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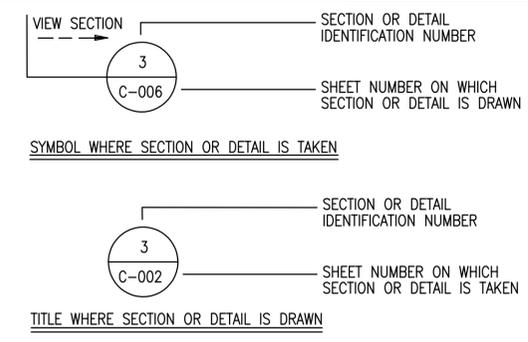
Drawings

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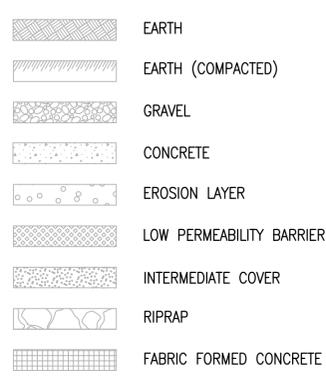
STANDARD ABBREVIATIONS

A	A.C.	AIR CONDITIONED	C.T.B.	CERAMIC TILE BASE	GR.	GRILLE	MTD.	MOUNTED MOUNTING	RM.	ROOM
G	A.C.M.	ASBESTOS CONTAINING MATERIAL	C. TO C.	CENTER TO CENTER	G.W.B.	GYPSUM WALL BOARD	MTG.	MECHANICAL VENTILATION	R.O.	ROUGH OPENING
	A.D.	AREA DRAIN	CU. FT.,CF.	CUBIC FEET	GYP.	GYPSUM	M.V.	MATTE GLAZE TILE	R.P.M.	REVOLUTIONS / MINUTE
	A.F.F.	ABOVE FINISH FLOOR	D		H		N		S	
	A.H.U.	AIR HANDLING UNIT	DET.	DETAIL	H.	HIGH	N.A.	NOT APPLICABLE	S.	SUPPLY
	ALT.	ALTERNATE	DIA.	DIAMETER	H.B.	HOLE BIBB	N.I.C.	NOT IN CONTRACT	S.A.	SUPPLY AIR
	ALUM.	ALUMINUM	DIFF.	DIFFUSER	H.C.	HOLLOW CORE	NO., #	NUMBER	SCH.	SCHEDULE
	AMP.,A	AMPERES	DIM.	DIMENSION	HT.	HEIGHT	O		SECT.	SECTION
	A.O.	ACCESS OPENING	DISC.	DISCONNECT	H.M.	HOLLOW METAL	O.A.	OUTDOOR AIR	SERV.	SERVICE
	APPROX.	APPROXIMATELY	DN.	DOWN	H.P.	HORSE POWER	O.C.	ON CENTER	SHT.	SHEET
	ARCH.	ARCHITECTURAL	DR.	DOOR	HTG.	HEATING	O.D.	OUTSIDE DIAMETER	S.J.	SLIP JOINT
	A.T.C.	ACOUSTICAL TILE CEILING	D.S.	DOWNSPOUT	HTR.	HEATER	O.H.	OVERHEAD	SPEC.	SPECIFICATIONS
	A.B.	ANCHOR BOLT	DWG. (S)	DRAWING (S)	HVAC	HEATING, VENTILATION & AIR CONDITIONING	OL.	OVERLOAD	SQ. FT., SF	SQUARE FEET
F	B		DSB	DOUBLE STRENGTH "B" GLASS	HW., HDWE.	HARDWARE	OPNG.	OPENING	STL.	STEEL
	BAL.	BALANCE	E		HYD.	HYDRANT	OPP.	OPPOSITE	STOR.	STORAGE
	BD.	BOARD	EA.	EACH	HORIZ.	HORIZONTAL	O.S.D.	OPEN SIGHT DRAIN	STRUC.	STRUCTURAL
	BLDG.	BUILDING	E.C.	EMPTY CONDUIT	I		P		SUSP.	SUSPENDED
	BLK.	BLOCK	E.F.	EXHAUST FAN	I.D.	INSIDE DIAMETER	P.	PAPER	SW.	SWITCH
	BM.	BEAM	EL., ELEV.	ELEVATION	I.E.	INVERT	PART'N.	PARTITION	STD.	STANDARD
	BOT.	BOTTOM	ELEC.	ELECTRIC	IN.	INCHES	PC.	POINT OF CURVATURE	T	
	BRG.	BEARING	EQUIP.	EQUIPMENT	INCAND.	INCANDESCENT	PER.	PERIMETER	T., TOIL.	TOILET
	B.T.U.H.	BRITISH THERMO UNIT/HR.	E.W.	EACH WAY	INSUL.	INSULATION	PL.	PLATE	TEL.	TELEPHONE
C	CAB.	CABINET	E.W.C.	ELECTRIC WATER COOLER	INT.	INTERIOR	PLBG.	PLUMBING	TEMP.	TEMPERATURE
	CAP.	CAPACITY	EXH.	EXHAUST	J		PLYD.	PLYWOOD	THK.	THICKNESS
	C/B	CIRCUIT BREAKER	EXP. JT.	EXPANSION JOINT	J.B.	JUNCTION BOX	PNL.	PANEL	THD.	THRESHOLD
	C.D.	CEILING DIFFUSER	EXT.	EXTERIOR	JCT.	JUNCTION	PRESS.	PRESSURE	TYP.	TYPICAL
	CEM.	CEMENT	EXIST.	EXISTING	JT.	JOINT	PSF	POUNDS / SQUARE FOOT	T.T.D.	TOILET TISSUE DISPENSER
	CER.	CERAMIC	F		K		PSI	POUNDS / SQUARE INCH	T.O.S.	TOP OF STEEL
	C.F.M.	CUBIC FEET/MINUTE	F.A.	FIRE ALARM	KVA	KILOVOLT AMPERE	PT.	POINT OF TANGENCY	T & G	TONGUE & GROOVE
	CIRC.	CIRCULATING	F.C.	FLEXIBLE CONNECTION	KW.	KILOWATT	PTD.	PAINTED	TR.	TREAD
	C.J.	CONTROL JOINT	F.D.	FLOOR DRAIN	L		P.T.D.	PAPER TOWEL DISPENSER	U	
	CK'D	CHECKERED	F.E.C.	FIRE EXTINGUISHER CABINET	LB.	POUND	Q		U.O.N.	UNLESS OTHERWISE NOTED
	CKT.	CIRCUIT	F.E.S.	FLARED END SECTION	LG.	LONG	QTR.	QUARTER	V	
	C.L.	CENTER LINE	FIN.	FINISH	L.P.	LIGHTING PANEL	QUAN.	QUANTITY	V.	VOLT
	CIEL.,CLG.	CEILING	FR.	FRAME	LTG.	LIGHTING	R		V.C.T.	VINYL COMPOSITION TILE
	CLO.	CLOSET	FT.	FOOT - FEET	LAV.	LAVATORY	R.	RISER	VENT.	VENTILATION
	C.M.P.	CORRUGATED METAL PIPE	FTG.	FOOTING	M		R.A.	RETURN AIR	VERT.	VERTICAL
	C.M.U.	CONCRETE MASONRY UNIT	FDN.	FOUNDATION	M.	MOTOR	RAD.	RADIUS	VTR.	VENT THRU ROOF
	C.O.	CLEAN OUT	G		M.	MAINTENANCE	RD.	ROUND	W	
	COL.	COLUMN	GA.	GAGE	MAX.	MAXIMUM	REC'D.	RECESSED	W.	WATT
	CONC.	CONCRETE	GAL.	GALLON	M.D.P.	MAIN DISTRIBUTION PANEL	RECIRC.	RECIRCULATING	W/	WITH
	COND.	CONDENSATE	GALV.	GALVANIZED	M.E.C.	MECHANICAL	RECP.	RECEPTACLE	WD.	WOOD
	CONN.	CONNECTION	G.F.E.	GOVERNMENT FURNISHED EQUIPMENT	MTL.	METAL	REG.	REGISTER	W.G.	WATER GAGE
	CONST.	CONSTRUCTION	GL.	GLASS	MIN.	MINIMUM	REINF.	REINFORCING	WP.	WEATHERPROOF
	CONT.	CONTINUOUS	GND.	GROUND	MISC.	MISCELLANEOUS	REQ'D.	REQUIRED	WTR.	WATER
	CONTR.	CONTRACTOR	GOVT	GOVERNMENT	M.O.	MASONRY OPENING	RET.	RETURN	W.W.F.	WELDED WIRE FABRIC
	C.P.P.	CORRUGATED PLASTIC PIPE	G.P.H.	GALLONS/HOUR	M.T.	METAL THRESHOLD	R.G.	RETURN GRILLE	W.C.	WATER CLOSET
	CONTR. JT.	CONTRACTION JOINT	G.P.M.	GALLONS/MINUTE					W.H.	WATER HEATER
	C.T.	CERAMIC TILE								

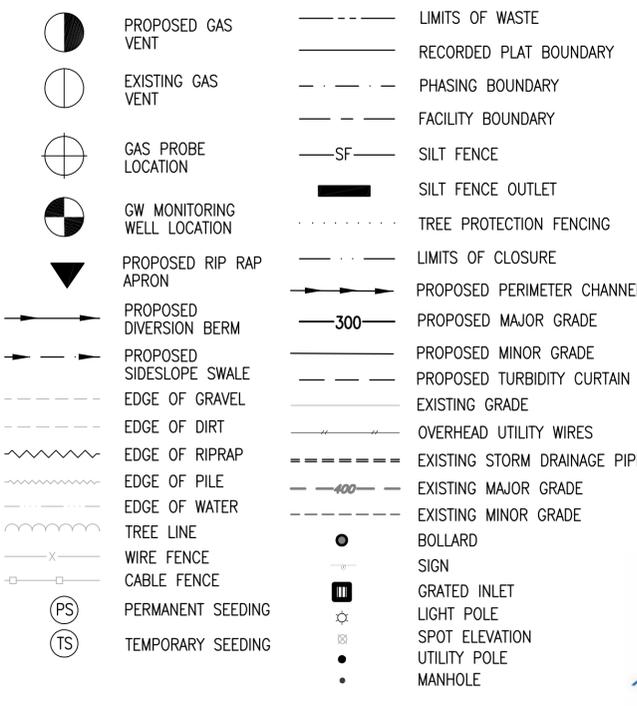
SECTION OR DETAIL SYMBOLS



MATERIAL INDICATIONS



LEGEND



STANDARD NOTES

- GROUNDWATER MONITORING WELLS AND GAS PROBES ARE NOT TO BE DISTURBED. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY DAMAGED WELLS OR PROBES.
- THIS CONTRACT INCLUDES WORK PRIMARILY ASSOCIATED WITH THE FOLLOWING MAJOR FEATURES:
 - TEMPORARY/PERMANENT SOIL EROSION/SEDIMENT CONTROL
 - CLOSURE OF PORTIONS OF PHASE II
 - EXCAVATION OF PHASE III BASEGRADES
 - STORM WATER CONTROL MEASURES INSTALLATION
 - REVEGETATION
 REFER TO THE ACCOMPANYING CONTRACT DOCUMENTS INCLUDING TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND ELEVATION OF ALL EXISTING BENCHMARKS. FURTHER, THE CONTRACTOR WILL NEED TO EMPLOY A LICENSED SURVEYOR FOR EXTENDING BOTH HORIZONTAL AND VERTICAL CONTROLS AS NECESSARY TO PERFORM THE WORK UNDER THIS CONTRACT. SURVEYOR SHALL BE RESPONSIBLE FOR SURVEYING THE FOLLOWING:
 - STORMWATER PIPING
 - DRAINAGE SWALES
 - DITCHES
 - BERMS
 - HORIZONTAL GAS WELL TRENCHES
 - FINAL COVER SOIL LAYER THICKNESS
 - FINAL GRADES
- THE CONTRACTOR SHALL RESTORE TO THE OWNERS SATISFACTION ALL AREAS DISTURBED BY CONSTRUCTION; INCLUDING PERIMETER ROADWAY SURFACES, ROADWAY SHOULDER AND DITCHES, DRAINAGE STRUCTURES, AND OTHER EXISTING FEATURES.
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND APPROVALS PRIOR TO COMMENCING WORK WITH THE EXCEPTION OF SOLID WASTE AND EROSION AND SEDIMENT CONTROL PERMITS WHICH WILL BE PROVIDED BY OTHERS. REFER TO TECHNICAL SPECIFICATIONS.
- THESE PLANS PRESENT CONSTRUCTION DETAILS OF SELECTED EARTHWORK (GRADING AND DRAINAGE), PIPING, AND APPURTENANCES. THE CONSTRUCTION SHOULD STRICTLY ADHERE TO THE FACILITY PERMIT (NO. 26-08) UNLESS OTHERWISE DEPICTED IN THESE PLANS.
- ANY CONFLICTS BETWEEN THESE PLANS AND THE PERMIT (DESIGN) SHOULD BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER (HDR ENGINEERING, INC.).
- ATTENTION IS DIRECTED TO THE FACT THAT AN ACTIVE LANDFILL WILL BE IN OPERATION DURING THE CONSTRUCTION PERIOD. WASTE HAULING TRUCKS WILL BE ACTIVE ON THE LANDFILL ENTRANCE ROAD. THE CONTRACTOR SHALL NOT BLOCK WASTE HAULING ACTIVITIES WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER. THE CONTRACTOR IS ADVISED THAT SCALE RECORDS ARE AVAILABLE, UPON REQUEST, FROM THE OWNER, WHICH INDICATE HISTORICAL DELIVERIES, BOTH DAILY AND HOURLY, OF WASTE TO THE LANDFILL.
- CONTACT LANDFILL MANAGER PRIOR TO SITE VISIT. 910-396-6873
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO COMMENCING WORK. CONDITIONS AT THE SITE DO VARY FROM THOSE SHOWN AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INCORPORATE THE ACTUAL EXISTING CONDITIONS IN THE EXECUTION OF WORK.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS CONTRACT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING BUT NOT LIMITED TO THOSE MANDATED BY OSHA.
- CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND MAINTAINING A SITE SAFETY PROGRAM TO ADDRESS ONSITE MONITORING OF THE WORK WITHIN AND ADJACENT TO THE EXISTING LANDFILL AND PERSONAL SAFETY REQUIREMENTS. REFER TO SECTION 01 00 00 GENERAL REQUIREMENTS - FOR FURTHER INFORMATION.
- THESE PLANS ACCOMPANY AND ARE PART OF THE TECHNICAL SPECIFICATIONS. WHEN THESE DRAWINGS AND/OR TECHNICAL SPECIFICATIONS LACK SPECIFITY, CONSULT THE DESIGN ENGINEER (HDR ENGINEERING, INC.).
- THE CONTRACTOR IS RESPONSIBLE FOR DEWATERING ALL EXCAVATIONS, FILL AREAS, ETC. IN ORDER TO WORK IN DRY CONDITIONS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



