AGBHNH-P101(771)N

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	1	107

INDEX OF SHEETS

Sheet No.	1	Title and Location Map
" "	2-3	Standard Plans List
" "	4-5	Layouts
" "	6-7	Construction Details
" "	8-15	Stage Construction Plans
" "	16-17	Traffic Handling Plans
" "	18	Construction Area Signs
" "	19	Summary of Quantities
" "	20	Electrical Plans
" "	21	Revised Standard Plan

STRUCTURE PLANS

" "	22-107	Marina Viaduct Br. No. 34-0014

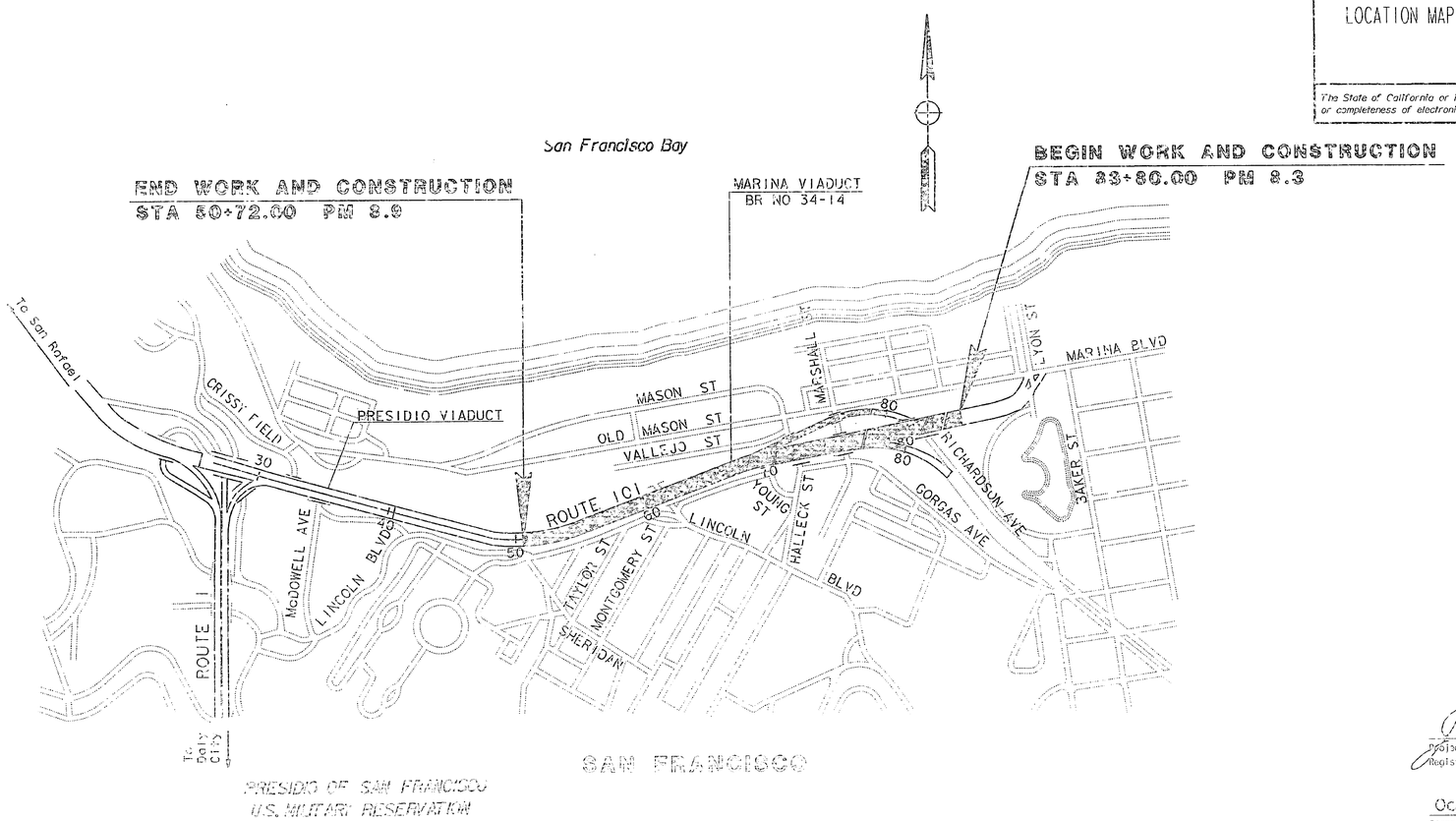
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY

IN THE CITY AND COUNTY OF SAN FRANCISCO FROM 0.2 MILE EAST TO 0.4 MILE WEST OF MARSHALL STREET

To be supplemented by Standard Plans dated July, 1992

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.



NO CONSTRUCTION CHANGES
CONTRACT No. 04-133094
DATE ACCEPTED 1-12-96
AS BUILT
RESIDENT ENGINEER E Der

J. A. Blevins
Project Engineer
Registered Civil Engineer 10-07-94

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

October 24, 1994
Plans Approval Date

The Contractor shall possess the class (or classes) of license as specified in the "Notice to Contractors"

NO SCALE

PROJECT ENGINEER J. A. BLEVINS | DATE | PROJECT MANAGER NATALIA PILAND | DATE

TIME PLOTTED => 26-OCT-1994 08:53

Contract No. 04-133094

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

INFRAME => mikes1
DGN FILES => /usr/mikes1/PO/113309e01.dg

CU 04332

EA 133094

FORM 1 20 04 PE (REV. 3/92)

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.	DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
	04	SF	101	8.3/8.9	2	107

To accompany plans dated 10-24-94

GENERAL ROAD WORK

MISCELLANEOUS

- ☒ A10A Abbreviations
- ☒ A10B Symbols
- ☒ A20A Pavement Markers and Traffic Lines, Typical Details
- ☒ A20B Pavement Markers and Traffic Lines, Typical Details
- ☐ A20C Pavement Markers and Traffic Lines, Typical Details
- ☒ *RSP A20D Pavement Markers and Traffic Lines, Typical Details*
- ☒ A24A Pavement Markings- Arrows
- ☐ A24B Pavement Markings- Arrows
- ☐ A24C Pavement Markings- Symbols and Numerals
- ☒ A24D Pavement Markings- Words
- ☐ A24E Pavement Markings- Words and Crosswalks
- ☐ A35A Portland Cement Concrete Paving Details
- ☐ A62A Excavation and Backfill- Miscellaneous Details
- ☐ A62B Limits of Payment for Excavation and Backfill Bridge- Surcharge and Wall
- ☒ A62C Limits of Payment for Excavation and Backfill- Bridge
- ☐ A62D Excavation and Backfill- Concrete Pipe Culverts
- ☐ A62E Excavation and Backfill- Cast-in-Place Reinforced Concrete Box and Arch Culverts
- ☐ A62F Excavation and Backfill- Metal and Plastic Culverts
- ☐ A73A Markers
- ☒ A73B Markers
- ☒ A73C Delineators, Channelizers and Barricades
- ☐ A74 Survey Monuments
- ☐ A75A Concrete Barrier Type 50
- ☐ A75B Concrete Barrier Type 50E
- ☐ A75C Headlight Glare Screen
- ☐ A77A Metal Beam Guard Railing
- ☐ A77B Metal Beam Guard Railing- Standard Hardware
- ☐ A77C Metal Beam Guard Railing- Posts and Blocks
- ☐ A77D Guard Rail Flares
- ☐ A77E Guard Rail Flares
- ☐ A77F Metal Beam Guard Railing- Miscellaneous Details
- ☐ A77G Guard Rail End Anchors (Breakaway)
- ☐ A77H Guard Rail End Anchors (Breakaway Hardware)
- ☐ A77I Barrier and Guard Rail End Anchors
- ☐ A77J Guard Rail Connections to Bridge Rails, Retaining Walls and Abutments
- ☐ A77K Guard Rail Connections to Bridge Sidewalks and Curbs
- ☐ A78A Thrie Beam Barrier
- ☐ A78B Thrie Beam Barrier- Standard Hardware and Miscellaneous Details
- ☐ A78C Thrie Beam Barrier- End Anchors
- ☐ A78D Thrie Beam Barrier Connection to Concrete Barrier Type 50
- ☐ A78E Thrie Beam Barrier Connections to Bridge Rails
- ☐ A78F Thrie Beam Barrier Connections to Bridge Curbs, Retaining Walls and Abutments
- ☐ A80 Thrie Beam Barrier Emergency Passageway
- ☐ A81 Crash Cushion, Sand Filled
- ☐ A83 Portable Scale Pad and Approach Slab Details
- ☐ A85 Chain Link Fence
- ☐ A86 Barbed Wire and Wire Mesh Fences
- ☐ *RSP A87 Curbs, Dikes and Driveways*

CRIB WALLS

- ☐ C7A Reinforced Concrete Crib Wall- Battered Walls- Types A, B and C
- ☐ C7B Reinforced Concrete Crib Wall- Battered Walls- Types D, E and F
- ☐ C7C Reinforced Concrete Crib Wall- Vertical Walls- Types A, B and C
- ☐ C7D Reinforced Concrete Crib Wall- Vertical Walls- Types D, E and F
- ☐ C7E Reinforced Concrete Crib Wall- Types A, B, C, D, E and F Header and Stretcher Details
- ☐ C7F Design Data for Reinforced Concrete Crib Wall Foundation Pressure-Battered Wall
- ☐ C7G Reinforced Concrete Crib Wall Foundation Pressure- Vertical Wall
- ☐ C8A Steel Crib Wall- Construction Details
- ☐ C8B Steel Crib Wall- Design Data
- ☐ C8C Steel Crib Wall- Design Data
- ☐ C9A Timber Crib Wall- Types A, B, C and D
- ☐ C9B Timber Crib Wall- Types A, B, C and D Design Data

DRAINAGE

- ☐ D72 Drainage Inlets
- ☐ D73 Drainage Inlets
- ☐ D74A Drainage Inlets
- ☐ D74B Drainage Inlets
- ☐ D74C Drainage Inlets Details
- ☐ D75 Pipe Inlet
- ☐ D77A Grate Details
- ☐ D77B Bicycle Proof Grate Details
- ☐ D77C Alternative Hinged Cover for Type OL and OS Inlets and Trash Rack for Type OCP Inlet
- ☐ D78 Gutter Depressions
- ☐ D79 Precast Reinforced Concrete Pipe- Direct Design Method
- ☐ D80 Cast-in-Place Reinforced Concrete Single Box Culvert
- ☐ D81 Cast-in-Place Reinforced Concrete Double Box Culvert
- ☐ D82 Cast-in-Place Reinforced Concrete Box Culvert Miscellaneous Details
- ☐ D84 Box Culvert Wingwalls- Types A, B, C
- ☐ D85 Box Culvert Wingwalls- Types D and E
- ☐ D86A Box Culvert Warped Wingwalls
- ☐ D86B Pipe Culvert Headwalls, Endwalls and Warped Wingwalls
- ☐ D86C Arch Culvert Headwalls, Endwalls and Warped Wingwalls
- ☐ D87A Overside Drains
- ☐ D87B Overside Drains
- ☐ D87C Underdrains
- ☐ D88 Construction Loads on Culverts
- ☐ D88A Strut Details for Structural Steel Plate Pipes, Arches, and Vehicular Undercrossings
- ☐ D89 Pipe Headwalls
- ☐ D90 Pipe Culvert Headwalls, Endwalls and Wingwalls- Types A, B and C
- ☐ D93A Pipe Riser Connections
- ☐ D93B Drainage Inlet Riser Connections
- ☐ D93C Pipe Riser with Debris Rack Cage
- ☐ D94A Metal and Plastic Flared End Sections
- ☐ D94B Concrete Flared End Sections
- ☐ D96 Concrete Arch Culverts
- ☐ D97A Corrugated Metal Pipe Coupling Details No. 1- Annular Coupling Band Bar and Strap and Angle Connectors
- ☐ D97B Corrugated Metal Pipe Coupling Details No. 2- Hat Band Coupler and Flange Details
- ☐ D97C Corrugated Metal Pipe Coupling Details No. 3- Helical and Universal Couplers
- ☐ D97D Corrugated Metal Pipe Coupling Details No. 4- Hugger Coupling Bands
- ☐ D97E Corrugated Metal Pipe Coupling Details No. 5- Standard Joint
- ☐ D97F Corrugated Metal Pipe Coupling Details No. 6- Positive Joint
- ☐ D97G Corrugated Metal Pipe Coupling Details No. 7- Positive Joints and Downdrains
- ☐ D97H Reinforced Concrete Pipe or Non-Reinforced Concrete Pipe Standard and Positive Joints
- ☐ D98A Slotted Corrugated Steel Pipe Drain Details
- ☐ D98B Slotted Corrugated Steel Pipe Drain Details
- ☐ D99A Structural Section Drainage System Details
- ☐ D99B Edge Drain Outlet and Vent Details
- ☐ D99C Edge Drain Cleanout and Vent Details
- ☐ D99D Cross Drain Interceptor Details

HIGHWAY PLANTING

- ☐ H1 Planting and Irrigation- Abbreviations
- ☐ H2 Planting and Irrigation- Symbols
- ☐ H3 Planting and Irrigation- Details
- ☐ H4 Planting and Irrigation- Details
- ☐ H5 Planting and Irrigation- Details
- ☐ H6 Planting and Irrigation- Details
- ☐ H7 Planting and Irrigation- Details
- ☐ *RSP H8 Planting and Irrigation Details*

TEMPORARY FACILITIES

- ☐ T1 Temporary Crash Cushion, Sand Filled
- ☐ T2 Temporary Crash Cushion, Sand Filled
- ☐ T3 Temporary Railing (Type K)
- ☐ T4 Temporary Traffic Screen
- ☐ T10 Traffic Control System for Lane Closure on Freeways and Expressways
- ☐ T10A Traffic Control System for Lane and Complete Closures on Freeways and Expressways
- ☒ T11 Traffic Control System for Lane Closure on Multilane Conventional Highways
- ☐ T12 Traffic Control System for Lane Closure on Multilane Conventional Highways
- ☐ T13 Traffic Control System for Lane Closure on Two Lane Conventional Highways
- ☐ T14 Traffic Control System for Ramp Closures

BRIDGE

- ☐ B0-1 Bridge Details
- ☐ B0-3 Bridge Details
- ☐ B0-5 Bridge Details
- ☐ B0-13 Bridge Details
- ☐ B2-3 16'' Cast-in-Drilled-Hole Concrete Pile
- ☐ B2-5 Pile Details- Class 45 and Class 70
- ☐ B2-8 Pile Details- Class 45C and Class 70C
- ☐ B2-9 Load Test Anchor Pile Details
- ☐ B3-1 Retaining Wall- Type 1, H=4'-30'
- ☐ B3-2 Retaining Wall- Type 1, H=32'-36'
- ☐ B3-3 Retaining Wall- Type 1A
- ☐ B3-4 Retaining Wall- Type 2
- ☐ B3-5 Counterfort Retaining Wall- Type 3
- ☐ B3-6 Counterfort Retaining Wall- Type 4
- ☐ B3-7 Retaining Wall- Type 5
- ☐ B3-8 Retaining Wall Details No. 1
- ☐ *RSP B3-9 Retaining Wall Details No.2*
- ☐ B3-11 Retaining Wall Type 6-6'-0'' Maximum
- ☐ B6-1 T- Beam Details
- ☐ B6-10 Utility Openings, T- Beam
- ☐ B6-21 Joint Seals (Maximum Movement Rating = 2'')
- ☐ B7-1 Box Girder Details
- ☐ B7-5 Deck Drains
- ☐ B7-6 Deck Drains- Type D-1 and D-2
- ☐ B7-10 Utility Opening- Box Girder
- ☐ B7-11 Utility Details
- ☐ B8-5 Cast-in-Place Prestressed Girder Details
- ☐ B11-7 Chain Link Railing
- ☐ B11-47 Cable Railing
- ☐ B11-51 Tubular Hand Railing
- ☐ B11-52 Chain Link Railing Type 7
- ☐ B11-53 Concrete Barrier Type 25
- ☐ B11-54 Concrete Barrier Type 26
- ☐ B13-1 Slope Protection Detail No. 1
- ☐ B13-2 Slope Protection Detail No. 2
- ☐ B14-1 Structural Steel Plate Vehicular Undercrossing
- ☐ B14-3 Communication and Sprinkler Control Conduit (Conduit less than 4'' Diameter)
- ☐ B14-4 Water Supply Line (Bridge) (Pipe less than 4'' Diameter)
- ☐ B14-5 Water Supply Line (Details) (Pipe less than 4'' Diameter)

ROADSIDE SIGNS

- ☐ RS1 Roadside Signs, Typical Installation Details No. 1
- ☐ RS2 Roadside Signs, Wood Posts, Typical Installation Detail No. 2
- ☐ RS3 Roadside Signs, Laminated Box Wood Posts, Typical Installation Details No. 3
- ☐ RS4 Roadside Signs, Typical Installation Detail No. 4

NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

SHEET 1 OF 2
STANDARD PLANS LIST
July 1992 Edition
Revised June 1994

The Revised Standard Plans (RSP) and Roy Standard Plans (RSP) which apply to this contract are included as individual sheets of the project plans. The Standard Plan sheets applicable to this contract include but are not limited to those indicated by a marked box.

USERNAME => $$$$$USER$$$$$
DGN FILE => $$$$$$$$$DGNSPEC$$$$$$$$$

CONTRACT NO. 04-133094

TIME PLOTTED => $$$$$$$$SYSTIME$$$$$$$$

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	04	SF	101	8.3/8.9	3	107

To accompany plans dated 10-24-94

OVERHEAD SIGNS

OVERHEAD SIGNS-TRUSS

- ☐ S1 Overhead Signs- Truss, Instructions and Examples
- ☐ S2 Overhead Signs- Truss, Single Post Type, Post Type II thru VII
- ☐ S3 Overhead Signs- Truss, Two Post Type, Post Type I-S thru VII-S
- ☐ S4 Overhead Signs- Truss, Single Post Type, Structural Frame Members
- ☐ S5 Overhead Signs- Truss, Two Post Type, Structural Frame Members
- ☐ S6 Overhead Signs- Truss, Structural Frame Details
- ☐ S7 Overhead Signs- Truss, Frame Juncture Details
- ☐ S8A Overhead Signs- Steel Frame Removable Sign Panel Frames
- ☐ S8B Overhead Signs- Removable Sign Panel Frames, Overhead Formed Panel Mounting Details
- ☐ S8C Overhead Signs- Truss, Sign Panel Mounting Details, Laminated Panel- Type A
- ☐ S8D Overhead Signs- Truss, Removable Sign Panel Frames 110" and 120" Sign Panels
- ☐ S9 Overhead Signs- Walkway Details No. 1
- ☐ S10 Overhead Signs- Walkway Details No. 2
- ☐ S11 Overhead Signs- Walkway Safety Railing Details
- ☐ S13 Overhead Signs- Truss Pile Foundation

OVERHEAD SIGNS-LIGHTWEIGHT

- ☐ S14A Overhead Signs- Lightweight Balanced-Single Steel Post Connection and Mounting Details
- ☐ S14B Overhead Signs- Lightweight Balanced-Single Steel Post Details
- ☐ S15 Overhead Signs- Lightweight, Type A, Connection Details
- ☐ S16 Overhead Signs- Lightweight, Type B, Connection Details
- ☐ S17 Overhead Signs- Lightweight, Type C, Connection Details
- ☐ S18A Overhead Signs- Lightweight, Sign Panel Mounting Details, Laminated Panels- Type A
- ☐ S18B Overhead Signs- Lightweight, Light Fixture Mounting Details
- ☐ S20A Overhead Signs- Lightweight Post Details
- ☐ S20B Overhead Signs- Lightweight Foundation

OVERHEAD SIGNS-BOX BEAM CLOSED TRUSS ALTERNATIVE

- ☐ S39 Overhead Signs- Box Beam, Closed Truss Foundation
- ☐ S40A Overhead Signs- Box Beam, Closed Truss, Two Post Type Frame Members
- ☐ S40B Overhead Signs- Box Beam, Closed Truss, Single and Two Post Type General Frame Details
- ☐ S40C Overhead Signs- Box Beam, Closed Truss, Ribbed Sheet Metal Details
- ☐ S40D Overhead Signs- Box Beam, Closed Truss, Two Post Type Frame Details
- ☐ S40E Overhead Signs- Box Beam, Closed Truss, Two Post Type Frame Juncture Details
- ☐ S40F Overhead Signs- Box Beam, Closed Truss, Two Post Type Post Details
- ☐ S40G Overhead Signs- Box Beam, Closed Truss, Single Post Type Frame Members
- ☐ S40H Overhead Signs- Box Beam, Closed Truss, Single Post Cantilever Frame Details
- ☐ S40I Overhead Signs- Box Beam, Closed Truss, Single Post Cantilever Frame Juncture Details
- ☐ S40J Overhead Signs- Box Beam, Closed Truss, Single Post Cantilever Post Details
- ☐ S40K Overhead Signs- Box Beam, Closed Truss, Single Post Butterfly Frame Details
- ☐ S40L Overhead Signs- Box Beam, Closed Truss, Single Post Butterfly Frame Juncture Details
- ☐ S40M Overhead Signs- Box Beam, Closed Truss, Single Post Butterfly Post Details

OVERHEAD SIGNS-TUBULAR

- ☐ S40N Overhead Signs- Tubular, Instructions and Examples
- ☐ S40P Overhead Signs- Tubular, Single Post Type Layout and Pipe Selection
- ☐ S40Q Overhead Signs- Tubular, Two Post Type Layout and Pipe Sections
- ☐ S40R Overhead Signs- Tubular, Structural Frame Details No. 1
- ☐ S40S Overhead Signs- Tubular, Structural Frame Details No. 2
- ☐ S40T Overhead Signs- Tubular Foundation Details

SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS

- ☒ ES-1A Signal, Lighting and Electrical Systems- Symbols and Abbreviations
- ☒ ES-1B Signal, Lighting and Electrical Systems- Symbols and Abbreviations
- ☐ ES-2A Signal, Lighting and Electrical Systems- Service Equipment
- ☐ ES-2B Signal, Lighting and Electrical Systems- Service Equipment
- ☐ ES-2C Signal, Lighting and Electrical Systems- Service Equipment Notes
- ☐ ES-2D Signal, Lighting and Electrical Systems- Service Equipment and Typical Wiring Diagram, Type A
- ☐ ES-2E Signal, Lighting and Electrical Systems- Service Equipment and Typical Wiring Diagram, Type B
- ☐ ES-2F Signal, Lighting and Electrical Systems- Service Equipment and Typical Wiring Diagram, Type C
- ☐ ES-3A Signal, Lighting and Electrical Systems- Signal Heads and Mountings
- ☐ ES-3B Signal, Lighting and Electrical Systems- Signal Heads and Mountings
- ☐ ES-3C Signal, Lighting and Electrical Systems- Signal Heads and Mountings
- ☐ ES-3D Signal, Lighting and Electrical Systems- Signal Heads and Mountings
- ☐ ES-3E Signal, Lighting and Electrical Systems- Signal Heads and Mountings
- ☐ ES-4A Signal, Lighting and Electrical Systems- Controller Cabinet Details
- ☐ ES-4B Signal, Lighting and Electrical Systems- Controller Cabinet Details
- ☐ ES-4C Signal, Lighting and Electrical Systems- Controller Cabinet Details
- ☐ ES-4D Irrigation Controller Enclosure Cabinet
- ☐ ES-4E Signal, Lighting and Electrical Systems- Telephone Demarcation Cabinet Details
- ☐ ES-4F Signal, Lighting and Electrical Systems- Telephone Demarcation Cabinet Details
- ☐ ES-5A Signal, Lighting and Electrical Systems- Detectors
- ☐ ES-5B Signal, Lighting and Electrical Systems- Detectors
- ☐ ES-5C Signal, Lighting and Electrical Systems- Detectors
- ☐ ES-5D Signal, Lighting and Electrical Systems- Detectors
- ☐ ES-5E Signal, Lighting and Electrical Systems- Detectors
- ☐ ES-5F Signal, Lighting and Electrical Systems- Pedestrian Barricades
- ☐ ES-6A Signal and Lighting Standards- Type 1 Standards and Equipment Numbering
- ☐ ES-6AA Signal Standards- Push Button Post
- ☐ ES-6B Lighting Standards- Types 15, 21 and 22
- ☐ ES-6C Lighting Standards- 80' to 160' High Mast Light Pole, Foundation Details
- ☐ ES-6D Lighting Standards- Types 30 and 31, Slip Base
- ☐ ES-6DA Lighting Standards- Type 32
- ☐ ES-6E Lighting Standards- Types 30 and 31, Slip Base Plate Details
- ☐ ES-6F Lighting Standards- 10 Degree Type
- ☐ ES-6H Lighting Standards- 10 Degree Type, Details
- ☐ ES-6J Signal and Lighting Standards- Case 1 Arm Loading, Wind Velocity = 70 MPH, Arm Lengths 15' to 30'
- ☐ ES-6K Signal and Lighting Standards- Case 2 Arm Loading, Wind Velocity = 70 MPH, Arm Lengths 20' to 30'
- ☐ ES-6L Signal and Lighting Standards- Case 3 Arm Loading, Wind Velocity = 70 MPH, Arm Lengths 15' to 45'
- ☐ ES-6M Signal and Lighting Standards- Case 4 Arm Loading, Wind Velocity = 70 MPH, Arm Lengths 25' to 45'
- ☐ ES-6MA Signal and Lighting Standards- Case 5 Arm Loading, Wind Velocity = 70 MPH, Arm Lengths 50' to 55'
- ☐ ES-6N Signal and Lighting Standards- Type 40-0-30
- ☐ ES-6O Signal and Lighting Standards- Case 1 Arm Loading, Wind Velocity = 80 MPH, Arm Lengths 25' to 30'
- ☐ ES-6P Signal and Lighting Standards- Case 2 Arm Loading, Wind Velocity = 80 MPH, Arm Lengths 20' to 30'
- ☐ ES-6Q Signal and Lighting Standards- Case 3 Arm Loading, Wind Velocity = 80 MPH, Arm Lengths 20' to 45'
- ☐ ES-6R Signal and Lighting Standards- Case 4 Arm Loading, Wind Velocity = 80 MPH, Arm Lengths 25' to 45'
- ☐ ES-6RA Signal and Lighting Standards- Case 5 Arm Loading, Wind Velocity = 80 MPH, Arm Lengths 50' to 55'
- ☐ ES-6S Signal and Lighting Standards- Details No. 1
- ☐ ES-6T Signal and Lighting Standards- Details No. 2
- ☐ ES-6TA Signal and Lighting Standards- Pole and Mast Arm Alternatives
- ☐ ES-6U Lighting Standards- Types 10 and 15 Slip Base Insert
- ☐ ES-6V Signal and Sign Standards- Type 33 Left Turn
- ☐ ES-7A Signal, Lighting and Electrical Systems- Electrical Details, Structure Installations
- ☐ ES-7B Signal, Lighting and Electrical Systems- Electrical Details, Structure Installations
- ☐ ES-7C Signal, Lighting and Electrical Systems- Electrical Details, Structure Installations
- ☐ ES-7D Signal, Lighting and Electrical Systems- Electrical Details, Structure Installations
- ☐ ES-7E Signal, Lighting and Electrical Systems- Electrical Details, Structure Installations
- ☐ ES-7F Signal, Lighting and Electrical Systems- Flush Soffit Luminaire Modification Details, Structure Installation
- ☐ ES-8 Signal, Lighting and Electrical Systems- Pull Box Details
- ☐ ES-9A Signal, Lighting and Electrical Systems- Cantilever Flashing Beacon, Types 9, 9A, 9B
- ☐ ES-9B Signal, Lighting and Electrical Systems- Cantilever Flashing Beacon, Types 9, 9A, 9B
- ☐ ES-10 Signal, Lighting and Electrical Systems- Isolux Diagrams
- ☐ ES-11 Signal, Lighting and Electrical Systems- Foundation Installations
- ☐ ES-12 Signal, Lighting and Electrical Systems- Pedestrian Undercrossing Fluorescent Lighting Fixture
- ☒ ES-13 Signal, Lighting and Electrical Systems- Splicing Details
- ☐ ES-14 Signal, Lighting and Electrical Systems- Wiring Detail and Fuse Ratings
- ☐ ES-15 Signal, Lighting and Electrical Systems- Pedestrian Overcrossing Fluorescent Lighting Fixture
- ☐ ES-27A Signal, Lighting and Electrical Systems- Extinguishable Message Sign, 10'' Letters
- ☐ ES-27B Signal, Lighting and Electrical Systems- Extinguishable Message Sign, 10'' Letters
- ☐ ES-28 Signal, Lighting and Electrical Systems- Extinguishable Message Sign and Flashing Beacons

SIGN ILLUMINATION

- ☐ ES-29 Sign Illumination- Mercury Sign Illumination Equipment
- ☐ ES-30 Sign Illumination- 36" Fluorescent Sign Illumination Equipment
- ☐ ES-32A Sign Illumination- Sign Illumination Equipment
- ☐ ES-32B Sign Illumination- Sign Illumination Control
- ☐ ES-33 Sign Illumination- Internally Illuminated Street Name Sign

NEW STANDARD PLANS

- ☐ NSP A40 Rumble Strip Details
- ☐ NSP A75D Concrete Headlight Glare Screen
- ~~☐ NSP A88 Curb Ramp Details No. 1~~ } CANCELED
- ~~☐ NSP A83 Curb Ramp Details No. 2~~ }
- ☐ NSP T7 Construction Project Funding Indentification Signs
- ☐ NSP T15 Traffic Control System for Moving Lane Closure on Multilane Highways
- ☐ NSP T16 Traffic Control System for Moving Lane Closure on Multilane Highways
- ☐ NSP T17 Traffic Control System for Moving Lane Closure on Two Lane Highways

NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

SHEET 2 OF 2
STANDARD PLANS LIST
(July, 1992 Edition)
Revised June 13, 1994

The Revised Standard Plans (RSP) and New Standard Plans (NSP) which apply to this contract are included as individual sheets of the project plans. The Standard Plan sheets applicable to this contract include, but are not limited to those indicated by a marked box.

NOTE: 1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. ALL TEMPORARY FENCE IS CHAIN LINK (TYPE CL-6).
3. FOR TEMPORARY FENCE AT BENTS 58 TO 36, SEE STAGE CONSTRUCTION SHEETS SC-2 AND SC-3.
4. ALL UTILITIES SHOWN ARE EXISTING.

LEGEND

(E) STREET CLOSURES
(N) BANK STREET CLOSED
SS: SANITARY SEWER.
DIRECTION OF TRAVEL

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	4	107

J. A. Blevins
REGISTERED CIVIL ENGINEER 10-07-94
10-24-94
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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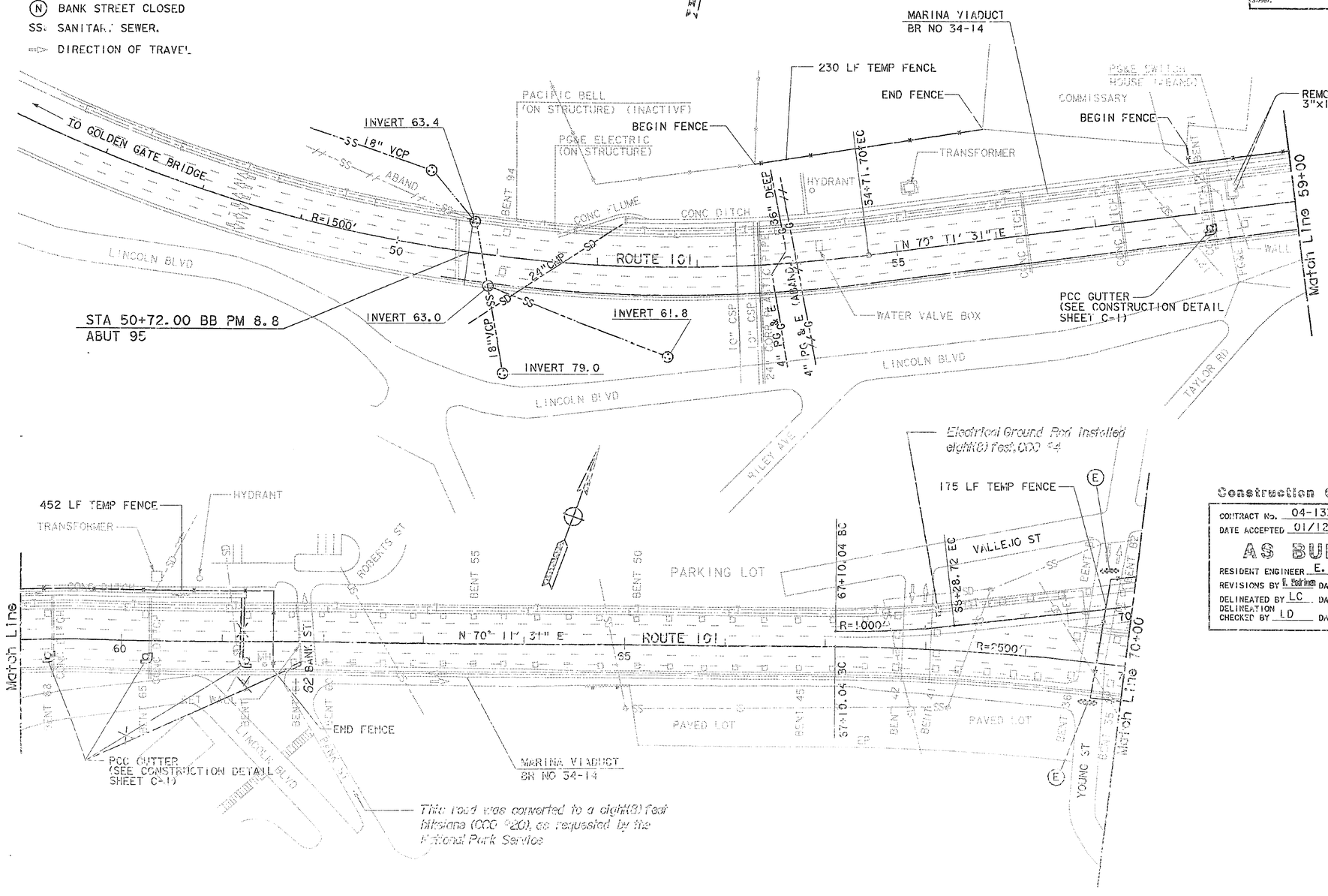

Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96

AS BUILT

RESIDENT ENGINEER E. Der
REVISIONS BY E. Der DATE 2/7/96
DELINEATED BY LC DATE 7/17/96
DELINEATION CHECKED BY LD DATE 8-6-96

LAYOUT
SCALE: 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE
PROJECT ENGINEER J. A. BLEVINS

DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY
CHECKED BY

t4ldelac 413309e02 25-Sep-1996 15:00 /home/t4ldelac/check/133091/413309e02.asb

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	5	107

J. A. Blevins
REGISTERED CIVIL ENGINEER 10-07-94
10-24-94
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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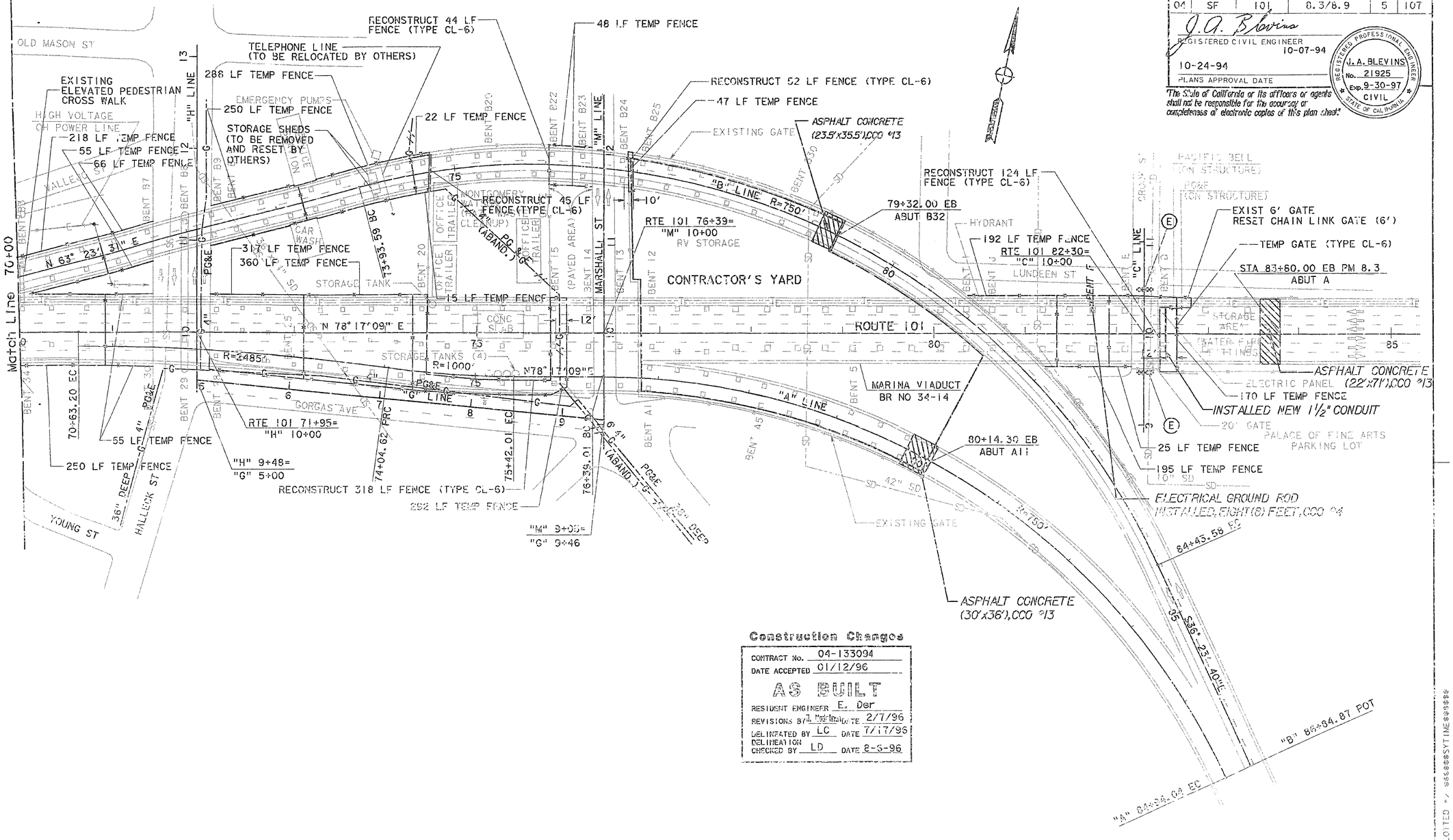

Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der
REVISIONS BY [illegible] DATE 2/7/96
DELINEATED BY LC DATE 7/17/96
DELINEATION CHECKED BY LD DATE 8-5-96

NOTES:
1. SEE TRAFFIC HANDLING SHEETS FOR STAGING ON HALLECK AND MARSHALL STREETS.

LAYOUT
SCALE: 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE
PROJECT ENGINEER J. A. BLEVINS
CALCULATED/DESIGNED BY
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DATE
REVISED BY
DATE REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES
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DGN FILE => $$$$$$$$$$$PCMSPEC$$$$$$$$$$
CU 04332
EA 133091
TIME PLOTTED => $$$$$$SYTIME$$$$$$
LAST REVISION 00-00-00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	6	107

J. A. Blevins
REGISTERED CIVIL ENGINEER 10-07-94
10-24-94
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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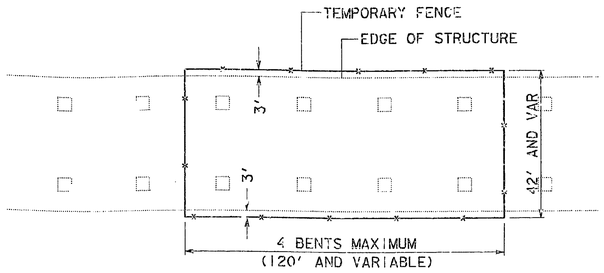
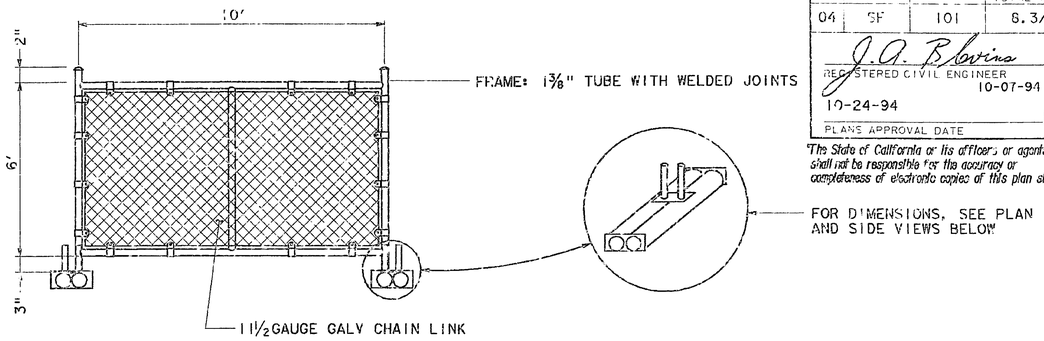
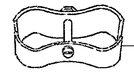


PLAN

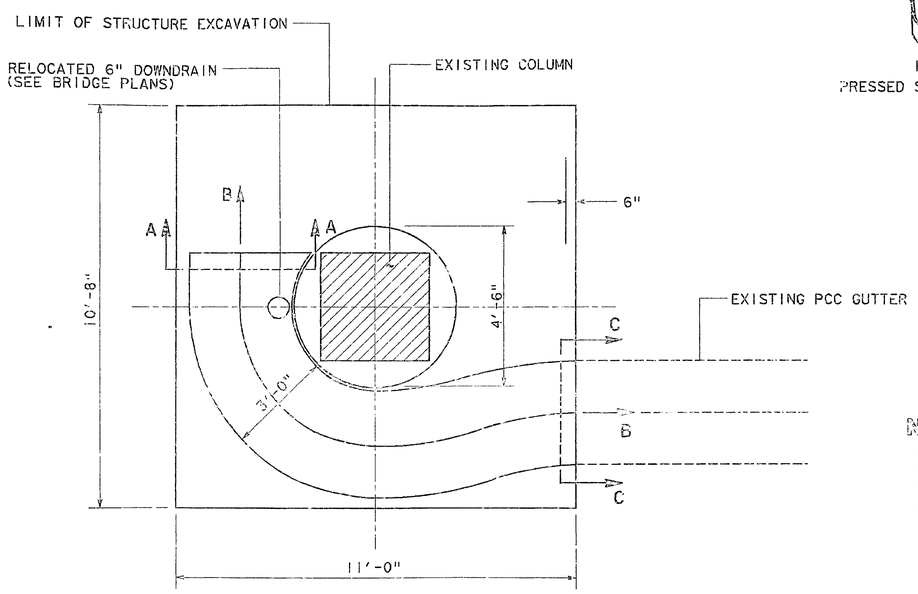
TYPICAL TEMPORARY FENCE



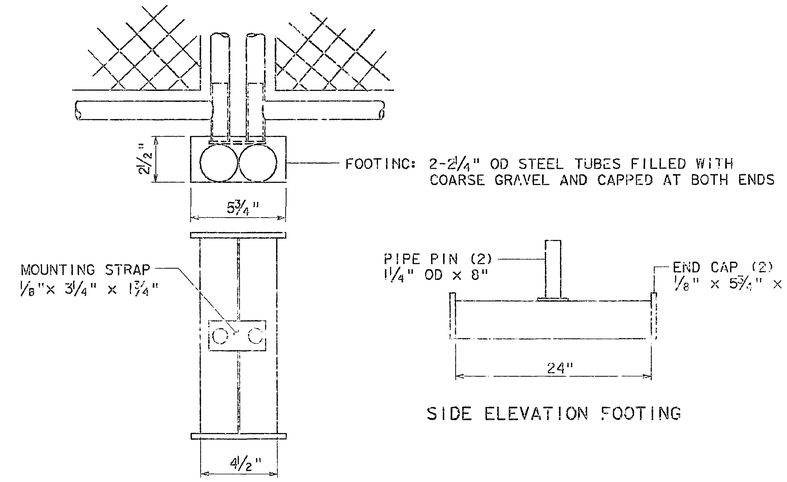


ATTACHING BRACKET TO CLAMP PANELS TOGETHER. ONE USED ON EACH SIDE OF PANEL.

PANEL CLAMP
PRESSED STEEL (WITHOUT BOLTS)



PLAN



PLAN VIEW FOOTING

SIDE ELEVATION FOOTING

TYPICAL PORTABLE TEMPORARY FENCE

NO Construction Changes
CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
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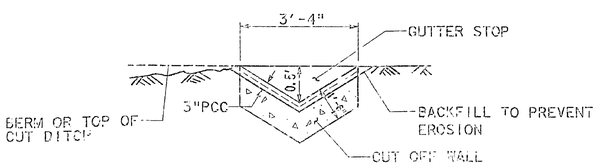
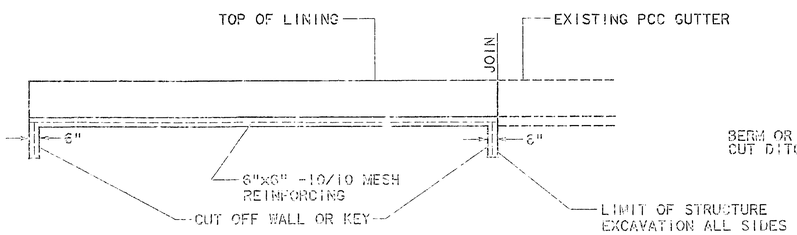
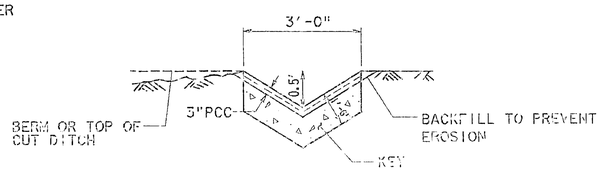
RESIDENT ENGINEER E. Der



SECTION A-A



SECTION B-B



SECTION C-C

CONCRETE (GUTTER LINING) DETAIL FOR BENTS 62, 66, 68, AND 71

NOTES: 1. CUT-OFF WALL REQUIRED AT THE BEGINNING OF ALL PCC GUTTERS.
2. KEY TO BE PLACED AT JOIN.

CONSTRUCTION DETAILS
NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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PROJECT ENGINEER J. A. BLEVINS

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FOR ENLARGED PLANS ORIGINAL SCALE IS IN INCHES

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04	SF	101	8.3/8.9	7	107

REGISTERED CIVIL ENGINEER 10-07-94

10-24-94
PLANS APPROVAL DATE

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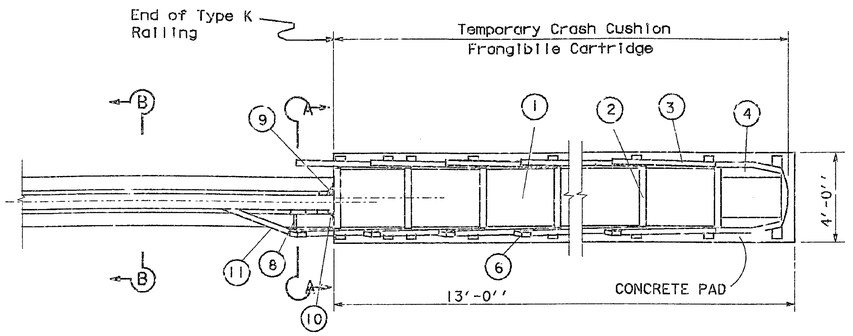
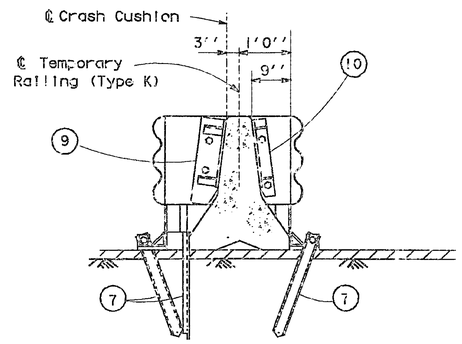
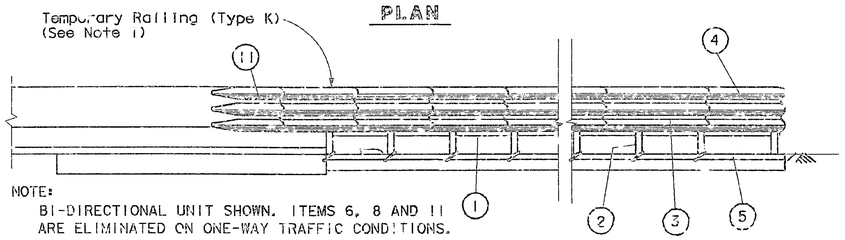


PLAN



SECTION A-A

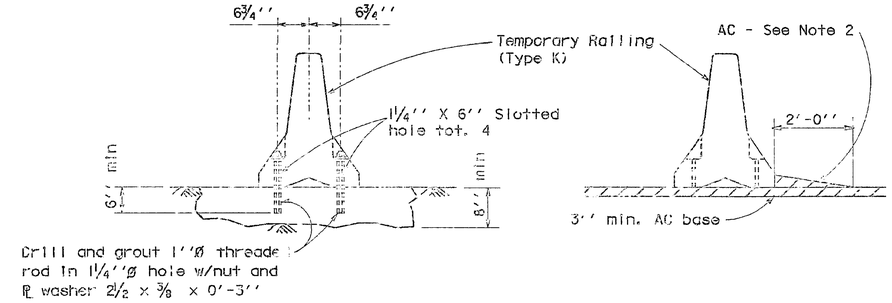


NOTE:
BI-DIRECTIONAL UNIT SHOWN. ITEMS 6, 8 AND 11 ARE ELIMINATED ON ONE-WAY TRAFFIC CONDITIONS.

ELEVATION

THE G.R.E.A.T. SYSTEM SHALL CONSIST OF, IN GENERAL, THE FOLLOWING:

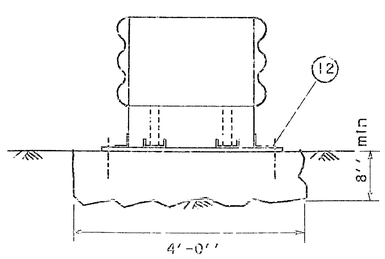
1. HEX-FOAM CARTRIDGE
2. DIAPHRAGM
3. THRIE BEAM FENDER PANEL
4. NOSE COVER
5. STABILIZING CHAIN PLATFORM
6. DEFLECTORS
7. ANCHOR PIN (26 REQ.)
8. SUPPORT BRACKET
9. RIGHT ATTACHMENT BRACKET
10. LEFT ATTACHMENT BRACKET
11. TRANSITION PANEL
12. CONCRETE ANCHOR BOLTS



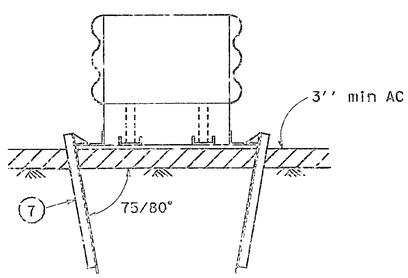
CONCRETE BASE

AC BASE

SECTION B-B
(SEE NOTE 4)



TYPICAL ANCHORAGE DETAIL TO CONCRETE PAD OR DECK



TYPICAL ANCHORAGE DETAIL TO ASPHALT SURFACE

NO Construction Changes
CONTRACT No. 04-133094
DATE ACCEPTED 1-12-96
AS BUILT
RESIDENT ENGINEER E. Dar

GENERAL NOTES

1. INSTALLED LENGTH OF TEMPORARY RAILING TYPE K TO BE 80' MINIMUM.
2. PLACE AC THE ENTIRE LENGTH OF 20 FOOT PANEL ON BI-DIRECTIONAL UNITS.
3. PROVIDE A CONCRETE OR AC BASE FOR THE FIRST PANEL OF TYPE K RAILING AND ANCHOR AS SHOWN.
4. FOR DETAILS OF TEMPORARY RAILING (TYPE K) SEE STD. PLAN T3.
5. FOR DETAILS OF G.R.E.A.T. SYSTEM AND ACCESSORIES SEE MANUFACTURER'S DETAILS.
6. ONLY ANCHORAGES PROVIDED BY THE MANUFACTURER SHALL BE USED. NO SUBSTITUTIONS PERMITTED.

CONSTRUCTION DETAILS
TEMPORARY CRASH CUSHION, FRANGIBLE CARTRIDGE
NO SCALE

G-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE

PROJECT ENGINEER J. A. BLEVINS

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TIME PLOTTED 09:59:59 SYTIME$$$$$$

LAST REVISION 00-00-00

FOR ABOVE PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

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CU 04272 | EA 133094

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	8	107

J. A. Blevins
REGISTERED CIVIL ENGINEER
10-07-94

10-24-94
PLANS APPROVAL DATE

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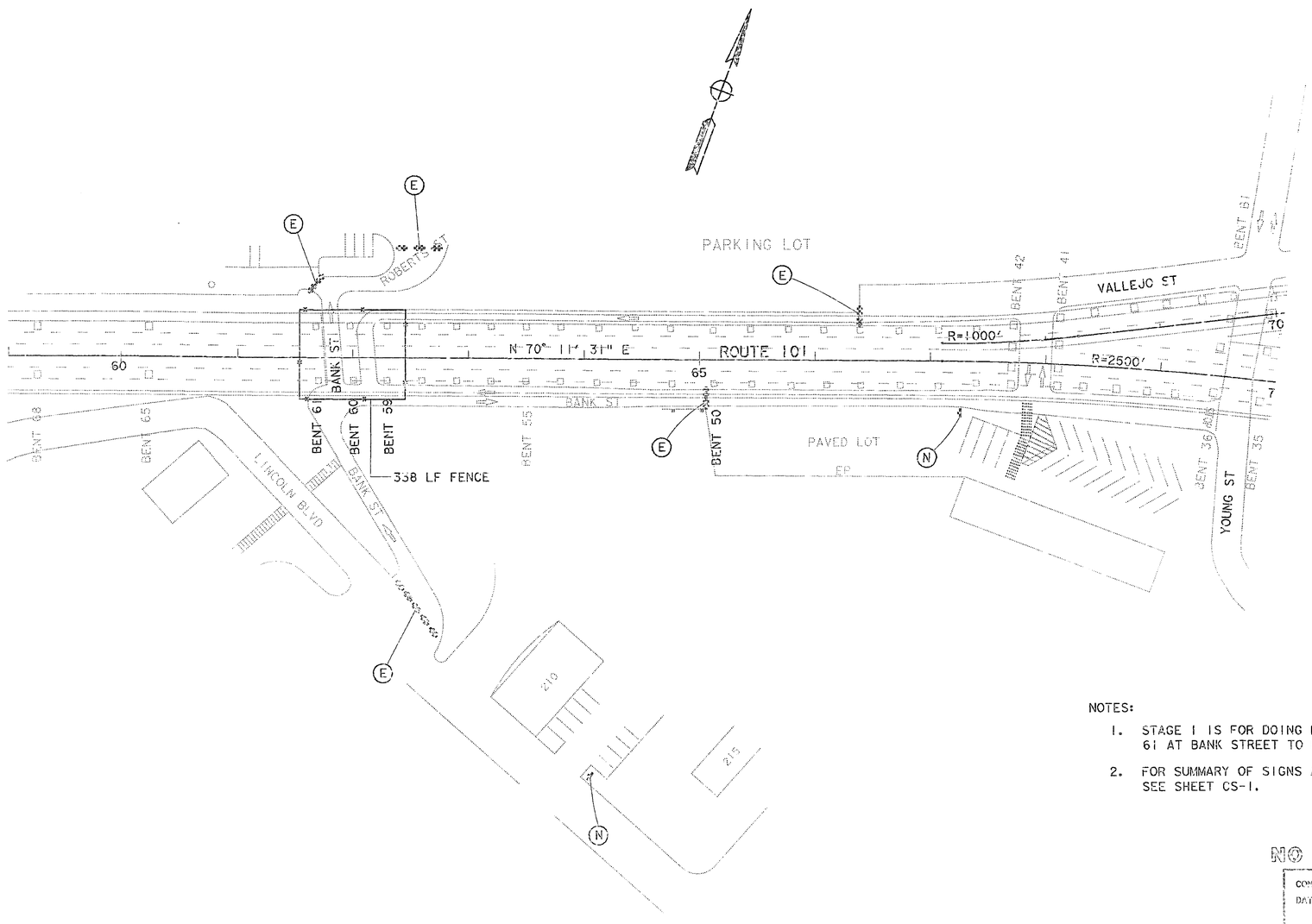
REGISTERED PROFESSIONAL ENGINEER
J. A. BLEVINS
No. 21925
Exp. 9-30-97
CIVIL
STATE OF CALIFORNIA



NOTES:

1. STAGE 1 IS FOR DOING RETROFIT WORK BENT 61 AT BANK STREET TO BENT 59.
2. FOR SUMMARY OF SIGNS AND BARRICADES, SEE SHEET CS-1.

NO Construction Changes
CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Dor

STAGE CONSTRUCTION
BENT 61 TO BENT 47
SCALE: 1"=50'

SC-4

DATE	REVISED BY	DATE REVISED

CALCULATED/DESIGNED BY
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PROJECT ENGINEER
J. A. BLEVINS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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FOR REDUCED PLANS
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EA 133091

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/9.9	9	107

J. A. Blevins
REGISTERED CIVIL ENGINEER
10-07-94

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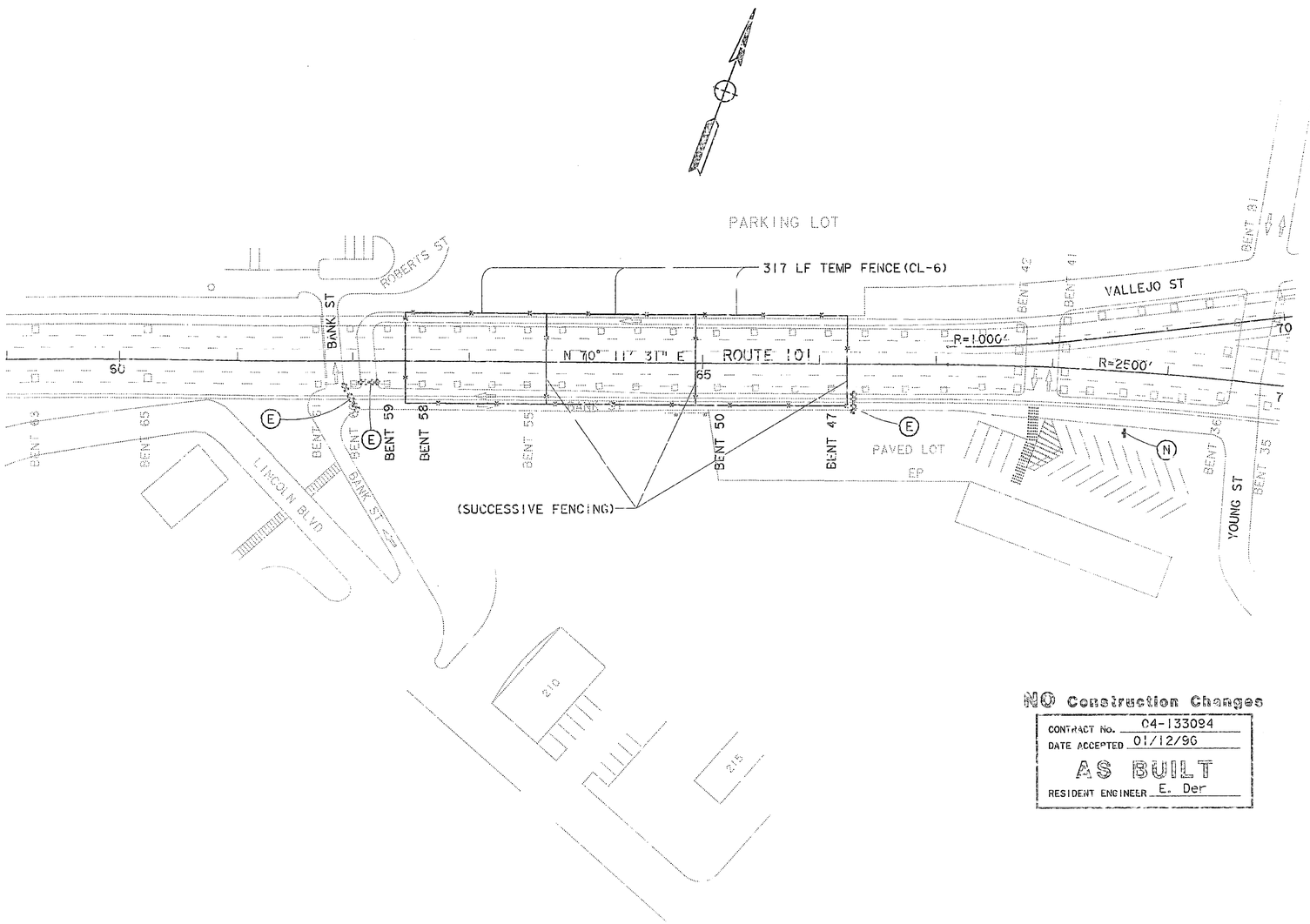
STATE OF CALIFORNIA



NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

NOTES: 1. STAGE 2 IS FOR DOING RETROFIT WORK FROM BENT 58 AT BANK STREET TO BENT 47.
2. MOVE TEMPORARY FENCE TO EAST, 4 BENTS AT A TIME.

STAGE CONSTRUCTION
(BENT 61 TO BENT 47)
SCALE: 1"=50'

SC-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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PROJECT ENGINEER J. A. BLEVINS

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CH 04302 | EA 133091

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	10	107

J. A. Blevins
REGISTERED CIVIL ENGINEER
10-07-94

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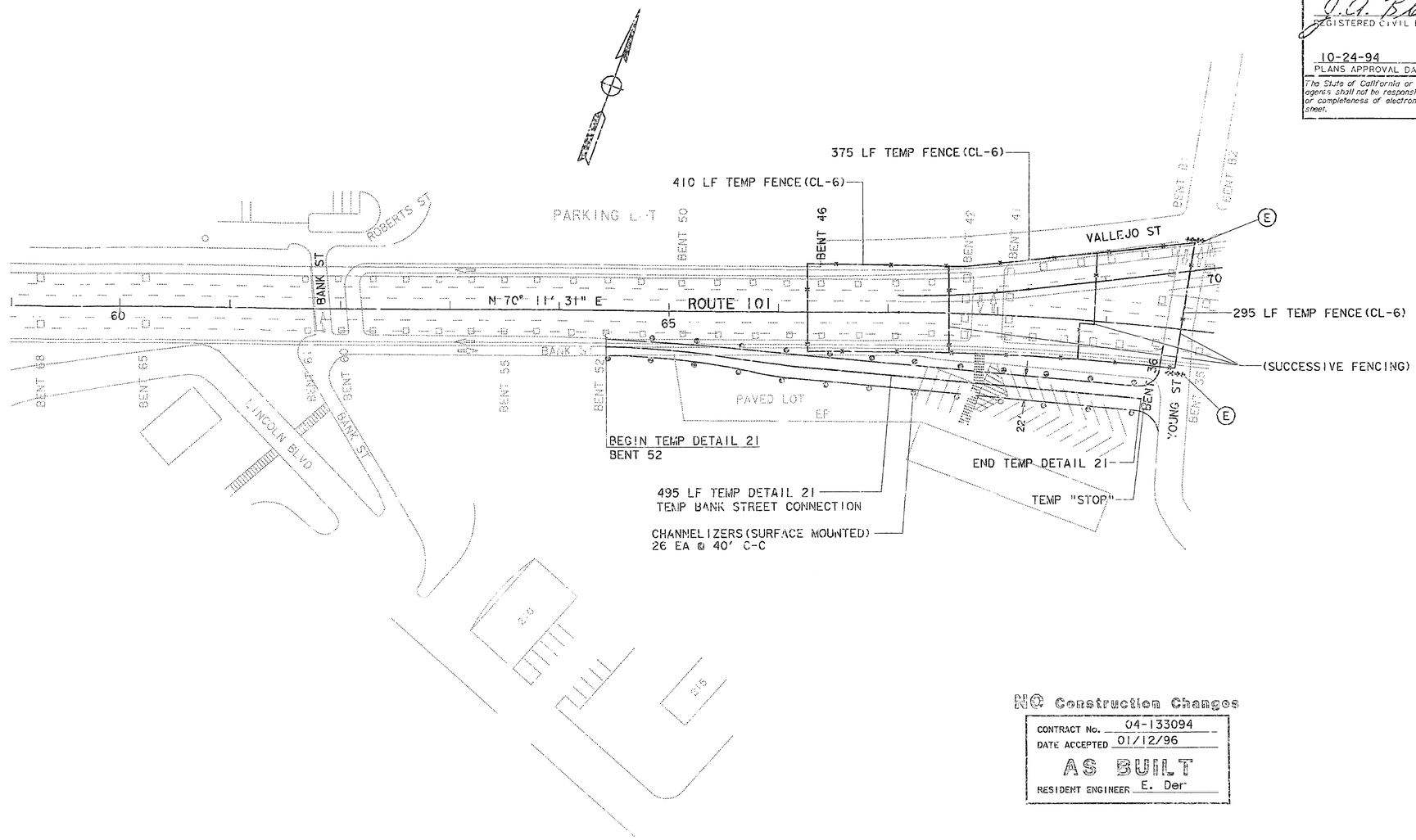

NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

NOTES: 1. STAGE 3 IS FOR DOING ALL RETROFIT WORK FROM BENT 46 TO BENT 36.

2. STRIPING FOR PARKING STALLS AND PEDESTRIAN CROSS-WALKS RIGHT STATION 67+25 TO 69+50 SHALL BE REMOVED PRIOR TO TEMPORARY BANK STREET CONNECTION. THIS STRIPING SHALL BE REPLACED AFTER TEMPORARY BANK STREET CONNECTION IS REMOVED.

STAGE CONSTRUCTION
(BENT 46 TO BENT 36)
SCALE: 1"=50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE

PROJECT ENGINEER: J.A. BLEVINS
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FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2

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CU 04332
EA 133091

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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J. A. Blevins
REGISTERED CIVIL ENGINEER
10-07-94

10-24-94
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REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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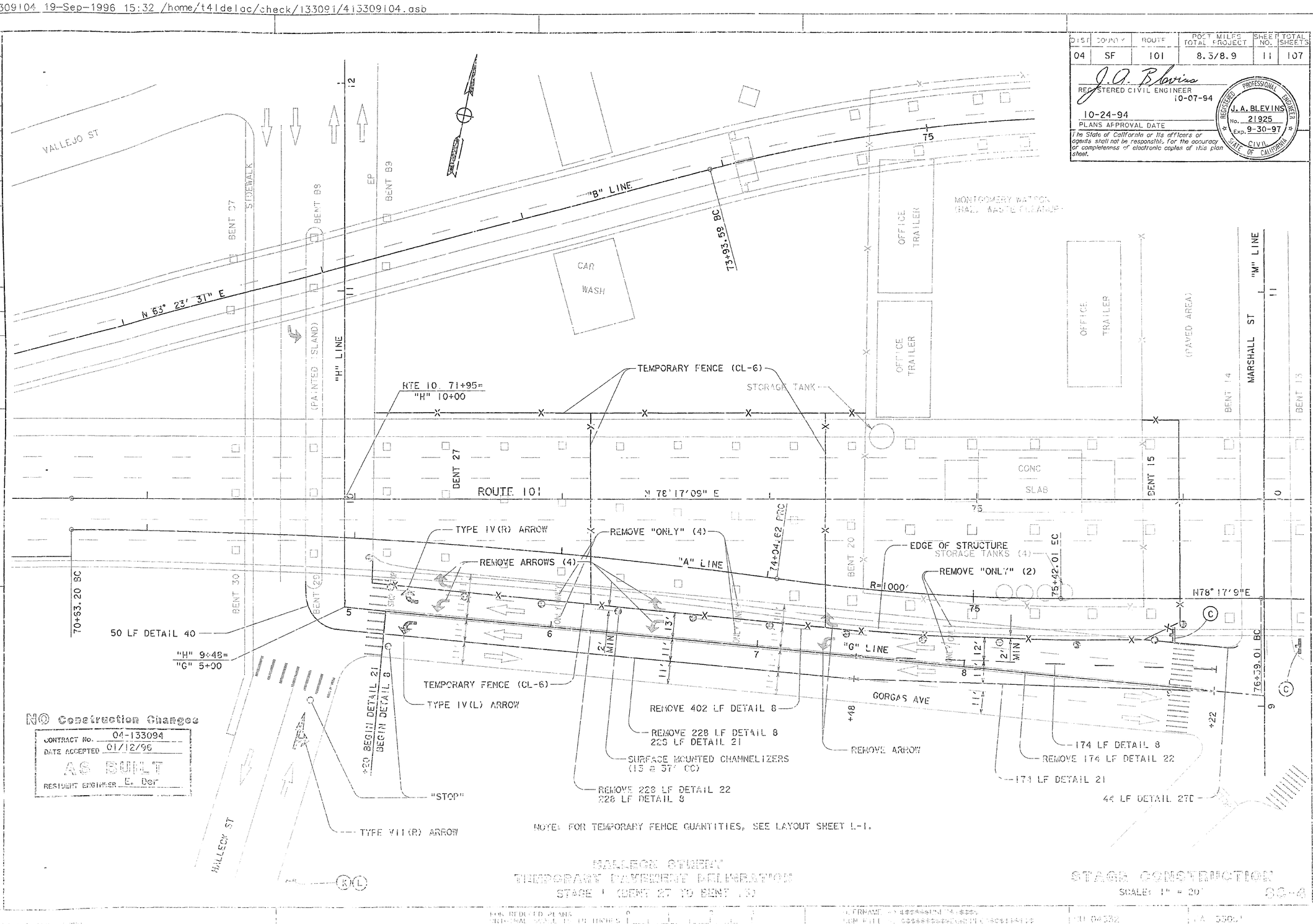

NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

NOTE: FOR TEMPORARY FENCE QUANTITIES, SEE LAYOUT SHEET L-1.

HILLSCH STREET
TEMPORARY PAVEMENT DELINEATION
STAGE 1 (BENT 27 TO BENT 13)

STAGE CONSTRUCTION
SCALE: 1" = 20'
SC-4

PROJECT ENGINEER J. A. BLEVINS
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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DATE REVISED BY
DATE REVISED
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FOR REDUCED PLANS INTERNAL SCALE IS 10 INCHES

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04	SF	101	8.3/8.9	12	107

REGISTERED CIVIL ENGINEER 10-07-94

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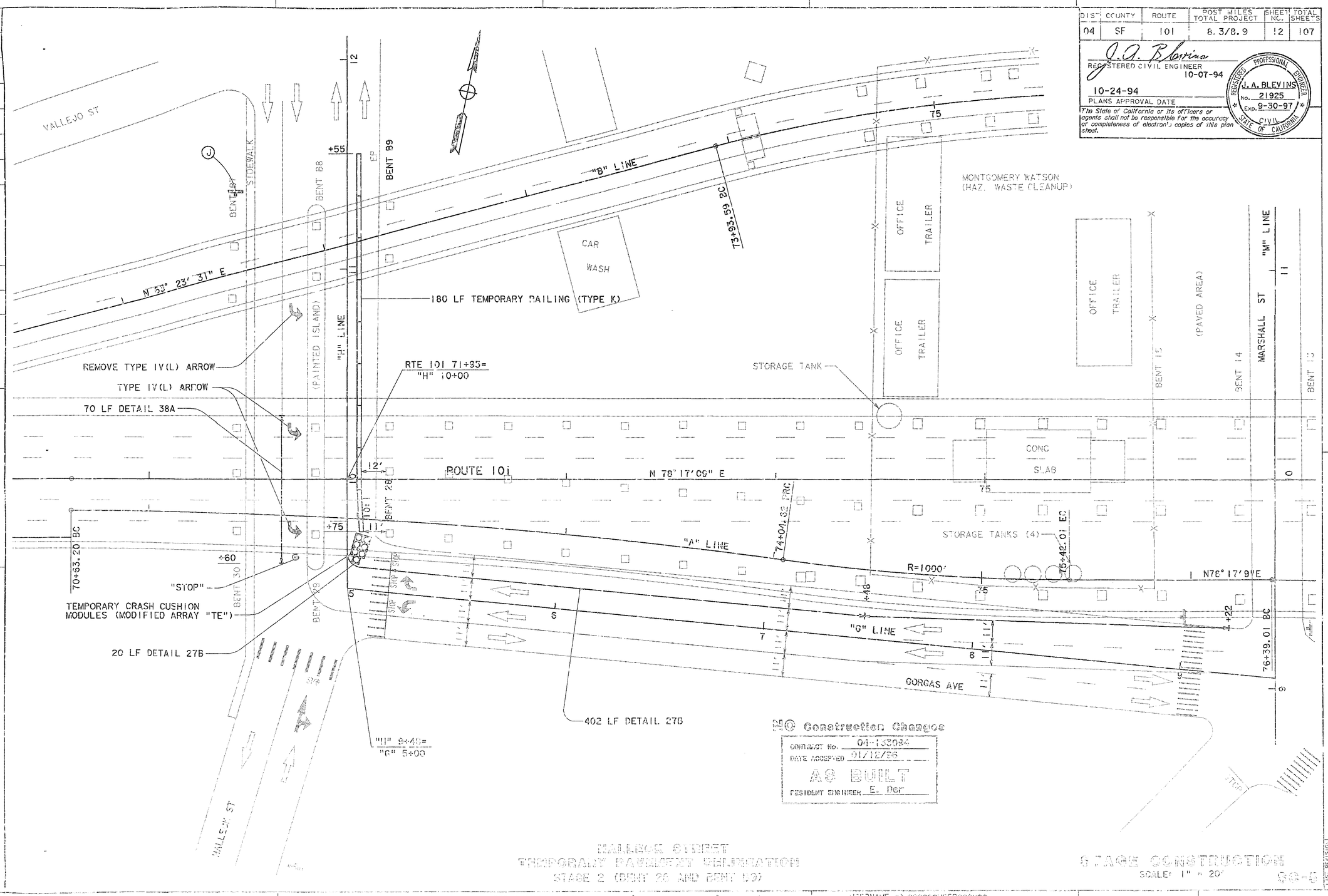

NO Construction Changes
CONTRACT No. 04-133084
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Ber

MALLOW STREET
TEMPORARY PAVEMENT DELINEATION
STAGE 2 (BENT 28 AND BENT 29)

STAGE CONSTRUCTION
SCALE: 1" = 20'
SC-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE

PROJECT ENGINEER J. A. BLEVINS

CALCULATED/DESIGNED BY | CHECKED BY | DATE | REVISED BY | DATE REVISED

LAST REVISION 00-00-00 | TIME PLOTTED => $$$$$$$$TIME$$$$$$

FOR REDUCED PLANS ORIGINAL SCALE IS 1 INCHES

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	13	107

J. A. Blevins
REGISTERED CIVIL ENGINEER 10-07-94

10-24-94
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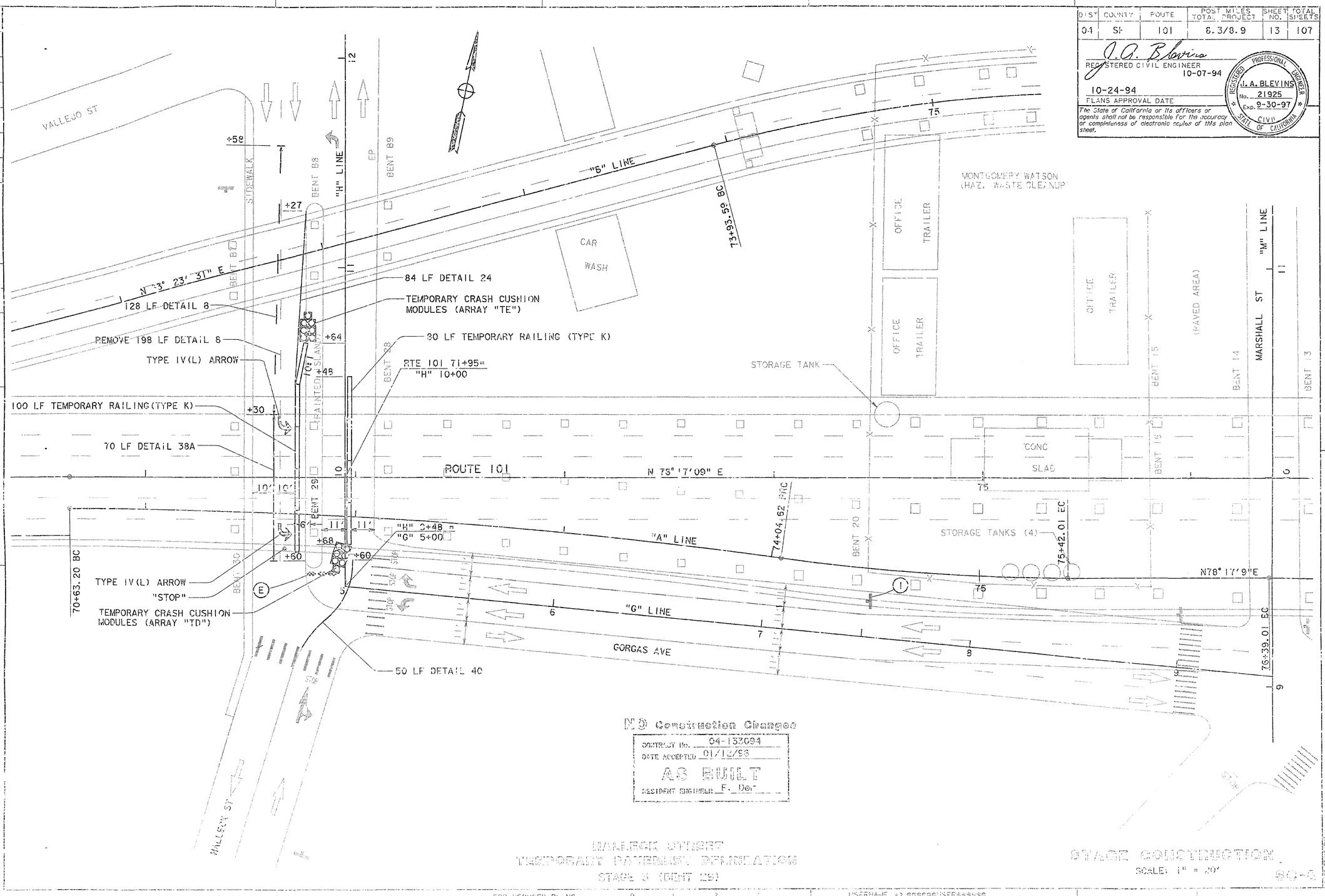

NO Construction Changes
CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER F. Der

HALLECK STREET
TEMPORARY PAVEMENT DELINEATION
STAGE 3 (BENT 29)

STAGE CONSTRUCTION
SCALE: 1" = 20'
SC-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans OFFICE OF DESIGN STATEWIDE
PROJECT ENGINEER J. A. BLEVINS
CALCULATED/DESIGNED BY
CHECKED BY
DATE REVISED BY
DATE REVISED

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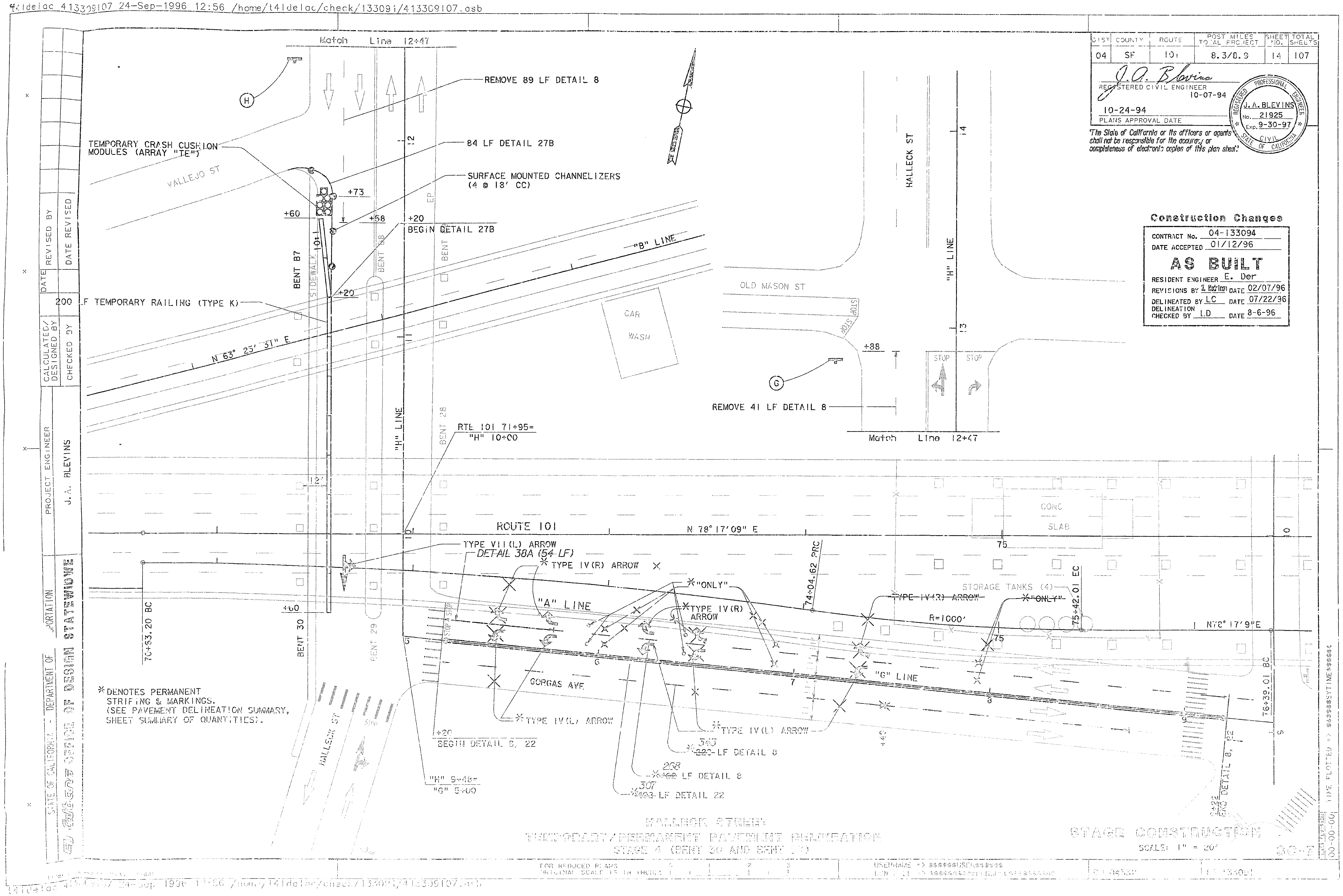
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DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS
04 | SF | 101 | 8.3/8.9 | 14 | 107
J.A. Blevins
REGISTERED CIVIL ENGINEER
10-07-94
10-24-94
PLANS APPROVAL DATE
REGISTERED PROFESSIONAL ENGINEER
J.A. BLEVINS
No. 21925
Exp. 9-30-97
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CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
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RESIDENT ENGINEER E. Der
REVISIONS BY DATE 02/07/96
DELINEATED BY LC DATE 07/22/96
DELINEATION CHECKED BY LD DATE 8-6-96
DATE REVISED
REVISED BY
CALCULATED/DESIGNED BY
CHECKED BY
PROJECT ENGINEER
J.A. BLEVINS
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans OFFICE OF DESIGN STATEWIDE
Match Line 12+47
REMOVE 89 LF DETAIL 8
84 LF DETAIL 27B
SURFACE MOUNTED CHANNELIZERS (4 @ 18' CC)
TEMPORARY CRASH CUSHION MODULES (ARRAY "TE")
VALLEJO ST
+73
+60
+58
+20
BEGIN DETAIL 27B
BENT B7
SIDEWALK
10:1
BENT 28
BENT
EP
+20
200 LF TEMPORARY RAILING (TYPE K)
N 63° 23' 31" E
"B" LINE
CAR WASH
OLD MASON ST
STOP
HALLECK ST
"H" LINE
14
13
+88
G
H
REMOVE 41 LF DETAIL 8
Match Line 12+47
RTE 101 71+95=
"H" 10+00
"H" LINE
BENT 28
12'
ROUTE 101
N 78° 17' 09" E
TYPE VII(L) ARROW
DETAIL 38A (54 LF)
*TYPE IV(R) ARROW
"A" LINE
*"ONLY"
*TYPE IV(R) ARROW
74+04.62 PRC
TYPE IV(R) ARROW
*"ONLY"
STORAGE TANKS (4)
75+42.01 EC
R=1000'
N78° 17'9"E
CONC SLAB
75
70+63.20 BC
+60
BENT 30
BENT 29
GORGAS AVE
"G" LINE
*TYPE IV(L) ARROW
*TYPE IV(L) ARROW
+20
BEGIN DETAIL 8, 22
*345 220 LF DETAIL 8
*268 402 LF DETAIL 8
*307 402 LF DETAIL 22
"H" 9+48=
"G" 5+00
+40
76+39.01 BC
9+22 END DETAIL 8, 22
*DENOTES PERMANENT STRIPING & MARKINGS. (SEE PAVEMENT DELINEATION SUMMARY, SHEET SUMMARY OF QUANTITIES).
HALLECK STREET
TEMPORARY/PERMANENT PAVEMENT DELINEATION
STAGE 4 (BENT 30 AND BENT 17)
STAGE CONSTRUCTION
SCALE: 1" = 20'
SC-7
FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES
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TIME PLOTTED => $$$$$$SYTIME$$$$$$
LAST REVISION 00-00-00
EA 133091

41delac 413309108 24-Sep-1996 13:02 /home/141delac/check/133091/413309108.asb

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	15	107

Construction Changes
CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der
REVISIONS BY WM DATE 02/07/96
DELINEATED BY LC DATE 07/22/96
DELINEATION CHECKED BY LD DATE 8-6-96

J. A. Blevins
REGISTERED CIVIL ENGINEER 10-07-94
10-24-94
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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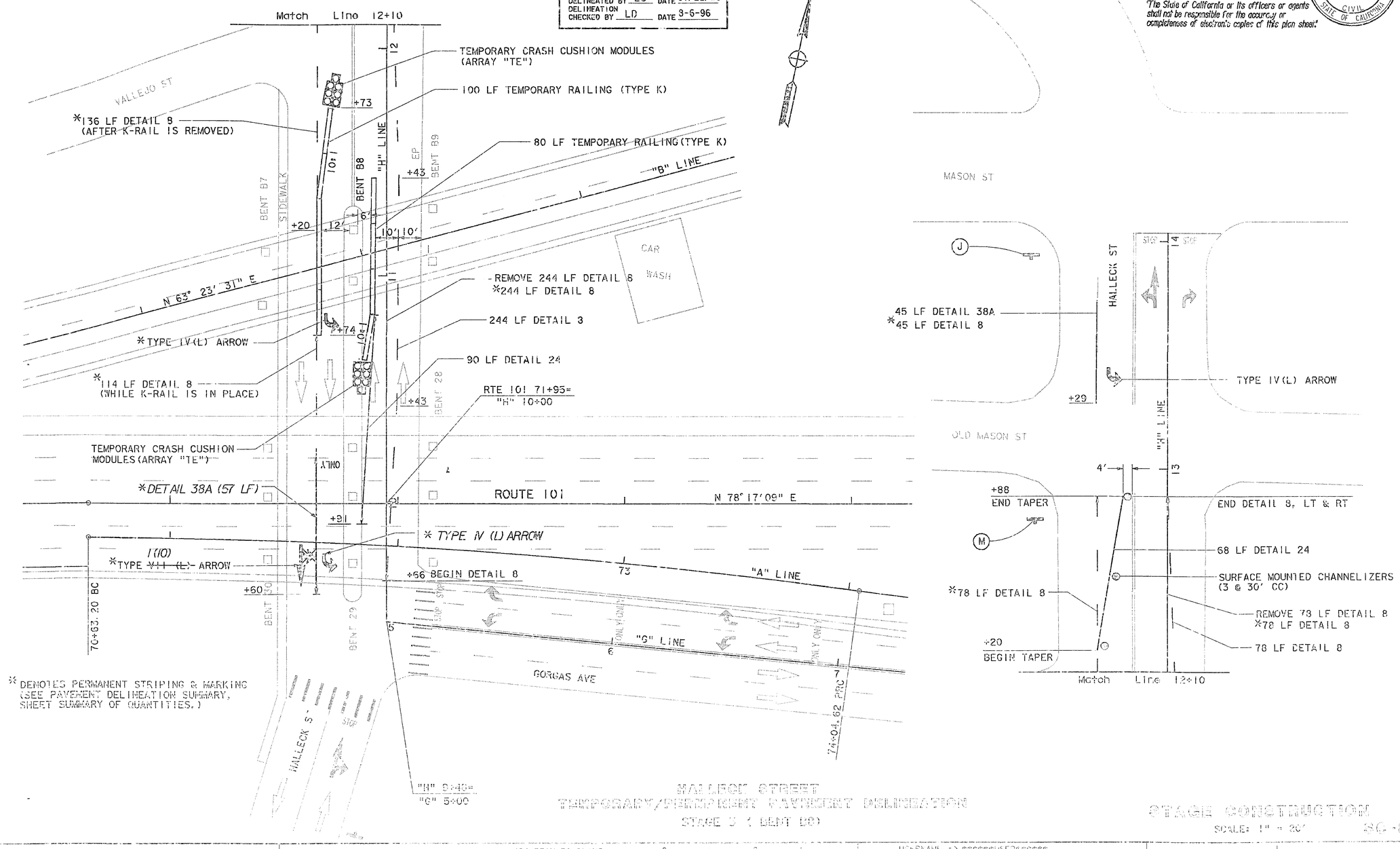

* DENOTES PERMANENT STRIPING & MARKING (SEE PAVEMENT DELINEATION SUMMARY, SHEET SUMMARY OF QUANTITIES.)

