Task Order Request #TO23-118-R1 - Design - 450 East Double X-Over

Status	Open	**Assignees**	Jacob Wouden
Created Date	Aug 22, 2023	**Issued Date**	Sep 1, 2023
		Location	23-118 Design - 450 East Double X-Over

TASK ORDER IDENTIFICATION

Contract No	20-3349	**Account Code(s)**	20-7385.63000.1010
Contractor Name	Stacy and Witbeck, Inc.	**Contract Start Date**	02/02/21

THE PURPOSE OF THIS TASK ORDER IS TO SPECIFICALLY DEFINE THE SCOPE, SCHEDULE, LUMP SUM PRICE, AND OTHER TERMS APPLICABLE TO THE WORK IDENTIFIED HEREIN.

UTA AND THE CONTRACTOR HEREBY AGREE AS FOLLOWS:

1.0 SCOPE OF SERVICES

The scope of work for this Task Order is hereby attached and incorporated into this Task Order	23-616-R2 - Design - 450 East Double X-Over - Scope Letter and Price Proposal.pdf	**The contractor's scope letter and price estimate is hereby attached and incorporated into this Task Order**	TO23-118_R1_UTA_Scope.pdf

2.0 SCHEDULE

The Substantial Completion Date for this Task is	12/31/23	**The Final Acceptance Date for this Task is**	12/31/23

3.0 LUMP SUM PRICE

Invoices will be billed on a monthly basis for completed work to date. The price for this task order is a not to exceed amount of	$244,229.00	**Independent Cost Estimate (ICE) link, if applicable**	TO23-118_ICE.pdf
This item is under UTA's simplified acquisition threshold ($200,000) and requires no ICE. The cost was determined to be fair and reasonable based on a review of contractor quotes and the original contract rates.	No	**This item is greater than UTA's simplified acquisition threshold ($200,000) and thus requires an Independent Cost Estimate (ICE). I have reviewed and found the ICE within the appropriate range for approval.**	Yes

4.0 APPLICABILITY OF FEDERAL CLAUSES

Does this Task Order include federal assistance funds which requires the application of the Federal Clauses appended as Exhibit D to the Contract?	Yes	**If federal assistance funds are anticipated, the UTA Civil Rights group has set a Disadvantaged Business Enterprises (DBE) participation goal for this Task Order of**	Race Neutral

IN WITNESS WHEREOF, THIS TASK ORDER HAS BEEN EXECUTED BY UTA AND CONTRACTOR OR ITS APPOINTED REPRESENTATIVE

UTAH TRANSIT AUTHORITY:

Required Signatures	**Project Manager** $0 - 24,999 **Legal Review** $25k or greater **Dir. of Capital Projects** $25k - 74,999 **Chief Service Dev. Ofcr.** $75k - 199,999 **Executive Director** $200,000+ **Procurement/Contracts** (for all)	**Signature (Legal)**	By: DocuSigned by: Mike Ball 70E33A415BA44F6...
PM Approval	The costs associated with this task order have been measured against the standard schedule of rates and the agreed contract pricing, (where applicable) and have been deemed consistent and appropriate for the proposed scope of work.	**Signature (Project Manager)**	By: _____ Name: _____ Title: _____ Date: _____
Director Approval	I have evaluated the content of this task order and the scope of work described in the task ordering agreement and have made the determination that this Task Order is within the scope of work contemplated and described by the contracting parties when they executed the original task ordering agreement.	**Signature (Director)**	By: _____ Name: _____ Title: _____ Date: _____
Signature (Procurement)	By: _____	**Signature (Chief Service Development Officer)**	By: _____ David Hancock, Chief Service Development Officer Date: _____
Signature (Executive Director)	By: _____ Jay Fox, Executive Director Date: _____		

COMPANY:

COMPANY:	Stacy and Witbeck, Inc.	**Signature (Contractor)**	By: DocuSigned by: Collin Christensen ACA3AB62608B4E2... Date: 10/17/2023

Stacy and Witbeck

October 9, 2023 On Call Services

Jake Wouden
Rail Infrastructure Project Manager
Utah Transit Authority
2264 South 900 West
South Salt Lake City, UT 84119

Reference: On-Call Transit Infrastructure Construction, Maintenance and Repair
Project No: 20-03349VW

Subject: 23-616-R1 - Design - 450 East Double X-Over

Dear Jake:

We are pleased to provide the attached cost estimate to have Sener design the concrete track slab for the new Direct Fixation style track proposed to replace the current embedded track at the 450 East Double Crossover on the University Line.

