SHOPP Asset Management Pilot Request Form

SHOPPCPR: Ver 3 11/14

Submittal Date 08/14/2015

Caltrans

Division of Transportation Programming
State Highway Operation and Protection Program (SHOPP)

Project Manager Jaime Matteoli

Phone 707 441-4581

Dist	County	Route	Prefix	PM	Prefix	PM	EA	PPNO	Project ID
01	Humboldt	101		79.8		80	X	X	X

☐ Includes Multiple Locations (Complete Page 2 of this Form)

MPO: Non-MPO

Project Location/Description (Include the nearest city, town or landmark)

US Route 101 in Humboldt County from PM 79.8 through PM 80.0, just north of the City of Eureka.

Need for project and proposed improvements (Elaborate using PID language)

This project is a District priority and is needed to address seismic deficiencies of the Southbound Eureka Slough Bridge. The project is also needed as a means for the Department to meet one of the Coastal Commission's conditions for Project Coastal Consistency Determination on the Route 101 Corridor Improvement Project. Specifically, to assist in development of a Class I path between Arcata and Eureka.
The proposed improvements consist of bridge replacement with a new structure that will provide improved sight distances, a separated path for multi-modal access, ITS components to reduce motorist's delay and travel times, surface runoff treatment systems to eliminate slough water contamination, and widened shoulders for errant vehicle recovery and emergency parking.
In addition to Pilot funding, the project will be eligible for funding from the Bridge Seismic Restoration Program of the SHOPP as a PSSR was prepared and submitted for retrofit work in the 2016 SHOPP cycle.

PA&ED / M200	02/01/2021	R/W Cert / M410	02/01/2022	CCA / M600	09/01/2026
PS&E / M380	12/01/2021	RTL / M460	03/01/2022	END Project / M800	12/01/2027

Capital ($1,000)
(Escalated to FY of Programming)

	FY	Cost
R/W	2021/22	$550
Construction	2021/22	$22,000
	Total Capital	$22,550

Support ($1,000)

	FY	Cost
PA & ED	2020/21	$1,300
PS & E	2021/22	$2,800
R/W	2021/22	$130
Construction	2021/22	$2,100
	Total Support	$6,330

Legislative District Numbers
(Separate multiple Districts with a comma)

State Assembly	2
State Senate	2
Congressional	2

☐ Approved ☐ Denied

CAPITAL CONSTRUCTION COST ESCALATION RATE 3.5%

District SFP (Print)	for Tom Fitzgerald	District SFP (Sign)	Curtis D. Cole	Phone	(707) 445-6382
District Director (Print)	Charles Fielder	District Director (Sign)	Charles Fielder	Phone	(707) 445-6445
SHOPP Exec. (Print)		SHOPP Exec. (Sign)		Phone	

Project Nomination for the Asset Management Program Pilot

Southbound Eureka Slough Bridge

District 1, HUM 101- PM 79.78

August 2015

This candidate project proposes the use of funding from both the Bridge Preservation Category of the State Highway Operation and Protection Program (SHOPP) and the Asset Management Program Pilot. The end project will address seismic deficiencies and regional multi-modal transportation needs at the Southbound Eureka Slough Bridge (SB ESB, 04 0022L) on US 101 in Humboldt County (Attachment A). The project will address one of the District's priorities and also assist the Department in meeting one of the Coastal Commission's conditions for Project Coastal Consistency Determination on the Route 101 Corridor Improvement Project. This project was one of three chosen by a multi-disciplinary team, which met several times to assess asset needs and score candidate projects on how well projects met the Department's Goals.

The following pilot program nomination narrative describes how the project will help the Department achieve its goals and provide qualitative and when available, quantitative assessment of the project relative to the Strategic Management Plan.

Existing Southbound Eureka Slough Bridge looking southeasterly

Project Background

Originally constructed in 1943 as a two direction crossing for US 101 over the slough, the SB ESB is 884 feet long and about 36 feet wide. The structure has 20 spans: two of which support the deck on steel pony trusses while the rest use reinforced concrete T-girders. The width of the structure does not provide enough room to meet standard travel lane and shoulder widths and the pony truss prohibits widening without replacement of those two spans (see Attachment D).

In June of 2015, a Project Scope Summary Report (PSSR, 01-0F200K) identified the SB ESB as a candidate project for the 2016 SHOPP Bridge Seismic Restoration Program. In the PSSR, the scope is limited to retrofit work with capital and right of way costs estimated to be $6.16M (2015). Support costs are estimated to be $3.36M (2015). Total costs will be $9.52M (2015). Due the project being located in sensitive environmental areas within the coastal zone, almost half of the capital and right of way costs are for mitigation and permits. If programmed, the project will be funded in the 2019/20 FY.

This pilot program candidate proposes a project which would combine funding from the Bridge Seismic Restoration Program and the Asset Management Program Pilot. Under this arrangement, $9.52M from the Bridge Seismic Restoration Program project would be used to supplement funding from the Asset Management Program Pilot for a project which would replace the SB ESB with a new structure. This new structure would provide standard shoulders and a separated Class I multi-use path.

