



California Regional Water Quality Control Board

San Francisco Bay Region



Linda S. Adams
Acting Secretary for
Environmental
Protection

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(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>

Edmund G. Brown, Jr.
Governor

{ Date }
Site No. 02-01-C0849 (BT)
CIWQS Place No. 728681

California Department of Transportation
Attn: Mr. Ron Kiaaina
Ron_Kiaaina@dot.ca.gov
111 Grand Avenue
Oakland, CA 94612

Subject: Proposed Modification Number One to the Water Quality Certification for the Niles Canyon State Route 84 Widening Project, Phase One, unincorporated Alameda County

Department Project No.: EA 04-17440

Dear Mr. Kiaaina:

The San Francisco Bay Regional Water Quality Control Board (Water Board) issued Clean Water Act section 401 water quality certification (certification) to the California Department of Transportation (Department) for the Niles Canyon State Route 84 Safety Improvement Project, Phase One (Project), on June 22, 2010. The certification required the Department to implement off-site riparian enhancement and restoration activities along the Arroyo Mocho, adjacent El Granada High School, in the city of Livermore, as partial mitigation for impacts to riparian habitat along Alameda Creek. In a letter to the Water Board dated March 4, 2010, the Department requested the certification be modified to replace the El Granada High School mitigation with a different riparian mitigation project in Livermore on the Arroyo Mocho.

The Department has withdrawn the El Granada High School mitigation because the school would not allow installation of a pedestrian footbridge to bypass the mitigation area. The Department will not commit to the El Granada mitigation project if it does not include a pedestrian bridge to reduce foot traffic through the mitigation area.

To compensate for the withdrawal of the El Granada High School mitigation, the Department has proposed stream channel and habitat restoration along approximately 2,560 linear feet (6.2 acres) of the Arroyo Mocho in the city of Livermore, along the north side of East Stanley Boulevard between Isabel Avenue and Murrieta Boulevard (Department mitigation). The proposed Caltrans mitigation is on land owned and managed by the Zone 7 Flood Control District of Alameda County (Zone 7)

Preserving, enhancing, and restoring the San Francisco Bay Area's waters for over 50 years

and is bounded by an approximately 5,000 linear foot reach of the Arroyo that Zone 7 intends to restore (Stanley reach). Zone 7 has worked in partnership with the Urban Creeks Council to determine that mitigation at the Stanley Reach is feasible and will have significant environmental benefits.

The 401 certification issued to the Department on June 22, 2010 is hereby modified as follows. An underline and strikeout revision of the June 22, 2010, certification is included as Attachment C to this modification.

San Francisco Bay Regional Water Quality Control Board (Water Board) staff have reviewed the 401 water quality certification application submitted by the California Department of Transportation (Department) for the Niles Canyon State Route 84 Roadway Widening Project (Project). The Department has received a Project permit from the U.S. Army Corps of Engineers (ACOE) pursuant to Clean Water Act (CWA) Section 404 Nationwide Permit No. 14 (*Linear Transportation Projects*). You applied to this office under Section 401 of the CWA for water quality certification verifying that the Project does not violate State water quality standards.

Project: The Department proposes to make various safety improvements along an approximately one mile length of State Route 84 (SR 84) in Niles Canyon, alongside Alameda Creek, between the Rosewornes and Farwell railroad underpasses. Primary project elements include the following:

- Reconstruction of the Palomares Road/SR 84 intersection to the south by approximately 20 feet to provide additional vehicle sight distance;
- Replacement of the existing box culvert at Stonybrook Creek, which is a fish passage barrier, with a bridge;
- Construction of retaining walls between SR 84 and Alameda Creek, above the ordinary high water mark of Alameda Creek;
- Widening of the existing roadway shoulders to meet current highway standards; and
- Construction of a northbound turn lane on SR 84 at Palomares Road.

Impacts: The proposed Project will result in permanent impacts to approximately 0.016 acres of jurisdictional wetlands and approximately 189 linear feet (0.046 acres) of jurisdictional waters as a result of roadway widening and riprap installation.

Proposed permanent impacts to jurisdictional waters are the result of placement of riprap at the base of retaining walls for scour protection within Alameda Creek (118 linear feet, 0.013 acres), and placement of riprap at the base of the Rosewornes railroad bridge pier (71 linear feet, 0.033 acres). Proposed permanent impacts to jurisdictional wetlands are the result of roadway widening.



The proposed Project will result in temporary impacts to approximately 353 linear feet (0.123 acres) of jurisdictional waters due to construction access at Alameda and Stonybrook Creeks.

The proposed Project will also result in approximately 1.2 acres (2,923 linear feet) of permanent impacts to riparian habitat along Alameda and Stonybrook Creeks. Permanent impacts are primarily the result of roadway widening into the existing Alameda Creek riparian buffer area. Riparian impacts will not result in the loss of coldwater habitat within Alameda Creek. Permanent impacts to native riparian tree species within the riparian impact areas include 10 white alder, 9 California bay laurel, 13 big leaf maple, 17 California sycamore, and 21 willow.

The proposed Project will also result in temporary impacts to approximately 0.35 acres (3,336 linear feet) of riparian habitat due to construction access for construction of Alameda Creek retaining walls (0.051 acres), construction of the Stonybrook Creek bridge (0.347 acres), and construction access for removal of abandoned in-stream structures (0.206 acres).

Hydromodification impacts: Added impervious areas may result in alterations to existing hydrologic regimes, resulting in erosion and/or changes of sediment transport in receiving waters (hydromodification). Project implementation would result in approximately 1.14 acres of added impervious area and therefore the Department is required to mitigate potential hydromodification impacts.

Mitigation: To compensate for permanent impacts to approximately 0.016 acres of jurisdictional wetlands and approximately 189 linear feet (0.046 acres) of jurisdictional waters, the Department shall remove the existing SR 84 box culvert at Stonybrook Creek, which is currently a fish passage barrier, and install a bridge with abutments placed wider than the active channel width and above the ordinary high water mark. The creek channel will be modified at this location to repair a scour hole that has formed at the downstream end of the box culvert. Additionally, three remnant structures shall be removed from Stonybrook Creek between SR 84 and its confluence with Alameda Creek (an old rock weir grade control structure, bridge abutment, and roadway remnant).

To mitigate for permanent impacts to riparian habitat on-site, the Department shall plant 5 California Sycamores~~big leaf maples~~ and 63 willow trees within a 0.19 acre (560 linear foot) area. To mitigate for permanent impacts to riparian habitat off-site, the Department shall ~~restore no less than 1.5 acres, and enhance no less than 3.0 acres of riparian habitat along the Arroyo Mocho, in the city of Livermore, adjacent El Granada High School.~~

Temporarily impacted riparian areas shall be re-vegetated within the first growing season following cessation of construction activities in those areas.

Roadway Pollutant Mitigation: As mitigation for increased pollutant loads associated with impervious areas, the Department is required to provide treatment of stormwater runoff from no less



than 2.6 acres of impervious area. Due to space constraints within the Project area, the Department was unable to provide filtration-based treatment of stormwater (e.g., grass filter strips, biofiltration swales). As such, the Department has proposed underground pipe storage and settling of stormwater from an approximately 2.7-acre impervious shed area. Because contaminant removal using settling is significantly less effective than filtration-based treatment, the Department shall receive 1.3 acres of stormwater treatment credit for its treatment proposal. Appropriately, this certification requires the Department provide an additional 1.4 acres of stormwater treatment, plus an additional 50% of that area for temporal loss of treatment (total 2.1 acres), within the Alameda Creek watershed no later than five years from Project completion (certification condition no. 14).

Hydromodification Mitigation: To mitigate for potential hydromodification impacts, the Department shall install underground detention pipes with control structures at the outfall to detain Project peak stormwater flows from added impervious areas (see plans in Attachment B).

California Wetlands Portal~~Wetland Tracker System:~~ It has been determined through regional, State, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's No Net Loss Policy for wetlands, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, as specified under Condition No. 221 of this certification, we require that the Department to use a standard form to provide Project information related to restoration measures. An electronic copy of the form and instructions can be downloaded at: <http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml>. Project information concerning impacts and mitigation/restoration will be made available at the web link: <http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml>~~http://www.californiawetlands.net~~.

CEQA Compliance: On June 16, 2006, the Department filed a Negative Declaration for the Project.

Certification: I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 – DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

1. ~~Project construction, including construction of contractor yards and clearing and grubbing activities, shall be prohibited until a final, signed co-operative agreement between the Department and all appropriate agencies with legal responsibilities at the Arroyo Mocho El Granada High School mitigation site, has been submitted and found acceptable by Water Board staff;~~

2. Caltrans shall not commence construction within the riparian corridor if the work and its associated erosion control measures cannot be completed prior to the onset of a 72-hour storm event. 72-hour weather forecasts from the National Weather Service shall be consulted prior to beginning any Project phase;
3. Erosion control measures shall be utilized throughout all phases of construction where sediment runoff from disturbed areas threatens to enter waters of the State, regardless of date. At no time shall silt-laden runoff be allowed to enter waters of the State;
4. Project construction within waters of the State shall occur only between June 15 and October 15. Regardless of the date, Project construction within waters of the State is prohibited during rain events capable of mobilizing sediment;
5. All temporarily disturbed areas shall be restored to pre-construction or enhanced conditions, using only native plant species, within the first growing season following cessation of construction activities in those areas;
6. Construction of all on- and off-site mitigation shall be completed prior to completion of Project construction. The Department shall provide additional mitigation, subject to the acceptance of the Water Board Executive Officer, if it fails to meet this timeline;
7. A final on-site Mitigation and Monitoring Plan (On-site MMP) shall be submitted and found acceptable to the Water Board Executive Officer no later than March 31, 2011. The on-site MMP shall be implemented. The On-site MMP shall include:
 - a. A proposal to plant no fewer than 5 ~~California sycamores~~ ~~big leaf maples~~ and 63 willow trees on-site within four areas totaling no less than 0.19 acres (560 linear feet);
 - b. A detailed planting plan;
 - c. An invasive plant removal plan; and
 - d. A minimum 5-year monitoring plan with survivorship, percent cover, vigor, and reproductive signs metrics, success criteria and commitment to submit periodic monitoring reports to the Water Board. Five ~~California sycamores~~ ~~maples~~ and fifty percent of the willows shall survive after five years. At a minimum, the Department shall propose a timeline to submit monitoring reports for years 0, 1, 3, and 5.

Site maps shall be prepared with photo-documentation points. Prior to implementing the Project, the Department shall photographically document the condition of the Project site. Following installation of the mitigation, the immediate post-construction condition of the site shall be photo-documented and a report shall be submitted to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points clearly marked (Year 0 report);



8. A final off-site Mitigation and Monitoring Plan (Off-site MMP) detailing proposed mitigation at the Stanley reach of the Arroyo Mocho, shall be submitted and found acceptable to the Water Board Executive Officer no later than November 15, 2011~~March 31, 2011~~. The accepted Off-site MMP shall be implemented. The Off-site MMP shall include:
- a. A proposal to establish no less than 6.2 acres of native riparian tree habitat along 2,560 linear feet of the Arroyo Mocho. Tree species shall include California sycamore, big leaf maple, white alder, willow, and other native tree species, as appropriate~~restore high quality riparian habitat along the Arroyo Mocho. The Off-site MMP shall include no less than 1.5 acres of restoration and 3.0 acres of riparian enhancement mitigation;~~
 - b. A detailed riparian tree planting plan using herb, shrub, and tree species, including that incorporates California sycamore, valley oak, white alder, box elder, and other native tree species, as appropriate, along the entire Arroyo Mocho Stanley reach mitigation area. The planting plan shall be acceptable to Zone 7. This certification requires implementation of the planting plan only within a 6.2 acre along an approximately 2,560 linear foot stretch of the Arroyo~~willow, oak, alder, bay laurel, big leaf maple, and sycamore;~~
 - c. An invasive plant removal plan;
 - d. Site maintenance plan;
 - e. Adaptive management plan;
 - f. A legal mechanism to protect the mitigation area in perpetuity;
 - g. Documentation of a legal agreement between Zone 7 and the Department that allows the Department to implement mitigation on Zone 7 property;
 - h. California Environmental Quality Act (CEQA) documentation for the proposed mitigation. If CEQA documentation is not available at the time of the MMP submittal, a CEQA status report and timeline may instead be included;
 - i. A channel restoration plan that includes removal of grade control structures and appropriate channel modifications to ensure a stable channel profile, and removal of all potential fish passage barriers along the Arroyo Mocho Stanley reach mitigation area. The plan shall include natural channel design plans and be based upon a fluvial geomorphic analysis found acceptable to Zone 7. This certification requires implementation of the channel restoration plan only along the 2,560 linear feet of the Arroyo that lies between the Department's 6.2 acre planting area~~A plan to prevent and/or limit pedestrian activity in the mitigation area;~~ and
 - j. A minimum 10-year monitoring plan with survivorship, native and invasive percent cover, vigor, and hydrology metrics, success criteria and commitment to submittal of periodic monitoring reports to the Water Board~~Monitoring metrics and success criteria shall be established for herb, shrub, and tree layers.~~ At a minimum, the Department shall propose a timeline to submit monitoring reports for years 0, 1, 2, 3, 5, 7, and 10.



Site maps shall be prepared with photo-documentation points. Prior to implementing the Project, the Department shall photographically document the condition of the Project site. Following installation of the mitigation, the immediate post-construction condition of the site shall be photo-documented and a report shall be submitted to the Water Board including the pre-construction photographs, the post-construction photographs, and the map with the locations of the photo-documentation points clearly marked (Year 0 report);

9. Any planting established as part of a Project mitigation plan shall not be considered successfully established until supplemental irrigation systems have been terminated for two or more full growing seasons;
10. The Department shall remove the existing box culvert from Stonybrook Creek, install a bridge per the plans in Attachment A, and implement the following in-channel improvements within Stonybrook Creek:
 - a. Remove the remnant rock weir, roadway, and abutment structures. These structures shall be removed by hand. Jackhammers or other hand-operated equipment may be used to break apart the material;
 - b. Fill the scour hole immediately downstream of the existing Stonybrook Creek box culvert with appropriately sized cobble; and
 - c. Grade the new channel section to meet upstream and downstream channel elevations. The new channel section shall be backfilled with native material and overlaid with native rock material.
11. All work in Stonybrook Creek shall be completed before completion of Project construction. The Department shall provide the following reports to the Water Board that address work within Stonybrook Creek:
 - a. An implementation timeline for all mitigation activities within Stonybrook Creek, to be submitted not later than March 30, 2011. Please also include a timeline for overall Project implementation;
 - b. Before and after photo-documentation of creek areas where the remnant structures were removed, to be submitted no later than sixty days after their removal;
 - c. A photographic report showing the entire restored channel section and new bridge, to be submitted no later than sixty days from completion; and
 - d. A Stonybrook Creek geomorphic assessment report detailing the stability of the restored channel section, to be submitted no later than July 15, three rainy seasons after mitigation completion. This report shall be subject to the acceptance of the Executive Officer, and shall include any mitigation measures necessary to improve channel stability (e.g., replacement of cobble).
12. Not later than 30 days prior to the beginning of construction of any Project component, the City shall submit, acceptable to the Executive Officer, a final SWPPP to address the Project's expected construction stage impacts, prepared pursuant to the State Water Resources Control



Board Water Quality Order No. 99-06-DWQ, the NPDES Statewide Permit for Storm Water Discharges From the State of California City of Transportation Properties, Facilities, and Activities;

13. All on- and off-site mitigation shall not be considered to satisfy the conditions of this certification until final mitigation success reports have been submitted to the Water Board and found acceptable by the Executive Officer;
14. The Department shall provide 2.1 acres of stormwater treatment from impervious areas within the Alameda Creek watershed. A treatment proposal shall be submitted, subject to the acceptance of the Executive Officer, and be implemented no later than five years from the date of Project completion;
15. The Department shall mitigate potential hydromodification impacts from the Project's added impervious areas by installing underground detention facilities per the plans included in Attachment B of this certification;
16. Not later than 20 days prior to any dewatering and diversion activities, the Department shall submit a dewatering and/or diversion plan, subject to the acceptance of Water Board staff. The plan shall present a time schedule for dewatering activities and include a commitment to have all diversion structures removed from waters of the State, including stabilization and restoration in areas where diversion occurred, prior to October 15;
17. This certification does not allow for the take, or incidental take, of any special status species. The City shall use the appropriate protocols, as approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service, to ensure that Project activities do not impact the Beneficial Use of the Preservation of Rare and Endangered Species;
18. The Department shall maintain a copy of this water quality certification at the Project site so as to be available at all times to site operating personnel. It is the responsibility of the Department to assure that all personnel (employees, contractors, and subcontractors) are adequately informed and trained regarding the conditions of this certification;
19. The Department shall adhere to the Standard and Regional conditions imposed by Nationwide Permit No. 14 (File No. SPN-2004-286510 S) and the terms of the Streambed Alteration Agreement between the Department and the California Department of Fish and Game (Notification no. 1600-2009-0370-3);
20. This Certification applies to the Project as proposed in the application materials. Please be advised that failure to implement the Project as proposed is a violation of this water quality certification;



21. The Department is required to use the California Wetlands Standard Form to provide Project information and a map of the ~~Department mitigation enhancement and restoration~~ site no later than six weeks from the date of this certification. An electronic copy of the form can be downloaded at: <http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml>. The completed California Wetlands form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a hard copy to both: 1) The Water Board, 1515 Clay St., Suite 1400, Oakland, CA 94612, to the attention of California Wetlands Portal~~The completed form shall be submitted electronically to wetlandsdata@waterboards.ca.gov or shall be submitted as a hard copy to both: 1) The Water Board to the attention of Wetland Tracker; and 2) The San Francisco Estuary Institute, 7770 Pardee Lane, Oakland, CA 94621-1424, to the attention of Mike May;~~
22. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the State may occur; construction materials and heavy equipment must be stored outside waters of the State;
23. Except as expressly allowed in this Certification, the discharge, or creation of the potential for discharge, of any soil materials including fresh concrete, cement, silts, clay, sand and other organic materials to waters of the State is prohibited;
24. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code (CWC) and Section 3867 of Title 23 of the California Code of Regulations(23 CCR);
25. This certification action does not apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to California Code of Regulations (CCR) Title 23, Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought; and,
26. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833). Water Board staff received full payment of \$720.00 on December 16, 2009.

We anticipate your cooperation in implementing these conditions. However, please be advised that any violation of water quality certification conditions is a violation of State law and subject to administrative civil liability pursuant to California Water Code (CWC) section 13350. Failure to respond, inadequate response, late response, or failure to meet any condition of this certification may subject you to civil liability imposed by the Water Board to a maximum of \$5,000 per day per violation or \$10 for each gallon of waste discharged in violation of this certification.



Conditions 6, 7, 108, 11, ~~1312~~, 15, and 2014 are requirements for information or reports. Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in CWC section 13268.

Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR Section 3857.



If you have any questions, please contact Brendan Thompson at (510) 622-2506, or via e-mail to BThompson@waterboards.ca.gov.

Sincerely,

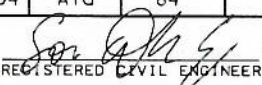

Bruce H. Wolfe
Executive Officer

cc (via e-mail): Mr. Bill Orme SWRCB-DWQ
Mr. Hal Durio, USACE
Ms. Jane Hicks, USACE
Mr. Cameron Johnson, USACE
Ms. Holly Costa, USACE
Mr. Jerry Roe, USFWS

Mr. Dale Bowyer, Water Board
Mr. Jason Brush, USEPA
Mr. Hardeep Takhar, Caltrans
Mr. Cyrus Vafai, Caltrans
Ms. Andrea Meier, USACE

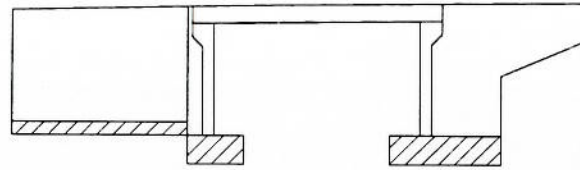


Attachment A
Plans for Stonybrook Creek
Improvements

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84			
				1-28-10	
REGISTERED CIVIL ENGINEER				DATE	
					
PLANS APPROVAL DATE					
<small>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.</small>					

INDEX TO PLANS



SHEET NO.	TITLES
1.	GENERAL PLAN
2.	INDEX TO PLANS
3.	DECK CONTOURS
4.	FOUNDATION PLAN
5.	REMOVAL DETAILS
6.	ABUTMENT 1 LAYOUT
7.	ABUTMENT 2 LAYOUT
8.	ABUTMENT DETAILS NO.1
9.	ABUTMENT DETAILS NO.2
10.	ABUTMENT DETAILS NO.3
11.	TYPICAL SECTION
12.	SLAB REINFORCEMENT
13.	STRUCTURE APPROACH TYPE EQ (3D)
14.	STRUCTURE APPROACH DRAINAGE DETAIL
15.	ARCHITECTURAL TREATMENT
16.	TUBULAR BICYCLE RAILING
17.	LOG OF TEST BORINGS 1 OF 4
18.	LOG OF TEST BORINGS 2 OF 4
19.	LOG OF TEST BORINGS 3 OF 4
20.	LOG OF TEST BORINGS 4 OF 4



CONCRETE STRENGTH AND TYPE LIMITS

No Scale

Legend:

-  Structural Concrete, Bridge ($f_c' = 28 \text{ MPa} @ 28 \text{ days}$)
-  Structural Concrete, Bridge Footing $f_c' = 25 \text{ Mpa}$

GENERAL NOTES LOAD RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, Fourth Edition with Interims through 2007 and Caltrans Amendments, except that geotechnical design of deep foundations, earth retaining systems, bridge (incl. barrier and railing) details taken from Standard Plans July 2004 and earlier version, Standard Bridge Details XS sheets, etc) are designed using Bridge Specifications ('96 AASHTO w/Revisions by Caltrans).

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC), VERSION 1.4 JUNE 2004

DEAD LOAD: Includes 1680 Pa for Future Wearing Surface

LIVE LOADING: HL-93 and and Permit Design Load

SEISMIC LOADING: Soil Profile Type C
Magnitude Group 7.25 ± 0.25
Peak Rock Acceleration = 0.6g

REINFORCED CONCRETE: $f_y = 420 \text{ MPa}$
 $f_c' = 25 \text{ MPa}$
 $n = 8$

QUANTITIES

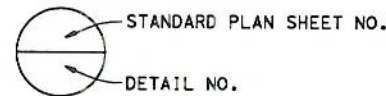
	LUMP	SUM
BRIDGE REMOVAL		
STRUCTURE EXCAVATION (BRIDGE)	425	m ³
STRUCTURE EXCAVATION (RETAINING WALL)	51	m ³
STRUCTURE BACKFILL (BRIDGE)	276	m ³
STRUCTURE BACKFILL (RETAINING WALL)	58	m ³
PERVIOUS BACKFILL MATERIAL	44	m ³
PERVIOUS BACKFILL MATERIAL (RETAINING WALL)	4	m ³
STRUCTURAL CONCRETE, BRIDGE FOOTING	75	m ³
STRUCTURAL CONCRETE, BRIDGE	189	m ³
STRUCTURAL CONCRETE, RETAINING WALL	21	m ³
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ)	22	m ³
ARCHITECTURAL TREATMENT	39	m ²
JOINT SEAL (MR 13 MM)	37	m
BAR REINFORCING STEEL (BRIDGE)	30,010	kg
BAR REINFORCING STEEL (RETAINING WALL)	1373	kg
CLEAN AND PAINT BRIDGE RAILING		LUMP SUM
PREPARE AND STAIN CONCRETE	117	m ²
TUBULAR BICYCLE RAILING	30	m
CABLE RAILING	6	m
CONCRETE BARRIER (TYPE 736)	30	m

STANDARD PLANS JULY 2004

A10A	ACRONYMS AND ABBREVIATIONS (A-L)
A10B	ACRONYMS AND ABBREVIATIONS (M-Z)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B0-13	BRIDGE DETAILS
B3-1	RETAINING WALL TYPE 1
B3-8	RETAINING WALL DETAILS NO. 1
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 50MM)
B11-47	CABLE RAILING
B11-56	CONCRETE BARRIER TYPE 736

FOOTING DATA TABLE

	Working Stress Design (WSD)	
	Permissible Gross Contact Stress (Settlement) (kPa)	Allowable Gross Bearing Capacity (kPa)
Abut 1	588	196
Abut 2	588	196



DESIGN	BY	CHECKED
DESIGN	A. Yazdani/S. Ly	S. Hamoud
DETAILS	L. Ma/F. Maagma	S. Ly
QUANTITIES	H. Singh/A. Perez	S. Ly

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO.	KILOMETER POST
33-0731	20.90

STONYBROOK CREEK BRIDGE
INDEX TO PLAN

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS



CU 04
EA 174411
FILE => 33-e0731-b-1tp.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

