

## CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE  
710 E STREET • SUITE 200  
EUREKA, CA 95501-1865  
VOICE (707) 445-7833  
FACSIMILE (707) 445-7877

MAILING ADDRESS:  
P. O. BOX 4908  
EUREKA, CA 95502-4908



## RECORD PACKET COPY

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Staff:	Jim Baskin
Staff Report:	November 22, 2002
Hearing Date:	December 13, 2002
Commission Action:	

**STAFF REPORT:**  
**PERMIT AMENDMENT**

APPLICATION NO.: **1-98-100-A3**

APPLICANTS: **CALIFORNIA DEPARTMENT OF TRANSPORTATION  
(CALTRANS) DISTRICT 3**

PROJECT LOCATION: **Highway One Noyo River Bridge within the City of Fort  
Bragg, Mendocino County**

**DESCRIPTION OF PROJECT  
PREVIOUSLY APPROVED:**

Replace the existing two-lane, 36-ft.-wide Noyo River Bridge with an 86.6-ft.-wide, 875-ft.-long, triple cast-in-place (CIP) concrete box girder bridge. The proposed bridge would accommodate four 12-ft. lanes, a 12-ft. median, 8-ft. outside shoulders with 6-ft. sidewalks placed on both sides. Construction of the bridge will require the installation and subsequent removal of temporary falsework and trestles involving: 1) the driving of approximately 224 temporary piers displacing approximately 2,000 sq. ft. of the river; and 2) constructing an approximately 30,000 sq. ft. temporary trestle for construction access.

**DESCRIPTION OF**

AMENDMENT REQUEST: **Substitute the previously-approved Type 80SW railing and concrete barrier with an inboard Type ST-10 railing and TRACCTM (Trinity Attenuating Crash Cushion) (metal**

beam) crash cushion, and outboard spoke railing for the replacement Noyo River Bridge.

**SUBSTANTIVE FILE**

**DOCUMENTS:**

1. Coastal Development Permit File No. 1-98-100;
2. Coastal Development Permit File No. A-1-FTB-99-006;
3. Reconsideration Request File No. R-1-98-100
4. Reconsideration Request File No. R- A-1-FTB-99-006
5. Coastal Development Permit File No. 1-98-100-A1;
6. Coastal Development Permit File No. A-1-FTB-99-006-A1;
7. Coastal Development Permit File No. 1-98-100-A2; and
8. Coastal Development Permit File No. A-1-FTB-99-006-A2;

**SUMMARY OF STAFF RECOMMENDATION:**

The staff recommends that the Commission approve with conditions, the requested amendment to the coastal development permit originally granted for the replacement of the Highway 1 bridge over the Noyo River within the City of Fort Bragg. The original 1999 permit authorized the construction of a "Type 80 SW" bridge railing design that would have substantially reduced views to and along the ocean and scenic coastal areas.

The Type 80SW railing was approved because at that time no other, less-visibly obtrusive railing design had been approved for such use within the State of California. Since that time, Caltrans has reviewed, tested, and approved several alternative railing systems that could be used on the replacement Noyo River Bridge. Some of these designs were presented at a public workshop held on September 4, 2002, in Fort Bragg and the proposed "ST-10" dual railing and picket system was the over-whelming favorite among the polled attendees.

Caltrans now proposes to amend the bridge replacement project to substitute the ST-10 dual railing /picket and TRACC™ (Trinity Attenuating Crash Cushion) metal beam end section for the previously-approved Type 80SW single railing. Caltrans believes that by substituting the ST-10 railing, spoke picket fence, and TRACC™ end section for the Type 80SW rail will lessen the bridge replacement project's impacts on visual resources. In addition, the amendment request will satisfy Special Condition No. 17 (see Exhibit No. 8), a special condition attached to a previous amendment of the permit requiring that a subsequent request to amend the design of the bridge railing include "a bridge railing design that will provide additional visual access beyond that included in the design currently authorized by the original permit."

Commission staff concurs with Caltrans insofar as concluding that the proposed ST-10 railing system would afford greater visibility of views to and along the coast and coastal scenic areas than the Type 80SW railing system. However, staff believe impacts to

visual resources can be further reduced through the use of the shorter-length Quadguard® crash barrier end section instead of the TRACCTM. In addition, staff believe the visual aesthetics of the railing system would likewise be further enhanced by painting the metal portions of the QuadGuard® end section to match the green color proposed for the ST-10 railing components. Two Special Conditions have been recommended to make these modifications requirements of the permit amendment authorization to ensure conformance with applicable Coastal Act policies.

As conditioned, staff has determined that the proposed development with the proposed amendment would be consistent with the Coastal Act.

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### **STAFF NOTES:**

#### **1. Background**

On March 12, 1999, Coastal Permit No. 1-98-100 (Caltrans) was approved by the Commission with ten special conditions intended to address public trust concerns, environmentally sensitive habitat, public access, and visual, water quality, and other coastal resource issues. A copy of the revised findings for approval of the report containing the adopted special conditions is attached as Exhibit No. 8 of this report.

Special Condition No. 1 requires clearance of the project from the State Lands Commission prior to issuance of the coastal permit. Special Condition No. 2 requires submittal of a copy of the approved Streambed Alteration Agreement issued by the California Department of Fish and Game for the project prior to commencing construction. Special Condition No. 3 requires the applicant to comply with the terms and conditions of the National Marine Fisheries Service (NMFS) Biological Opinion regarding the recommended marine mammal monitoring program. Special Condition No. 4 requires that the temporary trestle system be constructed per the application and promptly removed upon project completion, along with pulling up all piles. Special Condition No. 5 requires the applicant to comply with all mitigation measures identified within the Mitigated Negative Declaration adopted for the project. Special Condition No. 6 gave the option to Caltrans to construct a public scenic viewing area at the Noyo Headlands or provide a \$1 million in-lieu mitigation fee that could be used by an approved third party to construct the viewing area or a similar public access improvement elsewhere in the Fort Bragg coastal zone to offset visual resource impacts of the replacement bridge. Special Condition No. 7 established that any future modifications to the replacement bridge, its railings, sidewalks, shoulders, traffic lanes, or median would require a permit amendment to be secured from the Commission. Special Condition No. 8 required that all construction debris be promptly removed from the site following completion of construction and disposed of at an authorized disposal site. Special Condition No. 9 requires the applicant to monitor and report on the condition compliance

for a period of three years during and after construction. Finally, Special Condition No. 10 requires Caltrans to submit and receive approval from the Executive Director of a pollution prevention plan prior to commencing construction.

Upon satisfying all prior-to-issuance conditions, the coastal development permit was issued on March 25, 1999. Revised findings for the permit were adopted by the Commission on February 16, 2000. On February 9, 2001, all prior-to-commencement-of-construction conditions were satisfied.

On March 28, 2001, citing changes in circumstances that would make construction of the replacement bridge under the terms of the existing permit infeasible, Caltrans applied for a permit amendment to expand and define a construction staging area and access route within Ocean Front Park, beneath the bridge's northern abutment. The amendment also requested provisions for closure of the park for specified periods during crucial phases of the replacement bridge's construction. The Commission approved the requested amendment with conditions on May 11, 2001. Six additional special conditions were attached to the permit amendment: Special Condition No. 12 requires that a revised water pollution control plan be prepared and submitted for the Executive Director's approval addressing efforts to protect water quality associated with the construction activities within the Ocean Front Park staging area. Special Condition No. 13 requires that a revised revegetation plan be prepared and submitted for the Executive Director's approval addressing efforts to prevent erosion associated with development within the Ocean Front Park staging area. Special Condition No. 14 sets limits on the closures of the North Harbor Drive entrance to Ocean Front Park to avoid adverse impacts on coastal access and recreational uses. Special Condition No. 15 sets limits on the spatial extent of areas to be used for construction staging and access within Ocean Front Park. Special Condition No. 16 requires the Executive Director be provided with a copy of the Waste Discharge Requirements issued by the North Coast Regional Water Quality Control Board (NCRWQCB) for the amended project, or letter of permission, or evidence that no revised discharge permit will be issued. Special Condition No. 17 requires that the applicant file by November 11, 2002 a request to amend the design of the bridge railing to one that will provide additional visual access beyond than that included in the originally permitted design.

On July 19, 2001, Caltrans requested a second amendment to the permit to make minor changes to the staging area egress route and establish a public parking and turning area within the Noyo Harbor area for use by the public during closures of Ocean Front Park. The requested project changes were approved by the Executive Director under an immaterial permit amendment considered by the Commission on October 11, 2001.

Concurrent with the various actions taken by the applicant to satisfy permit conditions and seek authorizations to modify the project as needed, in 2000, the Commission chair appointed a sub-committee of Commission members to study and make recommendations as to which bridge railing designs would be appropriate for use in

scenic coastal settings. Both currently existing models as well as new styles that could be developed at a future time were to be considered.

Caltrans representatives participated in these meetings and presented a total of four currently available dual-railing designs: the Type 80, the so-called "Alaska," "Wyoming," and "Minnesota," and one pending (at that time) design, the proposed ST-10. Dual-rail options include railings on each side of the sidewalk whereas single-rail option includes only a railing on the outside of the sidewalk.

The sub-committee reviewed the various designs and rated the railings, finding the Alaska railing as most appropriate for coastal settings given its minimized obstruction of views. The Wyoming rail rated second in preference, with the sub-committee taking note of its less industrial-looking aesthetics. The Type 80 railing rated a third place, with caveats that the design should not be used where immediate views of the coast are not an immediate concern, and where a incorporating a natural textural appearance or color scheme into the rails components might be necessary for purposes of finding the railing visually compatible with its surroundings. The Minnesota rail was ranked last place and deemed not a preferred choice for use within the coastal zone. The sub-committee's recommendations were subsequently endorsed by the full Commission (see Exhibit No. 9).

As the proposed ST-10 rail was not available for use at the time of the sub-committees review, the design was not included in the rating hierarchy. Although the sub-committee acknowledged that the ST-10 did incorporate some of the favorable characteristics of the preferred available designs, the rail's bulky appearance, due to its use of standard I-beam components, was seen as a significant aesthetic drawback. Accordingly, the Commission offered several points of input regarding the development of the ST-10 railing that should be addressed by Caltrans in designing the ST-10.

To solicit public opinion on alternative see-through bridge railings being considered for the new Noyo Bridge, Caltrans held a public open house on September 4, 2002, in Fort Bragg. Six alternative railing designs were presented: Two single-rail options, the previously-approved Type 80SW and a modified version of the New England Transportation Consortium (NETC) 4-bar system, and four dual-rail options, the ST-10, Type 80, and the "Alaska" and "Wyoming" models (see Exhibit No. 7).

A questionnaire was distributed among the workshop attendees, soliciting their opinions regarding the six alternative railings, two alternative rail-end crash cushions (TRACC and ADIEM), and which factors they considered most important in selecting a rail for the Noyo River Bridge. Table One below summarizes the results of the survey:

Of the 103 responses, 72% selected the California ST-10 as their most favored railing, with 11% for the NETC single rail design, 10% for the single rail type 80SW, the concrete rail originally proposed by Caltrans. The other three railings shown all received

3% or less of the votes. With respect to crash cushion preferences, the respondents chose the TRACCTM metal beam cushion by a 58% majority compared to the 42% in favor of the ADIEM 350TM alternative, consisting of lightweight concrete blocks on concrete base.

The public attendees were also asked to indicate what they deemed to be the top three factors (of seven options plus a write-in "other" category) that should be considered in any subsequent bridge railing permit amendment proposal. The top three choices selected were: (1) "views afforded the driver;" (2) "safety for pedestrians;" and (3) "pleasing appearance."

On September 26, 2002, in conformance with Special Condition No. 17 of Coastal Development Permit Nos. 1-98-100-A1 and A-1-FTB-99-006-A1, Caltrans filed a third permit amendment for the subject railing substitution, requesting that the project changes be processed as an immaterial amendment. On October 9, 2002, the request was reported to the Commission who objected to the Executive Director's determination of the amendment immateriality and directed that the project modifications be processed as a material permit amendment subject to a full public hearing.

## **2. Procedural Note.**

Section 13166 of the California Code of Regulations states that the Executive Director shall reject an amendment request if: (a) it lessens or avoids the intent of the approved permit; unless (b) the applicant presents newly discovered material information, which he or she could not, with reasonable diligence, have discovered and produced before the permit was granted.

Regarding the first prong of these permit amendment acceptance criteria, the Executive Director has determined that the proposed amendment would not lessen or avoid the intent of the approved permit and subsequent permit amendments with regard to visual resources. The original permit issued by the Commission contemplated that views to and along the ocean and to scenic coastal areas would be adversely impacted by construction of the replacement bridge railing. In-lieu mitigation fees were assessed to partially offset these lost views through acquisition and development of an offsite coastal viewing area. In addition, in considering an amendment to the original permit, the Commission attached Special Condition No. 17 which required the applicant to file by November 11, 2002, a subsequent request to amend the design of the bridge railing to one that would provide additional visual access beyond that provided by the Type 80SW design authorized by the original permit. Accordingly, as the proposed permit amendment would result in lessening impacts to visual resources the proposed amendment request is consistent with the intent of the originally approved permit.

Therefore, based on the information presented by Caltrans, and for the reasons discussed above, the Executive Director has found that the proposed amendment would not lessen

or avoid the intent of the approved permit. Accordingly, the Executive Director accepted the amendment request for processing.

3. **Concurrent Review of Coastal Development Permit Amendment Request No. A-1-FTB-99-006-A3.**

The Noyo River Bridge replacement project is bisected by the boundary between the Commission's area of retained coastal development permit jurisdiction and the permit jurisdiction of the City of Fort Bragg. Accordingly, pursuant to Section 30600 *et seq.* of the Coastal Act, the applicant must obtain separate coastal development permits for each portion of the project lying within the two jurisdictions. Amendments to these permits are to be issued separately, each addressing only those portions of the original permit lying within the respective jurisdiction, if any, affected by the amendment. In this case, the proposed revised project entails changes to authorized development within both the Commission's original and appellate permit jurisdiction areas. Accordingly, the Commission must consider and take action on two separate, but functionally related permit amendments.

The applicant has submitted a site plan and related information that propose to amend the originally approved project description. For those portions of the bridge replacement project within the Commission's original permit jurisdiction, the revised site plan proposes to: (a) substitute the previously approved Type 80SW single-rail system with the dual ST-10 railing and picket along the approximately 725-foot length of the west side of the bridge; and (b) substitute the previously approved Type 80SW single-rail system with the dual ST-10 railing and picket along the approximately 400-foot length of the east side of the bridge. All other issues of the proposed permit amendment concerning substitution of other portions of the bridge railing and end section crash barriers are addressed in the associated staff report for Coastal Development Permit Amendment No. A-1-FTB-99-006-A3 which will also be considered by the Commission at the December 13, 2002 meeting.

4. **Commission Jurisdiction and Standard of Review.**

Those portions of the proposed bridge replacement project subject to this coastal development permit amendment are located within the Coastal Commission's area of original or retained jurisdiction within and adjacent to the banks of the Noyo River in which the span and abutments for the replacement Noyo River Bridge railing would be constructed. Therefore, the standard of review is the applicable Chapter 3 policies of the Coastal Act.

5. **Scope.**

This staff report addresses only the coastal resource issues affected by the proposed permit amendment, provides recommended special conditions to reduce and mitigate

significant impacts to coastal resources and achieve consistency with the Chapter 3 policies of the Coastal Act, and provides findings for conditional approval of the amended project. All other analysis, findings, and conditions related to the originally permitted project and preceding amendments thereto, except as specifically affected by the proposed permit amendment and addressed herein, remain as adopted by the Commission on February 16, 2000, May 11, 2001, and October 11, 2001 [see Revised Findings Staff Report for Coastal Development Permit Nos. 1-98-100, 1-98-100-A1, and 1-98-100-A2, dated January 21, 2000, April 27, 2002, and October 10, 2002, respectively.]

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**I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION:**

The staff recommends that the Commission adopt the following resolution:

**Motion:**

I move that the Commission approve the proposed amendment to Coastal Development Permit No. 1-98-100-A2 pursuant to the staff recommendation.

**Staff Recommendation of Approval:**

Staff recommends a YES vote. Passage of this motion will result in approval of the permit amendment as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

**Resolution to Approve with Conditions:**

The Commission hereby approves the coastal development permit amendment and adopts the findings set forth below on the grounds that the development as amended and subject to conditions, will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit amendment complies with the California Environmental Quality Act because either: 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the amended development on the environment; or 2) there are no feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the amended development on the environment

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**II. STANDARD CONDITIONS:** See attached.

**III. SPECIAL CONDITIONS:**

**Note:** Special Conditions Nos. 1-10 of the original permit and Special Conditions Nos. 12-16 of Coastal Development Permit Amendment Nos. 1-98-100-A1 and A-1-FTB-99-006-A1 remain in force and are included in Exhibit No. 8. Special Conditions Nos. 18 and 19 below, are additional conditions imposed as part of Coastal Development Permit Amendment No. 1-98-100-A3.

**18. Required Use of Quadguard® Crash Barrier End Section**

The crash barrier railing end sections to be installed on the replacement Noyo River Bridge at: (1) the northern terminus of the approved ST-10 inner-railing to be constructed along the southbound lane (10-176-R); and (2) at the southern terminus of the approved ST-10 inner-railing to be constructed along the northbound lane (10-176-L) shall be QuadGuard® crash barrier end sections.

**19. Design Restrictions**

All exposed metal portions of the QuadGuard® crash cushion end sections required by Special Condition No. 18, with the exception of the traffic-facing, reflector-painted safety warning panel portions of the barriers, shall be painted green to match the color of the approved ST-10 dual-railing system.

**IV. FINDINGS AND DECLARATIONS**

The Commission hereby finds and declares:

**A. Coastal Zone Jurisdiction.**

The portion of the project authorized herein is located within the Coastal Commission's retained jurisdictional area at Noyo River (see Exhibit No. 4). Therefore, the permit amendment request is being processed by the Commission using the policies of Chapter 3 of the Coastal Act as the standard of review. Those portions of the project as amended within the Commission's retained jurisdiction and addressed herein include the central bridge span, piers, and abutments (generally, the portions of the bridge that extend over the river, bluff faces, totaling approximately 700 lineal feet). Other portions of the project are within the coastal development jurisdiction of the City of Fort Bragg, including the bridge approaches, bridge abutments on the bluffs, the two ends of the bridge span (generally, the portions of the bridge that extend over the bluff faces and bluff tops,

totaling approximately lineal 175 feet). The coastal development permit approved by the City for the portions of the original project within the City's coastal development permit jurisdiction was appealed to the Commission and acted upon by the Commission *de novo*. Only the Commission may grant an amendment to a permit previously issued by the Commission. Therefore, the Commission is concurrently reviewing Coastal Development Permit Amendment No. A-1-FTB-99-006-A3 for those portions of the proposed amendment of the project that are within the City's coastal development permit jurisdiction.

**B. Site Description.**

The site of the proposed amended project consists of areas within the State Route 1 crossing of the Noyo River. The existing Noyo River Bridge was built in 1948 and provides the main access to Fort Bragg from the south. In this area, the coastal zone boundary is located along the easterly side of the Highway 1 right-of-way [see Exhibit No. 2]. The bridge crosses the Noyo River between the 110-ft-high bluffs above the Noyo Harbor entrance. Noyo Harbor is an important regional commercial fishing center and is developed with a variety of coastal-dependent commercial-industrial and visitor-serving facilities. The port provides the only "harbor of refuge" along the California Northcoast between Bodega Bay and Humboldt Bay.

**C. Project Description.**

The original permit as approved by the Commission authorized replacing the existing two-lane, 36-ft.-wide Noyo River Bridge with an 86.6-ft.-wide, 875-ft.-long, triple cast-in-place (CIP) concrete box girder bridge. Construction of the bridge would require the installation and subsequent removal of temporary falsework and trestles involving: 1) the driving of approximately 224 temporary piers displacing approximately 2,000 sq. ft. of the river; and 2) the construction of an approximately 30,000 sq. ft. temporary trestle for construction access.

The replacement bridge will accommodate four 12-ft. lanes, a 12-ft. median, 8-ft. outside shoulders with 6-ft. sidewalks placed on both sides. A Type 80SW bridge deck railing with a flared metal beam guard rail was authorized to be installed to provide a safety barrier for vehicles, bicyclists, and/or pedestrians from accidentally falling off of the bridge deck. At that time, the Type 80SW railing was the only railing system approved by Caltrans for use on the Noyo River bridge (other than the existing Type 26 railing). Much of the discussion during the hearings on the replacement bridge project focused on the visual impacts the Type 80SW railing would have on views from the bridge to and along the coast and coastal scenic areas. Given the lack of viable alternatives at that time, the Commission approved the use of the Type 80SW, applying in-lieu fee requirements for the acquisition and development of an off-site vista point as mitigation to offset the unavoidable loss of views from the bridge and other visual impacts of the project.

The original permit has been subsequently amended twice to further allow: 1) a construction staging area to be established within the eastern 14,500 square feet of the Ocean Front Park parking lot and within the western  $\pm 1.75$  acres of the Noyo River dredge spoils disposal basin; 2) a detour road to be constructed at the North Harbor Drive entrance to Ocean Front Park; 3) reconfiguration of the park's westerly 25 single-row, perpendicular parking spaces into 19 standard, 2 compact, and 1 handicapped-accessible diagonal spaces; 4) closure of access to Ocean Front Park for up to 140 days during the bridge replacement construction period; 5) modification of the egress route to the Ocean Front Park staging area for in-bound construction-related traffic to use the dredge spoils disposal facility access road; and 6) establishment of a vehicular parking and turning area within the Noyo Harbor area for use by the public during closures of Ocean Front Park.

#### Bridge Railing / Crash Barrier Options Developed Since 1999 Permit Approval

In seeking this permit amendment, Caltrans has continued to make a good-faith effort to accommodate ocean and harbor views in the current project. It should be recalled that Caltrans had originally proposed a Type 26 concrete barrier and hand railing design that blocked substantially more of the current views. In response to local concerns over the loss of views that this design would cause, Caltrans sought to find a more "see-through" railing. Caltrans' policy is that "all bridge railings must be crashworthy by testing following American Association of State Highway Transportation Officials (AASHTO) guidelines" and are accepted by the Federal Highway Administration (FHWA). In 1998, Caltrans found a new design, the Type 80SW, that was already in the process of being considered for approval. Caltrans was able to obtain approval of the Type 80SW for conditions with limited speeds, such as the proposed bridge. Caltrans presented the "see-through" design in their November 1998 Initial Study/Environmental Assessment for the Noyo Bridge Replacement Project and received approval for use of the railing by the Commission in March 1999.

