

SCS ENGINEERS

December 5, 2017
File No. 02217306.01

Mr. Revendra Awasthi
Department of Environment and Conservation
Knoxville Environmental Field Office
3711 Middlebrook Pike
Knoxville, Tennessee 37921

Subject: Minor Permit Modification
Side Slope Modification
Phase F-2
Yarnell Road Class III Landfill, DML 47-0069

Dear Mr. Awasthi:

On behalf of WCA Waste Corporation of Tennessee (WCA), SCS Engineers submits this minor permit modification to Tennessee Department of Environment and Conservation (TDEC) for the Yarnell Road Landfill.

BACKGROUND

In May 2017, a minor modification for Phase F-2 was approved by TDEC. The May 2017 minor modification raised the bottom grades within the western portion of Phase F-2 due to the presence of rock. The grades in the May 2017 minor modification are shown on Drawing 3, **Attachment C**.

In June 2017, the as-built base grade map was submitted to TDEC for the western portion of Phase F-2. TDEC approved the area for waste placement on June 7, 2017.

In October 2017, the site was notified that the southern side slope within Phase F-2 was not correctly constructed at a 2:1 slope at the time waste was placed. As a result, the site was required to estimate the amount of waste placed below the 2:1 slope in this area. In a November 3, 2017 letter from SCS to TDEC, the amount of waste in this area was estimated to be 10,740 cubic yards (cy). Also, at this time, no additional waste was placed along the western slope of Phase F-2.

During a meeting in early November with TDEC, it was decided that the waste volume gained along the southern side slope should be negated along the western side slope and base of Phase F-2. To negate this volume of waste, it is proposed to place additional soil above the geologic buffer which will revise the side slope.



MINOR PERMIT MODIFICATION

The minor permit modification presented herein includes this letter, TDEC Solid Waste Modification Notification Form (**Attachment A**), Cut/Fill Computation (**Attachment B**) and reduced-size Construction Drawings (**Attachment C**). Full size bound Construction Drawings are also being submitted separately. This minor permit modification proposes to place additional fill materials in the western portion of Phase F-2.

The following seven (7) permit drawings are provided to illustrate this minor permit modification.

- Drawing 1 – Title Sheet
- Drawing 2 – Overall Site Plan
- Drawing 3 – Phase F-2 Permitted Subgrade (May 2017)
- Drawing 4 – Phase F-2 Existing Conditions (November 2017)
- Drawing 5 – Proposed Subgrade Plan
- Drawings 6 and 7 – Cross Sections

Drawing 3 illustrates the permitted top of geologic buffer. The bottom portion was obtained from the May 2017 minor modification prepared by Applied Engineering and Management Corporation (AMEC). The side slope grade was obtained from Sheet S-4 contained in the 2005 major permit modification prepared by Quantum Environmental & Engineering Services, LLC (QE²).

Drawing 5 illustrates the proposed contours following the placement of additional fill materials. As shown here, the proposed side slope grades along the western side of Phase F-2 were flattened to 3:1. Additional soil fill is also proposed north of the northern Phase F-2 permit boundary to tie back into existing grades at an approximate 2:1 slope. The northern permit boundary has been referred to as the “red line”.

Using AutoCAD Civil 3D, applicable topographic and design surfaces were used to estimate the volume of additional soil fill material needing to be placed to negate the 10,740 cy of waste placed along the southern boundary of Phase F-2. Based on this analysis, the additional soil needed to construct the new proposed grades and negate the gained airspace is approximately 10,800 cy. The AutoCAD printout is provided in **Attachment B**.

CONSTRUCTION AND CERTIFICATION

Following approval of this minor permit modification, WCA will hire a contractor to place and compact the required geologic buffer soil to achieve the permitted side slope grades. SCS will oversee the construction and retain the services of a Tennessee licensed surveyor and geotechnical testing firm.

Construction and soil testing will be conducted in accordance with the landfill’s Construction Quality Assurance (CQA) Plan. The top 5 feet of all geologic buffer soils will comprise of

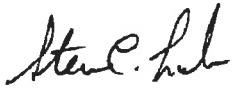
compacted soils that achieve an in-place hydraulic conductivity equal to or less than 1×10^{-6} cm/sec. The additional fill materials needed to negate the gained airspace will be placed above the permitted geologic buffer.

Following the construction of the geologic buffer and the placement of the additional soil fill material, SCS will prepare a Construction Certification Report. This report will contain a narrative, daily field reports, photographs, and as-built maps. This report will be sealed by a registered Tennessee professional engineer.

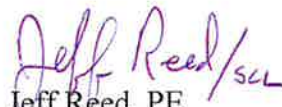
CLOSING

If you have any questions or need any additional information, please contact either Owen Karickhoff from WCA at 941-377-5370, or Steve Lamb from SCS Engineers at 704-576-4731.

Sincerely,



Steven C. Lamb, PE
Project Director/Vice President
SCS ENGINEERS



Jeff Reed, PE
Project Director/Vice President
SCS ENGINEERS

oh/scl

cc: Owen Karickhoff, WCA
John Anderson, Yarnell Road Landfill

Enclosures

ATTACHMENT A

TDEC Form





STATE OF TENNESSEE
 DEPARTMENT OF ENVIRONMENT AND CONSERVATION
 DIVISION OF SOLID WASTE MANAGEMENT
 WILLIAM R. SNODGRASS TENNESSEE TOWER
 312 ROSA L. PARKS AVENUE, 14TH FLOOR
 NASHVILLE, TN 37243

SOLID WASTE FACILITY MODIFICATION NOTIFICATION

PERMIT # DML 47 000 0069
DATE 11/30/2017
TDEC USE ONLY <input type="checkbox"/> MINOR <input type="checkbox"/> MAJ

