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West Carleton Environmental Centre

Ottawa, Ontario

Final Report

Noise Best Management Practices Plan
Version 1

RWDI # 1302177
July 30, 2014

SUBMITTED TO

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1. PURPOSE

Waste Management of Canada Corporation (WM) has completed a noise Best Management Practices Plan (BMPP) in conjunction with RWDI AIR Inc. (RWDI). The BMPP will minimize the potential for off-site sound level effects for the proposed landfill operations at the West Carleton Environmental Centre (WCEC).

The objectives of this BMPP are summarized below:

- Identify activities that have the potential to affect sensitive receptors near the WCEC site;
- Provide appropriate practices and controls to reduce acoustic emissions; and
- Identify reporting programs and handling of noise complaints.

This BMPP is to be amended if there is an alternative solution or modification to the practices and controls provided herein. The following sections outline the procedure that WM will implement to control the potential for acoustic emissions from the site.

2. RESPONSIBILITIES

WM is responsible for ensuring the requirements of this BMPP are appropriately implemented. To accomplish this, employees will be trained on this BMPP, including the deployment, maintenance and inspections of equipment, and operations. Employee's responsibilities will be designated with regard to these activities. As a minimum, WM have the following responsibilities:

- Communicate the best management practices to the responsible supervisors, who shall ensure personnel are following operating procedures as defined in this BMPP.
- Ensure the BMPP is reviewed annually for changes in operations.
- All control measures will be in place before operation of the landfill commences.
- Maintain adequate separation distance between site boundary and surrounding receptors. Must be vigilant to ensure no new sensitive uses encroach close to the site boundary. Any sensitive uses not within the site boundary may be considered a point of reception in the future.
- Active participation in land-use planning and policy proposals within the study area would ensure awareness of the potential changes that may impact landfill operations leading to the appropriate actions.
- Access road to the proposed landfill should remain north of the existing closed landfill and south of the proposed footprint.
- The finished height of the existing and proposed landfill is approximately 172 mASL and 156 mASL which will act as berms for receptors to the south and north, respectively.

WM will ensure the Site Manager have the following responsibilities:

- Ensure that this BMPP is followed and formal training is provided to the appropriate staff.
- Knowledge and understanding of the practices and control measures as outlined in this BMPP in order to provide guidance where required.
- Maintaining this plan along with complaints and maintenance logs.
- Monitor and maintain haul route roadways to minimize movement over rough ground and potholes which can generate higher sound levels from the site.
- Scheduling should be such that activities are spaced out throughout the day where practical to prevent high periods of noise over short durations.

3. GENERAL INFORMATION

Construction and landfilling operations have been planned to occur over 10 development phases. The development phases are illustrated in **Appendix A**. Acoustic emissions from construction and landfilling operations have the potential to affect sensitive receptors surrounding the landfill depending on the type and location of activities. A number of factors will influence the sound levels at off-site receptors. Factors affecting acoustic emissions include the following:

- Activity occurrences (acoustic emissions generated by the frequency and scheduling of activities, and hours of operation).
- Travelled surfaces (acoustic emissions generated by vehicles travelling on paved and unpaved haul routes and vehicle movement). Traffic volume and speed also contribute to the overall affect off-site.
- Material handling (acoustic emissions generated by activities associated with construction, landfilling, pest control, ancillary facilities). Condition and proper use of equipment are also critical factors.
- Proper implementation of control measures.
- Meteorological effects on sound propagation (wind speed, wind direction, relative humidity, and temperature).

3.1 Statutory Requirements

This BMPP focuses on reducing the potential for sound level effects at sensitive receptors and ensuring compliance with the following applicable statutory requirements.

- Ministry of the Environment (MOE) Landfill guideline;
- MOE Publication NPC-300 guideline for “Stationary and Transportation Sources”; and
- MOE Publication NPC-115 guidance for construction equipment.

The WCEC site is located within the City of Ottawa and therefore Noise By-law 2004-253 is applicable for construction activities at the WCEC. A summary of the construction requirements is provided below.

Construction Restrictions per Noise By-law 2004-253 (City of Ottawa)		
7.	(1)	No person shall, between 22:00 hours of one day and 07:00 hours of the next day operate or cause to be operated, any construction vehicle or construction equipment in connection with the construction of any building or structure, highway, motor car, steam boiler or other engine or machine.
	(2)	Despite subsection (1) above, no person shall operate or cause to be operated any construction vehicle or construction equipment before 09:00 hours on any Sunday or statutory or public holiday.

4. TRAINING

All applicable workers are to receive training so they are competent in the best management practices regarding acoustic controls appropriate for the work they would be undertaking.

Formal training on new and existing operating procedures shall be provided by the Site Manager to relevant new and existing site personnel and contractors at least once every 3 years, and in the event of changes to this BMPP.

The Site Manager will also be responsible for identifying a list of personnel who are trained in acoustic control measures. Records of the training and attendees will be maintained on-site.

The list of individuals identified will be listed in the training log. An example of the training log is provided in **Appendix B**. The form will be updated every 5 years or upon employee turnover.

5. INSPECTION AND MAINTENANCE PROCEDURES

The Site Manager or trained individuals will be responsible for the inspection and maintenance of on-site equipment. All inspections and maintenance will be included in the inspection log. An example of the inspection log is provided in **Appendix C**. The form will be updated every 5 years.

As a minimum, the following activities or events shall be inspected and recorded in the inspection logs.

- Monthly inspection of haul routes and roadways will be carried out and maintenance will be performed within 1 month or as soon as conditions would allow.
- Unpaved roads and regularly travelled portions of the site will be re-graded as required.
- Inspection and monitoring of pest control devices will be carried out upon commissioning and quarterly afterwards. Propane cannon and shotgun blasts must be aligned away from residences.
- All on-site WM and contractors heavy mobile equipment is to be inspected before first use and annually afterwards to comply with NPC-115 equipment guidelines.
- All heavy mobile equipment shall be kept in good working order and fitted with working mufflers. Effective acoustic control depends on machinery being in good condition and fitted with working mufflers.

6. PRACTICES AND CONTROL MEASURES

Environmental noise from WCEC activities has the potential to affect sensitive receptors depending on the type and location of activities. A list of the applicable sensitive receptors is provided in **Table 1** and shown in **Figure 1**. Compliance with the statutory requirements will depend on the implementation of practices and controls outlined in this Section.

6.1 Heavy Mobile Equipment

Landfill operators, machine operators and contractors must review and follow the practices and controls as outlined below.

1. All landfilling and processing equipment shall be kept in good working order as deterioration may increase equipment sound levels.
2. All construction equipment should meet the sound emission standards as set out in MOE Publication NPC-115.
3. All heavy mobile equipment will be equipped with the appropriate mufflers and be kept in good working order.
4. Use of engine retarder braking (jake-brake) is prohibited.
5. On-site vehicle speed limits must be enforced.
6. Idling vehicles will be limited to no more than 5 minutes.
7. Vehicle movements must be appropriately designed to reduce the use of back-up alarms, where practical. This should coincide with safety considerations.
8. Where equipment back-up alarms will be used near areas that are potentially environmentally sensitive, alternative alarms should be used to reduce sound levels and annoyance. Ambient adjustable, strobe light or broadband alarms are options to consider.
9. Gated dump trucks are not to use brake jerks to swing their gates into the body to loosen material.

6.2 Construction and Landfilling Operations

Landfill operators, machine operators and contractors must review and follow the practices and controls as provided in the following subsections.

6.2.1 Steady-State Construction Activities

Construction activities have been planned to occur throughout the life of the landfill. Construction phases are illustrated in **Appendix A**.

All requirements in Section 6.1 are emphasized for construction activities along with the following controls.

- Construction activities will be limited to daytime hours (07:00 to 19:00 hours), with the exception of a couple of dozers operating between 06:00 to 07:00 and 19:00 to 20:00 hours used only for stripping and daily cover.
- All construction activities will be prohibited before 09:00 during daytime hours on Sunday, or statutory or public holidays to comply with the City of Ottawa By-law 253.
- Haul trucks will enter the site at the proposed main entrance on Carp Road.
- Construction working faces will be kept to a minimum area.
- Material overburden and cover soil stockpiles will be placed in the vicinity of the active working faces, while minimizing separation distance to and from the working faces which will reduce sound levels associated with material transport.
- Extracted materials from the construction area will be transported to the overburden or cover soil stockpile area.
- Adequate daily cover will be applied following each day's landfilling operations. Daily cover will be delivered to the cover soil stockpile as required and will be supplemented by excess materials from construction operations.
- A receptor-based monitoring program, through sound level measurements, is to verify the steady-state sound level limits are met during operation. See Noise Monitoring Program (NMP) report for details.

6.2.2 Steady-State Landfilling Activities

Landfilling activities are proposed to start from east to west. Landfill development phases are provided in **Appendix A**.

All requirements in Section 6.1 are emphasized for landfilling activities along with the following controls.