Since the original permit approval in 1999, in which the Type 80SW was authorized, Caltrans has researched and developed several other railing and crash barrier end-section systems pursuant to Federal Highway Administration test criteria articulated in National Cooperative Highway Research Program (NCHRP) Report 350. To date, a total of six bridge railing alternatives to the Type 80SW and six proprietary crash cushion end-sections (for use on any one of the four dual-rail systems) have been approved. Altogether, these railing and crash barrier systems provide the following options:

#### Single Rail Systems:

Type 26  
Type 80SW  
NETC

#### Dual Rail Systems:

"Alaska"  
"Modified Wyoming"  
ST-10  
Type 80

#### Crash Barrier End-Sections:

QuadGuard®  
REACT 350.4®  
TRACC™  
ADIEM 350™  
CAT®  
TAU-II™

### Rail Systems

#### Type 26

The Type 26 design (Exhibit No. 5, Figure No. 1) is a square type concrete railing. This model was originally proposed for the replacement bridge in 1998. After concerns were raised during early consideration of the project regarding the loss of views from the bridge, Caltrans substituted the Type 80SW design for the Type 26.

#### Type 80SW

The currently-approved Type 80SW (Exhibit No. 5, Figure Nos. 2-4) bridge rail is primarily intended for low speed applications of 70 km/hr or less. The Type 80SW functions primarily as a vehicular barrier and alone does not provide for pedestrian protection. Unlike the Type 80 bridge rail, the Type 80SW is built on a 200-mm-high (approximately 8 inches) sidewalk rather than the bridge deck surface. The rail is fitted with a single metal tube spanning the gap and a 250-mm-high handrail attached to the top of the concrete barrier.

#### NETC

The NETC (New England Transportation Consortium) 4-Bar bridge railing (Exhibit No. 5, Figure Nos. 5-7) is a curb-mounted multi-rail system that was developed by an association of Northeast U.S. state transportation departments for use on highway bridges in that region. The NETC rail mounts on a 150-mm (6-inch) curb, reducing the clear opening to 226 mm (approximately 9 inches), and increasing the overall height of the rail of 1067 mm (approximately 39 inches). The original NETC 4-bar model rail has been modified by Caltrans for use on state highways within California.

#### "Alaska"

The Alaska Multi-State Bridge Railing (Exhibit No. 5, Figure Nos. 8-10) is a double tube steel rail mounted on top of a 7-inch-high concrete curb. The "Alaska railing" consists of two TS 127mm x 127mm x 7.9 m tubes supported by W200-mm x36-mm posts on 3050-mm centers set on a 180-mm high curb. The centerline of the lower rail is 410 mm above the riding surface and the centerline of the top rail is 765 mm above the deck. Total rail height is 830 mm (approximately 33 inches).

#### "Modified Wyoming"

The Caltrans-modified version of the Wyoming TL-3/TL-4 railing (Exhibit No. 5, Figure Nos. 11-13) is a double tube steel rail mounted on top of a 150-mm-high (6-inch) concrete curb. The rail is constructed in modules of five 1625-mm (approximately 64 inches) ground-mounted steel posts with soil plates on 1220-mm (4-foot) centers, one same-size post at 1830 mm (6-feet), followed by standard box beam line posts on 1830 mm centers.

ST-10

The ST-10 bridge rail (Exhibit No. 5, Figure Nos. 14-16) is a recently-approved steel dual-rail system. The ST-10 closely resembles the "Wyoming" and similarly consists of a double tube steel rail mounted on top of a 6-inch-high concrete curb.

Type 80

The Type 80 bridge rail (Exhibit No. 5, Figure Nos. 17-19) is an 810-mm-tall (approximately 32 inches), reinforced concrete barrier similar to the Type 80SW. The rail has gaps which are 280-mm-high by 1620-mm-long, sitting 230 mm above the bridge deck surface. Considered by Caltrans to be an "aesthetic, see-through concrete bridge rail," The Type 80 bridge rail was built and tested in accordance with NCHRP Report 350 and is now recommended for installation on California highways requiring "Test Level 4" (TL-4) bridge rails.

Crash Barrier End Sections

All of the dual rail systems require that one of the following crash cushions be installed at the end of the inside rail:

QuadGuard®

The QuadGuard® system (see Exhibit No. 6) consists of energy-absorbing cartridges surrounded by a framework of steel diaphragms and patented Quad-Beam® fender panels. This crash cushion is designed for hazards ranging in width from 610 mm to 2300 mm (24" to 7'6"). During head-on impacts, the system telescopes in on itself, crushing the cartridges to absorb the energy of the impact as it moves rearward. When impacted from the side, the system safely redirects the errant vehicle back toward its original travel path without allowing gating. Unlike gating crash cushions and end treatments, no clear zone is required behind the QuadGuard® system. The QuadGuard® extends 13' 1" in length, spans 2' in width, and stands 2' 8" in height.

REACT 350.4®

The REACT 350.4® (Reusable Energy Absorbing Crash Terminal) (see Exhibit No. 6) is a 70 km/h crash cushion composed of four high-molecular weight, high-density polyethylene cylinders. The REACT 350.4® extends 15' 8" in length, spans 3' in width, and stands 4' in height.

TRACCTM

The TRACCTM (Trinity Attenuating Crash Cushion) (see Exhibit No. 6) is designed for use in both permanent and work-zone applications and meets NCHRP Report 350, Test Level 3 requirements. The TRACCTM features an open design utilizing familiar galvanized steel components. The TRACCTM extends 21' in length, spans 2' 7" in width, and stands 2' 8" in height.

ADIEM 350™

The ADIEM 350™ (Advanced Dynamic Impact Extension Module) (see Exhibit No. 6) crash cushion design entails a series of lightweight, crushable concrete modules engineered into an energy-absorbing system. Safer than sloped concrete barriers, easier to maintain than sand-filled barrels, easier to place and move around construction zones, ADIEM 350™ is far more affordable than complex systems. The ADIEM 350™ extends 10' in length, spans 2' in width, and stands 2' to 4' in height.

CAT®

The CAT® (Crash Cushion Attenuating Terminal) (see Exhibit No. 6) is a three-stage system that uses energy absorbing beam elements, breakaway wooden posts, and a cable anchorage system to prevent out-of-control vehicles from impacting fixed objects. The system works by absorbing a vehicle's kinetic energy while bringing it to a controlled stop or redirects the forward motion of the vehicle, thus preventing the disastrous consequences of spearing, vaulting, or rollover. The CAT® extends 31' 3" in length, spans 2' in width, and stands 2' 3" in height.

TAU-II™

The TAU-II™ (see Exhibit No. 6) is a fully re-directive, non-gating crash cushion system with capacities for both low and high speed applications (30-70 mph) that is ideally suited for roadway hazards such as the ends of rigid barriers. The TAU-II™ has been crash-tested in accordance with NCHRP Report 350 test level 3 (TL-3) procedures. The TAU-II™ extends 26' 10" in length, spans 2' 9" in width, and stands 2' 11" in height.

Proposed Bridge Railing Substitution

The proposed amendment would allow an alternative bridge railing design to be used in place of the single-railing Type 80SW design previously approved under the original permit. An ST-10 dual railing and picket with a TRACC™ end section would be substituted to provide greater visibility of the ocean, headlands, and river to motorists, cyclists, and pedestrians crossing the bridge. The railing is proposed to be painted a dark-green color with the TRACC™ end sections having a zinc-galvanized metal beam finish.

**D. Visual Resources.**Applicable Coastal Act Chapter 3 Policies:

Section 30251 of the Coastal Act establishes the standards for protection of the scenic and visual qualities of coastal areas:

*The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

Section 30253 addresses protection of special communities and visitor destination points.

*New development shall:...*

*(5) Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.*

Discussion:

In summary, the applicable standards of the Coastal Act require that the proposed amended bridge railing system:

- Be sited and designed to protect views to and along the ocean and scenic coastal areas;
- Be visually compatible with the character of surrounding areas;
- Protect areas of unique character that are popular visitor destination points for recreational uses; and
- Minimize the alteration of natural landforms.

Protection of Views To and Along the Ocean and Coastal Scenic Areas

The proposed bridge railing amendment would incrementally reduce the obstruction of views to and along the ocean and coastal scenic areas. The proposed bridge would be highly visible from visitor destinations such as the hotels, restaurants and other viewing spots in the harbor, as well from recreational areas, and would affect views to and from the bluffs, the scenic setting at the mouth of the Noyo River, and the ocean.

The currently-approved Type 80SW bridge railing design would reduce the motorists' views from those currently available from the existing bridge. The Type 80SW design would block a portion of the view provided by the present barrier. As best as can be determined from the information provided, the Type 80SW railing, viewed straight on, would block somewhat more than 60% of the sightline between the top of the sidewalk

and the top of the rail. Due to the increased thickness of the concrete barrier elements, a greater proportion of the area is blocked when viewed at an angle. For further reference, the existing bridge rail blocks approximately 25% of the area between the base and top of the rail, and because it is considerably thinner, obscures less area when viewed at an angle.

Table 1 below, provides a summary of the dimensional and view obstruction characteristic of the six bridge railing options. By comparison, three of the six railing systems would reduce the amount of visual obstruction by approximately 3% (NETC) to 17% (ST-10) from that would result from bridge construction using the currently-approved Type 80SW railing system.

**Table 1: Summary Comparison of Bridge Railing Characteristics**

Railing Attribute	Type 80	WY <sub>mod</sub>	AK	ST-10	NETC	Type 26
Overall Height (in.)	31.8	32.7	31.6	32.6	51	32
Number of Rails	1	2	2	2	4	Solid
Combined Rail Thickness <sup>1</sup> (in.)	11	14	10	8	20	4
Foundation Height (in.)	9	6	7	6	8	20
Combined Solid Surfaces <sup>2</sup> (in.)	20.8	20	17	14	29	32
Combined Window Height <sup>3</sup> (in.)	11	12.7	14.8	18.7	22	N/A
Percentage Opacity <sup>4</sup>	65.4	84.4	53.8	42.9	56.9	N/A
Maximum Post Spacing (ft.)	6.5	11.8	10	10	8	N/A

1 Refers to vertical dimensions of rail surfaces perpendicular to the road

2 Excluding vertical posts

3 Refers to vertical dimension of window openings

4 Refers to the percentage of the overall height of the railing obscured by solid surfaces

Note: Solid surfaces obstruct views while windows provide views. Bridge railings with minimum combined solid surfaces plus maximum combined height of windows are the most "see-through." Totals may not sum exactly due to "rounding."

Thus, based upon the above analysis, the proposed ST-10 railing system would substantially reduce view blockage from the Noyo River Bridge from that caused by the currently-approved Type 80SW railing system. Although it doesn't have the least number of rails or is the shortest in terms of base and overall height, the streamline design of the ST-10 system in terms of bulkiness of its components is its primary visual advantage over the other railing options. The combination of its nominal foundation and overall heights, together with the minimal thickness of its railings, and the wide spacing of its supports, work together to cause the ST-10 design to have the highest ratio of openings to solid surfaces. As a result, of the railing system options available for use on the Noyo River Bridge, with a 42.9% opacity rating the ST-10 is the most transparent design, causing the least amount of view blockage.



The various crash barrier end sections would have much less impact on views from the bridge than the rails themselves. Assuming that a dual-rail system is to be substituted, only two end sections would be needed: one each on the outer sides of the roadways as they approach the bridge span. For the southbound side, the views of the harbor and river in this area are already obscured by the presence of the North Cliff Hotel. On the northbound approach, views inland of the river and Noyo Harbor area are blocked by a stand of approximately 80-foot tall Monterey pine trees growing along the southern banks of the river. Thus, the various crash cushion end sections would not appreciably affect coastal views.

#### Visual Compatibility with Surrounding Area/Character

As noted, Section 30251 of the Coastal Act requires that development protect views to the ocean and scenic coastal areas and be visually compatible with the character of surrounding areas. Section 30253 requires protection of areas which, because of their unique characteristics, are popular visitor destination points for recreational uses.

While the Coastal Act is the standard of review for the part of the project within the Commission's retained jurisdiction, the certified Fort Bragg LCP provides guidance in the interpretation of those policies. With regard to visual and community character issues, the Fort Bragg LCP in part reiterates Sections 30251 and 30253 of the Coastal Act. LUP Policy XIV-1 states that new development within the City's coastal zone shall be sited and designed to protect views to and along the ocean, be visually compatible with the character of surrounding areas, and, where feasible, restore and enhance visual quality in visually degraded areas. In introducing this policy, the LUP cites Coastal Act Policies 30106, 30251, and 30253, and goes on to state: "...along Highway 1 the City's Scenic Corridor Design Review system should be used to implement this Coastal Act Policy," thereby incorporating these Coastal Act policies as certified LCP policies. The City's zoning map applies the Scenic Corridor combining zone to the area around the Noyo River Bridge.

As incorporated into the LCP, the Scenic Corridor Combining Zone, Section 18.58.05 (C) states that a structure shall be so designed that it, in general, contributes to the character and image of the City as a place of beauty, spaciousness and balance; that the exterior design and appearance of the structure is not of a quality or scale so as to cause the nature of the neighborhood to materially depreciate in appearance and value; and that the structure is in harmony with proposed adjacent development in the area and the Scenic Corridor Zone and in conformity with the LCP.

Zoning Code Section 18.61.028 (Coastal visual resources and special communities) states that permitted development within the coastal scenic corridor shall minimize the alteration of natural landforms, be visually compatible with the character of the surrounding area, be sited and designed to protect views to and along the ocean and

scenic coastal areas, and, wherever feasible, restore and enhance visual quality in visually degraded areas.

Additionally, LUP Policy XIV-3 states that "the views from the bluffs at the mouth of Pudding Creek and the Noyo River shall be protected."

In determining whether the proposed amended project meets the requirements of the relevant portions of Coastal Act sections 30251 and 30253, as guided by the relevant LCP policies, the Commission is faced with both objective facts and subjective judgments. It is a fact that the proposed bridge railing plays a dominant part in determining the amount of views towards and along the ocean and to other scenic areas from vehicles crossing the Noyo River. However, the manner in which the particular architectural design of a particular bridge railing design would affect the character of the area is more a matter of subjective judgment.

As to the first factually-based criterion, by all objective measurements, the proposed ST-10 railing when compared with the currently-approved railing and other options would increase the amount of area between the various rail beams, struts, and stanchions through which vistas of the river, ocean, and harbor areas might be viewed. With regard to the second, more bias-driven criterion, determining compliance with visual compatibility and harmoniousness of the surrounding area can be more elusive. One perspective, however, might be found in how well the proposed substitute bridge railing would "fit in" (i.e., match the predominant style and appearance) with the lower Noyo River environs).

The proposed replacement bridge railing / crash cushion system is a generally rectilinear assemblage of metal and concrete components ranging in height from three to four feet and spanning several hundred feet at the uppermost part of a pier foundation concrete span bridge, similar in overall appearance to railings typically found on many highways and roads throughout the state. By comparison, the character of the Noyo Harbor / Noyo River area proper is diverse study in contrasts. The lower Noyo River forms a valley that is to a significant degree physically and visually separated from the more urbanizing terrace areas of Fort Bragg described above. This area includes the harbor, the shoreline and mouth of the river, Noyo Bay and its opening to the ocean, Ocean Front Park, Jetty Beach, and the bluffs that frame the valley, including the blufftop area at both ends of the existing bridge. The harbor area itself is a working fishing village, with development that includes a variety of architectural styles. The area's open spaces, including the river itself and along the bluff faces, are also an important part of its character.

In sum, the character of the area may best be described as "eclectic." In view of this variety of styles, the visual changes associated with substitution of the proposed ST-10 railing system for the currently-approved Type 80SW bridge railing cannot, from a strictly architectural point of view, be determined to be out of character with the

surrounding area. The Commission therefore finds that the proposed project is consistent with Section 30251's provisions regarding compatibility with the surrounding area.

#### Protection of Special Communities and Neighborhoods

The replacement bridge, including its railing, will continue to be a highly visible feature of coastal views afforded from visitor destination points and recreational areas in and around Noyo River. The prominence of the bridge makes the bridge one of the most significant elements defining the character of the area.

With respect to providing protection to special communities and neighborhoods, in addition to taking efforts to assure that a permit amendment for a substitute bridge railing affords the least interference to views of the Noyo River / Noyo Harbor region, another measure to guard the aesthetic integrity of the surrounding area would be minimize the visual presence of bridge components to the greatest level feasible. To this end, Caltrans has included within the permit amendment application a provision that the proposed ST-10 railing be painted a dark-green color to mute the appearance of the railing, emulating the earth tones of the vegetation on the surrounding river banks.

The Commission concludes that further softening of the visual aspects of the proposed substitute railing system could be accomplished by utilizing the shortest length of crash barrier end section possible. The applicant proposes to use the TRACC™ end section onto the approach termini of the ST-10 railing. The TRACC™ would occupy a nearly 2½-ft width of the bridge decking for a 21-ft-length of the roadway edge. By comparison, the QuadGuard® end section at slightly over 13 feet in length and two feet in width would require only approximately 48% of the footprint of the TRACC™. Thus, the Commission finds that the use of the QuadGuard® end section in place of the proposed TRACC™ system would reduce the visual clutter on the bridge decking and would contribute to the protection of the Noyo River and Harbor area.

Additionally, the Commission notes that in a memo from the applicant's Landscape Architecture Office (see Exhibit No. 6), a concern was raised and a recommendation offered with regard to the proposed TRACC™ crash cushion:

The appearance of the TRACC crash cushion is incompatible with the green metal coating that is being [proposed to be] used on the ST-10 railing and lighting fixtures. Consider coating the TRACC end section, to blend with the dual rail system.

The Commission concurs that by painting the QuadGuard® crash cushion a dark-green color as that proposed for the railing the overall visual presence of the railing system would be further reduced. Further, by eliminating the contrast between the railing and end section finishes, a greater harmony of design would result among these bridge components.

Therefore, the Commission attaches Special Condition Nos. 18 and 19. Special Condition No. 18 requires that the applicant use the QuadGuard® end section as part of the substitute bridge railing system. Special Condition No. 19 further stipulates that the required QuadGuard® end section be painted consistent with the proposed substitute railing, as proposed by the applicant. The Commission finds that the proposed project, as conditioned, is consistent with Section 30253 of the Coastal Act as the proposed amendment will continue to protect the unique characteristics and recreational destination attributes of the special communities and neighborhoods that make up the Noyo River / Harbor area.

#### Minimization of Landform Alteration

Substitution of bridge railing and/or crash cushion systems will entail no alteration of landforms.

#### Conclusion

Thus, based on the above analysis, the Commission finds that the proposed substitute bridge railing system, with the modifications of utilizing the least visually obtrusive end section crash barrier and incorporating painting to blend the end section with other bridge components, will strike a visual balance between the natural and built environment elements of the lower Noyo River area. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section 30251 of the Coastal Act as the proposed amendment will continue to protect views to and along the ocean and scenic coastal areas, minimize the alteration of natural land forms, be visually compatible with the character of surrounding areas, and be subordinate to the character of its setting. Furthermore, the Commission finds that the proposed project, as conditioned, is consistent with Section 30253 of the Coastal Act as the proposed amendment will continue to protect the unique characteristics and recreational destination attributes of the special communities and neighborhoods that make up the Noyo River / Harbor area.

#### **E. Public Access and Recreation.**

The public access and recreation policies of the Coastal Act provide, in part, as follows:

Section 30210 of the Coastal Act states:

*In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act Section 30211 provides:

*Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act Section 30212(a) further states, in applicable part:

*Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects...*

Section 30221 of the Coastal Act provides:

*Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*

In applying the above public access policies of the Coastal Act, the Commission is limited by the need to show that any denial of a permit application based on this section, or any decision to grant a permit subject to special conditions requiring public access is necessary to avoid or offset a project's adverse impact on existing or potential access.

The Noyo River Bridge proper is a form of coastal access facility. The structure provides a multi-modal crossing of the Noyo River that allows convenient lateral transit along the Mendocino County coastline for autos, bicyclists, hikers, and pedestrians. In the currently-approved bridge railing configuration, the Type 80SW would be constructed on the outboard sides of the bridge decking. No barrier would be provided between motorized vehicles traveling across the bridge, pedestrians and bicycle users. The proposed permit amendment would substitute a ST-10 dual railing wherein a crash railing would be erected between the vehicular travelway and the bikeway and pedestrian walkway and a picket railing on the outer edges of the bridge decking. This modification would result in greater safety being afforded to non-vehicular coastal users by partitioning auto traffic portions

Therefore, for the reasons discussed above, the Commission finds that the project as conditioned is consistent with the public access and recreation policies of the Coastal Act.

**F. California Environmental Quality Act (CEQA).**

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with

any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Commission incorporates its findings on conformity with the Coastal Act at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project which have been received as of preparation of this staff report. As discussed herein, in the findings addressing the consistency of the proposed project with the Coastal Act, the proposed project has been conditioned in order to be found consistent with the Coastal Act. Mitigation measures which will minimize all adverse environmental impacts have been required. As conditioned, there are no feasible alternatives or mitigation measures which would substantially lessen any significant adverse impact that the activity may have on the environment. Therefore, the Commission finds that the proposed project can be found to be consistent with the requirements of the Coastal Act to conform to CEQA.