HALLECK STREET
TEMPORARY/PERMANENT PAVEMENT DELINEATION
STAGE 3 (BENT B8)

STAGE CONSTRUCTION
SCALE: 1" = 20'
SC-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE
PROJECT ENGINEER J. A. BLEVINS
CALCULATED/DESIGNED BY
CHECKED BY
DATE
REVISED BY
DATE REVISED

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TIME PLOTTED => $$$$$$SYTIME$$$$$$
LIST REVISION 00-00-00

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	16	107

J. A. Blevins
REGISTERED CIVIL ENGINEER 10-07-94

10-24-94
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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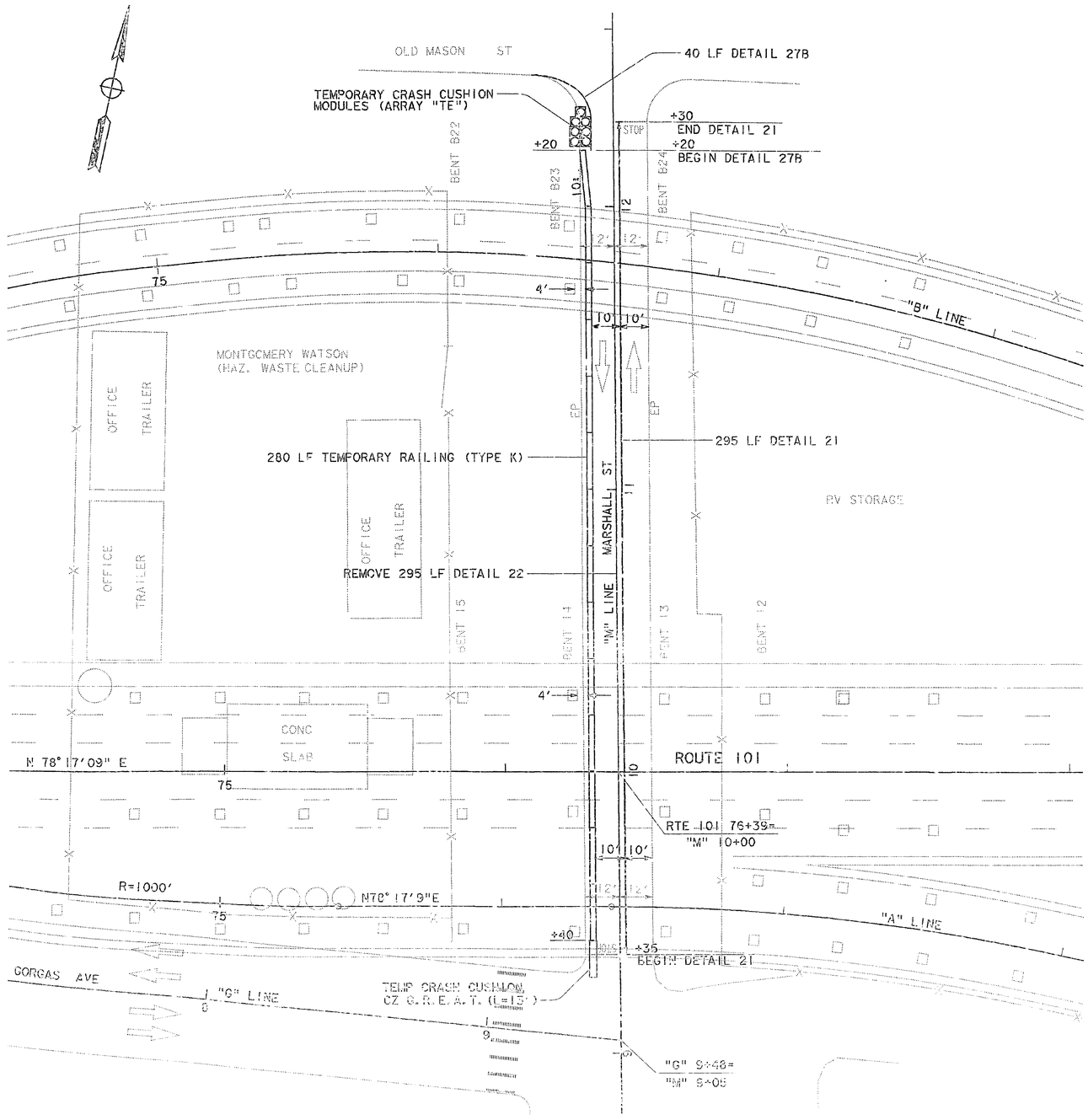

NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

MARSHALL STREET BR
TEMPORARY PAVEMENT DELINEATION
PHASE 1 (BENT 14 AND BENT B23)

TRAFFIC HANDLING PLAN
SCALE: 1" = 20'

TP-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE

PROJECT ENGINEER J. A. BLEVINS

CALCULATED/DESIGNED BY
CHECKED BY

DATE REVISED BY
DATE REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 1 2 3

FILE 04133

133091

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	17	107

J. A. Blevins
REGISTERED CIVIL ENGINEER
10-07-94

10-24-94
PLANS APPROVAL DATE

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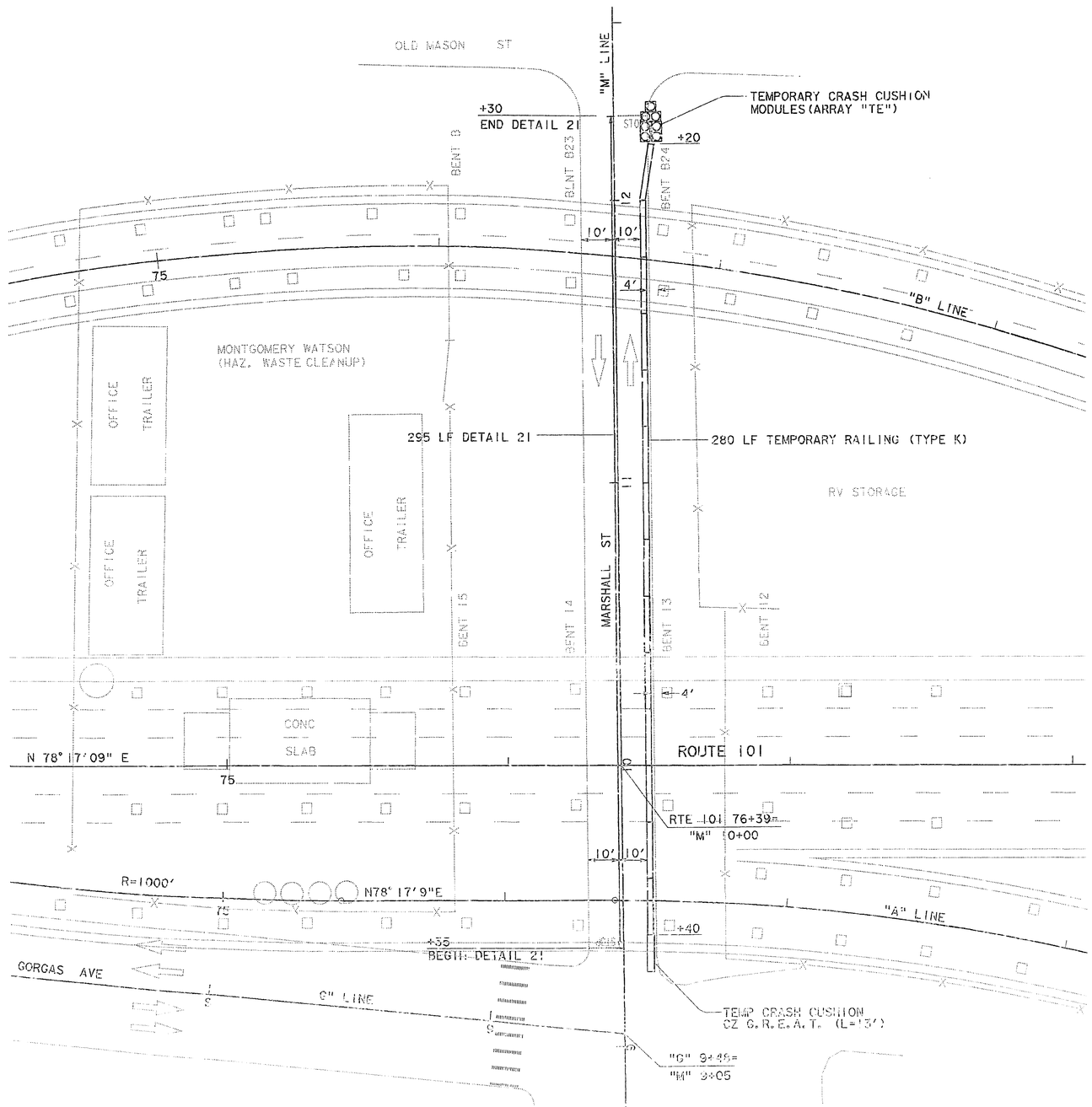
REGISTERED PROFESSIONAL ENGINEER
J. A. BLEVINS
No. 21925
Exp. 9-30-97
CIVIL
STATE OF CALIFORNIA



NOTE:

REPLACE 295 LF DETAIL 22 ALONG "M" ℄ ("M" 9+35 TO "M" 12+30) AFTER THIS PHASE. (SEE PAVEMENT DELINEATION SUMMARY, SHEET SUMMARY OF QUANTITIES).

NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

MARSHALL STREET UC
TEMPORARY PAVEMENT DELINEATION
PHASE 2 (BENT 13 AND BENT B24)

TRAFFIC HANDLING PLAN
SCALE: 1" = 20'
TH-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE

PROJECT ENGINEER: J. A. BLEVINS
CALCULATED/DESIGNED BY
CHECKED BY
DATE
REVISED BY
DATE REVISED

FORM DC-OE-92 PE (REV. 1/88)

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CU 04332
FA 133091

TIME PLOTTED => $$$$$$SYTIME$$$$$$

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	18	107

J. A. Blevins
REGISTERED CIVIL ENGINEER 10-07-94

10-24-94
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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NOTES:

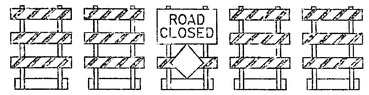
1. EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
2. SEE LAYOUT AND TRAFFIC HANDLING PLANS FOR LOCATIONS OF SOME CONSTRUCTION AREA SIGNS.
3. REFLECTIVE ORANGE BACKGROUNDS WITH BLACK 4" C SERIES LETTERS.

CONSTRUCTION AREA SIGNS

○	TYPE	PANEL SIZE	POSTS	MESSAGE	EACH
A	C18	72" x 72"	2- 4" x 6"	ROAD CONSTRUCTION AHEAD	1 (S)
C	C18	48" x 48"	1- 4" x 6"	ROAD CONSTRUCTION AHEAD	7 (S)
D	C13	48" x 48"	1- 4" x 6"	END CONSTRUCTION	5 (S)
E	C2	48" x 30"	(SEE DETAIL A)	ROAD CLOSED (SEE SHEETS L-1 AND L-2 FOR LOCATIONS)	12 (B)
F	C13	48" x 48"	——	END CONSTRUCTION	1 (SSB)
G	W75(L)	48" x 48"	1- 4" x 6"	LANE ENDS	1 (S)
H	W11(L)	36" x 36"	1- 4" x 4"		1 (S)
I	SPECIAL	36" x 24"	1- 4" x 6"	(SEE DETAIL B)	1 (S)
J	SPECIAL	36" x 24"	1- 4" x 6"	(SEE DETAIL B)	2 (S)
K	W17	36" x 36"	1- 4" x 6"	STOP AHEAD SYMBOL	1 (S)
L	W17A	24" x 18"	——	STOP AHEAD	1 (S)
M	W11R	36" x 36"	1- 4" x 6"		1 (S)
N	SPECIAL	36" x 24"	1- 4" x 6"	(SEE DETAIL C) (SEE SHEET SC-1 AND SC-2 FOR LOCATIONS)	3 (S)

(S) STATIONARY MOUNTED SIGN
(B) TYPE III BARRICADE MOUNTED SIGN
(SSB) STRAP AND SADDLE BRACKET MOUNTED SIGN

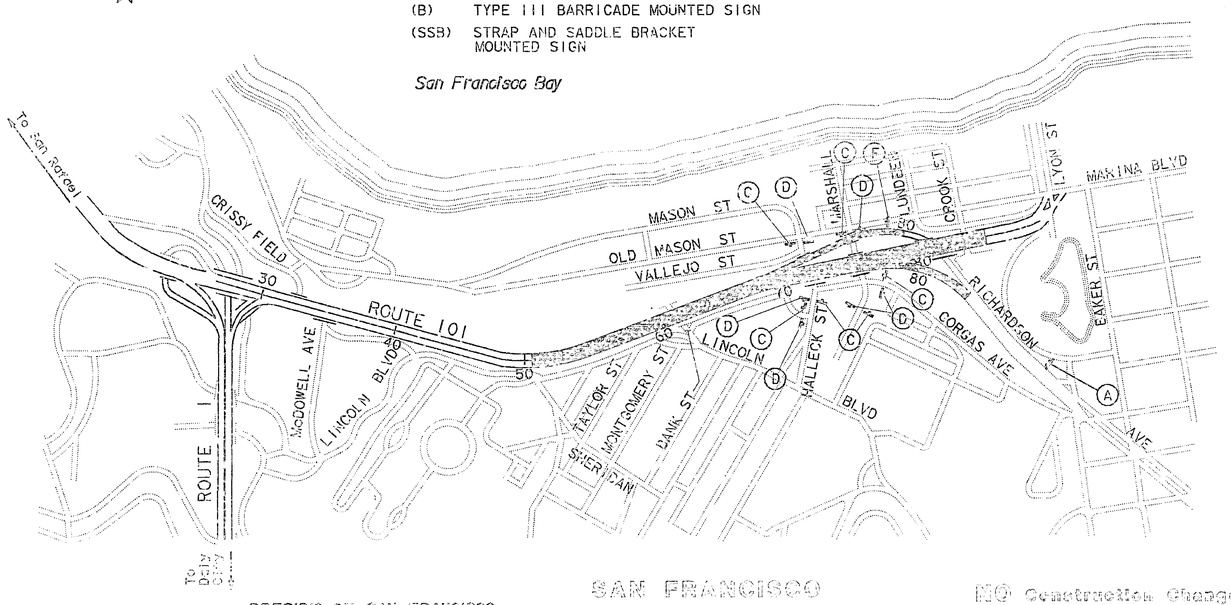
48" x 30"
C2 (ROAD) SIGN
18" x 18"
TYPE N-4 MARKER



TYPE III BARRICADES

NOTE: FOR NUMBER OF BARRICADES PER LOCATION, SEE SUMMARY OF QUANTITIES.

DETAIL A



PRESIDIO OF SAN FRANCISCO
U.S. MILITARY RESERVATION

SAN FRANCISCO

*RIGHT LANE MUST TURN *RIGHT

SPECIAL SIGNS (NOTE 3)
(I) *RIGHT
(J) *LEFT

DETAIL B

BANK STREET CLOSED 200 FT AHEAD

DETAIL C
(NOTE 3)

NO Construction Changes

CONTRACT NO. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

CONSTRUCTION AREA SIGNS
NO SCALE
CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF DESIGN STATEWIDE
PROJECT ENGINEER J. A. BLEVINS
CALCULATED/DESIGNED BY
CHECKED BY
DATE REVISED BY
DATE REVISED

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USERNAME => $$$$$$USER$$$$$$
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CU 04532
EA 133091

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	19	107

REGISTERED CIVIL ENGINEER 10-07-94

10-24-94
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER J. A. BLEVINS No. 21925 Exp. 9-30-97 CIVIL STATE OF CALIFORNIA

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PAVEMENT DELINEATION SUMMARY

LOCATION PHASE STATION	REMOVE: PAINTED TRAFFIC STRIPE DETAIL 8 (LF)	REMOVE: PAINTED TRAFFIC STRIPE DETAIL 22 (*LF)	REMOVE: PAVEMENT MARKING TYPE IV ARROW (L) (SQFT)	REMOVE: PAVEMENT MARKING TYPE IV ARROW (R) (SQFT)	REMOVE: PAVEMENT MARKING "ONLY" (SQFT)	REMOVE: PAVEMENT MARKING MISC STRIPING (SQFT)	REMOVE: PAVEMENT MARKER TYPE D (REFLECTIVE) (EA)	TEMPORARY: TRAFFIC STRIPE (TAPE) DETAIL 8 (LF)	TEMPORARY: TRAFFIC STRIPE (TAPE) DETAIL 21 (LF)	TEMPORARY: TRAFFIC STRIPE (TAPE) DETAIL 24 (LF)	TEMPORARY: TRAFFIC STRIPE (TAPE) DETAIL 27B (LF)	TEMPORARY: TRAFFIC STRIPE (TAPE) DETAIL 38A (*LF)	TEMPORARY: TRAFFIC STRIPE (TAPE) DETAIL 40 (LF)	TEMPORARY: PAVEMENT MARKING (TAPE) TYPE IV ARROW (L) (SQFT)	TEMPORARY: PAVEMENT MARKING (TAPE) TYPE IV ARROW (R) (SQFT)	TEMPORARY: PAVEMENT MARKING (TAPE) TYPE VII ARROW (R) (SQFT)	TEMPORARY: PAVEMENT MARKING (TAPE) TYPE VII ARROW (L) (SQFT)	TEMPORARY: PAVEMENT MARKING (TAPE) TYPE I ARROW (SQFT)	TEMPORARY: PAVEMENT MARKING (TAPE) "STOP" (SQFT)	TEMPORARY: CHANNELIZER (SURFACE MOUNTED) (EA)	PERMANENT: PAINT TRAFFIC STRIPE (2 COAT) DETAIL 6 (LF)	PERMANENT: PAINT TRAFFIC STRIPE (2 COAT) DETAIL 22 (LF)	PERMANENT: PAINT PAVEMENT MARKING (2 COAT) TYPE IV ARROW (L) (SQFT)	PERMANENT: PAINT PAVEMENT MARKING (2 COAT) TYPE IV ARROW (R) (SQFT)	PERMANENT: PAINT PAVEMENT MARKING (2 COAT) "ONLY" (SQFT)	PERMANENT: PAINT PAVEMENT MARKING (2 COAT) MISC STRIPING (SQFT)	PERMANENT: PAVEMENT MARKER TYPE D (REFLECTIVE) (EA)
HALLECK ST PHASE 1																											
"G" 5+00 TO "G" 9+22	196	804	45	45	132		36	126	800				9	15	15				22	13							
"H" 9+00 TO "H" 9+50																27			22								
HALLECK ST PHASE 2																											
"G" 5+00 TO "G" 9+22											422	140															
"H" 9+60 TO "H" 11+55			15											30					22								
HALLECK ST PHASE 3																											
"H" 9+20 TO "H" 11+58	63							42		84		140	9	30					22								
HALLECK ST PHASE 4																											
"G" 5+20 TO "G" 9+22																					630	402	45	45	132		36
"H" 9+60 TO "H" 12+88	42										84						27			4							
HALLECK ST PHASE 5																											
"H" 9+60 TO "H" 13+74	98							98		156		90		15			27			3	695		15				
MARSHALL ST PHASE 1																											
RT "M" 9+35 TO RT "M" 12+45		590					26		590		40																
MARSHALL ST PHASE 2																											
LT "M" 9+30 TO LT "M" 12+30									590																		
"M" 9+35 TO "M" 12+30																						295					26
STAGE CONST STAGE 3						240			990										22	26						240	
SUBTOTAL	399	1394	60	45	132	240	62	266	2970	242	546	370	18	90	15	27	54		110	46	1325	697	60	45	132	240	62
TOTAL	1793		477				62	4412						295						46	2022		477				62

* 8" STRIPE HAS BEEN CONVERTED TO EQUIVALENT 4" STRIPE.

FENCE LIST

SHEET BENTS	TEMPORARY FENCE (TYPE CL-6) (LF)	RECONSTRUCT FENCE (TYPE CL-6) (LF)
SC-1		
BENT 61½ TO BENT 58½	338	
SC-2		
BENT 58½ TO BENT 48½	1028	
SC-3		
BENT 48½ TO BENT 35½	1080	
L-1 & L-2		
LT RTE 101 51+90 TO LT RTE 101 61+50	983	
BENT 35½ (B 1½) TO BENT 30 (B7)	874	
BENT 28 (B9) TO BENT 14 (B23)	1640	407
BENT B24 TO BENT B25	47	52
BENT 1 TO BENT E½	387	
BENT E½ TO BENT 4	185	124
TOTAL	6272	583

TEMPORARY RAILING (TYPE K)

LOCATION PHASE STATION	LF
HALLECK ST PHASE 2	
RT "H" 9+75 TO RT "H" 11+55	180
HALLECK ST PHASE 3	
LT & RT "H" 9+63 TO "H" 10+64	130
HALLECK ST PHASE 4	
LT "H" 9+60 TO LT "H" 11+60	200
HALLECK ST PHASE 5	
LT & RT "H" 10+64 TO "H" 11+73	180
MARSHALL ST PHASE 1	
LT "M" 9+30 TO LT "M" 12+18	280
MARSHALL ST PHASE 2	
RT "M" 9+40 TO RT "M" 12+00	200
TOTAL	1300

TEMPORARY CRASH CUSHIONS

LOCATION PHASE STATION	ARRAY "TC" MODULES (EA)	ARRAY "TD" MODULES (EA)	FRANGIBLE CARTRIDGE (L=13') (EA)
HALLECK ST PHASE 2			
RT "H" 9+75		7	
HALLECK ST PHASE 3			
LT & RT "H" 9+68	7	7	
HALLECK ST PHASE 4			
LT "H" 11+60	7		
HALLECK ST PHASE 5			
LT & RT "H" 11+73	14		
MARSHALL ST PHASE 1			
LT "M" 9+40			1
LT "M" 12+20	7		
MARSHALL ST PHASE 2			
RT "M" 9+40			1
RT "M" 12+20	7		
TOTAL	53		2

GATES

LOCATION STATION	TEMPORARY GATE (TYPE CL-6) (EA)	RESET CHAIN LINK GATE (6') (EA)
CROOK ST		
LT 82+65	1	1
TOTAL	1	1

TYPE III BARRICADES

LOCATION	EA
BANK ST (SHEET SC-1)	24
BANK ST (SHEET SC-2)	9
YOUNG ST (69+70)	10
CROOK ST (62+30)	10
HALLECK ST (72+00)	4
TOTAL	57

CONCRETE (GUTTER LINING)

STATION	CY
RTE 101 58+30	0.60
RTE 101 59+30	0.60
RTE 101 60+30	0.60
RTE 101 61+25	2.30
TOTAL	4.30

REMOVE 3" x 16' INACTIVE CONDUITS

LOCATION	EA
RTE 101 58+40	2
TOTAL	2

NO Construction Changes

CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Der

SUMMARY OF QUANTITIES

9-12

DATE	REVISED BY	DATE REVISED

CALCULATED/ DESIGNED BY	CHECKED BY

PROJECT ENGINEER J. A. BLEVINS

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
Caltrans DIVISION OF DESIGN STATEWIDE

00-00-00 TIME PLOTTED => $$$$$$SYTIME$$$$$$

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USERNAME => $$$$$$USER$$$$$$ DGN FILE => $$$$$$$$$$$$$$$$$$$$$$$$

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	20	107

Gurprit S Hansra
REGISTERED ELECTRICAL ENGINEER

10-24-94
PLANS APPROVAL DATE

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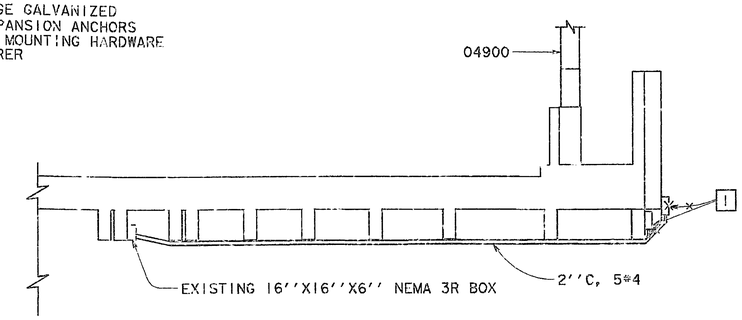
REGISTERED PROFESSIONAL ENGINEER G. S. HANSRA No. E13886 Exp. 6-30-96 ELEC STATE OF CALIFORNIA

TRAFFIC NO. 1689

1 INSTALL A 26''X16''X6'', 16 GUAGE GALVANIZED STEEL, NEMA TYPE 3R BOX WITH EXPANSION ANCHORS ON THE CONCRETE STRUCTURE. USE MOUNTING HARDWARE AS RECOMMENDED BY THE MANUFACTURER



SECTION A-A
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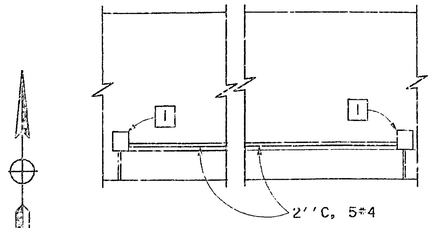

SECTION B-B
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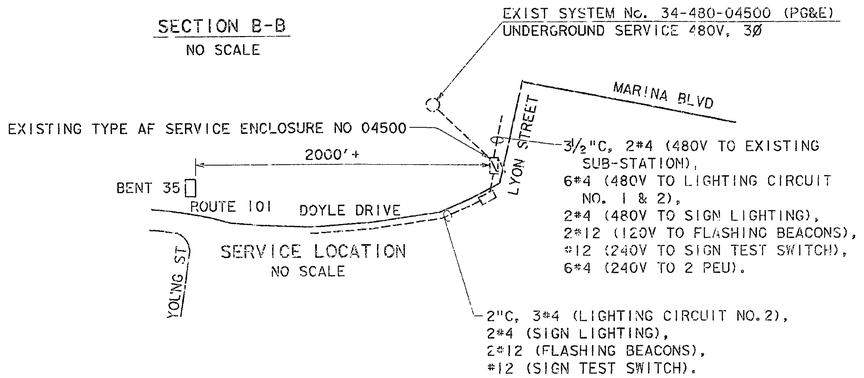
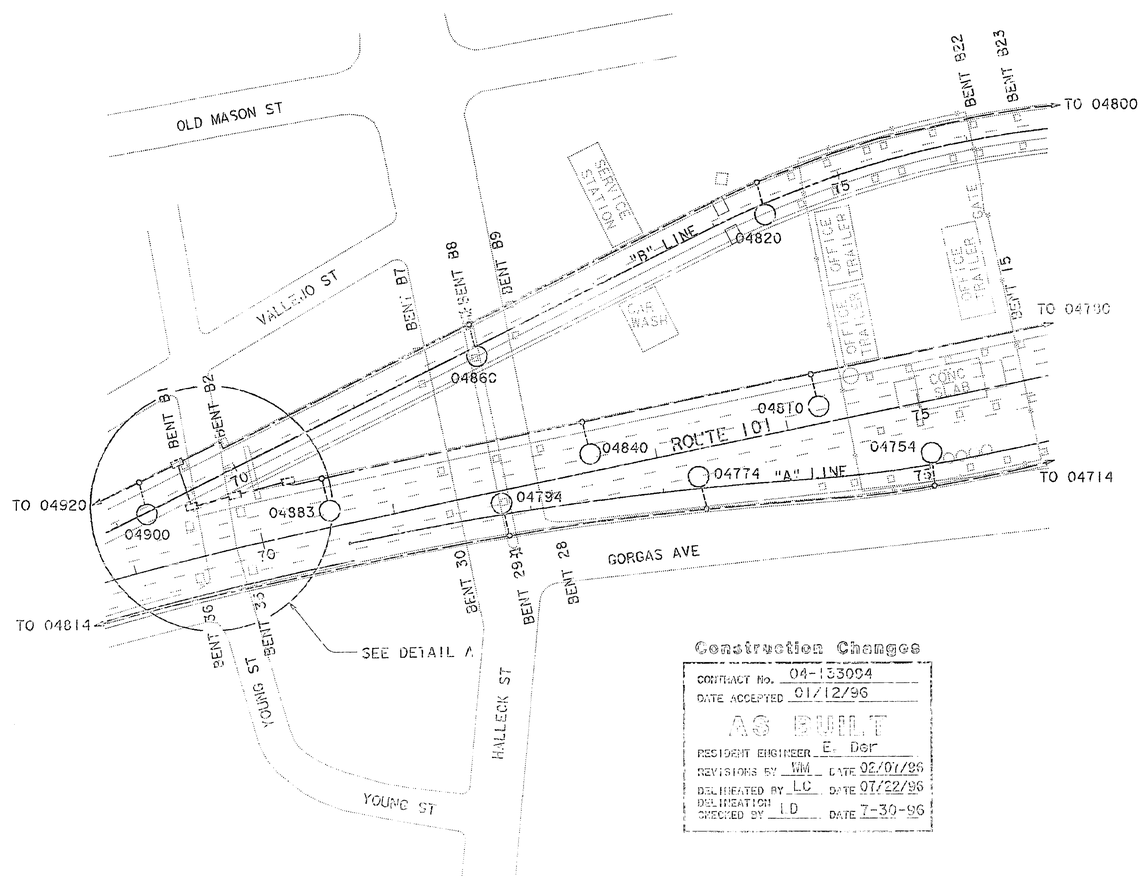
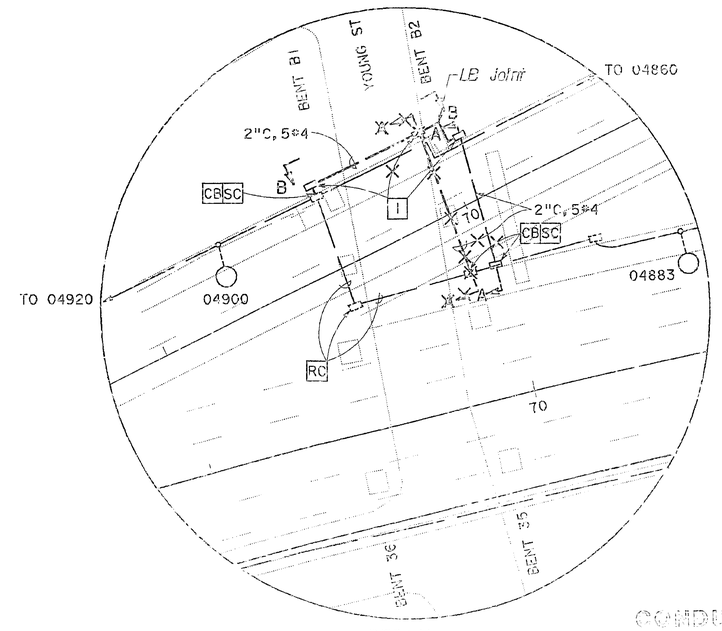


SERVICE LOCATION
NO SCALE



Construction Changes
CONTRACT No. 04-133094
DATE ACCEPTED 01/12/96
AS BUILT
RESIDENT ENGINEER E. Dor
REVISIONS BY WM DATE 02/07/96
DELINEATED BY LC DATE 07/22/96
DELINEATION CHECKED BY LD DATE 7-30-96



DETAIL A
SCALE: 1" = 20'

CONDUIT (MODIFY)
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
SACRAMENTO DESIGN

PROJECT ENGINEER E.E. LOMBARDI

CALCULATED/DESIGNED BY | CHECKED BY | DATE | REVISED BY | DATE REVISED

TIME PLOTTED => $$$$$$SYTIME$$$$$$

LAST REVISION 00-00-00

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CU 04220 | EA 133091

t41delac 413309u01 24-Sep-1996 13:07 /home/t41delac/check/133091/413309u01.asb

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.5/18.9	21	107

REGISTERED CIVIL ENGINEER

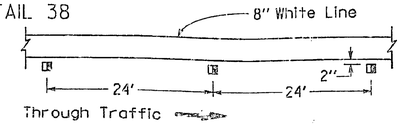
November 5, 1992
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER P. Lowden Jr. No. 12284 Exp. 3-31-93 CIVIL STATE OF CALIFORNIA

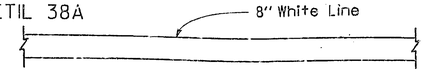
To accompany plans dated 10-24-94

CHANNELIZING LINE

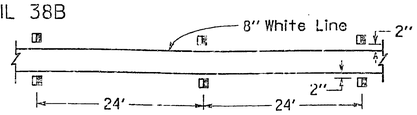
DETAIL 38



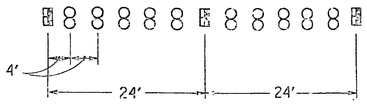
DETIL 38A



DETAIL 38B

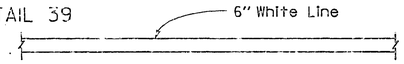


DETAIL 38C



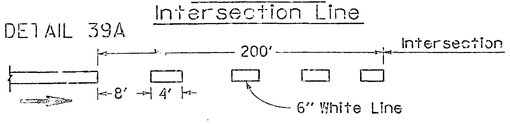
BIKE LANE LINE

DETAIL 39



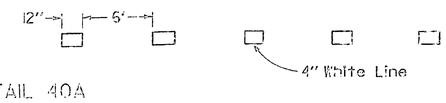
BIKE LANE Intersection Line

DETAIL 39A

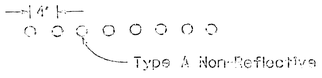


LANE LINE EXTENSIONS THROUGH INTERSECTIONS

DETAIL 40



DETAIL 40A

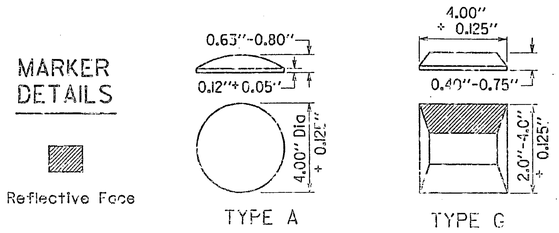


LEGEND

MARKERS

- TYPE A White Non-reflective
- TYPE G One-way Clear Reflective
- Direction of Travel

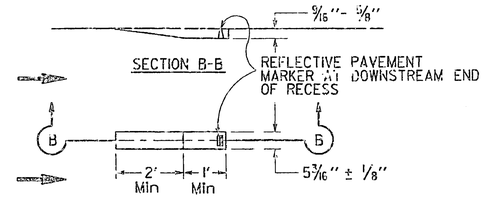
MARKER DETAILS



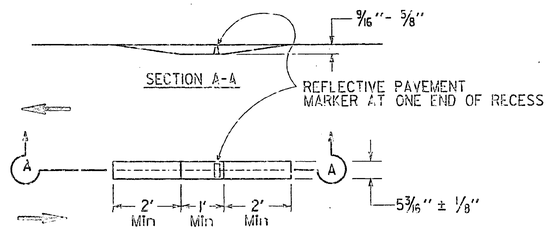
NOTES

1. Minimum projected area of reflective face = 1.00 square inch
2. Reflective markers need not be rectangular
3. See typical traffic line details for marker patterns to be used with recessed pavement markers. Detail 14 requires a Type 2 recess.

RECESS DETAIL FOR REFLECTIVE PAVEMENT MARKER

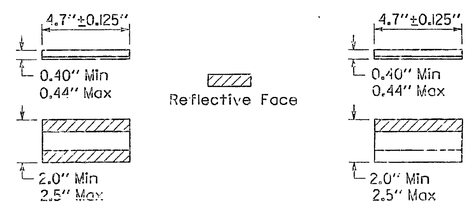


ONE-WAY TRAFFIC
(TYPE 1)



TWO-WAY TRAFFIC
(TYPE 2)

REFLECTIVE PAVEMENT MARKER FOR RECESSED INSTALLATION



TYPE C & TYPE D TYPE G & TYPE H

See Note 3

NO CONSTRUCTION CHANGES
CONTRACT No. 04-133094
DATE ACCEPTED 1-12-96
AS BUILT
PLAN NOT CHANGED 6 Dar

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINES TYPICAL DETAILS

NO SCALE

RSP A20D DATED NOVEMBER 5, 1992 SUPERSEDES STANDARD PLAN A20D DATED JULY 1, 1992, PAGE 5 OF THE STANDARD PLANS BOOK DATED JULY 1992.

REVISED STANDARD PLAN RSP A20D

STD. PLAN RSP A20D

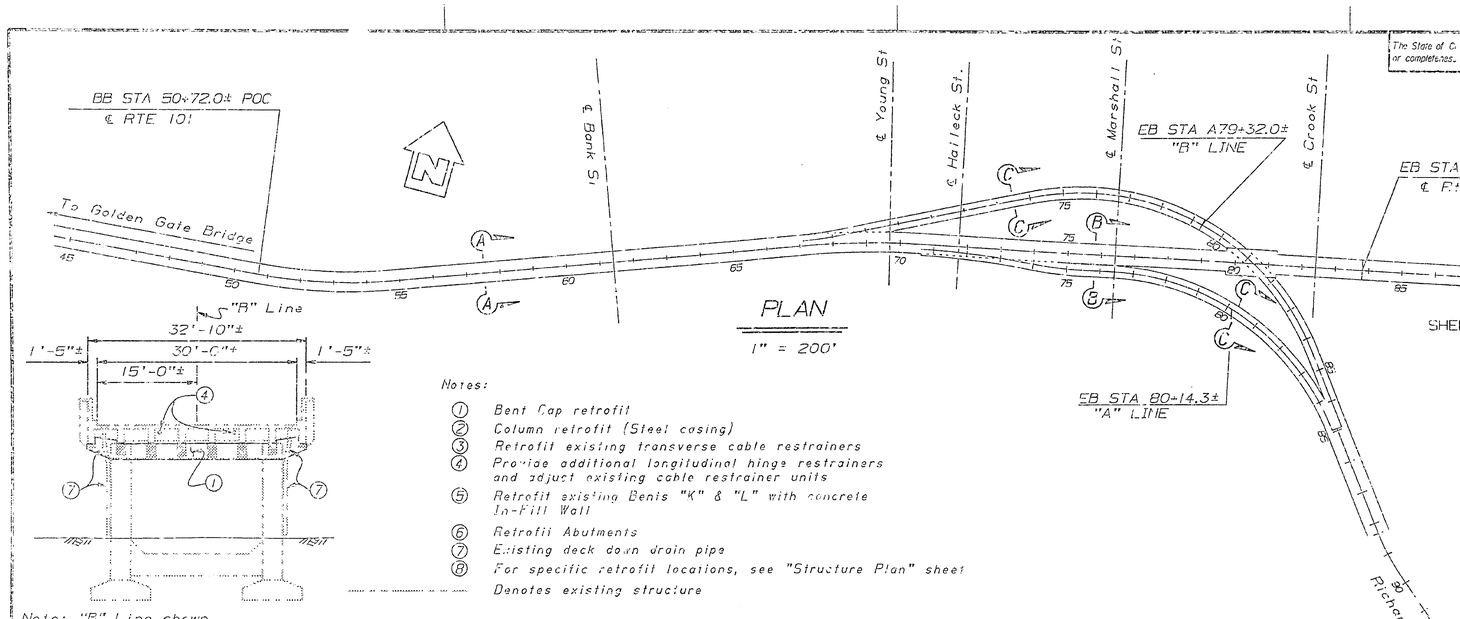
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	22	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper No. 42221 Exp. 3-31-96 CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



PLAN

1" = 200'

Note: "B" Line shown
"A" Line similar.

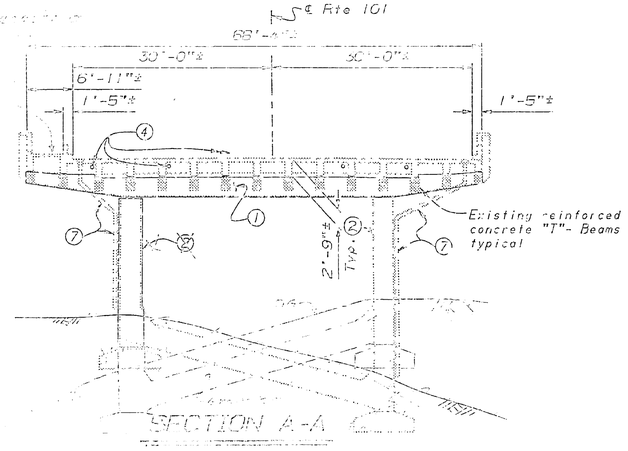
SECTION C-C

1"=10'

Notes:

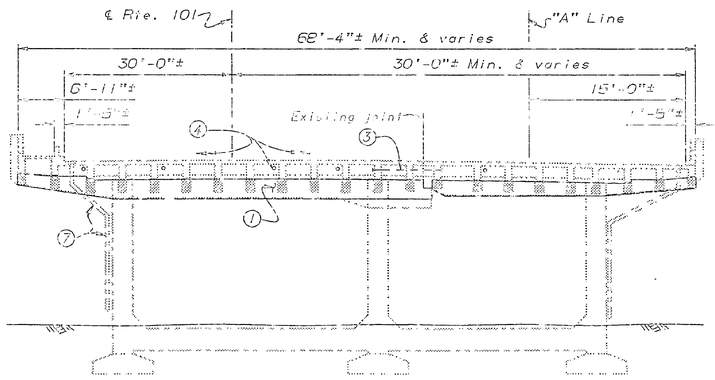
1. Bent Cap retrofit
2. Column retrofit (Steel casing)
3. Retrofit existing transverse cable restrainers
4. Provide additional longitudinal hinge restrainers and adjust existing cable restrainer units
5. Retrofit existing Bents "K" & "L" with concrete In-Fill Wall
6. Retrofit Abutments
7. Existing deck down drain pipe
8. For specific retrofit locations, see "Structure Plan" sheet

Denotes existing structure



SECTION A-A

1"=10'



Note: "A" Line transition structure shown.
"B" Line trasition structure similar.

SECTION B-B

1"=10'

STANDARD PLANS DATED JULY 1992

A62-C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE

INDEX TO PLANS

SHEET NO.	TITLE
1.	GENERAL PLAN
2.	STRUCTURE PLAN NO. 1
3.	STRUCTURE PLAN NO. 2
4.	STRUCTURE PLAN NO. 3
5.	ABUTMENT A RETROFIT
6.	ABUTMENT A RETROFIT DETAILS
7.	ABUTMENT 95 RETROFIT
8.	ABUTMENT 95 RETROFIT DETAILS
9.	ABUTMENT RETROFIT RAMPS A11 & B32
10.	IN-FILL WALL RETROFIT NO. 1
11.	IN-FILL-WALL RETROFIT NO. 2
12.	STEEL COLUMN CASING DETAILS
13.	COLUMN REPAIR DETAILS
14.	BENT CAP RETROFIT Ⓐ
15.	BENT DETAILS Ⓐ
16.	BENT CAP RETROFIT Ⓑ
17.	BENT CAP RETROFIT Ⓒ
18.	BENT DETAILS Ⓒ NO. 1
19.	BENT DETAILS Ⓒ NO. 2
20.	BENT CAP RETROFIT Ⓓ & Ⓔ
21.	BENT DETAILS Ⓓ & Ⓔ NO. 1
22.	BENT DETAILS Ⓓ & Ⓔ NO. 2
23.	BENT CAP RETROFIT Ⓔ
24.	BENT DETAILS Ⓔ NO. 1
25.	BENT CAP RETROFIT Ⓕ
26.	BENT CAP RETROFIT Ⓖ
27.	BENT CAP RETROFIT Ⓗ
28.	BENT CAP RETROFIT Ⓘ
29.	BENT CAP RETROFIT Ⓙ
30.	BENT DETAILS Ⓚ
31.	BENT CAP RETROFIT Ⓛ
32.	BENT DETAILS Ⓛ
33.	BENT 13 CAP RETROFIT
34.	BENT 14 AND 16 CAP RETROFIT
35.	BENT 15 CAP RETROFIT
36.	BENT 17 CAP RETROFIT
37.	BENT 18 CAP RETROFIT
38.	BENT 19 CAP RETROFIT
39.	BENT 20 CAP RETROFIT
40.	BENT 21 CAP RETROFIT
41.	BENT 22 CAP RETROFIT
42.	BENT 23 CAP RETROFIT
43.	BENT 24 CAP RETROFIT
44.	BENT 25 CAP RETROFIT
45.	BENT 26 CAP RETROFIT
46.	BENT 27 CAP RETROFIT
47.	BENT 28 CAP RETROFIT
48.	BENT 29 CAP RETROFIT
49.	BENT 30 CAP RETROFIT
50.	BENT 36 AND B1 CAP RETROFIT
51.	BENT 37 CAP RETROFIT
52.	BENT 38 CAP RETROFIT
53.	BENT 39 CAP RETROFIT
54.	BENT 40 CAP RETROFIT
55.	BENT 41 CAP RETROFIT
56.	BENT 42 CAP RETROFIT
57.	BENT 43 CAP RETROFIT
58.	BENT DETAILS NO. 1 - BENTS 13-30,36-43
59.	BENT DETAILS NO. 2 - BENTS 13-30,36-43
60.	BENT DETAILS NO. 3 - BENTS 13-30,36-43
61.	BENT DETAILS NO. 4 - BENTS 13-30,36-43
62.	BENT DETAILS NO. 5 - BENTS 13-30,36-43
63.	PRESTRESSED CAP DETAILS NO. 1
64.	PRESTRESSED CAP DETAILS NO. 2
65.	MISCELLANEOUS DETAILS
66.	EXISTING GIRDER LAYOUT NO. 1
67.	EXISTING GIRDER LAYOUT NO. 2
68.	HINGE RESTRAINER LAYOUT ①
69.	HINGE RESTRAINER LAYOUT ②
70.	HINGE RESTRAINER LAYOUT ③ & ④
71.	HINGE RESTRAINER LAYOUT ⑤ & ⑥
72.	HINGE RESTRAINER LAYOUT ⑦ & ⑧
73.	HINGE RESTRAINER LAYOUT ⑨
74.	HINGE RESTRAINER LAYOUT ⑩
75.	HINGE RESTRAINER LAYOUT ⑪
76.	HINGE RESTRAINER LAYOUT ⑫
77.	HINGE RESTRAINER LAYOUT ⑬
78.	HINGE RESTRAINER LAYOUT ⑭
79.	HINGE RESTRAINER LAYOUT ⑮
80.	HINGE RESTRAINER LAYOUT ⑯
81.	HINGE RESTRAINER DETAILS ⑯
82.	HINGE RESTRAINER LAYOUT ⑰
83.	HINGE RESTRAINER LAYOUT ⑱
84.	CABLE RESTRAINER DETAILS
85.	TRANSVERSE RESTRAINER RETROFIT DETAILS
86.	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL LIMITS

QUANTITIES

REPAIR SPALLED CONCRETE	320	SQFT
ADJUST RESTRAINER CABLES	LUMP	SUM
BRIDGE REMOVAL (PORTION)	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	670	CY
STRUCTURE EXCAVATION (TYPE B)	26	CY
STRUCTURE BACKFILL (BRIDGE)	540	CY
PRESTRESSING BENT CAPS	LUMP	SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	128	CY
STRUCTURAL CONCRETE, BRIDGE	2,790	CY
DRILL AND BOND DOWEL	4,780	LF
DRILL AND BOND DOWEL (EPOXY CARTRIDGE)	110	LF
CORE CONCRETE (2")	240	LF
CORE CONCRETE (4")	110	LF
CORE CONCRETE (5")	40	LF
CORE CONCRETE (6")	95	LF
CORE CONCRETE (9")	120	LF
CORE CONCRETE (1 1/4")	220	LF
CORE CONCRETE (2 1/2")	45	LF
REPLACE BEARING PAD	1,945	EA
ADJ. RESTRAINING STRUT	7,500	EA
ASPHALT MEMBRANE WATERPROOFING	455	SQFT
GOLDEN CASTIN	22,000	LB
MISCELLANEOUS METAL (RESTRAINER - CABLE TYPE)	147,000	LB
MISCELLANEOUS METAL (RESTRAINER - POP TYPE)	7,950	LB
MISCELLANEOUS METAL (BRIDGE)	350	LB

Note: For General Notes see "Structure Plan No. 1" sheet

AS BUILT

CONTRACTOR

CONTRACT NO.

DATE

Kevin Harper	6-94	Greg Thornton	6-94	Kevin Harper	6-94	Greg Thornton	6-94

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DRAWING NO.
S-B-D01

HARTHWAKE RETROFIT PROJECT NO. 10

MARIN COUNTY

PLAN

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	23	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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.

GENERAL NOTES
LOAD FACTOR DESIGN

DESIGN: BRIDGE DESIGN SPECIFICATIONS (1953 AASHTO with Interims and Revisions by CALTRANS)

SEISMIC LOADING: Peak Rock Acceleration:
0.4g substructure
0.6g superstructure restrainer design

Depth of Alluvium:
10-150 ft.

REINFORCED CONCRETE:

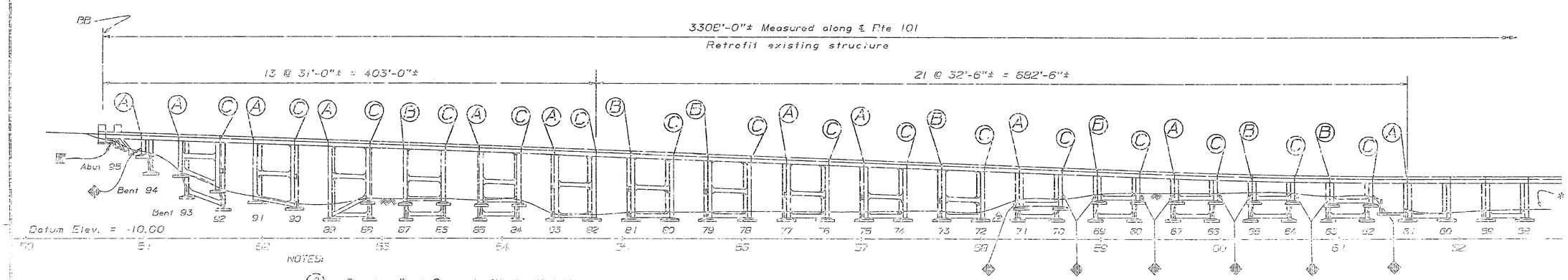
EXISTING	NEW CONSTRUCTION
f_y = 40,000 psi	f_y = 60,000 psi
f'_c = 5,000 psi	f'_c = 3,250 psi

PRESTRESSED CONCRETE: See 'Prestressing Notes'

STRUCTURAL STEEL: f_y = 36,000 psi unless otherwise noted

EXISTING PILE FOUNDATION:
Service Loading = 30 tons (compression)
Ultimate Seismic Loading = 90 tons (compression)
Uplift = 0

FOOTING PRESSURE: Ultimate Seismic pressure = 3 tons per square foot



NOTES:

(A) Denotes Bent Cap retrofit detail letter

Denotes retrofit of South column (Steel casing)

Denotes Abutment Retrofit

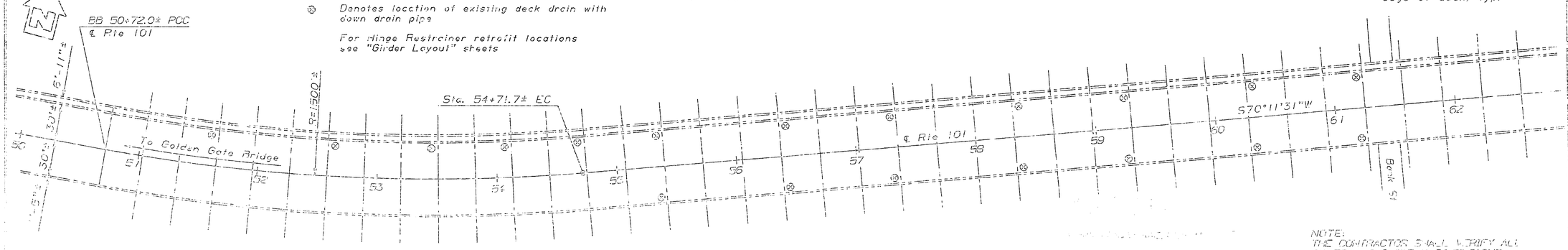
Denotes location of existing deck drain with down drain pipe

For Hinge Restrainer retrofit locations see "Girder Layout" sheets

ELEVATION
1" = 40'

Approximate location of historical building # 616 (PG&E Switch house - Abandoned)

* Approx. O.G. at South edge of deck, typ.



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

PLAN
1" = 40'

DESIGN	Kevin Harper 6-94	CHECKED Greg Thornton 6-94	
DETAILS	Judy D'Amboy 5-94	CHECKED Greg Thornton 6-94	
QUANTITIES	Kevin Harper	CHECKED Mike Lentz	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION
STRUCTURE DESIGN

BRIDGE NO. 34-0017
POST MILE 8.3

LANDSCAPE DETAIL PROJECT NO. 75
MARIN COUNTY
GENERAL NOTES
LOAD FACTOR DESIGN

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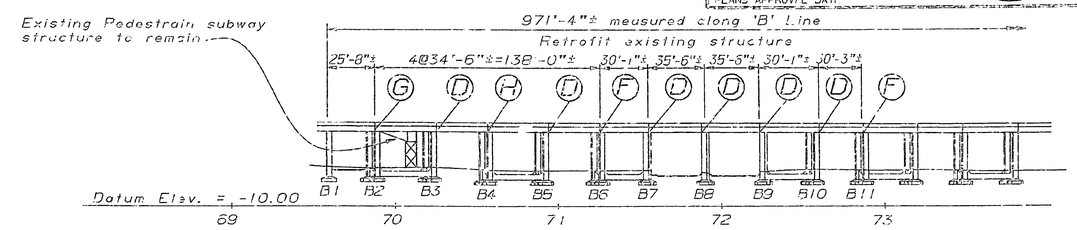
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	24	107

REGISTERED ENGINEER - CIVIL

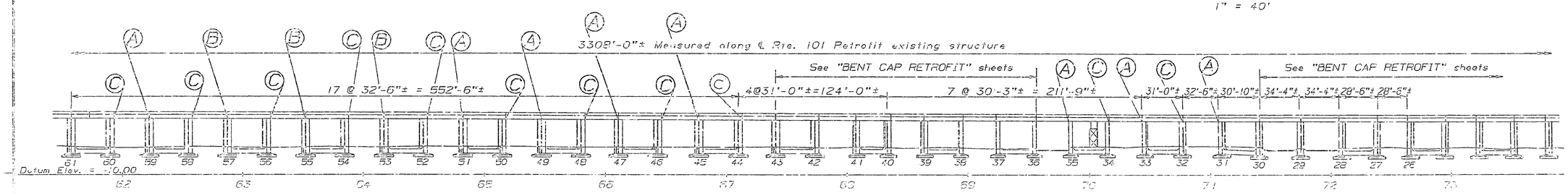
REGISTERED PROFESSIONAL ENGINEER
Kevin Horner
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



ELEVATION - 'B' LINE

1" = 40'



ELEVATION

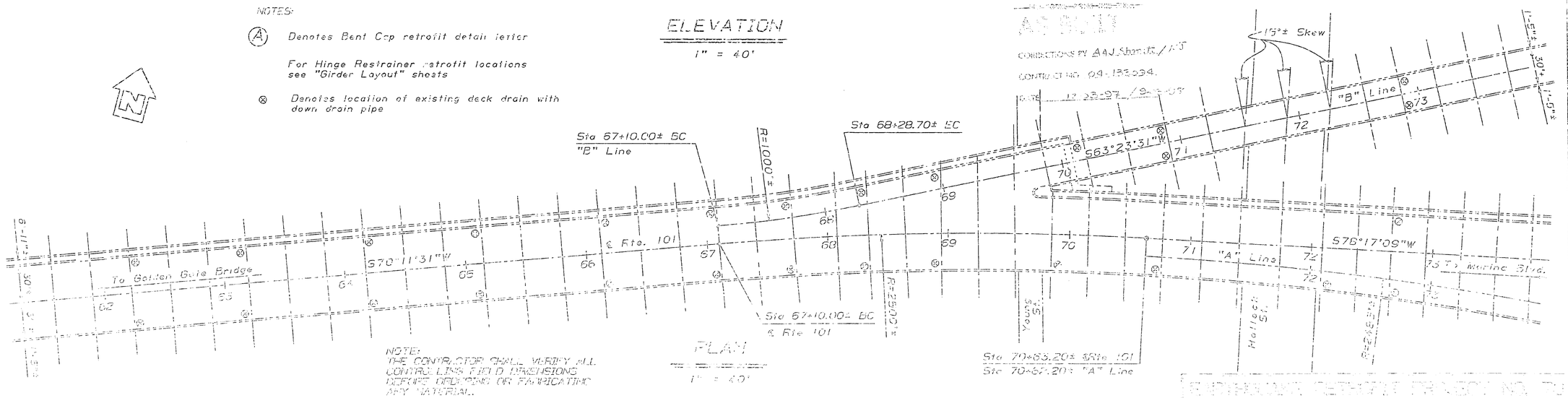
1" = 40'

NOTES:

(A) Denotes Bent Cap retrofit detail letter

For Hinge Restrainer retrofit locations see "Girder Layout" sheets

⊗ Denotes location of existing deck drain with down drain pipe



PLAN

1" = 40'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Kevin Horner 6-94	CHECKED Greg Thornton 3-94	
DETAILS	Judy Dempsey 3-93	CHECKED Greg Thornton 6-94	
QUANTITIES	Kevin Horner	PLOTTED Mike Lewis	

STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER

STRUCTURE OF STRUCTURES
STRUCTURE DESIGN

EARTHQUAKE RETROFIT PROJECT NO. 70
MARINA VIADUCT
STRUCTURE PLAN NO. 2

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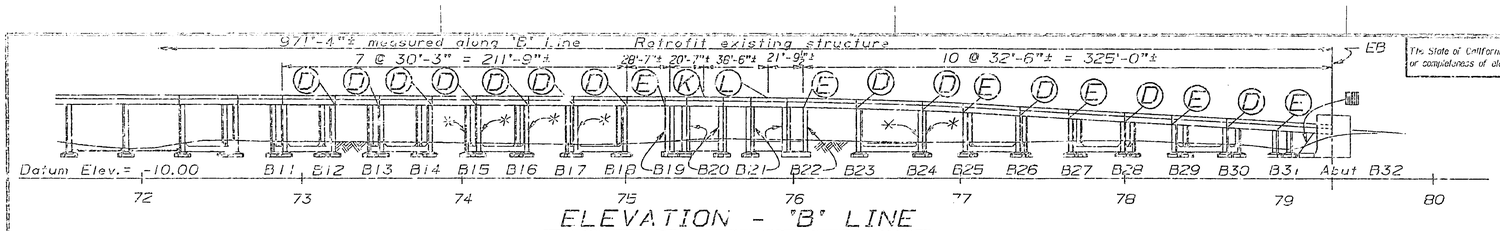
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	25	107

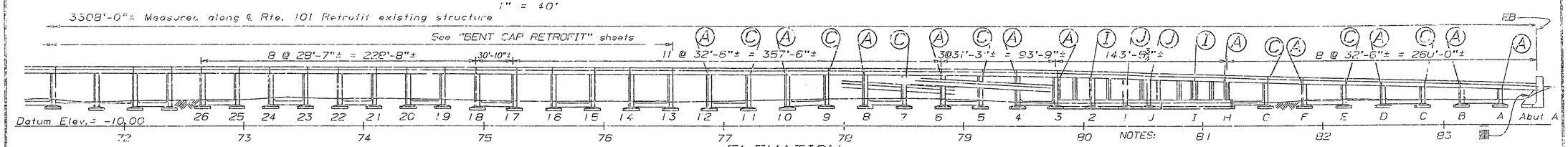
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper No. 42221 Exp. 3-31-96 CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



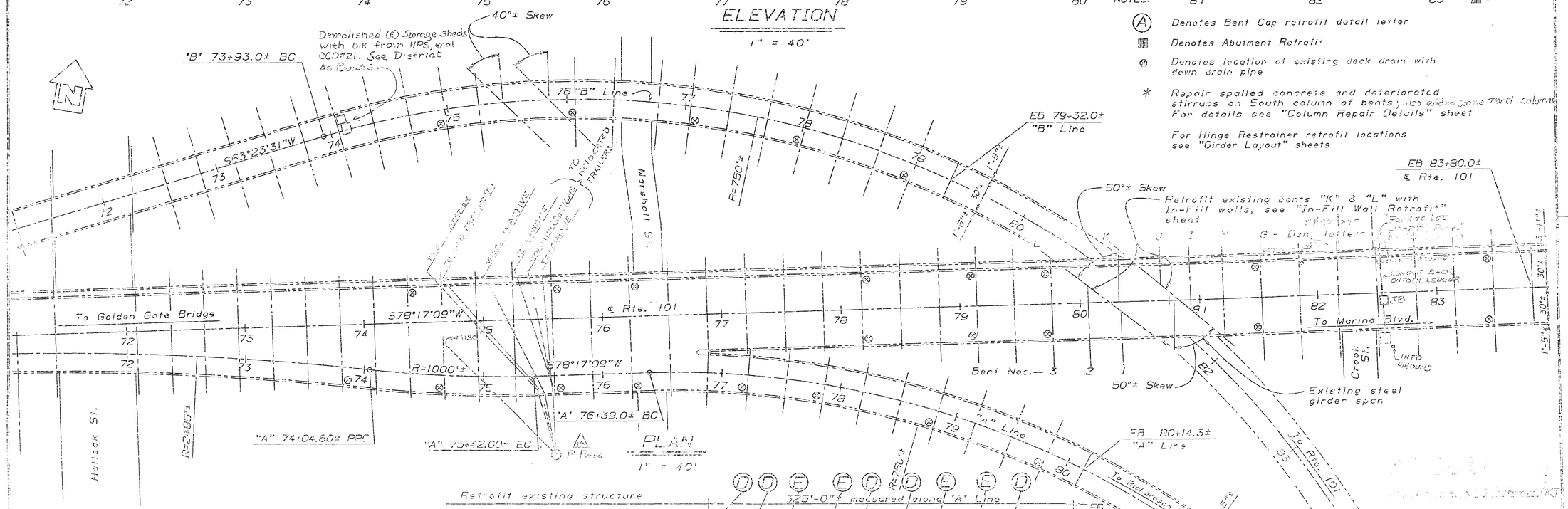
ELEVATION - "B" LINE
1" = 40'

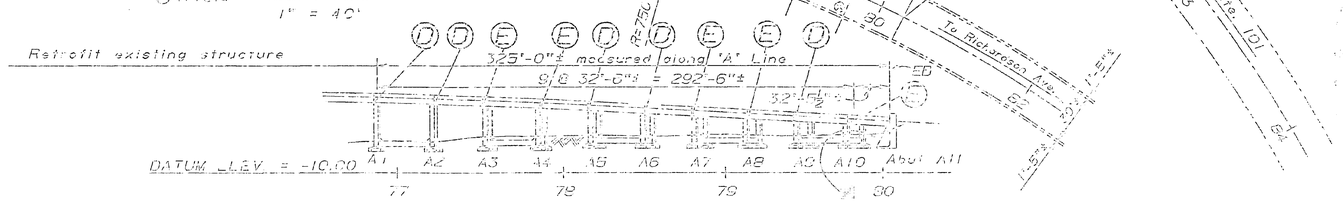


ELEVATION
1" = 40'

NOTES:

- (A) Denotes Bent Cap retrofit detail letter
- Denotes Abutment Retrofit
- Denotes location of existing deck drain with down drain pipe
- * Repair spalled concrete and deteriorated stirrups on South column of bents; also add some North columns. For details see "Column Repair Details" sheet
- For Hinge Restrainer retrofit locations see "Girder Layout" sheets





ELEVATION - "A" LINE
1" = 40'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Kevin Harper 6-94	CHECKED	Greg Thornton 6-94
DETAILED	Judy Dempsey 3-94	CHECKED	Greg Thornton 6-94
QUANTITIES	Kevin Harper	CHECKED	Jack Lewis

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION
STRUCTURE DESIGN 8

PROJECT NO. 14-0001K
Test Site 1-3

RETROFIT BRIDGE PROJECT MAJOR
NORTH BOUND
BRIDGE NO. 28C-0001

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	26	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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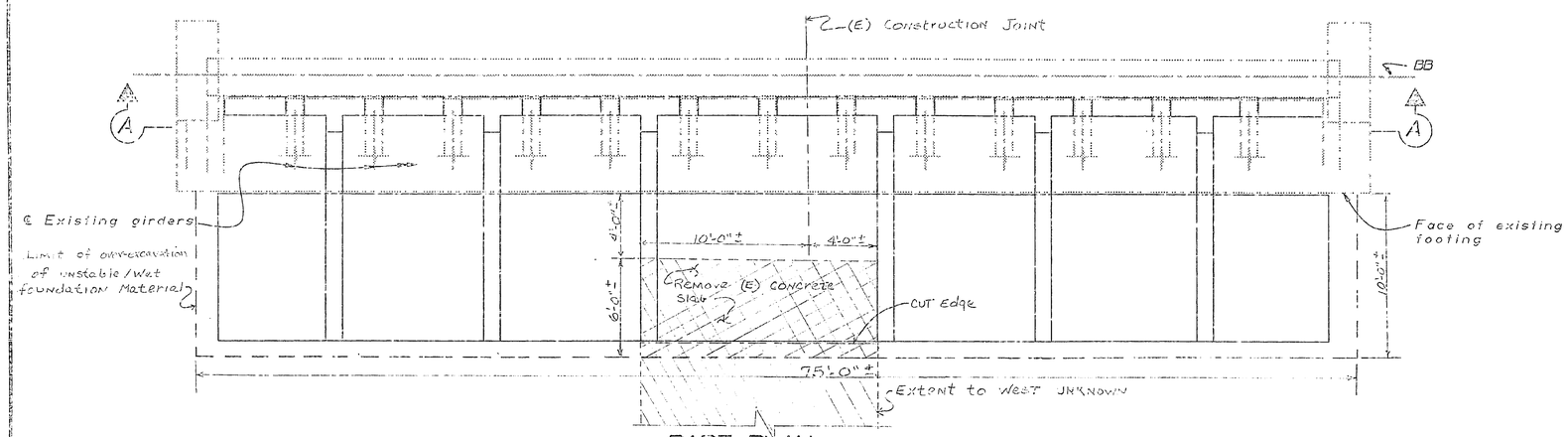
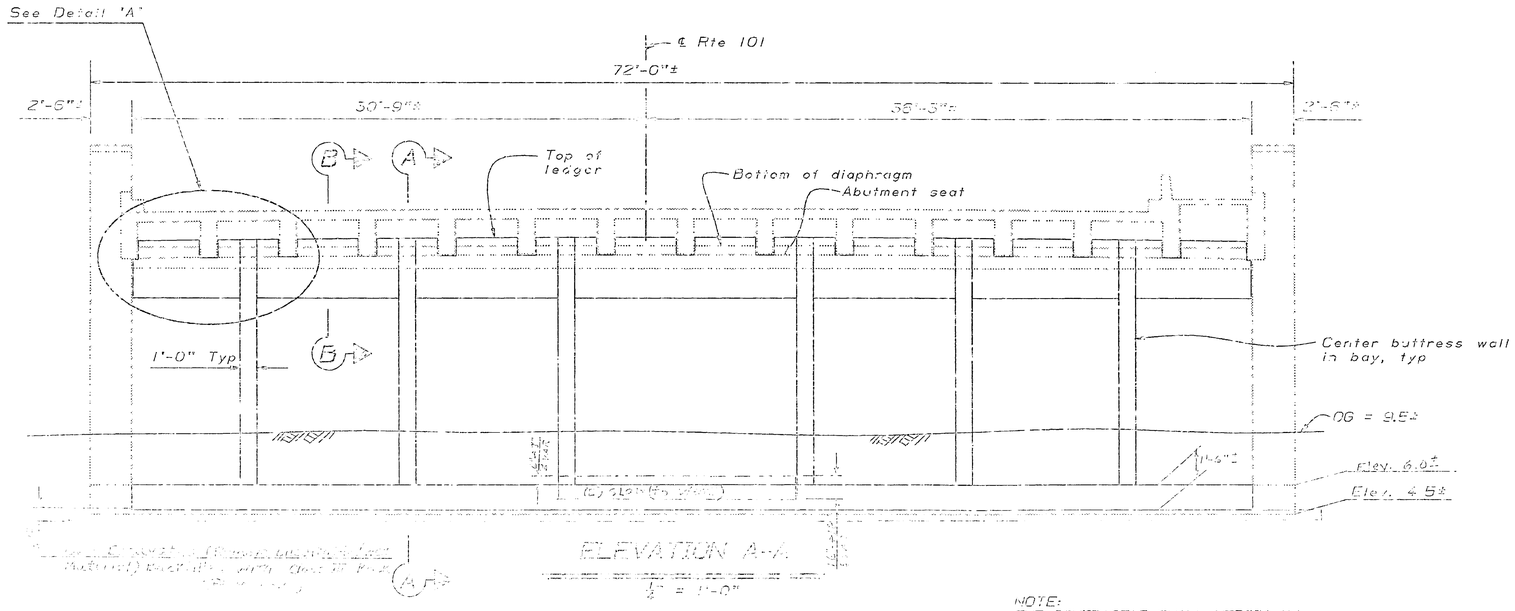


PART PLAN
1/4" = 1'-0"

Notes:
For Section A-A, Section B-B, and Detail A, see "Abutment A Retrofit Details" sheet.

Indicates existing structure



ELEVATION A-A
1/4" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Pat Hipley	6-94	CHECKED Paul Snyder	6-94
DETAILS	Judy Ramsey	3-94	CHECKED Paul Snyder	6-94
QUANTITIES	Matt Lee	5-94	CHECKED D. Tran	6-94

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
STRUCTURE DESIGN

BRIDGE NO.
POST MILE
8.5

MARINA VIADUCT
ABUTMENT A RETROFIT

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	27	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER KEVIN HARPER No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
FLANG APPROVAL DATE

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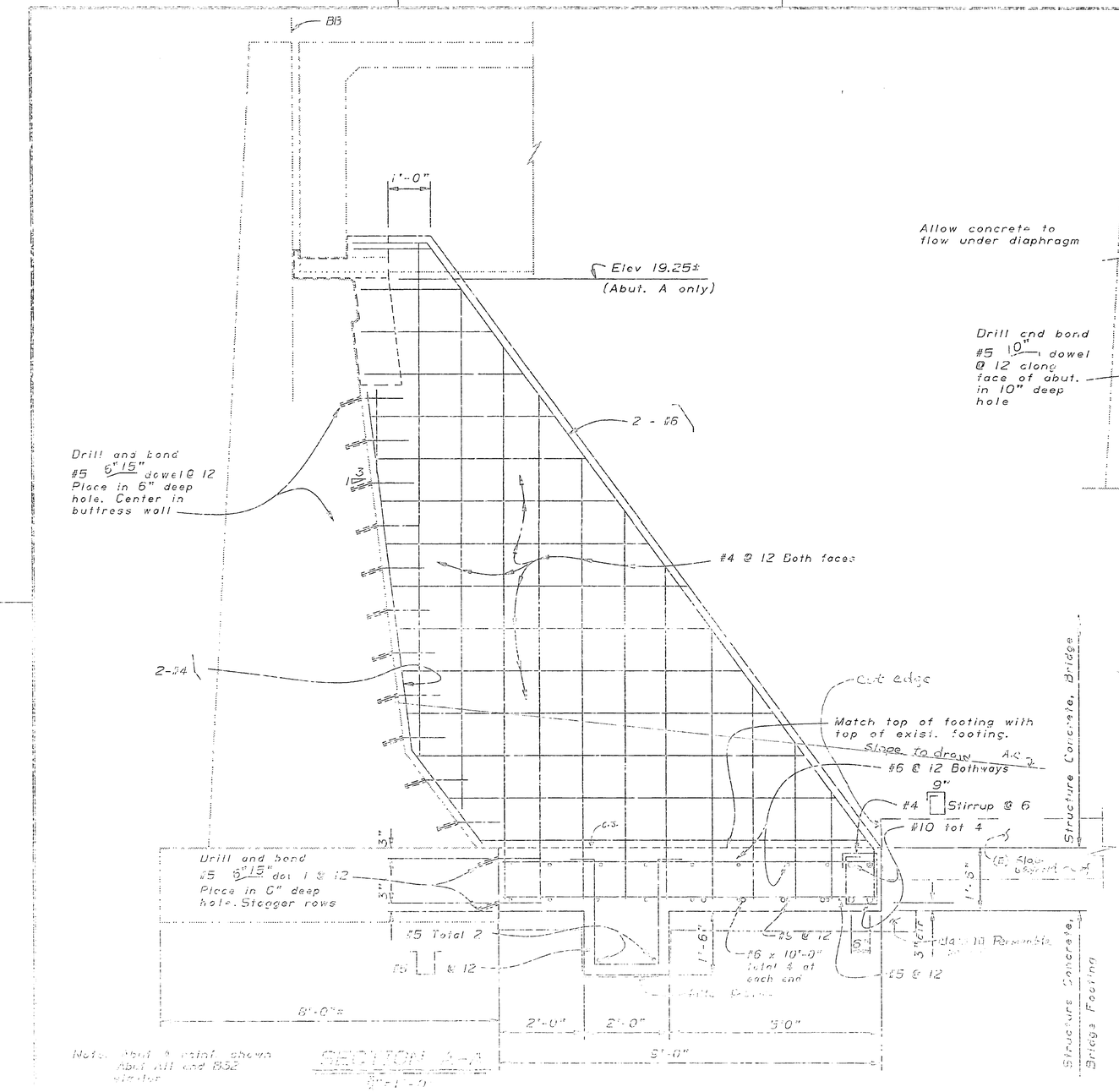
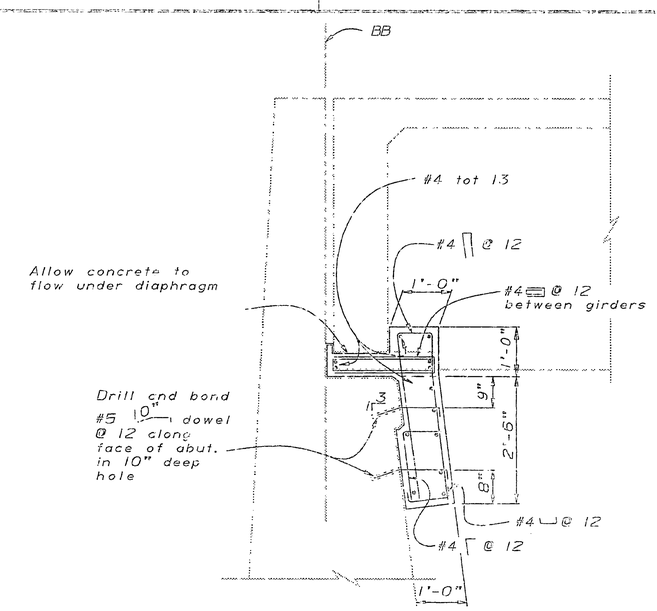
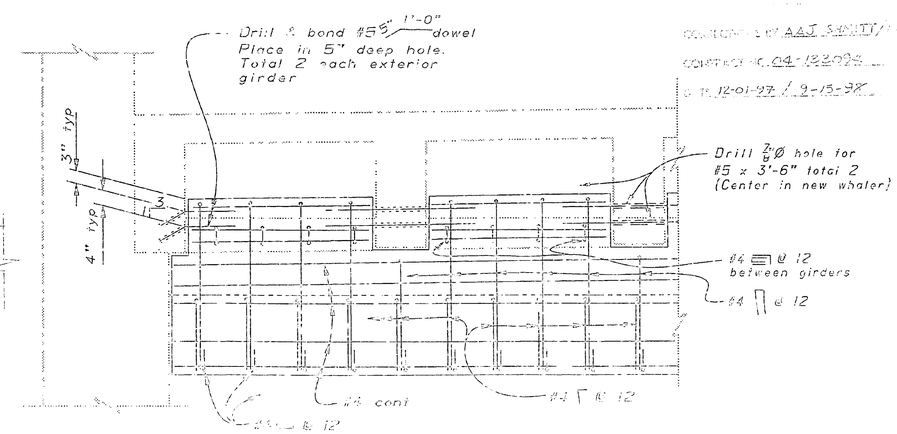




Note:
On drill and bond dowels, contractor was allowed to use epoxy cartridge in lieu of specified "Magnesium Phospate" concrete. 3:1 hole batter not require with epoxy option. Hole diameter and depth to match manufacturer recommendation but hole never shallower than that shown on plans.



NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

REVISION BY AAJ SANTIAGO
CONTRACT NO. 04-192094
12-01-97 / 2-15-98

DESIGNED	Pat Hilary	1-94	CHECKED	Paul Snyder	6-94	STATE OF CALIFORNIA	REVISED FOR CONSTRUCTION
DRAWN	Todd Mikamo	1-94	CHECKED	Paul Snyder	6-94		
QUANTITIES	Mark Fox		CHECKED	Paul Snyder			

CALTRANS REGION 1 DISTRICT NO. 04
MARIN - SONOMA
CONNECTOR & RAMP TO
NORTH BOUND

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	28	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-95
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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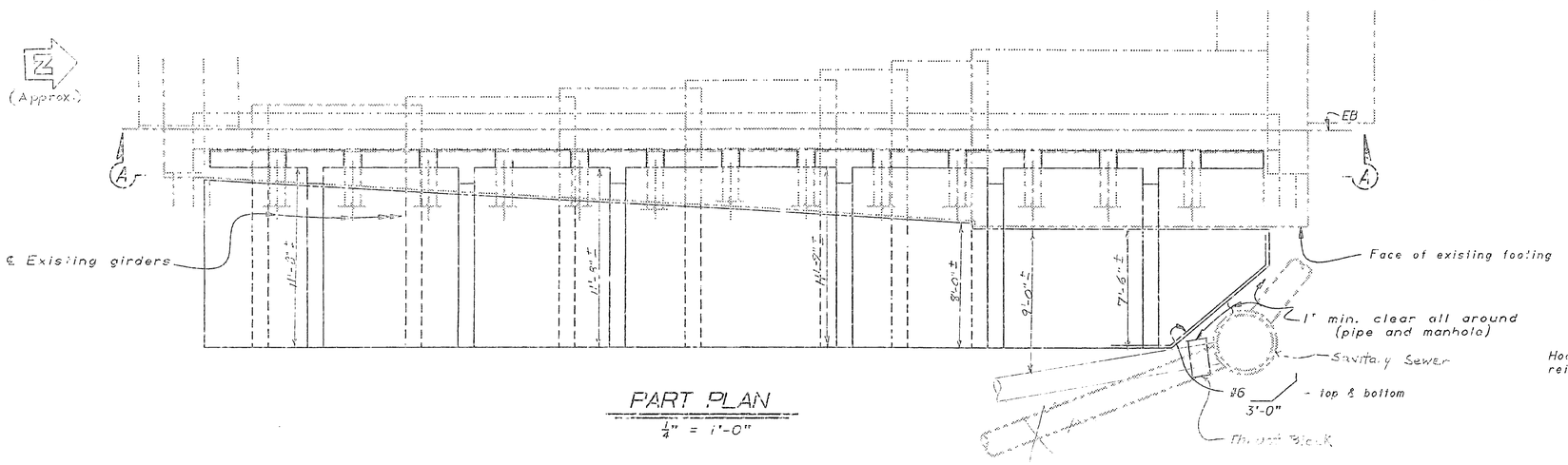
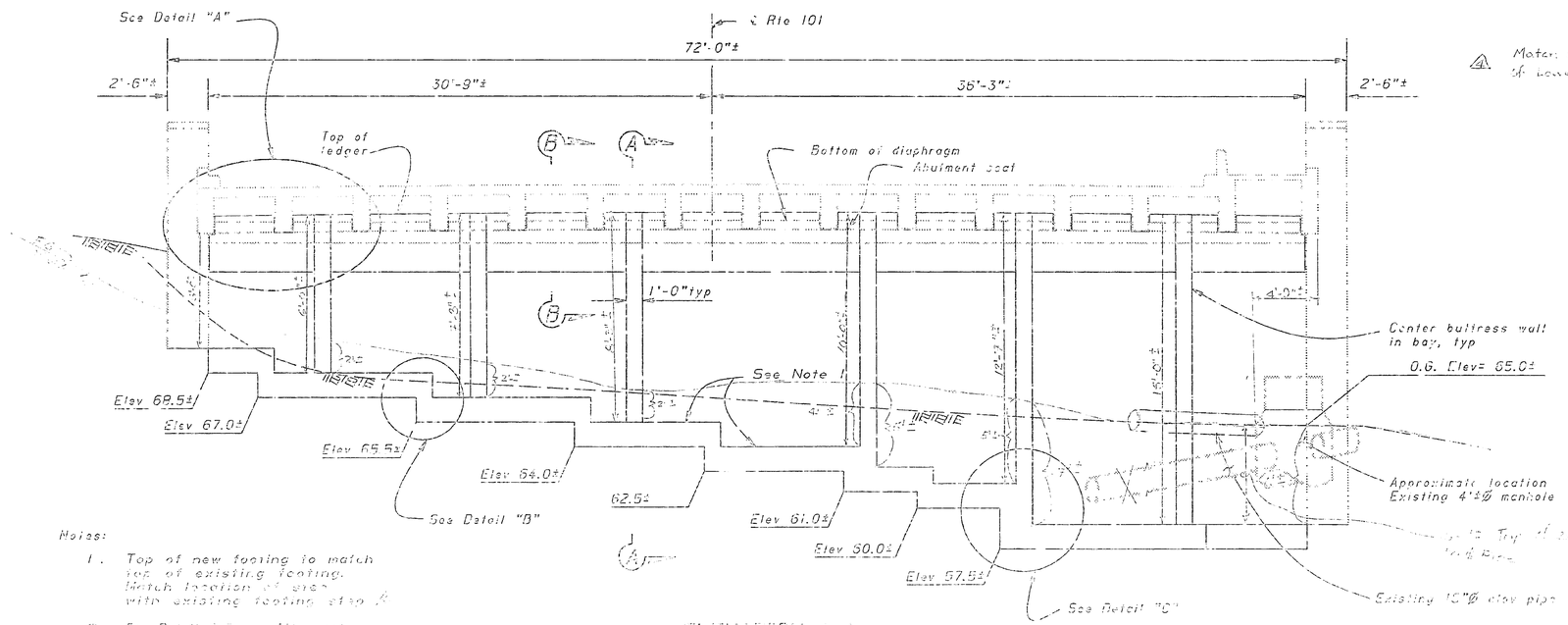
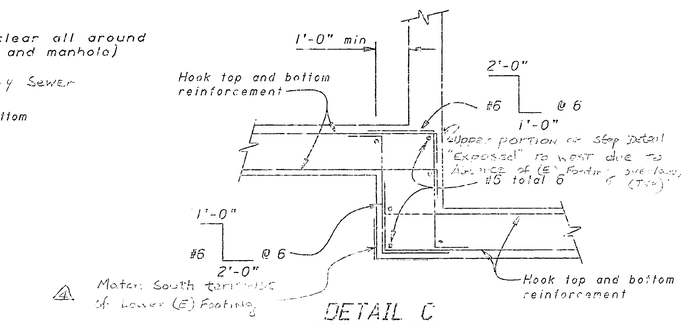


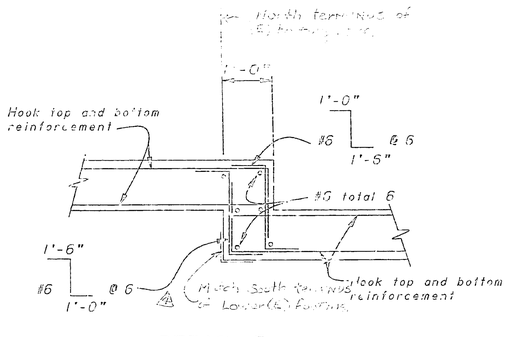
PART PLAN
1/4" = 1'-0"



ELEVATION A-A
1/4" = 1'-0"



DETAIL C
NO SCALE



DETAIL B
NO SCALE

Notes:

1. Top of new footing to match top of existing footing. Match location of steps with existing footing step A
2. For Detail "A" see "Abutment A Retrofit Details" sheet
3. For Section A-A and Section B-B see "Abutment 55 Retrofit Details" sheet

Indicates existing structure

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Paul Nagy	5-94	Paul Snyder	5-94
CHECKED	Keith Kawamoto	5-94	Paul Snyder	5-94

CALTRANS DETAILS PROJECT
ABUTMENT 55
ABUTMENT 55 RETROFIT

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	29	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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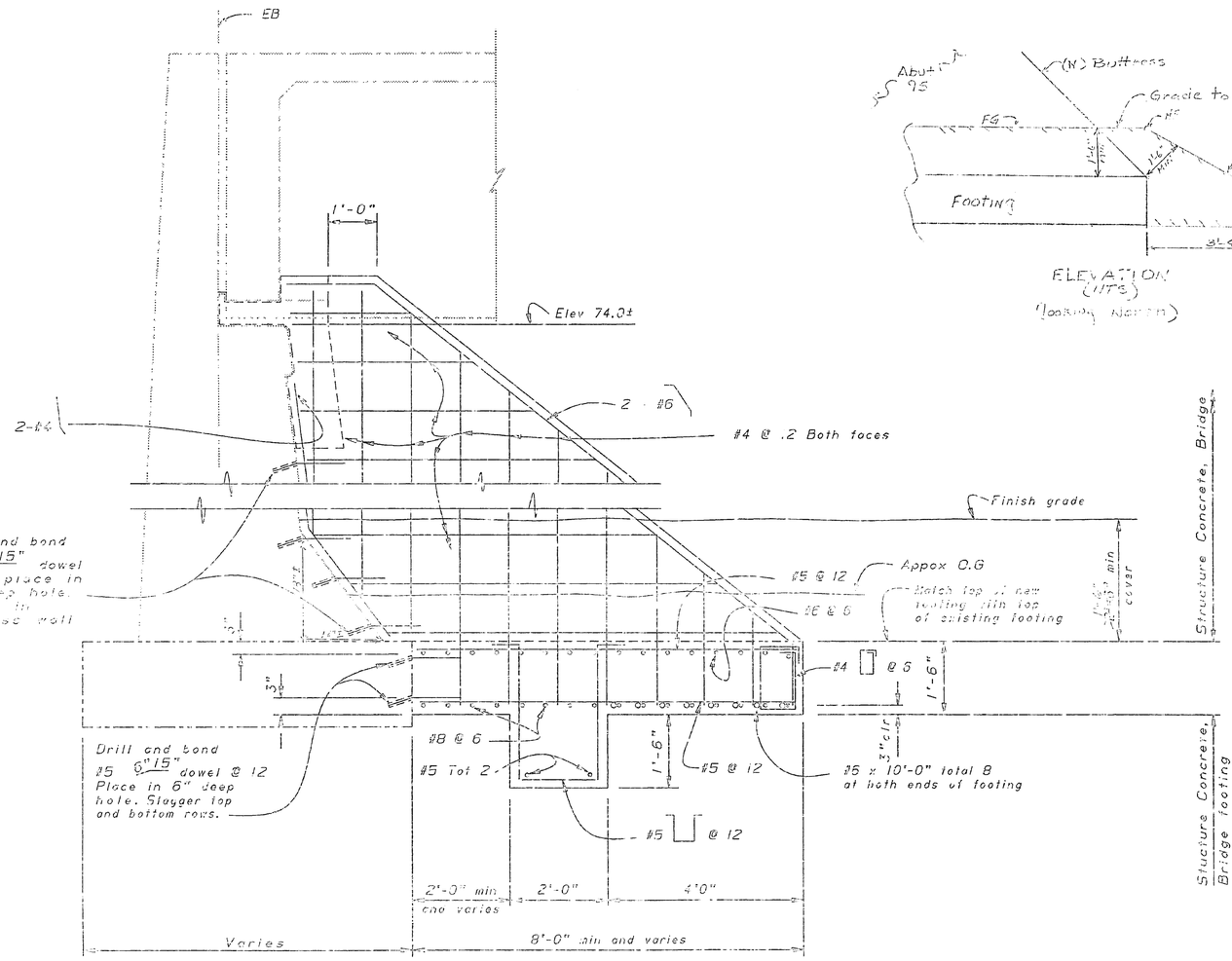
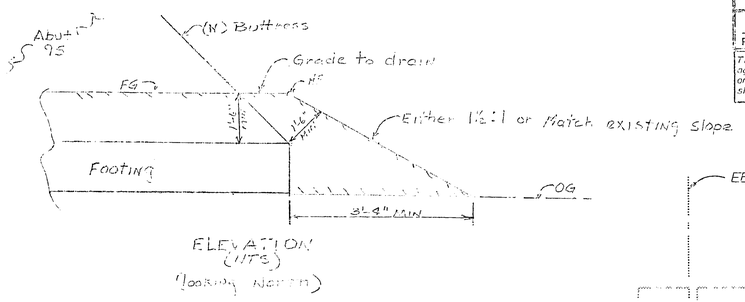
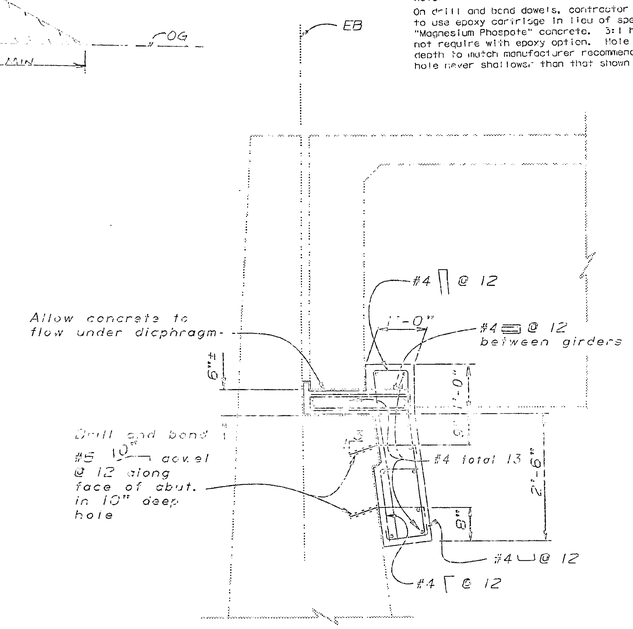


SECTION A-A
3/8"=1'-0"



ELEVATION
(N/TS)
(looking North)

Note:
On drill and bond dowels, contractor was allowed to use epoxy cartridge in lieu of specified "Magnesium Phosphate" concrete. 3:1 hole batter not require with epoxy option. Hole diameter and depth to match manufacturer recommendation but hole never shallower than that shown on plans.



SECTION B-B
3/8"=1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Note:
Shotcrete option was extended to include abutment retrofit buttress walls and ledger
CCO#12

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	30	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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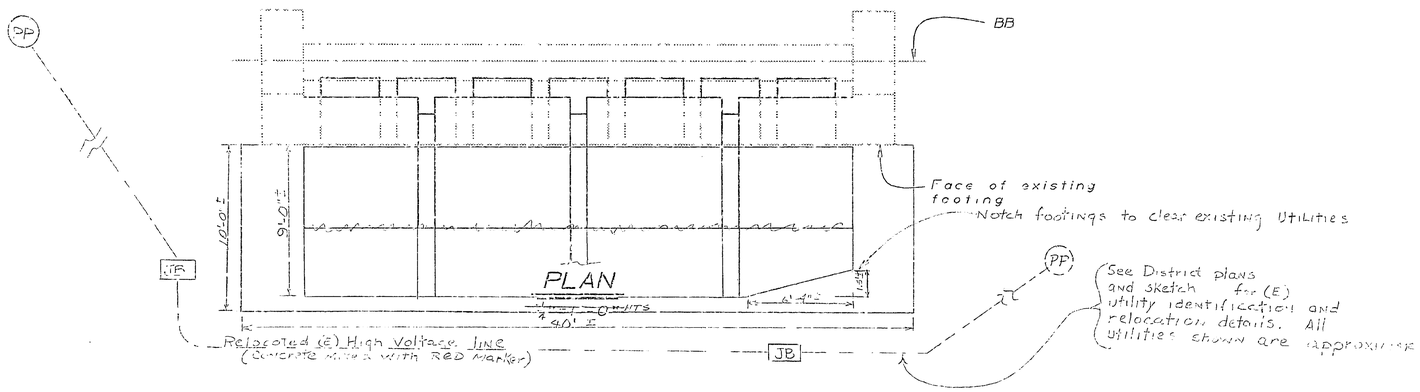
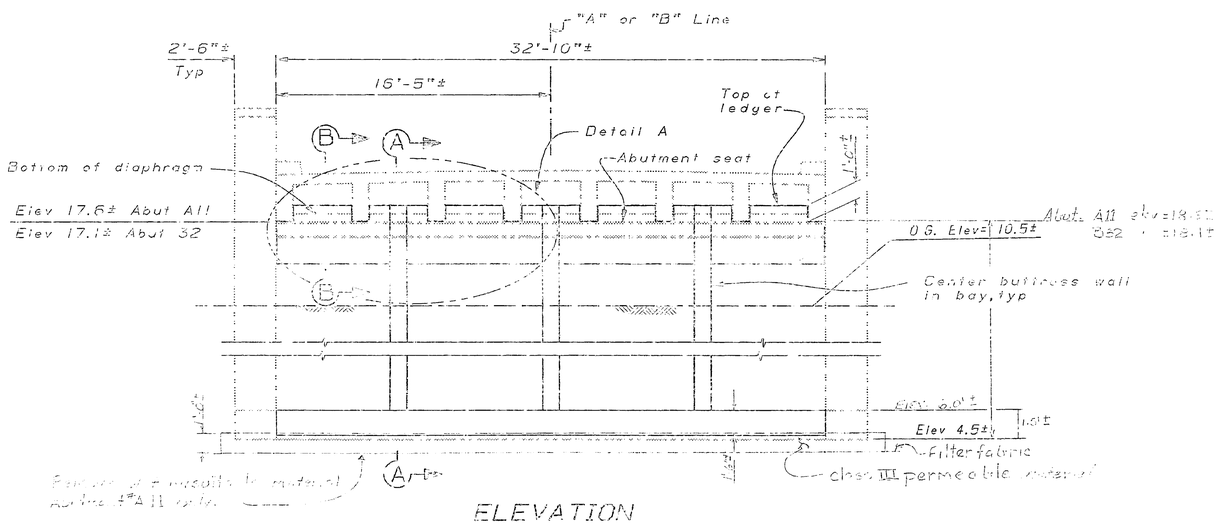
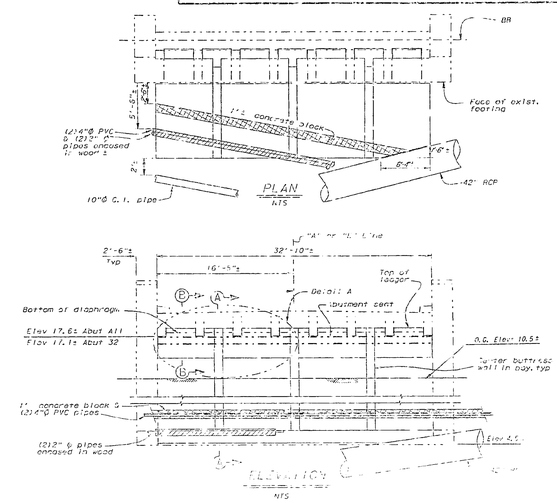




Notes:

For Section A-A, Section B-B and Detail A see "Abutment A Retrofit Details" sheet

Indicates existing structure



SKETCH A

ASSESSMENT OF (E) UTILITY CONFLICTS AT ABUT. B32
Date: 7-25-95
By: Rob Shackleford

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

REVISED	Earl Higley	DESIGNED	Paul Snyder
CHECKED	G. Williford	CHECKED	Paul Snyder
DRAWN BY	M. Lee	DRAWN	G. Tran

CALTRANS

DISTRICT 04
04-SF-101
PM 8.3/8.9

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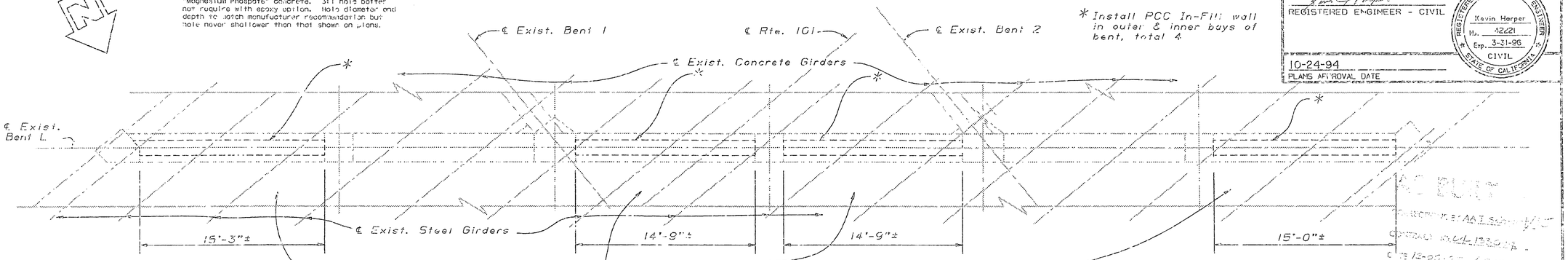
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	31	107

REGISTERED ENGINEER - CIVIL

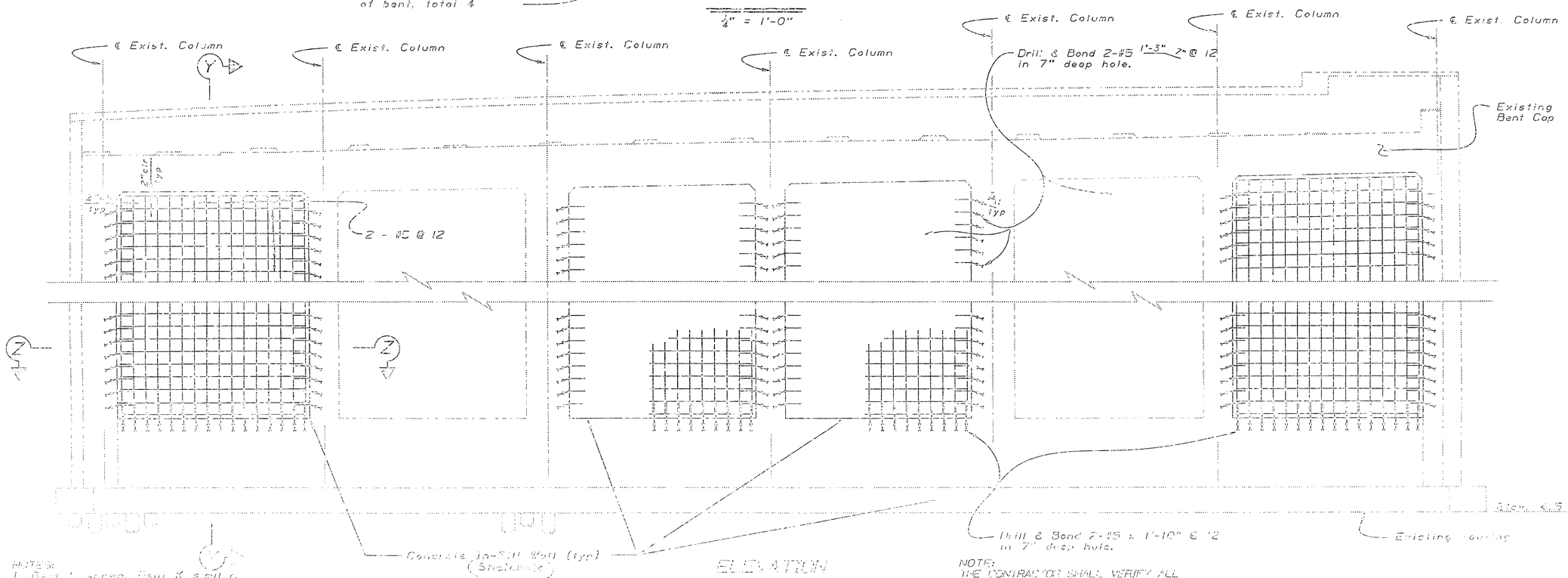
REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

Note:
On drill and bond dowels, contractor was allowed to use epoxy cartridge in lieu of specified "Magnesium Phospate" concrete. 3:1 hole batter not required with epoxy option. Hole diameter and depth to match manufacturer recommendation but hole never shallower than that shown on plans.



PLAN
1/4" = 1'-0"



ELEVATION
1/4" = 1'-0"

NOTES:
1. Bent L shown, Bent K similar.
2. For sections not shown see "Bent Cap Retrofit @ No. 2" sheet.
3. All piles not shown.
4. Follow existing alignment.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Designed	P. Kurt Tilgey 6-94	Checked	Paul Snyder 6-94
Detailed	Jack Dunmire 6-94	Checked	Paul Snyder 6-94
Quantities	Mike Lewis	Checked	Jack Lewis

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN

SAN FRANCISCO BAY AREA 17

BARRIER RAIL RETROFIT PHASE 2

BENT L

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	32	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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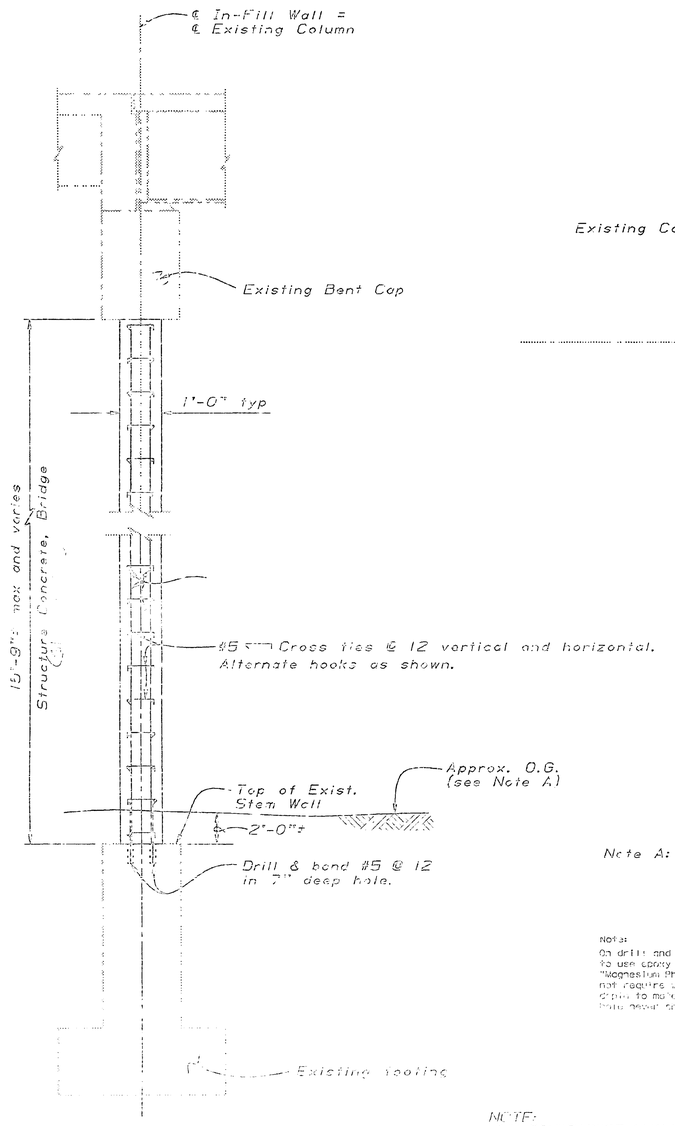

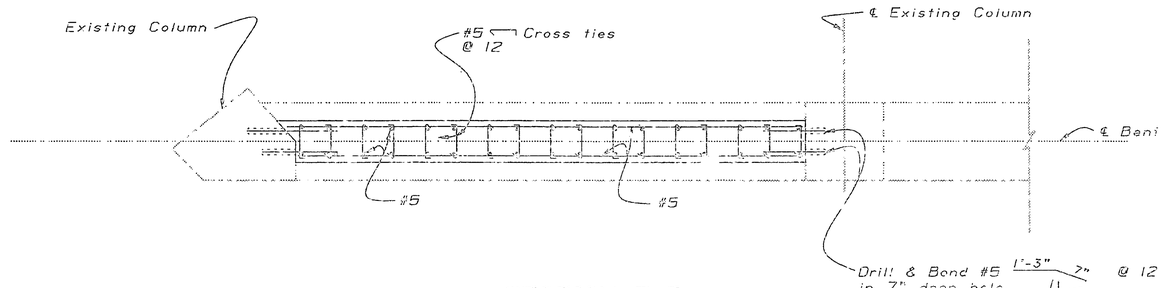

SECTION Z-Z
3/8" = 1'-0"

Note A: Structure Excavation at in-fill walls shall be Type H.

Note:
On drill and bond dowels, contractor was allowed to use epoxy cartridge in lieu of specified "Magnesium Phosphate" concrete. Drill hole better not require with epoxy cartridge. Hole diameter and depth to match manufacturer recommendation but shall never be shallower than the shown on plans.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.318.9	33	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER KEVIN HARPER No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
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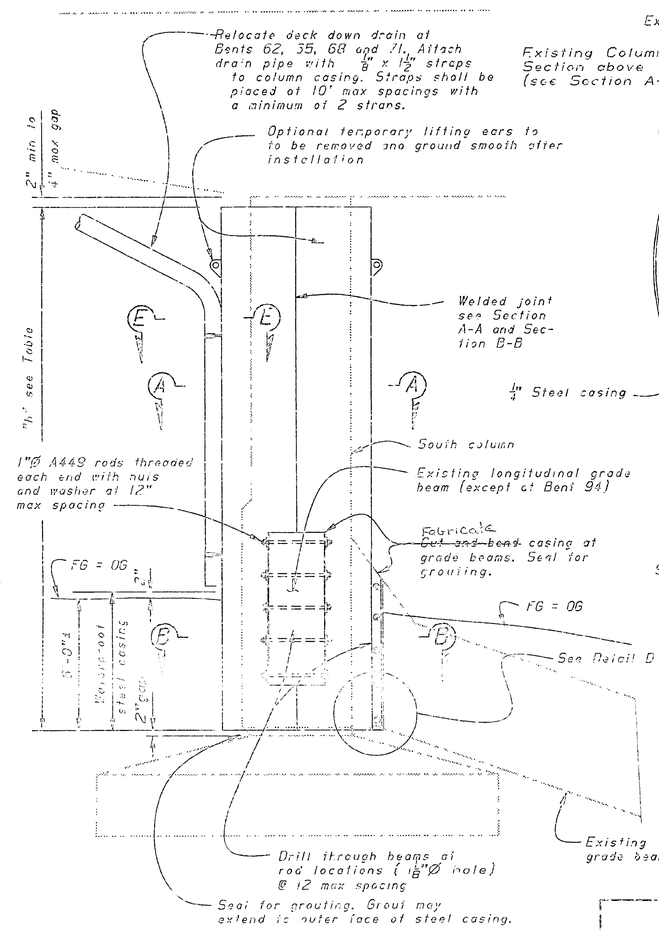
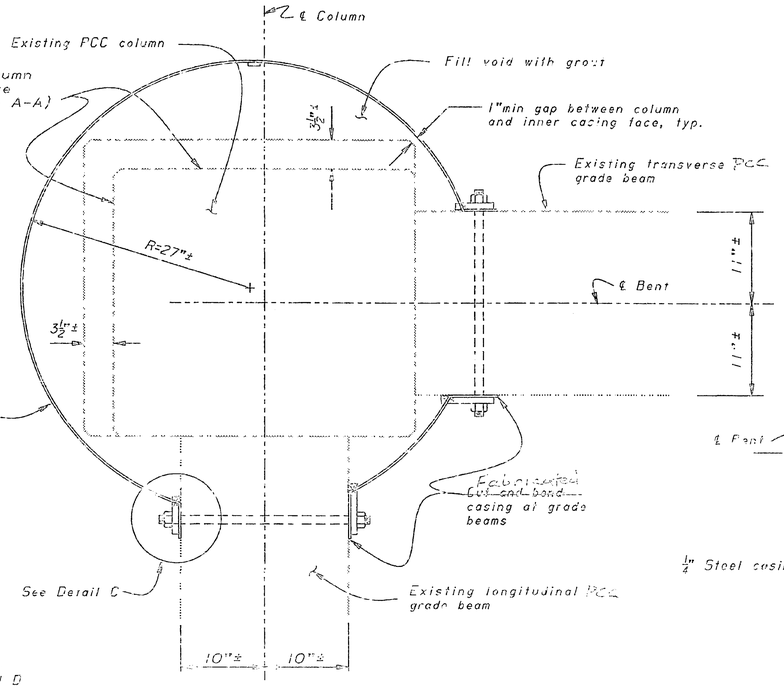
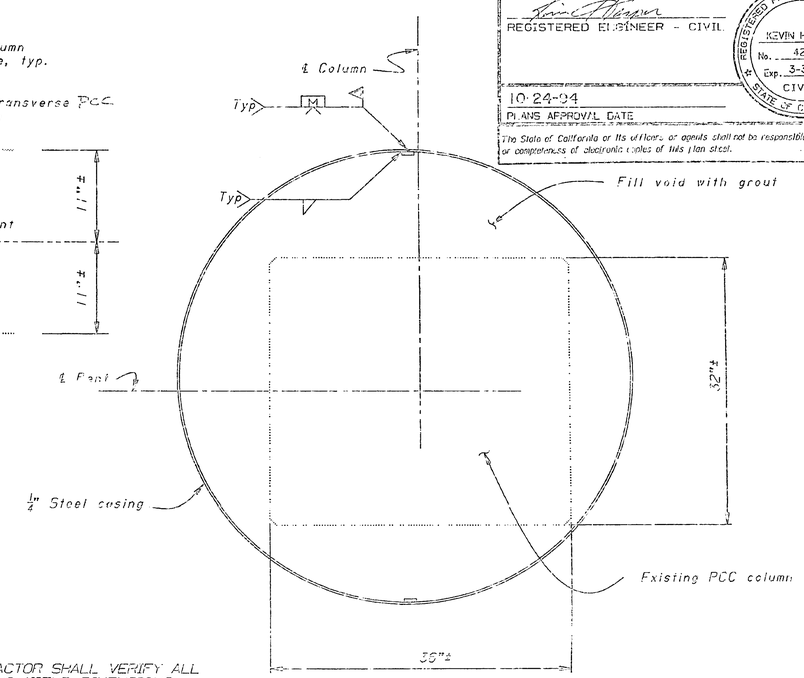


STEEL CASING DETAILS
1/2"=1'-0"

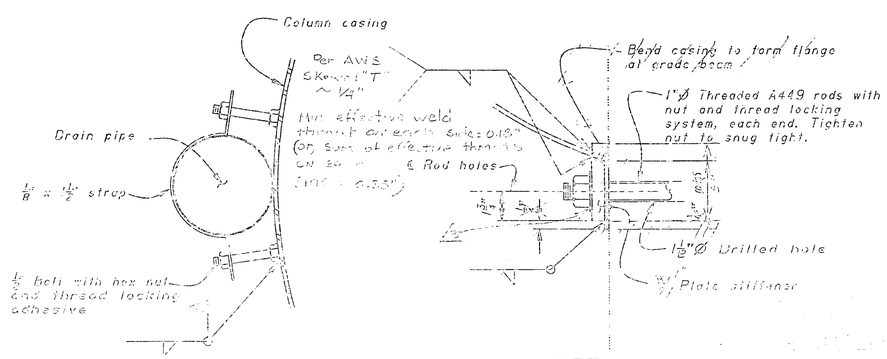


SECTION B-B
1 1/2"=1'-0"



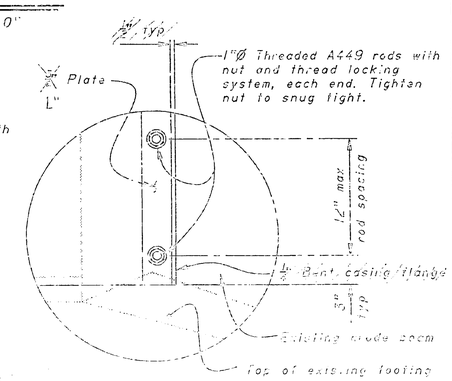
SECTION A-A
1 1/2"=1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



SECTION B-B
3"=1'-0"

A DETAIL C
3"=1'-0"



DETAIL D
1/2"=1'-0"

TABLE	
Bent	Approximate Casing Height "h"
62	14'-2" ±
63	12'-0" ±
64	12'-4"±2'-7"
65	12'-2"±2'-4"
66	[illegible]
67	[illegible]
68	[illegible]
69	[illegible]
70	[illegible]
71	[illegible]
94	9'-4"

Notes:

1. Appropriate injection nozzles to be provided at casing but removed and ground flush following completion of void filling operation
2. Location and number of welds to be determined by the Contractor subject to approval by the Engineer
3. Location of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars (except as noted). Final hole locations are subject to the approval of the Engineer

[illegible]

[illegible]

[illegible]

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

[illegible]

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	34	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — KEVIN HARPER No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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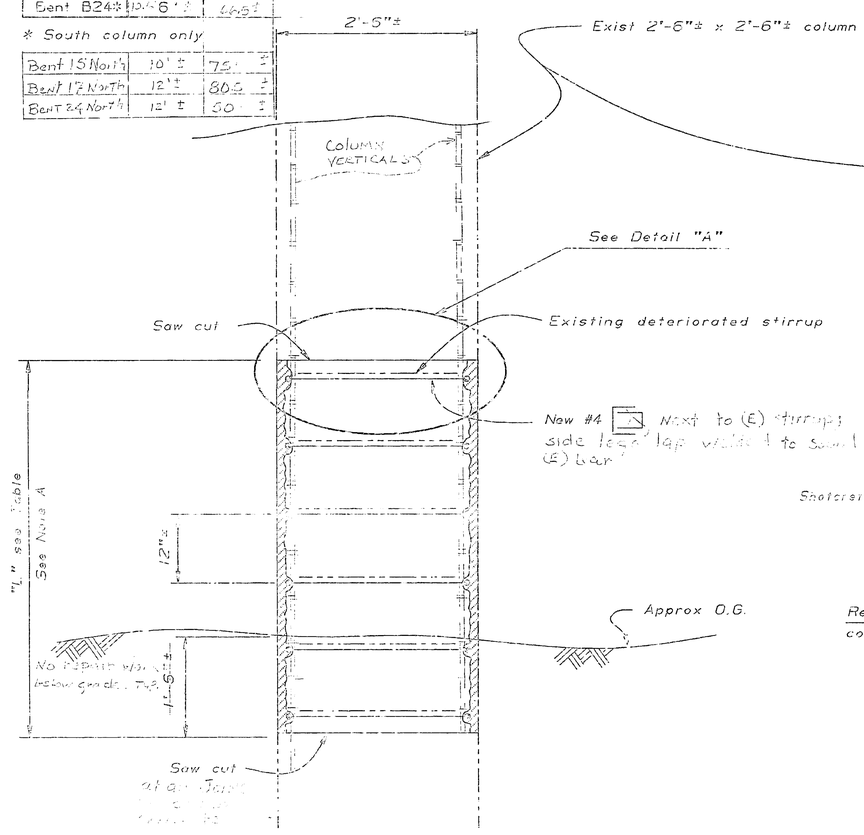
TABLE		Area
Location	"L"	sq.ft.
Bent B15*	13'-6" ±	84±
Bent B16*	15'-9" ±	94±
Bent B17*	12'-10" ±	42±
Bent B24*	12'-6" ±	66±

* South column only

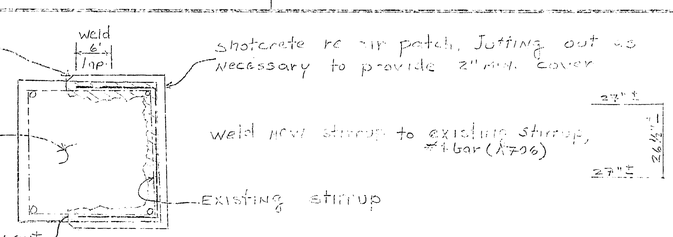
Bent 15 North	10' ±	75 ±
Bent 17 North	12' ±	80 ±
Bent 24 North	12' ±	50 ±



PART ELEVATION

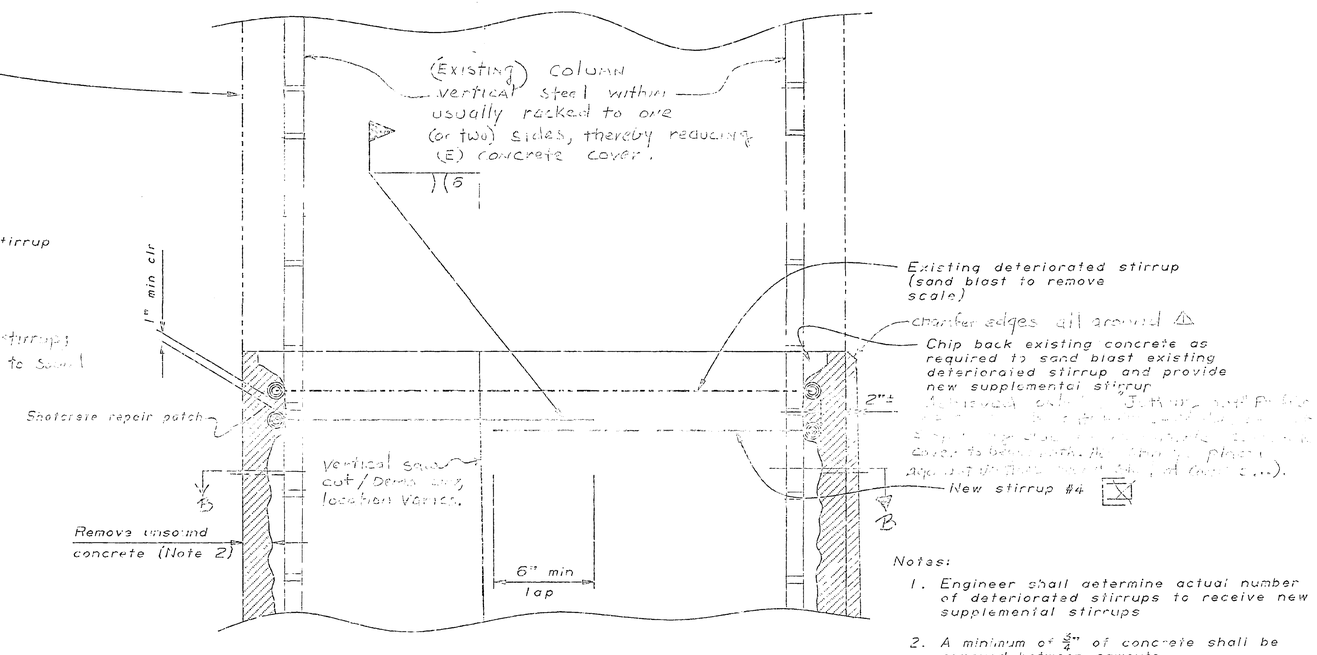
1" = 1'-0"

Note A: Remove spalled and unsound concrete to sound concrete. Patch with shotcrete



SECTION B-B

NTS



Notes:

1. Engineer shall determine actual number of deteriorated stirrups to receive new supplemental stirrups
2. A minimum of ¾" of concrete shall be removed between sawcuts

Indicates limits of concrete removal

DETAIL "A"

3" = 1'-0"

DESIGNED	BY Pat Mistry	9-94	CHECKED Kevin Harper	6-94	
DETAILED	BY Tom Blake	7-94	CHECKED Kevin Harper	6-94	
QUANTITIES	BY K. de Harpe		CHECKED Mike Lent		

DEPARTMENT OF HIGHWAY BRIDGES

EARTHQUAKE RETROFIT PROJECT
NORTH SHORE

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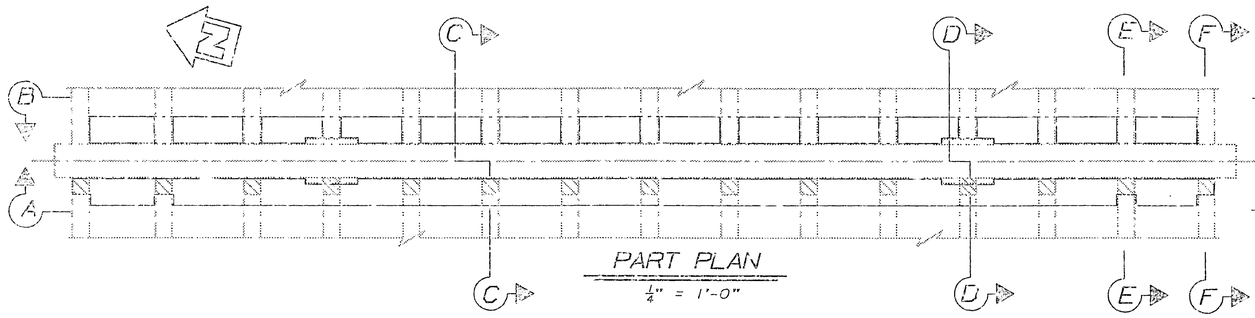
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	35	107

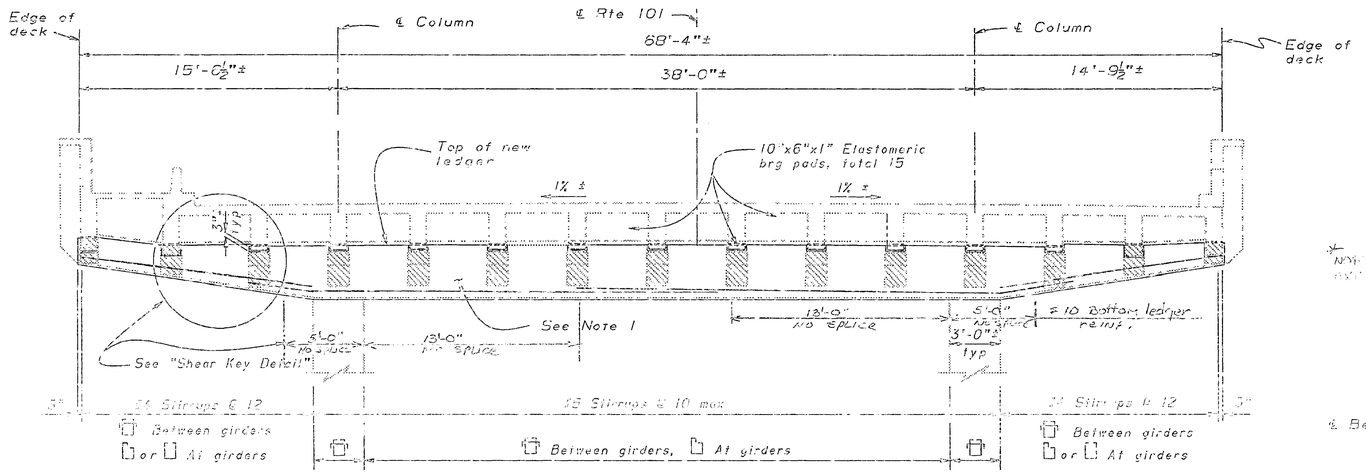
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

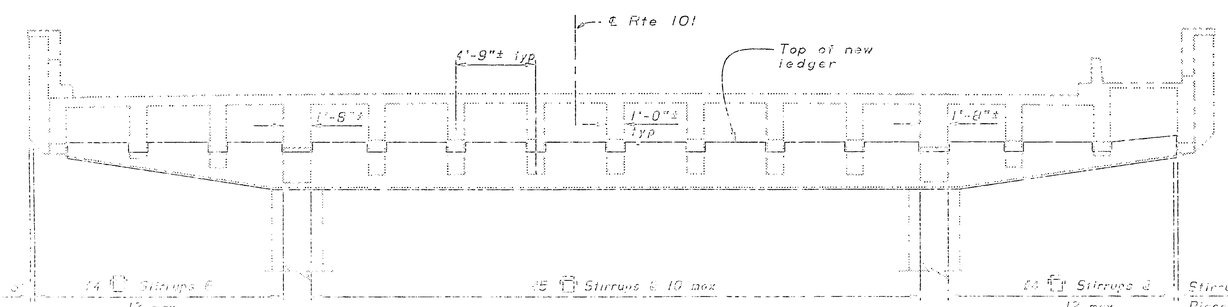
10-24-94
PLANS APPROVAL DATE



PART PLAN
1/4" = 1'-0"



ELEVATION A-A
1/4" = 1'-0"



ELEVATION B-B
1/4" = 1'-0"

Stirrup spacing between girder
Place stirrups 3" max from existing girder faces

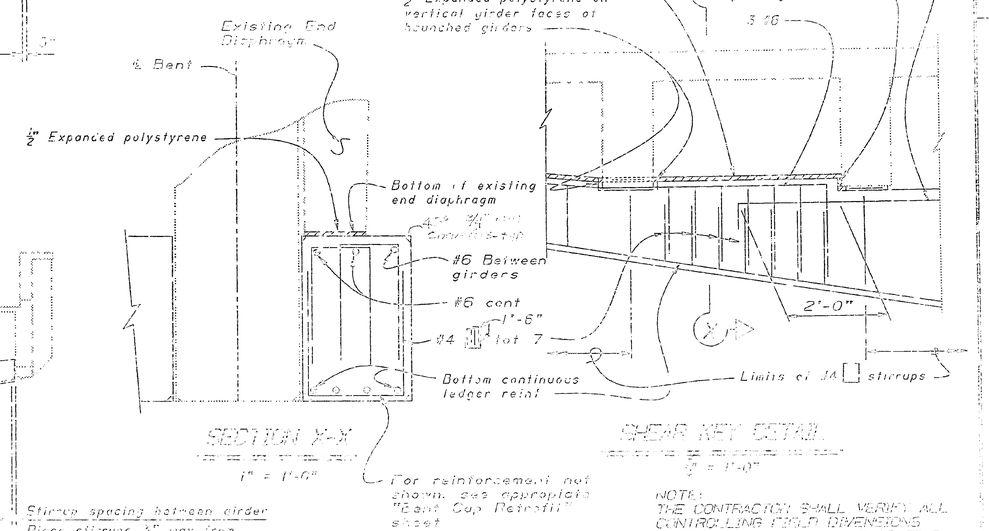
Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet. see Note 6.
2. For Sections C-C, D-D, E-E and F-F see "Bent Details (A)" sheet.
3. For "Elastomeric Brg Pad Detail" see "Miscellaneous Details" sheet.
4. Hinge Restrainers not shown.
5. For additional details at locations where existing deck down drain pipe is present see "Detail D" on "Miscellaneous Details" sheet.

Indicates limits of concrete removal.

Indicates existing structure.

*6. Demolition of existing corbel (typical all locations) [illegible] resulted in [illegible] loss. Masonry plate resulted in [illegible] [illegible] the [illegible] detail for [illegible] (Existing Note 6 [illegible] typical all locations) [illegible] the existing corbel [illegible]



SECTION X-X
1" = 1'-0"

SHEAR KEY DETAIL
1" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Kevin Harper	6-96	OFFICE CHIEF	Dennis M. Sun
REVIEW	Jack Hawkins	7-96	OFFICE CHIEF	Brian Maroney
REVIEW	Linda Zuniga			

[illegible]

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	36	107

REGISTERED ENGINEER - CIVIL

Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

10-24-94
PLANS APPROVAL DATE

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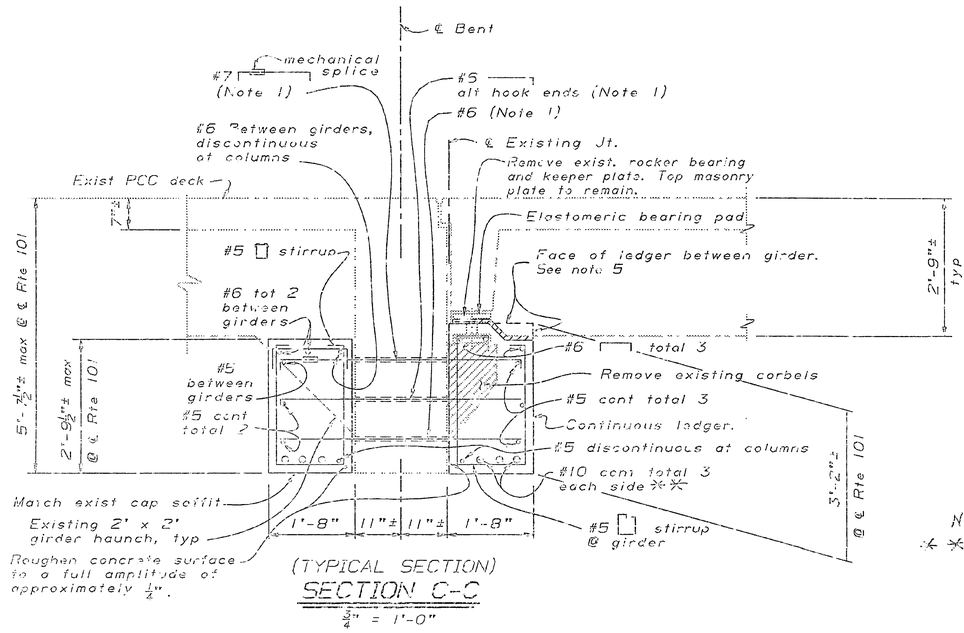
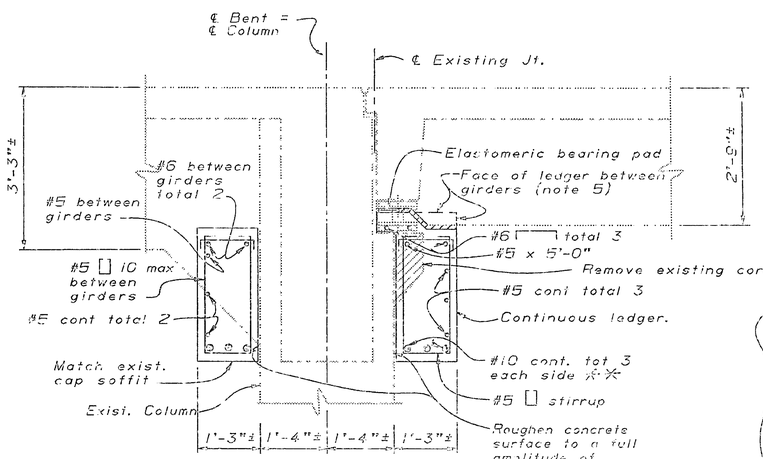


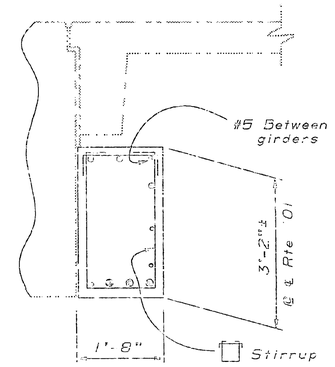
(TYPICAL SECTION)
SECTION C-C
¾" = 1'-0"

Note: See "Detail A" for typical ledger between girders



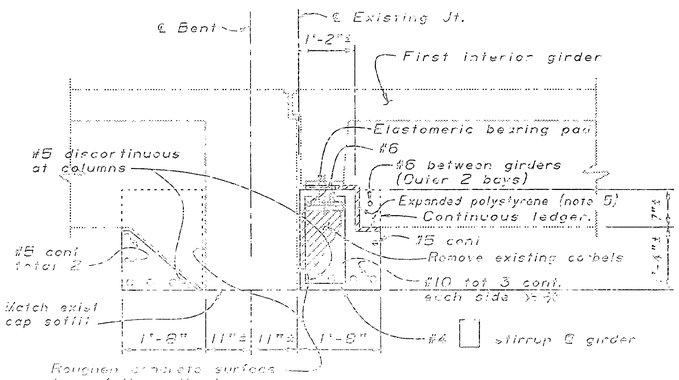
(TYPICAL ALONG COLUMN WIDTH)
SECTION D-D
¾" = 1'-0"

NOTE:
* * For "NO SPLICE" regions see "ELEVATION A-1" on "BENT CAP RETROFIT Ⓐ" SHEET.
Contractor used "Shotcrete option" on all Bent cap retrofits.

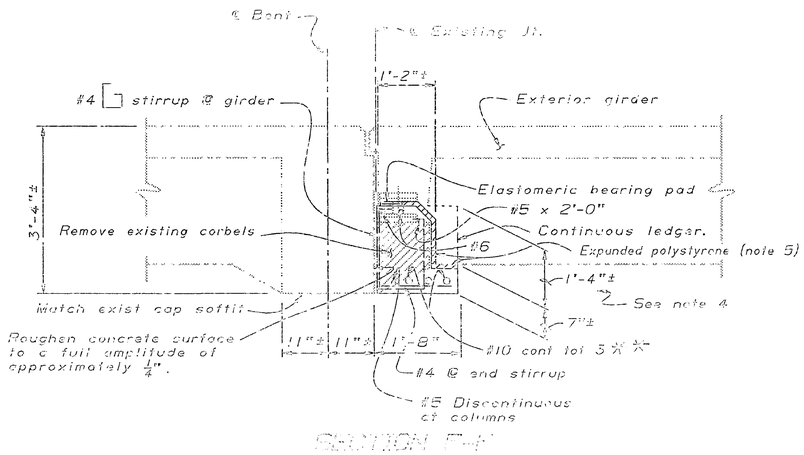


DETAIL A
¾" = 1'-0"

Note: "Detail A" typ. between girders



SECTION E-E
¾" = 1'-0"



SECTION F-F
¾" = 1'-0"

Notes:

1. For "Dowel Layout" see "Bent Details Ⓒ No. 2" sheet. Dowels to be placed thru drilled holes in existing bent cap.
2. For location of Cross-Sections C-C, D-D, E-E and F-F see "Bent Cap Retrofit Ⓐ" sheet.
3. For reinforcement layout in cantilever portion of cap, see "Bent Details Ⓒ No. 2" sheet.
4. Some locations may have original sliding plate bearings at exterior girder instead of rocker bearings shown. If so, see "Section F-F" on "Bent Details Ⓒ No.1" sheet. Existing top sliding plate anchored to girder to remain.
5. Isolate existing girder from ledger with expanded polystyrene on girder soffit and sides. Expanded polystyrene shall be same thickness as brg pad on girder soffit and 1/2" thick on girder side faces

Indicates limits of concrete removal.

Indicates existing structure.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN Kevin Harper 5-94
DETAILED Gary Dorsey 7-94
CHECKED Gary Thornton 5-94
CHECKED Gary Hamilton 6-94

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	37	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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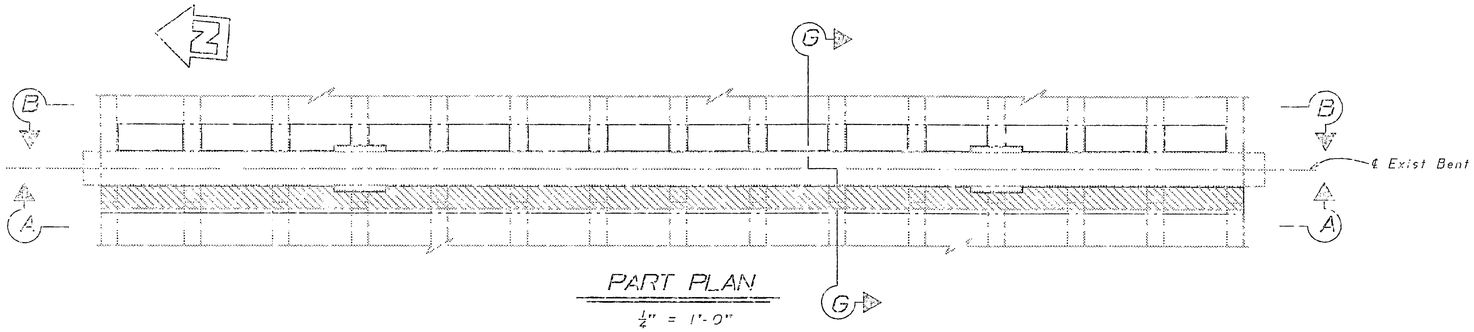
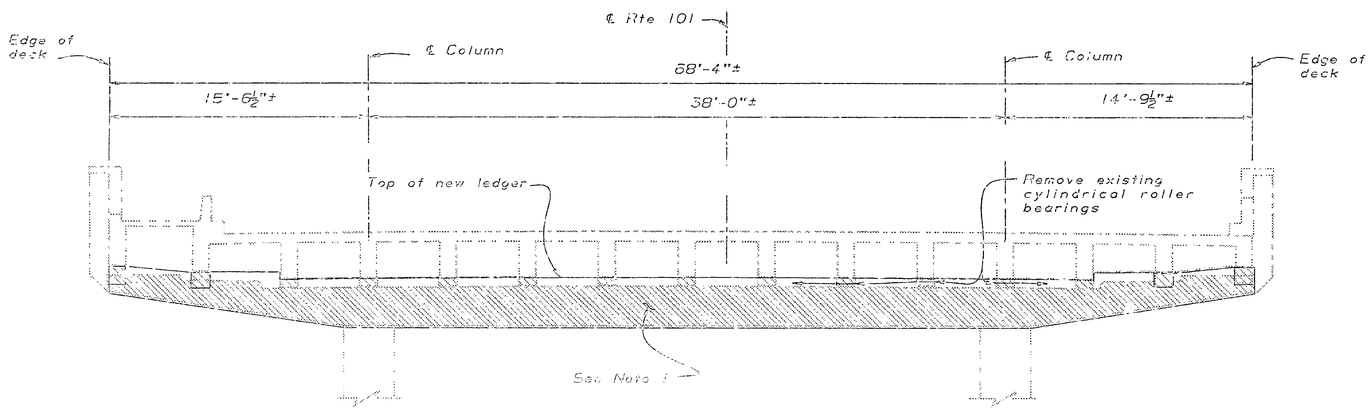
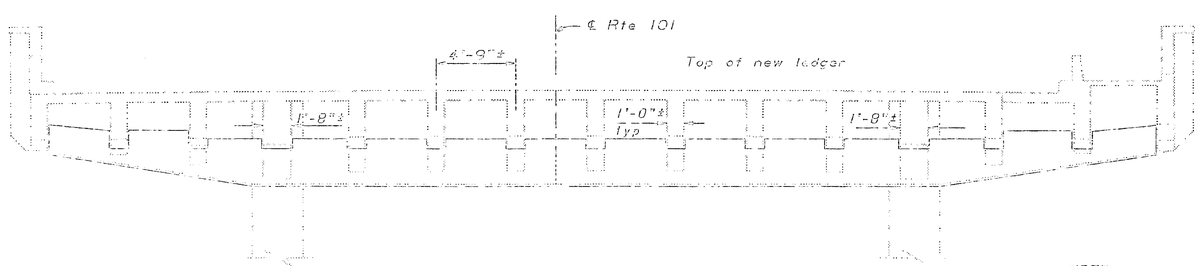


PART PLAN
1/4" = 1'-0"



ELEVATION A-A
1/4" = 1'-0"



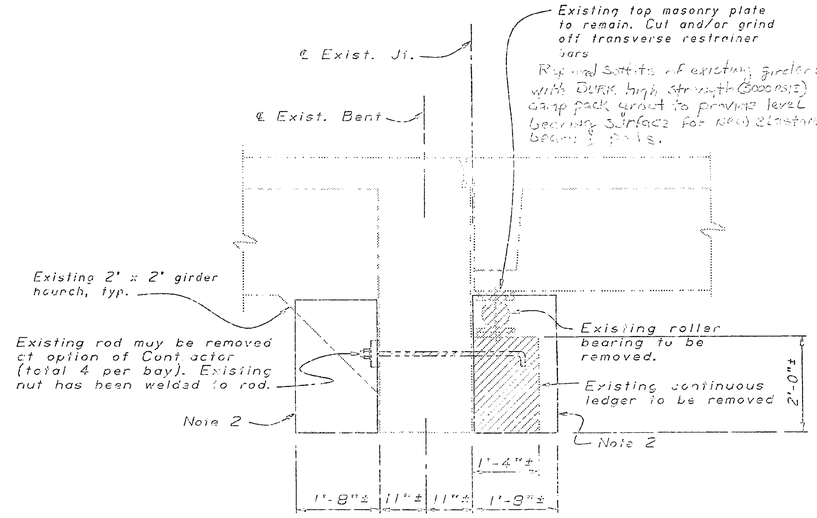
ELEVATION B-B
1/4" = 1'-0"

Notes:

1. Remove existing continuous ledger and construct new continuous ledger. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For details of new ledger see "Bent Cap Retrofit ©" sheet.
3. Hinge Restrainers not shown.

Indicates limits of concrete removal.

Indicates existing structure.



SECTION G-G
3/4" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Kevin Harper 6-94	Greg Thornton 6-94	
DETAILS	Jay Dempsey 7-94	Greg Thornton 6-94	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	38	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper No. 42221 Exp. 3-31-95 CIVIL — STATE OF CALIFORNIA

10-24-94

PLANS APPROVAL DATE

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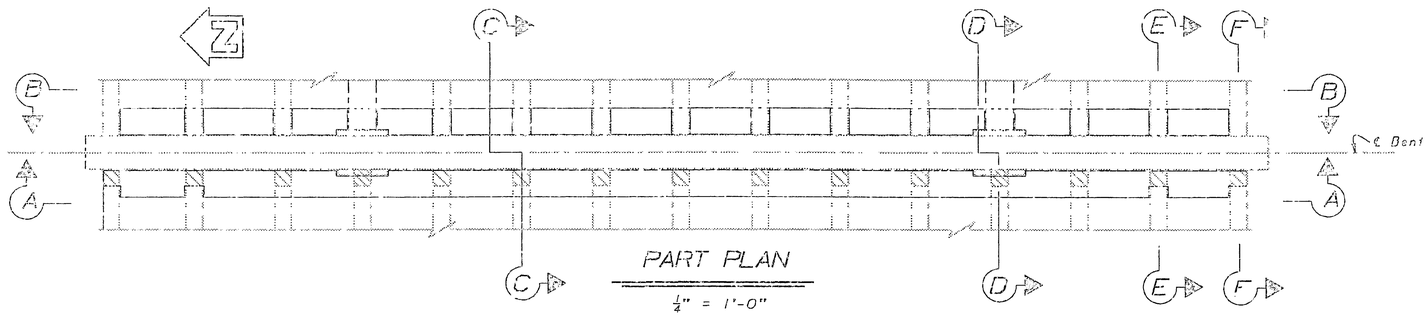
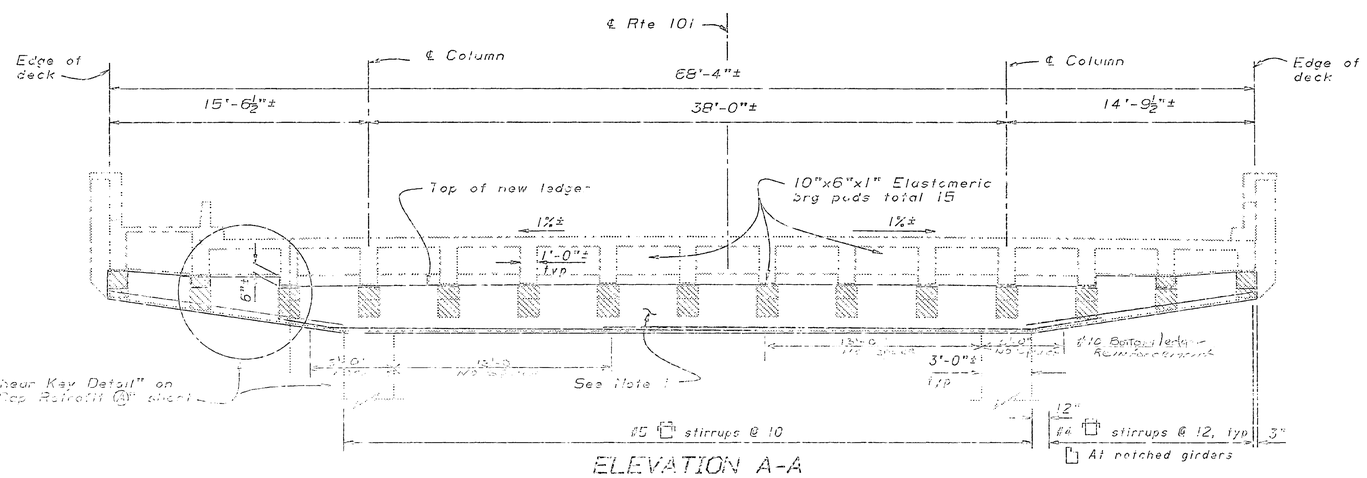


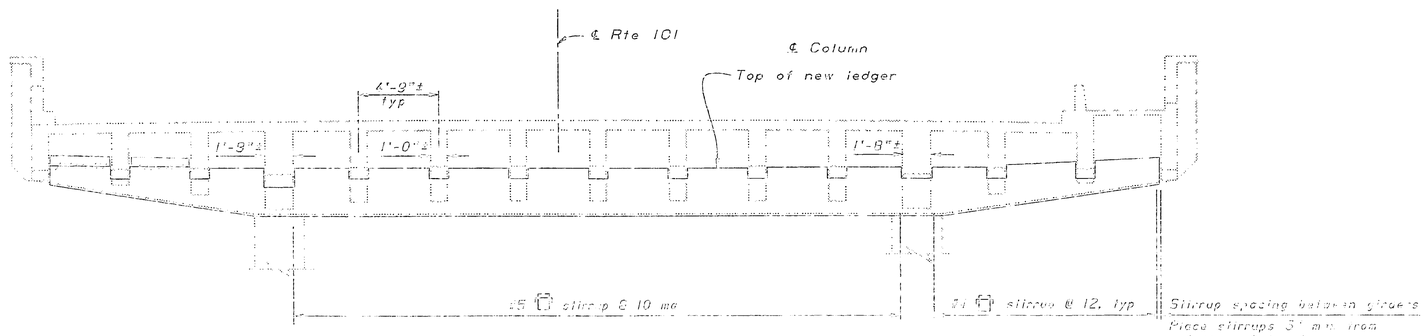
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet. See Note 6
2. For location of "Sections C-C, D-D, E-E F-F see and "Bent Cap Retrofit Ⓒ" No. 1 sheet.
3. For "Elastomeric Brg Pad Detail" see "Miscellaneous Details" sheet.
4. Hinge Restrainers not shown.
5. For additional details at locations where existing deck down drain pipe is present see "Detail C" on "Miscellaneous Details" sheet.

Indicates limits of concrete removal.

Indicates existing structure

6. Remove existing corbels in portions of [illegible] "21" to [illegible] bearing pads found at E-[illegible] 7, 9, 11, 33, 34, 41, 46, 47, 50, 52, 64, 69, 72, 74, 76, 78, 80, 82, 84, 86, 8, 6 & 4.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING LINE AND DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Kevin Harper	5-94	DESIGNED Greg Thornton 5-94
CHECKED	John D. Gray	7-95	CHECKED Greg Thornton 8-94
DRAWN	Kevin Harper		DRAWN Bill Lewis

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES

DESIGN OF STRUCTURES

SHEET NO.
38 OF 107

POST MILE
8.3/8.9

SOUTHBOUND BRIDGE RETROFIT PROJECT
VARIOUS LOCATIONS

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	39	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper No. 42221 Exp. 5-31-96 CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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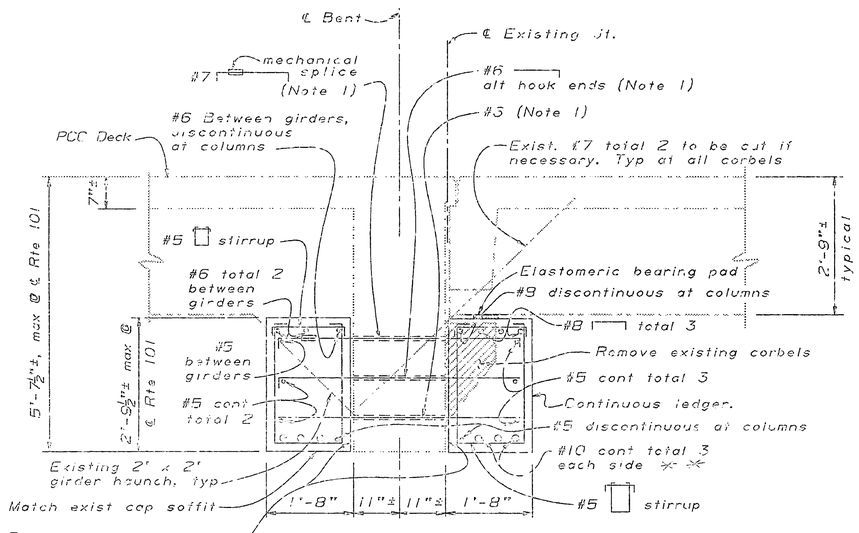
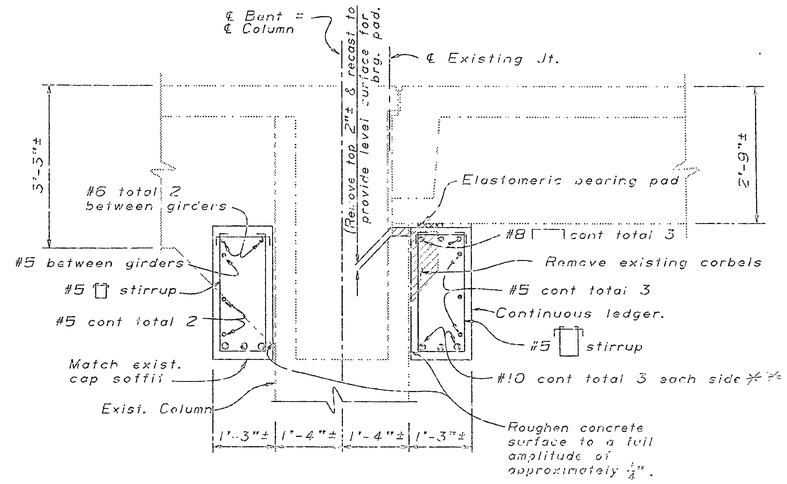


(TYPICAL SECTION)
SECTION C-C
3/4" = 1'-0"



(TYPICAL ALONG COLUMN WIDTH)
SECTION D-D
3/4" = 1'-0"

Notes:

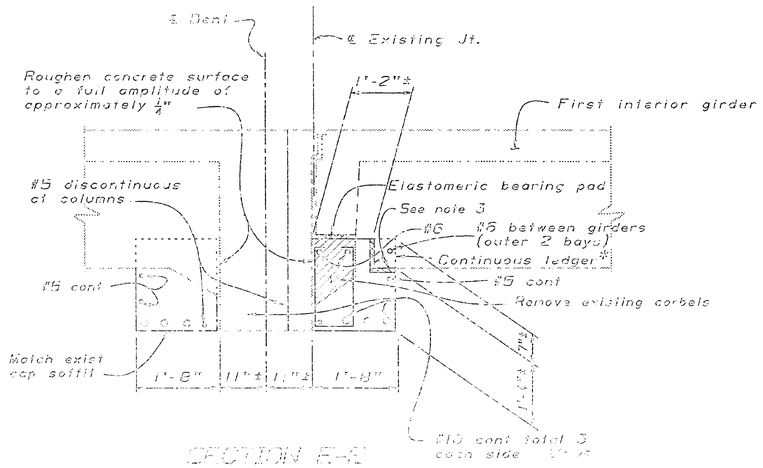
1. For "Dowel Layout" see "Bent Details Ⓒ No. 2" sheet. Dowels to be placed thru drilled holes in existing bent cap.
2. For location of "Sections C-C, D-D, E-E and F-F see "Bent Cap Retrofit Ⓒ" sheet.
3. Isolate existing girder from ledger with expanded polystyrene. Expanded polystyrene shall be 1" thick on girder front face and soffit and 1/2" thick on girder side faces.

▨ Indicates limits of concrete removal.

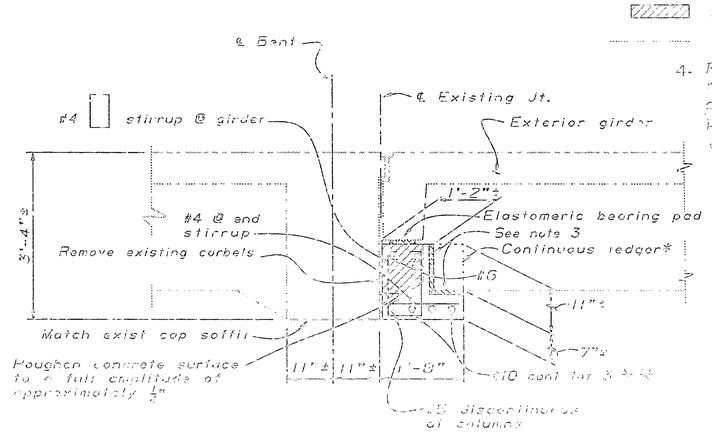
- - - - Indicates existing structure.

4. Remove soffits of existing girders [illegible] back one stirrup spacing, ramp back girder to provide level bearing surface for new elastomeric pad. Typical at Bents 7, 11, 24, 34, 41, 45, 67, 68 & 70.

