Draft HC Constructability Technical Memorandum

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Subject:	Constructability Analysis for Conveyance Facilities Task Order No. 2

1.0 Executive Summary

[Text to be provided at a later date.]

2.0 Introduction

The Sites Reservoir Project (Project) consists of a large reservoir, ancillary roads, and conveyance facilities near Maxwell, California. The Site Joint Power Authority (Authority) decided to segregate the design of these facilities into two segments. The first, Segment H Reservoir (HR), includes design of the reservoir features (including several dams and inlet/outlet (I/O) tunnels at Golden Gate Dam) and relocation of roads displaced by the reservoir. The second segment, Segment H Conveyance (HC), includes improvements to: the two existing diversion canals from the Sacramento River to the project area (Tehama-Colusa Canal [TCC] and Glenn-Colusa Irrigation District [GCID] Main Canal); regulating reservoirs (existing Funks Reservoir and a new Terminal Regulating Reservoir); two pumping generating plants (PGP) and their respective substations; electrical interconnection transmission lines; large-diameter pipelines from each PGP to Sites Reservoir; and a large-diameter pipeline to convey water from the TCC to the Colusa Basin Drain (CBD) or Sacramento River near Dunnigan, California.

Detailed descriptions of each facility are provided in the next section. An overall site plan of the project area is provided on Figure 1.

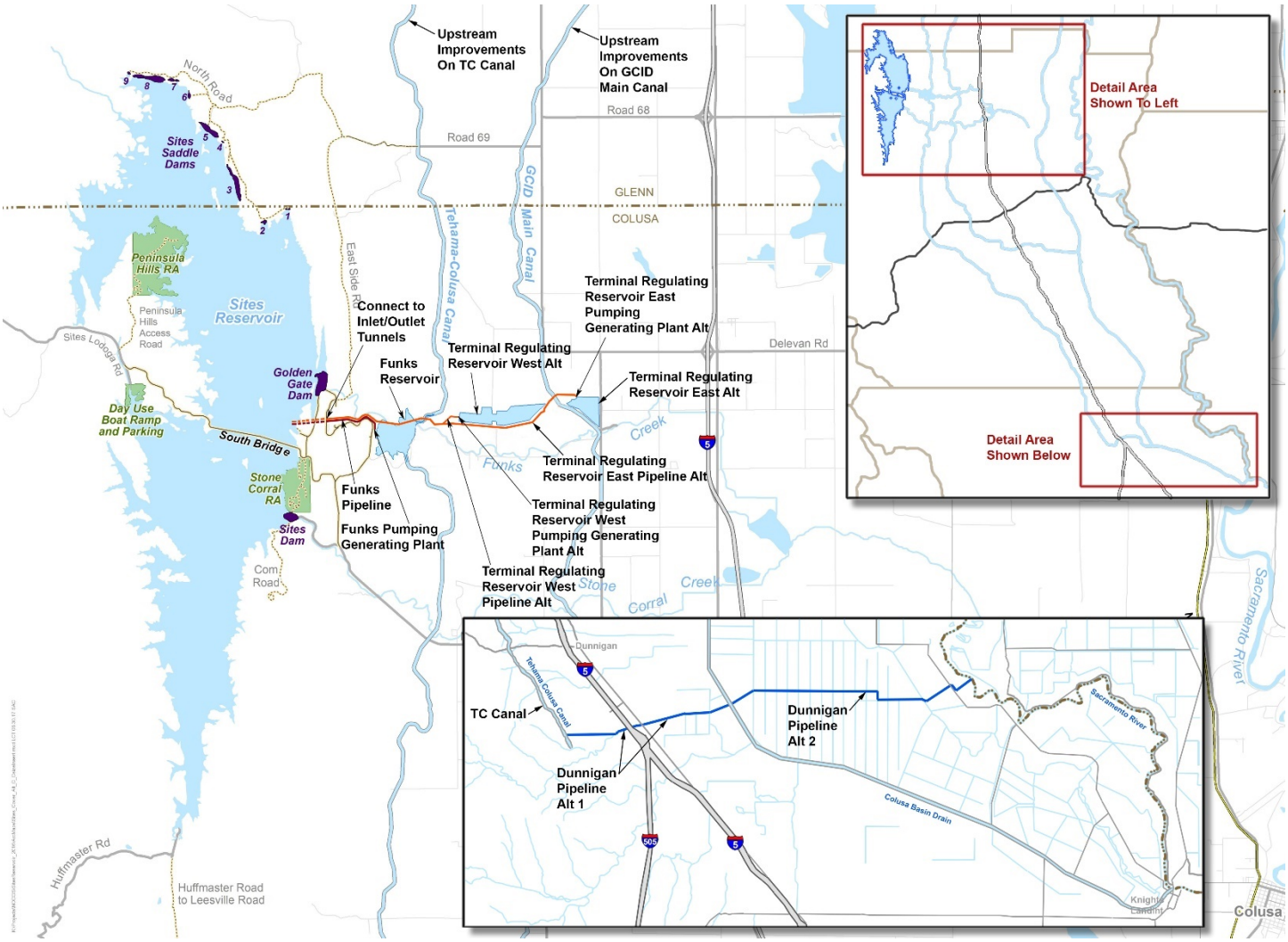


Figure 1: Project Area Site Plan

2.1 General Description of Facilities

Following is a list of the individual new facilities and existing facilities that require improvements:

- Improvements to the Tehama-Colusa Canal Authority (TCCA) Red Bluff Pumping Plant on the Sacramento River
- GCID canal improvements upstream of the Terminal Regulating Reservoir (TRR)
- TRR-East Alternative
- TRR-West Alternative
- TRR PGP with respective substation
- TRR pipelines
- Funks Reservoir – sediment removal
- Funks PGP with respective substation
- Funks pipelines
- Western Area Power Administration (WAPA) or Pacific Gas and Electric (PG&E) substation/switchyard

- Power transmission lines
- Dunnigan Pipeline (Alternatives 1 and 2)
- Administration and operations building
- Maintenance and storage building
- Access roads

2.1.1 Improvements to the TCCA Red Bluff Pumping Plant

The Red Bluff Diversion is located on the Sacramento River in Red Bluff, California. The facility includes a 2,500 cubic feet per second (cfs) capacity, 1,180-foot-long fish screen structure, forebay, pumping plant (current capacity 2,000 cfs), electrical switchyard, and a 660-foot-long access bridge, canal, and siphon under Red Bank Creek, to deliver water from the Sacramento River into the TCC and Corning Canal. This facility was constructed and put into operation in October 2012. The pumping plant was designed to accommodate the Sites Project. The plant includes space to add two additional 250 cfs 600-horsepower pumping units, bringing the total pumping capacity to 2,500 cfs.

2.1.2 GCID Main Canal Improvements

The GCID Main Canal delivers water from the Sacramento River to water users along its route, from its diversion point approximately 5 miles northwest of Hamilton City to southeast of the City of Williams. The canal is a 65-mile-long, unlined, earthen channel, with capacity varying from 3,000 cfs at the upstream end to 300 cfs at the southern terminus. Water conveyed by the canal is pumped by the Hamilton City Main Pump Station into the GCID Main Canal.

Improvements to the GCID Main Canal will include a new 3,000 cfs headworks structure just downstream of the Hamilton City Diversion, two new siphon structures (Willow Creek and Walker Creek), modifications to a railroad siphon at Willows, canal earthwork, and some canal bank gravel road improvements. The need for replacing the siphons and railroad crossing will be determined after a canal hydraulic model and condition assessment are completed, which is anticipated to be in Spring 2021.

2.1.3 TRR

This is a new reservoir that will be hydraulically connected to the GCID Main Canal, about 3 miles east of Funks Reservoir and just upstream of the Funks Creek Siphon at milepost 41.3 on the GCID Main Canal. The footprint of the TRR will be approximately 130 acres, with a storage volume of approximately 600 acre-feet. The TRR will also include gates to control water flow in and out of the GCID Main Canal. There are two alternative locations for the TRR: one on the eastern side of the GCID Main Canal (TRR-East) and one on the western side of the GCID Main Canal (TRR-West).

2.1.4 TRR PGP

This is a PGP that will be used to pump water from the TRR to the Sites Reservoir. This facility will also include hydroelectric turbines to generate electricity when flow is released from Sites Reservoir to the TRR and GCID Main Canal. As part of this PGP facility, there will also be an energy-dissipation facility to allow releases back to the TRR as backup to the hydroelectric turbine facilities. The pumping plant will have a capacity of 1,800 cfs; the generating plant will have a capacity of 1,000 cfs.

2.1.5 TRR Pipelines

These are two, parallel, 12-foot-diameter pipelines used to convey water between the TRR PGP and the Sites Reservoir. These pipelines will connect from the piping manifold at TRR PGP to the downstream side of the two proposed 23-foot-diameter tunnels connected to the Site Reservoir I/O structure. The approximate length of these pipelines for TRR-East is 4.4 miles (23,200 feet) each. The approximate length of these pipelines for TRR-West is 2.5 miles(13,000 feet) each. Just downstream of the piping manifold that connects the TRR

pipelines with the two I/O tunnels, there is a 24-inch-diameter environmental water pipeline that is approximately 2,550 feet long and discharges into Funks Creek.

2.1.6 Funks Reservoir

The U.S. Bureau of Reclamation (Reclamation) constructed the Funks Reservoir in the mid-1970s, with the intent of providing operational flexibility for the TCC. There are check structures on the TCC just upstream and downstream of the reservoir. The TCC is located about 1 mile east of the proposed Sites Reservoir. At the time of construction, the reservoir had a useable capacity of 1,170 acre-feet between operating levels of 199.5 and 205.2 feet elevation, and 1,080 acre-feet of inactive storage below elevation 199.5 feet, for a total capacity of 2,250 acre-feet. However, the addition of sediment from Funks Creek and the TCC have likely reduced the total storage volume. Additionally, a cofferdam will be constructed within Funks Reservoir to facilitate construction of the TRR pipelines. The resulting storage volume reductions will be offset by sediment removal and excavation where storage capacity can be regained. The spillway has a capacity of 2,500 cfs. The Project will remove accumulated sediment to recapture the design storage volume.

2.1.7 Funks PGP

This is a PGP that will be used to pump water from Funks Reservoir to the Sites Reservoir. This facility will also include hydroelectric turbines to generate electricity when flow is released from Sites Reservoir to Funks Reservoir and, ultimately, to the TCC. Part of this PGP facility will be an energy-dissipation facility that will allow releases back to Funks Reservoir as backup to the hydroelectric turbine facilities. The pumping plant will have a capacity of 2,100 cfs; the generating plant will have a capacity of 2,000 cfs.

2.1.8 Funks Pipelines

These are 2 parallel, 12-foot-diameter pipelines used to convey water between the Funks PGP and the Sites Reservoir. These pipelines will connect from the piping manifold at Funks PGP to the downstream side of the 2 proposed, 23-foot-diameter, tunnels connected to the Site Reservoir I/O structure. The approximate lengths of these pipelines are 1 mile (5,200 feet) each.

2.1.9 Dunnigan Pipeline

The Dunnigan pipeline consists of either a 9-foot-diameter or 10.5-foot-diameter pipeline that will be used to release water from the TCC to the Sacramento River. The concept is to release flow from Sites Reservoir to Funks Reservoir, where the flow will then go south about 40 miles to near the end of the TCC. At this point, flow will be diverted into the Dunnigan pipeline, where flow will head either to the CBD, which flows to Sacramento River, or directly to the Sacramento River. If the pipeline discharges directly into the Sacramento River, then a portion of the water will also be diverted and discharged in the CBD. Alternative 1 consists of a 9-foot-diameter pipeline that is about 4 miles (20,900 feet) long and discharges into the CBD. Alternative 2 consists of a 10.5-foot-diameter pipeline that is about 9.4 miles (49,500 feet) long and discharges directly into the Sacramento River. WAPA or PG&E Substation/Switchyard.

There are 230 kilovolt (kV) electrical transmission lines running near the proposed project area. Specifically, the WAPA transmission lines run very close to Funks Reservoir in a north-south direction, with a parallel 230 kV line owned by PG&E a few miles east of the WAPA transmission lines. It is anticipated that one of these transmission lines will be connected to provide power for the Project, and receive generated electrical power from the hydroelectric turbines. Switchyards and substations will be needed to provide power to both the TRR and Funks sites.

2.1.10 Electrical Transmission Lines

Electrical transmission lines will be required to connect the existing WAPA or PG&E 230 kV transmission lines to the TRR PGP and the Funks PGP.

2.1.11 Administration and Operations Building

At this time, staffing requirements for operating and maintaining the Sites facilities have not been defined, but an administration and operations building is provided, based on a drawing obtained from Reclamation. This building is anticipated to be next to the Funks PGP.

2.1.12 Maintenance and Storage Building

A building will be required to provide maintenance and storage associated with the Project. A drawing from Reclamation of the building was used in the feasibility design. This building is anticipated to be next to the Funks PGP.

2.1.13 Access Roads

Access to the proposed TRR-East site would likely be from McDermott Road, which lies adjacent to the proposed reservoir. Access to the Funks complex (PGP and reservoir) is currently accomplished using the operations and maintenance road, along the TCC. Access to the proposed TRR-West site would come off the Access to the Funks complex. A new access road will be required that allows larger equipment and year-round access. It is also anticipated that roads will be constructed within the TRR-East or TRR-West and Funks Pipeline easements, not only to provide access to the pipelines and electrical power transmission lines, but also to act as a secondary access road to the project facilities.

2.2 Purpose and Scope

The purpose of this task is to demonstrate that the HC portion of the Project can be constructed with existing technology and availability of construction materials, work force, and equipment. This task includes the following:

- General construction conditions on conveyance activities, including site access, weather and environmental considerations, and staging use
- Characterization of material balance for TRR-East and TRR-West, considering borrow material sources, locations of placement within the TRR and their required volumes, and disposal
- Equipment use tables (including schedule and durations of use)
- Construction sequencing plan, risks, and construction schedule for the facilities within the HC contract (The constructability analysis will demonstrate the ability to provide public benefits by 2030.)
- Work force staff and equipment needs estimated over the construction period, for facilities within the HC contract

2.3 Limitations

The scope of work for this technical memorandum (TM) is restricted to the development of the constructability activities for the Sites Reservoir under the HC contract. Constructability activities for the reservoir facilities are separately considered in a companion TM for the HR contract.

Jacobs represents that our services have been conducted in a manner that is consistent with the standards of care ordinarily applied as the state of practice in the profession, within the limits prescribed by our client.

This TM is intended for the sole use of the Sites Project Authority. The scope of services performed may not be appropriate to satisfy the needs of other users. Any use or reuse of this document or of the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

3.0 Public Interface and Site Safety

3.1 Public Interface and Traffic Routing

Construction of conveyance facilities will involve approximately 6 years of regularly transporting construction equipment and materials on public roadways leading to the site. The anticipated increase in traffic in the rural

area of the Project warrants special planning. The Authority is taking measures for the appropriate conveyance of construction traffic, considering the safety and convenience of the traveling public. Construction access routes to the site have been defined to avoid the community of Maxwell.

Objectives of the traffic handling strategy will be: avoiding the comingling the traveling public with construction activities, avoiding public interface with heavy off-road equipment, and minimizing public interface with other construction equipment required on public roadways.

Construction access figures are provided in Appendix A.

3.2 Site Safety

The contractor is responsible for means and methods to complete the work safely. The contractor also is required to provide for public safety and safe access for inspection and to Authority employees.

California Code of Regulations (CCR), Title 8 and California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) will have overall jurisdiction regarding project safety, including tunneling. Additionally, the interconnected utility (WAPA or PG&E) Health and Safety Standards and Protocols will be included in the works for the contractor to follow and implement.

Work around construction equipment requires special precautions and the contractor will be required to provide and maintain equipment in accordance with CCR Title 8.

4.0 General Considerations

4.1 Procurement and Work Packages

Procurement packages should divide the work in a manner that considers market conditions, resource availability, and bonding, and is conducive to concurrent construction of conveyance facilities. The construction procurement strategy and program should also recognize the need for participation from large, national, and international contractors with adequate resources to complete the anticipated work. The procurement strategy should consider contractor prequalification and proposals, as necessary, to provide for contracting with constructors who are qualified for the work involved; the strategy should anticipate adequate time in the procurement schedule.

For this constructability analysis, and considering the site arrangement, contractor resources, and work type, potential contract packages are anticipated as follows:

- Design-bid-build (traditional) contracts:
  - TCCA Red Bluff Pumping Plant improvements
  - GCID Main Canal improvements
  - TRR Alternatives
    - TRR-East
      - Contract 1: Ground improvement (cement deep soil mixing [CDSM]), also includes haul roads, GCID Canal bridge, material handling, stockpile
      - Contract 2: PGP and reservoir earthwork, also includes base liner, spillway, I/O works, GCID Canal plug
    - TRR-West
      - Contract 1: Earthwork (reservoir excavations), also includes haul roads, surface water diversion, stockpile (Note: Because this earthwork does not have to be done all at one time or any particular time, this contract can be broken into multiple contracts and/or can be part of HR Reservoir contract[s] to optimize material usage)
      - Contract 2: PGP and I/O works, also includes reservoir base liners, tunnels between main and extension reservoirs, existing canal lateral relocation, GCID Canal plug

  - Funks Reservoir
    - Contract 1: Dredging, also includes haul roads, surface water diversion (including Funks Creek), material handling, dewatering, stockpile
    - Contract 2: PGP and reservoir earthwork, includes Funks Creek diversion, approach channel excavation, temporary cofferdams
- Design-Build Contracts:
  - TRR/Funks pipelines
  - Dunnigan pipeline Alternative1 or 2
  - Transmission power lines
  - Electrical substations
  - Interconnection substation for WAPA or PG&E

4.2 Site Access

4.2.1 Improvements to the TCCA Red Bluff Pumping Plant

Site access plan and details for the GCID Main Canal upgrade locations are provided on the figures in Appendix A.

4.2.2 GCID Main Canal Improvements Area

Site access plan and details for the GCID Main Canal improvement locations are provided on the figures in Appendix A.

4.2.3 Funks and TRR Area

The proposed Funks PGP and TRR PGP sites are located in Colusa County, about 7 miles west of Maxwell, California. Access is shown on the figures in Appendix A.

