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January 2, 2003

Ms. Kristy Chew  
Siting Project Manager  
California Energy Commission  
1516 Ninth Street, MS-15  
Sacramento, CA 95814

RE: Data Responses, Informal Set 13  
Cosumnes Power Plant (01-AFC-19)

On behalf of the Sacramento Municipal Utility District, please find attached 12 copies and one original of the Informal Data Responses, Set 13, which addresses the proposed Drainage Plan.

Please call me if you have any questions.

Sincerely,

CH2M HILL

A handwritten signature in black ink, appearing to read "John L. Carrier". The signature is fluid and cursive, written over the typed name and title.

John L. Carrier, J.D.  
Program Manager

c: Colin Taylor/SMUD  
Kevin Hudson/SMUD  
Steve Cohn/SMUD

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**COSUMNES POWER PLANT  
(01-AFC-19)**

**INFORMAL DATA RESPONSE,  
SET 13**

Submitted by  
**SACRAMENTO MUNICIPAL  
UTILITY DISTRICT (SMUD)**

January 2, 2003



2485 Natomas Park Drive, Suite 600  
Sacramento, California 95833-2937



**Technical Area:** Water and Soil Resources

**Author:** Richard Latteri

**CPP Author:** EJ Koford

## **BACKGROUND**

The following questions were asked at the Data Response and Issues Resolution Workshop held on June 12, and conference call on June 14, 2002.

## **DATA REQUEST**

W&SR-2: Please revise Figure W&SR 250a to show, on a topographic base, the plant site plan, laydown area and rerouted drainages.

**Response:** SMUD has received comments from the CEC, the public and the agencies regarding the previous response to this request, and has modified the laydown area grading and drainage plan to incorporate recommendations. The following narrative describes the current laydown area grading and drainage plan, as illustrated in the attached Figure W&SR 2 (Sheets 1 through 5).

### **Objectives for Laydown Area**

The objectives of revising the laydown area were to minimize impacts to wetlands and the biota that occupy them, as well as any other potential impacts. Part of the objective of preserving wetlands is to avoid modifying them to the extent feasible. As a result, SMUD has proposed that the east swale be avoided, and that the laydown area straddle the swale, separated by a suitable (25-foot or more) buffer from the wetland course. The advantage of this approach is in preserving the east swale, rather than attempting to restore it at a later date.

### **Layout for Laydown Area**

The footprint (outer boundary) of the laydown area does not change from the current polygon design depicted in AFC Supplement D. The naturally occurring west swale at the laydown area will drain west-northwest as shown by the arrows. As the drainage meanders toward Clay East Road, it is directed away from the laydown area due to the higher finished elevation of the laydown area. Best management practices (BMPs) such as the use of coir or vegetative mat will protect the built-up contours from erosion. Appropriately-sized culverts will be installed at the low point of the drainage underneath Clay East Road to accommodate drainage from the west swale (approximately 80 cubic feet per second (cfs) for the 100-year event as provided in Informal Data Response, Set 6, filed October 28, 2002). This culvert installation will route the flow to the west and away from the plant site. Once drainage crosses under Clay East Road, flow will be re-established by

following the natural topography to Clay Creek. As necessary, the drainage pathway will be encouraged by using straw wattles without disturbing existing vegetation.

The laydown area will be contoured to drain to the naturally occurring and existing east swale that is established near the middle of the laydown area. Approximately  $\frac{3}{4}$  of the laydown area stormwater will drain toward this eastern swale. There is no retention basin in the laydown area. BMPs such as wattles, silt fences and straw bales (determined in consultation with RWQCB) will be used to capture sediment or oils in stormwater. Sediment is expected to be low due to a gravel surface that will be applied to the laydown area. The eastern swale will still receive upland flow calculated by the rational method (62 cfs for 100-year storm event). Silt fencing will be installed at least 25 feet from both sides of the entire length of the natural swale as it traverses through the laydown area. The laydown area surrounding the last 250 feet of this swale will be contoured to guide drainage to a culvert system. An appropriately-sized culvert system will be installed underneath Clay East Road to drain the east swale runoff to the east side of the CPP site. BMPs will be designed to minimize scour at the culvert exit.

Some overtopping of the roadway could be expected from both the east and west swales during a 100-year storm, and the roadway apron will be suitably treated to prevent washout. The existing east and west swale drainage is currently provided by a single 17-inch x 25-inch arch culvert without special protection at the roadway apron. There is no evidence of historical scouring at the roadway apron under existing conditions with the smaller culverts.

