CENTRAL TEXAS
Regional Mobility Authority

AGENDA ITEM #6 SUMMARY

Approve a change order to the contract with Central Texas Mobility Constructors relating to pavement sections for the Manor Expressway.

Strategic Plan Relevance:	Regional Mobility
Department:	Engineering
Associated Costs:	$1,480,445.71
Funding Source:	Construction Fund
Board Action Required:	Yes

Description of Matter: The Mobility Authority revised the mainlane and frontage road pavement sections on the Manor Expressway Project to provide a better subgrade and base support beneath the rigid concrete and flexible asphalt pavements. CTMC has submitted this proposed Change Order #1 to capture the increased cost of these revised pavement sections.

Board approval of Change Order #1 is necessary because the price exceeds the Executive Director's signatory authority.

Reference documentation:

Draft Resolution
Proposed Change Order #1

Contact for further information:

Wesley M. Burford, P.E., Director of Engineering

GENERAL MEETING OF THE BOARD OF DIRECTORS
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

RESOLUTION NO. 12-___

APPROVING A CHANGE ORDER TO THE CONTRACT WITH CENTRAL TEXAS MOBILITY CONSTRUCTORS RELATING TO PAVEMENT SECTIONS FOR THE MANOR EXPRESSWAY.

WHEREAS, by Resolution No. 11-019, dated March 30, 2011, the Board of Directors approved and authorized the Executive Director to execute a design-build comprehensive development agreement with Central Texas Mobility Constructors LLC ("CTMC") to develop the Manor Expressway Phase II Project (the "Project"), and the design/build comprehensive development agreement contract for construction of the Project was fully executed by the Mobility Authority and CTMC and became effective on June 15, 2011; and

WHEREAS, Mobility Authority staff and its general engineering consultant have requested that CTMC revise the mainlane and frontage road pavement sections on the Project to provide a better subgrade and base support beneath the rigid concrete and flexible asphalt pavements; and

WHEREAS, the Executive Director recommends approval of the proposed Change Order No. 1 with CTMC attached as Exhibit 1 to this resolution, but without Exhibits A through I on file with the Mobility Authority and referenced therein.

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors approves the proposed Change Order No. 1 with CTMC for an additional amount not to exceed $1,480,445.71, in the form or substantially the same form attached as Exhibit 1, to include all exhibits referenced therein; and

BE IT FURTHER RESOLVED, that Change Order No. 1 with CTMC may be finalized and executed by the Executive Director on behalf of the Mobility Authority in the form or substantially the same form attached as Exhibit 1 and with all exhibits referenced therein.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 5th day of December, 2012.

Submitted and reviewed by:

_____
Andrew Martin
General Counsel for the Central
Texas Regional Mobility Authority

Approved:

_____
Ray A. Wilkerson
Chairman, Board of Directors
Resolution Number: 12-___
Date Passed: 12/5/12

EXHIBIT 1

PROPOSED CHANGE ORDER NO. 1 WITH

CENTRAL TEXAS MOBILITY CONSTRUCTORS

[on the following 23 pages, but excluding Exhibits A through I referenced therein]

Central Texas Regional Mobility Authority

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

CHANGE ORDER NUMBER: 01

Project Name:	*Manor Expressway Phase II Project*
Contract No:	*CDA*
CCSJ:	*0114-02-053*
Highway:	*290E*
County:	*Travis*
District:	*Austin*
FAP Number:	*NH1101 (012)*

1. CONTRACTOR: **Central Texas Mobility Constructors, LLC**

2. Change Order Work Limits: Sta. 244+60.00 US 290 to Sta. 1574+10.96 US 290

3. Type of Change(on federal-aid non-exempt projects): Major (Major/Minor)

4. Reasons: 3E (In order of importance - Primary first)

5. Describe the work being revised:

Revised pavement sections for mainlanes and frontage roads.

6. Work to be performed in accordance with Items: 132, 216, 275, 276, 310, 340, 346, 360, SS-3224

7. New or revised plan sheet(s) are attached and numbered: ☑ 1GN-011 through 1GN-20A; 2GN-011 through 2GN-019; 3GN-012 through 3GN-016; 3GN-018 through 3GN-022; 3GN-024; 3GN-025; 3GN-027

8. New general notes to the contract are attached: Yes ☑ No

9. New Special Provisions to Item No. ____ and Special Specification Item are attached. N.A.

10. CDA Exhibit _B_, Section _20__ amendments are attached. Yes

Each signatory hereby warrants that each has the authority to execute this Change Order (CO).

The contractor must sign the Change Order and, by doing so, agrees to waive any and all claims for additional compensation due to any and all other expenses; additional changes for time, overhead and profit; or loss of compensation as a result of this change.

