SEE SHEET 2 FOR INDEX OF SHEETS

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		1

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

STATE AID PROJECT NO. C 924-00-145

FY 2023 SIGNING PROJECT (DISTRICTWIDE)
CSJ: 0924-00-145
EL PASO COUNTY, ETC.

HIGHWAY	FC	LIMITS From	LIMITS To	Length MI	Length FT
SS 1966	4	US 85	W SCHUSTER AVE	0.3	1,584.00
SH 178	3	IH 10	NEW MEXICO STATE LINE	3.0	15,840.00
SS 601	2	US 54	SL 375	7.4	39,072.00
US 54	2	SL 375	NEW MEXICO STATE LINE	23.3	123,024.00
SL 375	2	US 85	SH 20	54.4	287,232.00
IH 10	1	NEW MEXICO STATE LINE	IH 20	185.9	981,552.00
ALL ROADWAYS PERTAINING TO CONTROLLING CSJ				274.3	1,448,304.00

FOR THE CONSTRUCTION OF TRAFFIC CONTROL DEVICES
CONSISTING OF WRONG WAY DRIVING SIGNAGE IMPROVEMENTS

SS 601
DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH
A.D.T. (2021) = 66,029
A.D.T. (2041) = 92,441
PERCENT TRUCK (AADT) = 4.1

SH 178
DESIGN SPEED = 60 MPH
POSTED SPEED = 60 MPH
A.D.T. (2021) = 20,613
A.D.T. (2041) = 28,858
PERCENT TRUCK (AADT) = 11.8

SS 1966
DESIGN SPEED = 35 MPH
POSTED SPEED = 35 MPH
A.D.T. (2021) = 6,180
A.D.T. (2041) = 8,652
PERCENT TRUCK (AADT) = 3.6

US 54
DESIGN SPEED = 60 MPH
POSTED SPEED = 60 MPH
A.D.T. (2021) = 104,228
A.D.T. (2041) = 145,919
PERCENT TRUCK (AADT) = 3.7

SL 375
DESIGN SPEED = 55 MPH
POSTED SPEED = 55 MPH
A.D.T. (2021) = 25,507
A.D.T. (2041) = 35,710
PERCENT TRUCK (AADT) = 7.9

IH 10
DESIGN SPEED = 75 MPH
POSTED SPEED = 75 MPH
A.D.T. (2021) = 38,370
A.D.T. (2041) = 53,718
PERCENT TRUCK (AADT) = 24.8

IH 10
BEGIN PROJECT
RM: 0
LAT: 32.000656
LONG: -106.582779

SL 375
BEGIN PROJECT
RM: 10
LAT: 31.908198
LONG: -106.599953

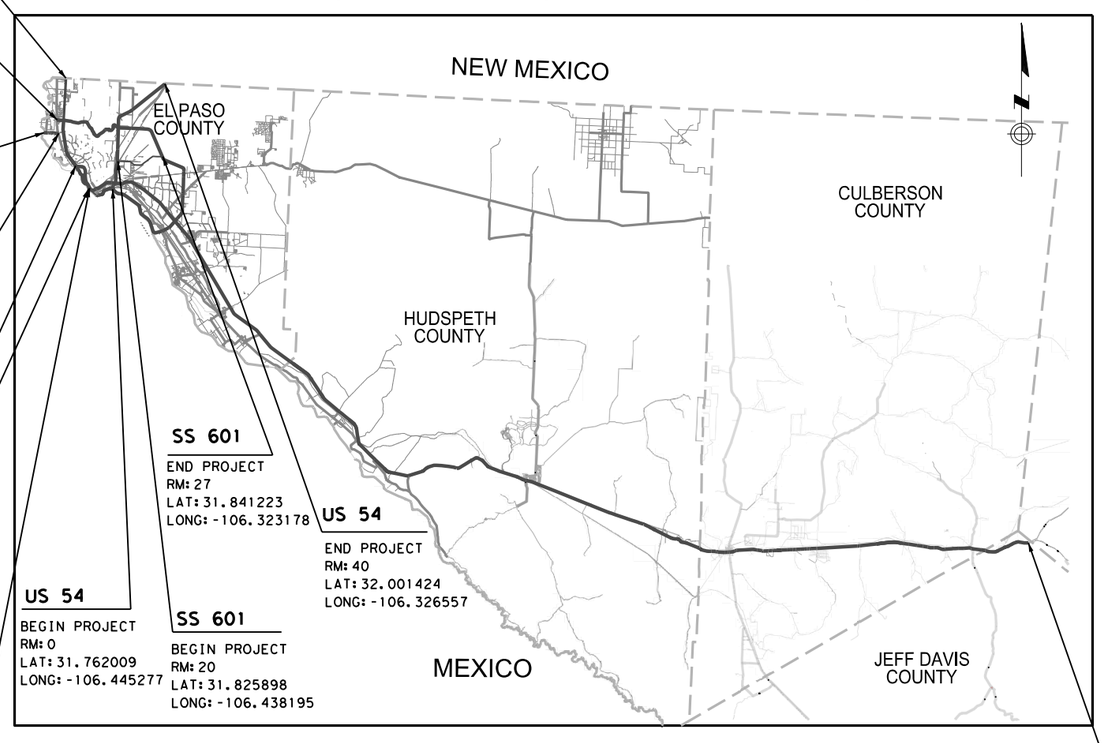
SH 178
BEGIN PROJECT
RM: 10
LAT: 31.878943
LONG: -106.631307

SH 178
END PROJECT
RM: 12
LAT: 31.883249
LONG: -106.581226

SL 375
END PROJECT
RM: 66
LAT: 31.805428
LONG: -106.541248

SS 1966
BEGIN PROJECT
RM: 346
LAT: 31.762416
LONG: -106.507815

SS 1966
END PROJECT
RM: 346
LAT: 31.765067
LONG: -106.504861



EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

TDLR INSPECTION NOT REQUIRED

REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH BC (1)- 21 THRU BC (12)- 21 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED SPECIAL LABOR PROVISIONS FOR ALL STATE CONSTRUCTION PROJECTS. (SP000---008)

STATE OF TEXAS
CRUZ ALVAREZ
134425
LICENSED
PROFESSIONAL ENGINEER
03/23/2023

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
03/23/2023

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901
915-701-8796

DATE: 3/22/2023 2:08:02 PM
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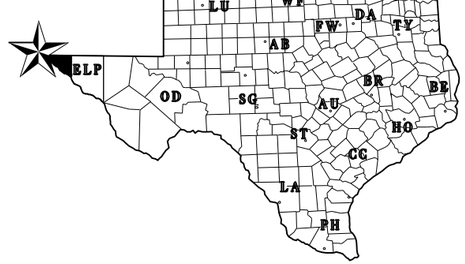
FINAL PLANS

CONTRACTOR: _____
TIME CHARGES BEGAN: _____
DATE CONTRACTOR BEGAN WORK: _____
DATE WORK WAS COMPLETED: _____
DATE WORK WAS ACCEPTED: _____
TOTAL DAYS CHARGED: _____
ORIGINAL CONTRACT AMOUNT: $ _____
AMOUNT OF CONTRACT AMENDMENTS: $ _____
FINAL CONTRACT COST: $ _____

_____ 20 _____

_____
AREA ENGINEER



KEY TO COUNTIES

Texas Department of Transportation

3/30/2023
RECOMMENDED FOR LETTING:
DocuSigned by: Eduardo Perales, P.E.
2778C60AB5E7426...
SAFETY REVIEW COMMITTEE CHAIRMAN

3/30/2023
RECOMMENDED FOR LETTING:
DocuSigned by: L. Raul Ortega Jr., P.E.
0F1...
DISTRICT DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT

3/30/2023
APPROVED FOR LETTING:
DocuSigned by: Tom Yzaguirre, P.E.
7A68C5EA0D9...
DISTRICT ENGINEER

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1	TITLE SHEET
2	INDEX OF SHEETS
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5, 5A-5D	GENERAL NOTES
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7,8	SUMMARY OF QUANTITIES
9	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)
TRAFFIC CONTROL	
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TRAFFIC CONTROL STANDARDS	
11	*TCP (1-1)-18
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ENVIRONMENTAL STANDARDS	
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STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED WITH A "*" HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

Shuaiyu Chen — 03/23/2023

NAME — DATE

INDEX OF SHEETS

SHEET 1 OF 1

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
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EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		2

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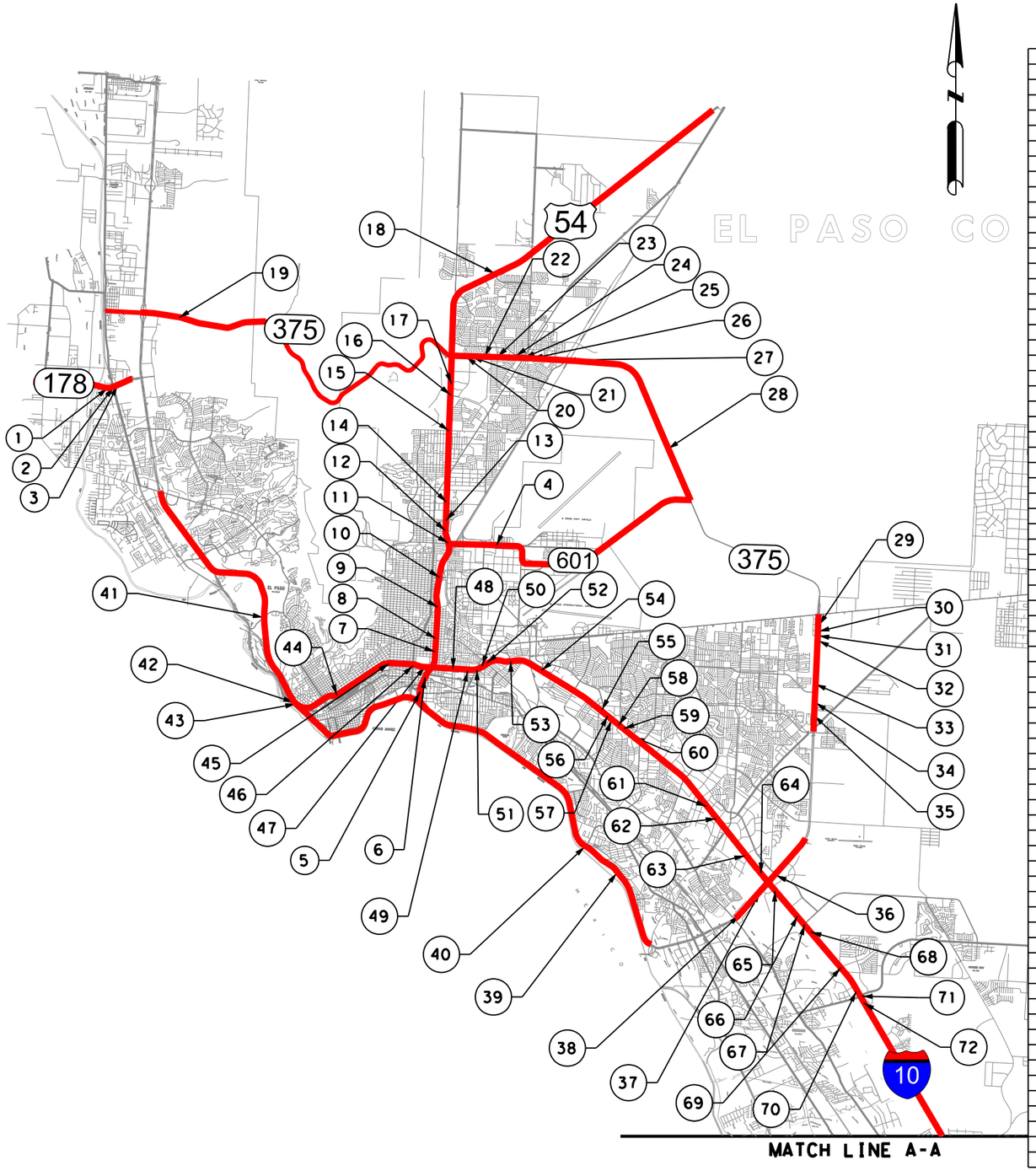

NO.	HIGHWAY	FC	LOCATIONS	SHEET NO.
1	SH 178	PRINCIPAL ARTERIAL	EB EXIT TO DONIPHAN DR	SH178 SHEET 1 OF 3
2	SH 178	PRINCIPAL ARTERIAL	DONIPHAN DR	SH178 SHEET 2 OF 3
3	SH 178	PRINCIPAL ARTERIAL	WB EXIT TO DONIPHAN DR	SH178 SHEET 3 OF 3
4	SS 601	PRINCIPAL ARTERIAL	CHAFFEE RD	SS601 SHEET 1 OF 1
5	US 54	PRINCIPAL ARTERIAL	EL PASO DR	US 54 SHEET 1 OF 14
6	US 54	PRINCIPAL ARTERIAL	ALAMEDA AVE	US 54 SHEET 2 OF 14
7	US 54	PRINCIPAL ARTERIAL	MONTANA AVE	US 54 SHEET 3 OF 14
8	US 54	PRINCIPAL ARTERIAL	TROWBRIDGE DR	US 54 SHEET 4 OF 14
9	US 54	PRINCIPAL ARTERIAL	PERSHING DR	US 54 SHEET 5 OF 14
10	US 54	PRINCIPAL ARTERIAL	CASSIDY RD	US 54 SHEET 6 OF 14
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13	US 54	PRINCIPAL ARTERIAL	NB EXIT 25	US 54 SHEET 9 OF 14
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16	US 54	PRINCIPAL ARTERIAL	DIANA DR	US 54 SHEET 12 OF 14
17	US 54	PRINCIPAL ARTERIAL	NB EXIT 29	US 54 SHEET 13 OF 14
18	US 54	PRINCIPAL ARTERIAL	NB EXIT 32	US 54 SHEET 14 OF 14
19	SL 375	PRINCIPAL ARTERIAL	PLEXXAR DR	SL 375 SHEET 1 OF 23
20	SL 375	PRINCIPAL ARTERIAL	WB EXIT 21	SL 375 SHEET 2 OF 23
21	SL 375	PRINCIPAL ARTERIAL	KENWORTHY ST	SL 375 SHEET 3 OF 23
22	SL 375	PRINCIPAL ARTERIAL	EB EXIT 22	SL 375 SHEET 4 OF 23
23	SL 375	PRINCIPAL ARTERIAL	RUSHING RD	SL 375 SHEET 5 OF 23
24	SL 375	PRINCIPAL ARTERIAL	ALCAN ST	SL 375 SHEET 6 OF 23
25	SL 375	PRINCIPAL ARTERIAL	DYER ST	SL 375 SHEET 7 OF 23
26	SL 375	PRINCIPAL ARTERIAL	EB EXIT 24	SL 375 SHEET 8 OF 23
27	SL 375	PRINCIPAL ARTERIAL	RAILROAD DR	SL 375 SHEET 9 OF 23
28	SL 375	PRINCIPAL ARTERIAL	SERGEANT MAJOR BLVD	SL 375 SHEET 10 OF 23
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30	SL 375	PRINCIPAL ARTERIAL	SB EXIT 38	SL 375 SHEET 12 OF 23
31	SL 375	PRINCIPAL ARTERIAL	EDGEMERE BLVD	SL 375 SHEET 13 OF 23
32	SL 375	PRINCIPAL ARTERIAL	NB EXIT 38	SL 375 SHEET 14 OF 23
33	SL 375	PRINCIPAL ARTERIAL	SB EXIT 39	SL 375 SHEET 15 OF 23
34	SL 375	PRINCIPAL ARTERIAL	NB EXIT 39	SL 375 SHEET 16 OF 23
35	SL 375	PRINCIPAL ARTERIAL	SB EXIT 40	SL 375 SHEET 17 OF 23
36	SL 375	PRINCIPAL ARTERIAL	ROJAS DR	SL 375 SHEET 18 OF 23
37	SL 375	PRINCIPAL ARTERIAL	SB EXIT 45A	SL 375 SHEET 19 OF 23
38	SL 375	PRINCIPAL ARTERIAL	SB EXIT 45	SL 375 SHEET 20 OF 23
39	SL 375	PRINCIPAL ARTERIAL	PLANT DR	SL 375 SHEET 21 OF 23
40	SL 375	PRINCIPAL ARTERIAL	MIDWAY DR	SL 375 SHEET 22 OF 23
41	SL 375	PRINCIPAL ARTERIAL	EXECUTIVE CENTER BLVD	SL 375 SHEET 23 OF 23
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43	IH 10	INTERSTATE	WB EXIT 18A	IH 10 SHEET 2 OF 47
44	IH 10	INTERSTATE	WB EXIT 19B	IH 10 SHEET 3 OF 47
45	IH 10	INTERSTATE	PIEDRAS ST	IH 10 SHEET 4 OF 47
46	IH 10	INTERSTATE	N COPIA ST	IH 10 SHEET 5 OF 47
47	IH 10	INTERSTATE	WB EXIT 22A	IH 10 SHEET 6 OF 47
48	IH 10	INTERSTATE	RAYNOLDS ST	IH 10 SHEET 7 OF 47
49	IH 10	INTERSTATE	EB EXIT 23B	IH 10 SHEET 8 OF 47
50	IH 10	INTERSTATE	E PAISANO DR	IH 10 SHEET 9 OF 47
51	IH 10	INTERSTATE	EB EXIT 24A	IH 10 SHEET 10 OF 47
52	IH 10	INTERSTATE	TROWBRIDGE DR	IH 10 SHEET 11 OF 47
53	IH 10	INTERSTATE	GERONIMO DR	IH 10 SHEET 12 OF 47
54	IH 10	INTERSTATE	AIRWAY BLVD	IH 10 SHEET 13 OF 47
55	IH 10	INTERSTATE	HUNTER DR	IH 10 SHEET 14 OF 47
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57	IH 10	INTERSTATE	EB EXIT 28B	IH 10 SHEET 16 OF 47
58	IH 10	INTERSTATE	N YARBROUGH DR	IH 10 SHEET 17 OF 47
59	IH 10	INTERSTATE	WB EXIT 28B	IH 10 SHEET 18 OF 47
60	IH 10	INTERSTATE	EB EXIT 29	IH 10 SHEET 19 OF 47
61	IH 10	INTERSTATE	WB EXIT 30	IH 10 SHEET 20 OF 47
62	IH 10	INTERSTATE	EB EXIT 32	IH 10 SHEET 21 OF 47
63	IH 10	INTERSTATE	WB EXIT 32	IH 10 SHEET 22 OF 47
64	IH 10	INTERSTATE	WB EXIT 33	IH 10 SHEET 23 OF 47
65	IH 10	INTERSTATE	EB EXIT 35	IH 10 SHEET 24 OF 47
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STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen

03/23/2023

PROJECT LAYOUT

SHEET 1 OF 2

TRAF·IQ
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832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
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EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		3

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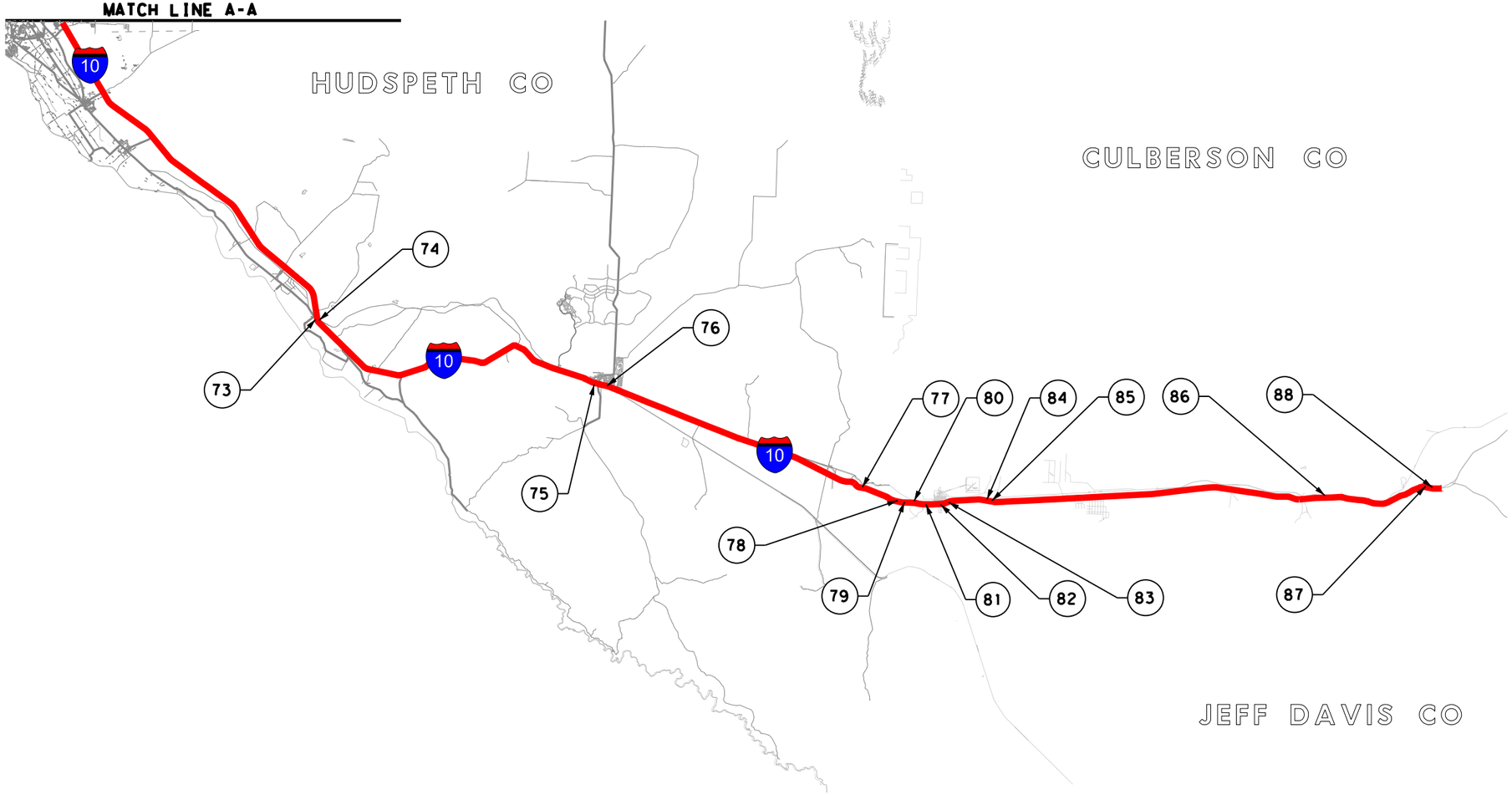

NO.	HIGHWAY	FC	LOCATIONS	SHEET NO.
73	IH 10	INTERSTATE	EB EXIT 78 TO SH 20	IH 10 SHEET 32 OF 47
74	IH 10	INTERSTATE	WB EXIT 78 TO SH 20	IH 10 SHEET 33 OF 47
75	IH 10	INTERSTATE	EB EXIT 107 TO FM 1111	IH 10 SHEET 34 OF 47
76	IH 10	INTERSTATE	WB EXIT 108	IH 10 SHEET 35 OF 47
77	IH 10	INTERSTATE	WB EXIT 133	IH 10 SHEET 36 OF 47
78	IH 10	INTERSTATE	WB EXIT TO SCENIC OVERLOOK	IH 10 SHEET 37 OF 47
79	IH 10	INTERSTATE	EB EXIT TO WEIGH STATION	IH 10 SHEET 38 OF 47
80	IH 10	INTERSTATE	EB EXIT 138	IH 10 SHEET 39 OF 47
81	IH 10	INTERSTATE	GOLF COURSE DR	IH 10 SHEET 40 OF 47
82	IH 10	INTERSTATE	US 90	IH 10 SHEET 41 OF 47
83	IH 10	INTERSTATE	ROSS DR	IH 10 SHEET 42 OF 47
84	IH 10	INTERSTATE	EB EXIT TO REST AREA	IH 10 SHEET 43 OF 47
85	IH 10	INTERSTATE	WB EXIT TO REST AREA	IH 10 SHEET 44 OF 47
86	IH 10	INTERSTATE	NELSON LETSCO RANCH RD	IH 10 SHEET 45 OF 47
87	IH 10	INTERSTATE	EB EXIT 185	IH 10 SHEET 46 OF 47
88	IH 10	INTERSTATE	WB EXIT TO PICNIC AREA	IH 10 SHEET 47 OF 47

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

PROJECT LAYOUT

SHEET 2 OF 2

TRAF·IQ
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Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		4

DATE: 3/22/2023 2:08:08 PM
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General Requirements

Maintain the entire project area in a neat and orderly manner throughout the duration of the work. Remove all construction litter and undesirable vegetation within the right of way inside the project limits. This work will be subsidiary to the various bid items.

General Project Description – This Project consist Wrong Way Driving Signage Improvements on ramps and intersections in highway SS 601, SH 178, SS 1966, US 54, SL375, AND IH 10 in the El Paso, Hudspeth, and Culberson County.

Traffic

Contact the Engineer or the City when construction operations are within 400 feet of a signalized intersection to determine/verify the location of loop detectors, conduit, ground-boxes, etc. Repair or replace any signal equipment damaged by construction operations. The method of repair or replacement shall be pre-approved and inspected. This work shall be completed at the Contractor's expense.

Inform the Engineer and the respective utility companies, when it becomes apparent that the utility lines will interfere with the work in progress.

Contractor questions on this project are to be addressed to the following individual(s):

Rene Moreno	Aldo Madrid, P.E.	Monica Ruiz, P.E.
East El Paso Area Engineer	**Director of Construction**	**District Construction Engineer**
Rene.Romero@txdot.gov	Aldo.Madrid@txdot.gov	Monica.Ruiz@txdot.gov

Questions may be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors.

All contractor questions will be reviewed by the Engineer. All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page.

The Letting Pre-Bid Q&A web page for each project can be accessed by using the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project you want to view the Q&A for and click on the link in the window that pops up.

Contact the Department's El Paso District Signal Shop at txdotelplocates@txdot.gov to request all Department utility line locates within the project limits. The Signal Shop will locate one time only. Record locates for the purpose of refreshing and maintaining all markings throughout the duration of the project.

Contact City of El Paso Streets and Maintenance Department at linespots@elpasotexas.gov and pavementcut@elpasotexas.gov to request all City of El Paso utility line locates within project limits. The City will locate one time only. Record locates for refreshing and maintaining all markings throughout the duration of the project.

Item 4 – Scope of Work

Schedule and perform all work to ensure proper drainage during the course of construction or maintenance operations. All labor, tools, equipment and supervision required, to ensure drainage, removal, and handling of water shall be considered incidental work.

Item 5 – Control of Work

Keep traveled surfaces used in hauling operations clear and free of dirt or other material.

Existing pavement, utilities, structures, etc. damaged as a result of the operations will be repaired at no additional cost to the Department.

Protect from damage and destruction all areas of the right of way, which are not included in the actual limits of the proposed construction areas. Exercise care to prevent damage to trees, vegetation, and other natural features. Protect trees, shrubs, and other landscape features from abuse, marring, or damage within the actual construction and/or fenced protection areas designated for preservation.

Restore any area disturbed or damaged to a condition "as good as" or "better than" prior to start of construction operation. This work will be at the Contractor's expense.

Item 7 – Legal Relations and Responsibilities

Comply with all requirements of the Environmental Permits Issues and Commitments (EPIC) Sheet.

Do not discharge any liquid pollutant from vehicles onto the roadside. Immediately clean spills and dispose in compliance with local, state, and federal regulations to the satisfaction of the Engineer at no additional cost to the Department.

Occupational Safety & Health Administration (OSHA) regulations prohibit operations that bring people or equipment within 10 ft. of an energized electrical line. Where workers and/or equipment may be close to an energized electrical line, notify the electrical power company and make all necessary adjustments to ensure the safety of workers near the energized line.

No significant traffic generator events identified.

Law Enforcement Personnel

Submit charge summary and invoices using the Department forms.

Patrol vehicles must be clearly marked to correspond with the officer's agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.

No payment will be made for law enforcement personnel needed for moving equipment or payment for drive time to/from the event site.

Item 8 – Prosecution and Progress

Working days will be calculated in accordance with Section 8.3.1., "**Standard** Workweek." Create and maintain a bar chart schedule.

Submit baseline schedule and obtain approval prior to beginning construction. The monthly progress payment will be held if the monthly update is not submitted.

Provide a Project Schedule Summary Report on a monthly basis along with the monthly progress schedule.

The maximum number of working days for computing the incentive credit for Substantial Completion of Work for the project will be pending days.

Failure of Substantial Completion of Work for the project within the established number of working days shown above will result in the assessment of disincentives using the daily road-user costs shown above for each working day in excess of those allowed for Substantial Completion of Work for the project.

The number of working days for final acceptance will be pending working days after Substantial Completion of Work for the project.

Item 9 – Measurement and Payment

Monthly progress payments will be made for items of work completed by the 27th day of each month. Any work completed after the 27th will be included for payment in the subsequent monthly progress payment.

Submit Material on Hand (MOH) payment requests at least **two (2)** working days before the end of the month for payment consideration on that month's estimate.

When approved, provide uniformed, off-duty law enforcement officers with marked vehicles during work that requires a lane closure. The officer in marked vehicles shall be located as approved to monitor or direct traffic during the closure. The method used to direct traffic at signalized

intersections shall be as approved. Additional officers and vehicles may be provided when approved or directed.

Complete the daily tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided.

Show proof of certification by the Texas Commission on Law Enforcement Standards.

All law enforcement personnel used in Work Zone Traffic Control shall be trained for performing duties in work zones and are required to take "Safe and Effective Use of Law Enforcement Personnel in Work Zones" WEB-BASED (Course #133119) which can be found online at the following site: **https://www.nhi.fhwa.dot.gov/**

Certificates of completion should be available to all who finish the course. These should be kept by the officers in order to substantiate completion when reporting to the work site.

Minimums, scheduling fees, etc. will not be paid; TxDOT will consider paying cancellation fees on a case by case basis.

Item 502 – Barricades, Signs, and Traffic Handling

Prior to beginning construction, the Engineer will approve the routing of traffic and sequence of work.

Additional signs and barricades, placed as directed, will be considered subsidiary to this Item.

In accordance with Section 7.2.6.1, designate, in writing, a Contractor Responsible Person (CRP) and a CRP alternate to take full responsibility for the set-up, maintenance, and necessary corrective measures of the traffic control plan. The CRP or CRP alternate must be present at site and implement the initial set up of every traffic control phase/stage, at each location, and/or each call out, for the entire duration of the project.

At the written request of the Engineer, immediately remove the CRP or CRP alternate from the project if, in the opinion of the Engineer, is not competent, not present at initial TCP set-ups, or does not perform in a proper, skillful, or safe manner. These individuals shall not be reinstated without written consent of the Engineer.

CRP and CRP alternate must be trained using Department approved training. Provide a copy of the certificate of completion to the Engineer for project records. Refer to Table 1 for Department approved Training.

Table 1

Contractor Responsible Person and Alternate

Provider	Course Number	Course Title	Duration	Notes
American Traffic Safety Services Association	TCS	Traffic Control Supervisor	2 days	
National Highway Institute	133112 133113	Design and Operation of Work Zone Traffic Control Work Zone Traffic Control for Maintenance Operations	1 day 1 day	Both courses are required to meet minimum required training.
Texas Engineering Extension Services	133112A	Design and Operation of Work Zone Traffic Control	3 days	
University of Texas Arlington Division for Enterprise Development	WKZ421	Traffic Control Supervisor	16 hours	Contact UTA for training needs.

All contractor workers involved with the traffic control implementation and maintenance must participate and complete a Department approved training course. Provide a copy of the certificate of completion to the Engineer for project records. Refer to Table 2 for Department approved training.

Table 2

Other Work Zone Personnel

Provider	Course Number	Course Title	Duration	Notes
American Traffic Safety Services Association	TCT	Traffic Control Technician	1 day	
Texas Engineering Extension Services	HWS002	Work Zone Traffic Control	16 hours	Identical to HWS-410. Counts for 3 year CRP requirement.
National Highway Institute	133116	Maintenance of Traffic for Technicians	5 hours	Web based
National Highway Institute	134109-I	Maintenance Training Series: Basics of Work Zone Traffic Control	1 hour	Free, Web based
University of Texas at Arlington, Division for Enterprise Development	WKZ100	Work Zone Safety: Temporary Traffic Control	4 hours	Note name change. Free, Web based
TxDOT/AGC Joint Development	N/A	Safe Workers Awareness Highway Construction Work Zone Hazards	16 minutes 18 minutes	Videos available through AGC of Texas offices. English & Spanish
AGC America	N/A	Highway Work Zone Safety Training	1 day	
Texas Engineering Extension Service	HWS400	Temporary Traffic Control Worker	4 hours	Contact TEEX, if interested in course
TxDOT/AGC Joint Development	N/A	Work Zone Fundamentals	10 minutes	Videos available through ACT of Texas offices. English & Spanish

Contractor may choose to train workers involved with the traffic control implementation and maintenance with a contractor developed training in lieu of Department approved training. Contractor developed training must be equivalent to the Department approved training shown in Table 2. Provide the Engineer a copy of the course curriculum for pre-approval, prior to conducting the contractor developed training. Provide the Engineer a copy of the log of attendees after training completion for project records.

Existing regulatory signs, route marker auxiliaries, guide signs, and warning signs that must be removed due to widening shall be relocated temporarily and erected on approved supports at locations shown in the plans, or as directed. This work will not be paid for directly, but considered subsidiary to this Item.

Notify the Department officials when major traffic changes are to be made, such as detours. Coordinate with the Department on all traffic changes. Advance notification for the following week's work must be made by 5 P.M. on Wednesdays.

If Law Enforcement Personnel is required by the Engineer, coordinate with local law enforcement as directed or agreed. Complete the weekly tracking form provided by the Department and submit invoices with 5% allowance for Law Enforcement payments by Contractor that agree with the tracking form for payment at the end of each month where approved services were provided.

Provide access to intersecting side roads and driveways at all times, unless otherwise directed.

Any approved change to the sequence of work or TCP, must be signed and sealed by a Contractor's Licensed Professional Engineer assuming full responsibility for any additional barricade signs and devices needed.

Use striping operations to channelize traffic into the newly completed roadway, as directed. Maintain shoulders and median areas in a condition capable of serving as emergency paths, as approved. This work will be subsidiary to this Item.

Use portable changeable message signs (PCMS) to alert public of construction two weeks prior to construction.

Use flaggers when directed. Provide two-way radio communication for all flaggers.

Place and maintain sufficient additional warning signs, beacons, delineators, and barricades to warn and guide the public of all hazards through the construction zone at all times, and as directed.

Use flashing arrow boards on all tapers for each lane closure.

Some signs, barricades, and channelization devices may not be shown at the precise or measured position. Place the barricades, devices, or signs, with approval, in positions to meet field conditions.

Fill any holes left by barricade or sign supports and restore the area to its original condition.

Use Type A flashing warning lights or delineators to mark open excavation, footings, foundations, or other obstructions near lanes that may be open to traffic, as directed.

For additional information pertaining to channelization, signing, spacing details, and flagging procedures required to regulate, warn, and guide traffic through project, refer to the "Barricade and Construction Standards," BC(1)-21 and to the current *Texas Manual on Uniform Traffic Control Devices(TMUTCD).*

Remove or cover signs that do not apply to current conditions at the end of each day's work.

Repair and/or replace all signs damaged by the public or due to weather events.

Contractor to restrict working hours to avoid peak hours.

Safety Contingency

The contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancement, to improve the effectiveness of the TCP that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Item 506 – Temporary Erosion, Sedimentation, and Environmental Controls

It is not anticipated that any erosion, sedimentation, or environmental control devices will be needed on this project. However, in the event that such controls are necessary, the Storm Water Pollution Prevention Plan (SWP3) for this project shall consist of the use of any temporary erosion control measures deemed necessary by the Engineer and as provided under this Item. Payment for the work will be determined in accordance with Article 9.7, "Payment for Extra Work and Force Account Method."

Item 644 – Small Roadside Sign Assemblies

Stake all sign locations and receive approval prior to sign placement.

The 2-1/2 inch, Schedule 10 post will meet the following requirements:

- 0.120 in. nominal wall thickness
- Seamless or electric-resistance welded steel tubing or pipe

- Steel will be HSLAS Grade 55 per ASTM A1011 or ASTM A1008

Other steel may be used, if it meets the following:

- 55,000 psi minimum yield strength
- 70,000 psi minimum tensile strength
- 20% minimum elongation in 2 in.
- Wall thickness (uncoated) to be within the range of 0.108 in. to 0.132 in. galvanization per ASTM A123 or ASTM A653 G90

For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metalizing with zinc wire per ASTM B833.

Verify all post lengths to ensure the proper sign height. Remove and replace any sign installed incorrectly. This work will be done at no expense to the Department.

Provide Texas Universal Triangular Slip Base Bolt clamp type for all signs as shown on SMD (Slip-1)-08.

As directed, some regulatory and guide signs will be relocated before construction begins. Mark and locate each reference marker perpendicular to the road and along the right of way, or as directed, prior to removal. Re-erect reference markers at their original location upon completion of construction.

All signs removed will remain property of the Department and should be return to the district office. Coordinate the return of remove signs with field engineer.

Add Red Reflective Tape/Marker on the pole facing traffic. It is subsidiary to Item 644.

Item 672 – Raised Pavement Markers

Use a pilot line for final striping and remove pilot line after all striping is complete. Removal will be in accordance with the methods specified in Item 677, “Eliminating Existing Pavement Markings and Markers,” and will be subsidiary to this Item.

Air blasting is required for pavement surface preparation.

Furnish adhesives that conform to DMS-6100, “Epoxies and Adhesives,” and DMS-6130, “Bituminous Adhesive for Pavement Markers,” for this Item.

Do not place raised pavement markers when the pavement surface temperature is below 60°F.

Removal of all existing raised pavement markers will be considered subsidiary to the various bid items.

Item 6185 – Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)

All TMA Operators must participate in a TMA workshop to be conducted by the El Paso District Safety Office, on the proper use of TMAs, prior to working on Department Right of Way (ROW). A certificate of completion will be issued to TMA Operators that successfully complete the TMA workshop. The certificate of completion must be carried by TMA Operators at all times while working on Department right of way.

Acquire the TCP and TMA Operator’s certificates of completion prior to the authorization to begin work. No time suspension will be granted, and no traffic control work will be allowed without certificates of completion.

Therefore, 80 total shadow vehicles with TMA will be required for this type of work. The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMAs needed for the project.

The supporting vehicle for the TMA shall have a minimum gross (i.e., ballasted) vehicular weight of 19,000 pounds.

Basis of Estimate for Stationary TMAs				
		TMA(Stationary)		
Phase	Standard	Required	Additional	TOTAL
CSJ: 0924-00-145		40		40
Total		40		40

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0924-00-145 **DISTRICT** El Paso **COUNTY** El Paso
HIGHWAY Various

			CONTROL SECTION JOB		**0924-00-145**	TOTAL EST.	TOTAL FINAL
			PROJECT ID		**A00130323**		
			COUNTY		**El Paso**		
			HIGHWAY		**Various**		
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	2.000		2.000	
	644-6002	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	EA	190.000		190.000	
	644-6067	IN SM RD SN SUP&AM (INST SIGN ONLY)	EA	103.000		103.000	
	644-6076	REMOVE SM RD SN SUP&AM	EA	6.000		6.000	
	672-6008	REFL PAV MRKR TY I-R	EA	2,688.000		2,688.000	
	6185-6002	TMA (STATIONARY)	DAY	40.000		40.000	
	08	CONTRACTOR FORCE ACCOUNT SAFETY CONTINGENCY (NON-PARTICIPATING)	LS	1.000		1.000	
		CONTRACTOR FORCE ACCOUNT EROSION CONTROL MAINTENANCE (NON-PARTICIPATING)	LS	1.000		1.000	
		CONTRACTOR FORCE ACCOUNT LAW ENFORCEMENT (NON-PARTICIPATING)	LS	1.000		1.000	

SUMMARY OF SIGNAGE ITEMS - WRONG WAY DRIVER DETECTION SYSTEM (SS 178)				
LOCATION	644 6002	644 6067	644 6076	6185 6002
	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	IN SM RD SN SUP & AM (INST SIGN ONLY)	REMOVE SM RD SN SUP&AM	TMA (STATIONARY)
	EA	EA	EA	DAY
SHEET 1 OF 3	2	2		
SHEET 2 OF 3	4	4		
SHEET 3 OF 3	1	2		
SUBTOTAL	7	8	0	2

SUMMARY OF SIGNAGE ITEMS - WRONG WAY DRIVER DETECTION SYSTEM (SS 601)				
LOCATION	644 6002	644 6067	644 6076	6185 6002
	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	IN SM RD SN SUP & AM (INST SIGN ONLY)	REMOVE SM RD SN SUP&AM	TMA (STATIONARY)
	EA	EA	EA	DAY
SHEET 1 OF 1	4	4		
SUBTOTAL	4	4	0	1

SUMMARY OF SIGNAGE ITEMS - WRONG WAY DRIVER DETECTION SYSTEM (US 54)				
LOCATION	644 6002	644 6067	644 6076	6185 6002
	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	IN SM RD SN SUP & AM (INST SIGN ONLY)	REMOVE SM RD SN SUP&AM	TMA (STATIONARY)
	EA	EA	EA	DAY
SHEET 1 OF 14	5		2	
SHEET 2 OF 14	2	1		
SHEET 3 OF 14	4	2		
SHEET 4 OF 14	3	1		
SHEET 5 OF 14	1			
SHEET 6 OF 14	3	1		
SHEET 7 OF 14	1	4		
SHEET 8 OF 14	3			
SHEET 9 OF 14	1			
SHEET 10 OF 14	4			
SHEET 11 OF 14	1	3		
SHEET 12 OF 14	1	3		
SHEET 13 OF 14	1	1		
SHEET 14 OF 14	4			
SUBTOTAL	34	16	2	5

SUMMARY OF SIGNAGE ITEMS - WRONG WAY DRIVER DETECTION SYSTEM (SL 375)				
LOCATION	644 6002	644 6067	644 6076	6185 6002
	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	IN SM RD SN SUP & AM (INST SIGN ONLY)	REMOVE SM RD SN SUP&AM	TMA (STATIONARY)
	EA	EA		DAY
SHEET 1 OF 23	1	4		
SHEET 2 OF 23	1			
SHEET 3 OF 23	1			
SHEET 4 OF 23	1			
SHEET 5 OF 23	2			
SHEET 6 OF 23	2			
SHEET 7 OF 23	1			
SHEET 8 OF 23	3			
SHEET 9 OF 23	1	3		
SHEET 10 OF 23	4			
SHEET 11 OF 23	1			
SHEET 12 OF 23	1			
SHEET 13 OF 23	1			
SHEET 14 OF 23	2			
SHEET 15 OF 23	1			
SHEET 16 OF 23	1			
SHEET 17 OF 23	1			
SHEET 18 OF 23	2	1		
SHEET 19 OF 23	4			
SHEET 20 OF 23	1			
SHEET 21 OF 23	3		1	
SHEET 22 OF 23	2			
SHEET 23 OF 23	2	6		
SUBTOTAL	39	14	1	5

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

SUMMARY OF QUANTITIES

SHEET 1 OF 2

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		7

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SUMMARY OF SIGNAGE ITEMS - WRONG WAY DRIVER DETECTION SYSTEM (IH 10)				
LOCATION	644 6002	644 6067	644 6076	6185 6002
	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	IN SM RD SN SUP & AM (INST SIGN ONLY)	REMOVE SM RD SN SUP&AM	TMA (STATIONARY)
	EA	EA	EA	DAY
SHEET 1 OF 47	1	2		
SHEET 2 OF 47	1	1		
SHEET 3 OF 47	2	1		
SHEET 4 OF 47	13			
SHEET 5 OF 47	1			
SHEET 6 OF 47	2			
SHEET 7 OF 47	1			
SHEET 8 OF 47	1			
SHEET 9 OF 47	3	1		
SHEET 10 OF 47	2			
SHEET 11 OF 47	3	1		
SHEET 12 OF 47	2			
SHEET 13 OF 47	1	3		
SHEET 14 OF 47	3	3		
SHEET 15 OF 47	1			
SHEET 16 OF 47	1			
SHEET 17 OF 47	1			
SHEET 18 OF 47	1			
SHEET 19 OF 47	1			
SHEET 20 OF 47	1			
SHEET 21 OF 47	1			
SHEET 22 OF 47	1			
SHEET 23 OF 47	2		1	
SHEET 24 OF 47	5			
SHEET 25 OF 47	2		1	
SHEET 26 OF 47	3			
SHEET 27 OF 47	2			
SHEET 28 OF 47	1			
SHEET 29 OF 47	4			
SHEET 30 OF 47	4			
SHEET 31 OF 47	4			
SHEET 32 OF 47	2	1		
SHEET 33 OF 47	2	1		
SHEET 34 OF 47	3	2	1	
SHEET 35 OF 47	1			
SHEET 36 OF 47	4			
SHEET 37 OF 47	2			
SHEET 38 OF 47	2			
SHEET 39 OF 47	1			
SHEET 40 OF 47	2			
SHEET 41 OF 47	4			
SHEET 42 OF 47	2			
SHEET 43 OF 47	2			
SHEET 44 OF 47	2			
SHEET 45 OF 47	1			
SHEET 46 OF 47	2			
SHEET 47 OF 47	3			
SUBTOTAL	106	16	3	27

SUMMARY OF SIGNAGE ITEMS - DNE AND WWA TABLES		
LOCATION	644 6067	672 6008
	IN SM RD SN SUP & AM (INST SIGN ONLY)	REFL PAV MRKR TY I-R
	EA	EA
PROJECT TOTAL	45	2688

SUMMARY OF SIGNAGE ITEMS - WRONG WAY DRIVER DETECTION SYSTEM (TOTAL)							
LOCATION	500 6001	502 6001	644 6002	644 6067	644 6076	672 6008	6185 6002
	MOBILIZATION	BARRICADES, SIGNS AND TRAFFIC HANDLING	IN SM RD SN SUP&AM TY10BWG(1)SA(P-BM)	IN SM RD SN SUP & AM (INST SIGN ONLY)	REMOVE SM RD SN SUP&AM	REFL PAV MRKR TY I-R	TMA (STATIONARY)
	LS	MO	EA	EA	EA	EA	DAY
PROJECT TOTAL	1	2	190	103	6	2688	40

SUMMARY OF QUANTITIES

SHEET 2 OF 2

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		8

DATE: 3/22/2023 2:08:10 PM
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DATE:
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I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1.

2.

☐ No Action Required ☒ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

☒ No Permit Required

☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)

☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1.

2.

3.

4.

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☐ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting	☐ Rock Berm	☐ Retention/Irrigation Systems
☐ Mulch	☐ Triangular Filter Dike	☐ Extended Detention Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost
☐ Erosion Control Compost	☐ Erosion Control Compost	☐ Mulch Filter Berm and Socks
☐ Mulch Filter Berm and Socks	☐ Mulch Filter Berm and Socks	☐ Compost Filter Berm and Socks
☐ Compost Filter Berm and Socks	☐ Compost Filter Berm and Socks	☐ Vegetation Lined Ditches
	☐ Stone Outlet Sediment Traps	☐ Sand Filter Systems
	☐ Sediment Basins	☐ Grassy Swales

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.
Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	Migratory Bird Treaty Act	TxDOT:	Texas Department of Transportation
NOT:	Notice of Termination	T&E:	Threatened and Endangered Species
NWP:	Nationwide Permit	USACE:	U.S. Army Corps of Engineers
NOI:	Notice of Intent	USFWS:	U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canister, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☐ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

(includes regional issues such as Edwards Aquifer District, etc.)

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

Texas Department of Transportation

Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
12-12-2011 (DS)	DIST	COUNTY		SHEET NO.
05-07-14 ADDED NOTE SECTION IV.	ELP	EL PASO, ETC.		9
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.				

CK:
DW:
CK:
DN:

TCP SELECTION TABLE

TYPE OF WORK	STANDARD SHEET	SHEET DESCRIPTION	SHEET DIAGRAM	SHEET DIAGRAM	SUGGESTED USE	APPLICABLE LOCATION NUMBER
RAMP SIGN & WRONG WAY ARROW INSTALLATION	TCP (6-4)-12	TRAFFIC CONTROL PLAN FOR FREEWAYS/EXPRESSWAYS	TCP (6-4a)	WORK SPACE ON VARIOUS EXIT RAMPS	CLOSURES ONLY ALLOWED BETWEEN 9:00 AM & 4:00 PM. TMA REQUIRED DURING WORKING HOURS. REMOVE EXIT RAMP CLOSURE DURING NON-WORKING HOURS. DO NOT CLOSE CONSECUTIVE EXIT RAMPS AT A TIME.	SIGN INSTALLATION ON: 1, 3, 13, 17, 18, 20, 22, 26, 29, 30 32, 33, 34, 35, 37, 38, 43, 44, 47, 49 51, 56, 57, 59, 60, 61, 62, 63, 64, 65 66, 68, 69, 71, 73, 74, 75, 76, 77, 78 79, 80, 84, 85, 87, 88
FRONTAGE ROAD SIGN INSTALLATION	TCP (1-1)-18	TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK	TCP (1-1a)	WORK SPACE NEAR SHOULDER CONVENTIONAL ROADS	APPLY SHOULDER CLOSURE DURING WORKING HOURS. REMOVE SHOULDER CLOSURE DURING NO-WORKING HOURS.	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15 16, 19, 21, 23, 24, 25, 27, 28, 31, 36 39, 40, 41, 42, 45, 46, 48, 50, 52, 53 54, 55, 58, 67, 70, 72, 81, 82, 83, 86

NOTES:
1. CONTRACTOR TO RESTRICT WORKING HOURS TO AVOID PEAK HOURS.
2. SEE PROJECT LAYOUT SHEETS FOR LOCATION NUMBER.
3. SEE SUMMARY OF WRONG WAY ARROWS FOR RAMP LOCATIONS.