Exclusions:

- See attached proposal and Key Understandings
- Signal, Comm., or Traction Power Design

Clarifications:

- Please see detailed list of each bid item below.
- The unit costs for each bid item includes the costs of insurance, bond, and risk at the agreed upon rates.
- The scope of work is inclusive of only the items and scope that are listed below. Any other items of work or changes to the below scope will need to be repriced.
- Rail alignment and elevation are to be constructed per the original UTA drawings/as-builts provided by UTA.
- See attached Sener proposal for additional clarifications

Bid Item 1000 – Field Engineering and Project Controls – 1 LS – Total of $7,079.00 – This bid item includes Stacy and Witbeck support from field engineer to manage coordination with Sener. The field engineer will also perform pre-task planning and coordination with Sener and UTA. This item also includes office manager time for payroll and accounts payable.

Bid Item 4000 – 450 East Double X-Over Design – NTE – Total of $220,111.00 – This bid item includes a not to exceed cost to have Sener provide a direct fixation track slab design using existing horizontal and vertical geometry as shown in the as-built drawings provided by UTA. The slab design will include

required DF fastener spacing and slab reinforcement, as well as subgrade requirements per current UTA specifications and standards. Sener will also perform a drainage analysis of the current drainage system and provide design for any modifications required to drain the project limits. Please see attached detailed design scope and proposal. Sener has included some time for interface with their design and the Comm, Signal, and Traction Power design provided by RMSS, but will not be providing design for those components.

At such point design efforts exceed $200,000.00 from the designer, a change order to Stacy and Witbeck will be required to cover such costs. These design efforts may include DSDC.

Bid Item 100000 – Fee (7.5%) – 1 LS – Total of $17,039.00 – This is the agreed 7.5% GMGC fee.

The total price for this scope of work is **$244,229.00**

If you have any questions, please contact me.

Sincerely,
Stacy and Witbeck, Inc.

Collin Christensen
Project Manager

1958 West North Temple
Salt Lake City, UT 84116
801.666.7840 (office) 801.432.7849 (fax)

10/09/2023 13:23
23-616-R1 Design - 450 East Double X-Over
*** Collin Christensen, CC

BID TOTALS

Biditem	Description	Quantity	Units	Unit Price	Bid Total
1000	Field Engineering & Project Controls	1.000	LS	7,079.00	7,079.00
4000	450 East Double X-Over Design	1.000	LS	220,111.00	220,111.00
		Subtotal			$227,190.00
100000	Fee (7.5%)	1.000	LS	17,039.00	17,039.00
		Subtotal			$244,229.00
		Bid Total ========>			$244,229.00

UTA On Call Design Services
450 East crossover replacement

Technical & Financial Proposal

Stacy and Witbeck

UTA

Control de firmas / Signature Control

Realizado Written	Aprobado Approved
Nombre y Apellidos / Name and Last Name Roberto Rodríguez Illanes Álvaro Relaño	Nombre Apellidos / Name and Last Name Mercedes Sierra
Fecha y Firma Date and Signature	Fecha y Firma Date and Signature

No precisa firma si está aprobado electrónicamente mediante ruta / Signature not needed if electronically approved by route

Información del Documento Document Information	
Document nº	UTA_Crossovers
Ref.	C0410210

W

Registro de cambios / Changes Record

Rev Rev	Fecha Date	Autor Author	Sección afectada Affected section	Cambios Changes
00	2023 08 08	RRI	All	First edition
01	2023 08 10	RRI	All	Revised proposal segregated by location.
02	2023 08 11	RRI	All	Revised scope.
03	2023 08 31	RRI	All	Revised proposal considering UTA comments.
04	2023 10 06	RRI	All	Revised proposal considering additional UTA comments.

INDICE / TABLE OF CONTENTS

1 SENER COMPETENCE

SENER is a privately held engineering and technology group with over 60 years of global operational experience.

