Finding of No Significant Impact for a FHWA Project

Proposed Action: US 281 (Future I-69 C)

Project Limits: FM 490 to SH 186/FM 1017

City: Edinburg and San Manuel-Linn **County:** Hidalgo **State:** Texas

TxDOT CSJ(s): 0255-07-140

In accordance with 23 CFR Section 771.119 and Section 771.121, the Texas Department of Transportation (TxDOT) has determined that the US 281 (Future I-69 C) Project from FM 490 to SH 186/FM 1017 will not have a significant impact on the human or natural environment.

This Finding of No Significant Impact (FONSI) for the Preferred Alternative is based on the final Environmental Assessment (EA) dated December 2019 and the entire project record. This decision documents the selection of the Build Alternative, presented in the final EA as the Preferred Alternative, which is described as:

The US 281 (Future I-69 C) Project from FM 490 to SH 186/FM 1017 consists of reconstructing and upgrading the existing rural divided highway to interstate standards as part of the future I-69C. US 281 will be designated as I-69C once construction is complete. The proposed project would include widening the existing facility from a 4-lane divided highway to an urban freeway with continuous frontage roads in each direction. Specifically, the improvements include constructing 4 main lanes (2 in each direction) and 2-lane frontage roads in each direction. The ultimate completed improvements would add 2 main lanes (1 lane each direction) as future traffic warrants. Additionally, overpasses would be added at Laguna Seca Road, Red Gate Road, and Los Venados Drive. The length of the proposed project is approximately 7.04 miles. The purpose of the proposed project would be to enhance mobility, safety, and improve traffic operations along US 281 (future I-69C).

The proposed project would be constructed generally within the existing right-of-way (ROW) which varies between 200 feet and 320 feet. However, approximately 65.38 acres of additional ROW will be required, at select locations, to upgrade the facility.

A Notice of Availability of the Draft EA was issued on June 25, 2019.

A Notice Affording Opportunity for a Public Hearing and Draft EA Notice of Availability for Public Review was published on July 28, 2019.

Design modifications were made as a result of comments received during the posted comment period, comments made at the public meetings and meeting with affected property owners (MAPO), and include changes in ramp configuration (ramp reversals) and drainage improvements. These design modifications are included in the final EA.

Public Meeting and MAPO Documentation has been prepared and is available for review on request.

The final EA and technical reports contained in the file of record have been independently evaluated by TxDOT and determined to adequately and accurately discuss the need, purpose, alternatives, environmental issues, impacts of the proposed project, and appropriate mitigation measures. These documents provide sufficient evidence and analysis for determining that preparation of an Environmental

Impact Statement is not required. These documents are incorporated by reference into this decisional document.

Based upon TxDOT's review and consideration of the analysis and evaluation contained in the EA for this project, and after careful consideration of all social, economic, and environmental factors, including input from the public involvement process, TxDOT hereby issues this Finding of No Significant Impact for the US 281 (Future I-69 C) Project from FM 490 to SH 186/FM 1017

TxDOT will ensure adherence and completion of all project commitments described in the final EA, dated December 2019, Section 8.0. TxDOT will ensure that any and all local, state, or federal permit requirements and conditions are met and otherwise complied with.

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by TxDOT pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

TxDOT Environmental Affairs Division Director

12/12/19

Date

STIP Portal

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[Project Management] [Reports] [Support]

Project Management > Area List > STIPs (M-HIDALGO COUNTY) > Revisions () > TIP Instances (Unassigned) > Highway Projects (Unassigned) > Project Details

Color Key: ☐ - Business rule violation ☐ - Value changed in current session ☐ - Different from DCIS or latest approved copy [Data]

Statewide ☐

TIP Revision: None

District: PHARR

County: HIDALGO

MPO: HIDALGO COUNTY

Highway: US 281

CSJ: 0255 - 07 - 140

TIP FY: 2022

Phase:
- ☑ Construction
- ☑ Engineering
  - ☐ Environmental
  - ☐ Engineering
- ☑ Right-of-Way
  - ☐ Acquisition
  - ☐ Utilities
- ☐ Transfer

Total Project Cost Information

Prelim Engineering	$3,920,000	☐
ROW Purchase	$4,813,000	☐
Construction Cost	$80,000,000	☐
Const Engineering	$3,912,000	☐
Contingencies	$904,000	☐
Indirect Costs	$0	☐
Bond Financing	$0	☐
Potential Chg Ord	$0	☐
Total Project Cost	$93,549,000	
YOE Cost		
Toll		☐
TCM		☐

Revision Date: 08/2019

Project Sponsor: TXDOT

MPO Proj Number: HC-384

MTP Reference: HC-384

City: COUNTY

NOX (Kg /D):	0.0000	
VOC (Kg /D):	0.0000	
PM10 (Kg /D):	0.0000	
PM2.5 (Kg /D):	0.0000	
CO (Lbs /D):		

Limits From: 0.273 MI S SH 186

Limits To: 0.023 MI N FM 490

Project Description: RURAL EXPRESSWAY FACILITY- CONSTRUCT 4 LANES WITH OVERPASSES AND TWO - 2 LANE FRONTAGE ROADS

P7 Remarks: E = PRELIMINARY AND CONSTRUCTION ENGINEERING

Project History: NEW PROJECT, MODIFIED LIMITS, UPDATED PROJECT DESCRIPTION

Authorized Funding by Category/Share

Category	Federal	State	Regional	Local	Local Contributions	Total
4	$62,072,000	$15,518,000	$0	$0	$0	$77,590,000
11	$12,767,200	$3,191,800	$0	$0	$0	$15,959,000
Total	$74,839,200	$18,709,800	$0.00	$0.00	$0.00	$93,549,000

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
PHARR	HIDALGO COUNTY	HIDALGO	0255-07-140	2022	US 281	C,E,R	COUNTY	$ 93,549,000

LIMITS FROM: 0.273 MI S SH 186
LIMITS TO: 0.023 MI N FM 490
PROJECT DESCR: RURAL EXPRESSWAY FACILITY- CONSTRUCT 4 LANES WITH OVERPASSES AND TWO - 2 LANE FRONTAGE ROADS
PROJECT SPONSOR: TXDOT
REVISION DATE: 08/2019
MPO PROJ NUM: HC-384
FUNDING CAT(S): 4,11
REMARKS P7: E = PRELIMINARY AND CONSTRUCTION ENGINEERING
PROJECT HISTORY: NEW PROJECT, MODIFIED LIMITS, UPDATED PROJECT DESCRIPTION

TOTAL PROJECT COST INFORMATION

PRELIM ENG:	$ 3,920,000
ROW PURCH:	$ 4,813,000
CONST COST:	$ 80,000,000
CONST ENG:	$ 3,912,000
CONTING:	$ 904,000
INDIRECT:	$ 0
BOND FIN:	$ 0
POT CHG ORD:	$ 0
TOTAL COST:	$ 93,549,000

COST OF APPROVED PHASES $ 93,549,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
11	$ 12,767,200	$ 3,191,800	$ 0	$ 0	$ 0	$ 15,959,000
4	$ 62,072,000	$ 15,518,000	$ 0	$ 0	$ 0	$ 77,590,000
TOTAL	$ 74,839,200	$ 18,709,800	$ 0	$ 0	$ 0	$ 93,549,000

TIP History

2019-2022 STIP — **08/2019 Revision: Approved 10/18/2019**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
PHARR	HIDALGO COUNTY	HIDALGO	0255-07-140	2022	US 281	C,E,R	COUNTY	$ 93,549,000

LIMITS FROM: 0.273 MI S SH 186
LIMITS TO: 0.023 MI N FM 490
PROJECT SPONSOR: TXDOT
REVISION DATE: 08/2019
MPO PROJ NUM: HC-384
FUNDING CAT(S): 4,11
PROJECT DESCR: RURAL EXPRESSWAY FACILITY
REMARKS P7: E = PRELIMINARY AND CONSTRUCTION ENGINEERING
PROJECT HISTORY: NEW PROJECT, MODIFIED LIMITS

TOTAL PROJECT COST INFORMATION

PRELIM ENG:	$ 3,920,000
ROW PURCH:	$ 4,813,000
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CONST ENG:	$ 3,912,000
CONTING:	$ 904,000
INDIRECT:	$ 0
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POT CHG ORD:	$ 0
TOTAL COST:	$ 93,549,000

COST OF APPROVED PHASES $ 93,549,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
4	$ 62,072,000	$ 15,518,000	$ 0	$ 0	$ 0	$ 77,590,000
11	$ 12,767,200	$ 3,191,800	$ 0	$ 0	$ 0	$ 15,959,000
TOTAL	$ 74,839,200	$ 18,709,800	$ 0	$ 0	$ 0	$ 93,549,000

2019-2022 STIP — **05/2019 Revision: Approved 07/26/2019**

DISTRICT	MPO	COUNTY	CSJ	TIP FY	HWY	PHASE	CITY	YOE COST
PHARR	HIDALGO COUNTY	HIDALGO	0255-07-140	2022	US 281	C,E,R	COUNTY	$ 93,549,000

LIMITS FROM: 0.273 MI N SH 186
LIMITS TO: 0.023 MI N FM 490
PROJECT SPONSOR: TXDOT
REVISION DATE: 05/2019
MPO PROJ NUM: HC-384
FUNDING CAT(S): 4,11
PROJECT DESCR: RURAL EXPRESSWAY FACILITY
REMARKS P7: E = PRELIMINARY AND CONSTRUCTION ENGINEERING
PROJECT HISTORY: NEW PROJECT

TOTAL PROJECT COST INFORMATION

PRELIM ENG:	$ 3,920,000
ROW PURCH:	$ 4,813,000
CONST COST:	$ 80,000,000
CONST ENG:	$ 3,912,000
CONTING:	$ 904,000
INDIRECT:	$ 0
BOND FIN:	$ 0
POT CHG ORD:	$ 0
TOTAL COST:	$ 93,549,000

COST OF APPROVED PHASES $ 93,549,000

AUTHORIZED FUNDING BY CATEGORY/SHARE

CATEGORY	FEDERAL	STATE	REGIONAL	LOCAL	LC	TOTAL
4	$ 62,072,000	$ 15,518,000	$ 0	$ 0	$ 0	$ 77,590,000
11	$ 12,767,200	$ 3,191,800	$ 0	$ 0	$ 0	$ 15,959,000
TOTAL	$ 74,839,200	$ 18,709,800	$ 0	$ 0	$ 0	$ 93,549,000

Comment History

Time	User	Comment	Related Approval
2019/11/13 11:42:17	Greg Wood		08/2019: Approved
2019/11/13 11:41:42	Greg Wood	documentation on 2-lane frontage road included Project approved	
2019/08/26 13:38:32	Kirk Fauver	Not approved, the project description lacks sufficient detailed description to approve >KDF	08/2019: Not Approved
2019/05/30 14:38:55	Greg Wood		05/2019: Approved

STIP Portal

Texas Department of Transportation

Tue, Dec 03, 2019 1:24:35 PM

HIDALGO COUNTY METROPOLITAN PLANNING ORGANIZATION METROPOLITAN TRANSPORTATION PLAN PROJECT DATA

Line Numbers	System Sort	Highway	From	To	MTP #	CSJ #	Project Length (mi)	Type of Improvement (Proposed Project Data)	Jurisdiction	Current Construction Cost Estimate (Total Project Cost)	Letting Year Construction dollars	ROW cost (12% 2011 const cost)	Preliminary Engineering (4.9% 2011 const cost)	CE Cost (<$2M 7.5%, $2-$10M 5%, >$10M 4.5% of 2011 const cost)	Contingencies (<$2M 7%, $2-$25M 6.5%, $25-$50M 9%, >$50M 7% of 2018 const cost)	Total Project Cost	Year of Expenditure Dollars (YOE)	Cat 1 Funding (Funding Categories)	Cat 2 Funding	Cat 4 - Statewide Connectivity	Cat 7 Funding (CE & Contingencies)	Cat 9 Funding	Cat 11 Funding	Cat 12 Funding	CBI - Eligible	Earmark Funding	Other Funds (Local, Bond, etc)	TRENDS - Innovative Financing	TOTAL
281	Off	CS - Cesar Chavez - **ROW**	Bus 83	Ridge	HC-344r	0921-02-339	1	Widen to 4 lanes	San Juan / Alamo / County 1,2	$ 5,955,000	$ 6,193,200	$ 1,000,000	$ 249,994	$ 655,000	$ -	$ 8,482,172	$ 1,000,000				$ 1.00								$ 1.00
171	Off	Taylor Rd	Bus 83	I-2 (US 83)	HC-256	0921-02-327	1	Widen 4 lanes with left turn lane	Mission / McAllen	$ 4,500,000	$ 4,500,000	$ 1,192,488	$ 371,667	$ 500,000	$ 365,050	$ 7,277,407	$ 5,000,000				$ 5.00								$ 5.00
40	On	FM 676 (Mile 5 N)	SH 364 (La Homa Rd)	SH 107 (Conway)	HC-117b	1064-01-032	2.39	Widen to 4 Lane Divided	Alton / County 3	$ 15,000,000	$ 15,000,000	$ 1,200,000	$ 423,987	$ 450,000	$ 650,000	$ 18,343,987	$ 15,000,000	$ 2.00	$ 10.00				$ 3.00						$ 15.00
207	Off	Anzalduas Int'l Port of Entry	Anzalduas Int'l Port of Entry		HC-277	0921-02-301		Construction of Southbound Inspection Station	Anzalduas Int'l Bridge Board	$ 7,241,012	$ 7,241,012	$ -	$ 354,810	$ 362,051	$ 470,666	$ 8,877,432	$ 7,241,012								$ 0.10		$ 7.14		$ 7.24
229	On	SH 68	US 83	FM 1925	HC-295c	3629-01-001	10	Construct new 4 lane divided rural highway facility	TxDOT	$ 55,000,000	$ 55,000,000	$ 92,629,626	$ 6,500,000	$ 2,475,000	$ 3,850,000	$ 163,804,626	$ 55,000,000							$ 55.00					$ 55.00
245	Off	International Bridge Trade Corridor (IBTC) - **ROW**	365 Tollway at FM 493	BI-2	RMA-3	0921-02-142		4 lane divided - at grade - non toll facility	HCRMA	$ 80,812,000	$ 80,812,000	$ 35,688,406	$ 5,435,921	$ -	$ -	$ 121,936,327	$ 35,688,406							$ 12.07			$ 23.62		$ 35.69
274	On	Bus 281 / SH 107	Bus 281 W	I-69C (US 281)	HC-337	0342-01-093	1.3	Operational Improvements and Rehabilitation	County 4	$ 19,000,000	$ 19,000,000	$ 1,000,000	$ 1,219,012	$ 855,000	$ 1,235,000	$ 24,487,012	$ 19,000,000		$ 19.00										$ 19.00
307	Off	Jackson Hike Bike Phase II - TAP	[illegible] & Wisconsin (McAllen)	Canton Rd & Jackson Rd (Edinburg)	HC-370	0921-02-431	2.8	Jackson Rd Hike & Bike Project Phase II	McAllen / Edinburg	$ 2,753,775	$ 2,753,775	$ 370,000	$ -	$ -	$ -	$ 3,123,775	$ 2,753,775					$ 0.40					$ 2.35		$ 2.75
308	Off	PSJA TriCity Ped Improv Ph II - TAP	City Pharr	City Alamo	HC-371	0921-02-432	13.4	New construction of pedestrian safety improvements	Pharr / San Juan / Alamo	$ 2,196,840	$ 2,196,840	$ -	$ -	$ -	$ -	$ 2,196,840	$ 2,196,840					$ 1.30					$ 0.90		$ 2.20
																	$ 158,048,218				$ 16,000,000								
		FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021	FY 2021		FY 2021	FY 2021		FY 2021	FY 2021		FY 2021		
216	Off	Mile 3 N (Phase I)	Tom Gill Road	FM 492 (Goodwin Rd)	HC-286a	0921-02-321	3.8	Widen to 4 Lane Divided - Curb & Gutter Section	County 3	$ 12,300,302	$ 14,382,614	$ 1,186,754	$ 526,431	$ 1,637,306	$ -	$ 18,353,281	$ 17,213,674				$ 16.81			$ 0.40					$ 17.21
57	Off	Mile 10 North - **ROW**	Westgate (Mile 6 W)	FM 1015	HC-264r	0921-02-360	3	Widen to 4 lanes - Urban	Weslaco / County 1	$ 9,266,769	$ 12,194,434	$ 2,300,000	$ 992,860	$ 1,700,000	$ -	$ 18,428,602	$ 2,300,000				$ 2.20								$ 2.20
278	Off	CS - Inspiration Rd/ Military Pkwy Loop - **ROW**	BI-2	FM 1016	HC-341r	0921-02-395		Widen to 4 Lane Divided	Mission / McAllen / Hidalgo	$ 16,477,935	$ 20,047,921	$ 3,000,000	$ 1,276,483	$ 2,305,272	$ -	$ 27,624,037	$ 3,000,000				$ 3.00								$ 3.00
296	Off	Cano Hike & Bike Trail Lighting Project - **TAP**	Cano St	Freddy Gonzalez	HC-359	0921-02-392	1	Installation of solar powered lighting along the Cano walking trail	Edinburg	$ 534,400	$ 534,400	$ -	$ -	$ -	$ -	$ 534,400	$ 534,400					$ 0.42					$ 0.11		$ 0.53
297	Off	Donna Sidewalk Project - **TAP**	S. International Blvd		HC-360	0921-02-393	4.9	Rehabilitation of deteriorated sidewalks and construction of new	Donna	$ 340,741	$ 340,741	$ -	$ -	$ -	$ -	$ 340,741	$ 340,741					$ 0.27					$ 0.07		$ 0.34
298	Off	Donna Int'l Bridge	@ Donna Int'l Bridge		HC-361	0921-02-394	1.2	Construction commercial facilities northbound loaded / empty and	Donna	$ 37,352,850	$ 37,352,850	$ -	$ 4,545,234	$ 1,500,000	$ -	$ 43,398,084	$ 43,398,084								$ 8.90		$ 34.50		$ 43.40
243	On	FM 494	FM 1924 (Mile 3)	FM 676 (Mile 5)	HC-292b	0864-01-069	2	Widen to 4 lane	County 3	$ 7,397,344	$ 9,000,000	$ 500,000	$ 392,000	$ 450,000	$ 585,000	$ 11,485,000	$ 9,000,000						$ 9.00						$ 9.00
97	On	FM 2029	FM 491 (Mile [illegible] W)	Cameron County Line	HC-14	[illegible]	4	Proposed Super 2	HCRMA	$ 15,000,000	$ 15,000,000	$ 5,000,000	$ 735,000	$ 675,000	$ 975,000	$ 23,315,000	$ 15,000,000		$ 15.00										$ 15.00
																	$ 96,484,999				$ 22,413,674								
		FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022	FY 2022		FY 2022	FY 2022		FY 2022	FY 2022		FY 2022		
121	Off	CS - Taylor Rd	0.3mi S Mile 2	Business 83	HC-257	0921-02-328	2	4 lanes divided urban	Mission / McAllen / County 3	$ 6,006,390	$ 6,006,390	$ 2,011,852	$ 743,333	$ 887,802	$ 376,725	$ 10,385,439	$ 6,894,192				$ 6.89								$ 6.89
24a	Off	Mile 6 W Rd	Mile 9 N	Mile 11 N	HC-148ba	0921-02-420	2	Widen to 4 Lane	Weslaco / County 1	$ 11,403,687	$ 11,403,687	$ 1,800,000	$ 1,614,606	$ 1,200,000	$ -	$ 16,726,293	$ 12,603,687				$ 11.60			$ 0.40		$ 0.60			$ 12.60
24b	Off	Mile 6 W Rd - **ROW**	SH 107	Mile 11 N	HC-148bb	0921-02-286	5.5	Widen to 4 Lane	County 1	$ 22,541,630	$ 31,202,499	$ 4,396,313	$ 992,100	$ 3,410,000	$ 1,316,000	$ 42,571,802	$ 4,396,313				$ 4.40								$ 4.40
214	Off	Liberty Blvd (Phase I)	US 83	Mile 3 Rd	HC-284a	0921-02-194	2.4	Widen to 4 lanes with dedicated left turn lane	Penitas	$ 8,400,000	$ 9,448,858	$ 1,185,242	$ 219,782	$ 1,066,619	$ -	$ 12,526,330	$ 10,535,477				$ 10.14			$ 0.40					$ 10.54
224	On	FM 494	SH 107	FM 676 (Mile 5)	HC-292a	0864-01-068	2	Widen to 4 lane	County 3	$ 8,657,966	$ 8,657,966	$ 2,937,143	$ 392,000	$ -	$ -	$ 12,543,905	$ 8,657,966		$ 8.66										$ 8.66
222	On	FM 1925	10th St	McColl Rd	HC-290	1803-01-092	1.28	Widen to 6 lane with raised median	Edinburg / County 4	$ 8,240,000	$ 8,240,000	$ 630,000	$ 403,760	$ -	$ 535,600	$ 10,320,240	$ 8,240,000		$ 8.24										$ 8.24
98	On	FM 2220 (Ware Rd)	SH 107	FM 1925 (Monte Cristo)	HC-23	2094-01-063	2.5	6 Lanes Divided Urban Section	McAllen / County 3-4	$ 17,000,000	$ 17,000,000	$ 2,640,000	$ 833,000	$ 765,000	$ 1,105,000	$ 23,397,000	$ 17,000,000		$ 17.00										$ 17.00
155	On	CS - Veterans Blvd (Future SH 495)	BI-2/US 83	SH 364 (La Homa Rd)	HC-50	0863-01-108	2.3	4 Lanes divided urban	Palmview / County 3	$ 11,360,000	$ 11,360,000	$ 2,699,360	$ 843,140	$ 511,200	$ 738,400	$ 16,856,420	$ 11,360,000		$ 11.36										$ 11.36
275	On	FM 1925	Wallace	10th St	HC-358	1803-01-094	3.5	6 lane with raised median	County 4	$ 20,000,000	$ 20,000,000	$ 3,000,000	$ 980,000	$ 900,000	$ 1,300,000	$ 27,420,000	$ 20,000,000		$ 20.00										$ 20.00
51	On	FM 1925	FM 88 E	FM 491 (Mile 1 W)	HC-13	1803-02-038	2.7	Widen to 4 Lane Divided	HCRMA	$ 15,700,000	$ 15,700,000	$ 5,230,000	$ 769,300	$ 706,500	$ 1,020,500	$ 24,369,730	$ 15,700,000		$ 15.70										$ 15.70
41	On	FM 676 (Mile 5 N)	SH 107 (Conway)	Taylor Rd	HC-117c	1064-01-027	3	Widen to 4 Lane Divided	Alton / County 3	$ 7,656,456	$ 10,075,374	$ 918,775	$ 493,093	$ 457,392	$ 654,899	$ 13,222,809	$ 10,075,374		$ 5.20				$ 4.88						$ 10.08
78aa	On	FM 1925	FM 907 (Alamo Rd)	Sharp Rd	HC-12aa	1803-02-035	1.57	Widen to 4 Lane Divided	County 4	$ 10,000,000	$ 10,000,000	$ 1,010,000	$ 490,000	$ 450,000	$ 549,543	$ 13,119,543	$ 10,000,000		$ 10.00										$ 10.00
280	On	SH 107 (Conway)	FM 676	SH 107	HC-343	0528-01-112	2	Construct 6 lane divided urban	Alton / County 3	$ 15,000,000	$ 15,000,000	$ -	$ 735,000	$ 675,000	$ 975,000	$ 18,315,000	$ 15,000,000		$ 15.00										$ 15.00
39	On	SH 107 (Conway)	FM 676 (Mile 5 N)	FM 1924 (Mile 3 N)	HC-234	0528-01-113	1.944	Construct 4 Lane Divided Rural	[illegible]	$ 9,423,161	$ 10,600,000	$ -	$ 319,400	$ 325,900	$ 210,940	$ 11,896,100	$ 10,600,000		$ 10.60										$ 10.60
320	On	SH 107 (Conway)	FM 1924 (Mile 3 N)	SH 495	HC-383	0528-01-118	1	Construct 6 Lane w Raised Median	Mission / Palmhurst / County 3	$ 17,779,927	$ 20,000,000	$ -	$ 980,000	$ 992,000	$ 398,000	$ 22,370,000	$ 22,370,000	$ 2.37	$ 20.00										$ 22.37
[illegible]	Off	CS - Dove Ave	41st Street	[illegible]	HC-315	0921-02-341	0.25	Construct 4 lane urban roadway	McAllen	$ 1,404,225	$ 1,404,225	$ -	$ 68,807	$ 70,211	$ 91,275	$ 1,721,588	$ 1,495,500										$ 1.50		$ 1.50
321	On	US 281	0.275 mi N SH 186	0.023 mi N FM 490	HC-384	0255-07-140	7.009	Rural Expressway Facility	County 4	$ 80,000,000	$ 80,000,000	$ 4,811,000	$ 3,920,000	$ 3,912,000	$ 904,000	$ 93,549,000	$ 93,549,000			$ 77.59			$ 15.96						$ 93.55
																	$ 278,477,[illegible]				$ 33,825,962								
		FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023	FY 2023		FY 2023	FY 2023		FY 2023	FY 2023		FY 2023		
11	On	FM 676	Taylor Rd	FM 2220	HC-144	1064-01-043	1	Widen to 4 Lane Divided	McAllen / County 1	$ 4,326,925	$ 4,500,000	$ 1,000,000	$ 471,876	$ 500,000	$ -	$ 6,950,176	$ 6,000,000				$ 6.00								$ 6.00
271	Off	CS - Hi Line East	Cage	Veterans	HC-336	0921-02-375	1	Widen to 2 lane with continuous left turn lane	Pharr	$ 4,173,551	$ 4,173,551	$ 350,000	$ 204,504	$ 208,678	$ 271,281	$ 5,466,774	$ 4,523,551				$ 4.52								$ 4.52

Environmental Document Certification Form

Reset Form

Project Name: US 281 Segment 1 from SH 186 to FM 490

Control Section Job Number (CSJ): 0255-07-140

Document Type: ☒ EA ☐ EIS ☐ FONSI **Document Stage:** ☐ Draft ☒ Final

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B. The document has been determined to be administratively complete.