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

TRAFFIC CONTROL

SHEET 1 OF 1

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		10

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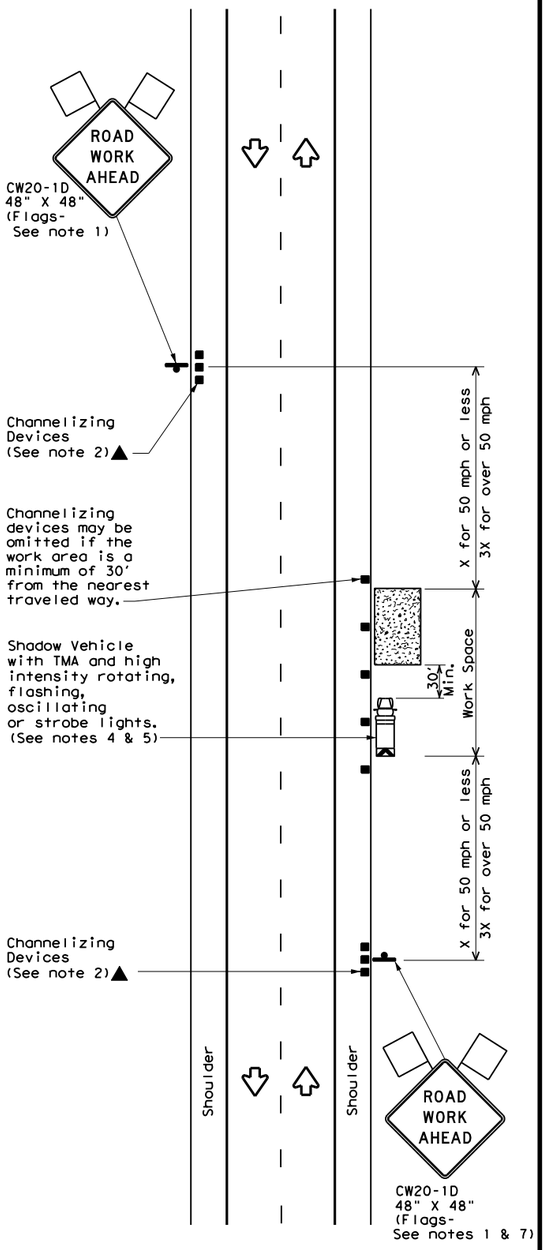
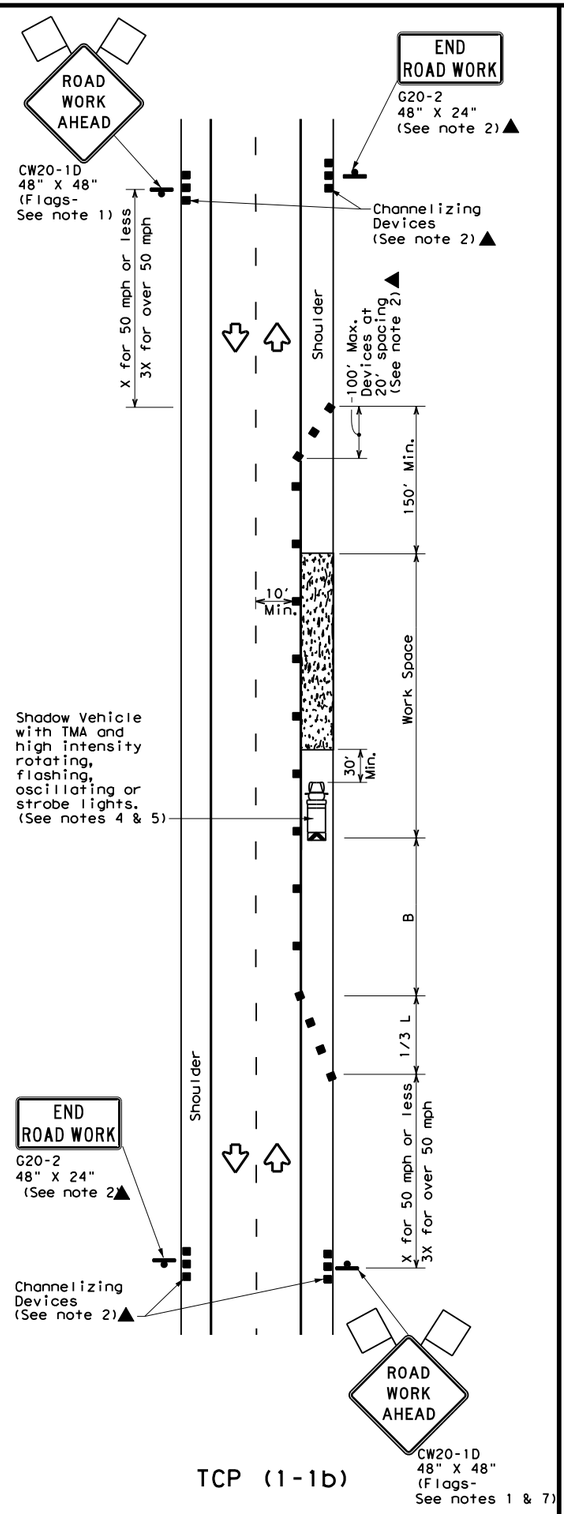


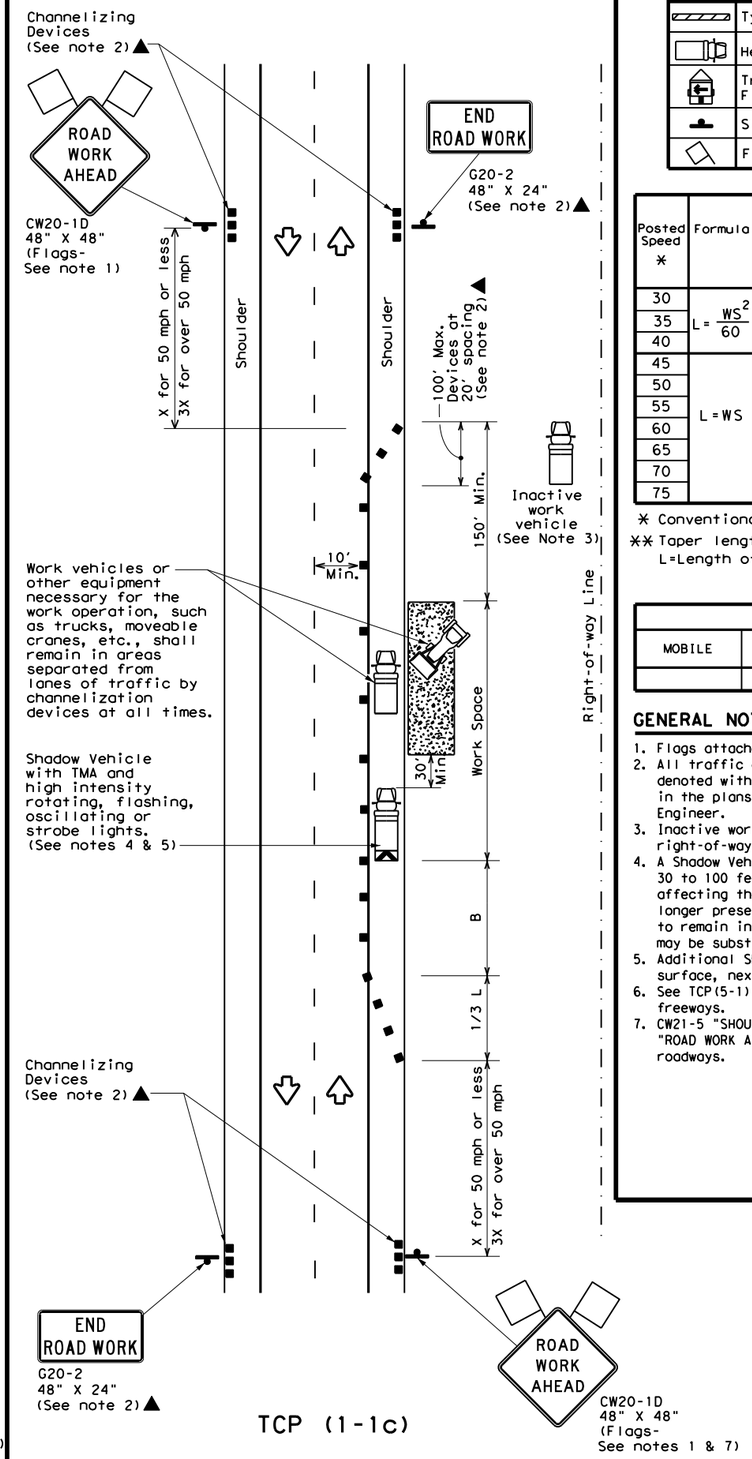
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

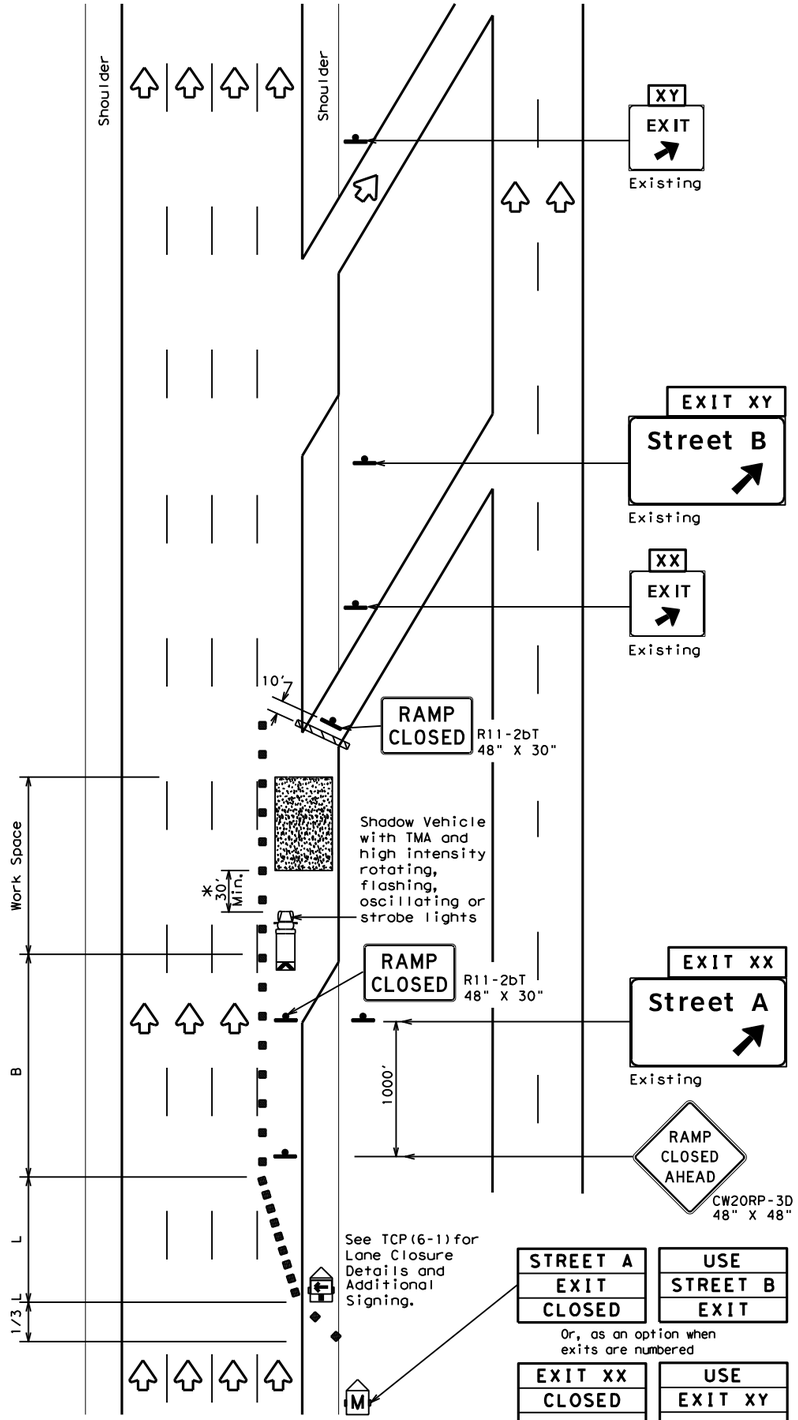
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-18

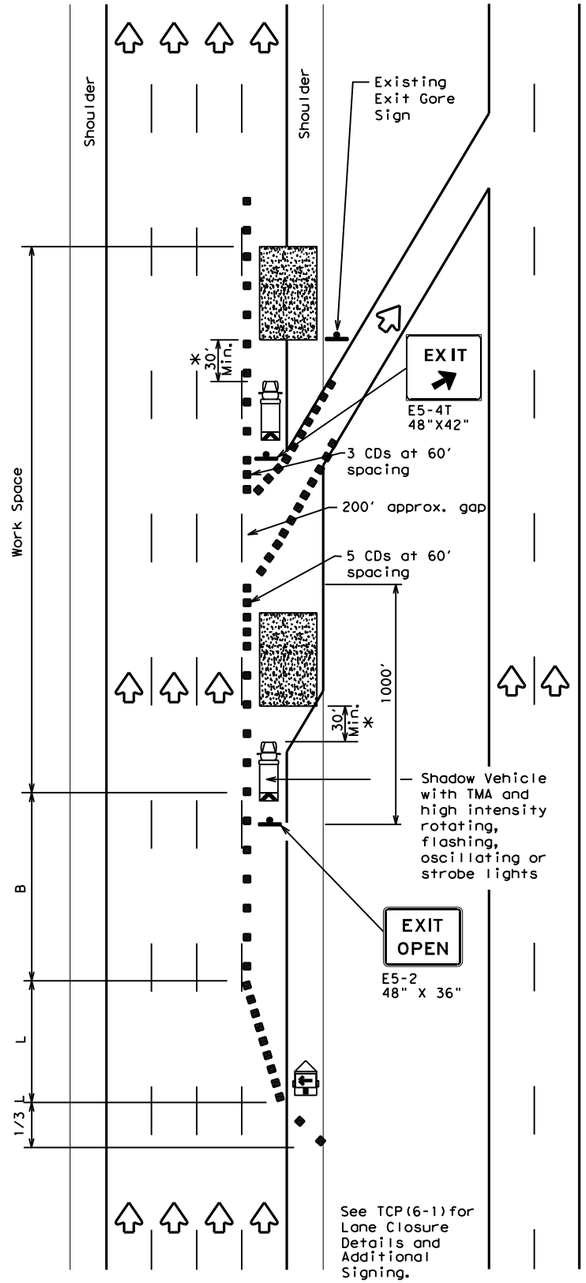
FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	0924	00	145	VAR
	DIST	COUNTY		SHEET NO.
	ELP	EL PASO, ETC.		11

DATE:
FILE:



TCP (6-4a)

EXIT RAMP CLOSED
TRAFFIC EXITS PAST CLOSED RAMP



TCP (6-4b)

EXIT RAMP OPEN

LEGEND

	Type 3 Barricade		Channelizing Devices (CDs)
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed	Formula	Minimum Desirable Taper Lengths "L" ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Suggested Longitudinal Buffer Space "B"
45	L=WS	450'	495'	540'	45'	90'	195'
50		500'	550'	600'	50'	100'	240'
55		550'	605'	660'	55'	110'	295'
60		600'	660'	720'	60'	120'	350'
65		650'	715'	780'	65'	130'	410'
70		700'	770'	840'	70'	140'	475'
75		750'	825'	900'	75'	150'	540'
80		800'	880'	960'	80'	160'	615'

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

GENERAL NOTES

1. All traffic control devices illustrated are REQUIRED. Devices denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
2. See BC Standards for sign details.

*A shadow vehicle equipped with a Truck Mounted Attenuator is typically required. A shadow vehicle equipped with a TMA shall be used if it can be positioned 30' to 100' in advance of the area of crew exposure without adversely affecting the work performance.

Additional requirements for lane closures and advance signing shall be as shown on TCP (6-1) or as directed by the Engineer.

Texas Department of Transportation
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
WORK AREA AT EXIT RAMP

TCP(6-4)-12

FILE: tcp6-4.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT Feburary 1994	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
1-97 8-98	DIST	COUNTY		SHEET NO.
4-98 8-12	ELP	EL PASO, ETC.		12

DATE:
FILE:

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

Texas Department of Transportation

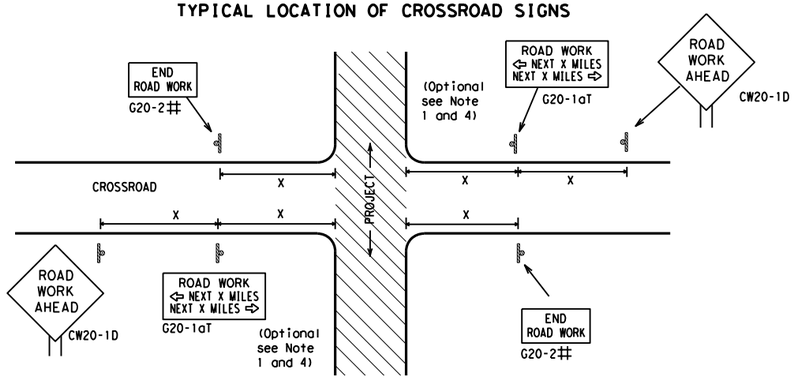
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	ELP	EL PASO, ETC.		13
5-10 5-21				

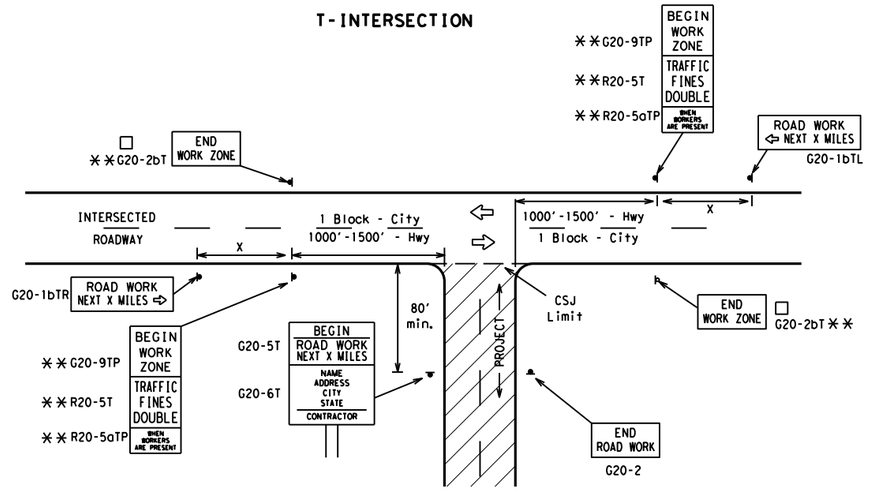
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK"(G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES"(G20-1aT)sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
*	*[3]

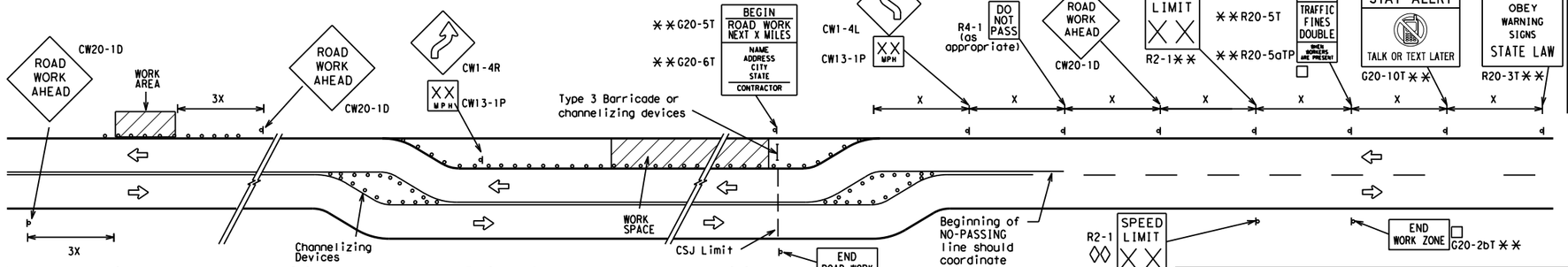
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

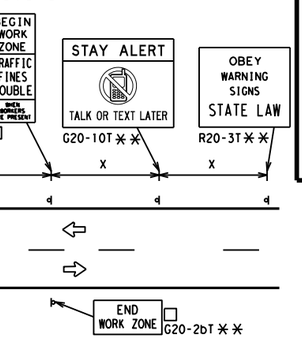
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

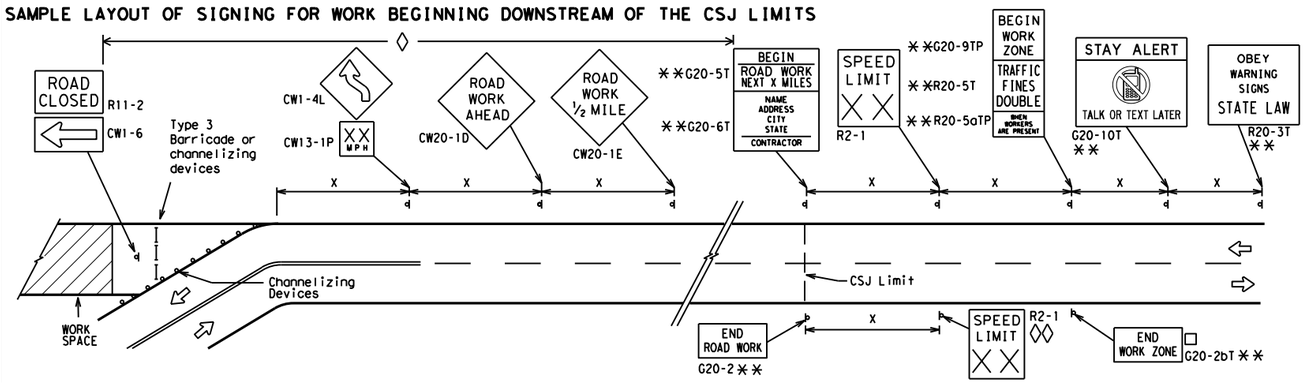


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

◊◊ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

⊢⊣	Type 3 Barricade
○ ○ ○	Channelizing Devices
▬	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0924	00	145	VAR
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ELP	EL PASO, ETC.		14

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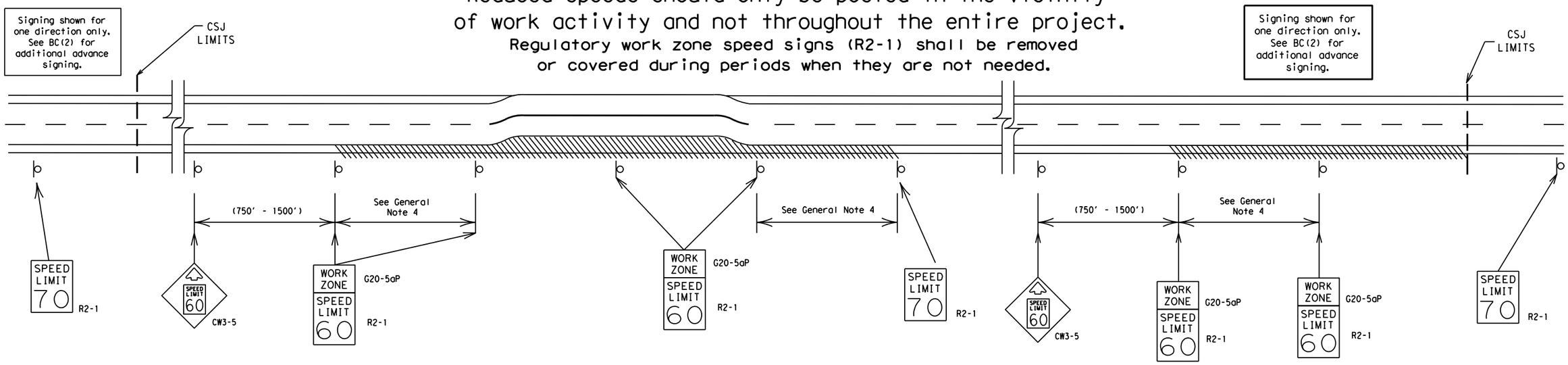
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ELP	EL PASO, ETC.		15

DATE:
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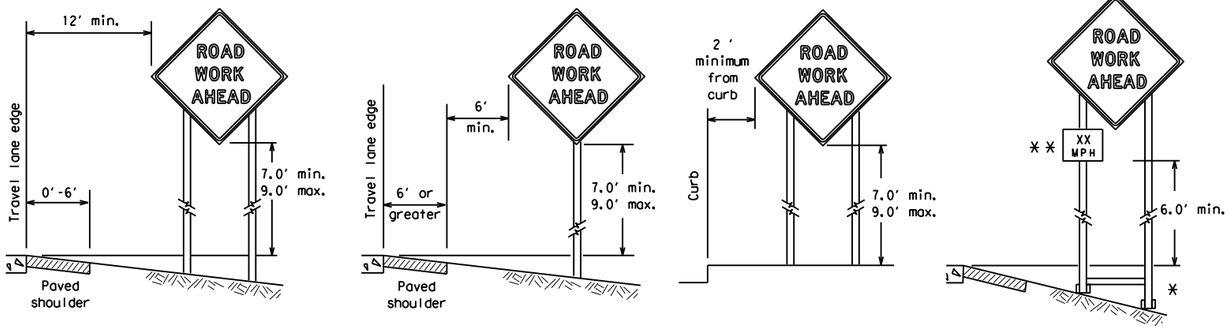
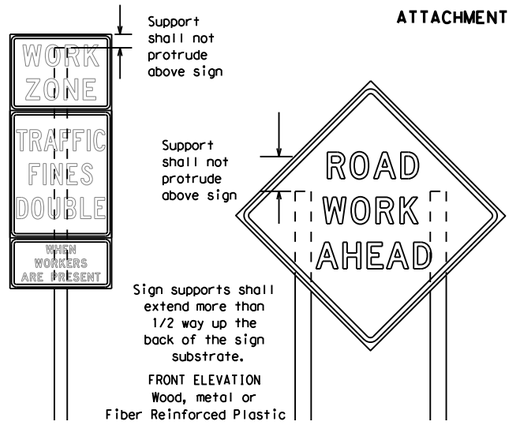
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

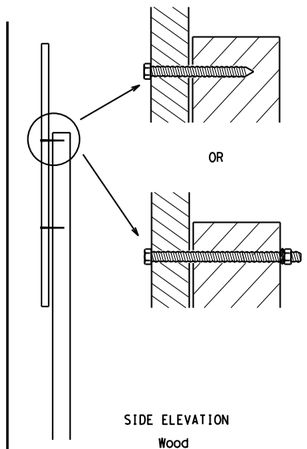


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS





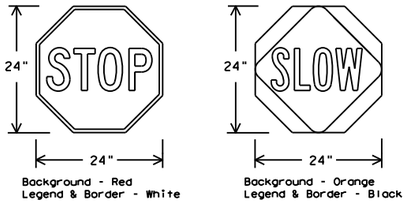
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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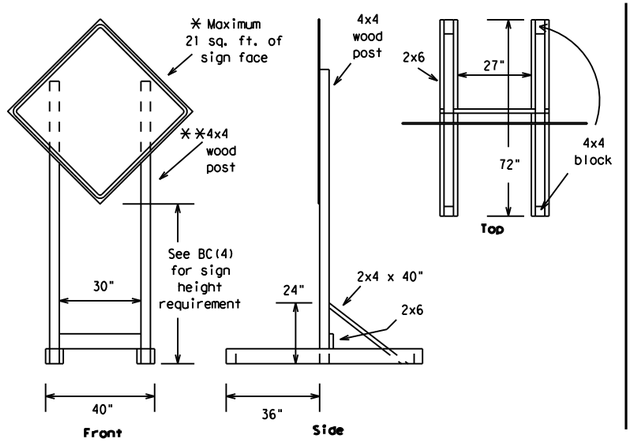
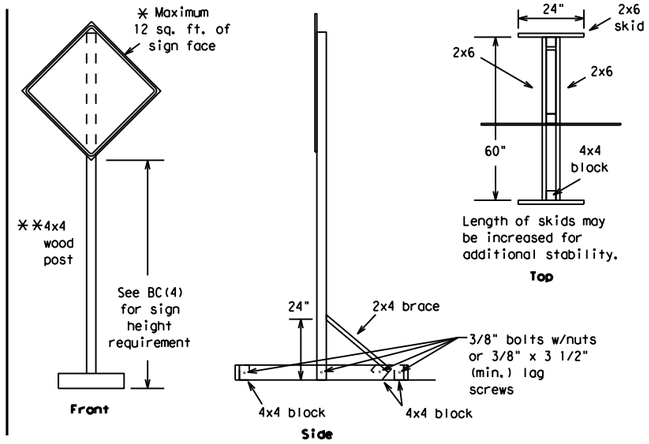
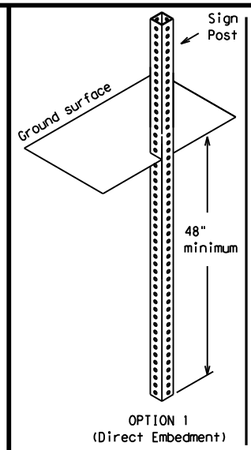
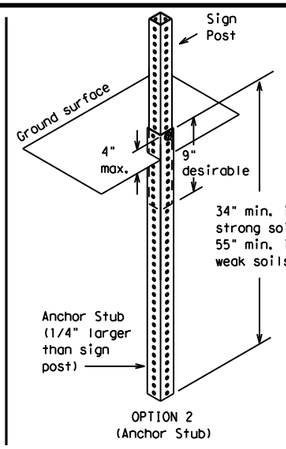


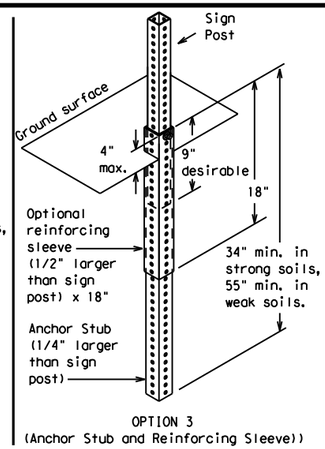


SKID MOUNTED WOOD SIGN SUPPORTS

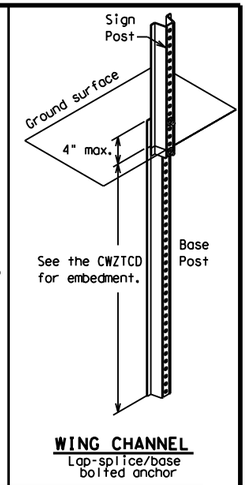
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS







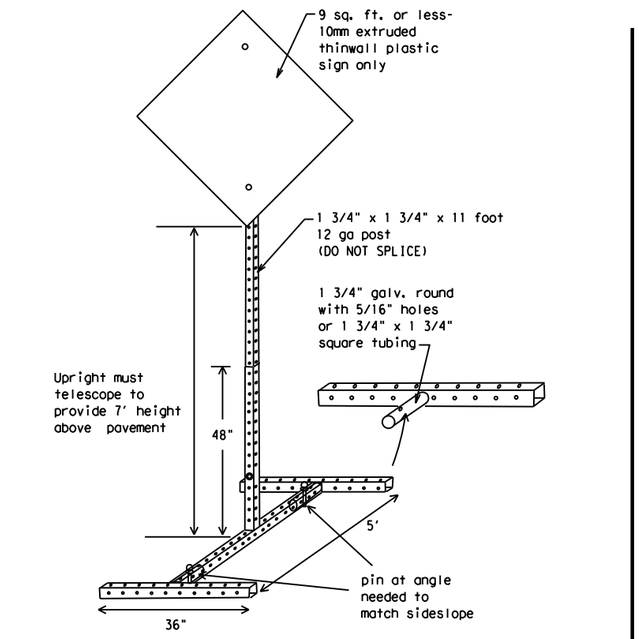
PERFORATED SQUARE METAL TUBING

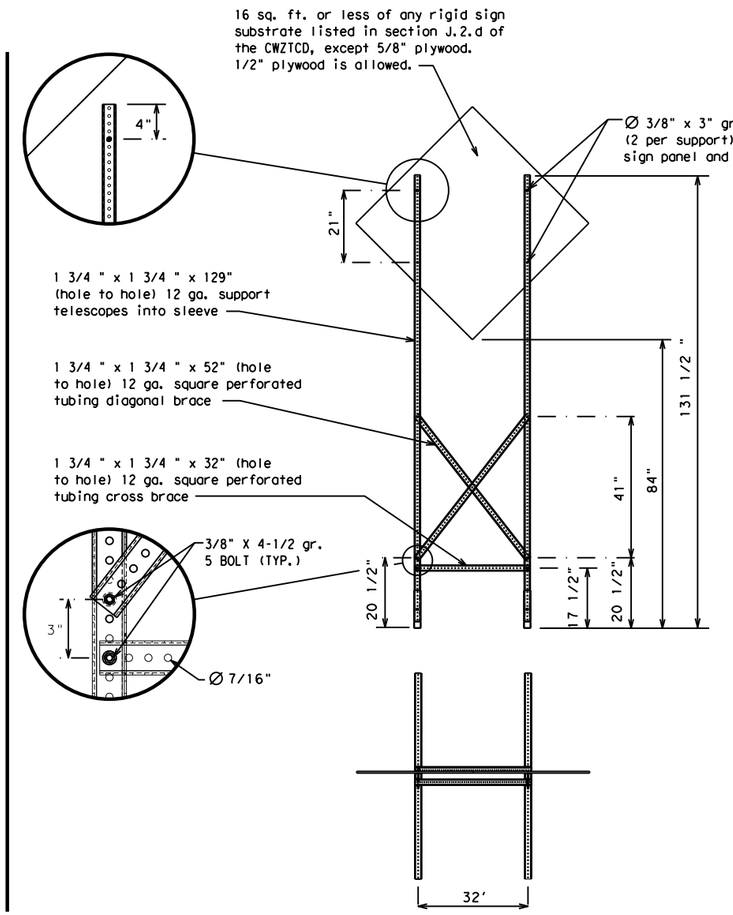


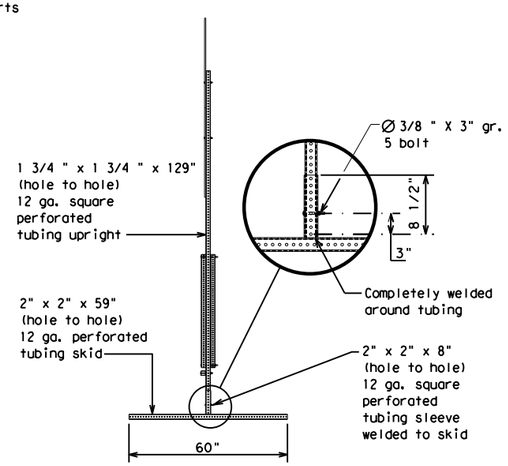
WING CHANNEL
Lap-splice/base bolted anchor

GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

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Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

Roadway designation * IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

- FREEWAY CLOSED X MILE
- FRONTAGE ROAD CLOSED
- ROAD CLOSED AT SH XXX
- SHOULDER CLOSED XXX FT
- ROAD CLSD AT FM XXXX
- RIGHT LN CLOSED XXX FT
- RIGHT X LANES CLOSED
- RIGHT X LANES OPEN
- CENTER LANE CLOSED
- DAYTIME LANE CLOSURES
- NIGHT LANE CLOSURES
- I-XX SOUTH EXIT CLOSED
- VARIOUS LANES CLOSED
- EXIT XXX CLOSED X MILE
- EXIT CLOSED
- RIGHT LN TO BE CLOSED
- MALL DRIVEWAY CLOSED
- X LANES CLOSED TUE - FRI
- XXXXXXXX BLVD CLOSED

Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- TRAFFIC SIGNAL XXXX FT
- LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE *

Location List

- AT FM XXXX
- BEFORE RAILROAD CROSSING
- NEXT X MILES
- PAST US XXX EXIT
- XXXXXXX TO XXXXXXX
- US XXX TO FM XXXX

Warning List

- SPEED LIMIT XX MPH
- MAXIMUM SPEED XX MPH
- MINIMUM SPEED XX MPH
- ADVISORY SPEED XX MPH
- RIGHT LANE EXIT
- USE CAUTION
- DRIVE SAFELY
- DRIVE WITH CARE

** Advance Notice List

- TUE-FRI XX AM- X PM
- APR XX-XX X PM-X AM
- BEGINS MONDAY
- BEGINS MAY XX
- MAY X-X XX PM - XX AM
- NEXT FRI-SUN
- XX AM TO XX PM
- NEXT TUE AUG XX
- TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

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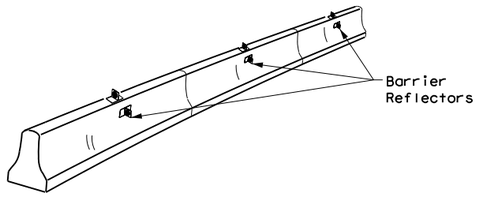
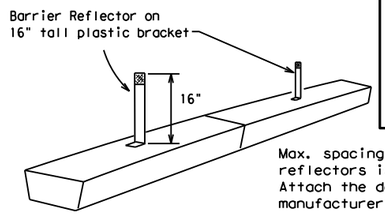
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



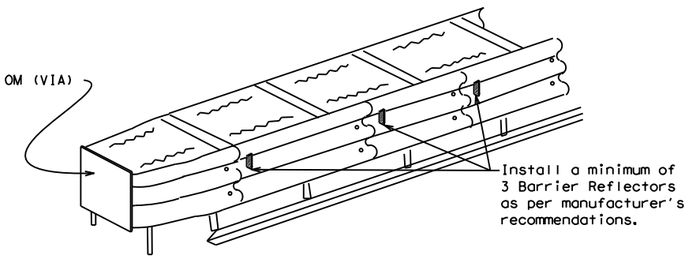
CONCRETE TRAFFIC BARRIER (CTB)

3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

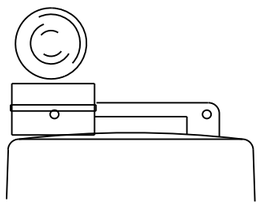
LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

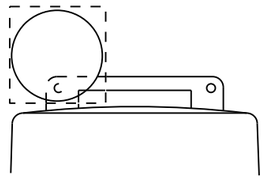
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square.Must have a yellow reflective surface area of at least 30 square inches

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

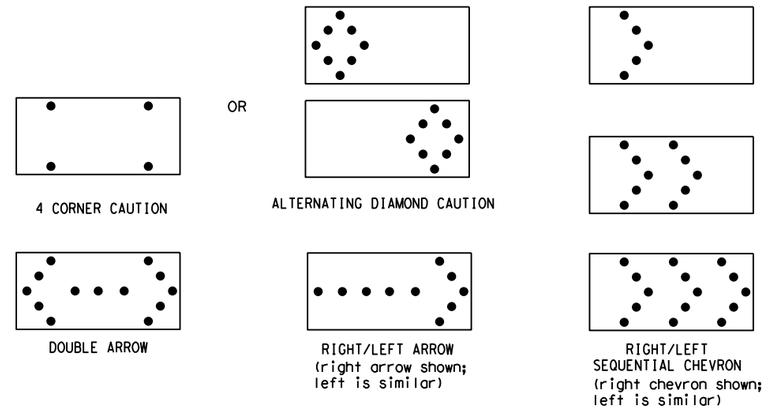
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

SHEET 7 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ELP	EL PASO, ETC.		19

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DATE:
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GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

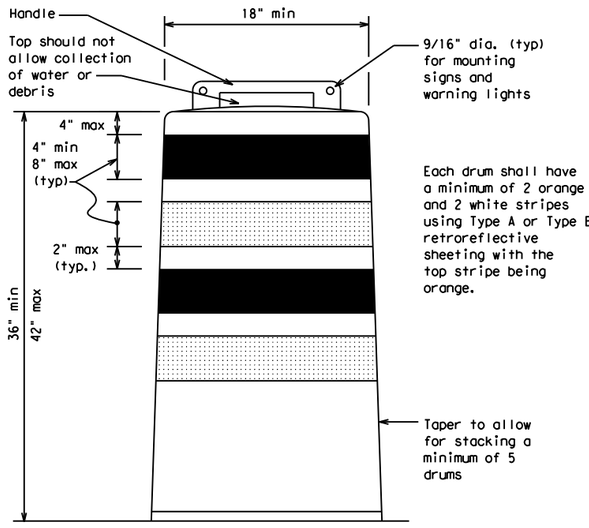
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

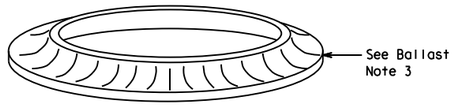
RETROREFLECTIVE SHEETING

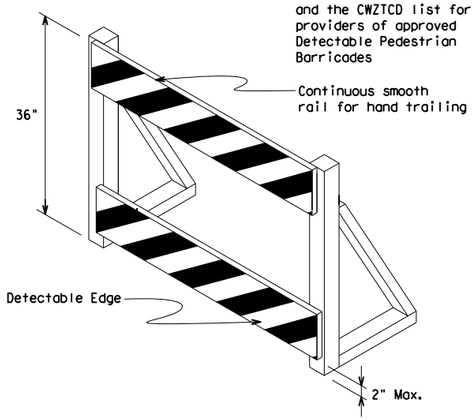
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.

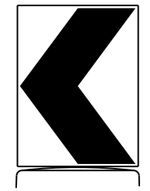




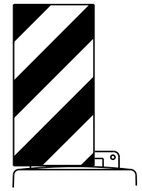


DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21	ELP	EL PASO, ETC.		20
7-13				

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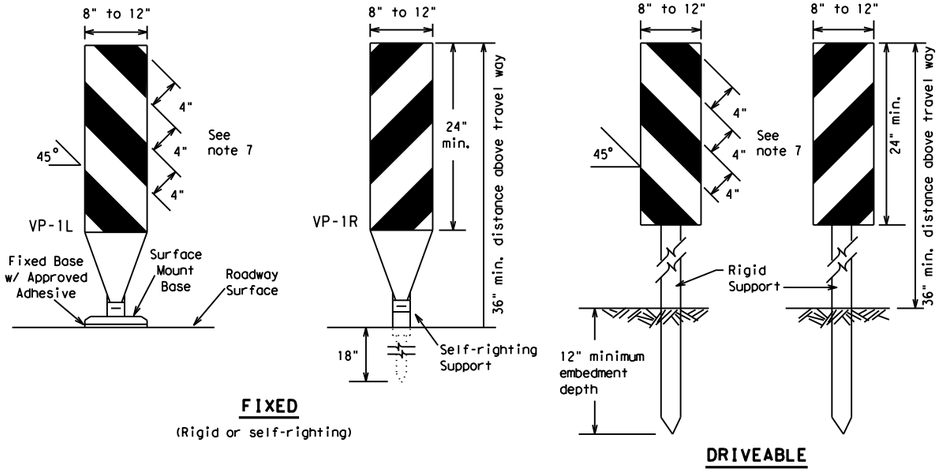
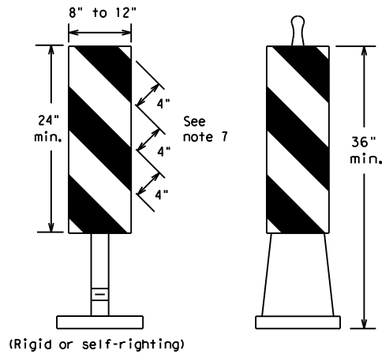


FIXED
(Rigid or self-righting)

DRIVEABLE

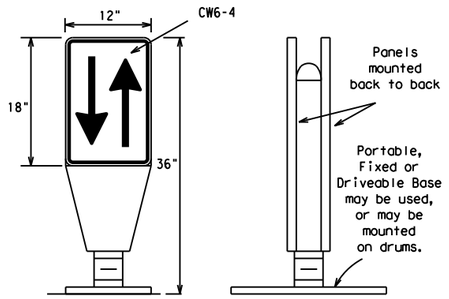


(Rigid or self-righting)

PORTABLE

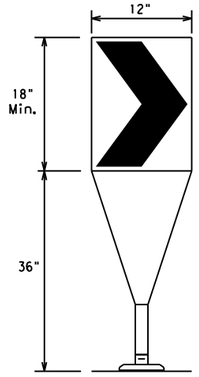
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

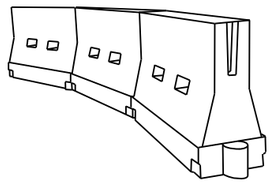
OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

** Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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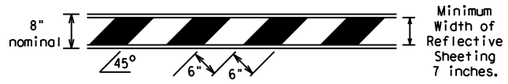
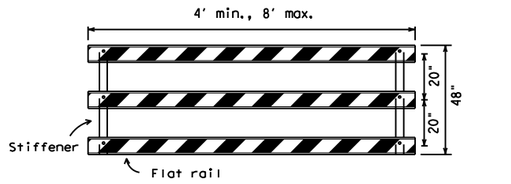
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



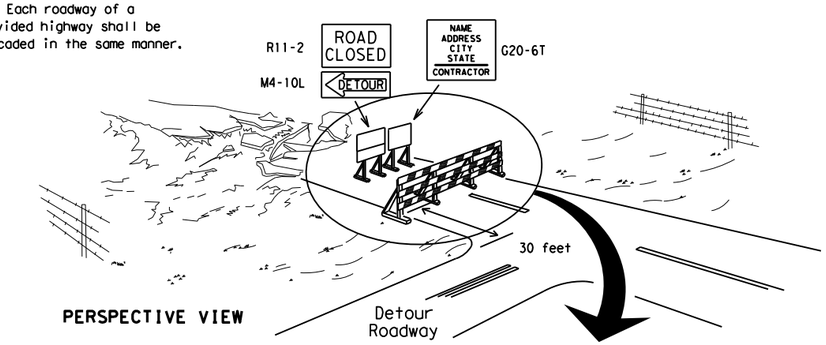
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

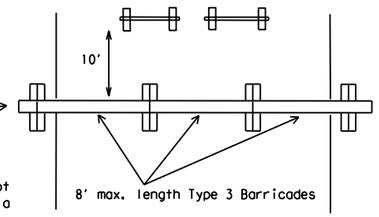
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

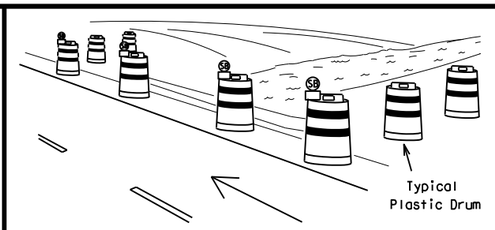
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

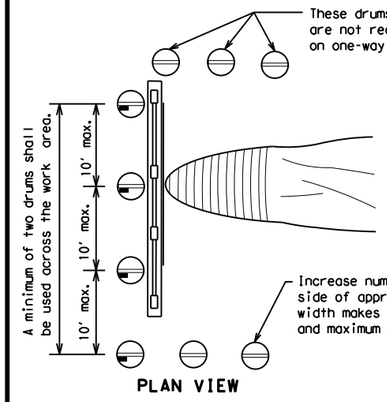
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

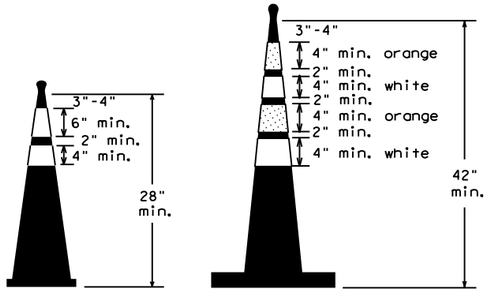
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



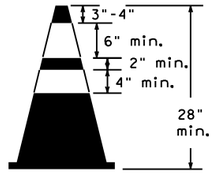
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

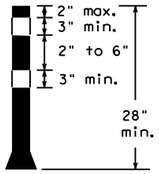
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

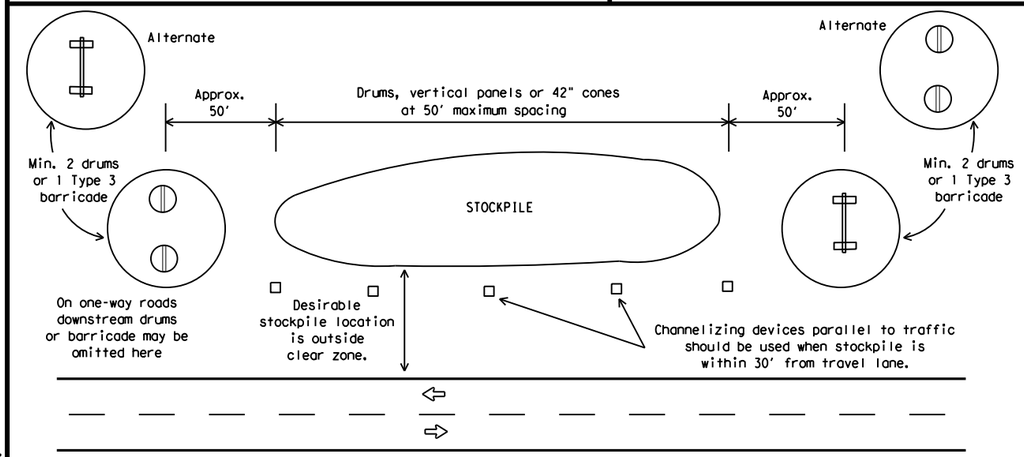


Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

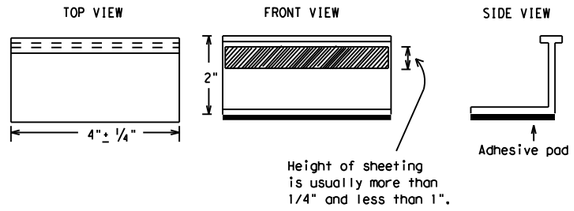
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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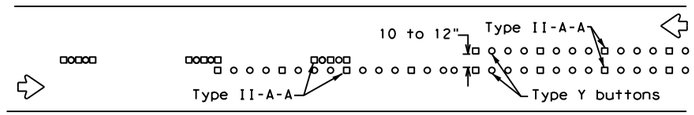
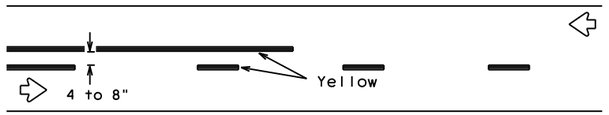
PAVEMENT MARKING PATTERNS

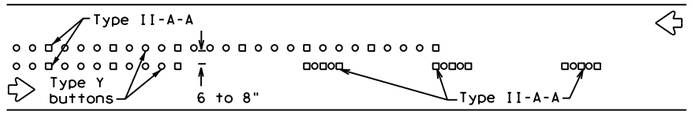
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



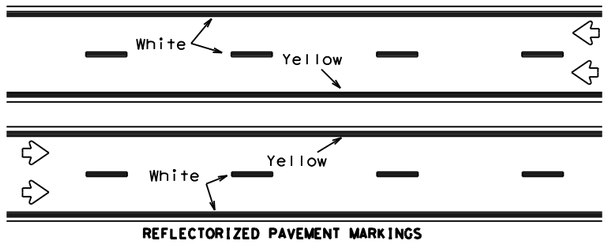
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



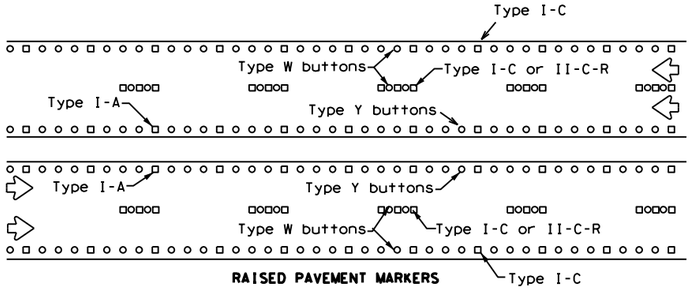
RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



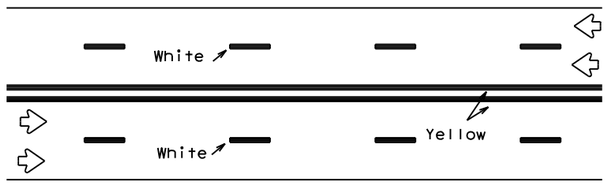
REFLECTORIZED PAVEMENT MARKINGS



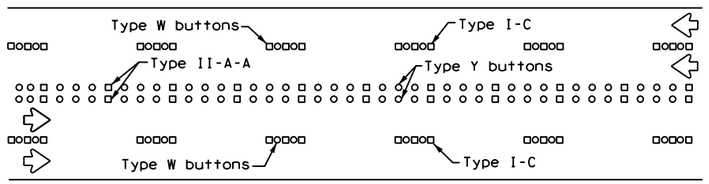
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



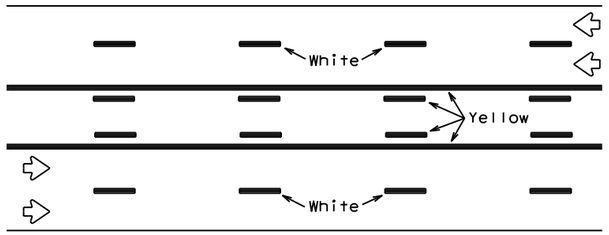
REFLECTORIZED PAVEMENT MARKINGS



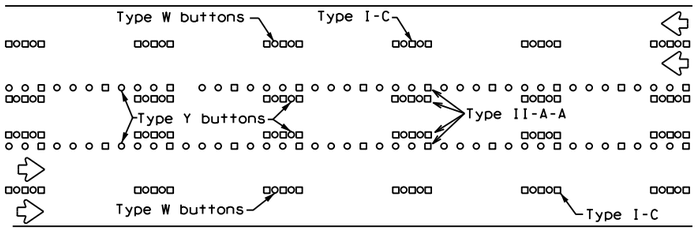
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

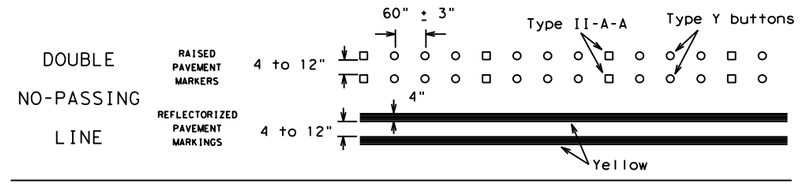
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

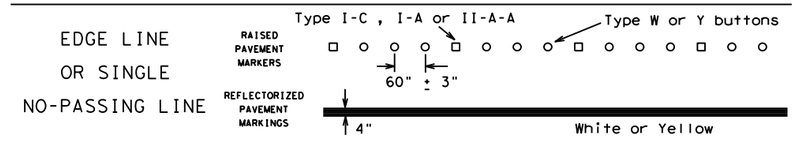
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

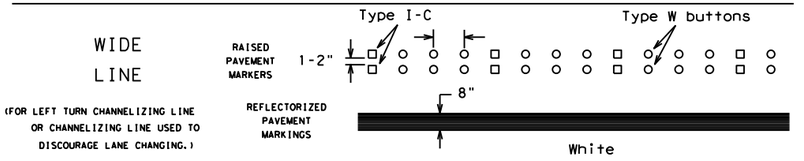


EDGE LINE OR SINGLE NO-PASSING LINE



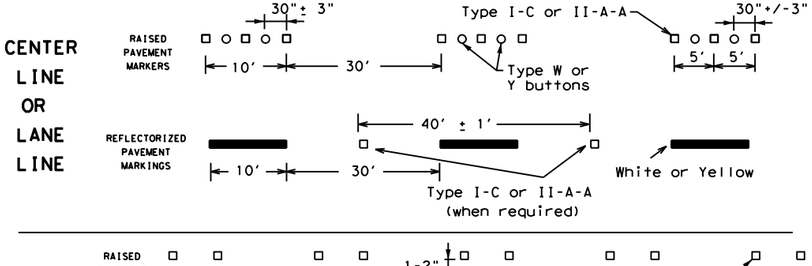
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

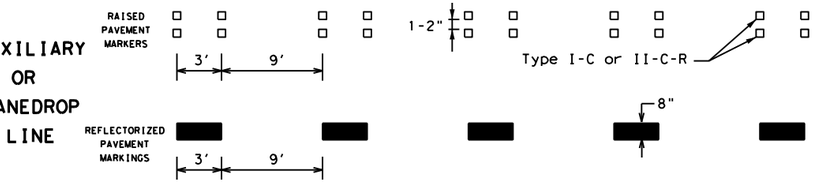


BROKEN LINES

CENTER LINE OR LANE LINE

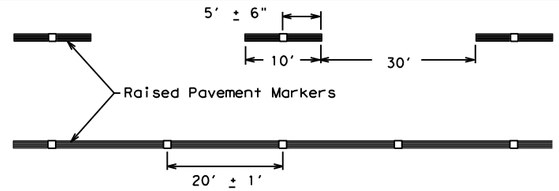


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Centerline only - not to be used on edge lines

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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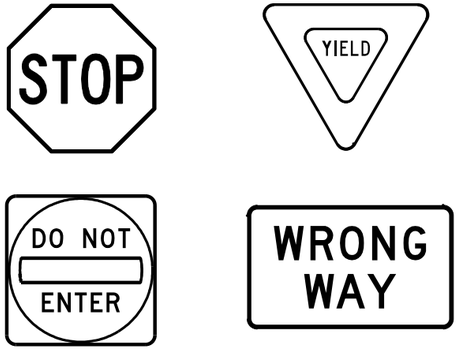
REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS

(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

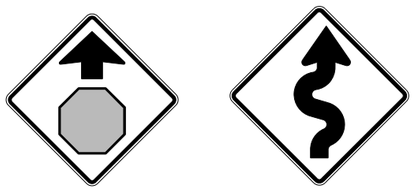
REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

GENERAL NOTES

1. Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
2. Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
3. Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
4. Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
5. White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
6. Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
8. Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

Texas Department of Transportation

Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(4)-13

FILE: tsr4-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
12-03 7-13	DIST	COUNTY		SHEET NO.
9-08	ELP	EL PASO, ETC.		25

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

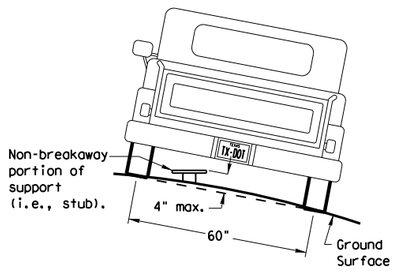
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-1) to (SLIP-3))

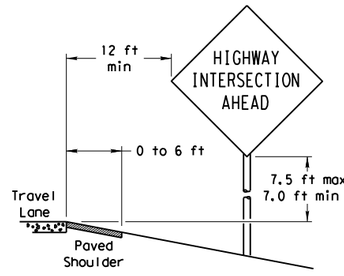
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

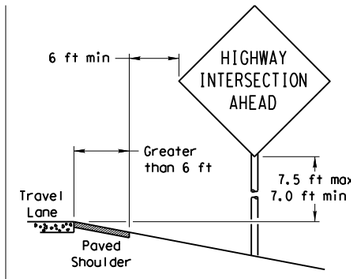
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

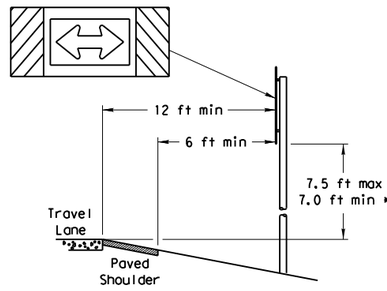
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



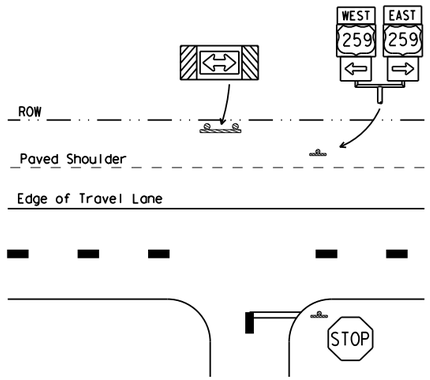
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

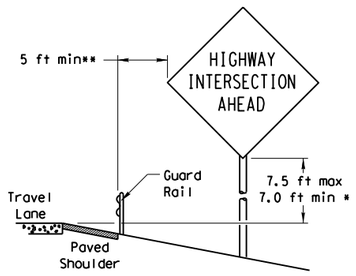
T-INTERSECTION



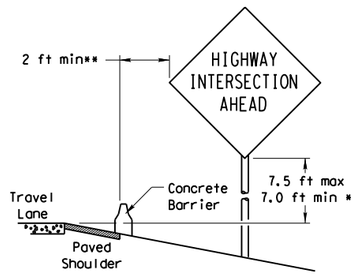
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



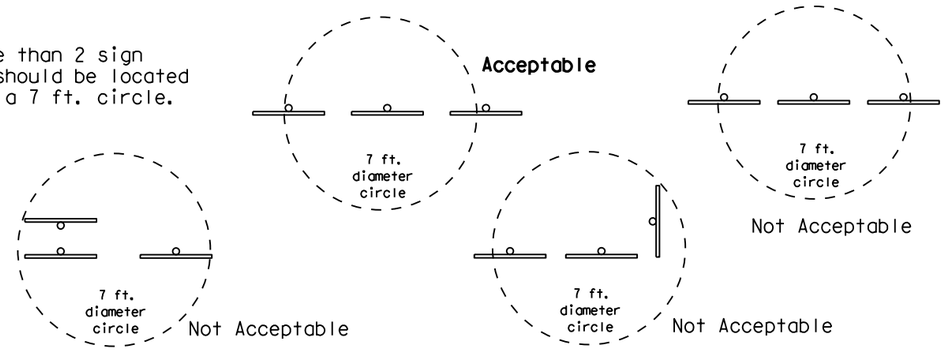
BEHIND GUARDRAIL



BEHIND CONCRETE BARRIER

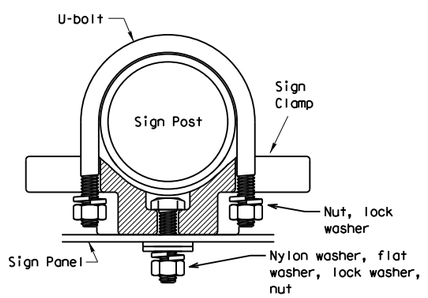
**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

No more than 2 sign posts should be located within a 7 ft. circle.



