



**DEPARTMENT OF THE ARMY**  
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
450 GOLDEN GATE AVENUE  
SAN FRANCISCO, CALIFORNIA 94102-3404

Operations and Readiness Division

**PUBLIC NOTICE**

**REQUEST FOR PERMISSION TO ALTER A U.S. ARMY CORPS OF ENGINEERS  
PROJECT UNDER SECTION 408**

**TITLE:** San Joaquin River – LS9 HDD Project, 408-SPN-2023-0003

Public notice comment period:  
Begins: October 31, 2023  
Ends: November 30, 2023

**REQUESTER:** In compliance with U.S.C. Title 33, Chapter 9, Subchapter 1, Section 408, Kinder Morgan (requester) has requested permission from the U.S. Army Corps of Engineers (USACE) to alter the Stockton Deep Water Ship Channel, an existing federal navigation project, originally authorized by the Rivers and Harbors Act of 1876 and further authorized by the Rivers and Harbors Acts of 1927, 1950, and 1965.

**LOCATION:** The proposed project is located on the San Joaquin River, immediately downstream from the Calaveras River junction, in the City of Stockton, San Joaquin County, California. (Lat. 37.969284, Long. -121.371899)

**REQUESTER'S PROPOSED ACTION:** The Project includes installation of a replacement section for the 10-inch LS 9 pipeline crossing the San Joaquin River to maintain compliance with the hazardous liquid pipeline integrity management regulation mandated by the Pipeline and Hazardous Materials Safety Administration (PHMSA). The Project will be completed using Horizontal Directional Drill (HDD) to cross the river. Based on initial assessments, the San Joaquin River HDD alignment will be approximately 1,675 feet in length and drilled at a depth of 90 or more feet below the bed of the river. HDD involves use of guided drilling equipment to drill a borehole beneath the river and then pull back of a welded pipe string through that finished borehole. The pipe is then tied into the existing pipeline on either side of the river using conventional trenching methods. The old section of pipe is to be drained and abandoned in place.

**ENVIRONMENTAL IMPACTS OF PROPOSED ACTION:** The Stockton Deep Water Ship Channel runs along this portion of the San Joaquin River. The Channel is 35 feet deep, 400 feet and 225 feet wide, and extends 41 miles from the Port of Stockton to Antioch, CA. The San Francisco District is responsible for maintaining both the channel to 35-feet and existing bank protection. The project is located in the counties of Contra Costa, Sacramento and San Joaquin.

Project activities will include placement of an entry and exit pit on either side of the river, staging areas for drilling and support equipment, and providing a corridor for welding and preparation of the supported pipe string prior to pull-back. The entry pit work area is proposed to be 0.41 acre on the northeast side of the river, within an existing golf course. The exit pit work area is proposed at 0.69 acre on the southwest side of the river within the East Bay Municipal Utility District (East Bay MUD) utility corridor. The pipe stringing area is proposed at 1,750 feet in length by 75 feet in width (3.01 acres) on the southwest side of the river within East Bay MUD utility corridor and an active agricultural field. No impacts to the San Joaquin River, its banks, or sensitive species and their habitat are anticipated to occur as a result of project activities.

USACE determined there is no suitable habitat for federally listed species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) in the vicinity of the project components. The proposed project components include the HDD entry and exit points and the area 90 feet below the river invert where the pipeline will be installed. Therefore, USACE determined there would be no effects to federally listed species, designated critical habitat, or essential fish habitat under the jurisdiction of the USFWS and/or NMFS.

After an initial review, USACE has determined no eligible or potentially eligible cultural resources may be affected by the proposed project. USACE will initiate consultation with the State Historic Preservation Officer and Native American Tribes under Section 106 of the National Historic Preservation Act, as appropriate.

Upon review of the Section 408 application and other supporting documentation, USACE has made a preliminary determination that the project neither qualifies for a Categorical Exclusion nor requires the preparation of an Environmental Impact Statement for the purposes of NEPA.

