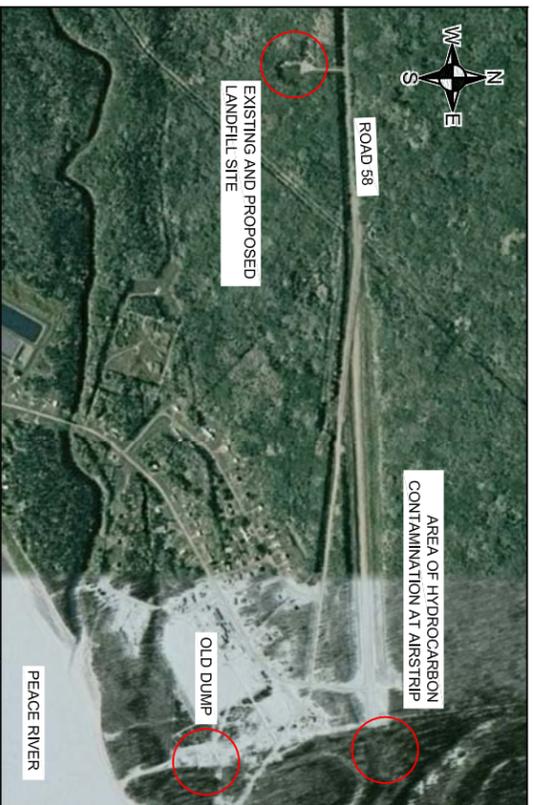


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Garden River, Wood Buffalo National Park
Contaminated Site Remediation Project

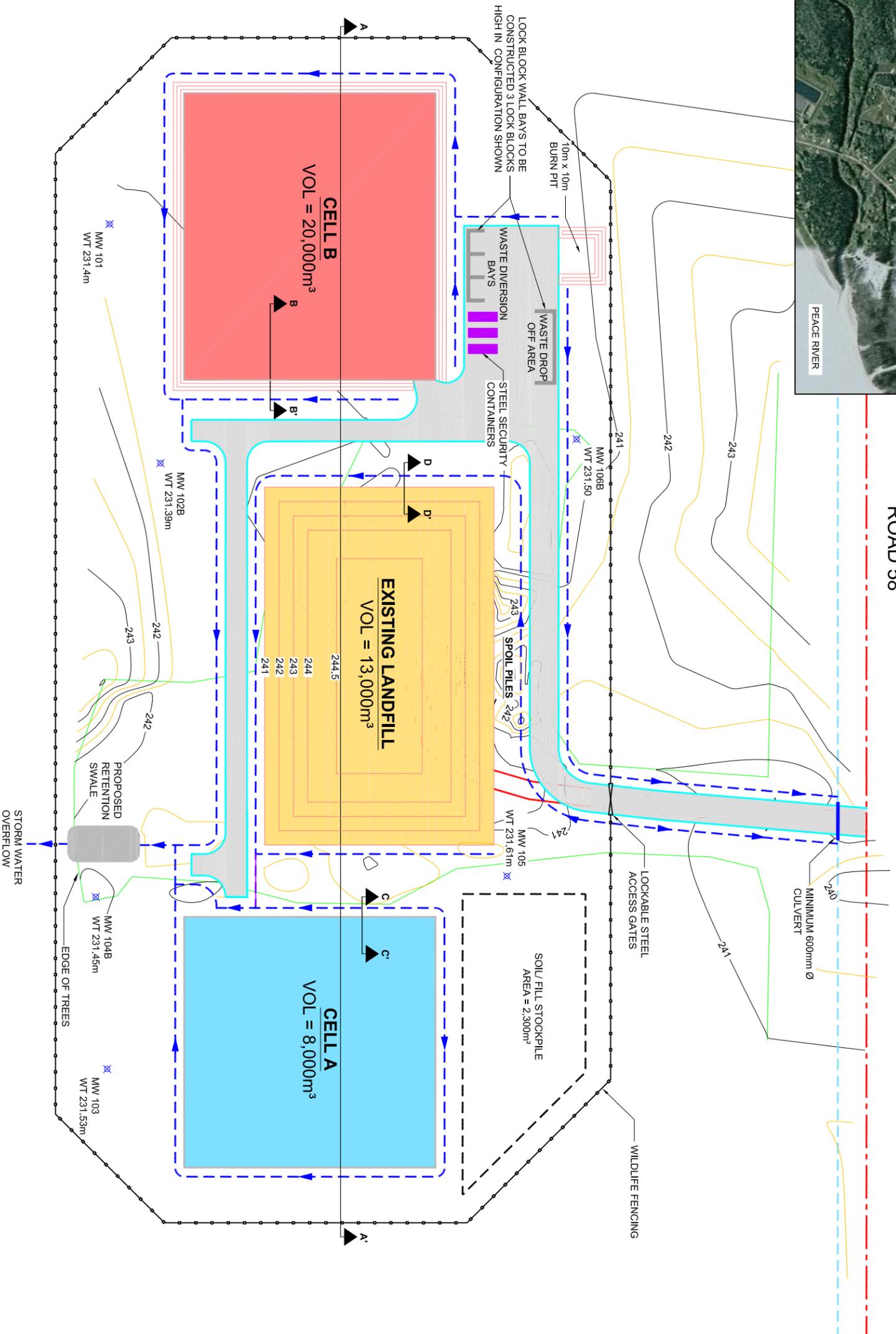
DRAWINGS

Note: The Drawings contain information on additional work that is outside the scope of this project. Only Cell A construction and closure and the Old Dump remediation are included in this contract.

Cell B and the capping of the existing landfill are shown on the drawings for reference of future work locations, and should not be included in the proposal and bid from the Contractor.



ROAD 58



NOTES

1. READ ALL DRAWINGS TOGETHER WITH ACCOMPANYING SPECIFICATIONS.
2. ALL ELEVATIONS, DIMENSIONS AND SETTING OUT CO-ORDINATES TO BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.

SCALE 1:1,250
WHEN PLOTTED ON A 11" x 17" SHEET

0 25 50 75m

LEGEND

- EXISTING 1m CONTOUR JUNE 2014
- EXISTING 0.5m CONTOUR JUNE 2014
- EXISTING SITE ROAD
- PROPOSED SITE ROAD
- EXISTING MONITORING WELLS INSTALLED BY SLR
- WATER TABLE LEVELS OBSERVED ON MAY 21 2014
- EXISTING TREE/BUSHLINE
- EXISTING DITCHING
- PROPOSED DITCHING
- PROPOSED CULVERT
- PROPOSED WILDLIFE FENCING

Revision	By	Chk'd By	Date	Comments
E	A/C	BA	28/04/15	BURN PIT & STEEL SECURITY CONTAINERS ADDED
D	A/C	BA	17/02/15	FINAL
C	A/C	BA	26/01/15	CLIENT REVIEW
B	A/C	BA	29/09/14	CLIENT REVIEW
A	A/C	MS	26/09/14	INTERNAL REVIEW



