

HCRMA

HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY

PHARR CITY HALL, 2ND FLOOR
COUNCIL CHAMBERS
118 S. CAGE BLVD
PHARR, TEXAS 78577



SPECIAL BOARD OF DIRECTORS MEETING
FRIDAY / MAY 11, 2018
4:30 PM

HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY

NOTICE OF AND AGENDA FOR A SPECIAL MEETING TO BE HELD BY THE BOARD OF DIRECTORS

DATE: FRIDAY, MAY 11, 2018
TIME: 4:30 PM
PLACE: PHARR CITY HALL
2nd FLOOR CITY COMMISSION CHAMBERS
118 SOUTH CAGE BOULEVARD
PHARR, TEXAS 78577

PRESIDING: S. DAVID DEANDA, JR, CHAIRMAN

PLEDGE OF ALLEGIANCE

INVOCATION

CALL TO ORDER AND ESTABLISHMENT OF A QUORUM FOR REGULAR MEETING

1. AGENDA

- A. Resolution 2018 – 20 – Approval of Change Orders Number 1 and 2 with Johnson Bros. Corporation for construction of the 365 Tollway Project from US 281/Military Highway to FM 396 (Anzalduas Highway).

2. EXECUTIVE SESSION, CHAPTER 551, TEXAS GOVERNMENT CODE, SECTION 551.071 (CONSULTATION WITH ATTORNEY)

- A. Consultation with Board Attorney on legal issues pertaining to the construction contract with Johnson Bros. Corporation for construction of the 365 Tollway Project from US 281/Military Highway to FM 396 (Anzalduas Highway) (Section 551.071 T.G.C.).

PUBLIC COMMENT

ADJOURNMENT OF SPECIAL MEETING

CERTIFICATION

I, the Undersigned Authority, do hereby certify that the attached agenda of the Hidalgo County Regional Mobility Authority Board of Directors is a true and correct copy and that I posted a true and correct copy of said notice on the Hidalgo County Regional Mobility Authority Web Page (www.hcrma.net) and the bulletin board in the Hidalgo County Court House (100 North Closner, Edinburg, Texas 78539), a place convenient and readily accessible to the general public at all times, and said Notice was posted on the 7th day of May 2018 at 5:00 pm and will remain so posted continuously for at least 72 hours preceding the scheduled time of said meeting in accordance with Chapter 551 of the Texas Government Code.

Maria E. Alaniz
Administrative Assistant

Note: If you require special accommodations under the Americans with Disabilities Act, please contact Maria E. Alaniz at 956-402-4762 at least 24 hours before the meeting.

PUBLIC COMMENT POLICY

Public Comment Policy: "At the beginning of each HCRMA meeting, the HCRMA will allow for an open public forum/comment period. This comment period shall not exceed one-half (1/2) hour in length and each speaker will be allowed a maximum of three (3) minutes to speak. All individuals desiring to address the HCRMA must be signed up to do so, prior to the open comment period. The purpose of this comment period is to provide the public an opportunity to address issues or topics that are under the jurisdiction of the HCRMA. For issues or topics which are not otherwise part of the posted agenda for the meeting, HCRMA members may direct staff to investigate the issue or topic further. No action or discussion shall be taken on issues or topics which are not part of the posted agenda for the meeting. Members of the public may be recognized on posted agenda items deemed appropriate by the Chairman as these items are considered, and the same time limitations (3 minutes) applies."

HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY

AGENDA RECOMMENDATION FORM

BOARD OF DIRECTORS	<u> X </u>	AGENDA ITEM	<u> 1 </u>
PLANNING COMMITTEE	<u> </u>	DATE SUBMITTED	<u> 5/07/18 </u>
FINANCE COMMITTEE	<u> </u>	MEETING DATE	<u> 5/11/18 </u>
TECHNICAL COMMITTEE	<u> </u>		

1. Agenda Item: **RESOLUTION 2018-20 – APPROVAL OF CHANGE ORDER NUMBER 1 AND 2 WITH JOHNSON BROS. CORPORATION FOR CONSTRUCTION OF THE 365 TOLLWAY FROM US 281/MILITARY HIGHWAY TO FM 396 (ANZALDUAS HIGHWAY).**

2. Nature of Request: (Brief Overview) Attachments: X Yes No

Consideration and approval of Change Order 1 and 2 with Johnson Bros. for construction of the 365 Tollway from US 281/Military Highway to FM 396 (Anzalduas Highway).

3. Policy Implication: Board Policy, Local Government, Texas Government Code, Texas Transportation Code, TxDOT Policy

4. Budgeted: X Yes No N/A Funding Source: _____

5. Staff Recommendation: **Motion to approve Resolution 2018-20 – Approval of Change Order Number 1 and 2 with Johnson Bros. Corporation for construction of the 365 Tollway from US 281/Military Highway to FM 396 (Anzalduas Highway).**

6. Development Engineer's Recommendation: X Approved Disapproved None
7. Construction Engineer's Recommendation: X Approved Disapproved None
8. Chief Auditor's Recommendation: Approved Disapproved X None
9. Board Attorney's Recommendation: X Approved Disapproved None
10. Chief Financial Officer's Recommendation: X Approved Disapproved None
11. Executive Director's Recommendation: X Approved Disapproved None



Memorandum

To: S. David Deanda, Jr., Chairman

From: Pilar Rodriguez, PE, Executive Director

Date: May 11, 2018

Re: **Change Orders 1 & 2 – 365 Tollway Project**

Background

On November 28, 2017, the Board of Directors awarded the construction contract for the 365 Tollway Project to Johnson Bros. Corporation for the low bid in the amount of \$202,548,591.57. Subsequent to the award of contract, Johnson Bros. Corporation has submitted a request to the Authority to consider a Value Engineering Change Proposal to entertain project cost savings.

Goal

Attached for the Board's review and consideration, are Change Orders Numbers 1 & 2 to the construction contract with Johnson Bros. Corporation for the 365 Tollway Project from US 281/Military Highway to FM 396 (Anzalduas Highway).

Change Order Number 1 is a request to delay the issuance of Payment, Performance and Warranty Bonds until such time the Authority issues a Notice to Proceed for construction. This item does have a fiscal impact.

