CONCEPTUAL DESIGN

San Cristobal Landfill

PREPARED BY:

SCS ENGINEERS
3900 KILROY AIRPORT WAY
SUITE 100
LONG BEACH, CA 90806
+1 562-426-954

SCS JOB NO. 06218001.00
AUGUST 2018

REFERENCE MAP
NO SCALE

INDEX OF DRAWINGS

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REV.	DATE	DESCRIPTION	CK. BY
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SHEET TITLE: COVER SHEET
PROJECT TITLE: SAN CRISTOBAL LANDFILL

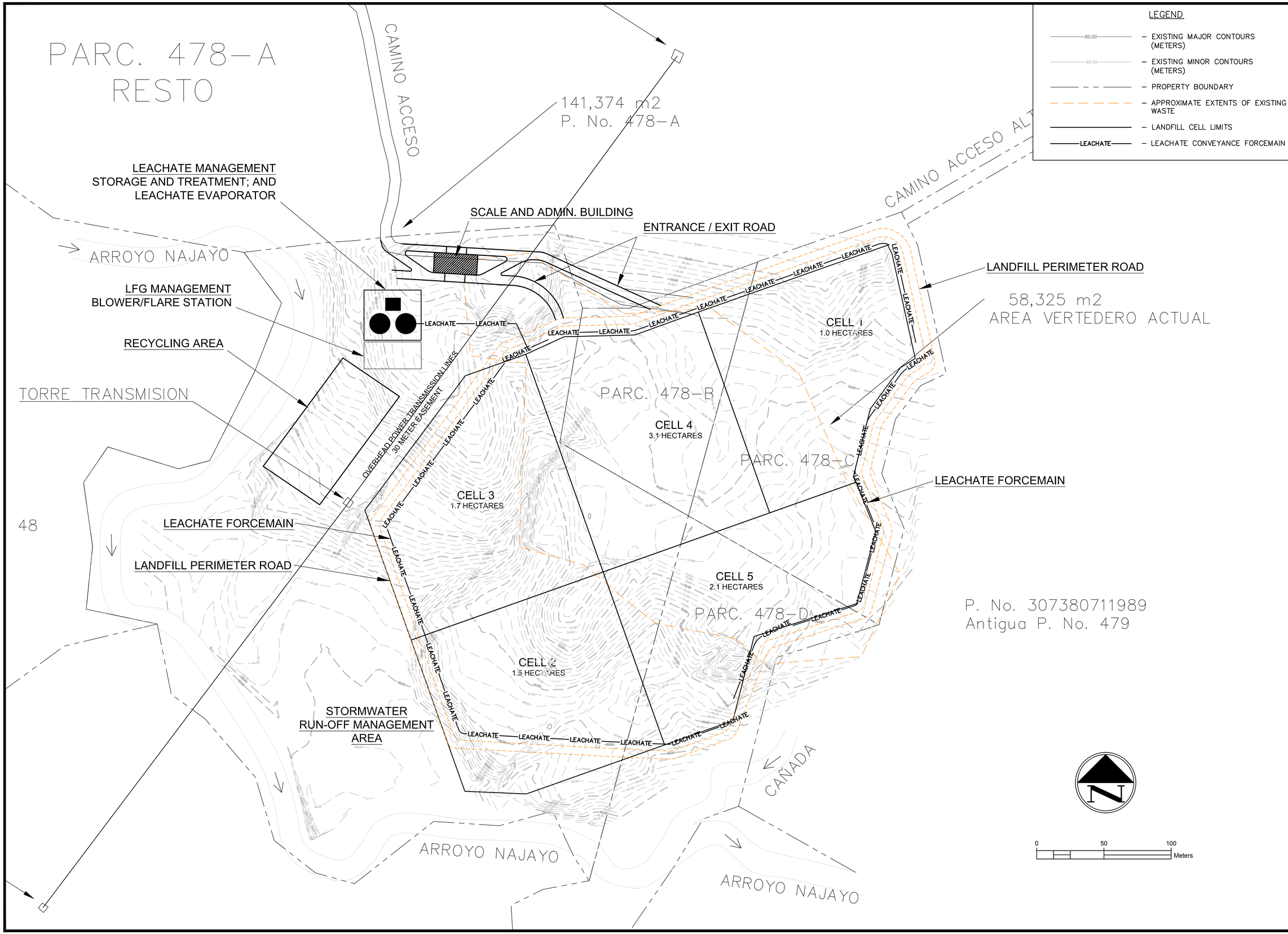
CLIENT: BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00
DWN. BY:
O/A R/W BY:
DSN. BY:
CHK. BY:
APP. BY:

CADD FILE: COVER SHEET
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 0 of 18

M:\CADD PROJECT DRAWINGS\06218001.00 - DR Landfill Battelle\Drawings\Cover Sheet.dwg Sep 04, 2018 - 3:01pm Layout Name: COVER SHEET By: 3291adg



REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE
CONCEPTUAL SITE DEVELOPMENT

PROJECT TITLE
SAN CRISTOBAL LANDFILL

CLIENT
BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

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PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY:
DSN. BY: ADG | CHK. BY: | APP. BY:

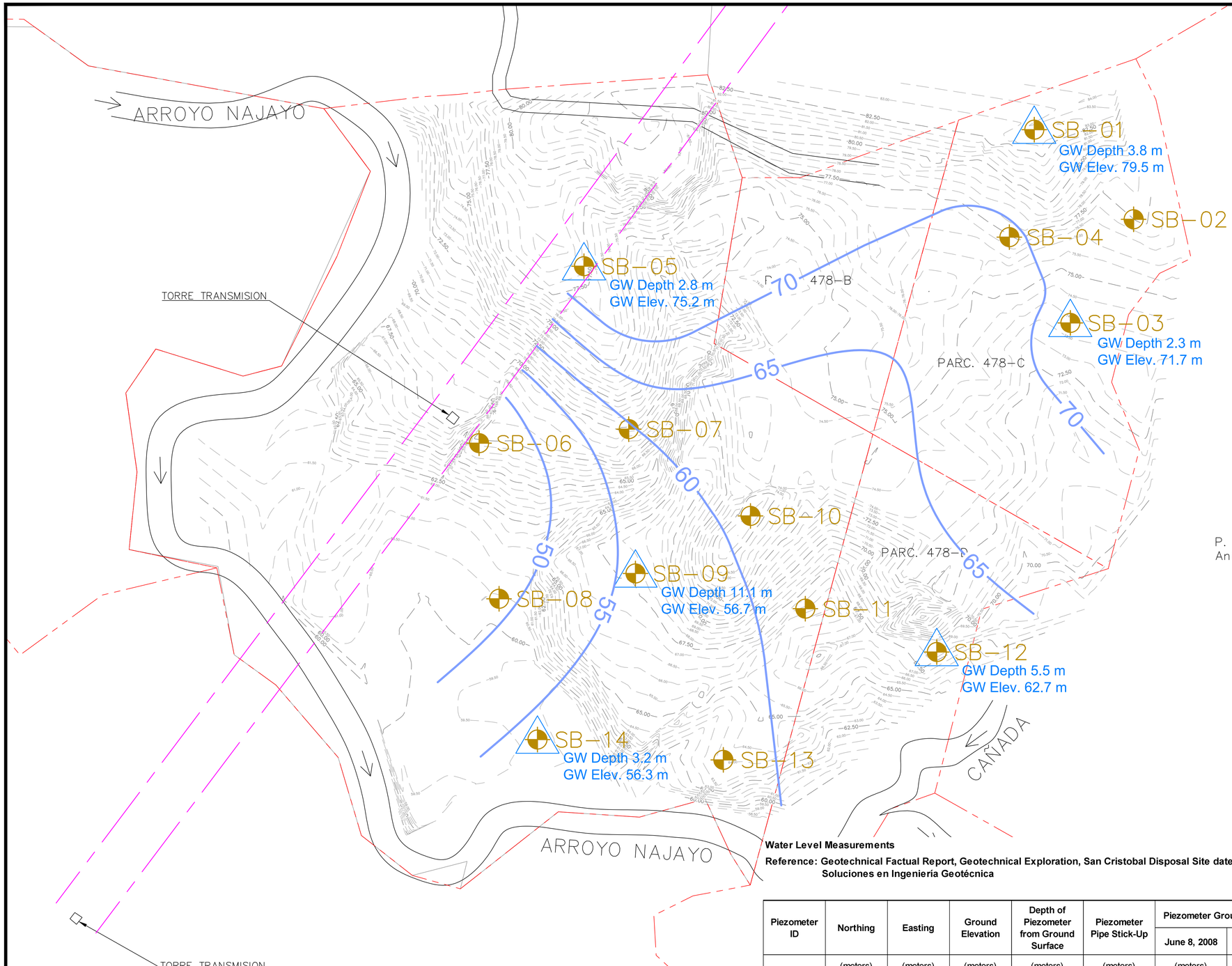
CADD FILE: SHEET 1

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO.
1 of **18**

C:\Users\1903jd\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 1 – Conceptual Site Development.dwg Sep 10, 2018 – 3:44pm Layout Name: SITE DEVELOPMENT By: 1903jd



P. No. 307380711989
Antigua P. No. 479

LEGEND

- SB-# – SOIL BORING LOCATION
- SB-# – SOIL BORING / GROUNDWATER PIEZOMETER LOCATION
- 70 – GROUNDWATER SURFACE CONTOUR (METERS)
- 82.00 – EXISTING MAJOR CONTOURS
- 82.50 – EXISTING MINOR CONTOURS
- PROPERTY BOUNDARY

GROUNDWATER SURFACE CONTOURS ARE INTERPOLATED FROM PIEZOMETER GROUNDWATER MEASUREMENTS.

N

0 50 100 Meters

Water Level Measurements

Reference: Geotechnical Factual Report, Geotechnical Exploration, San Cristobal Disposal Site dated July 26, 2018 prepared by Horizon Consultants Soluciones en Ingeniería Geotécnica

Piezometer ID	Northing	Easting	Ground Elevation	Depth of Piezometer from Ground Surface	Piezometer Pipe Stick-Up	Piezometer Groundwater Measurements from Ground Surface(1)				Average Measurement	Groundwater Surface Elevation
						June 8, 2008	June 15, 2018	June 29, 2018	July 11, 2018(2)		
	(meters)	(meters)	(meters)	(meters)	(meters)	(meters)	(meters)	(meters)	(meters)	(meters)	(meters)
SB-01	2,030,314	378,317	83.3	8.2	0.57		4.0	3.9	3.6	3.8	79.5
SB-03	2,030,199	378,348	74	5.9	0.13		2.6	2.04	2.10	2.3	71.7
SB-05	2,030,232	378,046	78	8.6	0.15	3.7	3.1	2.5	2.0	2.8	75.2
SB-09	2,030,047	378,077	67.8	20.9	0.30		18.6	7.4	7.4	11.1	56.7
SB-12	2,029,999	378,258	68.2	9.7	0.27		5.4	5.59	5.58	5.5	62.7
SB-14	2,029,947	378,018	59.5	5.9	0.18	3.2	3.2	3.1	3.1	3.2	56.3

(1) Piezometers installed June 8 through June 15, 2018.
(2) Day after rain storm.

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: GROUNDWATER POTENTIOMETRIC SURFACE

PROJECT TITLE: SAN CRISTOBAL LANDFILL

CLIENT: BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

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PROJ. NO. 06218001.00 | DSN. BY: | DWN. BY: | CHK. BY: | Q/A RVW BY: | APP. BY:

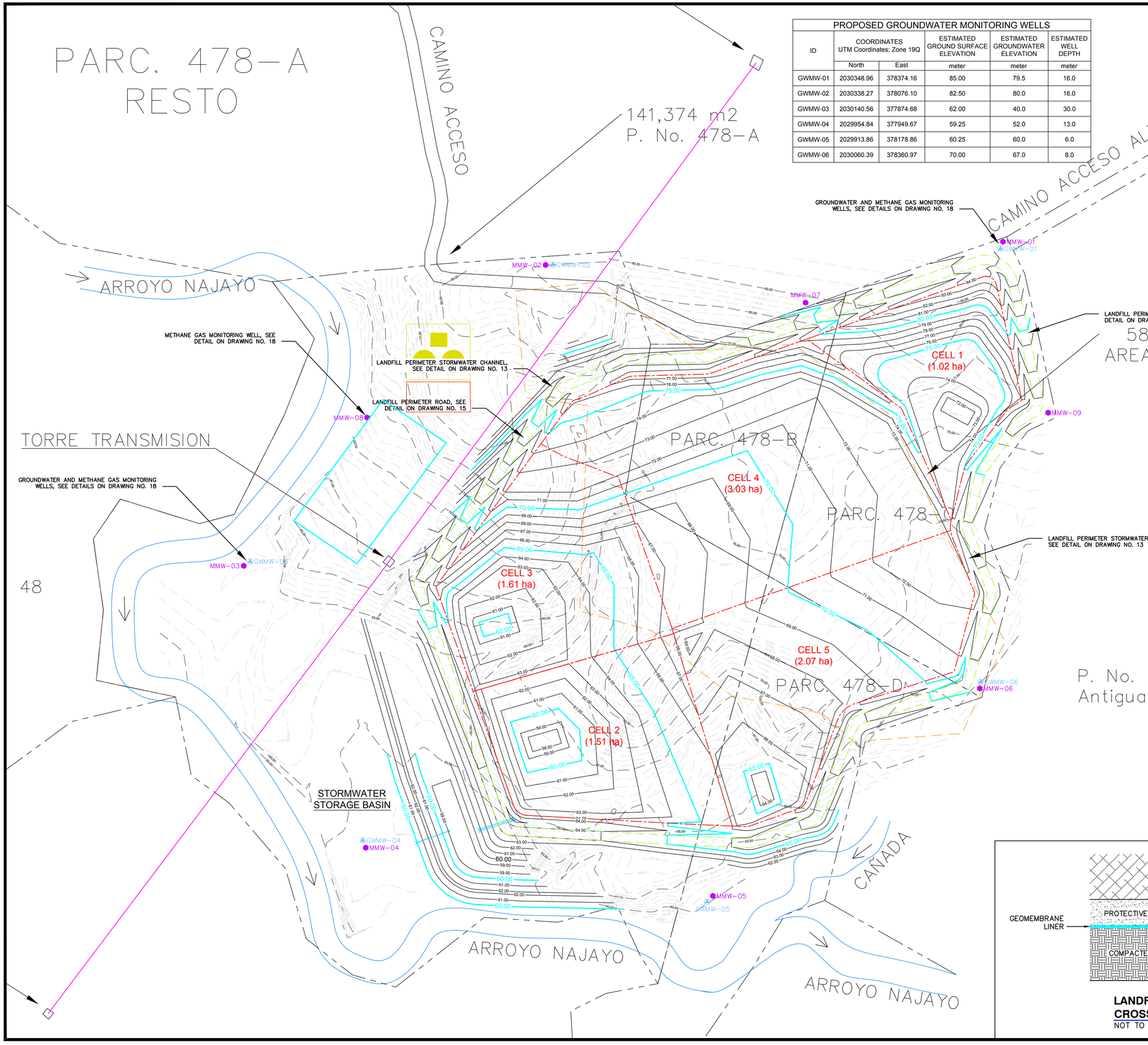
CADD FILE: SHEET 3

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO. 2 of 18

M:\CADD PROJECT DRAWINGS\06218001.00 – DR Landfill Battelle\Drawings\Sheet 2 – GW Potentiometric Surface.dwg Sep 04, 2018 – 3:05pm Layout Name: GW POTENTIOMETRIC By: 3291adg