### **Post-construction Restoration**

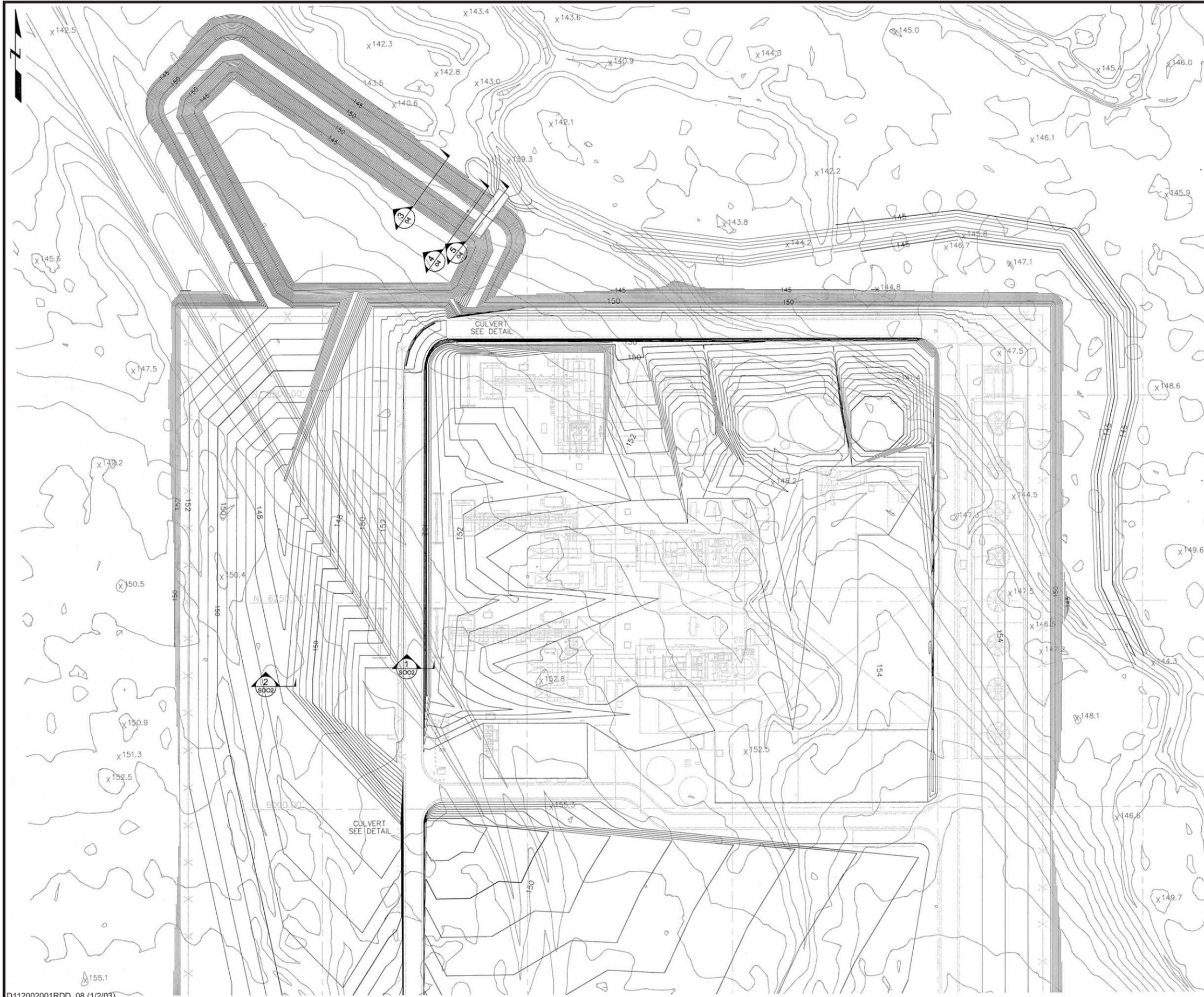
After construction, the gravel covering the surface of the laydown area will be collected, silt fences removed, and the laydown area revegetated. No major recontouring of the laydown area is required, since the drainage is sloped toward the eastern swale.

### **Plant Site Details**

The plant site detention basin footprint is unchanged. The bottom of the detention basin is at elevation 142 feet, with the top elevation at 152 feet. The spillway crest is at 148 feet, providing a 4-foot freeboard. The concrete spillway uses a baffle design for velocity reduction. BMPs or other erosion control methods will be used to the extent needed to comply with an NPDES general stormwater permit. BMPs such as a short length of riprap or other suitable erosion control method necessary to meet NPDES general stormwater permit requirements will be provided at the outfall of the 12-inch PVC pipe.