03-22-09	01-28-09	4-22-09	11-18-09	12-14-09	1-28-10
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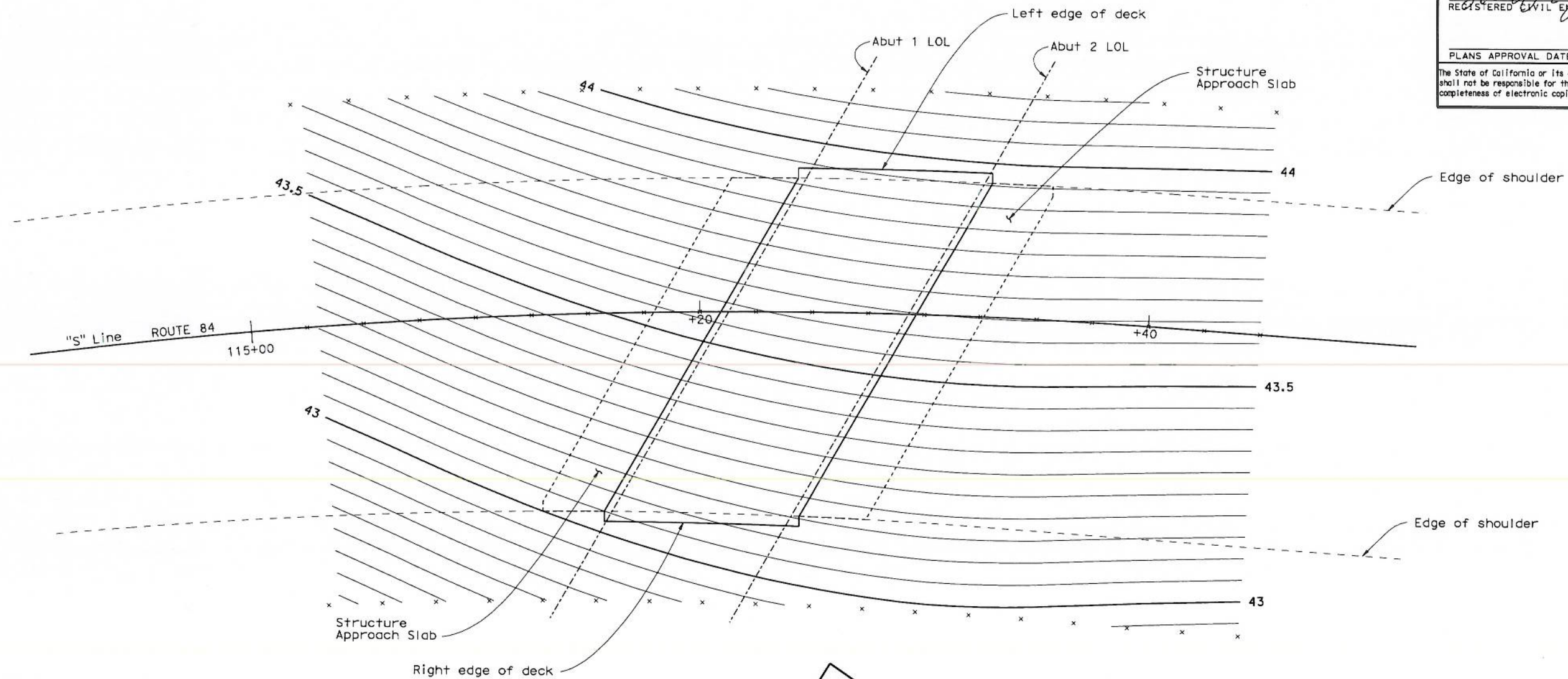
SHEET 2 OF 20

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV. 03-17-04)

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84			

REGISTERED CIVIL ENGINEER DATE 1-28-10
 Son Thanh Ly
 No. 72584
 Exp. 6-30-10
 CIVIL
 STATE OF CALIFORNIA

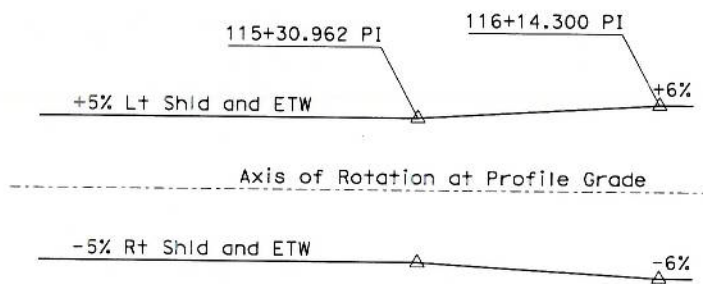
PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



PLAN
1:100



Notes:
 0.05 m Contour Interval
 x - 2.50 m Station Increment
 Contours do not include camber



SUPERELEVATION DIAGRAM
No Scale



DESIGN	BY A. Yazdani/S. Ly	CHECKED S. Hamoud
DETAILS	BY L. Ma/ F. Maagma	CHECKED S. Ly
QUANTITIES	BY H. Singh/A. Perez	CHECKED S. Ly

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO.	33-0731
KILOMETER POST	20.90

STONYBROOK CREEK BRIDGE
DECK CONTOURS

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN



CU 04
EA 174411
FILE => 33-e0731-d-dc01.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
03-02-06 01-28-09 4-24-05 11-14-05 12-14-09 1-28-10	3	20

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

DATE PLOTTED => 11-FEB-2010 TIME PLOTTED => 17:31 USERNAME => tmc1

CURVE DATA

No.	R	Δ	T	L
(A)	250.000	18°45'13"	41.283	81.828
(B)	243.550	4°33'58"	9.710	19.409
(C)	243.550	7°52'49"	16.775	33.497

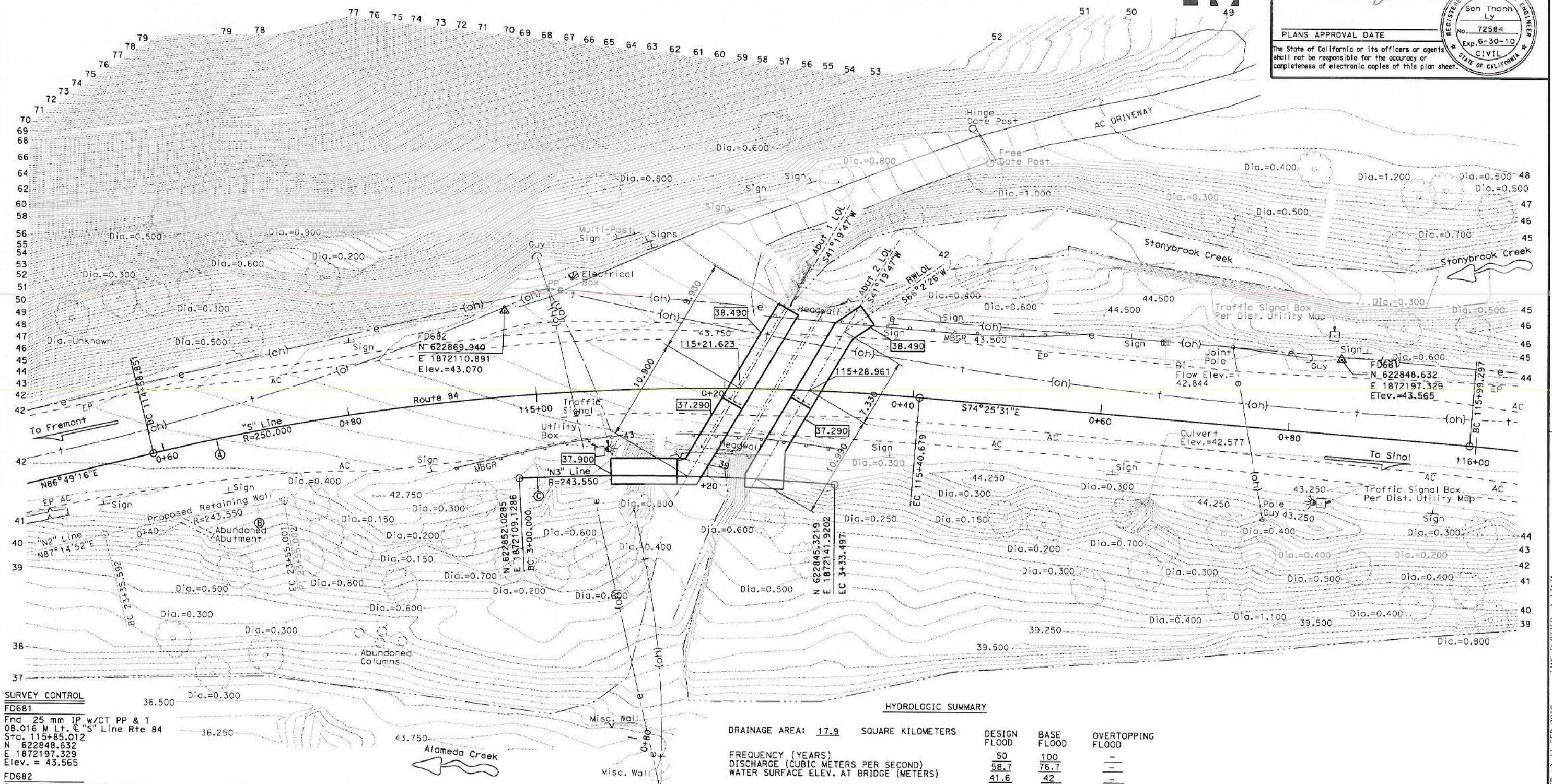


DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84			

REGISTERED CIVIL ENGINEER
 Son Thann Ly
 No. 72584
 Exp. 6-30-10
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE: 1-28-10
 DATE: 1-28-10

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SURVEY CONTROL

FD681
 Fnd 25 mm IP w/CT PP & T
 08.016 M Lt. @ "S" Line Rte 84
 Sta. 115+85.012
 N 622848.632
 E 1872197.329
 Elev. = 43.565

FD682
 Fnd 25 mm IP w/CT PP & T
 09.208 M Lt. @ "S" Line Rte 84
 Sta. 114+97.397
 N 622869.940
 E 1872110.891
 Elev. = 43.070

NOTE:

- Indicates Bottom of Footing Elevation
 - Indicates Existing Structure

HYDROLOGIC SUMMARY

DRAINAGE AREA:	17.9	SQUARE KILOMETERS	DESIGN FLOOD	BASE FLOOD	OVERTOPPING FLOOD
FREQUENCY (YEARS)	50		58.7	76.7	-
DISCHARGE (CUBIC METERS PER SECOND)	41.6		41.6	42	-
WATER SURFACE ELEV. AT BRIDGE (METERS)					

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATIONS.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

PRELIMINARY INVESTIGATION SECTION				DESIGN		BY		CHECKED			
SCALE	VERT. DATUM NAVD83	PHOTOGRAMMETRY AS OF 1	1:200	HORZ. DATUM NAD83 (1991.35)	SURVEYED	BY	DISTRICT/ C.FASSETT	CHECKED	BY	T.GILLETT	09/2007
ALIGNMENT TIES	DIST. TRAVERSE SHEET	DRAFTED	BY	T.ZOLNIKOVA	09/2007	CHECKED	BY	J.PALLARES	01/2008		
STRUCTURES FOUNDATION PLAN SHEET (METRIC) (REV.10-27-05)				DETAILS	BY	L. Ma	CHECKED	S. Ly			
				QUANTITIES	BY	H. Singh/A. Perez	CHECKED	S. Ly			

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO.
33-0731
KILOMETER POST
21.90

**STONY BROOK CREEK BRIDGE
FOUNDATION PLAN**

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

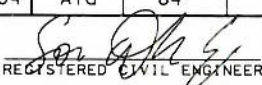
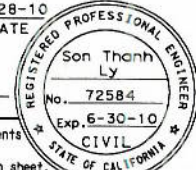
CU 04
EA 174411

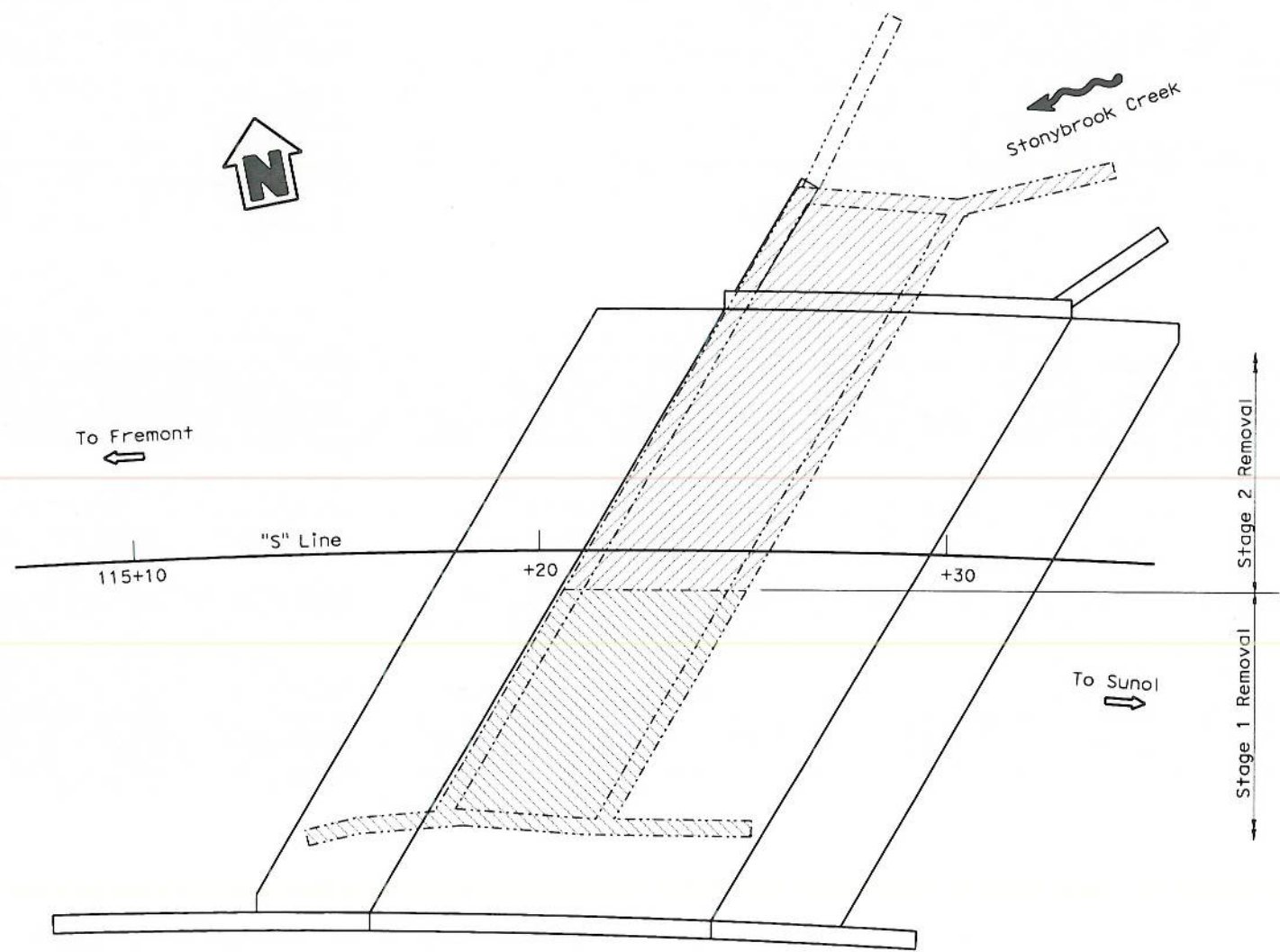
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
01/27/05 12/02/05 11/14/05 1-28-10 2-10-10	4	20

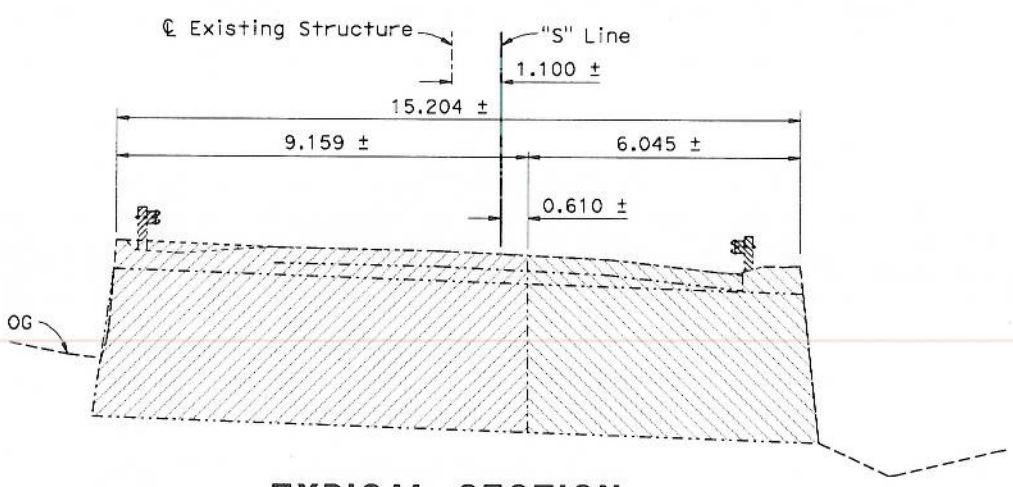
FILE => 33-e0731-e-fp01.dgn

DATE PLOTTED => 11-FEB-2010 USERNAME => rmo1


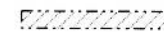
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Alq	84			
 REGISTERED CIVIL ENGINEER DATE 1-28-10					
PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



PLAN
1:80



TYPICAL SECTION
1:80

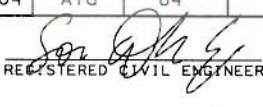

- LEGEND:**
- Stage 1 Removal:  Denotes limits of removal of existing reinforced concrete box culvert and foundation, retaining walls and foundation, structural roadway section, earthen cover and MBGR during Stage 1
 - Stage 2 Removal:  Denotes limits of removal of existing reinforced concrete box culvert and foundation, retaining walls and foundation, structural roadway section, earthen cover and MBGR during Stage 2

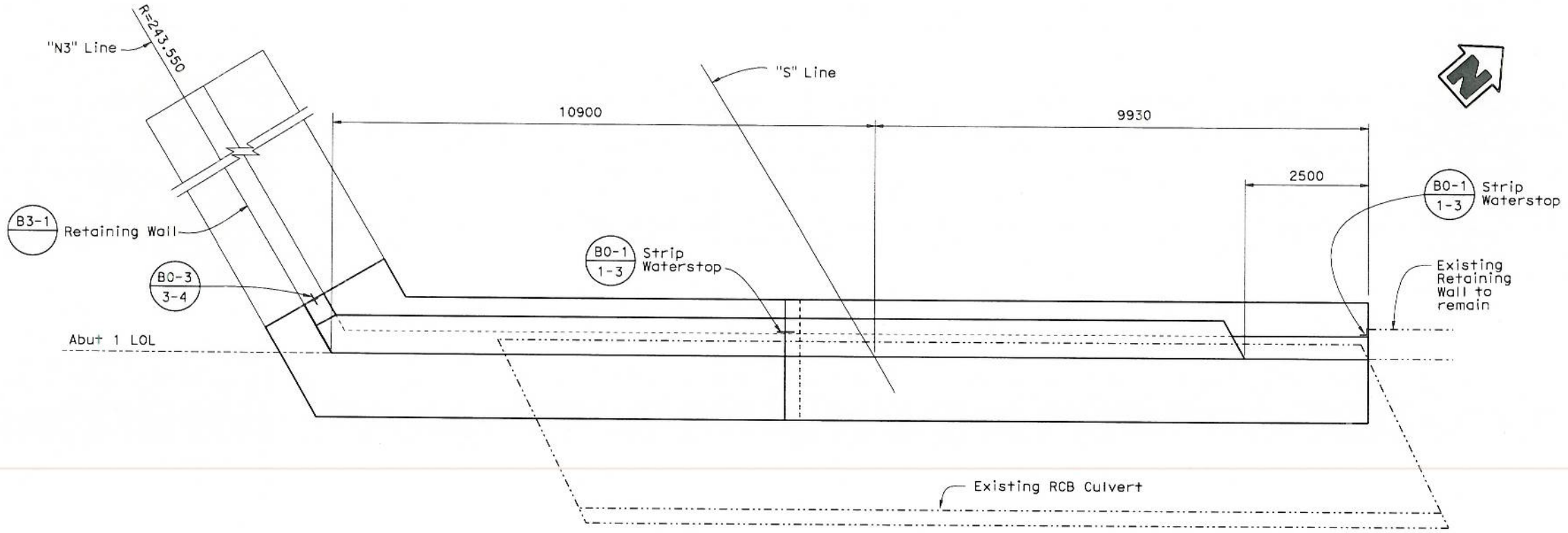
- Notes:**
- Removal of existing structure paid for as "Bridge Removal"
 - Structure Excavation for existing footing and structure will be included as "Bridge Removal"

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

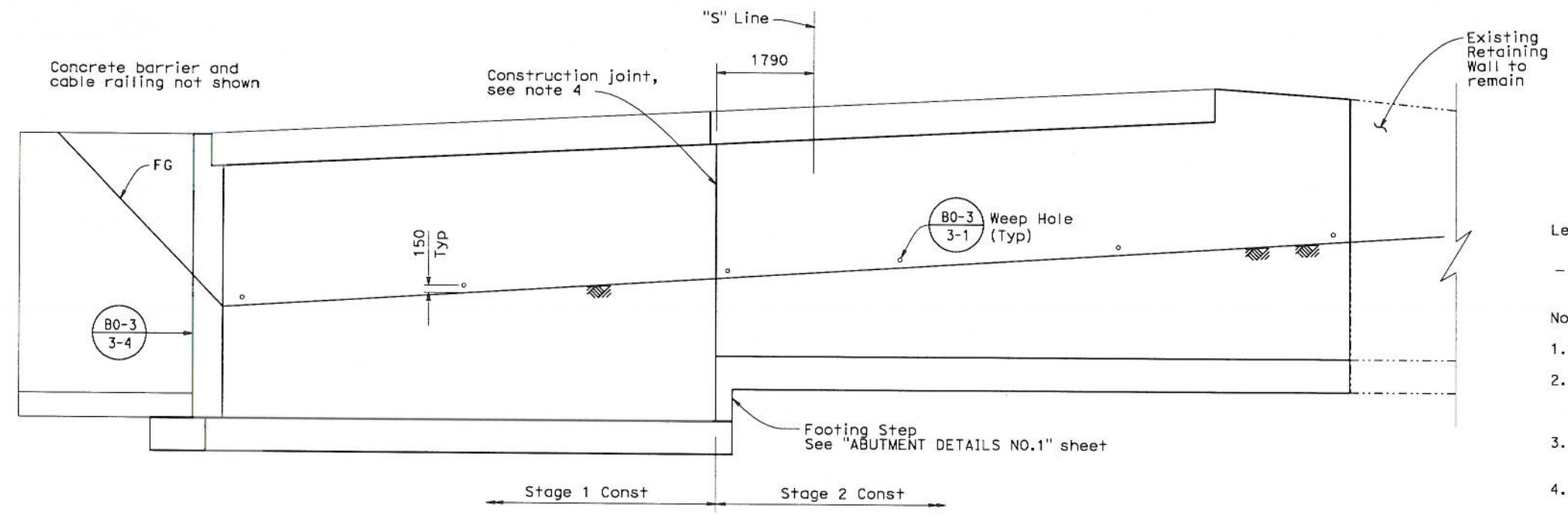
	DESIGN	BY A. Yazdani/S. Ly	CHECKED S. Hamoud	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO.	33-0731	STONYBROOK CREEK BRIDGE REMOVAL DETAILS		
	DETAILS	BY L. Ma/F. Maagma	CHECKED S. Ly			KILOMETER POST	20.90			
QUANTITIES	BY H. Singh/A. Perez	CHECKED S. Ly	CU 04 EA 174411			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11-16-09 1-28-10		SHEET	5
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN				ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 		FILE => 33-e0731-e-rem01.dgn		STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)		

DATE PLOTTED => 11-FEB-2010 TIME PLOTTED => 17:32 USERNAME => fmg1

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84			
REGISTERED CIVIL ENGINEER			DATE	1-28-10	
 REGISTERED CIVIL ENGINEER			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
1:50



ELEVATION
1:50

Legend:

----- Denotes existing structure

Notes:

1. Finish Grade, see "ROAD PLANS".
2. Backfill shall be placed simultaneously at both abutments after the deck is completed.
3. For architectural treatment, see "ARCHITECTURAL TREATMENT" sheet.
4. Reinforcing steel shall be continuous thru all construction joints.