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

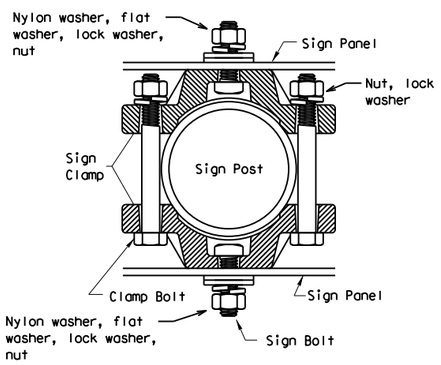


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

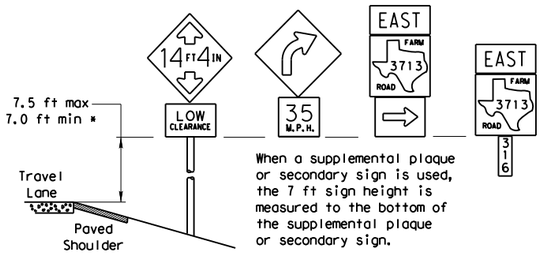
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



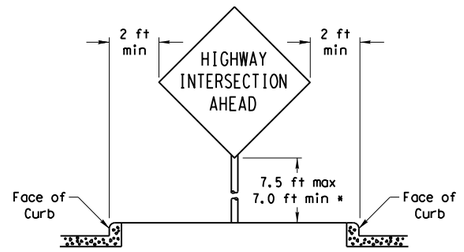
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



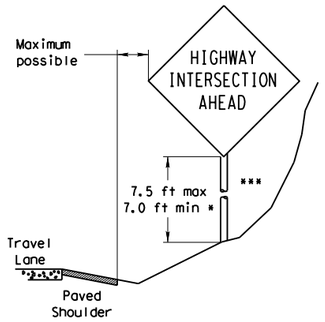
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/traffic.htm

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

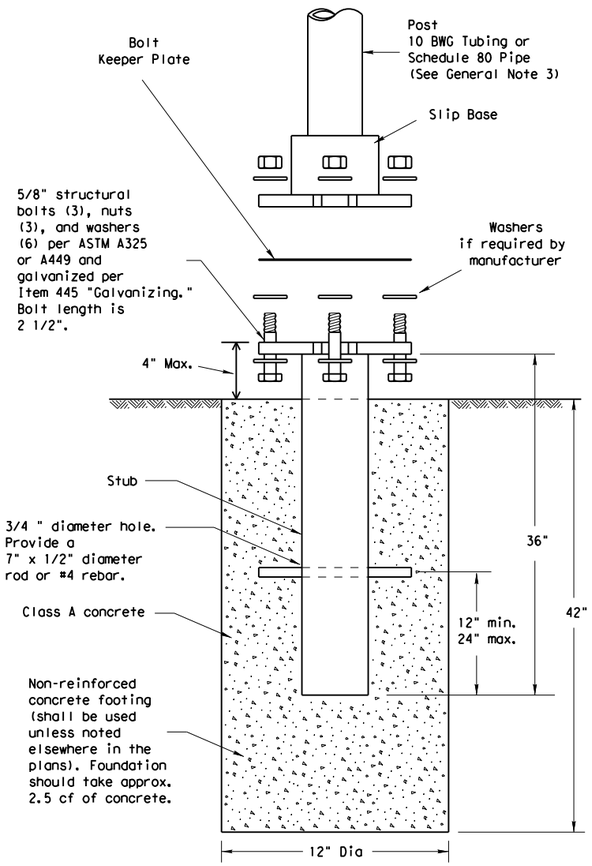
SMD(GEN)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08	0924	00	145	VAR
	DIST	COUNTY		SHEET NO.
	ELP	EL PASO, ETC.		26

DATE:
FILE:

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   - 0.134" nominal wall thickness
   - Seamless or electric-resistance welded steel tubing or pipe
   - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   - Other steels may be used if they meet the following:
     - 55,000 PSI minimum yield strength
     - 70,000 PSI minimum tensile strength
     - 20% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

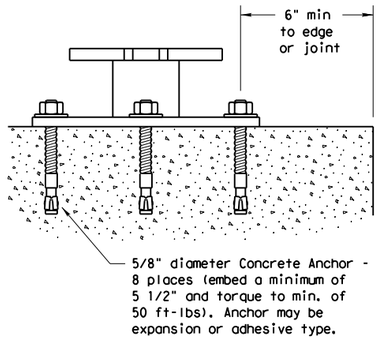
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum yield strength
     - 62,000 PSI minimum tensile strength
     - 21% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   - Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

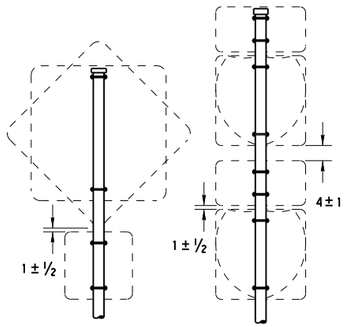
SMD(SLIP-1)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS			
9-08			

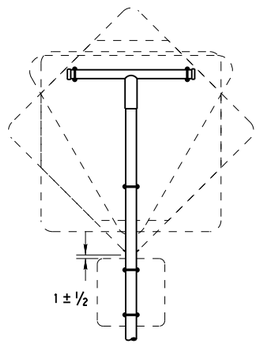
CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		27

DATE:
FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



SM RD SGN ASSM TY XXXXX(1)XX(P)



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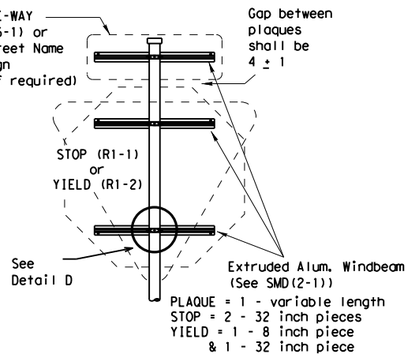

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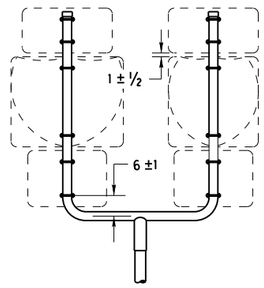
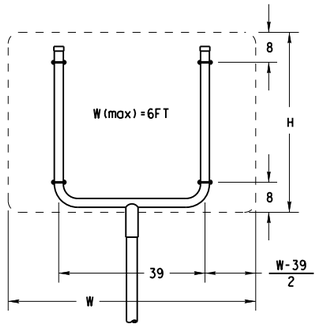
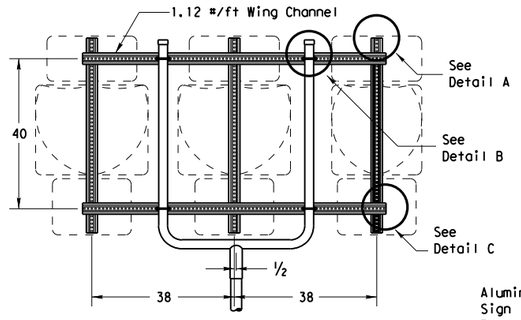


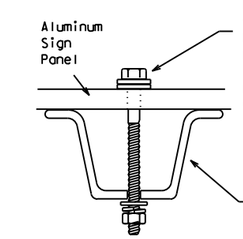
SM RD SGN ASSM TY XXXXX(1)XX(U)



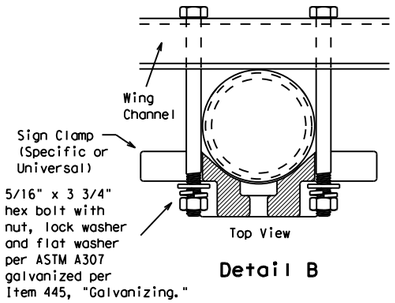
SM RD SGN ASSM TY XXXXX(1)XX(U)



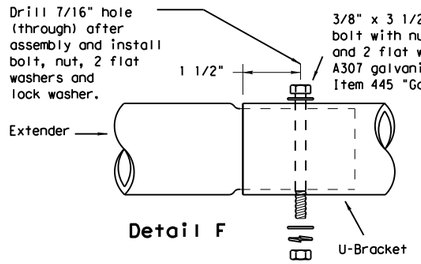
SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)



Detail A

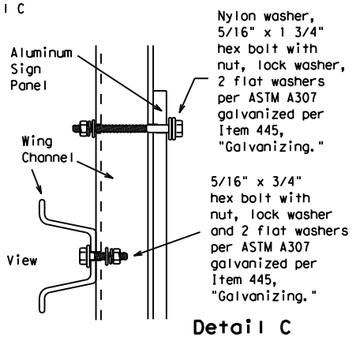


Detail B

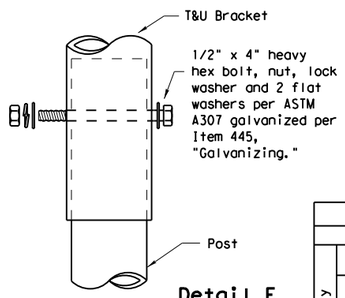


Detail F

Splices shall only be allowed behind the sign substrate.



Detail C



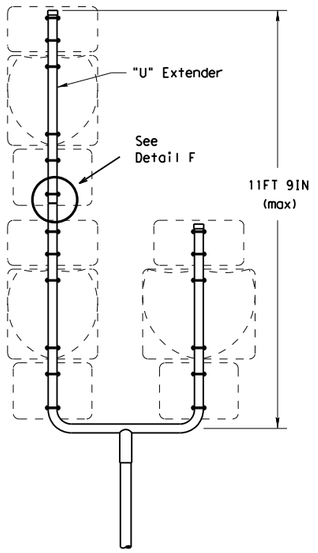
Detail E

GENERAL NOTES:

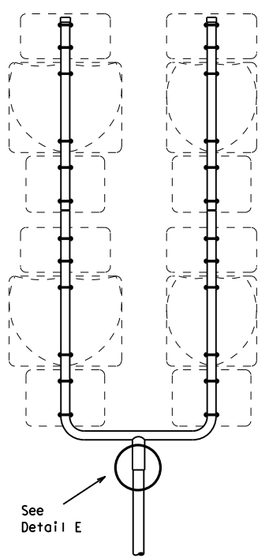
1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.



SM RD SGN ASSM TY S80(1)XX(U-1EXT)



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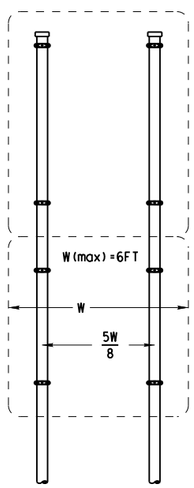

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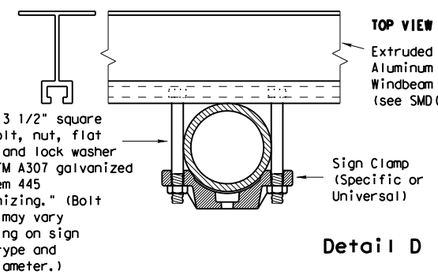
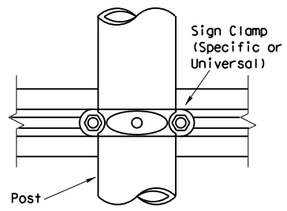
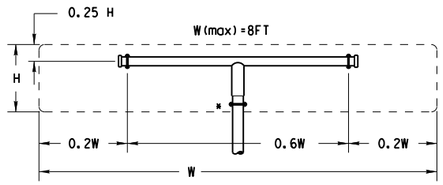


Detail D



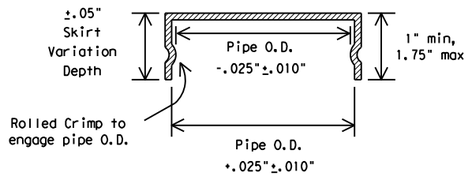
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



All dimensions are in english unless detailed otherwise.

SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

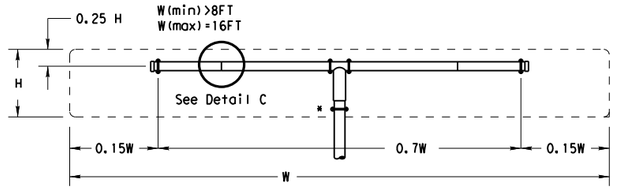
SMD(SLIP-2)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		28

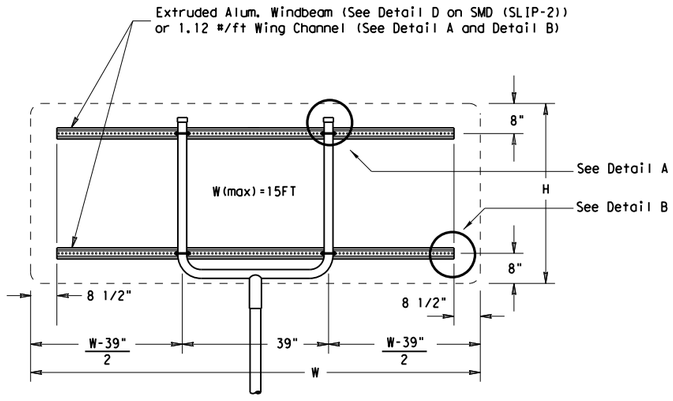
9-08 REVISIONS

DATE:
FILE:

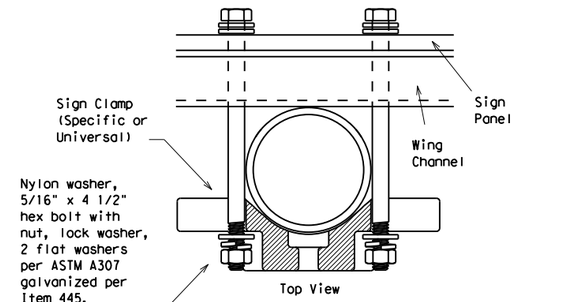
DATE:
FILE:



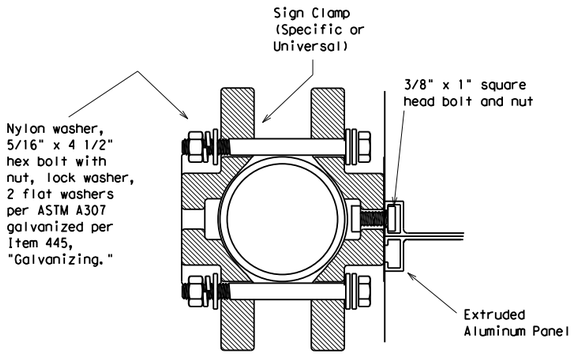
SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)



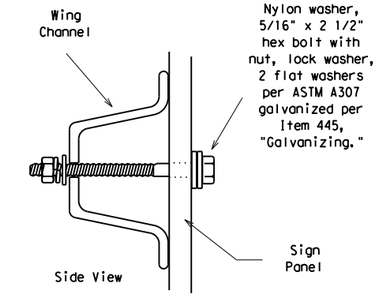
SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



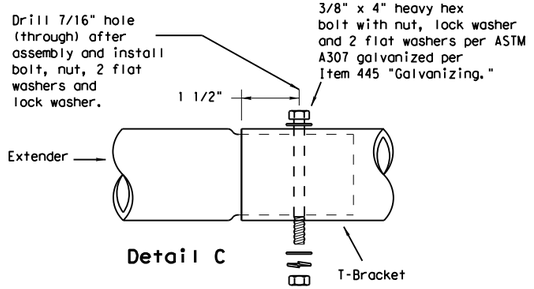
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET

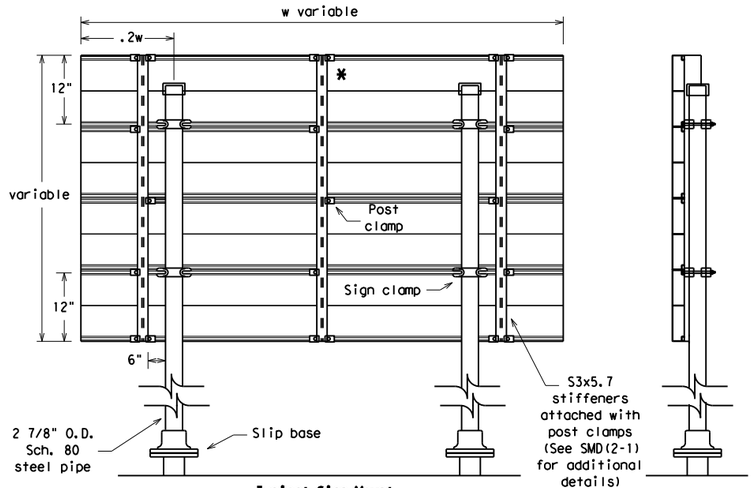


Detail B



Detail C

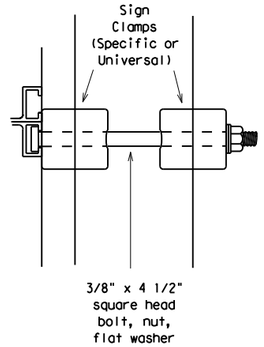
Splices shall only be allowed behind the sign substrate.



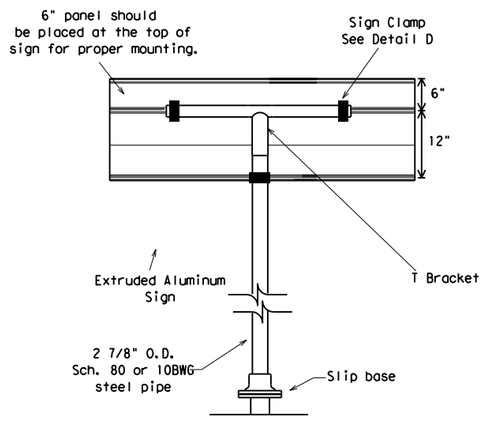
Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

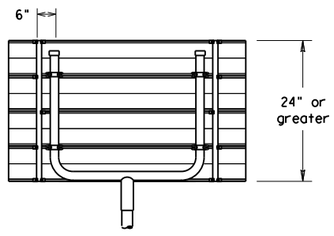
* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.



Detail E



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

GENERAL NOTES:

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

1. See table above.
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

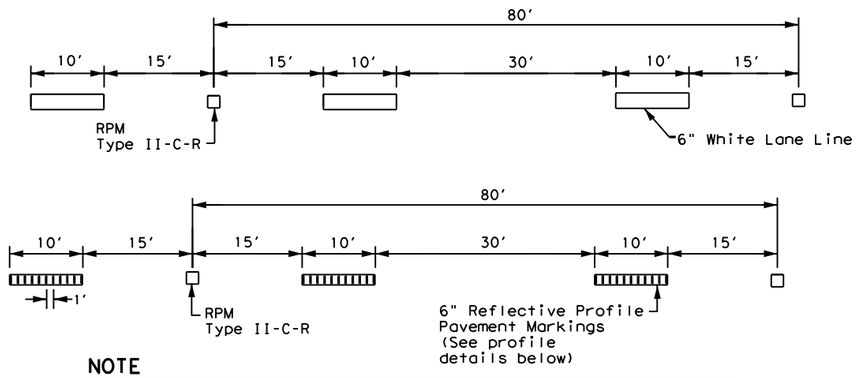
REVISIONS
9-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR

DIST	COUNTY	SHEET NO.
ELP	EL PASO, ETC.	29

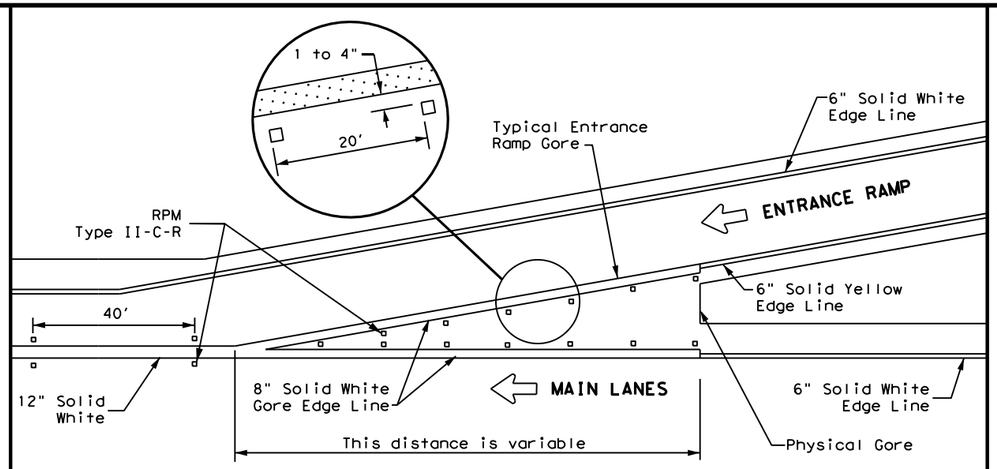
DATE:
FILE:



NOTE

Reflectorized raised pavement markers Type II-C-R shall be spaced on 80' centers with the clear face toward normal traffic and the red face toward wrong way traffic. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.

TRAFFIC LANE LINES PAVEMENT MARKING



TYPICAL ENTRANCE RAMP GORE MARKING

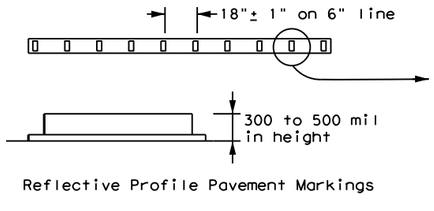
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

LEGEND	
⇦	Traffic flow
↱	Pavement marking arrows (white)
▫	Reflectorized Raised Markers (RPM) Type II-C-R

GENERAL NOTE

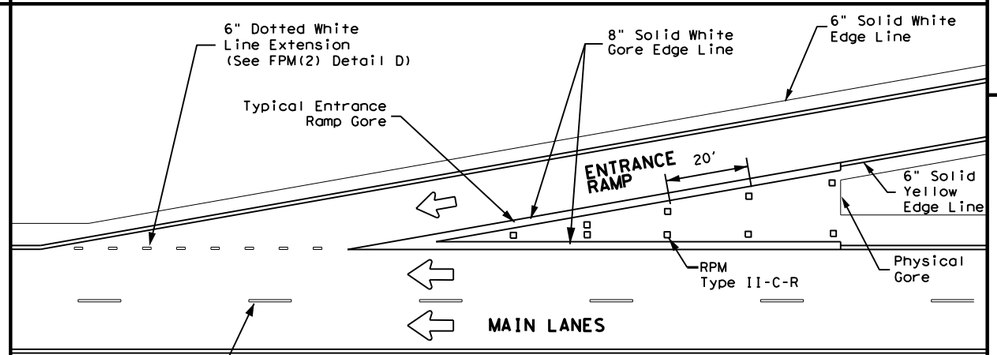
On concrete pavements the raised pavement markers shall be placed to one side of the longitudinal joints.



NOTE

Edge lines should typically be 6" wide and the materials shall be as specified in the plans. See details above if reflective profile pavement markings are to be used.

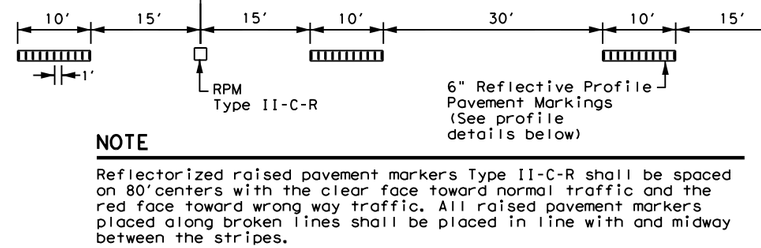
EDGE LINE PAVEMENT MARKINGS



NOTE

See the Roadway Design Manual Chapter 3 to determine if a tapered acceleration lane may be used.

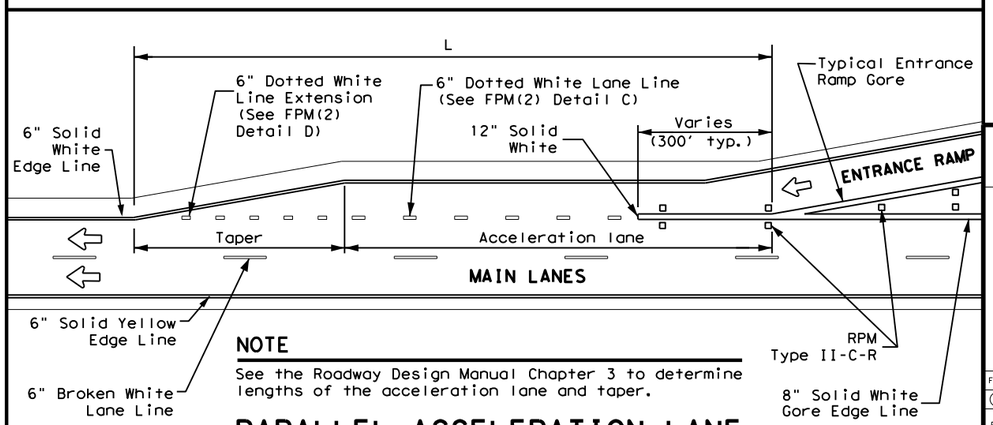
TAPERED ACCELERATION LANE



NOTES

1. Reflectorized raised pavement markers Type-II-C-R in the wrong way arrow shall have the clear face toward normal traffic and the red face toward the wrong way traffic.
2. Red reflectorized wrong way arrows, not to exceed two, may be placed on exit ramps. Locations of the arrows shall be as shown in the plans or as directed by the engineer.

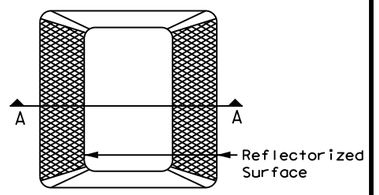
WRONG WAY ARROW



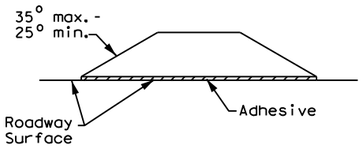
NOTE

See the Roadway Design Manual Chapter 3 to determine lengths of the acceleration lane and taper.

PARALLEL ACCELERATION LANE



Type II (Top View)



SECTION A

REFLECTORIZED RAISED PAVEMENT MARKER (RPM)

Texas Department of Transportation

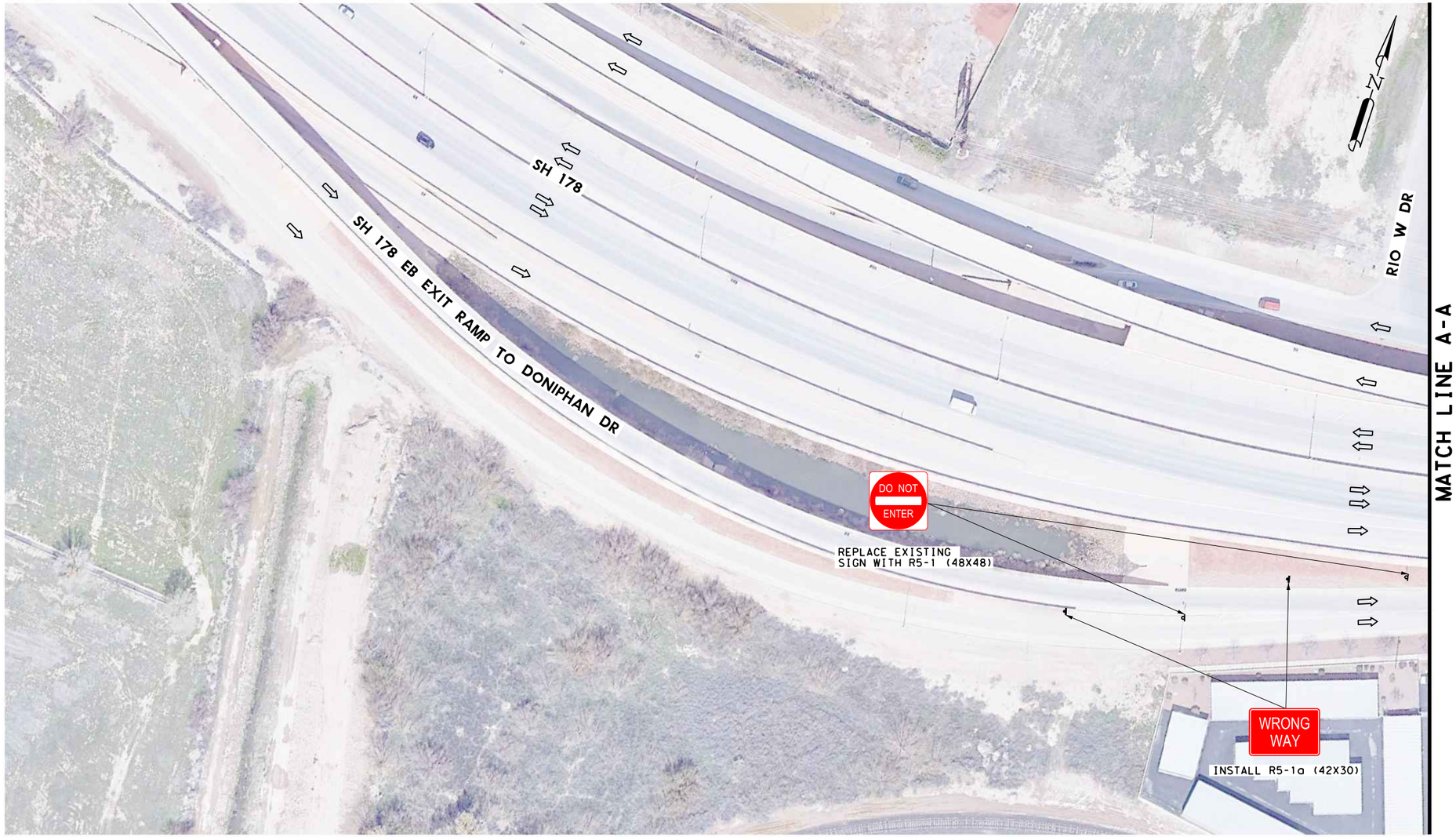
Traffic Safety Division Standard

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS WITH RAISED PAVEMENT MARKERS

FPM(1)-22

FILE: fpm(1)-22.dgn	DN:	CK:	DW:	CK:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
5-74 8-00 2-12	DIST	COUNTY		SHEET NO.
4-92 2-08 10-22	ELP	EL PASO, ETC.		30
5-00 2-10				

23A



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

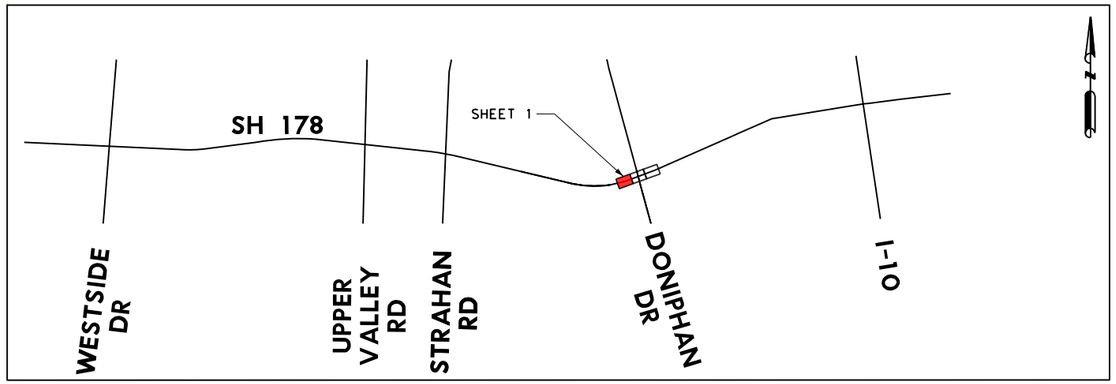
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SH 178 AT EB EXIT TRAFFIC SIGNING LAYOUTS

SHEET 1 OF 3

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SH 178
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		31

DATE: 3/22/2023 2:43:59 PM
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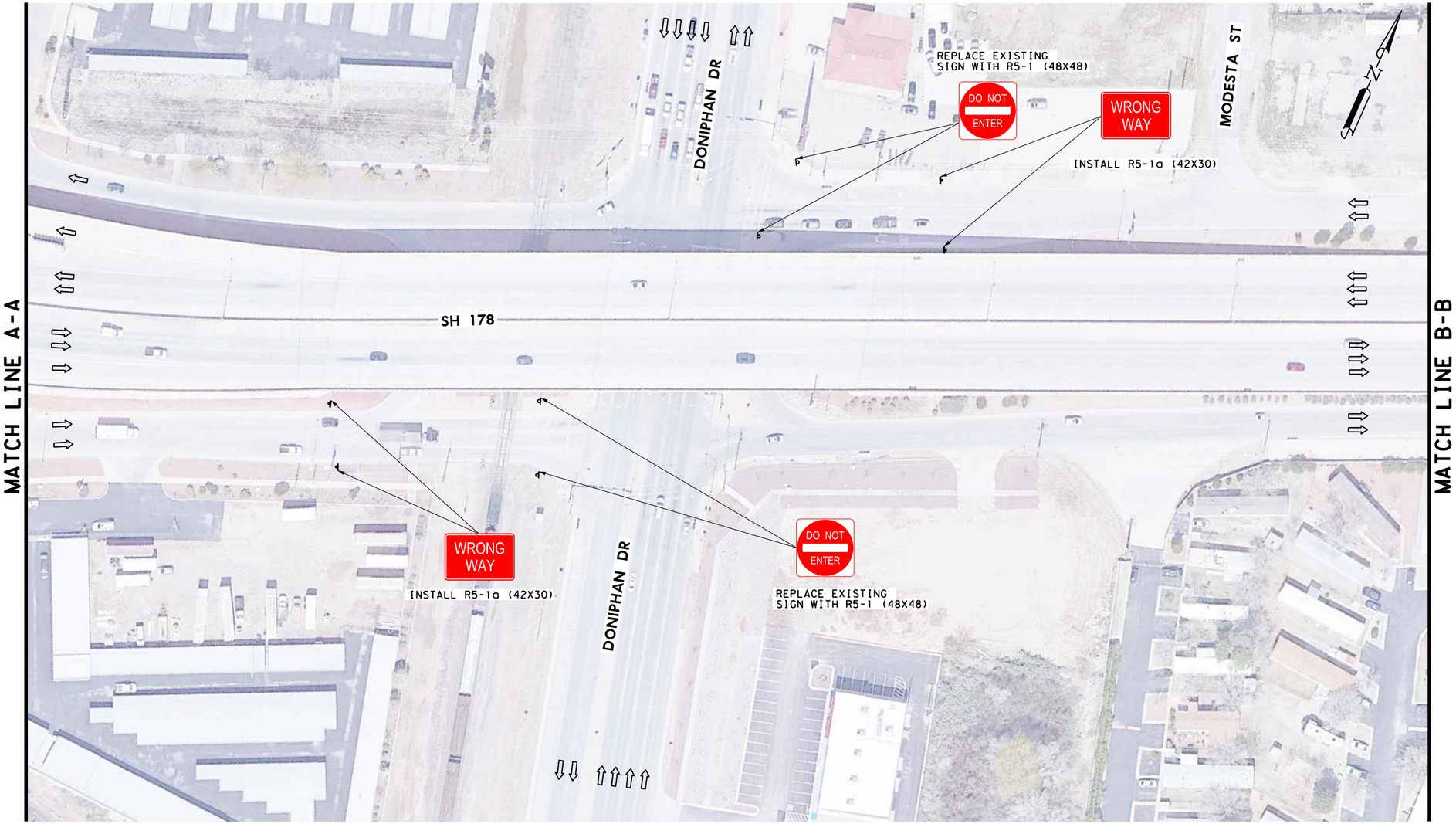


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

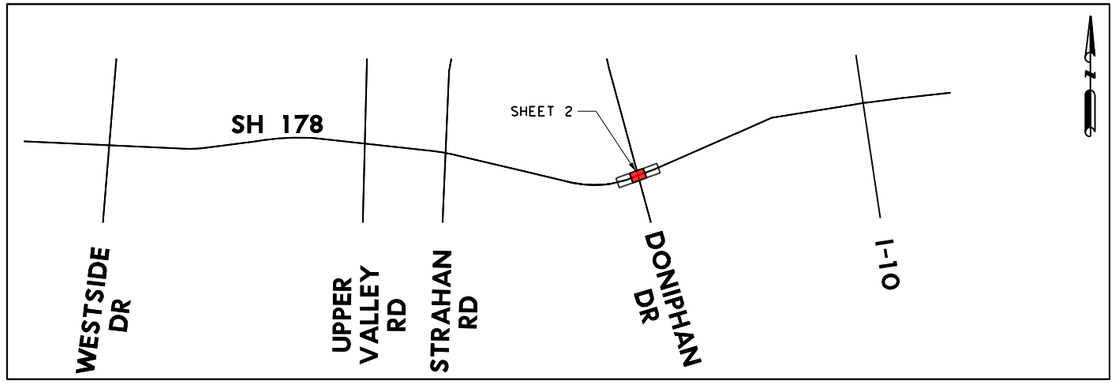
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SH 178 AT DONIPHAN DR TRAFFIC SIGNING LAYOUTS

SHEET 2 OF 3

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SH 178
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		32

DATE: 3/22/2023 2:44:01 PM
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LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen

03/23/2023

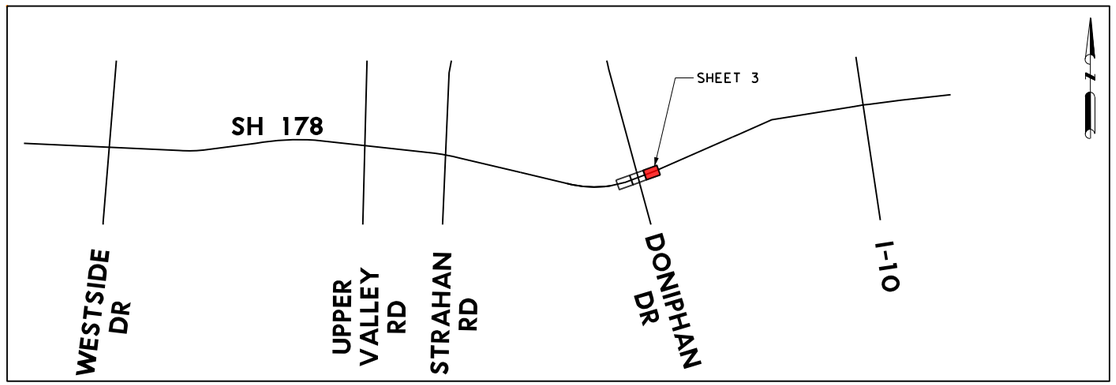
0 25 50 100

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SH 178 AT WB EXIT TRAFFIC SIGNING LAYOUTS

SHEET 3 OF 3

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SH 178
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		33

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LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

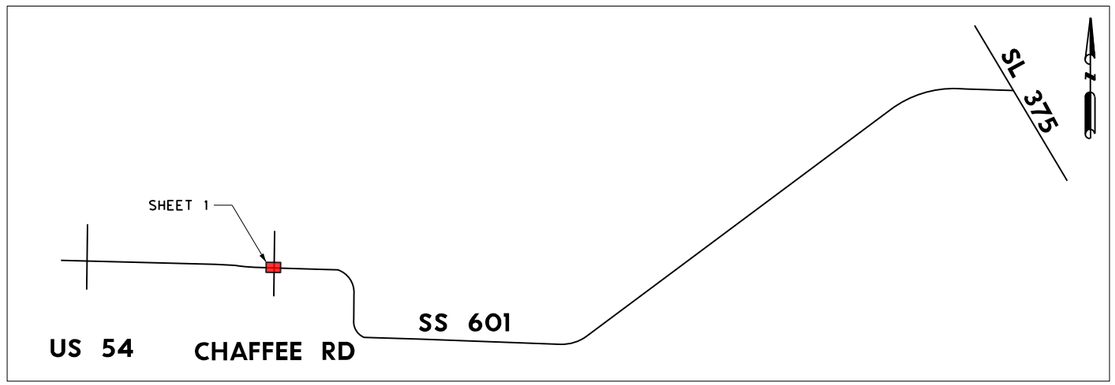
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SS 601 AT CHAFFEE RD TRAFFIC SIGNING LAYOUTS

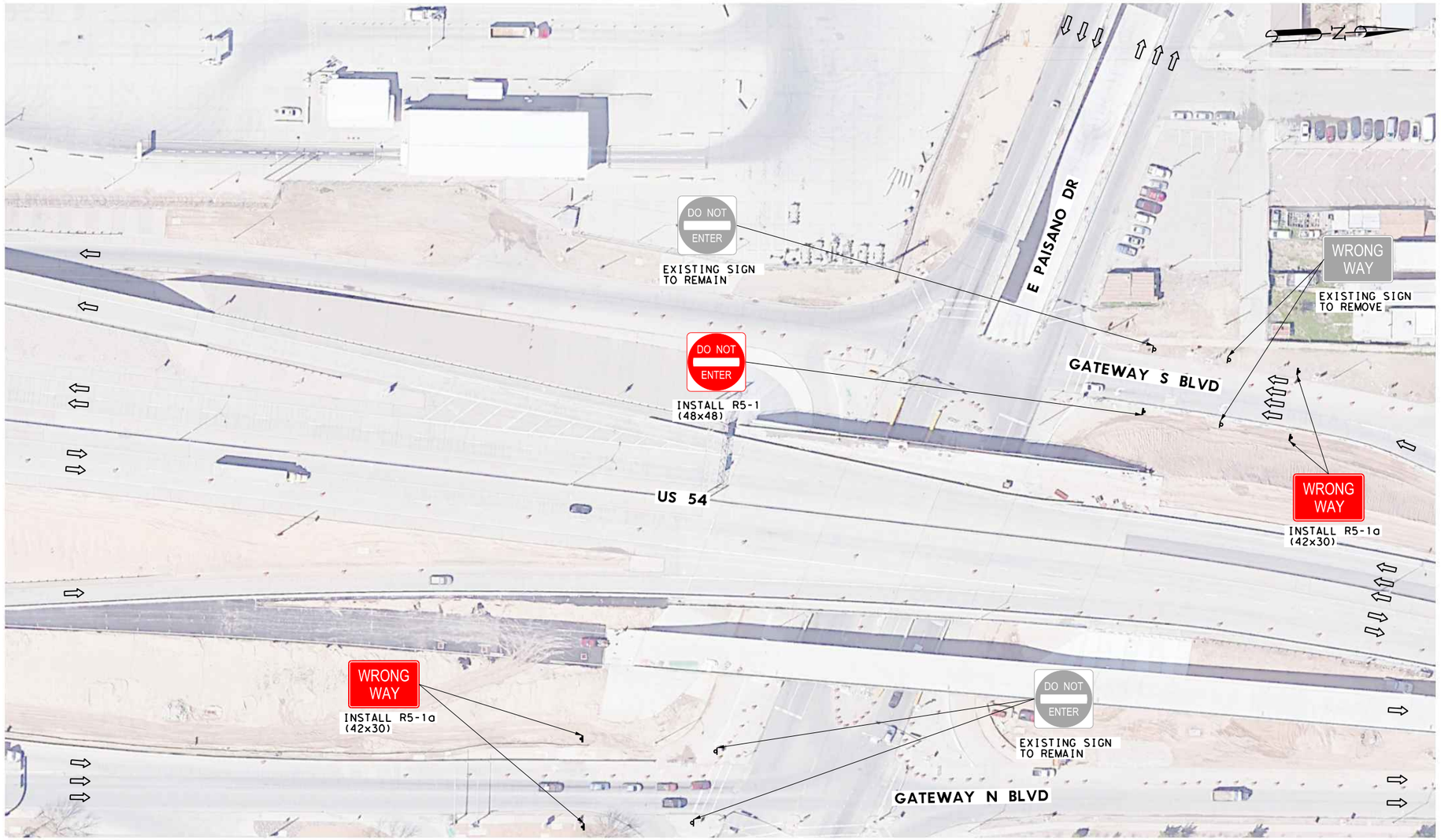
SHEET 1 OF 1

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	SS 601
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		34

DATE: 3/22/2023 2:44:04 PM
FILE: TFQ_ELP_SS601_WWDC_SHEET_01 (Chaffee Rd).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

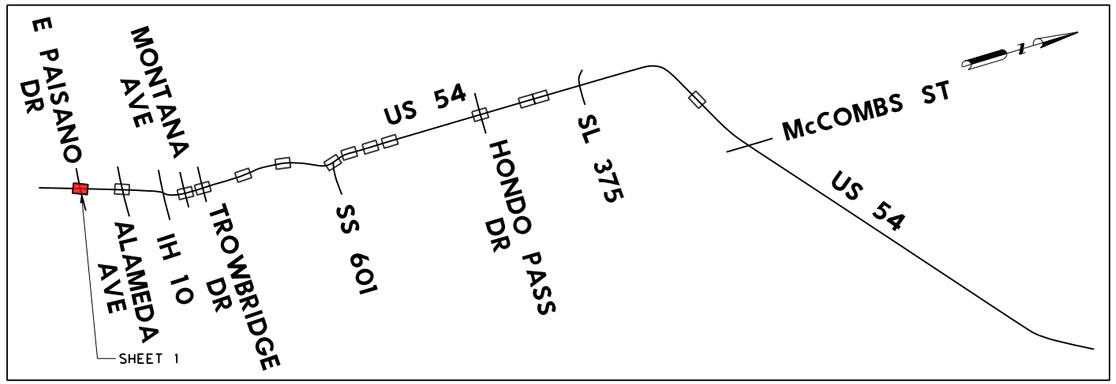
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	5
644	6076	REMOVE SM RD SN SUP & AM	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT E PAISANO DR TRAFFIC SIGNING LAYOUTS

SHEET 1 OF 14

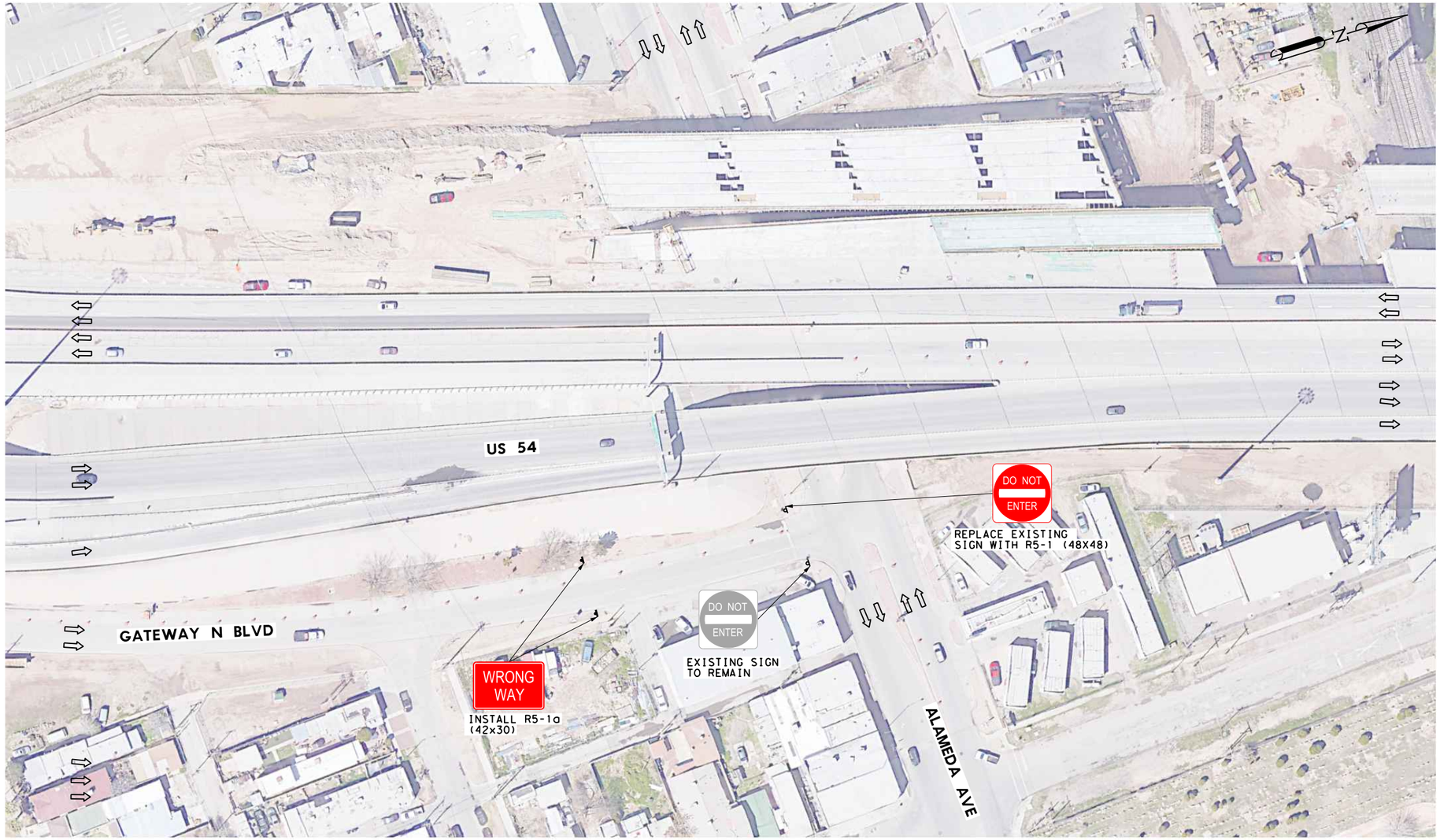
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		35

DATE: 3/22/2023 3:37:38 PM
FILE: TFQ_ELP_US54_WWDC_SHEET_01 (E Paisano Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

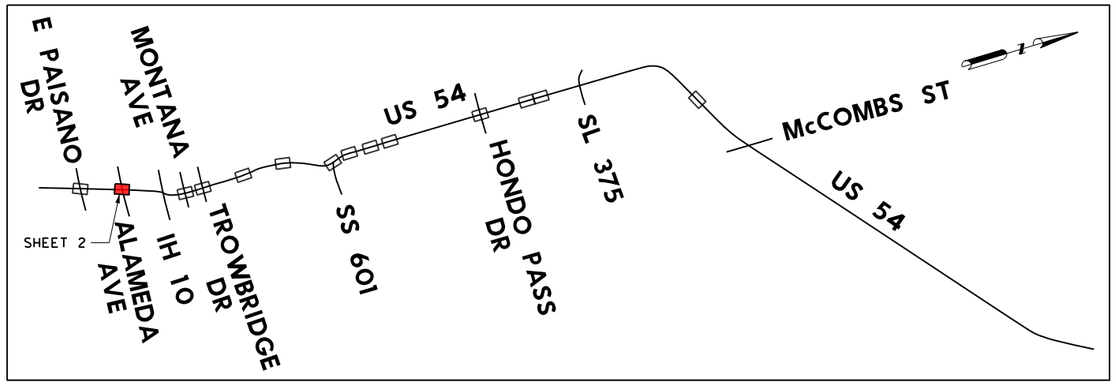
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT ALAMEDA AVE TRAFFIC SIGNING LAYOUTS

SHEET 2 OF 14

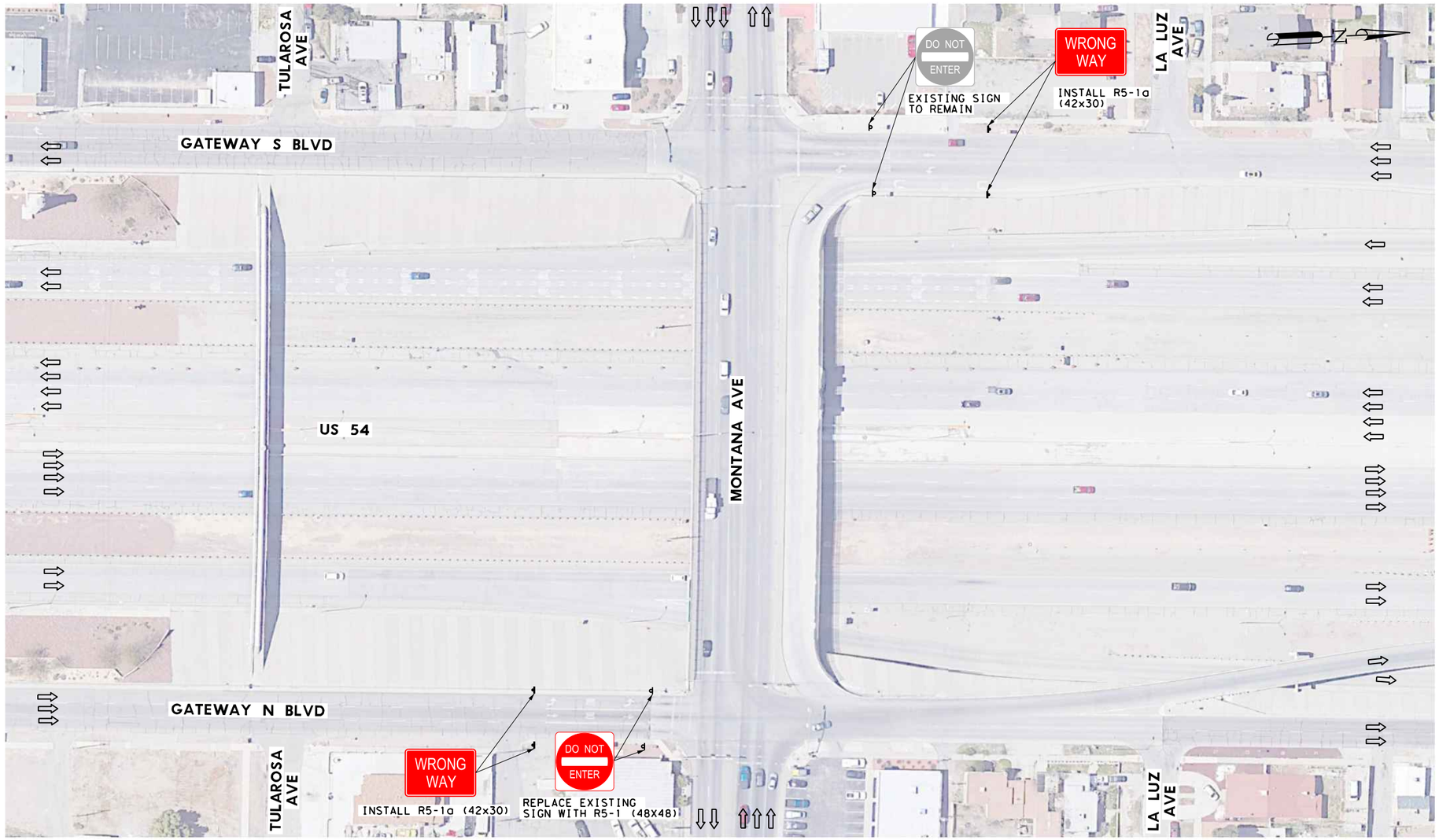
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		36

DATE: 3/22/2023 2:44:07 PM
FILE: TFO_ELP_US54_WWDC_SHEET_02 (Alameda Ave).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

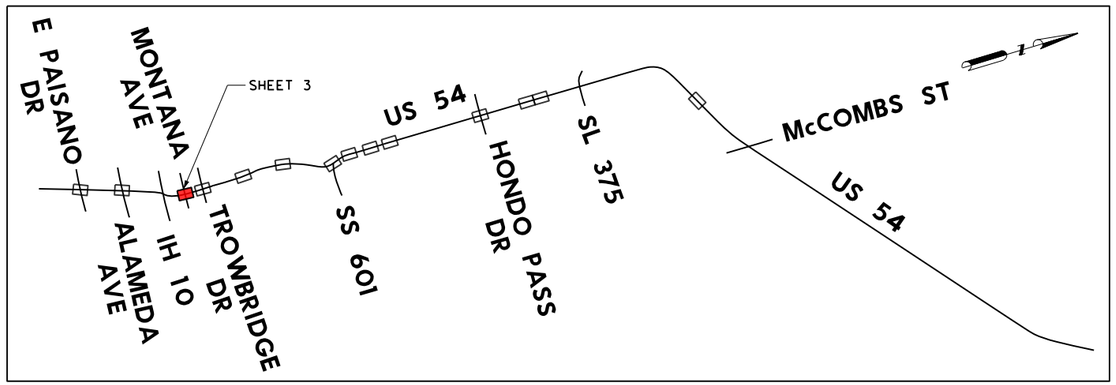
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT MONTANA AVE TRAFFIC SIGNING LAYOUTS

SHEET 3 OF 14

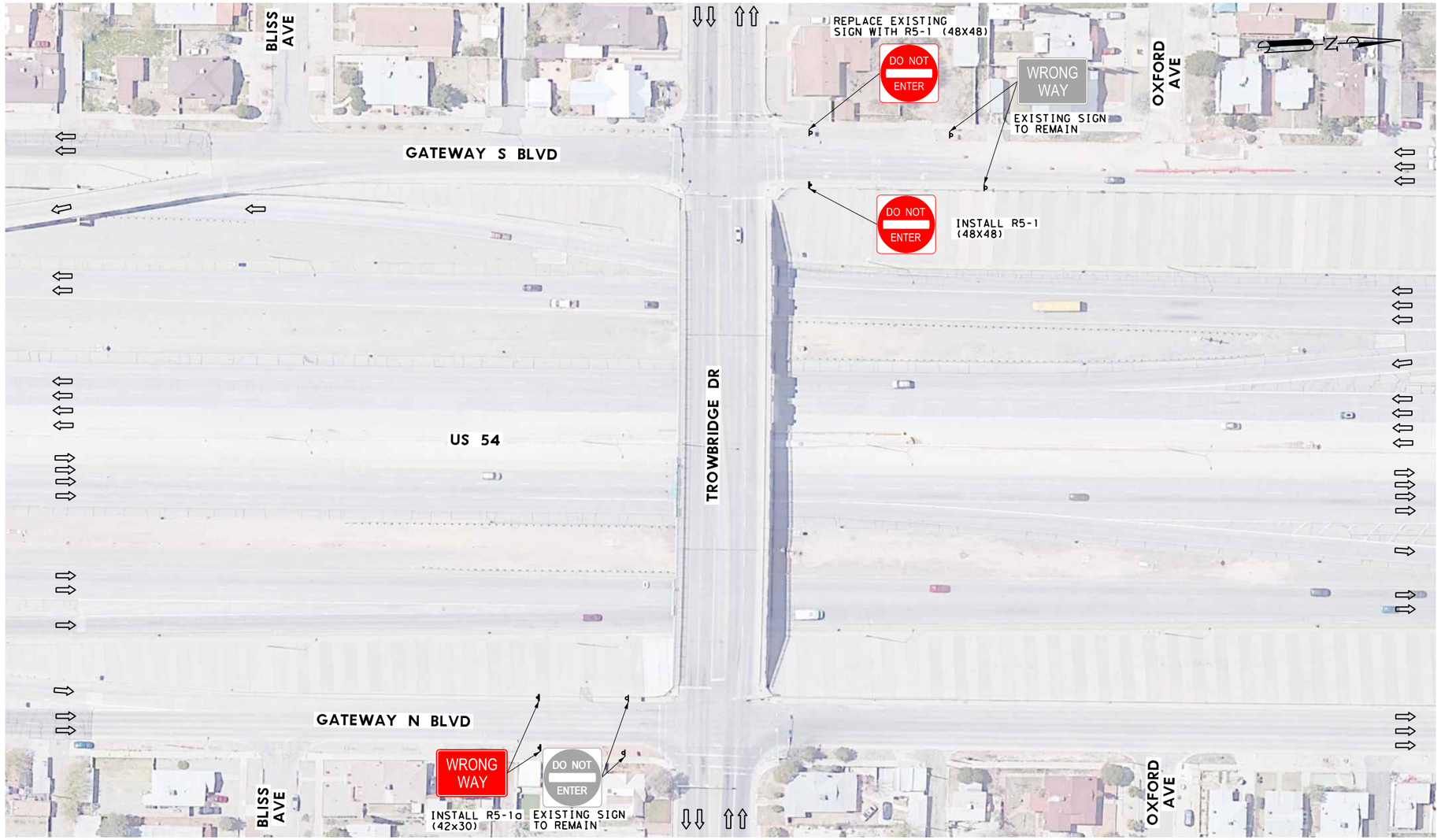
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		37

