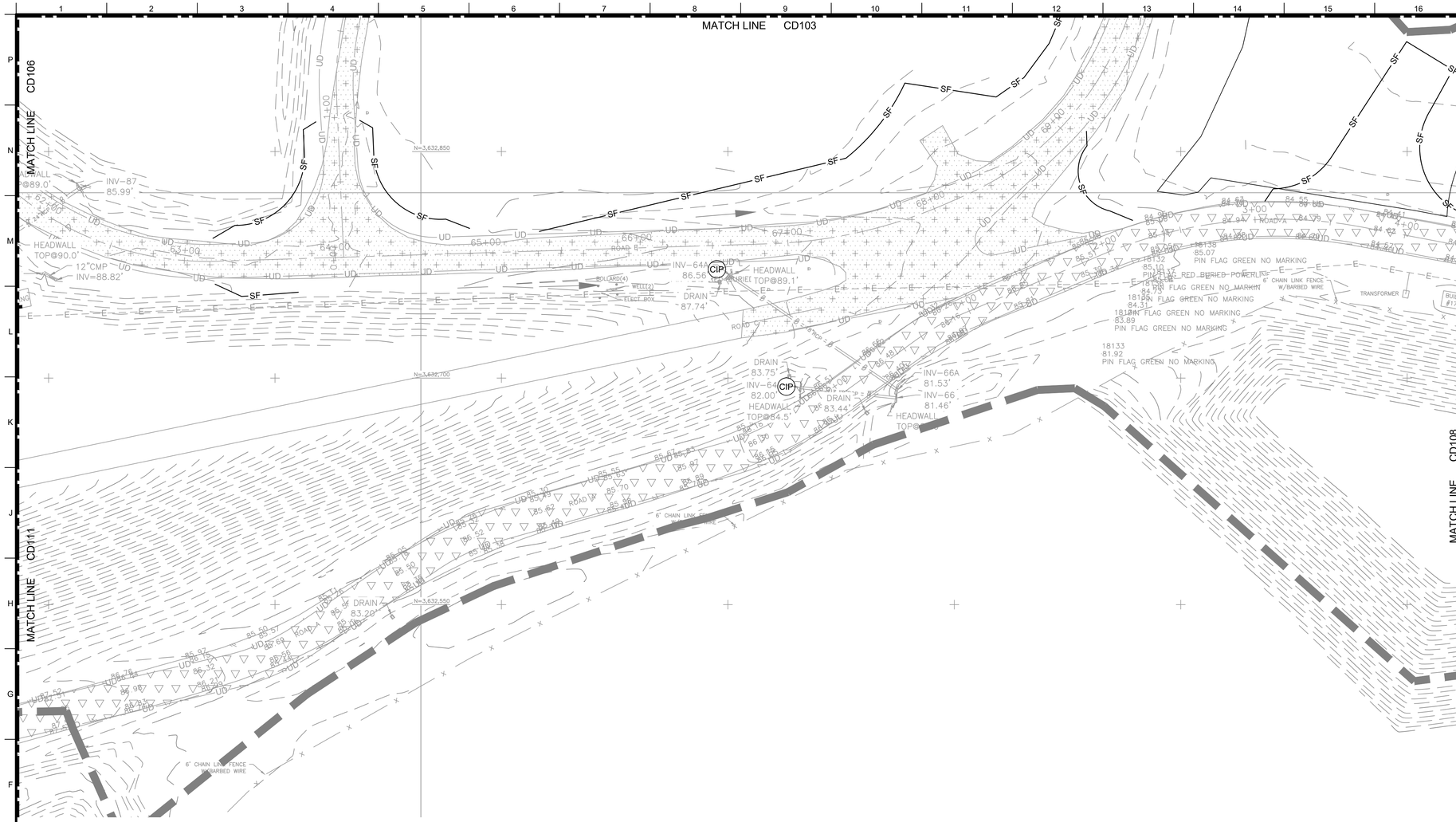


E7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

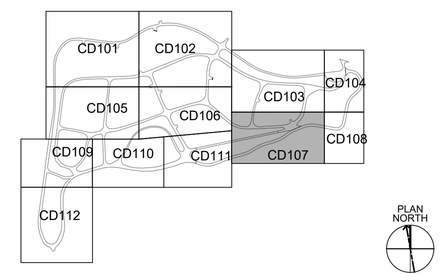
0 40' 80'

GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ON E IN THE SAME.

KEYNOTES:

KEY PLAN:



LEGEND:

	DEMOLITION
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
	DRAINAGE BOUNDARY
	FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188
SIZE:

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. WALL

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
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FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
CD107

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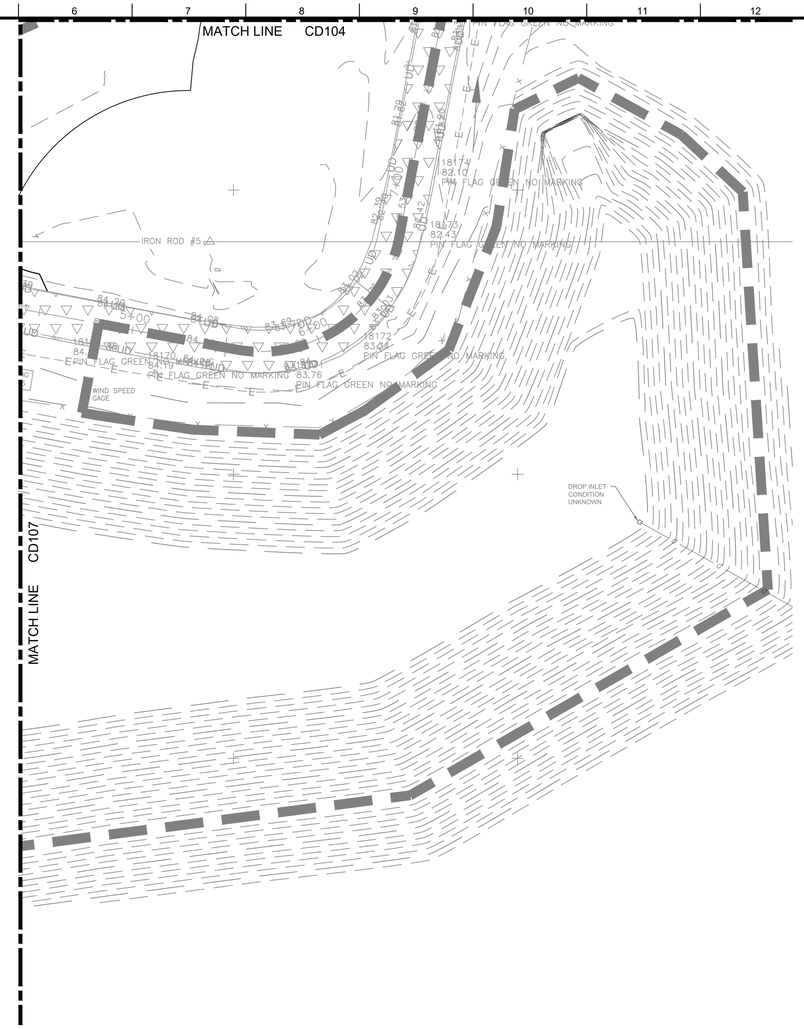


E7 DEMOLITION SITE PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

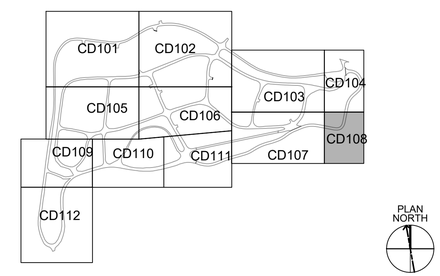
GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.

KEYNOTES:

1. SILT FENCE IS ALSO THE LOD.

KEY PLAN:



LEGEND:

DRAINAGE DIVIDE

FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N. INGOLD
SUBMITTED BY: J. WALL
SIZE:

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
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U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

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FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
CD108

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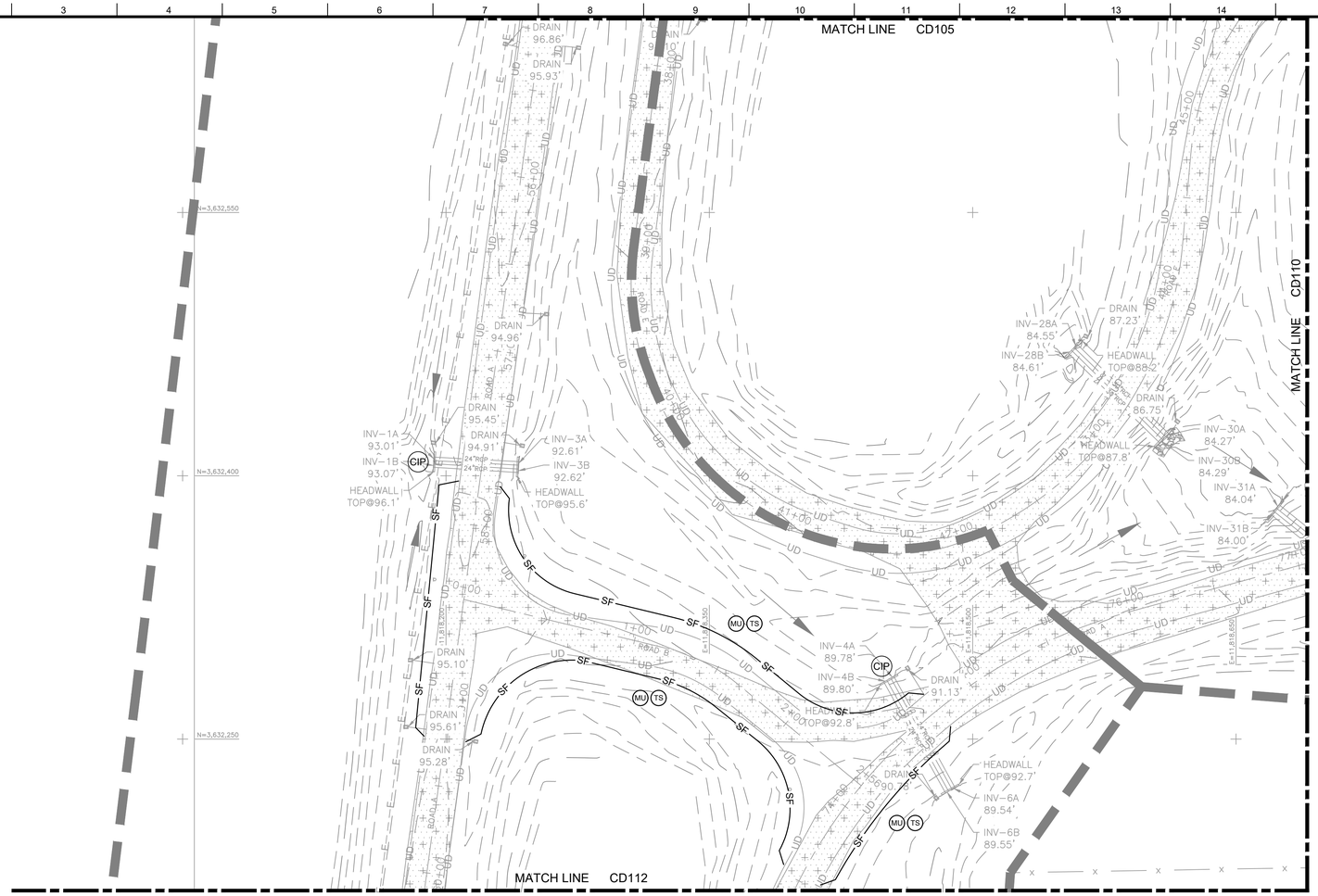


E7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

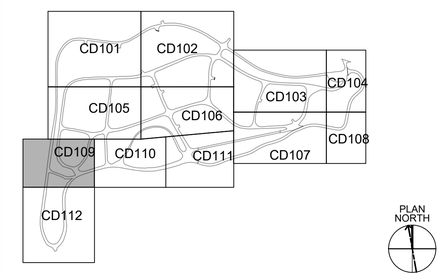
0 40' 80'

GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. LIMITS OF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME

KEYNOTES:

KEY PLAN:



LEGEND:

SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
	DRAINAGE BOUNDARY
	FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
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SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
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FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID

CD109

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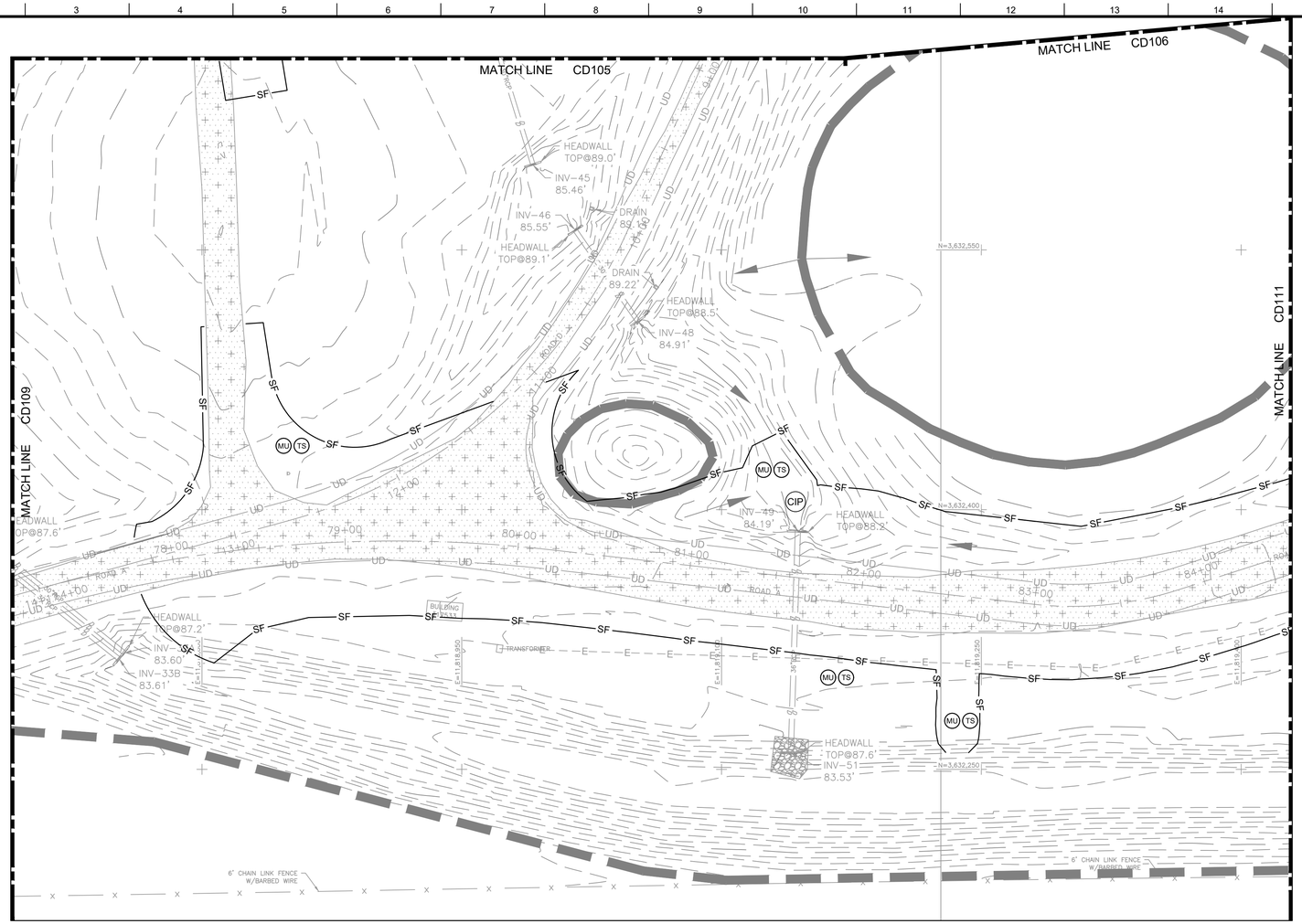


E7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

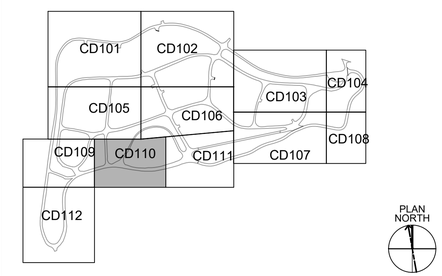
0 40' 80'

GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION
2. LIMITS OF CONSTRUCTION AND SILT FENCE ARE ONE IN THE SAME.

KEYNOTES:

KEY PLAN:



LEGEND:

SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
	DRAINAGE BOUNDARY
	FLOW DIRECTION

US Army Corps of Engineers®

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CHECKED BY: N. INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 1188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

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(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
CD110

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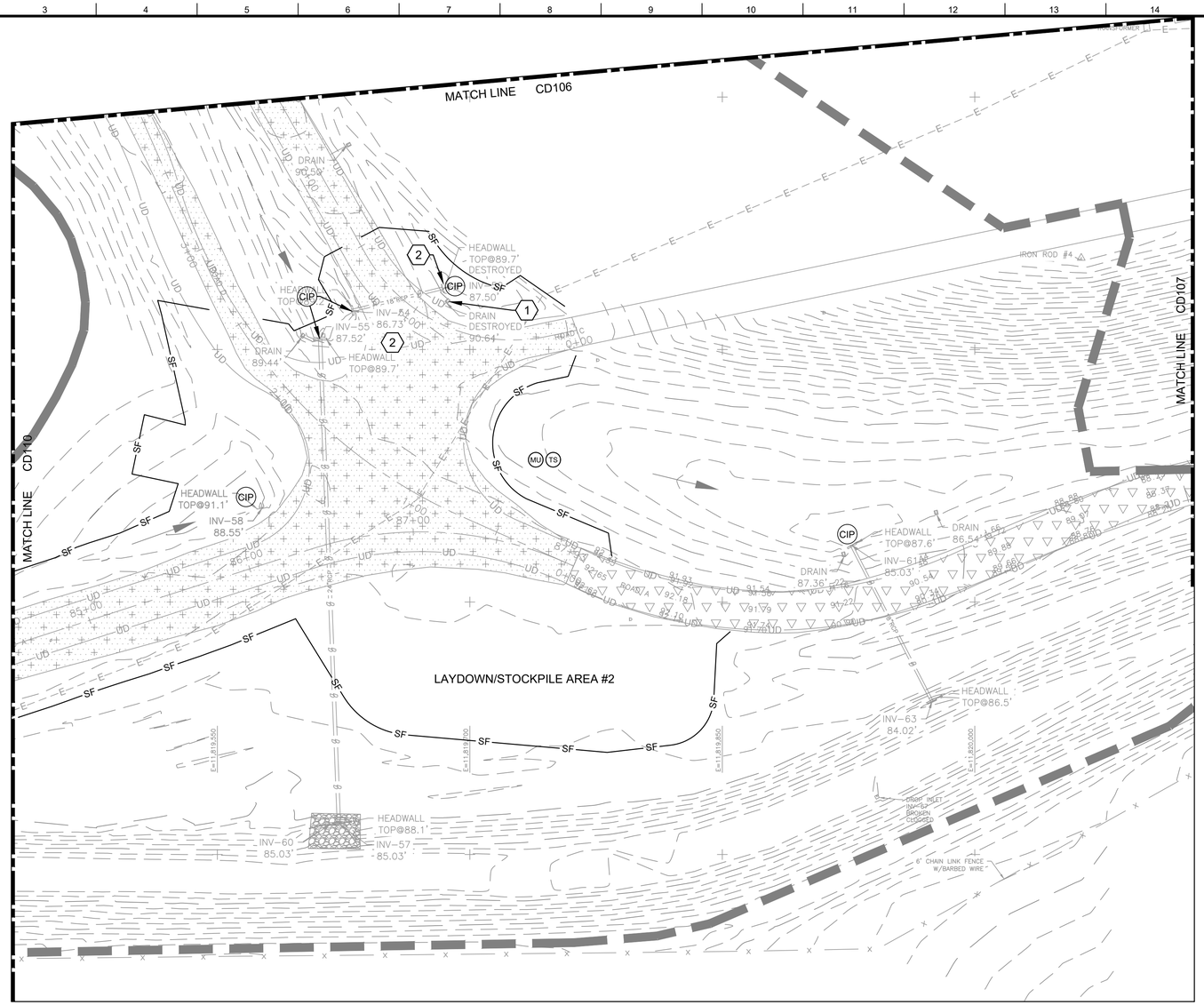


D7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

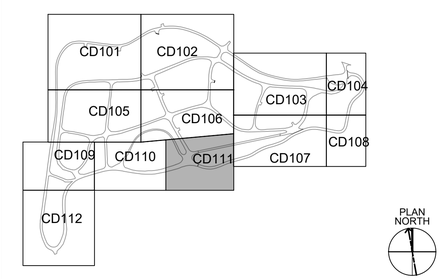
GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. DRAINAGE STRUCTURES LABELED TO BE REMOVED, SHALL REMOVE HEADWALL, PIPE, AND RIPRAP.
3. LIMITS NOF CONSTRUCTION AND SILT FENCE LOCATION ARE ONE IN THE SAME.

KEYNOTES:

1. REMOVE DAMAGED OR DESTROYED UNDERDRAIN ENDWALL. EXPOSED DAMAGED OR DESTROYED UNDERDRAIN PIPING SHALL BE REMOVED TO THE JOINT AND REPLACED.
2. REMOVE DAMAGED HEADWALL.

KEY PLAN:



LEGEND:

SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
	DRAINAGE BOUNDARY
	FLOW DIRECTION

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: S. ADAMS	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: R. TRAMMELL	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: N. INGOLD	NAO FILE NO.: 11188
SIZE: J. WALL	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

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FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID

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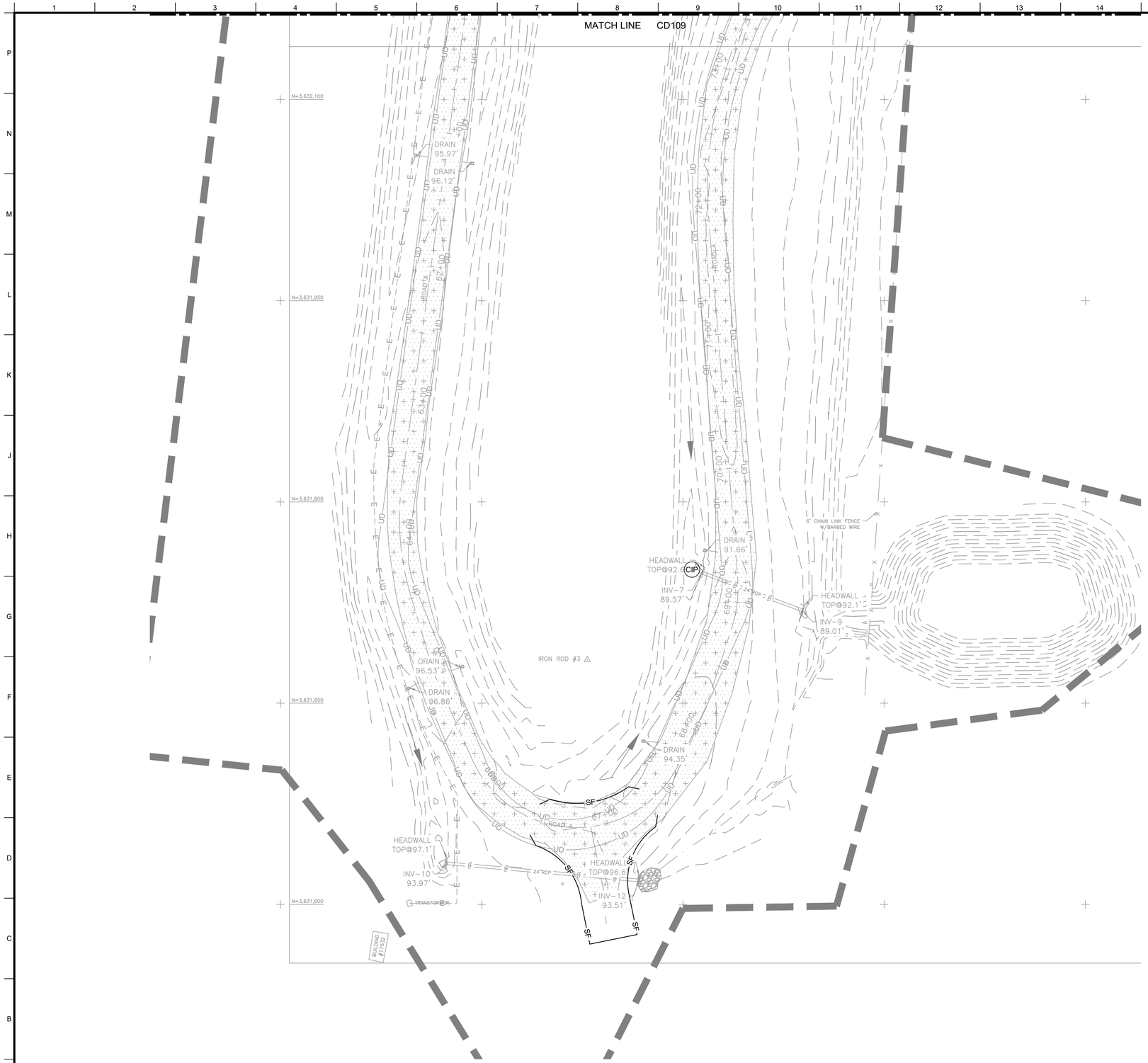


A7 DEMOLITION SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

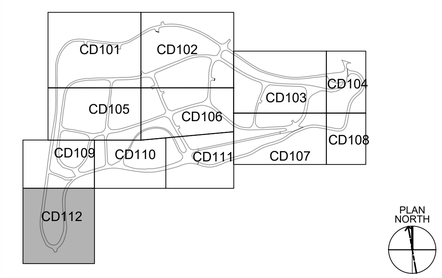
0 40' 80'

GENERAL NOTES:

1. SEE V-001 FOR ADDITIONAL LEGEND INFORMATION.
2. LIMITS OF CONSTRUCTION AND SILT FENCE ARE ONE IN THE SAME.

KEYNOTES:

KEY PLAN:



LEGEND:

SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
TS	TEMPORARY SEEDING SEE DETAIL A15/C-503
	DRAINAGE BOUNDARY
	FLOW DIRECTION

US Army Corps of Engineers®

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U.S. ARMY CORPS OF ENGINEERS
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803 FRONT STREET
NORFOLK, VA 23510

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FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DEMOLITION SITE PLAN

SHEET ID
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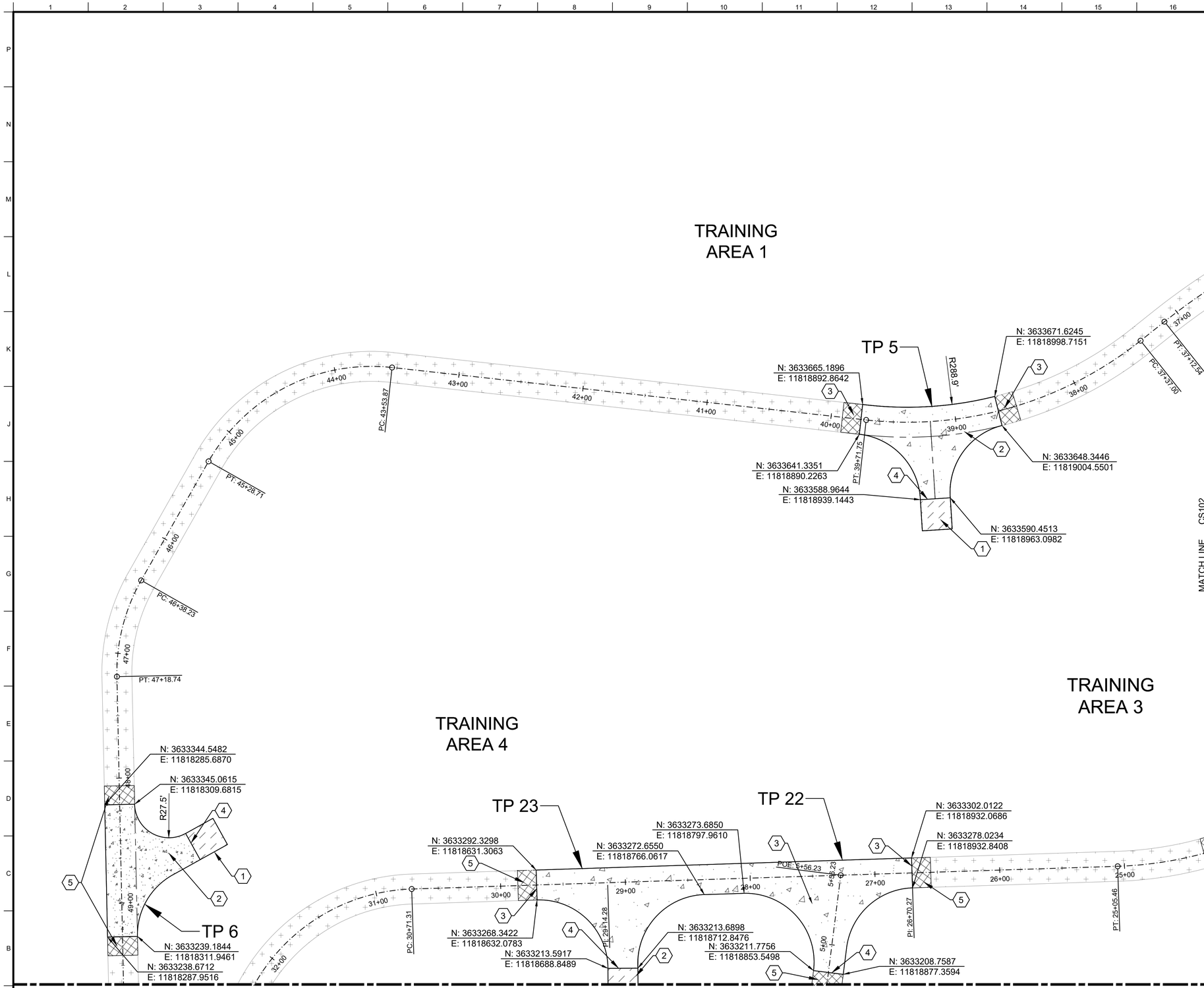


A7 SITE PLAN
SCALE: 1" = 40'-0"

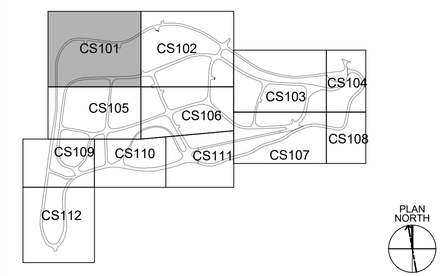
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR LIMITED MAINTENANCE.

KEYNOTES:

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.

KEY PLAN:



LEGEND:

- CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503
- GRAVEL ROAD MAINTENANCE SEE DETAIL A2/C-504
- TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504
- STONE APRON SEE DETAIL B1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
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SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
SITE PLAN

SHEET ID
CS101

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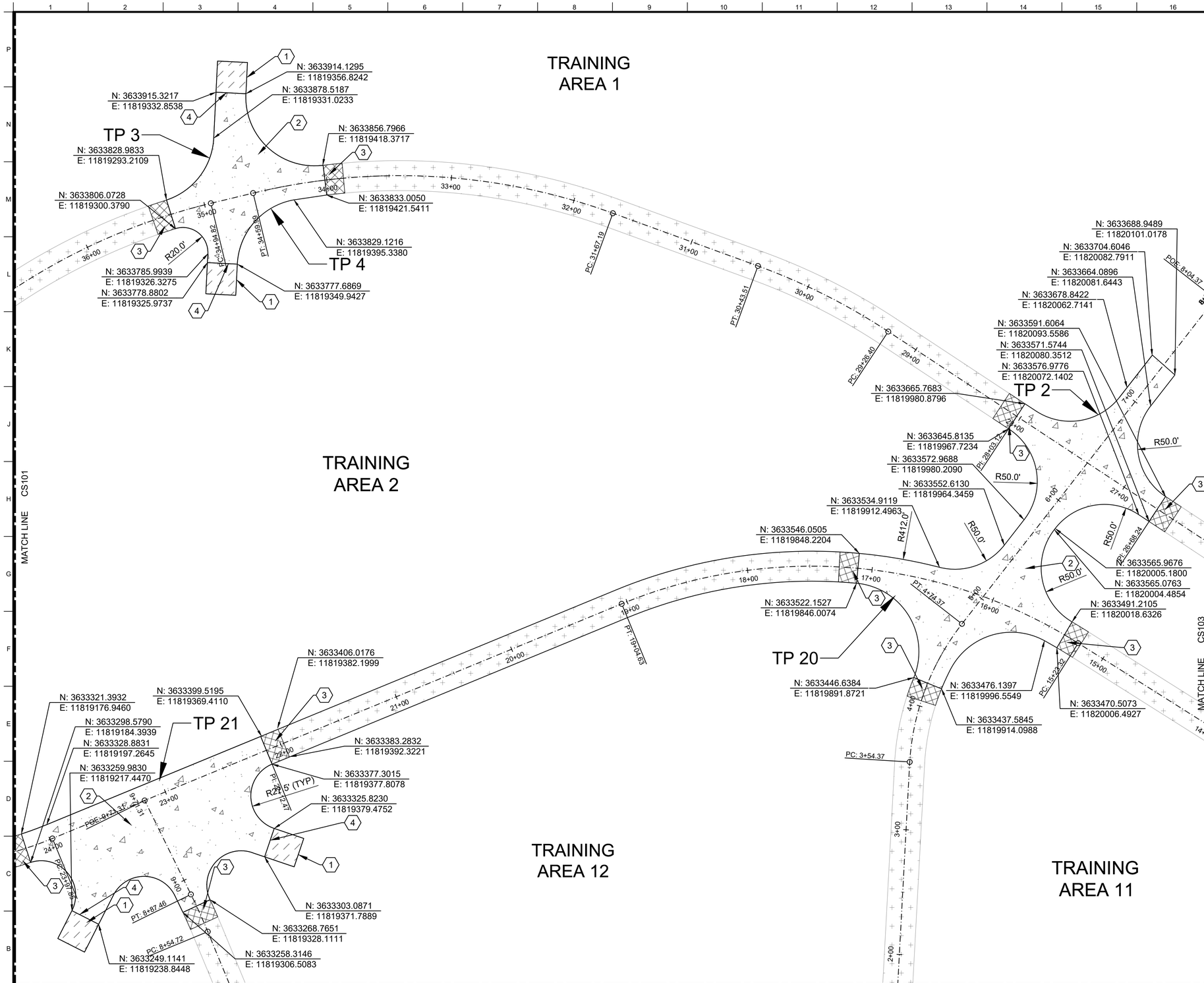


A7 SITE PLAN
SCALE: 1" = 40'-0"

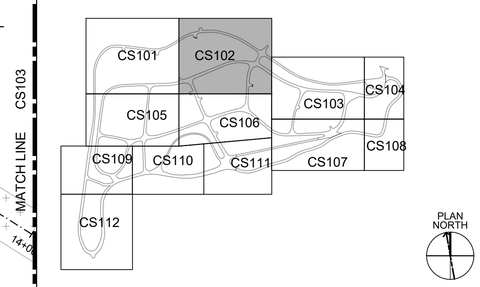
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE OR REGRADING.