With a footprint that spans five continents and global revenue of over 375M EUR (80% outside of Spain), SENER operates in a broad range of markets, including infrastructure and transportation, aerospace, renewables, power, oil & gas, and marine. Combining local knowledge with international experience, SENER's 2,400+ professionals deliver innovation, quality, and efficiency for clients worldwide.

SENER's main characteristics are **Independence** (SENER is not attached to any construction, manufacturer or financial group, which allows us to provide professional and independent services to our clients), **Innovation** (through the achievement of the highest technological level in all our products), and **Commitment to Quality**.

SENER has delivered transit technical services (including design, planning and project management) for about 1,200 km of lines, in more than 70 different transit networks.

SENER has experience and references in all engineering tasks related to transit projects, from civil design to systems integration, including, track, traction power, comms, and train control system.

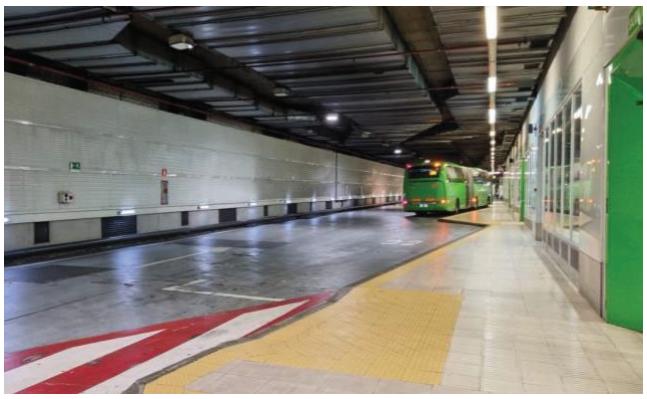
Our team's design experience working in the highly regulated rail & transit environments is unparalleled. Our approach advocates on collaboration to add value to the design, relying on our ability to listen, but at the same time sharing our knowledge from past experiences around the world.

Global Recognition for Innovation

SENER has a long history in railway innovation, helping the industry evolve. From new construction techniques for the tunnels and stations for the Bilbao Metro in the '80s, to the state-of-the-art dynamic lateral wind detection system for the High-Speed Rail System in Spain, SENER has been present in dozens of R&D programs and partnerships.

SENER offers a know-how and experience in civil engineering, in combination with specific, most advanced technologies applicable in the transport sector. Technology application is directly linked to SENER's innovation spirit. Innovation is one of SENER's corporate values. Some examples of this innovation applied to transportation systems are:

- **RESPIRA**, an intelligent HVAC management system that uses Artificial Intelligence (AI) to **improve energy efficiency, thermal comfort and air quality** in buildings and stations.



- **BLOCKSAT**, an innovate traffic Management system to manage the railway operations within low density traffic lines.