- Landfilling activities will be limited to daytime hours (07:00 to 19:00 hours) with the exception of a couple of dozers operating between 06:00 to 07:00 and 19:00 to 20:00 hours used only for stripping and daily cover.
- Landfilling activities would start in cell 1A after the completion of the liner construction (Phase 1).
- Haul trucks will enter the site at the proposed main entrance on Carp Road.
- Landfilling working faces will be kept to a minimum area.
- A receptor-based monitoring program, through sound level measurements, shall be completed to verify the steady-state sound level limits are met during operation. See Noise Monitoring Program (NMP) report for details.

6.2.3 Impulsive Landfill Pest Control Devices

The following practices and controls are required for impulsive pest control devices, primarily propane cannons, a shotgun and ‘whistles’.

- The use of pest control devices will be limited to daytime hours (07:00 to 19:00 hours).
- Use pest control devices only when required and minimize the amount of cannons used where practical.
- Careful placement of the propane cannons to ensure they are pointed away from residences is expected to mitigate sound level effects.
- Avoid synchronizing propane cannon blasts and intervals.
- Proper maintenance of the propane cannons will avoid unwanted operation after equipment is shut-off.
- Use of the shotgun is prohibited in Cell 1A. The use of a shotgun is permitted in all other cells provided that it is pointed away from residences. In most cases, point towards the northeast corner of the base of the existing closed landfill footprint (towards Karson Quarry east of Carp Road).
- Regulate propane cannons and space out shotgun blasts to prevent high periods of sound levels over short durations.

- Pyrotechnic bird bangers (also known as 'bird bombs') that detonates in the air are prohibited. The use of trained raptors, such as falcons, and other visual deterrent techniques should be investigated as alternative means of bird control.
- A receptor-based monitoring program, through sound level measurements, is to verify the impulsive sound level limits are met during operation. See Noise Monitoring Program (NMP) report for details.

6.3 Waste Transfer and Processing Facility (WTPF)

Landfill operators, machine operators and contractors must review and use the practices and controls provided in this Section. The WTPF consists of the material recycling, organics processing, and construction and demolition recycling operations.

6.3.1 Material Recycling (MRF) Operations

All requirements in Section 6.1 are emphasized for the MRF operations along with the following controls.

- MRF operations will be restricted to daytime hours (07:00 to 19:00 hours) for waste receipt.
- All MRF operations, with the exception of the outdoor sorting area and delivery truck traffic, will operate indoors.
- Scheduling should be such that activities are spaced out throughout the day to prevent high periods of sound levels over short durations.

6.3.2 Organics Processing (OPF) Operations

The organics processing operations is included in the capacity of the MRF and it will process only leaf and yard waste. Any associated vehicle movements have already been considered as part of the MRF.

6.3.3 Construction and Demolition Recycling (CDF) Operations

All requirements in Section 6.1 are emphasized for the CDF operations along with the following controls.

- CDF operations will be restricted to daytime hours (07:00 to 19:00 hours).
- Locate stationary equipment indoors where practical.
- Scheduling should be such that activities are spaced out throughout the day to prevent high periods of sound levels over short durations.

6.4 Mini Transfer Area

The proposed Mini Transfer Area is located off of the proposed main entrance off Carp Road North. Vehicle mix is expected to consist of mainly passenger traffic with occasional commercial trucks. Requirements 5 through 9 of Section 6.1 are emphasized for this facility along with the following controls.

- Hours of operation will be limited to daytime hours (07:00 to 19:00 hours) for waste receipt.
- Heavy equipment, such as but not limited to loaders or large dump trucks, are prohibited.
- On-site vehicle speed limits must be enforced.
- Idling vehicles will be limited to no more than 3 minutes.
- Vehicle movements must be appropriately designed to reduce the use of back-up alarms, where practical. This should coincide with safety considerations.

7. SCHEDULE OF IMPLEMENTATION

The following provides the proposed schedule for implementation of the plan:

Table 7.1: Schedule of Implementation

Tasks	Implementation Time Lines
Construction of landfill perimeter berms (Material Stockpiles)	Prior to construction of first cell excavation and on-going until site completion
Implementation of inspections, maintenance, practices and controls as outlined in Sections 5 and 6	During construction of first cell and subsequent landfilling starting in first cell, and on-going until site completion
Noise monitoring program (see NMP report)	During construction of first cell and subsequent landfilling starting in first cell, and on-going until site completion

8. RECORD KEEPING

Records shall be kept of when and how acoustic control measures are implemented and when complaints, if any, are received. Example of a complaint form is provided in **Appendix D**. The form will be updated every 5 years or upon employee turnover. As a minimum, the following activities will take place if a complaint is received.

- Complaints or concerns expressed directly to contractors or site personnel should be communicated immediately to the Site Manager so that formal complaint process can be initiated and followed up.
- The complaint form will provide the description of the complaint, environmental conditions, operations at time of incident, and description of all responses and follow up actions.
- Reporting will be conducted with the intent to manage any potential acoustic issues through operational changes to construction and landfilling.
- If the complaint is valid or persistent (i.e., not an upset condition), investigation through sound level measurements will be conducted and reported within 2 business days.
- On an annual basis, the complaint records will be reviewed and any unfavourable trends will be examined further to identify corrective actions and included in the annual report.

9. EA Commitments and EA Conditions

The following table provides a summary of EA commitments and EA Conditions that have been addressed through this Best Management Plan for Noise:

Table 9.1: Overview of EA Commitments and EA Conditions

EA Commitments	EA Conditions	Covered in BMPP
Development of a Noise BMP Plan that includes the following mitigation measures: 1) All WM trucks use standard (factory) mufflers and be kept in good working order; 2) All WM equipment will comply with MOE NPC-115 guidelines for construction equipment; 3) Enclose stationary sources in buildings, where practical; 4) The existing landfill height of approximately 172 mASL will act as a berm for receptors to the south; 5) The finished height of the preferred landfill footprint of approximately 156 mASL will act as a berm for receptors to the north of the sources travelling on the main access road; 6) Construction and landfill operations are conducted between the hours of 7:00 am and 7:00 pm to reduce potential impacts; and 7) Ancillary facilities, with the exception of the gas-to-energy plant, will operate between 7:00am and 7:00pm based on consultation with WM. Development of a Noise Monitoring Program that includes the following monitoring measures: 1) Monitoring Plan for steady-state and impulsive noise sources.	Condition 2.2: The proponent shall fulfill all commitments made during the environmental assessment process. Section 4.0: Compliance Monitoring Section 4.1: The proponent shall prepare and submit to the Director for the public record, an environmental assessment compliance monitoring plan. Section 4.3: The program shall include monitoring of the proponent's implementation of the undertaking in accordance with the environmental assessment and the conditions in this Notice with respect to mitigation measures, public consultation and additional studies and work to be carried out. The program shall also include monitoring of compliance with all commitments made in the environmental assessment and the subsequent review assessment with respect to mitigation measures, public consultation and additional studies of work to be carried out.	1) Section 6.1 2) Section 6.1 3) Section 6.3 4) Section 2 5) Section 2 6) Section 6.2 7) Section 6.3 1) Refer to Noise Monitoring Program

10. REFERENCES

Ontario Ministry of the Environment, 1998: Noise Guidelines for Landfill Sites (Draft), October 1998.

Ontario Ministry of the Environment, 2013: Publication NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", August 2013.

Ontario Ministry of the Environment (MOE), 1977b: Model Municipal Noise Control By-law, which includes Publication NPC-115 – Construction Equipment.

City of Ottawa, 2004: Noise By-law No. 2004-253.

TABLES

Table 1: Point of Reception Summary

WCEC - Ottawa, Ontario

Notes:

1. The higher of MOE Landfill Guideline daytime limit for steady-state sources or background sound level.
2. The higher of MOE Landfill Guideline limit for quasi-steady impulsive pest control devices or background sound level.
3. The higher of MOE Landfill Guideline limit for impulsive pest control devices or background sound level.

Point of Reception ID	Point of Reception (PoR) Description	Easting (m)	Northing (m)	Performance Limit		
				Landfill Steady-State Sources [1] (dBA)	Landfill Quasi-Steady Impulsive Sources [2] (dBA)	Landfill Impulsive Sources [3] (dBAI)
SITE VICINITY RECEPTORS						
PR4	2-storey home on Richardson Side Road NNW	422496	5014786	55	60	70
PR9	2-storey home David Manchester Road	422477	5013457	57	60	70
NR1	1-storey home on Richardson Side Road N	423378	5015662	61	61	70
NR2	2-storey home at 2166 Carp Road East	425095	5014365	60	60	70
NR4	2-storey home at 292 Moonstone Road South	424009	5013694	60	60	70
NR8	2-storey Terrace Youth Residential Services	424510	5013860	57	60	70
NR9	2-storey Sensitive Business Operation	423804	5016030	64	64	70
RR12	2-storey home on David Manchester Road Central	421792	5014164	62	62	70
RR14	2-storey home at 607 William Mooney Road	422720	5015088	61	61	70
RR15	2-storey home on Wilbert Cox Drive	422487	5015392	55	60	70
REGIONAL RECEPTORS						
PR7	2-storey home at 2096 Carp Road South	425379	5014175	60	60	70
NR5	St. Stephen Catholic Elementary School	426965	5013887	55	60	70
NR6	Huntleigh United Cemetery	423336	5016477	55	60	70
NR7	Lloydalex Park	426103	5013580	55	60	70
RR10	2-storey Spruce Ridge Road Central	420721	5013259	55	60	70
RR11	2-storey David Manchester Road North	420955	5015076	59	60	70
RR13	2-storey David Manchester Road South	423070	5012577	55	60	70
RR16	2-storey Carp Road North	422885	5017058	55	60	70
RR17	2-storey Oak Creek Road	424808	5016945	61	61	70
RR18	2-storey West Carleton Industrial Park	424788	5013745	55	60	70
RR19	2-storey Timbermere	425265	5013211	55	60	70
RR20	2-storey Stittsville	426301	5013124	55	60	70
RR21	2-storey Jackson Trails	426301	5014124	55	60	70
RR22	2-storey Fairwinds	427201	5014922	55	60	70
RR23	2-storey Arcadia	426664	5016724	55	60	70
RR24	2-storey Kanata West	426926	5017979	55	60	70