DATE	1/20/16
MARK	1
ISSUED FOR PERMIT	
DESCRIPTION	

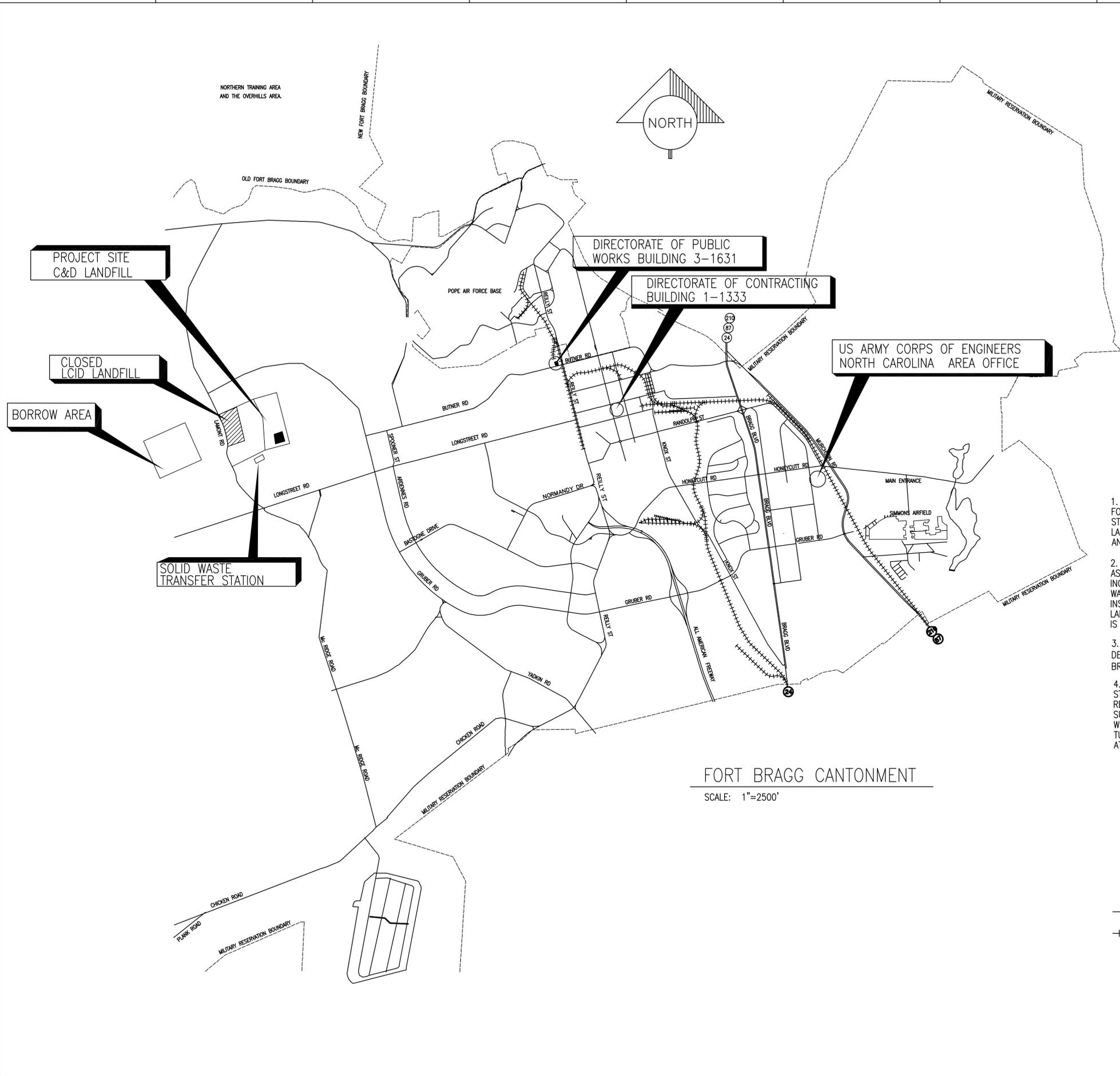
DESIGNED BY:	T. YANOSCHAK, P.E.
DRAWN BY:	XXXXXXXXXX
CHECKED BY:	XXXXXXXXXX
ISSUE DATE:	JANUARY 2016
CONTRACT NO.:	XXXXXXXXXX
CATEGORY CODE:	XXXXXXXXXX
FILE NAME:	00G-02.DGN
U.S. ARMY CORPS OF ENGINEERS	100 WEST OGLETHORPE AVENUE SAVANNAH DISTRICT SAVANNAH, GEORGIA
HDR ENGINEERING, INC. OF THE CAROLINAS	555 FAYETTEVILLE STREET, SUITE 900 RALEIGH, NORTH CAROLINA 27601

STANDARD ABBREVIATIONS AND SYMBOLS

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL PHASE III DESIGN
AND PHASE II CLOSURE

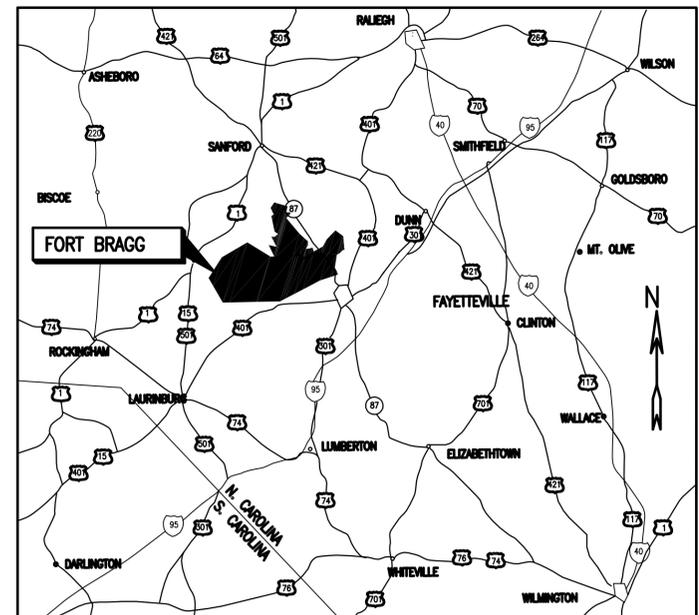


SHEET ID
G-002



FORT BRAGG CANTONMENT

SCALE: 1"=2500'



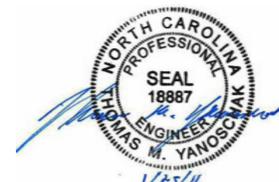
VICINITY MAP
N.T.S.

GENERAL NOTES

1. FORT BRAGG HAS A WASTE CENTER WITH A CONSTRUCTION AND DEMOLITION LANDFILL FOR NON-HAZARDOUS SOLID WASTE DISPOSAL AND A PERMITTED WASTE TRANSFER STATION (WTS) FOR THE TRANSFER OF MUNICIPAL SOLID WASTE (MSW) TO A REGIONAL LANDFILL. THE WASTE CENTER IS LOCATED ON LAMONT ROAD BETWEEN LONGSTREET AND MCKELLAR ROADS AND IS OPEN WEEKDAYS FOR DISPOSAL FROM 0730-1500 HOURS.
2. THE CONSTRUCTION AND DEMOLITION (C&D) LANDFILL IS PERMITTED TO RECEIVE ASBESTOS AND CONSTRUCTION AND DEMOLITION DEBRIS GENERATED ON FORT BRAGG. THIS INCLUDES PAINTED AND TREATED WOOD, INCIDENTAL SCRAP METALS, AND NON-HAZARDOUS WASTE NORMALLY GENERATED AT A CONSTRUCTION SITE TO INCLUDE PACKAGING, LUNCHES, INSULATION, SHINGLES, METAL CANS, AND WASTE WALLBOARD. ASBESTOS IS WITHIN THE C&D LANDFILL, BUT FRIABLE ASBESTOS MUST BE DOUBLE BAGGED AND MANIFESTED. YARD WASTE IS NOT ALLOWED.
3. THE C&D LANDFILL IS ALSO PERMITTED TO RECEIVE LAND CLEARING AND INERT DEBRIS (LCID) GENERATED ON FORT BRAGG. THIS INCLUDES STUMPS, TREE TRUNKS, BRICK, CONCRETE, ROCK, CLEAN SOIL, AND ASPHALT.
4. CONCRETE AND ASPHALT SHOULD NOT BE MIXED WITH THE DEBRIS AND WILL BE STOCKPILED IN THE CONCRETE RECYCLING AREA FOR CRUSHING AND REUSE. CLEAN, REUSABLE SOIL SHALL BE STOCKPILED AT A SITE DESIGNATED BY ENVIRONMENTAL SUSTAINABILITY OFFICE (ESO). PINE NEEDLES SHOULD NOT BE MIXED WITH DEBRIS AND WILL BE STOCKPILED AT THE CLOSED LCID LANDFILL FOR REUSE. SCRAP METAL SHALL BE TURNED IN TO DRMO FOR SALVAGE; THE LANDFILL WILL ONLY ACCEPT INCIDENTAL METALS ATTACHED TO DEBRIS.

LEGEND:

- LAKES
- U. S. ROUTE
- STREETS
- RAILROADS
- STATE ROUTE
- INTERSTATE ROUTE
- INSTALLATION BOUNDARIES



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1		1/2016

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CHECKED BY:	J. MURRAY, P.E.
ISSUE DATE:	JANUARY 2016
PROJECT NO.:	XXXXXX-XXXX
CONTRACT NO.:	XXXXXX-XXXX
DATE:	1/2016
FILE NAME:	00G-03.DGN

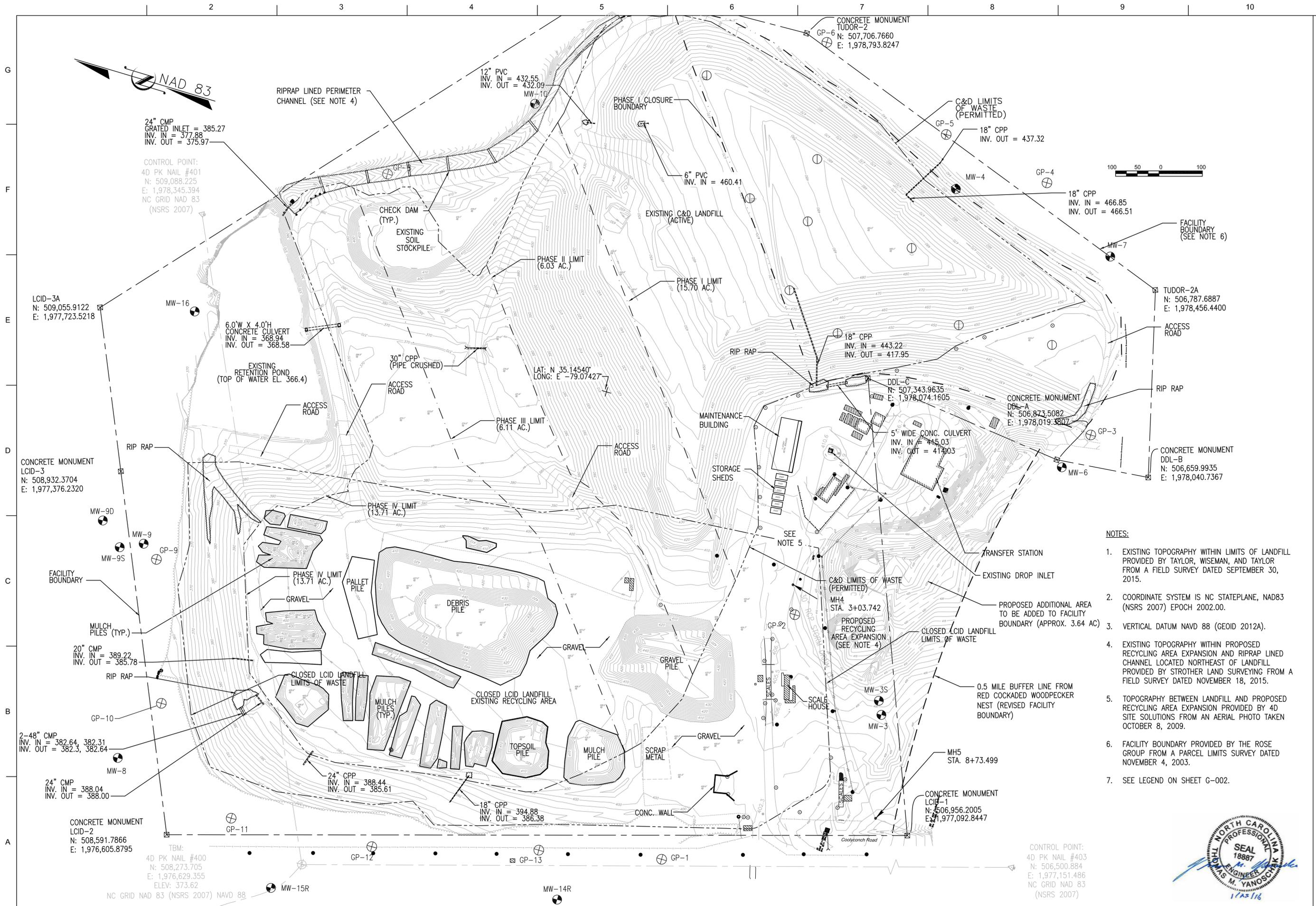
U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

HDR ENGINEERING, INC. OF THE CAROLINAS
555 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL, PHASE III DESIGN
AND PHASE II CLOSURE

VICINITY MAP

SHEET ID
G-003



ISSUED FOR PERMIT	MARK	DATE
1		

DESIGNED BY: T. YANOSCHAK, P.E.	CHECKED BY: T. YANOSCHAK, P.E.	ISSUE DATE: JANUARY 2016
DRAWN BY: XXX-XX-XX-XXXX	CONTRACT NO.:	PROJECT NO.:
DATE:	W912HN 12 D 0024	CONTRACT NO.:
SCALE:	XXX-XX-XX	CATEGORY CODE
FILE NAME:	00C-01.DGN	

U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

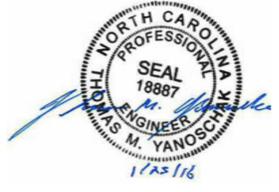
HDR ENGINEERING, INC. OF THE CAROLINAS
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RALEIGH, NORTH CAROLINA 27601

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL PHASE III DESIGN
AND PHASE II CLOSURE

OVERALL SITE PLAN

SHEET ID
C-001

- NOTES:**
- EXISTING TOPOGRAPHY WITHIN LIMITS OF LANDFILL PROVIDED BY TAYLOR, WISEMAN, AND TAYLOR FROM A FIELD SURVEY DATED SEPTEMBER 30, 2015.
 - COORDINATE SYSTEM IS NC STATEPLANE, NAD83 (NSRS 2007) EPOCH 2002.00.
 - VERTICAL DATUM NAVD 88 (GEOID 2012A).
 - EXISTING TOPOGRAPHY WITHIN PROPOSED RECYCLING AREA EXPANSION AND RIPRAP LINED CHANNEL LOCATED NORTHEAST OF LANDFILL PROVIDED BY STROTHER LAND SURVEYING FROM A FIELD SURVEY DATED NOVEMBER 18, 2015.
 - TOPOGRAPHY BETWEEN LANDFILL AND PROPOSED RECYCLING AREA EXPANSION PROVIDED BY 4D SITE SOLUTIONS FROM AN AERIAL PHOTO TAKEN OCTOBER 8, 2009.
 - FACILITY BOUNDARY PROVIDED BY THE ROSE GROUP FROM A PARCEL LIMITS SURVEY DATED NOVEMBER 4, 2003.
 - SEE LEGEND ON SHEET G-002.



NOTES

1. ALL EXTERIOR SLOPES SHALL BE CONSTRUCTED AT 3H:1V.
2. LIMITS OF PHASE II CLOSURE MAY BE ADJUSTED AT TIME OF CONSTRUCTION TO COINCIDE WITH AREAS THAT HAVE REACHED FINAL GRADE.
3. STOCKPILES REMOVED BY OWNER FOR PERIMETER CHANNEL GRADING. 1" CONTOUR INTERVALS USED FOR PERIMETER CHANNEL GRADING.
4. CONTRACTOR IS NOT REQUIRED TO GRADE WASTE SLOPES OUTSIDE OF LIMITS OF CLOSURE.
5. SEE LEGEND ON SHEET G-002.



DATE	DESCRIPTION
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	MARK

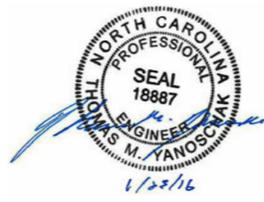
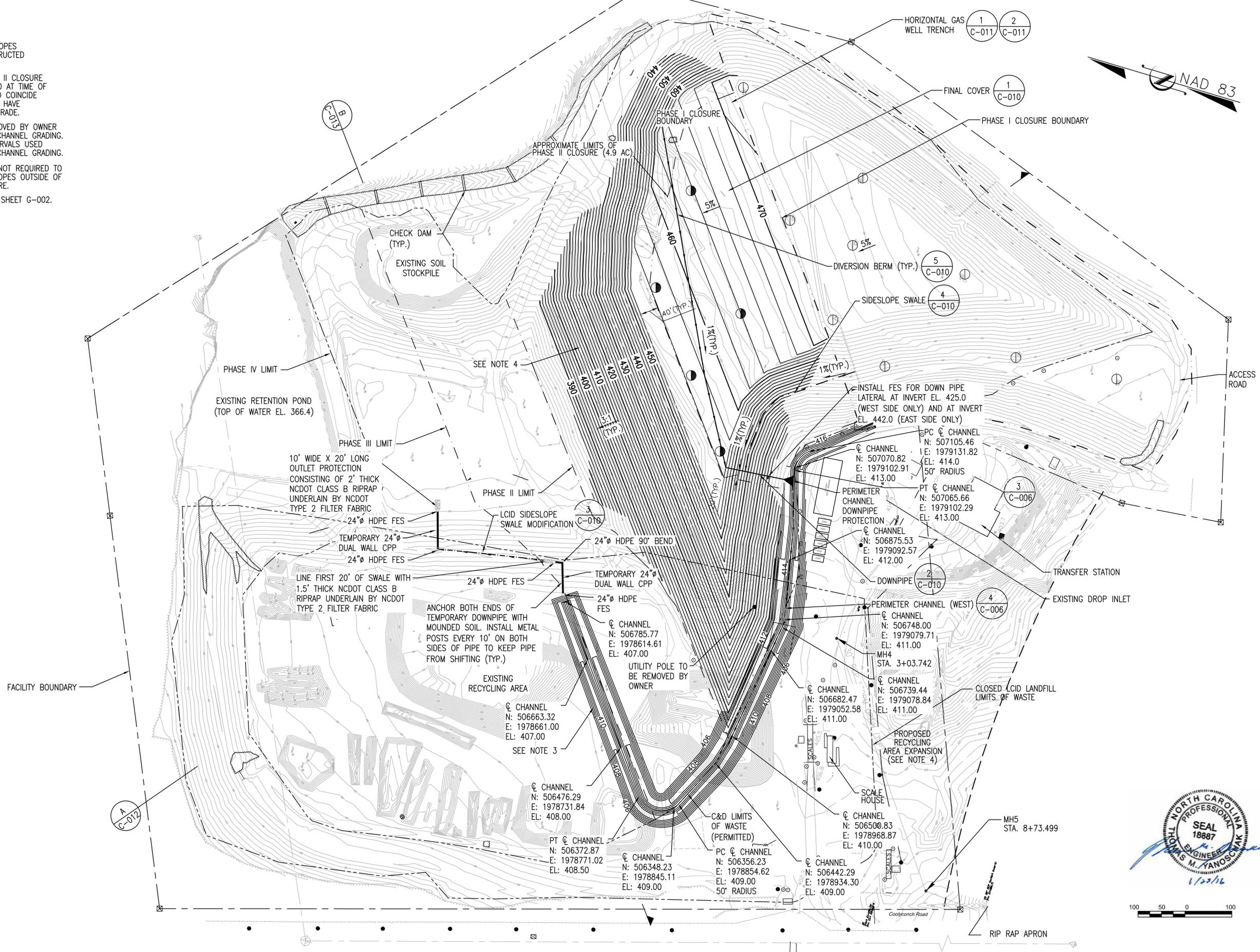
ISSUE DATE: JANUARY 2016	DESIGNED BY: T. YANOSCHAK, P.E.	U.S. ARMY CORPS OF ENGINEERS 100 WEST OGLETHORPE AVENUE SAVANNAH DISTRICT SAVANNAH, GEORGIA	HDR ENGINEERING, INC. OF THE CAROLINAS 555 FAYETTEVILLE STREET, SUITE 900 RALEIGH, NORTH CAROLINA 27601
PROJECT NO.: XXXXXX-XX-XXXX	DRAWN BY: T. YANOSCHAK, P.E.		
CONTRACT NO.: W912HN 12 D 0024	CHECKED BY: T. YANOSCHAK, P.E.		
CATEGORY CODE XXX-XX-XX	SUBMITTED BY: T. YANOSCHAK, P.E.		
	FILE NAME: 00C-02.DGN		

