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Title: Storm Water Individual Permit Water Quality Improvement

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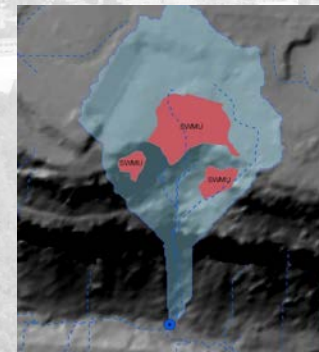
Storm Water Individual Permit Water Quality Improvement

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Engineering & Technology
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July 30, 2013

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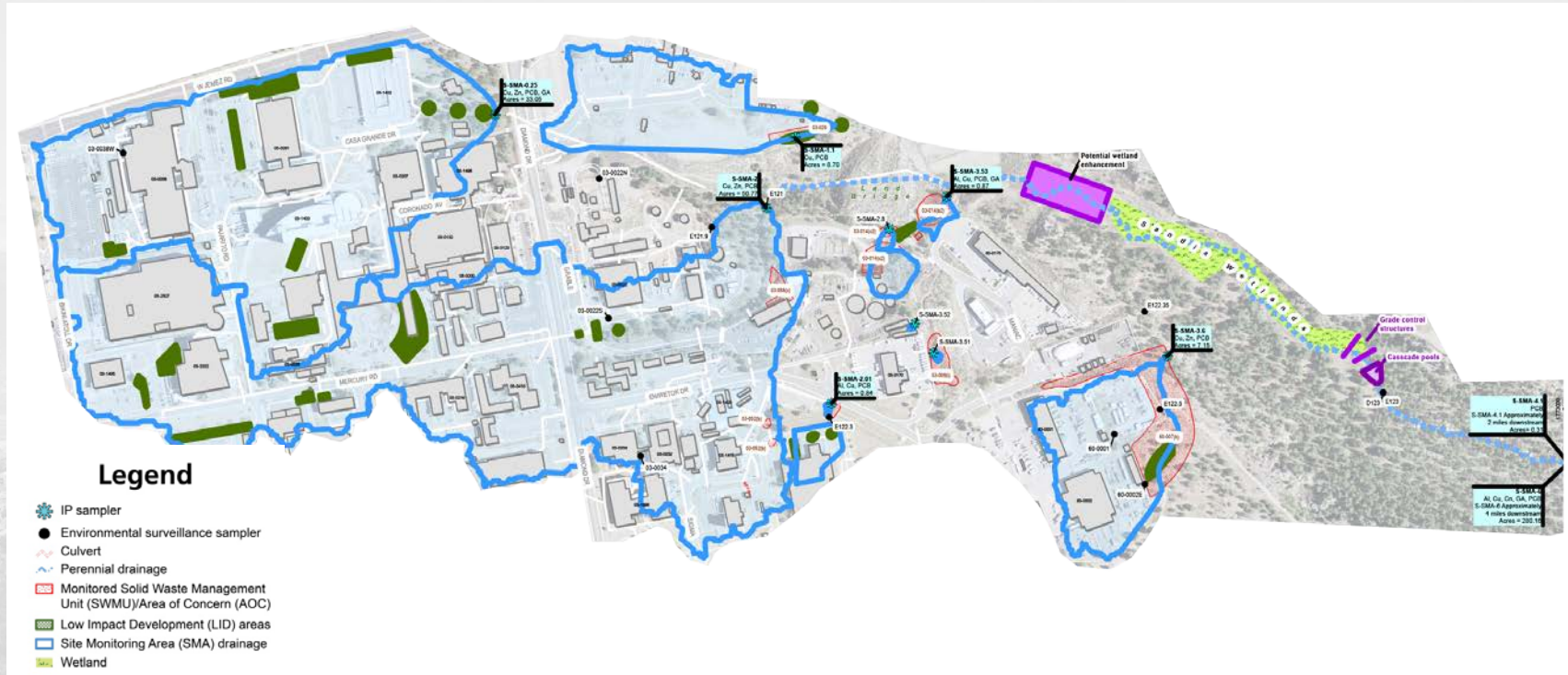
LANL Individual Permit