DATE: 3/22/2023 3:28:19 PM
FILE: TFO_ELP_US54_WWDC_SHEET_03 (Montana Ave).dgn



LEGEND

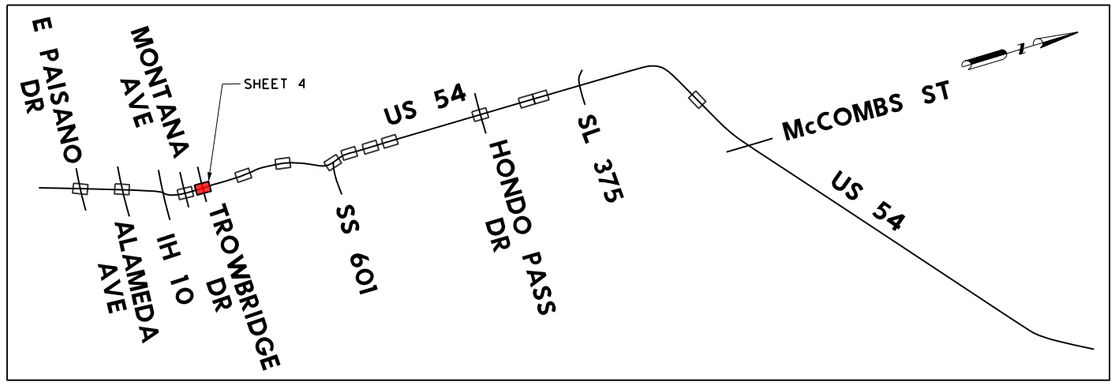
- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen

03/23/2023

US 54 AT TROWBRIDGE DR TRAFFIC SIGNING LAYOUTS

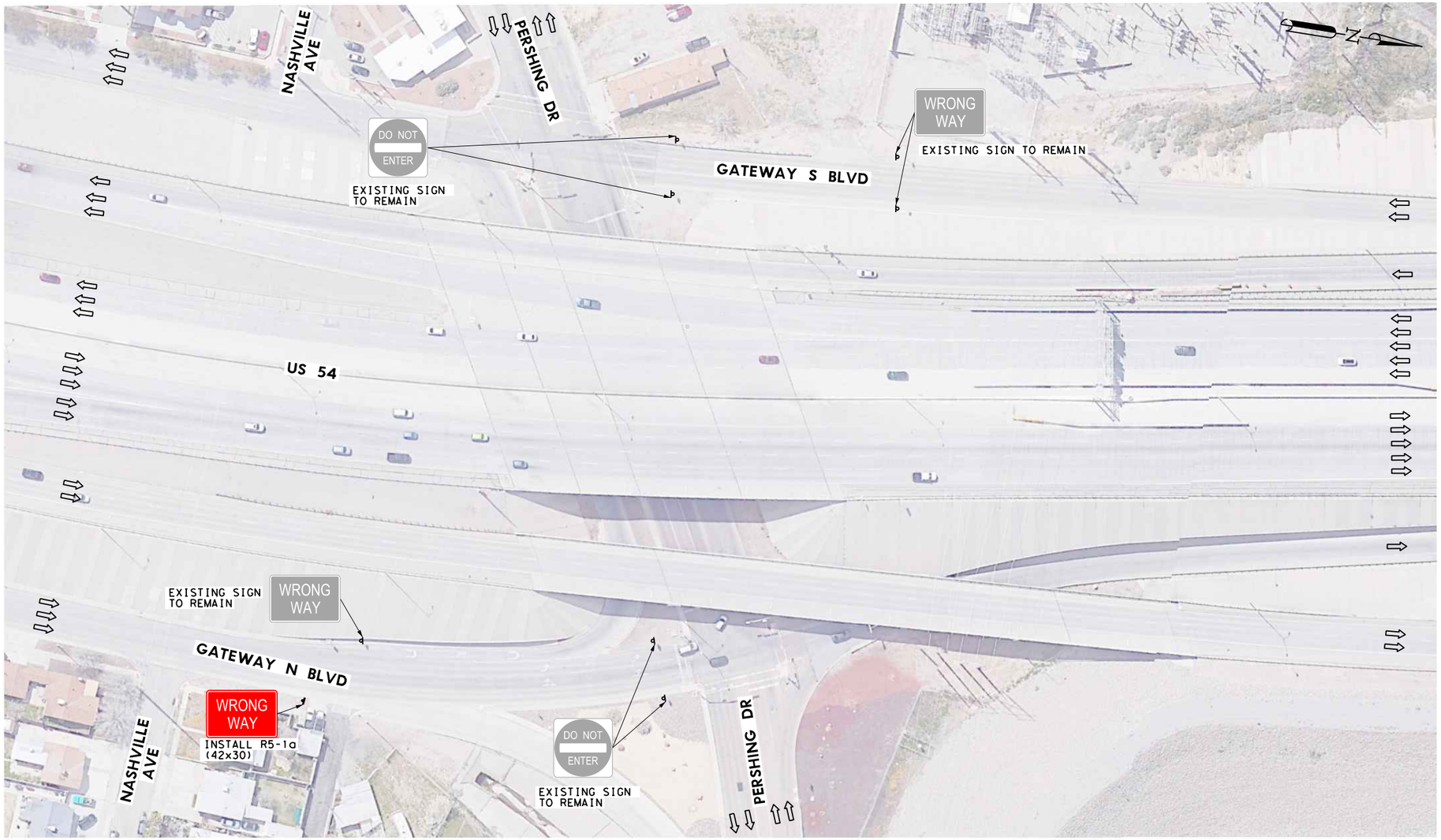
SHEET 4 OF 14

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		38

DATE: 3/22/2023 3:28:21 PM
FILE: TFQ_ELP_US54_WWDC_SHEET_04 (Trowbridge Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

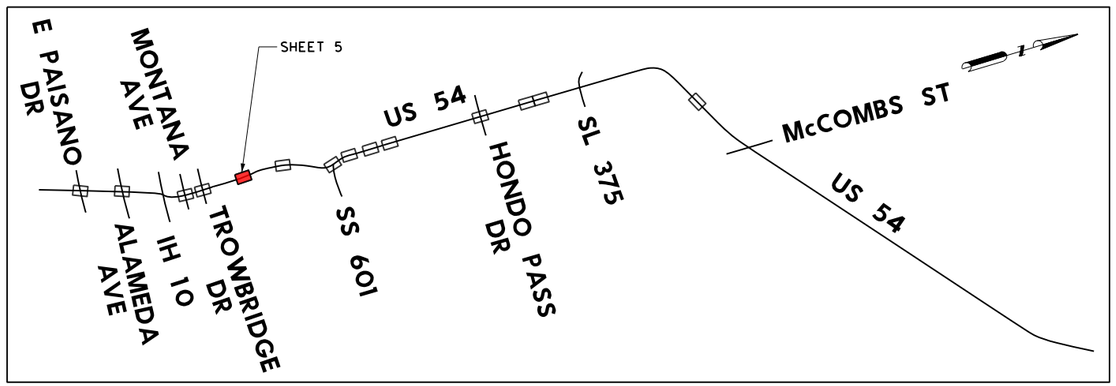
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT PERSHING DR TRAFFIC SIGNING LAYOUTS

SHEET 5 OF 14

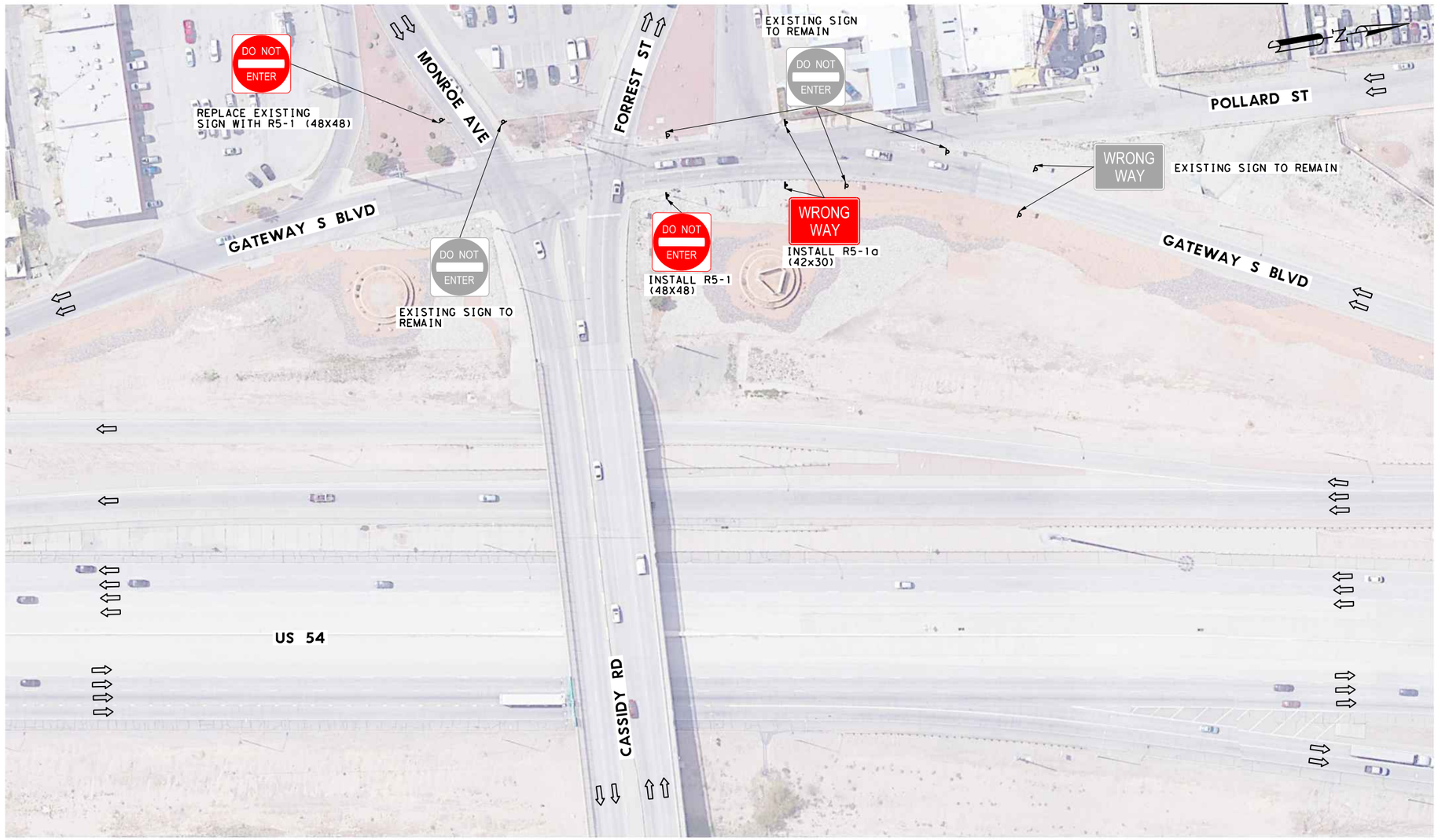
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		39

DATE: 3/22/2023 2:52:18 PM
FILE: TFO_ELP_US54_WWDC_SHEET_05 (Pershing Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

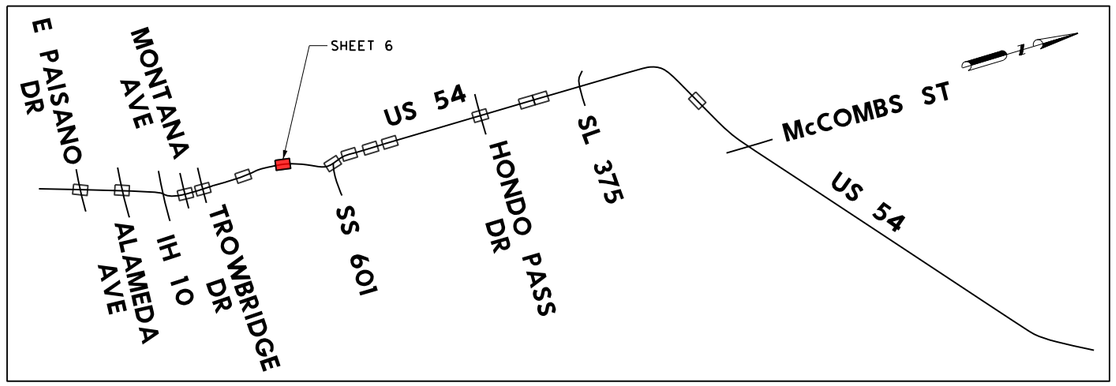
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT CASSIDY RD TRAFFIC SIGNING LAYOUTS

SHEET 6 OF 14

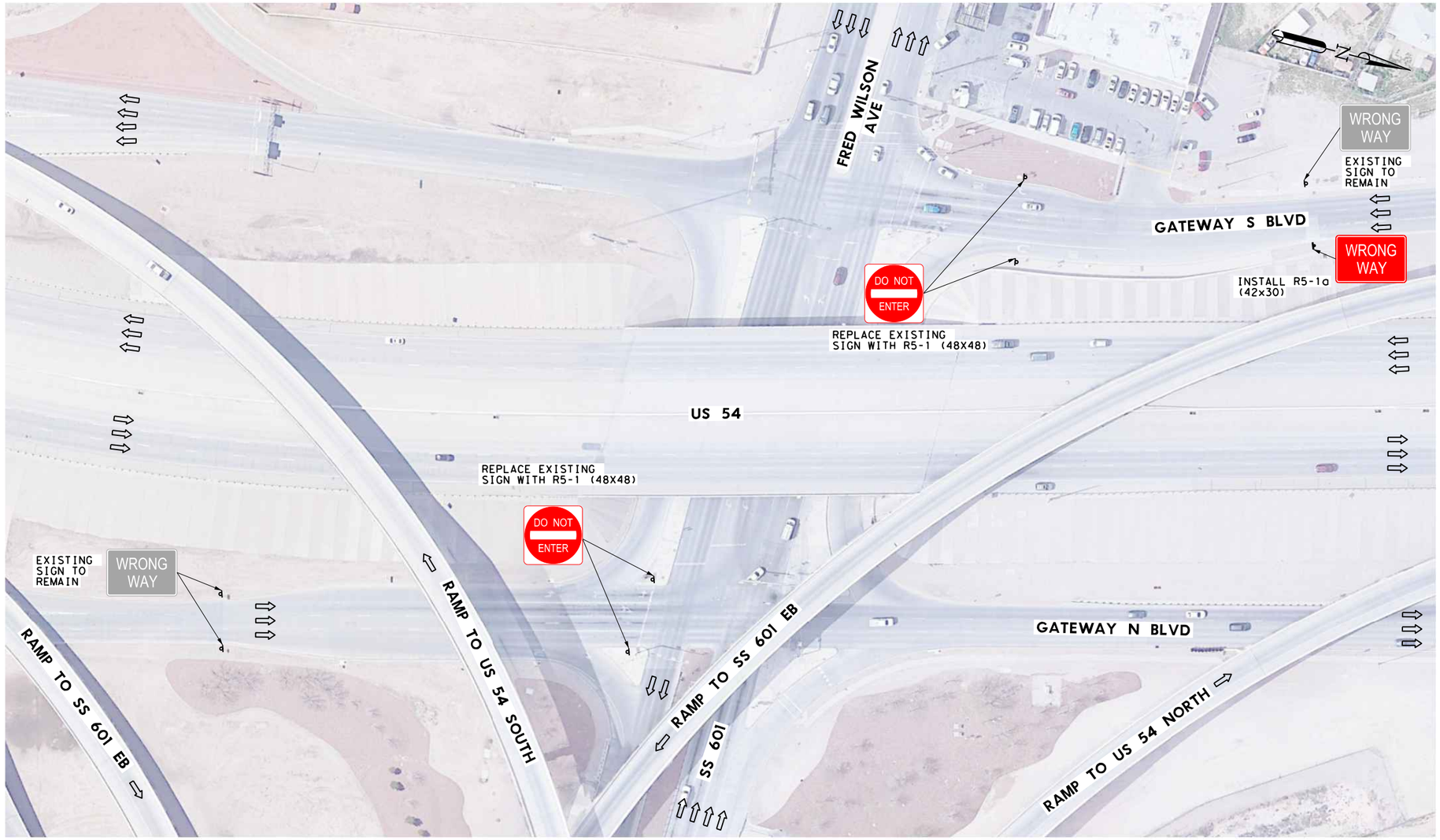
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		40

DATE: 3/22/2023 2:52:20 PM
FILE: TFO_ELP_US54_WWDC_SHEET_06 (Cassidy Rd).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

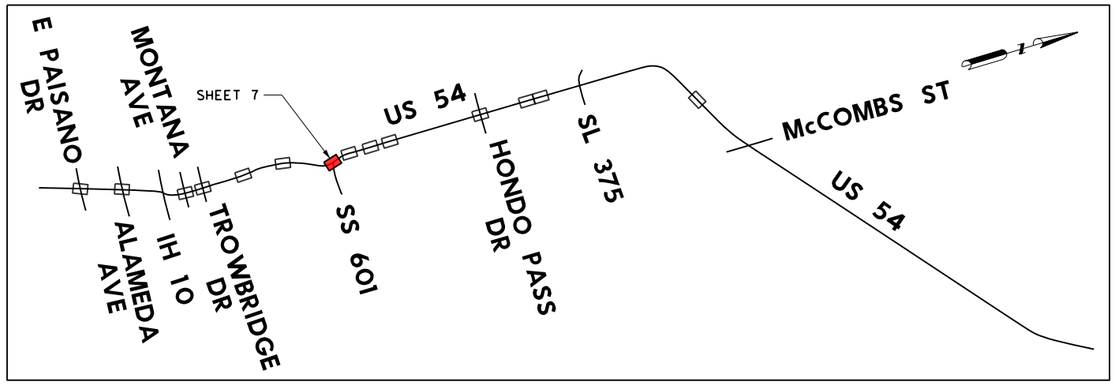
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT SS 601 TRAFFIC SIGNING LAYOUTS

SHEET 7 OF 14

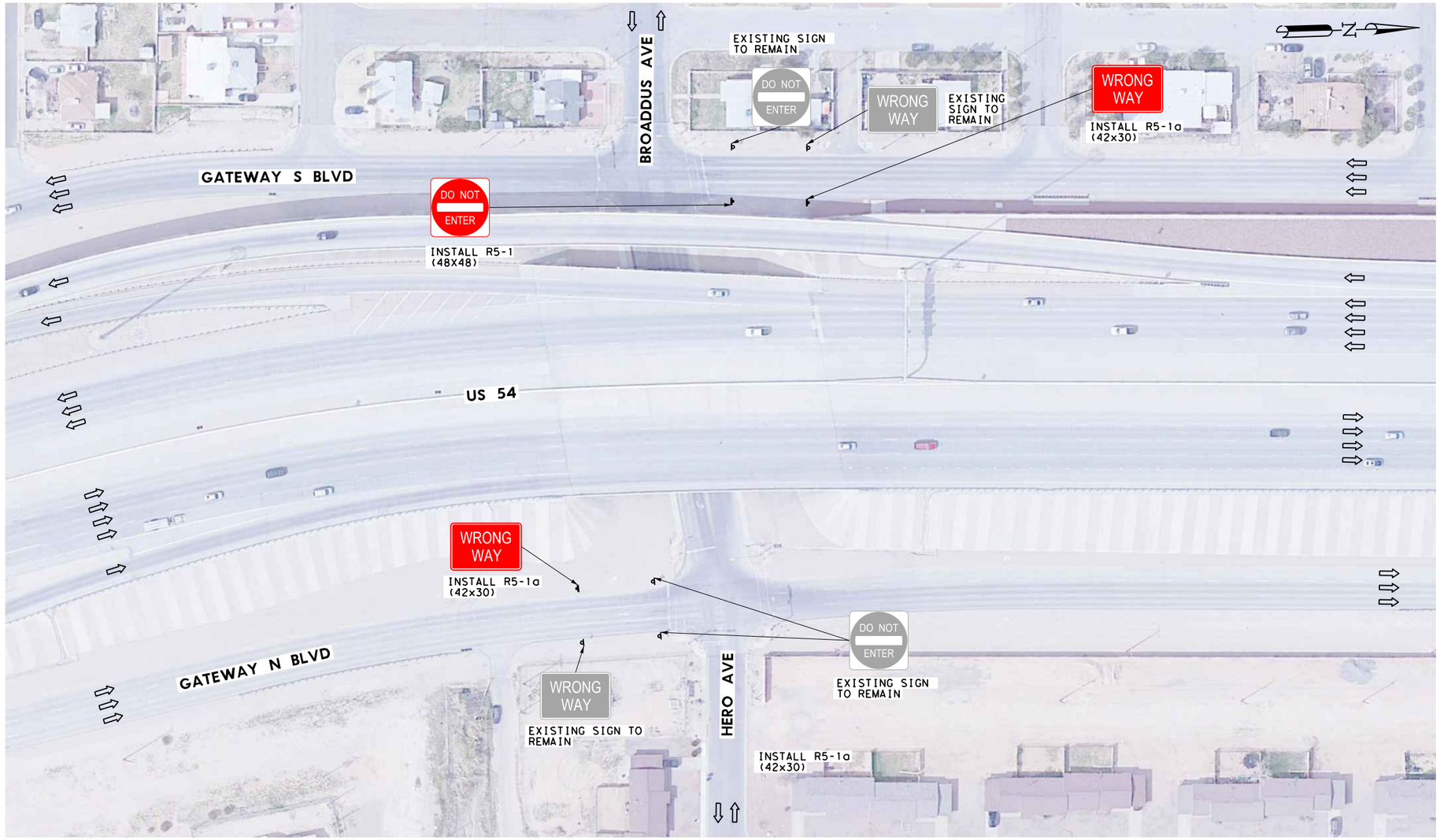
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		41

DATE: 3/22/2023 2:44:16 PM
FILE: TFQ_ELP_US54_WWDC_SHEET_07 (SS601).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
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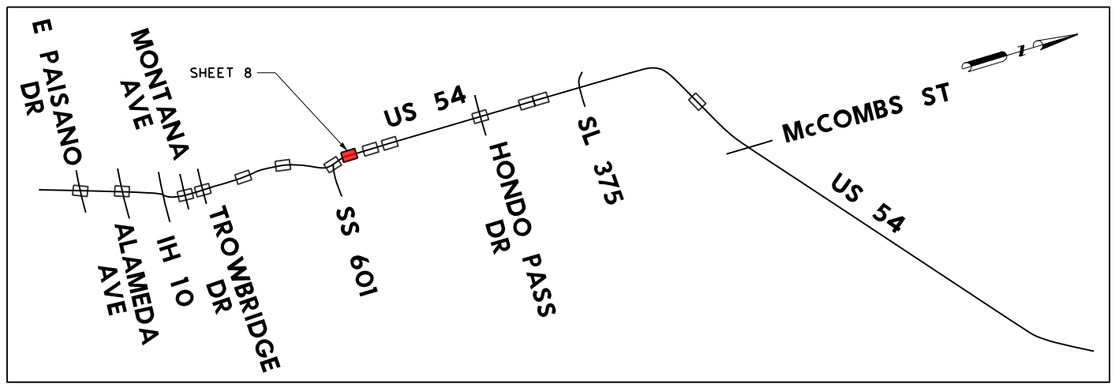


US 54 AT HERO AVE TRAFFIC SIGNING LAYOUTS

SHEET 8 OF 14

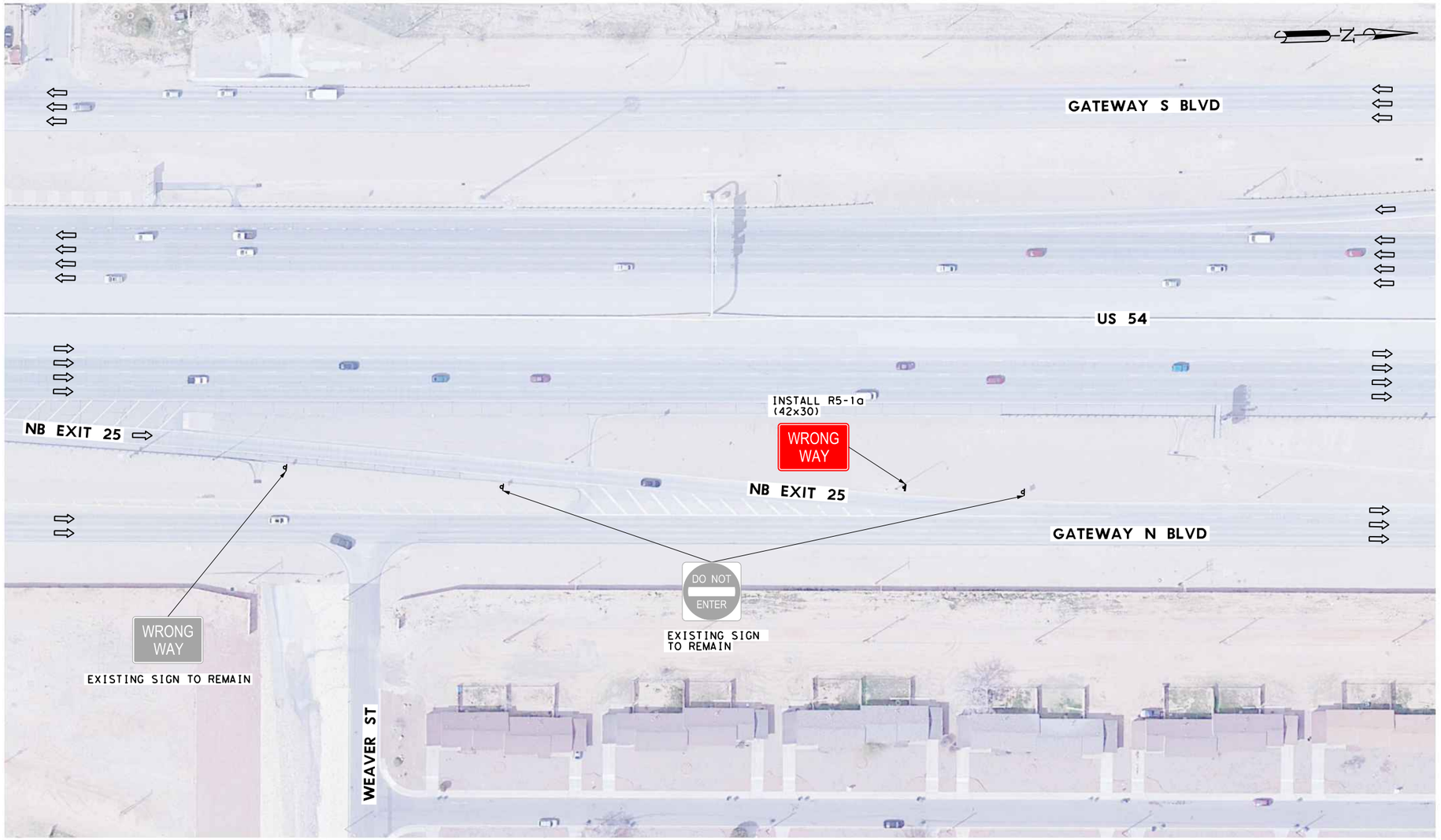
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		42

DATE: 3/22/2023 2:44:17 PM
FILE: TFQ_ELP_US54_WWDC_SHEET_08 (Hero Ave).dgn



LEGEND

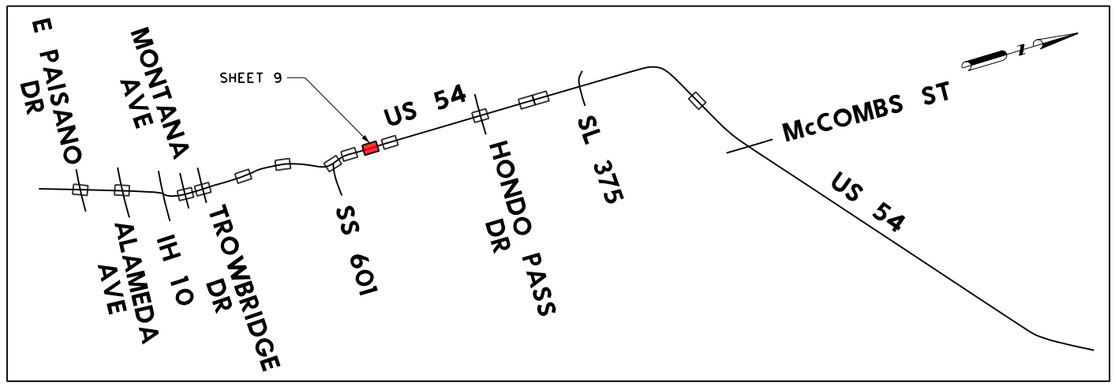
- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

US 54 AT NB EXIT 25 TRAFFIC SIGNING LAYOUTS

SHEET 9 OF 14

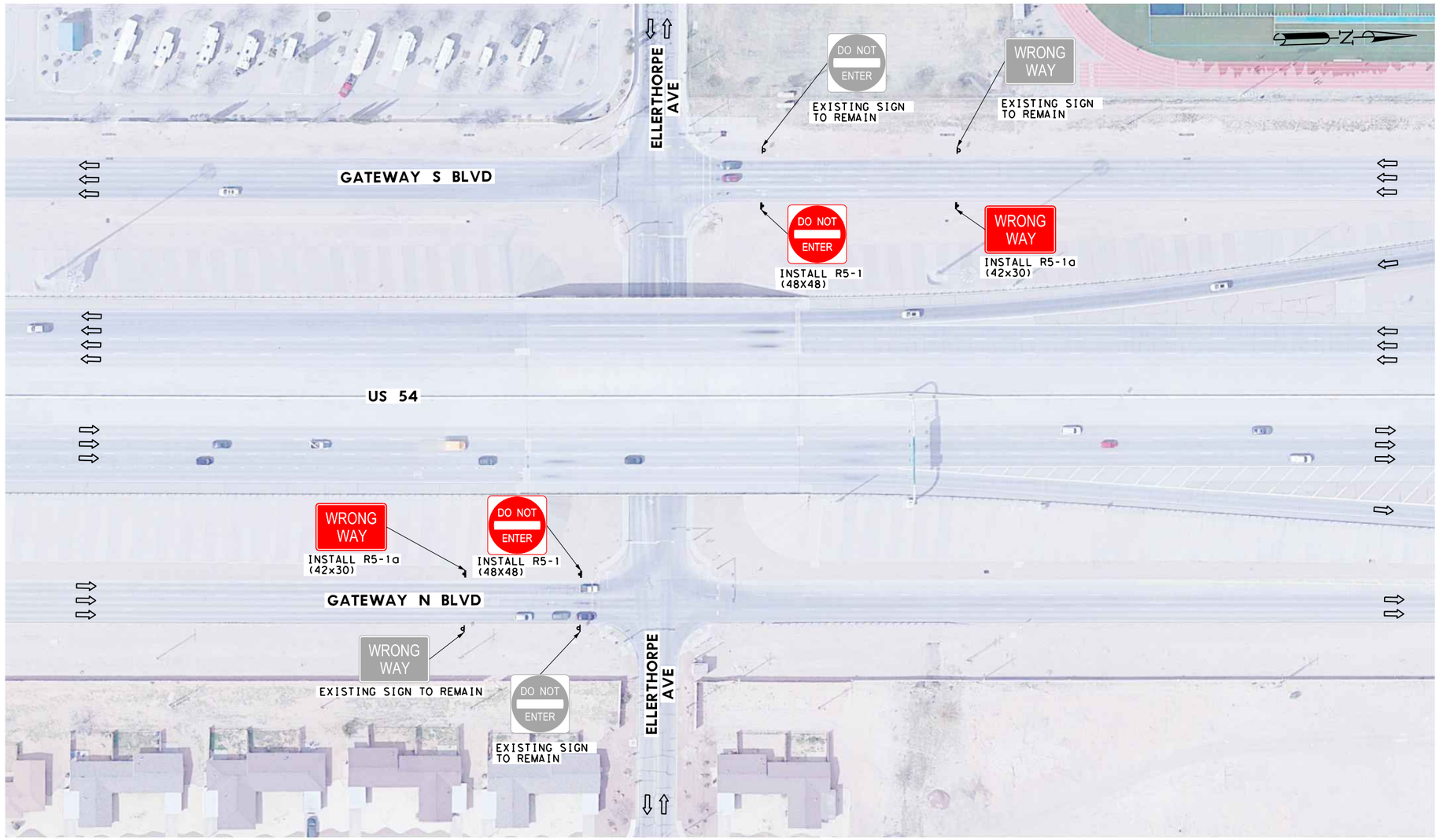
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		43

DATE: 3/22/2023 2:44:19 PM
FILE: TFQ_ELP_US54_WWDC_SHEET_09 (NB Exit 25).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

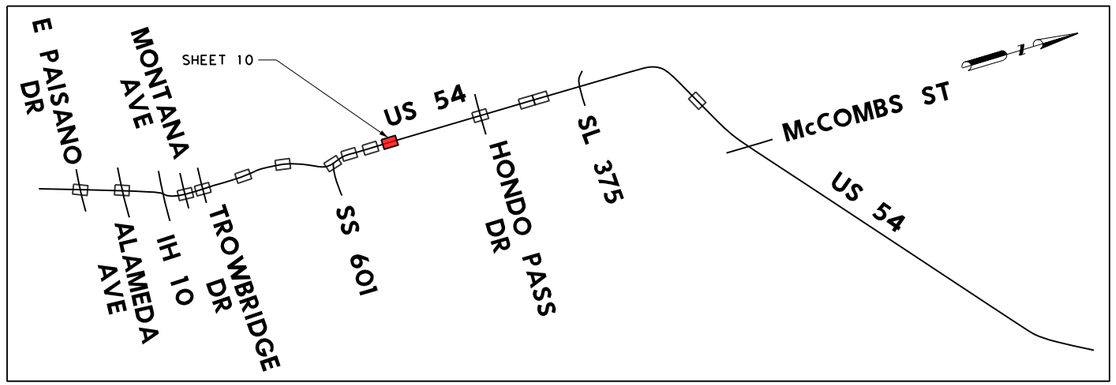
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT ELLERTHORPE AVE TRAFFIC SIGNING LAYOUTS

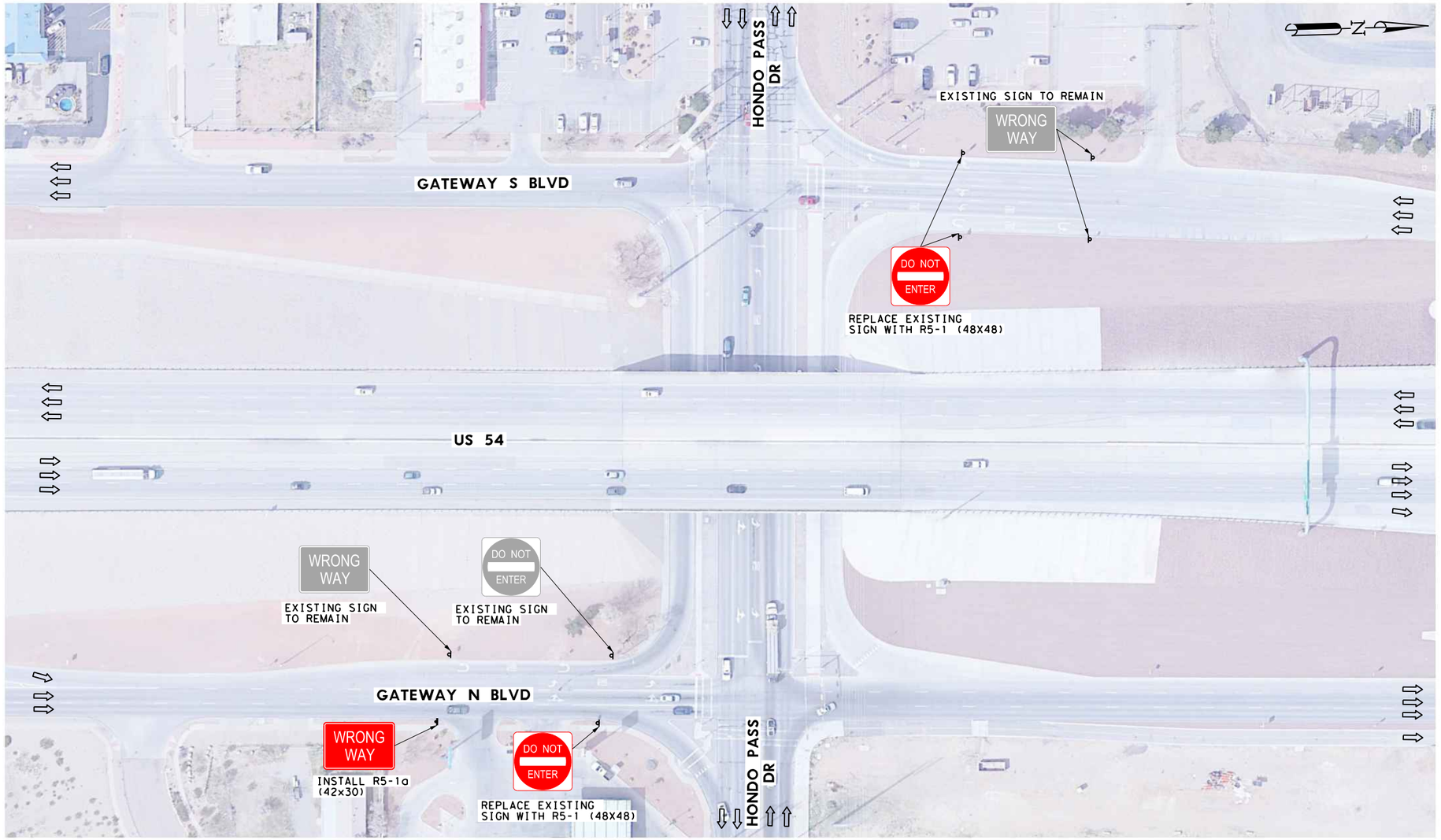
SHEET 10 OF 14

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		44

DATE: 3/22/2023 2:44:21 PM
FILE: TFO_ELP_US54_WWDC_SHEET_10 (Ellerthorpe Ave).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

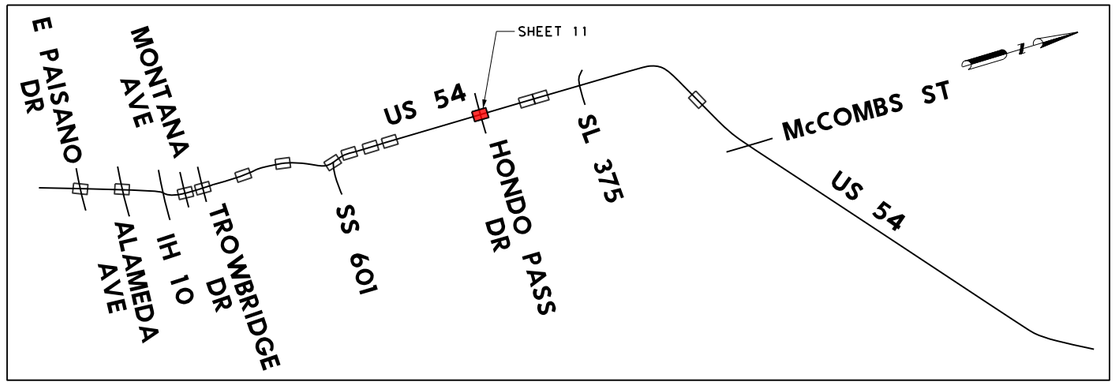
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT HONDO PASS DR TRAFFIC SIGNING LAYOUTS

SHEET 11 OF 14

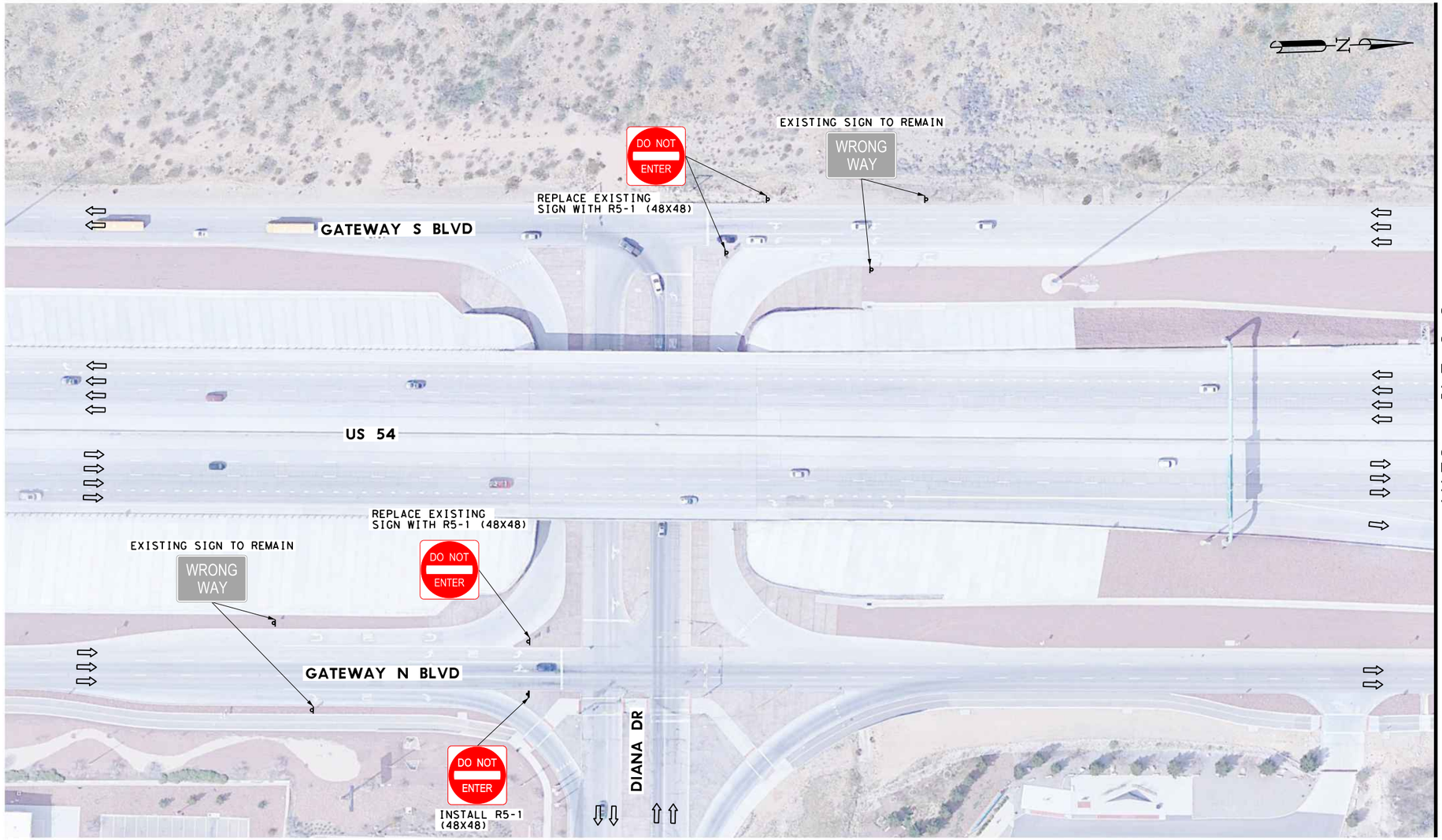
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		45

DATE: 3/22/2023 2:44:22 PM
FILE: TFQ_ELP_US54_WWDC_SHEET_11 (Hondo Pass Dr).dgn



MATCH LINE C-C

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

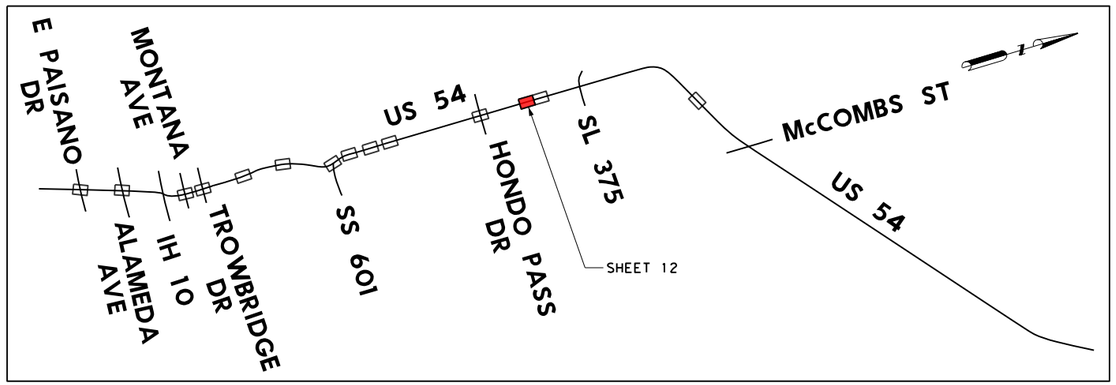
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT DIANA DR TRAFFIC SIGNING LAYOUTS

SHEET 12 OF 14

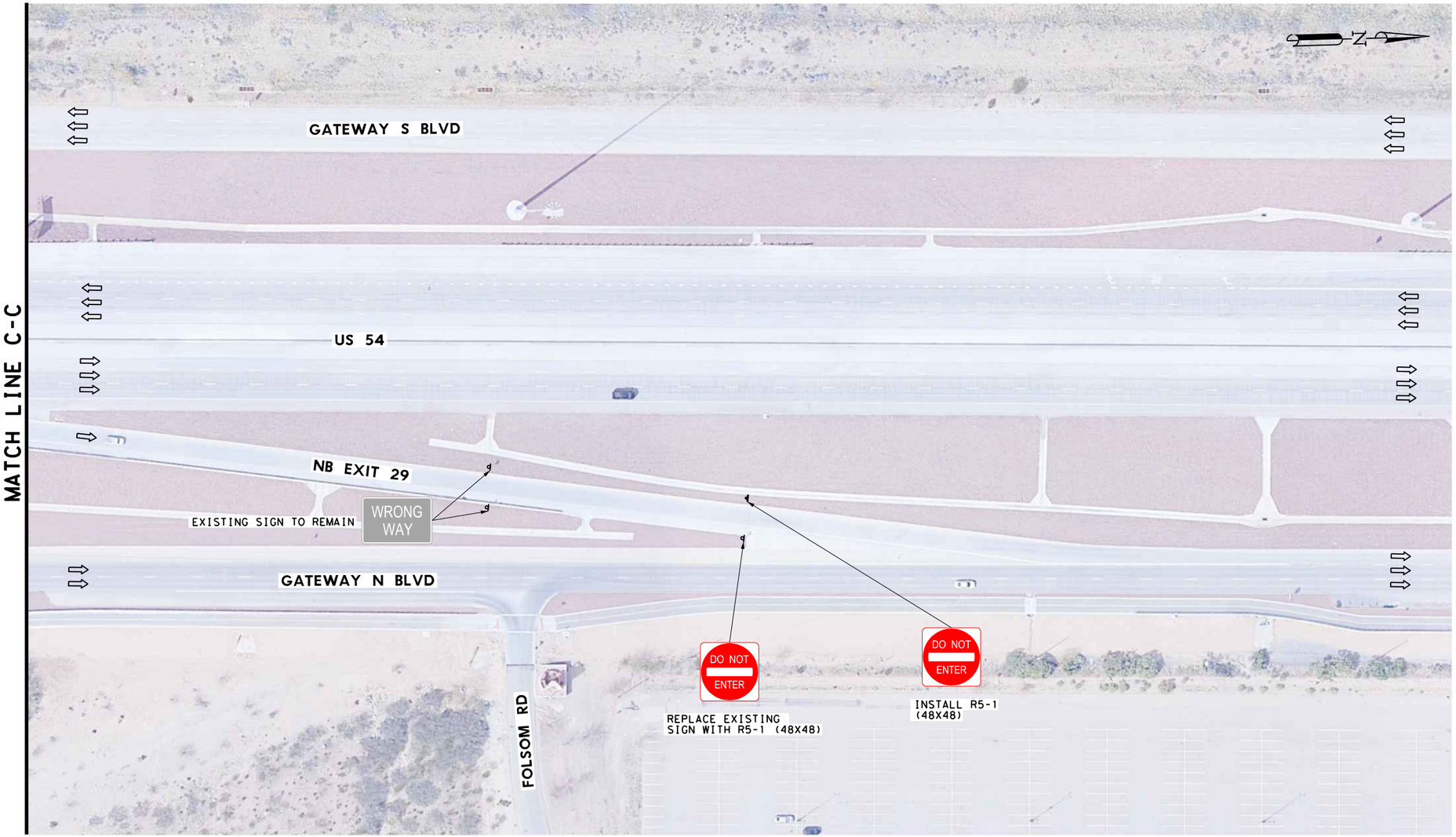
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		46

DATE: 3/22/2023 2:44:24 PM
FILE: TF0_ELP_US54_WWDC_SHEET_12 (Diana Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

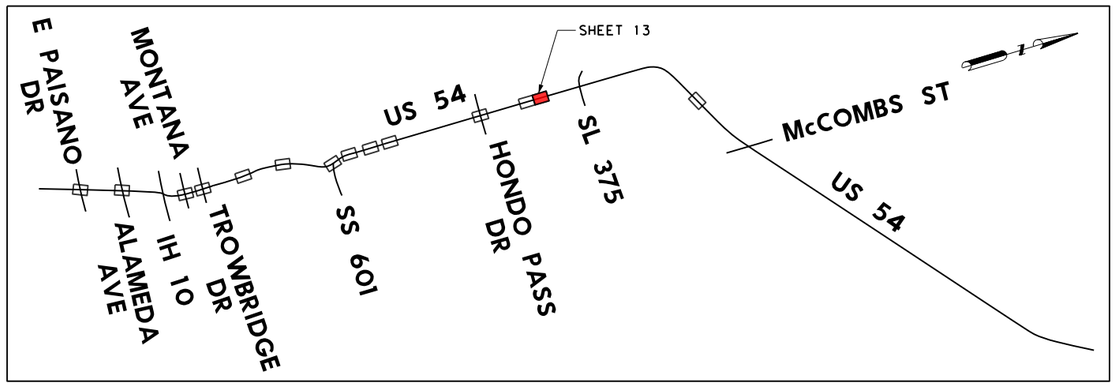
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT NB EXIT 29 TRAFFIC SIGNING LAYOUTS

SHEET 13 OF 14

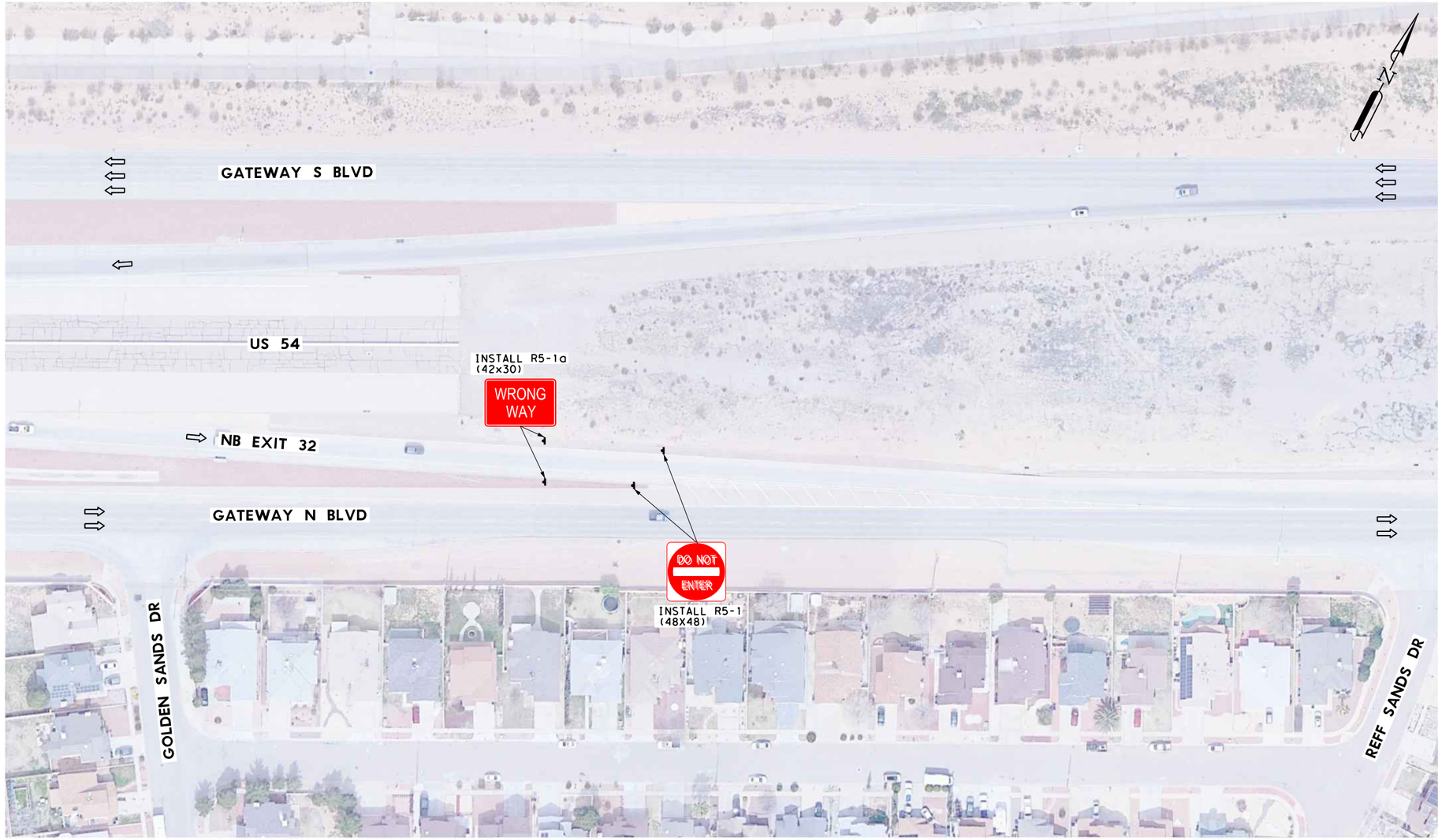
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		47

DATE: 3/22/2023 2:44:29 PM
FILE: TFO_ELP_US54_WWDC_SHEET_13 (NB Exit 29).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

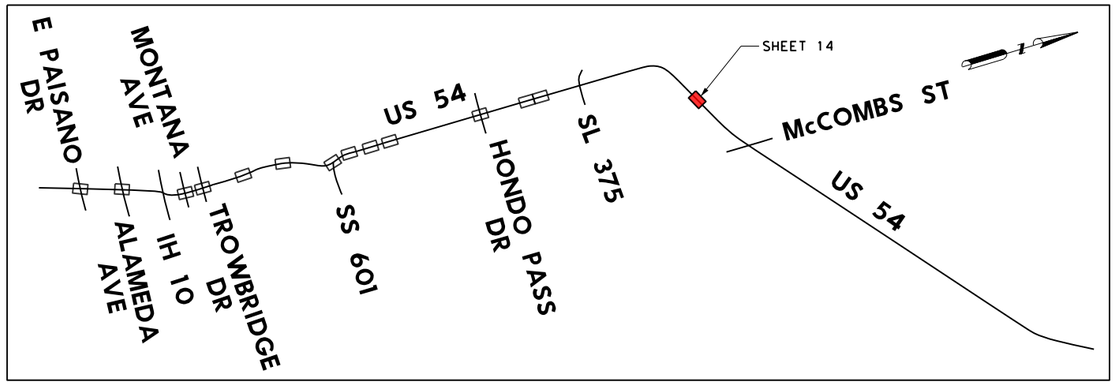
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



US 54 AT NB EXIT 32 TRAFFIC SIGNING LAYOUTS

SHEET 14 OF 14

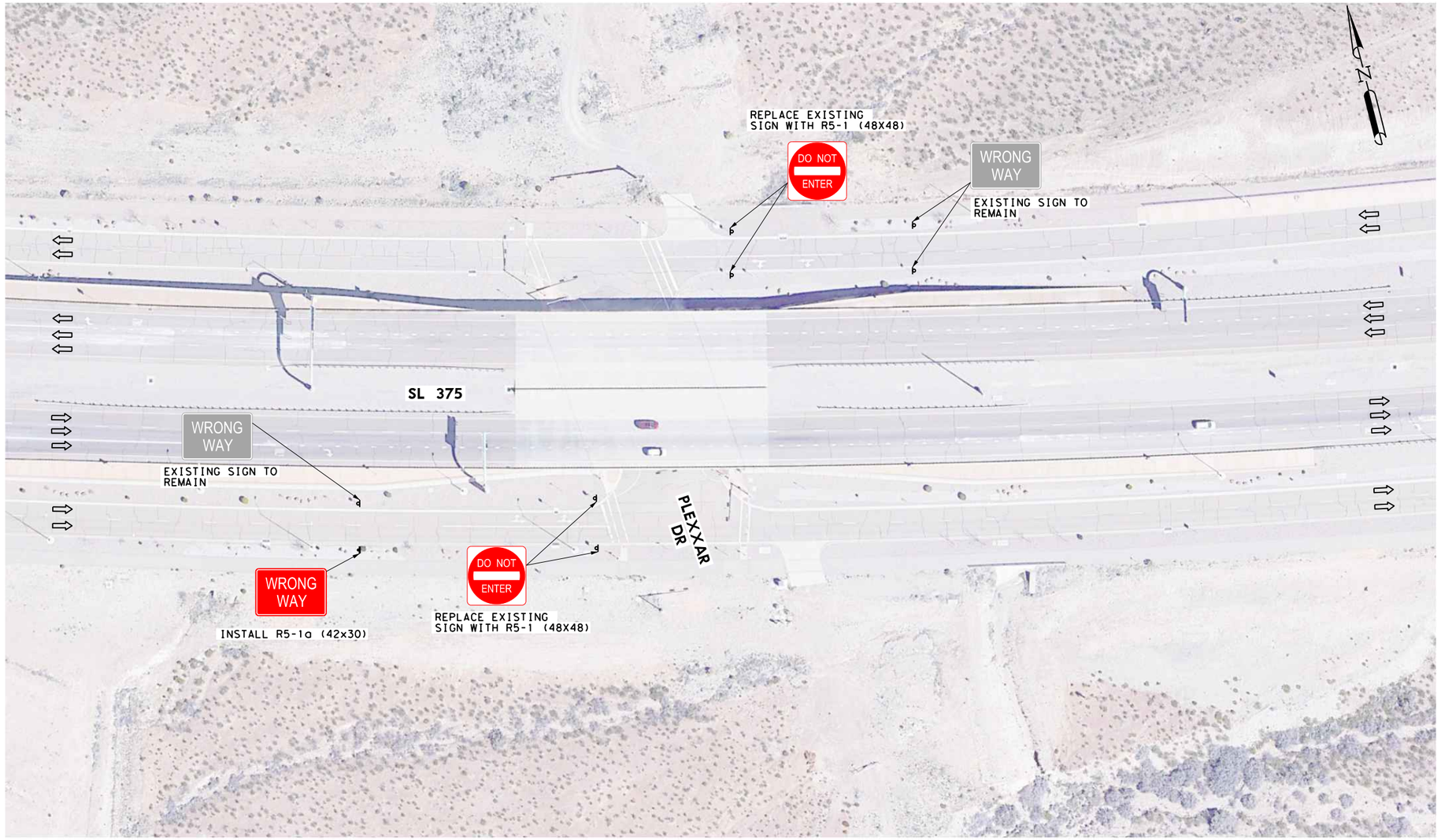
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	US 54
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		48

