

II.c Engineering Report – Plans, Specifications, And Calculations

II.c.1 Unit Design to include cover design; fill methods; and evaluation of final cover R315-310-3(1)(b) and R315-310-4(2)(c)(iii)_

The Ibapah Solid Waste Facility is classed as a Class IVb Landfill subject to requirements outlined by Utah Administrative Code 315-305 and is therefore utilized for the disposal of specific categories of waste including C&D waste, inert waste, yard waste, and dead animals. The area permitted to receive this waste includes approximately 10 acres and, as of 2021, waste disposal operations are conducted within the southern portion of the fenced-in area, which is itself only a part of the entire permitted area. Over time, as the cell reaches design elevations and undergoes final closure, the disposal area may shift to any part of the permitted area. For a reference providing final cover elevations as well as a conceptual design of partial buildout, please refer to Appendix I: Figure I-1

Following full utilization, closure activities will include the installation of 18 inches of cover soil, covered with a 6-inch-thick layer of site soils capable of supporting vegetation, providing a total final cover thickness of 24 inches. The maximum side slopes of the finished cell shall be 3H:1V with a top surface proving a minimum grade of 2% in a northwesterly direction, following the placement and contouring of final cover layers, the final cover shall be vegetated with a mixture of range grasses indigenous to the area. During the course of cell-utilization the commonly used fill method on a day-to-day basis is the “canyon-fill” method, where waste is deposited at either the base or top of a lift (depending on the current landfill topographic conditions) and then pushed or compacted on the working face through the use of landfill equipment.

II.c.2 Design and location of run-on and run-off control systems R315-310-4(2)(c)(viii)

Aside from periodic coverage of deposited waste, the Ibapah Solid Waste Facility does not contain an extensive man-made runoff/runoff control system. Due to the arid conditions of the site, as well as the isolated location of the facility, limited diversion structures have proven sufficient up until the present date. In the event of a severe storm resulting in higher-than-normal run-on/run-off volumes, incoming waste would be temporarily halted until conditions became dry enough to resume operations.

4.6.1 Run-on/Run-off Analysis

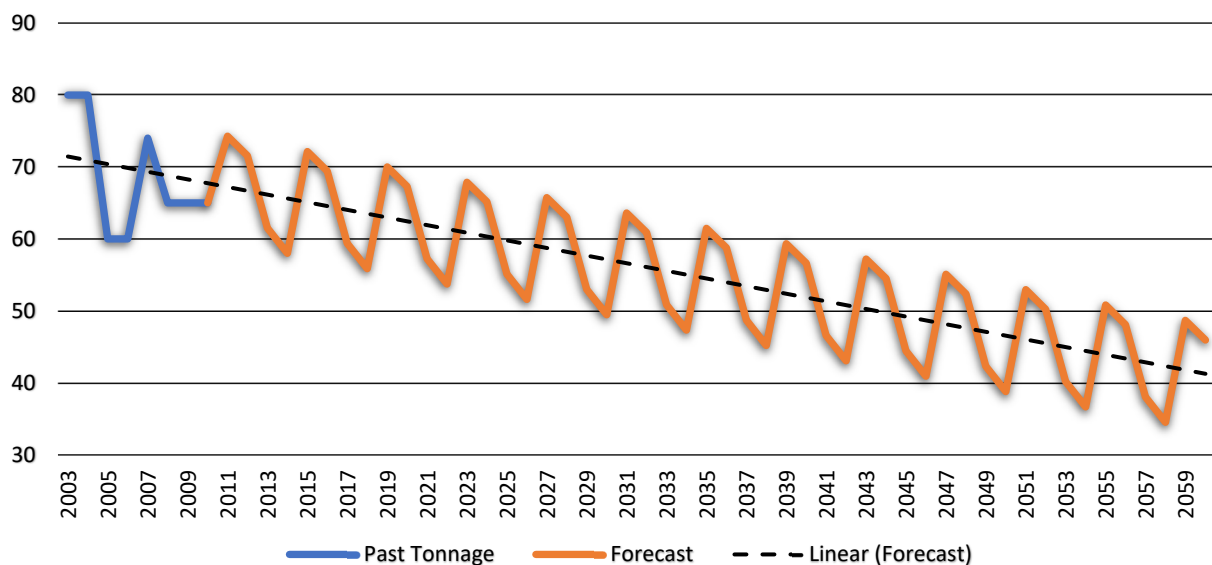
For permitting purposes, a drainage analysis was completed for the proposed cell development of the Ibapah Solid Waste Facility. The site, covering a relatively small area, was analyzed using a single drainage zone encompassing the entire site, which can be referenced in Appendix F: Figure SW-1.