KEYNOTES:

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE DETAIL BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.

KEY PLAN:



LEGEND:

- CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503.
- STONE APRON SEE DETAIL B1/C-505
- TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504.

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MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 1188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
SITE PLAN

SHEET ID
CS102

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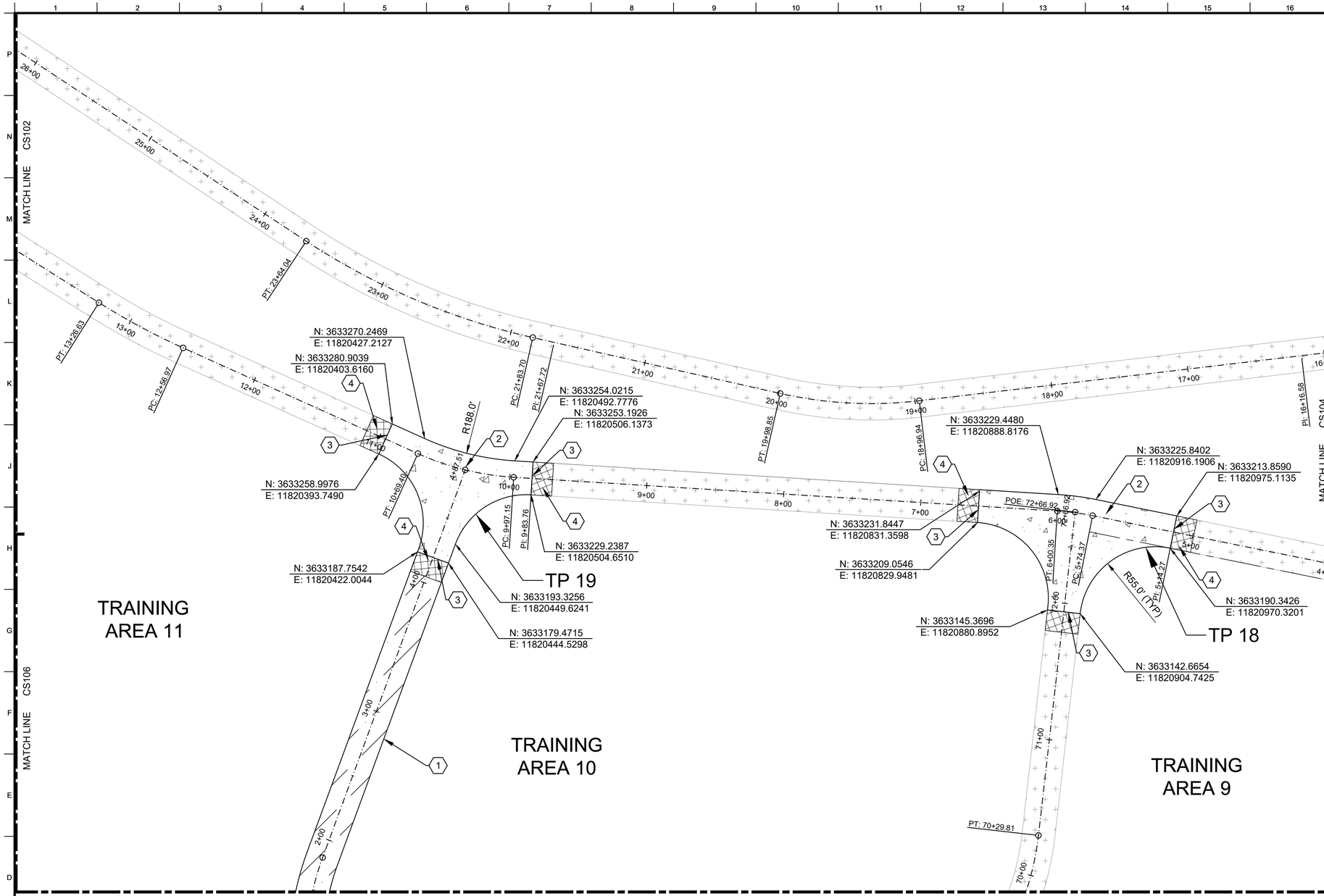


C7 SITE PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

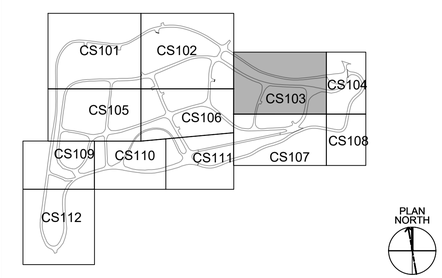
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE OR REGRADING.

KEYNOTES:

1. GRAVEL ROAD MAINTENANCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE DETAIL BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.

KEY PLAN:



LEGEND:

- CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503
- GRAVEL ROAD MAINTENANCE SEE DETAIL A2/C-504
- TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 1188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

SITE PLAN

SHEET ID
CS103

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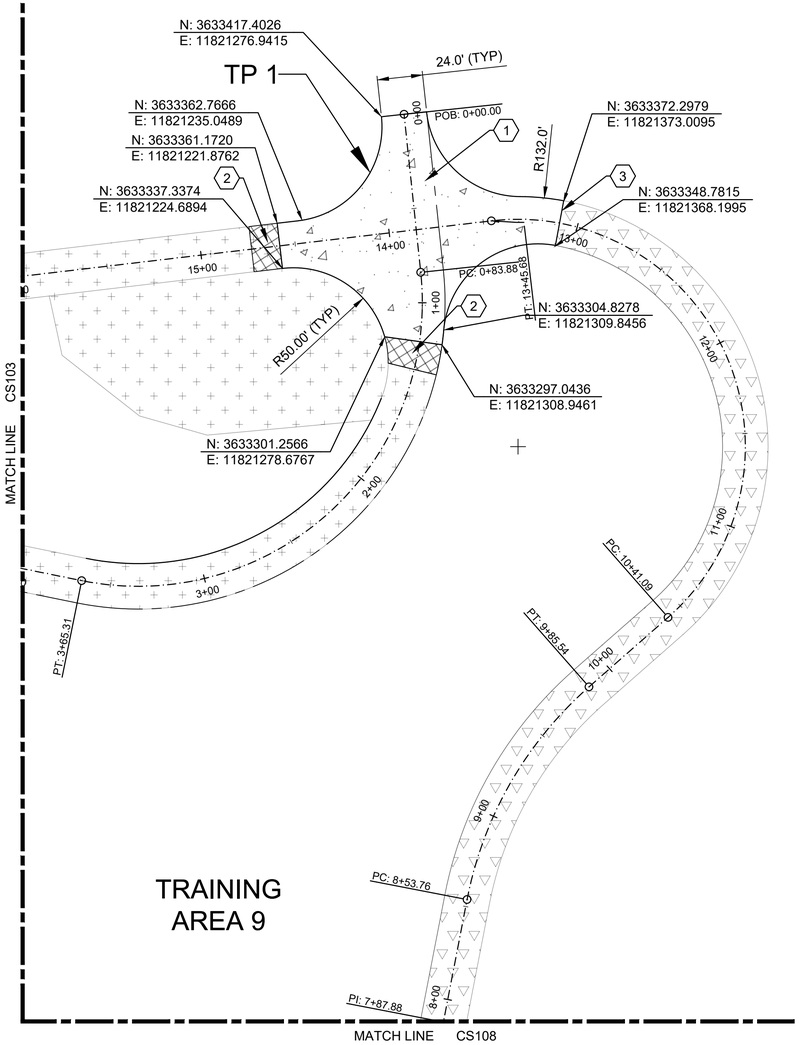


C7 SITE PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

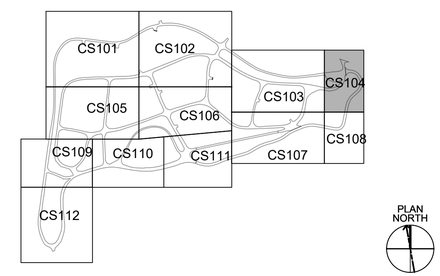
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE OR REGRADING.

KEYNOTES:

1. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. THICKENED EDGE AT ASPHALT. SEE DETAIL A15/C-505.

KEY PLAN:



LEGEND:

CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503.

GRAVEL SURFACE TRANSITION SEE DETAIL C8/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

SITE PLAN

SHEET ID
CS104

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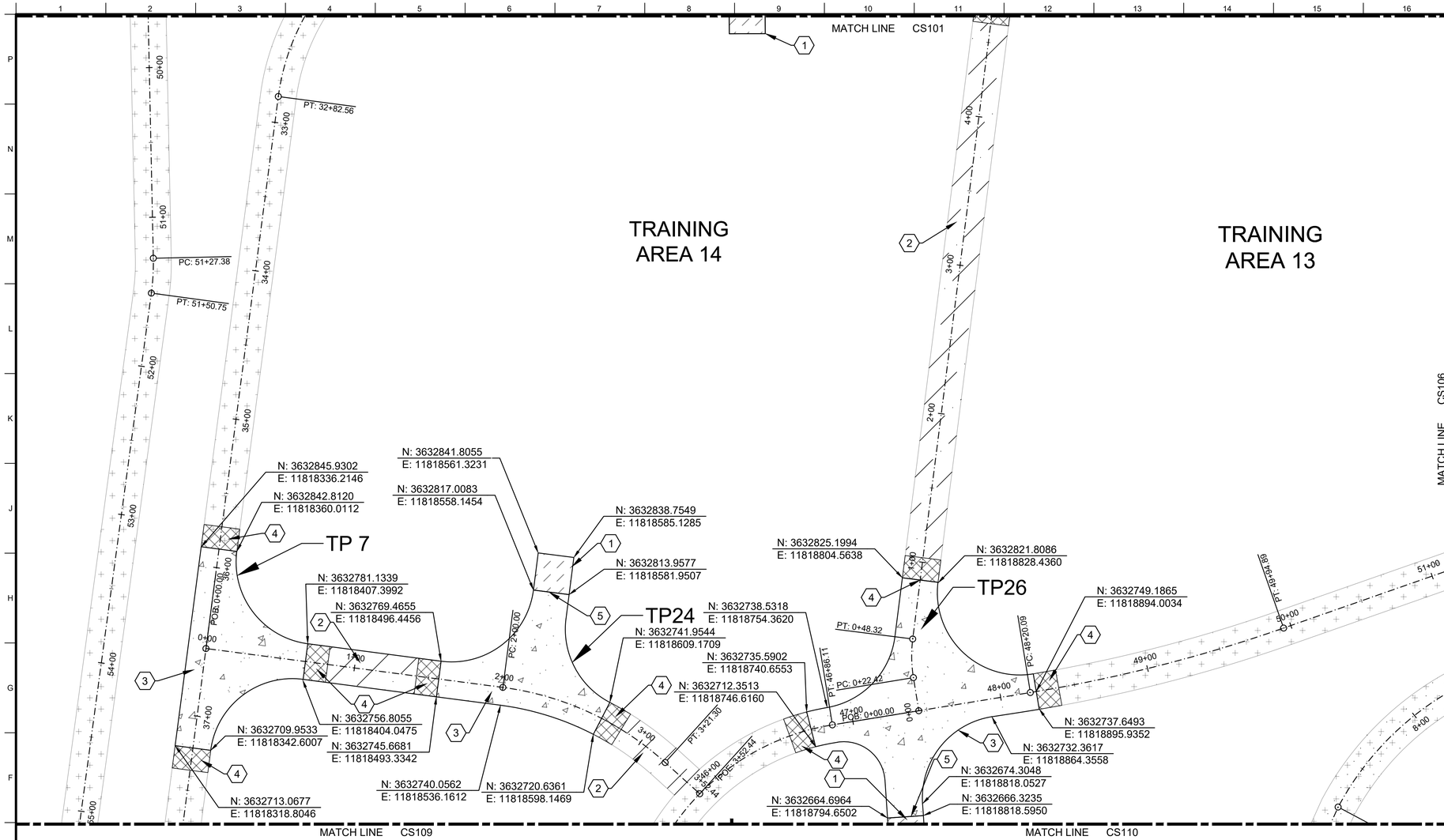


E7 SITE PLAN

SCALE: 1" = 40'-0"

0 40' 80'

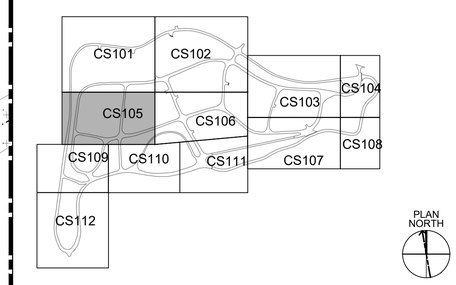
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE OR REGRADING.

KEYNOTES:

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. GRAVEL ROAD MAINTENANCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
5. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.

KEY PLAN:



LEGEND:

- CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503
- GRAVEL ROAD MAINTENANCE SEE DETAIL A2/C-504
- TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504
- STONE APRON SEE DETAIL B1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

SITE PLAN

SHEET ID
CS105

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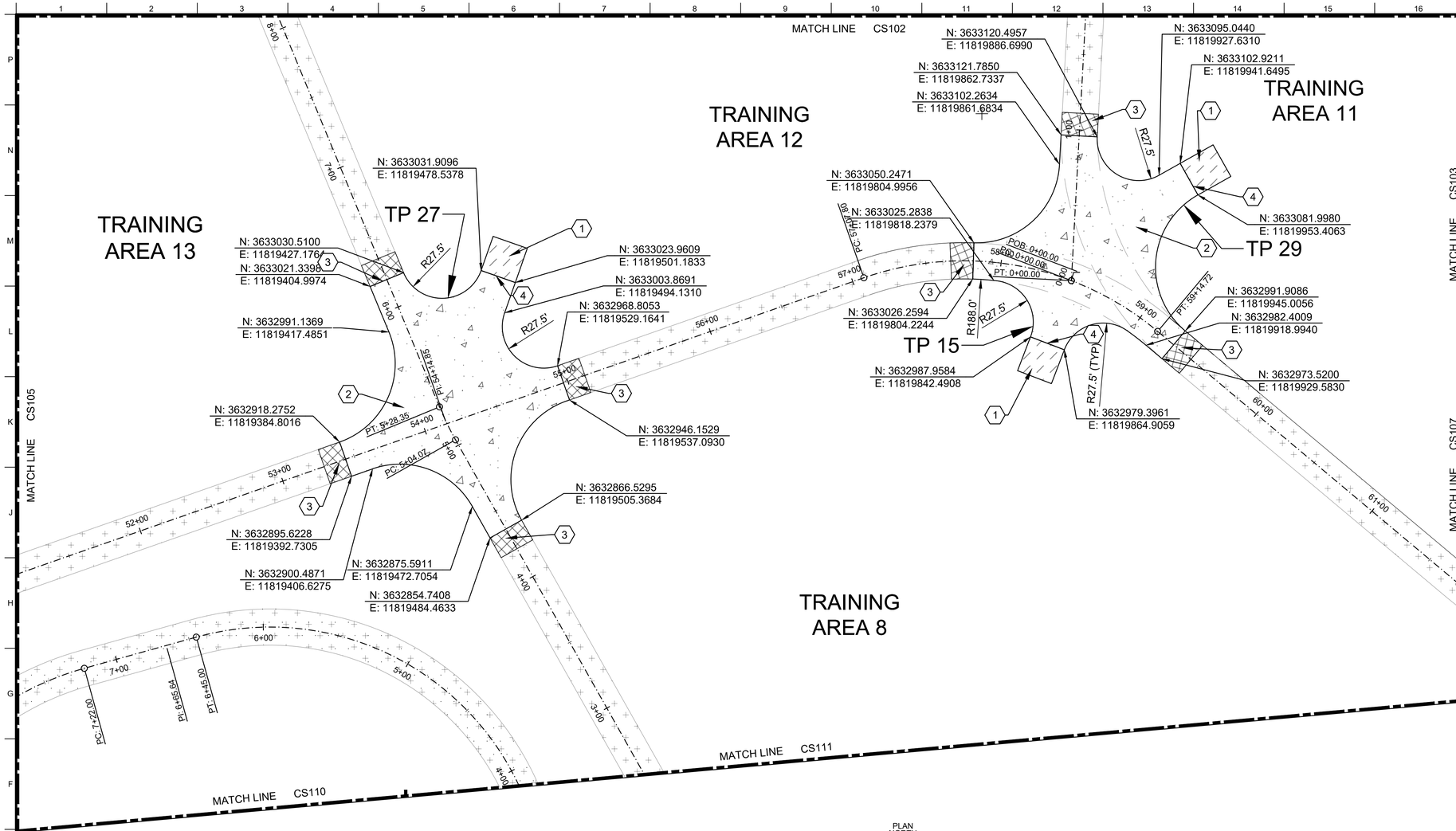


E7 SITE PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

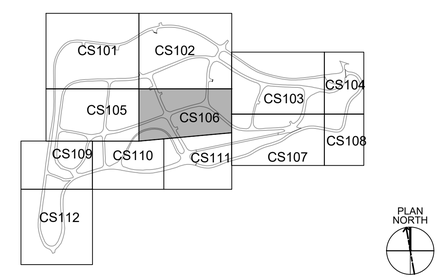
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR LIMITED MAINTENANCE.

KEYNOTES:

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.

KEY PLAN:



LEGEND:

CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503

TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504

STONE APRON SEE DETAIL B1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

SITE PLAN

SHEET ID
CS106

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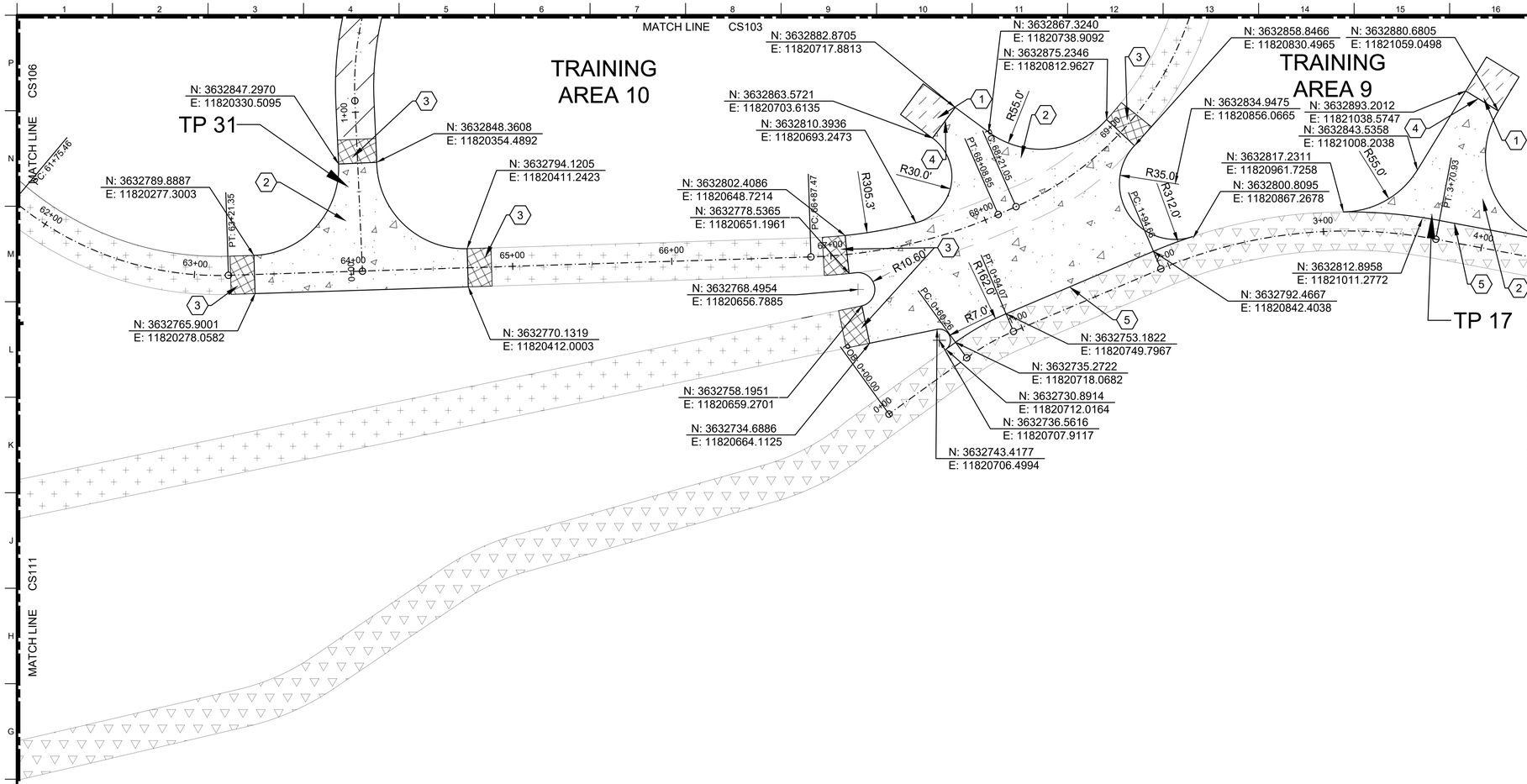


E7 SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

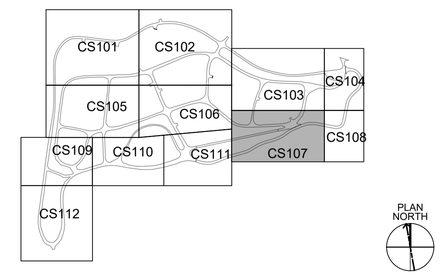
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE.

KEYNOTES: ⬡

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.
5. JUNCTION OF RIGID AND FLEXIBLE PAVEMENT, SEE DETAIL A15/C-505.

KEY PLAN:



LEGEND:

- CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503
- GRAVEL ROAD MAINTENANCE SEE DETAIL A2/C-504
- TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504
- STONE APRON SEE DETAIL B1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN SOLICNUM
CONTRACT NO.: +AEC_MAN CONTRNUM
NAO FILE NO.: 11188
SIZE:

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
SITE PLAN

SHEET ID
CS107

E4ECEBPH
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AEC_B&W.STB
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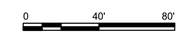
E7 SITE PLAN
SCALE: 1" = 40'-0"



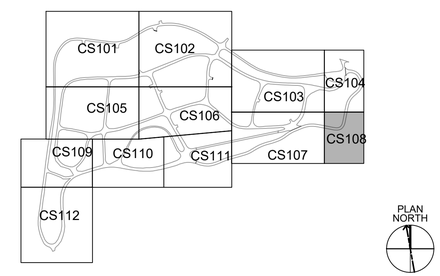
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE.

KEYNOTES:

1. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. JUNCTION OF RIGID AND FLEXIBLE PAVEMENT, SEE DETAIL A15/C-505.

KEY PLAN:



LEGEND:

CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N.INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J.VIALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
SITE PLAN

SHEET ID
CS108

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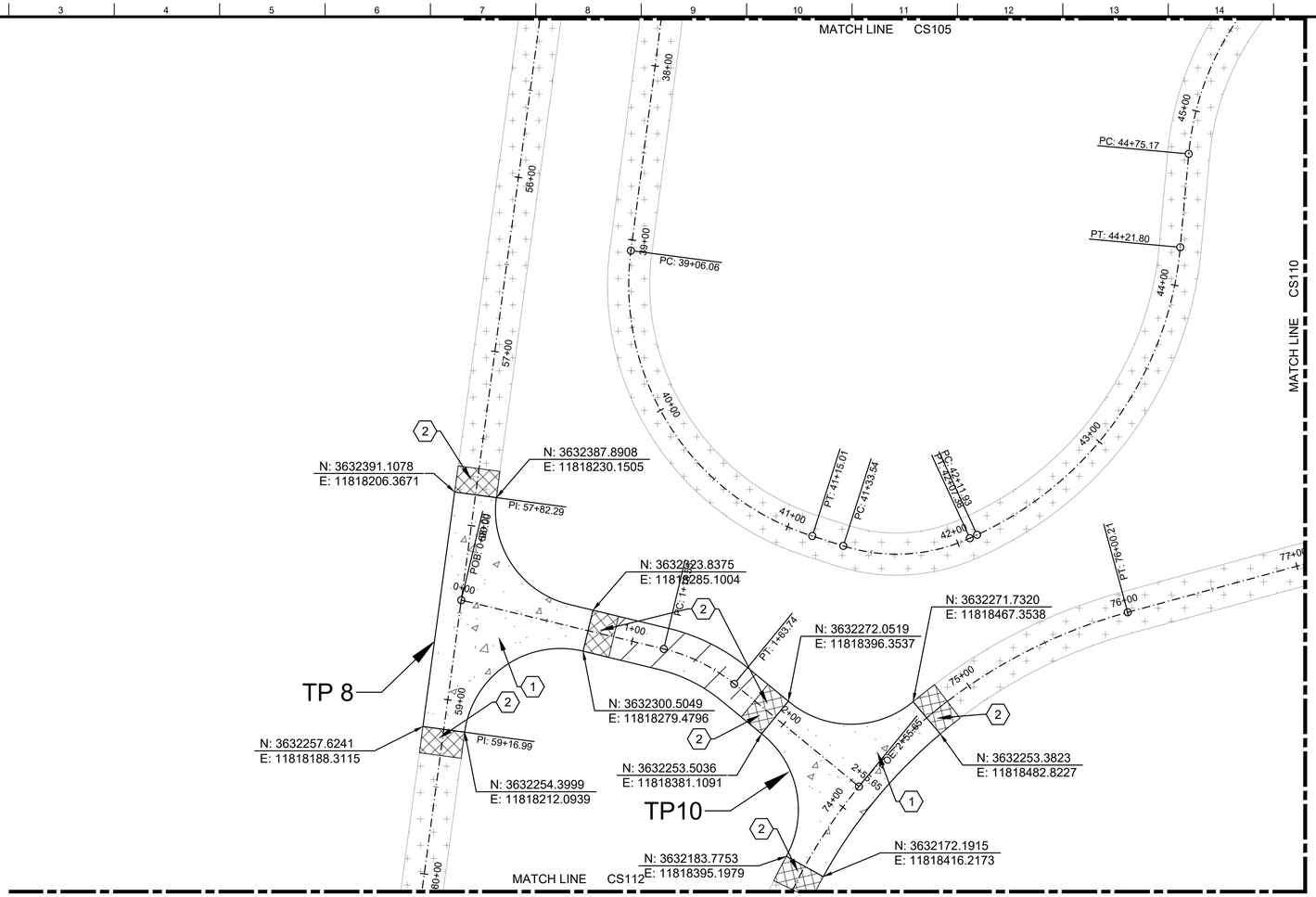


E7 SITE PLAN

SCALE: 1" = 40'-0"

0 40' 80'

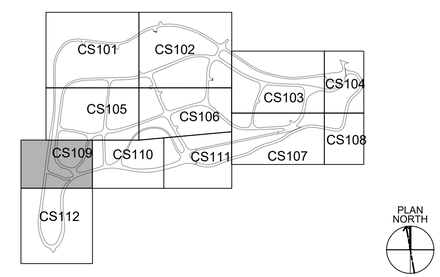
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE OR REGRADING.

KEYNOTES:

1. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.

KEY PLAN:



LEGEND:

CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503

GRAVEL ROAD MAINTENANCE SEE DETAIL A2/C-504

TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N.INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

SITE PLAN

SHEET ID

CS109

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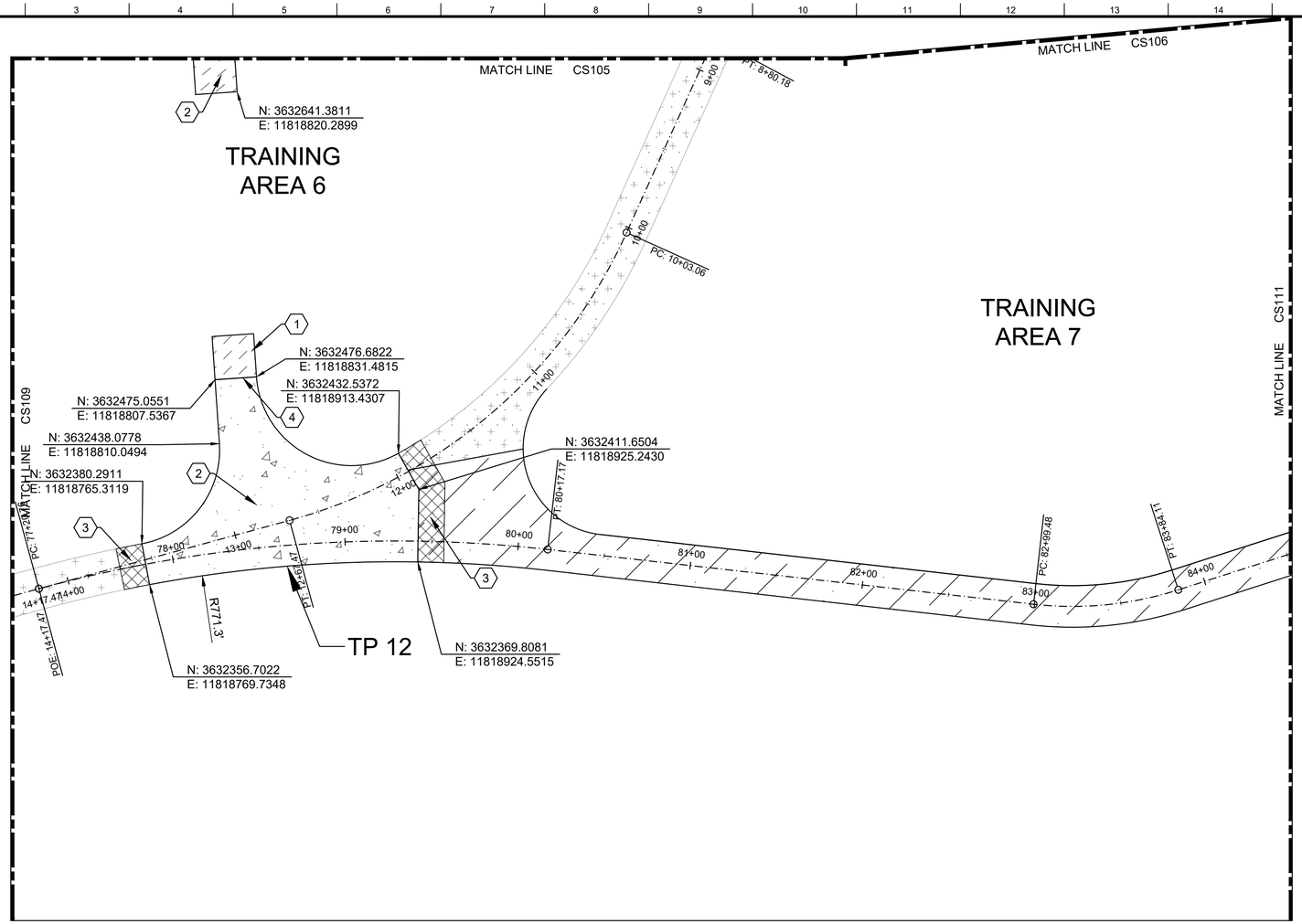


E7 SITE PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

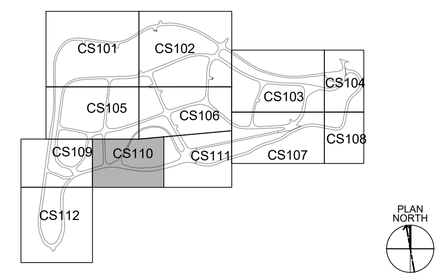
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE.

KEYNOTES:

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.