Some roadway improvements will be required within the Funks area. The Funks PGP site will be accessed via a 30-foot-wide asphalt, concrete-paved, road from Maxwell Sites Road to the south. Existing gravel and roads will be improved to be 30 feet wide, with asphalt concrete surfacing for the southern access; these roads will be relocated through the PGP site. A 30-foot-wide gravel bypass road may be provided to the west of the site. On the northern side of the site, the existing dirt road will be improved to be a 30-foot-wide gravel road that will follow the existing road alignment until it reaches the TRR pipeline. At that location, a new 30-foot-wide access road will be built alongside the Funks and TRR pipelines to the connection with the Sites tunnels.

Most of the proposed Funks PGP site is in a Federal Emergency Management Agency (FEMA) Area of Minimal Flood Hazard, Zone X, but a portion of the existing gravel road to the northwest of the PGP site and adjacent to the existing creek is located within a FEMA Special Hazard Flood Area without Base Flood Elevation, Zone A. This portion may need to be raised, if all-season access from that direction will be required.

The proposed TRR-East is located in Colusa County, east of the GCID Main Canal, north of Funks Creek, and just West of McDermott Road. The site will be accessed via a maximum 30-foot-wide, asphalt concrete, paved road from McDermott Road. Paved parking will be provided near the pumping generating plant.

The proposed TRR-East site is located within a designated FEMA Special Flood Hazard Areas, Zone A, Without Based Flood Elevation. A base flood elevation will need to be determined prior to project approval.

The proposed TRR-West is located in Colusa County, west of the GCID Main Canal, east of Funks Reservoir, and north of Funks Creek. The site will be accessed via an all-weather gravel road off Funks Reservoir. Paved parking will be provided near the PGP.

The proposed TRR-West site is not located within a flood zone. (Rude check with B.Chelonis)

4.2.4 Dunnigan Pipeline Area

Site access plans and details for the Dunnigan pipeline Alternatives 1 and 2 are on the figures in Appendix A.

4.3 Weather Considerations

Wet weather may affect construction activities, although not significantly. Potential impacts may occur for a few specific work components, as detailed in the following paragraphs.

Wet weather has potential to delay the placement of the welded geomembrane liner on the cofferdams at Funks Reservoir. This activity is to be performed during the drawdown of the reservoir during the TCC Canal non-operational period, from December to March. The liner needs to be heat-welded together and will not seal if it is wet. In rainy weather, time-consuming drying could delay completion. Alternatively, rain shelters can be used to avoid such delays.

Both the TRR-East and TRR-West reservoir options involve I/O connections to the GCID Main Canal, with this construction to be performed within the GCID Main Canal non-operational window (January through February). Moving heavy equipment around during times that are too wet can cause delays and other construction challenges.

Stormwater control and stream diversions (particularly Funks Creek) will need to be handled in accordance with the Project's stormwater pollution prevention plan during construction activities.

Wet weather will have an impact on the construction of the Dunnigan pipeline, Alternatives 1 and 2, once the pipelines are east of the Highway (Hwy) 99 and railroad crossing. This area has silty/clay soils that make it very difficult for pipeline construction during extended wet weather.

4.4 Environmental Impacts and Impacts on Construction

It is beyond the scope of work for this TM to provide a detailed evaluation of environmental impacts resulting from construction; these impacts are addressed by others. Project planning will need to consider protection of species, such as nesting birds. A strategy of brush and tree clearing or netting of trees prior to nesting season could be employed to deter nesting birds, which otherwise could impact construction. Giant garter snake habitat is present along the Dunnigan pipeline; work adjacent to creeks and drains will need to be considered as well.

Dust control measures, similar to those employed on similar civil construction works, will be implemented. These will include gravel plating of haul roads, use of dust suppressants or surfactants on haul roads, water applied to haul roads, spray bars and dust catchment systems on aggregate processing equipment and batch plants, and other measures. Stockpiles and other open sources of fugitive dust will likely require temporary seeding. Air monitoring stations will be used.

4.5 Geotechnical Considerations

All of the planned conveyance facilities are considered constructable, using standard construction procedures and current geotechnical engineering practices.

4.5.1 TRR Alternatives

4.5.1.1 TRR-East

TRR-East features include embankment berms, canal I/O works, and a bridge over the GCID Main Canal. An important geotechnical consideration prior to the construction of TRR-East embankments involves ground improvement activities. Previous explorations within the footprint of the reservoir indicate adverse subsurface conditions that may be susceptible to liquefaction, lateral spreading, and ground settlement. To address these concerns, ground improvement will be performed and is anticipated to consist of CDSM methods.

Prior to mobilizing equipment for bridge construction, current site conditions along the eastern and western edges of the GCID Main Canal and available access routes should be considered. Limited available workspace for construction activities (such as pile driving and pile cap construction) and permissible access roads

crossing the GCID Main Canal may limit mobilization or delay construction. Equipment mobilization should be initiated based on anticipated construction sequencing to the extent feasible.

Because of shallow or seasonal perched groundwater conditions, temporary dewatering may be required during excavation across the base of the reservoir. Groundwater removed during TRR-East construction activities would be managed and stored in accordance with state and local regulations.

Embankment berms associated with TRR-East will be under Division of Safety of Dams' (DSOD's) jurisdictional oversight. Anticipated turnaround times for required DSOD permitting and inspections must be accounted for to facilitate appropriate construction scheduling and help avoid delays in construction.

4.5.1.2 TRR-West

TRR-West features include two reservoir excavations (main and extension), the canal I/O works, and the extension reservoir connecting tunnel.

One of the geotechnical considerations includes high-cut slopes that could experience groundwater seepage, seasonal surface water erosion, and sediment transport. These considerations are routine and can be managed by implementing best management practices, as described in the Project's stormwater pollution prevention plan.

Excavations for each reservoir and the I/O works will produce topographically low areas that will concentrate groundwater, surface water, and construction water during construction activities. This concentration of water is considered routine and can be managed by a site-specific pumping plan to prevent conflicts with construction activities.

TRR-West features also cross existing corridor facilities (including overhead electrical transmission, underground gas lines, the GCID Main Canal, and a local landowner canal lateral). These crossings should be considered during construction to facilitate appropriate scheduling time for permitting, depth and distance to associated feature, and operating closure constraints (for the GCID Main Canal). In particular, the tunnel connecting the reservoirs crosses below the gas lines and considerations must be made to ensure tunnel roof stability and ground control (see Section 3.9 for more details).

Unlike TRR-East, TRR-West does not fall within DSOD's jurisdiction (because no dam will be constructed), which will remove the time associated with DSOD permitting and inspections.

4.5.2 Funks

Funks Reservoir features include sediment removal by dredging, temporary cofferdams construction and removal, and PGP approach channel excavation. Geotechnical considerations include soil characteristics of the dredge material to be reused as a material for construction.

For the dredged sediments to be used throughout the Project, they will need to be dewatered. Some soils from dredging are anticipated to be predominantly finer material and, therefore, likely to require more time to dry enough to be used for construction. Suitable materials for the temporary cofferdams are proposed to come from both the dredging and other areas of excavation. The cofferdam material will need to be sourced prior to the cofferdam construction, which would occur in the December through February non-operational period of Funk/TCC.

4.5.3 Other Conveyance Features

Other conveyance features that involve earthwork and geotechnical considerations, and for which limited geotechnical information is currently available include:

- The GCID Main Canal improvements. Geotechnical considerations include structural stability and uplift for the main head gate and siphon structures, and dewatering at those locations so the structures can be built in the dry.

- The TRR-East pipelines. Geotechnical considerations include dewatering the pipe trench near the GCID Main Canal, crossing the GCID Main Canal, pipe trench stability, tunneling/crossing the TCC and crossing the northern portion of Funks Reservoir.
- The TRR-West pipelines. Geotechnical considerations include pipe trench stability, tunneling/crossing the TCC, and crossing the northern portion of Funks Reservoir.
- The Funks pipelines. Geotechnical consideration include pipe trench stability and dewatering the trench along Funks Creek.
- The Dunnigan pipeline Alternative 1. Geotechnical considerations include pipe trench stability, tunneling under Interstate 5, Hwy 99, and the railroad; and dewatering the pipe trench as it heads east of the Hwy 99.
- The Dunnigan pipeline Alternative 2. Geotechnical considerations include the same as Dunnigan pipeline Alternative 1 and tunneling under the CBD and associated east levee (State Levee), crossing State Hwy 45, and going over the Sacramento River Levee.

The TCCA Red Bluff Pumping Plant improvements do not require any geotechnical considerations because the improvements are to an existing facility that involves no earthwork.

All of these features may be in close proximity of existing features near each location. Schedules should be planned and coordinated accordingly to protect existing features, and allow for operating windows, permitting, and associated approvals to avoid schedule delays.

4.6 Existing Utilities

4.6.1 TCC

The TCC is a concrete-lined canal that needs to remain in service year round except for a 6- to 8-week period in December through early February. The dual TRR-West or the TRR-East pipelines will cross the canal at one location close to the entrance of the TCC to Funks Reservoir. Depending on time of year and further design, the dual 12-foot-diameter pipelines could be installed either by tunneling underneath the TCC or open-cutting the TCC.

4.6.2 GCID Main Canal

The GCID Main Canal is an earthen canal without any liner. It needs to remain in service year round, except for a 6- to 8-week period in December through early February. The dual TRR-East pipelines will cross the canal just west of TRR-East. It is expected that the dual 12-foot-diameter pipelines could be installed by open-cutting the canal.

The connection of the GCID Main Canal to either TRR-East or TRR-West would be one of the last construction items for either reservoir project.

4.6.3 PG&E

PG&E has two 230 kV transmission lines, running north to south, through the project site between Funks Reservoir and the GCID Main Canal. In PG&E's same right-of-way corridor, they also have two high-pressure gas lines. Coordination with PG&E will have to occur during design to be able to cross their facilities with the TRR-East pipelines, or the TRR-West reservoir.

In addition, coordination will need to occur with PG& E if the decision is made to connect to their 230 kV transmission lines for obtaining electricity for the PGPs and for transmitting power generated by the PGPs back to the electrical grid. This coordination would include: establishing the point of interconnection (POI); designing the modification of existing structures and conductors for crossing transmission lines; designing, constructing, and starting up and commissioning the substation prior to energization; and sequencing with the pumping station power energizing and startup schedule with the utility.

4.6.4 WAPA

WAPA has one 230 kV and one 500 kV transmission line running north to south through the project site, between Funks Reservoir and the GCID Main Canal. Coordination with WAPA will have to occur during design to be able to cross under their facilities with the TRR-East or TRR-West pipelines.

In addition, coordination will need to occur with WAPA if the decision is made to connect to their 230 kV transmission lines to obtain electricity for the PGPs and transmit power generated by the PGPs back to the electrical grid. This coordination would include: establishing the POI; designing the modification of existing structures and conductors for crossing transmission lines; designing, constructing, and starting up and commissioning of the substation prior to energization; and sequencing with the pumping station power energizing and startup schedule with the utility.

4.6.5 CBD

The CBD is an existing earth drainage feature that is unlined that has a state levee on its eastern bank. The CBD at the location of project facilities (River Mile 10.0) is full of water year round. The levee is maintained by numerous entities. The CBD itself is not maintained by anyone. The CBD water surface elevation is controlled by the Department of Water Resources at the Knights Landing Outfall Gates structure.

Design and construction of the CBD outlet structure for Dunnigan pipeline Alternatives 1 and 2, and tunneling under the CBD and east levee for Alternative 2 will need to be coordinated with local landowners, Reclamation District No. 108, and the Department of Water Resources.

4.7 Site Staging and Use

Staging areas will be required near each of the conveyance facilities being constructed. The staging areas will be developed by the construction contractors for various activities, including: construction office facilities, material laydown areas, and equipment storage and maintenance. Each of the facilities has one or more proposed staging areas identified.

4.7.1 Red Bluff Pumping Plant Improvements

There are two staging areas that can be used at the existing pumping plant, as shown on the figures in Appendix A.

4.7.2 GCID Main Canal Improvements

Staging areas are located at the main headgate structure, the Willows siphon, the Walker Creek siphon, and the railroad siphon.

4.7.3 TRR

4.7.3.1 TRR-East

Equipment laydown and staging areas for TRR-East will be primarily situated inside the footprint of the reservoir and I/O works areas. One temporary (approximately 0-acre) stockpile area will be located west of TRR-East and the GCID Canal and can be used for staging during construction activities. Relatively limited staging areas and site access routes should be considered as construction progresses to facilitate availability of adequate storage and laydown capacity and to avoid potential schedule delays.

4.7.3.2 TRR-West

Staging for TRR-West construction of the main reservoir, extension reservoir, and I/O works will be within the footprint of these same features. Because staging will occur in the same areas as construction, site access routes and laydown areas should be considered as construction progresses to avoid potential schedule delays. One temporary (approximately 20-acre) stockpile area will be located north of TRR-West extension reservoir

and can be used for staging during construction activities. The staging area for the extension reservoir connecting tunnel will be within the footprint of the main and extension reservoirs because this tunnel will be constructed after the reservoirs are excavated.

4.7.4 Funks

Staging areas at Funks Reservoir will be needed for the dredging equipment, the materials needed to build the PGP, and the liner material for the cofferdams. The PGP footprint and areas identified nearby will be used for staging of heavy equipment and construction materials used for dredging and during the cofferdam construction. Once the PGP construction begins, the staging area will be moved slightly up the Funks Creek valley. Many of the stockpile areas identified for Funks Reservoir materials would have dual purposes as staging and laydown areas throughout the life of the Project.

4.7.5 Remaining Conveyance Facilities

For the TRR-East pipelines, TRR-West pipelines, Funks pipelines, Dunnigan pipelines Alternatives 1 and 2, staging areas will be developed along the length of pipelines within the designated construction easements, at the contractor's discretion. The electrical transmission lines will be installed after the TRR pipeline.

4.8 Construction Water

Average construction water use is expected to be approximately 75,000 gallons per day, primarily related to the pipelines for compaction and dust control. Total water use for the Project associated with the HC facilities is roughly calculated to be approximately 35 million gallons.

Water used for construction would be transferred to the facility footprints from the GCID Main Canal by trucks and/or pipes. The pipes are not expected to be buried, except at crossings of heavily trafficked areas, where they may be installed several feet below ground surface.

The Funks PGP and associated facilities would obtain water from the GCID Main Canal. The TRR PGP and associated facilities would obtain water from the GCID Main Canal. The Dunnigan pipeline Alternative 1 would obtain water from wells or dewatering efforts required during pipeline construction.

4.9 Tunneling

Between the TRR pipeline, Funks pipeline, and Dunnigan pipeline, seven tunnels will be constructed across the Project. Four proposed, 12-foot-diameter, tunnels (two for TRR-East and two for Funks) will be used to cross the GCID Main Canal and the TCC Canal. The remaining three tunnels are for the Dunnigan pipeline: for Alternative 1, 10.5-foot casings will be required, first under Interstate 5 and then Hwy 99 and railroad; and for Alternative 2 the tunnel locations and size will be the same at Alternative 1, with an additional tunnel of the same size to cross under the CBD.

For TRR-West there are four proposed, 12-foot-diameter tunnels, to connect the two reservoirs (main and extension) that make up the TRR-West reservoir. The tunnels will go under the PG&E transmission towers and two PG&E high-pressure gas pipelines.

All tunneling features will follow standard guidelines.

5.0 Site Materials and Use

The primary objective for materials will be to use excavated materials for fill, as a direct or single haul-and-place activity. The potential for double handling exists because the timing and suitability of materials will vary, as well as the coordination of where and when materials are needed as fill. Most excavation and materials processing activities can be sequenced early in the overall Project to maintain flexibility for efficient reuse of earthen materials (for example, as random fill). A less preferred option would be permanent disposal on site. The least preferred option would be off-haul of materials for disposal. Disposal quantities should be small if more beneficial project site areas are identified for reuse. The project team will further develop the ultimate

dispositions of these materials to optimize the reuse of material for the overall Sites project, as discussed in the following subsections for each TRR option or Funks Reservoir modification.

Haul roads are needed to perform the construction activities in and around the reservoirs. Haul routes will be designated to accommodate construction traffic and avoid public use. Within the project limits, the routes may be separated between light traffic use and heavy equipment hauling for site safety.

5.1 TRR

5.1.1 TRR-East

Construction of the TRR-East reservoir embankments will require that fill be obtained from borrow sources located elsewhere within the Sites project (that is, not from within the TRR-East footprint). Construction of TRR-East also will produce excess material that is unsuitable as embankment fill and must be hauled away from the TRR-East site.

The CDSM ground improvement under the reservoir embankments will consist of a large, treated, volume of in-place material mixing, which also will generate a significant volume of fluid spoils (soil, cement, and water). These CDSM spoils are unlikely to be acceptable as reservoir embankment fill and, therefore, will be hauled away from the TRR-East site. CDSM spoils may be acceptable after dewatering for non-engineered fill uses, such as for pipeline trench backfill in certain zones above the pipelines (zones not exposed). CDSM spoils to be reused will be hauled to a stockpile location for dewatering prior to reuse. Some CDSM spoils may be unsuitable for reuse and have to be disposed of either on site (elsewhere within the Sites project) or hauled offsite for disposal.

Development of the TRR-East reservoir will require excavation of surficial soils and underlying soils to a depth of 2 feet across the TRR-East reservoir footprint. These soils are anticipated to be unsuitable for use as reservoir embankment fill and, therefore, will be hauled away from the TRR-East site. As for the CDSM spoils, some of the soils excavated across the TR- East reservoir footprint may be acceptable for non-engineered fill uses, and some may need to be disposed of on site or hauled offsite for disposal.

To construct the TRR-East reservoir embankments, fill will need to be obtained from borrow sources located elsewhere within the Sites project. The primary source of fill for the embankments will be the excavations for the TRR pipelines trenches. The pipeline trenches will produce significant quantities of materials that will be suitable as embankment fill; these materials will be hauled from the pipeline trench excavations to the TRR-East site.

5.1.2 TRR-West

The TRR-West option (if selected) will produce very large quantities of materials from the excavations that are needed to create the reservoir. As much as 8 to 9 million cubic yards of material may be produced from these excavations. Very little of this material will be needed as fill at the TRR-West location. Therefore, these large quantities of material will be hauled from the TRR-West site to other locations on the Sites project for use as fill.

The TRR-West option will be implemented with the Option 2 zoning configuration of the main dams for Sites Reservoir (that is, the Option 2 configuration for Golden Gate Dam and for Sites Dam). The Option 2 configuration for the main dams requires significantly greater volumes of Zone 4 random fill than does the Option 1 configuration. While for the Option 1 configuration of the main dams, excess Zone 4 material is available, the Option 2 configuration does not have such excess material. For the Option 2 configuration alternative, the materials excavated for TRR-West would supply the additional Zone 4 material that is needed for the main dams.