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL PHASE III DESIGN
AND PHASE II CLOSURE

PHASE II FINAL GRADING PLAN

SHEET ID
C-002

STATUS



G
F
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C
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A



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1			1/20/16

DESIGNED BY: T. YANOSCHAK, P.E.	ISSUE DATE: JANUARY 2016
DRAWN BY: M. MCCULLY	PROJECT NO.:
CHECKED BY: J. MURRAY, P.E.	CONTRACT NO.:
SUBMITTED BY: T. YANOSCHAK, P.E.	W912HN 12 D 0024
FILENAME: 00C-03.DGN	CATEGORY CODE XXX-XX-XX

U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

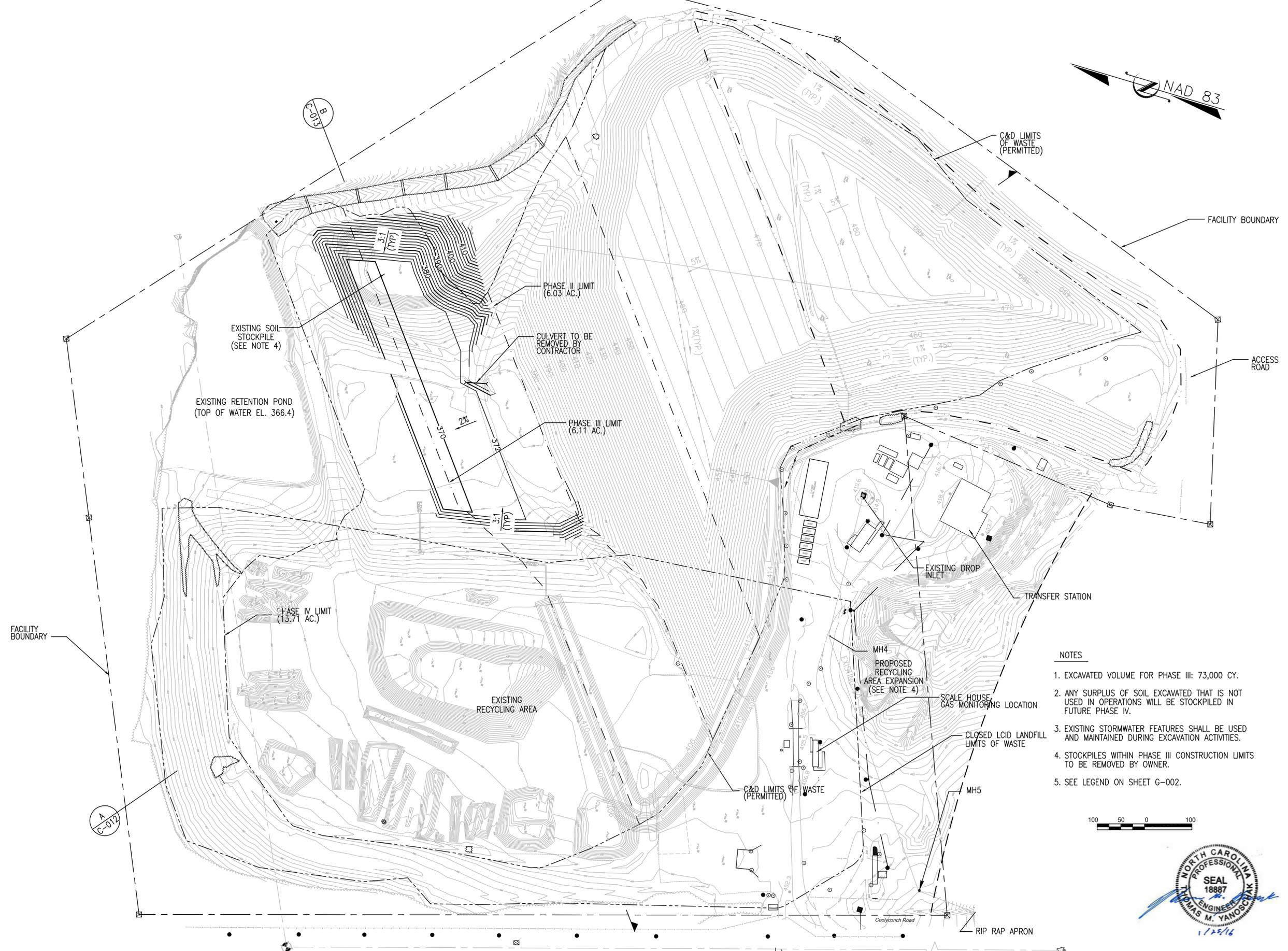
HDR ENGINEERING, INC. OF THE CAROLINAS
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RALEIGH, NORTH CAROLINA 27601

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL PHASE III DESIGN
AND PHASE II CLOSURE

PHASE III EXCAVATION PLAN

SHEET ID
C-003

STATUS



- NOTES**
- EXCAVATED VOLUME FOR PHASE III: 73,000 CY.
 - ANY SURPLUS OF SOIL EXCAVATED THAT IS NOT USED IN OPERATIONS WILL BE STOCKPILED IN FUTURE PHASE IV.
 - EXISTING STORMWATER FEATURES SHALL BE USED AND MAINTAINED DURING EXCAVATION ACTIVITIES.
 - STOCKPILES WITHIN PHASE III CONSTRUCTION LIMITS TO BE REMOVED BY OWNER.
 - SEE LEGEND ON SHEET G-002.





US Army Corps of Engineers

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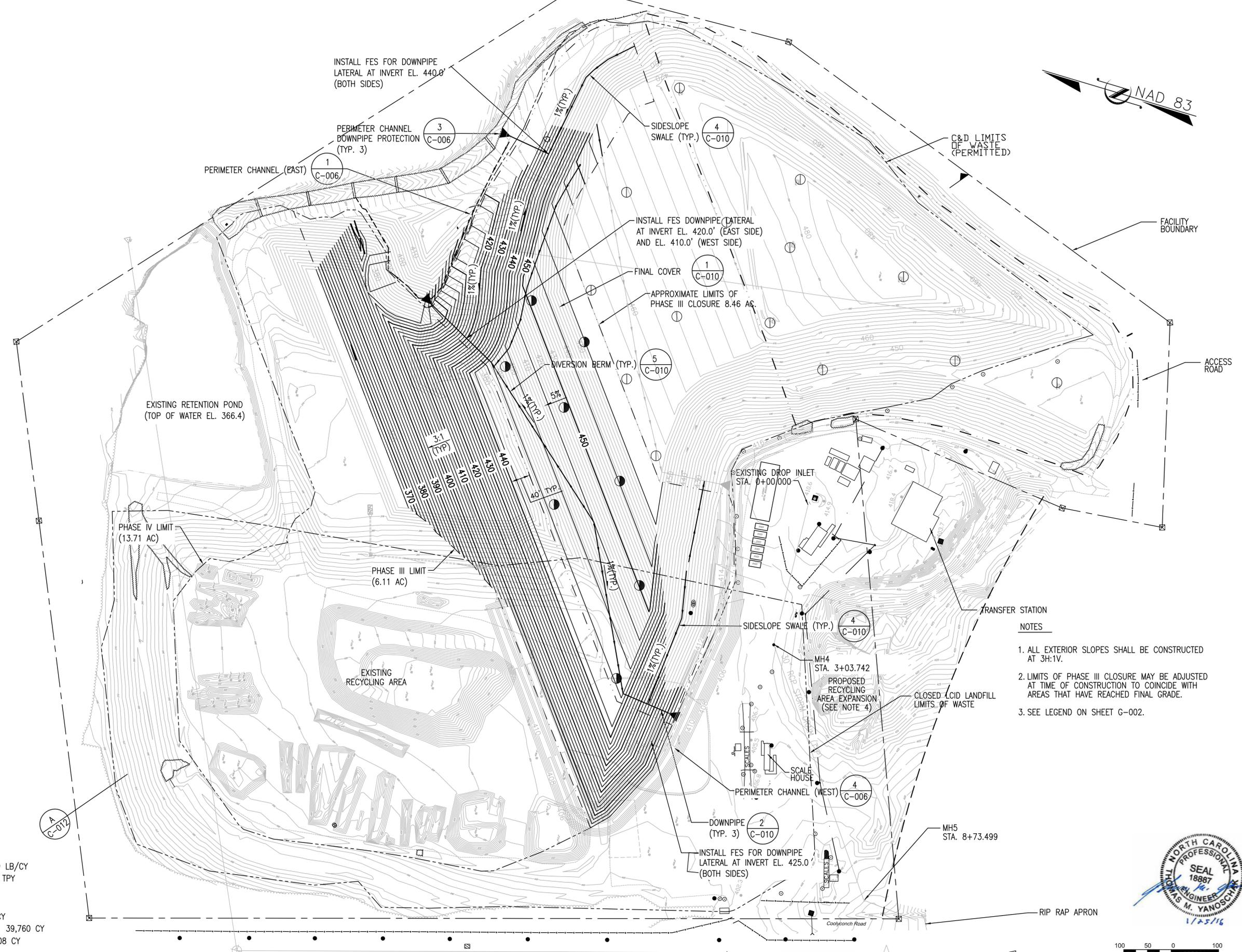
DESIGNED BY: T. YANOSCHAK, P.E.	ISSUE DATE: JANUARY 2016
DRAWN BY: M. COLLIER	DWG. NO.: XXX-XX-XX-XXX
CHECKED BY: J. MURRAY, P.E.	CONTRACT NO.: W912HN 12 D 0024
SUBMITTED BY: T. YANOSCHAK, P.E.	CATEGORY CODE: XXX-XX-XX
FILENAME: 00C-04.DGN	

U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

HDR ENGINEERING, INC. OF THE CAROLINAS
555 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

PHASE III FINAL GRADING PLAN
SHEET ID
C-004

STATUS



- NOTES**
1. ALL EXTERIOR SLOPES SHALL BE CONSTRUCTED AT 3H:1V.
 2. LIMITS OF PHASE III CLOSURE MAY BE ADJUSTED AT TIME OF CONSTRUCTION TO COINCIDE WITH AREAS THAT HAVE REACHED FINAL GRADE.
 3. SEE LEGEND ON SHEET G-002.



PHASE III CAPACITY

ASSUMPTIONS:
 IN-PLACE DENSITY: 2,339 LB/CY
 REFUSE INTAKE: 110,000 TPY
 GROSS AREA: 6.11 AC.
 GROSS VOLUME: 477,100 CY
 FINAL COVER SYSTEM: 35,332 CY
 DAILY AND INTERMEDIATE COVER: 39,760 CY
 NET OPERATING VOLUME: 402,008 CY
 LIFESPAN: 4.3 YRS

SSDGN\$PECSS
 \$\$\$SYSTEMSS
 \$\$\$USER\$NAMESS

NOTES

- SEE NOTES ON SHEET C-009.
- ANY SURPLUS OF SOIL EXCAVATED THAT IS NOT USED IN OPERATIONS WILL BE STOCKPILED IN FUTURE PHASE IV.
- EXISTING STORMWATER FEATURES SHALL BE USED AND MAINTAINED DURING EXCAVATION ACTIVITIES.
- STOCKPILES ASSUMED REMOVED FOR PERIMETER CHANNEL GRADING. 1' CONTOUR INTERVALS USED FOR PERIMETER CHANNEL GRADING.
- SEE DETAIL 1/C-009 FOR SEEDING REQUIREMENTS AND DETAIL 2/C-009 FOR SEEDBED PREPARATION REQUIREMENTS.
- SEE LEGEND ON SHEET G-002.
- PROPOSED RECYCLING EXPANSION AREA WILL RECEIVE CRUSHED STONE SURFACING AFTER FINAL GRADE IS ACHIEVED.
- GRADES SHOWN WITHIN PROPOSED RECYCLING AREA EXPANSION REPRESENT MINIMUM ALLOWABLE GRADES TO ACHIEVE DRAINAGE. FINAL GRADES ABOVE THOSE SHOWN ARE ACCEPTABLE.
- BASIN BOTTOM EL. 397.0
TOP OF EMBANKMENT EL. 400.5
EMERGENCY SPILLWAY EL. 399.0

PERIMETER CHANNEL EAST (EXISTING) C-006

TURBIDITY CURTAIN C-007

EXISTING RETENTION POND (TOP OF WATER EL. 366.4)

LCID SIDESLOPE SWALE MODIFICATION C-010

10' WIDE X 20' LONG OUTLET PROTECTION CONSISTING OF 2' THICK NCDOT CLASS B RIPRAP UNDERLAIN BY NCDOT TYPE 2 FILTER FABRIC

24" HDPE FES
TEMPORARY 24" DUAL WALL CPP
24" HDPE FES

LINE FIRST 20' OF SWALE WITH 1.5" THICK NCDOT CLASS B RIPRAP UNDERLAIN BY NCDOT TYPE 2 FILTER FABRIC

PHASE IV LIMIT (13.71 AC.)

ANCHOR BOTH ENDS OF TEMPORARY DOWNPIPE WITH MOUNDED SOIL. INSTALL METAL POSTS EVERY 10' ON BOTH SIDES OF PIPE TO KEEP PIPE FROM SHIFTING (TYP.)

EROSION CONTROL MATTING CHANNEL INSTALLATION

EXISTING RECYCLING AREA

SEE NOTE 4

EROSION CONTROL MATTING CHANNEL INSTALLATION

PERIMETER CHANNEL (WEST) C-006

SCALE HOUSE GAS MONITORING LOCATION

PROPOSED RECYCLING AREA EXPANSION (SEE NOTES 7 AND 8)

30" RCP CLASS III CLOSED LCID LANDFILL LIMITS OF WASTE

DIVERSION BERM C-010 (TYP.)