FIGURES

Sensitive Receptor Locations

WCEC - Ottawa, Ontario

True North

Project #1302177

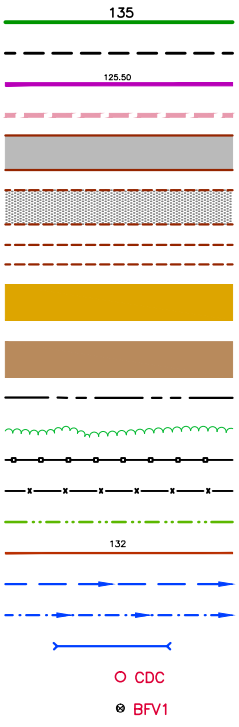
Drawn by:	NBN	Figure:	1
Approx. Scale:	1:30,000		
Date Revised:	Mar. 6, 2014		

RWDI

APPENDIX A

Landfill Development Phases

LEGEND :



AREA COMPLETED TO FINAL WASTE GRADES (SEE NOTE BELOW)

PROPOSED LIMIT OF WASTE (EXPANSION AREA)

PROPOSED BOTTOM OF WASTE CONTOURS

APPROXIMATE LIMIT OF EXISTING LANDFILL

HARD SURFACE ACCESS ROAD

GRAVEL HIGH LEVEL ACCESS ROAD

TEMPORARY GRAVEL ACCESS ROAD

WORKING AREA FOR EACH LANDFILLING PHASE

AREA OF TEMPORARY CLAY SEAL

WASTE MANAGEMENT OF CANADA CORP. PROPERTY LIMIT

TREELINE

LITTER FENCE 10m HIGH

LITTER FENCE 3m HIGH

CUT/FILL LIMIT BESIDE EXISTING LANDFILL MOUND

FILL CONTOURS BESIDE EXISTING LANDFILL MOUND

PROPOSED DITCH/SWALE

PROPOSED DITCH/SWALE RIP RAP LINED

PROPOSED CULVERT

CDC — CONDENSATE DRAIN CHAMBER/PUMPING STATION

BFV1 — 750ø BUTTERFLY ISOLATION VALVE

ABBREVIATIONS :

LF	LEACHATE FORCEMAIN
WM	WATERMAIN (NONPOTABLE)
OH	OVERHEAD HYDRO
SAF	SANITARY FORCEMAIN/SEWER
PWF	PURGE WELL FORCEMAIN
GH	GAS HEADER
CA	COMPRESSED AIR LINE
PS	PUMPING STATION (PRIMARY AND SECONDARY LEACHATE COLLECTION SYSTEM)

NOTE :

THIS AREA WILL BE PARTIALLY CAPPED AND VEGETATED AS SOON AS PRACTICAL AND FULLY CAPPED AND VEGETATED ONCE STABILIZED AND NO SIGNIFICANT SETTLEMENT IS ANTICIPATED. CONTOUR ELEVATIONS SHOWN REFLECT TOP OF FINAL COVER.

EXISTING/PROPOSED FACILITIES

LOCATION	DESCRIPTION
A	PUMPING STATIONS PS5/PS6
B	END OF GAS HEADER AT PHASE 1 – NORTH
C	MAINTENANCE BUILDING
D	SCALE HOUSE
E	END OF GAS HEADER AT PHASE 1 – SOUTH
F	END OF EXISTING PURGE WELL FORCEMAIN (PW20)
G	PUMPING STATION PS1
H	BLOWER BUILDING AND FLARES
J	EXISTING OFFICE BUILDING
K	LEACHATE PRETREATMENT PLANT
L	PUMPING STATION PS3
M	GAS HEADER TEE FOR LANDFILL LOOP
N	KIOSK MINI TRANSFER AREA
P	END OF GAS HEADER AT PHASE 2 – NORTH
Q	END OF GAS HEADER AT PHASE 2 – SOUTH
R	END OF GAS HEADER AT PHASE 3 – NORTH
S	END OF GAS HEADER AT PHASE 3 – SOUTH
T	END OF GAS HEADER AT PHASE 5 – NORTH
U	END OF GAS HEADER AT PHASE 5 – SOUTH
V	END OF GAS HEADER AT PHASE 6 – SOUTH
W	END OF GAS HEADER AT PHASE 6 – NORTH
X	ACCESS ROAD TURNAROUND

FIGURE 4-1

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2013
SCALE: N T S

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 131–19416–00 – 4–1

LEGEND

WEST CARLETON ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101–1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM

WORK DESIGNATION

RUN	PIPING INFO
A – K	LF (75ø)
B – E	GH, GH & CA (750/250/75ø)
C – D	WM (50ø)
D – A	OH
D – C	SAF (75ø)
E – F	PWF (150ø)
H – M	GH, GH & CA (750/250/75ø)
J – D	OH
J – N	OH

UTILITY TRENCH SECTION (1 / 4-2)
SCALE: 1 : 75

NOTE :
CONFIGURATION OF COMMON TRENCH VARIES DEPENDING ON LOCATION.

WSP
101-1450 1st AVENUE W
OWEN SOUND, ONTARIO, CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8098 | WWW.WSPGROUP.COM

WASTE MANAGEMENT

SITE PREPARATION FOR PHASE 1 - PART 1

WEST CARLETON ENVIRONMENTAL CENTRE

DWN BY: T C G
CHK BY: F C F

DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 131-19416-00 – 4-2

FIGURE 4-2

G:\2013\05\13-401 – Environmental\131-19416-00 – Ottawa Landfill Expansion\DRAWINGS FOR D&O\131-19416-00-4-2.dwg Mar 18, 2014 – 4:18pm