2 PROJECT BACKGROUND AND UNDERSTANDING

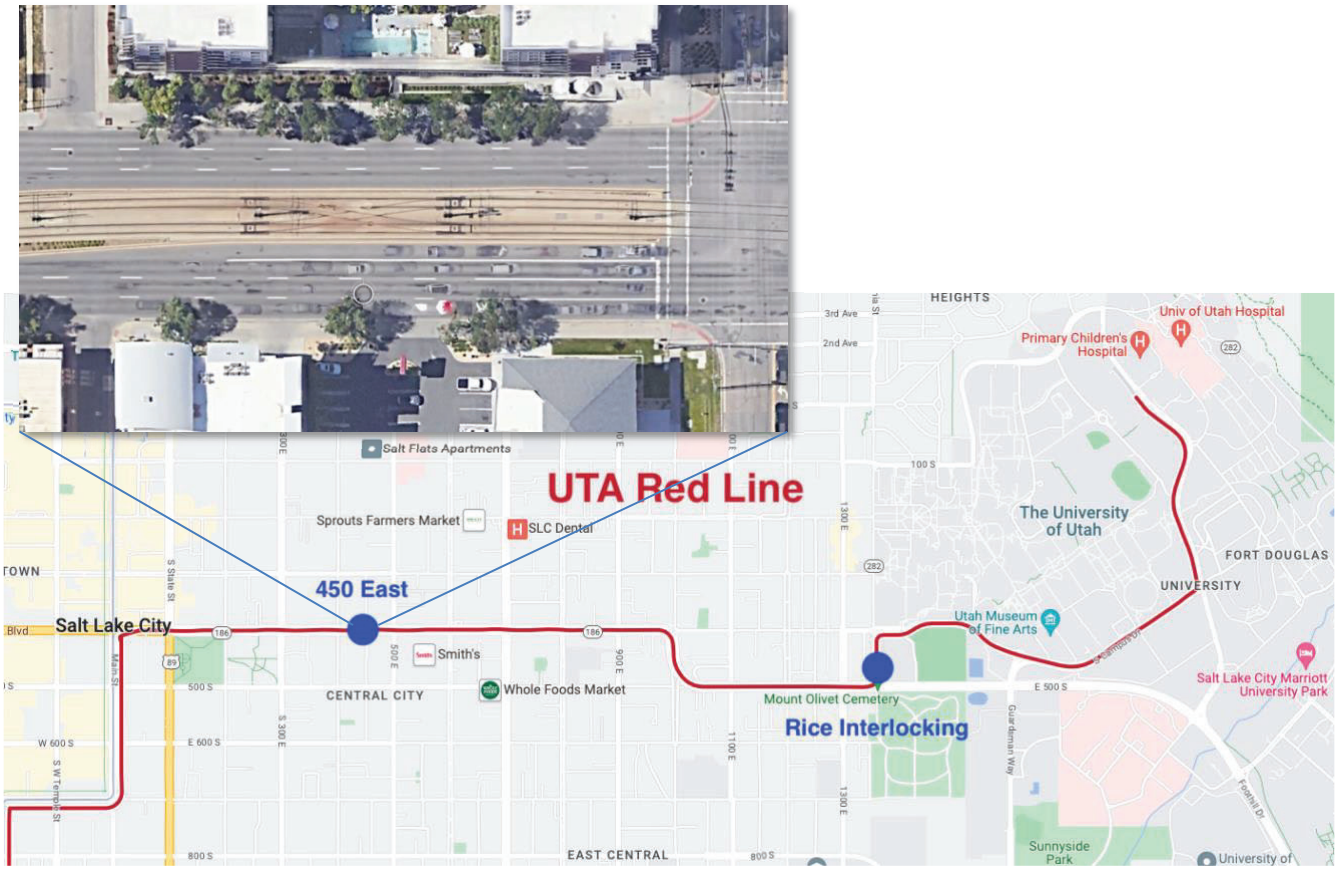
The Red Line is a light rail line on the TRAX system in the Salt Lake Valley of Utah operated by the Utah Transit Authority (UTA). It originally began operation in December 2001 as the Sandy/University Line, running from the University of Utah south to Sandy Civic Center on the Blue Line. It was later rerouted to South Jordan and renamed the Red Line in August 2011. The current line runs from the University of Utah Medical Center in Salt Lake City through the south end of Downtown Salt Lake City, South Salt Lake, Murray, Midvale, West Jordan, and South Jordan to the University of Utah's South Jordan Medical Center in Daybreak.

The focus area of this study on the Red Line is a specific location:

450 East is currently an embedded track, double crossover, with manual switch machines. UTA is planning to replace it with a direct fixation powered crossover.

The tracks are now 20 years old at this location, and they have begun to show some wear.

Stacy Witbeck has requested SENER to provide a proposal for the detailed design services needed to procure and install these two new crossovers and remove the existing ones.



3 SCOPE OF THE DESIGN SERVICES

3.1 Assumptions

3.1.1 Input data

To produce a detailed design for the project, it is crucial to have access to all the data used in previous phases of the design, at least:

- detailed direct fixation drawings and specifications, specific for this project,
- detailed alignment of the track, including plan, profile and superelevations,
- all as-built drawings and reports,
- field inspections reports,
- track maintenance reports,
- latest field surveying and topography campaign,
- existing drainage elements,
- geotechnical report of the trackbed,
- design loads (axle loads),
- operations plan,

Also, the following input data needs to be available before the design starts:

- detailed (1":40') topographic map of the project project area, including cross sections of the track each 50' and concise coordinates of all drainage elements, cable duct lines, manholes and any other element contained within the track ROW between the limits of the project.
- Survey data control plans

3.1.2 Interfaces

The design of the necessary civil elements required for other rail systems (traction power, OCS, train control system, comms) is not included in the scope of this proposal (conduits, manholes, etc.). However, the necessary coordination and interface resolution with the designated contractor in charge of this scope is included.

