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Golder Associates

February 29, 2008

073-97229

RECEIVED
SACRAMENTO
CVRWQCB
2008 MAR -3 PM 3:30

Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, California 95670

Attention: Mr. Jeff Huggins

RE: DM-3.1 BASE LINER DESIGN REPORT AND CONSTRUCTION DOCUMENTS
NORCAL WASTE SYSTEMS HAY ROAD LANDFILL
SOLANO COUNTY, CALIFORNIA

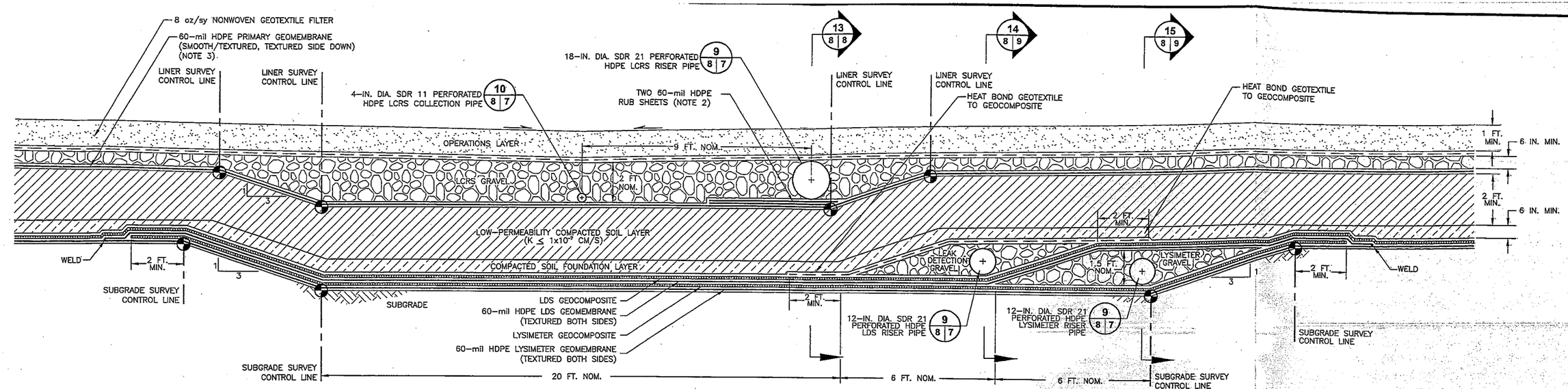
Dear Mr. Huggins:

Golder Associates Inc. (Golder) is pleased to submit this design report and attached construction documents for the construction of the Disposal Module (DM) 3.1 base liner system at the Norcal Waste Systems Hay Road Sanitary Landfill (NWSHRL) in Solano County, California. Norcal Waste Systems Hay Road Landfill, Inc. (NWSHRLI) owns and operates the NWSHRL as a Class II solid waste disposal facility.

This report presents the grading plan and base liner design for DM-3.1, which has been designed as a Class II disposal unit in compliance with the design requirements specified in the site's Waste Discharge Requirements (WDR's) Order No. R5-2003-0118. Construction of DM-3.1 is planned to begin in April 2008 with the placement of general fill. Drawing 1 of the Construction Plans (Appendix A) shows the site vicinity and location maps. Drawing 2 shows the site development plan and the limits of the DM-3.1 base liner. In addition to the Construction Drawings, the Construction Specifications (Appendix B), and the Construction Quality Assurance Plan (Appendix C) have been included for your consideration.