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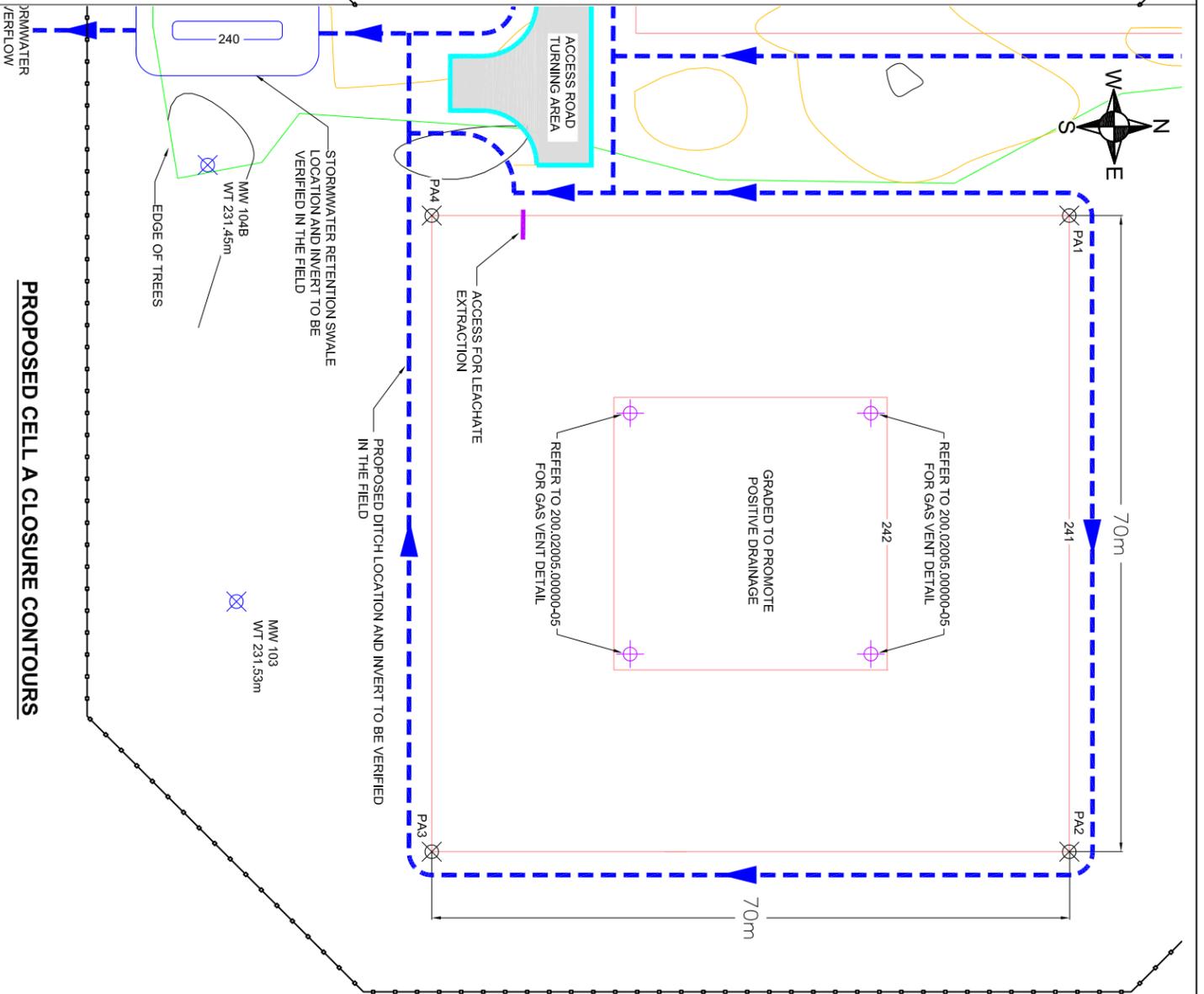
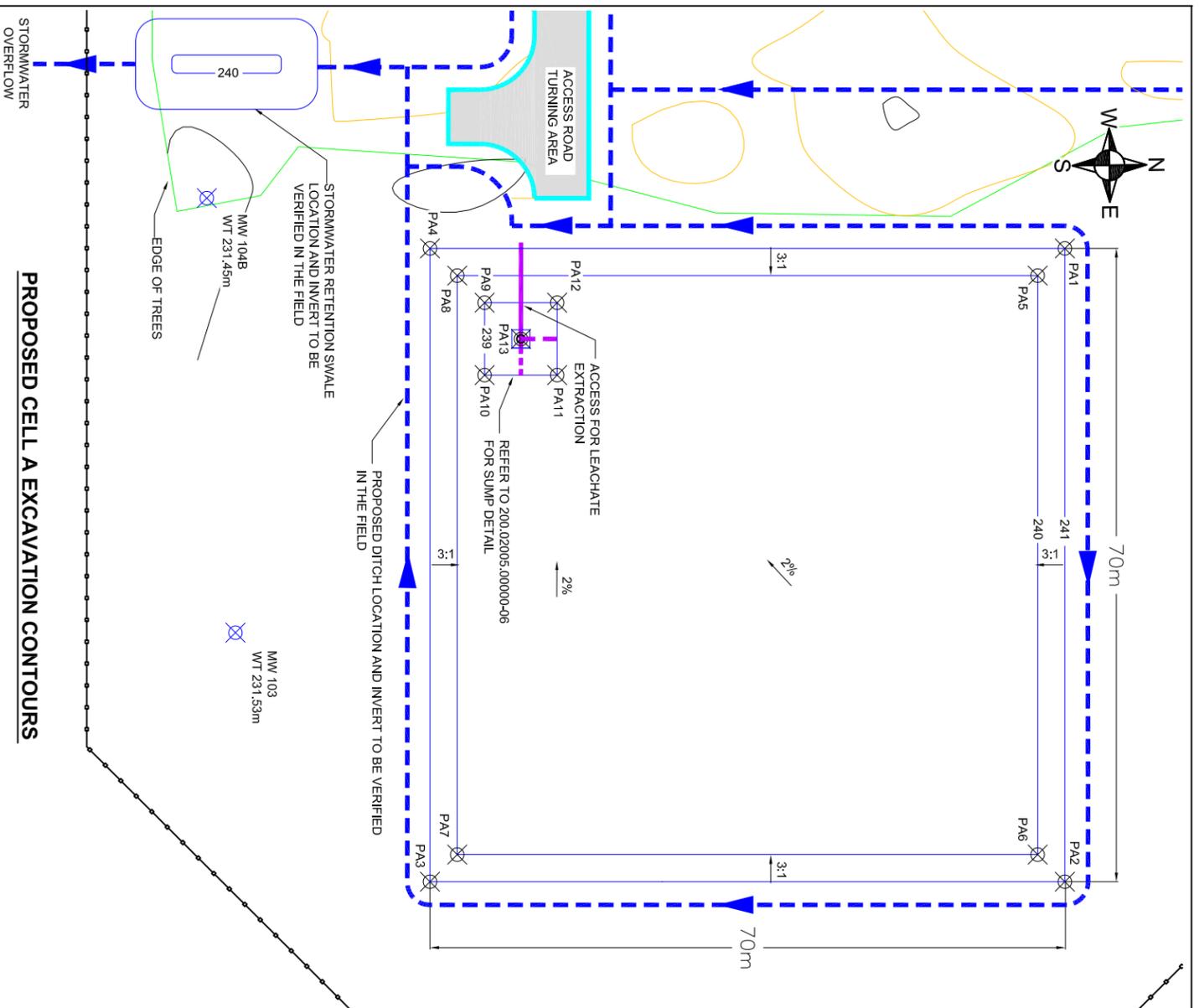
Project: CONTAMINATED SITE REMEDIATION PROJECT

