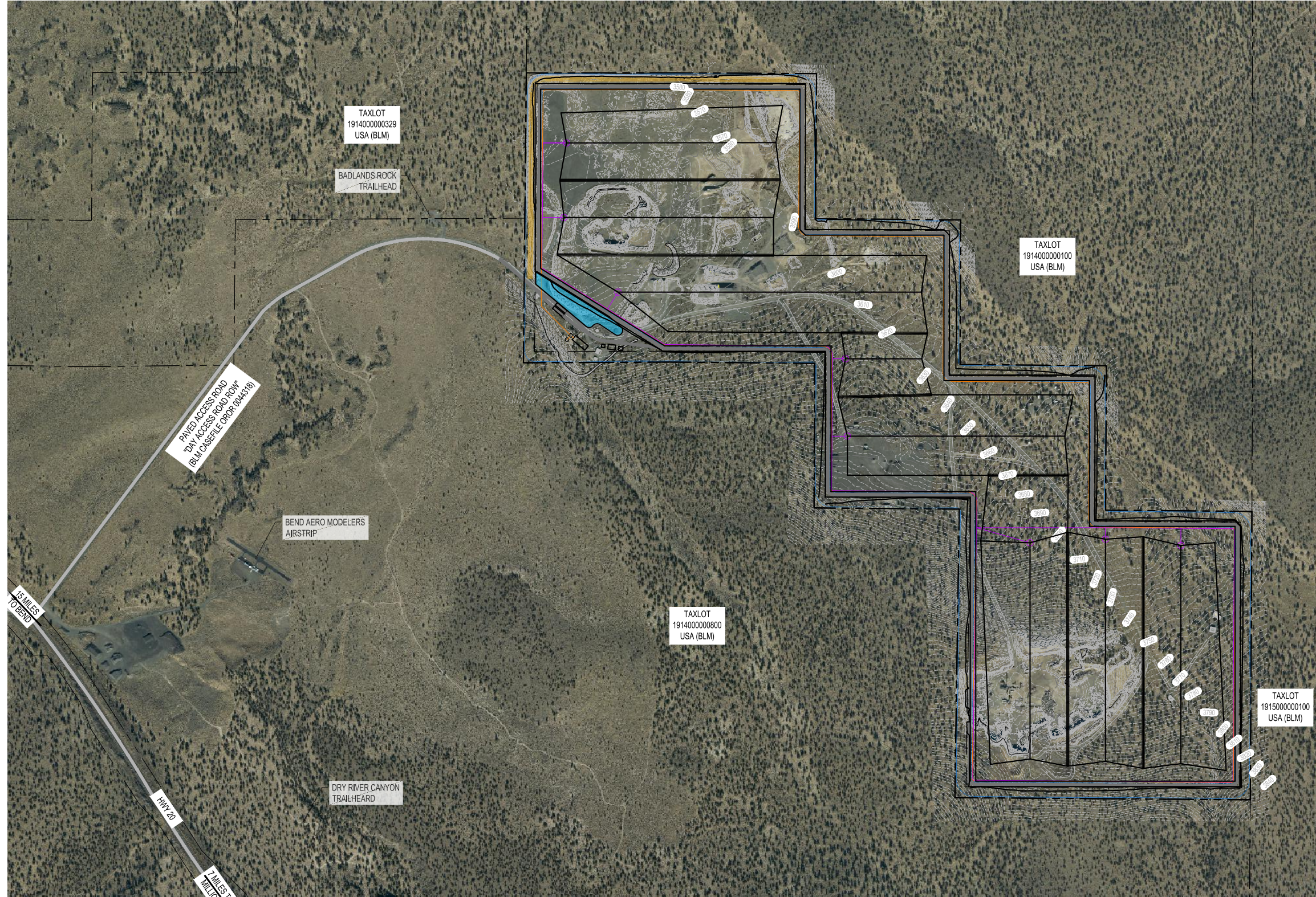


Appendix D

Preliminary Design Drawings

LAYOUT: OVERALL MASTER PLAN FILENAME: 5532508011-C-00 PLOTTED BY: Tanish DATE: Friday, December 8, 2023 11:58:46 AM



EXISTING	PROPOSED	
		ROADWAY
		PROPERTY BOUNDARY
		SCREENING BERM
		PROPERTY BUFFER
		DITCH
		LEACHATE SUMP
		LFG CONDENSATE SUMP
		MAJOR CONTOURS
		MINOR CONTOURS

PROJECT DATA	
OWNER AND ADDRESS:	MOON PIT LLC 95 SW SCALEHOUSE LP#100 BEND, OR 97702
PROJECT LOCATION:	26300 HWY 20, BEND, OR 97702
LEGAL DESCRIPTION:	T.19S. R.14E. W.1M. DESCHUTES COUNTY, OREGON SECTION 1: SW1/4NW1/4, NW1/4SW1/4, SW1/4NE1/4, SE1/4SW1/4, SW1/4SE1/4 SECTION 2: SE1/4NE1/4, NE1/4SE1/4 SECTION 12: NE1/4
MAP AND TAXLOT	191400000200
PARCEL #:	00200
BASE ZONE:	SURFACE MINING (SM)
OVERLAY ZONES:	SURFACE MINING IMPACT AREA (SMIA) WILDLIFE AREA COMBINING ZONE (WA)
PROJECT COORDINATES:	LAT. -120.998 LONG. 43.949
SIZE:	440 ACRES
AREA OF DISTURBANCE:	344 ACRES - TOTAL SITE DISTURBANCE
LANDFILL FOOTPRINT:	387 ACRES

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
C100	OVERALL MASTER PLAN
C200	MOON PIT LANDFILL - SITE PLAN
C300	TYPICAL SECTIONS
C301	TYPICAL SECTIONS
C400	TYPICAL DETAILS
C1	EXISTING TOPOGRAPHY
C2	SUBGRADE PLAN
C3	EXCAVATION AND FILL DEPTHS
C4	FINAL GRADING PLAN
C5	MSW FILL DEPTHS
C6	LINER SECTIONS AND DETAILS
C7	LINER SECTIONS AND DETAILS
A1	CELL 1 EXISTING SITE CONDITIONS
A2	CELL 1 SUBGRADE PLAN
A3	CELL 1 SOIL/ROCK EXCAVATION AND FILL DEPTHS
A4	CELL 1 MSW FILL PLAN
A5	CELL 1 MSW FILL DEPTHS
A6	CELL 1 LINER SECTIONS AND DETAILS
A7	CELL 1 LINER SECTIONS AND DETAILS
A8	CELL 1 LINER SECTIONS AND DETAILS

OVERALL MASTER PLAN
SCALE IN FEET
0 500' 1000'

PRELIMINARY

XX% REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

REVISIONS	DATE	BY	DESIGNED
			XXX
			DRAWN
			XXX
			CHECKED
			XXX
			APPROVED
			XXX

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No. XX
DATE XX/XX

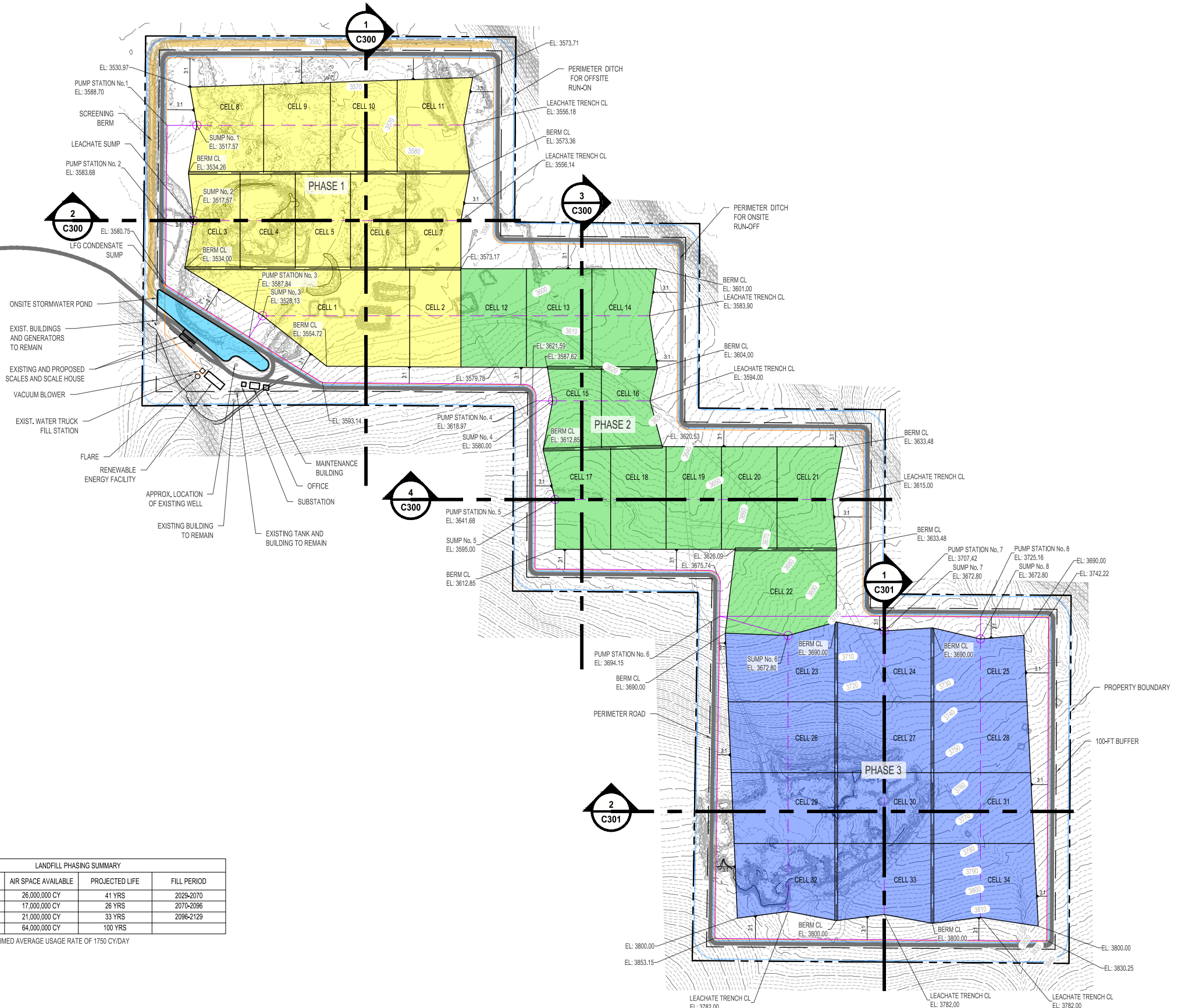


PROJECT NAME
**MOON PIT LANDFILL
CONCEPTUAL MASTER PLAN**
DESCHUTES COUNTY, OREGON

OVERALL MASTER PLAN

DRAWING NO. XX
C100

LAYOUT: MOON PIT LANDFILL - SITE PLAN FILENAME: 532509011-C200 PLOTTED BY: Tamboh DATE: Friday, December 8, 2023 11:59:14 AM



LANDFILL PHASING SUMMARY			
PHASE	AIR SPACE AVAILABLE	PROJECTED LIFE	FILL PERIOD
PHASE 1	26,000,000 CY	41 YRS	2029-2070
PHASE 2	17,000,000 CY	26 YRS	2070-2096
PHASE 3	21,000,000 CY	33 YRS	2096-2129
TOTAL	64,000,000 CY	100 YRS	

NOTE: BASED ON ASSUMED AVERAGE USAGE RATE OF 1750 CY/DAY

MOON PIT LANDFILL SITE PLAN
SCALE IN FEET
0 400' 800'

XX% REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

REVISIONS	DATE	BY	DESIGNED XXX
			DRAWN XXX
			CHECKED XXX
			APPROVED XXX

**ONE INCH AT FULL SCALE,
IF NOT, SCALE ACCORDINGLY**
FILE NAME
JOB No.
XX
DATE
XX/XX

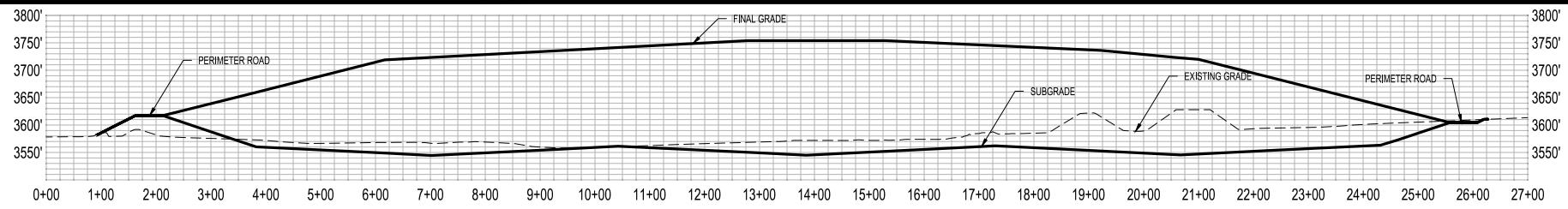
PRELIMINARY

Parametrix

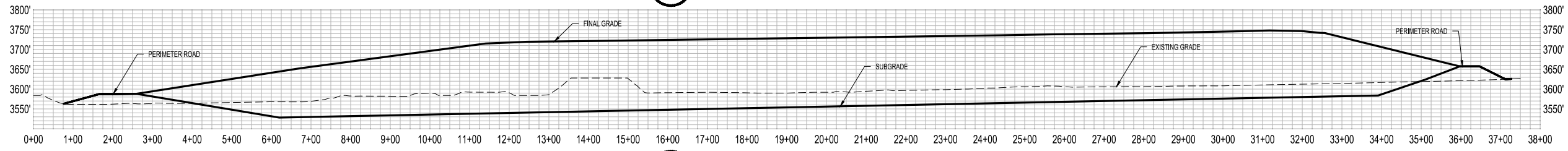
PROJECT NAME
**MOON PIT LANDFILL
CONCEPTUAL MASTER PLAN**
DESCHUTES COUNTY, OREGON

MOON PIT LANDFILL - SITE PLAN

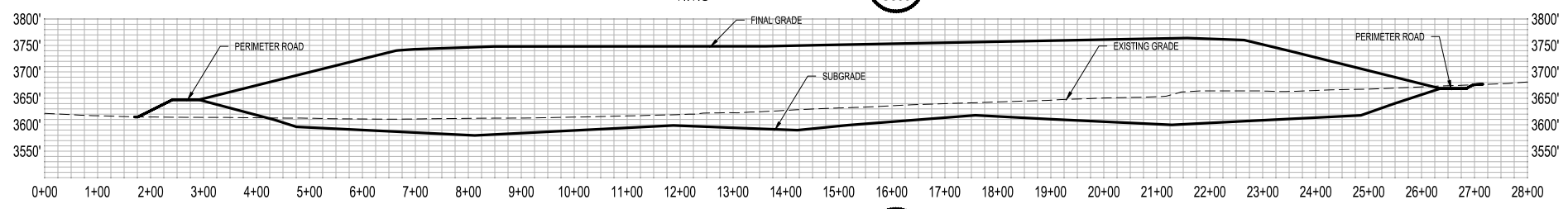
DRAWING NO.
XX
C200



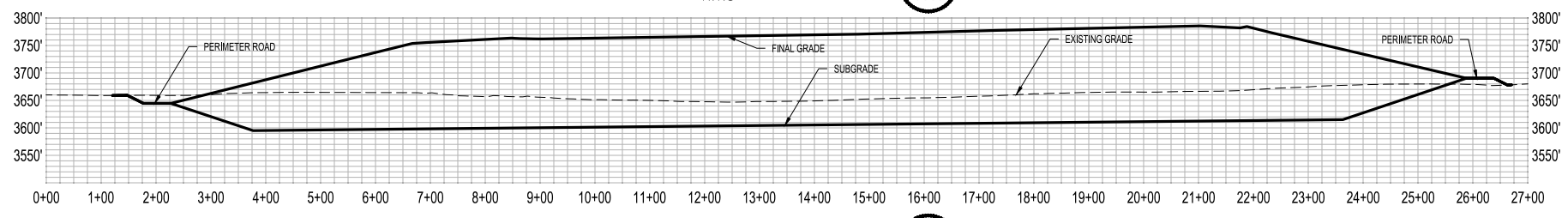
PHASE 1 NORTH-SOUTH SECTION
N.T.S. **1**
C300



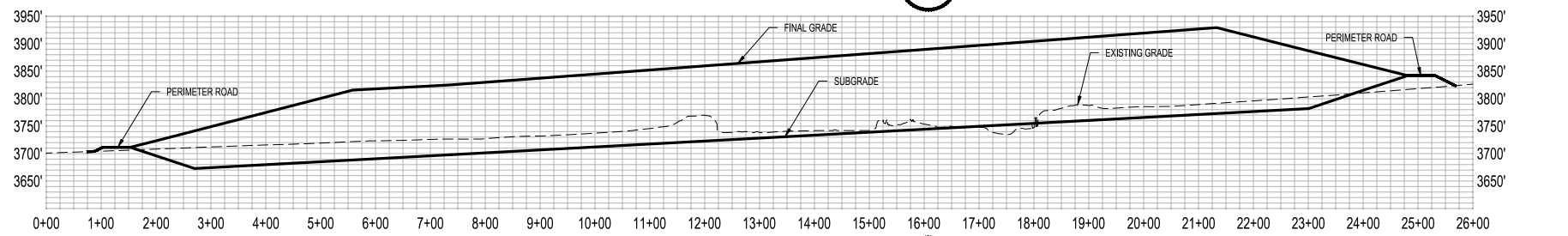
PHASE 1 WEST-EAST SECTION
N.T.S. **2**
C300



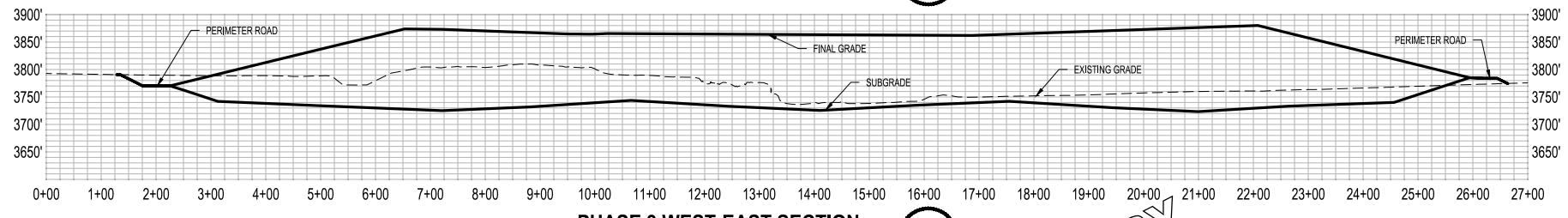
PHASE 2 NORTH-SOUTH SECTION
N.T.S. **3**
C300



PHASE 2 WEST-EAST SECTION
N.T.S. **4**
C300



PHASE 3 NORTH-SOUTH SECTION
N.T.S. **5**
C300



PHASE 3 WEST-EAST SECTION
N.T.S. **6**
C300

LAYOUT: TYPICAL SECTIONS FILENAME: 5532599011-C300 PLOTTED BY: Tamara DATE: Friday, December 8, 2023 11:59:39 AM

XX % REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

REVISIONS	DATE	BY	DESIGNED XXX
			DRAWN XXX
			CHECKED XXX
			APPROVED XXX

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY
FILE NAME
JOB No.
XX
DATE
XX/XX

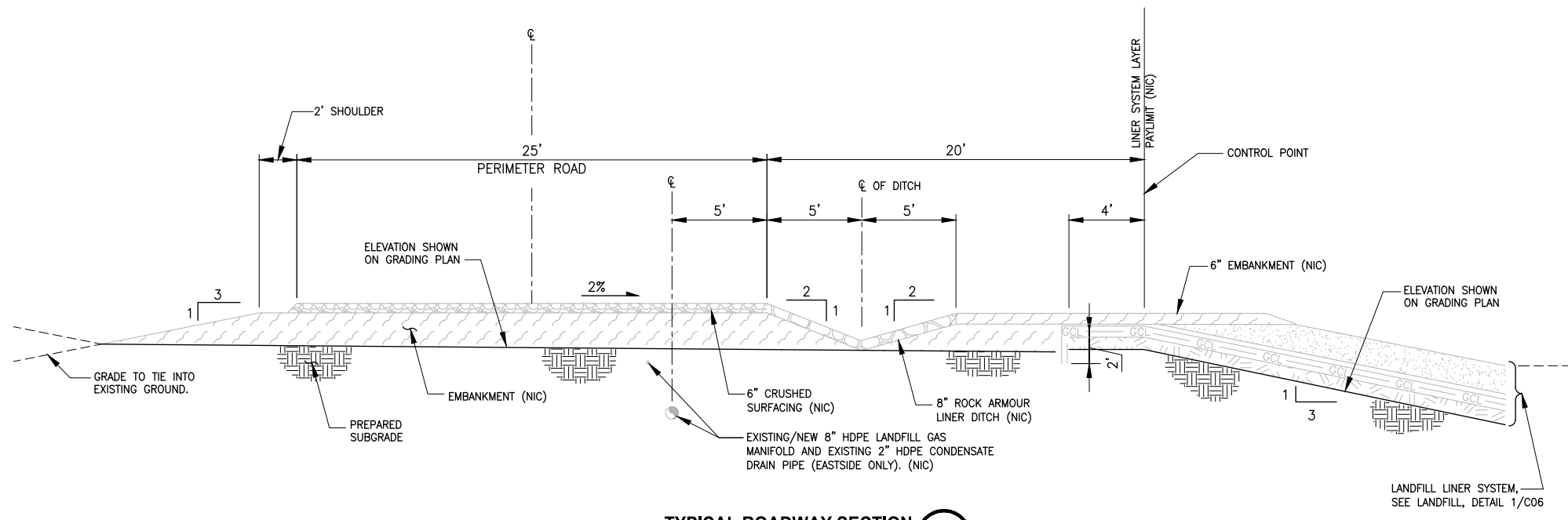
PRELIMINARY



PROJECT NAME
**MOON PIT LANDFILL
CONCEPTUAL MASTER PLAN
DESCHUTES COUNTY, OREGON**

TYPICAL SECTIONS

DRAWING NO.
XX
C300



TYPICAL ROADWAY SECTION 1
N.T.S. C400

LAYOUT: TYPICAL DETAILS FILENAME: 6532598011-C400 PLOTTED BY: Tamuoh DATE: Friday, December 8, 2023 12:00:00 PM

REVISIONS	DATE	BY	DESIGNED XXX
			DRAWN XXX
			CHECKED XXX
			APPROVED XXX

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY	
FILE NAME	
JOB No.	XX
DATE	XX/XX