1 - FACILITY TYPE	2 - TYPES OF MODIFICATIONS		NUMBER OF MODIFICATIONS
<input type="checkbox"/> CLASS I <input type="checkbox"/> CLASS II <input checked="" type="checkbox"/> CLASS III <input type="checkbox"/> COMPOST	<input type="checkbox"/> OPERATIONS <input type="checkbox"/> NARRATIVE CHANGE <input checked="" type="checkbox"/> ENGINEERING PLANS <input type="checkbox"/> GROUND WATER PROGRAM	<input type="checkbox"/> CONSTRUCTION QUALITY ASSURANCE PLAN <input type="checkbox"/> CLOSURE / POST CLOSURE PLAN <input type="checkbox"/> OTHER (SPECIFY) _____	

3 - FACILITY INFORMATION

FULL LEGAL NAME OF FACILITY Yarnell Road Class III Landfill	COUNTY Knox
PHYSICAL LOCATION ADDRESS (GIVE DIRECTIONS IF NECESSARY) 1550 Lamons Quarry Road	CITY STATE ZIP Knoxville TN 37932

4 - CONTACT PERSONS


FACILITY MANAGER OR SITE OPERATOR John Anderson	PHONE (865) 740-2673	EMAIL janderson@wcamerica.com
RESPONSIBLE OFFICIAL Bob Shires	PHONE (352) 377-0800	EMAIL bshires@wcamerica.com
FACILITY MAILING ADDRESS 1550 Lamons Quarry Road	CITY STATE ZIP Knoxville TN 37932	

5 - MODIFICATION INFORMATION

DESCRIPTION OF MODIFICATION	REASON FOR MODIFICATION
1. Adding fill material to modify side slopes and base grades in Phase F-2.	Need to reduce remaining airspace to account for waste overfill in Phase F-2.
2.	
3.	

6 - CERTIFICATION REQUIRED

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

 SIGNATURE OF RESPONSIBLE OFFICIAL	Bob Shires PRINTED NAME
Region Vice President TITLE	12/01/2017 DATE SIGNED

ATTACHMENT B

Cut/Fill Report

Cut/Fill Report

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By user: 3457ojh

Drawing: M:\CADD PROJECT DRAWINGS\02217306.01 Yarnell F-2\Minor Mod Drawings\Surfaces\M:\CADD PROJECT DRAWINGS\02217306.01 Yarnell F-2\Minor Mod Drawings\Surfaces\Proposed Surface 3 to 1 - flat 1167.dwg

Volume Summary							
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Totals				
	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	67201.31	7.33	10807.28	10799.94<Fill>

* Value adjusted by cut or fill factor other than 1.0

ATTACHMENT C
Construction Drawings

CONSTRUCTION DRAWINGS

MINOR MODIFICATION - PHASE F-2 YARNELL ROAD DEMOLITION LANDFILL DML 47-0069

WCA WASTE CORPORATION OF TENNESSEE
YARNELL ROAD DEMOLITION LANDFILL
1550 LAMONS QUARRY LANE
KNOXVILLE, TENNESSEE 37932

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
(704) 504-3107

JOB NO. 02217306.01

DECEMBER 2017



AREA MAP
SCALE: AS SHOWN



LOCATION MAP
SCALE: AS SHOWN

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LANDFILL SITE PLAN
3	PHASE F-2 BASE GRADES (MAY 2017)
4	PHASE F-2 EXISTING GRADES (NOV 2017)
5	PROPOSED ADDITIONAL FILL GRADING PLAN
6	EAST SECTION VIEWS
7	NORTH SECTION VIEWS