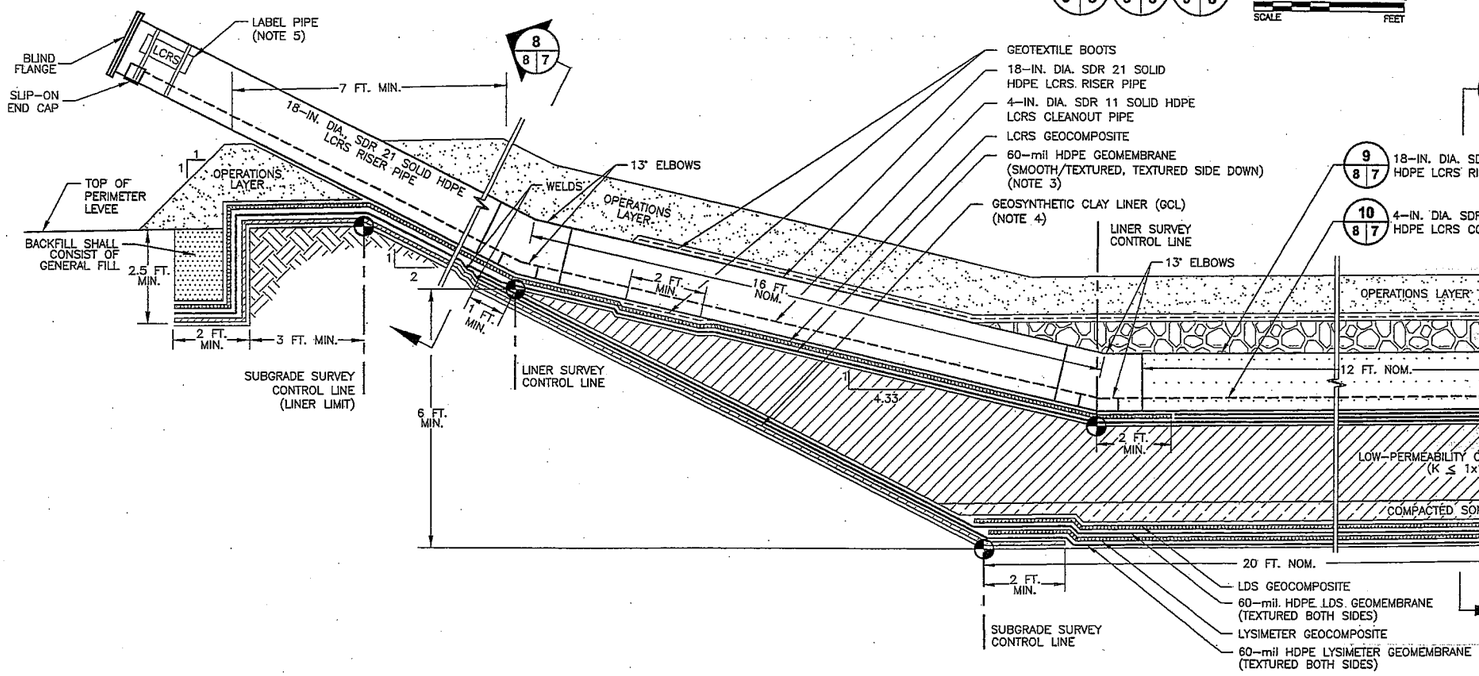
FINAL BASE GRADING

The grading plan for DM-3.1 conforms to the minimum ground water separation requirements developed by Geosyntec (1995) and stipulated in WDR Order No. R5-2003-0118. Grading for the 8.1-acre DM-3.1 base liner construction will involve placement of approximately 60,000 cubic yards of general fill to establish the lower limits of the liner system as shown in Drawing 3 of the construction plans. The DM-3.1 base grades are extensions of the previously constructed DM-4 and DM-5 base liner systems and include construction an extension of the perimeter levee. The floor grades maintain a minimum 2 percent grade on the floor with a 1 percent grade along the Leachate Collection and Removal System (LCRS) drainage pipes. These grades are consistent with the construction of the previous Class II landfill disposal units at the site. The base grading and construction requirements are designed to provide positive drainage to the collection sump in DM-3.1 and to provide a firm, stable foundation for the containment system.



12 3 8 | 12 8 8 | 12 9 8 **LATERAL SUMP DETAIL**

SCALE 2 0 2 FEET



13 3 8 | 13 5 8 | 13 7 8 | 13 8 8 **SUMP DETAIL AT LCRS RISER PIPE**

SCALE 2 0 2 FEET

LEGEND

- 2:1 SLOPE INDICATOR
- 2% GRADE INDICATOR
- SURVEY CONTROL INDICATOR (NOTE 6)
- 8 / 3 6 DETAIL/SECTION DESIGNATION; DRAWING WHERE SECTION/DETAIL IS LOCATED; DRAWING WHERE SECTION/DETAIL IS REFERENCED

