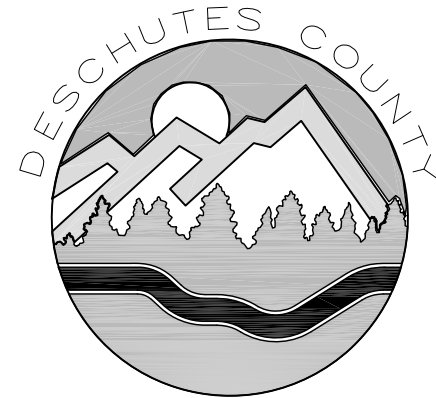


Knott Landfill

◆

2016 MSW Cell Sequence Plan



DEPARTMENT OF SOLID WASTE
61050 SE 27th Street
Bend, Oregon 97702

Director of Solid Waste
Timm Schimke

November, 2016

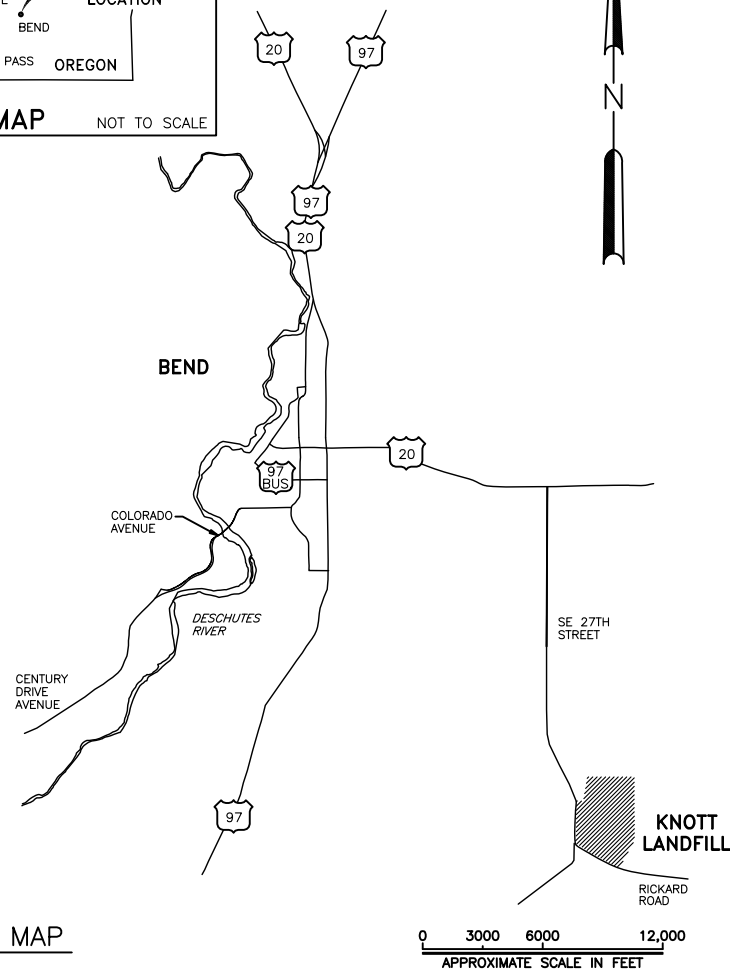
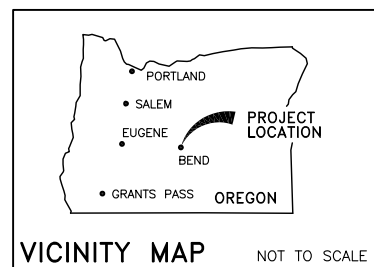
Project Directory

Owner

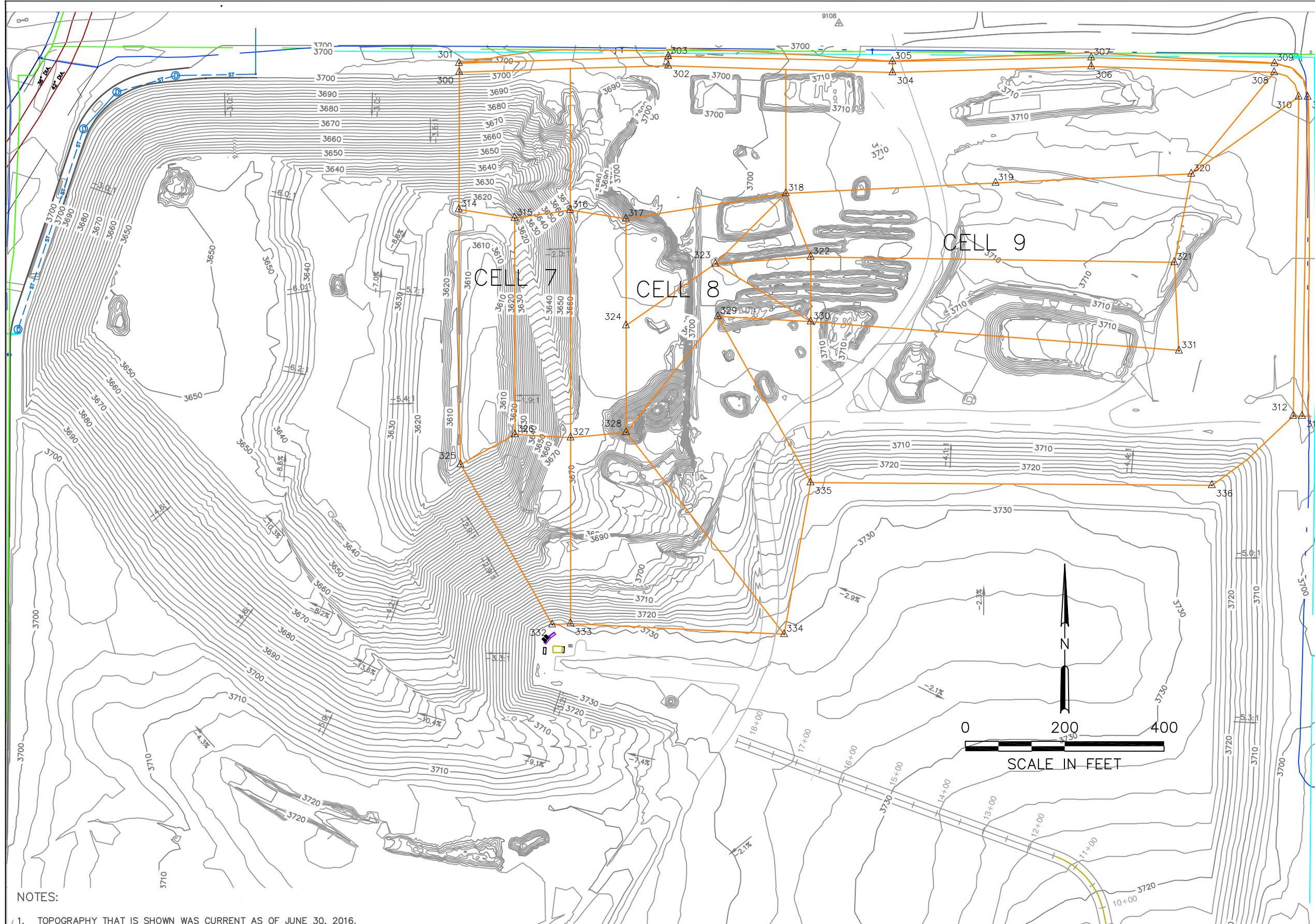
Deschutes County
Department of Solid Waste
61050 SE 27th Street
Bend, Oregon 97702
Phone: 541-317-3163
Director: Timm Schimke
Operations Mgr: Chad Centola

Project Engineer

Gerry Friesen PE
G. Friesen Associates, Inc.
4088 Orchard Drive
Lake Oswego, Oregon 97035
Phone: 503-635-1233



