

along the temporary soil berm is 3.0 ft/sec on the top dome and the flow velocity through the permanent swale along the top dome is 2.9 ft/sec. Thereafter, the velocity through the downchute is 7.9 ft/sec and the velocity through the swale off the landfill is ~~5.8-6.1~~ 6.1 ft/sec as calculated in Section 3 and presented in Tables 2-4 through 2-6 and Attachment 1.

Drainage and conveyance structures were designed and sized to withstand erosive forces of water and not to exceed the permissible non-erodible velocities presented in Section 3.2.2 and summarized in Table 3-1.

Table 3-1
Comparison of Calculated Flow Velocities and Permissible Non-Erodible Velocities

Type	Velocity	Permissible Non-Erodible Velocity
Temp. Soil Berm – Subtitle D Top Dome	3.0 ft/sec	3 ft/sec (silty-loam)
Swale – Subtitle D Top Dome	2.9 ft/sec	9 to 12 ft/sec (RECP or Recycled Rip-Rap)
Downchute – Off Subtitle D Top Dome	7.9 ft/sec	18 ft/sec (Gabion Mattress)
Swale – Off Landfill	6.1 ft/sec	9 to 12 ft/sec (RECP or Recycled Rip-Rap)

To further reduce flow velocities and allow sediments and other pollutants to settle, rock check dams will be installed along the drainage swales as shown on Sheets C-4 and C-5 in Appendix B (Design Drawings).

The hydraulic calculation supporting this design of the temporary soil berm is included in Attachment 2. The hydraulic calculation supporting the design of the permanent diversion drainage swales are included in Attachment 1.