	DESIGN	BY A. Yazdani/S. Ly	CHECKED S. Hamoud	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO.	33-0731	STONYBROOK CREEK BRIDGE ABUTMENT 1 LAYOUT	
	DETAILS	BY L. Ma	CHECKED S. Ly			KILOMETER POST	20.90		
	QUANTITIES	BY H. Singh/A. Perez	CHECKED S. Ly			CU 04 EA 174411	DISREGARD PRINTS BEARING EARLIER REVISION DATES		<table border="1"> <tr> <td>08-05</td> <td>11-10-05</td> <td>12-1-05</td> <td>1-28-10</td> </tr> </table>
08-05	11-10-05	12-1-05	1-28-10						
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN				ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS				SHEET 6 OF 20	

FILE => 33-e0731-f_c01-1o01.dgn

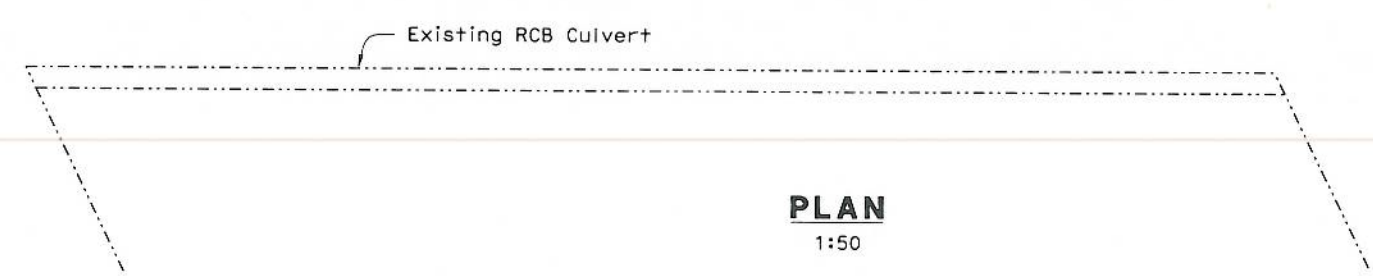
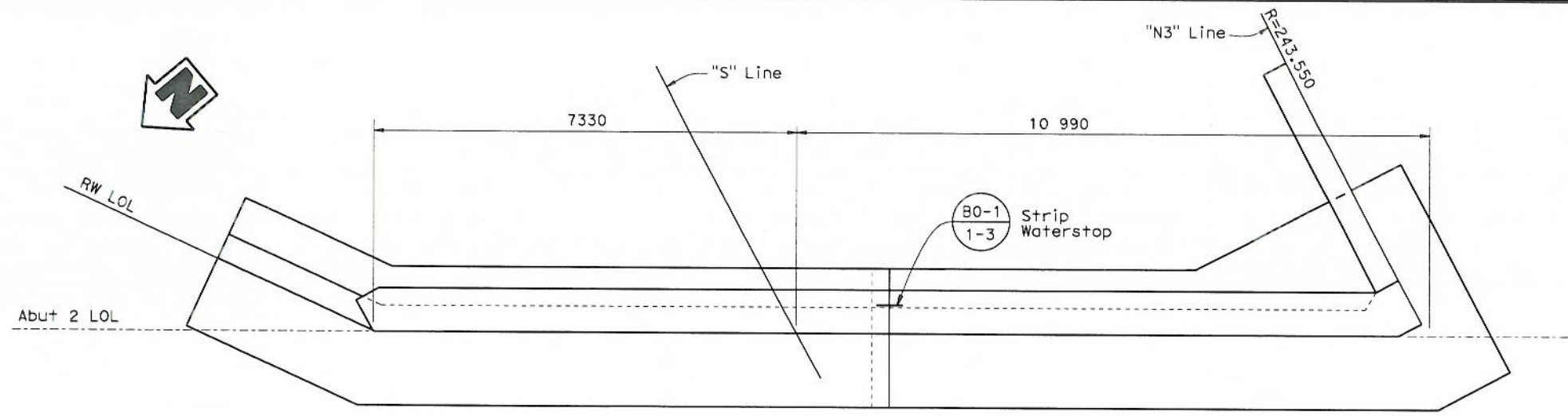
STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

DATE PLOTTED => 11-FEB-2010 TIME PLOTTED => 17:32 USERNAME => 1img1

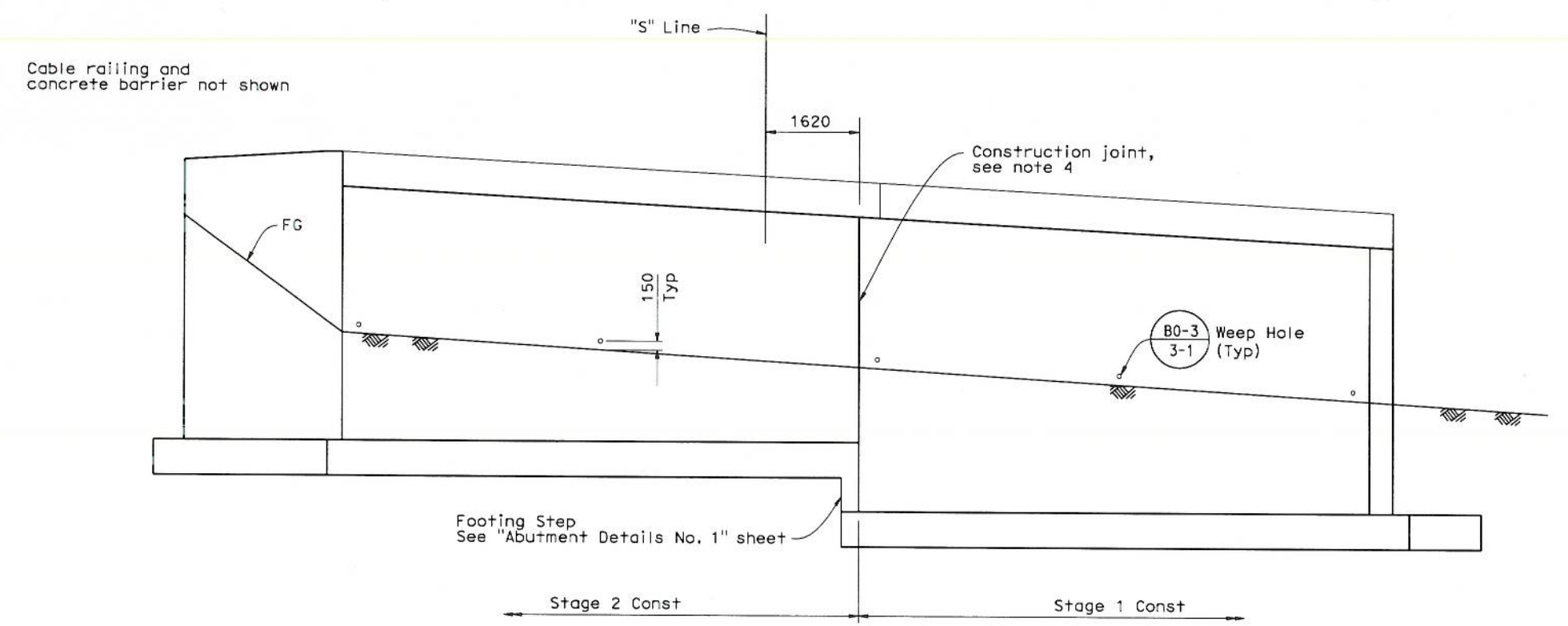
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	Ala	84			

1-28-10
 REGISTERED CIVIL ENGINEER DATE
 Son Thanh Ly
 No. 72584
 Exp. 6-30-10
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
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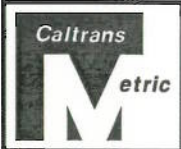


PLAN
1:50



ELEVATION
1:50

- Legend:
- Denotes existing structure
- Notes:
1. Finish Grade, see "ROAD PLANS".
 2. Backfill shall be placed simultaneously at both abutments after the deck is completed.
 3. For architectural treatment, see "ARCHITECTURAL TREATMENT" sheet.
 4. Reinforcing steel shall be continuous thru all construction joint.



DESIGN	BY A. Yazdani/S. Ly	CHECKED S. Hamoud
DETAILS	BY L. Ma	CHECKED S. Ly
QUANTITIES	BY H. Singh/A. Perez	CHECKED S. Ly

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO. 33-0731
KILOMETER POST 20.90
STONYBROOK CREEK BRIDGE
ABUTMENT 2 LAYOUT

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN



CU 04
EA 174411
FILE => 33-e0731-f_c01-1a02.dgn

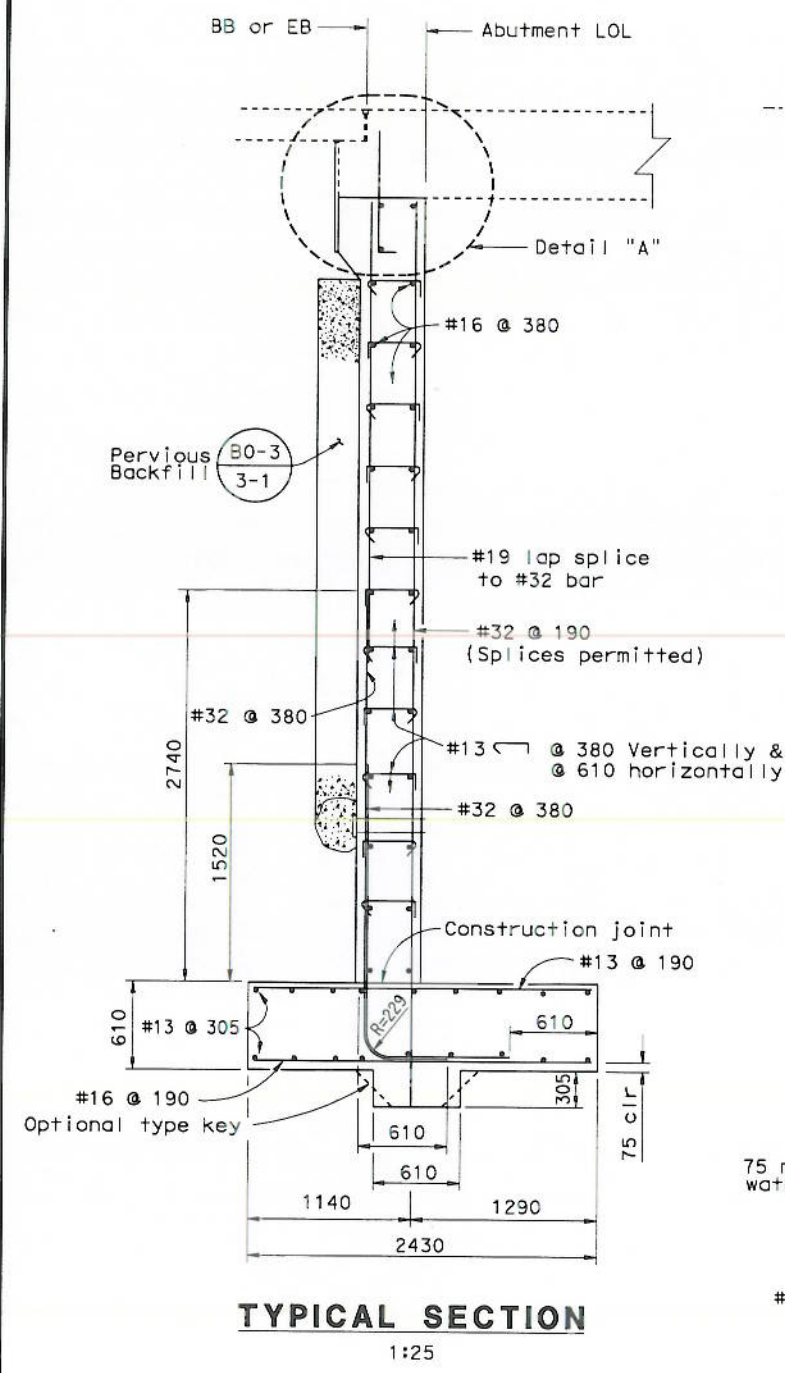
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
	7	20

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

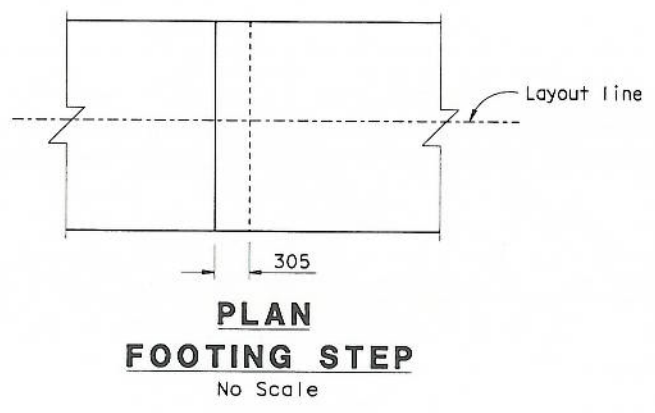
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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Alc	84			
REGISTERED CIVIL ENGINEER Son Thanh Ly No. 72584 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA			1-28-10 PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		

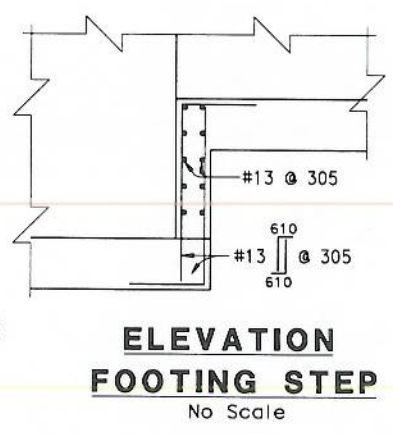


TYPICAL SECTION
1:25

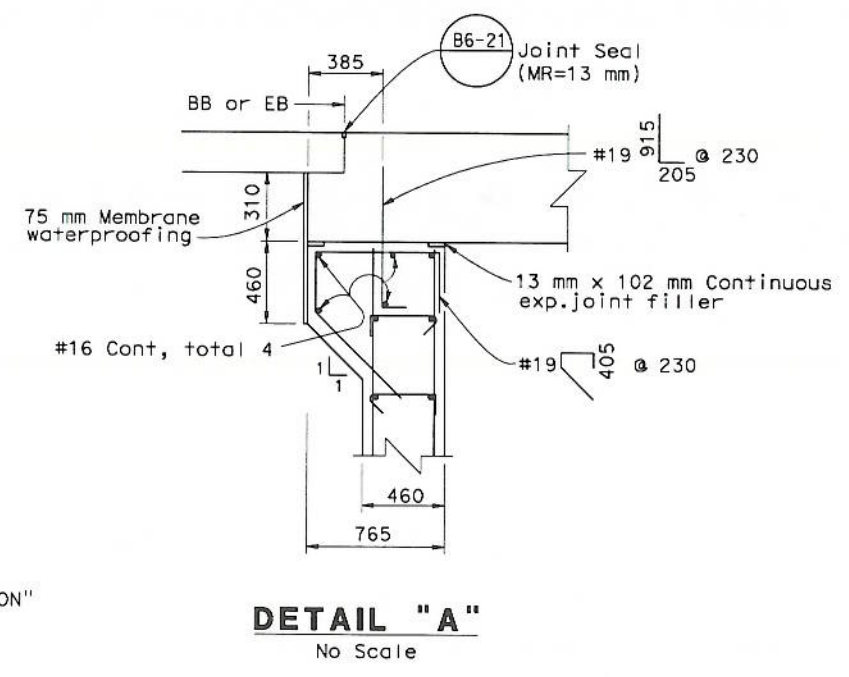
- Notes:
1. Finish Grade, see "ROAD PLANS"
 2. For slab reinforcement, see "TYPICAL SECTION" and "SLAB REINFORCEMENT" sheets



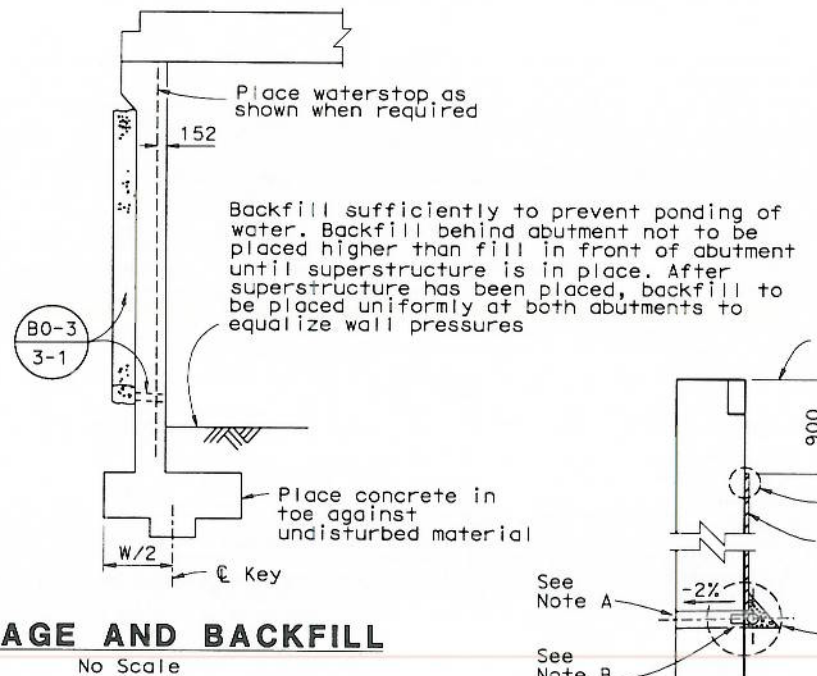
PLAN FOOTING STEP
No Scale



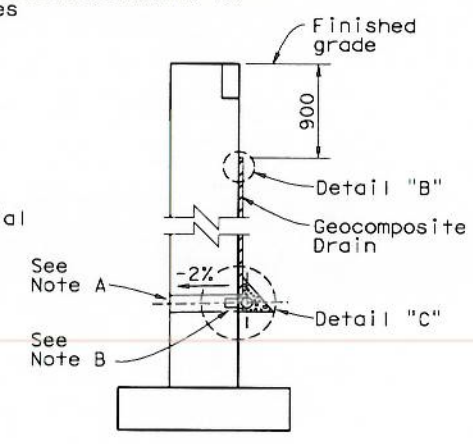
ELEVATION FOOTING STEP
No Scale



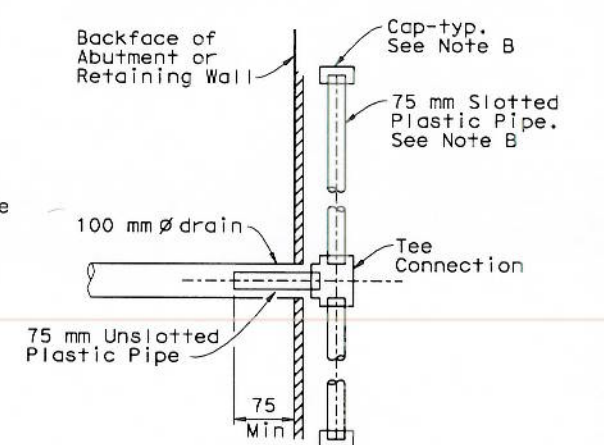
DETAIL "A"
No Scale



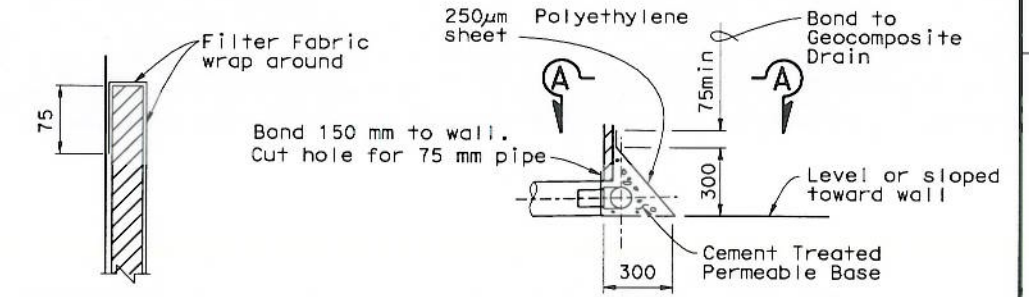
DRAINAGE AND BACKFILL
No Scale



WALL SECTION



SECTION A-A



DETAIL "B" DETAIL "C"

WEEP HOLE AND GEOCOMPOSITE DRAIN

No Scale
ALTERNATIVE TO BRIDGE DETAIL (B0-3 3-1)

- Notes:
- 100mm diameter drains at intermediate sag points and at 7.60 meters center to center (2.75 meters c-c for Type 3 and 2.80 meters c-c for Type 4 retaining walls). For walls adjacent to sidewalks or curbs, provide 100 mm cast iron or asbestos cement pipe under the sidewalk to discharge through curb face. Exposed wall drains shall be located 75mm above finished grade.
 - Geocomposite drain, cement treated permeable base, and 75 mm diameter slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 100 mm diameter drain.
 - Connect the low end of plastic pipe to the main outlet pipe as applicable.

	DESIGN	BY A. Yazdani/S. Ly	CHECKED S. Hamoud	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO.	33-0731	STONYBROOK CREEK BRIDGE ABUTMENT DETAILS NO.1
	DETAILS	BY L. Ma	CHECKED S. Ly			KILOMETER POST	20.90	
	QUANTITIES	BY H. Singh/A. Perez	CHECKED S. Ly			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 08-1-09 08-1-09 12-14-09 1-28-10	

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

CU 04 EA 174411 FILE => 33-e0731-f-a01-d+01.dgn

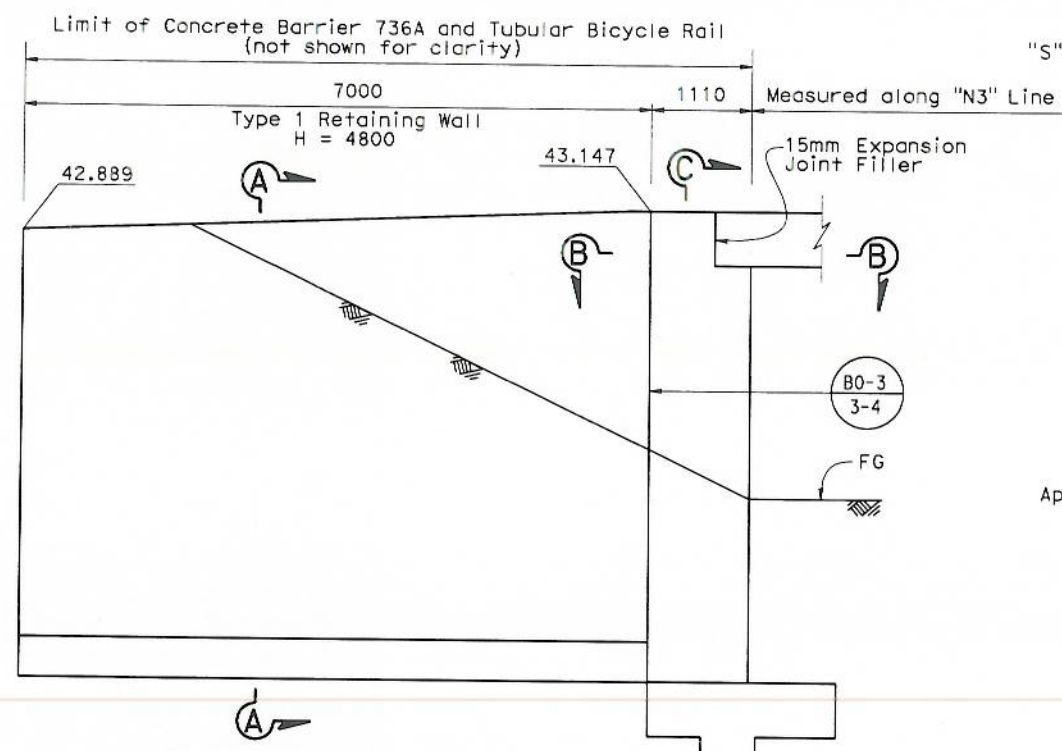
STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

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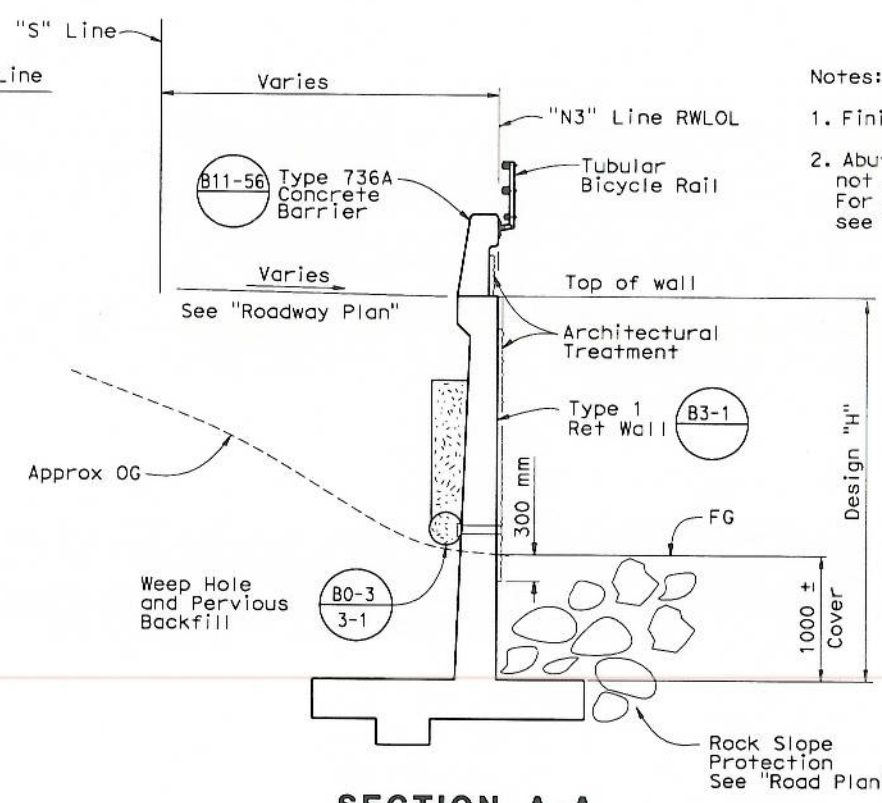
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84			

REGISTERED CIVIL ENGINEER	1-28-10	DATE
Son Thanh Ly No. 72584 Exp. 6-30-10 CIVIL STATE OF CALIFORNIA		
PLANS APPROVAL DATE		

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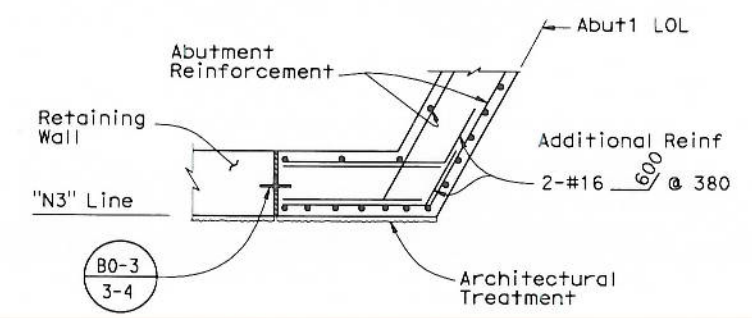


ABUTMENT 1 LEFT RETAINING WALL ELEVATION
1:40

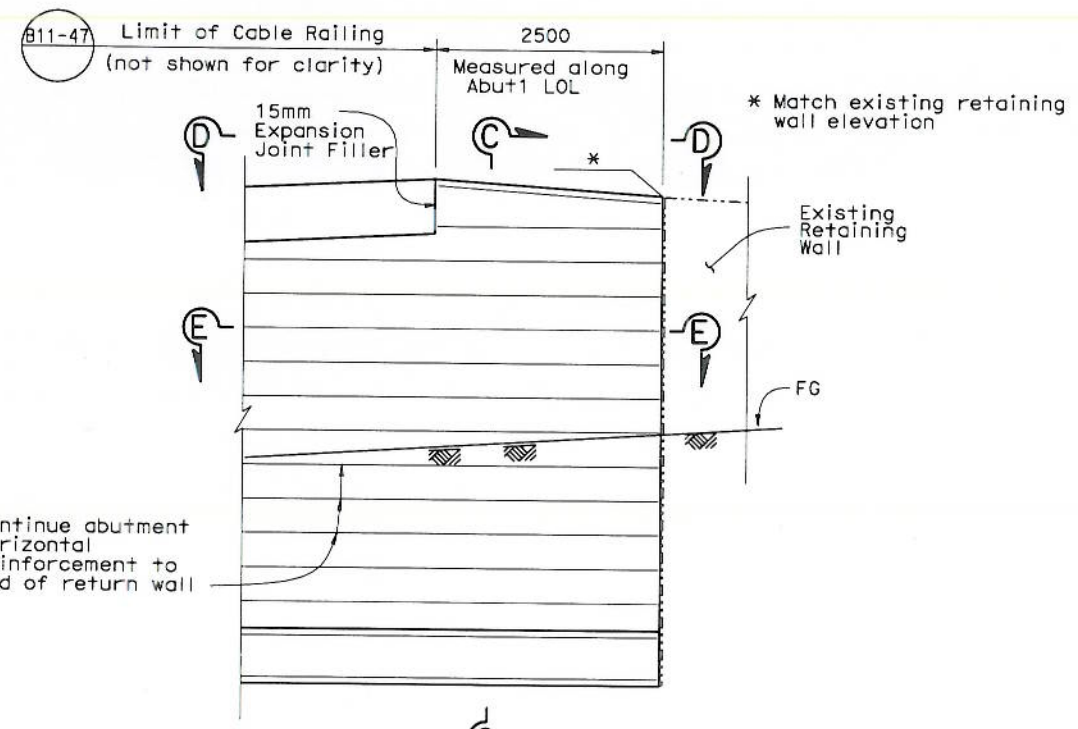


SECTION A-A
1:40

Notes:
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 2. Abutment architectural treatment not shown on Elevation for clarity. For architectural treatment details, see "ARCHITECTURAL TREATMENT" sheet.