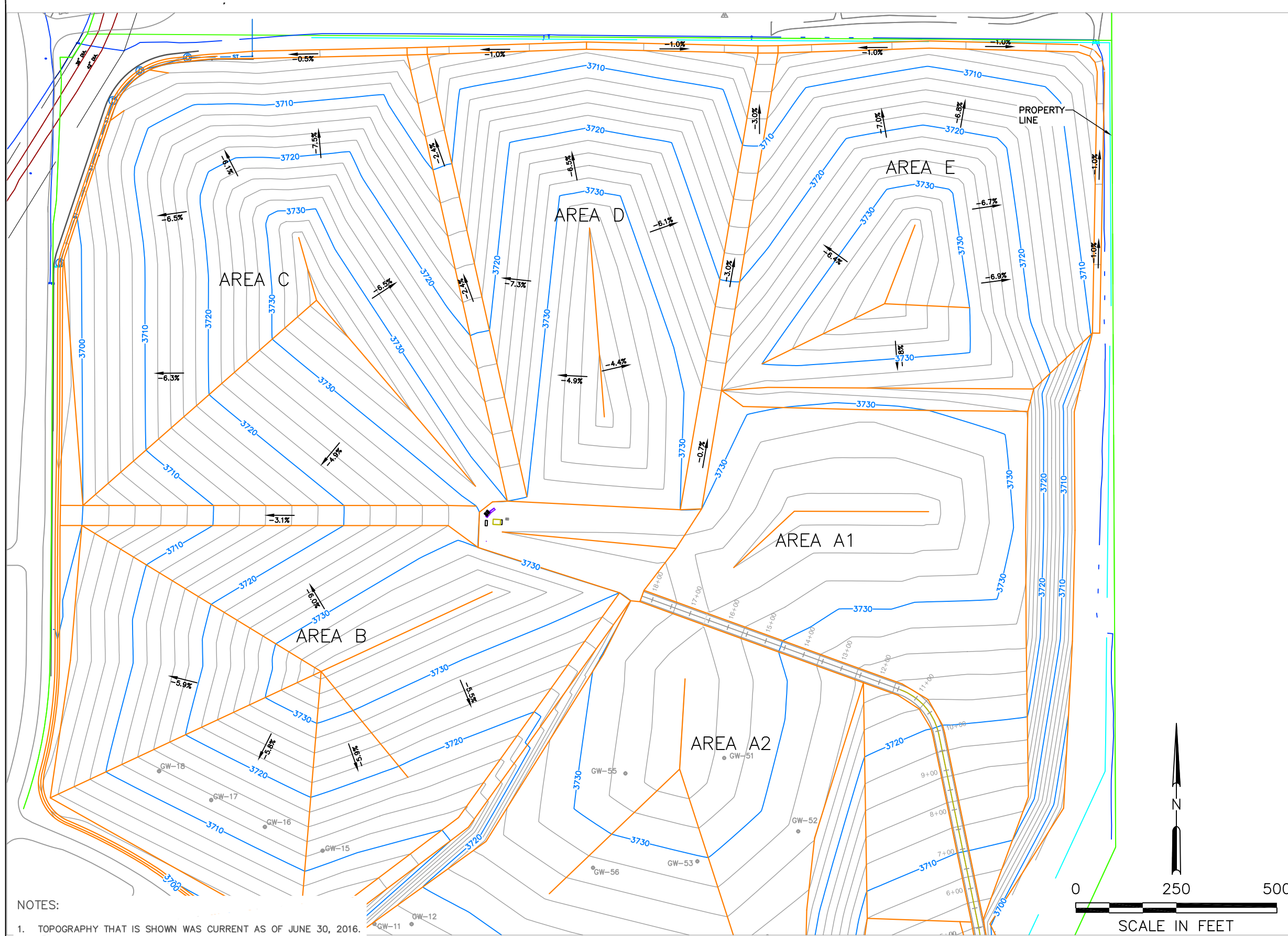
LOCATION MAP



| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 300 | 370065.68 | 3307359.20 | 3703.21 |
| 301 | 370083.68 | 3307358.79 | 3703.21 |
| 302 | 370078.63 | 3307779.80 | 3707.42 |
| 303 | 370097.49 | 3307779.78 | 3707.42 |
| 304 | 370065.12 | 3308231.03 | 3702.92 |
| 305 | 370087.37 | 3308230.83 | 3702.92 |
| 306 | 370077.11 | 3308630.91 | 3706.92 |
| 307 | 370095.11 | 3308630.92 | 3706.92 |
| 308 | 370065.47 | 3308998.93 | 3703.21 |
| 309 | 370083.46 | 3308999.50 | 3703.21 |
| 310 | 370016.20 | 3309048.21 | 3703.21 |
| 311 | 370015.89 | 3309066.21 | 3703.21 |
| 312 | 369373.88 | 3309037.10 | 3709.70 |
| 313 | 369373.88 | 3309055.10 | 3709.70 |
| 314 | 369789.55 | 3307358.47 | 3611.35 |
| 315 | 369772.08 | 3307470.50 | 3605.53 |
| 316 | 369788.18 | 3307582.48 | 3611.33 |
| 317 | 369770.68 | 3307694.50 | 3605.51 |
| 318 | 369821.99 | 3308016.36 | 3621.50 |
| 319 | 369842.78 | 3308438.36 | 3628.00 |
| 320 | 369861.16 | 3308832.01 | 3634.03 |
| 321 | 369683.12 | 3308797.96 | 3625.05 |
| 322 | 369693.98 | 3308066.47 | 3615.93 |
| 323 | 369680.18 | 3307874.41 | 3613.00 |
| 324 | 369556.02 | 3307694.81 | 3602.79 |
| 325 | 369276.27 | 3307361.88 | 3606.25 |
| 326 | 369336.75 | 3307471.13 | 3600.02 |
| 327 | 369330.33 | 3307583.16 | 3605.52 |
| 328 | 369341.02 | 3307695.12 | 3600.07 |
| 329 | 369574.34 | 3307879.59 | 3612.00 |
| 330 | 369563.79 | 3308066.47 | 3622.00 |
| 331 | 369505.14 | 3308807.34 | 3634.00 |
| 332 | 368954.19 | 3307546.29 | 3730.00 |
| 333 | 368956.12 | 3307583.16 | 3730.00 |
| 334 | 368934.71 | 3308012.90 | 3730.00 |
| 335 | 369239.95 | 3308066.05 | 3728.00 |
| 336 | 369234.48 | 3308873.50 | 3724.00 |

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

| | | | | | | | | | | | |
|---|---------|------|-------------------------|------------------|--------------------|-----------------------|--|--|--|----------------------|------------------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION | JOB No. 00172 | DESIGNED: GF | PROJ. ENGINEER: GF |  G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 | KNOTT LANDFILL 2016 CELL SEQUENCE PLAN DESCHUTES COUNTY, OREGON | Aerial Topography Current as of June 30, 2016 | DRAWING NUMBER: 1 | |
| | No. | DATE | BY | REVISION | SCALE: AS SHOWN | DRAWN BY: GF | | | | APPROVED BY: CC | CAD FILE NUMBER: |
| | | | | | CHECKED BY: GF | DATE: 11/2/16 | | | | SHEET: 1 of 10 | REV. A |



Final Cover System

| | | | |
|------------------------|-----------------------|---|------------|
| Area B | Closure Area | = | 24.5 acre |
| | Assumed Closure Depth | = | 2 feet |
| | Soil Required | = | 83,000 cy |
| Area C | Closure Area | = | 25.0 acre |
| | Assumed Closure Depth | = | 2 feet |
| | Soil Required | = | 85,000 cy |
| Area D | Closure Area | = | 17.0 acre |
| | Assumed Closure Depth | = | 2 feet |
| | Soil Required | = | 58,000 cy |
| Area E | Closure Area | = | 17.5 acre |
| | Assumed Closure Depth | = | 2 feet |
| | Soil Required | = | 60,000 cy |
| Total Remaining | Closure Area | = | 84.0 acre |
| | Assumed Closure Depth | = | 2 feet |
| | Soil Required | = | 285,000 cy |

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

| | | | |
|-----|---------|----|-------------------------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION |
| No. | DATE | BY | REVISION |

| | | |
|--------------------|-------------------|-----------------------|
| JOB No. 00172 | DESIGNED: GF | PROJ. ENGINEER: GF |
| SCALE: AS SHOWN | DRAWN BY: GF | APPROVED BY: CC |
| | CHECKED BY: GF | DATE: 11/2/16 |