THE CONTRACTOR Date 11/20/12

By R Clark

Typed/Printed Name Russ Clark

Typed/Printed Title Project Manager

The following information must be provided

Time Ext. #: N.A. Days added on this CO: 0

Amount added by this change order: $ 1,480,445.71

For TxDOT/CTRMA/FHWA use only:

Current Contract Amount	$ 207,308,403.00
Revised Contract Amount To Date	$ 208,788,848.71
Days FHWA non-participating	
CO Portion FHWA non-participating	

RECOMMENDED FOR EXECUTION:

Engineers Seal:

STATE OF TEXAS
DANIEL W. FREEMAN
103510
LICENSED
PROFESSIONAL ENGINEER

(1) Dan W. Freeman 11/20/12
GEC Project Controls or Construction Manager Date

(2) Alastair Miller 11/20/12
GEC Project Manager Date

(3) _____
CTRMA, Director of Engineering Date
☐ APPROVED ☐ REQUEST APPROVAL

(4) _____
CTRMA, General Counsel Date
☑ APPROVED ☐ REQUEST APPROVAL

(5) _____
CTRMA, Executvie Director Date
☐ APPROVED ☐ REQUEST APPROVAL

(6) _____
FHWA Area Engineer (Verbal Approval) Date
☐ APPROVED ☐ REQUEST APPROVAL

(7) _____
TxDOT Project Engineer Date
☐ APPROVED ☐ REQUEST APPROVAL

(8) _____
FHWA Area Engineer Date
☐ APPROVED ☐ REQUEST APPROVAL

Manor Expressway Phase II Project

CHANGE ORDER NUMBER: 1

TABLE A: Force Account Work and Materials Placed into Stock

Estimated Cost:

		LABOR	HOURLY RATE		EQUIPMENT	HOURLY RATE
		N/A	N/A		N/A	N/A

TABLE B: Contract Items

				ORIGINAL + PREVIOUSLY REVISED			NEW			
CHANGE ITEM	REASON CODE	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	ITEM COST	QUANTITY	UNIT PRICE	ITEM COST	OVERRUN/ UNDERRUN
3224-2010	3E	HMAC BASE D-GR TY-B PG 70-22 (QCQA)	TN	243,968.00	$53.25	$ 12,991,296.00	0.00	$53.25	$ -	$ (12,991,296.00)
310-2002	3E	PRIME COAT (AE-P)	GAL	156,506.00	$3.50	$ 547,771.00	136,461.20	$3.50	$ 477,614.20	$ (70,156.80)
247-2392	3E	8" FLEXBASE (TY D)(GR 5)(FIN POS)	SY	365,342.00	$5.50	$ 2,009,381.00	0.00	$5.50	$ -	$ (2,009,381.00)
247-2392	3E	12" FLEXBASE (TY D)(GR 5)(FIN POS)	SY	16,309.00	$8.40	$ 136,995.60	0.00	$8.40	$ -	$ (136,995.60)
5747-2001	3E	GEOTEXTILE FABRIC (TY 1)	SY	381,651.00	$1.00	$ 381,651.00	0.00	$1.00	$ -	$ (381,651.00)
132-2025	3E	EMBANKMENT (TY C1)(DENS CONT)	CY	330,373.00	$8.15	$ 2,692,539.95	0.00	$8.15	$ -	$ (2,692,539.95)
132-2026	3E	EMBANKMENT (TY C2)(DENS CONT)	CY	123,140.00	$9.10	$ 1,120,574.00	464,939.00	$9.10	$ 4,230,944.90	$ 3,110,370.90
132-2031	3E	EMBANKMENT (TY C3)(DENS CONT)	CY	195.00	$4.10	$ 799.50	0.00	$4.10	$ -	$ (799.50)
360-2007	3E	14" CRCP	SY	376,611.00	$47.00	$ 17,700,717.00	0.00	$47.00	$ -	$ (17,700,717.00)
360-XXXX	3E	14" JCPGFRPB	SY	2,804.00	$100.00	$ 280,400.00	0.00	$100.00	$ -	$ (280,400.00)
EXTRA WORK ITEM	REASON CODE	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	ITEM COST	QUANTITY	UNIT PRICE	ITEM COST	OVERRUN/ UNDERRUN
3224-2047	3E	HMAC BASE D-GR TY-D PG 76-22 (QCQA)	TN	0.00		$ -	38,358.00	$83.50	$ 3,202,893.00	$ 3,202,893.00
3224-2008	3E	HMAC BASE D-GR TY-B PG 64-22 (QCQA)	TN	0.00		$ -	76,716.00	$53.25	$ 4,085,127.00	$ 4,085,127.00
216-2001	3E	PROOFROLLING (PRE-CRACK CEM TRT BASE SURF)	SY	0.00		$ -	381,651.00	$0.07	$ 26,715.57	$ 26,715.57
276-2057	3E	8" CM TRT BASE (PLT MX)(CL L)(TY A)(GR 5)(FIN POS)	SY	0.00		$ -	381,651.00	$9.47	$ 3,614,234.97	$ 3,614,234.97
275-2057	3E	6" CM TRT EMBANKMENT (TY C2)(RD MX)	SY	0.00		$ -	381,651.00	$3.62	$ 1,381,576.62	$ 1,381,576.62
276-2057	3E	6" CM TRT BASE (PLT MX)(CL L)(TY A)(GR 5)(FIN POS)	SY	0.00		$ -	400,874.00	$8.01	$ 3,211,000.74	$ 3,211,000.74
275-2002	3E	8" CM TRT EMBANKMENT (TY C2)(RD MX)	SY	0.00		$ -	400,874.00	$4.82	$ 1,932,212.68	$ 1,932,212.68
360-2005	3E	12" CRCP	SY	0.00		$ -	376,611.00	$39.20	$ 14,763,151.20	$ 14,763,151.20
360-XXXX	3E	12" JCPGFRPB	SY	0.00		$ -	2,804.00	$97.00	$ 271,988.00	$ 271,988.00
340-2043	3E	HMAC BASE D-GR TY-D PG 70-22 (QCQA)	TN	0.00		$ -	22,048.00	$84.50	$ 1,863,056.00	$ 1,863,056.00
N/A	3E	DESIGN	LS	0.00		$ -				$ 47,705.33
N/A	3E	OVERHEAD, RISK, & PROFIT	LS	0.00		$ -				$ 211,036.45
N/A	3E	BONDS	LS	0.00		$ -				$ 23,314.10
TOTALS						$ 37,862,125.05			$ 39,060,514.88	$ 1,480,445.71