**EXHIBITS:**

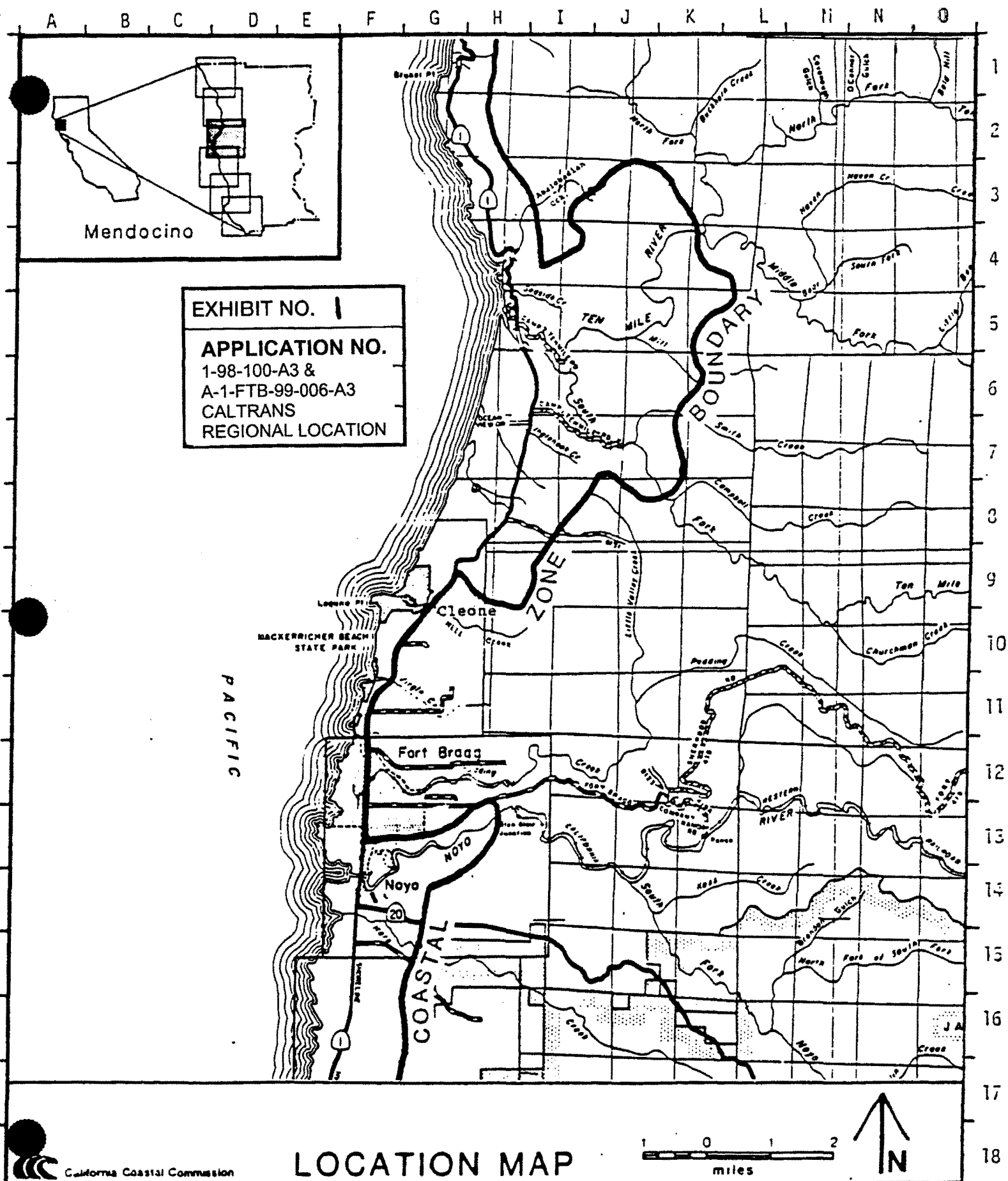
1. Regional Location
2. Vicinity Map
3. Project Area
4. Boundary Determination No BD-12-98: Retained Jurisdiction/Appeal Area
5. Bridge Railing Alternatives
6. Proposed Substitute Bridge Railing, Discussion of Railing and Crash Barrier Alternatives, and Visual Impact Assessment
7. Caltrans' September 4, 2002 Noyo River Bridge Railing Public Workshop Handout and Questionnaire
8. Permit Special Conditions for Original and Past Amended Project (1-98-100, A-1-FTB-99-006, and A-1-FTB-99-006-A1)
9. Correspondence

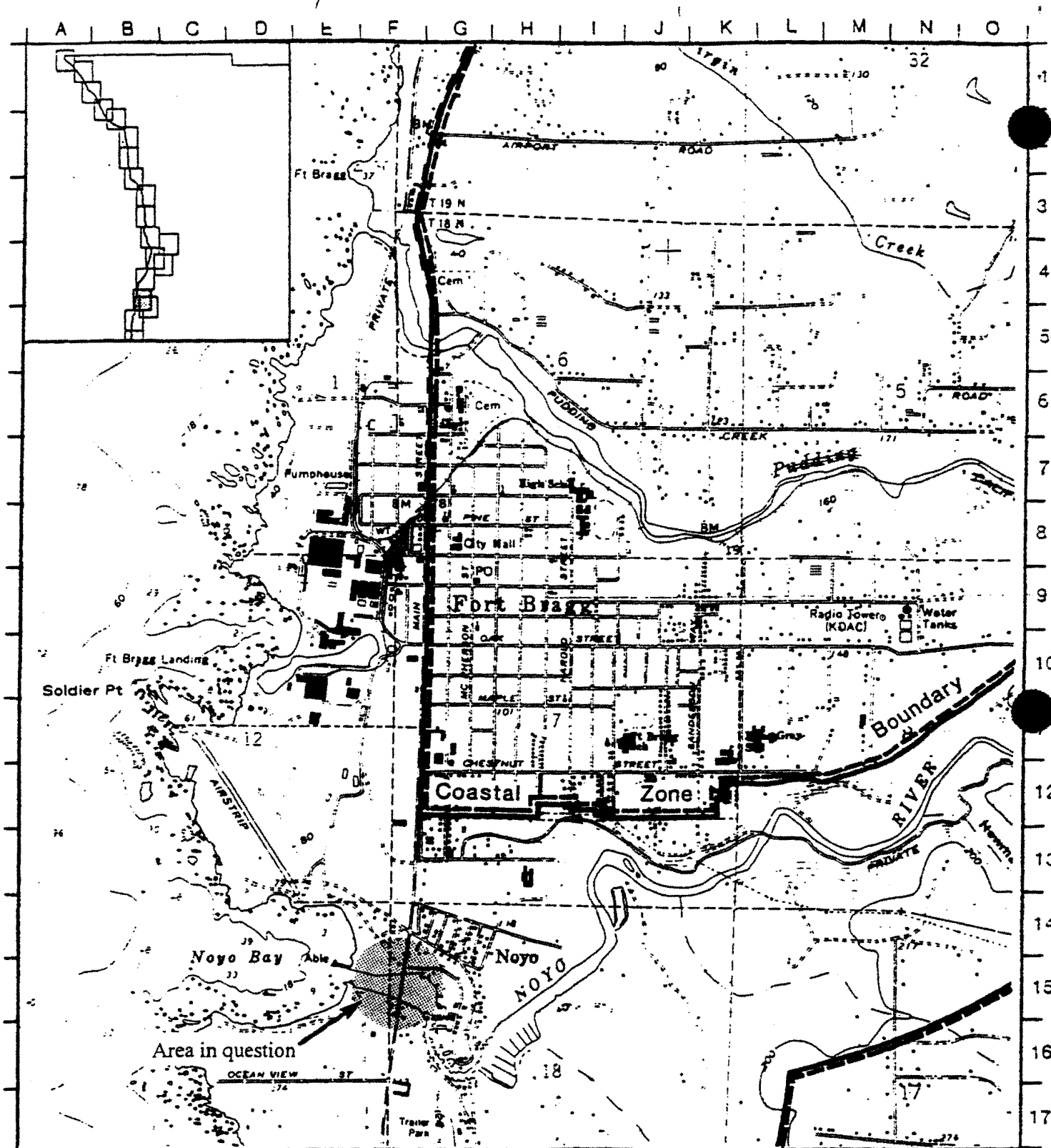
APPENDIX A:

STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgement. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable amount of time. Application for extension of the permit must be made prior to the expiration date.
3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of the Commission.
4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.







BD 12-98  
Noyo River Area

Portion of Coastal Zone Boundary Map  
Map # 31 (Ft. Bragg)



California Coastal Commission

1000 0 2000  
feet



County of Mendocino

EXHIBIT NO. 2

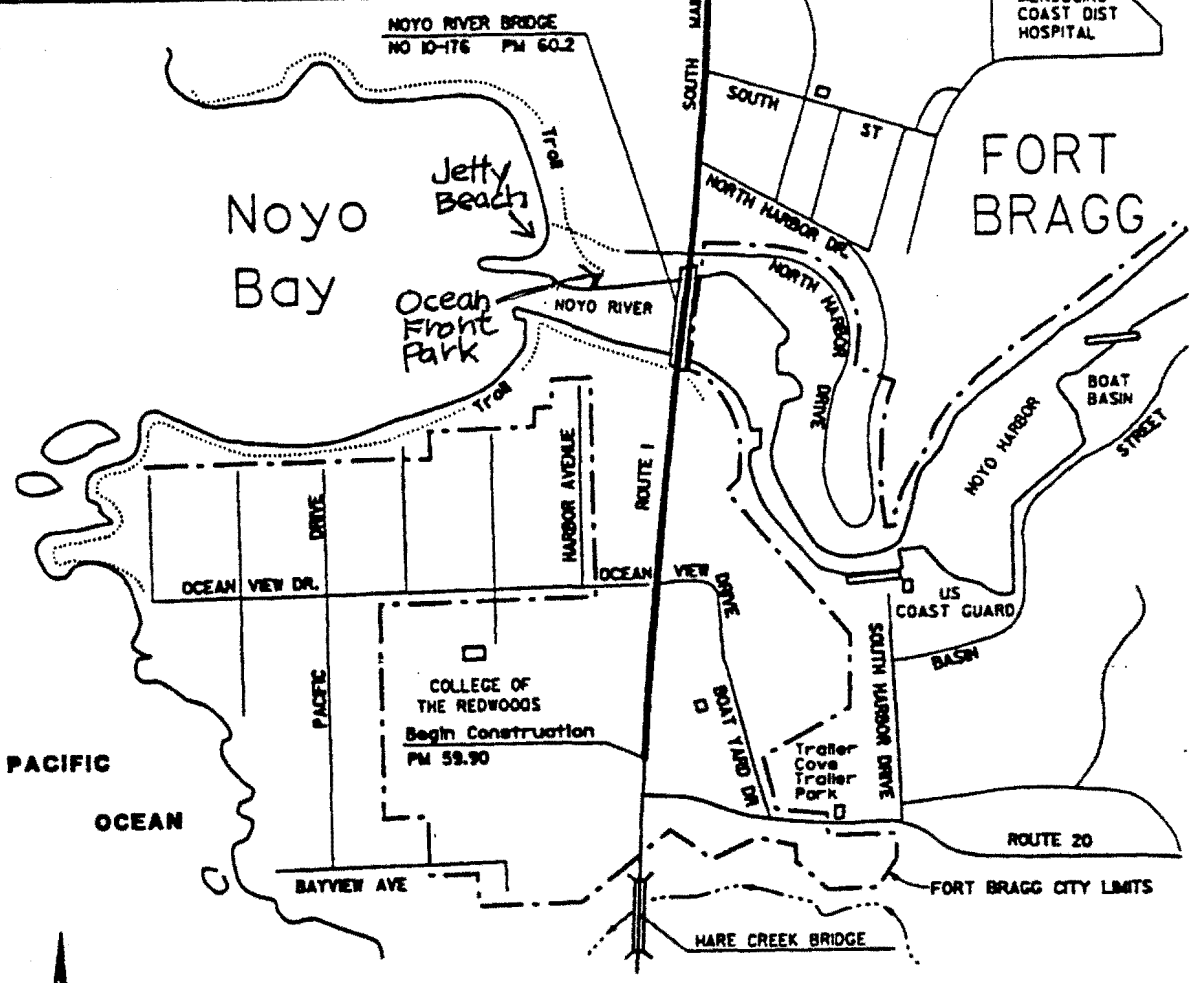
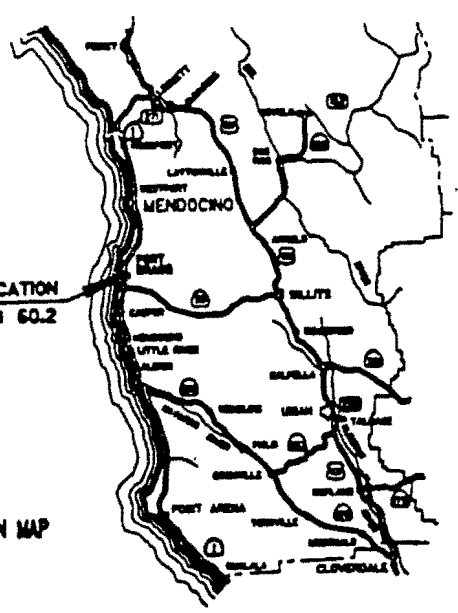
APPLICATION NO.

1-98-100-A3 &  
A-1-FTB-99-006-A3  
CALTRANS  
VICINITY MAP



PROJECT LOCATION  
ROUTE 1 PM 60.2

LOCATION MAP



No Scale

EXHIBIT NO. 3

APPLICATION NO.  
1-98-100-A3 &  
A-1-FTB-99-006-A3  
CALTRANS  
PROJECT AREA



**Figure No. 1: Type 26 Modified Concrete Barrier**

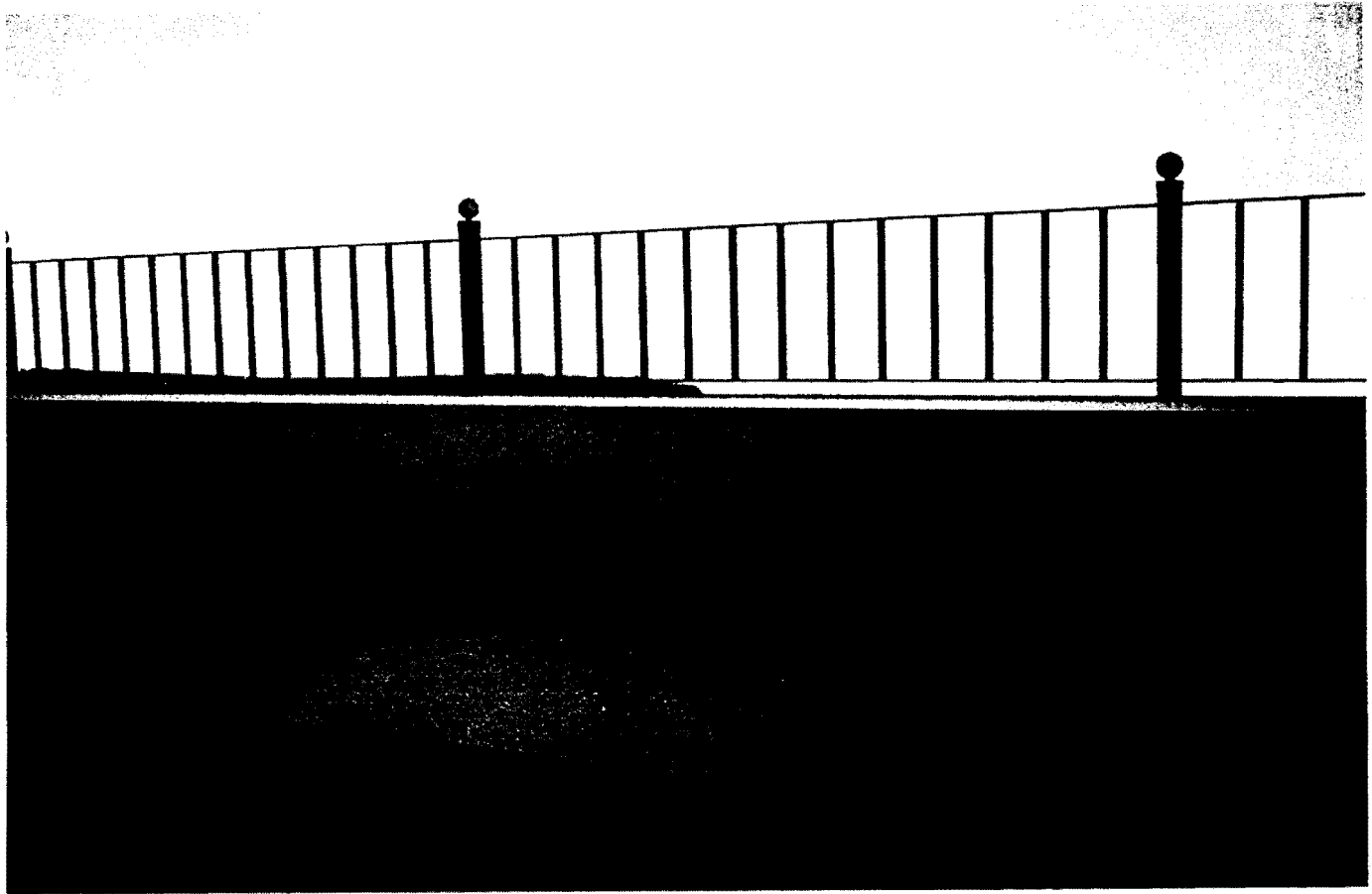


EXHIBIT NO. 5

APPLICATION NO.

1-98-100-A3 &

A-1-FTB-99-006-A3

BRIDGE RAILING

ALTERNATIVES (1 of 19)

**Figure 2:**     **Type 80SW - 45° Bridge Deck View**



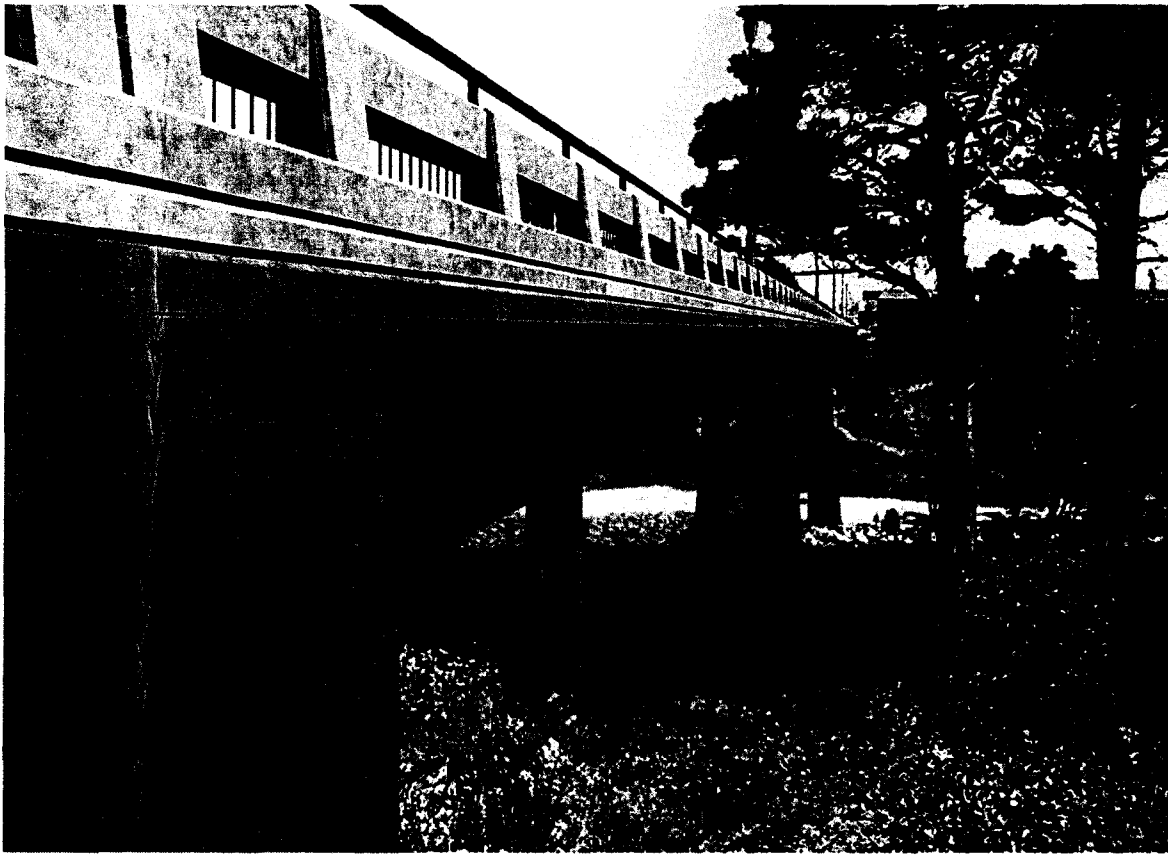
2919

Figure 3: Type 80SW – Pedestrian View



3 of 19

**Figure 4:**     **Type 80SW – Bridge View**



4 919



Figure 5: NETC – Bridge Deck View



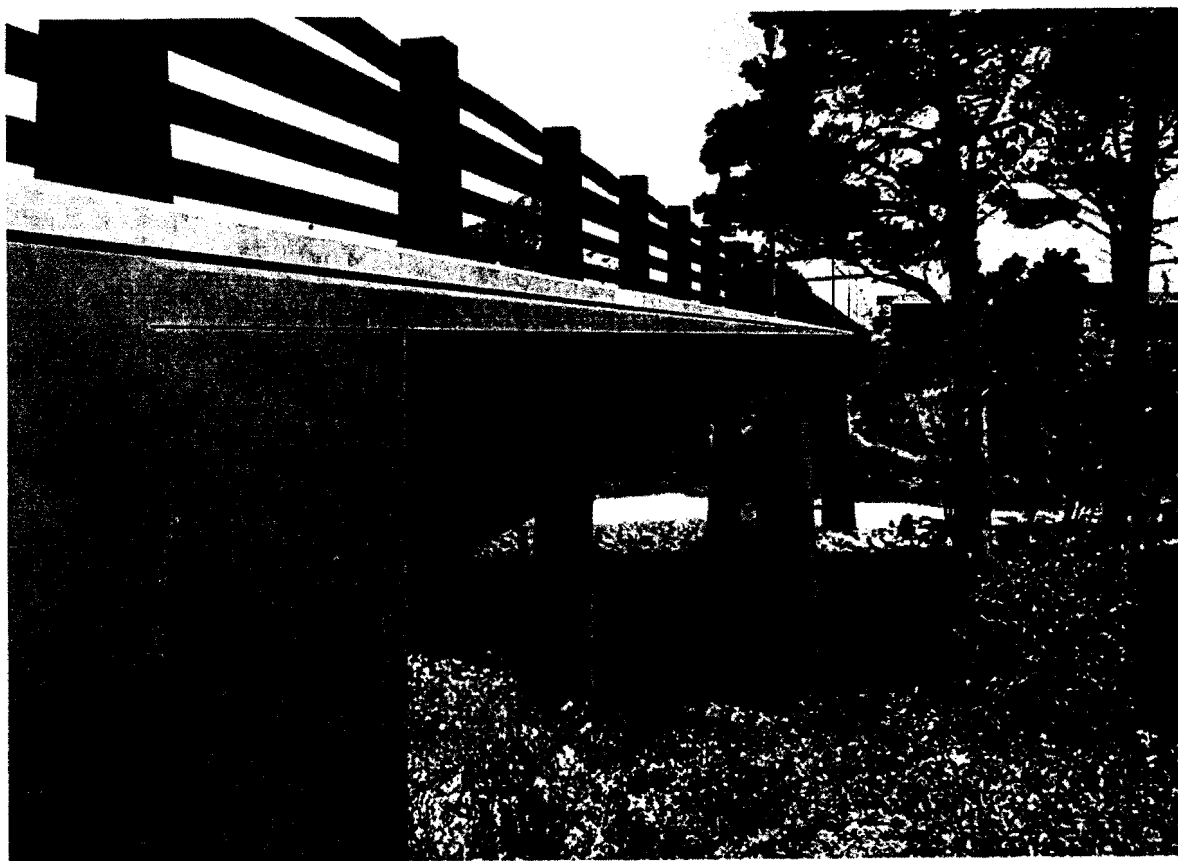
5 of 19

Figure 6: NETC – Pedestrian View



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Figure 7: NETC – Bridge View