C. The document meets the requirements of technical review (43 TAC §2.49) as required to date.

D. The required public participation has been completed as required to date.

E. All consultation and coordination required for the environmental decision is complete and appropriately documented (for final environmental documents).

F. Legal Review or Legal Sufficiency Review has been completed, as required.

G. Current funding has been reviewed, and is as follows:

☒ Mix of Federal/State/Local funding ☐ State-only funding Date Verified: 11/14/2019

Comments:

Signed: Nolan Nicolas Digitally signed by Nolan Nicolas DN: cn=Nolan Nicolas, o=Environmetal, ou=TxDOT Pharr District, email=Nolan.Nicolas@txdot.gov, c=US Date: 2019.11.14 07:36:09 -06'00' **Date:** 11/14/2019

District Core Team Member

Print Name: NOLAN NICOLAS

Signed: JGRUBB Digitally signed by JGRUBB DN: dc=us, dc=tx, dc=state, dc=dot, ou=DDOs, ou=ENV, ou=Users, cn=JGRUBB, email=:Jubal.Grubb@txdot.gov Date: 2019.12.09 09:06:05 -06'00' **Date:** 12/9/2019

ENV Core Team Member

Print Name: Jubal Grubb

Environmental Document Review Checklist

Reset Form

Project Name: US 281 Segment 1 from SH 186 to FM 490		☐ State ☒ Federal - Assigned ☐ Federal - Not Assigned	
CSJ No.: 0255-07-140	Federal-Aid No. (if applicable):	Date of Administrative Completeness: Jun 6, 2019	
District / County: Pharr/Hidalgo		Project Sponsor:	
Document Type: ☒ EA ☐ EIS	Document Stage: ☐ Draft ☒ Final	Preparer/Consultant: Blanton and Associates	

Preparer identify	Preparer check if content is:		Core Team check if content is:	Major Required Content
Section in Document	Included	Not Applicable	Acceptable	
	☒	☐	☒	**Cover Sheet**
	☒	☐	☒	Follows TxDOT approved format
	☒	☐	☒	Includes 23 U.S.C. 327 assignment language
	☐	☒	☐	Title includes any cooperating agencies (EIS only)
	☐	☒	☐	Signature block and contacts (only required for EIS)
	☐	☒	☐	Abstract (only required for EIS)
	☐	☒	☐	**ROD (for Final EIS) / FONSI (for EA)**
	☐	☒	☐	**Executive Summary (optional for EA, optional for combined FEIS/ROD, but required for EIS)**
	☐	☒	☐	Includes 23 U.S.C. 327 assignment language
	☐	☒	☐	Summary of major conclusions, areas of controversy, preferred alternative, and commitments
i - iii	☒	☐	☒	**Table of Contents:** include list of tables, figures, and appendices
iv - v	☒	☐	☒	**List of Acronyms**
1.0	☒	☐	☒	**Introduction**
1.0	☒	☐	☒	Purpose of the Document: brief overview including appropriate figures
2.0	☒	☐	☒	Project Description
2.1	☒	☐	☒	Existing Facility Description
2.2	☒	☐	☒	Proposed Project (General Description)
2.2	☒	☐	☒	Demonstrates logical termini and independent utility
2.2	☒	☐	☒	**Planning and Programming Status**
2.2	☒	☐	☒	Consistent with current Plan and Program (required for Final Environmental Document)
2.2	☒	☐	☒	Reference to plan sheet in appendix (required for Final Environmental Document)
3.0	☒	☐	☒	**Purpose and Need**
3.1	☒	☐	☒	Need statement(s)
3.2	☒	☐	☒	Supporting Facts and/or Data
3.3	☒	☐	☒	Purpose statement(s)
4.0	☒	☐	☒	**Alternatives**
4.1	☒	☐	☒	Build Alternative(s)
2.2/4.1	☒	☐	☒	Includes number of lanes, ROW requirements, median width, access control, estimated cost
4.2	☒	☐	☒	No-build Alternative
4.3	☒	☐	☒	Alternatives Considered But Eliminated From Further Consideration (if applicable)
5.0	☒	☐	☒	**Affected Environment and Environmental Consequences (see page 2 for further detail)**
6.0	☒	☐	☒	**Agency Coordination**
7.0	☒	☐	☒	**Public Involvement**
8.0	☒	☐	☒	**Environmental Permits, Issues and Commitments**
9.0	☒	☐	☒	**Conclusion**
	☐	☒	☐	Identification of preferred alternative (required for Final Environmental Document)
	☐	☒	☐	Locally preferred alternative, if one has been identified
	☐	☒	☐	**List of Preparers (EIS only)**
10.0	☒	☐	☒	**References Cited**
Appendix A, B,C and D	☒	☐	☒	**Exhibits (Maps, Photos, Schematics, Typical Sections)/Appendices**

Comments:

Preparer identify:	Preparer check if content is:			Core Team check if content is:	**Affected Environment and Environmental Consequences**
Section in Document	Included	Subject of Technical Report	Not Applicable	Acceptable	
Issues/resources determined to have no impact at scoping can be listed in the document. Summary discussion needed for issues/resources considered in detail. Discussion should address affected environment, environmental consequences, encroachment-alteration effect, and applicable avoidance, minimization, and mitigation measures for each issue/resource.					
5.1	☒	☒	☐	☒	**Right of way/Displacements**
5.2	☒	☒	☐	☒	**Land Use**
5.3	☒	☒	☐	☒	**Farmlands**
5.4	☒	☐	☐	☒	**Utilities/Emergency Services**
5.5	☒	☐	☐	☒	**Bicycle and Pedestrian Facilities**
5.6	☒	☒	☐	☒	**Community Impacts (EJ and LEP)**
5.7	☒	☐	☐	☒	**Visual/Aesthetics**
5.8.1	☒	☒	☐	☒	**Archeological Resources** - *includes Section 106 statement for Federal projects*
5.8.2	☒	☒	☐	☒	**Historic Properties** - *includes section 106 statement for Federal projects*
5.9	☒	☐	☐	☒	**Section 4(f)/6(f)/Chapter 26** - *includes Section 4(f) statement for Federal projects*
5.10	☒	☒	☐	☒	**Water Resources**
5.11	☒	☒	☐	☒	**Biological Resources** - *includes Section 7 statement for Federal projects*
5.12	☒	☒	☐	☒	**Air Quality**
5.13	☒	☒	☐	☒	**Hazardous Materials**
5.14	☒	☒	☐	☒	**Traffic Noise**
5.15	☒	☒	☐	☒	**Indirect Impacts (Induced Growth Summary)**
5.16	☒	☒	☐	☒	**Cumulative Impacts**
5.17	☒	☐	☐	☒	**Construction Impacts**
Comments:					

Core Team check if information is:			**Supporting Documentation**
Included as Appendix	Not applicable	Present in File	
The appendices and/or file of record must contain the following items/documents			
☒	☐	☒	**Plan and Program consistency documentation (compare against current E-STIP)**
☒	☐	☒	**Technical Reports: all technical reports as identified above have been completed, approved, and are present in the project file**
☒	☐	☒	**Agency coordination/consultation in appendices and/or file – Includes Distribution List for EIS only** ☐ USFWS ☒ TPWD ☒ THC ☐ TCEQ ☒ Other-List in Comments
☒	☐	☒	**Section 4(f) Evaluation, Programmatic Section 4(f) Evaluation, Section 4(f) De Minimis Determination, or Section 6(f) Evaluation**
☒	☐	☒	**Public Meeting/Public Hearing Documentation (that includes public involvement certification)**
Comments: Coordination with the NRCS for the FPPA and Coordination with Native American tribes (Comanche Nation)			

Yes	No	Not applicable	**Document Consistency (Core Team Completes)**
☒	☐	☐	**Quantitative consistency between technical reports and Environmental Document (traffic, ROWs, etc.)**
☒	☐	☐	**Quantitative consistency within Environmental Document**
☒	☐	☐	**Map and figure consistency (project limits, street names, key, etc.)**
☒	☐	☐	**Exhibits and appendices listed in the Table of Contents are present in the Environmental Document**
Comments:			

Completed By:

Nolan Nicolas	Nolan Nicolas (Digitally signed by Nolan Nicolas, DN: cn=Nolan Nicolas, o=Environmental, ou=TxDOT Pharr District, email=Nolan.Nicolas@txdot.gov, c=US, Date: 2019.11.14 07:54:48 -06'00')	11/14/2019
District Core Team Member (Print Name)	*Signature*	*Date*
Jubal Grubb	JGRUBB (Digitally signed by JGRUBB, DN: dc=us, dc=tx, dc=state, dc=dot, ou=DDOs, ou=ENV, ou=Users, cn=JGRUBB, email=Jubal.Grubb@txdot.gov, Date: 2019.12.09 07:21:23 -06'00')	12/9/2019
ENV Core Team Member (Print Name)	*Signature*	*Date*

Environmental Document Certification Form

Reset Form

Project Name: US 281 Segment 1 from SH 186 to FM 490

Control Section Job Number (CSJ): 0255-07-140

Document Type: ☒ EA ☐ EIS ☐ FONSI **Document Stage:** ☐ Draft ☒ Final

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District Core Team Member

Print Name: NOLAN NICOLAS

Signed: JGRUBB Digitally signed by JGRUBB DN: dc=us, dc=tx, dc=state, dc=dot, ou=DDOs, ou=ENV, ou=Users, cn=JGRUBB, email=:Jubal.Grubb@txdot.gov Date: 2019.12.09 09:06:05 -06'00' **Date:** 12/9/2019

ENV Core Team Member

Print Name: Jubal Grubb

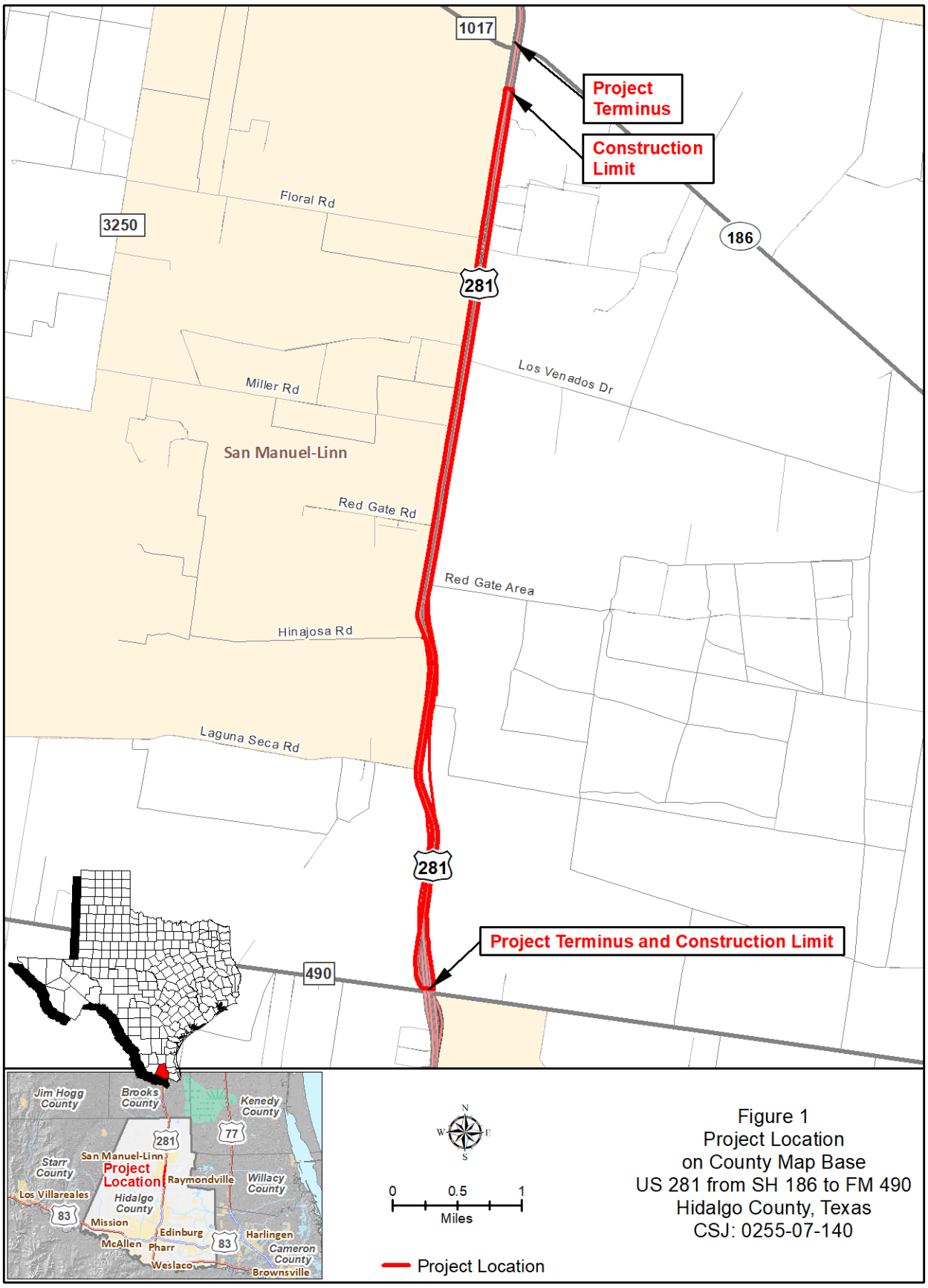


Figure 1
Project Location
on County Map Base
US 281 from SH 186 to FM 490
Hidalgo County, Texas
CSJ: 0255-07-140

Scale: 0' 50' 100' 200'

ROLL 1 OF 3

Date: 12/6/2017

CSJ: 0255-07-140

Texas Department of Transportation
US 281
© 2017

FILE: D:\cfa\2016\11013_US*281*Schematic*ENV\USTN\project\xschemB01.dgn
DATE: 12/6/2018 10:07:12 AM

US 281

281
1017
186
490
281
N

LOCATION MAP
N. T. S.

Texas Department of Transportation
© 2017

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262
www.cobbfendley.com

TEXAS DEPARTMENT OF TRANSPORTATION
PRELIMINARY DESIGN SCHEMATIC
US HIGHWAY 281
HIDALGO COUNTY

LIMITS: From: 0.690 MILES SOUTH OF SH 186
To: 0.34 MILES NORTH OF FM 490

C-S-J-: 0255-07-140
FED. AID PROJECT NO.:
LENGTH: 7.040 MILES

Existing Posted Speed: 70 MPH - MAINLANES

OFFICE OF DISTRICT ENGINEER
PHARR DISTRICT

DESIGN SPEED: 75 MPH - Mainlane; 50 MPH Frontage Roads
Functional Classification: Rural Freeway
Chapter 3, Section 6 Freeways
Superelevation Rate e_{max} = 6%

12/6/2017

APPROVED: DESIGN DIVISION LETTER DATED

APPROVED: FHWA LETTER DATED
FED. RD. DIV. NO. 6

APPROVED:
__________, 2016
DISTRICT ENGINEER

CORRECT:
__________, 2016
AREA ENGINEER

RECOMMENDED FOR APPROVAL:
__________, 2016
DIRECTOR OF TRANSPORTATION
PLANNING AND DEVELOPMENT

AVERAGE DAILY TRAFFIC VOLUMES

CSJ 0255-07-140
US 281 MAINLANES
From: 0.690 MILES SOUTH OF SH 186
To: 0.34 MILES NORTH OF FM 490

EXIST	LETTING	DESIGN
2015	2020	2040
14,453	20,700	29,000

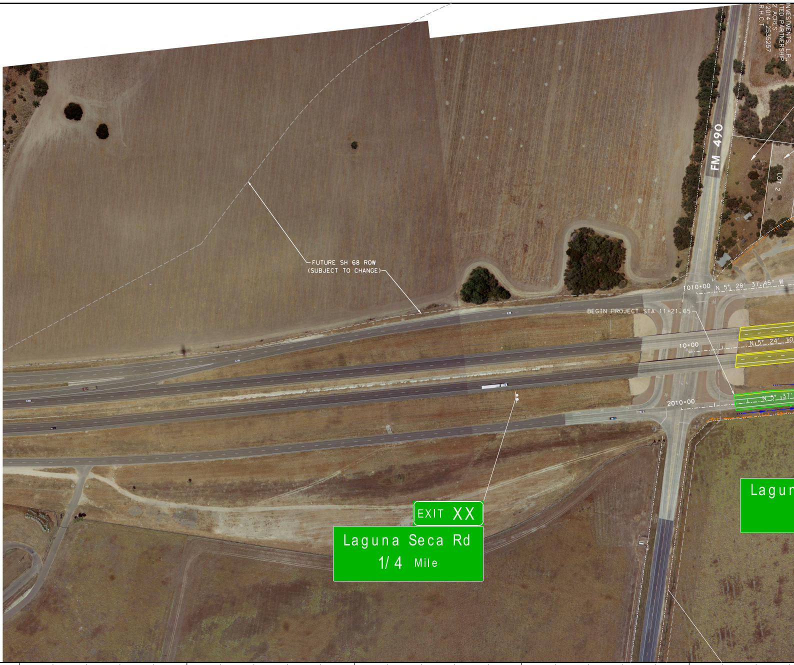
GEOMETRIC DESIGN

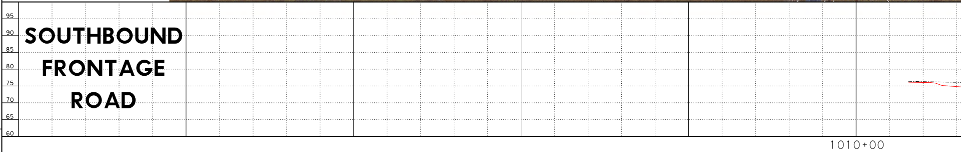
These documents are not intended for Construction, Bidding, or Permit Purposes. They were prepared by, or under the supervision of :

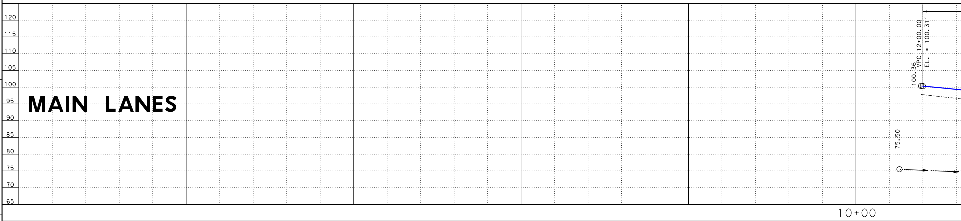
Mahmoud Salehi, P.E. PE #89552 Date

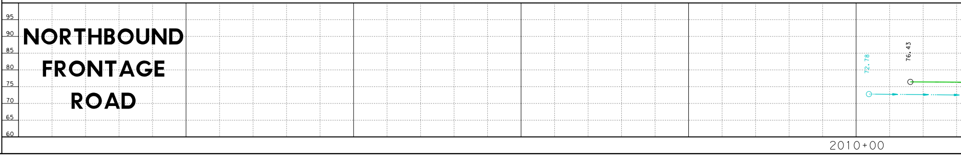
COLOR LEGEND

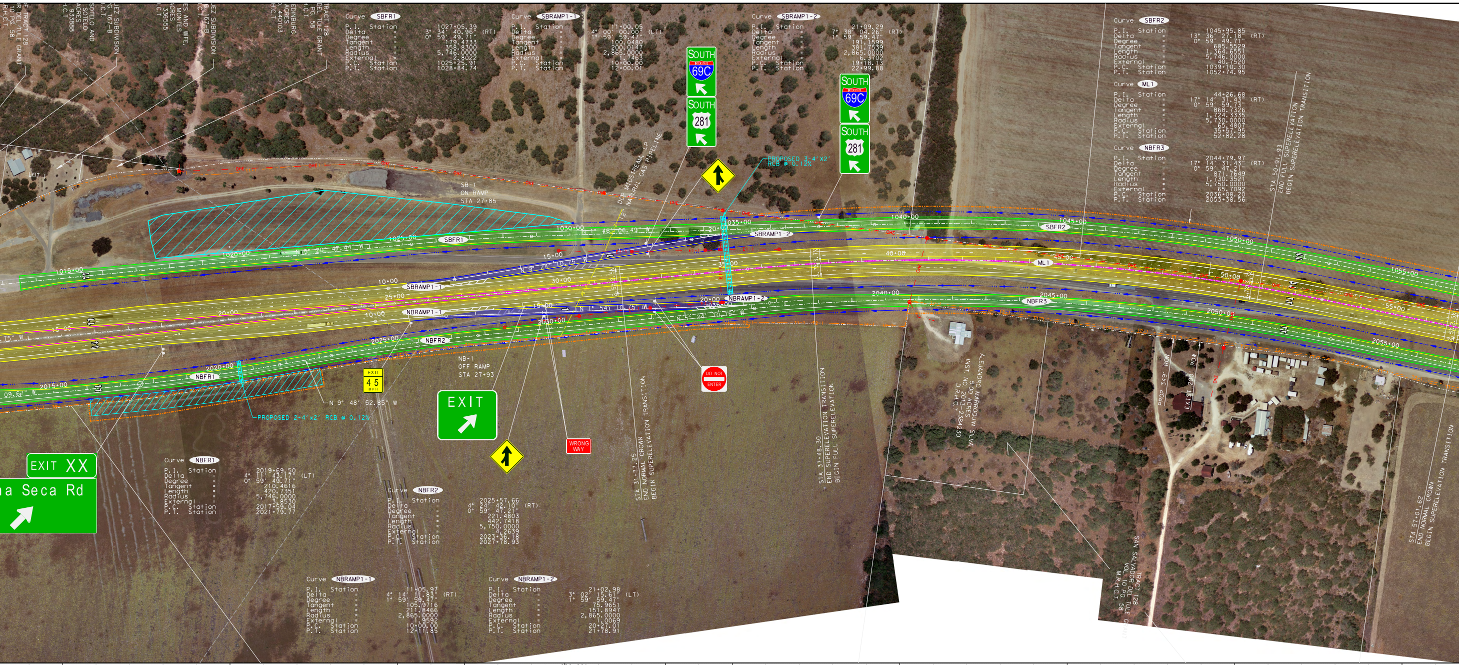
🟨	FREEWAY MAINLANES (WIDENING OR RECONSTRUCTION)
🟩	FRONTAGE ROAD
🟦	RAMPS
🟥	PROPOSED BRIDGE STRUCTURES
—	PROPOSED RETAINING WALLS
— T1-1 —	EXISTING AT&T
— T2-1 —	EXISTING ATT FIBER OPTIC LINE
— OHE —	EXIST OVERHEAD ELECTRIC
— E1-1 —	EXIST ELECTRIC
— W1-1 —	EXIST WATER
— PL-2-D —	EXIST DCP/MIDSTREAM PIPELINE
—PL-1—	EXIST KINDER MORGAN PIPELINE


FUTURE SH 68 ROW
(SUBJECT TO CHANGE)
FM 490
NVESTMENTS, L.P.
ITED PARTNERSHIP
2 ACRES
2014-2535257
R.H.C.T.
LOT 2
1010+00
N 5° 28' 37.45" W
BEGIN PROJECT STA 11+21.65
10+00
N 5° 24' 10
2010+00
N 5° 37'
EXIT XX
Laguna Seca Rd
1/4 Mile
Lagun


95
90
85
80
75
70
65
60
SOUTHBOUND
FRONTAGE
ROAD
1010+00


120
115
110
105
100
95
90
85
80
75
70
65
MAIN LANES
100.36
VPC 12+00.00
EL. = 100.31'
75.50
10+00


95
90
85
80
75
70
65
60
NORTHBOUND
FRONTAGE
ROAD
72.78
76.43
2010+00


SOUTH
INTERSTATE 69C
SOUTH
281
SOUTH
INTERSTATE 69C
SOUTH
281
PROPOSED 3-4'X2' RCB @ 0.12%
SB-1
ON RAMP
STA 27+85
DCP MIDSTREAM, LP
12" NATURAL GAS PIPELINE
OHE
1015+00
1020+00
1025+00
1030+00
1035+00
1040+00
1045+00
1050+00
1055+00
SBFR1
SBFR2
SBRAMP1-1
SBRAMP1-2
ML1
NBFR2
NBFR3
NBRAMP1-1
NBRAMP1-2
NBFR1
10+00
15+00
20+00
25+00
30+00
35+00
40+00
45+00
50+00
55+00
2015+00
2020+00
2025+00
2030+00
2035+00
2040+00
2045+00
2050+00
2055+00
N 1° 46' 06.49" W
N 5° 20' 47.44" W
N 9° 24' 10.75" W
N 1° 54' 10.75" W
N 5° 24' 10.75" W
N 9° 48' 52.85" W
EXIT 45 MPH
NB-1
OFF RAMP
STA 27+93
EXIT
DO NOT ENTER
WRONG WAY
PROPOSED 2-4'x2' RCB @ 0.12%
EXIT XX
a Seca Rd
STA 31+77.25
END NORMAL CROWN
BEGIN SUPERELEVATION TRANSITION
STA 37+48.30
END SUPERELEVATION TRANSITION
BEGIN FULL SUPERELEVATION
ALEJANDRO MARROQUIN SILVA
5.00 ACRES
INST. NO. 2013-2384230
D.R.H.C.T
PROP 349' ROW
EXIST 200' ROW
TRACT 128
SAN SALVADOR DEL TULE GRANT
VOL. 10 PG. 58
M.R.H.C.T.
STA 50+91.93
END FULL SUPERELEVATION
BEGIN SUPERELEVATION TRANSITION
STA 57+01.62
END NORMAL CROWN
BEGIN SUPERELEVATION TRANSITION
TRACT 128
DEL TULE GRANT
PG. 58
SOTELO AND
SOTELO
ACRES
933888
ES AND WIFE
MONTES
ACRES
EDINBURG
ACRES
440103
H.C.T.
LEZ SUBDIVISION
I.C.T.