Inclusion of the multi-use path would address long standing and well documented needs to provide a means for non-motorized traffic to cross the slough. The addition of the multi-use path would also assist the Department in meeting the Coastal Commission's conditions for Project Coastal Consistency Determination on the Route 101 Corridor Improvement Project, which lies north of the slough. One of the Commission's condition is such that "*Caltrans agrees that construction of the Route 101 Corridor Improvements will not commence until adequate commitments have been put in place to assure that a separated Class 1 bike and pedestrian trail, parallel to Route 101 between Arcata and the northern end of Eureka, will occur*." The trail referred to in the condition is known as the Humboldt Bay Trail and is part of a regional plan to connect not only Eureka to Arcata, but to fill a gap in the Pacific Coast Bike Route.

At the south end of the ESB, the trail will have an opportunity to connect to another regional trail plan called the Waterfront Trail, which is sponsored by the City of Eureka. The Waterfront Trail consists of a plan to construct a trail system along the waterfront perimeter of Eureka. Currently, the Waterfront Trail is funded through PS&E and has recently been awarded construction funding in Cycle 1 of the Active Transportation Program (See Attachments B & C).

Assets

Asset	Total Quantity	Pre-Project Condition				Post- Project Condition		
		Good	Fair	Poor		Good	Fair	Poor
Bridge	1		X			X		
Multi-use path	1	New Asset				X		
ITS	1	New Asset				X		
Culverts	2	New Asset				X		

Asset (Program)	Strategic Objectives (Goal)*	Performance Measures	Description of Work	Constr. Cost (1,000)
Bridge (015 & 113)	Worker Safety (1) User Safety (1) Eliminate Recurring Maint. Cost (2)	1 Bridge replaced	Replacement of the existing structure with standard shoulders, lanes and geometrics. Cost of path included below	$15,700
Multi-use Path (361)	Active Transportation (1) Multi Modal (2) Leadership (5) Collaboration (5) User Safety (1)	2 Locations	Construct additional width on structure for separated path & connections to Waterfront Trail	$3,000
ITS (315)	Smart Mobility (4) Worker Safety (1) Travel time/Delay Reduction (4) Greenhouse Gas Reduction (2)	4 Elements	Install traffic count loops, supporting communication components	$50
Stormwater (335)	Enviro Impact Reduction (3)	1 Location	Install culverts and construct treatment BMP	$20
			Total Construction Costs	$18,770

*Goal Number
(1) Safety & Health
(2) Stewardship & Efficiency
(3) Sustainability, Livability and Economy
(4) System Performance
(5) Organizational Excellence

Safety and Health

Safety benefits of the Southbound Eureka Slough Bridge (HUM 101 PM 79.78) project would be provided by shoulder widening and a separated bike path. Widening shoulders allows additional area for an errant vehicle to recover without leaving the roadway. According to the Highway Safety

Improvement Manual (2014), shoulder widening provides an average collision reduction of 30% of all collisions when the ADT of the roadway is greater than 400 and the total widening is greater than 4-ft. This location, with a 30% collision reduction factor due to shoulder widening, is expected to have 13 collisions reduced over the lifetime of the project.

The separated bike path would eliminate conflicts between vulnerable users and vehicles and would create an important crossing over the Eureka Slough for bicyclists and pedestrians traveling from Arcata to Eureka as well as those passing through the area on the Pacific Coast Bike Route.

The existing vertical and horizontal alignments at the approach to the bridge do not provide adequate line of sight for stopping sight distance requirements and according to recent collision history for this segment, 9 of 11 collisions were "rear end' type. Constructing a new structure will provide an opportunity to address vertical and horizontal alignment deficiencies that are contributing to the frequency of these collisions.

Non-motorized users will perceive a separated, multi-use path along the corridor as better access and a safer means to crossing the slough. This will encourage greater use of the route not only for recreational purposes, but also for commuting purposes. Improved access on the facility would encourage active transportation, reduce congestion and reduce emissions.

By adding Intelligent Transportation System components to the scope, traffic data collection can be accessed remotely. Remote retrieval will reduce trips to field locations by Caltrans staff, which in turn will reduce worker exposure to work zone injuries/deaths.

Stewardship and Efficiency

A Structure Replacement And Improvement Needs (STRAIN) report from Structures Maintenance and Investigations states that the southbound ESB requires spot preparation and painting of the existing steel truss, stringers, floor beams, and girders. Cost for this work are estimated to be about $312,000. This is a recurring cost that would no longer be a burden to limited maintenance funds if the steel elements were replaced with a concrete structure.

Replacement of this bridge asset will meet Bridge Health Index threshold requirements of SB 486 as a new structure will be seismically sound, functionally sufficient bridge and have an extended life cycle. Adding a multi-use path to the bridge will improve the State's non-motorized assets.

By adding Intelligent Transportation System components to the scope, traffic data collection can be accessed remotely. Remote retrieval reduces trips to field locations by Caltrans staff which will reduce greenhouse gas generation from internal operational pollutants.

Sustainability, Livability and Economy

The replacement of the SB ESB as proposed would increase accessibility to the Humboldt Bay and Waterfront Trails and provide the local community more mobility options. Improved access and mobility is likely to result in an increase in non-auto driven trips, which will reduce greenhouse gas emissions.