3.1.3 Submittals & review cycles

SENER is assuming the following scheme for the document review cycle (within the 1.5-month period):

1. **Draft 90%** design submittal issued for 1 cycle of revision by SW. Assumes a ONE-week revision period by SW.
2. **Final Design** submittal with SW comments addressed.

A Bill of Quantities report will be produced, but no cost estimation will be prepared.

Preparation of separate submittal packages for third parties or stakeholders is not included.

3.2 Detailed Design Drawings

3.2.1 Track plan & profile

This set of drawings define the geometry of the tracks and the crossovers elements.

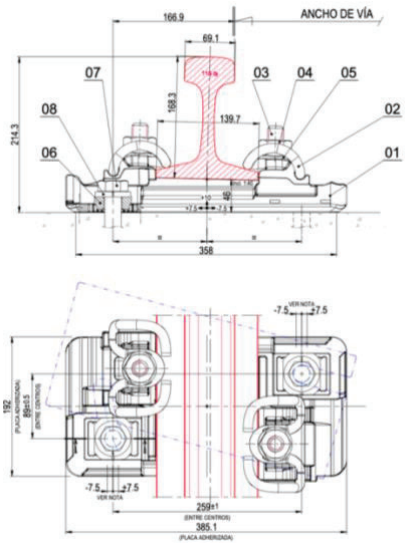
3.2.2 Typical Cross Sections

Typical cross sections drawings will be provided for all situations encountered in the project. These cross sections will detail the different dimensions of the new track cross section, including subbase, base and the track slab.

3.2.3 Track Components Drawings

These drawings will contain details for the track components provided by suppliers, like:

- Rail sections
- Rail fastenings
- Details of rail fastening anchorage to the slab



3.2.4 Rail fastening stiffness transition

This drawing will define the stiffness transition needed between the new direct fixation system and the existing embedded track system, where needed.

3.2.5 Concrete track slab

This set of drawings will define the concrete slab dimensions, steel reinforcement and construction details, notes and specifications.

3.2.6 Track drainage

This set of drawings will define the drainage system for the new track design, including gutters, catch water drains, drainpipes, French drains, plus the connection to the general storm drainage system of the City.

3.2.7 Earthing and bonding

Earthing and bonding helps to avoid corrosion due to stray currents by providing a low resistance path for the stray current to flow to ground. The earthing and bonding design of the track in this section will be revised to minimize this issue, and the appropriate measures will be defined in this set of drawings.

3.3 Detailed Design Reports

3.3.1 Slab track design validation

This report will include all the calculations needed to validate the concrete slab track structural design.

3.3.2 Drainage report

This report will include all the calculations needed to validate the track drainage system design, if needed.

3.3.3 Bill of Quantities

This report will compile the bill of quantities of the materials and components needed for the construction.

4 SCOPE OF THE DESIGN SERVICES DURING CONSTRUCTION (DSDC)

After the Detailed Design phase has finalized, SENER will provide Design Services During Construction to support the project until its completion.

In this phase, SENER shall provide, on a *Time and Material* basis, professional engineering services as follows:

- Prepare, provide, review, and/or approve, field changes to complex designs, project drawings and specifications associated with the project including, but not limited to, Issued for Construction (IFC) plans and specifications.
- Prepare designs in response to Design Change Requests (DCR's) or Field Changes Requests (FCR's) including calculations, drawings, or professional analysis, as required.
- Review, respond and/or approve Request for Information (RFI) or Approval (RFA) submittals involving shop drawings, material data information and specifications and/or samples, and recommend appropriate action based upon project requirements and specifications.
- Manage, coordinate, and verify the recordation of the Project's as-built situation including, but not limited to, reviewing, processing, and/or documenting (red-lining) as-built drawings to ensure that all changes during the course of construction are recorded.
- Coordinate with other subcontractors, material suppliers, and potential tradesmen working for the Contractor, as a representative of the Contractor regarding the execution of the Project.
- Provide field inspections and observations to ensure conformance with all Project plans and specifications at the direction of Contractor representatives.
- Represent the Contractor in the professional resolution of design and specification conflicts encountered during the course of construction and develop cost effective solutions without effecting the quality and functionality of the Project deliverables.
- Interpret/verify the intent of Project construction drawings and specifications with field personnel and confirm understanding of the design to ensure the most effective execution of the Project.
- Coordinate and interface with SW, UTA, other subcontractors, and other entities and subsystems related to the Project (civil, rolling stock, traction power, OCS, train control systems and comms).

5 PROJECT ORGANIZATION AND PROPOSED STAFF

The experience and know-how SENER staff will cover the full range of the required relevant expertise to perform and successfully deliver the services.

The key staff presented below has proven experience in successfully supporting clients during bid stage. Our team is used to work hard under tight schedules and time constraints, and to plan and coordinate internal and client's teams and efforts.

All SENER staff to be involved in these services will do every effort, be dedicated, and make itself responsible to provide a satisfactory advice to the UTA On Call team.

Key staff:

Role	Name	Exp. (yrs)
Design Manager	Álvaro Relaño, PE	34
Deputy Design Manager	Roberto Rodríguez, PE	20
Track Lead	Raúl Arroyo	19
Integration Lead	Juan Ángel García-Cifo	6
Structures Lead	Manuel Francisco Báez	16
Drainage Lead	Miguel Jerez	15

Alvaro Relaño, PE is a Professional Engineer in Utah (amongst other states) with 34 years of experience as Project and Design Manager. He is a renowned rail expert that has successfully contributed over the last three decades to the planning, design and implementation of rail & transit infrastructures internationally. Alvaro´s experience includes projects encompassing all the disciplines (civil, track and systems) and he has a deep knowledge of the interfaces, being able to anticipate problems derived from the integration of the different railway systems.

Roberto Rodríguez, PE is a Professional Engineer in CA based in LA and will be the Deputy Design Manager. He will lead the design team, carrying out and being responsible for the content of the work and the timely production and submission of the deliverables for every Task. Roberto is a Civil Engineer with 20 years of experience managing and coordinating railway infrastructure projects, both in the private sector working for SENER, as well as in the public sector, managing rail contracts working for the Spanish Railways Infrastructure Manager (ADIF). Two of his areas of expertise are rail track design and FL & Safety facilities for tunnels.

Raúl Arroyo is an expert in Track Technology and Manager of multidisciplinary contracts related to this area of activity. He has extensive knowledge in railway dynamics, ballastless track and ballasted track, anti-vibration solutions (floating slab tracks and ballast mats), EN and AREMA regulations, vibrations, noise, railway pathologies, track materials, instrumentation, signal analysis and post-processing, simulation, validation and approval of railway fastening systems, buckling, railway inspections and auscultations, obstacle implementation gauging and railway interoperability.

Juan Ángel García-Cifo is a Civil Engineer with a Masters in Railway Systems with 6 years of experience in the railway sector. He has experience working on energy, infrastructure, control-command and signaling subsystems. Extensive knowledge in CE certification (European regulation) and commissioning of high-speed rail projects working for the Spanish rail infrastructure administrator (ADIF). He also has experience in railway safety life cycle and standards (CENELEC) in international projects (Egypt, Brazil) CBTC and ERTMS technologies (track and on board).

Manuel Francisco Báez is a Civil engineer with 16 years of experience in structural and track design. He has a Master degree in Seismic Engineering: Dynamics of Soils and Structures at the Polytechnic University of Madrid (UPM), and a Master degree in Structural Engineering at the Technological Institute of Santo Domingo (INTEC). Manuel has broad knowledge of

slab track systems and has experience in designing structural solutions for them.

Miguel Jerez is an Agricultural Engineer Project Management Professional, with 15 years of experience in the fields of climatology, hydrology and drainage. He has developed his professional career in the infrastructure sector, mainly in linear works (railways and highways) and structures (bridges, stations and airport terminals). His technical specialty is the study, design and dimensioning of drainage elements and complementary works necessary for the proper functioning of the collection, conduction and drainage systems of rainwater and/or fluvial water in infrastructures, structures and buildings.