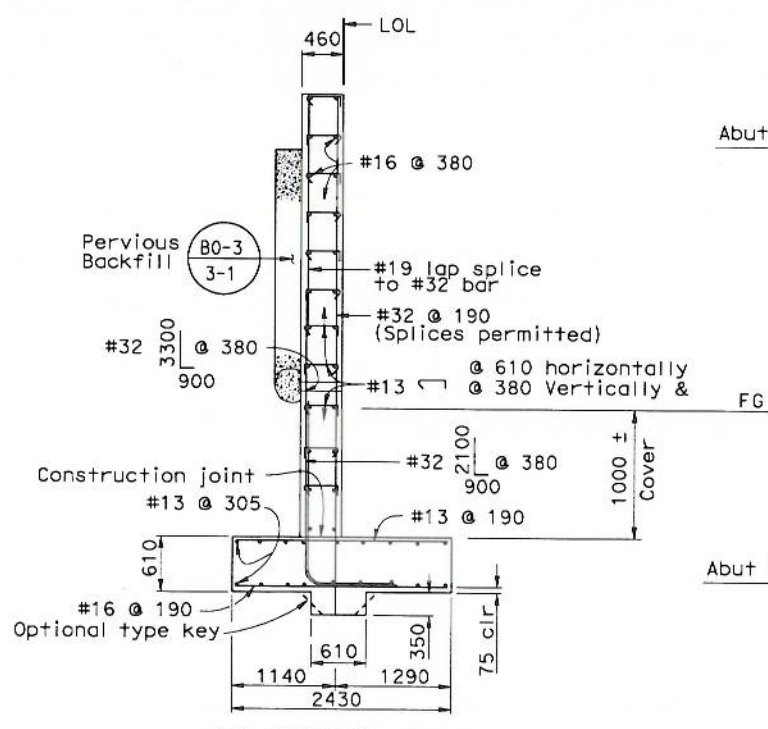


SECTION B-B
1:25

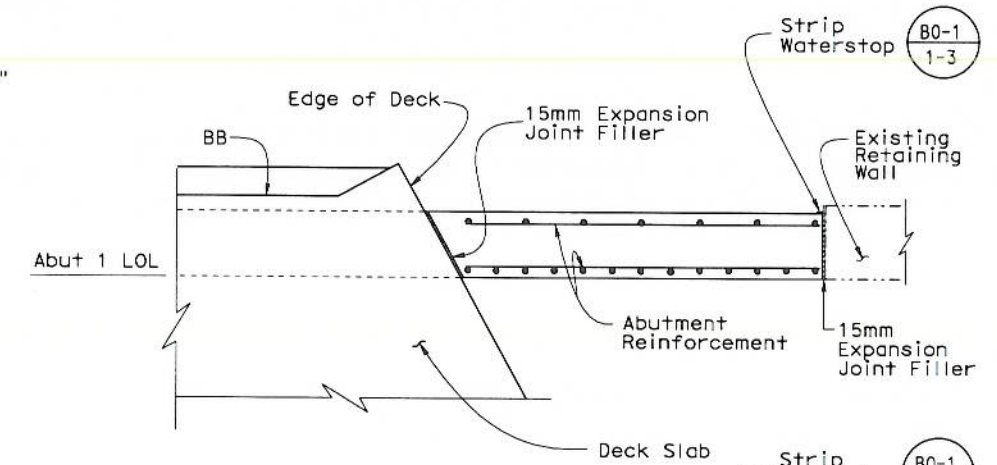


ABUTMENT 1 RIGHT RETURN WALL ELEVATION
1:40

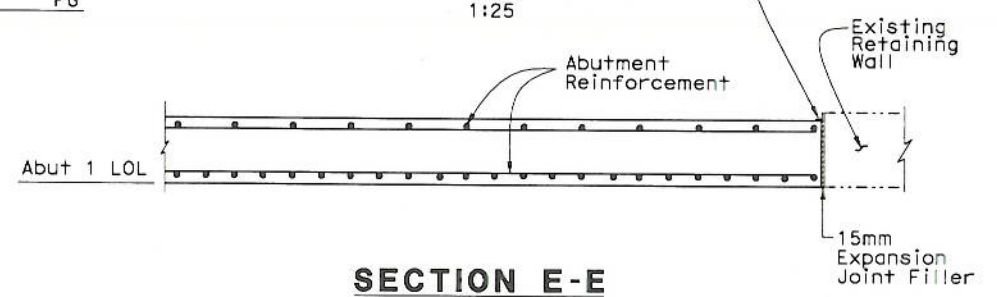
NOTE: For General Notes, see "Standard Plans B3-8"



SECTION C-C
1:40



SECTION D-D
1:25



SECTION E-E
1:25

	DESIGN BY A. Yazdani/S. Ly	CHECKED S. Hamoud	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DESIGN BRANCH 16	BRIDGE NO. 33-0731	STONYBROOK CREEK BRIDGE ABUTMENT DETAILS NO.2	
	DETAILS BY L. Ma	CHECKED S. Ly		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN		KILOMETER POST 20.90
	QUANTITIES BY H. Singh/A. Perez	CHECKED S. Ly		CU 04 EA 174411		DISREGARD PRINTS BEARING EARLIER REVISION DATES

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

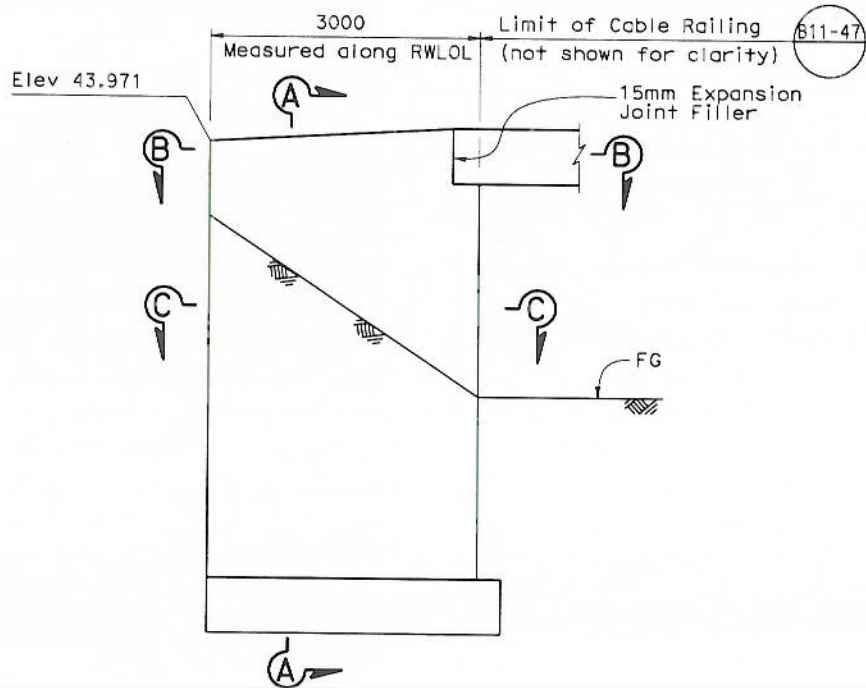
ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

REVISION DATES: 01-14-09, 02-17-09, 11-24-09, 12-14-09, 1-28-10

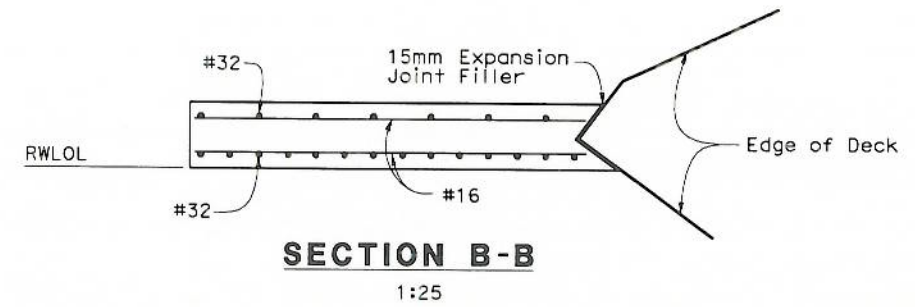
SHEET 9 OF 20

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV. 03-17-04)

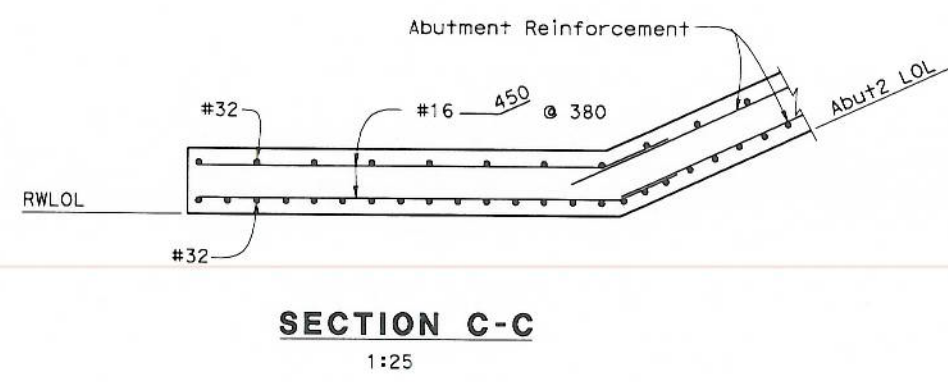
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84			
REGISTERED CIVIL ENGINEER			DATE	1-28-10	
Son Thanh Ly					
No. 72584			REGISTERED PROFESSIONAL ENGINEER		
PLANS APPROVAL DATE			STATE OF CALIFORNIA		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



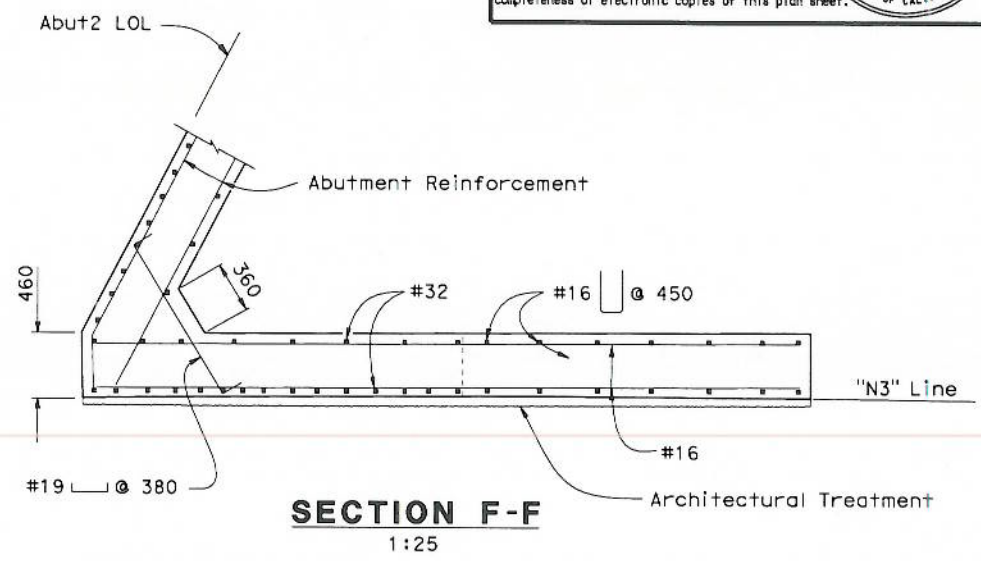
ABUTMENT 2 LEFT RETURN WALL ELEVATION
1:40



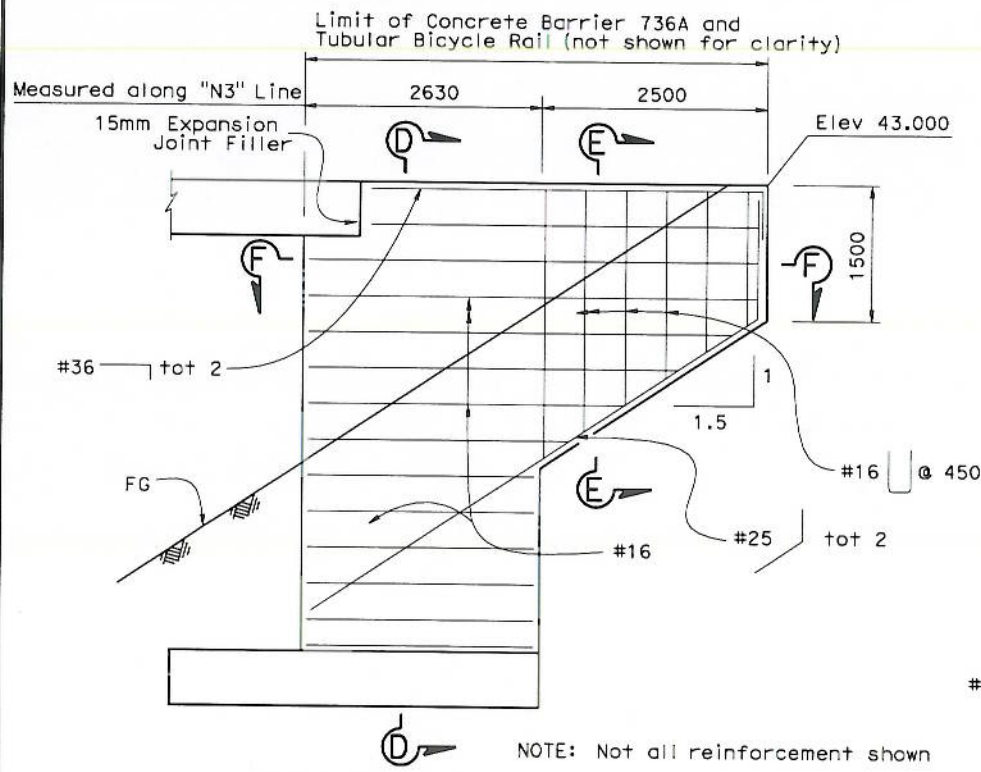
SECTION B-B
1:25



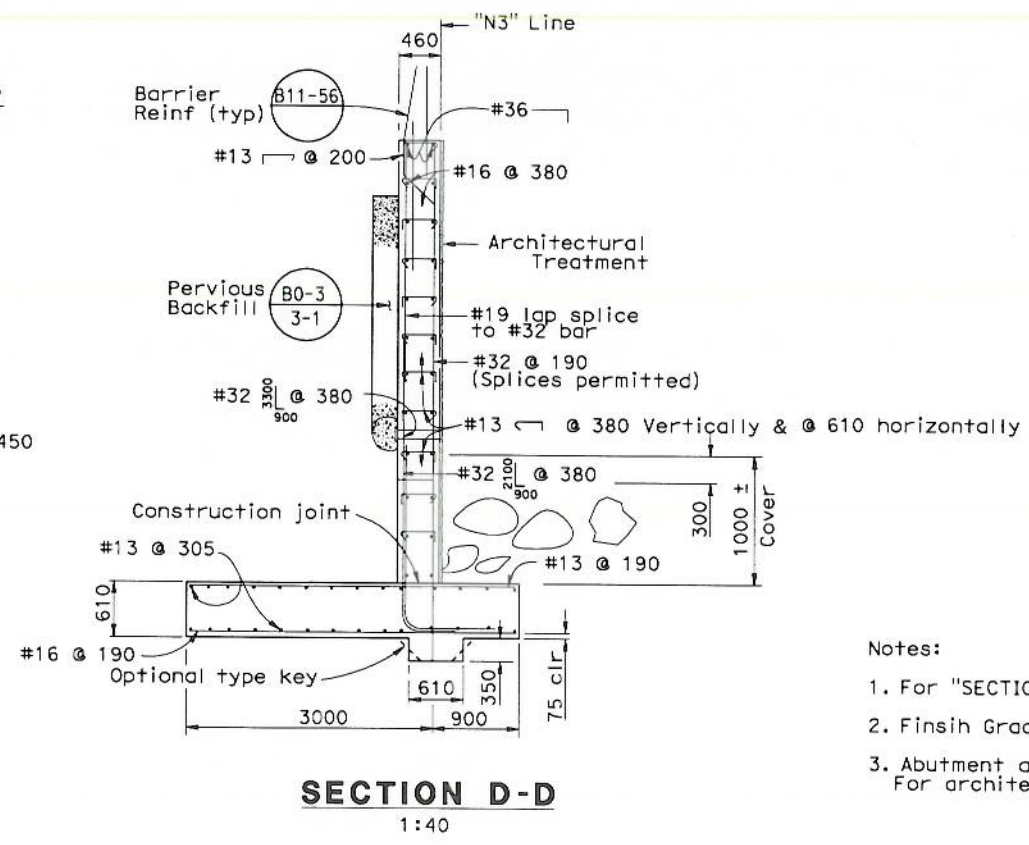
SECTION C-C
1:25



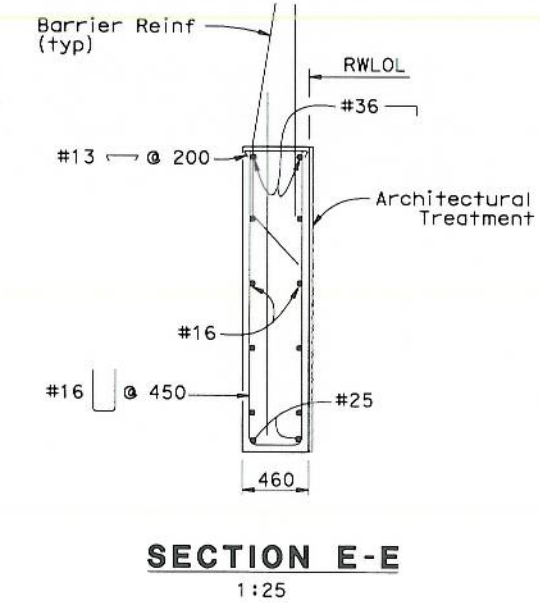
SECTION F-F
1:25



ABUTMENT 2 RIGHT RETURN WALL ELEVATION
1:40



SECTION D-D
1:40



SECTION E-E
1:25

- Notes:
1. For "SECTION A-A", see "ABUTMENT DETAILS NO.2" sheet "SECTION C-C".
 2. Finish Grade, see "ROAD PLANS".
 3. Abutment architectural treatment not shown on Elevation for clarity. For architectural treatment details, see "ARCHITECTURAL TREATMENT" sheet.

	DESIGN BY A. Yazdani/S. Ly CHECKED S. Hamoud	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DESIGN BRANCH 16	BRIDGE NO. 33-0731	STONYBROOK CREEK BRIDGE ABUTMENT DETAILS NO.3
	DETAILS BY L. Ma/F. Waagma CHECKED S. Ly		KILOMETER POST 20.90	
	QUANTITIES BY H. Singh/A. Perez CHECKED S. Ly		CU 04 EA 174411	
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN		ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES
		FILE => 33-e0731-f-a01-at03.dgn		SHEET 10 OF 20

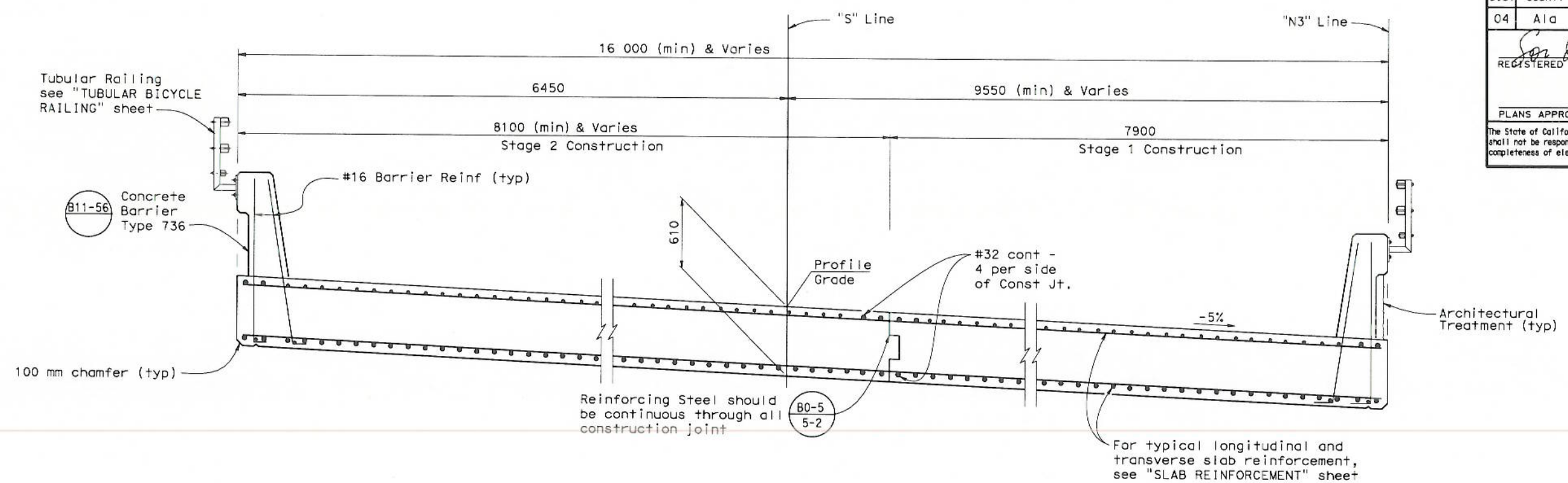
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DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Ala	84			

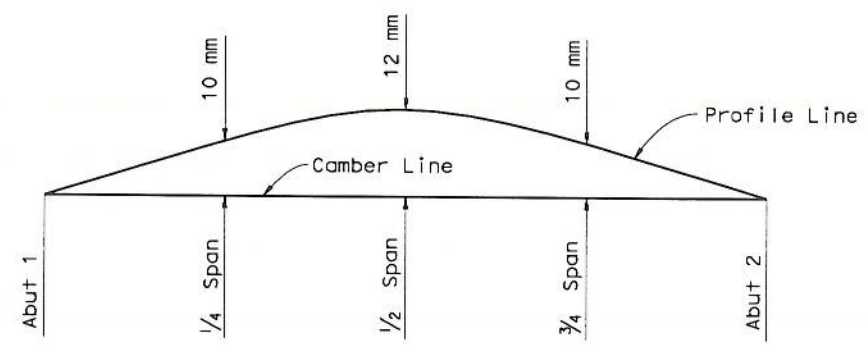
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<i>Son Thanh Ly</i>	1-28-10
PLANS APPROVAL DATE	

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<i>Son Thanh Ly</i>	
No. 72584	Exp. 6-30-10
CIVIL	

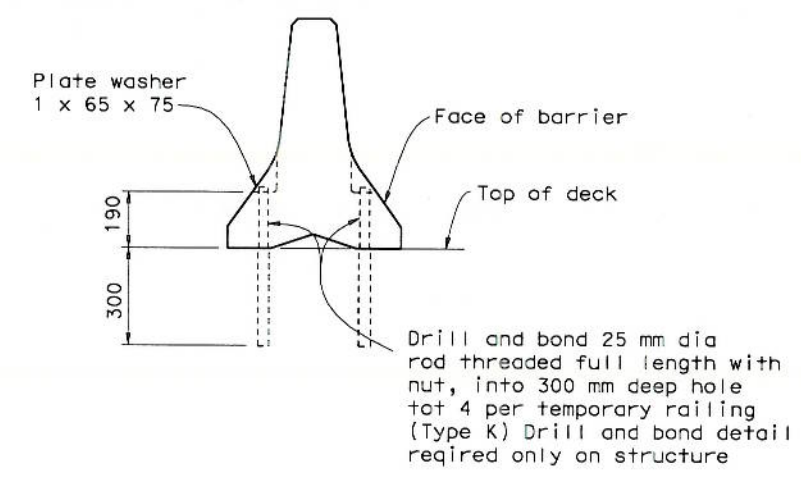
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TYPICAL SECTION
1:20



CAMBER DIAGRAM
No Scale



TEMPORARY RAILING (TYPE K) ATTACHMENT DETAIL
No Scale



DESIGN	BY A. Yazdani/S. Ly	CHECKED S. Hamoud
DETAILS	BY L. Ma/F. Maagma	CHECKED S. Ly
QUANTITIES	BY H. Singh/A. Perez	CHECKED S. Ly

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO. 33-0731
KILOMETER POST 20.90
STONYBROOK CREEK BRIDGE
TYPICAL SECTION