NO.	REVISION	DATE

SHEET TITLE	TITLE SHEET
PROJECT TITLE	WCA YARNELL ROAD LANDFILL MINOR MODIFICATION - PHASE F-2

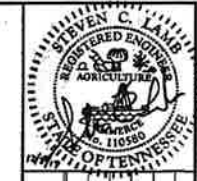
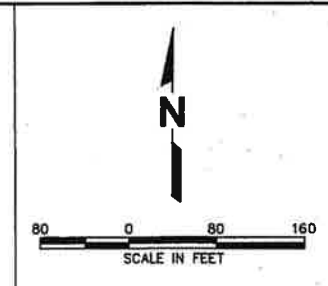
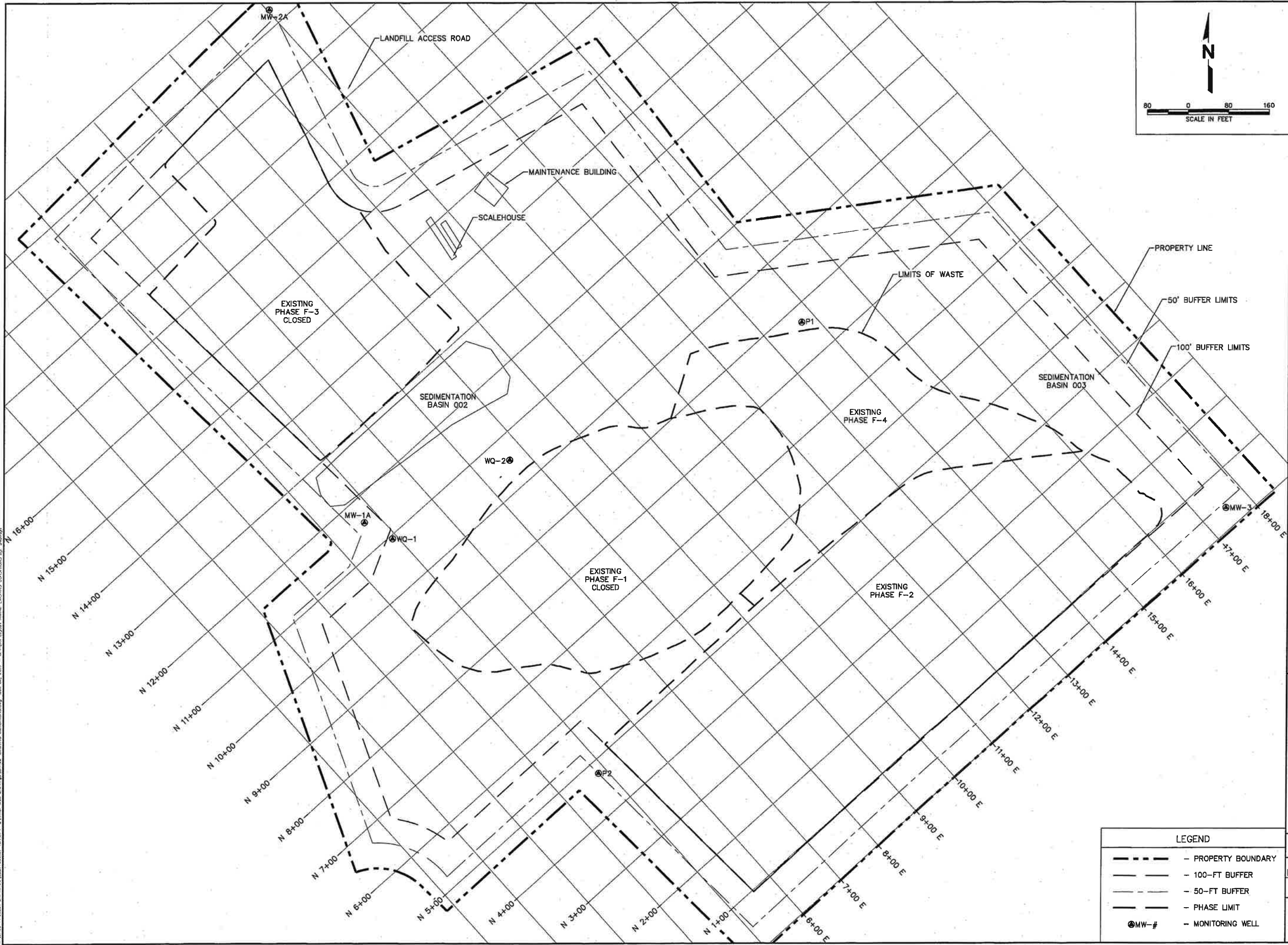
CLIENT	WASTE CORPORATION OF TENNESSEE P.O. BOX 31165 KNOXVILLE, TENNESSEE 37930
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SCS ENGINEERS	2520 WHITEHALL PARK DRIVE, SUITE 450 CHARLOTTE, NORTH CAROLINA 28273 PHONE: (704) 504-3107 FAX: (704) 504-3174
PROJ. NO.	02217306.01
DWG. BY:	JCT
CHECK BY:	
DATE:	

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DRAWING NO.	1 of 7

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NO.	REVISION	DATE

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PROJECT TITLE WCA YARNELL ROAD LANDFILL MINOR MODIFICATION - PHASE F-2

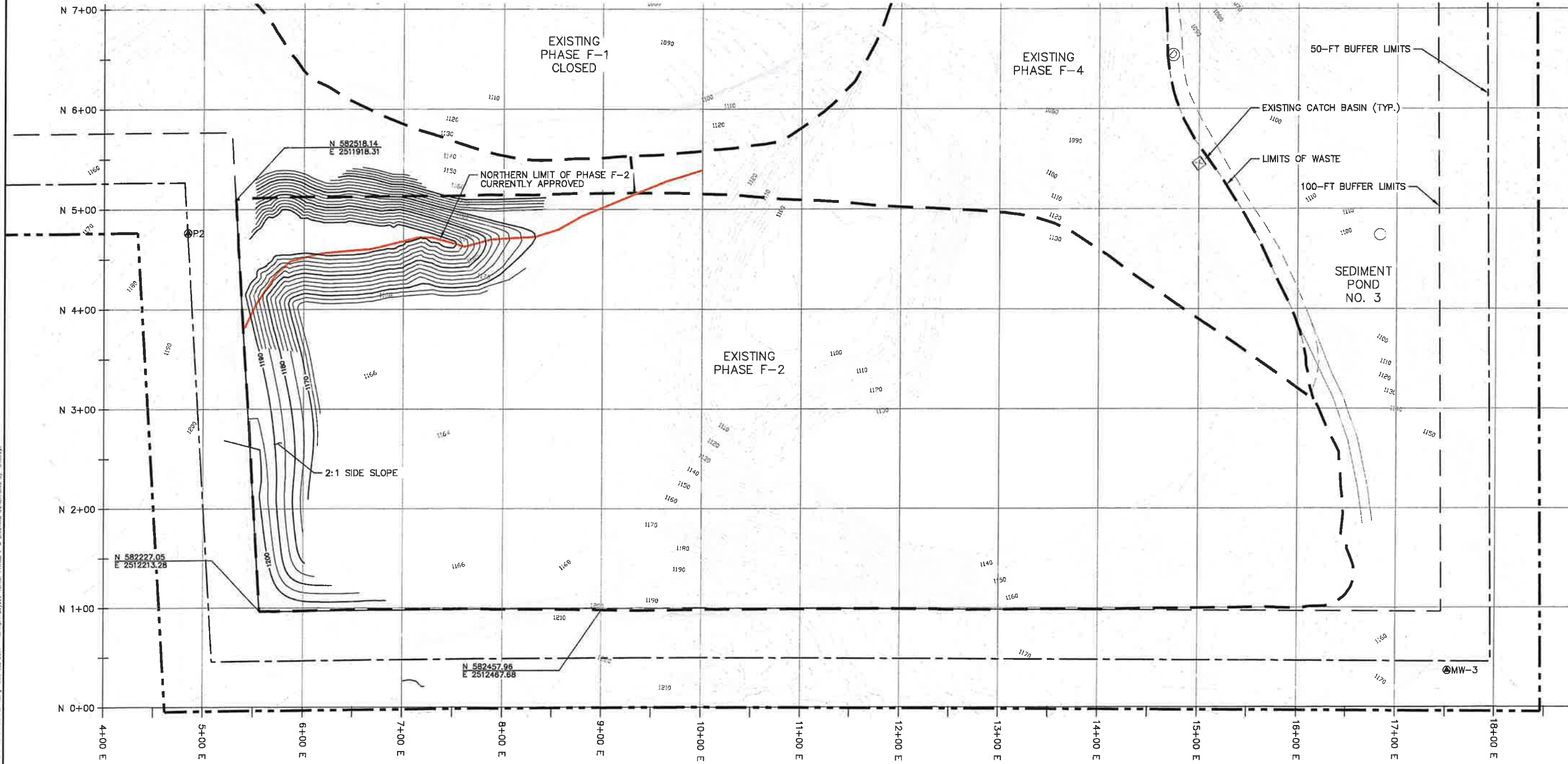
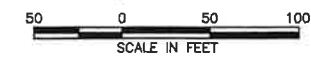
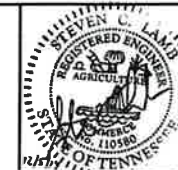
CLIENT WASTE CORPORATION OF TENNESSEE
 P.O. BOX 31165
 KNOXVILLE, TENNESSEE 37930