Change Order Number 2 is a request from Johnson Bros. to consider a Value Engineering Change Proposal for possible project savings. The Value Engineering Change Proposal would require a workshop to determine areas or element that may produce cost savings. Once the scope of the Value Engineering is agreed to by the Authority, Johnson Bros. would be authorized to develop the design, budget and saving at a rate of \$3,600 per hour based on a work authorization (not to exceed) approved by the Board. The Board approval is proposed in two phases: Phase 1 is design development and estimated cost savings; Phase 2 is final plans, specifications and pricing. Each phase would be approved by the Board of Directors with a not to exceed dollar amount of effort. The cost for Value Engineering development is proposed to be netted from the construction cost savings.

Options

The Board of Directors could chose to disapprove Change Orders 1 & 2.

Recommendation

Based on review by this office, **approval of Resolution 2018-20 – Approval of Change Orders Numbers 1 & 2 with Johnson Bros. Corporation for construction of the 365 Tollway Project from US 281/Military Highway to FM 396 (Anzalduas Highway) is recommended.**

If you should have any questions or require additional information, please advise.

HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY
BOARD RESOLUTION No. 2018-20

APPROVAL OF CHANGE ORDER NUMBER 1 AND 2 TO JOHNSON
BROS. CORPORATION, A SOUTHLAND COMPANY, FOR
CONSTRUCTION OF THE 365 TOLL PROJECT

THIS RESOLUTION is adopted this 11th day of May, 2018 by the Board of Directors of the Hidalgo County Regional Mobility Authority.

WHEREAS, the Hidalgo County Regional Mobility Authority (the “Authority”), acting through its Board of Directors (the “Board”), is a regional mobility authority created pursuant to Chapter 370, Texas Transportation Code, as amended (the “Act”); and

WHEREAS, on November 17, 2005, the Texas Transportation Commission (the “Commission”) created the Authority pursuant to (i) the Act; (ii) Title 43, Texas Administrative Code; (iii) a petition of the Hidalgo County Commissioners Court (the “County”); and (iv) findings by the Commission that the creation of the Authority would result in certain direct benefits to the State of Texas (the “State”), local governments, and the traveling public and would improve the State’s transportation system; and

WHEREAS, the Act allows the Authority to construct transportation projects within the County, including the 365 Tollway Project (the “Project”); and

WHEREAS, the Texas Department of Transportation (“TxDOT”) approved the Project’s final design, contract letting and award procedures, and form of construction contract; and

WHEREAS, on October 4, 2017, with amendments published October 8, 2017, October 11, 2017 and October 15, 2017 the Authority published a solicitation for Bid #2017-002 for the 365 Tollway Project (Segments 1 and 2), Contract No. 0921-02-368 for the Project; and

WHEREAS, bids for the Project were submitted electronically via Civcast Bid System; the first bid was received at 2:20 p.m. on November 10, 2017, and the last bid was received at 2:39 pm on November 10, 2017; and

WHEREAS, at 3:05 p.m. on November 10, 2017, the Authority opened and read into the record five (5) formal sealed, electronic bids for the Project from: (i) Johnson Bros. Corporation, a Southland Company (“Johnson”), (ii) Anderson Columbia Company, Inc., (iii) Pulice-Flatiron JV, (iv) Lane-Abrams Toll 365 Joint Venture, and (v) Webber, LLC, in amounts ranging from \$202,548,591.57 to \$289,374,971.13 for construction of the Project; and

WHEREAS, Johnson provided the lowest Project bid in the amount of \$202,548,591.57; and

WHEREAS, on November 28, 2017, the Board conditionally approved the award of the construction contract by and between Johnson and the Authority for construction of the Project in the amount \$202,548,591.57, subject to (i) approval of the low bidder from TxDOT, as required under Section IV.8(b) of the Project's Project Development, Operation and Maintenance Agreement; (ii) conformance between the with the Project's budget and the toll revenue financing; and (iii) separate approval of the Board of any issuance of a Notice to Proceed to Johnson ("NTP") ; and

WHEREAS, on April 26, 2018, the Authority issued a notice of award to Johnson (attached as Exhibit A), clarifying the Board's conditional approval of award, modifying the contract, and providing fifteen (15) days for contract execution; and

WHEREAS, in conjunction with executing the contract, Johnson requested Change Order Number 1 (attached hereto as Exhibit B) providing for a delay on issuance of Performance, Payment and Warranty Bonds for construction of the Project until such time as NTP is issued by the Authority; and

WHEREAS, Johnson has requested via Change Order Number 2 (attached hereto as Exhibit B) that the Authority consider a Value Engineering Change Proposal for the Project to promote conformance between the Project's budget and the toll revenue financing and acknowledging that Johnson has no expectation of or property interest in the issuance of NTP; and

WHEREAS, pursuant to the Act, the Board finds that approval of Change Orders Number 1 & 2 to the construction contract with Johnson necessary and in the best interest of the Authority;

NOW THEREFORE BE IT RESOLVED BY THE BOARD OF
DIRECTORS OF THE HIDALGO COUNTY REGIONAL MOBILITY
AUTHORITY THAT:

Section 1. The recital clauses are incorporated in the text of this Resolution as if fully restated.

Section 2. The Board hereby approves Change Order Number 1 to the construction contract with Johnson for construction of the Project.

Section 3. The Board hereby approves Change Order Number 2 at a rate of \$3,600.00 per hour based on a not-to-exceed work authorization(s) for Project Scope to be approved by the Board.

Section 4. The Board hereby approves Change Orders Numbers 1 & 2 with no

issuance of an NTP to Johnson until such Project scope of the Value Engineering Proposal is approved by the Board of Directors and TxDOT.

Section 5. If the Project scope is not deemed feasible and additional revenue is not available to fully fund the Project, no NTP shall be issued. If NTP is not issued, the Authority shall terminate the contract without incurring any additional costs other than those approved under Change Order 2.

Section 6. The Board hereby authorizes the Executive Director to execute the Change Orders 1 & 2 with Johnson.

PASSED AND APPROVED AS TO BE EFFECTIVE IMMEDIATELY BY THE BOARD OF DIRECTORS OF THE HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY AT A SPECIAL MEETING on the 11th day of May, 2018, at which meeting a quorum was present.