KEY PLAN:



LEGEND:

- CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503
- GRAVEL ROAD MAINTENANCE SEE DETAIL A2/C-504
- TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504
- STONE APRON SEE DETAIL B1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
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SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

SITE PLAN

SHEET ID

CS110

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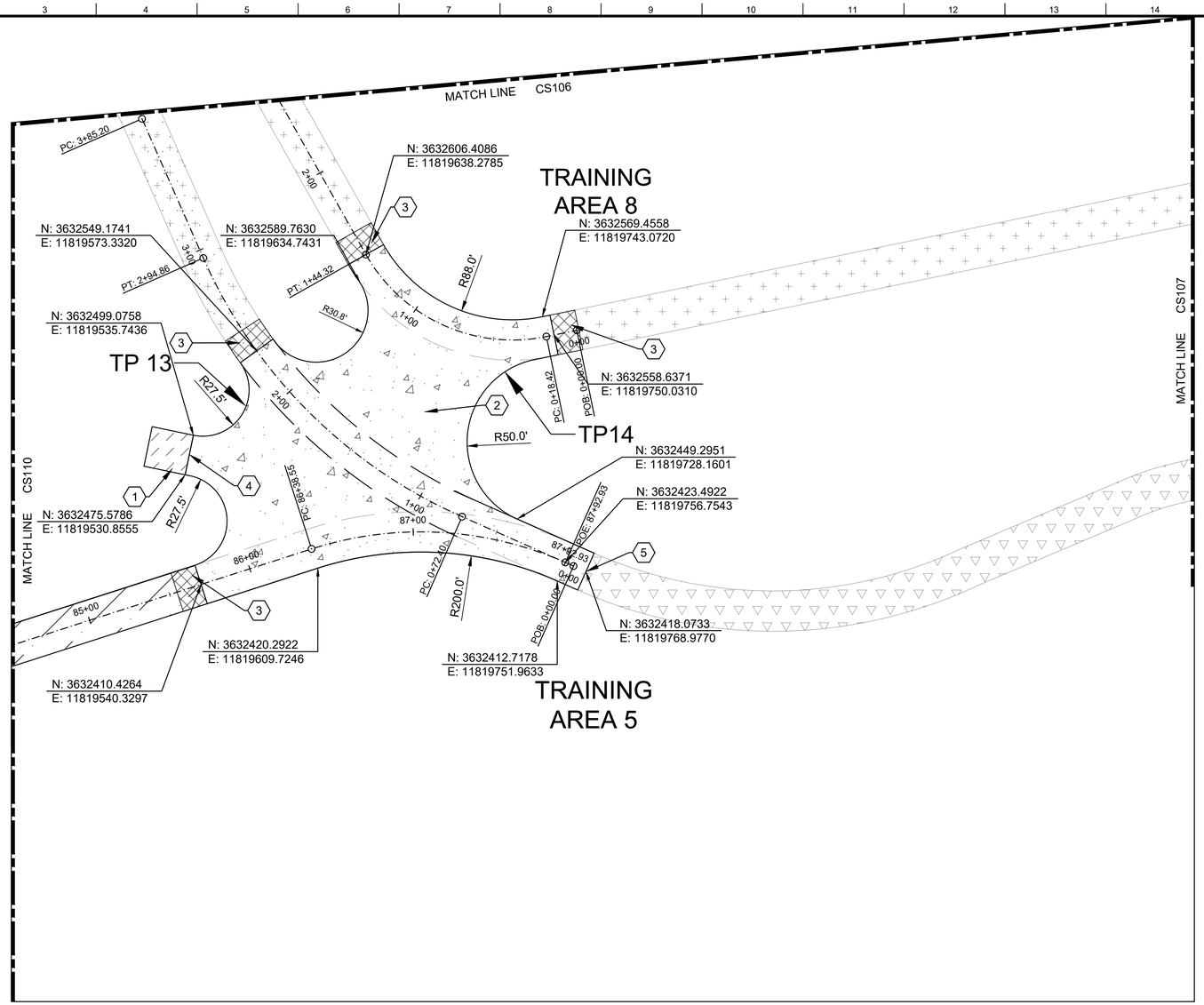


D7 SITE PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

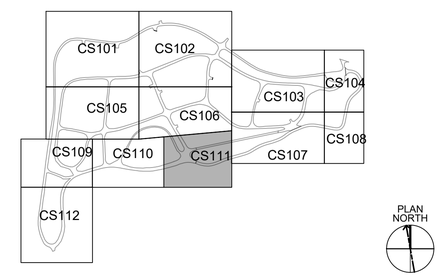
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE OR REGRADING.

KEYNOTES:

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.
5. JUNCTION OF RIGID AND FLEXIBLE PAVEMENT, SEE DETAIL A15/C-505.

KEY PLAN:



LEGEND:

- CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503.
- GRAVEL ROAD MAINTENANCE. SEE DETAIL A2/C-504.
- STONE APRON SEE DETAIL B1/C-505
- TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
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NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
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SUBMITTED BY: J. WALL
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U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
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FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
SITE PLAN

SHEET ID
CS111

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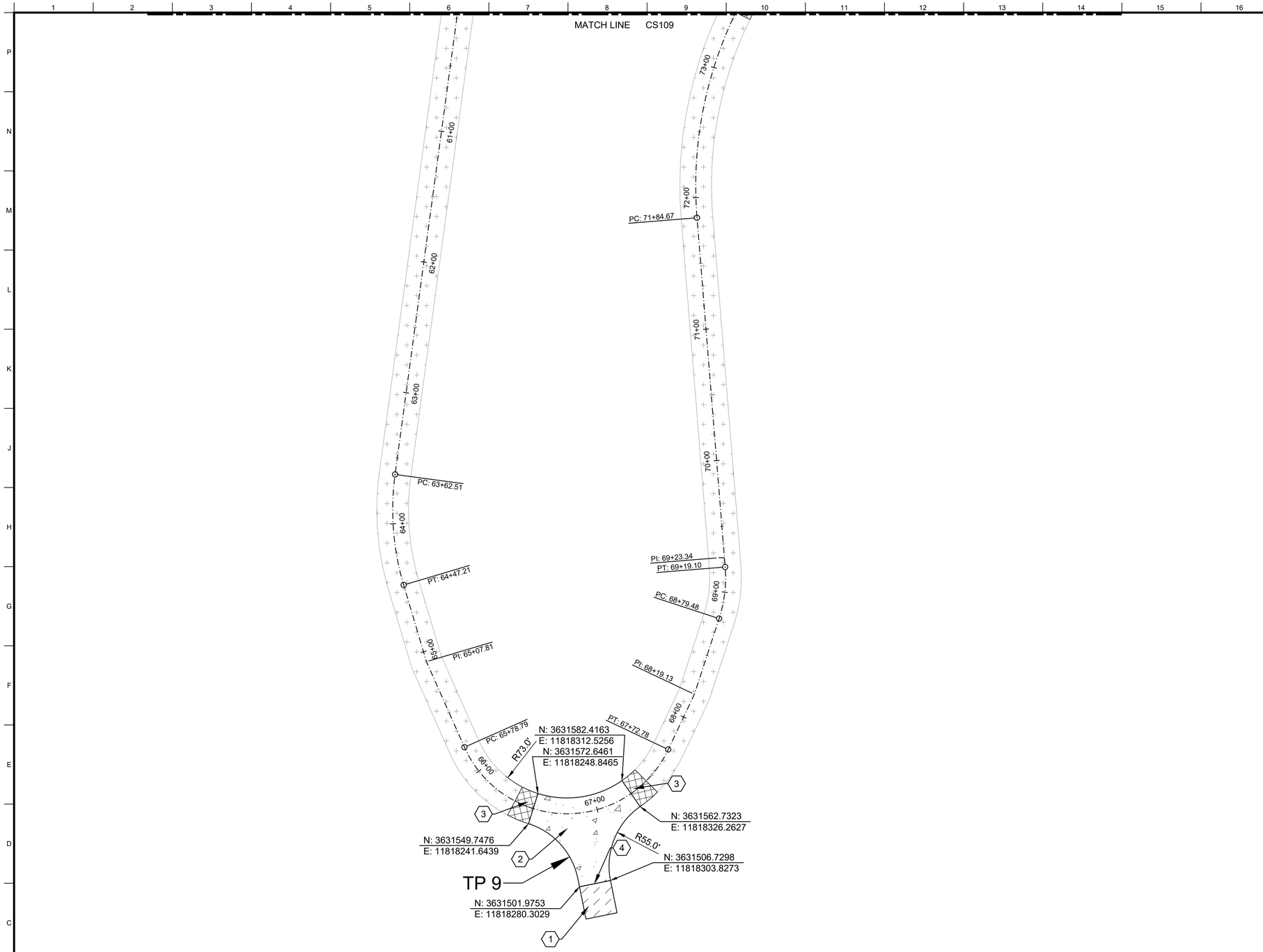


A7 SITE PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

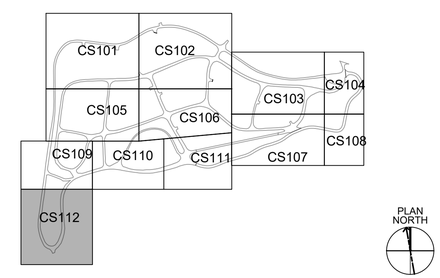
GENERAL NOTES:

1. ALL TURNING PAD RADII ARE 55 FEET UNLESS STATED OTHERWISE.
2. ROAD IMPROVEMENTS FOR THE PROJECT ARE THOSE DESIGNATED FOR MINIMAL MAINTENANCE OR REGRADING.

KEYNOTES:

1. STONE APRON (24'W x 25'D). SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CONCRETE TURNING PAD. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. TURNING PAD THICKENED EDGE/TRANSITION. SEE LEGEND BELOW FOR DETAIL REFERENCE.
4. TURNING PAD THICKENED EDGE AT STONE ENTRANCE. SEE DETAIL J9/C-513.

KEY PLAN:



LEGEND:

CONCRETE TURNING PAD, SEE DETAILS A2/C-503 AND B9/C-503

TURNING PAD THICKENED EDGE/TRANSITION, SEE DETAIL C8/C-504

STONE APRON SEE DETAIL B1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
SITE PLAN

SHEET ID
CS112

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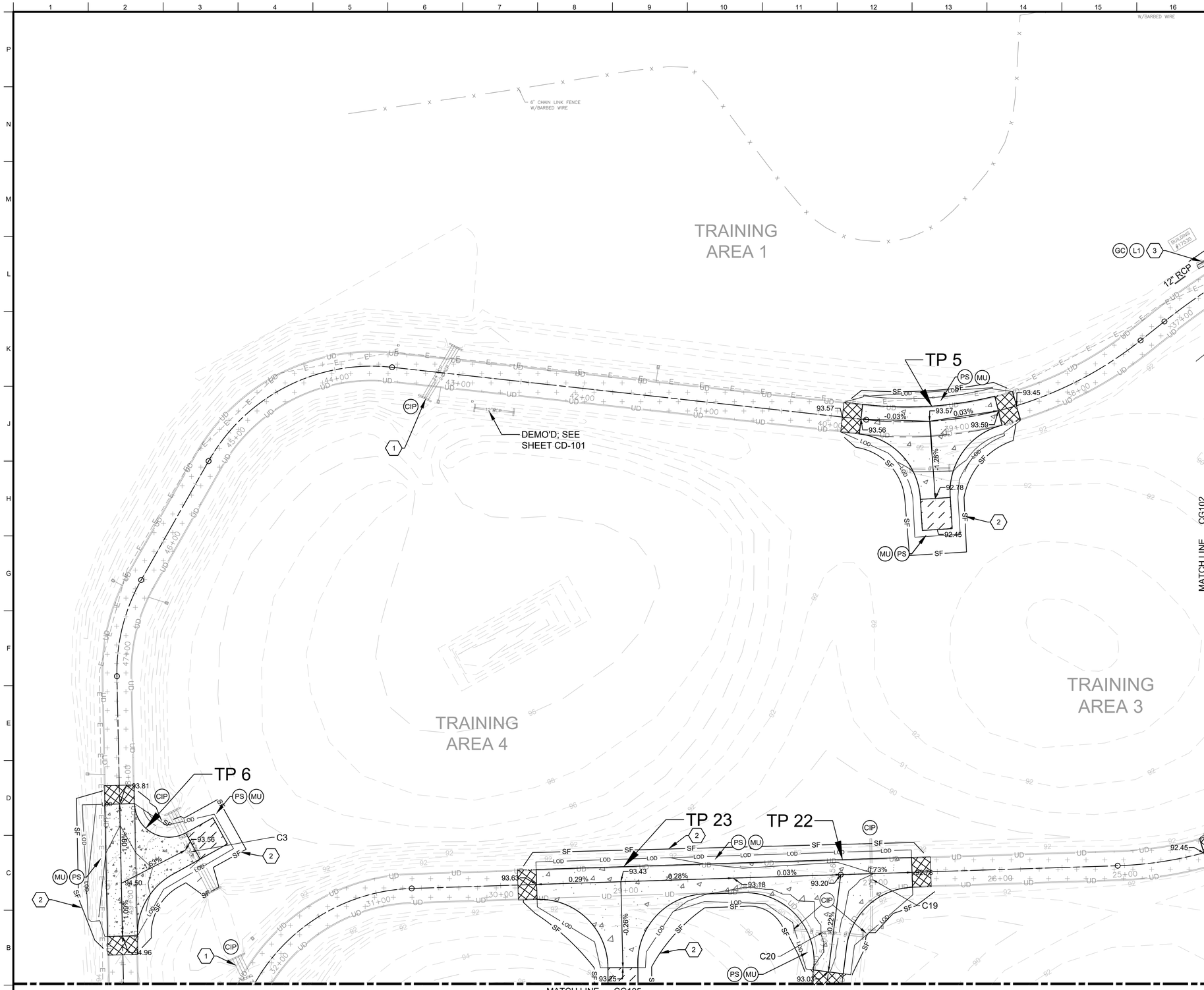


A7 GRADING PLAN
SCALE: 1" = 40'-0"

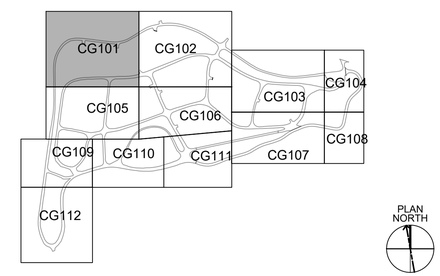
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
3. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH "L#" AS SHOWN IN THE LEGEND
4. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. CLEAN AND REMOVE ACCUMULATED SEDIMENT FROM CULVERT.
2. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. DITCH GRADING REQUIRED AND LINE NUMBER.

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
SD	NEW STORM DRAIN
SF	SILT FENCE SEE DETAIL E2/C-503
L#_	DITCH PROFILE DESIGNATION
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
GC	GRASS CHANNEL SEE DETAIL A1/C-513

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188
SIZE:

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J.WALL

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG101

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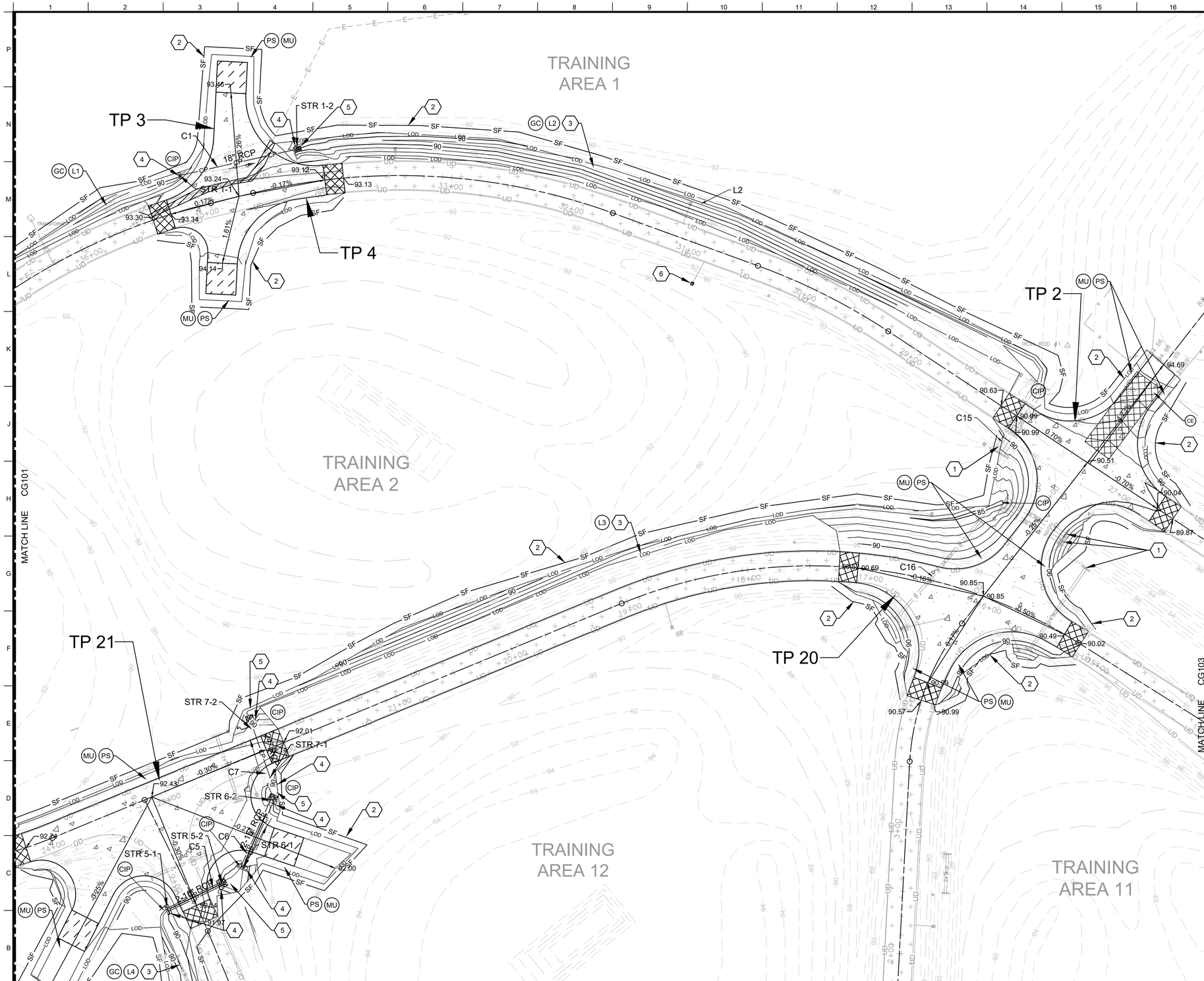


A7 GRADING PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

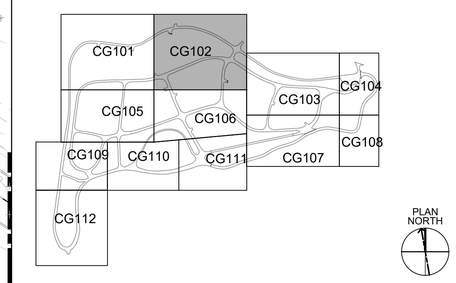
GENERAL NOTES:

1. C1 - NEW CULVERT; REPLACES EXISTING CULVERT AS SHOWN IN V-101 AND CD102.
2. C5,C6,C7 - NEW CULVERTS
3. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
4. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L_ AS SHOWN IN THE LEGEND
5. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. CLEAN AND REMOVE ACCUMULATED SEDIMENT FROM CULVERT
2. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
3. DITCH GRADING REQUIRED AND LINE NUMBER.
4. ST'D VDOT EW-1, SEE DETAIL G14/C-506.
5. ST'D VDOT EC-1 CL I, SEE DETAIL G3/C-505.
6. ST'D VDOT EW-12, SEE DETAIL G13/C-505.

KEY PLAN:



LEGEND:

CE	CONSTRUCTION ENTRANCE SEE DETAIL G7/C-503
LOD	LIMITS OF DISTURBANCE
CP	NEW STORM CULVERT
SF	SILT FENCE SEE DETAIL E2/C-503
C_	CULVERT PROFILE DESIGNATION
L_	DITCH PROFILE DESIGNATION
STR_	STRUCTURE DESIGNATION
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
GC	GRASS CHANNEL SEE DETAIL A1/C-513

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 1188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

GRADING PLAN

SHEET ID
CG102

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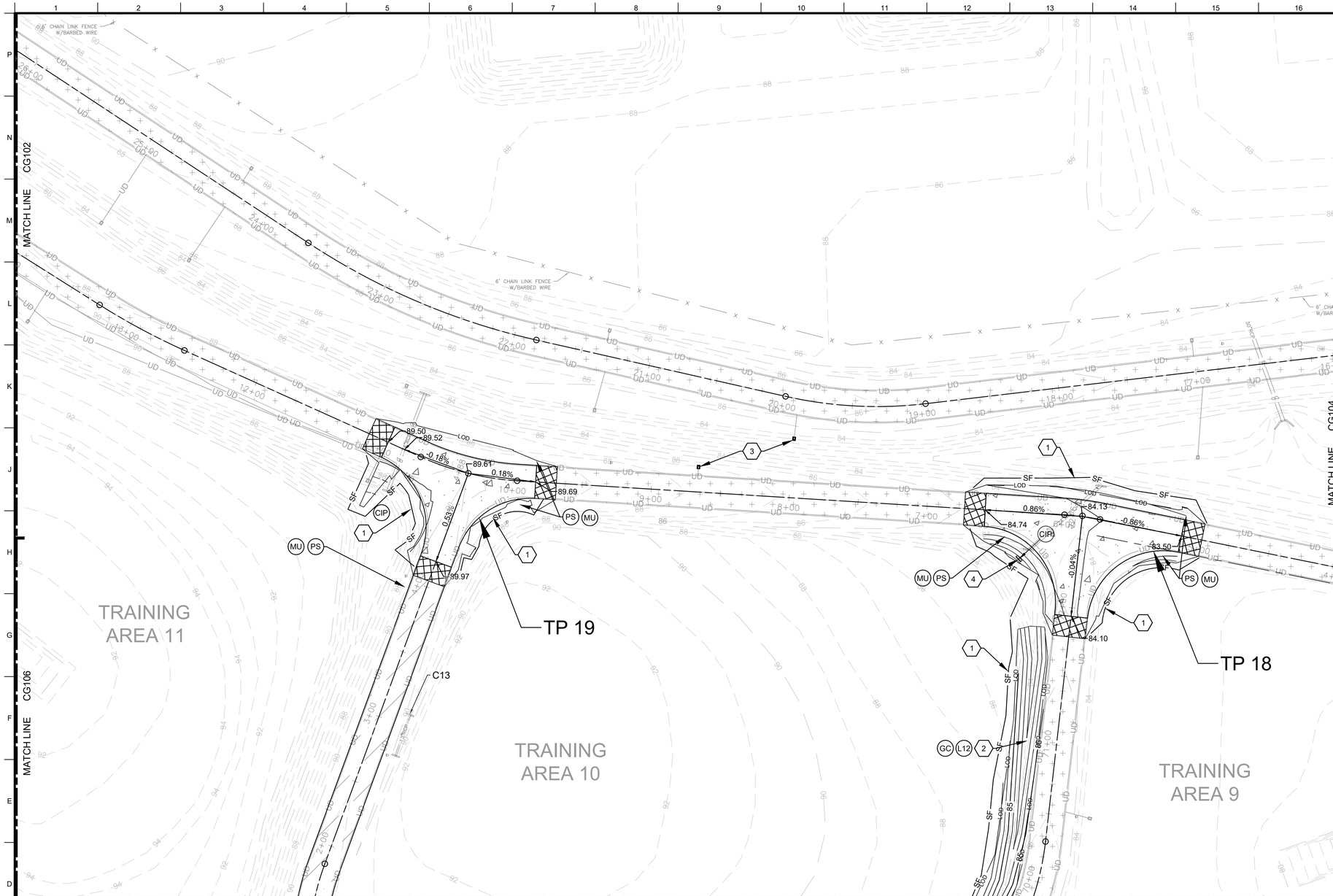


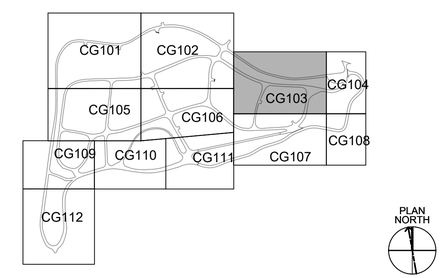
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
3. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L_ AS SHOWN IN THE LEGEND.
4. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. DITCH GRADING REQUIRED AND LINE NUMBER.
3. ST'D VDOT EW-12, SEE DETAIL G13/C-505.
4. EXTEND EXIST CULVERT 8 LF OF PIPE TO NEW VDOT EW-1 HEADWALL. SEE DETAIL G14/C-506.

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
GC	GRASS CHANNEL SEE DETAIL A1/C-513

C7 GRADING PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188
SIZE:

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG103

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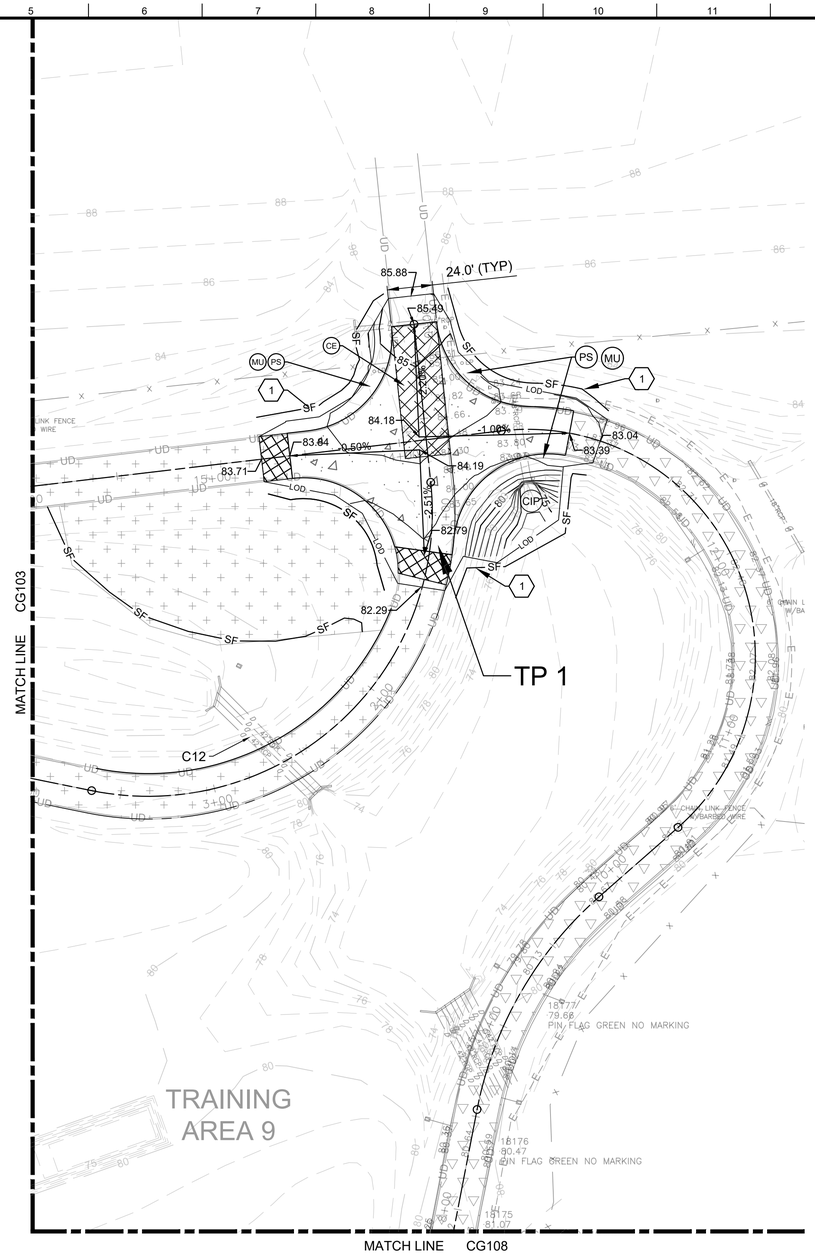


C7 GRADING PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

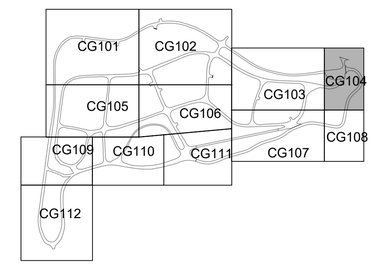
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
3. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L# AS SHOWN IN THE LEGEND.
4. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.

KEY PLAN:



LEGEND:

CE	CONSTRUCTION ENTRANCE SEE DETAIL G7/C-503
LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188
DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2-516440
GRADING PLAN

SHEET ID
CG104

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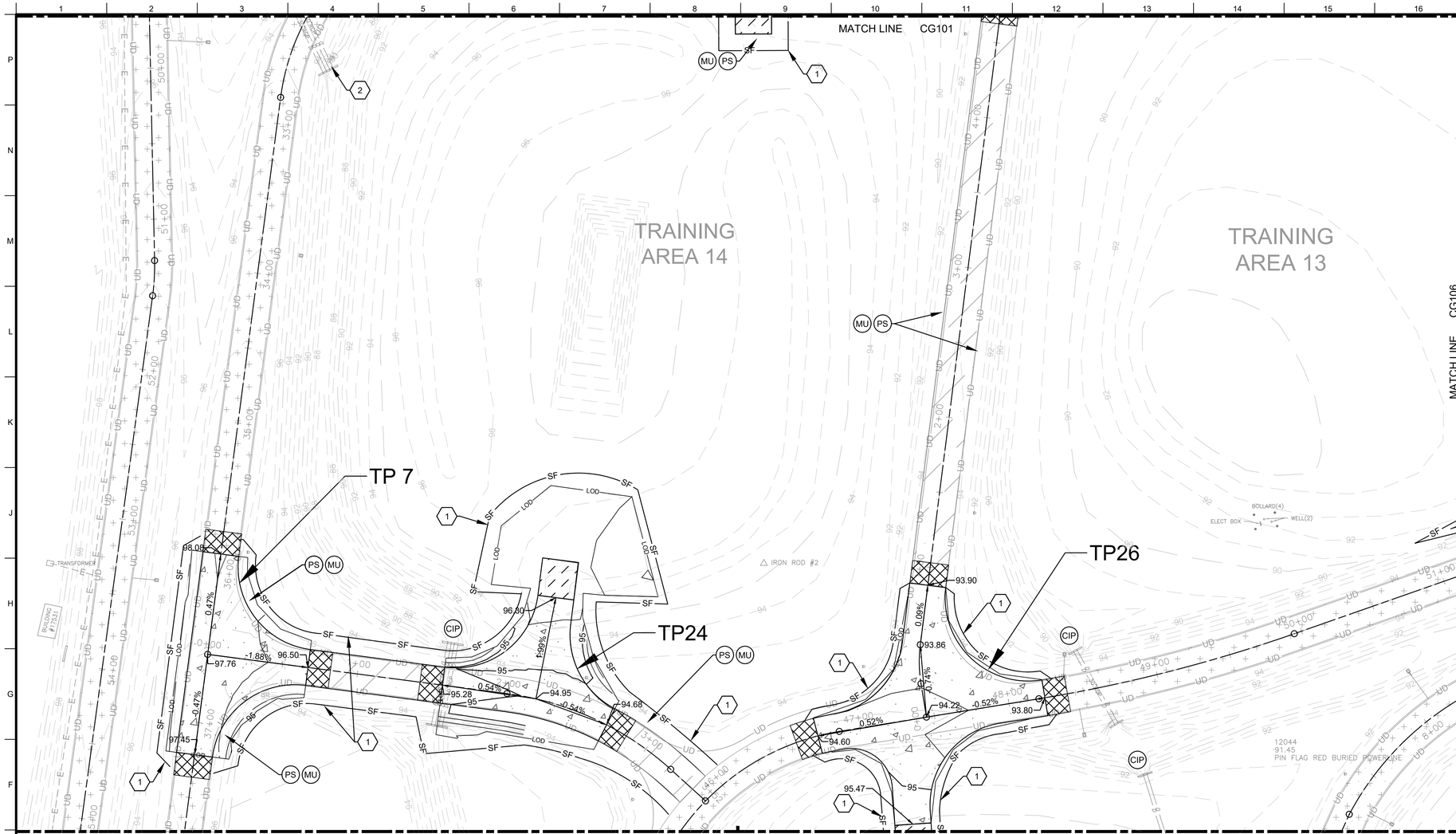


E7 GRADING PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

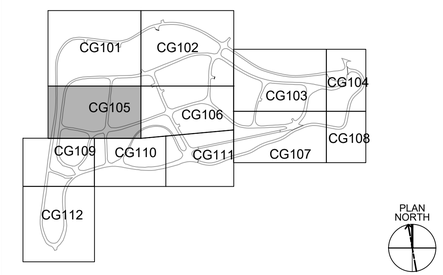
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
3. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L_ AS SHOWN IN THE LEGEND.
4. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CLEAN AND REMOVE ACCUMULATED SEDIMENT FROM CULVERT

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2-516440
GRADING PLAN

SHEET ID
CG105

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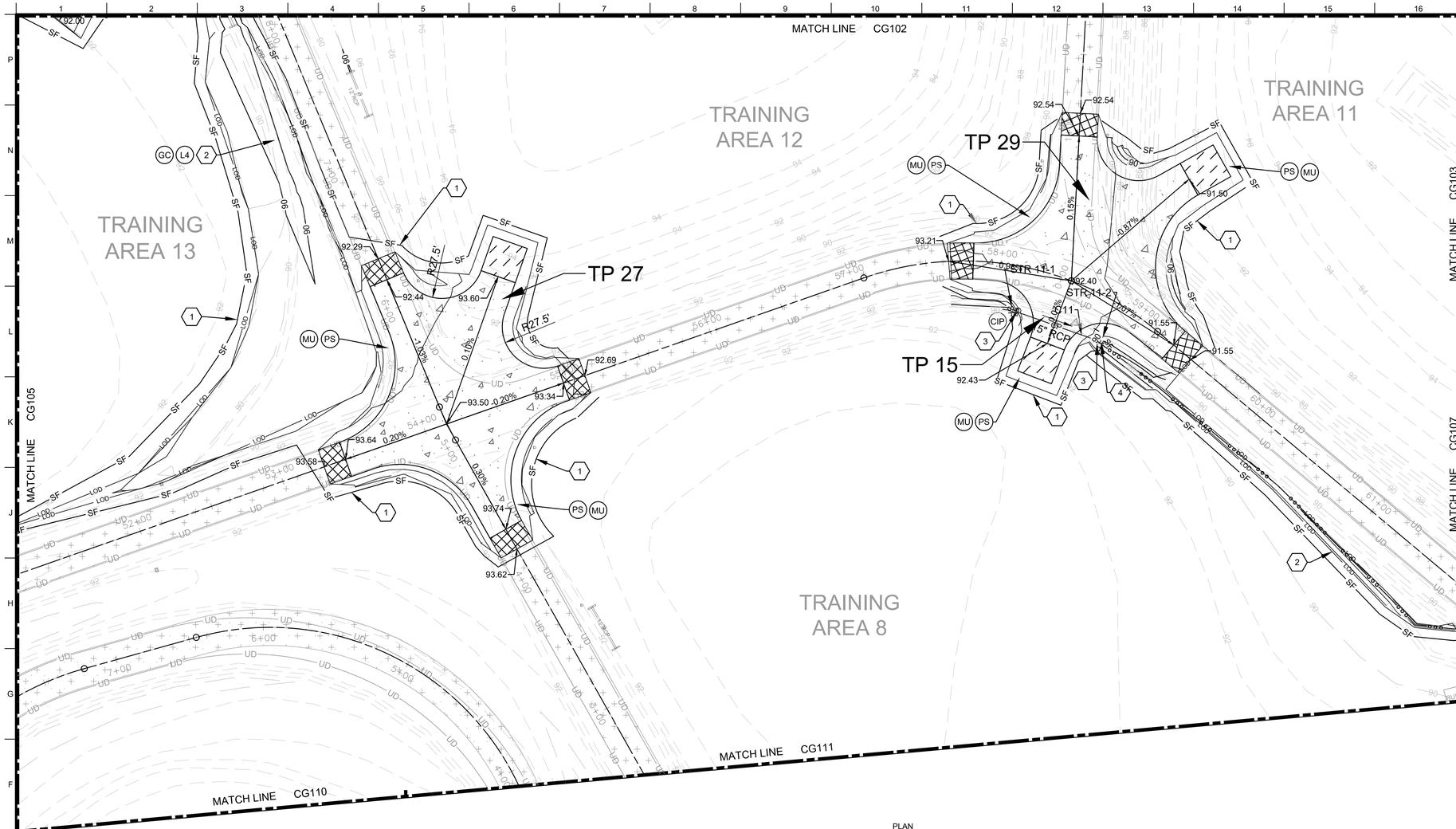


E7 GRADING PLAN

SCALE: 1" = 40'-0"

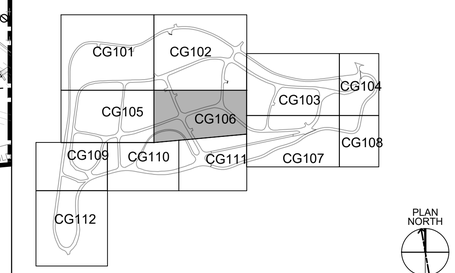
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
3. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L_ AS SHOWN IN THE LEGEND.
4. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES: ⬡

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. DITCH GRADING REQUIRED AND LINE NUMBER.
3. ST'D VDOT EW-1, SEE DETAIL G14/C-506.
4. ST'D VDOT EC-1 CL I, SEE DETAIL G3/C-505.