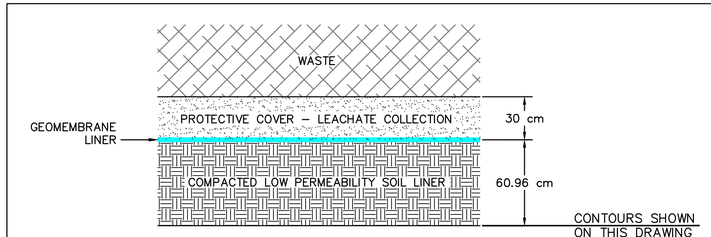


PROPOSED GROUNDWATER MONITORING WELLS					
ID	COORDINATES UTM Coordinates; Zone 19Q		ESTIMATED GROUND SURFACE ELEVATION	ESTIMATED GROUNDWATER ELEVATION	ESTIMATED WELL DEPTH
	North	East	meter	meter	meter
GWMW-01	2030348.96	378374.16	85.00	79.5	16.0
GWMW-02	2030338.27	378076.10	82.50	80.0	16.0
GWMW-03	2030140.56	377874.68	62.00	40.0	30.0
GWMW-04	2029954.84	377949.67	59.25	52.0	13.0
GWMW-05	2029913.86	378178.86	60.25	60.0	6.0
GWMW-06	2030060.39	378360.97	70.00	67.0	8.0

LEGEND

- 85.00 – PROPOSED MAJOR CONTOURS (METERS)
- 82.50 – PROPOSED MINOR CONTOURS (METERS)
- 82.00 – EXISTING MAJOR CONTOURS (METERS)
- 82.50 – EXISTING MINOR CONTOURS (METERS)
- LANDFILL CELL LIMIT
- PROPERTY BOUNDARY
- APPROXIMATE EXTENTS OF EXISTING WASTE
- GWMW-___ – PROPOSED GROUNDWATER MONITORING WELL
- MMW-___ – PROPOSED METHANE GAS MONITORING WELL

PROPOSED METHANE GAS MONITORING WELLS		
ID	COORDINATES UTM Coordinates; Zone 19Q	
	North	East
MMW-01	2030353.57	378375.86
MMW-02	2030338.11	378071.29
MMW-03	2030137.77	377870.42
MMW-04	2029949.93	377951.60
MMW-05	2029917.72	378182.76
MMW-06	2030056.02	378360.45
MMW-07	2030313.07	378244.42
MMW-08	2030227.96	377959.48
MMW-09	2030239.69	378405.95



LANDFILL BOTTOM SYSTEM CROSS-SECTION
NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: **CONCEPTUAL LANDFILL DEVELOPMENT**

PROJECT TITLE: **SAN CRISTOBAL LANDFILL**

CLIENT: **BATTELLE MEMORIAL INSTITUTE**
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
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PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00 | DWN. BY: CH | Q/A RVW BY: | DSN. BY: ADG | CHK. BY: | APP. BY:

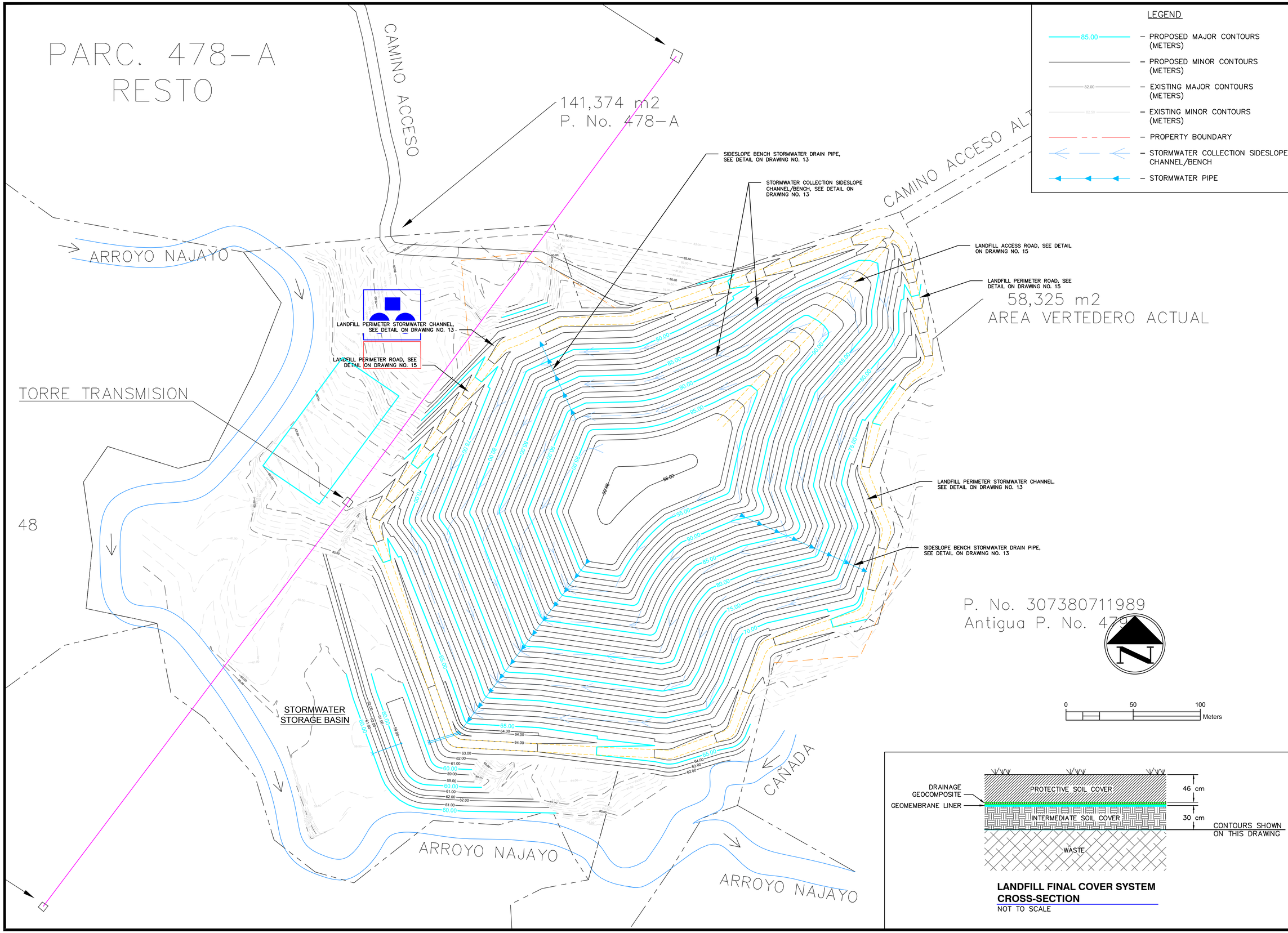
CADD FILE: SHEET 3–CON...

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO. **3** of **18**

C:\Users\1903jld\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 3 – Conceptual Landfill Development.dwg Sep 10, 2018 – 3:47pm Layout Name: LANDFILL DEVELOPMENT By: 1903jld



REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE
CONCEPTUAL LANDFILL CLOSURE PLAN

PROJECT TITLE
SAN CRISTOBAL LANDFILL

CLIENT
BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
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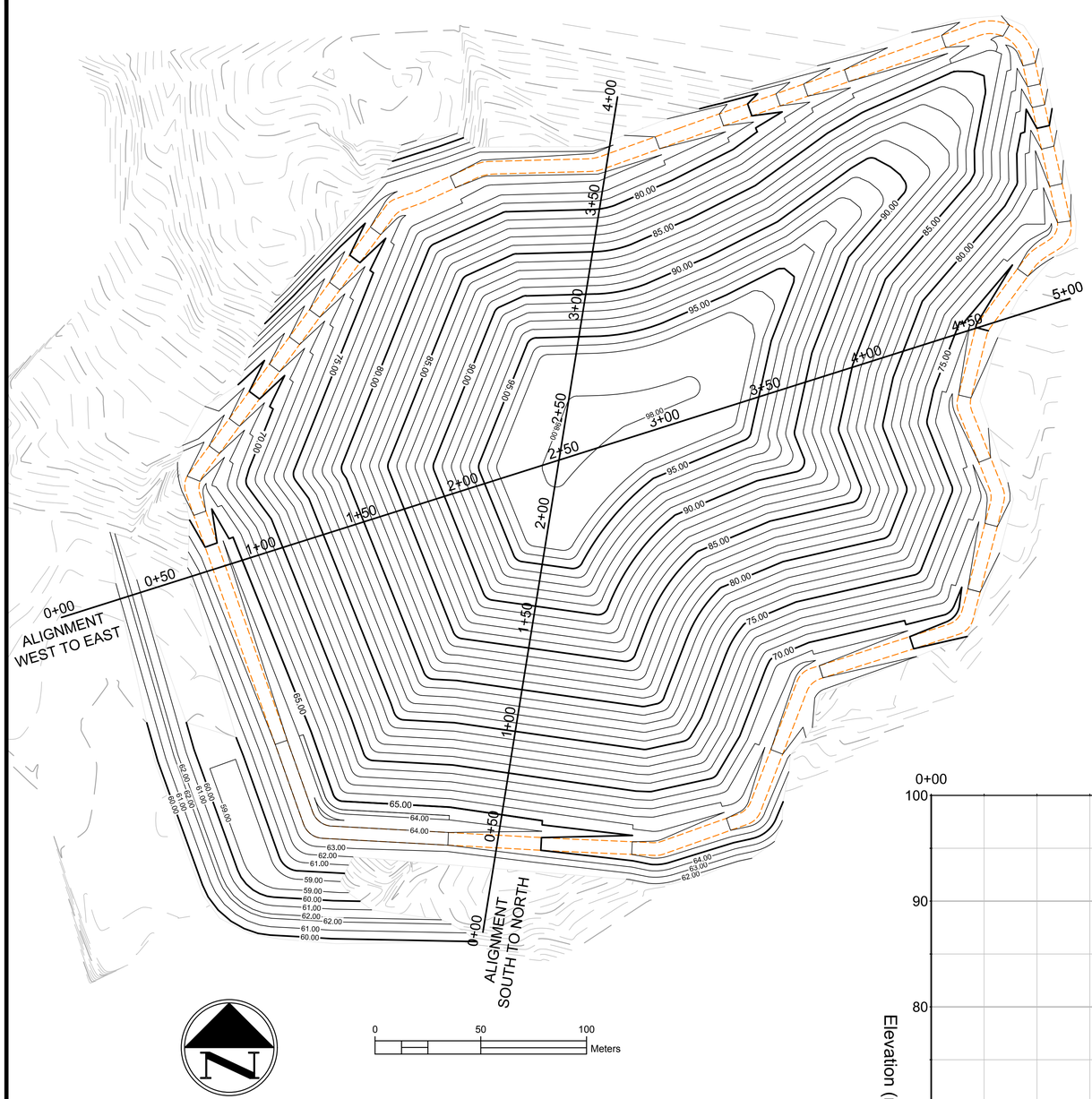
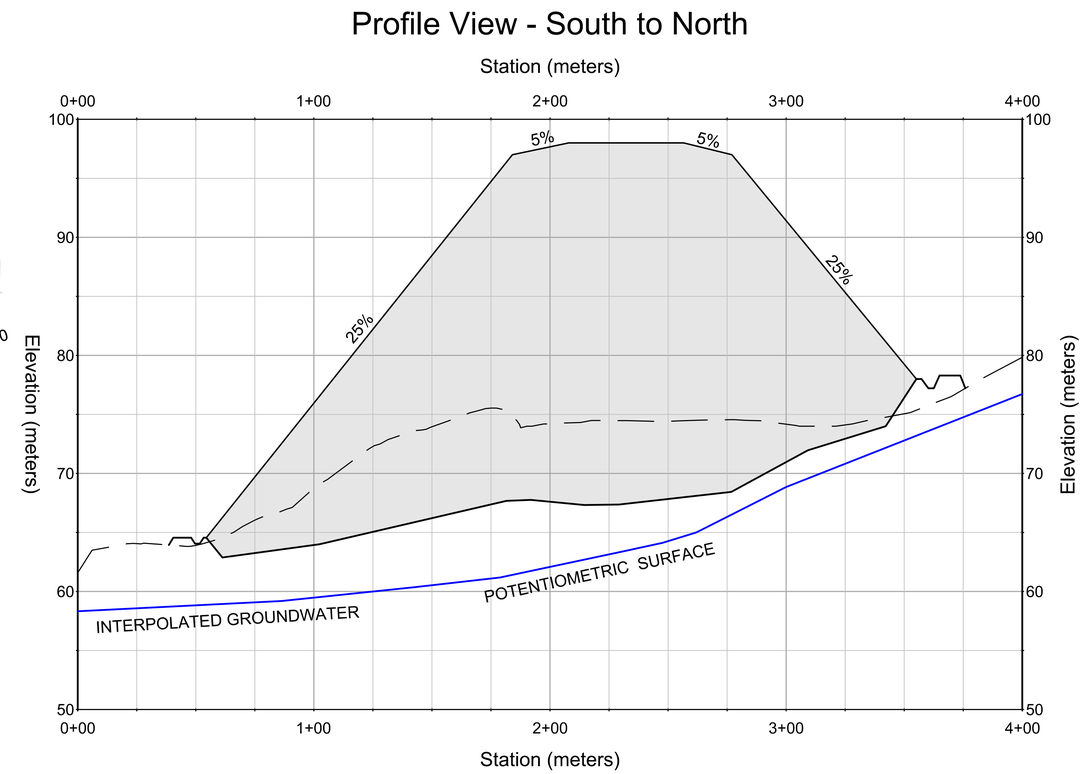
PHONE: (704) 504-3107 FAX: (704) 504-3174