SCS ENGINEERS
 2520 WHITEHALL PARK DRIVE, SUITE 450
 CHARLOTTE, NORTH CAROLINA 28273
 PHONE: (704) 504-3107 FAX: (704) 504-3174
 PROJECT NO. 102217006.D1
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 CHECKED BY: JCT DATE: 02/20/17
 DESIGNED BY: JCT DATE: 02/20/17
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DRAWING NO.: 02 of 7

LEGEND

	- PROPERTY BOUNDARY
	- 100-FT BUFFER
	- 50-FT BUFFER
	- PHASE LIMIT
	- MONITORING WELL



NO.	REVISION	DATE

SHEET TITLE
PHASE F-2 BASE GRADES (MAY 2017)

PROJECT TITLE
**WCA YARNELL ROAD LANDFILL
MINOR MODIFICATION - PHASE F-2**

CLIENT
**WASTE CORPORATION
OF TENNESSEE**
P.O. BOX 31165
KNOXVILLE, TENNESSEE 37930

SCS ENGINEERS
2620 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
PHONE: (704) 504-3107 FAX: (704) 504-3174

DATE: 12/17/2017
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DATE:
DECEMBER 2017

SCALE:
AS SHOWN

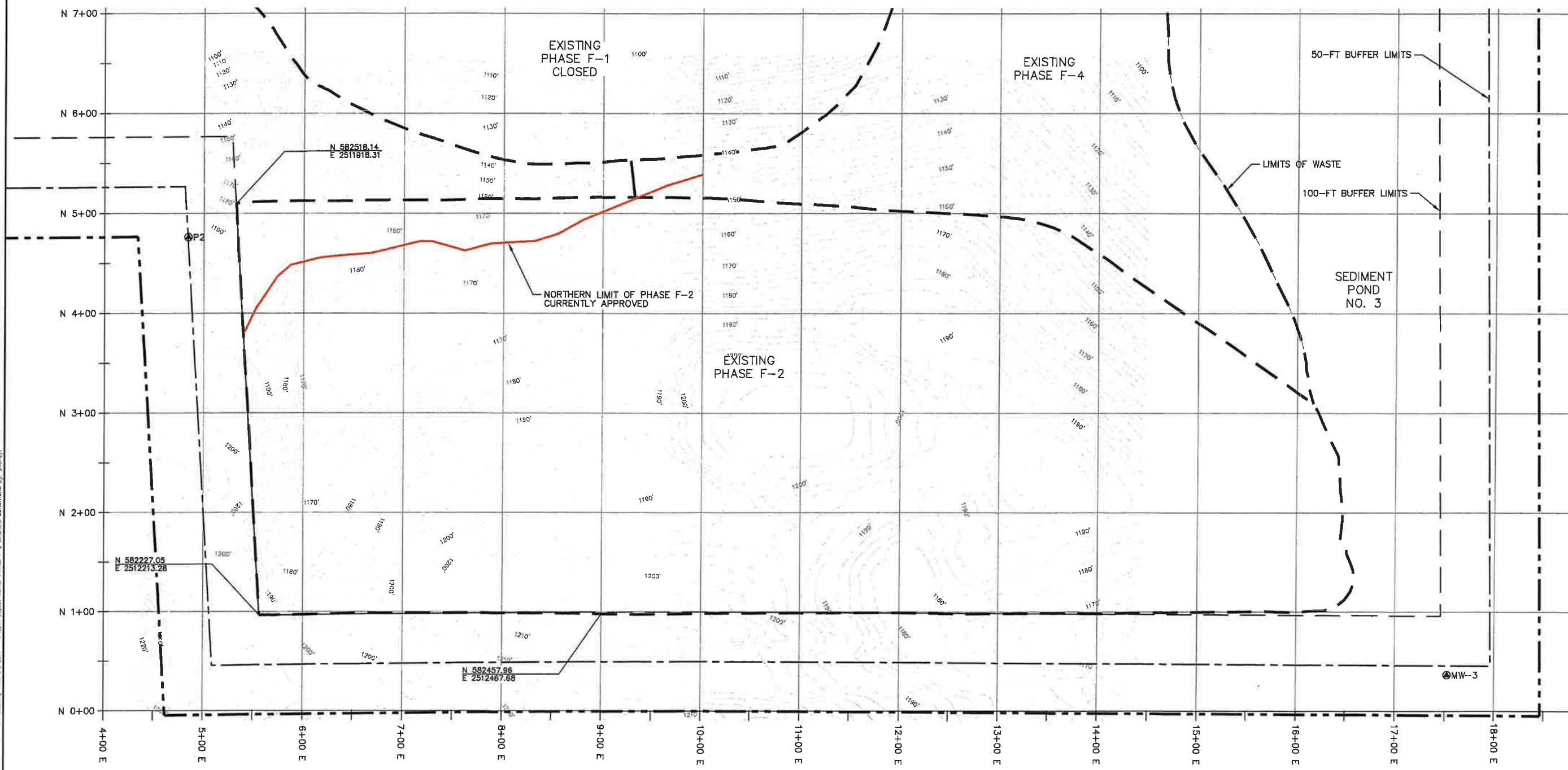
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3 of 7