CHANGE ORDER REASON(S) CODE CHART

1. Design Error or Omission	1A. Incorrect PS&E 1B. Other
2. Differing Site Conditions (unforeseeable)	2A. Dispute resolution (expense caused by conditions and/or resulting delay) 2B. Unavailable material 2C. New development (conditions changing after PS&E completed) 2D. Environmental remediation 2E. Miscellaneous difference in site conditions (unforeseeable)(Item 9) 2F. Site conditions altered by an act of nature 2G. Unadjusted utility (unforeseeable) 2H. Unacquired Right-of-Way (unforeseeable) 2I. Additional safety needs (unforeseeable) 2J. Other
3. CTRMA Convenience	3A. Dispute resolution (not resulting from error in plans or differing site conditions) 3B. Public relations improvement 3C. Implementation of a Value Engineering finding 3D. Achievement of an early project completion 3E. Reduction of future maintenance 3F. Additional work desired by the CTRMA 3G. Compliance requirements of new laws and/or policies 3H. Cost savings opportunity discovered during design/construction 3I. Implementation of improved technology or better process 3J. Price adjustment on finished work (price reduced in exchange for acceptance) 3K. Addition of stock account or material supplied by state provision 3L. Revising safety work/measures desired by the CTRMA 3M. Other
4. Third Party Accommodation	4A. Failure of a third party to meet commitment 4B. Third party requested work 4C. Compliance requirements of new laws and/or policies (impacting third party) 4D. Other
5. Contractor Convenience	5A. Contractor exercises option to change the traffic control plan 5B. Contractor requested change in the sequence and/or method of work 5C. Payment for Partnering workshop 5D. Additional safety work/measures desired by the contractor 5E. Other
6. Untimely ROW/Utilities	6A. Right-of-Way not clear (third party responsibility for ROW) 6B. Right-of-Way not clear (County responsibility for ROW) 6C. Utilities not clear 6D. Other

Change Order No. 9 -- Revised Contract Amount to Date Summary

Original Contract: $ 207,297,859.00

		Amount	Description		Revised Contract Amt to Date:
DRB	$	10,544.00	Contractually Allowed DRB Expenditures	$	207,308,403.00
C.O. #1	$	1,480,445.71	Revised Mainlane and Frontage Road Pavement Sections	$	208,788,848.71
C.O. #2				$	208,788,848.71
C.O. #3				$	208,788,848.71
C.O. #4				$	208,788,848.71
C.O. #5				$	208,788,848.71
C.O. #6				$	208,788,848.71
C.O.#7				$	208,788,848.71
C.O. #8				$	208,788,848.71
C.O. #9				$	208,788,848.71
C.O.#10				$	208,788,848.71

Summary Prepared by: _____ _____

Daniel W. Freeman, PE — Date

Change Order #1
Description of Development Work Being Revised

This Change Order revises the mainlane and frontage road pavement and structural sections for the Project. The requirements for the pavement and structural sections for the Project are provided in Exhibit B – Section 20.0 and Exhibit D – Item 20 to the Design/Build Comprehensive Development Agreement ("CDA"), both of which are included as attachments to this submittal.

The mainlane and frontage road pavement and structural sections included in the above referenced sections of the CDA require the use of three types of embankment (TY C1, TY C2, and TY C3). The pavement and structural sections were designed with these embankment types to control the plasticity index ("PI") of the subgrade below the pavement; the PI of the embankment material decreases from the lower levels of the subgrade (TY C3 embankment) to the upper levels of the subgrade (TY C1 embankment). The intent of this design is to provide a subgrade of suitable strength and with a sufficient non-swell zone that minimizes the potential vertical rise beneath the asphalt or continuously reinforced concrete pavement sections.

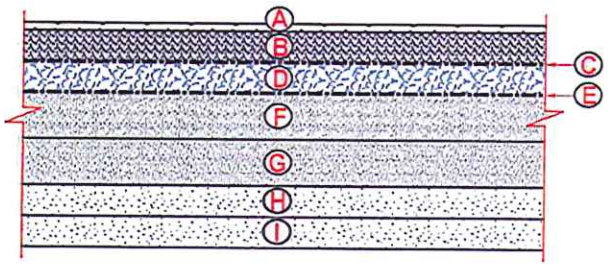
As part of the Development Work, the existing US 290 pavement must be removed. To satisfy sustainability efforts on the Project, and to allow proposers to utilize recycled asphalt pavement ("RAP") in the subgrade, gradation requirements for the embankment material were not included in the Technical Provisions of the CDA. Inclusion of gradation requirements would have precluded the inclusion of RAP in the pavement subgrade, and likely increased the Development Cost of the Project.

Subsequent to issuance of the Notice to Proceed ("NTP") for the Project, the D/B CDA Developer, Central Texas Mobility Constructors, LLC ("CTMC") stated that they intended to use the overburden from a local third party mining operation as a source of the TY C1 embankment material.