By filling a gap along the Pacific Coast Bike Route (PCBR) and adding connections to the local trail network, it is expected that this improvement will help promote greater use of the PCBR and also assist in establishing the area as a recreational tourist destination.

Replacement of the SB ESB structure would increase system resiliency as the new asset would be designed to withstand natural disasters such as earthquakes, tsunamis and floods as well as manmade influenced vulnerabilities such as climate change and sea level rise.

The existing barrier on the bridge has several openings or scuppers which allow runoff from the bridge surface to drain directly into the slough. This condition provides a path for pollutants to directly contaminate water in the slough. If the bridge was rebuilt, this direct connection would be replaced with new culverts and storm water treatment systems that would prevent pollutants from entering the slough. These facility improvements would help meet the Strategic Plan's 10% target reduction in water pollutants.

A breakdown of sustainability, livability, and economy objectives is provided as an attachment. (Attachment E)

System Performance

By adding Intelligent Transportation System (ITS) components to the scope, travel times and delay can be reduced, which improves system performance. ITS components could be tied to the Transportation Management Center and/or Traffic Signal Management and Surveillance System server. The components can eventually become part of an integral signal inter-connect system and/or a real time traffic monitoring/count station network.

Inclusion of the separated path on the structure and connections to off-corridor trails systems are Complete Streets features that improve safety, access and mobility for all travelers.

Organizational Excellence

With this project the Department will be collaborating with and improving the relationship with not only external agency partners, but also with the many community based organizations that have interests in improving multimodal features along this segment. In doing so, the Department will

- Take the lead in developing a plan to close a gap on the PCBR
- Provide a connection to a local partner's planned trail
- Take the initiative to solve a long standing obstacle to completion of the Humboldt Bay Trail

By increasing Caltrans' outreach effort and leadership role in this effort, partners and beneficiaries will put more faith in the commitments made with the Department's new Mission, Vision, and Goals.

Funding Plan

The following table depicts a breakdown of costs and currently identified funding sources. The 2016 SHOPP candidate project (01-0F200K) has not been programmed to date, but is expected to be approved by the CTC next year. The total capital and support costs for the 2016 SHOPP project is $9.52M. Structure replacement capital and support costs are estimated to be about $29.01M. District 1 proposes to use the anticipated allocation for the 2016 SHOPP project as a supplement to funding from the Asset Management Program Pilot in order to fund a project to replace the SB ESB. The amount being requested is $19.49M.

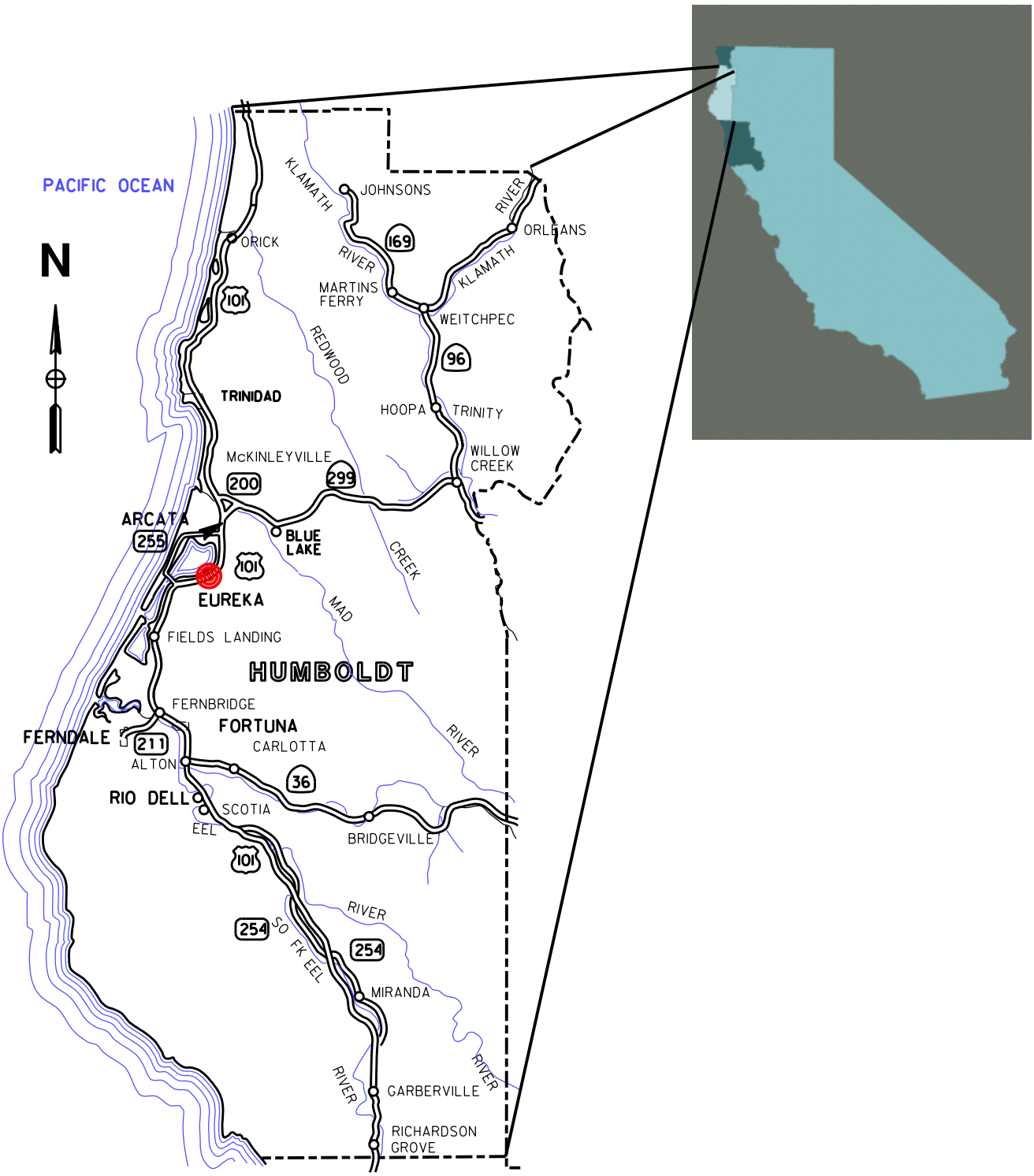
	2016 SHOPP Candidate ($M) (2015)	Replacement Cost ($M) (2015)		Asset Management Program Pilot Funding
Roadway Constr.	$0.93	$1.42		
Structures Constr.	$2.22	$18.8		
R/W	$3.01	$0.50		
PA&ED (0-Phase)	$0.69	$1.70		
PS&E (1-Phase)	$1.48	$3.65		
R/W (2-Phase)	$0.07	$0.17		
Constr. (3-Phase)	$1.12	$2.76		
SUP/CAP Ratio	55%	40%		
Total Project Cost	**$9.52**	**$29.01**		**$19.49**