LEGEND			
1164	- 10 FOOT MAJOR CONTOUR	1180	- 10 FOOT MAJOR PERMIT CONTOUR
- - - - -	- MINOR CONTOUR	- - - - -	- MINOR PERMIT CONTOUR
- - - - -	- PROPERTY BOUNDARY	⊗	- EXISTING CATCH BASIN
- - - - -	- 100-FT BUFFER	⊙	- EXISTING MANHOLE
- - - - -	- 50-FT BUFFER	⊕MW-#	- MONITORING WELL
- - - - -	- PHASE LIMIT	- - - - -	- PHASE F-2 NORTHERN LIMITS

NOTES:

1. THE CONTOURS IN PHASE F-2 WEST OF STATION 9+00 E REPRESENT THE CURRENT PERMIT BASE GRADES.
2. THE WESTERN SIDE SLOPE GRADES WERE OBTAINED FROM SHEET S-4 FROM THE MAY 2005 MAJOR PERMIT MODIFICATION PREPARED BY QUANTUM ENVIRONMENTAL & ENGINEERING SERVICES, LLC.

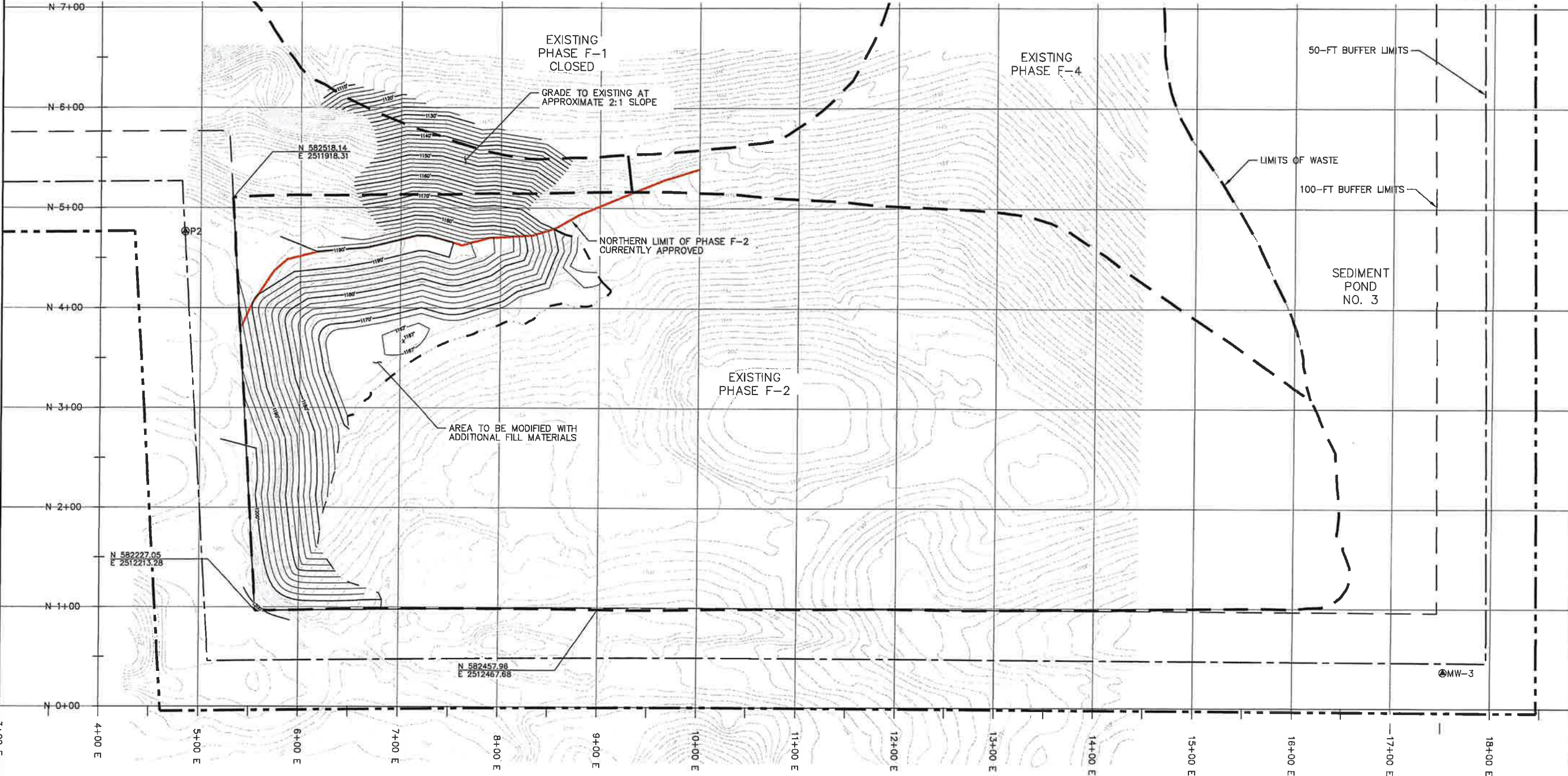
BASE SOURCE MAP: LANDFILL SURFACE GRADES FROM MAY 2017, DRONE SURVEY PROVIDED BY APPLIED ENGINEERING AND MANAGEMENT CORPORATION.