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN



CU 04
EA 174411
FILE => 33-e0731-k-ts01.dgn

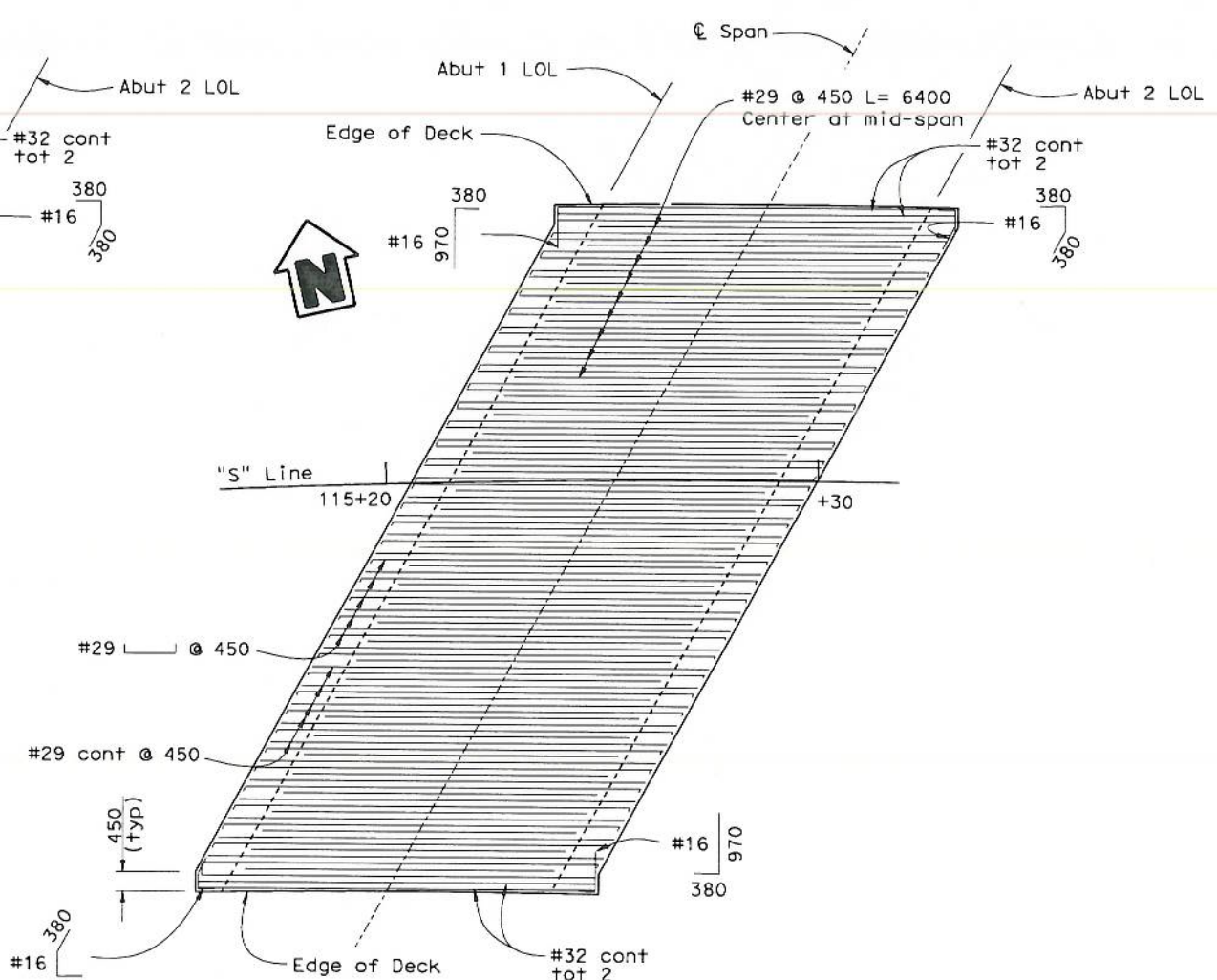
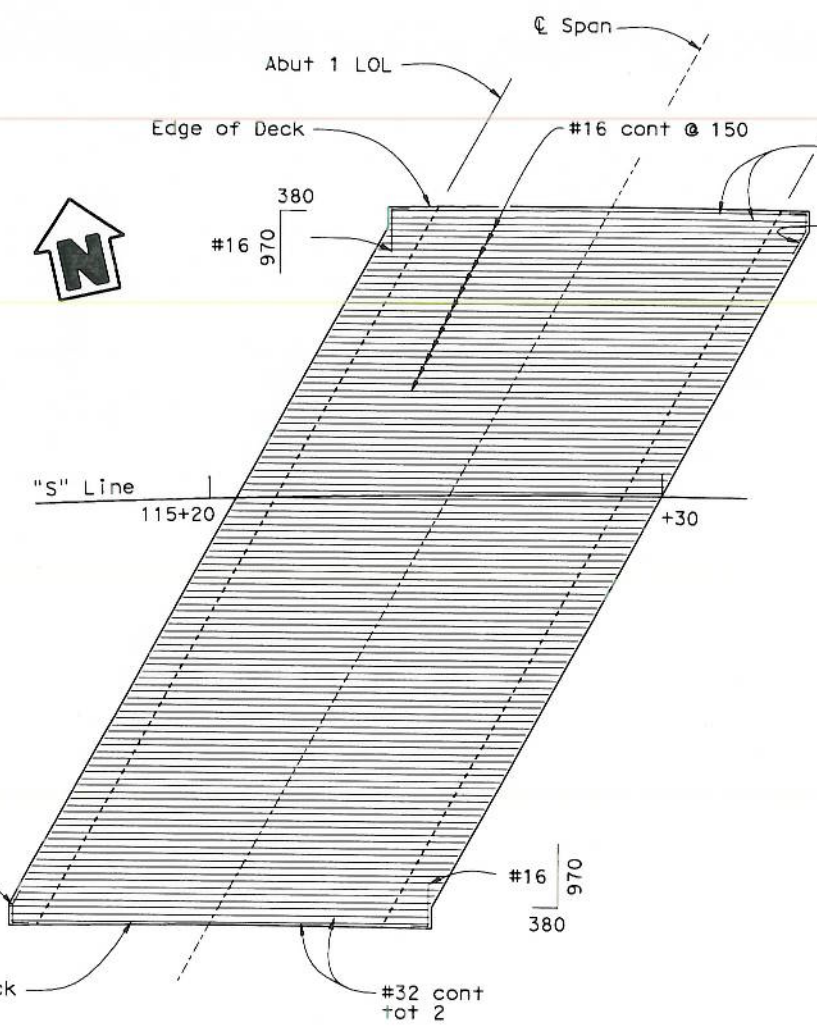
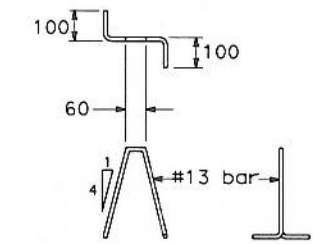
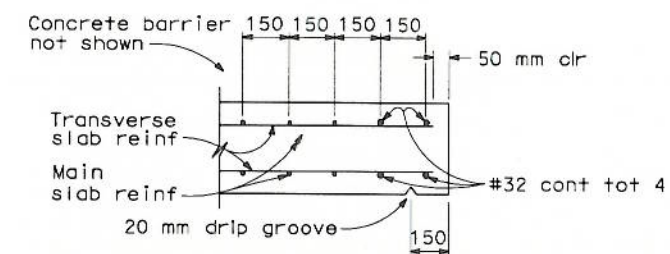
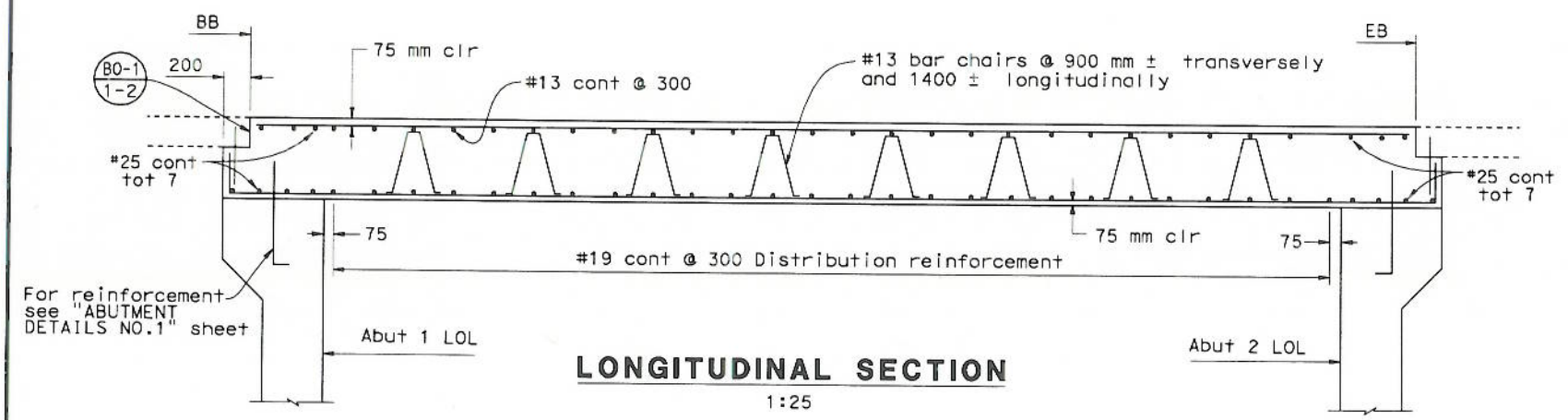
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REVISION DATES	SHEET	OF
01-28-05 01-24-05 12-14-05 1-28-10	11	20

STRUCTURES DESIGN DETAIL SHEET (METRIC) (REV.03-17-04)

DATE PLOTTED => 11-FEB-2010 TIME PLOTTED => 17:53 USERNAME => 1101

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	Ala	84			
			1-28-10		
			REGISTERED CIVIL ENGINEER DATE		
			1-28-10		
			PLANS APPROVAL DATE		
			1-28-10		
			REGISTERED PROFESSIONAL ENGINEER		
			Son Thanh Ly		
			No. 72584		
			Exp. 6-30-10		
			CIVIL		
			STATE OF CALIFORNIA		

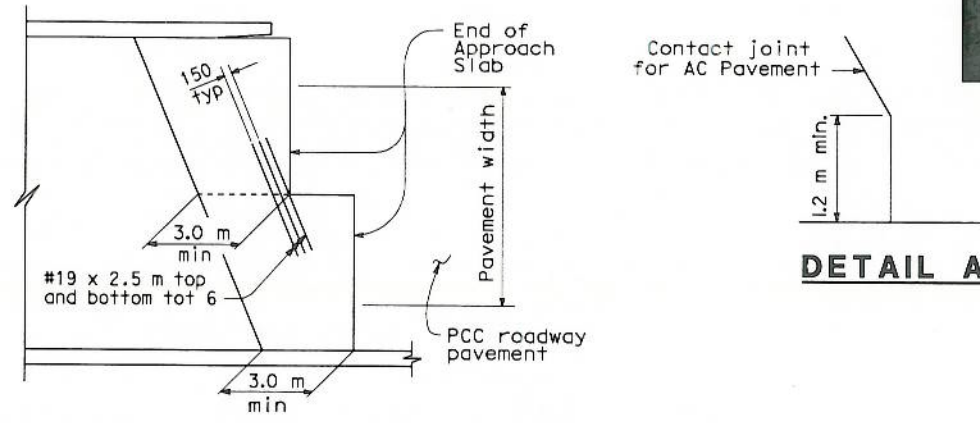
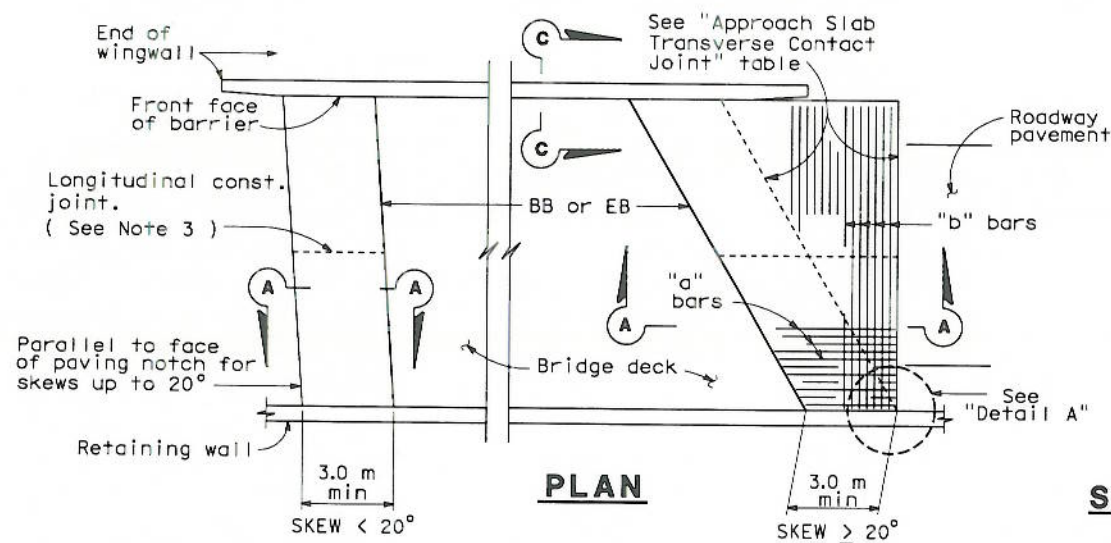


	DESIGN	BY A. Yazdani/S. Ly	CHECKED S. Hamoud	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO.	33-0731	STONYBROOK CREEK BRIDGE SLAB REINFORCEMENT
	DETAILS	BY L. Ma	CHECKED S. Ly			KILOMETER POST	20.90	
	QUANTITIES	BY H. Singh/A. Perez	CHECKED S. Ly					
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN				ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 		DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 01-28-05, 07-21-05, 11-27-05, 12-24-05, 1-28-10		SHEET 12 OF 20

DATE PLOTTED => 11-FEB-2010 TIME PLOTTED => 17:33 USERNAME => 1img1

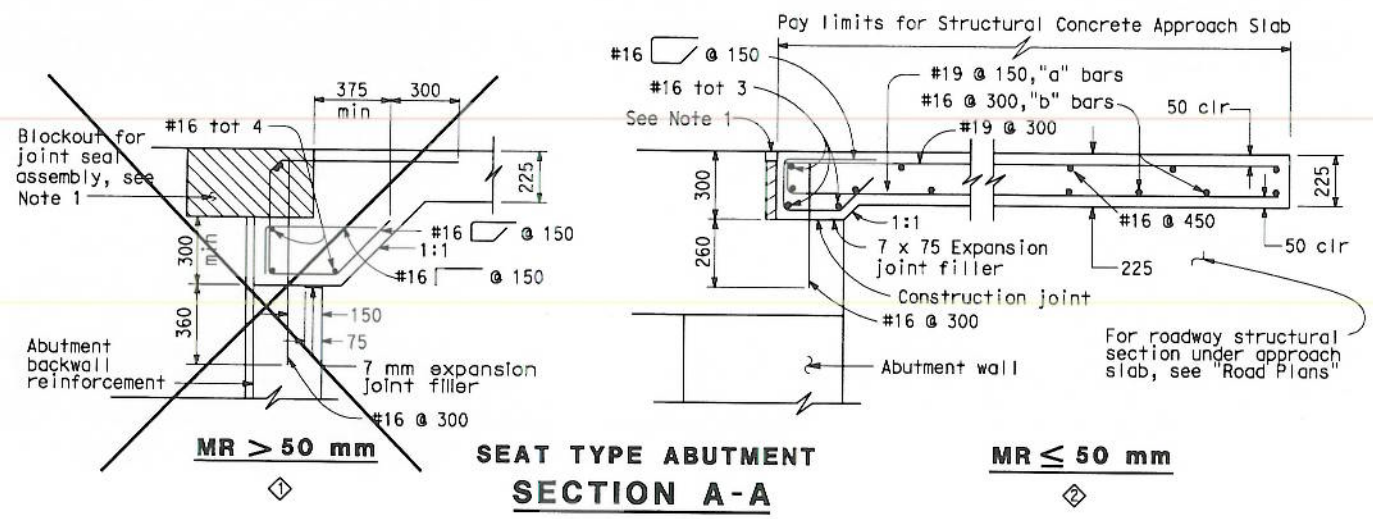


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			1-28-10		
REGISTERED ENGINEER - CIVIL PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



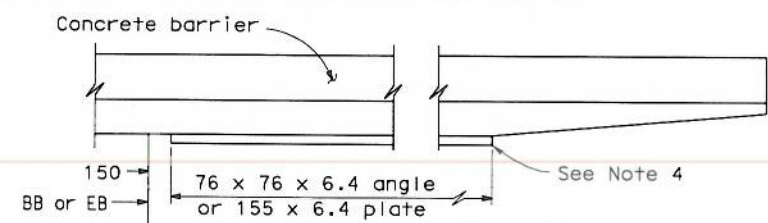
DETAIL A

APPROACH SLAB TRANSVERSE CONTACT JOINT		
STRUCTURE SKEW	AC APPROACH PAVEMENT	PCC APPROACH PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 7.2 m to 10.8 m apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line

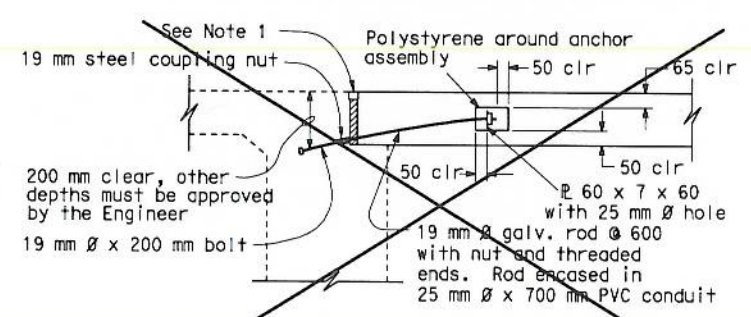


SEAT TYPE ABUTMENT SECTION A-A

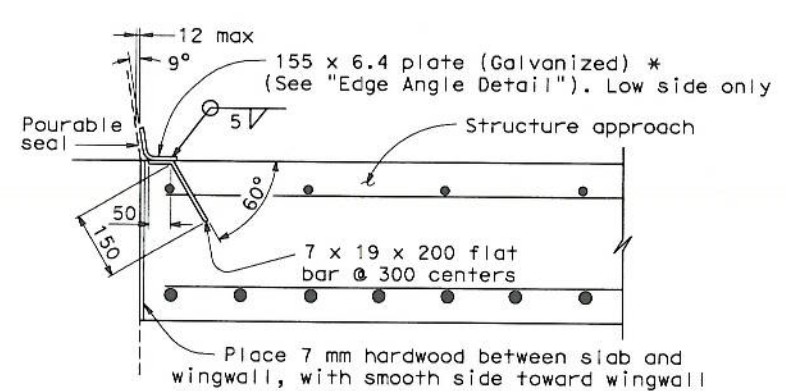
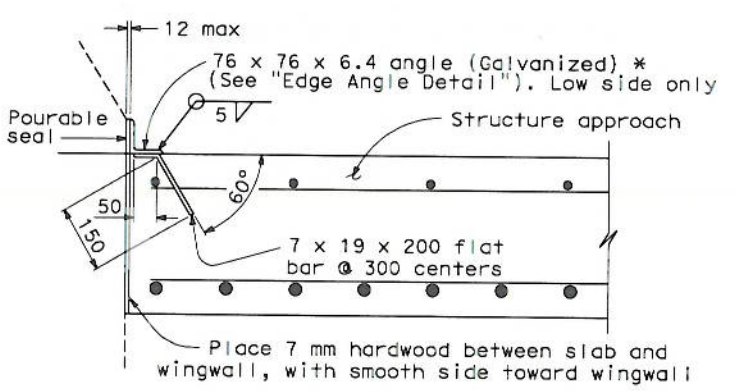
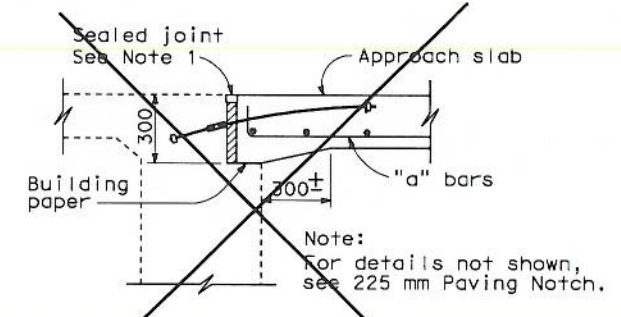
Note: Seat Type Abutment shown, for Diaphragm Type Abutment, see "Abutment Tie Details".



EDGE ANGLE DETAIL



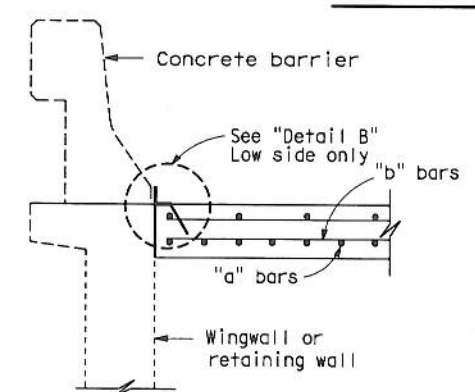
DIAPHRAGM TYPE ABUTMENT ABUTMENT TIE DETAILS



DETAIL B

*(TO BE USED WITH TYPE 25 OR TYPE 27 CONCRETE BARRIER)

*(TO BE USED WITH TYPE 732 OR TYPE 736 CONCRETE BARRIER)



SECTION C-C

NOTES:

- For details not noted or shown, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
- For transverse contact joint with new PCC paving, refer to Standard Plan P10.
- Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
- End angle or plate at beginning of barrier transition, end of wing wall or end of structure approach as applicable.
- At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along roadway.
- For drainage details, see Structure Plans.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

NO SCALE

STANDARD DRAWING			
RELEASE DATE	DESIGN BY	CHECKED	RELEASED BY
3/14/05	M. TRAFFALS	E. THORKILDSEN	
FILE NO.	DETAILS BY	CHECKED	
x83-150	R. YEE	E. THORKILDSEN	
	SUBMITTED BY	DRAWING DATE	
	M. HA	6/93	

- Delete detail
- Modify detail

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	STONYBROOK CREEK BRIDGE	
33-0731		
KILOMETER POST	STRUCTURE APPROACH TYPE EQ(3)	
20.90		

DS OSD 2147A (METRIC) (REV. 2/25/97)



CU 04
EA 174411

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
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USERNAME => lma1

33-e0731-s-sa.cgn

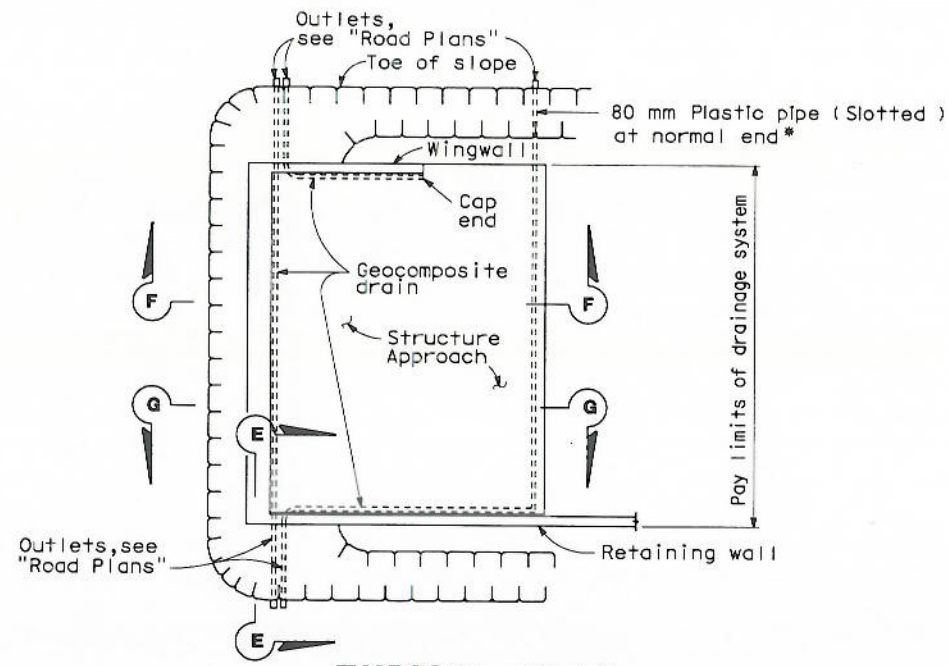
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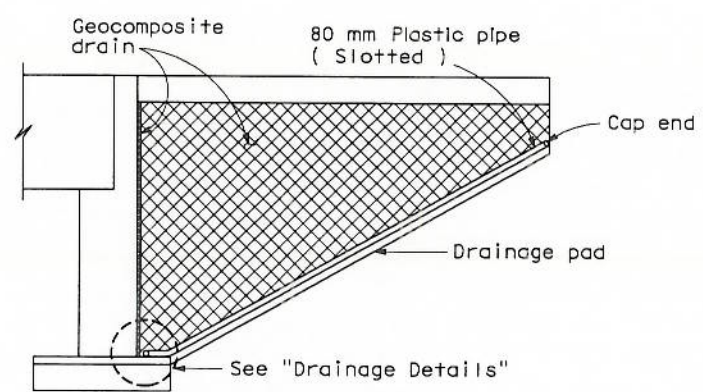
1-28-10
 REGISTERED ENGINEER - CIVIL
 Son Thanh Ly
 No. 72584
 Exp. 6-30-10
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
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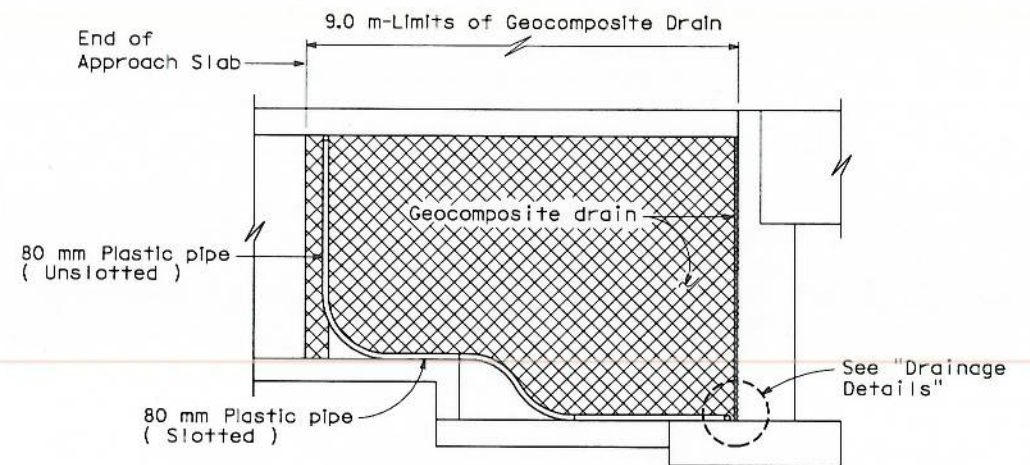


TYPICAL PLAN

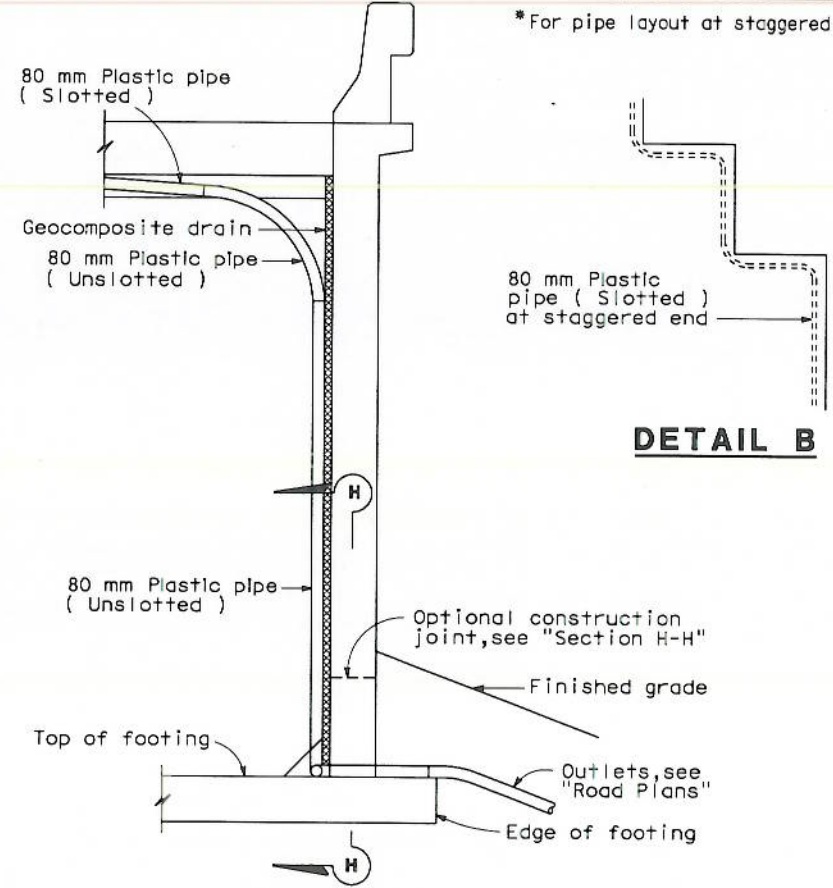
*For pipe layout at staggered end, see "Detail B".



