Permit No.	Date	DIN
57-03	September 30, 2015	25083

RECEIVED
September 17, 2015
Solid Waste Section
Asheville Regional Office

MACON COUNTY MSW LANDFILL

PERMIT NO. 57-03

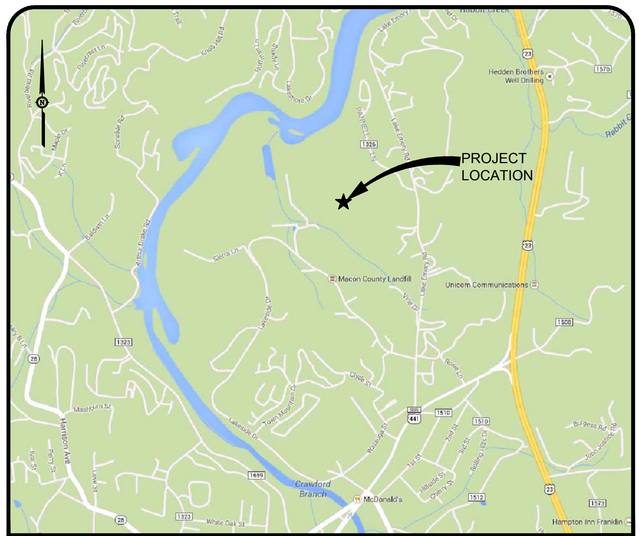
PERMIT TO CONSTRUCT MSW PHASE 3 CELL 1

MACON COUNTY, NORTH CAROLINA

MACON COUNTY

COUNTY MANAGER : DEREK ROLAND
SOLID WASTE DIRECTOR : CHRIS STAHL

PROJECT LOCATION: 35.20315 N 83.372729 W



VICINITY MAP NOT TO SCALE

SCHEDULE OF DRAWINGS

G-001 . . . COVER SHEET & PROJECT VICINITY MAP
G-002 . . . GENERAL NOTES & EXISTING CONDITIONS LEGEND
V-101 . . . FACILITY BOUNDARY PLAT
C-101 . . . OVERALL SITE PLAN AND WELL ABANDONMENT PLAN
C-102 . . . CELL 1 SUBGRADE ELEVATIONS
C-103 . . . CELL 1 CLAY LINER GRADES
C-104 . . . CELL 1 DRAINAGE LAYER GRADES & LEACHATE COLLECTION SYSTEM
C-105 . . . PROPOSED LEACHATE FORCE MAIN PLAN
C-106 . . . CELL 1 CAP GRADES WITH METHANE VENTS AND FINAL EROSION CONTROL PLAN
C-107 . . . INITIAL EROSION CONTROL PLAN
C-108 . . . CELL 1 WASTE FILL SEQUENCE YEAR 1
C-109 . . . CELL 1 WASTE FILL SEQUENCE YEAR 2
C-110 . . . CELL 1 WASTE FILL SEQUENCE YEAR 3
C-111 . . . CELL 1 WASTE FILL SEQUENCE YEAR 4
C-112 . . . CELL 1 WASTE FILL SEQUENCE YEAR 5
C-113 . . . CROSS-SECTION A-A'
C-114 . . . CROSS-SECTION B-B'
C-501 . . . MISCELLANEOUS DETAILS
C-502 . . . MISCELLANEOUS DETAILS
C-503 . . . MISCELLANEOUS DETAILS
C-504 . . . MISCELLANEOUS DETAILS
C-505 . . . MISCELLANEOUS DETAILS
C-506 . . . MISCELLANEOUS DETAILS
C-507 . . . MISCELLANEOUS DETAILS

McGill ASSOCIATES
ENGINEERING · PLANNING · FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH. (828) 252-0575 FIRM LICENSE # C-0459

NORTH CAROLINA PROFESSIONAL SEAL 024993 ENGINEER MARK D. CATHEY 9-30-15

FOR REGULATORY REVIEW

SEPTEMBER 2015

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - Cover2.dwg 9/16/2015 11:45 AM ADAM WALDROUP

NPDES STORMWATER PHASE II REQUIREMENTS FOR CONSTRUCTION SITES

FEDERAL NPDES STORMWATER PHASE II REQUIREMENTS SHALL BE MET BY THE CONTRACTOR FOR ALL CONSTRUCTION SITES LARGER THAN 1 ACRE. THESE REQUIREMENTS ARE SUMMARIZED AS FOLLOWS:

1. – IMPLEMENT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN AND KEEP A COPY OF THE PLAN ON SITE. DEVIATION FROM THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN WILL BE CONSIDERED A VIOLATION OF THE FEDERAL NPDES GENERAL PERMIT.
2. – PREVENT SPILLING OF FUELS, LUBRICANTS, COOLANTS, HYDRAULIC FLUIDS, AND ANY OTHER PETROLEUM PRODUCTS ONTO THE GROUND OR INTO SURFACE WATERS. DISPOSE OF SPENT FUELS APPROPRIATELY.
3. – USE HERBICIDES, PESTICIDES, AND FERTILIZER IN A MANNER CONSISTENT WITH THE FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT AND IN ACCORDANCE WITH LABEL RESTRICTIONS.
4. – CONTROL MANAGEMENT AND DISPOSAL OF LITTER AND SANITARY WASTE FROM THE SITE SO THAT NO ADVERSE IMPACTS TO WATER QUALITY OCCUR.
5. – INSPECT ALL EROSION AND SEDIMENTATION CONTROL FACILITIES EVERY SEVEN CALENDAR DAYS (TWICE IN SEVEN CALENDAR DAYS FOR STORMWATER DISCHARGES TO STREAMS ON THE LATEST EPA–APPROVED 303(d) LIST) AND WITHIN 24 HOURS OF ANY STORM EVENT OF MORE THAN 0.5 INCH OF RAIN IN A 24–HOUR PERIOD. MAINTAIN A RAIN GAUGE ON SITE AND KEEP A RECORD OF THE RAINFALL AMOUNTS AND DATES.
6. – OBSERVE STORMWATER RUNOFF DISCHARGES AND LOOK FOR CLARITY, FLOATING SOLIDS, SUSPENDED OILS, OIL SHEEN AND OTHER OBVIOUS INDICATORS OF POLLUTION AND EVALUATE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES. IF SEDIMENTATION IS LEAVING THE DISTURBED AREA, TAKE IMMEDIATE ACTION TO CONTROL THE DISCHARGE.
7. – KEEP A RECORD OF INSPECTIONS. RECORD ANY VISIBLE SEDIMENTATION FOUND OUTSIDE THE DISTURBED LIMIT AND RECORD MEASURES TAKEN TO CLEAN UP THE SEDIMENT. MAKE THESE RECORDS AVAILABLE TO THE DIVISION OF WATER QUALITY OR ITS AUTHORIZED AGENT UPON REQUEST.
8. – MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES TO KEEP THEM OPERATING AT OPTIMUM EFFICIENCY.

CONTACT THE ENGINEER FOR A COPY OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM.

VIOLATIONS OF THE NPDES STORMWATER RULES CONSTITUTE A VIOLATION OF THE FEDERAL CLEAN WATER ACT AND ARE SUBJECT TO CIVIL PENALTIES OF UP TO $27,000 PER DAY. UNDER STATE LAW, A DAILY CIVIL PENALTY OF $10,000 PER VIOLATION CAN BE ASSESSED FOR VIOLATION OF TERMS OF THE PERMIT.

GENERAL CONSTRUCTION NOTES

1. FINISH GRADE TOLERANCES SHALL BE AS NOTED IN THE SPECIFICATIONS. THE ENGINEER MAY MAKE GRADE CHANGES AS REQUIRED IN THE FIELD WITHOUT AFFECTING THE UNIT BID PRICE FOR UNCLASSIFIED EXCAVATION.
2. UNLESS OTHERWISE STATED, ALL FILL AREAS SHALL BE CONSTRUCTED IN LAYERS OF 8" MAXIMUM THICKNESS, WITH WATER ADDED OR SOIL CONDITIONED TO THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE ENGINEER AND COMPACTED WITH A SHEEP'S FOOT ROLLER TO A COMPACTION EQUAL TO OR GREATER THAN 95% (100% IN THE TOP 2' OF THE SUB GRADE BELOW ROADWAYS AND PARKING LOTS) OF THE DENSITY OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH THE STANDARD PROCTOR METHOD OF MOISTURE–DENSITY RELATIONSHIP TEST, ASTM D698 OR AASHTO–99 UNLESS SPECIFIED IN OTHER SPECIFICATIONS.
3. ENTIRE AREA TO BE GRADED SHALL BE CLEARED AND GRUBBED. NO FILL SHALL BE PLACED ON ANY AREA NOT CLEARED AND GRUBBED.
4. ALL SOIL EROSION CONTROL MEASURES REQUIRED BY THE GRADING PLAN SHALL BE PERFORMED PRIOR TO GRADING, CLEARING OR GRUBBING. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC., SHALL BE MAINTAINED IN WORKABLE CONDITION FOR THE LIFE OF THE PROJECT AND SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY ON THE ENGINEER'S APPROVAL. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO CLEARING AND GRUBBING. IF DURING THE LIFE OF THE PROJECT, A STORM CAUSES SOIL EROSION WHICH CHANGES FINISH GRADES OR CREATES "GULLIES" AND "WASHED AREAS", THESE SHALL BE REPAIRED AT NO EXTRA COST, AND ALL SILT WASHED OFF OF THE PROJECT SITE ONTO ADJACENT PROPERTY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AT NO EXTRA COST. THE CONTRACTOR SHALL ADHERE TO ANY APPROVED EROSION CONTROL PLANS WHETHER INDICATED IN THE CONSTRUCTION PLANS OR UNDER SEPARATE COVER.
5. DISPOSABLE MATERIAL
   - A. CLEARING AND GRUBBING WASTES SHALL BE DISPOSED OF ON SITE AT THE DIRECTION OF THE OWNER.
   - B. ON SITE BURNING IS AN ACCEPTABLE METHOD OF DISPOSING OF FLAMMABLE WASTES. WHEN BURNING IS ANTICIPATED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND MEETING GOVERNING CODES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR HIS REPRESENTATIVE AS TO THE SPECIFIC LOCATION OF BURNING.

     AFTER BURNING IS COMPLETED, PURE ASH MAY BE DISPOSED OF BY MIXING WITH FILL DIRT. THE CONTRACTOR SHALL NOT HOLD UP WORK PROGRESS FOR THE PURPOSE OF WAITING FOR A "BURNING DAY".
6. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ADJUSTMENT OF ALL UTILITY SURFACE ACCESSES WHETHER HE PERFORMS THE WORK OR A UTILITY COMPANY PERFORMS THE WORK.
7. THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AREA AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE SPECIFICATIONS.
8. ALL AREAS WHERE THERE IS EXPOSED DIRT SHALL BE SEEDED, FERTILIZED AND MULCHED ACCORDING TO THE SPECIFICATIONS. THE FINISHED SURFACE SHALL BE TO GRADE AND SMOOTH, FREE OF ALL ROCKS LARGER THAN 3", EQUIPMENT TRACKS, DIRT CLODS, BUMPS, RIDGES AND GOUGES PRIOR TO SEEDING; THE SURFACE SHALL BE LOOSENED TO A DEPTH OF ±4"–6" TO ACCEPT SEED. THE CONTRACTOR SHALL NOT PROCEED WITH SEEDING OPERATIONS WITHOUT FIRST OBTAINING THE ENGINEER'S APPROVAL OF THE GRADED SURFACE. ALL SEEDING SHALL BE PERFORMED BY A MECHANICAL "HYDRO–SEEDER". HAND SEEDING SHALL BE AUTHORIZED ON AN AREA BY AREA APPROVAL BY THE ENGINEER. DISTURBED AREAS SHOULD THEN BE MATTED WITH SHORT–TERM PHOTODEGRADABLE EROSION CONTROL MATTING.
9. WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) CONFORMING TO AASHTO M–170, AS CONTAINED IN NCDOT STANDARD SPECIFICATION 1032–9 FOR WALL "B" TYPE.

   WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE). SMOOTH WALL INTERIOR, WITH WATER TIGHT JOINTS, BACKFILLED WITH # 57 WASHED STONE UP TO MIN. 6" OVER THE TOP OF THE PIPE. HDPE PIPE USED FOR STORM DRAINAGE DETENTION SYSTEMS SHALL BE ADS N12 WT OR APPROVED EQUAL.

   WHERE SPECIFIED, CORRUGATED METAL STORM DRAIN PIPE (CMP) SHALL BE ALUMINIZED TYPE 2 CORRUGATED STEEL MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M–36. THE PIPE SHALL BE MANUFACTURED FROM ALUMINIZED STEEL TYPE 2 MATERIAL CONFORMING TO THE REQUIREMENTS OF AASHTO M–274. ALL PIPE SHALL BE FURNISHED WITH REROLLED ENDS AND SHALL BE JOINED WITH HUGGER BANDS. THE USE OF DIMPLE BANDS WILL NOT BE ALLOWED. PIPE THROUGH 24" DIAMETER SHALL BE 16 GAUGE, PIPE THROUGH 42" DIAMETER SHALL BE 14 GAUGE, PIPE THROUGH 54" DIAMETER SHALL BE 12 GAUGE.
10. CONTRACTOR SHALL VERIFY ALL ELEVATIONS BEFORE INSTALLATION OF FACILITIES.
11. CATCH BASINS CAST–IN–PLACE SHALL CONFORM TO THE REQUIREMENTS OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (LATEST EDITION) ARTICLES 840–1 THROUGH 840–3. CURB INLET CATCH BASIN SHALL CONFORM TO NCDOT STANDARD DETAILS 840.02 THROUGH 840.04. DROP INLETS SHALL CONFORM TO STANDARD DETAIL 840.14. JUNCTION BOXES SHALL CONFORM TO STANDARD DETAIL 840.31.
12. CONCRETE AND MASONRY SHALL MEET THE REQUIREMENTS OF APPROPRIATE SECTION OF NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES (LATEST EDITION). CONCRETE SHALL BE CLASS A OR B, 4000 PSI MINIMUM, MEETING THE REQUIREMENTS OF SECTION 1000, CONSTRUCTED IN ACCORDANCE WITH SECTION 825. MASONRY SHALL MEET THE REQUIREMENTS OF SECTION 1040, CONSTRUCTED IN ACCORDANCE WITH SECTION 830 AND/OR 834.
13. PRE CAST CONCRETE BOXES ARE ACCEPTABLE ALTERNATIVES FOR PROPOSED CATCH BASINS.

NORTH CAROLINA LAND QUALITY SECTION EROSION CONTROL NOTES

GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF ENERGY, MINERAL AND LAND RESOURCES, LAND QUALITY SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

1. – PRIOR TO BEGINNING WORK ON THE PROJECT THE CONTRACTOR SHALL OBTAIN FROM THE OWNER A COPY OF THE "EROSION AND SEDIMENT CONTROL APPROVAL" FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF ENERGY, MINERAL AND LAND RESOURCES, OR THE LOCAL AUTHORIZED PROGRAM. THE APPROVAL NOTICE MUST BE POSTED ON–SITE DURING ALL GRADING AND CONSTRUCTION ACTIVITIES.
2. – PRIOR TO BEGINNING WORK ON THE PROJECT THE CONTRACTOR SHALL OBTAIN A COPY OF THE 404/401 PERMITS AND ADHERE STRICTLY TO THE CONDITIONS OF THE PERMITS FOR ALL PROPOSED STREAM AND WETLANDS IMPACTS.
3. – INSTALL ALL EROSION CONTROL MEASURES AS REQUIRED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF ENERGY, MINERAL AND LAND RESOURCES, LAND QUALITY SECTION. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT THE END AND BEGINNING OF EACH WORK DAY AND MAINTAINED AS REQUIRED.
4. – CONTRACTOR IS TO PLACE PERMANENT STAKES MARKING CLEARLY THE 30' BUFFER FOR STREAMS WHERE SHOWN ON THE PLANS AND THE MARKERS ARE TO BE VISIBLE AT ALL TIMES DURING CONSTRUCTION.
5. – OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON–SITE INSPECTION BY A REPRESENTATIVE OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF ENERGY, MINERAL AND LAND RESOURCES, LAND QUALITY SECTION.
6. – PROCEED WITH GRADING, CLEARING AND GRUBBING. NOTE: NO OFF SITE DISPOSAL OF MATERIAL IS ALLOWED UNLESS THE DISPOSAL SITE HAS AN APPROVED EROSION CONTROL PLAN.
7. – SEED AND PLACE EROSION CONTROL MATTING ON ALL CUT AND FILL SLOPES THAT ARE NOT ROCK IMMEDIATELY UPON COMPLETION OF SLOPE STABILIZATION.
8. – ALL TEMPORARY STREAM AND CREEK CROSSINGS FOR EQUIPMENT DURING CONSTRUCTION SHALL BE MADE USING TEMPORARY BRIDGES. NO STREAM BANK OR STREAM BED DISTURBANCE SHALL BE ALLOWED FOR EQUIPMENT CROSSINGS.
9. – SEED AND MULCH DENUDED AREA WITHIN 14 DAYS AFTER FINISHED GRADE ARE ESTABLISHED. SEED AND SOIL AMENDMENTS SHALL BE PLACED ON A PREPARED SEEDBED AT THE FOLLOWING RATES PER ACRE. STRAW MULCH SHALL BE TACKED WITH TACKING AGENT APPLIED BY HYDROSEEDER.

LIME	4,000 LBS	
FERTILIZER (10–10–10)	1,000 LBS	
KY–31 FESCUE (PPA PRATENSIS)	100 LBS	(MOWED AND MAINTAINED AREAS ONLY)
OR		
CREEPING RED FESCUE	100 LBS	(NATURAL AREAS AND STREAMBANKS)
STRAW MULCH	60–80 BALES	

FOR SUMMER SEEDING ADD TO THE ABOVE:

GERMAN MILLET (SETARIA ITALICA)	40 LBS
SMALL–STEMMED SUDAN GRASS (SORGHUM BICOLOR)	50 LBS

FOR WINTER SEEDING ADD TO THE ABOVE:

RYE GRAIN (SECASE CEREALE)	120 LBS

IF HYDROSEEDING, WOOD CELLULOSE MAY BE USED IN ADDITION TO STRAW MULCH AT THE RATE OF 1,000 LBS PER ACRE.

ALL SEEDING SHALL BE MAINTAINED, WATERED ETC.., UNTIL A PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED OVER ALL DISTURBED AREAS.