Recommendation

In an effort to promote asset management and test the principles of the Asset Management Program, it is recommended to allocate $19.49M from the Asset Management Program Pilot and program $9.52M from the 2016 SHOPP for the purpose of funding a project to replace an aged, functionally obsolete asset with a modern, less maintenance demanding, multi modal structure. In doing so, the Department will more completely satisfy the targets set forth in the 2015 Strategic Plan and begin the practice of implementing Caltran's new Mission, Vision and Goals.

Attachments:

A. Location Map
B. Project Layout
C. Cross Section
D. Existing Structure Pictures
E. Sustainability Matrix



No Scale

ASSET MANAGEMENT PROGRAM PILOT
SB EUREKA SLOUGH BRIDGE
01-HUM-101
PM 79.78

ATTACHMENT A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	79.78	1	2

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVED DATE

DESIGN STUDY ONLY

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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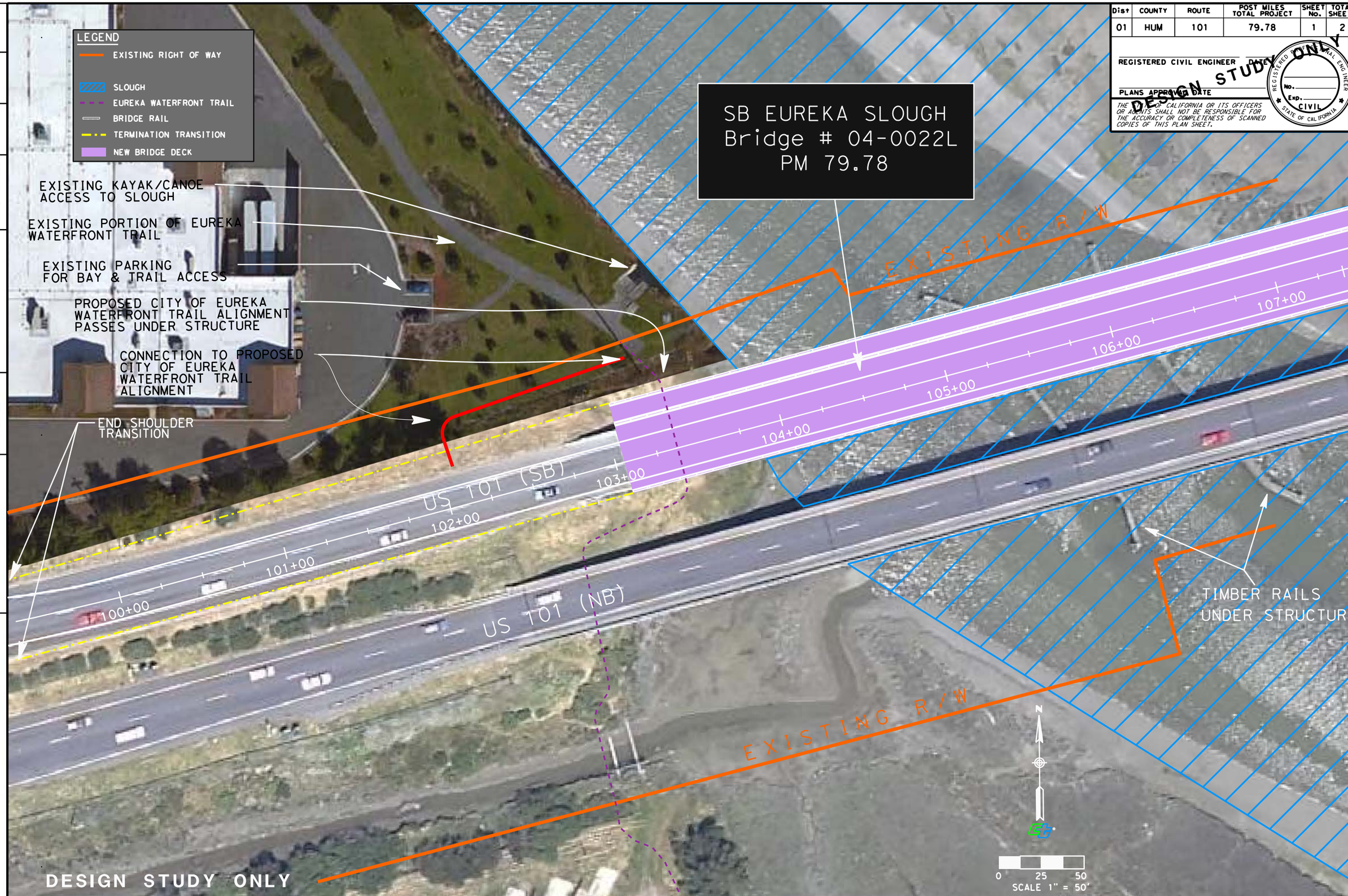