DATE: 3/22/2023 2:44:30 PM
FILE: TFO_ELP_US54_WWDC_SHEET_14 (NB Exit 32).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

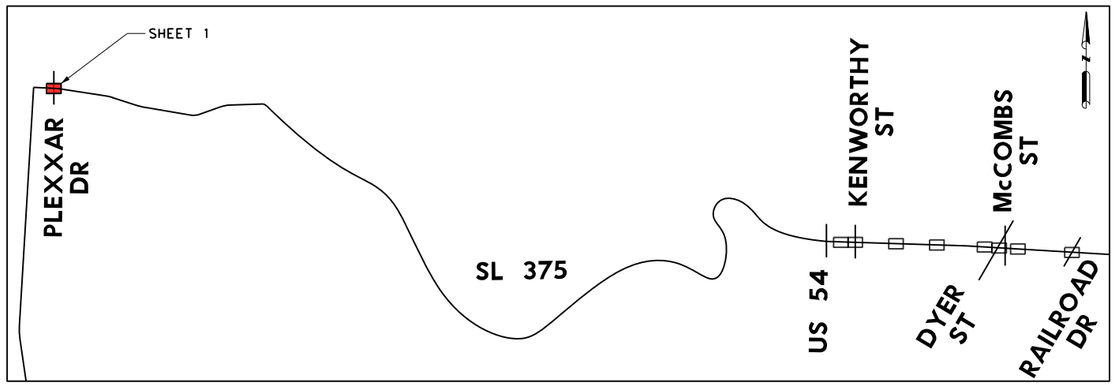
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT PLEXXAR DR TRAFFIC SIGNING LAYOUTS

SHEET 1 OF 23

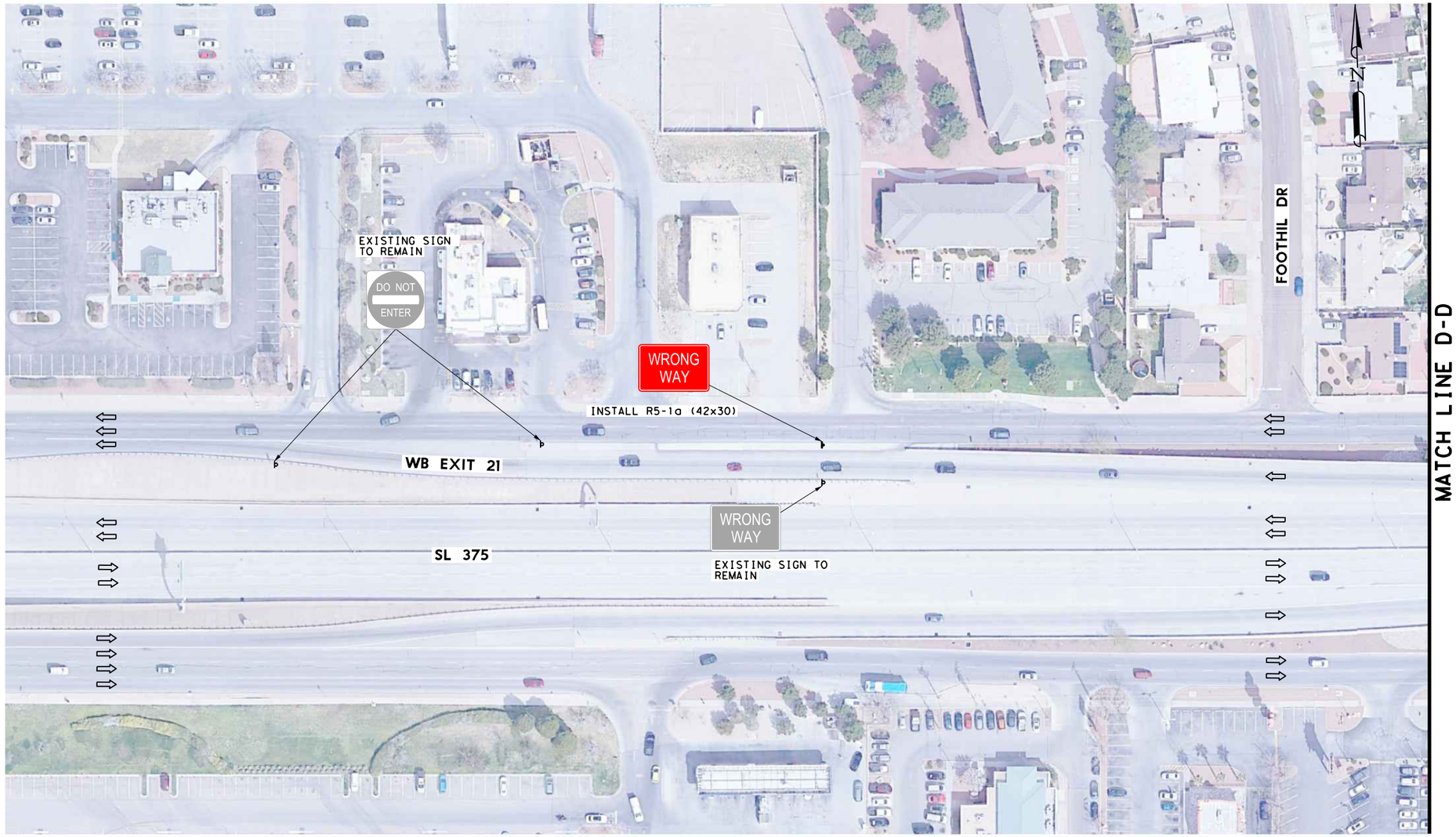
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		49

DATE: 3/22/2023 2:44:38 PM
FILE: TFQ_ELP_SL375_WWOC_SHEET_01 (Plexxar Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

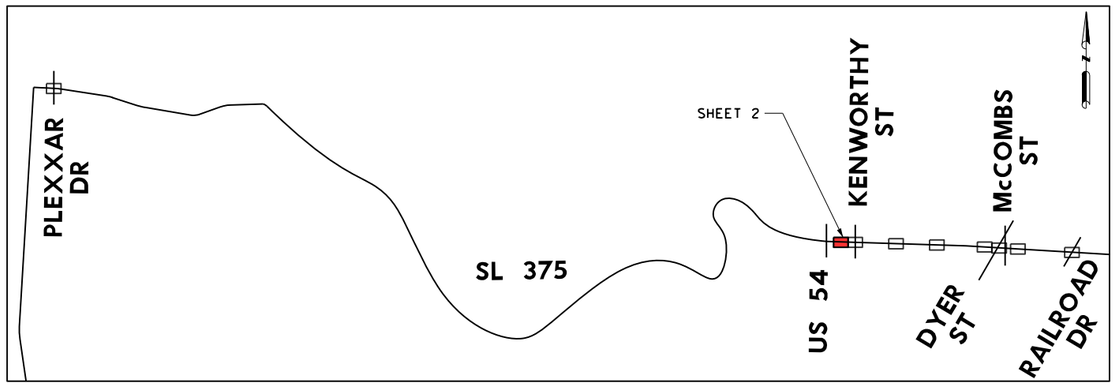
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT WB EXIT 21
TRAFFIC SIGNING LAYOUTS

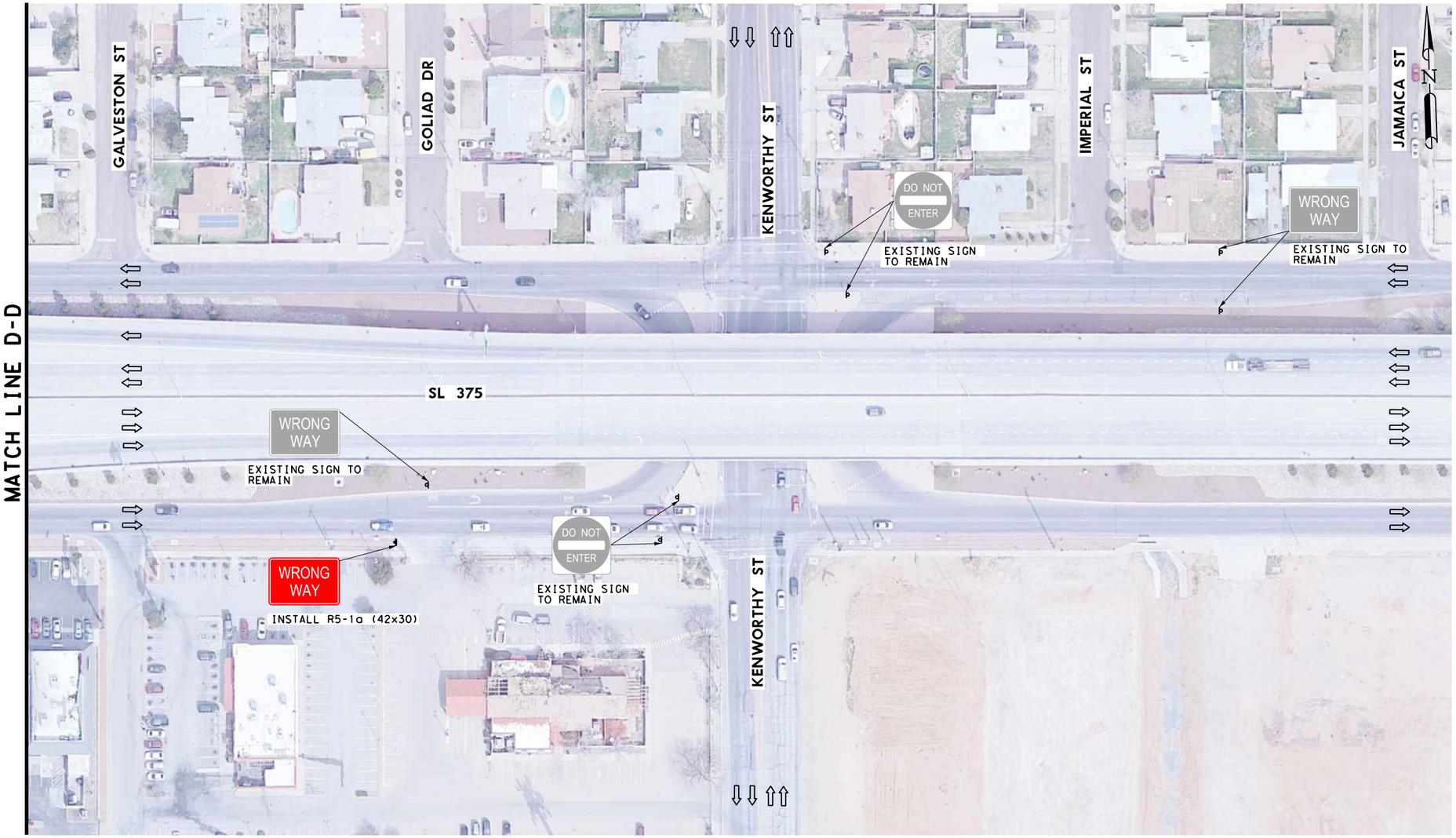
SHEET 2 OF 23

TRAFIQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		50

DATE: 3/22/2023 2:44:39 PM
FILE: TFO_ELP_SL375_WWDC_SHEET_02 (WB Exit 21).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

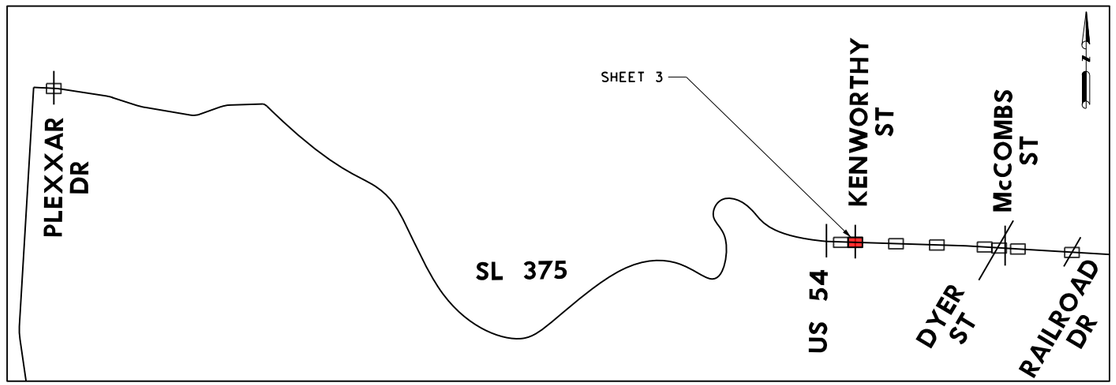
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT KENWORTHY ST TRAFFIC SIGNING LAYOUTS

SHEET 3 OF 23

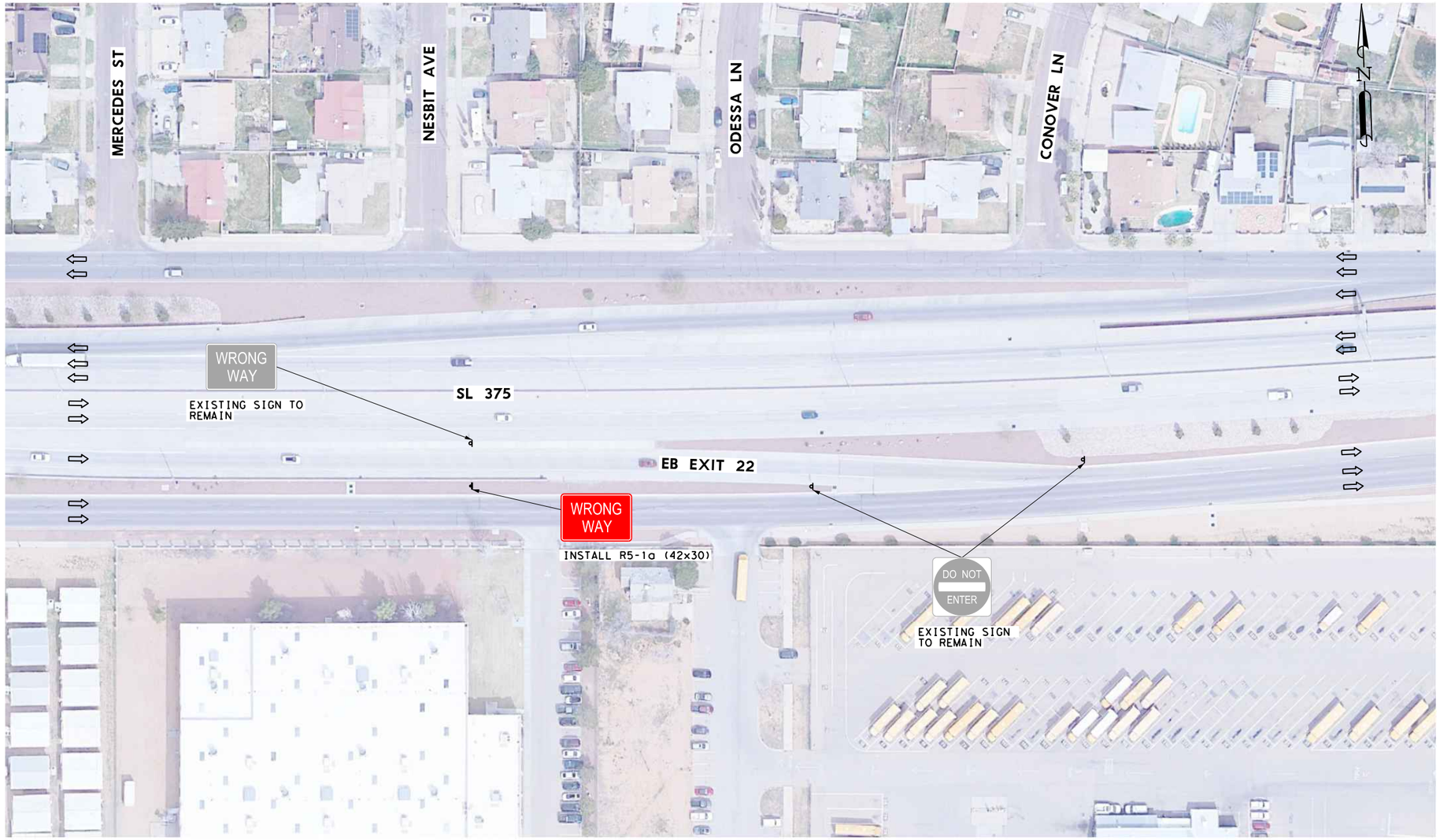
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc, F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		51

DATE: 3/22/2023 2:44:41 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_03 (Kenworthy St).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

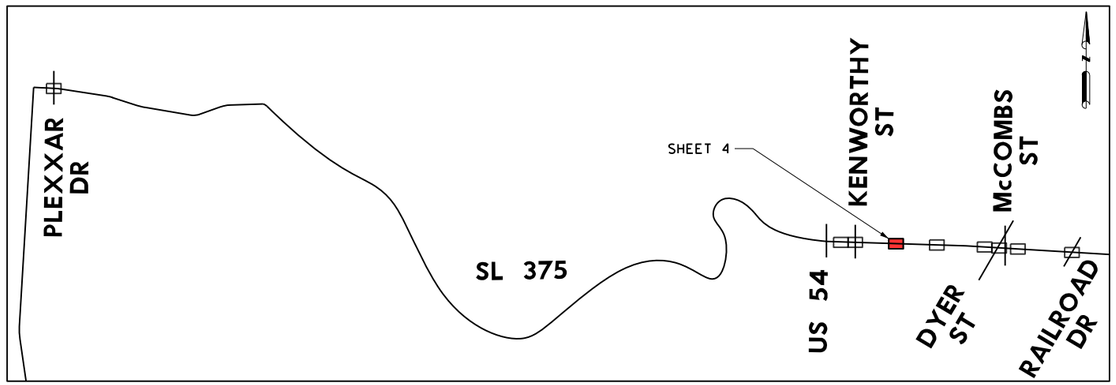
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT EB EXIT 22 TRAFFIC SIGNING LAYOUTS

SHEET 4 OF 23

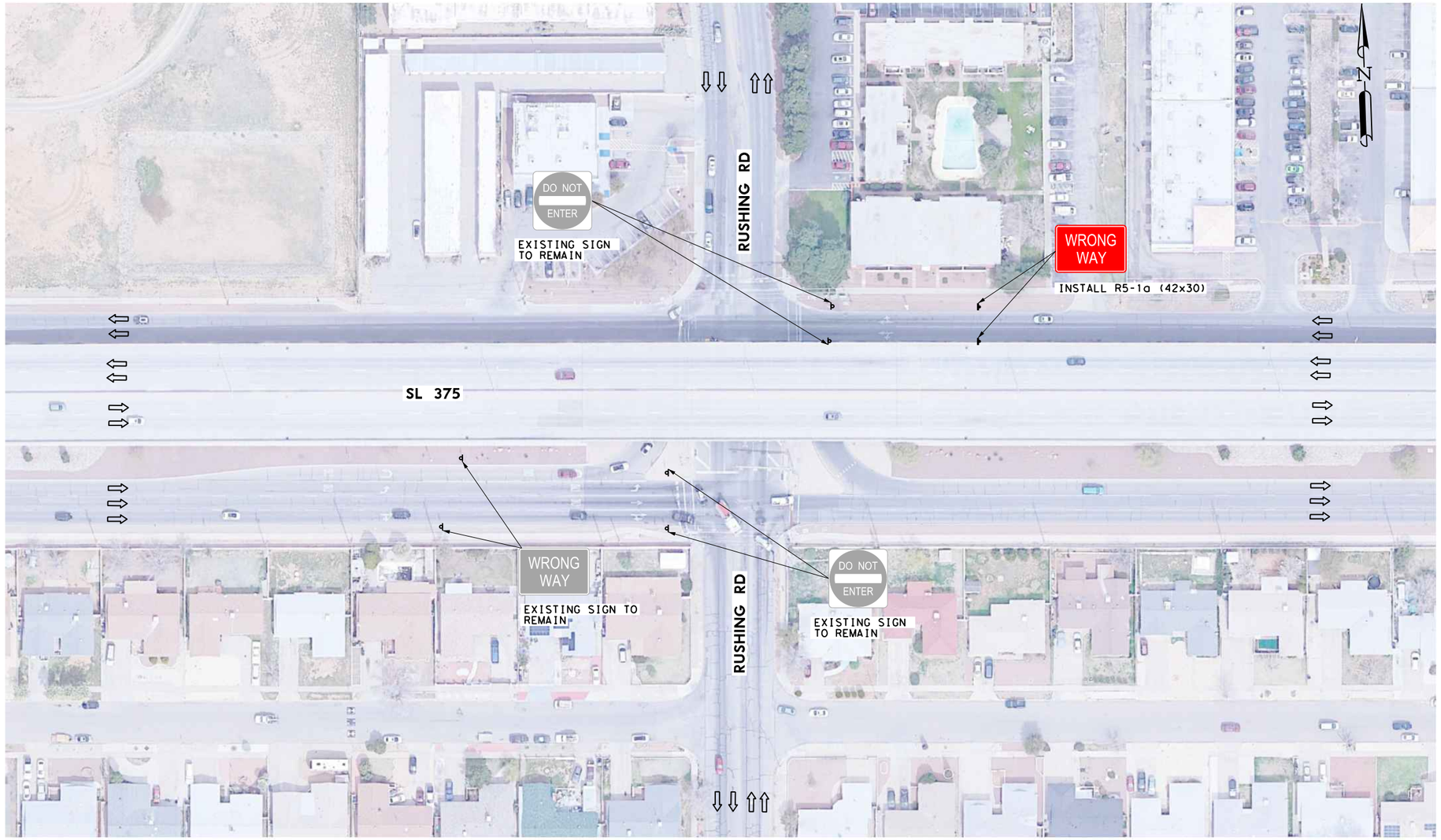
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		52

DATE: 3/22/2023 3:37:40 PM
FILE: TFO_ELP_SL375_WWDC_SHEET_04 (EB Exit 22).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

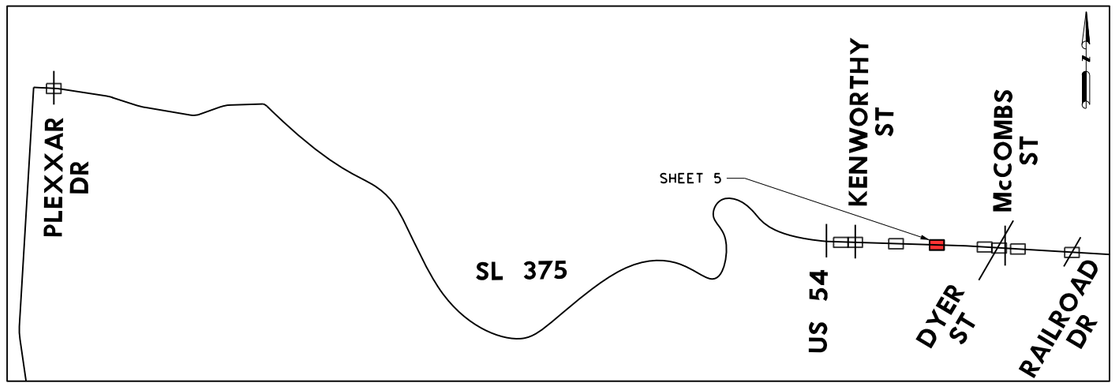
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT RUSHING RD TRAFFIC SIGNING LAYOUTS

SHEET 5 OF 23

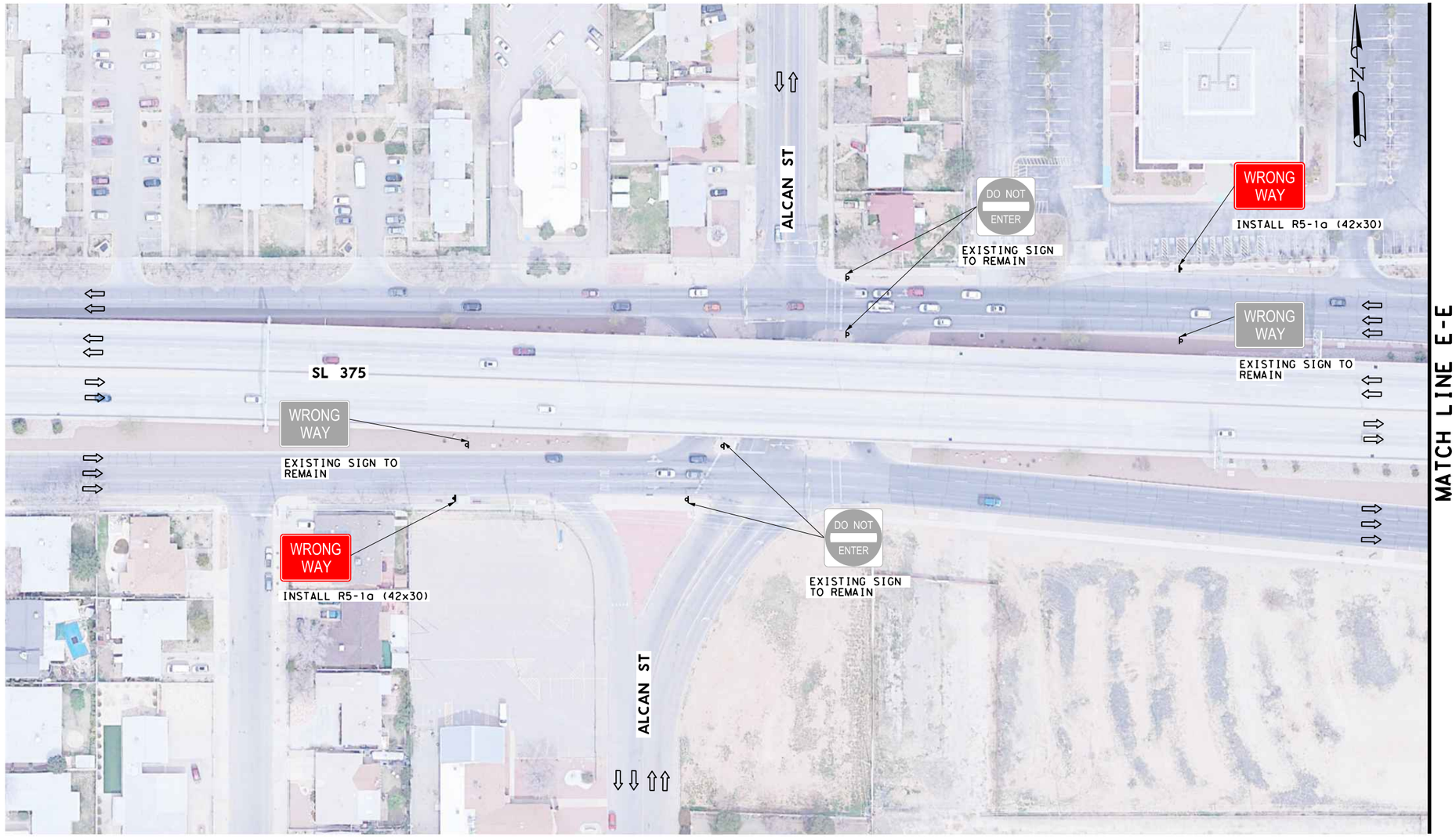
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		53

DATE: 3/22/2023 3:37:42 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_05 (Rushing Rd).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

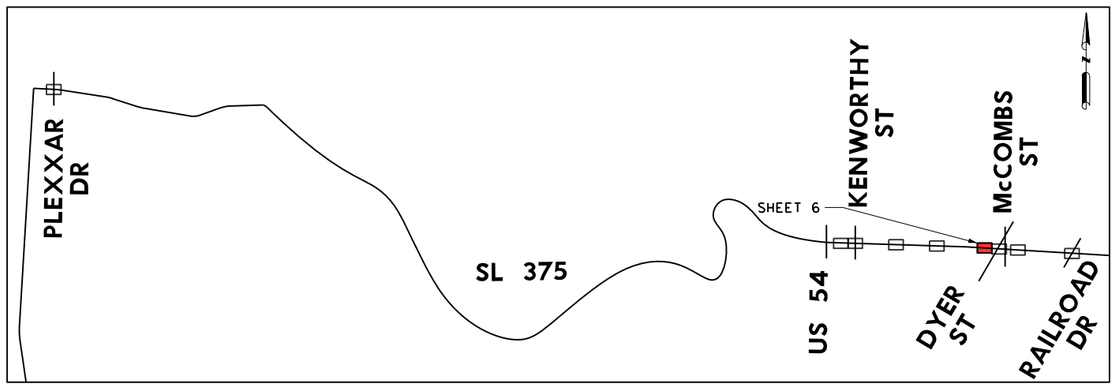
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT ALCAN ST TRAFFIC SIGNING LAYOUTS

SHEET 6 OF 23

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		54

DATE: 3/22/2023 3:37:43 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_06 (Alcan St).dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

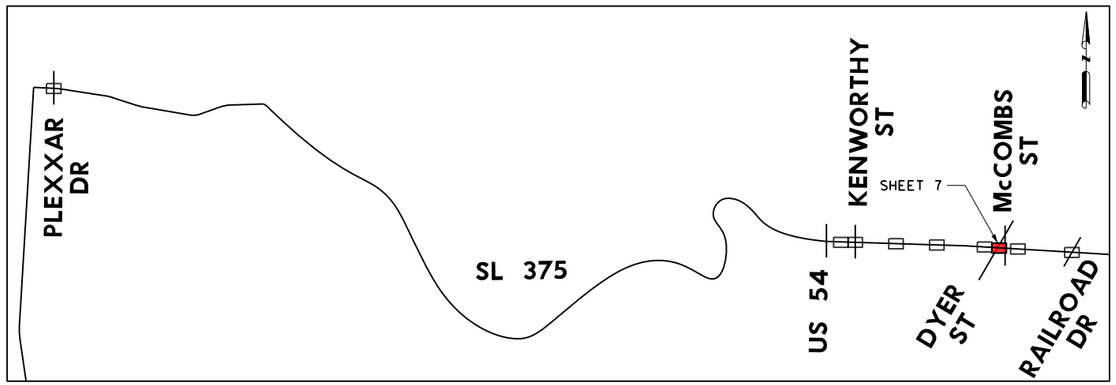
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT DYER ST TRAFFIC SIGNING LAYOUTS

SHEET 7 OF 23

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		55

DATE: 3/22/2023 2:44:47 PM
FILE: TFQ_ELP_SL375_WWOC_SHEET_07 (Dyer St).dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

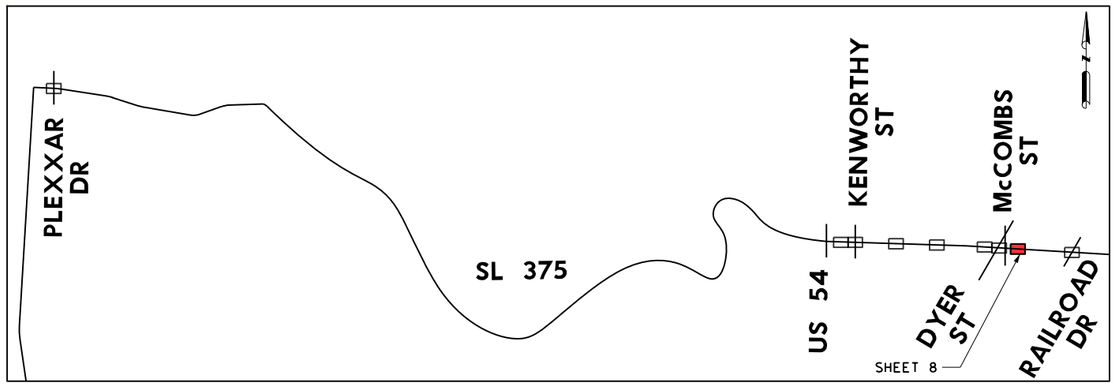
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT EB EXIT 24 TRAFFIC SIGNING LAYOUTS

SHEET 8 OF 23

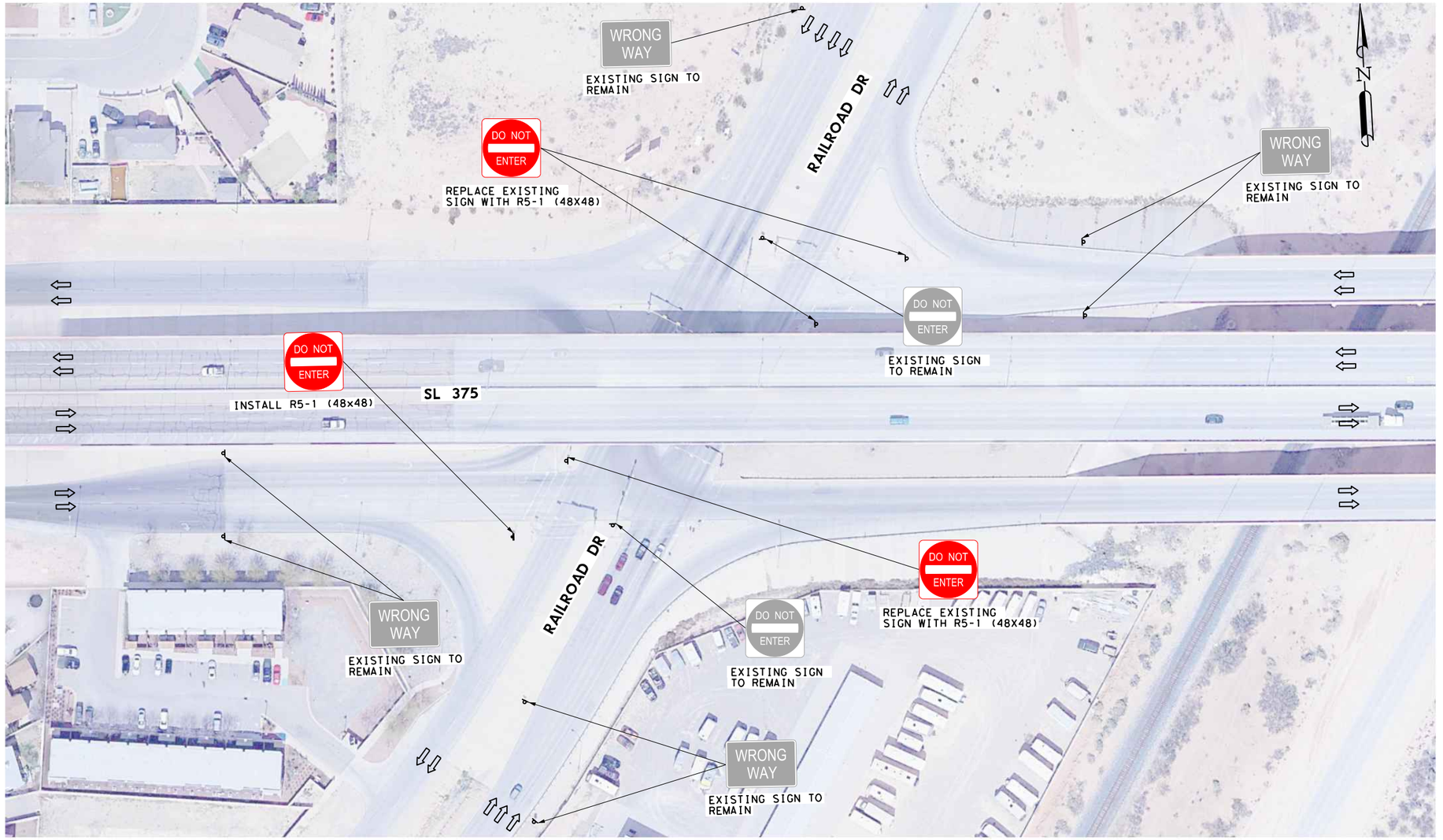
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		56

DATE: 3/22/2023 2:44:48 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_08 (EB Exit 24).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

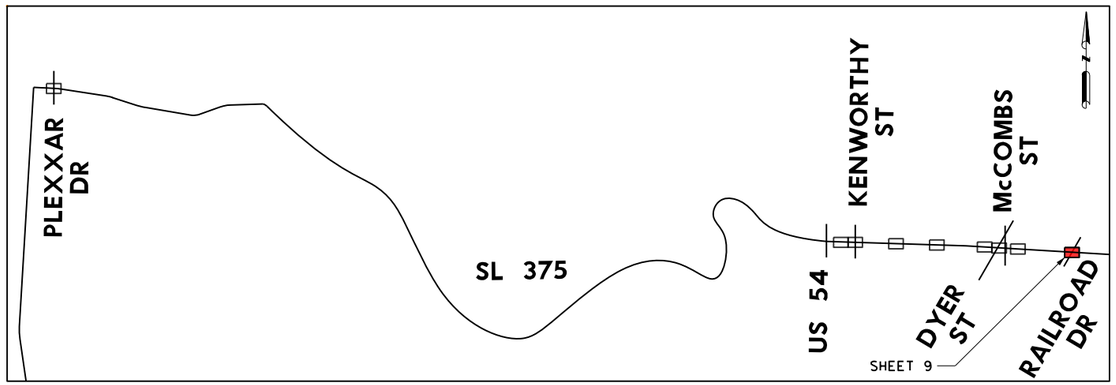
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT RAILROAD DR TRAFFIC SIGNING LAYOUTS

SHEET 9 OF 23

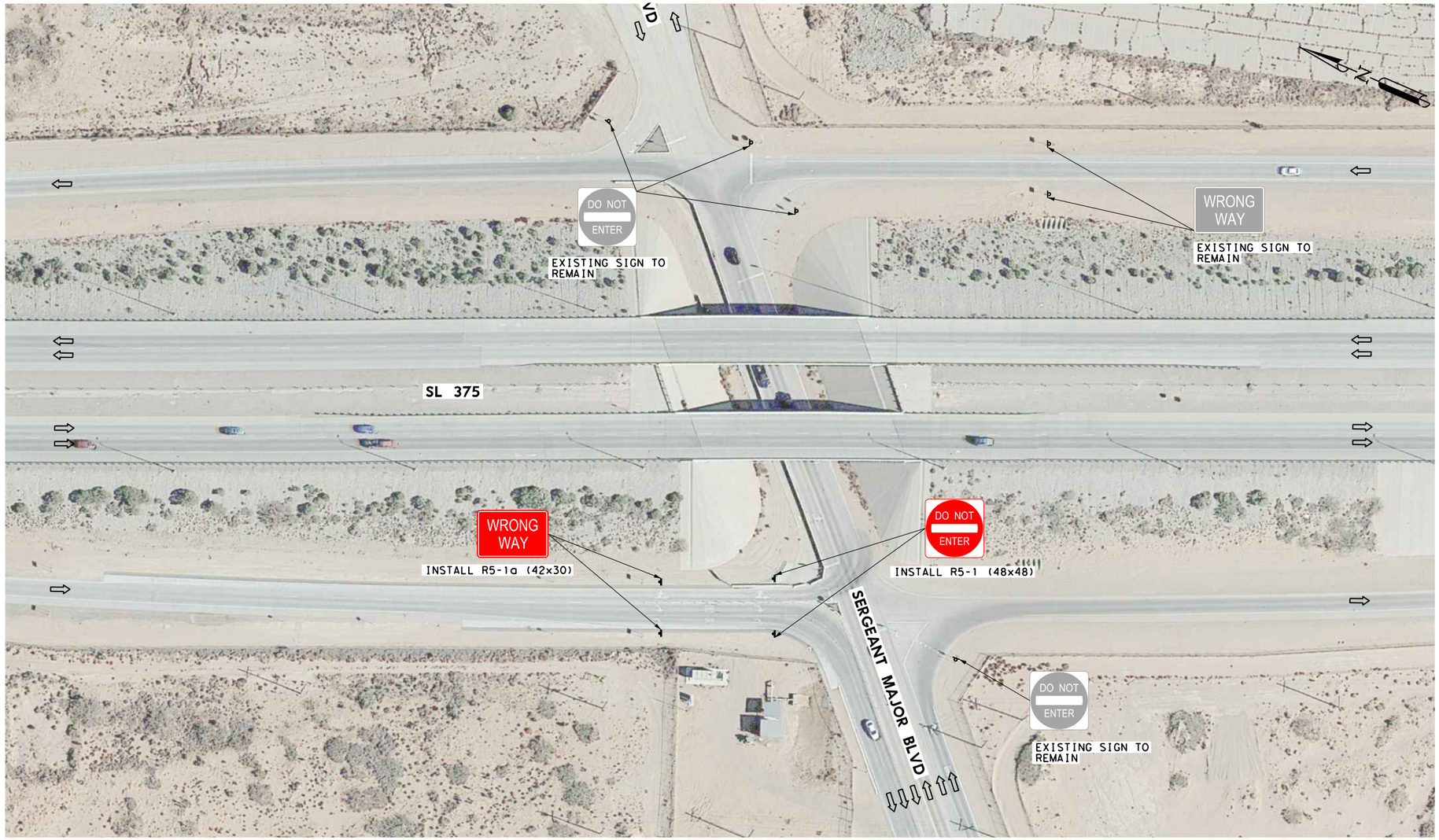
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		57

DATE: 3/22/2023 2:44:50 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_09 (Railroad Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

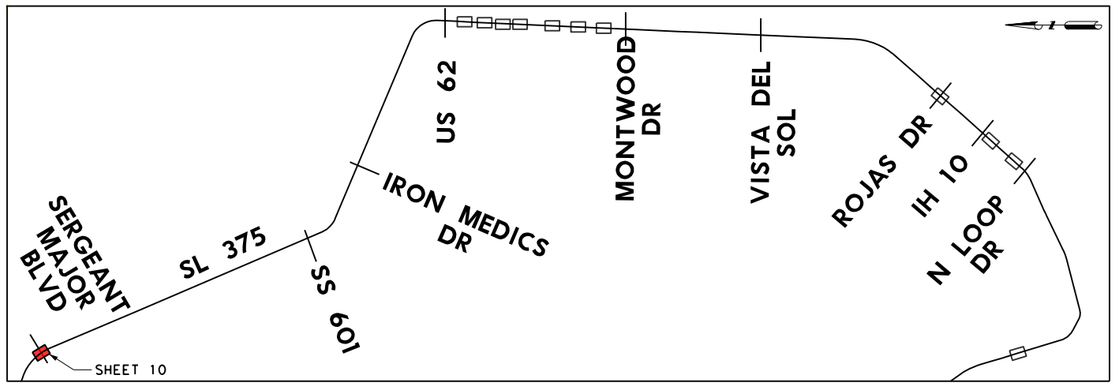
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT SERGEANT MAJOR BLVD TRAFFIC SIGNING LAYOUTS

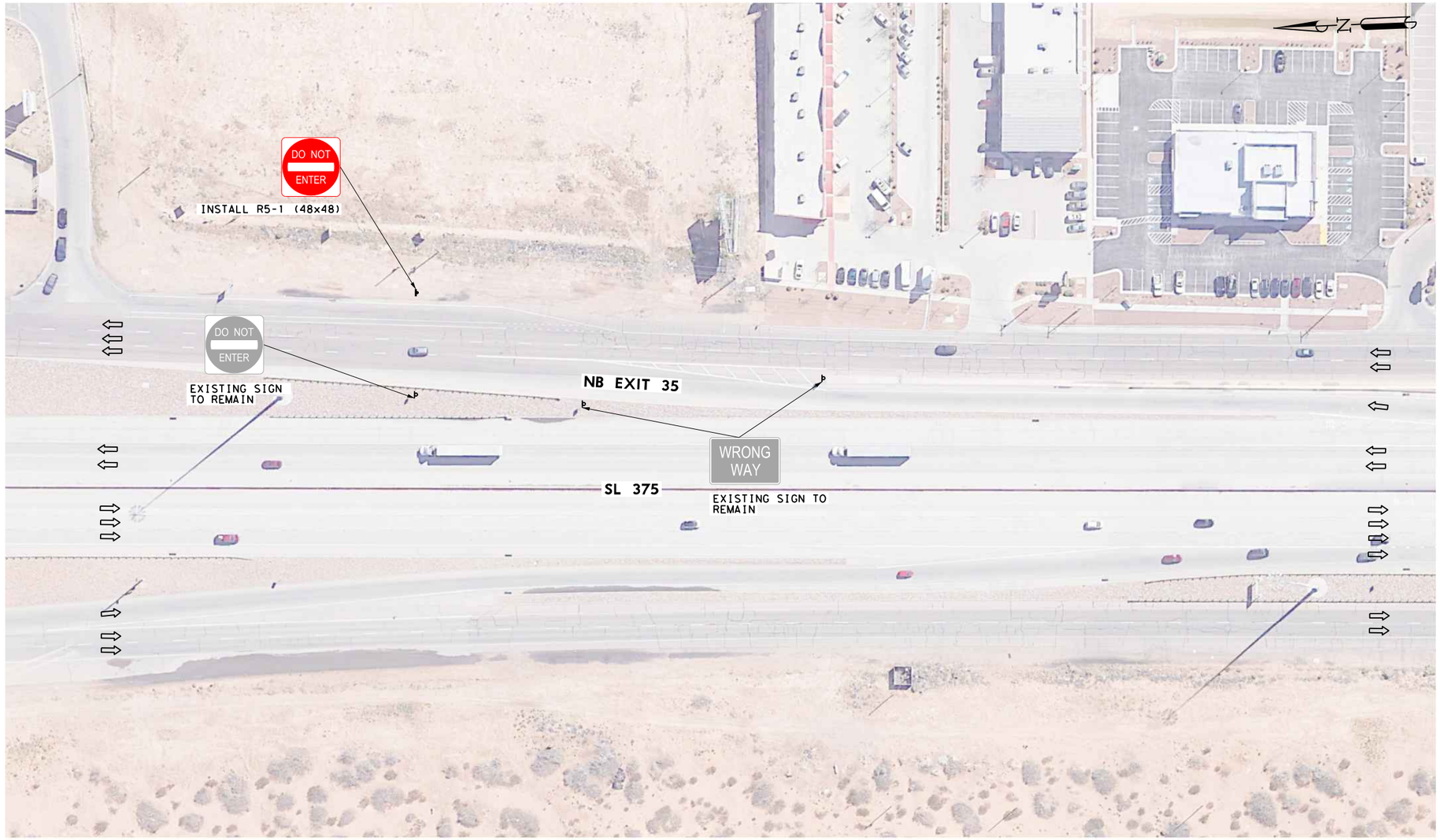
SHEET 10 OF 23

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		58

DATE: 3/22/2023 2:44:51 PM
FILE: TFQ_ELP_SL375_WWOC_SHEET_10 (Sergeant Major Blvd).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

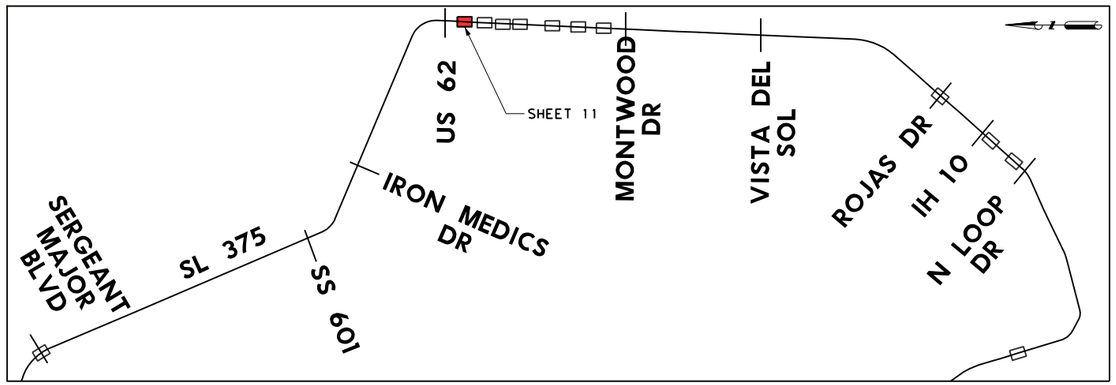
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT NB EXIT 35 TRAFFIC SIGNING LAYOUTS

SHEET 11 OF 23

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		59

DATE: 3/22/2023 2:44:53 PM
FILE: TFO_ELP_SL375_WWDC_SHEET_11 (NB Exit 35).dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

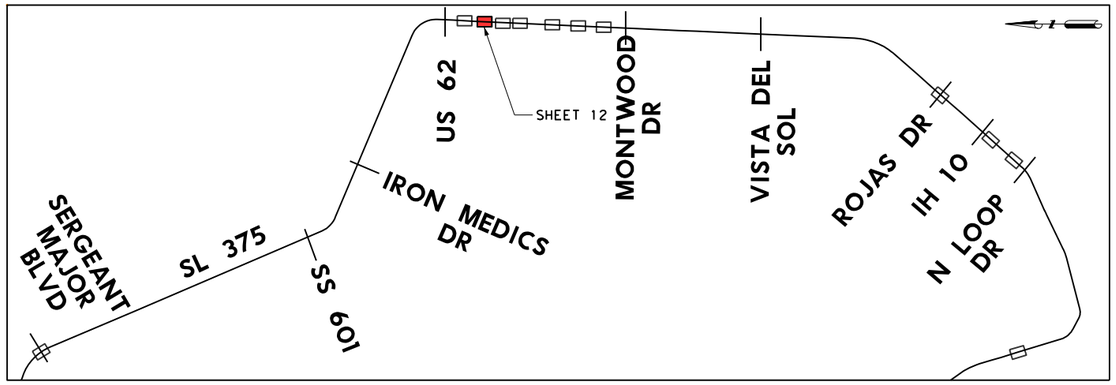
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT SB EXIT 38
TRAFFIC SIGNING LAYOUTS

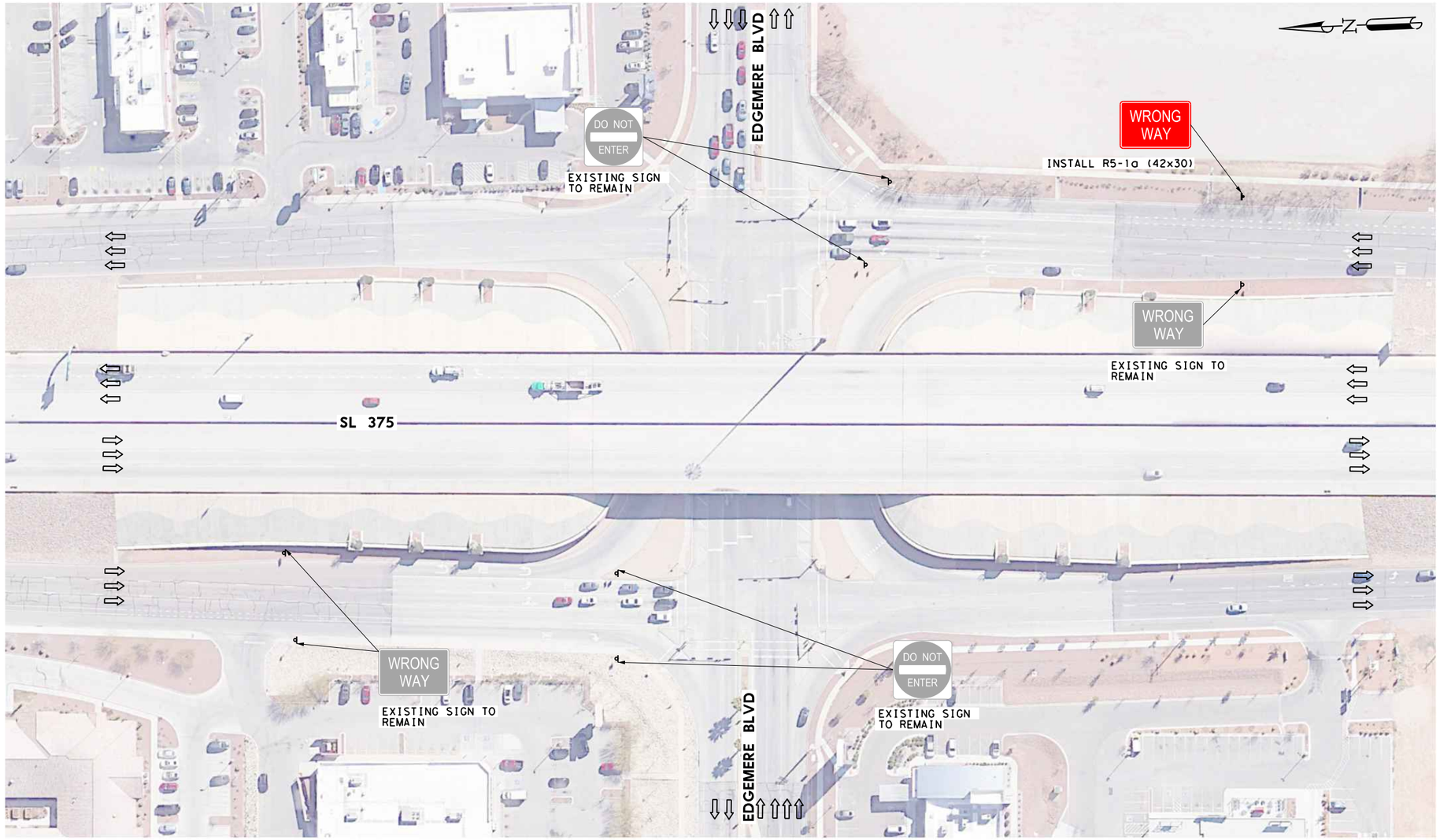
SHEET 12 OF 23

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		60

DATE: 3/22/2023 2:44:54 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_12 (SB Exit 38).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

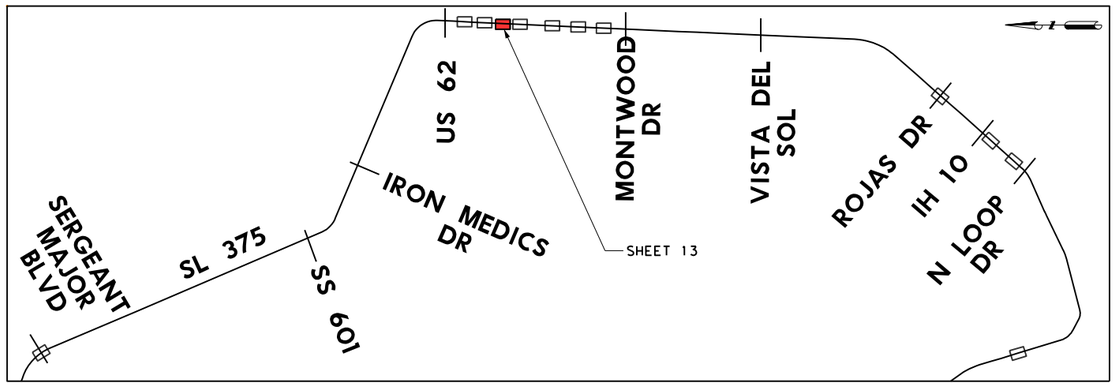
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT EDGEMERE BLVD TRAFFIC SIGNING LAYOUTS