LEGEND	
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5' contour line	- MINOR CONTOUR
Dashed line	- PROPERTY BOUNDARY
Long dashed line	- 100-FT BUFFER
Short dashed line	- 50-FT BUFFER
Thick solid line	- PHASE LIMIT
Circle with crosshair	- MONITORING WELL
Red solid line	- PHASE F-2 NORTHERN LIMITS

BASE SOURCE MAP; LANDFILL SURFACE GRADES FROM NOVEMBER 2017, DRONE SURVEY PROVIDED BY JMC SURVEYORS.

DATE	
REVISION	
NO.	
SHEET TITLE	PHASE F-2 EXISTING GRADES (NOV 2017)
PROJECT TITLE	WCA YARNELL ROAD LANDFILL MINOR MODIFICATION - PHASE F-2
CLIENT	WASTE CORPORATION OF TENNESSEE P.O. BOX 31165 KNOXVILLE, TENNESSEE 37930
SCS ENGINEERS	2620 WHITEHALL PARK DRIVE, SUITE 450 CHARLOTTE, NORTH CAROLINA 28273 PHONE: (704) 504-3107 FAX: (704) 504-3174 PROJ. NO. 02217308.01 DATE: 12/17/17 SCALE: AS SHOWN DRAWING NO. 04 of 7



DATE	
REVISION	
NO.	

SHEET TITLE: PROPOSED ADDITIONAL FILL GRADING PLAN
 PROJECT TITLE: WCA YARNELL ROAD LANDFILL MINOR MODIFICATION - PHASE F-2

CLIENT: WASTE CORPORATION OF TENNESSEE
 P.O. BOX 31165
 KNOXVILLE, TENNESSEE 37930

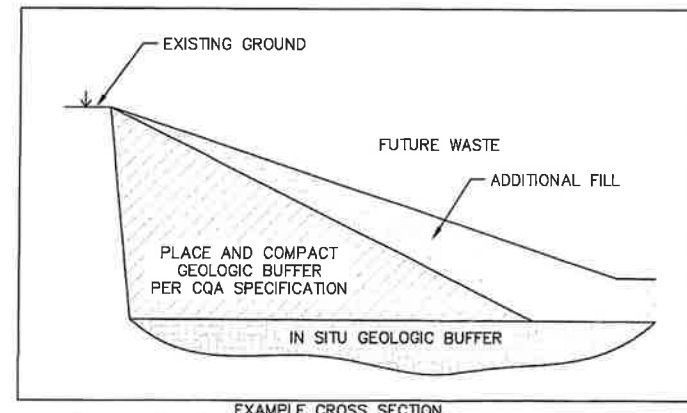
SCS ENGINEERS
 2520 WHITEHALL PARK DRIVE, SUITE 450
 CHARLOTTE, NORTH CAROLINA 28273
 PHONE: (704) 504-3107 FAX: (704) 504-3174
 PROJECT NO: 1002173005.01
 DATE: 12/27/2017
 DRAWN BY: JCT
 CHECK BY: DJH
 APP. BY: SCL

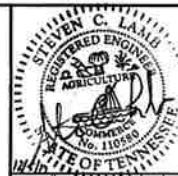
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LEGEND	
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	- MINOR CONTOUR
	- PROPOSED 10 FOOT MAJOR CONTOUR
	- PROPOSED MINOR CONTOUR
	- 100-FT BUFFER
	- 50-FT BUFFER
	- MW-# - MONITORING WELL
	- PHASE F-2 NORTHERN LIMITS
	- ADDITIONAL FILL EASTERN LIMITS
	- PHASE LIMIT
	- PROPERTY BOUNDARY
	- UNPAVED ROADWAY

BASE SOURCE MAP: LANDFILL SURFACE GRADES FROM NOVEMBER 2017, DRONE SURVEY PROVIDED BY JMC SURVEYORS.