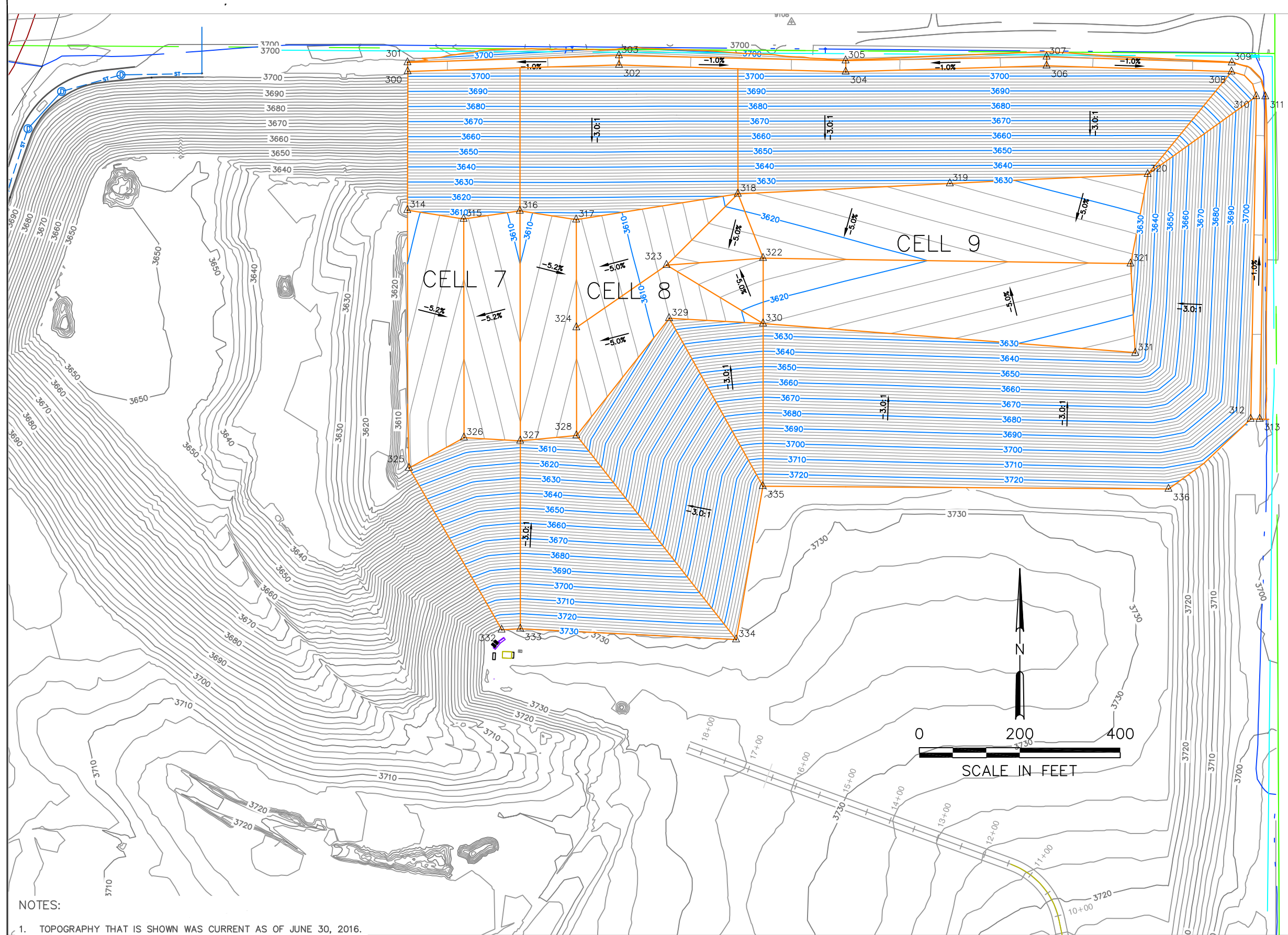


G. Friesen Associates, Inc.
 4088 Orchard Drive
 Lake Oswego, Oregon 97035
 Tel: (503) 635-1233
 Fax: (866) 533-5543

KNOTT LANDFILL
2016 CELL SEQUENCE PLAN
DESCHUTES COUNTY, OREGON

Top of Final
Cover Grading Plan

| | |
|----------------------|-----------|
| DRAWING NUMBER: 2 | |
| CAD FILE NUMBER: | |
| SHEET: 2 OF 10 | REV. A |



NOTES:

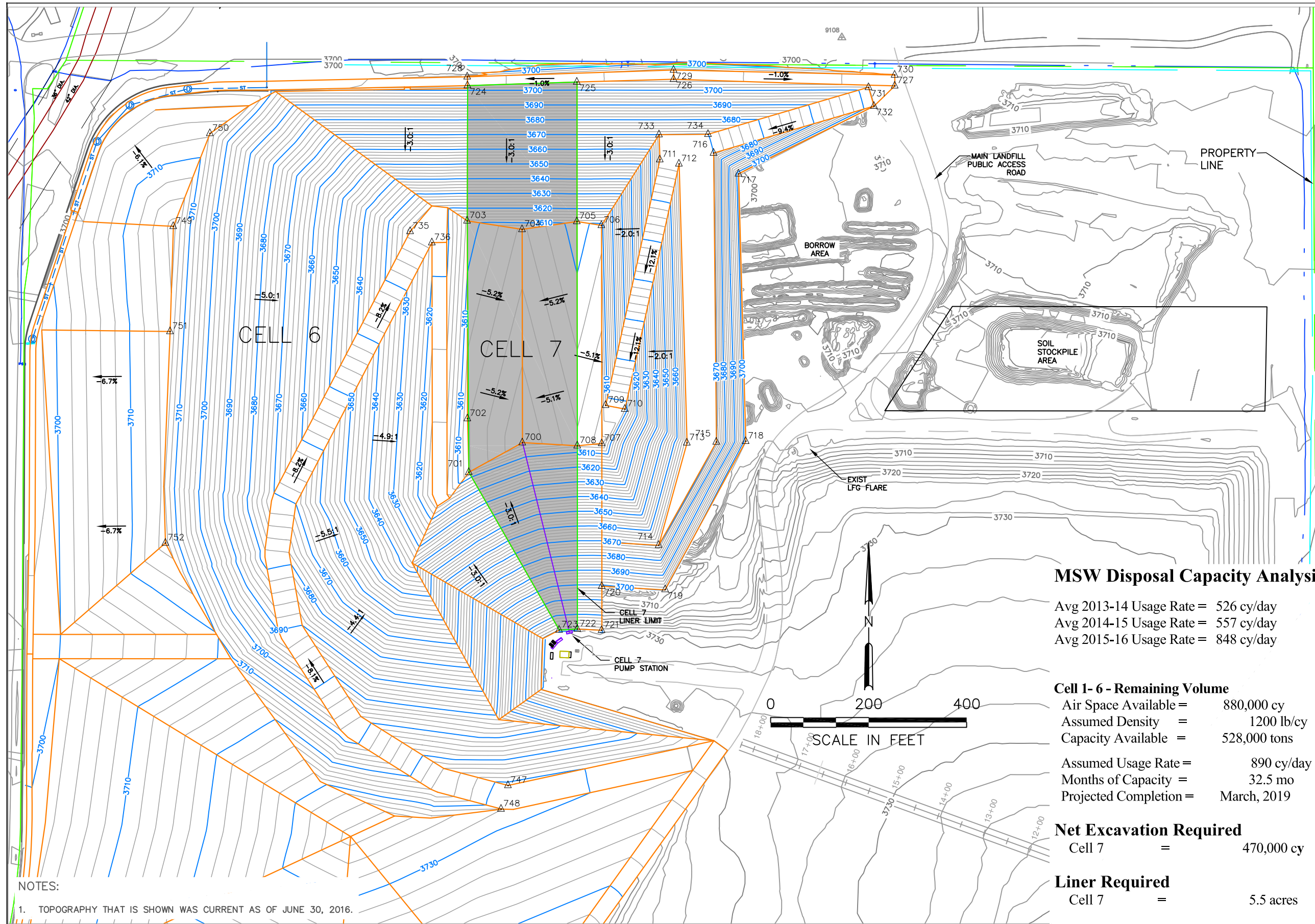
1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

Cell 7 - 9 Quantities

Excavation = 2,400,000 cy
 Liner System Area = 37.8 acre

| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 300 | 370065.68 | 3307359.20 | 3703.21 |
| 301 | 370083.68 | 3307358.79 | 3703.21 |
| 302 | 370078.63 | 3307779.80 | 3707.42 |
| 303 | 370097.49 | 3307779.78 | 3707.42 |
| 304 | 370065.12 | 3308231.03 | 3702.92 |
| 305 | 370087.37 | 3308230.83 | 3702.92 |
| 306 | 370077.11 | 3308630.91 | 3706.92 |
| 307 | 370095.11 | 3308630.92 | 3706.92 |
| 308 | 370065.47 | 3308998.93 | 3703.21 |
| 309 | 370083.46 | 3308999.50 | 3703.21 |
| 310 | 370016.20 | 3309048.21 | 3703.21 |
| 311 | 370015.89 | 3309066.21 | 3703.21 |
| 312 | 369373.88 | 3309037.10 | 3709.70 |
| 313 | 369373.88 | 3309055.10 | 3709.70 |
| 314 | 369789.55 | 3307358.47 | 3611.35 |
| 315 | 369772.08 | 3307470.50 | 3605.53 |
| 316 | 369788.18 | 3307582.48 | 3611.33 |
| 317 | 369770.68 | 3307694.50 | 3605.51 |
| 318 | 369821.99 | 3308016.36 | 3621.50 |
| 319 | 369842.78 | 3308438.36 | 3628.00 |
| 320 | 369861.16 | 3308832.01 | 3634.03 |
| 321 | 369683.12 | 3308797.96 | 3625.05 |
| 322 | 369693.98 | 3308066.47 | 3615.93 |
| 323 | 369680.18 | 3307874.41 | 3613.00 |
| 324 | 369556.02 | 3307694.81 | 3602.79 |
| 325 | 369276.27 | 3307361.88 | 3606.25 |
| 326 | 369336.75 | 3307471.13 | 3600.02 |
| 327 | 369330.33 | 3307583.16 | 3605.52 |
| 328 | 369341.02 | 3307695.12 | 3600.07 |
| 329 | 369574.34 | 3307879.59 | 3612.00 |
| 330 | 369563.79 | 3308066.47 | 3622.00 |
| 331 | 369505.14 | 3308807.34 | 3634.00 |
| 332 | 368954.19 | 3307546.29 | 3730.00 |
| 333 | 368956.12 | 3307583.16 | 3730.00 |
| 334 | 368934.71 | 3308012.90 | 3730.00 |
| 335 | 369239.95 | 3308066.05 | 3728.00 |
| 336 | 369234.48 | 3308873.50 | 3724.00 |

| | | | | | | | | | | | |
|---|---------|------|-------------------------|------------------|--------------------|-----------------------|--|--|---|-----------------------------|------------------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION | JOB No. 00172 | DESIGNED: GF | PROJ. ENGINEER: GF |  G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 | KNOTT LANDFILL 2016 CELL SEQUENCE PLAN DESCHUTES COUNTY, OREGON | North Perimeter Road Plan and Cell 7 - 9 Subgrade Plan | DRAWING NUMBER: 3 | |
| | No. | DATE | BY | REVISION | SCALE: AS SHOWN | DRAWN BY: GF | | | | APPROVED BY: CC | CAD FILE NUMBER: |
| | | | | | CHECKED BY: GF | DATE: 11/2/16 | | | | SHEET: 3 of 10 | REV. A |



NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

MSW Disposal Capacity Analysis

Avg 2013-14 Usage Rate = 526 cy/day
 Avg 2014-15 Usage Rate = 557 cy/day
 Avg 2015-16 Usage Rate = 848 cy/day

Cell 1-6 - Remaining Volume

Air Space Available = 880,000 cy
 Assumed Density = 1200 lb/cy
 Capacity Available = 528,000 tons
 Assumed Usage Rate = 890 cy/day
 Months of Capacity = 32.5 mo
 Projected Completion = March, 2019

Net Excavation Required

Cell 7 = 470,000 cy

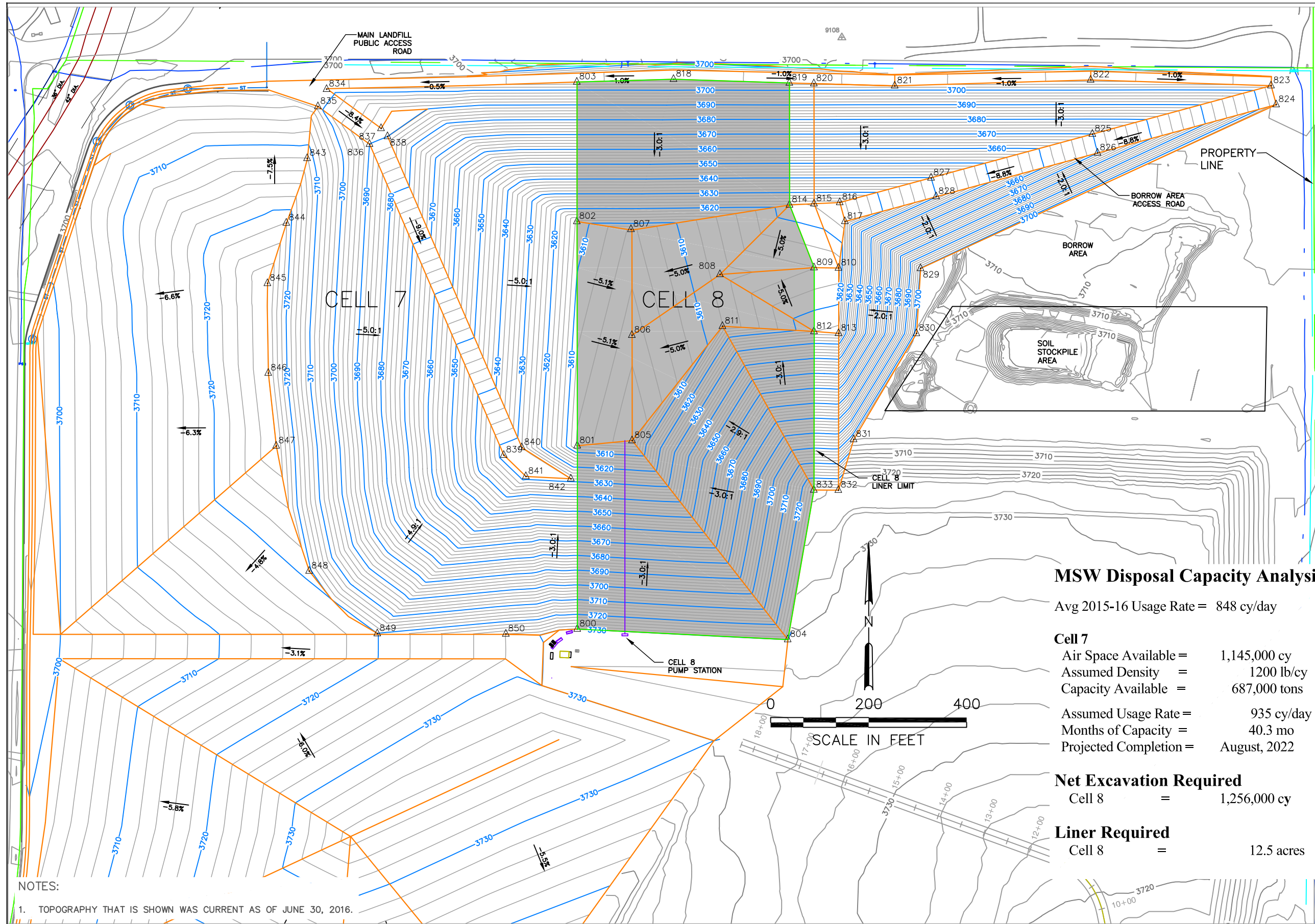
Liner Required

Cell 7 = 5.5 acres



| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 700 | 369336.75 | 3307471.13 | 3600.02 |
| 701 | 369276.27 | 3307361.88 | 3606.25 |
| 702 | 369385.78 | 3307359.06 | 3606.25 |
| 703 | 369789.55 | 3307358.47 | 3611.35 |
| 704 | 369772.08 | 3307470.50 | 3605.53 |
| 705 | 369788.18 | 3307582.48 | 3611.33 |
| 706 | 369780.37 | 3307632.49 | 3608.73 |
| 707 | 369335.10 | 3307633.15 | 3603.09 |
| 708 | 369330.33 | 3307583.16 | 3605.52 |
| 709 | 369413.02 | 3307641.01 | 3607.98 |
| 710 | 369405.14 | 3307680.31 | 3608.00 |
| 711 | 369914.52 | 3307751.73 | 3670.00 |
| 712 | 369905.90 | 3307790.79 | 3670.00 |
| 713 | 369336.38 | 3307806.96 | 3670.00 |
| 714 | 369127.12 | 3307749.41 | 3670.04 |
| 715 | 369337.99 | 3307866.94 | 3670.00 |
| 716 | 369928.01 | 3307861.33 | 3670.00 |
| 717 | 369885.56 | 3307912.27 | 3702.00 |
| 718 | 369339.60 | 3307926.92 | 3702.00 |
| 719 | 369036.82 | 3307762.51 | 3700.03 |
| 720 | 369043.53 | 3307633.16 | 3700.92 |
| 721 | 368953.67 | 3307632.98 | 3729.99 |
| 722 | 368956.12 | 3307583.16 | 3730.00 |
| 723 | 368954.19 | 3307546.29 | 3730.00 |
| 724 | 370065.68 | 3307359.22 | 3703.21 |
| 725 | 370073.02 | 3307582.48 | 3705.44 |
| 726 | 370078.63 | 3307779.80 | 3707.42 |
| 727 | 370065.12 | 3308231.03 | 3702.92 |
| 728 | 370083.68 | 3307358.79 | 3703.21 |
| 729 | 370097.49 | 3307779.78 | 3707.42 |
| 730 | 370087.37 | 3308230.83 | 3702.92 |
| 731 | 370062.01 | 3308177.55 | 3702.00 |
| 732 | 370023.89 | 3308188.57 | 3702.00 |
| 733 | 369965.56 | 3307750.07 | 3670.00 |
| 734 | 369966.40 | 3307850.08 | 3670.00 |
| 735 | 369768.05 | 3307242.19 | 3620.92 |
| 736 | 369744.95 | 3307286.54 | 3620.92 |
| 747 | 368636.82 | 3307441.91 | 3731.50 |
| 748 | 368588.70 | 3307427.72 | 3731.95 |
| 749 | 369778.29 | 3306758.87 | 3716.79 |
| 750 | 369967.94 | 3306833.63 | 3707.61 |
| 751 | 369563.68 | 3306752.25 | 3715.55 |
| 752 | 369131.77 | 3306742.75 | 3714.94 |

| | | | | | | | | | | | |
|---|---------|------|-------------------------|------------------|--------------------|-----------------------|--|--|-------------------------|----------------------|------------------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION | JOB No. 00172 | DESIGNED: GF | PROJ. ENGINEER: GF | G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 | KNOTT LANDFILL 2016 SEQUENCE PLAN DESCHUTES COUNTY, OREGON | CELL 7 SUBGRADE PLAN | DRAWING NUMBER: 4 | |
| | No. | DATE | BY | REVISION | SCALE: AS SHOWN | DRAWN BY: GF | | | | APPROVED BY: CC | CAD FILE NUMBER: |
| | | | | | CHECKED BY: GF | DATE: 11/2/16 | | | | SHEET: 4 of 10 | REV. A |



NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

MSW Disposal Capacity Analysis

Avg 2015-16 Usage Rate = 848 cy/day

Cell 7

Air Space Available = 1,145,000 cy
 Assumed Density = 1200 lb/cy
 Capacity Available = 687,000 tons

Assumed Usage Rate = 935 cy/day
 Months of Capacity = 40.3 mo
 Projected Completion = August, 2022

Net Excavation Required

Cell 8 = 1,256,000 cy

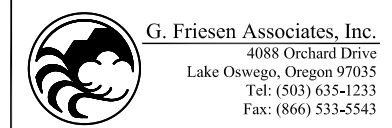
Liner Required

Cell 8 = 12.5 acres

| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 800 | 368956.12 | 3307583.16 | 3730.00 |
| 801 | 369330.33 | 3307583.16 | 3605.52 |
| 802 | 369788.18 | 3307582.48 | 3611.33 |
| 803 | 370073.02 | 3307582.48 | 3705.44 |
| 804 | 368934.69 | 3308012.74 | 3730.00 |
| 805 | 369341.02 | 3307695.12 | 3600.07 |
| 806 | 369556.02 | 3307694.81 | 3602.79 |
| 807 | 369772.27 | 3307692.86 | 3606.03 |
| 808 | 369680.18 | 3307874.41 | 3613.00 |
| 809 | 369693.98 | 3308066.47 | 3615.93 |
| 810 | 369693.24 | 3308116.47 | 3616.56 |
| 811 | 369574.34 | 3307879.59 | 3612.00 |
| 812 | 369563.79 | 3308066.47 | 3622.00 |
| 813 | 369559.89 | 3308116.47 | 3622.79 |
| 814 | 369821.99 | 3308016.36 | 3621.50 |
| 815 | 369824.44 | 3308066.35 | 3622.25 |
| 816 | 369827.01 | 3308118.90 | 3623.04 |
| 817 | 369788.40 | 3308129.36 | 3623.04 |
| 818 | 370078.63 | 3307779.80 | 3707.42 |
| 819 | 370071.04 | 3308015.99 | 3705.06 |
| 820 | 370069.67 | 3308066.00 | 3704.56 |
| 821 | 370065.12 | 3308231.03 | 3702.92 |
| 822 | 370077.11 | 3308630.91 | 3706.92 |
| 823 | 370065.47 | 3308998.93 | 3703.21 |
| 824 | 370026.87 | 3309009.40 | 3703.21 |
| 825 | 369966.69 | 3308634.37 | 3670.00 |
| 826 | 369928.17 | 3308644.86 | 3670.00 |
| 827 | 369877.24 | 3308305.24 | 3640.01 |
| 828 | 369839.18 | 3308315.58 | 3640.01 |
| 829 | 369692.43 | 3308283.71 | 3700.44 |
| 830 | 369559.71 | 3308275.28 | 3702.20 |
| 831 | 369343.18 | 3308147.20 | 3704.00 |
| 832 | 369239.61 | 3308116.10 | 3727.75 |
| 833 | 369239.95 | 3308066.05 | 3728.00 |
| 834 | 370058.26 | 3307071.70 | 3701.00 |
| 835 | 370022.94 | 3307054.05 | 3701.00 |
| 836 | 369946.07 | 3307159.36 | 3690.00 |
| 837 | 369978.28 | 3307182.91 | 3690.00 |
| 838 | 369961.83 | 3307196.02 | 3690.00 |
| 839 | 369311.25 | 3307433.17 | 3628.00 |
| 840 | 369326.79 | 3307470.09 | 3628.00 |
| 841 | 369267.72 | 3307478.42 | 3628.00 |
| 842 | 369262.98 | 3307570.24 | 3628.00 |
| 843 | 369917.21 | 3307032.13 | 3711.99 |
| 844 | 369785.15 | 3306989.63 | 3722.00 |
| 845 | 369661.91 | 3306951.03 | 3728.00 |
| 846 | 369478.65 | 3306952.77 | 3728.00 |
| 847 | 369330.06 | 3306968.86 | 3728.00 |
| 848 | 369074.48 | 3307036.17 | 3720.79 |
| 849 | 368946.87 | 3307175.18 | 3720.00 |
| 850 | 368946.10 | 3307437.52 | 3728.00 |

| | | | |
|-----|---------|----|-------------------------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION |
| No. | DATE | BY | REVISION |

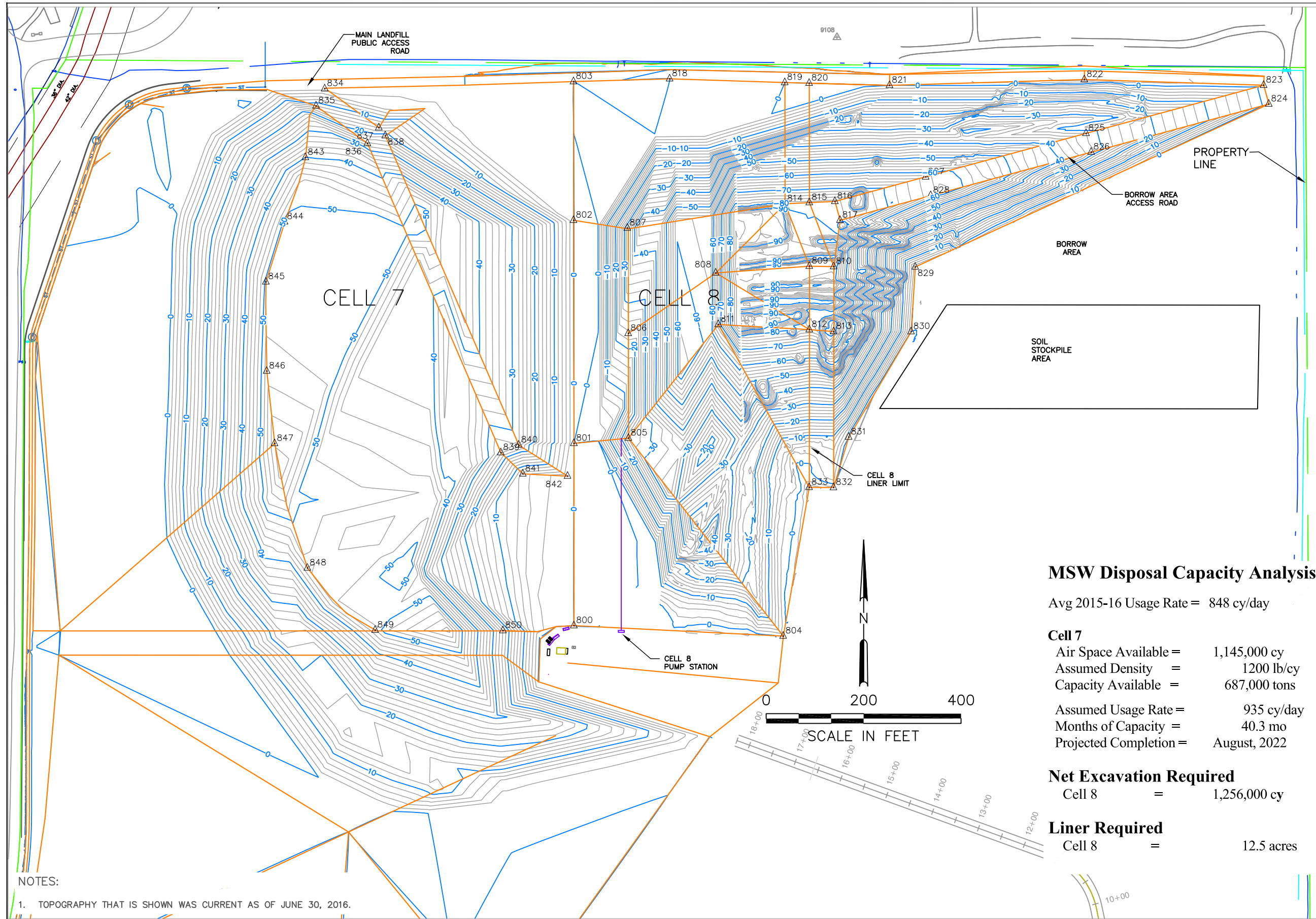
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|----------|-------------|-----------------|
| JOB No. | DESIGNED: | PROJ. ENGINEER: |
| 00172 | GF | GF |
| SCALE: | DRAWN BY: | APPROVED BY: |
| AS SHOWN | GF | CC |
| | CHECKED BY: | DATE: |
| | GF | 11/2/16 |