FOR ALL SLOPES 2:1 OR STEEPER ADD TO THE ABOVE:

PURE LIVE SEED SWITCHGRASS	4 LBS
BROWNTOP MILLET OR GERMAN MILLET (PENNISETUM GLAUCUM)	8 LBS
GRAIN SORGHUM (SORGHUM BICOLOR (L.) MOENCH SSP. BICOLOR)	2 LBS

ALL SLOPES 2:1 OR STEEPER SHALL BE COVERED BY EROSION CONTROL MATTING, EXCEPT FOR THE SOIL BORROW AREA IN FUTURE CELL 2.

NATIVE SEEDING:

THE CORRECT SEEDBED pH IS 5.5 TO 6.5.

APPLY ZERO NITROGEN AT PLANTING.

INCORPORATE SOIL AMENDMENTS INTO TOPSOIL/ROOT ZONE BEFORE SEEDING.

FIRM SEEDBED BEFORE SEEDING (TRAVEL WITH DOZER CLEATS).

SEEDING DEPTH FOR ALL NATIVE SSP. EXCEPT E.GAMAGRASS (TRIPSACUM DACTYBIDES) NEED TO BE 1/4" – 1/2". GREATER DEPTHS CAUSE HIGH SEED MORTALITY.

SPECIALIZED SEEDING IMPLEMENTS ARE REQUIRED. SEED MIXES AND RATES TO MATCH SEEDER USED. A NO–TILL, DROP SEEDER OR BROADCASTER WITH PRECISION METERING TO CONTROL SMALL SEED FLOW AND PICKER WHEEL AGITATORS TO HANDLE FLUFFY SEED ARE BEST SUITED FOR NATIVE SEED.

NPDES PERMITS - NOTE -FOR PROJECTS REQUIRING NPDES PERMITS, THE FOLLOWING STABILIZATION SCHEDULE SHALL APPLY:

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

10. – MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED. INSPECT ALL EROSION CONTROL MEASURES WEEKLY, AFTER EVERY RAIN AND DAILY DURING PROLONGED RAIN EVENTS.
11. – REMOVE SOIL EROSION CONTROL MEASURES AND STABILIZE THESE AREAS.
12. – REQUEST FINAL APPROVAL BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF LAND RESOURCES, LAND QUALITY SECTION.

EXISTING CONDITIONS LEGEND

TEL PED	TELEPHONE PEDESTAL
ELEC PED	ELECTRIC PEDESTAL
CATV PED	CABLE TV PEDESTAL
SIGN	SIGN
CATV	UNDERGROUND CABLE TV SIGN
UG FOC	UNDERGROUND FIBER OPTIC CABLE SIGN
UG TCS	UNDERGROUND TELEPHONE CABLE SIGN
UG GAS	UNDERGROUND GAS LINE SIGN
UG ELEC	UNDERGROUND ELECTRIC LINE SIGN
LP	LIGHT POLE
UP	UTILITY POLE
	GUY WIRE ANCHOR
TSP	TRAFFIC SIGNAL POLE
RR	RAILROAD CROSSING SIGNAL
MH	MANHOLE
SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
COMMH	COMMUNICATION MANHOLE
ELMH	ELECTRICAL MANHOLE
J.B.	JUNCTION BOX
SPIGOT	SPIGOT/YARD HYDRANT
C.O.	SEWER CLEAN–OUT
E.SS	ELECTRIC SERVICE STUB–OUT
G.SS	GAS SERVICE STUB–OUT
CB	CATCH BASIN
CI	CURB INLET
WM	WATER METER
FH	FIRE HYDRANT
WV	WATER VALVE
BLOW OFF VALV.	BLOW OFF VALVE
G/M	GAS METER
G/V	GAS VALVE
IDV	IRRIGATION CONTROL VALVE
PIV	POST INDICATOR VALVE
E.JUNC	ELECTRIC JUNCTION BOX OR OUTLET
SIG BOX	TRAFFIC SIGNAL BOX
	CALCULATED POINT
IPS	1/2" REBAR SET WITH CAP
	CONCRETE MONUMENT
CM–R/W	RIGHT–OF–WAY MONUMENT
DOT MON	D.O.T. CONTROL POINT
RBF	REBAR FOUND
RRSPIKE	RAILROAD SPIKE
PK NL	PK NAIL FOUND / SET
SPINDLE	SPINDLE FOUND / SET
CPHUB	HUB & TACK SET
CP/NL GPS	CONTROL POINT NAIL SET / FOUND
CP/NL	CONTROL POINT/NAIL SET GPS
CP/TEMP	CONTROL POINT TEMPORARY MARK
NGS METAL ROD	NATIONAL GEODETIC SURVEY METAL ROD
NGS CM	NATIONAL GEODETIC SURVEY CONCRETE MONUMENT
	TEMPORARY CONTROL POINT SET
	NETWORK TRIANGULATION POINT
STAKE	STAKE FOUND
40	INTERSTATE HIGHWAY
66	U.S. HIGHWAY
FFE ELEVATION	FINISHED FLOOR ELEVATION
MW	MONITORING WELL
PZ	PIEZOMETER
	LANDFILL GAS MONITORING PROBE
	SURFACE WATER SAMPLING LOCATION
	LANDFILL GAS VENT
	LANDFILL GAS COLLECTION WELLHEAD
	POTABLE WATER WELL
MB	MAILBOX OR PAPER BOX
PB	POSTAL DROP BOX
SAT DISH	SATELLITE DISH
YARD ORNAMENT	STATUE, BIRD BATHS, ETC.
	TREES
	SHRUBS / BUSHES
	(H) HORIZONTAL GROUND DISTANCE
	(G) NC STATE PLANE GRID DISTANCE
	CULVERT
X	FENCE
	SILT FENCE
	GUARD RAIL
S	APPROXIMATE LOCATION OF EXISTING SEWER LINES
W	APPROXIMATE LOCATION OF EXISTING WATER LINES
G	APPROXIMATE LOCATION OF EXISTING GAS LINES
	TOP & TOE LINES
DL	DITCH LINES
CTV	APPROXIMATE LOCATION OF UNDERGROUND CABLE TV LINE
CTV	APPROXIMATE LOCATION OF OVERHEAD CABLE TV LINE
FOC	APPROXIMATE LOCATION OF UNDERGROUND FIBER OPTIC CABLE LINE
E	APPROXIMATE LOCATION OF UNDERGROUND ELECTRIC LINE
E	APPROXIMATE LOCATION OF OVERHEAD ELECTRIC LINE
T	APPROXIMATE LOCATION OF UNDERGROUND TELEPHONE LINES
T	APPROXIMATE LOCATION OF OVERHEAD TELEPHONE LINES
ROW	RIGHT–OF–WAY
	TREELINE
	SHRUBLINE
	PROPERTY LINE NOT SURVEYED
	ROCKLINE
	STREAM LINE
	CENTERLINE ROADS
℄	CENTERLINE OTHER THAN ROADS
	SWAMPLINE/WETLANDS
U	APPROXIMATE LOCATION OF OVERHEAD UTILITY LINE

IPS	IRON PIN SET
RBF	REBAR FOUND
OTIPF	OPEN TOP IRON PIN FOUND
CTIPF	CRIMPED TOP IRON PIN FOUND
CMU	CONCRETE MASONRY UNIT
R/W	RIGHT OF WAY
℄	CENTERLINE
C	CURVE (SEE CURVE TABLE)
POB	POINT OF BEGINNING
CP	CALCULATED POINT
PB	PLAT BOOK
DB	DEED BOOK
L	LINE (SEE LINE TABLE)
BLDG	BUILDING
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CPP	CORRUGATED PLASTIC PIPE
DIP	DUCTILE IRON PIPE
E&T	ELECTRIC & TELEPHONE
FOC	FIBER OPTIC CABLE
GIP	GALVANIZED IRON PIPE
O/H	OVERHEAD
RCP	REINFORCED CONCRETE PIPE
U/G	UNDERGROUND
VCP	VITRIFIED CLAY PIPE
PVC	POLYVINYL CHLORIDE PIPE
FFE	FINISHED FLOOR ELEVATION
PG	PAGE
REF	REFERENCE
DOT	DEPARTMENT OF TRANSPORTATION
NGS	NATIONAL GEODETIC SYRVEY
NCSP	NORTH CAROLINA STATE PLANE
MTR BOX	METER BOX

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME:
13.00726-3 PTC - MASTER 5.19.15.dwg

GENERAL NOTES AND EXISTING CONDITIONS LEGEND

SHEET
G-002

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - MASTER 5.19.15.dwg 6/5/2015 12:24 PM ADAM WALDROUP

Franklin Landfill Photogrammetry Ground Control Points

Point No.	Latitude (N)	Longitude (W)	Northing	Easting	Elevation	Combined Factor	Convergence	Description
2	35 12 09.78049	83 22 43.31934	557548.43	692406.65	2089.15	0.999777503	-2 31 38.1	RBSGPS
86	35 12 16.08827	83 22 44.51263	558189.87	692335.85	2084.95	0.999777678	-2 31 38.8	CPNLGPS
661	35 12 07.89160	83 22 54.22952	557397.60	691493.80	2101.65	0.999776912	-2 31 44.4	RBSGPS
49000	35 12 22.02673	83 22 08.69394	558658.72	695331.50	2072.67	0.999778244	-2 31 18.1	RBSGPS
49001	35 12 00.77317	83 23 00.49324	556701.60	690942.78	2035.15	0.999780122	-2 31 48.0	RBSGPS
49002	35 11 50.49344	83 22 21.03914	555519.03	694167.78	2178.47	0.999773317	-2 31 25.3	RBSGPS
49003	35 12 08.02145	83 22 32.11319	557329.79	693327.78	2054.30	0.999779177	-2 31 31.6	RBSGPS
49004	35 12 23.58964	83 22 43.55453	558943.98	692448.71	2053.78	0.999779139	-2 31 38.3	RBSGPS
49005	35 11 56.17598	83 22 47.76777	556190.70	691977.22	2075.11	0.999778232	-2 31 40.7	RBSGPS
99900	35 11 37.79341	83 21 43.78747	554100.40	697199.68	2152.59	0.999774617	-2 31 03.8	NGSCM CITY
99901	35 11 30.69142	83 23 41.75383	553814.79	687387.68	2130.52	0.999775700	-2 32 11.8	CORS FRKN

Average combined scale factor for target points at the site is 0.999777814.

Northing and Easting coordinates are given in US Survey Feet on the North Carolina State Plane coordinate system.

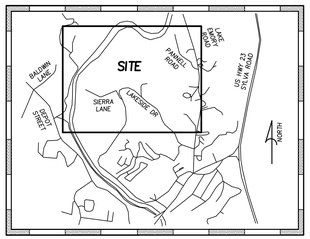
Horizontal coordinates are NAD 83(1986) relative to NGS station CITY and CORS station FRKN.

The vertical datum is a localized datum. All elevations are orthometric heights and are relative to Point No. 2 listed above. The elevation for Point No. 2 was established by Brian T. Moore, PLS and is 0.39 feet above local NAVD88 observations using geoid 09.

Coordinates calculated from GPS observations dated April 24, 2012.
The 2009 geoid model was used for computations.

The Global Positioning System (GPS) observations for this survey were performed to the Geospatial Positioning Accuracy Standards, Part 2: Standards for Geodetic Networks at the 2-Centimeter accuracy classification (95% confidence) using static GPS methods. FGDC Document FGDC-STD-007.2-1998

VICINITY MAP — NOT TO SCALE



LEGEND

- ⊠ NGS CM = NATIONAL GEODETIC SURVEY CONCRETE MONUMENT
- △ CP = CALCULATED POINT
- ● RBF = REBAR FOUND
- ○ RBS GPS = 1-1/2" REBAR SET GLOBAL POSITIONING SYSTEM
- (G) = NC STATE PLANE GRID DISTANCE
- (H) = HORIZONTAL GROUND DISTANCE
- INDICATES PROPERTY LINE
- INDICATES LINE NOT SURVEYED AT THIS TIME
- INDICATES SEPARATION OF PLAT LINE
- INDICATES INTERIOR PROPERTY LINE
- INDICATES RESOURCE RECOVERY FACILITY BOUNDARY
- INDICATES FIELD SURVEYED STREAM LINE ALONG RESOURCE RECOVERY FACILITY BOUNDARY
- INDICATES TIE LINE
- INDICATES WASTE AREAS
- INDICATES BUILDING

ACREAGE TABLE	
MACON MSWLF FACILITY	190.13

SURVEY NOTES:

Field work completed: April 29, 2015
Office work completed: June 4 2015

All coordinates shown are Horizontal Datum: NAD83(1986)
Vertical Datum: Macon County localized datum

Areas computed by coordinate method.

Property shown hereon is subject to the rules, regulations, ordinances and/or jurisdictions of local, state, and/or federal agencies if any. The requirements of said rules, regulations, ordinances, and/or the limits of said jurisdictions are not shown hereon unless stated otherwise.

Underground installations or improvements including building foundations have not been located except as shown hereon.

Not all above ground improvements are shown.

All distances shown on this map are horizontal ground lengths unless otherwise noted. To convert to grid distances, multiply by the average combined scale factor of 0.999777814.

No missing corners were set by surveyor except as shown hereon as 'RBS'.

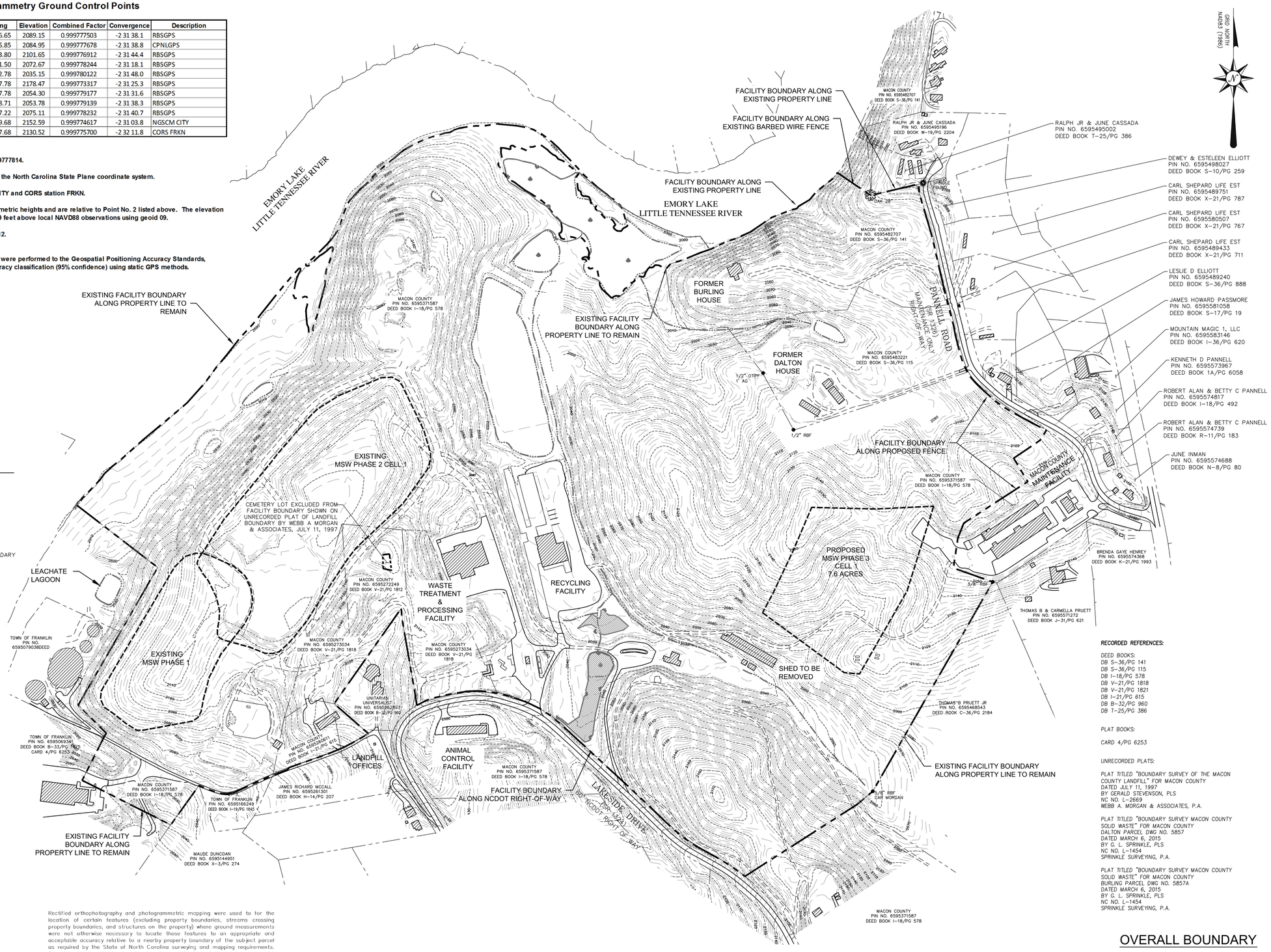
The purpose of this survey is to show the new location of the Macon County MSW Landfill Facility boundary. The property corners shown on this plat were field located by McGill Associates and used to position Deed and Plat Descriptions for establishing this new Facility Boundary. Portions of this facility boundary has been previously surveyed and recorded in the office of the Register of Deeds for Macon County, North Carolina.

This survey depicts both the boundary survey performed by McGill Associates and the calculated facility boundary lines as positioned from deed and plat information recorded in the office of the Register of Deeds for Macon County, North Carolina. The facility boundary lines are clearly defined by a distinct linetype and are labeled with the source of the recorded information. The reference deeds and plats that comprise the facility boundary are listed on this plat. Misclosures for property lines as calculated from deed and plat information for all parcels was found to be less than 0.10 feet. The reference deeds and plats that comprise the facility boundary are listed on this plat.

SURVEYOR'S CERTIFICATION

I, Christopher F. Jordan, certify that this plat was drawn under my supervision from deed description recorded in Book 2590/Pg 1758, Book 2590/PG 1748, Plat Book 63/PG 30; that the ratio of precision as calculated meets or exceeds 1:10,000; that this plat was prepared in accordance with G.S. 47-30 section F-11-c1 and that the survey is of an existing parcel or parcels of land and does not create a new street or change an existing street. Witness my dated original seal and signature.

CHRISTOPHER F. JORDAN NC PLS L-4956 — June 4, 2015 DATE



RECORDED REFERENCES:

DEED BOOKS:
DB S-36/PG 141
DB S-36/PG 115
DB I-18/PG 578
DB V-21/PG 1818
DB V-21/PG 1821
DB I-21/PG 615
DB B-32/PG 960
DB T-25/PG 386

PLAT BOOKS:

CARD 4/PG 6253

UNRECORDED PLATS:

PLAT TITLED "BOUNDARY SURVEY OF THE MACON COUNTY LANDFILL" FOR MACON COUNTY
DATED JULY 11, 1997
BY GERALD STEVENSON, PLS
NC NO. L-2669
WEBB A. MORGAN & ASSOCIATES, P.A.