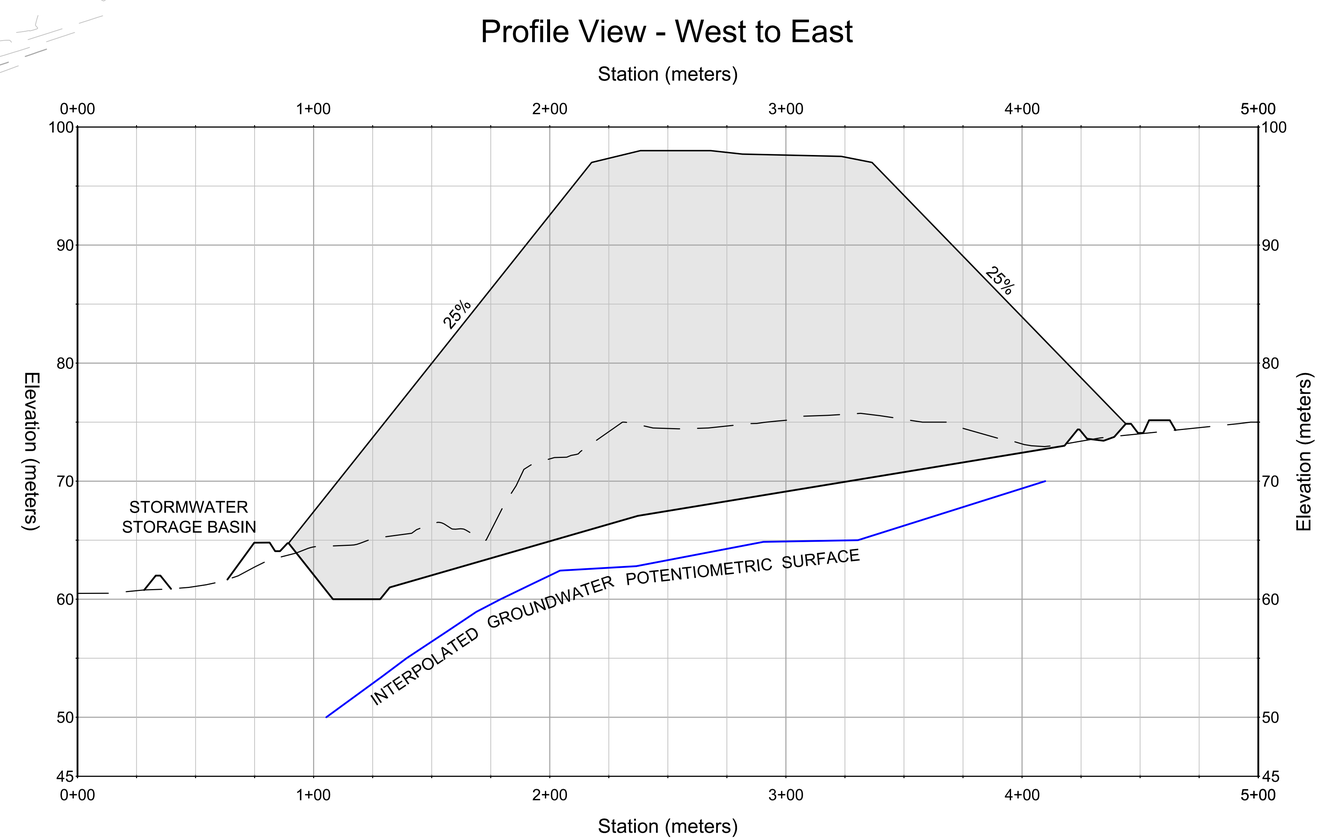
PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY: | APP. BY:
DSN. BY: ADG | CHK. BY:

CADD FILE: SHEET 4
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 4 of 18

C:\Users\1903jd\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 4 – Conceptual Closure Plan – 25%.dwg Sep 10, 2018 – 3:50pm Layout Name: LANDFILL CLOSURE PLAN By: 1903jd







REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: **LANDFILL PROFILES**

PROJECT TITLE: **SAN CRISTOBAL LANDFILL**

CLIENT: **BATTELLE MEMORIAL INSTITUTE**
505 KING AVENUE
COLUMBUS, OHIO 43201

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PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY:
DSN. BY: AJG | CHK. BY: | APP. BY:

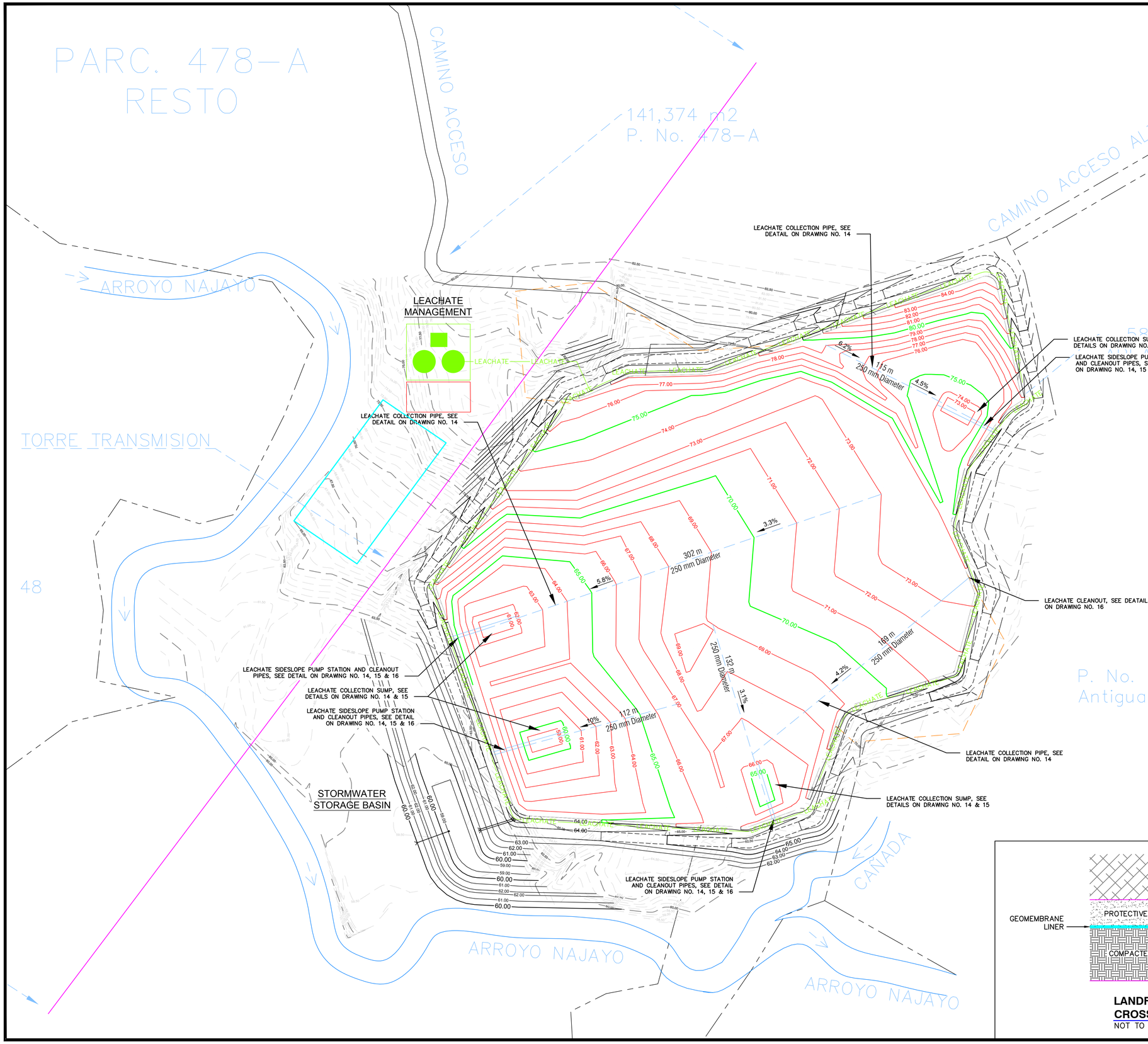
CADD FILE: SHEET 5

DATE: AUG 2018

SCALE: AS NOTED

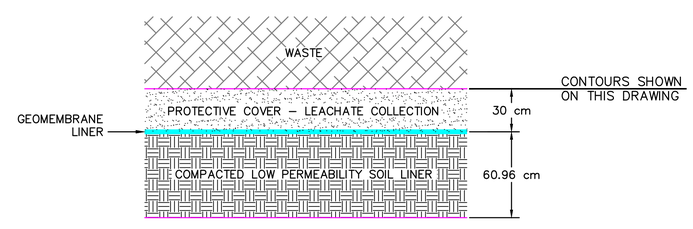
DRAWING NO. **5** of **18**

M:\CADD PROJECT DRAWINGS\06218001.00 – DR Landfill Battelle\Drawings\Sheet 5 – Landfill Profiles.dwg Sep 04, 2018 – 3:13pm Layout Name: PROFILES By: 3291adg



LEGEND

- 85.00 — PROPOSED MAJOR PC CONTOURS (METERS)
- 81.00 — PROPOSED MINOR PC CONTOURS (METERS)
- 82.00 — EXISTING MAJOR CONTOURS (METERS)
- 82.50 — EXISTING MINOR CONTOURS (METERS)
- PROPERTY BOUNDARY
- LEACHATE — LEACHATE CONVEYANCE FORCEMAIN
- LEACHATE COLLECTION PERFORATED PIPE
- LEACHATE COLLECTION SOLID PIPE



LANDFILL BOTTOM SYSTEM CROSS-SECTION
NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: **CONCEPTUAL LEACHATE MANAGEMENT**

PROJECT TITLE: **SAN CRISTOBAL LANDFILL**

CLIENT: **BATTELLE MEMORIAL INSTITUTE**
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
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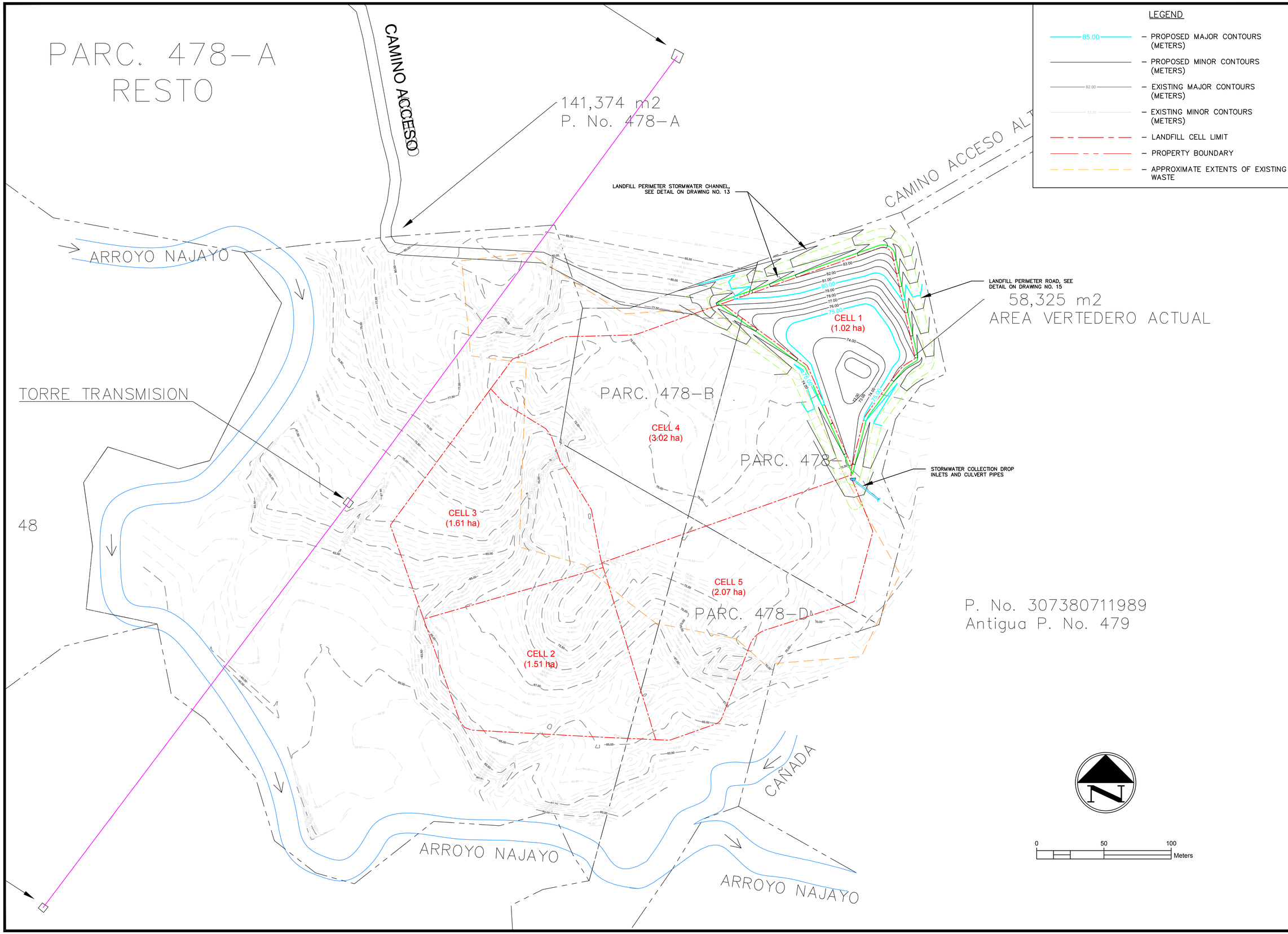
PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY:
DSN. BY: ADC | CHK. BY: | APP. BY:

CADD FILE: SHEET 6
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 6 of 18

C:\Users\1903jd\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 6 – Leachate Management.dwg Sep 10, 2018 – 3:54pm Layout Name: LANDFILL DEVELOPMENT By: 1903jd



REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE
CELL 1 SUBGRADE PLAN

PROJECT TITLE
SAN CRISTOBAL LANDFILL

CLIENT
BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
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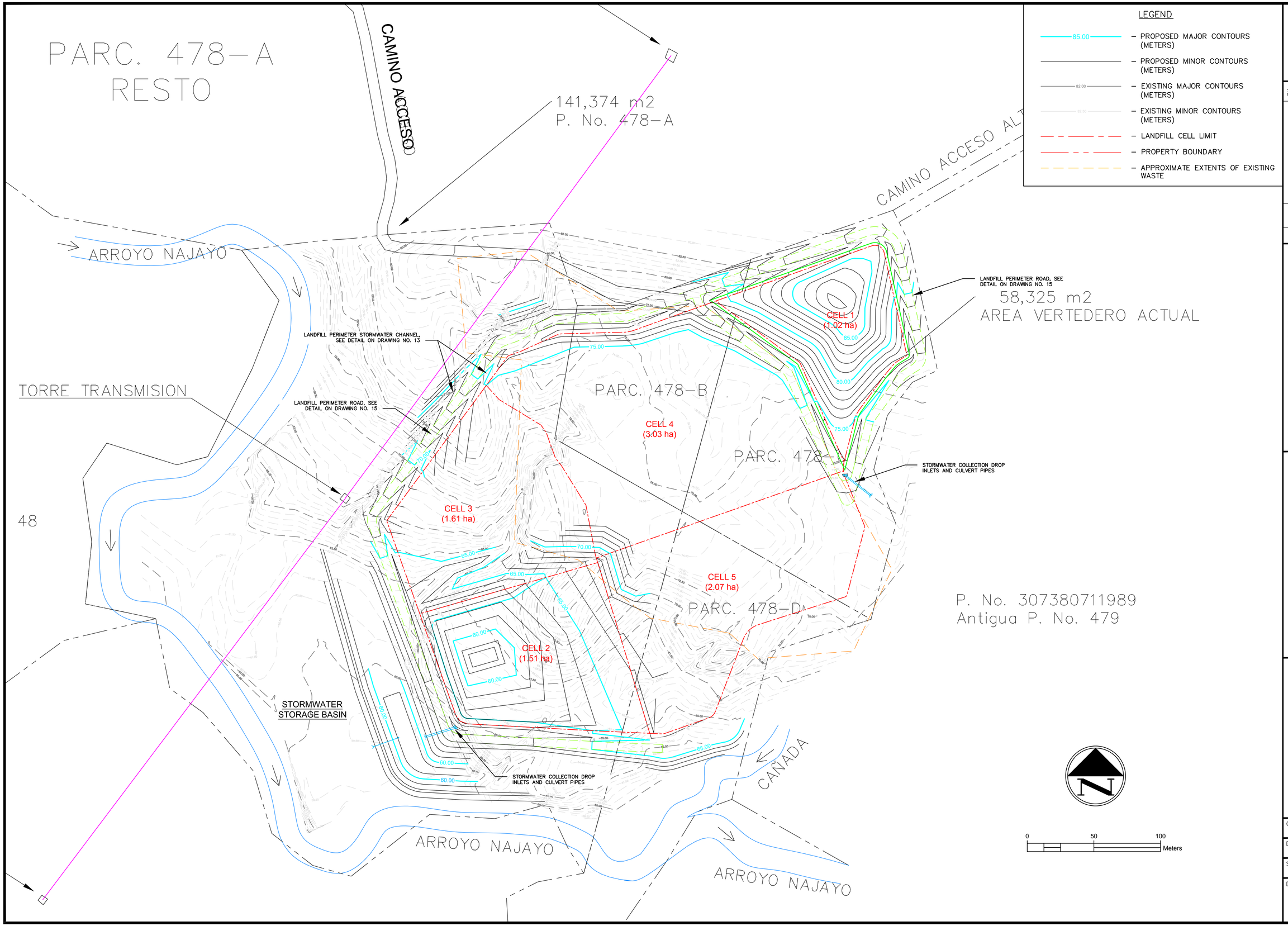
PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00 | DWG. BY: OH | S/A RVW BY:
DSN. BY: ADG | CHK. BY: | APP. BY:

CADD FILE: SHEET 7
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 7 of 18

C:\Users\19031d\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 7 – Cell 1 Subgrade.dwg Sep 10, 2018 – 4:02pm Layout Name: LANDFILL DEVELOPMENT By: 19031d



REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: CELL 1 TOP OF WASTE AND CELL 2 SUBGRADE PLAN

PROJECT TITLE: SAN CRISTOBAL LANDFILL

CLIENT: BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

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

PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY: | APP. BY:
DSN. BY: ADG | CHK. BY:

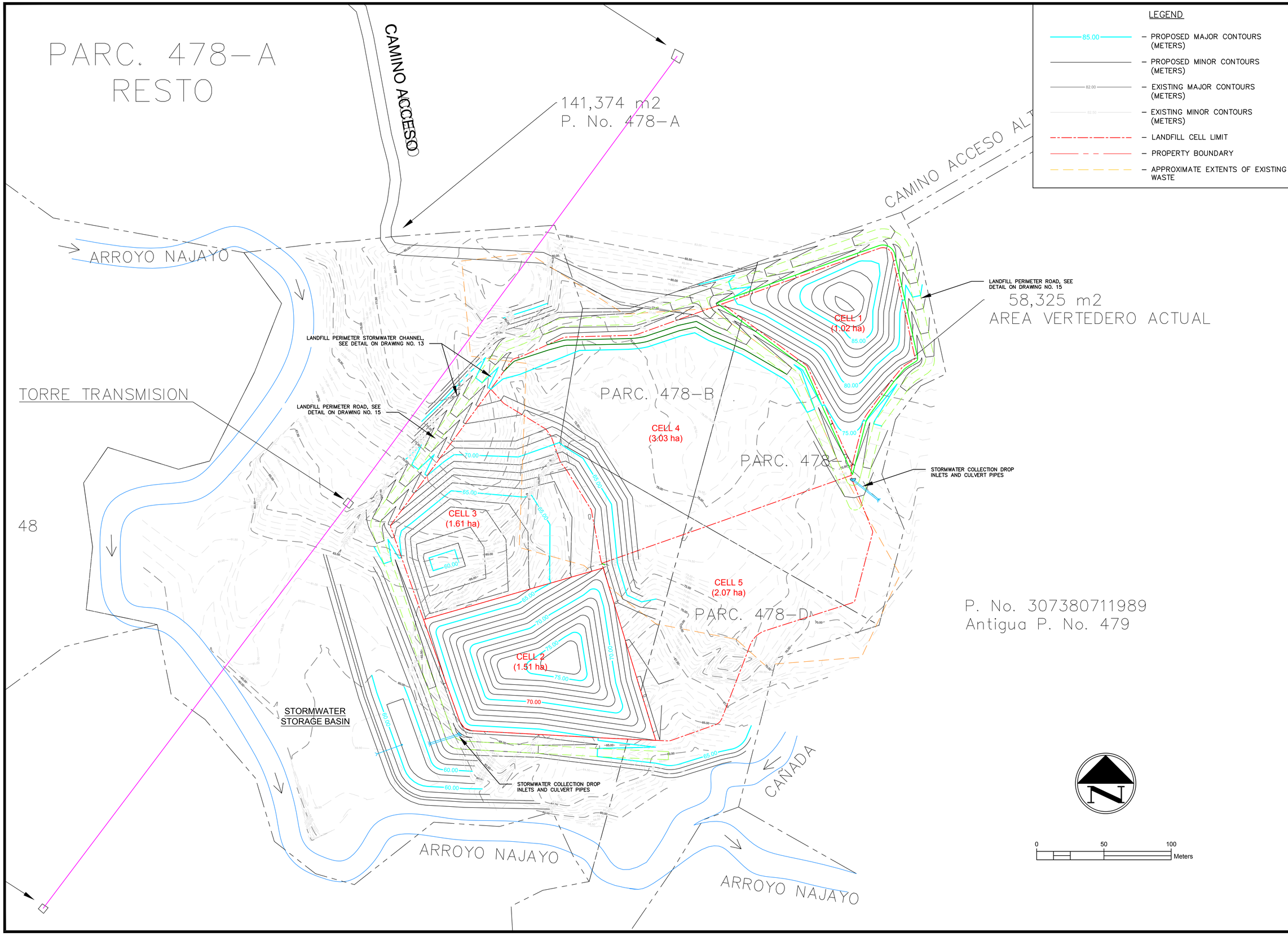
CADD FILE: SHEET 8

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO. 8 of 18

C:\Users\19033d\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 8 – Cell 1 Closure – Cell 2 Subgrades.dwg Sep 10, 2018 – 4:02pm Layout Name: LANDFILL DEVELOPMENT By: 19033d



LEGEND

- 85.00 – PROPOSED MAJOR CONTOURS (METERS)
- PROPOSED MINOR CONTOURS (METERS)
- 82.00 – EXISTING MAJOR CONTOURS (METERS)
- 82.50 – EXISTING MINOR CONTOURS (METERS)
- LANDFILL CELL LIMIT
- PROPERTY BOUNDARY
- APPROXIMATE EXTENTS OF EXISTING WASTE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: CELL 1 & 2 TOP OF WASTE AND CELL 3 SUBGRADE PLAN

PROJECT TITLE: SAN CRISTOBAL LANDFILL

CLIENT: BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

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

PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY: | DSN. BY: ADC | CHK. BY: | APP. BY:

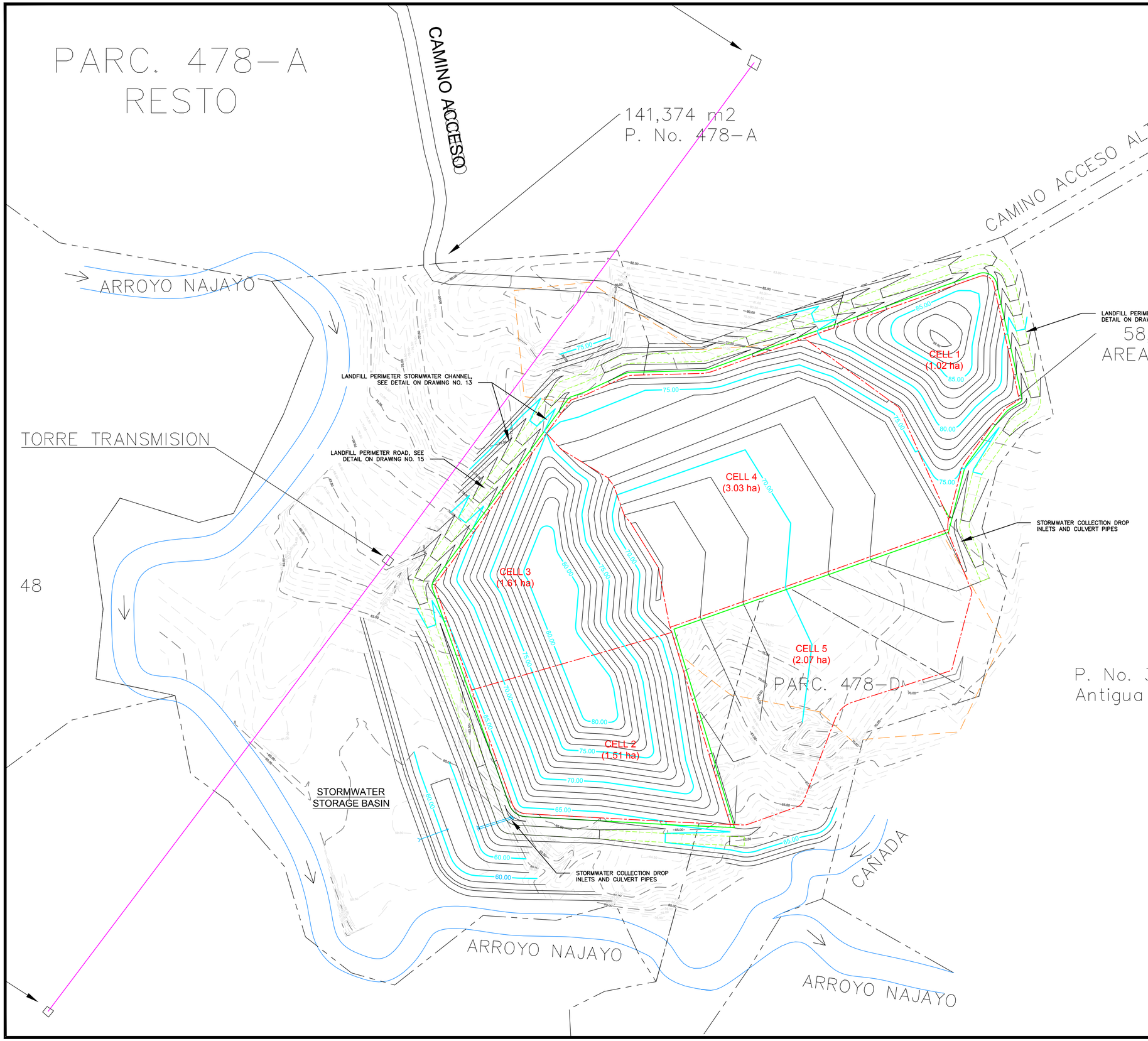
CADD FILE: SHEET 9-CEL...