In addition to the key staff presented above, SENER will provide a complete set of specialists that will be available on-demand to carry out the specific analysis and studies or clarify any doubts as they may arise during the services.

Services under this proposal are assumed to be performed in Los Angeles (CA), Las Vegas (NV) and Spain.

Also, to complement the scope of services that SENER can provide to this project and focusing on the regional knowledge of other rail stakeholders, SENER is open to collaborate with other third parties.

6 SUMMARY OF TASKS AND WORK PACKAGES

6.1 Detailed Design Drawings

WP 2.1 Track plan & profile

WP 2.2 Typical Cross Sections

WP 2.3 Track Components Drawings

WP 2.4 Rail fastening stiffness transition

WP 2.5 Concrete track slab

WP 2.6 Track drainage

WP 2.7 Earthing and bonding

WP 2.8 Interface with the Train Control System

6.2 Detailed Design Reports

WP 3.1 Slab track design validation

WP 3.2 Drainage report

WP 3.3 Bill of Quantities

6.3 DSDC

Work packages will be defined in later stages, based on the proposed scope.

7 SCHEDULE

SENER assumes the following duration of its services:

- **Detailed Design: 3 months** (Nov 2023 — Jan 2024)
- **DSDC: 3 months** (June— August 2024)

The SENER team will develop the scope described in this proposal during the period described above, provided that all the necessary documentation is available at the beginning. The detail design project works are assumed to start on October 1st, 2023.

8 COST PROPOSAL

8.1 Assumptions

The design assumptions considered in this proposal are the following:

- The track alignment design is not included in SENER's scope.
- No hard copies will be provided, all submittals will be electronic.
- Duration of the detailed design phase: 3 months
- Duration of the DSDC phase: 3 months.
- Periodic trips of the team based in Spain and Los Angeles to Salt Lake City to attend meetings.

8.2 Not-to-Exceed Price proposal

Due to the nature of the design services, a Not-to-Exceed Price is proposed. This not to exceed price is based in the estimated workload for the proposed staff.

The estimated not to exceed price for the tasks described in this proposal is 200,000 USD. This amount is exclusive of any indirect taxes.

This fee is based on a scope and a timeframe as described in this document. **If case of change of scope and/or schedule, SENER will be entitled to reconsider this price proposal.**

8.3 Fees proposal

The following rates are proposed to bill for the works described in this proposal:

Staff Categories	Rate	
Design Manager	$	325.00
Deputy Design Manager	$	325.00
Track Lead	$	175.00
Integration Lead	$	225.00
Structures Lead	$	175.00
Drainage Lead	$	225.00
Project Engineer	$	175.00
Draftsman	$	125.00
Admin staff	$	100.00

The invoices will be submitted on a monthly basis.

All payments will be done in USD, 30 days after invoicing.

8.4 Terms and conditions

This proposal is valid for 3 months.

The sole liability of the Consultant for any errors, mistakes or defects in the Engineering Services caused by his negligence shall be to correct at his cost any such errors mistakes or defects and correctly re-perform the services provided. The maximum aggregate liability of the Consultant for a cause whatsoever shall be limited to an amount equal to 100% of the Contract Price. The Consultant shall not assume any liability for indirect or consequential damages or losses of any kind.

The Consultant shall not be responsible nor assume any liability whatsoever under any circumstances in the performance of the works for errors or inadequacies in the documentation, information and instructions provided by the Client, or for defects or errors that may exist on existing Project documents.

The Intellectual Property (hereinafter IP) of the Consultant embedded in the works or developed while executing the works remains the property of the Consultant and the Client shall receive a non-exclusive, limited, royalty free license over such IP embedded in the works for the sole purposes of the exploitation of the Project by the Client.

In the event of termination for any reason, the Consultant shall be entitled to payment of the price for all work effectively carried out in accordance with the contract, up to the date of termination.

Other terms and conditions are to be agreed by the parties upon signature of a specific contract, and which will be executed between the Parties after the Client has officially accepted the Consultant's proposal.