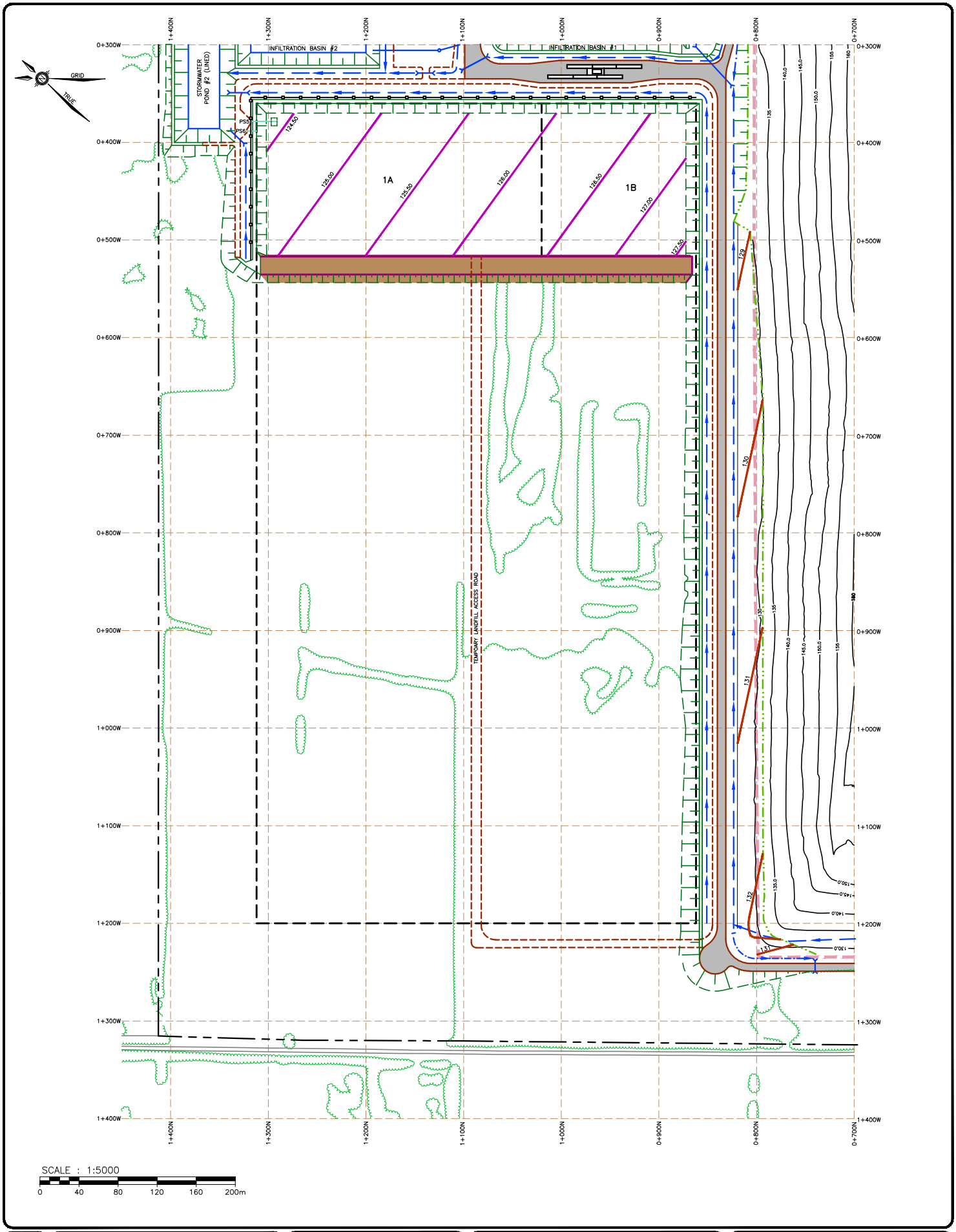


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FIGURE 4-3

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 131–19416–00 – 4–3

SITE PREPARATION FOR PHASE 1 - PART 2

WEST CARLETON ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

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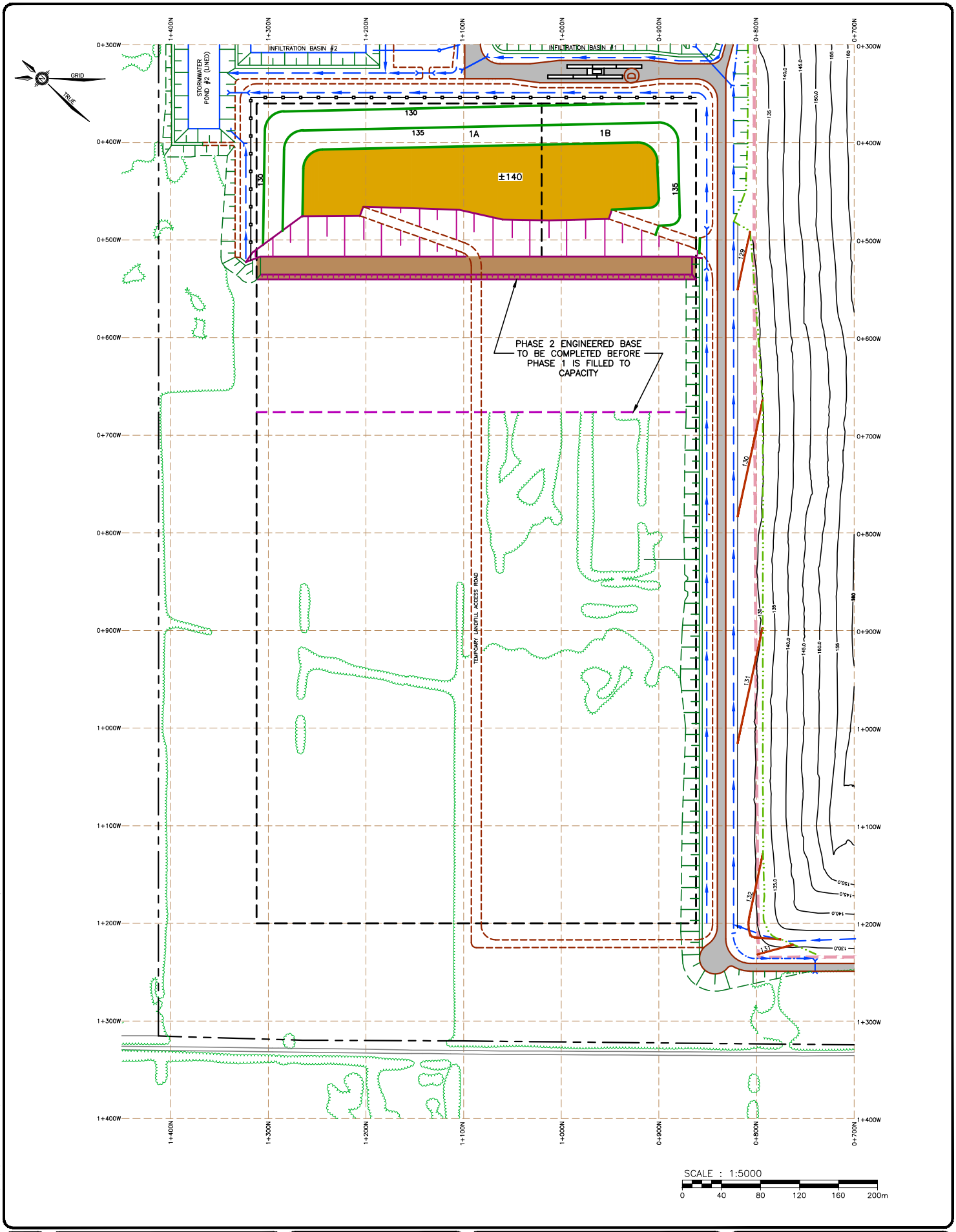

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FIGURE 4-4

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

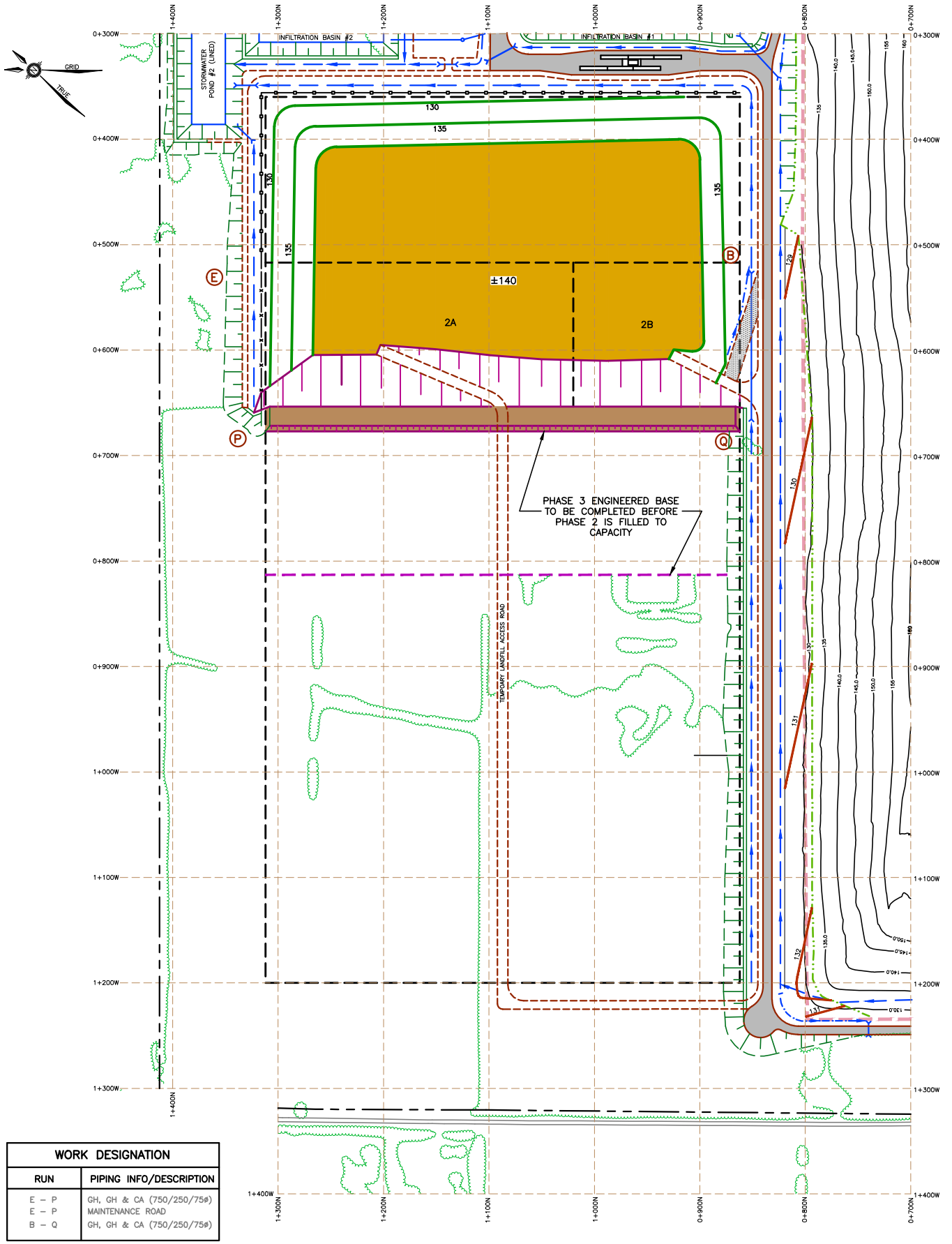
DRAWING NO. 131-19416-00 – 4-4

PHASE 1
LANDFILL DEVELOPMENT

WEST CARLETON ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM



WORK DESIGNATION	
RUN	PIPING INFO/DESCRIPTION
E – P	GH, GH & CA (750/250/75ø)
E – P	MAINTENANCE ROAD
B – Q	GH, GH & CA (750/250/75ø)