Curve SBFR1
P.I. Station 1027+05.39
Delta = 3° 34' 40.96" (RT)
Degree = 0° 59' 49.71"
Tangent = 179.4733
Length = 358.8300
Radius = 5,746.0000
External = 2.8022
P.C. Station 1025+25.91
P.T. Station 1028+84.74

Curve SBRAMP1-1
P.I. Station 11+00.05
Delta = 4° 00' 00.00" (LT)
Degree = 1° 59' 59.47"
Tangent = 100.0480
Length = 200.0147
Radius = 2,865.0000
External = 1.7463
P.C. Station 10+00.00
P.T. Station 12+00.01

Curve SBRAMP1-2
P.I. Station 21+09.29
Delta = 7° 38' 04.26" (RT)
Degree = 1° 59' 59.47"
Tangent = 191.1599
Length = 381.7539
Radius = 2,865.0000
External = 6.3702
P.C. Station 19+18.13
P.T. Station 22+99.88

Curve SBFR2
P.I. Station 1045+95.85
Delta = 13° 36' 27.18" (RT)
Degree = 0° 59' 49.71"
Tangent = 685.5529
Length = 1,364.6551
Radius = 5,746.0000
External = 40.7520
P.C. Station 1039+10.30
P.T. Station 1052+74.95

Curve ML1
P.I. Station 44+26.68
Delta = 17° 14' 31.43" (RT)
Degree = 0° 59' 59.73"
Tangent = 868.7326
Length = 1,724.3335
Radius = 5,730.0000
External = 65.4807
P.C. Station 35+57.95
P.T. Station 52+82.28

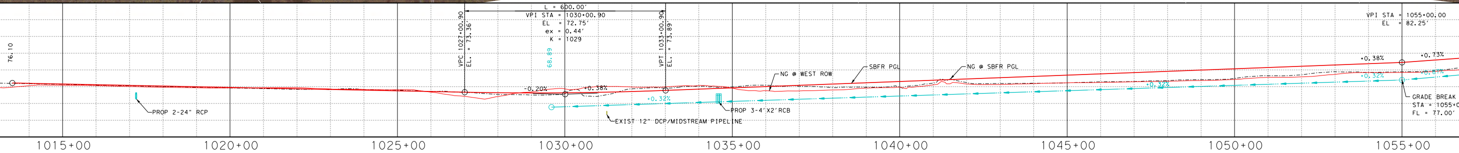
Curve NBFR3
P.I. Station 2044+79.97
Delta = 17° 14' 31.43" (RT)
Degree = 0° 59' 47.21"
Tangent = 871.7649
Length = 1,730.3521
Radius = 5,750.0000
External = 65.7092
P.C. Station 2036+08.20
P.T. Station 2053+38.56

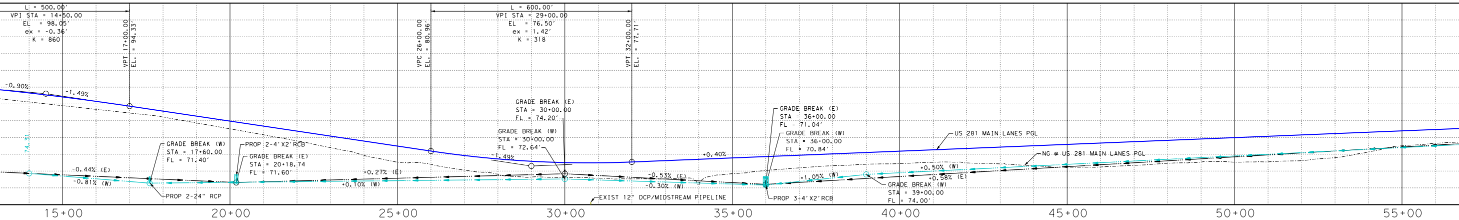
Curve NBFR1
P.I. Station 2019+69.50
Delta = 4° 11' 43.17" (LT)
Degree = 0° 59' 49.71"
Tangent = 210.4616
Length = 420.7351
Radius = 5,746.0000
External = 3.8530
P.C. Station 2017+59.04
P.T. Station 2021+79.77

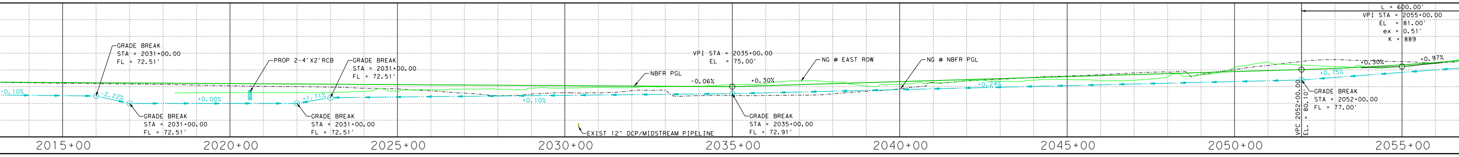
Curve NBFR2
P.I. Station 2025+57.66
Delta = 4° 24' 42.10" (RT)
Degree = 0° 59' 47.21"
Tangent = 221.4803
Length = 442.7418
Radius = 5,750.0000
External = 4.2639
P.C. Station 2023+36.18
P.T. Station 2027+78.93

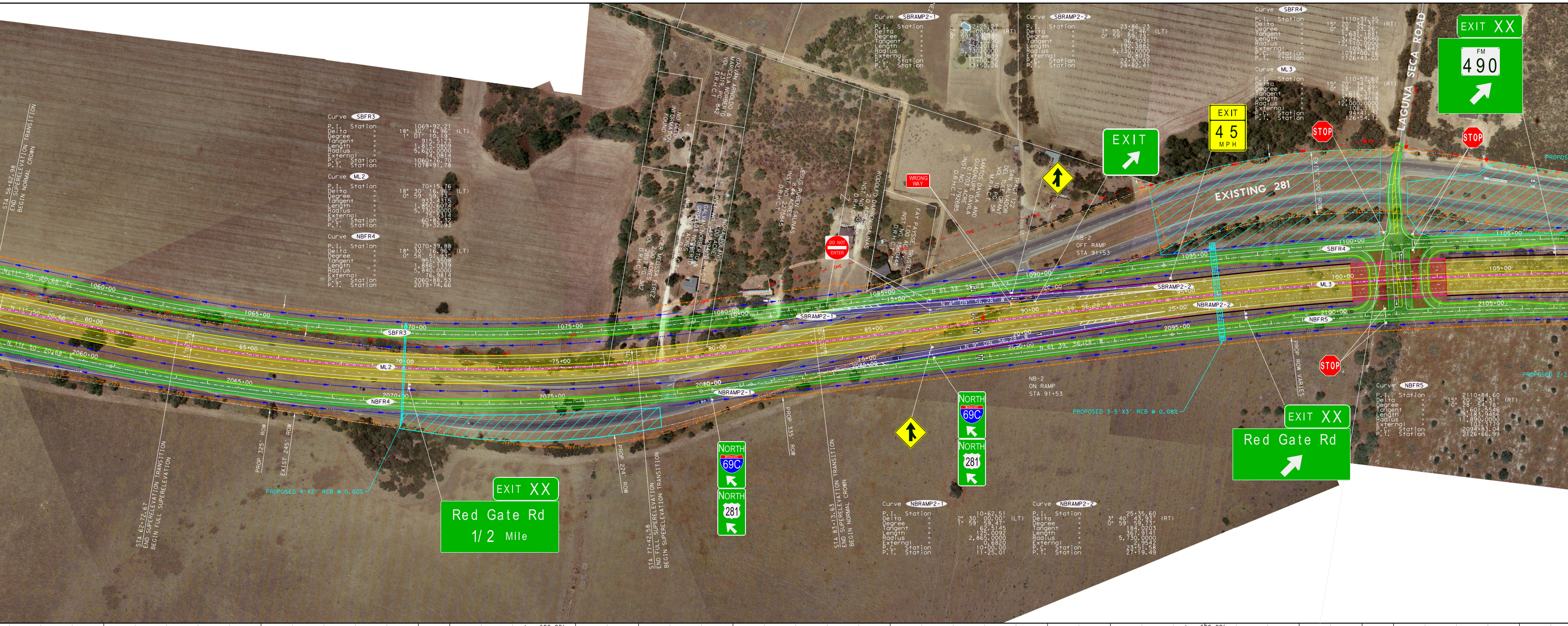
Curve NBRAMP1-1
P.I. Station 11+05.97
Delta = 4° 14' 11.83" (RT)
Degree = 1° 59' 59.47"
Tangent = 105.9716
Length = 211.8466
Radius = 2,865.0000
External = 1.9592
P.C. Station 10+00.00
P.T. Station 12+11.85

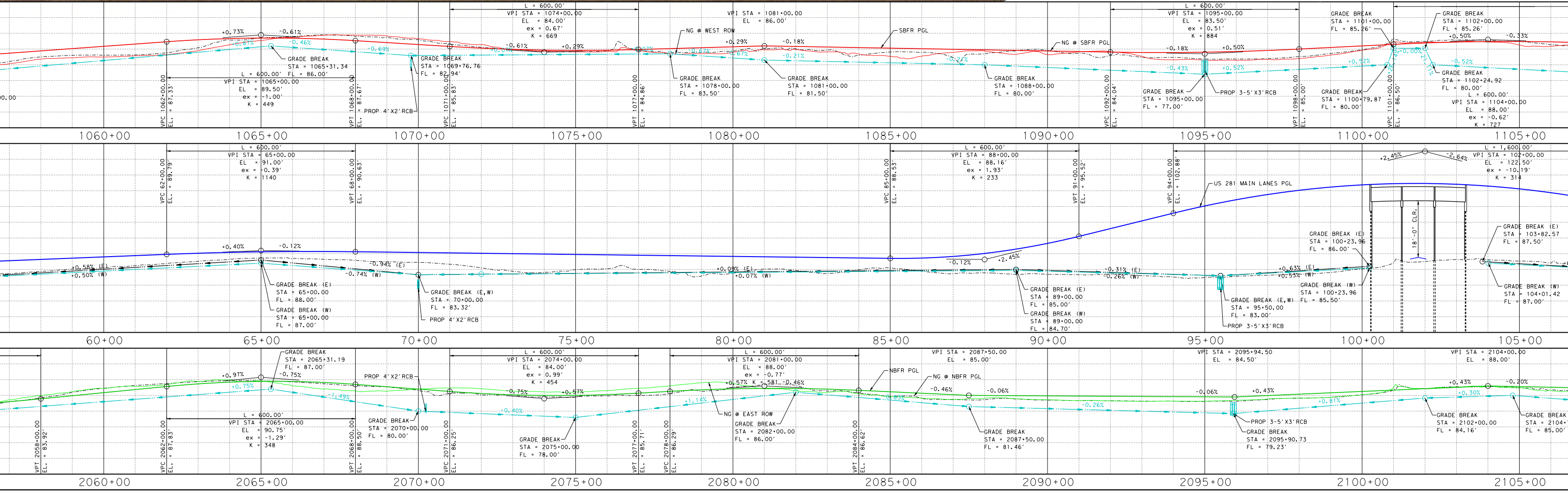
Curve NBRAMP1-2
P.I. Station 21+02.98
Delta = 3° 02' 15.61" (LT)
Degree = 1° 59' 59.47"
Tangent = 75.9651
Length = 151.8947
Radius = 2,865.0000
External = 1.0069
P.C. Station 20+27.01
P.T. Station 21+78.91


76.10
L = 600.00'
VPI STA = 1030+00.90
EL = 72.75'
ex = 0.44'
K = 1029
VPC 1027+00.90
EL. = 73.36'
VPT 1033+00.90
EL. = 73.89'
68.89
-0.20%
+0.38%
+0.32%
PROP 2-24" RCP
EXIST 12" DCP/MIDSTREAM PIPELINE
PROP 3-4'X2'RCB
NG @ WEST ROW
SBFR PGL
NG @ SBFR PGL
+0.32%
+0.38%
+0.73%
+0.87%
VPI STA = 1055+00.00
EL = 82.25'
GRADE BREAK
STA = 1055+0
FL = 77.00'
1015+00
1020+00
1025+00
1030+00
1035+00
1040+00
1045+00
1050+00
1055+00

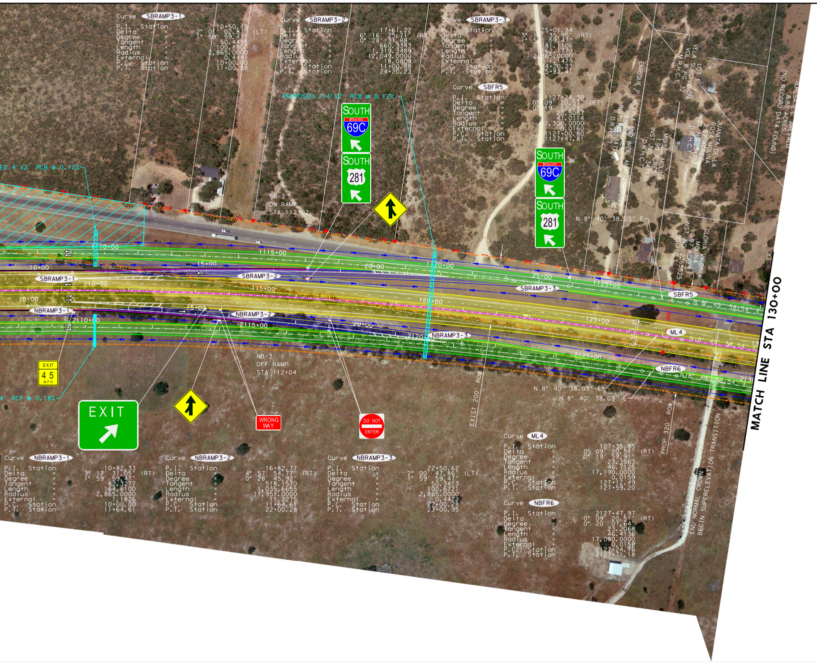

L = 500.00'
VPI STA = 14+50.00
EL = 98.05'
ex = -0.36'
K = 860
VPT 17+00.00
EL. = 94.33'
VPC 26+00.00
EL. = 80.96'
L = 600.00'
VPI STA = 29+00.00
EL = 76.50'
ex = 1.42'
K = 318
VPT 32+00.00
EL. = 77.71'
-0.90%
-1.49%
74.31
-0.44% (E)
-0.81% (W)
GRADE BREAK (W)
STA = 17+60.00
FL = 71.40'
PROP 2-24" RCP
PROP 2-4'X2'RCB
GRADE BREAK (E)
STA = 20+18.74
FL = 71.60'
+0.27% (E)
+0.10% (W)
GRADE BREAK (E)
STA = 30+00.00
FL = 74.20'
GRADE BREAK (W)
STA = 30+00.00
FL = 72.64'
-1.49%
+0.40%
-0.53% (E)
-0.30% (W)
EXIST 12" DCP/MIDSTREAM PIPELINE
GRADE BREAK (E)
STA = 36+00.00
FL = 71.04'
GRADE BREAK (W)
STA = 36+00.00
FL = 70.84'
PROP 3-4'X2'RCB
+1.05% (W)
+0.50% (W)
+0.58% (E)
GRADE BREAK (W)
STA = 39+00.00
FL = 74.00'
US 281 MAIN LANES PGL
NG @ US 281 MAIN LANES PGL
15+00
20+00
25+00
30+00
35+00
40+00
45+00
50+00
55+00


-0.10%
GRADE BREAK
STA = 2031+00.00
FL = 72.51'
-2.22%
GRADE BREAK
STA = 2031+00.00
FL = 72.51'
+0.00%
PROP 2-4'X2'RCB
+1.71%
GRADE BREAK
STA = 2031+00.00
FL = 72.51'
GRADE BREAK
STA = 2031+00.00
FL = 72.51'
+0.10%
EXIST 12" DCP/MIDSTREAM PIPELINE
NBFR PGL
VPI STA = 2035+00.00
EL = 75.00'
-0.06%
+0.30%
GRADE BREAK
STA = 2035+00.00
FL = 72.91'
NG @ EAST ROW
NG @ NBFR PGL
+0.24%
L = 600.00'
VPI STA = 2055+00.00
EL = 81.00'
ex = 0.51'
K = 889
VPC 2052+00.00
EL. = 80.10'
GRADE BREAK
STA = 2052+00.00
FL = 77.00'
+0.75%
+0.30%
+0.97%
2015+00
2020+00
2025+00
2030+00
2035+00
2040+00
2045+00
2050+00
2055+00

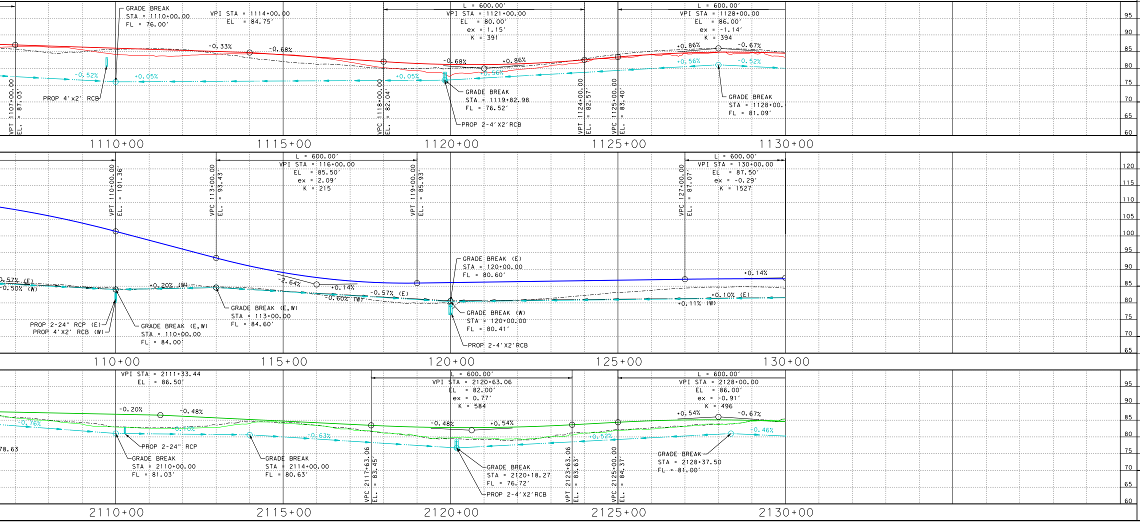

Curve SBFR3
P.I. Station 1069+92.21
Delta = 18° 30′ 16.96″ (LT)
Degree = 1° 01′ 10.19″
Tangent = 915.5123
Length = 1,815.0809
Radius = 5,620.0000
External = 74.0814
P.C. Station 1060+76.70
P.T. Station 1078+91.78
Curve ML2
P.I. Station 70+15.76
Delta = 18° 30′ 16.96″ (LT)
Degree = 0° 59′ 59.73″
Tangent = 933.4315
Length = 1,850.6074
Radius = 5,730.0000
External = 75.5314
P.C. Station 60+82.32
P.T. Station 79+32.93
Curve NBFR4
P.I. Station 2070+39.88
Delta = 18° 30′ 16.96″ (LT)
Degree = 0° 58′ 51.93″
Tangent = 951.3508
Length = 1,886.1339
Radius = 5,840.0000
External = 76.9814
P.C. Station 2060+88.53
P.T. Station 2079+74.66
Curve SBRAMP2-1
P.I. Station 12+25.27
Delta = 2° 30′ 00.00″ (RT)
Degree = 0° 59′ 59.73″
Tangent = 125.0290
Length = 250.0184
Radius = 5,730.0000
External = 1.3639
P.C. Station 11+00.25
P.T. Station 13+50.26
Curve SBRAMP2-2
P.I. Station 23+86.23
Delta = 1° 55′ 25.46″ (LT)
Degree = 0° 59′ 59.73″
Tangent = 96.2031
Length = 192.3882
Radius = 5,730.0000
External = 0.8075
P.C. Station 22+90.02
P.T. Station 24+82.41
Curve SBFR4
P.I. Station 1110+31.35
Delta = 15° 20′ 34.31″ (RT)
Degree = 0° 28′ 23.26″
Tangent = 1,631.1881
Length = 3,242.8580
Radius = 12,110.0000
External = 109.3647
P.C. Station 1094+00.16
P.T. Station 1126+43.02
Curve ML3
P.I. Station 110+57.69
Delta = 15° 20′ 34.31″ (RT)
Degree = 0° 28′ 38.87″
Tangent = 1,616.3714
Length = 3,213.4018
Radius = 12,000.0000
External = 108.3713
P.C. Station 94+41.31
P.T. Station 126+54.72
Curve NBRAMP2-1
P.I. Station 10+62.51
Delta = 2° 30′ 00.00″ (LT)
Degree = 1° 59′ 59.47″
Tangent = 62.5145
Length = 125.0092
Radius = 2,865.0000
External = 0.6820
P.C. Station 10+00.00
P.T. Station 11+25.01
Curve NBRAMP2-2
P.I. Station 25+35.60
Delta = 3° 40′ 43.93″ (RT)
Degree = 0° 59′ 59.73″
Tangent = 184.0203
Length = 367.9141
Radius = 5,730.0000
External = 2.9542
P.C. Station 23+51.58
P.T. Station 27+19.49
Curve NBFR5
P.I. Station 2110+84.60
Delta = 15° 20′ 34.31″ (RT)
Degree = 0° 28′ 54.78″
Tangent = 1,601.5546
Length = 3,183.9456
Radius = 11,890.0000
External = 107.3779
P.C. Station 2094+83.04
P.T. Station 2126+66.99
STA 56+62.98 END SUPERELEVATION TRANSITION BEGIN NORMAL CROWN
STA 62+72.67 END SUPERELEVATION TRANSITION BEGIN FULL SUPERELEVATION
STA 77+42.58 END FULL SUPERELEVATION BEGIN SUPERELEVATION TRANSITION
STA 83+13.63 END SUPERELEVATION TRANSITION BEGIN NORMAL CROWN
EXISTING 281
LAGUNA SECA ROAD
EXIT XX
FM 490
EXIT
EXIT 45 MPH
STOP
STOP
STOP
WRONG WAY
DO NOT ENTER
EXIT XX Red Gate Rd 1/2 Mile
EXIT XX Red Gate Rd
NORTH 69C
NORTH 281
NORTH 69C
NORTH 281
SB-2 OFF RAMP STA 91+53
NB-2 ON RAMP STA 91+53
PROPOSED 3-5' X3' RCB @ 0.08%
PROPOSED 4' X2' RCB @ 0.00%
PROPOSED 2-2
PROP 325' ROW
EXIST 245' ROW
PROP 224' ROW
PROP 335' ROW
EXIST 200' ROW
PROP ROW VARIES
SBFR3
ML2
NBFR4
SBRAMP2-1
SBRAMP2-2
NBRAMP2-1
NBRAMP2-2
SBFR4
ML3
NBFR5
1060+00
1065+00
1070+00
1075+00
1080+00
1085+00
1090+00
1095+00
1100+00
1105+00
60+00
65+00
70+00
75+00
80+00
85+00
90+00
95+00
100+00
105+00
2060+00
2065+00
2070+00
2075+00
2080+00
2085+00
2090+00
2095+00
2100+00
2105+00
N 4° 09′ 56.28″ W
N 61° 39′ 56.28″ W
N 9° 09′ 56.28″ W
OHE