CANTILEVER WINGWALL SECTION F-F



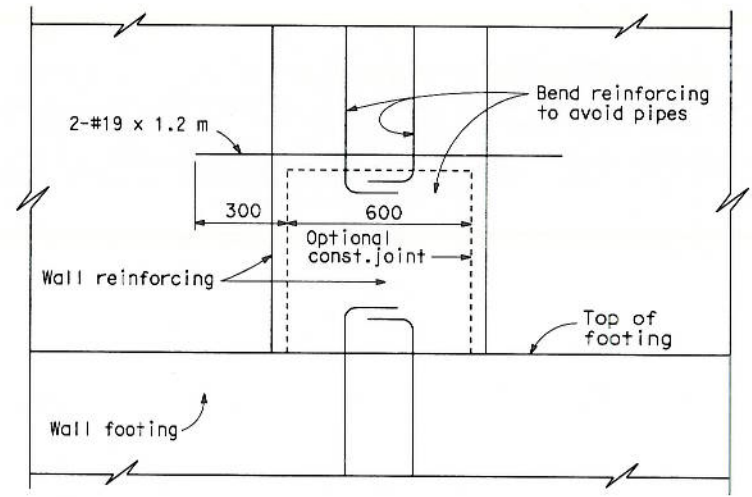
RETAINING WALL WINGWALL SECTION G-G



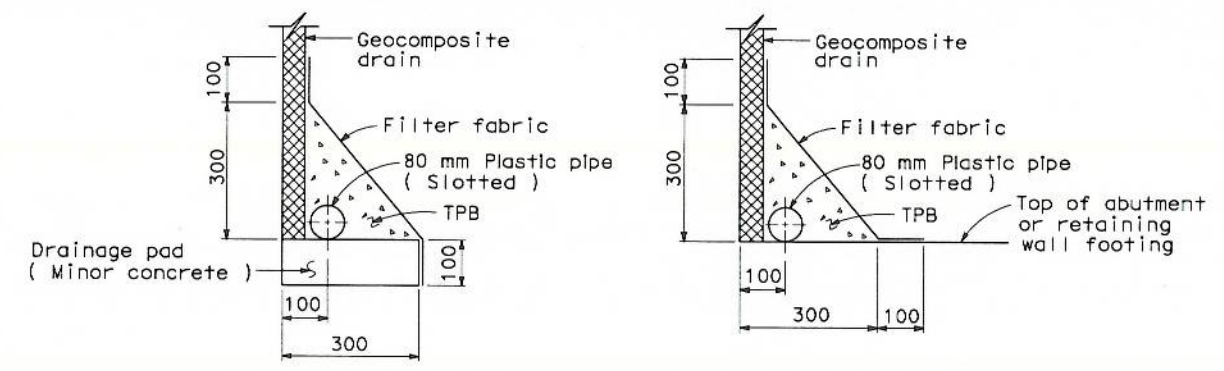
SECTION E-E

NOTE: Bends and junctions in 80 mm plastic pipe are 750 mm radius min.

DETAIL B



SECTION H-H



WITHOUT FOOTING WITH FOOTING DRAINAGE DETAILS

NO SCALE
 ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

STANDARD DRAWING			
RELEASE DATE 4/23/98	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	RELEASED BY <i>[Signature]</i>
FILE NO. x93-110	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	OFFICE CHIEF
	SUBMITTED BY M. HA	DRAWING DATE 4/98	

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.
33-0731
 KILOMETER POST
20.90

STONYBROOK CREEK BRIDGE
 STRUCTURE APPROACH DRAINAGE DETAILS

DS OSD 2147A (METRIC) (REV. 2/25/97)



CU 04
 EA 174411

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)
01-20-09 4:27:59 1-28-10

SHEET 14 OF 20

DATE PLOTTED => 11-FEB-2010 TIME PLOTTED => 17:34

33-e0731-s-saad.dwg

Attachment B

Plans for Underground Detention Facilities



FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS
AT DISTRICT OFFICE.

NOTES:

1. THE PROJECT VERTICAL DATUM IS NAVD 1988.
2. TOP OF GRATE ELEVATION (TG) IS FINISHED GRADE MINUS GUTTER DEPRESSION, AS APPLICABLE.
3. THE LOCATIONS OF EXISTING DRAINAGE FACILITIES ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION BEFORE MODIFYING EXISTING FACILITIES. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
5. FOR DRAINAGE INLET OFFSET AND TG REFERENCE LOCATIONS, SEE SHEET DD-1.

LEGEND:

- No. DRAINAGE SYSTEM NUMBER
- a DRAINAGE UNIT

ABBREVIATIONS:

- SO SIDE OPENING
- PE PERMANENT EASEMENT
- TCE TEMPORARY CONSTRUCTION EASEMENT



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	19.5/19.9, 20.5/21.2		

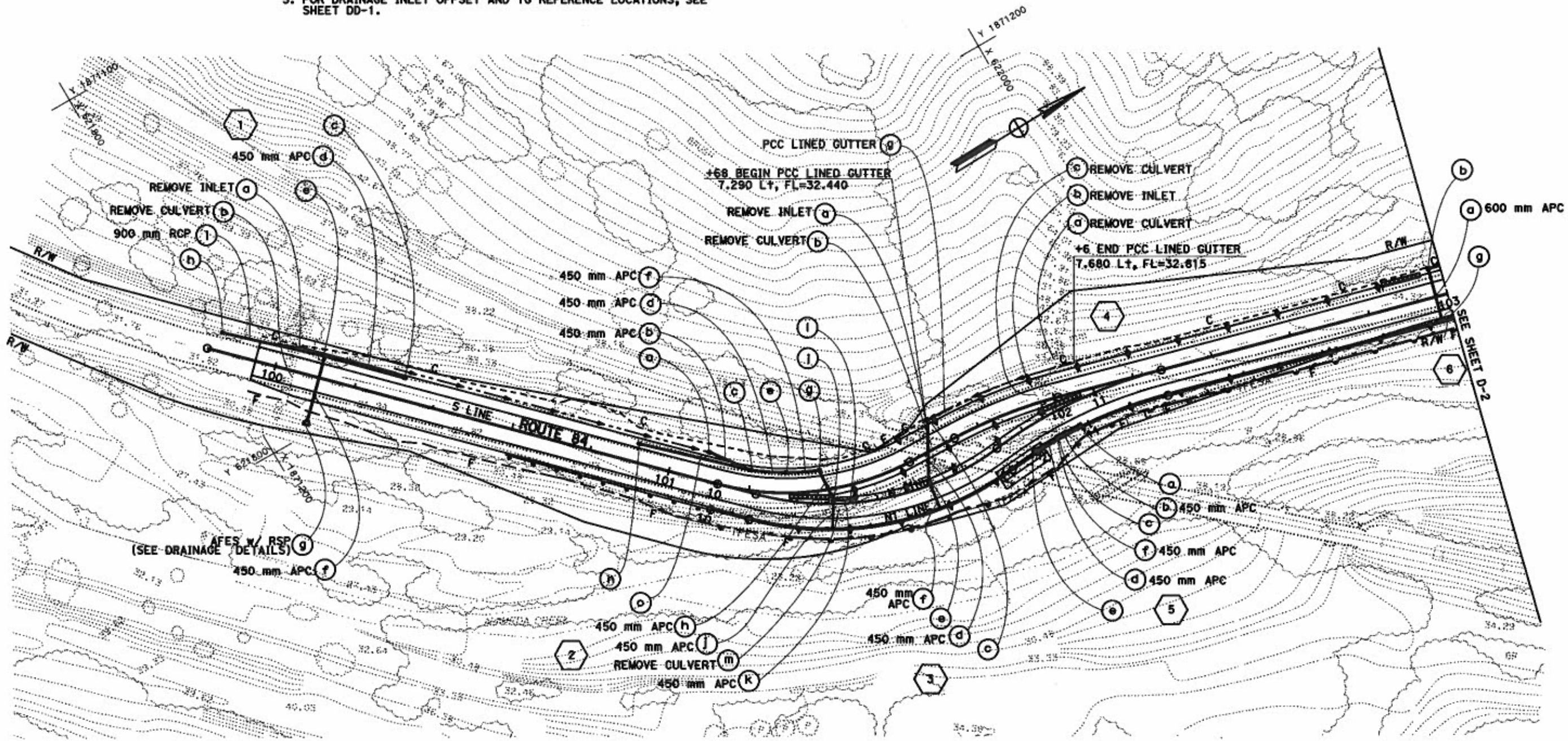
REGISTERED CIVIL ENGINEER DATE 3-8-10

PLANS APPROVAL DATE

Tam Ly
69254
6-30-10
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REVISOR	REVISION
TAM LY	GHULAM POPAL
FUNCTIONAL SUPERVISOR	GHULAM POPAL
DESIGN	



ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DRAINAGE PLAN

SCALE 1:500

THIS PLAN IS ACCURATE FOR DRAINAGE WORK ONLY

DATE PLOTTED 16-JUN-2010
TIME PLOTTED 11:02

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS
AT DISTRICT OFFICE.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Alc	84	19.5/19.9, 20.5/21.2		
			REGISTERED CIVIL ENGINEER	DATE	
			Tam Ly	3-8-10	
			69254		
			PLANS APPROVAL DATE		
			6-30-10		
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Caltrans
DESIGN

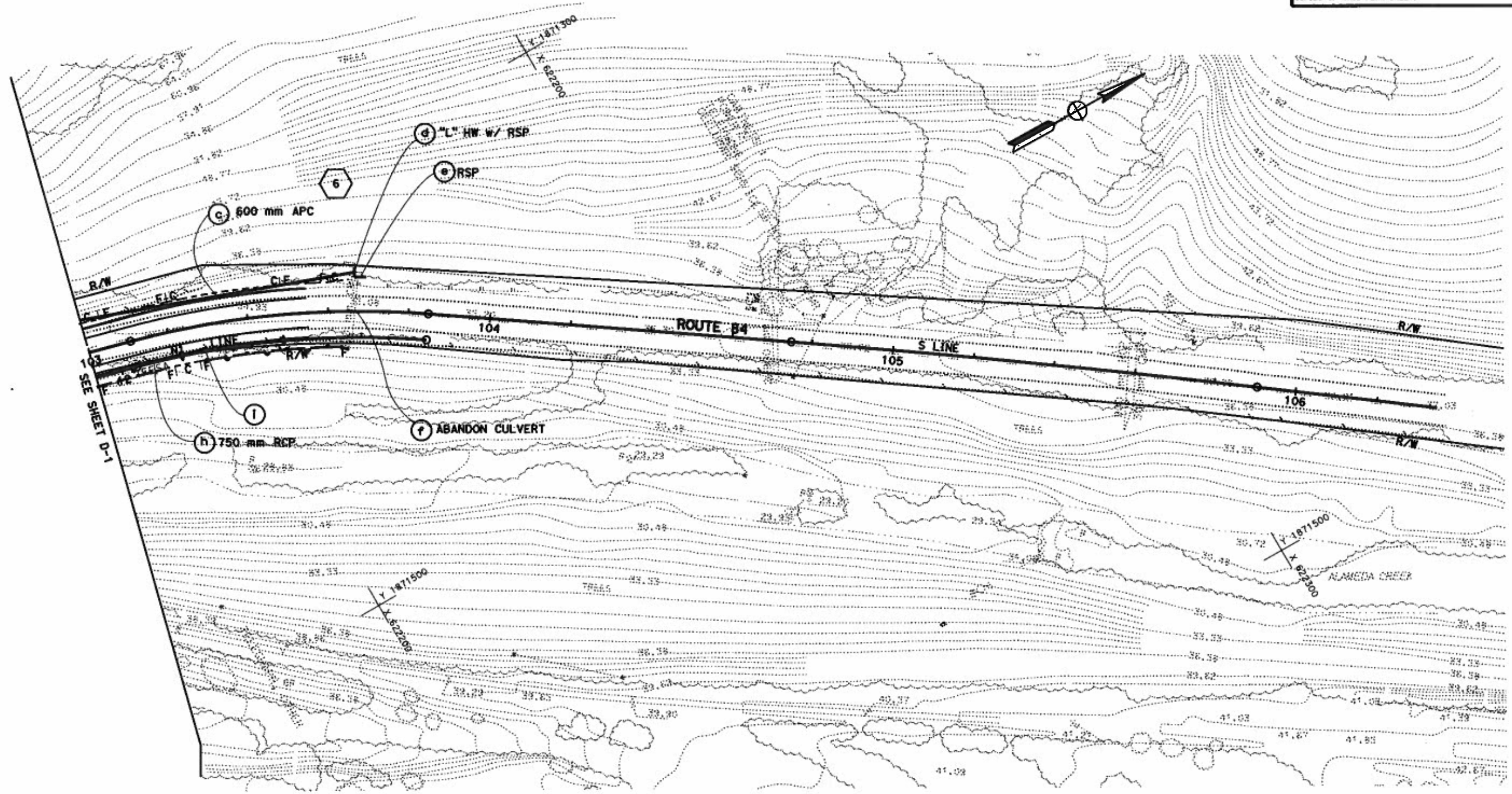
FUNCTIONAL SUPERVISOR
GHULAM POPAL

CALCULATED-DESIGNED BY
CHECKED BY
GHULAM POPAL

REVISOR
TAM LY

REVISOR
GHULAM POPAL

REVISOR
DATE REVISOR



ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DRAINAGE PLAN
SCALE 1:500

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET D-1

THIS PLAN IS ACCURATE FOR DRAINAGE WORK ONLY

D-2

DATE PLOTTED: 16-JUN-2010
TIME PLOTTED: 11:02
03-08-10

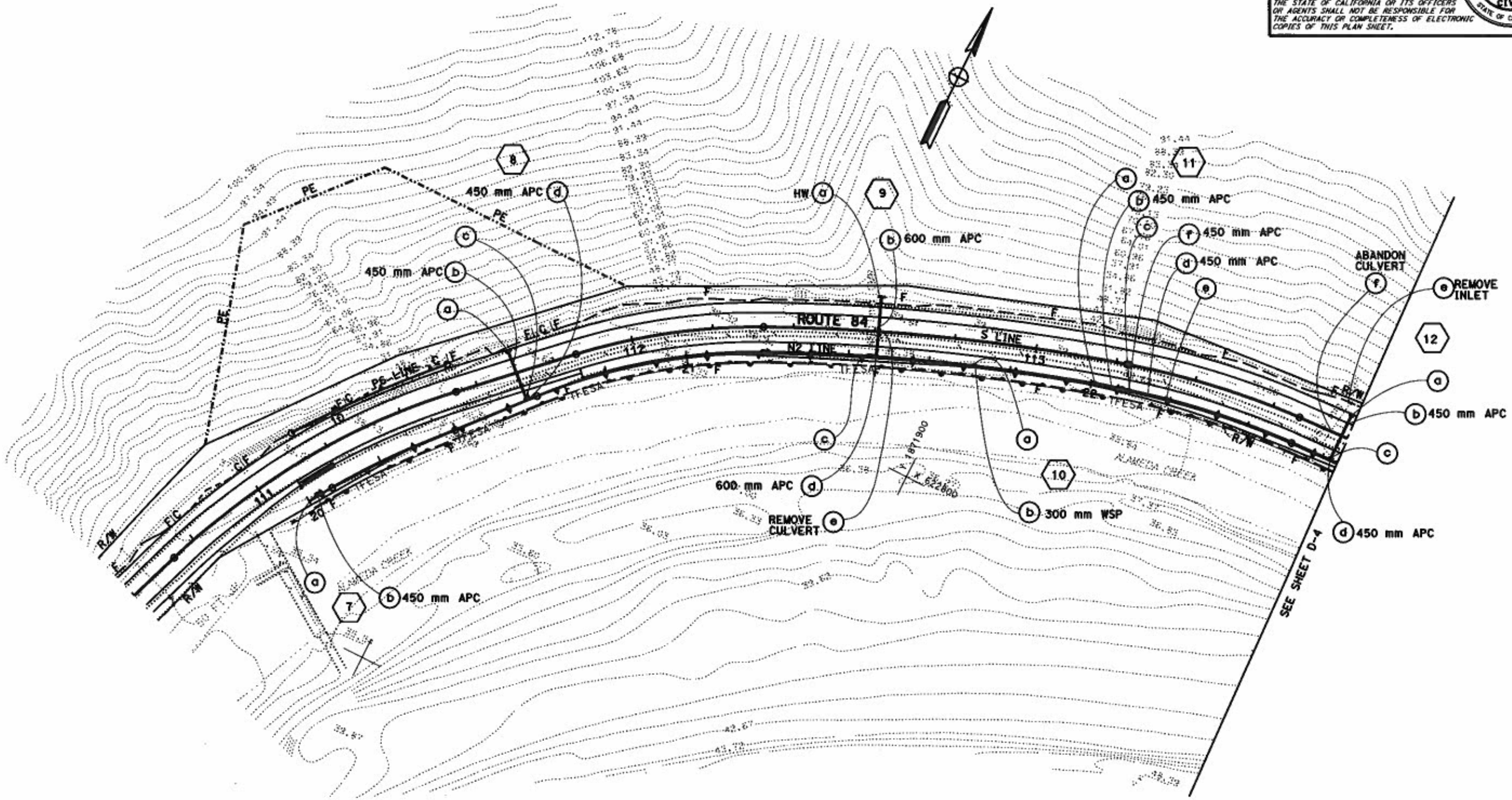
FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS
AT DISTRICT OFFICE.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	19.5/19.9 20.5/21.2		
			REGISTERED CIVIL ENGINEER DATE 3-8-10		
			PLANS APPROVAL DATE		
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REVISOR	REVISION
TAM LY	GHULAM POPAL
FUNCTIONAL SUPERVISOR	GHULAM POPAL
DESIGN	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	
Caltrans	



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DRAINAGE PLAN

SCALE 1:500

D-3

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET D-1

THIS PLAN IS ACCURATE FOR DRAINAGE WORK ONLY

DATE PLOTTED 16-JUN-2010 TIME PLOTTED 11:02

FOR COMPLETE RIGHT OF WAY DATA,
SEE RIGHT OF WAY RECORD MAPS
AT DISTRICT OFFICE.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	19.5/19.9 20.5/21.2		

REGISTERED CIVIL ENGINEER DATE 3-8-10
 REGISTERED PROFESSIONAL ENGINEER
 Tam Ly
 No. 69254
 6-30-10
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE

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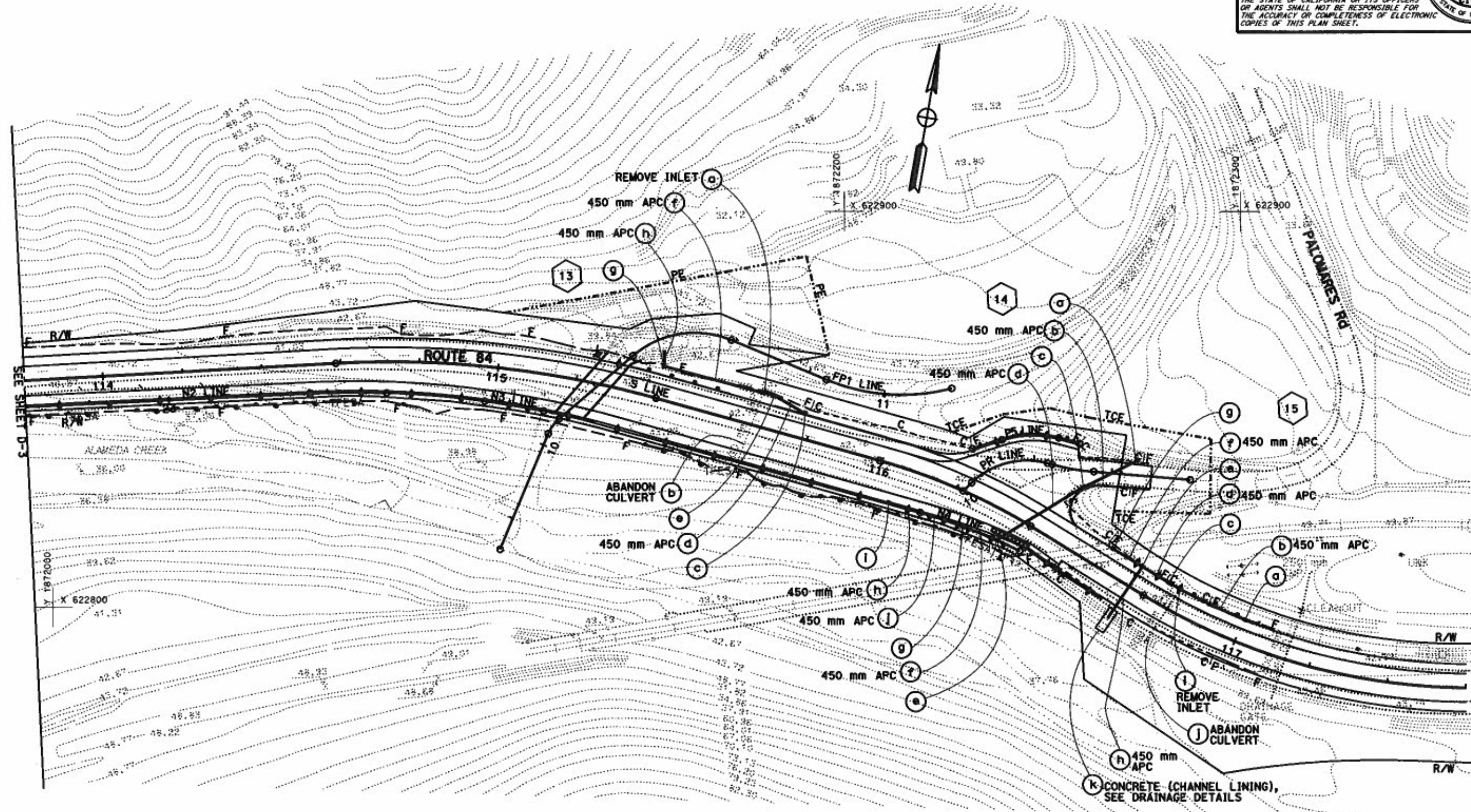
REVISOR
DATE

TAM LY
GHULAM POPAL

CALCULATED BY
DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR
GHULAM POPAL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN



FOR NOTES, ABBREVIATIONS
AND LEGEND, SEE SHEET D-1

THIS PLAN IS ACCURATE FOR
DRAINAGE WORK ONLY

ALL DIMENSIONS ARE IN
METERS UNLESS OTHERWISE SHOWN

DRAINAGE PLAN

SCALE 1:500

D-4

DATE PLOTTED 16-JUN-2010
TIME PLOTTED 11:02

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

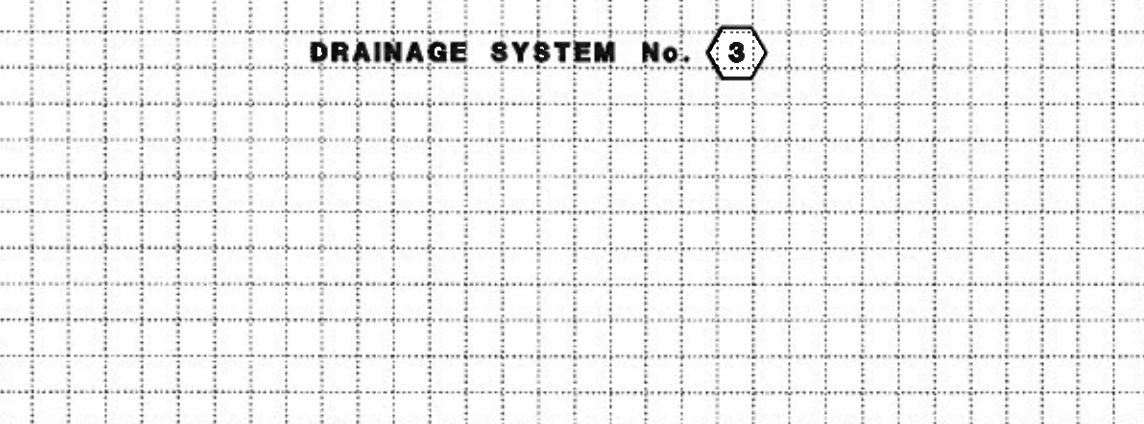
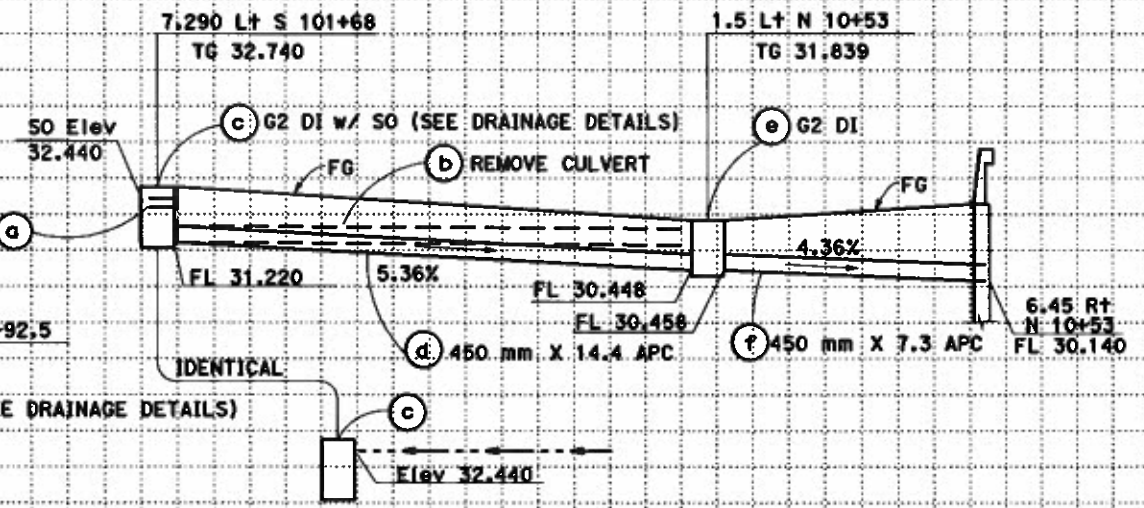
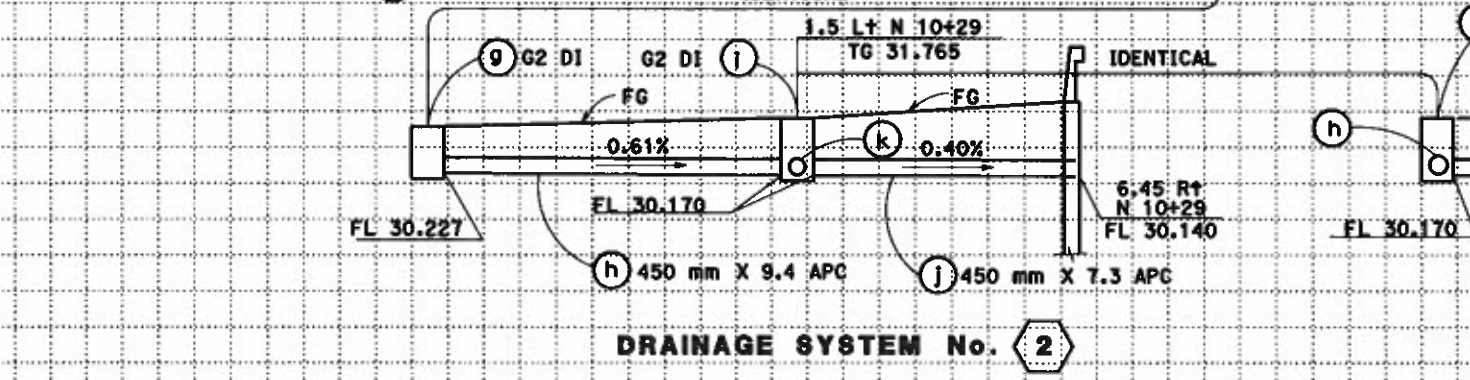
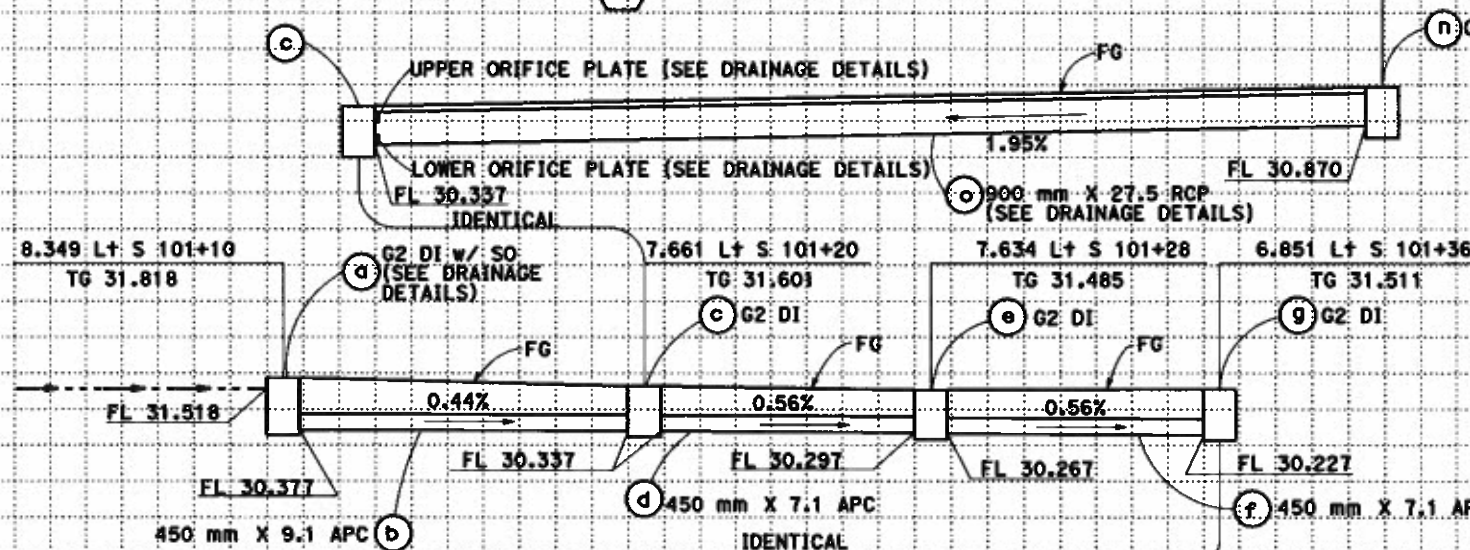
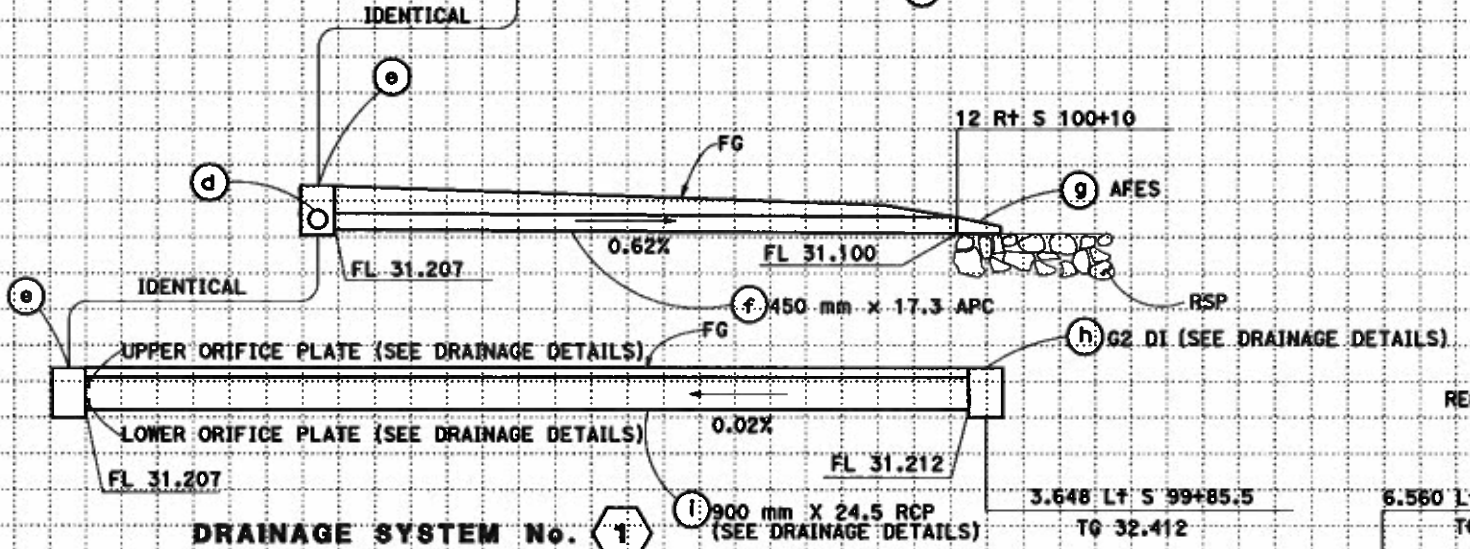
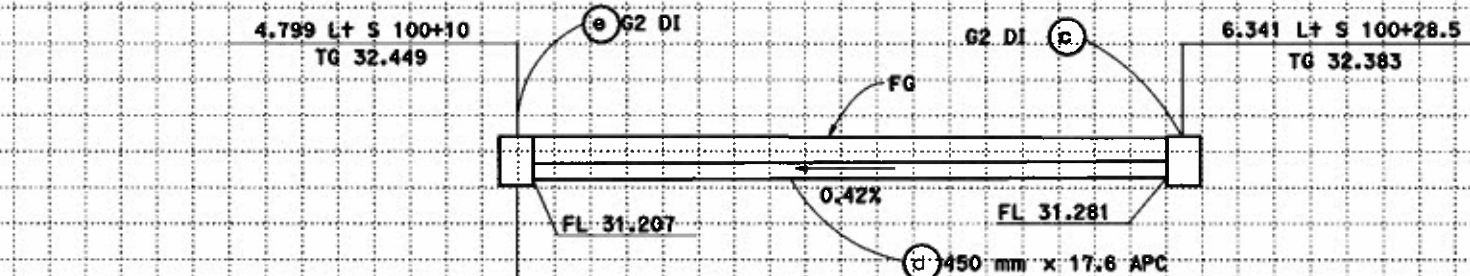
FUNCTIONAL SUPERVISOR
 GULAM POPAL
 CHECKED BY
 GULAM POPAL
 CALCULATED-DESIGNED BY
 GULAM POPAL
 TAM LY
 GULAM POPAL
 REVISOR
 DATE REVISOR
 DATE REVISOR



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Alc	84	19.5/19.9, 20.5/21.2		

REGISTERED CIVIL ENGINEER DATE 3-8-10
 Tam Ly
 No. 69254
 Exp. 6-30-10
 CIVIL
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA

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.

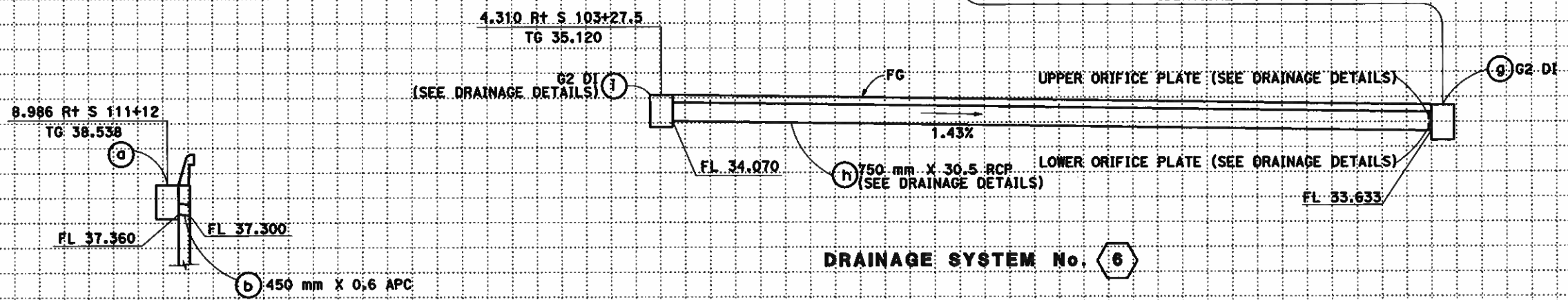
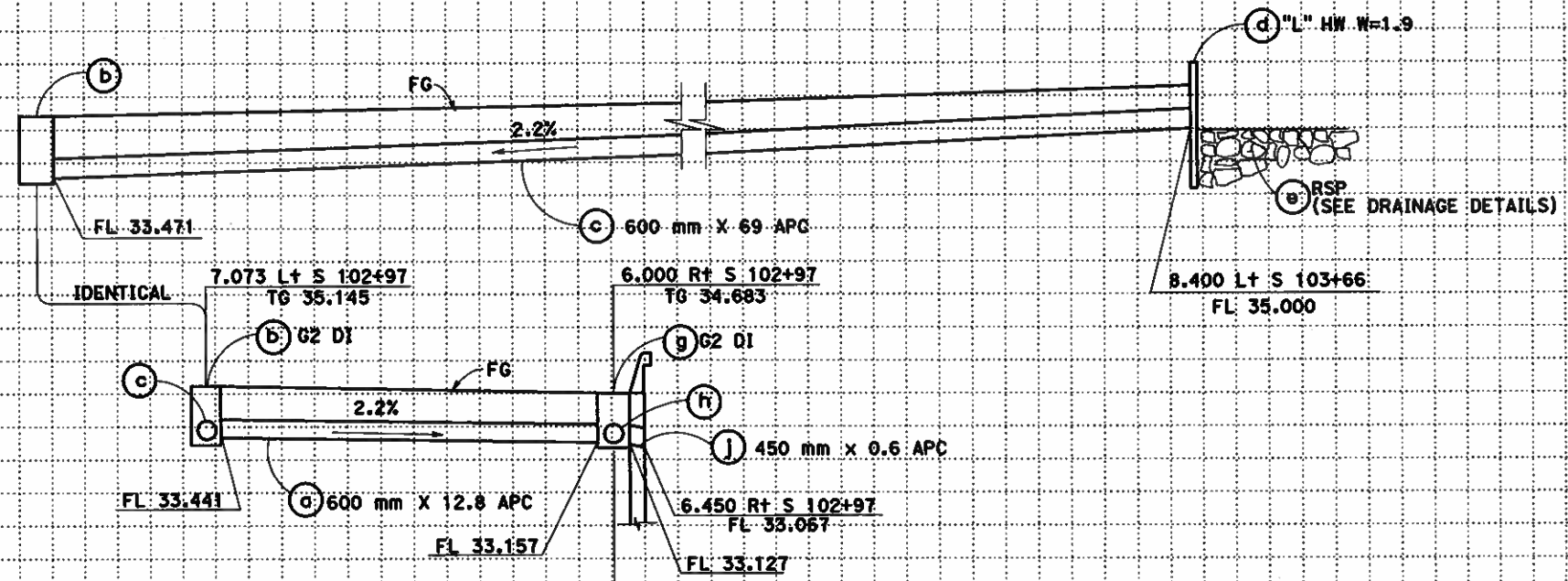
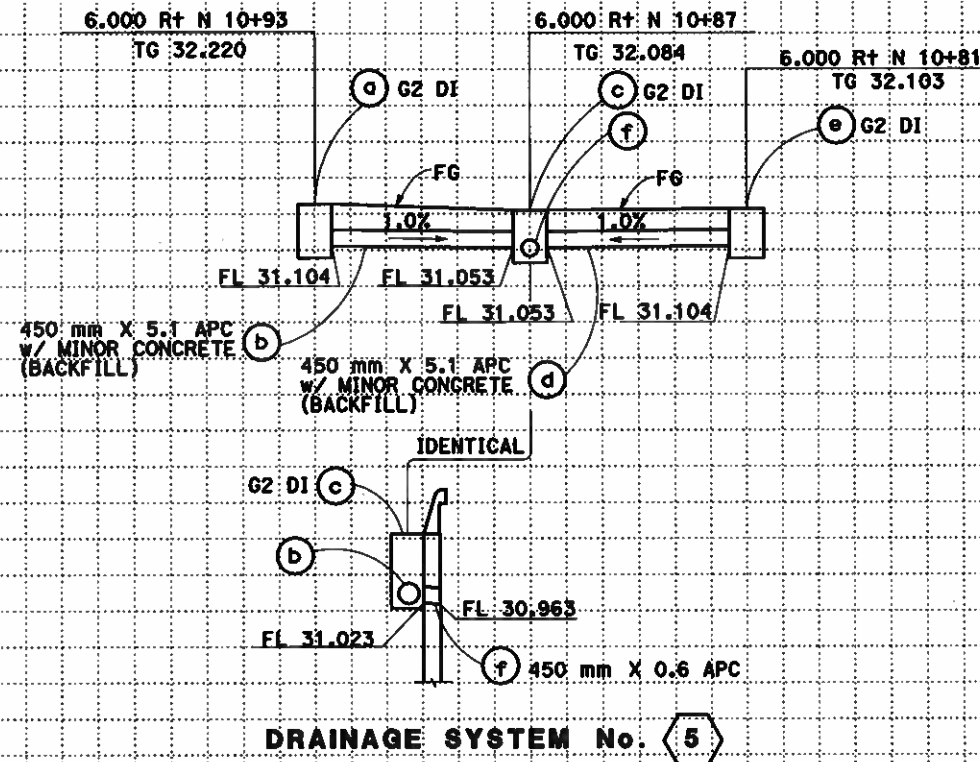


ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN
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 VERT 1:100
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DATE PLOTTED 16-JUN-2010
 TIME PLOTTED 11:02



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	19.5/19.9, 20.5/21.2		
			REGISTERED CIVIL ENGINEER	DATE	
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			69254	6-30-10	
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ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

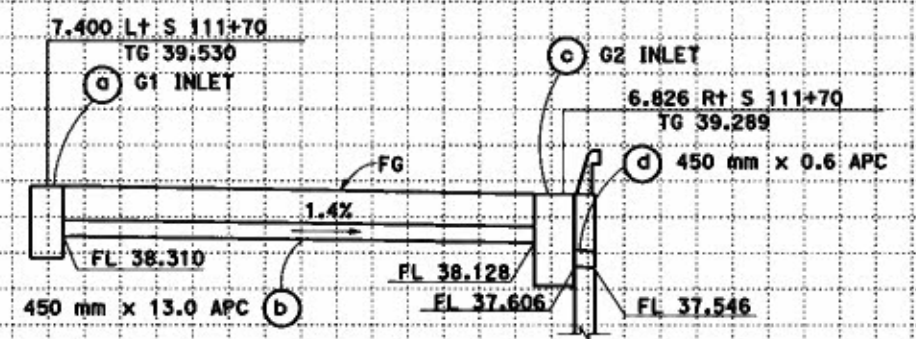
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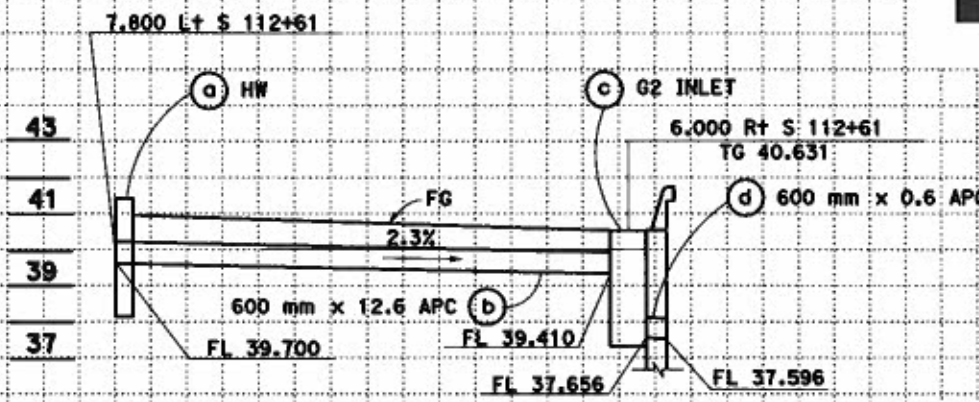
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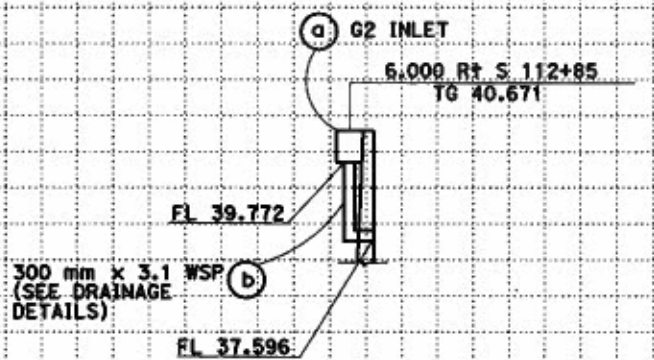
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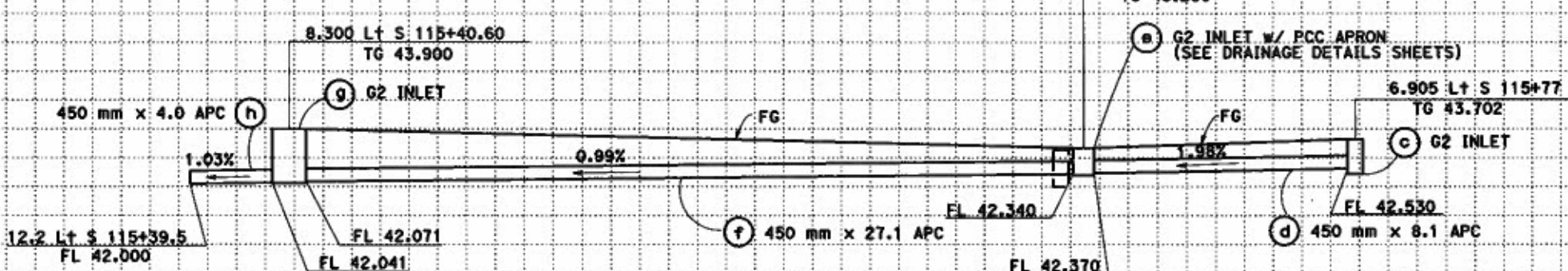
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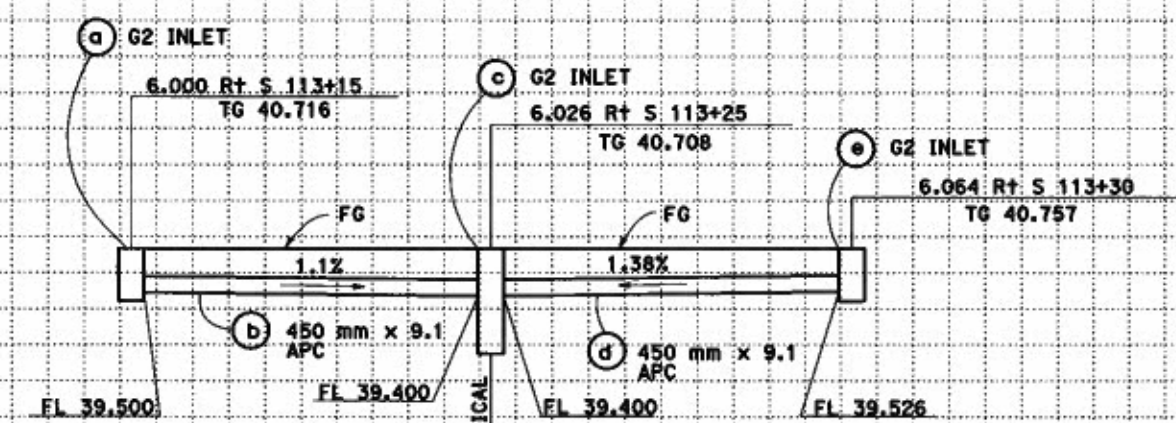
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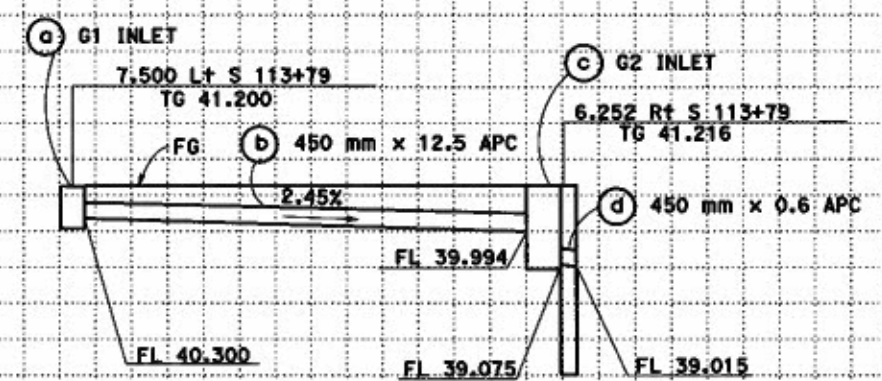
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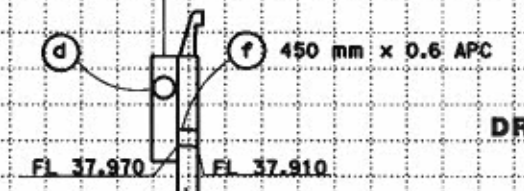
DRAINAGE SYSTEM No. 13



