LIST O F ANGLES COUNTY PUBLIC WORKS
PROJECT TITLE
GUARDRAIL REPAIR PROJECT
ROAD MAINTENANCE WORK ORDER NO. XXXXXXXXX

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2. TRANSITION RAILING (CALTRANS STD PLAN ATY4/H)
3. MIDWEST GUARDRAIL SYSTEM (CALTRANS STD PLAN ATY7/2)
4. FLANGE TERMINAL SYSTEM (TYPE EXTENSION)
5. IN-LINE TERMINAL SYSTEM (TYPE EXTENSION)
6. AS PAVEMENT (VARIES ThICKNESS)

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STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
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4. MIDWEST GUARDRAIL SYSTEM TYPICAL (CALTRANS STD PLAN ATY7/3)
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6. MIDWEST GUARDRAIL SYSTEM TRANSITION RAILING (TYPE WB-21)
7. MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ENHANCEMENTS

GUARDRAIL NOTES
1. VIBERTE NOTES
2. INSERT NOTES

COMMONLY USED ITEMS
ADD / DELETE AS NEEDED

(24X36 SHEET)
UPDATE ALL ORANGE TEXT

Los Angeles County Public Works
Project Title
Guardrail Repair Project
Project ID No. RDCXXXXXXX
Title: Plan Details

SUBMITTED BY:

REV.:

DATE:

60% PRELIMINARY DRAWINGS TO CHANGE PLAN XX
(24X36 SHEET)
UPDATE ALL ORANGE TEXT
TYPICAL RC BOX SECTION

NOT TO SCALE

CURVED BOX DETAILS

Top of Wall

Foundation Joint

Not to Scale

Structural Notes

1. Dimensions and actual size of the steel to be furnished shall be shown on the drawing unless otherwise specified in the contract documents.

2. Concrete dimensions shall be measured to the centerline of the reinforcing bars, unless otherwise shown.

3. All longitudinal and transverse construction joints shall be staggered. Joints shall be placed at the centerline of the wall.

4. Transverse construction joints shall be placed at 20 bar diameters at the centerline of the wall. The distance between adjacent joints shall be at least 20 bar diameters.

5. Longitudinal bars shall be continuous and shall extend through all construction joints.

6. The height of the starter wall shall be varied correspondingly so as to maintain a uniform thickness.

7. Exposed surfaces of concrete members shall be rounded or beveled.

8. No splices in transverse bars reinforcement shall be permitted other than shown on the drawing.

9. Longitudinal bars shall be lapped 20 bar diameters at transverse joints.

10. Longitudinal bars shall be placed three inches from the concrete surface unless otherwise shown on the structural details.

11. Concrete cover (3") min. shall be provided for all steel reinforcement.

12. All longitudinal and transverse construction joints shall be placed at 20 bar diameters at the centerline of the wall. The distance between adjacent joints shall be at least 20 bar diameters.

13. All longitudinal and transverse construction joints shall be placed at 20 bar diameters at the centerline of the wall. The distance between adjacent joints shall be at least 20 bar diameters.

14. Vertical length of C and C2 bars has been varied.

15. Vertical length of C and C2 bars has been varied.

16. Concrete quantities are based on a six by six inch fillet at each joint. Quantities do not include any optional splices.

17. Reinforcement at the centerline of the wall.

18. Reinforcement at the centerline of the wall.

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49. Reinforcement at the centerline of the wall.

50. Reinforcement at the centerline of the wall.
## Structural Notes

1. Dimensions for the base of concrete to be poured are to include batter, unless otherwise noted.
2. Concrete dimensions shall be marked on the concrete structure or on the drawings, and shall indicate the final batter if required.
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### General Information

- **Type of Joint**: Longitudinal
- **Project ID No.**: RDCXXXXXXX
- **Sheet**: 1

### Structural Schedule, Notes and Details

#### Structural Design Criteria

- **A.C.I. 318-63**
- **Los Angeles County Public Works**

#### Structural Design Criteria

- **Allowable Stresses**
  - **Dead Load**
  - **Live Load**

#### Project Title

- **Project Title**: Double RC Box

#### Project Description

- **Double RC Box**:

<table>
<thead>
<tr>
<th>Size</th>
<th>Status</th>
<th>Status</th>
<th>Status</th>
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</table>

#### H - Box Location Schedule

<table>
<thead>
<tr>
<th>Size</th>
<th>Status</th>
<th>Status</th>
<th>Status</th>
</tr>
</thead>
</table>

#### Structural Notes

1. Dimensions for the base of concrete to be poured are to include batter, unless otherwise noted.
2. Concrete dimensions shall be marked on the concrete structure or on the drawings, and shall indicate the final batter if required.
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### Typical RC Box Section

#### Not to Scale

#### Top of Wall

#### Base of Wall

#### Longitudinal Joint

#### Construction Joint Details

#### Not to Scale

#### Box Section

<table>
<thead>
<tr>
<th>Bar No.</th>
<th>Spacing</th>
</tr>
</thead>
</table>

#### Longitudinal Bars

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Spacing</th>
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</table>

#### Transverse Bars

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Spacing</th>
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</thead>
</table>

#### Shear and Bond Stresses per A.C.I. 318-63

- **Weight of concrete**: 150 pcf
- **Internal water pressure**: 62.4 psf per foot of depth
- **Weight of concrete**: 150 pcf
- **Internal water pressure**: 62.4 psf per foot of depth