The vast majority of the material that would be excavated for development of the TRR-West option will be suitable for beneficial reuse as general fill on the overall Project. This reuse will include placement as Zone 4 random fill at the dams, as fill for the large embankments of Sites-Lodoga Road, as fill for quarry restoration, or as other general fill. Topsoil stripped from the TRR-West footprint will not be suitable as general fill; a stockpile area is located adjacent to TRR-West to allow temporary storage of topsoil strippings.

5.2 Funks

Funks Reservoir modifications will involve predominantly excavations by dredging in over-water areas or conventional earthmoving when the reservoir pool is lowered. These activities will produce large quantities of materials that will not be used as fill at Funks and will be used elsewhere on the Sites project. Approximately 740,000 bank cubic yards of materials will be excavated by hydraulic dredging and conventional excavation from Funk Reservoir. These materials will be placed in stockpile areas for dewatering, to prepare these materials for later beneficial reuse on the Project. Likely, some quantity of dredged material will be unsuitable for reuse as engineered fill and may need to be disposed of onsite or offsite. At least 80 percent of materials are estimated to be suitable for reuse on the Project after dewatering. After dewatering, potential uses of these materials may include pipeline backfill, Zone 4 random fill (the stockpiles will be close to Golden Gate Dam), Sites-Lodoga Road embankment fill, quarry restoration, or other general fill.

5.3 General Concrete

It is anticipated that there will be a concrete batch plant onsite to supply concrete for the PGPs and other facilities. At this point, it is unknown if excavated site materials will be available or if aggregate will be hauled in from offsite. This will be verified through future geotechnical investigations. It is anticipated that concrete low strength material will be used as backfill for the large-diameter pipes. This material can potentially made from onsite materials mixed with hauled-in cement. This will be verified with future geotechnical investigations.

6.0 Equipment and Workforce Use Tables (Needs work – equipment and labor into tables by bid package)

6.1 Labor Force, Project Labor Agreements

Providing for a sufficient labor force for a project of this magnitude poses challenge, but is manageable. Much of the labor force is anticipated to come from the surrounding region, with contractors also bringing some skilled work force from other areas. While Colusa County is rural, with a population of about 20,000, the surrounding counties, including Sacramento and Yolo counties, have a regional population of over 2 million. It may be advantageous to consider project labor agreements with trade unions as a means of accommodating the project labor requirements, as well as avoiding labor disputes. A project labor agreement, well in advance of the need for craft labor, would provide for established labor rates, benefits, and work rules, as well as stability of the workforce. Unions and contractors will have advance notice in identifying required craft labor and training programs. Further, project labor agreements will minimize the risk of labor disputes during the course of the work. This strategy has been used successfully on other major civil works projects in California.

6.2 Equipment Needs and Workforce Use

The estimated equipment use tables are included in Appendix B[1]. The approach to estimating the equipment use and limitations, includes the following:

- The equipment use tables are intended to inform the project team of expected equipment type, hours and horsepower, as well as expected labor needed.
- At this point in the Project, the design is at feasibility level. Further design development will determine final quantities, with other factors influencing final equipment use.
- Various contractors will approach the work differently from each other, and likely differently from the design engineer's interpretation of equipment use and staffing.

[1] Appendix B will be provided at a later date.

- The equipment use tables are an approximation of the equipment, crews, and production needed to complete the Project. This is somewhat dictated by a lack of design details, although some details and quantities have been extrapolated based on best industry practices and expectations.
- Site geologic study and interpretation is incomplete. Future geotechnical work will affect final design and quantities.
- Procurement strategies and outcomes, including contract packages, will have some impact on the use and timing of equipment and crews.
- Travel speeds for vehicles: The average speed for pickup trucks and supervisory vehicles will be about 20 miles per hour (mph), but will vary with individual duties and activities.
- Travel speeds for offsite hauling vehicles: For offsite hauling vehicles (such as those making deliveries to the job), an average of 40 mph was used from points of origination to delivery sites and returns to points of origin.
- Travel speeds for onsite hauling vehicles: The team used average speeds for hauling calculations. For onsite hauling vehicles, such as those used to haul excavated or processed material, speeds averaged 15 mph.
- Travel speeds for support equipment: Equipment such as water trucks and graders have travel speeds of about 15 mph. Operational speeds while performing work will be about 3 to 5 mph.
- No off-road, mobile, electric-powered equipment is anticipated at this time.
- Electric power generation is included in the equipment use tables, as applicable for the various aggregate processing and batch plant needs. Some of this equipment could use direct line power, if such line power is available to the site on time and is economical.
- The average workforce and staffing have been evaluated. Workforce and staff will vary during the course of the Project, as work activities ramp-up, peak, and taper off toward completion.
- Regarding staff and workforce commute, it is anticipated that much of the workforce will come from the surrounding area, including the greater Sacramento area. The average daily commute is expected to be approximately 70 miles, or about 1.5 hours, each way.
- Start and end dates reflect the preliminary construction schedule produced as a separate document. The labor needs and equipment presented in the tables demonstrate the overall level of effort to complete each task within that timeframe. Schedule allowances have been made for ramp-up and resource leveling during that timeframe, including allowances for double-shift work, as well as multiple crews (as needed) to maintain the construction schedule.

The actual daily equipment and workforce use will vary based on what activities are being performed across the Project at any given time.

6.3 Equipment on Roads

Daily construction traffic will consist of trucks hauling equipment and materials to and from the worksites and the daily arrival and departure of construction workers. Construction traffic on local roadways will include dump trucks, bottom-dump trucks, concrete trucks, flatbed trucks for delivering construction equipment and permanent project equipment, pickups, water trucks, equipment maintenance vehicles, and other delivery trucks. Dump trucks would be used for earth moving and clearing, removal of excavated material, and import of other structural and paving materials. Other delivery trucks would deliver construction equipment, job trailer items, concrete-forming materials, reinforcing steel and structural steel, piping materials, foundation piles and sheet piling, sand and gravel from offsite sources, new facility equipment, and other construction-related deliveries. Construction equipment/materials would not be permitted to pass through the community of Maxwell on the Maxwell Sites Road.

7.0 Construction Sequencing Plan and Construction Schedule

7.1 General Plan and Approach

The first activities for project construction will include permitting and obtaining access on roads and real estate. Initial access will also allow for setup of staging, stockpile, office, and shop facilities, as well as mobilization of workforce and resources.

The general sequence of nonroad construction will begin with the Dunnigan pipeline and follow with regulating reservoirs and most associated facilities and pipelines. These facilities will be constructed over several years. Construction of the emergency release structures and substations will be initiated last in the sequence. The recreational areas will be completed generally concurrently with the regulating reservoirs and conveyance complex for a period of 2 years (expected between 2025 and 2027).

Note that construction within 1,000 feet of occupied residences will be restricted between 10:00 p.m. and 7:00 a.m. to eliminate potential noise concerns. Construction in areas beyond 1,000 feet of occupied residents may occur 24 hours a day, 7 days a week.

7.2 Construction Schedule

See Table 1 for the estimated construction schedule on conveyance facilities, including dates for permitting, engineering, and geotechnical investigations. The construction schedule is provided in Appendix C.

Table 1. Estimate Construction Schedule for Conveyance Facilities

Task Name	Duration (days)	Start Date	Finish Date
California Water Commission Award of Funds	0	12/1/23	12/1/23
Determine Engineering Procurement & Delivery Method	120	1/1/22	6/16/22
Sites Board Approval/Notice to Proceed for Phase 3	23	6/1/22	7/1/22
Real Estate Access & Permitting (Geotech & Surveying)	260	7/5/21	7/1/22
Initial Geotech & Surveying	130	7/4/22	12/30/22
Final Geotech Investigation	130	1/2/23	6/30/23
Engineering	867	9/1/22	1/15/25
Conveyance to Sacramento River Construction			
Dunnigan Pipeline – Alternative 1	355	9/26/24	2/4/26
Dunnigan Pipeline – Alternative 2	505	2/13/25	1/20/27
Regulating Reservoirs and Conveyance Construction			
Funks/TRR Pipelines	505	2/13/25	1/20/27
Transmission Powerlines	765	5/22/25	4/26/28
Funks Reservoir	680	5/22/25	12/29/27
Funks Pumping Generating Plant	880	5/22/25	10/4/28
TRR-East Reservoir	780	5/22/25	5/17/28
TRR Pumping Generating Plant	880	5/22/25	10/4/28
Substations	645	3/12/26	8/30/28
Sacramento River Diversion and Conveyance Construction			
Red Bluff Pumping Plan Improvements	560	2/3/25	3/26/27
GCID Improvements	680	5/22/25	12/29/27

7.3 Schedule and Work Hours

A more detailed schedule can be found in Appendix C. Note the following assumptions:

- The construction schedule is calculated on 20 working days per month to account for holidays and weather delays.
- Durations of construction are based on production rates associated with the anticipated equipment types needed for construction.
- Productions and durations are calculated on 10-hour work shifts, accounting for breaks.
- Crews would likely work 6 days per week on critical functions.

7.4 Procurement and Contract Packaging

The construction schedule includes assumptions on procurement and contract packaging on the conveyance facilities listed in Section 3.1.

7.5 Commissioning and Interface with HR Facilities

The HR facilities' schedule must be properly linked to the HC facilities' schedule to reflect the relationships.

Additionally, some access points developed under HC may be needed for tie-in of HR facilities. These logical dependencies should be made once the HR schedule activities are incorporated into the combined construction schedule.

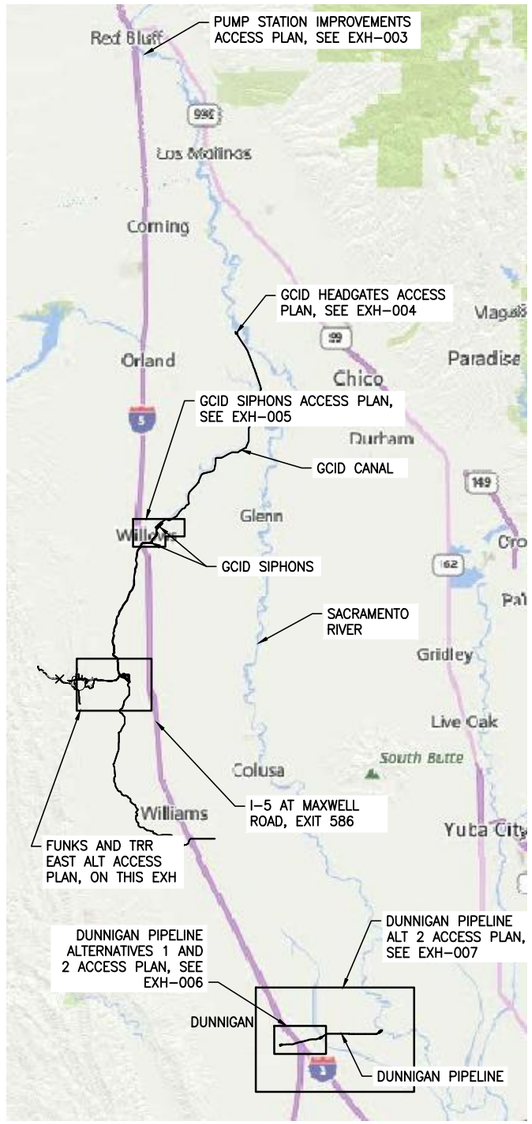
8.0 Conclusions

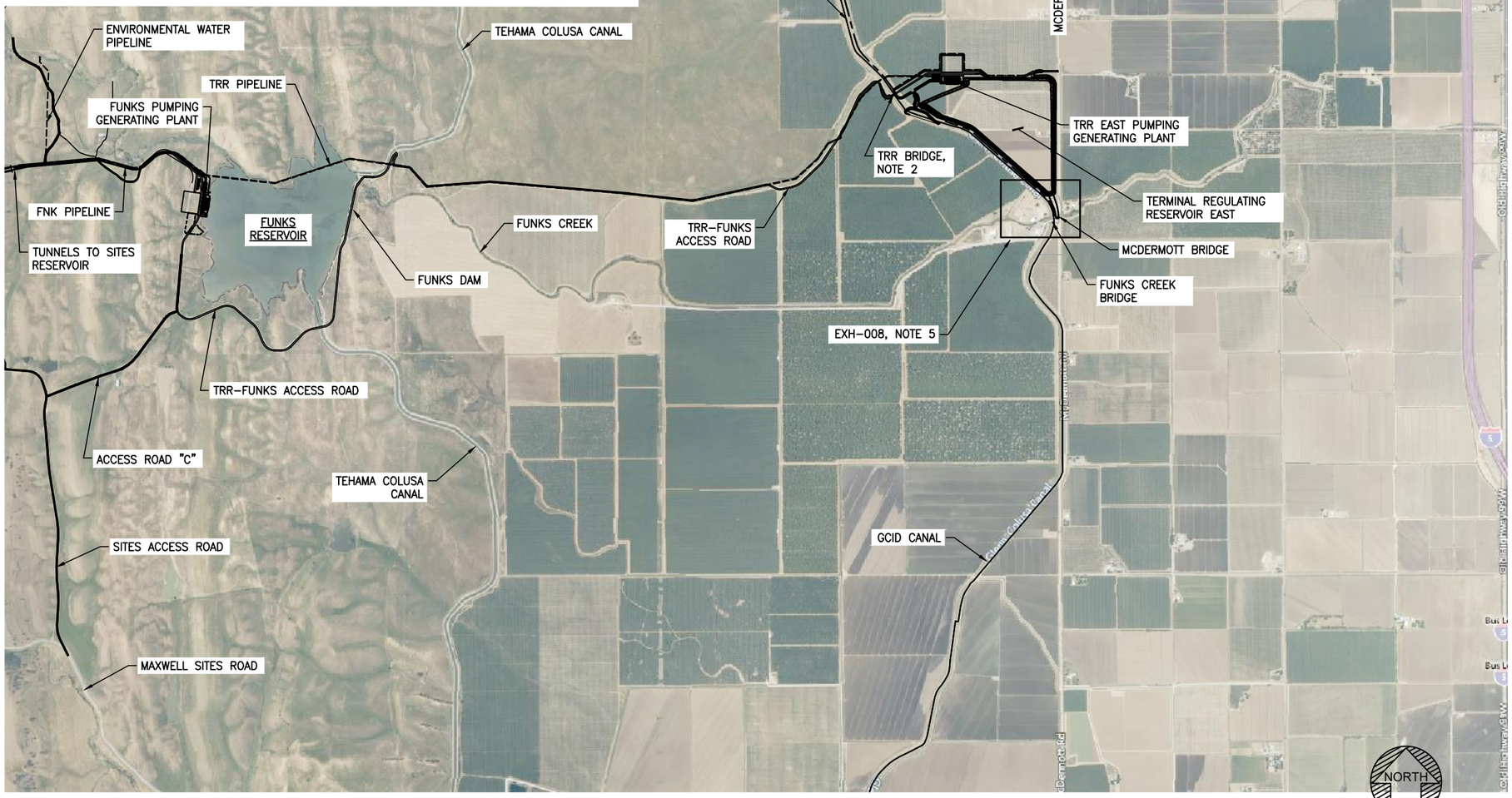
The objective of this TM is to show that the Project can be constructed with existing technology and availability of construction materials, work force, and equipment, and show public benefits by 2029. This study shows that the HR facilities can be constructed by the end of 2030, for a duration of about 6 years, with commissioning in 2030 (together with the HC facilities).

Appendix A
Site Access Plans

SITE ACCESS NOTES

1. FOR MAIN CONSTRUCTION ACCESS TO TRR EAST: EXIT I-5 AT DELEVAN ROAD, EXIT 591. TRAVEL WEST ON DELEVAN ROAD, THEN TURN SOUTH ON MCDERMOTT ROAD. TRAVEL SOUTH ON MCDERMOTT ROAD TO THE TRR EAST SITE ON THE RIGHT.
2. CONSTRUCTION VEHICLES ARE TO USE TRR-FUNKS ACCESS ROAD FOR CONSTRUCTION ACCESS AFTER CONSTRUCTING THE TRR BRIDGE.
3. ALTERNATE ACCESS TO FUNKS RESERVOIR PRIOR TO THE CONSTRUCTION OF THE TRR BRIDGE IS AS FOLLOWS: EXIT I-5 AT DELEVAN ROAD, EXIT 591. TRAVEL WEST ON DELEVAN ROAD, THEN TURN SOUTH ON MCDERMOTT ROAD. TRAVEL SOUTH ON MCDERMOTT ROAD TO MAXWELL SITES ROAD. TURN WEST ON MAXWELL SITES ROAD, THEN TAKE THE SITES ACCESS ROAD TO ACCESS ROAD "C" TO THE TRR-FUNKS ACCESS ROAD TO REACH THE FUNKS PUMPING GENERATING PLANT SITE.
4. DELEVAN BRIDGE IS A PRIVATE ACCESS BRIDGE AND HAS A MAX WEIGHT LIMIT OF XXX TONS.
5. FOR ALTERNATE CONSTRUCTION ACCESS USING PRIVATE BRIDGES ACROSS THE GCID CANAL AND FUNKS CREEK SOUTH OF THE TRR EAST SITE, SEE EXH-008.