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO. 9 of 18

C:\Users\19033d\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 9 – Cell 2 Closure – Cell 3 Subgrades.dwg Sep 10, 2018 – 4:03pm Layout Name: LANDFILL DEVELOPMENT By: 19033d



LEGEND

- 85.00 — PROPOSED MAJOR CONTOURS (METERS)
- PROPOSED MINOR CONTOURS (METERS)
- 82.00 — EXISTING MAJOR CONTOURS (METERS)
- 82.50 — EXISTING MINOR CONTOURS (METERS)
- LANDFILL CELL LIMIT
- PROPERTY BOUNDARY
- APPROXIMATE EXTENTS OF EXISTING WASTE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: CELL 1 - 3 TOP OF WASTE AND CELL 4 SUBGRADE PLAN

PROJECT TITLE: SAN CRISTOBAL LANDFILL

CLIENT: BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY:
DSN. BY: ADC | CHK. BY: | APP. BY:

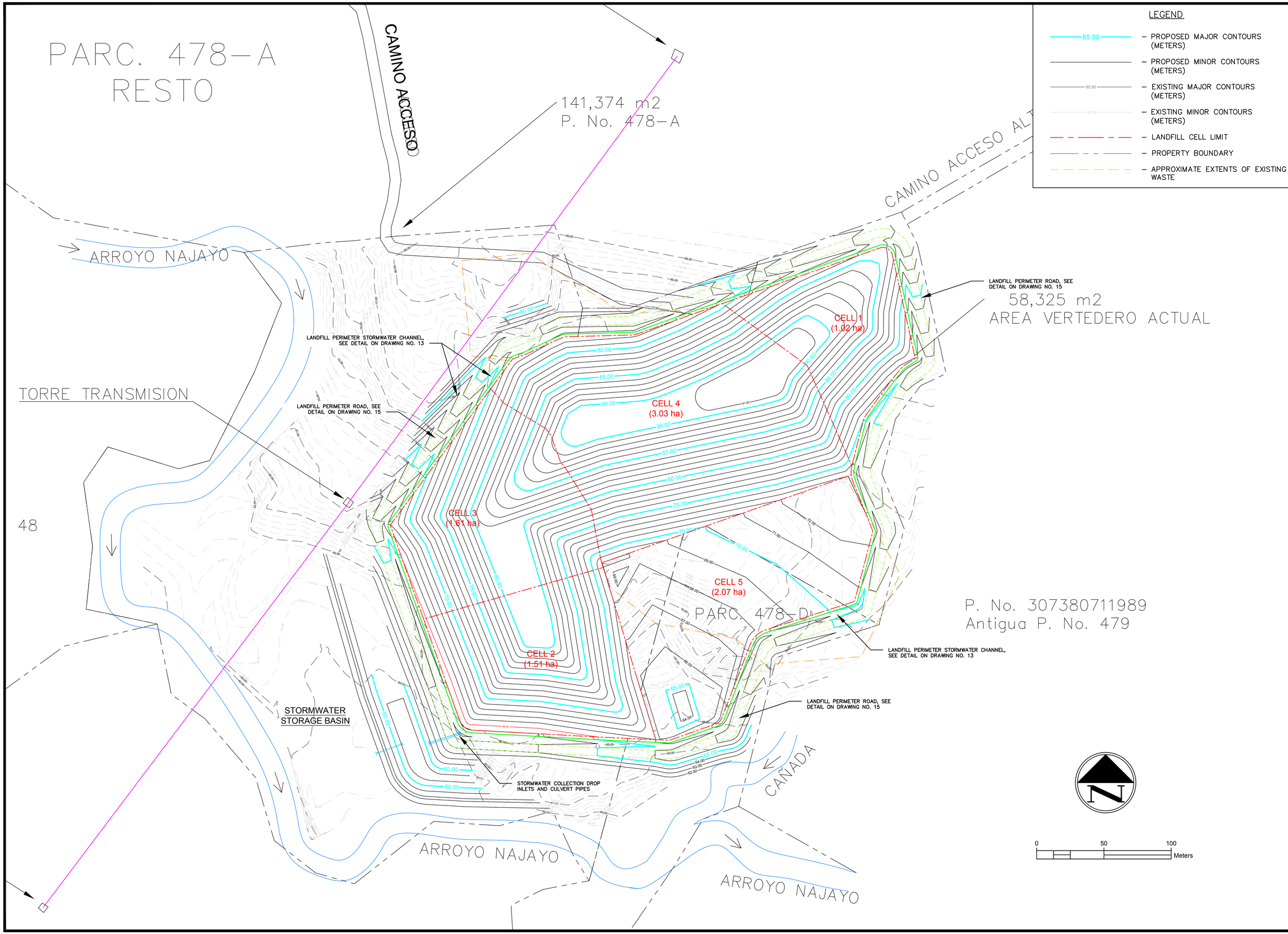
CADD FILE: SHEET 10

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO. 10 of 18

C:\Users\1903jd\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 10 – Cell 3 Closure – Cell 4 Subgrades.dwg Sep 10, 2018 – 4:04pm Layout Name: LANDFILL DEVELOPMENT By: 1903jd



REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: CELL 1 - 4 TOP OF WASTE AND CELL 5 SUBGRADE PLAN

PROJECT TITLE: SAN CRISTOBAL LANDFILL

CLIENT: BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
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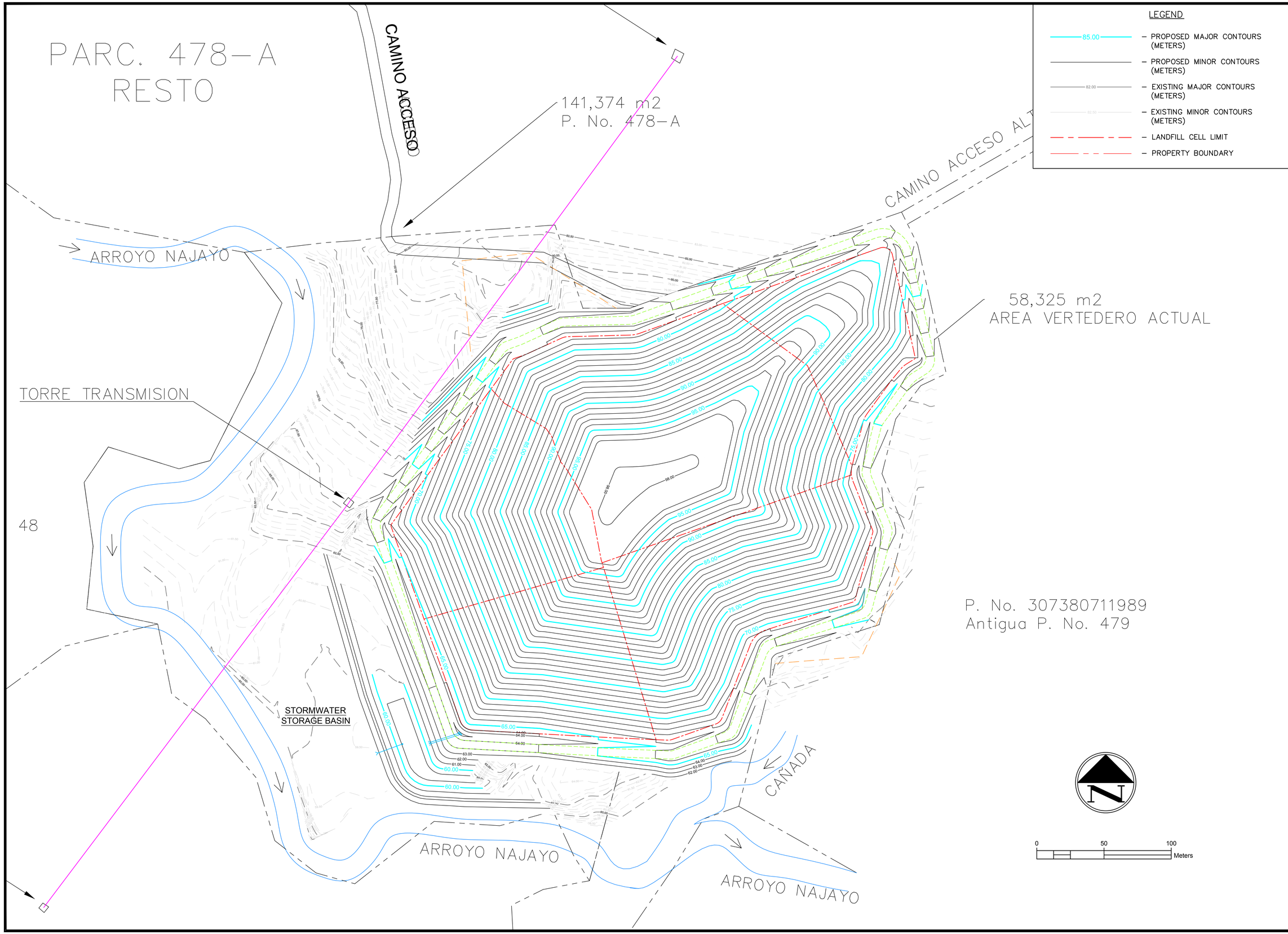
PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY: | APP. BY:
DSN. BY: ADG | CHK. BY:

CADD FILE: SHEET 11-CEL...
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 11 of 18

C:\Users\1903jd\Desktop\Work at Home\06218001.00 – DR Landfill Battelle\CADD\Drawings\Sheet 11 – Cell 4 Closure – Cell 5 Subgrades.dwg Sep 10, 2018 – 4:04pm Layout Name: LANDFILL DEVELOPMENT By: 1903jd



REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE
CELL 1 - 5 TOP OF WASTE

PROJECT TITLE
SAN CRISTOBAL LANDFILL

CLIENT
BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
PHONE: (704) 504-3107 FAX: (704) 504-3174

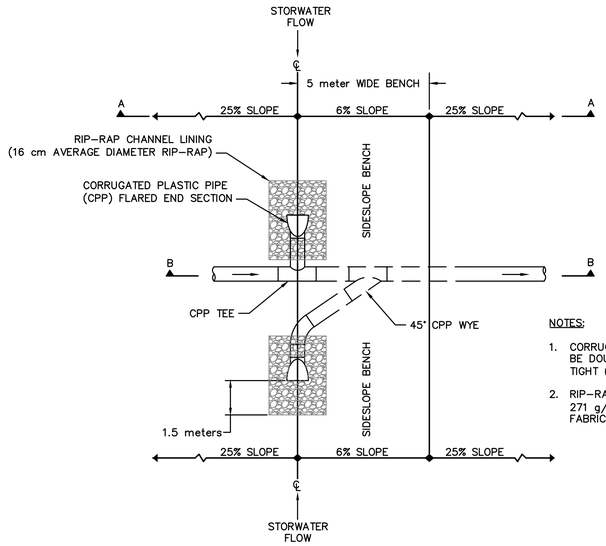
PROJ. NO. 06218001.00 | DWN. BY: OH | Q/A RVW BY:
DSN. BY: ADG | CHK. BY: | APP. BY:

CADD FILE: SHEET 12

DATE: AUG 2018

SCALE: AS NOTED

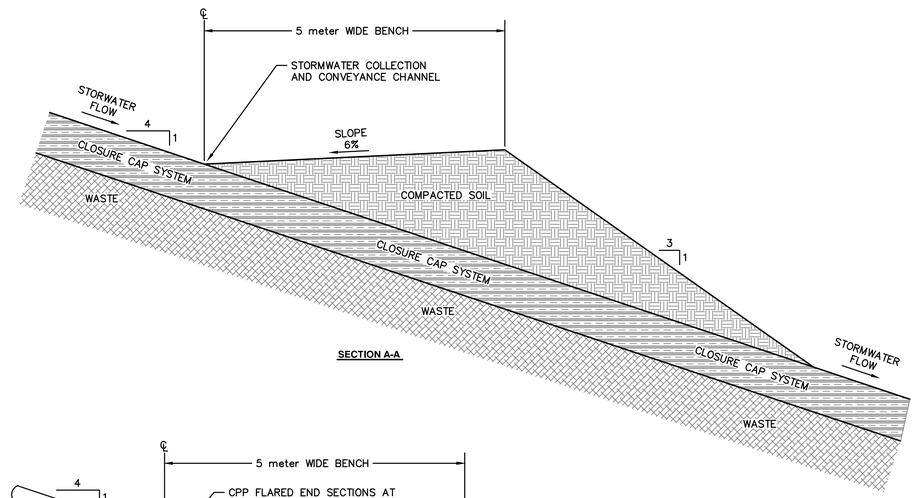
DRAWING NO.
12 of **18**



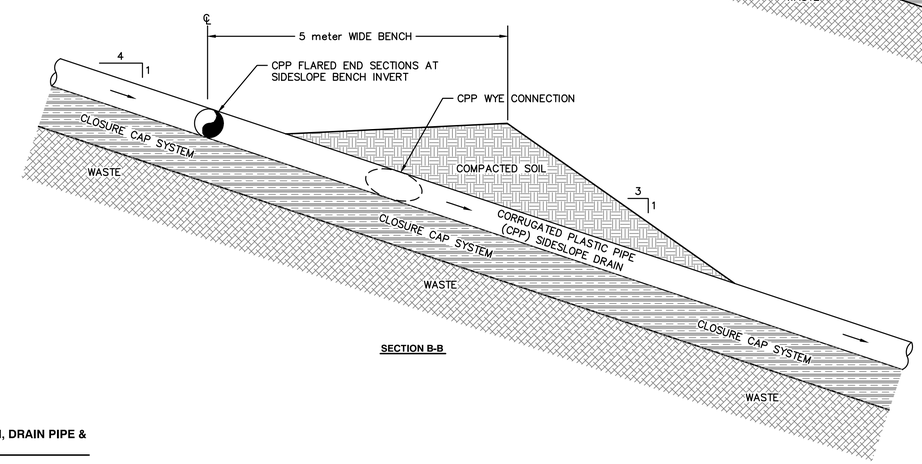
NOTES:

1. CORRUGATED PLASTIC PIPE (CPP) SHALL BE DOUBLE WALL SMOOTH CORE SOIL TIGHT (ST) PIPE.
2. RIP-RAP SHALL BE 46 cm THICK, WITH 271 g/m² NON-WOVEN GEOTEXTILE FABRIC UNDERLAYMENT.