SHEET 13 OF 23

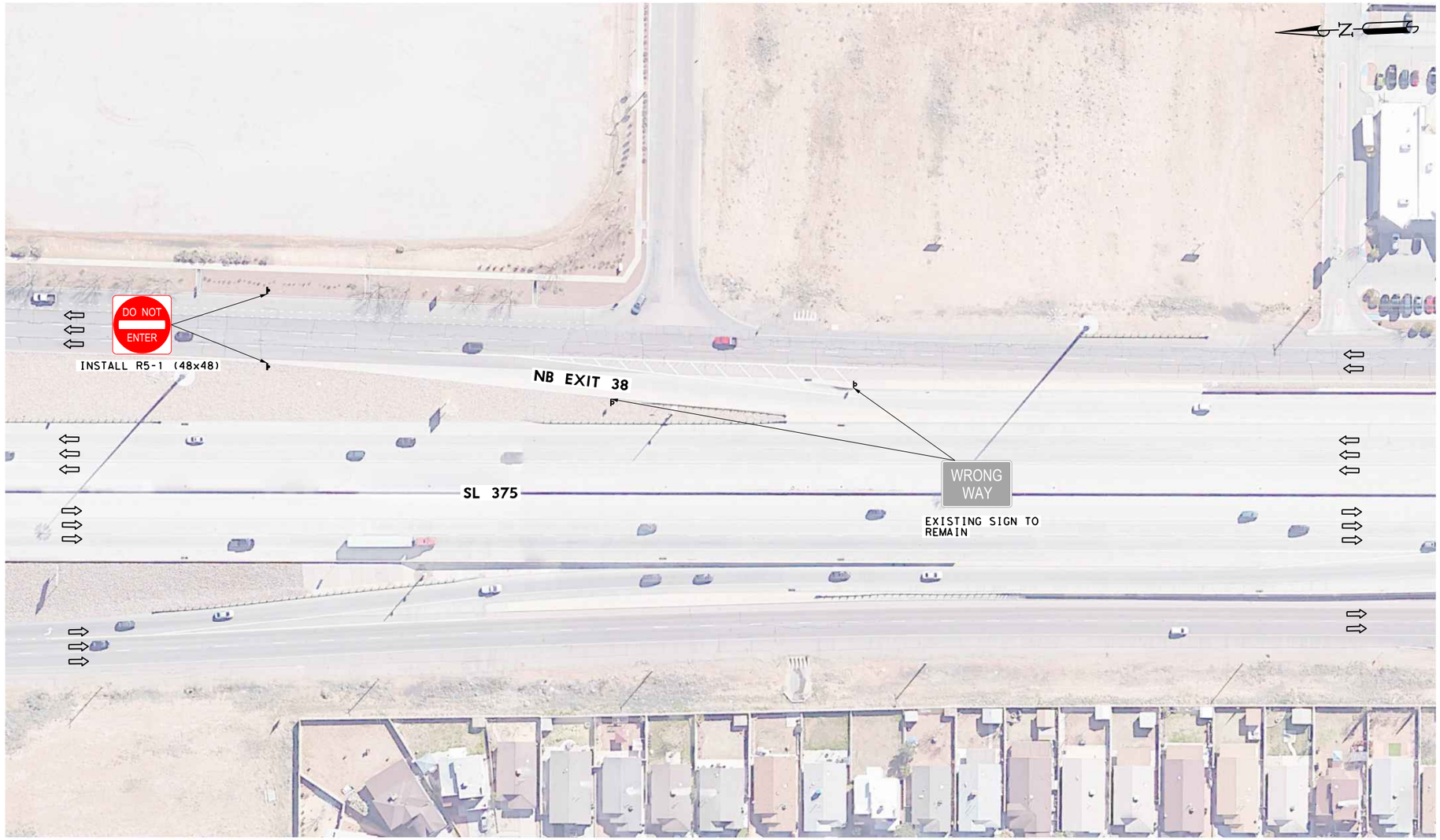
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		61

DATE: 3/22/2023 2:44:56 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_13 (Edgemere Blvd).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

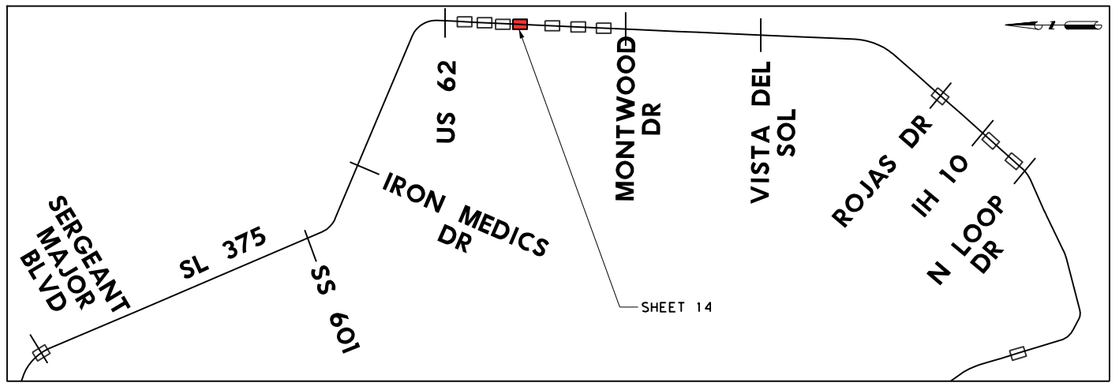
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT NB EXIT 38 TRAFFIC SIGNING LAYOUTS

SHEET 14 OF 23

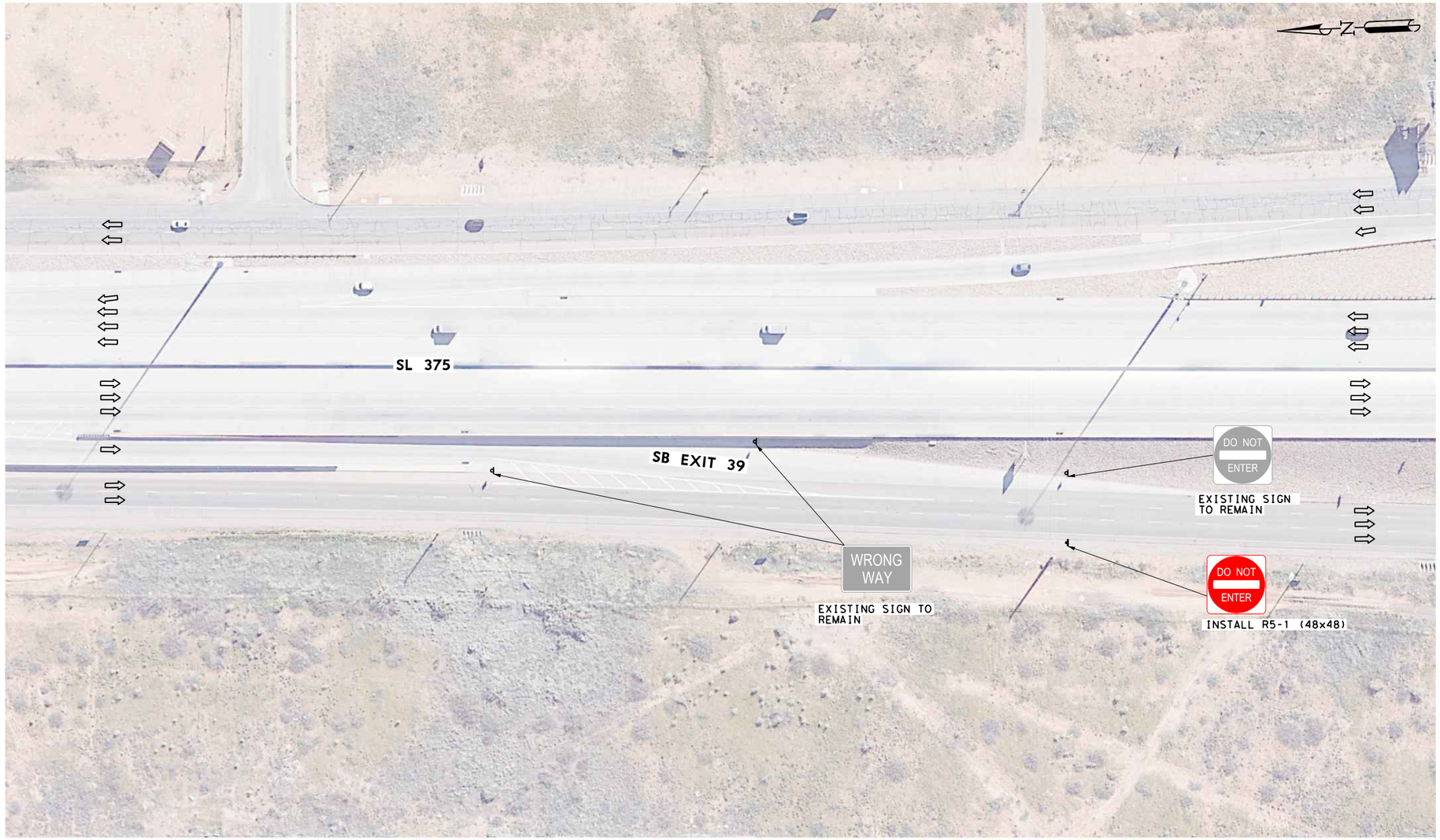
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		62

DATE: 3/22/2023 2:44:57 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_14 (NB Exit 38).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

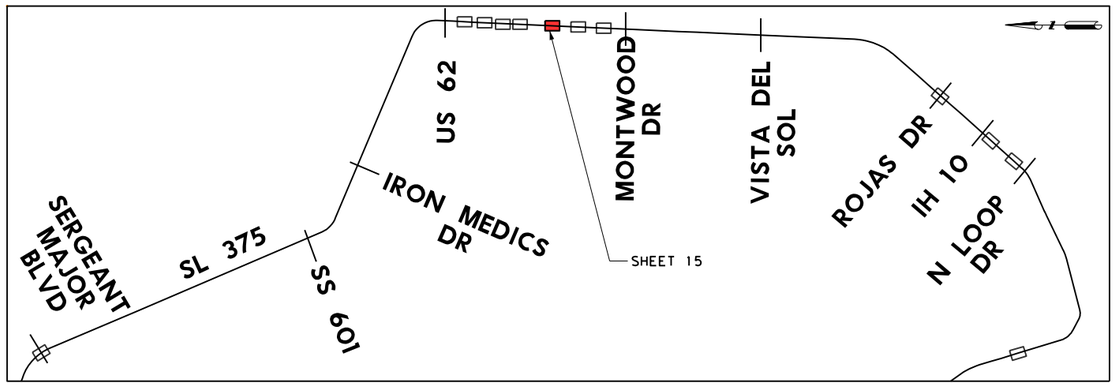
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT SB EXIT 39 TRAFFIC SIGNING LAYOUTS

SHEET 15 OF 23

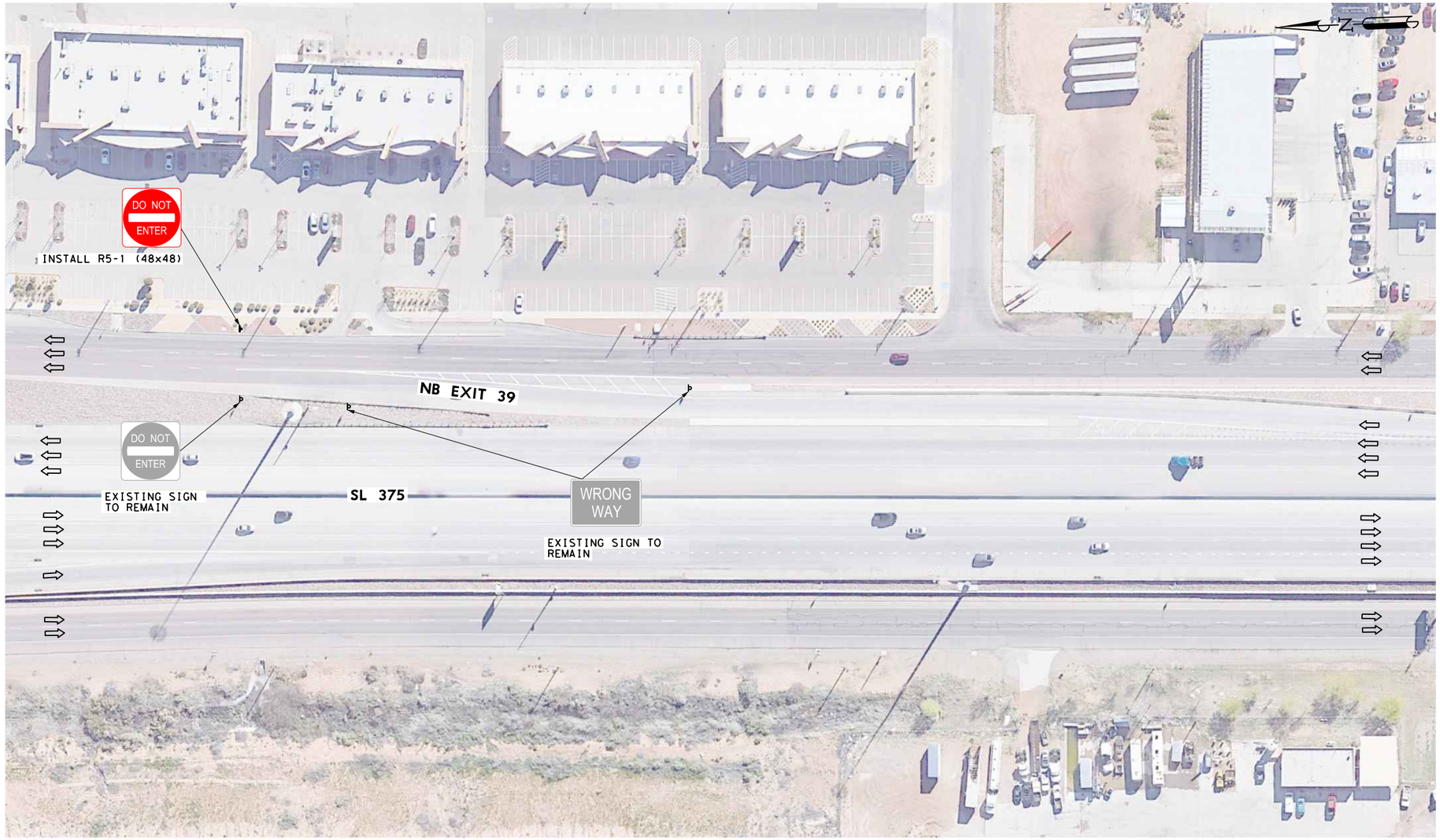
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		63

DATE: 3/22/2023 2:44:59 PM
FILE: TFQ_ELP_SL375_WWOC_SHEET_15 (SB Exit 39).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

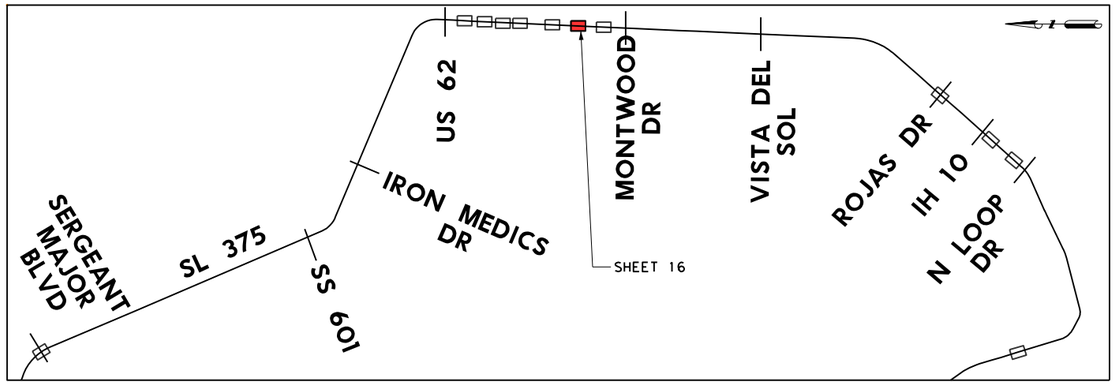
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT NB EXIT 39 TRAFFIC SIGNING LAYOUTS

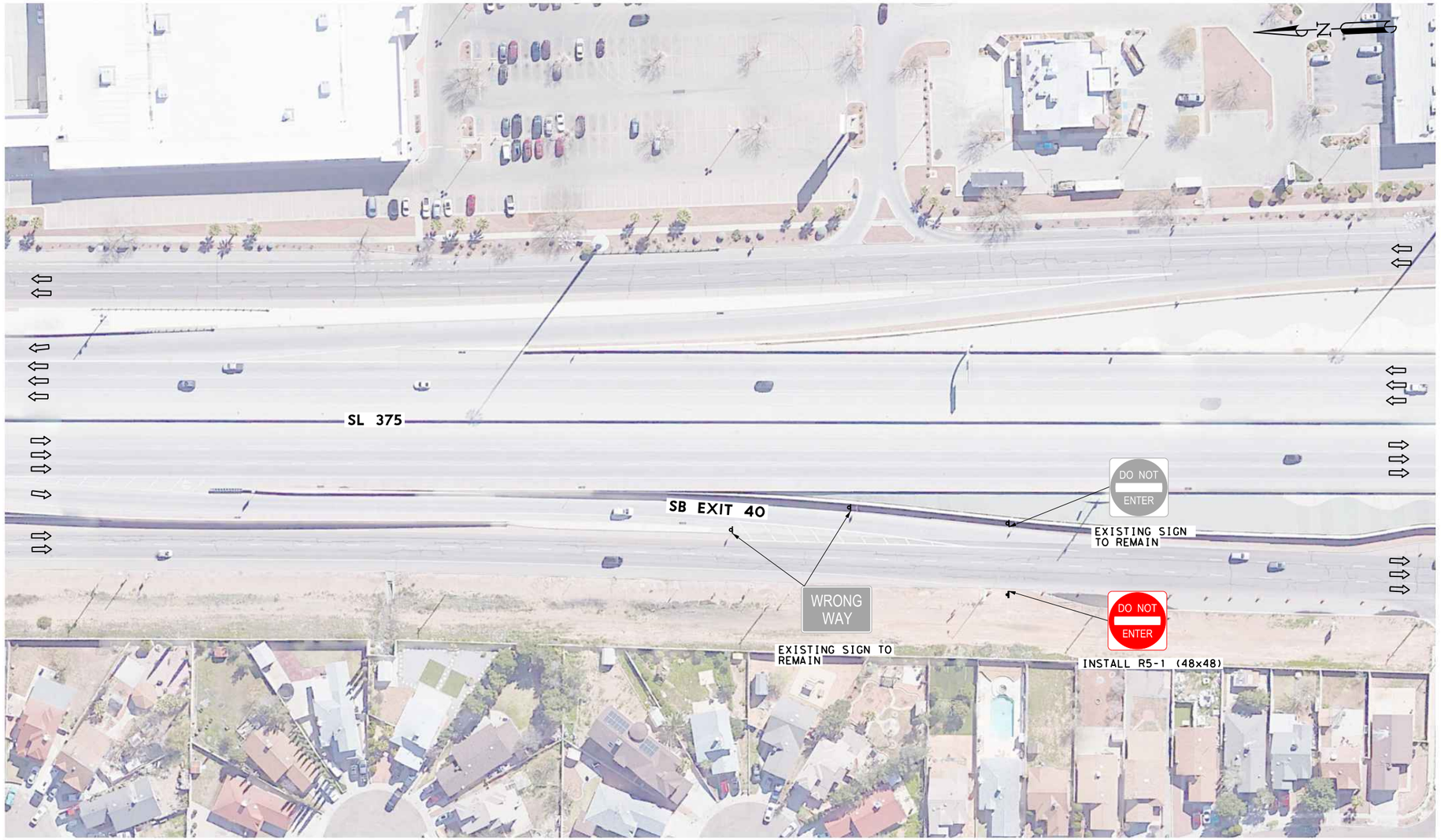
SHEET 16 OF 23

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		64

DATE: 3/22/2023 2:45:00 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_16 (NB Exit 39).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

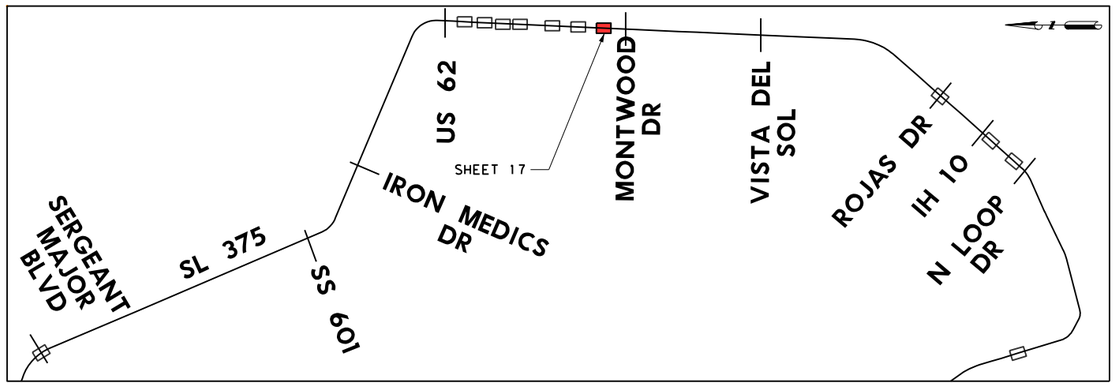
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT SB EXIT 40 TRAFFIC SIGNING LAYOUTS

SHEET 17 OF 23

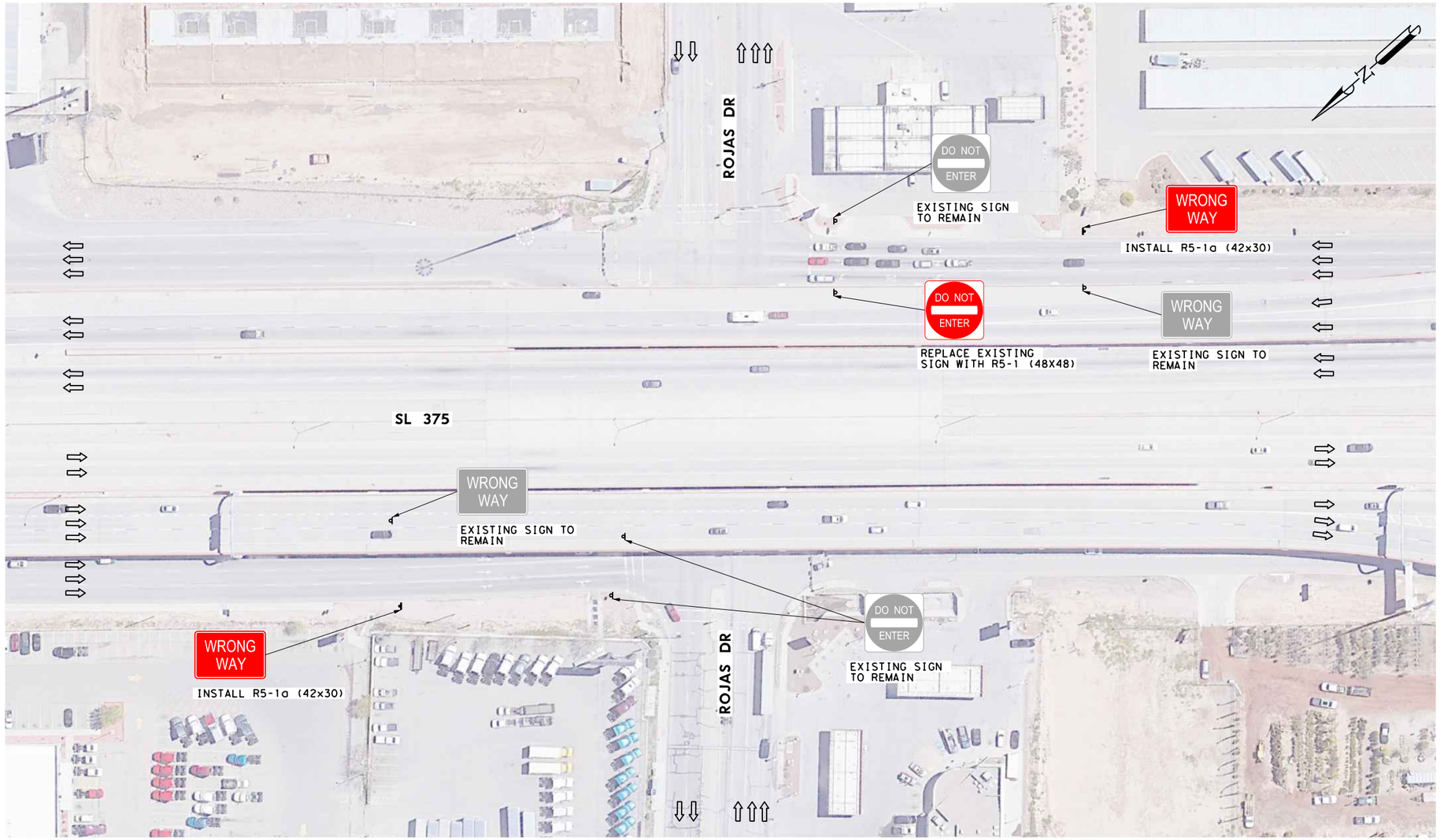
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		65

DATE: 3/22/2023 2:45:02 PM
FILE: TFQ_ELP_SL375_WWOC_SHEET_17 (SB Exit 40).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

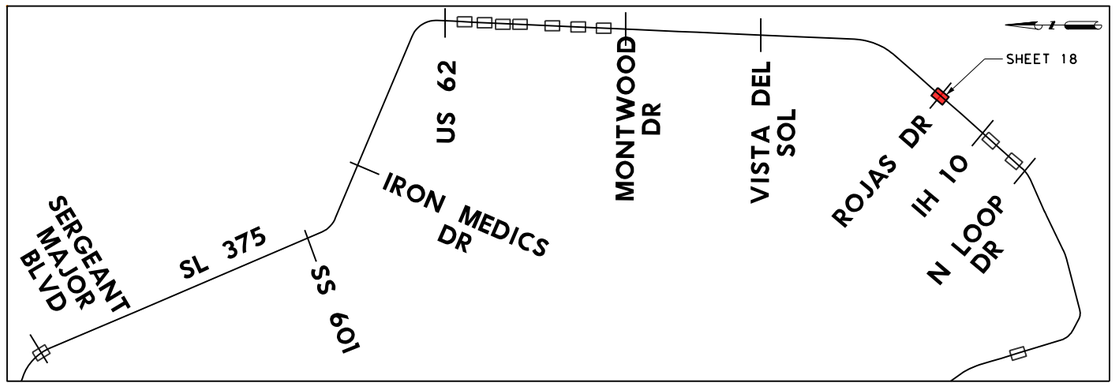
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT ROJAS DR TRAFFIC SIGNING LAYOUTS

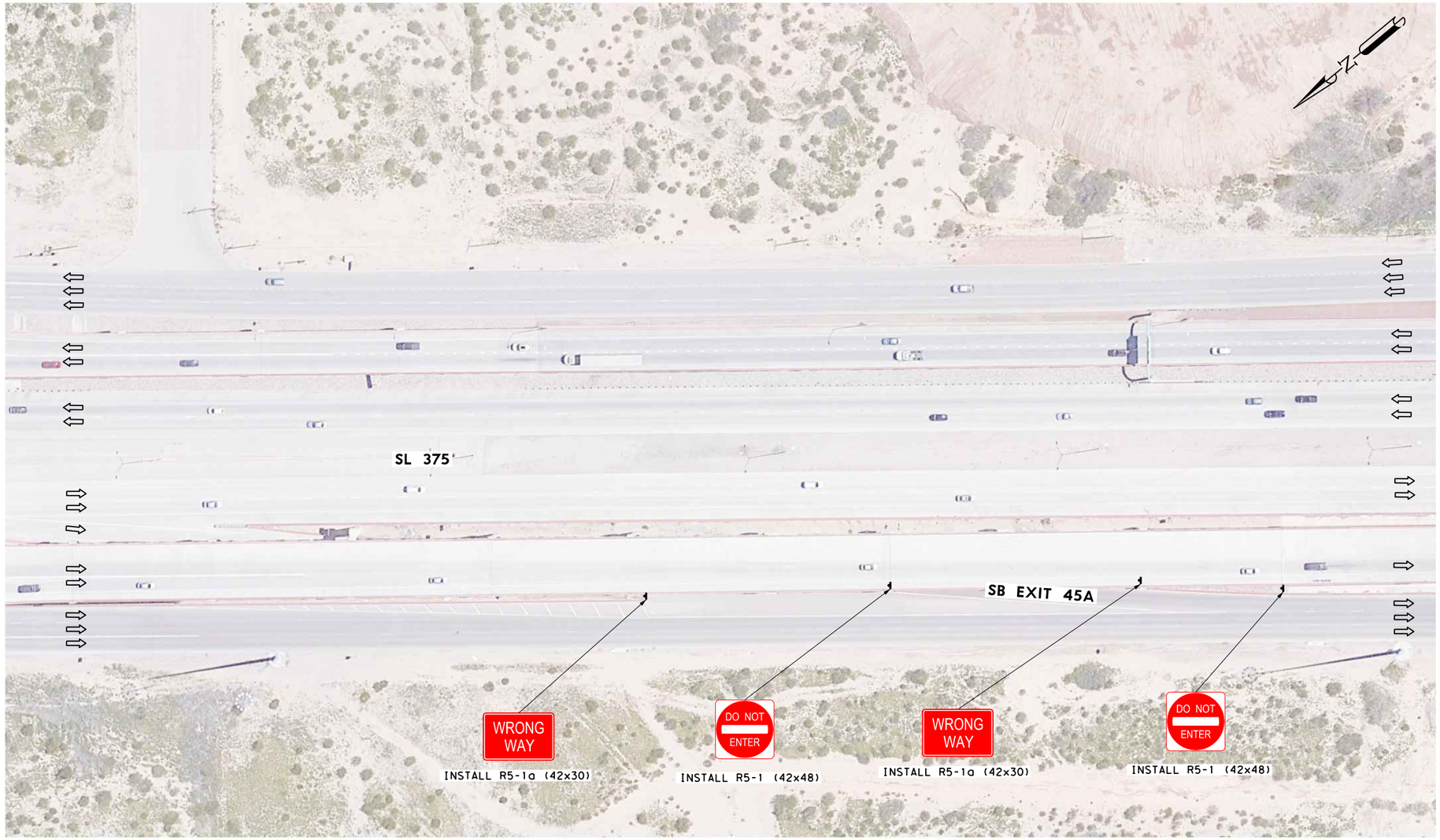
SHEET 18 OF 23

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		66

DATE: 3/22/2023 2:45:04 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_18 (Rojas Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

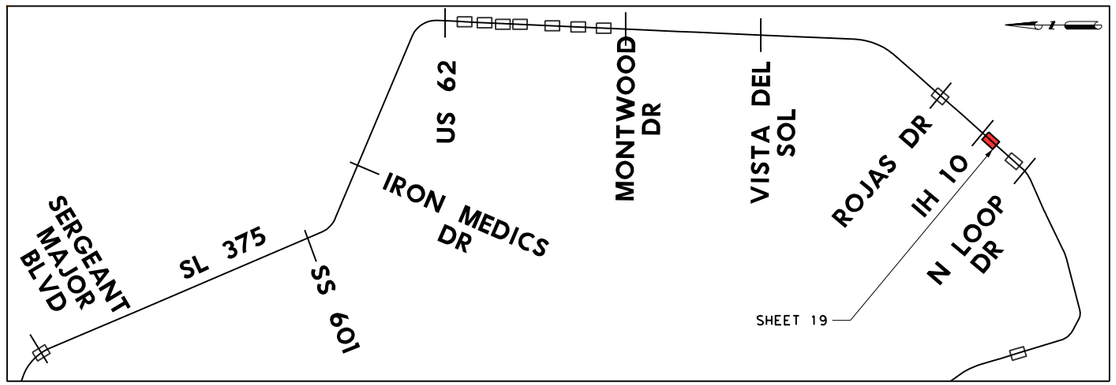
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT SB EXIT 45A TRAFFIC SIGNING LAYOUTS

SHEET 19 OF 23

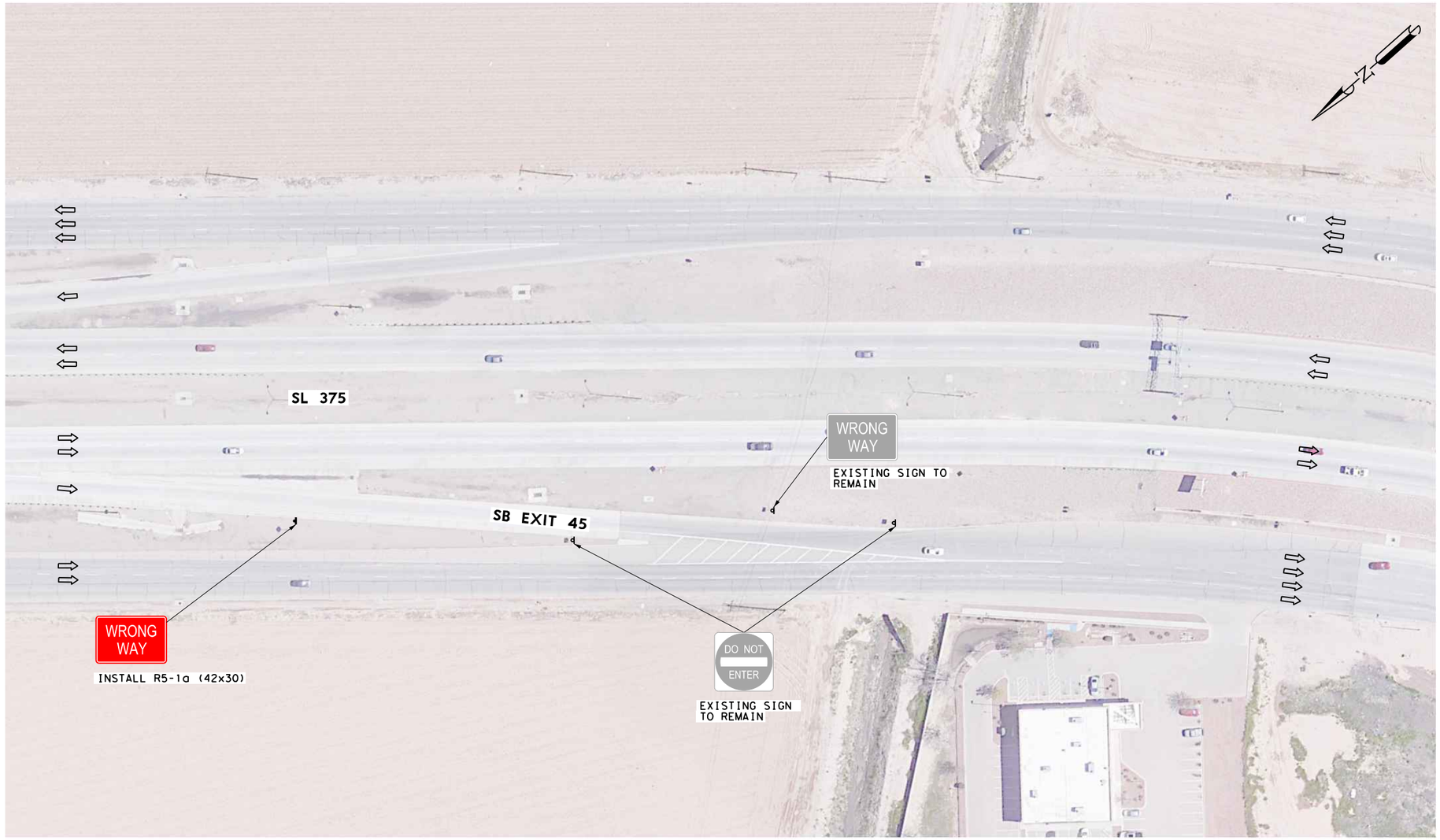
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		67

DATE: 3/22/2023 2:45:08 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_19 (SB Exist 45A).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

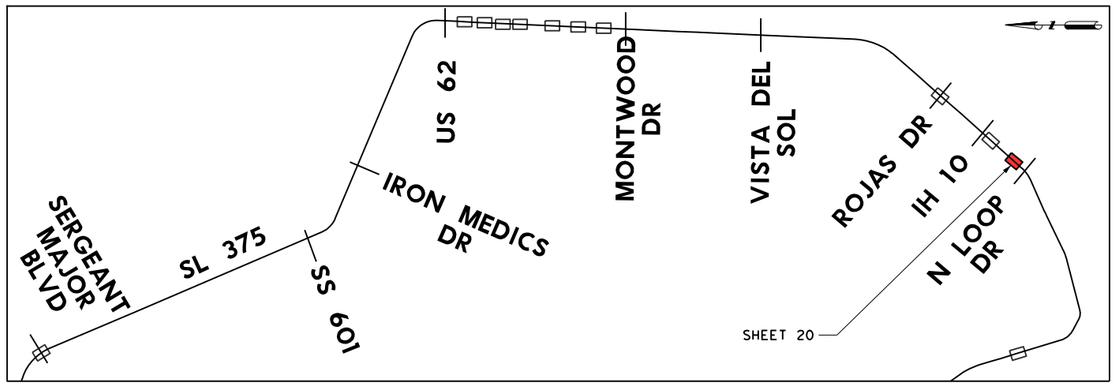
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT SB EXIT 45 TRAFFIC SIGNING LAYOUTS

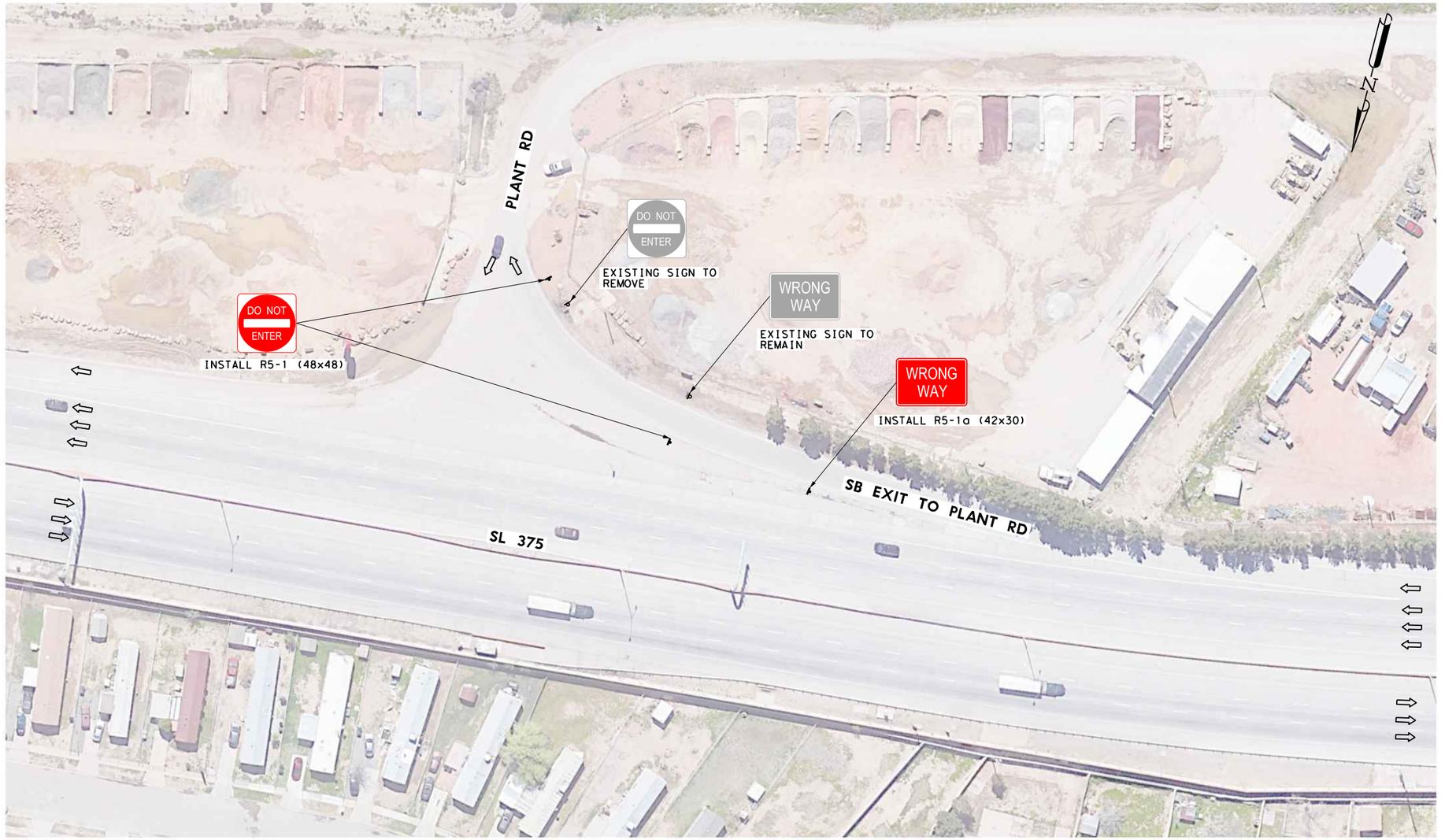
SHEET 20 OF 23

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		68

DATE: 3/22/2023 2:45:12 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_20 (SB Exit 45).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

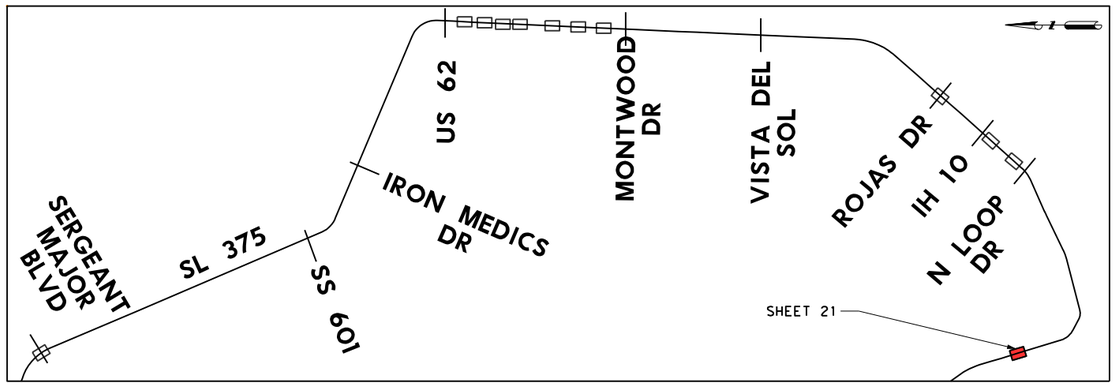
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3
644	6076	REMOVE SM RD SN SUP & AM	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT PLANT RD TRAFFIC SIGNING LAYOUTS

SHEET 21 OF 23

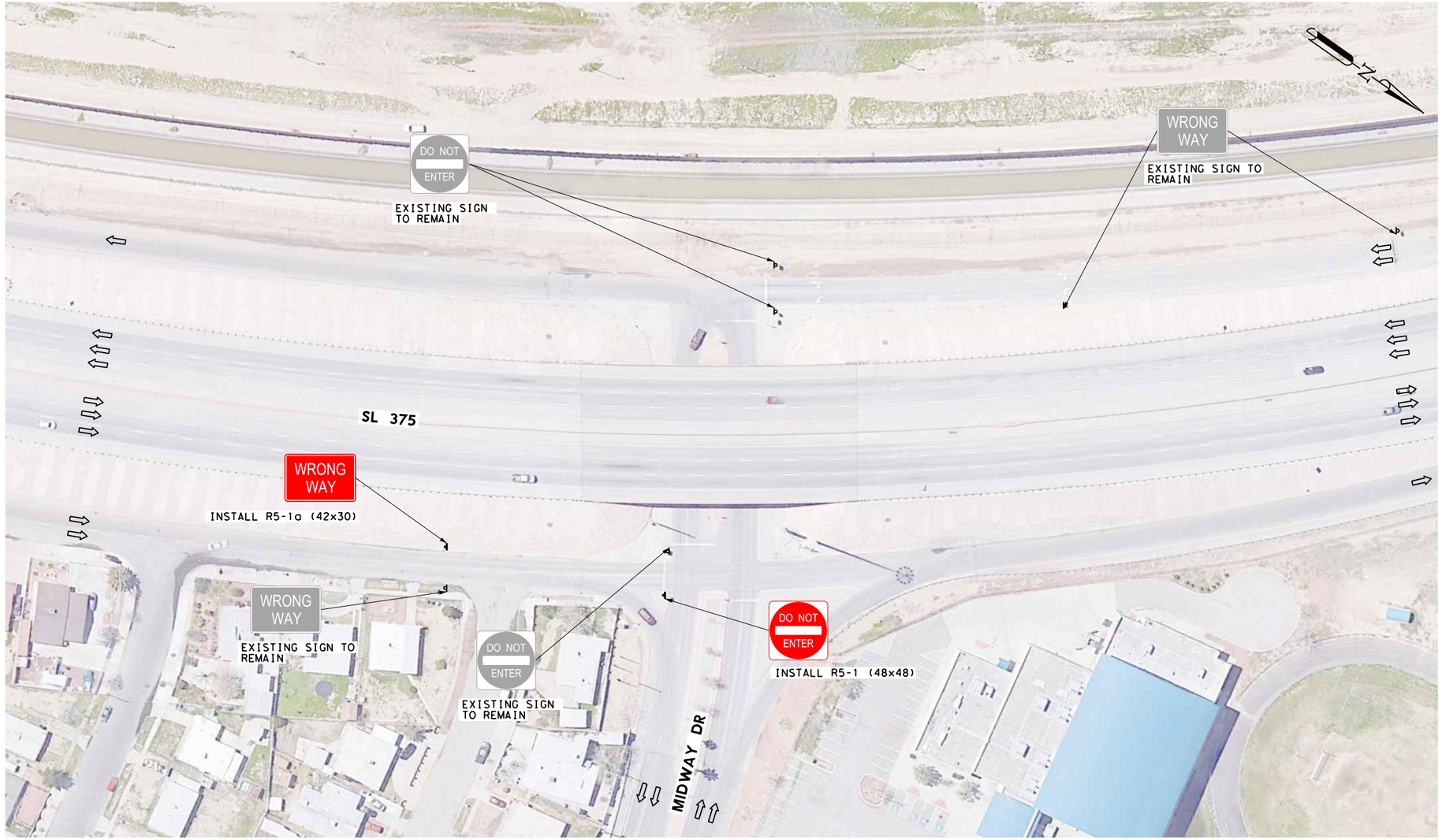
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		69

DATE: 3/22/2023 2:45:20 PM
FILE: TFQ_ELP_SL375_WWOC_SHEET_21 (Plant Rd).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

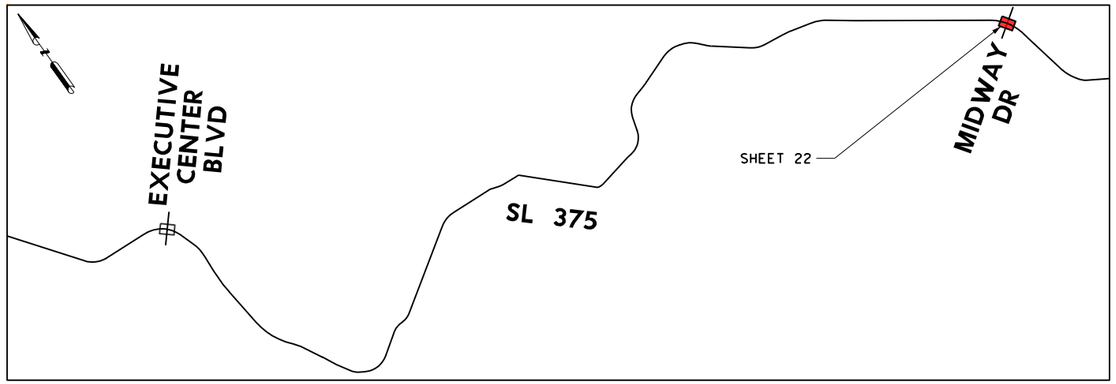
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT MIDWAY DR TRAFFIC SIGNING LAYOUTS

SHEET 22 OF 23

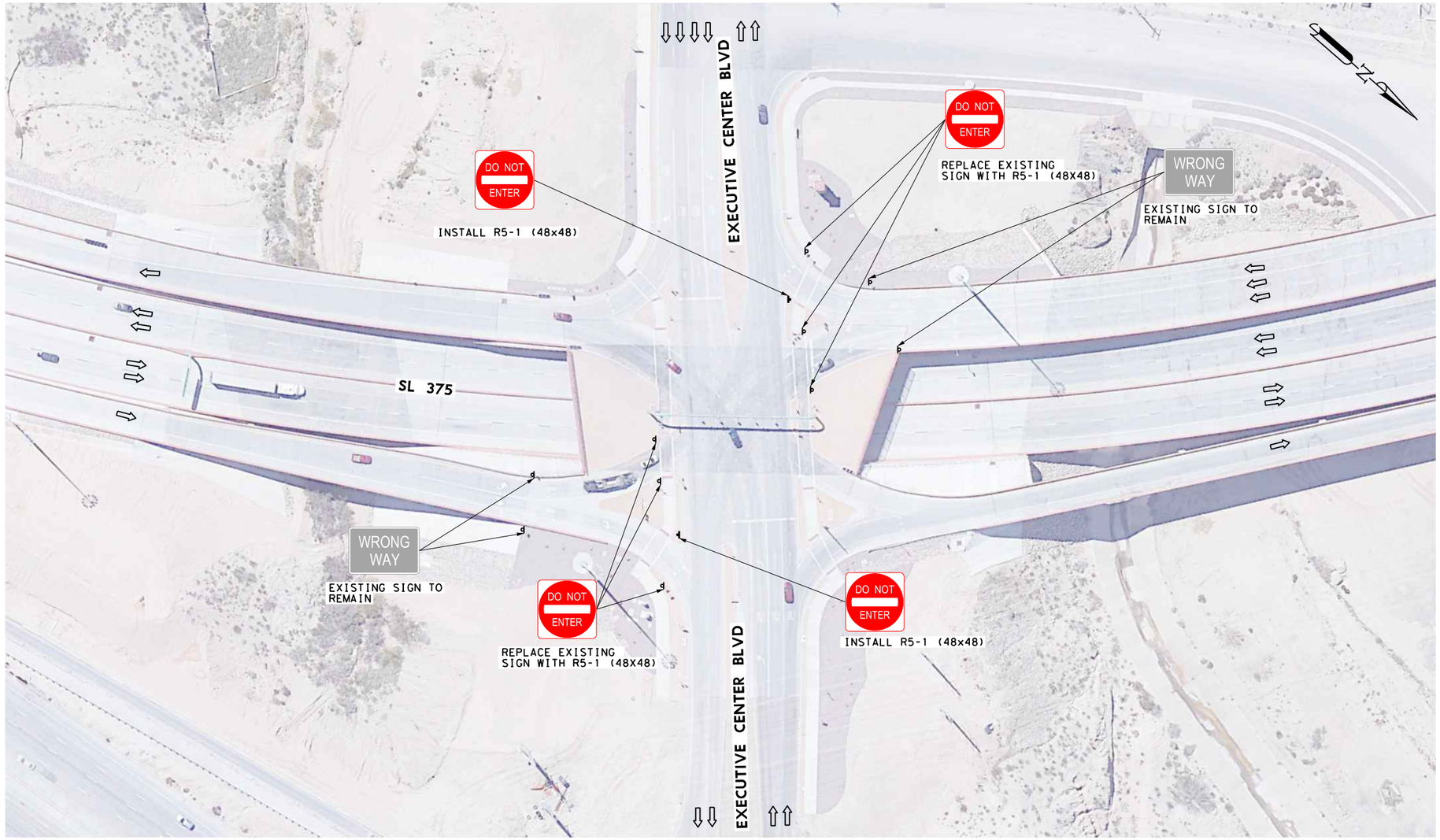
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		70

DATE: 3/22/2023 2:45:24 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_22 (Midway Dr).dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

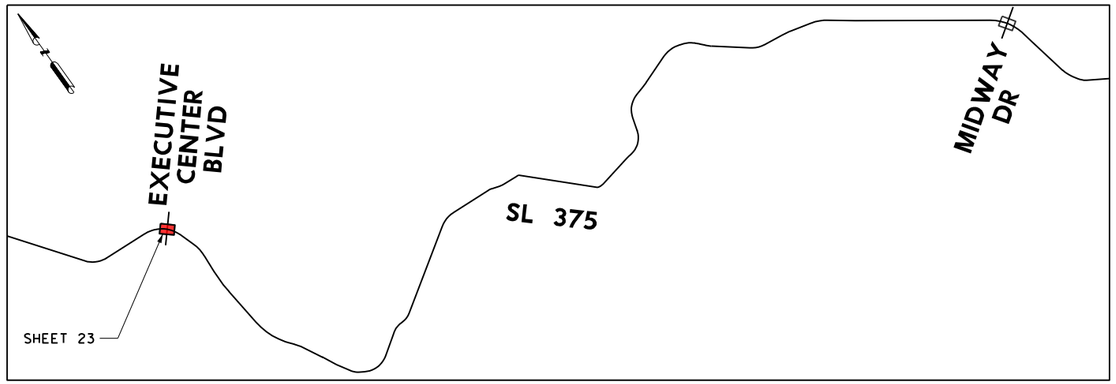
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	6

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



SL 375 AT EXECUTIVE CENTER BLVD TRAFFIC SIGNING LAYOUTS

SHEET 23 OF 23

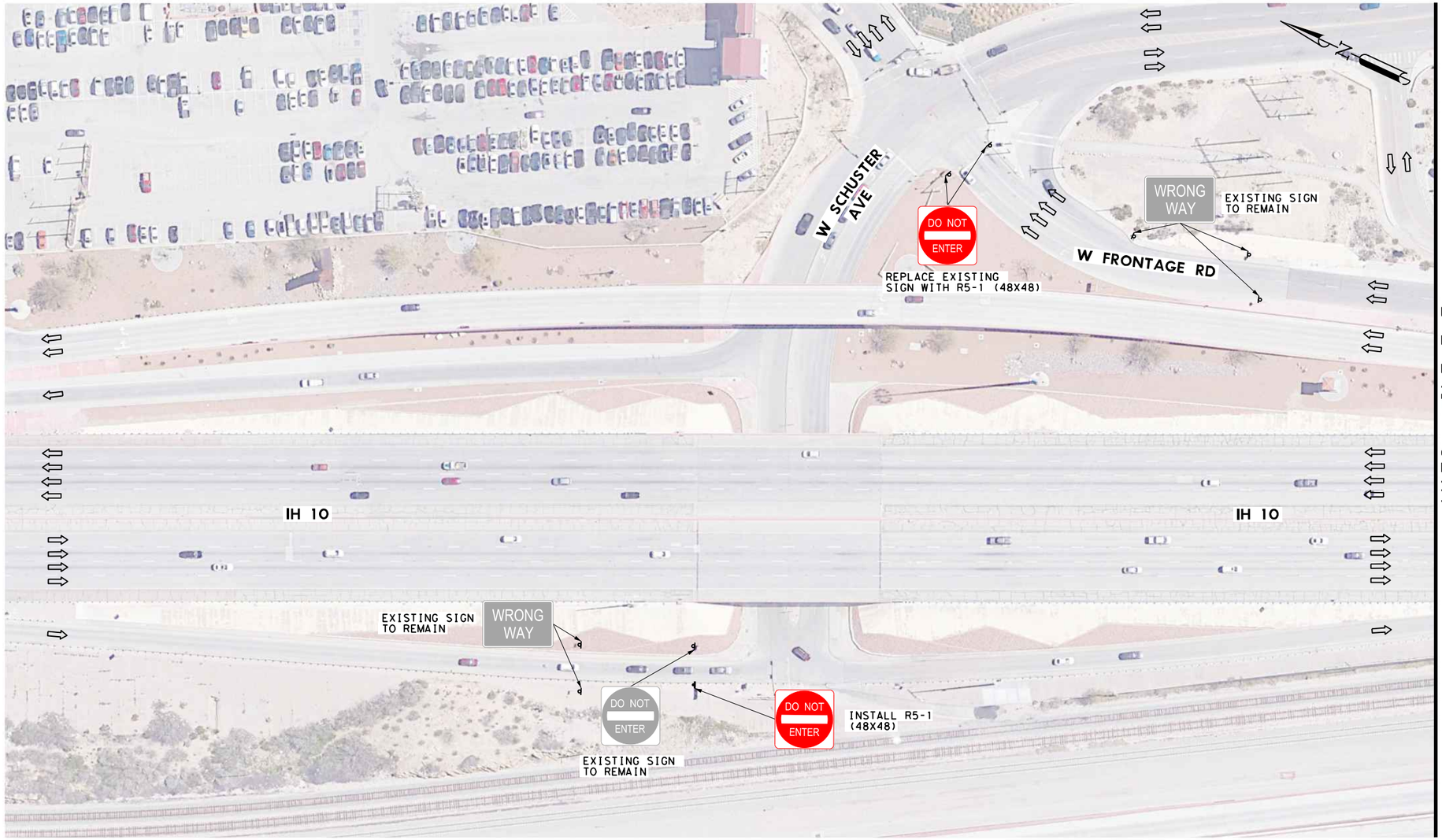
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	SL 375
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		71

DATE: 3/22/2023 2:45:29 PM
FILE: TFQ_ELP_SL375_WWDC_SHEET_23 (Executive Center Blvd).dgn



MATCH LINE F-F

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

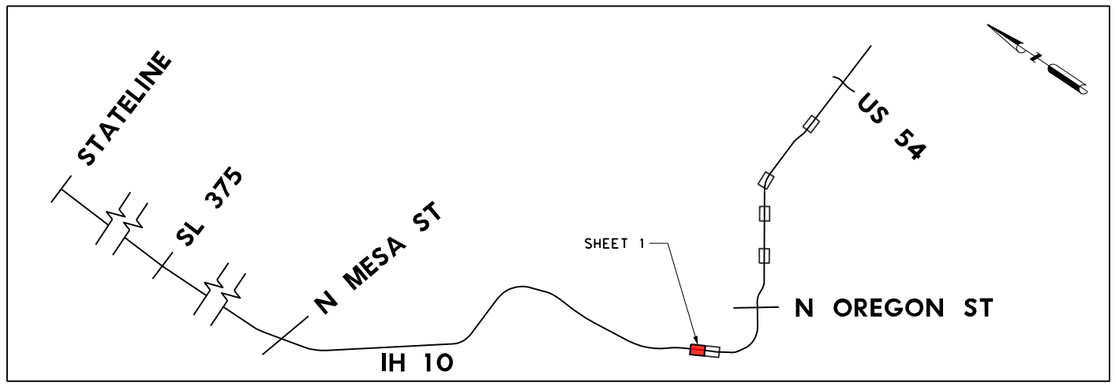
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT W SCHUSTER AVE TRAFFIC SIGNING LAYOUTS