NORTH

OVERALL LOCATION PLAN
NTS

DRAFT – PREDECISIONAL WORKING DOCUMENT – FOR DISCUSSION PURPOSES ONLY

FUNKS AND TRR EAST ALT ACCESS PLAN
SCALE: 1" = 1500'

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: B CHELONIS
DRAWN BY: B CHELONIS
CHECKED BY: J SMITH
IN CHARGE: P RUDE
DATE: MARCH 2021

JACOBS
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REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

Sites

SITES RESERVOIR TO 2
OVERALL LOCATION AND ACCESS PLAN TERMINAL REGULATING RESERVOIR EAST ALT

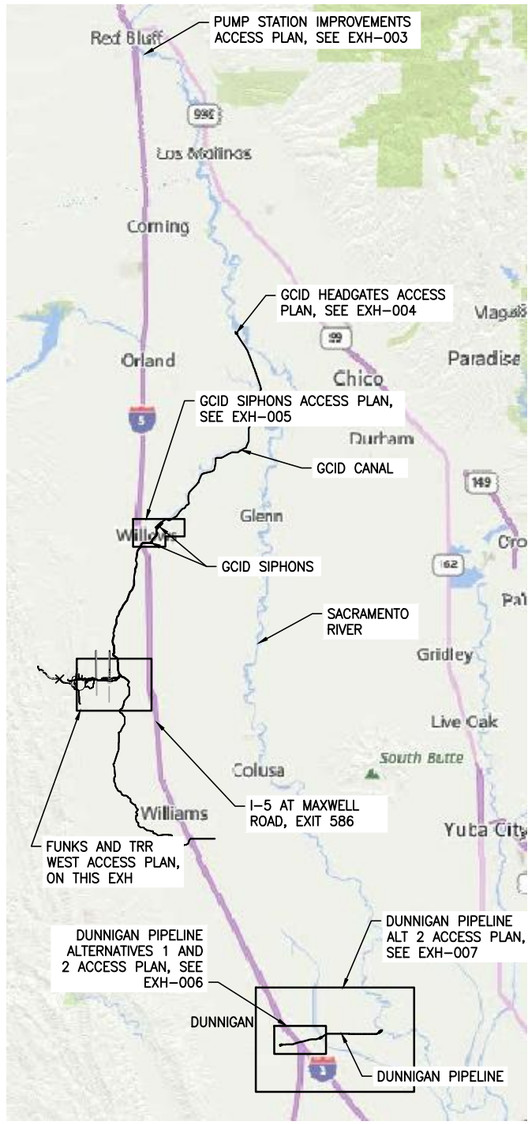
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

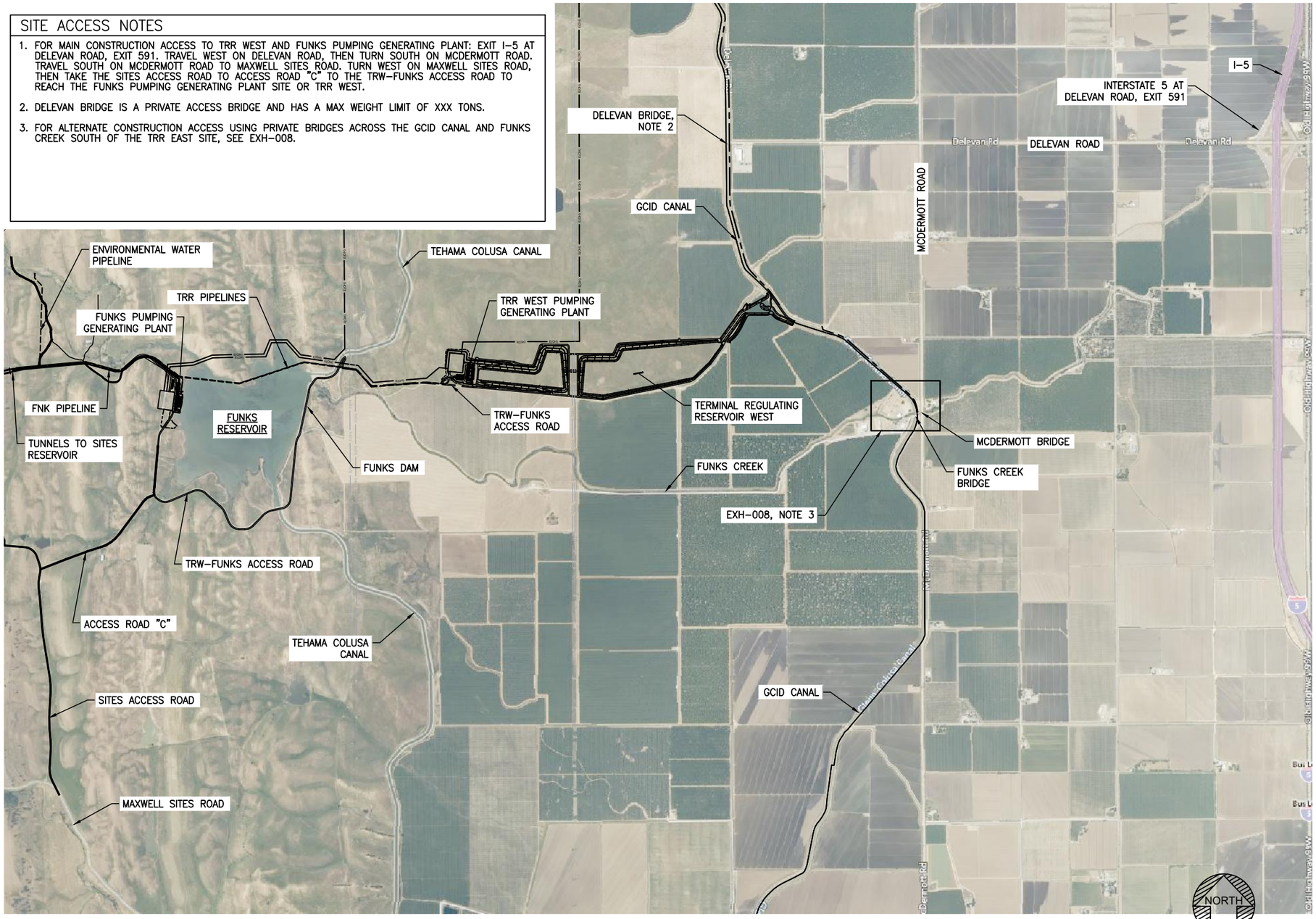
DRAWING NO.
EXH-001

PLOTTED BY:CHELONIS, BECKY/RDD -March 19, 2021-3:44:42 PM
DRAWING: GEN-EXH-001_D3380600.dwg
JACOBS PROJECT # D3880600

SITE ACCESS NOTES

1. FOR MAIN CONSTRUCTION ACCESS TO TRR WEST AND FUNKS PUMPING GENERATING PLANT: EXIT I-5 AT DELEVAN ROAD, EXIT 591. TRAVEL WEST ON DELEVAN ROAD, THEN TURN SOUTH ON MCDERMOTT ROAD. TRAVEL SOUTH ON MCDERMOTT ROAD TO MAXWELL SITES ROAD. TURN WEST ON MAXWELL SITES ROAD, THEN TAKE THE SITES ACCESS ROAD TO ACCESS ROAD "C" TO THE TRW-FUNKS ACCESS ROAD TO REACH THE FUNKS PUMPING GENERATING PLANT SITE OR TRR WEST.
2. DELEVAN BRIDGE IS A PRIVATE ACCESS BRIDGE AND HAS A MAX WEIGHT LIMIT OF XXX TONS.
3. FOR ALTERNATE CONSTRUCTION ACCESS USING PRIVATE BRIDGES ACROSS THE GCID CANAL AND FUNKS CREEK SOUTH OF THE TRR EAST SITE, SEE EXH-008.





NORTH

OVERALL LOCATION PLAN
NTS

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FUNKS AND TRR WEST ALT ACCESS PLAN
SCALE: 1" = 1500'

NORTH

0 1500' 3000'

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: B CHELONIS
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REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

Sites

SITES RESERVOIR TO 2
OVERALL LOCATION AND ACCESS PLAN TERMINAL REGULATING RESERVOIR WEST ALT

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

DRAWING NO.
EXH-002

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

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DRAWING: GEN-EXH-002_D3380600.dwg
JACOBS PROJECT # D3880600

SITE ACCESS NOTES

1. FOR CONSTRUCTION ACCESS TO THE RED BLUFF PUMPING PLANT, EXIT I-5 AT SOUTH MAIN STREET (EXIT 647). TRAVEL SOUTH ON SOUTH MAIN STREET, THEN TURN EAST ON ALTUBE AVENUE. PROCEED TO PUMPING PLANT ON ALTUBE AVENUE AS SHOWN ON THIS DRAWING.

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ACCESS PLAN
SCALE: 1" = 150'

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: B CHELONIS
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REGISTERED PROFESSIONAL ENGINEER – STATE OF CALIFORNIA

Sites

SITES RESERVOIR TO 2
RED BLUFF PUMPING PLANT
ACCESS PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

DRAWING NO.
EXH-003

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

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DRAWING: GEN-EXH-003_D3380600.dwg
JACOBS PROJECT # D3880600

SITE ACCESS NOTES

1. GCID HEADGATES SITE ACCESS ROUTE: EXIT INTERSTATE 5 AT ORLAND, CALIFORNIA STATE HIGHWAY 32 (SR 32), EXIT 619. CONTINUE EAST ON SR 32 TO HAMILTON CITY, THEN TURN NORTH ON CANAL ROAD/COUNTY ROAD 203. TRAVEL NORTH ON CANAL ROAD/COUNTY ROAD 203 TO REACH THE GCID HEADGATES SITE MAIN STAGING AREA ON THE EAST SIDE OF CANAL.
2. TO ACCESS THE SMALLER STAGING AREA ON THE WEST SIDE OF THE GCID HEADGATES STRUCTURE, FROM THE MAIN STAGING AREA, TRAVEL SOUTH ON CANAL ROAD/COUNTY ROAD 203 TO THE ROAD 204 BRIDGE. TURN WEST TO CROSS THE GCID CANAL, THEN TRAVEL NORTH ON ROAD 205 TO REACH THE WEST SIDE OF THE HEADGATES SITE.

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GCID HEADGATES ACCESS PLAN
SCALE: 1" = 30'

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: B CHELONIS
DRAWN BY: B CHELONIS
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DATE: MARCH 2021

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REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

Sites

SITES RESERVOIR TO 2
GCID MAIN CANAL HEADGATES ACCESS PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

DRAWING NO.
EXH–004

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

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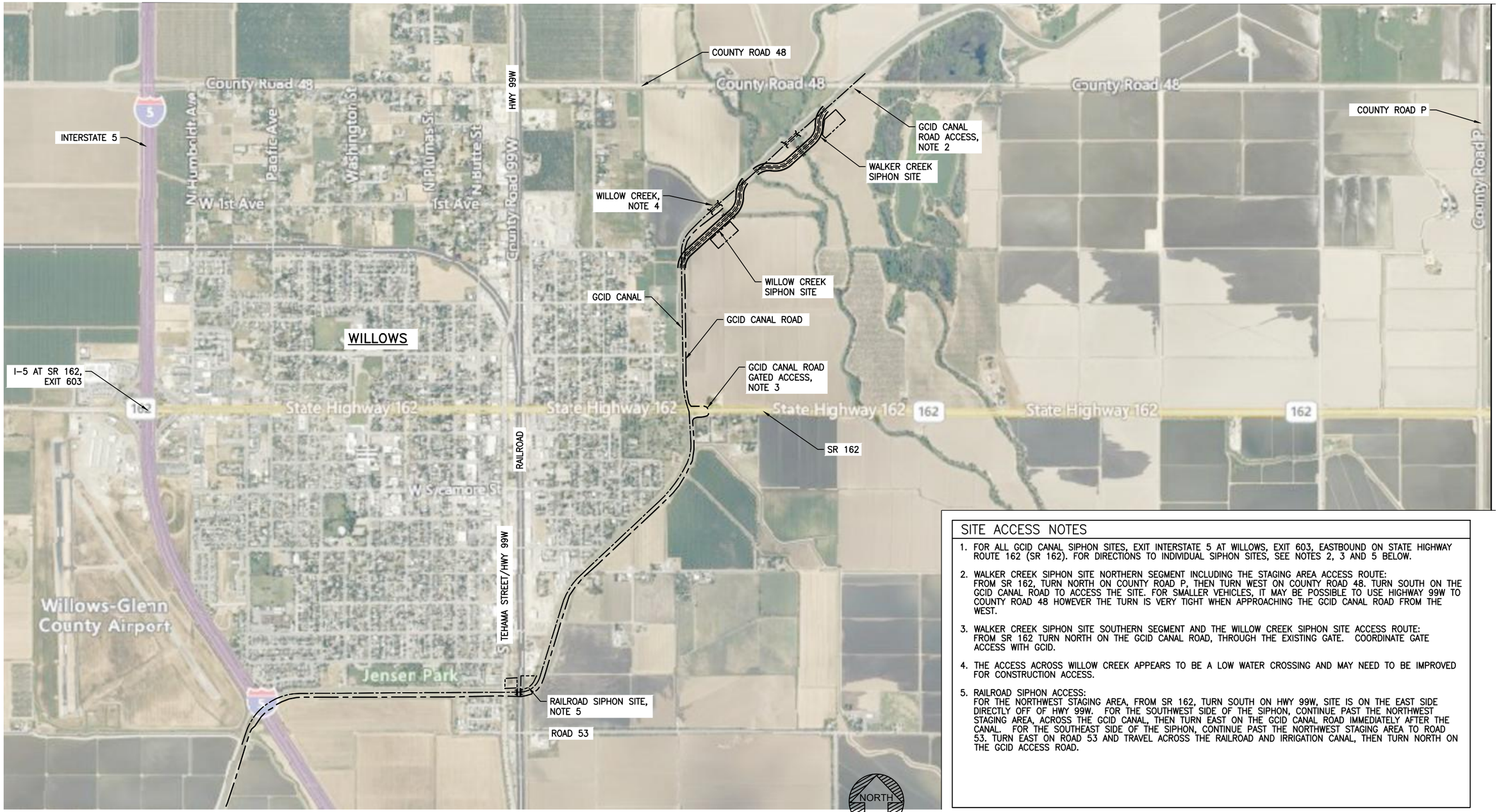
DRAWING: GEN-EXH-004_D3380600.dwg
JACOBS PROJECT # D3880600



SITE ACCESS NOTES

1. FOR ALL GCID CANAL SIPHON SITES, EXIT INTERSTATE 5 AT WILLOWS, EXIT 603, EASTBOUND ON STATE HIGHWAY ROUTE 162 (SR 162). FOR DIRECTIONS TO INDIVIDUAL SIPHON SITES, SEE NOTES 2, 3 AND 5 BELOW.
2. WALKER CREEK SIPHON SITE NORTHERN SEGMENT INCLUDING THE STAGING AREA ACCESS ROUTE: FROM SR 162, TURN NORTH ON COUNTY ROAD P, THEN TURN WEST ON COUNTY ROAD 48. TURN SOUTH ON THE GCID CANAL ROAD TO ACCESS THE SITE. FOR SMALLER VEHICLES, IT MAY BE POSSIBLE TO USE HIGHWAY 99W TO COUNTY ROAD 48 HOWEVER THE TURN IS VERY TIGHT WHEN APPROACHING THE GCID CANAL ROAD FROM THE WEST.
3. WALKER CREEK SIPHON SITE SOUTHERN SEGMENT AND THE WILLOW CREEK SIPHON SITE ACCESS ROUTE: FROM SR 162 TURN NORTH ON THE GCID CANAL ROAD, THROUGH THE EXISTING GATE. COORDINATE GATE ACCESS WITH GCID.
4. THE ACCESS ACROSS WILLOW CREEK APPEARS TO BE A LOW WATER CROSSING AND MAY NEED TO BE IMPROVED FOR CONSTRUCTION ACCESS.
5. RAILROAD SIPHON ACCESS: FOR THE NORTHWEST STAGING AREA, FROM SR 162, TURN SOUTH ON HWY 99W, SITE IS ON THE EAST SIDE DIRECTLY OFF OF HWY 99W. FOR THE SOUTHWEST SIDE OF THE SIPHON, CONTINUE PAST THE NORTHWEST STAGING AREA, ACROSS THE GCID CANAL, THEN TURN EAST ON THE GCID CANAL ROAD IMMEDIATELY AFTER THE CANAL. FOR THE SOUTHEAST SIDE OF THE SIPHON, CONTINUE PAST THE NORTHWEST STAGING AREA TO ROAD 53. TURN EAST ON ROAD 53 AND TRAVEL ACROSS THE RAILROAD AND IRRIGATION CANAL, THEN TURN NORTH ON THE GCID ACCESS ROAD.

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GCID SIPHONS ACCESS PLAN
SCALE: 1" = 800'

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

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DRAWING: GEN-EXH-005_D3380600.dwg
JACOBS PROJECT # D3880600

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: B CHELONIS
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CHECKED BY: J SMITH
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DATE: MARCH 2021

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REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

Sites

SITES RESERVOIR TO 2

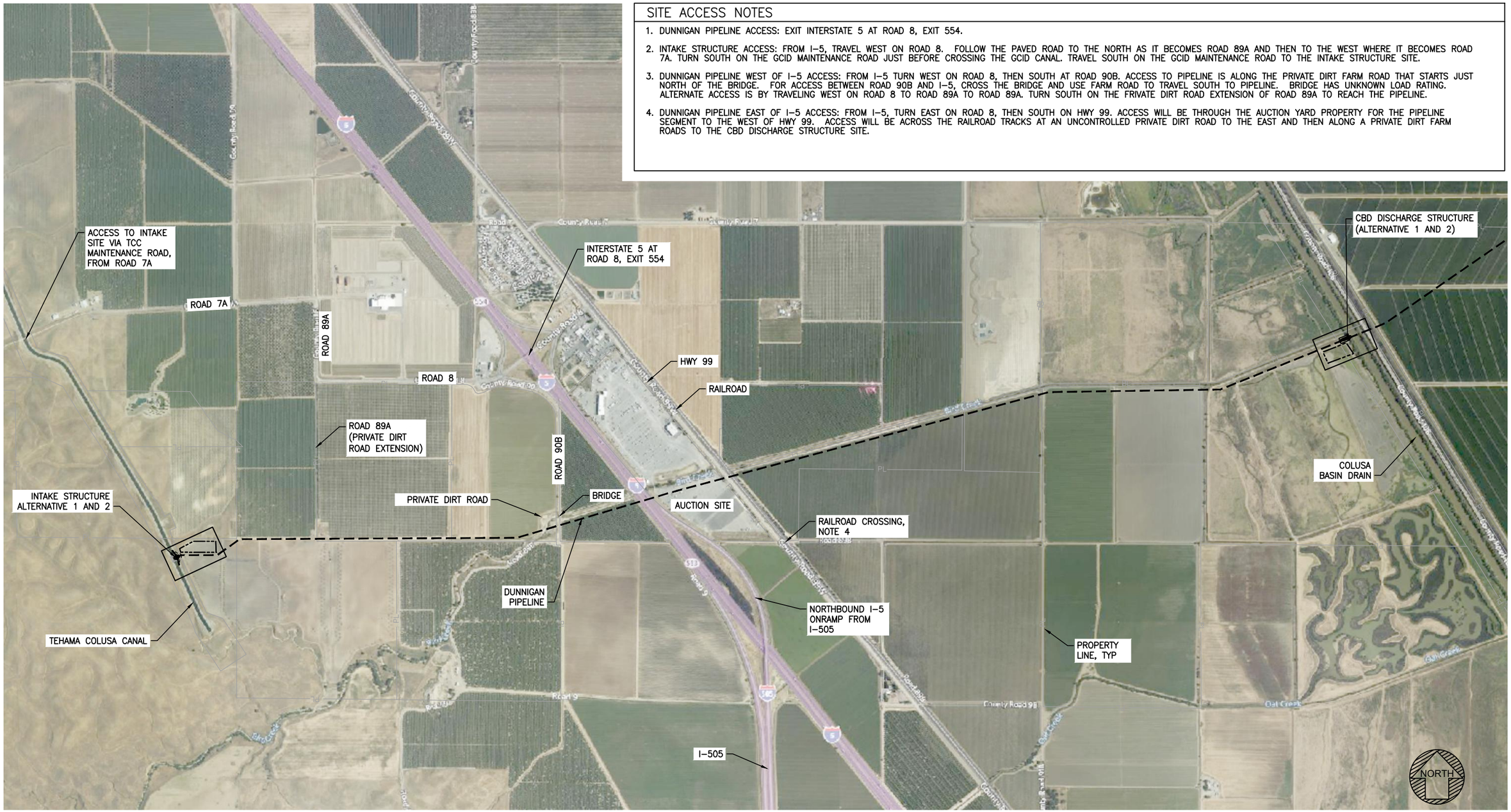
GCID SIPHONS ACCESS PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