- 405 Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)
- 250 Site Management Areas (SMAs)



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S-SMA-2.0

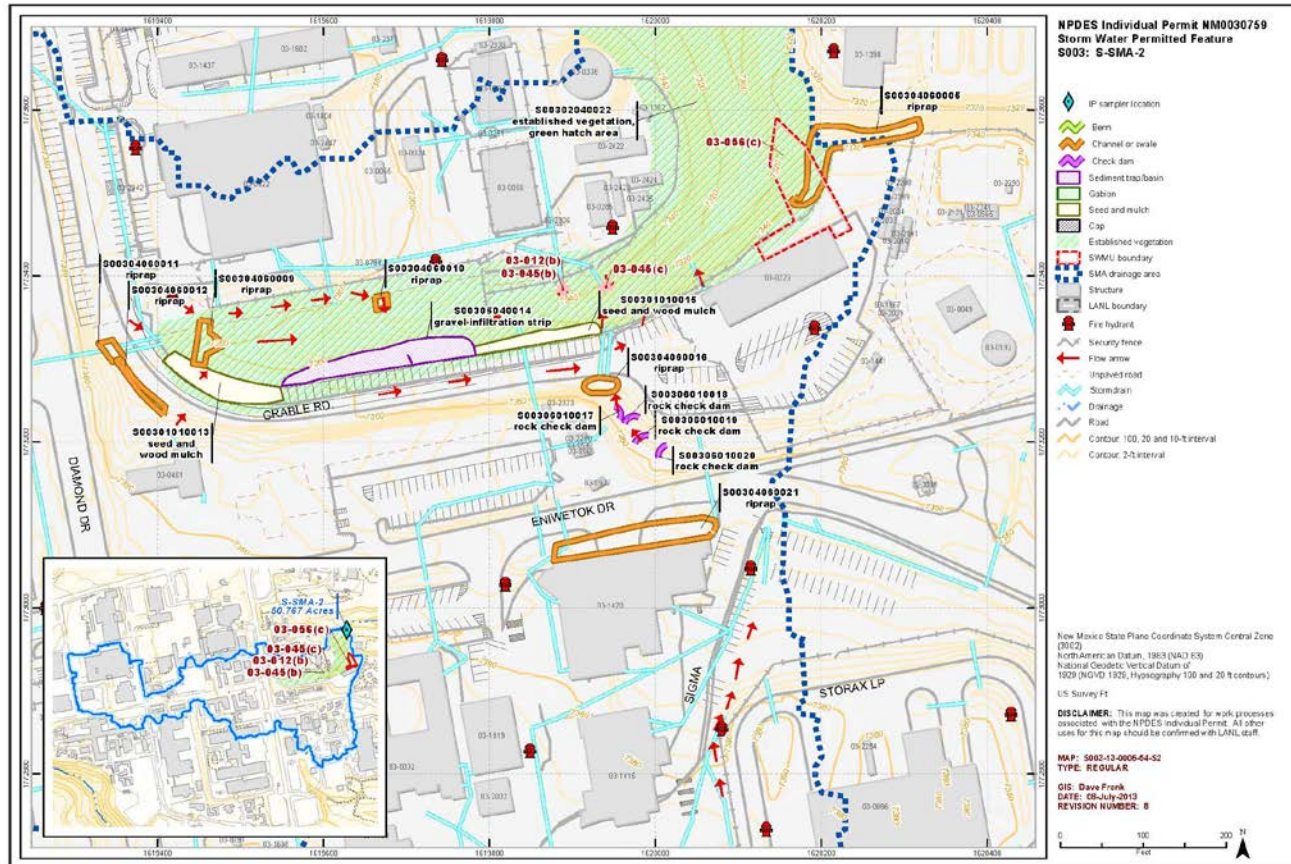


SWMU

- 03-056(c): Inactive former PCB equipment storage area
- 03-012(b): Power plant and cooling tower
- 03-045(b) and 03-045©: NPDES Permitted Outfall