Drawing Title: PROPOSED SITE LAYOUT

Scale: AS SHOWN Date: JULY 30th, 2014

Drawing Number: 200.02005.00000-01 Rev: E

FINAL



Cell A Setting Out Points

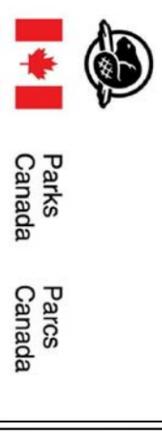
Point	Easting (X)	Northing (Y)	Elevation (Z)
PA1	331,915	6,511,657	241.0
PA2	331,985	6,511,657	241.2
PA3	331,985	6,511,587	241.0
PA4	331,915	6,511,587	240.7
PA5	331,918	6,511,654	240.0
PA6	331,982	6,511,654	240.0
PA7	331,982	6,511,590	240.0
PA8	331,918	6,511,590	240.0
PA9	331,921	6,511,593	239.0
PA10	331,929	6,511,593	239.0
PA11	331,929	6,511,601	239.0
PA12	331,921	6,511,601	239.0
PA13	331,925	6,511,597	238.0

- NOTES**
1. READ ALL DRAWINGS TOGETHER WITH ACCOMPANYING SPECIFICATIONS.
 2. ALL ELEVATIONS, DIMENSIONS AND SETTING OUT CO-ORDINATES TO BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.
 3. FINAL CONTOURS TO BE VERIFIED IN THE FIELD. CONTOURS SHALL BE GRADED TO PROMOTE POSITIVE DRAINAGE AND SHALL BE A MINIMUM OF 5% TO A MAXIMUM OF 30%.
SCALE 1:1,000
WHEN PLOTTED ON A 11" x 17" SHEET

LEGEND

- EXISTING 1m CONTOUR JUNE 2014
- EXISTING 0.5m CONTOUR JUNE 2014
- EXISTING SITE ROAD
- PROPOSED SITE ROAD
- EXISTING MONITORING WELLS INSTALLED BY SLR
- EXISTING TREE/BUSHLINE
- EXISTING WASTE PIT
- PROPOSED 1m CONTOURS BELOW GRADE
- PROPOSED 1m CONTOURS ABOVE GRADE
- EXISTING DITCHING
- PROPOSED DITCHING
- PROPOSED CULVERT
- PROPOSED SOLID LEACHATE PIPE
- PROPOSED PERFORATED LEACHATE PIPE
- PROPOSED WILDLIFE FENCING
- GAS VENT

Revision	By	Chk'd By	Date	Comments
A	AJC	BA	16/02/15	FINAL ISSUE



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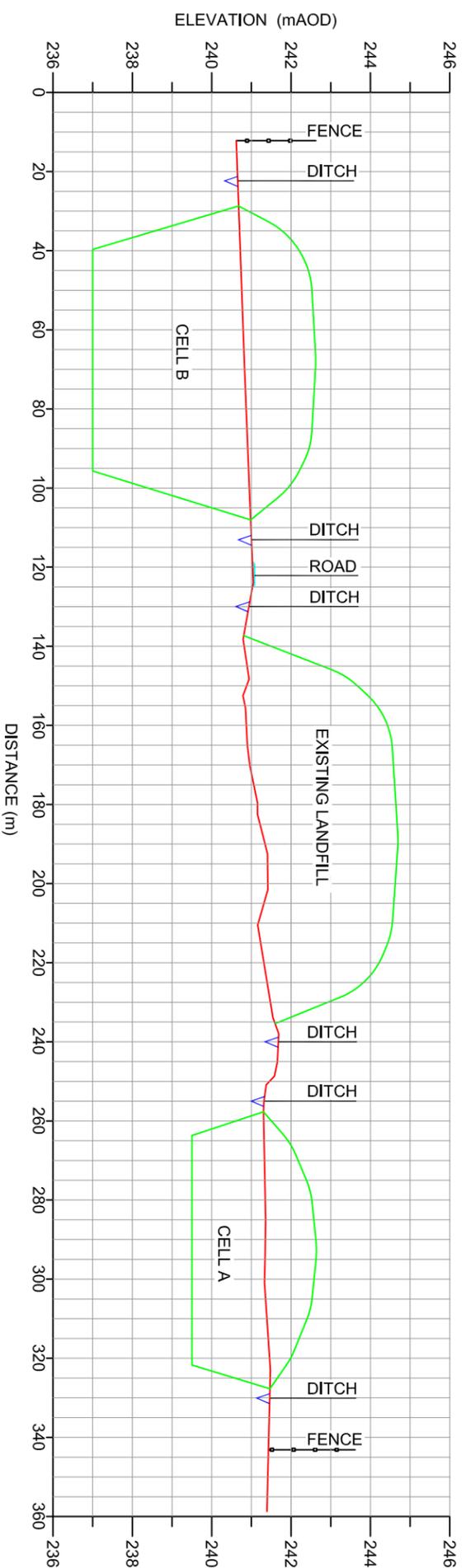
Project: CONTAMINATED SITE REMEDIATION PROJECT

Drawing Title: PROPOSED CELL A

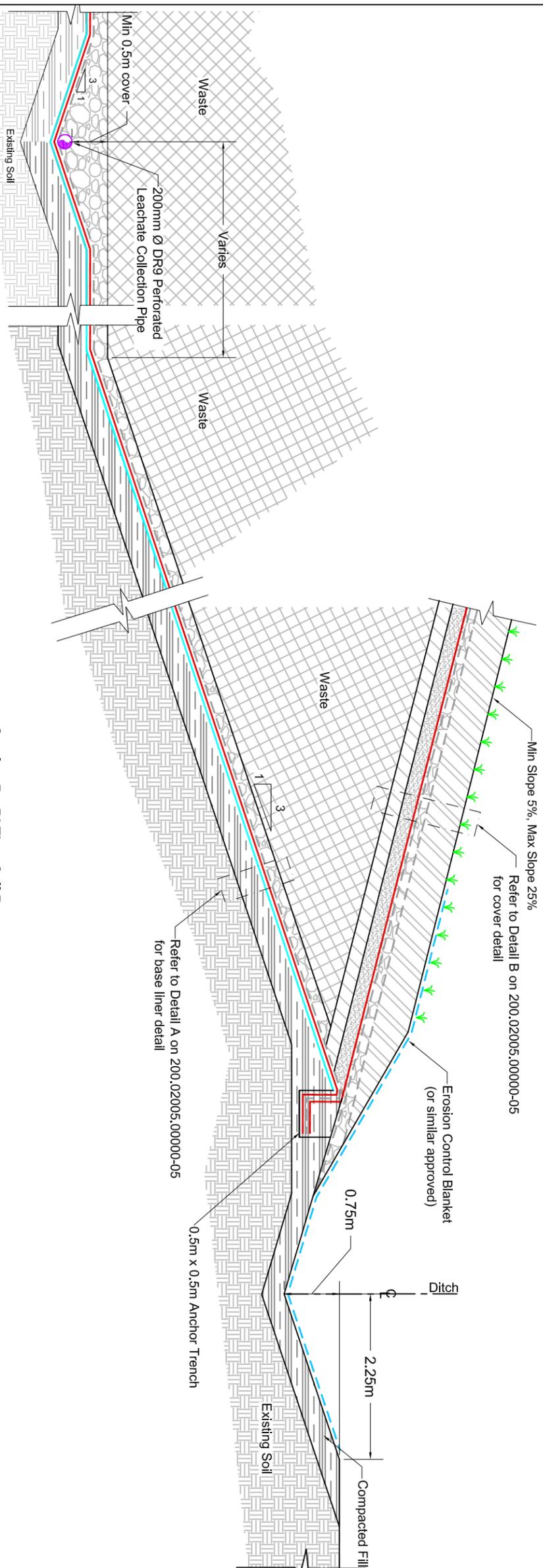
Scale: AS SHOWN Date: FEBRUARY 11th, 2015

Drawing Number: 200.02005.00000-02 Rev: A

FINAL



Section A - A'
 Scale: Hor 1:1,500 Ver 1:150
 (10x Vertical Exaggeration)



Section B - B' Thru Cell B
 Not to scale

NOTES

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3. FINAL CONTOURS TO BE VERIFIED IN THE FIELD. CONTOURS SHALL BE GRADED TO PROMOTE POSITIVE DRAINAGE AND SHALL BE A MINIMUM OF 5% TO A MAXIMUM OF 30%.
4. CONSTRUCT ALL SURFACE WATER SWALES TO DIMENSIONS SHOWN ON THIS DRAWING.