SIDESLOPE BENCH, DRAIN PIPE & PIPE INLET DETAIL
NOT TO SCALE



SECTION A-A



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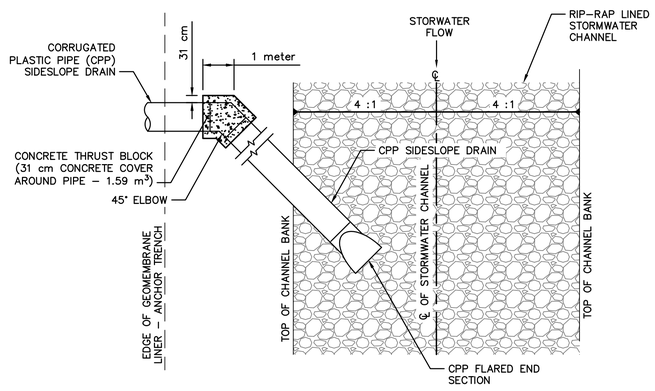
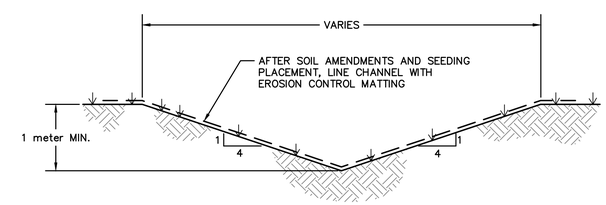


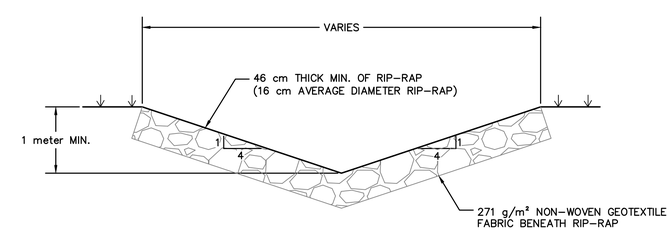
NOTE

1. CORRUGATED PLASTIC PIPE (CPP) SHALL BE DOUBLE WALL SMOOTH CORE SOIL TIGHT (ST) PIPE.

SIDESLOPE DRAIN PIPE OUTLET DETAIL
NOT TO SCALE



GRASS LINED CHANNEL



RIP-RAP LINED CHANNEL

STORMWATER CHANNEL DETAIL
NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: **STORMWATER MANAGEMENT DETAILS**

PROJECT TITLE: **SAN CRISTOBAL LANDFILL**

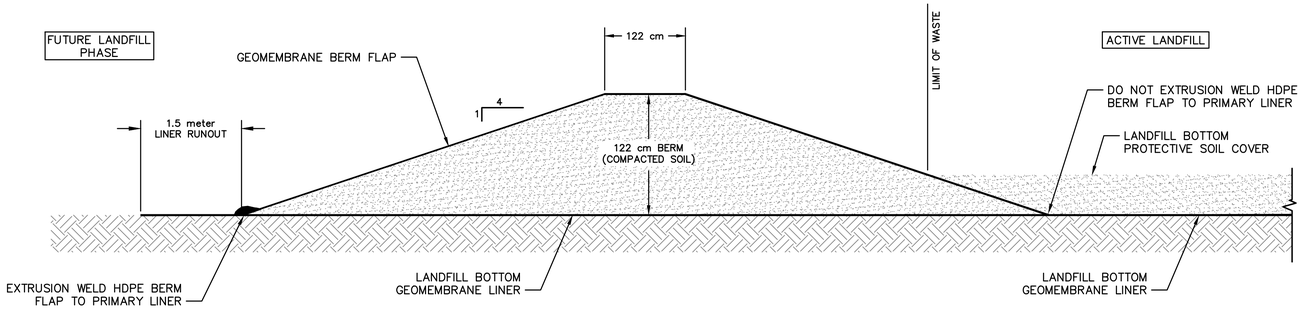
CLIENT: **BATTELLE MEMORIAL INSTITUTE**
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
PHONE: (704) 504-3107 FAX: (704) 504-3174

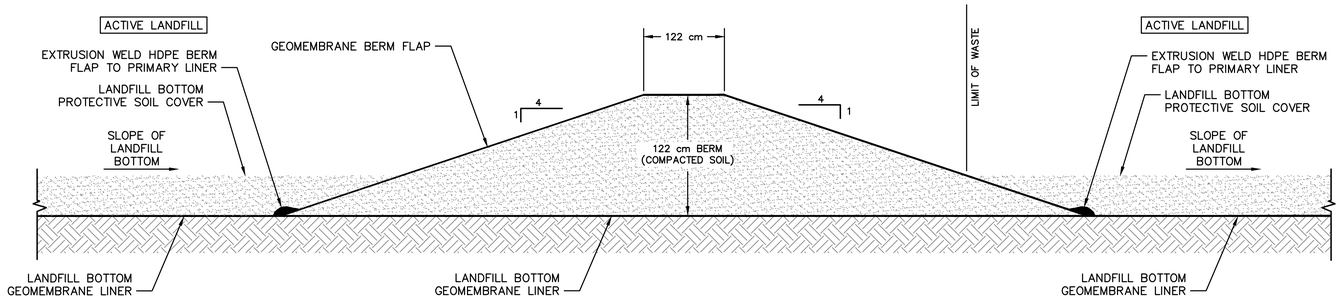
PROJ. NO. 06218001.00 | DWN. BY: OJH | Q/A RVW BY: | APP. BY:
DSN. BY: ADG | CHK. BY:

CADD FILE: DETAILS
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 13 of 18

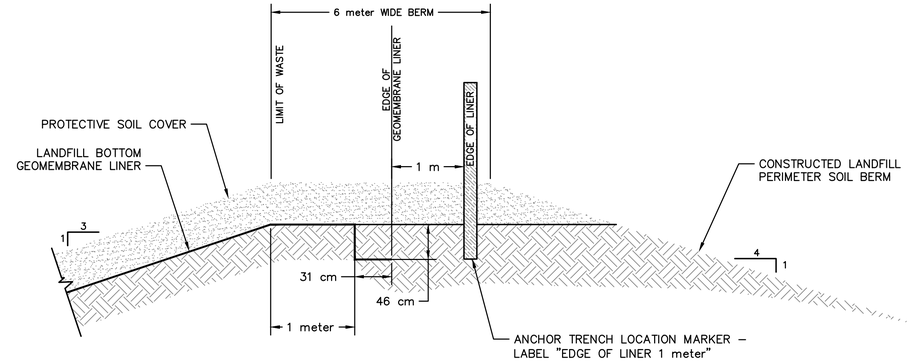
M:\CADD PROJECT DRAWINGS\06218001.00 – DR Landfill Battelle\Details\Typical Landfill Details (5 Sheets).dwg Sep 04, 2018 – 2:57pm Layout Name: SW COLLECTION DETAILS By: 3291adg



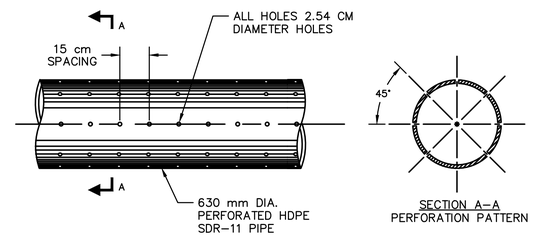
SOUTH SIDE OF LANDFILL PHASES I - II



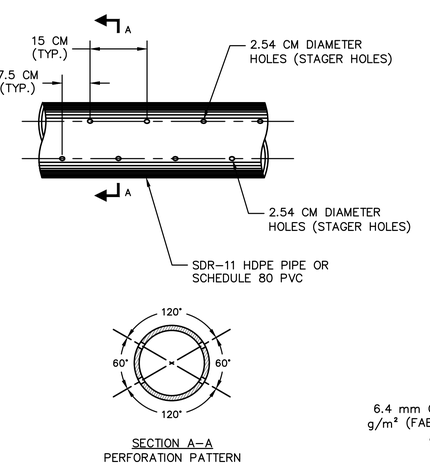
INTERNAL TO LANDFILL PHASE

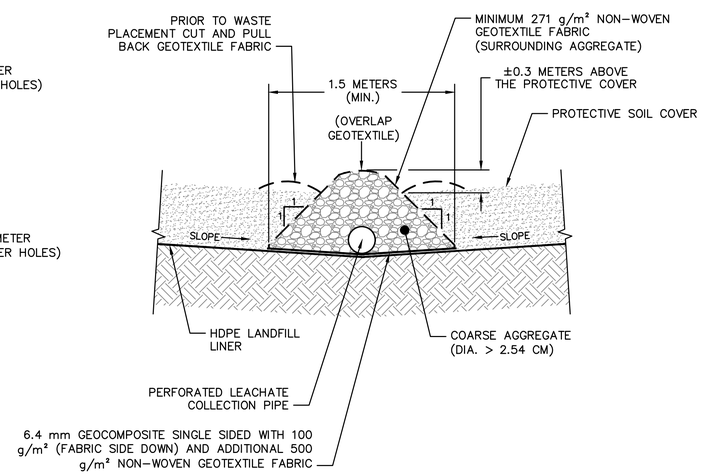


LANDFILL BOTTOM GEOMEMBRANE LINER ANCHOR TRENCH DETAIL
NOT TO SCALE

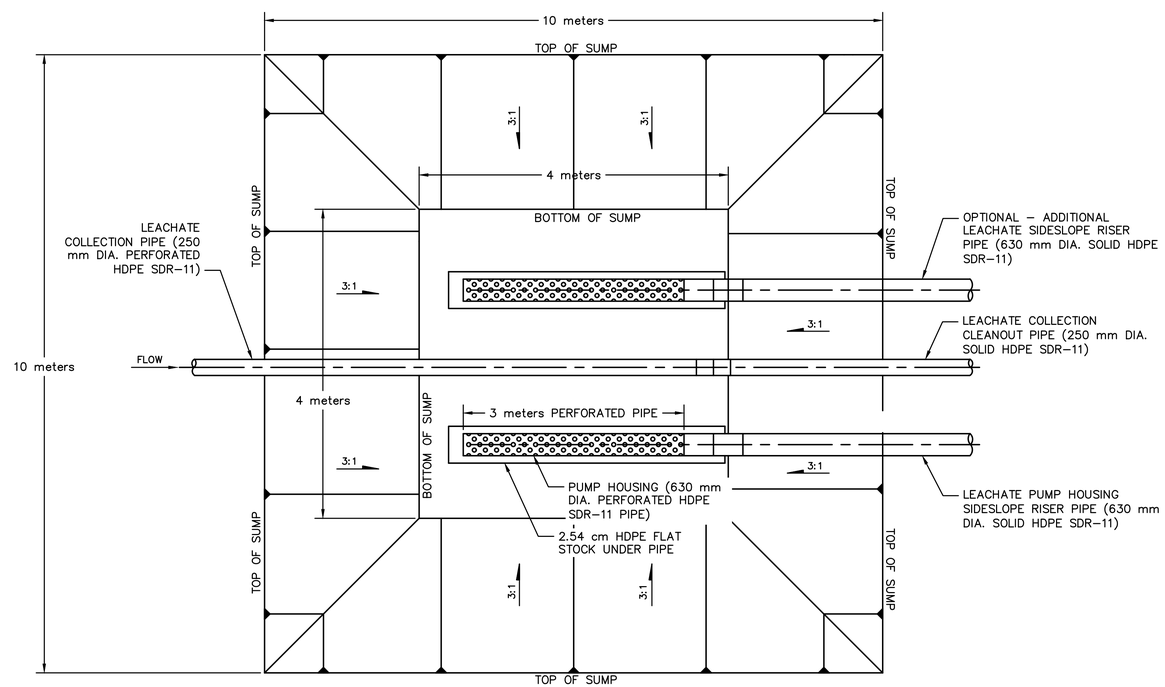


LEACHATE COLLECTION SUMP PUMP HOUSING PIPE DETAIL
NOT TO SCALE





LANDFILL BOTTOM LEACHATE COLLECTION PIPE DETAIL
NOT TO SCALE



LANDFILL BOTTOM LEACHATE COLLECTION SUMP DETAIL
NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: **LANDFILL DETAILS**