PLAT TITLED "BOUNDARY SURVEY MACON COUNTY SOLID WASTE" FOR MACON COUNTY
DALTON PARCEL DWG NO. 5857
DATED MARCH 6, 2015
BY G. L. SPRINKLE, PLS
NC NO. L-1454
SPRINKLE SURVEYING, P.A.

PLAT TITLED "BOUNDARY SURVEY MACON COUNTY SOLID WASTE" FOR MACON COUNTY
BURLING PARCEL DWG NO. 5857A
DATED MARCH 6, 2015
BY G. L. SPRINKLE, PLS
NC NO. L-1454
SPRINKLE SURVEYING, P.A.

Rectified orthophotography and photogrammetric mapping were used to for the location of certain features (excluding property boundaries, streams crossing property boundaries, and structures on the property) where ground measurements were not otherwise necessary to locate those features to an appropriate and acceptable accuracy relative to a nearby property boundary of the subject parcel as required by the State of North Carolina surveying and mapping requirements. Complete details of this mapping and the certification of the photogrammetrist can be found in the photogrammetrist's survey report.

Macon County Landfill was flown and photographed on April 29, 2012, project no. N12-0040 and Dalton and Burling Tracts were flown and photographed on November 07, 2014 by Carolina Resource Mapping, Inc., project no. N14-0070.

Orthophotography and photogrammetry were performed by:
Carolina Resource Mapping, Inc. NC, Corporate No. C-2264
Scott C. Williams, NC PLS L-4701, PPS
3517 Wrightsville Avenue, Suite B
Wilmington, NC 28403
(910) 799-8100

OVERALL BOUNDARY

GRAPHIC SCALE — 200 0 100 200 400 — 1 INCH = 200 FEET

NO.	DATE	BY	REVISION DESCRIPTION
1	08-31-2015	CFJ	ADD CONTOURS FROM PHOTOGAMMETRY PER PERMITTING DEPARTMENT

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

NORTH CAROLINA PROFESSIONAL SEAL L-4956 LAND SURVEYOR CHRISTOPHER F. JORDAN

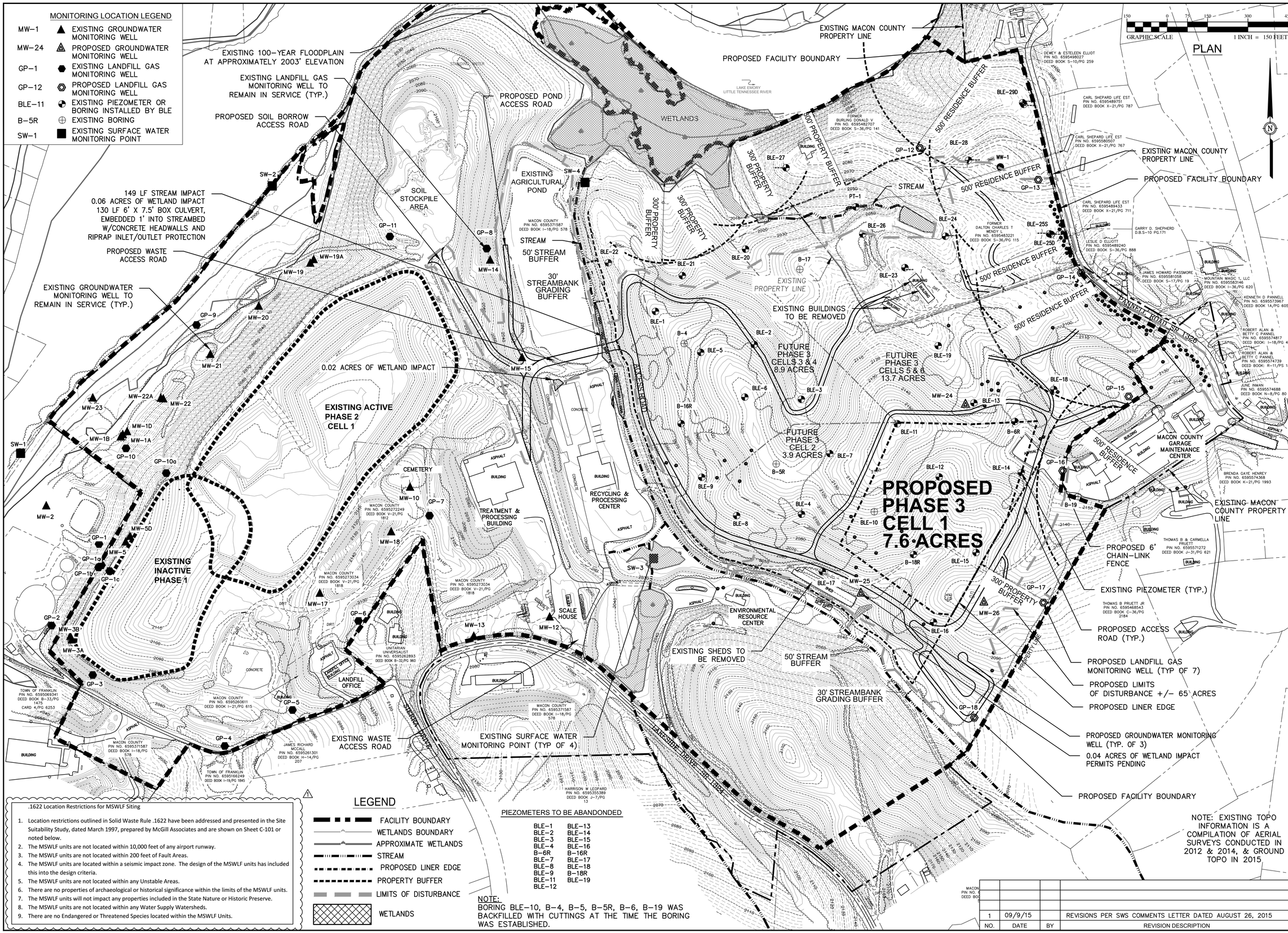
MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 15-150 / 13.00726
DATE: MAY 2015
DESIGNED BY: CFJ
CADD BY: CFJ
DESIGN REVIEW: JDG
CONST. REVIEW: N/A
FILE NAME: 15-150 Macon County Facility Boundary.dwg
CD001192

FACILITY BOUNDARY PLAT

FIGURE
V-101

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\15-150 Macon County Facility Boundary.dwg 9/1/2015 10:21 AM ADAM WALDROUP



.1622 Location Restrictions for MSWLF Siting

1. Location restrictions outlined in Solid Waste Rule .1622 have been addressed and presented in the Site Suitability Study, dated March 1997, prepared by McGill Associates and are shown on Sheet C-101 or noted below.
2. The MSWLF units are not located within 10,000 feet of any airport runway.
3. The MSWLF units are not located within 200 feet of Fault Areas.
4. The MSWLF units are located within a seismic impact zone. The design of the MSWLF units has included this into the design criteria.
5. The MSWLF units are not located within any Unstable Areas.
6. There are no properties of archaeological or historical significance within the limits of the MSWLF units.
7. The MSWLF units will not impact any properties included in the State Nature or Historic Preserve.
8. The MSWLF units are not located within any Water Supply Watersheds.
9. There are no Endangered or Threatened Species located within the MSWLF Units.

LEGEND

- FACILITY BOUNDARY
- WETLANDS BOUNDARY
- APPROXIMATE WETLANDS
- STREAM
- PROPOSED LINER EDGE
- PROPERTY BUFFER
- LIMITS OF DISTURBANCE
- WETLANDS

PIEZOMETERS TO BE ABANDONDED

BLE-1	BLE-13
BLE-2	BLE-14
BLE-3	BLE-15
BLE-4	BLE-16
B-6R	B-16R
BLE-7	BLE-17
BLE-8	BLE-18
BLE-9	B-18R
BLE-11	BLE-19
BLE-12	

NOTE:
BORING BLE-10, B-4, B-5, B-5R, B-6, B-19 WAS BACKFILLED WITH CUTTINGS AT THE TIME THE BORING WAS ESTABLISHED.

NO.	DATE	BY	REVISION DESCRIPTION
1	09/9/15		REVISIONS PER SWS COMMENTS LETTER DATED AUGUST 26, 2015

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH.(828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: FEB 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - C-101 OVERALL SITE PLAN.dwg

OVERALL SITE PLAN AND WELL ABANDONMENT PLAN

SHEET
C-101

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - C-101 OVERALL SITE PLAN.dwg 9/16/2015 11:55 AM ADAM WALDROUP

STOCKPILE AREA

EXISTING 100-YEAR FLOODPLAIN

PROPOSED 20' SOIL BORROW ACCESS ROAD

PROPOSED 16' POND ACCESS ROAD

PROPOSED 16' ACCESS ROAD (TYP.)

EXISTING MACON COUNTY PROPERTY LINE

PLAN

FUTURE STOCKPILE AREA

STOCKPILE AREA

STOCKPILE AREA

TEMPORARY LINER EDGE #2

TEMPORARY LINER EDGE #1

FUTURE BORROW AREA

PROPOSED 14' ACCESS ROAD (TYP.)

PHASE 3 CELL 1 7.6 ACRES

0.02 ACRES OF WETLAND IMPACT

149 LF STREAM IMPACT
0.06 ACRES OF WETLAND IMPACT
130 LF 6' X 7.5' BOX CULVERT W/CONCRETE HEADWALLS AND RIPRAP INLET/OUTLET PROTECTION

CEMETERY

TREATMENT & PROCESSING BUILDING

RECYCLING & PROCESSING CENTER

EXISTING STREAM

SCALE HOUSE

ENVIRONMENTAL RESOURCE CENTER

PERMANENT LINER EDGE #2

30' STREAMBANK GRADING BUFFER

PROPERTY LINE

FANNELL ROAD SR 1326

LAKESIDE DRIVE SR 1324

EXISTING BORING

EXISTING BEDROCK ELEVATIONS, TYP. (SEE DESIGN HYDROGEOLOGIC REPORT PREPARED BY BLE, INC.)

AVERAGE SEASONAL HIGH WATER TABLE ELEVATIONS, TYP. (SEE DESIGN HYDROGEOLOGIC REPORT PREPARED BY BLE, INC.)

PROPOSED CERTIFIED LINER EDGE (TYP.)

PERMANENT LINER EDGE #1

PROPOSED WASTE LIMITS

0.04 ACRES OF WETLAND IMPACT PERMITS PENDING

GRAPHIC SCALE 1 INCH = 100 FEET

PLAN

NOTE:

1. PROPOSED CONTOURS WITHIN PHASE 3 CELL 1 REPRESENT TOP OF SUBGRADE ELEVATION WHEN AN 18" CLAY LINER IS UTILIZED WITH A G.C.L. IF A 24" CLAY LINER IS USED, TOP OF SUBGRADE WILL BE 6" LOWER THAN THE COUNTOURS SHOWN HERE.
2. 404/401 PERMITS FOR 0.08 ACRES OF WETLANDS IMPACT ASSOCIATED WITH ACCESS ROAD HAVE BEEN OBTAINED.

LEGEND

- WETLANDS BOUNDARY
- SEASONAL HIGH WATER TABLE
- BEDROCK ELEVATIONS
- PROPOSED LINER EDGE
- MINOR SUBGRADE CONTOUR
- MAJOR SUBGRADE CONTOUR
- WETLANDS

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

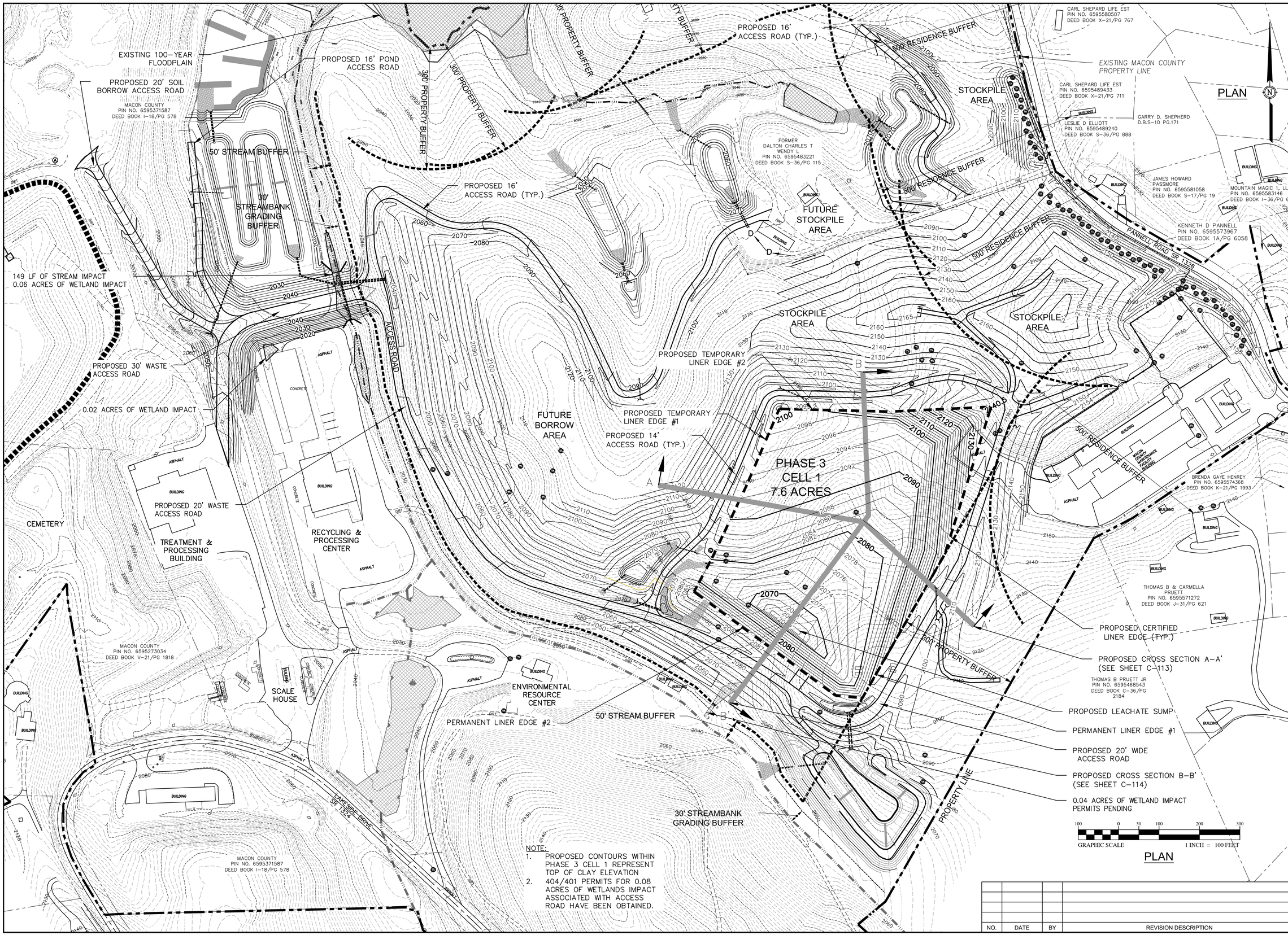
MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - MASTER 5.19.15.dwg

CELL 1 SUBGRADE ELEVATIONS

SHEET
C-102

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - MASTER 5.19.15.dwg 6/5/2015 12:24 PM ADAM WALDROUP



NOTE:
1. PROPOSED CONTOURS WITHIN PHASE 3 CELL 1 REPRESENT TOP OF CLAY ELEVATION
2. 404/401 PERMITS FOR 0.08 ACRES OF WETLANDS IMPACT ASSOCIATED WITH ACCESS ROAD HAVE BEEN OBTAINED.

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH.(828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - MASTER 5.19.15.dwg

CELL 1 CLAY LINER GRADES

SHEET
C-103

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - MASTER 5.19.15.dwg 6/5/2015 12:24 PM ADAM WALDROUP

LEACHATE FORCE MAIN CONTINUES TO LEACHATE LAGOON AT WASTE WATER TREATMENT FACILITY

EXISTING 100-YEAR FLOODPLAIN

PROPOSED 20' SOIL BORROW ACCESS ROAD

MATCHLINE - SEE SHEET C-105

PROPOSED 16' POND ACCESS ROAD

PROPOSED 16' ACCESS ROAD

PROPOSED 16' ACCESS ROAD

FUTURE STOCKPILE AREA

EXISTING MACON COUNTY PROPERTY LINE

PLAN

STOCKPILE AREA

FUTURE STOCKPILE AREA

CANNELL ROAD SR 1326

STOCKPILE AREA

STOCKPILE AREA

TEMPORARY LINER EDGE #2

TEMPORARY LINE EDGE #2

FUTURE BORROW AREA

TEMPORARY LINER EDGE #1

PROPOSED LEACHATE CLEANOUT, TYP.

PHASE 3 CELL 1 7.6 ACRES

PROPOSED 14' ACCESS ROAD

CEMETERY

TREATMENT & PROCESSING BUILDING

RECYCLING & PROCESSING CENTER

SCALE HOUSE

ENVIRONMENTAL RESOURCE CENTER

PERMANENT LINER EDGE #2

PROPOSED LEACHATE PUMP CONTROLS

PROPOSED DUPLEX LEACHATE PUMPS WITH SIDE SLOPE HDPE RISERS

PROPOSED DUAL CONTAINMENT LEACHATE FORCE MAIN, 6" SDR 17 CONTAINMENT PIPE / 3" SDR 17 HDPE CARRIER PIPE, 2' OFF ACCESS ROAD WITH 3' MINIMUM COVER, BENDS AS REQUIRED

LAKESIDE DRIVE SR 1324

PROPERTY LINE

PROPOSED FACILITY BOUNDARY

PROPOSED CERTIFIED LINER EDGE (TYP.)

PROPOSED STORMWATER CONTROL BERM (SEE DETAIL SHEET C-501)

PROPOSED 8" PERFORATED SDR 17 HDPE LEACHATE COLLECTION PIPE (TYP.) VARIABLE SLOPE, SEE PROPOSED DRAINAGE LAYER CONTOURS. MAXIMUM SLOPE 33.0%, MINIMUM SLOPE 4.0%

PERMANENT LINER EDGE #1

PROPOSED 20' WIDE ACCESS ROAD

PROPOSED FACILITY BOUNDARY

GRAPHIC SCALE 1 INCH = 100 FEET

PLAN

NOTES:

1. ENTIRE PHASE 3 CELL 1 AREA TO RECEIVE STORMWATER COVER.
2. PROPOSED CONTOURS WITHIN PHASE 3 CELL 1 REPRESENT TOP OF DRAINAGE LAYER ELEVATIONS.