DRAWING NO.
EXH-005

SITE ACCESS NOTES

1. DUNNIGAN PIPELINE ACCESS: EXIT INTERSTATE 5 AT ROAD 8, EXIT 554.
2. INTAKE STRUCTURE ACCESS: FROM I-5, TRAVEL WEST ON ROAD 8. FOLLOW THE PAVED ROAD TO THE NORTH AS IT BECOMES ROAD 89A AND THEN TO THE WEST WHERE IT BECOMES ROAD 7A. TURN SOUTH ON THE GCID MAINTENANCE ROAD JUST BEFORE CROSSING THE GCID CANAL. TRAVEL SOUTH ON THE GCID MAINTENANCE ROAD TO THE INTAKE STRUCTURE SITE.
3. DUNNIGAN PIPELINE WEST OF I-5 ACCESS: FROM I-5 TURN WEST ON ROAD 8, THEN SOUTH AT ROAD 90B. ACCESS TO PIPELINE IS ALONG THE PRIVATE DIRT FARM ROAD THAT STARTS JUST NORTH OF THE BRIDGE. FOR ACCESS BETWEEN ROAD 90B AND I-5, CROSS THE BRIDGE AND USE FARM ROAD TO TRAVEL SOUTH TO PIPELINE. BRIDGE HAS UNKNOWN LOAD RATING. ALTERNATE ACCESS IS BY TRAVELING WEST ON ROAD 8 TO ROAD 89A TO ROAD 89A. TURN SOUTH ON THE FRIVATE DIRT ROAD EXTENSION OF ROAD 89A TO REACH THE PIPELINE.
4. DUNNIGAN PIPELINE EAST OF I-5 ACCESS: FROM I-5, TURN EAST ON ROAD 8, THEN SOUTH ON HWY 99. ACCESS WILL BE THROUGH THE AUCTION YARD PROPERTY FOR THE PIPELINE SEGMENT TO THE WEST OF HWY 99. ACCESS WILL BE ACROSS THE RAILROAD TRACKS AT AN UNCONTROLLED PRIVATE DIRT ROAD TO THE EAST AND THEN ALONG A PRIVATE DIRT FARM ROADS TO THE CBD DISCHARGE STRUCTURE SITE.



DRAFT – PREDECISIONAL WORKING DOCUMENT – FOR DISCUSSION PURPOSES ONLY

DUNNIGAN PIPELINE ACCESS PLAN
SCALE: 1" = 800'

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: B CHELONIS
DRAWN BY: B CHELONIS
CHECKED BY: J SMITH
IN CHARGE: P RUDE
DATE: MARCH 2021

JACOBS
2525 AIRPARK DR
REDDING CA, 96001
PHONE: (530) 243-5831

REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

Sites

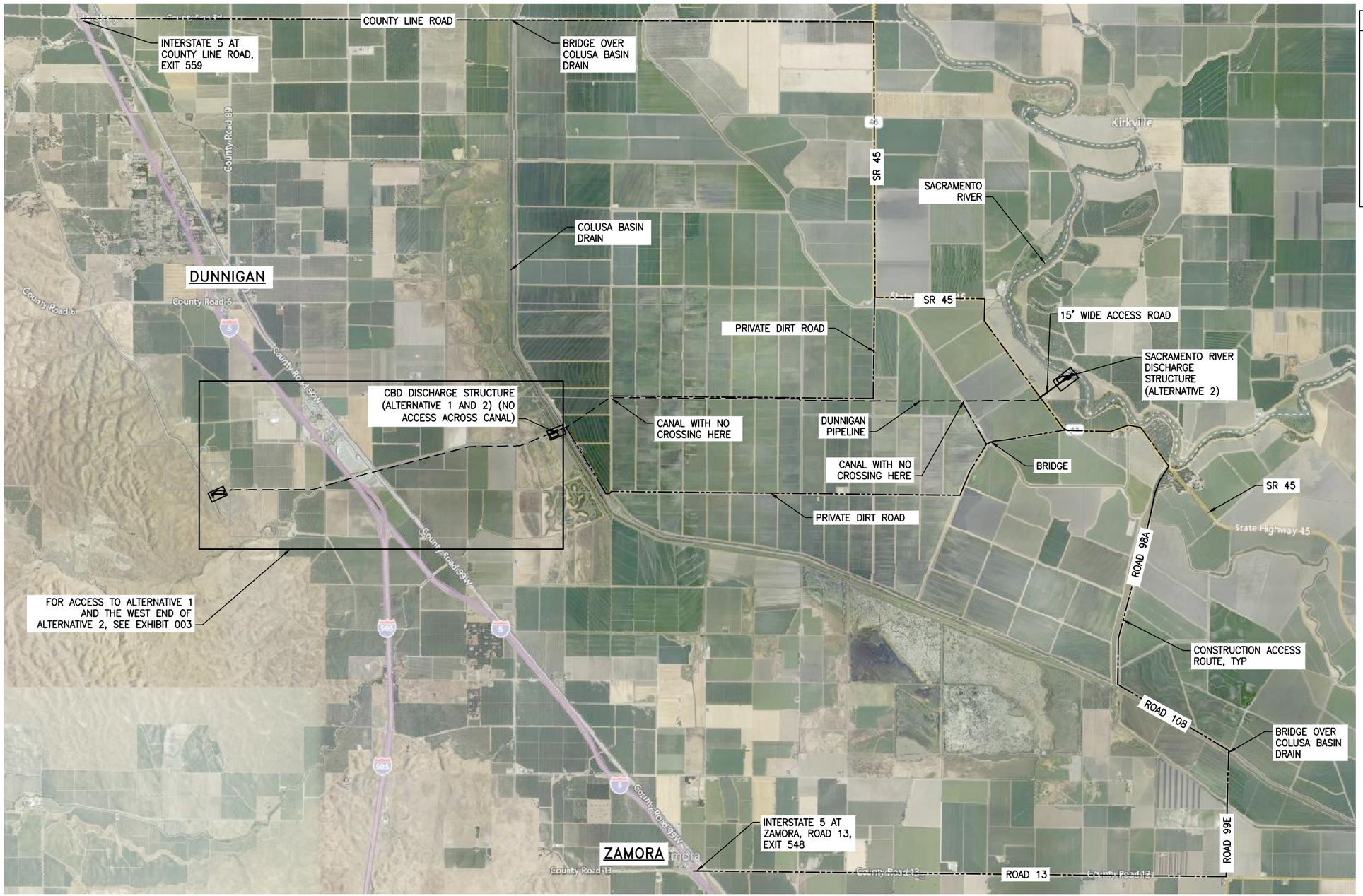
SITES RESERVOIR TO 2
DUNNIGAN PIPELINE
ALTS 1 AND 2 ACCESS PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

DRAWING NO.
EXH-006

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

PLOTTED BY:CHELONIS, BECKY/RDD -March 19, 2021-3:44:42 PM
DRAWING: GEN-EXH-006_D3380600.dwg
JACOBS PROJECT # D3880600



SITE ACCESS NOTES

1. DUNNIGAN PIPELINE ACCESS FROM NORTH: EXIT INTERSTATE 5 AT COUNTY LINE ROAD, EXIT 559. CONTINUE EAST ON COUNTY ROAD, THEN TURN SOUTH ON SR 45. TRAVEL SOUTH ON SR 45 AND THEN PROCEED SOUTH ON PRIVATE DIRT ROAD TO ACCESS THE CENTRAL PORTION OF DUNNIGAN PIPELINE.
2. DUNNIGAN PIPELINE ACCESS FROM THE SOUTH: EXIT INTERSTATE 5 AT ZAMORA, ROAD 13, EXIT 548. CONTINUE EAST ON ROAD 13, THEN TURN NORTH ON ROAD 99E. CROSS THE GCID CANAL BRIDGE, THEN TURN NORTHWEST ON ROAD 108. TURN NORTH ON ROAD 98A AND CONTINUE ON THAT ROAD UNTIL IT INTERSECTS WITH SR 45. TURN NORTH ON SR 45 AND CONTINUE TO ACCESS ROUTES ALONG PRIVATE DIRT ROADS AS SHOWN IN PLAN.

NORTH

0 3000' 6000'

DUNNIGAN PIPELINE ACCESS PLAN
SCALE: 1" = 3000'

DRAFT – PREDECISIONAL WORKING DOCUMENT – FOR DISCUSSION PURPOSES ONLY

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

I/R	DATE	BY	CHK	APPR	DESCRIPTION

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REGISTERED PROFESSIONAL ENGINEER – STATE OF CALIFORNIA

Sites

SITES RESERVOIR TO 2
DUNNIGAN PIPELINE
ALT 2 ACCESS PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

DRAWING NO.
EXH–007

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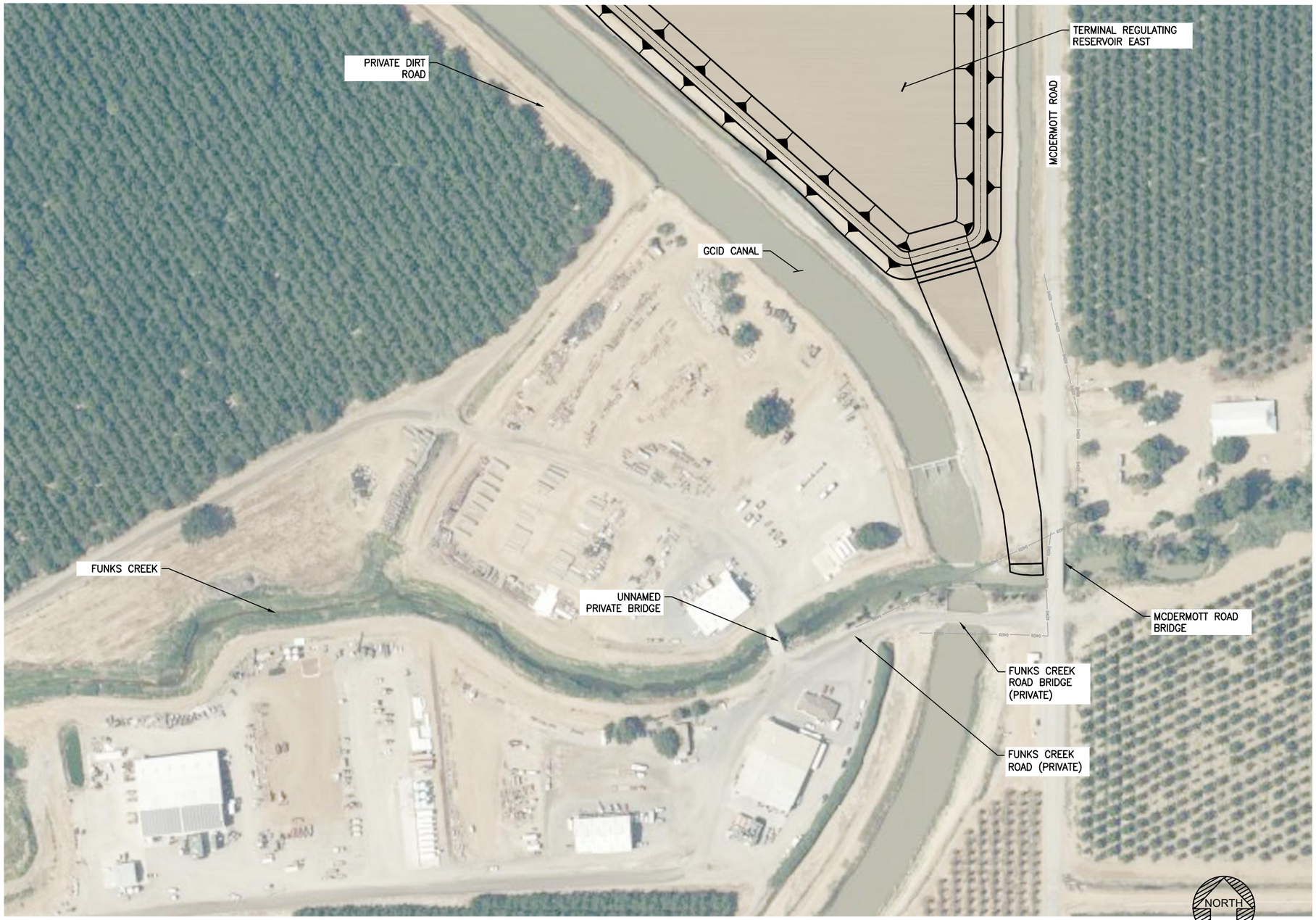
DRAWING: GEN-EXH-007_D3380600.dwg
JACOBS PROJECT # D3880600

SITE ACCESS NOTES

1. MCDERMOTT ROAD BRIDGE HAS A MAX WEIGHT LIMIT OF XXX TONS.
2. FUNKS CREEK ROAD BRIDGE IS A PRIVATE ACCESS BRIDGE AND HAS A MAX WEIGHT LIMIT OF XXX TONS.
3. UNNAMED PRIVATE BRIDGE IS A PRIVATE ACCESS BRIDGE AND HAS A MAX WEIGHT LIMIT OF XXX TONS.
4. ALTERNATE CONSTRUCTION ACCESS PRIOR TO TRR BRIDGE CONSTRUCTION USING THE PRIVATE ACCESS BRIDGES IS BY AGREEMENT WITH THE OWNER ONLY. COORDINATE DETAILS WITH OWNER, INCLUDING ACCEPTABLE WEIGHT LIMITS FOR BRIDGES.



DRAFT – PREDECISIONAL WORKING DOCUMENT – FOR DISCUSSION PURPOSES ONLY

PRIVATE BRIDGE ACCESS PLAN
SCALE: 1" =100'

PROJECT FEASIBILITY STUDY – NOT FOR CONSTRUCTION

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: B CHELONIS
DRAWN BY: B CHELONIS
CHECKED BY:
IN CHARGE: P RUDE
DATE: MARCH 2021

JACOBS
2525 AIRPARK DR
REDDING CA, 96001
PHONE: (530) 243-5831

Sites

SITES RESERVOIR TO 2

PRIVATE BRIDGE ACCESS PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALE FOR REDUCED PLOTS
0 1"

DRAWING NO.
EXH-008

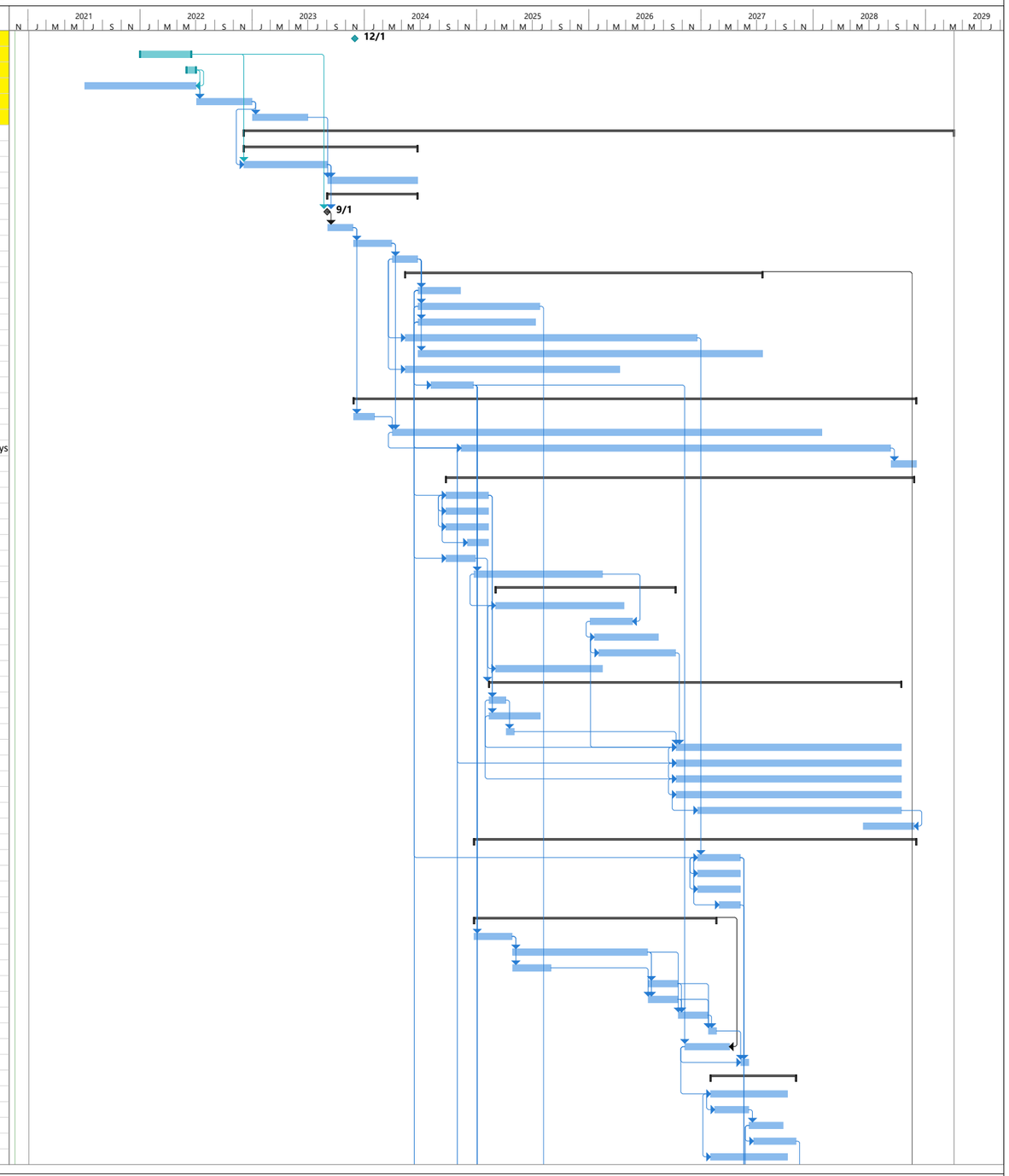
PLOTTED BY:CHELONIS, BECKY/RDD -March 19, 2021-3:44:42 PM
DRAWING: GEN-EXH-008_D3380600.dwg
JACOBS PROJECT # D3880600