NO.	REVISION	DATE

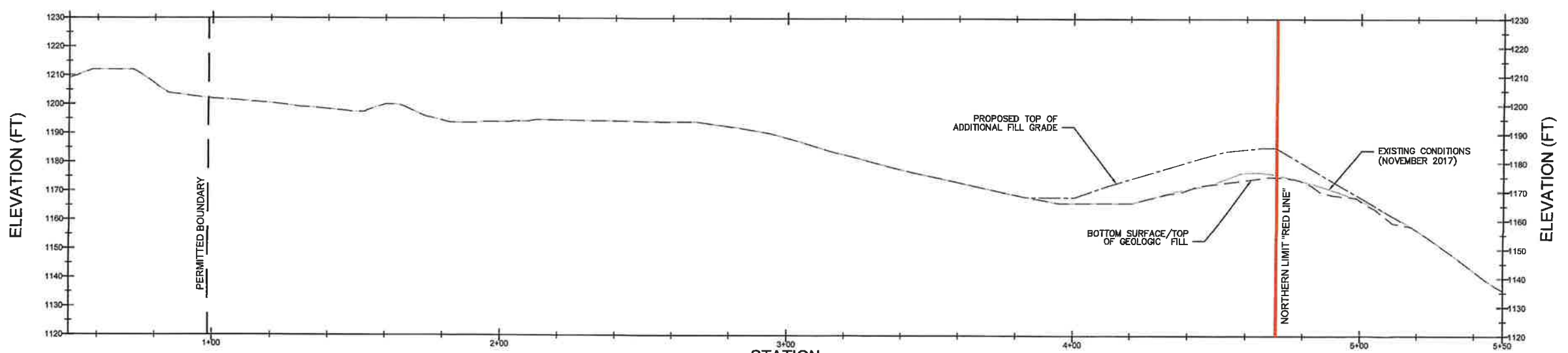
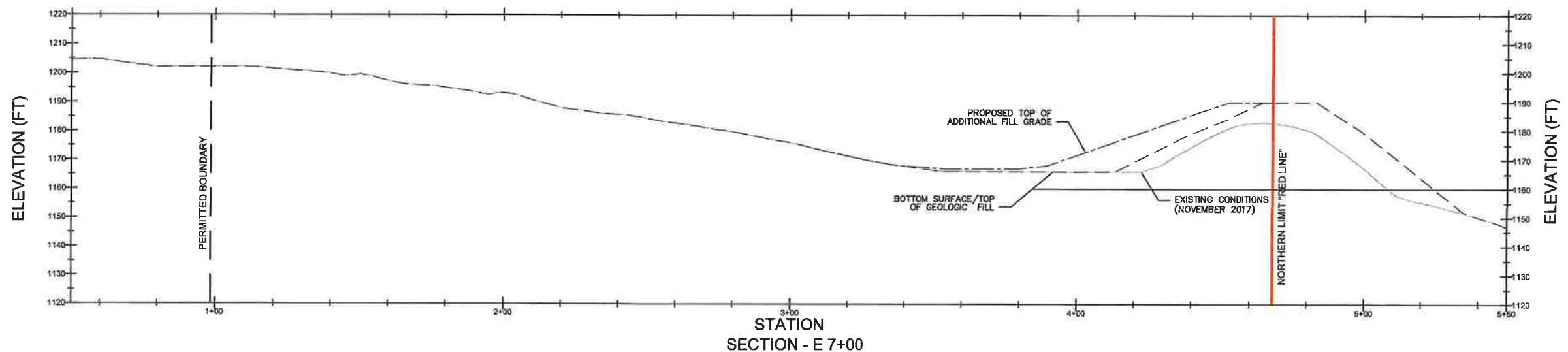
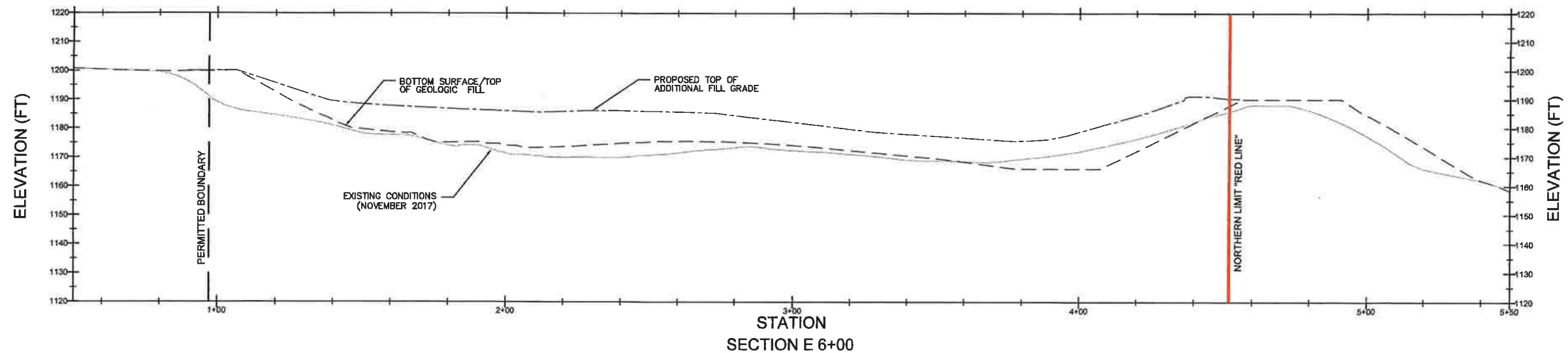
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 PROJECT TITLE: **WCA YARNELL ROAD LANDFILL MINOR MODIFICATION - PHASE F-2**

CLIENT: **WASTE CORPORATION OF TENNESSEE**
 P.O. BOX 31165
 KNOXVILLE, TENNESSEE 37930

SCS ENGINEERS
 2520 WHITEHALL PARK DRIVE, SUITE 450
 CHARLOTTE, NORTH CAROLINA 28273
 PHONE: (704) 504-3107 FAX: (704) 504-3174
 PROJECT NO. 02217.006.01
 DATE: 12/11/17
 DRAWN BY: JCT
 CHECKED BY: D.H.
 APPR. BY: SCL