NO.	DATE	BY	REVISION DESCRIPTION
1	9/9/15	SB	REVISIONS PER COMMENTS FROM NCDENR SWS

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH.(828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - MASTER 5.19.15.dwg

CELL 1 DRAINAGE LAYER GRADES & LEACHATE COLLECTION SYSTEM

SHEET
C-104

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EXISTING 100-YEAR FLOODPLAIN

PROPOSED DUAL CONTAINMENT LEACHATE FORCE MAIN, 6" SDR 17 CONTAINMENT PIPE / 3" SDR 17 HDPE CARRIER PIPE, 2' OFF ACCESS ROAD WITH 3' MINIMUM COVER, BENDS AS REQUIRED

EXISTING WASTE LIMITS

MATCHLINE – SEE SHEET C-104

PROPOSED 20' SOIL BORROW ACCESS ROAD

PLAN

PROPOSED APPROXIMATE LOCATION OF AIR RELEASE VALVE

EXISTING LEACHATE SUMP

PROPOSED 5' DIAMETER PRECAST CONCRETE MANHOLE WITH EPOXY LINER. CONNECT PROPOSED LEACHATE FORCE MAIN TO EXISTING LEACHATE FORCE MAIN (SEE DETAIL)

EXISTING LEACHATE LAGOON

EXISTING 3-INCH LEACHATE FORCE MAIN TO REMAIN IN SERVICE

EXISTING AIR RELEASE VALVE

EXISTING 3-INCH LEACHATE FORCE MAIN

EXISTING ACTIVE PHASE 2 CELL 1

EXISTING INACTIVE PHASE 1

CEMETERY

ASPHALT

BUILDING

TREATMENT & PROCESSING BUILDING

GRAPHIC SCALE 1 INCH = 100 FEET

PLAN

NO.	DATE	BY	REVISION DESCRIPTION
1	9/9/15	SB	REVISIONS PER COMMENTS FROM NCDENR SWS

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH.(828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - MASTER 5.19.15.dwg

PROPOSED LEACHATE FORCE MAIN PLAN

SHEET
C-105

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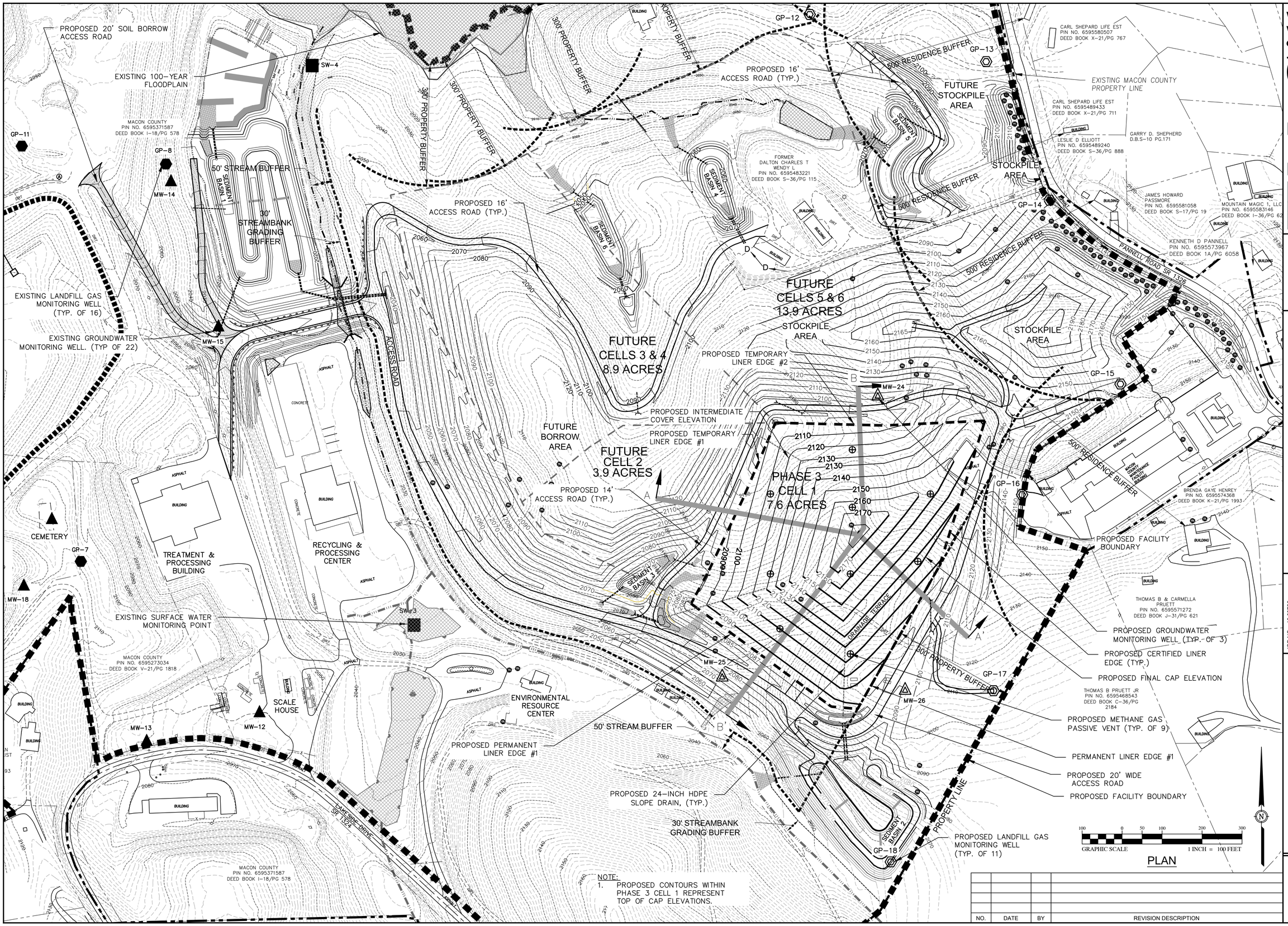

NOTE:
1. PROPOSED CONTOURS WITHIN PHASE 3 CELL 1 REPRESENT TOP OF CAP ELEVATIONS.

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH.(828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - MASTER 5.19.15.dwg

CELL 1 CAP GRADES WITH METHANE VENTS AND FINAL EROSION CONTROL PLAN

SHEET
C-106

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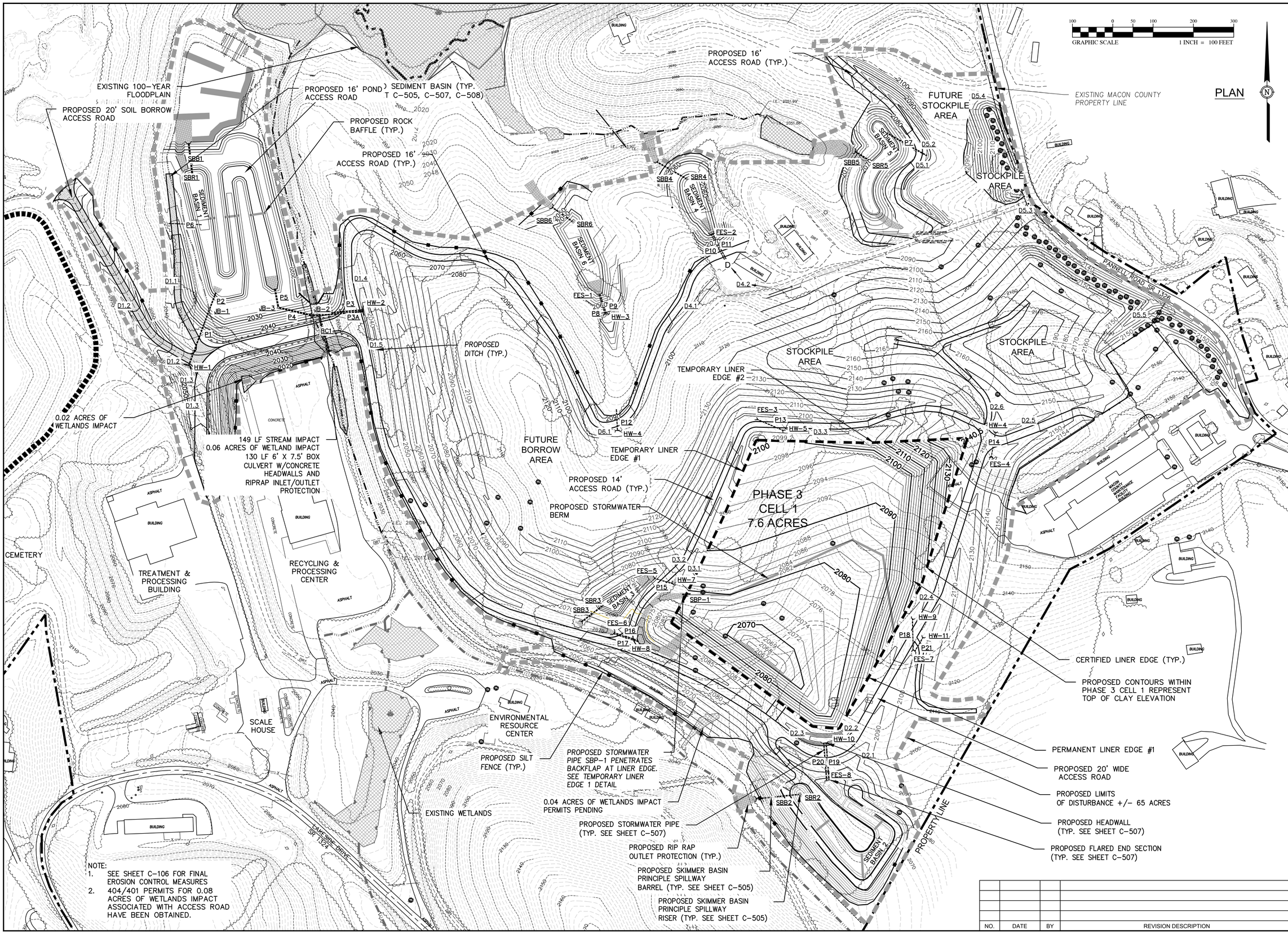


NOTE:
1. SEE SHEET C-106 FOR FINAL EROSION CONTROL MEASURES
2. 404/401 PERMITS FOR 0.08 ACRES OF WETLANDS IMPACT ASSOCIATED WITH ACCESS ROAD HAVE BEEN OBTAINED.

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

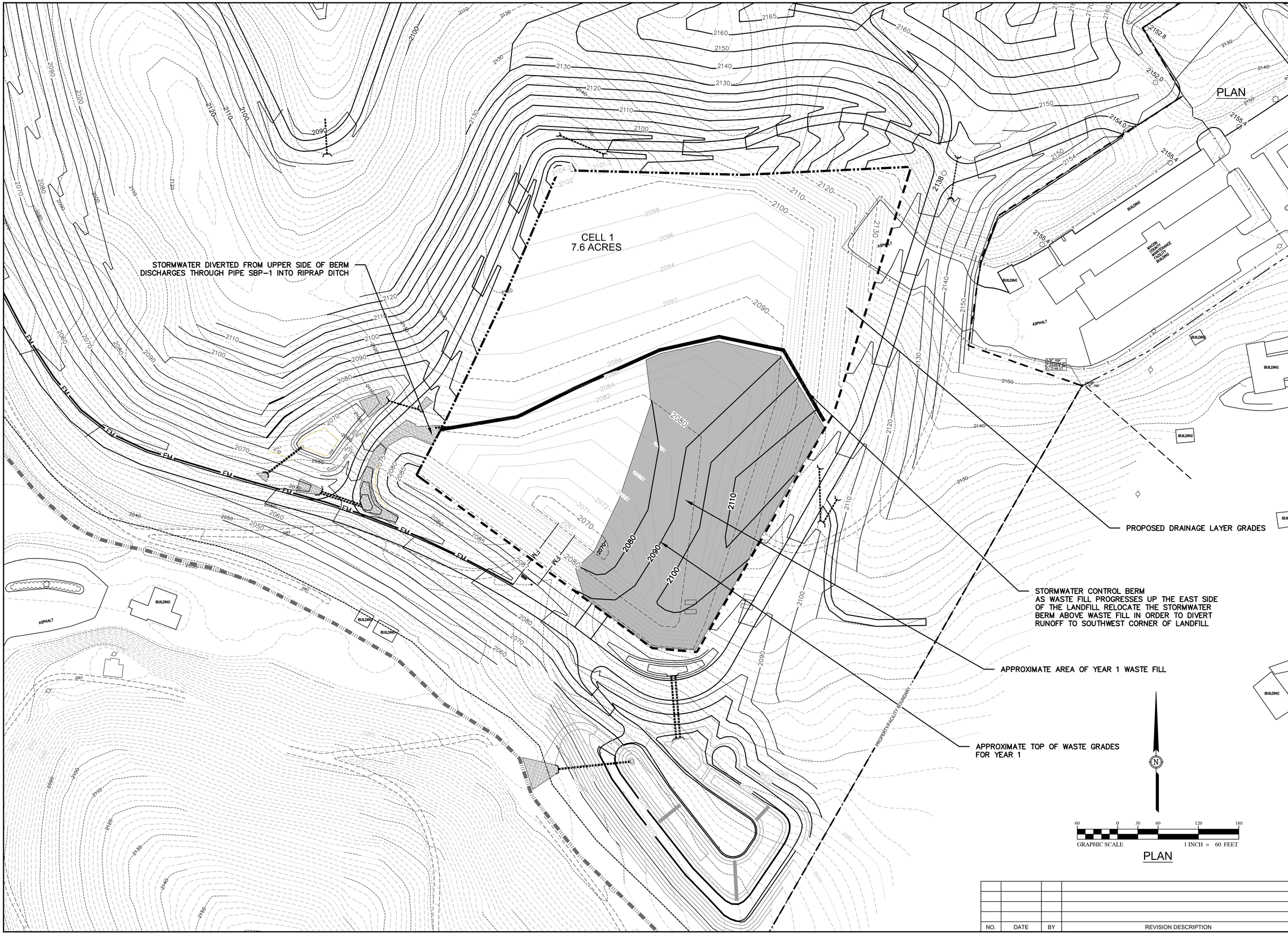
MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2014
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - MASTER 5.19.15.dwg

INITIAL EROSION CONTROL PLAN

SHEET
C-107

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - MASTER 5.19.15.dwg 6/5/2015 12:24 PM ADAM WALDROUP



PLAN

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - C-108 - C-112 Fill Sequence.dwg

CELL 1
WASTE FILL SEQUENCE
YEAR 1

SHEET
C-108

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STORMWATER CONTROL BERM
AS WASTE FILL PROGRESSES UP THE EAST SIDE OF THE LANDFILL
RELOCATE THE STORMWATER BERM ABOVE WASTE FILL IN ORDER TO
DIVERT RUNOFF TO SOUTHWEST CORNER OF LANDFILL

CELL 1
7.6 ACRES

MAINTAIN STORMWATER DISCHARGE POINT FROM
TOP OF RAIN COVER AS LONG AS POSSIBLE

ESTABLISH STORMWATER DISCHARGE POINT FROM
TOP OF DAILY OR INTERMEDIATE COVER

PROPOSED DRAINAGE LAYER GRADES

APPROXIMATE AREA OF YEAR 2 WASTE FILL

APPROXIMATE TOP OF WASTE GRADES
FOR YEAR 2

PROPERTY/FACILITY BOUNDARY

BUILDING

ASPHALT

DIRT

GRAPHIC SCALE 1 INCH = 60 FEET

PLAN

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

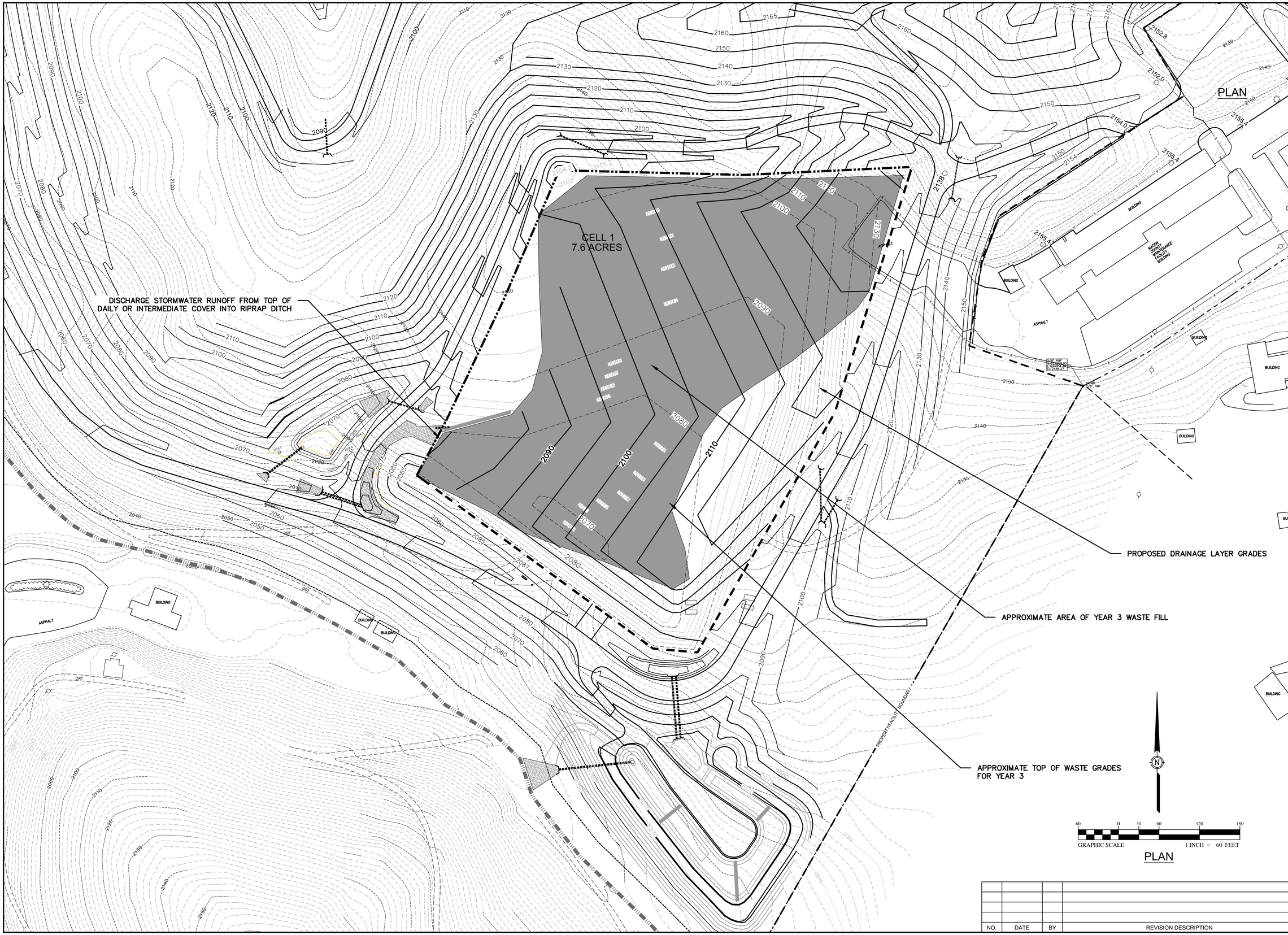
MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY 2015
DESIGNED BY: DAP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 - PTC - C-108 - C-112 Fill Sequence.dwg