Run-on flow from adjacent areas was assumed to be negligible. The precipitation for the 25-year, 24-hour storm event is 2.22 inches (NOAA, Atlas 14, Volume 1) The watershed soil exhibits the properties of hydrologic group “B” (sandy loam) and sagebrush with grass that is in poor condition, with a Runoff Curve Number of 51 based on general conditions at the site. Details of the input parameters and the model output are included in Appendix F.

The peak flow generated from the 25-year 24-hour storm event was determined for the zone by applying the National Resource Conservation Service Technical Release Number 55 (NRSC TR-55) method.

II.c.3 Anticipated facility life and the basis for calculating the facility’s life
R315-310-4(2)(c)(ii)

The remaining capacity (relative to the final concept grading plan presented in Figure I-2) of the Ibapah Solid Waste Facility is approximately 4,845 tons. While the estimated value used for the annual tonnage entering the Landfill was 65 tons (AE², 2018). As exhibited in the chart below, available annual data would likelihood for a slight decline in incoming waste punctuated by periodic increases, resulting in a longer lifespan. This is supported by a local population that has seen decline in recent years. However, as the data provided is too limited for projecting many years ahead, the anticipated life was based on a constant of 65 tons, which was years of disposal based on available fill volume with expected daily-waste disposal rates and an in-place density of 900 pounds per cubic yard (PCY).



II.c.4 Engineering Reports required to meet location standards **R315-310-4(2)(c)(i)**

As this facility represents an existing, non-expanding, permitted area, location standards are not relevant to this application.