LEGEND

- EXISTING GROUND LEVEL
- PROPOSED CELL
- ∨ PROPOSED DITCH
- PROPOSED ROAD
- PROPOSED WILDLIFE FENCE

C	AJC	BA	17/02/15	FINAL
B	AJC	BA	29/09/14	CLIENT REVIEW
A	AJC	MS	06/08/14	INTERNAL REVIEW
Revision	By	CHK'd By	Date	Comments



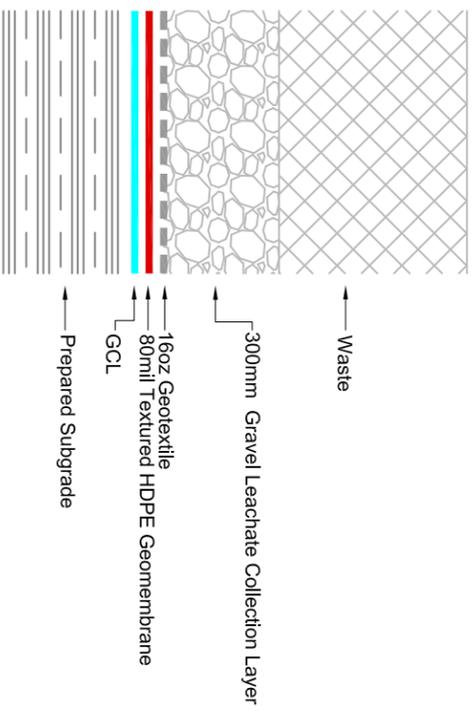
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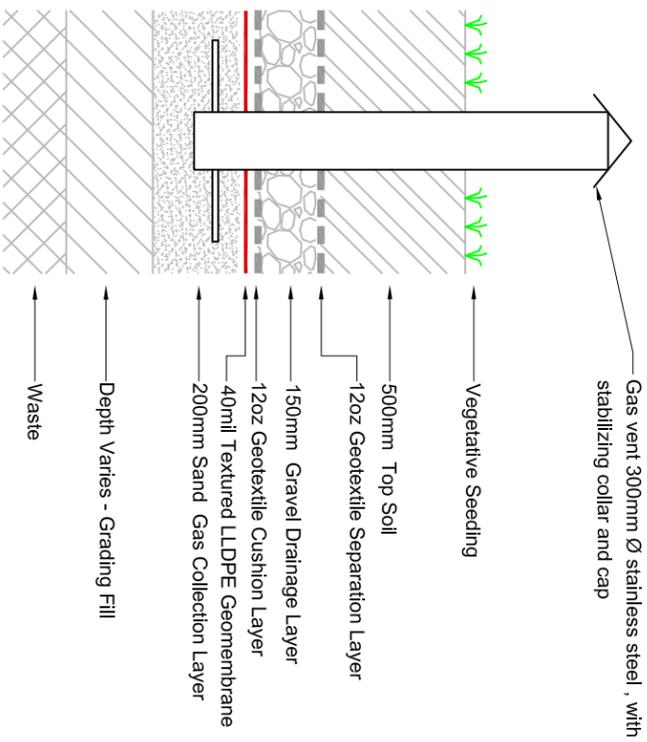
Project: **CONTAMINATED SITE REMEDIATION PROJECT**

Drawing Title: **SECTION A - A' THRU SITE, SECTION B - B' THRU CELL B**

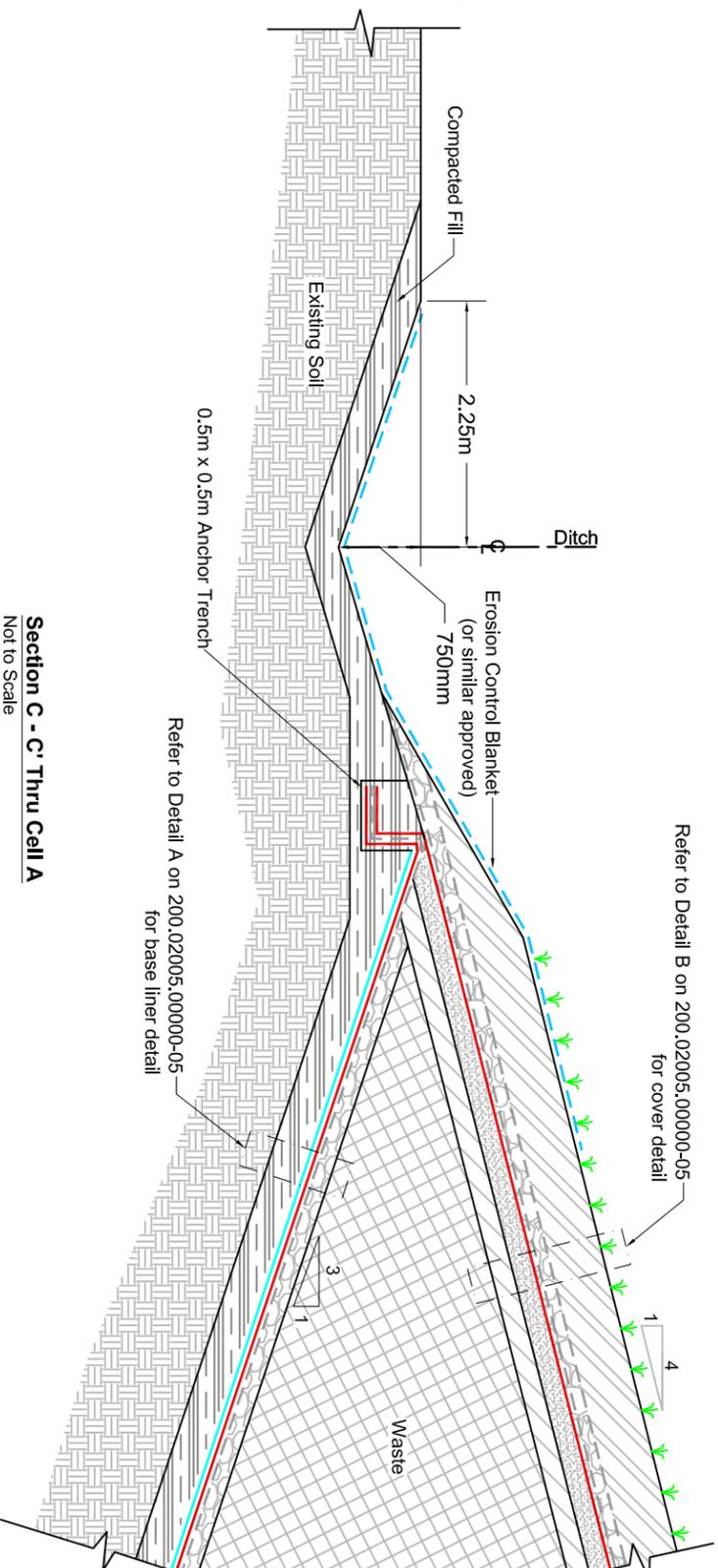
Scale: AS SHOWN	Date: SEPTEMBER 25th, 2014
Drawing Number: 200.02005.00000-04	Rev: C
FINAL	