S. David Deanda, Jr., Chairman

Ricardo Perez, Secretary/Treasurer

EXHIBIT A
NOTICE OF AWARD



Board of Directors

S. David Deanda, Jr., Chairman
Forrest Runnels, Vice Chairman
Ricardo Perez, Secretary/Treasurer
Alonzo Cantu, Director
R. David Guerra, Director
Paul S. Moxley, Director
Eziquel Reyna, Director

April 26, 2018

Russell Lindsey
Vice President
Johnson Brothers Corporation
608 Henrietta Creek
Roanoke, Texas 76262

Re: Solicitation for Bid #2017-002 for the 365 Tollway Project (Segments 1 and 2) (the "Project"), Contract No. 0921-02-368 (the "Contract")

Dear Mr. Lindsey:

On November 28, 2017, the Hidalgo County Regional Mobility Authority (the "HCRMA") Board of Directors (the "Board") approved the award of Contract to Johnson Brothers Corporation, a Southland Company (the "Contractor") as the lowest responsible bidder for the referenced Project in the amount of \$202,548,591.57. Pursuant to existing extensions between the HCRMA and the Contractor, the bid award deadline is April 27, 2018.

The Board's approval of the Contract was conditioned specifically upon the following:

1. Approval of the Contractor by the Texas Department of Transportation ("TxDOT") as provided for in Section IV.8(b) of that certain Project Development, Operation and Maintenance Agreement for the Project by and between the HCRMA and TxDOT;
2. Acknowledgment by the Contractor that, as stated in the referenced solicitation, the Project is to be financed in part by toll revenue bonds; accordingly, no notice to proceed ("NTP") shall be issued prior to (a) the issuance of toll revenue bonds providing adequate funding for the Project, including the construction contract, and (b) concurrence of the NTP by the Board; and
3. Contractor agrees not to begin any work on the Project or related to the Project or the construction contract prior to NTP, except as may be authorized in writing by the Board.

In correspondence dated April 11, 2018 to the HCRMA, TxDOT stated its deemed approval of the Contractor. Provided the Contractor acknowledges and agrees to Sections (ii) and (iii) above, the referenced Contract is hereby awarded. This Contract and any change orders or amendments thereto remains subject to TxDOT approval.

Please be advised that this Notice does NOT constitute the formation of a contract between the HCRMA and Contractor. The Contractor shall not acquire any legal or equitable rights relative to the contract services until a contract is executed. The HCRMA further reserves the right to cancel this Notice of Award at any time prior to the execution of the contract.

Page 2
Russell Lindsey
April 26, 2018

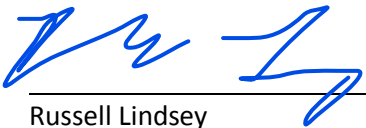
Please provide your executed acknowledgement and agreement to the terms of this award letter, which serve as a Contract amendment under Section P.3 of the Contract, as well as the signed Contract by May 9, 2018. Certificates of Insurance, evidence of filing with the Texas Ethics Commission of form 1295, and the Performance Bond, the Payment Bond, and the Warranty Bond must be submitted with the executed Contract.

Sincerley,
Hidalgo County Regional Mobility Authority



Pilar Rodriguez, PE
Executive Director

ACKNOWLEDGEMENT AND AGREEMENT



Russell Lindsey
Vice President
Johnson Brothers Corporation

Date: 4/26/18

EXHIBIT B
CHANGE ORDER NUMBER 1 & 2
BETWEEN
JOHNSON BROS. CORPORATION, A SOUTHLAND COMPANY
AND
HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY
FOR
CONSTRUCTION OF
365 TOLLWAY PROJECT



May 7, 2018

Hidalgo County Regional Mobility Authority
Attention: Pilar Rodriguez, P.E.
118 South Cage Blvd., 4th Floor
Pharr, Texas 78577

RE: HCRMA Bid Number 2017-002 for the 365 Tollway Segments 1 and 2 (the "Project"), Contract Number 0921-02-368 **PROPOSED CHANGE ORDER #1**

Dear Mr. Rodriguez:

On November 10, 2017, Johnson Brothers Corporation ("JBC") submitted its bid for construction of the above-referenced project. According to the official bid tabulation, JBC was the lowest bidder with a price of \$202,548,591.57 (the "Bid Amount"). Pursuant to the proposal documents, and your letter dated April 26, 2018 where the Hidalgo County Regional Mobility Authority ("HCRMA") is requesting the Performance Bond, the Payment Bond, and a Warranty Bond (collectively the "Bonds"), we propose Change Order #1. This request is based on the condition of the approval of the contract that no work may begin prior to the issuance of an NTP except as authorized by the Board.

JBC proposes to execute the contract documents but not provide the Bonds until such time as the notice to proceed is issued. This will eliminate from having JBC's bonds out and executed for a longer period of time than is required to meet the contract requirements. We can issue the HCRMA a letter of good standing if needed from our bond company. Thank you for entertaining this proposal.

JBC is pleased to work with the HCRMA to move the 365 project towards construction.

Best regards,

A handwritten signature in black ink, appearing to be "R. Lindsey", written over a vertical line.

JOHNSON BROTHERS CORPORATION

Name: Russell Lindsey
Title: Vice President

365 TOLL PROJECT, SEGMENTS 1 AND 2

CHANGE ORDER NO. 1

Project Information	ISSUANCE DATE: May __, 2018
Project Name	365 Toll Project (Segments 1 and 2)
CSJ	0921-02-368
Owner	Hidalgo County Regional Mobility Authority (HCRMA)
Description and Reason for the Change Order	

This change order is the result of the contract award being conditioned on no work being performed prior to issuance of an NTP without HCRMA board approval. With no ongoing work there is no reason for Johnson Brothers Corporation ("JBC") to tender Performance, Payment and Warranty Bonds (collectively "Bonds") with the submission of the signed contract. JBC will submit Bonds at such time that NTP is issued or work for which the Bonds would cover is authorized.

Price and Budget

There will be no cost impact associated with this change order.

Original Bid Amount	\$202,548,591.57
Previously Approved Change Orders	0
Change Order No. 1 Amount	0
Contract Not to Exceed Amount	\$202,548,591.57

365 TOLL PROJECT, SEGMENTS 1 AND 2

CHANGE ORDER NO. 1

For TxDOT/HCRMA/FHWA use only:	
Days FHWA Non-Participating Co Portion FHWA Non-Participating	N/A \$0.00
Project Schedule	
Substantial Completion Date: Final Acceptance Date:	TBD (due to deferral of work to NTP) TBD (due to deferral of work to NTP)
Signatures	
ACCEPTED: Johnson Brothers Corporation	Signature: _____ Russell Lindsey, Vice President Date: _____
ACCEPTED: HCRMA	Signature: _____ Pilar Rodriguez, Executive Director Date: _____



May 7, 2018

Hidalgo County Regional Mobility Authority
Attention: Pilar Rodriguez, P.E.
118 South Cage Blvd., 4th Floor
Pharr, Texas 78577

RE: HCRMA Bid Number 2017-002 for the 365 Tollway Segments 1 and 2 (the "Project"), Contract Number 0921-02-368 **CHANGE ORDER #2**

Dear Mr. Rodriguez:

On November 10, 2017, Johnson Brothers Corporation ("JBC") submitted its bid for construction of the above-referenced project. According to the official bid tabulation, JBC was the lowest bidder with a price of \$202,548,591.57 (the "Bid Amount"). Pursuant to the proposal documents, we propose Change Order #2 for Value Engineering ("VE") on the 365 project. We understand that our initial competitive bid was over the original estimate for construction. The terms of the agreement would be the following.