PRELIMINARY



PROJECT NAME
**MOON PIT LANDFILL
CONCEPTUAL MASTER PLAN**
DESCHUTES COUNTY, OREGON

TYPICAL DETAILS

DRAWING NO.
XX
C400

**XX% REVIEW SUBMITTAL
NOT FOR CONSTRUCTION**

MSW Disposal Capacity Analysis

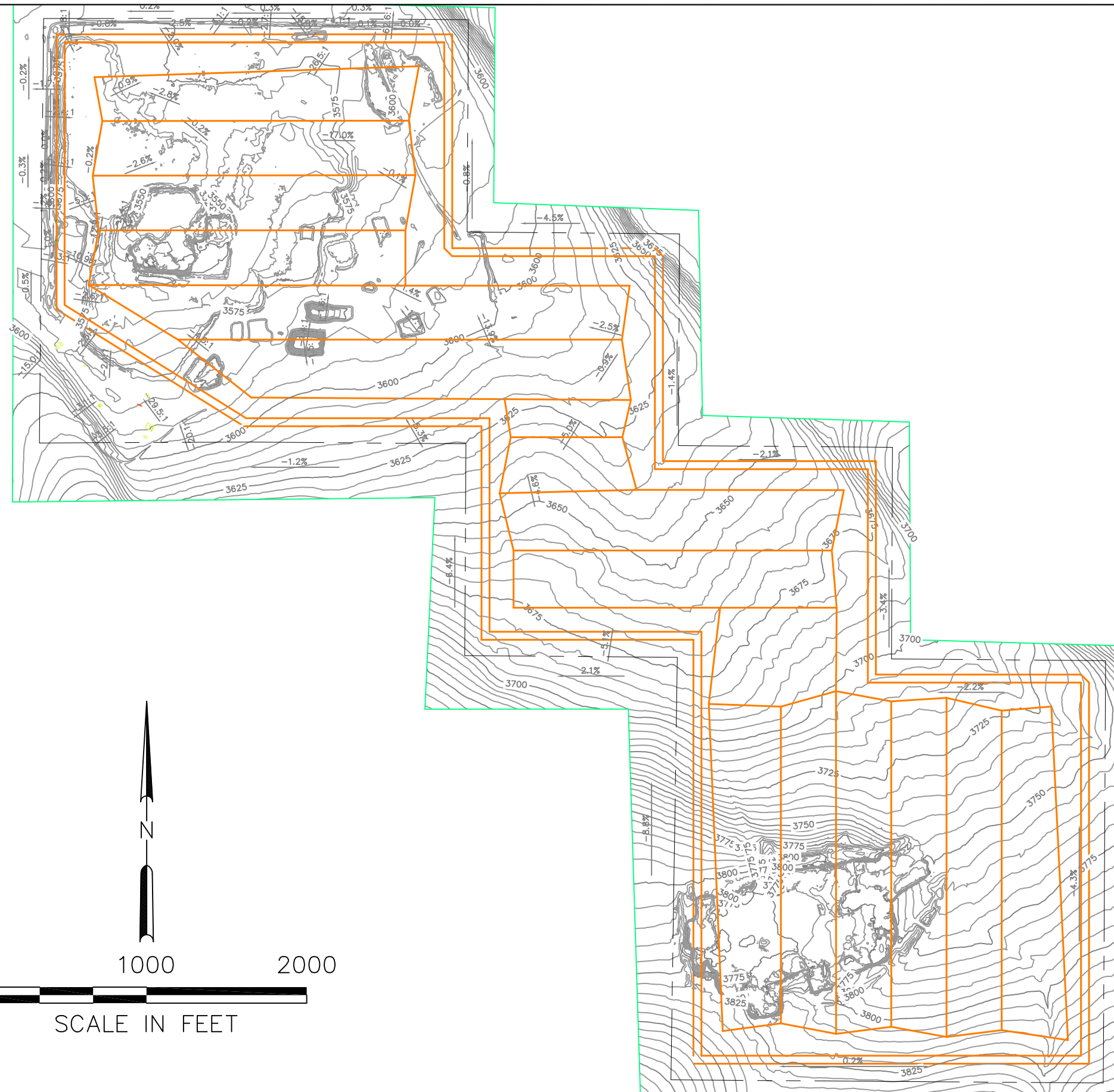
Air Space Available = 64,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 51,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 100 years
 Projected Year Completed = 2130

Disposal Area Size = 346 acres

Excavation and Fill Quantities

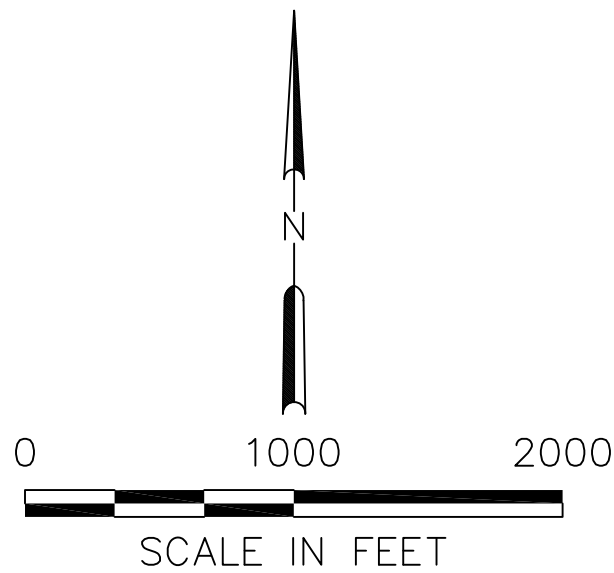
Cut = 13,000,000 cy
 Fill = 2,000,000 cy
 Net = 11,000,000 cy


Soil/Rock to Refuse Ratio = 17 %



NOTES:

1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023



			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT EXISTING TOPOGRAPHY	DRAWING NUMBER: C1	
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: C01	
				CHECKED BY: RR	DATE: 9/26/23				SHEET: 1 OF 7	
									REV. A	
A	9/26/23	GF	ISSUED FOR REVIEW							
No.	DATE	BY	REVISION							

MSW Disposal Capacity Analysis

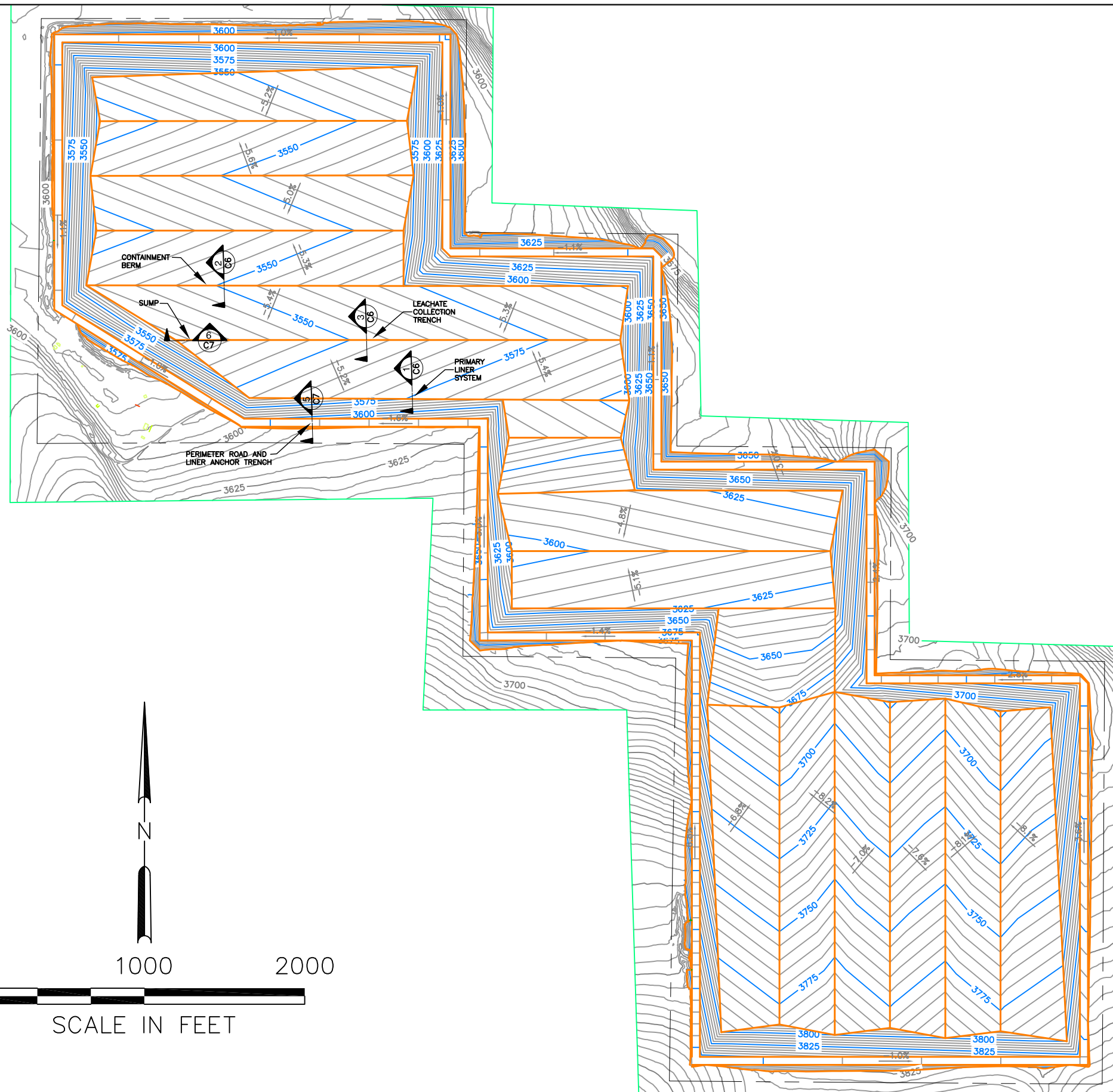
Air Space Available = 64,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 51,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 100 years
 Projected Year Completed = 2130

Disposal Area Size = 346 acres

Excavation and Fill Quantities

Cut = 13,000,000 cy
 Fill = 2,000,000 cy
 Net = 11,000,000 cy

Soil/Rock to Refuse Ratio = 17 %



NOTES:

1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

SCALE IN FEET

JOB No. 00192			DESIGNED: GF	PROJ. ENGINEER: GF	G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT SUBGRADE PLAN		DRAWING NUMBER: C2	
SCALE: AS SHOWN			DRAWN BY: GF	APPROVED BY: DM					CAD FILE NUMBER: C02	
			CHECKED BY: RR	DATE: 9/26/23					SHEET: 2 OF 7	REV. A
No.	DATE	BY	REVISION							
A	9/28/23	GF	ISSUED FOR REVIEW							

MSW Disposal Capacity Analysis

Air Space Available = 64,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 51,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 100 years
 Projected Year Completed = 2130

Disposal Area Size = 346 acres

Excavation and Fill Quantities


Cut = 13,000,000 cy
 Fill = 2,000,000 cy
 Net = 11,000,000 cy

Soil/Rock to Refuse Ratio = 17 %



NOTES:

- TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT EXCAVATION AND FILL DEPTHS	DRAWING NUMBER: C3	
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: C03	
				CHECKED BY: RR	DATE: 9/26/23				SHEET: 3 OF 7	REV. A
A	9/26/23	GF	ISSUED FOR REVIEW							
No.	DATE	BY	REVISION							

MSW Disposal Capacity Analysis

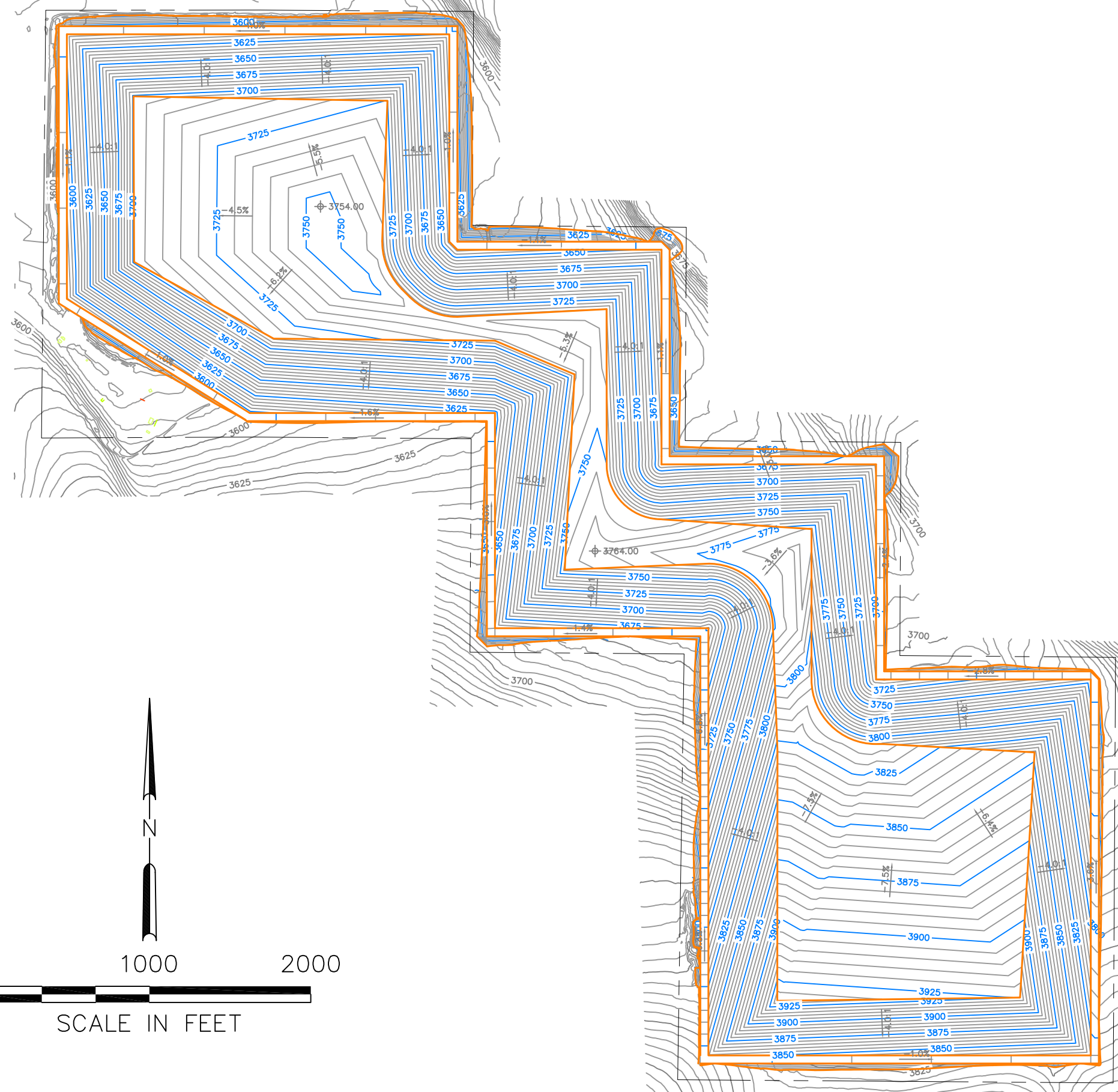
Air Space Available = 64,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 51,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 100 years
 Projected Year Completed = 2130

Disposal Area Size = 346 acres

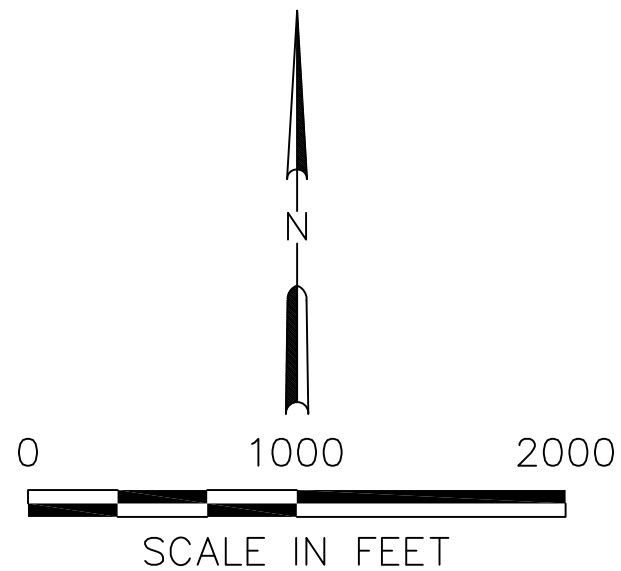
Excavation and Fill Quantities


Cut = 13,000,000 cy
 Fill = 2,000,000 cy
 Net = 11,000,000 cy

Soil/Rock to Refuse Ratio = 17 %



NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023



				JOB No. 00192		DESIGNED: GF		PROJ. ENGINEER: GF		 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543		LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON		MOON PIT FINAL GRADING PLAN		DRAWING NUMBER: C4	
				SCALE: AS SHOWN		DRAWN BY: GF		APPROVED BY: DM								CAD FILE NUMBER: C04	
				CHECKED BY: RR		DATE: 9/26/23				SHEET: 4 OF 7		REV. A					
A 9/26/23 GF ISSUED FOR REVIEW																	
No. DATE BY REVISION																	

MSW Disposal Capacity Analysis

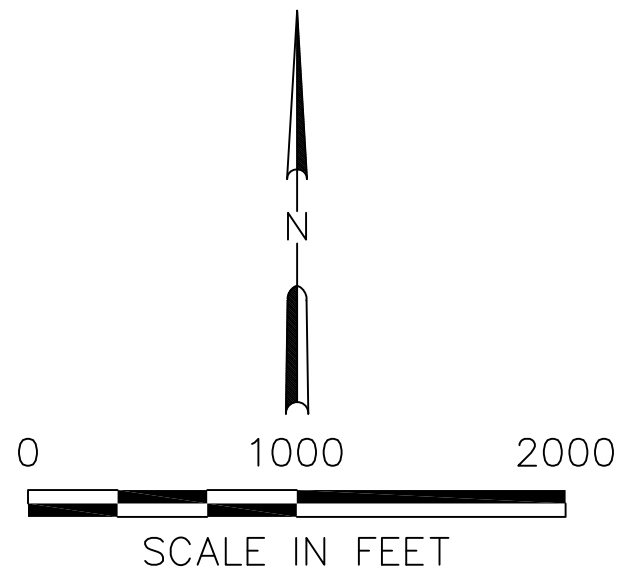
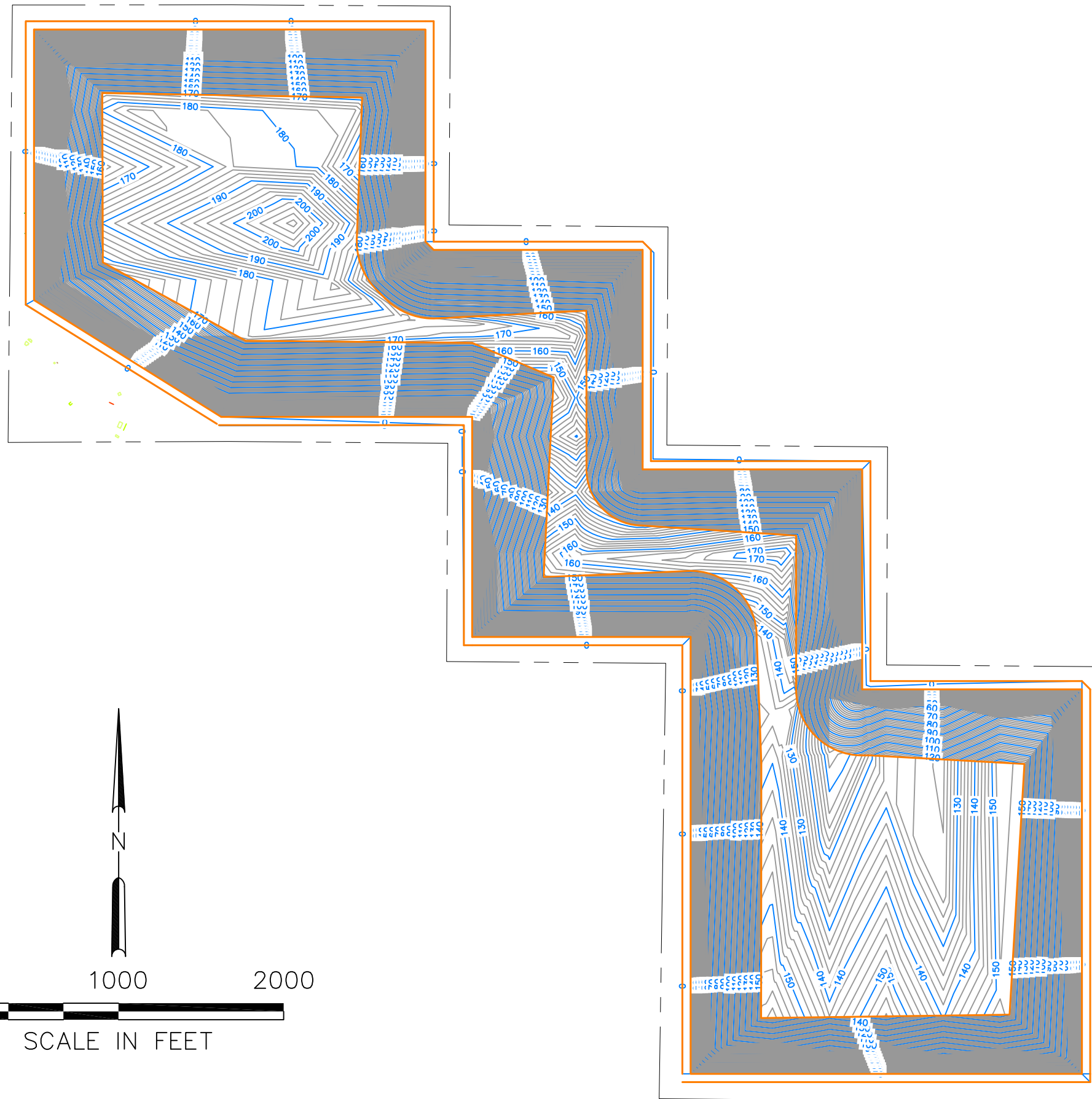
Air Space Available = 64,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 51,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 100 years
 Projected Year Completed = 2130

Disposal Area Size = 346 acres

Excavation and Fill Quantities


Cut = 13,000,000 cy
 Fill = 2,000,000 cy
 Net = 11,000,000 cy

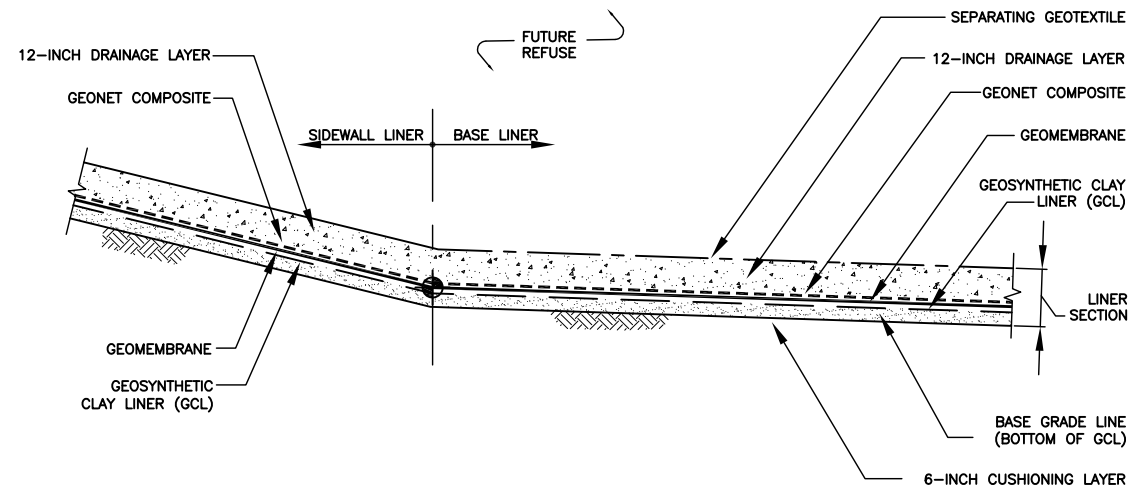
Soil/Rock to Refuse Ratio = 17 %



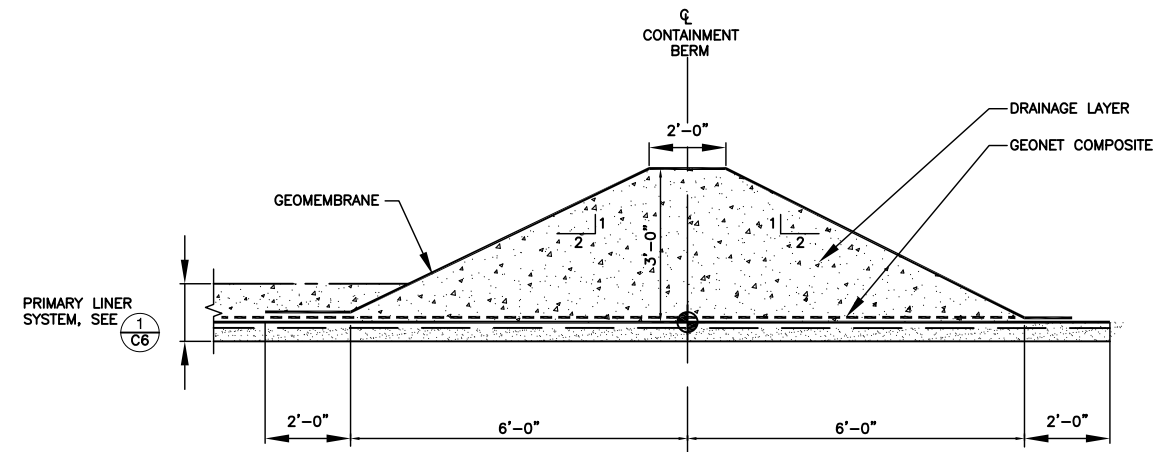
NOTES:

- TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

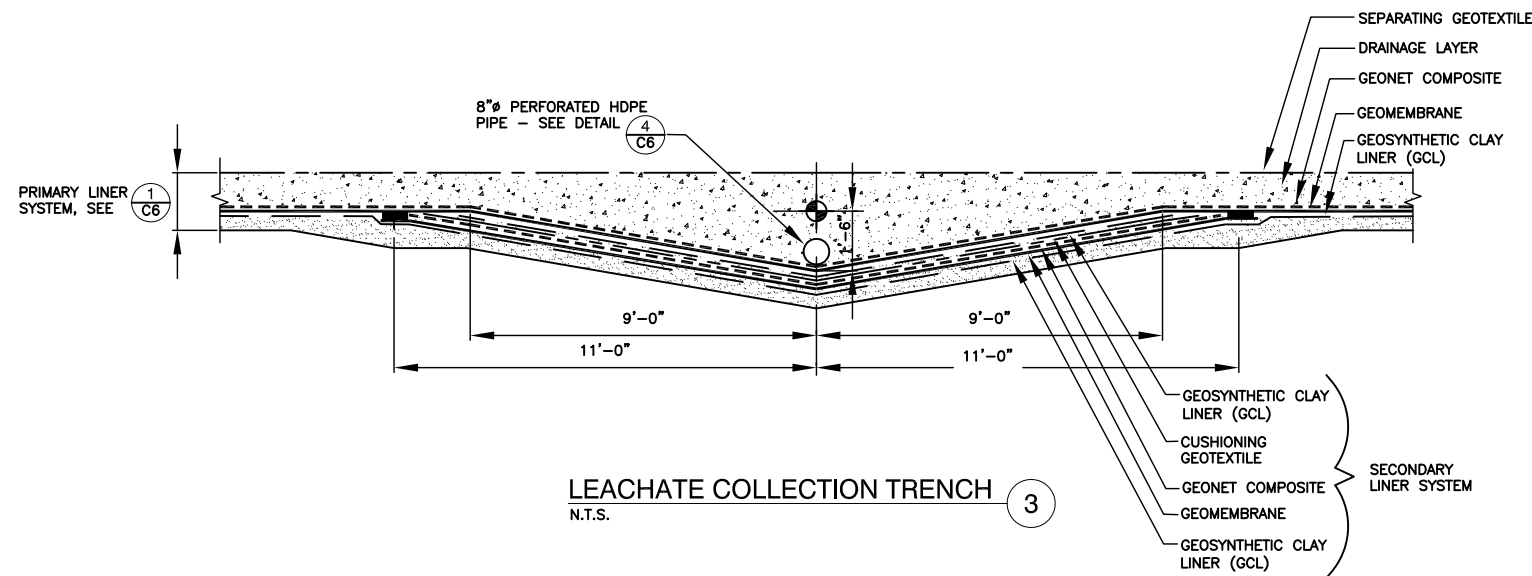
			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT MSW FILL DEPTHS	DRAWING NUMBER: C5	
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: C05	
				CHECKED BY: RR	DATE: 9/26/23				SHEET: 5 OF 7	REV. A
A	9/26/23	GF	ISSUED FOR REVIEW							
No.	DATE	BY	REVISION							



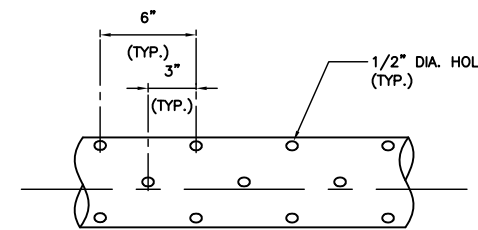
PRIMARY LINER SYSTEM ①
N.T.S.



CONTAINMENT BERM ②
N.T.S.



LEACHATE COLLECTION TRENCH ③
N.T.S.



PERFORATED HDPE PIPE ④
N.T.S.

- NOTES:
- HOLES SHALL BE DRILLED AT 90° AROUND PIPE CIRCUMFERENCE. SUCCESSIVE ROWS SHALL BE SEPARATED BY 2" AND STAGGERED 45°
 - REMOVE INTERIOR WELD BEADS AND ALL CUTTINGS INSIDE AND OUT BEFORE PIPE IS INSTALLED.

LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

No.	DATE	BY	REVISION
A	9/26/23	GF	ISSUED FOR REVIEW

JOB No.	DESIGNED:	PROJ. ENGINEER:
00192	GF	GF
SCALE:	DRAWN BY:	APPROVED BY:
N.T.S.	GF	DM
	CHECKED BY:	DATE:
	RR	9/26/23

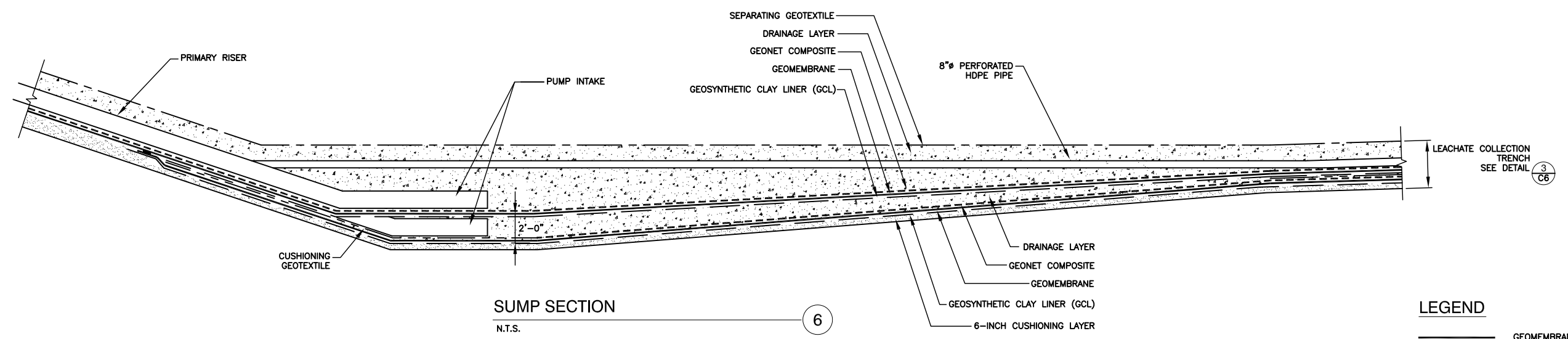
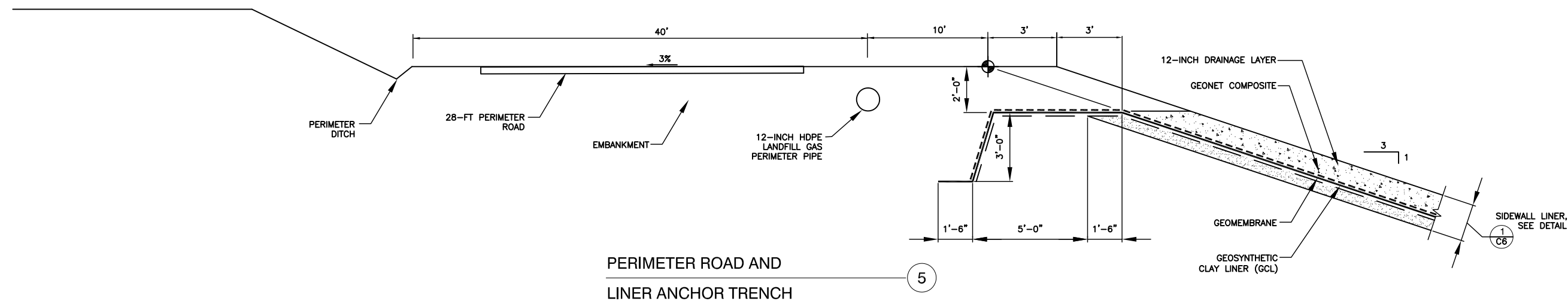


G. Friesen Associates, Inc.
4088 Orchard Drive
Lake Oswego, Oregon 97035
Tel: (503) 635-1233
Fax: (866) 533-5543

LANDFILL SITING PROJECT
SITE DEVELOPMENT
PLAN
DESCHUTES COUNTY, OREGON

MOON PIT
LINER SECTIONS AND DETAILS

DRAWING NUMBER:	
C6	
CAD FILE NUMBER:	
C06	
SHEET:	REV.
6 OF 7	A



LEGEND

—————	GEOMEMBRANE
- - - - -	CUSHIONING GEOTEXTILE
—————	GEOSYNTHETIC CLAY LINER (GCL)
- - - - -	GEONET COMPOSITE
—————	SEPARATING GEOTEXTILE

No.	DATE	BY	REVISION
A	9/26/23	GF	ISSUED FOR REVIEW

JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF
SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM
	CHECKED BY: RR	DATE: 9/26/23



G. Friesen Associates, Inc.
4088 Orchard Drive
Lake Oswego, Oregon 97035
Tel: (503) 635-1233
Fax: (866) 533-5543

LANDFILL SITING PROJECT
SITE DEVELOPMENT
PLAN
DESCHUTES COUNTY, OREGON

MOON PIT
LINER SECTIONS AND DETAILS

DRAWING NUMBER: C7	
CAD FILE NUMBER: C07	
SHEET: 7 OF 7	REV. A

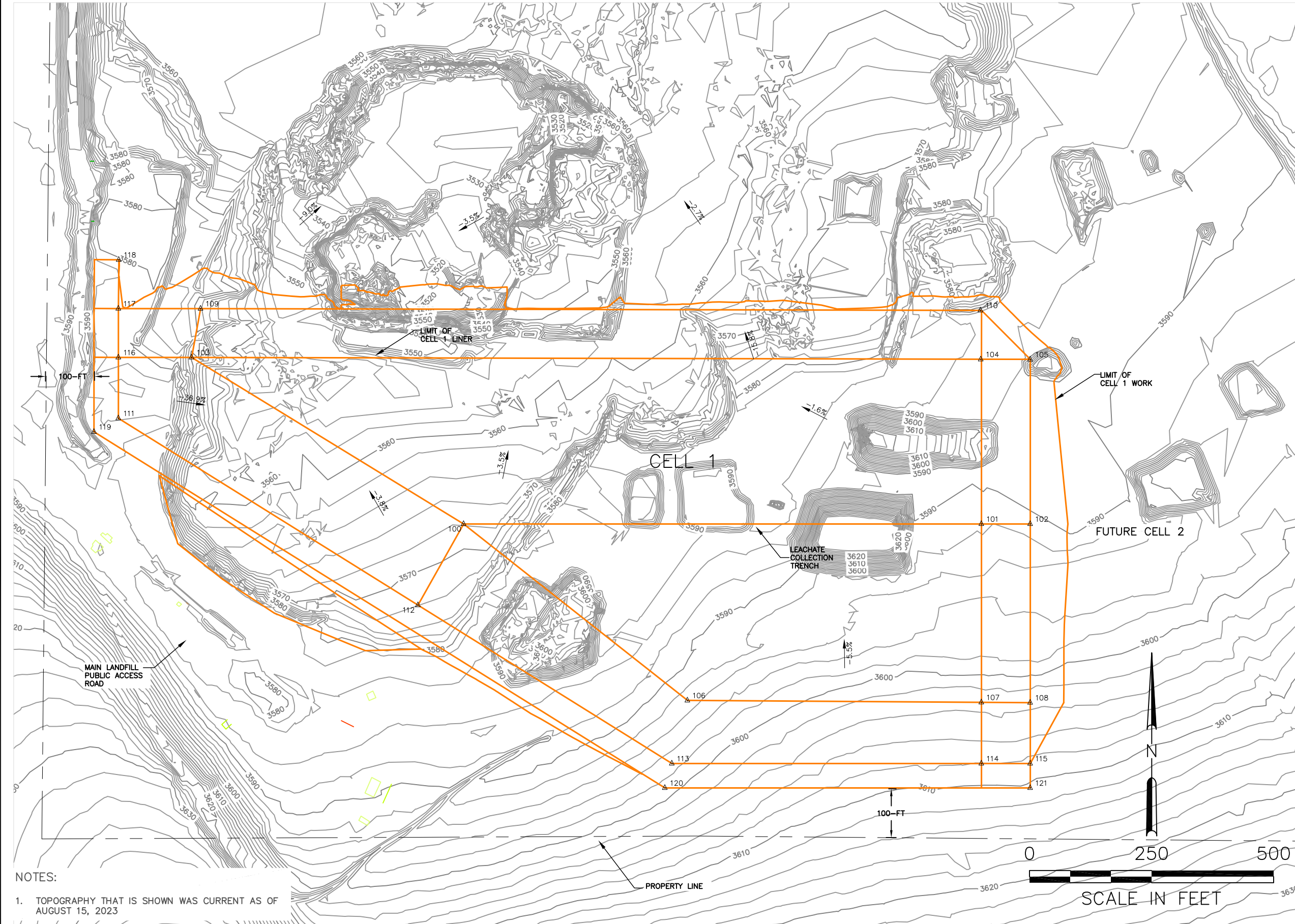
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 3.6 years
 Projected Start Date = Jan, 2030
 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres

Excavation and Fill Quantities
 Cut = 1,400,000 cy
 Fill = 100,000 cy
 Net = 1,300,000 cy



Point Table

Point #	Elevation	Northing	Easting
100	3528.13	347147.55	3372359.39
101	3549.46	347147.55	3373419.75
102	3551.48	347147.55	3373519.75
103	3534.00	347488.55	3371802.48
104	3566.00	347484.64	3373418.58
105	3568.00	347484.32	3373519.75
106	3554.72	346786.12	3372817.79
107	3567.24	346782.24	3373419.75
108	3569.32	346781.60	3373519.75
109	3534.38	347588.51	3371820.80
110	3566.00	347585.01	3373417.87
111	3584.00	347363.96	3371652.48
112	3591.23	346981.28	3372265.91
113	3597.36	346656.84	3372785.99
114	3607.64	346656.84	3373419.75
115	3609.26	346656.84	3373519.75
116	3585.33	347488.55	3371652.48
117	3586.40	347588.56	3371652.48
118	3580.00	347688.55	3371653.35
119	3583.70	347336.22	3371602.48
120	3597.13	346606.84	3372771.67
121	3609.26	346606.84	3373519.75

NOTES:

- TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

		JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT - INITIAL DEVELOPMENT - CELL 1 EXISTING SITE CONDITIONS	DRAWING NUMBER: A1	
		SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: A01	
			CHECKED BY: RR	DATE: 10/3/23				SHEET: 1 OF 8	REV. A
A	10/3/23	GF	ISSUED FOR REVIEW						
No.	DATE	BY	REVISION						

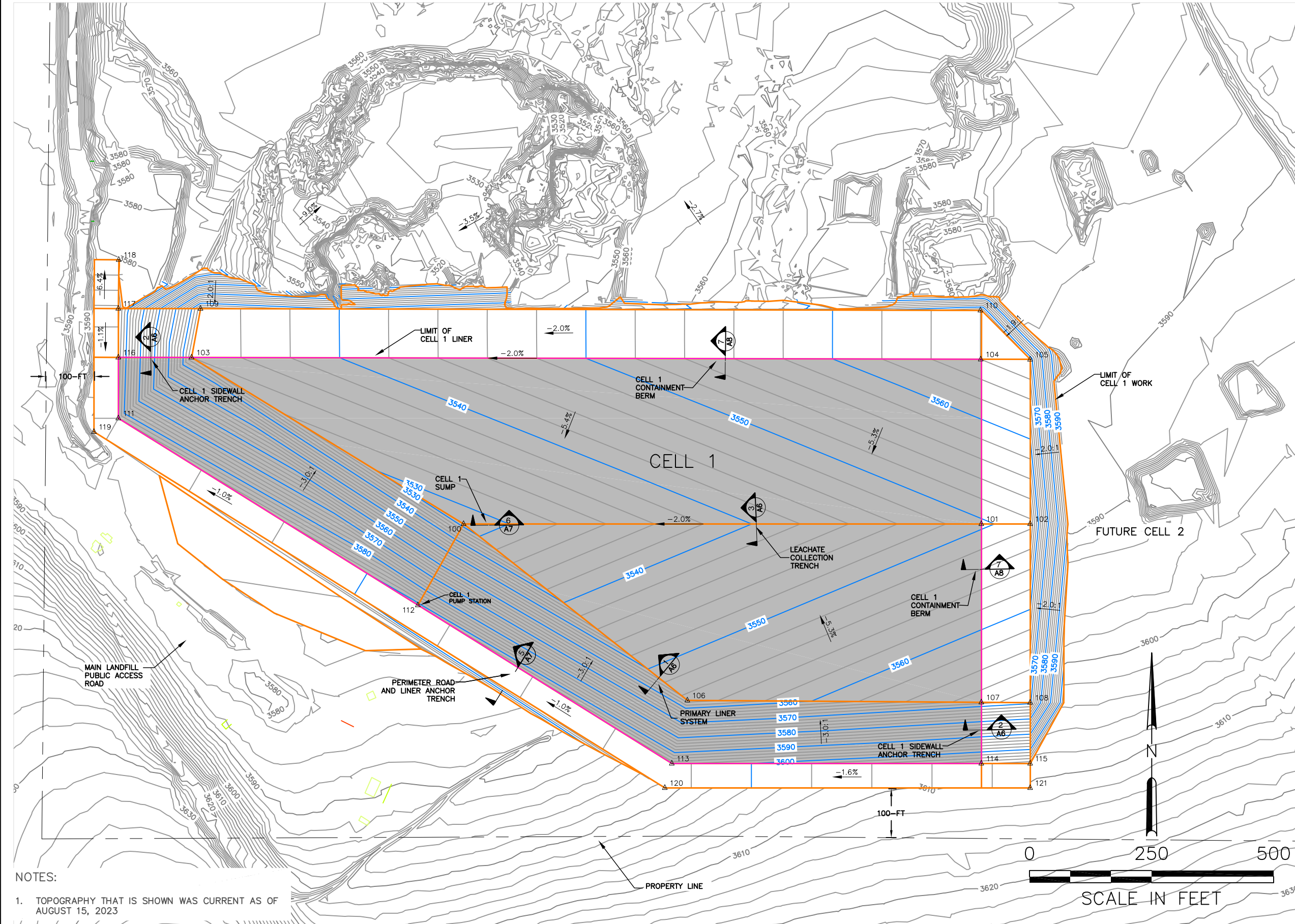
MSW Disposal Capacity Analysis

Initial Development - Cell 1

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Point Table

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103	3534.00	347488.55	3371802.48
104	3566.00	347484.64	3373418.58
105	3568.00	347484.32	3373519.75
106	3554.72	346786.12	3372817.79
107	3567.24	346782.24	3373419.75
108	3569.32	346781.60	3373519.75
109	3534.38	347588.51	3371820.80
110	3566.00	347585.01	3373417.87
111	3584.00	347363.96	3371652.48
112	3591.23	346981.28	3372265.91
113	3597.36	346656.84	3372785.99
114	3607.64	346656.84	3373419.75
115	3609.26	346656.84	3373519.75
116	3585.33	347488.55	3371652.48
117	3586.40	347588.56	3371652.48
118	3580.00	347688.55	3371653.35
119	3583.70	347336.22	3371602.48
120	3597.13	346606.84	3372771.67
121	3609.26	346606.84	3373519.75

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

JOB No. 00192		DESIGNED: GF	PROJ. ENGINEER: GF	<p> G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 </p>	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT - INITIAL DEVELOPMENT - CELL 1 SUBGRADE PLAN	DRAWING NUMBER: A2	
SCALE: AS SHOWN		DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: A02	
		CHECKED BY: RR	DATE: 10/3/23				SHEET: 2 OF 8	
A 10/3/23 GF ISSUED FOR REVIEW							REV. A	
No.	DATE	BY	REVISION					