To ensure drainage does not scour the northeast corner of the plant site, the current swale at the northeast corner will be rerouted north, then west in a slightly

meandering pattern as shown on the drawings to rejoin the natural drainage pattern. As recommended in Informal Data Response, Set 6, erosion fabric and other BMPs will be used to protect the plant fill area against erosion immediately after construction, and vegetative erosion protection for long-term erosion control.

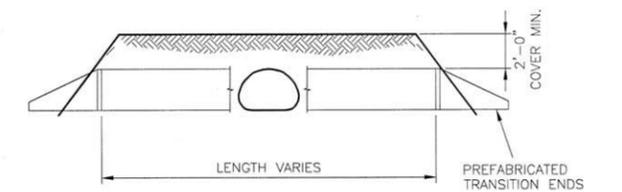


**NOTES:**

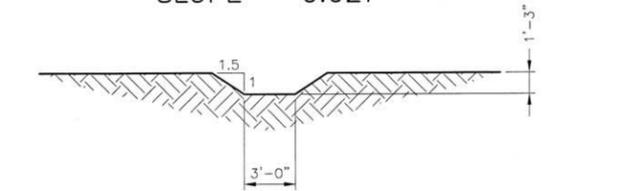
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 Original Surface Model: org-05-29-02  
 Final Surface Model: Grading062102-a  
  
 Total Cut Volume:  
  
 Total Fill Volume:  
  
 2. TOP OF CONCRETE = 154'-0"

**REFERENCE DRAWINGS:**

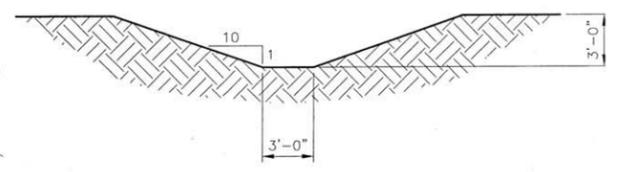
- GENERAL ARRANGEMENT D010325-100L100-01



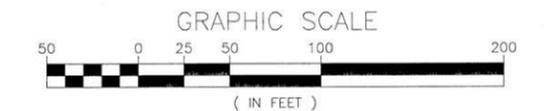
**CULVERT SECTION**  
 42"x29" ARCH PIPE, RCP  
 SLOPE = 0.027