NOTES

1) GEOSYNTHETICS THICKNESS EXAGGERATED FOR CLARITY.
2) TWO 5 FT WIDE 60-mil HDPE RUB SHEETS OR ONE 5 FT WIDE GEOCOMPOSITE RUB SHEET SHALL BE PLACED UNDER THE 18 IN. DIAMETER LCRS PIPE WHERE IT LAYS OVER THE FLOOR GEOMEMBRANE. OVERLAP RUB SHEETS WITH LCRS GEOCOMPOSITE
3) AS AN ALTERNATIVE TO SINGLE-SIDED TEXTURE, THE PRIMARY GEOMEMBRANE MAY BE TEXTURED ON BOTH SIDES.
4) GCL SHALL INCLUDE A 30-MIL HDPE GEOMEMBRANE BACKING. GEOMEMBRANE BACKING SHALL BE PLACED FACING DOWN.
5) ALL RISER PIPES SHALL BE LABELED AS LCRS, LDS, LYS (LYSIMETER), OR INJ (INJECTION) WITH A METAL SIGN BANDED TO PIPE AT TOP OF RISER TERMINATION. SUBMIT SIGN DESIGN TO OWNER FOR APPROVAL PRIOR TO INSTALLATION.
6) REFER TO DRAWINGS 3 AND 4 FOR CONTROL POINT INFORMATION.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	02/2008		ISSUED FOR PERMITTING			

PROJECT

NWS HAY ROAD LANDFILL, INC.
DM-3.1 LINER DESIGN
SOLANO COUNTY, CA

REGISTERED PROFESSIONAL ENGINEER PETER E. BORGES NO. C65436 CIVIL STATE OF CALIFORNIA

TITLE

SUMP DETAILS

Golder Associates Roseville, CA

PROJECT No.	073-97229	FILE No. DM31 6-9
DESIGN	PEB 2/29/08	SCALE AS SHOWN REV. 0
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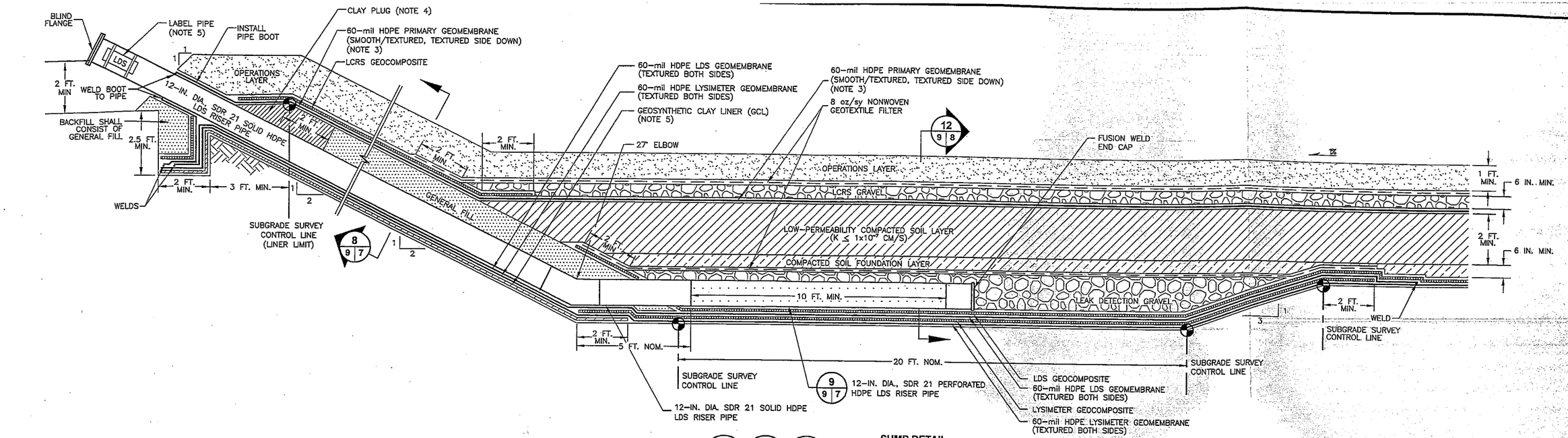
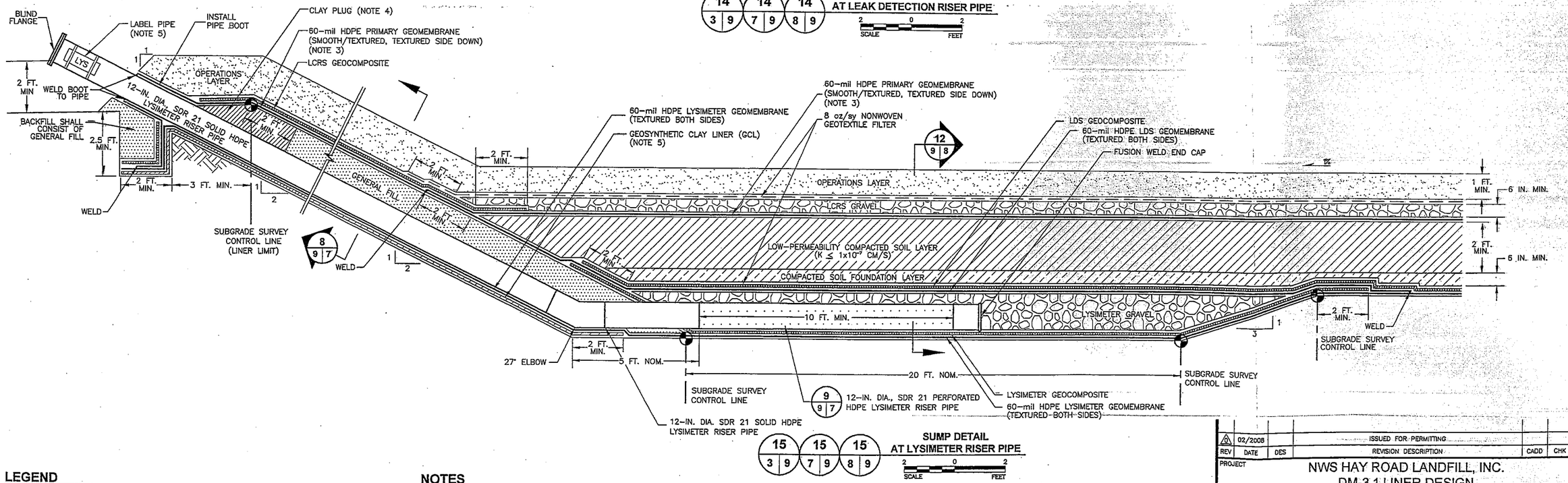