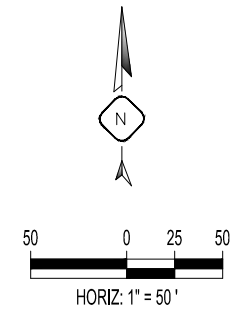
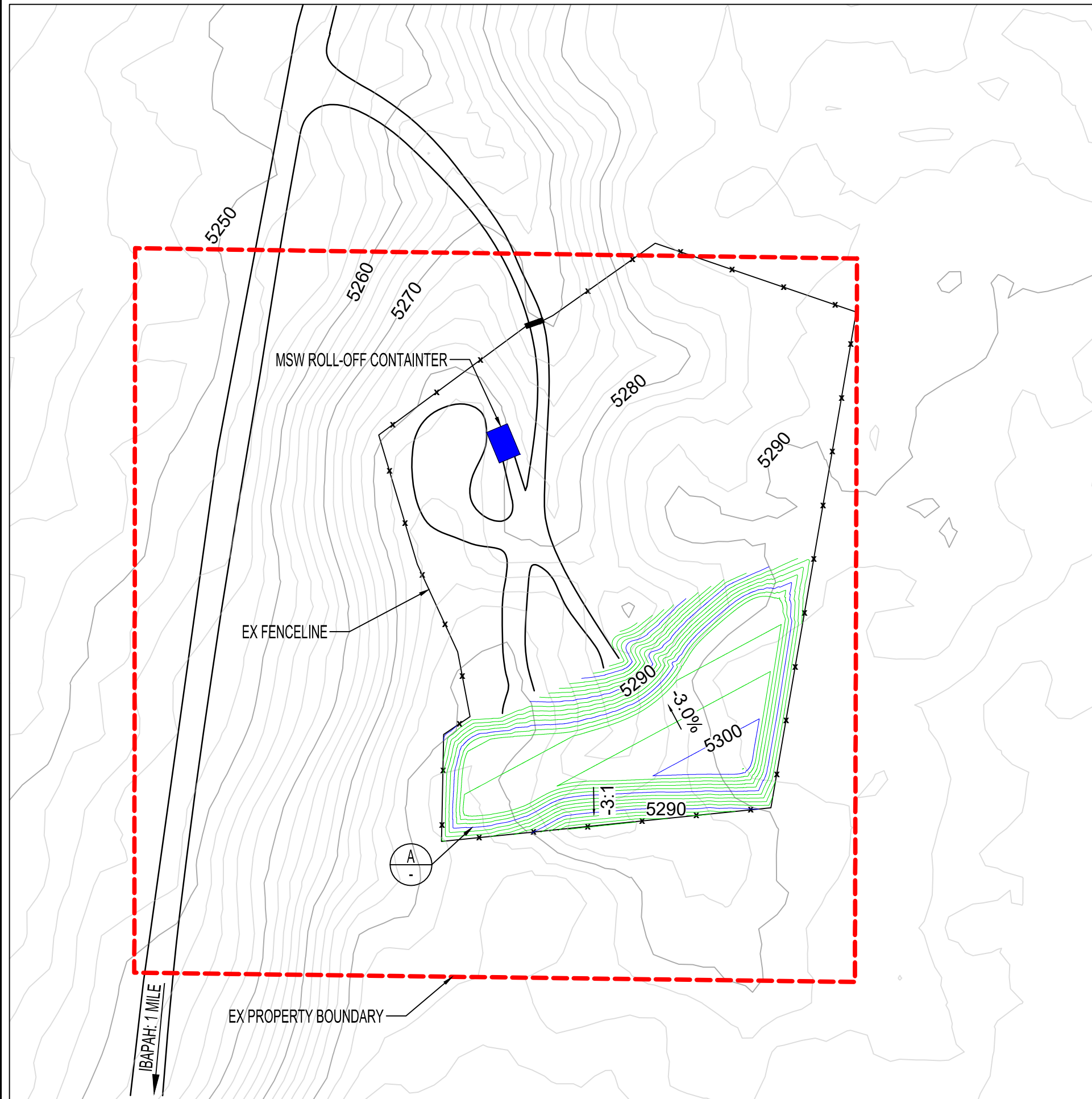
II.c.5 Identification of borrow sources for final cover **R315-310-4(2)(c)(iv)**

The primary borrow source for short-medium term operations will be a designated area located in an east-central area of the site (Appendix A, Figure A2). However, the majority of the site is available as a borrow source if needed.

II.c.6 Run-off collection, treatment, and disposal and DWQ documentation **R315-310-4(6)(c)(v) & R315-310-3(1)(i)**

Run-on and run-off storm water is controlled during both the open and closed phases of all disposal cells. Drainage swales are used to divert water around a cell into existing, on-site, swales in order to prevent ponding against refuse. As an additional measure, the active area of the working face is minimized in order to further reduce the potential for stormwater to come into contact with disposed waste. Final cover run-off is routed to perimeter drainage swales and subsequently discharged into on-site retention basins in such a manner as to minimize erosion. Run-off along access roads is controlled through the use of lowered-profile waterways.

Due to the type of waste disposed (which is not as conducive to leachate production) within the landfill, as well as the classification of the facility itself, no leachate collection is required. No effluent or outflow from a leachate containment system leaves the site.