Both the CTRMA's pavement engineer and the TxDOT pavement experts were familiar with the proposed TY C1 embankment material. While this low PI material appeared to meet the technical provisions of the CDA, the CTRMA's pavement engineer and TxDOT's pavement experts believed that the stability and durability of the CTMC-proposed TY C1 material is not sufficient for use as a pavement subgrade due to the gradation of the material. This Change Order revises the mainlane and frontage road pavement and structural sections omitting the use of the TY C1 embankment material. The CDA pavement and structural sections and the revised pavement and structural sections are provided in the below tables. Additionally, the revised pavement report is included as an attachment to this submittal.

CDA

FRONTAGE ROAD
PAVEMENT AND STRUCTURAL SECTION

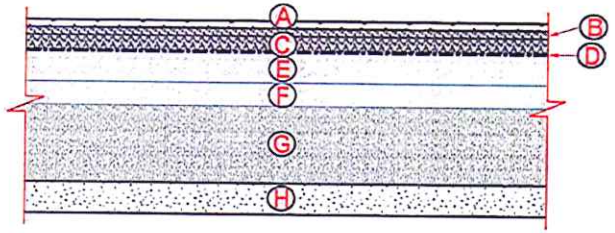


A. 2" HMAC SMA-C SAC-A PG76-22
B. 8" HMAC BASE D-GR TY-B PG70-22 (QCQA)
C. PRIME COAT (AE-P)
D. 8" FLEXIBLE BASE (TY D) (GR 5)
E. GEOTEXTILE FABRIC (TY 1)
F. 12" TY C1 EMBANKMENT (5 < PI < 15) (Mr > 8000 psi)
G. 12" TY C2 EMBANKMENT (5 < PI < 35)
H. 8" TY C3 EMBANKMENT (5 < PI < 50)
I. TY C3 EMBANKMENT AS REQUIRED TO MEET PROFILE (10 < PI < 50)

NOTE: TRANSITION PAVEMENT SECTIONS ARE NOT SHOWN FOR BREVITY, THE QUANTITIES ASSOCIATED WITH THESE PAVEMENT SECTIONS ARE LIMITED

REVISED (RCP OPTION 2)

FRONTAGE ROAD
PAVEMENT AND STRUCTURAL SECTION



A. 2" HMAC SMA-C SAC-A PG76-22
B. 2" HMAC BASE D-GR TY-D PG76-22 (QCQA)
C. 4" HMAC BASE D-GR TY-B PG64-22 (QCQA)
D. PRIME COAT (AE-P)
E. 8" CEMENT TREATED BASE (PLANT MIX) (CL L) (TY A) (GR 5) (MICROCRACKED)
F. 6" CEMENT TREATED TY C2 EMBANKMENT (ROAD MIX) (10 < PI < 25)
G. 20" TY C2 EMBANKMENT (10 < PI < 25) (Mr > 5000 psi)
H. TY C3 EMBANKMENT AS REQUIRED TO MEET PROFILE (10 < PI < 50)

CENTRAL TEXAS
Regional Mobility Authority
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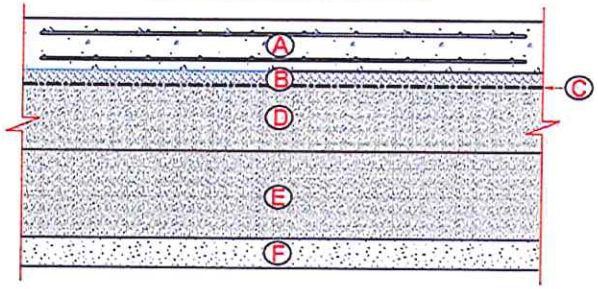
FRONTAGE ROAD
PAVEMENT AND STRUCTURAL SECTION
MANOR EXPRESSWAY 0187

CDA

MAINLANE

PAVEMENT AND STRUCTURAL SECTION

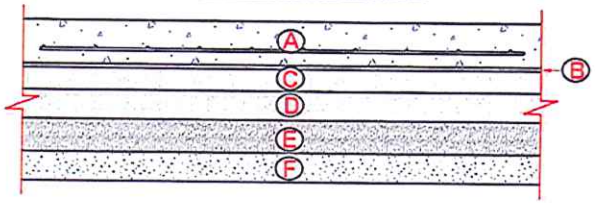


A. 14" CONTINUALLY REINFORCED CONCRETE PAVEMENT (CRCP)
B. 4" HMAC BASE D-GR TY-B PG70-22 (QCQA)
C. PRIME COAT (AE-P)
D. 18" TY C1 EMBANKMENT (5 < PI < 15) (Mr > 8000 psi)
E. 24" TY C2 EMBANKMENT AS REQUIRED TO MEET PROFILE (5 < PI < 35)
F. TY C3 EMBANKMENT AS REQUIRED TO MEET PROFILE (10 < PI < 50)

REVISED (RCP)

MAINLANE

PAVEMENT AND STRUCTURAL SECTION



A. 12" CONTINUALLY REINFORCED CONCRETE PAVEMENT (CRCP)
B. 1" HMAC BASE D-GR TY-D PG70-22 (QCQA)
C. 6" CEMENT TREATED BASE (PLANT MIX) (CL L) (TY A) (GR 5)
D. 8" CEMENT TREATED TY C2 EMBANKMENT (ROAD MIX) (10 < PI < 25)
E. 9" TY C2 EMBANKMENT (10 < PI < 25) (Mr > 5000 psi)
F. TY C3 EMBANKMENT AS REQUIRED TO MEET PROFILE (10 < PI < 50)

CENTRAL TEXAS
Regional Mobility Authority

MAINLANE
PAVEMENT AND STRUCTURAL SECTION

MANOR EXPRESSWAY 0188

ORIGNINAL CDA
PAVEMENT SECTIONS
(Exhibit B – Section 20.0)