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
CP CP	NEW STORM CULVERT
SF	SILT FENCE SEE DETAIL E2/C-503
C_	DITCH PROFILE DESIGNATION
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
GC	GRASS CHANNEL SEE DETAIL A1/C-513

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 1188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG106

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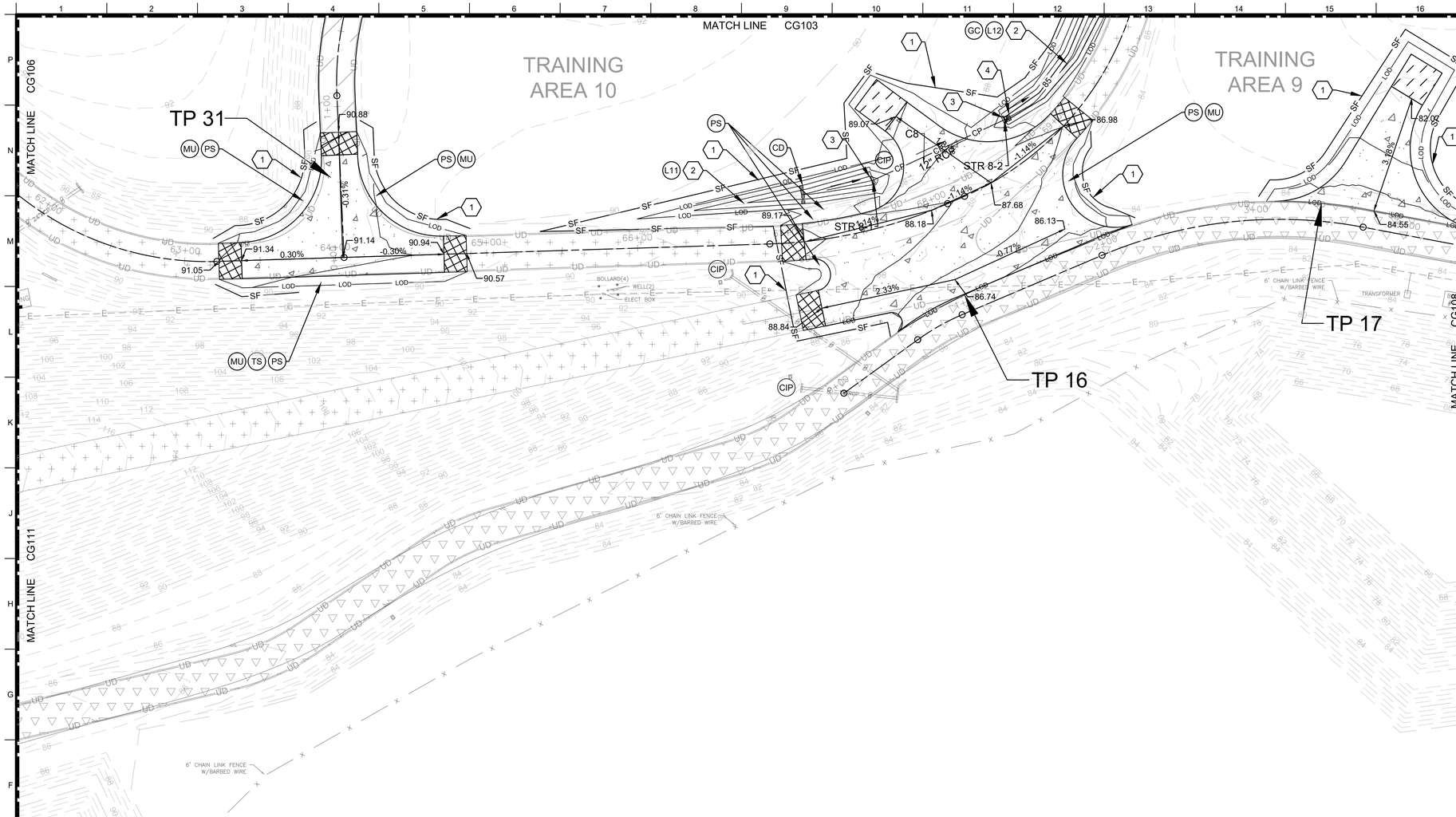


E7 GRADING PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

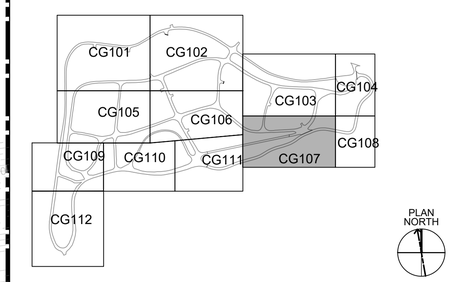
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
3. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L_ AS SHOWN IN THE LEGEND.
4. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. DITCH GRADING REQUIRED AND LINE NUMBER.
3. ST'D VDOT EW-1, SEE DETAIL G14/C-506.
4. ST'D VDOT EC-1 CL I, SEE DETAIL G3/C-505.

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
CP	NEW STORM CULVERT
SF	SILT FENCE SEE DETAIL E2/C-503
L#_	DITCH PROFILE DESIGNATION
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
CD	CHECK DAM SEE DETAIL G1/C-513
GC	GRASS CHANNEL SEE DETAIL A1/C-513

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG107

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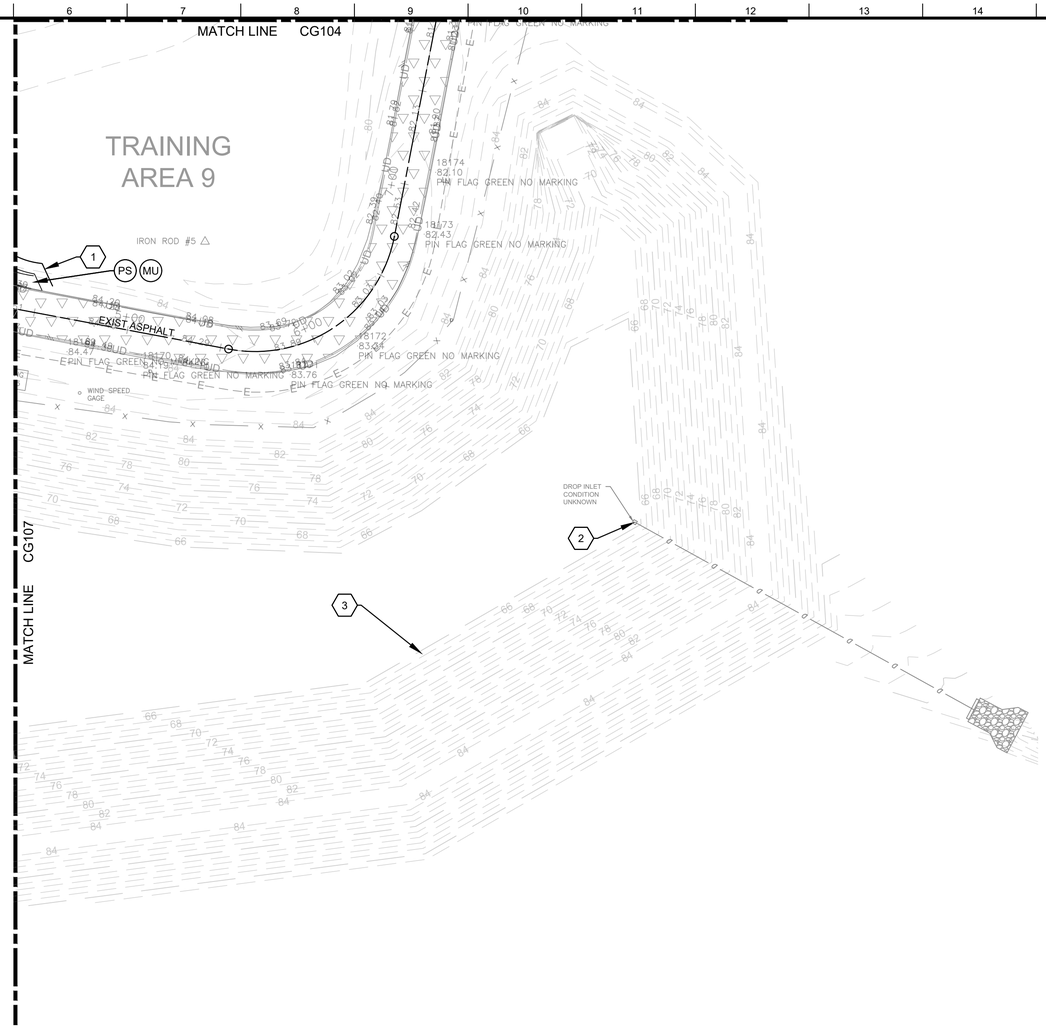


E7 GRADING PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

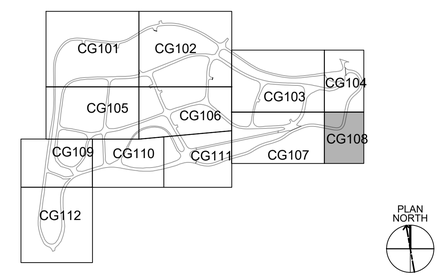
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE
2. DROP INLET, CONDITION UNKNOWN. CLEAN / REPAIR AS NEEDED TO RESTORE TO ORIGINAL DESIGN. SEE DETAIL J12/C-514 (BMP #3).
3. REMOVE ALL TREES AND WOODY VEGETATION ON THE EARTHEN BERM ON THE SOUTH AND EAST SIDES OF THE BMP. ROOTS LARGER THAN 1 INCH IN DIAMETER ARE TO BE GRUBBED OUT. HOLES RESULTING FROM THE GRUBBING OPERATION TO BE BACKFILLED WITH WELL-COMPACTED SOIL AND GRADED TO ADJACENT CONTOURS.

KEY PLAN:



SF — SILT FENCE
SEE DETAIL E2/C-503

MU — MULCHING
SEE DETAIL G15/C-503

PS — PERMANENT SEEDING
SEE DETAIL A15/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG108

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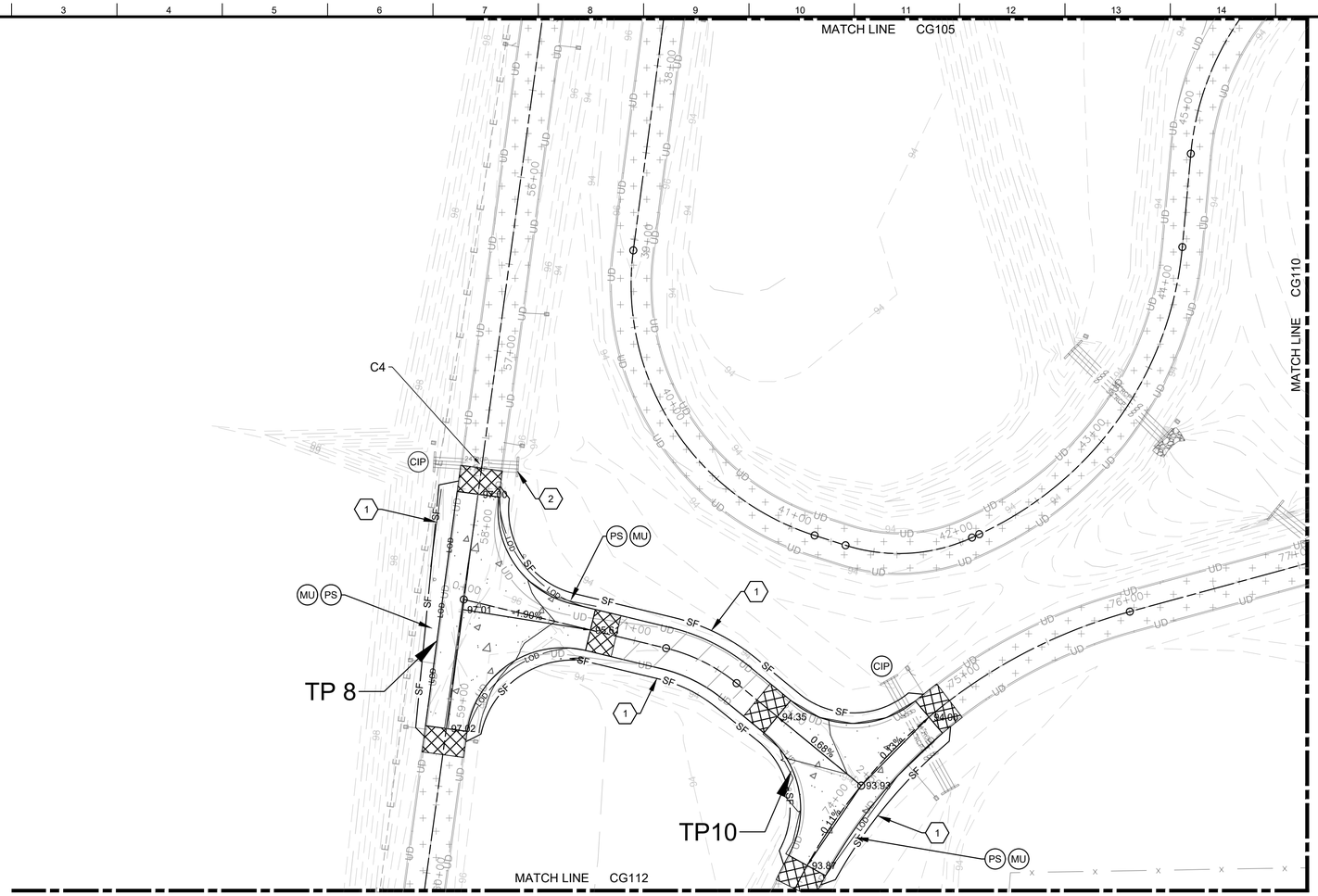


E7 GRADING PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

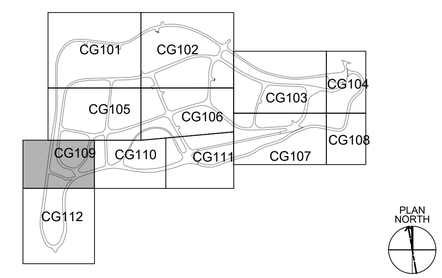
GENERAL NOTES:

1. MULCHING, TEMPORARY SEEDING, AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CLEAN AND REMOVE ACCUMULATED SEDIMENT FROM CULVERT

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG109

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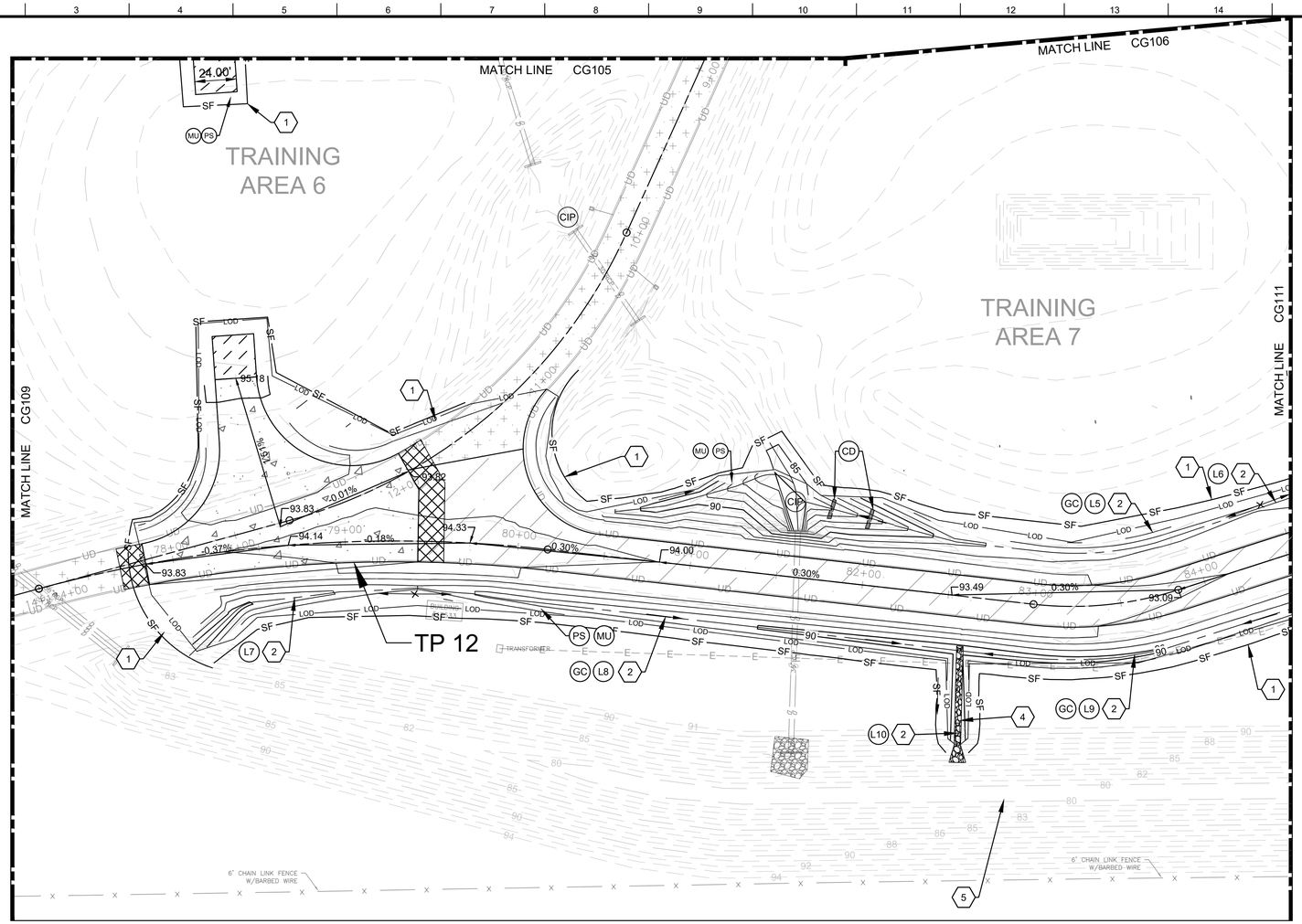


E7 GRADING PLAN

SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

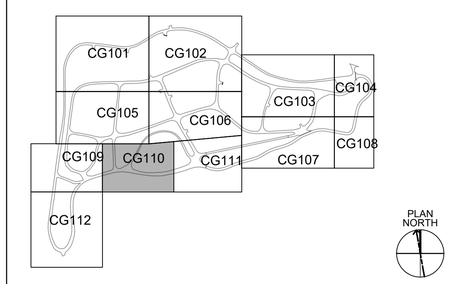
GENERAL NOTES:

1. C10A - NEW CULVERT.
2. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
3. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
4. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L_ AS SHOWN IN THE LEGEND.
5. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. DITCH GRADING REQUIRED AND LINE NUMBER.
3. ST'D VDOT EW-1, SEE DETAIL G14/C-506.
4. ST'D VDOT EC-1 CL I, SEE DETAIL G3/C-505.
5. RESTORE BMP TO ORIGINAL DESIGN WITH A DESIGN DEPTH OF 10' (ELEVATION 90 FT) AND VOLUME OF 528 THOUSAND CUBIC FEET

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
L#_	DITCH PROFILE DESIGNATION
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
CD	CHECK DAM SEE DETAIL G1/C-513
	CLASS 1 STONE -OUTLET PROTECTION
GC	GRASS CHANNEL SEE DETAIL A1/C-513

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS: VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG110

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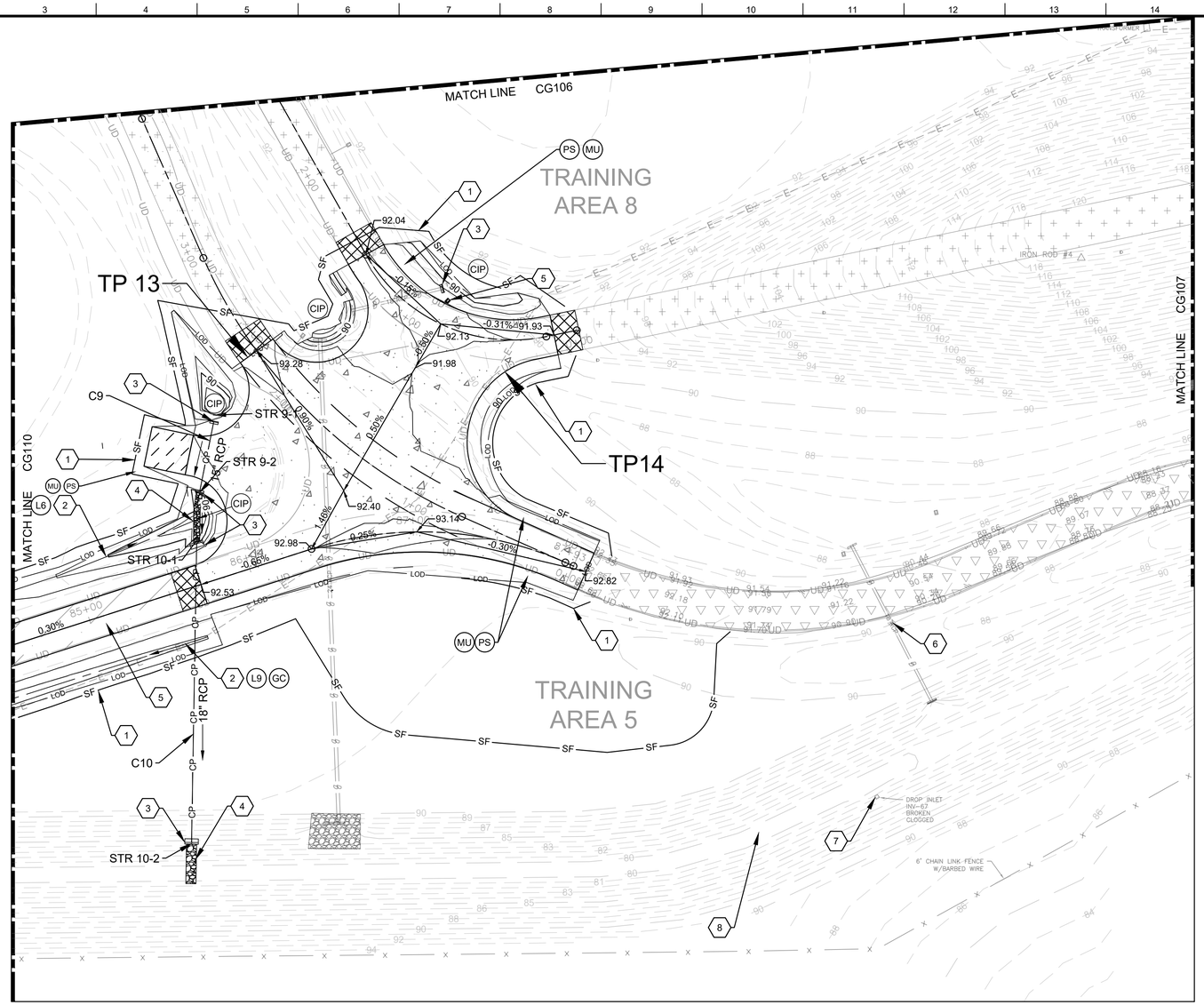


D7 GRADING PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

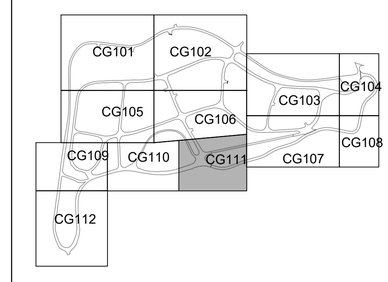
GENERAL NOTES:

1. C8 (AB) - NEW CULVERT
2. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
3. ADJUST ALL EW-12 STRUCTURES TO MATCH SLOPE.
4. SEE C200 SERIES DRAWINGS FOR CULVERT AND DITCH PROFILES AS WELL AS CROSS SECTIONS. NEW OR RE-GRADED SWALES DENOTED WITH L_ AS SHOWN IN THE LEGEND
5. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'
6. EW-XXX IS THE VDOT DESIGNATION FOR THE HEADWALLS FROM THE SURVEY FILE AS SHOWN IN THE CD SHEETS.

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. DITCH GRADING REQUIRED AND LINE NUMBER.
3. ST'D VDOT EW-1, SEE DETAIL G14/C-506.
4. ST'D VDOT EC-1 CL I, SEE DETAIL G3/C-505.
5. ST'D VDOT EW-12, SEE DETAIL G13/C-505.
6. CLEAN AND REMOVE ACCUMULATED SEDIMENT FROM CULVERT
7. REPAIR AND RESTORE DROP INLET TO ORIGINAL DESIGN, SEE DETAIL J3/C-514 (BMP #2). REMOVE ALL TREES AND WOODY VEGETATION WITHIN 25' OF THE OUTFALL.
8. RESTORE BMP TO ORIGINAL DESIGN WITH A DESIGN DEPTH OF 10' (ELEVATION 90 FT) AND VOLUME OF 528 THOUSAND CUBIC FEET

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
CP	NEW STORM CULVERT
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504
L#_	DITCH PROFILE DESIGNATION
CIP	CULVERT INLET PROTECTION SEE DETAIL G1/C-504
GC	GRASS CHANNEL SEE DETAIL A1/C-513

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
GRADING PLAN

SHEET ID
CG111

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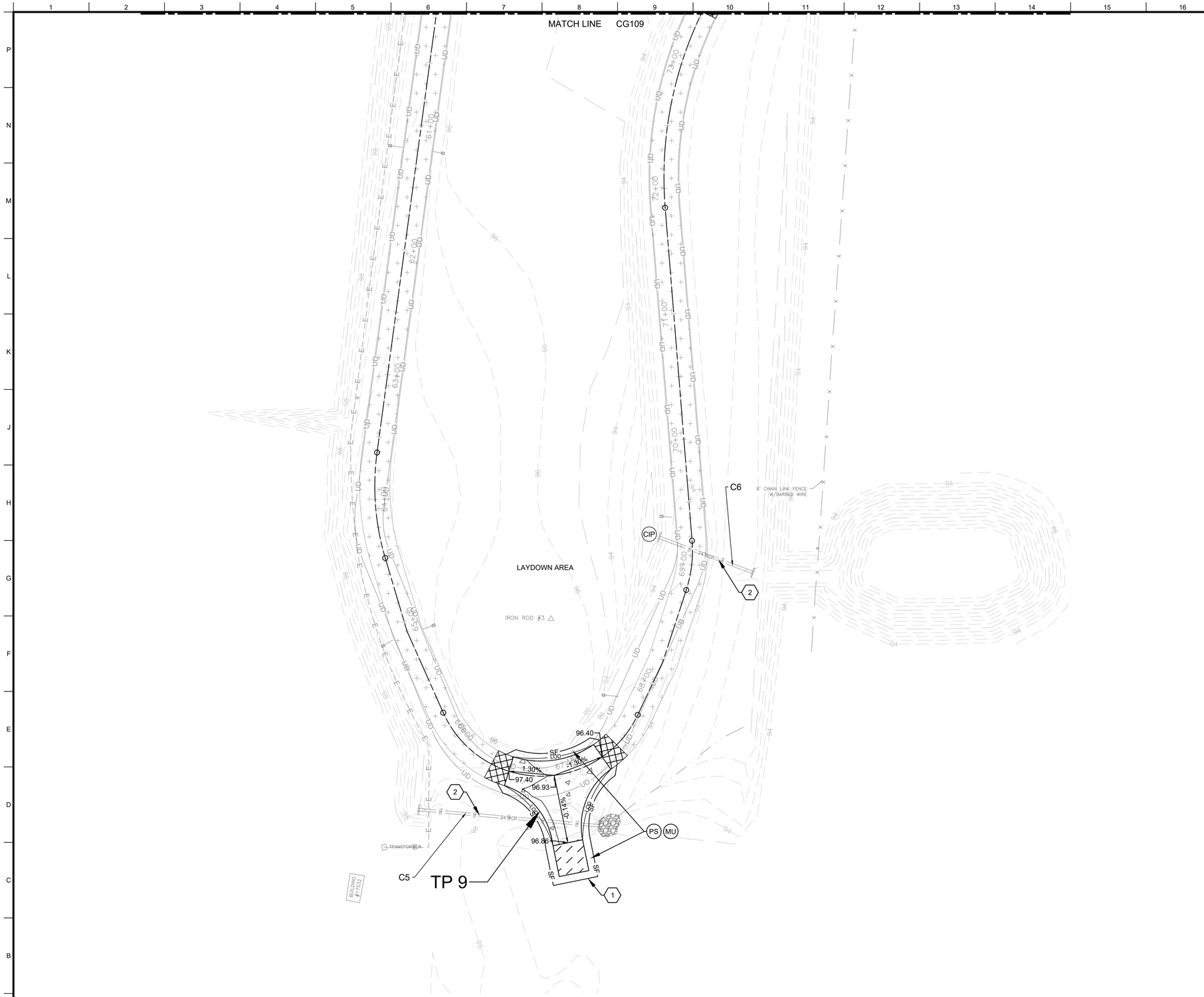


A7 GRADING PLAN
SCALE: 1" = 40'-0"

PLAN NORTH

0 40' 80'

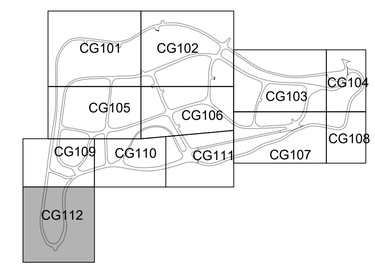
GENERAL NOTES:

1. MULCHING AND PERMANENT SEEDING. SEE LEGEND BELOW FOR DETAIL REFERENCES.
2. PROPOSED GRADE CONTOUR INTERVAL: 0.5'
   EXISTING GRADE CONTOUR INTERVAL: 1'

KEYNOTES:

1. SILT FENCE. SEE LEGEND BELOW FOR DETAIL REFERENCE.
2. CLEAN AND REMOVE ACCUMULATED SEDIMENT FROM CULVERT

KEY PLAN:



LEGEND:

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE SEE DETAIL E2/C-503
MU	MULCHING SEE DETAIL G15/C-503
PS	PERMANENT SEEDING SEE DETAIL A15/C-504

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

GRADING PLAN

SHEET ID
CG112

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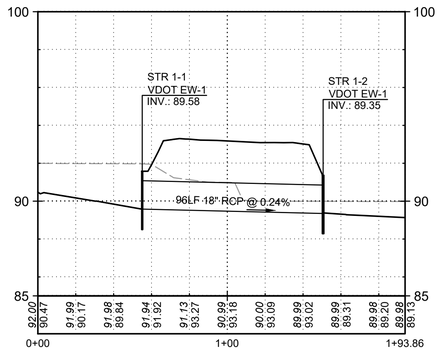
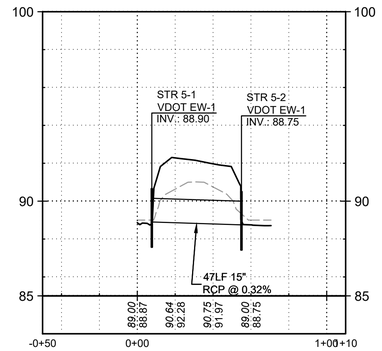
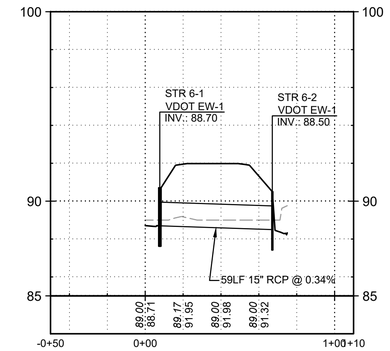