G:\2015\05\13-401 - Environmental\131-19416-00 - Ottawa Landfill Expansion\DRAWINGS FOR DA0\131-19416-00-4-5.dwg Mar 14, 2014 - 4:05pm

FIGURE 4-5

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

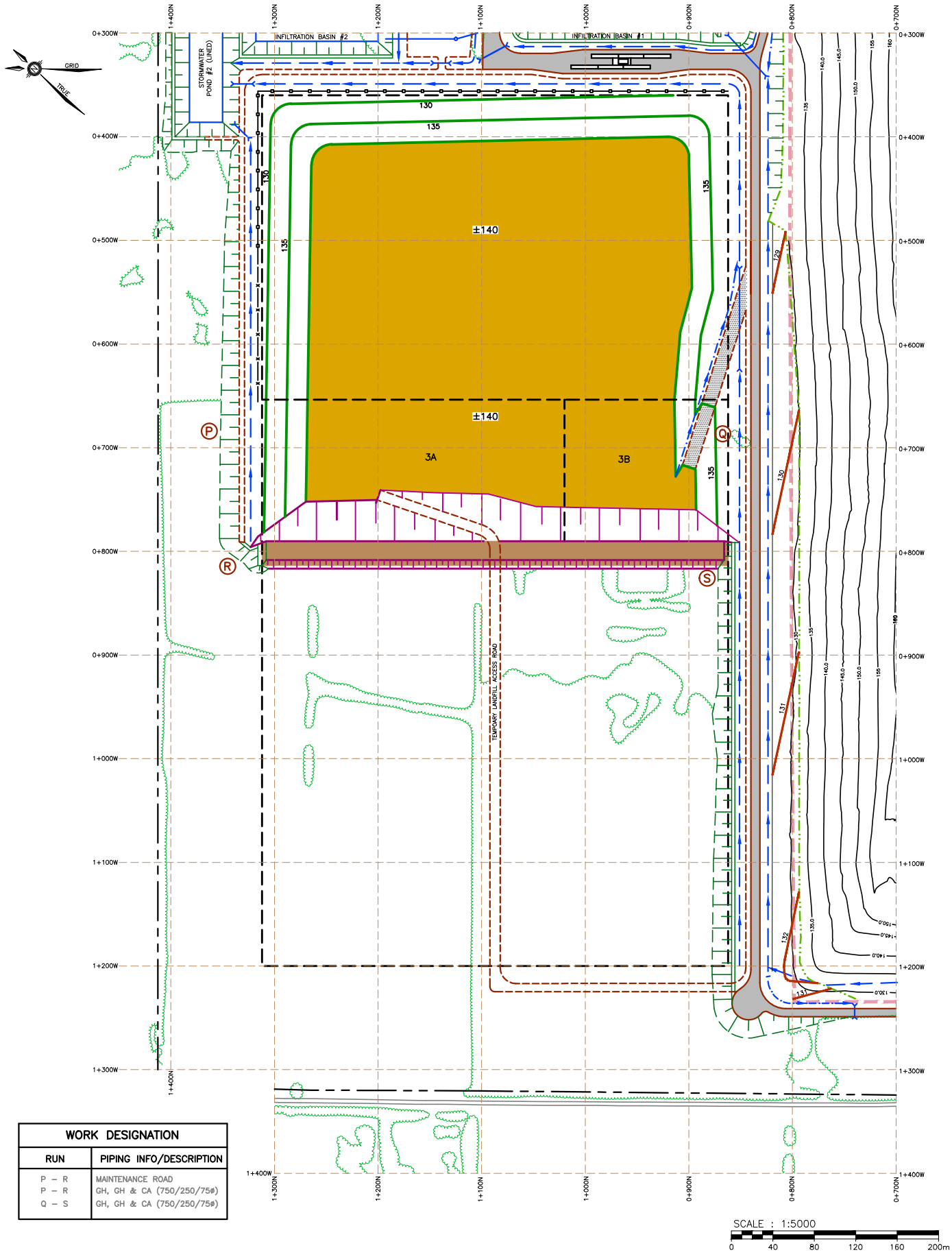
DRAWING NO. 131-19416-00 – 4-5

PHASE 2
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM



WORK DESIGNATION	
RUN	PIPING INFO/DESCRIPTION
P – R	MAINTENANCE ROAD
P – R	GH, GH & CA (750/250/75ø)
Q – S	GH, GH & CA (750/250/75ø)

FIGURE 4-6

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 131–19416–00 – 4–6

PHASE 3
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM

G:\2013\GS\13-401 – Environmental\131-19416-00 – Ottawa Landfill Expansion\DRAWINGS FOR CAD\131-19416-00-4-6.dwg Mar 14, 2014 – 4:07pm