** For "CID SPLICE" reqmts of #10 Bottom Ledger reinforcement see "SECTION A-A" on "BENT CAP RETROFIT Ⓒ" sheet.



SECTION E-E
3/4" = 1'-0"



SECTION F-F
3/4" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Kevin Harper	6-96	CHECKED	Greg Thornton	6-96
DRAWN	Indy Thompson	7-96	CHECKED	Greg Thornton	7-96
QUALITY CHECK	Kevin Harper		SR. STR. ENG.		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES
SAN FRANCISCO

DIVISION OF CONSTRUCTION
SAN FRANCISCO

BRIDGE NO. 34-0006
BENT CAP RETROFIT
SECTIONS

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	40	107

RECISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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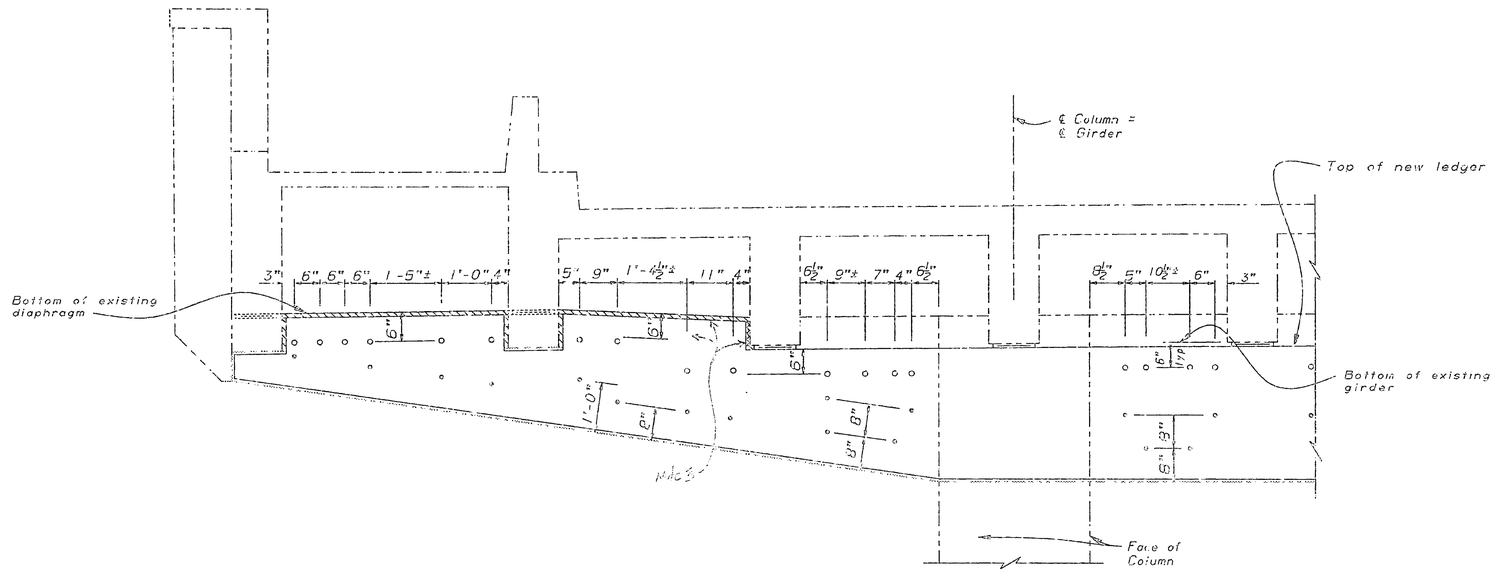


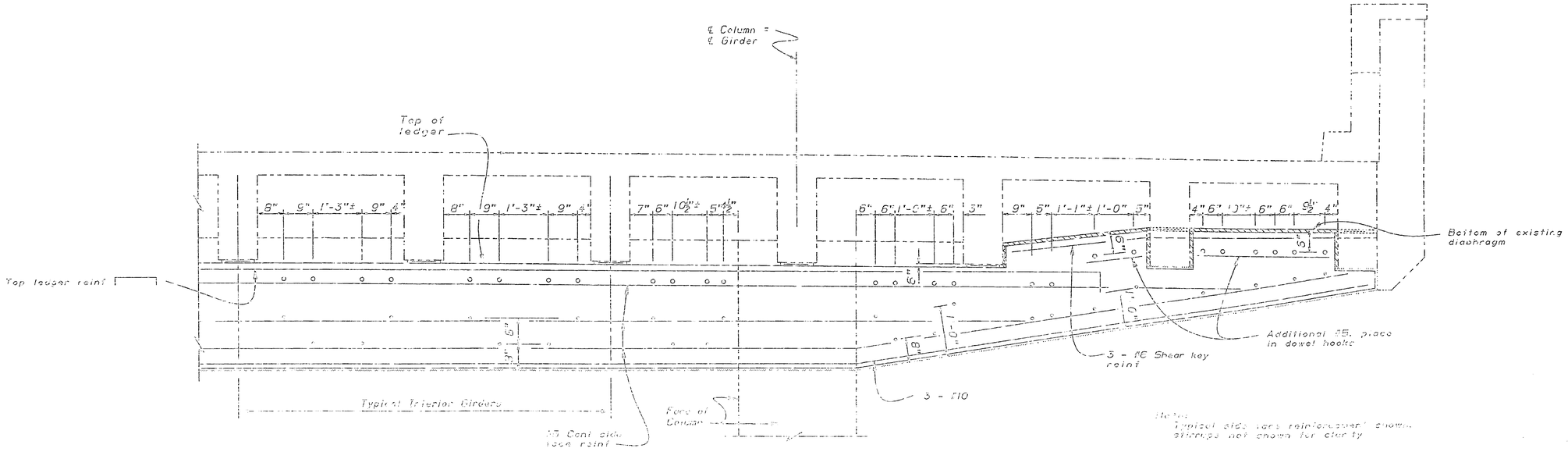
Notes:

1. Location of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars.
   Final hole locations are subject to the approval of the Engineer.
2. Dimensions between girders measured normal to ℄ girder

○ Indicates #7 ⊢— dowel in 1½"Ø drilled hole.

◦ Indicates #6 dowel in 1"Ø drilled hole.

3. 3½ high x 12½ wide [illegible]



Notes:
Typical side face reinforcement shown. Stirrups not shown for clarity

PART ELEVATION - DOWEL LAYOUT

½" = 1'-0"

Designed	[illegible]	6-96	Cost Function	6-96	Bridge No.	Sheet No.	
Detailed	[illegible]	7-96	Cost Function	6-96			
Quantities	[illegible]		Mod. L [illegible]				

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	9.3/8.9	41	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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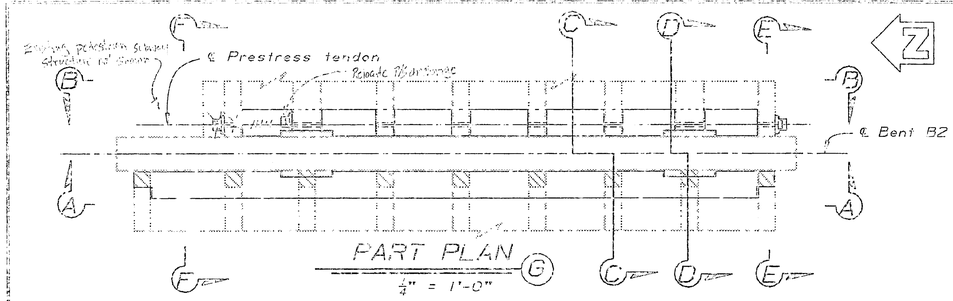
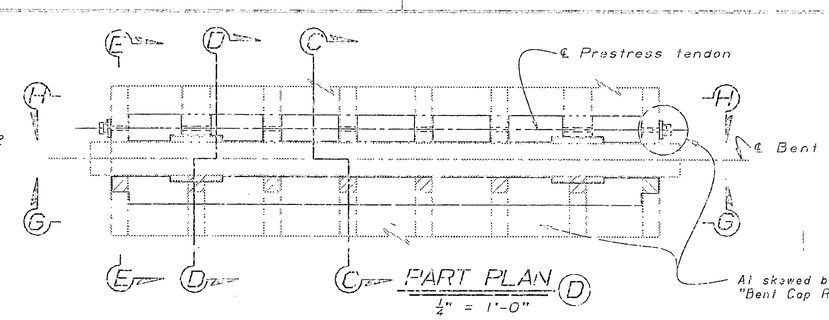
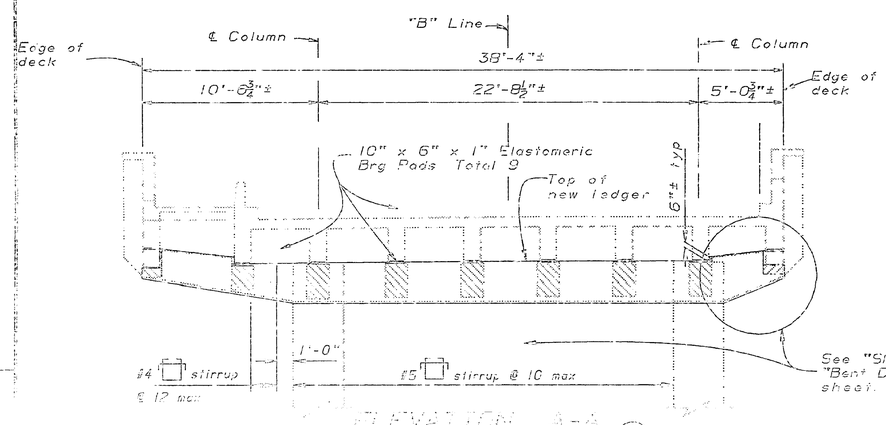


PART PLAN (G)
1/4" = 1'-0"

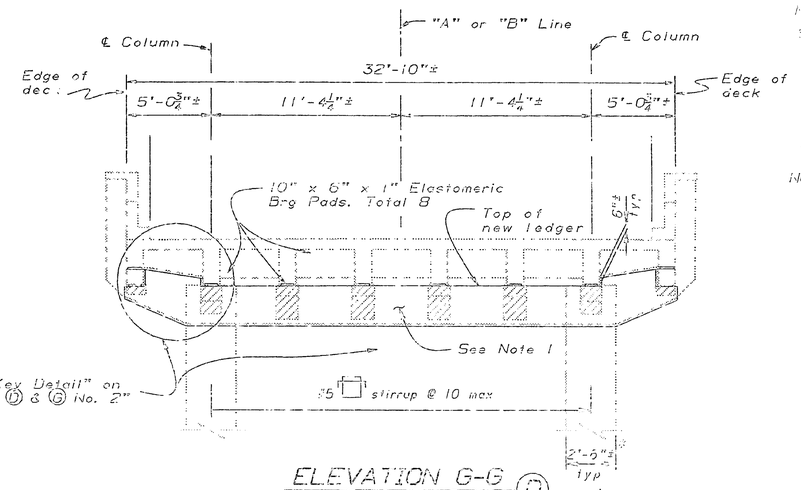


PART PLAN (D)
1/4" = 1'-0"

At skewed bents, see "Detail H" on "Bent Cap Retrofit (K)" sheet



ELEVATION A-A (G)
1/2" = 1'-0"



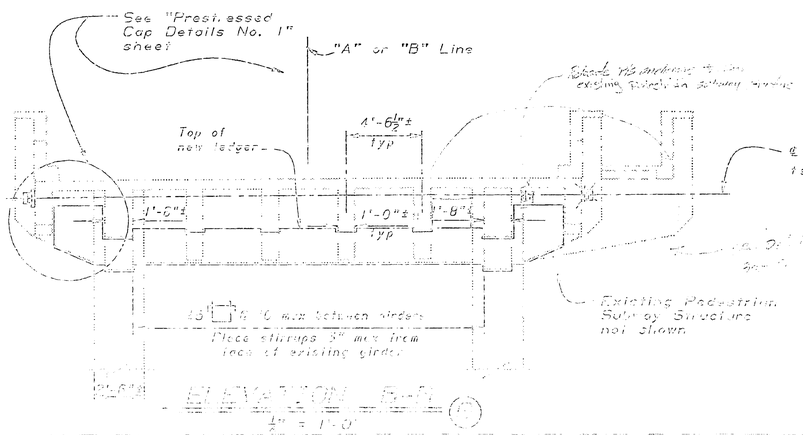
ELEVATION G-G (D)
1/2" = 1'-0"

NOTES:

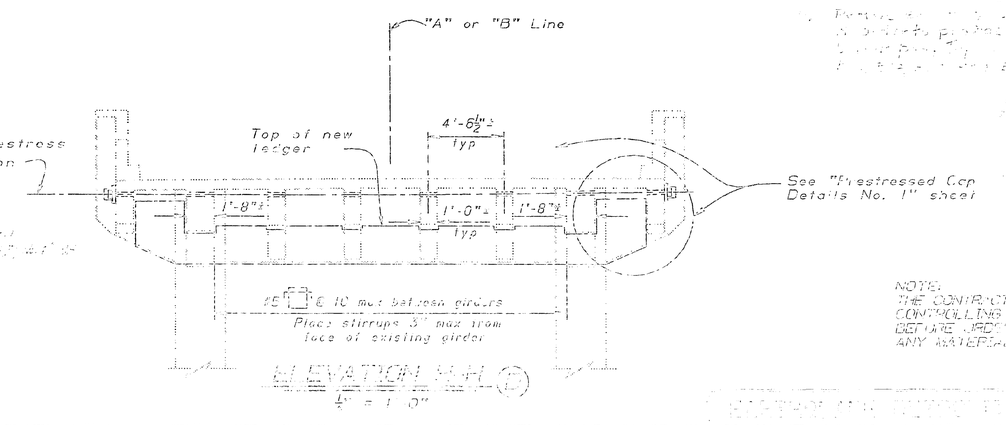
1. Remove existing corbels and construct continuous ledger. Existing reinforcing to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For Sections C-C, D-D, E-E and F-F see "Bent Details (D) and (G) No.1" sheet.
3. For "Elastomeric Brg Pad Detail" see Miscellaneous Details sheet.
4. Hinge restrainers not shown.
5. For additional details at locations where existing deck down drain pipe is present, see "Detail D" on "Miscellaneous Details" sheet
6. Bents normal to "A" or "B" Line shown, skewed bents are similar.

Indicates limits of concrete removal.

Indicates existing structure.



ELEVATION B-B (D)
1/2" = 1'-0"



ELEVATION H-H (D)
1/2" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Kevin Harper	5-94	CHECKED	Greg Thornton	5-94
BRIDGE	Jerry Gramer	7-94	DESIGN CHECKED	G. C. Thornton	5-94
DRAFTING	Kevin Harper	8-94	DRAFTING CHECKED	Greg Thornton	8-94

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES
SAN FRANCISCO OFFICE

BRIDGE NO. 34-0012
BRIDGE NAME

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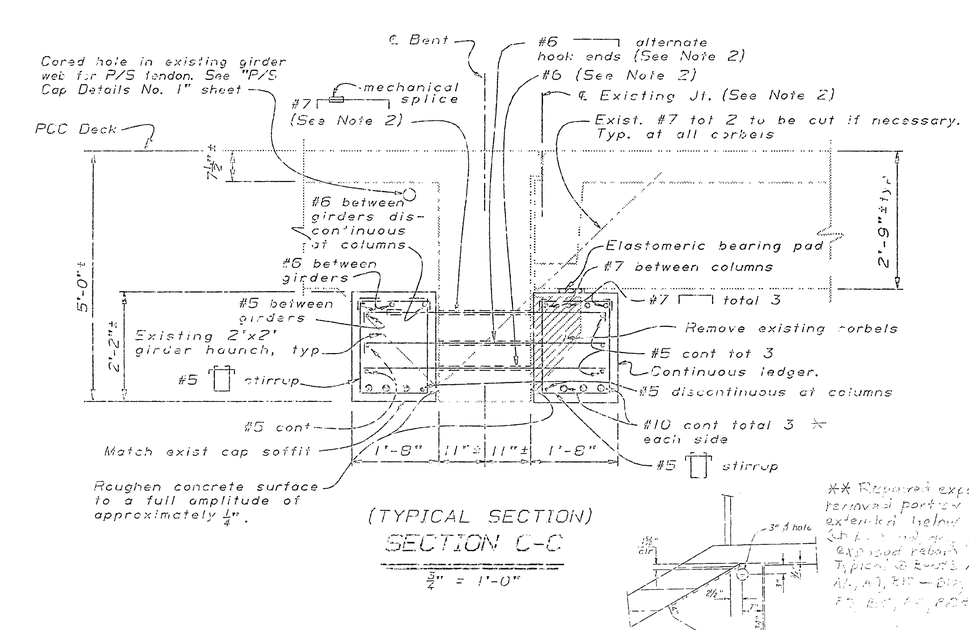
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	42	107

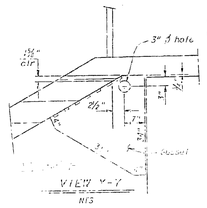
REGISTERED ENGINEER - CIVIL

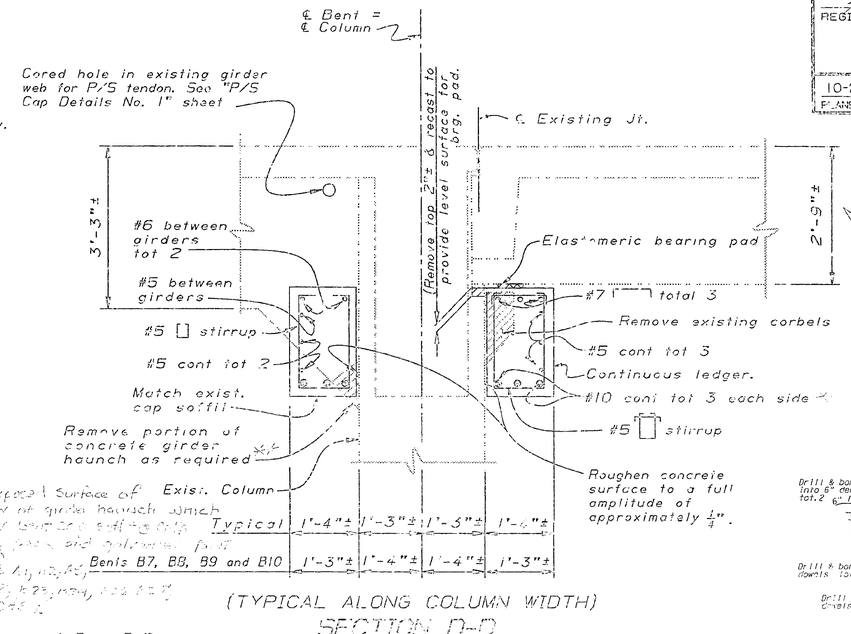
REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



(TYPICAL SECTION)
SECTION C-C
¾" = 1'-0"

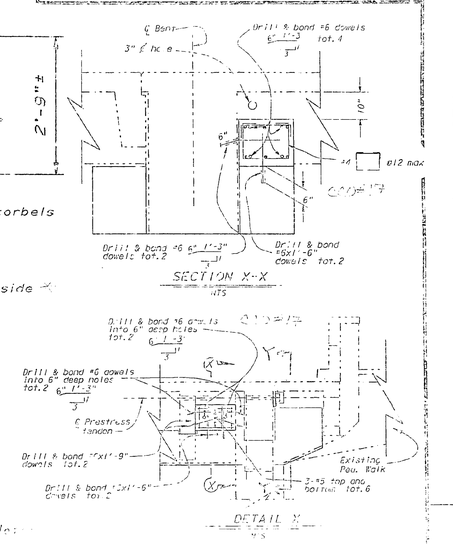




** Required expect surface of Exist. Column removal portion of girder haunch which extended below bottom of cap. Typical @ Bents A1, A2, A3, A6, A7, A8, B1 - B6, B7, B8, B9, B10 and B11 to B6, B7, B8, B9, B10.

Typical	1'-4"±	1'-3"±	1'-3"±	1'-6"±
Bents B7, B8, B9 and B10	1'-3"±	1'-4"±	1'-4"±	1'-3"±

(TYPICAL ALONG COLUMN WIDTH)
SECTION D-D
¾" = 1'-0"

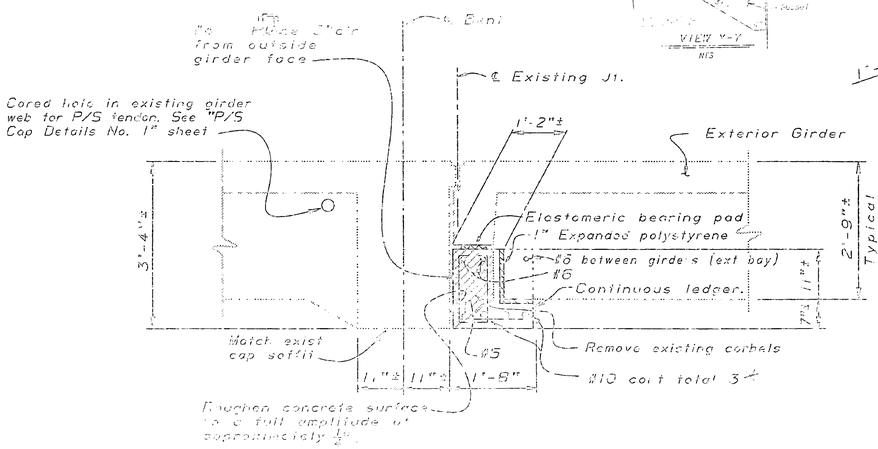


Note:

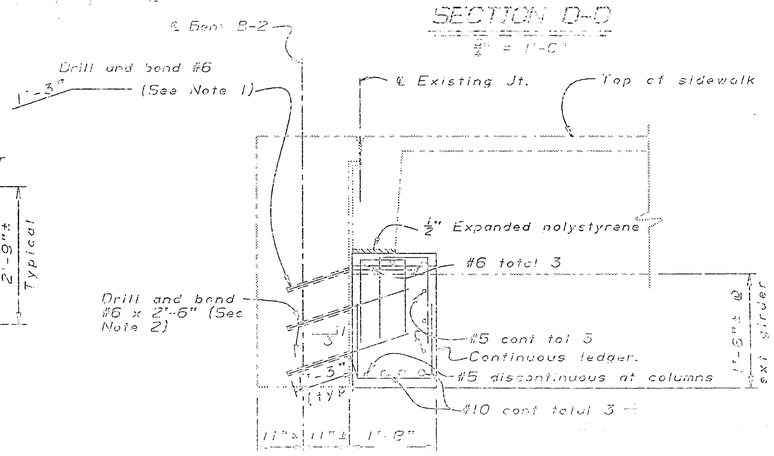
1. For "Drill and Bond Dowel Layout" see "Bent Details Ⓜ & Ⓟ No. 2" sheet
2. For "Dowel Layout" see "Bent Details Ⓜ & Ⓟ No. 2" sheet. Dowels to be placed thru drilled holes in existing bent
3. For locations of Sections C-C, D-D, E-E and F-F see "Bent Cap Retrofit Ⓜ & Ⓟ" sheet

Indicates limits of concrete removal

Indicates existing structure



SECTION E-E
¾" = 1'-0"



For reinforcement and details not shown see "Shear Key Detail" on "Bent Details Ⓜ & Ⓟ No. 2" sheet

SECTION F-F
¾" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Kevin Harper	5-96	CHECKED	Greg Thornton	5-96
DETAILED	Kay Dimaco	7-96	CHECKED	Greg Thornton	5-96
QUANTITIES	Kevin Harper	8-96	CHECKED	Greg Thornton	8-96

CALIFORNIA DEPARTMENT OF TRANSPORTATION
STRUCTURE REPAIR
BENT CAP RETROFIT
BENTS A1, A2, A3, A6, A7, A8, B1 - B6, B7, B8, B9, B10 AND B11

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	6.3/8.9	43	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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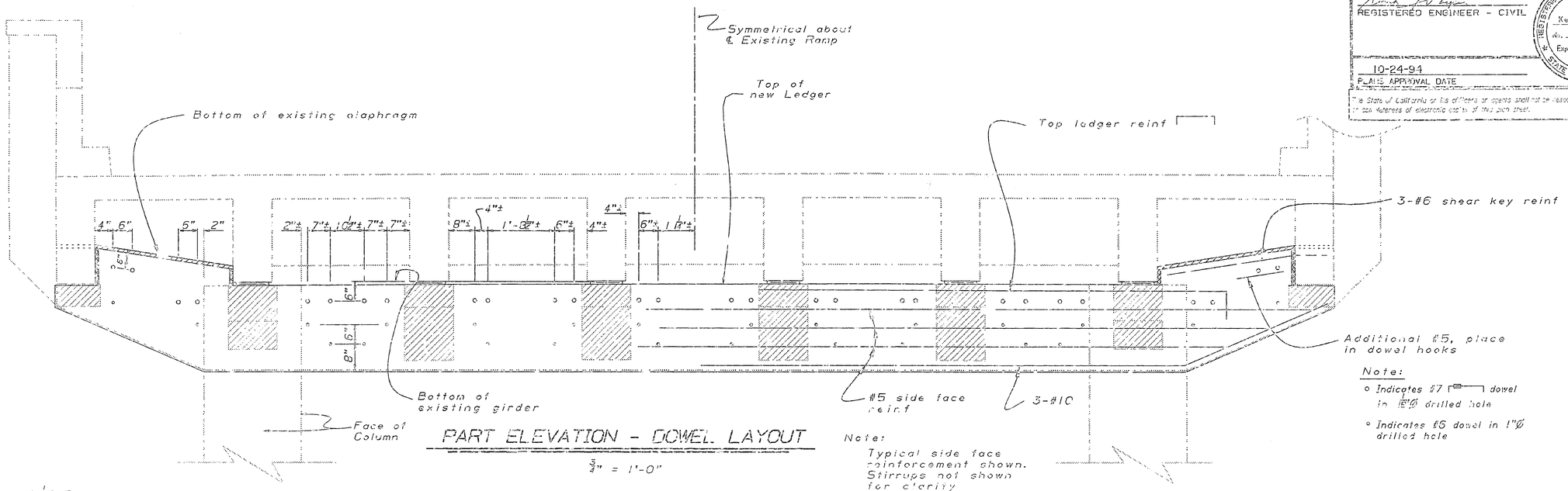
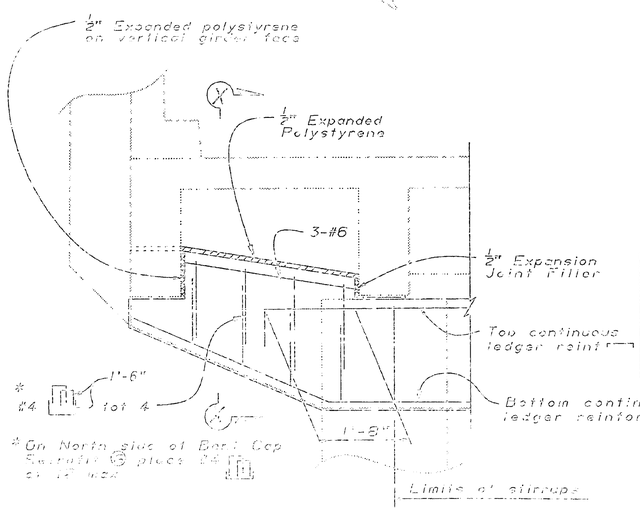


PART ELEVATION - DOWEL LAYOUT

¾" = 1'-0"

Note:
Typical side face reinforcement shown. Stirrups not shown for clarity

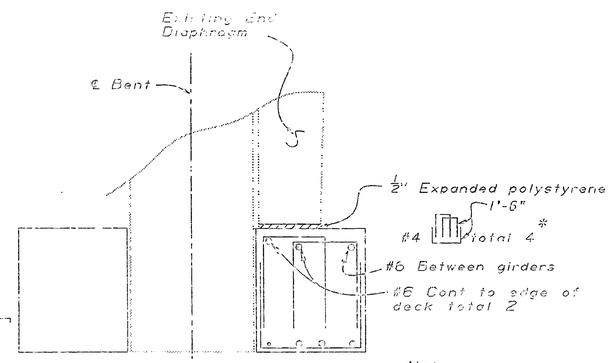
Note:
- Indicates #7 ⊓ dowel in 1½"Ø drilled hole
- Indicates #6 dowel in 1"Ø drilled hole



* On North side of Bent Cap Symmetric @ place #4 ⊓ on 12" hook

LINEAR KEY DETAIL

¾" = 1'-0"



SECTION X-X

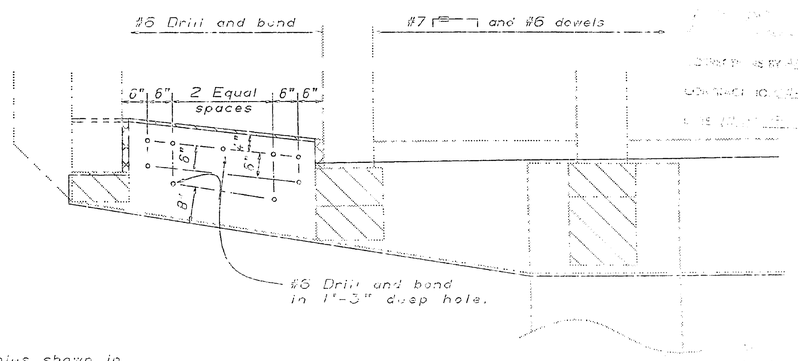
1" = 1'-0"

NOTE: For reinforcement not shown see appropriate "Bent Cap Retrofit" sheet.

Notes:
Location of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars. Final hole locations are subject to the approval of the Engineer.

Indicates limits of concrete removal.

Indicates existing structure.



DRILL AND BOND DOWEL LAYOUT (BENT 2)

¾"=1'-0"

NOTE
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Kevin Harper	6-96	CHECKED	Greg Thornton	9-96
DETAILED	Judy Dempsey	7-96	REVIEWED	Greg Thornton	9-96
QUANTITIES	Kevin Harper	9-96		Kurt Lewis	9-96

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROFESSIONAL ENGINEER

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN

INDEX OF DRAWINGS
STRUCTURE DETAIL
STRUCTURE DETAIL

BAY BRIDGE RETROFIT PROJECT
YERBA BUENA ISLAND
BRIDGE NO. 34-0016

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	44	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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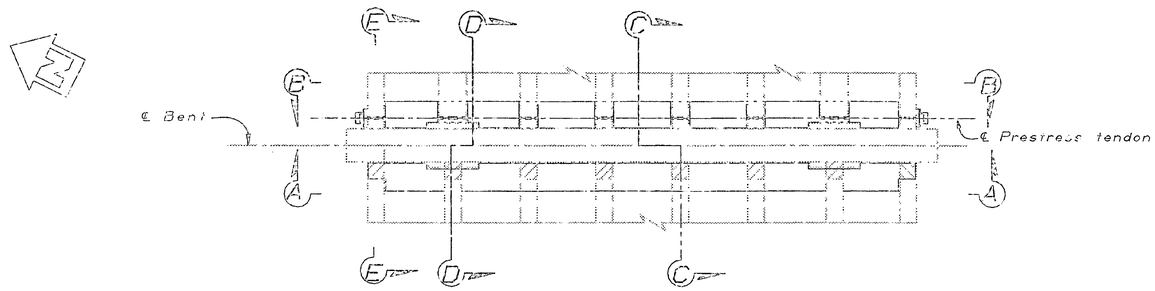
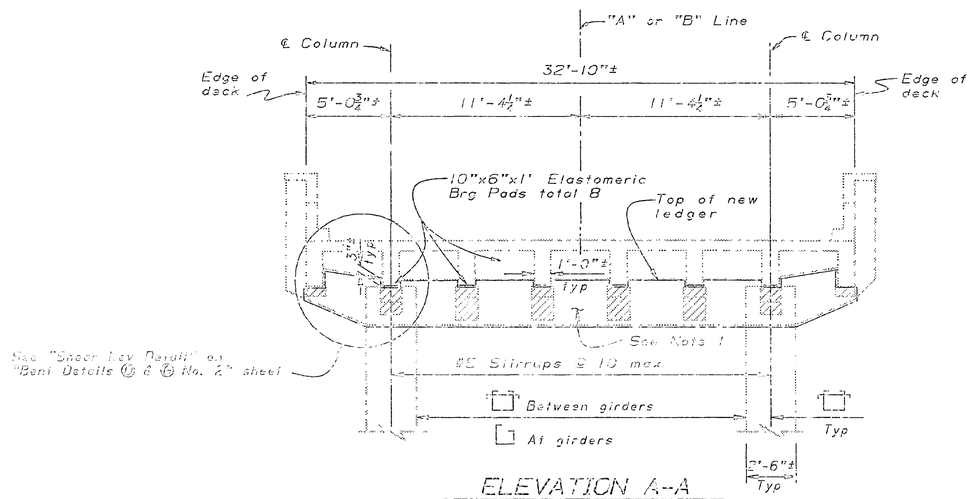
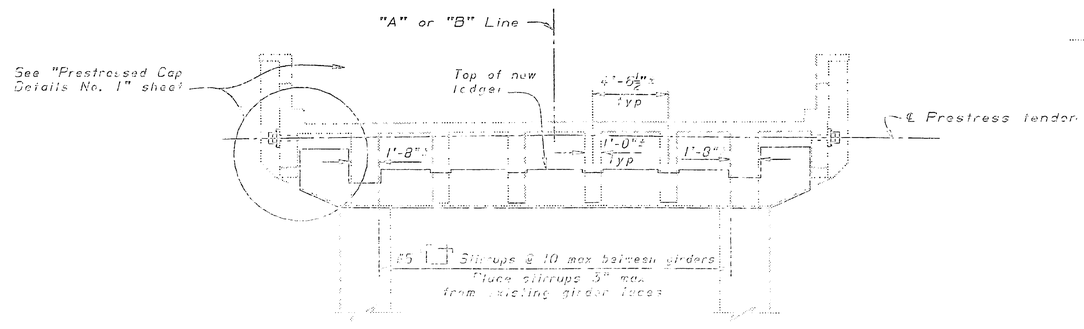


PART PLAN
$\frac{1}{4}$" = 1'-0"



ELEVATION A-A
$\frac{1}{4}$" = 1'-0"



ELEVATION B-B
$\frac{1}{4}$" = 1'-0"

NOTES:

1. Remove existing corbels and construct continuous ledger. Existing reinforcing to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For sections not shown see "Bent Details Ⓔ" sheet.
3. For "Elastomeric Brg Pad Detail" see "Miscellaneous Details" sheet.
4. Hinge restrainers not shown.
5. For additional details at locations where existing deck down drain pipe is present, see "Detail D" on "Miscellaneous Details" sheet.

Indicates limits of concrete removal.

Indicates existing structure.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

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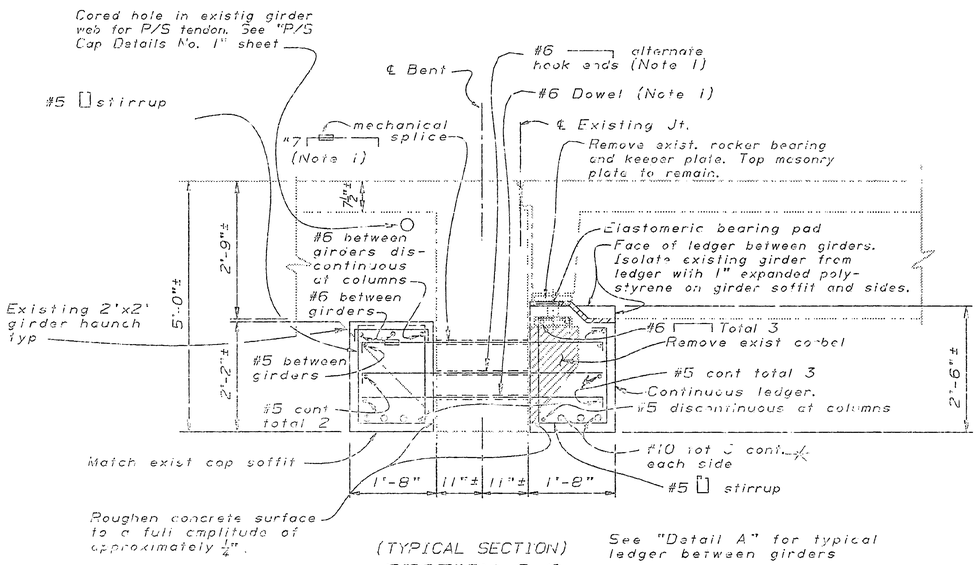
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	45	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

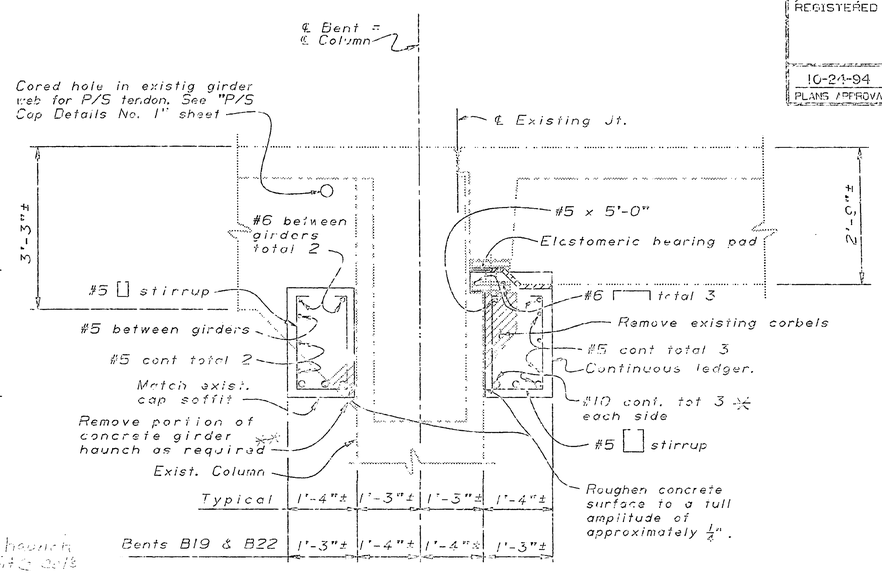
10-24-94
PLANS APPROVAL DATE



(TYPICAL SECTION)
SECTION C-C
3/4" = 1'-0"

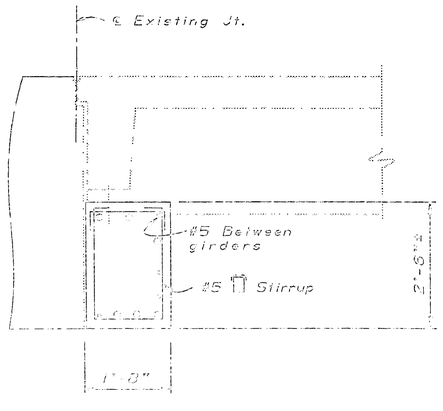
See "Detail A" for typical ledger between girders

** Removed exposed surface of girder haunch which extended below bent cap soffit & cols [illegible]

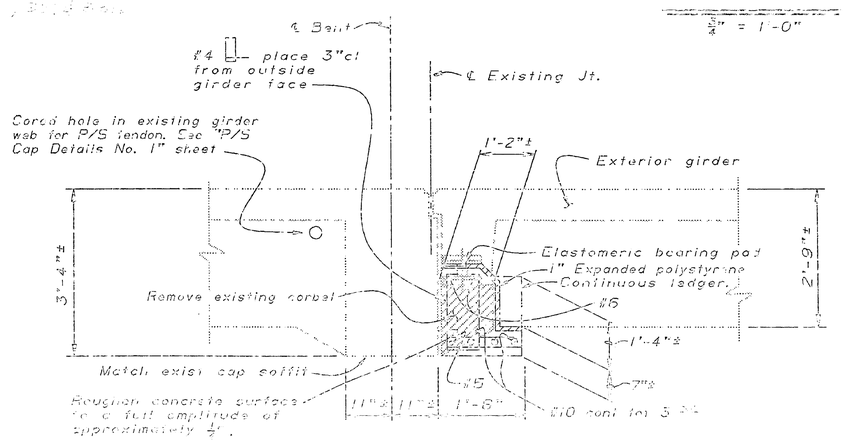


(TYPICAL ALONG COLUMN WIDTH)
SECTION D-D
3/4" = 1'-0"

* No [illegible]



DETAIL A
3/4" = 1'-0"



SECTION E-E
3/4" = 1'-0"

NOTES:

1. Dowels to be placed thru drilled holes in existing bent cap. For "Dowel Layout" see "Bent Details Ⓓ & Ⓖ No. 2" sheet.
2. For location of Sections C-C, D-D and E-E see "Bent Details Ⓔ" sheet.
3. For reinforcement layout in cantilever portion of cap, see "Bent Details Ⓓ & Ⓖ No. 2" sheet.

Indicates limits of concrete removal.

Indicates existing structure

NOTE.
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Kevin Harper	5-94	Greg Thornton	5-94
DETAILS	Judy Hampsey	7-93	Greg Thornton	5-94
CHECKED	Kevin Harper	[illegible]	[illegible]	[illegible]

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	46	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-95 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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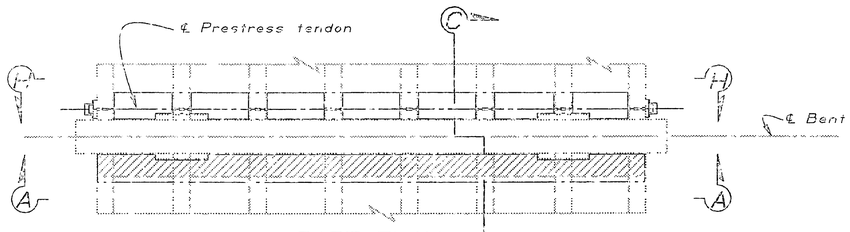
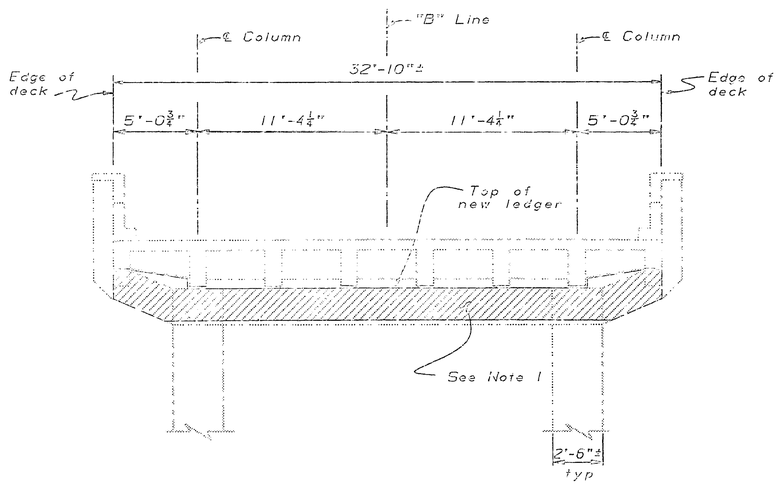


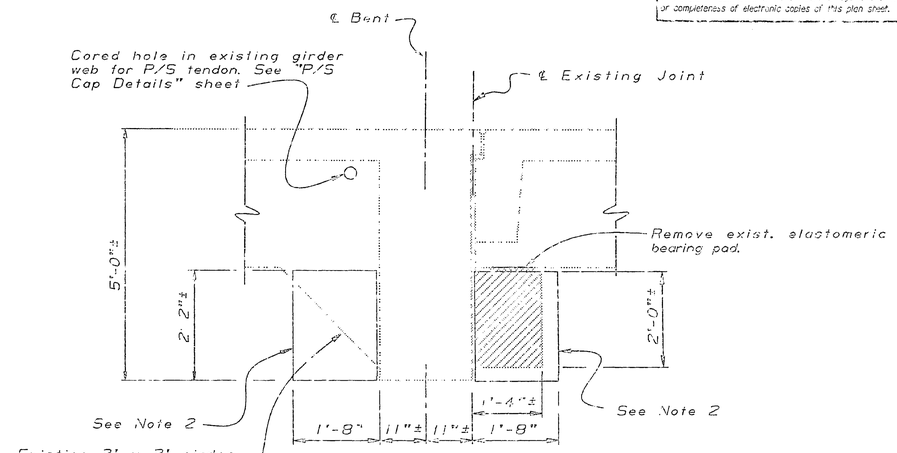
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



SECTION C-C

$\frac{3}{4}$" = 1'-0"

NOTES:

1. Remove existing continuous ledger and construct new continuous ledger. Existing reinforcement extending out of existing bent cap to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For details of new ledgers not shown see "Part Plan Ⓖ" on "Bent Cap Retrofit Ⓓ & Ⓔ" sheet.
3. Hinge restrainers not shown.
4. For Section H-H see Bent Cap Retrofit Ⓓ & Ⓔ" sheet.

Indicates limits of concrete removal

Indicates existing structure.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Kevin Harper	10-94	Bryan Hamilton 6-94
DETAILED	Judy Dougherty	10-94	Glen Hamilton 3-95
QUANTITIES	Kevin Harper	10-94	Glen Hamilton 3-95

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE DESIGN

DIVISION OF STRUCTURES
STRUCTURE DESIGN

BRIDGE NO.
34-0016

FOR COMPLETE DETAILS SEE DRAWING NO. 1A

SAN FRANCISCO
BRIDGE NO. 34-0016
BENT CAP RETROFIT
PLAN & SECTION

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	47	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42721
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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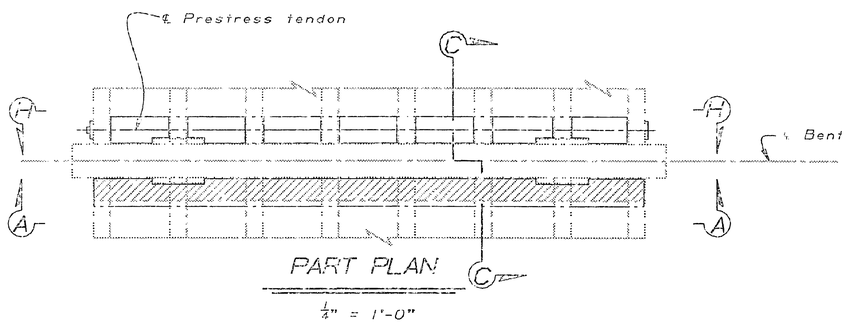
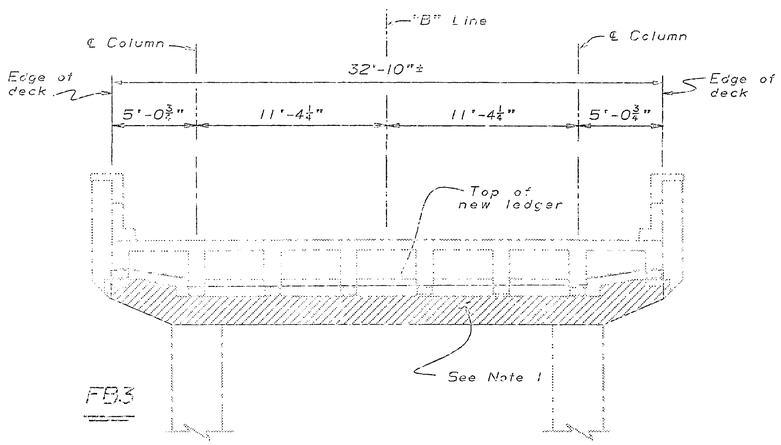


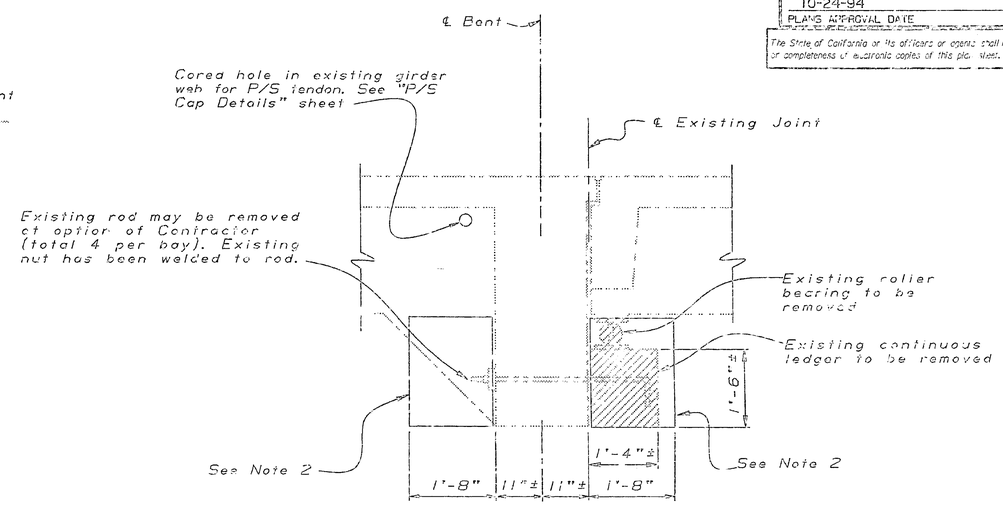
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



SECTION C-C

$\frac{3}{4}$" = 1'-0"

Notes:

1. Remove existing continuous ledger and construct new continuous ledger. Existing reinforcement extending out of existing bent cap to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.

2. For details of new ledger see "Part Plan Ⓓ" on "Bent Cap Retrofit Ⓓ & Ⓔ" sheet

3. For Section H-H, see "Bent Cap Retrofit Ⓓ & Ⓔ" sheet

4. Hinge restrainer not shown

Indicates limits of concrete removal

Indicates existing structure

(Section H-H of existing member bar lap splice length is required to match existing cap reinforcement. Existing lower longitudinal bars are welded to the existing spiral reinforcement.)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED Kevin Harper 7-94	CHECKED Greg Thornton 7-94	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES
DETAILED K. Wingard 7-94	CHECKED Greg Thornton 7-94		
QUANTITIES Kevin Harper 8-94	CHECKED Greg Lewis 8-94		

CALTRANS ORIGINAL DRAWING

BRIDGE NO. 33-0001
POST MILE 8.5

BRIDGE RETROFIT
PART PLAN
ELEVATION A-A
SECTION C-C

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	48	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
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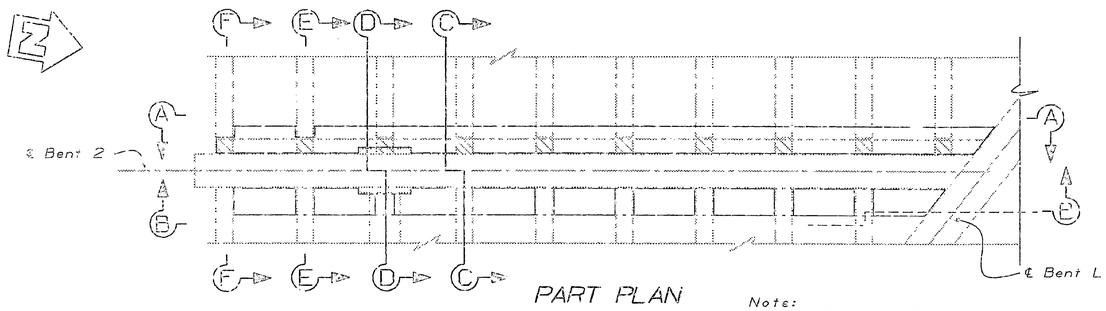
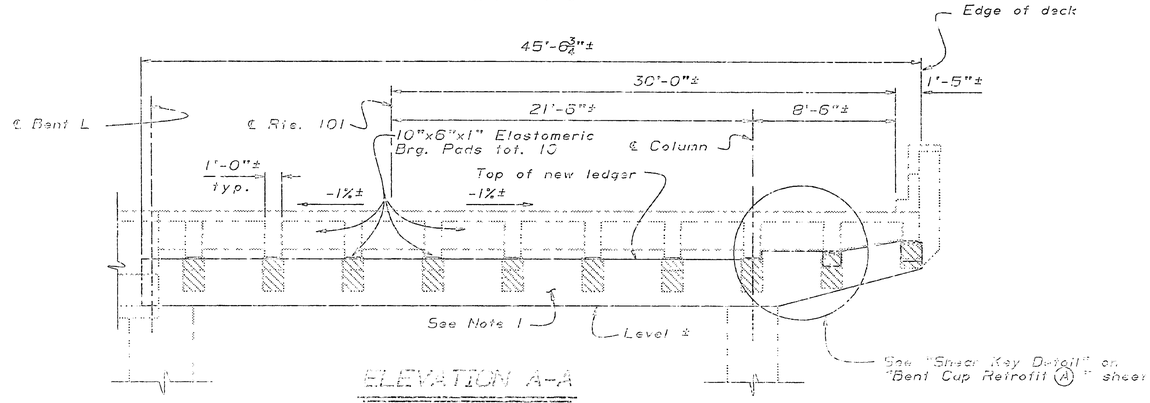


PART PLAN

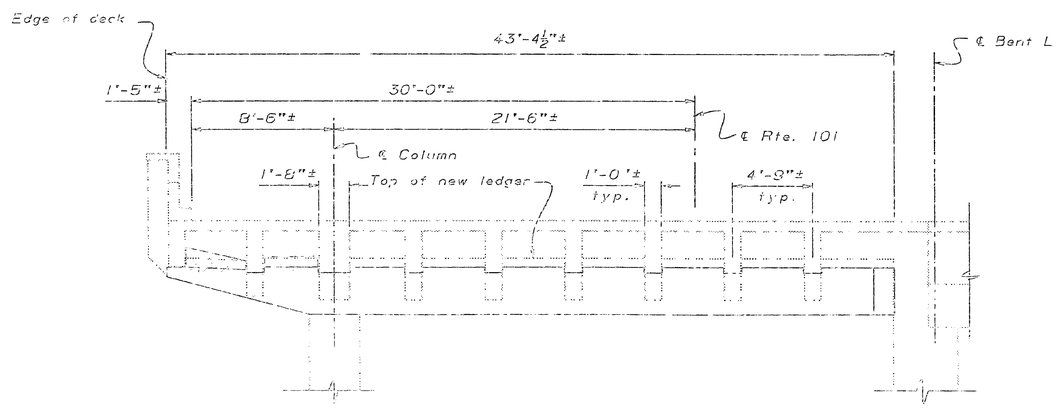
1/4" = 1'-0"

Note:
Bent 2 shown, Bent 1 similar



ELEVATION A-A

1/4" = 1' 0"



ELEVATION B-B

1/4" = 1' 0"

Notes:

1. Remove existing corbels and construct continous ledger. (exist. reinf. to remain). Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For Sections C-C, D-D, E-E and F-F see "Bent Details Ⓒ No. 1" sheet
3. For "Elastomeric Brg. Pad Detail" see "Miscellaneous Details" sheet.
4. Hinge restrainers not shown.

Indicates limits of concrete removal.

Indicates existing structure.

Remove existing corbel. Top reinforcement is required for new continuous top reinforcement as noted.

Remove outlets of existing circuits in this line at with 1500 watt or less lock circuit to prevent water from entering conduit. Cap and tape conductors.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

For hydraulic data, see "Hydraulic Data" on "Bridge Plan No. 1" or more contract plans.

DESIGNED	Kevin Harper	CHECKED	Greg Thornton
DRAWN	G. Williams 7-95	CHECKED	Greg Thornton
QUANTITIES	Kevin Harper	CHECKED	Mike Lange

STRUCTURE REHABILITATION PROJECT NO. 2B

MARIN COUNTY

BRIDGE NO. 27C0027

BRIDGE PLAN NO. 2

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	49	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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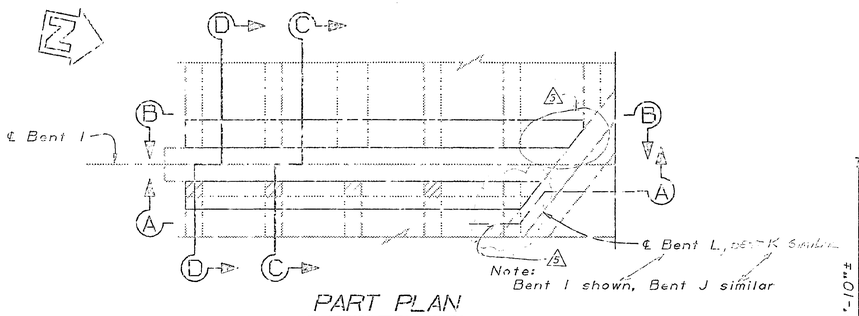
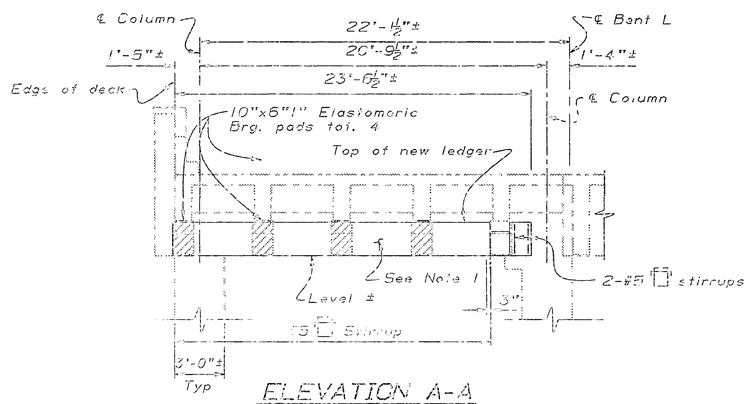
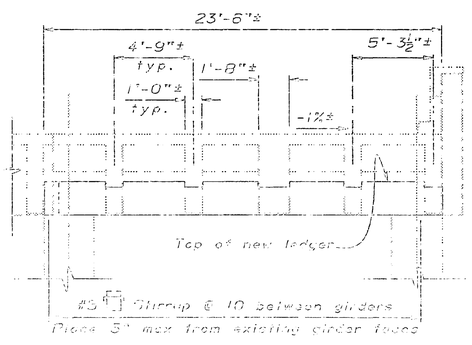


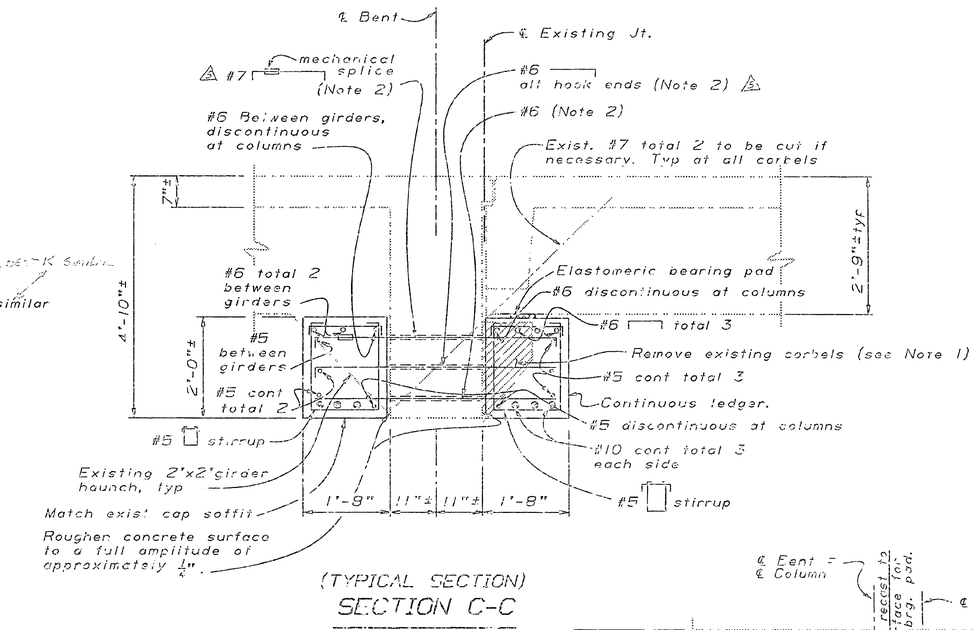
PART PLAN
1/4" = 1'-0"



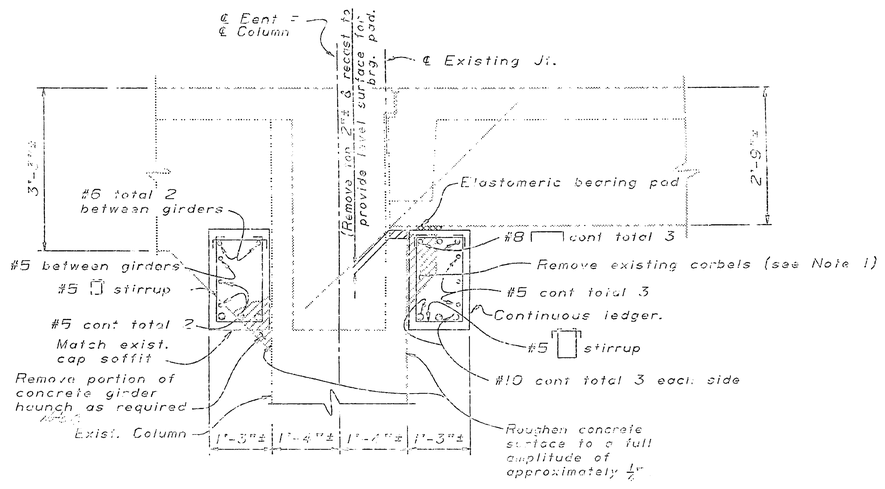
ELEVATION A-A
1/4" = 1'-0"



ELEVATION B-B
1/4" = 1'-0"



(TYPICAL SECTION)
SECTION C-C
1/4" = 1'-0"



(TYPICAL ALONG COLUMN WIDTH)
SECTION D-D
3/4" = 1'-0"

ADDITIONAL NOTES:

A. Repaired soffits of existing girders with Burk high strength (5000 psi +) damp pack grout to provide a level bearing surface for new elastomeric brg. pads.

B. Removed existing corbel top reinforcement to provide room for new 1" elastomeric bearing pad at bents.

C. Repaired exposed surface of girder haunch which extended below bent cap soffit & columns. (Chip, grind, dry pack and galvanize paint exposed rebar)

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcing to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For Dowel Layout see "Typical Interior Girders" pattern on "Bent Details (1) No. 2" sheet. Dowels to be placed thru drilled holes in existing bent cap.
3. For "Elastomeric Brg. Pad Detail" see "Miscellaneous Details" sheet.
4. Hinge restrainers not shown.

Indicates limits of concrete removal.

Indicates existing structure.

Quitted "through" type dowels at space restricted wedge shaped ends of retrofit ledgers adjoining skewed bents "K" & "L" (to South ends of Bents "H" (2), "I" & "J" and North ends of Bents "I", "2" & "2" (2), respectively), wed bar cantilever last than 1'-3". Placed d-111 S bond (Wig. Phos.) set 45° in lieu.

#7 ¾" 1'-3" in 1'-2" deep hole (at top), and

#6 ¾" 1'-0" in 1'-0" deep hole (at bottom).

Alternated #6 bar hooks only when working room was deal able.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ENGINEERING OR FABRICATING ANY MATERIAL.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	50	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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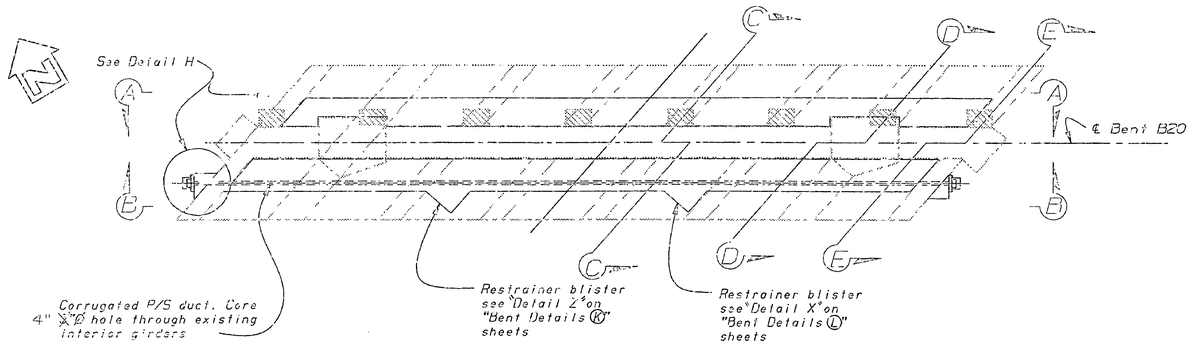
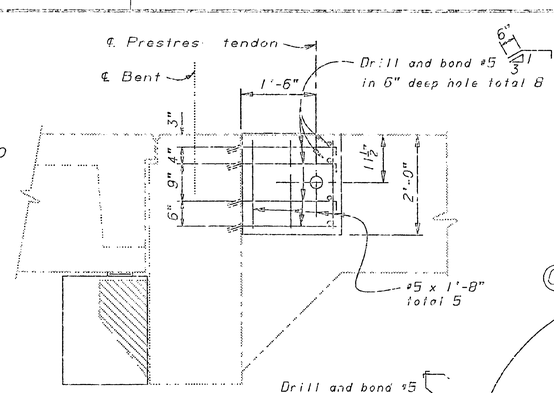
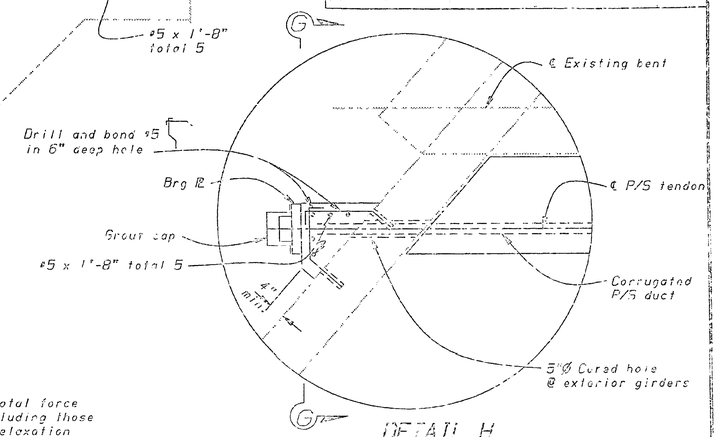


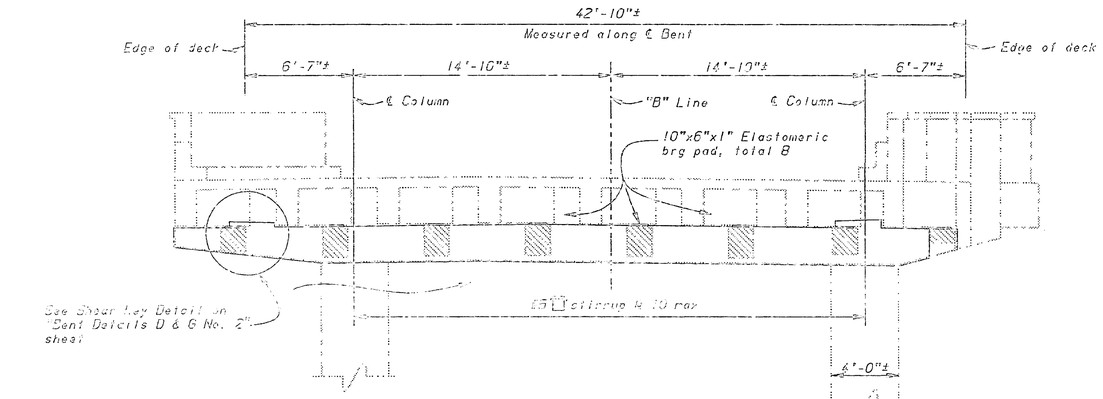
PART PLAN
1/4"=1'-0"



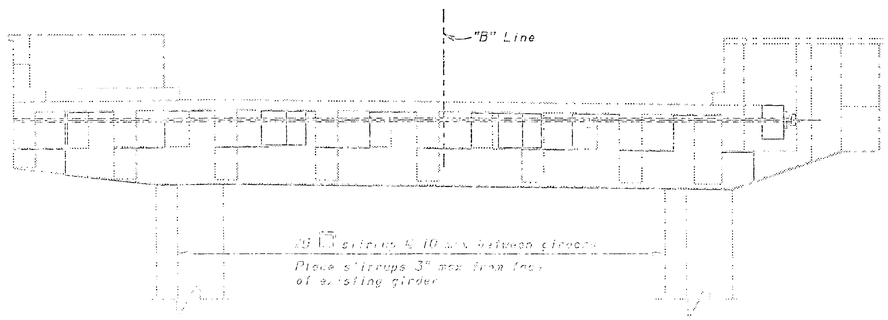
VIEW G-G
1/4"=1'-0"



DETAIL H
1/2"=1'-0"



ELEVATION A-A
1/4"=1'-0"



ELEVATION B-B
1/4"=1'-0"

PRESTRESSING NOTES

A. Working force, P_f = 210 kips, total force remaining after all losses, including those due to concrete creep and P/S relaxation have occured.

B. Minimum area of Prestressing Steel, A_s = 1.55 in^2 (270 ksi 1/2" strand)

C. Loss in stress in prestressing steel due to relaxation and creep of concrete shall be assumed to be 9 ksi.

D. In addition to losses noted above, provisions shall be made for losses due to anchorage take-up and any other losses peculiar to the pre-stressing system used. (One end stressing)

E. Tendon shall be bonded to the concrete by grouting after stressing. Tendon inside grout cap shall be grouted and caps left in place after grouting.

F. Prestressing force shall not be applied to bent cap until at least 10 days after the concrete ledger has been constructed.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet. See note 7.

2. For Sections C-C, D-D and E-E see "Bent Details K" sheet.

3. For "Elastomeric Brg Pad Detail" see "Miscellaneous Details" sheet.

4. Hinge Restrainers not shown.

5. For additional details at locations where existing deck drain drain pipe is present see "Detail D" on "Miscellaneous Details" sheet.

Indicates limits of concrete removal.

Indicates existing structure.

Repaired surfaces of existing girders with Dark high strength (5000 psi) epoxy bond coat 1/4" prior to placing fresh concrete surfaces for new structure to avoid cracks.

7. Remove existing corbel top reinforcement to provide room for new reinforcement to be placed and at bents.

DESIGNED	Paul Sayles	8-94	REVIEWED	Kevin Harper	8-94
DETAILED	Tuck Mokarram	8-94	CHECKED	Kevin Harper	8-94
QUANTITIES	Kevin Harper	8-94	RECOMMENDED	Mark Lewis	8-94

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DISTRICT 04
SAN FRANCISCO COUNTY
ROUTE 101
POST MILE 8.3/8.9

CONTRACT NO. 04-0G194
ROUTE 101
PM 8.3

CONTRACT PLANS
PART PLAN
ELEVATION A-A
ELEVATION B-B
VIEW G-G
DETAIL H

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	51	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER KEVIN HARPER No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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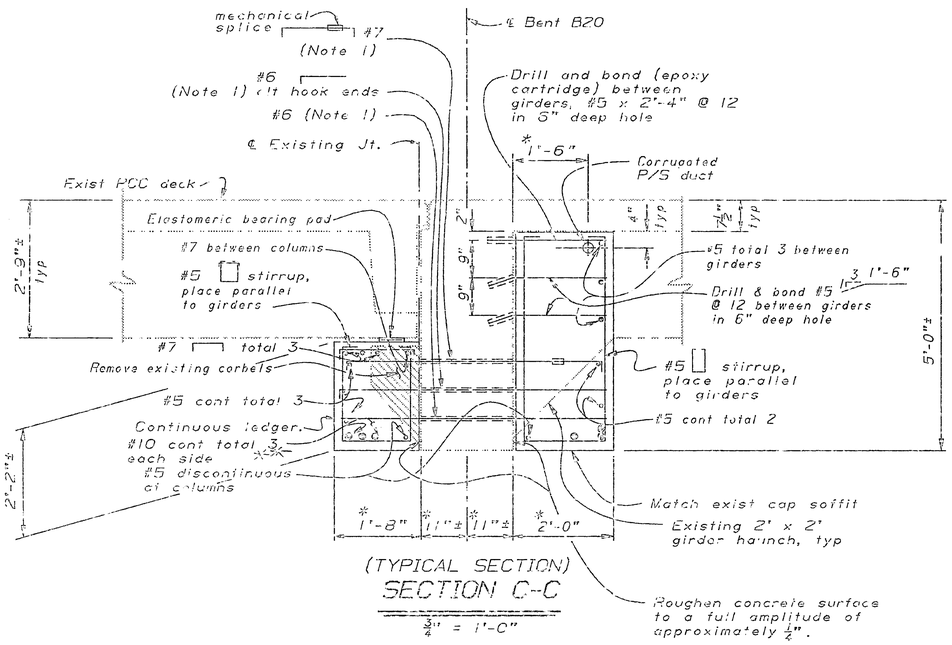
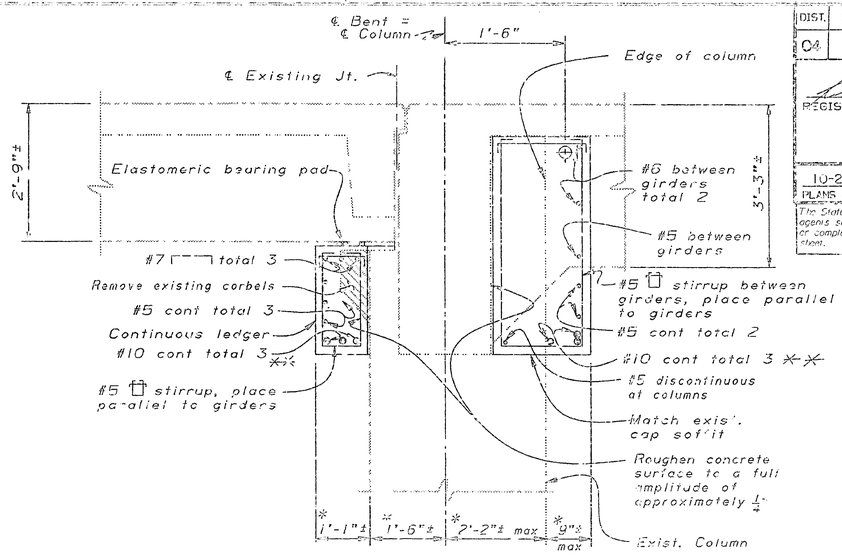
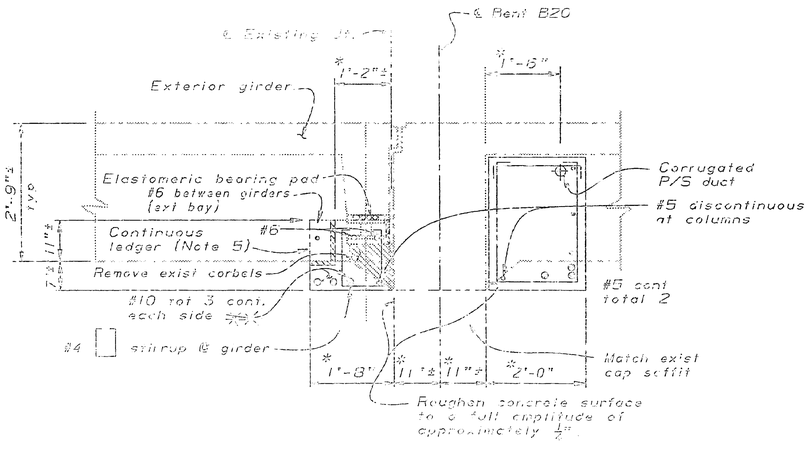


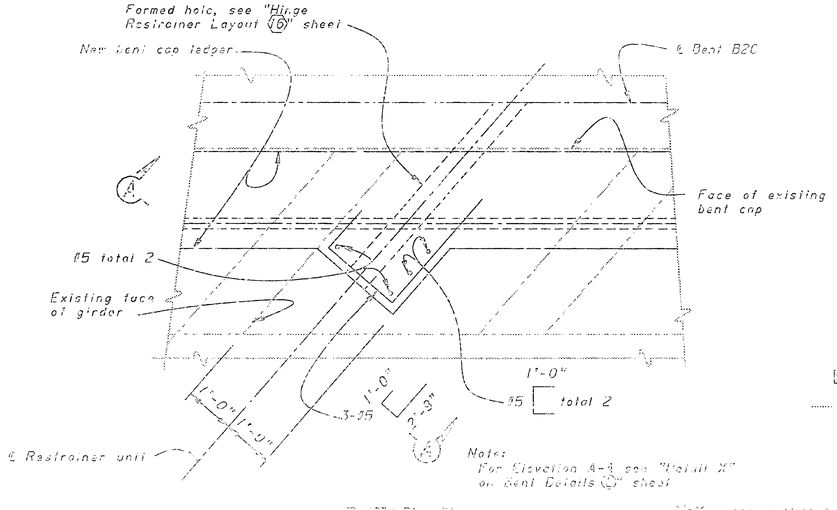
(TYPICAL SECTION)
SECTION C-C
¾" = 1'-0"



(TYPICAL ALONG COLUMN WIDTH)
SECTION D-D
¾" = 1'-0"



SECTION E-E
¾" = 1'-0"



DETAIL Z
½" = 1'-0"

Note:

1. For "Dowel Layout" see "Bent Details (D) & (G) No. 2" sheet. Dowels to be placed thru drilled holes in existing bent cap.
2. For location of "Sections C-C, D-D, E-E and F-F see "Bent Cap Retrofit (K)" sheet.
3. Hinge Restrainers not shown.
4. For additional details at locations where existing deck down drain pipe is present see "Detail D" on "Miscellaneous Details" sheet.
5. Isolate existing girder from ledger with expanded polystyrene on girder soffit and sides. Expanded polystyrene shall be 1" thick at girder soffit & front face and ½" thick on girder side faces.
6. For reinforcement layout on cantilever portion of cap, see "Bent Details (D) & (G) No. 2" sheet.

Indicates limits of concrete removal.

Indicates existing structure.

* Indicates dimensions shown normal to ℄ Bent

** For locations where #10 bottom ledger reinforcement was not utilized to be retrofitted see "Elevation A-A" on "Bent Cap Retrofit (K)" sheet.

DESIGN	Paul Snyder	8-94	Kevin Harper	8-94	
DETAILS	Yoshi Hayashi	8-94	Kevin Harper	8-94	
QUANTITIES	Kevin Harper	8-94	Mike Lynch	8-94	

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DISTRICT 4 OFFICE OF STRUCTURE CONSTRUCTION

CONTRACT NO. 04-0F113

POST MILE

BENT CAP RETROFIT DETAILS

BENT CAP RETROFIT DETAILS NO. 1

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	52	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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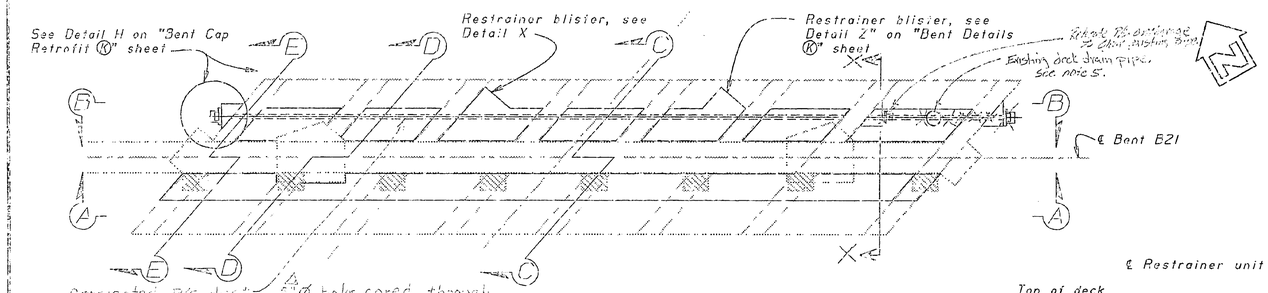
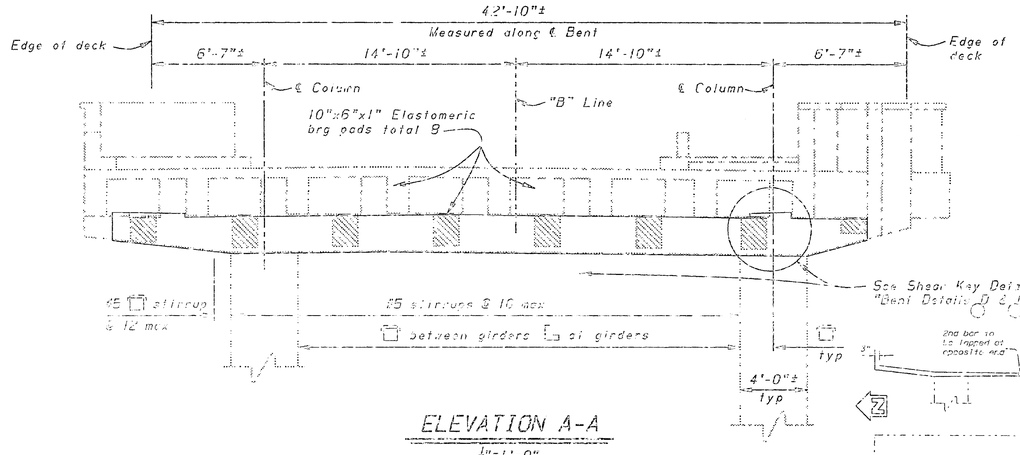
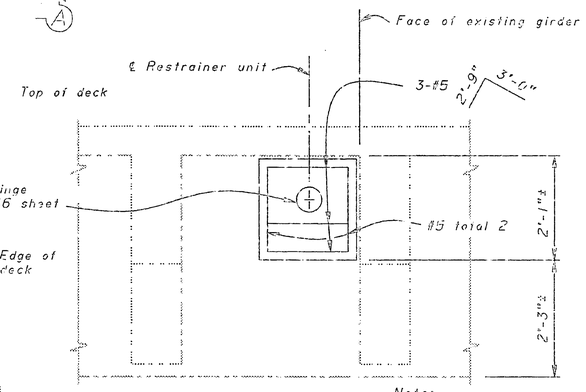


PART PLAN
1/4"=1'-0"

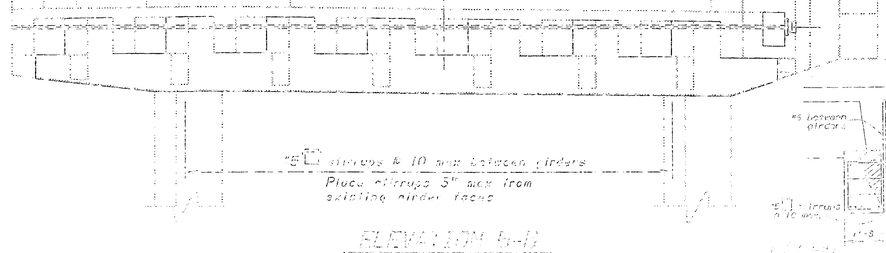


ELEVATION A-A
1/4"=1'-0"

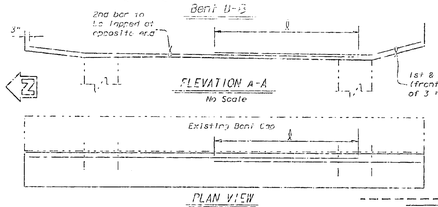


ELEVATION A-A
3/4"=1'-0"

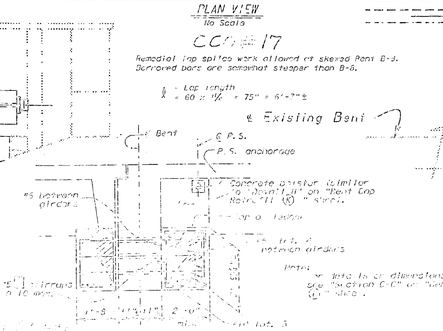
Note:
Section @ Detail X shown
Detail Z similar



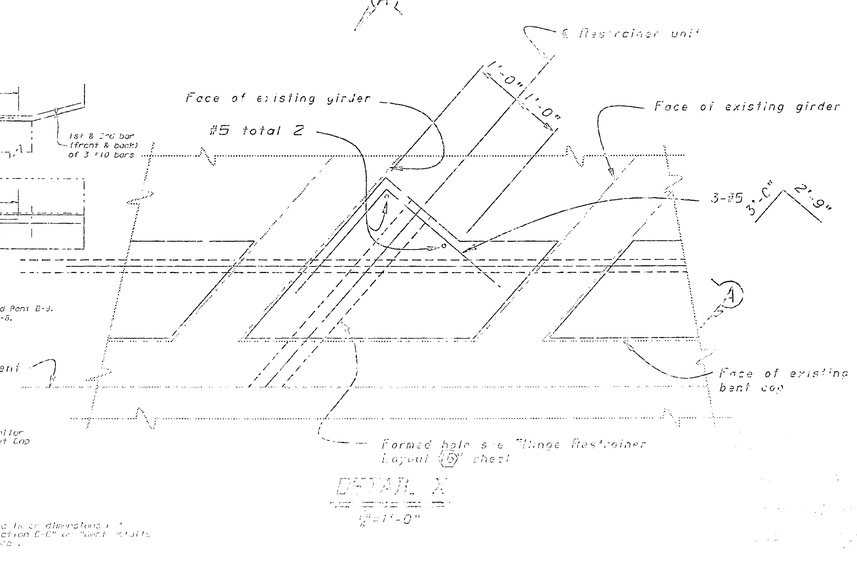
ELEVATION B-B
1/4"=1'-0"



CC #17
Remedial lap splice work allowed at skewed Bent B-3. Dowelled bars are somewhat steeper than B-3.
ℓ = Lap length
= 60 x 1/2 = 75" = 6'-3"±



SECTION B-B
No Scale



DETAIL X
1/2"=1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D and E-E see "Bent Details Ⓛ" sheet.
3. For "Elastomeric Brg Pad Detail" see "Miscellaneous Details" sheet.
4. Hinge Resirainers not shown.
5. For additional details at locations where existing deck drain pipe is present see "Detail D" on "Miscellaneous Details" sheet.
6. For Prestressing Notes see "Bent cap Retrofit Ⓚ" sheet.