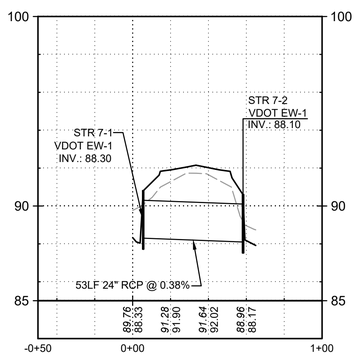
K2 CULVERT 1
SCALE V: 1"=4'; H: 1"=40'



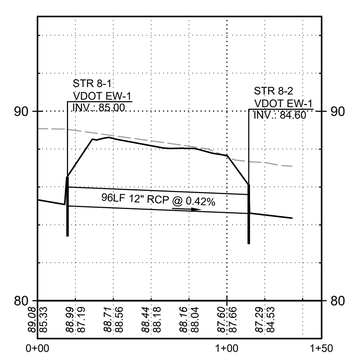
K8 CULVERT 5
SCALE V: 1"=4'; H: 1"=40'



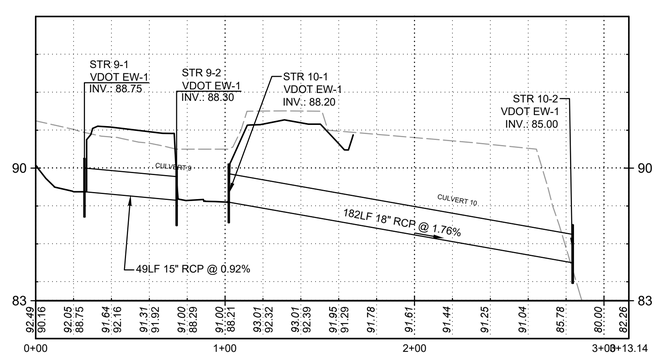
K15 CULVERT 6
SCALE V: 1"=4'; H: 1"=40'



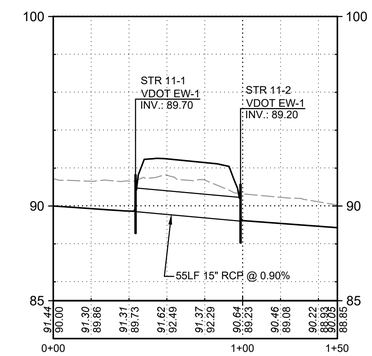
D2 CULVERT 7
SCALE V: 1"=4'; H: 1"=40'



D7 CULVERT 8
SCALE V: 1"=4'; H: 1"=40'



D11 CULVERTS 9 & 10
SCALE V: 1"=4'; H: 1"=40'



D16 CULVERT 11
SCALE V: 1"=4'; H: 1"=40'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DESIGNED BY: G. PREVITO
DRAWN BY: J.M. HURD
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

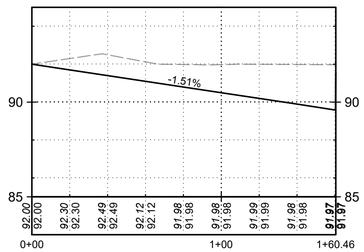
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.:
CONTRACT NO.:
NAO FILE NO.: 1188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

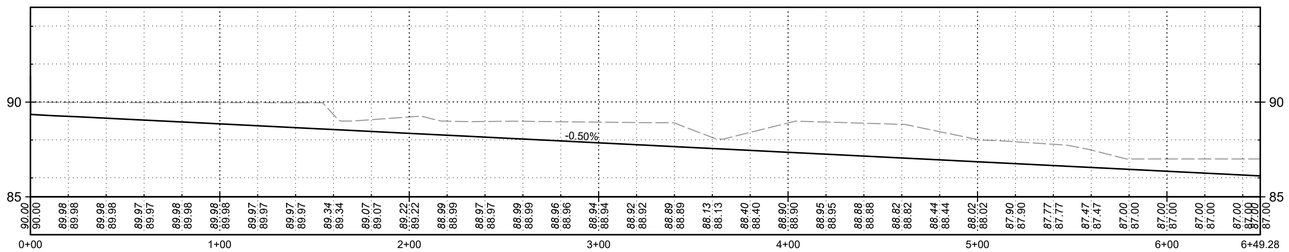
100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
STORM PIPE PROFILES

SHEET ID
C-201



L2 GRASS CHANNEL L1
SCALE V: 1"=4'; H: 1"=40'



L10 GRASS CHANNEL L2
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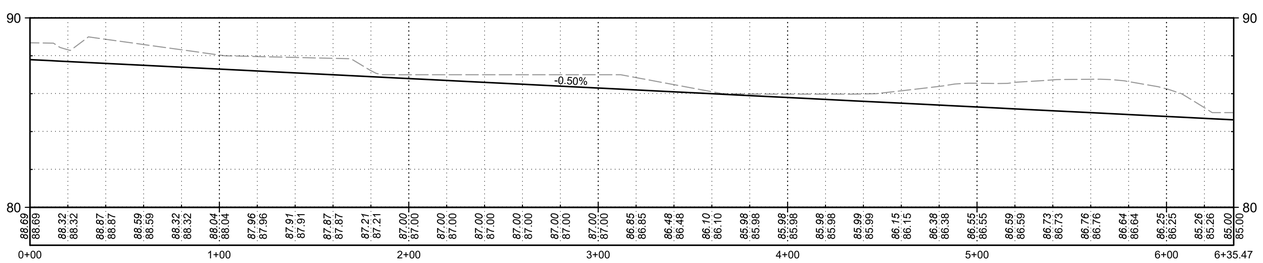
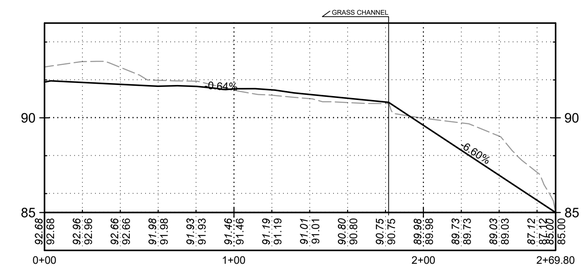
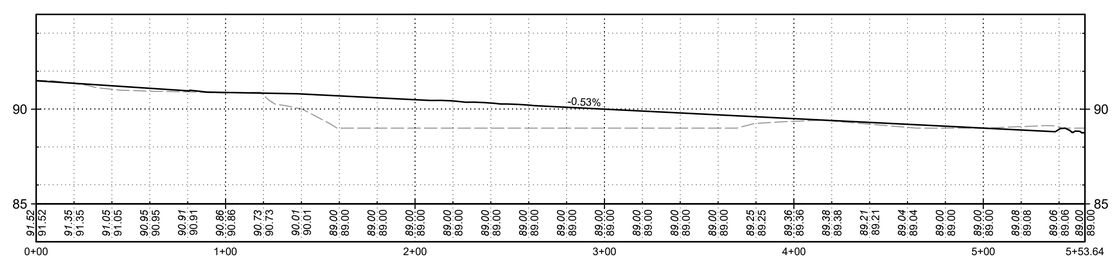


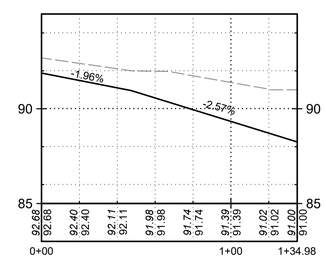
F5 SWALE L3
SCALE V: 1"=4'; H: 1"=40'



F14 GRASS CHANNEL L5
SCALE V: 1"=4'; H: 1"=40'



A5 GRASS CHANNEL L4
SCALE V: 1"=4'; H: 1"=40'



A12 SWALE L6
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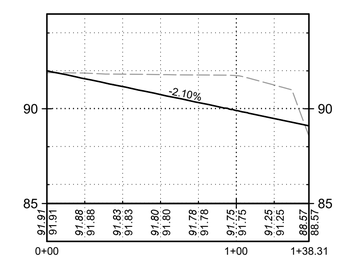

A16 SWALE L7
SCALE V: 1"=4'; H: 1"=40'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: J.M. HURD	SOLICITATION NO.:
CHECKED BY: N.INGOLD	CONTRACT NO.:
SUBMITTED BY: J. VIALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

CONSTRUCTED SWALE PROFILES

SHEET ID
C-202

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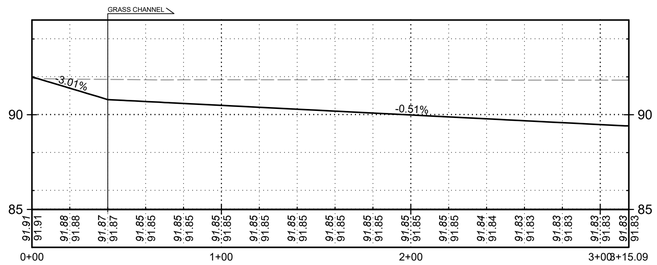
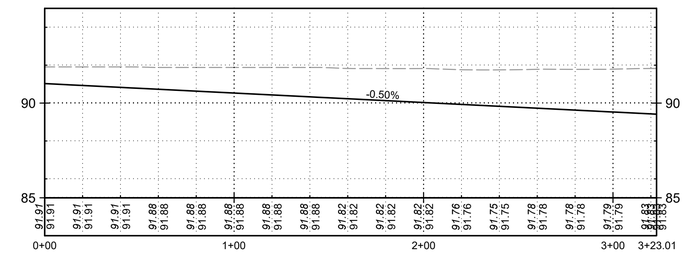


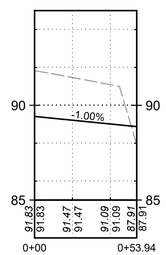
J3 GRASS CHANNEL L8

SCALE V: 1"=4'; H: 1"=40'



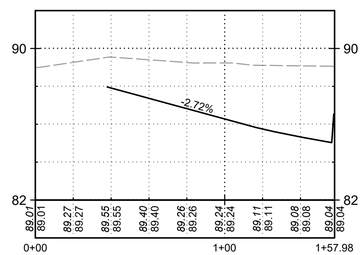
J14 GRASS CHANNEL L9

SCALE V: 1"=4'; H: 1"=40'



D4 SWALE L10

SCALE V: 1"=4'; H: 1"=40'



D7 SWALE L11

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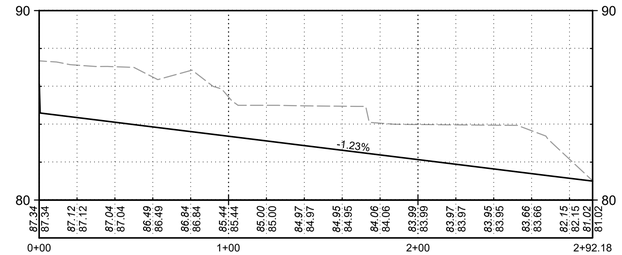

D13 GRASS CHANNEL L12

SCALE V: 1"=4'; H: 1"=40'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DESIGNED BY: G. PREVITO
DRAWN BY: J.M. HURD
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.:
CONTRACT NO.:
NAO FILE NO.: 1188

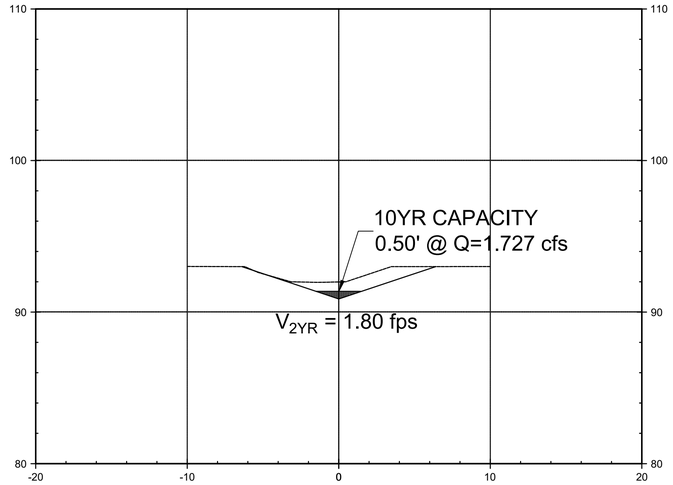
U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

CONSTRUCTED SWALE PROFILES

SHEET ID
C-203



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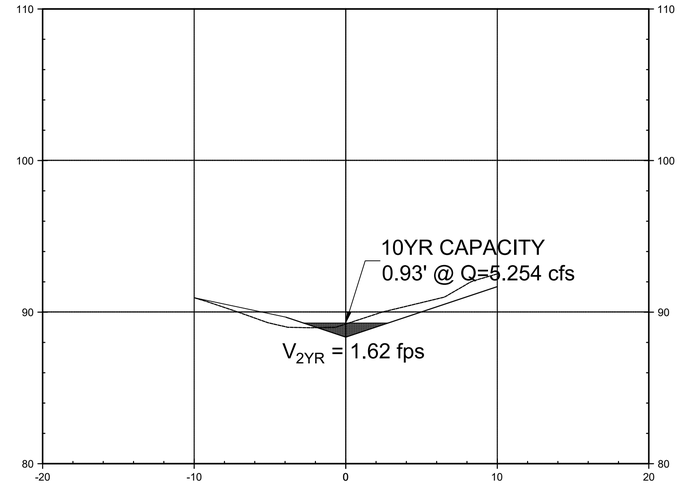

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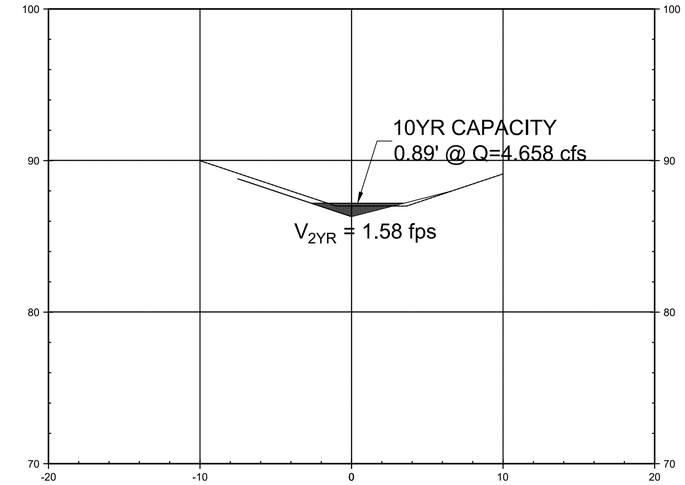

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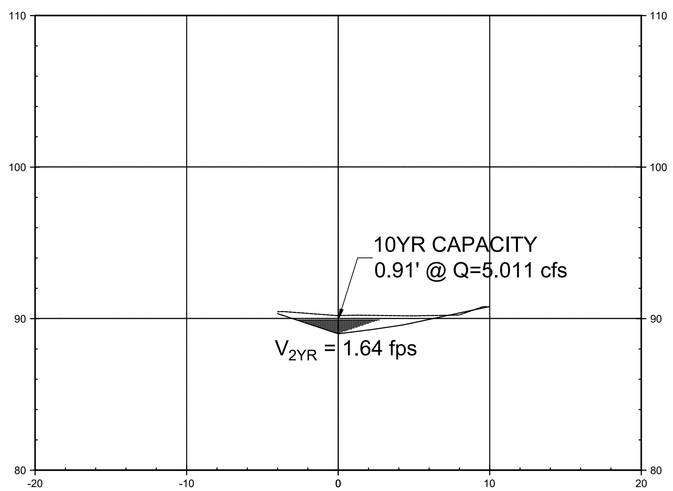

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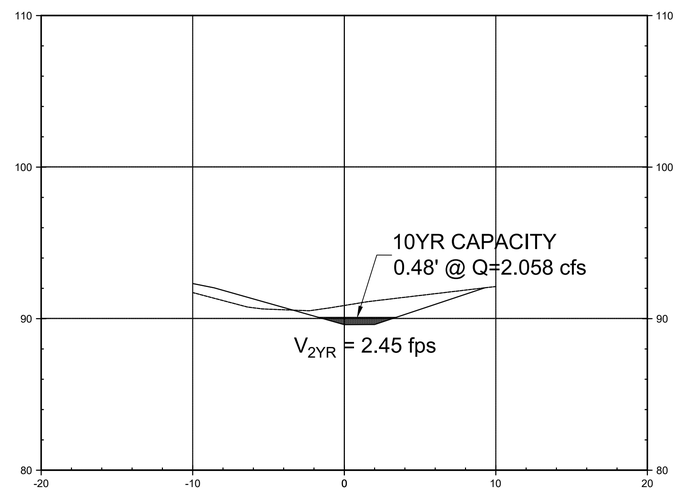

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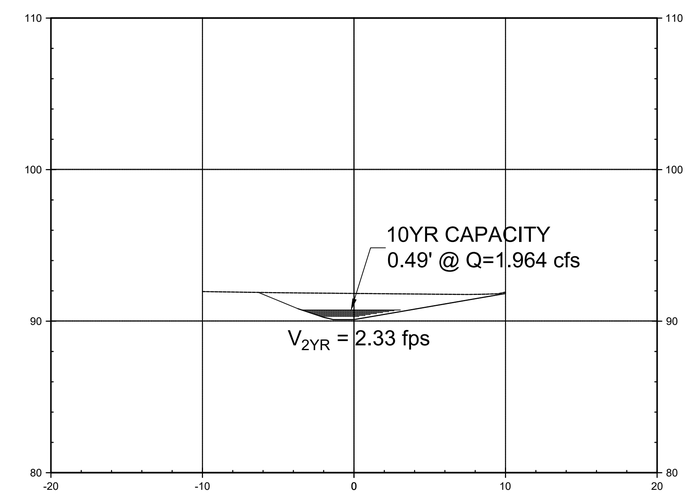

D17 SWALE L6
SCALE 1" = 5'

US Army Corps of Engineers®

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SUBMITTED BY: J.WALL
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FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

CONSTRUCTED SWALE PROFILES

SHEET ID
C-204

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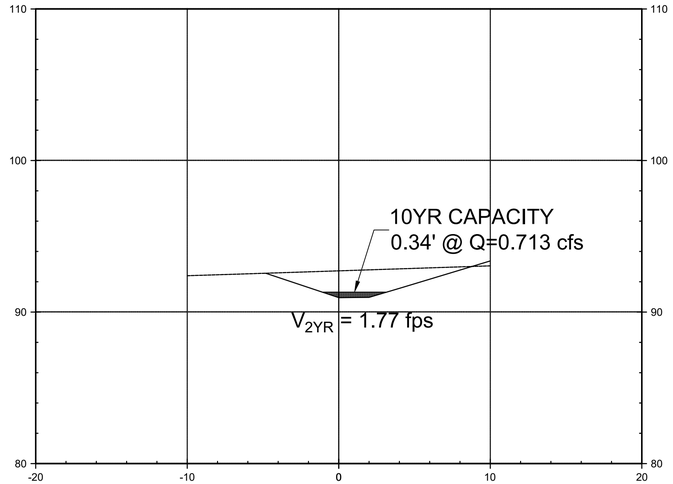

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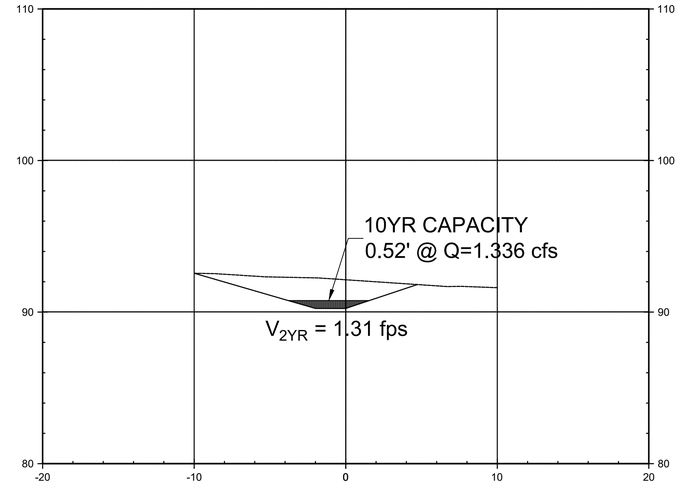

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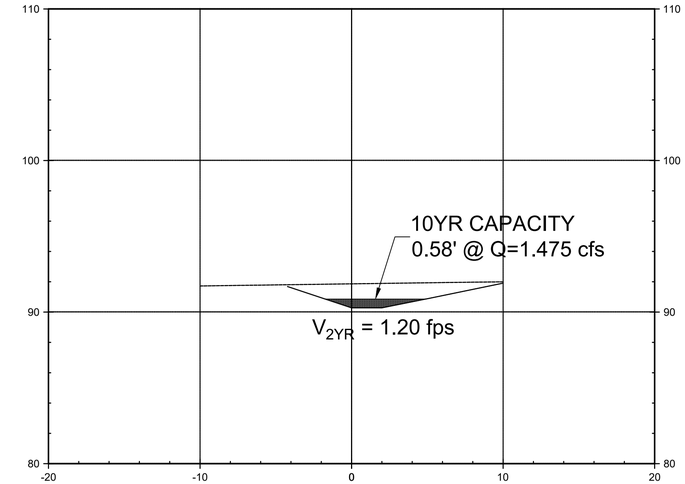

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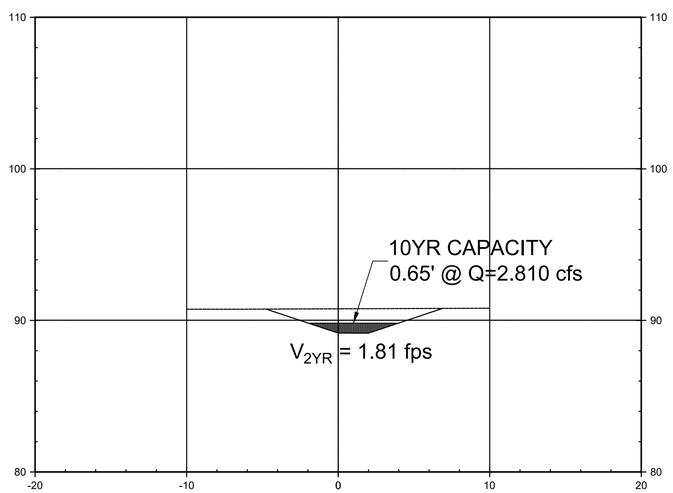

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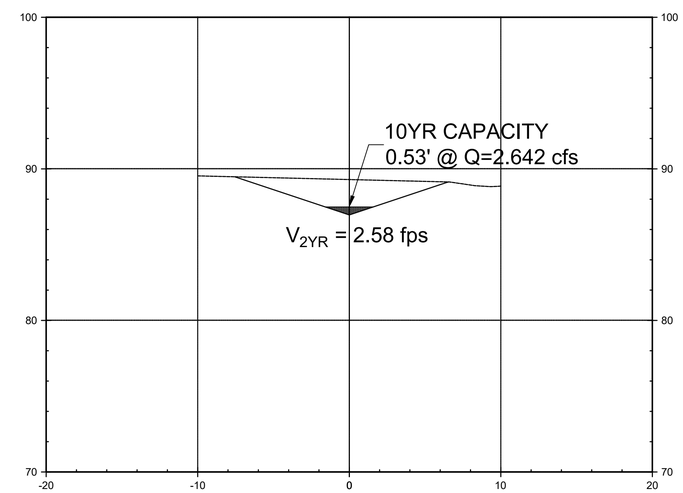

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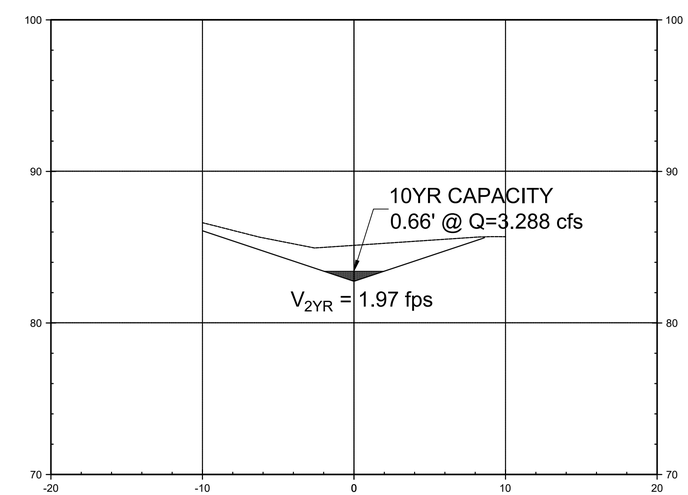

D17 GRASS CHANNEL L12
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CONSTRUCTED SWALE PROFILES

SHEET ID
C-205

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1. PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE DESIGN AND CONSTRUCTION OF IMPROVEMENTS TO THE EXISTING VEHICLE RECOVERY COURSE TRAINING FACILITY AT FORT GREGG-ADAMS. DUE TO THE DEGRADATION OF THE COURSE ROAD NETWORK FROM HEAVY USE AND DRAINAGE ISSUES, ESPECIALLY IN THE AREAS WHERE TRACKED VEHICLES MAKE SHARP TURNS, IT WAS DETERMINED THAT IMPROVEMENTS WOULD BE REQUIRED. THE ADDITION OF CONCRETE PADS WILL MINIMIZE ROAD DEGRADATION IN THE MOST HEAVILY IMPACTED AREAS. THE SPECIFIC DESIGN FEATURES INCLUDE THE FOLLOWING:

1.1. ADDITION OF EIGHT (8) NEW CONCRETE CULVERTS DUE TO DESIGN ANALYSIS CRITERIA AND/OR DEMOLITION OF EXISTING CULVERTS.

1.2. REPLACEMENT OF DAMAGED DRAINAGE STRUCTURES AND/OR CULVERTS THROUGHOUT THE RANGE.

1.3. MAINTENANCE IMPROVEMENTS FOR THREE (3) EXISTING CONCRETE CULVERTS.

1.4. LIMITED MAINTENANCE IMPROVEMENTS (RESHAPE OR REGRADE) AND CONSTRUCTION OF SWALES ALONG ROAD A BETWEEN THE INTERSECTION WITH THE ROAD D LOOP AND APPROXIMATELY 628 FEET EASTERLY.

1.5. LIMITED MAINTENANCE IMPROVEMENTS (RESHAPE OR REGRADE) FOR THE FOLLOWING ROADS: B, G, J, AND K.

1.6. LIMITED MAINTENANCE IMPROVEMENTS FOR SIXTEEN (16) CONCRETE CULVERTS.

1.7. CONSTRUCT TWENTY-SEVEN (27) CONCRETE TURNING PADS FOR TRACKED AND WHEELED VEHICLES TO SAFELY CONDUCT RECOVERY OPERATIONS.

THE PROJECT IS LOCATED ON THE NORTH SIDE OF FORT GREGG-ADAMS, BETWEEN I-295 TO THE EAST, THE APPOMATTOX RIVER TO THE WEST, AND ROUTE 635 TO THE NORTH. FORT GREGG-ADAMS IS LOCATED WITHIN THE BOUNDARY OF PRINCE GEORGE COUNTY, VIRGINIA AND BETWEEN THE INDEPENDENT VIRGINIA CITIES OF PETERSBURG AND HOPEWELL.

LAND DISTURBANCE ACTIVITIES INCLUDE GRADING FOR INSTALLATION OF CONCRETE TURNING PADS, A FIFTEEN-FOOT TRANSITION ZONE OF ADDITIONAL CRUSHED STONE ALONG THE EXISTING PROJECT ROADS AS THEY APPROACH EACH TURNING PAD, DITCH GRADING, AND REGRADING OF ROAD 'A'. THE TOTAL PROPOSED LAND DISTURBANCE AREA IS 4.72 ACRES. ADDITIONAL PROJECT REQUIREMENTS ARE DRAINAGE IMPROVEMENTS TO REPLACE CULVERTS AND UNDERDRAIN END TREATMENTS THAT HAVE BEEN DESTROYED OR DAMAGED AND MINIMAL MAINTENANCE OF DESIGNATED ROADWAYS.

2. EXISTING SITE CONDITIONS

THE EXISTING SITE WAS DEVELOPED IN 2008 AS PART OF THE BASE REALIGNMENT AND CLOSURE PLAN THAT TRANSFERRED THIS MISSION FROM A SMALLER FACILITY AT THE ABERDEEN PROVING GROUND. THE OVERALL FACILITY INCLUDES THE VEHICLE TRAINING AREAS AND A VEHICLE MAINTENANCE FACILITY (WHICH IS NOT PART OF THIS PROJECT). THE EXISTING ROADS WERE DESIGNED TO BE 24' WIDE WITH A CRUSHED STONE SURFACE AND ALLOW VEHICLES TO MANEUVER AROUND THE FACILITY AND PROVIDE ACCESS TO THE INTERIOR TRAINING SITES.

THE PROJECT AREA SLOPES FROM EAST TO WEST WITH ELEVATIONS THAT RANGE BETWEEN 95 TO 65 (NGVD 29). WITH THE EXCEPTION OF THE DIRT/GRAVEL ROADS, THE LAND COVER IS MANAGED TURF. THE RECOVERY RANGE INCLUDING THE MOTOR POOL, ADMIN/CLASSROOM FACILITIES, PARKING AREAS, AND BMPs IS APPROXIMATELY 147 ACRES.

3. ADJACENT AREAS

THE AREA DIRECTLY ADJACENT TO THE PROJECT SITE IS GRASSED OPEN SPACE/ MANAGED TURF. TO THE WEST, NORTH, AND EAST OF THE PROJECT SITE IS A PERIMETER FENCE THAT PARALLELS THE INSTALLATION BOUNDARY. FURTHER NORTH OF THE PROJECT SITE IS A STATE PENITENTIARY.

4. OFFSITE AREAS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF EXCAVATED MATERIAL FROM THE PROJECT SITE TO A LICENSED FACILITY.

5. SOILS

THE PREDOMINANT SOIL TYPES FOR THE SITE ARE SANDY LOAM AND SILT LOAM. THE SOILS WERE IDENTIFIED USING NATURAL RESOURCES CONSERVATION SERVICE (NRCS) WEB SOIL SURVEY. THE HYDROLOGICAL SOIL GROUP ASSOCIATED WITH THESE SOIL TYPES IS PREDOMINANTLY "B/D".

6. CRITICAL AREAS

THERE ARE NO CRITICAL AREAS DEFINED FOR THIS PROJECT.

7. EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATED AND STRUCTURAL EROSION, AND SEDIMENT CONTROL (ESC) CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE LATEST EDITION OF THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) APPLICABLE TO THE PIEDMONT REGION OF VIRGINIA. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO BEFORE, DURING, AND AFTER CONSTRUCTION, UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. REFER TO THE CONSTRUCTION PLANS FOR DETAILS AND LOCATIONS ASSOCIATED WITH THE CONTROL MEASURES.

7.1. GENERAL

7.1.1. A COPY OF THE APPROVED ESC PLAN AND THE VESCH SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

7.1.2. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THE ESC PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY ESC PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

7.1.3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY AT NO ADDITIONAL COST TO THE OWNER.

7.2. STRUCTURAL PRACTICES

7.2.1. TEMPORARY STONE CONSTRUCTION ENTRANCE (CE) - C-SCM-03

TEMPORARY STONE CONSTRUCTION ENTRANCE IS PROVIDED TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO SURROUNDING PAVED ROADWAY BY CONSTRUCTION VEHICLES. TEMPORARY STONE CONSTRUCTION ENTRANCE WILL BE PROVIDED TO ALLOW ACCESS FROM THE MAIN ROAD TO EACH SITE AND ACT AS AN ENTRANCE TO SITES WITH NO ESTABLISHED ENTRANCE. THE CONSTRUCTION ENTRANCE MUST BE AT A MINIMUM 70-FEET IN LENGTH, 6-INCHES DEEP, AND 24-FEET WIDE.

7.2.2. SILT FENCE - WIRE SUPPORTED (SF) - VESCH STD. C-PCM-04

SILT FENCING WILL SERVE AS A PERIMETER CONTROL TO PROTECT DISTURBED AREAS FROM OFF-SITE RUNOFF AND TO PREVENT SEDIMENTATION DAMAGE TO AREAS OUTSIDE THE PROJECT SITE.

7.2.3. CULVERT INLET PROTECTION (CIP) - VESCH STD. C-PCM-05

CULVERT INLET PROTECTION SHALL BE INSTALLED UPSTREAM OF THE DESIGNATED CULVERTS AS SHOWN IN THE PLAN TO PREVENT SEDIMENT FROM ENTERING THE STRUCTURES AND DOWNSTREAM SYSTEM PRIOR TO PERMANENT STABILIZATION.

7.2.4 OUTLET PROTECTION (OP) C-ECM-15

A PERMANENT, EROSION-RESISTANT GROUND COVER OF LARGE. LOOSE, ANGULAR STONE WITH FILTER FABRIC OR GRANULAR UNDERLINING, USED TO PROTECT THE SOIL FROM THE EROSIVE FORCES OF CONCENTRATED RUNOFF, SLOW THE VELOCITY OF CONCENTRATED RUNOFF WHILE ENHANCING THE POTENTIAL FOR INFILTRATION, ALSO USED TO STABILIZE SLOPES WITH SEEPAGE PROBLEMS AND/OR NON-COHESIVE SOILS.