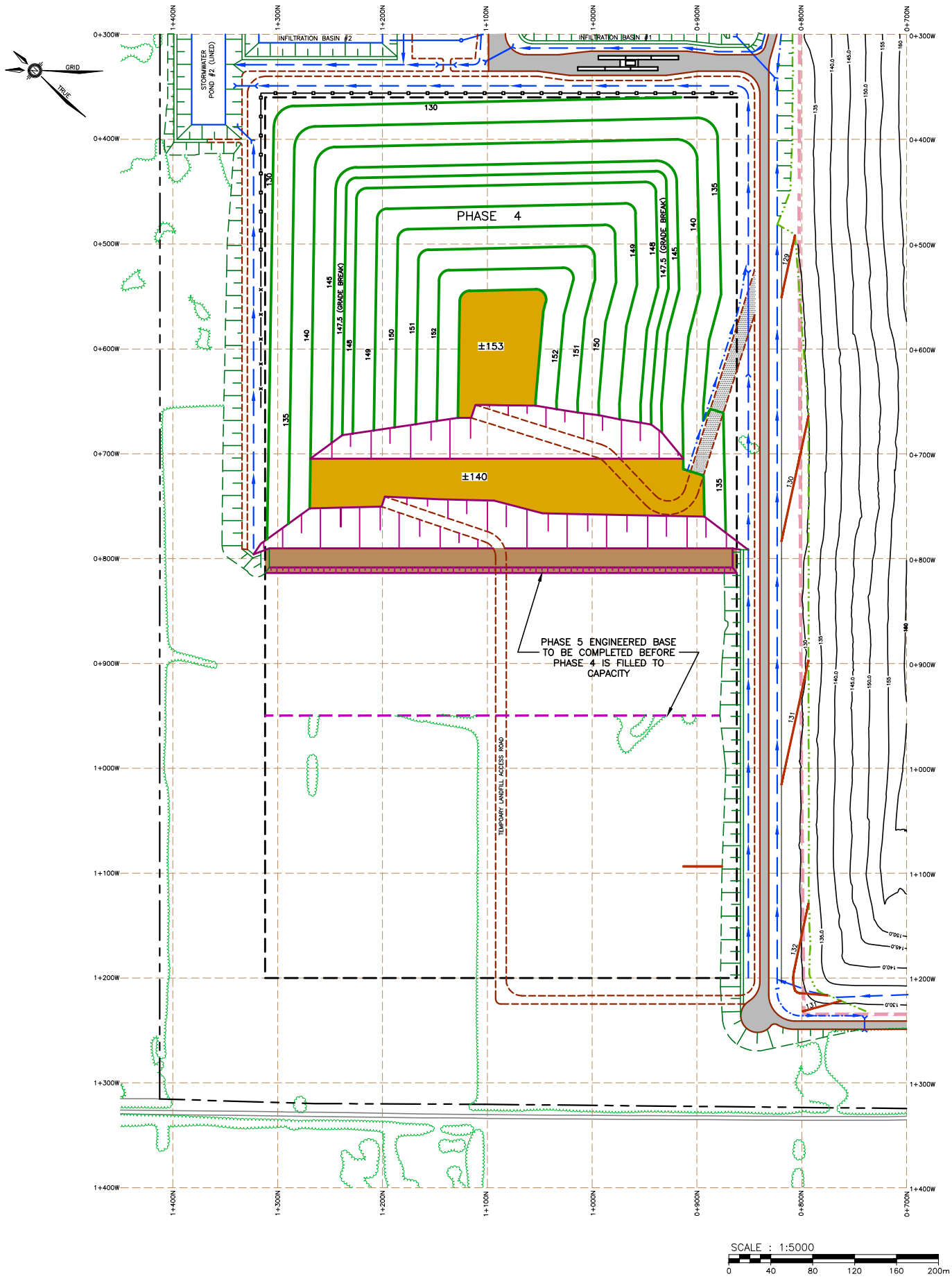


FIGURE 4-7

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

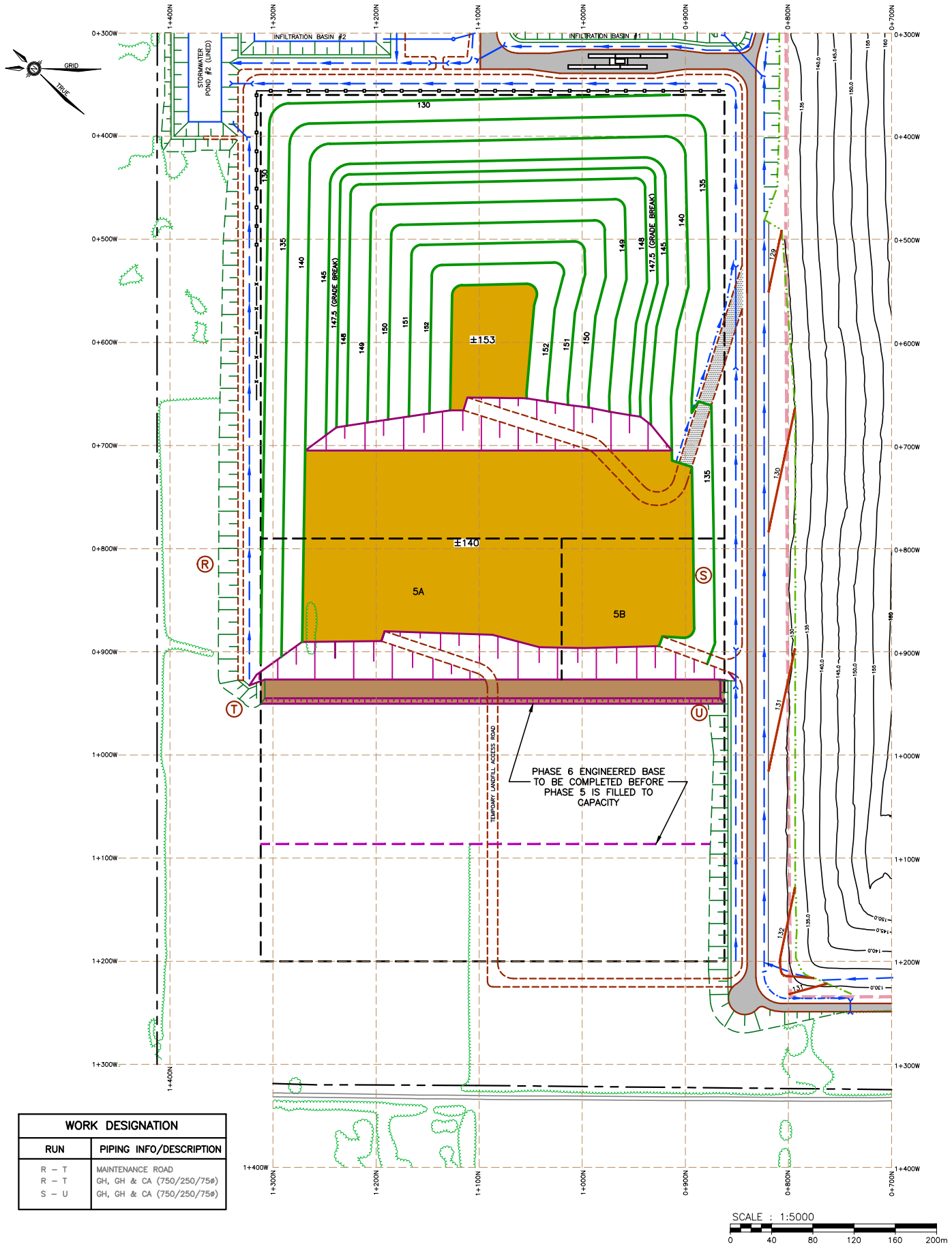
DRAWING NO. 131-19416-00 - 4-7

PHASE 4
LANDFILL DEVELOPMENT

WEST CARLETON ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM



WORK DESIGNATION	
RUN	PIPING INFO/DESCRIPTION
R – T	MAINTENANCE ROAD
R – T	GH, GH & CA (750/250/75ø)
S – U	GH, GH & CA (750/250/75ø)

G:\201\3\05\13-401 – Environmental\131-19416-00 – Ottawa Landfill Expansion\DRAWINGS FOR DMO\131-19416-00-4-8.dwg Mar 14, 2014 – 4:11pm

FIGURE 4-8

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

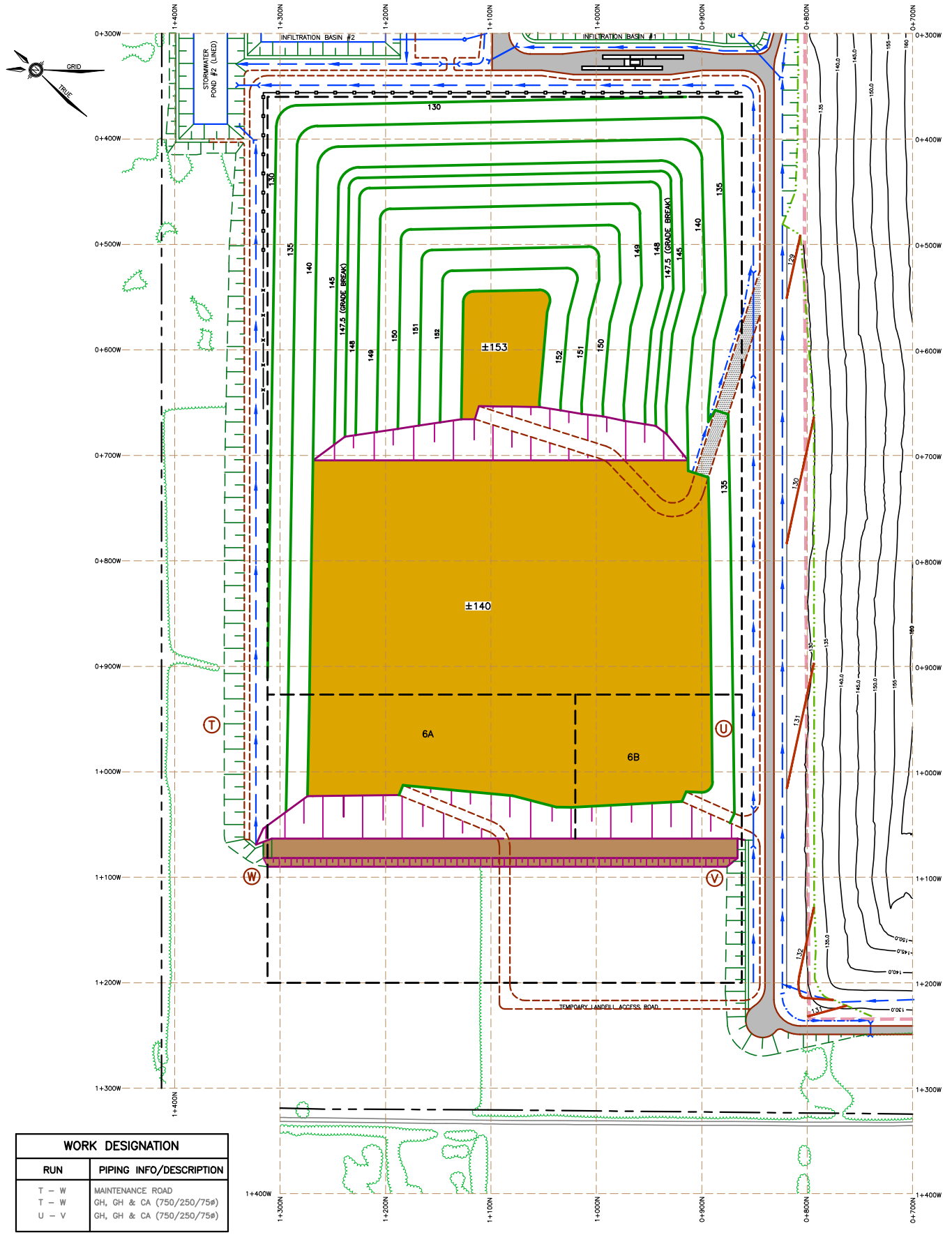
DRAWING NO. 131–19416–00 – 4–8

PHASE 5
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM



WORK DESIGNATION	
RUN	PIPING INFO/DESCRIPTION
T – W	MAINTENANCE ROAD
T – W	GH, GH & CA (750/250/75ø)
U – V	GH, GH & CA (750/250/75ø)