**SECTION 1**  
 PERIMETER ROAD DRAIN DITCH  
 SLOPE = 0.0005

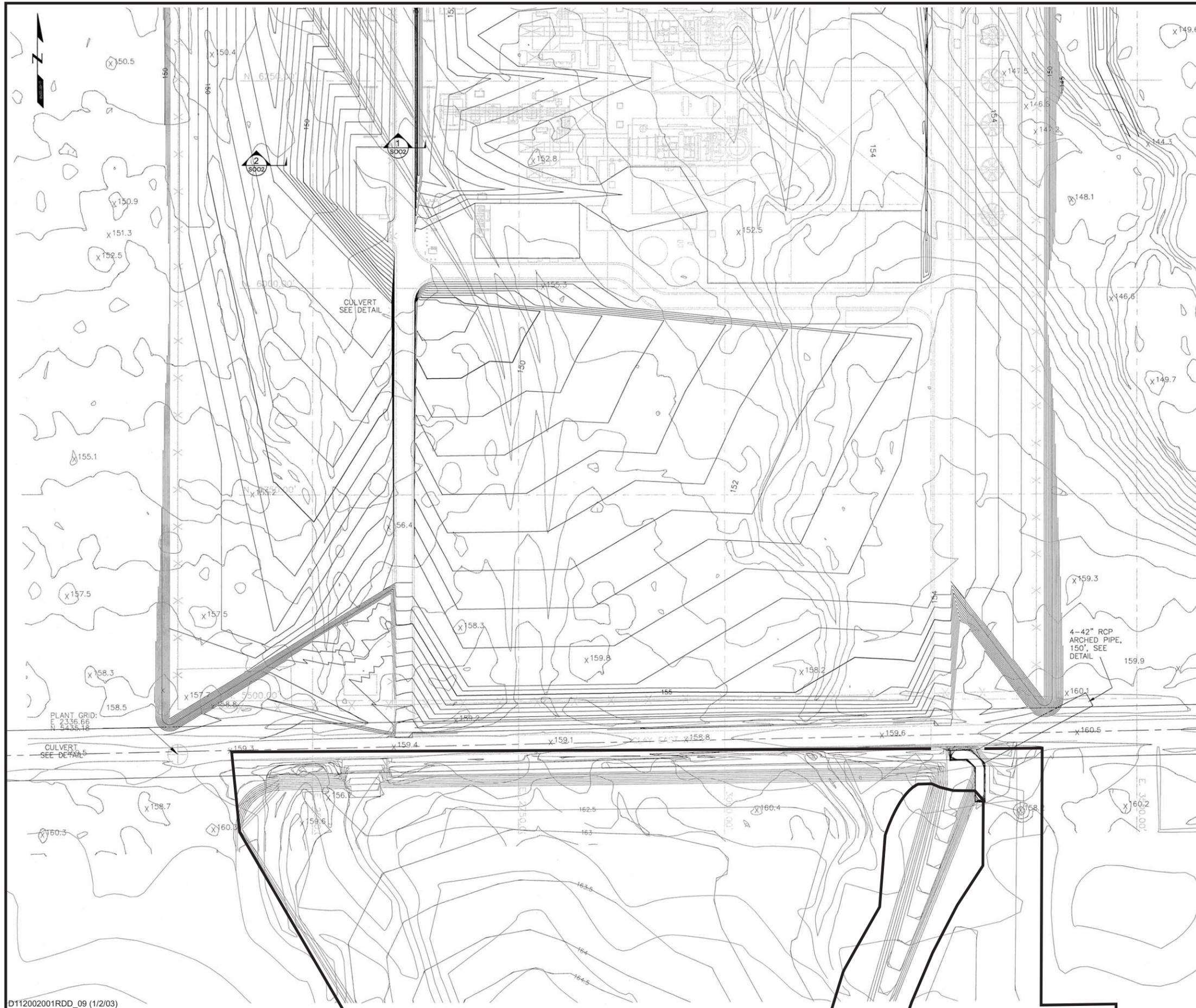


**SECTION 2**  
 SUBSTATION DRAINAGE SWALE  
 SLOPE = 0.0005  
 N.T.S.



REFERENCE:  
 D010325-103S002 S01 R0B

**FIGURE W&SR 2**  
**(SHEET 1)**  
**PROPOSED DRAINAGE PLAN**  
 COSUMNES POWER PLANT  
**CH2MHILL**

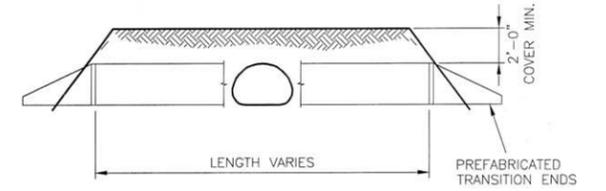


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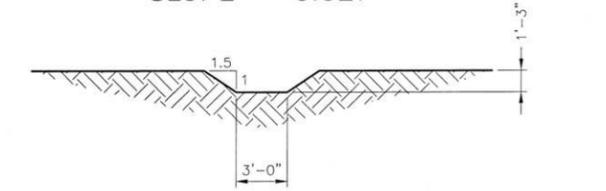
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 Final Surface Model: Grading062102-a  
  
 Total Cut Volume:  
  
 Total Fill Volume:  
  
 2. TOP OF CONCRETE = 154'-0"

**REFERENCE DRAWINGS:**

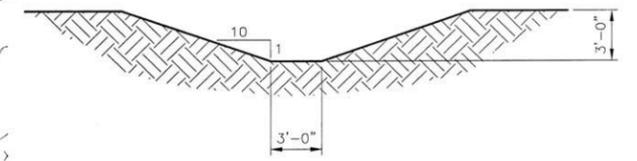
- GENERAL ARRANGEMENT D010325-100L100-01



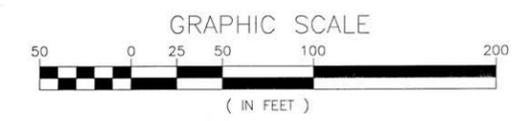
**CULVERT SECTION**  
 42"x29" ARCH PIPE, RCP  
 SLOPE = 0.027