**AUTHORITY:** The authority to grant permission for temporary or permanent use, occupation, or alteration of any USACE civil works project is contained in Section 14 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C 408) ("Section 408"). Section 408 authorizes the Secretary of the Army, on the recommendation of the Chief of Engineers, to grant permission for the alteration or occupation or use of a USACE project if the Secretary determines that the activity will not be injurious to the public interest and will not impair the usefulness of the project. The Secretary of Army's authority under Section 408 has been delegated to the USACE, Chief of Engineers. The USACE Chief of Engineers has further delegated the authority to the USACE, Directorate of Civil Works and Division and District Engineers, depending upon the nature of the activity.

**LIMITS OF SECTION 408 AUTHORITY:** A requester has the responsibility to acquire all other permissions or authorizations required by federal, state, and local laws or regulations, including any required permits from the USACE Regulatory Program under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), Section 404 of the

Clean Water Act (33 U.S.C. Section 1344), and/or Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413). In addition, an approval under Section 408 does not grant any property rights or exclusive privileges nor does it authorize any injury to the property or rights of others.

**EVALUATION FACTORS:** The decision whether to grant the requested permission for project alteration under Section 408 will be based on several factors. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. Review of requests for alteration will be reviewed by a USACE technical review team considering the following factors:

1) Impair the Usefulness of the Project Determination. The review team will determine if the proposed alteration would limit the ability of the USACE project to function as authorized, or would compromise or change any authorized project conditions, purposes or outputs. In order for an alteration to be approved, the requester must demonstrate that the alteration does not impair the usefulness of the federally authorized project.

2) Injurious to the Public Interest Determination. Proposed alterations will be reviewed to determine the probable impacts, including cumulative impacts, on the public interest. Factors that may be relevant to the public interest evaluation depend upon the type of USACE project being altered and the nature of the proposed alteration and may include, but are not limited to, such things as conservation, economic development, historic properties, cultural resources, environmental impacts, water supply, water quality, flood hazards, floodplains, residual risk, induced damages, navigation, shore erosion or accretion, and recreation. This evaluation will consider information received from the interested parties, including tribes, agencies, and the public. The benefits that reasonably may be expected to accrue from the proposal must be compared against its reasonably foreseeable detriments. The decision whether to approve an alteration will be determined by the consideration of whether benefits are commensurate with risks and by the net impact of the alteration on the public interest using the public interest factors.

3) Environmental Compliance. A decision on a Section 408 request is a federal action, and therefore subject to the National Environmental Policy Act (NEPA) and other environmental compliance requirements. While USACE is responsible for ensuring environmental compliance, the requester is responsible for providing all information that the San Francisco District identifies as necessary to satisfy all applicable federal laws, executive orders, regulations, policies, and procedures. NEPA and other analysis completed to comply with other environmental statutes (e.g. Endangered Species Act) should be commensurate with the scale and potential effects of the activity that would alter the USACE project. The San Francisco District will work with the requester to determine the requirements, which will be scaled to the likely impacts of the proposed alteration and

should convey the relevant considerations and impacts in a concise and effective manner. The final NEPA analysis will normally address the direct, indirect, and cumulative impacts that result from activities resulting in the temporary or permanent use, occupation, or alteration of any USACE civil works project. The final NEPA analysis will be incorporated in the decision documentation that provides the rationale for issuing or denying a Section 408 permission for the project. The final NEPA analysis and supporting documentation will be on file with the San Francisco District, Operations and Readiness Division.

**PUBLIC INVOLVEMENT:** The purpose of this notice is to solicit comments from the public; federal, state, and local agencies and officials; tribes; and other interested parties regarding the San Joaquin River – LS9 HDD Project, a proposed alteration to an existing federally authorized project. Comments received within 30 days of publication of this notice will be used in the evaluation of potential impacts of the proposed action on important resources and in the evaluation of whether the proposed alteration would be injurious to the public interest and/or would impair the usefulness of the authorized project. Only the specific activities that have the potential to occupy, use or alter the Stockton Deep Water Ship Channel will be evaluated. Please limit comments to the area of the alteration and those adjacent areas that would be directly or indirectly affected by the alteration to the Stockton Deep Water Ship Channel. Please note that all comment letters received are subject to release to the public through the Freedom of Information Act.