L = 600.00′
VPI STA = 1074+00.00
EL = 84.00′
ex = 0.67′
K = 669
VPI STA = 1081+00.00
EL = 86.00′
L = 600.00′
VPI STA = 1095+00.00
EL = 83.50′
ex = 0.51′
K = 884
GRADE BREAK
STA = 1101+00.00
FL = 85.26′
GRADE BREAK
STA = 1102+00.00
FL = 85.26′
GRADE BREAK
STA = 1065+31.34
FL = 86.00′
GRADE BREAK
STA = 1069+76.76
FL = 82.94′
L = 600.00′
VPI STA = 1065+00.00
EL = 89.50′
ex = -1.00′
K = 449
PROP 4′X2′ RCB
NG @ WEST ROW
SBFR PGL
NG @ SBFR PGL
GRADE BREAK
STA = 1078+00.00
FL = 83.50′
GRADE BREAK
STA = 1081+00.00
FL = 81.50′
GRADE BREAK
STA = 1088+00.00
FL = 80.00′
GRADE BREAK
STA = 1095+00.00
FL = 77.00′
PROP 3-5′X3′RCB
GRADE BREAK
STA = 1100+79.87
FL = 80.00′
GRADE BREAK
STA = 1102+24.92
FL = 80.00′
L = 1,600.00′
VPI STA = 1104+00.00
EL = 122.50′
ex = -0.62′
K = 727
L = 600.00′
VPI STA = 65+00.00
EL = 91.00′
ex = -0.39′
K = 1140
L = 600.00′
VPI STA = 88+00.00
EL = 88.16′
ex = 1.93′
K = 233
US 281 MAIN LANES PGL
L = 1,600.00′
VPI STA = 102+00.00
EL = 122.50′
ex = -10.19′
K = 314
18′-0″ CLR.
GRADE BREAK (E)
STA = 65+00.00
FL = 88.00′
GRADE BREAK (W)
STA = 65+00.00
FL = 87.00′
GRADE BREAK (E,W)
STA = 70+00.00
FL = 83.32′
PROP 4′X2′RCB
GRADE BREAK (E)
STA = 89+00.00
FL = 85.00′
GRADE BREAK (W)
STA = 89+00.00
FL = 84.70′
GRADE BREAK (E,W)
STA = 95+50.00
FL = 83.00′
PROP 3-5′X3′RCB
GRADE BREAK (W)
STA = 100+23.96
FL = 85.50′
GRADE BREAK (E)
STA = 100+23.96
FL = 86.00′
GRADE BREAK (E)
STA = 103+82.57
FL = 87.50′
GRADE BREAK (W)
STA = 104+01.42
FL = 87.00′
GRADE BREAK
STA = 2065+31.19
FL = 87.00′
PROP 4′X2′RCB
L = 600.00′
VPI STA = 2074+00.00
EL = 84.00′
ex = 0.99′
K = 454
L = 600.00′
VPI STA = 2081+00.00
EL = 88.00′
ex = -0.77′
K = 581
VPI STA = 2087+50.00
EL = 85.00′
VPI STA = 2095+94.50
EL = 84.50′
VPI STA = 2104+00.00
EL = 88.00′
L = 600.00′
VPI STA = 2065+00.00
EL = 90.75′
ex = -1.29′
K = 348
GRADE BREAK
STA = 2070+00.00
FL = 80.00′
GRADE BREAK
STA = 2075+00.00
FL = 78.00′
NG @ EAST ROW
GRADE BREAK
STA = 2082+00.00
FL = 86.00′
NBFR PGL
NG @ NBFR PGL
GRADE BREAK
STA = 2087+50.00
FL = 81.46′
PROP 3-5′X3′RCB
GRADE BREAK
STA = 2095+90.73
FL = 79.23′
GRADE BREAK
STA = 2102+00.00
FL = 84.16′
GRADE BREAK
STA = 2104+
FL = 85.00′
VPC 1062+00.00 EL. = 87.33
VPT 1068+00.00 EL. = 87.67
VPC 1071+00.00 EL. = 85.83
VPT 1077+00.00 EL. = 84.86
VPC 1092+00.00 EL. = 84.04
VPT 1098+00.00 EL. = 85.00
VPC 1101+00.00 EL. = 86.50
VPC 62+00.00 EL. = 89.79
VPT 68+00.00 EL. = 90.63
VPC 85+00.00 EL. = 88.53
VPT 91+00.00 EL. = 95.52
VPC 94+00.00 EL. = 102.88
VPT 2058+00.00 EL. = 83.92
VPC 2062+00.00 EL. = 87.83
VPT 2068+00.00 EL. = 88.50
VPC 2071+00.00 EL. = 86.25
VPT 2077+00.00 EL. = 85.71
VPC 2078+00.00 EL. = 86.29
VPT 2084+00.00 EL. = 86.62
+0.73%
-0.61%
-0.61%
+0.29%
+0.29%
-0.18%
-0.18%
+0.50%
-0.33%
+0.40%
-0.12%
-0.12%
+2.45%
+2.45%
-2.64%
+0.97%
-0.75%
-0.75%
+0.57%
+0.57%
-0.46%
-0.46%
-0.06%
-0.06%
+0.43%
+0.43%
-0.20%
1060+00
1065+00
1070+00
1075+00
1080+00
1085+00
1090+00
1095+00
1100+00
1105+00
60+00
65+00
70+00
75+00
80+00
85+00
90+00
95+00
100+00
105+00
2060+00
2065+00
2070+00
2075+00
2080+00
2085+00
2090+00
2095+00
2100+00
2105+00

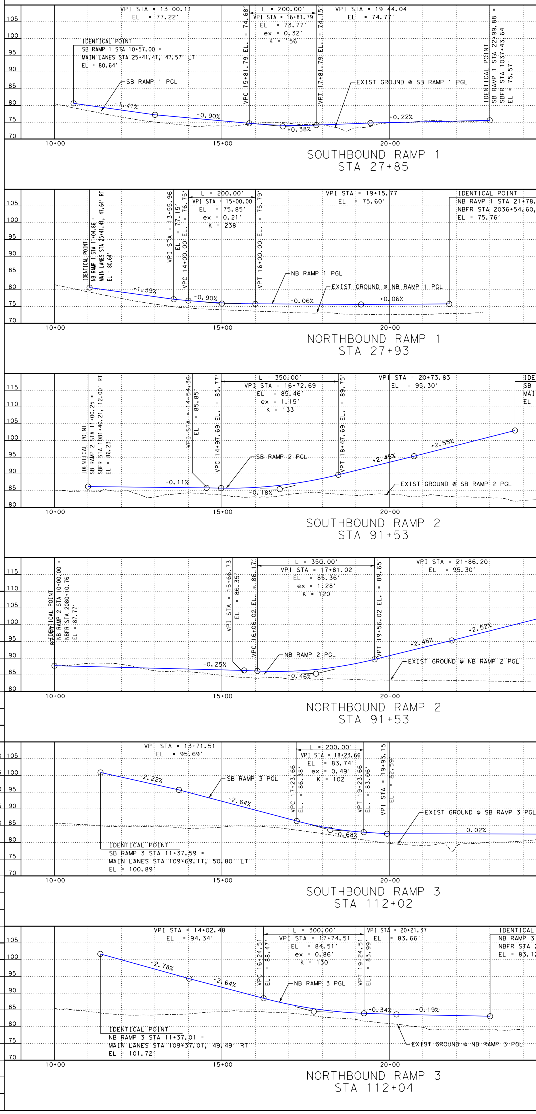
RAMP PROFILES



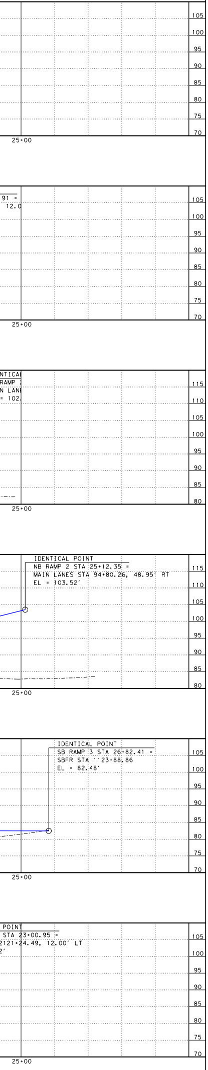
Curve SBRAMP3-1
Curve SBRAMP3-2
Curve SBRAMP3-3
Curve SBFR5
PROPOSED 2-4'X2' RCB @ 0.12%
SOUTH 69C
SOUTH 281
SB-3 ON RAMP STA 112+02
N 8° 40' 38.03" E
1115+00
1120+00
1125+00
SBRAMP3-1
SBRAMP3-2
SBRAMP3-3
SBFR5
NBRAMP3-1
NBRAMP3-2
NBRAMP3-3
ML4
NBFR6
2115+00
2120+00
2125+00
NB-3 OFF RAMP STA 112+04
EXIT 45 MPH
EXIT
WRONG WAY
DO NOT ENTER
EXIST 200' ROW
PROP 320' ROW
MATCH LINE STA 130+00
END NORMAL CROWN BEGIN SUPERELEVATION TRANSITION
Curve NBRAMP3-1
Curve NBRAMP3-2
Curve NBRAMP3-3
Curve ML4
Curve NBFR6
(NO RECORD DATA FOUND)



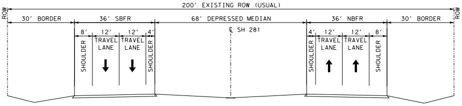
GRADE BREAK STA = 1110+00.00 FL = 76.00'
VPI STA = 1114+00.00 EL = 84.75'
L = 600.00' VPI STA = 1121+00.00 EL = 80.00' ex = 1.15' K = 391
L = 600.00' VPI STA = 1128+00.00 EL = 86.00' ex = -1.14' K = 394
-0.33%
-0.68%
+0.86%
-0.67%
PROP 4'x2' RCB
GRADE BREAK STA = 1119+82.98 FL = 76.52'
PROP 2-4'X2'RCB
GRADE BREAK STA = 1128+00. FL = 81.09'
1110+00
1115+00
1120+00
1125+00
1130+00
L = 600.00' VPI STA = 116+00.00 EL = 85.50' ex = 2.09' K = 215
L = 600.00' VPI STA = 130+00.00 EL = 87.50' ex = -0.29' K = 1527
-2.64%
+0.14%
GRADE BREAK (E) STA = 120+00.00 FL = 80.60'
GRADE BREAK (E,W) STA = 113+00.00 FL = 84.60'
GRADE BREAK (E,W) STA = 110+00.00 FL = 84.00'
GRADE BREAK (W) STA = 120+00.00 FL = 80.41'
PROP 2-24" RCP (E)
PROP 4'X2' RCB (W)
PROP 2-4'X2'RCB
110+00
115+00
120+00
125+00
130+00
VPI STA = 2111+33.44 EL = 86.50'
L = 600.00' VPI STA = 2120+63.06 EL = 82.00' ex = 0.77' K = 584
L = 600.00' VPI STA = 2128+00.00 EL = 86.00' ex = -0.91' K = 496
-0.20%
-0.48%
+0.54%
-0.67%
PROP 2-24" RCP
GRADE BREAK STA = 2110+00.00 FL = 81.03'
GRADE BREAK STA = 2114+00.00 FL = 80.63'
GRADE BREAK STA = 2120+18.27 FL = 76.72'
PROP 2-4'X2'RCB
GRADE BREAK STA = 2128+37.50 FL = 81.00'
2110+00
2115+00
2120+00
2125+00
2130+00



VPI STA = 13+00.11 EL = 77.22'
L = 200.00' VPI STA = 16+81.79 EL = 73.77' ex = 0.32' K = 156
VPI STA = 19+44.04 EL = 74.77'
IDENTICAL POINT SB RAMP 1 STA 10+57.00 = MAIN LANES STA 25+41.41, 47.57' LT EL = 80.64'
SB RAMP 1 PGL
EXIST GROUND @ SB RAMP 1 PGL
-1.41%
-0.90%
-0.38%
+0.22%
SOUTHBOUND RAMP 1
STA 27+85
L = 200.00' VPI STA = 15+00.00 EL = 75.85' ex = 0.21' K = 238
VPI STA = 19+15.77 EL = 75.60'
NB RAMP 1 PGL
EXIST GROUND @ NB RAMP 1 PGL
-1.39%
-0.90%
-0.06%
+0.06%
NORTHBOUND RAMP 1
STA 27+93
L = 350.00' VPI STA = 16+72.69 EL = 85.46' ex = 1.15' K = 133
VPI STA = 20+73.83 EL = 95.30'
SB RAMP 2 PGL
EXIST GROUND @ SB RAMP 2 PGL
-0.11%
-0.18%
+2.45%
+2.55%
SOUTHBOUND RAMP 2
STA 91+53
L = 350.00' VPI STA = 17+81.02 EL = 85.36' ex = 1.28' K = 120
VPI STA = 21+86.20 EL = 95.30'
NB RAMP 2 PGL
EXIST GROUND @ NB RAMP 2 PGL
-0.25%
-0.46%
+2.45%
+2.52%
NORTHBOUND RAMP 2
STA 91+53
VPI STA = 13+71.51 EL = 95.69'
L = 200.00' VPI STA = 18+23.66 EL = 83.74' ex = 0.49' K = 102
SB RAMP 3 PGL
EXIST GROUND @ SB RAMP 3 PGL
-2.22%
-2.64%
-0.68%
-0.02%
IDENTICAL POINT SB RAMP 3 STA 11+37.59 = MAIN LANES STA 109+69.11, 50.80' LT EL = 100.89'
SOUTHBOUND RAMP 3
STA 112+02
VPI STA = 14+02.48 EL = 94.34'
L = 300.00' VPI STA = 17+74.51 EL = 84.51' ex = 0.86' K = 130
VPI STA = 20+21.37 EL = 83.66'
NB RAMP 3 PGL
EXIST GROUND @ NB RAMP 3 PGL
-2.78%
-2.64%
-0.34%
-0.19%
IDENTICAL POINT NB RAMP 3 STA 11+37.01 = MAIN LANES STA 109+37.01, 49.49' RT EL = 101.72'
NORTHBOUND RAMP 3
STA 112+04
10+00
15+00
20+00

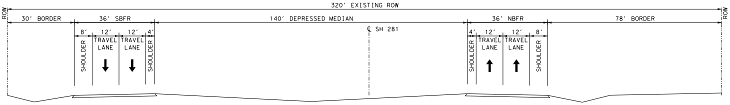


TYPICAL SECTIONS



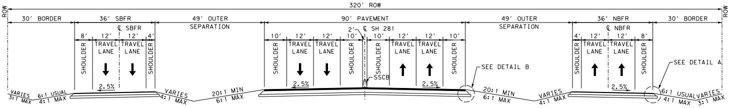
200' EXISTING ROW (USUAL)
ROW
30' BORDER
36' SBFR
68' DEPRESSED MEDIAN
36' NBFR
30' BORDER
ROW
℄ SH 281
8'
12'
12'
4'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER

EXISTING US 281 TYPICAL SECTION
STA 35+00 TO STA 160+00



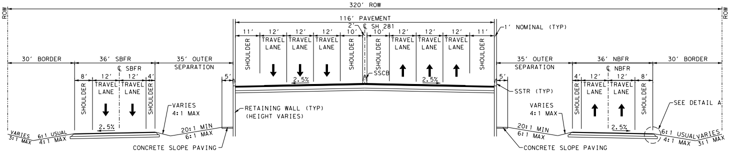
320' EXISTING ROW
ROW
30' BORDER
36' SBFR
140' DEPRESSED MEDIAN
36' NBFR
78' BORDER
ROW
℄ SH 281
8'
12'
12'
4'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER

EXISTING US 281 TYPICAL SECTION
STA 160+00 TO STA 383+17



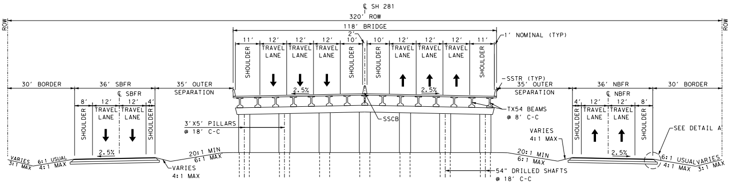
320' ROW
ROW
30' BORDER
36' SBFR
℄ SBFR
49' OUTER SEPARATION
90' PAVEMENT
49' OUTER SEPARATION
36' NBFR
℄ NBFR
30' BORDER
ROW
2'
℄ SH 281
8'
12'
12'
4'
10'
12'
12'
10'
10'
12'
12'
10'
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
SSCB
SEE DETAIL B
SEE DETAIL A
2.5%
VARIES 3:1 MAX
6:1 USUAL 4:1 MAX
VARIES 4:1 MAX
20:1 MIN 6:1 MAX
20:1 MIN 6:1 MAX
VARIES 4:1 MAX
6:1 USUAL 4:1 MAX
VARIES 3:1 MAX

PROPOSED US 281 USUAL TYPICAL SECTION



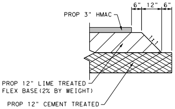
320' ROW
ROW
116' PAVEMENT
2'
℄ SH 281
11'
12'
12'
12'
10'
10'
12'
12'
12'
11'
SHOULDER
TRAVEL LANE
TRAVEL LANE
TRAVEL LANE
SHOULDER
1' NOMINAL (TYP)
30' BORDER
36' SBFR
℄ SBFR
35' OUTER SEPARATION
35' OUTER SEPARATION
36' NBFR
℄ NBFR
30' BORDER
8'
12'
12'
4'
4'
12'
12'
8'
5'
5'
SSCB
2.5%
SSTR (TYP)
VARIES 4:1 MAX
RETAINING WALL (TYP) (HEIGHT VARIES)
SEE DETAIL A
VARIES 3:1 MAX
6:1 USUAL 4:1 MAX
20:1 MIN 6:1 MAX
CONCRETE SLOPE PAVING

PROPOSED US 281
BRIDGE APPROACH TYPICAL SECTION



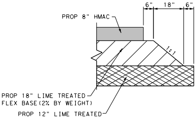
℄ SH 281
320' ROW
ROW
118' BRIDGE
2'
11'
12'
12'
12'
10'
10'
12'
12'
12'
11'
SHOULDER
TRAVEL LANE
TRAVEL LANE
TRAVEL LANE
SHOULDER
1' NOMINAL (TYP)
SSTR (TYP)
30' BORDER
36' SBFR
℄ SBFR
35' OUTER SEPARATION
35' OUTER SEPARATION
36' NBFR
℄ NBFR
30' BORDER
8'
12'
12'
4'
4'
12'
12'
8'
2.5%
TX54 BEAMS @ 8' C-C
SSCB
3'X5' PILLARS @ 18' C-C
VARIES 4:1 MAX
SEE DETAIL A
VARIES 3:1 MAX
6:1 USUAL 4:1 MAX
20:1 MIN 6:1 MAX
54" DRILLED SHAFTS @ 18' C-C

PROPOSED US 281
BRIDGE TYPICAL SECTION



PROP 3" HMAC
6"
12"
6"
1:1
PROP 12" LIME TREATED FLEX BASE (2% BY WEIGHT)
PROP 12" CEMENT TREATED SUBGRADE (3% BY WEIGHT)

DETAIL A



PROP 8" HMAC
6"
18"
6"
1:1
PROP 18" LIME TREATED FLEX BASE (2% BY WEIGHT)
PROP 12" LIME TREATED SUBGRADE (3% BY WEIGHT)

DETAIL B

Scale: 0' 50' 100' 200'

ROLL 1 OF 3

Date: 12/6/2017

CSJ: 0255-07-140

US 281

Texas Department of Transportation

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FILE: D:\cfo\2016\1013_US+281+Schematic+ENV\USTN\project\xschem801.dgn
DATE: 12/6/2017 8:07:12 AM

Scale: 0' 50' 100' 200'

ROLL 2 OF 3

Date: 12/6/2017

CSJ: 0255-07-140

US 281

281
1017
186
281
490
N

LOCATION MAP
N. T. S.

Texas Department of Transportation
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CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262
www.cobbfendley.com

TEXAS DEPARTMENT OF TRANSPORTATION
PRELIMINARY DESIGN SCHEMATIC
US HIGHWAY 281
HIDALGO COUNTY

LIMITS: From: 0.690 MILES SOUTH OF SH 186
To: 0.34 MILES NORTH OF FM 490

C-S-J-: 0255-07-140
FED. AID PROJECT NO.:
LENGTH: 7.040 MILES

Existing Posted Speed: 70 MPH - MAINLANES

OFFICE OF DISTRICT ENGINEER
PHARR DISTRICT

DESIGN SPEED: 75 MPH - Mainlane; 50 MPH Frontage Roads

Functional Classification: Rural Freeway
Chapter 3, Section 6 Freeways

Superelevation Rate e_{max} = 6%

12/6/2017

APPROVED: DESIGN DIVISION LETTER DATED

APPROVED: FHWA LETTER DATED
FED. RD. DIV. NO. 6

APPROVED:
__________, 2016
DISTRICT ENGINEER

CORRECT:
__________, 2016
AREA ENGINEER

RECOMMENDED FOR APPROVAL:
__________, 2016
DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT

AVERAGE DAILY TRAFFIC VOLUMES

CSJ 0255-07-140
US 281 MAINLANES
From: 0.690 MILES SOUTH OF SH 186
To: 0.34 MILES NORTH OF FM 490

EXIST 2015	LETTING 2020	DESIGN 2040
14,453	20,700	29,000

GEOMETRIC DESIGN

These documents are not intended for Construction, Bidding, or Permit Purposes. They were prepared by, or under the supervision of :

Mahmoud Salehi, P.E. PE #89552 Date

COLOR LEGEND

🟨	FREEWAY MAINLANES (WIDENING OR RECONSTRUCTION)
🟩	FRONTAGE ROAD
🟦	RAMPS
🟥	PROPOSED BRIDGE STRUCTURES
———	PROPOSED RETAINING WALLS
— T1-1 —	EXISTING AT&T
— T2-1 —	EXISTING ATT FIBER OPTIC LINE
— OHE —	EXIST OVERHEAD ELECTRIC
— E1-1 —	EXIST ELECTRIC
— W1-1 —	EXIST WATER
— PL-2-D —	EXIST DCP/MIDSTREAM PIPELINE
——PL-1——	EXIST KINDER MORGAN PIPELINE

Texas Department of Transportation
US 281
© 2017

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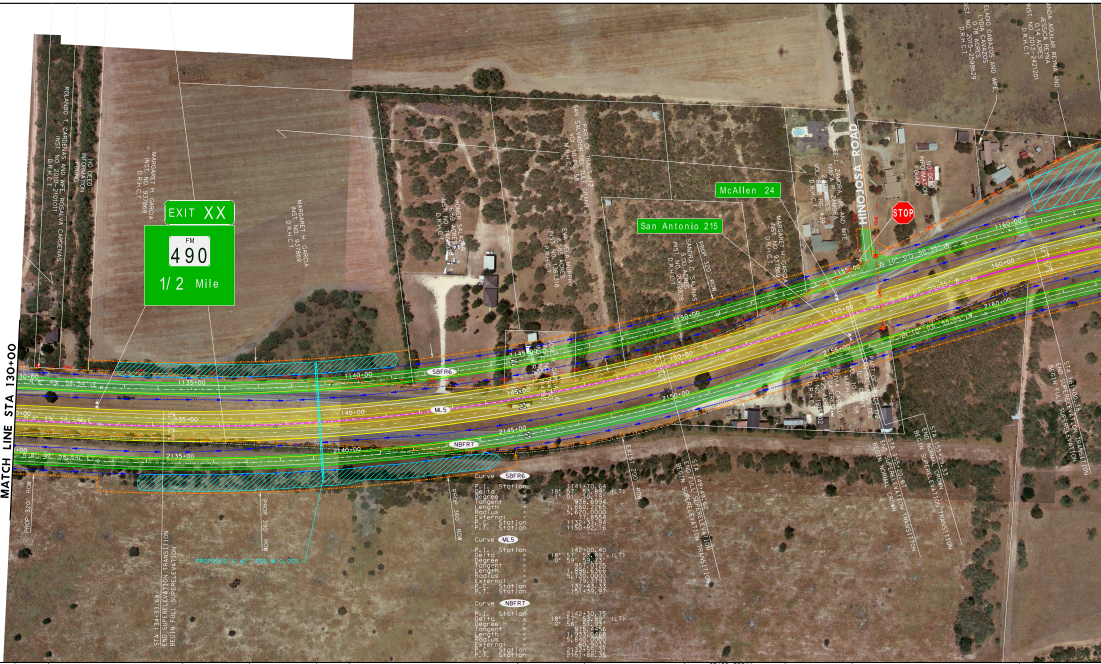