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	79.78	2	2

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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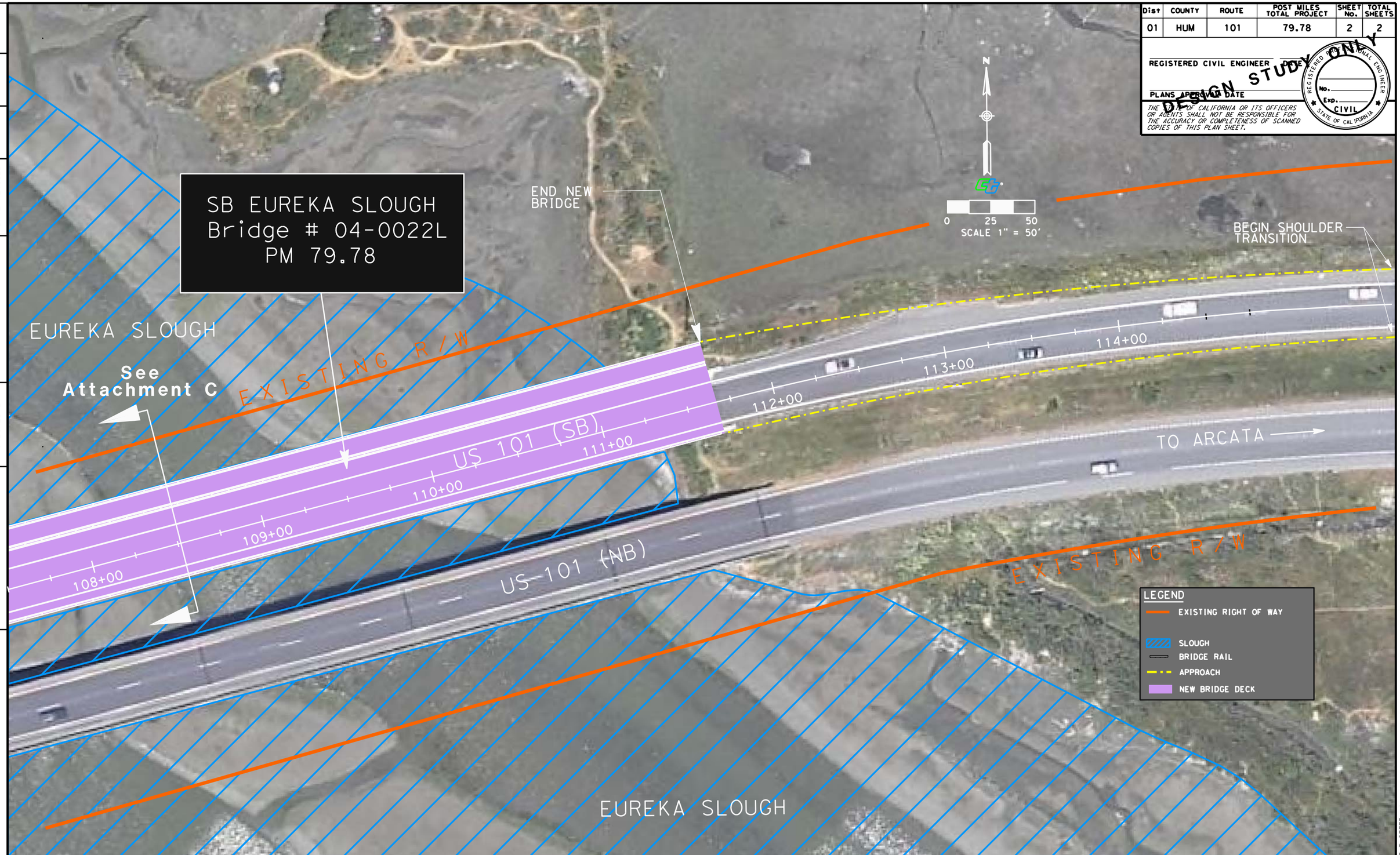