1. JBC's construction and engineering team would propose industry and local "best practice" ideas from our extensive background across North America. The HCRMA's management team would be able to pick and choose these ideas for further discovery in a work order method. At that point JBC's team would work the feasibility of the idea including conceptual design, budget and savings at a rate of \$ 3,600 per hour for the approved work order. After feasibility and approval, JBC would finalize the approved idea for construction at which time JBC and HCRMA would split the savings after the cost of work orders.
2. Should the HCRMA fail to receive necessary funding, fail to issue a notice to proceed, or cancel the project; then JBC would receive full compensation based on the work order hourly rates as discussed above.

This letter will also serve as a notice for future delays based project scheduling of the above mentioned in regards to time extensions and seasonality of construction activities.



JOHNSON BROS.
CORPORATION

Page 2, Change order #2

Attached you will find a short document that shows some of the ideas that could be proposed for work orders to accomplish budget constraints.

JBC is pleased to work with the HCRMA to move the 365 project towards construction and please let us know any questions that you all might have.

Best regards,

JOHNSON BROTHERS CORPORATION

Name: Russell Lindsey
Title: Vice President

365 TOLL PROJECT, SEGMENTS 1 AND 2

CHANGE ORDER NO. 2

Project Information	ISSUANCE DATE: May __, 2018
Project Name	365 Toll Project (Segments 1 and 2)
CSJ	0921-02-368
Owner	Hidalgo County Regional Mobility Authority (HCRMA)
Description and Reason for the Change Order	

This change order is for Value Engineering (VE) for the Project. JBC's bid was over the HCRMA Engineer's Estimate for construction. VE is intended to reduce the cost. The terms for performing VE are:

1. JBC's construction and engineering team would propose industry and local "best practice" ideas from its extensive background across North America. The HCRMA's management team would be able to pick and choose from among these from ideas and authorize further analysis and assessment through issuance of a work order. At that point JBC's team would work the feasibility of the idea including conceptual design, budget, and savings at a rate of \$3,600 per hour for the approved work order. After feasibility and approval, JBC would finalize the approved idea for construction at which time JBC and HCRMA would split the savings after the cost of work orders.
2. Should the HCRMA fail to receive necessary funding, fail to issue a notice to proceed, or cancel the project; then JBC would receive full compensation based on the work order hourly rate as discussed above.
3. HCRMA also acknowledges that there will be impacts on project scheduling of the above mentioned activities in regards to time extensions and seasonality of construction work.
4. JBC acknowledges that it has no expectation of or property interest in the issuance of NTP.

365 TOLL PROJECT, SEGMENTS 1 AND 2

CHANGE ORDER NO. 2

Price and Budget

There will be no cost impact associated with this change order. Any costs would be the subject of future work orders.

Original Bid Amount	\$202,548,591.57
Previously Approved Change Orders	0
Change Order No. 1 Amount	0
Contract Not to Exceed Amount	\$202,548,591.57

For TxDOT/HCRMA/FHWA use only:

Days FHWA Non-Participating Co Portion FHWA Non-Participating	N/A \$0.00
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Project Schedule

Substantial Completion Date: Final Acceptance Date:	TBD (due to deferral of work to NTP) TBD (due to deferral of work to NTP)
--	--

Signatures

ACCEPTED:
Johnson Brothers Corporation

Signature: _____
Russell Lindsey, Vice President
Date: _____

ACCEPTED:
HCRMA

Signature: _____
Pilar Rodriguez, Executive Director
Date: _____

**365 Tollway Segments 1 & 2
HCRMA Contract No. 0921-02-368**

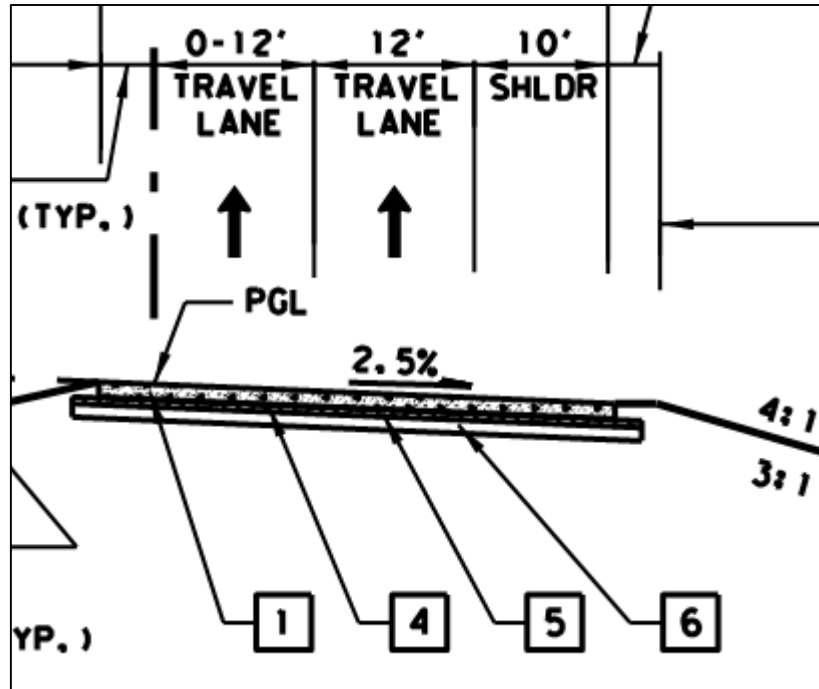
MAY 4, 2018



Potential VE Work Order Ideas

- Pavement / Subgrade
 - *Use Thicker Asphalt Base in Lieu of Lime Treated Subgrade*
 - *Use 4" Bond Breaker in Lieu of CTB*
 - *Reduce Concrete Pavement Section to 10" CRC*
 - *Revise Concrete Pavement to "Layered Pavement"*
- Materials / Foundations
 - *Use Geogrid (Tensar-type) MSE Wall System*
 - *Use Florida I Beams for Extending Span Lengths*
 - *Change Drilled Shafts to Driven Pile Foundations*
 - *Use Portadam-Type System in Lieu of Temporary Levee*
- Geometrics
 - *Eliminate I Rd / Thomas Rd Bridge & Replace with Frontage Roads*