SKIMMER SEDIMENT BASIN (SEE NOTE 9)

LINE SLOPES AT DIVERSION BERM INLETS AND PROVIDE 10'X10' SPLASH PADS WITH NCDOT CLASS 1 RIPRAP UNDERLAIN BY NCDOT TYPE 2 FILTER FABRIC

RIP RAP APRON

PROVIDE 10' WIDE X 2' DEEP RIPRAP LINED TRIANGULAR CHANNEL TO DRAINAGE DITCH

MH5 INV. IN = 390.1 INV. OUT = 389.6



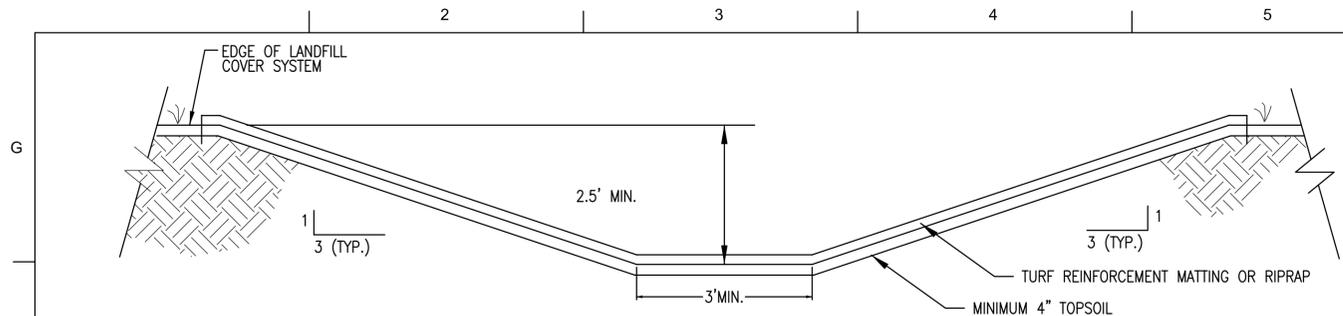


US Army Corps of Engineers

<p>ISSUE DATE: JANUARY 2016 DESIGNED BY: T. YANOSCHAK, P.E. DRAWN BY: M. MCCULLY CHECKED BY: J. MURRAY, P.E. SUBMITTED BY: T. YANOSCHAK, P.E. ANSI D: 00C-05.DGN</p>	<p>DATE: 1/20/16</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>MARK</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ISSUED FOR PERMIT</td> </tr> </tbody> </table> <p>U.S. ARMY CORPS OF ENGINEERS 100 WEST OGLETHORPE AVENUE SAVANNAH DISTRICT SAVANNAH, GEORGIA</p> <p>HDR ENGINEERING, INC. OF THE CAROLINAS 555 FAYETTEVILLE STREET, SUITE 900 RALEIGH, NORTH CAROLINA 27601</p> <p style="text-align: center;">  FORT BRAGG, NORTH CAROLINA LAMONT ROAD LANDFILL PHASE III DESIGN AND PHASE II CLOSURE EROSION AND SEDIMENT CONTROL PLAN </p>	MARK	DESCRIPTION	1	ISSUED FOR PERMIT
MARK	DESCRIPTION				
1	ISSUED FOR PERMIT				

SHEET ID
C-005

STATUS



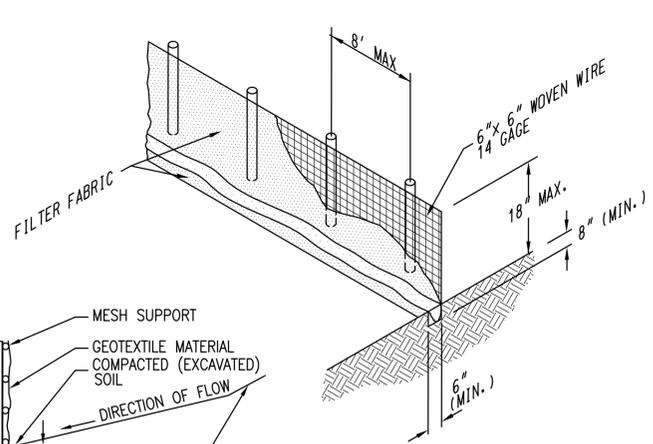
PERIMETER CHANNEL (EAST)

NTS

NOTES:

- 1) INSTALL TURF REINFORCEMENT MATTING FOR CHANNEL STABILIZATION AFTER PLACING TOPSOIL AND SEEDING.
- 2) USE TURF REINFORCEMENT MATTING AS SPECIFIED IN DETAIL 3/SHEET C-008.
- 3) MAINTAIN MINIMUM SLOPE OF 1%.
- 4) IF RIPRAP LINING IS USED, PROVIDE MIN. 18" THICK NCDOT CLASS B RIPRAP UNDERLAIN BY NCDOT TYPE 2 FILTER FABRIC.
- 5) CHECK CHANNEL FOR BANK STABILIZATION AND EVIDENCE OF PIPING OR SCOUR HOLES. MAKE REPAIRS IMMEDIATELY.
- 6) REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIRED CARRYING CAPACITY.
- 7) KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES.

1
C-004



SECTION

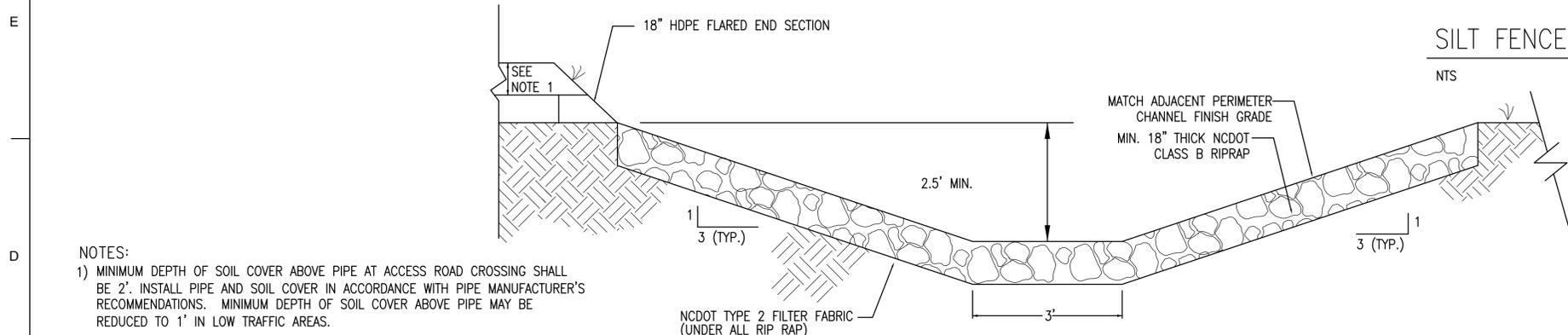
SILT FENCE

NTS

2
C-005

NOTES:

- 1) USE A SYNTHETIC FILTER FABRIC OR A PERVIOUS SHEET OF POLYPROPYLENE, NYLON, POLYESTER, OR POLYETHYLENE YARN, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120A F.
- 2) POSTS FOR SILT FENCES ARE 1.33 LB/LINEAR FT. STEEL WITH A MINIMUM LENGTH OF 4 FT. STEEL POSTS SHALL HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
- 3) INSPECT SILT FENCE AT LEAST ONCE PER WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- 4) REMOVE ANY TRAPPED SEDIMENT ONCE IT HAS REACHED HALF THE DEPTH OF THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
- 5) SHOULD THE FABRIC COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- 6) REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING AREA HAS BEEN PROPERLY STABILIZED.



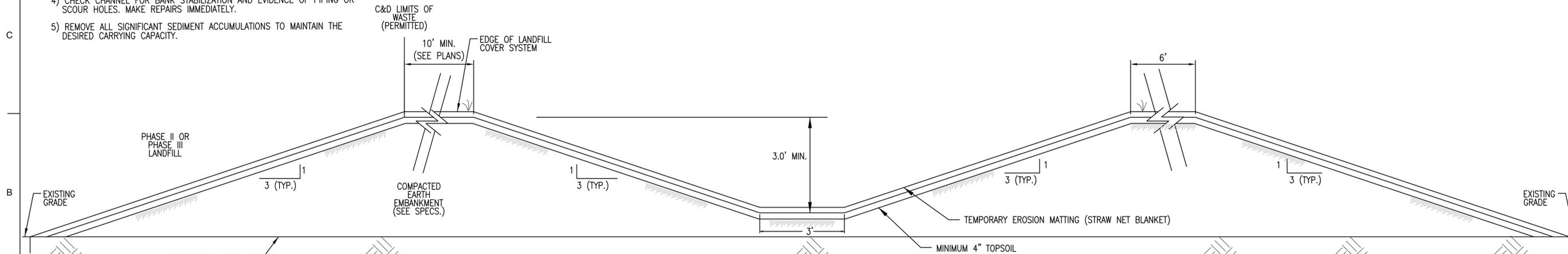
PERIMETER CHANNEL DOWNPIPE PROTECTION

NTS

3
C-002

NOTES:

- 1) MINIMUM DEPTH OF SOIL COVER ABOVE PIPE AT ACCESS ROAD CROSSING SHALL BE 2'. INSTALL PIPE AND SOIL COVER IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS. MINIMUM DEPTH OF SOIL COVER ABOVE PIPE MAY BE REDUCED TO 1' IN LOW TRAFFIC AREAS.
- 2) PIPE DEFLECTION MAY BE USED IN LIEU OF BEND IF WITHIN LIMITS OF PIPE MANUFACTURER'S RECOMMENDATIONS.
- 3) RIPRAP SHALL EXTEND A MINIMUM OF 10' UPSTREAM AND DOWNSTREAM OF FLARED END SECTION CENTERLINE.
- 4) CHECK CHANNEL FOR BANK STABILIZATION AND EVIDENCE OF PIPING OR SCOUR HOLES. MAKE REPAIRS IMMEDIATELY.
- 5) REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIRED CARRYING CAPACITY.



PERIMETER CHANNEL (WEST)

NTS

NOTES:

- 1) INSTALL EROSION CONTROL MATTING FOR CHANNEL STABILIZATION AFTER PLACING TOPSOIL AND SEEDING.
- 2) USE EROSION CONTROL MATTING AS SPECIFIED IN DETAIL 3/SHEET C-008.
- 3) MAINTAIN SLOPE OF 0.5% UNLESS OTHERWISE INDICATED ON DRAWINGS.
- 4) CHECK CHANNEL FOR BANK STABILIZATION AND EVIDENCE OF PIPING OR SCOUR HOLES. MAKE REPAIRS IMMEDIATELY.
- 5) REMOVE ALL SIGNIFICANT SEDIMENT ACCUMULATIONS TO MAINTAIN THE DESIRED CARRYING CAPACITY.
- 6) KEEP THE GRASS IN A HEALTHY, VIGOROUS CONDITION AT ALL TIMES.

4
C-002



DATE	DESCRIPTION	MARK
11/20/15		1

DESIGNED BY: T. YANOSCHAK, P.E.	ISSUE DATE: NOVEMBER 2015
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CHECKED BY: J. MURRAY, P.E.	CONTRACT NO.:
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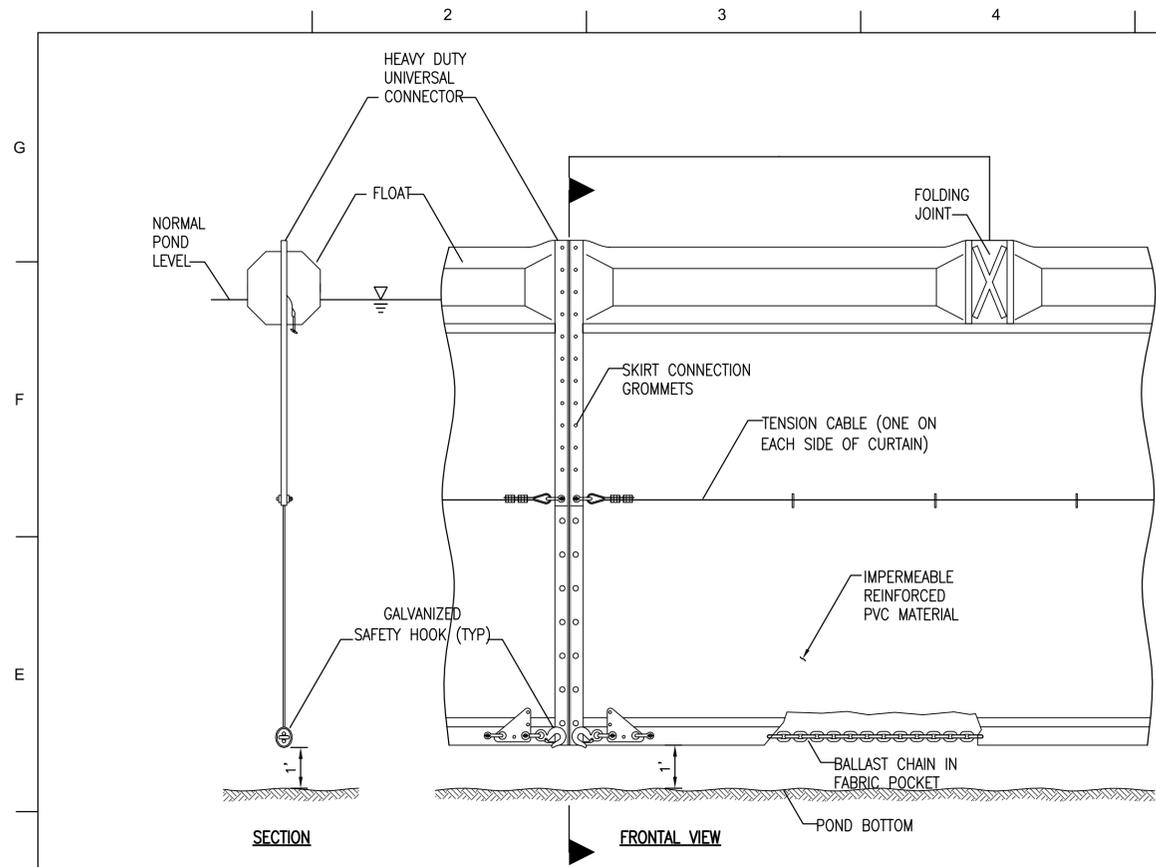
U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

HDR ENGINEERING OF THE CAROLINAS, INC.
556 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL, PHASE III DESIGN
AND PHASE II CLOSURE

EROSION AND SEDIMENT CONTROL DETAILS (1 OF 4)

SHEET ID
C-006



TURBIDITY CURTAIN

NTS

1
C-005

NOTES:

1. CONTRACTOR SHALL INSPECT TURBIDITY CURTAIN ACCORDING TO INSPECTION SCHEDULE AND REPAIR ANY OBSERVED DAMAGE.

TURBIDITY CURTAIN SPECIFICATIONS

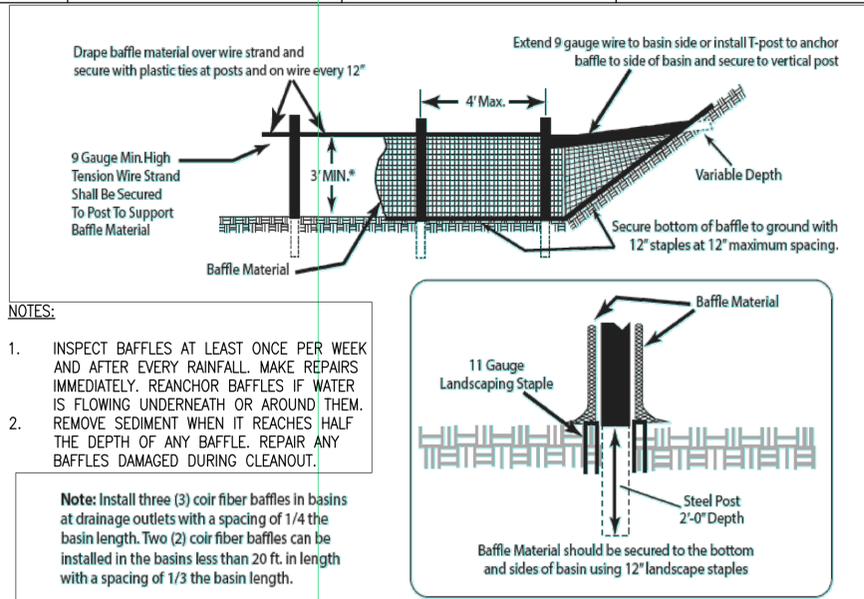
CURTAIN MATERIAL: IMPERMEABLE REINFORCED PVC
 MIN TENSILE STRENGTH - 300 LB/IN
 MIN FABRIC WT. - 13 OZ/SY
 TEAR STRENGTH - 80 LBS
 TENSILE STRENGTH AFTER ABRASION - 200 LB/IN
 RESISTANT TO MARINE GROWTH, ULTRA VIOLET LIGHT, AND MILDEW
 ALL FABRIC SHALL BE HEAT SEALED.

FLOATS: SOLID, CLOSED-CELL, PLASTIC FOAM SEALED IN FABRIC POCKET.
 PROVIDE BUOYANT RATIO > 5
 MAX LENGTH 10'

BALLST CHAIN: NON-CORROSIVE
 2 LB/IN WEIGHT

TENSION CABLE: GALVANIZED OR STAINLESS STEEL WIRE ROPE

MOORING: AS RECOMMENDED BY MANUFACTURER FOR PROPOSED APPLICATION



POROUS BAFFLES

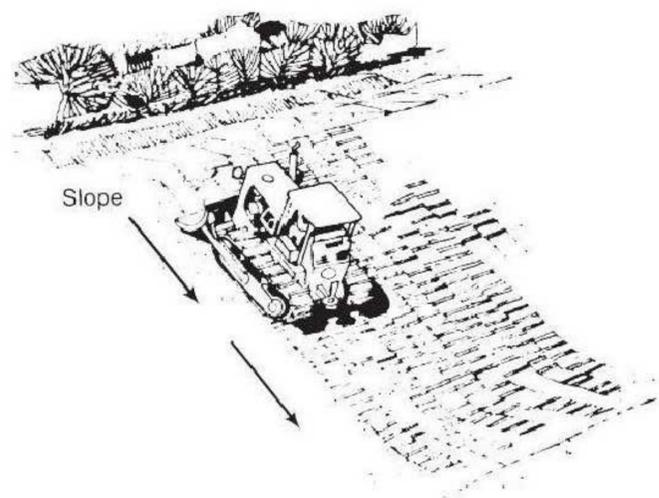
NTS

2
C-005

NOTES:

1. INSPECT BAFFLES AT LEAST ONCE PER WEEK AND AFTER EVERY RAINFALL. MAKE REPAIRS IMMEDIATELY. REANCHOR BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM. REMOVE SEDIMENT WHEN IT REACHES HALF THE DEPTH OF ANY BAFFLE. REPAIR ANY BAFFLES DAMAGED DURING CLEANOUT.