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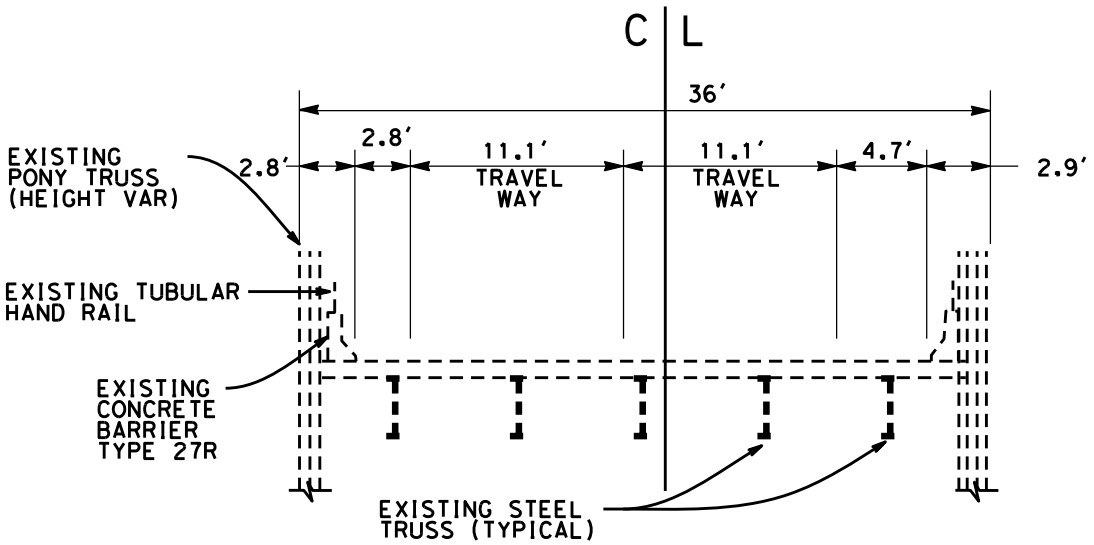
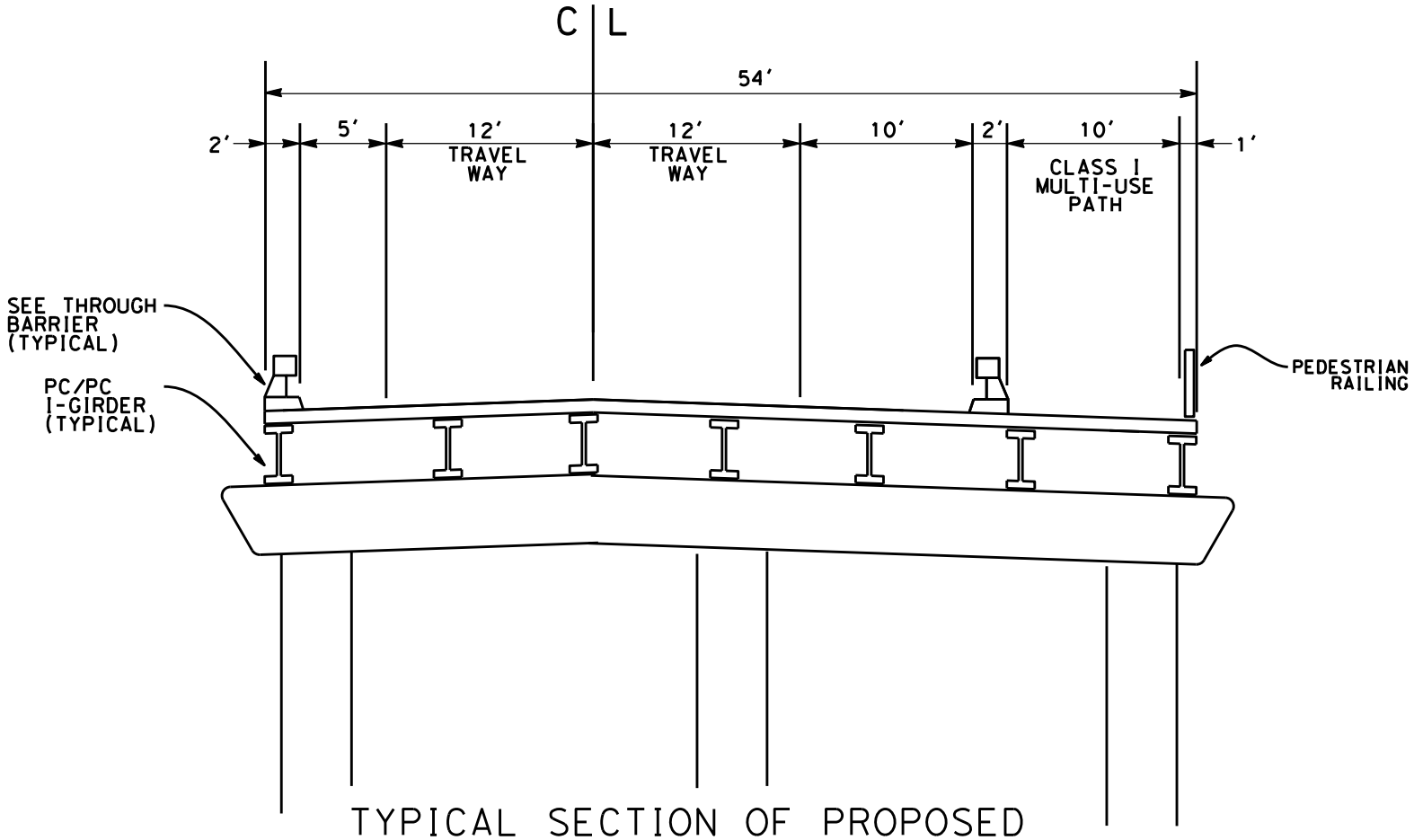