CELL 1
WASTE FILL SEQUENCE
YEAR 2

SHEET
C-109

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - C-108 - C-112 Fill Sequence.dwg 6/5/2015 11:05 AM ADAM WALDROUP



McGill ASSOCIATES
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CELL 1
WASTE FILL SEQUENCE
YEAR 3

NO.	DATE	BY	REVISION DESCRIPTION

SHEET
C-110

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BEGIN TO CONSTRUCT SOIL BERM AND DRAINAGE TERRACE DURING YEAR 4 TO DIVERT AS MUCH STORMWWATER RUNOFF AS POSSIBLE AWAY FROM THE DEVELOPMENT OF PHASE 3 CELL 2

CELL 1
7.6 ACRES

PROPOSED DRAINAGE LAYER GRADES

APPROXIMATE AREA OF YEAR 4 WASTE FILL

APPROXIMATE TOP OF WASTE GRADES FOR YEAR 4

CONSTRUCT RIPRAP DITCH TO ACCOMMODATE RUNOFF FROM DRAINAGE TERRACE

PROPERTY/FACILITY BOUNDARY

MACON COUNTY MAINTENANCE BUILDING

BUILDING

ASPHALT

DIRT

GRAPHIC SCALE 1 INCH = 60 FEET

PLAN

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CELL 1
WASTE FILL SEQUENCE
YEAR 4

SHEET
C-111

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EXTEND SOIL BERM AND DRAINAGE TERRACE DURING YEAR 5 TO DIVERT AS MUCH STORMWWATER RUNOFF AS POSSIBLE AWAY FROM THE DEVELOPMENT OF PHASE 3 CELL 2

CELL 1
7.6 ACRES

CONSTRUCT RIPRAP DITCH TO ACCOMMODATE RUNOFF FROM DRAINAGE TERRACE

PROPOSED DRAINAGE LAYER GRADES

APPROXIMATE AREA OF YEAR 5 WASTE FILL

APPROXIMATE TOP OF WASTE GRADES FOR YEAR 5

PROPERTY/FACILITY BOUNDARY

MACON COUNTY MAINTENANCE FACILITY BUILDING

BUILDING

ASPHALT

DIRT

FM

GRAPHIC SCALE 1 INCH = 60 FEET

PLAN

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CELL 1
WASTE FILL SEQUENCE
YEAR 5

SHEET
C-112

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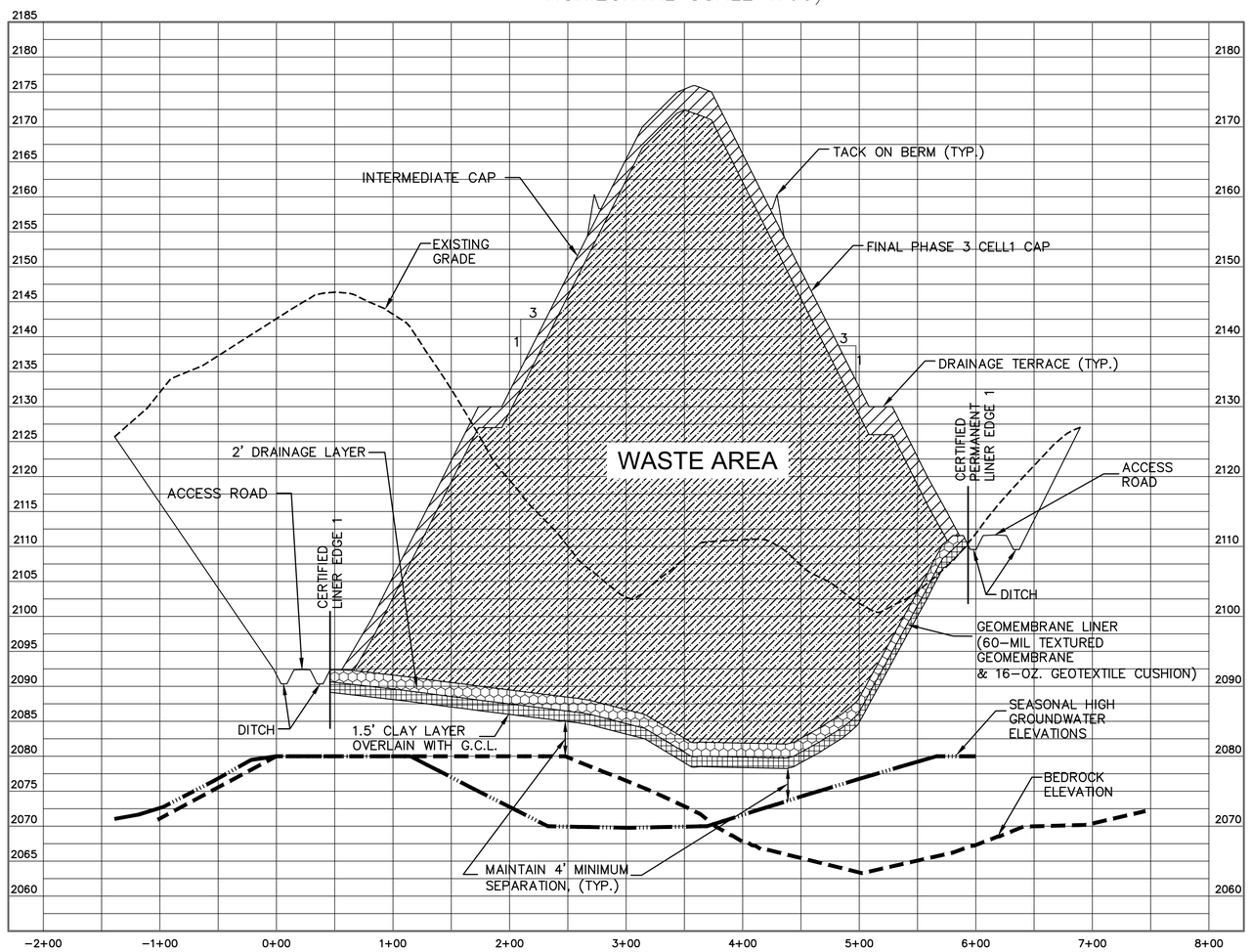
PROFILE: CROSS SECTION A–A'
(VERTICAL SCALE 1:10
HORIZONTAL SCALE 1:60)



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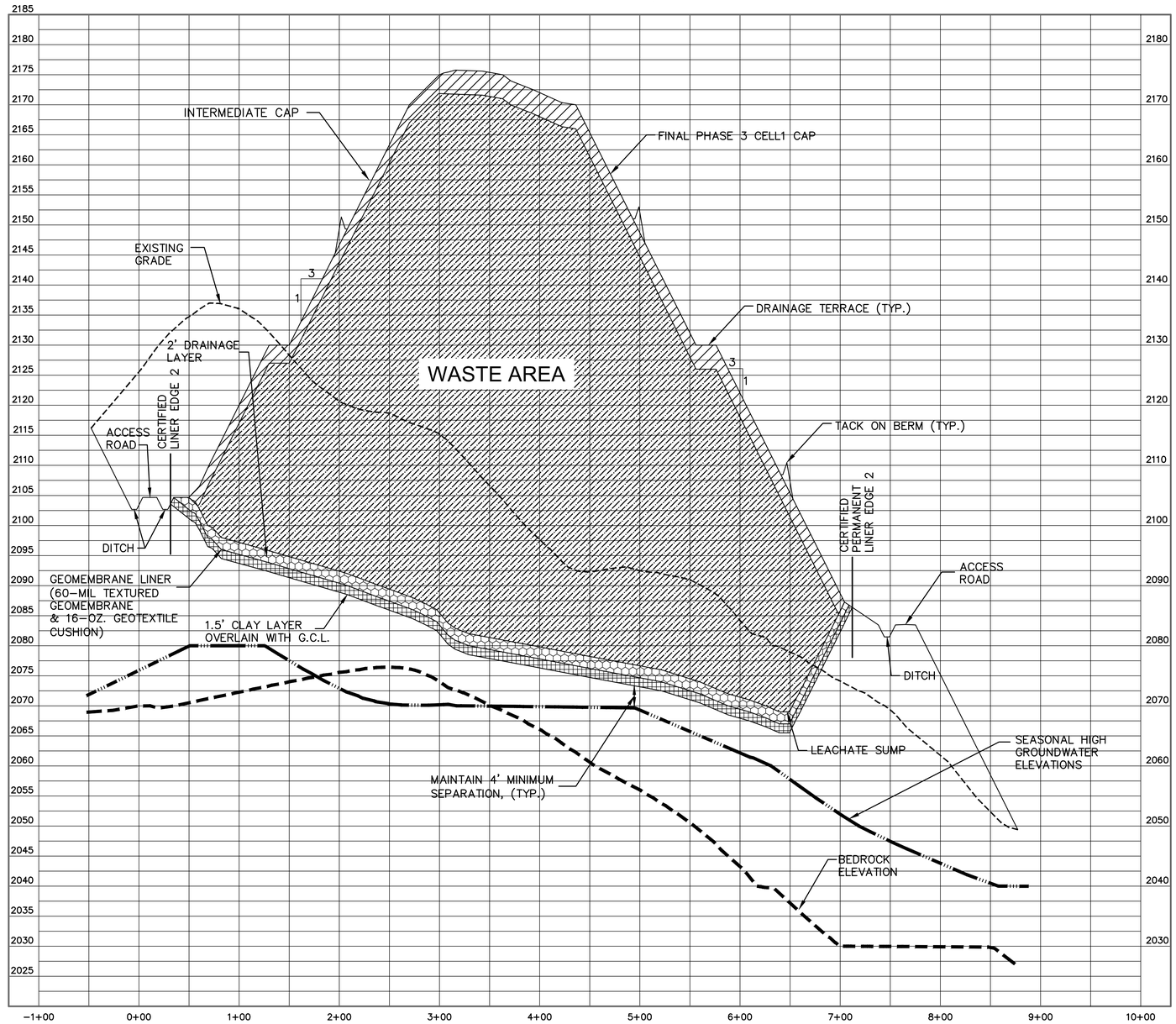
CONST. REVIEW: ____
FILE NAME:
13.00726- PTC - Cross Sections.dwg

CROSS-SECTION A-A'

SHEET
C-113

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - Cross Sections.dwg 6/5/2015 11:10 AM ADAM WALDROUP

PROFILE: CROSS SECTION B–B'
(VERTICAL SCALE 1:10
HORIZONTAL SCALE 1:60)



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FILE NAME: 13.00726 - PTC - Cross Sections.dwg

CROSS-SECTION B-B'

SHEET
C-114

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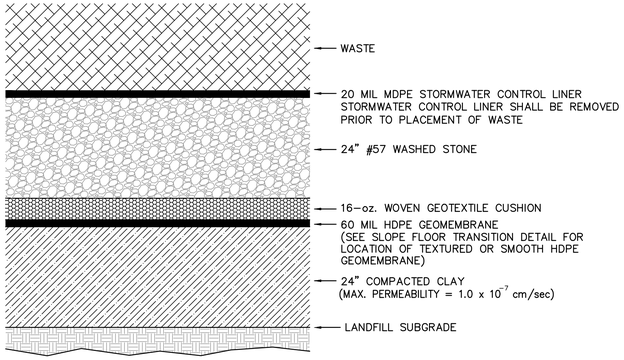
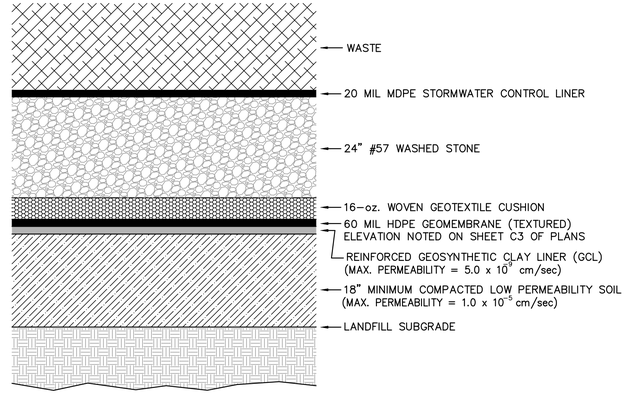


LANDFILL BASE DETAIL

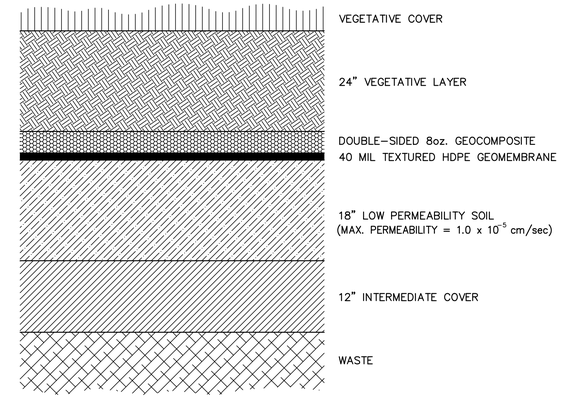
OR



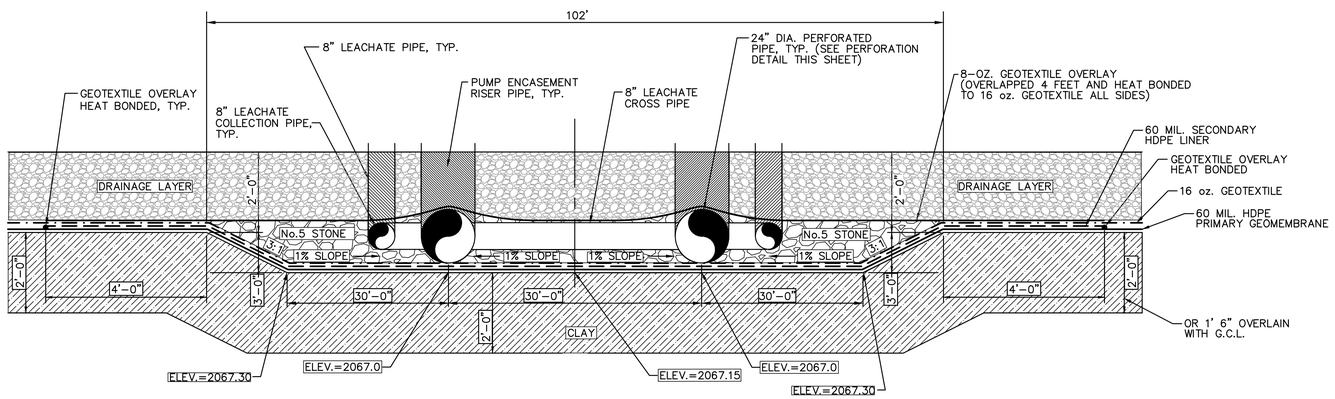
ALTERNATE BASE LINER DETAIL

LOW PERMEABILITY BASE LAYER

NOTE:
FINAL CAP GRADE'S SLOPE
SHALL NOT EXCEED 33%, OR
BE LESS THAN 5%.

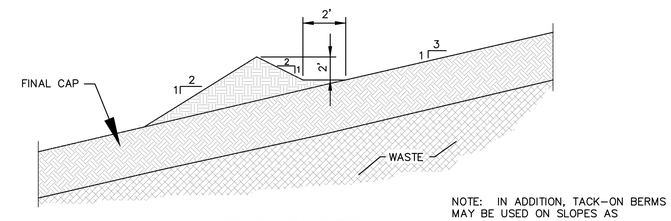


CAP DETAIL



LEACHATE SUMP - PUMP STATION/RISER PIPE (SECT. A-A)

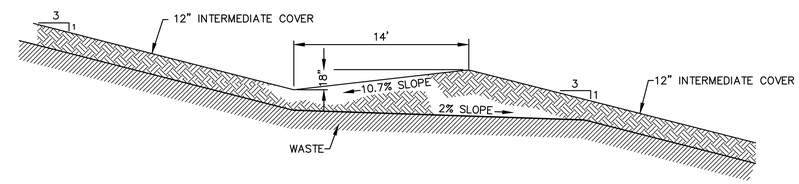
N.T.S.



TACK-ON BERM

NOT TO SCALE

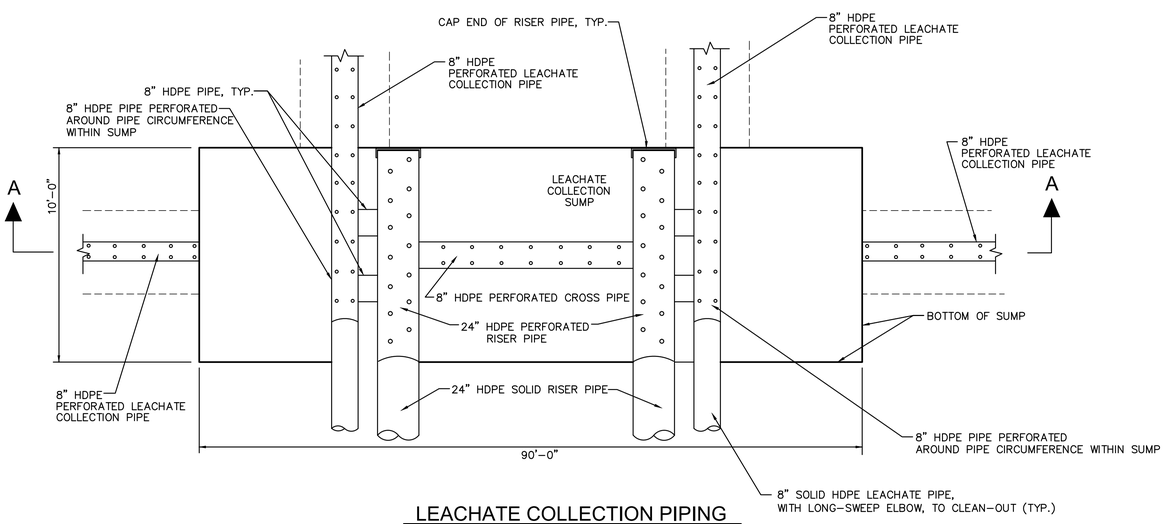
NOTE: IN ADDITION, TACK-ON BERMS
MAY BE USED ON SLOPES AS
TEMPORARY EROSION AND
SEDIMENTATION CONTROL STRUCTURES
PRIOR TO FINAL CAP PLACEMENT



NOTE:
FOR FINAL SLOPES SEE CAP DETAIL.
THIS DETAIL FOR MATERIALS ABOVE
12" INTERMEDIATE COVER.