Note: Install three (3) coir fiber baffles in basins at drainage outlets with a spacing of 1/4 the basin length. Two (2) coir fiber baffles can be installed in the basins less than 20 ft. in length with a spacing of 1/3 the basin length.



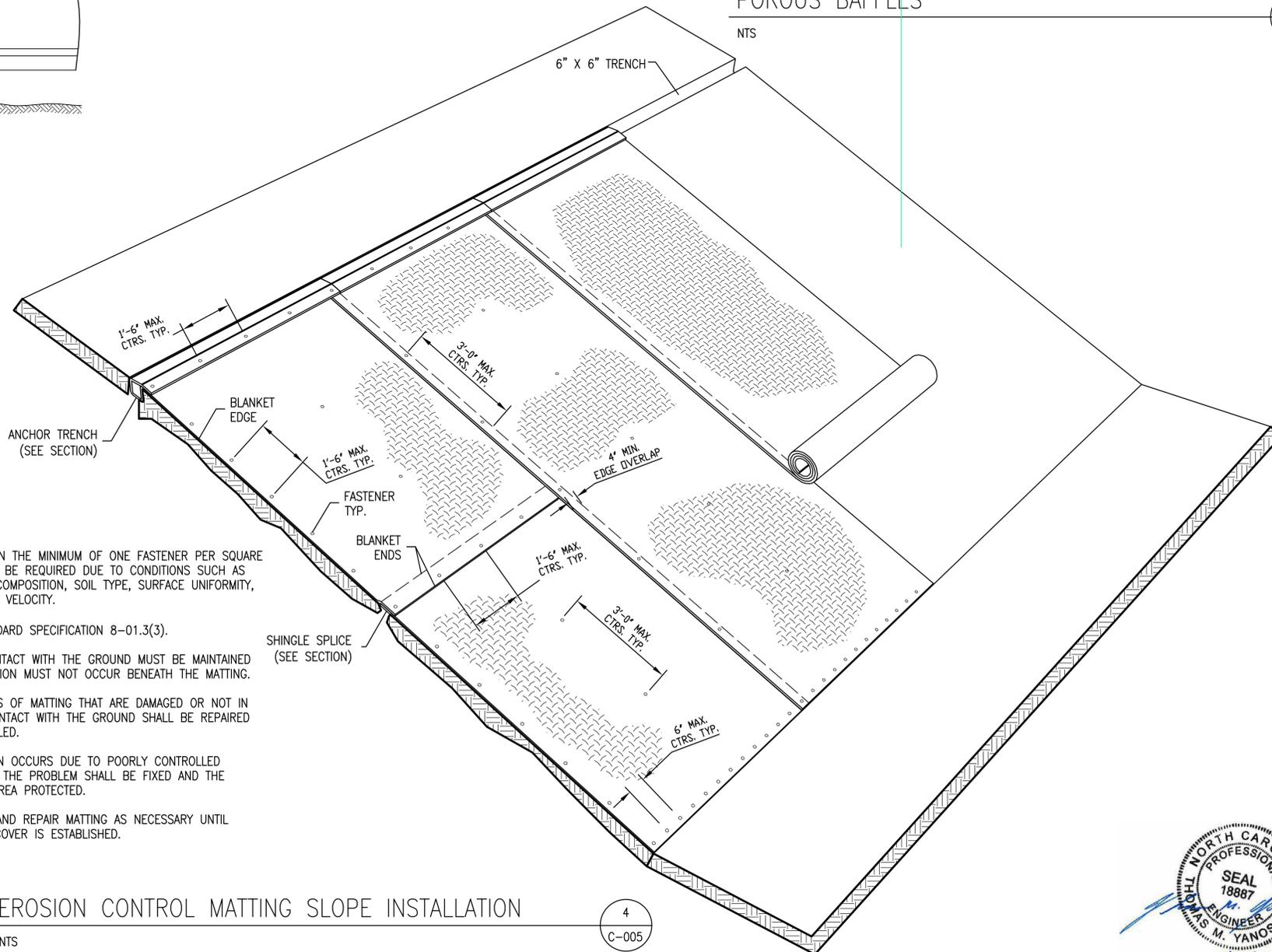
NOTES:

1. OPERATE TRACKED MACHINERY UP AND DOWN SLOPE TO LEAVE HORIZONTAL DEPRESSIONS IN SOIL.
2. DO NOT BACK BLADE DURING FINAL GRADING OPERATIONS PRIOR TO SLOPE STABILIZATION.
3. PERIODICALLY CHECK THE SEEDED SLOPES FOR RILLS AND WASHES. FILL THESE AREAS SLIGHTLY ABOVE THE ORIGINAL GRADE, THEN RESEED AND MULCH AS SOON AS POSSIBLE.

SLOPE TRACKING

NTS

3
C-005



NOTES:

1. MORE THAN THE MINIMUM OF ONE FASTENER PER SQUARE YARD MAY BE REQUIRED DUE TO CONDITIONS SUCH AS BLANKET COMPOSITION, SOIL TYPE, SURFACE UNIFORMITY, AND FLOW VELOCITY.
2. SEE STANDARD SPECIFICATION 8-01.3(3).
3. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED AND EROSION MUST NOT OCCUR BENEATH THE MATTING.
4. ANY AREAS OF MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
5. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
6. MONITOR AND REPAIR MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

EROSION CONTROL MATTING SLOPE INSTALLATION

NTS

4
C-005



DATE	DESCRIPTION	MARK
1/2016	ISSUED FOR PERMIT	1

DESIGNED BY: T. YANOSCHAK, P.E.	ISSUE DATE: JANUARY 2016
DRAWN BY: XXXXXX-XX-XXXX	PROJECT NO.:XXXXXX-XX-XXXX
CHECKED BY: J. MURRAY, P.E.	CONTRACT NO.:W912HN 12 D 0024
SUBMITTED BY: T. YANOSCHAK, P.E.	CATEGORY CODE: XXX-XX-XX
FILE NAME: 00C-07.DGN	ANSID:

U.S. ARMY CORPS OF ENGINEERS
 100 WEST OGLETHORPE AVENUE
 SAVANNAH DISTRICT
 SAVANNAH, GEORGIA

HDR ENGINEERING, INC. OF THE CAROLINAS
 555 FAYETTEVILLE STREET, SUITE 900
 RALEIGH, NORTH CAROLINA 27601

FORT BRAGG, NORTH CAROLINA
 LAMONT ROAD LANDFILL, PHASE III DESIGN
 AND PHASE II CLOSURE

EROSION AND SEDIMENT CONTROL DETAILS (2 OF 4)



SHEET ID
C-007

G
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E
D
C
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A

US Army Corps of Engineers

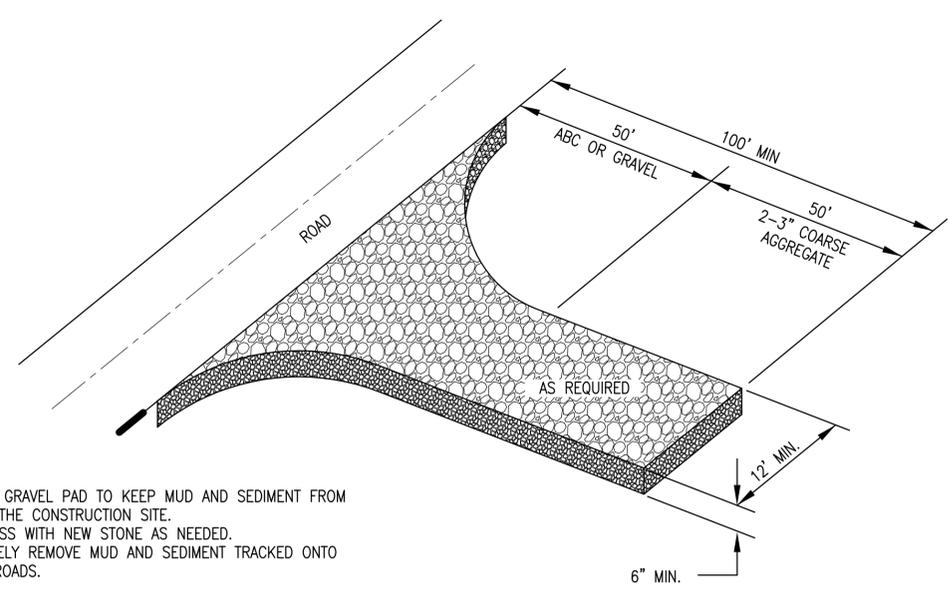
ISSUE DATE:	JANUARY 2016	DATE	1/2016
DESIGNED BY:	T. YANOSCHAK, P.E.	MARK	1
DRAWN BY:	XXXXXX-XXXX	ISSUED FOR PERMIT	
CHECKED BY:	J. MURRAY, P.E.	DESCRIPTION	
CONTRACT NO.:	W912HN12D0024		
CATEGORY CODE:	XXX-XX-XX		
FILE NAME:	00C-08.DGN		

U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

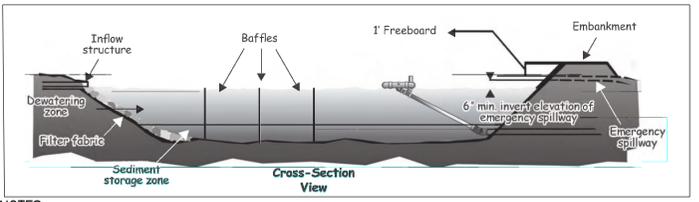
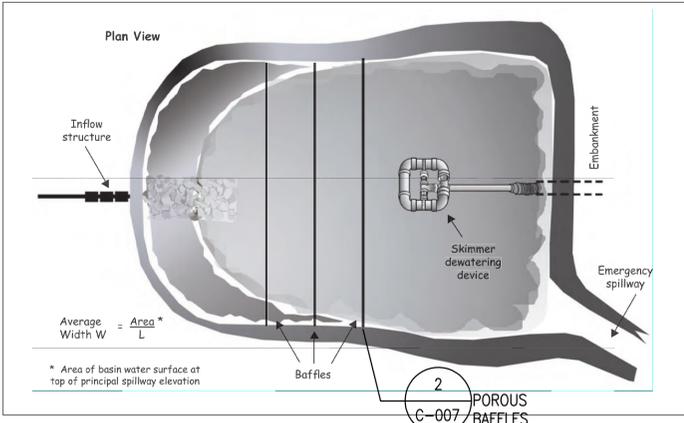
HDR ENGINEERING, INC. OF THE CAROLINAS
555 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

EROSION AND SEDIMENT CONTROL DETAILS (3 OF 4)

SHEET ID
C-008



- NOTES:**
1. MAINTAIN GRAVEL PAD TO KEEP MUD AND SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.
 2. TOP DRESS WITH NEW STONE AS NEEDED.
 3. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED ONTO PUBLIC ROADS.



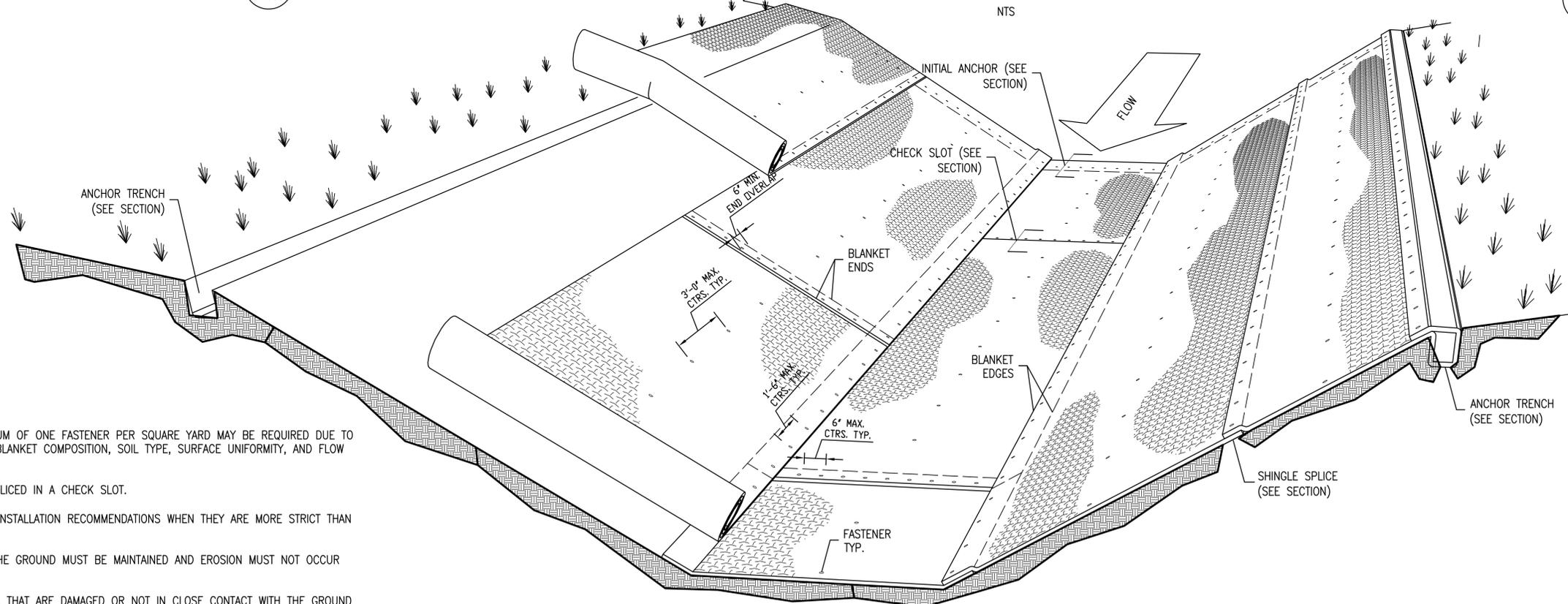
- NOTES:**
1. MINIMUM LENGTH: WIDTH RATIO 2:1.
 2. PROVIDE MINIMUM OF 3 POROUS BAFFLES ACROSS EACH TRAP. (SEE STANDARD PRACTICE 6.65, NC E&S&C PLANNING AND DESIGN MANUAL)
 3. REMOVE SEDIMENT WHEN ACCUMULATED SEDIMENT REACHES 1/2 THE HEIGHT OF THE FIRST BAFFLE.
 4. CONSTRUCT SKIMMER SEDIMENT BASIN IN ACCORDANCE WITH STANDARD PRACTICE 6.64, NC E&S&C PLANNING AND DESIGN MANUAL.
 5. ANY PROPOSED CHANGES TO BASIN DIMENSIONS SHALL BE PROVIDED TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
 6. INSPECT BASIN AT LEAST WEEKLY AND AFTER EACH RAIN EVENT 1/2" OR GREATER AND REPAIR IMMEDIATELY.
 7. EXCAVATE SEDIMENT FROM ENTIRE BASIN AND REPAIR BAFFLES AS NEEDED.
 8. ENSURE SKIMMER IS OPERATING PROPERLY. REMOVE OBSTRUCTIONS IMMEDIATELY.
 9. LINE EMERGENCY SPILLWAY WITH IMPERMEABLE GEOTEXTILE.

**TABLE 1
SKIMMER BASIN DESIGN PARAMETERS**

BASIN NO.	DISTURBED DRAINAGE AREA (AC)	MIN. STORAGE VOL. (FT ³)*	Q ₁₀ (CFS)	MIN. SURFACE AREA (SF)**	WEIR LENGTH (FT)	SKIMMER SIZE (IN)	SKIMMER ORIFICE DIAMETER (IN)	DEWATERING TIME (DAYS)	BASIN BOTTOM DIMENSIONS (FT)	PONDED DEPTH (FT)
SB-1	5.8	10,400	27.4	8,900	28.0	2.5	2.5	3	SEE PLANS	2

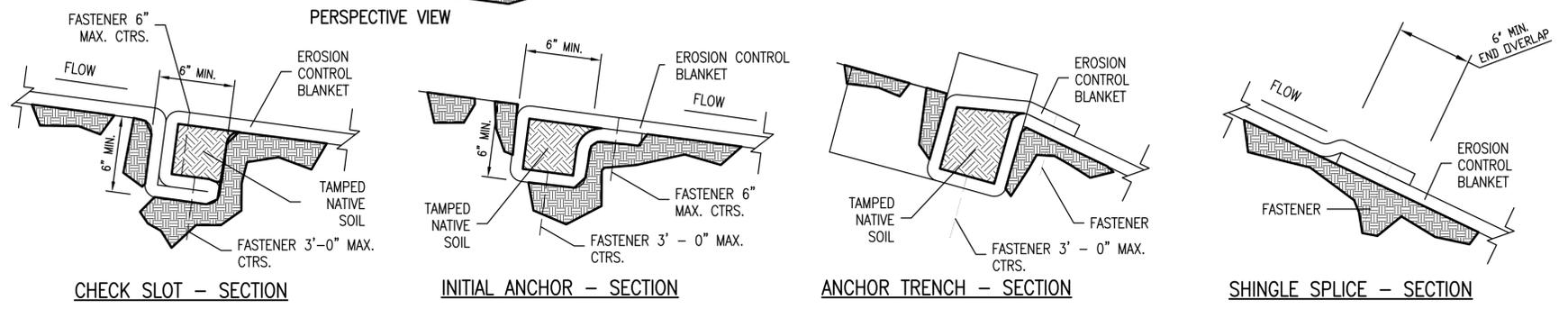
* 1,800 CF PER ACRE OF DISTURBED AREA.
** 325 SF PER CFS
*** CURRENTLY INSTALLED

SKIMMER SEDIMENT BASIN



- NOTES:**
1. MORE THAN THE MINIMUM OF ONE FASTENER PER SQUARE YARD MAY BE REQUIRED DUE TO CONDITIONS SUCH AS BLANKET COMPOSITION, SOIL TYPE, SURFACE UNIFORMITY, AND FLOW VELOCITY.
 2. ROLL ENDS MAY BE SPLICED IN A CHECK SLOT.
 3. USE MANUFACTURER'S INSTALLATION RECOMMENDATIONS WHEN THEY ARE MORE STRICT THAN THOSE SHOWN.
 4. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED AND EROSION MUST NOT OCCUR BENEATH THE MATTING.
 5. ANY AREAS OF MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
 6. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
 7. MONITOR AND REPAIR MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

EROSION CONTROL MATTING CHANNEL INSTALLATION



SEEDING SCHEDULE:

PERMANENT SEEDING:

PERFORM SUMMER SEEDING BETWEEN MARCH 1 THROUGH AUGUST 31.