PROJECT TITLE: **SAN CRISTOBAL LANDFILL**

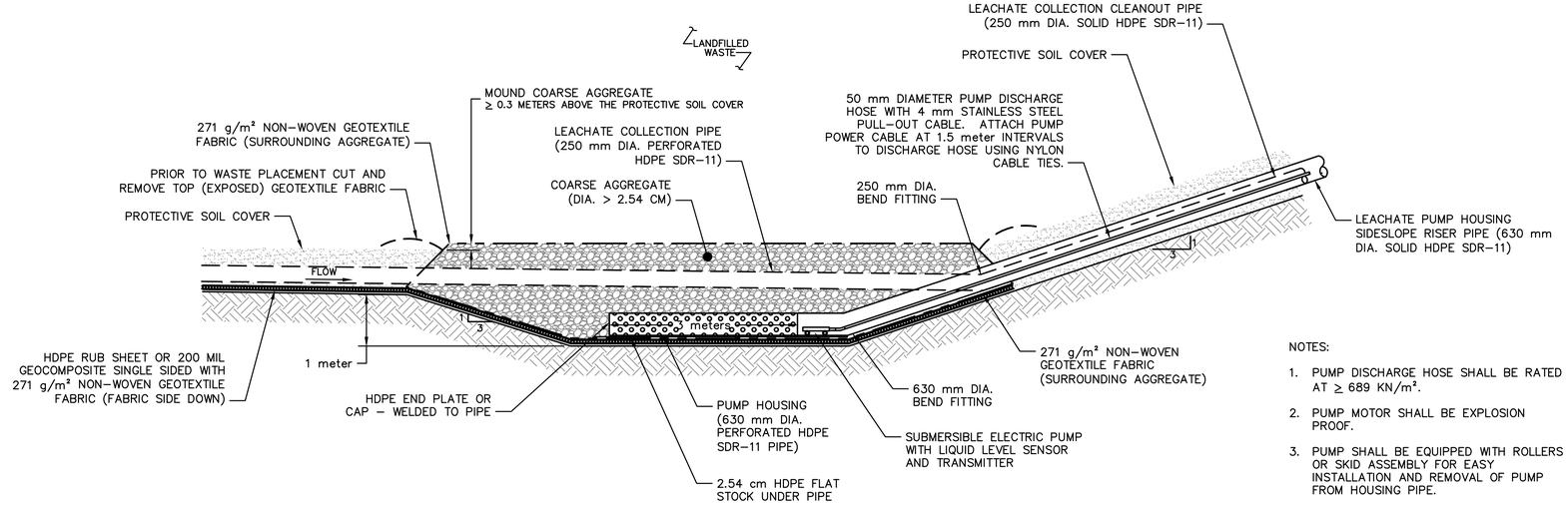
CLIENT: **BATTELLE MEMORIAL INSTITUTE**
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00 | DWN. BY: OJH | Q/A RVW BY: | APP. BY:
DSN. BY: ADG | CHK. BY:

CADD FILE: DETAILS
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 14 of 18

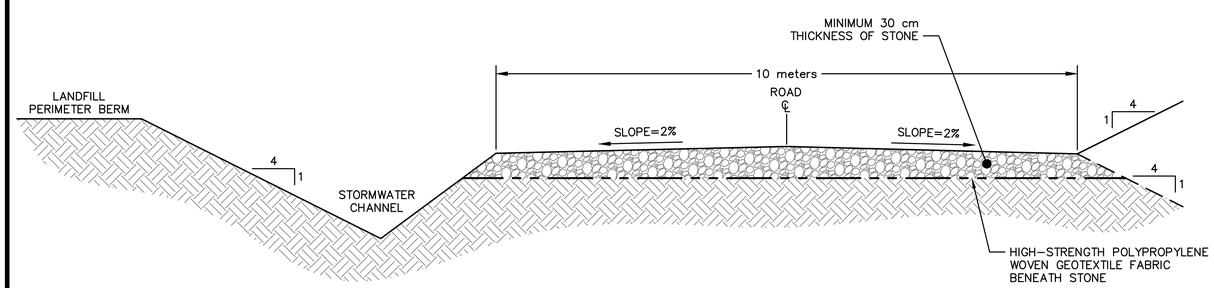
M:\CADD PROJECT DRAWINGS\06218001.00 – DR Landfill Battelle\Details\Typical Landfill Details (5 Sheets).dwg Sep 04, 2018 – 2:56pm Layout Name: LANDFILL DETAILS 1 By: 3291adg



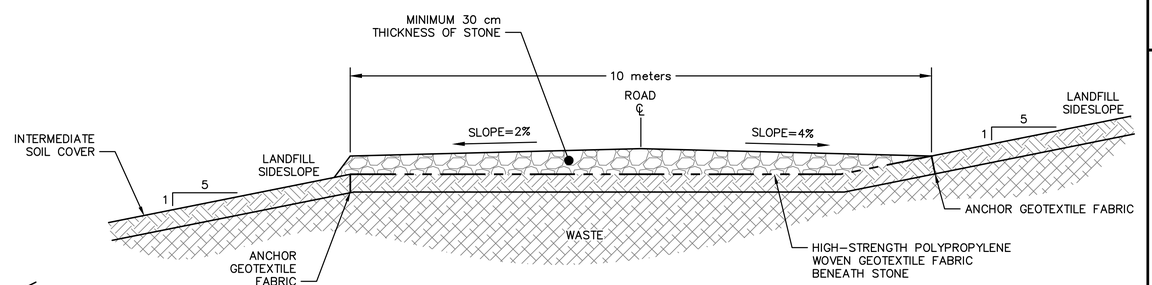
NOTES:

1. PUMP DISCHARGE HOSE SHALL BE RATED AT ≥ 689 KN/m².
2. PUMP MOTOR SHALL BE EXPLOSION PROOF.
3. PUMP SHALL BE EQUIPPED WITH ROLLERS OR SKID ASSEMBLY FOR EASY INSTALLATION AND REMOVAL OF PUMP FROM HOUSING PIPE.

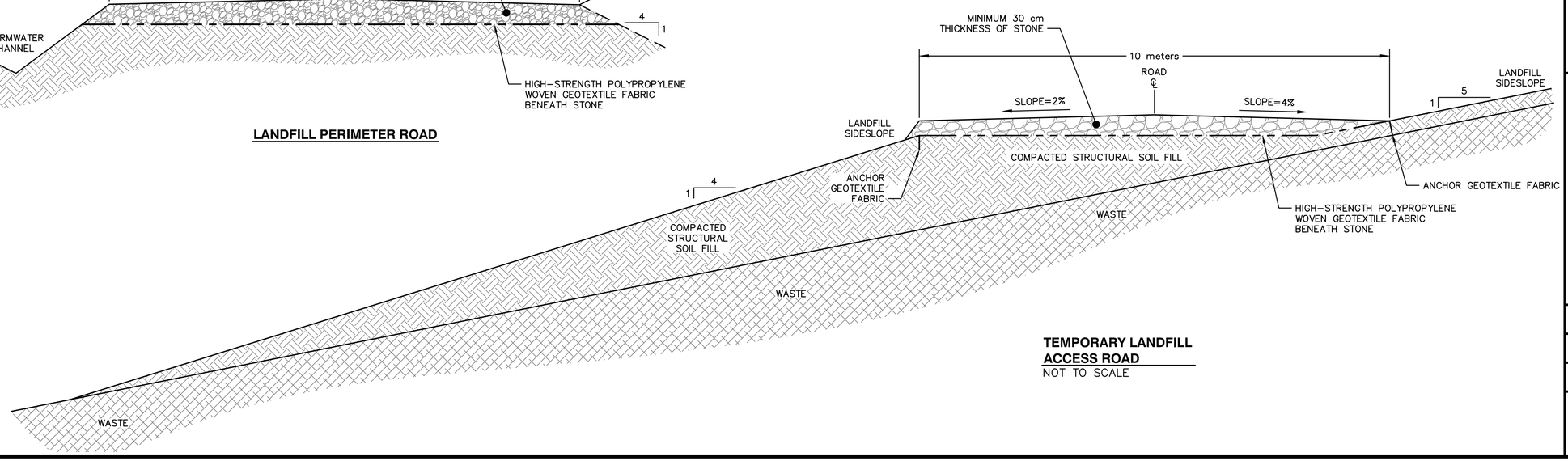
LANDFILL BOTTOM LEACHATE COLLECTION SUMP AND RISER PROFILE
NOT TO SCALE



LANDFILL PERIMETER ROAD



LANDFILL ACCESS ROAD



TEMPORARY LANDFILL ACCESS ROAD
NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE **LANDFILL DETAILS**

PROJECT TITLE **SAN CRISTOBAL LANDFILL**

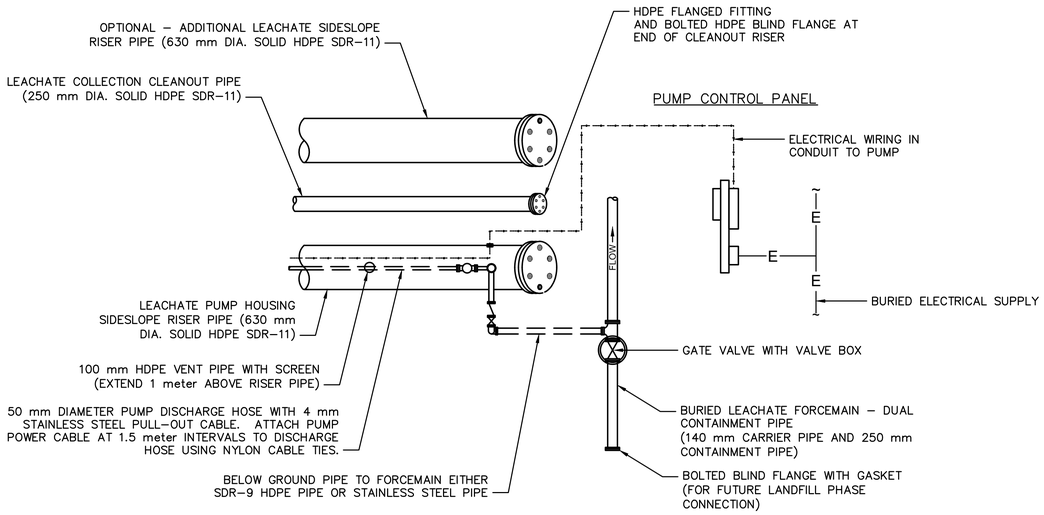
CLIENT **BATTELLE MEMORIAL INSTITUTE**
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
CHARLOTTE, NORTH CAROLINA 28273
PHONE: (704) 504-3107 FAX: (704) 504-3174

PROJ. NO. 06218001.00 | DWN. BY: OJH | Q/A RVW BY: | DSN. BY: AOG | CHK. BY: | APP. BY:

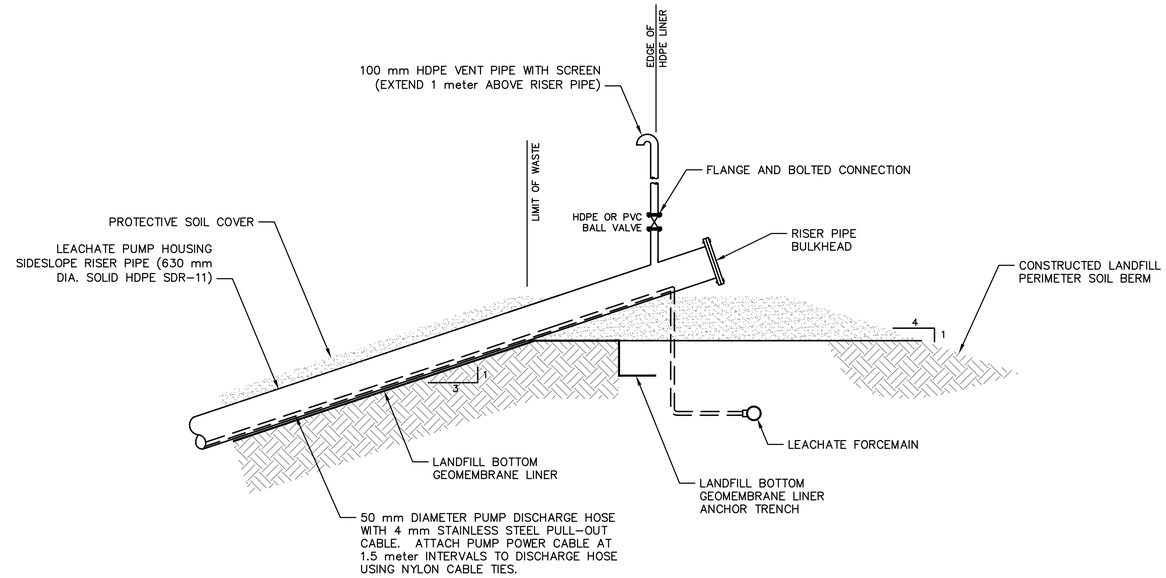
CADD FILE: DETAILS
DATE: AUG 2018
SCALE: AS NOTED
DRAWING NO. 15 of 18

M:\CADD PROJECT DRAWINGS\06218001.00 – DR Landfill Battelle\Details\Typical Landfill Details (5 Sheets).dwg Sep 04, 2018 – 2:56pm Layout Name: LANDFILL DETAILS 2 By: 3291adg