Table 20.1.4a – Minimum Flexible Pavement and Structural Section for Frontage Roads

Description	
Stone Matrix Asph SMA-C SAC-A PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-B PG70-22	8"
Prime Coat (AE-P)	Yes
Flex Base Item 247 FL BS (TY D GR 5)	8"
Geotextile Fabric (TY 1)	yes
Embankment Item 132 (DENS CONT) (TY C1)	12"
Embankment Item 132 (DENS CONT) (TY C2)	12"
Embankment Item 132 (DENS CONT) (TY C3)	8"
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	In excess of above embankment

Table 20.1.5a – Minimum Flexible Pavement Section and Structural Section for Frontage Road Transitions

Description	
Stone Matrix Asph SMA-C SAC-A PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-B PG70-22	6.5"
Prime Coat (AE-P)	Yes
Flex Base Item 247 FL BS (TY D GR 5)	8"
Geotextile Fabric (TY 1)	yes
Embankment Item 132 (DENS CONT) (TY C1)	12"
Embankment Item 132 (DENS CONT) (TY C2)	12"
Embankment Item 132 (DENS CONT) (TY C3)	8"
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	In excess of above embankment

Table 20.1.3 – Minimum Mainlane Transition Pavement and Structural Section

Description	
Stone Matrix Asph SMA-C SAC-A PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-B PG70-22	7"
Prime Coat (AE-P)	Yes
Flex Base Item 247 FL BS (TY D GR 5)	12"
Geotextile Fabric (TY 1)	yes
Embankment Item 132 (DC) (TY C1)	18"
Embankment Item 132 (DC) (TY C2) (AS REQUIRED TO MEET PROFILE)	24"
Embankment Item 132 (DC) (TY C3) (AS REQUIRED TO MEET PROFILE)	In excess of above Embankment

Table 20.1.1 – Minimum CRCP Pavement and Structural Section for Mainlane and Ramps

Description	Cut	Fill
CRCP or JCPGFRPB	14"	14"
HMA Base D-GR HMA(QCQA) TY-B PG70-22	4"	4"
Prime Coat (AE-P)	Yes	Yes
Embankment Item 132 (DENS CONT) (TY C1)	18"	18"
Embankment Item 132 (DENS CONT) (TY C2) (AS REQUIRED TO MEET PROFILE)	N/A	24"
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	N/A	In excess of above Embankment

CHANGE ORDER #1
PAVEMENT SECTIONS

Minimum Frontage Road Pavement and Structural Section (Replaces Table 20.1.4a and Table 20.1.5)

Description	
Stone Matrix Asph SMA-C SAC-A PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-D PG76-22	2"
HMA Base D-GR HMA(QCQA) TY-B PG64-22	4"
Pre-Crack Cement Treat Base Surface	N/A
Prime Coat (AE-P)	Yes
CM TRT BS (PLT MX) (CL L)(TY A)(GR 5)(FNL POS) (7 Day Min f'c = 300 psi)	8"
CM TRT (TY C2) (RD MX) (PI 10 - 25) (7 DAY f'c - 150psi to 300psi)	6"
Embankment Item 132 (DC) (TY C2) (PI 10 - 25) (Mr > 5,000 psi)	20"
Embankment Item 132 (DC) (TY C3) (PI 10 - 50) (AS REQUIRED TO MEET PROFILE)	In excess of above Embankment

Minimum Mainlane Pavement and Structural Section (Replaces Table 20.1.1 and Table 20.1.3)

Description	Cut	Fill
CRCP or JCPGFRPB	12"	12"
HMA Base D-GR HMA(QCQA) TY-D PG70-22	1"	1"
Prime Coat (AE-P)	Yes	Yes
CM TRT (PT MX) (CL L) (TY A) (GR 5) (7 DAY min f'c = 400 psi)	6"	6"
CM TRT (TY C2) (RD MX) (PI 10 - 25) (7 DAY f'c - 150psi to 300psi)	8"	8"
Embankment Item 132 (DC) (TY C2) (PI 10 - 25) (Mr > 5,000 psi)	9"	9"
Embankment Item 132 (DENS CONT) (TY C3) (AS REQUIRED TO MEET PROFILE)	N/A	In excess of above Embankment

Justification for Change Order Pricing

The CTRMA developed an independent estimate to establish reasonable pricing for this Change Order. This independent estimate is provided as Exhibit A to this submittal. In the Request for Change Proposal, three separate frontage road pavement section designs were provided to CTMC for pricing. The CTRMA's independent estimate also includes pricing for each of these three frontage road designs. CTMC provided pricing in response to a Request for Change Proposal issued by the CTRMA; that pricing indicated that frontage road "Option 2" was the most economical frontage road pavement design. The CTRMA's independent estimate concurs with CTMC's result that the "Option 2" frontage road design is the most economical design. For brevity, the following justification focuses on the "Option 2" frontage road design, and the revisions to the mainlane pavement section. It should be noted that the "Option 2" frontage road pavement will also be used for the mainlane and frontage road transition pavement sections specified in the CDA. TxDOT Average Low Bid Unit Prices, if applicable, were used to establish the CTRMA's independent estimate. The following justification supports the CTRMA's independent estimate provided in Exhibit A.