SUMP DETAIL AT LEAK DETECTION RISER PIPE

SCALE 2 0 2 FEET



SUMP DETAIL AT LYSIMETER RISER PIPE

SCALE 2 0 2 FEET

LEGEND

- SLOPE INDICATOR (2:1)
- GRADE INDICATOR (2%)
- SURVEY CONTROL INDICATOR (NOTE 7)
- DETAIL/SECTION DESIGNATION (8 / 3 6)
- DRAWING WHERE SECTION/DETAIL IS LOCATED
- DRAWING WHERE SECTION/DETAIL IS REFERENCED

NOTES

1) GEOSYNTHETICS THICKNESS EXAGGERATED FOR CLARITY.
2) TWO 5 FT WIDE 60-mil HDPE RUB SHEETS OR ONE 5 FT WIDE GEOCOMPOSITE RUB SHEET SHALL BE PLACED UNDER THE 18 IN. DIAMETER LCRS PIPE WHERE IT LAYS OVER THE FLOOR GEOMEMBRANE. EXTEND RUB SHEET 2-FEET UP SLOPE.
3) AS AN ALTERNATIVE TO SINGLE-SIDED TEXTURE, THE PRIMARY GEOMEMBRANE MAY BE TEXTURED ON BOTH SIDES.
4) CLAY PLUG SHALL CONSIST OF ONSITE CLAY. CLAY PLUG SHALL BE COMPACTED TO 90% MODIFIED PROCTOR (ASTM D1557) AT 0 TO +4% OF OPTIMUM MOISTURE CONTENT.
5) GCL SHALL INCLUDE A 30-MIL HDPE GEOMEMBRANE BACKING. GEOMEMBRANE BACKING SHALL BE PLACED FACING DOWN.
6) ALL RISER PIPES SHALL BE LABELED AS LCRS, LDS, LYS (LYSIMETER), OR INJ (INJECTION) WITH A METAL SIGN BANDED TO PIPE AT TOP OF RISER TERMINATION. SUBMIT SIGN DESIGN TO OWNER FOR APPROVAL PRIOR TO INSTALLATION.
7) REFER TO DRAWINGS 3 AND 4 FOR CONTROL POINT INFORMATION.

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