7.3. VEGETATED PRACTICES

7.3.1. ROCK CHECK DAM (CD) C-SCM-07

SMALL TEMPORARY STONE DAMS CONSTRUCTED ACROSS A SWALE OR DRAINAGE DITCH TO REDUCE THE VELOCITY OF COMCENTRATED STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE SWALE OR DITCH. THIS PRACTICE ALSO TRAPS SEDIMENT GENERATED FROM ADJACENT AREAS OR THE DITCH ITSELF, MAINLY BY PONDING OF THE STORMWATER RUNOFF.

7.3.2. TEMPORARY SEEDING (TS) C-SSM-09

TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN FOURTEEN (14) DAYS. TEMPORARY SEEDING SHALL BE APPLIED IMMEDIATELY AFTER ROUGH GRADING IS COMPLETED ON THE RESPECTIVE AREAS. REFER TO TABLE 3.31-B FOR TEMPORARY SEEDING GUIDANCE.

7.3.3. PERMANENT SEEDING (PS) C-SSM-10

ALL AREAS AT FINAL GRADE MUST BE SEEDED WITHIN SEVEN (7) DAYS AFTER COMPLETION OF LAND DISTURBANCE ACTIVITY. EXCEPT FOR SMALL LEVEL AREAS, SEEDED AREAS SHALL BE PROTECTED WITH MULCH. REFER TO TABLE 3.32-E FOR PERMANENT SEEDING GUIDANCE.

7.3.4. MULCHING (MU) - VESCH STD. C-SSM-11

AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING TO FOSTER THE GROWTH OF VEGETATION.

8. MANAGEMENT STRATEGIES

8.1. STONE CONSTRUCTION ENTRANCES, CULVERT INLET PROTECTION AND SILT FENCE WILL BE INSTALLED AS AN EARLY STEP DURING LAND DISTURBING ACTIVITIES.

8.2. THE SITE DRAINS TO EITHER EXISTING OR PROPOSED CULVERTS AND ARE CONTROLLED BY CULVERT INLET AND OUTLET PROTECTION DURING LAND DISTURBING ACTIVITIES AND SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED. THE FINAL TERMINATION FOR SITE DRAINAGE ARE THE THREE EXISTING BMPs THAT ARE LOCATED AT THE SOUTHERN END OF THE SITE.

8.3. RESPONSIBILITY FOR PLAN IMPLEMENTATION SHOULD BE GIVEN TO THE CONSTRUCTION SUPERINTENDENT AND HE/SHE SHALL MAKE ALL CONSTRUCTION WORKERS AWARE OF THE PROVISIONS OF THE PLAN.

8.4. ALL ESC CONTROL MEASURES SHALL BE CHECKED CONTINUOUSLY AND ESPECIALLY AFTER EACH SIGNIFICANT STORM TO LOCATE DAMAGES AND CONDUCT MAINTENANCE OPERATIONS.

8.5. ALL TEMPORARY ESC CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

8.6. ANY AND ALL MATERIAL TRANSPORTED ONTO A PUBLIC OR PRIVATE ROAD SURFACE WILL BE REMOVED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROAD BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

8.7. ALL TEMPORARY EQUIPMENT, CONSTRUCTION MATERIAL, AND DEBRIS MUST BE REMOVED FROM THE SITE IN A LAWFUL MANNER IN ORDER FOR CONSTRUCTION TO BE CONSIDERED COMPLETE.

8.8. ALL EXCESS EXCAVATED EARTHWORK MATERIAL SHALL BE PROPERLY TRANSPORTED OFFSITE AND DISPOSED AT AN APPROVED LOCATION PERTAINING TO APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

9. SEQUENCE OF CONSTRUCTION

9.1. OBTAIN NECESSARY PERMITS.

9.2. MOBILIZATION.

9.3. AS A FIRST MEASURE PRIOR TO LAND DISTURBANCE, INSTALL EROSION AND SEDIMENT CONTROL MEASURES AROUND LAND DISTURBING ACTIVITIES ON THE PROJECT SITE PER THE PRIORITY PHASING PLAN AS SHOWN ON G-005.

9.4. DEMOLISH DESIGNATED ALL SITE FEATURES IDENTIFIED ON THE DEMOLITION SHEETS.

9.5. CONDUCT ALL CHANNEL GRADING AS SHOWN ON THE PLANS.

9.6. INSTALL NEW DRAINAGE CULVERTS, AND ASSOCIATED OUTLET PROTECTION. INSTALL CONCRETE TURNING PADS ACCORDING TO THE SEQUENCE BELOW.

9.6.1. PERFORM SOIL STOCK FILL MATERIAL FOR CONCRETE PADS, STONE PADS AND ROAD TRANSITIONS.

9.6.2. PERFORM ROUGH GRADING OF FILL MATERIAL AND COMPACTION AS NOTED IN ITEM 9.6.1 AT EACH PAD LOCATION.

9.6.3. PLACE CONCRETE FORMS, BASE MATERIAL, AND REINFORCING STEEL.

9.6.4. PLACE CONCRETE FOR TURNING PADS.

9.6.5. PERFORM FINISH ROAD GRADING, STONE PLACEMENT, AND COMPACTION FOR NEWLY CONSTRUCTED TURNING PADS ALONG WITH MINIMAL MAINTENANCE ACTIVITIES OF DESIGNATED ROADS.

9.6.6. PERFORM STABILIZATION OF TURF AREAS ADJACENT TO TURNING PADS.

9.7. INSTALL STORM WATER MANAGEMENT FEATURES.

9.8. DISPOSE OF ALL EXCAVATED MATERIAL IN A LAWFUL MANNER.

9.9. REMOVE SEDIMENT FROM AROUND SEDIMENT BARRIERS & REMOVE SEDIMENT BARRIER CONTROL DEVICES.

9.9.1. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, AS DIRECTED BY THE CONTRACTING OFFICER.

9.9.2. RESTORE AND STABILIZE ALL DISTURBED AREAS RESULTING FROM THE REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROLS AS DIRECTED BY THE CONTRACTING OFFICER.

10. PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING WITHIN 7 DAYS FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE IN ACCORDANCE WITH STD. & SPEC. 3.32, PERMANENT SEEDING, OF THE HANDBOOK. STRAW OR FIBER MULCH WILL BE USED. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.

11. TEMPORARY STABILIZATION

ALL DENUDED AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING WITHIN 7 DAYS. TEMPORARY SEEDING SHALL BE DONE IN ACCORDANCE WITH STD. & SPEC. 3.31, TEMPORARY SEEDING, OF THE HANDBOOK. STRAW OR FIBER MULCH WILL BE USED. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.

12. MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES

12.1. TEMPORARY STONE CONST. ENTRANCE (CE) C-SCM-03

12.1.1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO FORT EUSTIS ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

12.1.2. REMOVAL. REMOVAL OF THE CE SHALL NOT CAUSE THE MIGRATION OF SEDIMENT OFFSITE. THE CE CAN BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE.

12.2. SILT FENCE (SF) C-SCM-04

12.2.1. SILT FENCE SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

12.2.2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING.

12.2.3. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.

12.2.4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

12.2.5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED AND SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

12.2.6. REMOVAL. SILT FENCE SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.`

12.3. CULVERT INLET PROTECTION (IP) C-SCM-05

12.3.1. INSPECT THE STRUCTURES AFTER EACH RAIN EVENT AND MAKE REPAIRS AS NEEDED IF STRUCTURES DEEMED DAMAGED.

12.3.2. AGGREGATE SHALL BE REPLACED OR CLEANED WHEN INSPECTION REVEALS THAT CLOGGED VOIDS ARE CAUSING PONDING PROBLEMS WHICH INTERFERE WITH ON-SITE CONSTRUCTION.

12.3.3. SEDIMENT SHALL BE REMOVED AND THE IMPOUNDMENT RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS.

12.3.4. TEMPORARY STRUCTURES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

13. INSPECTION CHECKLIST FOR CONSTRUCTION OF GRASS CHANNELS

13.1. PRE-CONSTRUCTION MEETING WITH THE CONTRACTOR DESIGNATED TO INSTALL THE GRASS CHANNEL SHALL BE CONDUCTED.

13.2. IMPERVIOUS COVER SHALL BE CONSTRUCTED/INSTALLED AND AREA TO BE FREE OF CONSTRUCTION EQUIPMENT, VEHICLES, MATERIAL STORAGE AND/OR OTHER PROJECT COMPONENTS.

13.3. ALL PERVIOUS AREAS OF THE CONTRIBUTING DRAINAGE AREAS SHALL BE ADEQUATELY STABILIZED AND EROSION CONTROL MEASURES REMOVED.

13.4. ENSURE GRASS CHANNEL HAS NOT BEEN USED DURING CONSTRUCTION.

13.4.1. IF GRASS CHANNEL HAS BEEN USED FOR CONSTRUCTION, ENSURE THAT IT IS SCHEDULED TO BE RESTORED BY REMOVING CONSTRUCTION SEDIMENT AND INCORPORATING APPROPRIATE SOIL AMENDMENTS.

13.5. STORMWATER TO BE DIVERTED FOR THE CONSTRUCTION OF INFLOW MEASURES (EG. LEVEL SPREADER OR GRAVEL DIAPHRAGM)

13.6. ENSURE PROPER GRADES HAVE BEEN ACHIEVED WITH LIGHT EQUIPMENT TO AVOID COMPACTION AND PROVIDE THE REQUIRED GEOMETRY OF THE GRASS CHANNEL (EG. LENGTH, LONGITUDINAL SLOPE, BOTTOM WIDTH, SIDE SLOPES, ETC.)

13.7. SOIL AMENDMENTS, IF REQUIRED, MUST BE INCORPORATED AS SPECIFIED (THE THICKNESS OF COMPOST MATERIAL HAS BEEN INCORPORATED TO THE REQUIRED DEPTH).

13.8. CHECK DAMS, INCLUDING DRIVEWAY CULVERTS, SHALL BE INSTALLED AT AREAS OF CONCENTRATED INFLOW IN ACCORDANCE WITH THESE PLANS.

13.9. HYDRAULIC ENERGY DISSIPATERS AND SEDIMENT FOREBAYS, IF REQUIRED, SHALL BE INSTALLED AT THE AREAS OF CONCENTRATED INFLOW IN ACCORDANCE WITH THESE PLANS.

13.10. PRE-TREATMENT PRACTICES SHALL BE INSTALLED FOR SHEET FLOW ENTRY.

13.11. CHANNEL BED AND BANKS, AS WELL AS ADJACENT DISTURBED AREAS SHALL BE ADEQUATELY STABILIZED WITH MATTING AS REQUIRED TO ENSURE A DENSE VEGETATIVE COVER BEFORE DIVERTING RUNOFF INTO ANY CHANNEL.

13.12. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE REMOVED.

13.13. FOLLOW-UP INSPECTION AND AS-BUILT SURVEY/CERTIFICATION SHALL BE SCHEDULED.

13.14. GPS COORDINATES SHALL BE DOCUMENTED FOR ALL CONSTRUCTED/IMPROVED GRASS CHANNELS AT THE SITE.

7.2.4 OUTLET PROTECTION (OP) C-ECM-15

A PERMANENT, EROSION-RESISTANT GROUND COVER OF LARGE. LOOSE, ANGULAR STONE WITH FILTER FABRIC OR GRANULAR UNDERLINING, USED TO PROTECT THE SOIL FROM THE EROSIVE FORCES OF CONCENTRATED RUNOFF, SLOW THE VELOCITY OF CONCENTRATED RUNOFF WHILE ENHANCING THE POTENTIAL FOR INFILTRATION, ALSO USED TO STABILIZE SLOPES WITH SEEPAGE PROBLEMS AND/OR NON-COHESIVE SOILS.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.:
CONTRACT NO.:
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. VIALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DETAILS

SHEET ID
C-501

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E4ECEBPH

MINIMUM STANDARDS OF VIRGINIA EROSION AND SEDIMENT CONTROL

MINIMUM STANDARDS	MINIMUM STANDARDS CRITERIA REQUIREMENTS	MS-19 STANDARDS PROJECT IMPLEMENTATION
MS-1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.	REQUIREMENTS ARE SHOWN ON SHEET C-501, SECTION 10- "PERMANENT STABILIZATION" AND SECTION 11-"TEMPORARY STABILIZATION".
MS-2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	SILT FENCE IS PROVIDED TO MINIMIZE SOIL TRANSPORT.
MS-3	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	REQUIREMENTS ARE SHOWN ON SHEET C-501, SECTION 10- "PERMANENT STABILIZATION".
MS-4	SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.	SILT FENCE AND CULVERT INLET PROTECTIONS ARE TO BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY.
MS-5	STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	N/A
MS-6	SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN. A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE (3) ACRES. B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE (3) ACES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATION S SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.	N/A
MS-7	CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.	OPEN CUT TRENCHES REQUIRED FOR THE PROJECT ARE GENERALLY SHALLOW AND SHALL BE LESS THAN 2H:1V. TRENCH SHIELD SHALL BE INSTALLED BY THE CONTRACTOR IF EXCAVATION DEPTH EXCEEDS 5-FEET. THE PROJECT SHOULD BE ABLE TO AVOID STEEP SLIDE SLOPES FOR CUT AND FILL.
MS-8	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.	CHECK DAMS ARE SHOWN IN THE PERMANENT SWALES TO ADDR4ESS CONCENTRATED FLOWS (SEE CG PLANS).
MS-9	WHENEVER WATER SEEPS FROM SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	N/A
MS-10	ALL STORM SEWER INLETS THAT ARE MADE OPERATIONAL DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	N/A
MS-11	BEFORE NEWLY CONSTRUCTED CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN THE RECEIVING CHANNEL.	CULVERT INLET PROTECTION, CULVERT OUTLET PROTECTION, AND CHANNEL LINING ARE ADDED WHERE NECESSARY TO PREVENT EROSION AND SEDIMENTATION OF THE CULVERTS AND CHANNELS.
MS-12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NON-ERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NON-ERODIBLE COVER MATERIALS	N/A
MS-13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NON-ERODIBLE MATERIAL SHALL BE PROVIDED.	N/A
MS-14	ALL APPLICABLE FEDERAL, STATE, AND LOCAL CHAPTERS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.	N/A
MS-15	THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	N/A
MS-16	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME. B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	N/A
MS-17	WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.	CONSTRUCTION ENTRANCE DETAIL SHOWN ON C-503. CONSTRUCTION ENTRANCE LOCATION SHOWN ON CG104.
MS-18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DEPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	REQUIREMENTS ARE SHOWN ON SHEET C-501, SECTION 9-"SEQUENCE OF CONSTRUCTION" SUBSECTION 9.6 TO 9.9.
MS-19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION, AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA: A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY IN AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED. B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER: 1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT: OR 2) A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A 2-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS. B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANK AND BY THE USE OF A 2-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A 10-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL: 1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO CHANNEL THE BED OR BANKS; OR 2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; 3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PREDEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MANMADE CHANNEL; OR 4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION. D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT. F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE. G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL. H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE. I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY. J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS. K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE. L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO i. DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; ii. DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24- HOUR STORM; AND iii. REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 10.1-562 OR 10.1-570 OF THE ACT. M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 10.1-561 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS. N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM STANDARD 19.	THIS CONTRACT DOCUMENT INCLUDES AN EROSION AND SEDIMENT CONTROL PLAN THAT ADDRESSES THE MS-19 REQUIREMENTS. THE EROSION AND SEDIMENT CONTROL PLANS WILL BE REVIEWED AND APPROVED BY VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY PRIOR TO THE CONTRACTOR STARTING WORK.

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MARK	DESCRIPTION	DATE

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AEC_B&W.STB
E4ECEBPH

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

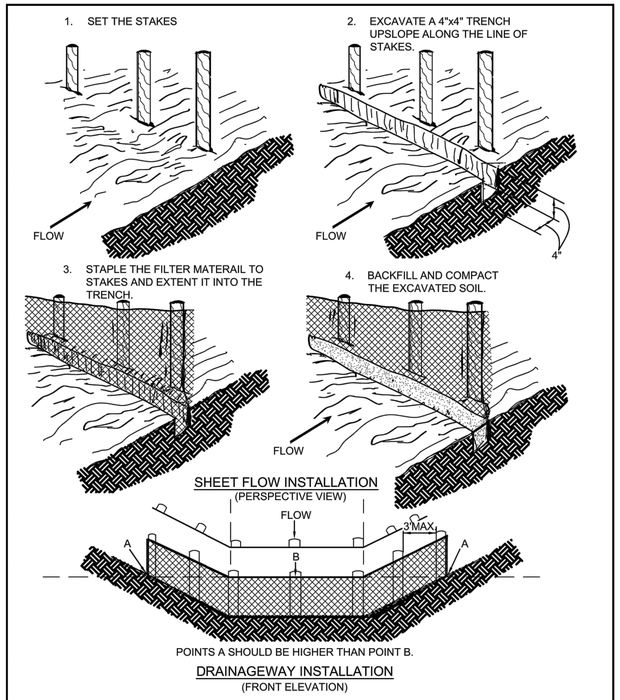
U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DETAILS

SHEET ID
C-502



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

CONSTRUCTION OF SILT FENCE WITHOUT WIRE SUPPORT

v1.1 SOURCE: ADAPTED FROM STRAW & FAB. BARRIERS, SHERWOOD & WYANT

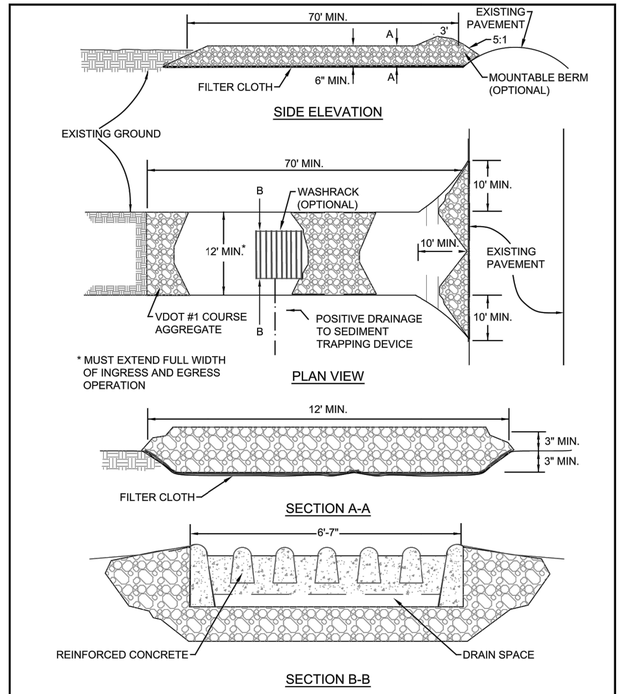
C-PCM-04-2B

NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY WITH TIES AT TOP AND MID SECTION.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
3. A 4" WIDE BY 4" DEEP TRENCH SHALL BE EXCAVATED UPSLOPE OF SILT FENCE.
4. BURY SILT FENCE A MIN. OF 8" IN TRENCH. BACKFILL AND COMPACT TRENCH.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN 'BULGES' DEVELOP IN THE SILT FENCE.
6. POSTS SHALL BE 4' MIN. STANDARD V OR T SECTION, MIN. WEIGHT= 3 LBS/FOOT.
7. FILTER CLOTH SHALL MEET LATEST VESCH SPECIFICATIONS FOR SILT FENCE.
8. ALL SILT FENCE SHALL BE WIRE SUPPORTED.

E2 SILT FENCE DETAIL SF

NOT TO SCALE



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

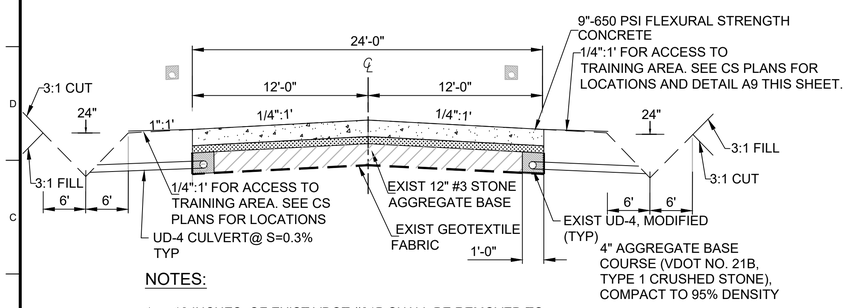
STONE CONSTRUCTION ENTRANCE

v1.1 SOURCE: VA. DSWC, MD ESC STDS

C-SCM-03-1

G7 CONSTRUCTION ENTRANCE DETAIL CE

NOT TO SCALE

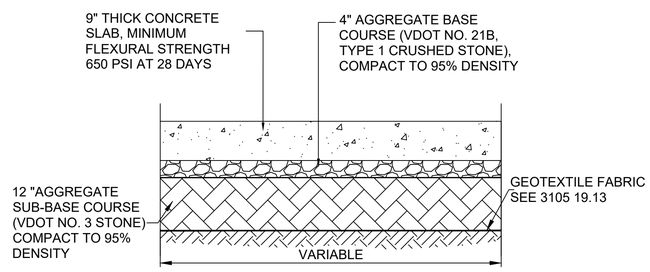


NOTES:

1. 12 INCHES OF EXIST VDOT #21B SHALL BE REMOVED TO FACILITATE CONSTRUCTION OF THE CONCRETE TURNING PAD. PROVIDE 4 INCHES OF VDOT 21B ``CO
2. (AS SHOWN) to 95% DENSITY.
3. SEE OVERTURN AREA DETAIL, THIS SHEET.
4. SEE CS SHEETS FOR LOCATIONS.
5. STRUCTURAL REINFORCEMENT NOT SHOWN FOR CLARITY; SEE DETAILS J8/C-504 AND K15/C-504.

A2 TURNING PAD DETAIL

NOT TO SCALE



NOTES:

1. STRUCTURAL REINFORCEMENT NOT SHOWN FOR CLARITY; SEE DETAILS J8/C-504 AND K15/C-504.
2. SEE CS PLANS FOR LOCATIONS.

B9 CONCRETE PAD OVERTURN AREA DETAIL

NOT TO SCALE

TABLE 3.35-A

ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RATES: Per Acre	RATES: Per 1000 sq. ft.	NOTES:
Straw or Hay	1½ - 2 tons (Minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	Minimum 1500 lbs.	35 lbs.	Do not use as mulch for winter cover or during hot, dry periods.* Apply as slurry.
Corn Stalks	4 - 6 tons	185 - 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs nitrogen per ton. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.
Bark Chips or Shredded Bark	50 - 70 cu. yds.	1-2 cu. yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2000 lbs./ac. or 45 lbs./1000 sq. ft.

Source: Va. DSWC

G15 MULCHING MU

NOT TO SCALE

Table C-SSM-09-4 Temporary Seeding Applications

Temporary Seeding Plant Materials, Seeding Rates, and Dates

Species	Seeding Rate: lbs./acre	Seeding Rate: lbs./1,000 ft²	North[a]: 3/1 - 4/30	North[a]: 5/1 - 8/15	North[a]: 8/15 - 11/1	South[b]: 2/15 - 4/30	South[b]: 5/1 - 9/1	South[b]: 9/1 - 11/15	Plant Characteristics
Oats (*Avena sativa*)	50 – 100	2.0	X	-	--	X	-	-	Use spring varieties (e.g., Noble).
Rye[d] (*Secale cereale*)	50 – 110	2.5	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
German millet (*Setaria italica*)	50	1.0	-	X*	-	-	X*	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
Annual ryegrass[c] (*Lolium multi-florum*)	60	1.5	X*	-	X	X*	-	X	May be added in mixes. Will mow out of most stands.
Korean Lespedeza[c] (*Lespedeza stipulacea*)	25	1.5	X	X	-	X	X	-	Warm-season annual legume. Tolerates acid soils. May only be used in a mix with another grass (e.g., annual or cereal rye); it is not suitable as a pure seeding for this purpose.

a. Northern Piedmont and Mountain regions. See Figure C-ENV-01-1 and Figure C-ENV-01-2.
b. Southern Piedmont and Coastal Plain.
c. May be used as a cover crop with spring seeding.
d. May be used as a cover crop with fall seeding.
X. May not be planted between these dates.
-. May be planted between these dates.

*** The shift date for annual rye to German millet should be April 15 for the Piedmont and Coastal Plain, rather than May 1.**

A15 TEMPORARY SEEDING SCHEDULE TS

NOT TO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DETAILS

SHEET ID
C-503

S:\FT_GREGG ADAMS\11188_VEHICLE_RECOVERY_COURSE\2_DESIGN\CIVIL_3D\11188_C500.DWG
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AEC_B&W.STB
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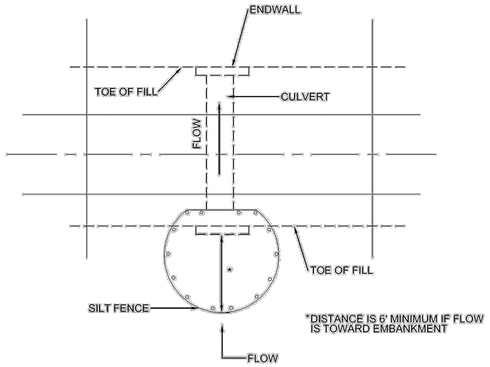
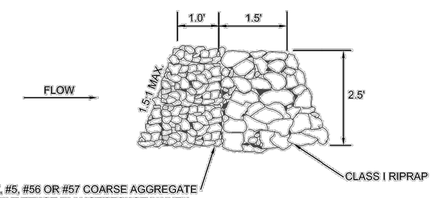


OPTIONAL STONE COMBINATION **



**VDOT #3, #357, #5, #56 OR #57 COARSE AGGREGATE TO REPLACE SILT FENCE IN " HORSESHOE " WHEN HIGH VELOCITY OF FLOW IS EXPECTED

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

v1.1

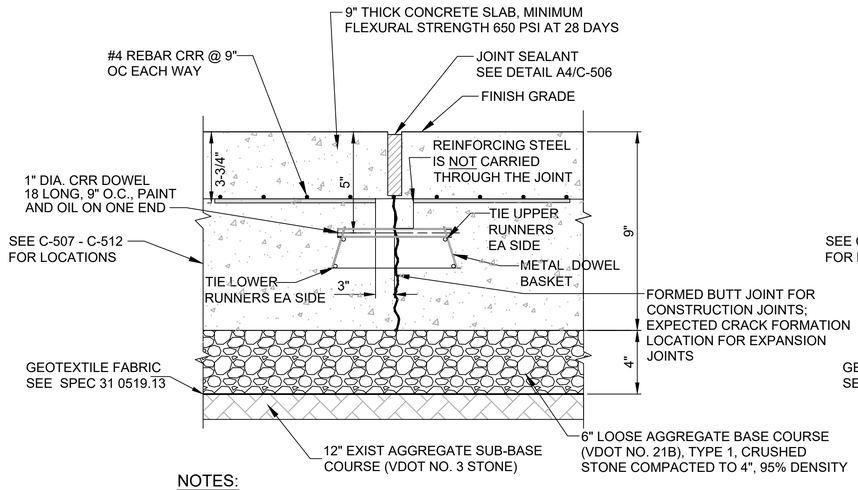
SILT FENCE CULVERT INLET PROTECTION

SOURCE: VA. DSWC, VDOT

C-SCM-05-1

G1 CULVERT INLET PROTECTION DETAIL (CIP)

NOT TO SCALE

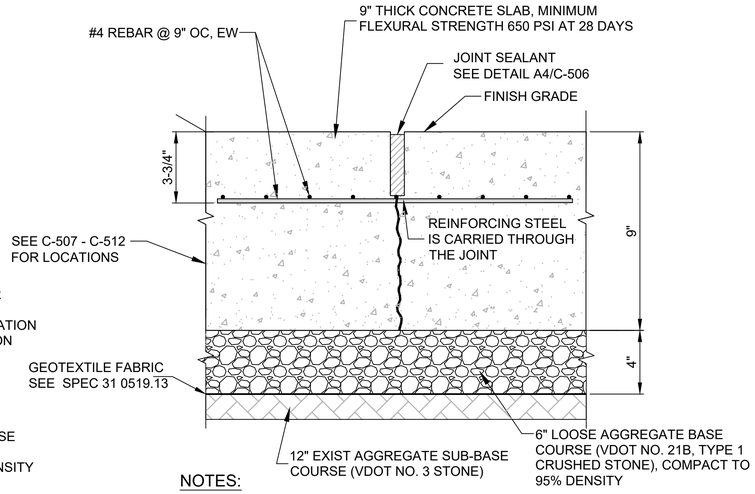


NOTES:

1. OUTSIDE EDGE OF THE TURNING PAD SLAB ABUTTING ROADWAYS SHALL BE CHAMFERED, I.E. 1-1/2".
2. SEE C-505, C-507, AND C-513 FOR ADDITIONAL JOINT DETAILS.

J8 DOWELED CONTRACTION/CONSTRUCTION JOINT DETAIL

NOT TO SCALE

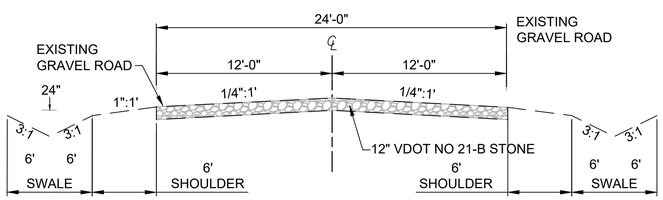


NOTES:

1. OUTSIDE EDGE OF THE TURNING PAD SLAB ABUTTING ROADWAYS SHALL BE CHAMFERED, I.E. 1-1/2".
2. SAW CUT WILL NOT EXTEND BELOW THE REINFORCING STEEL.
3. SEE C-505, C-507, AND C-513 FOR ADDITIONAL JOINT DETAILS.

K15 LONGITUDINAL CONTRACTION JOINT DETAIL

NOT TO SCALE

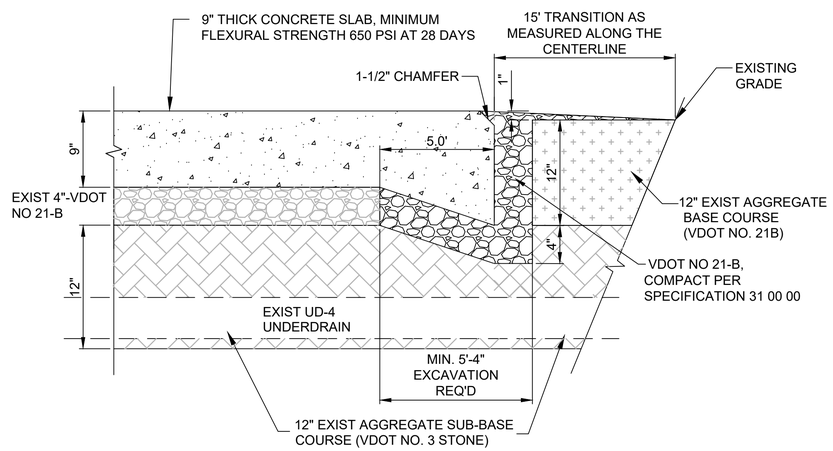


NOTES:

1. GRADE AND RESHAPE ROAD TO MATCH THE CROSS SECTION SHOWN ABOVE.
2. GRADING LIMITS SHALL TIE INTO EXISTING SWALES.
3. CONTRACTOR SHALL INSTALL SILT FENCE (SEE DETAIL E2/C-503) AS REQUIRED TO PREVENT SOIL TRANSPORT UNTIL REPAIRS HAVE BEEN COMPLETED.

A2 GRAVEL ROAD MAINTENANCE DETAIL

NOT TO SCALE



C8 THICKENED EDGE AT GRAVEL ROADWAY DETAIL

NOT TO SCALE

NOTES:

1. STRUCTURAL REINFORCEMENT NOT SHOWN FOR CLARITY; SEE DETAILS J8/C-504 AND K15/C-504.
2. SEE CS PLANS FOR LOCATIONS.

TABLE 3.32-D
(Revised June 2003)
PERMANENT SEEDING SPECIFICATIONS FOR PIEDMONT AREA

SEED1		
LAND USE	**SPECIES**	**APPLICATION PER ACRE**
Minimum Care Lawn (Commercial or Residential)	Tall Fescue1 Perennial Ryegrass Kentucky Bluegrass1	95-100% 0-5% 0-5% TOTAL: 175-200 lbs.
High-Maintenance Lawn	Tall Fescue1	TOTAL: 200-250 lbs.
General Slope (3:1 or less)	Tall Fescue1 Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop2	128 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue1 Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop2 Crownvetch3	108 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.html

2 - Use seasonal nurse crop in accordance with seeding dates as stated below:

February 16th - April	Annual Rye
May 1st - August 15th	Foxtail Millet
August 16th - October	Annual Rye
November - February 15th	Winter Rye

3 - Substitute Sericea lespedeza for Crownvetch east of Farmville, VA (May through September use hulled seed, all other periods, use unhulled Sericea). If Flatpea is used, increase rate to 30 lbs./acre. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30 -40

FERTILIZER & LIME

Apply 10-20-10 fertilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.)
Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:
- A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.
- Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means.
- When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at http://www.dcr.state.va.us/sw/e&s.htm#pubs

A15 PERMANENT SEEDING/C-SSM-10 (PS)

NOT TO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 11188
DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
DETAILS

SHEET ID
C-504

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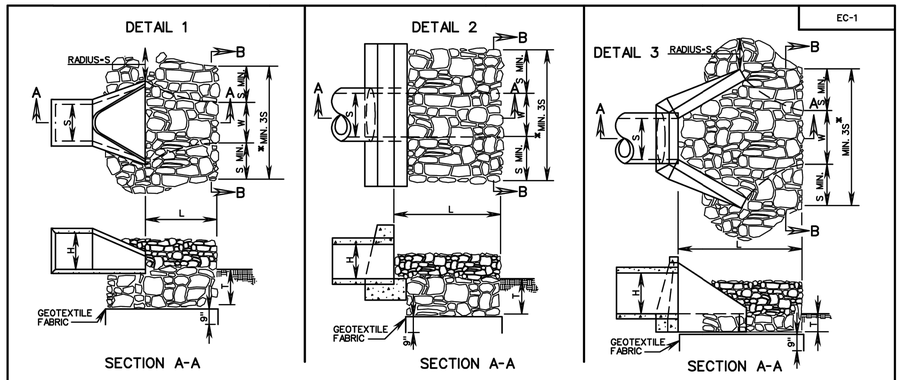
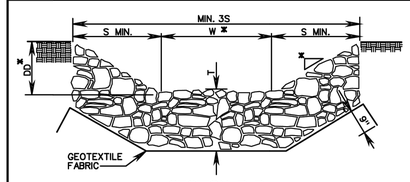
AEC_B&W.STB
E4ECEBPH

2016 ROAD & BRIDGE STANDARDS

EC-1





TYPE OF OUTLET PROTECTION MATERIAL		MAXIMUM OUTLET VELOCITY (FOR DESIGN STORM)	MINIMUM "T" (INCHES)
CLASS A1	CLASS A1 DRY RIPRAP	8 fps	18
CLASS I	CLASS I DRY RIPRAP	14 fps	24
CLASS II	CLASS II DRY RIPRAP	19 fps	36

NOTES:

1. FOR MULTIPLE LINE INSTALLATIONS, DIMENSION S IS TO GOVERN THE PROTECTION OUTSIDE THE CHANNEL WIDTH (W).
2. ON ANY INSTALLATION REQUIRING CULVERT OUTLET PROTECTION WHERE NO ENDWALL OR ENDSECTION IS SPECIFIED ON THE PLANS, CONSTRUCTION IS TO BE IN ACCORDANCE WITH DETAIL 2 SHOWN ABOVE.
3. GEOTEXTILE FABRIC TO BE INSTALLED UNDER CLASS A1, I, AND II MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS.
4. S = DIAMETER OF CIRCULAR CULVERT OR SPAN FOR BOX, ELLIPTICAL OR ARCH CULVERT. H = DIAMETER OF CIRCULAR CULVERT OR RISE/HEIGHT FOR BOX, ELLIPTICAL OR ARCH CULVERT.
* USE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL OR MATCH EXISTING DITCH OR NATURAL GROUND.