Indicates limits of concrete removal.

Indicates existing structure.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	53	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER KEVIN HARPER No. 42221 Exp. 3-31-95 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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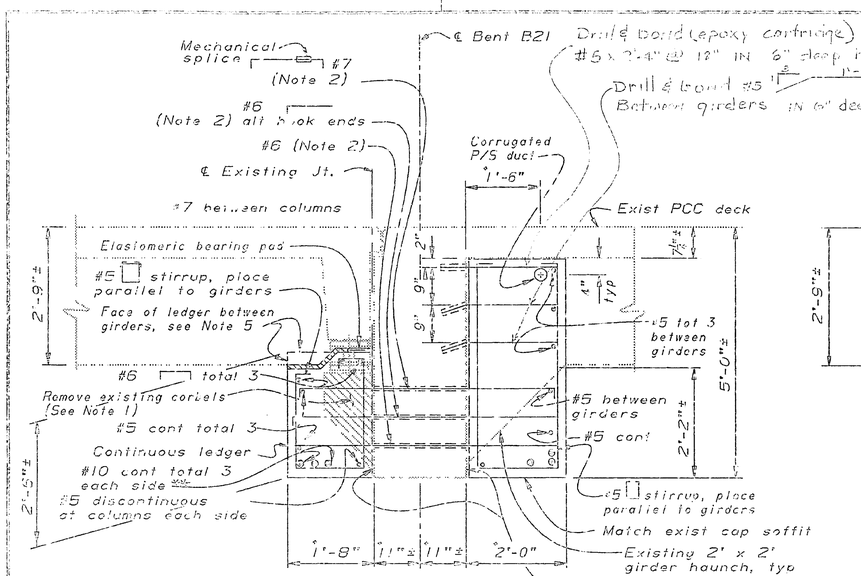
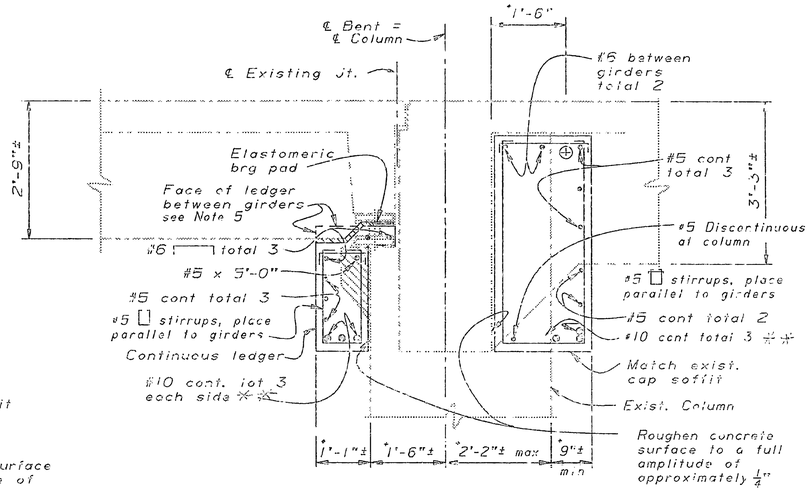
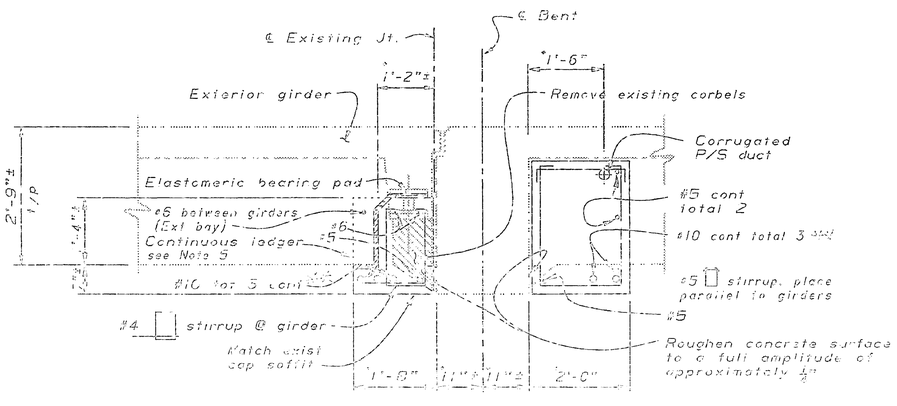


(TYPICAL SECTION)
SECTION C-C
3/4" = 1'-0"



(TYPICAL ALONG COLUMN WIDTH)
SECTION D-D
3/4" = 1'-0"

Note:
See "Detail A" on "Bent Details (E)" sheet for typical ledger between girders



SECTION E-E
3/4" = 1'-0"

Note:

1. For "Dowel Layout" see "Bent Details (D) & (G) No. 2" sheet. Dowels to be placed thru drilled holes in existing bent cap.
2. For location of "Sections C-C, D-D, E-E and F-F see "Bent Cap Retrofit (C)" sheet.
3. Hinge Restrainers not shown.
4. For additional details at locations where existing deck down drain pipe is present see "Detail D" on "Miscellaneous Details" sheet.
5. Isolate existing girder from ledger with expanded polystyrene on girder soffit and sides. Expanded polystyrene shall be same thickness as brg pad on girder soffit, 3/4" front face and 1/2" thick on girder side faces.
6. For reinforcement layout on cantilever portion of cap, see "Bent Details (D) & (G) No. 2" sheet

Indicates limits of concrete removal

Indicates existing structure.

Indicates dimensions shown normal to ℄ Bent

For locations where the bottom layer reinforcement was not allowed to be placed see "Elevation B-B" on "Bent Cap Retrofit (C)" sheet.

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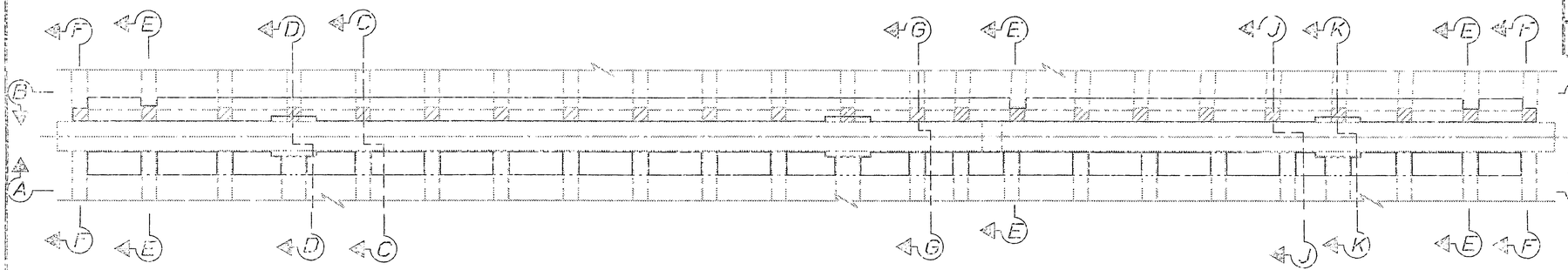
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	54	107

REGISTERED ENGINEER - CIVIL

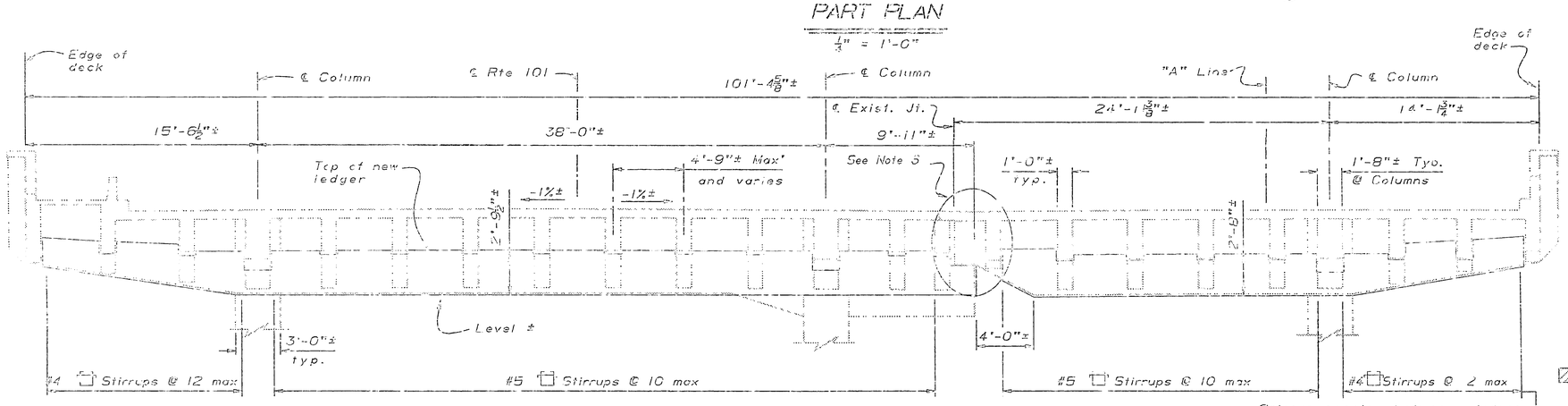
REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-96 — CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



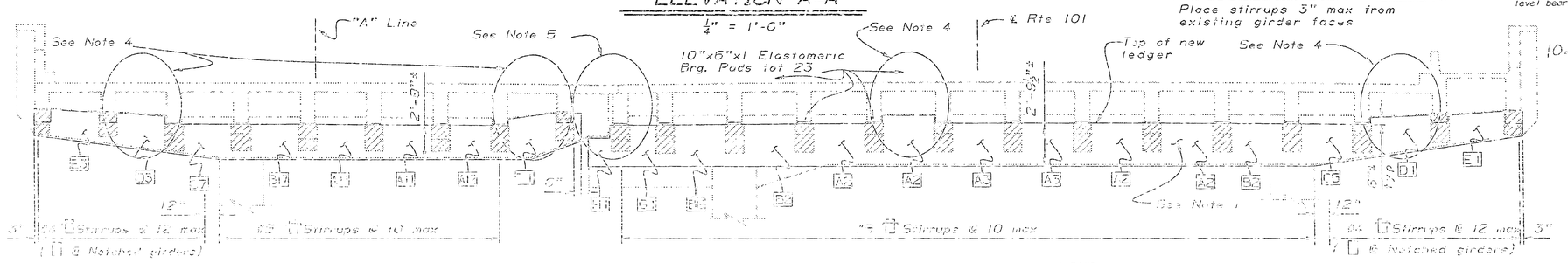
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details © No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet.
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown

⊠ Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

▨ Indicates limits of concrete removal.

9. Repaired soffits of existing girders with Burlsnign strength (5000 psi +) deep pack grout to provide a level bearing surface for new elastomeric brg. pads.

10. Removed existing corbel top reinforcement to provide room for new 1" elastomeric bearing pad.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Greg Thornton	CHECKED	Kevin Harper
DRAWN	Judy Dougherty	CHECKED	Kevin Harper
QUANTITIES	Kevin Harper		

DEPARTMENT OF TRANSPORTATION
STATE OF CALIFORNIA

DISTRICT 04

BRIDGE DETAILS
BENT CAP RETROFIT
ELEVATION

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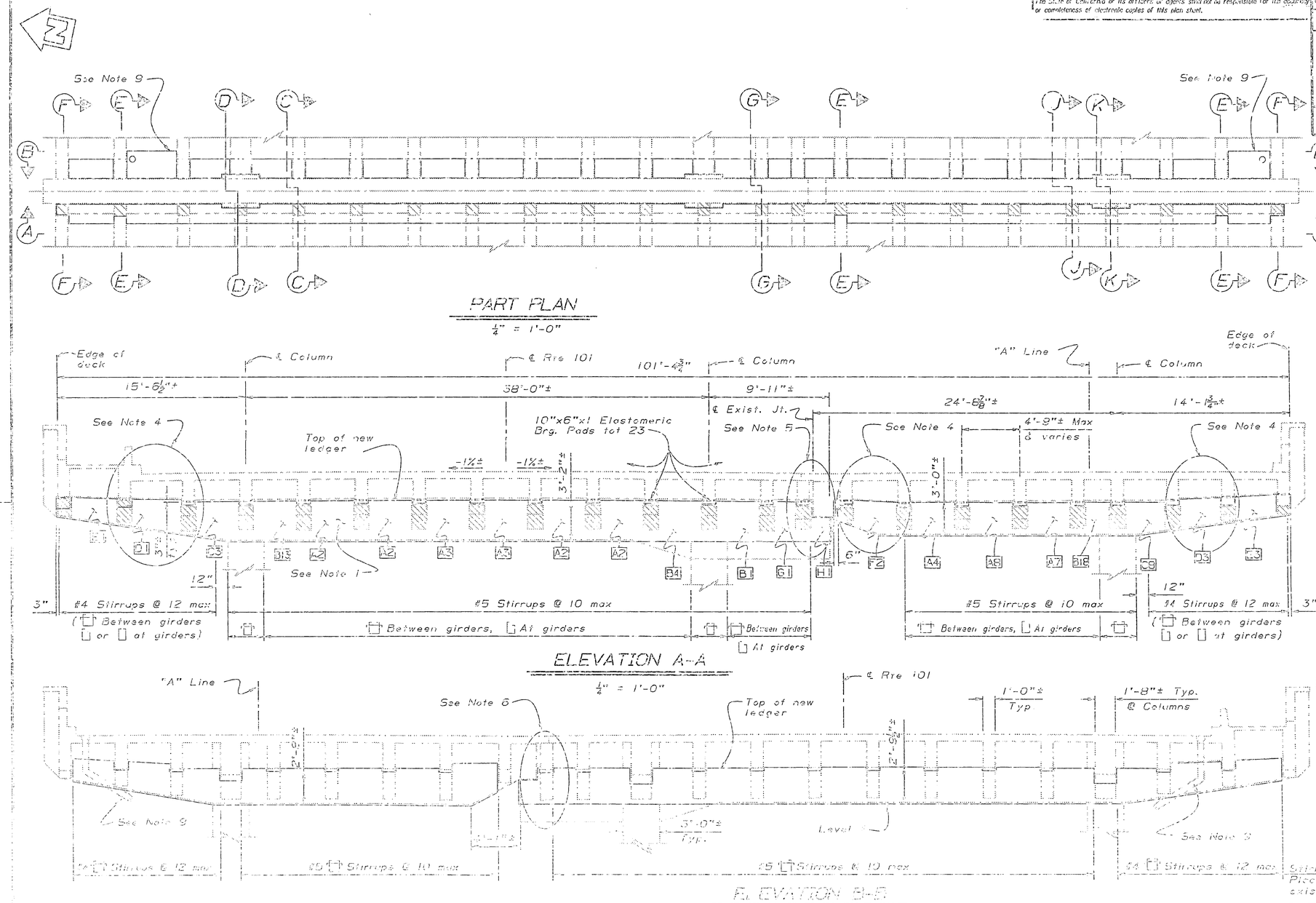
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	55	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



10. Demolition of existing rocker bearing lower masonry plate resulted in removing a portion of existing corbel top reinforcement. (Existing lower masonry plate was welded to the existing corbel reinforcement.)

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 5 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet

xx Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

NOTE
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

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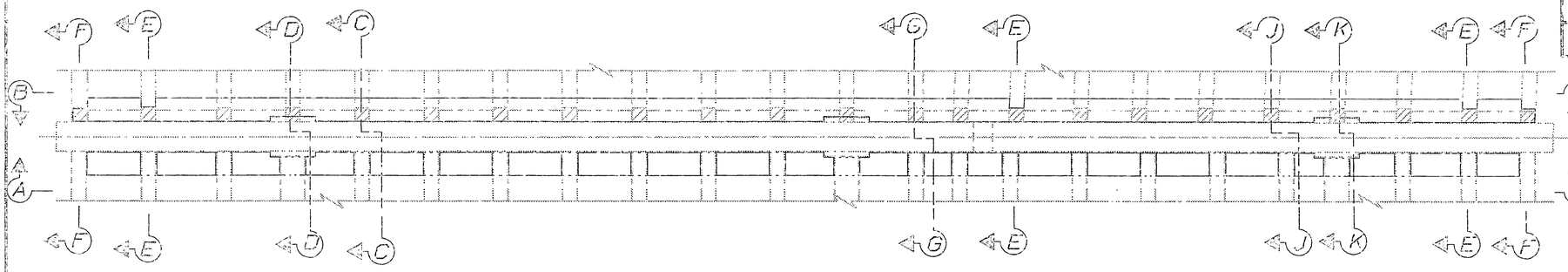
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	56	107

REGISTERED ENGINEER - CIVIL

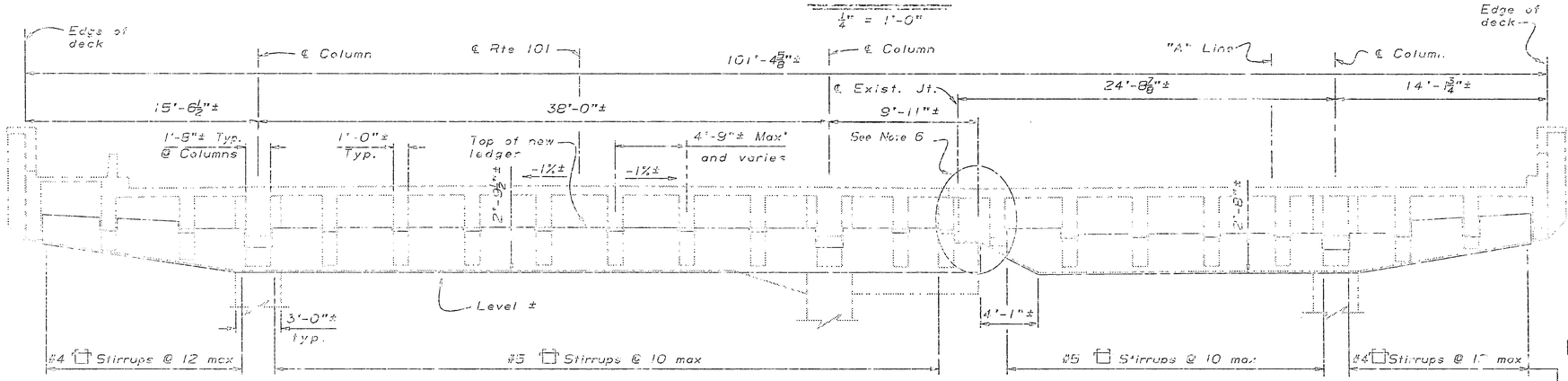
REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-95 — CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



PART PLAN

$\frac{1}{4}$" = 1'-0"

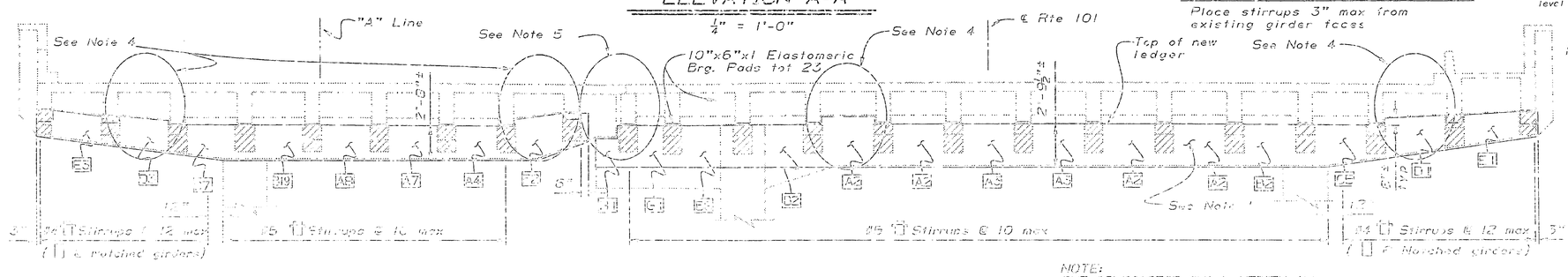


ELEVATION A-A

$\frac{1}{4}$" = 1'-0"

Stirrup spacing between girders

Place stirrups 3" max from existing girder faces



Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details © No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet.
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown

xx Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

7. Repaired soffits of existing girders with Burk high strength (5000 psi +) damp pack grout to provide a level bearing surface for new elastomeric brg. pads.

10. Removed existing corbel top reinforcement to provide room for new 1" elastomeric bearing pad

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

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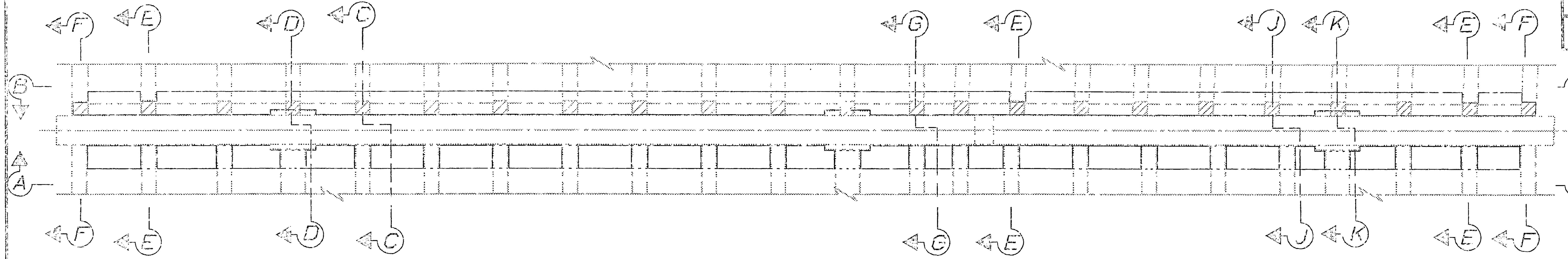
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	57	107

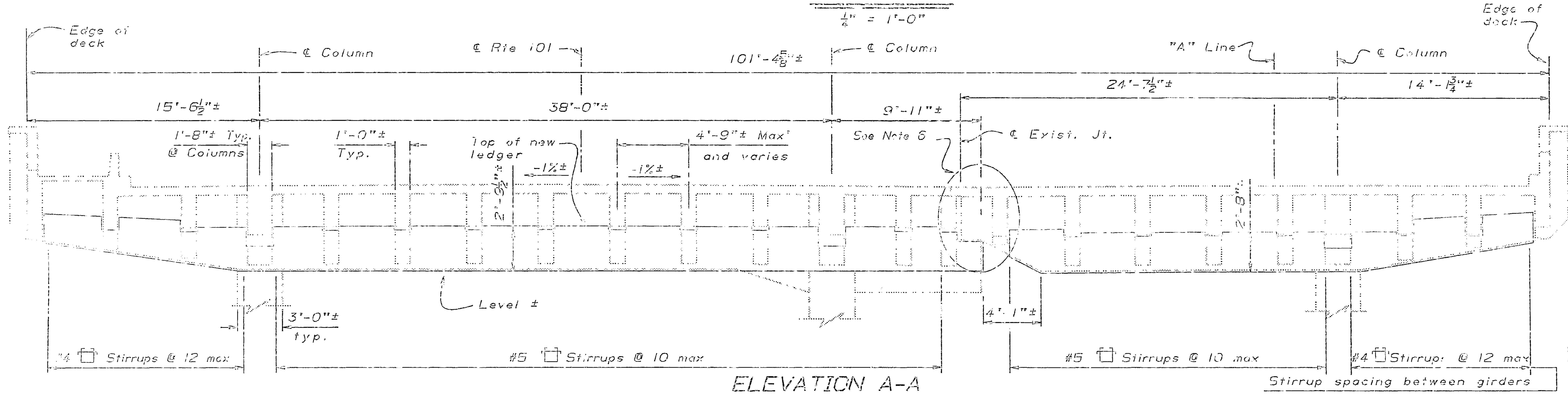
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-96 — CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

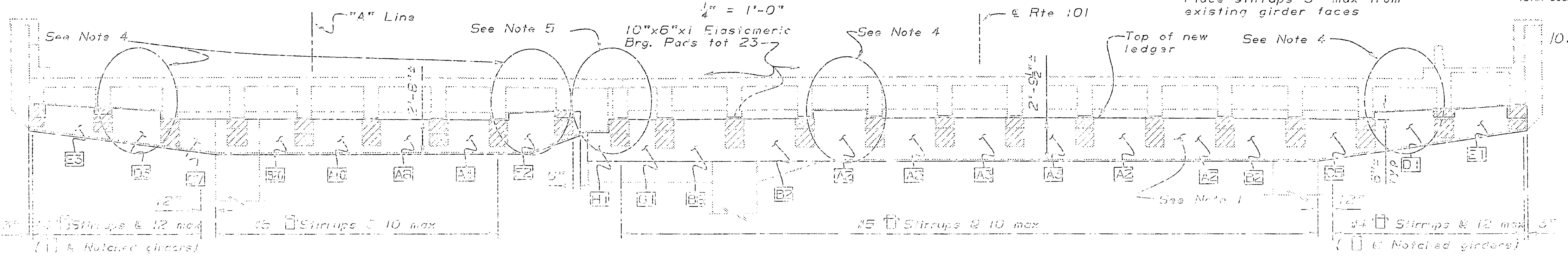


PART PLAN
1/4" = 1'-0"



ELEVATION A-A
1/4" = 1'-0"

Place stirrups 3" max from existing girder faces



ELEVATION B-B
1/4" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shll be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details Ⓒ No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet.
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown

[x x] Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

[hatched] Indicates limits of concrete removal.

9. Repaired soffits of existing girders with Burke high strength (5000 psi ±) damp pack grout to provide a level bearing surface for new elastomeric brg. pads.
10. Removed existing corbel top reinforcement to provide room for new 1" elastomeric bearing pad

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Greg Thornton	CHECKED	Kevin Harper
DETAILS	Judy Ohm...	CHECKED	Kevin Harper
QUANTITIES	Kevin Harper	CHECKED	Mike L...

DIVISION OF STRUCTURES

BRIDGE NO. 34-0014

POST MILE 8.8

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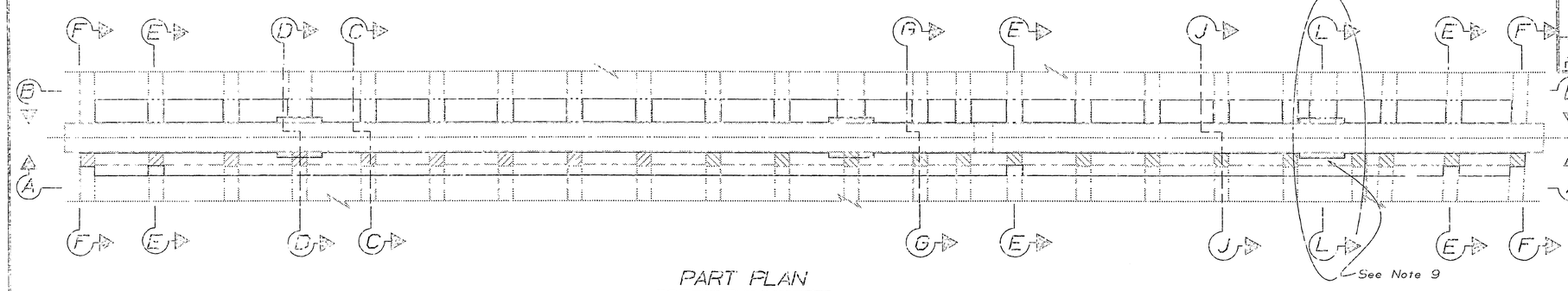
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	58	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

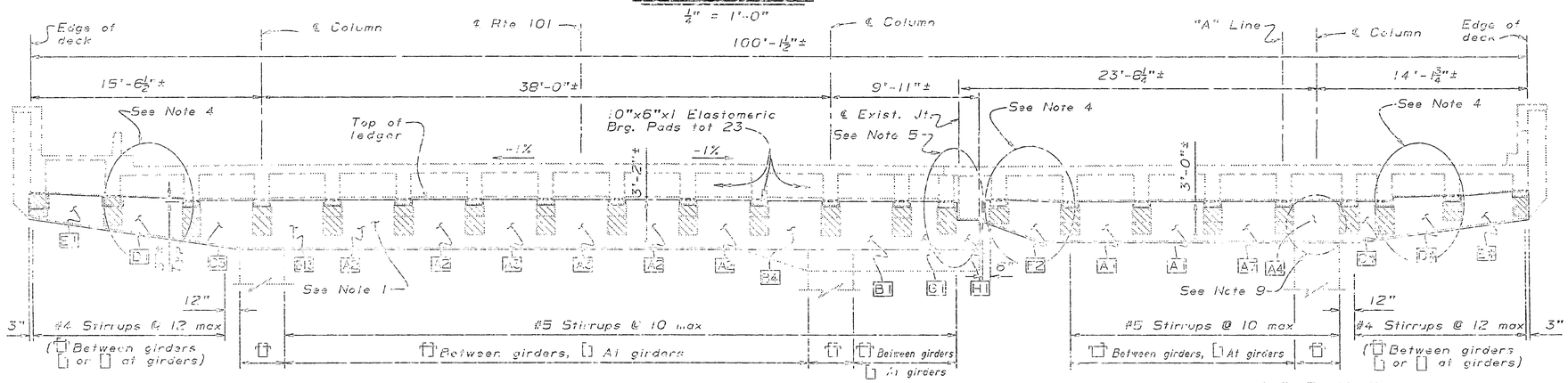
10-24-94
PLANS APPROVAL DATE

"Section L-L" similar to "Section K-K" on "Bent Details No.2 Bents 13-30, 36-43" sheet



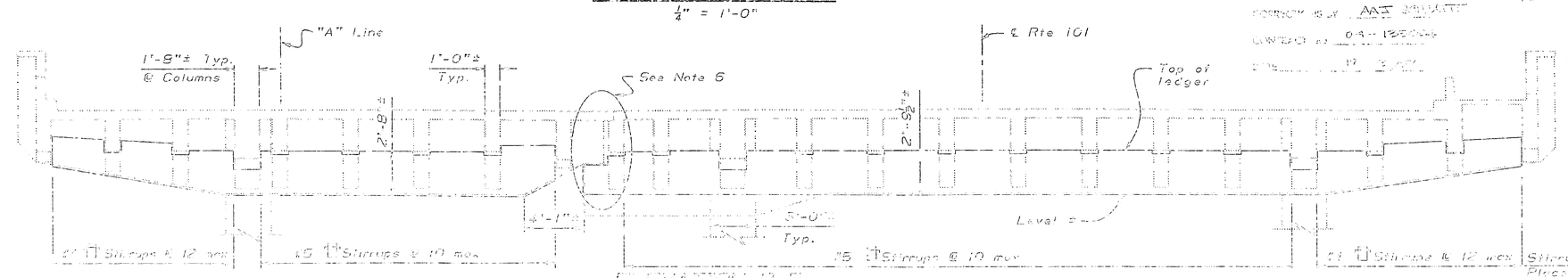
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Exist. reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Sections G-G and J-J" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. Drill & bond #7 1'-2" Use indicated dowel pattern, this bay only

A-A Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

(A) Demolition of existing middle bearing lower masonry plate resulted in removing a portion of existing corbel top reinforcement. (Existing lower masonry plate was welded to the existing corbel reinforcement.)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Greg Hawley	CHECKED	Kevin Harper
DETAILED	Bob Hawley	CHECKED	Kevin Harper
QUANTITIES	Lynn Lengel	CHECKED	Mike Lynn

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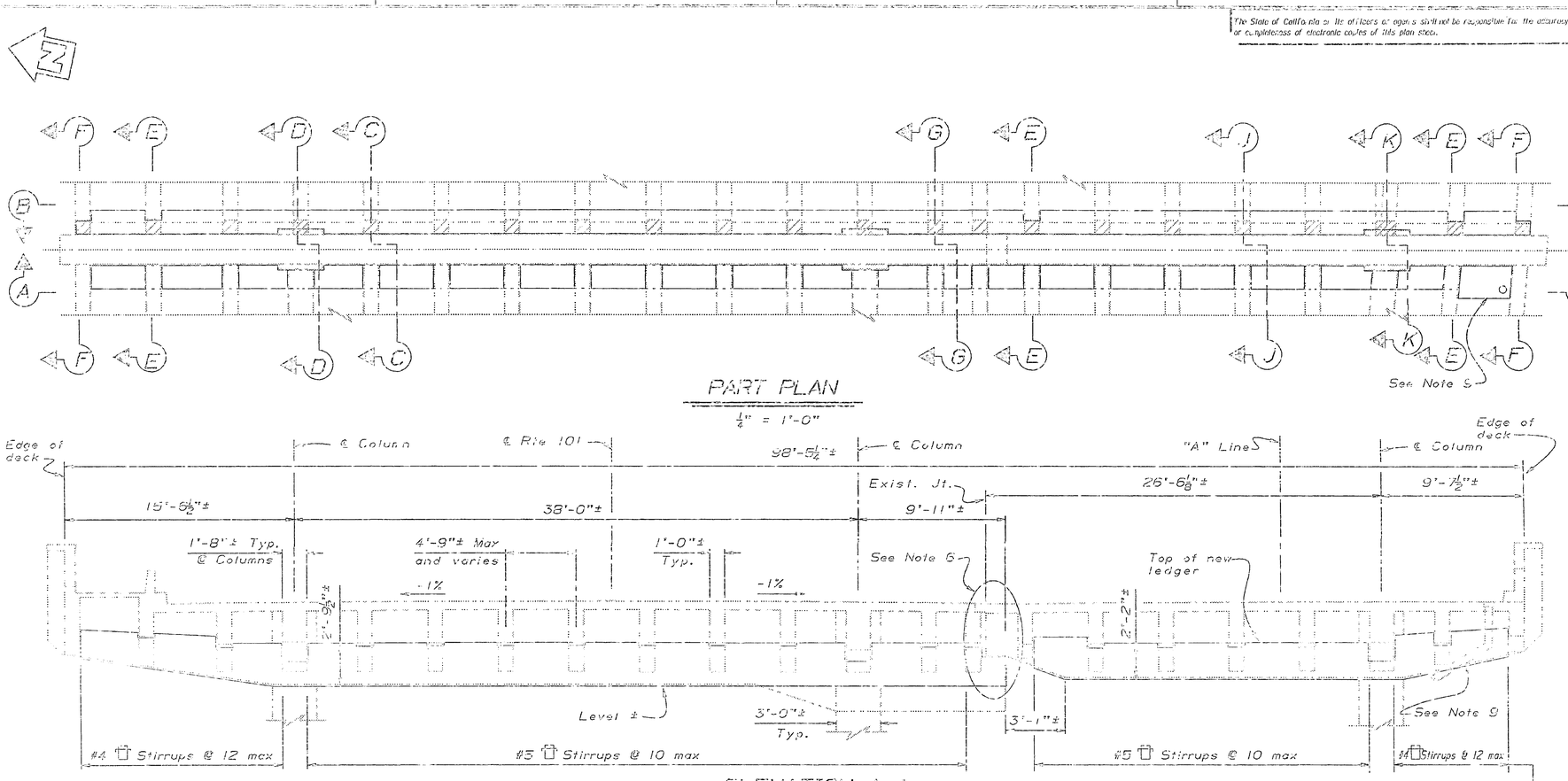
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	59	107

REGISTERED ENGINEER - CIVIL

PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



PART PLAN
1/4" = 1'-0"

ELEVATION A-A
1/4" = 1'-0"

ELEVATION B-B
1/4" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Exist. reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details ⓒ No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet

xx Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

10. Required [illegible] (5000 psi+) damp pack grout to provide level bearing surface for [illegible]
11. [illegible]

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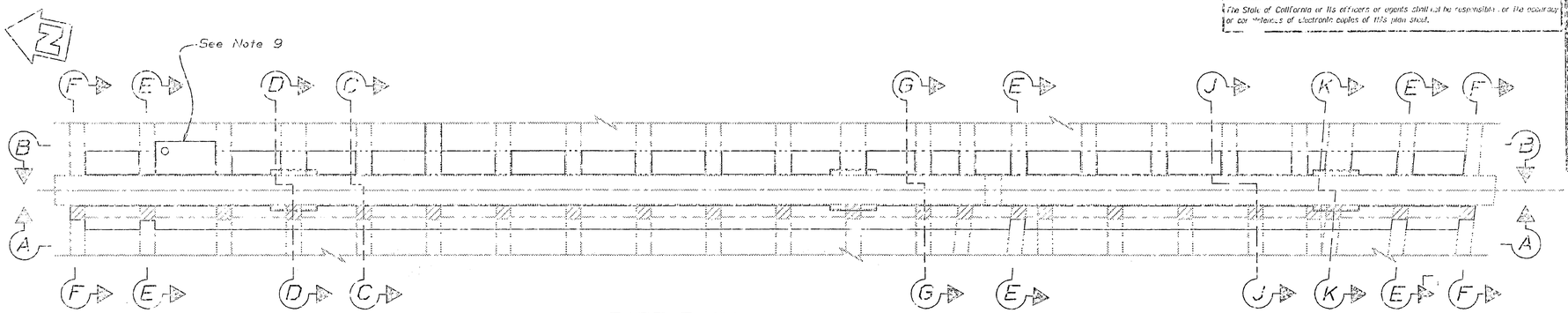
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	60	107

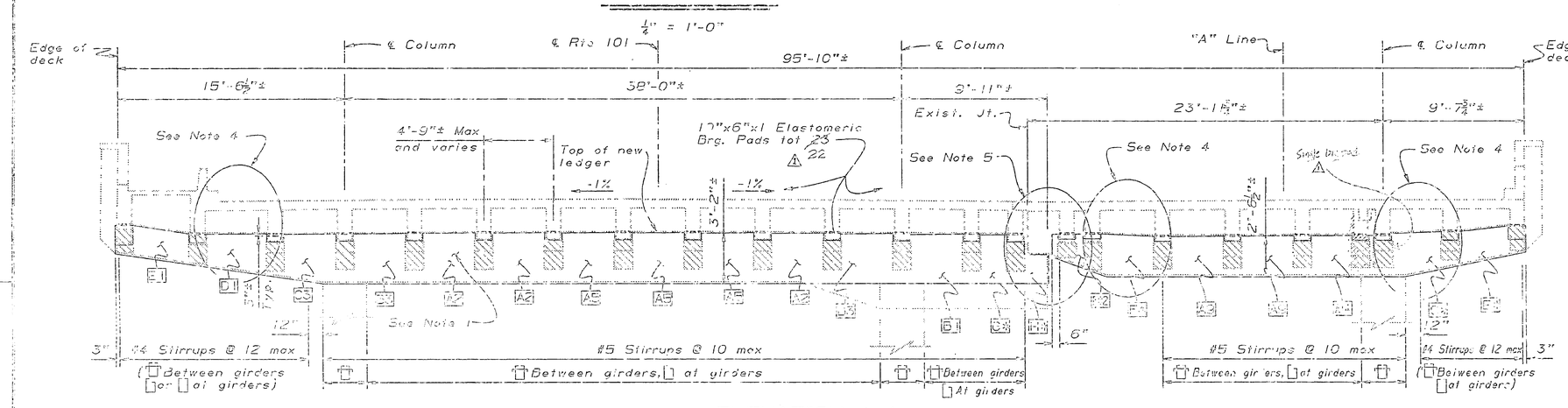
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



PART PLAN



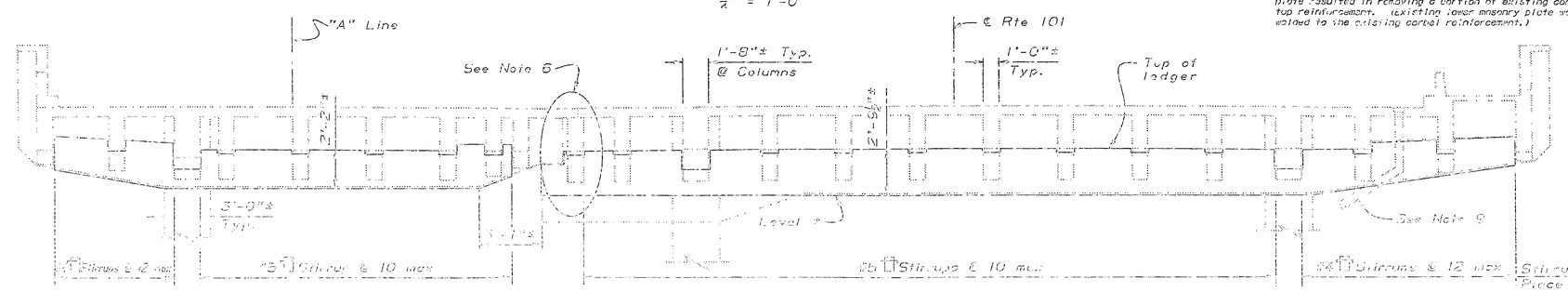
ELEVATION A-A

1/4" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (B)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet

Note:
10. Demolition of existing rocker bearing lower masonry plate resulted in removing a portion of existing corbel top reinforcement. (existing lower masonry plate was welded to the existing corbel reinforcement.)



ELEVATION B-B

1/4" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING THE MATERIAL.

DESIGNED	Greg Thornton	CHECKED	Kevin Harper
DRAWN	Jack Powers	CHECKED	Kevin Harper
QUANTITIES	Kevin Harper		

CALTRANS STRUCTURE DESIGN

MARIN COUNTY

SAN QUENTIN VIADUCT

DATE	10-24-94
REGISTERED ENGINEER	Kevin Harper

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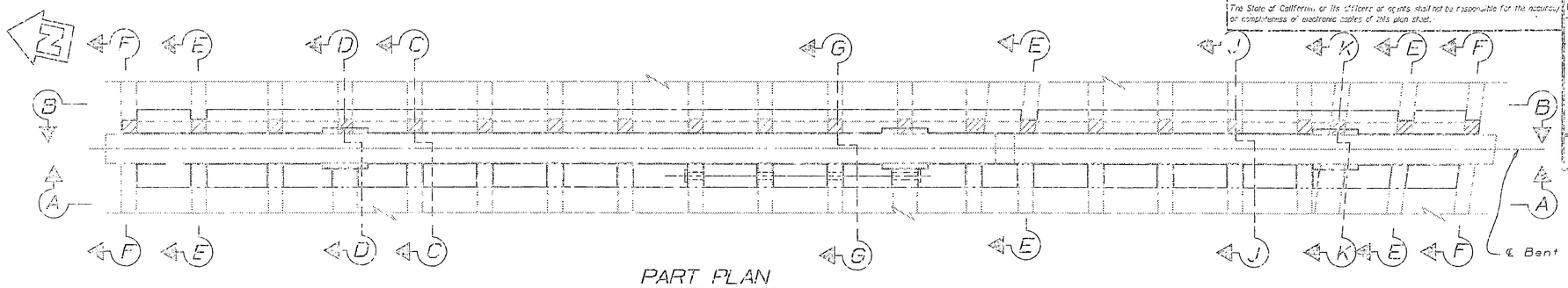
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	61	107

REGISTERED ENGINEER - CIVIL

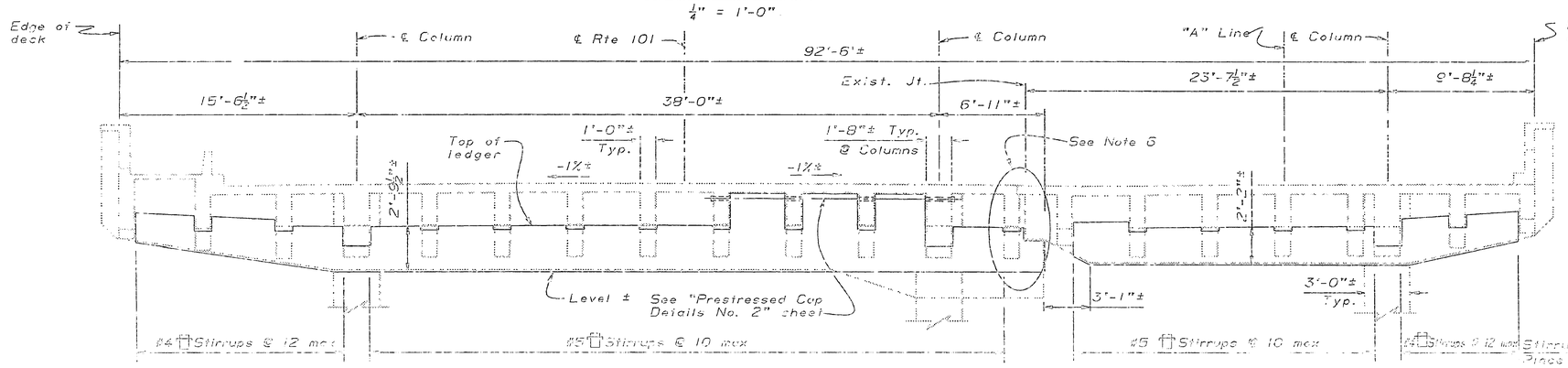
REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-96 — CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



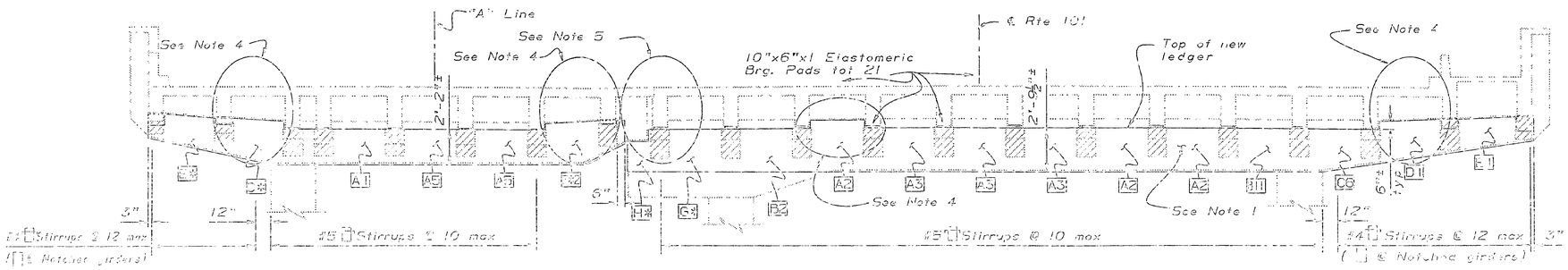
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details Ⓒ No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet.
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown

[x x] Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bents Details No. 5 13-30, 36-43" sheets

Indicates limits of concrete removal.

Stirrup spacing between girders. Place stirrups 3" max from existing girder faces

9. Repaired soffits of girders shall be with Sika high strength (5,000 psi +) damp pack grout to soffit level. [illegible]
10. Removed existing [illegible] top reinforcement to permit [illegible] 1" clearance [illegible]

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Gary Thornton	CHECKED	Kevin Harper		
CHECKED	Judy Chavez	CHECKED	Kevin Harper		
DRAWN BY	Kevin Harper	DATE	[illegible]		

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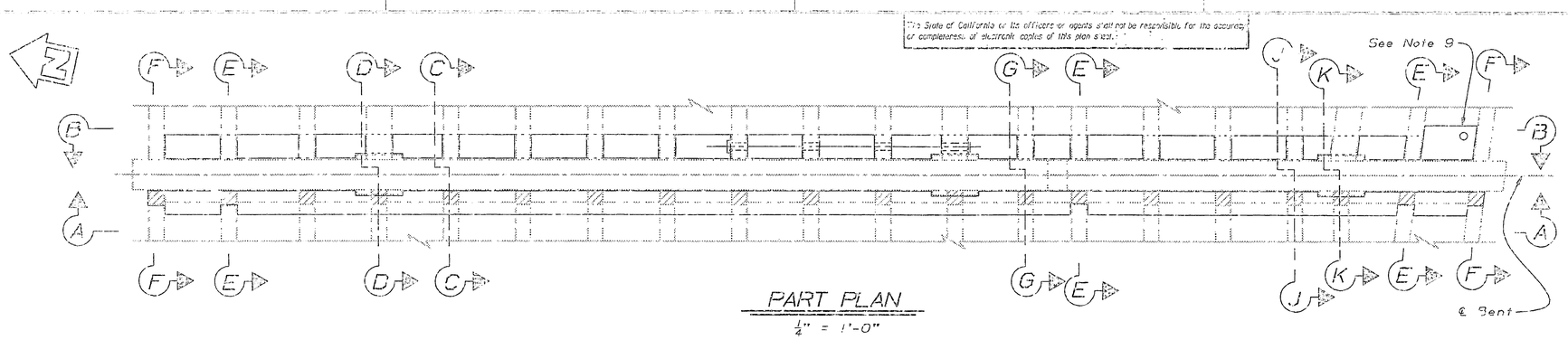
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	62	107

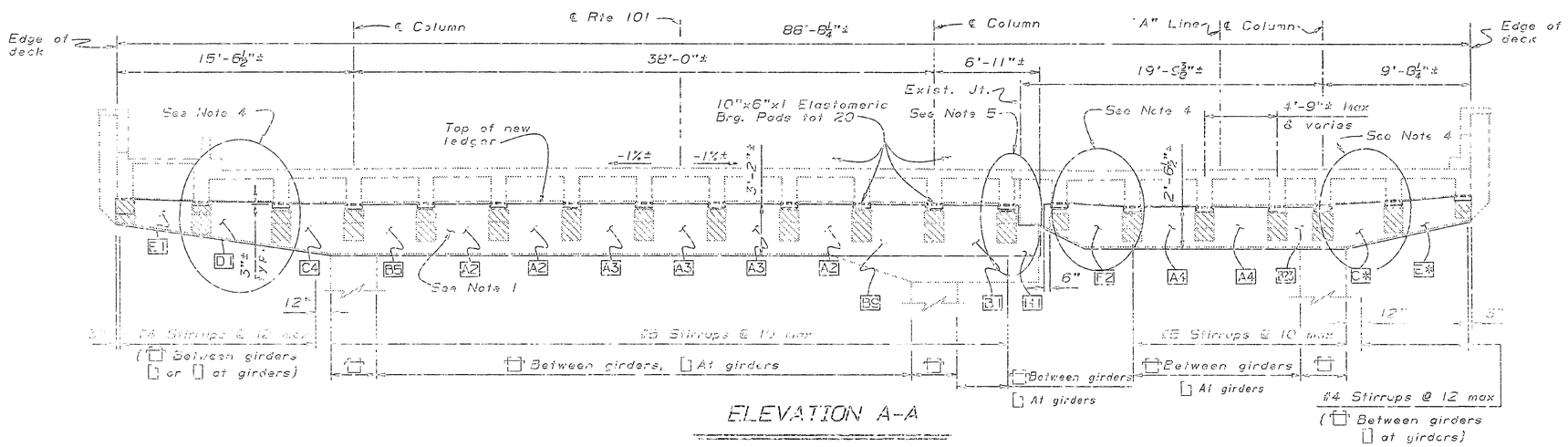
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

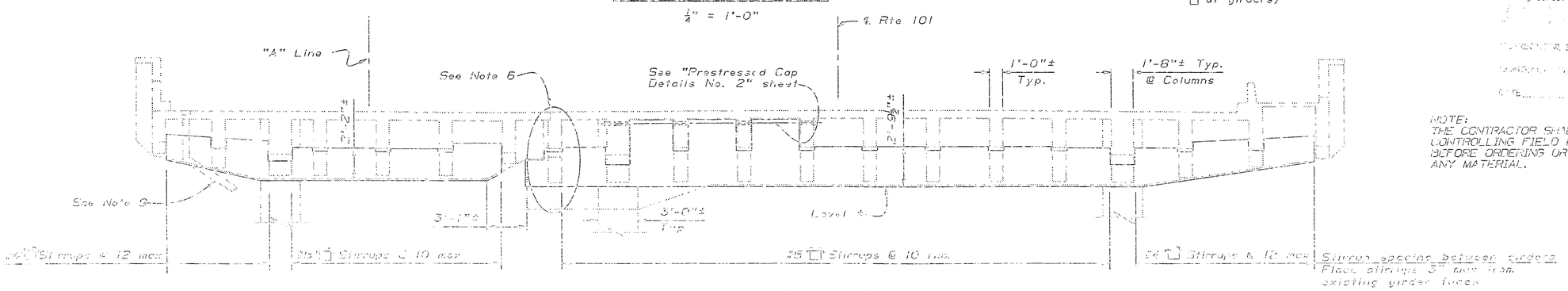
10-24-94
PLANS APPROVAL DATE



PART PLAN
1/4" = 1'-0"



ELEVATION A-A
1/4" = 1'-0"



ELEVATION B-B
1/4" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger, Existing reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details Ⓐ" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet
10. Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet
11. Indicates limits of concrete removal.
12. Demolition of existing rocker bearing lower masonry plate resulted in removing a portion of existing corbel top reinforcement. (Existing lower masonry plate was welded to the existing corbel reinforcement.)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Steve Thornton	CHECKED	Kevin Harper
DETAILS	Judy Dempsey 7-95	CHECKED	Kevin Harper
QUANTITIES	Kevin Harper	CHECKED	Mike Lewis

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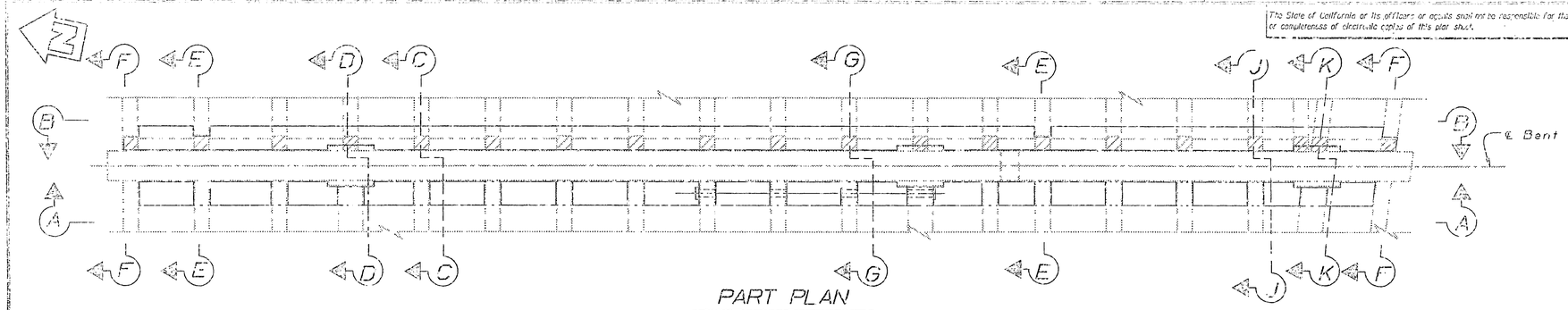
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	63	107

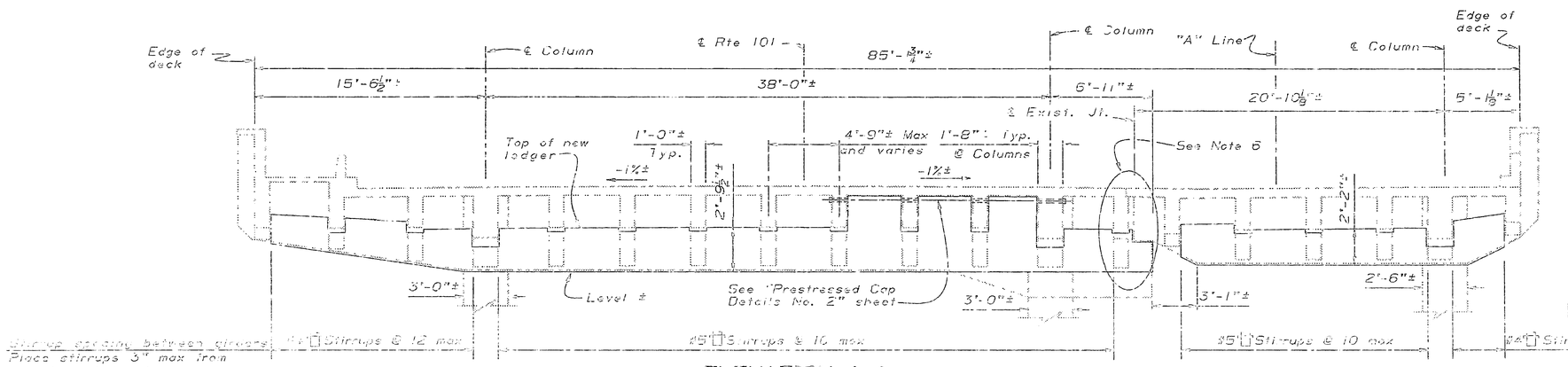
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

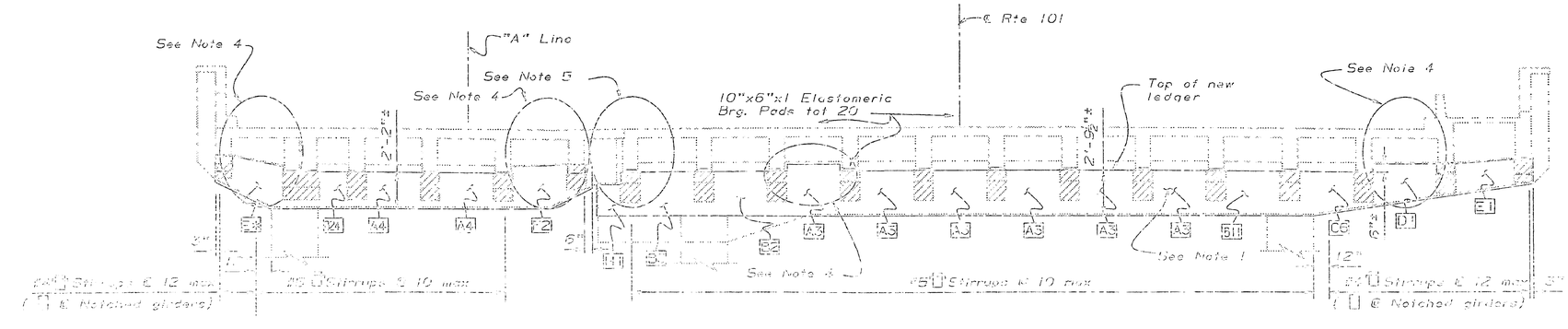
10-24-94
PLANS APPROVAL DATE



PART PLAN
1/4" = 1'-0"



ELEVATION A-A
1/4" = 1'-0"



ELEVATION B-B
1/4" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger, Exist. reinf. to remain Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details © No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown

[xx] Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

[////] Indicates limits of concrete removal

9. Repair [illegible] existing girders with [illegible] dump pack grout to provide a level bearing [illegible]
10. Remove [illegible] clearance for new 1" elastomeric brg. pad.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Doug Thornton	CHECKED	Kevin Harper
DETAILS	Judy Hampton	CHECKED	Kevin Harper
QUANTITIES	Kevin Harper	CHECKED	Mike Lewis

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	64	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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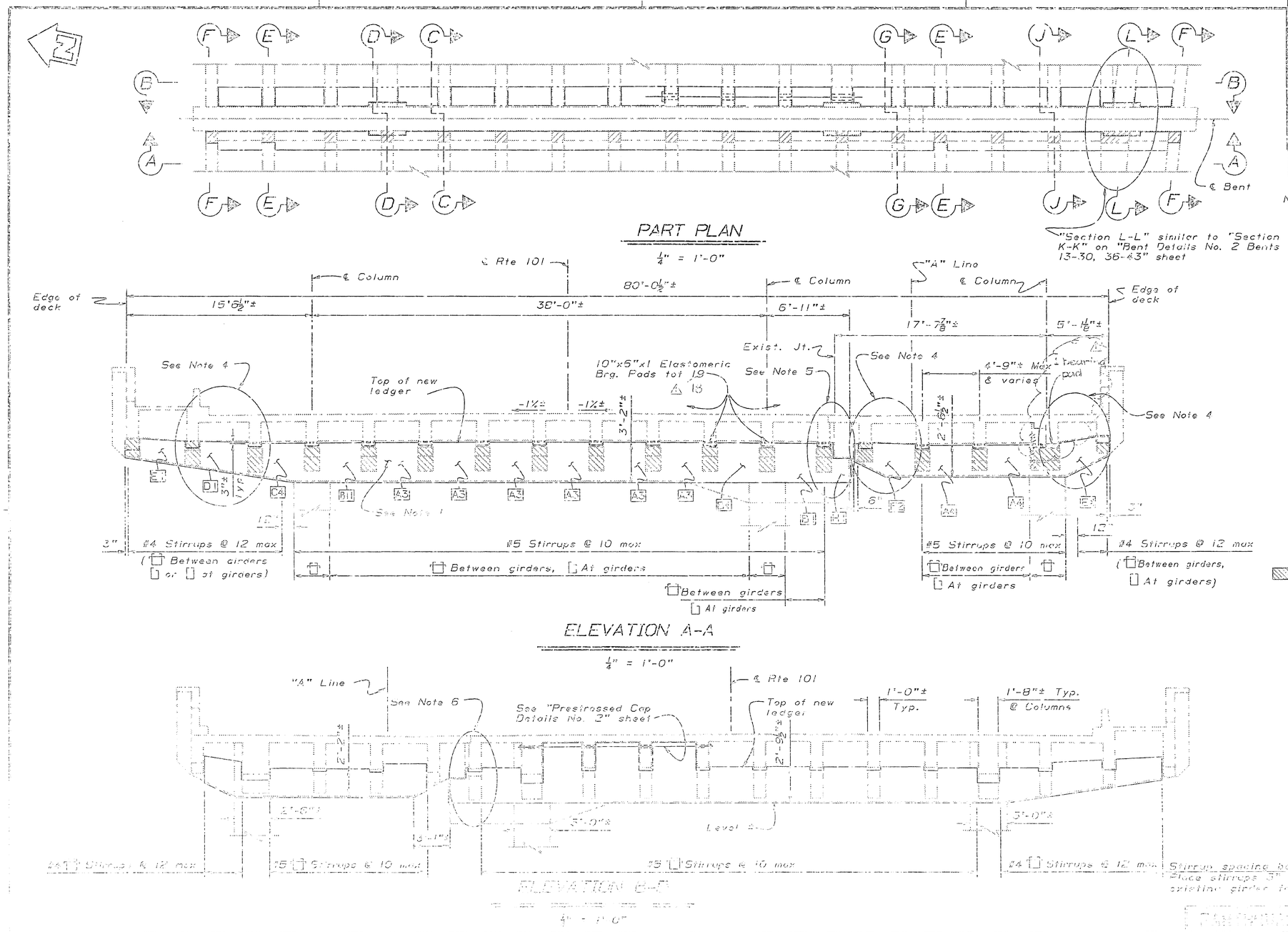

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Sections G-G and J-J" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet
10. Indicates limits of concrete removal.
11. Demolition of existing rocker bearing lower masonry plate resulted in removing a portion of existing corbel top reinforcement. (Existing lower masonry plate was welded to the existing corbel reinforcement.)

NOTE:
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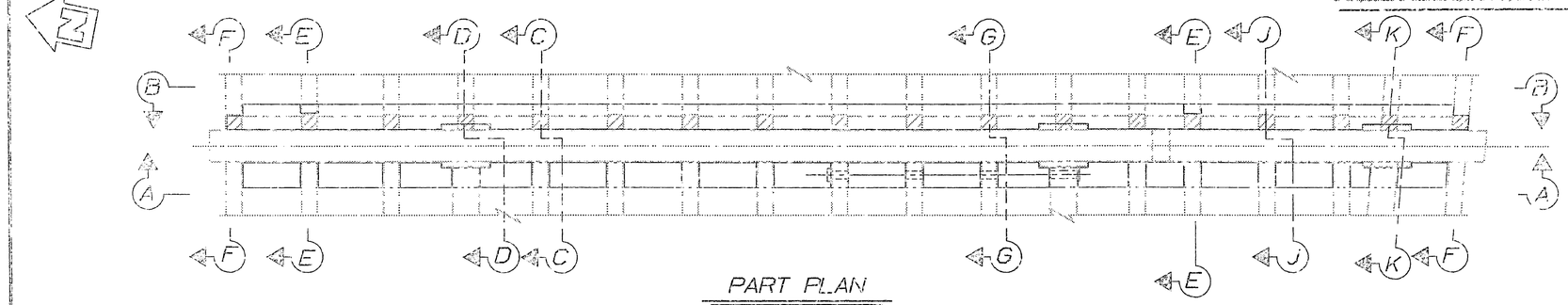
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	65	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-96 — CIVIL — STATE OF CALIFORNIA

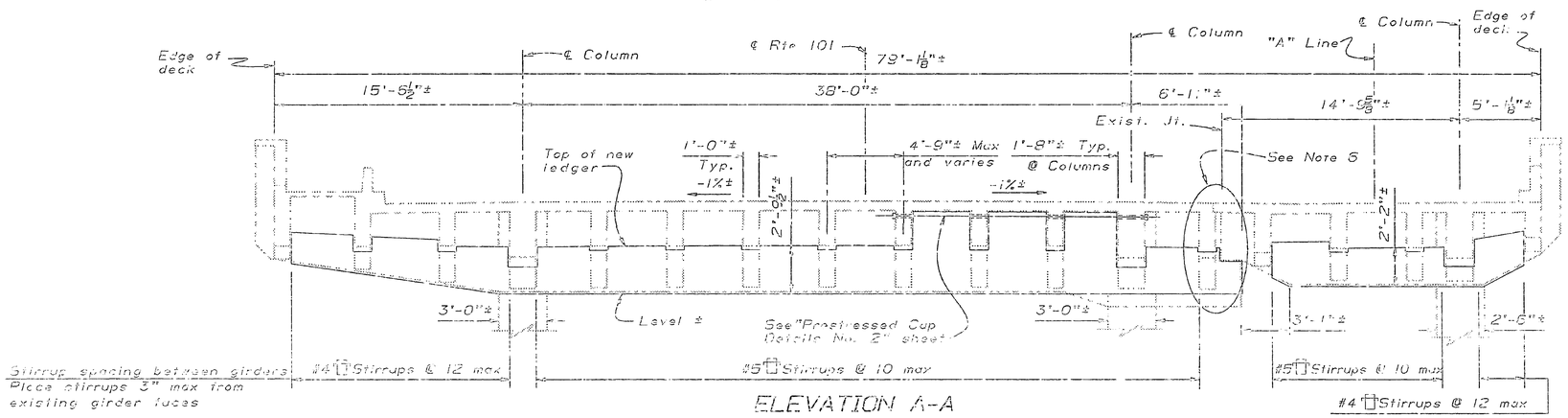
10-24-94

PLANS APPROVAL DATE



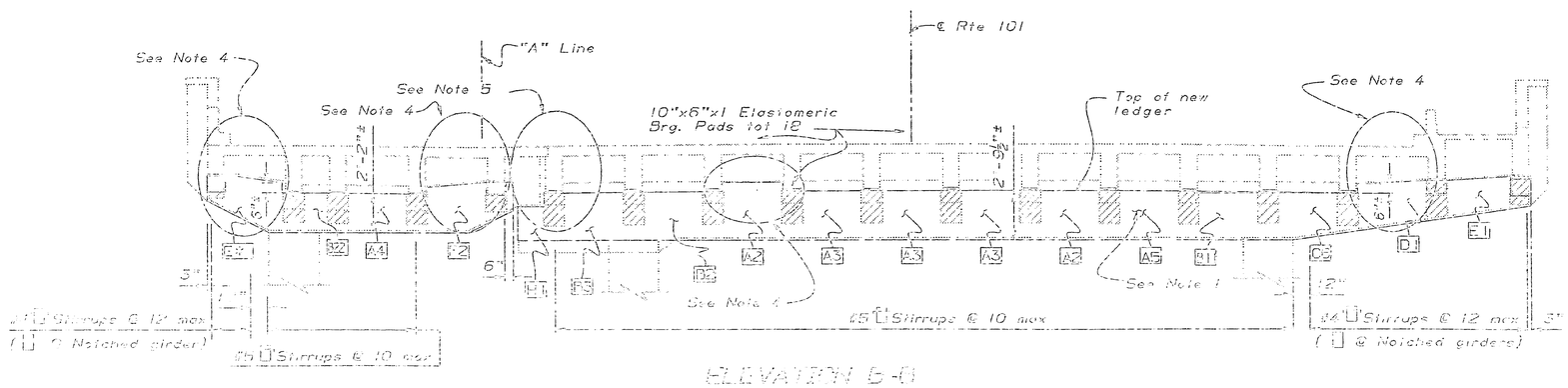
PART PLAN

1/4" = 1'-0"



ELEVATION A-A

1/4" = 1'-0"



ELEVATION B-B

1/4" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details ⓒ No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown

[xx] Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 3 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

9. Repair soffits of existing girders with [illegible] [illegible] See [illegible]
10. Remove existing corbel top rein forcing [illegible] provide [illegible] [illegible]

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	66	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-95 — CIVIL — STATE OF CALIFORNIA

10-24-94

PLANS APPROVAL DATE

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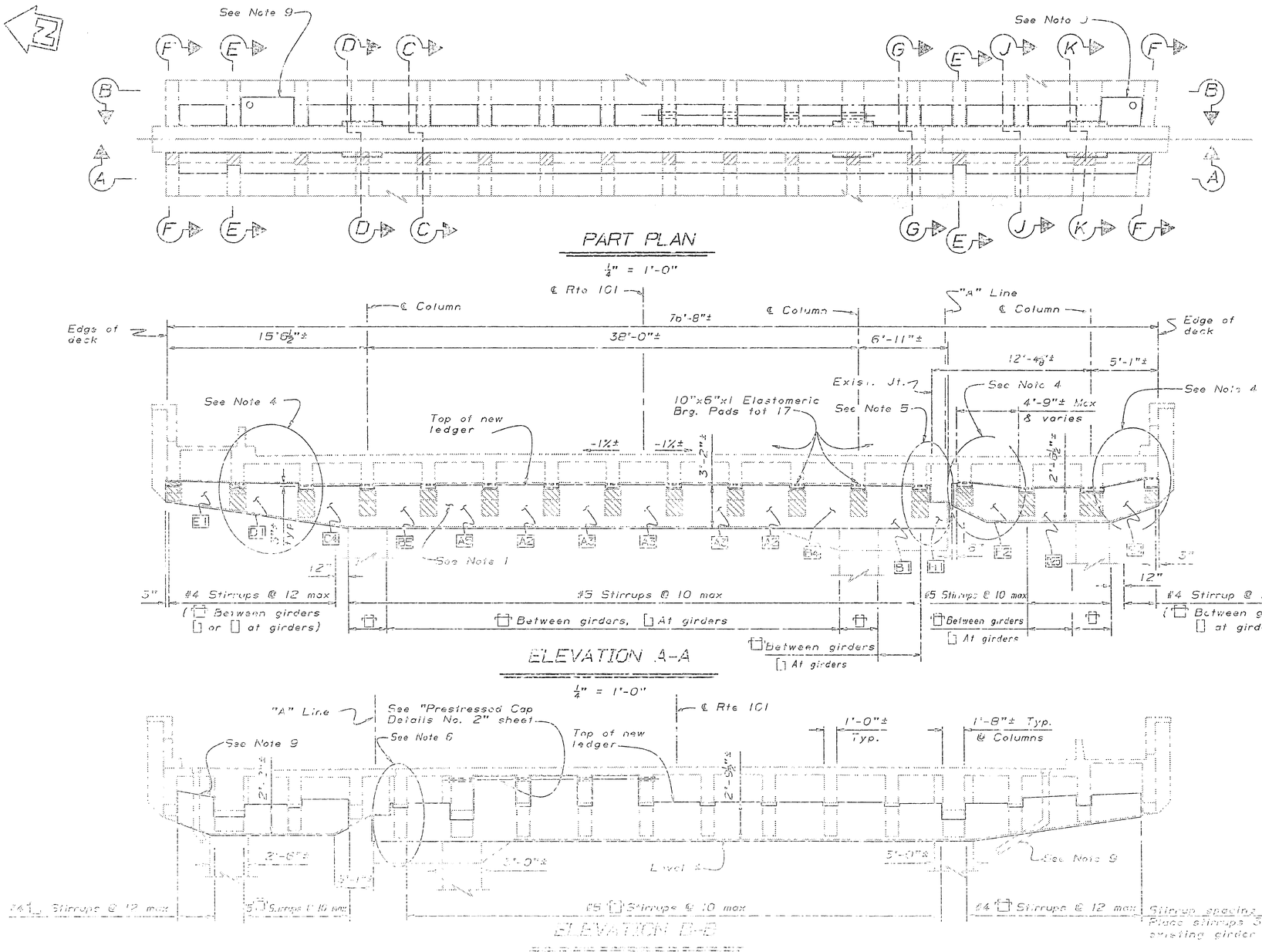

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet
   - [x] Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet
   - [hatched] Indicates limits of concrete removal.
10. Demolition of existing neoprene bearing lower mass plate resulted in inadvertent damage to corbels or reinforcement. (Edge of lower mass plate was [illegible] corbel reinforcement.)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	BY Greg Thornton	CHECKED Kevin Harper			
DETAILS	BY Judy Dunpay 7-94	CHECKED Kevin Harper			
QUANTITIES	BY Kevin Harper	CHECKED Greg Thornton			

DEPARTMENT OF TRANSPORTATION
STATE OF CALIFORNIA

DISTRICT 04 — SAN FRANCISCO

DEPARTMENT OF TRANSPORTATION
CONSTRUCTION DIVISION

DATE
SHEET
SHEET

EMBARCADERO FREEWAY PROJECT NO. [illegible]

PLAN OF PART PLAN
ELEVATION A-A
ELEVATION B-B

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	67	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper No. 42721 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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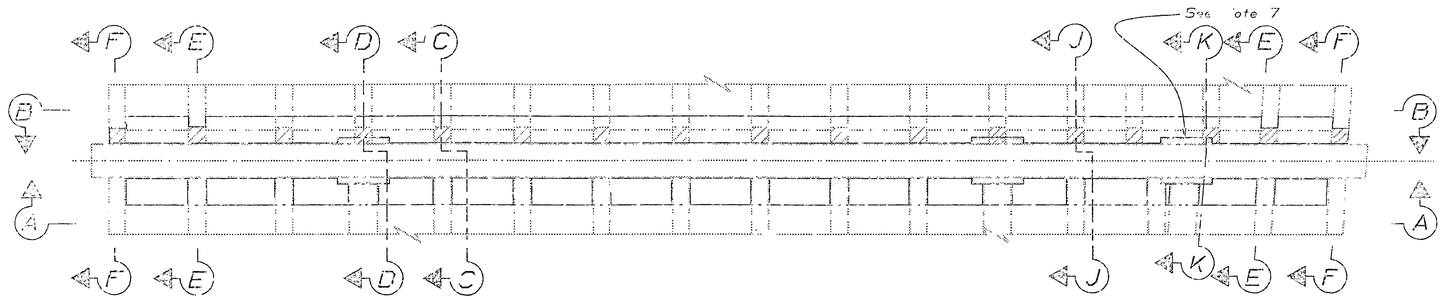
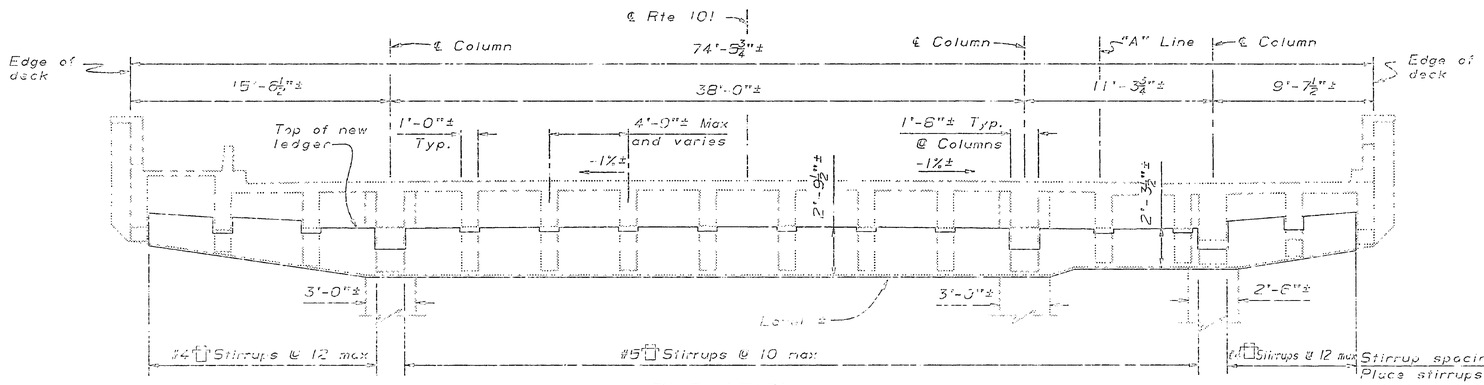


PART PLAN

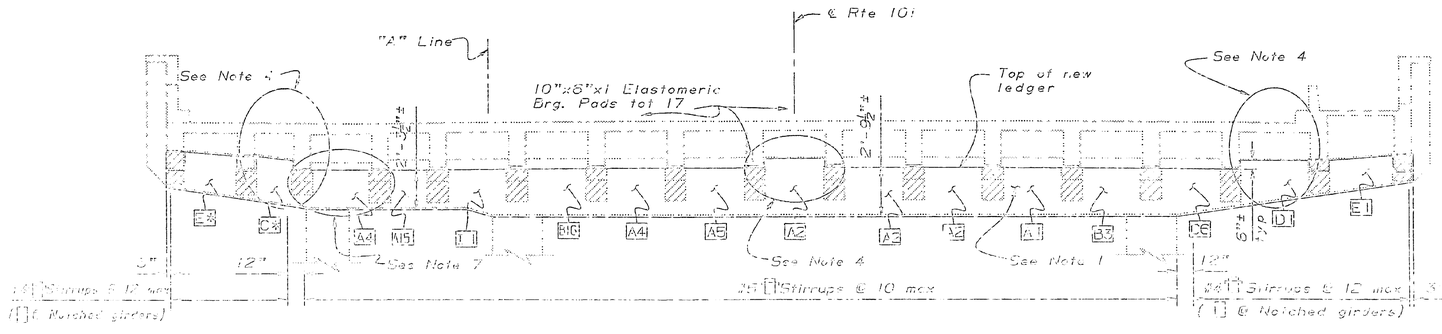
$\frac{1}{4}$" = 1'-0"



Stirrup spacing between girders
Place stirrups 3" max from existing girder faces

ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION C-C

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details ⓒ No. 1" sheet.
3. For "Section J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet
5. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
6. Hinge restrainers not shown
7. Drill & bond #7 $\frac{1}{3}$ 1'-2" Use indicated dowel pattern, this bay only ※※
8. Repair and [illegible] with bulk high strength 5000 psi, damp pack grout [illegible] a level bearing surface for [illegible] type "B" [illegible]
9. Remove existing corbel [illegible] to provide room for new 1" elast[illegible] brg. pads.

※※ Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removed.