7/19

Figure 8: Alaska Multi-State – Bridge Deck View



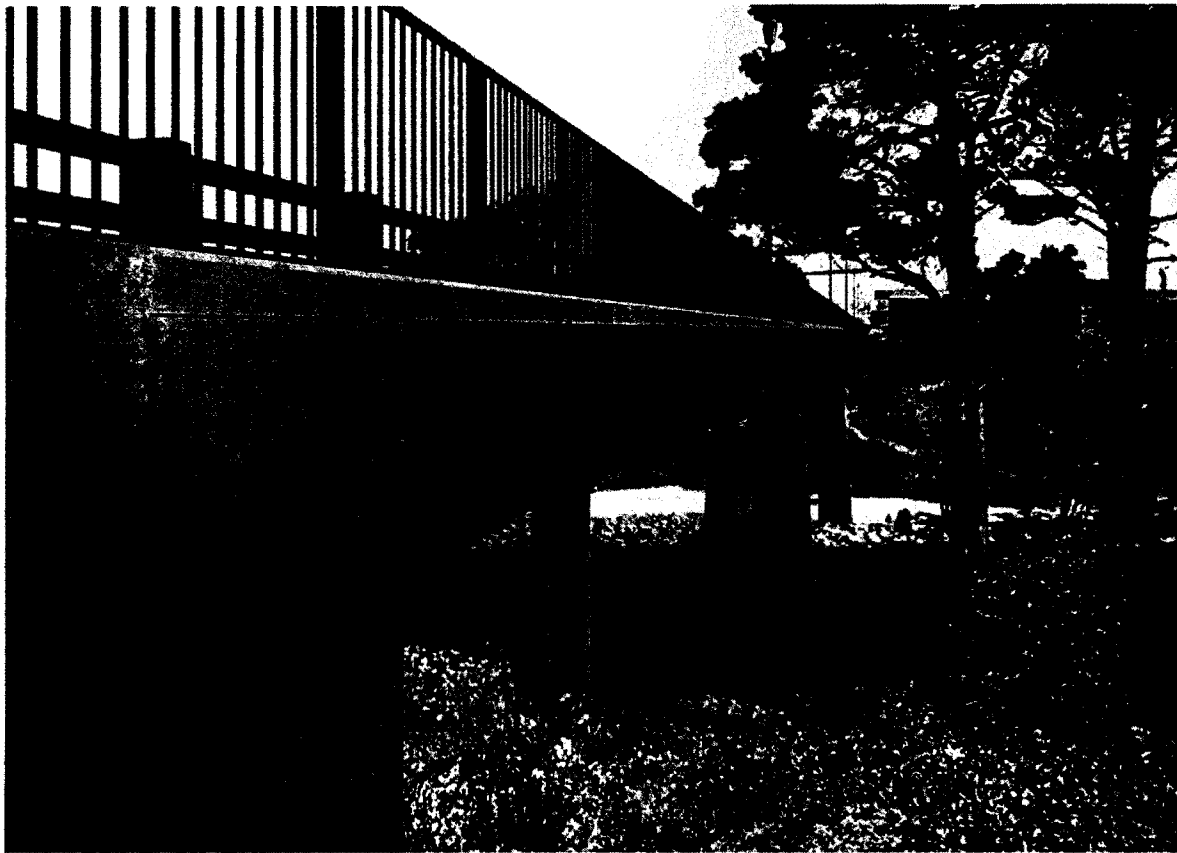
8 of 19

Figure 9: Alaska Multi-State – Pedestrian View



9.7.19

**Figure 10:** Alaska Multi-State – Bridge View



10 4 19

Figure 11: Modified Wyoming – Bridge Deck View



11-2-19

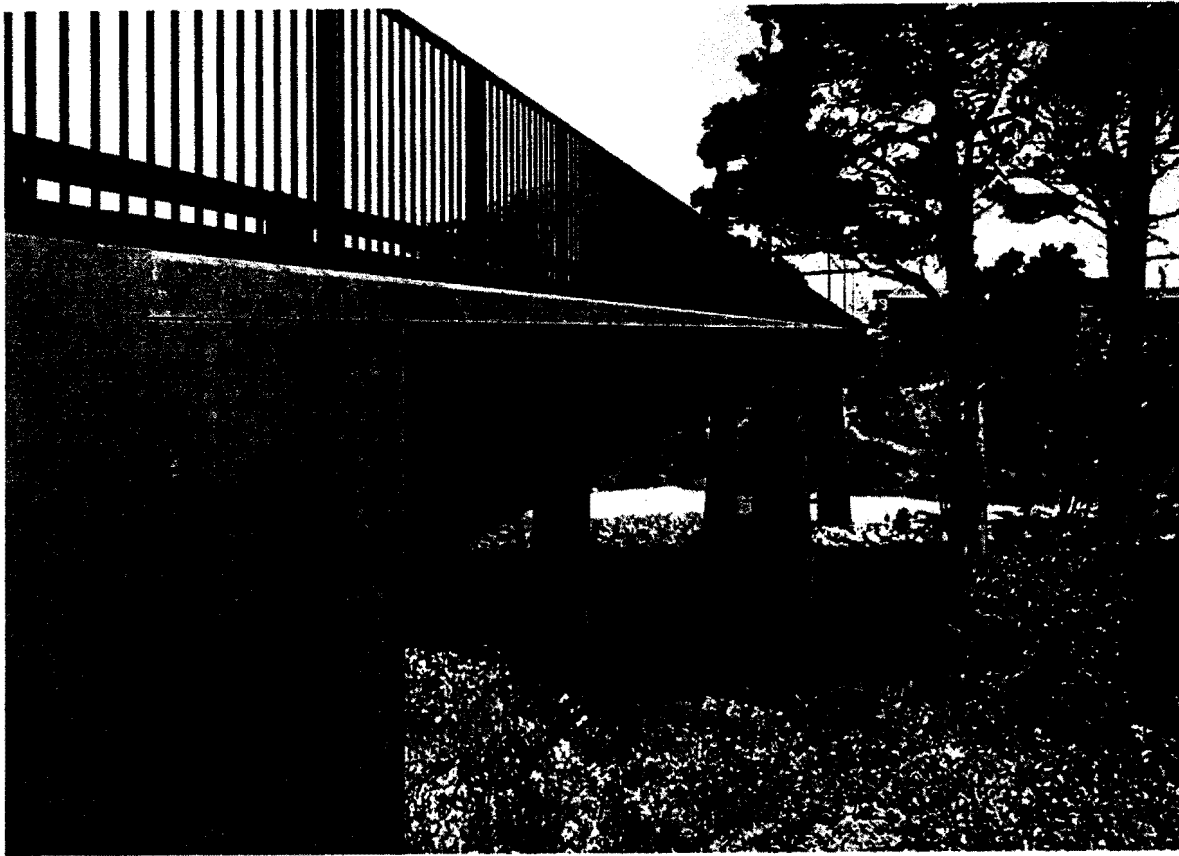
**Figure 12: Modified Wyoming – Pedestrian View**



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Figure 13: Modified Wyoming – Bridge View



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Figure 14: ST-10 – Bridge Deck View



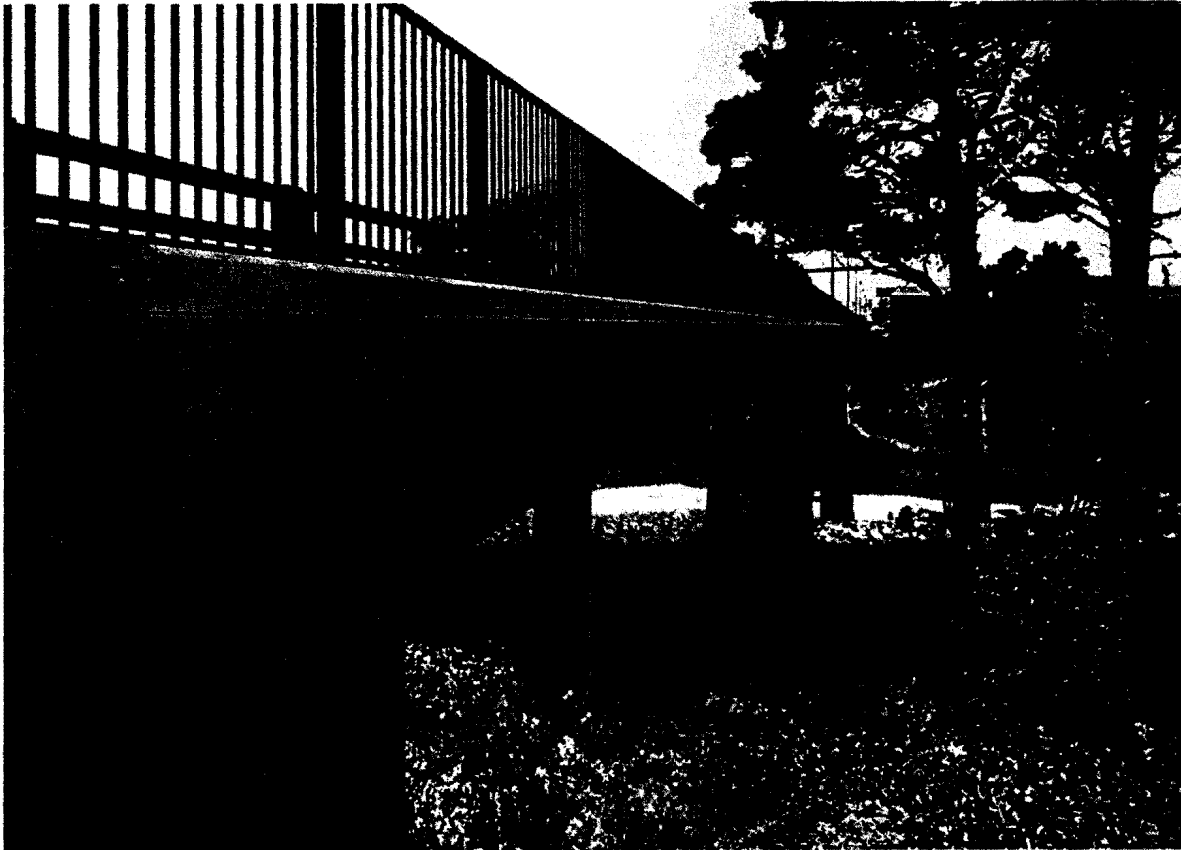
14 of 19

Figure 15: ST-10 – Pedestrian View



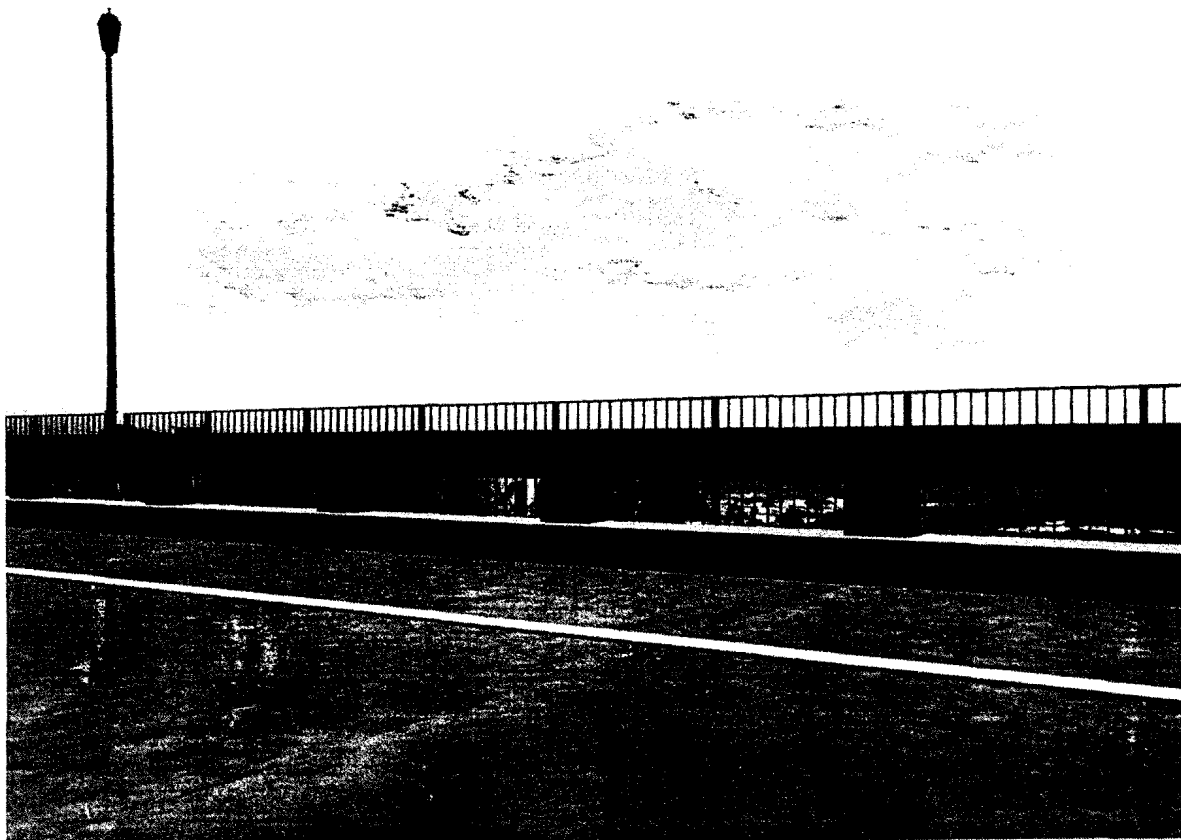
15 of 19

Figure 16: ST-10 – Bridge View



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Figure 17: Type 80 – Bridge Deck View



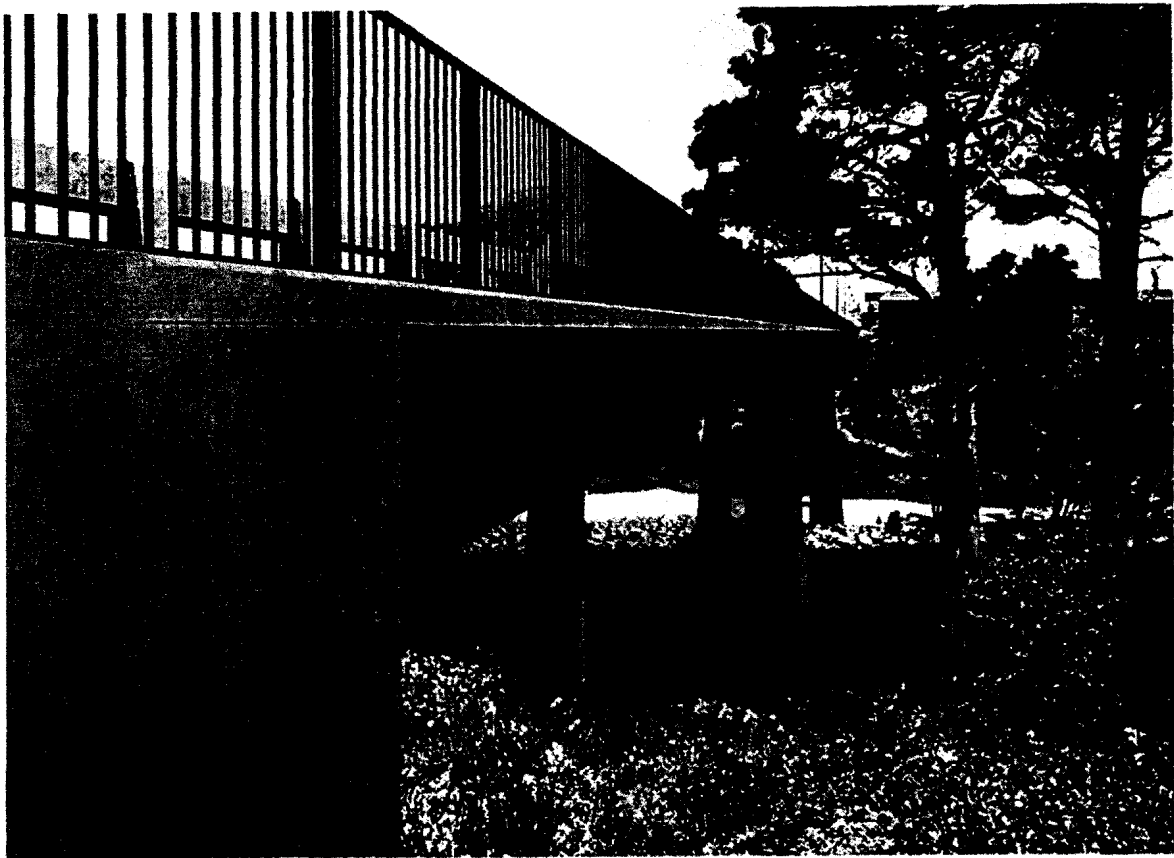
17 of 19

Figure 18: Type 80 – Pedestrian View



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Figure 19: Type 80 – Bridge View



19 of 19

**DEPARTMENT OF TRANSPORTATION**

DISTRICT 3, SACRAMENTO AREA OFFICE-MS 41

P.O. BOX 942874

SACRAMENTO, CA 94274-0001

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November 8, 2002

Mr. Robert S. Merrill  
North Coast District Manager  
California Coastal Commission  
P.O. Box 4908  
Eureka, CA 95502-4908

**RE:** Permit Amendment Application; 01-MEN-01 (KP 96.4/97.6) Noyo River Bridge Replacement Project; Coastal Development Permit Nos. 1-98-100 and A-1-FTB-99-06; Proposed Bridge Rail, Fort Bragg, Mendocino County.

Dear Mr. Merrill:

Per your letter dated October 18, 2002, you requested additional information to enable Coastal Commission staff to address the concerns raised at the October 19, 2002, Coastal Commission meeting on the final Noyo River bridge rail selection immaterial amendment. You also requested additional information to complete the analysis for the substitution of the Type ST-10 railing for the previously approved Type 80SW railing.

As you are well aware of, on March 1999, the Coastal Commission approved the Noyo River Bridge replacement project with a condition requiring the purchase and development of an off-site viewing site or payment of \$1 million to compensate for the loss of views for bridge users. The California Department of Transportation (Department) chose to make the \$1 million dollar payment, which was issued in 2001. During the May 2001 Coastal Commission amendment hearing for the project, the Commission required the Department to present to the Commission subsequent request to amend the bridge rail further to provide additional visual access.

As a result of the March 1999 Commission action, the Department embarked on a project to identify and develop additional bridge rails that would meet required Federal and State safety standards while still allowing for viewing opportunities of surrounding areas. The Department's staff has worked closely with the Commission's Bridge Rail Subcommittee and Commission staff to reach consensus on various bridge rails that would meet Commission's direction and address its concerns. To complement its efforts of developing appropriate bridge rails that protect the views of California's scenic areas, on September 4, 2002, the Department held an open house in Fort Bragg to solicit input from the community on the different types of rails that may be used as part of the Noyo Bridge replacement project.

The items listed below explain the basis for the Department's selection of the ST10 dual rail system and an appropriate end section to protect pedestrians, bicyclists and motorized users.