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Solid Waste Management Unit 03-056(c)



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History of S-SMA-2.0

- Copper and zinc
 - Not associated with industrial materials historically managed at the site
 - Common urban contaminants
- PCBs
 - Historical releases at Site 03-056(c)

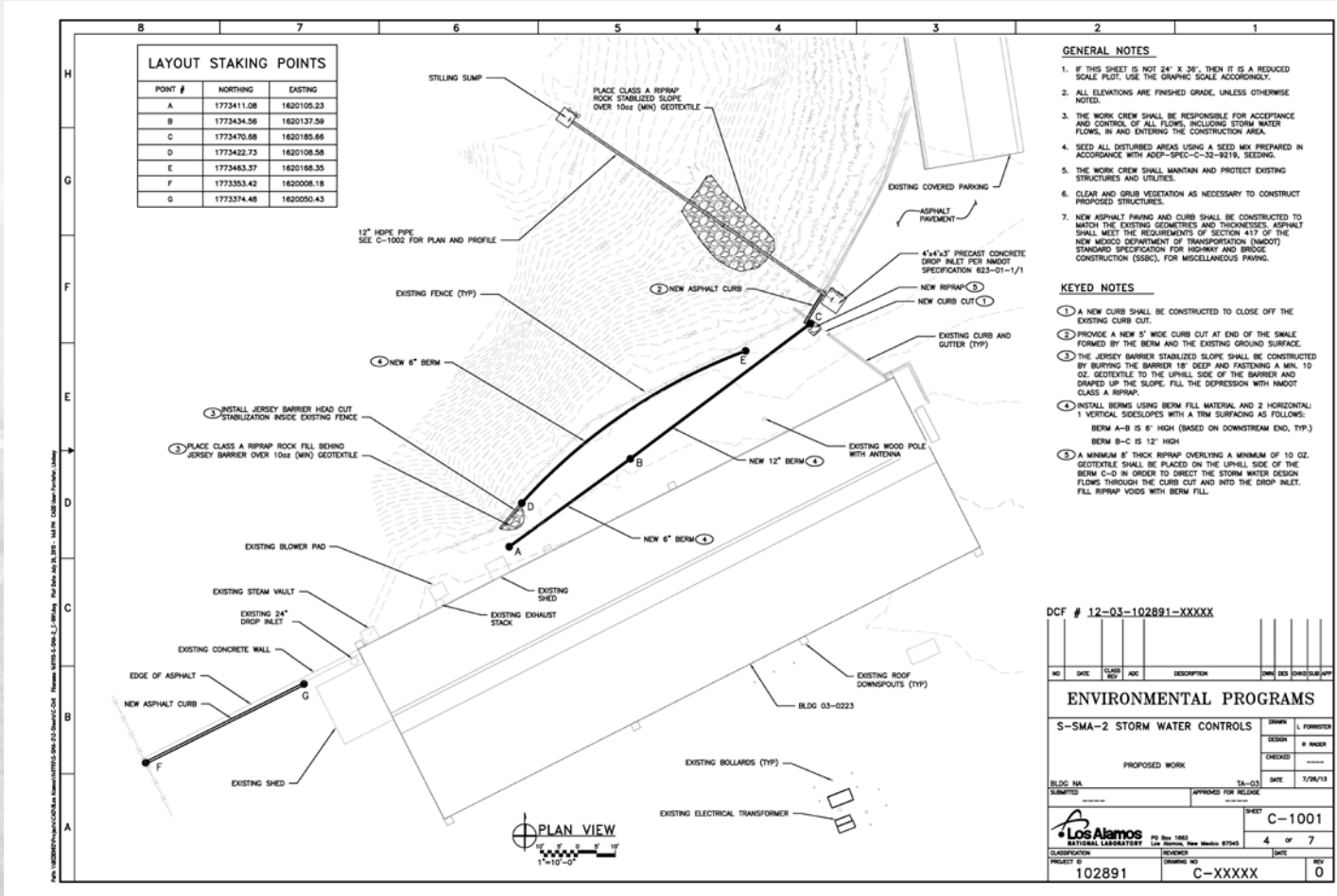
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No Exposure: Drop Inlet and Conveyance