The following exhibits are included in this submittal:

Exhibit A - CTRMA Independent Estimate
Exhibit B – Request for Change Proposal ("RCP") #005
Exhibit C – CTMC Transmittal of Negotiated Settlement
Exhibit D – Revised Pavement Memorandum
(including changes to Exhibit B – Section 20)
Exhibit E – TxDOT Average Low Bid Unit Prices (Statewide)
Exhibit F – TxDOT Average Low Bid Unit Prices (District 14)
Exhibit G – Panther Creek Trucking Subcontract Pricing
Exhibit H – Letter from HVJ Associates to FHWA
Exhibit I – Revised Design Plans

Frontage Road Pavement Section

I. **CDA Frontage Road Pavement Section [Deleted Work]**

346 – 2002 (2") HMAC SMA-C SAC-A PG76-22
District 14 (Austin District) pricing indicates an average low bid unit price of $110.00 per ton for this item.

$110.00/ton x -36,050 tons = -$3,965,500

3224 – 2010 (8") HMAC BASE D-GR TY-B PG70-22 (QCQA)
District 14 pricing indicates an average low bid unit price of $56.62 per ton for this item.

$56.62/ton x -147,827 tons = -$8,369,964.74

310 – 2002 PRIME COAT (AE-P)
District 14 pricing indicates an average low bid unit price of $3.87 per gallon for this item.

$3.87/gallon x -72,135 gallons = -$279,162.45

247 – 2392 (8") FLEXBASE (TY D) (GR 5)
District 14 pricing indicates an average low bid unit price of $32.23 per cubic yard for this item.

$32.23/CY x 8" x 1/36 = $7.16 per square yard
$7.16/SY x -360,675 SY = -$2,582,433

5747 – 2001 GEOTEXTILE FABRIC (TY 1)
No District 14 pricing exists in the past 12 months for this item. Statewide pricing indicates an average low bid unit price of $1.05 per square yard for this item.

$1.05/SY x -360,675 SY = -$378,708.75

132 – 2025 (12") EMBANKMENT (TY C1) (DENS CONT)
The TY C1 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $70 per load for the TY C1 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 11 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $70.00/load ÷ 15 CY = $4.67/CY

Total TY C1 Cost: $6.05 + $4.67 = $10.72/CY
$10.72/CY x -120,225 = -$1,288,812.00

132 – 2026 (12") EMBANKMENT (TY C2) (DENS CONT)
The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used

to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C2 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C2 Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x -120,225 = -$1,400,621.25

Note: The 8" TY C3 Embankment layer is not accounted for so that a 42" section can be maintained for estimating purposes.

II. CDA Mainlane Transition Section [Deleted Work]

346 – 2002 (2") HMAC SMA-C SAC-A PG76-22
District 14 pricing indicates an average low bid unit price of $110.00 per ton for this item.

$110.00/ton x -1,794 tons = -$197,340.00

3224 – 2010 (7") HMAC BASE D-GR TY-B PG70-22
District 14 pricing indicates an average low bid unit price of $56.62 per ton for this item.

$56.62/ton x -6,270 tons = -$355,516.98

310 – 2002 PRIME COAT (AE-P)
District 14 pricing indicates an average low bid unit price of $3.87 per gallon for this item.

$3.87/gallon x -3,262 gallons = -$12,623.94

247 – 2392 (12") FLEXBASE (TY D) (GR 5)
District 14 pricing indicates an average low bid unit price of $32.23 per cubic yard for this item.

$32.23/CY x 12" x 1/36 = $10.74 per square yard
$10.74/SY x -16,309 SY = -$175,158.66

5747 – 2001 GEOTEXTILE FABRIC (TY 1)

No District 14 pricing exists in the past 12 months for this item. Statewide pricing indicates an average low bid unit price of $1.05 per square yard for this item.

$1.05/SY x -16,309 SY = -$17,124.45

132 – 2025 (18") EMBANKMENT (TY C1) (DENS CONT)

The TY C1 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $70 per load for the TY C1 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 11 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $70.00/load ÷ 15 CY = $4.67/CY

Total TY C1 Cost: $6.05 + $4.67 = $10.72/CY
$10.72/CY x -8,155 CY = -$87,421.60

132 – 2026 (3") EMBANKMENT (TY C2) (DENS CONT)

Note: Only 3" of this 24" layer is being accounted for to maintain a 42" section for estimating purposes.

The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C2 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C2 Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x -1,359 CY = -$15,832.35

III. **CDA Frontage Road Transition Section [Deleted Work]**

346 – 2002 (2") HMAC SMA-C SAC-A PG76-22
District 14 pricing indicates an average low bid unit price of $110.00 per ton for this item.

$110.00/ton x -514 tons = -$56,540.00

3224 – 2010 (6.5") HMAC BASE D-GR TY-B PG70-22 (QCQA)
District 14 pricing indicates an average low bid unit price of $56.62 per ton for this item.

$56.62/ton x -1,670 tons = -$94,555.40

310 – 2002 PRIME COAT (AE-P)
District 14 pricing indicates an average low bid unit price of $3.87 per gallon for this item.

$3.87/gallon x -934 gallons = -$3,707.98

247 – 2392 (8") FLEXBASE (TY D) (GR 5)
District 14 pricing indicates an average low bid unit price of $32.23 per cubic yard for this item.

$32.23/CY x 8" x 1/36 = $7.16 per square yard
$7.16/SY x -4,667 SY = -$33,415.72

5747 – 2001 GEOTEXTILE FABRIC (TY 1)
No District 14 pricing exists in the past 12 months for this item. Statewide pricing indicates an average low bid unit price of $1.05 per square yard for this item.

