

# TECHNICAL PROPOSAL

## A. EXECUTIVE SUMMARY



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Alamo NEX Construction has assembled a world-class team of engineering, construction, quality and maintenance professionals to meet TxDOT’s expectations and deliver I-35 NEX Central.

Our team combines Ferrovia Construction’s expertise in managing large, complex design-build projects with Webber’s self-performance capabilities and local experience, knowledge, and relationships. This approach has proven successful on design-build contracts in dense urban areas, including the \$2.1B I-635 LBJ Express, \$1.5B North Tarrant Express Segments 1&2 and \$1.1B I-35W Segment 3A. All three projects were highly complex, required substantial design innovation and excellence in execution, and completed early.

Conсор Engineers and Othon lead the design team with the support of TYLIN International. These firms are collaborative, innovative and produce quality work. Independent Quality will be performed by PaveTex. PaveTex has an AASHTO accredited lab 1.3 miles from the Project corridor. Maintenance services will be provided by Cintra. Cintra maintains over \$10B of infrastructure projects in the US, including three TxDOT projects with 52-year contracts.

A truly integrated team, we emphasize consistent communication and collaboration among all team members. We use a fast-tracked design approach, which considers construction-driven schedules while prioritizing long-term maintenance considerations.

## A. TECHNICAL PROPOSAL ORGANIZATION & CONTENTS

Following the direction of the Instructions to Proposers, Alamo NEX Construction (ANC) has organized its response according to the checklist in Exhibit E and contains the requirements of Exhibit B. ANC Concept Plans and the schedule are included in the Appendices in roll plot and 11 x 17 format. These include:

### Concept Plans – 11 x 17 Appendix

- Roll Plot Location Map
- Retaining Walls Cross Sections
- Disposition of Existing Roadways and Structures

### Concept Plans – Roll Plots

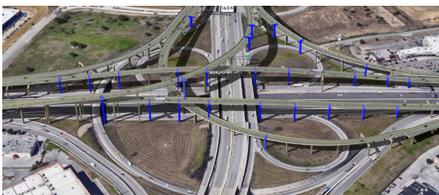
- General Plans / Index
- Concept Drawings - Construction Staging and Temporary Drainage
- Bridges
- Retaining and Sound Walls
- Profile Schematic Sheets - Roadway
- Drainage

### Schedule – 11 x 17 Appendix

- Critical Path
- Warranty and CMA Periods
- Work Breakdown Structure

ANC performed an exhaustive analysis of the existing infrastructures, local conditions and project requirements in all disciplines. Documentation related to this technical due diligence and investigations is included in digital and roll plot format in the form of Exhibit M; this material includes:

- Additional Geotechnical Investigation
- CCTV Drainage System Investigation
- 3D Aerial LiDAR
- Lighting Concept Plans & ITS
- Traffic Modeling Analysis for Construction Staging
- Special Equipment – Beam Launcher
- Alternative Solution for the Relocation of ELSB I-410N DC at I-35/I-410N Interchange
- Alternative Concept for Additional Connectivity on ELNB I-35.



## B. QS CHANGES

ANC has no changes to our QS beyond those described in Section C below.

## C. ORGANIZATION AND KEY PERSONNEL CHANGES

ANC did not submit any change in organization, Equity Members or other Major Participants. The Construction Manager proposed in the QS, Pau Fornes, has since left the company. On December 15, 2020, TxDOT approved the ANC requested change from Pau Fornes to Jose Luis Beltran. Jose has been active in the proposal development, leading the construction and scheduling teams and participating in one-on-ones. Jose brings extensive construction management experience from complex and challenging projects with similar constraints, such as limited access, tight right of way, adjacency to railroad and highly congested roadway, coordination of many stakeholders, and construction of deep foundations while managing multidisciplinary teams.

The TxDOT letter showing acceptance of this change is included in the response.

## D. MANAGEMENT STRUCTURE

Day-to-day and operational decision making authority and accountability will be vested in our project manager, Pablo Molla. He is TxDOT's sole point of contact for communication on all items, except those specifically assigned to others. A corporate management committee including senior management for the DB Contractor will oversee the organization and major strategic decisions.

### Commitment Statement

Each Major participant with Key Personnel commits to providing the specified individuals:

- Ferrovial Construction – Project Manager Pablo Molla, Construction Manager Jose Luis Beltran, Lead MOT Implementation Manger Dean Conrad, Utility Manager Javier Moino, Safety Manager, Kyle Freeman
- CONSOR – Design Manager Sandeep Patil, PE
- OTHON – Lead Structural Engineer, Ben Anderson, PE, Lead MOT Design Engineer, Danny Davila, PE
- PaveTex – Independent Quality Firm Manager Marvin Garcia, PE, PSQAM, Juan Villarreal, PE

## E. TECHNICAL SOLUTIONS SUMMARY

### 1. PROJECT MANAGEMENT

ANC identified a significant number of Value Added Responses (VARs) that exceed the requirements of the Project Management Plan (PMP). We have included the VARs that provide superior benefits and value to TxDOT and/or result in outstanding improvements in the implementation of the Project. A few examples by PMP component plan:

- Co-locate all project management Key Personnel (PM, CM, Utility Manager, Safety Manager, MOT Implementation Manager, IQFM) from NTP1 until Final Acceptance and avail for in-person meetings at TxDOT's discretion within 24 hours for six months after Final Acceptance.
- Procedures to adhere to pandemic restrictions and protocols, including testing available for employees anytime, paid leave for positive tests, PPE provided at all times as requested, mandatory face masks and the installation of hand washing stations. We will continue to innovate and adapt to everchanging health and safety concerns relating to COVID-19 and any other risks that arise.
- Integrate traffic management software (Nodum or similar) that evaluates the projected lane closures and combines all the activities involved with the resulting traffic flow patterns. The system will be used with LCRs to help ANC and TxDOT anticipate traffic issues and eliminate impacts caused by different closures occurring simultaneously by using an algorithm to prevent LCR conflicts and last-minute cancellations.
- Avoid several long-term allowable closures, including ramps and frontage road lanes. ANC's design eliminates 180 days of allowable ramp lane closures (at Randolph and Weidner interchanges) and avoids seven ramp and four FR closures, eliminating 870 days of allowable lane closures for existing wall reconstruction.

ANC VAR/VEIs are derived from our best practices and lessons learned as a result of having reconstructed four major TxDOT design-build projects amounting to \$6.6B in construction costs.

## 2. QUALITY MANAGEMENT

Our IQF has an existing 9,000 sf laboratory (AASHTO/CCRL/TxDOT accredited) and facilities within 1.3 miles of the corridor, satisfying the requirement of within 10 miles of the Project. IQF has 30 inspectors and two laboratory managers in San Antonio, who have been performing inspection and testing for TxDOT over the past eight years. This includes having engineering staff with a combined 120 years of experience working at TxDOT and being able to provide lead inspectors with at least two years of TxDOT inspection and testing experience on I-35.

- ANC’s quality VARs exceed the requirements of the Quality Management Plan and improve the overall quality of the Project. The VARs bring best practices, lessons learned and unique solutions from similar projects. Examples include:
- Test critical materials (soils/concrete) in advance by ANC QC laboratory. Additional laboratory and testing to anticipate and correct failures prior to IQF testing.
- Daily coordination between IQF and OV teams. Pre-empts potential non-validation before it happens; and addresses OV failing test results and non-validation of IQF test results.

## 3. DESIGN AND CONSTRUCTION PLAN

Through a collaborative approach with TxDOT during the proposal phase, value engineering and constructability analysis, we have incorporated Value Engineering Improvements (VEI) that minimize delays to the traveling public and inconvenience to surrounding businesses, improve mobility, and maintain a safe environment. A summary of the VEIs is listed below. For further details, please refer to the technical proposal, drawings and videos.

- Improving the geometry and reducing the required design exceptions and variances by increasing shoulders, radius of some direct connectors, stopping sight distance and geometry parameters in some transitions.
- Using hammerheads and maximizing the use of monoshaft foundations, 70 straddle bents were eliminated creating a more consistent and efficient elevated structure that reduce the permanent and construction footprint.
- Improving traffic management and reducing traffic closures thanks to the use of monshafts and the reduction of the number of straddle bents, the impacts with the existing infrastructure, and the number of construction phases as in Loop 1604.
- Reduced structure area by 340,000 sf and eliminated 76 steel spans and 82 bents.
- Retaining infrastructure and avoiding conflicts with existing infrastructure. Avoidance of reconstruction of 23 existing retaining walls and minimization of impacts on utilities and drainage elements.

**Bridge construction** represents approximately 55% of the Project budget. ANC has chosen construction methods and approaches to meet objectives of minimizing impacts to users and completing the Project on time or early. We have focused our efforts in providing means and methods that improve the constructability of the superstructure. With more than 800 spans of 145 ft (average), the execution of successive spans on a continual and predictable basis is key. An innovative and proven solution is to use a beam launcher system. ANC has extensive experience with this system. The method for girder placement (by launcher or conventional crane) will be determined based on minimizing impacts, avoiding lane closures and specifics of span (eg, crossing with other spans, curved girder, height, etc). We anticipate placing more than half of the girders with launchers. When using this state-of-the-art method, no major cranes will be needed. ANC will self-perform the launching scope with specialized crews. We have partnered with the equipment manufacture to design and provide the heavy-lift equipment. This addresses the resource limitations of a very competitive and busy market.



## F. DBE APPROACH

ANC will facilitate DBE participation while providing the resources for economic growth and success. We have a proven record of exceeding participation goals through effective comprehensive compliance strategies to monitor and ensure regulatory compliance. We will utilize outreach initiatives, such as customized work packages as well as provide mentoring and training. We will use our proven strategies, lessons learned and best practices to ensure we achieve our VAR of at least 15% DBE participation for construction services

Project	Goal	Result
I-635 LBJ	12.12%	20%
NTE 1&2	12.12%	21%
I-35W 3A	6%	13%