**SUBMITTING COMMENTS:** Written comments, referencing 408-SPN-2023-0003 must be submitted to the office listed below on or before November 30, 2023.

Jessica Vargas, 408 Coordinator  
U.S. Army Corps of Engineers, San Francisco District  
Operations and Readiness Division  
450 Golden Gate Avenue, 4<sup>th</sup> Floor, Room 1111  
San Francisco, California 94102-3404

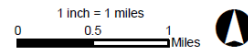
Email: [spn.operationsdivision@usace.army.mil](mailto:spn.operationsdivision@usace.army.mil)


**ATTACHMENTS:** vicinity map, location map, and proposed project footprint in relation to federal project.

2. Location map
3. Project location coordinates: 37.969343, -121.372085

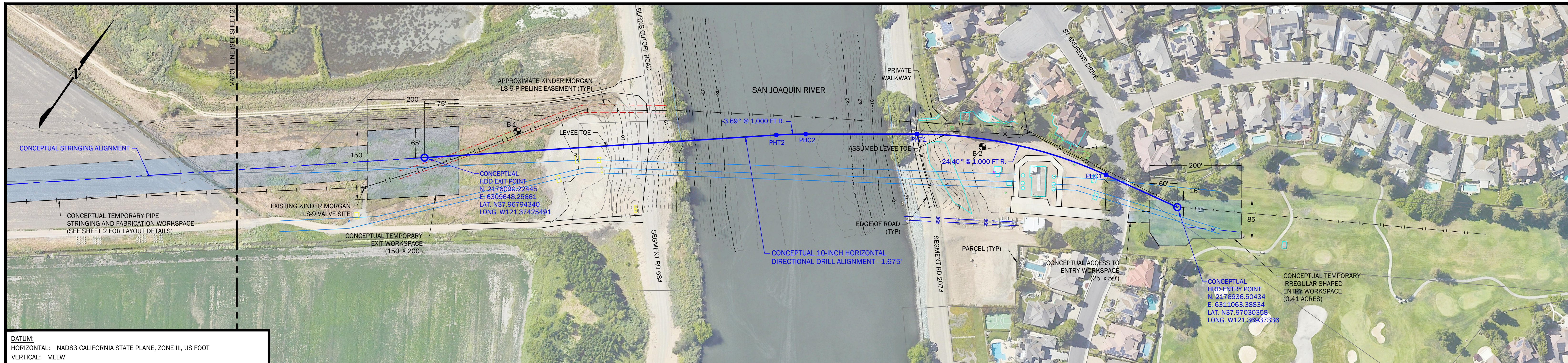


Path: \\sdg1-1s1vgst3554\_NaturalResources\KinderMorgan\_LSS\_SanJoaquinHDD\_1215100514\MXD\Report\figures\Fig1\_RegionalLocation.mxd, lindsay.gutting 5/18/2023



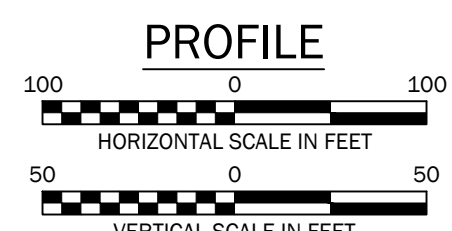
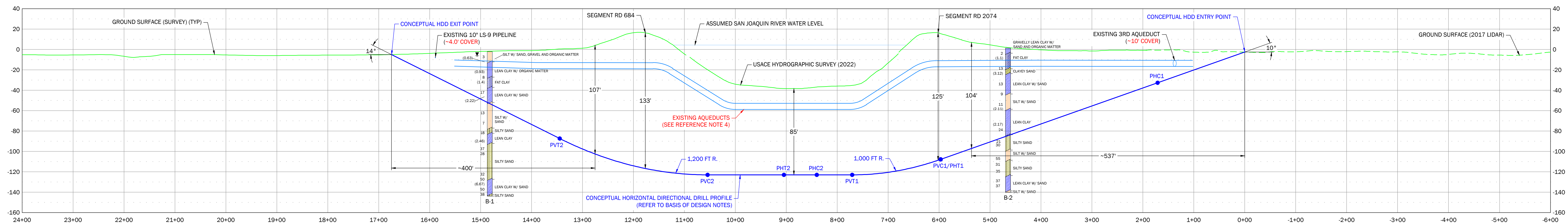
 Project Work Area