**SECTION 1**  
 PERIMETER ROAD DRAIN DITCH  
 SLOPE = 0.0005

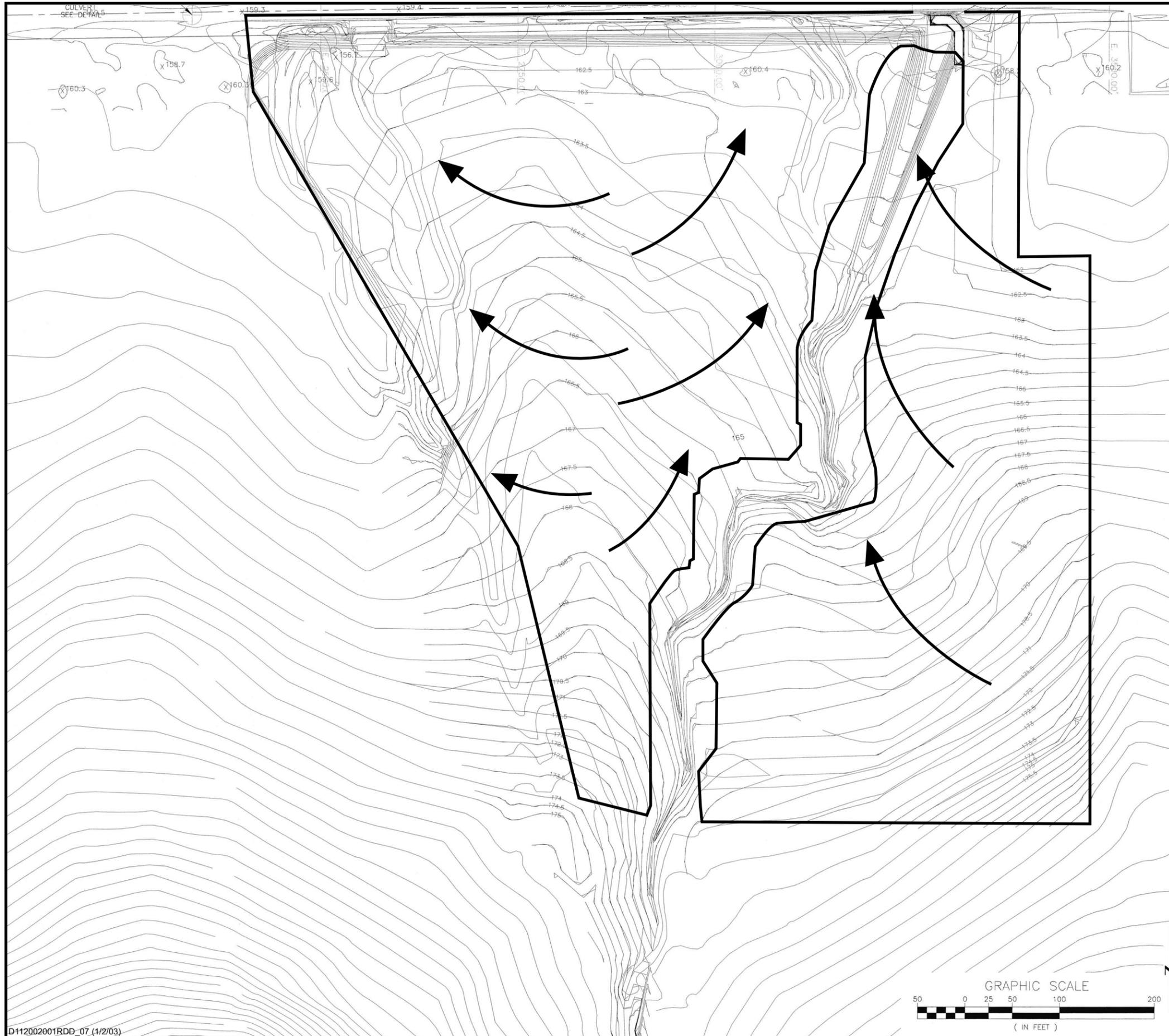


**SECTION 2**  
 SUBSTATION DRAINAGE SWALE  
 SLOPE = 0.0005  
 N.T.S.



REFERENCE:  
 D010325-103S002 S02 R0B

**FIGURE W&SR 2**  
**(SHEET 2)**  
**PROPOSED DRAINAGE PLAN**  
 COSUMNES POWER PLANT  
**CH2MHILL**



**NOTES:**

- ESTIMATED CUT AND FILL VOLUMES:  
 Original Surface Model: org-05-29-02  
 Final Surface Model: Grading062102-a  
 Total Cut Volume:  
 Total Fill Volume:
- TOP OF CONCRETE = 154'-0"