MATCH LINE STA 130+00
EXIT XX
FM 490
1/2 Mile
McAllen 24
San Antonio 215
STOP
HINOJOSA ROAD
SBFR6
ML5
NBFR7
1135+00
1140+00
1145+00
1150+00
1155+00
1160+00
135+00
140+00
145+00
150+00
155+00
160+00
2135+00
2140+00
2145+00
2150+00
2155+00
2160+00
ROLANDO T. CARDENAS AND WIFE, ROSAURA CARDENAS INST. NO. 2010-2100101 D.R.H.C.T.
MARGARET H. GARCIA INST. NO. 937869 D.R.H.C.T.
NO DEED INFORMATION FOUND
PROP 320' ROW
PROP 390' ROW
PROP 360' ROW
EXIST 200' ROW
PROPOSED 4' X2' RCB @ 0.00%
END SUPERELEVATION TRANSITION
BEGIN FULL SUPERELEVATION
BEGIN SUPERELEVATION TRANSITION
END FULL SUPERELEVATION
BEGIN NORMAL CROWN

Curve SBFR6

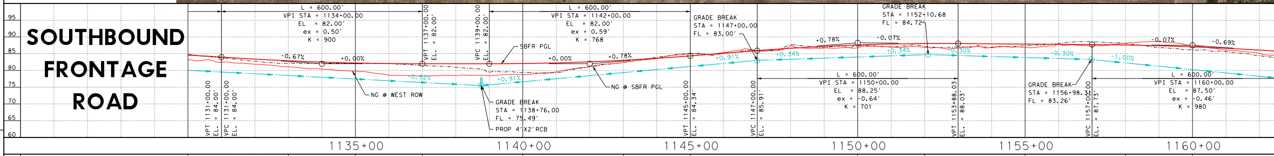
P.I. Station		1141+70.64
Delta	=	18° 57' 53.89" (LT)
Degree	=	1° 01' 10.19"
Tangent	=	938.6994
Length	=	1,860.2265
Radius	=	5,620.0000
External	=	77.8554
P.C. Station		1132+31.94
P.T. Station		1150+92.16

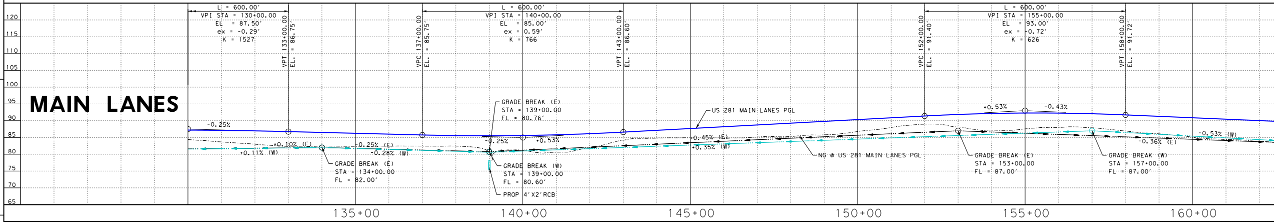
Curve ML5

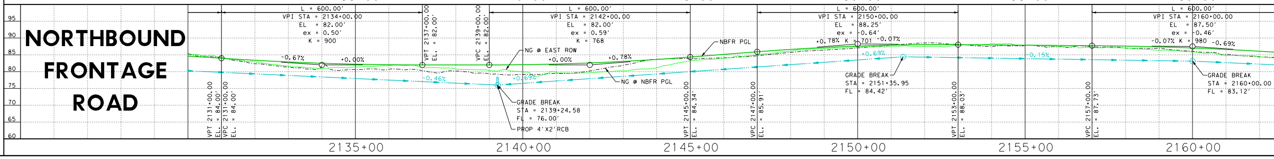
P.I. Station		142+00.40
Delta	=	18° 57' 53.89" (LT)
Degree	=	0° 59' 59.73"
Tangent	=	957.0725
Length	=	1,896.6366
Radius	=	5,730.0000
External	=	79.3793
P.C. Station		132+43.33
P.T. Station		151+39.97

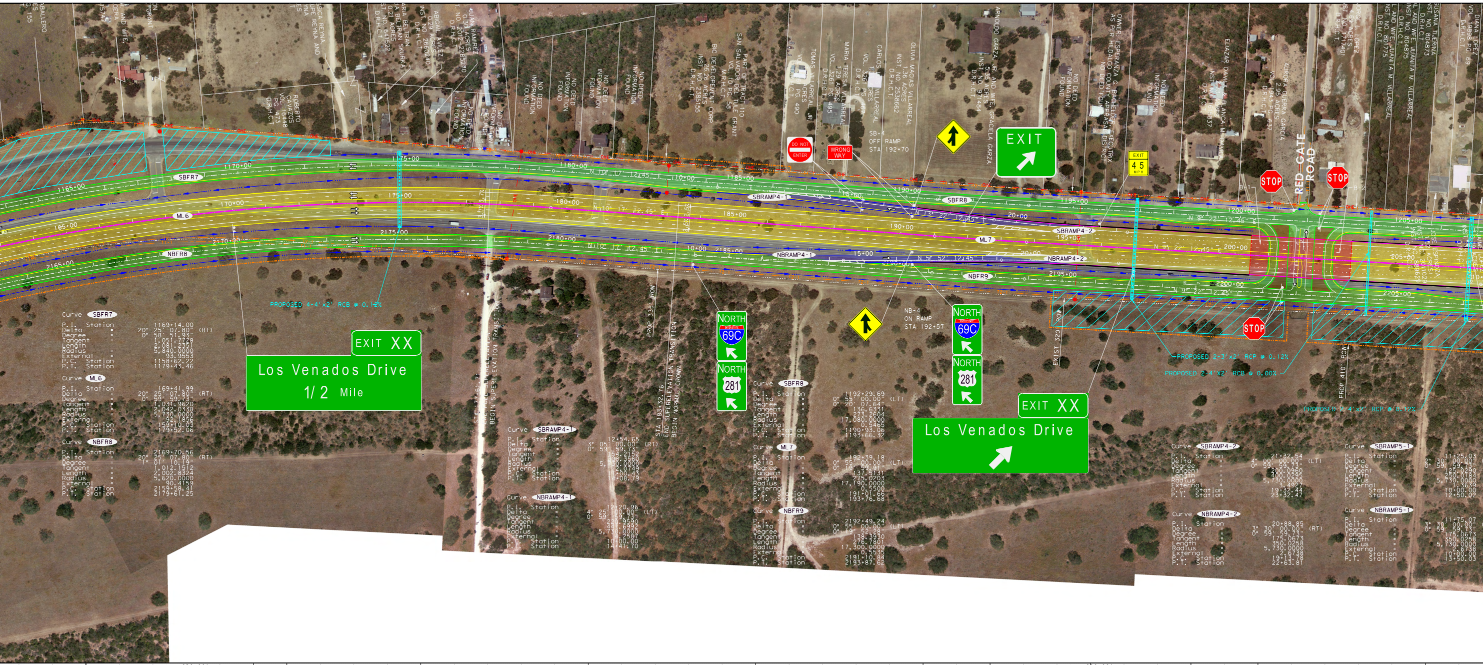
Curve NBFR7

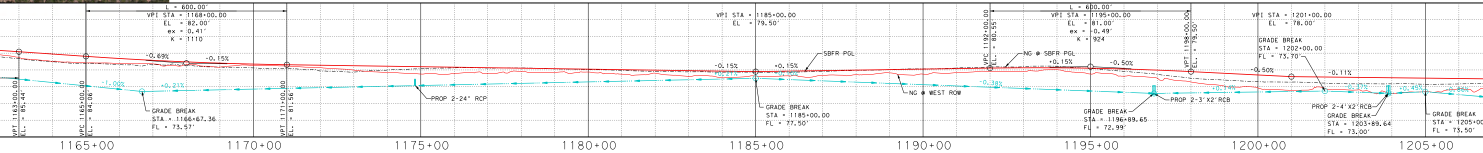
P.I. Station		2142+30.75
Delta	=	18° 57' 53.89" (LT)
Degree	=	0° 58' 51.93"
Tangent	=	975.4456
Length	=	1,933.0468
Radius	=	5,840.0000
External	=	80.9032
P.C. Station		2132+55.31
P.T. Station		2151+88.35

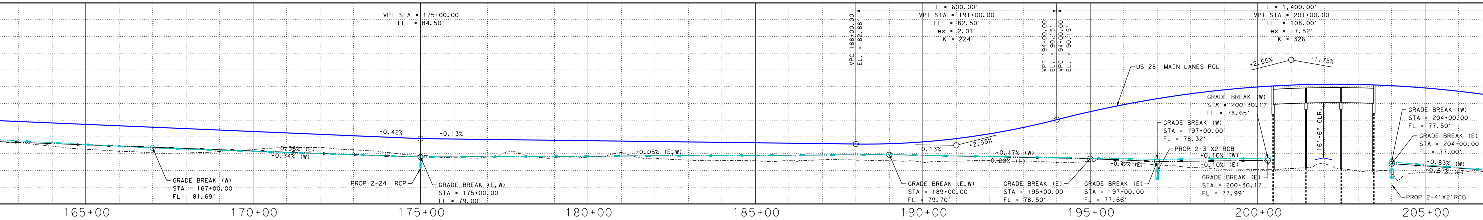


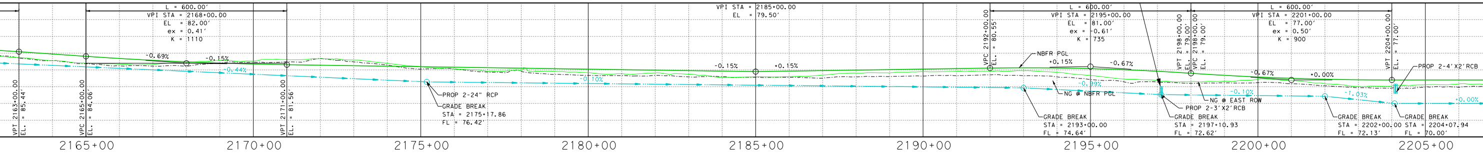


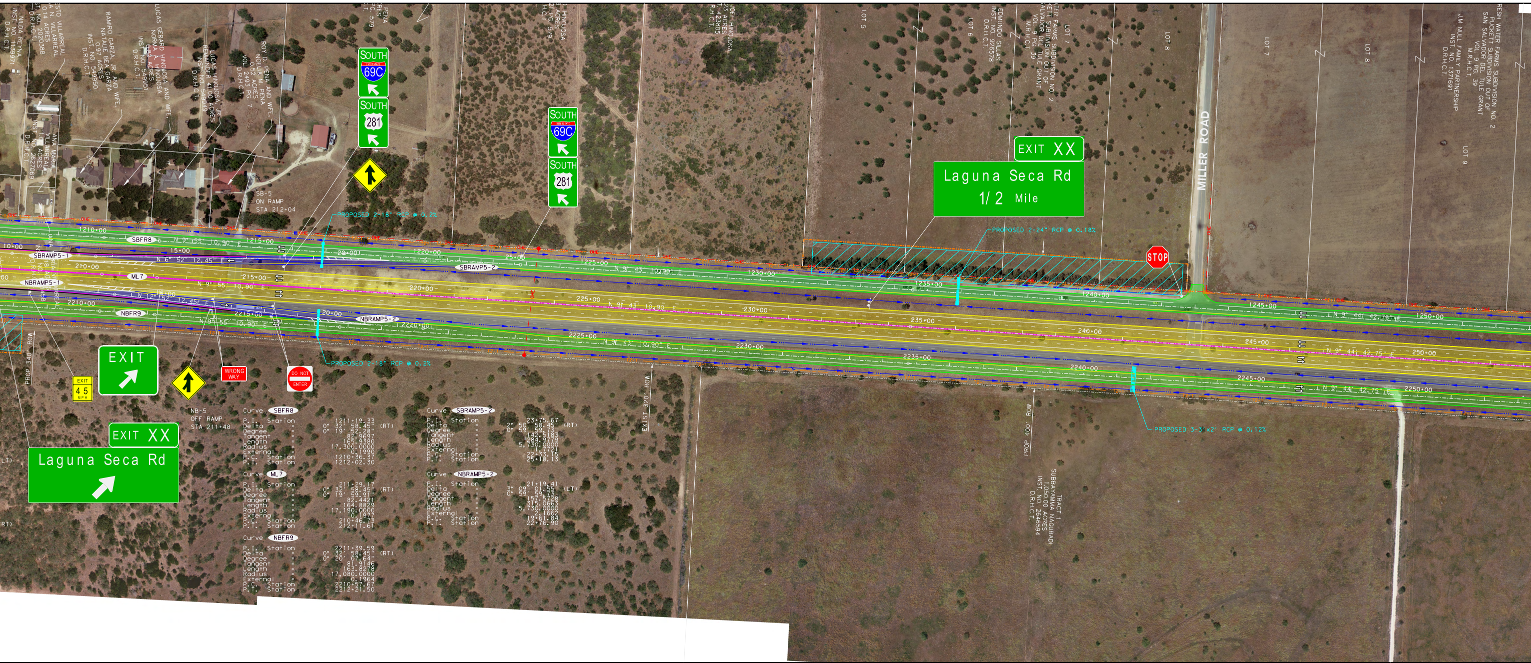



1165+00
1170+00
1175+00
1180+00
1185+00
1190+00
1195+00
1200+00
1205+00
165+00
170+00
175+00
180+00
185+00
190+00
195+00
200+00
205+00
2165+00
2170+00
2175+00
2180+00
2185+00
2190+00
2195+00
2200+00
2205+00
SBFR7
ML6
NBFR8
SBRAMP4-1
NBRAMP4-1
SBFR8
ML7
NBFR9
SBRAMP4-2
NBRAMP4-2
N 10° 17' 12.45" E
N 3° 52' 12.45" E
N 9° 22' 12.45" E
DO NOT ENTER
WRONG WAY
SB-4 OFF RAMP STA 192+70
EXIT
EXIT 45 MPH
STOP
RED GATE ROAD
NORTH
69C
NORTH
281
NB-4 ON RAMP STA 192+57
EXIT XX
Los Venados Drive
1/2 Mile
EXIT XX
Los Venados Drive
PROPOSED 4-4'x2' RCB @ 0.12%
PROPOSED 2-3'x2' RCP @ 0.12%
PROPOSED 2-4'x2' RCB @ 0.00%
PROPOSED 2-4'x2' RCP @ 0.12%
STA 177+61.71 END FULL SUPERELEVATION BEGIN SUPERELEVATION TRANSITION
STA 183+32.76 END SUPERELEVATION TRANSITION BEGIN NORMAL CROWN
PROP 330' ROW
EXIST 320' ROW
PROP 410' ROW
NO DEED INFORMATION FOUND
BIO DEVELOPMENT CORP
ELEAZAR DAVILA
Curve SBFR7
P.I. Station 1169+14.00
Delta = 20° 25' 07.80" (RT)
Degree = 0° 58' 51.93"
Tangent = 1,051.7728
Length = 2,081.2351
Radius = 5,840.0000
External = 93.9553
P.C. Station 1158+62.22
P.T. Station 1179+43.46
Curve ML6
P.I. Station 169+41.99
Delta = 20° 25' 07.80" (RT)
Degree = 0° 59' 59.73"
Tangent = 1,031.9620
Length = 2,042.0338
Radius = 5,730.0000
External = 92.1856
P.C. Station 159+10.03
P.T. Station 179+52.06
Curve NBFR8
P.I. Station 2169+70.56
Delta = 20° 25' 07.80" (RT)
Degree = 1° 01' 10.19"
Tangent = 1,012.1512
Length = 2,002.8324
Radius = 5,620.0000
External = 90.4159
P.C. Station 2159+58.41
P.T. Station 2179+61.25
Curve SBRAMP4-1
P.I. Station 12+54.65
Delta = 3° 05' 00.00" (RT)
Degree = 0° 59' 59.73"
Tangent = 154.2152
Length = 308.3560
Radius = 5,730.0000
External = 2.0749
P.C. Station 11+00.43
P.T. Station 14+08.79
Curve NBRAMP4-1
P.I. Station 12+20.96
Delta = 4° 25' 00.00" (LT)
Degree = 0° 59' 59.73"
Tangent = 220.9590
Length = 441.6992
Radius = 5,730.0000
External = 4.2587
P.C. Station 10+00.00
P.T. Station 14+41.70
Curve SBFR8
P.I. Station 1192+29.69
Delta = 0° 55' 00.00" (LT)
Degree = 0° 20' 07.64"
Tangent = 136.6331
Length = 273.2604
Radius = 17,080.0000
External = 0.5465
P.C. Station 1190+93.06
P.T. Station 1193+66.32
Curve ML7
P.I. Station 192+39.18
Delta = 0° 55' 00.00" (LT)
Degree = 0° 19' 59.91"
Tangent = 137.5131
Length = 275.0203
Radius = 17,190.0000
External = 0.5500
P.C. Station 191+01.66
P.T. Station 193+76.68
Curve NBFR9
P.I. Station 2192+49.24
Delta = 0° 55' 00.00" (LT)
Degree = 0° 19' 52.28"
Tangent = 138.3930
Length = 276.7801
Radius = 17,300.0000
External = 0.5535
P.C. Station 2191+10.84
P.T. Station 2193+87.62
Curve SBRAMP4-2
P.I. Station 21+32.54
Delta = 4° 00' 00.00" (LT)
Degree = 0° 59' 59.73"
Tangent = 200.0960
Length = 400.0295
Radius = 5,730.0000
External = 3.4927
P.C. Station 19+32.44
P.T. Station 23+32.47
Curve NBRAMP4-2
P.I. Station 20+88.85
Delta = 3° 30' 00.00" (RT)
Degree = 0° 59' 59.73"
Tangent = 175.0673
Length = 350.0258
Radius = 5,730.0000
External = 2.6738
P.C. Station 19+13.78
P.T. Station 22+63.81
Curve SBRAMP5-1
P.I. Station 11+25.03
Delta = 2° 30' 00.00"
Degree = 0° 59' 59.73"
Tangent = 125.0290
Length = 250.0184
Radius = 5,730.0000
External = 1.3639
P.C. Station 10+00.00
P.T. Station 12+50.02
Curve NBRAMP5-1
P.I. Station 11+75.07
Delta = 3° 30' 00.00"
Degree = 0° 59' 59.73"
Tangent = 175.0673
Length = 350.0258
Radius = 5,730.0000
External = 2.6738
P.C. Station 10+00.00
P.T. Station 13+50.03


L = 600.00'
VPI STA = 1168+00.00
EL = 82.00'
ex = 0.41'
K = 1110
VPT 1163+00.00 EL. = 85.44'
VPC 1165+00.00 EL. = 84.06'
VPT 1171+00.00 EL. = 81.56'
-0.69%
-0.15%
-1.09%
+0.21%
GRADE BREAK STA = 1166+67.36 FL = 73.57'
PROP 2-24" RCP
VPI STA = 1185+00.00 EL = 79.50'
-0.15%
+0.15%
SBFR PGL
GRADE BREAK STA = 1185+00.00 FL = 77.50'
VPC 1192+00.00 EL. = 80.55
L = 600.00'
VPI STA = 1195+00.00
EL = 81.00'
ex = -0.49'
K = 924
NG @ SBFR PGL
+0.15%
-0.50%
NG @ WEST ROW
-0.38%
GRADE BREAK STA = 1196+89.65 FL = 72.99'
PROP 2-3'X2' RCB
VPT 1198+00.00 EL. = 79.50'
VPI STA = 1201+00.00 EL = 78.00'
GRADE BREAK STA = 1202+00.00 FL = 73.70'
-0.50%
-0.11%
PROP 2-4'X2' RCB
GRADE BREAK STA = 1203+89.64 FL = 73.00'
GRADE BREAK STA = 1205+00 FL = 73.50'
1165+00
1170+00
1175+00
1180+00
1185+00
1190+00
1195+00
1200+00
1205+00


VPI STA = 175+00.00 EL = 84.50'
-0.42%
-0.13%
-0.36% (E)
-0.34% (W)
GRADE BREAK (W) STA = 167+00.00 FL = 81.69'
PROP 2-24" RCP
GRADE BREAK (E,W) STA = 175+00.00 FL = 79.00'
+0.05% (E,W)
VPC 188+00.00 EL. = 82.88'
L = 600.00'
VPI STA = 191+00.00
EL = 82.50'
ex = 2.01'
K = 224
-0.13%
+2.55%
GRADE BREAK (E,W) STA = 189+00.00 FL = 79.70'
VPT 194+00.00 EL. = 90.15'
VPC 194+00.00 EL. = 90.15'
US 281 MAIN LANES PGL
-0.17% (W)
-0.20% (E)
GRADE BREAK (E) STA = 195+00.00 FL = 78.50'
GRADE BREAK (E) STA = 197+00.00 FL = 77.66'
-0.42% (E)
L = 1,400.00'
VPI STA = 201+00.00
EL = 108.00'
ex = -7.52'
K = 326
+2.55%
-1.75%
GRADE BREAK (W) STA = 200+30.17 FL = 78.65'
GRADE BREAK (W) STA = 197+00.00 FL = 78.32'
PROP 2-3'X2' RCB
+0.10% (W)
-0.10% (E)
GRADE BREAK (E) STA = 200+30.17 FL = 77.99'
16'-6" CLR.
GRADE BREAK (W) STA = 204+00.00 FL = 77.50'
GRADE BREAK (E) STA = 204+00.00 FL = 77.00'
-0.83% (W)
-0.67% (E)
PROP 2-4'X2' RCB
165+00
170+00
175+00
180+00
185+00
190+00
195+00
200+00
205+00


L = 600.00'
VPI STA = 2168+00.00
EL = 82.00'
ex = 0.41'
K = 1110
VPT 2163+00.00 EL. = 85.44'
VPC 2165+00.00 EL. = 84.06'
VPT 2171+00.00 EL. = 81.56'
-0.69%
-0.15%
-0.44%
PROP 2-24" RCP
GRADE BREAK STA = 2175+17.86 FL = 76.42'
-0.10%
VPI STA = 2185+00.00 EL = 79.50'
-0.15%
+0.15%
VPC 2192+00.00 EL. = 80.55
L = 600.00'
VPI STA = 2195+00.00
EL = 81.00'
ex = -0.61'
K = 735
NBFR PGL
+0.15%
-0.67%
-0.39%
NG @ NBFR PGL
GRADE BREAK STA = 2193+00.00 FL = 74.64'
VPT 2198+00.00 EL. = 79.00'
VPC 2198+00.00 EL. = 79.00'
NG @ EAST ROW
PROP 2-3'X2' RCB
GRADE BREAK STA = 2197+10.93 FL = 72.62'
L = 600.00'
VPI STA = 2201+00.00
EL = 77.00'
ex = -0.50'
K = 900
-0.67%
+0.00%
-0.10%
-1.03%
VPT 2204+00.00 EL. = 77.00'
PROP 2-4'X2' RCB
+0.00%
GRADE BREAK STA = 2202+00.00 FL = 72.13'
GRADE BREAK STA = 2204+07.94 FL = 70.00'
2165+00
2170+00
2175+00
2180+00
2185+00
2190+00
2195+00
2200+00
2205+00


SOUTH
69C
SOUTH
281
EXIT XX
Laguna Seca Rd
1/2 Mile
MILLER ROAD
STOP
SB-5
ON RAMP
STA 212+04
NB-5
OFF RAMP
STA 211+48
EXIT
EXIT
45
MPH
WRONG WAY
DO NOT ENTER
EXIT XX
Laguna Seca Rd
PROPOSED 2-18" RCP @ 0.2%
PROPOSED 2-24" RCP @ 0.16%
PROPOSED 2-18" RCP @ 0.2%
PROPOSED 3-3'x2' RCP @ 0.12%
SBFR8
SBRAMP5-1
NBRAMP5-1
ML7
NBFR9
SBRAMP5-2
NBRAMP5-2
EXIST 320' ROW
PROP 400' ROW
PROP 340' ROW
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
TRACT 1
SUBBAYAMA NAGUADI
INST. NO. 554594
D.R.H.C.T.