Appendix B
Work Force Table and Equipment Table
(to be provided at a later date)

Appendix C
Construction Schedule

Sites Reservoir
Preliminary Construction Schedule
Roads, Dams, and I/O Facilities
November 2020

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Successors
1		CWC Award of Funds	0 days	Fri 12/1/23	Fri 12/1/23		
2		Determine Engineering Procurement & Delivery Method	120 days	Sat 1/1/22	Thu 6/16/22		9,12
3		Sites Board Approval/NTP for Phase 3	23 days	Wed 6/1/22	Fri 7/1/22		4FF,5
4		Real Estate Access & Permitting (Geotech & Surveying)	260 days	Mon 7/5/21	Fri 7/1/22	3FF	5
5		Initial Geotech & Surveying	130 days	Mon 7/4/22	Fri 12/30/22	3,4	6,9FS-20 days
6		Final Geotech Investigation	130 days	Mon 1/2/23	Fri 6/30/23	5	10
7		**Reservoir Facilities**	**1652 days**	**Mon 12/5/22**	**Tue 4/3/29**		
8		**Engineering**	**405 days**	**Mon 12/5/22**	**Fri 6/21/24**		
9		Preliminary Engineering	195 days	Mon 12/5/22	Fri 9/1/23	2,5FS-20 days	10,12
10		Final Engineering	210 days	Mon 9/4/23	Fri 6/21/24	6,9	
11		**Administrative and General**	**210 days**	**Fri 9/1/23**	**Fri 6/21/24**		
12		Contract Award	0 days	Fri 9/1/23	Fri 9/1/23	2,9	13
13		Notice To Proceed	60 days	Mon 9/4/23	Fri 11/24/23	12	14,25
14		Early Submittals And Approvals	90 days	Mon 11/27/23	Fri 3/29/24	13	15,26
15		Mobilization	60 days	Mon 4/1/24	Fri 6/21/24	14	17,18,20SS+30 days,22SS+30 days,19,21
16		**Roads, Bridges, Access, and Site Development**	**831 days**	**Mon 5/13/24**	**Mon 7/19/27**		**198**
17		Site Access and Staging Development	100 days	Mon 6/24/24	Fri 11/8/24	15	23SS+30 days,180SS+50 days,184SS+50 days,34SS+65 days
18		Northern Construction Access Roads	284 days	Mon 6/24/24	Thu 7/24/25	15	53SS+100 days,84,27SS+100 days
19		Southern Construction Access Roads	274 days	Mon 6/24/24	Thu 7/10/25	15	30SS+65 days,180SS+50 days,184SS+50 days
20		Sites Lodoga Road Realignment and Bridge	680 days	Mon 5/13/24	Fri 12/18/26	15SS+30 days	53
21		Huffmaster Road Realignment	801 days	Mon 6/24/24	Mon 7/19/27	15	
22		Reservoir Footprint Mitigation Actions	500 days	Mon 5/13/24	Fri 4/10/26	15SS+30 days	
23		Demolition and Clearing	100 days	Mon 8/5/24	Fri 12/20/24	17SS+30 days	35,182,65,58,88
24		**Process and Haul Filter Materials to Project**	**1310 days**	**Mon 11/27/23**	**Fri 12/1/28**		
25		Offsite Quarry Development	50 days	Mon 11/27/23	Fri 2/2/24	13	26
26		Process Filter Materials	1000 days	Mon 4/1/24	Fri 1/28/28	14,25	27SS+30 days
27		Filter Material Haul to Stockpile	1000 days	Mon 11/11/24	Fri 9/8/28	26SS+30 days,18SS+100 days	28,47SS+30 days,77SS+30 days,98SS+30 days,118SS+30 days,138SS+30 days
28		Quarry Reclamation and Restoration	60 days	Mon 9/11/28	Fri 12/1/28	27	
29		**Golden Gate Dam Construction**	**1090 days**	**Mon 9/23/24**	**Fri 11/24/28**		
30		Golden Gate Access and Staging	100 days	Mon 9/23/24	Fri 2/7/25	19SS+65 days	31SS,33SS+50 days,32SS,43,44
31		Erosion and Sediment Control	100 days	Mon 9/23/24	Fri 2/7/25	30SS	
32		Clearing / Grubbing Topsoil Salvage from Work Areas	100 days	Mon 9/23/24	Fri 2/7/25	30SS	
33		Demolition	50 days	Mon 12/2/24	Fri 2/7/25	30SS+50 days	
34		GG Dam - Bypass Pipeline and U/S Cofferdam	70 days	Mon 9/23/24	Fri 12/27/24	17SS+65 days	42
35		GG Dam - Foundation Excavation	300 days	Mon 12/23/24	Fri 2/13/26	23	37SS+50 days,38FF+70 days
36		**GG Dam - Foundation Preparation and Grouting**	**420 days**	**Mon 3/3/25**	**Fri 10/9/26**		
37		Foundation Cleaning	300 days	Mon 3/3/25	Fri 4/24/26	35SS+50 days	41SS
38		Grout Cap	100 days	Mon 1/5/26	Fri 5/22/26	35FF+70 days	39SS+10 days
39		Consolidation Grouting	150 days	Mon 1/19/26	Fri 8/14/26	38SS+10 days	40SS+10 days,46SS+100 days
40		Curtain Grouting	180 days	Mon 2/2/26	Fri 10/9/26	39SS+10 days	46
41		Dental Excavation and Concrete	250 days	Mon 3/3/25	Fri 2/13/26	37SS	
42		**GG Dam - Embankment**	**960 days**	**Mon 2/10/25**	**Fri 10/13/28**	**34**	
43		Initial Borrow Development (Core Material)	40 days	Mon 2/10/25	Fri 4/4/25	30	46SS+20 days,45
44		Initial Quarry Development for Zones 3 and 4	120 days	Mon 2/10/25	Fri 7/25/25	30	48SS+40 days
45		Borrow Overburden and Waste to Disposal Site	20 days	Mon 4/7/25	Fri 5/2/25	43	46
46		Place Zone 1 - Core	525 days	Mon 10/12/26	Fri 10/13/28	43SS+20 days,45,39SS+100 days,4	47SS
47		Place Zone 2A & 2B - Filters, Drains and Transitions	525 days	Mon 10/12/26	Fri 10/13/28	46SS,27SS+30 days	48SS
48		Place Zone 3 - Rockfill	525 days	Mon 10/12/26	Fri 10/13/28	47SS,44SS+40 days	49SS
49		Place Zone 4 - Random	525 days	Mon 10/12/26	Fri 10/13/28	48SS	50SS+50 days
50		Place Rip Rap	475 days	Mon 12/21/26	Fri 10/13/28	49SS+50 days	51FF+30 days
51		Site Reclamation and Topsoil Replacement	120 days	Mon 6/12/28	Fri 11/24/28	50FF+30 days	
52		**Sites Dam Construction**	**1030 days**	**Mon 12/23/24**	**Fri 12/1/28**		
53		Sites Dam Access and Staging	100 days	Mon 12/21/26	Fri 5/7/27	18SS+100 days,20	54SS,56SS+50 days,55SS,74,75
54		Erosion and Sediment Control	100 days	Mon 12/21/26	Fri 5/7/27	53SS	
55		Clearing / Grubbing Topsoil Salvage from Work Areas	100 days	Mon 12/21/26	Fri 5/7/27	53SS	
56		Demolition	50 days	Mon 3/1/27	Fri 5/7/27	53SS+50 days	66
57		**Sites Diversion Outlet Facility**	**565 days**	**Mon 12/23/24**	**Fri 2/19/27**		**65FF+30 days**
58		Develop Downstream Portal	90 days	Mon 12/23/24	Fri 4/25/25	23	59,60
59		Tunnel Excavation and Lining	315 days	Mon 4/28/25	Fri 7/10/26	58	62,61,63
60		Develop Upstream Portal	90 days	Mon 4/28/25	Fri 8/29/25	58	62
61		Outlet Structure Concrete	70 days	Mon 7/13/26	Fri 10/16/26	59	64,63
62		Inlet Structure Concrete	70 days	Mon 7/13/26	Fri 10/16/26	59,60	64,63
63		Mechanical	70 days	Mon 10/19/26	Fri 1/22/27	59,61,62	64
64		Sites Diversion Completion and Restoration	20 days	Mon 1/25/27	Fri 2/19/27	61,62,63	66
65		Sites Dam - Foundation Excavation	105 days	Mon 11/9/26	Fri 4/2/27	23,57FF+30 days	68SS+60 days,66SS+50 days
66		Construct Cofferdam to El. 310	20 days	Mon 5/10/27	Fri 6/4/27	56,65SS+50 days,64	
67		**Sites Dam - Foundation Preparation and Grouting**	**200 days**	**Mon 2/1/27**	**Fri 11/5/27**		
68		Foundation Cleaning	180 days	Mon 2/1/27	Fri 10/8/27	65SS+60 days	72SS,69SS+10 days
69		Grout Cap	80 days	Mon 2/15/27	Fri 6/4/27	68SS+10 days	70
70		Consolidation Grouting	80 days	Mon 6/7/27	Fri 9/24/27	69	71SS+10 days,76SS+100 days
71		Curtain Grouting	100 days	Mon 6/21/27	Fri 11/5/27	70SS+10 days	76
72		Dental Excavation and Concrete	180 days	Mon 2/1/27	Fri 10/8/27	68SS	

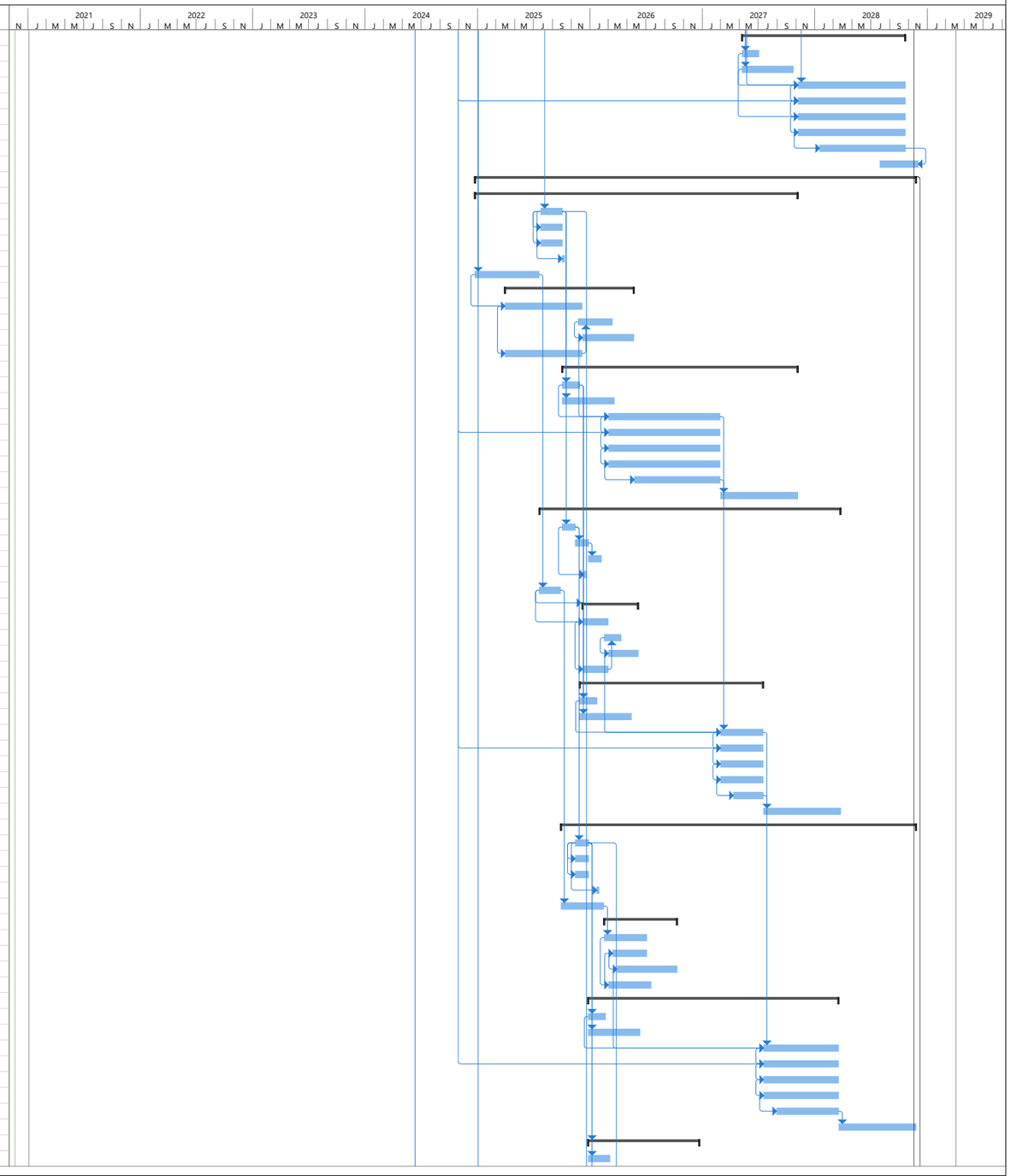


Project: Sites Reservoir
Date: Fri 11/20/20

Task | Milestone | Project Summary | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | External Tasks | Deadline | Manual Progress
Split | Summary | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only | External Milestone | Progress

Sites Reservoir
Preliminary Construction Schedule
Roads, Dams, and I/O Facilities
November 2020