*"Caltrans improves mobility across California"***EXHIBIT NO.** 6**APPLICATION NO.**

1-98-100-A3 &amp;

A-1-FTB-99-006-A3

PROPOSED SUBSTITUTE  
BRIDGE RAILING, DISCUSSION  
OF RAILING & CRASH BARRIER  
ALTERNATIVES, & VISUAL  
IMPACT ASSESSMENT (1 OF 2)



1. Plot plans in 8 1/2" x 11" format suitable for use as staff report exhibits showing the location and extent of the currently approved Type 80SW railing and crash barrier end section and the proposed Type ST-10 rail, picket, and TRACC end section;

*(Refer to enclosed plans).*

2. A description of the "flared" end section that would be used with the currently approved Type 80SW railing compared and contrasted with the TRACC end section;

*The currently approved Type 80 SW rail does not have crash end sections due to the raised sidewalk, included with its design. Therefore, there is no comparison/contrasting with the TRACC end section.*

*The Type 80SW rail was mistakenly presented with metal beam guard (MBGR) ends at our September 4, 2002 informational workshop. Although this is the typical end section placed on bridge railings, no end section is needed with the Type 80SW, due to the raised sidewalk, as noted above. We do not consider this representation to have had a material effect on public's selection of a preferred railing. This opinion is based upon 72% of those responding to our survey considering views from the bridge as one of their top 3 factors in choosing a bridge rail. Alternatively, only 9% considered a railing not requiring a crash cushion as one of their top 3 factors.*

3. A discussion of the testing parameters for end section crash barriers as relate to application on the Noyo River bridge, whether other approved end barrier designs are available, and their compatibility of use with the various railing designs;

*Caltrans Highway Safety Features New Products Committee (HSFNPC) evaluates new proprietary roadside safety hardware through the crash-testing program conducted by the Roadside Safety Technology Branch (RSTB) and recommends them for approval to be used on the state highway system. The usual scope of HSFNPC consideration is barrier systems, crash cushions, barrier rail end-treatments, break-away mounting systems, sign posts, mailbox supports, truck mounted attenuators and materials used in these devices. FHWA evaluates roadside safety hardware for compliance to the National Cooperative Highway Research Program (NCHRP) Report 350 crash testing criteria. Crash cushions and end sections are designed to resist the force of a vehicle traveling at a specified speed. Different speeds warrant different design features and the devices are rated according. The test levels vary from 1 to 6. The HSFNPC requires that the item or device information, it's FHWA acceptance letter and package of materials demonstrating conformance with NCHRP 350 crash test standards are submitted to Caltrans for evaluation.*

*Generally, the Department uses Test Level 3 end sections and crash cushions on high speed facilities (45 mph or greater). Caltrans uses a few Test level 2 (TL-2) crash cushions and end treatments for use on low speed roadways (45 mph or less). The TL-2 rated end sections are generally shorter in length. The barriers on the Noyo River Bridge can terminate with a Level-2 devise, provided the devise is approved for use. Option available for use would include the metal beam type end section such as the Quadguard and the TRACC system.*

*The following crash cushions and end treatments are available for use with the dual railings:*

- *QUADGUARD (TL-2)*
- *REACT 350.4 (Reusable Energy Absorbing Crash Terminal) (TL-2)*
- *TRACC (Trinity Attenuating Crash Cushion) (TL-3)*
- *ADIEM 350 (Advance Dynamic Impact Extension Module) (TL-3)*
- *TAU-II (TL-3)*
- *CAT (Crash Attenuating Terminal) (TL-3)*

*A single rail alternative placed at the edge of the deck with a raised sidewalk in front of it would not need an end treatment or crash cushion.*

4. Clarification as to whether a raised or at-grade walkway would be used for each railing/end section option; and

*Regardless of which end section is selected the following applies:*

*If rail is placed at edge of deck, outside of the sidewalk, and no physical separation is placed between the sidewalk and vehicular traffic, then it is necessary to have a raised sidewalk. Rails requiring a raised sidewalk would be the NETC and the Type 80SW.*

*If rail is placed between traffic and sidewalk, the sidewalk does not need to be raised. The Department decided to place the sidewalk at the deck level to provide for additional downward view shed. The rails not requiring a raised sidewalk would be the ST-10, Type 80, Alaska, and Modified Wyoming. During our public workshop on September 4, 2002, a public opinion survey was distributed to approximately 100 participants. 72% of the respondents favored the dual rail system with a flush sidewalk.*

*Please note that at a considerable cost the utilities were relocated from within the raised sidewalk to the bridge deck in order to keep the sidewalk flush with the roadway. This redesign was done to increase the view shed from the bridge. Furthermore, dropping the walkway down below the roadway deck would necessitate a complete bridge redesign, which would result in increased costs and project delays.*

5. A visual resource impact analysis of the six various railing alternatives and the various end section systems that indicates the percentage of view that would be blocked by each railing alternative and similarly quantifies how much of the view would be blocked by each end section design.

*In a previous study prepared by the Department and presented to the Coastal Commission Bridge Rail Subcommittee, four different bridge railings, all of which have been crash tested and approved for use in California, were evaluated for suitability of use in scenic coastal settings. They included the Type-80 and so called Wyoming, Minnesota, and Alaska railings. Based on this study, the Bridge Rail Subcommittee concluded and the Coastal Commission later endorsed the subcommittee's recommendation, that the Alaska railing was superior overall due to its relatively large openings between rails and supports, which therefore provides the greatest see-through characteristics. The*

Commission also agreed that the Type 80 and Wyoming rails may be preferred on settings where the views from the bridge itself are not the primary objective, and where textural and color treatments of the concrete elements of the Type 80 would be appropriate to better blend with the environment. Lastly, the Commission determined that the Minnesota rail was not a preferred use in the coastal zone due to its limited visibility.

Two additional bridge railings with see-through characteristics, the ST-10 and NETC (modified), were later developed and approved by Caltrans. They were included in the group of bridge railings evaluated for possible use on the new Noyo River Bridge. The primary consideration in selecting a railing from this set of six candidates for the Noyo River Bridge was the ability of the railing to promote views by presenting the least visual obstruction to travelers on the bridge. A secondary consideration was the aesthetic character of the railing and its compatibility with the landscape setting of the bridge. In summary, the ST-10 bridge railing presents the least visual obstruction due to a combination of factors. Its overall height is below the eye level of passing motorists, it utilizes two, thin horizontal rails, and it has large openings between rails. In addition, the ST-10 utilizes flat-plate vertical supports similar in design to the Wyoming railing which were deemed visually appealing and less "industrial" in character than other types in the previous study.

Summary Comparison of Bridge Railing Characteristics						
	CA 80	WY	AK	ST-10	NETC	Type26
Overall Height	31.8"	32.7"	31.6"	32.6"	51"	32"
Number of Rails	1	2	2	2	4	Solid
Combined Rail Thickness <sup>1</sup>	11"	14"	10"	8"	20"	NA
Foundation Height	9"	6"	7"	6"	9"	NA
Combined Solid Surfaces <sup>2</sup>	20.8"	20"	17"	14"	29"	32"
Combined Window Height <sup>3</sup>	11"	12.76"	14.8"	18.7"	22"	NA
Post Spacing (maximum)	6.5'	11.8'	10'	10'	8'	NA

<sup>1</sup> refers to vertical dimension of rail surface perpendicular to the road

<sup>2</sup> excluding vertical posts

<sup>3</sup> refers to vertical dimension of window openings

Note: Solid surfaces obstruct views while windows provide views. Bridge railings with minimum combined solid surfaces plus maximum combined height of windows are the most see-through.

Since a pedestrian sidewalk is located along the outer edge of both sides of the new Noyo River Bridge, the ST-10 railing is proposed as a safety barrier separating vehicles and pedestrians on the bridge. In this case, installation of safety devices known as end sections are required to protect against oncoming vehicles potentially colliding head-on with the end of the bridge railing. Two end sections would be installed, one at the northwest end to protect southbound vehicles, and one at the southeast end for protection of northbound vehicles. The end sections of the new Noyo River Bridge are not a factor in viewing the ocean or the Noyo Harbor from the highway due to certain local conditions at the bridge site. When driving southbound on Highway 1 and approaching the Noyo River Bridge, westerly views toward the ocean are blocked by the North Cliff Motel. The motel is situated on the north bank of the river, at the north end of the bridge. The new end section of the bridge would be placed here. It is not until motorists drive past the Motel that the view of the ocean appears. Once on the bridge, motorists will be able to view the ocean through the proposed bridge railing. As northbound motorists approach

*the Noyo River Bridge, a stand of mature pine trees roughly 80' high located on the south bank of the river between the ocean and the highway occupies the motorist's view. It is not until motorists are on the bridge, past the stand of trees, that the view to the harbor appears. Views of the ocean and harbor will not be affected by proposed end sections for the bridge.*

The Department believes it has succeeded in achieving the direction of the Commission by considering alternative bridge rail designs that maximize visibility. In addition, the selected ST-10 rail is characterized by slim members rather than heavy, blocky forms. The selected bridge rail and end sections will be painted green to better blend with their surroundings. This choice of color is also consistent with the color scheme of the existing bridge and helps preserve a sense of the past for the local community. The Department believes it has selected a clean, aesthetic and attractive bridge rail design.

The Department prides itself for leading the nation in the development of transportation solutions that are safe, functional and protective of its natural and scenic resources. In its continuing effort to develop designs that meet these criteria, the Department is currently involved with the Transportation Research Board on a research project that addresses national needs for the continued aesthetic improvements of railings and barriers.

In addition, given the limited resources and staff time to develop new barriers that address the concerns of local jurisdictions and the public in general, the Department is working in conjunction with the private sector in an effort to speed up the design, development, and crash testing of new barriers.

Based on the results of the public workshop and our amended visual assessment. The ST-10 railing maximizes visibility of the landscape and minimizes view blockage. This is achieved by the ST-10 thru the use of rail elements that are as thin as possible.

We want to emphasize the need for the project is to replace a structural deficient bridge vulnerable to collapse during large seismic events. Time is now a critical factor since the new bridge is under construction.

Please confirm that the enclosed permit amendment package is complete, and the time that this item will be scheduled for action at the December 2002 Commission meeting in San Francisco.

If you have any questions or would like to discuss this further, please call Lupe Jimenez, Environmental Coordinator, at (916) 274-0597 or myself at (916) 274-0568. We appreciate your assistance in obtaining approval of the ST-10 bridge rail design and the end treatment/crash cushion for the new Noyo River Bridge.

Sincerely,

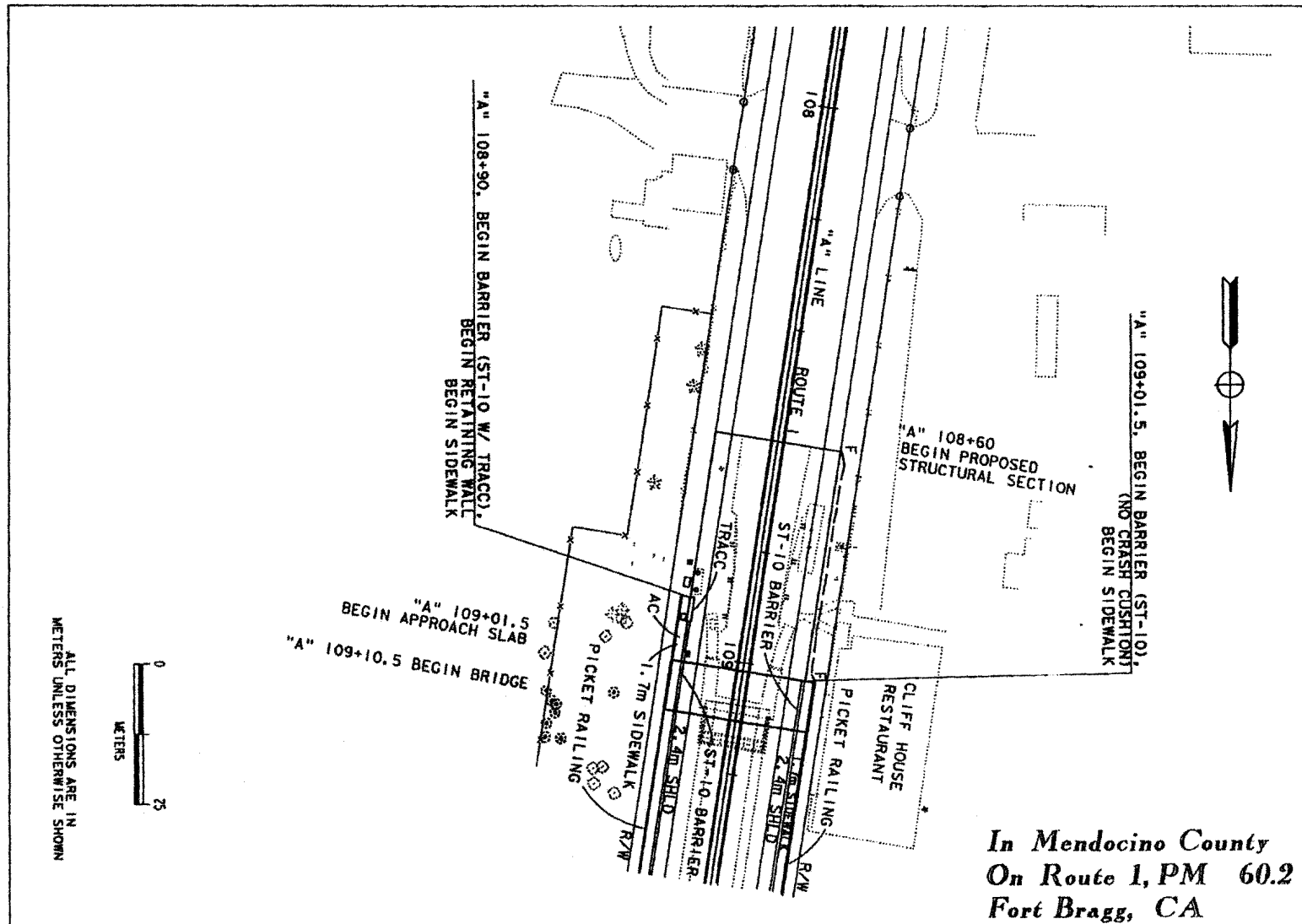
Cher Daniels, Chief  
Office of Environmental Management, S-1

Enclosures:

1. Plot plans in 8 1/2" x 11" showing location/extent of the Type 80SW and the ST-10 rails with end sections.
  - Figure 1A-Proposed ST-10 Rail with TRACC end treatment (south side)
  - Figure 2A-Type 80SW Rail Layout (south side)
  - Figure 1B-Proposed ST-10 Rail with TRACC end treatment (north side)
  - Figure 2B-Type 80SW Rail Layout (north side)
  - Figure 3A-Type 80SW Rail Layout (entire bridge)
  - Figure 3B-Proposed ST-10 Rail with TRACC end treatment (entire bridge)
2. Summary of End Sections.
3. Visual Impact Assessment Addendum (Forthcoming)

cc: Peter Douglas, CCC Executive Director  
Tami Grove, CCC Development and Transportation Liaison  
Bob Merrill, North Coast District Manager  
Rick Knapp, District 1 Director  
Rick Land, Structures  
John Webb, North Region Environmental  
Guy Preston, Senior Construction Engineer  
Stefan Galvez, CCC Liaison

DIST	COUNTY	ROUTE	KILOMETER POST	MILE POST
01	Men	1	96.5/97.7	



**CALTRANS**  
D·E·S·I·G·N

Application by Caltrans, District 3  
Box 942874, Mail Station #41  
Sacramento, CA 94274-0001



DATE: 10-31-02

FIGURE 1A

PROPOSED ST-10 RAIL  
WITH TRACC END TREATMENT

SOUTH SIDE - APPROACH TO THE NOTO RIVER BRIDGE

DATE PLOTTED: 12-29-02  
DATE: 12-29-02  
TIME: 14:33  
00-00-00

314401

USERNAME: j3110x  
DOC FILE: j3110x.dgn

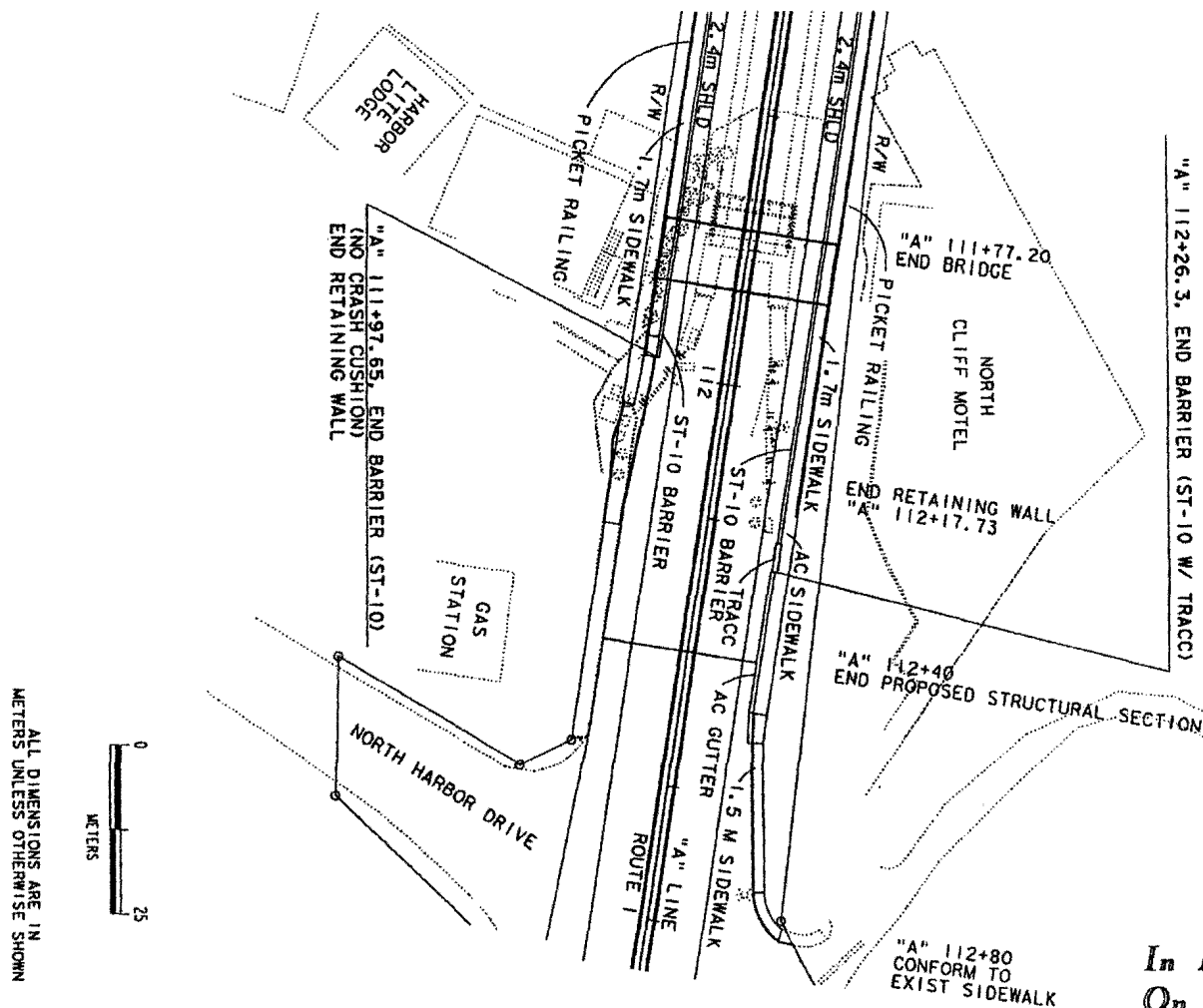
PROJECT ENGINEER  
**MARK F. SOBOTA**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans**

2427

DIST	COUNTY	ROUTE	KILOMETER	POST	MILE
01	Men	1	96.5/97.7		



In Mendocino County  
On Route 1, PM 60.2  
Fort Bragg, CA

**CALTRANS**  
D·E·S·I·G·N

Application by Caltrans, District 3  
Box 942874, Mail Station #41  
Sacramento, CA 94274-0001



DATE: 10-31-02

USERNAME -> t100  
BCH FILE -> 3001001.dgn

FIGURE 1B

**PROPOSED ST-10 RAIL  
WITH TRACC END TREATMENT**

NORTH SIDE - APPROACH TO THE NOYO RIVER BRIDGE

DATE PLOTTED: 11-14-02  
TIME PLOTTED: 11:14:33  
00-00-00-00

314401

PROJECT ENGINEER  
**MARK F. SOBOTA**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

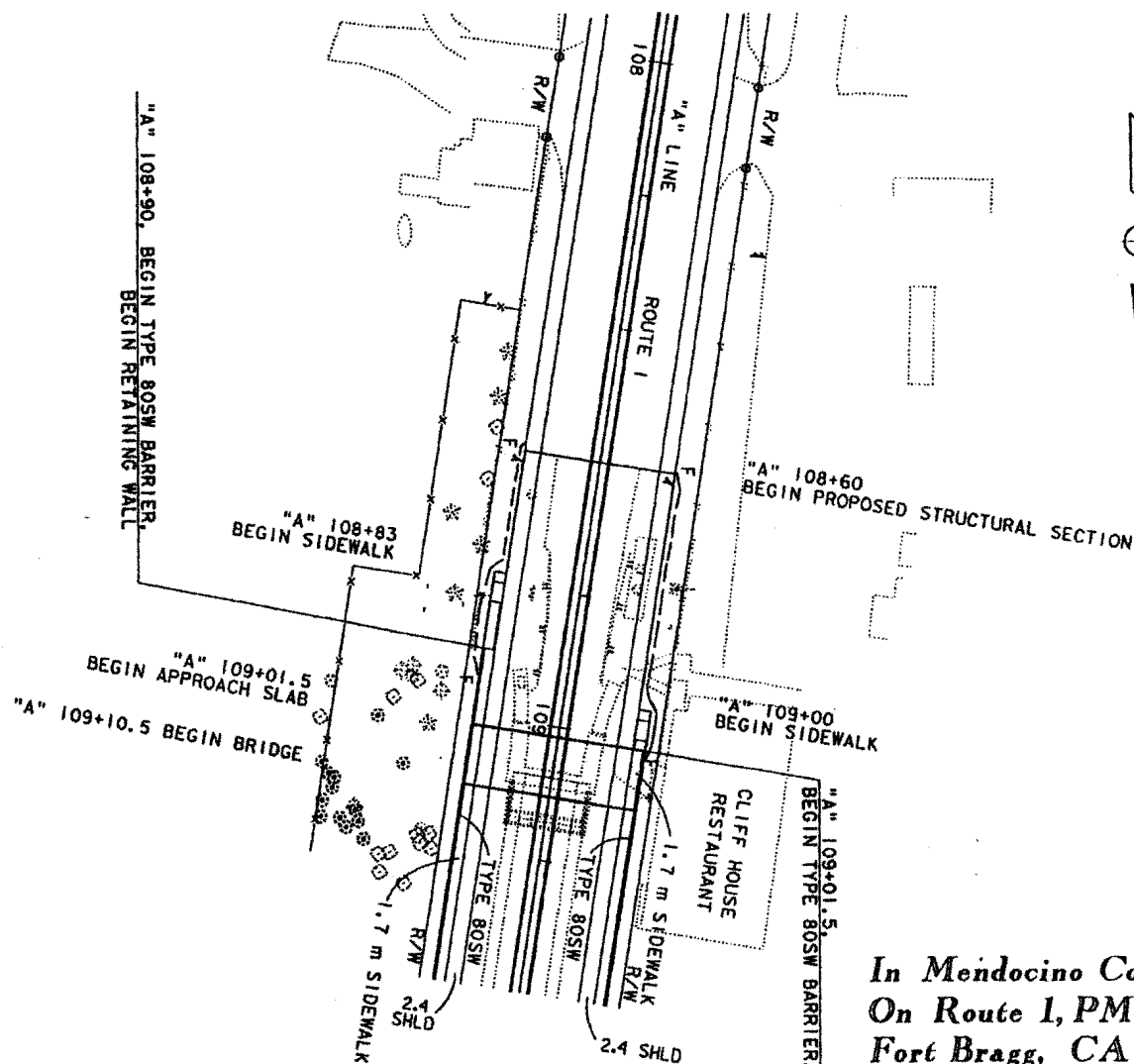
**Caltrans**

80727

DIST	COUNTY	ROUTE	KILOMETER POST	MILE POST
01	Mon	1	96.5/97.7	

NOTES:  
1. ON A CONVENTIONAL HIGHWAY WITH THE TYPE 80 BARRIER PLACED AT THE BACK OF THE SIDEWALK, A CRASH CUSHION IS NOT REQUIRED AS AN END TREATMENT.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN



In Mendocino County  
On Route 1, PM 60.2  
Fort Bragg, CA

**CALTRANS**  
D·E·S·I·G·N

Application by Caltrans, District 3  
Box 942874, Mail Station #41  
Sacramento, CA 94274-0001



DATE: 10-31-92

FIGURE 2A

TYPE 80SW RAIL LAYOUT

SOUTH SIDE - APPROACH TO THE NOYO RIVER BRIDGE

314401

USERNAME => tmax  
DON FILE => 307108.dgn

DATE PLOTTED 23-OCT-2002  
TIME PLOTTED 11:41:33

PROJECT ENGINEER  
**MARK F. SOBOTA**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans**

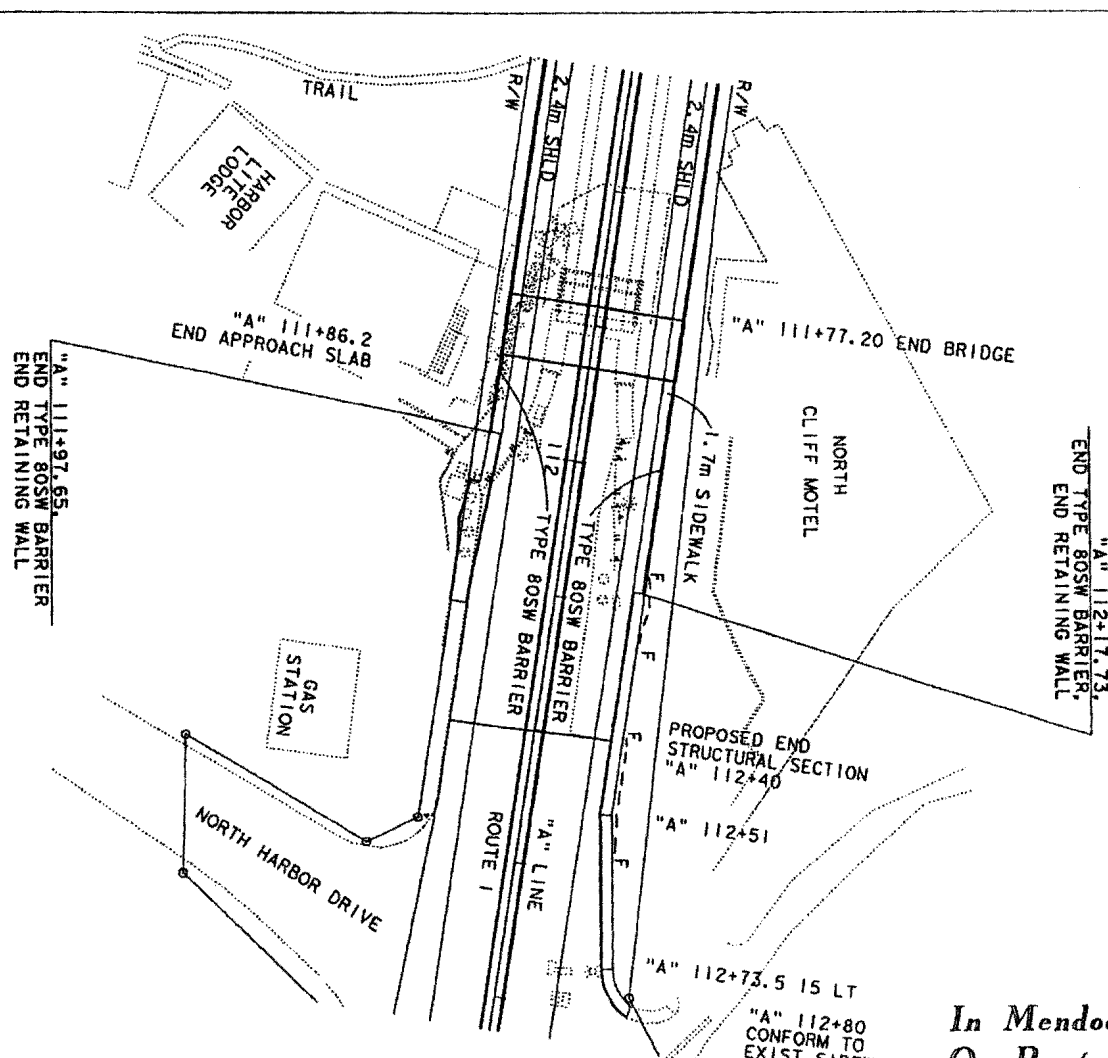
94274



DIST	COUNTY	ROUTE	KILOMETER	POST	MILE
01	Mend	1	96.5/97.7		

NOTES:  
1. ON A CONVENTIONAL HIGHWAY WITH THE TYPE 80 BARRIER PLACED AT THE BACK OF THE SIDEWALK, A CRASH CUSHION IS NOT REQUIRED AS AN END TREATMENT.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN



In Mendocino County  
On Route 1, PM 60.2  
Fort Bragg, CA

**CALTRANS**  
DESIGN

Application by Caltrans, District 3  
Box 942874, Mail Station #41  
Sacramento, CA 94274-0001



DATE: 10-31-02

USERNAME: >> ttrax  
ODN FILE: >> barriers.dgn

FIGURE 2B

TYPE 80SW RAIL LAYOUT

NORTH SIDE - APPROACH TO THE NOYO RIVER BRIDGE

DATE PLOTTED: 11/14/02  
PLOTTER: 11/14/02  
FILE: 11/14/02  
00-00-00

314401

PROJECT ENGINEER  
**MARK F. SOBOTA**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

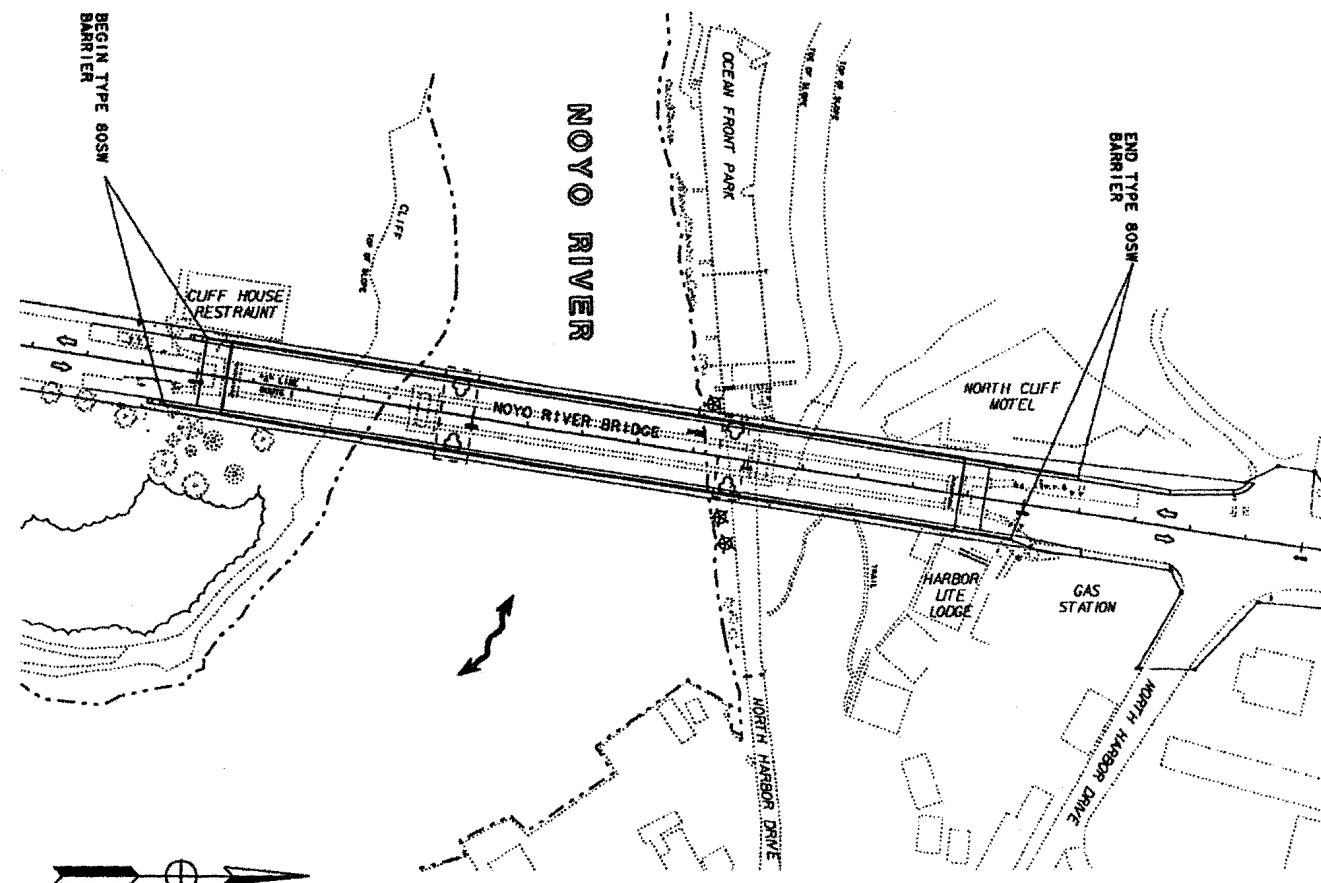
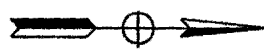
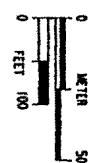


10927

DIST	COUNTY	ROUTE	KILOMETER POST	MILE POST
01	Men	1	96.5/97.7	

NOTES:  
1. ON A CONVENTIONAL HIGHWAY WITH THE TYPE 80 BARRIER PLACED AT THE BACK OF THE SIDEWALK, A CRASH CUSHION IS NOT REQUIRED AS AN END TREATMENT.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN



In Mendocino County  
On Route 1, PM 60.2  
Fort Bragg, CA

**CALTRANS**  
D·E·S·I·G·N

Application by Caltrans, District 3  
Box 942874, Mail Station #41  
Sacramento, CA 94274-0001



DATE: 10-31-02

FIGURE 3A
TYPE 80SW RAIL LAYOUT
NOYO RIVER BRIDGE

USERNAME -> tires  
OUT FILE -> barriers.dgn

314401

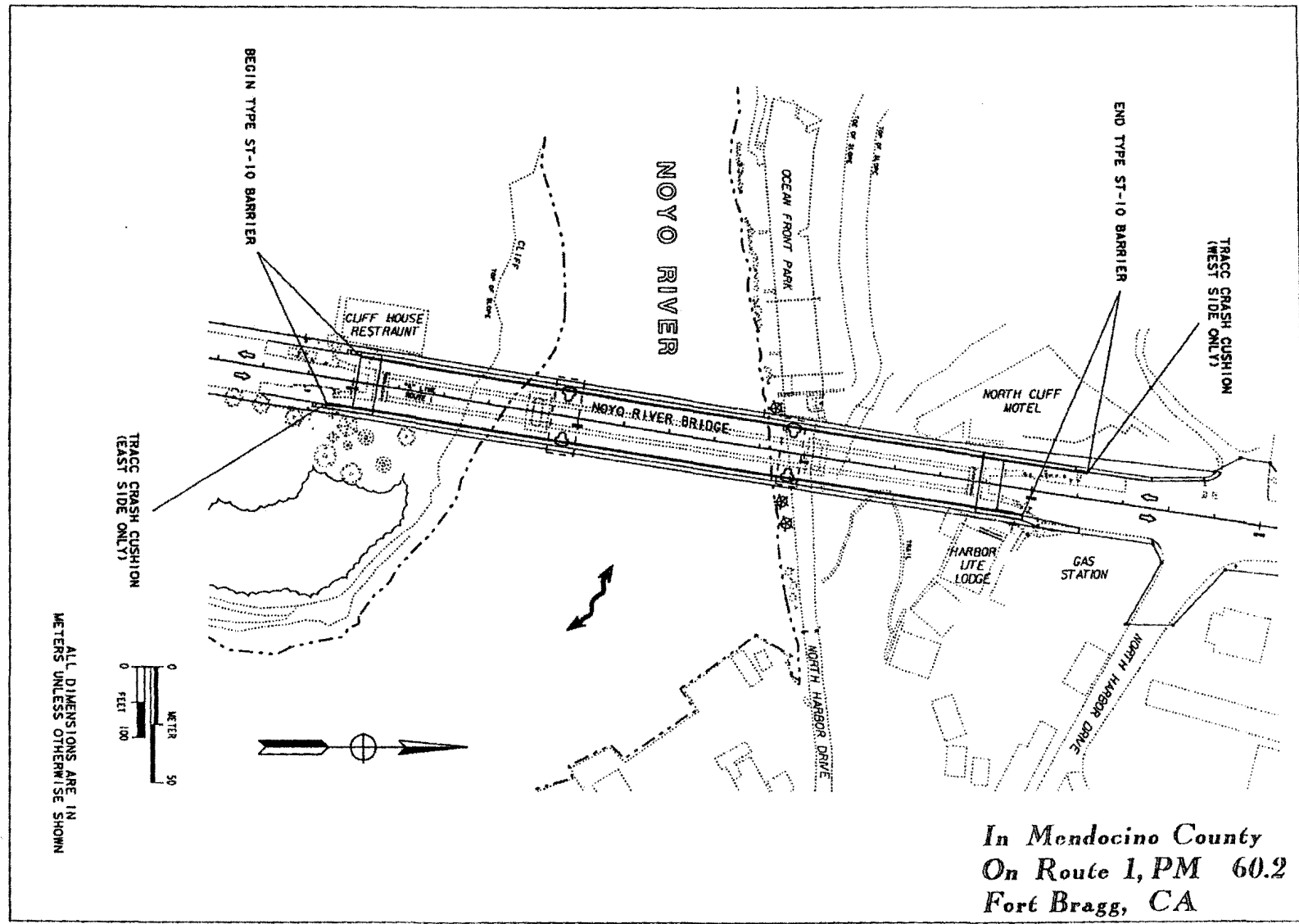
DATE PLOTTED: 10-31-02  
TIME PLOTTED: 11:45:31  
00-00-00

PROJECT ENGINEER  
**MARK F. SOBOTA**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**

11877

DIST	COUNTY	ROUTE	KILOMETER	POST	MILE
01	Mon	1	96.5/97.7		



In Mendocino County  
On Route 1, PM 60.2  
Fort Bragg, CA

**CALTRANS**  
D·E·S·I·G·N

Application by Caltrans, District 3  
Box 942874, Mail Station #41  
Sacramento, CA 94274-0001



DATE: 10-31-02

FIGURE 3B  
PROPOSED ST-10 RAIL  
WITH TRACC END TREATMENT  
NOYO RIVER BRIDGE

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DCN FILE: >:barriers.dgn

314401

LAST PLOT DATE: 10-31-02  
PLOT TIME: 14:13

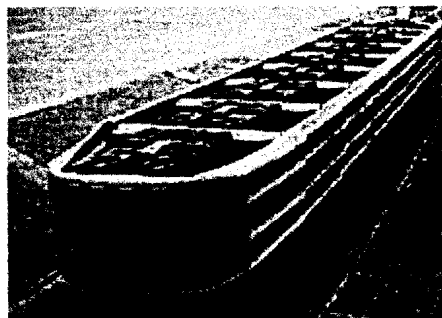
PROJECT ENGINEER  
**MARK F. SOBOTA**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**

12427

- (1.) **Quadguard TL-2**

13' - 1" long, 2 feet wide, and 32 inches high.



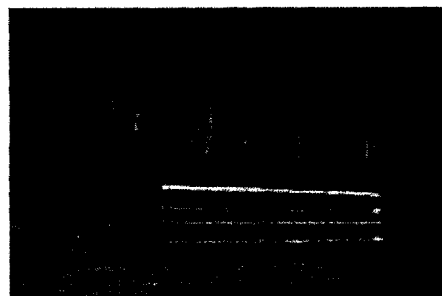
- (2.) **React 350.4 (Reusable Energy Absorbing Crash Terminal) TL-2**

15'-8" long, 3 feet wide and 4 feet high.



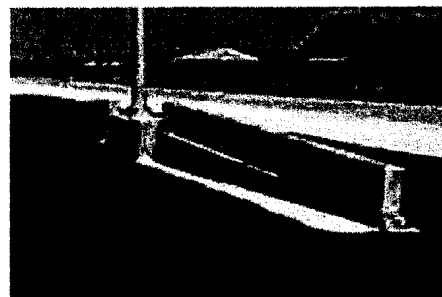
- (3.) **TRACC (Trinity Attenuating Crash Cushion) TL-3**

21'-0 feet long, 2'-7" wide, and 32 inches high.



- (4.) **Adiem II (Advanced Dynamic Impact Extension Module) TL-3**

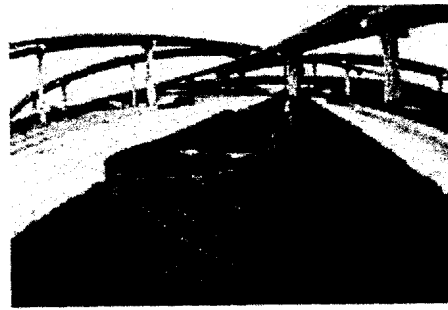
30 feet long, 2 feet wide, and varies in height from 2 feet to 4 feet.



13 of 27

(5.) Cat (Crash Attenuating Terminal) TL-3

31'-3" long, 2 feet wide, and 2'-3" high.



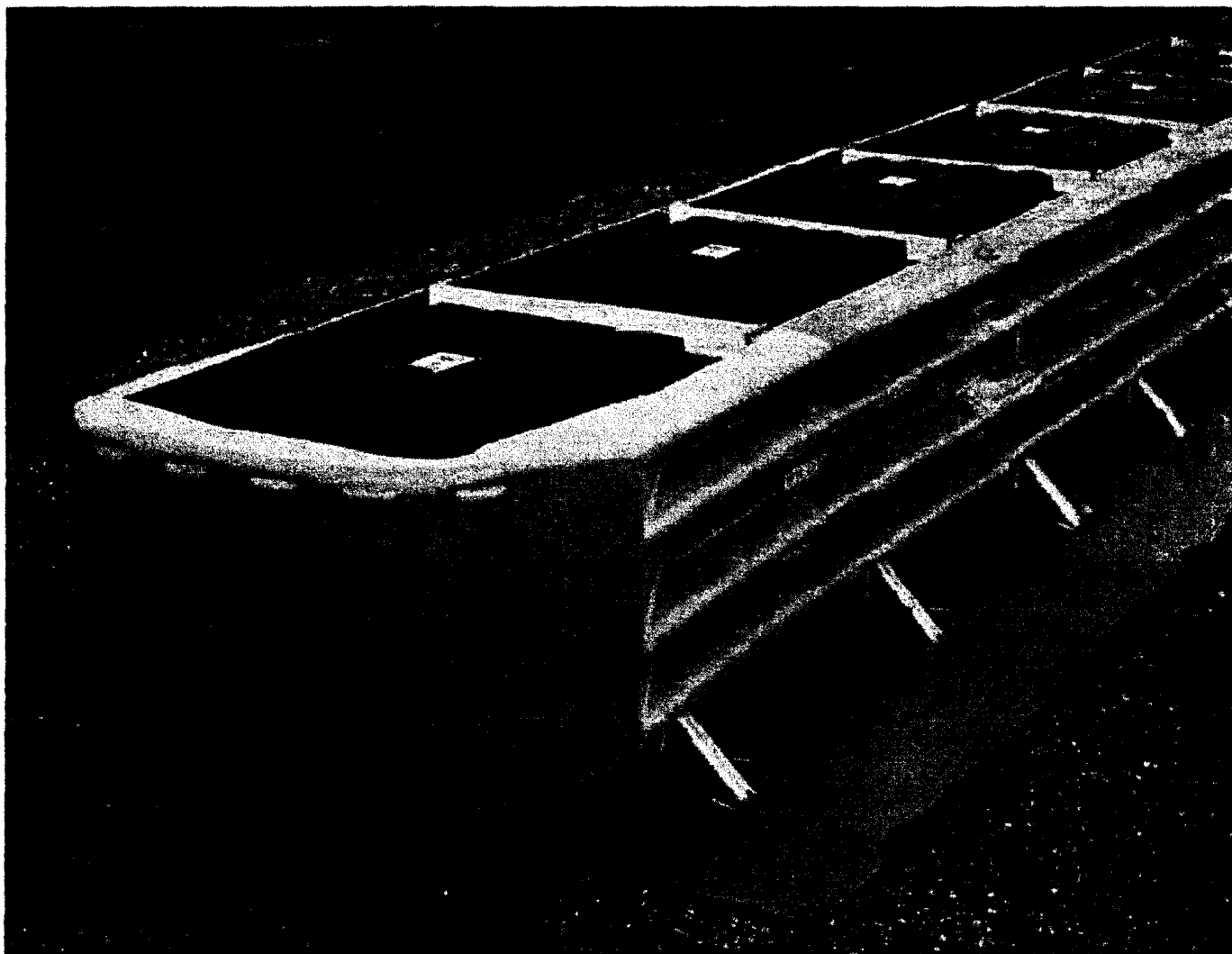
• (6.) TAU-II TL-3

26'-10" long, 2'-9" wide, and 2'-11 feet high.