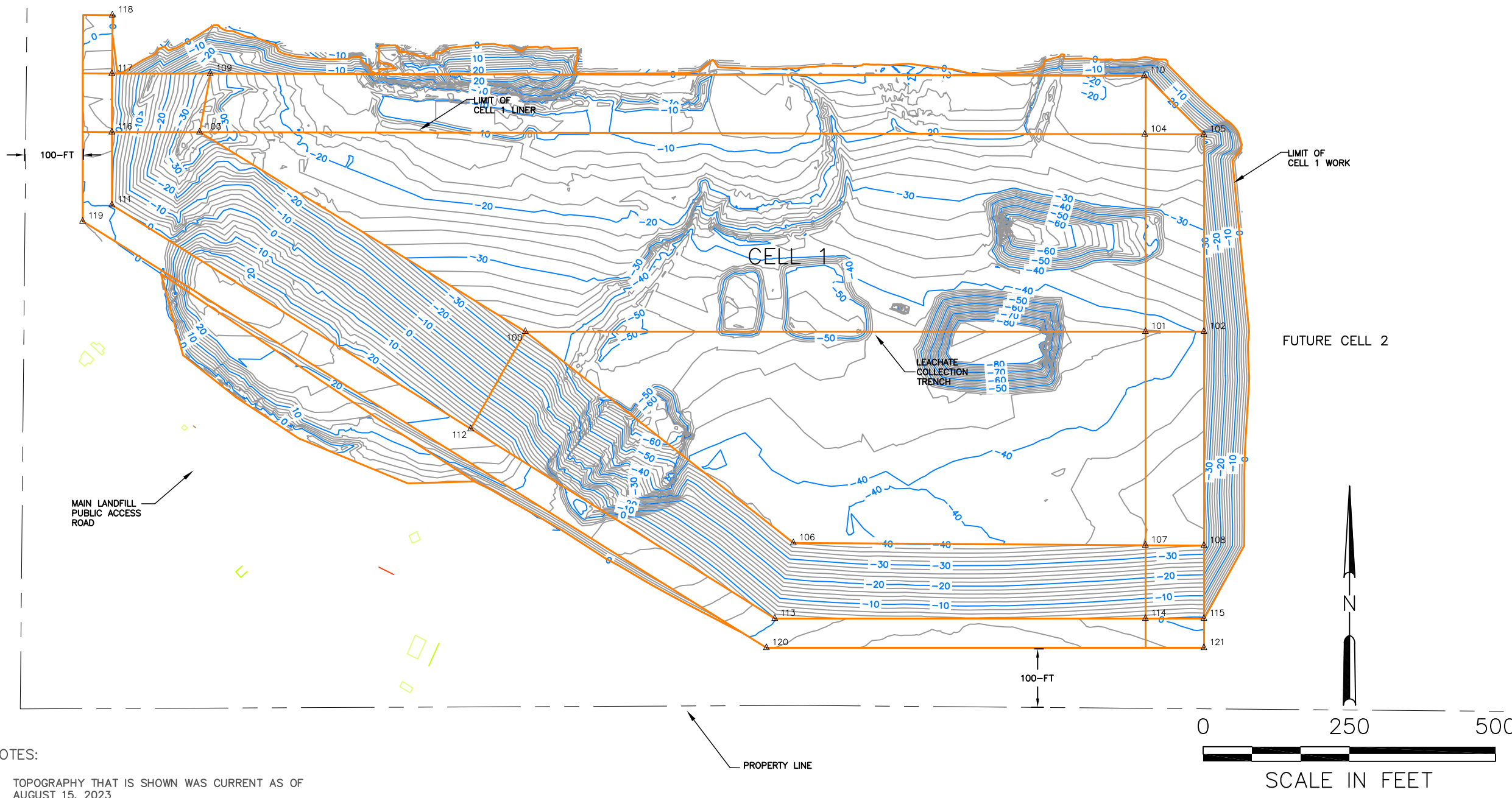
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 3.6 years
 Projected Start Date = Jan, 2030
 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres

Excavation and Fill Quantities
 Cut = 1,400,000 cy
 Fill = 100,000 cy
 Net = 1,300,000 cy



Point Table

Point #	Elevation	Northing	Easting
100	3528.13	347147.55	3372359.39
101	3549.46	347147.55	3373419.75
102	3551.48	347147.55	3373519.75
103	3534.00	347488.55	3371802.48
104	3566.00	347484.64	3373418.58
105	3568.00	347484.32	3373519.75
106	3554.72	346786.12	3372817.79
107	3567.24	346782.24	3373419.75
108	3569.32	346781.60	3373519.75
109	3534.38	347588.51	3371820.80
110	3566.00	347585.01	3373417.87
111	3584.00	347363.96	3371652.48
112	3591.23	346981.28	3372265.91
113	3597.36	346656.84	3372785.99
114	3607.64	346656.84	3373419.75
115	3609.26	346656.84	3373519.75
116	3585.33	347488.55	3371652.48
117	3586.40	347588.56	3371652.48
118	3580.00	347688.55	3371653.35
119	3583.70	347336.22	3371602.48
120	3597.13	346606.84	3372771.67
121	3609.26	346606.84	3373519.75

NOTES:

- TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM
A	10/3/23	GF		CHECKED BY: RR	DATE: 10/3/23
No.	DATE	BY	REVISION		



G. Friesen Associates, Inc.
 4088 Orchard Drive
 Lake Oswego, Oregon 97035
 Tel: (503) 635-1233
 Fax: (866) 533-5543

LANDFILL SITING PROJECT
 SITE DEVELOPMENT
 PLAN
 DESCHUTES COUNTY, OREGON

MOON PIT - INITIAL DEVELOPMENT - CELL 1
 SOIL/ROCK EXCAVATION AND FILL DEPTHS

DRAWING NUMBER: A3	
CAD FILE NUMBER: A03	
SHEET: 3 OF 8	REV. A

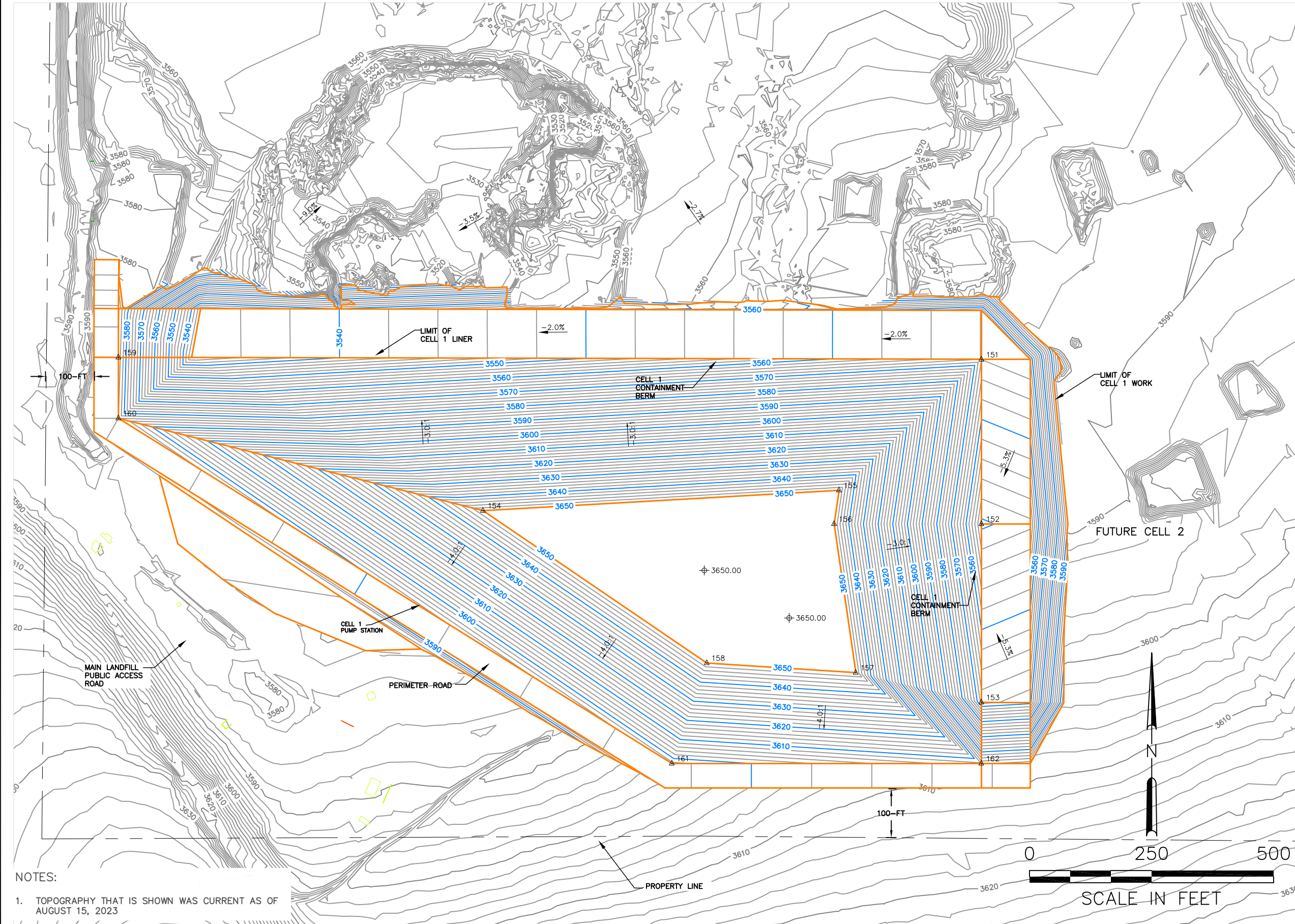
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 3.6 years
 Projected Start Date = Jan, 2030
 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres

Excavation and Fill Quantities
 Cut = 1,400,000 cy
 Fill = 100,000 cy
 Net = 1,300,000 cy



Point Table

Point #	Elevation	Northing	Easting
151	3566.00	347484.16	3373419.75
152	3549.46	347147.55	3373419.75
153	3567.24	346782.24	3373419.75
154	3650.00	347174.75	3372399.12
155	3650.00	347216.48	3373128.30
156	3650.00	347147.55	3373118.14
157	3650.00	346842.96	3373162.61
158	3650.00	346862.77	3372857.36
159	3585.33	347488.55	3371652.48
160	3584.00	347363.96	3371652.48
161	3597.36	346656.84	3372785.99
162	3607.64	346656.84	3373419.75

NOTES:

- TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

JOB No. 00192		DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT - INITIAL DEVELOPMENT - CELL 1 MSW FILL PLAN	DRAWING NUMBER: A4	
SCALE: AS SHOWN		DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: A04	
A 10/3/23 GF ISSUED FOR REVIEW		CHECKED BY: RR	DATE: 10/3/23				SHEET: 4 OF 8	
No. DATE BY REVISION							REV. A	

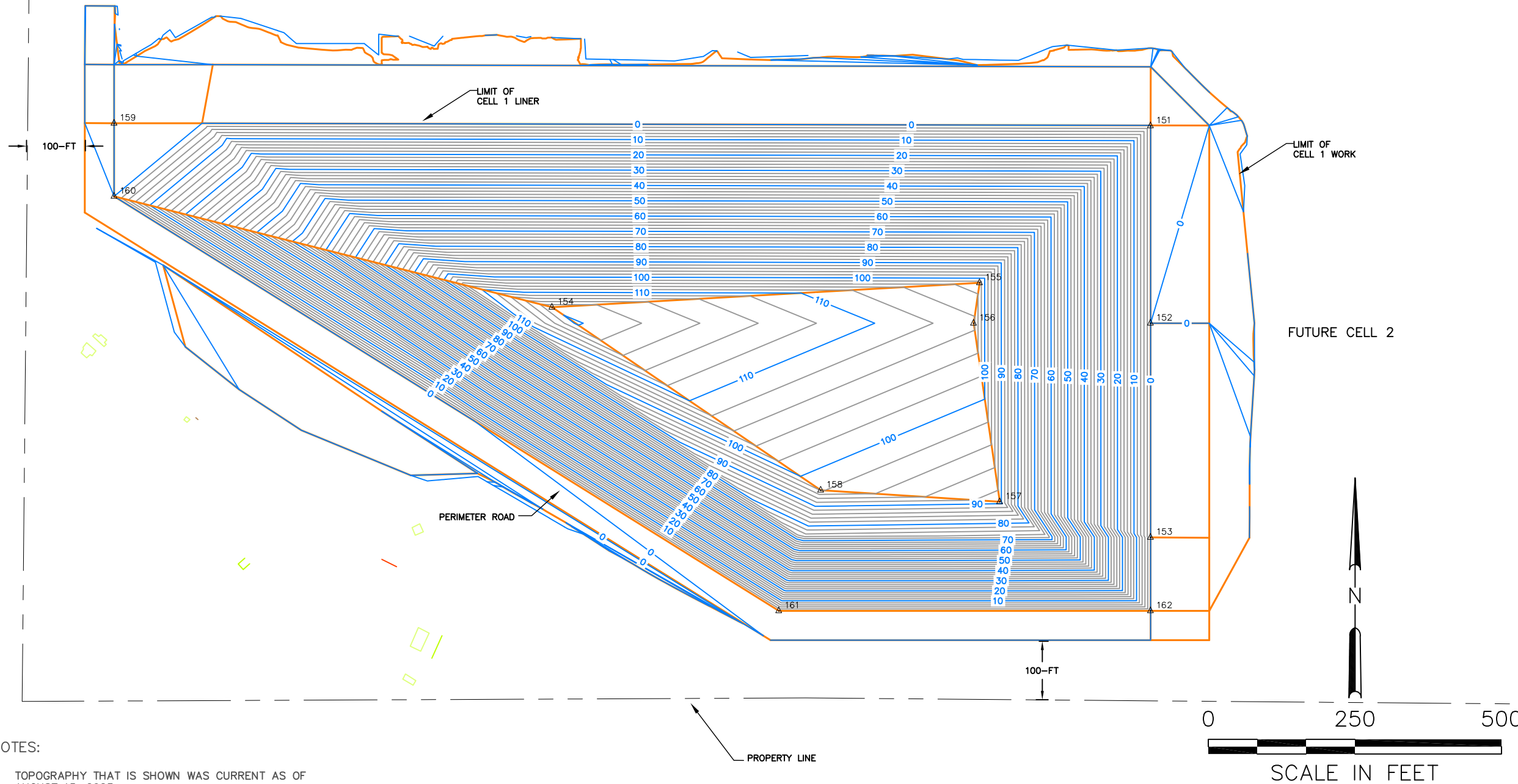
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
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 Cut = 1,400,000 cy
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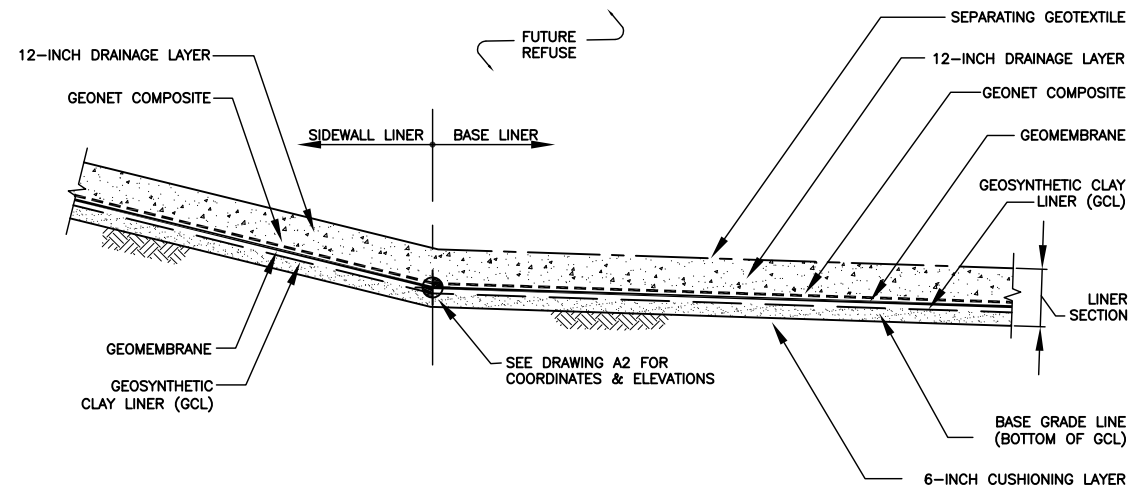


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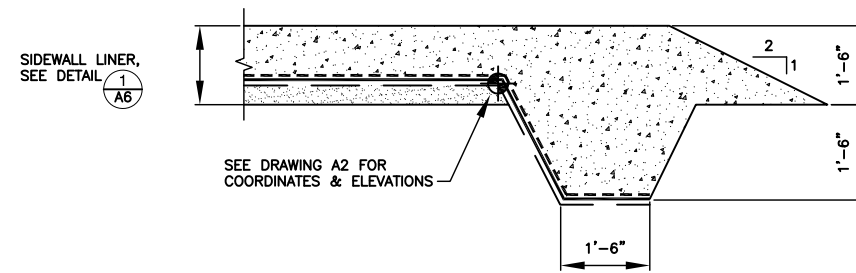
- TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

Point Table			
Point #	Elevation	Northing	Easting
151	3566.00	347484.16	3373419.75
152	3549.46	347147.55	3373419.75
153	3567.24	346782.24	3373419.75
154	3650.00	347174.75	3372399.12
155	3650.00	347216.48	3373128.30
156	3650.00	347147.55	3373118.14
157	3650.00	346842.96	3373162.61
158	3650.00	346862.77	3372857.36
159	3585.33	347488.55	3371652.48
160	3584.00	347363.96	3371652.48
161	3597.36	346656.84	3372785.99
162	3607.64	346656.84	3373419.75

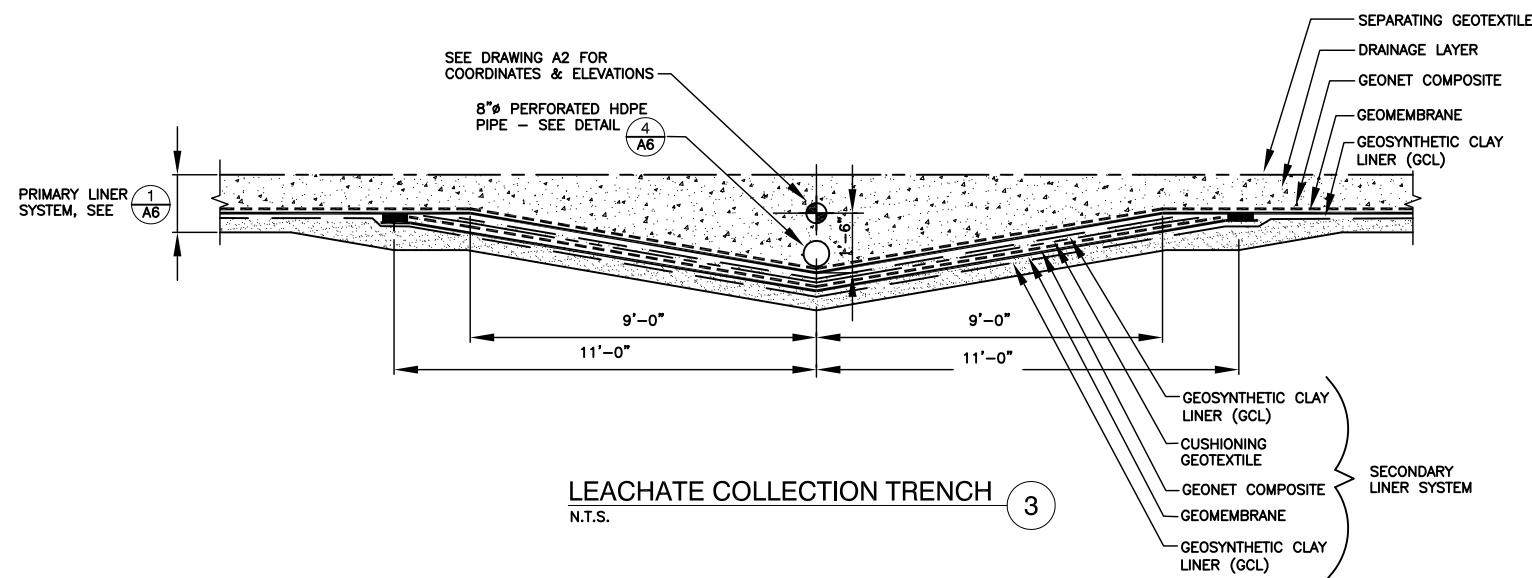
		JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT - INITIAL DEVELOPMENT - CELL 1 MSW FILL DEPTHS	DRAWING NUMBER: A5	
		SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: A05	
			CHECKED BY: RR	DATE: 10/3/23				SHEET: 5 OF 8	REV. A
A	10/3/23	GF	ISSUED FOR REVIEW						
No.	DATE	BY	REVISION						



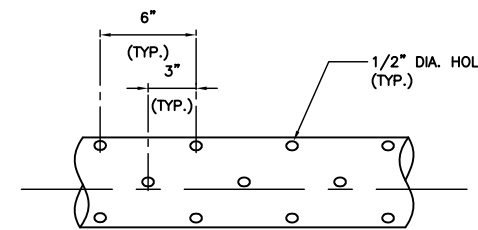
PRIMARY LINER SYSTEM ①
N.T.S.



SIDEWALL ANCHOR ②
N.T.S.



LEACHATE COLLECTION TRENCH ③
N.T.S.



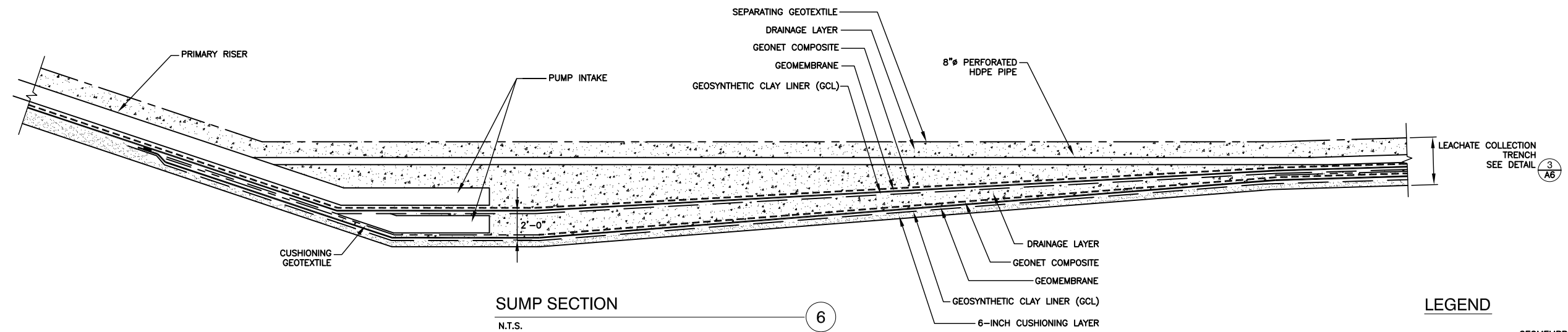
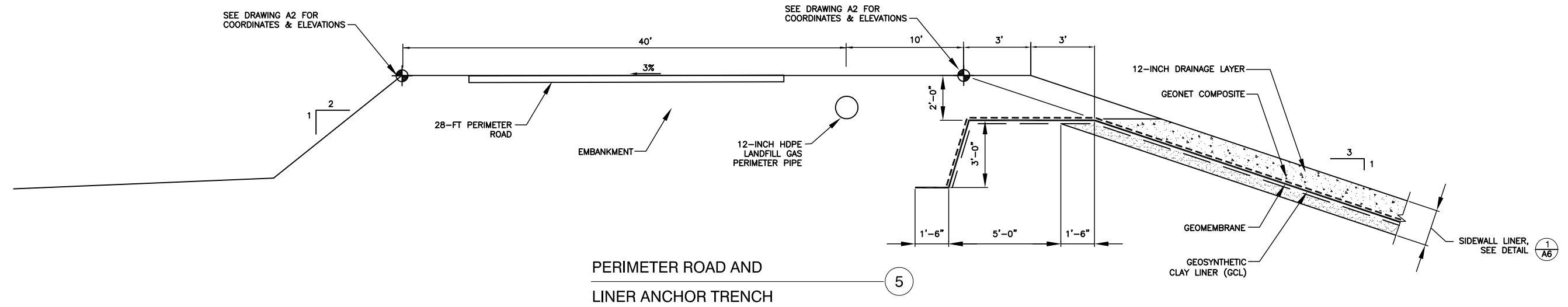
- NOTES:
- HOLES SHALL BE DRILLED AT 90° AROUND PIPE CIRCUMFERENCE. SUCCESSIVE ROWS SHALL BE SEPARATED BY 2" AND STAGGERED 45°.
 - REMOVE INTERIOR WELD BEADS AND ALL CUTTINGS INSIDE AND OUT BEFORE PIPE IS INSTALLED.

PERFORATED HDPE PIPE ④
N.T.S.

LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

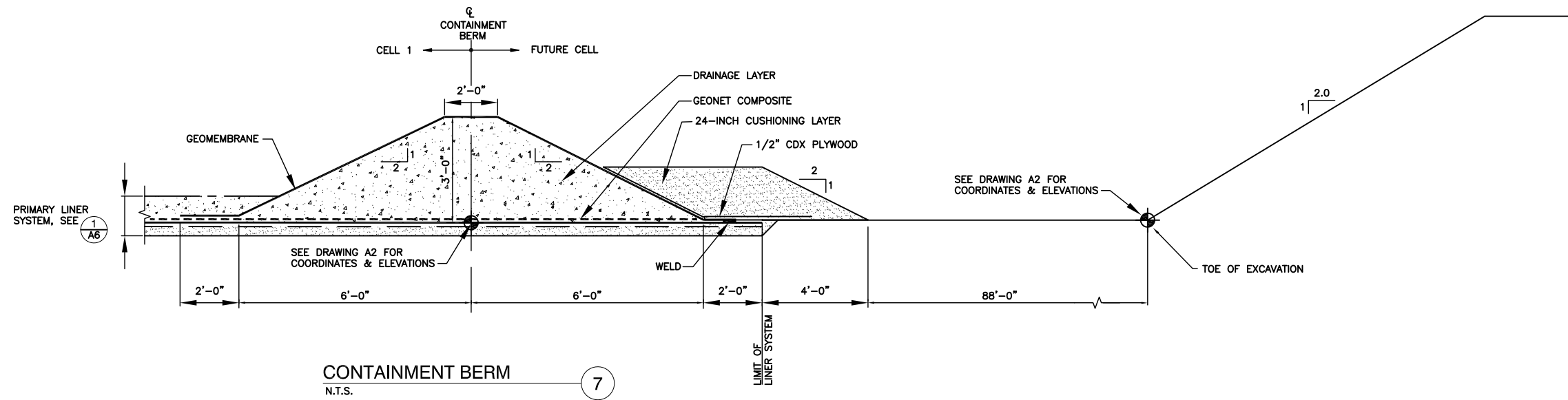
				JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 <p>G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543</p>	<p>LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON</p>	<p>MOON PIT - INITIAL DEVELOPMENT - CELL 1 LINER SECTIONS AND DETAILS</p>	DRAWING NUMBER: A6	
				SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: A06	
				CHECKED BY: RR	DATE: 10/3/23	SHEET: 6 OF 8				REV. A	
A	10/3/23	GF	ISSUED FOR REVIEW								
No.	DATE	BY	REVISION								



LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

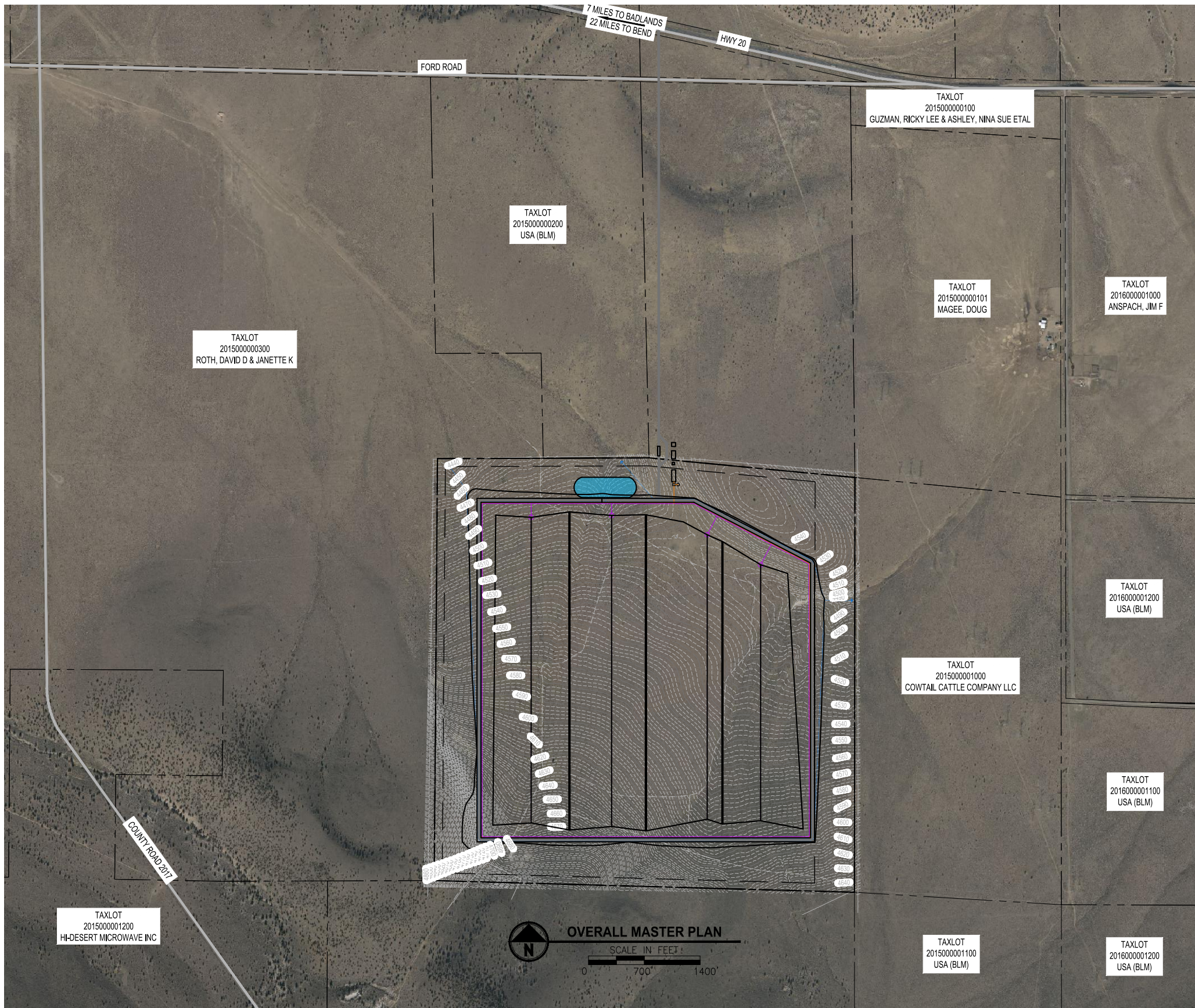
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		SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM	CAD FILE NUMBER: A07						
			CHECKED BY: RR	DATE: 10/3/23	SHEET: 7 OF 8					REV. A	
A	9/26/23	GF	ISSUED FOR REVIEW								
No.	DATE	BY	REVISION								



LEGEND

	GEOMEMBRANE
	CUSHIONING GEOTEXTILE
	GEOSYNTHETIC CLAY LINER (GCL)
	GEONET COMPOSITE
	SEPARATING GEOTEXTILE

		JOB No. 00192		DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	MOON PIT - INITIAL DEVELOPMENT - CELL 1 LINER SECTIONS AND DETAILS	DRAWING NUMBER: A8	
		SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM	CAD FILE NUMBER: A08					
			CHECKED BY: RR	DATE: 10/3/23	SHEET: 8 OF 8				REV. A	
A	10/3/23	GF	ISSUED FOR REVIEW							
No.	DATE	BY	REVISION							



LEGEND		
EXISTING	PROPOSED	
		ROADWAY
		PROPERTY BOUNDARY
		SCREENING BERM
		PROPERTY BUFFER
		DITCH
		LEACHATE SUMP
		LFG CONDENSATE SUMP
		MAJOR CONTOURS
		MINOR CONTOURS

PROJECT DATA	
OWNER AND ADDRESS:	ROTH, STEPHEN F & CLANCY R 7715 E 138 RD HOLDENVILLE, OK 74848
PROJECT LOCATION:	56200 PINE MOUNTAIN RD, BEND, OR 97701
LEGAL DESCRIPTION:	T.20S, R.15E, W.M. DESCHUTES COUNTY SECTION 1: NW1/4, SW1/4 SECTION 11: NE1/4, SE1/4 SECTION 12: NW1/4, SW1/4 SECTION 13: NW1/4, SW1/4NW1/4, SW1/4SW1/4 SECTION 14: NE1/4, SE1/4, NW1/4NE1/4, NW1/4SE1/4, SW1/4NE1/4, SW1/4NW1/4
MAP AND TAXLOT:	201500000301
PARCEL #:	00301
BASE ZONE:	EXCLUSIVE FARM USE - HORSE RIDGE SUBZONE (EFUHR)
OVERLAY ZONES:	FOREST USE 1 (F1) LANDSCAPE MANAGEMENT COMBINING ZONE (LM) SAGE GROUSE HABITAT AREA - LOW DENSITY (SGH4-LDW) SURFACE MINING IMPACT AREA (SMA) WILDLIFE AREA COMBINING ZONE (WA)
PROJECT COORDINATES:	LAT: -120.887 LONG: 43.853
SIZE:	1706.23 ACRES
AREA OF DISTURBANCE:	385 ACRES - TOTAL SITE DISTURBANCE

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
C100	OVERALL MASTER PLAN
C200	ROTH EAST LANDFILL - SITE PLAN
C300	TYPICAL SECTIONS
C301	TYPICAL SECTIONS
C400	TYPICAL DETAILS
D1	EXISTING TOPOGRAPHY
D2	SUBGRADE PLAN
D3	EXCAVATION AND FILL DEPTHS
D4	FINAL GRADING PLAN
D5	MSW FILL DEPTHS
D6	LINER SECTIONS AND DETAIL
D7	LINER SECTIONS AND DETAIL
B1	CELL 1 EXISTING SITE CONDITIONS
B2	CELL 1 SUBGRADE PLAN
B3	CELL 1 SOIL/ROCK EXCAVATION AND FILL DEPTHS
B4	CELL 1 MSW FILL PLAN
B5	CELL 1 MSW FILL DEPTHS
B6	CELL 1 LINER SECTIONS AND DETAILS
B7	CELL 1 LINER SECTIONS AND DETAILS
B8	CELL 1 LINER SECTIONS AND DETAILS

XX% REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

LAYOUT: OVERALL MASTER PLAN FILENAME: 5532508011-C-00 PLOTTED BY: Tanjoh DATE: Friday, December 8, 2023 12:02:38 PM

REVISIONS	DATE	BY	DESIGNED XXX
			DRAWN XXX
			CHECKED XXX
			APPROVED XXX

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY	
FILE NAME	
JOB No.	XX
DATE	XX/XX

PRELIMINARY



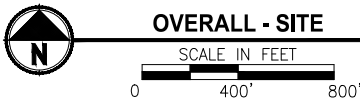
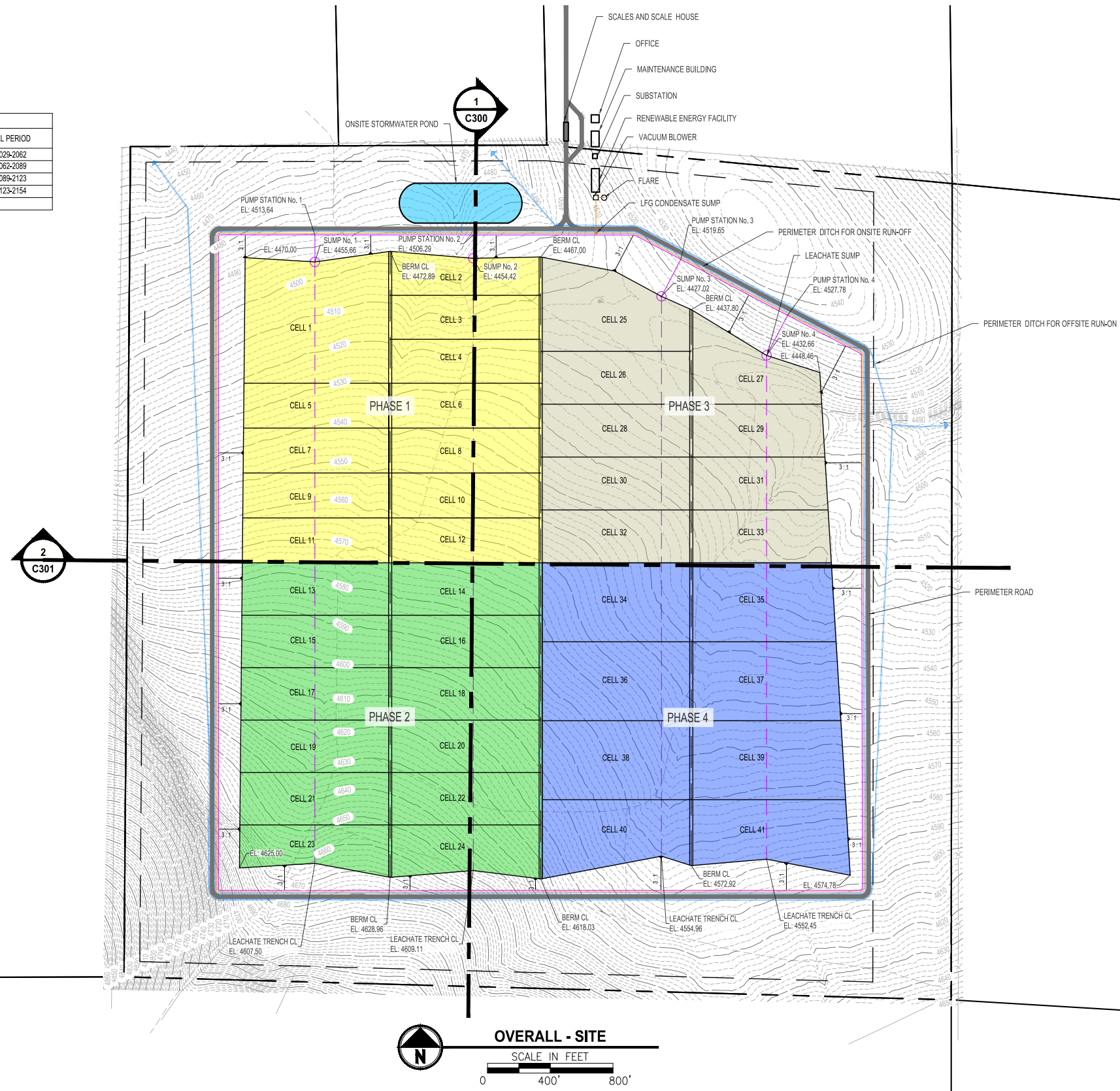
PROJECT NAME	ROTH EAST LANDFILL CONCEPTUAL MASTER PLAN DESCHUTES COUNTY, OREGON
--------------	--

OVERALL MASTER PLAN

DRAWING NO. XX
C100

LANDFILL PHASING SUMMARY			
PHASE	AIR SPACE AVAILABLE	PROJECTED LIFE	FILL PERIOD
PHASE 1	21,000,000 CY	33 YRS	2029-2062
PHASE 2	17,000,000 CY	27 YRS	2062-2089
PHASE 3	22,000,000 CY	34 YRS	2089-2123
PHASE 4	20,000,000 CY	31 YRS	2123-2154
TOTAL	64,000,000 CY	125 YRS	

NOTE: BASED ON ASSUMED AVERAGE USAGE RATE OF 1750 CY/DAY



LAYOUT: ROTH EAST LANDFILL - SITE PLAN FILENAME: 6532568011-C200 PLOTTED BY: Tranah DATE: Friday, December 8, 2023 12:02:58 PM

PRELIMINARY

XX% REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

REVISIONS	DATE	BY	DESIGNED
			XXX
			DRAWN
			XXX
			CHECKED
			XXX
			APPROVED
			XXX

ONE INCH AT FULL SCALE.
IF NOT, SCALE ACCORDINGLY

FILE NAME

JOB No. XX

DATE XX/XX

Parametrix

PROJECT NAME

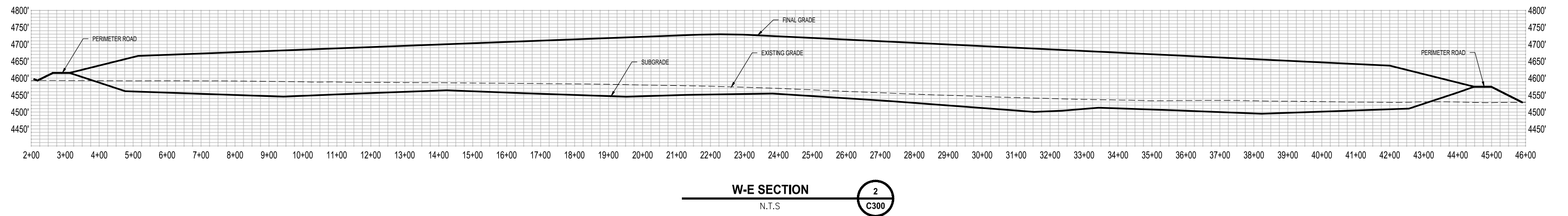
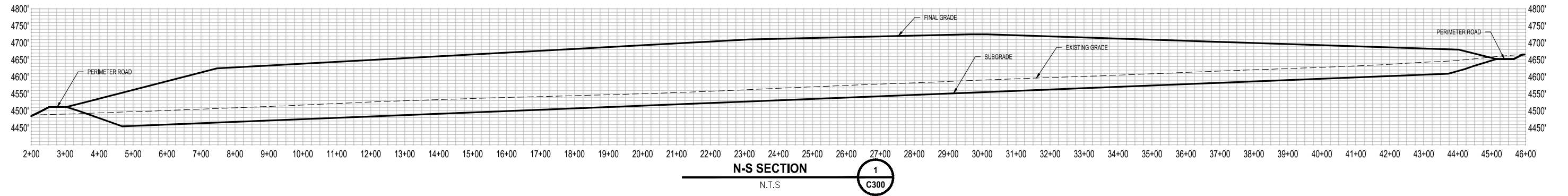
**ROTH EAST LANDFILL
CONCEPTUAL MASTER PLAN**

DESCHUTES COUNTY, OREGON

ROTH EAST LANDFILL - SITE PLAN

DRAWING NO. XX

C200



LAYOUT: TYPICAL SECTIONS FILENAME: 532599011-C300 PLOTTED BY: Tamuoh DATE: Friday, December 8, 2023 12:03:17 PM

XX % REVIEW SUBMITTAL
NOT FOR CONSTRUCTION

REVISIONS	DATE	BY	DESIGNED XXX
			DRAWN XXX
			CHECKED XXX
			APPROVED XXX

ONE INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY	
FILE NAME	
JOB No. XX	
DATE XX/XX	

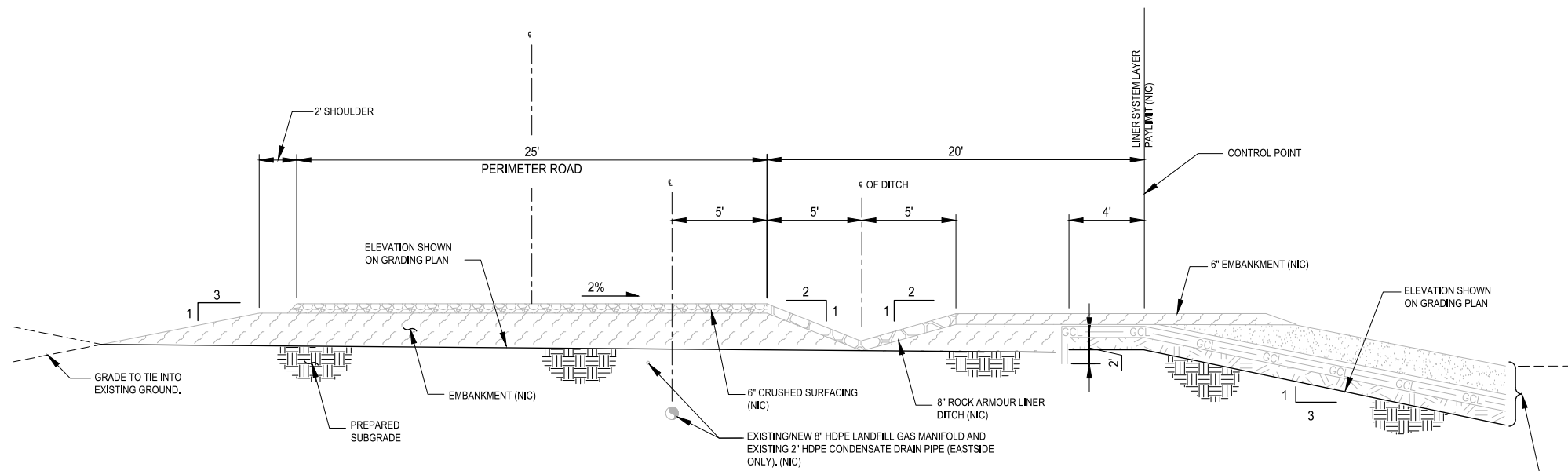
PRELIMINARY



PROJECT NAME
**ROTH EAST LANDFILL
CONCEPTUAL MASTER PLAN**
DESCHUTES COUNTY, OREGON

TYPICAL SECTIONS

DRAWING NO.
XX
C300



TYPICAL ROADWAY SECTION
 N.T.S. 1
C400

LAYOUT: TYPICAL DETAILS FILENAME: 6532568011-C400 PLOTTED BY: Tamuoh DATE: Friday, December 8, 2023 12:03:37 PM