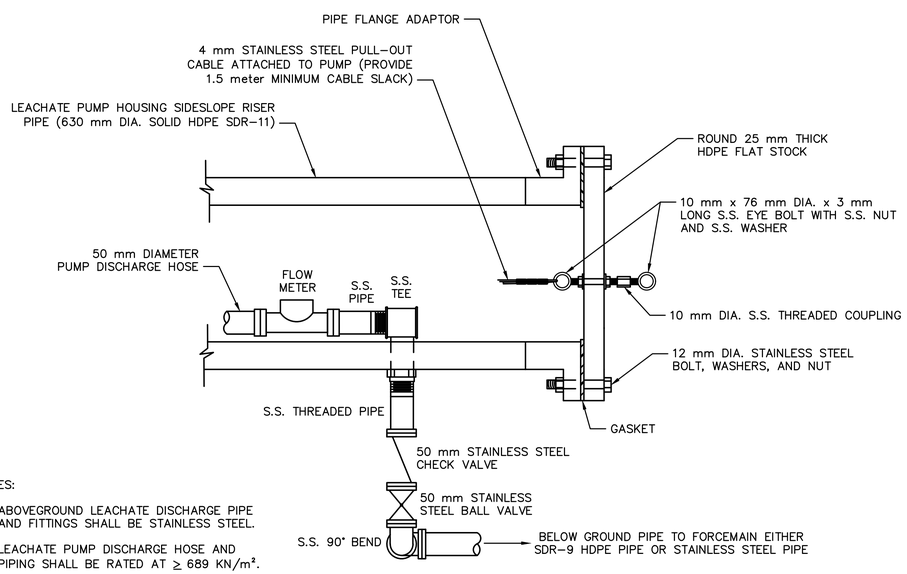


LEACHATE RISER DETAIL

NOT TO SCALE



LEACHATE COLLECTION SIDESLOPE RISER PIPE PROFILE

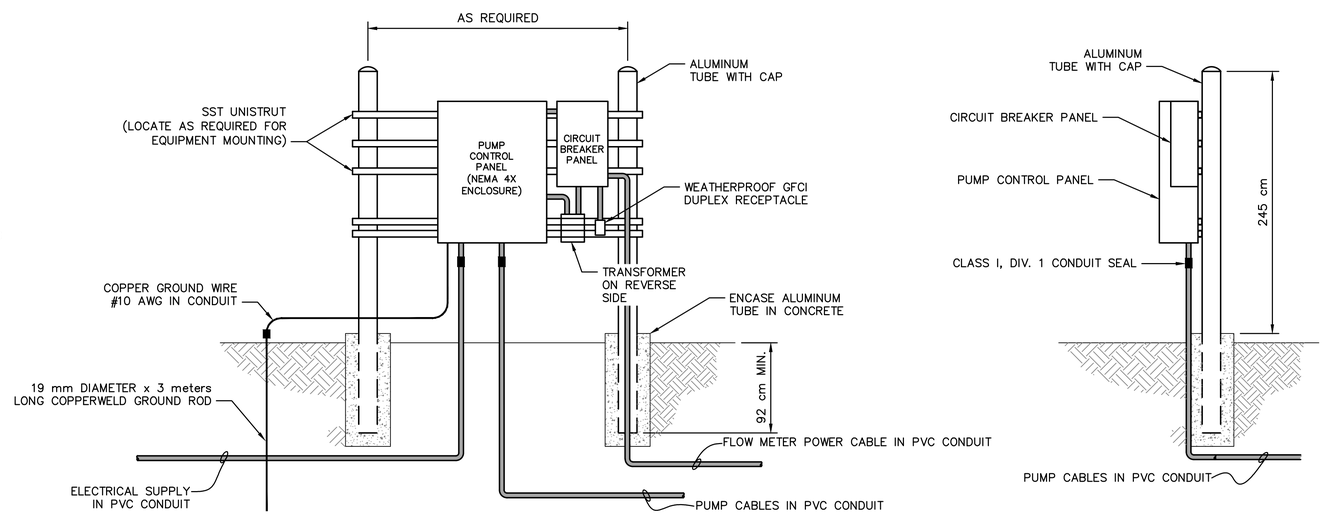


NOTES:

1. ABOVEGROUND LEACHATE DISCHARGE PIPE AND FITTINGS SHALL BE STAINLESS STEEL.
2. LEACHATE PUMP DISCHARGE HOSE AND PIPING SHALL BE RATED AT $\geq$ 689 KN/m^2.
3. ALL EXPOSED LEACHATE DISCHARGE PIPING SHALL BE WRAPPED IN INSULATION.
4. FLOW METER AND AIR RELEASE VALVE CAN BE LOCATED OUTSIDE OF SIDESLOPE RISER PIPE.

RISER PIPE BULKHEAD AND FITTINGS

NOT TO SCALE



LEACHATE PUMP CONTROL PANEL DETAIL

NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: **LANDFILL DETAILS**

PROJECT TITLE: **SAN CRISTOBAL LANDFILL**

CLIENT: **BATTELLE MEMORIAL INSTITUTE**
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COLUMBUS, OHIO 43201

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PROJ. NO. 06218001.00 | DWN. BY: OJH | Q/A RVW BY: | DSN. BY: ADG | CHK. BY: | APP. BY:

CADD FILE: DETAILS

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO. **16** of **18**

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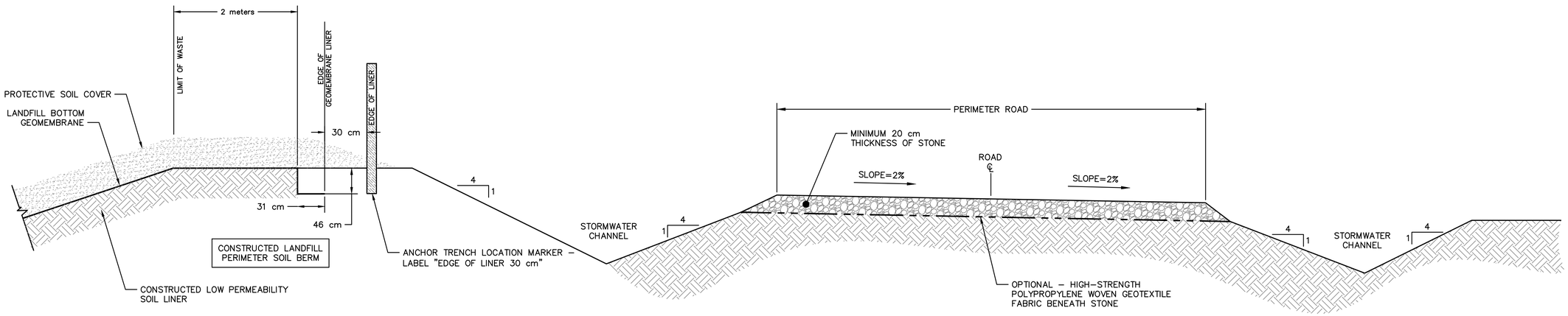
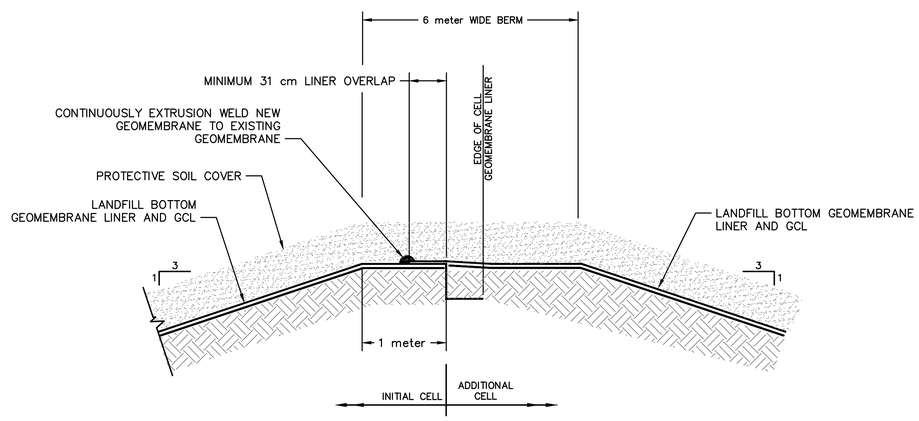


LANDFILL BOTTOM GEOMEMBRANE LINER ANCHOR TRENCH DETAIL

NOT TO SCALE



LANDFILL BOTTOM GEOMEMBRANE LINER TIE-IN DETAIL

NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE **LANDFILL DETAILS**

PROJECT TITLE **SAN CRISTOBAL LANDFILL**

CLIENT **BATTELLE MEMORIAL INSTITUTE**

505 KING AVENUE
COLUMBUS, OHIO 43201

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PROJ. NO. 06218001.00 | DWN. BY: | Q/A RVW BY: | DSN. BY: | CHK. BY: | APP. BY:

CADD FILE: TYPICAL LAND...

DATE: AUG 2018

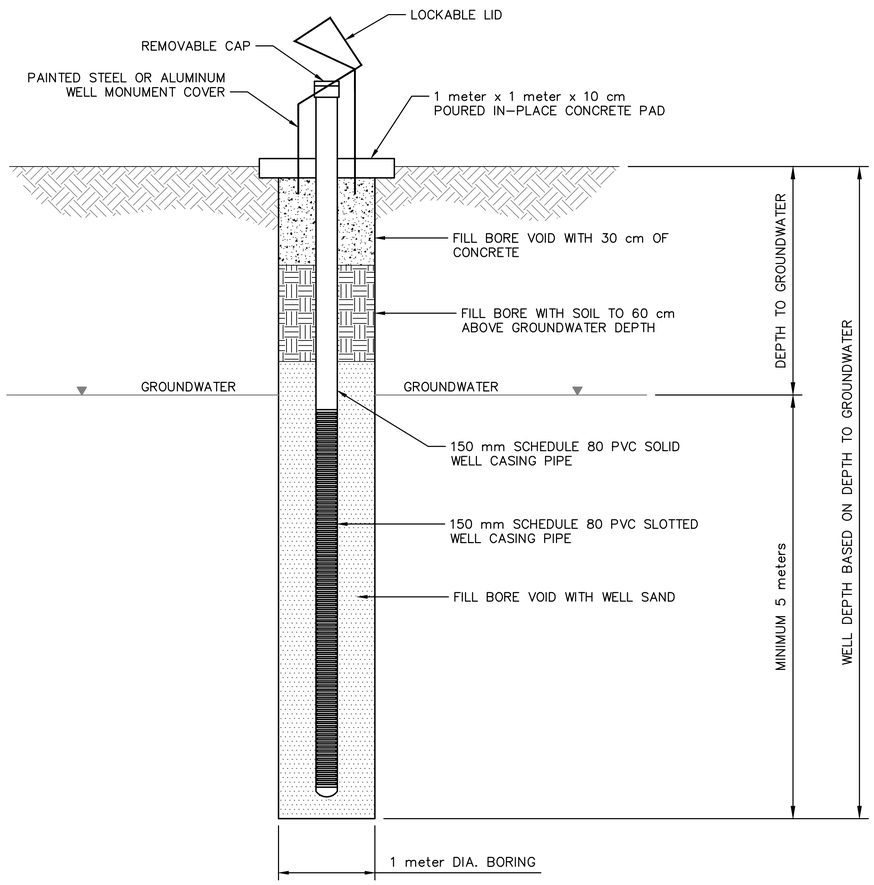
SCALE: AS NOTED

DRAWING NO. **17** of **18**

M:\CADD PROJECT DRAWINGS\06218001.00 – DR Landfill Battelle\Details\Typical Landfill Details (5 Sheets).dwg Sep 04, 2018 – 2:54pm Layout Name: LANDFILL DETAILS 4 By: 3291adg

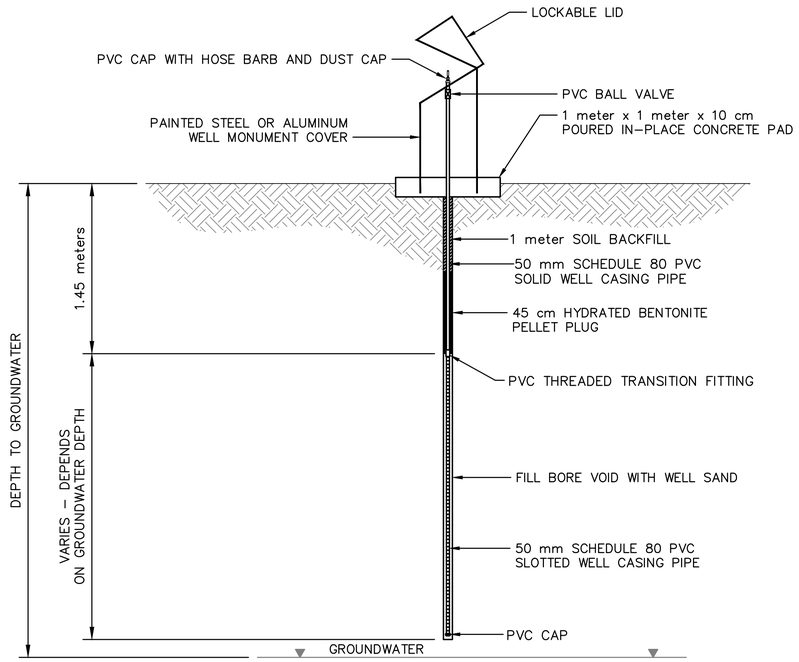
WELL SAND PACK SPECIFICATIONS

Screen Opening (in)	Sand Pack Mesh Name	1% Passing Size (d-1) (in)	10% Passing Size (d-10) (in)	30% Passing Size (d-30) (in)	Derived 60% Passing Size (d-60) (in)	Range for Uniformity Coefficient
0.005-0.006	100	.0035 - .0047	.0055 - .0067	.0067 - .0083	.0085 - .0134	1.3 - 2.0
0.010"	20-40	.0098 - .0138	.0157 - .0197	.0197 -.0236	.020 - .0315	1.1 - 1.6



TYPICAL GROUNDWATER MONITORING WELL DETAIL

NOT TO SCALE



TYPICAL METHANE GAS MONITORING WELL DETAIL

NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY

SHEET TITLE: GROUNDWATER AND METHANE GAS MONITORING WELL DETAILS

PROJECT TITLE: SAN CRISTOBAL LANDFILL

CLIENT: BATTELLE MEMORIAL INSTITUTE
505 KING AVENUE
COLUMBUS, OHIO 43201

SCS ENGINEERS
2520 WHITEHALL PARK DRIVE, SUITE 450
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PROJ. NO. 06218001.00 | DWN. BY: | Q/A RVW BY: | DSN. BY: | CHK. BY: | APP. BY:

CADD FILE: MONITORING

DATE: AUG 2018

SCALE: AS NOTED

DRAWING NO. 18 of 18

M:\CADD PROJECT DRAWINGS\06218001.00 - DR Landfill Battelle\Details\Typical Landfill Details (5 Sheets).dwg Sep 04, 2018 - 2:53pm Layout Name: LANDFILL DETAILS 5 By: 3291adg