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Successors
73		**Sites Dam - Embankment**	**380 days**	**Mon 5/10/27**	**Fri 10/20/28**		
74		Initial Borrow Development (Core Material)	40 days	Mon 5/10/27	Fri 7/2/27	53	76SS+20 days
75		Initial Quarry Development for Zones 3 and 4	120 days	Mon 5/10/27	Fri 10/22/27	53	78SS+40 days
76		Place Zone 1 - Core	250 days	Mon 11/8/27	Fri 10/20/28	70SS+100 days,74SS+20 days,71	77SS
77		Place Zone 2A & 2B - Filters, Drains and Transitions	250 days	Mon 11/8/27	Fri 10/20/28	76SS,27SS+30 days	78SS
78		Place Zone 3 - Rockfill	250 days	Mon 11/8/27	Fri 10/20/28	77SS,75SS+40 days	79SS
79		Place Zone 4 - Random	250 days	Mon 11/8/27	Fri 10/20/28	78SS	80SS+50 days
80		Place Rip Rap	200 days	Mon 1/17/28	Fri 10/20/28	79SS+50 days	81FF+30 days
81		Site Reclamation and Topsoil Replacement	90 days	Mon 7/31/28	Fri 12/1/28	80FF+30 days	
82		**Saddle Dams**	**1025 days**	**Mon 12/23/24**	**Fri 11/24/28**		**198**
83		**Saddle Dam 3**	**750 days**	**Mon 12/23/24**	**Fri 11/5/27**		
84		Saddle Dam 3 - Access and Staging	50 days	Fri 7/25/25	Thu 10/2/25	18	85SS,87SS+50 days,86SS,95,96,155,104
85		Erosion and Sediment Control	50 days	Fri 7/25/25	Thu 10/2/25	84SS	
86		Clearing / Grubbing Topsoil Salvage from Work Areas	50 days	Fri 7/25/25	Thu 10/2/25	84SS	
87		Demolition	5 days	Fri 10/3/25	Thu 10/9/25	84SS+50 days	
88		Saddle Dam 3 - Foundation Excavation	150 days	Mon 12/23/24	Fri 7/18/25	23	90SS+70 days,108
89		**Saddle Dam 3 - Foundation Preparation and Grouting**	**300 days**	**Mon 3/31/25**	**Fri 5/22/26**		
90		Foundation Cleaning	180 days	Mon 3/31/25	Fri 12/5/25	88SS+70 days	93SS
91		Grout Cap	80 days	Mon 11/24/25	Fri 3/13/26	93FS-10 days	92SS+10 days
92		Curtain Grouting	120 days	Mon 12/8/25	Fri 5/22/26	91SS+10 days	97SS+60 days
93		Dental Excavation and Concrete	180 days	Mon 3/31/25	Fri 12/5/25	90SS	91FS-10 days
94		**Saddle Dam 3 - Embankment**	**546 days**	**Fri 10/3/25**	**Fri 11/5/27**		
95		Initial Borrow Development (Core Material)	40 days	Fri 10/3/25	Thu 11/27/25	84	97SS+20 days,115,116
96		Initial Quarry Development for Zones 3 and 4	120 days	Fri 10/3/25	Thu 3/19/26	84	
97		Place Zone 1 - Core	260 days	Mon 3/2/26	Fri 2/26/27	95SS+20 days,92SS+60 days	98SS,117
98		Place Zone 2A & 2B - Filters, Drains and Transitions	260 days	Mon 3/2/26	Fri 2/26/27	97SS,27SS+30 days	99SS
99		Place Zone 3 - Rockfill	260 days	Mon 3/2/26	Fri 2/26/27	98SS	100SS
100		Place Zone 4 - Random	260 days	Mon 3/2/26	Fri 2/26/27	99SS	101SS+60 days
101		Place Rip Rap	200 days	Mon 5/25/26	Fri 2/26/27	100SS+60 days	102
102		Site Reclamation and Topsoil Replacement	180 days	Mon 3/1/27	Fri 11/5/27	101	
103		**Saddle Dam 5**	**700 days**	**Mon 7/21/25**	**Fri 3/24/28**		
104		Saddle Dam 5 - Access and Staging	30 days	Fri 10/3/25	Thu 11/13/25	84	107SS+50 days,105,124
105		Erosion and Sediment Control	30 days	Fri 11/14/25	Thu 12/25/25	104	106
106		Clearing / Grubbing Topsoil Salvage from Work Areas	30 days	Fri 12/26/25	Thu 2/5/26	105	
107		Demolition	5 days	Fri 12/12/25	Thu 12/18/25	104SS+50 days	
108		Saddle Dam 5 - Foundation Excavation	50 days	Mon 7/21/25	Fri 9/26/25	88	109SS+100 days,110SS+20 days,128
109		**Saddle Dam 5 - Foundation Preparation and Grouting**	**130 days**	**Mon 12/8/25**	**Fri 6/5/26**	**108SS+100 days**	
110		Foundation Cleaning	60 days	Mon 12/8/25	Fri 2/27/26	108SS+20 days	113SS
111		Grout Cap	40 days	Mon 2/16/26	Fri 4/10/26	113FS-10 days	112SS+10 days
112		Curtain Grouting	70 days	Mon 3/2/26	Fri 6/5/26	111SS+10 days	117SS+60 days
113		Dental Excavation and Concrete	60 days	Mon 12/8/25	Fri 2/27/26	110SS	111FS-10 days
114		**Saddle Dam 5 - Embankment**	**426 days**	**Fri 11/28/25**	**Fri 7/16/27**		
115		Initial Borrow Development (Core Material)	40 days	Fri 11/28/25	Thu 1/22/26	95	117SS+20 days
116		Initial Quarry Development for Zones 3 and 4	120 days	Fri 11/28/25	Thu 5/14/26	95	
117		Place Zone 1 - Core	100 days	Mon 3/1/27	Fri 7/16/27	112SS+60 days,115SS+20 days,97	118SS,137
118		Place Zone 2A & 2B - Filters, Drains and Transitions	100 days	Mon 3/1/27	Fri 7/16/27	117SS,27SS+30 days	119SS
119		Place Zone 3 - Rockfill	100 days	Mon 3/1/27	Fri 7/16/27	118SS	120SS
120		Place Zone 4 - Random	100 days	Mon 3/1/27	Fri 7/16/27	119SS	121SS+30 days
121		Place Rip Rap	70 days	Mon 4/12/27	Fri 7/16/27	120SS+30 days	122
122		Site Reclamation and Topsoil Replacement	180 days	Mon 7/19/27	Fri 3/24/28	121	
123		**Minor Saddle Dams (1,2,6,8A)**	**825 days**	**Mon 9/29/25**	**Fri 11/24/28**		
124		Minor Saddle Dams - Access and Staging	30 days	Fri 11/14/25	Thu 12/25/25	104	125SS,127SS+50 days,126SS,135,136,143,144,145,156,168
125		Erosion and Sediment Control	30 days	Fri 11/14/25	Thu 12/25/25	124SS	
126		Clearing / Grubbing Topsoil Salvage from Work Areas	30 days	Fri 11/14/25	Thu 12/25/25	124SS	
127		Demolition	5 days	Fri 1/23/26	Thu 1/29/26	124SS+50 days	
128		Minor Saddle Dams - Foundation Excavation	100 days	Mon 9/29/25	Fri 2/13/26	108	130
129		**Minor Saddle Dams - Foundation Preparation and Grout**	**170 days**	**Mon 2/16/26**	**Fri 10/9/26**		
130		Foundation Cleaning	100 days	Mon 2/16/26	Fri 7/3/26	128	133SS+10 days
131		Grout Cap	80 days	Mon 3/16/26	Fri 7/3/26	133SS+10 days	132SS+10 days
132		Curtain Grouting	140 days	Mon 3/30/26	Fri 10/9/26	131SS+10 days	137SS+60 days
133		Dental Excavation and Concrete	100 days	Mon 3/2/26	Fri 7/17/26	130SS+10 days	131SS+10 days
134		**Minor Saddle Dams - Embankment**	**581 days**	**Fri 12/26/25**	**Fri 3/17/28**		
135		Initial Borrow Development (Core Material)	40 days	Fri 12/26/25	Thu 2/19/26	124	137SS+20 days
136		Initial Quarry Development for Zones 3 and 4	120 days	Fri 12/26/25	Thu 6/11/26	124	
137		Place Zone 1 - Core	175 days	Mon 7/19/27	Fri 3/17/28	132SS+60 days,135SS+20 days,117	138SS
138		Place Zone 2A & 2B - Filters, Drains and Transitions	175 days	Mon 7/19/27	Fri 3/17/28	137SS,27SS+30 days	139SS
139		Place Zone 3 - Rockfill	175 days	Mon 7/19/27	Fri 3/17/28	138SS	140SS
140		Place Zone 4 - Random	175 days	Mon 7/19/27	Fri 3/17/28	139SS	141SS+30 days
141		Place Rip Rap	145 days	Mon 8/30/27	Fri 3/17/28	140SS+30 days	142
142		Site Reclamation and Topsoil Replacement	180 days	Mon 3/20/28	Fri 11/24/28	141	
143		**Saddle Dam 8B - Spillway**	**257 days**	**Fri 12/26/25**	**Mon 12/21/26**	**124**	
144		Batch Plant Setup and Operational	50 days	Fri 12/26/25	Thu 3/5/26	124	



Project: Sites Reservoir
Date: Fri 11/20/20

Task | Milestone | Project Summary | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | External Tasks | Deadline | Manual Progress
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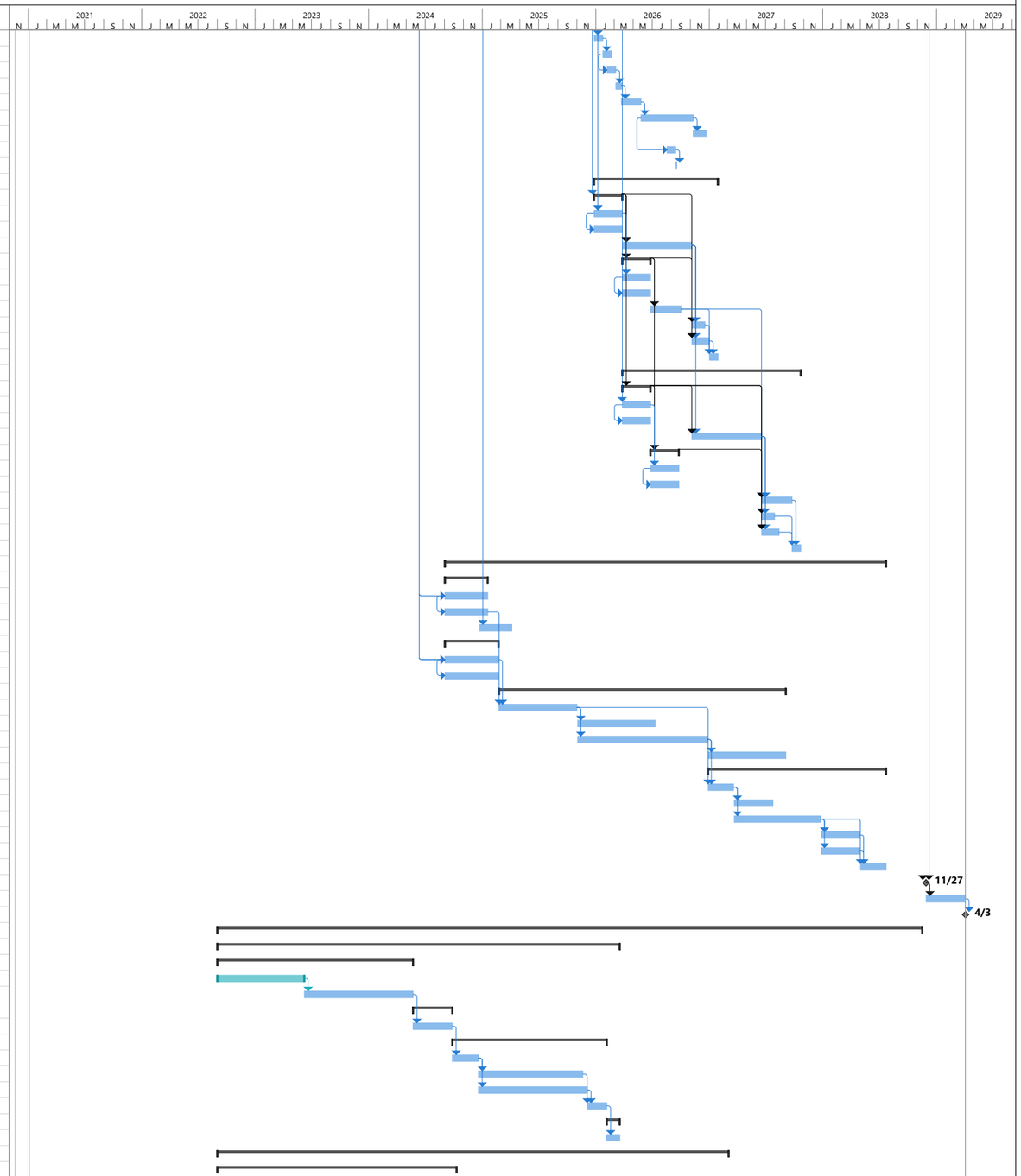
Sites Reservoir
Preliminary Construction Schedule
Roads, Dams, and I/O Facilities
November 2020

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Successors
145		SD8 - Foundation Excavation	20 days	Fri 12/26/25	Thu 1/22/26	124	146
146		SD8 - Foundation Cleaning	20 days	Fri 1/23/26	Thu 2/19/26	145	147SS+10 days
147		SD8 - Dental Excavation and Concrete	20 days	Fri 2/6/26	Thu 3/5/26	146SS+10 days	148
148		SD8 - Grout Cap	12 days	Fri 3/6/26	Mon 3/23/26	147	149
149		SD 8 - Foundation Grouting	45 days	Tue 3/24/26	Mon 5/25/26	148	150
150		SD 8 - Mass Concrete	120 days	Tue 5/26/26	Mon 11/9/26	149	151,152SS+60 days
151		SD 8 - Bridge	30 days	Tue 11/10/26	Mon 12/21/26	150	
152		SD 8 - Clay Backfill	20 days	Tue 8/18/26	Mon 9/14/26	150SS+60 days	153
153		SD 8 - Riprap and Drain Gravel	3 days	Tue 9/15/26	Thu 9/17/26	152	
154		**Emergency Release Structure No. 1**	**285 days**	**Fri 12/26/25**	**Thu 1/28/27**		
155		**Develop Downstream Portal**	**65 days**	**Fri 12/26/25**	**Thu 3/26/26**	**84**	**158,159,163,167**
156		Portal Excavation	65 days	Fri 12/26/25	Thu 3/26/26	124	157SS,160
157		Rock Bolting	65 days	Fri 12/26/25	Thu 3/26/26	156SS	
158		Tunnel Excavation and Lining (12 ft)	160 days	Fri 3/27/26	Thu 11/5/26	155	164,163,170
159		**Develop Upstream Portal**	**65 days**	**Fri 3/27/26**	**Thu 6/25/26**	**155**	**171,164,162**
160		Portal Excavation	65 days	Fri 3/27/26	Thu 6/25/26	156	161SS
161		Rock Bolting	65 days	Fri 3/27/26	Thu 6/25/26	160SS	
162		Outlet Structure Concrete	70 days	Fri 6/26/26	Thu 10/1/26	159	165,174
163		Install 10-Ft Cut and Cover Pipe	30 days	Fri 11/6/26	Thu 12/17/26	155,158	165
164		Inlet Structure Concrete	40 days	Fri 11/6/26	Thu 12/31/26	158,159	165
165		ERS - 1 Completion and Restoration	20 days	Fri 1/1/27	Thu 1/28/27	162,163,164	
166		**Emergency Release Structure No. 2**	**410 days**	**Fri 3/27/26**	**Thu 10/21/27**		
167		**Develop Downstream Portal**	**65 days**	**Fri 3/27/26**	**Thu 6/25/26**	**155**	**170,171,175,174**
168		Portal Excavation	65 days	Fri 3/27/26	Thu 6/25/26	124	169SS,172
169		Rock Bolting	65 days	Fri 3/27/26	Thu 6/25/26	168SS	
170		Tunnel Excavation and Lining	160 days	Fri 11/6/26	Thu 6/17/27	167,158	176,175,174
171		**Develop Upstream Portal**	**65 days**	**Fri 6/26/26**	**Thu 9/24/26**	**167,159**	**176**
172		Portal Excavation	65 days	Fri 6/26/26	Thu 9/24/26	168	173SS
173		Rock Bolting	65 days	Fri 6/26/26	Thu 9/24/26	172SS	
174		Outlet Structure Concrete	70 days	Fri 6/18/27	Thu 9/23/27	162,167,170	177
175		Install 10-Ft Cut and Cover Pipe	30 days	Fri 6/18/27	Thu 7/29/27	167,170	177
176		Inlet Structure Concrete	40 days	Fri 6/18/27	Thu 8/12/27	170,171	177
177		ERS - 2 Completion and Restoration	20 days	Fri 9/24/27	Thu 10/21/27	174,175,176	
178		**Inlet Outlet Facilities**	**1015 days**	**Mon 9/2/24**	**Fri 7/21/28**		
179		**Develop Downstream Portal**	**100 days**	**Mon 9/2/24**	**Fri 1/17/25**		
180		Portal Excavation	100 days	Mon 9/2/24	Fri 1/17/25	17SS+50 days,19SS+50 days	181SS
181		Rock Bolting	100 days	Mon 9/2/24	Fri 1/17/25	180SS	187
182		Intake Channel Excavation	75 days	Mon 12/23/24	Fri 4/4/25	23	
183		**Develop Upstream Portal**	**125 days**	**Mon 9/2/24**	**Fri 2/21/25**		
184		Portal Excavation	125 days	Mon 9/2/24	Fri 2/21/25	17SS+50 days,19SS+50 days	185SS,187
185		Rock Bolting	125 days	Mon 9/2/24	Fri 2/21/25	184SS	
186		**Tunnels Excavation and Lining (Double Shift)**	**660 days**	**Mon 2/24/25**	**Fri 9/3/27**		
187		North Tunnel Excavation - Two Headings, Double Shift	180 days	Mon 2/24/25	Fri 10/31/25	181,184	188,189,192
188		North Tunnel Lining	180 days	Mon 11/3/25	Fri 7/10/26	187	
189		South Tunnel Excvation - Double Shift	300 days	Mon 11/3/25	Fri 12/25/26	187	190,192
190		South Tunnel Lining	180 days	Mon 12/28/26	Fri 9/3/27	189	
191		**Intake and Outlet Structures**	**410 days**	**Mon 12/28/26**	**Fri 7/21/28**		
192		Intake Structure Foundation	60 days	Mon 12/28/26	Fri 3/19/27	187,189	193,194
193		Tunnel Bifurcation	90 days	Mon 3/22/27	Fri 7/23/27	192	
194		Intake Structure Concrete	200 days	Mon 3/22/27	Fri 12/24/27	192	197,195,196
195		Intake Structure Gates and Mechanical	90 days	Mon 12/27/27	Fri 4/28/28	194	197
196		Tower Access Bridge	90 days	Mon 12/27/27	Fri 4/28/28	194	197
197		I/O Completion and Restoration	60 days	Mon 5/1/28	Fri 7/21/28	194,195,196	
198		Dams and I/O Ready for Commissioning	1 day	Mon 11/27/28	Mon 11/27/28	16,82	199
199		Dams and I/O Startup and Commissioning	90 days	Tue 11/28/28	Mon 4/2/29	198	200
200		Dams and I/O Substantial Completion	1 day	Tue 4/3/29	Tue 4/3/29	199	
201		**Conveyance Facilities**	**1620 days**	**Thu 9/1/22**	**Wed 11/15/28**		
202		**Dunnigan Pipeline - Alt 1**	**925 days**	**Thu 9/1/22**	**Wed 3/18/26**		
203		**Engineering**	**450 days**	**Thu 9/1/22**	**Wed 5/22/24**		
204		Preliminary	200 days	Thu 9/1/22	Wed 6/7/23		205
205		Final	250 days	Thu 6/8/23	Wed 5/22/24	204	207
206		**Bid and Award**	**90 days**	**Thu 5/23/24**	**Wed 9/25/24**		
207		Bid and Award	90 days	Thu 5/23/24	Wed 9/25/24	205	209
208		**Construction**	**355 days**	**Thu 9/26/24**	**Wed 2/4/26**		
209		Submittals	60 days	Thu 9/26/24	Wed 12/18/24	207	210,211
210		Structures	240 days	Thu 12/19/24	Wed 11/19/25	209	212
211		Pipeline	250 days	Thu 12/19/24	Wed 12/3/25	209	212
212		Testing	45 days	Thu 12/4/25	Wed 2/4/26	210,211	214
213		**Commissioning**	**30 days**	**Thu 2/5/26**	**Wed 3/18/26**		
214		Commission	30 days	Thu 2/5/26	Wed 3/18/26	212	
215		**Dunnigan Pipeline - Alt 2**	**1175 days**	**Thu 9/1/22**	**Wed 3/3/27**		
216		**Engineering**	**550 days**	**Thu 9/1/22**	**Wed 10/9/24**		