KNOTT LANDFILL
2016 SEQUENCE PLAN
DESCHUTES COUNTY, OREGON

Cell 7 - MSW Fill Plan
Cell 8 - Subgrade Plan

| | |
|------------------|------|
| DRAWING NUMBER: | |
| 6 | |
| CAD FILE NUMBER: | |
| SHEET: | REV. |
| 6 OF 10 | A |



| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 800 | 368956.12 | 3307583.16 | 3730.00 |
| 801 | 369330.33 | 3307583.16 | 3605.52 |
| 802 | 369788.18 | 3307582.48 | 3611.33 |
| 803 | 370073.02 | 3307582.48 | 3705.44 |
| 804 | 368934.69 | 3308012.74 | 3730.00 |
| 805 | 369341.02 | 3307695.12 | 3600.07 |
| 806 | 369556.02 | 3307694.81 | 3602.79 |
| 807 | 369772.27 | 3307692.86 | 3606.03 |
| 808 | 369680.18 | 3307874.41 | 3613.00 |
| 809 | 369693.98 | 3308066.47 | 3615.93 |
| 810 | 369693.24 | 3308116.47 | 3616.56 |
| 811 | 369574.34 | 3307879.59 | 3612.00 |
| 812 | 369563.79 | 3308066.47 | 3622.00 |
| 813 | 369559.89 | 3308116.47 | 3622.79 |
| 814 | 369821.99 | 3308016.36 | 3621.50 |
| 815 | 369824.44 | 3308066.35 | 3622.25 |
| 816 | 369827.01 | 3308118.90 | 3623.04 |
| 817 | 369788.40 | 3308129.36 | 3623.04 |
| 818 | 370078.63 | 3307779.80 | 3707.42 |
| 819 | 370071.04 | 3308015.99 | 3705.06 |
| 820 | 370069.67 | 3308066.00 | 3704.56 |
| 821 | 370065.12 | 3308231.03 | 3702.92 |
| 822 | 370077.11 | 3308630.91 | 3706.92 |
| 823 | 370065.47 | 3308998.93 | 3703.21 |
| 824 | 370026.87 | 3309009.40 | 3703.21 |
| 825 | 369966.69 | 3308634.37 | 3670.00 |
| 826 | 369928.17 | 3308644.86 | 3670.00 |
| 827 | 369877.24 | 3308305.24 | 3640.01 |
| 828 | 369839.18 | 3308315.58 | 3640.01 |
| 829 | 369692.43 | 3308283.71 | 3700.44 |
| 830 | 369559.71 | 3308275.28 | 3702.20 |
| 831 | 369343.18 | 3308147.20 | 3704.00 |
| 832 | 369239.61 | 3308116.10 | 3727.75 |
| 833 | 369239.95 | 3308066.05 | 3728.00 |
| 834 | 370058.26 | 3307071.70 | 3701.00 |
| 835 | 370022.94 | 3307054.05 | 3701.00 |
| 836 | 369946.07 | 3307159.36 | 3690.00 |
| 837 | 369978.28 | 3307182.91 | 3690.00 |
| 838 | 369961.83 | 3307196.02 | 3690.00 |
| 839 | 369311.25 | 3307433.17 | 3628.00 |
| 840 | 369326.79 | 3307470.09 | 3628.00 |
| 841 | 369267.72 | 3307478.42 | 3628.00 |
| 842 | 369262.98 | 3307570.24 | 3628.00 |
| 843 | 369917.21 | 3307032.13 | 3711.99 |
| 844 | 369785.15 | 3306989.63 | 3722.00 |
| 845 | 369661.91 | 3306951.03 | 3728.00 |
| 846 | 369478.65 | 3306952.77 | 3728.00 |
| 847 | 369330.06 | 3306968.86 | 3728.00 |
| 848 | 369074.48 | 3307036.17 | 3720.79 |
| 849 | 368946.87 | 3307175.18 | 3720.00 |
| 850 | 368946.10 | 3307437.52 | 3728.00 |

MSW Disposal Capacity Analysis

Avg 2015-16 Usage Rate = 848 cy/day

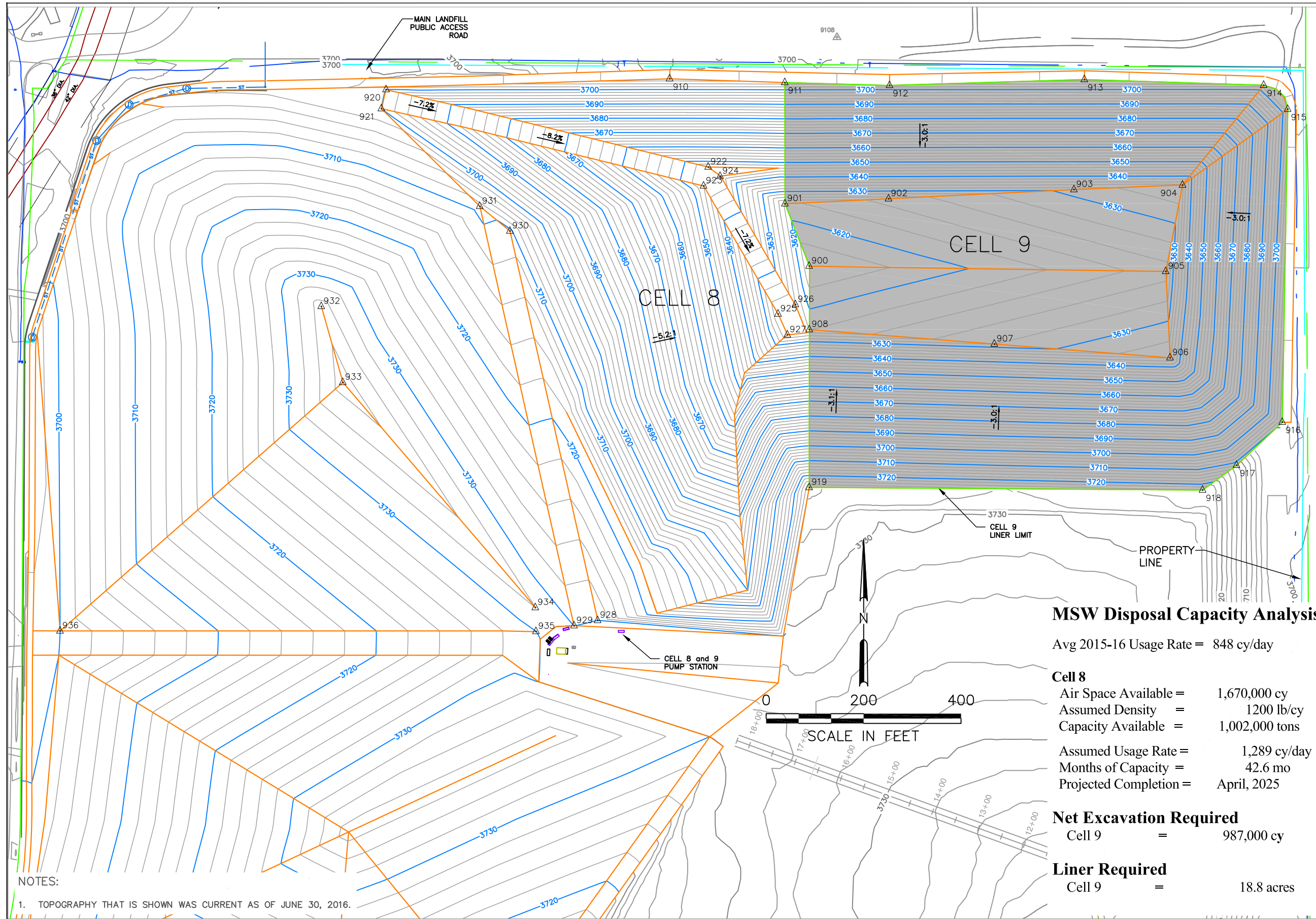
Cell 7
 Air Space Available = 1,145,000 cy
 Assumed Density = 1200 lb/cy
 Capacity Available = 687,000 tons
 Assumed Usage Rate = 935 cy/day
 Months of Capacity = 40.3 mo
 Projected Completion = August, 2022