Curve **SBFR8**

P.I. Station		1211+19.33
Delta	=	0° 32′ 58.45″ (RT)
Degree	=	0° 19′ 52.28″
Tangent	=	82.9697
Length	=	165.9380
Radius	=	17,300.0000
External	=	0.1990
P.C. Station		1210+36.37
P.T. Station		1212+02.30

Curve **ML7**

P.I. Station		211+29.17
Delta	=	0° 32′ 58.45″ (RT)
Degree	=	0° 19′ 59.91″
Tangent	=	82.4421
Length	=	164.8829
Radius	=	17,190.0000
External	=	0.1977
P.C. Station		210+46.73
P.T. Station		212+11.61

Curve **NBFR9**

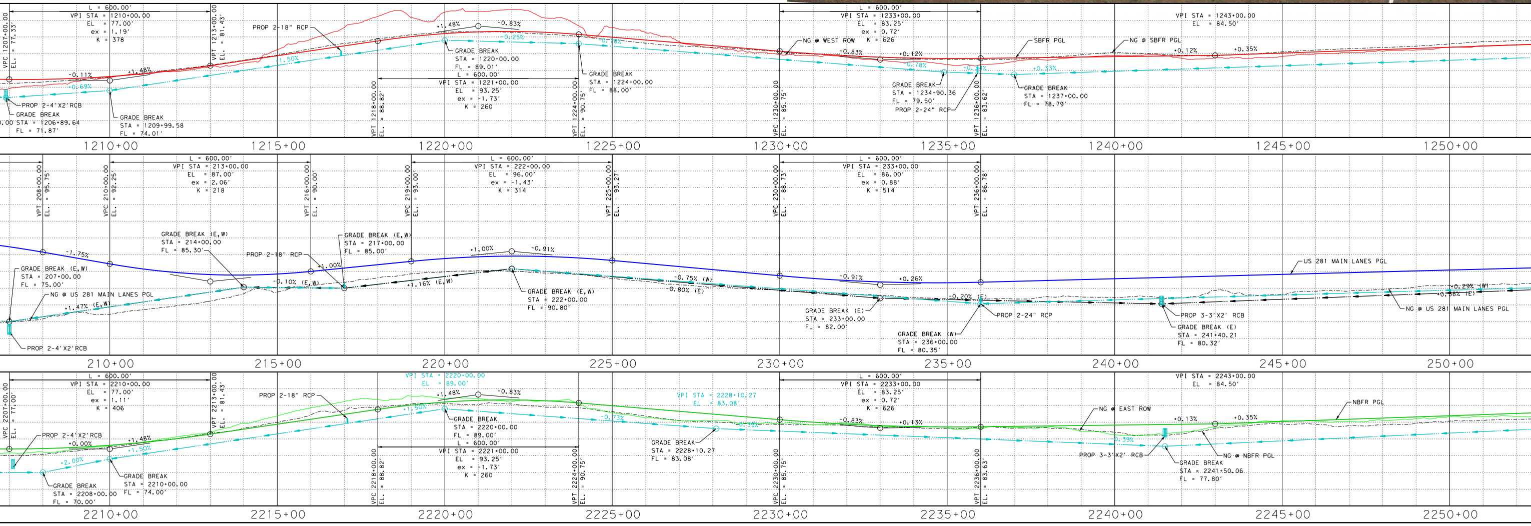
P.I. Station		2211+39.59
Delta	=	0° 32′ 58.45″ (RT)
Degree	=	0° 20′ 07.64″
Tangent	=	81.9146
Length	=	163.8278
Radius	=	17,080.0000
External	=	0.1964
P.C. Station		2210+57.67
P.T. Station		2212+21.50

Curve **SBRAMP5-2**

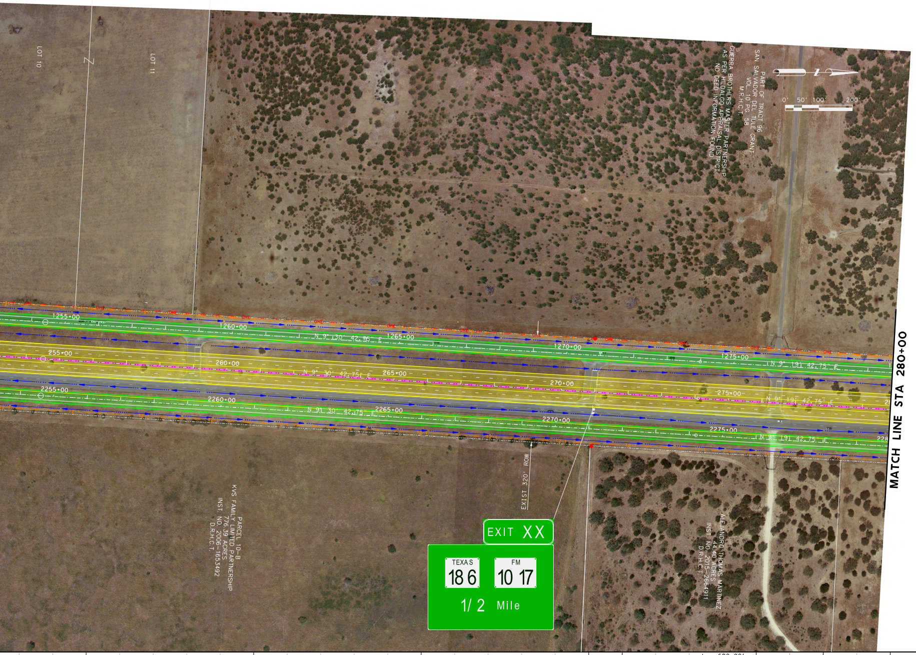
P.I. Station		23+75.67
Delta	=	2° 50′ 58.45″ (RT)
Degree	=	0° 59′ 59.73″
Tangent	=	142.5183
Length	=	284.9779
Radius	=	5,730.0000
External	=	1.7721
P.C. Station		22+33.15
P.T. Station		25+18.13

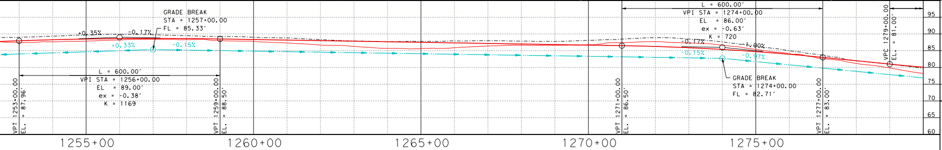
Curve **NBRAMP5-2**

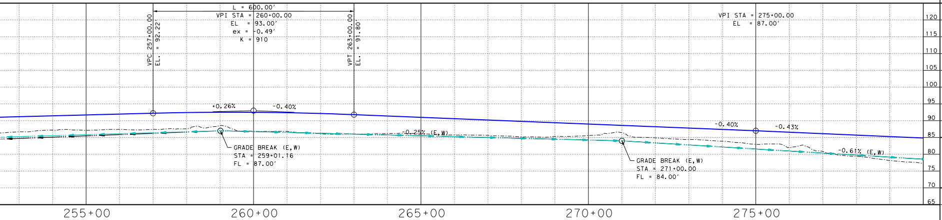
P.I. Station		21+19.41
Delta	=	3° 09′ 01.55″ (LT)
Degree	=	0° 59′ 59.73″
Tangent	=	157.5728
Length	=	315.0663
Radius	=	5,730.0000
External	=	2.1662
P.C. Station		19+61.84
P.T. Station		22+76.90

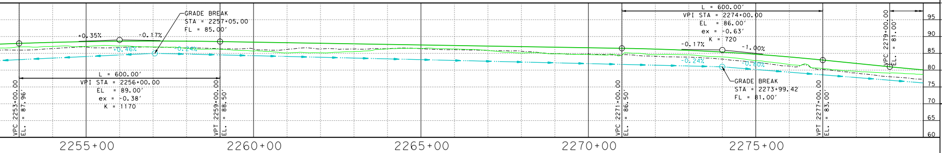

L = 600.00'
VPI STA = 1210+00.00
EL = 77.00'
ex = 1.19'
K = 378
PROP 2-18" RCP
L = 600.00'
VPI STA = 1233+00.00
EL = 83.25'
ex = 0.72'
K = 626
VPI STA = 1243+00.00
EL = 84.50'
NG @ WEST ROW
SBFR PGL
NG @ SBFR PGL
GRADE BREAK
STA = 1220+00.00
FL = 89.01'
L = 600.00'
VPI STA = 1221+00.00
EL = 93.25'
ex = -1.73'
K = 260
GRADE BREAK
STA = 1224+00.00
FL = 88.00'
GRADE BREAK
STA = 1234+90.36
FL = 79.50'
PROP 2-24" RCP
GRADE BREAK
STA = 1237+00.00
FL = 78.79'
PROP 2-4'X2' RCB
GRADE BREAK
STA = 1206+89.64
FL = 71.87'
GRADE BREAK
STA = 1209+99.58
FL = 74.01'
1210+00
1215+00
1220+00
1225+00
1230+00
1235+00
1240+00
1245+00
1250+00
L = 600.00'
VPI STA = 213+00.00
EL = 87.00'
ex = 2.06'
K = 218
L = 600.00'
VPI STA = 222+00.00
EL = 96.00'
ex = -1.43'
K = 314
L = 600.00'
VPI STA = 233+00.00
EL = 86.00'
ex = 0.88'
K = 514
GRADE BREAK (E,W)
STA = 214+00.00
FL = 85.30'
GRADE BREAK (E,W)
STA = 217+00.00
FL = 85.00'
GRADE BREAK (E,W)
STA = 207+00.00
FL = 75.00'
NG @ US 281 MAIN LANES PGL
PROP 2-18" RCP
GRADE BREAK (E,W)
STA = 222+00.00
FL = 90.80'
US 281 MAIN LANES PGL
GRADE BREAK (E)
STA = 233+00.00
FL = 82.00'
PROP 2-24" RCP
GRADE BREAK (W)
STA = 236+00.00
FL = 80.35'
PROP 3-3'X2' RCB
GRADE BREAK (E)
STA = 241+40.21
FL = 80.32'
NG @ US 281 MAIN LANES PGL
PROP 2-4'X2' RCB
210+00
215+00
220+00
225+00
230+00
235+00
240+00
245+00
250+00
L = 600.00'
VPI STA = 2210+00.00
EL = 77.00'
ex = 1.11'
K = 406
VPI STA = 2220+00.00
EL = 89.00'
VPI STA = 2228+10.27
EL = 83.08'
L = 600.00'
VPI STA = 2233+00.00
EL = 83.25'
ex = 0.72'
K = 626
VPI STA = 2243+00.00
EL = 84.50'
PROP 2-18" RCP
PROP 2-4'X2' RCB
NG @ EAST ROW
NBFR PGL
GRADE BREAK
STA = 2220+00.00
FL = 89.00'
L = 600.00'
VPI STA = 2221+00.00
EL = 93.25'
ex = -1.73'
K = 260
GRADE BREAK
STA = 2228+10.27
FL = 83.08'
PROP 3-3'X2' RCB
NG @ NBFR PGL
GRADE BREAK
STA = 2241+50.06
FL = 77.80'
GRADE BREAK
STA = 2208+00.00
FL = 70.00'
GRADE BREAK
STA = 2210+00.00
FL = 74.00'
2210+00
2215+00
2220+00
2225+00
2230+00
2235+00
2240+00
2245+00
2250+00

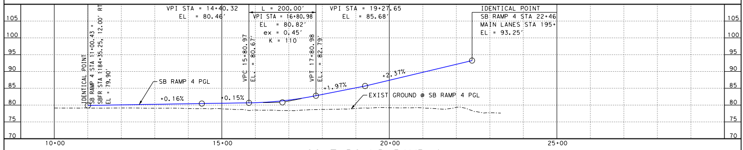
RAMP PROFILES


LOT 10
LOT 11
PART OF TRACT 96
SAN SALVADOR DEL TULE GRANT
VOL. 10 PG. 58
M.R.H.C.T.
GUERRA BROTHERS MASTER PARTNERSHIP
AS PER HILDALGO APPRAISAL DISTRICT
NO DEED INFORMATION FOUND
0' 50' 100' 200'
1255+00
1260+00
1265+00
1270+00
1275+00
N 9° 30' 42.75" E
255+00
260+00
265+00
270+00
275+00
2255+00
2260+00
2265+00
2270+00
2275+00
N 9° 19' 42.75" E
OHE
T2-1
EXIST 320' ROW
MATCH LINE STA 280+00
EXIT XX
TEXAS
18 6
FM
10 17
1/ 2 Mile
PARCEL 10-B
KVS FAMILY LIMITED PARTNERSHIP
776.39 ACRES
INST. NO. 2006-1653492
D.R.H.C.T.
ALEJANDRO THOMAS MARTINEZ
44.40 ACRES
INST. NO. 2015-2664911
D.R.H.C.T.

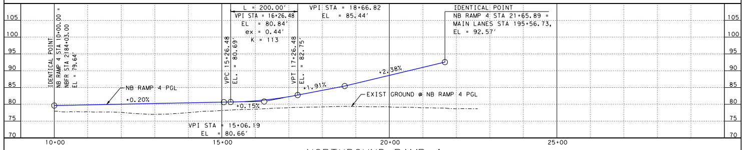

GRADE BREAK
STA = 1257+00.00
FL = 85.33'
+0.35%
-0.17%
+0.33%
-0.15%
L = 600.00'
VPI STA = 1256+00.00
EL = 89.00'
ex = -0.38'
K = 1169
VPT 1253+00.00
EL. = 87.96'
VPT 1259+00.00
EL. = 88.50'
L = 600.00'
VPI STA = 1274+00.00
EL = 86.00'
ex = -0.63'
K = 720
-0.17%
-1.00%
-0.15%
-0.97%
GRADE BREAK
STA = 1274+00.00
FL = 82.71'
VPT 1271+00.00
EL. = 86.50'
VPT 1277+00.00
EL. = 83.00'
VPC 1279+00.00
EL. = 81.00'
95
90
85
80
75
70
65
60
1255+00
1260+00
1265+00
1270+00
1275+00


L = 600.00'
VPI STA = 260+00.00
EL = 93.00'
ex = -0.49'
K = 910
VPC 257+00.00
EL. = 92.22'
VPT 263+00.00
EL. = 91.80'
+0.26%
-0.40%
GRADE BREAK (E,W)
STA = 259+01.16
FL = 87.00'
-0.25% (E,W)
VPI STA = 275+00.00
EL = 87.00'
-0.40%
-0.43%
GRADE BREAK (E,W)
STA = 271+00.00
FL = 84.00'
-0.61% (E,W)
120
115
110
105
100
95
90
85
80
75
70
65
255+00
260+00
265+00
270+00
275+00

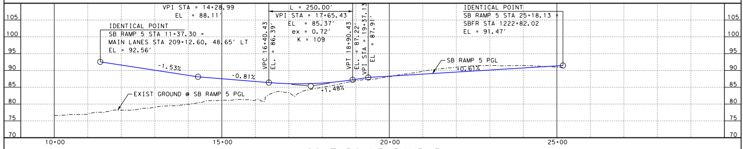

GRADE BREAK
STA = 2257+05.00
FL = 85.00'
+0.35%
-0.17%
+0.46%
-0.24%
L = 600.00'
VPI STA = 2256+00.00
EL = 89.00'
ex = -0.38'
K = 1170
VPC 2253+00.00
EL. = 87.96'
VPT 2259+00.00
EL. = 88.50'
L = 600.00'
VPI STA = 2274+00.00
EL = 86.00'
ex = -0.63'
K = 720
-0.17%
-1.00%
-0.24%
-0.80%
GRADE BREAK
STA = 2273+99.42
FL = 81.00'
VPC 2271+00.00
EL. = 86.50'
VPT 2277+00.00
EL. = 83.00'
VPC 2279+00.00
EL. = 81.00'
95
90
85
80
75
70
65
60
2255+00
2260+00
2265+00
2270+00
2275+00


VPI STA = 14+40.32
EL = 80.46'
L = 200.00'
VPI STA = 16+80.98
EL = 80.82'
ex = 0.45'
K = 110
VPI STA = 19+27.65
EL = 85.68'
IDENTICAL POINT
SB RAMP 4 STA 22+46
MAIN LANES STA 195+
EL = 93.25'
IDENTICAL POINT
SB RAMP 4 STA 11+00.43 =
SBFR STA 1184+35.25, 12.00' RT
EL = 79.90'
VPC 15+80.97
EL. = 80.67'
VPT 17+80.98
EL. = 82.79'
SB RAMP 4 PGL
+0.16%
+0.15%
+1.97%
+2.37%
EXIST GROUND @ SB RAMP 4 PGL
105
100
95
90
85
80
75
70
10+00
15+00
20+00
25+00

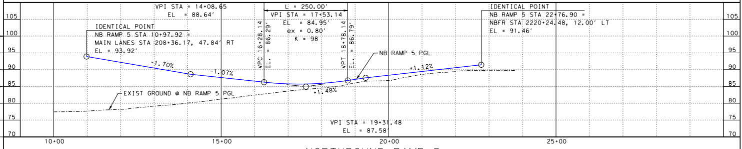
SOUTHBOUND RAMP 4
STA 192+70


L = 200.00'
VPI STA = 16+26.48
EL = 80.84'
ex = 0.44'
K = 113
VPI STA = 18+66.82
EL = 85.44'
IDENTICAL POINT
NB RAMP 4 STA 21+65.89 =
MAIN LANES STA 195+56.73,
EL = 92.57'
IDENTICAL POINT
NB RAMP 4 STA 10+00.00 =
NBFR STA 2184+03.00
EL = 79.64'
VPC 15+26.48
EL. = 80.69'
VPT 17+26.48
EL. = 82.75'
NB RAMP 4 PGL
+0.20%
+0.15%
+1.91%
+2.38%
EXIST GROUND @ NB RAMP 4 PGL
VPI STA = 15+06.19
EL = 80.66'
105
100
95
90
85
80
75
70
10+00
15+00
20+00
25+00

NORTHBOUND RAMP 4
STA 192+57

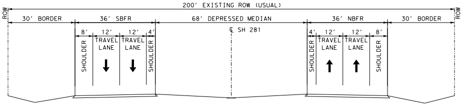

VPI STA = 14+28.99
EL = 88.11'
IDENTICAL POINT
SB RAMP 5 STA 11+37.30 =
MAIN LANES STA 209+12.60, 48.65' LT
EL = 92.56'
L = 250.00'
VPI STA = 17+65.43
EL = 85.37'
ex = 0.72'
K = 109
VPC 16+40.43
EL. = 86.39'
VPT 18+90.43
EL. = 87.22'
VPI STA = 19+37.13
EL = 87.91'
IDENTICAL POINT
SB RAMP 5 STA 25+18.13 =
SBFR STA 1222+82.02
EL = 91.47'
-1.53%
-0.81%
+1.48%
+0.61%
SB RAMP 5 PGL
EXIST GROUND @ SB RAMP 5 PGL
105
100
95
90
85
80
75
70
10+00
15+00
20+00
25+00

SOUTHBOUND RAMP 5
STA 212+04


VPI STA = 14+08.65
EL = 88.64'
IDENTICAL POINT
NB RAMP 5 STA 10+97.92 =
MAIN LANES STA 208+36.17, 47.84' RT
EL = 93.92'
L = 250.00'
VPI STA = 17+53.14
EL = 84.95'
ex = 0.80'
K = 98
VPC 16+28.14
EL. = 86.29'
VPT 18+78.14
EL. = 86.79'
IDENTICAL POINT
NB RAMP 5 STA 22+76.90 =
NBFR STA 2220+24.48, 12.00' LT
EL = 91.46'
-1.70%
-1.07%
+1.48%
+1.12%
NB RAMP 5 PGL
EXIST GROUND @ NB RAMP 5 PGL
VPI STA = 19+31.48
EL = 87.58'
105
100
95
90
85
80
75
70
10+00
15+00
20+00
25+00

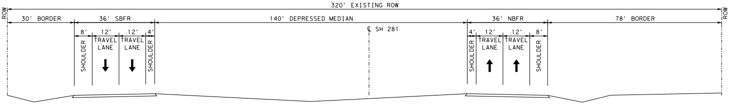
NORTHBOUND RAMP 5
STA 211+48

TYPICAL SECTIONS



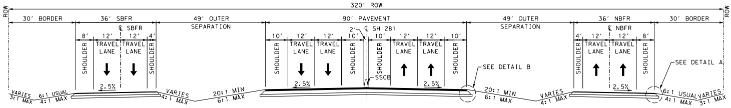
200' EXISTING ROW (USUAL)
ROW
30' BORDER
36' SBFR
68' DEPRESSED MEDIAN
36' NBFR
30' BORDER
ROW
8'
12'
12'
4'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
℄ SH 281
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER

EXISTING US 281 TYPICAL SECTION
STA 35+00 TO STA 160+00



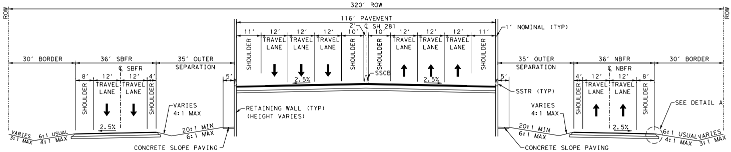
320' EXISTING ROW
ROW
30' BORDER
36' SBFR
140' DEPRESSED MEDIAN
36' NBFR
78' BORDER
ROW
8'
12'
12'
4'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
℄ SH 281
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER

EXISTING US 281 TYPICAL SECTION
STA 160+00 TO STA 383+17



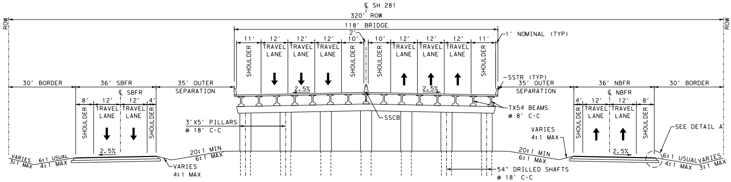
320' ROW
ROW
30' BORDER
36' SBFR
℄ SBFR
49' OUTER SEPARATION
90' PAVEMENT
2'
℄ SH 281
49' OUTER SEPARATION
36' NBFR
℄ NBFR
30' BORDER
ROW
8'
12'
12'
4'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
2.5%
10'
12'
12'
10'
10'
12'
12'
10'
SSCB
2.5%
2.5%
SEE DETAIL B
4'
12'
12'
8'
2.5%
SEE DETAIL A
VARIES 3:1 MAX
6:1 USUAL 4:1 MAX
VARIES 4:1 MAX
20:1 MIN 6:1 MAX
20:1 MIN 6:1 MAX
VARIES 4:1 MAX
6:1 USUAL 4:1 MAX
VARIES 3:1 MAX

PROPOSED US 281 USUAL TYPICAL SECTION



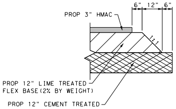
320' ROW
ROW
116' PAVEMENT
2'
℄ SH 281
1' NOMINAL (TYP)
11'
12'
12'
12'
10'
10'
12'
12'
12'
11'
SHOULDER
TRAVEL LANE
TRAVEL LANE
TRAVEL LANE
SHOULDER
SSCB
2.5%
2.5%
30' BORDER
36' SBFR
℄ SBFR
35' OUTER SEPARATION
5'
5'
35' OUTER SEPARATION
36' NBFR
℄ NBFR
30' BORDER
8'
12'
12'
4'
4'
12'
12'
8'
SSTR (TYP)
VARIES 4:1 MAX
RETAINING WALL (TYP) (HEIGHT VARIES)
VARIES 4:1 MAX
SEE DETAIL A
2.5%
2.5%
20:1 MIN 6:1 MAX
20:1 MIN 6:1 MAX
VARIES 3:1 MAX
6:1 USUAL 4:1 MAX
6:1 USUAL 4:1 MAX
VARIES 3:1 MAX
CONCRETE SLOPE PAVING
CONCRETE SLOPE PAVING

PROPOSED US 281
BRIDGE APPROACH TYPICAL SECTION



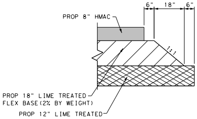
℄ SH 281
320' ROW
ROW
118' BRIDGE
2'
1' NOMINAL (TYP)
11'
12'
12'
12'
10'
10'
12'
12'
12'
11'
SHOULDER
TRAVEL LANE
TRAVEL LANE
TRAVEL LANE
SHOULDER
SSTR (TYP)
2.5%
2.5%
30' BORDER
36' SBFR
℄ SBFR
35' OUTER SEPARATION
35' OUTER SEPARATION
36' NBFR
℄ NBFR
30' BORDER
8'
12'
12'
4'
4'
12'
12'
8'
TX54 BEAMS @ 8' C-C
SSCB
3'X5' PILLARS @ 18' C-C
VARIES 4:1 MAX
SEE DETAIL A
2.5%
2.5%
20:1 MIN 6:1 MAX
20:1 MIN 6:1 MAX
VARIES 3:1 MAX
6:1 USUAL 4:1 MAX
VARIES 4:1 MAX
54" DRILLED SHAFTS @ 18' C-C
6:1 USUAL 4:1 MAX
VARIES 3:1 MAX

PROPOSED US 281
BRIDGE TYPICAL SECTION



6"
12"
6"
PROP 3" HMAC
1:1
PROP 12" LIME TREATED FLEX BASE (2% BY WEIGHT)
PROP 12" CEMENT TREATED SUBGRADE (3% BY WEIGHT)

DETAIL A



6"
18"
6"
PROP 8" HMAC
1:1
PROP 18" LIME TREATED FLEX BASE (2% BY WEIGHT)
PROP 12" LIME TREATED SUBGRADE (3% BY WEIGHT)

DETAIL B

Scale: 0' 50' 100' 200'

ROLL 2 OF 3

Date: 12/6/2017

CSJ: 0255-07-140

Texas Department of Transportation

US 281

© 2017

FILE: D:\cfo\2016\11013_US*281*ENV\USTN\project\xschem802.dgn
DATE: 12/6/2017 10:09:07 AM

Scale: 0' 50' 100' 200'

ROLL 3 OF 3

Date: 12/6/2017

CSJ: 0255-07-140

Texas Department of Transportation
US 281
© 2017

FILE: D:\cfa\2016\11013_US*281*Schematic*ENV\USTN\project\xschem803.dgn
DATE: 12/6/2017 11:22 AM

US 281

281
1017
186
490
281
N

LOCATION MAP
N.T.S.