- Use Asphalt Base Layer in Lieu of Lime Treated Subgrade (Layer 6)



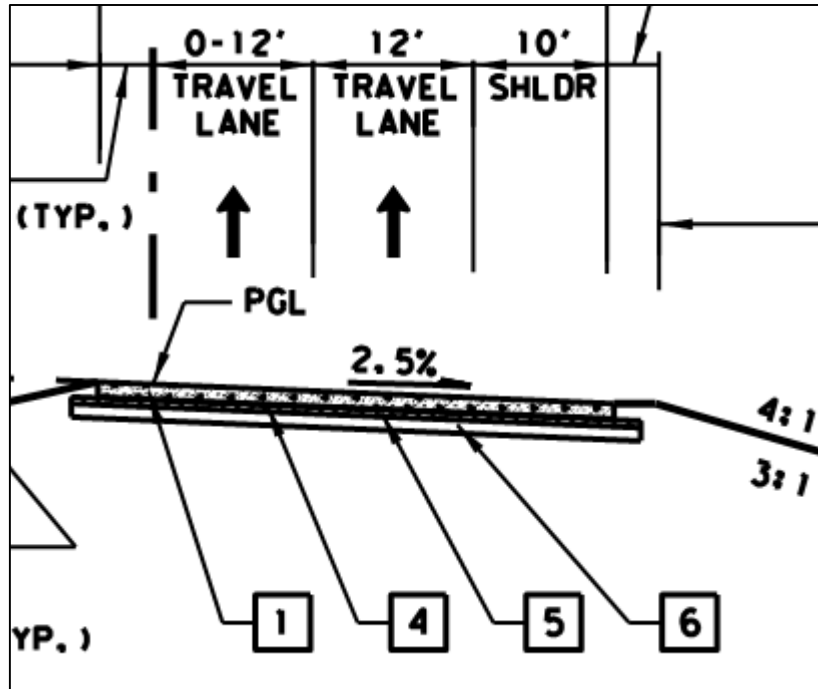
NOTES:

FOR ESTIMATE BY STATION SEE PAVEMENT SUMMARY

- 1 13" CONC. PAV (CONT REINF)
- 2 11.5" CONC. PAV (CONT REINF)
- 3 10" CONC. PAV (CONT REINF)
- 4 PROP. 1" TY D HMA (PG-64-22) BOND BREAKER
- 5 PROP. 6" CEMENT TREAT. FLEXBASE W/2% CEMENT ADMIX BY WEIGHT
- 6 PROP. 12" LIME TREAT. SUBGRADE W/6% LIME ADMIX BY WEIGHT

- Reduces issues with mixing in place, weather issues and curing time associated with Chemical Stabilization

- Use 4" Bond Breaker Layer in Lieu of CTB (Layer 5)



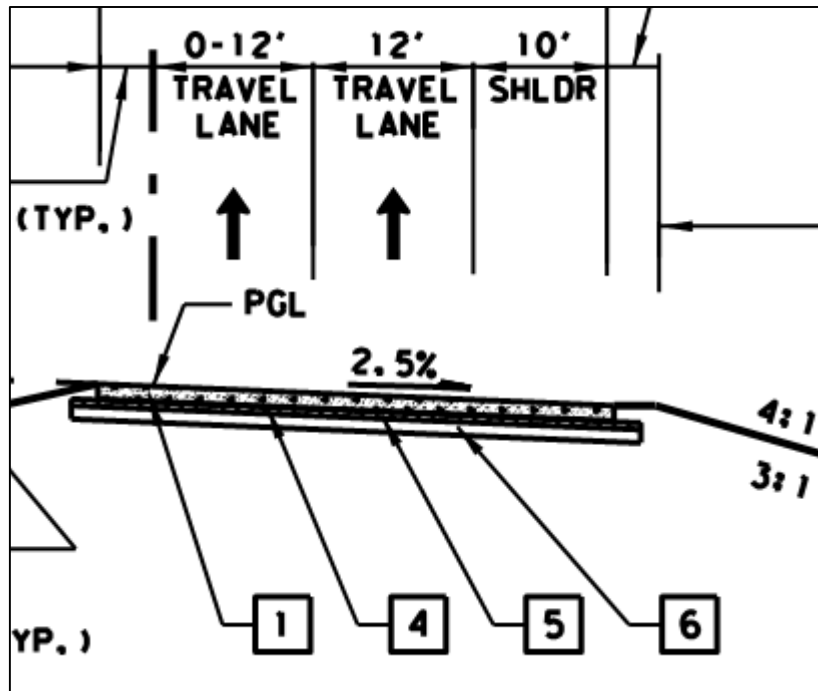
NOTES:

FOR ESTIMATE BY STATION SEE PAVEMENT SUMMARY

- | | |
|---|--|
| 1 | 13" CONC. PAV (CONT REINF) |
| 2 | 11.5" CONC. PAV (CONT REINF) |
| 3 | 10" CONC. PAV (CONT REINF) |
| 4 | PROP. 1" TY D HMA
(PG-64-22) BOND BREAKER |
| 5 | PROP. 6" CEMENT TREAT. FLEXBASE
W/2% CEMENT ADMIX BY WEIGHT |
| 6 | PROP 12" LIME TREAT. SUBGRADE
W/6% LIME ADMIX BY WEIGHT |

- Reduces issues with delivery, placing and curing of Cement Treated Base
- Thinner asphalt layer can provide similar strength properties as CTB

- Reduce Concrete Pavement Layer to 10" CRC to Match Initial Traffic Volumes



NOTES:

FOR ESTIMATE BY STATION SEE PAVEMENT SUMMARY

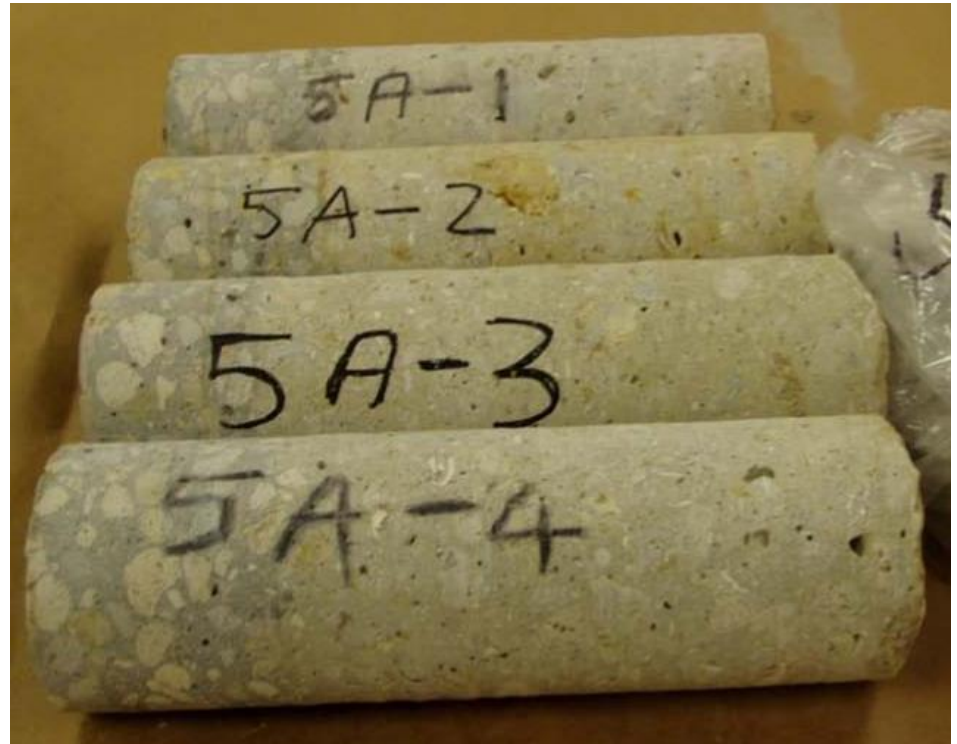
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- 5 PROP. 6" CEMENT TREAT. FLEXBASE W/2% CEMENT ADMIX BY WEIGHT
- 6 PROP 12" LIME TREAT. SUBGRADE W/6% LIME ADMIX BY WEIGHT

- Use "Perpetual Pavement" Concept to reduce initial thickness of pavement to match initial traffic ramp up
- As traffic increases, revenue is available and bonded overlay can be added

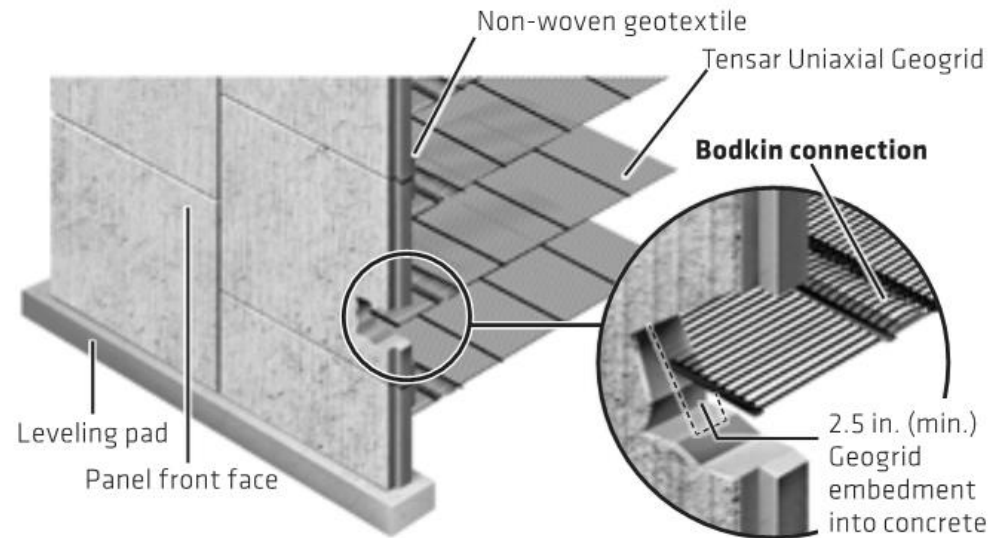
- Implement a “Layered Concrete Pavement” Section



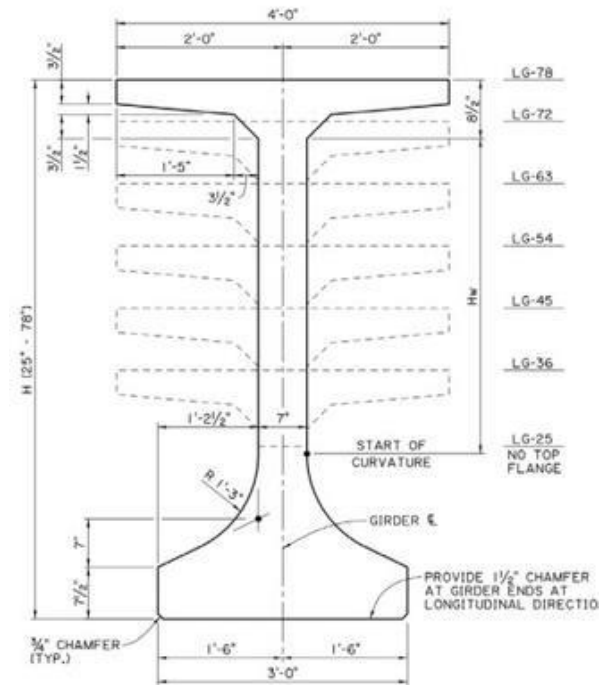
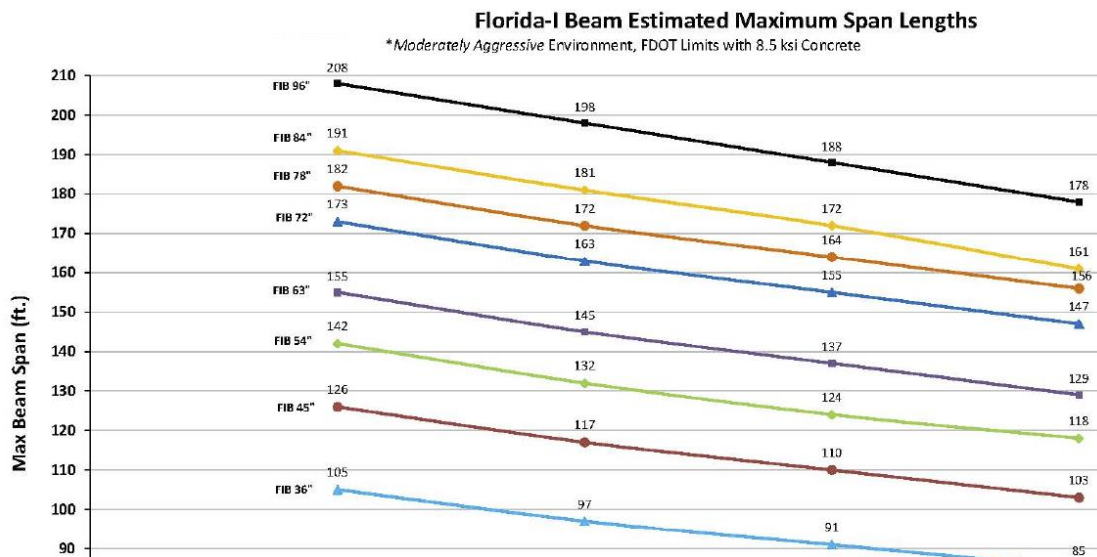
- Implement a “Layered Concrete Pavement” Section
 - Uses 2 layer concrete section with a lower quality mix in the deeper portion of the section where stresses are lower and a high quality mix in the top layer
 - Used in Europe for many years and in US prior to 1970s
 - 30 year test section in service in Florida with good results
 - Provides a more sustainable project
 - Reduces the need for import of aggregates