REVISIONS	DATE	BY	DESIGNED XXX
			DRAWN XXX
			CHECKED XXX
			APPROVED XXX

**ONE INCH AT FULL SCALE.
 IF NOT, SCALE ACCORDINGLY**
 FILE NAME
 JOB No.
 XX
 DATE
 XX/XX

PRELIMINARY



PROJECT NAME
**ROTH EAST LANDFILL
 CONCEPTUAL MASTER PLAN**
 DESCHUTES COUNTY, OREGON

TYPICAL DETAILS

DRAWING NO.
 XX
C400

**XX % REVIEW SUBMITTAL
 NOT FOR CONSTRUCTION**

MSW Disposal Capacity Analysis

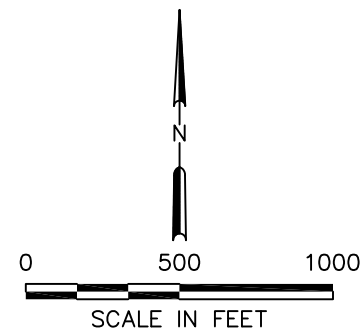
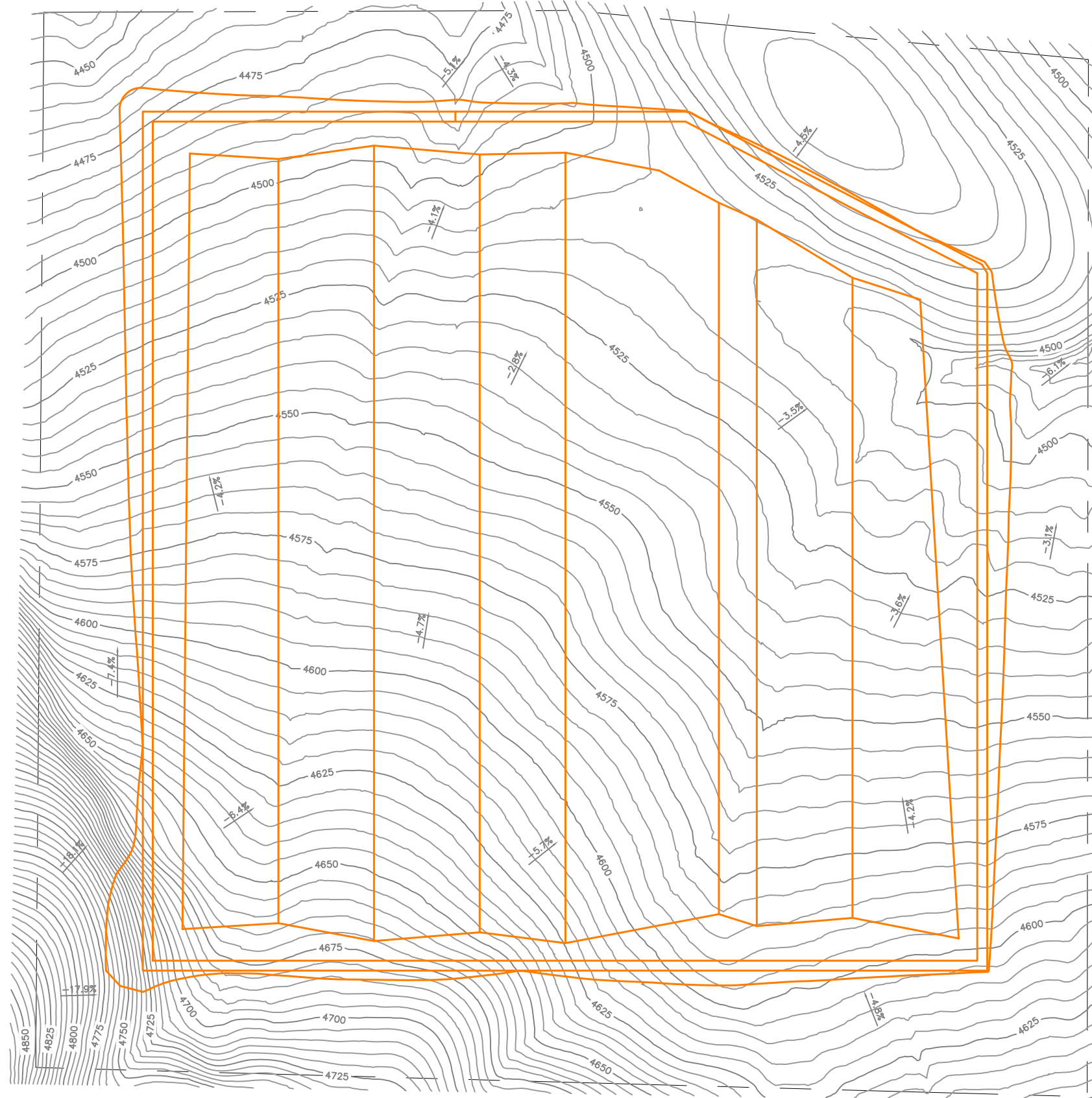
Air Space Available = 80,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 64,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 125 years
 Projected Year Completed = 2155

Disposal Area Size = 387 acres

Excavation and Fill Quantities


Cut = 18,000,000 cy
 Fill = 2,000,000 cy
 Net = 16,000,000 cy

Soil/Rock to Refuse Ratio = 20 %



NOTES:

- 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

A	9/26/23	GF	ISSUED FOR REVIEW	JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST EXISTING TOPOGRAPHY	DRAWING NUMBER: D1
				SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: D01
	No.	DATE	BY	REVISION	CHECKED BY: RR	DATE: 9/26/23				SHEET: 1 OF 7

MSW Disposal Capacity Analysis

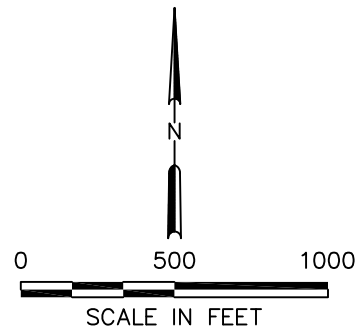
Air Space Available = 80,000,000 cy
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			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST SUBGRADE PLAN	DRAWING NUMBER: D2	
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: D02	
			CHECKED BY: RR	DATE: 9/26/23	SHEET: 2 OF 7				REV. A	
No.	DATE	BY	REVISION							

MSW Disposal Capacity Analysis

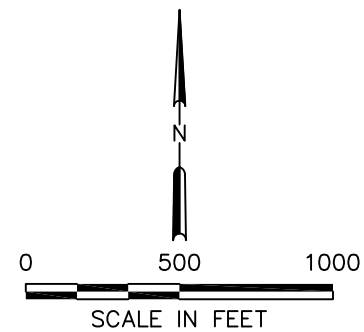
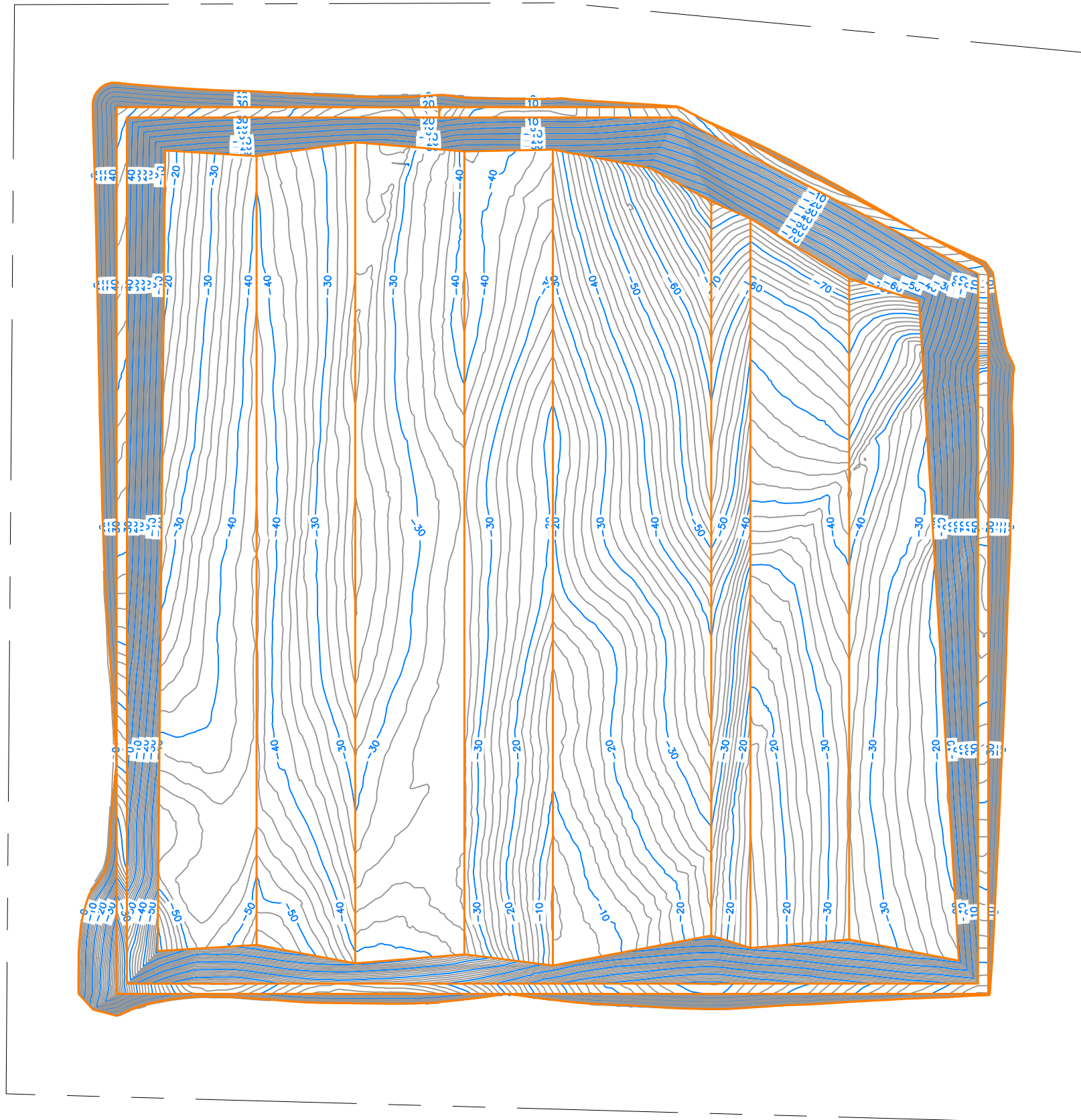
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			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST EXCAVATION AND FILL DEPTHS	DRAWING NUMBER: D3	
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: D03	
				CHECKED BY: RR	DATE: 9/26/23				SHEET: 3 OF 7	
									REV. A	
A	9/26/23	GF	ISSUED FOR REVIEW							
No.	DATE	BY	REVISION							

MSW Disposal Capacity Analysis

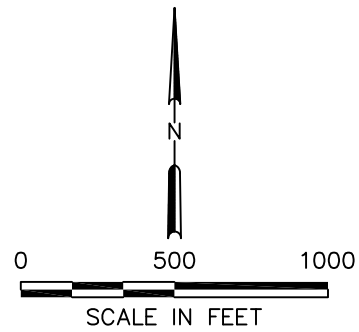
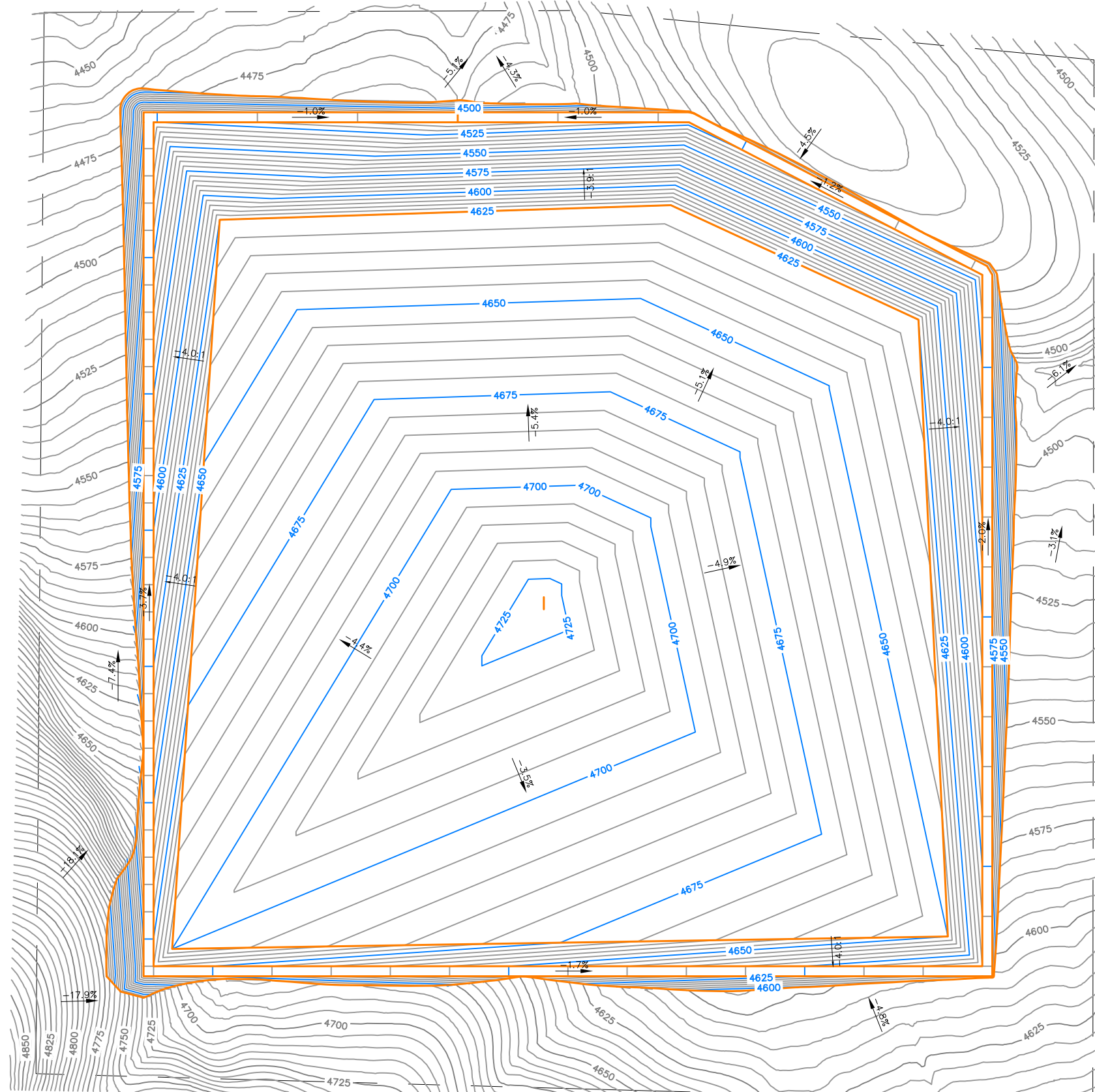
Air Space Available = 80,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 64,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 125 years
 Projected Year Completed = 2155

Disposal Area Size = 387 acres

Excavation and Fill Quantities

Cut = 18,000,000 cy
 Fill = 2,000,000 cy
 Net = 16,000,000 cy

Soil/Rock to Refuse Ratio = 20 %



NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

A	9/26/23	GF	ISSUED FOR REVIEW	JOB No.	DESIGNED:	PROJ. ENGINEER:	G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST FINAL GRADING PLAN	DRAWING NUMBER:	
				00192	GF	GF				D4	
No.	DATE	BY	REVISION	SCALE:	DRAWN BY:	APPROVED BY:	G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST FINAL GRADING PLAN	CAD FILE NUMBER:	
				AS SHOWN	GF	DM				D04	
				CHECKED BY:	DATE:					SHEET:	REV.
				RR	9/26/23					4 OF 7	A

MSW Disposal Capacity Analysis

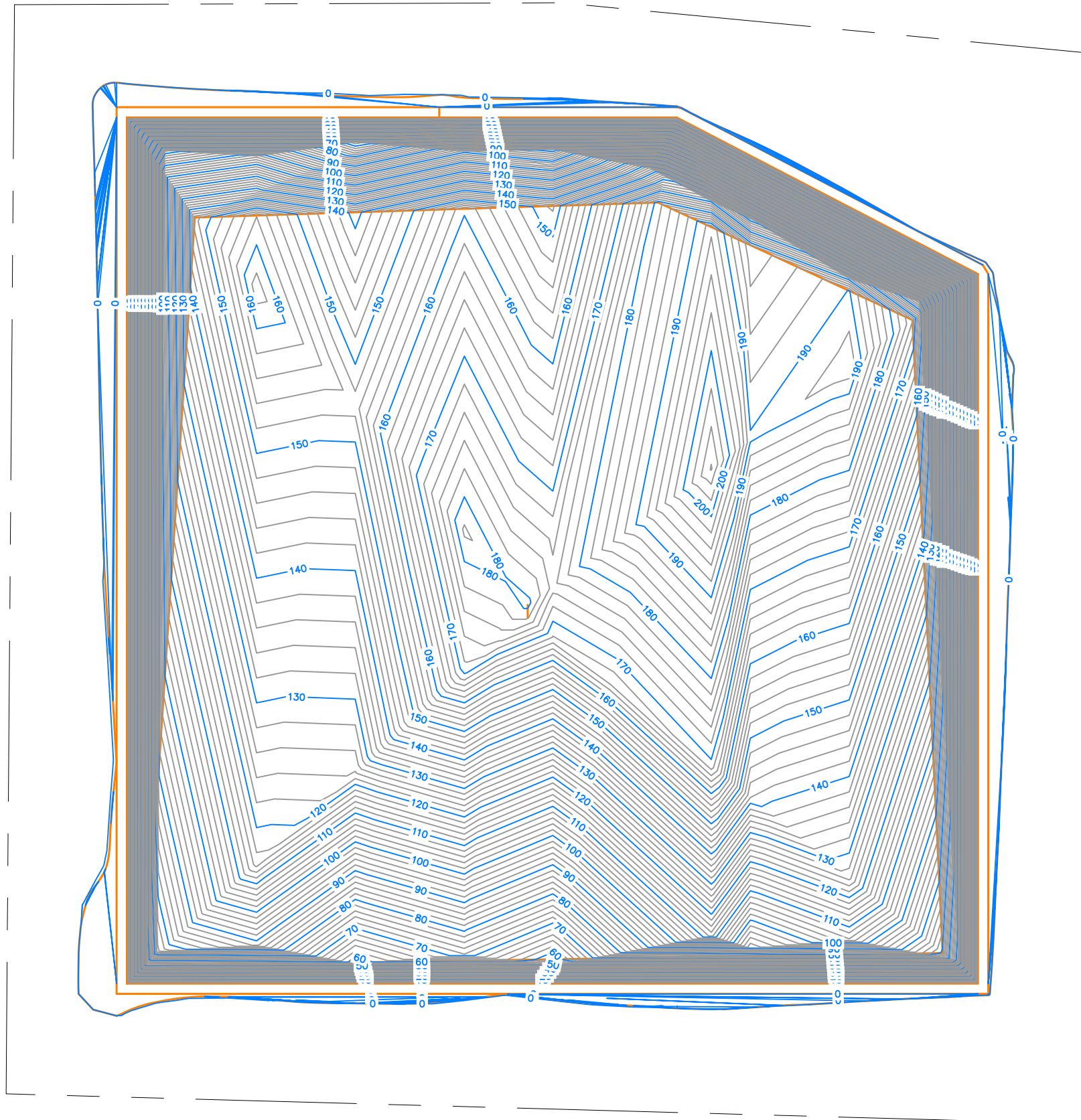
Air Space Available = 80,000,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 64,000,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 125 years
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Disposal Area Size = 387 acres

Excavation and Fill Quantities


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 Net = 16,000,000 cy

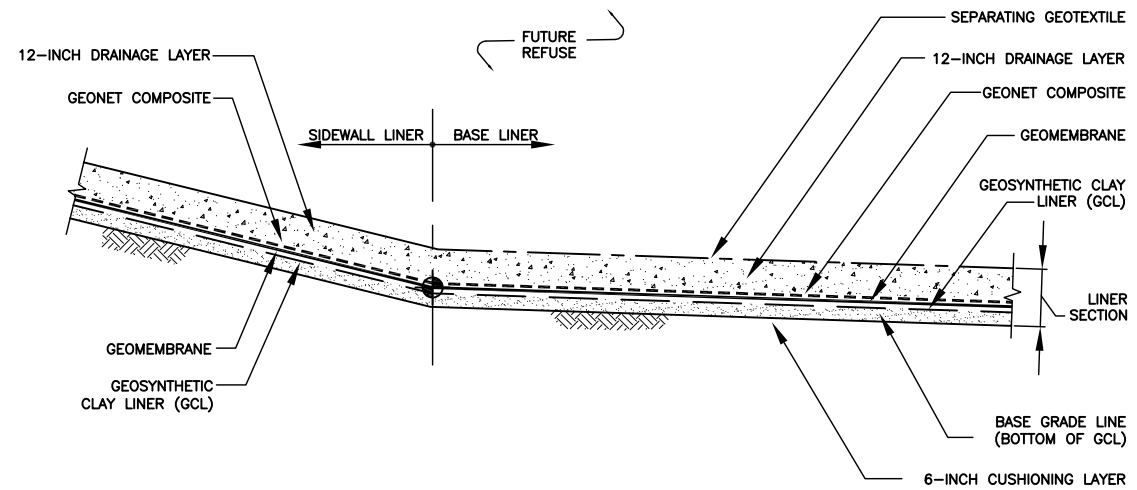
Soil/Rock to Refuse Ratio = 20 %



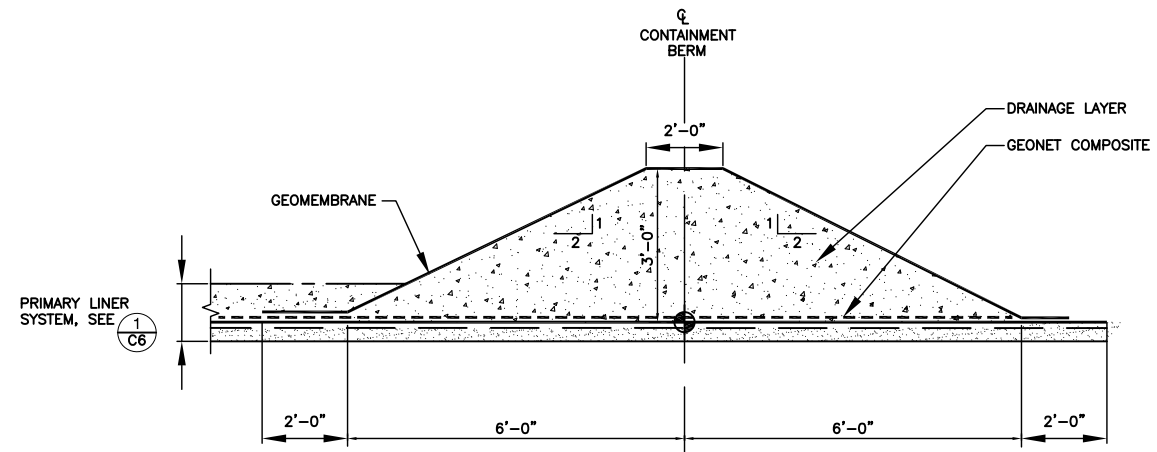
NOTES:

1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

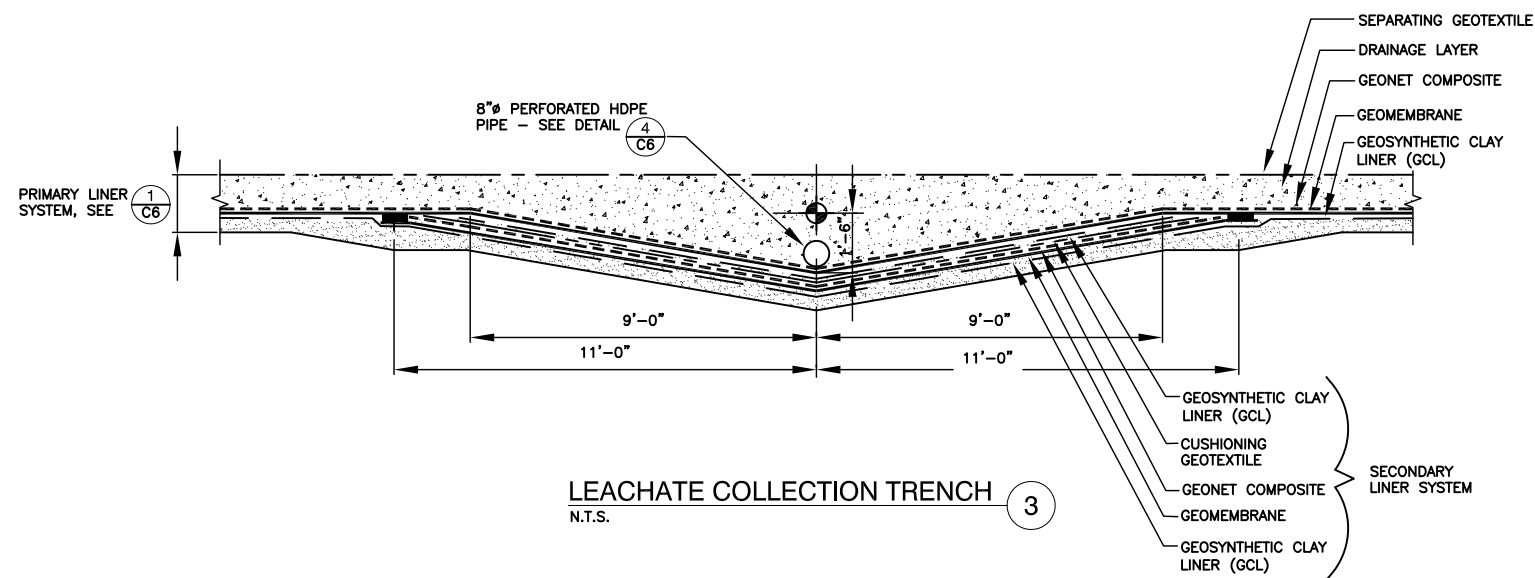
			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST MSW FILL DEPTHS	DRAWING NUMBER: D5	
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: D05	
				CHECKED BY: RR	DATE: 9/26/23				SHEET: 5 of 7	REV. A
A	9/26/23	GF	ISSUED FOR REVIEW							
No.	DATE	BY	REVISION							



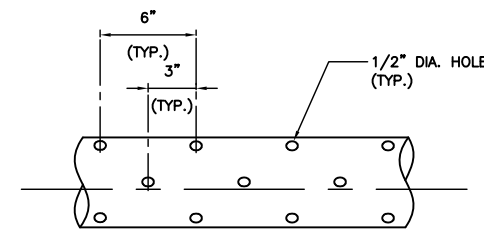
PRIMARY LINER SYSTEM
N.T.S. ①



CONTAINMENT BERM
N.T.S. ②



LEACHATE COLLECTION TRENCH
N.T.S. ③



PERFORATED HDPE PIPE
N.T.S. ④

- NOTES:
- HOLES SHALL BE DRILLED AT 90° AROUND PIPE CIRCUMFERENCE. SUCCESSIVE ROWS SHALL BE SEPARATED BY 2" AND STAGGERED 45°
 - REMOVE INTERIOR WELD BEADS AND ALL CUTTINGS INSIDE AND OUT BEFORE PIPE IS INSTALLED.

LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

No.	DATE	BY	REVISION
A	9/26/23	GF	ISSUED FOR REVIEW

JOB No.	DESIGNED:	PROJ. ENGINEER:
00192	GF	GF
SCALE:	DRAWN BY:	APPROVED BY:
N.T.S.	GF	DM
	CHECKED BY:	DATE:
	RR	9/26/23

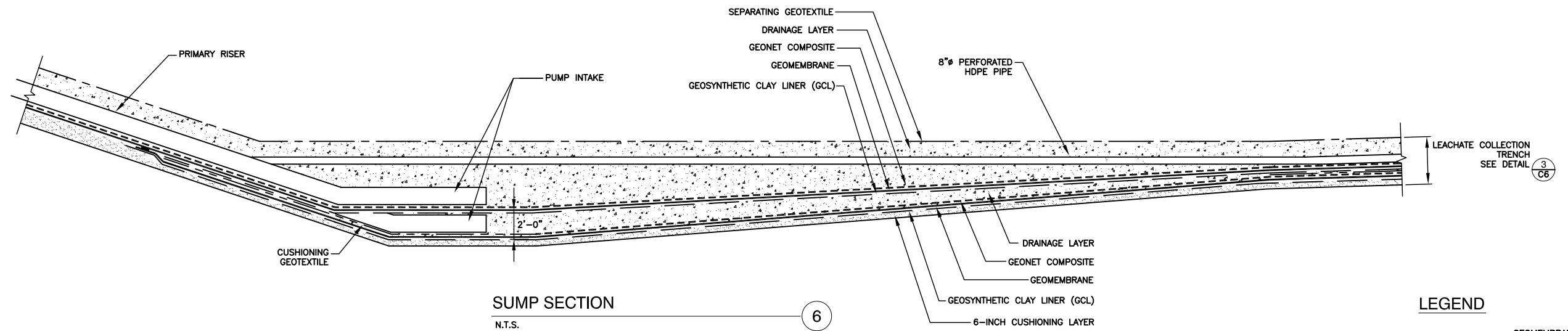
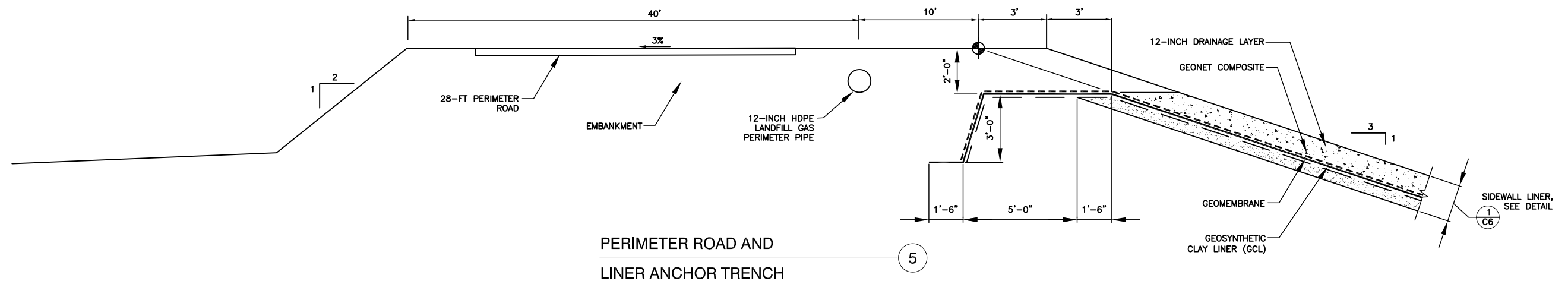


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**LANDFILL SITING PROJECT
SITE DEVELOPMENT
PLAN
DESCHUTES COUNTY, OREGON**

**ROTH EAST
LINER SECTIONS AND DETAILS**

DRAWING NUMBER: D6	
CAD FILE NUMBER: D06	
SHEET: 6 OF 7	REV. A



LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

No.	DATE	BY	REVISION
A	9/26/23	GF	ISSUED FOR REVIEW

JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF
SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM
	CHECKED BY: RR	DATE: 9/26/23



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LANDFILL SITING PROJECT
SITE DEVELOPMENT
PLAN
DESCHUTES COUNTY, OREGON

ROTH EAST
LINER SECTIONS AND DETAILS

DRAWING NUMBER: D7	
CAD FILE NUMBER: D07	
SHEET: 7 OF 7	REV. A

MSW Disposal Capacity Analysis

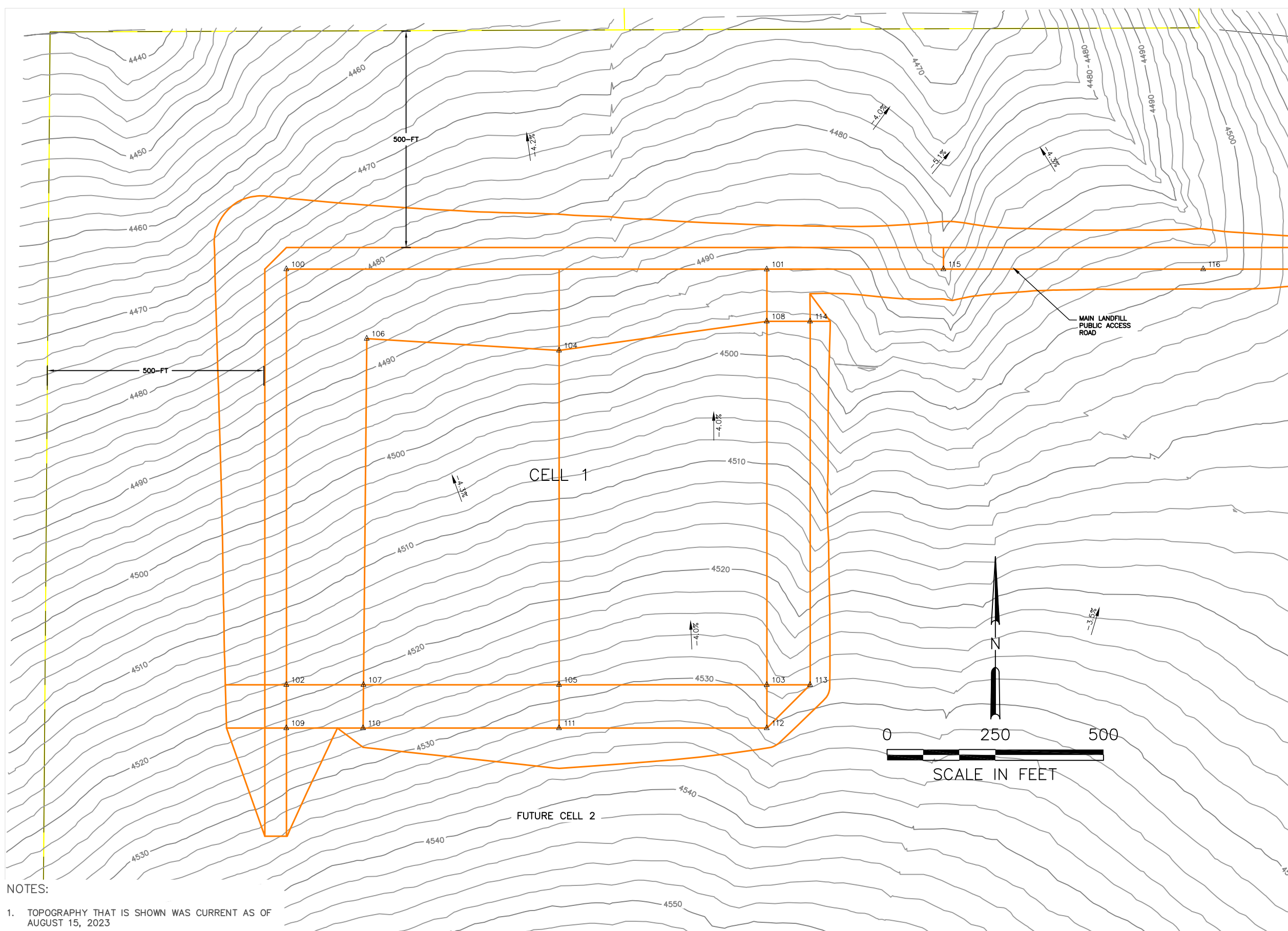
Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 3.6 years
 Projected Start Date = Jan, 2030
 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres

Excavation and Fill Quantities

Cut = 1,200,000 cy
 Fill = 700,000 cy
 Net = 500,000 cy



Point Table

Point #	Elevation	Northing	Easting
100	4525.18	312799.43	3402399.40
101	4514.00	312799.19	3403509.40
102	4560.50	311838.88	3402399.40
103	4505.73	311838.88	3403509.40
104	4455.66	312611.68	3403029.40
105	4486.25	311838.88	3403029.40
106	4470.00	312638.88	3402585.10
107	4501.86	311838.88	3402577.54
108	4472.89	312678.85	3403509.40
109	4564.17	311738.88	3402399.40
110	4505.84	311738.88	3402576.59
111	4490.21	311738.88	3403029.40
112	4509.64	311738.88	3403509.40
113	4505.73	311838.88	3403609.40
114	4472.89	312678.85	3403609.40
115	4510.00	312799.43	3403917.40
116	4516.00	312799.43	3404517.56

NOTES:

- TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

JOB No. 00192		DESIGNED: GF	PROJ. ENGINEER: GF
SCALE: AS SHOWN		DRAWN BY: GF	APPROVED BY: DM
A 10/2/23 GF		CHECKED BY: RR	DATE: 10/2/23
No.	DATE	BY	REVISION
			ISSUED FOR REVIEW



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 Lake Oswego, Oregon 97035
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 Fax: (866) 533-5543

LANDFILL SITING PROJECT
SITE DEVELOPMENT
PLAN
DESCHUTES COUNTY, OREGON

ROTH EAST - INITIAL DEVELOPMENT - CELL 1
EXISTING SITE CONDITIONS

DRAWING NUMBER: B1	
CAD FILE NUMBER: BO1	
SHEET: 1 OF 8	REV. A

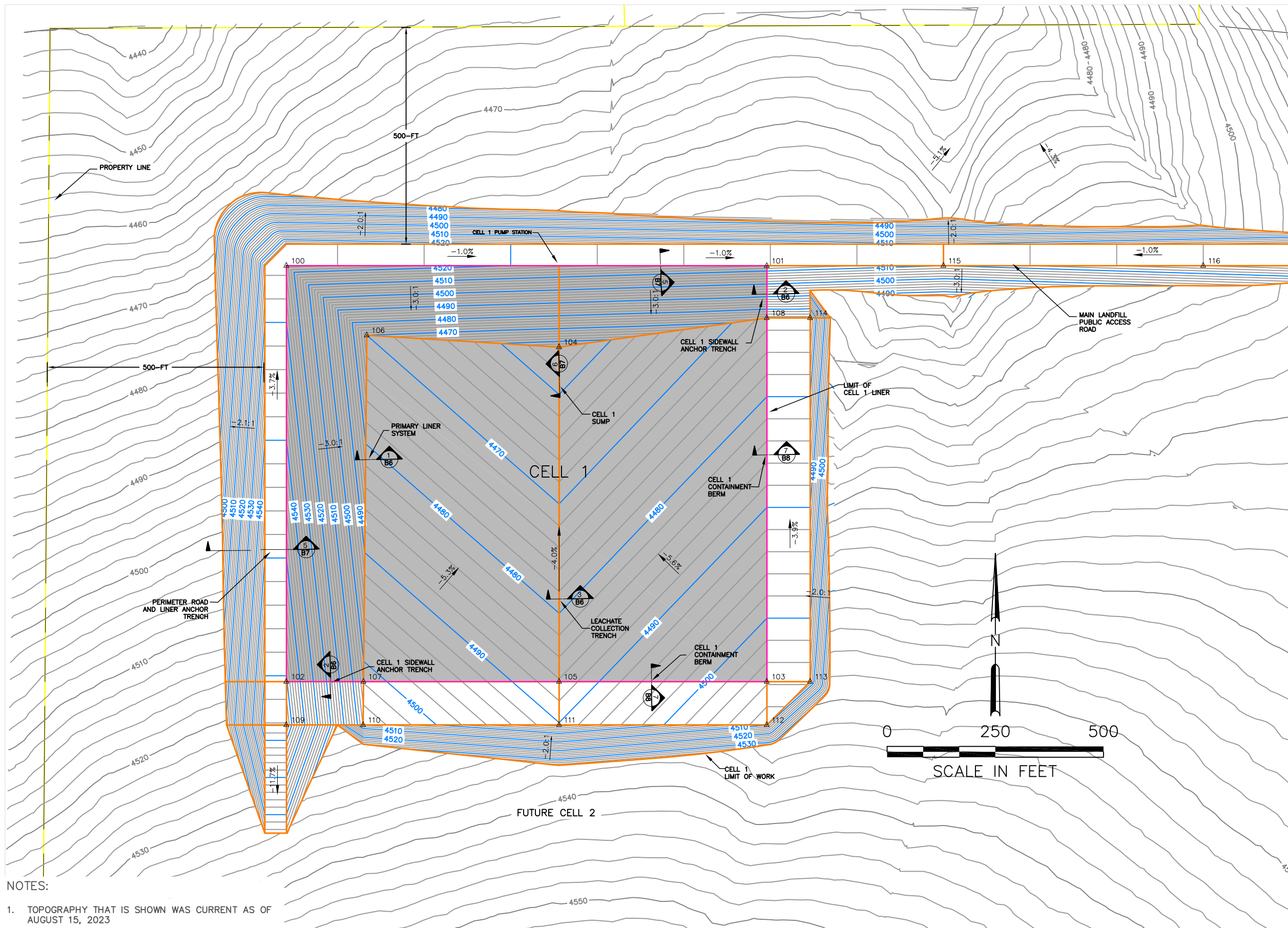
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 3.6 years
 Projected Start Date = Jan, 2030
 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres

Excavation and Fill Quantities
 Cut = 1,200,000 cy
 Fill = 700,000 cy
 Net = 500,000 cy




Point Table

Point #	Elevation	Northing	Easting
100	4525.18	312799.43	3402399.40
101	4514.00	312799.19	3403509.40
102	4560.50	311838.88	3402399.40
103	4505.73	311838.88	3403509.40
104	4455.66	312611.68	3403029.40
105	4486.25	311838.88	3403029.40
106	4470.00	312638.88	3402585.10
107	4501.86	311838.88	3402577.54
108	4472.89	312678.85	3403509.40
109	4564.17	311738.88	3402399.40
110	4505.84	311738.88	3402576.59
111	4490.21	311738.88	3403029.40
112	4509.64	311738.88	3403509.40
113	4505.73	311838.88	3403609.40
114	4472.89	312678.85	3403609.40
115	4510.00	312799.43	3403917.40
116	4516.00	312799.43	3404517.56

NOTES:

1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

		JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST - INITIAL DEVELOPMENT - CELL 1 SUBGRADE PLAN	DRAWING NUMBER: B2	
		SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: B02	
			CHECKED BY: RR	DATE: 10/2/23				SHEET: 2 OF 8	REV. A
A	10/2/23	GF	ISSUED FOR REVIEW						
No.	DATE	BY	REVISION						

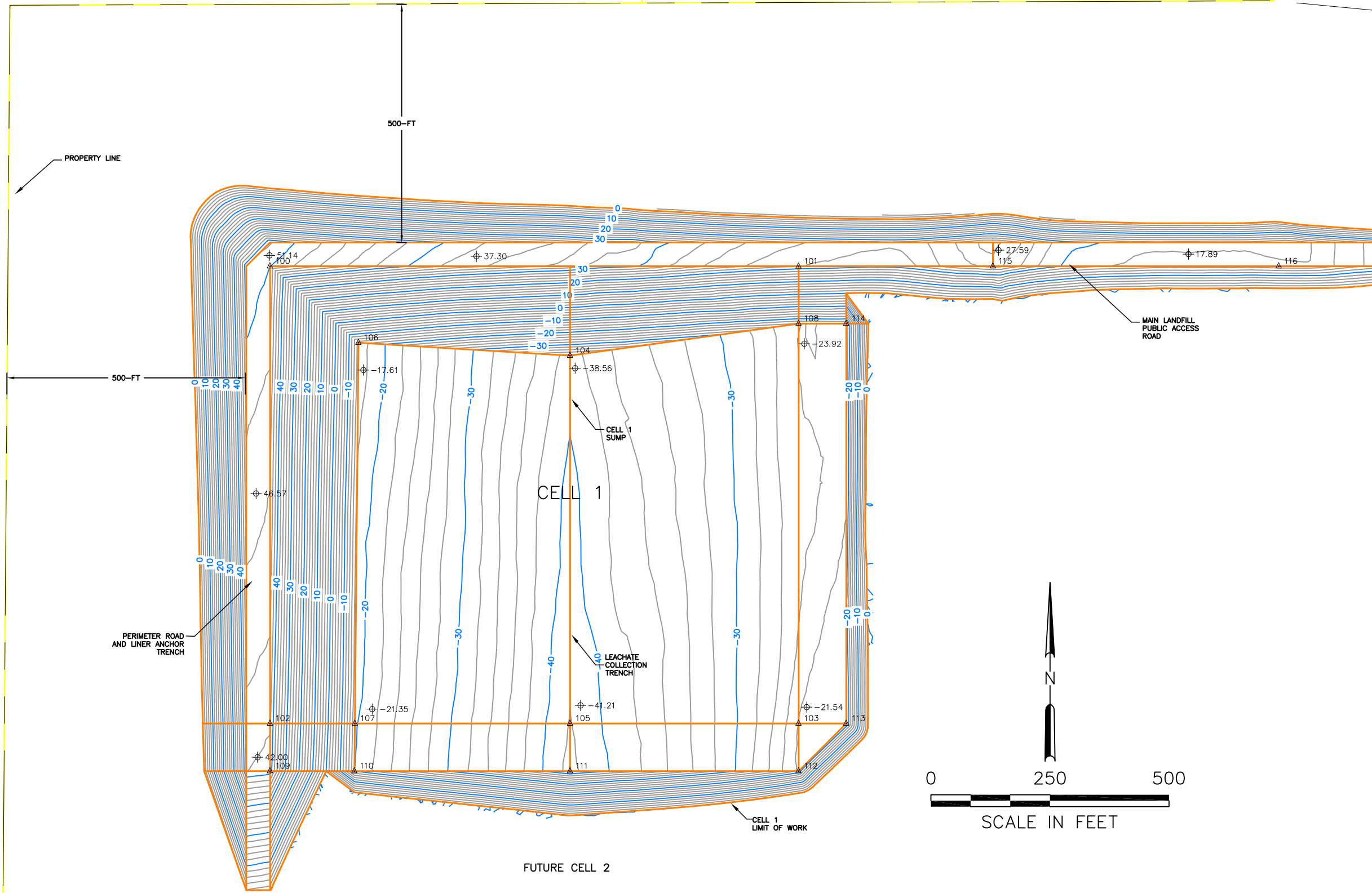
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 3.6 years
 Projected Start Date = Jan, 2030
 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres


Excavation and Fill Quantities
 Cut = 1,200,000 cy
 Fill = 700,000 cy
 Net = 500,000 cy



Point Table			
Point #	Elevation	Northing	Easting
100	4525.18	312799.43	3402399.40
101	4514.00	312799.19	3403509.40
102	4560.50	311838.88	3402399.40
103	4505.73	311838.88	3403509.40
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105	4486.25	311838.88	3403029.40
106	4470.00	312638.88	3402585.10
107	4501.86	311838.88	3402577.54
108	4472.89	312678.85	3403509.40
109	4564.17	311738.88	3402399.40
110	4505.84	311738.88	3402576.59
111	4490.21	311738.88	3403029.40
112	4509.64	311738.88	3403509.40
113	4505.73	311838.88	3403609.40
114	4472.89	312678.85	3403609.40
115	4510.00	312799.43	3403917.40
116	4516.00	312799.43	3404517.56

NOTES:

1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

A	10/2/23	GF	ISSUED FOR REVIEW	JOB No.	DESIGNED:	PROJ. ENGINEER:	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST - INITIAL DEVELOPMENT - CELL 1 SOIL EXCAVATION AND FILL DEPTHS	DRAWING NUMBER:	
				00192	GF	GF				B3	
				SCALE:	DRAWN BY:	APPROVED BY:					
				AS SHOWN	GF	DM					
				CHECKED BY:	RR	DATE:					
						10/2/23					
No.	DATE	BY	REVISION								CAD FILE NUMBER:
											B03
											SHEET:
											3 OF 8
											REV.
											A