Texas Department of Transportation
© 2017

CobbFendley
TBPE Firm Registration No. 274
TBPLS Firm Registration No. 100467
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040
713.462.3242 | fax 713.462.3262
www.cobbfendley.com

TEXAS DEPARTMENT OF TRANSPORTATION
PRELIMINARY DESIGN SCHEMATIC
US HIGHWAY 281
HIDALGO COUNTY

LIMITS: From: 0.690 MILES SOUTH OF SH 186
To: 0.34 MILES NORTH OF FM 490

C-S-J-: 0255-07-140
FED. AID PROJECT NO.:
LENGTH: 7.040 MILES

Existing Posted Speed: 70 MPH - MAINLANES

OFFICE OF DISTRICT ENGINEER
PHARR DISTRICT

DESIGN SPEED: 75 MPH - Mainlane; 50 MPH Frontage Roads
Functional Classification: Rural Freeway
Chapter 3, Section 6 Freeways
Superelevation Rate e_{max} = 6%

12/6/2017

CORRECT:
__________, 2016

AREA ENGINEER

APPROVED: DESIGN DIVISION LETTER DATED

APPROVED: FHWA LETTER DATED
FED. RD. DIV. NO. 6

APPROVED:
__________, 2016

DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL:
__________, 2016

DIRECTOR OF TRANSPORTATION
PLANNING AND DEVELOPMENT

AVERAGE DAILY TRAFFIC VOLUMES

CSJ 0255-07-140
US 281 MAINLANES
From: 0.690 MILES SOUTH OF SH 186
To: 0.34 MILES NORTH OF FM 490

EXIST	LETTING	DESIGN
2015	2020	2040
14,453	20,700	29,000

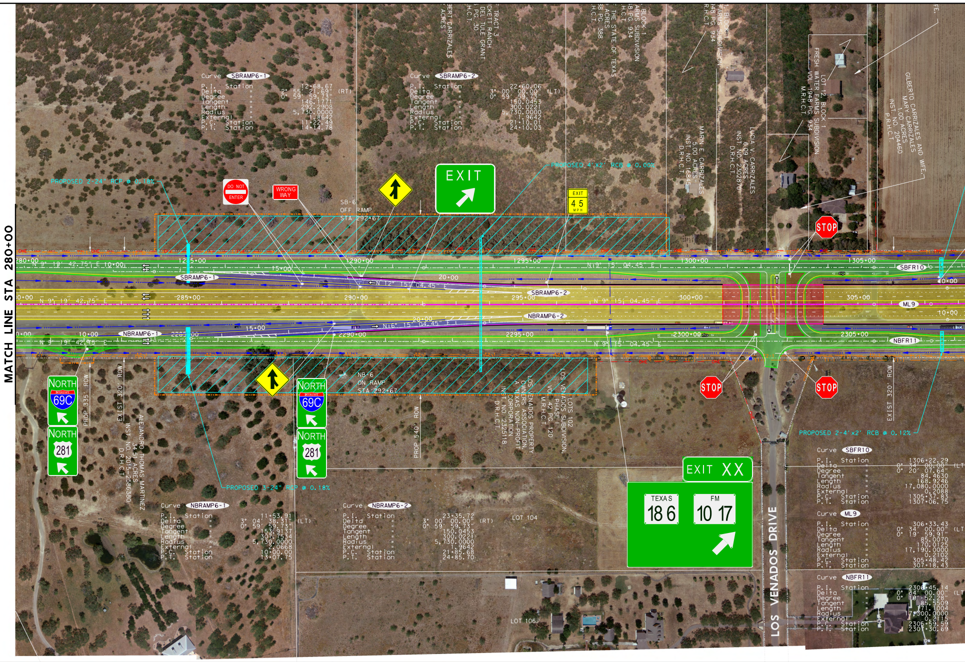
GEOMETRIC DESIGN

These documents are not intended for Construction, Bidding, or Permit Purposes. They were prepared by, or under the supervision of :

Mahmoud Salehi, P.E. PE #89552 Date

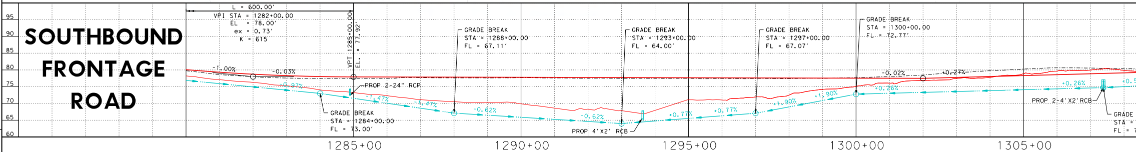
COLOR LEGEND

🟨	FREEWAY MAINLANES (WIDENING OR RECONSTRUCTION)
🟩	FRONTAGE ROAD
🟦	RAMPS
🟥	PROPOSED BRIDGE STRUCTURES
—	PROPOSED RETAINING WALLS
— T1-1 —	EXISTING AT&T
— T2-1 —	EXISTING ATT FIBER OPTIC LINE
— OHE —	EXIST OVERHEAD ELECTRIC
— E1-1 —	EXIST ELECTRIC
— W1-1 —	EXIST WATER
— PL-2-D —	EXIST DCP/MIDSTREAM PIPELINE
—PL-1—	EXIST KINDER MORGAN PIPELINE

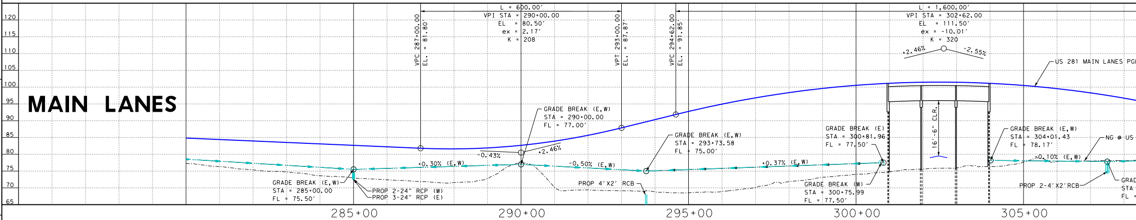


MATCH LINE STA 280+00
Curve SBRAMP6-1
P.I. Station 12+68.67
Delta = 2° 55' 21.69" (RT)
Degree = 0° 59' 59.73"
Tangent = 146.1771
Length = 292.2908
Radius = 5,730.0000
External = 1.8642
P.C. Station 11+22.49
P.T. Station 14+14.78
Curve SBRAMP6-2
P.I. Station 22+60.06
Delta = 3° 00' 00.00" (LT)
Degree = 0° 59' 59.73"
Tangent = 150.0453
Length = 300.0221
Radius = 5,730.0000
External = 1.9642
P.C. Station 21+10.01
P.T. Station 24+10.03
PROPOSED 2-24" RCP @ 0.18%
PROPOSED 4'x2' RCB @ 0.00%
DO NOT ENTER
WRONG WAY
EXIT
EXIT 45 MPH
SB-6 OFF RAMP STA 292+67
STOP
SBRAMP6-1
SBRAMP6-2
NBRAMP6-1
NBRAMP6-2
SBFR10
ML9
NBFR11
NB-6 ON RAMP STA 292+67
NORTH 69C
NORTH 281
PROPOSED 3-24" RCP @ 0.18%
PROPOSED 2-4'x2' RCB @ 0.12%
Curve NBRAMP6-1
P.I. Station 11+53.91
Delta = 3° 04' 38.31" (LT)
Degree = 0° 59' 59.73"
Tangent = 153.9137
Length = 307.7534
Radius = 5,730.0000
External = 2.0668
P.C. Station 10+00.00
P.T. Station 13+07.75
Curve NBRAMP6-2
P.I. Station 23+35.72
Delta = 3° 00' 00.00" (RT)
Degree = 0° 59' 59.73"
Tangent = 150.0453
Length = 300.0221
Radius = 5,730.0000
External = 1.9642
P.C. Station 21+85.70
P.T. Station 24+85.70
EXIT XX
TEXAS 186
FM 10 17
LOS VENADOS DRIVE
LOT 104
LOT 106
Curve SBFR10
P.I. Station 1306+22.29
Delta = 0° 34' 00.00" (LT)
Degree = 0° 20' 07.64"
Tangent = 84.4630
Length = 168.9246
Radius = 17,080.0000
External = 0.2088
P.C. Station 1305+37.83
P.T. Station 1307+06.75
Curve ML9
P.I. Station 306+33.43
Delta = 0° 34' 00.00" (LT)
Degree = 0° 19' 59.91"
Tangent = 85.0070
Length = 170.0125
Radius = 17,190.0000
External = 0.2102
P.C. Station 305+48.42
P.T. Station 307+18.43
Curve NBFR11
P.I. Station 2306+45.14
Delta = 0° 34' 00.00" (LT)
Degree = 0° 18' 52.28"
Tangent = 85.5509
Length = 171.1004
Radius = 17,300.0000
External = 0.2115
P.C. Station 2305+59.59
P.T. Station 2307+30.69

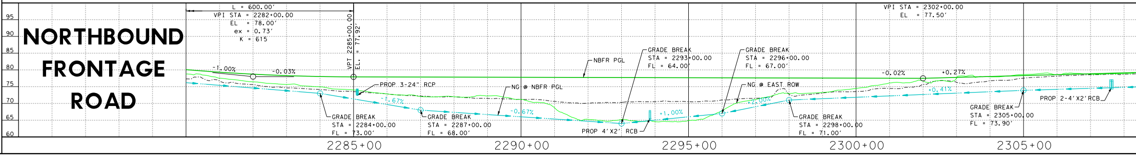
SOUTHBOUND FRONTAGE ROAD

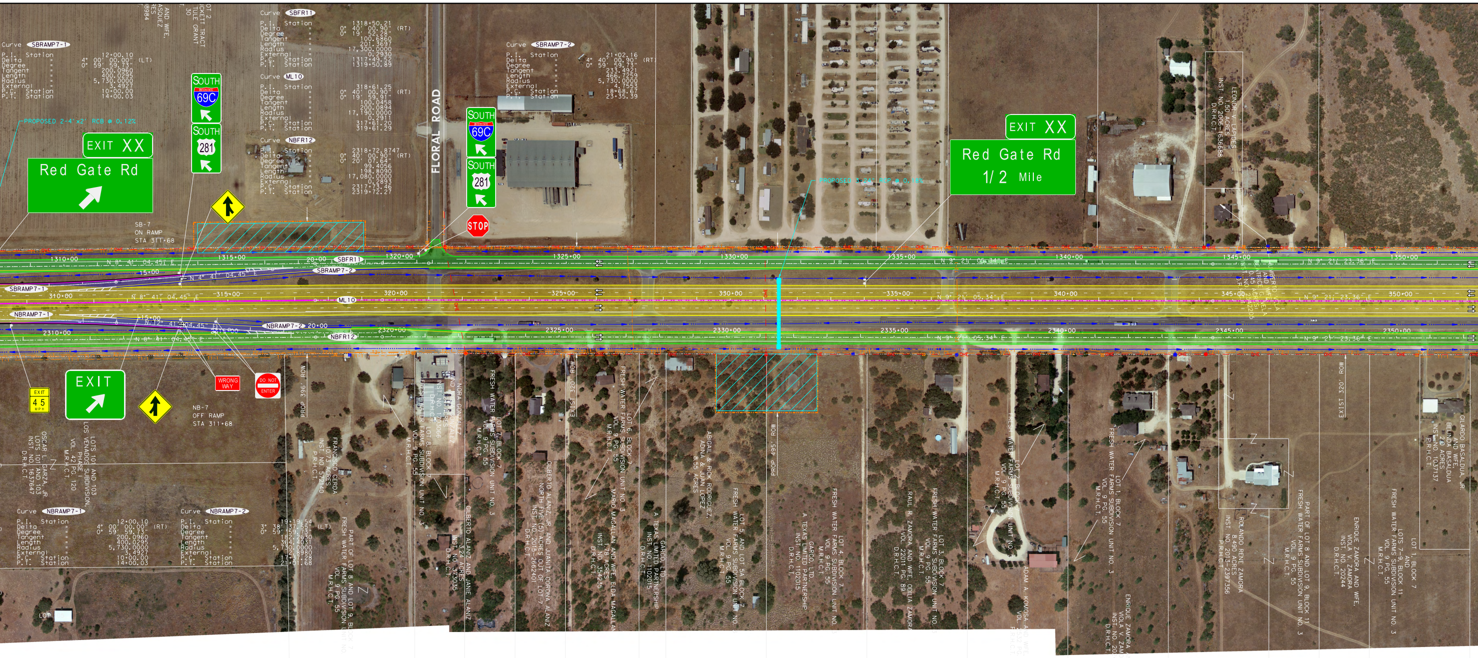


MAIN LANES



NORTHBOUND FRONTAGE ROAD




FLORAL ROAD
EXIT XX
Red Gate Rd
SOUTH
69C
SOUTH
281
STOP
EXIT XX
Red Gate Rd
1/2 Mile
EXIT
EXIT
45
MPH
WRONG WAY
DO NOT ENTER
PROPOSED 2-4'x2' RCB @ 0.12%
SB-7
ON RAMP
STA 311+68
NB-7
OFF RAMP
STA 311+68
1310+00
1315+00
1320+00
1325+00
1330+00
1335+00
1340+00
1345+00
1350+00
310+00
315+00
320+00
325+00
330+00
335+00
340+00
345+00
350+00
2310+00
2320+00
2325+00
2330+00
2335+00
2340+00
2345+00
2350+00
15+00
20+00
SBFR11
SBRAMP7-1
SBRAMP7-2
ML10
NBRAMP7-1
NBRAMP7-2
NBFR12
N 8° 41' 04.45" E
N 4° 41' 04.45" E
N 9° 21' 05.34" E
N 9° 21' 23.36" E
PROP 396' ROW
PROP 495' ROW
EXIST 320' ROW
LOTS 101 AND 103
LOS VENADOS SUBDIVISION,
PHASE I
VOL. 42 PG. 120
M.R.H.C.T.
OSCAR L. GARZA, JR.
LOTS 101 AND 103
INST. NO. 1637647
D.R.H.C.T.
FRANCISCO CERDA
10.73 ACRES
INST. NO. 572140
P.R.H.C.T.
PART OF LOT 8 AND LOT 9, BLOCK 7
FRESH WATER FARMS SUBDIVISION UNIT NO. 3
VOL. 9 PG. 55
M.R.H.C.T.
LOT 105

Curve SBRAMP7-1

P.I. Station		12+00.10
Delta	=	4° 00' 00.00" (LT)
Degree	=	0° 59' 59.73"
Tangent	=	200.0960
Length	=	400.0295
Radius	=	5,730.0000
External	=	3.4927
P.C. Station		10+00.00
P.T. Station		14+00.03

Curve SBFR11

P.I. Station		1318+50.21
Delta	=	0° 40' 00.90" (RT)
Degree	=	0° 19' 52.28"
Tangent	=	100.6860
Length	=	201.3697
Radius	=	17,300.0000
External	=	0.2930
P.C. Station		1317+49.52
P.T. Station		1319+50.89

Curve ML10

P.I. Station		318+61.25
Delta	=	0° 40' 00.90" (RT)
Degree	=	0° 19' 59.91"
Tangent	=	100.0458
Length	=	200.0894
Radius	=	17,190.0000
External	=	0.2911
P.C. Station		317+61.20
P.T. Station		319+61.29

Curve NBFR12

P.I. Station		2318+72.8747
Delta	=	0° 40' 00.90" (RT)
Degree	=	0° 20' 07.64"
Tangent	=	99.4056
Length	=	198.8090
Radius	=	17,080.0000
External	=	0.2893
P.C. Station		2317+73.46
P.T. Station		2319+72.27

Curve SBRAMP7-2

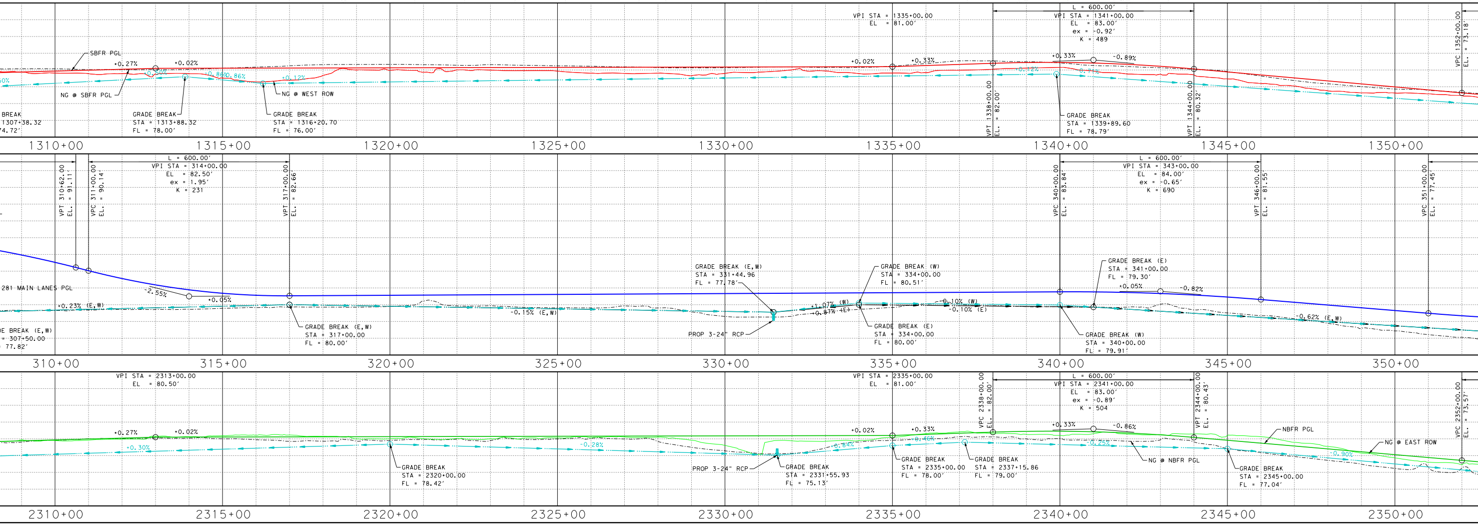
P.I. Station		21+02.16
Delta	=	4° 40' 00.90" (RT)
Degree	=	0° 59' 59.73"
Tangent	=	233.4921
Length	=	466.7259
Radius	=	5,730.0000
External	=	4.7553
P.C. Station		18+68.67
P.T. Station		23+35.39

Curve NBRAMP7-1

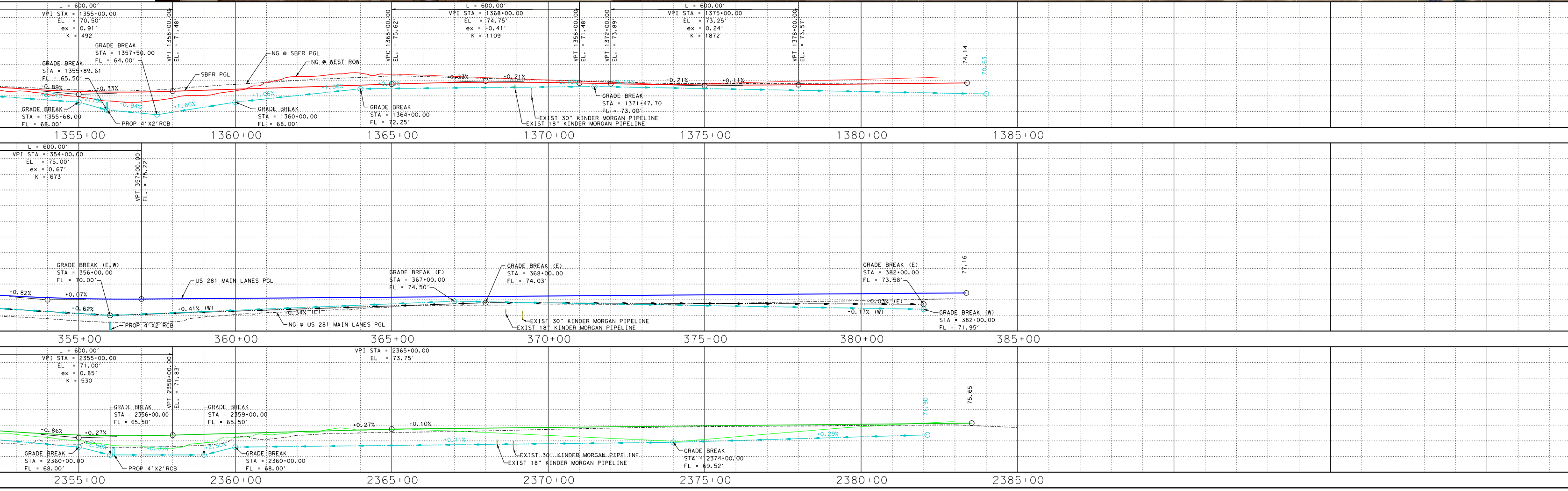
P.I. Station		12+00.10
Delta	=	4° 00' 00.00" (RT)
Degree	=	0° 59' 59.73"
Tangent	=	200.0960
Length	=	400.0295
Radius	=	5,730.0000
External	=	3.4927
P.C. Station		10+00.00
P.T. Station		14+00.03

Curve NBRAMP7-2

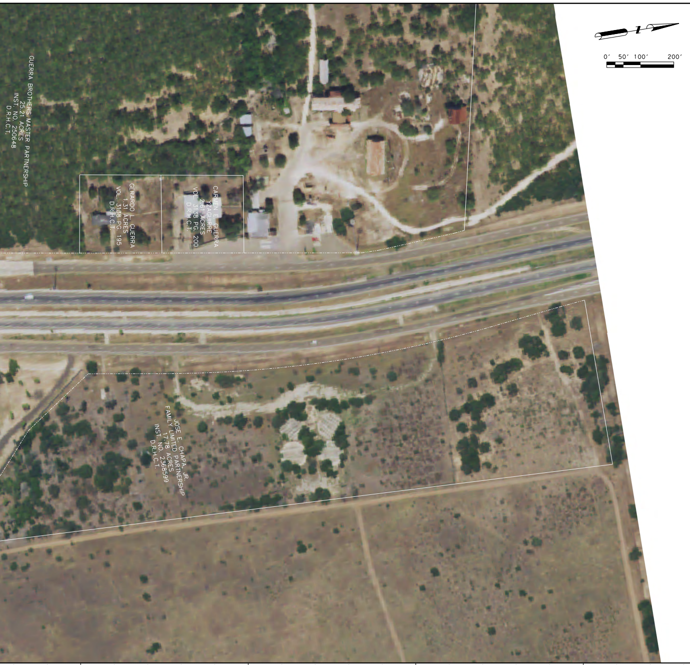
P.I. Station		19+19.54
Delta	=	3° 38' 37.55" (LT)
Degree	=	0° 59' 59.73"
Tangent	=	182.2630
Length	=	364.4031
Radius	=	5,730.0000
External	=	2.8980
P.C. Station		17+37.28
P.T. Station		21+01.68

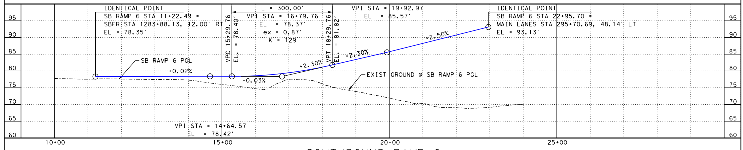

SBFR PGL
+0.27%
+0.02%
+0.50%
-0.86%
-0.86%
+0.12%
NG @ SBFR PGL
NG @ WEST ROW
BREAK
1307+38.32
74.72'
GRADE BREAK
STA = 1313+88.32
FL = 78.00'
GRADE BREAK
STA = 1316+20.70
FL = 76.00'
VPI STA = 1335+00.00
EL = 81.00'
L = 600.00'
VPI STA = 1341+00.00
EL = 83.00'
ex = -0.92'
K = 489
+0.02%
+0.33%
+0.33%
-0.89%
+0.12%
-0.71%
VPT 1338+00.00
EL. = 82.00'
VPT 1344+00.00
EL. = 80.32'
VPC 1352+00.00
EL. = 73.18'
GRADE BREAK
STA = 1339+89.60
FL = 78.79'
1310+00
1315+00
1320+00
1325+00
1330+00
1335+00
1340+00
1345+00
1350+00
VPT 310+62.00
EL. = 91.11'
VPC 311+00.00
EL. = 90.14'
L = 600.00'
VPI STA = 314+00.00
EL = 82.50'
ex = 1.95'
K = 231
VPT 317+00.00
EL. = 82.66'
281 MAIN LANES PGL
-2.55%
+0.05%
+0.23% (E,W)
DE BREAK (E,W)
= 307+50.00
= 77.82'
GRADE BREAK (E,W)
STA = 317+00.00
FL = 80.00'
-0.15% (E,W)
GRADE BREAK (E,W)
STA = 331+44.96
FL = 77.78'
PROP 3-24" RCP
+1.07% (W)
+0.87% (E)
GRADE BREAK (W)
STA = 334+00.00
FL = 80.51'
GRADE BREAK (E)
STA = 334+00.00
FL = 80.00'
-0.10% (W)
-0.10% (E)
VPC 340+00.00
EL. = 83.84
L = 600.00'
VPI STA = 343+00.00
EL = 84.00'
ex = -0.65'
K = 690
GRADE BREAK (E)
STA = 341+00.00
FL = 79.30'
+0.05%
-0.82%
GRADE BREAK (W)
STA = 340+00.00
FL = 79.91'
VPT 346+00.00
EL. = 81.55
-0.62% (E,W)
VPC 351+00.00
EL. = 77.45
310+00
315+00
320+00
325+00
330+00
335+00
340+00
345+00
350+00
VPI STA = 2313+00.00
EL = 80.50'
+0.27%
+0.02%
+0.30%
-0.28%
GRADE BREAK
STA = 2320+00.00
FL = 78.42'
PROP 3-24" RCP
GRADE BREAK
STA = 2331+55.93
FL = 75.13'
VPI STA = 2335+00.00
EL = 81.00'
+0.02%
+0.33%
+0.84%
+0.46%
GRADE BREAK
STA = 2335+00.00
FL = 78.00'
GRADE BREAK
STA = 2337+15.86
FL = 79.00'
VPC 2338+00.00
EL. = 82.00'
L = 600.00'
VPI STA = 2341+00.00
EL = 83.00'
ex = -0.89'
K = 504
+0.33%
-0.86%
-0.25%
NG @ NBFR PGL
VPT 2344+00.00
EL. = 80.43'
NBFR PGL
NG @ EAST ROW
-0.90%
GRADE BREAK
STA = 2345+00.00
FL = 77.04'
VPC 2352+00.00
EL. = 73.57'
2310+00
2315+00
2320+00
2325+00
2330+00
2335+00
2340+00
2345+00
2350+00