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Proposed Work



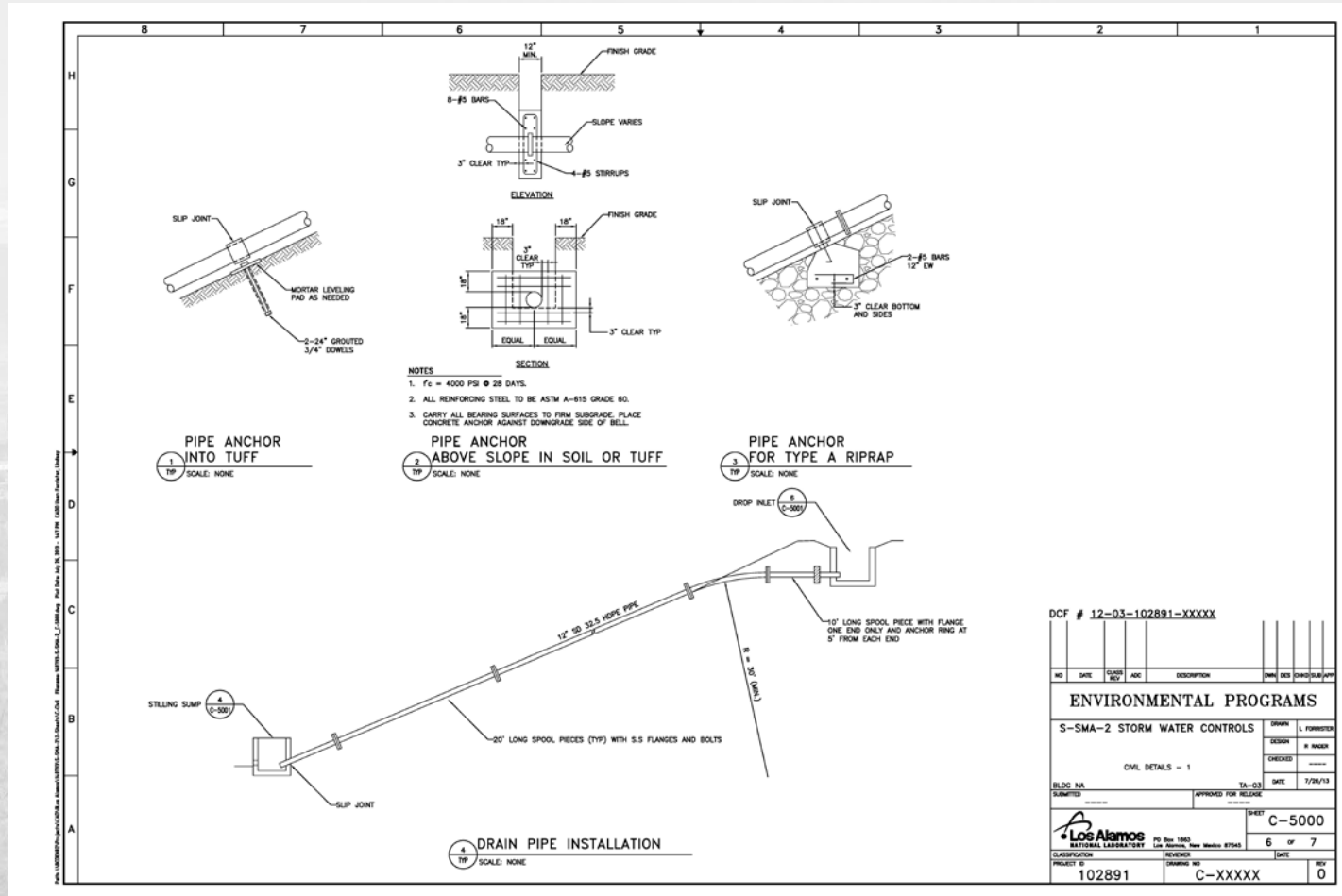
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HY-8 Culvert Analysis for HDPE Pipe Sizing