SEEDING MIX:

1. FOXTAIL MILLET: 50 LBS/AC
2. COMMON BERMUDA GRASS (HULLED): 50 LBS/AC
3. GERMAN MILLET: 50 LBS/AC

PERFORM WINTER SEEDING BETWEEN SEPTEMBER 1 THROUGH FEBRUARY 28.

SEEDING MIX:

1. ROANE SOFT RED WINTER WHEAT: 50 LBS/AC
2. COMMON BERMUDA GRASS (HULLED): 25 LBS/AC
3. COMMON BERMUDA GRASS (UNHULLED): 25 LBS/AC

TEMPORARY SEEDING:

MARCH 1 THROUGH AUGUST 31:

1. GERMAN MILLET: 65 LBS/AC
2. FOXTAIL MILLET: 65 LBS/AC

SEPTEMBER 1 THROUGH FEBRUARY 28:

1. ROANE SOFT RED WINTER WHEAT: 120 LBS/AC

MULCHING:

IMMEDIATELY PROTECT SEEDED AREAS AGAINST EROSION BY MULCHING OR PLACING EROSION CONTROL MATTING. USE EROSION CONTROL MATTING OR BONDED FIBER MATRIX WHERE REQUIRED ON DRAWINGS OR IN SPECIFICATIONS.

STRAW MULCH:

1. CLEAN, SEED FREE, THRESHED STRAW OF OATS, WHEAT, BARLEY, RYE, OR OTHER LOCALLY AVAILABLE MULCH MATERIAL.
2. SPREAD MULCH IN A CONTINUOUS BLANKET USING 2 TONS/ACRE TO A DEPTH OF 4 TO 5 STRAWS.
3. IMMEDIATELY FOLLOWING SPREADING OF MULCH, SECURE WITH NETTING OR ASPHALT BINDER.
4. APPLY ASPHALT BINDER AT A RATE OF 0.10 GALS PER SQUARE YARD (10 GALS/1,000 SQ FT) OR ANCHOR WITH LIGHTWEIGHT NETS STAPLED OVER MULCH.

WOOD FIBER AND CELLULOSE FIBER MULCH (HYDROSEEDING):

1. USE WITH DARK GREEN MARKER DYE.
2. pH: 5
3. MOISTURE CONTENT: 12%
4. WOOD FIBER: 70% MAXIMUM
5. CELLULOSE FIBER: 30% MAXIMUM
6. WATER HOLDING CAPACITY: 1100% MINIMUM
7. APPLY WITH SEED AS PART OF A HYDROSEEDER SLURRY.

EROSION CONTROL MAT:

1. ROLLED WOOD EXCELSIOR MATTING
2. ALLOWABLE SHEAR STRESS: 1.75 PSF MINIMUM
3. LONGEVITY: 8 MONTHS
4. TOP NET: PHOTODEGRADABLE POLYPROPYLENE
5. BOTTOM NET: NONE
6. FIBER MATRIX: 100% WOOD EXCELSIOR (0.5 LBS/SY) 80% OF FIBERS 6-INCHES OR MORE.
7. INSTALL PER DETAIL 3/SHEET 10 AND DETAIL 2/SHEET 11 OR MANUFACTURER'S RECOMMENDATIONS.

BONDED FIBER MATRIX (OPTION FOR SLOPES):

1. APPLY IN 2-STEP PROCESS AS FOLLOWS:
FIRST PASS - INCLUDE ALL SEED, ALL AMMENDMENTS, AND 1/3 OF MULCH
SECOND PASS - INCLUDE 2/3 OF MULCH AND APPLY IN OPPOSING DIRECTION OF FIRST PASS IF APPLIED BY TOWER.

TURF REINFORCEMENT MAT:

1. ROLLED POLYPROPYLENE PRODUCT STABILIZED AGAINST UV AND CHEMICAL DEGRADATION.
2. ALLOWABLE MINIMUM SHEAR STRESS: 6 PSF AND VELOCITY: 16 FT/S
3. LONGEVITY: PERMANENT
4. INSTALL PER DETAIL 3/SHEET 10 AND DETAIL 2/SHEET 11 OR MANUFACTURER'S RECOMMENDATIONS.

SEEDING REQUIREMENTS

NTS

CONSTRUCTION SEQUENCE:

1. CONTACT LAND QUALITY AT (910) 433-3300 MINIMUM OF 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
2. FLAG CONSTRUCTION LIMITS WITH TREE PROTECTION FENCING WHERE SHOWN ON PLANS.
3. INSTALL TURBIDITY CURTAIN IN EXISTING RETENTION POND AS SHOWN ON DRAWINGS.
4. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCES/EXITS AS SHOWN ON PLAN. IMMEDIATELY STABILIZE DISTURBED AREAS LOCATED OUTSIDE OF SILT FENCE WITH MATTING, RIPRAP, MULCH, ETC.
5. OBTAIN SOIL REQUIRED FOR CONSTRUCTION FROM ON-SITE STOCKPILES, MATERIAL EXCAVATED FROM WITHIN PHASE III, OR THE ON-SITE BORROW AREA. STABILIZE SLOPES AND DIVERSIONS BY SEEDING AND INSTALLING EROSION CONTROL MATTING IMMEDIATELY AFTER CONSTRUCTION.
6. INSTALL DRAINAGE CHANNELS AS SHOWN ON DRAWINGS.
7. STABILIZE DISTURBED AREAS AND STOCKPILES WITH PERMANENT SEEDING OR WOOD MULCH. INSTALL EROSION CONTROL MATTING OR BONDED FIBER MATRIX WHERE REQUIRED.
8. AFTER COMPLETION OF CONSTRUCTION, RESTORE CHANNELS, BERMS AND SEDIMENT BASIN TO DESIGN DIMENSIONS. RESTORE VEGETATION AS NEEDED. REMOVE SAFETY FENCING.
9. UPON STABILIZATION OF SITE, REMOVE SILT FENCE.

SEEDBED PREPARATION REQUIREMENTS:

1. PROJECT MANAGER (AS DEFINED IN SECTION 01040) TO APPROVE AREA AFTER THE SURFACE IS PREPARED AND PRIOR TO SEEDING. IF AREA IS SEEDED WITHOUT APPROVAL FROM PROJECT MANAGER AND THE PROJECT MANAGER REQUIRES THE AREA TO BE DISTURBED, THE CONTRACTOR SHALL RESEED THE AREA WITHOUT ADDITIONAL COST TO THE OWNER.
2. LIMIT PREPARATION TO AREAS WHICH WILL BE PLANTED SOON AFTER PREPARATION.
3. INSTALL TOPSOIL IN ACCORDANCE WITH SECTION 02260. ON SLOPES STEEPER THAN 5:1 CONTRACTOR SHALL TRACK SLOPE WITH DOZER TO CREATE WATER BARS PERPENDICULAR TO THE SLOPE.
4. LOOSEN SURFACE TO MINIMUM DEPTH OF FOUR (4) IN.
5. REMOVE STONES OVER ONE (1) IN IN ANY DIMENSION, STICKS, ROOTS, RUBBISH AND OTHER EXTRANEOUS MATTER.
6. APPLY GROUND LIMESTONE AT A MINIMUM RATE OF 2 TONS/AC (3 TONS/AC FOR CLAY SOILS) OR AS RECOMMENDED BY SOIL TESTING.
7. SPREAD LIME UNIFORMLY OVER DESIGNATED AREAS.
8. AFTER APPLICATION OF LIME, PRIOR TO APPLYING FERTILIZER, LOOSEN AREAS TO BE SEEDED WITH DOUBLE DISC OR OTHER SUITABLE DEVICE IF SOIL HAS BECOME HARD OR COMPACTED. CORRECT ANY SURFACE IRREGULARITIES IN ORDER TO PREVENT POCKET OR LOW AREAS WHICH WILL ALLOW WATER TO STAND.
9. APPLY 10-10-10 FERTILIZER AT A RATE OF 800-1200 LB/AC OR AS RECOMMENDED BY SOIL TESTING.
10. DISTRIBUTE FERTILIZER UNIFORMLY OVER AREAS TO BE SEEDED.
 - 10.1. USE SUITABLE DISTRIBUTOR.
 - 10.2. INCORPORATE FERTILIZER INTO SOIL TO DEPTH OF AT LEAST TWO (2) IN.
 - 10.3. REMOVE STONES OR OTHER SUBSTANCES WHICH WILL INTERFERE WITH TURF DEVELOPMENT OR SUBSEQUENT MOWING.
11. GRADE SEEDED AREAS TO SMOOTH, EVEN SURFACE WITH LOOSE, UNIFORMLY FINE TEXTURE.
 - 11.1. ROLL AND RAKE, REMOVE RIDGES AND FILL DEPRESSIONS, AS REQUIRED TO MEET FINISH GRADES.
 - 11.2. FINE GRADE JUST PRIOR TO PLANTING.
12. RESTORE SEEDED AREAS TO SPECIFIED CONDITION IF ERODED OR OTHERWISE DISTURBED BETWEEN FINE GRADING AND PLANTING.
13. IF FERTILIZER OR LIME APPLICATION RATE IS DETERMINED (BY INVOICES SUBMITTED) TO BE LESS THAN THAT SPECIFIED, APPLY ADDITIONAL FERTILIZER AND/OR LIME.
14. PROTECT SEEDED AREAS.

SEEDBED PREPARATION REQUIREMENTS

NTS

EROSION AND SEDIMENT CONTROL NOTES:

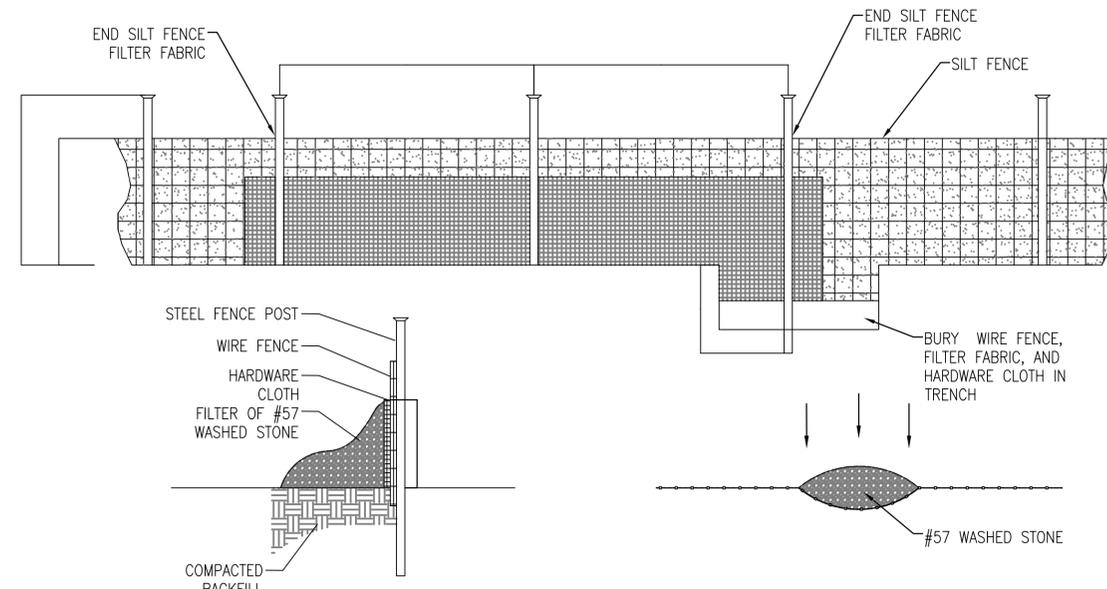
1. OPEN BURNING OF TREES, LIMBS, STUMPS AND CONSTRUCTION DEBRIS IS PROHIBITED.
2. SEE GROUND STABILIZATION REQUIREMENTS TABLE THIS SHEET.
3. CONTRACTOR WILL ADD EROSION AND SEDIMENT CONTROL AS NECESSARY TO PREVENT SEDIMENTATION AND DAMAGE TO ADJACENT AREAS AND AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
4. CONTRACTOR WILL INSPECT AND REPAIR, AS NECESSARY, ANY EROSION AND SEDIMENT CONTROL WEEKLY AND FOLLOWING EACH RAIN.
5. EROSION AND SEDIMENT CONTROL WILL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. SEE SPECIFICATIONS.
6. CONTRACTOR IS RESPONSIBLE FOR MONITORING DOWNSTREAM CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD AND CLEARING ANY DEBRIS AND SEDIMENT RESULTING FROM CONSTRUCTION.
7. EROSION CONTROL FENCING MUST MEET THE REQUIREMENT OF THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, STATE OF NORTH CAROLINA STANDARD SPECIFICATIONS. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES.
8. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION BY THE ENGINEER OR THEIR REPRESENTATIVE.
9. CLEAN SEDIMENT CONTROLS AFTER SEED HAS BEEN ESTABLISHED.
10. INSTALL BONDED FIBER MATRIX OR EXCELSIOR MAT ON ALL VEGETATED SLOPES WHERE SHOWN ON PLANS AND MAT ALONG ALL VEGETATED CHANNELS. MAT SHALL MEET THE REQUIREMENTS OF NCDOT STANDARD SPECIFICATION SECTION 1060. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
11. INSTALL TURF REINFORCEMENT MAT ON BERMS AND CHANNELS WHERE SHOWN ON PLANS.
12. SEE PROJECT SPECIFICATIONS AND DETAILS FOR SEEDING MIXTURES AND SEEDBED PREPARATIONS.
13. MAXIMUM DISTURBED ACREAGE FLOWING TO THE EXISTING RETENTION POND IS APPROXIMATELY 42.8 ACRES.
14. CONTRACTOR SHALL RESTORE GRAVEL ROADS USED BY CONSTRUCTION TRAFFIC TO ORIGINAL CONDITION FOLLOWING COMPLETION OF CONSTRUCTION.
15. CLEAN OUT OF CONCRETE TRUCKS WILL NOT BE PERMITTED ON SITE.

ANNOUNCEMENT OF COMBINED SELF-MONITORING AND SELF-INSPECTION FORM

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. TO SIMPLIFY DOCUMENTATION OF SELF-INSPECTION REPORTS AND NPDES SELF-MONITORING REPORTS, A COMBINED FORM IS NOW AVAILABLE. THE NEW FORM WAS DEVELOPED TO SATISFY THE REQUIREMENTS OF THE SEDIMENTATION POLLUTION CONTROL ACT AND THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES, NCG 010000. BEGINNING AUGUST 1, 2013, THE DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES IS RESPONSIBLE FOR ADMINISTERING BOTH THE SPCA AND THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES, NCG 010000. THE COMBINED FORM SHOULD MAKE IT EASIER TO COMPLY WITH SELF-INSPECTION REQUIREMENTS. THE COMBINED SELF-MONITORING FORM IS AVAILABLE AS A PDF AND WORD DOCUMENT FROM THE LAND QUALITY WEB SITE, <http://portal.ncdenr.org/web/lr/erosion> IF YOU HAVE QUESTIONS, PLEASE CONTACT THE LAND QUALITY SECTION AT A DEQ REGIONAL OFFICE.

GROUND STABILIZATION REQUIREMENTS*		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

* "EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE."



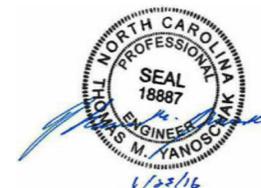
SILT FENCE OUTLET

NTS

3
C-005

NOTES:

1. INSPECT OUTLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT.
2. CLEAR STONE AND WIRE FENCE OF ANY SEDIMENT OR DEBRIS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS.
3. REPLACE STONE AS NEEDED.