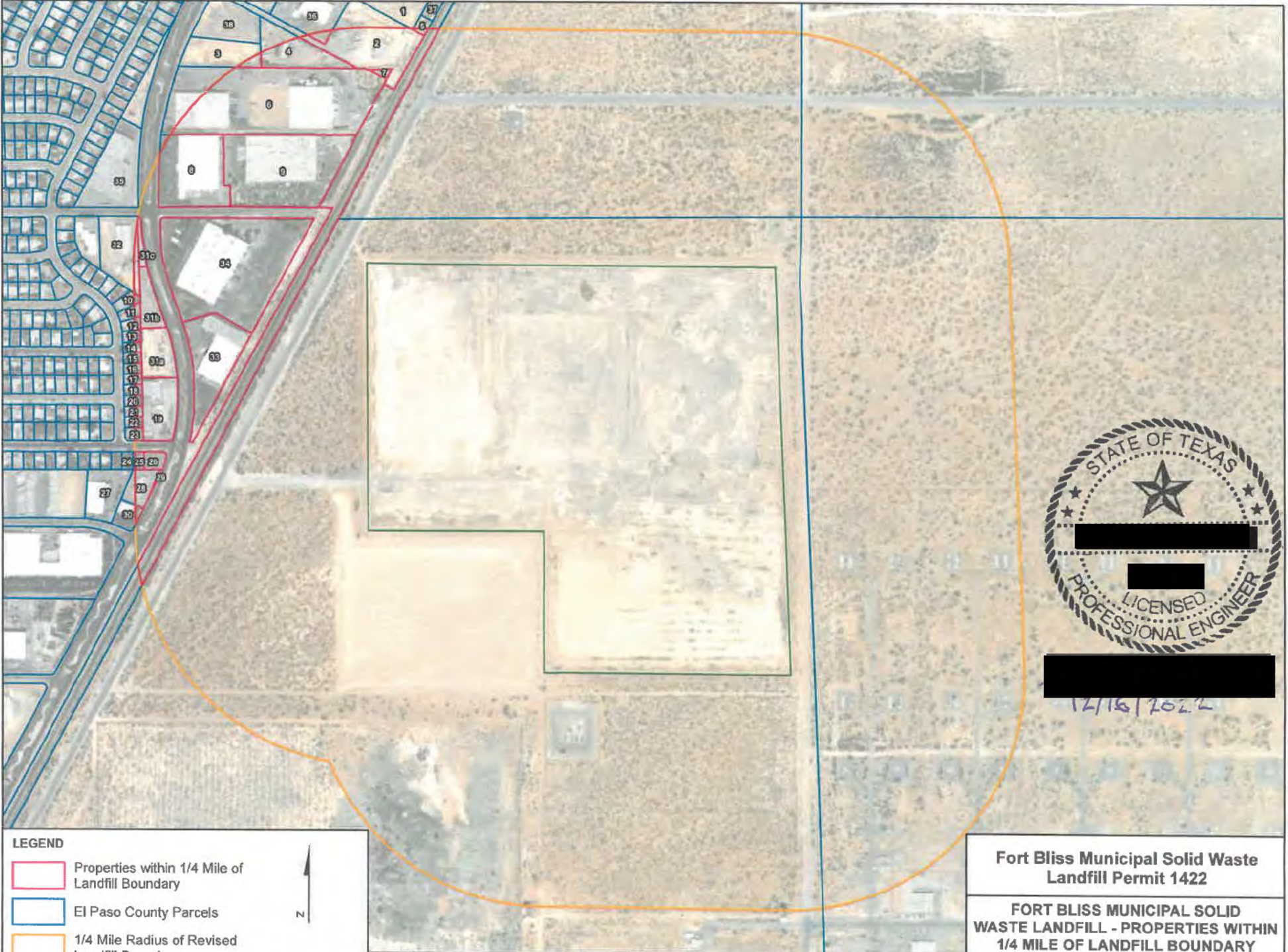
Soil Loss Calculations

Soil erosion loss was estimated utilizing the Revised Universal Soil Loss Equation Version 2 (RUSLE2). RUSLE2 uses factors that represent the effects of climate (erosivity, precipitation, and temperature), soil erodibility, topography, cover management, and support practices to compute soil loss and erosion.

RUSLE2 is a mathematical model that uses a system of equations implemented in a computer program to estimate erosion rates. The other major component of RUSLE2 is a database containing an extensive array of site/county specific values (precipitation, R, EL, etc.) that are used by the RUSLE2 user to describe a site-specific condition so RUSLE2 can compute erosion values that directly reflect conditions at a particular site. The RUSLE2 computer program and its extensive database information were developed by the USDA-Agricultural Research Service (ARS), USDA-Natural Resources Conservation Service

**5b Comment 3_ Part I Attachment: ¼ Mile Landownership Information,
Figure 1**

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City: (i.e. ATL, DAL, HOJ) Div/Group: WATER Last saved by: [REDACTED]
Last saved date: October 10, 2022 10:42 PM
File Location: V



12/16/2022

LEGEND

- Properties within 1/4 Mile of Landfill Boundary
- El Paso County Parcels
- 1/4 Mile Radius of Revised Landfill Boundary
- Landfill Border