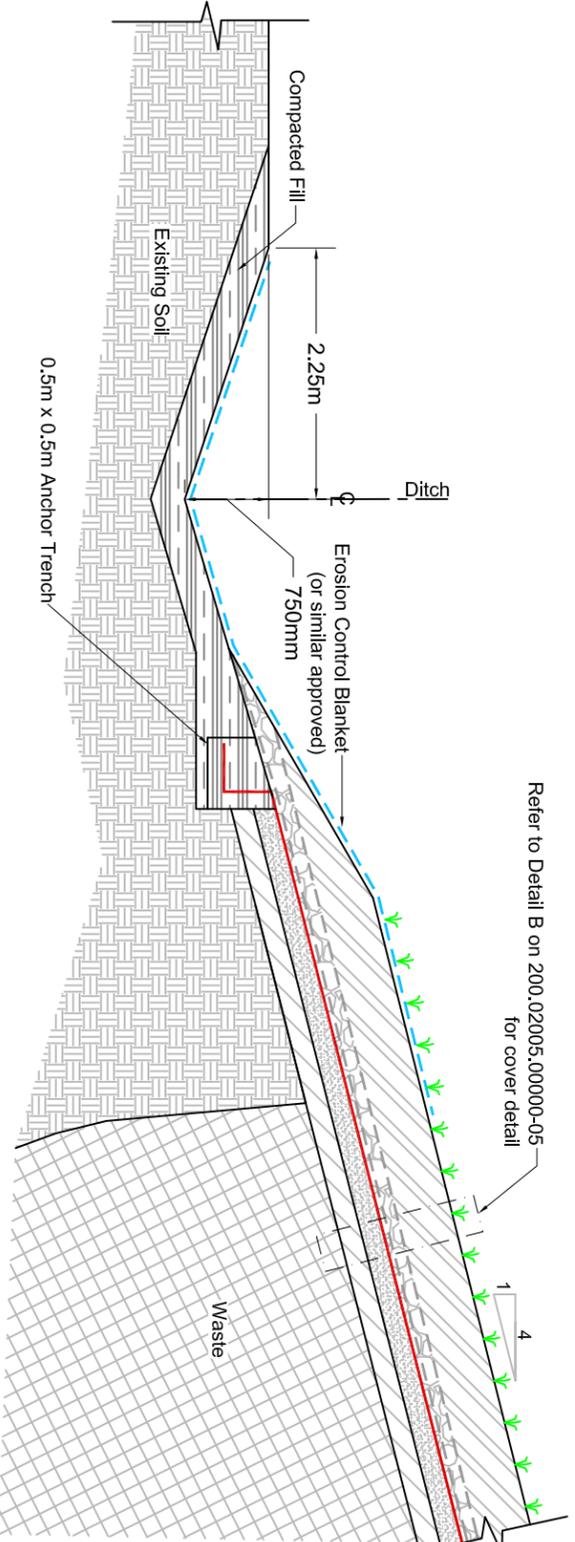
Detail A - Typical Base Liner Section
Not to Scale



Detail B - Typical Final Cover Section
Not to Scale



Section C - C' Thru Cell A
Not to Scale



Section D - D' Thru Proposed Cap over Existing Landfill
Not to Scale

- NOTES**
1. READ ALL DRAWINGS TOGETHER WITH ACCOMPANYING SPECIFICATIONS.
 2. ALL ELEVATIONS, DIMENSIONS AND SETTING OUT CO-ORDINATES TO BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.
 3. FINAL CONTOURS TO BE VERIFIED IN THE FIELD. CONTOURS SHALL BE GRADED TO PROMOTE POSITIVE DRAINAGE AND SHALL BE A MINIMUM OF 5% TO A MAXIMUM OF 30%.
 4. CONSTRUCT ALL SURFACE WATER SWALES TO DIMENSIONS SHOWN ON THIS DRAWING.

LEGEND

C	AJC	BA	17/02/15	FINAL
B	AJC	BA	29/09/14	CLIENT REVIEW
A	AJC	MS	26/09/14	INTERNAL REVIEW
Revision	By	CHK'd By	Date	Comments



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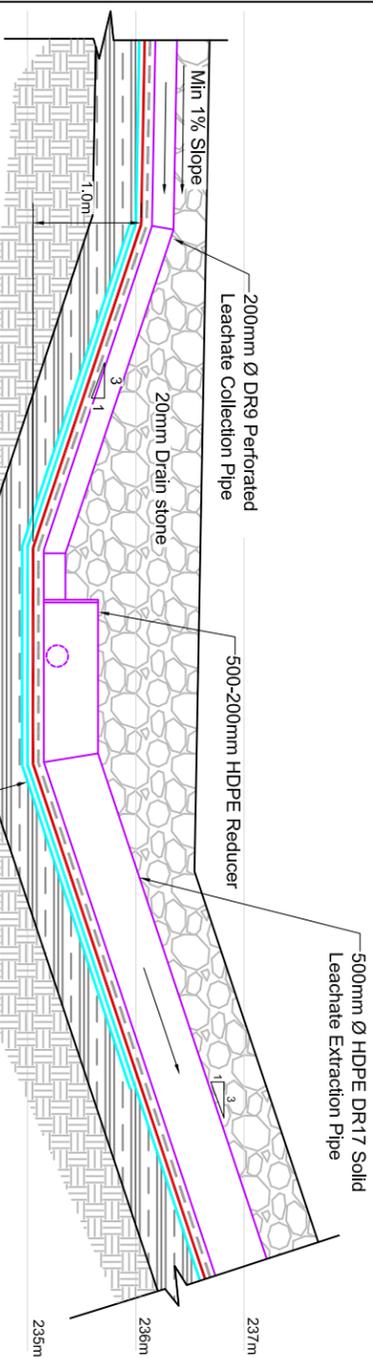
Project: **CONTAMINATED SITE REMEDIATION PROJECT**

Drawing Title: **SECTIONS & TYPICAL DETAILS**

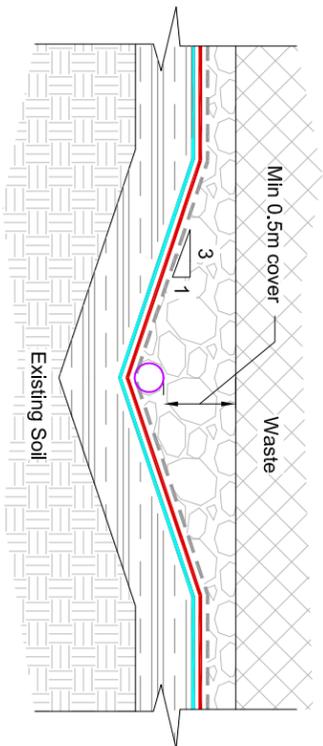
Scale: **NOT TO SCALE** Date: **SEPTEMBER 25th, 2014**