FIGURE 4-9

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 131–19416–00 – 4–9

PHASE 6
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM

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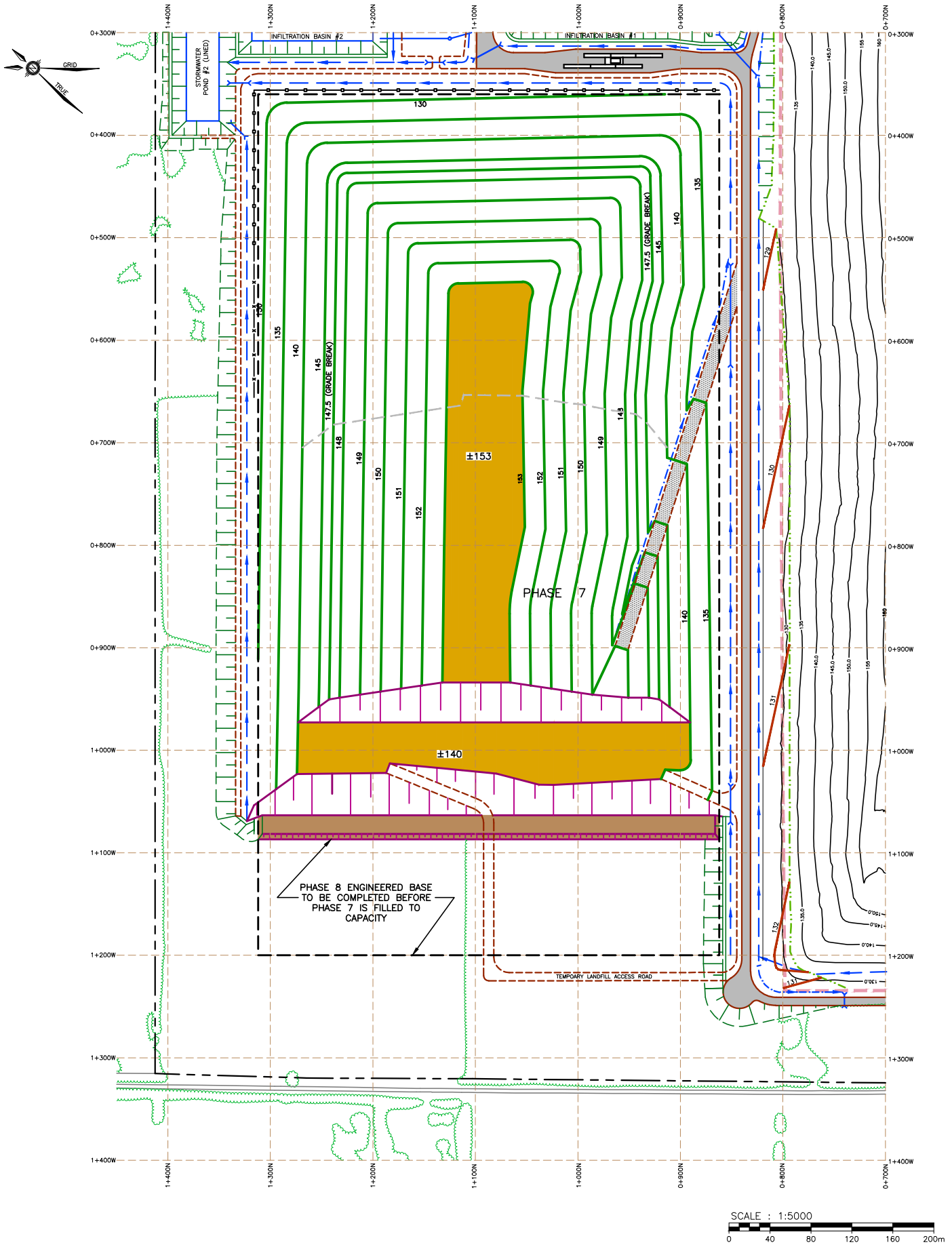

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FIGURE 4-10

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

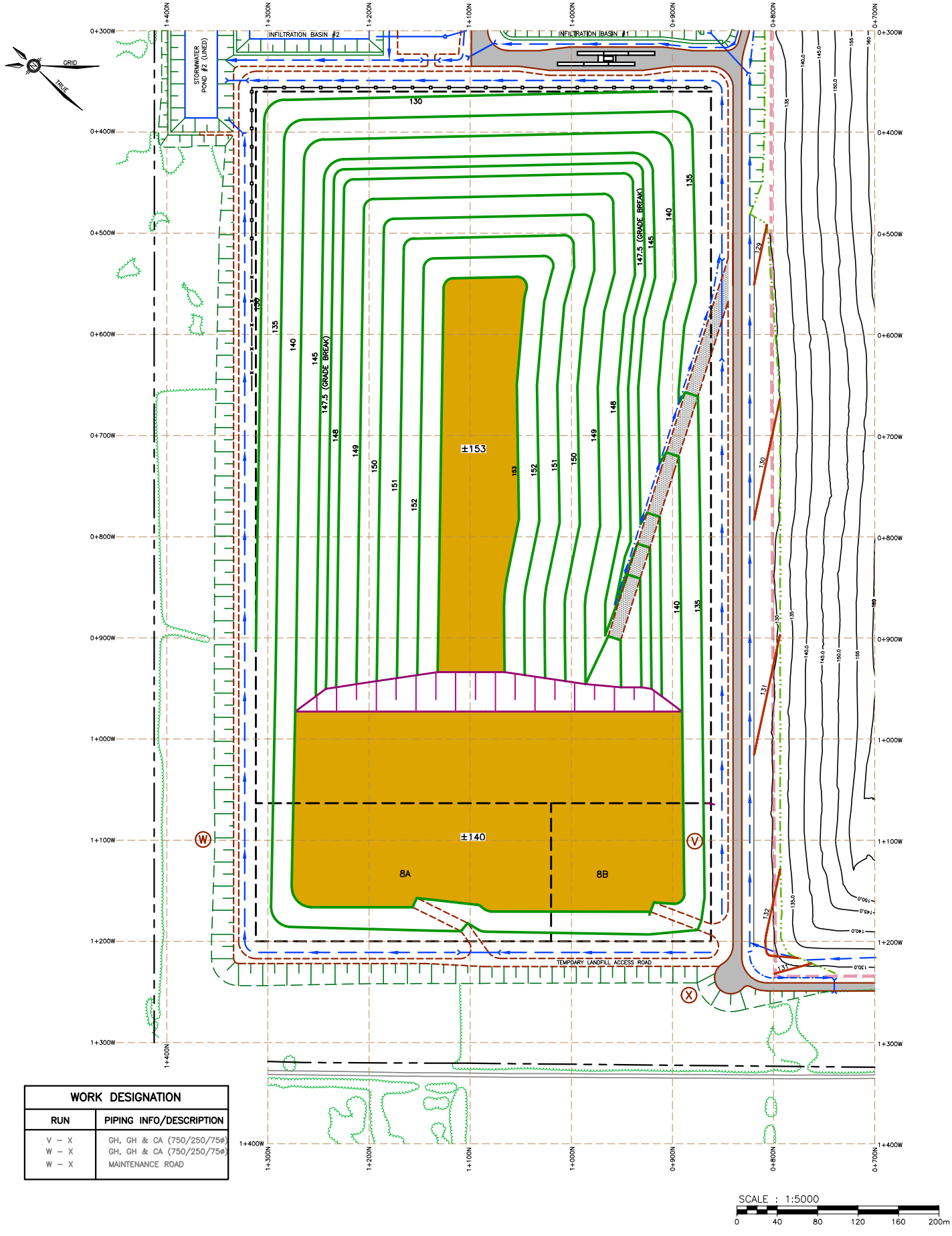
DRAWING NO. 131–19416–00 – 4–10

PHASE 7
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM



WORK DESIGNATION	
RUN	PIPING INFO/DESCRIPTION
V – X	GH, GH & CA (750/250/75ø)
W – X	GH, GH & CA (750/250/75ø)
W – X	MAINTENANCE ROAD