$1.05/SY x -4,667 SY = -$4,900.35

132 – 2025 (12") EMBANKMENT (TY C1) (DENS CONT)
The TY C1 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek

Trucking indicates a cost of $70 per load for the TY C1 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 11 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $70.00/load ÷ 15 CY = $4.67/CY

Total TY C1 Cost: $6.05 + $4.67 = $10.72/CY
$10.72/CY x -1,556 CY = -$16,680.32

132 – 2026 (12") EMBANKMENT (TY C2) (DENS CONT)

The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C2 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C2 Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x -1,556 CY = -$18,127.40

132 – 2031 (1.5") EMBANKMENT (TY C3) (DENS CONT)

Note: Only 1.5" of this 24" layer is being accounted for to maintain a 42" section for estimating purposes.

The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C3 embankment material. The trucking distance from the borrow site for this material to the Project is

approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C3 Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x -195 CY = -$2,271.75

IV. Revised Frontage Road Pavement Section (Option 2) [Added Work]

346 – 2002 (2") HMAC SMA-C SAC-A PG76-22
District 14 pricing indicates an average low bid unit price of $110.00 per ton for this item.

$110.00/ton x 38,358 tons = $4,219,380.00

3224 – 2047 (2") HMAC BASE D-GR TY-D PG76-22 (QCQA)
District 14 pricing indicates an average low bid unit price of $68.37 per ton for this item. However, usage is low and the statewide pricing contains more recent usage that would be more appropriate for pricing this asphalt item. The statewide pricing contains usage during the month of July 2012, and indicates an average low bid unit price of $83.63 per ton.

$83.63/ton x 38,358 tons = $3,207,879.54

3224 – 2008 (4") HMAC BASE D-GR TY-B PG64-22 (QCQA)
District 14 pricing indicates an average low bid unit price of $63.18 per ton for this item.

$63.18/ton x 76,716 tons = $4,846,916.88

216 – 2001 PRE-CRACK CEMENT TREATED BASE SURFACE
In accordance with the revised frontage road pavement design, the cement-treated base must be micro-cracked prior to laying the HMAC base layer. Item 216 – 2001 Proofrolling was used to estimate this activity. The CTRMA assumed a production rate of 500 SY/hr. District 14 pricing indicates an average low bid unit price of $95.00/hr.

$95.00/hr ÷ 500 SY/hr = $0.19/SY
$0.19/SY x 381,651 SY = $72,513.69

310 – 2002 PRIME COAT (AE-P)
District 14 pricing indicates an average low bid unit price of $3.87 per gallon for this item.

$3.87/gallon x 76,330 gallons = $295,337.10

276 – 2057 (8") CEM TRT BASE (PLT MX)(CL L)(TY A)(GR 5)(FNL POS)
There has been no usage in Texas in the past 12 months for this item with a Grade 5 flexible base. Item 276 – 2057 is for Grade 1 Flexible Base; however, this item is being used since the Grade 5 properties are similar to Grade 1 properties. Statewide pricing indicates an average low bid unit price of $77.00 per cubic yard for this item.

$77.00/CY x 8" x 1/36 = $17.11/SY
$17.11/SY x 381,651 SY = $6,530,048.61

275 – 2002 (6") CEM TRT EXISTING MATERIAL (RD MX)
The upper 6" of the TY C2 embankment must be cement treated in accordance with the revised frontage road pavement design. District 14 pricing indicates an average low bid unit price of $1.25 per square yard; however, usage is light. The more recent statewide pricing indicates an average low bid unit price of $1.45 per square yard; the CTRMA believes this is a more appropriate unit cost for estimating this Change Order.

$1.45/CY x 381,651 CY = $553,393.95

132 – 2026 (26") EMBANKMENT (TY C2) (DENS CONT)
The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C2 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C2 Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x 275,637 CY = $3,211,171.05

Mainlane Pavement Section

I. **CDA Mainlane Pavement Section [Deleted Work]**

360 – 2007 (14") CONT REINF CONC PAVEMENT (CRCP)

There was no usage of this particular item Statewide within the last twelve months; therefore, the CTRMA used pricing for item 360 – 2006 (13" CRCP) and 360 – 2008 (15" CRCP) to bracket a reasonable price for this item. Accordingly, the CTRMA believes that a unit cost of $49.00 per square yard is reasonable pricing for this item.

$49.00/SY x -376,611 SY = -$18,453,939.00

360 – XXXX (14") JOINTED CONC PAVEMENT GLASS FIBER REINFORCED POLYMER BAR (JCPGFRPB)

There was no usage of either the 14" JCPGFRPB or the 12" JCPGFRPB (in the revised mainlane pavement section) statewide within the last twelve months; therefore the CTRMA calculated the difference between the two sections. Since both sections require only one layer of reinforcing, the difference in the two sections is limited to 2" of concrete. The CTRMA calculated the cost of this 2" of concrete to establish the pricing difference between the two sections. The CTRMA solicited concrete pricing from a local supplier to establish the unit cost of concrete at $80/CY.

2,804 SY x 2" x 1/36 = 156 CY
156 CY x $80.00/CY = $12,480.00
$12,480 / 2,804 SY = $4.45/SY
Therefore, the cost difference between the 14" JCPGFRPB and the 12" JCPGFRPB sections is $4.45 per square yard. The CTRMA set the unit cost of the 12" section arbitrarily at $100.00 per square yard, and increased the unit cost of the 14"section by the established $4.45/SY delta at $104.45.