Net Excavation Required
 Cell 8 = 1,256,000 cy

Liner Required
 Cell 8 = 12.5 acres

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

| | | | | | | | | | | | | | |
|-----|---------|----|-------------------------|--------------------|-----------------|-------------------|--|--|---|----------------------|------------------|-------------------|-----------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION | JOB No. | DESIGNED: | PROJ. ENGINEER: | G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 | KNOTT LANDFILL 2016 SEQUENCE PLAN DESCHUTES COUNTY, OREGON | Cell 7 - MSW Fill Depths Cell 8 - Cuts and Fills | DRAWING NUMBER: 7 | CAD FILE NUMBER: | SHEET: 7 of 10 | REV. A |
| | | | | 00172 | GF | GF | | | | | | | |
| No. | DATE | BY | REVISION | SCALE: AS SHOWN | DRAWN BY: GF | CHECKED BY: GF | | | | | | | |



| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 900 | 369694.12 | 3308066.06 | 3616.01 |
| 901 | 369821.99 | 3308016.36 | 3621.50 |
| 902 | 369832.41 | 3308229.12 | 3624.70 |
| 903 | 369851.27 | 3308609.56 | 3630.70 |
| 904 | 369860.49 | 3308832.38 | 3634.08 |
| 905 | 369683.12 | 3308797.96 | 3625.05 |
| 906 | 369505.99 | 3308806.81 | 3633.70 |
| 907 | 369534.15 | 3308446.13 | 3628.00 |
| 908 | 369563.85 | 3308066.39 | 3622.01 |
| 910 | 370078.63 | 3307779.80 | 3707.42 |
| 911 | 370071.04 | 3308015.99 | 3705.06 |
| 912 | 370065.12 | 3308231.03 | 3702.92 |
| 913 | 370077.11 | 3308630.91 | 3706.92 |
| 914 | 370065.47 | 3308998.93 | 3703.21 |
| 915 | 370016.20 | 3309048.21 | 3703.21 |
| 916 | 369373.88 | 3309037.10 | 3709.70 |
| 917 | 369285.35 | 3308943.31 | 3712.00 |
| 918 | 369234.48 | 3308873.50 | 3724.00 |
| 919 | 369239.76 | 3308066.27 | 3728.00 |
| 920 | 370056.59 | 3307197.71 | 3700.10 |
| 921 | 370017.33 | 3307188.04 | 3700.00 |
| 922 | 369897.54 | 3307858.89 | 3646.00 |
| 923 | 369858.68 | 3307849.37 | 3646.00 |
| 924 | 369878.47 | 3307883.19 | 3646.00 |
| 925 | 369595.90 | 3308002.22 | 3624.00 |
| 926 | 369615.27 | 3308037.83 | 3624.01 |
| 927 | 369553.08 | 3308021.48 | 3624.00 |
| 928 | 368966.93 | 3307631.98 | 3730.00 |
| 929 | 368956.06 | 3307583.54 | 3730.00 |
| 930 | 369766.09 | 3307451.88 | 3710.71 |
| 931 | 369816.78 | 3307389.95 | 3709.11 |
| 932 | 369611.32 | 3307064.74 | 3735.00 |
| 933 | 369455.55 | 3307108.86 | 3737.00 |
| 934 | 368993.12 | 3307504.05 | 3732.00 |
| 935 | 368944.27 | 3307505.36 | 3730.00 |
| 936 | 368945.28 | 3306528.54 | 3700.00 |

MSW Disposal Capacity Analysis

Avg 2015-16 Usage Rate = 848 cy/day

Cell 8
 Air Space Available = 1,670,000 cy
 Assumed Density = 1200 lb/cy
 Capacity Available = 1,002,000 tons

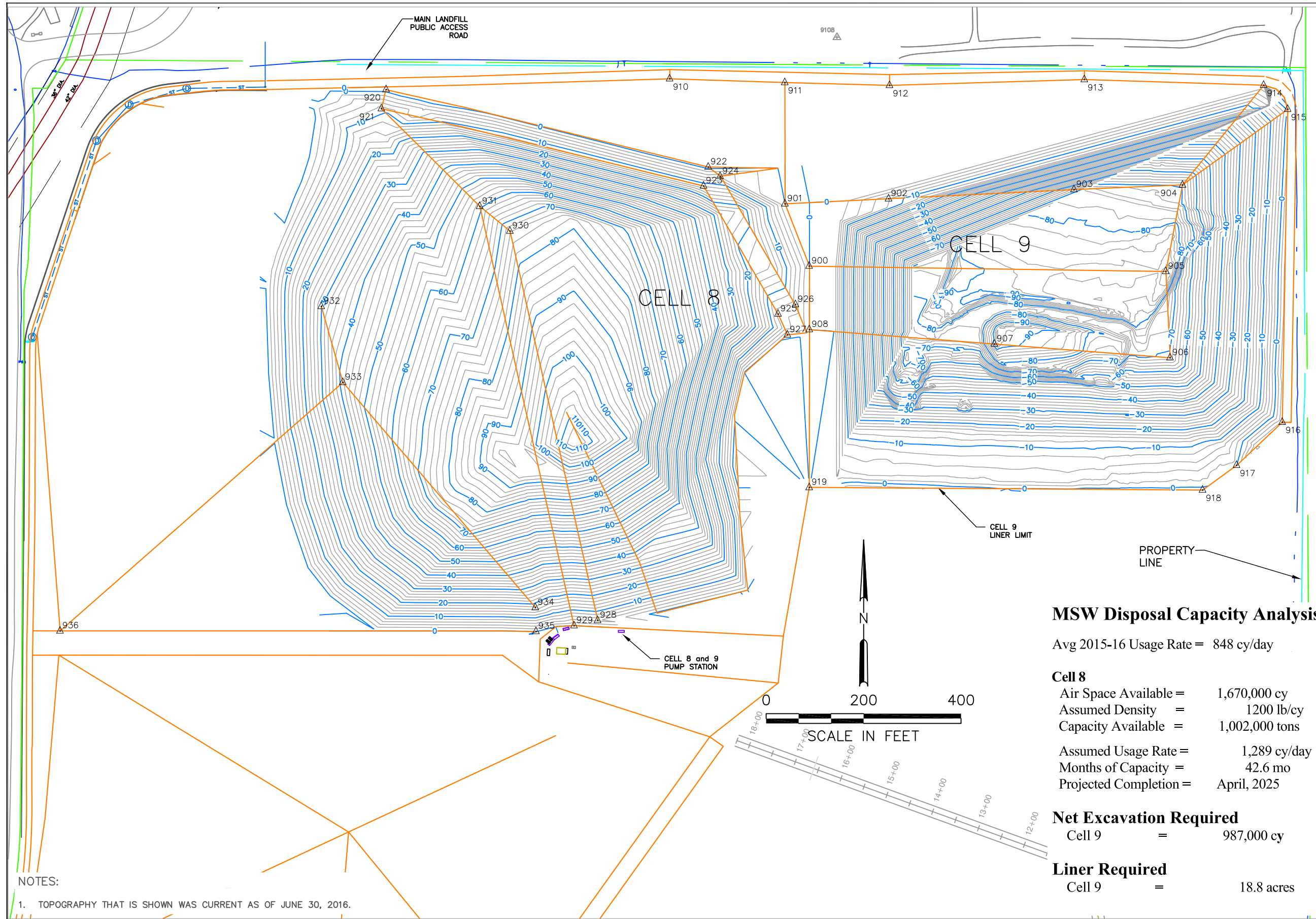
Assumed Usage Rate = 1,289 cy/day
 Months of Capacity = 42.6 mo
 Projected Completion = April, 2025

Net Excavation Required
 Cell 9 = 987,000 cy

Liner Required
 Cell 9 = 18.8 acres

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

| | | | | | | | | | | | |
|-----|---------|----|-------------------------|----------|-----------|-----------------|--|---|--|----------------------|------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION | JOB No. | DESIGNED: | PROJ. ENGINEER: | G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 | KNOTT LANDFILL 2016 CELL SEQUENCE PLAN DESCHUTES COUNTY, OREGON | Cell 8 - MSW Fill Plan Cell 9 - Subgrade Plan | DRAWING NUMBER: 8 | |
| | | | | SCALE: | DRAWN BY: | APPROVED BY: | | | | CAD FILE NUMBER: | |
| No. | DATE | BY | REVISION | AS SHOWN | GF | CC | | | | SHEET: | REV. |
| | | | | | GF | 11/2/16 | | | | 8 of 10 | A |



| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 900 | 369694.12 | 3308066.06 | 3616.01 |
| 901 | 369821.99 | 3308016.36 | 3621.50 |
| 902 | 369832.41 | 3308229.12 | 3624.70 |
| 903 | 369851.27 | 3308609.56 | 3630.70 |
| 904 | 369860.49 | 3308832.38 | 3634.08 |
| 905 | 369683.12 | 3308797.96 | 3625.05 |
| 906 | 369505.99 | 3308806.81 | 3633.70 |
| 907 | 369534.15 | 3308446.13 | 3628.00 |
| 908 | 369563.85 | 3308066.39 | 3622.01 |
| 910 | 370078.63 | 3307779.80 | 3707.42 |
| 911 | 370071.04 | 3308015.99 | 3705.06 |
| 912 | 370065.12 | 3308231.03 | 3702.92 |
| 913 | 370077.11 | 3308630.91 | 3706.92 |
| 914 | 370065.47 | 3308998.93 | 3703.21 |
| 915 | 370016.20 | 3309048.21 | 3703.21 |
| 916 | 369373.88 | 3309037.10 | 3709.70 |
| 917 | 369285.35 | 3308943.31 | 3712.00 |
| 918 | 369234.48 | 3308873.50 | 3724.00 |
| 919 | 369239.76 | 3308066.27 | 3728.00 |
| 920 | 370056.59 | 3307197.71 | 3700.10 |
| 921 | 370017.33 | 3307188.04 | 3700.00 |
| 922 | 369897.54 | 3307858.89 | 3646.00 |
| 923 | 369858.68 | 3307849.37 | 3646.00 |
| 924 | 369878.47 | 3307883.19 | 3646.00 |
| 925 | 369595.90 | 3308002.22 | 3624.00 |
| 926 | 369615.27 | 3308037.83 | 3624.01 |
| 927 | 369553.08 | 3308021.48 | 3624.00 |
| 928 | 368966.93 | 3307631.98 | 3730.00 |
| 929 | 368956.06 | 3307583.54 | 3730.00 |
| 930 | 369766.09 | 3307451.88 | 3710.71 |
| 931 | 369816.78 | 3307389.95 | 3709.11 |
| 932 | 369611.32 | 3307064.74 | 3735.00 |
| 933 | 369455.55 | 3307108.86 | 3737.00 |
| 934 | 368993.12 | 3307504.05 | 3732.00 |
| 935 | 368944.27 | 3307505.36 | 3730.00 |
| 936 | 368945.28 | 3306528.54 | 3700.00 |