Curve SBRAMP8-1
P.I. Station 12+29.15
Delta = 5° 08' 00.00" (RT)
Degree = 1° 59' 59.47"
Tangent = 128.4287
Length = 256.6856
Radius = 2,865.0000
External = 2.8771
P.C. Station 11+00.72
P.T. Station 13+57.40
Curve SBRAMP8-2
P.I. Station 18+02.17
Delta = 5° 00' 00.00" (LT)
Degree = 1° 59' 59.47"
Tangent = 125.0886
Length = 250.0184
Radius = 2,865.0000
External = 2.7294
P.C. Station 16+77.08
P.T. Station 19+27.10
PROPOSED 4'x2' RCB @ 0.00%
DO NOT ENTER
WRONG WAY
SB-8
OFF RAMP
STA 367+14
EXIT
EXIT
45
MPH
18" KINDER MORGAN NATURAL GAS PIPELINE
30" KINDER MORGAN NATURAL GAS PIPELINE
EXIT XX
Floral Rd/Los Venados Dr
FM 1017
N 8° 46' 16.55" E
N 9° 35' 22.99" E
N 9° 29' 23.36" E
END PROJECT STA 385+53.20
1355+00
1360+00
1365+00
1370+00
1375+00
1380+00
1385+00
355+00
360+00
365+00
375+00
380+00
2355+00
2360+00
2370+00
2375+00
2380+00
2385+00
SBRAMP8-1
SBRAMP8-2
NBRAMP8-1
NBRAMP8-2
NORTH
69C
NORTH
281
NORTH
69C
NORTH
281
NB-8
ON RAMP
STA 367+12
Curve NBRAMP8-1
P.I. Station 11+21.75
Delta = 4° 52' 00.00" (LT)
Degree = 1° 59' 59.47"
Tangent = 121.7488
Length = 243.3513
Radius = 2,865.0000
External = 2.5857
P.C. Station 10+00.00
P.T. Station 12+43.35
EXIST 320' ROW
Curve NBRAMP8-2
P.I. Station 18+60.83
Delta = 5° 00' 00.00" (RT)
Degree = 1° 59' 59.47"
Tangent = 125.0886
Length = 250.0184
Radius = 2,865.0000
External = 2.7294
P.C. Station 17+35.74
P.T. Station 19+85.76
N 8° 46' 16.56" E
EXIT XX
Floral Rd/Los Venados Dr
1/2 Mile
SH 186
PROP 355' ROW

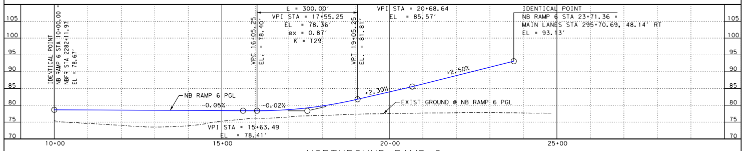

L = 600.00'
VPI STA = 1355+00.00
EL = 70.50'
ex = 0.91'
K = 492
VPT 1358+00.00
EL. = 71.48'
GRADE BREAK
STA = 1357+50.00
FL = 64.00'
GRADE BREAK
STA = 1355+89.61
FL = 65.50'
-0.89%
+0.33%
-0.71%
-2.79%
-0.94%
+1.60%
+1.06%
+1.06%
SBFR PGL
NG @ SBFR PGL
NG @ WEST ROW
GRADE BREAK
STA = 1355+68.00
FL = 68.00'
PROP 4'X2'RCB
GRADE BREAK
STA = 1360+00.00
FL = 68.00'
VPC 1365+00.00
EL. = 75.62'
GRADE BREAK
STA = 1364+00.00
FL = 72.25'
L = 600.00'
VPI STA = 1368+00.00
EL = 74.75'
ex = -0.41'
K = 1109
+0.33%
-0.21%
VPT 1358+00.00
EL. = 71.48'
VPT 1372+00.00
EL. = 73.89'
GRADE BREAK
STA = 1371+47.70
FL = 73.00'
EXIST 30" KINDER MORGAN PIPELINE
EXIST 18" KINDER MORGAN PIPELINE
L = 600.00'
VPI STA = 1375+00.00
EL = 73.25'
ex = 0.24'
K = 1872
-0.21%
+0.11%
VPT 1378+00.00
EL. = 73.57'
74.14
70.63
1355+00
1360+00
1365+00
1370+00
1375+00
1380+00
1385+00
L = 600.00'
VPI STA = 354+00.00
EL = 75.00'
ex = 0.67'
K = 673
VPT 357+00.00
EL. = 75.22'
GRADE BREAK (E,W)
STA = 356+00.00
FL = 70.00'
US 281 MAIN LANES PGL
-0.82%
+0.07%
-0.62%
+0.41% (W)
+0.34% (E)
PROP 4'X2'RCB
NG @ US 281 MAIN LANES PGL
GRADE BREAK (E)
STA = 367+00.00
FL = 74.50'
GRADE BREAK (E)
STA = 368+00.00
FL = 74.03'
EXIST 30" KINDER MORGAN PIPELINE
EXIST 18" KINDER MORGAN PIPELINE
GRADE BREAK (E)
STA = 382+00.00
FL = 73.58'
-0.03% (E)
-0.17% (W)
GRADE BREAK (W)
STA = 382+00.00
FL = 71.95'
77.16
355+00
360+00
365+00
370+00
375+00
380+00
385+00
L = 600.00'
VPI STA = 2355+00.00
EL = 71.00'
ex = 0.85'
K = 530
VPT 2358+00.00
EL. = 71.83'
GRADE BREAK
STA = 2356+00.00
FL = 65.50'
GRADE BREAK
STA = 2359+00.00
FL = 65.50'
-0.86%
+0.27%
-2.50%
+0.00%
+2.50%
GRADE BREAK
STA = 2360+00.00
FL = 68.00'
PROP 4'X2'RCB
GRADE BREAK
STA = 2360+00.00
FL = 68.00'
VPI STA = 2365+00.00
EL = 73.75'
+0.27%
+0.10%
+0.11%
EXIST 30" KINDER MORGAN PIPELINE
EXIST 18" KINDER MORGAN PIPELINE
GRADE BREAK
STA = 2374+00.00
FL = 69.52'
+0.29%
71.90
75.65
2355+00
2360+00
2365+00
2370+00
2375+00
2380+00
2385+00

RAMP PROFILES

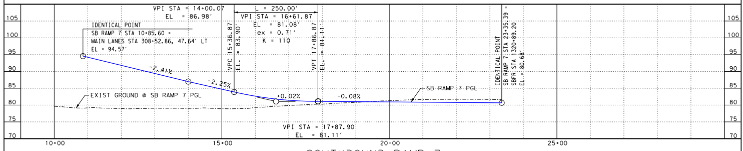

0' 50' 100' 200'
GUERRA BROTHERS MASTER PARTNERSHIP
25.21 ACRES
INST. NO. 250648
D.R.H.C.T.
GERARDO L. GUERRA
1.31 ACRES
VOL. 3138 PG. 195
D.R.H.C.T.
CARMEN E. GUERRA
YZAGUIRRE
2.61 ACRES
VOL. 3138 PG. 200
D.R.H.C.T.
JOSE E. CHAPA, JR.
FAMILY LIMITED PARTNERSHIP
17.78 ACRES
INST. NO. 2368599
D.R.H.C.T.



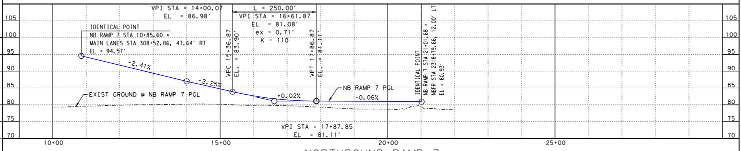
SOUTHBOUND RAMP 6
STA 292+67



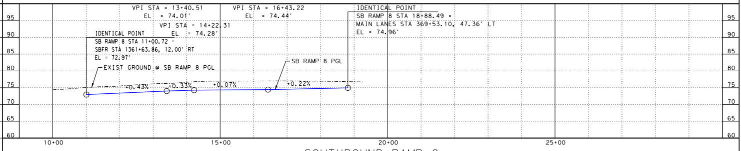
NORTHBOUND RAMP 6
STA 292+67



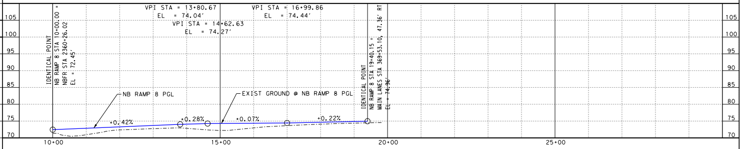
SOUTHBOUND RAMP 7
STA 311+68



NORTHBOUND RAMP 7
STA 311+68

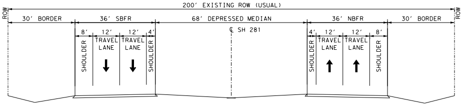


SOUTHBOUND RAMP 8
STA 367+14

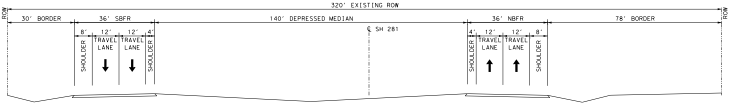


NORTHBOUND RAMP 8
STA 367+12

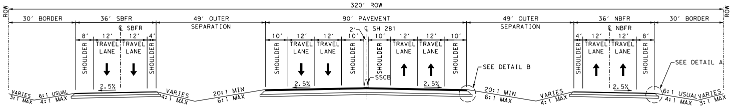
TYPICAL SECTIONS


200' EXISTING ROW (USUAL)
ROW
30' BORDER
36' SBFR
68' DEPRESSED MEDIAN
36' NBFR
30' BORDER
℄ SH 281
8'
12'
12'
4'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER

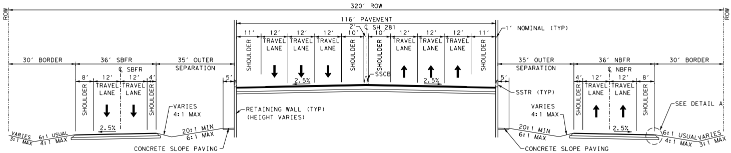
EXISTING US 281 TYPICAL SECTION
STA 35+00 TO STA 160+00


320' EXISTING ROW
ROW
30' BORDER
36' SBFR
140' DEPRESSED MEDIAN
36' NBFR
78' BORDER
℄ SH 281
8'
12'
12'
4'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER

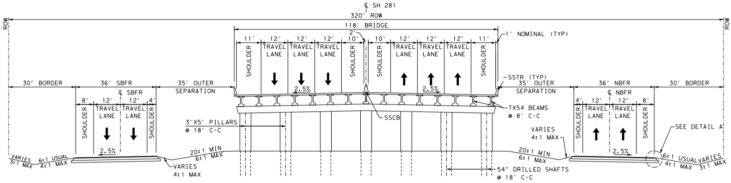
EXISTING US 281 TYPICAL SECTION
STA 160+00 TO STA 383+17


320' ROW
ROW
30' BORDER
36' SBFR
49' OUTER SEPARATION
90' PAVEMENT
49' OUTER SEPARATION
36' NBFR
30' BORDER
℄ SBFR
2'
℄ SH 281
℄ NBFR
8'
12'
12'
4'
10'
12'
12'
10'
10'
12'
12'
10'
4'
12'
12'
8'
SHOULDER
TRAVEL LANE
TRAVEL LANE
SHOULDER
SSCB
2.5%
SEE DETAIL B
SEE DETAIL A
VARIES
3:1 MAX
6:1 USUAL
4:1 MAX
VARIES
4:1 MAX
20:1 MIN
6:1 MAX
20:1 MIN
6:1 MAX
VARIES
4:1 MAX
6:1 USUAL
4:1 MAX
VARIES
3:1 MAX

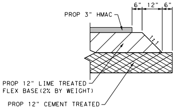
PROPOSED US 281 USUAL TYPICAL SECTION


320' ROW
ROW
116' PAVEMENT
2'
℄ SH 281
1' NOMINAL (TYP)
11'
12'
12'
12'
10'
10'
12'
12'
12'
11'
SHOULDER
TRAVEL LANE
TRAVEL LANE
TRAVEL LANE
SHOULDER
SSCB
2.5%
30' BORDER
36' SBFR
35' OUTER SEPARATION
35' OUTER SEPARATION
36' NBFR
30' BORDER
℄ SBFR
℄ NBFR
8'
12'
12'
4'
4'
12'
12'
8'
5'
5'
SSTR (TYP)
RETAINING WALL (TYP)
(HEIGHT VARIES)
VARIES
4:1 MAX
VARIES
4:1 MAX
20:1 MIN
6:1 MAX
20:1 MIN
6:1 MAX
CONCRETE SLOPE PAVING
CONCRETE SLOPE PAVING
SEE DETAIL A
VARIES
3:1 MAX
6:1 USUAL
4:1 MAX
6:1 USUAL
4:1 MAX
VARIES
3:1 MAX
2.5%

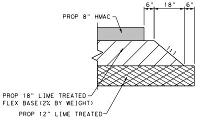
PROPOSED US 281
BRIDGE APPROACH TYPICAL SECTION


℄ SH 281
320' ROW
ROW
118' BRIDGE
2'
1' NOMINAL (TYP)
11'
12'
12'
12'
10'
10'
12'
12'
12'
11'
SHOULDER
TRAVEL LANE
TRAVEL LANE
TRAVEL LANE
SHOULDER
2.5%
SSTR (TYP)
30' BORDER
36' SBFR
35' OUTER SEPARATION
35' OUTER SEPARATION
36' NBFR
30' BORDER
℄ SBFR
℄ NBFR
8'
12'
12'
4'
4'
12'
12'
8'
TX54 BEAMS
@ 8' C-C
SSCB
3'X5' PILLARS
@ 18' C-C
VARIES
4:1 MAX
VARIES
4:1 MAX
20:1 MIN
6:1 MAX
20:1 MIN
6:1 MAX
54" DRILLED SHAFTS
@ 18' C-C
SEE DETAIL A
VARIES
3:1 MAX
6:1 USUAL
4:1 MAX
6:1 USUAL
4:1 MAX
VARIES
3:1 MAX

PROPOSED US 281
BRIDGE TYPICAL SECTION


6"
12"
6"
PROP 3" HMAC
1:1
PROP 12" LIME TREATED
FLEX BASE (2% BY WEIGHT)
PROP 12" CEMENT TREATED
SUBGRADE (3% BY WEIGHT)

DETAIL A


6"
18"
6"
PROP 8" HMAC
1:1
PROP 18" LIME TREATED
FLEX BASE (2% BY WEIGHT)
PROP 12" LIME TREATED
SUBGRADE (3% BY WEIGHT)

DETAIL B

Scale: 0' 50' 100' 200'

ROLL 3 OF 3

Date: 12/6/2017

CSJ: 0255-07-140

Texas Department of Transportation

US 281

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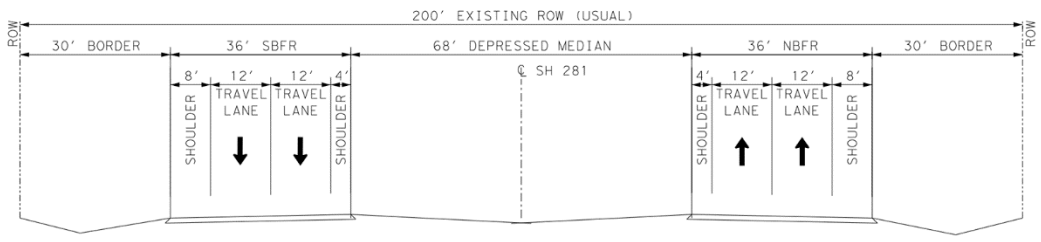
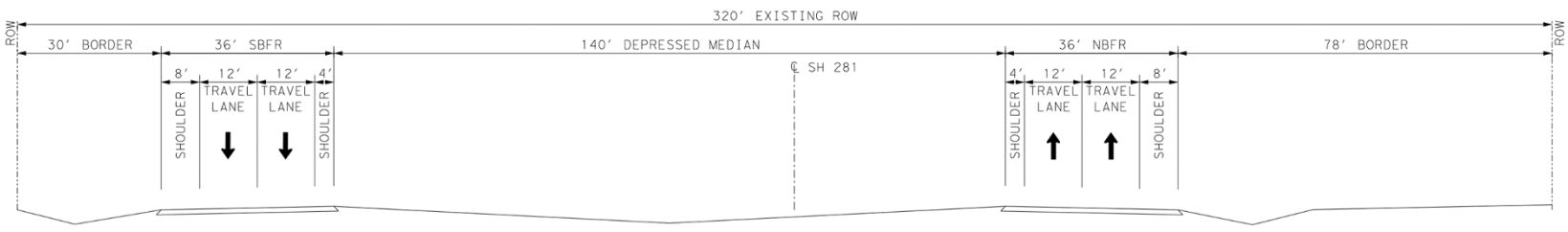
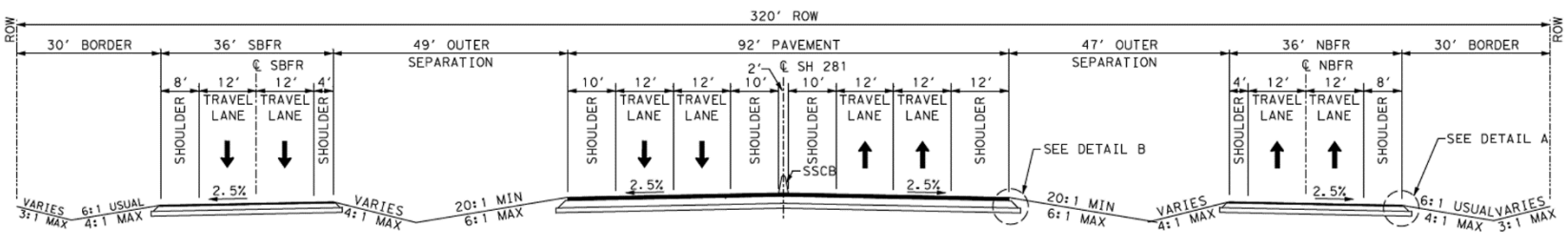
FILE: D:\cfa\2016\11013_US*281*Schematic*ENV\USTN\project\xschemB03.dgn
DATE: 12/6/2017 11:22 AM



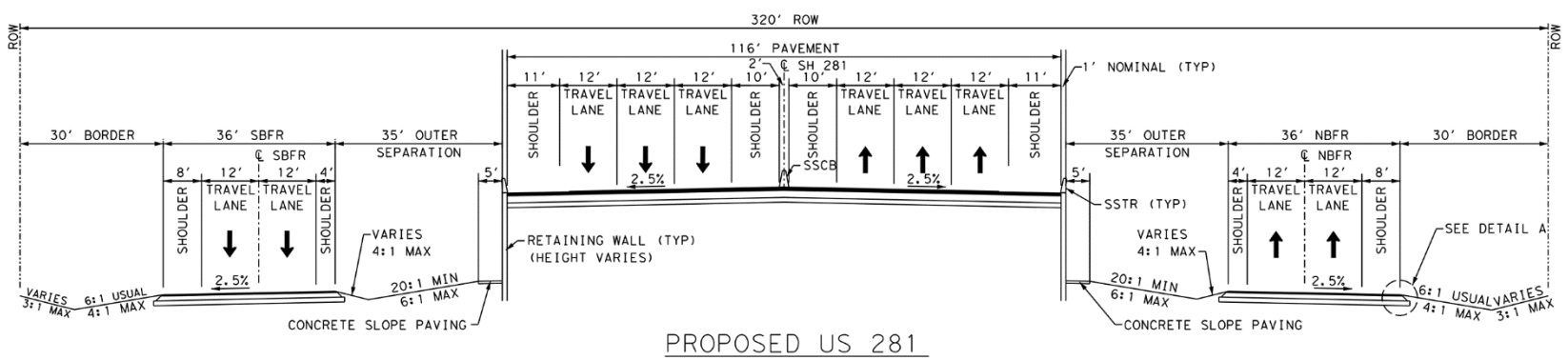
EXISTING US 281 TYPICAL SECTION
STA 35+00 TO STA 160+00



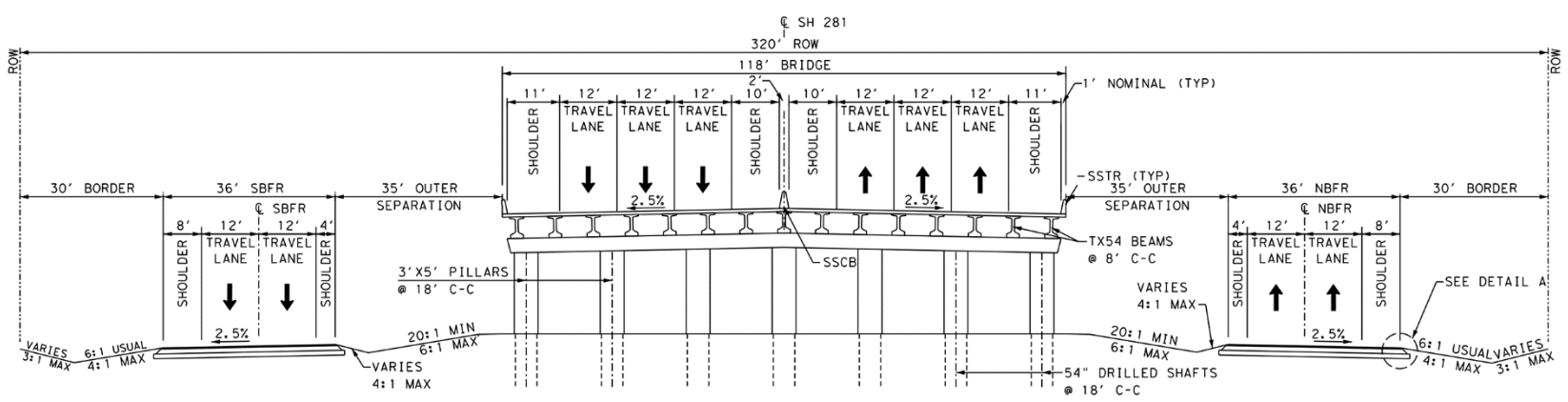
EXISTING US 281 TYPICAL SECTION
STA 160+00 TO STA 383+17



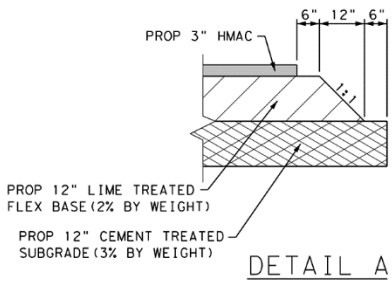
PROPOSED US 281 USUAL TYPICAL SECTION



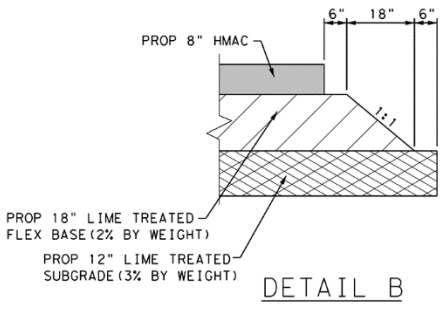
PROPOSED US 281
BRIDGE APPROACH TYPICAL SECTION



PROPOSED US 281
BRIDGE TYPICAL SECTION



DETAIL A



DETAIL B

Figure 3
Existing and Proposed Typical Sections
US 281 from SH 186 to FM 490
Hidalgo County, Texas
CSJ: 0255-07-140