LEGEND

PROPERTY LINE	
FENCELINE	
EX ROADWAY	
EX MAJOR CONTOUR	5005
EX MINOR CONTOUR	5001
PR MAJOR CONTOUR	5005
PR MINOR CONTOUR	5001

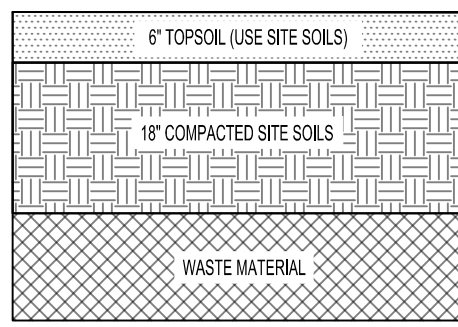
FINISHED CELL STATISTICS (900 PCY)

TOTAL REMAINING VOLUME: 13,460 CY (~6060 TONS)

DISPOSAL VOLUME: 10,768 CY (~4845 TONS)

COVER VOLUME: 2,692 CY (~1211 TONS)

FINAL COVER ELEVATION AT HIGH POINT: 5,300 FT.



A PROPOSED FINAL COVER
- N.T.S

NO.	DATE	REVISION

DRAWING IS NOT TO SCALE IF BAR DOES NOT MEASURE 1/2 INCH

FINAL GRADING PLAN

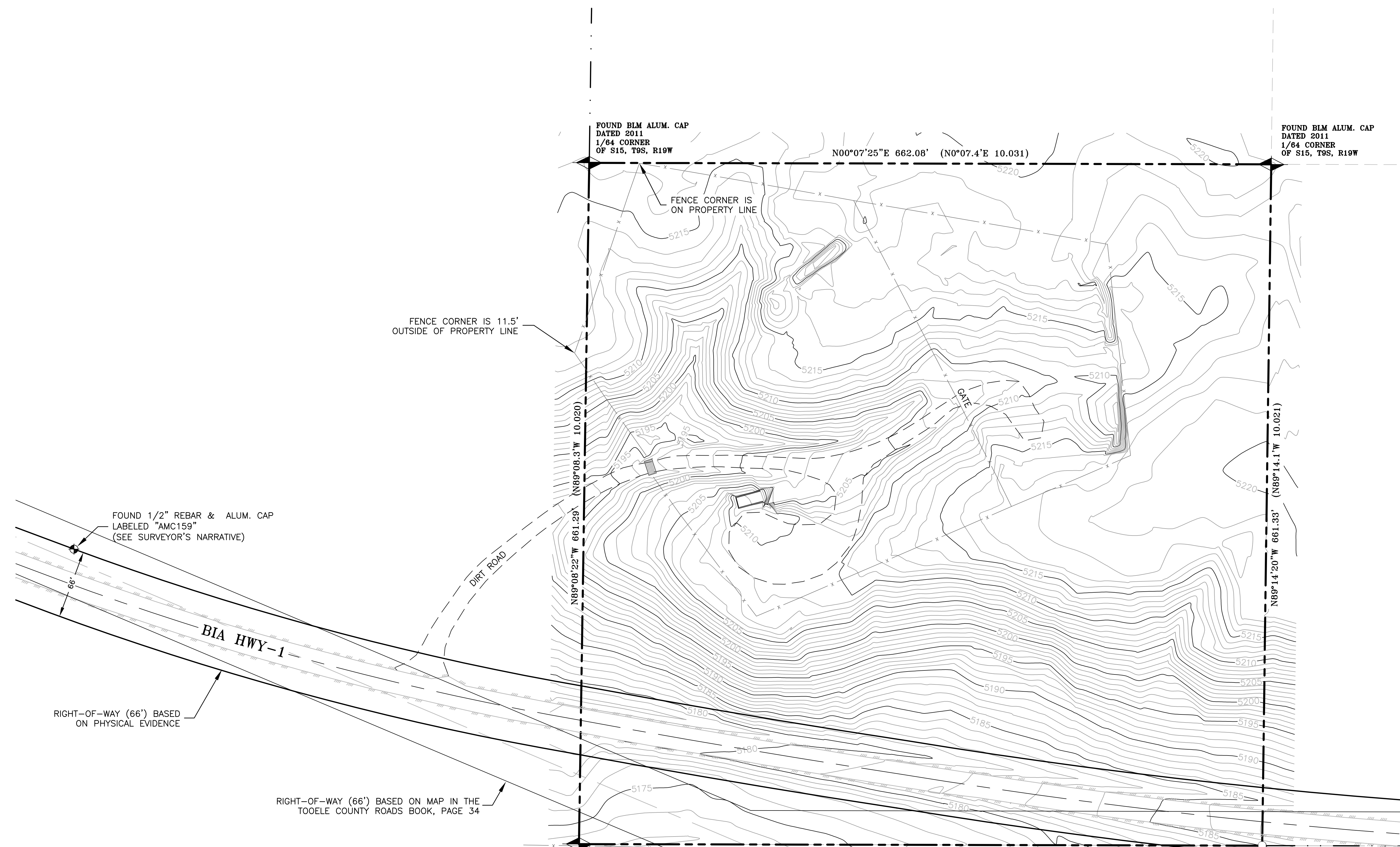
IBAPAH WASTE MANAGEMENT FACILITY
TOOELE COUNTY, UTAH