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FIGURE 4-11

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 131–19416–00 – 4–11

PHASE 8
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM

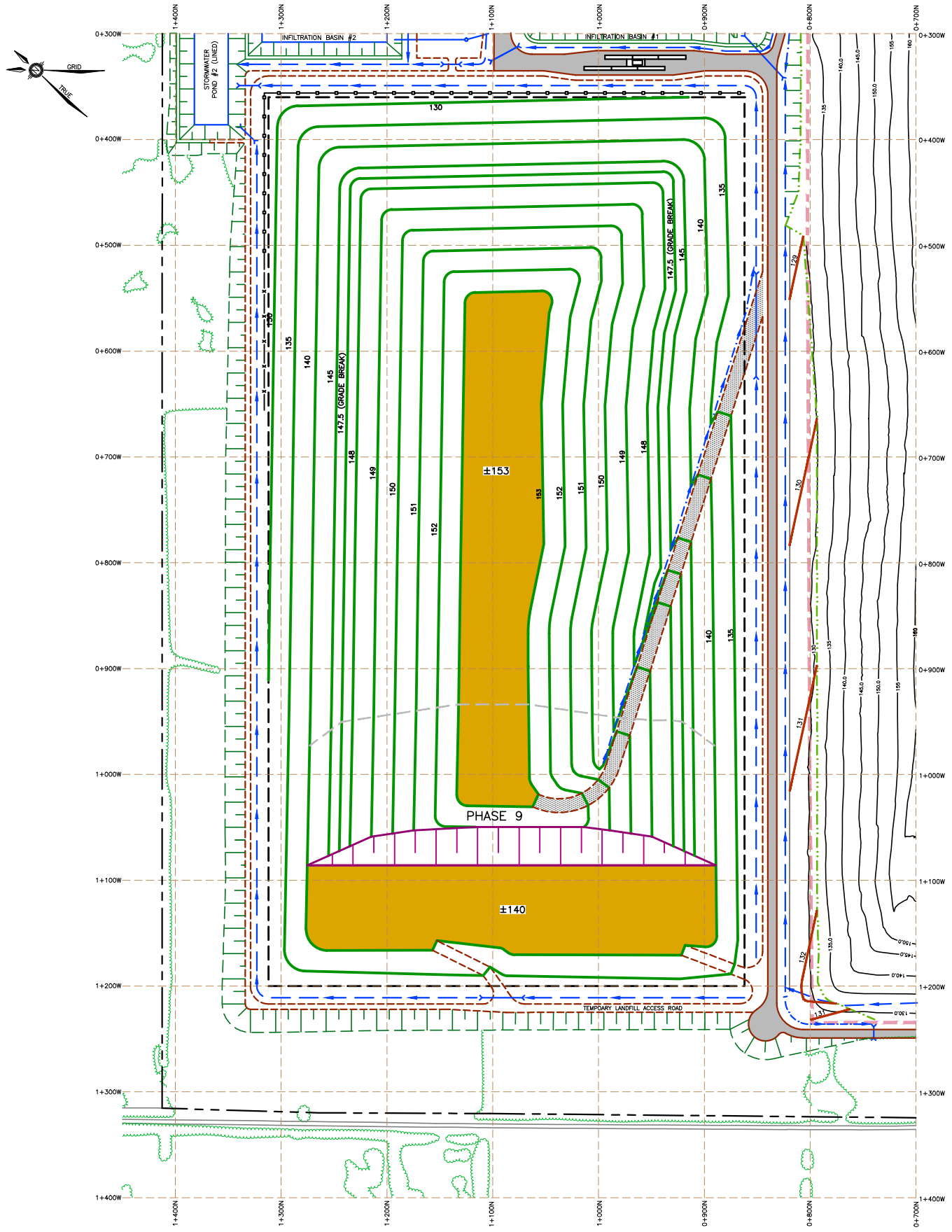


FIGURE 4-12

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

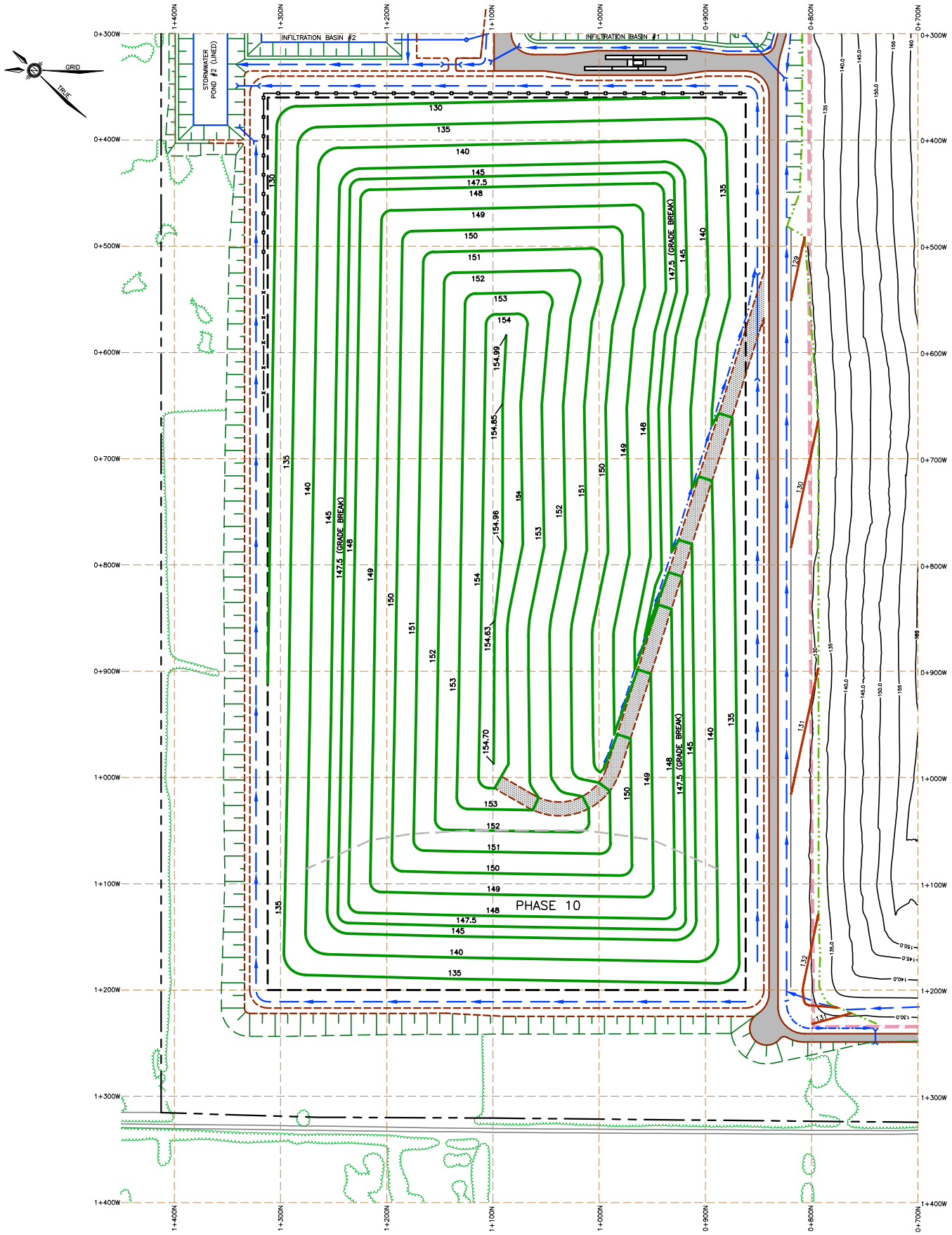
DRAWING NO. 131-19416-00 - 4-12

PHASE 9
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM



SCALE : 1:5000

0 40 80 120 160 200m

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FIGURE 4-13

DWN BY: T C G
CHK BY: F C F
DATE: MAR 17, 2014
SCALE: SEE BAR SCALE

WASTE MANAGEMENT OF CANADA CORP.

DRAWING NO. 131-19416-00 - 4-13

PHASE 10
LANDFILL DEVELOPMENT

WEST CARLETON
ENVIRONMENTAL CENTRE

WASTE MANAGEMENT

WSP
101-1450 1st AVENUE W
OWEN SOUND (ONTARIO) CANADA N4K 6W2
TEL.: 519-376-7612 | FAX: 519-376-8008 | WWW.WSPGROUP.COM

APPENDIX B

Noise Training Log

West Carleton Environmental Centre Best Management Practice Plan
Noise Training Log

Trained Employee Name	Date of Training	Supervisor Signature

APPENDIX C

Noise Inspection Log

NOISE INSPECTION LOG

WCEC - Ottawa, Ontario

Form Last Updated
2014-03-18

Date & Time	Type of Equipment / Others [1]	Make	Model	Serial#	Current Controls	Comments	Need to Monitor?	Corrective Actions & Notes	Name, Title and Signature
****Example* *2014-03-21 14:25h*	*Wheeled Loader*	*CAT*	*972G*	*24018*	*Exhaust muffler installed*	*Muffler not working properly (abnormally noisy)*	☐ *Yes* ☑ *No*	*Replaced with a quieter loader (CAT 988H) and called equipment supplier to investigate.*	*John Smith, Equipment Manager*
2014-03-26 11:15h	*Wheeled Loader*	*CAT*	*972G*	*24018*	*Exhaust muffler installed*	*Muffler not working properly (abnormally noisy)*	☐ *Yes* ☑ *No*	*Muffler replaced per supplier investigation and working properly.*	*John Smith, Equipment Manager*
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		
							☐ *Yes* ☐ *No*		

Notes:

-- This form is reviewed and updated every 5 years.

[1] Examples include, but not limited to, pest control devices, haul trucks, mobile equipment, haul routes.

APPENDIX D

Noise Complaint Form

NOISE COMPLAINT FORM

WCEC - Ottawa, Ontario

Form Last Updated
2014-03-18

1. Complainant Information

Date & Time: _____
Name of Complainant: _____
Telephone of Complainant: _____
Address of Complainant: _____
Address of Complaint: ☐ Same as above, or _____
Complaint Method: In-person / Telephone / Email / Other _____

2A. Complaint Description

Noise Activities Visible: ☐ Yes ☐ No
Nature of Complaint: _____

2B. Inside/Outside Location

Location of Annoyance: ☐ Inside ☐ Outside
Describe Inside Location: Bedroom / Living Room / Dining Room / Other _____
Describe Outside Location: Front Yard / Back Yard / Side Yard / Other _____
Complainant Activity at Time of Complaint (optional): _____
Other Comments: _____

3A. Employee Receiving Complaint

Name: _____
Company & Title: _____
Date & Time: _____
Telephone: _____

3B. Form Completion ☐ Same as 3A

Completed By: _____
Company & Title: _____
Date & Time: _____
Telephone: _____

4. Environmental Conditions

Weather Description: _____
Precipitation: ☐ Yes ☐ No
Wind Speed (km/h): _____
Wind Direction From: _____
Other Comments: _____

5. Complaint Investigation and Corrective Actions

Acitivities at Time of Incident: ☐ Landfilling: _____
☐ Construction: _____
☐ Contractors: _____
☐ Others: _____
Unusual Events/Occurrences? ☐ Yes ☐ No
If yes, describe: _____
Need to Monitor? ☐ Yes ☐ No
Corrective Actions: _____

Other Comments:

Note:
-- This form is reviewed and updated every 5 years.