TYPICAL SECTION OF EXISTING
SOUTHBOUND EUREKA SLOUGH BRIDGE
THROUGH PONY TRUSS



TYPICAL SECTION OF PROPOSED
SOUTHBOUND EUREKA SLOUGH BRIDGE

TYPICAL CROSS SECTION

ATTACHMENT C

Project Nomination for Asset Management Program Pilot

Southbound Eureka Slough Bridge

Looking northeasterly, in between SB & NB Eureka Slough Bridges

Looking southeasterly at SB Eureka Slough Bridge

Attachment D

Project Nomination for Asset Management Program Pilot

Southbound Eureka Slough Bridge

Looking southwesterly at approach to SB Eureka Slough Bridge

Looking southwesterly at SB Eureka Slough Bridge

Attachment D

	Sustainability Goal measures	Project Title: Southbound Eureka Slough Bridge District 1, HUM 101, PM 79.78	Yes/No	Description (of Yes responses)
Quality of Life				
		Stimulate Sustainable Growth and Development *(Envision QL 1.2)*		
		Intent: Support and stimulate sustainable growth and development, including improvements in job growth, capacity building, productivity, business attractiveness and livability.		
1	Prosperity	Will the project enhance the community's quality of life and economic prosperity?	Yes	The addition of a Class I multi-use path with connections to two other regional paths will encourage the pubic to commute and make use of the facility as recreational asset. This will increase their quality of life by improving mobility and active transportation. The economy of the area will improve as the area is able to market the recreational opportunities.
		Improve Community Mobility and Access *(Envision QL 1.2)*		
		Intent: Locate, design and construct the project in a way that eases traffic congestion, improves mobility and access, does not promote urban sprawl, and otherwise improves community livability.		
2	Access	Will the project provide good, safe access to adjacent facilities, amenities and transportation hubs, including appropriate wayfinding signage?	Yes	A safe and easily accessed connection to the planned Eureka Waterfront Trail and Humboldt Bay Trail will be included
3	Non-Auto Mode Share	Will the project encourage the use of transit and/or non-motorized transportation?	Yes	With the inclusion of the Class I path, non-motorized users will be the main beneficiary of the asset. The lack of a crossing at this location is a hindrance to users that would otherwise use the corridor for commuting or recreation.
4	Non-Auto Mode Share	Has the project team coordinated the design with other infrastructure assets to improve walkability and livability?	Yes	A safe and easily accessed connection to the planned Eureka Waterfront Trail and Humboldt Bay Trail will be included
		Preserve Historic and Cultural Resources *(Envision QL 3.1)*		
		Intent: Preserve or restore significant historical and cultural sites and related resources to preserve and enhance community cultural resources.		
5	Env	Will the project minimize impacts on historic and cultural resources? (Consulted the tribal, historic and cultural resource staff in Environmental (PQS)?	Yes	Avoiding environmental and cultural impacts will be first objective, minimizing them will be second. To do so, the project team will coordinate with environmental planning, the district Native American Liaison, and local tribes.
		Enhance Public Space *(Envision QL 3.3)*		
		Intent: Improve existing public space including parks, plazas, recreational facilities, or wildlife refuges to enhance community livability.		
6	Livability	Will the proposed project make meaningful enhancements to public space or address Section 4(f) properties, (examples include parks, plazas, recreational facilities, or wildlife refuges) to enhance community, livability, and quality of life?	Yes	Access to parks, plazas, recreation facilities, and enhanced livability and quality of life will be implemented through the Class I path
Leadership				
		Foster Collaboration and Teamwork *(Envision LD 1.3)*		
		Intent: Eliminate conflicting design elements, and optimize system by using integrated design and delivery methodologies and collaborative processes.		
7	Sustainable Corridor Master Plan (SCMP)	Are the project owner and the project team intending to take a Context Sensitive Solutions view of the project?	Yes	The project team will work with local agencies to make sure the Class I path is a viable connection to externally planned multi-use paths. Context Sensitive Solutions will be utilized.
		Improve Infrastructure Integration *(Envision LD 2.2)*		
		Intent: Design the project to take into account the operational relationships among other elements of community infrastructure which results in an overall improvement in infrastructure efficiency and effectiveness.		
8	Livability	Will the project team seek input from local stakeholders regarding how the project impacts or enhances the community infrastructure?	Yes	This will be a very high profile project for the area (a major bridge on a major highway connection between two cities) and as such, public outreach may be solicited in future phases
9	Freight	Will the project address the needs on the priority freight network included in the Freight Mobility Plan?	Yes	Eureka and a Tier III freight facility. Replacing the bridge will ensure lasting connectivity and mobility
Resource Allocation				
		Use Recycled Materials *(Envision RA 1.3)*		
		Intent: Minimize transportation costs and impacts and retain regional benefits through specifying local sources.		
10	Resource Consumption	Will the project team consider reuse of existing materials or recycled materials or use of materials from within 100 miles of the project site?	Yes	This project will be consistent with Deputy Directives DD-17 and DD-105
		Reduce Energy Consumption *(Envision RA 2.1)*		
		Intent: Conserve energy by reducing overall operation and maintenance energy consumption throughout the project life cycle.		