$104.45/SY x -2,804 SY = -$292,877.80

3224 – 2010 (4") HMAC BASE D-GR TY-B PG70-22 (QCQA)

District 14 pricing indicates an average low bid unit price of $56.62 per ton for this item.

$56.62/ton x -88,192 tons = -$4,993,431.04

310 – 2002 PRIME COAT (AE-P)

District 14 pricing indicates an average low bid unit price of $3.87 per gallon for this item.

$3.87/gallon x -80,175 gallons = -$310,277.25

132 – 2025 (18") EMBANKMENT (TY C1) (DENS CONT)

The TY C1 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $70 per load for the TY C1 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 11 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $70.00/load ÷ 15 CY = $4.67/CY

Total TY C1 Unit Cost: $6.05 + $4.67 = $10.72/CY
$10.72/CY x -200,437 CY = -$2,148,684.64

132 – 2026 (24") EMBANKMENT (TY C2) (DENS CONT)

The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C2 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C2 Unit Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x -267,250 CY = -$3,113,462.50

II. **Revised Mainlane Pavement Section [Added Work]**

360 – 2005 (12") CONT REINF CONC PAVEMENT (CRCP)
Statewide pricing indicates an average low bid unit price of $35.26 per square yard for this item.

$35.26/SY x 376,611 SY = $13,279,303.86

360 – XXXX (12") JOINTED CONC PAVEMENT GLASS FIBER REINFORCED POLYMER BAR (JCPGFRPB)

There was no usage of either the 14" JCPGFRPB or the 12" JCPGFRPB (in the revised mainlane pavement section) statewide within the last twelve months; therefore the CTRMA calculated the difference between the two sections. Since both sections require only one layer of reinforcing, the difference in the two sections is limited to 2" of concrete. The CTRMA calculated the cost of this 2" of concrete to establish the pricing difference between the two sections. The CTRMA solicited concrete pricing from a local supplier to establish the unit cost of concrete at $80/CY.

2,804 SY x 2" x 1/36 = 156 CY
156 CY x $80.00/CY = $12,480.00
$12,480 / 2,804 SY = $4.45/SY

Therefore, the cost difference between the 14" JCPGFRPB and the 12" JCPGFRPB sections is $4.45 per square yard. The CTRMA set the unit cost of the 12" section arbitrarily at $100.00 per square yard, and increased the unit cost of the 14"section by the established $4.45/SY delta at $104.45.

$100.00/SY x 2,804 SY = -$280,400.00

3224 – 2043 (1") HMAC BASE D-GR TY-D PG70-22 (QCQA)
There was no usage in District 14 for this item. The statewide pricing contains usage during the month of July 2012, and indicates an average low bid unit price of $115.75 per ton.

$115.75/ton x 22,048 tons = $2,552,056.00

310 – 2002 PRIME COAT (AE-P)
District 14 pricing indicates an average low bid unit price of $3.87 per gallon for this item.

$3.87/gallon x 60,131 gallons = $232,706.97
276 – 2057 (6") CEM TRT BASE (PLT MX)(CL L)(TY A)(GR 5)(FNL POS)

There has been no usage in Texas in the past 12 months for this item with a Grade 5 flexible base. Item 276 – 2057 is for Grade 1 Flexible Base; however, this item is being used since the Grade 5 properties are similar to Grade 1 properties. Statewide pricing indicates an average low bid unit price of $77.00 per cubic yard for this item.

$77.00/CY x 6" x 1/36 = $12.83/SY
$12.83/SY x 381,651 SY = $5,143,213.42

275 – 2002 (8") CEM TRT EXISTING MATERIAL (RD MX)

The upper 6" of the TY C2 embankment must be cement treated in accordance with the revised frontage road pavement design. District 14 pricing indicates an average low bid unit price of $1.25 per square yard; however, usage is light. The more recent statewide pricing indicates an average low bid unit price of $1.45 per square yard; the CTRMA believes this is a more appropriate unit cost for estimating this Change Order.

$1.45/CY x 400,874 CY = $581,267.30

132 – 2026 (9") EMBANKMENT (TY C2) (DENS CONT)

The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C2 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C2 Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x 189,302 CY = $2,205,368.30

132 – 2031 (24") EMBANKMENT (TY C3) (DENS CONT)

Note: 24" of TY C3 embankment is included in this section to maintain a 60" section for estimating purposes.

The TY C2 embankment material is an import material for this Project; therefore, use of a particular TxDOT bid item is not a reasonable approximation of CTMC's cost for this item. CTMC would be required to excavate and transport this material to the

Project. As a result, Item 110 – 2001 Roadway Excavation was used to estimate the excavation activity, and CTMC's subcontract with Panther Creek Trucking was used to establish trucking costs. District 14 pricing indicates an average low bid unit price of $6.05 per cubic yard for Item 110 – 2001. CTMC's subcontract with Panther Creek Trucking indicates a cost of $84 per load for the TY C3 embankment material. The trucking distance from the borrow site for this material to the Project is approximately 15 miles. The CTRMA has assumed a 15 cubic bank yard capacity for the trucks.

Excavation: $6.05/CY
Trucking: $84.00/load ÷ 15 CY = $5.60/CY

Total TY C3 Cost: $6.05 + $5.60 = $11.65/CY
$11.65/CY x 267,250 CY = 3,113,462.50

Summary

Total Estimated Cost of Frontage Road Revisions	**$3,580,281.73**
Total Estimated Cost of Mainlane Revisions	**-$1,924,893.88**
Net Estimated Change Order Amount	**$1,655,387.85**