**FIGURE 1**  
Regional Location  
LS-9 HDD San Joaquin River  
San Joaquin County, CA



DATUM:  
 HORIZONTAL: NAD83 CALIFORNIA STATE PLANE, ZONE III, US FOOT  
 VERTICAL: MLLW

NOTE: THIS IS A FULL SIZE DRAWING THAT IS INTENDED TO BE PRINTED ON A 24" X 36" SHEET OF PAPER.



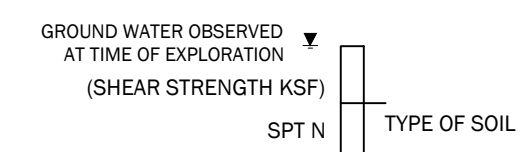
DIRECTIONAL DRILL DATA - ALIGNMENT BASED STATIONING SAN JOAQUIN RIVER HDD		
DESCRIPTION	* STATION (FT)	ELEVATION (FT)
ENTRY @ 10°	0+00.00	-2.50
PHC1 (-24.40° @ 1,000 FT)	1+71.12	-32.67
PHT1	5+97.07	-107.78
PVC1 (10.00° @ 1,000 FT)	5+97.07	-107.78
PVT1	7+70.72	-122.97
PHC2 (-3.69° @ 1,000 FT)	8+40.24	-122.97
PHT2	9+04.62	-122.97
PVC2 (14.00° @ 1,200 FT)	10+54.59	-122.97
PVT2	13+44.89	-87.32
EXIT @ 14°	16+75.00	-5.02
HORIZONTAL DISTANCE = 1,675.00 FT		
DIRECTIONAL DRILL PIPE LENGTH = 1,698.11 FT		

DIRECTIONAL DRILL DATA - STRAIGHT LINE STATIONING SAN JOAQUIN RIVER HDD			
DESCRIPTION	* STATION (FT)	ELEVATION (FT)	RIGHT (FT)
ENTRY @ 10°	0+00.00	-2.50	0.00
PHC1 (-24.40° @ 1,000 FT)	1+60.15	-32.67	60.31
PHT1	5+78.31	-107.78	122.29
PVC1 (10.00° @ 1,000 FT)	5+78.31	-107.78	122.29
PVT1	7+51.58	-122.97	110.88
PHC2 (-3.69° @ 1,000 FT)	8+20.95	-122.97	106.30
PHT2	8+85.01	-122.97	100.01
PVC2 (14.00° @ 1,200 FT)	10+33.71	-122.97	80.54
PVT2	13+21.56	-87.32	42.85
EXIT @ 14°	16+48.87	-5.02	0.00
HORIZONTAL DISTANCE = 1,648.87 FT			
DIRECTIONAL DRILL PIPE LENGTH = 1,698.11 FT			

PILOT HOLE TOLERANCES	
ITEM	* TOLERANCE
ENTRY ANGLE	INCREASE ANGLE UP TO 1° (STEEPER), BUT NO DECREASE IN ANGLE ALLOWED.
ENTRY LOCATION	AS PER COORDINATES PROVIDED BY COMPANY WITH NO CHANGES WITHOUT COMPANY APPROVAL.
EXIT ANGLE	INCREASE ANGLE UP TO 1° (STEEPER) OR DECREASE UP TO 2° (FLATTER).
EXIT LOCATION	UP TO 20 FEET BEYOND OR 10 FEET SHORT OF THE EXIT STAKE. BETWEEN 5 FEET LEFT AND 5 FEET RIGHT OF CENTERLINE.
DEPTH	UP TO 2 FEET ABOVE THE DESIGN DRILL PROFILE ALLOWED. UP TO 10 FEET BELOW THE DESIGN DRILL PROFILE ALLOWED.
ALIGNMENT	UP TO 5 FEET LEFT OR RIGHT OF THE HDD ALIGNMENT WILL BE ALLOWED.
MINIMUM ALLOWABLE 3-JOINT RADIUS	800 FEET