DESIGN:	
DRAWN:	TL
CHECKED:	CH
DATE:	11/29/21



**IBAPAH LANDFILL
RECORD OF SURVEY**
LOCATED IN THE NORTHWEST QUARTER OF SECTION 15,
TOWNSHIP 9 SOUTH, RANGE 19 WEST,
SALT LAKE BASE AND MERIDIAN



FOUND 1/2" REBAR & ALUM. CAP
LABELED "AMC159"
(SEE SURVEYOR'S NARRATIVE)

RIGHT-OF-WAY (66') BASED
ON PHYSICAL EVIDENCE

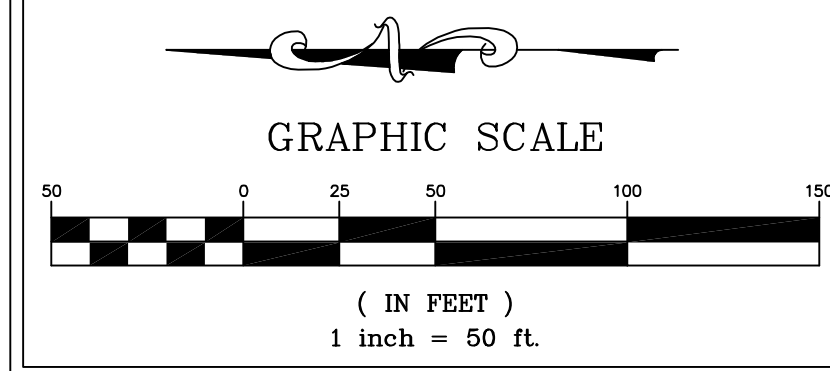
RIGHT-OF-WAY (66') BASED ON MAP IN THE
TOOELE COUNTY ROADS BOOK, PAGE 34

FOUND BLM ALUM. CAP
DATED 2011
1/64 CORNER
OF S15, T9S, R19W

FOUND BLM ALUM. CAP
DATED 2011
1/64 CORNER
OF S15, T9S, R19W

FOUND BLM ALUM. CAP
DATED 2011
NORTHWEST CORNER
OF S15, T9S, R19W

SET REBAR & CAP
LABELED "RIDGELINE"



IBAPAH LANDFILL RECORD OF SURVEY

LOCATED IN THE NORTHWEST QUARTER OF SECTION 15
TOWNSHIP 9 SOUTH, RANGE 19 WEST,
SALT LAKE BASE AND MERIDIAN

Ridge Line Inc. Surveying
P.O. Box 36
Tooele, Utah 84074
Tel - 801-866-8081

CLIENT: IBAPAH
DWS: IBAPAH ROS-TOPO.dwg
JOB No: IBAP-2011-01
DRAWING IS REDUCED IF LESS THAN 27.25"
UNLESS NOTED OTHERWISE. SEE SCALE

DRAWN BY: JRL/Consulting
DESIGN BY: JRL
CHECKED BY: JRL
DATE: 09/08/11

REVISIONS
NO. DATE BY DESCRIPTION

01 08/28/11 JRL ISSUED TO CLIENT

SHEET:
2 OF 2