CAP TERRACE DETAIL

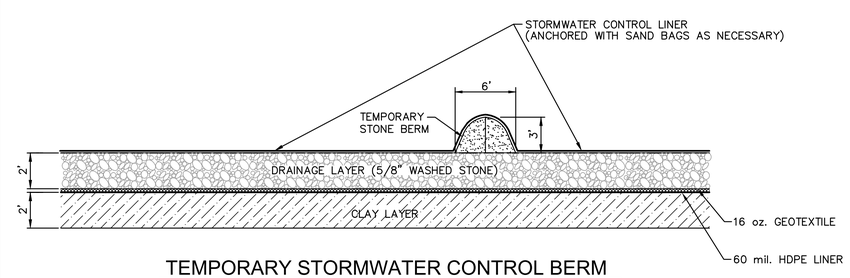
NOT TO SCALE



LEACHATE COLLECTION PIPING
TERMINATION @ SUMP

PLAN VIEW

N.T.S.



TEMPORARY STORMWATER CONTROL BERM

NOT TO SCALE

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55 BROAD STREET ASHEVILLE, NC 28801 PH.(828) 252-0575 FIRM LICENSE # C-0459

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MSWLF PHASE 3 CELL 1
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MISCELLANEOUS DETAILS

SHEET
C-501

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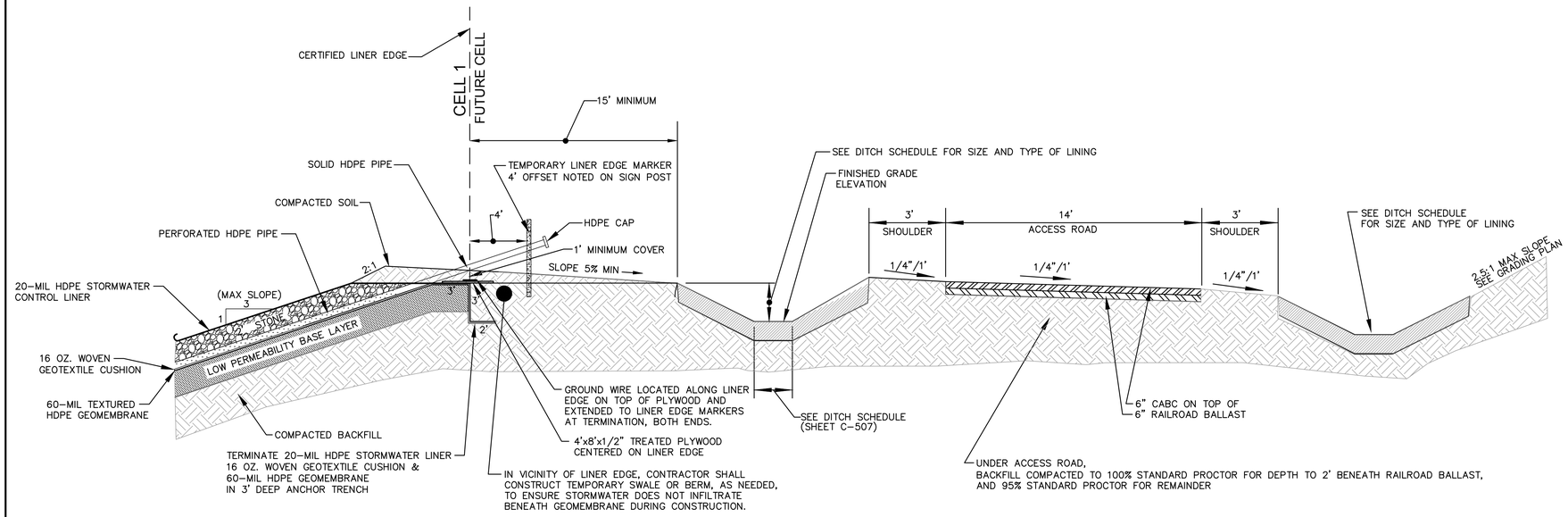
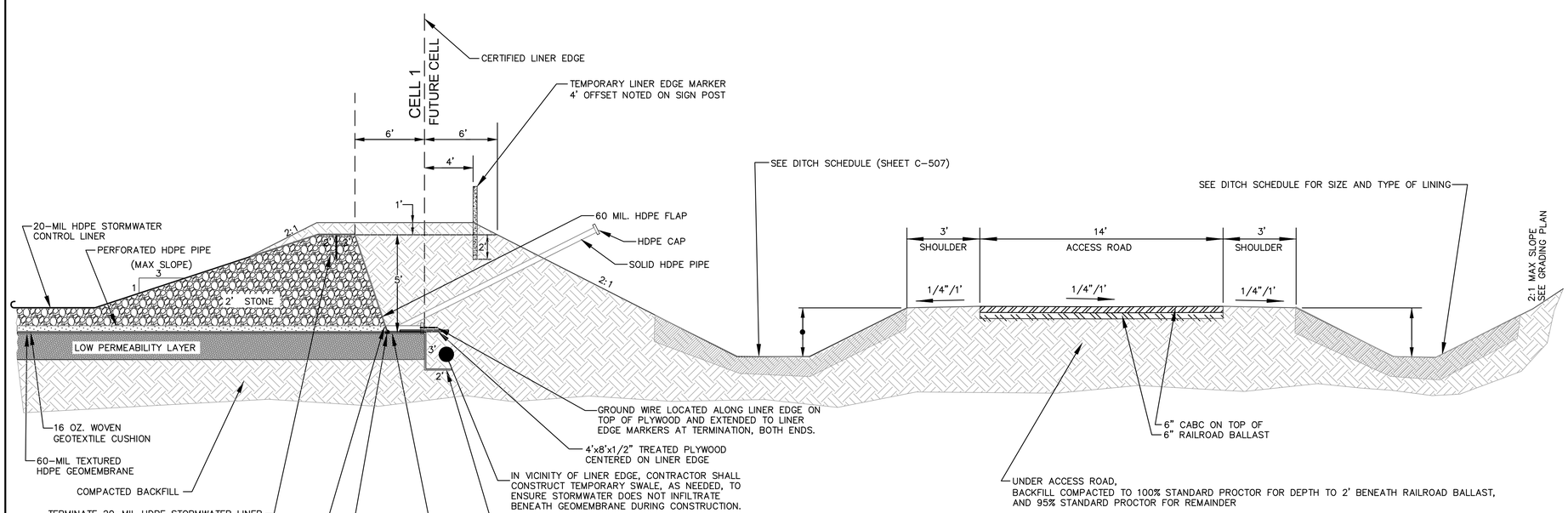


TEMPORARY LINER EDGE #2

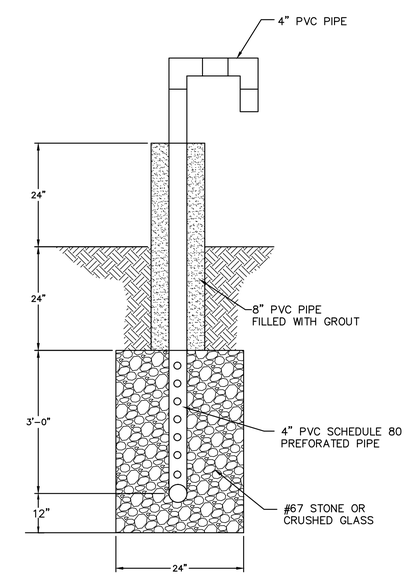
NTS



NOTE: USE PIPE PENETRATION BOOT WITH STORM PIPE SBP-1. PIPE NOT SHOW.

TEMPORARY LINER EDGE #1

NTS



PASSIVE LANDFILL GAS VENT

NTS

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MISCELLANEOUS DETAILS

SHEET
C-502

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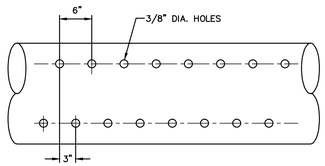
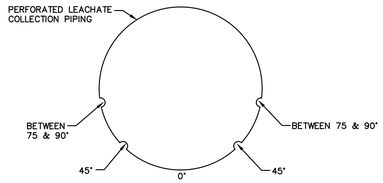


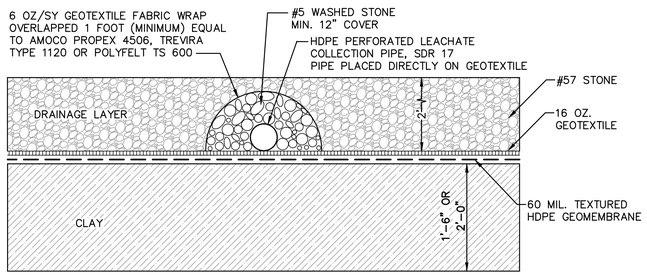
PERFORATED PIPE DETAIL



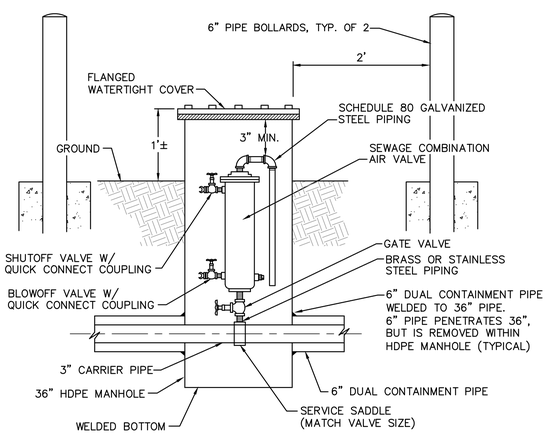
NOTES:
1. 0° CORRESPONDS TO PIPE INVERT.
2. FOUR 3/8" DIAMETER PERFORATIONS, 6" O.C.

PERFORATION PATTERN DETAIL

LEACHATE COLLECTION SYSTEM PIPING



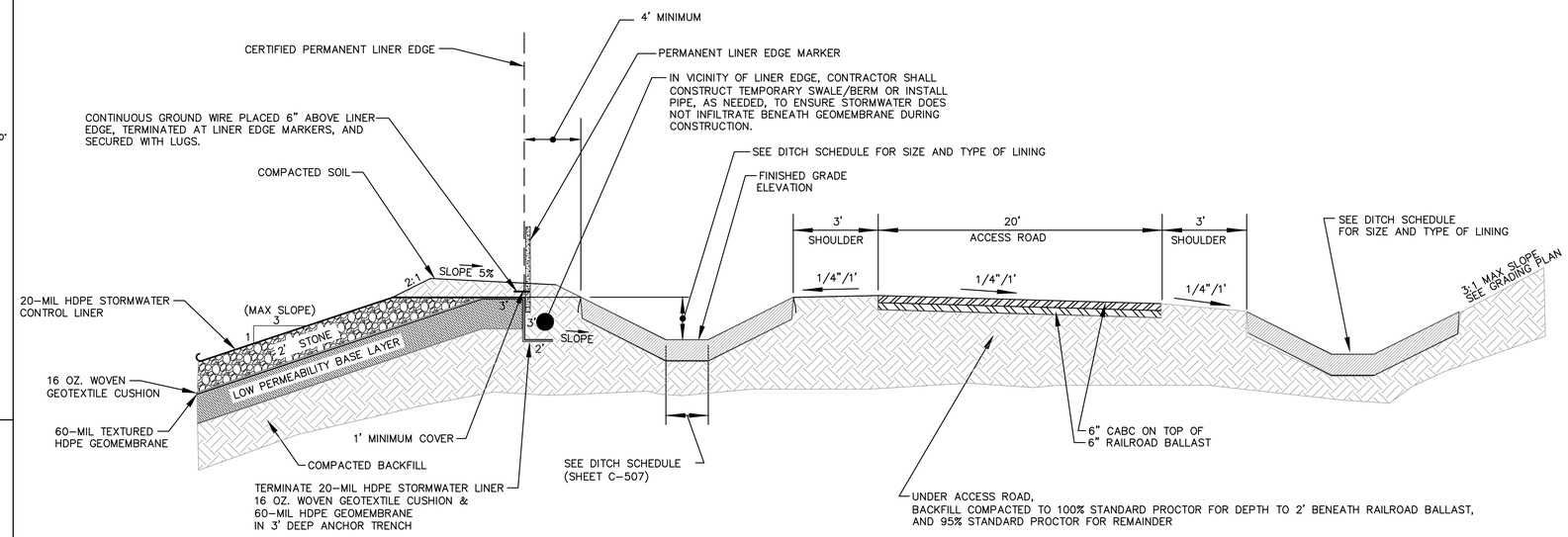
LEACHATE COLLECTION PIPE



SECTION B–B

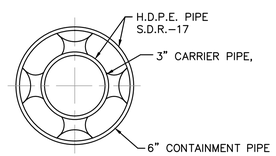
NOTES:
1. COMBINATION AIR VALVE TO BE INSTALLED AT ACTUAL HIGH POINT OF LINE.
2. VALVE SIZE AS SHOWN ON DRAWINGS OR DETAILED IN THE SPECIFICATIONS.
3. ALL PIPING FOR COMBINATION AIR VALVE SHALL BE BRASS OR STAINLESS STEEL.
4. CONTRACTOR SHALL ADJUST THE DEPTH OF THE FORCE MAIN AT ALL HIGH POINTS TO ACCOMODATE THE INSTALLATION OF THE COMBINATION AIR VALVE.

LEACHATE FORCE MAIN AIR RELEASE VALVE

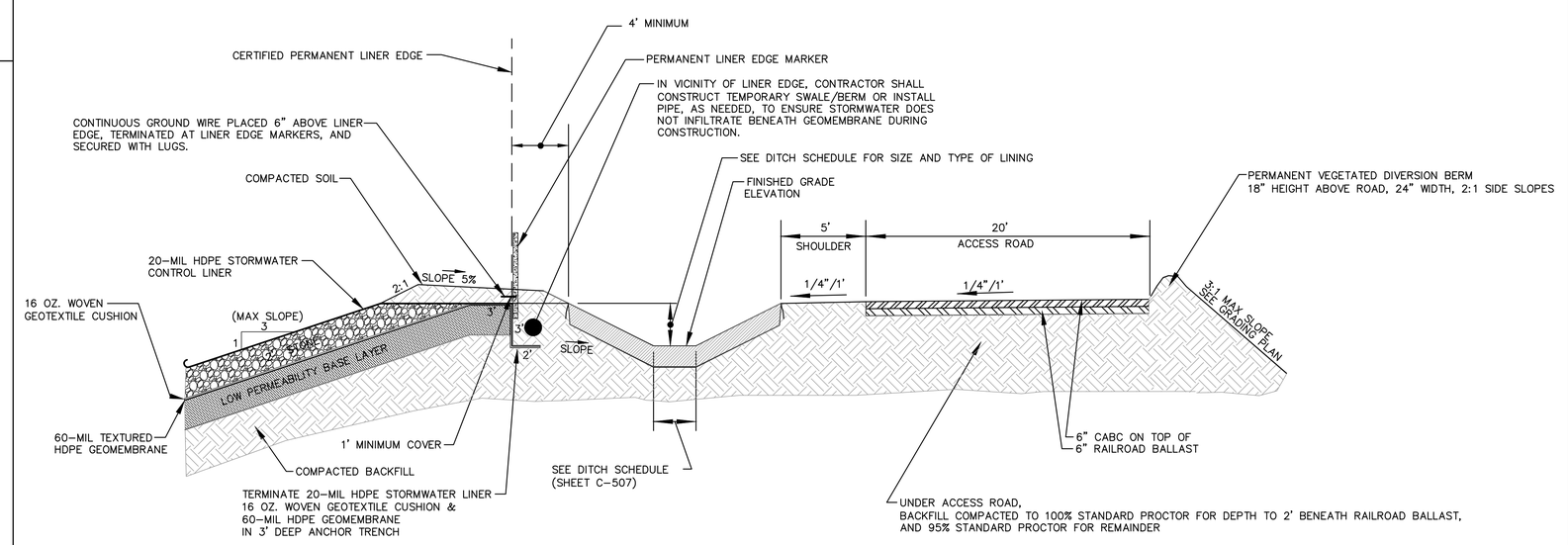


PERMANENT LINER EDGE #1

NTS



DUAL CONTAINED FORCE MAIN PIPE



PERMANENT LINER EDGE #2

NTS

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MISCELLANEOUS DETAILS

SHEET
C-503

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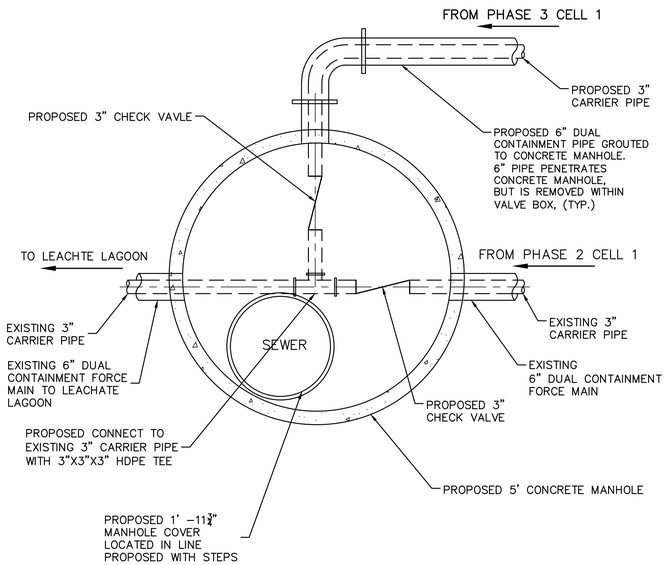
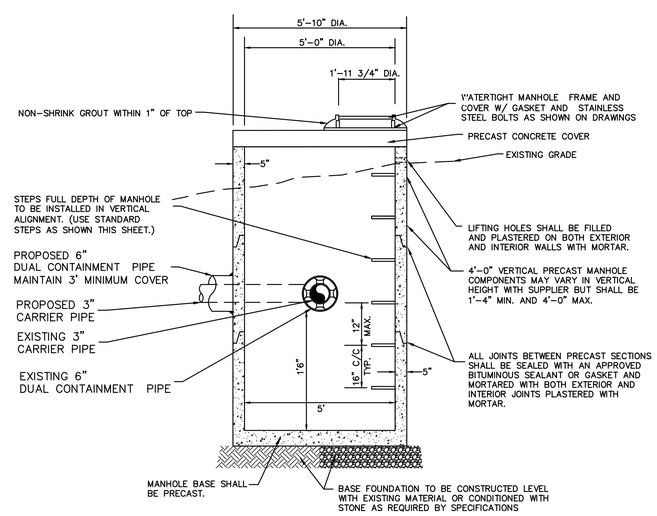