\* THE STATIONING IS BASED ON AN ARBITRARY REFERENCE POINT

- DESIGN BASIS:**
- CARRIER PIPE WILL CONSIST OF 10.75" O.D. X 0.365" W.T., ERW, API-5L X-52 PIPE WITH 14-16 MILS OF FUSION BONDED EPOXY (FBE) AND A MINIMUM OF 40 MILS OF ABRASION RESISTANT OVERLAY (ARO).
  - THE MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) = 1,408 PSIG.
  - THE ASSUMED OPERATING TEMPERATURE = 70° FAHRENHEIT.



- LEGEND:**
- x — FENCE
  - — — EDGE OF WATER
  - — — STRUCTURE
  - — — TREE LINE
  - — — MAJOR CONTOUR - 10' INTERVAL
  - — — MINOR CONTOUR - 2' INTERVAL
  - — — EXISTING LS-9 PIPELINE
  - — — APPROXIMATE LOCATION OF EXISTING LS-9 PIPELINE
  - — — APPROXIMATE LOCATION OF EXISTING LS-9 PIPELINE EASEMENT
  - — — EXISTING AQUEDUCTS
  - — — WATER LINE

NOT FOR CONSTRUCTION

**HDD CONTRACTOR NOTES:**

- CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER KINDER MORGAN SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
- CONTRACTOR IS RESPONSIBLE FOR CALLING CALIFORNIA STATE ONE CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM KINDER MORGAN PRIOR TO INITIATING HDD OPERATIONS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
- PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
- ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
- WORKSPACE: MAXIMUM WORKSPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORKSPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT WORKSPACES REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
- WATER SOURCE: DRILL WATER AND HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
- HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIBER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- SPILL PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
- EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
- INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO KINDER MORGAN FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
- DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE KINDER MORGAN REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE KINDER MORGAN REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
- CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEANUP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.

**REFERENCES:**

- GEOTECHNICAL DATA: BOREHOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.
- GROUND SURFACE LIDAR DATA GENERATED FROM EDITED LIDAR ELEVATION DATA, DOWNLOADED FROM [HTTP://NATIONALMAP.GOV](http://nationalmap.gov). USACE HYDROGRAPHIC SURVEY DOWNLOADED FROM [HTTPS://WWW.ARCGIS.COM/](https://www.arcgis.com/), AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO © 2023, LICENSED TO GEOENGINEERS, INC., IMAGE DATED 03/11/22.
- GROUND SURFACE AND SURVEY DATA PROVIDED BY KINDER MORGAN BY EMAIL ON DECEMBER 13, 2022.
- EXISTING AQUEDUCTS TAKEN FROM EAST BAY MUNICIPAL UTILITY DISTRICT, MOKELUMNE AQUEDUCT RELOCATION AT SAN JOAQUIN RIVER, W2901-03R02-1.PDF.

REFERENCES	
DRAWING NUMBER	REFERENCE DRAWING TITLE
SAN JOAQUIN RIVER	TOPOGRAPHIC SURVEY

REVISIONS						
NO.	DESCRIPTION	DRAWN	DESIGN	CHK'D	APP'D	DATE
A	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	OJC			01/26/23
B	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE			03/08/23
C	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE			04/06/23
D	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	AB	PJE	MAM	04/21/23
E	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE	PJE	MAM	04/28/23
F	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE	PJE		05/01/23
G	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE	PJE		05/10/23