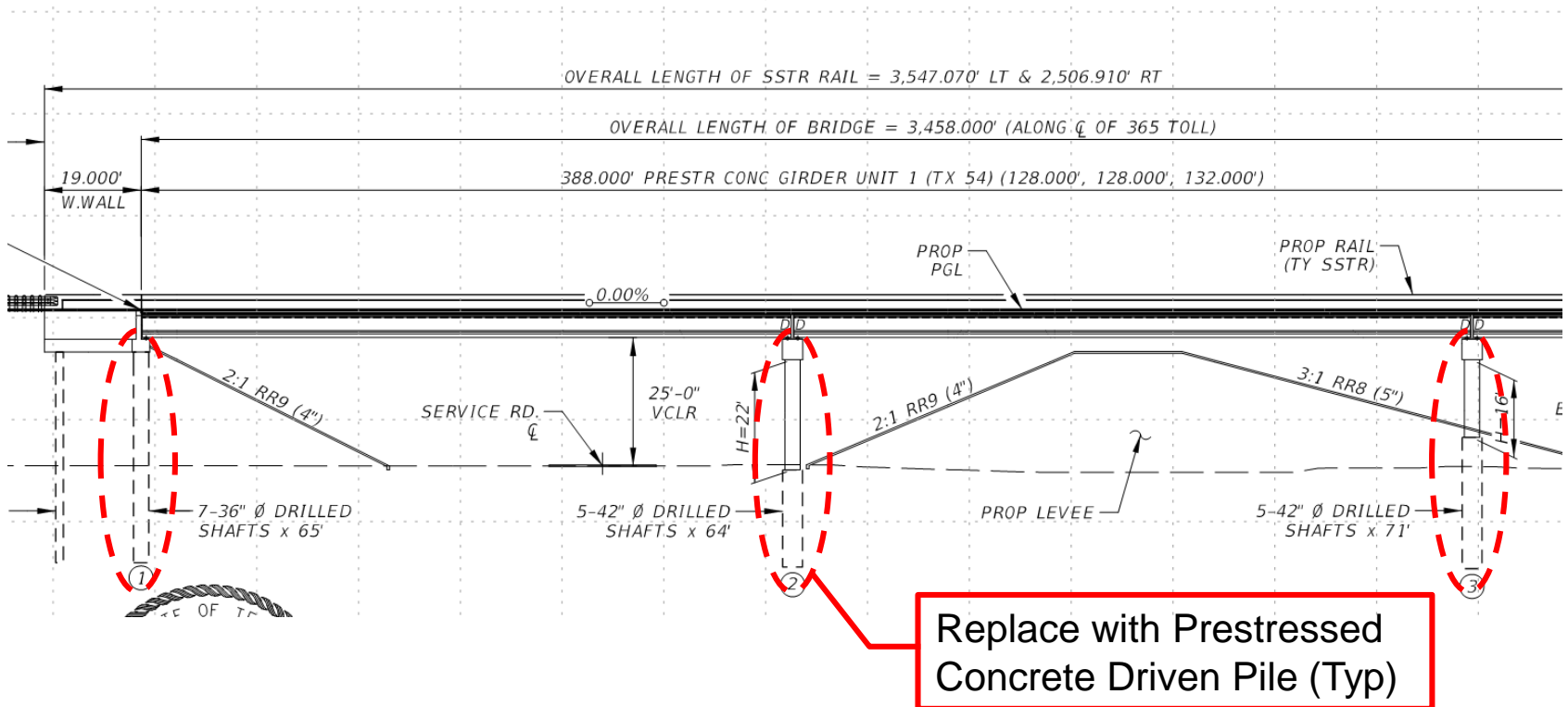
- Use Non-Metallic MSE Wall System (Tensar or others)
 - GeoMega Wall or Geogrid Wall system
 - Design with locally available fine-grained backfill materials
 - Reduces the need for import of aggregates
 - Resistant to corrosive soils