[illegible] for [illegible] method of [illegible] prosthetic [illegible]

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

ELECTRONIC REPORT [illegible]

DESIGN [illegible] Kevin Harper
DETAILS [illegible] July [illegible]
CHECKED [illegible]
CHECKED [illegible]

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

[illegible]

[illegible]

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	68	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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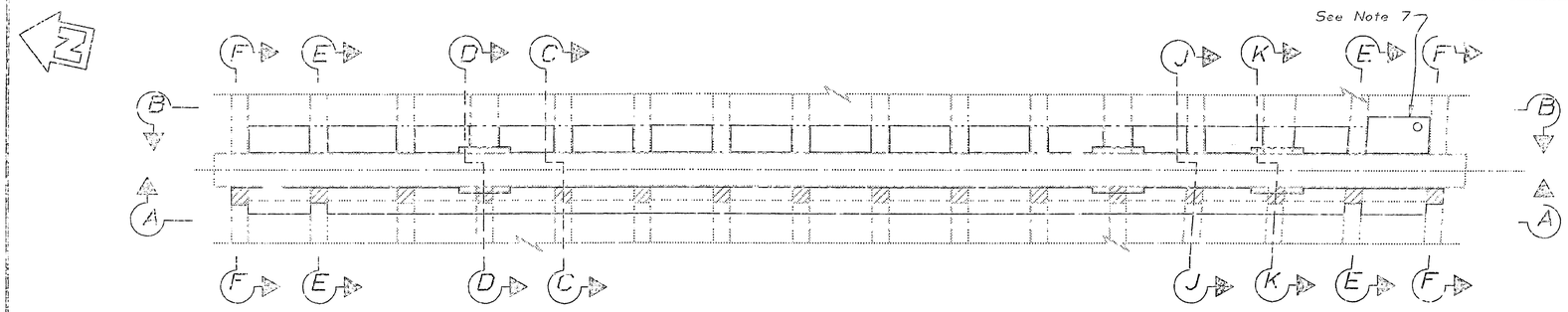
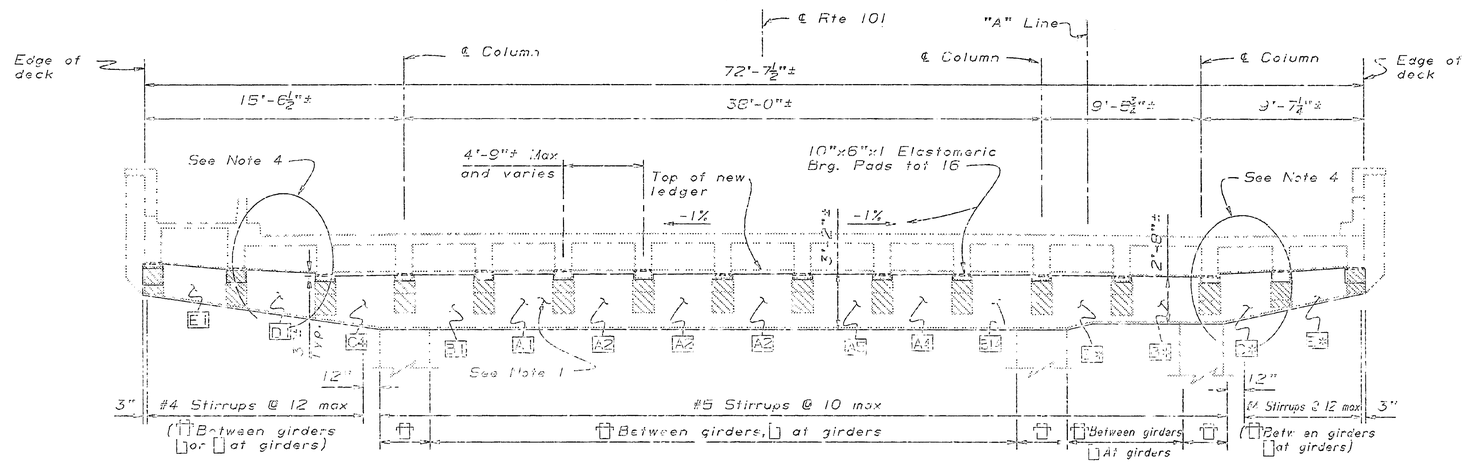


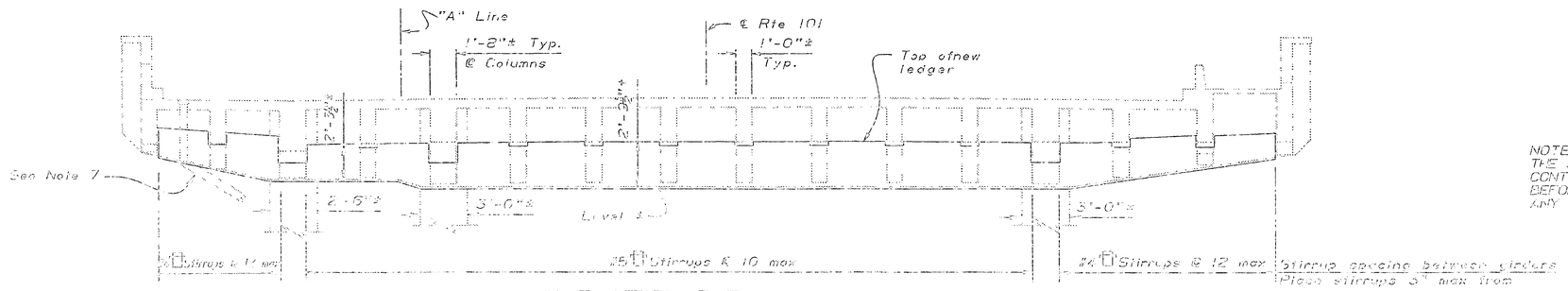
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A1)" sheet.
3. For "Sections J-J and K-K" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
6. Hinge restrainers not shown
7. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet

XX Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

8. [illegible] of existing concrete [illegible] (existing lower [illegible] to the existing corbel reinforcement)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Greg Thornton	CHECKED Kevin Harper	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF STRUCTURES	SHEET NO. 52-007
DRAWN	Jerry Dempsey 7/95	REVIEWED Kevin Harper			
QUANTITIES	Kevin Harper	APPROVED Dale Lane			

EARTHQUAKE RETROFIT PROJECT NO. 10

MARINA VISTA

ROUTE 101 IN MONTEREY

[illegible]

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	69	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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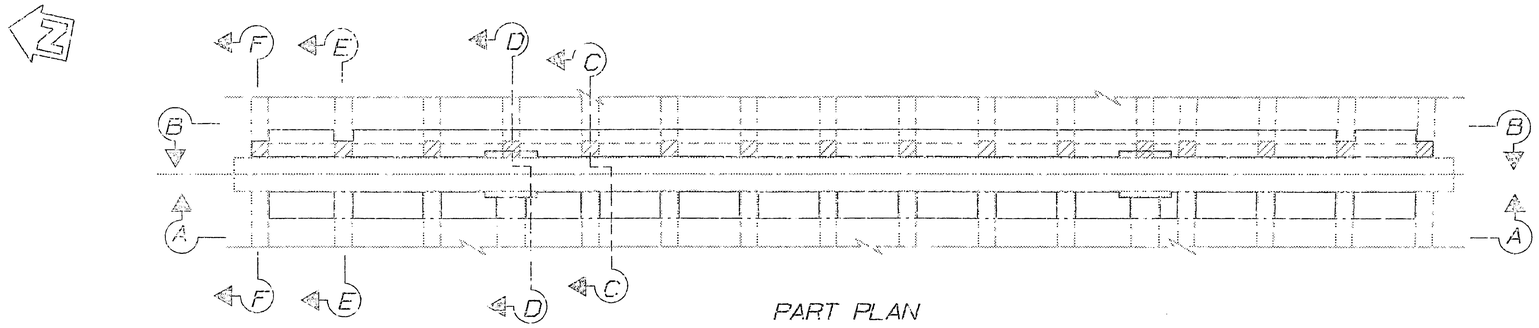
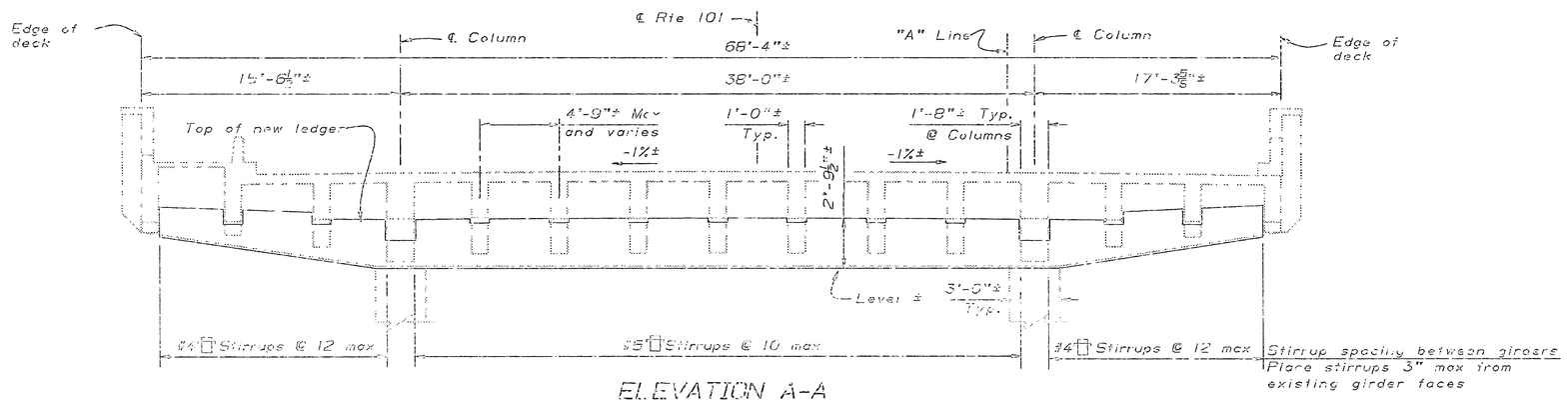


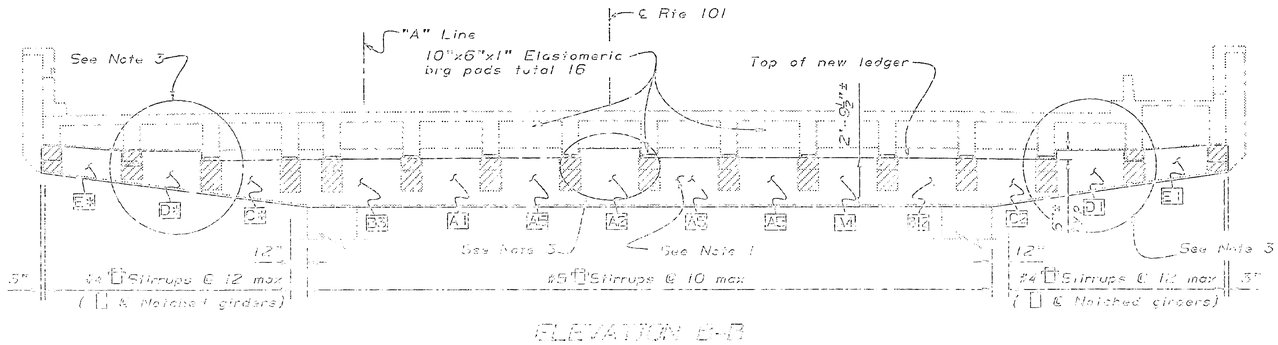
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. ~~Existing reinforcement to remain.~~ Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For Sections C-C, D-D, E-E and F-F see "Bent Details Ⓒ No. 1" sheet.
3. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet.
4. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
5. Hinge restrainers not shown

xx Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

Removed existing corbel top [illegible] to provide clearance [illegible] 1" clearance [illegible]

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Greg Thornton	Kevin Harper
DRAWN	Jack Dempsey 1-93	Kevin Harper
CHECKED	Kevin Harper	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	70	107

REGISTERED ENGINEER CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-96 — CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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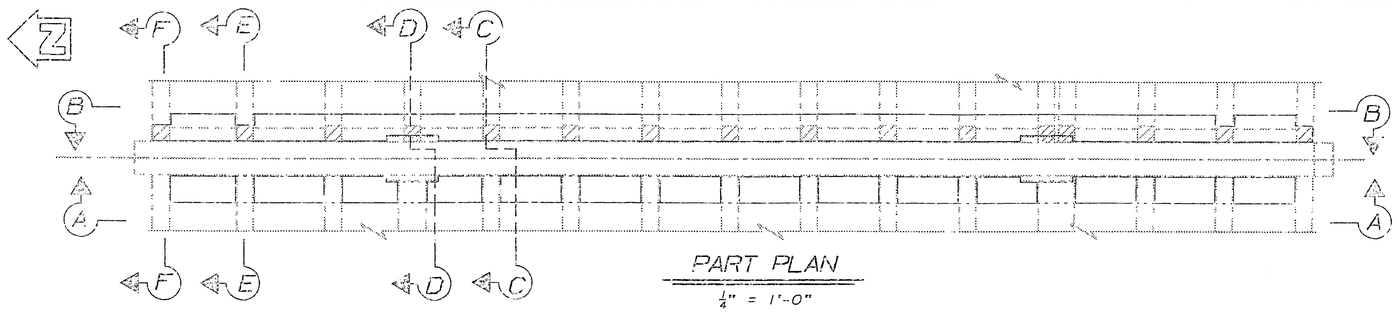
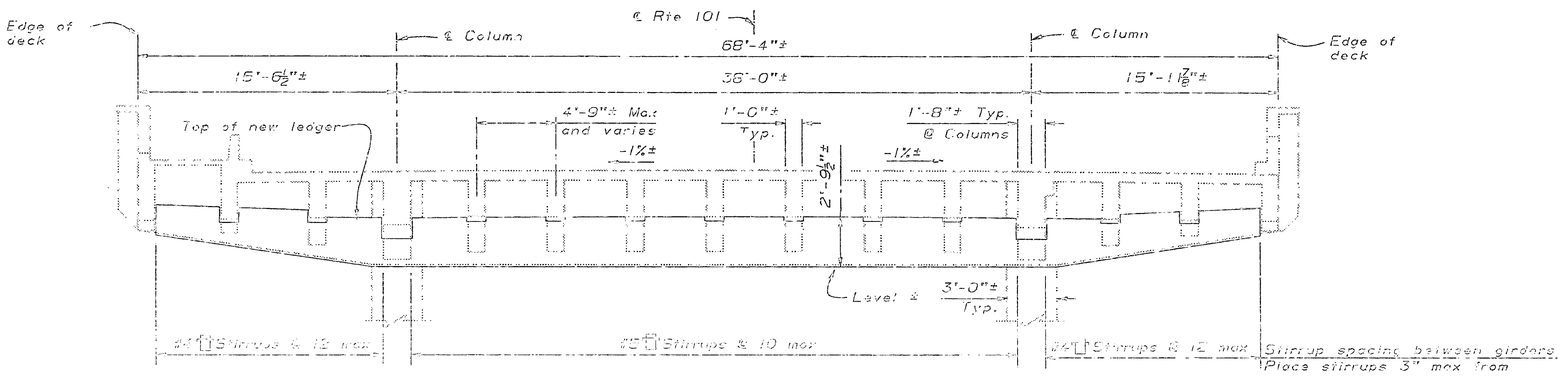


PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"

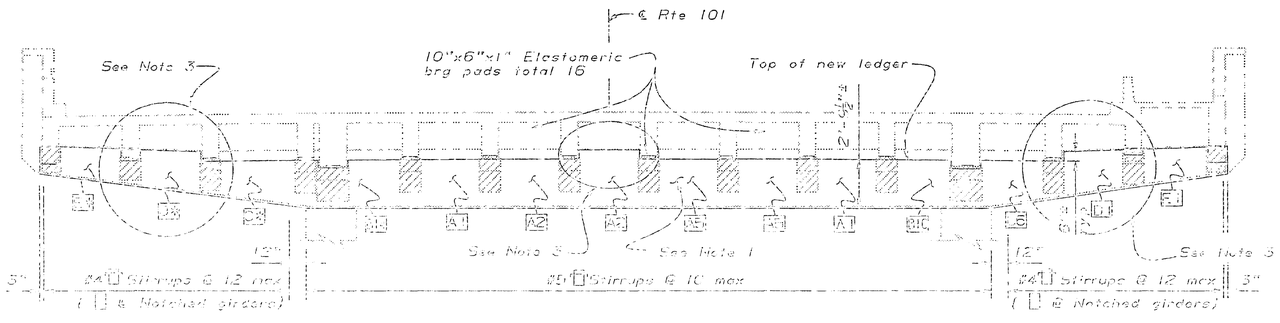
Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinforcement to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For Sections C-C, D-D, E-E and F-F see "Bent Details (C) No. 1" sheet.

   See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet.
3. For additional details at locations where existing deck down drain pipe is present see "Detail D" on "Miscellaneous Details" sheet.
4. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
5. Hinge restrainers not shown.

Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.



ELEVATION E-E

$\frac{1}{4}$" = 1'-0"

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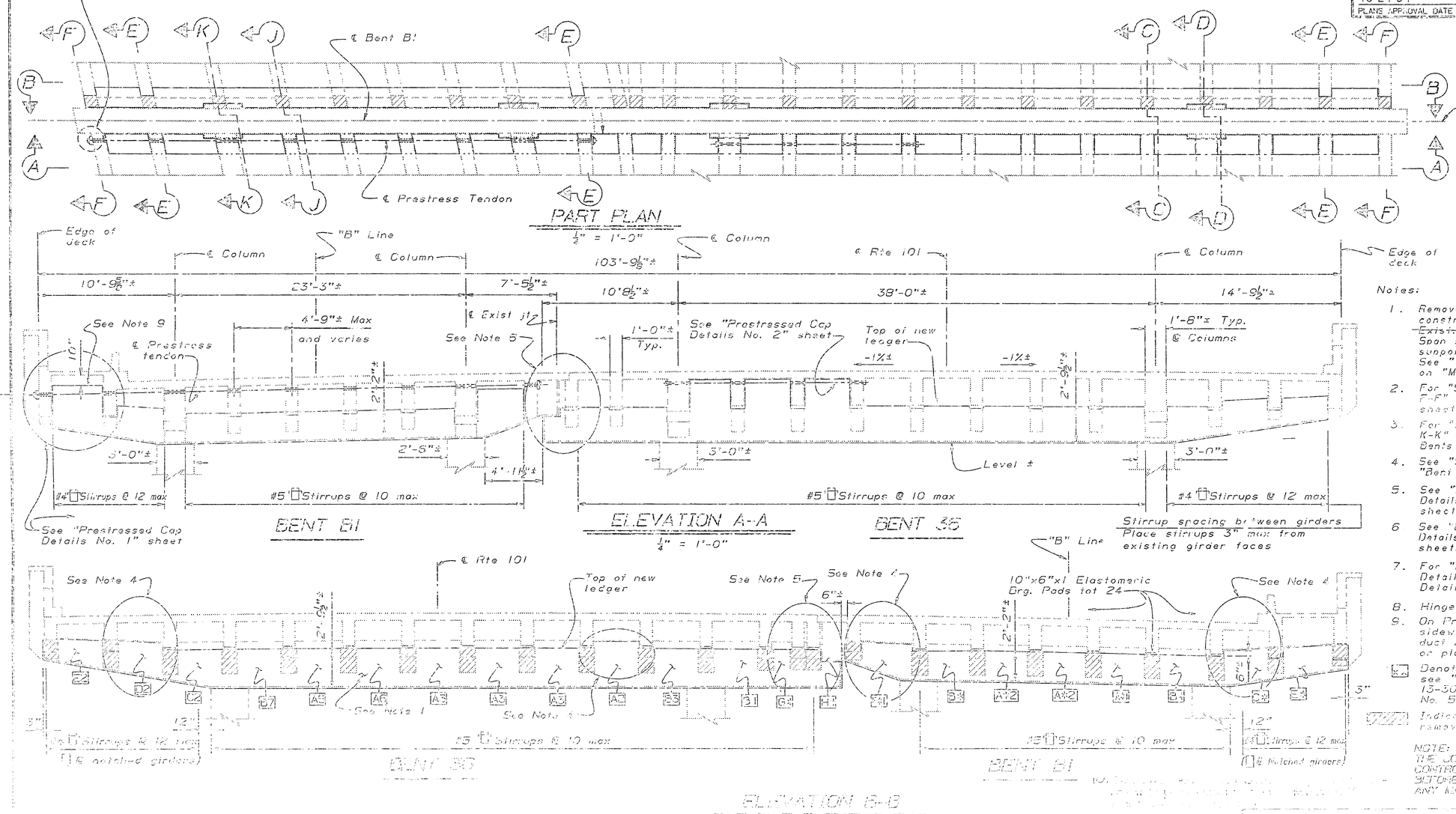
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	71	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 12221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



Notes:

1. Remove existing corbels and construct continuous ledger. ~~Exist. corbels to remain.~~ Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (C) No. 1" sheet.
3. For "Sections J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. On Prestress end block under sidewalk, galvanized std. pipe duct may be cast into end block or placed in formed hole.

Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Greg Thornton	CHECKED	Kevin Harper
DETAILS	Judy Lemmey	CHECKED	Kevin Harper
QUANTITIES	Kevin Harper	CHECKED	John Levy

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
DIVISION OF ENGINEERING SERVICES

DESIGNED BY
DATE
DRAWN BY
DATE
CHECKED BY
DATE

DEPARTMENT OF TRANSPORTATION
DIVISION OF STRUCTURES
BRIDGE DETAILS
BENT 81 & BENT 36

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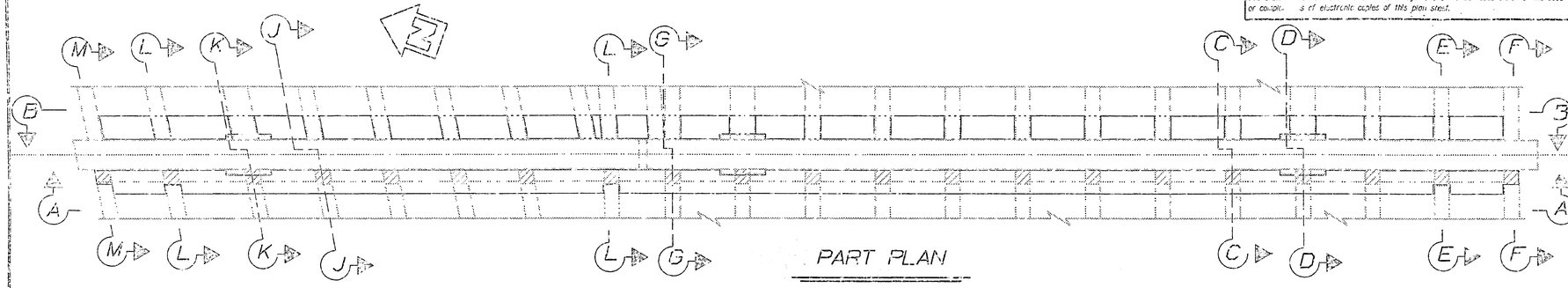
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	72	107

REGISTERED ENGINEER - CIVIL

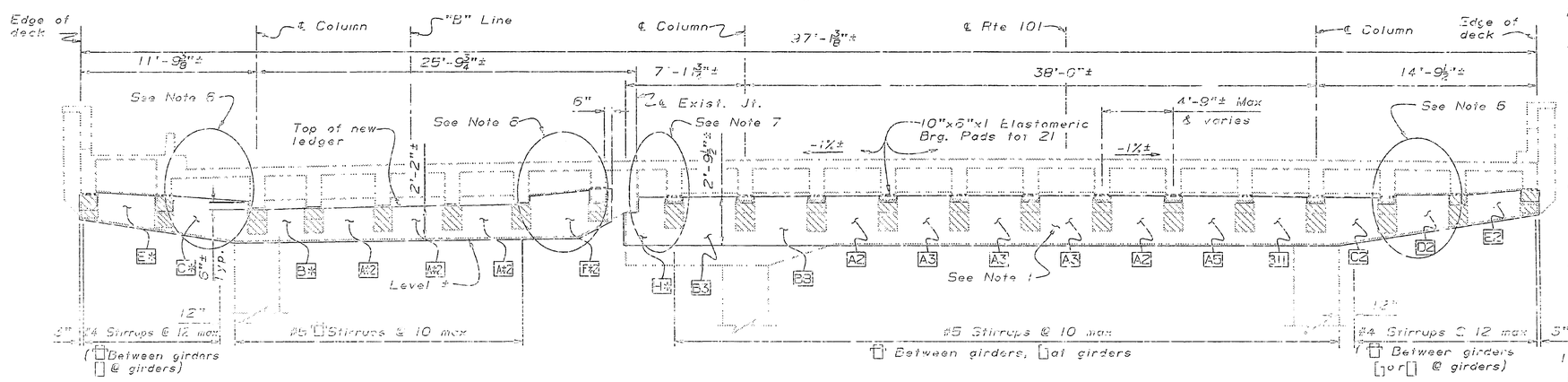
REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"

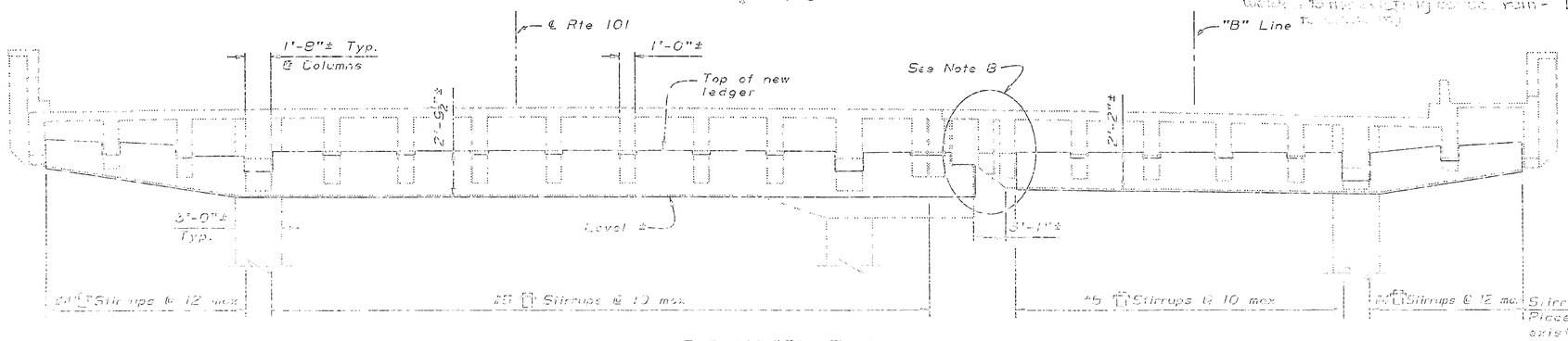
Notes:

1. Remove existing corbels and construct continuous ledger. Exist. reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Section G-G" see "Bent Details No. 2 Bents 13-30, 36-43" sheet.
4. For "Sections J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
5. For "Sections L-L and M-M" see "Sections E-E and F-F" respectively on "Bent Details (C) No. 1" sheet.
6. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
7. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
8. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
9. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
10. Hinge restrainers not shown

(xx) Denotes dowel pattern for bar see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

11. Demolition of existing rock or brick lower masonry plate resulted in removing a portion of existing foundation. (Existing lower masonry plate was weak, demolition by dozer rain-



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	73	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
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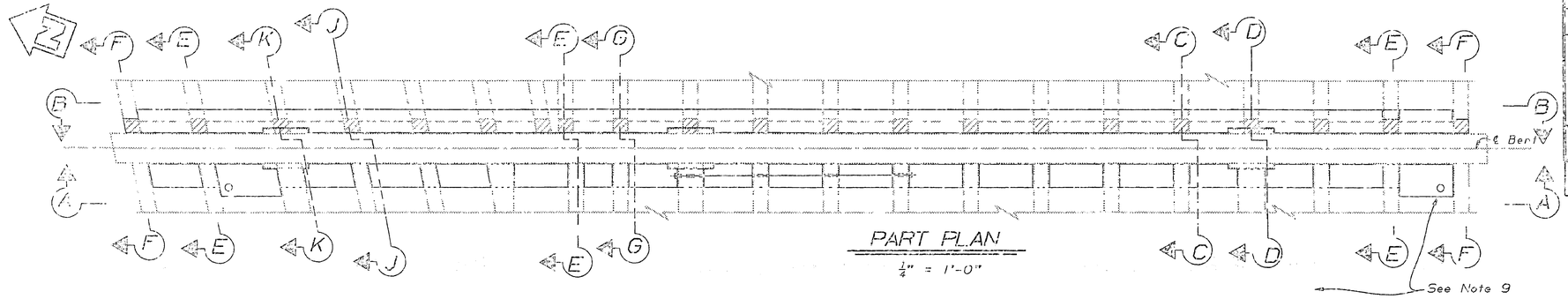
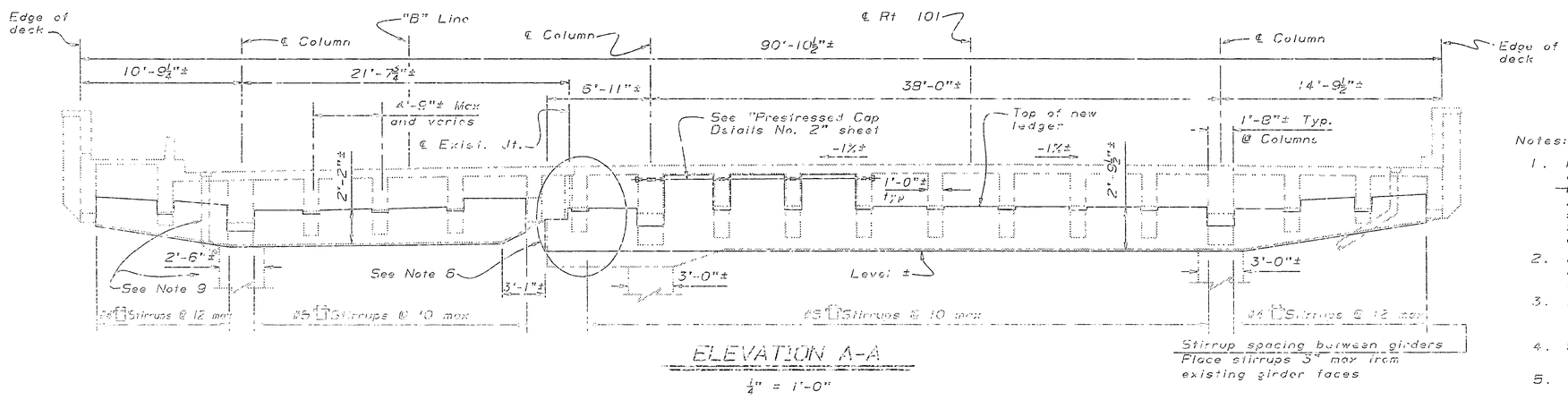
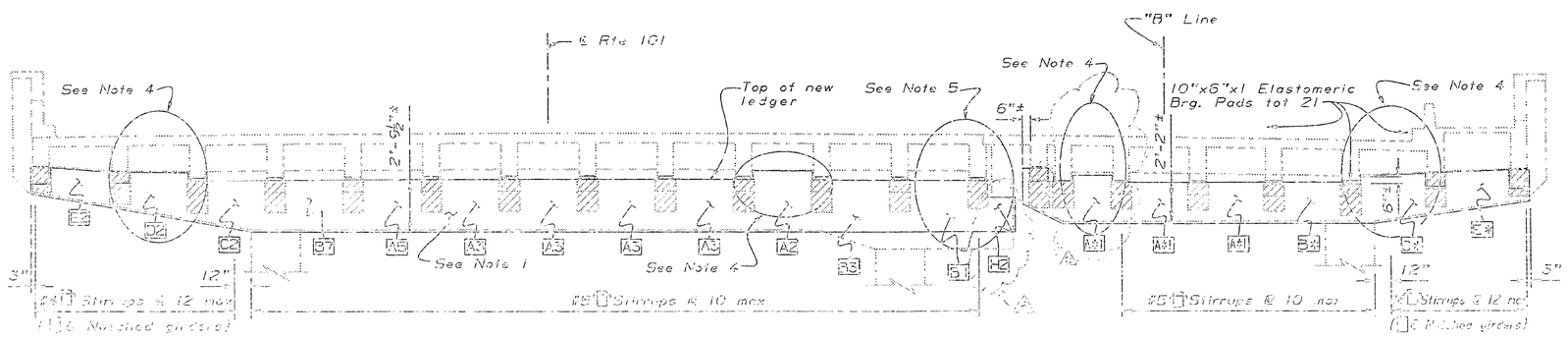


PART PLAN
$\frac{1}{4}$" = 1'-0"



ELEVATION A-A
$\frac{1}{4}$" = 1'-0"



ELEVATION B-B
$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. ~~Exist. reinf. to remain.~~ Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (C) No. 1" sheet.
3. For "Sections G-G, J-J and K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
6. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
8. Hinge restrainers not shown
9. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet

Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	74	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-95 — CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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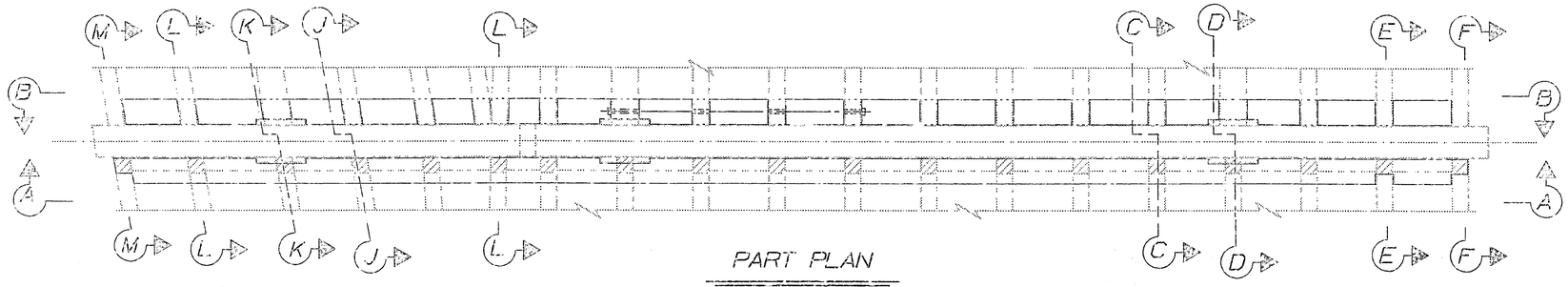
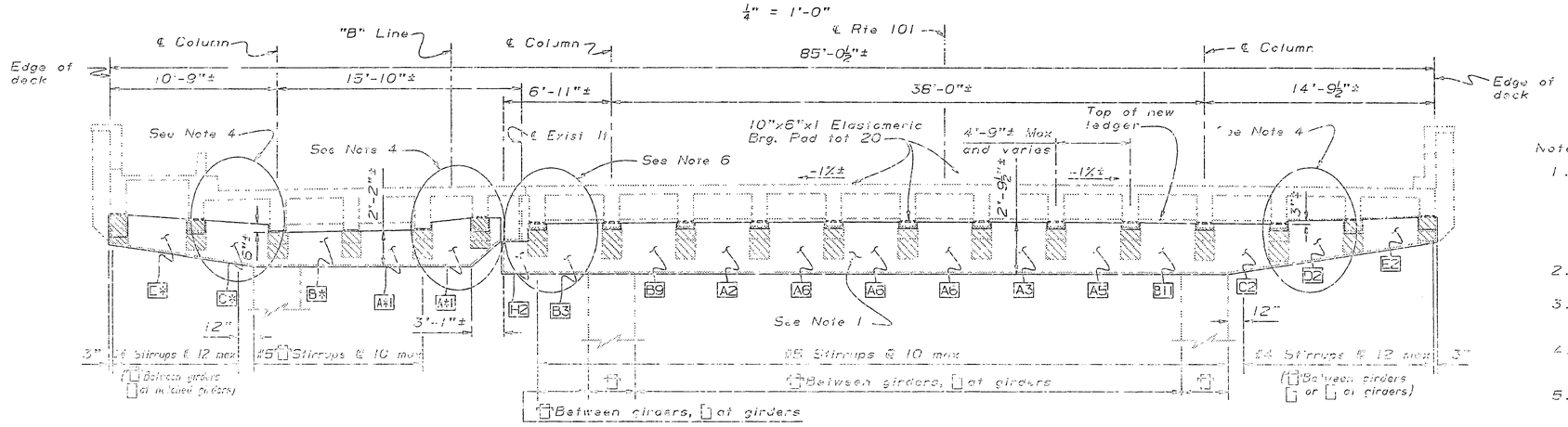


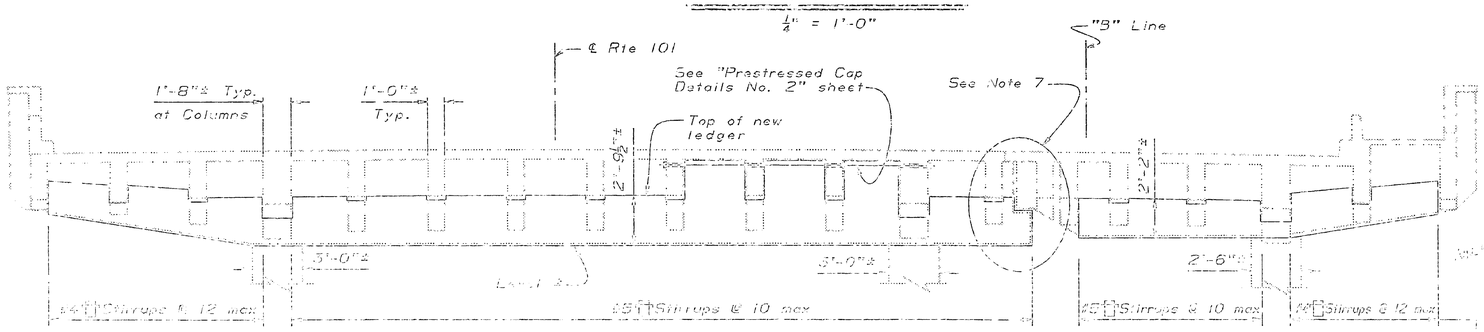
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Exist. reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Sections J-J and K-K see "Bent Details No. 1 - Bents 13-30, 36-43" sheets.
4. See "Shear Key Detail" on "Bent Cap Details (B)" sheet.
5. For "Sections L-L and M-M see "Sections E-E and F-F" respectively on "Bent Details (C) No. 1" sheet.
6. See "Detail X" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
7. See "Detail Z" on "Bent Details No. 3 Bents 13-30, 36-43" sheet.
8. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
9. Hinge restrainers not shown

[x x] Denotes dowel pattern for Lay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGNED	Greg Thornton	CHECKED	Kevin Harper
DETAILED	Jerry Dempsey	CHECKED	Kevin Harper
QUANTITIES	Kevin Harper		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN

DEPARTMENT OF TRANSPORTATION
DISTRICT 4

BENICIA-MARTINEZ BRIDGE
PART PLAN
ELEVATION A-A
ELEVATION B-B

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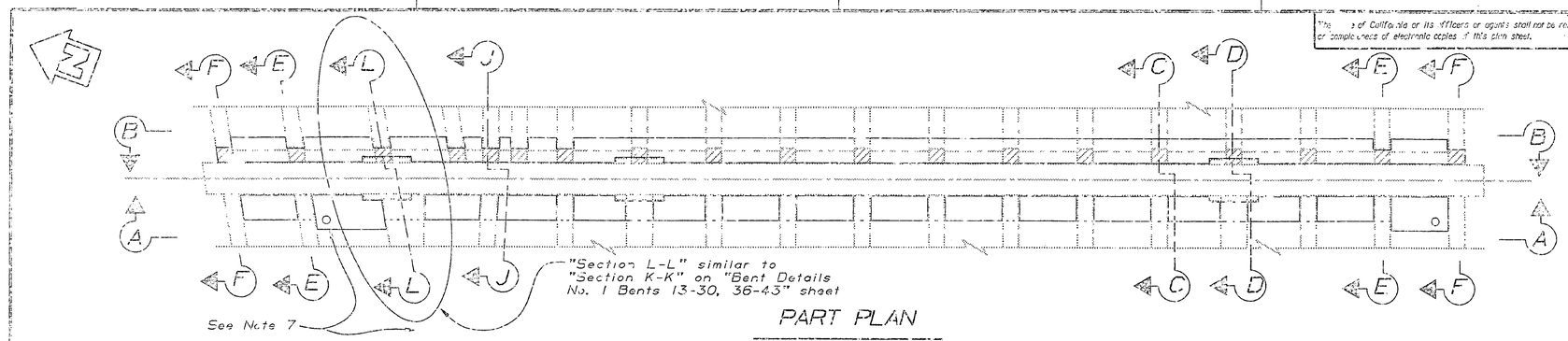
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	3.3/8.9	75	107

REGISTERED ENGINEER - CIVIL

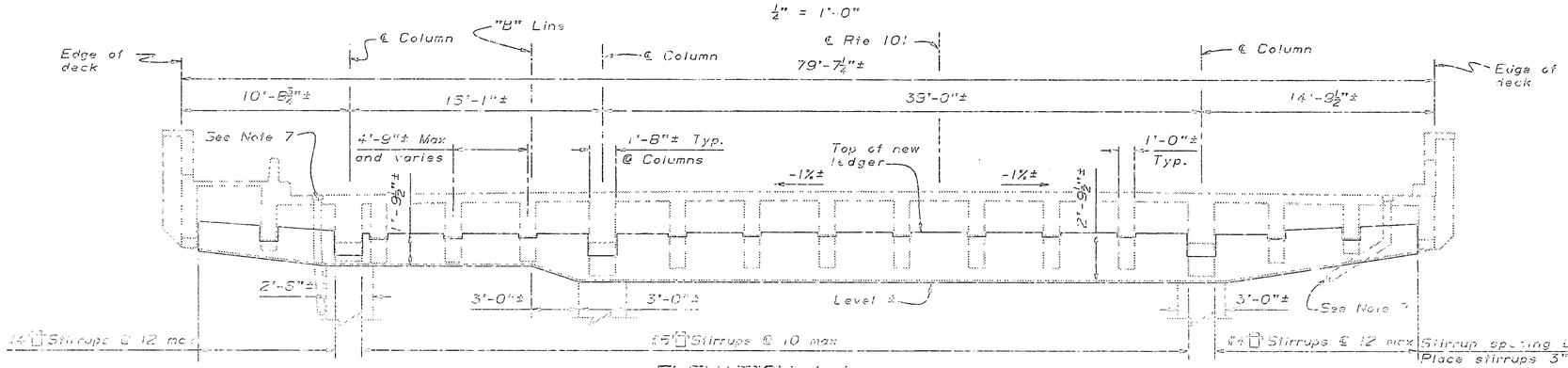
REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

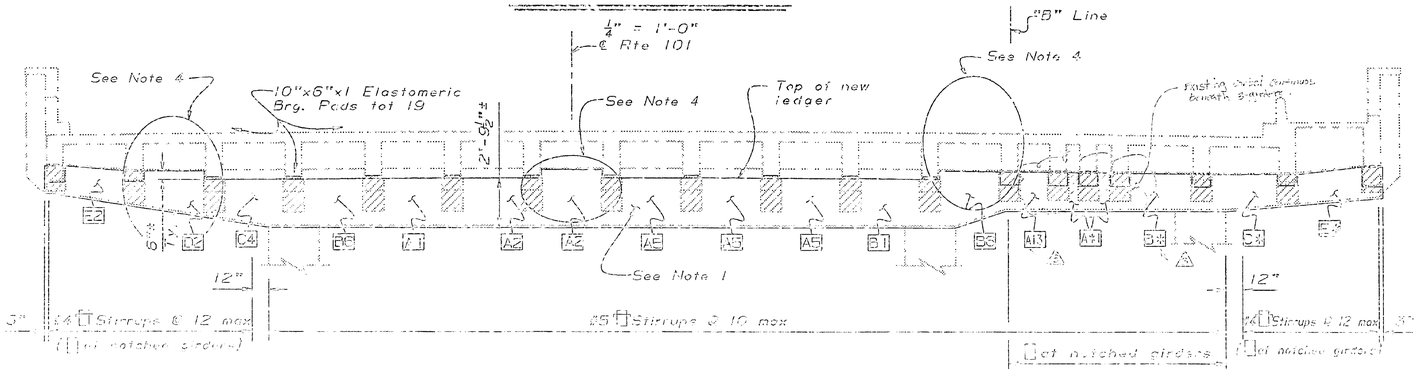


PART PLAN

1/4" = 1'-0"



ELEVATION A-A



ELEVATION B-B

1/4" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. ~~Exist. reinf. to remain.~~ Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details © No. 1" sheet.
3. For "Section J-J" see "Bent Details No. 1 Bent 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓐ" sheet
5. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
6. Hinge restrainers not shown
7. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet

[xx] Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

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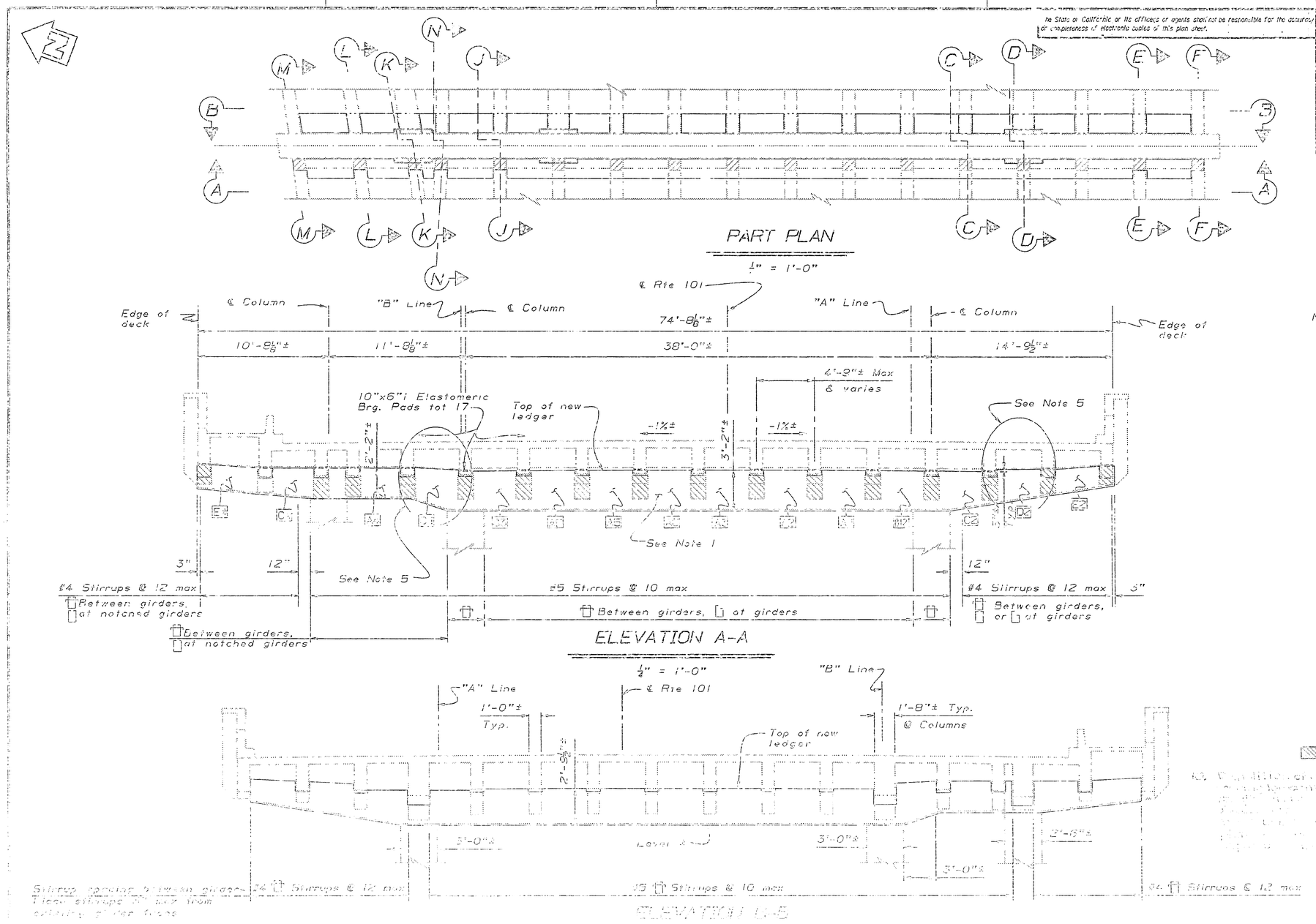
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	76	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



Notes:

1. Remove existing corbels and construct continuous ledger. Existing reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (A)" sheet.
3. For "Section K-K" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. For "Section J-J" see "Bent Details No. 2 Bents 13-30, 36-43"
5. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
6. For "Sections L-L and M-M" see "Sections E-E and F-F" respectively on "Bent Details (C) No. 1" sheet.
7. For "Section N-N" see "Section J-J" on "Bent Details No. 1 Bents 13-30, 36-43" sheet
8. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
9. Hinge restrainers not shown

xx Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

Indicates limits of concrete removal.

NOTE:
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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	77	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
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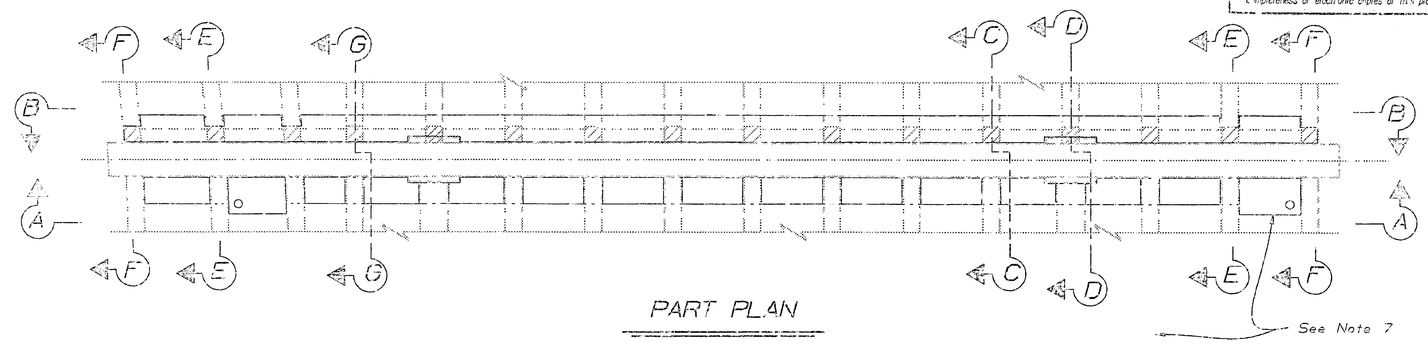
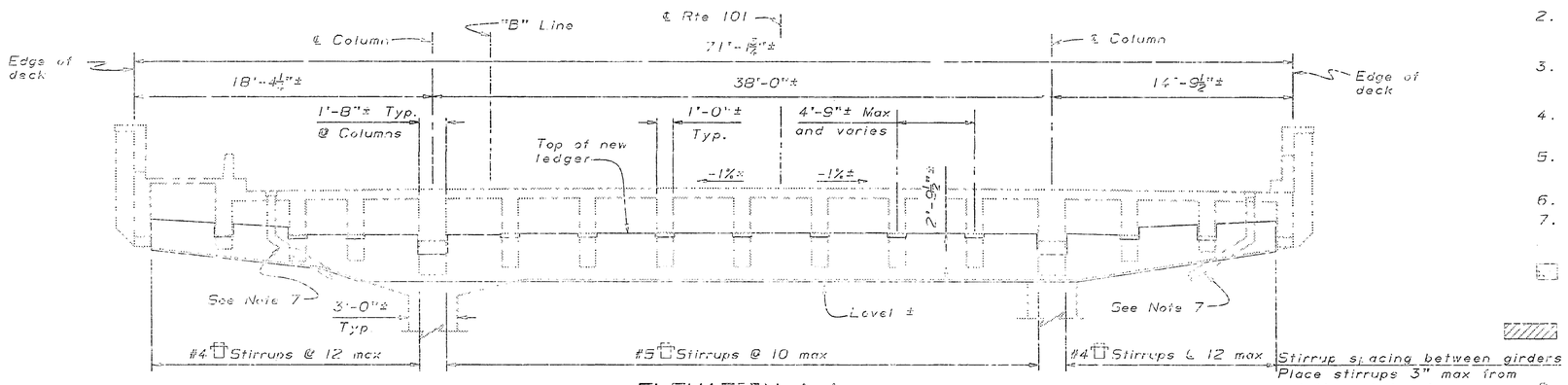


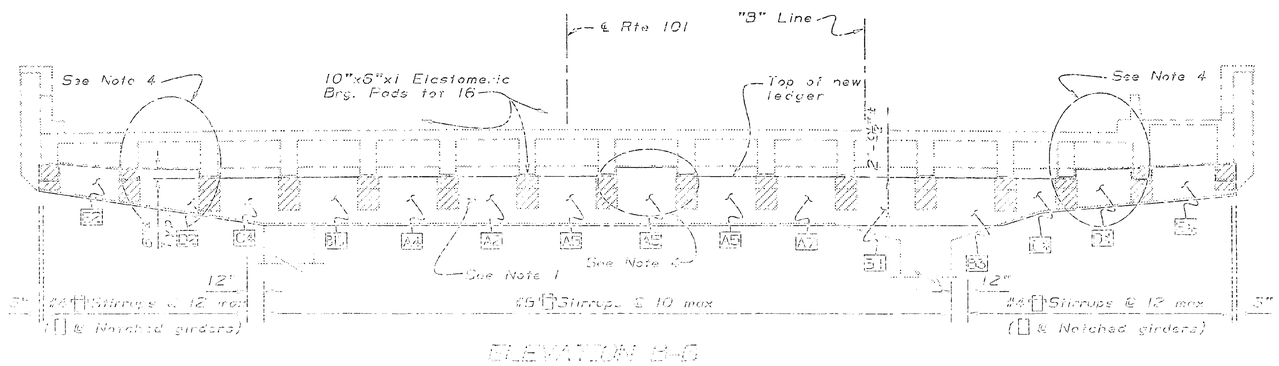
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. ~~Exist. reinf. is remain.~~ Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details (C) No. 1" sheet.
3. For "Section G-G" see "Bent Details No. 1 Bents 13-30, 36-43" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit (A)" sheet
5. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
6. Hinge restrainers not shown
7. For details of deck down drain pipe, see "Detail D" on "Miscellaneous Details" sheet

[ ] Dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

[//////] Indicates limits of concrete removal.

8. Provide surface of seat with high strength (5000 psi) clamp and grout to provide a level bearing surface for new elastomeric pad.
9. Remove existing corbel as part of element to provide clearance for new elastomeric pad.

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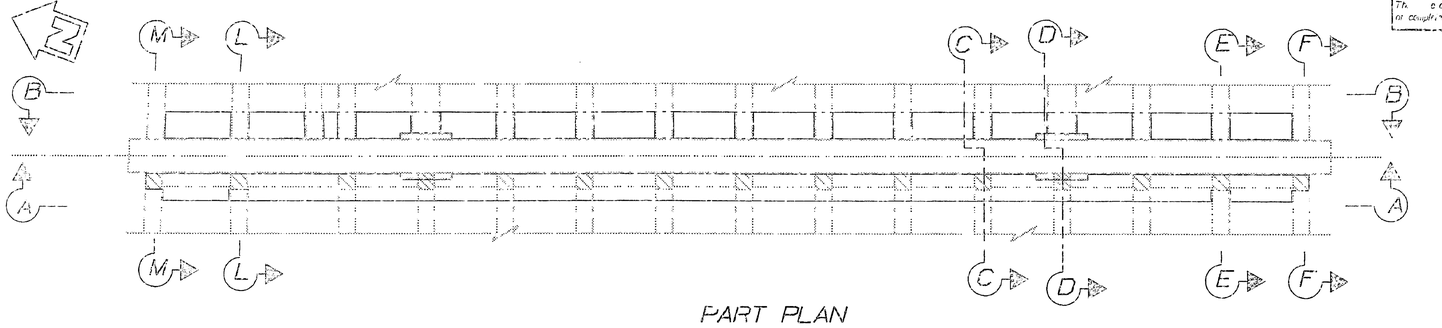
04	SF	101	8.3/12.9	78	107

REGISTERED ENGINEER - CIVIL

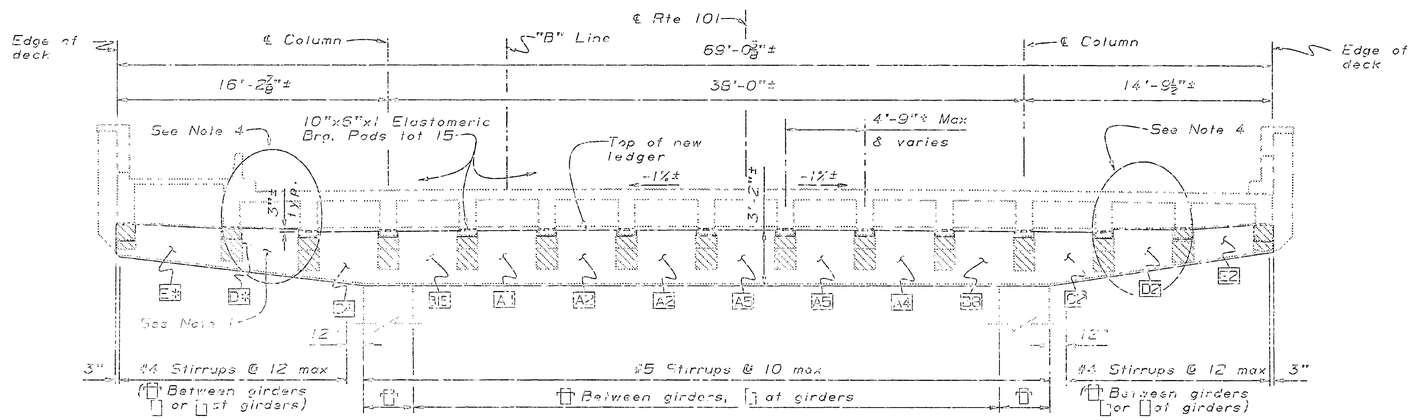
REGISTERED PROFESSIONAL ENGINEER
Kevin Horner
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



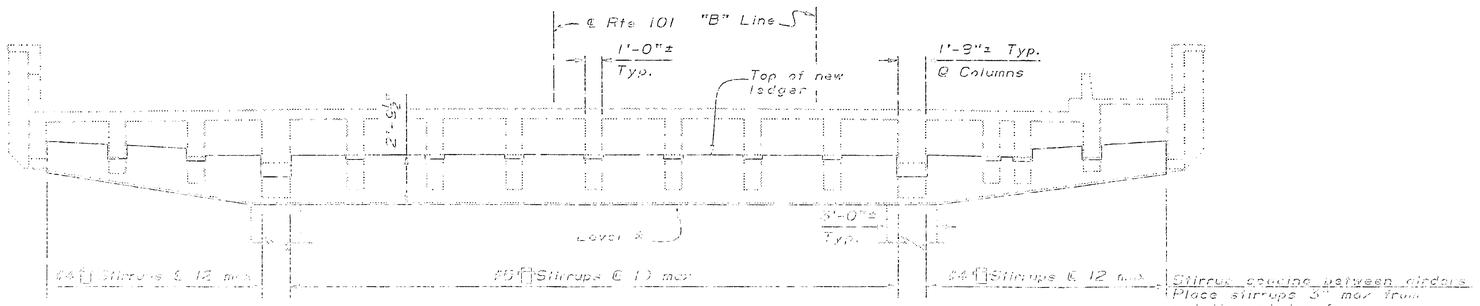
PART PLAN

$\frac{1}{4}$" = 1'-0"



ELEVATION A-A

$\frac{1}{4}$" = 1'-0"



ELEVATION B-B

$\frac{1}{4}$" = 1'-0"

Notes:

1. Remove existing corbels and construct continuous ledger. Exist. reinf. to remain. Span shall be jacked and supported during construction. See "Temporary Support Diagram" on "Miscellaneous Details" sheet.
2. For "Sections C-C, D-D, E-E and F-F" see "Bent Details Ⓐ" sheet.
3. For "Sections L-L and M-M see "Sections E-E and F-F" respectively on "Bent Details Ⓒ No. 1" sheet.
4. See "Shear Key Detail" on "Bent Cap Retrofit Ⓔ" sheet
5. For "Elastomeric Bearing Pad Detail", see "Miscellaneous Details" sheet.
6. Hinge restrainers not shown

[xx] Denotes dowel pattern for bay see "Bent Details No. 4 Bents 13-30, 36-43" & "Bent Details No. 5 Bents 13-30, 36-43" sheet

[//////] Indicates limits of concrete removal.

NOTE:
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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	79	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
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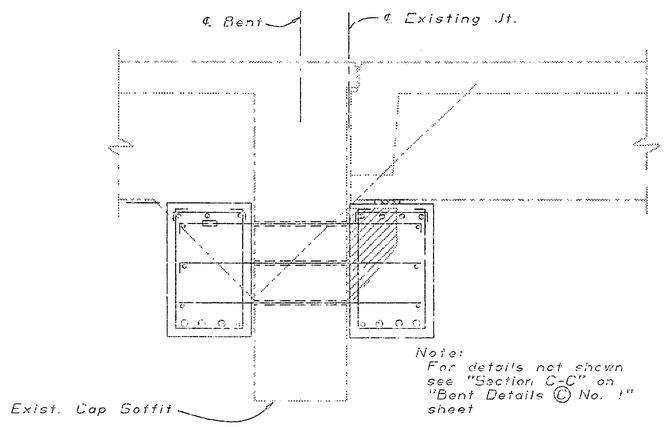


SECTION G-G
3/8" = 1'-0"

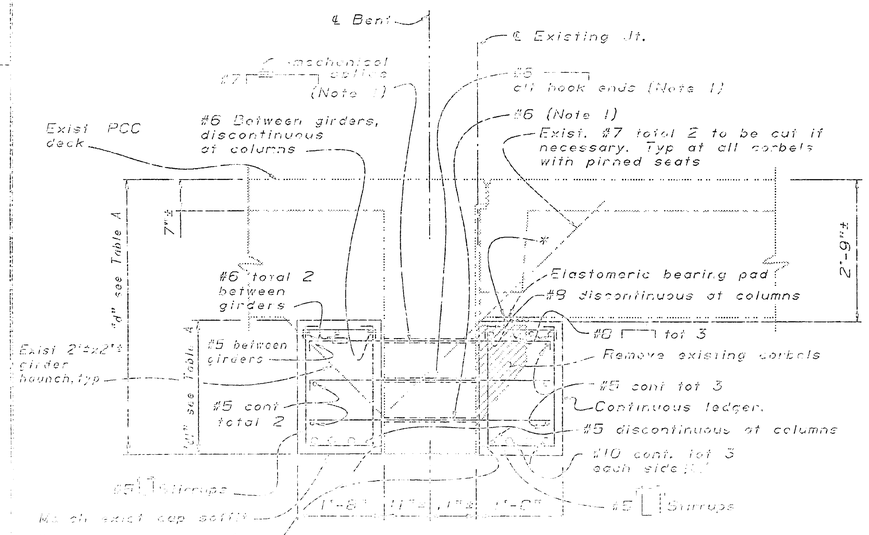
NOTES:

1. For "Dowel Layout" see "Bent Cap Retrofit" sheets. Dowels to be placed thru drilled holes in existing bent cap.
2. For location of "Sections G-G, J-J, and K-K" see "Bent Cap Retrofit" sheets.
3. Hinge Restrainers not shown.

Indicates limits of concrete removal.

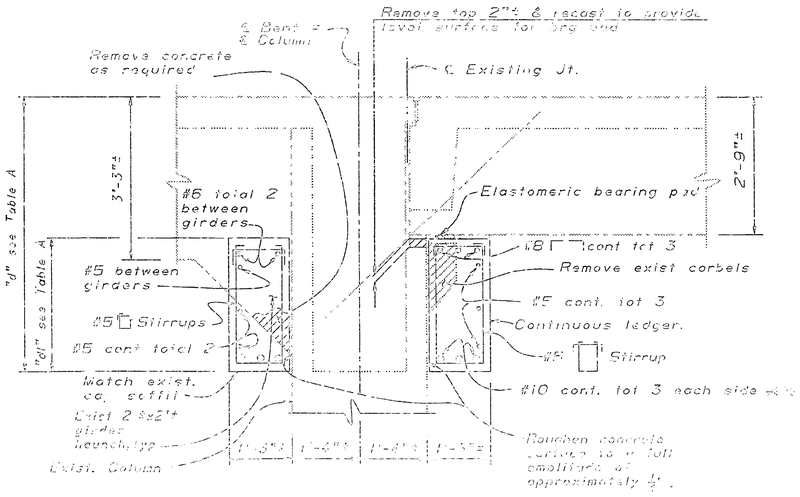
Indicates existing structure.

** For location of longitudinal #10 bottom layer reinforcement see "Dowel Splice" detail "B" on "Bent Cap Det. No. A" sheet.



SECTION J-J
3/8" = 1'-0"

* Steel plate anchored to stringer to match in place at all corbels with plate bearings (steel and bronze plate).



SECTION K-K
3/8" = 1'-0"

TABLE A

Bents	"d"	"d1"
13, 15 & 17	5'-3"±	2'-8"±
19, 21, 23 & 25	5'-0"±	2'-2"±
27	5'-1 1/2"±	2'-3 1/2"±
33, 37, 39, & 35	5'-0"±	2'-2"±
29, 31	[illegible]	[illegible]

NOTE:
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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/18.9	80	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

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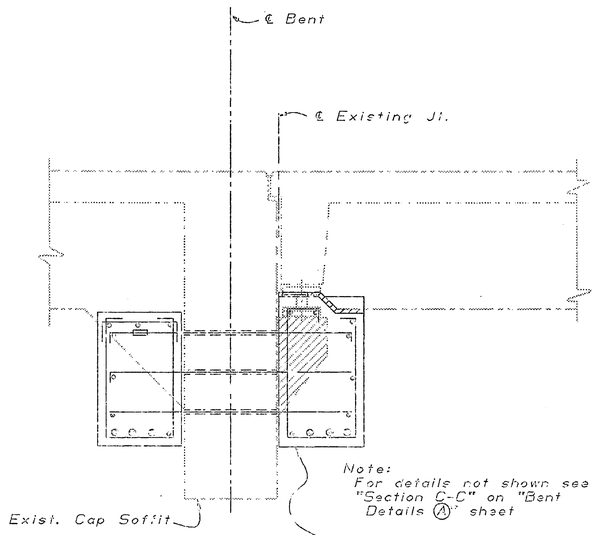


SECTION G-G
$\frac{3}{8}$" = 1'-0"

NOTES:

1. For "Dowel Layout" see "Bent Cap Retrofit" sheets. Dowels to be placed thru drilled holes in existing bent cap.
2. For location of "Sections G-G, J-J and K-K" see "Bent Cap Retrofit" sheets.
3. Hinge Restrainers not shown.

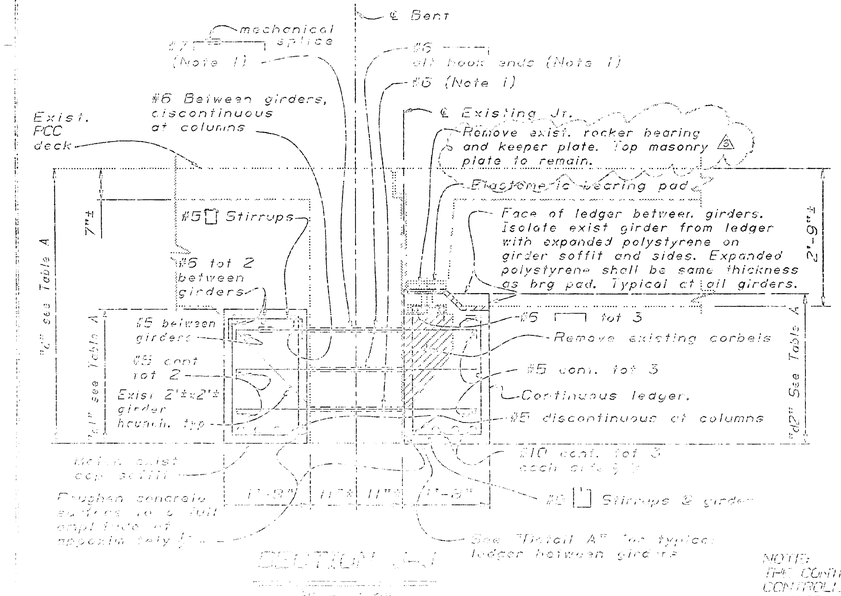
Indicates limits of concrete removal.

Indicates existing structure.

[illegible] "Elevation A-A" on "Bent Cap Retrofit" sheet.

TABLE A

Bents	"d"	"d1"	"d2"
14, 16 & 18	5'-6"±	2'-8"	3'-0½"±
20, 22, 24 & 26	5'-0"±	2'-2"	2'-0½"±
28	5'-1½"±	2'-3½"	2'-8"±
41	4'-7½"±	1'-9½"	2'-2"±



SECTION J-J
$\frac{3}{8}$" = 1'-0"

NOTE:
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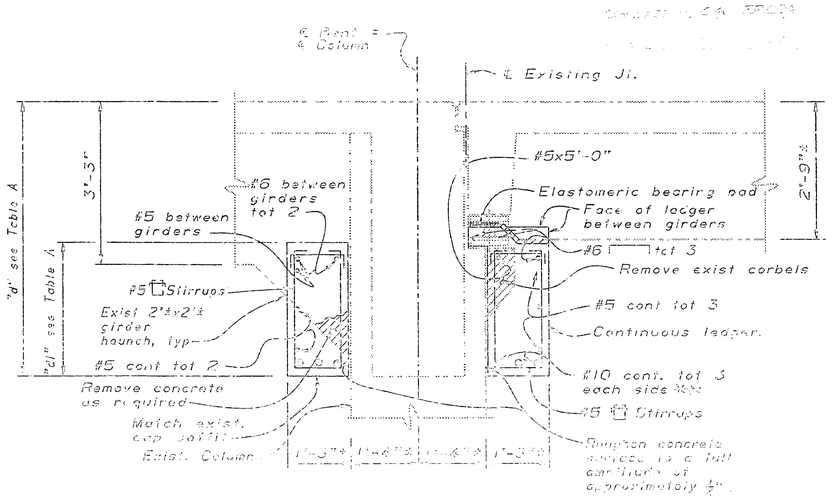
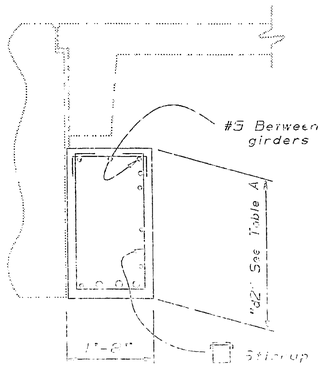


SECTION K-K
$\frac{3}{8}$" = 1'-0"



DETAIL A
$\frac{3}{8}$" = 1'-0"

Note: "Detail A" typ. between girders

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.5/8.9	81	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-95
CIVIL
STATE OF CALIFORNIA

10-24-94
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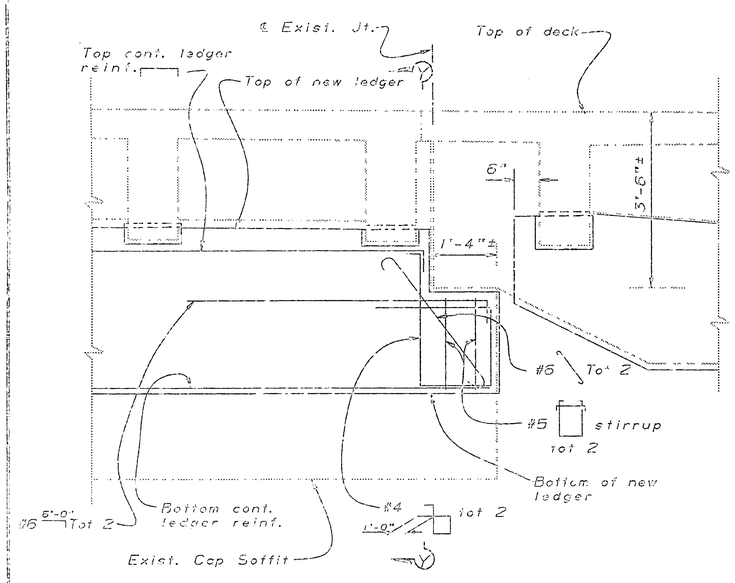
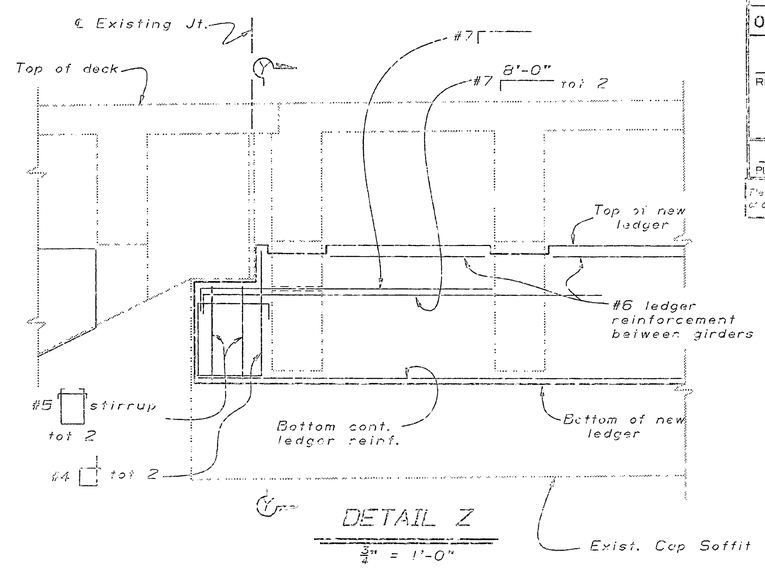
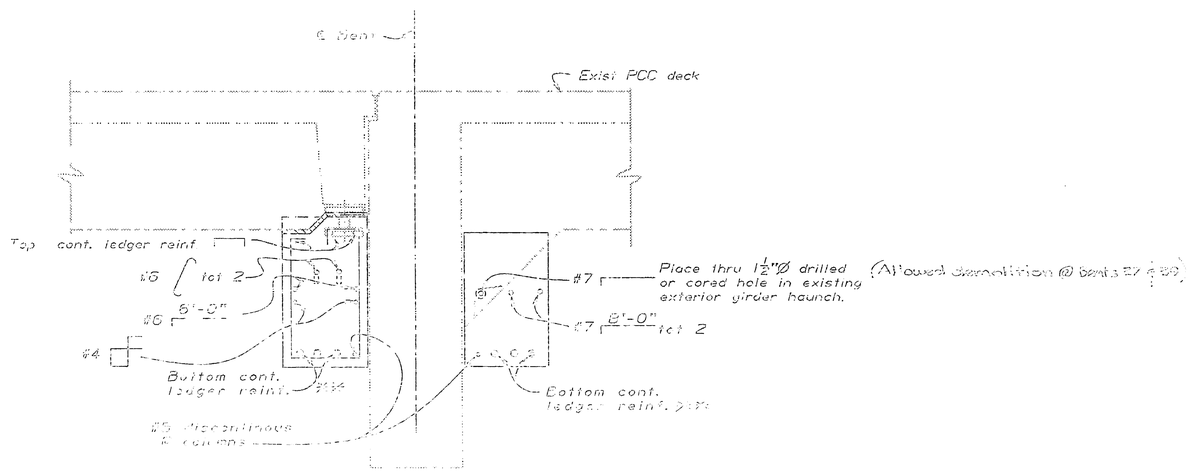


DETAIL X
3/4" = 1'-0"

Note:
For reinforcement not shown see "Bent Cap Retrofit" sheets



DETAIL Z
3/4" = 1'-0"



SECTION A-A
3/4" = 1'-0"

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	82	107

REGISTERED ENGINEER - CIVIL

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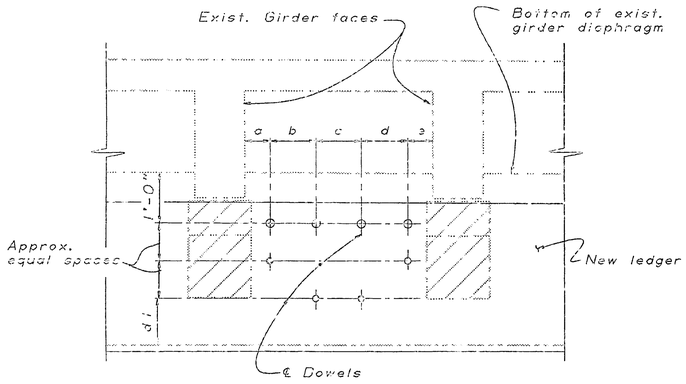
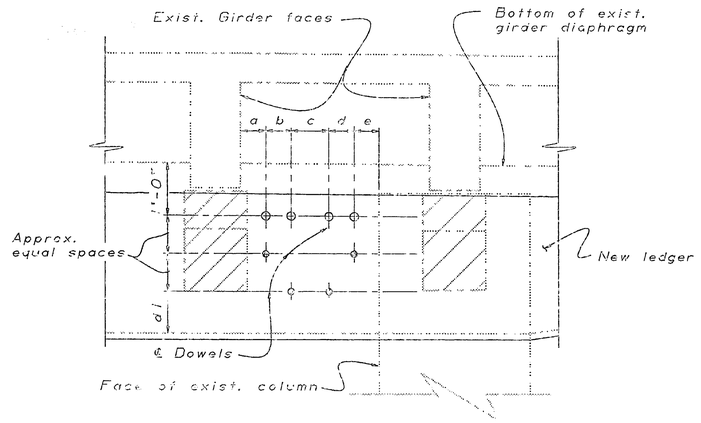


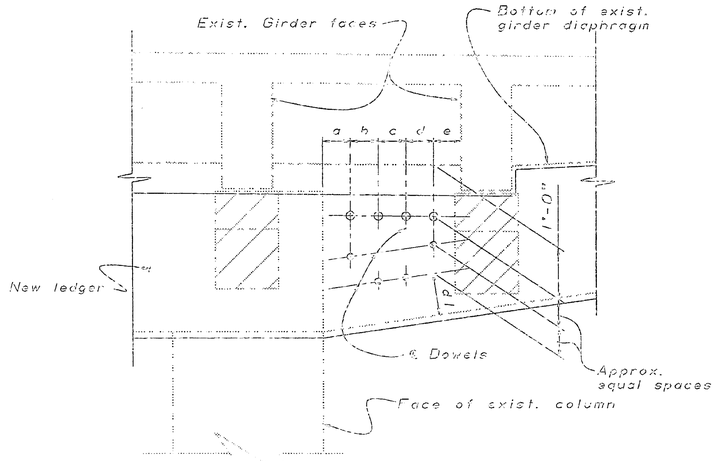
DOWEL PATTERN A

3/4" = 1'-0"



DOWEL PATTERN B

3/4" = 1'-0"



DOWEL PATTERN C

3/4" = 1'-0"

Notes:

1. Location of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars. Final hole locations are subject to the approval of the Engineer.
2. Dimensions measured normal to girder. Place intermediate dowels at approximately equal spacing between exterior dowels. Drilled holes shall be placed normal to ℄ bent.
3. New ledgers shown are typical for bents with existing plate bearing seats. New ledger at bents with existing roller bearing seats are similar.

○ Indicates #7 dowel in $1\frac{1}{8}$"Ø drilled hole.

● Indicates #6 dowel in 1"Ø drilled hole.