Project: Sites Reservoir
Date: Fri 11/20/20

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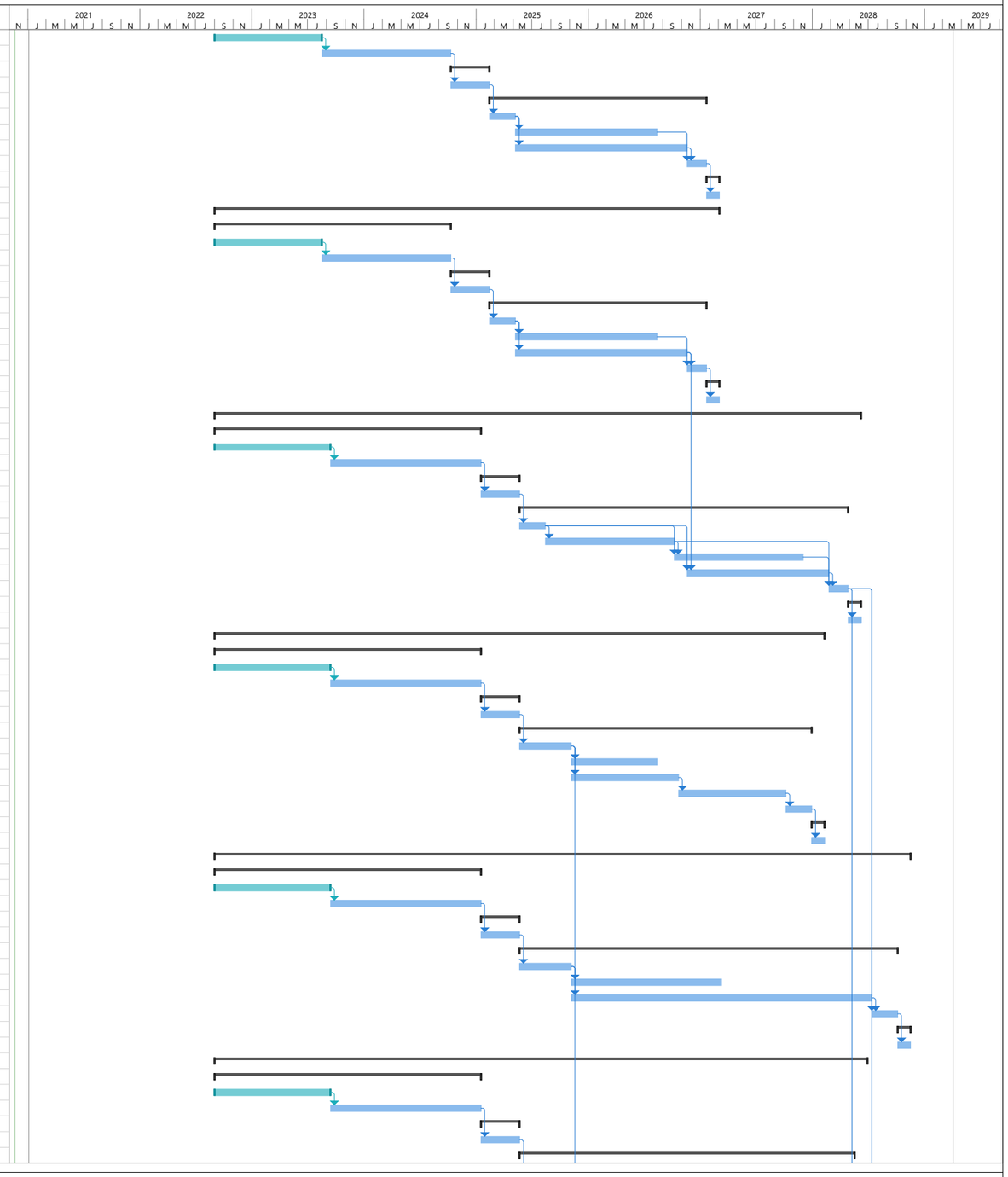
Sites Reservoir
Preliminary Construction Schedule
Roads, Dams, and I/O Facilities
November 2020

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Successors
217		Preliminary	250 days	Thu 9/1/22	Wed 8/16/23		218
218		Final	300 days	Thu 8/17/23	Wed 10/9/24	217	220
219		**Bid and Award**	**90 days**	**Thu 10/10/24**	**Wed 2/12/25**		
220		Bid and Award	90 days	Thu 10/10/24	Wed 2/12/25	218	222
221		**Construction**	**505 days**	**Thu 2/13/25**	**Wed 1/20/27**		
222		Submittals	60 days	Thu 2/13/25	Wed 5/7/25	220	223,224
223		Structures	330 days	Thu 5/8/25	Wed 8/12/26	222	225
224		Pipeline	400 days	Thu 5/8/25	Wed 11/18/26	222	225
225		Testing	45 days	Thu 11/19/26	Wed 1/20/27	223,224	227
226		**Commissioning**	**30 days**	**Thu 1/21/27**	**Wed 3/3/27**		
227		Commission	30 days	Thu 1/21/27	Wed 3/3/27	225	
228		**Funks/TRR Pipelines**	**1175 days**	**Thu 9/1/22**	**Wed 3/3/27**		
229		**Engineering**	**550 days**	**Thu 9/1/22**	**Wed 10/9/24**		
230		Preliminary	250 days	Thu 9/1/22	Wed 8/16/23		231
231		Final	300 days	Thu 8/17/23	Wed 10/9/24	230	233
232		**Bid and Award**	**90 days**	**Thu 10/10/24**	**Wed 2/12/25**		
233		Bid and Award	90 days	Thu 10/10/24	Wed 2/12/25	231	235
234		**Construction**	**505 days**	**Thu 2/13/25**	**Wed 1/20/27**		
235		Submittals	60 days	Thu 2/13/25	Wed 5/7/25	233	236,237
236		Structures	330 days	Thu 5/8/25	Wed 8/12/26	235	238
237		Pipeline	400 days	Thu 5/8/25	Wed 11/18/26	235	238,251
238		Testing	45 days	Thu 11/19/26	Wed 1/20/27	236,237	240
239		**Commissioning**	**30 days**	**Thu 1/21/27**	**Wed 3/3/27**		
240		Commission	30 days	Thu 1/21/27	Wed 3/3/27	238	
241		**Transmission Powerlines**	**1505 days**	**Thu 9/1/22**	**Wed 6/7/28**		
242		**Engineering**	**620 days**	**Thu 9/1/22**	**Wed 1/15/25**		
243		Preliminary	270 days	Thu 9/1/22	Wed 9/13/23		244
244		Final	350 days	Thu 9/14/23	Wed 1/15/25	243	246
245		**Bid and Award**	**90 days**	**Thu 1/16/25**	**Wed 5/21/25**		
246		Bid and Award	90 days	Thu 1/16/25	Wed 5/21/25	244	248
247		**Construction**	**765 days**	**Thu 5/22/25**	**Wed 4/26/28**		
248		Submittals	60 days	Thu 5/22/25	Wed 8/13/25	246	249,250,251
249		Procurement	300 days	Thu 8/14/25	Wed 10/7/26	248	250,252
250		Towers/Powerlines to POI	300 days	Thu 10/8/26	Wed 12/1/27	248,249	252
251		Towers/Powerlines Funks/TRR	330 days	Thu 11/19/26	Wed 2/23/28	237,248	252
252		Testing	45 days	Thu 2/24/28	Wed 4/26/28	249,250,251	254,279,307,320
253		**Commissioning**	**30 days**	**Thu 4/27/28**	**Wed 6/7/28**		
254		Commission	30 days	Thu 4/27/28	Wed 6/7/28	252	
255		**Funks Reservoir**	**1420 days**	**Thu 9/1/22**	**Wed 2/9/28**		
256		**Engineering**	**620 days**	**Thu 9/1/22**	**Wed 1/15/25**		
257		Preliminary	270 days	Thu 9/1/22	Wed 9/13/23		258
258		Final	350 days	Thu 9/14/23	Wed 1/15/25	257	260
259		**Bid and Award**	**90 days**	**Thu 1/16/25**	**Wed 5/21/25**		
260		Bid and Award	90 days	Thu 1/16/25	Wed 5/21/25	258	262
261		**Construction**	**680 days**	**Thu 5/22/25**	**Wed 12/29/27**		
262		Submittals	120 days	Thu 5/22/25	Wed 11/5/25	260	263,264,315
263		Haulroads	200 days	Thu 11/6/25	Wed 8/12/26	262	
264		Sediment Removal	250 days	Thu 11/6/25	Wed 10/21/26	262	265
265		Cofferdams (build/remove)	250 days	Thu 10/22/26	Wed 10/6/27	264	266
266		Testing	60 days	Thu 10/7/27	Wed 12/29/27	265	268
267		**Commissioning**	**30 days**	**Thu 12/30/27**	**Wed 2/9/28**		
268		Commission	30 days	Thu 12/30/27	Wed 2/9/28	266	
269		**Funks Pumping Generating Plant**	**1620 days**	**Thu 9/1/22**	**Wed 11/15/28**		
270		**Engineering**	**620 days**	**Thu 9/1/22**	**Wed 1/15/25**		
271		Preliminary	270 days	Thu 9/1/22	Wed 9/13/23		272
272		Final	350 days	Thu 9/14/23	Wed 1/15/25	271	274
273		**Bid and Award**	**90 days**	**Thu 1/16/25**	**Wed 5/21/25**		
274		Bid and Award	90 days	Thu 1/16/25	Wed 5/21/25	272	276
275		**Construction**	**880 days**	**Thu 5/22/25**	**Wed 10/4/28**		
276		Submittals	120 days	Thu 5/22/25	Wed 11/5/25	274	277,278
277		Large Equipment Procurement	350 days	Thu 11/6/25	Wed 3/10/27	276	
278		Structures	700 days	Thu 11/6/25	Wed 7/12/28	276	279
279		Testing	60 days	Thu 7/13/28	Wed 10/4/28	252,278	281
280		**Commissioning**	**30 days**	**Thu 10/5/28**	**Wed 11/15/28**		
281		Commission	30 days	Thu 10/5/28	Wed 11/15/28	279	
282		**TRR East Reservoir**	**1520 days**	**Thu 9/1/22**	**Wed 6/28/28**		
283		**Engineering**	**620 days**	**Thu 9/1/22**	**Wed 1/15/25**		
284		Preliminary	270 days	Thu 9/1/22	Wed 9/13/23		285
285		Final	350 days	Thu 9/14/23	Wed 1/15/25	284	287
286		**Bid and Award**	**90 days**	**Thu 1/16/25**	**Wed 5/21/25**		
287		Bid and Award	90 days	Thu 1/16/25	Wed 5/21/25	285	289
288		**Construction**	**780 days**	**Thu 5/22/25**	**Wed 5/17/28**		



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Sites Reservoir
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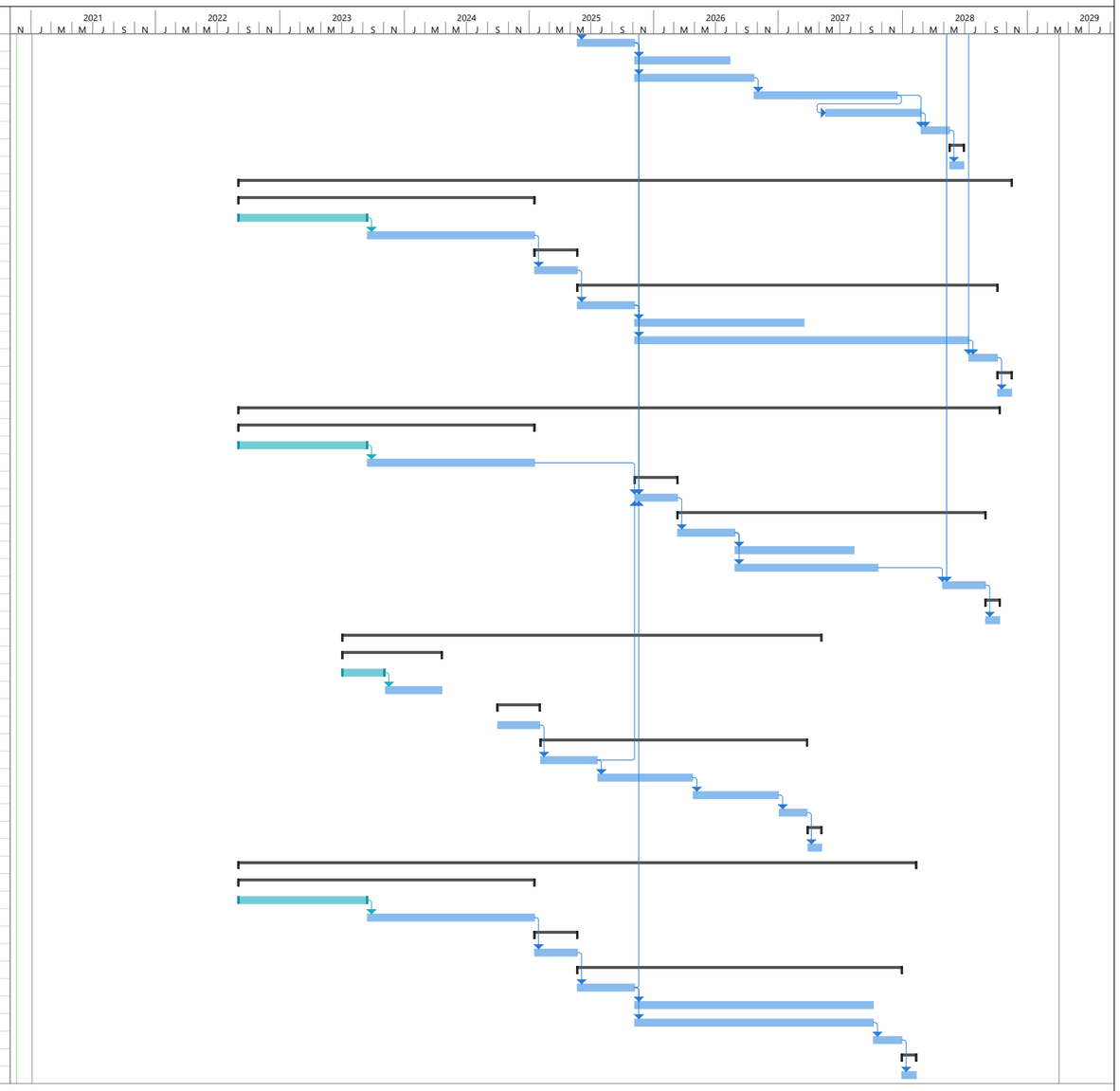
November 2020

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Successors
289		Submittals	120 days	Thu 5/22/25	Wed 11/5/25	287	290,291,315
290		Haulroads	200 days	Thu 11/6/25	Wed 8/12/26	289	
291		Ground Improvement	250 days	Thu 11/6/25	Wed 10/21/26	289	292
292		Earthwork/Structures	300 days	Thu 10/22/26	Wed 12/15/27	291	293FS-1200 hrs,294
293		Subgrade and Liner	200 days	Thu 5/20/27	Wed 2/23/28	292FS-1200 hrs	294
294		Testing	60 days	Thu 2/24/28	Wed 5/17/28	292,293	296
295		**Commissioning**	**30 days**	**Thu 5/18/28**	**Wed 6/28/28**		
296		Commission	30 days	Thu 5/18/28	Wed 6/28/28	294	
297		**TRR Pumping Generating Plant**	**1620 days**	**Thu 9/1/22**	**Wed 11/15/28**		
298		**Engineering**	**620 days**	**Thu 9/1/22**	**Wed 1/15/25**		
299		Preliminary	270 days	Thu 9/1/22	Wed 9/13/23		300
300		Final	350 days	Thu 9/14/23	Wed 1/15/25	299	302
301		**Bid and Award**	**90 days**	**Thu 1/16/25**	**Wed 5/21/25**		
302		Bid and Award	90 days	Thu 1/16/25	Wed 5/21/25	300	304
303		**Construction**	**880 days**	**Thu 5/22/25**	**Wed 10/4/28**		
304		Submittals	120 days	Thu 5/22/25	Wed 11/5/25	302	305,306
305		Large Equipment Procurement	355 days	Thu 11/6/25	Wed 3/17/27	304	
306		Structures	700 days	Thu 11/6/25	Wed 7/12/28	304	307
307		Testing	60 days	Thu 7/13/28	Wed 10/4/28	252,306	309
308		**Commissioning**	**30 days**	**Thu 10/5/28**	**Wed 11/15/28**		
309		Commission	30 days	Thu 10/5/28	Wed 11/15/28	307	
310		**Substations**	**1595 days**	**Thu 9/1/22**	**Wed 10/11/28**		
311		**Engineering**	**620 days**	**Thu 9/1/22**	**Wed 1/15/25**		
312		Preliminary	270 days	Thu 9/1/22	Wed 9/13/23		313
313		Final	350 days	Thu 9/14/23	Wed 1/15/25	312	315
314		**Bid and Award**	**90 days**	**Thu 11/6/25**	**Wed 3/11/26**		
315		Bid and Award	90 days	Thu 11/6/25	Wed 3/11/26	262,289,313,330,343	317
316		**Construction**	**645 days**	**Thu 3/12/26**	**Wed 8/30/28**		
317		Submittals	120 days	Thu 3/12/26	Wed 8/26/26	315	318,319
318		Large Equipment Procurement	250 days	Thu 8/27/26	Wed 8/11/27	317	
319		Structures	300 days	Thu 8/27/26	Wed 10/20/27	317	320
320		Testing	90 days	Thu 4/27/28	Wed 8/30/28	252,319	322
321		**Commissioning**	**30 days**	**Thu 8/31/28**	**Wed 10/11/28**		
322		Commission	30 days	Thu 8/31/28	Wed 10/11/28	320	
323		**Red Bluff Pumping Plant Improvements**	**1005 days**	**Mon 7/3/23**	**Fri 5/7/27**		
324		**Engineering**	**210 days**	**Mon 7/3/23**	**Fri 4/19/24**		
325		Preliminary	90 days	Mon 7/3/23	Fri 11/3/23		326
326		Final	120 days	Mon 11/6/23	Fri 4/19/24	325	
327		**Bid and Award**	**90 days**	**Mon 9/30/24**	**Fri 1/31/25**		
328		Bid and Award	90 days	Mon 9/30/24	Fri 1/31/25		330
329		**Construction**	**560 days**	**Mon 2/3/25**	**Fri 3/26/27**		
330		Submittals	120 days	Mon 2/3/25	Fri 7/18/25	328	315,331
331		Procurement	200 days	Mon 7/21/25	Fri 4/24/26	330	332
332		Mechanical/Electrical	180 days	Mon 4/27/26	Fri 1/1/27	331	333
333		Testing	60 days	Mon 1/4/27	Fri 3/26/27	332	335
334		**Commissioning**	**30 days**	**Mon 3/29/27**	**Fri 5/7/27**		
335		Commission	30 days	Mon 3/29/27	Fri 5/7/27	333	
336		**GCID Improvements**	**1420 days**	**Thu 9/1/22**	**Wed 2/9/28**		
337		**Engineering**	**620 days**	**Thu 9/1/22**	**Wed 1/15/25**		
338		Preliminary	270 days	Thu 9/1/22	Wed 9/13/23		339
339		Final	350 days	Thu 9/14/23	Wed 1/15/25	338	341
340		**Bid and Award**	**90 days**	**Thu 1/16/25**	**Wed 5/21/25**		
341		Bid and Award	90 days	Thu 1/16/25	Wed 5/21/25	339	343
342		**Construction**	**680 days**	**Thu 5/22/25**	**Wed 12/29/27**		
343		Submittals	120 days	Thu 5/22/25	Wed 11/5/25	341	315,344,345
344		Structures	500 days	Thu 11/6/25	Wed 10/6/27	343	
345		Earthwork	500 days	Thu 11/6/25	Wed 10/6/27	343	346
346		Testing	60 days	Thu 10/7/27	Wed 12/29/27	345	348
347		**Commissioning**	**30 days**	**Thu 12/30/27**	**Wed 2/9/28**		
348		Commission	30 days	Thu 12/30/27	Wed 2/9/28	346	



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