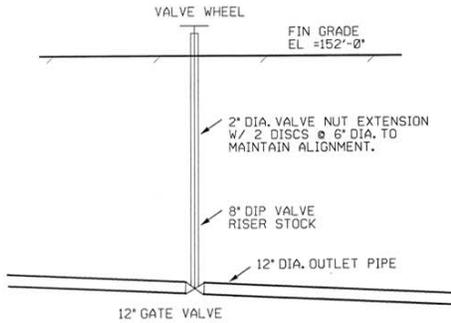
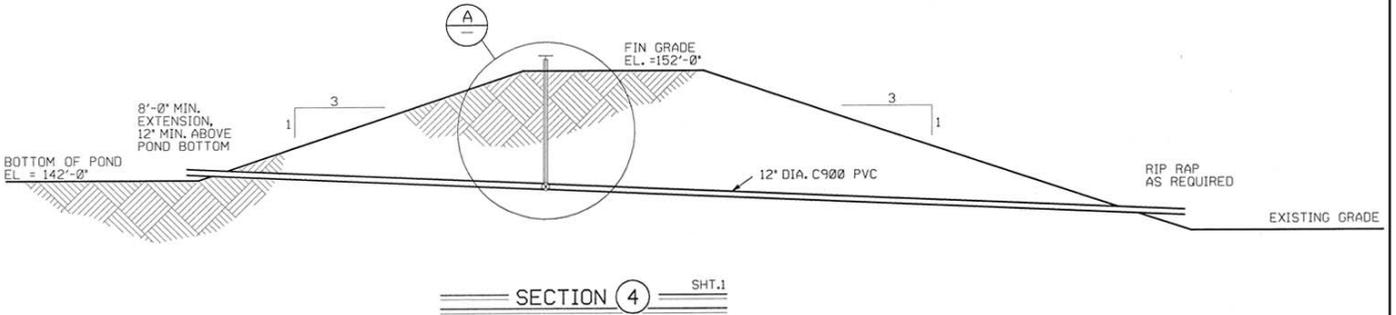
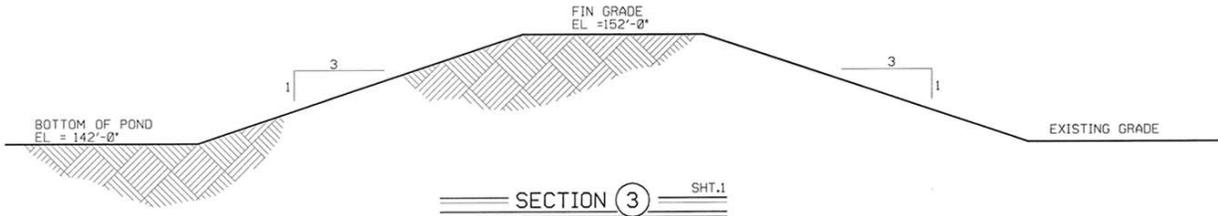
**REFERENCE DRAWINGS:**