- Provide a calculation to size the pipe needed to convey approximately 6.5 cfs of water over the slope.
- Determine the required inflow conditions and exit conditions as requirement for designing a drop inlet and outflow basin.

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Design Requirements



DCF # 12-03-102891-XXXX

| NO. | DATE | BY | CHKD | DESCRIPTION | DESIGN | CHKD | DATE |
|-------------------------------|-------------|----|------|-------------|--------|--------------|--------------|
| ENVIRONMENTAL PROGRAMS | | | | | | | |
| S-SMA-2 STORM WATER CONTROLS | | | | | | DESIGN | L. FORRESTER |
| CIVIL DETAILS - 1 | | | | | | CHECKED | |
| BLDG. NO. | TA-03 | | DATE | 7/26/13 | | | |
| APPROVED FOR RELEASE | | | | | | SHEET C-5000 | |
| | | | | | | 6 OF 7 | |
| PROJECT ID | DRAWING NO. | | REV | | | | |
| 102891 | C-XXXX | | 0 | | | | |

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HY-8 Culvert Analysis Data Input

Crossing Data - S-SMA-2 HDPE Drop

Crossing Properties

Name:

| Parameter | Value | Units |
|--------------------------|------------------------------|-------|
| DISCHARGE DATA | | |
| Discharge Method | Minimum, Design, and Maximum | |
| Minimum Flow | 1.00 | cfs |
| Design Flow | 6.50 | cfs |
| Maximum Flow | 10.00 | cfs |
| TAILWATER DATA | | |
| Channel Type | Trapezoidal Channel | |
| Bottom Width | 20.00 | ft |
| Side Slope (H:V) | 5.00 | _:1 |
| Channel Slope | 0.0500 | ft/ft |
| Manning's n (channel) | 0.0300 | |
| Channel Invert Elevation | 7306.00 | ft |
| Rating Curve | View... | |
| ROADWAY DATA | | |
| Roadway Profile Shape | Constant Roadway Elevation | |
| First Roadway Station | 0.00 | ft |
| Crest Length | 200.00 | ft |
| Crest Elevation | 7340.00 | ft |
| Roadway Surface | Paved | |
| Top Width | 80.00 | ft |

Culvert Properties


Culvert 1

[Add Culvert](#)

[Duplicate Culvert](#)

[Delete Culvert](#)