PLAN

CONNECTION TO EXISTING HDPE FORCE MAIN

NO SCALE



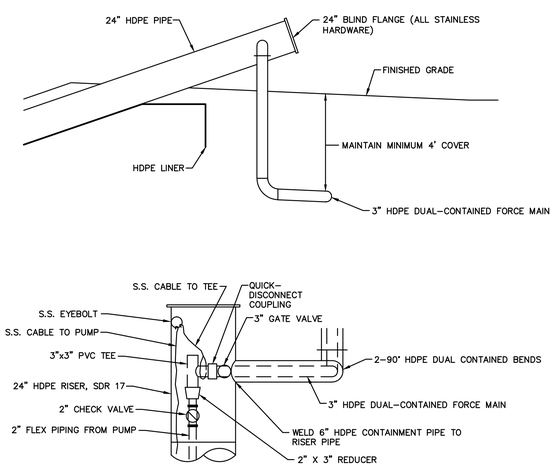
ELEVATION VIEW

PRECAST MANHOLE NOTES:

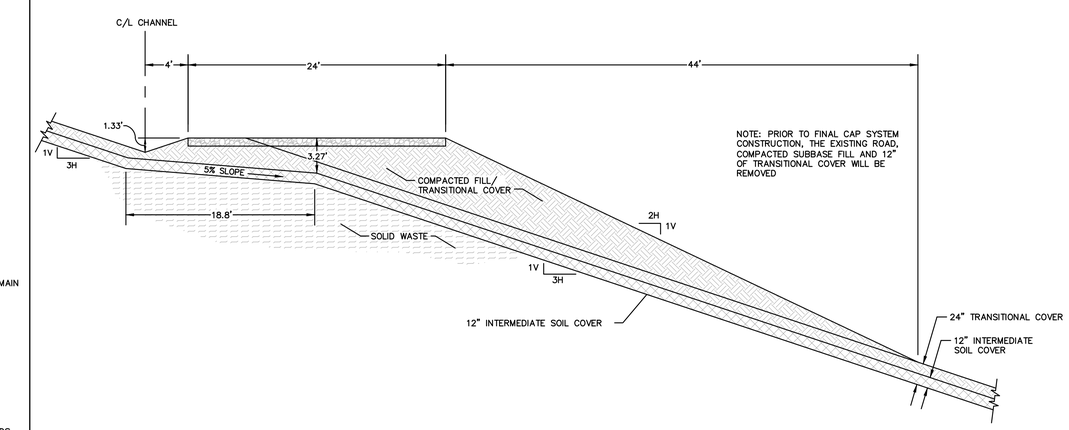
1. ALL PRECAST MANHOLE COMPONENTS SHALL MEET REQUIREMENTS OF ASTM C-478, LATEST REVISION.
2. ALL MANHOLES SHALL BE CONSTRUCTED PLUMB
3. IF MANHOLE IS SET IN LOCATION OF HIGH WATER TABLE OR UNDERGROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL INSTALL UNDERDRAINS AND STONE AS DIRECTED IN THE FIELD BY THE ENGINEER.
4. STEPS SHALL BE INSTALLED ON STRAIGHT SIDE OF MANHOLE.
5. INSTALL PARSON POXY SEL-80 (BY PARSON ENVIRONMENTAL, INC.), MANHOLE LINER OR APPROVED EQUAL ON INSIDE SURFACE OF MANHOLE, PER MANUFACTURERS RECOMMENDATION. INSTALL 80-MIL COATING.

PRECAST CONCRETE MANHOLE

NOT TO SCALE



FORCE MAIN CONNECTION DETAILS



TACK ON ROAD

NOT TO SCALE

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MISCELLANEOUS DETAILS

SHEET
C-504

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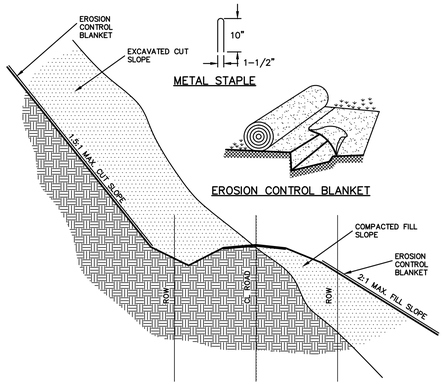
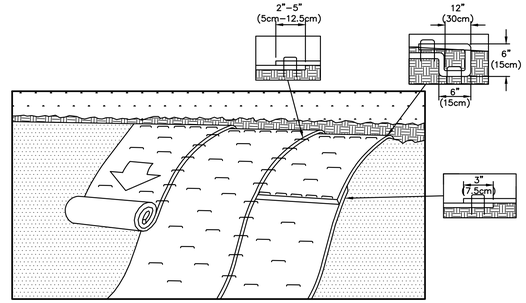


NOTES:

1. INSTALLATION OF MATTING SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.
2. SEE GRADING PLAN FOR LOCATIONS OF CUT AND FILL SLOPES.
3. MATTING SHALL BE: NORTH AMERICAN GREEN C125, STAPLE PATTERN C, AMERICAN EXCELSIOR EROSION CONTROL BLANKET, OR EQUAL, INSTALL ON ALL DISTURBED SLOPES (CHOSEN PRODUCT MUST BE RATED FOR SLOPES 2:1 TO 1:1).
4. ALLOW 3" MIN. OVERLAP BETWEEN PARALLEL STRIPS.
5. BURY THE TOP END OF THE MAT IN A TRENCH 4" OR MORE IN DEPTH. TAMP THE TRENCH FULL OF SOIL. SECURE WITH ROW OF STAPLES, 10" SPACING, 4" DOWN FROM THE TRENCH. OVERLAP END OF TOP STRIP 4" AND STAPLE.

SLOPE STABILIZATION WITH MATTING

REVISION DATE - NOVEMBER 3, 2008

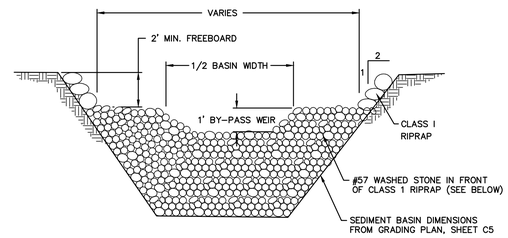


NOTES:

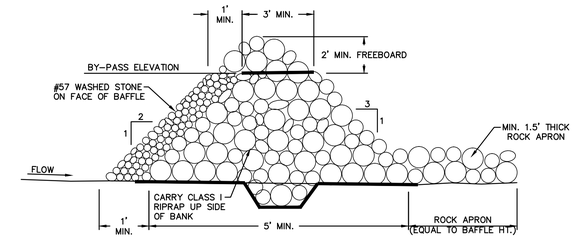
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
3. ROLL THE RECP'S DOWN OR HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING AND SPACING STAPLES/STAKES IN APPROPRIATE LOCATIONS PER MANUFACTURER RECOMMENDATIONS.
4. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON RECP'S TYPE.
5. CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH.
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.

STAPLE/ROLL INSTALLATION

REVISION DATE - NOVEMBER 3, 2008



FACE VIEW



SIDE VIEW

NOTES:

1. RIRAP AND WASHED STONE SHALL BE CHECKED AFTER EACH RAINFALL TO ENSURE AGAINST EROSION AND SHALL BE REPAIRED AS REQUIRED.
2. SEDIMENT SHALL BE REMOVED WHEN DEPTH OF SEDIMENT REACHES 1/2 HEIGHT OF BAFFLE.

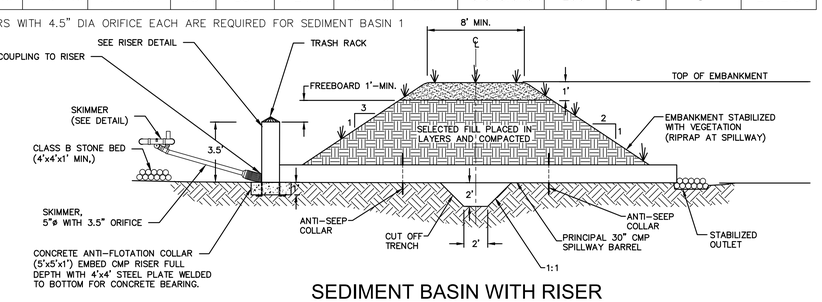
ROCK BAFFLE

N.T.S.

SEDIMENT BASIN SCHEDULE

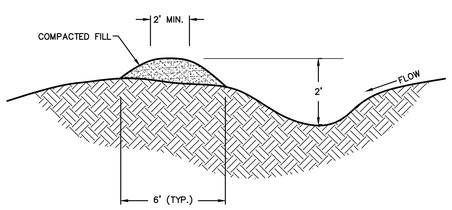
BASIN#	TOP BERM ELEV. (ft)	EMERGENCY SPILLWAY ELEV. (ft)	TOP OF RISER (ft)	EMERGENCY SPILLWAY (D x WIDTH)	BERM WIDTH (FT)	SBR RISER SIZE (inches)	SBB BARREL SIZE (inches)	BARREL INV. IN ELEV. (ft)	BARREL INV. OUT ELEV. (ft)	FLOTATION BLOCK DIMENSIONS (FT)	BASIN AVG. LENGTH (FT)	BASIN AVG. WIDTH (FT)	SKIMMER ORIFICE SIZE (IN)	SKIMMER INVERT ELEV. (FT)
1	2024.5	2023.0	2021.5	2'X23'	VARIES ±20'	4'x4'	42"	2014.0	2013.5	4.5'x4.5'x3.5'	950'	45'	DUAL 4.5"	2016.0
2	2070.5	2069.0	2067.5	2'X10'	VARIES ±16'	3'x3'	24"	2057.0	2047.0	4x4x3.5	530'	45'	4.5"	2062.0
3	2074.3	2074.0	2071.3	2'X30'	12'	36"	24"	2064.0	2063.0	4x4x1.5	180'	45'	2.75"	2067.5
4	2062.0	2060.0	2059.0	2'X10'	20'	36"	24"	2056.0	2042.0	3.5x3.5x1	150'	45'	2.5"	2056.0
5	2074.0	2072.0	2071.0	2'X12'	20''	36"	24"	2068.0	2066.0	3.5x3.5x2	260'	45'	3"	2068.0
6	2050.5	2048.0	2047.0	2'X12'	15'	36"	24"	2044.0	2040	3.5x3.5x3	200'	45'	3"	2042.5

* NOTE: (2) 6" SKIMMERS WITH 4.5" DIA ORIFICE EACH ARE REQUIRED FOR SEDIMENT BASIN 1



SEDIMENT BASIN WITH RISER

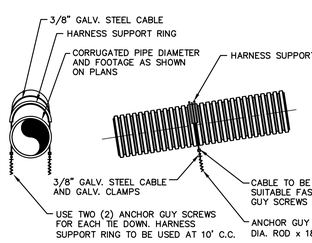
REVISION DATE - JANUARY 2014



NOTE: DITCH SIDE SLOPES SHALL BE 2:1.

TEMPORARY DIVERSION DITCH

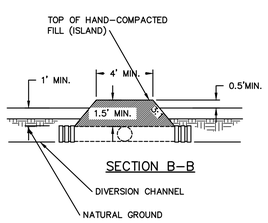
REVISION DATE - NOVEMBER 3, 2008



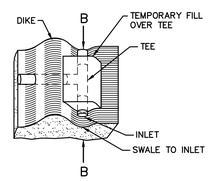
NOTES:

1. PLACE SLOPE DRAINS ON UNDISTURBED SOIL OR WELL COMPACTED FILL AT 200' INTERVALS ALONG NEW FILL SLOPE DURING CONSTRUCTION.
2. SLIGHTLY SLOPE SECTION OF PIPE UNDER THE DIVERSION DIKE TOWARD OUTLET.
3. ENSURE THAT ALL SLOPE DRAIN CONNECTIONS ARE WATERTIGHT.
4. INSPECT AFTER EVERY RAINFALL AND MAKE NECESSARY REPAIRS.
5. REFERENCE NCDENR LAND QUALITY SECTION DESIGN MANUAL: 6.32.

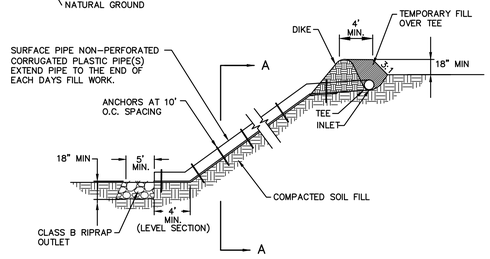
SECTION AA



SECTION B-B

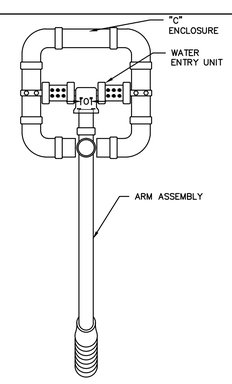


PLAN VIEW
T-SECTION

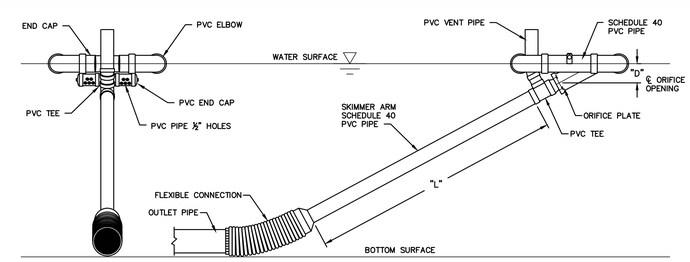


TEMPORARY SLOPE DRAIN

REVISION DATE - NOVEMBER 3, 2008



TOP VIEW



END VIEW

FRONT VIEW

NOTES:
1. REFERENCE NCDENR LAND QUALITY SECTION DESIGN MANUAL: 6.64

SKIMMER DETAIL

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

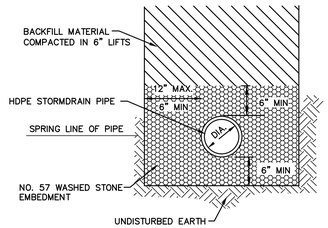
MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DP
CADD BY: ANW
DESIGN REVIEW: ___
CONST. REVIEW: ___
FILE NAME: 13.00726 PTC - DETAILS.dwg

MISCELLANEOUS DETAILS

SHEET
C-505

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - DETAILS.dwg 6/5/2015 12:16 PM ADAM WALDROUP



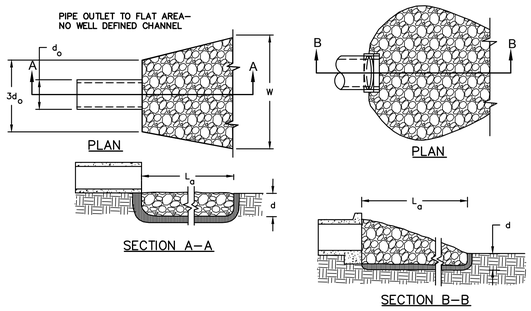
STANDARD EXCAVATION

NOTES:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.

2. PAYMENT FOR ROCK EXCAVATION AND SELECT BACKFILL IN TRENCH SHALL BE FOR ACTUAL QUANTITIES AND SHALL NOT EXCEED THE WIDTH OF TRENCH SHOWN ON THIS DETAIL.

TYPICAL TRENCHING DETAIL
HDPE PIPE WITH WASHED STONE EMBEDMENT

NOT TO SCALE



NOTES

1. La IS THE LENGTH OF THE RIPRAP APRON
2. d= 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL–DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. MIRAFI 140N FILTER FABRIC (OR APPROVED EQUAL) SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.
5. REFERENCE NCDENR LAND QUALITY SECTION DESIGN MANUAL: 8.06.3.

OUTLET PROTECTION

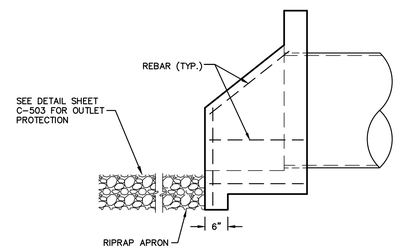
NOT TO SCALE

HEADWALL DIMENSIONS (HDPE PIPE)
NOTE: USE NEXT LARGEST SIZE FOR CONCRETE PIPE.