SHEET 1 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		72

DATE: 3/22/2023 2:45:36 PM
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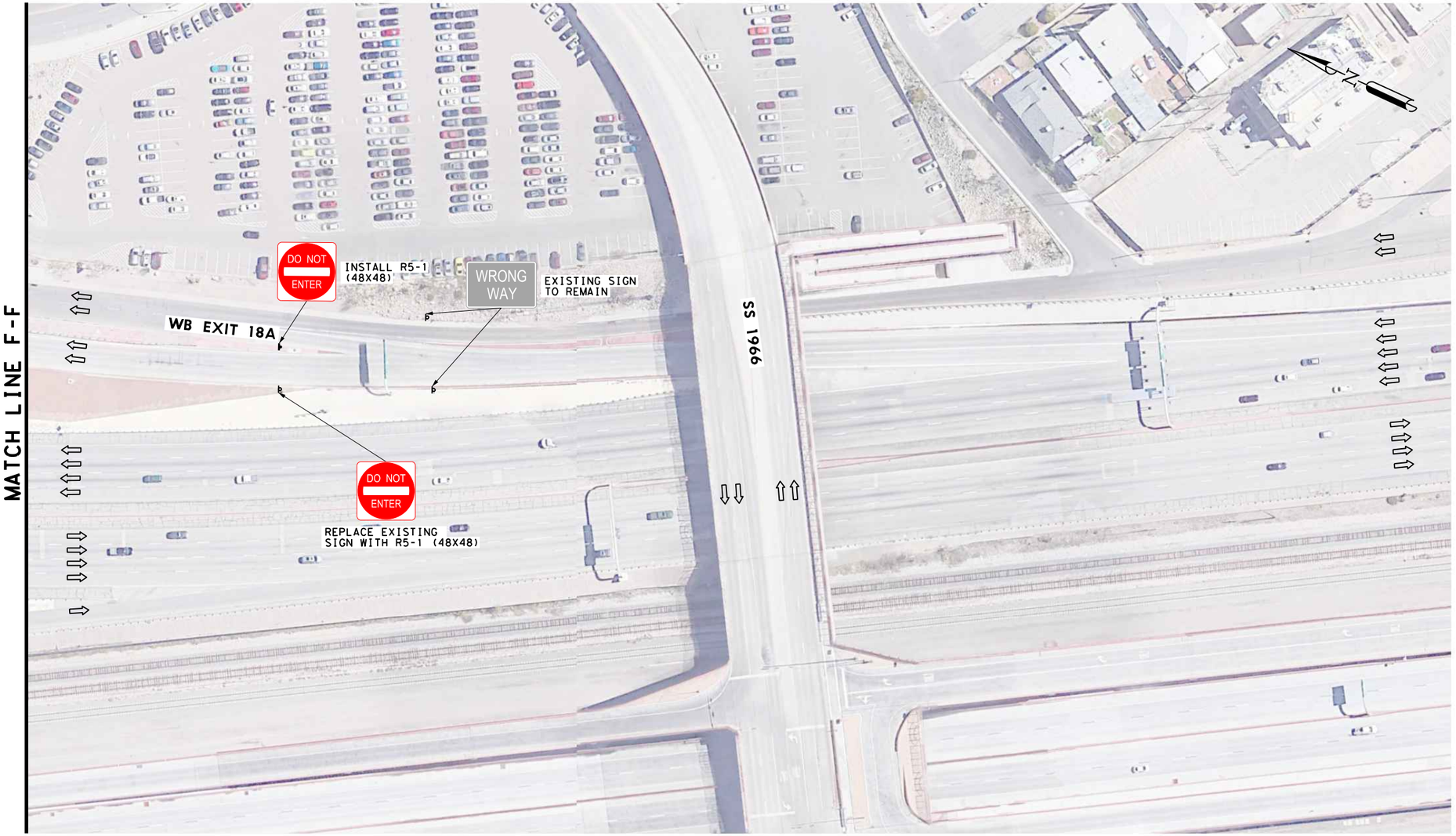


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

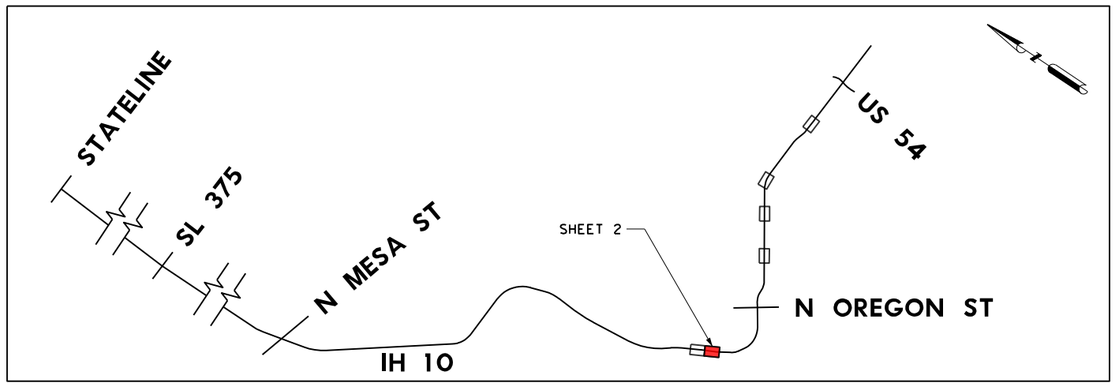
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 18A TRAFFIC SIGNING LAYOUTS

SHEET 2 OF 47

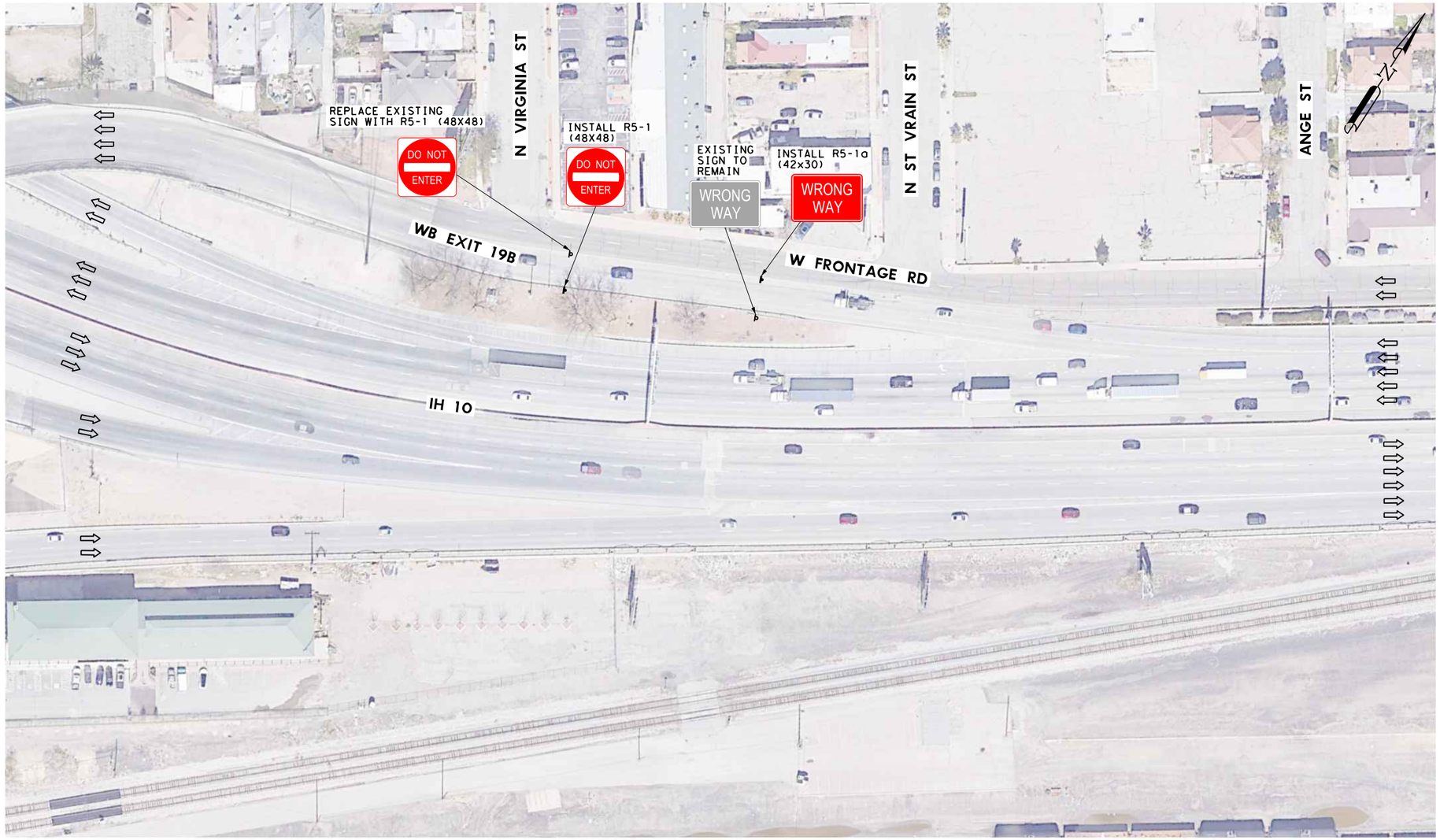
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		73

DATE: 3/22/2023 2:45:39 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_02.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

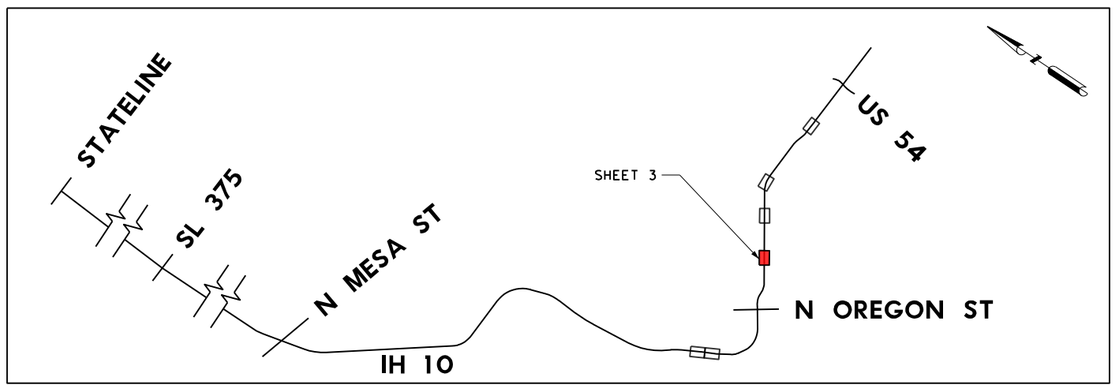
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 19B TRAFFIC SIGNING LAYOUTS

SHEET 3 OF 47

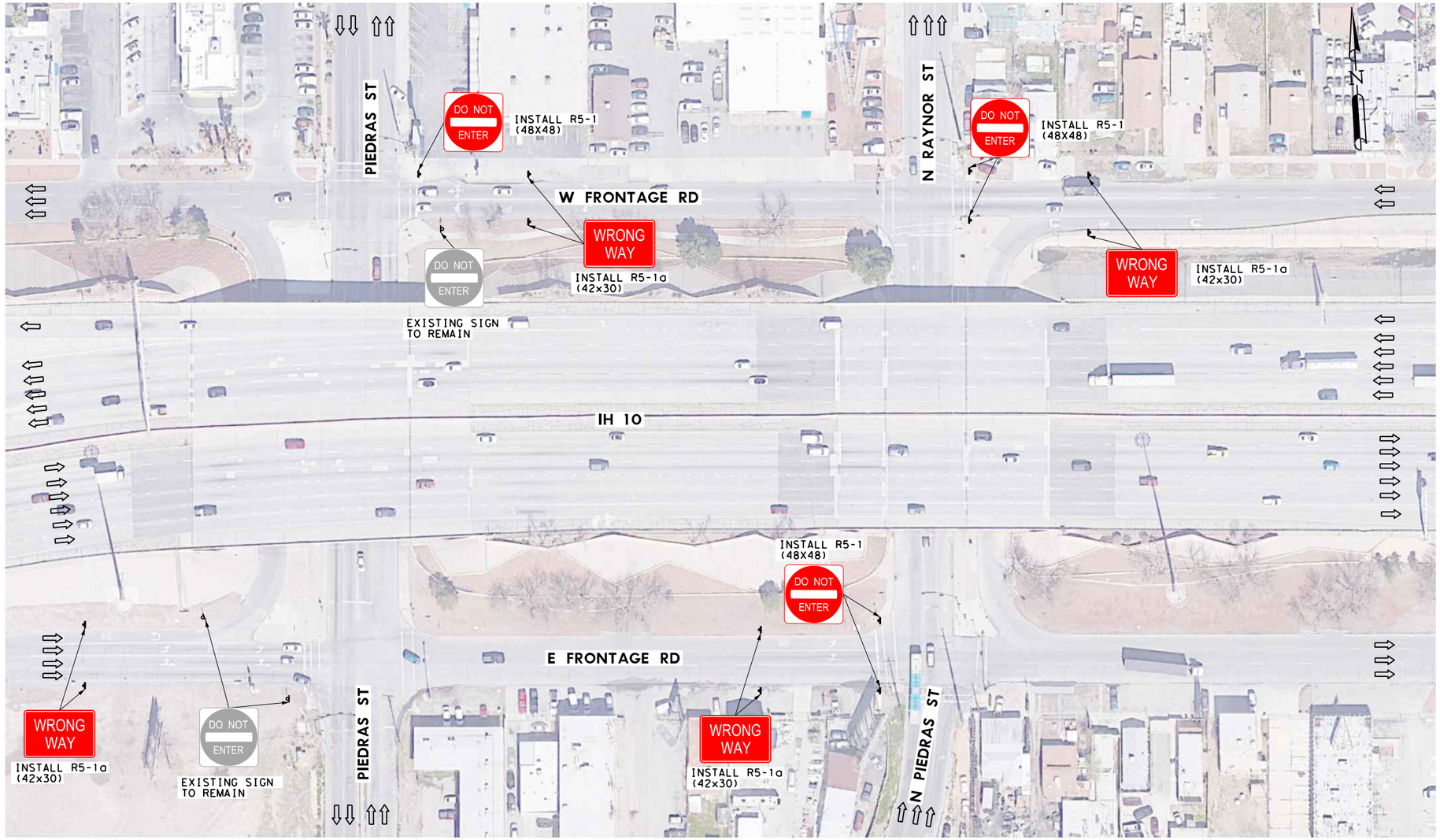
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		74

DATE: 3/22/2023 2:45:40 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_03.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS

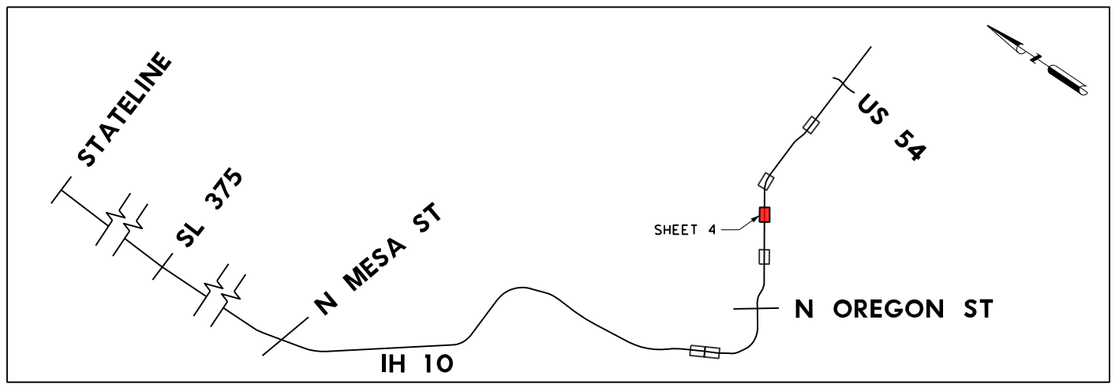
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	13

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT PIEDRAS ST TRAFFIC SIGNING LAYOUTS

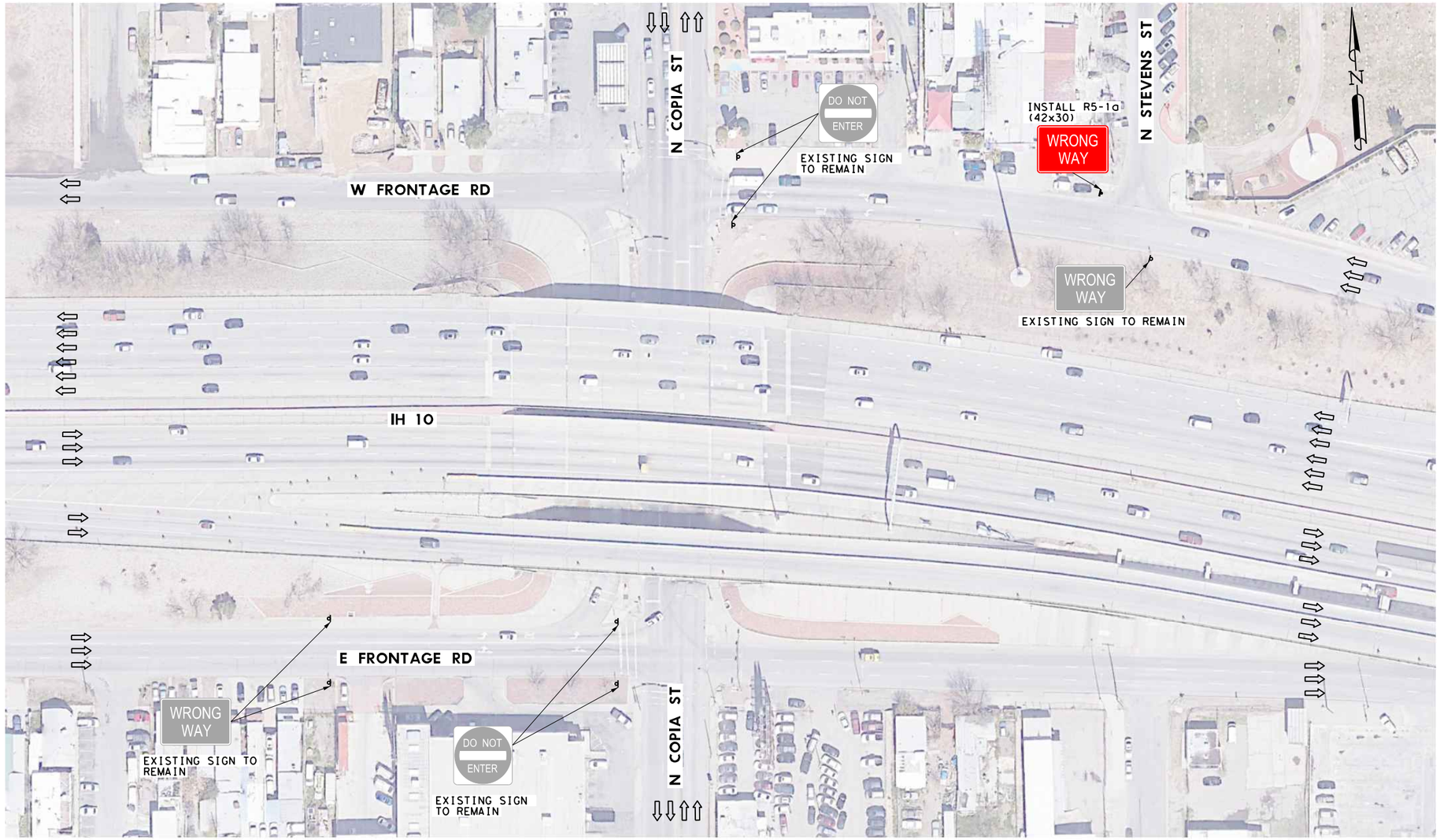
SHEET 4 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		75

DATE: 3/22/2023 2:45:42 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_04.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

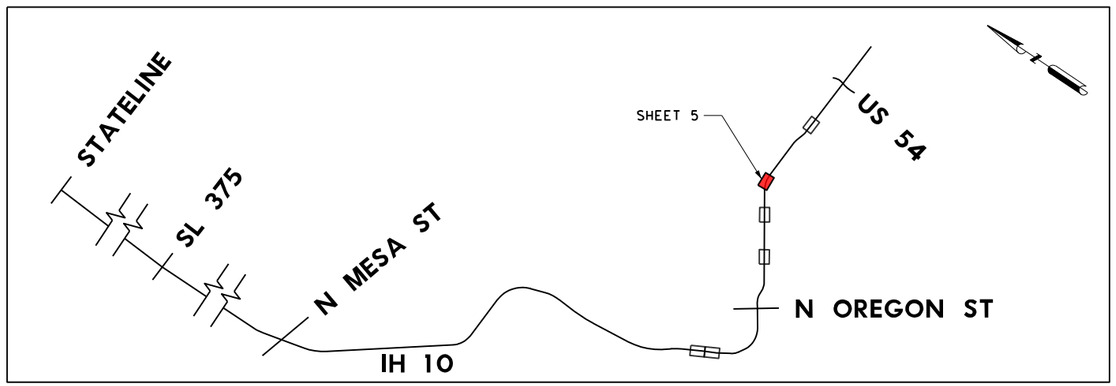
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT N COPIA ST TRAFFIC SIGNING LAYOUTS

SHEET 5 OF 47

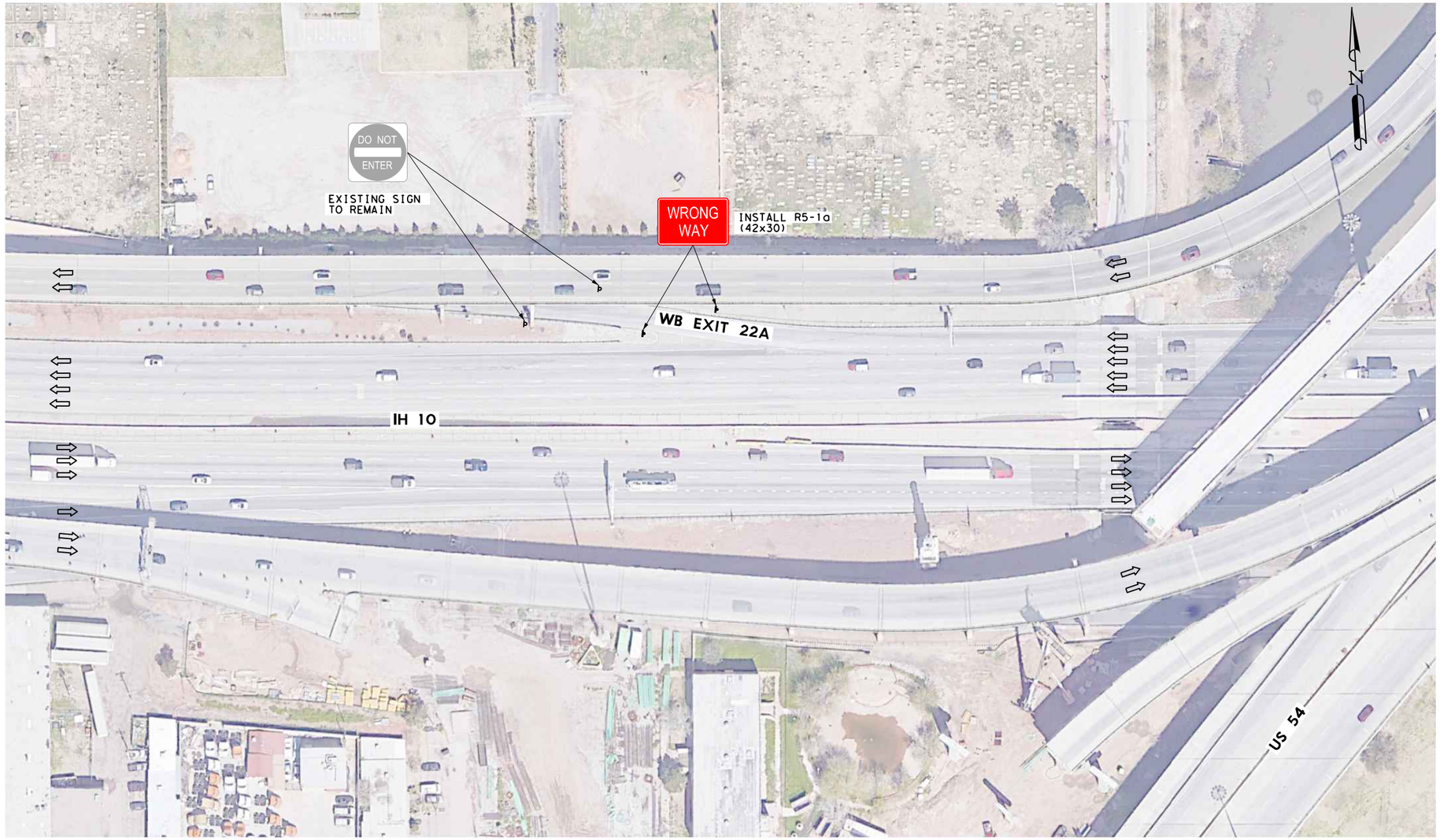
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		76

DATE: 3/22/2023 2:45:44 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_05.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

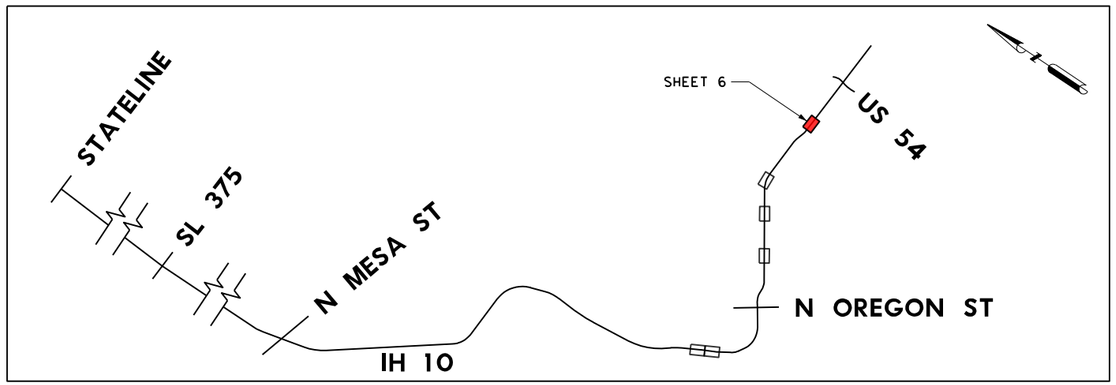
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 22A TRAFFIC SIGNING LAYOUTS

SHEET 6 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		77

DATE: 3/22/2023 2:45:46 PM
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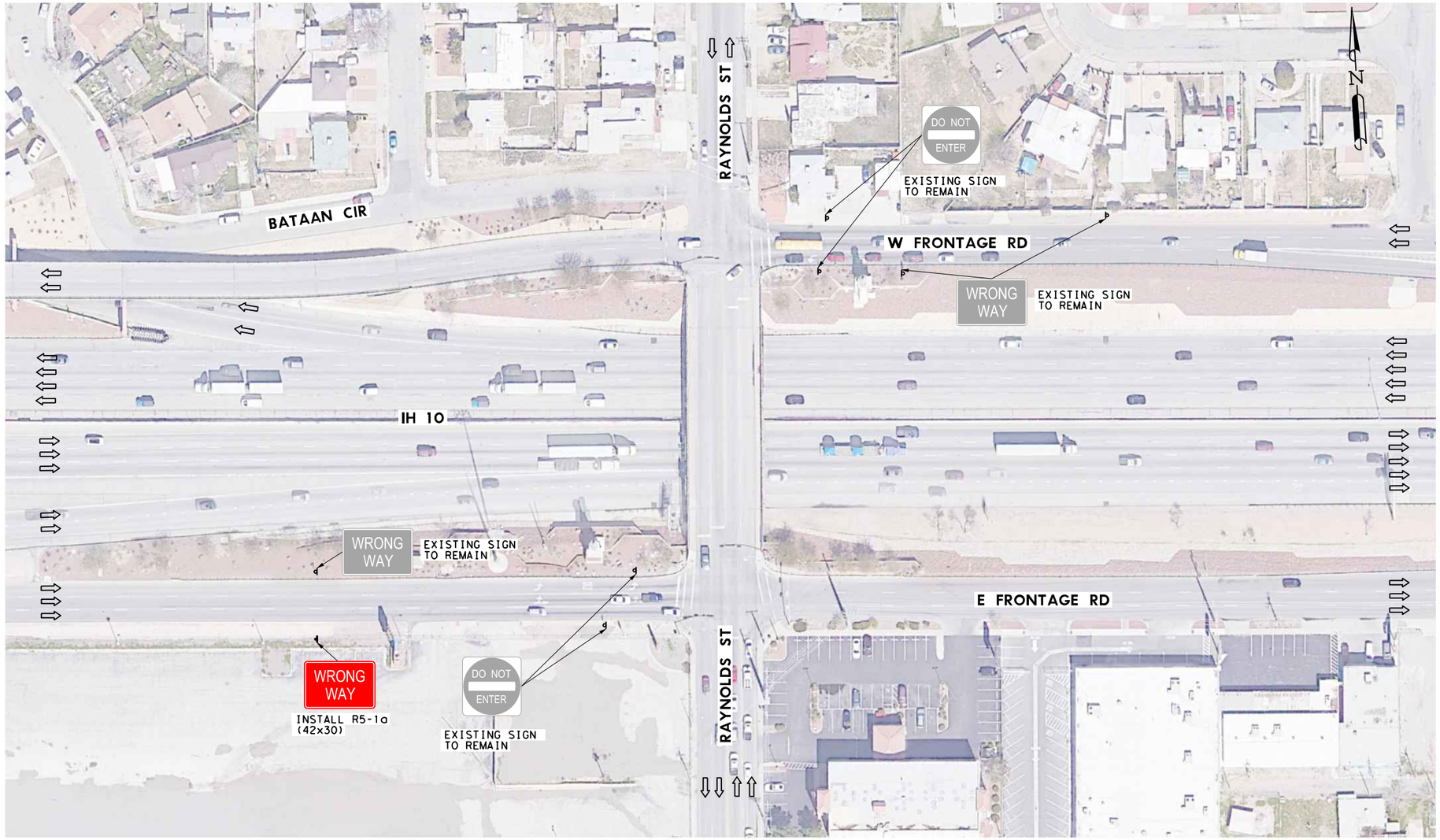


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

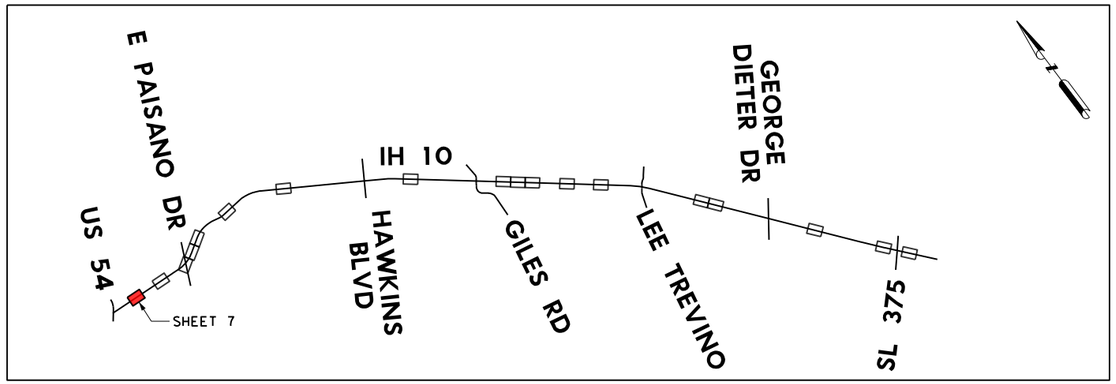
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT RAYNOLDS ST TRAFFIC SIGNING LAYOUTS

SHEET 7 OF 47

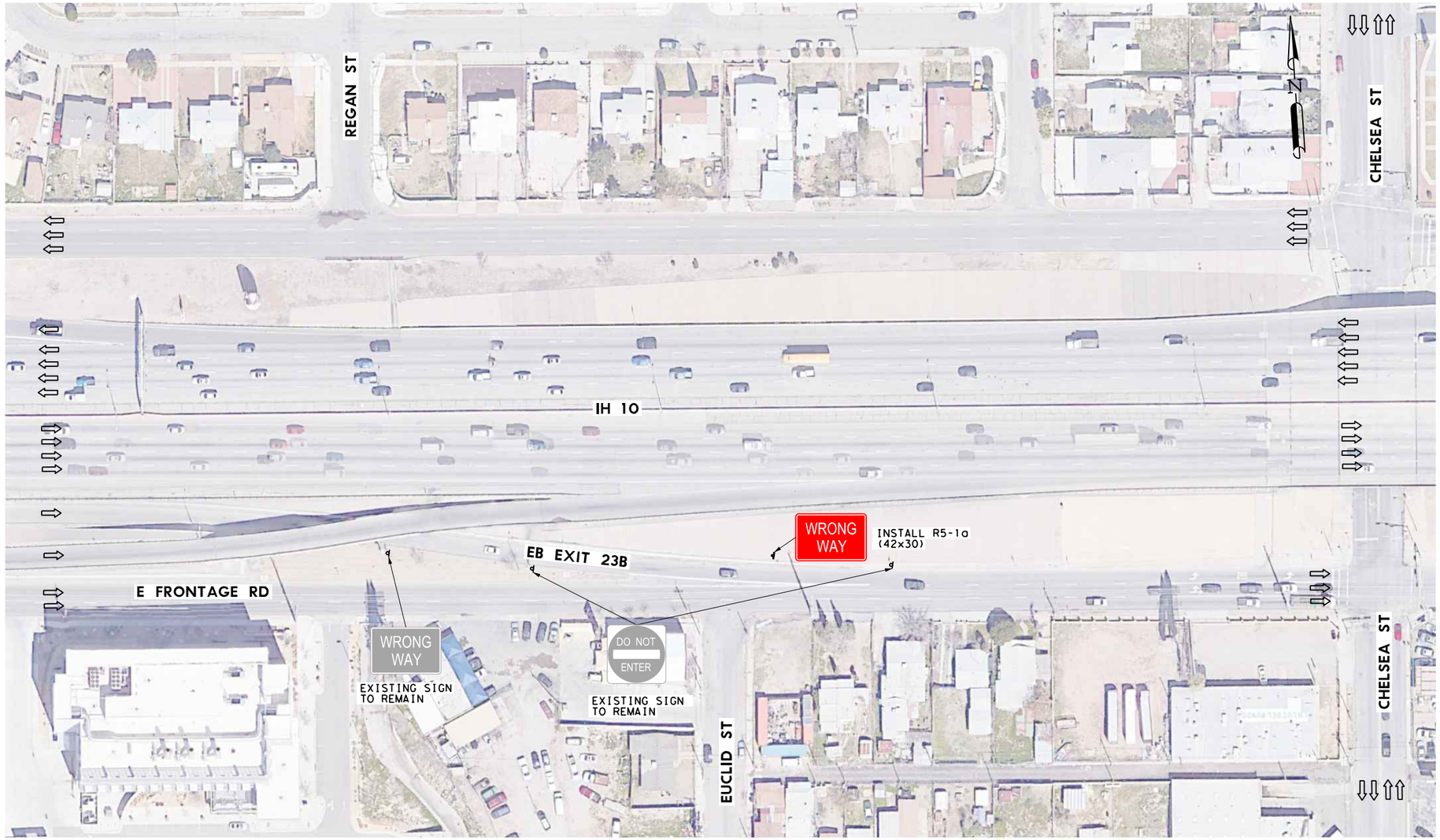
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		78

DATE: 3/22/2023 2:45:48 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_07.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

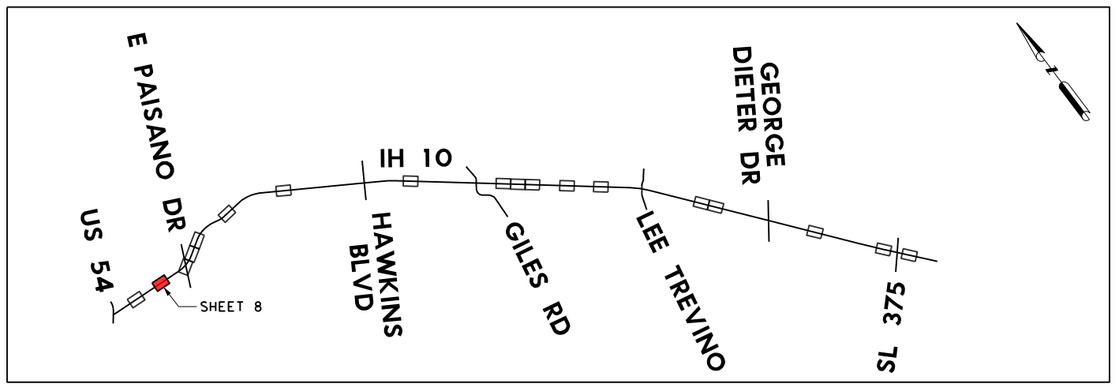
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 23B TRAFFIC SIGNING LAYOUTS

SHEET 8 OF 47

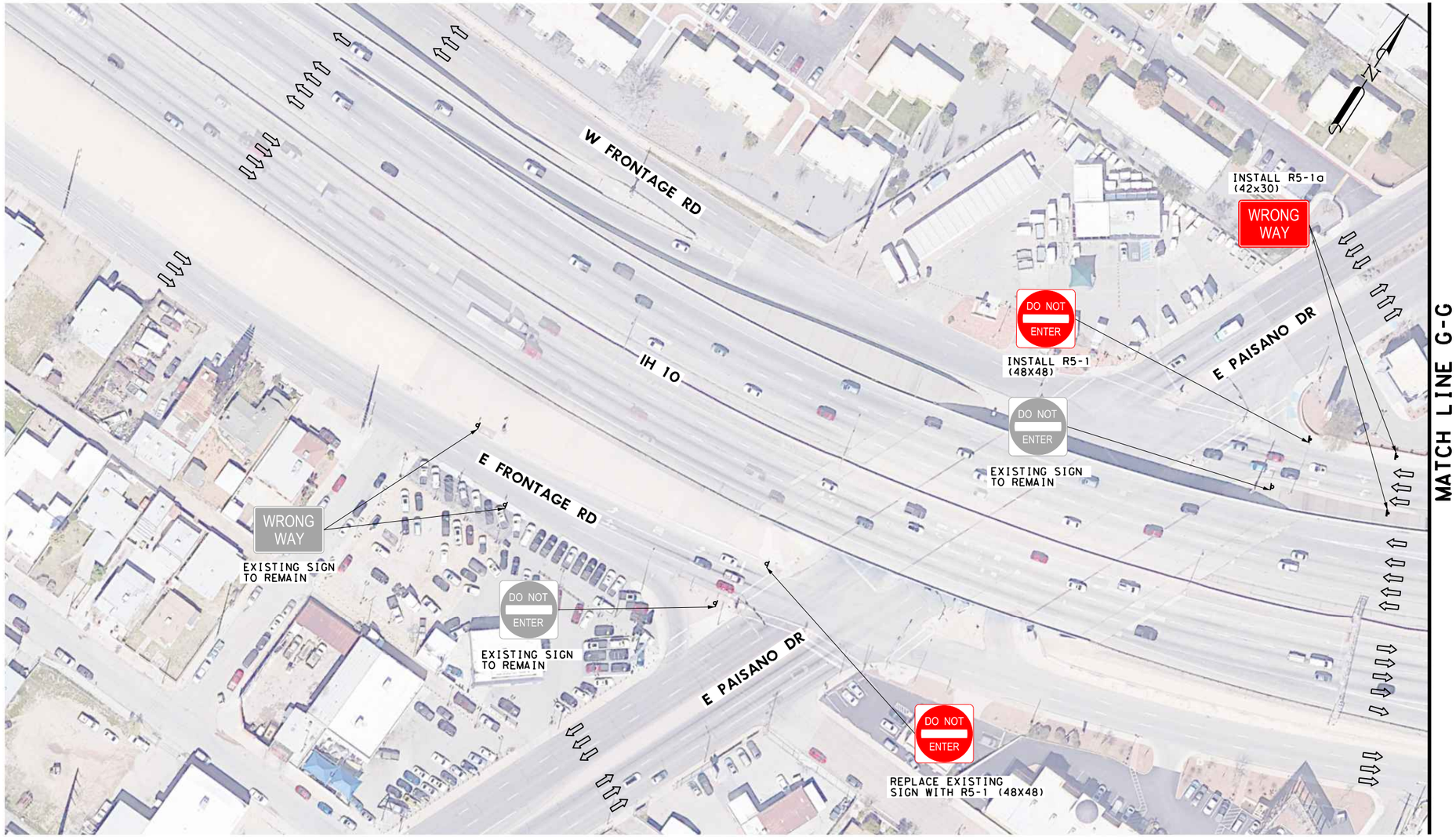
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		79

DATE: 3/22/2023 2:45:50 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_08.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

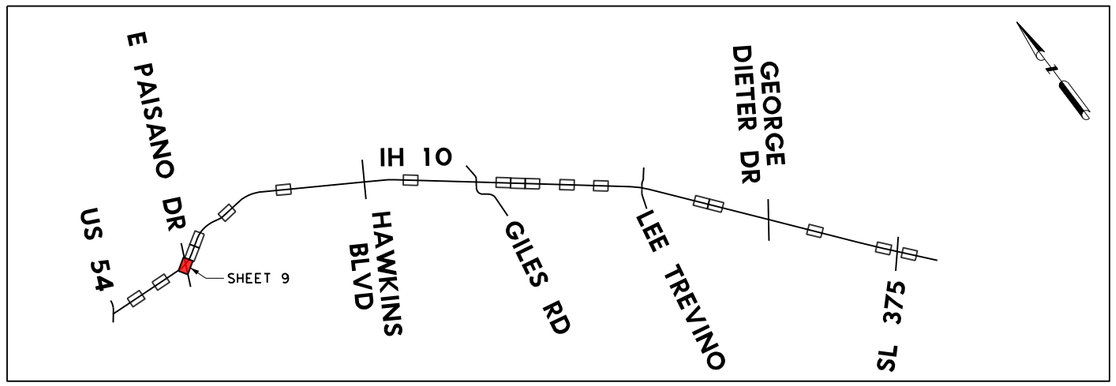
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT E PAISANO DR TRAFFIC SIGNING LAYOUTS

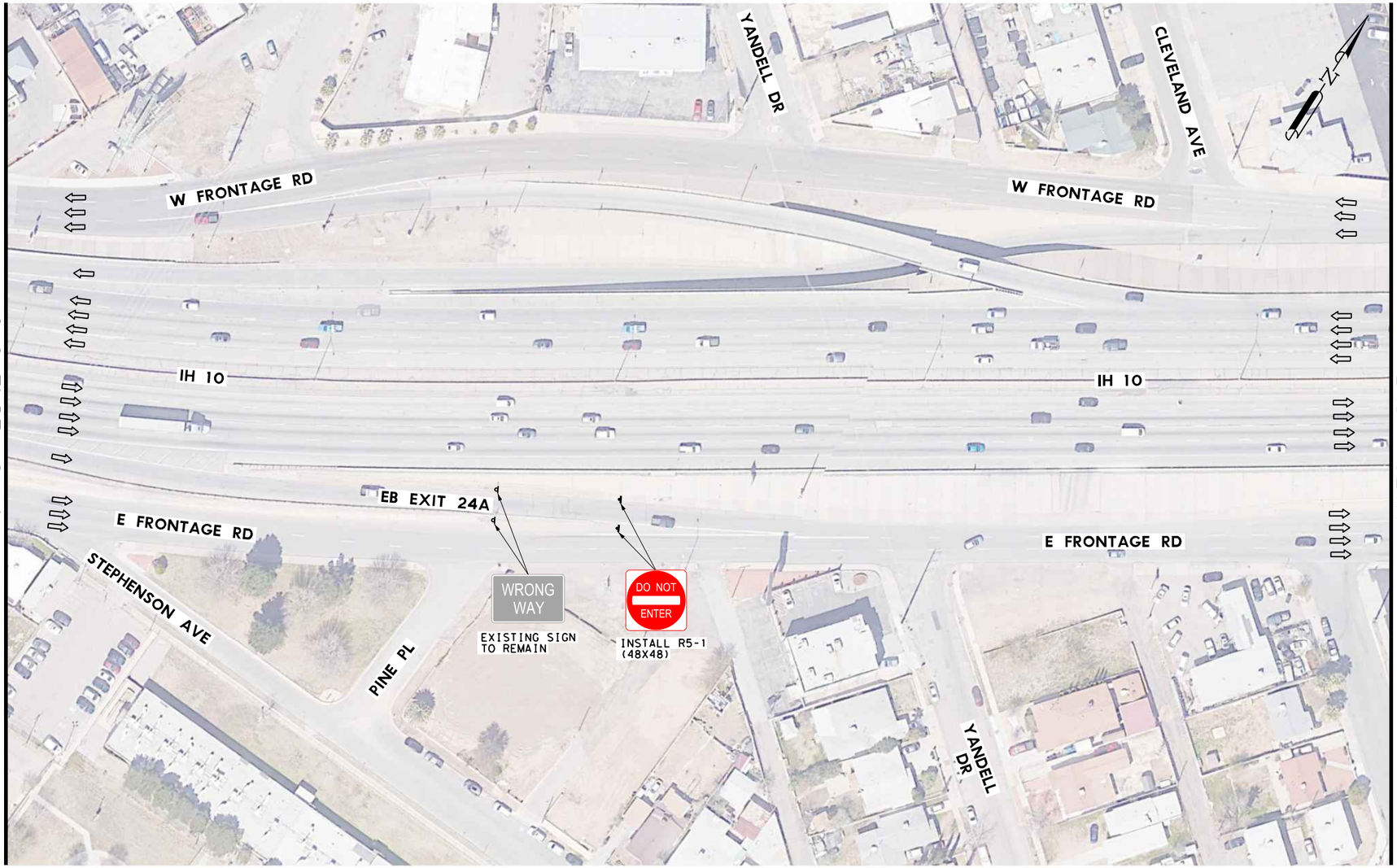
SHEET 9 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		80

DATE: 3/22/2023 2:45:53 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_09.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

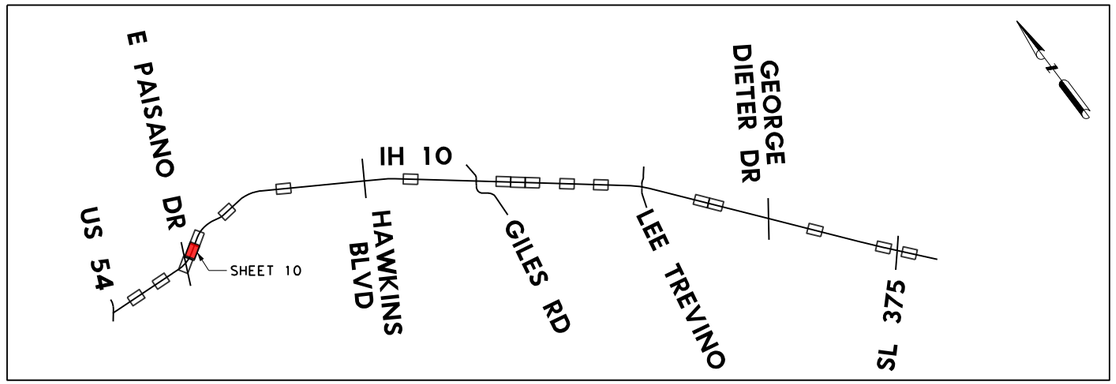
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 24A TRAFFIC SIGNING LAYOUTS

SHEET 10 OF 47

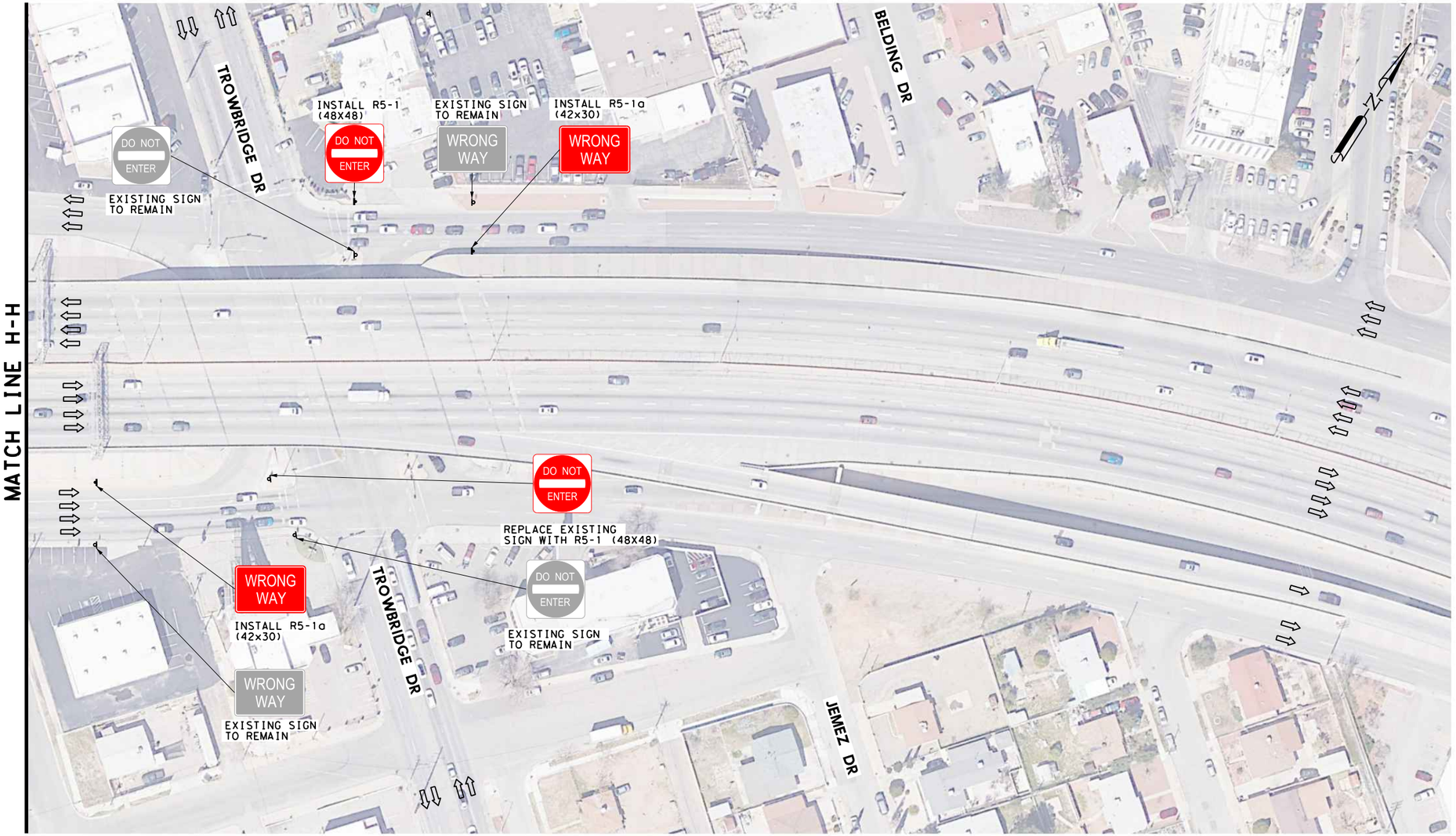
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		81

DATE: 3/22/2023 2:45:54 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_10.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
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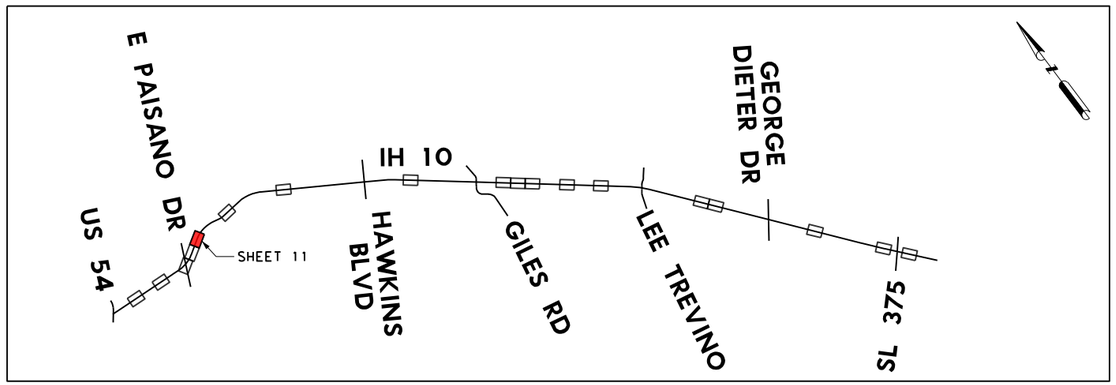

IH 10 AT TROWBRIDGE DR TRAFFIC SIGNING LAYOUTS

SHEET 11 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		82

DATE: 3/22/2023 2:45:57 PM
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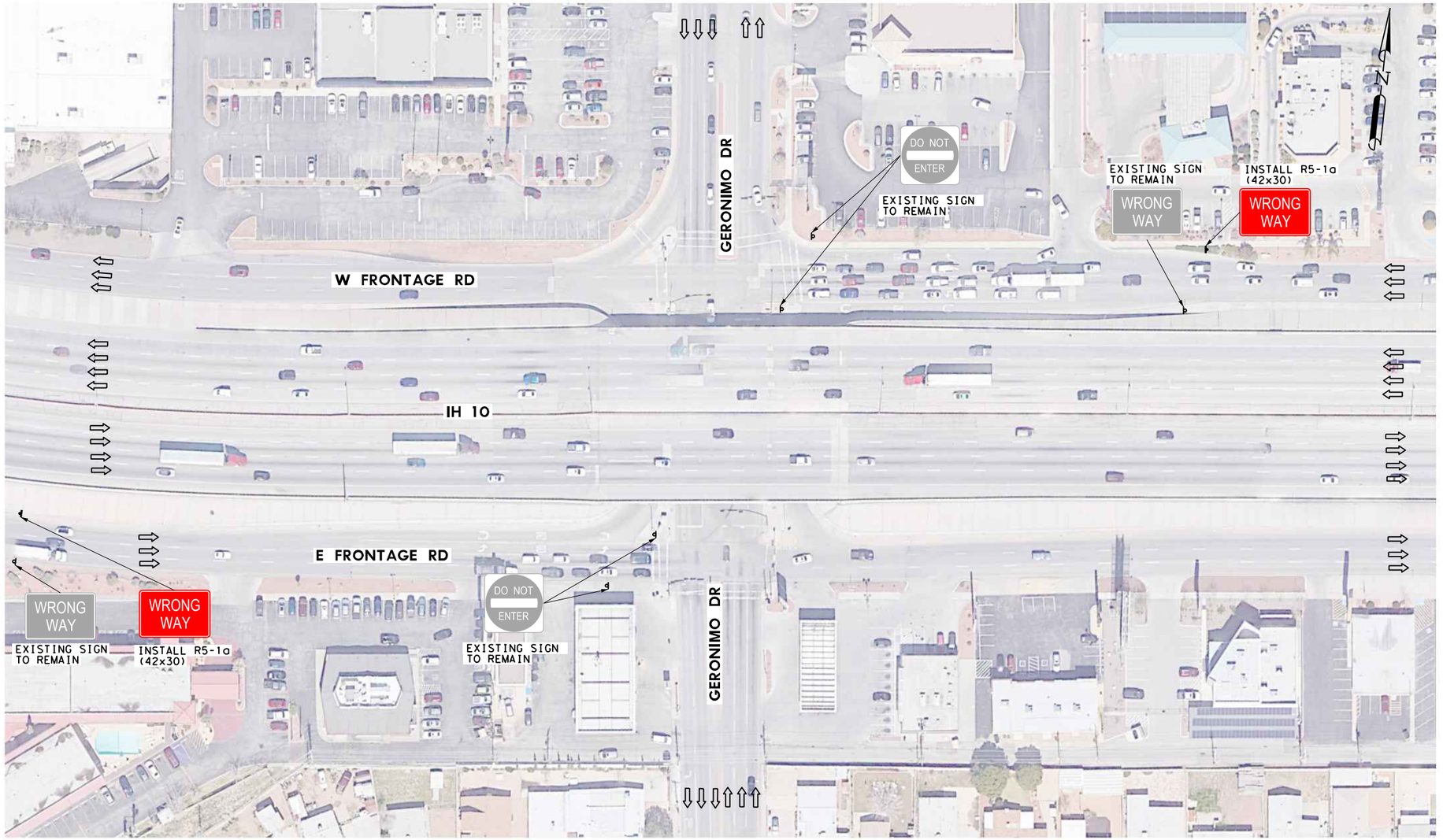

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
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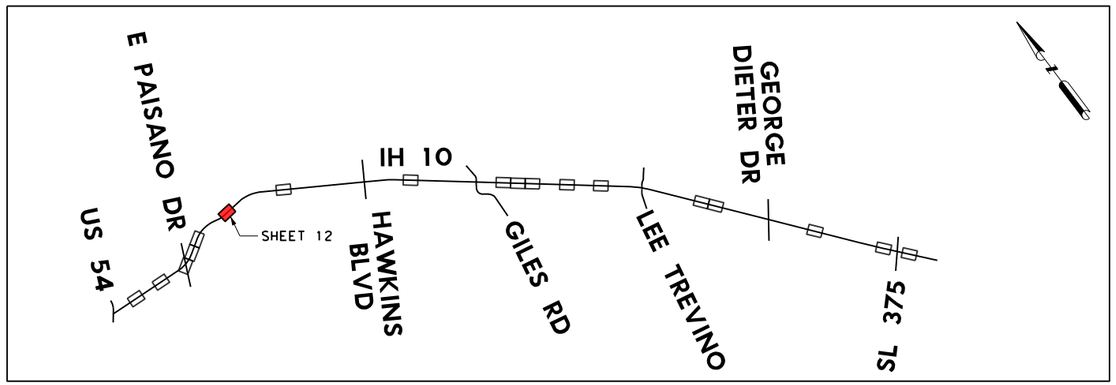