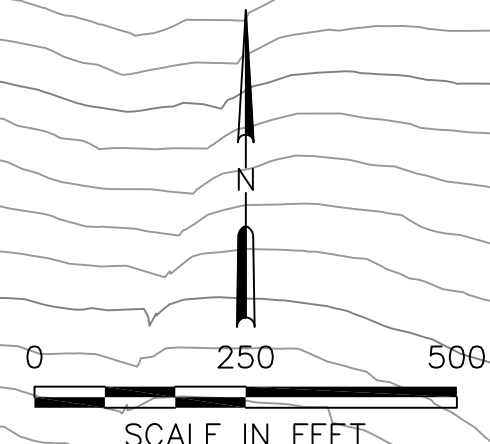
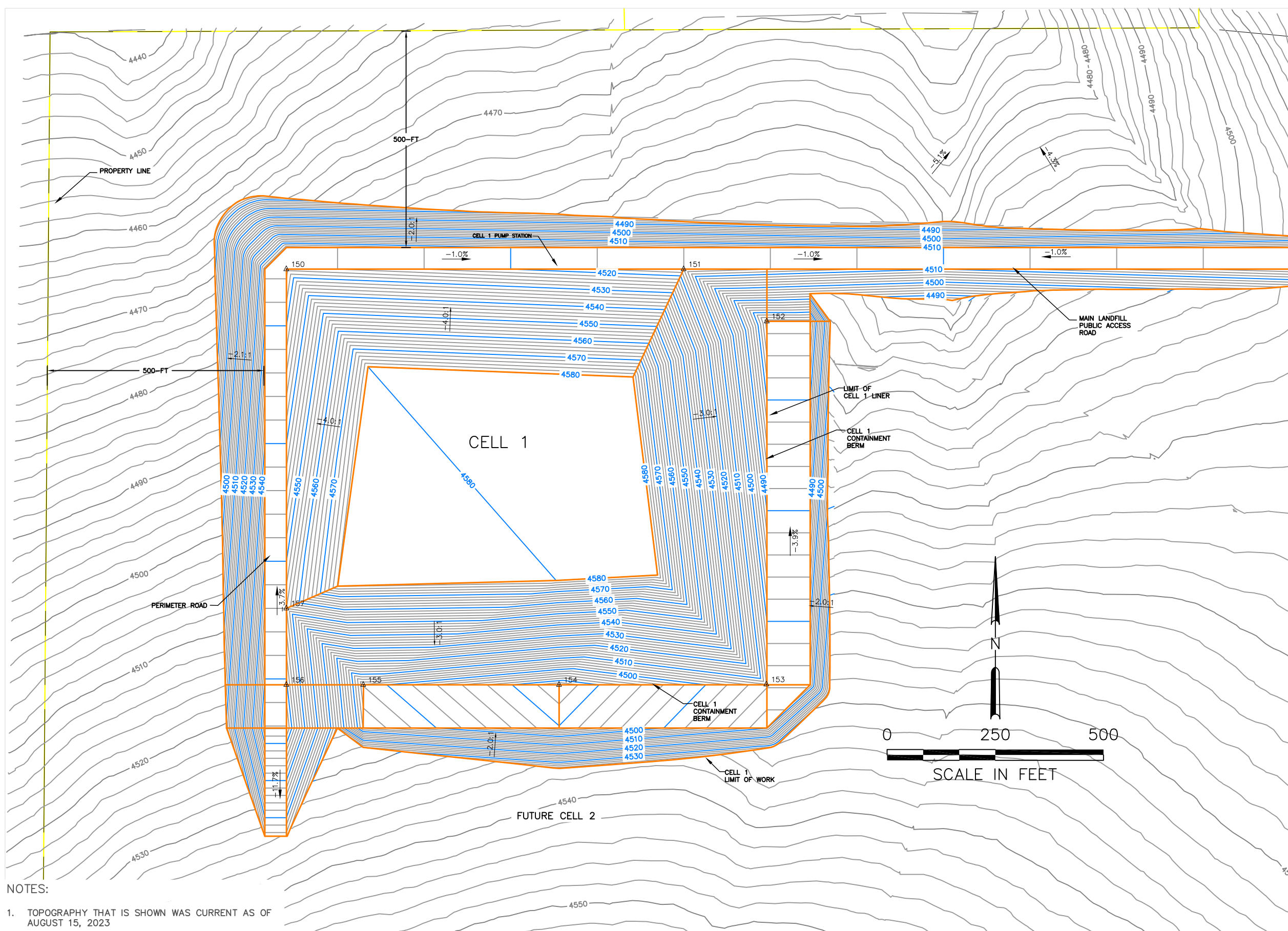
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
 Assumed Usage Rate = 1,750 cy/day
 Projected Life = 3.6 years
 Projected Start Date = Jan, 2030
 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres


Excavation and Fill Quantities
 Cut = 1,200,000 cy
 Fill = 700,000 cy
 Net = 500,000 cy



Point Table

Point #	Elevation	Northing	Easting
150	4525.18	312799.43	3402399.40
151	4516.00	312799.43	3403317.40
152	4472.89	312678.85	3403509.40
153	4506.00	311839.80	3403508.48
154	4486.25	311838.88	3403029.40
155	4502.00	311838.88	3402577.11
156	4560.50	311838.88	3402399.40
157	4554.00	312015.55	3402399.40

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

		JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543	LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON	ROTH EAST - INITIAL DEVELOPMENT - CELL 1 MSW FILL PLAN	DRAWING NUMBER: B4	
		SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: B04	
			CHECKED BY: RR	DATE: 10/2/23				SHEET: 4 OF 8	REV. A
A	10/2/23	GF	ISSUED FOR REVIEW						
No.	DATE	BY	REVISION						

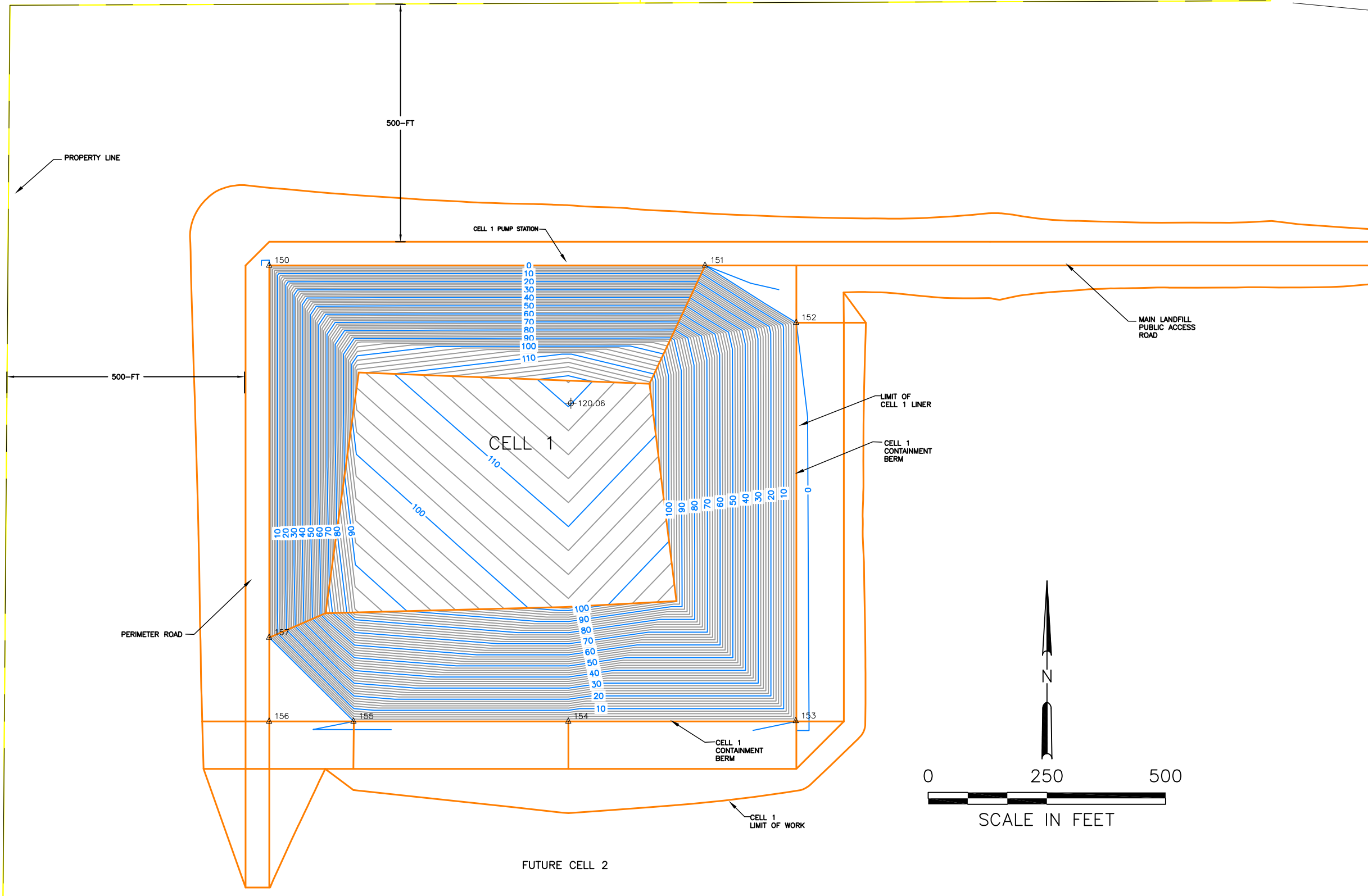
MSW Disposal Capacity Analysis

Initial Development - Cell 1

Air Space Available = 2,300,000 cy
 Assumed Density = 1600 lb/cy
 Capacity Available = 1,840,000 tons
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 Projected Completion Date = Aug, 2033

Disposal Area Size = 24 acres

Excavation and Fill Quantities
 Cut = 1,200,000 cy
 Fill = 700,000 cy
 Net = 500,000 cy



NOTES:

1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF AUGUST 15, 2023

Point #	Elevation	Northing	Easting
150	4525.18	312799.43	3402399.40
151	4516.00	312799.43	3403317.40
152	4472.89	312678.85	3403509.40
153	4506.00	311839.80	3403508.48
154	4486.25	311838.88	3403029.40
155	4502.00	311838.88	3402577.11
156	4560.50	311838.88	3402399.40
157	4554.00	312015.55	3402399.40

			JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF
			SCALE: AS SHOWN	DRAWN BY: GF	APPROVED BY: DM
A	10/2/23	GF		CHECKED BY: RR	DATE: 10/2/23
No.	DATE	BY	REVISION		

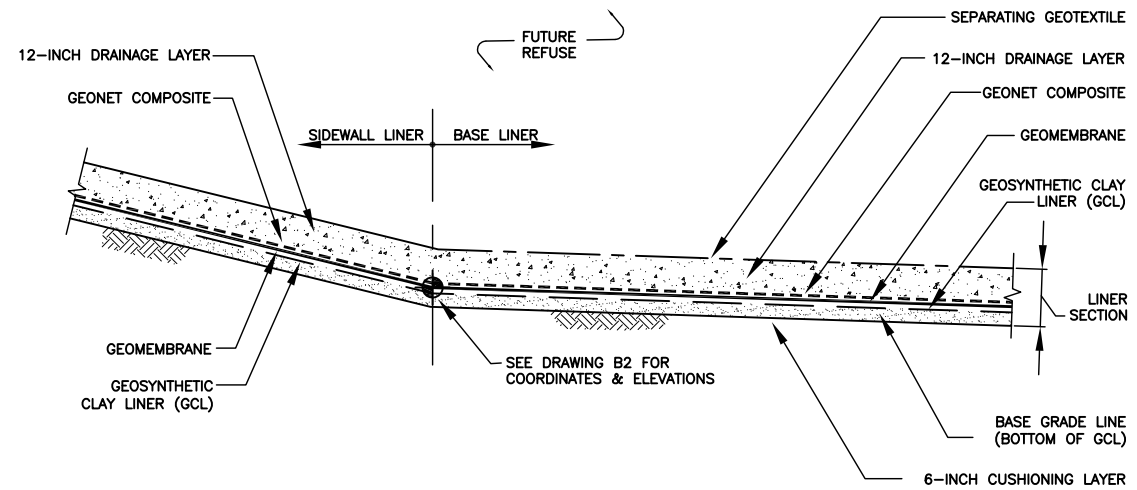


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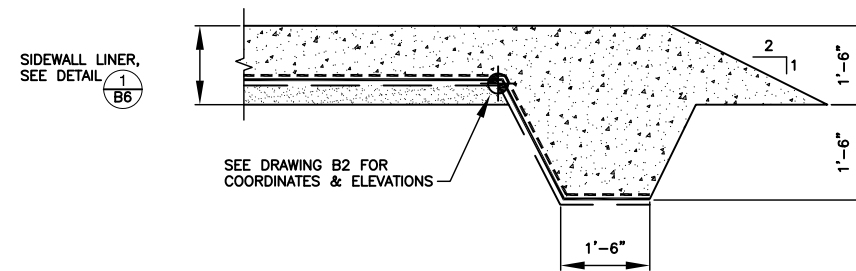
LANDFILL SITING PROJECT
SITE DEVELOPMENT
PLAN
 DESCHUTES COUNTY, OREGON

ROTH EAST - INITIAL DEVELOPMENT - CELL 1
MSW FILL DEPTHS

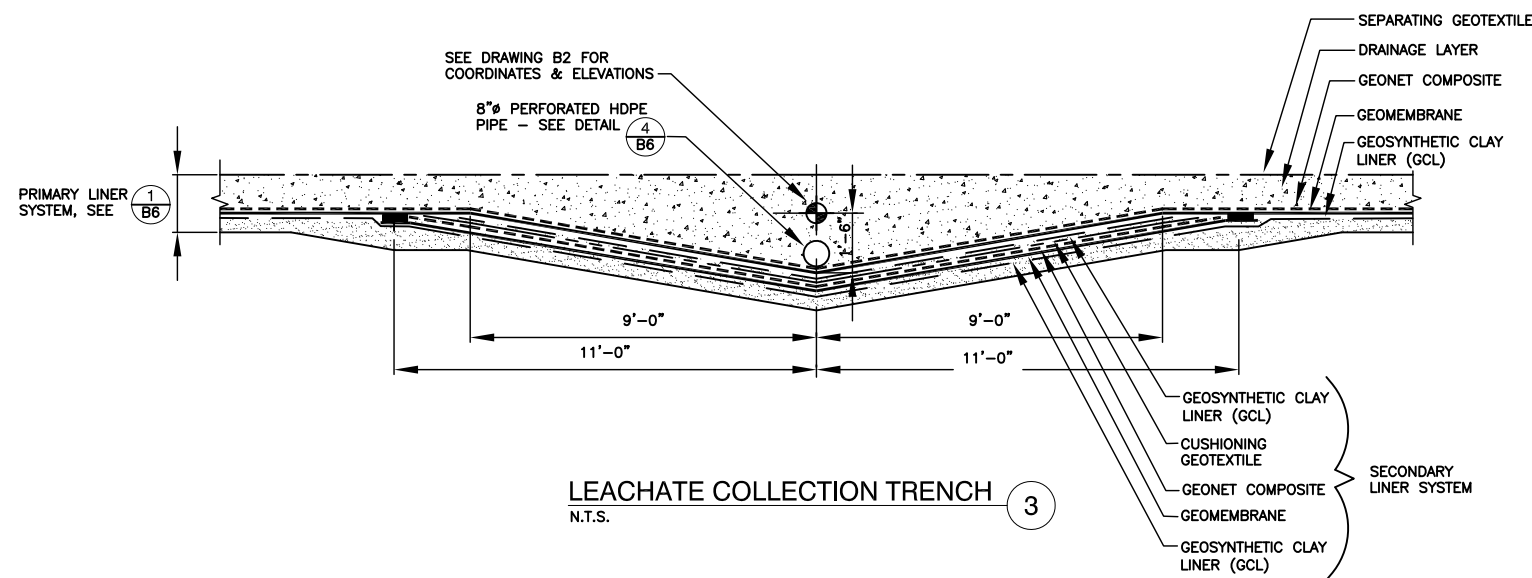
DRAWING NUMBER: B5	
CAD FILE NUMBER: B05	
SHEET: 5 of 8	REV. A



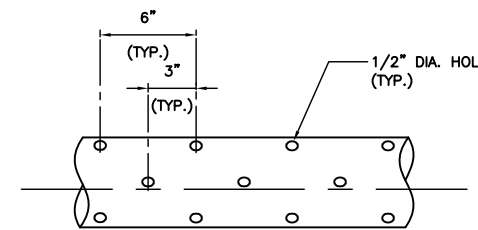
PRIMARY LINER SYSTEM
N.T.S. ①



SIDEWALL ANCHOR
N.T.S. ②



LEACHATE COLLECTION TRENCH
N.T.S. ③



PERFORATED HDPE PIPE
N.T.S. ④

- NOTES:
- HOLES SHALL BE DRILLED AT 90° AROUND PIPE CIRCUMFERENCE. SUCCESSIVE ROWS SHALL BE SEPARATED BY 2" AND STAGGERED 45°
 - REMOVE INTERIOR WELD BEADS AND ALL CUTTINGS INSIDE AND OUT BEFORE PIPE IS INSTALLED.

LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

No.	DATE	BY	REVISION
A	9/26/23	GF	ISSUED FOR REVIEW

JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF
SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM
	CHECKED BY: RR	DATE: 10/2/23

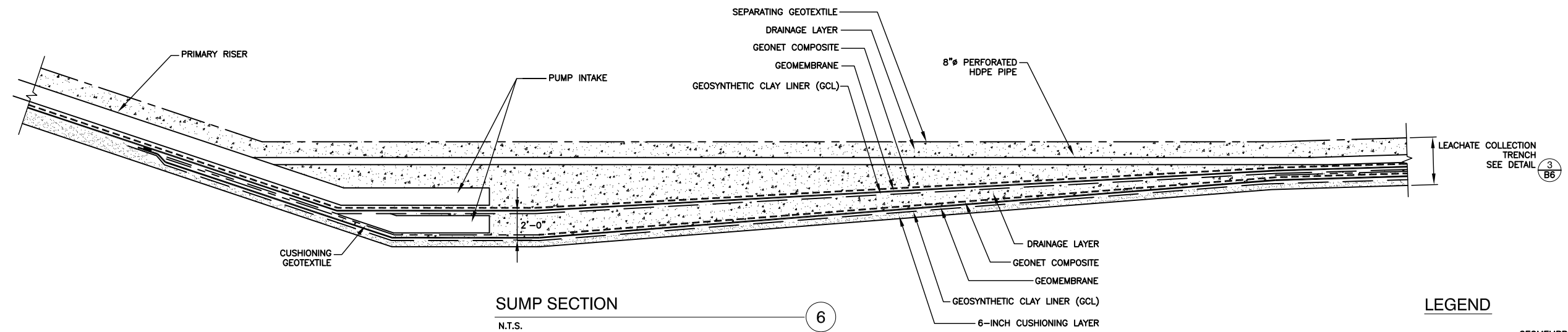
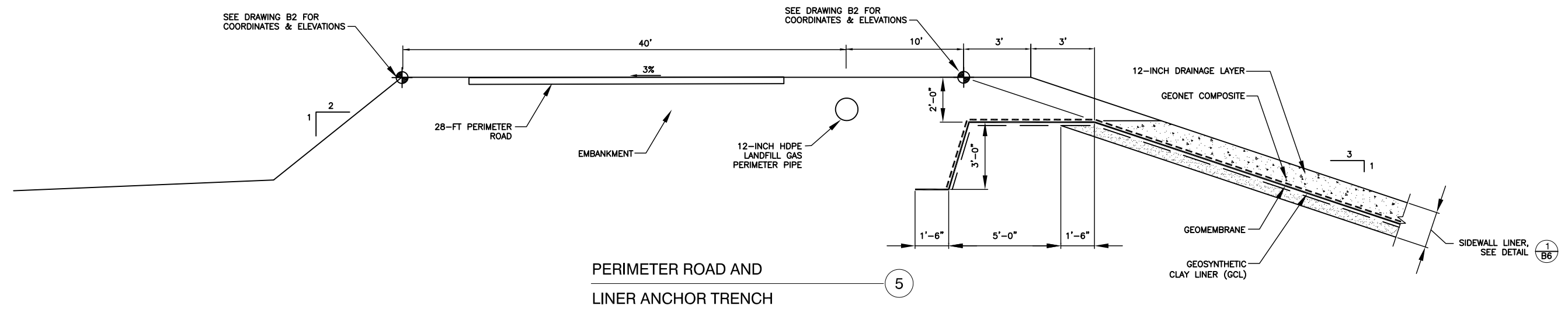


G. Friesen Associates, Inc.
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Fax: (866) 533-5543

**LANDFILL SITING PROJECT
SITE DEVELOPMENT
PLAN
DESCHUTES COUNTY, OREGON**

**ROTH EAST - INITIAL DEVELOPMENT - CELL 1
LINER SECTIONS AND DETAILS**

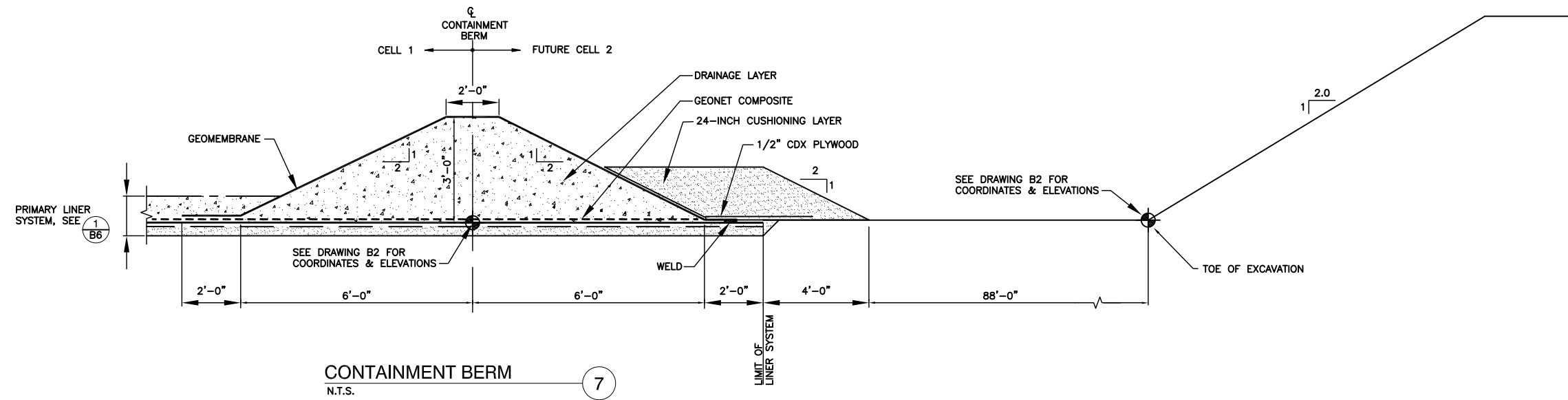
DRAWING NUMBER: B6	
CAD FILE NUMBER: B06	
SHEET: 6 OF 8	REV. A



LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

				JOB No. 00192	DESIGNED: GF	PROJ. ENGINEER: GF	 <p>G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543</p>	<p>LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON</p>	<p>ROTH EAST - INITIAL DEVELOPMENT - CELL 1 LINER SECTIONS AND DETAILS</p>	DRAWING NUMBER: B7	
				SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM				CAD FILE NUMBER: B07	
					CHECKED BY: RR	DATE: 10/2/23				SHEET: 7 OF 8	
										REV. A	
A	9/26/23	GF	ISSUED FOR REVIEW								
No.	DATE	BY	REVISION								



LEGEND

- GEOMEMBRANE
- - - - - CUSHIONING GEOTEXTILE
- GEOSYNTHETIC CLAY LINER (GCL)
- - - - - GEONET COMPOSITE
- - - - - SEPARATING GEOTEXTILE

		JOB No. 00192		DESIGNED: GF	PROJ. ENGINEER: GF	 <p>G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543</p>	<p>LANDFILL SITING PROJECT SITE DEVELOPMENT PLAN DESCHUTES COUNTY, OREGON</p>	<p>ROTH EAST - INITIAL DEVELOPMENT - CELL 1 LINER SECTIONS AND DETAILS</p>	DRAWING NUMBER: B8	
		SCALE: N.T.S.	DRAWN BY: GF	APPROVED BY: DM	CAD FILE NUMBER: B08					
			CHECKED BY: RR	DATE: 10/2/23	SHEET: 8 OF 8				REV. A	
A	9/26/23	GF	ISSUED FOR REVIEW							
No.	DATE	BY	REVISION							