LARGER PHOTOS:

- 1. The Quadguard



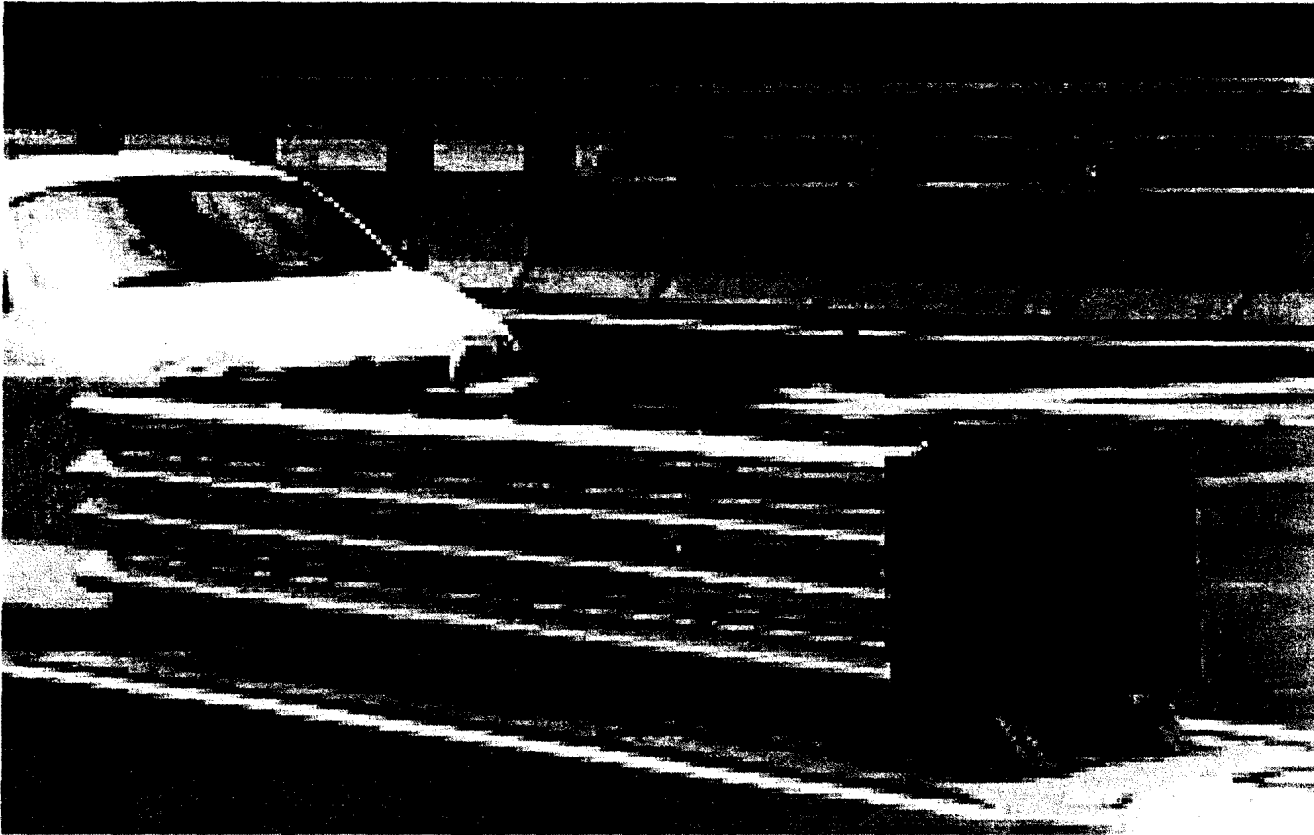
15 of 27

The React-350.4:



16 of 27

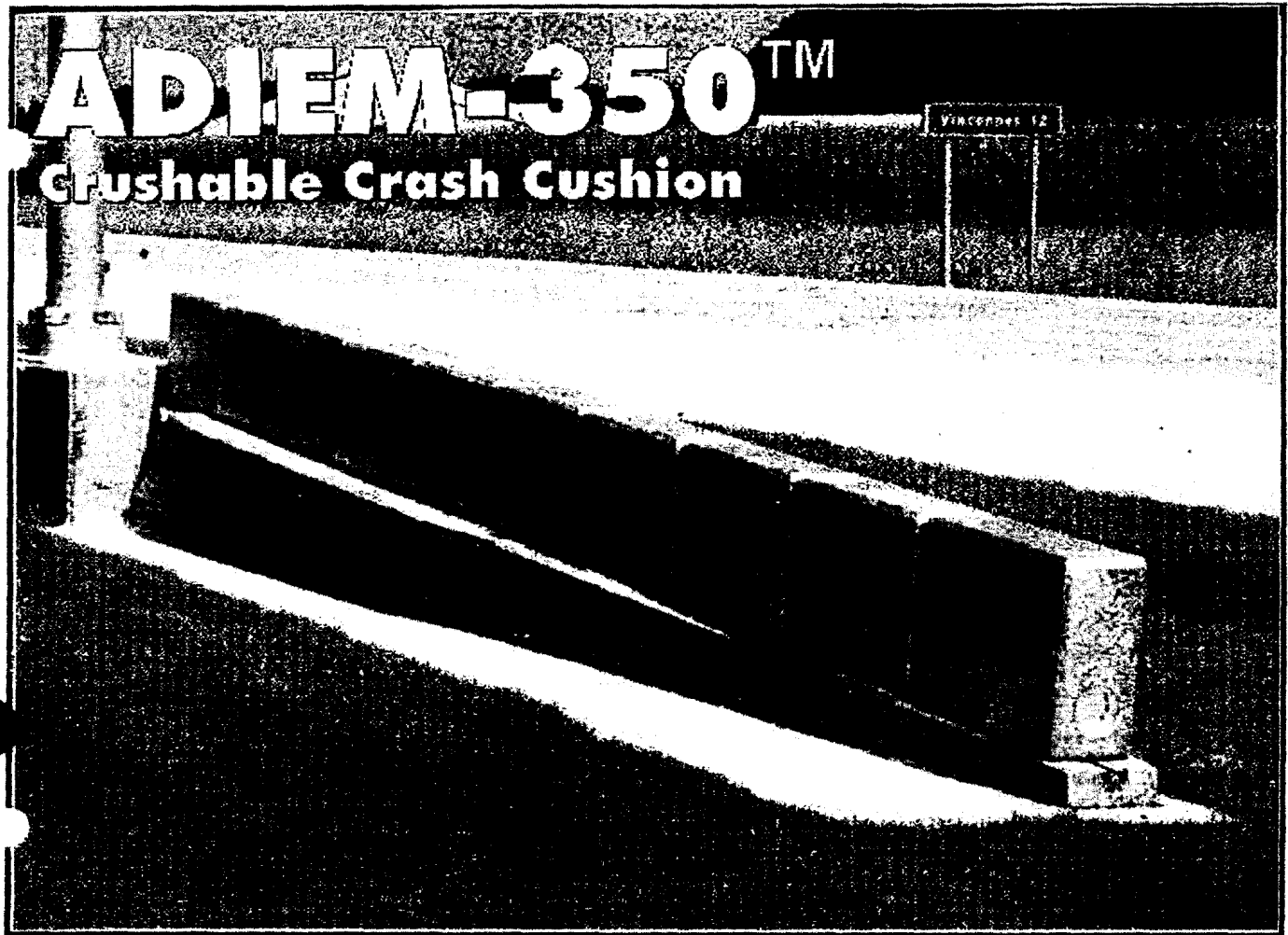
3. The TRACC:



17027



4. The Adiem-350:



18 of 27

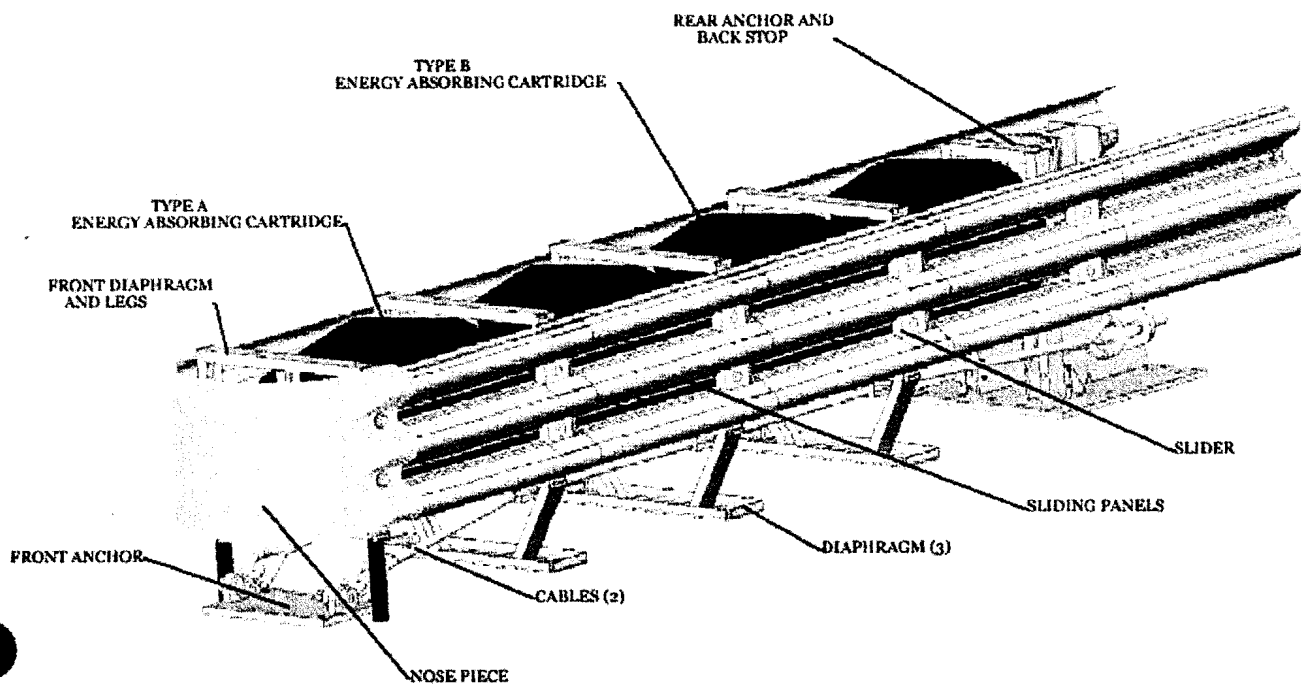
5. The Cat-350:

## Type 9 SYRO – CAT



19 07 27  
7

6. The TAU-II TL-3:



20927

# MEMORANDUM

To: Lupe V. Jimenez, Coordinator  
Office of Environmental  
Management-Sacramento

Date: October 7, 2002

File: 01-Men-1  
01-378002  
Br.#10-176

From: **DEPARTMENT OF TRANSPORTATION**  
**District 3, North Region Office**  
**Of Landscape Architecture**

Subject: Visual Impact Assessment Addendum

This visual impact assessment is an addendum to the original Noyo River Bridge Visual Impact Assessment written in 1998. This addendum addresses the proposed rail designs of the Replacement Noyo River Bridge. In addition, each rail and end section was visually assessed.

The proposed project originally was to replace the existing steel baluster railing with the Type 26 modified concrete barrier. However, this concrete barrier substantially obstructed the ocean view, so the Type 80 concrete barrier afforded additional views of the ocean and harbor below.

Based on coordination with Caltrans and the Coastal Bridge Rail Subcommittee, several see-through bridge rails were developed and subsequently approved for use by Caltrans.

The Coastal Commission requested an alternative railing that provided for even better visual access. On September 4, 2002, a public open house was held in the community of Fort Bragg, to solicit public opinion for alternative see-through bridge railings and end section treatments for the new Noyo River Bridge.

The Fort Bragg community was given a questionnaire including six alternative railings and two alternative rail-end sections for dual rails systems. The California ST-10 rail and the TRACC end section were favored.

21 of 27

### EXISTING STEEL BALUSTER RAILING



The existing railing is a steel baluster that was designed at that time specifically for the original steel Noyo River Bridge. This design consisted of a 3'-6" high railing, posts spanning roughly every 10 feet and three horizontal rails. The green tubing of the metal railing causes a minor visual obstruction, which is less noticeable while driving. When focusing on the background, the railing becomes out of focus and in motion. Views of the ocean; however, are spectacular while driving over the bridge.

### TYPE 26 MODIFIED CONCRETE BARRIER



The Type 26 concrete barrier was the original bridge rail proposed for the new Noyo River Bridge. This rail obstructed views to the ocean and harbor while driving over the bridge.

22 of 27

## TYPE 80 MODIFIED CONCRETE BARRIER



The Type 80 SW rail was proposed as a see-through concrete barrier approved for use by the Federal Highway Administration. Compared to the Type 26 modified concrete barrier, it provided additional views to the ocean. However, when compared to the original steel baluster, the Type 80 SW concrete barrier, would have blocked a large portion of the ocean, and harbor.

## CALIFORNIA ST-10 RAILING (DUAL RAIL SYSTEM)



Based on input received on September 4<sup>th</sup> open house, the public voiced preference for the dual rail system. The dual railing system, consisting of the California ST-10 rail between the traffic and the sidewalk, and a picket railing on the outside of the bridge.

When comparing the original steel baluster to the dual railing system there is a minor increase to the visual obstruction. Due to the presence of two different

23 of 27

rails located at different distances from the viewer, foreground views are in motion and the viewer has to concentrate to focus on the background views. This visual obstruction slightly decreases the visibility of the ocean, and harbor views while driving over the bridge. Of all the railing available that meets existing design and safety standards, the ST-10 dual rail system provides the best views of the ocean and harbor below.

### **NOYO RIVER BRIDGE END SECTION OPTIONS**

The original Noyo River Bridge had metal beam guard rails (MBGR) located at the ends of the steel baluster railings.

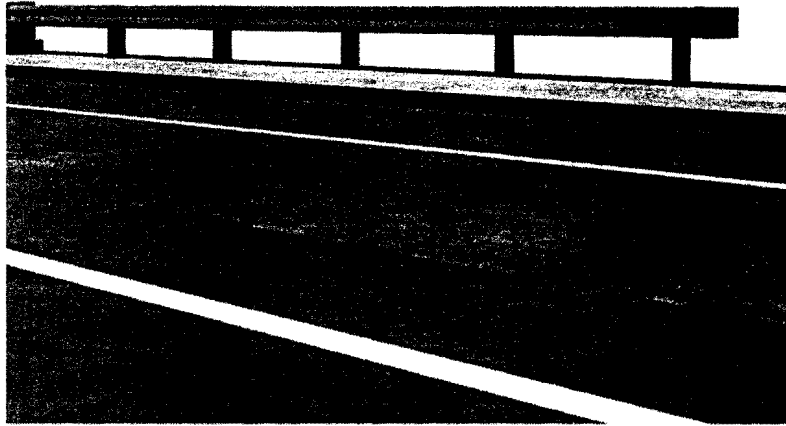
Because the dual rail system was selected, the questionnaire directed the public at the open house to select either the Adiem or the TRACC end section. These two types of end sections are appropriately placed between sidewalk and roadway. When a vehicle impacts these end sections they are designed to collapse into themselves to protect the pedestrian. The public preferred the TRACC end section.

The end section will be located on the northwest end and the southeast end of the bridge. Driving southbound on Highway 1 approaching the Noyo River Bridge, the westerly views of the ocean are blocked by the North Cliff Motel. It is not until the motorist drives past the Motel that the view to the ocean below suddenly appears and the motorist will be viewing the ocean through the proposed railing.

Driving northbound on Highway 1 approaching the Noyo River Bridge, one notices the mature stand of pine trees roughly 80'-0" high to the east. This stand of trees is growing around the top of the cliffs, framing the end of the bridge. It is not until the motorist is on the bridge, past the stand of trees that the view to the harbor appears. Ocean and harbor views are not blocked by either the Adiem end section or the TRACC end section.

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## METAL BEAM GUARD RAIL (MBGR)

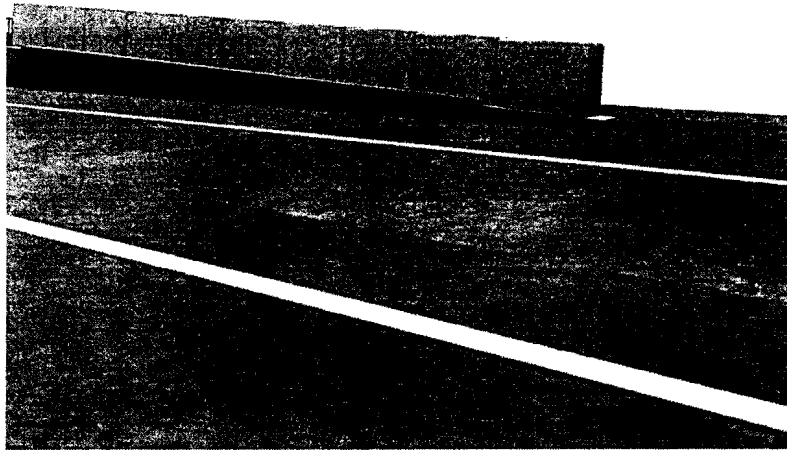


On the existing Noyo River Bridge the MBGR end section was 62'-4" long at the northwest, southwest and on the southeast ends of the bridge. At the northeast end of the bridge the MBGR end section was 36'-0" long.

The MBGR is 2'-3" tall. This is an open design and motorists can partly see through the metal beam guardrail to views. Since the California ST-10 railing was selected, it is inappropriate to use this type of end section. Because an end section that is placed between sidewalk and roadway needs to collapse into itself to protect the pedestrian, and the MBGR does not have this capacity.

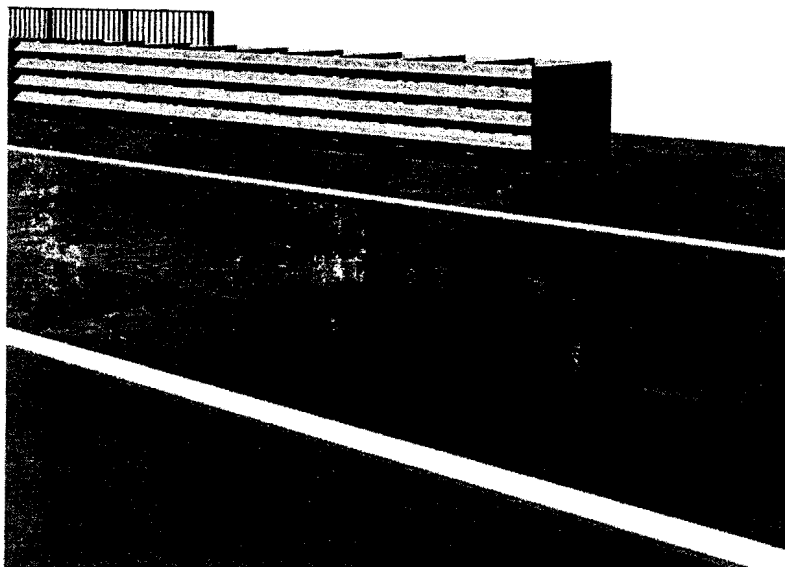


### ADIEM END SECTION



The Adiem end section would be located at the end of the ST-10 bridge railing and is placed between the sidewalk and roadway. This end section is 30'-0" long and slopes from a height of 48 " down to 28". The difference in height does not appear uniform with the proposed bridge railing. While the Adiem end section is a solid concrete rail, the motorist views are unaffected because of the North Cliff Motel and the stand of pine trees.

### TRACC END SECTION



The Fort Bragg community preferred the TRACC end section over the Adiem end section which were listed in the questionnaire. The TRACC end section, is

26 of 27

21' in length and, 2'-8" in height and the surface is made of steel. After several seasons of ocean environment, the high reflective metal will dull and develop a gray mat finish. The rail end section has an orange and black arrow design to alert the attention of driving motorist.

The TRACC end section is a steel beam rail, which creates minor visual impacts due to hiding the environment behind the rail. However, the views of the ocean and harbor are unaffected. While driving over the bridge, one has to put into context the entire viewing experience. The motorist viewing the end sections, are a matter of seconds. Views of the ocean and harbor dominate the drivers experience.

The TRACC end section is the most visually compatible end section to use on the new Noyo River Bridge. When compared to the Adiem it is shorter in length and height. The top height of the TRACC integrated better with the proposed dual rail system.

The galvanized steel material of the TRACC end section is consistent with the metal beam guardrail from the existing Noyo River Bridge.

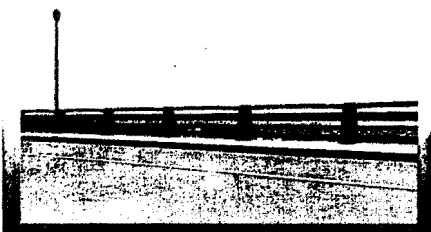
#### Concern

The appearance of the galvanized steel portion of the TRACC crash cushion is incompatible with the green metal coating that is being used on the St-10 railing and lighting fixtures. Consider coating the TRACC end section, to blend with the dual rail system.

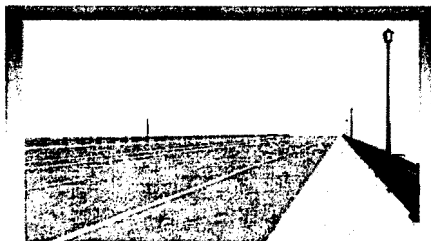
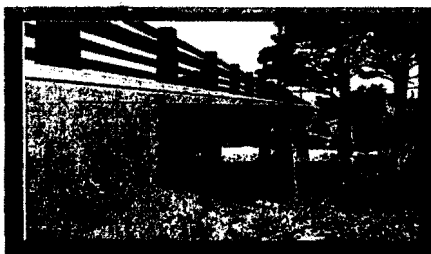
If you have any questions, or concerns please call me at (530) 741-5297 or calnet, 8-457-5297.

Lesley E. Phillips  
Landscape Associate

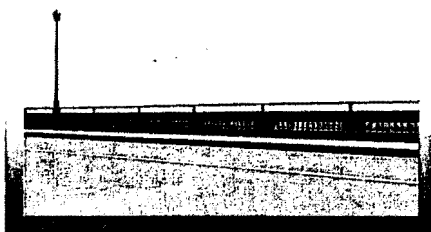
27 of 27



The Type 80SW Rail is a sidewalk mounted concrete rail placed on the outside of the bridge sidewalk.



The NETC Rail is a steel 4-bar sidewalk mounted rail, placed on the outside of the bridge sidewalk.



It contains vertical pickets spaced at 4-inches required for pedestrian safety.



This is the rail on the current plans, in accordance with the existing Coastal Development Permit for the bridge.

## Further Information

**For Media Inquiries  
Please Contact**

### Caltrans Public Affairs Officer

**Ann Jones**  
 PO Box 3700  
 Eureka, CA 95502  
 (707) 445-6444

**For Maintenance & Project  
Information Please Contact**

### Caltrans Resident Engineer & Project Manager

**Guy Preston**  
 PO Box 1245  
 Fort Bragg, CA 95437  
 (707) 961-5403

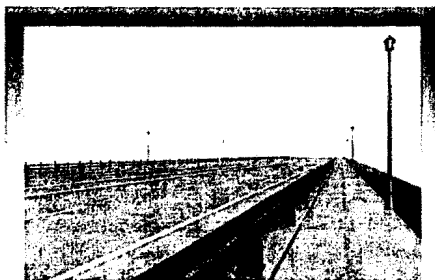
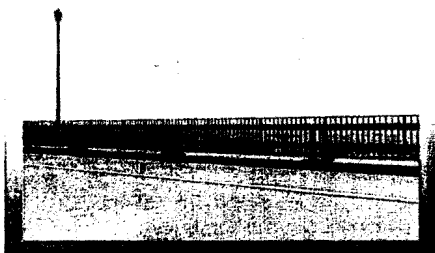
Caltrans is providing six bridge "see-through" rail options for potential use on the Noyo River Bridge, under construction in the City of Fort Bragg. Four of the six rail designs are double rail systems where a barrier railing is placed on the inside of the sidewalk (between traffic and pedestrian). This type of design requires a separate 42-inch high pedestrian picket railing on the edge of the bridge deck. Pickets are spaced at 4-inches. The other two designs are single sidewalk-mounted barrier rails placed at the edge of the bridge deck. These railings are also 42-inches high, required for pedestrian safety.