Drawing Number: **200.02005.00000-05** Rev: **C**

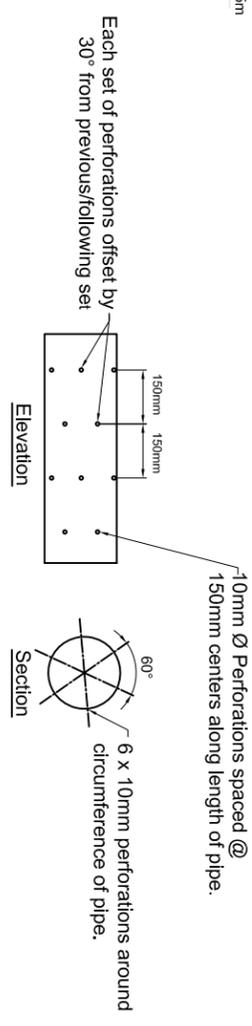
FINAL



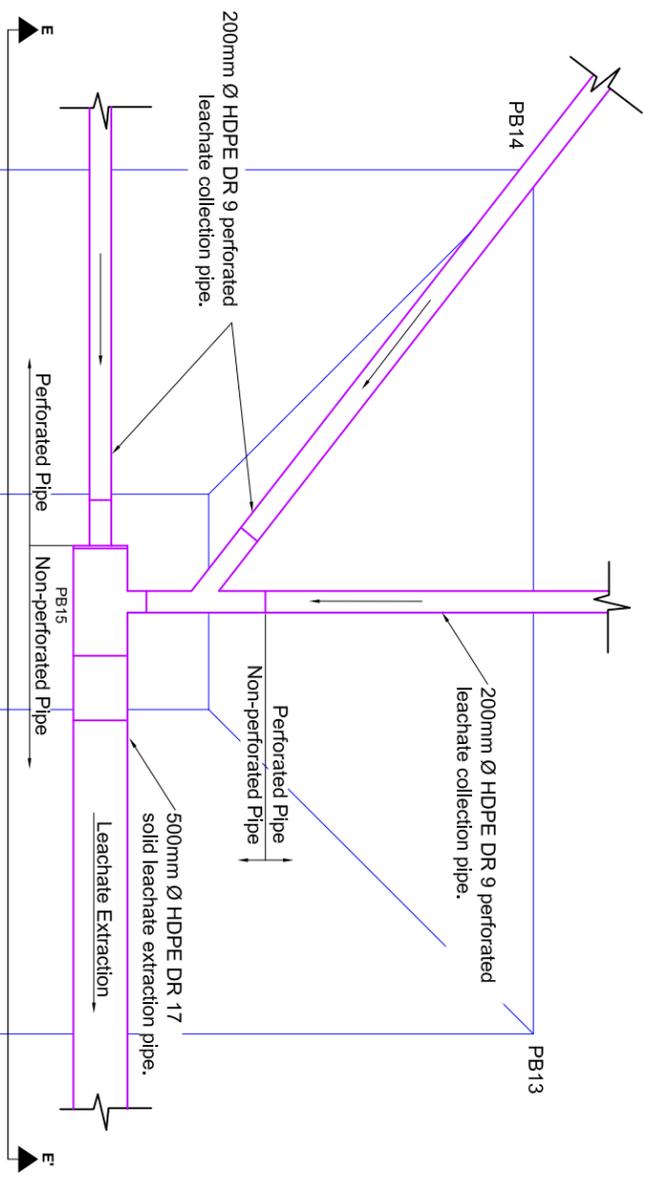
Section E-E' Thru Sump Cell B
Not to scale



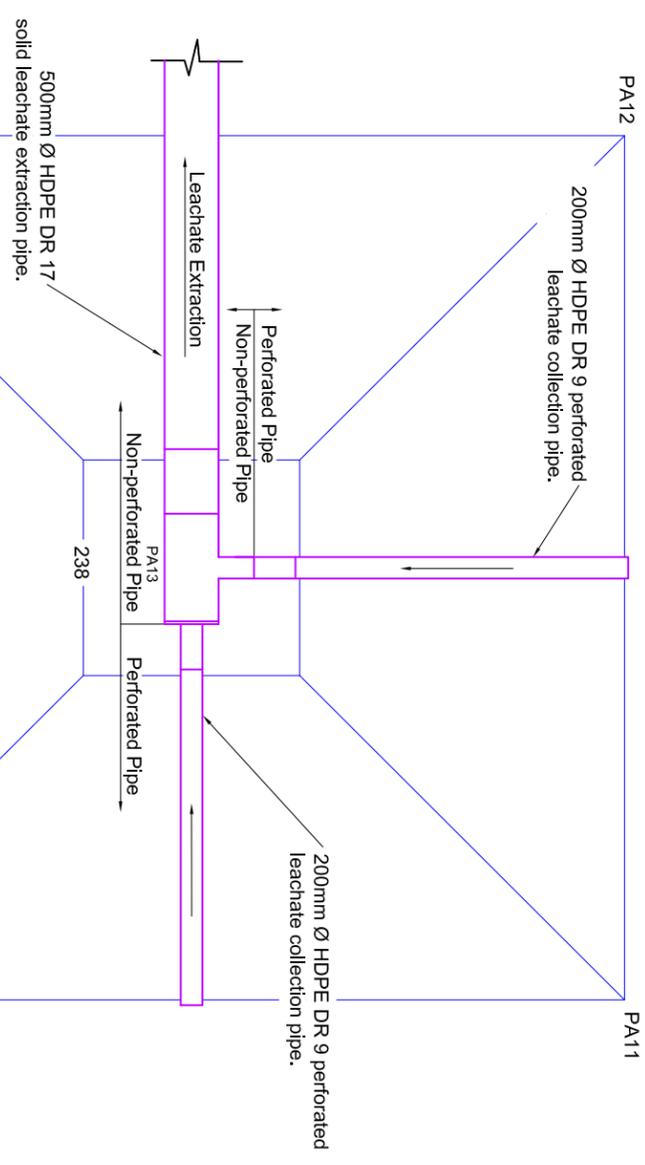
Typical Section Thru Leachate Collection Trench Cell B
Not to scale



Detail C Perforated Pipe Detail
Not to scale



Plan of Sump Cell B
Not to scale



Plan of Sump Cell A
Not to scale

NOTES

LEGEND

Revision	By	Chkd By	Date	Comments
A	A/C	BA	17/02/15	FINAL



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Project: **CONTAMINATED SITE REMEDIATION PROJECT**

Drawing Title: **DETAILS**

Scale: **NOT TO SCALE** Date: **FEBRUARY 3rd, 2015**

Drawing Number: **200.02005.00000-06** Rev: **A**

FINAL

NOTES

1. EITHER OF THE METHODS OF WASTE PLACEMENT INDICATED IN THIS DRAWING ARE CONSIDERED SUITABLE FOR ACHIEVING EFFECTIVE WASTE COMPACTION.

LEGEND

Revision	By	Chk'd By	Date	Comments
A	AJC	BA	17/02/15	FINAL



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Site: GARDEN RIVER

Project: CONTAMINATED SITE REMEDIATION PROJECT

Drawing Title: PUSH UP AND PUSH DOWN SCHEMATIC

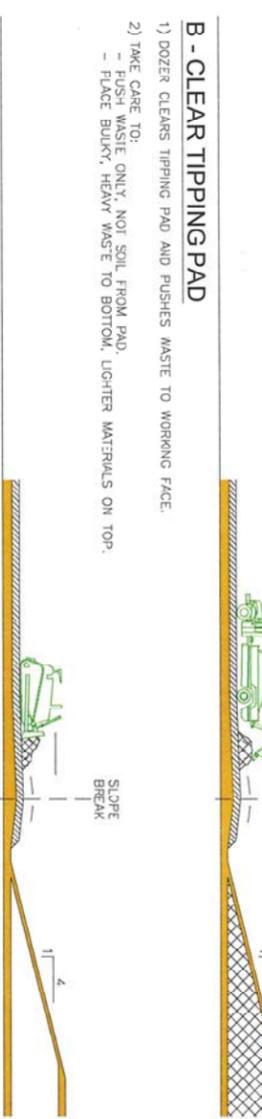
Scale: NOT TO SCALE Date: FEBRUARY 12th, 2015