TABLE A

#Dowel Pattern	d1	a	b	c	d	e
A1	6"	6"	9"	1'-3"	9"	6"
A2	9"	6"	9"	1'-3"	9"	6"
A3	12"	6"	9"	1'-3"	9"	6"
A4	6"	9"	9"	9"	9"	9"
A5	9"	9"	9"	9"	9"	9"
A6	12"	9"	9"	9"	9"	9"
A7	6"	4"	9"	1'-6"	7"	8"
A8	6"	8"	9"	1'-1"	11"	7"
A9	6"	6"	5"	6"	1'-10"	5"
A10	5"	9"	7"	1'-2"	10"	5"
A11	5"	6"	6"	11"	7"	1'-04"
A12	5"	8"	6"	6"	7"	7"
A13	6"	3"	6"	6"	6"	3"
A14	6"	5"	5"	6"	6"	1'-2"
A15	5"	6"	6"	8"	7"	5"
A*1	6"	10"	See Note 2			10"
A*2	9"	10"	See Note 2			10"
B1	6"	9"	6"	5"	8"	3"
B2	9"	9"	6"	5"	8"	3"
B3	6"	6"	5"	7"	6"	8"
B4	9"	5"	6"	7"	6"	8"
B5	9"	5"	8"	4"	8"	8"
B6	6"	5"	6"	9"	5"	8"
B7	9"	5"	6"	9"	5"	8"
B8	6"	4"	8"	8"	6"	7"
B9	9"	4"	6"	10"	6"	7"
B10	6"	5"	9"	3"	7"	8"
B11	9"	5"	9"	9"	5"	5"
B12	6"	7"	7"	4"	6"	9"
B13	9"	7"	7"	4"	6"	9"
B14	6"	7"	6"	9"	5"	6"
B15	6"	4"	10"	5"	6"	8"
B16	6"	5"	6"	7"	8"	7"
B17	6"	6"	4"	5"	1'-3½"	-
B18	6"	5"	4"	6"	"	-
B19	6"	5"	4"	5"	-	-
B20	6"	6"	4"	3½"	-	-
B21	6"	6"	6"	10"	8"	6"
B22	6"	3"	6"	3½"	-	-
B23	6"	3"	3½"	6"	-	-
B24	6"	3"	8"	6"	6"	5"
B25	6"	8"	9"	10"	9"	3½"
B*	6"	10"	See Note 2			10"
C1	6"	6"	7"	5"	6"	9"
C2	9"	6"	7"	5"	5"	6"
C3	6"	6"	6"	8"	5"	6"
C4	9"	8"	6"	8"	5"	8"
C5	6"	7"	8"	5"	8"	8"
C6	9"	7"	8"	6"	8"	8"
C7	6"	4½"	7"	5½"	8"	3½"
C8	6"	6"	7"	6"	8"	8"
C*	6"	10"	See Note 2			10"

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	83	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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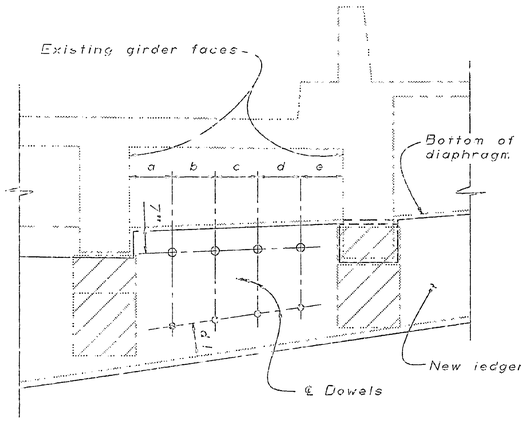
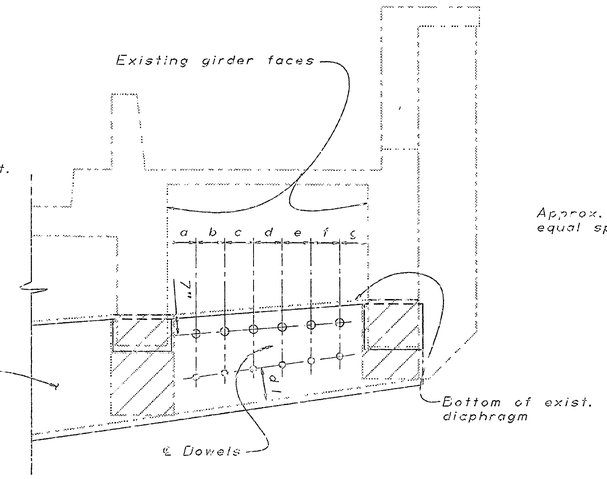


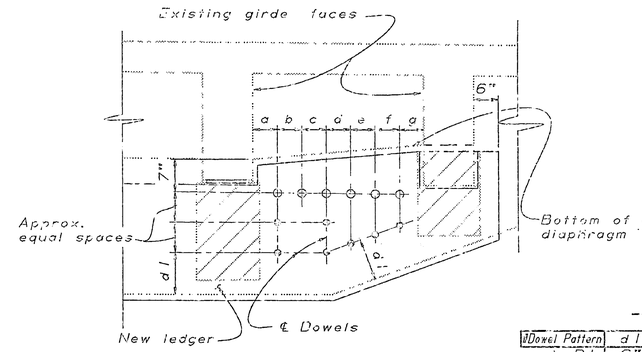
DOWEL PATTERN D

3/4" = 1'-0"



DOWEL PATTERN E

3/4" = 1'-0"



DOWEL PATTERN F

3/4" = 1'-0"

TABLE 6

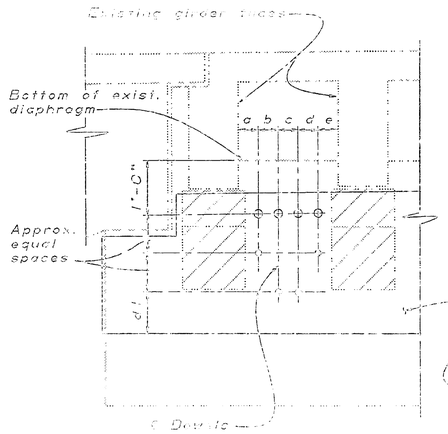
Dowel Pattern	d1	a	b	c	d	e	f	g
D1	6"	6"	7"	1'-4"	8"	6½"	-	-
D2	6"	7"	8"	1'-3"	8"	7"	-	-
D3	6"	6"	7"	1'-4"	8"	5½"	-	-
D*	6"	10"	See Note 2			10"	-	-
E1	6"	3"	7"	7"	10"	11½"	6½"	9"
E2	6"	7"	6"	6"	6"	6"	6"	6½"
E3	6"	7"	5"	7"	5"	7"	5"	6½"
E*	6"	10"	See Note 2					10"
F1	6"	6"	6"	6"	9"	9"	5"	4"
F2	6"	6"	6"	8"	4½"	6½"	6"	6"
F3	9"	6"	6"	8"	4½"	6½"	6"	6"
F4	6"	3"	5"	5"	6"	1'-7"	4"	3"
F*1	6"	10"	See Note 2					10"
F*2	9"	10"	See Note 2					10"
G1	6"	3"	7"	4"	7"	3"	-	-
G*	6"	10"	See Note 2			10"	-	-
H1	6"	6"	4"	4"	6"	-	-	-
H2	6"	7"	4"	4"	6"	-	-	-
H*	6"	10"	See Note 2		10"	-	-	-
I1	6"	6"	9"	9"	6"	3"	-	-
I*	6"	10"	See Note 2			10"	-	-

Notes:

1. Location of drilled holes shown in the plans are approximate. Prior to placing holes in concrete, the Contractor shall locate all reinforcing steel and adjust the location of the holes to clear all reinforcing bars. Final hole locations are subject to the approval of the Engineer.
2. Dimensions measured normal to girder. Place intermediate dowels at approximately equal spacing between exterior dowels. Drilled holes shall be placed normal to ℄ bent.
3. New ledgers shown are typical for bents with existing plate bearing seats. New ledger at bents with existing rocker bearing seats are similar.

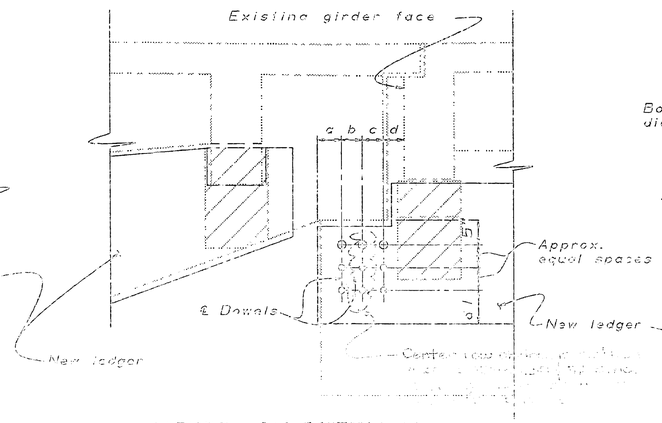
○ Indicates #71 dowel in 1⅛"Ø drilled hole.

○ Indicates #6 dowel in 1"Ø drilled hole.



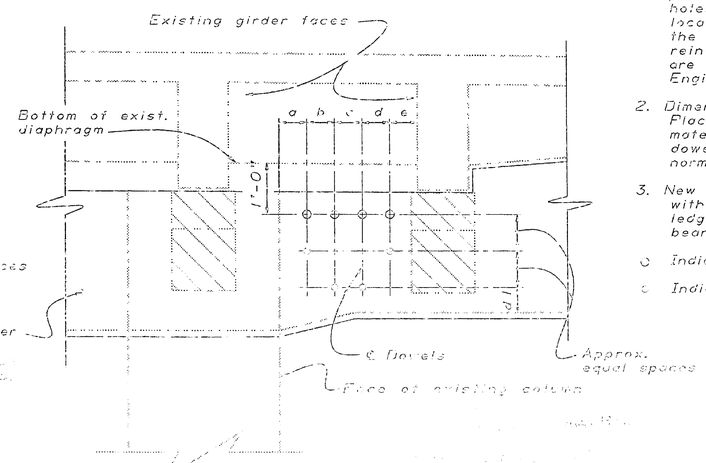
DOWEL PATTERN G

3/4" = 1'-0"



DOWEL PATTERN H

3/4" = 1'-0"



DOWEL PATTERN I

3/4" = 1'-0"

NOTE:
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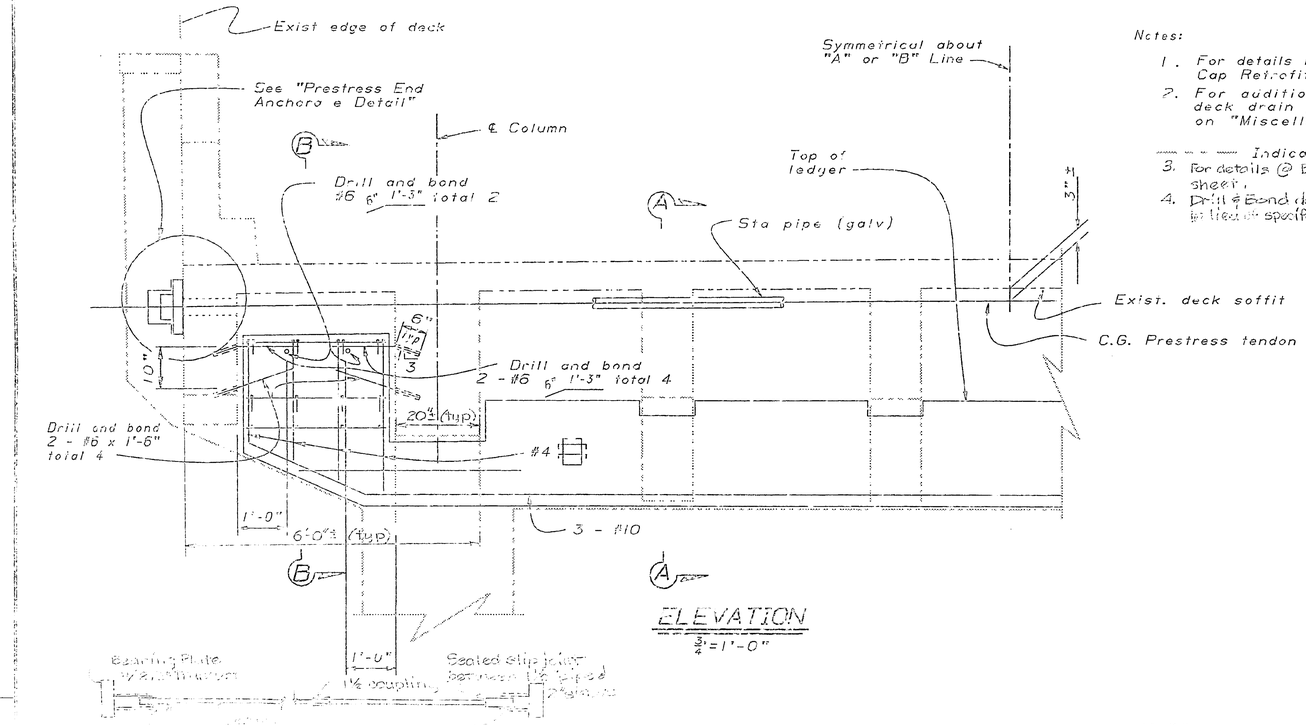
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/3.9	84	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER — Kevin Harper — No. 42221 — Exp. 3-31-96 — CIVIL — STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE



ELEVATION
¾" = 1'-0"

FIELD FABRICATION INSTALLATION DETAIL FOR P/S DETAIL "A"

Notes:

1. For details not shown see Bent Cap Retrofit sheet.
2. For additional details at locations where existing deck drain pipe is present see "Detail D" on "Miscellaneous Details" sheet
- - - - Indicates existing structure
3. For details @ Bent 2 (North End) see "Bent Cap Retrofit D & G" sheet.
4. Drill & Bond dowels allowed to be bonded w/epoxy cartridge in lieu of specified magnesium phosphate concrete.

PRESTRESSING NOTES

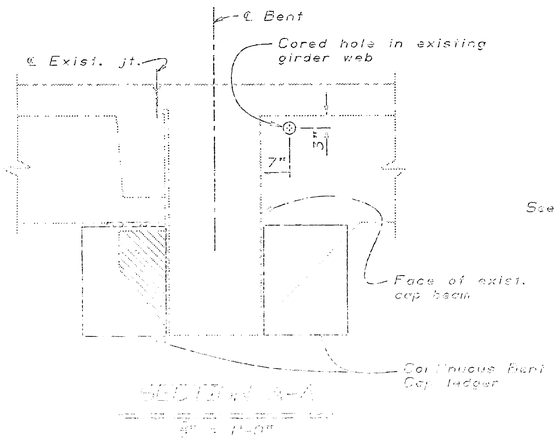
A. Working force, P_f = Total force remaining after all losses, including those due to concrete creep and P/S relaxation have occured.

B. In addition to the creep and relaxation losses shown below, provisions shall be made for losses due to anchorage take-up and any other losses peculiar to the system used. (One end stressing)

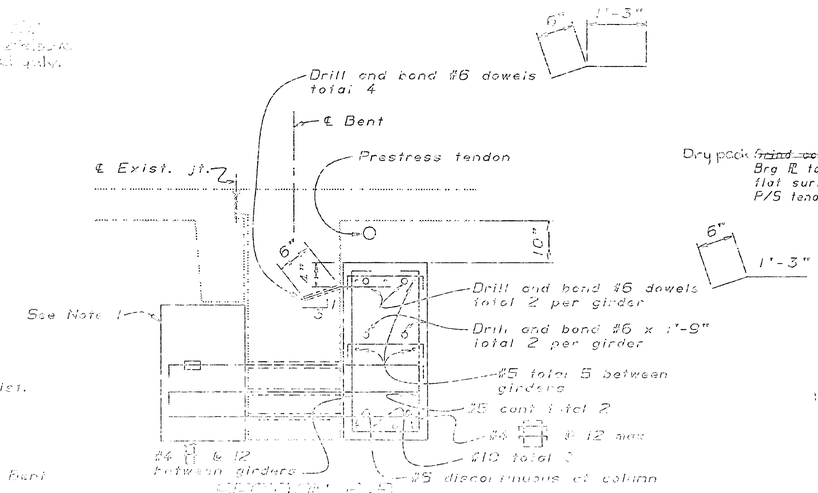
C. Prestressing tendon shall be placed in galvanized pipe as specified and grouted after stressing. Provisions shall be made for elastic shortening during stressing. Tendon inside grout cap shall be grouted and caps left in place.

D. Prestressing force shall not be applied to bent cap until at least 10 days after the concrete ledger has been constructed.

Bent Locations	P_f (Kips)	Assumed losses due to concrete creep & P/S relaxation	Galv. Std. Pipe	Cored hole Dia.	
				Interior Girders	Exterior Girders
A1 Thru A10 B1 Thru B6 B11 Thru B18 B23 Thru B31	75k	6 ksi	1½"Ø	3"Ø 2"Ø	4"Ø 3"Ø
B7 Thru B10 B19 Thru B22	175k	8 ksi	2"Ø	[illegible]	5"Ø

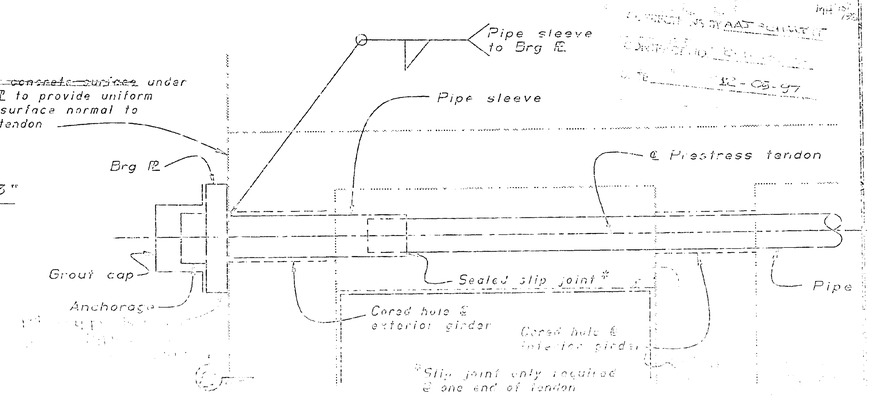


SECTION A-A
¾" = 1'-0"



SECTION B-B
¾" = 1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE DRILLING OR FABRICATING ANY MATERIAL.



PRESTRESS END ANCHORAGE DETAIL
¼" = 1'-0"

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	85	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
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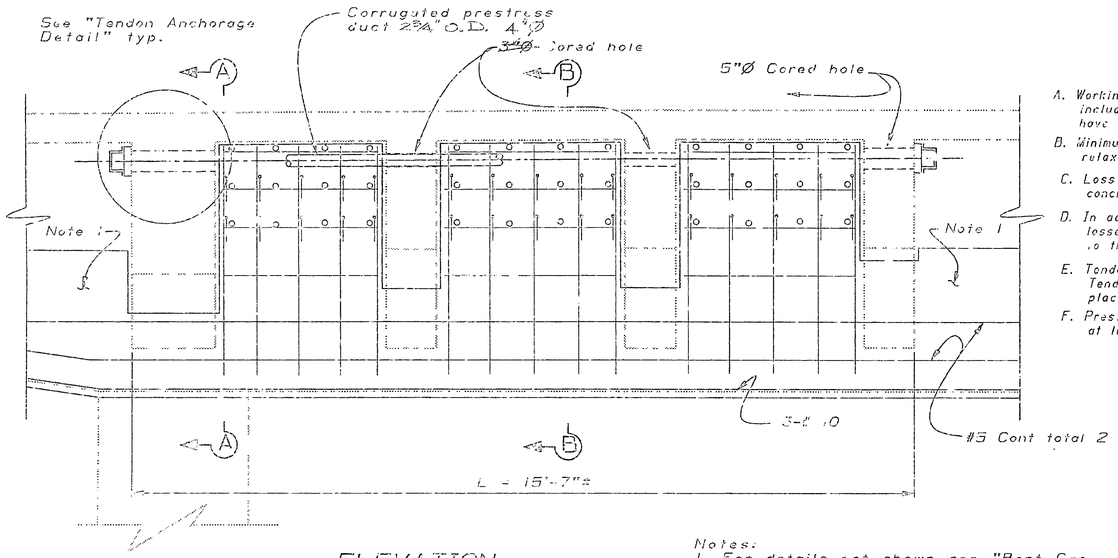


ELEVATION

3/4" = 1'-0"

PRESTRESSING NOTES

A. Working force P_f = 165 KIPS, total force remaining after all losses, including those due to concrete creep and Prestress Steel relaxation, have occured.

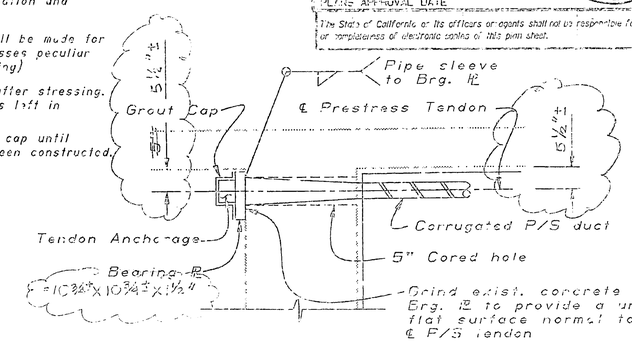
B. Minimum area of prestressing steel, $A_s^* = 1.22\ in^2$ (270 KSI low relaxation strand).

C. Loss in stress in prestressing steel due to relaxation and concrete creep shall be assumed to be 8 KSI.

D. In addition to losses noted above, provisions shall be made for losses due to anchorage take-up and any other losses peculiar to the prestressing system used. (one end stressing)

E. Tendon shall be bonded to concrete by grouting after stressing. Tendon inside grout cap shall be grouted and caps left in place after grouting.

F. Prestressing forces shall not be applied to bent cap until at least 10 days after the concrete ledger has been constructed.

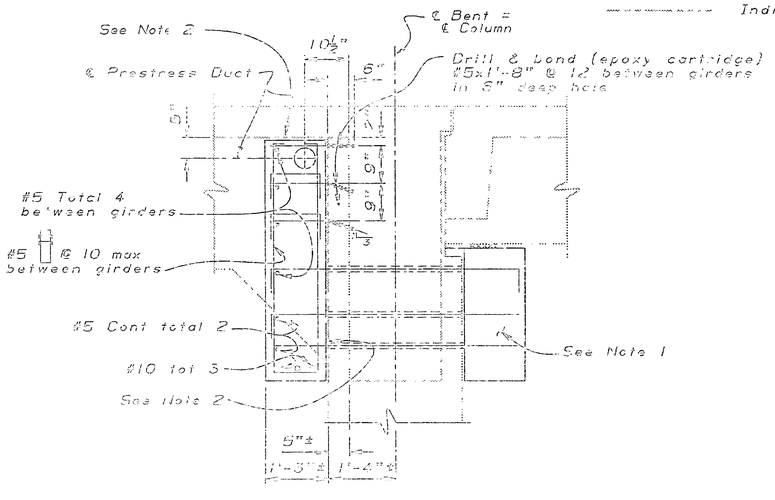


TENDON ANCHORAGE DETAIL

3/4" = 1'-0"

Notes:
1. For details not shown see "Bent Cap Retrofit" sheet.
2. Roughen concrete surface to a full amplitude of approximately 1/4".

Indicates existing structure



SECTION A-A

3/4" = 1'-0"

NOTE
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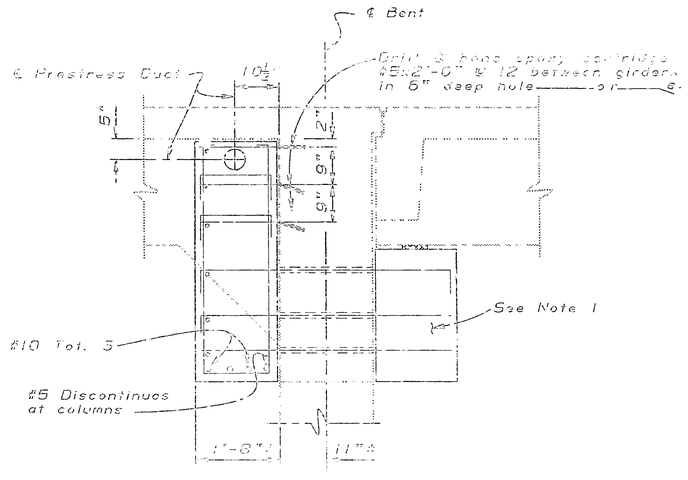

Note: For details not shown see "Section A-A"

SECTION B-B

3/4" = 1'-0"

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	86	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER KEVIN HARPER No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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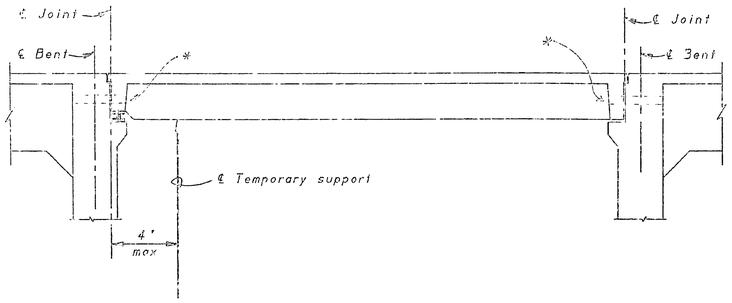


R = 50k/girder

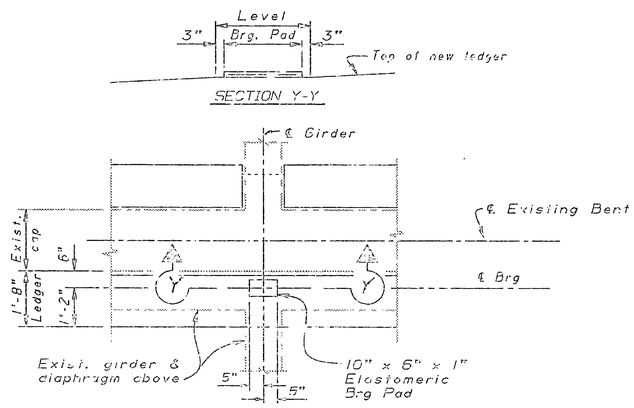
Notes:

1. Support reaction, R, includes dead load + liveload + impact per girder (Service Load).
2. All girders within a span shall be supported on temporary supports prior to removing existing corbels at bent.
3. Only one end of a given span shall be on temporary supports at any one time.
4. The Temporary support shall be designed to resist a lateral Seismic load of 6 kips per girder applied parallel to ℄ of Bent (Service Load). *

* Contractor placed temporary 3½"Ø, 6"Ø, or 8"Ø "Shear pins" (solid or pipe) to resist lateral Seismic load requirement. Often utilized future longitudinal cable restrainer (and holes). Other holes plugged.

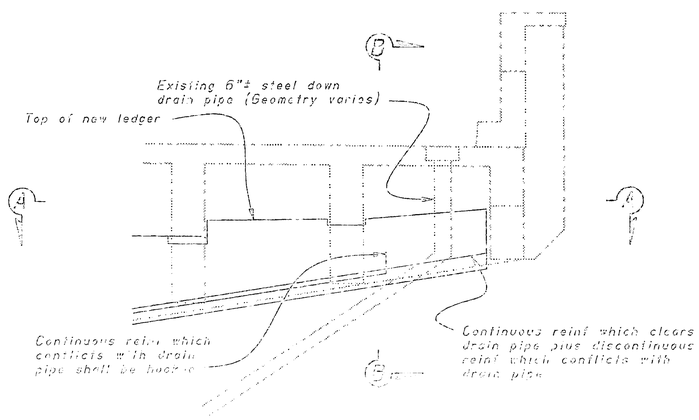
TEMPORARY SUPPORT DIAGRAM

No Scale



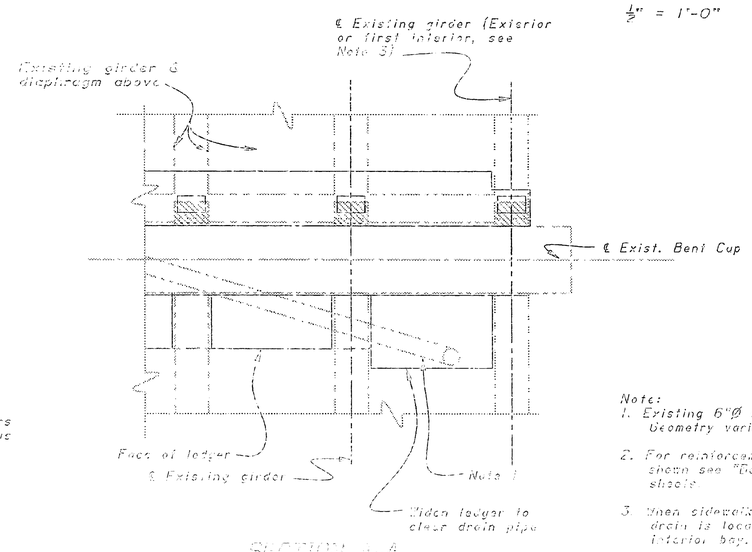
ELASTOMERIC BRG PAD DETAIL

½" = 1'-0"



DETAIL B

½"=1'-0"

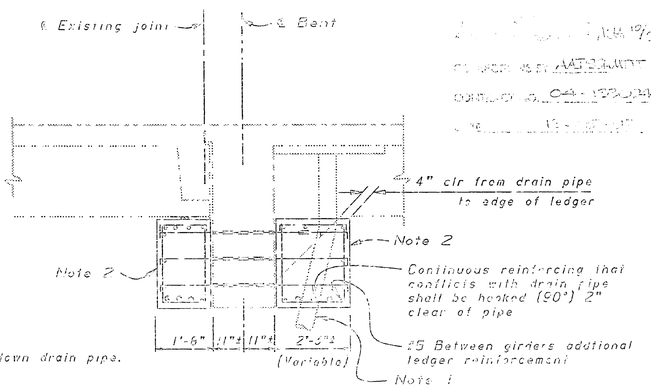


SECTION A-A

½"=1'-0"

Note:
1. Existing 6"Ø steel down drain pipe. Geometry varies.
2. For reinforcement and details not shown see "Bent Cap Retrofit" sheets
3. When sidewalk is present, existing drain is located in the first interior bay.

Indicates existing structure



SECTION B-B

½"=1'-0"

NOTE:
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DESIGN	BY Kevin Harper	CHECKED Paul Swanson	TYPE OF	NUMBER OF CONTRACTORS	DATE
CHECKED	BY Vince Nunnemann	CHECKED Paul Swanson	CONTRACT		
CHECKED	BY Kevin Harper	CHECKED Mike Lewis			

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	3.3/8.9	87	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-94
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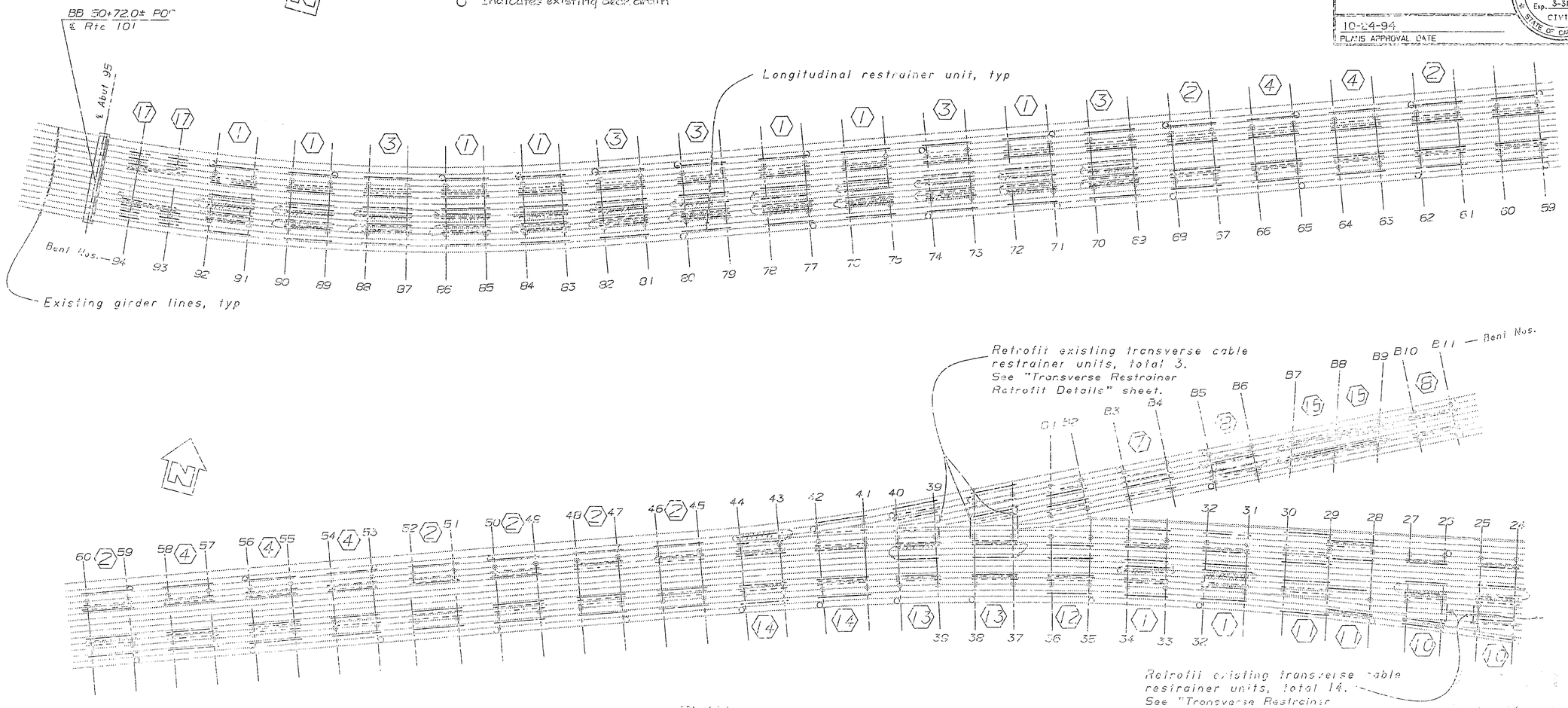
NOTE:

(3) Denotes Hinge Restrainer Layout number
---- Indicates ℄ new restrainer units
- - - - Indicates ℄ existing restrainer units
O Indicates existing deck drain



PLAN
1" = 40'

NOTE:
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04	SF	101	8.3/8.9	88	107

REGISTERED ENGINEER - CIVIL

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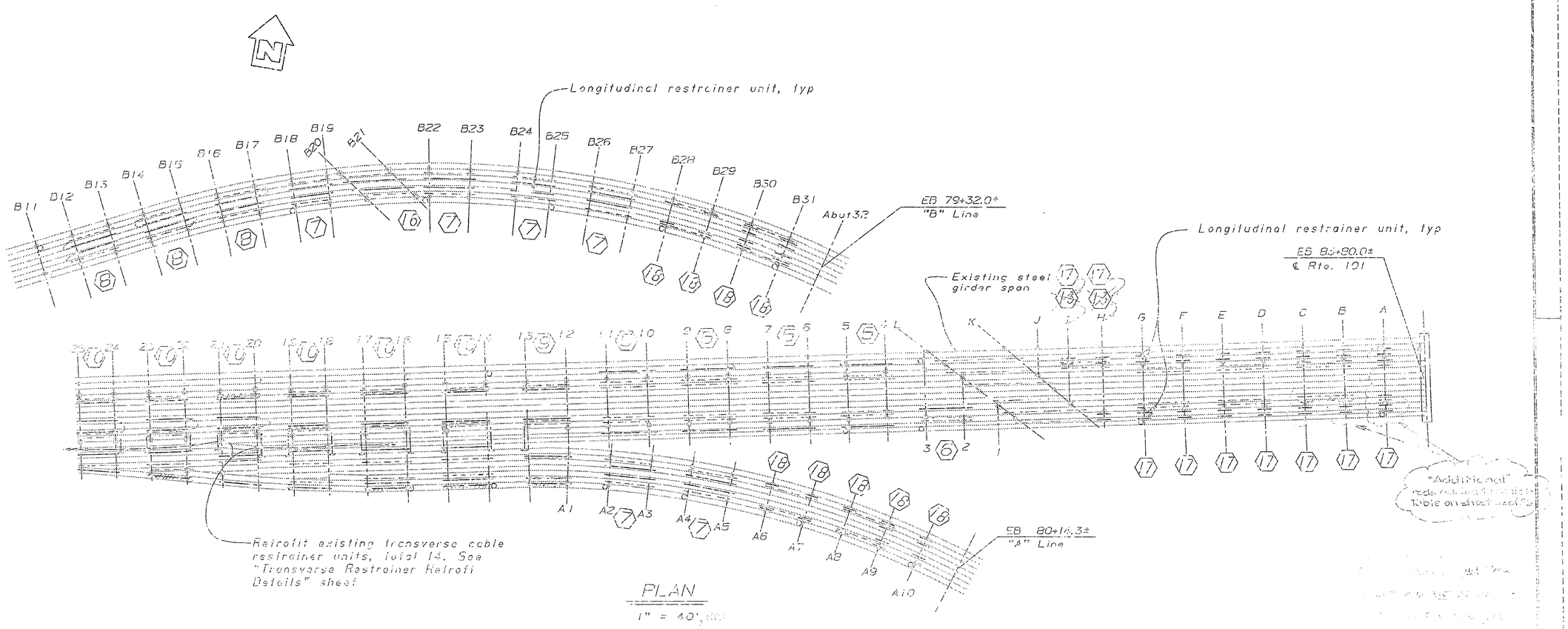
NOTE:

⟨7⟩ Denotes Hinge Restrainer Layout number
—— Indicates ℄ new restrainer units
- - - - Indicates ℄ existing restrainer units
○ Indicates existing deck drain



PLAN
1" = 40'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

EARTHQUAKE RETROFIT PROJECT NO. 10

MARINA VICINITY

DESIGN	Kevin Harper 6-94	Greg Thornton 6-94	STATE OF CALIFORNIA	APPROVAL OF ENGINEERING	ORIGINAL PLAN
DETAILS	Kelly Dempsey 6-94	Greg Thornton 6-94			
REVISIONS	Matt Lee	D. Tran			

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	89	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 3-31-96 CIVIL STATE OF CALIFORNIA

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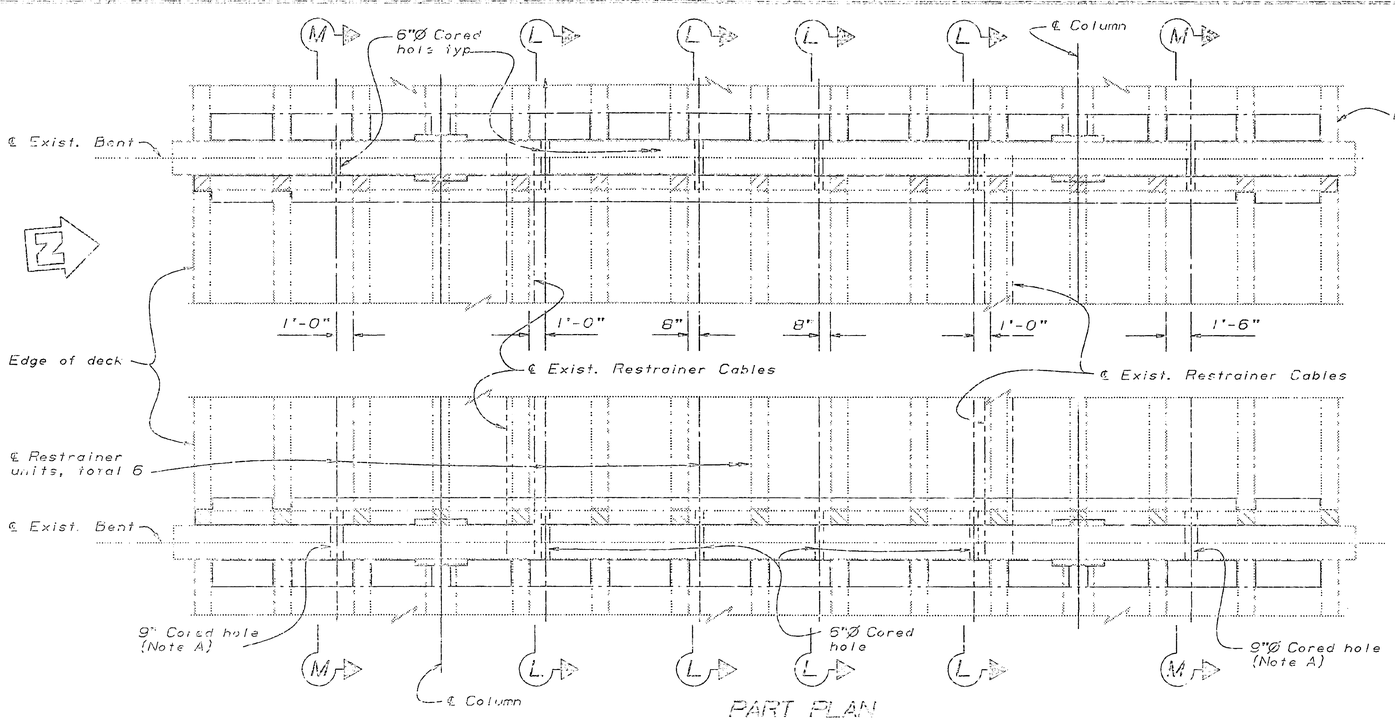
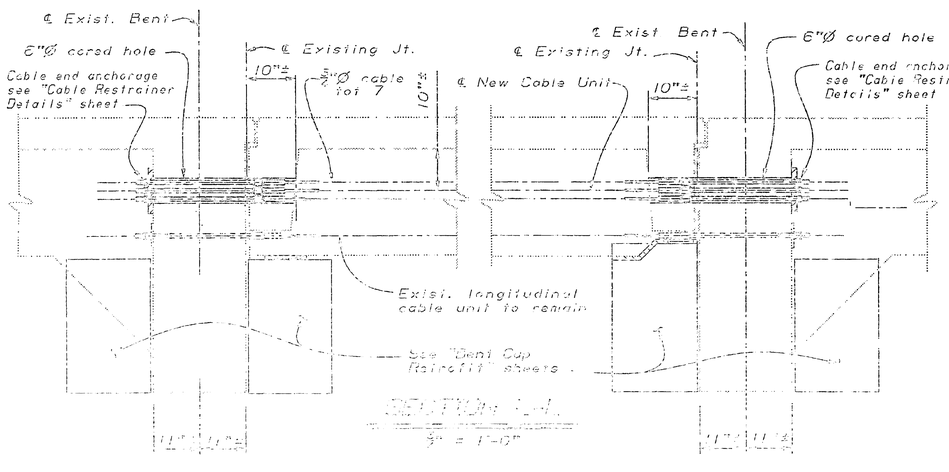
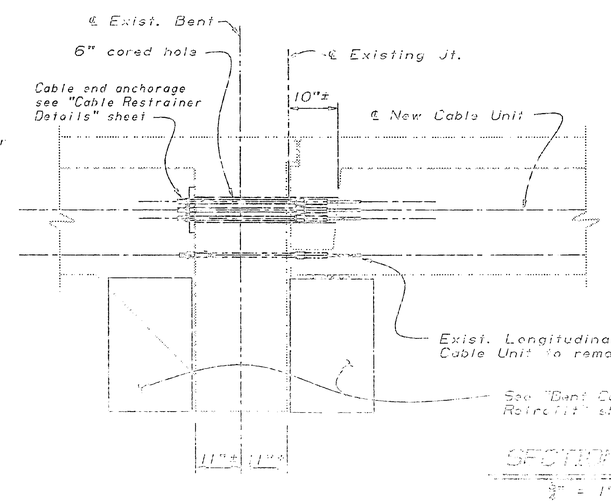


PART PLAN
1/4" = 1'-0"

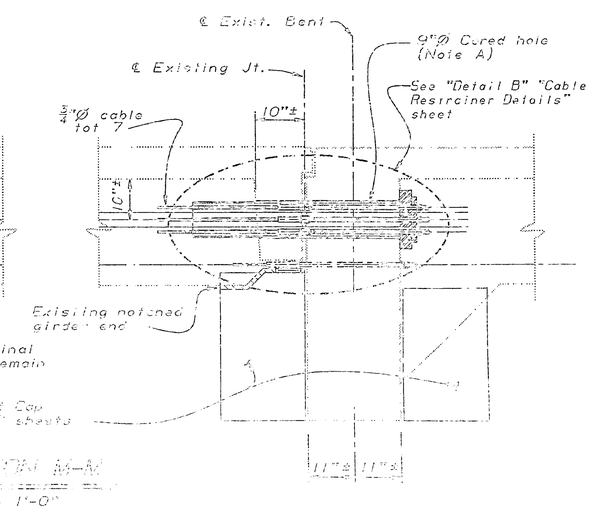
Note: A 9"Ø Cored hole with 8"x-Strong pipe shall be placed at the end of the girder that has been notched (existing)



SECTION L-L
1/4" = 1'-0"



SECTION M-M
1/4" = 1'-0"



DESIGNED Kevin Harper
CHECKED Joe Hanson
QUANTITIES Kevin Harper
Greg Thornton
Greg Thornton
Mike Lewis

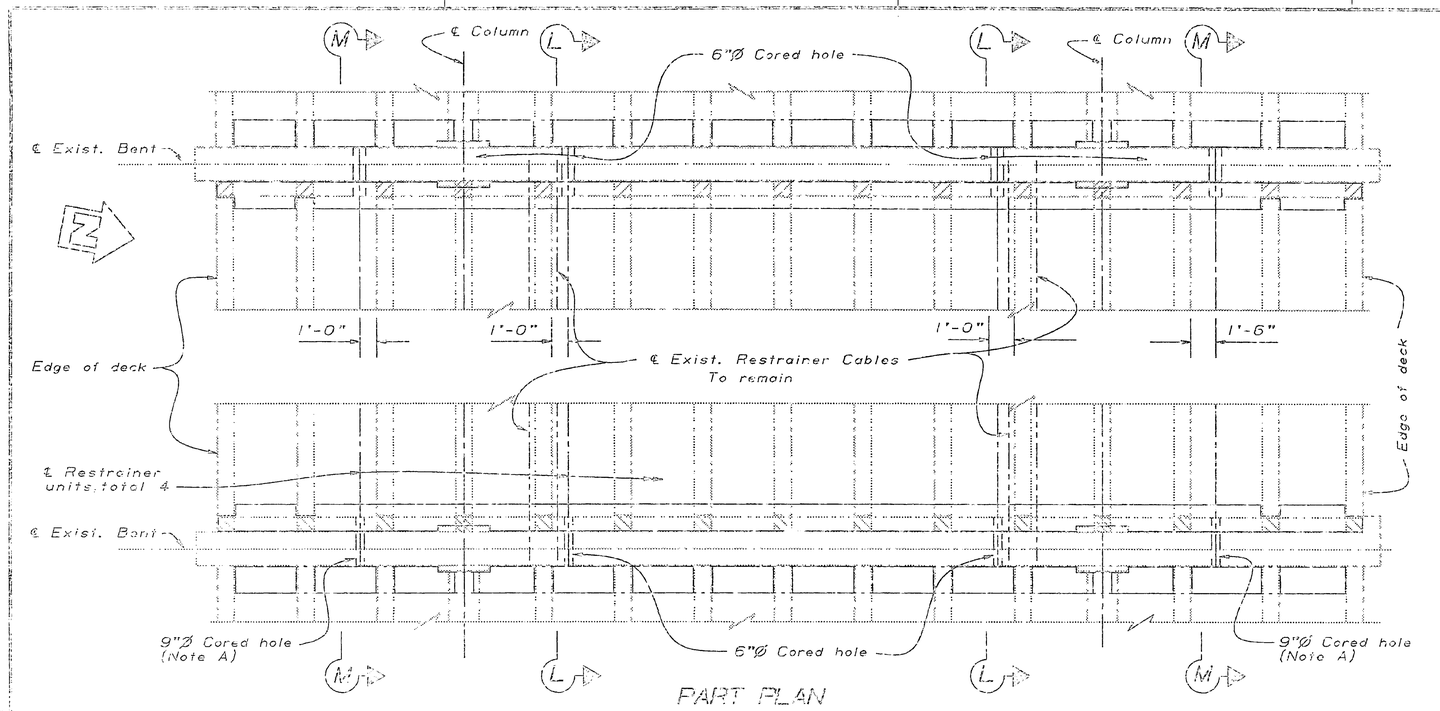
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
SAN FRANCISCO OFFICE

DIVISION OF ENGINEERING SERVICES
SAN FRANCISCO OFFICE

CONTRACT NO. 04-135094

DISTRICT 4
MARIN COUNTY
ROUTE 101
POST MILES 8.3/8.9



PART PLAN

1/4" = 1'-0"

Note: For "Sections L-L and M-M see "Hinge Restrainer Layout 2" sheet

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	90	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
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CIVIL
STATE OF CALIFORNIA

10-24-94
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Note: A 9"Ø Cored hole with 8XX Strong pipe shall be placed at the end of the girder that has been notched (existing)

NOTE:
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04	SF	101	8.3/8.9	91	107

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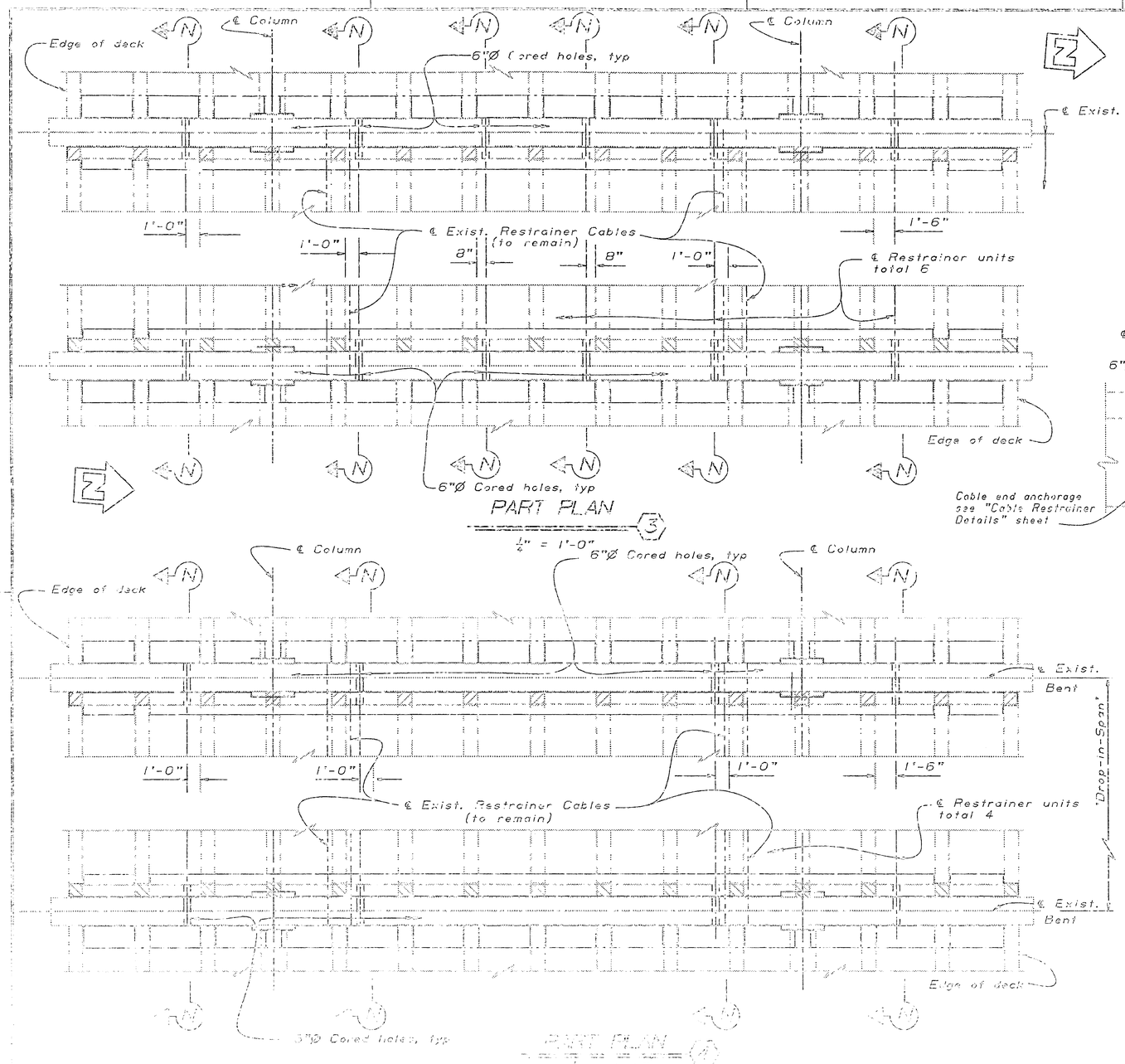
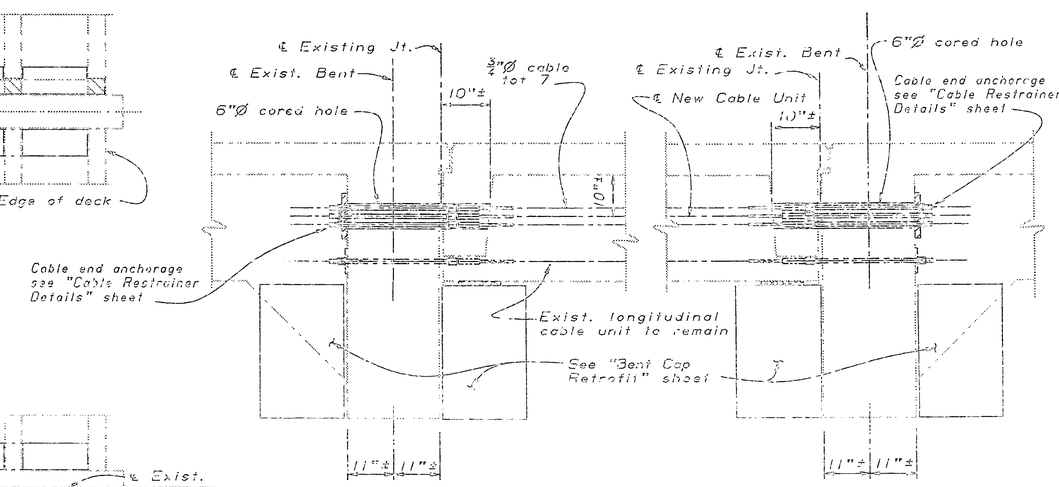


PART PLAN (3)
1/4" = 1'-0"

PART PLAN (4)
1/4" = 1'-0"



SECTION N-N
3/4" = 1'-0"

NOTE:
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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	92	107

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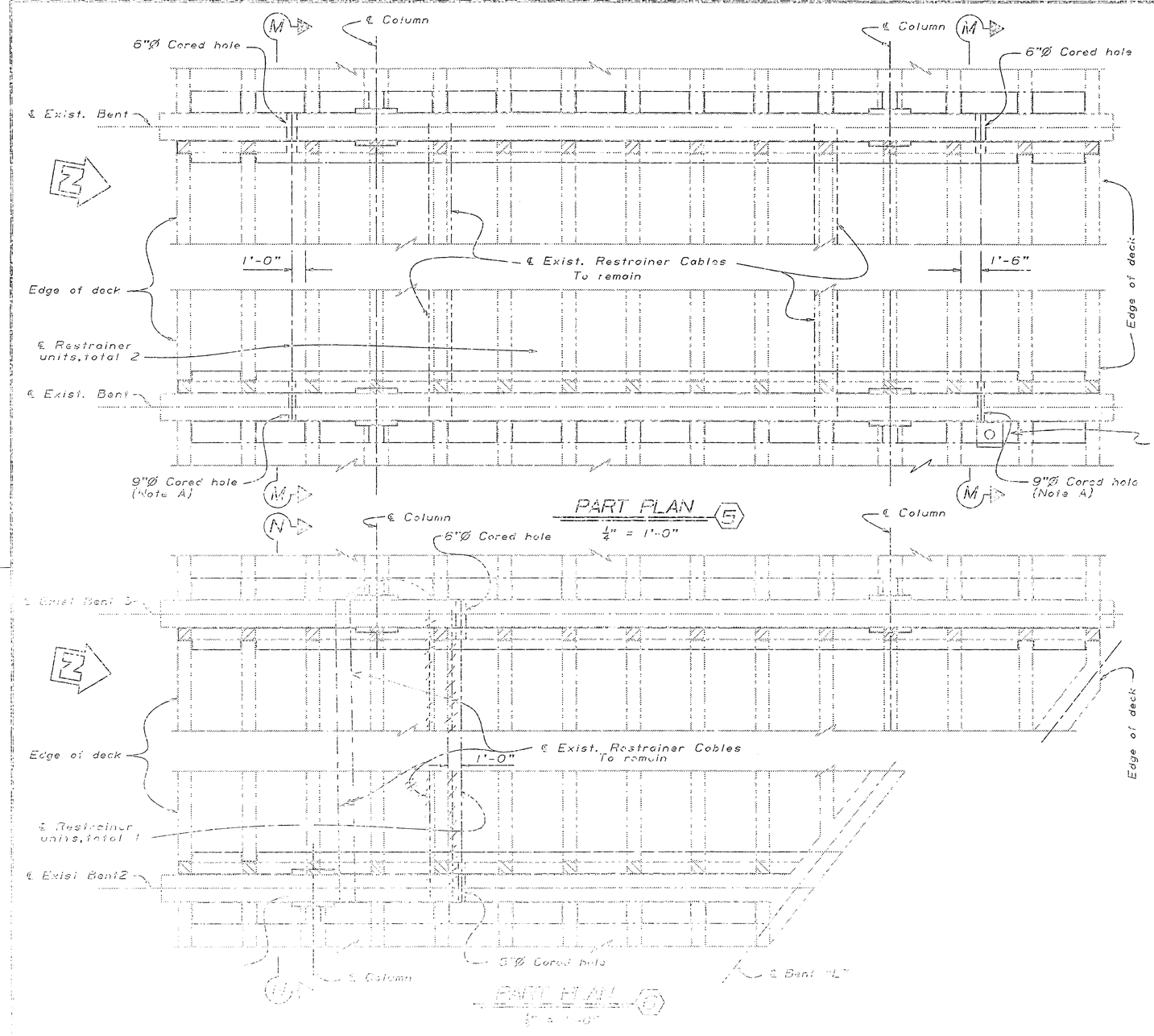

PART PLAN (5)
1/4" = 1'-0"

PART PLAN (6)
1/4" = 1'-0"

Notes:

A. 9"Ø Cored hole with ~~8X~~ 8XX Strong pipe shall be placed at the end of the girder that has been notched (existing)

B. For Section M-M, see "Hinge Restrainer Layout (1)" sheet. For Section N-N, see "Hinge Restrainer Layout (3) & (4)" sheet

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN	Kevin Harper 6-94	CHECKED Greg Thornton 6-94	
CHECKED	Judy Dempsey 7-94	CHECKED Greg Thornton 6-94	
SUBMITTED	Kevin Harper	CHECKED Mike Lee	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	93	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-95
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STATE OF CALIFORNIA

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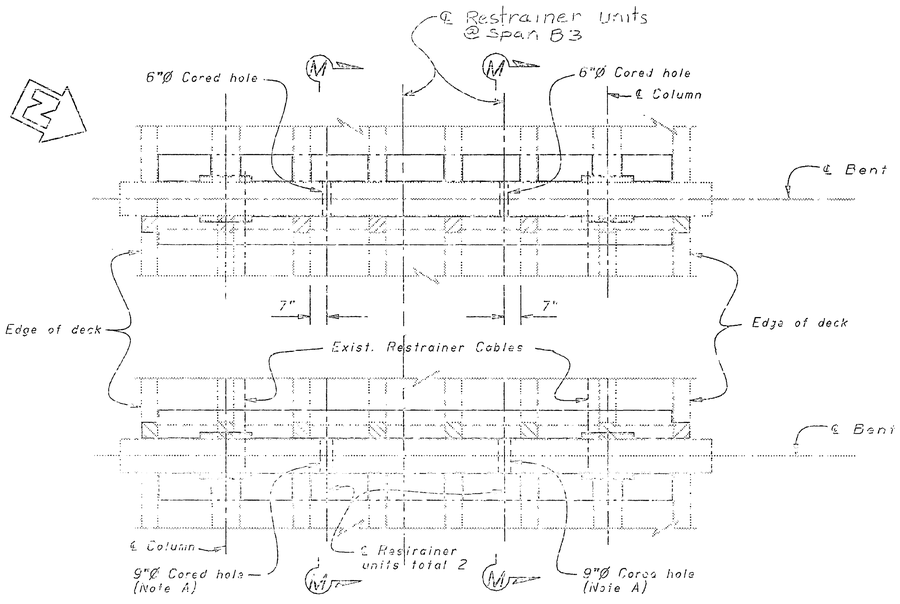
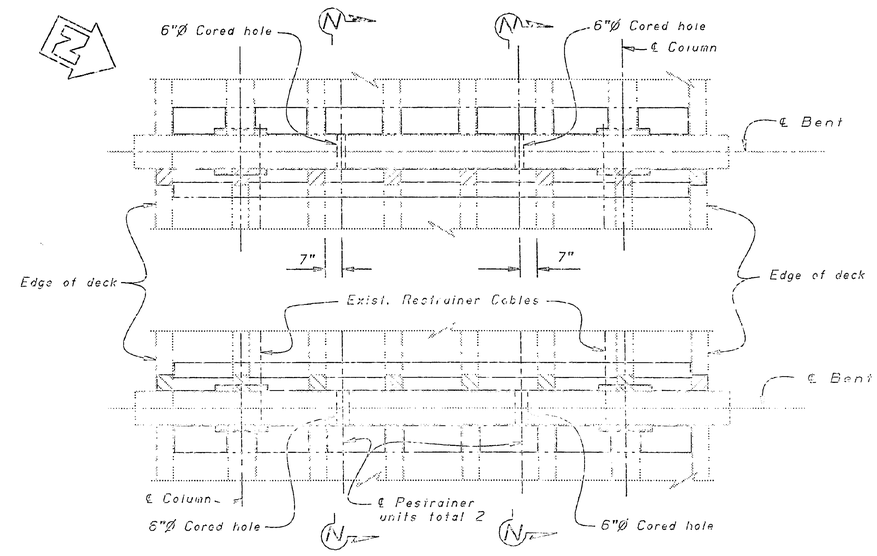


PART PLAN 7
1/4"=1'-0"



PART PLAN 8
1/4"=1'-0"

Notes:

A: 9"Ø Cored hole with Bay-Strong pipe shall be placed at the end of the girder that has been notched (existing)

B: For Section A-A see "Hinge Restrainer Layout 1" sheet

C: For Section N-N see "Hinge Restrainer Layout 6 & 7" sheet

---------- Indicates existing structure

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04	SF	101	8.3/8.9	94	107

REGISTERED ENGINEER - CIVIL

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Kevin Harper
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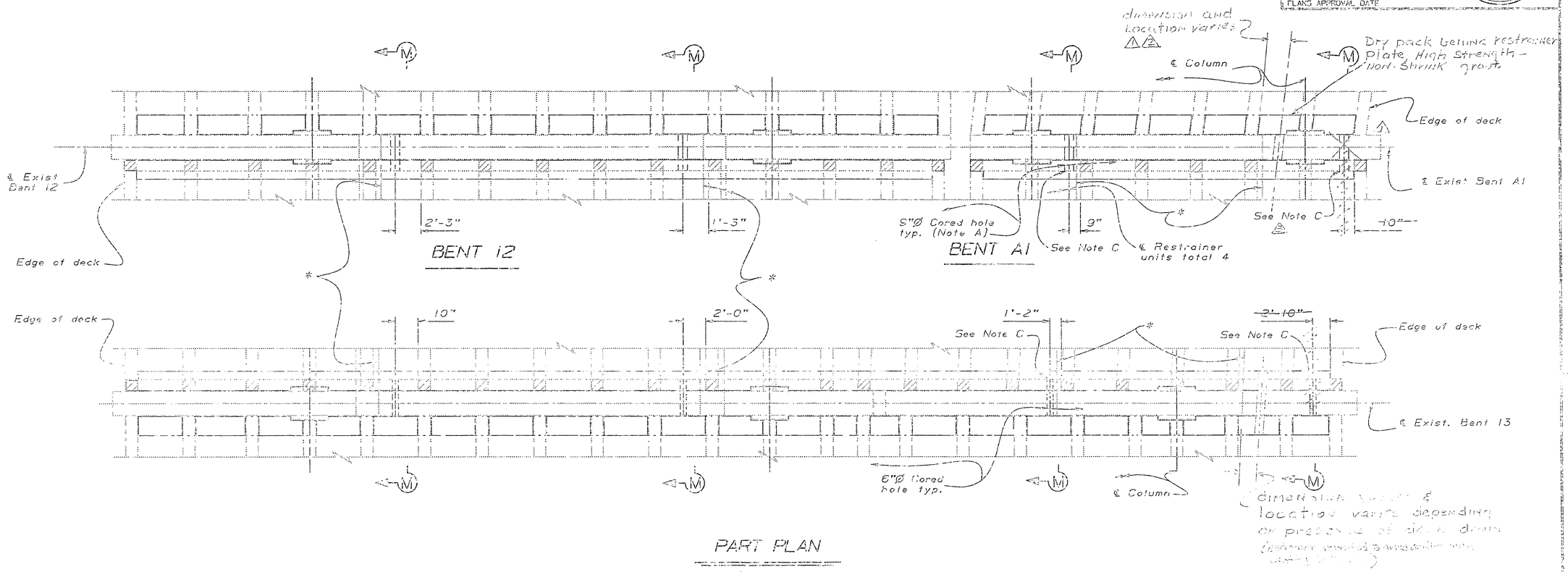

PART PLAN

1/4" = 1'-0"

Note:

A. 5"Ø Cored hole with 8X-Strong pipe shall be placed at the end of the girder that has been patched (existing)

B. For SECTION M-M see "HINGE RESTRAINER LAYOUT (1)" sheet

C. Chip or grind concrete to 4" min radius along cable path

* ℄ Existing restrainer cables (to remain)

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04	SF	101	8.3/8.9	95	107

REGISTERED ENGINEER - CIVIL

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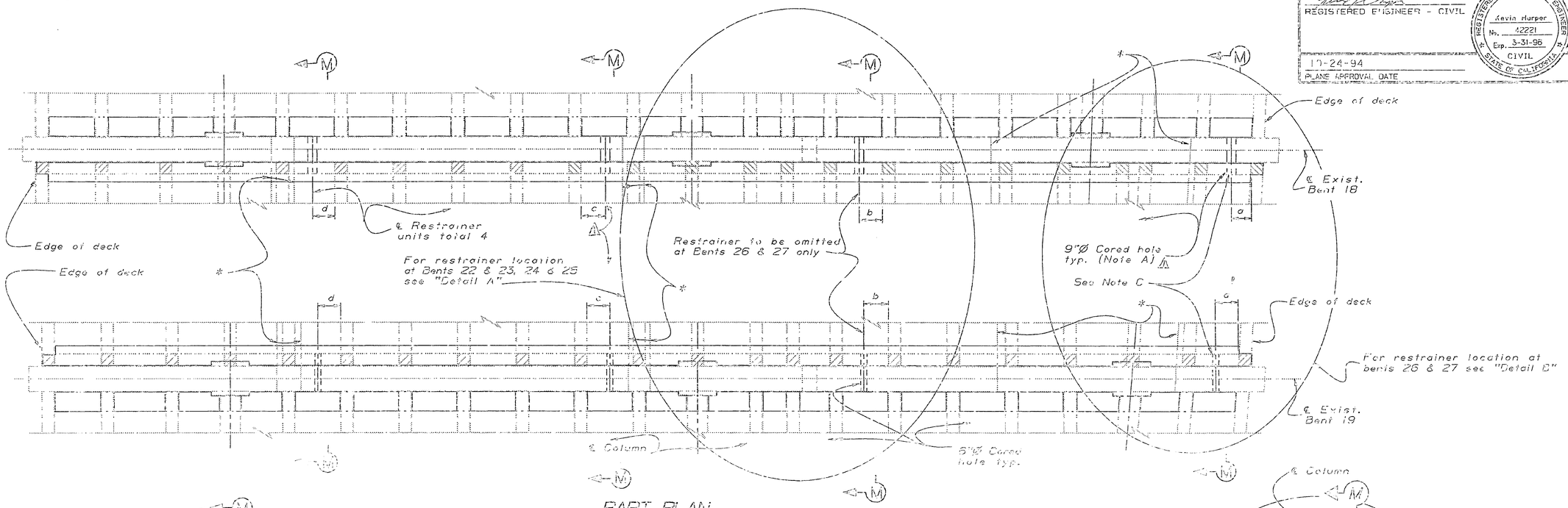
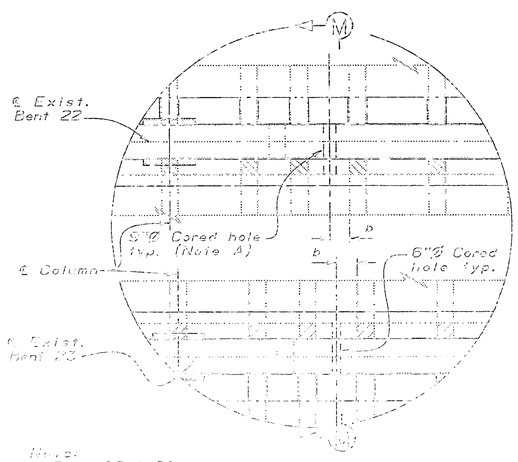


PART PLAN

1/4" = 1'-0"

Note:
Bents 18 & 19 shown, Bents 14 & 15, 16 & 17 and 20 & 21 are similar

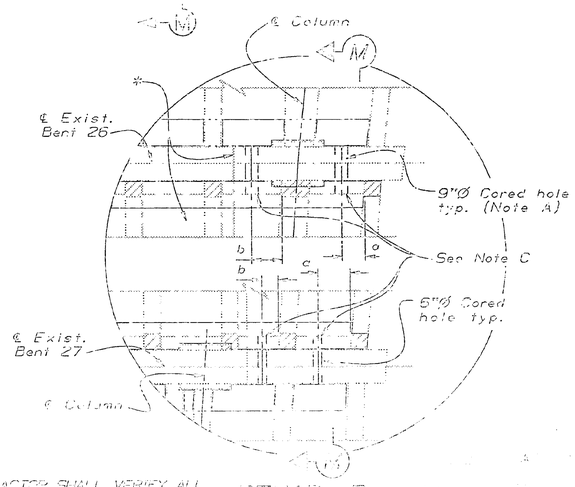
For restrainer offsets see "Table 1"



Note:
Bents 22 & 23 shown
Bents 24 & 25 similar

DETAIL A

1/4" = 1'-0"



DETAIL B

1/4" = 1'-0"

TABLE 1

Bents	a	b	c	d
14	10"	8"	1'-3"	10"
15	10"	8"	1'-3"	10"
16	10"	8"	1'-3"	10"
17	10"	8"	1'-3"	10"
18	9"	8"	1'-3"	10"
19	1'-1"	1'-0"	1'-0"	1'-0"
20	1'-1"	2'-3"	1'-0"	1'-0"
21	1'-0"	1'-3"	1'-3"	10"
22	1'-0"	1'-4"	1'-3"	10"
23	6"	1'-4"	1'-3"	10"
24	6"	1'-4"	1'-3"	10"
25	6"	1'-4"	1'-0"	1'-0"
26	6"	1'-5"	1'-0"	1'-0"
27	8"	8"	1'-5"	8"

Note:
A. 9"Ø Cored hole with ~~XX~~ XX-Strong pipe shall be placed at the end of the girder that has been notched (existing)

B. For SECTION M-M see "HINGE RESTRAINER LAYOUT (1)" sheet

C. Chip or grind concrete to 4" min radius along cable path.

*- ℄ Existing restrainer cables (to remain)

NOTE:
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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	96	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER Kevin Harper No. 42221 Exp. 2-31-96 CIVIL STATE OF CALIFORNIA

10-24-94

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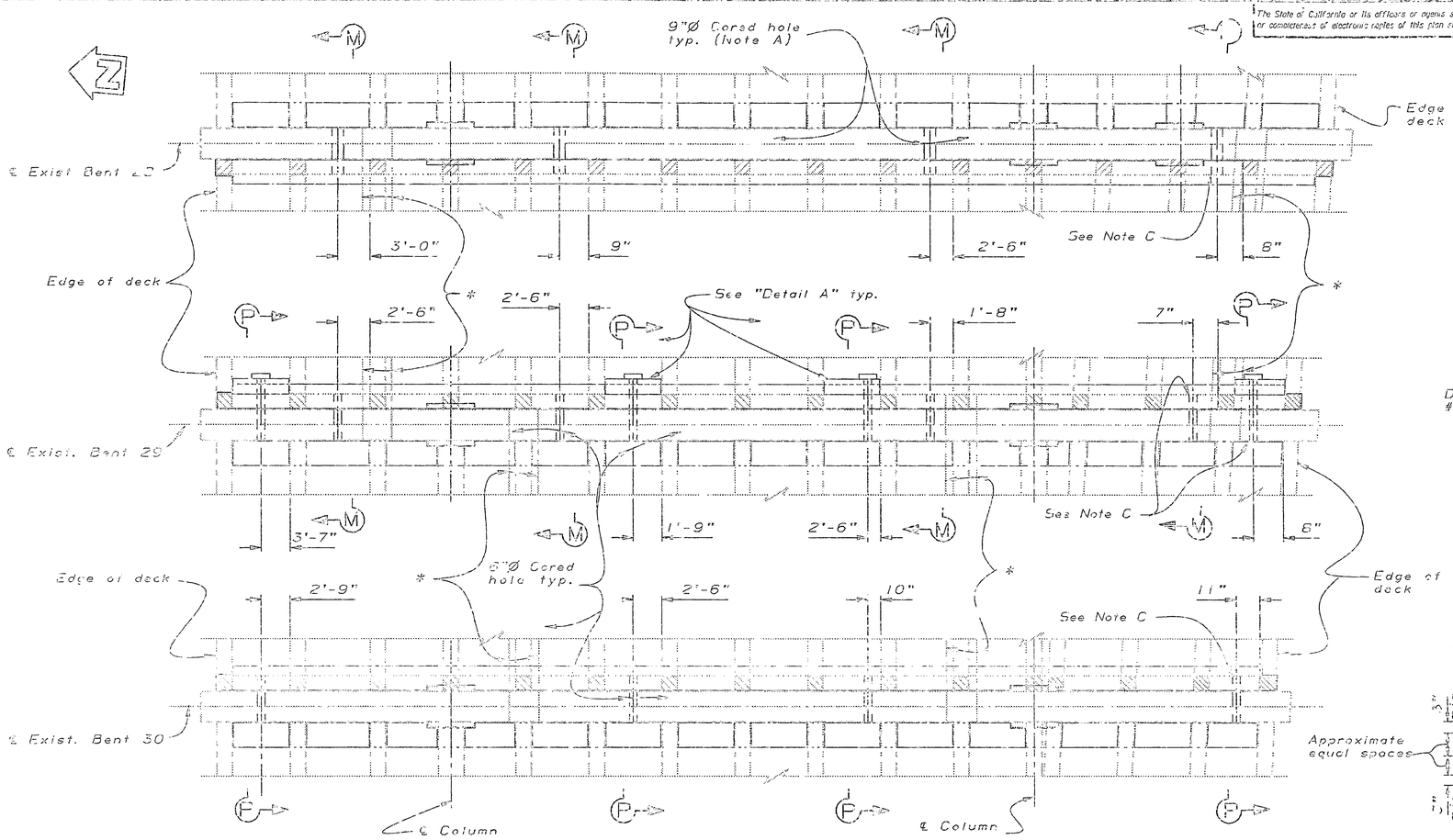
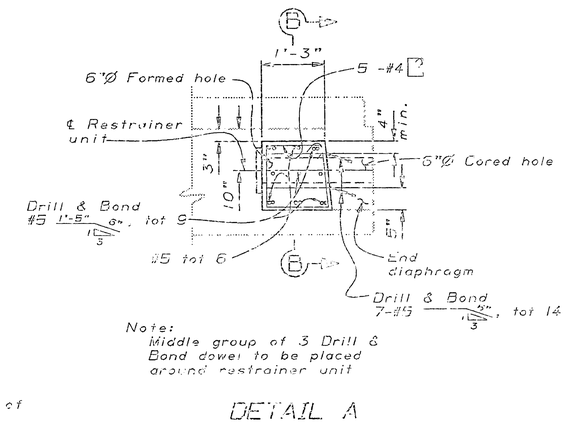


PART PLAN

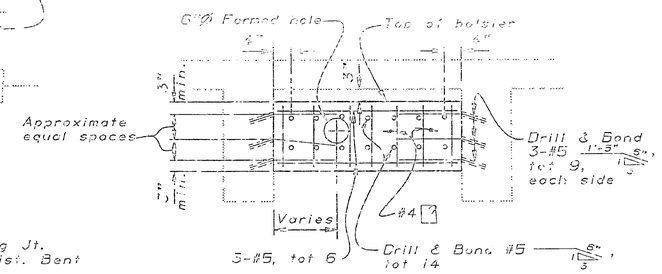
1/4" = 1'-0"



Note:
Middle group of 3 Drill & Bond dowel to be placed around restrainer unit

DETAIL A

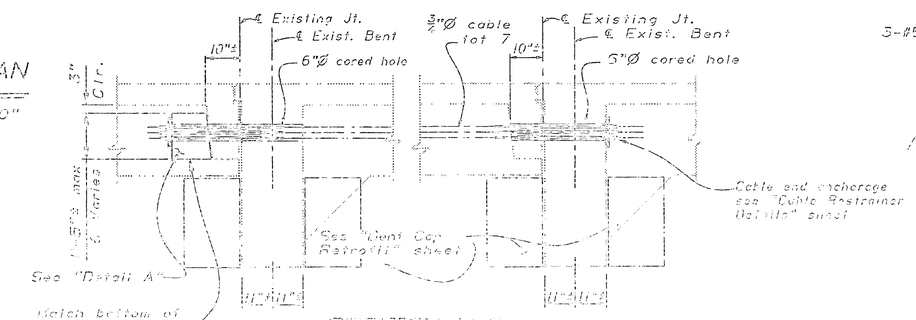
3/4" = 1'-0"



SECTION B-B

3/4" = 1'-0"

(ASE) Drill & Bond dowels allowed to be bonded with epoxy cartridge in lieu of specified magnesium phosphate concrete



SECTION P-P

1/2" = 1'-0"

Note:
A. 9"Ø Cored hole with RX-Strong pipe shall be placed at the end of the girder that has been notched (existing)

B. For SECTION M-M see "HINGE RESTRAINER LAYOUT (1)" sheet

C. Chip or grind concrete to 4" min radius along cable path

*- ℄ Existing restrainer cables (to remain)

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	6.3/8.9	97	107

REGISTERED ENGINEER - CIVIL

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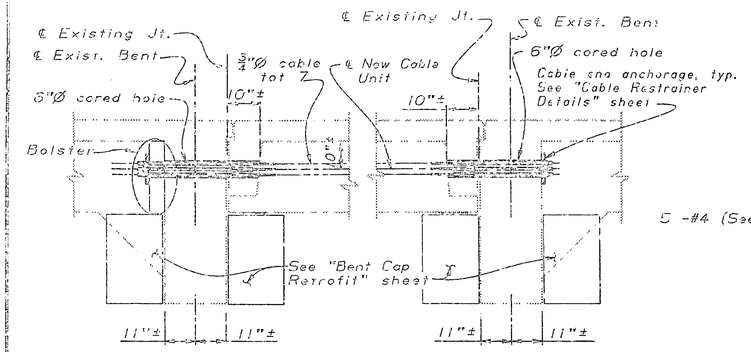
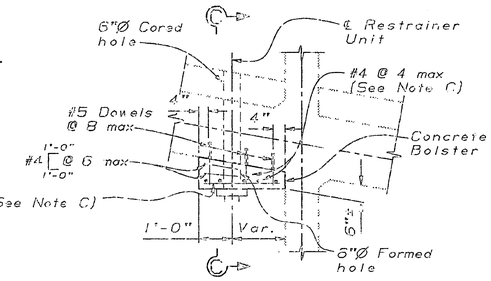
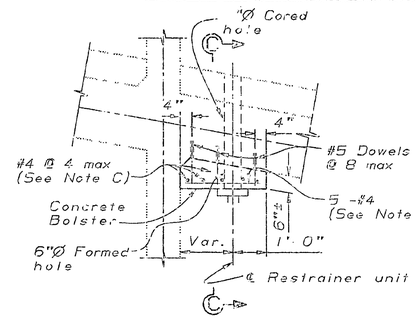


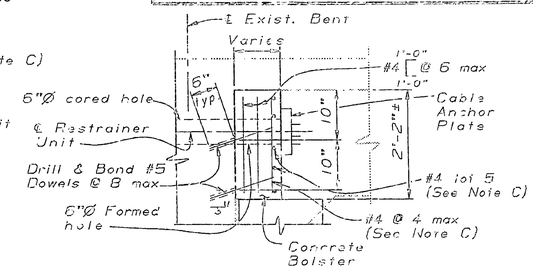
SECTION N-N
3/4" = 1'-0"



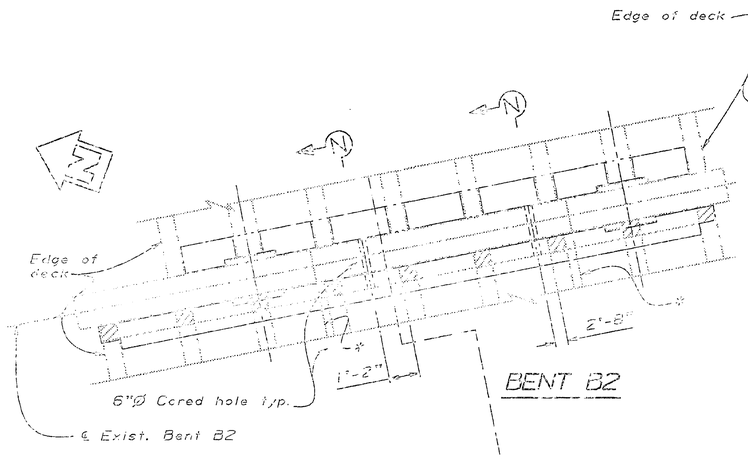
DETAIL A
1/2" = 1'-0"



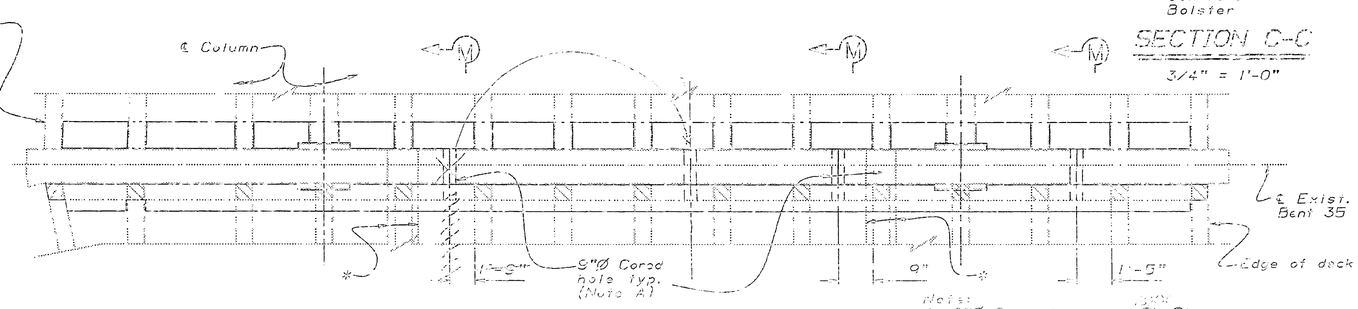
DETAIL B
1/2" = 1'-0"



SECTION C-C
3/4" = 1'-0"



BENT B2



BENT 35

NOTE:
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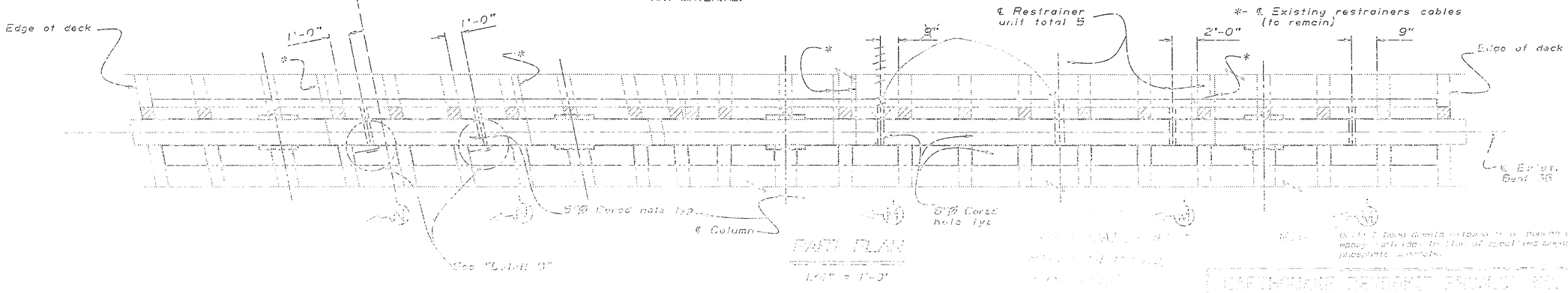
Notes:
A. 9"Ø Cored hole with 8X-Strong pipe shall be placed at the end of the girder that has been notched (@ existing rocker brg.)
B. For "SECTION M-M" see "HINGE RESTRAINER LAYOUT (1)" sheet
C. Reinforcement to be placed around restrainer unit
*- ℄ Existing restrainers cables (to remain)



PART PLAN
1/4" = 1'-0"

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04	SF	101	8.3/8.3	98	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42621
Exp. 3-31-95
CIVIL
STATE OF CALIFORNIA

10-24-94
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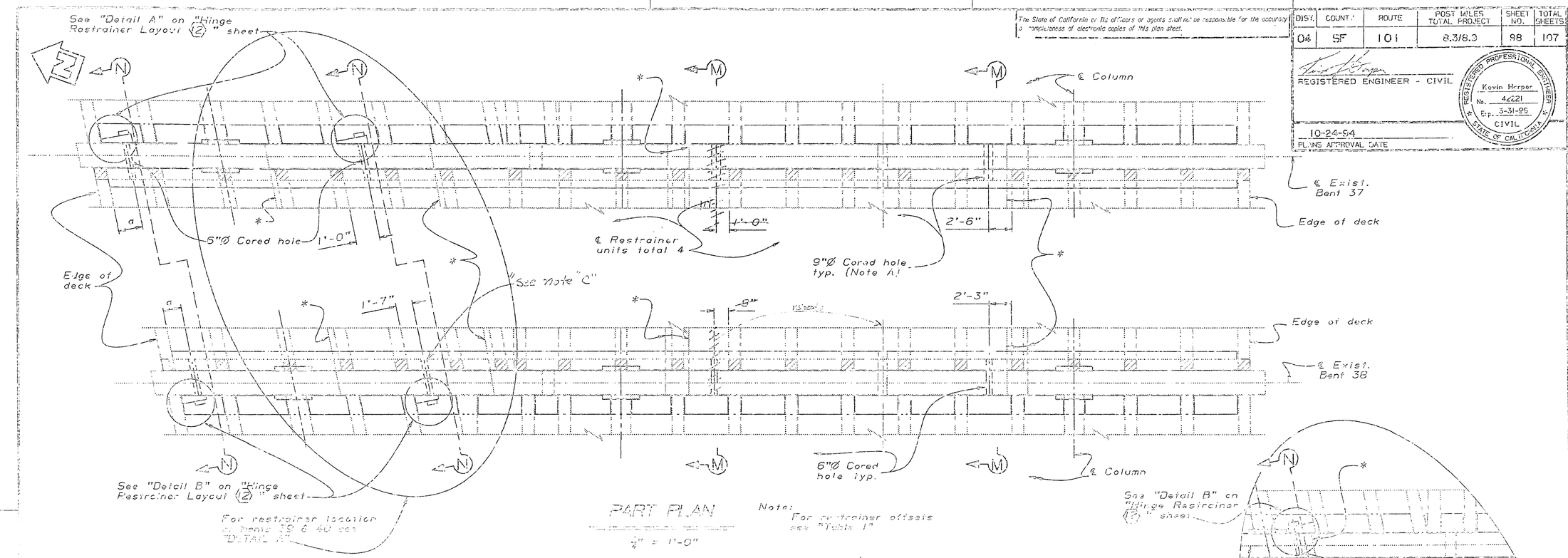
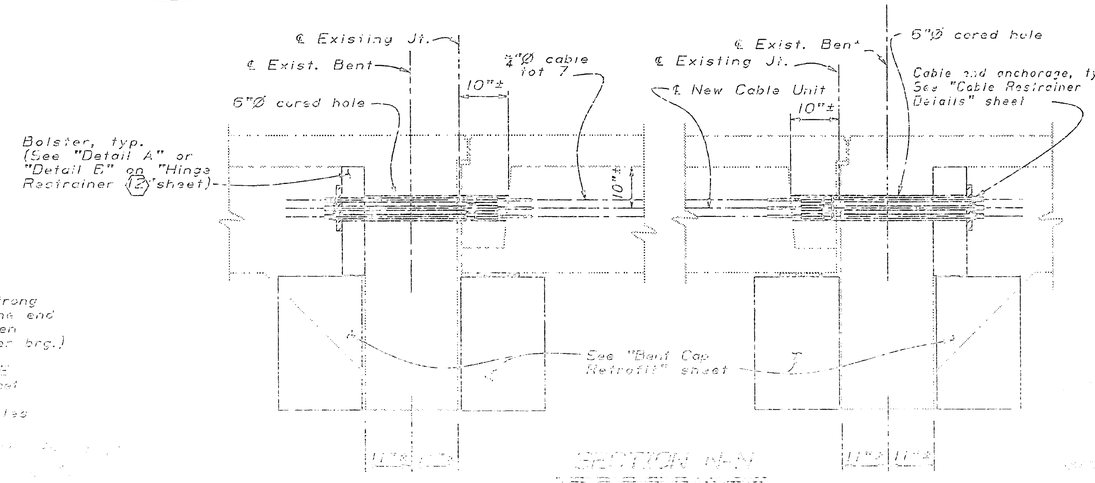


PART PLAN
1/4" = 1'-0"

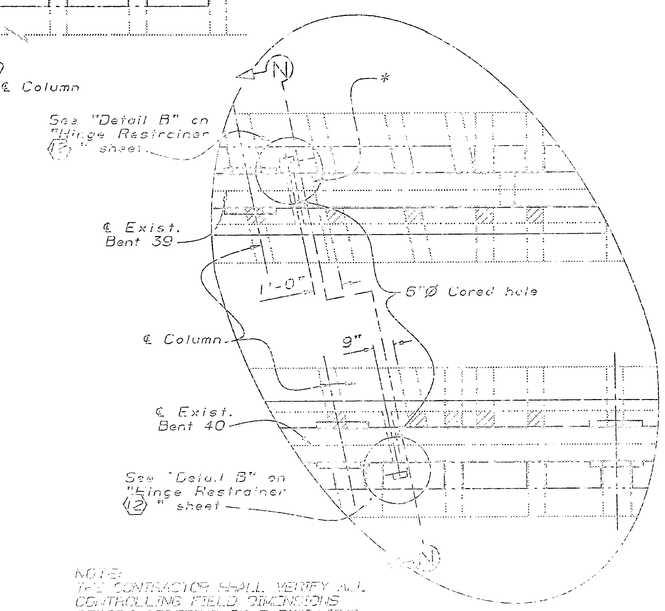
Note:
For restrainer offsets see "Table 1"

TABLE 1

Bents	a
37	2'-2"
38	1'-11"
39	1'-11"
40	1'-10"



SECTION M-M
1/4" = 1'-0"



NOTE:
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DETAIL A
1/4" = 1'-0"

Notes:
A. 9"Ø Cored hole with 8"Ø-Strong pipe shall be placed at the end of the girder that has been notched (@ existing rocker brg.)