DATE	DESCRIPTION	MARK
1/20/16		1

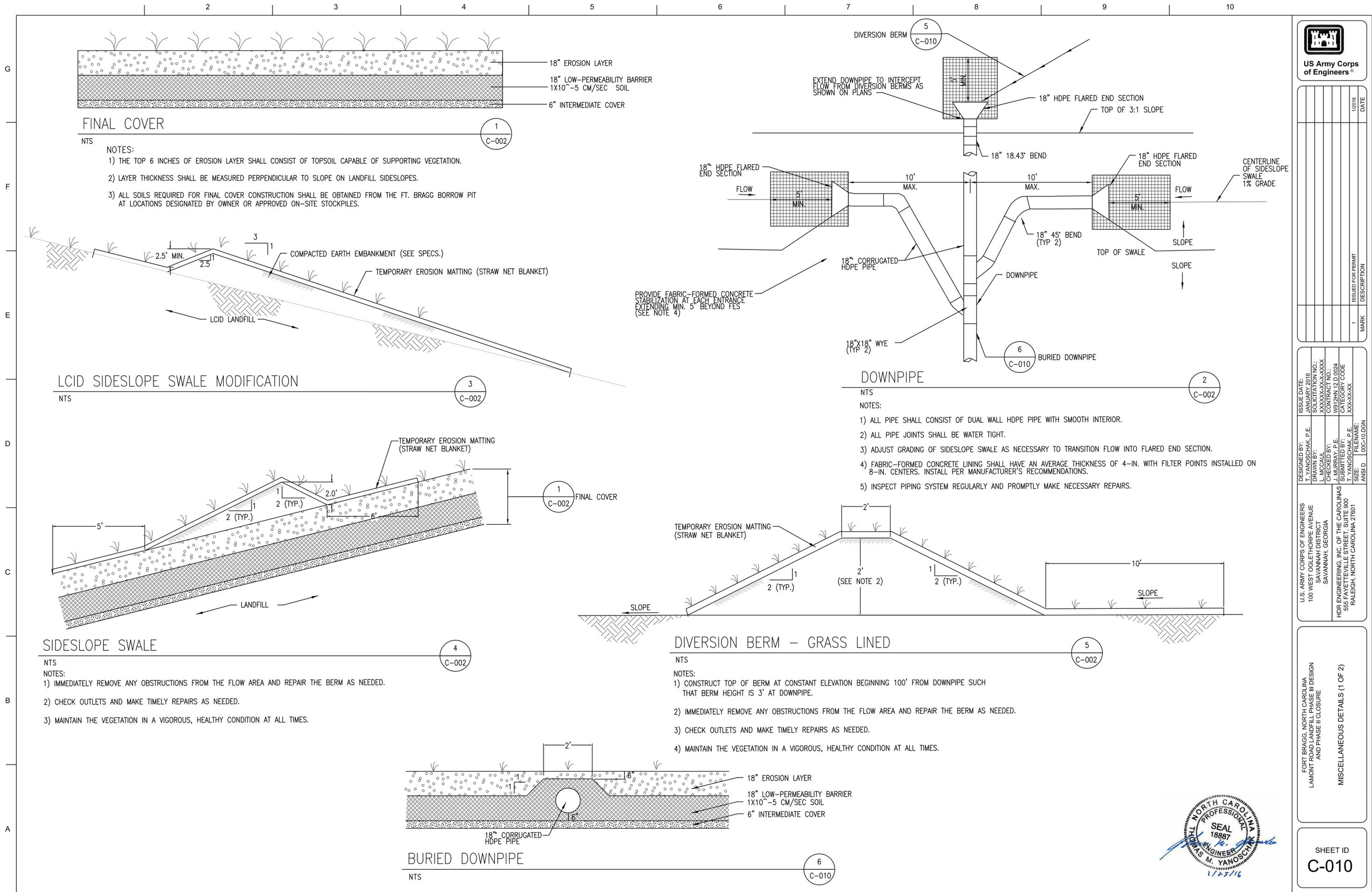
ISSUE DATE: JANUARY 2015	DESIGNED BY: T. YANOSCHAK, P.E.	CHECKED BY: J. MURRAY, P.E.	DATE: 1/20/16
DRAWING NO.: XXX-XXX-XXX	PROJECT NO.: W912HN 12 D 0024	CONTRACT NO.: XXX-XX-XX	FILE NAME: 00C-09.DGN
CATEGORY CODE: XXX-XX-XX			

U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

HDR ENGINEERING, INC. OF THE CAROLINAS
556 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

EROSION AND SEDIMENT CONTROL DETAILS (4 OF 4)

SHEET ID
C-009



FINAL COVER

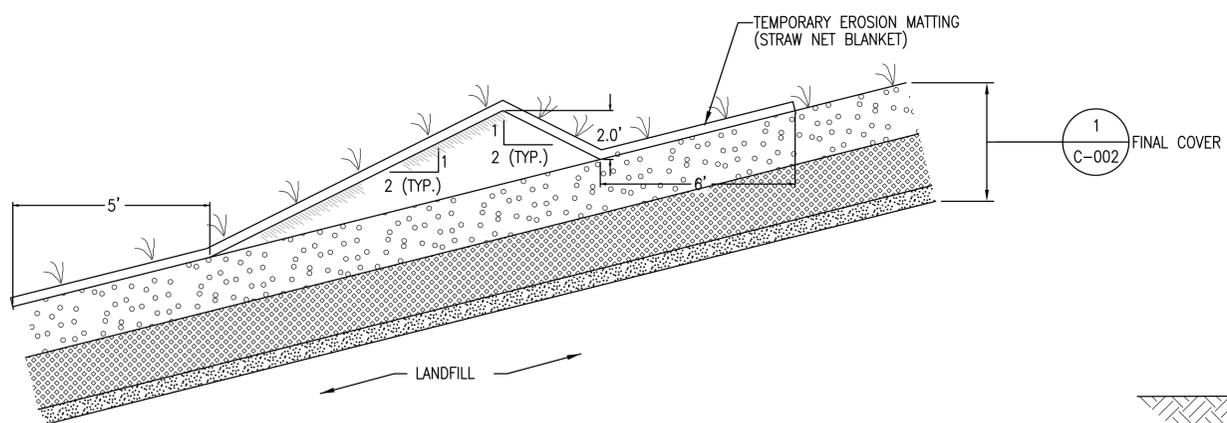
NTS

- NOTES:
- 1) THE TOP 6 INCHES OF EROSION LAYER SHALL CONSIST OF TOPSOIL CAPABLE OF SUPPORTING VEGETATION.
 - 2) LAYER THICKNESS SHALL BE MEASURED PERPENDICULAR TO SLOPE ON LANDFILL SIDESLOPES.
 - 3) ALL SOILS REQUIRED FOR FINAL COVER CONSTRUCTION SHALL BE OBTAINED FROM THE FT. BRAGG BORROW PIT AT LOCATIONS DESIGNATED BY OWNER OR APPROVED ON-SITE STOCKPILES.

1
C-002

LCID SIDESLOPE SWALE MODIFICATION

NTS



3
C-002

SIDESLOPE SWALE

NTS

- NOTES:
- 1) IMMEDIATELY REMOVE ANY OBSTRUCTIONS FROM THE FLOW AREA AND REPAIR THE BERM AS NEEDED.
 - 2) CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
 - 3) MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES.

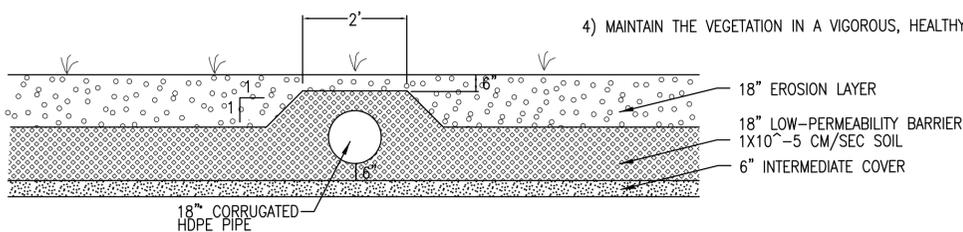
4
C-002

DIVERSION BERM - GRASS LINED

NTS

- NOTES:
- 1) CONSTRUCT TOP OF BERM AT CONSTANT ELEVATION BEGINNING 100' FROM DOWNPIPE SUCH THAT BERM HEIGHT IS 3' AT DOWNPIPE.
 - 2) IMMEDIATELY REMOVE ANY OBSTRUCTIONS FROM THE FLOW AREA AND REPAIR THE BERM AS NEEDED.
 - 3) CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
 - 4) MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES.

5
C-002



BURIED DOWNPIPE

NTS

6
C-010

DOWNPIPE

NTS

- NOTES:
- 1) ALL PIPE SHALL CONSIST OF DUAL WALL HDPE PIPE WITH SMOOTH INTERIOR.
 - 2) ALL PIPE JOINTS SHALL BE WATER TIGHT.
 - 3) ADJUST GRADING OF SIDESLOPE SWALE AS NECESSARY TO TRANSITION FLOW INTO FLARED END SECTION.
 - 4) FABRIC-FORMED CONCRETE LINING SHALL HAVE AN AVERAGE THICKNESS OF 4-IN. WITH FILTER POINTS INSTALLED ON 8-IN. CENTERS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - 5) INSPECT PIPING SYSTEM REGULARLY AND PROMPTLY MAKE NECESSARY REPAIRS.

2
C-002



DATE	DESCRIPTION	MARK	ISSUED FOR PERMIT
1/2016		1	

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DESIGNED BY:	T. YANOSCHAK, P.E.
DRAWN BY:	XXXXXXXXXX
CHECKED BY:	XXXXXXXXXX
CONTRACT NO.:	W912HN 12 D 0024
SUBMITTED BY:	J. MURRAY, P.E.
FILE NAME:	XXXXXXXXXX
ANSID:	00C-10.DGN

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100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

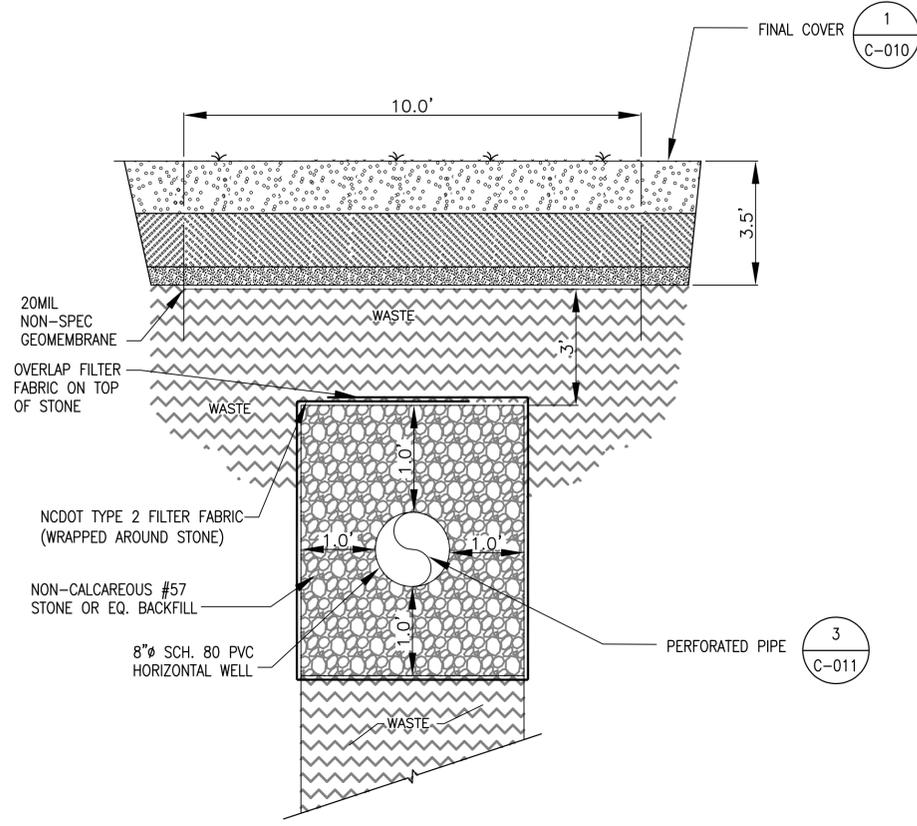
HDR ENGINEERING, INC. OF THE CAROLINAS
555 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

MISCELLANEOUS DETAILS (1 OF 2)

SHEET ID
C-010



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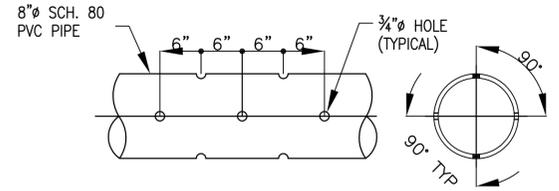


HORIZONTAL GAS WELL TRENCH (FRONT VIEW)

NTS

1
C-002

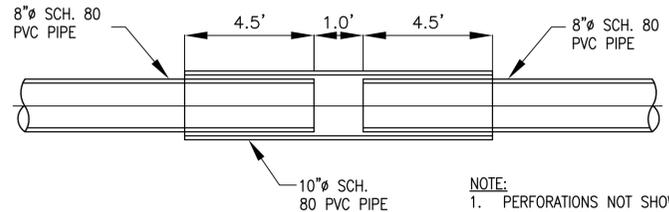
- NOTES:
- 1) CONTRACTOR IS RESPONSIBLE FOR ALL HEALTH AND SAFETY ASPECTS OF ALL CONSTRUCTION ACTIVITIES.
 - 2) HORIZONTAL WELLS SHALL BE INSTALLED AT A MINIMUM FREQUENCY OF 1 PER CLOSURE ACRE.



PERFORATED PIPE

NTS

3
C-011

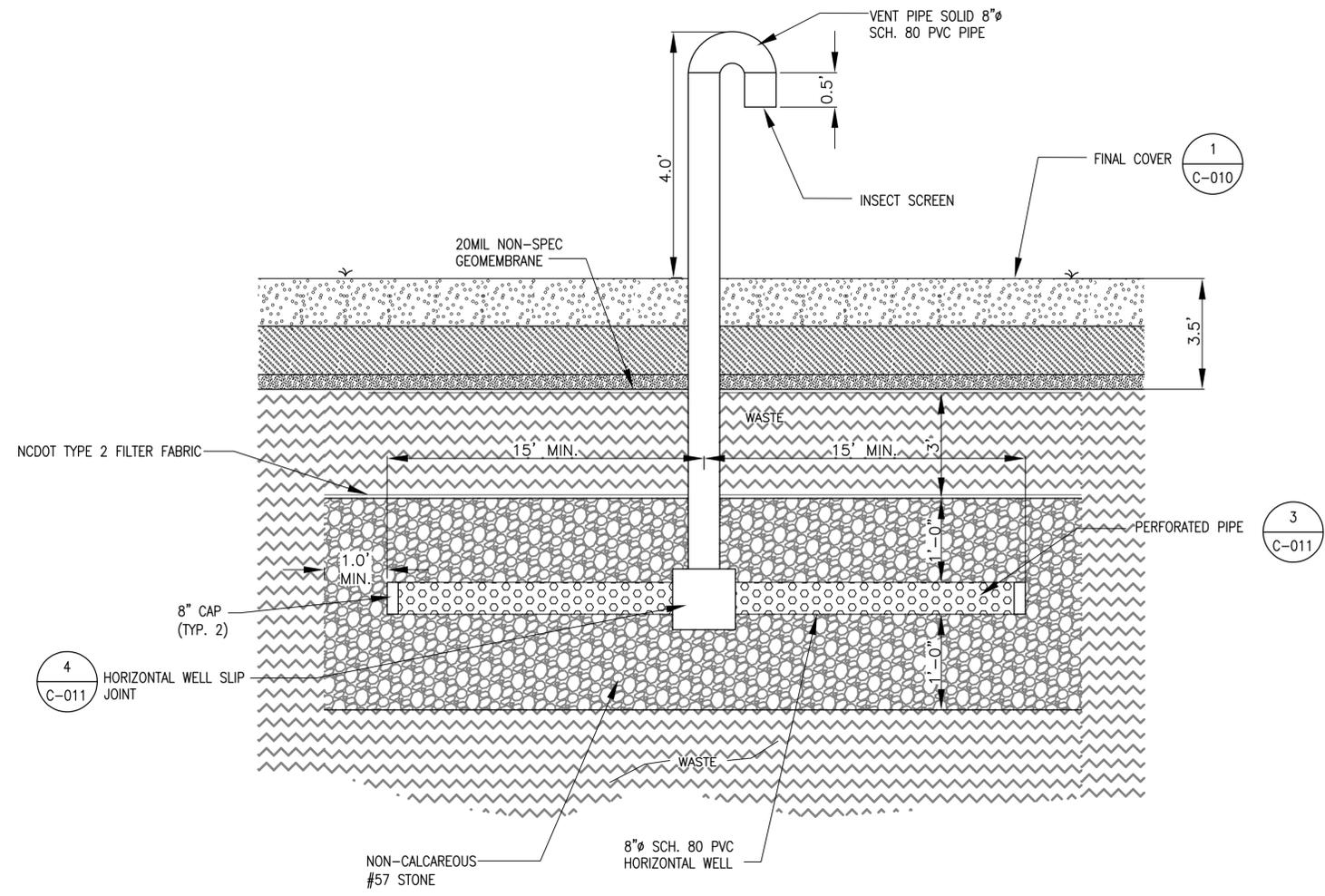


- NOTE:
1. PERFORATIONS NOT SHOWN FOR CLARITY. SEE DETAIL 3 OF THIS SHEET FOR PERFORATED PIPE.