OUTLET PROTECTION MINUMUM LENGTH (L)	
TYPE A INSTALLATION	3H
TYPE B INSTALLATION	5H

SPECIFICATION REFERENCE
204
245
303
414

CULVERT OUTLET PROTECTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS

REVISION DATE	SHEET 1 OF 1
	113.01

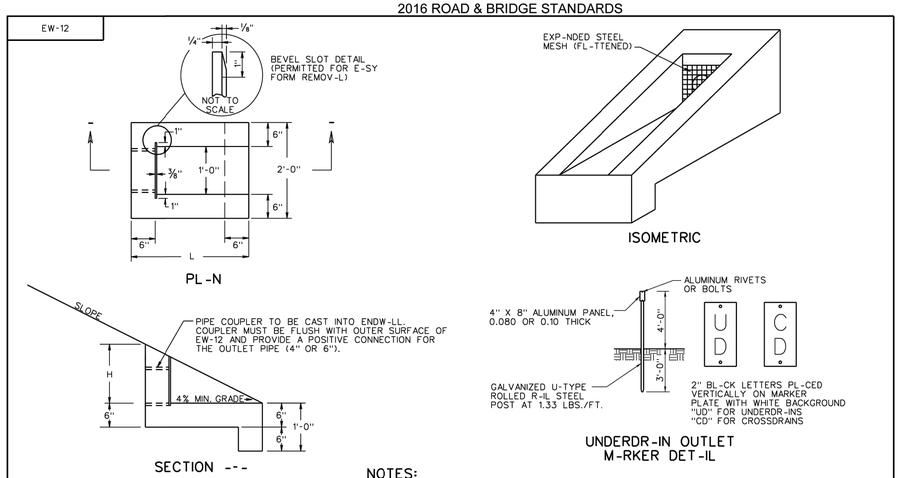
2016 ROAD & BRIDGE STANDARDS

G3 CULVERT OUTLET PROTECTION

NOT TO SCALE

2016 ROAD & BRIDGE STANDARDS

EW-12



PIPE I.D.	SLOPE	DIMENSIONS		CL-SS -3 CONCRETE CUBIC YARDS
		L	H	
4"	2:1	2'-5 1/2"	1'-2 3/4"	0.19
4"	3:1	3'-5 1/4"	1'-1 3/4"	0.25
4"	4:1	4'-5"	1'-1 1/4"	0.30
6"	2:1	2'-10 1/2"	1'-5 1/4"	0.20
6"	3:1	4'-3/4"	1'-4 1/4"	0.30
6"	4:1	5'-3"	1'-3 1/4"	0.38

NOTES:

1. TYPICAL ENDWALL TO BE PLACED AT THE ENDS OF ALL UNDERDRAIN OUTLETS, BARRING LOCATIONS WHERE UNDERDRAIN IS TIED INTO OTHER DRAINAGE STRUCTURES. ENDW-LL TO BE INSTALLED PERPENDICUL-R TO ROADW-Y -ND FLUSH WITH THE SLOPE.
2. OUTLET PIPES SHALL BE RIGID NONPERFORATED, SMOOTH-BORE PIPE, MEETING THE REQUIREMENTS OF 70 PSI TESTED -CCORDING TO -STM 2412.
3. EXP-NDED STEEL MESH (FL-TTENED) SH-LL H-VE OPENINGS OF APPROX. 1/2" X 1" -ND WEIGH APPROX. 0.82 LBS. PER SQ. FT. MESH SH-LL BE G-LV-NIZED IN ACCORDANCE WITH ASTM A-123. THE MESH SHALL EXTEND - MINIMUM OF 1" -BOVE THE O.D. OF THE PIPE, AND IS - B-RRIER FOR RODENTS, ETC. THE SLOT FOR THE STEEL MESH IS TO BE CONSTRUCTED SO THAT THE MESH CAN BE REMOVED FOR CLEANOUT PURPOSES.
4. THIS ITEM MAY BE PRECAST OR CAST IN PL-CE. C-ST IN PLACE CONCRETE IS TO BE CL-SS A3 (3000 PSI MIN.). PREC-ST CONCRETE IS TO BE CL-SS A4 (4000 PSI MIN.).
5. STEEL POSTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS. -LUMINUM M-RKER PL-TES SHALL BE -STM B209 ALLOY 6061-T6 OR 5052-H38IF. SHEETING FOR WHITE B-CKGROUND -ND BL-CK LETTERS SHALL CONFORM TO SECTION 701 OF THE ROAD AND BRIDGE SPECIFICATIONS.
6. M-RKER SH-LL BE PL-CED -T -LL EW-12 INSTALL-TIONS WITH 2 INCH LETTERS PL-CED VERTIC-LLY DESIGNATING UNDERDRAINS WITH "UD" AND CROSSDRAINS WITH "CD".
7. MARKER WILL BE PAID FOR IN ACCORDANCE WITH SECTION 501 OF THE ROAD AND BRIDGE SPECIFICATIONS.

VDOT RO-D -ND BRIDGE ST-ND-RDS

SHEET 1 OF 1	REVISION DATE
101.32	04/20

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

STANDARD ENDWALL FOR PIPE UNDERDRAIN

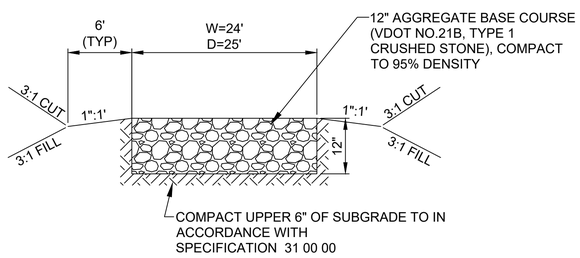
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE
105 701
233
302
501

2016 ROAD & BRIDGE STANDARDS

G13 STANDARD ENDWALL FOR PIPE UNDERDRAINS

NOT TO SCALE

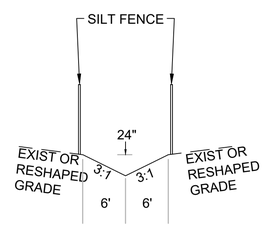


NOTES:

1. SEE CS SHEETS FOR LOCATIONS.
2. SEE DETAIL J9/C513 FOR THICKENED EDGE

B1 STONE APRON DETAIL

NOT TO SCALE

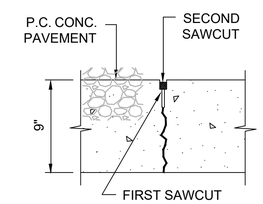


NOTES:

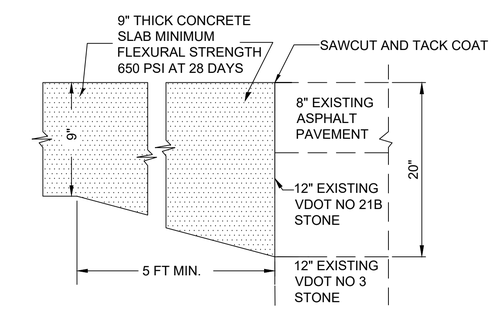
1. MINIMUM SLOPE: 0.5%.
2. GRADING LIMITS AND SHAPE SHALL TIE INTO EXISTING SWALES.
3. CONTRACTOR SHALL INSTALL SILT FENCE (SEE DETAIL E2/C-503) AT THE TOP OF SLOPE WHILE THE DITCH IS BEING CONSTRUCTED. SILT FENCE SHALL BE REMOVED ONCE THE COR IS SATISFIED THAT THE DITCH IS STABILIZED.

B7 DITCH GRADING DETAIL

NOT TO SCALE



D13 CONTRACTION JOINT DETAIL



D17 THICKENED EDGE AT JUNCTION OF RIGID AND FLEXIBLE PAVEMENT DETAIL

NOTES:

1. THE CONTRACTOR SHALL EITHER USE THE JOINT LAYOUT PLAN PROVIDED OR SUBMIT A PLAN FOR ALL CONCRETE PAVEMENT PLACEMENT TO BE APPROVED BY USACE PRIOR TO ANY PAVEMENT CONSTRUCTION.
2. STRUCTURAL REINFORCEMENT NOT SHOWN FOR CLARITY; SEE DETAILS J8/C-504 AND K15/C-504.
3. SEE DETAIL A4/C-506 FOR ADDITIONAL INFORMATION.
4. FOR INFORMATION NOT OTHERWISE NOTED OR SHOWN ON PLAN SHEETS, REFER TO CONCRETE PAVEMENT SECTION WITHIN SPECIFICATIONS, AND UFC 3-250-01 (2016), "PAVEMENT DESIGN FOR ROADS AND PARKING AREAS."

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN SOLICNUM
CONTRACT NO.: +AEC_MAN CONTRNUM
NAO FILE NO.: 11188
SIZE:

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
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SUBMITTED BY: J. WALL

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
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100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
DETAILS

SHEET ID
C-505

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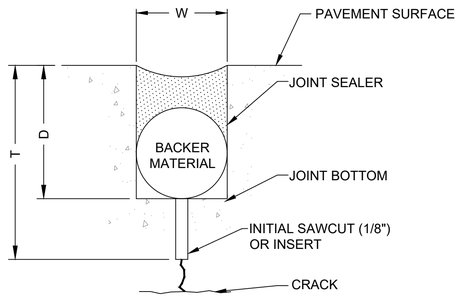
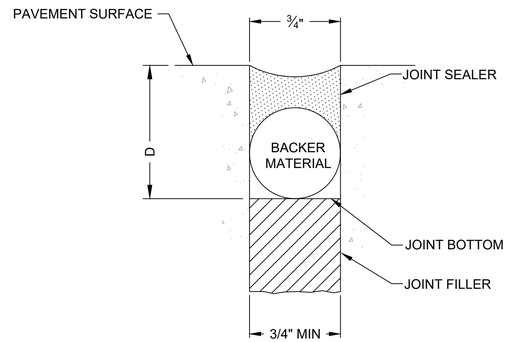
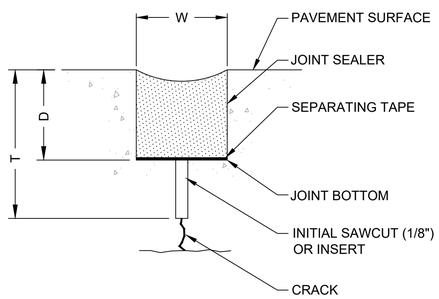


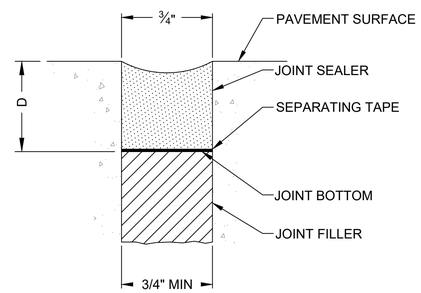
SAWCUT CONTRACTION JOINT DETAIL(BACKER MATERIAL)



CONTRACTION JOINT DETAIL W/ FILLER(BACKER MATERIAL)



SAWCUT CONTRACTION JOINT DETAIL(SEPARATING TAPE)



CONTRACTION JOINT DETAIL W/ FILLER(SAPARATING TAPE)

NOTES:

W = WIDTH OF SEALANT RESERVOIR (¾")
D= DEPTH OF SEALANT RESERVOIR (1.0 TO 1.5W)
T=DEPTH OF INITIAL SAWCUT OR INSERT TYPE JOINT FORMER (CONTRACTION JOINT) SHALL BE 1/4 SLAB THICKNESS.

1. NOTE 1: BACKER MATERIAL WILL MEET THE REQUIREMENTS OF OF ACI 504R PARAGRAPHS 2.8, 3.4.6.2, AND 3.4.6.3
2. NOTE 2: TOP OF SEALANT WILL BE ⅛" TO ¼" BELOW TOP OF PAVEMENT SURFACE FOR EXTERIOR PAVEMENTS.

CONCRETE JOINT SEALANT GENERAL NOTES:

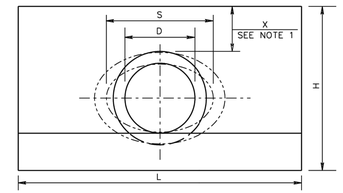
1. USE EITHER JOINT SEALANT WITH SEPARATING TAPE OR BACKER MATERIAL
2. ADDITIONAL REFERENCES ARE J8/C-504, K15/C-504, D13/C-505

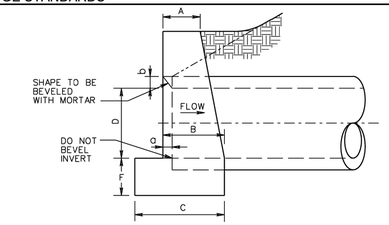
A4 CONCRETE JOINT SEALANT DETAILS

NOT TO SCALE

2016 ROAD & BRIDGE STANDARDS

EW-1,1A





NOTES:

1. "H" MAY BE REDUCED UNTIL "X" REACHES A MINIMUM OF 4" WHERE ENDWALL WOULD PROTRUDE ABOVE SHOULDER LINE. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEET 101.02.
4. THIS STANDARD TO BE USED WITH STRAIGHT CROSSINGS AND ALL SKEWS(0° TO 45°).
5. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT.
6. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT (WHERE THE FLOW ENTERS THE CULVERT).
7. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
8. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
9. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

EW-1

ENDWALL FOR CIRCULAR PIPE

	DIAMETER OF PIPE CULVERT					
	12"	15"	18"	21" OR 24"	27" OR 30"	33" OR 36"
A	0'-6"	0'-8"	0'-9"	0'-11"	1'-0"	1'-0"
B	0'-11"	1'-1"	1'-3"	1'-6"	1'-9"	2'-0"
C	1'-4"	1'-7"	1'-9"	2'-2"	2'-6"	2'-9"
D	1'-0"	1'-3"	1'-6"	2'-0"	2'-6"	3'-0"
F	0'-6"	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"
H	2'-3"	2'-11"	3'-2"	3'-9"	4'-3"	4'-9"
L	4'-0"	5'-0"	6'-0"	8'-0"	10'-0"	12'-0"
a	0'-1¼"	0'-1¾"	0'-2"	0'-2½"	0'-3¼"	0'-3¾"
b	0'-1"	0'-1¼"	0'-1½"	0'-2"	0'-2½"	0'-3"
CUBIC YARDS OF CONCRETE						
CONC. PIPE	0.241	0.492	0.697	1.319	2.067	2.947
C.M. PIPE	0.257	0.521	0.739	1.398	2.198	3.145

EW-1A

ENDWALL FOR ELLIPTICAL PIPE

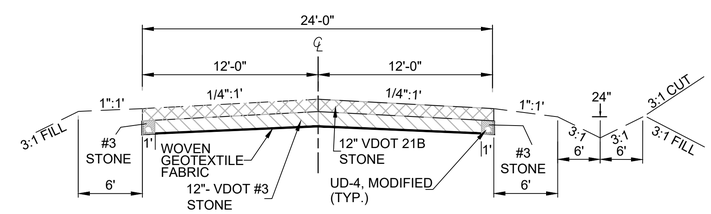
	SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)							
	23"x14"	30"x19"	34"x22"	38"x24"	42"x27"	45"x29"	49"x32"	53"x34"
A	0'-8"	0'-9"	0'-10"	0'-11"	0'-11"	1'-0"	1'-0"	1'-0"
B	1'-2"	1'-5"	1'-6"	1'-8"	1'-9"	1'-10"	1'-11"	1'-11"
C	1'-8"	1'-11"	2'-1"	2'-4"	2'-5"	2'-7"	2'-8"	2'-9"
D	1'-2"	1'-7"	1'-10"	2'-0"	2'-3"	2'-5"	2'-8"	2'-10"
F	0'-8"	0'-8"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"	0'-9"
H	2'-10"	3'-3"	3'-7"	3'-9"	4'-0"	4'-2"	4'-5"	4'-7"
L	5'-5"	7'-2"	8'-6"	9'-2"	10'-2"	10'-11"	12'-1"	12'-11"
S	1'-11"	2'-6"	2'-10"	3'-2"	3'-6"	3'-9"	4'-1"	4'-5"
a	0'-2½"	0'-3¼"	0'-3½"	0'-4"	0'-4½"	0'-4¾"	0'-5"	0'-5½"
b	0'-2"	0'-2½"	0'-2¾"	0'-3"	0'-3½"	0'-3¾"	0'-4"	0'-4½"
CUBIC YARDS OF CONCRETE								
CONC.PIPE	0.502	0.855	1.236	1.500	1.811	2.101	2.512	2.801

SPECIFICATION REFERENCE	A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.	VDOT ROAD AND BRIDGE STANDARDS
105 302	STANDARD ENDWALL FOR PIPE CULVERTS 12" - 36" CIRCULAR AND 23" x 14" - 53" x 34" ELLIPTICAL PIPES VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE 04/19 · SHEET 1 OF 1 · 101.01

2016 ROAD & BRIDGE STANDARDS

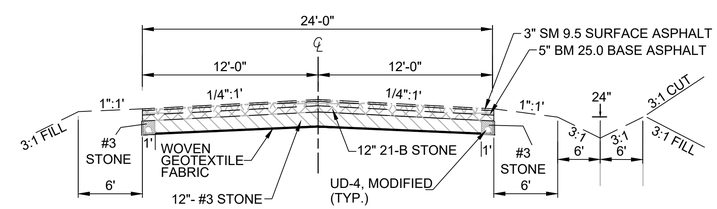
G14 STANDARD ENDWALL FOR PIPE CULVERTS

NOT TO SCALE



D14 EXISTING GRAVEL ROADWAY DETAIL

NOT TO SCALE



A14 EXISTING ASPHALT ROADWAY DETAIL

NOT TO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN SOLICNUM
CONTRACT NO.: +AEC_MAN CONTRNUM
NAO FILE NO.: 11188

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS: VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DETAILS

SHEET ID
C-506

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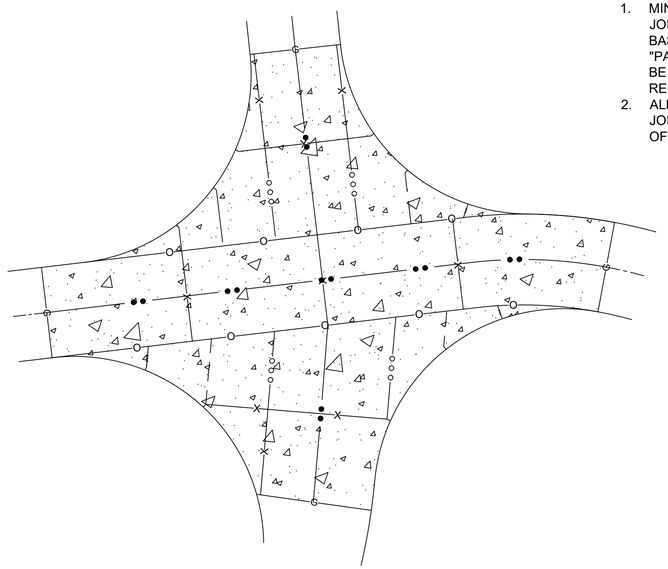
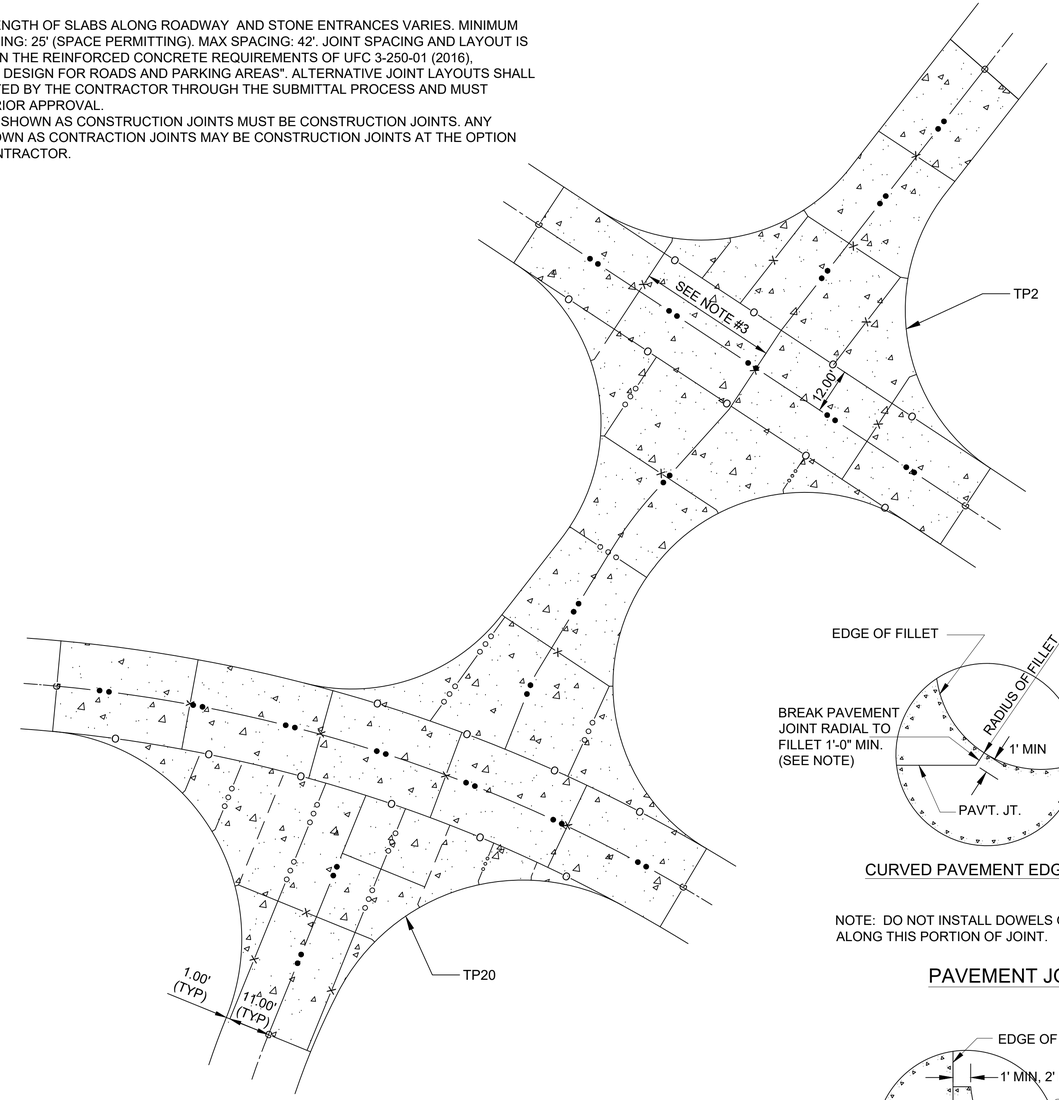
E4ECEBPH

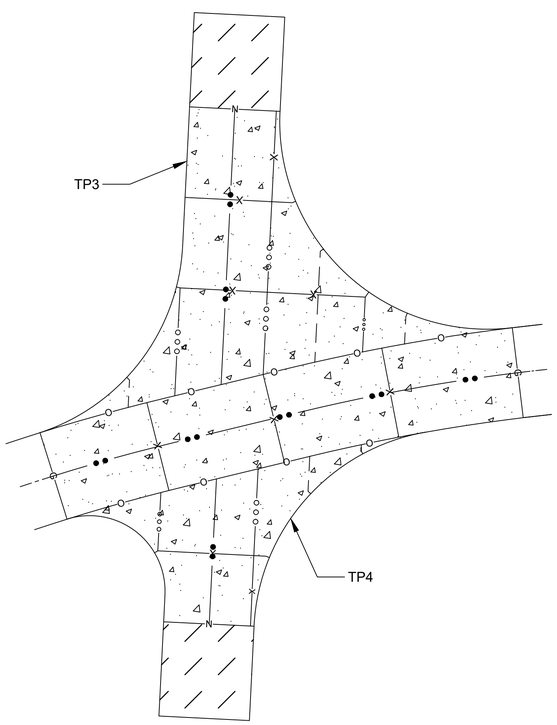
1. MINIMUM LENGTH OF SLABS ALONG ROADWAY AND STONE ENTRANCES VARIES. MINIMUM JOINT SPACING: 25' (SPACE PERMITTING). MAX SPACING: 42'. JOINT SPACING AND LAYOUT IS BASED UPON THE REINFORCED CONCRETE REQUIREMENTS OF UFC 3-250-01 (2016), "PAVEMENT DESIGN FOR ROADS AND PARKING AREAS". ALTERNATIVE JOINT LAYOUTS SHALL BE SUBMITTED BY THE CONTRACTOR THROUGH THE SUBMITTAL PROCESS AND MUST RECEIVE PRIOR APPROVAL.
2. ALL JOINTS SHOWN AS CONSTRUCTION JOINTS MUST BE CONSTRUCTION JOINTS. ANY JOINTS SHOWN AS CONTRACTION JOINTS MAY BE CONSTRUCTION JOINTS AT THE OPTION OF THE CONTRACTOR.



J2 TP1
SCALE: 1"= 20'-0"
0 20' 40'



D9 TP2 AND TP20
SCALE: 1'= 20'-0"
0 20' 40'

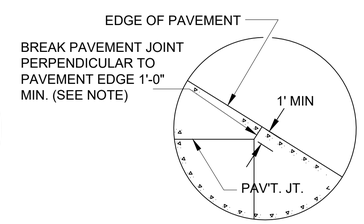


A2 TP3 AND TP4
SCALE: 1"= 20'-0"
0 20' 40'

LEGEND

——O——	THICKENED EDGE SLIP JOINT AT INTERSECTION OF CONCRETE ROADWAYS, SEE DETAIL K15/C-513
——X——	DOWELED CONTRACTION JOINT SEE DETAIL J8/C-504
——○○○——	DOWELED CONSTRUCTION JOINT SEE DETAIL J8/C-504
——●●——	LONGITUDINAL CONTRACTION JOINT SEE DETAIL K15/C-504
— — — — —	CONTRACTION JOINT SEE DETAIL D13/C-505
——N——	THICKENED EDGE AT STONE ENTRANCE, SEE DETAIL J9/C-513
——G——	THICKENED EDGE AT GRAVEL ROADWAY, SEE DETAIL C8/C-504
——V——	THICKENED EDGE AT JUNCTION OF RIGID AND FLEXIBLE PAVEMENT, SEE DETAIL D17/C-505

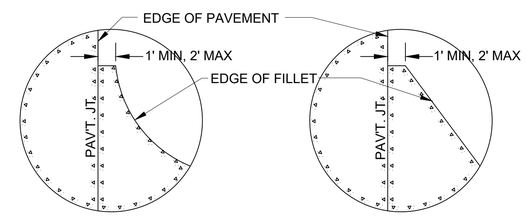
CURVED PAVEMENT EDGE



STRAIGHT PAVEMENT EDGE

NOTE: DO NOT INSTALL DOWELS OR TIE BARS ALONG THIS PORTION OF JOINT.

PAVEMENT JOINT FILLET DETAILS



CURVED PAVEMENT EDGE STRAIGHT PAVEMENT EDGE

FILLET EDGE DETAILS

GENERAL NOTES:

1. ABOVE DETAILS EXCLUDED FROM TURNING PAD LAYOUTS FOR CLARITY. TURNING PAD RADII ARE 55 FEET UNLESS OTHERWISE STATED. SEE CS SHEETS FOR SPECIFIC LOCATIONS.
2. CONCRETE SHALL DEVELOP A MINIMUM FLEXURAL STRENGTH OF 650 PSI AT 28 DAYS.
3. MINIMUM JOINT SPACING: 25' (SPACE PERMITTING). MAX SPACING: 42'. JOINT SPACING AND LAYOUT IS BASED UPON THE REINFORCED CONCRETE REQUIREMENTS OF UFC 3-250-01 (2016), "PAVEMENT DESIGN FOR ROADS AND PARKING AREAS". ALTERNATIVE JOINT LAYOUTS SHALL BE SUBMITTED BY THE CONTRACTOR THROUGH THE SUBMITTAL PROCESS AND MUST RECEIVE PRIOR APPROVAL.
4. ALL JOINTS SHOWN AS CONSTRUCTION JOINTS MUST BE CONSTRUCTION JOINTS. ANY JOINTS SHOWN AS CONTRACTION JOINTS MAY BE CONSTRUCTION JOINTS AT THE OPTION OF THE CONTRACTOR.