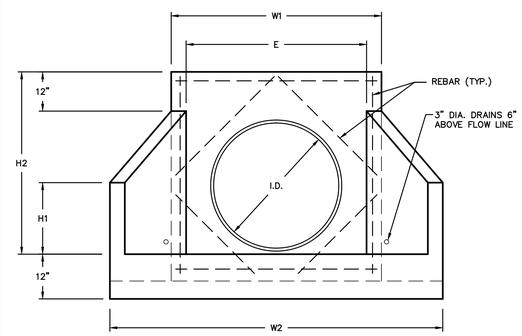
INSIDE DIAMETER OF PIPE	W1	W2	H1	H2	D	E	WEIGHT	SQ. FT. BASE AREA
12"–15"–18"	3'–2"	4'–10"	1'–3"	3'–2"	1'–3"	1'–9"	1,550	7.34
21"–24"	3'–8"	6'–1"	1'–9"	3'–8"	1'–6"	2'–3"	2,100	9.90
30"	4'–2"	7'–2"	2'–0"	4'–2"	1'–10"	2'–9"	2,850	13.50
36"	4'–8"	8'–4"	2'–4"	4'–8"	2'–2"	3'–3"	3,700	17.65
42"–48"	5'–8"	10'–10"	3'–3"	5'–8"	2'–11"	4'–3"	5,600	28.60
54"–60"	6'–10"	11'–9"	3'–6"	6'–8"	3'–4"	5'–2"	7,500	36.27
66"–72"	8'–1"	12'–0"	3'–8"	7'–7"	3'–4"	6'–2"	8,500	40.00
84"–96"	9'–4"	12'–8"	4'–0"	9'–6"	3'–4"	7'–6"	10,000	44.00

NOTE:

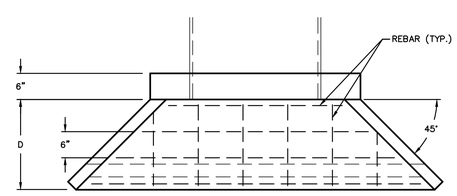
1. 4000 PSI CONCRETE STANDARD



SIDE ELEVATION



FRONT ELEVATION



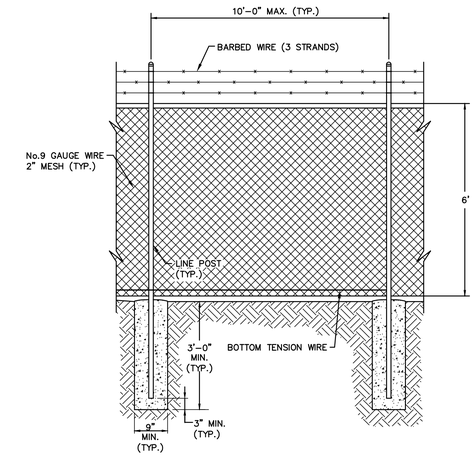
PLAN

NOTES:

1. CONCRETE HEADWALL REINFORCEMENT PER N.C.D.O.T. STANDARD NO. 838.39 REVISION A.

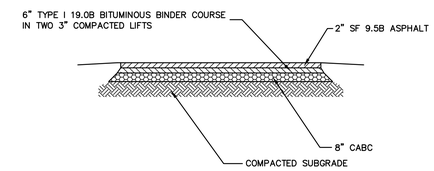
REINFORCED CONCRETE ENDWALL

NOT TO SCALE



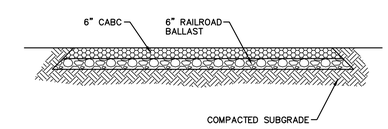
CHAIN LINK FENCE DETAIL

NOT TO SCALE



TYPICAL PAVEMENT CROSS-SECTION

NOT TO SCALE



TYPICAL GRAVEL ROAD CROSS-SECTION

NOT TO SCALE

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DP
CADD BY: ANW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: 13.00726 PTC - DETAILS.dwg

MISCELLANEOUS DETAILS

SHEET
C-506

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DITCH SCHEDULE

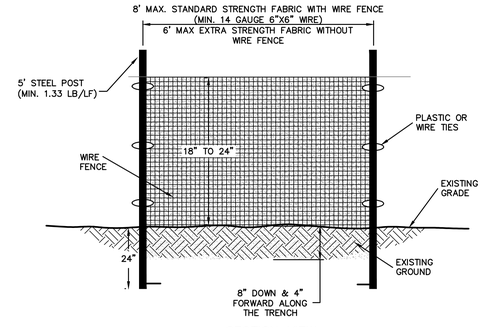
Label	Friction Method	Roughness Coefficient	Channel Slope (ft/ft)	Normal Depth (ft)	Left Side Slope (ft/ft (H:V))	Right Side Slope (ft/ft (H:V))	Bottom Width (ft)	Discharge (ft^3/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Hydraulic Radius (ft)	Top Width (ft)	Critical Depth (ft)	Velocity (ft/s)	Velocity Head (ft)	Specific Energy (ft)	Froude Number	Flow Type
D1.1	Manning Formula	0.03	0.063	0.21	2	2	4	3.8	0.93	4.94	0.19	4.84	0.29	4.08	0.26	0.47	1.64	Supercritical
D1.2	Manning Formula	0.03	0.069	0.19	3	3	4	3.4	0.86	5.2	0.17	5.14	0.26	3.93	0.24	0.43	1.69	Supercritical
D1.3	Manning Formula	0.03	0.046	0.17	3	3	3.5	2.1	0.7	4.59	0.15	4.54	0.21	3.02	0.14	0.31	1.36	Supercritical
D1.4	Manning Formula	0.03	0.074	0.37	3	3	3	9	1.54	5.36	0.29	5.24	0.54	5.86	0.53	0.91	1.91	Supercritical
D1.5 STEEPEST	Manning Formula	0.03	0.050	0.59	3	3	12	57.9	8.13	15.73	0.52	15.54	0.83	7.13	0.79	1.38	1.74	Supercritical
D1.5 FLATTEST	Manning Formula	0.03	0.023	0.74	3	3	12	57.9	10.49	16.67	0.63	16.43	0.83	5.52	0.47	1.21	1.22	Supercritical
D2.1	Manning Formula	0.03	0.065	0.52	3	3	8	36.7	5	11.31	0.44	11.14	0.78	7.33	0.84	1.36	1.93	Supercritical
D2.2	Manning Formula	0.03	0.069	0.24	3	3	6	7.4	1.6	7.5	0.21	7.43	0.34	4.64	0.33	0.57	1.76	Supercritical
D2.3	Manning Formula	0.03	0.028	0.12	3	3	4	1	0.52	4.76	0.11	4.72	0.12	1.91	0.06	0.18	1.01	Supercritical
D2.4	Manning Formula	0.03	0.057	0.33	3	3	4	8.3	1.67	6.11	0.27	6	0.45	4.98	0.38	0.72	1.66	Supercritical
D2.5	Manning Formula	0.03	0.046	0.23	3	3	5	4.8	1.31	6.45	0.2	6.38	0.29	3.67	0.21	0.44	1.43	Supercritical
D2.6	Manning Formula	0.03	0.066	0.52	3	3	0	4.1	0.82	3.3	0.25	3.13	0.65	5.02	0.39	0.91	1.73	Supercritical
D2.7	Manning Formula	0.03	0.069	0.5	3	3	4	18.9	2.75	7.16	0.38	7	0.73	6.87	0.73	1.23	1.93	Supercritical
D3.1 STEEPEST	Manning Formula	0.03	0.081	0.27	3	3	4	6.9	1.31	5.72	0.23	5.63	0.41	5.27	0.43	0.7	1.93	Supercritical
D3.1 FLATTEST	Manning Formula	0.03	0.036	0.34	3	3	4	6.9	1.72	6.16	0.28	6.05	0.41	4.01	0.25	0.59	1.33	Supercritical
D3.2 STEEPEST	Manning Formula	0.03	0.093	0.42	3	3	5	19.7	2.65	7.67	0.35	7.54	0.68	7.43	0.86	1.28	2.21	Supercritical
D3.2 FLATTEST	Manning Formula	0.03	0.037	0.55	3	3	5	19.7	3.63	8.46	0.43	8.28	0.68	5.42	0.46	1	1.44	Supercritical
D3.3 STEEPEST	Manning Formula	0.03	0.150	0.18	3	3	6	6.7	1.17	7.13	0.16	7.07	0.32	5.74	0.51	0.69	2.49	Supercritical
D3.3 FLATTEST	Manning Formula	0.03	0.020	0.32	3	3	6	6.7	2.24	8.03	0.28	7.93	0.32	2.99	0.14	0.46	0.99	Subcritical
D4.1	Manning Formula	0.03	0.030	0.5	3	3	2	7.2	1.73	5.14	0.34	4.98	0.56	4.16	0.27	0.76	1.24	Supercritical
D4.2	Manning Formula	0.03	0.061	0.29	3	3	3	5.2	1.12	4.84	0.23	4.74	0.39	4.63	0.33	0.62	1.67	Supercritical
D5.1 STEEPEST	Manning Formula	0.03	0.155	0.23	3	3	2	3.8	0.61	3.45	0.18	3.37	0.39	6.18	0.59	0.82	2.55	Supercritical
D5.1 FLATTEST	Manning Formula	0.03	0.023	0.38	3	3	2	3.8	1.2	4.42	0.27	4.29	0.39	3.16	0.15	0.54	1.05	Supercritical
D5.2 STEEPEST	Manning Formula	0.03	0.080	0.34	3	3	2	5.7	1.03	4.16	0.25	4.05	0.49	5.53	0.48	0.82	1.93	Supercritical
D5.2 FLATTEST	Manning Formula	0.03	0.007	0.64	3	3	2	5.7	2.48	6.02	0.41	5.81	0.49	2.3	0.08	0.72	0.62	Subcritical
D5.3 STEEPEST	Manning Formula	0.03	0.125	0.37	3	3	5	18.3	2.28	7.36	0.31	7.24	0.65	8.02	1	1.37	2.52	Supercritical
D5.3 FLATTEST	Manning Formula	0.03	0.019	0.63	3	3	5	18.3	4.35	8.99	0.48	8.79	0.65	4.21	0.28	0.91	1.05	Supercritical
D5.4 STEEPEST	Manning Formula	0.03	0.150	0.07	3	3	4	0.9	0.29	4.44	0.07	4.41	0.11	3.11	0.15	0.22	2.14	Supercritical
D5.4 FLATTEST	Manning Formula	0.03	0.033	0.11	3	3	4	0.9	0.47	4.68	0.1	4.65	0.11	1.93	0.06	0.17	1.08	Supercritical
D5.5 STEEPEST	Manning Formula	0.03	0.070	0.36	3	3	4	10.5	1.83	6.27	0.29	6.16	0.52	5.75	0.51	0.87	1.86	Supercritical
D5.5 FLATTEST	Manning Formula	0.03	0.034	0.44	3	3	4	10.5	2.34	6.78	0.34	6.64	0.52	4.49	0.31	0.75	1.33	Supercritical
D6.1	Manning Formula	0.03	0.024	0.38	3	3	3	5.2	1.55	5.38	0.29	5.26	0.39	3.35	0.17	0.55	1.09	Supercritical

STORM DRAIN PIPE SCHEDULE

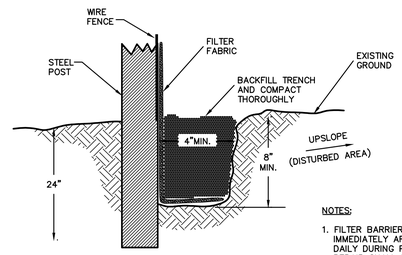
Pipe ID	Material	Length (ft)	Inv. In	Inv. Out	Size (in)	Pipe Slope	Upstream Structure	Downstream Structure
1	HDPE	146	2042.00	2017.00	24	17.12%	HW-1	JB-1
2	HDPE	41	2017.00	2016.50	24	1.22%	JB-1	SED BAS 1
3	HDPE	125	2038.00	2032.00	36	4.80%	HW-2	JB-2
3A	HDPE	125	2038.00	2032.00	36	4.80%	HW-2	JB-2
4	HDPE	80	2032.00	2021.00	42	13.75%	JB-2	JN-3
5	HDPE	44	2021.00	2020.50	42	1.14%	JB-3	SED BAS 1
6	HDPE	81	2026.00	2016.00	15	12.35%	DITCH	SED BAS 1
7	HDPE	114	2077.50	2068.00	15	8.33%	DITCH	SKIM BAS 5
8	HDPE	50	2056.50	2048.50	18	16.00%	HW-3	FES-1
9	HDPE	50	2056.50	2048.50	18	16.00%	HW-3	FES-1
10	HDPE	71	2077.00	2058.00	18	26.76%	0.00%	FES-2
11	HDPE	71	2077.00	2058.00	18	26.76%	0.00%	FES-2
12	HDPE	52	2088.50	2083.00	18	10.58%	DITCH	0.00%
13	HDPE	71	2096.00	2095.50	15	0.70%	HW-5	FES-3
14	HDPE	61	2135.50	2134.80	18	1.15%	HW-6	FES-4
15	HDPE	53	2077.00	2073.50	18	6.60%	HW-7	FES-5
16	HDPE	62	2066.50	2065.50	18	1.61%	HW-8	FES-6
17	HDPE	65	2066.50	2065.50	18	1.54%	HW-8	FES-6
18	HDPE	78	2105.60	2100.40	15	6.67%	HW-9	FES-7
19	HDPE	93	2083.00	2065.00	18	19.35%	HW-10	FES-8
20	HDPE	93	2083.00	2065.00	18	19.35%	HW-10	FES-8
21	HDPE	40	2103.00	2100.40	24	6.50%	HW-11	FES-7
SBP-1	HDPE	20	2081.00	2079.00	30	10.00%	P3C1	FES-7

STORM STRUCTURE SCHEDULE

Structure ID	Type	Rim/ Grate Elevation	Bottom Elevation	Structure Depth
HW-1	Headwall	2247.80	2243.80	0.00
HW-2	Headwall	2247.80	2243.42	0.00
HW-3	Headwall	2248.40	2244.40	0.00
HW-4	Headwall	2248.00	2244.00	0.00
HW-5	Headwall	2247.60	2242.54	0.00
HW-6	Headwall	2246.00	2242.00	0.00
HW-7	Headwall	2246.00	2241.62	0.00
HW-8	Headwall	2254.00	2250.00	0.00
HW-9	Headwall	2254.00	2249.62	0.00
HW-10	Headwall	2245.30	2241.30	0.00
HW-11	Headwall	2106.50	2103.00	0.00
FES-1	Flared End Section	2244.50	2240.92	0.00
FES-2	Flared End Section	2242.10	2238.00	0.00
FES-3	Flared End Section	2236.70	2231.17	0.00
FES-4	Flared End Section	2236.70	2230.79	0.00
FES-5	Flared End Section	2224.10	2220.10	0.00
FES-6	Flared End Section	2224.10	2218.48	0.00
FES-7	Flared End Section	2217.90	2213.80	0.00
FES-8	Flared End Section	2210.40	2206.40	0.00
JB-1	Junction Box	2026.00	2017.00	9.00
JB-2	Junction Box	2038.00	2032.00	6.00
JB-3	Junction Box	2026.00	2021.00	5.00



SECTION VIEW



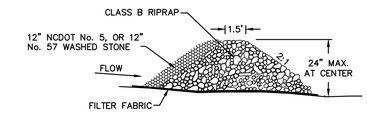
SLOPE	SLOPE LENGTH(FT)	MAXIMUM AREA(SQFT)
<2%	100	10,000
2 TO 5%	75	7,500
5 TO 10%	50	5,000
10 TO 20%	25	2,500
>20%	15	1,500

NOTES:

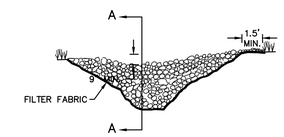
1. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. REPAIR SHALL BE MADE AS NECESSARY.
2. FABRIC SHALL BE REPLACED PROMPTLY IF FOUND TO BE IN DISREPAIR.
3. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT AND WHEN DEPOSITS REACH APPROXIMATELY 1/3 HEIGHT OF BARRIER.
4. REFERENCE NCDENR LAND QUALITY SECTION DESIGN MANUAL: 6.62.

SEDIMENTATION/SILT FENCE

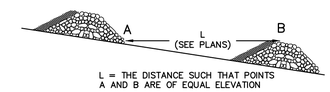
NOT TO SCALE



SECTION A–A



FACE VIEW



L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

DETAIL

THE FOLLOWING CRITERIA SHOULD BE USED WHEN DESIGNING A CHECK DAM:
- DRAINAGE AREA IS LIMITED TO ONE HALF ACRE.
- KEEP THE MAXIMUM HEIGHT OF 2 FT AT THE CENTER OF THE CHECK DAM.
- KEEP THE CENTER OF THE CHECK DAM AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES AT NATURAL GROUND ELEVATION.
- KEEP THE SIDE SLOPES OF THE DAM AT 2:1 OR FLATTER.
- KEY THE STONE INTO THE DITCH BANKS AND EXTEND BEYOND THE ABUTMENTS 1.5 FEET MINIMUM TO AVOID WASHOUTS FROM OVERFLOW AROUND DAM.
- STABILIZE OUTFLOW AREAS ALONG THE CHANNEL TO RESIST EROSION CAUSED BY CHECK DAMS.

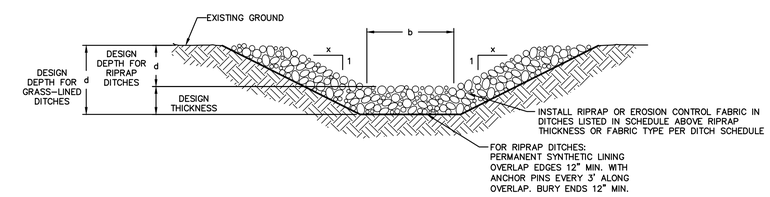
NOTES:

1. INSPECT CHECK DAMS AND CHANNELS WEEKLY AND AFTER EACH RAINFALL OF 1/2" OR GREATER AND REPAIR IMMEDIATELY.
2. CLEAN OUT SEDIMENT AND DEBRIS.
3. ADD STONES TO DAM IF NEEDED TO MAINTAIN DESIGN HEIGHT AND WIDTH.
4. REFERENCE NCDENR LAND QUALITY SECTION DESIGN MANUAL: 6.83

RIPRAP CHECK DAM

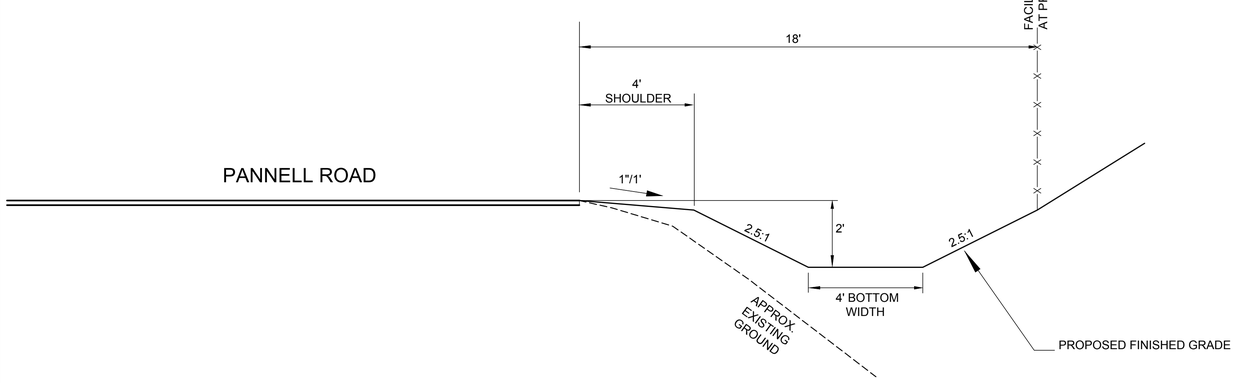
NOT TO SCALE

ALL MATTING PRODUCTS MAY BE SUBSTITUTED WITH APPROVED EQUAL. INSTALL PER MANUFACTURERS RECOMMENDATION



TYPICAL DITCH DETAIL

NOT TO SCALE



ROADSIDE DITCH AT PANNELL ROAD

NO.	DATE	BY	REVISION DESCRIPTION

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

MACON COUNTY MSW LANDFILL
PERMIT NO. 57-03
PERMIT TO CONSTRUCT
MSWLF PHASE 3 CELL 1
MACON COUNTY
MACON COUNTY, NORTH CAROLINA

JOB NO.: 13.00726
DATE: MAY, 2015
DESIGNED BY: DP
CADD BY: ANW
DESIGN REVIEW: ___
CONST. REVIEW: ___
FILE NAME: 13.00726 - PTC - DETAILS.dwg

MISCELLANEOUS DETAILS

SHEET
C-507

Q:\2013\13.00726 - Macon County MSW Phase 3\Design\Solid Waste\Drawings\000-Permit To Construct\13.00726 - PTC - DETAILS.dwg 6/5/2015 12:16 PM ADAM WALDROUP