It is important to note that if a double rail system is chosen, a special end treatment (i.e., crash cushion) must be placed at the end of the barrier rail to prevent vehicles from crashing into a rigid blunt end. Single rail systems will contain a flared Metal Beam Guard Rail (MBGR), typically found on most California bridges. A display depicting the three types of end treatments (ADIEM, TRACC, MBGR) is provided at this open house, but not shown in this handout.

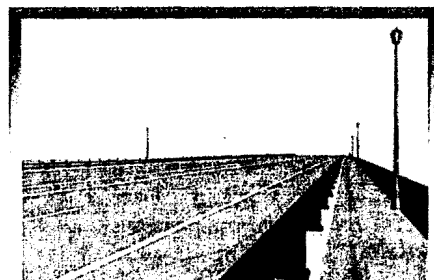
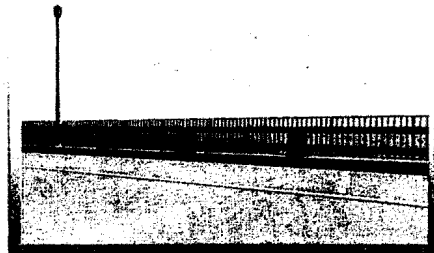
Please express your opinions on the questionnaire to help us make our final decision.

**Fort Bragg Town Hall**  
**363 N. Main Street**  
**4pm-8pm, September 4, 2002**

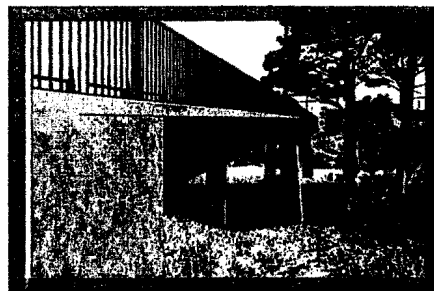
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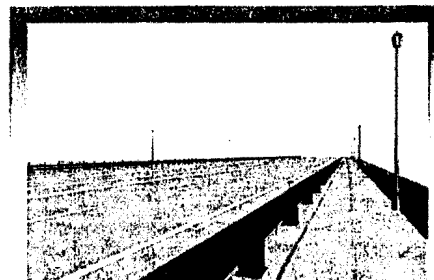
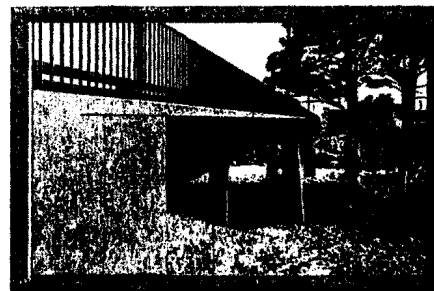
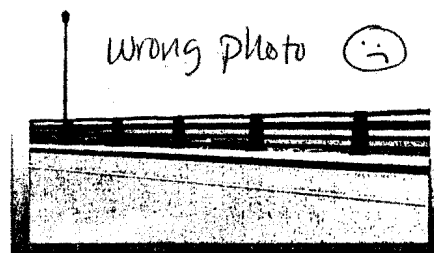
The ST-10 Rail is a double tube steel rail mounted on top of a 6-inch high concrete curb.



The Alaska Rail is a double tube steel rail mounted on top of a 7-inch high concrete curb.



The Type 80 Rail is a concrete rail, similar to the Type 80SW, but is placed on the inside of the bridge sidewalk (between traffic and pedestrians).



The Modified Wyoming Rail is a double tube steel rail mounted on top of a 6-inch high concrete curb.

# Public Meeting - Wednesday, September 4, 2002

1. Which railings do you like the best?  
(rank 1, 2, 3...1 BEING THE BEST)

SINGLE RAIL SYSTEM

☐ NETC

☐ Type 80SW

DUAL RAIL SYSTEM

☐ ST-10

☐ Type 80

☐ Wyoming

☐ Alaska

2. If a "Dual Rail" system is selected, which of the two crash cushion designs do you prefer?

☐ TRACC (metal beam cushion)

☐ ADIEM (light weight concrete blocks on a conventional concrete base)

3. What factors are most important to you in selecting a railing?  
(check up to 3)

☐ Views afforded the driver

☐ Pleasing appearance

☐ Simplicity of design

☐ Safety for pedestrians

☐ One not needing a crash cushion

☐ Compatibility with bridge design

☐ Ease of maintenance

☐ Other (specify) \_\_\_\_\_

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### III. SPECIAL CONDITIONS:

**Note:** The following list includes conditions required by Coastal Development Permit No. 1-98-100, Coastal Development Permit A-1-FTB-99-06, or both. As they are all requirements pertaining to construction of the Noyo River Bridge, for ease of reference all of the conditions are listed here. However, only Special Conditions 1-10 are conditions of Coastal Development Permit No. 1-98-100, and only Special Conditions 5-11 are conditions of Coastal Development Permit No. A-1-FTB-99-06.

#### 1. State Lands Commission Review.

**PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit to the Executive Director a written determination from the State Lands Commission that:

- a. No State lands are involved in the development; or
- b. State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or
- c. State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

#### 2. California Dept. of Fish and Game Review.

**PRIOR TO THE COMMENCEMENT OF CONSTRUCTION,** the applicant shall submit to the Executive Director evidence of an approved 1601 streambed alteration agreement for the project from the California Department of Fish and Game.

#### 3. Measures to Minimize Impact on Coho Salmon.

The applicant shall comply with the "Terms and Conditions" specified in the US Department of Commerce, National Marine Fisheries Service's Biological Opinion letter of December 22, 1998, and attached as Exhibit 15 of the staff report for Permit Application No. 1-98-100, and shall Caltrans implement a marine mammal monitoring program as specified in the National Marine Fisheries Service's letter of December 2, 1998 letter and attached as Exhibit 16 of the staff report for Permit Application No. 1-98-100.

#### 4. Use of Trestle.

The temporary trestle system shall be constructed as described in the application and shall be completely removed upon project completion. All piles shall be pulled up and completely removed without digging them out.

**5. Implementation of CEQA Mitigation Measures.**

The applicant shall comply with all Mitigation Measures specified in the adopted Mitigated Negative Declaration attached as Exhibit 17 of the staff report for Permit Application No. 1-98-100.

**6. Off-Site Mitigation Program.**

Within 90 days of Commission approval, the applicant shall indicate by letter to the Executive Director a commitment to --either-- (a) acquire and develop as a public viewing area the southern headland west of the proposed project (consisting of the Shaw Trust, APN 018-440-10-00 and Kime Trust, APNs 018-440-01-00 and 018-440-02-00 properties) --or-- (b) deposit one million dollars (\$1,000,000.00) in an interest bearing account designated by the Executive Director for the purpose of providing funds for either the acquisition and improvement of the project described in (a) above or implementation of another project determined by the Executive Director to be comparable in terms of adequately offsetting the impacts of the new bridge on visual resources and public recreational opportunities.

Option (a).

If the applicant chooses Option (a) to acquire and develop a public scenic viewing area along the southern headland west of the bridge, the applicant shall meet the following additional requirements:

- (1) Within 18 months following Commission action the applicant shall submit evidence in a form and content acceptable to the Executive Director that Caltrans has purchased sufficient rights over the parcels to develop, operate, and maintain the public viewing area improvements outlined below;
- (2) Within 24 months following Commission action the viewing area shall be constructed and open to the public, unless that deadline is extended by the Executive Director for good cause;
- (3) Prior to filing an application with the appropriate coastal permitting agency for construction of the viewing area, the applicant shall submit for the review and approval of the Executive Director final construction plans for development of the required viewing area improvements. The plans shall include, at a minimum, the construction of a paved access driveway connecting the site to Ocean View Drive, the construction of a paved parking lot with at least 15 parking spaces oriented towards Noyo Bay, fencing or other barriers to keep motorized vehicles from accessing other parts of the property besides the parking area and driveway, a trail along the entire blufftop of the property, and measures to control soil erosion on the site;

CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 3

- (4) The applicant may transfer the responsibility for operation and maintenance of the viewing area to another public agency or a non-profit group approved by the Executive Director.

Option (b).

If the applicant chooses Option (b) to fund the construction by another entity of a public viewing area, the applicant shall submit evidence within 6 months following Commission action, in a form and content acceptable to the Executive Director, that a mitigation fee of one million dollars (\$1,000,000.00) has been deposited in an interest-bearing account designated by the Executive Director. The California Coastal Commission shall be named as trustee of this account. All interest earned on the fee will be payable to the account.

The purpose of the account shall be to create and/or improve the public's ability to view the Pacific Ocean from a site in the Fort Bragg or Mendocino County area. The funds shall be used solely to acquire and improve land as a public recreational area offering views of the Pacific Ocean. The Executive Director of the Coastal Commission shall release the funds only upon approval of an appropriate project. The funds shall be released as provided for in a memorandum of agreement (MOA) between the Commission and a public agency or non-profit entity, setting forth terms and conditions to assure that the in-lieu fee will be expended in the manner intended by the Commission.

The mitigation fee may be refunded to Caltrans in whole or in part if, within 24 months of Commission action on this coastal development permit, Caltrans or another entity has completed a mitigation project that has been approved by the Executive Director as fully meeting this condition. The Executive Director may extend the above deadline for obtaining a refund if the permittee has obtained all necessary permits by the deadline for construction of the public viewing area project.

**7. Amendments.**

Any future modification of the bridge, railings, sidewalks, shoulders, traffic lanes or median area will require a Commission amendment to this coastal development permit.

**8. Disposal of Construction Debris.**

All construction dredge material and debris shall be removed from the site upon completion of the project. Disposal of any of this material in the coastal zone at a location other than in a licensed landfill will require a coastal development permit.

**9. Monitoring and Reporting.**



As proposed by the applicant, during and following construction activities, the applicant shall field monitor the project for condition compliance for a period of 3 years. Annually after project completion, the various impact locations shall be reviewed to assess the success of project mitigation measures. Brief summary reports with photographs shall be forwarded to the Coastal Commission by May 15th annually in 2000, 2001, and the final report in the year 2002.

**10. Pollution Prevention.**

**PRIOR TO THE COMMENCEMENT OF CONSTRUCTION**, Caltrans shall submit, for the review and approval of the Executive Director, a pollution prevention plan designed to prevent polluted runoff or other waste materials from entering the Noyo River.

**11. Erosion Control and Revegetation.**

**PRIOR TO THE COMMENCEMENT OF CONSTRUCTION**, Caltrans shall submit, for the review and approval of the Executive Director, an erosion control and revegetation plan for all areas disturbed by construction and including the correction of existing erosion problems in the Caltrans right of way surrounding the bridge. The revegetation plan shall demonstrate how all non-native species will be prevented from establishing in the revegetation area during the first five years following planting.

The site shall be monitored for the first five years following planting, and a monitoring report shall be submitted by September 1 of each year for the review and approval of the Executive Director of the Coastal Commission. The monitoring report will document the health of the planted and existing trees and recommend any needed corrective actions to achieve compliance with the requirements of this condition.

**Note:** Special Conditions Nos. 12, 15, 16, and 17 below, are additional conditions imposed as part of Coastal Development Permit Amendment No. A-1-FTB-99-006-A1.

**12. Revised Water Pollution Control Plan for Park and Staging Areas.**

- A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicant shall submit a revised Water Pollution Control Plan for Ocean Front Park and the construction staging areas to the Executive Director for review and approval. The plan shall be designed to prevent polluted runoff or other waste materials from entering the Noyo River. All sources and types of wastes and polluted runoff not previously addressed in the plan formerly approved pursuant to Special Condition No. 10 of the original permit (i.e., grading for park entrance road detour, dripping fuel and lubricants at the vehicular parking areas) shall be addressed in the revised plan. The plan shall be reviewed and approved by the project engineer to ensure the plan is in conformance with the engineer's recommendations. The plan shall include, but not be limited to, the following criteria and contents:

CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 3

- 1) The revised plan control plan shall demonstrate that:
  - a. Runoff from all construction staging, fabrication, materials storage, parking areas, roadways and other impervious surfaces shall be collected and directed through a system of filters. The filter elements shall be designed to: (1) trap sediment, particulates, and other solids; and (2) remove or mitigate contaminants. The drainage system shall also be designed to convey and discharge runoff in excess of this standard from the construction site in non-erosive manner;
  - b. At least the following temporary erosion and sedimentation control measures shall be used during construction: straw bale barriers and silt fencing;
  - c. Following construction, erosion on the site shall be controlled to avoid adverse impacts on adjacent properties and resources through the use of re-seeding and mulching of bare soil areas with a native grass seed mix;
  - d. Run-off from the project site shall not increase sedimentation in waters of the Noyo River or the Pacific Ocean;
  - e. Best Management Practices (BMPs) shall be used to prevent entry of stormwater runoff into the construction site, the entrainment of excavated materials leaving the site, and to prevent the entry of polluted stormwater runoff into coastal waters during and following construction; and
  - f. The plan is not in conflict with the Discharge Permit Requirements of the Regional Water Quality Control Board, the California Water Resources Control Board, or the pending revised Biological Opinion and Incidental Take Statements of the National Marine Fisheries Service.
- 2) The revised plan shall include, at a minimum, the following components:
  - a. A narrative report describing all water pollution prevention, and run-off and erosion control measures to be used during construction and all permanent erosion control measures to be installed for permanent erosion control, referencing relevant best management practices (BMPs) as detailed in the "Amendment 1 Water Pollution Control Plan," as prepared by Guy Preston, PE, California Department of Transportation, dated January 14, 2001;
  - b. Revised site plans showing the location of all approved construction staging areas, the construction access corridor (North Harbor Drive), and erosion and pollution control measures, and the location of all permanent erosion control measures (i.e., parking lot culvert upgrades, revegetated areas);
  - c. A schedule for installation and removal of the temporary erosion control measures, and structural and non-structural BMPs; and
  - d. A schedule for installation and maintenance of the permanent erosion and water pollution control structural and nonstructural BMPs.

- B. The permittee shall undertake development in accordance with both the approved final plans for this permit amendment and the approved Water Pollution Control Plan for the original permit. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

**15. Construction Staging Area and Construction Access.**

To minimize significant adverse impacts to public access, recreational facilities, and coastal-dependent uses, the permittee shall comply with the following construction-related requirements during use of the Ocean Front Park construction staging area and North Harbor Drive construction access:

**A. Ocean Front Park Staging Area**

- 1) All storage of construction equipment and construction staging activities shall occur only within the 14,500-square-foot area of the existing eastern portion of the Ocean Front Park parking lot and the approximately 1.75-acre area comprising the western portion of the dredge spoils disposal basin, except during the periods identified in Special Condition No. 14 when the entire park may be closed and used for construction related activities.
- 2) Access to Ocean Front Park shall be provided through a detour constructed at the North Harbor Drive entrance to the park, as proposed by the permittee.
- 3) A temporary reconfigured parking lot consisting of twenty-one (21) standard spaces and one (1) handicapped spaces within the western half of Ocean Front Park parking lot shall be developed for park users as proposed by the permittee.
- 4) Compensatory improvements to the park's restrooms, culverts, parking lot overlays, stripping, gating, and entry drive, as proposed by the permittee, shall be installed within three (3) months following cessation of the construction staging area use.
- 5) All portions of Ocean Front Park disturbed by the construction staging area use shall be fully repaired, revegetated, and reopened to public use, as proposed by the permittee within three (3) months of bridge completion.

**B. North Harbor Drive Construction Access**

- 1) Permittee shall perform all necessary repairs before, during and upon cessation of the use of North Harbor Drive for construction access to maintain North Harbor Drive in a usable condition as a public street.

**16. Regional Water Quality Control Board Approval.**

**PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicant shall provide to the Executive Director a copy of the

CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 3

Waste Discharge Requirements issued by the North Coast Regional Water Quality Control Board (NCRWQCB) for the amended project, or letter of permission, or evidence that no revised discharge permit will be issued. The applicant shall inform the Executive Director of any changes to the project required by the NCRWQCB. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

17. **Bridge Railing Amendment.**

Caltrans will file, within 1½ years from the date of this amendment, a subsequent request to amend the design of the bridge railing. The subsequent request to amend shall include a bridge railing design that will provide additional visual access beyond that included in the design currently authorized by the original permit.

## CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000  
SAN FRANCISCO, CA 94105-2219  
VOICE AND TDD (415) 904-5200  
(415) 904-5400



June 29, 2001

Jeff Morales, Director  
California Department of Transportation  
P.O. Box 942873  
Sacramento, CA 94273-0001

EXHIBIT NO. 9
APPLICATION NO. 1-98-100-A3 & A-1-FTB-99-006-A3 CORRESPONDENCE (1 of 3)

Subject: Design of bridge rails in scenic coastal areas

Dear Mr. Morales:

I wrote to you in August 2000 to express the concern of the Coastal Commission about the use by the Department of Transportation of view-blocking rails on bridges in scenic coastal areas in California. Since that time, staff of your department has briefed the Coastal Commission on several alternative rail designs that are or might be available. I am writing now to offer the Commission's comments concerning alternatives, including rails that are available now as well as those that might be available in the future.

By way of background, the Coastal Commission has become increasingly concerned with the design of bridges and railings in scenic coastal areas in California. Whereas the safety and durability of bridge structures, including railings, have increased over the years, improvement of the visual characteristics of railings has not kept pace. In fact, today's sturdy bridge railings typically impede most of the view available to travelers on newly constructed bridges in California's coastal zone.

The Commission has been presented on numerous occasions in recent years with coastal permit applications for new or replaced coastal bridges or other facilities involving rails that offer little or no views of scenic areas to travelers. As a result, I appointed a subcommittee of the Commission to address this issue and provide recommendations to the full Commission. The subcommittee met on several occasions with members of your staff, including Richard Land of the Division of Engineering Services and others, to identify improved bridge rails that could be used now as well as a potential all-new rail for future use. The Commission has endorsed the subcommittee's recommendations, which are presented below.

#### Alternative rails for interim use

First, the Commission has reviewed the four rail designs (Type 80 and the so-called Alaska, Wyoming, and Minnesota rails) that have been crash-tested and approved for use in California. The Commission concluded that the Minnesota rail would not be useful in the coastal zone, due to the limited visibility it would provide for bridge users. Of the remaining three alternatives, the

Alaska rail is superior overall, based on the relatively large openings between rails and supports that it offers.

The Wyoming rail provides slightly less see-through characteristics than the Alaska rail, although in some settings, the flat-plate supports used in the Wyoming rail may present advantages over the Alaska rail, which has thick I-beam supports and has a more "industrial" appearance. For instance, where public views of the bridge itself from a nearby view overlook are as important as the views from the bridge, the Wyoming rail may be useful, because the back of the Wyoming rail is somewhat more graceful than that of the Alaska rail. Finally, the Type 80 rail may be useful in settings where immediate views of the coast from the bridge are not a primary concern and where the rail's concrete elements can be used to good advantage from an aesthetic perspective in the particular setting. For instance, in contrast to the Alaska and Wyoming rails which are primarily galvanized steel, the concrete Type 80 rail can be stamped to create textural effects and stained a wood-tone or other color, in order to blend better with the immediate environment. The Subcommittee recognized that the Department of Transportation will consider additional treatment of the Alaska and Wyoming rails, such as earth tone paint, to enhance the rails' blending in with the surroundings.

In sum:

- ◆ The Alaska rail is likely to be most useful overall, because it presents the least visual obstruction for travelers on bridges;
- ◆ In settings where views from the bridge itself are not the primary objective, the Wyoming and Type 80 rails may be preferred;
- ◆ The Minnesota rail is not a preferred choice in the coastal zone.

### **New rail design**

The Commission reviewed the California Type ST-10 rail that was presented for discussion purposes. The ST-10 rail includes some of the better elements of the other rail alternatives, with the goal of presenting the relatively narrow rails and supports and relatively wide viewing windows. At the same time, the ST-10 rail, as a steel rail made up of standard components, has a relatively "industrial" appearance. The ST-10 may be useful for discussion purposes, but the Commission concluded that it is important to take this opportunity that is presented by the development of an all-new rail to address a wide range of factors, including some that are not addressed by the existing four "interim" rails.

Consequently, the Commission offers the following comments about the elements that should be addressed in the design of an all-new rail for use in scenic coastal areas:

- ◆ The most important factor is **visibility** for users of the bridge. The goal should be to develop a rail that is as close to "invisible" as possible.
- ◆ To that end, use of rail elements that are as thin as possible is important. An example is the possible use of plate supports, rather than I-beams or other blocky forms.

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- ◆ Use of color and texture is appropriate to make rails blend better with their surroundings. Although concrete can be more easily stamped and colored than steel, color and texture treatments for steel rails should also be explored.
- ◆ Curved and arched elements should be explored, in order to make the rail design as graceful and attractive as possible.
- ◆ Because of the loss of many historic and attractive bridges throughout California, a new rail design should seek to incorporate elements of historic bridges where consistent with modern safety standards. For instance, scale, materials, and other factors that evoke traditional bridge forms in California should be explored.
- ◆ A unified design for the rail is desirable, including whatever elements are necessary for pedestrian and bicycle safety, as opposed to simply tacking pedestrian or bicycle elements on top of vehicle rails. In settings where pedestrian and bicyclist safety elements are not necessary, a "pared-down" rail could then be used that simply meets vehicle safety requirements.
- ◆ A new rail should be developed as soon as possible, preferably in less than a year, in order to be available as an option for bridges that will come before the Coastal Commission for review and approval in coming months.

I would like to take this opportunity to commend the staff of the Department of Transportation for their cooperation on this issue. We appreciate your efforts to provide improved options for bridge rails in California's highly scenic coastal areas. Please do not hesitate to let me know if you have any questions.

Truly yours,

Sara Wan  
Chairperson

Cc: Coastal Commissioners  
Richard Land  
Stefan Galvez

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