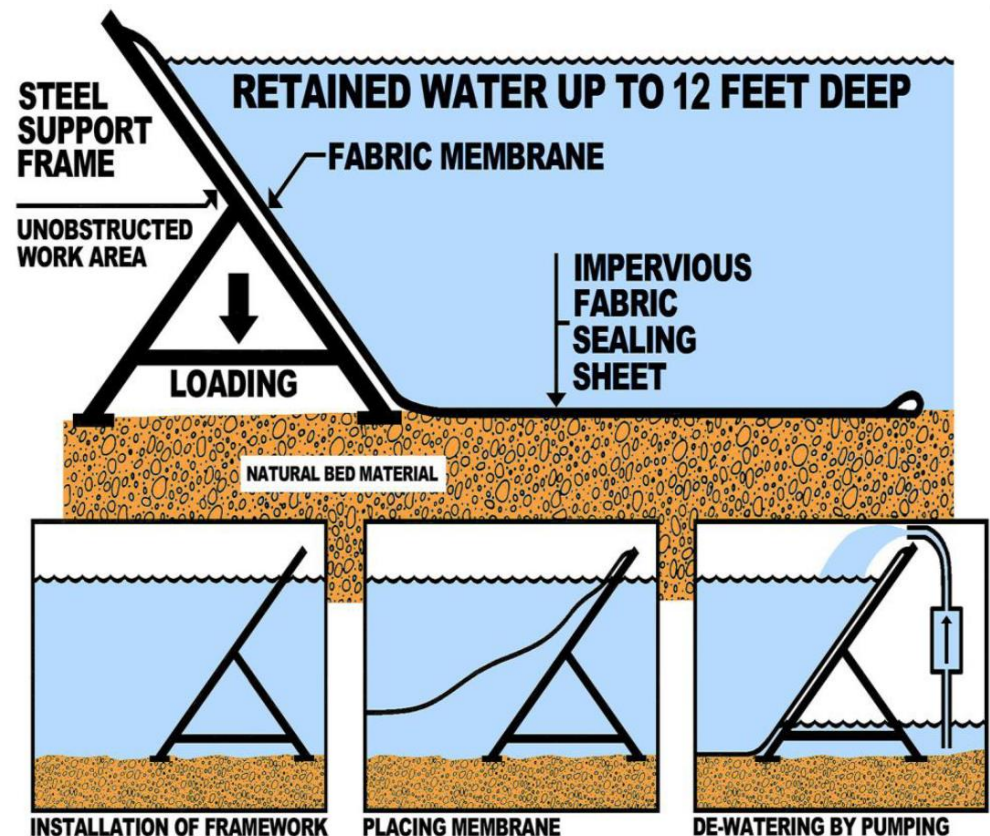
- Use Florida I Beam (FIB) Sections for Bridges
 - Extends span lengths and reduces substructure units
 - Increases beam spacing
 - Reduces the number of beams to be transported to the site and erected



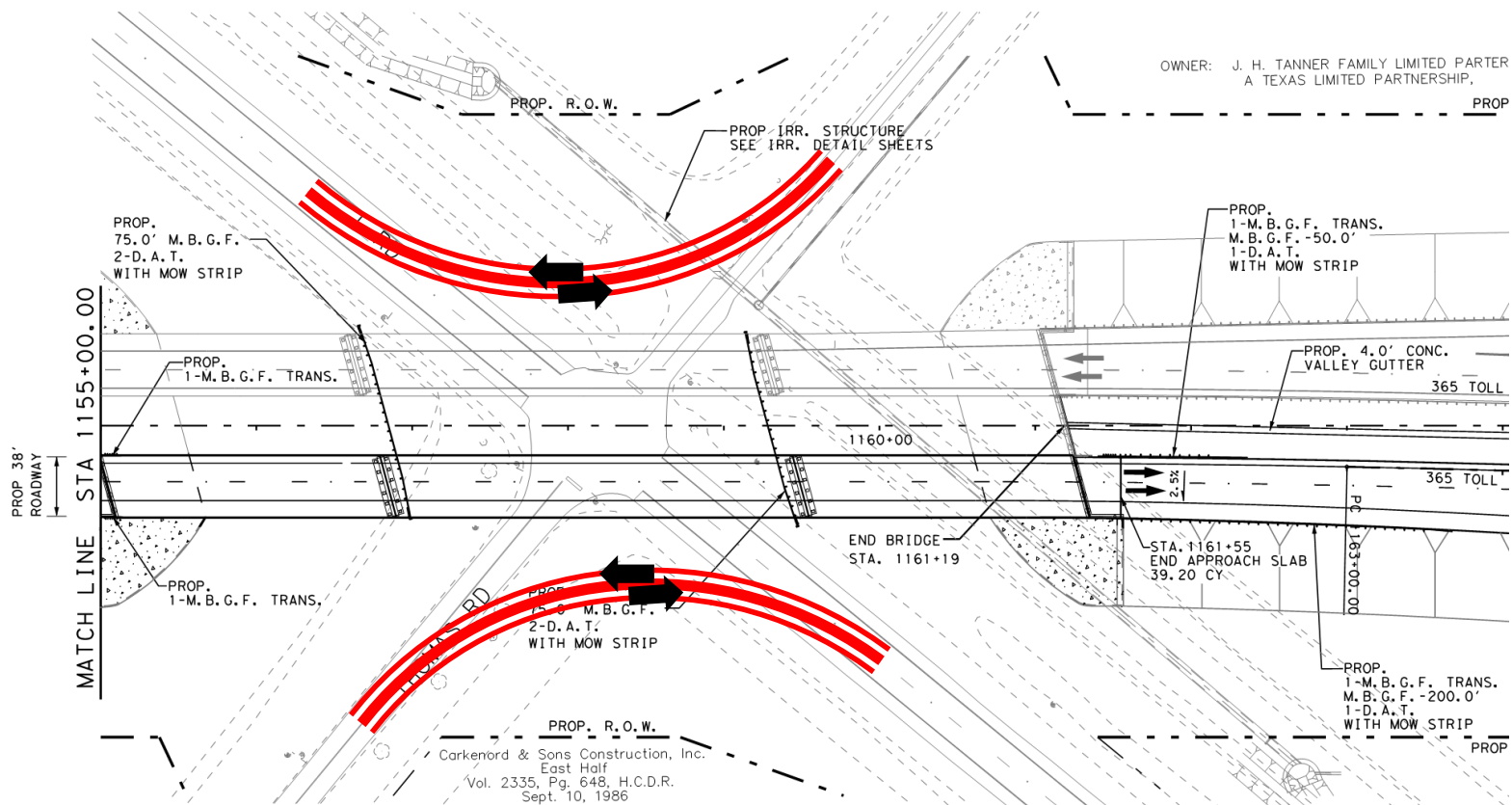
- Change Drilled Shaft Foundations to Driven Piles
 - Smaller diameter drilled shaft foundations can be revised to driven concrete piles
 - Quicker and simpler installation
 - Can be used for columns to improve speed of construction



- Use Portadam-Type Temporary Levee System
 - Allows the levee construction to be completed in sections rather than constructing a completely separate temporary levee system
 - Avoids the need for large volume of temporary levee fill material



- Eliminate 365 Toll Bridge over I Road / Thomas Road
 - Replace with frontage roads connecting I Rd to Thomas Rd
 - Removes entire bridge structure and large volume of approach earthwork



**365 Tollway Segments 1 & 2
HCRMA Contract No. 0921-02-368**

MAY 4, 2018



Potential VE Proposals