HORIZONTAL WELL SLIP JOINT

NTS

4
C-011



HORIZONTAL GAS WELL TRENCH (SIDE VIEW)

NTS

2
C-002

- NOTES:
- 1) CONTRACTOR IS RESPONSIBLE FOR ALL HEALTH AND SAFETY ASPECTS OF ALL CONSTRUCTION ACTIVITIES.
 - 2) HORIZONTAL WELLS SHALL BE INSTALLED AT A MINIMUM FREQUENCY OF 1 PER CLOSURE ACRE.



DATE	DESCRIPTION	MARK	ISSUED FOR PERMIT
1/2016		1	

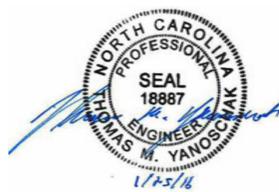
DESIGNED BY: T. YANOSCHAK, P.E.	ISSUE DATE: JANUARY 2016
CHECKED BY: J. MURRAY, P.E.	SCALE: XXX-XX-XX
PROJECT NO.:W912HN 12 D 0024	CONTRACT NO.:XXX-XX-XX
DATE OF SUBMITTAL: 1/15/16	CATEGORY CODE: XXX-XX-XX
FILE NAME: 00C-11.DGN	ANSI D:00C-11.DGN

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100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

HDR ENGINEERING, INC. OF THE CAROLINAS
556 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

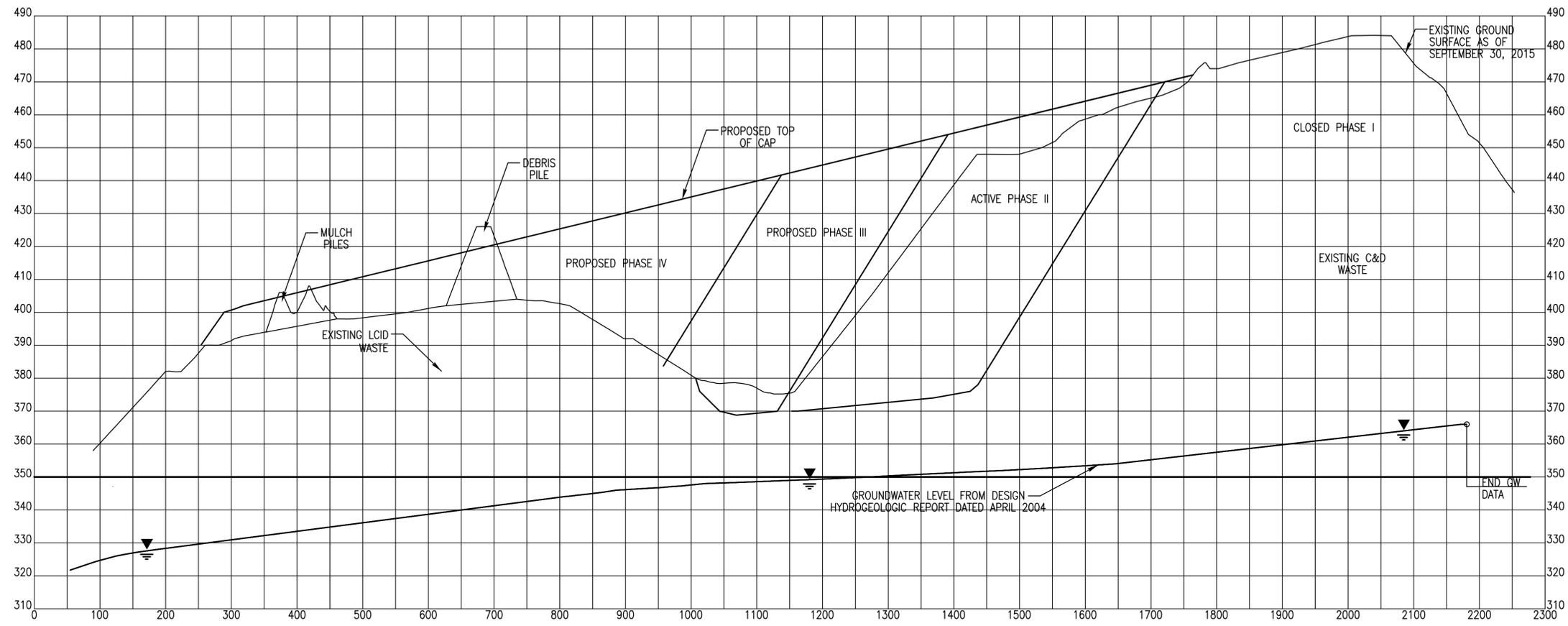
FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL, PHASE III DESIGN
AND PHASE II CLOSURE

MISCELLANEOUS DETAILS (2 OF 2)

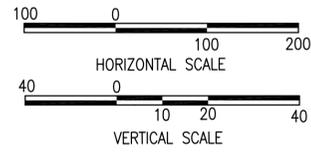


SHEET ID
C-011

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CROSS SECTION A
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C-002



MARK	ISSUED FOR PERMIT	DESCRIPTION	DATE
1			1/2016

DESIGNED BY: T. YANOSCHAK, P.E.	ISSUE DATE: JANUARY 2016
DRAWN BY: M. MURRAY	PROJECT NO.:
CHECKED BY: J. MURRAY, P.E.	CONTRACT NO.:
SUBMITTED BY: T. YANOSCHAK, P.E.	W912HN 12 D 0024
SIZE: ANSI D	CATEGORY CODE XXX-XX-XX
FILENAME: 00C-12.DGN	

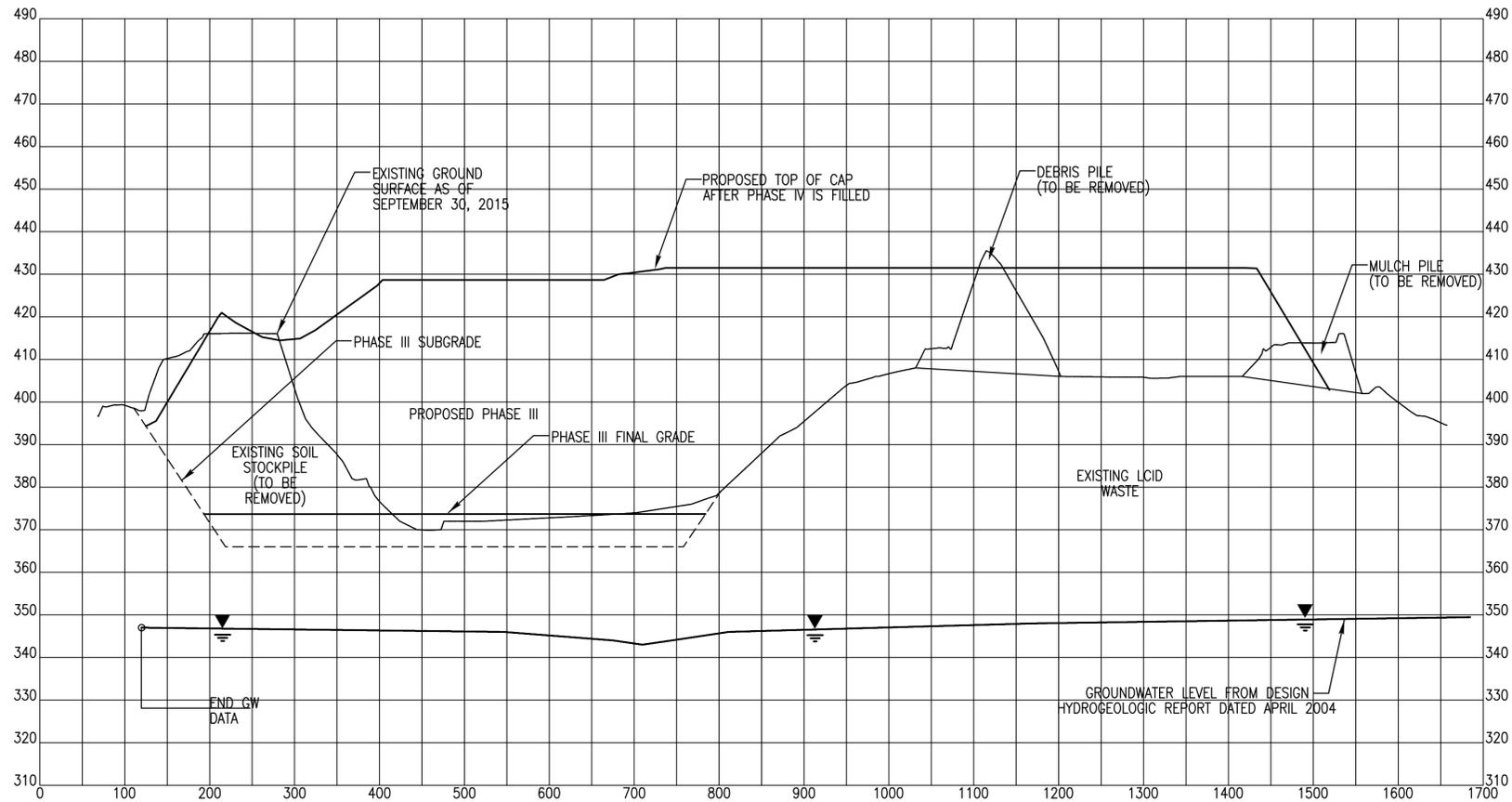
U.S. ARMY CORPS OF ENGINEERS
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SAVANNAH, GEORGIA

HDR ENGINEERING, INC. OF THE CAROLINAS
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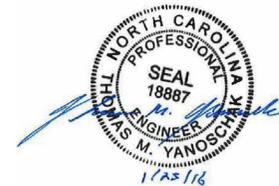
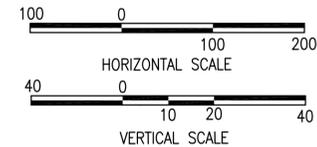
CROSS SECTION (1 OF 2)

SHEET ID
C-012

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CROSS SECTION B
B
C-002



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MARK	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	1/2016

DESIGNED BY: T. YANOSCHAK, P.E.	ISSUE DATE: JANUARY 2016
DRAWN BY: M. J. MURRAY	PROJECT NO.:
CHECKED BY: J. MURRAY, P.E.	CONTRACT NO.:
SUBMITTED BY: T. YANOSCHAK, P.E.	W912HN12 D 0024
FILENAME: 00C-13.DGN	CATEGORY CODE XXX-XX-XX
U.S. ARMY CORPS OF ENGINEERS 100 WEST OGLETHORPE AVENUE SAVANNAH DISTRICT SAVANNAH, GEORGIA	
HDR ENGINEERING, INC. OF THE CAROLINAS 555 FAYETTEVILLE STREET, SUITE 900 RALEIGH, NORTH CAROLINA 27601	

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL, PHASE III DESIGN
AND PHASE II CLOSURE
CROSS SECTION

SHEET ID
C-013



US Army Corps of Engineers

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1			1/2016

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DRAWN BY:	M. J. MURRAY
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DATE:	1/2016
PROJECT NO.:	XXXXXX-XX-XXXX
CONTRACT NO.:	W912HN12 D 0024
CATEGORY CODE:	XXX-XX-XX
FILE NAME:	00C-14.DGN

U.S. ARMY CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH DISTRICT
SAVANNAH, GEORGIA

HDR ENGINEERING, INC. OF THE CAROLINAS
555 FAYETTEVILLE STREET, SUITE 900
RALEIGH, NORTH CAROLINA 27601

FORT BRAGG, NORTH CAROLINA
LAMONT ROAD LANDFILL PHASE III DESIGN
AND PHASE II CLOSURE

MONITORING PLAN

SHEET ID
C-014

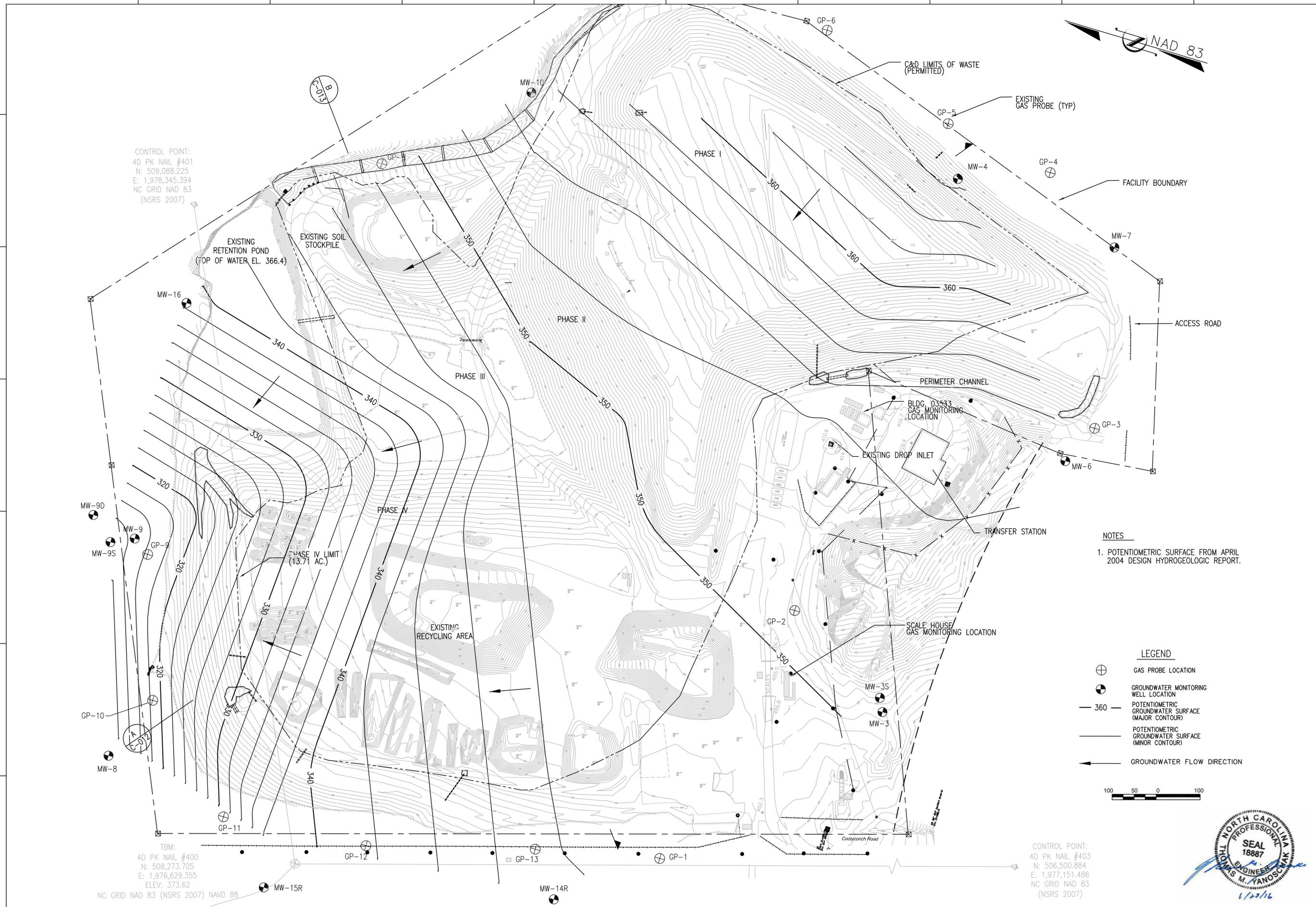
STATUS



CONTROL POINT:
4D PK NAIL #401
N: 509,088.225
E: 1,978,345.394
NC GRID NAD 83
(NSRS 2007)

TBM:
4D PK NAIL #400
N: 508,273.705
E: 1,976,629.355
ELEV: 373.62
NC GRID NAD 83 (NSRS 2007) NAVD 88

CONTROL POINT:
4D PK NAIL #403
N: 506,500.884
E: 1,977,151.486
NC GRID NAD 83
(NSRS 2007)



NOTES
1. POTENTIOMETRIC SURFACE FROM APRIL 2004 DESIGN HYDROGEOLOGIC REPORT.

- LEGEND**
- GAS PROBE LOCATION
 - GROUNDWATER MONITORING WELL LOCATION
 - 360 POTENTIOMETRIC GROUNDWATER SURFACE (MAJOR CONTOUR)
 - POTENTIOMETRIC GROUNDWATER SURFACE (MINOR CONTOUR)
 - GROUNDWATER FLOW DIRECTION