Feet
0 500

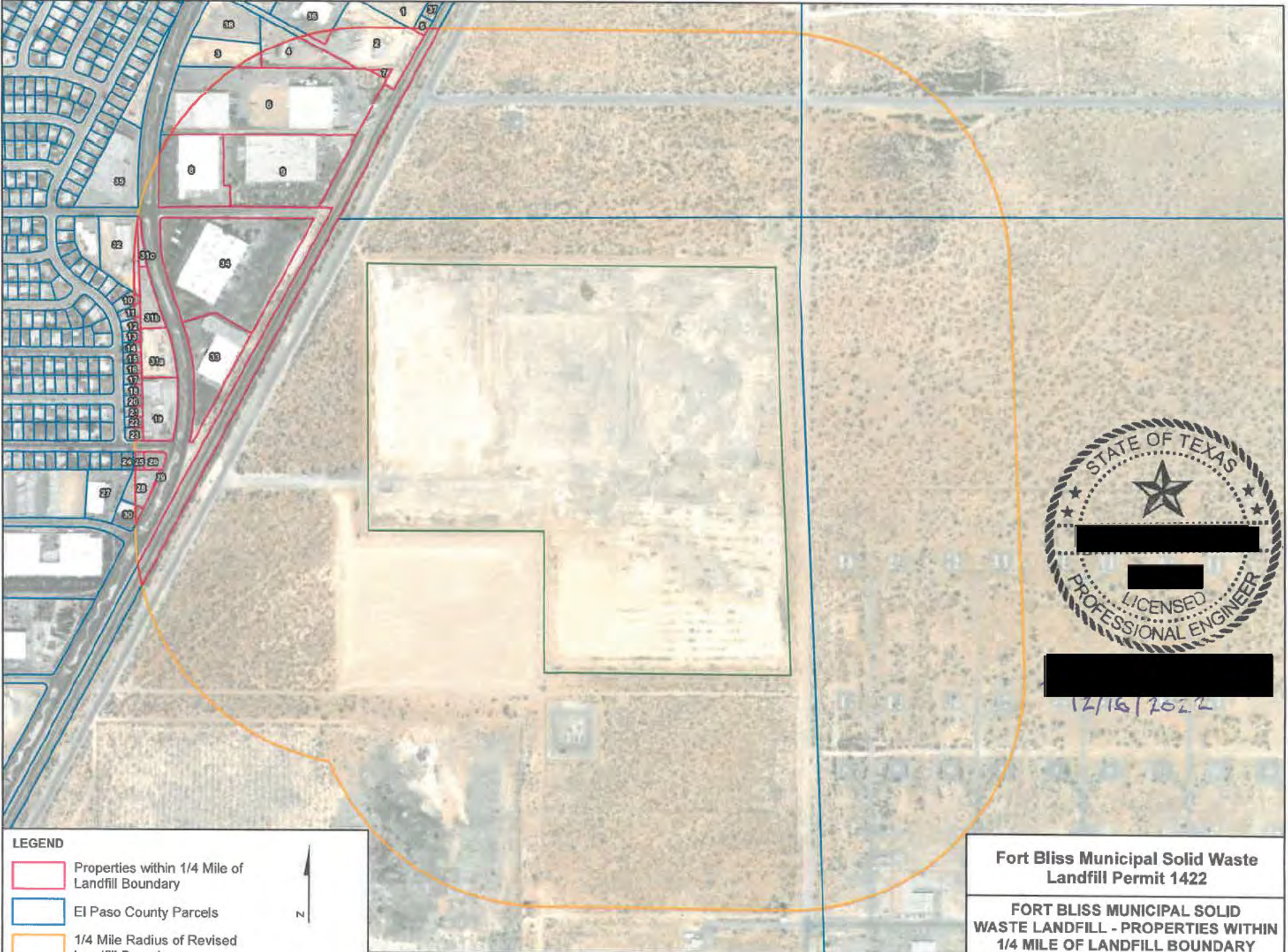
Fort Bliss Municipal Solid Waste Landfill Permit 1422

FORT BLISS MUNICIPAL SOLID WASTE LANDFILL - PROPERTIES WITHIN 1/4 MILE OF LANDFILL BOUNDARY

Permit Modification Application - Permit No. 1422
July 31, 2014
Revision 1: Oct 24, 2014; Revision 2: July 11, 2022; Revision 3: Nov 8, 2022

[REDACTED] FIGURE 1

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Last saved date: October 10, 2022 10:42 PM
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12/16/2022

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- Properties within 1/4 Mile of Landfill Boundary
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Feet
0 500

Fort Bliss Municipal Solid Waste Landfill Permit 1422

FORT BLISS MUNICIPAL SOLID WASTE LANDFILL - PROPERTIES WITHIN 1/4 MILE OF LANDFILL BOUNDARY

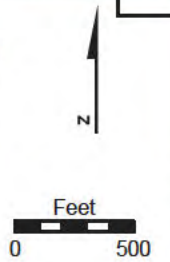
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July 31, 2014
Revision 1: Oct 24, 2014; Revision 2: July 11, 2022; Revision 3: Nov 8, 2022

[REDACTED] FIGURE 1

Project 30143880 City (i.e. ATL, DAL, HOU) Div/Group WATER Last saved by File Location Last saved date October 10, 2022 10:42 PM



- LEGEND**
- Properties within 1/4 Mile of Landfill Boundary
 - El Paso County Parcels
 - 1/4 Mile Radius of Revised Landfill Boundary
 - Landfill Border



**FORT Bliss Municipal Solid Waste
Landfill Permit 1422**

**FORT BLISS MUNICIPAL SOLID
WASTE LANDFILL - PROPERTIES WITHIN
1/4 MILE OF LANDFILL BOUNDARY**

Permit Modification Application - Permit No. 1422
July 31, 2014
Revision 1: Oct 24, 2014; Revision 2: July 11, 2022; Revision 3: Nov 8, 2022

