State of California
Department of Transportation

Structure Hydraulics

DIVISION OF STRUCTURES

FINAL HYDRAULIC REPORT

ROCKWOOD CANAL BRIDGES, Left and Right

Located
In the Imperial County
On Route 111, just 2.5 Kilometers South of the Town of Brawley

JOB: **Rockwood Canal Bridges, L/R**
Bridge No's.: Not Yet Assigned
EA: 11-199361
(Reference Bridge: 58-0122)

LOCATION: 11-IMP-111-KP 32

DATE: October 4, 2000

WRITTEN BY: Jesse Garcia **REVIEWED BY: W.B Lindsey, PE**

HYDROLOGIC SUMMARY				
Drainage Area: N/A. Irrigation Canal w/ controlled flow and depth.				
Frequency (years)	Design Flood	50	100	Overtopping Flood >> 500-yr
Discharge (m^3/s)	8.5	*n/a	*n/a	*n/a
Bridge WSEL (m)	36.38 *	*n/a	*n/a	*n/a

* Rockwood Canal is an irrigation canal with no drainage component to consider.

Note: Water Surface Elevation (WSEL) shown is taken from the submitted construction plan study sheet, dated 9/99.

Flood plain data are based upon information available at the time of assessment and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

This report has been prepared under my direction as the professional engineer-in-charge and in accordance with the provisions of the Professional Engineers Act of the State of California.

W.B Lindsey, PE

Registration Number: _____ Date: _____

REGISTERED PROFESSIONAL ENGINEER
WILLIAM B. LINDSEY
No. 19,901
CIVIL
STATE OF CALIFORNIA

* 63.826 m

General:
In the Imperial County, it is proposed to improve Route 111 to a four-lane divided expressway between the cities of El Centro and Brawley. The improvement requires realignment of the route and the construction of two new bridges (left and right) over the Rockwood Canal.

The proposed structures will be located to the east of the existing Route111 / Rockwood Canal Bridge (No.: 58-0122), by approximately 62 meters, centerline to centerline. Both of the proposed bridges will be identical. Each will consist of a single span, cast-in-place reinforced concrete slab, supported on concrete piles at the abutments. The bridge length and deck width will be 12.2 meters and 11.7 meters, respectively. The deck thickness will be 0.625 meters. Plan sheets show the abutments to be set back 1.8 meters from top edge of channel bank.

Watershed:
There is no defined watershed. Rockwood Canal is a minor irrigation waterway with no advantageous drainage component. The general topography is flat and predominantly agricultural. The mean annual precipitation is approximately 76 mm per year (U.S. Geological Survey, Water Resources Investigations 77-21).

Discharge:
The Imperial Irrigation District controls discharge. Maximum discharge is 8.5 m^3/s.

Stage:
The Imperial Irrigation District controls stage. Per the District layout sheets, high water (HW) is reported as 36.38 meters (NGVD 1988 + 100 meters).

Velocity:
The velocity at the proposed bridge site is estimated to be 0.91 m/s (3.0 ft/s).

Drift:
No significant drift anticipated.

Scour:
Not applicable, the channel is fully lined.

Recommendations:
- None.

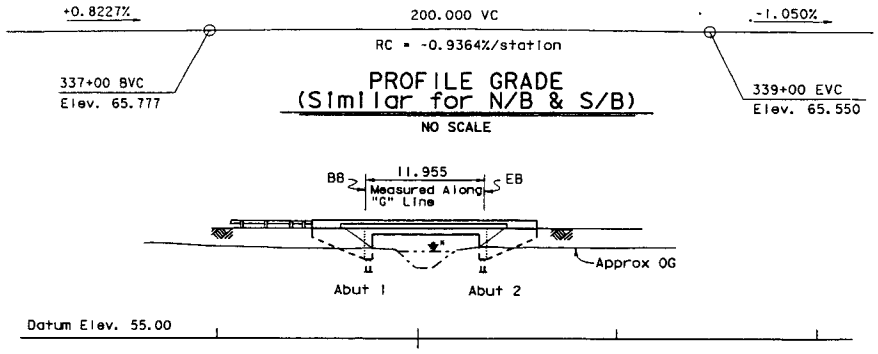
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
11	IMP	111			

REGISTERED CIVIL ENGINEER 3-4-02

PLANS APPROVAL DATE

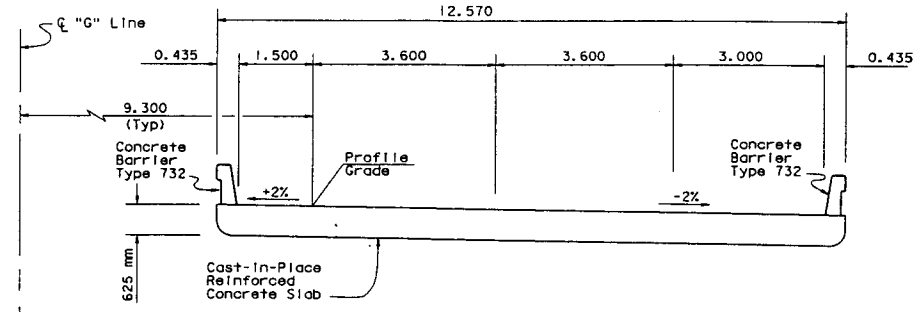
REGISTERED PROFESSIONAL ENGINEER SURJIT DHILLON No. 50104 Exp. 06-30-05 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