MSW Disposal Capacity Analysis

Avg 2015-16 Usage Rate = 848 cy/day

Cell 8
 Air Space Available = 1,670,000 cy
 Assumed Density = 1200 lb/cy
 Capacity Available = 1,002,000 tons

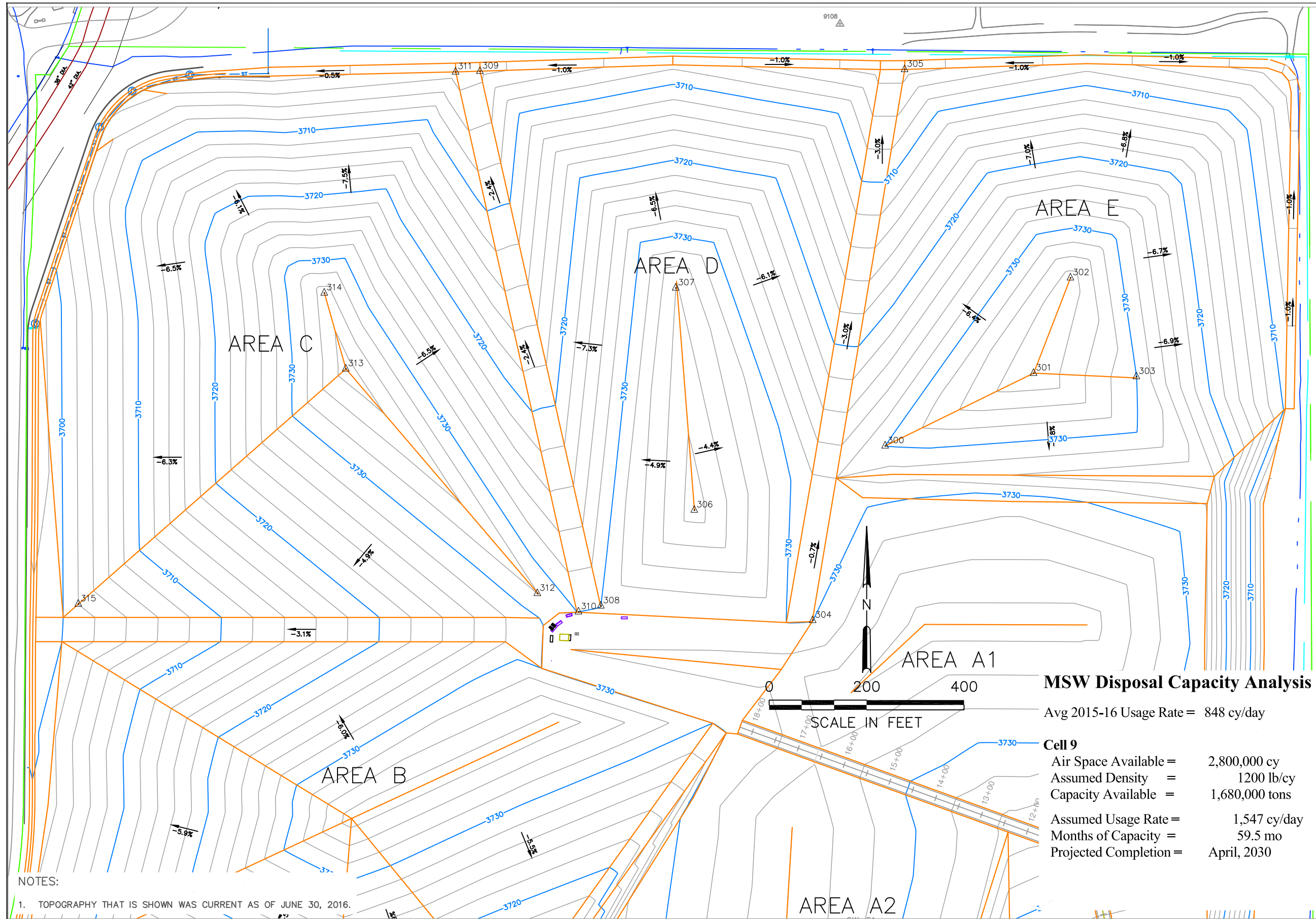
Assumed Usage Rate = 1,289 cy/day
 Months of Capacity = 42.6 mo
 Projected Completion = April, 2025

Net Excavation Required
 Cell 9 = 987,000 cy

Liner Required
 Cell 9 = 18.8 acres

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

| | | | | | | | | | | | |
|-----|---------|----|-------------------------|-------------|-----------|-----------------|--|--|--|-----------------|------------------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION | JOB No. | DESIGNED: | PROJ. ENGINEER: |  G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 | KNOTT LANDFILL 2016 CELL SEQUENCE PLAN DESCHUTES COUNTY, OREGON | Cell 8 - MSW Fill Depths Cell 9 - Cut and Fill Depths | DRAWING NUMBER: | |
| | | | | 00172 | GF | GF | | | | 9 | CAD FILE NUMBER: |
| No. | DATE | BY | REVISION | SCALE: | DRAWN BY: | APPROVED BY: | SHEET: 9 OF 10 | REV. A | | | |
| | | | | AS SHOWN | GF | CC | | | | | |
| | | | | CHECKED BY: | DATE: | | | | | | |
| | | | | GF | 11/2/16 | | | | | | |



| Point Table | | | |
|-------------|-----------|------------|-----------|
| Point # | Northing | Easting | Elevation |
| 300 | 369297.43 | 3308215.97 | 3730.00 |
| 301 | 369446.70 | 3308520.60 | 3738.00 |
| 302 | 369642.41 | 3308596.20 | 3737.00 |
| 303 | 369439.56 | 3308731.56 | 3730.00 |
| 304 | 368939.26 | 3308067.30 | 3730.01 |
| 305 | 370070.13 | 3308255.91 | 3703.17 |
| 306 | 369165.57 | 3307824.17 | 3739.00 |
| 307 | 369621.53 | 3307786.12 | 3735.97 |
| 308 | 368968.91 | 3307632.33 | 3730.01 |
| 309 | 370066.50 | 3307384.19 | 3703.46 |
| 310 | 368956.78 | 3307586.61 | 3730.00 |
| 311 | 370065.13 | 3307334.20 | 3703.08 |
| 312 | 368994.56 | 3307502.00 | 3731.99 |
| 313 | 369455.55 | 3307108.86 | 3737.00 |
| 314 | 369611.32 | 3307064.74 | 3735.00 |
| 315 | 368972.86 | 3306559.90 | 3702.00 |

MSW Disposal Capacity Analysis

Avg 2015-16 Usage Rate = 848 cy/day

Cell 9
 Air Space Available = 2,800,000 cy
 Assumed Density = 1200 lb/cy
 Capacity Available = 1,680,000 tons

Assumed Usage Rate = 1,547 cy/day
 Months of Capacity = 59.5 mo
 Projected Completion = April, 2030

NOTES:
 1. TOPOGRAPHY THAT IS SHOWN WAS CURRENT AS OF JUNE 30, 2016.

| | | | | | | | | | | | |
|---|---------|------|-------------------------|------------------|--------------------|-----------------------|--|--|-------------------------------|------------------------------|------------------|
| A | 11/2/16 | GF | ISSUED FOR CONSTRUCTION | JOB No. 00172 | DESIGNED: GF | PROJ. ENGINEER: GF |  G. Friesen Associates, Inc. 4088 Orchard Drive Lake Oswego, Oregon 97035 Tel: (503) 635-1233 Fax: (866) 533-5543 | KNOTT LANDFILL 2016 CELL SEQUENCE PLAN DESCHUTES COUNTY, OREGON | Cell 9 - MSW Fill Plan | DRAWING NUMBER: 10 | |
| | No. | DATE | BY | REVISION | SCALE: AS SHOWN | DRAWN BY: GF | | | | APPROVED BY: CC | CAD FILE NUMBER: |
| | | | | | CHECKED BY: GF | DATE: 11/2/16 | | | | SHEET: 10 of 10 | REV. A |