**GEOENGINEERS**

11923 Sunbelt Court  
 Baton Rouge, LA 70809  
 Telephone (225) 293-2460  
 Fax (225) 293-2463

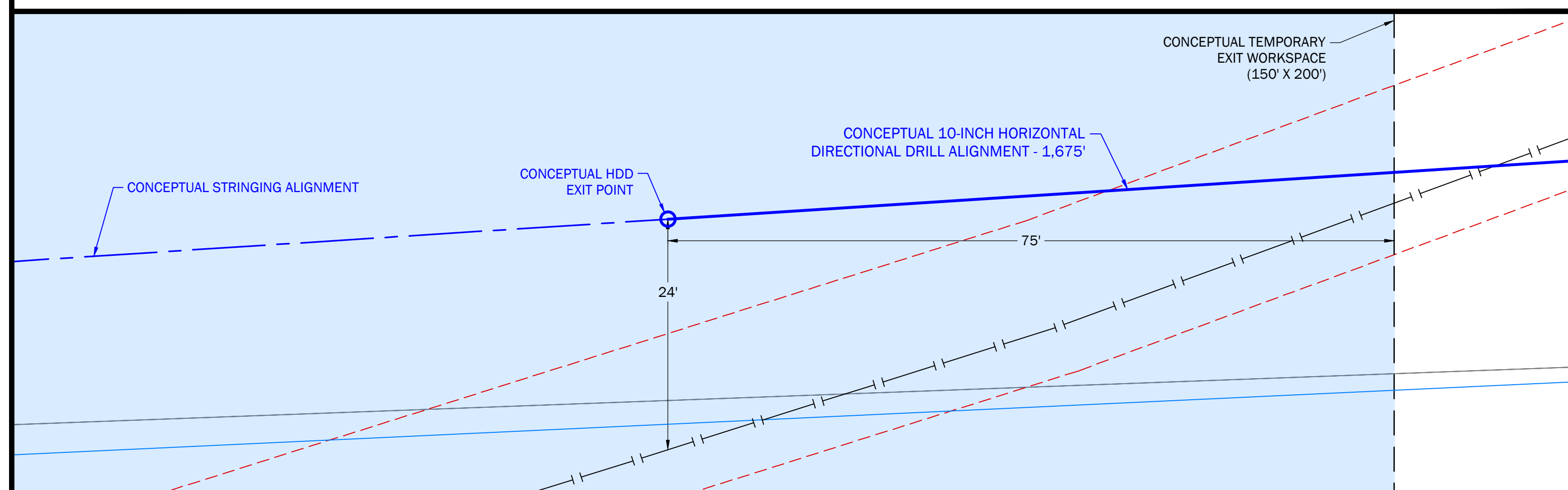
**KINDER MORGAN**  
**INTEGRITY MANAGEMENT PROGRAM LS-9 PROJECT**  
**SAN JOAQUIN RIVER HDD**  
**PLAN AND PROFILE**  
**SAN JOAQUIN COUNTY, CALIFORNIA**