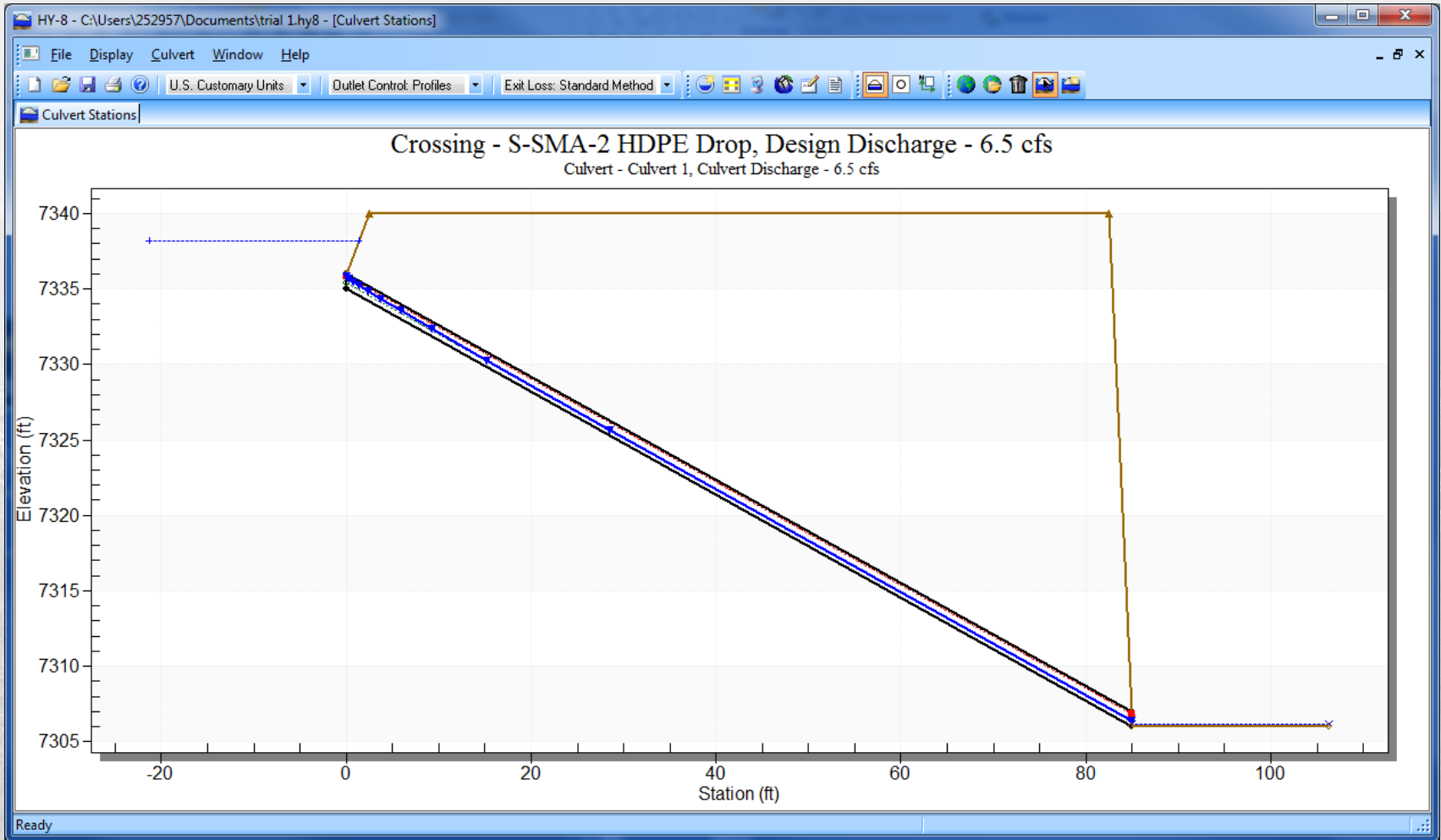
| Parameter | Value | Units |
|------------------------|---------------------------|-------|
| CULVERT DATA | | |
| Name | Culvert 1 | |
| Shape | Circular | |
| Material | Smooth HDPE | |
| Diameter | 1.00 | ft |
| Embedment Depth | 0.00 | in |
| Manning's n | 0.0120 | |
| Culvert Type | Straight | |
| Inlet Configuration | Square Edge with Headwall | |
| Inlet Depression? | No | |
| SITE DATA | | |
| Site Data Input Option | Culvert Invert Data | |
| Inlet Station | 0.00 | ft |
| Inlet Elevation | 7335.00 | ft |
| Outlet Station | 85.00 | ft |
| Outlet Elevation | 7306.00 | ft |

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[Energy Dissipation](#) [Analyze Crossing](#) [OK](#) [Cancel](#)