FIGURE
1

**5c Comment 4_ Appendix B Title Page and Table of Contents
(List of Drawings)**

Appendix B – Landfill Modification and Closure Design Drawings

Fort Bliss Municipal Solid Waste
Landfill
Permit 1422

July 2014

Revised October 24, 2014 Rev. 1

Revised July 11, 2022 Rev. 2

Revised December 13, 2022 Rev. 3

Prepared By:

[REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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List of Drawings

- Sheet G-1 Cover Sheet
- Sheet T-1 Survey of Existing Conditions I
- Sheet T-2 Survey of Existing Conditions II
- Sheet C-1 Final Cover Capping Plan
- Sheet C-2 Final Cover Grading Plan I
- Sheet C-3 Final Cover Grading plan II
- Sheet C-4 Final Cover Storm Water Collection Plan I
- Sheet C-5 Final Cover Storm Water Collection Plan II
- Sheet C-6 Final Cover Landfill Cross Section
- Sheet C-7 Typical Cap & Drainage Details
- Sheet C-8 Typical Site Details
- Sheet C-9 Erosion Control Details



Appendix B – Landfill Modification and Closure Design Drawings

Fort Bliss Municipal Solid Waste
Landfill
Permit 1422

July 2014

Revised October 24, 2014 Rev. 1

Revised July 11, 2022 Rev. 2

Revised December 13, 2022 Rev. 3

Prepared By:



[Redacted]

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List of Drawings

Sheet G-1	Cover Sheet
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Sheet T-2	Survey of Existing Conditions II
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Sheet C-2	Final Cover Grading Plan I
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Sheet C-4	Final Cover Storm Water Collection Plan I
Sheet C-5	Final Cover Storm Water Collection Plan II
Sheet C-6	Final Cover Landfill Cross Section
Sheet C-7	Typical Cap & Drainage Details
Sheet C-8	Typical Site Details
Sheet C-9	Erosion Control Details



Appendix B – Landfill Modification and Closure Design Drawings

Fort Bliss Municipal Solid Waste
Landfill
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Sheet C-7	Typical Cap & Drainage Details
Sheet C-8	Typical Site Details
Sheet C-9	Erosion Control Details

5d Comment 5_Appendix L Title Page

Appendix L – Final Facility Surface Water Drainage Report

**Fort Bliss Municipal Solid Waste
Landfill
Permit 1422**

July 2014

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Appendix L – Final Facility Surface Water Drainage Report

**Fort Bliss Municipal Solid Waste
Landfill
Permit 1422**

July 2014

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Revised December 13, 2022 Rev. 4



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Appendix L – Final Facility Surface Water Drainage Report

**Fort Bliss Municipal Solid Waste
Landfill
Permit 1422**

July 2014

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Revised July 11, 2022 Rev. 2

Revised November 8, 2022 Rev. 3

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5e Comment 6_Appendix L Table of Contents



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- Attachment 2: Intermediate Erosion and Soil Control Design Calculations (Peak Runoff Velocity, Swale Design, and Soil Loss)
- Attachment 3: Final Erosion and Soil Control Design Calculations (Soil Loss)
- Attachment 4: Erosion and Soil Control Measures Specifications Information
- Attachment 5: 2021 Stormwater Pollution Prevention Plan (For Reference Only – Prepared by Directorate of Public Works Environmental Division Stormwater Compliance)
- Attachment 6: Geohydrologic Site Characterization of the Municipal Solid Waste Landfill Facility, U.S. Army Defense Artillery Center and Fort Bliss, El Paso County, Texas



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5f Comment 7_Appendix O Title Page

Appendix O – Final Closure Plan

**Fort Bliss Municipal Solid Waste
Landfill
Permit 1422**

July 2014

Revised October 24, 2014 Rev. 1

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Appendix O – Final Closure Plan

Fort Bliss Municipal Solid Waste Landfill

Permit 1422

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Appendix O – Final Closure Plan

**Fort Bliss Municipal Solid Waste
Landfill
Permit 1422**

July 2014

Revised October 24, 2014 Rev. 1

Revised July 11, 2022 Rev. 2

[Revised November 8, 2022 Rev. 3](#)

Prepared By:

[Redacted]