

ATTACHMENT VI-2
STORMWATER MANAGEMENT

DRAFT

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Stormwater Management1

Figure 1a: ~~Estimated Rainfall Amounts for a Drawing of Stormwater Drainage Patterns~~
100-year, 24-hour Rain Event

Figure 1b: ~~Estimated Rainfall Amounts for a 25-year, 24-hour~~ Rain Event

Figure 2: ~~Rainfall Frequency Distribution Curves~~ Stormwater Drainage Patterns after
Closure of All Landfill Cells

STORMWATER MANAGEMENT

Stormwater management at the Clean Harbors Grassy Mountain Facility (CHGM) provides for the control of surface water drainage, resulting from precipitation falling on areas that are tributary to or from the landfill cells. Precipitation that falls on the site will do one of the following: infiltrate directly into the ground, evaporate, adhere directly to vegetation, or run off into the drainage ways and be transported to collection ~~points~~ ~~or points, or~~ run off directly into collection points. The stormwater management plan consists of facilities to control runoff inside and outside of the landfill cells. The control facilities outside of the cells will control runoff from precipitation ~~which that~~ falls outside ~~of~~ the landfill cells, whereas the control facilities inside ~~of~~ the cells will control runoff from precipitation ~~which that~~ falls inside ~~of~~ the landfill cells. These together make up the “runoff management system.”

The control facilities inside the cells must be capable of collecting and controlling the runoff water volume resulting from a 25-year, twenty-four hour storm as required by Utah Administrative Code (UAC) R315-~~264-301(g), (h), and (i)~~ 8-14.2 of the Utah Hazardous Waste Management Rules. The system is designed to manage the volume of runoff that would be produced by a 100-year, ~~twenty-four hour~~ twenty-four-hour storm event, ~~thus meeting and exceeding the requirements of the rules. by allowing These requirements are met by maintaining~~ enough capacity in the open cells to contain the necessary amount of water. The design exceeds the requirements of R315-264 UAC.

Outside ~~of~~ the cells, the stormwater runoff from uncontaminated surfaces, which including ~~es exterior~~ cell embankment surfaces and caps of closed cells, is managed via dikes, conveyance facilities (ditches, culverts, drain boxes, etc.), and ponds. The facility is relatively flat. The stormwater controls are designed to prevent ~~Allowing~~ stormwater ~~to~~ from accumulate ~~accumulating~~ around the toe of the cell berms and interfering with ~~would be a nuisance to CHGM facility operations. These controls are implemented to minimize the negative impact that the accumulation of stormwater would have on operations.~~

~~Currently, t~~The facility has ~~seven (7) identified six~~ stormwater run-off ponds and a seventh proposed pond that are designed to provide ~~provided for~~ drainage from each RCRA, PCB, and Industrial Waste Landfill Cells, as well as, the Bulk Solids Storage Units Container Storage Areas East and West. A series of ditches provides for containment of run-off from parking and sampling areas.