Drawing Number: 200.02005.00000-07 Rev: A

FINAL



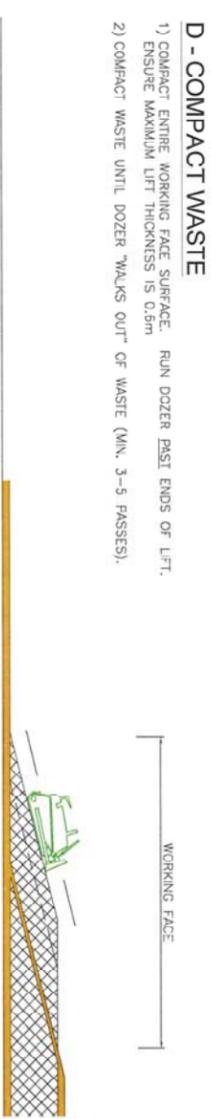
- A - UNLOAD WASTE**
- UNLOAD WASTE ONTO TIPPING PAD. KEEP TRUCK ON SOIL-COVERED PAD. DO NOT DUMP AT WORKING FACE.
 - KEEP PAD SURFACE SLOPED AWAY FROM WORKING FACE. MAINTAIN SLOPE BREAK TO PREVENT WATER FLOW FROM WORKING FACE.
 - MAINTAIN PAD SMOOTH, FREE DRAINING AND CLEAR OF DEBRIS.



- B - CLEAR TIPPING PAD**
- DOZER CLEARS TIPPING PAD AND PUSHES WASTE TO WORKING FACE.
 - TAKE CARE TO:
 - PUSH WASTE ONLY, NOT SOIL FROM PAD.
 - PLACE BULKY, HEAVY WASTE TO BOTTOM, LIGHTER MATERIALS ON TOP.



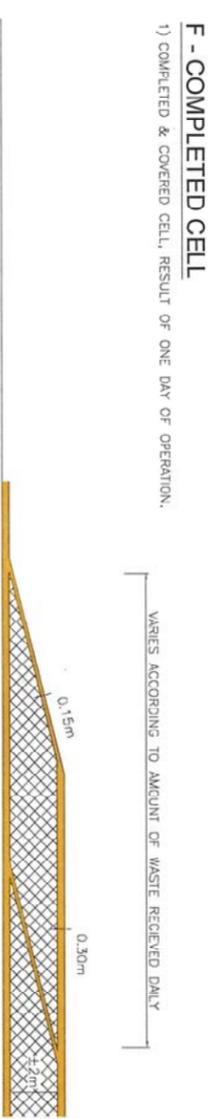
- C - SPREAD WASTE ON WORKING FACE**
- SPREAD WASTE IN LIFTS 0.3 - 0.6m THICK MAXIMUM.
 - MANUEVER WASTE TO ACHIEVE AS DENSE AN ARRANGEMENT AS POSSIBLE.
 - MAINTAIN WORKING FACE SLOPE BETWEEN 4H:1V TO 3H:1V.



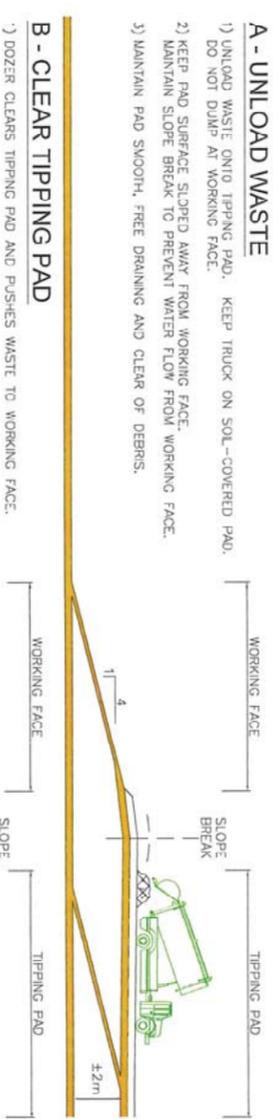
- D - COMPACT WASTE**
- COMPACT ENTIRE WORKING FACE SURFACE. RUN DOZER PAST ENDS OF LIFT. ENSURE MAXIMUM LIFT THICKNESS IS 0.6m
 - COMPACT WASTE UNTIL DOZER "WALKS OUT" OF WASTE (MIN. 3-5 PASSES).



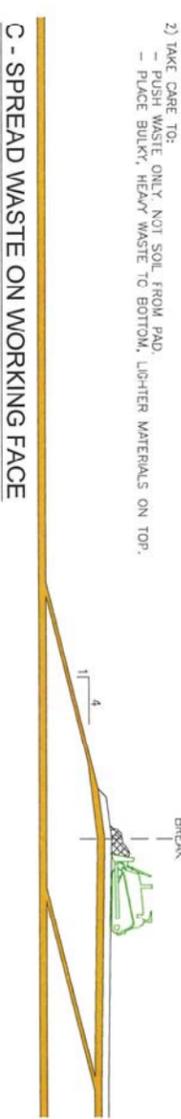
- E - PLACE DAILY COVER**
- AT END OF DAY'S OPERATIONS:
 - TRIM & RE-COMPACT WORKING FACE SURFACE.
 - MAINTAIN SMALL STOCKPILE OF WASTE TO INFILL SURFACE VOIDS.
 - PLACE THIN LIFT OF COVER SOIL. COVER THICKNESS:
 - 0.15m ON WORKING FACE.
 - 0.3m ON TOP OF CELL.
 - COMPACT COVER WITH 3-5 PASSES OF DOZER.



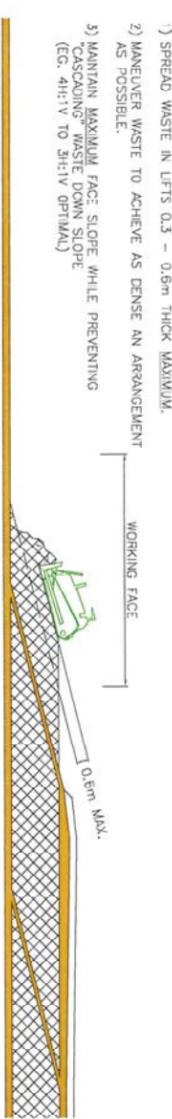
- F - COMPLETED CELL**
- COMPLETED & COVERED CELL, RESULT OF ONE DAY OF OPERATION.



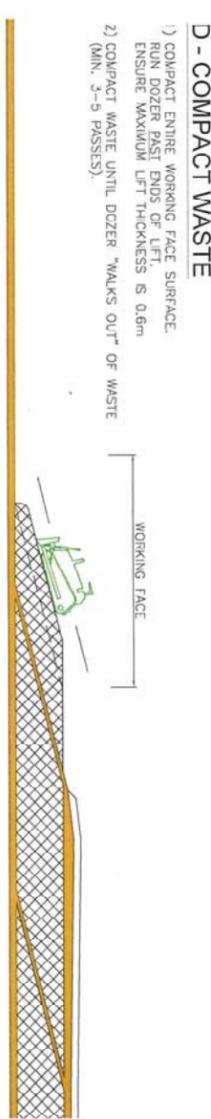
- A - UNLOAD WASTE**
- UNLOAD WASTE ONTO TIPPING PAD. KEEP TRUCK ON SOIL-COVERED PAD. DO NOT DUMP AT WORKING FACE.
 - KEEP PAD SURFACE SLOPED AWAY FROM WORKING FACE. MAINTAIN SLOPE BREAK TO PREVENT WATER FLOW FROM WORKING FACE.
 - MAINTAIN PAD SMOOTH, FREE DRAINING AND CLEAR OF DEBRIS.