- GENERAL ARRANGEMENT D010325-100L100-01

**LEGEND**

← SHEET FLOW

REFERENCE:  
D010325-103S002 S03 R0B



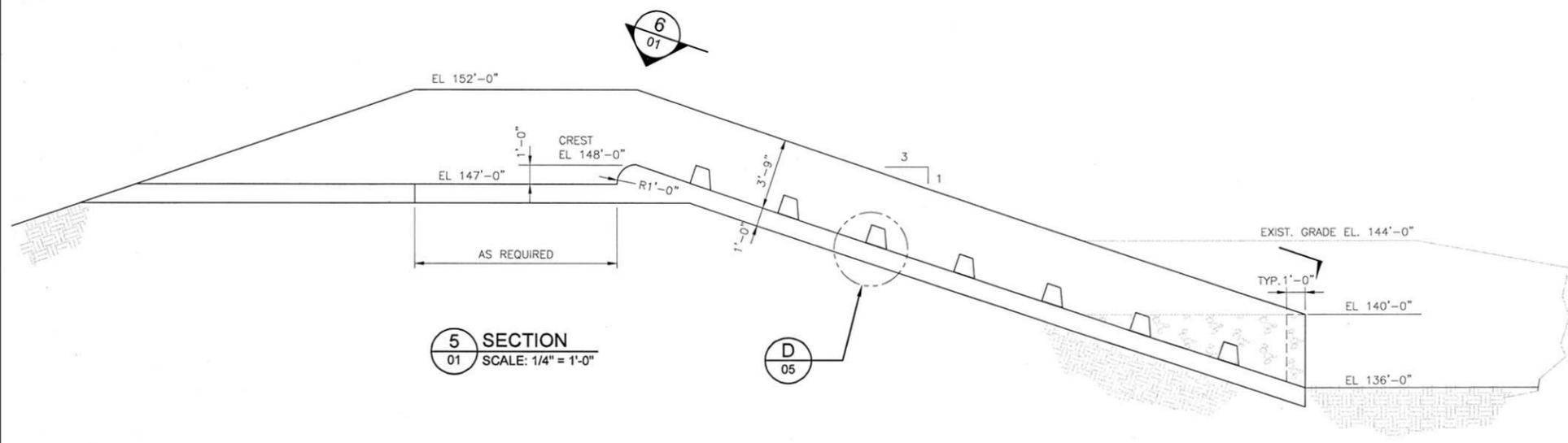
**GENERAL NOTES**

1. ALL CONCRETE SHALL BE 4000 PSI @ 28 DAYS.
2. ALL REBAR SHALL BE GRADE 60.
3. ALL REBAR SHALL HAVE 3" CLEAR COVER.
4. SEALANT - SONNEBORN SONOLASTIC NP-1 OR EQUAL, COLOR ALUM GREY.
5. GROUT - FIVE STAR GROUT OR EQUAL (CEMENT + BASED, NON-METALLIC, NON-SHRINK).

**REFERENCE:**  
D010325-103S002 S04 R0B

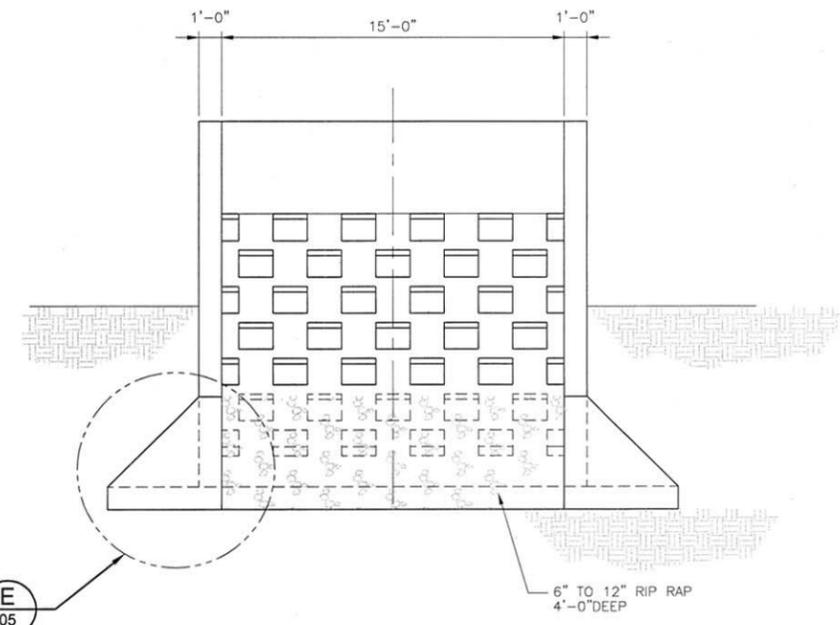
**DETAIL A**  
12" GATE VALVE

**FIGURE W&SR2  
(SHEET 4)  
PROPOSED DRAINAGE PLAN  
COSUMNES POWER PLANT**



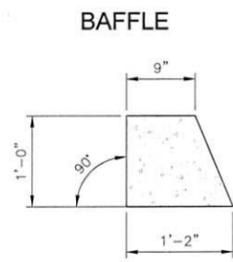
**5 SECTION**  
01 SCALE: 1/4" = 1'-0"