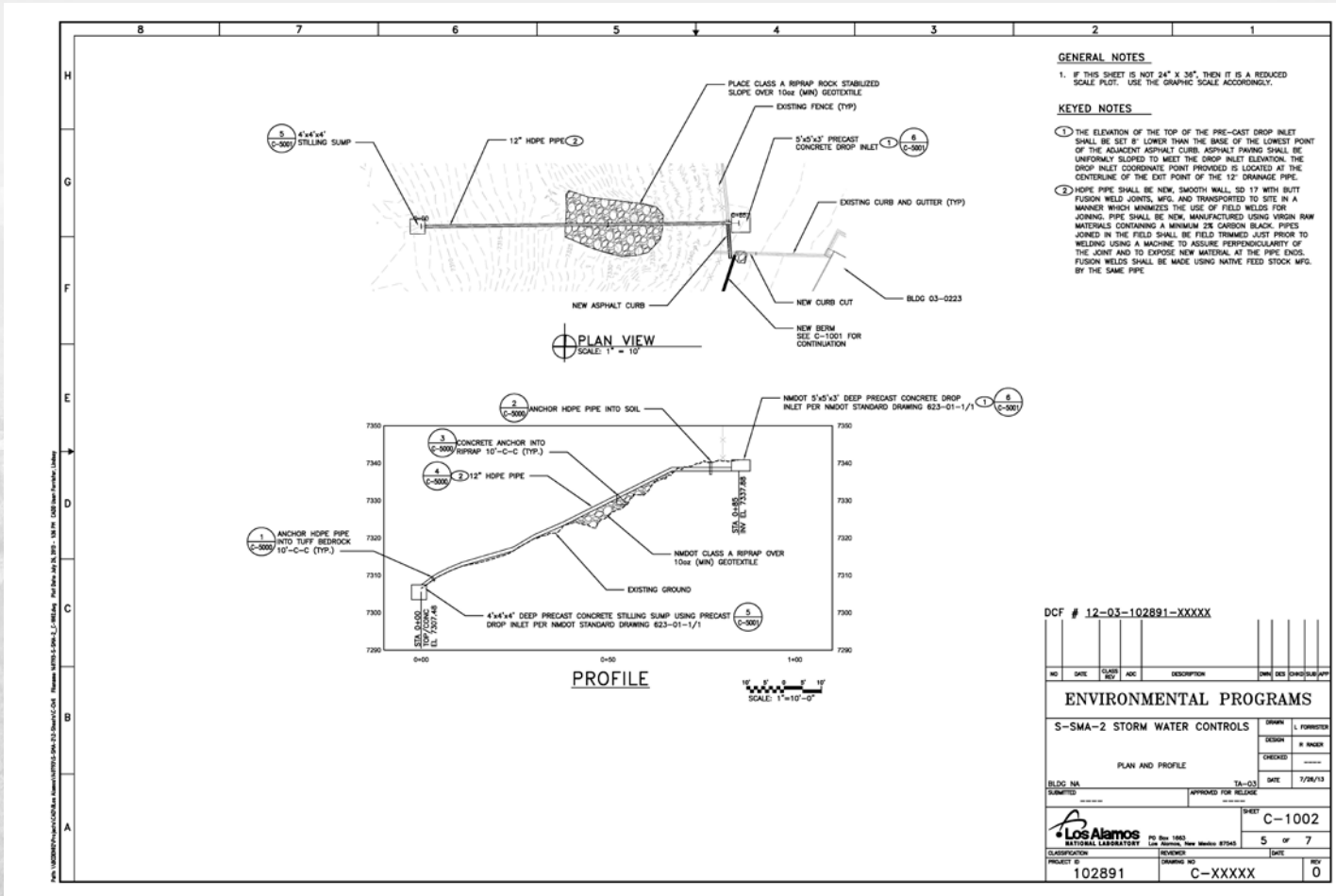
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HY-8 Culvert Analysis Data Output



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Summary and Conclusion



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