### Allowable Stresses

- **Dead Load**
- **Live Load**

#### LCAB Drawings

- **Los Angeles County Public Works**
- **Project ID No.**: RDCXXXXXXX

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**Notes**

- **Date**: April 1982
- **Revision**: Dated April 1982
- **ASBUILT DRAWINGS**
- **STRUCTURAL SCHEDULE, NOTES AND DETAILS**
- **PROJECT TITLE**: Double RC Box
- **PROJECT ID No.**: RDCXXXXXXX
- **SHEET**: 1
### Preliminary Plans

**Date:** Chan.

**FOR INVERT SLAB**

- **PD DATE:** asphaltic paint
- **Station:** 3:07:55 PM

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### Typical Channel Section

**NOT TO SCALE**

#### Longitudinal Construction

**NOT TO SCALE**

#### Transverse Construction Joint Details

**NOT TO SCALE**

---

### Structural Notes

1. Dimensions for base of invert shall be laid out to center of bar, unless otherwise shown.
2. Concrete punchouts shall be marked horizontally or vertically.
3. Transverse construction joints shall be placed at the end of all pours, 30 inches apart.
4. Transverse construction joints shall not be placed within 30 inches of any opening or change in slope.

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### Structural Design Criteria

- **Load:**
  - **External:** 62.5 psf, E.F.P.
  - **Internal:** 40 psf, E.F.P.

### Quantities

<table>
<thead>
<tr>
<th>Channel Location Delineated</th>
<th>Channel</th>
<th>Over Channel</th>
<th>Elevation</th>
<th>Section</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</table>

### Structural Schedule, Notes and Details

**Project ID No:** RDCXXXXXXX

**Sheets:** 1-1/2" LACPW ENGINEERING BORDER.dgn

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### Channel Section

<table>
<thead>
<tr>
<th>Width</th>
<th>Height</th>
<th>Rail Thickness</th>
<th>End Thickness</th>
<th>Slot Thickness</th>
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<tbody>
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</table>

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### Longitudinal Construction Joint Detail

- **Wall Base:**
- **Transverse Construction Joint Details:**

---

### Structural Details

- **Concrete dimensions:** shall be measured horizontally or vertically unless otherwise shown.

---

### Channel Details

- **Reinforcement:**
  - **Bars:** #4 Longitudinal bars, #3 Transversal bars.
  - **Spacing:**
    - Longitudinal bars shall be placed 20 bar diameters at splices.
    - Transverse bars shall be lapped 30 bar diameters at splices.

---

### Typical Section

**NOT TO SCALE**

### Construction Joints

- **Longitudinal:**
  - Bars shall be placed radially from the maximum construction joint.
  - Bars shall be placed symmetrically about the centerline of construction joints.
  - Longitudinal bars shall terminate two inches from transverse construction joints.

---

### Wall Base

- Concrete surface shall be covered with a 3/8" asphaltic paint.

---

### Load and Stress

- **Allowable Stresses:**
  - \( f_c = 1800 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)

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### Notes

- **Shear and Bending Stresses:**
  - Shear and bending stresses per A.C.I. 318-43
  - **Foundation materials:**
    - Bearing capacity: 196 psf

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### Diagram

- **Dimensioned:**
  - 1-1/2" LACPW ENGINEERING BORDER.dgn
  - Station: 3:07:55 PM
  - Asphaltic paint

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### Conversion

- **Conversion:**

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### Table

<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Rail Thickness</th>
<th>End Thickness</th>
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### Details

- **Concrete Cover:**
  - Transverse bars shall be lapped 30 bar diameters at splices.
  - No splices in transverse bars reinforcement will be permitted other than as otherwise shown on drawings.

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### Transverse Construction Joint Details

- **Transverse:**
  - Bars shall be placed symmetrically about the centerline of construction joints.
  - Bars shall be spaced three inches from the transverse construction joints.
  - All rectangular open channel walls shall be fenced in accordance with standard plan 6500 and as otherwise shown on the drawings.
  - Exposed edges of concrete members shall be rounded or beveled.
  - Transverse and longitudinal construction joints shall be normal or radial to the centerline of conduit on the plan except as otherwise shown.

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### Schedule

<table>
<thead>
<tr>
<th>Channel</th>
<th>Width</th>
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</table>

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### General Notes

- **General:**
  - All rectangular open channel walls shall be fenced in accordance with standard plan 6500.
  - Exposed edges of concrete members shall be rounded or beveled.
  - Transverse and longitudinal construction joints shall be normal or radial to the centerline of conduit on the plan except as otherwise shown.

---

### Load and Stress

- **Allowable Stresses:**
  - \( f_c = 1800 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)
  - \( f_{cr} = 6000 \text{ psi} \)

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### Foundation

- **Foundation materials:**
  - Bearing capacity: 196 psf

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### Design

- **Design:**

---

### Details

- **Concrete Cover:**
  - Transverse bars shall be lapped 30 bar diameters at splices.
  - No splices in transverse bars reinforcement will be permitted other than as otherwise shown on drawings.

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### Contact

- **Contact:**

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### General Notes

- **General Notes:**

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### Construction

- **Construction:**

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### Design

- **Design:**

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### General Notes

- **General Notes:**

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### Survey

- **Survey:**

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### Notes

- **Notes:**

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### General Notes

- **General Notes:**

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