A16 PAVEMENT JOINT DETAILS
NOT TO SCALE

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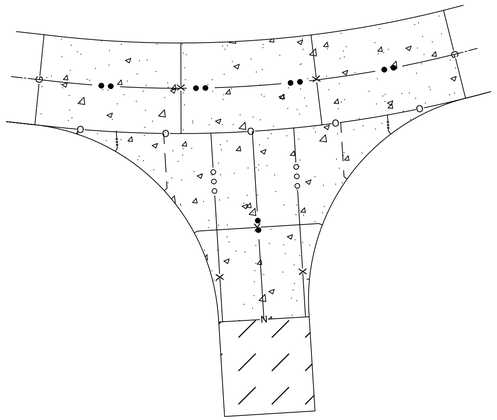
DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N.INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
DETAILS

SHEET ID
C-507



J2 TP5
SCALE: 1"= 20'-0"
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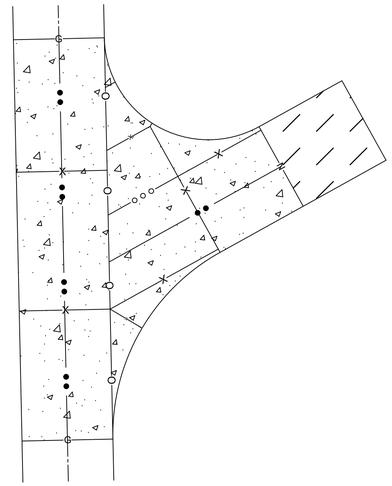

J8 TP6
SCALE: 1"= 20'-0"
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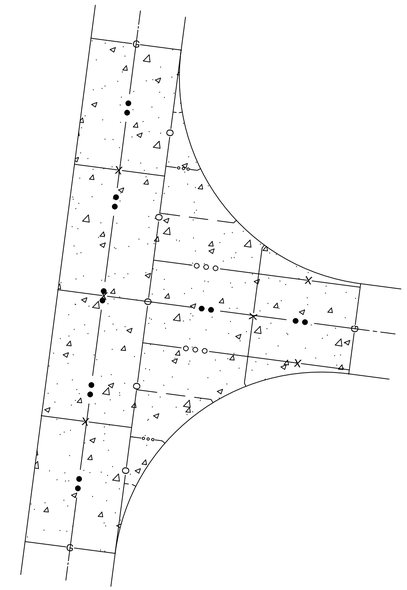

J15 TP7
SCALE: 1"= 20'-0"
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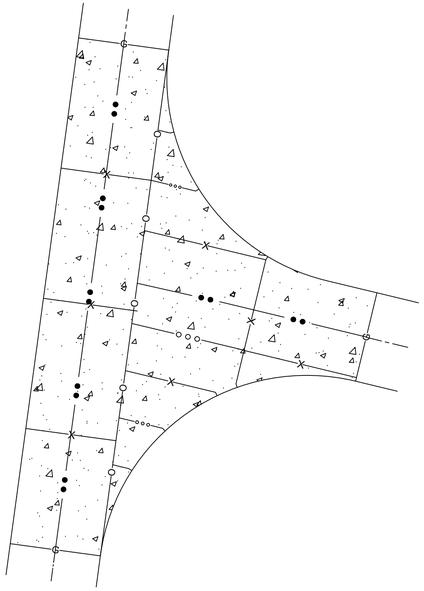
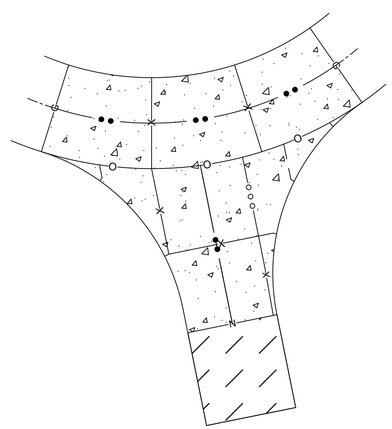
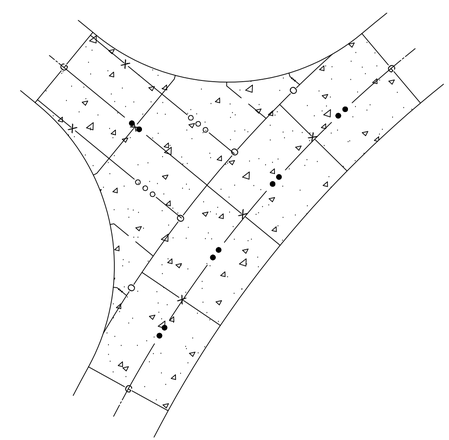


A2 TP8
SCALE: 1"= 20'-0"
0 20' 40'



A8 TP9
SCALE: 1"= 20'-0"
0 20' 40'



A15 TP10
SCALE: 1"= 20'-0"
0 20' 40'

GENERAL NOTES:

1. SEE THE LEGEND FOUND ON C-507 FOR JOINT TYPES.

US Army Corps of Engineers®

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DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N.INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. WALL	NAO FILE NO.: 1188
SIZE:	

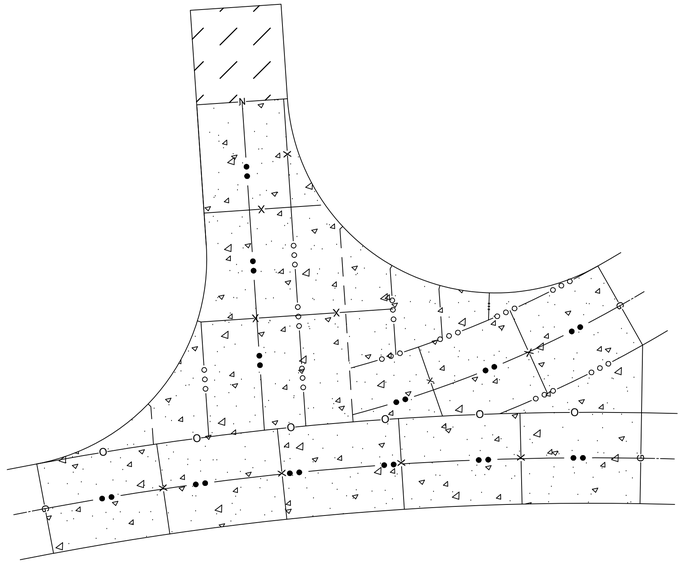
U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DETAILS

SHEET ID
C-508



J3 TP12
SCALE: 1"= 20'-0"
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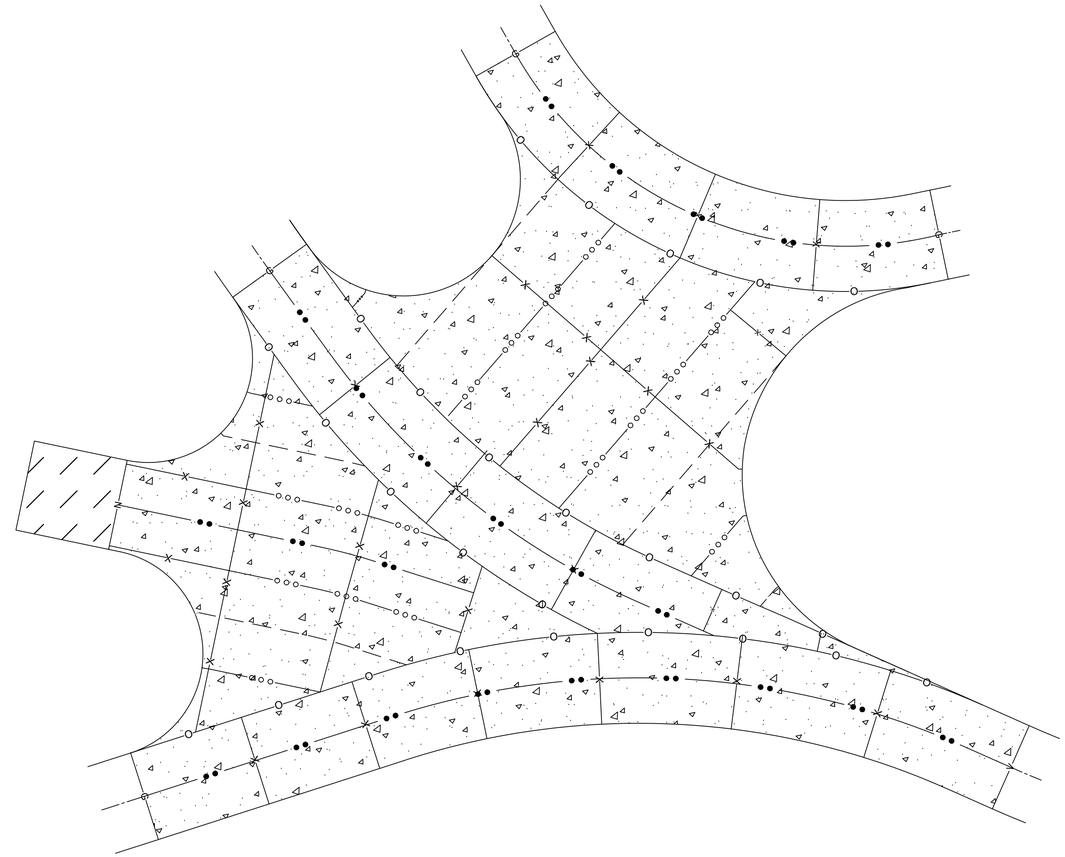

E13 TP13 AND TP14
SCALE: 1"= 20'-0"
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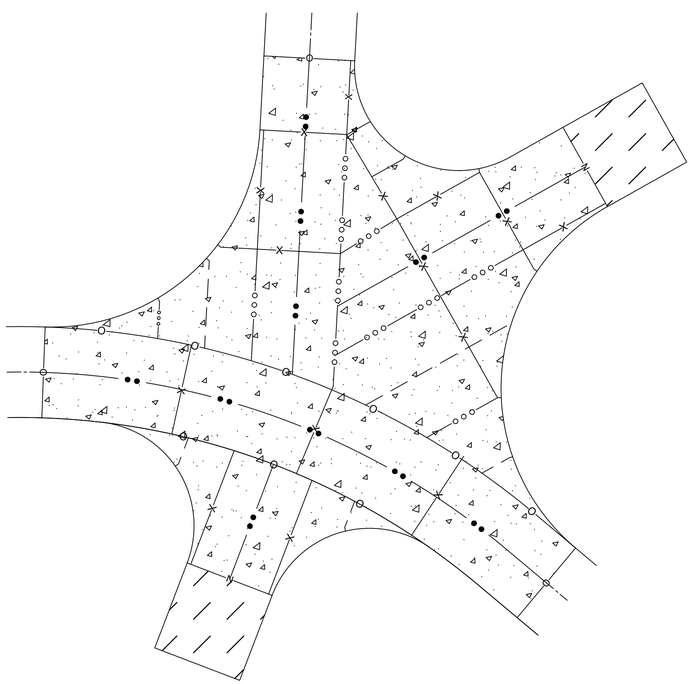

A2 TP15
SCALE: 1"= 20'-0"
0 20' 40'

GENERAL NOTES:

1. SEE THE LEGEND FOUND ON C-507 FOR JOINT TYPES.

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CHECKED BY: N.INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 1188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE

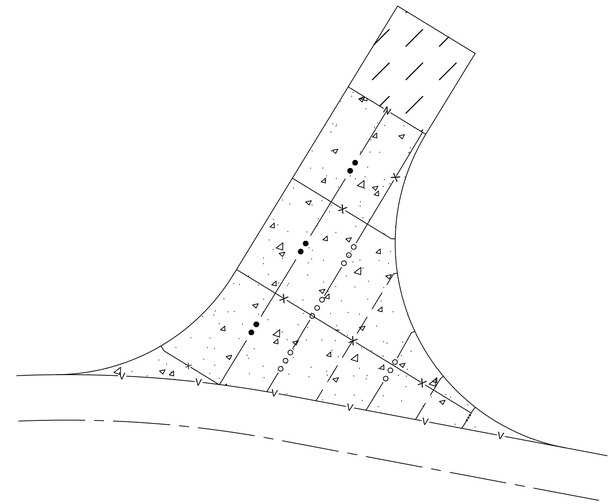
P2 - 516440

DETAILS

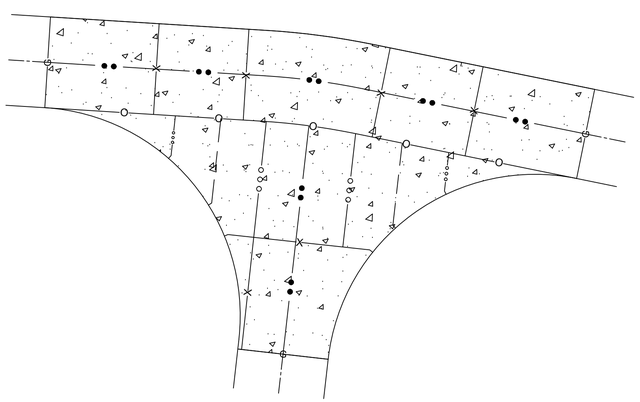
SHEET ID

C-509

G4 TP16
SCALE: 1"= 20'-0"
0 20' 40'



H13 TP17
SCALE: 1"= 20'-0"
0 20' 40'



A3 TP18
SCALE: 1"= 20'-0"
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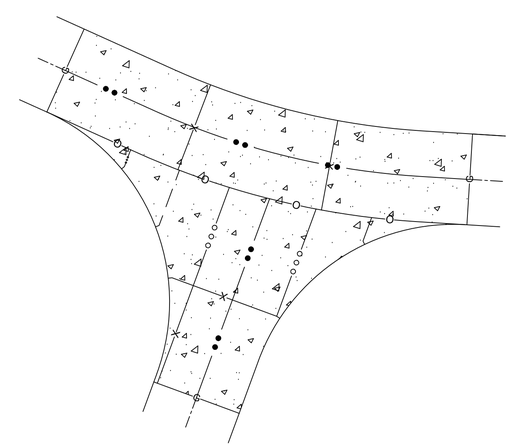

A13 TP19
SCALE: 1"= 20'-0"
0 20' 40'

GENERAL NOTES:

1. SEE THE LEGEND FOUND ON C-507 FOR JOINT TYPES.

US Army Corps of Engineers®

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DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:

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U.S. ARMY CORPS OF ENGINEERS
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803 FRONT STREET
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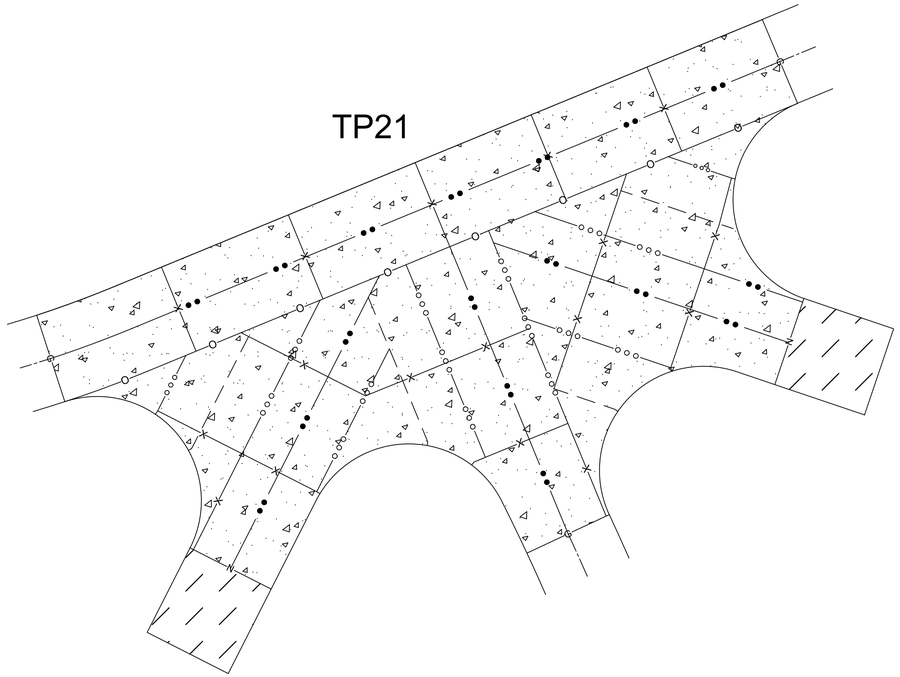
FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE

P2 - 516440

DETAILS

SHEET ID
C-510



G4 TP21
SCALE: 1"= 20'-0"
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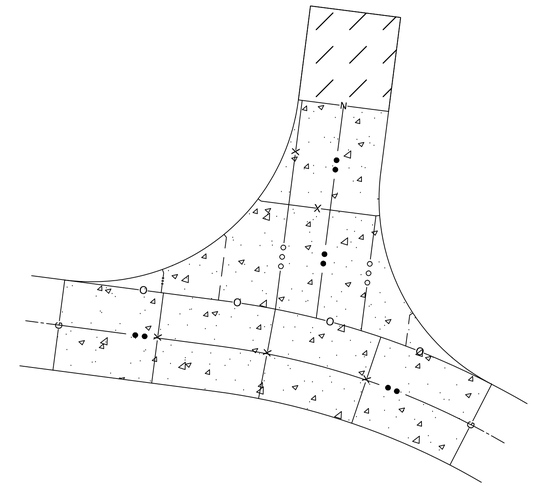

H13 TP24
SCALE: 1"= 20'-0"
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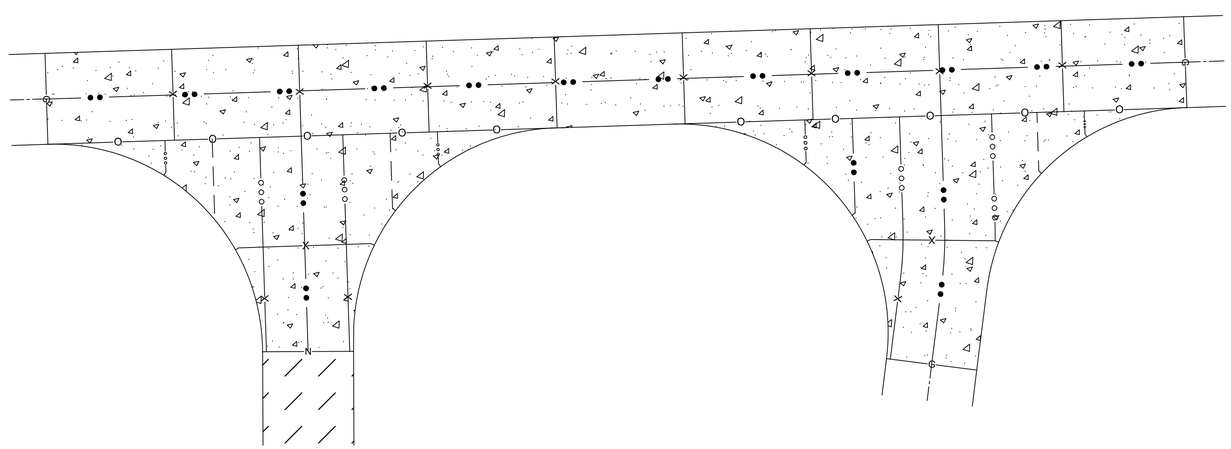

A9 TP22 & TP23
SCALE: 1"= 20'-0"
0 20' 40'

GENERAL NOTES:

1. SEE THE LEGEND FOUND ON C-507 FOR JOINT TYPES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
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SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
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U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
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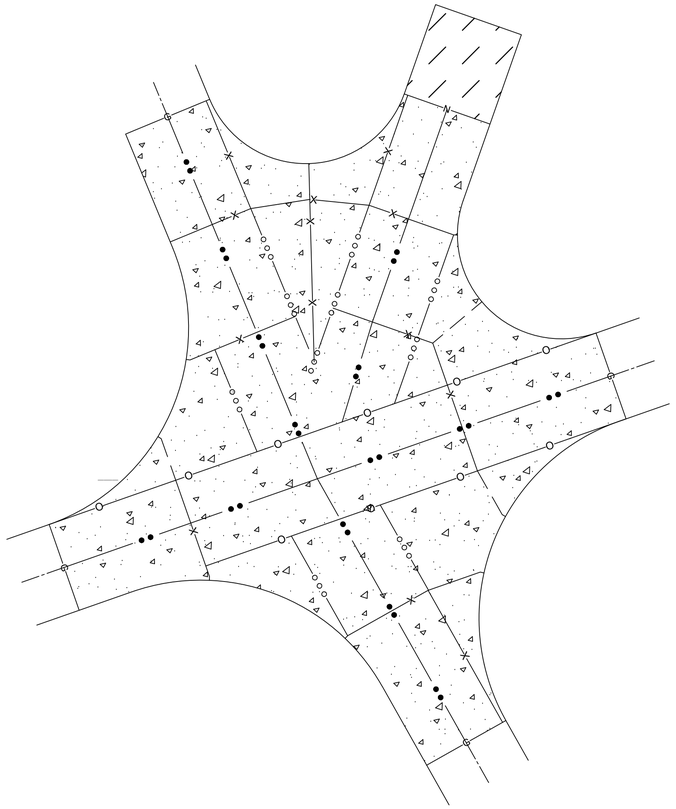
FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
DETAILS

SHEET ID
C-511



G4 TP27
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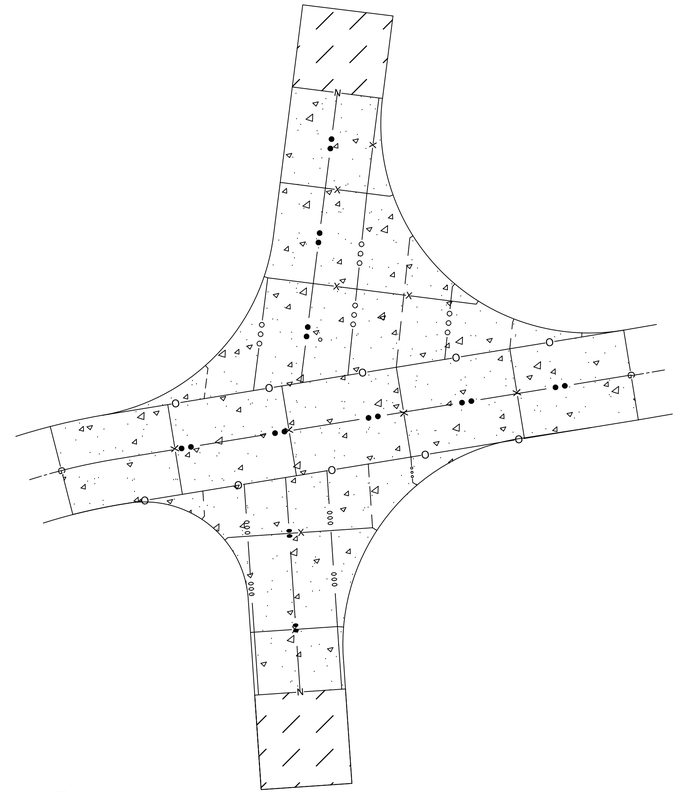

H13 TP26
SCALE: 1"= 20'-0"
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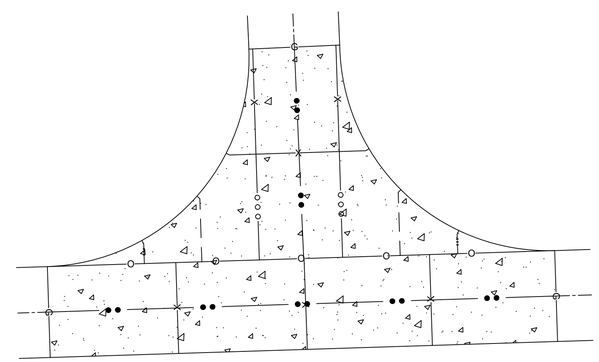

A9 TP31
SCALE: 1"= 20'-0"
0 20' 40'

GENERAL NOTES:

1. SEE THE LEGEND FOUND ON C-507 FOR JOINT TYPES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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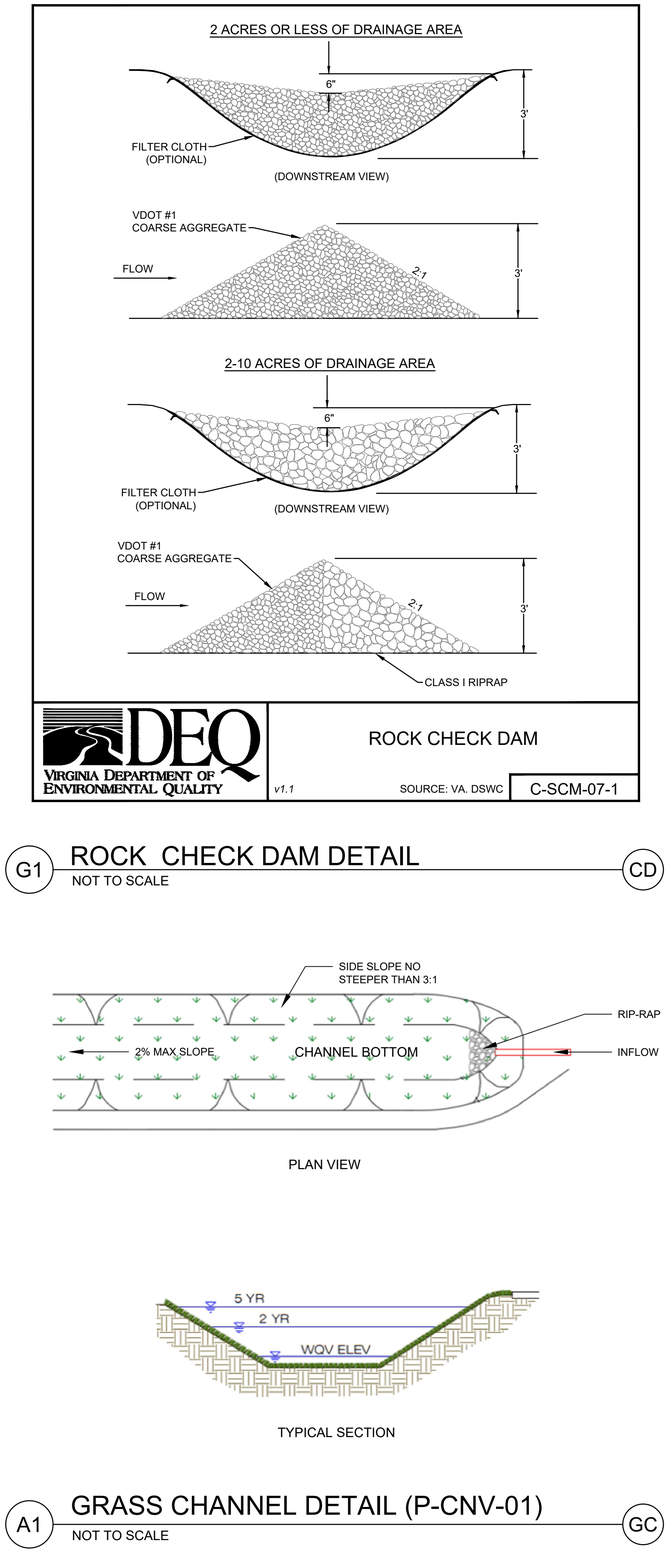
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

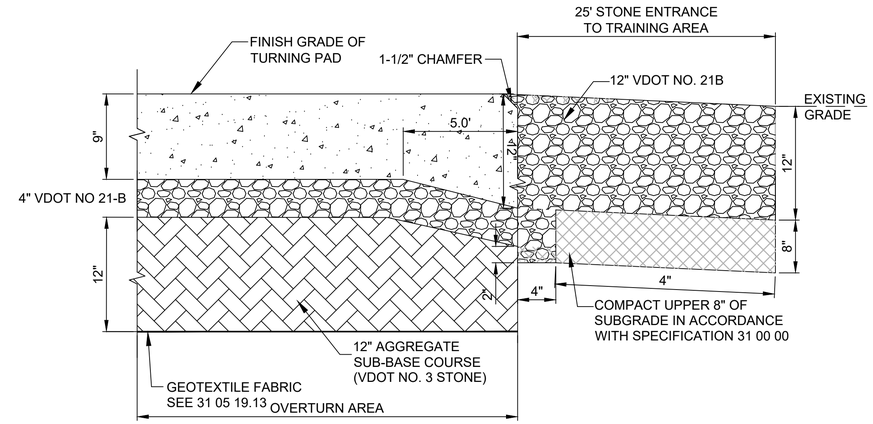
FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
DETAILS

SHEET ID
C-512



G1 ROCK CHECK DAM DETAIL (CD)

NOT TO SCALE

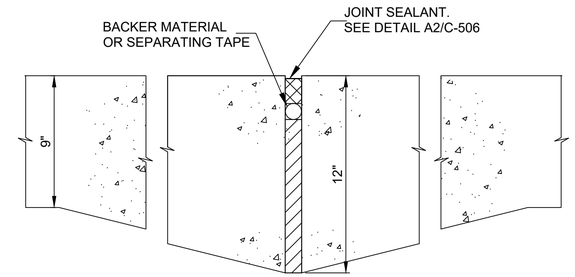


NOTES:

1. STRUCTURAL REINFORCEMENT NOT SHOWN FOR CLARITY; SEE DETAILS J8/C-504 AND K15/C-504.
2. SEE CS PLANS FOR LOCATIONS.

J9 THICKENED EDGE AT STONE ENTRANCE DETAIL

NOT TO SCALE

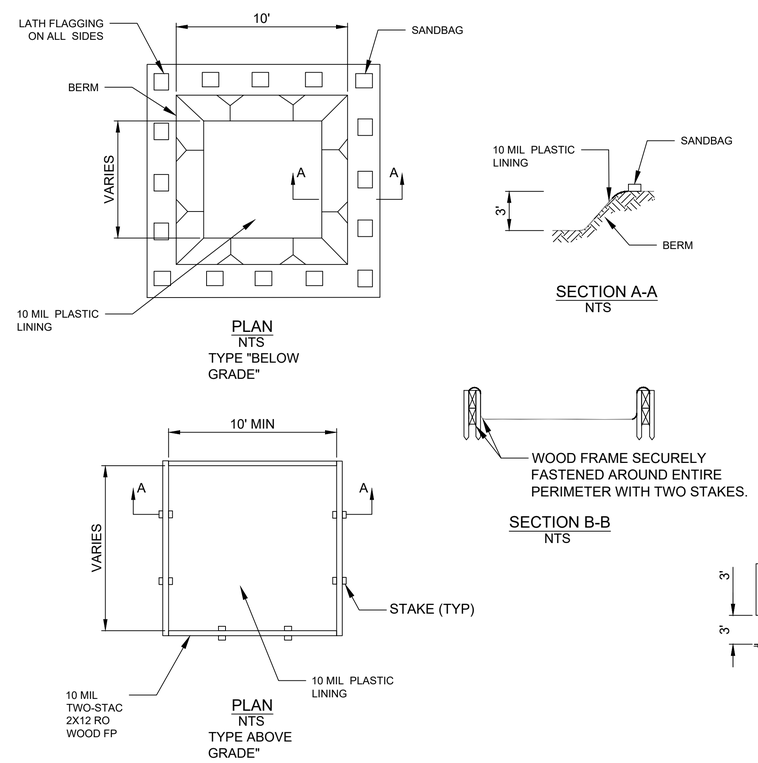


NOTES:

1. STRUCTURAL REINFORCEMENT NOT SHOWN FOR CLARITY; SEE DETAILS J8/C-504 AND K15/C-504.
2. SEE CS PLANS FOR LOCATIONS.
3. A TOLERANCE OF ±1/16" MAY BE ALLOWED FOR KEY DIMENSIONS AND LOCATION

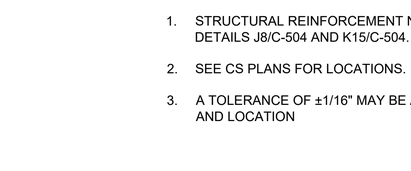
K15 THICKENED EDGE SLIP JOINT AT CONCRETE ROADWAY DETAIL

NOT TO SCALE



NOTES:

1. PLAN SHOWS POSSIBLE LOCATION OF CONCRETE WASHOUT. ACTUAL LAYOUT AND LOCATION TO BE DETERMINED IN FIELD WITH FACILITY COORDINATION TO MINIMIZE DISRUPTION TO OPERATIONS.
4. FOLLOW ALL VA DEQ REQUIREMENTS. SEE VIRGINIA STORMWATER MANAGEMENT HANDBOOK (VSMH) CHAPTER 7 (C-SCM-13).
5. CONCRETE WASHOUT MUST BE LOCATED A MINIMUM OF 100 FEET FROM STORM DRAINS, OPEN DITCHES, OR SURFACE WATERS. CONTRACTOR TO DETERMINED TYPE AND LOCATION OF CONCRETE WASHOUT IN FIELD.
6. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF TEMPORARY WASHOUT FACILITY.
7. SEE SPECIFICATION 01 57 19.



A1 GRASS CHANNEL DETAIL (P-CNV-01) (GC)

NOT TO SCALE

A9 CONCRETE WASHOUT DETAIL

NOT TO SCALE

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO	ISSUE DATE: NOVEMBER 3, 2025
DRAWN BY: R. TRAMMELL	SOLICITATION NO.: +AEC_MAN_SOLICNUM
CHECKED BY: N.INGOLD	CONTRACT NO.: +AEC_MAN_CONTRNUM
SUBMITTED BY: J. VIALL	NAO FILE NO.: 11188
SIZE:	

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440

DETAILS

SHEET ID
C-513

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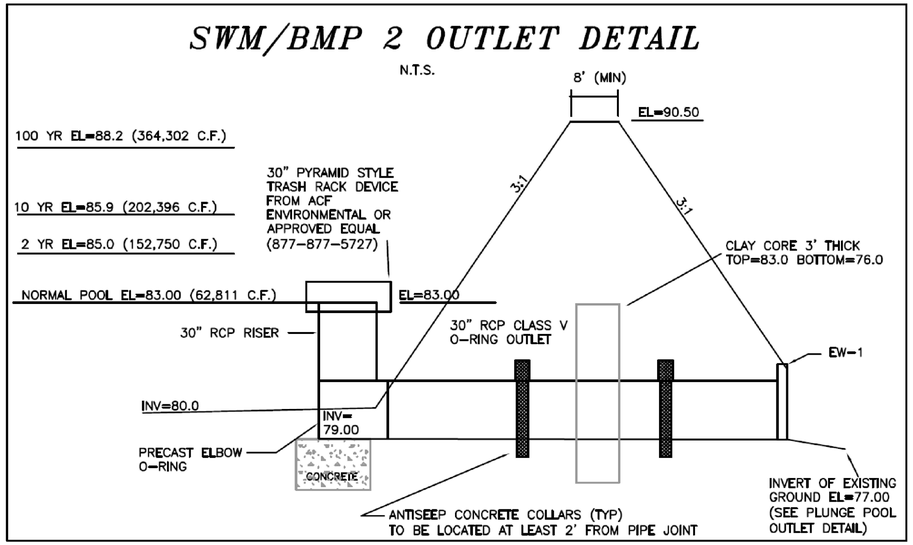
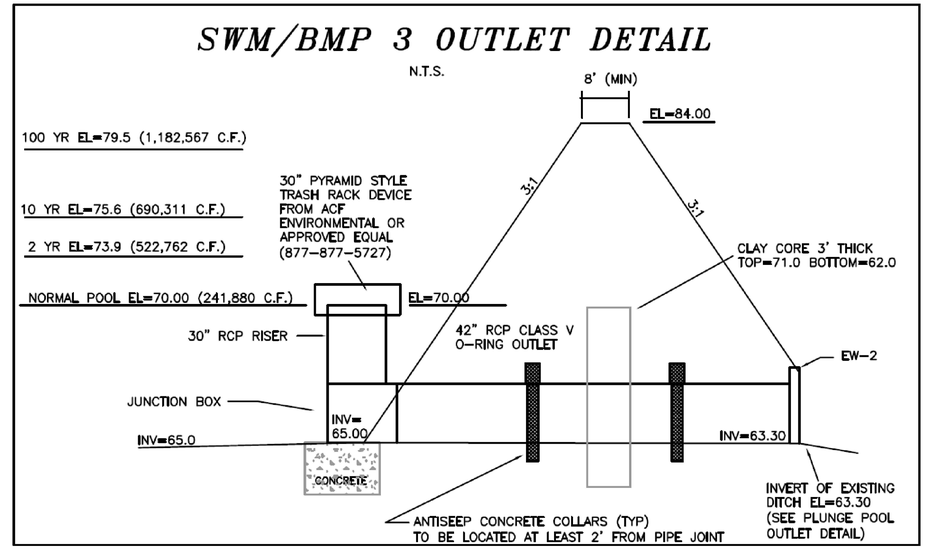


J3 BMP OUTFALL ORIGINAL DESIGN
NTS



J12 BMP OUTFALL ORIGINAL DESIGN
NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: G. PREVITO
DRAWN BY: R. TRAMMELL
CHECKED BY: N.INGOLD
SUBMITTED BY: J. WALL
SIZE:
ISSUE DATE: NOVEMBER 3, 2025
SOLICITATION NO.: +AEC_MAN_SOLICNUM
CONTRACT NO.: +AEC_MAN_CONTRNUM
NAO FILE NO.: 1188

U.S. ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
803 FRONT STREET
NORFOLK, VA 23510

100% SUBMITTAL
(NOT FOR CONSTRUCTION)

FORT GREGG-ADAMS, VIRGINIA
VEHICLE RECOVERY RANGE
P2 - 516440
+SHEET TITLE 1

SHEET ID
C-514

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