B. For SECTION M-M see "HINGE RESTRAINER LAYOUT (1)" sheet

C. " Existing restrainer cables to remain

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	3.3/3.9	99	107

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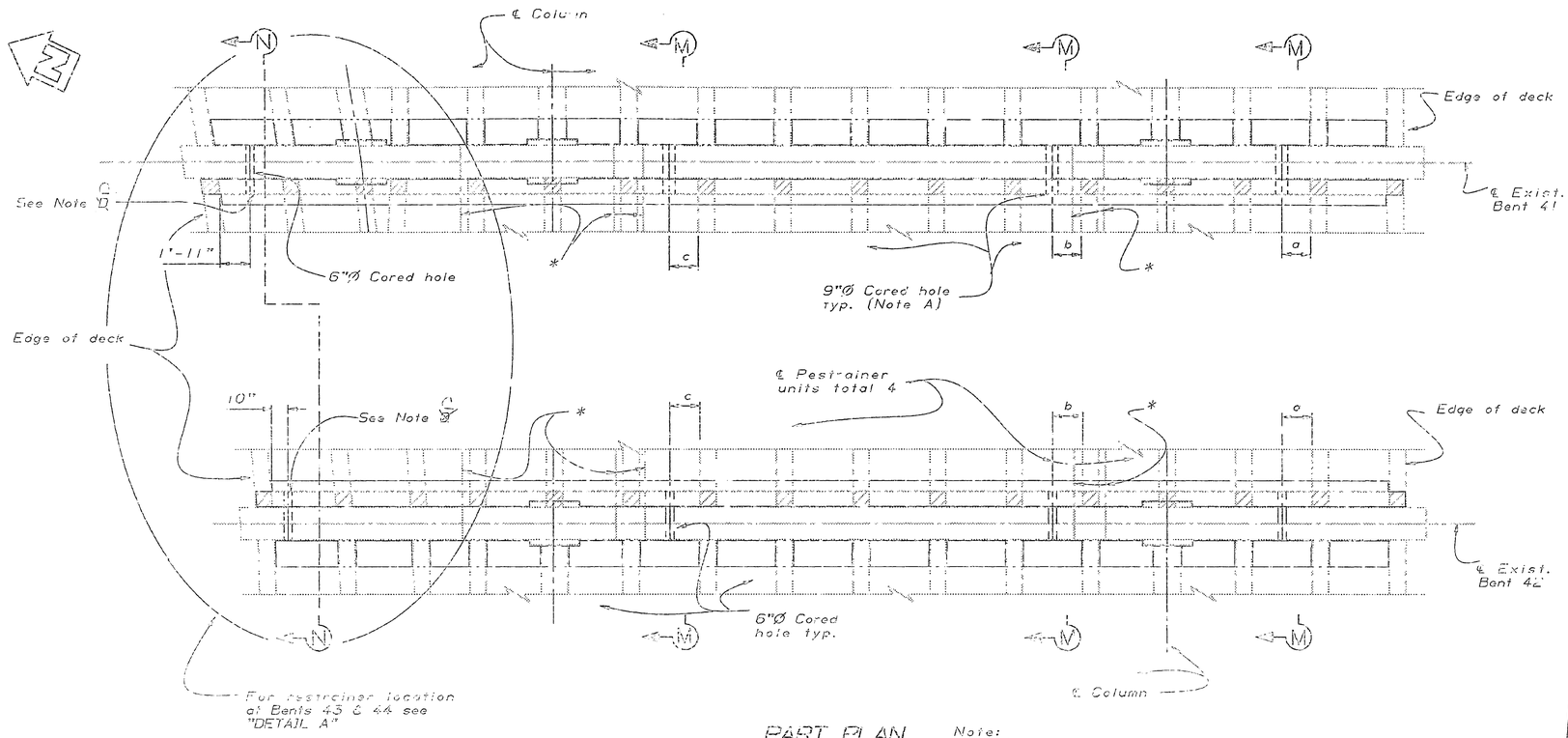


PART PLAN

Note:
For restrainer offsets see "Table 1"

TABLE 1

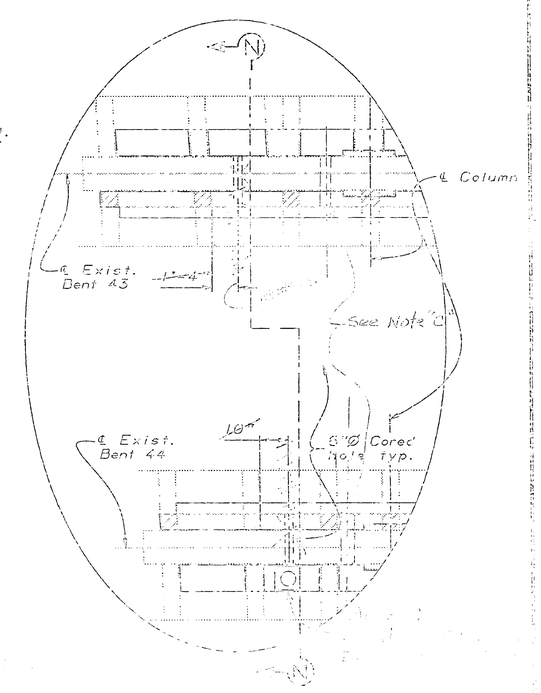
Bents	a	b	c
41	1'-5"	1'-3"	2'-1"
42	1'-5"	2'-9"	1'-1"
43	9"	1'-9"	1'-8"
44	1'-5"	1'-9"	1'-8"

Note:
A. 9"Ø Cored hole with 8"Ø-Strong pipe shall be placed at the end of the girder that has been notched (existing)

B. For SECTION M-M see "HINGE RESTRAINER LAYOUT (1)" sheet

C. Chip or grind concrete to 4" min radius along cable path

*- ℄ Existing restrainer cables (to remain)



DETAIL A
1/4" = 1'-0"

NOTE:
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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	100	107

REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
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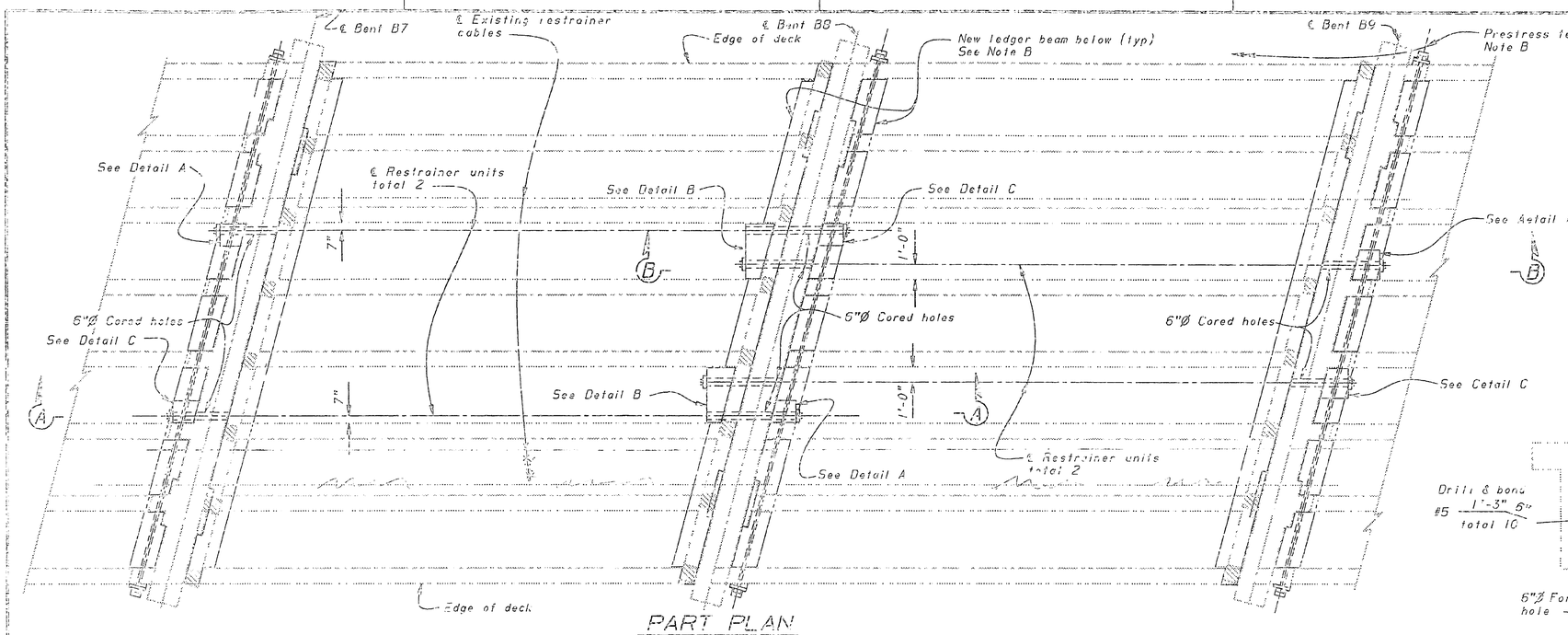
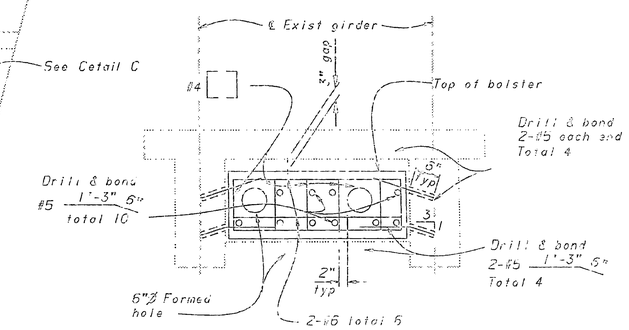
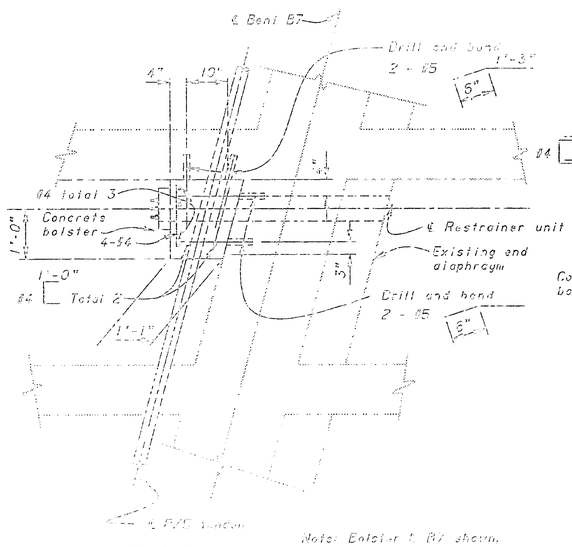


PART PLAN
1/4"=1'-0"

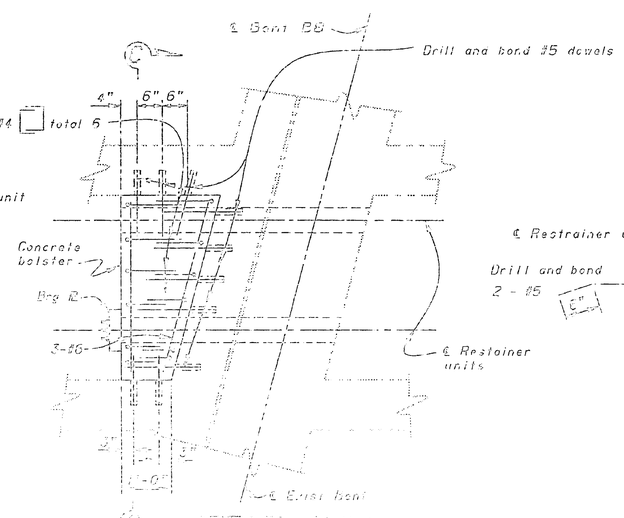


SECTION B-B
1/4"=1'-0"

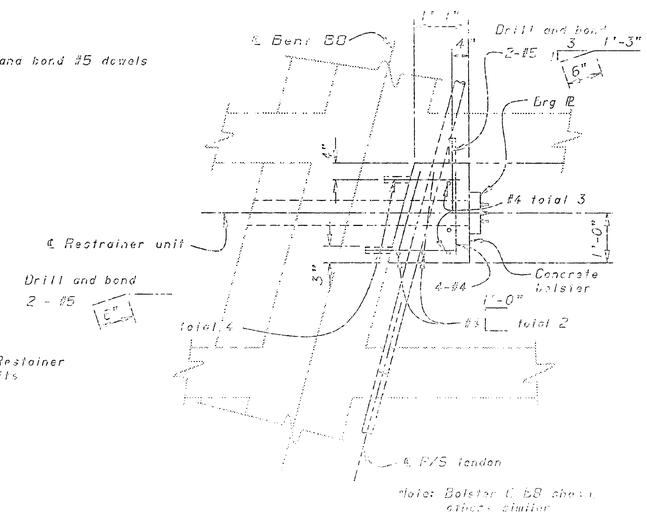


Note: Bolster @ B7 shown, others similar

DETAIL A
1/4"=1'-0"



DETAIL B
Note: For location of Bridge Plates see "Plan Plan"
1/4"=1'-0"



Note: Bolster @ B8 shown, others similar

DETAIL C
1/4"=1'-0"

Notes:

A. For Sections A-A and B-B see "Hinge Restrainer Details (C)" sheet

B. For Bent Cap Retrofit Details see "Part Plan (C)" and "Bent Cap Retrofit (D) & (E)" sheet

C. Drill & bond dowels shown to be bond system only, orientation in line of specified reinforcing intended to match

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	102	107

REGISTERED ENGINEER - CIVIL

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STATE OF CALIFORNIA

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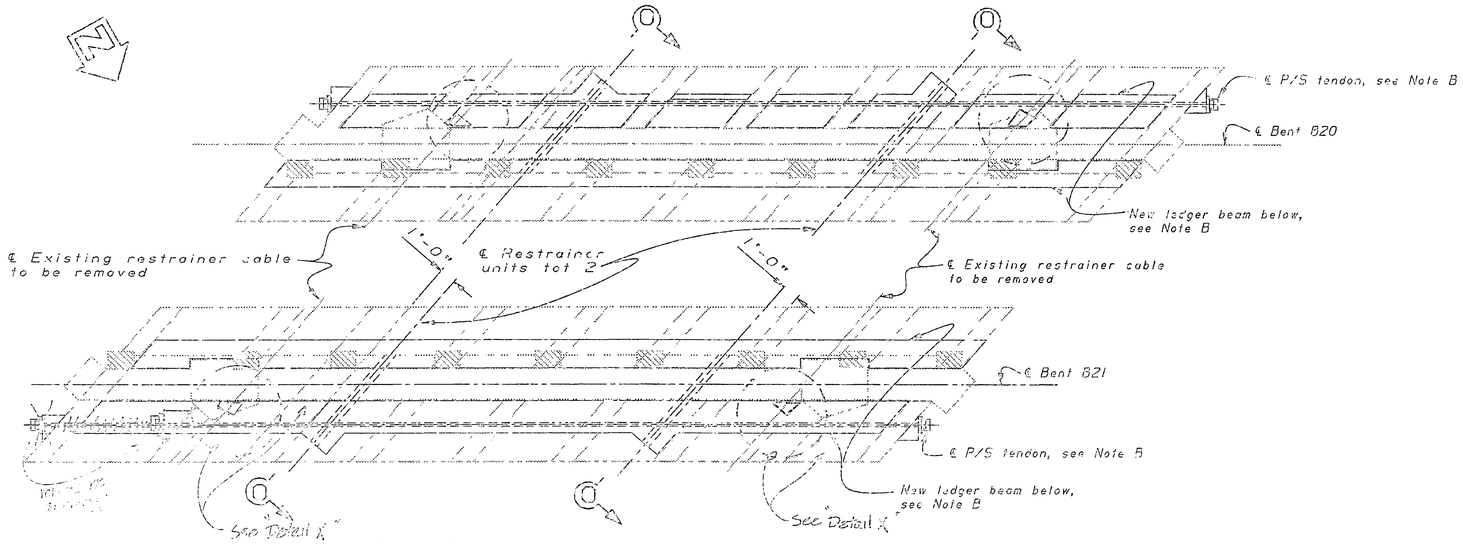
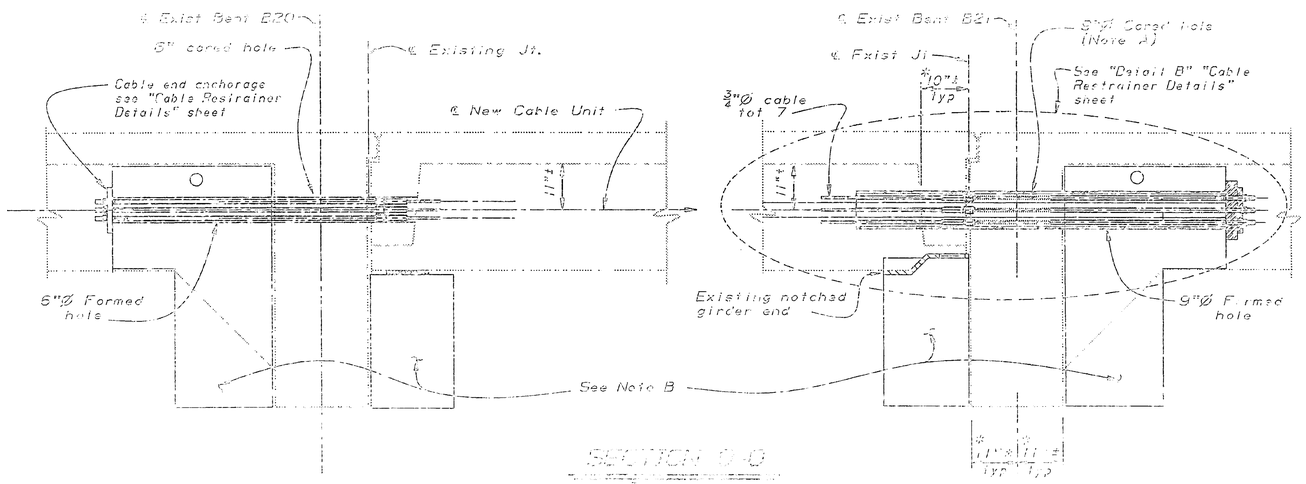


PART PLAN
1/4"=1'-0"

Notes:

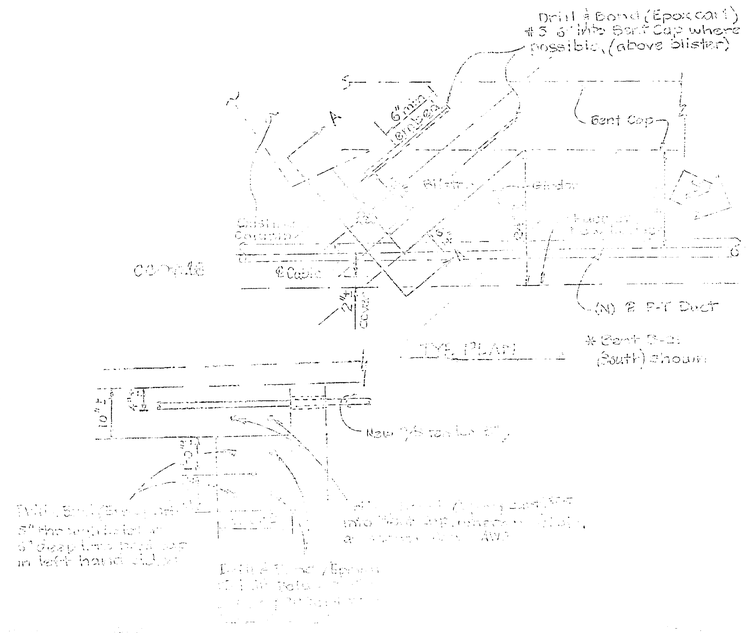
A. 9"Ø Cored hole with ~~BX~~ 8XX-Strong pipe shall be placed at the end of the girder that has been notched

B. For bent cap retrofit details see "Bent Cap Retrofit (K)" or "Bent Cap Retrofit (L)" sheet



SECTION D-D
1/2" = 1'-0"

*Dimensions measured normal to ℄ Bent



TYP. PLAN

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04	SF	101	8.3/8.9	103	107

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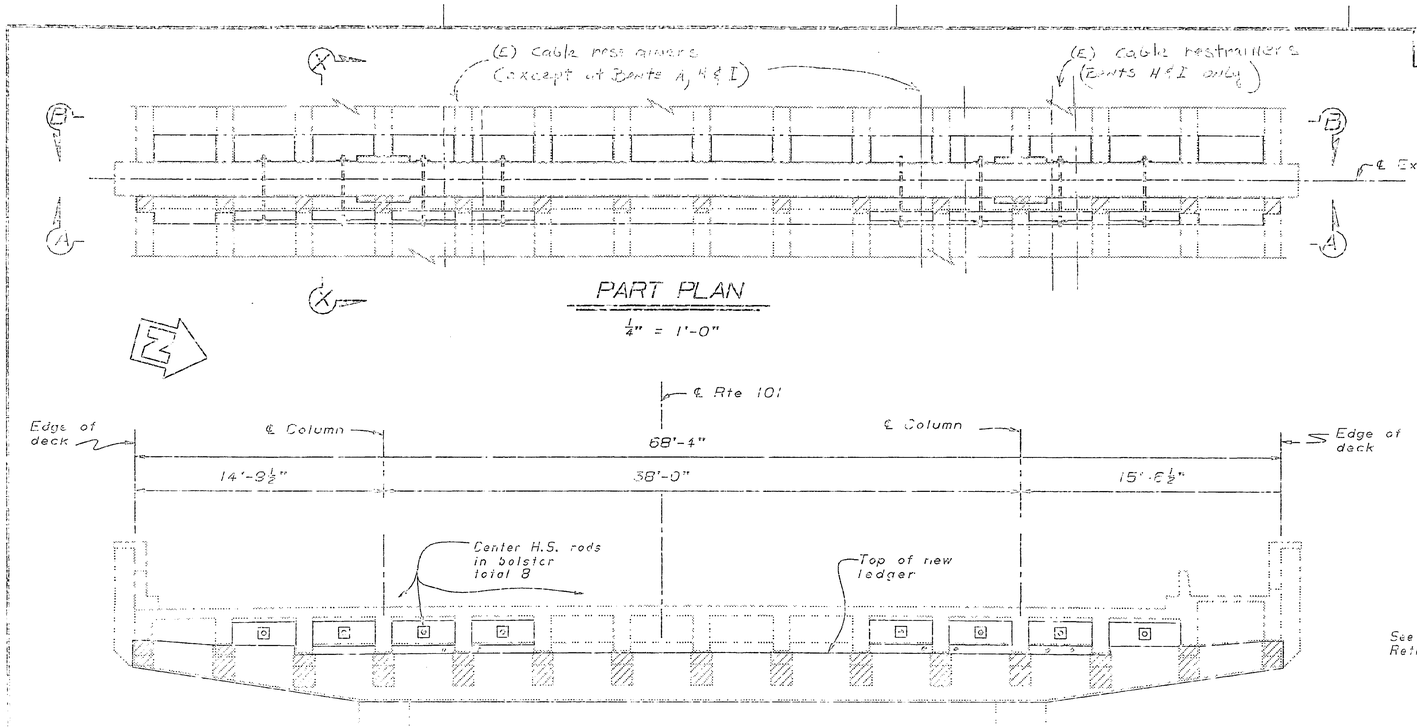
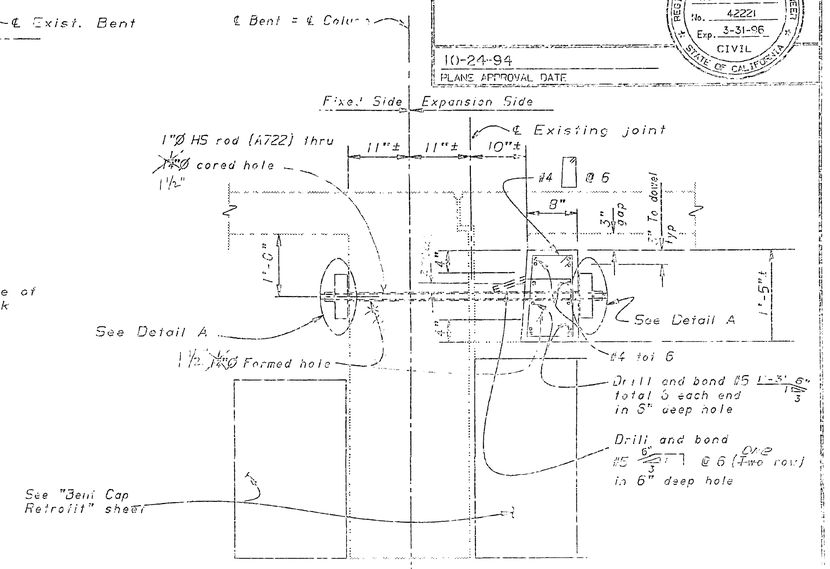


PART PLAN

1/4" = 1'-0"

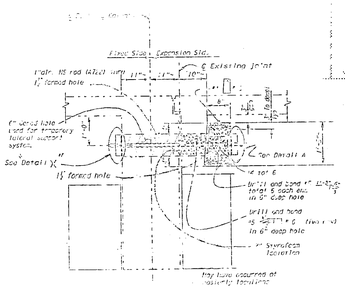
ELEVATION A-A

1/4" = 1'-0"



SECTION X-X

1"=1'-0"

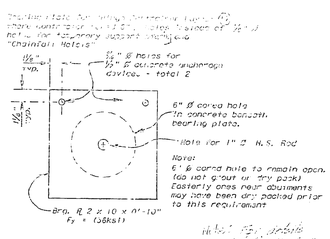


Note:

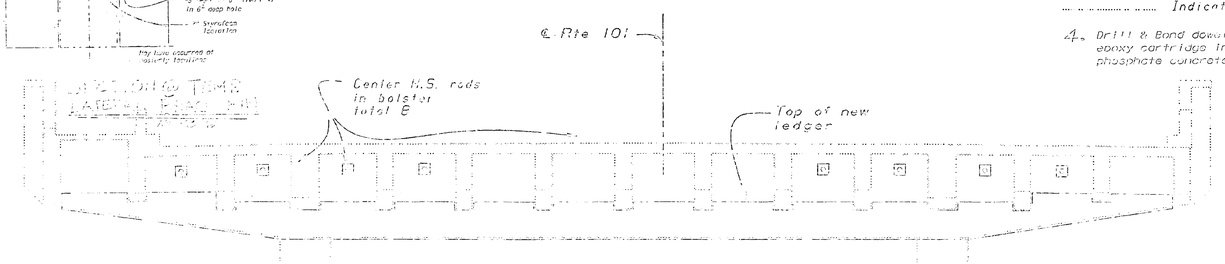
1. Location of cored and drilled holes shown in the plans are approximate. Prior to placing holes into concrete, the Contractor shall locate all reinf. steel and adjust the location of the holes to clear all reinf bars (except as noted). Final hole locations are subject to the approval of the Engineer.
2. Place rods symmetrically from second bay inward except Bent I.
3. Bent A shown, others similar

..... Indicates existing structure

4. Drill & Bond dowels allowed to be bonded with epoxy cartridge in lieu of specified magnesium phosphate concrete.

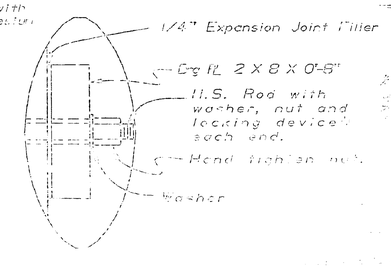


DETAIL X



ELEVATION B-B

1/4" = 1'-0"



DETAIL A

3"=1'-0"

RESTRAINER TABLE	
Bent	No. of Rods
A	8
B	5
C	5
D	4
E	4
F	4
G	4
H	4
2G	4
2H	8
I	2

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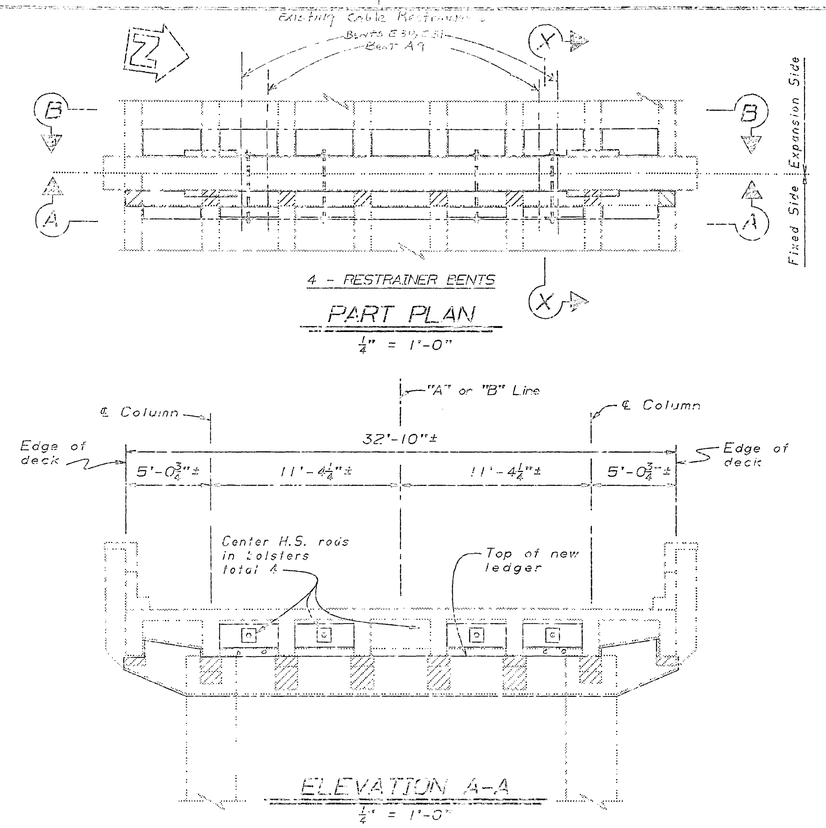
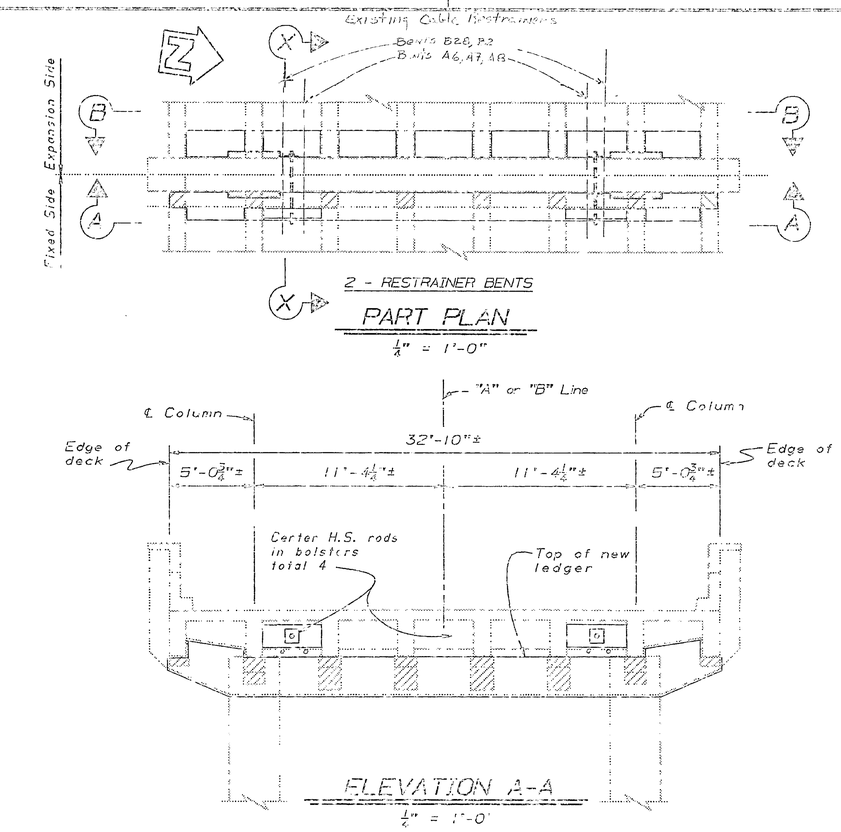
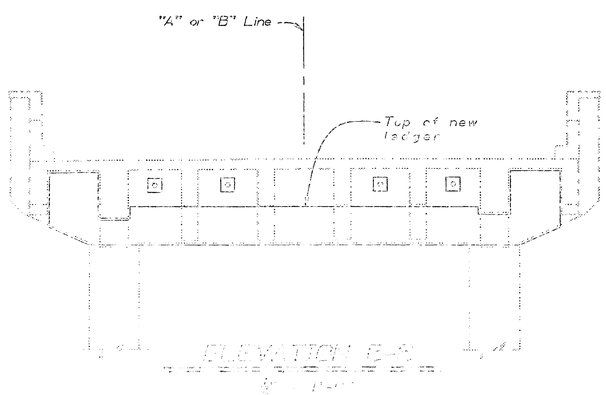
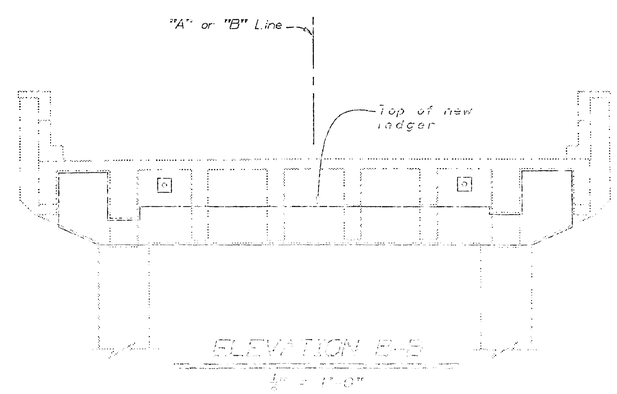




Note:
For Section X-X see "Hinge Restrainer Layout (17) sheet

RESTRAINER TABLE	
Bent	No. of Rods
A6	2
A7	2
A8	2
A9	4
A10	4
B28	2
B29	2
B30	4
B31	4





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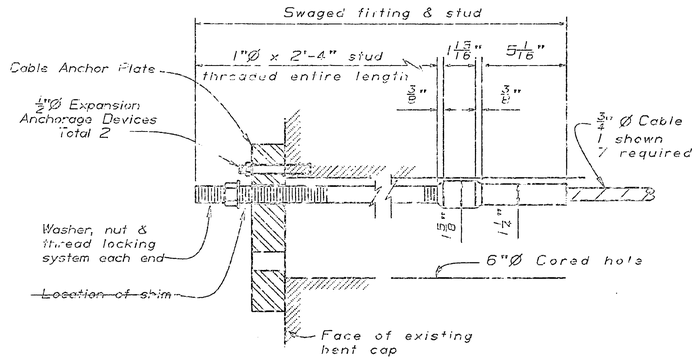


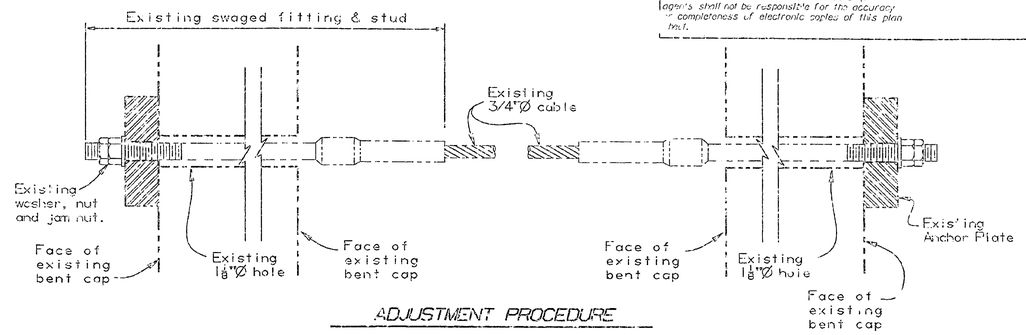
ANCHORING PROCEDURE AT ONE END OF RESTRAINER UNIT

See "Adjustment Procedure" below.

1. ~~Place 1/4" shims between Anchor PL and washer.~~ Tighten nut to remove slack from cable. Turn nut while applying thread locking adhesive until all threads of nut are coated with adhesive.
2. Turn each nut one additional turn per 5 feet of restrainer length.
3. ~~Remove shims.~~

CABLE END ANCHORAGE

3" = 1'-0"

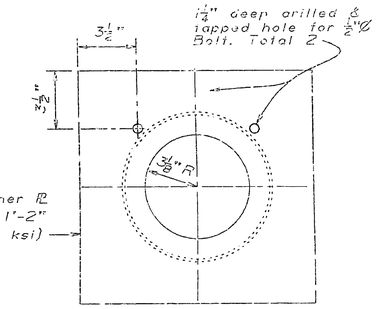


ADJUSTMENT PROCEDURE

1. Remove jam nut and nut from one end of restainer and reinstall using thread locking adhesive. See "Adjustment Procedure" below.
2. ~~At opposite end of restrainer, back off jam nut and nut sufficiently to install 1/4" shim between Anchor PL and washer.~~ Re-tighten nut to remove slack from cable.
3. Turn nut one additional turn per 5-feet of restainer length. Tighten jam nut ~~and remove shims~~.
4. Place thread locking adhesive on nut prior to removing slack from cable, and on jam nut prior to tightening

EXISTING CABLE END ANCHORAGE

3"=1'-0"



NOTE: Cable and PVC sheathing not shown.

SECTION N-N

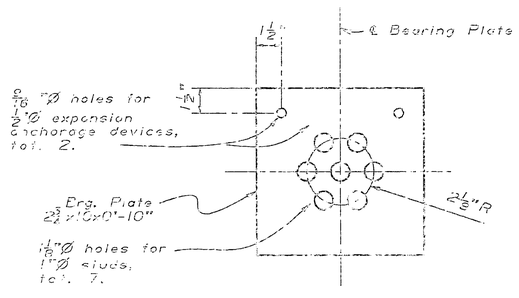
3" = 1'-0"

ADJUSTMENT PROCEDURE

A. Without 1/4" shim, tighten nut to remove slack from cable.

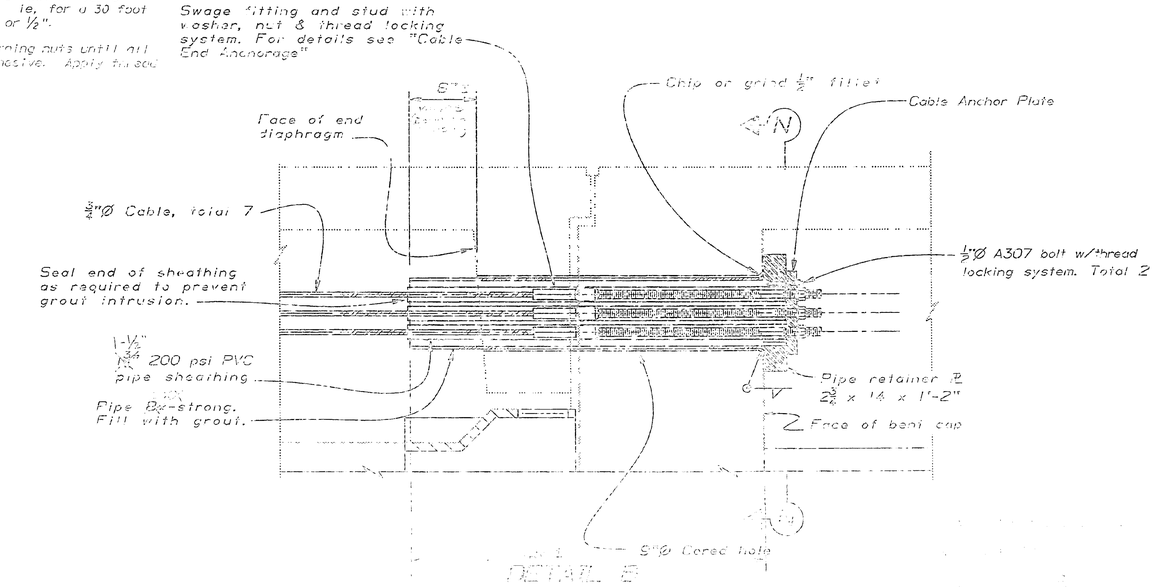
B. Tighten the nut an additional turn per 5 feet of cable length, minus 2 turns for the 1/4" shim. ie, for a 30 foot cable, 6 turns minus 2 turns = 4 turns or 1/2".

C. Apply thread locking adhesive while turning nuts until all threads of the nut are covered with adhesive. Apply thread locking adhesive to jam nuts as well.



CABLE ANCHOR PLATE

3" = 1'-0"



DETAIL B

1" = 1'-0"

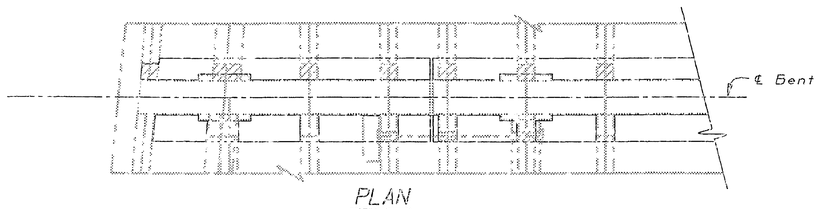
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.3/8.9	106	107

REGISTERED ENGINEER - CIVIL

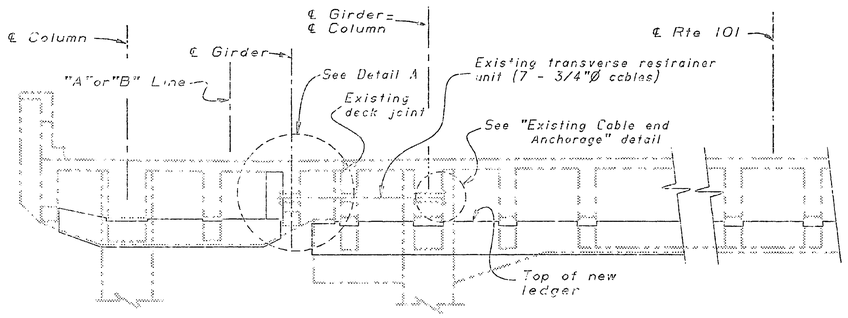
REGISTERED PROFESSIONAL ENGINEER
KEVIN HARPER
No. 42221
Exp. 3-31-96
CIVIL
STATE OF CALIFORNIA

10-24-9
PLANS APPROVAL DATE

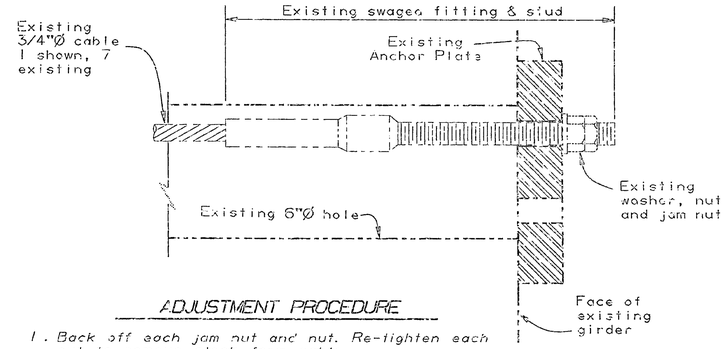
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



PLAN
1/4"=1'-0"



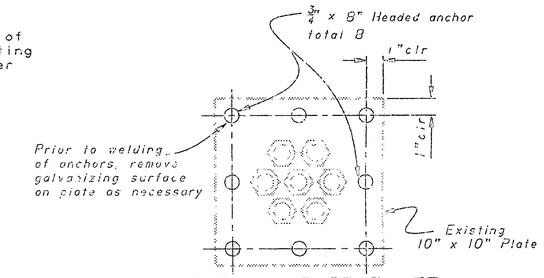
ELEVATION
1/2"=1'-0"



ADJUSTMENT PROCEDURE

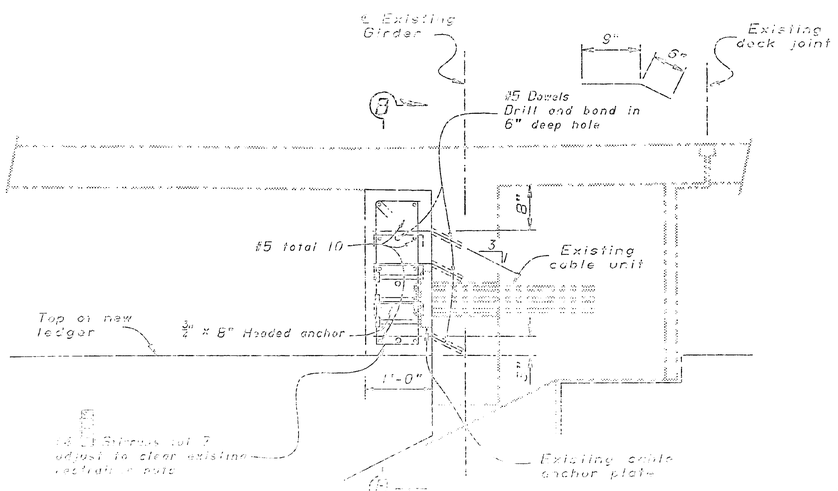
1. Back off each jam nut and nut. Re-tighten each nut to remove slack from cable.
2. Turn nut one additional turn per 5-feet of restainer length. Tighten jam nut.
3. Place thread locking adhesive on nut prior to removing slack from cable, and on jam nut prior to tightening

EXISTING CABLE END ANCHORAGE
3"=1'-0"

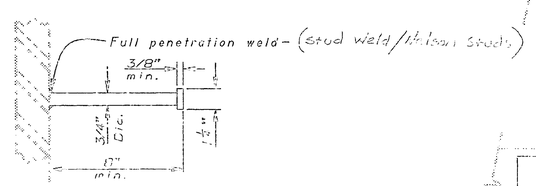


EXISTING ANCHOR PLATE
3"=1'-0"

Note:
Drill & Bond dowels allowed to be bonded with epoxy cartridge in lieu of magnesium phosphate concrete.

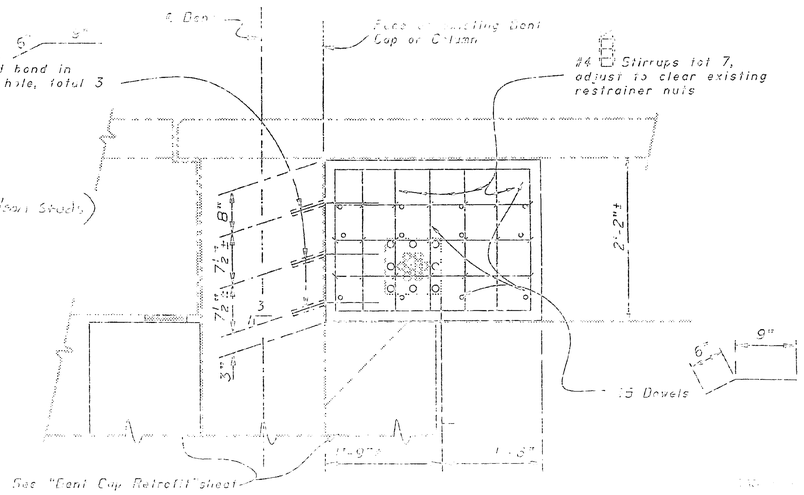


DETAIL A
1"=1'-0"



HEADED ANCHOR DETAIL
3"=1'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



SECTION B-B
No Scale

RELEASED 9-3-92

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	101	8.318.9	107	107

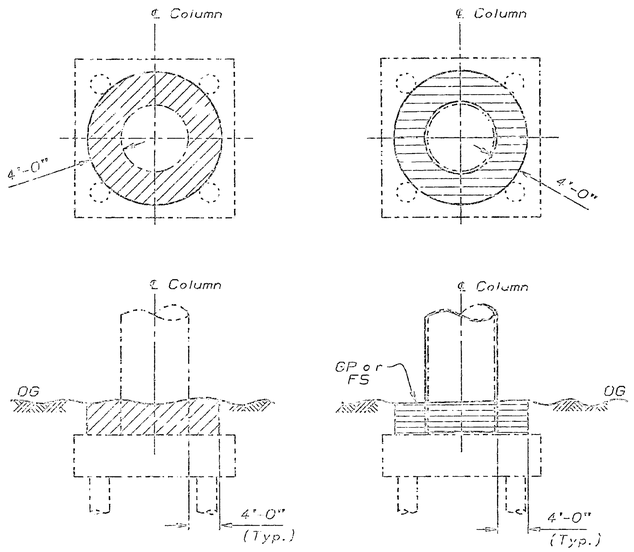
REGISTERED ENGINEER - CIVIL

REGISTERED PROFESSIONAL ENGINEER
Kevin Harper
No. 42221
Exp. 3-31-95
CIVIL
STATE OF CALIFORNIA

10-24-94
PLANS APPROVAL DATE

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.

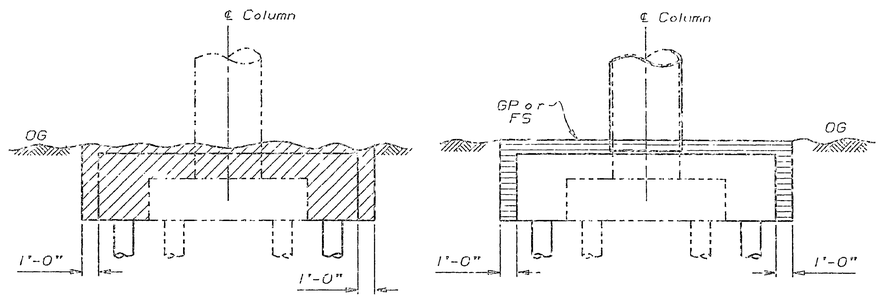
EXCAVATION —— BACKFILL



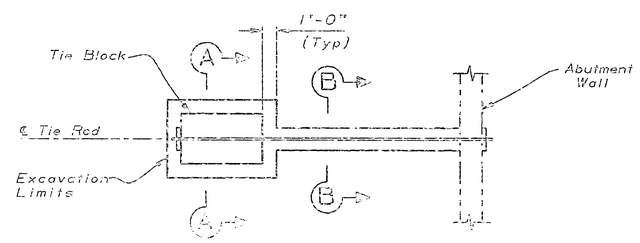
COLUMN CASING ONLY
NO SCALE

Note:
Circular column shown. Rectangular, square or oval columns similar.

EXCAVATION —— BACKFILL



COLUMN CASING & FOOTING RETROFIT
NO SCALE



PLAN VIEW - TIE ROD ANCHOR
NO SCALE

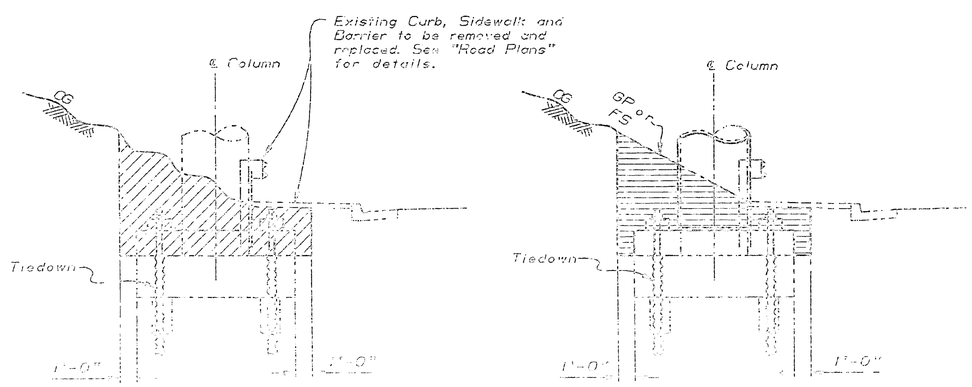
LEGEND

- Indicates Existing Structure
- Indicates New Construction
- Indicates Structure Excavation
- Indicates Structure Backfill

ABBREVIATIONS

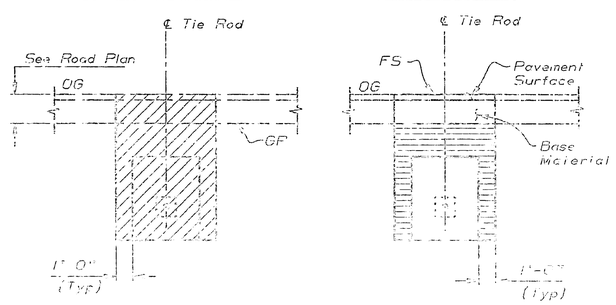
OG	Original Ground
FS	Planned Finished Surface
GP	Planned Graded Plane

EXCAVATION —— BACKFILL



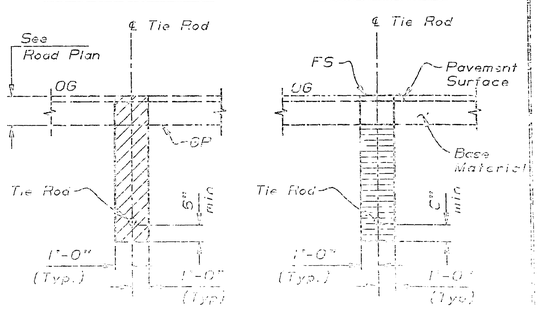
BENT PLATING TIE-DOWNS
NO SCALE

EXCAVATION —— BACKFILL

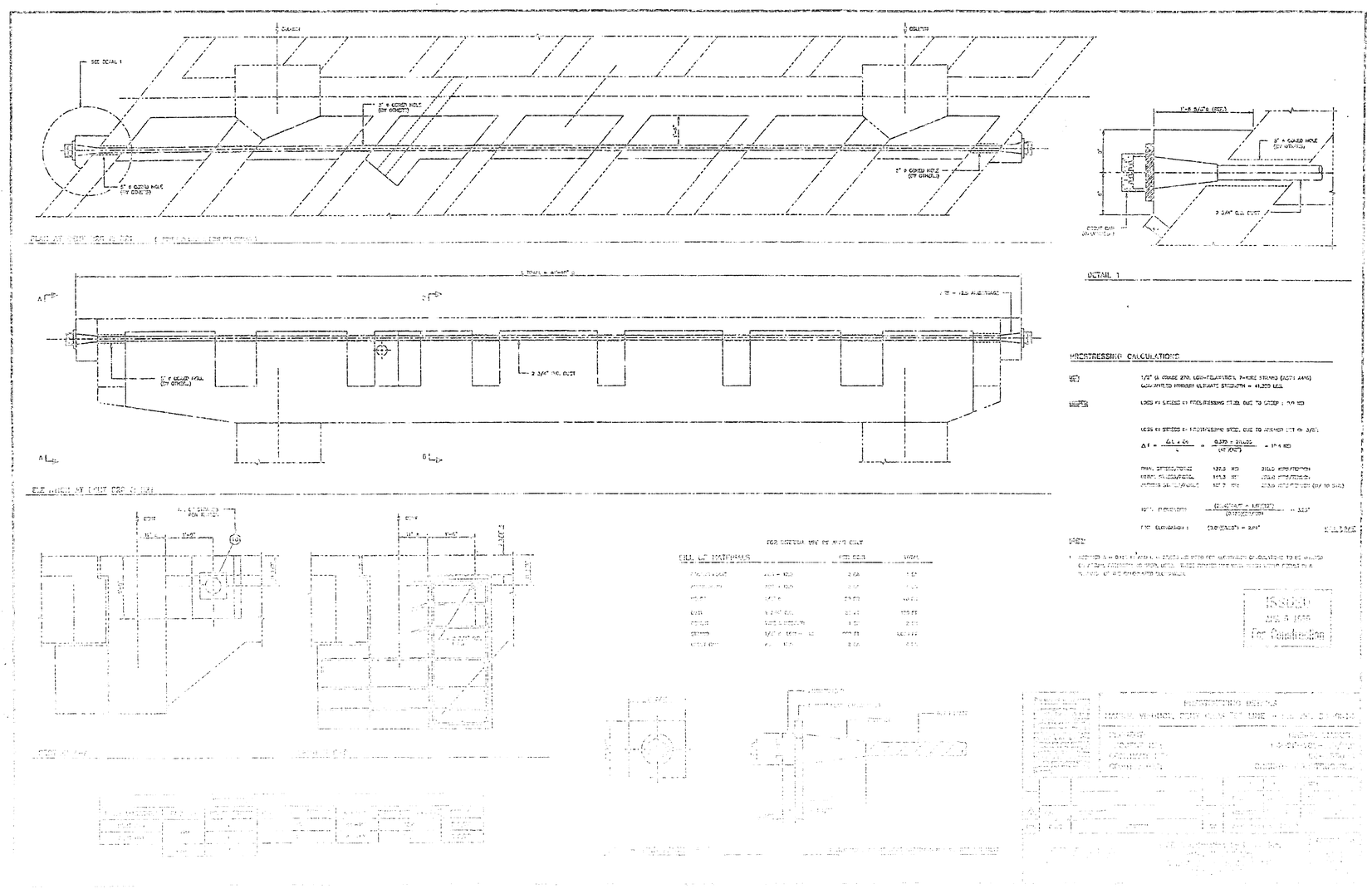


SECTION A-A
NO SCALE

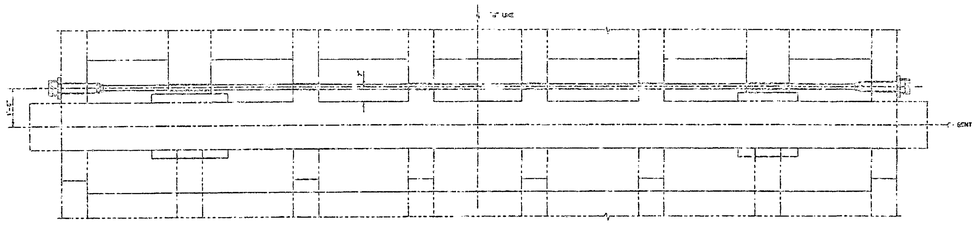
EXCAVATION —— BACKFILL



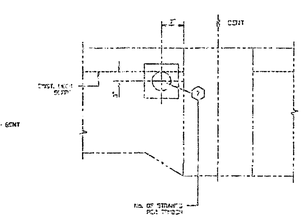
SECTION B-B
NO SCALE



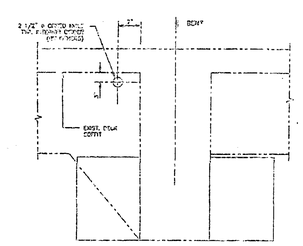
DETAIL 1
PRESTRESSING CALCULATIONS
ISSUED
For Construction



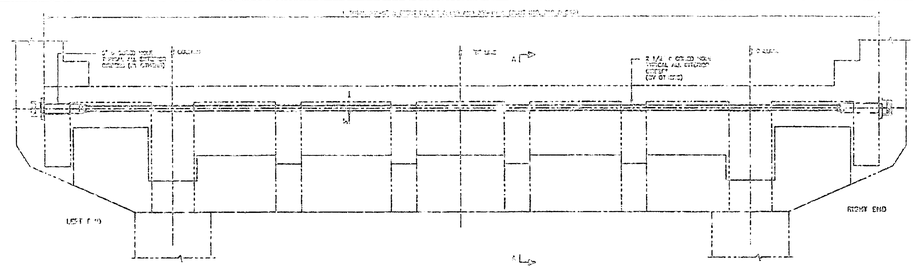
PLAN : BENT 07, 08, 07, 310, 312 & 322



ELEVATION AT END



SECTION A-A



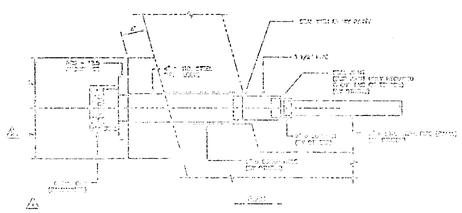
ELEVATION, BENT 07, 08, 09, 310, 312 & 322

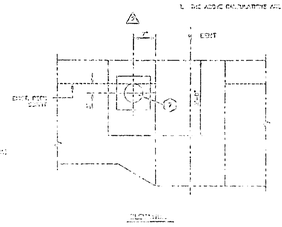
FOR PREGRAM, USE OF MAKE GIRT

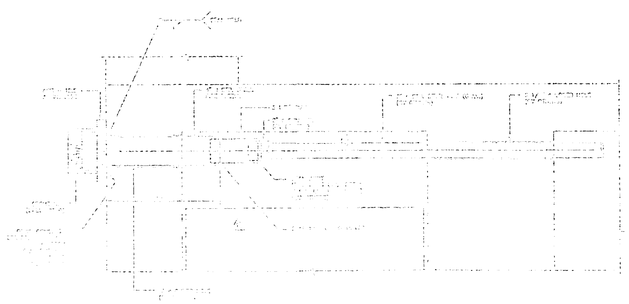
BILL OF MATERIALS

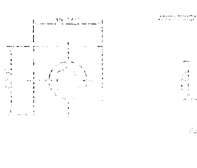
		FOR BENT	TOTAL
BEARING PLATE ASSEY	ASS - 125	2 EA	12 EA
ANCHORAGE	ASS - 125	2 EA	12 EA
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	TYPE 2 [illegible]	1 EA	6 EA
[illegible]	1/2" X 1.25" = 0.08	[illegible]	[illegible]
[illegible]	ASS - 42	2 EA	12 EA

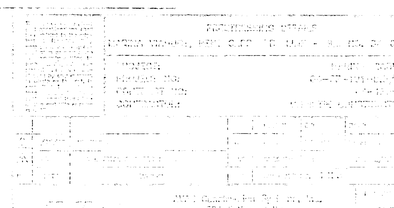
BILL OF MATERIALS					
PART LOCATION	PT PART	NO. OF PARTS	LENGTH	[illegible]	[illegible]
[illegible]	125	2	[illegible]	[illegible]	2 SAE
[illegible]		1	[illegible]	[illegible]	[illegible]
[illegible]		2	[illegible]	[illegible]	[illegible]
	[illegible]				

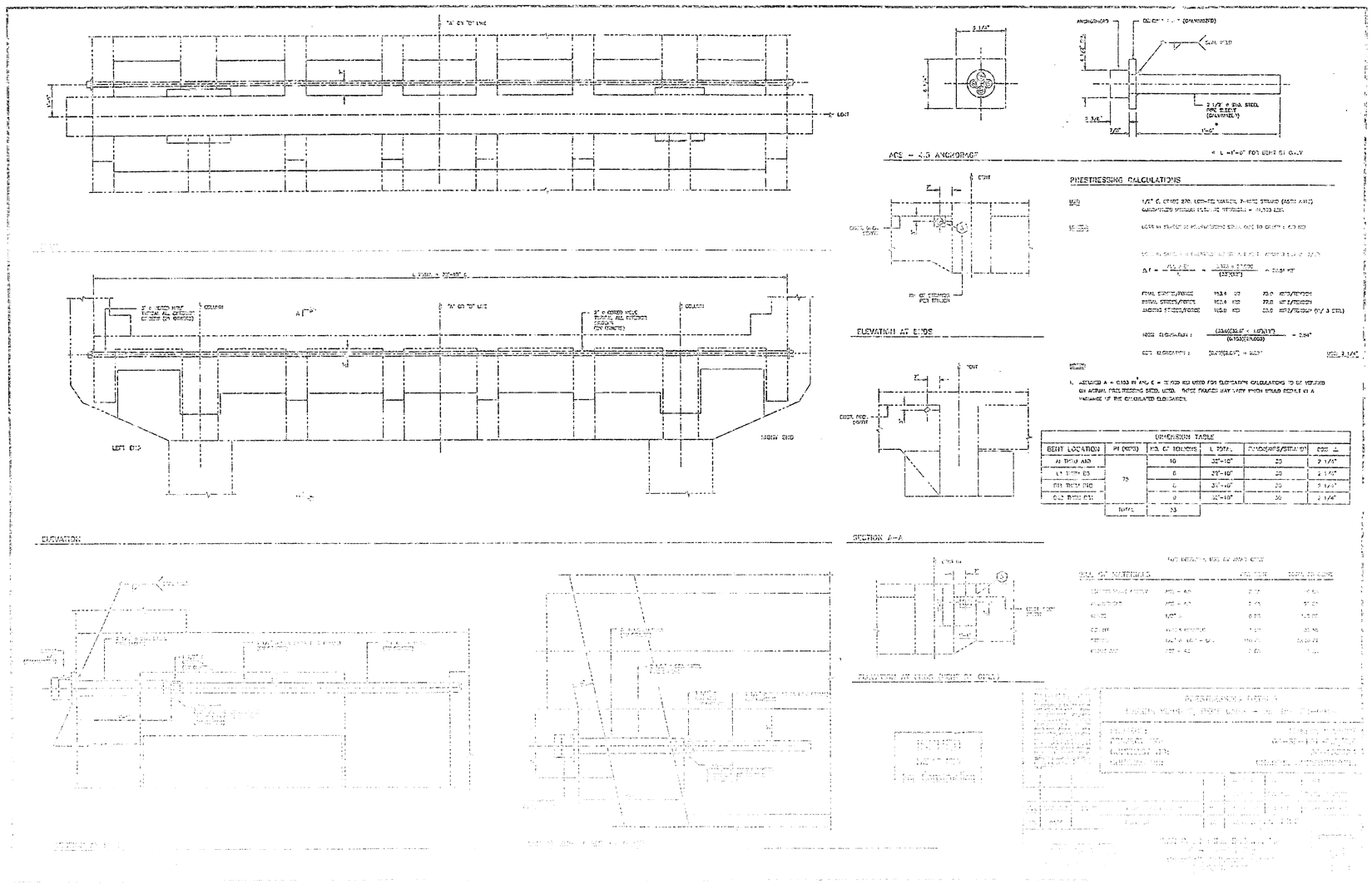












DIMENSION TABLE					
BENT LOCATION	PI (KIPS)	NO. OF TENSIONS	L TOTAL	FLUID(KIPS/STRAND)	COS ∠
AT THRU AND	75	10	32'-10"	30	2 1/4"
LT THRU BS		6	32'-10"	30	2 1/4"
RH THRU BS		6	32'-10"	30	2 1/4"
OLD THRU BS		9	32'-10"	30	2 1/4"
	TOTAL	33			

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
SHOP PLAN RECORD
DS-D0114A (REV 3/91)

Completed 12/95

JOB NO.	PRINT NUMBER OR TITLE	PRINTS RECEIVED AMT	PRINTS RECEIVED DATE	UNCK TO R.E. DATE	TO LAB - RET'D DATE	TO R.R. - RET'D DATE	TO CONST - RET'D DATE	RET'D FOR CORR	PRINTS APPROVED DATE	MC	ADD PT'S ORD. AMT	ADD PRINTS RECEIVED DATE	AMT	RET'D TO CONTR.-VENDOR	FINAL APPROVED SHOP PLANS R.E.	LAB	R.R.	DATE FILM REC'D	DATE MSE WALL REC'D
	B1	3	1/24/95					2/9/95	3/2/95		6	2/28/95	6	2/10/95	3/3/95			AYAR 2/28/96	
	B2								2/21/95 3/13/95	✓	6	3/10/95	6	2/23/95				✓	
	B3		2/9/95					3/17/95	7/5/95	✓	6	6/27/95	6	3/20/95	7/6/95			✓	
	B4																	✓	
	B5 [illegible]		5/8/95						7/1/95					9/5/95				✓	

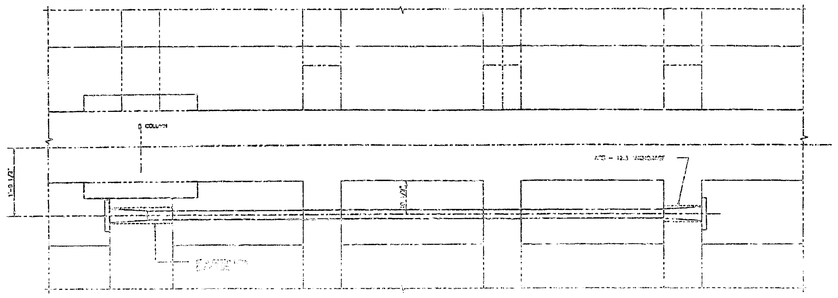
STATE CONTRACT: 04-133094
DISTRICT: 04-SF-101
SATISFACTORY: STRUCTURAL STEEL ☐ PRESTRESSED CONCRETE ☐ REINFORCED CONCRETE ☐

SECTION: 1 KIN MARINA VIADUCT 34-0014

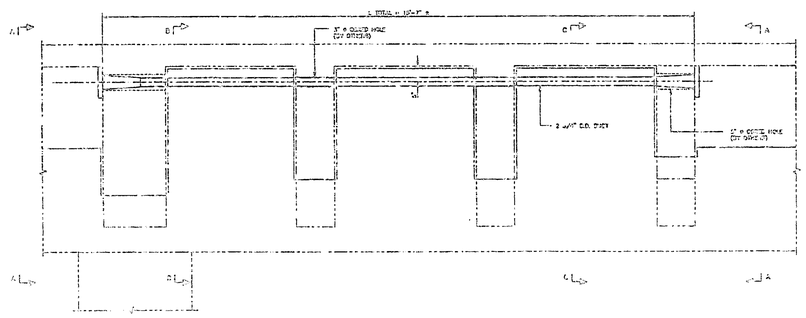
M.O.: 12-9-94

CONTRACTOR & ADDRESS:
CHRISTIE CONSTR
4925 SEAPORT AVE
[illegible] CA 94804

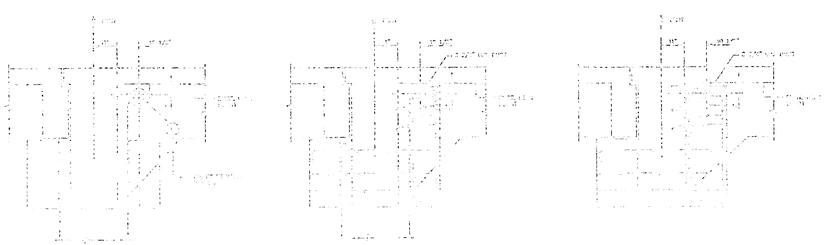
MR ALEXANDER SCHMITT
DEPARTMENT OF TRANSPORTATION
[illegible] BRANNAN STREET
[illegible] FRANCISCO, CA 94102

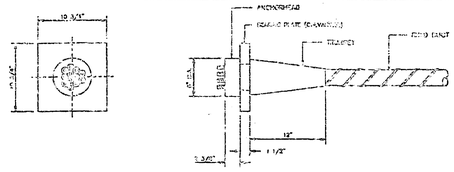


PLAN AT BENT 21 THRU 26, 28, 36 & 38



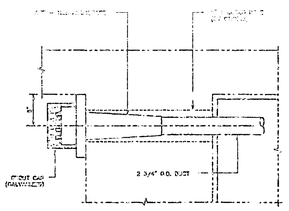
SECTION AT BENT 21 THRU 26, 28, 36 & 38





ACS – 12.5 ANCHORAGE

MATERIALS : ANCHORHEAD [illegible] ASTM A193 B7



TENDON ANCHORAGE DETAIL

PRESTRESSING CALCULATIONS

[illegible]

$$\Delta L = \frac{\Delta L \cdot L_0}{L} = \frac{0.073 \cdot 3.9(10)}{(1.0)(10^4)} = 0.7\ \text{FT}$$

FINAL STRESS/TENDON	134.0 KSI	160.0 KIPS/TENDON	
INITIAL STRESS/TENDON	142.5 KSI	170.0 KIPS/TENDON	
AVERAGE STRESS/TENDON	137.5 KSI	164.0 KIPS/TENDON (W/ 6 STRS)	

$$\text{MEAS. ELONGATION} = \frac{(20)(30)(6) - (4)(30)(1)}{(0.153)(28,000)} = 1.00''$$

$$\text{CORR. ELONGATION} = (0.15)(1.00) = 1.12''$$

NOTE: 1.12"

NOTES:

1. ASSUMED A = 0.153 IN² AND E = 28,000 KSI WERE USED FOR ELONGATION CALCULATIONS TO BE VERIFIED BY ACTUAL PRESTRESSING STRAND. RATE STRAND MAY NOT EXCEED YIELD ALONE BY A AVERAGE OF THE CALCULATED ELONGATION.

DIMENSION TABLE

BENT LOCATION	EV (PIPE)	NO. OF TENDONS	NO. OF STRANDS/TENDON	L TOTAL	PIPE DIMENSION	ACS – A
21 THRU 26	1x6	6	5	10'-7"	20.0	11.12"
36		1	6	10'-7"	20.0	11.12"
28		1	6	10'-7"	20.0	11.12"
38		1	5	10'-7"	20.0	11.12"
	TOTAL	9				

ACS ELEVATIONS AT CONTROL POINTS

POINT DESCRIPTION	STATION	ELEV.	ACS
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

ISSUED
[illegible]
for Construction

[illegible]