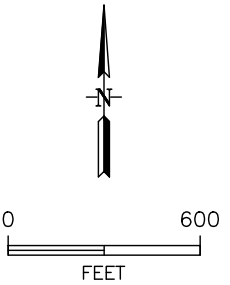
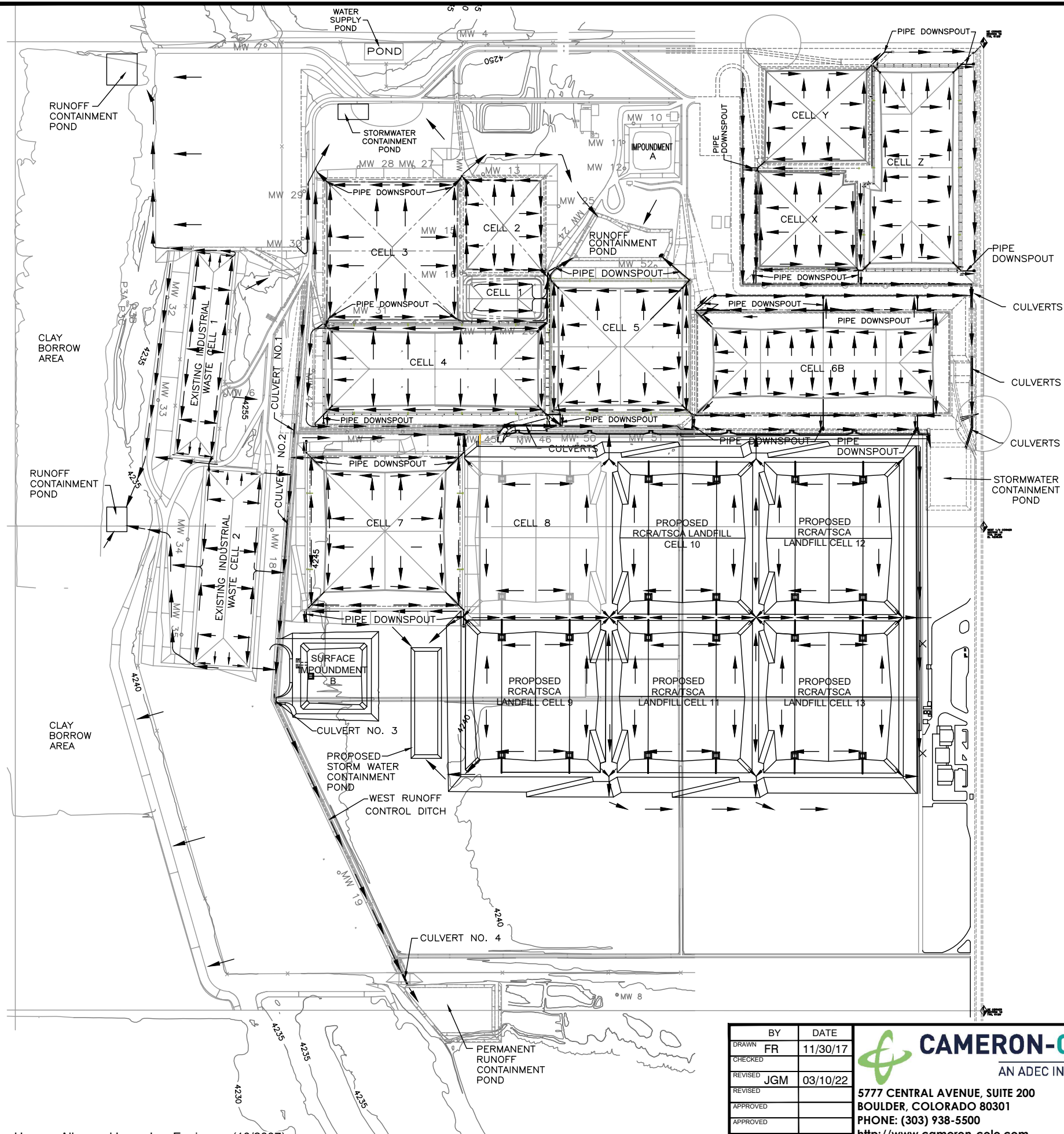
Figures 1a and 1b, ~~presents~~ the rainfall frequency distribution for the Clive Area (~~Figures 1a and 1b were developed from~~ U.S. Department of Commerce Weather Bureau Technical Paper No 40. (Jershfield, D.M)). As illustrated on Figure 1a, the rainfall depth for the 100-year, 24-hour precipitation event in the Clive area is approximately 2.5 inches. Based on and as shown on figure Figure 1b, estimated 25-year 24-hour rainfall is approximately 2.0 inches for a 25-year, 24-hour precipitation event.

Figure 2 shows the design of the stormwater drainage patterns system, ~~that the runoff management system was designed to create in the area of Disposal Cells 8—13 and Surface Impoundment B.~~ The size of the stormwater containment ponds was based on the

~~assumed rainfall amounts and runoff generated from assumptions as to the amount of precipitation that run off the embankments and cell caps which that are tributary to the ponds and the volume of rain produced by a 100 year, 24 hour precipitation event.~~

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Note: Modified from Hansen Allen and Luce, Inc. Engineers (10/2007)

BY	DATE
DRAWN FR	11/30/17
CHECKED	
REVISED JGM	03/10/22
REVISED	
APPROVED	
APPROVED	
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FIGURE 2

**STORMWATER DRAINAGE PATTERNS AFTER CLOSURE
 OF ALL LANDFILL CELLS
 CLEAN HARBORS GRASSY MOUNTAIN, LLC**

SCALE:	AS SHOWN	PROJECT:	1968
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