DRAINAGE SYSTEM No. 11



DRAINAGE SYSTEM No. 12



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	84	19.5/19.9, 20.5/21.2		
			3-8-10		
			REGISTERED CIVIL ENGINEER DATE		
			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.					
REGISTERED PROFESSIONAL ENGINEER Tam Ly 69254 6-30-10 CIVIL STATE OF CALIFORNIA					

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

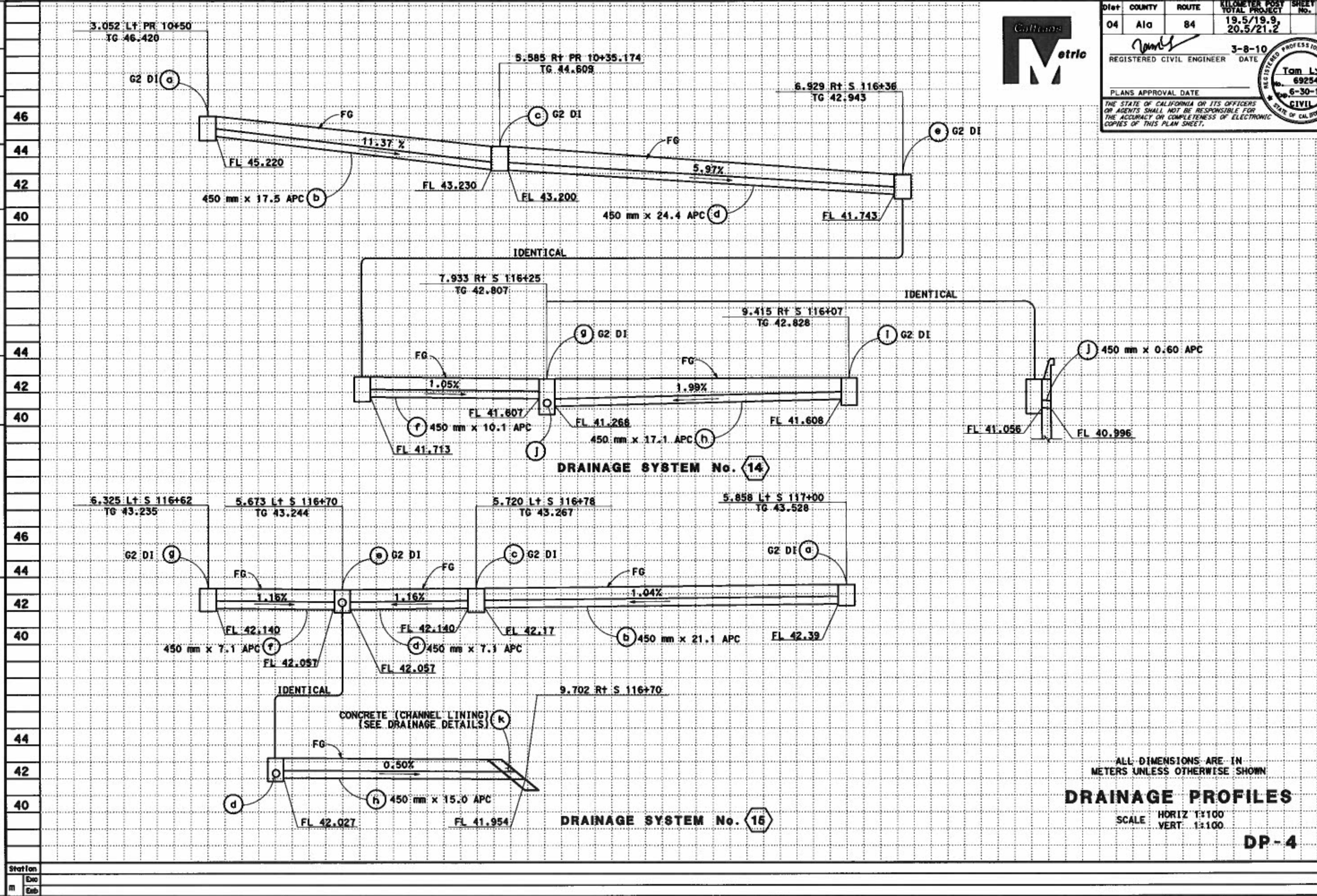
DRAINAGE PROFILES

SCALE HORIZ 1:100
VERT 1:100

DP-3

DATE PLOTTED 16-JUN-2010
 TIME PLOTTED 11:02

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	84	19.5/19.9 20.5/21.2		

REGISTERED CIVIL ENGINEER DATE 3-8-10

PLANS APPROVAL DATE

Tom Ly
 69254
 6-30-10
 CIVIL

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ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DRAINAGE PROFILES

SCALE HORIZ 1:100
 VERT 1:100

DP-4

DATE PLOTTED 16-JUN-2010
 TIME PLOTTED 11:03
 09-23-09

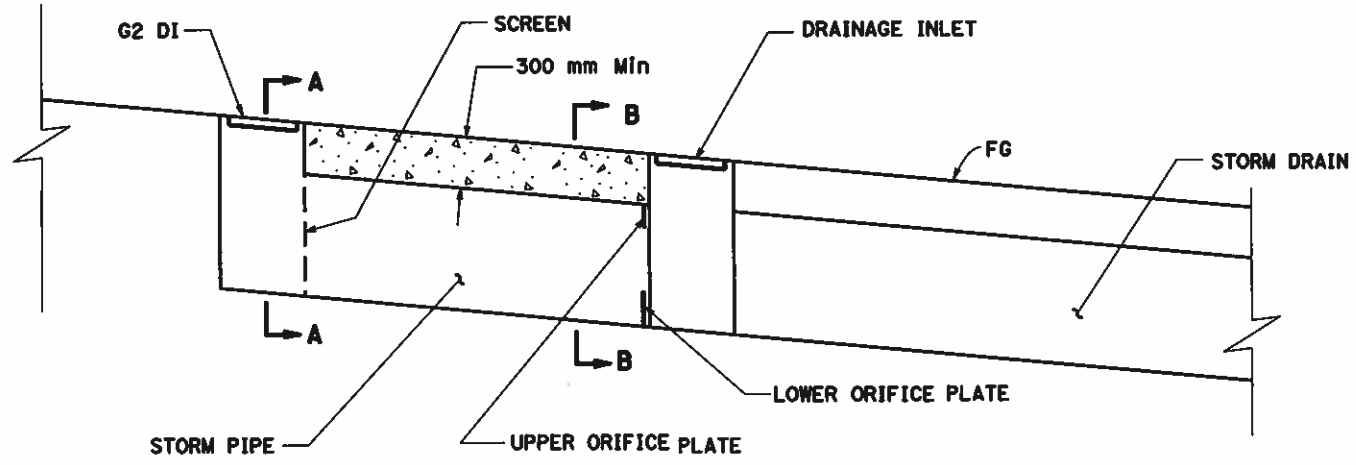


DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	84	19.5/19.9, 20.5/21.2		

REGISTERED CIVIL ENGINEER	DATE
<i>Tam Ly</i>	3-8-10
Tam Ly	6-30-10
69254	
CIVIL	

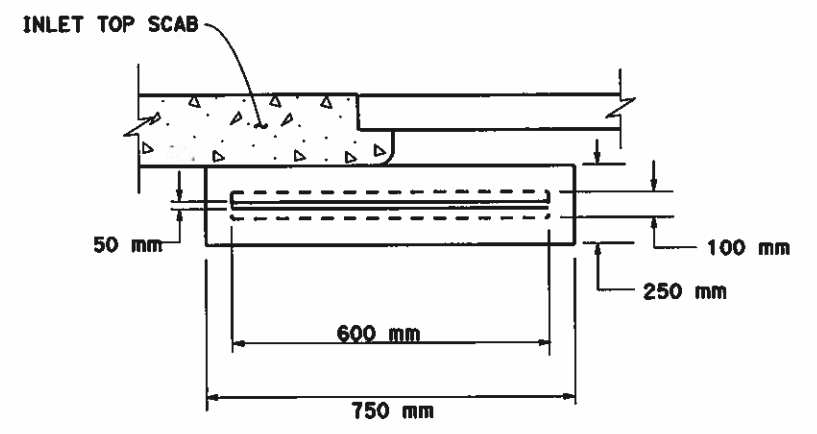
PLANS APPROVAL DATE

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.

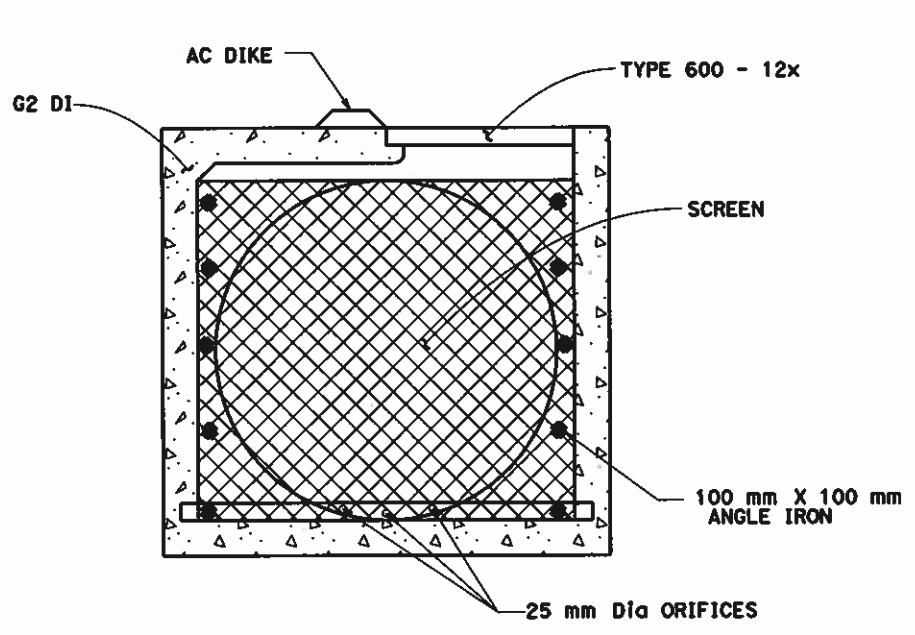


PLAN
UNDERGROUND STORAGE PIPE FOR STORMWATER BMPs

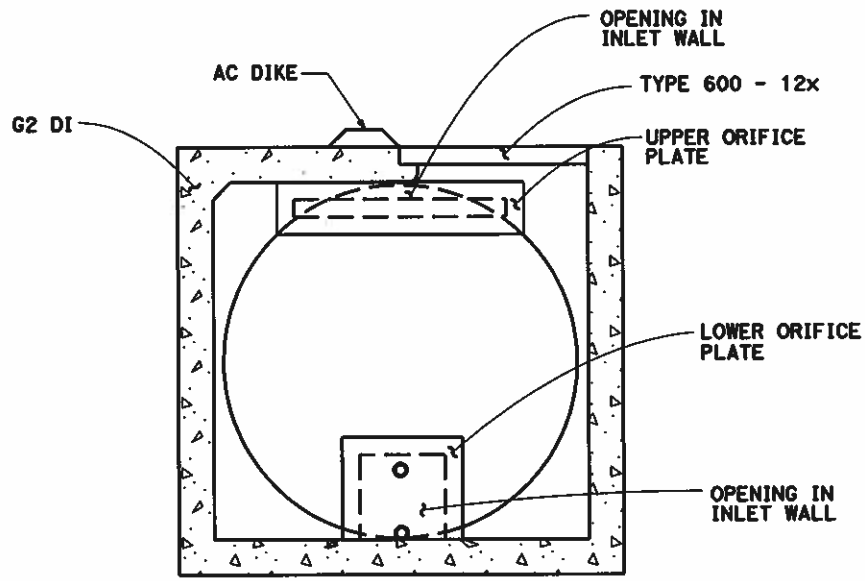
① h i ② n o ③ h i



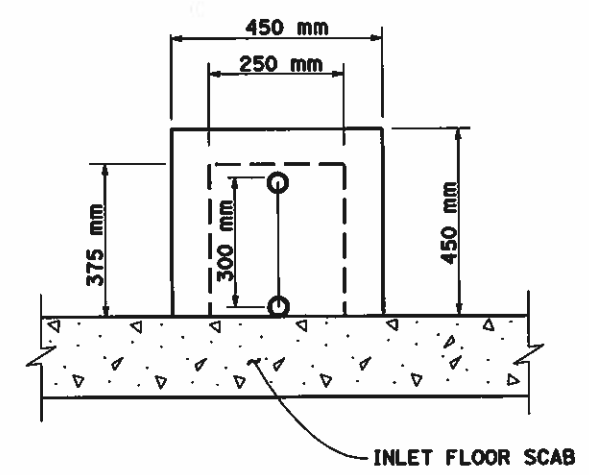
UPPER ORIFICE PLATE



SECTION A-A



SECTION B-B



LOWER ORIFICE PLATE

DRAINAGE DETAILS
(STORMWATER BMPs STORAGE PIPES)

NO SCALE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DD-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: GHULAM POPAL
TAM LY
GHULAM POPAL
REVISOR: GHULAM POPAL
DATE: 3-8-10

LAST REVISION DATE PLOTTED 16-JUN-2010
03-08-10 TIME PLOTTED 11:03



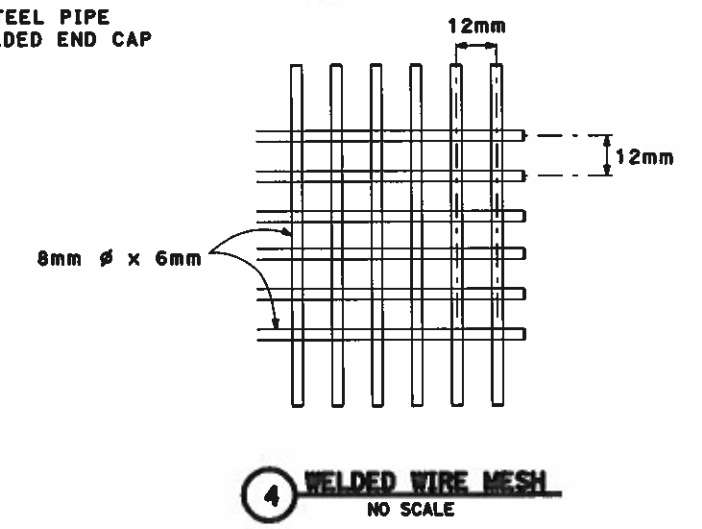
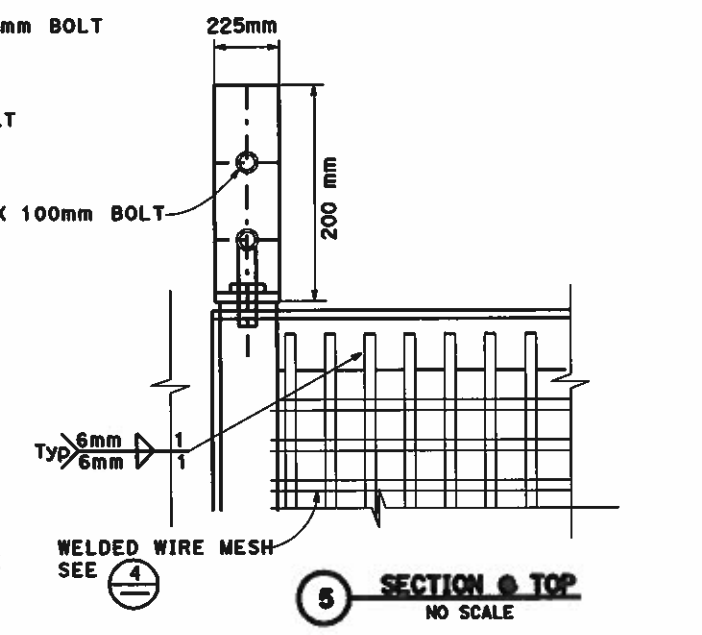
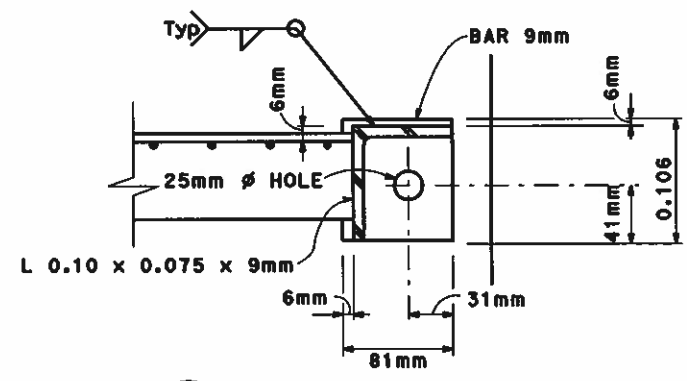
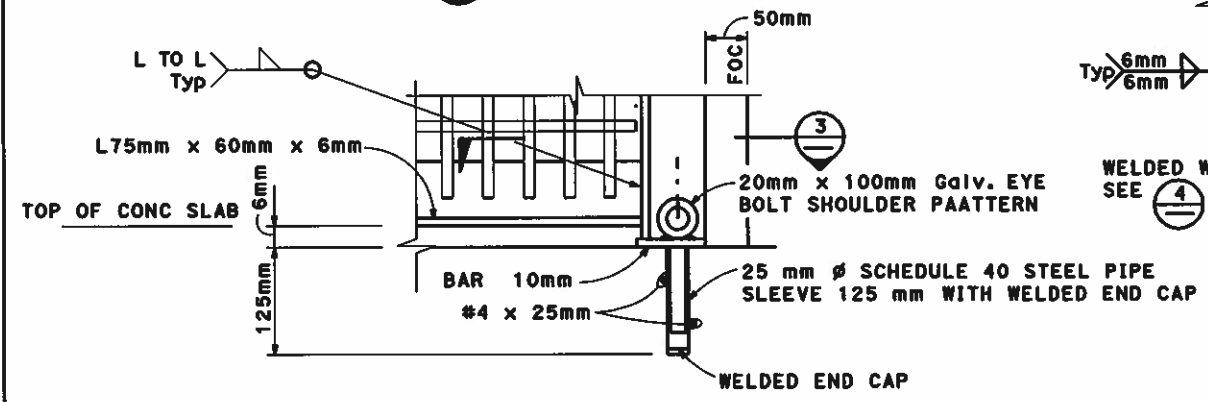
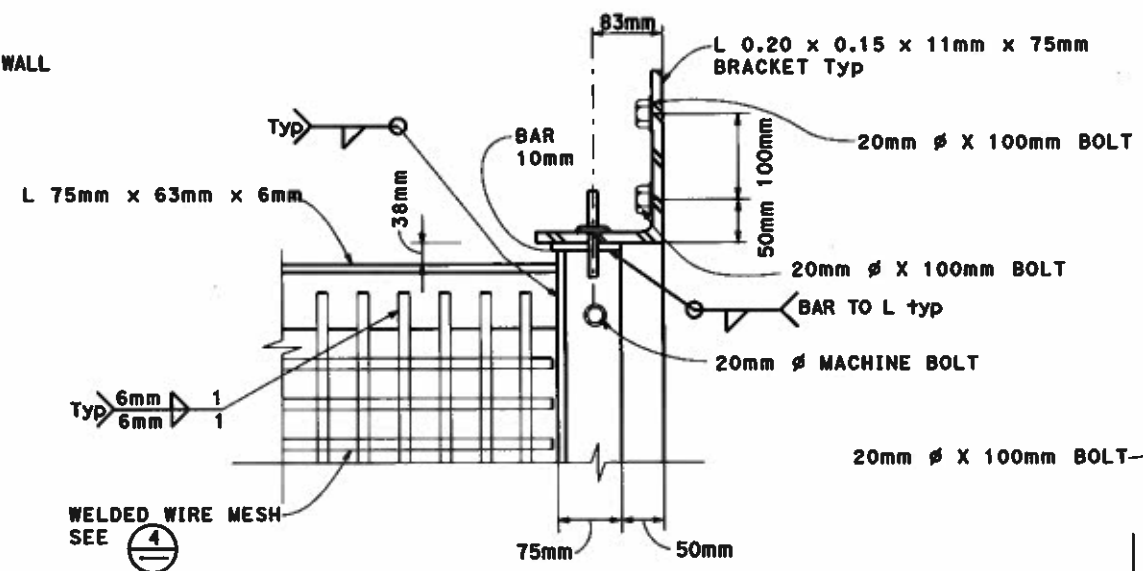
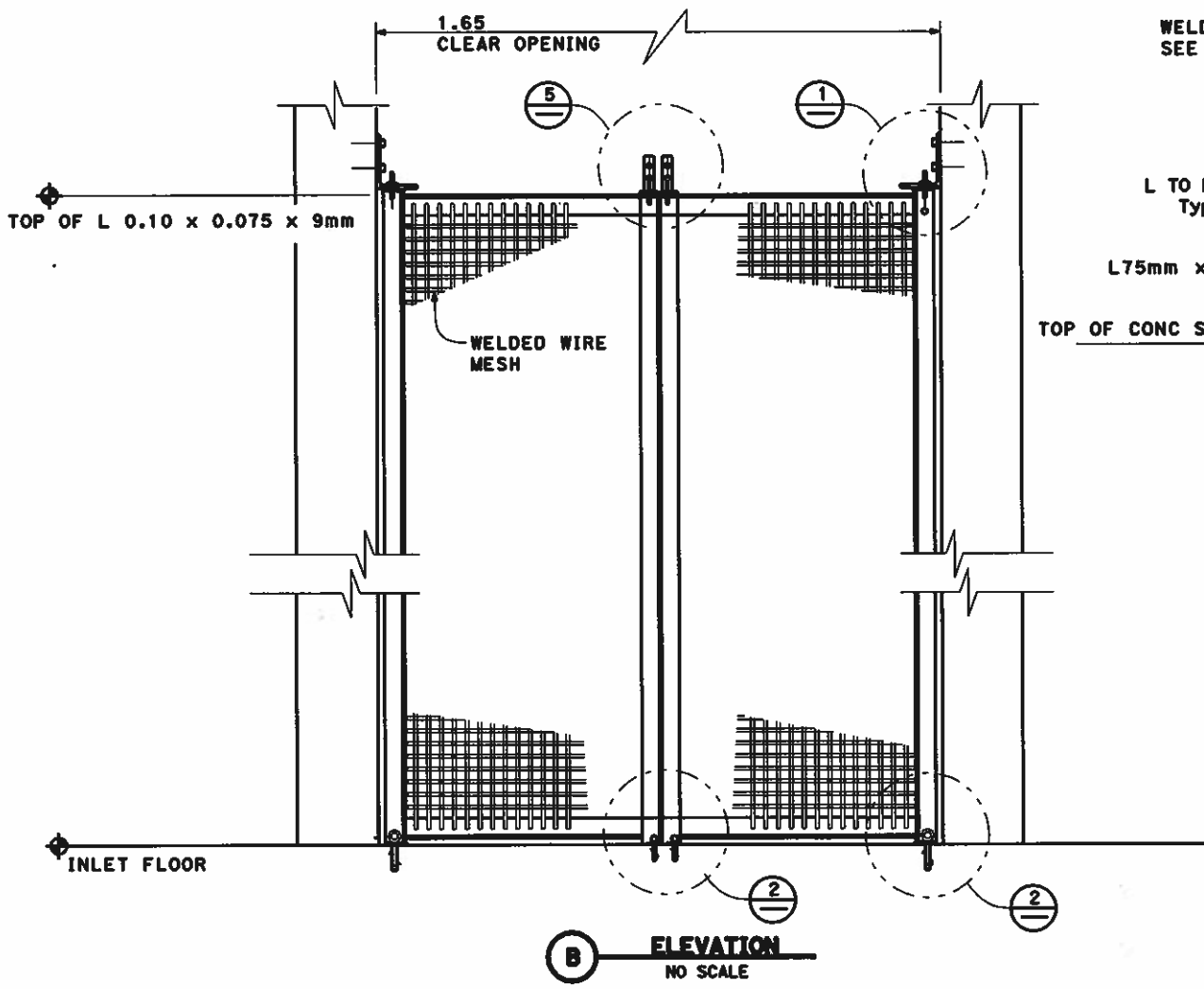
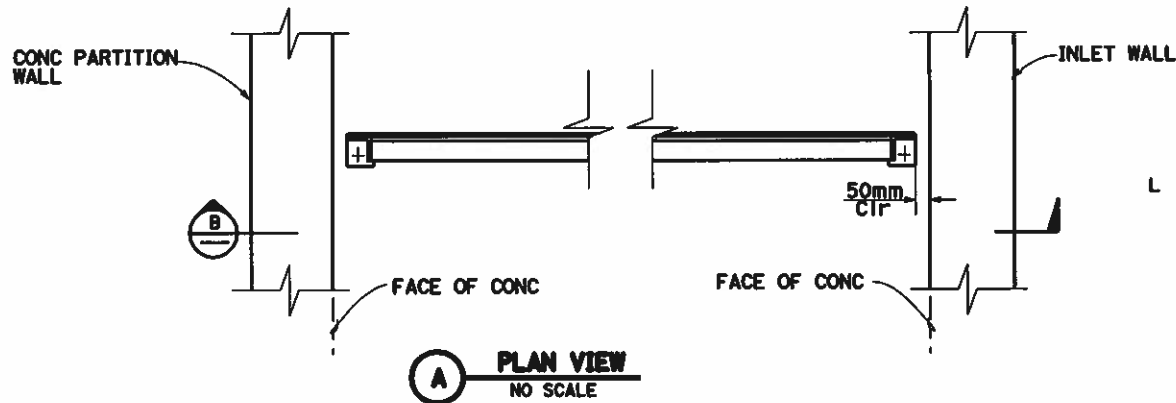
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET TOTAL SHEETS
04	Ala	84	19.5/19.9, 20.5/21.2	

REGISTERED CIVIL ENGINEER DATE 3-8-10

Tam Ly
69254
6-30-10
CIVIL

PLANS APPROVAL DATE

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NOTE:
ALL METAL COMPONENTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION

DRAINAGE DETAILS
NO SCALE

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DD-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: GHULAM POPAL
CHECKED BY: GHULAM POPAL
TAM LY
REVISOR: GHULAM POPAL
DATE: REVISED

DATE PLOTTED: 12-07-09
TIME PLOTTED: 11:03
12-07-09 11:03