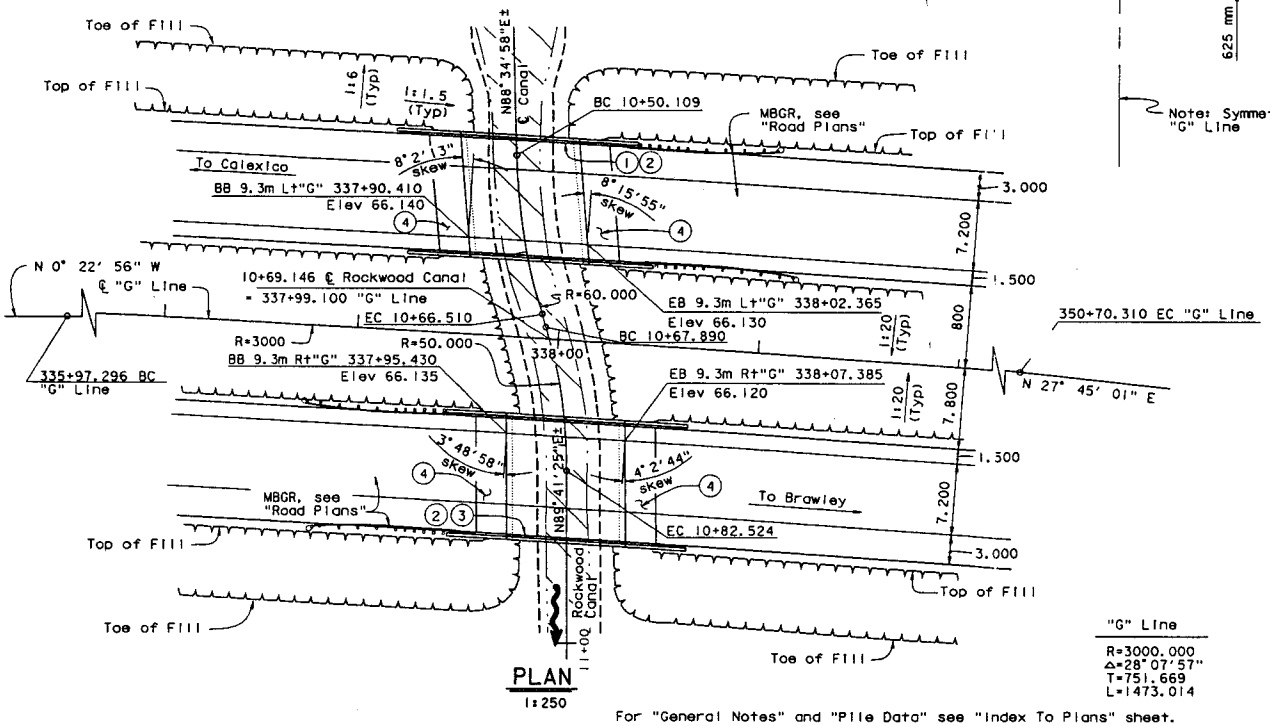
Note:
* - For Hydrologic Summary see "Foundation Plan" sheet.

ELEVATION
1:250



Note: Symmetrical About "G" Line

TYPICAL SECTION
1:50



PLAN
1:250

QUANTITIES

STRUCTURE EXCAVATION (BRIDGE)	125	m³
STRUCTURE BACKFILL (BRIDGE)	67	m³
FURNISH PILING (CLASS 400C)	378	m
DRIVE PILE (CLASS 400C)	28	EA
STRUCTURAL CONCRETE, BRIDGE	280	m³
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ)	45	m³
JOINT SEAL (MR 15 mm)	50	m
BAR REINFORCING STEEL (BRIDGE)	25,400	kg
CONCRETE BARRIER (TYPE 732)	90	m

Notes:
1. Paint "Br No 58-0335L"
2. Paint "Rockwood Canal Bridge"
3. Paint "Br No 58-0335R"
4. Structure Approach Type EQ(3)

"G" Line	"℄ Canal" Line	"℄ Canal" Line
R=3000.000	R=60.000	R=50.000
Δ=28° 07' 57"	Δ=15° 39' 43"	Δ=16° 46' 10"
T=751.669	T=8.252	T=7.370
L=1473.014	L=16.401	L=14.634

For "General Notes" and "Pile Data" see "Index To Plans" sheet.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

Michael D. Keever
DESIGN ENGINEER

	BY	CHECKED
DESIGN	Gabriel Galo	Surjit Dhillon
DETAILS	David Kish	Surjit Dhillon
QUANTITIES	Gabriel Galo	Surjit Dhillon

LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD	
LAYOUT	BY Gabriel Galo	CHECKED Surjit Dhillon
SPECIFICATIONS	BY	CHECKED PLANS AND SPECS COMPARED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
STRUCTURE DESIGN 15

CU 11
EA 199361

BRIDGE NO. 58-335 L/R
KILOMETER POST 32.694

ROCKWOOD CANAL BRIDGE
GENERAL PLAN

STRUCTURES DESIGN GENERAL PLAN SHEET (METRIC) (REV. 4/20/00)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 1-10-01 1-5-01 3-15-01 5-30-01 9-1-01 11-16-01 12-13-01

SHEET 1 OF 16

FILE => 58-0335ri-a-gp01.dgn