	Sustainability Goal measures	Project Title: Southbound Eureka Slough Bridge District 1, HUM 101, PM 79.78	Yes/No	Description (of Yes responses)
11	Energy	Can the project incorporate reducing energy consumption or generating energy supply during the construction phase or after as a purpose for the project?	Yes	Remote data access from the ITS features will reduce/eliminate staff from travelling to the location for that purpose. This reduces energy consumption and greenhouse gas generation.
Natural World				
		Preserve Prime Habitat and Species *(Envision NW 1.1)*		
		Intent: Avoid placing the project – and the site compound/temporary works – on land that has been identified as of high ecological value or as having species of high value.		
12	Env	Does the project concept incorporate solutions to preserve, improve or connect important natural resources (habitat, species needs, or fish and wildlife movement corridors)?	Yes	Currently, the Eureka Slough is an open fish passage, and this bridge will preserve that passage
		Protect Wetlands and Surface Water *(Envision NW 1.2)*		
		Intent: Protect, buffer, enhance and restore areas designated as wetlands, shorelines, and water bodies by providing natural buffer zones, vegetation and soil protection zones.		
13	Water	Does the project concept address or enhance adjacent wetlands, hydraulic connection and waters functions, values, or existing deficiencies?	Yes	The bridge over Eureka Slough will perpetuate or improve the hydraulic connection to Humboldt Bay and beyond
		Preserve Prime Farmland *(Envision NW 1.3)*		
		Intent: Identify and protect soils designated as prime farmland, unique farmland, or farmland of statewide importance.		
14	Env	Does the project concept improve or enhance the existing farming conditions or associated interface with the transportation facility (water conveyance, quality, habitat preservation, weed management, farming operation, etc.)?	Yes	By eliminating the scuppers on the existing bridge, pollutants in storm water will no longer have a direct discharge into the slough/bay. The project will collect this runoff and treat for pollutant removal prior to discharge
		Preserve Floodplain Functions *(Envision NW 1.5)*		
		Intent: Preserve floodplain functions by limiting development and development impacts to maintain water management capacities and capabilities.		
15	Water	Does the project concept allow for natural floodplain functions restored or rectified related to existing infrastructure impingements?	Yes	The bridge over Eureka Slough will perpetuate or improve the hydraulic capacity
		Manage Stormwater *(Envision NW 2.1)*		
		Intent: Minimize the impact of infrastructure on stormwater runoff quantity and quality.		
16	Water Quality	Can the project be designed to treat more than minimum stormwater treatment requirements, for example post construction or TMDL compliance units?	Yes	By eliminating the scuppers on the existing bridge, pollutants in storm water will no longer have a direct discharge into the slough/bay. The project will collect this runoff and treat for pollutant removal prior to discharge
		Roadside Vegetation Environment *(Envision NW 3.4)*		
		Intent: Use appropriate non-invasive species and control or eliminate existing invasive species.		
17	Env	Does the project concept incorporate improvements to roadside vegetation through restorative actions to native/appropriate vegetation to reduce/eliminate need for future management (maintenance, water use, pesticides, invasive species, etc.)?	Yes	Landscape Architects will be included on the Team and will weigh in on opportunities to restore habitat
Climate & Risk				
		Reduce Greenhouse Gas Emissions *(Envision CR 1.1)*		
		Intent: Conduct a comprehensive life-cycle carbon analysis and use this assessment to reduce the anticipated amount of net greenhouse gas emissions during the life cycle of the project, reducing project contribution to climate change.		
18	GHG	Based on a life-cycle carbon assessment, will the project be designed in a way that substantially reduces carbon emissions?	Yes	By including a separated path, non-motorized crossing of the slough will be encouraged which should appeal to commuters that would prefer to use non-motorized means.
		Assess Climate Threat *(Envision CR 2.1)*		
		Intent: Develop a comprehensive Climate Vulnerability Assessment and Adaptation Plan.		
19	Resiliency	Will the project address potential risks or vulnerability deficiencies identified in state, regional, local or site specific plans?	Yes	Design will review climate change and sea level rise guidance and incorporate features or aspects into the design to eliminate/reduce risk of impact
		Manage Heat Island Effects *(Envision CR 2.5)*		
		Intent: Minimize surfaces with a high solar reflectance index (SRI) to reduce localized heat accumulation and manage microclimates.		
20	Green Infrastructure	Will the project be designed to include green infrastructure such as reducing heat island effects by reducing the percentage of low solar reflectance index (SRI) surfaces?	No	