**D 05**

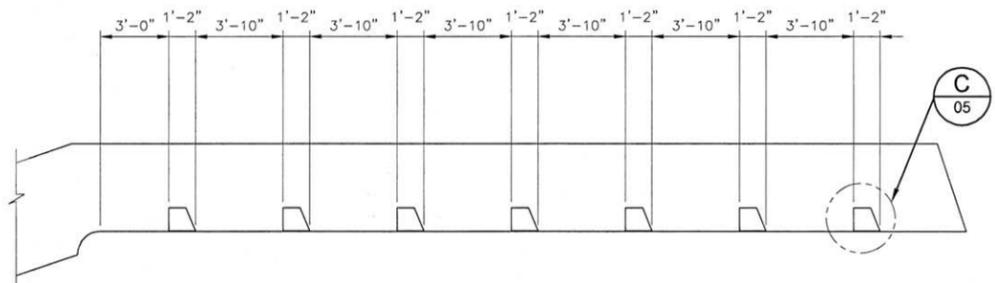


**END VIEW**  
SCALE: 1/4" = 1'-0"

**E 05**

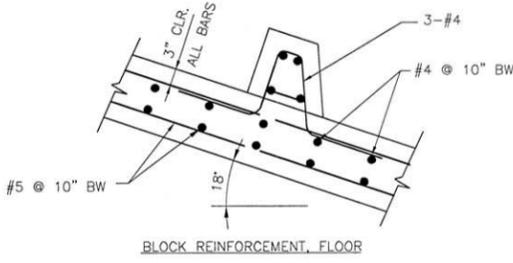


**C DETAIL**  
05 SCALE: 1" = 1'-0"

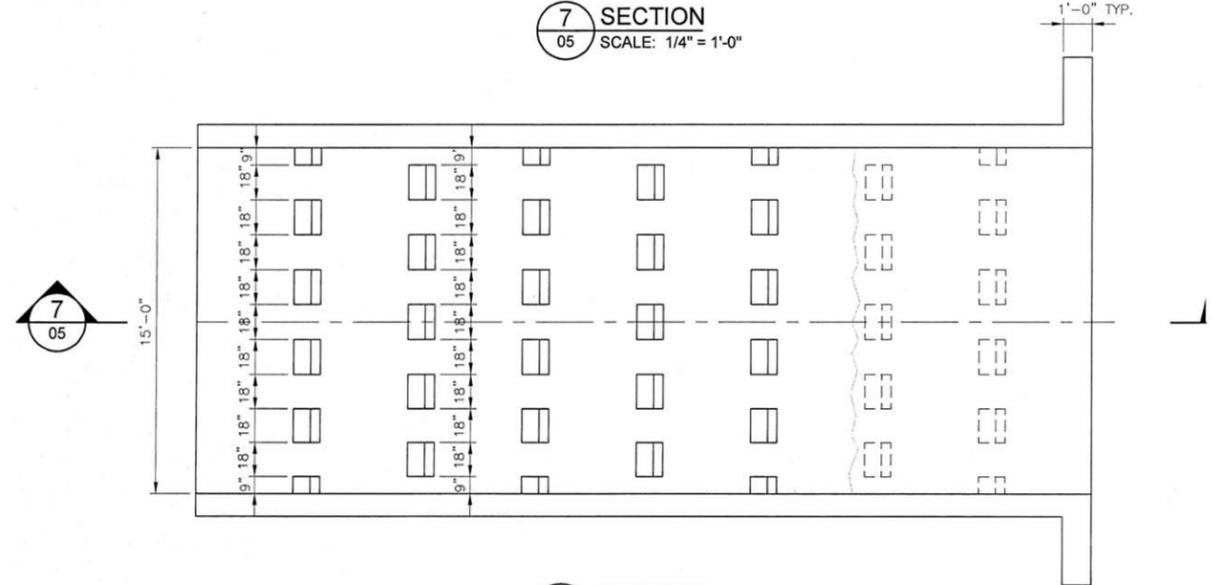


**7 SECTION**  
05 SCALE: 1/4" = 1'-0"

**C 05**

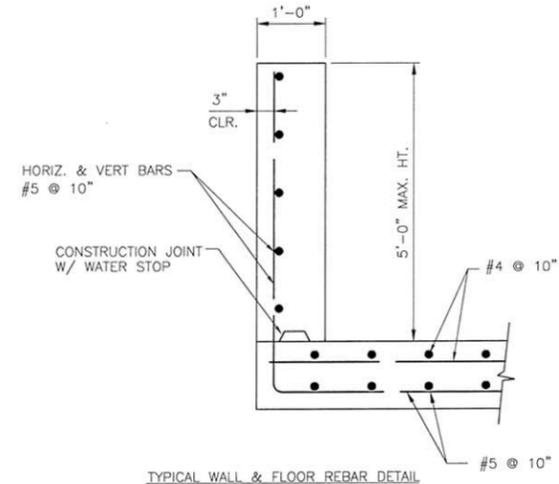


**D DETAIL**  
05 SCALE: 3/4" = 1'-0"



**6 SECTION**  
05 SCALE: 1/4" = 1'-0"

**7 05**



**E DETAIL**  
05 SCALE: 3/4" = 1'-0"

REFERENCE:  
D010325-103S002 S05 R0A

D112002001RDD\_12 (1/2/03)