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 DATE: **DECEMBER 2017**
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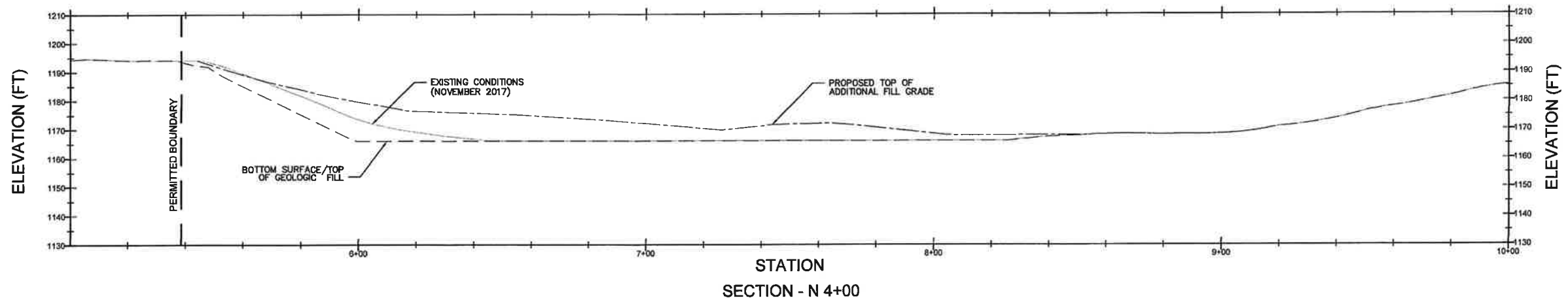
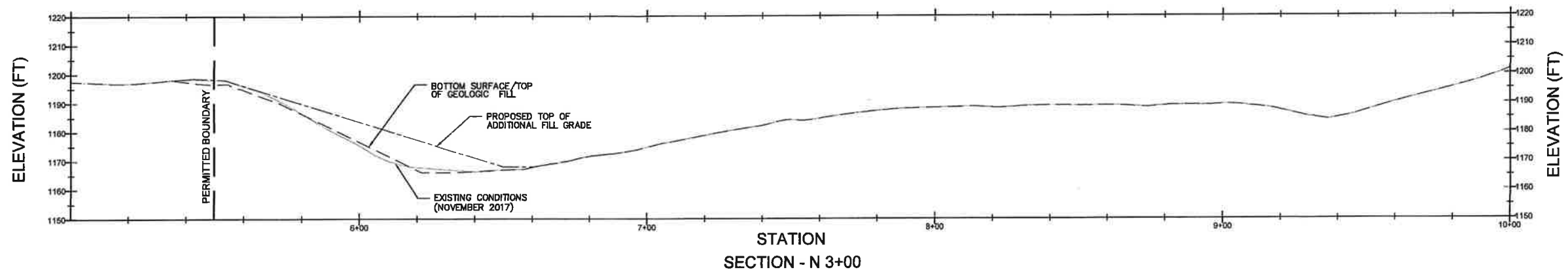
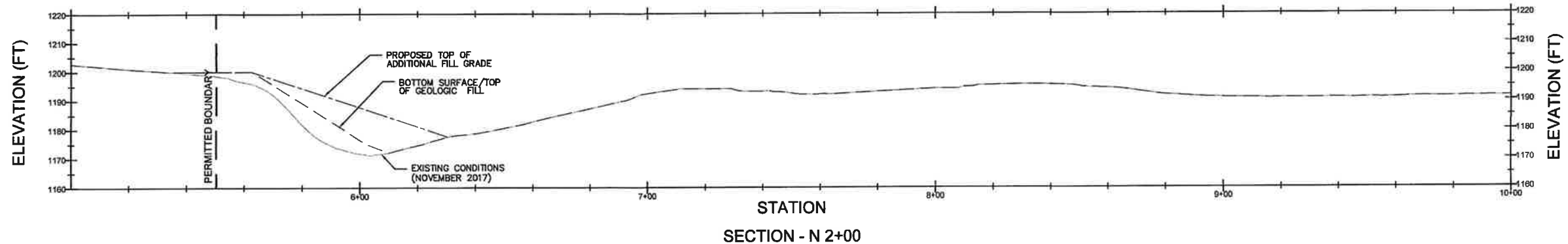
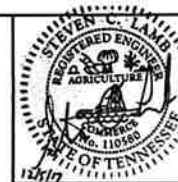
LEGEND	
	- BOTTOM SURFACE/TOP OF GEOLOGIC FILL
	- EXISTING CONDITIONS AS OF NOVEMBER 2017
	- PROPOSED TOP OF ADDITIONAL FILL GRADE
	- PERMITTED PHASE F-2 BOUNDARY
	- NORTHERN PHASE F-2 LIMITS "RED LINE"

HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 20'

SURVEY SOURCE NOTES:

- LANDFILL SURFACE GRADES FROM MAY 2017, CREATED FROM DRONE SURVEY PROVIDED BY APPLIED ENGINEERING & MANAGEMENT CORPORATION.
- LANDFILL SURFACE GRADES FROM NOVEMBER 2017, CREATED FROM DRONE SURVEY PROVIDED BY JMC SURVEYORS.

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LEGEND	
---	- BOTTOM SURFACE/TOP OF GEOLOGIC FILL
—	- EXISTING CONDITIONS AS OF NOVEMBER 2017
- · -	- PROPOSED TOP OF ADDITIONAL FILL GRADE
—	- PERMITTED PHASE F-2 BOUNDARY

HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 20'

SURVEY SOURCE NOTES:

1. LANDFILL SURFACE GRADES FROM MAY 2017, CREATED FROM DRONE SURVEY PROVIDED BY APPLIED ENGINEERING & MANAGEMENT CORPORATION.
2. LANDFILL SURFACE GRADES FROM NOVEMBER 2017, CREATED FROM DRONE SURVEY PROVIDED BY JMC SURVEYORS.

NO.	REVISION	DATE

SHEET TITLE	NORTH CROSS SECTIONS
PROJECT TITLE	WCA YARNELL ROAD LANDFILL MINOR MODIFICATION - PHASE F-2

CLIENT	WASTE CORPORATION OF TENNESSEE P.O. BOX 31165 KNOXVILLE, TENNESSEE 37930
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SCS ENGINEERS 2620 WHITEHALL PARK DRIVE, SUITE 450 CHARLOTTE, NORTH CAROLINA 28273 PHONE: (704) 504-3107 FAX: (704) 504-3174	PROJ. NO. 02217306.01 DATE: 12/17/17 DRAWN BY: JCT CHECKED BY: OJH IN CHARGE: SCL DATE: 12/17/17 DRAWN BY: JCT CHECKED BY: OJH IN CHARGE: SCL
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DATE:	DECEMBER 2017
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