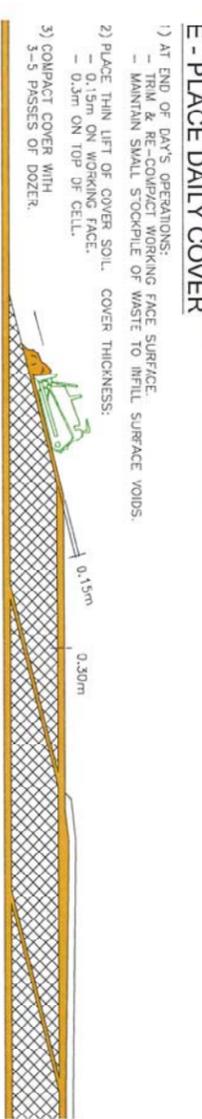
- B - CLEAR TIPPING PAD**
- DOZER CLEARS TIPPING PAD AND PUSHES WASTE TO WORKING FACE.
 - TAKE CARE TO:
 - PUSH WASTE ONLY, NOT SOIL FROM PAD.
 - PLACE BULKY, HEAVY WASTE TO BOTTOM, LIGHTER MATERIALS ON TOP.



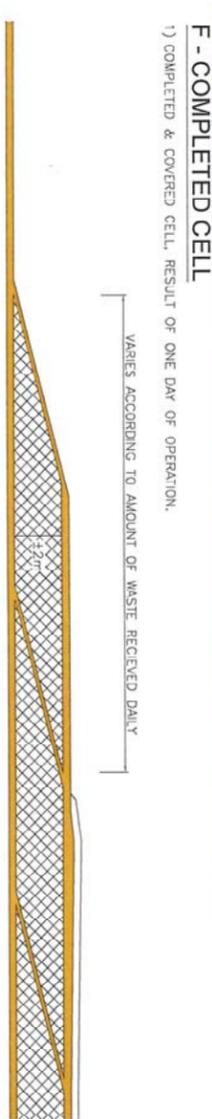
- C - SPREAD WASTE ON WORKING FACE**
- SPREAD WASTE IN LIFTS 0.3 - 0.6m THICK MAXIMUM.
 - MANUEVER WASTE TO ACHIEVE AS DENSE AN ARRANGEMENT AS POSSIBLE.
 - MAINTAIN MAXIMUM FACE SLOPE WHILE PREVENTING "CASCAING" WASTE DOWN SLOPE (EG. 4H:1V TO 3H:1V OPTIMAL)



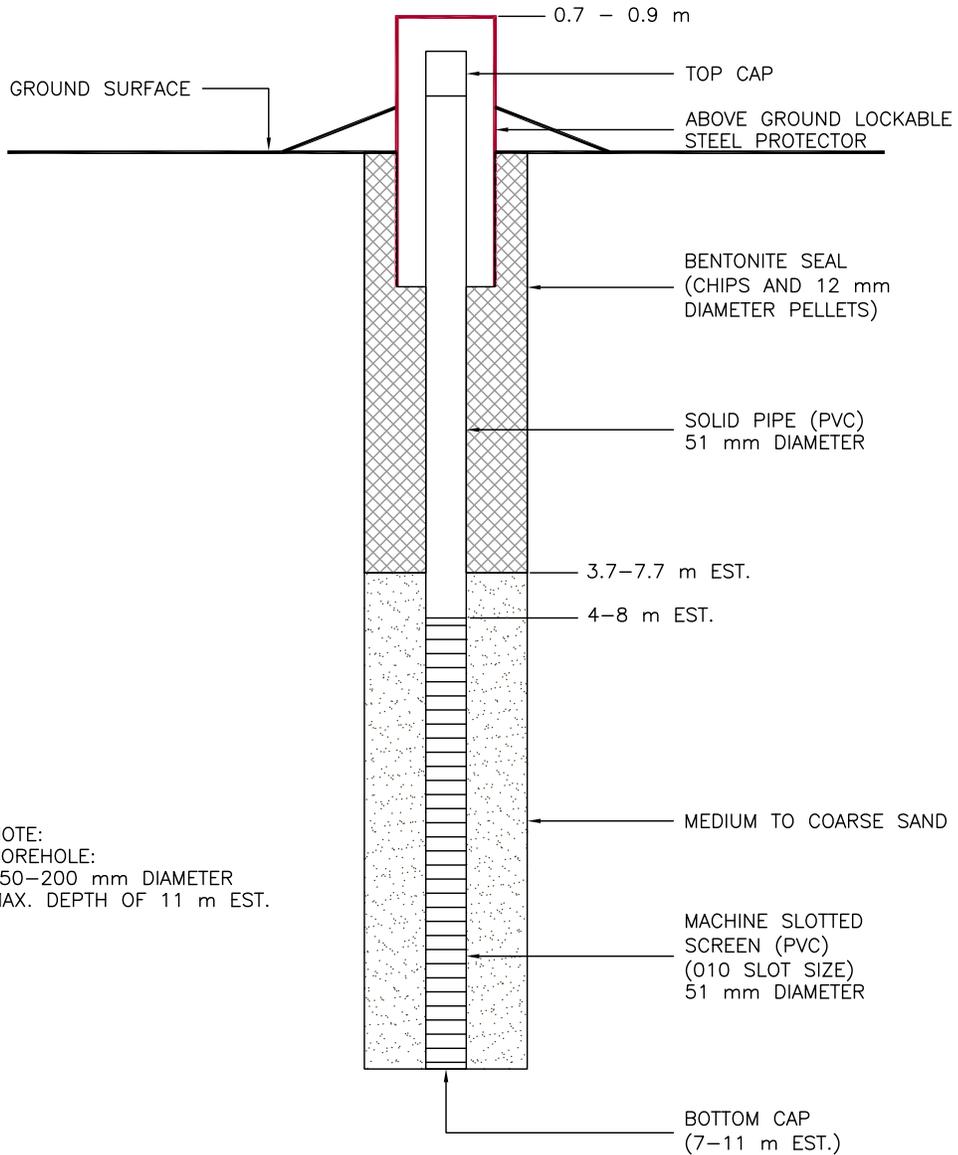
- D - COMPACT WASTE**
- COMPACT ENTIRE WORKING FACE SURFACE. RUN DOZER PAST ENDS OF LIFT. ENSURE MAXIMUM LIFT THICKNESS IS 0.6m
 - COMPACT WASTE UNTIL DOZER "WALKS OUT" OF WASTE (MIN. 3-5 PASSES).



- E - PLACE DAILY COVER**
- AT END OF DAY'S OPERATIONS:
 - TRIM & RE-COMPACT WORKING FACE SURFACE.
 - MAINTAIN SMALL STOCKPILE OF WASTE TO INFILL SURFACE VOIDS.
 - PLACE THIN LIFT OF COVER SOIL. COVER THICKNESS:
 - 0.15m ON WORKING FACE.
 - 0.3m ON TOP OF CELL.
 - COMPACT COVER WITH 3-5 PASSES OF DOZER.



- F - COMPLETED CELL**
- COMPLETED & COVERED CELL, RESULT OF ONE DAY OF OPERATION.



NOTE:
BOREHOLE:
150-200 mm DIAMETER
MAX. DEPTH OF 11 m EST.

NOTES

FOR CONCEPTUAL PURPOSES ONLY COMPLETION DETAILS TO BE CONFIRMED DURING BOREHOLE DRILLING PROGRAM.

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.



Site:	GARDEN RIVER		
Project:	CONTAMINATED SITE REMEDIATION PROJECT		
Drawing:	MONITOR WELL CONSTRUCTION DETAIL		
Date	February 13, 2015	Scale	NTS
File Name		Drawing No.	200.02005.00000-08