Project No. 09552-078-00  
 Drawing No.  
 Sheet 1 of 2

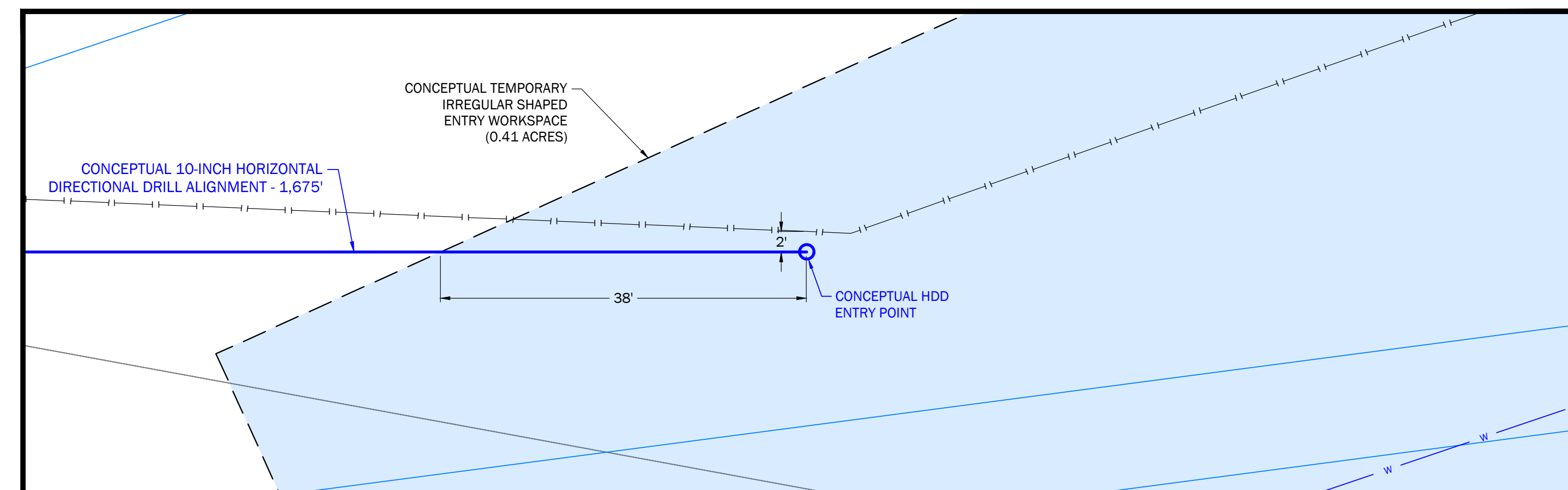


DATUM:  
 HORIZONTAL: NAD83 CALIFORNIA STATE PLANE, ZONE III, US FOOT  
 VERTICAL: MLLW

NOTE: THIS IS A FULL SIZE DRAWING THAT IS INTENDED TO BE PRINTED ON A 24" X 36" SHEET OF PAPER.



EXIT DETAIL  
 SCALE IN FEET



ENTRY DETAIL  
 SCALE IN FEET

**NOT FOR CONSTRUCTION**

- LEGEND**
- BORING LOCATION
  - EXISTING LS-9 PIPELINE
  - APPROXIMATE LOCATION OF EXISTING LS-9 PIPELINE
  - APPROXIMATE LOCATION OF EXISTING LS-9 PIPELINE EASEMENT
  - EXISTING AQUEDUCTS
  - WATER LINE
  - FENCE
  - EDGE OF WATER
  - STRUCTURE
  - TRELLINE
  - MAJOR CONTOUR - 10' INTERVAL
  - MINOR CONTOUR - 2' INTERVAL

- HDD CONTRACTOR NOTES:**
- ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
- REFERENCES:**
- GROUND SURFACE LIDAR DATA GENERATED FROM EDITED LIDAR ELEVATION DATA, DOWNLOADED FROM [HTTP://NATIONALMAP.GOV](http://nationalmap.gov), AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO © 2023, LICENSED TO GEOENGINEERS, INC., IMAGE DATED 03/11/22.
  - GROUND SURFACE AND SURVEY DATA PROVIDED BY KINDER MORGAN BY EMAIL ON DECEMBER 13, 2022.

REFERENCES		REVISIONS						
DRAWING NUMBER	REFERENCE DRAWING TITLE	NO.	DESCRIPTION	DRAWN	DESIGN	CHK'D	APP'D	DATE
SAN JOAQUIN RIVER	TOPOGRAPHIC SURVEY	A	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	OJC			01/26/23
		B	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE			03/08/23
		C	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE			04/06/23
		D	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	AB	PJE	MAM	04/21/23
		E	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE	PJE	MAM	04/28/23
		F	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE	PJE		05/01/23
		G	PRELIMINARY: NOT FOR CONSTRUCTION	BTL	PJE	PJE		05/10/23

**GEOENGINEERS**

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**KINDER MORGAN**  
 INTEGRITY MANAGEMENT PROGRAM LS-9 PROJECT  
 SAN JOAQUIN RIVER HDD  
 STRINGING WORKSPACE / DETAILS  
 SAN JOAQUIN COUNTY, CALIFORNIA

Project No. 09552-078-00  
 Drawing No.  
 Sheet 2 of 2