IH 10 AT GERONIMO DR TRAFFIC SIGNING LAYOUTS

SHEET 12 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		83

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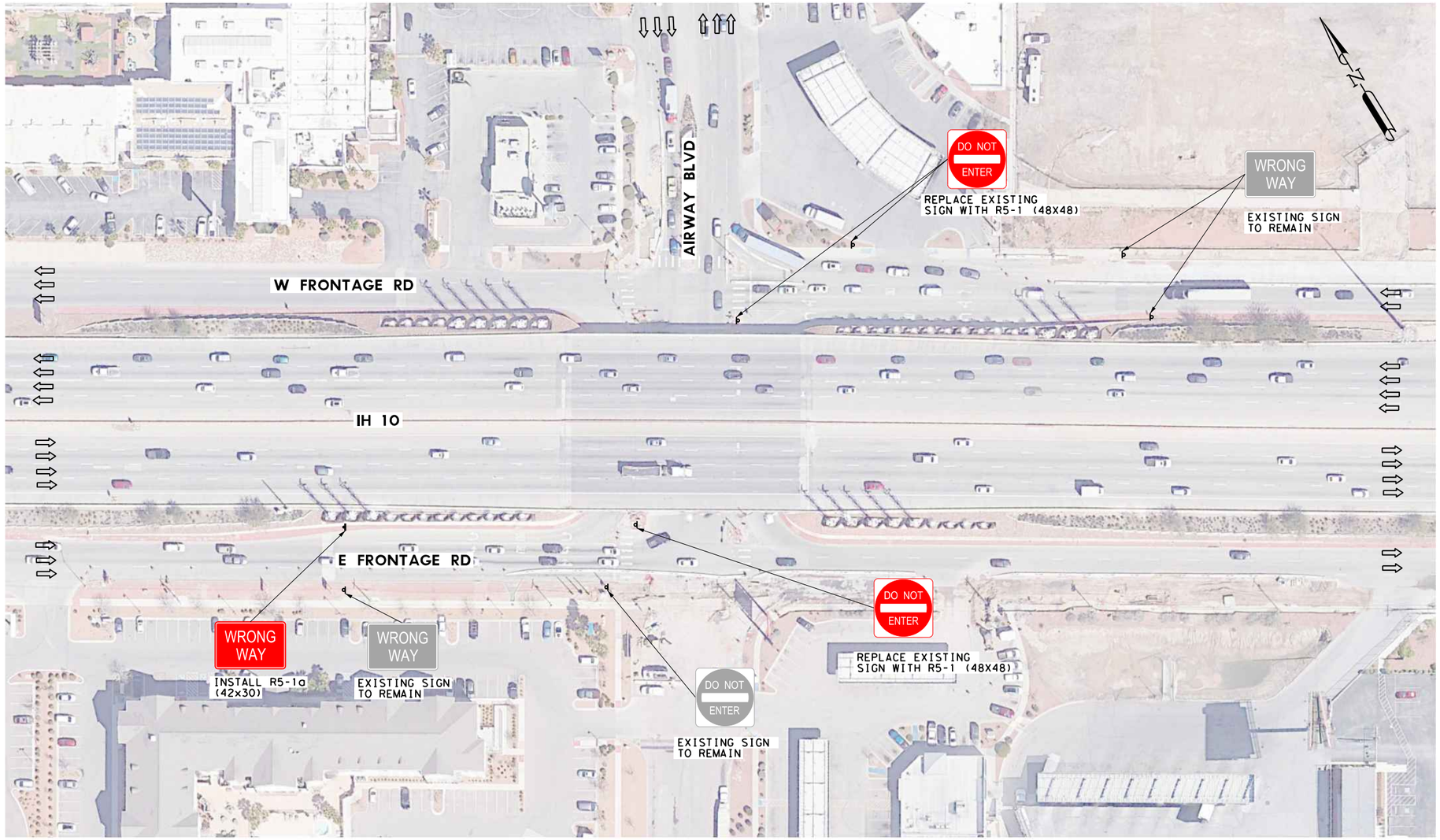

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
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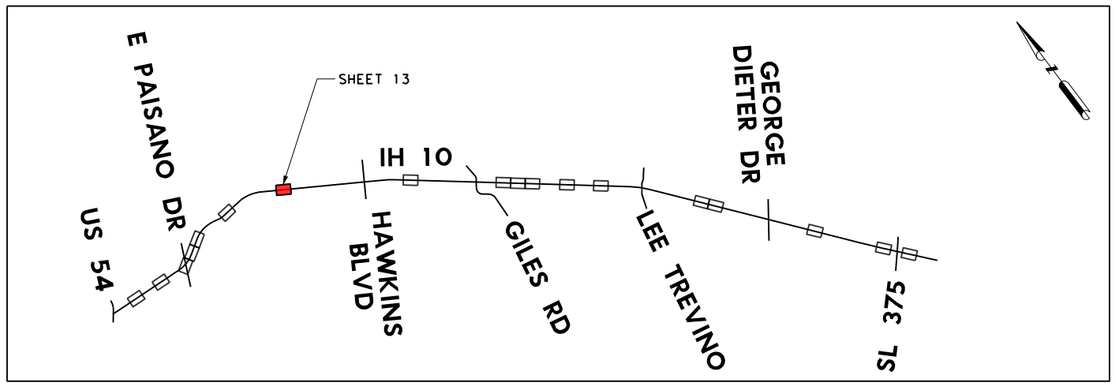


IH 10 AT AIRWAY BLVD TRAFFIC SIGNING LAYOUTS

SHEET 13 OF 47

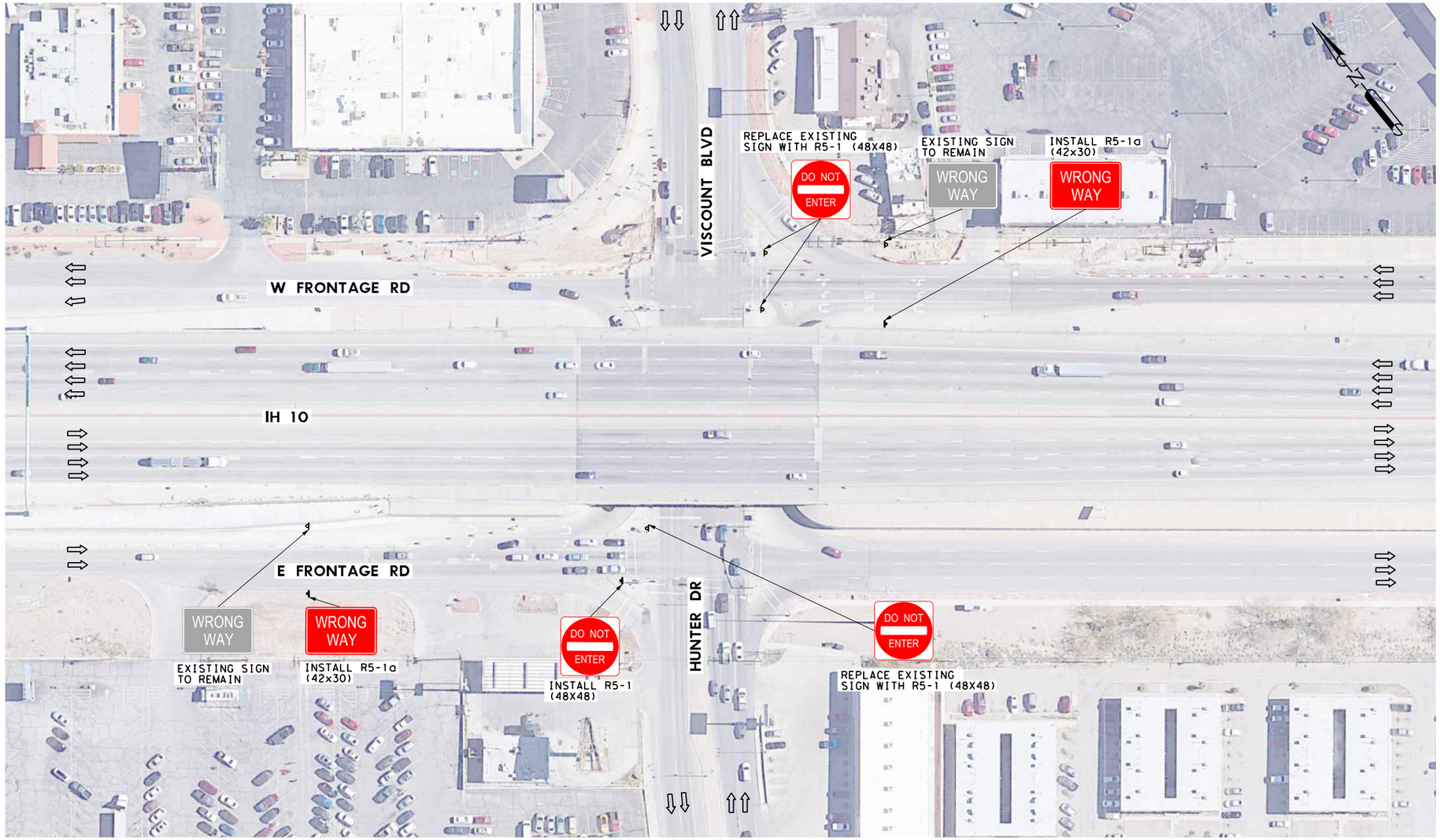
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		84

DATE: 3/22/2023 2:46:00 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_13.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen

03/23/2023

0 25 50 100

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
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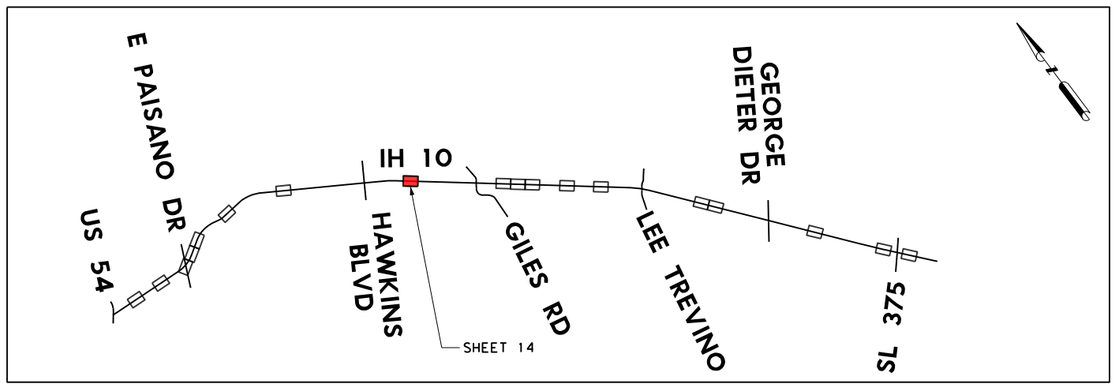


IH 10 AT HUNTER DR TRAFFIC SIGNING LAYOUTS

SHEET 14 OF 47

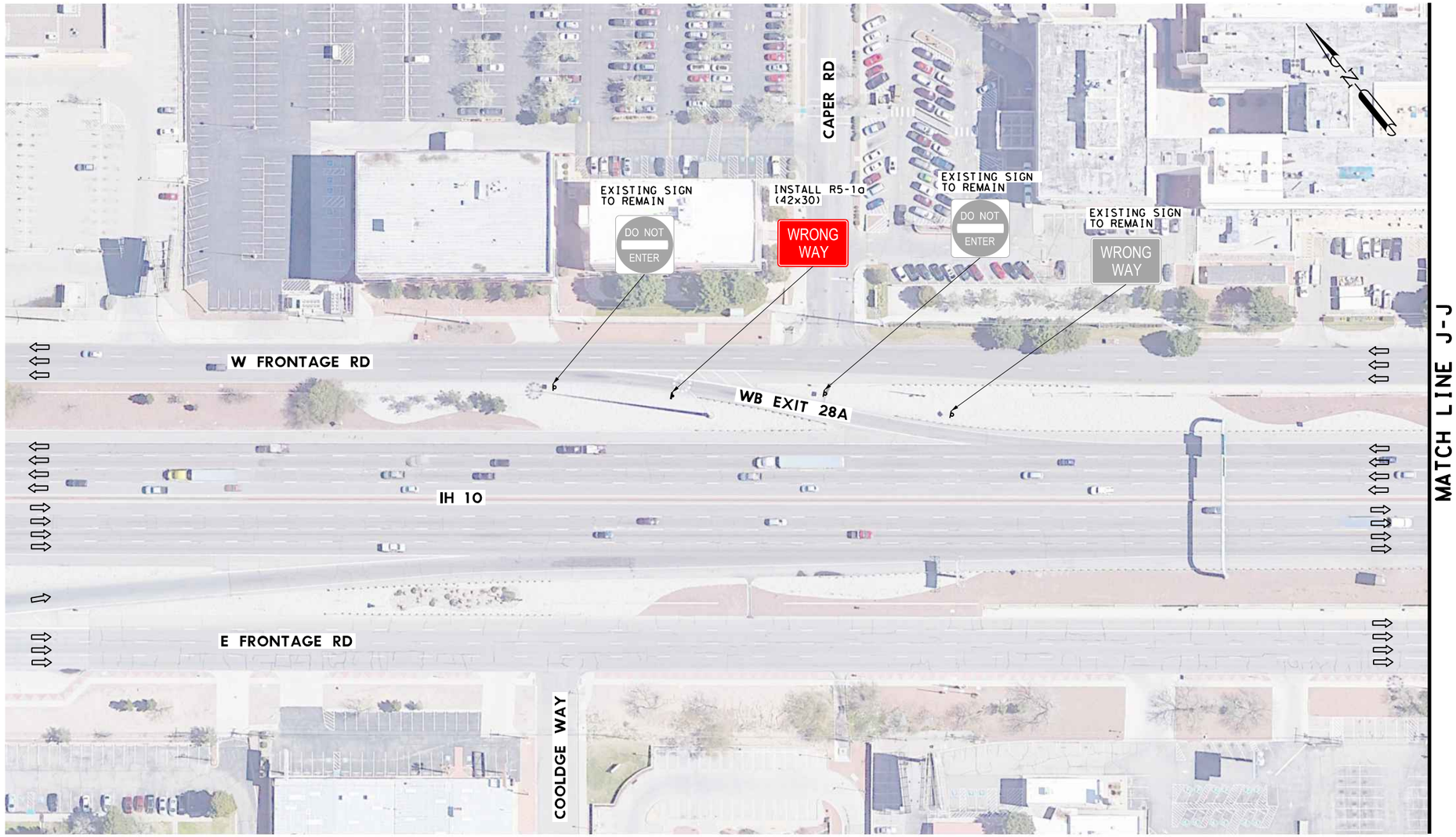
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		85

DATE: 3/22/2023 2:46:02 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_14.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
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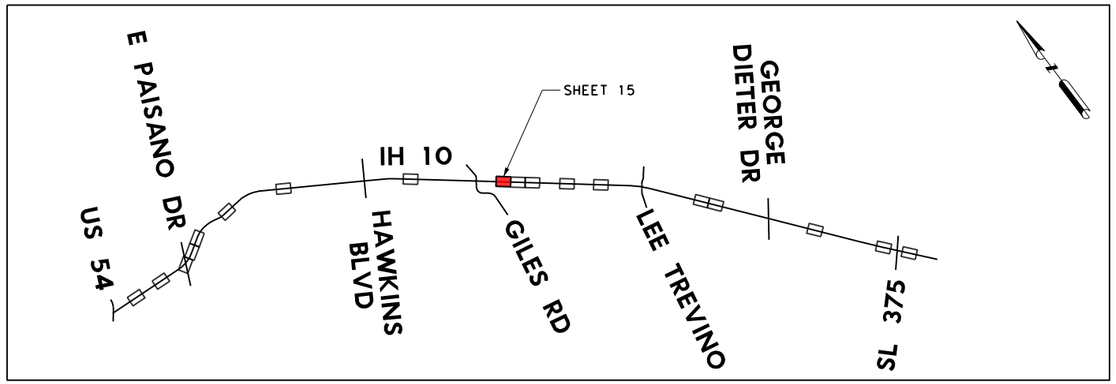


IH 10 AT WB EXIT 28A TRAFFIC SIGNING LAYOUTS

SHEET 15 OF 47

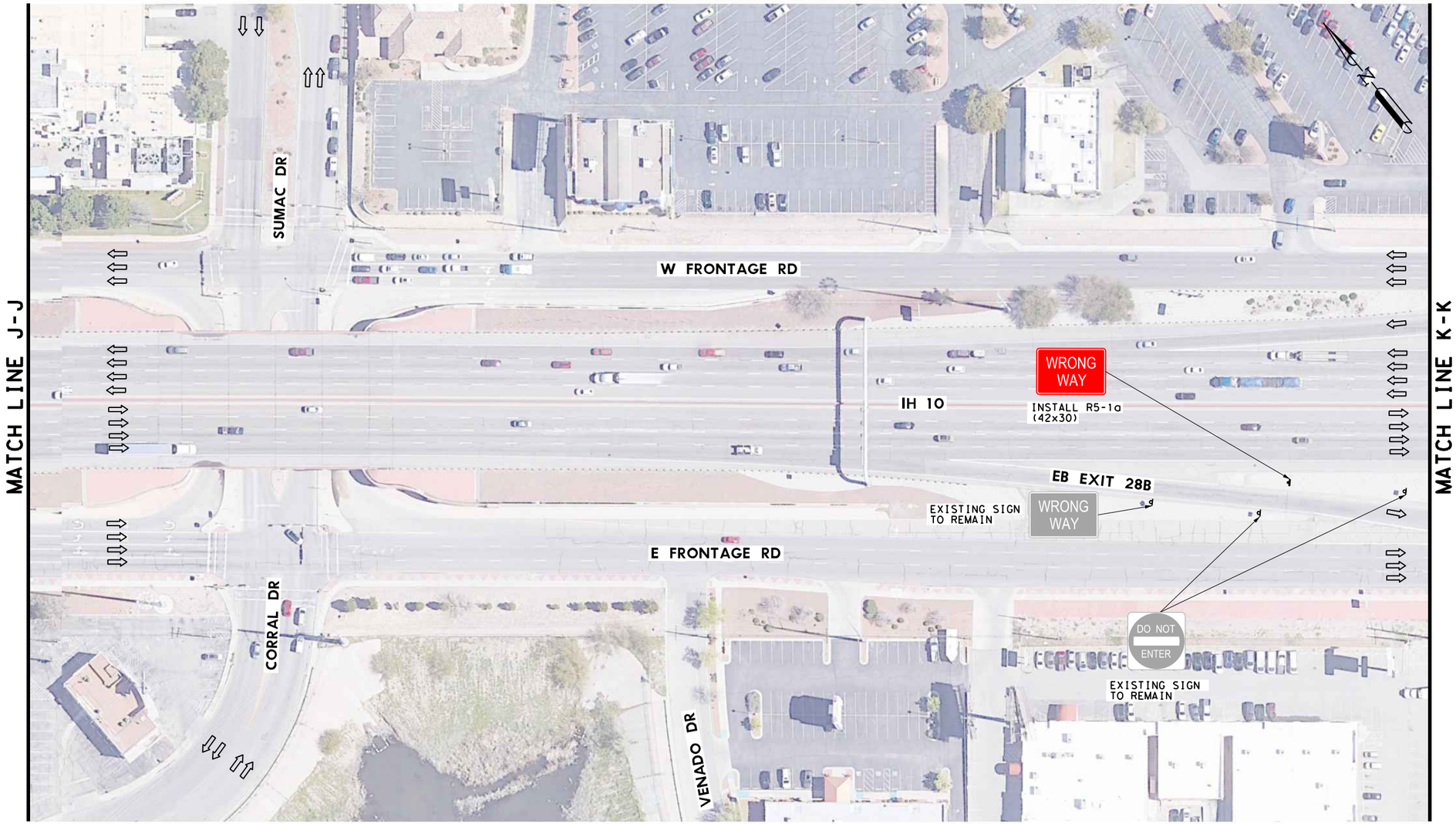
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		86

DATE: 3/22/2023 2:46:04 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_15.dgn



LEGEND

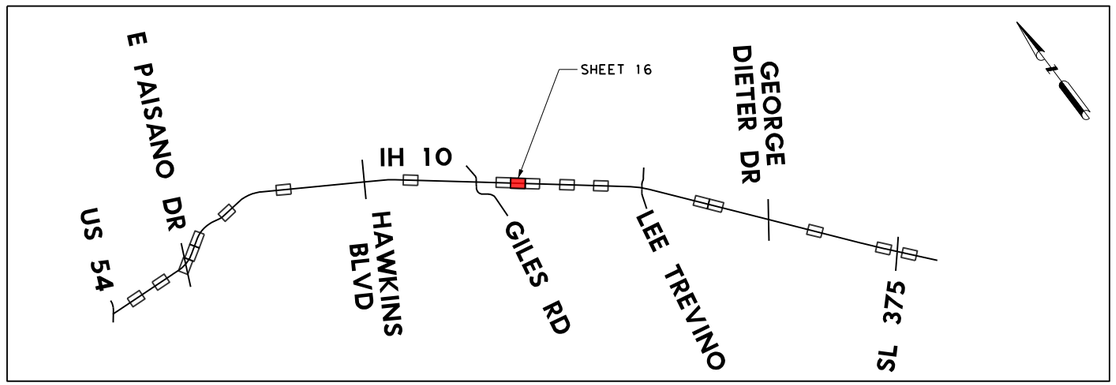
- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 28B TRAFFIC SIGNING LAYOUTS

SHEET 16 OF 47

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
03/23/2023

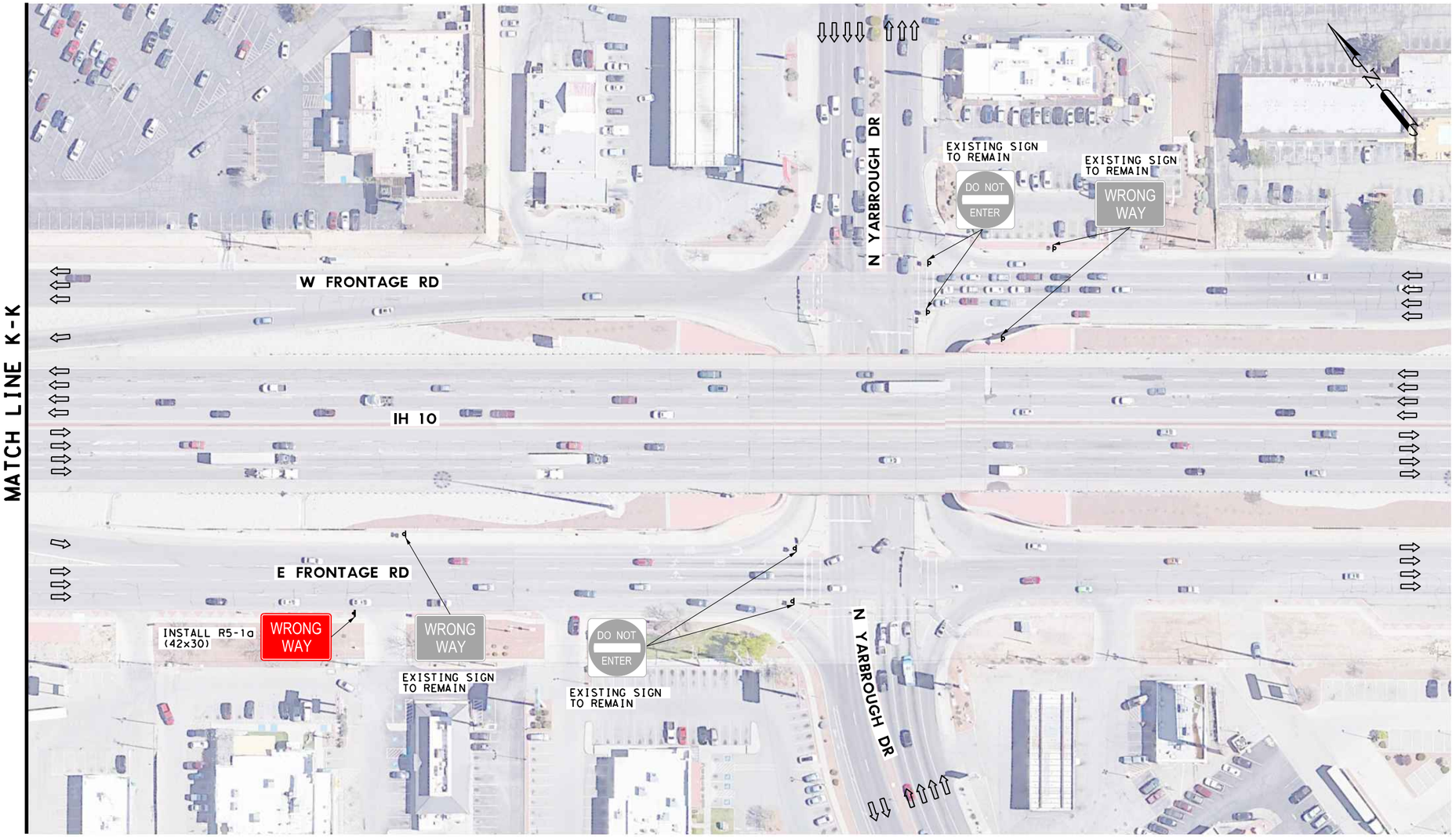
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		87

DATE: 3/22/2023 2:46:07 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_16.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

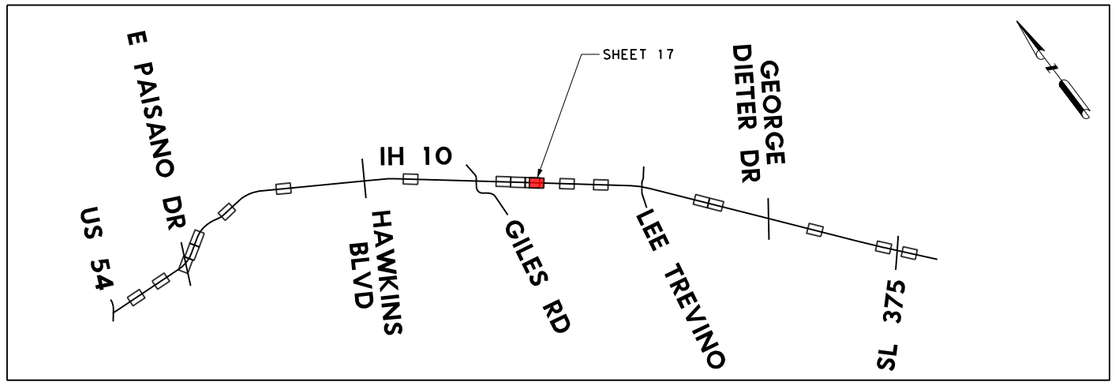
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT N YARBROUGH DR TRAFFIC SIGNING LAYOUTS

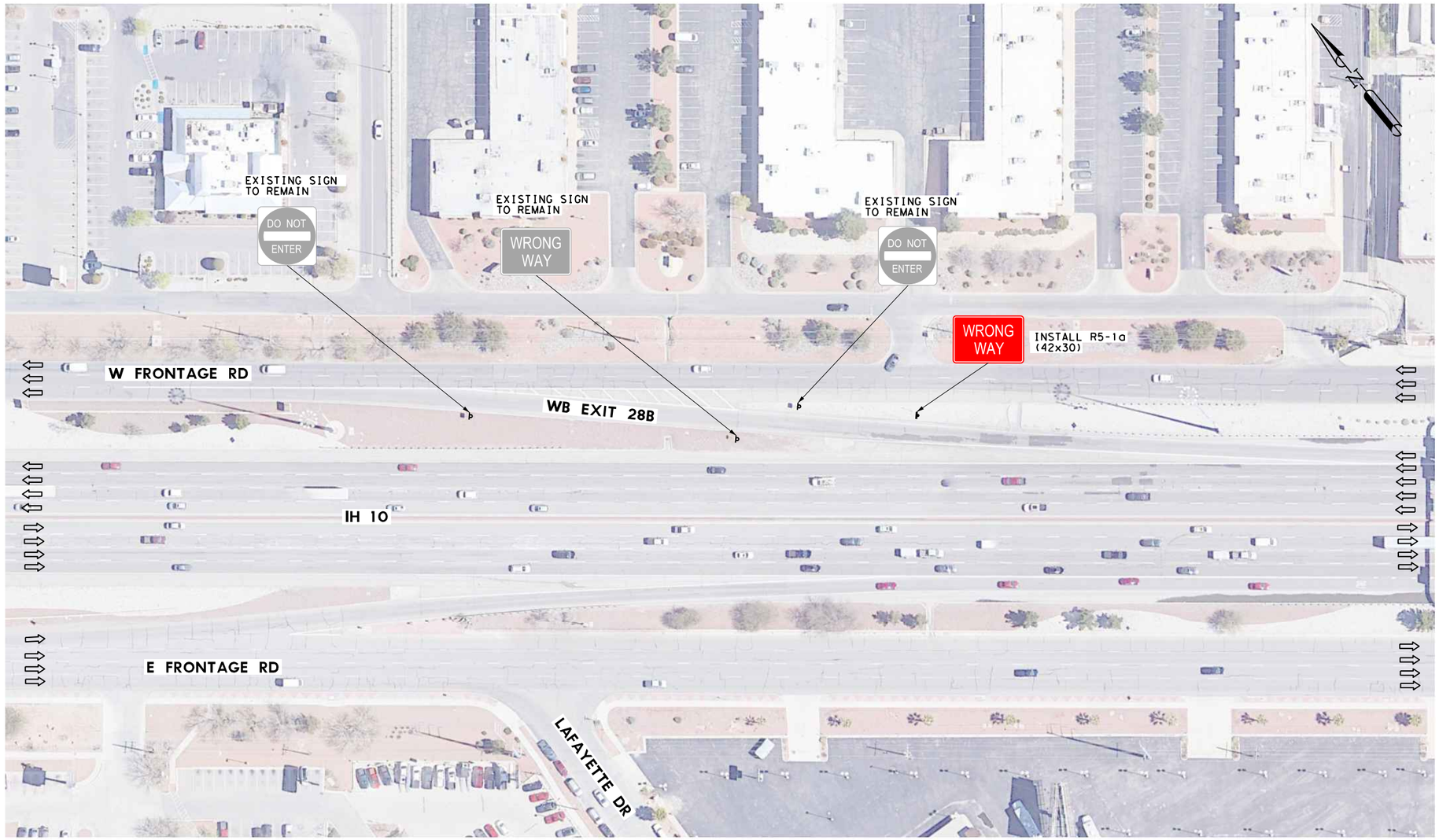
SHEET 17 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		88

DATE: 3/22/2023 2:46:13 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_17.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

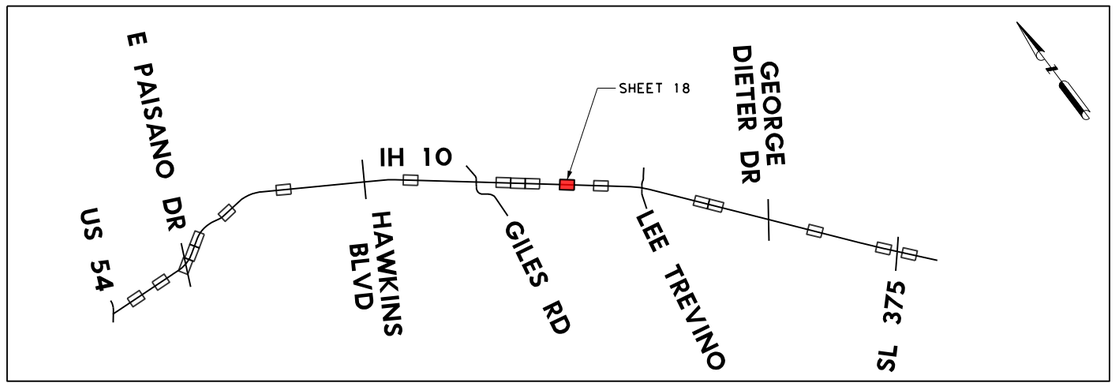
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 28B TRAFFIC SIGNING LAYOUTS

SHEET 18 OF 47

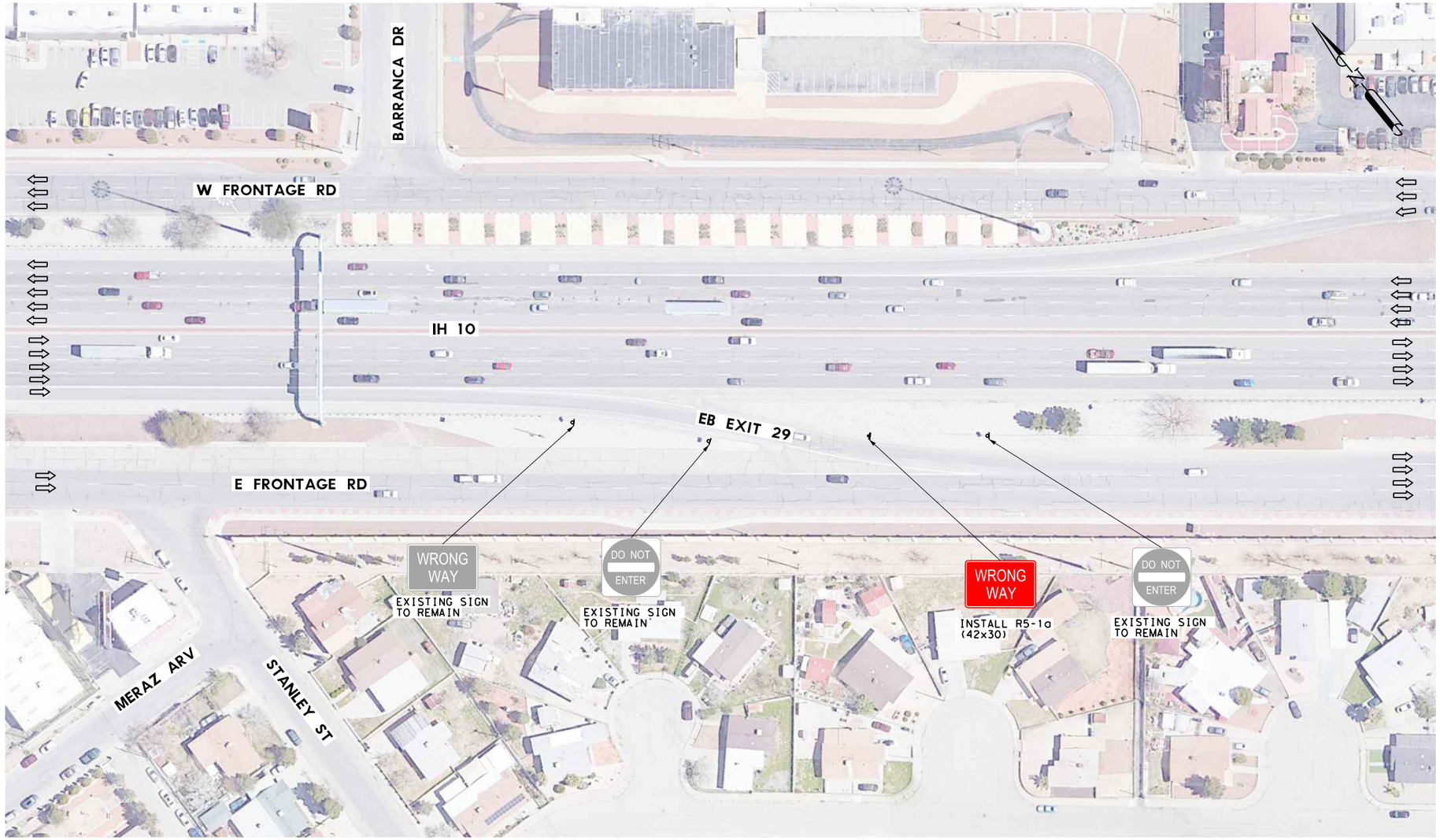
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		89

DATE: 3/22/2023 2:46:19 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_18.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

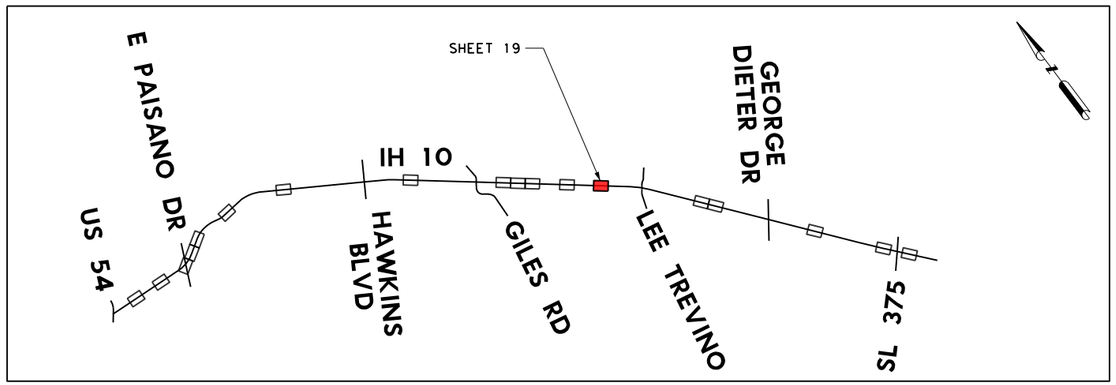
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 29 TRAFFIC SIGNING LAYOUTS

SHEET 19 OF 47

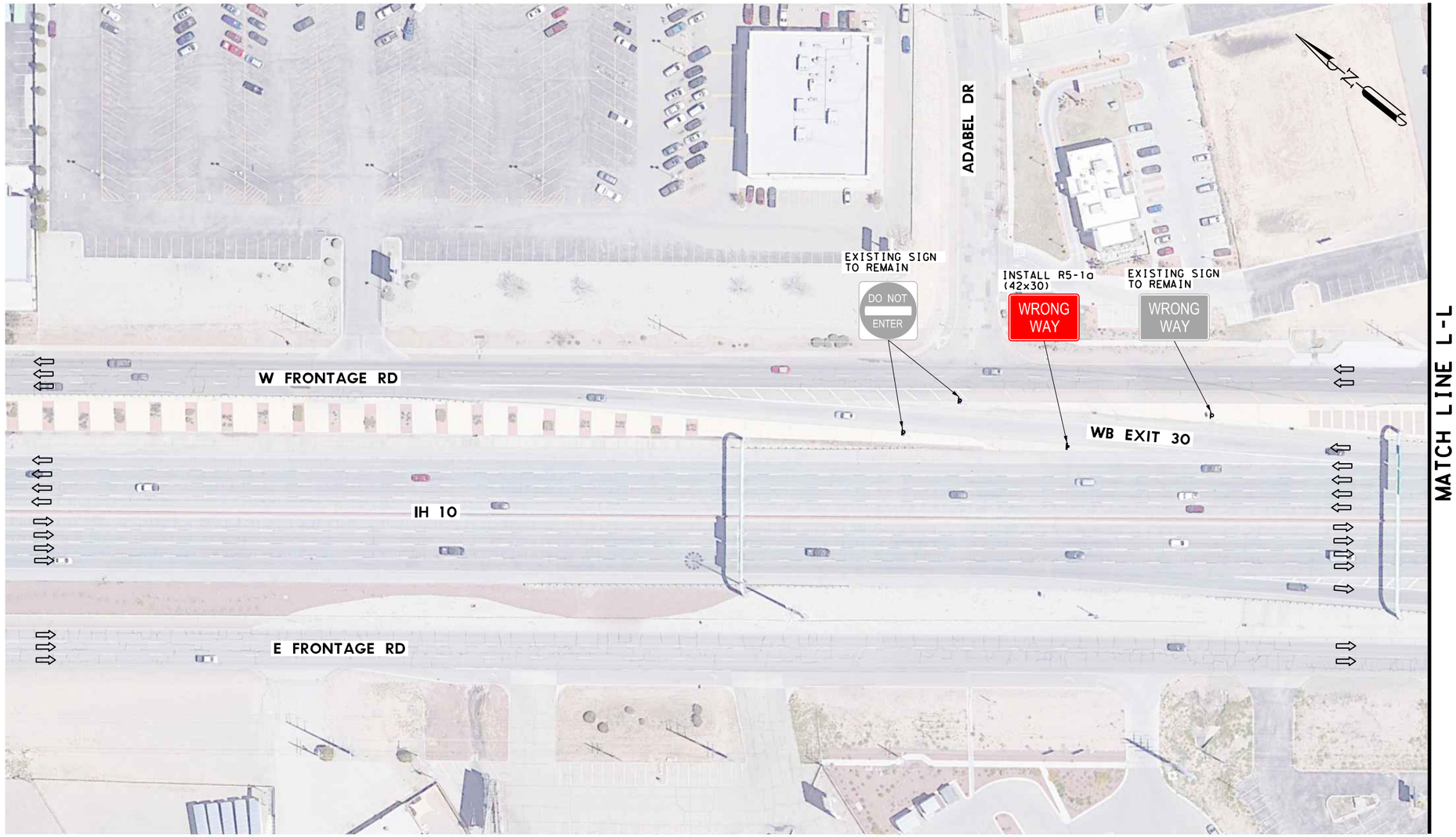
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		90

DATE: 3/22/2023 2:46:21 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_19.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

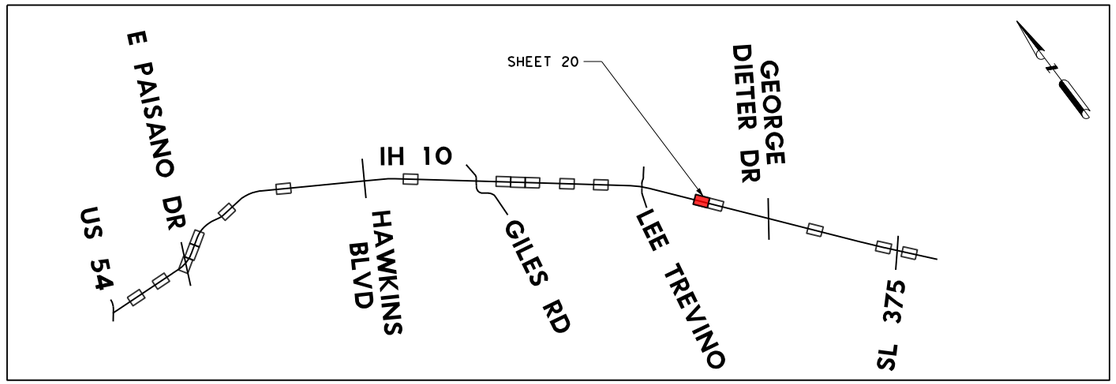
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 30 TRAFFIC SIGNING LAYOUTS

SHEET 20 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		91

DATE: 3/22/2023 2:46:26 PM
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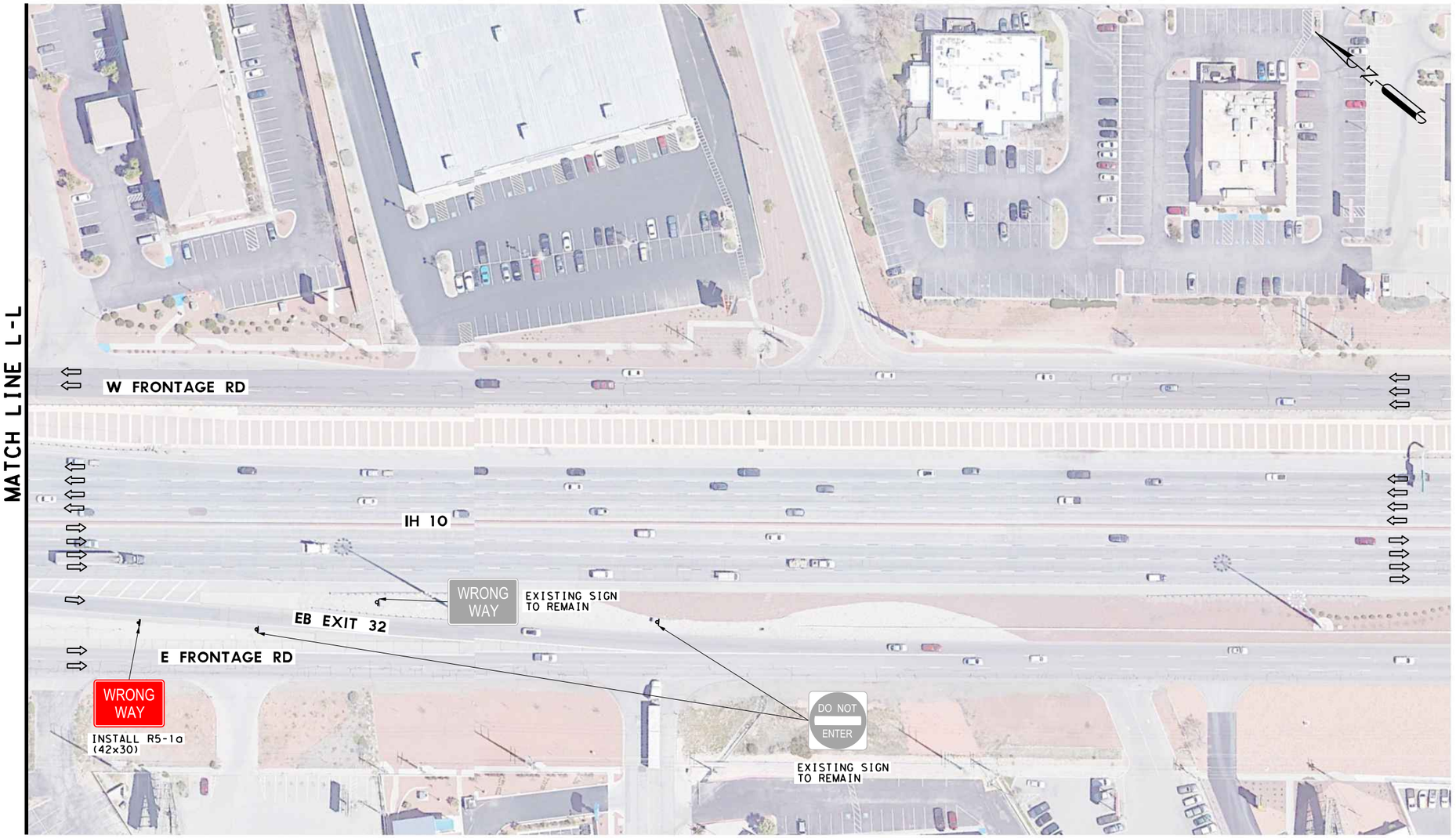


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

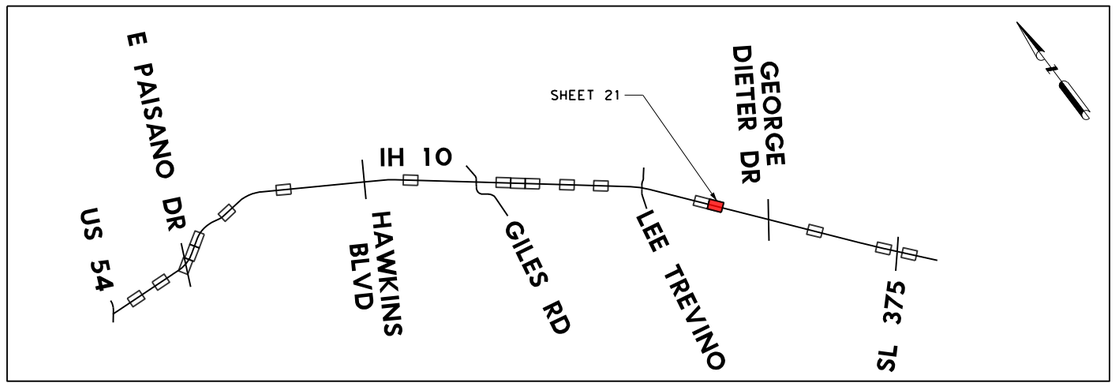
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 32 TRAFFIC SIGNING LAYOUTS

SHEET 21 OF 47

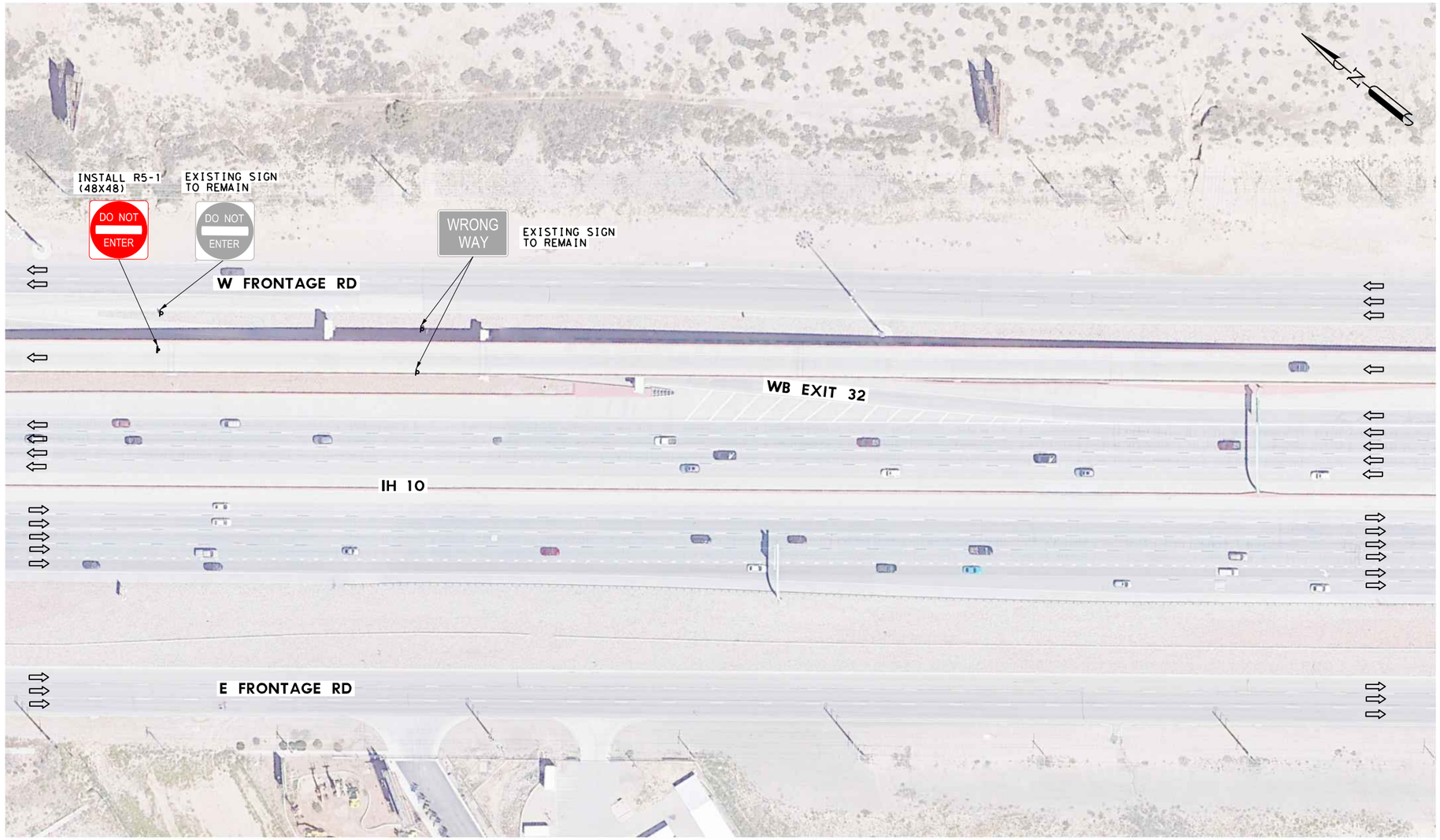
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		92

DATE: 3/22/2023 2:46:36 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_21.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

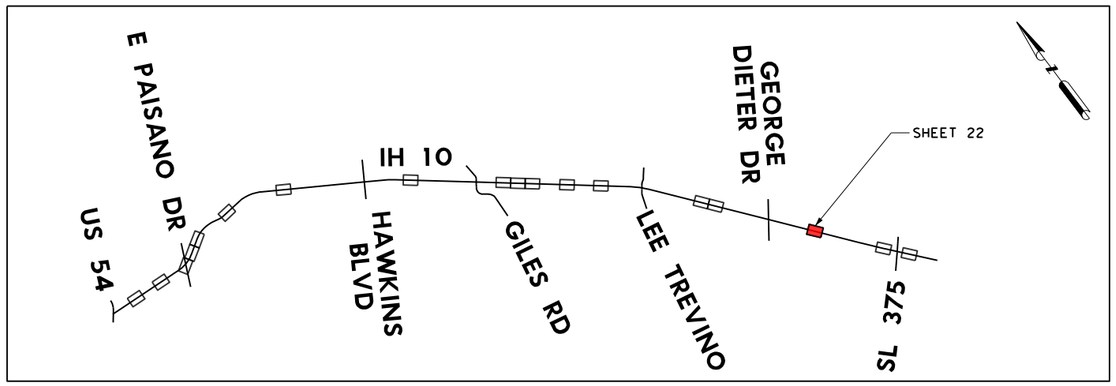
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 32 TRAFFIC SIGNING LAYOUTS

SHEET 22 OF 47

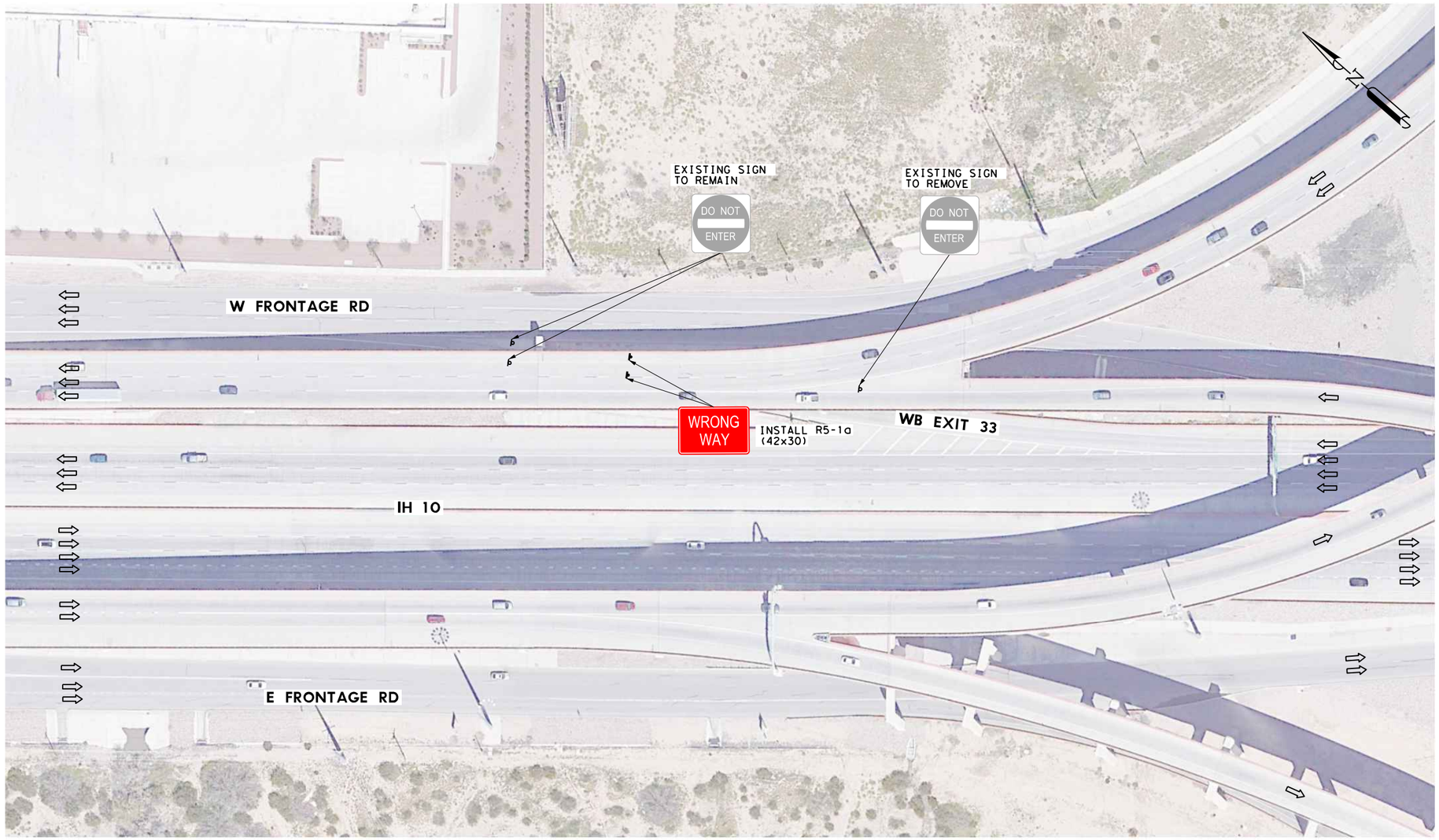
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		93

DATE: 3/22/2023 2:46:38 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_22.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

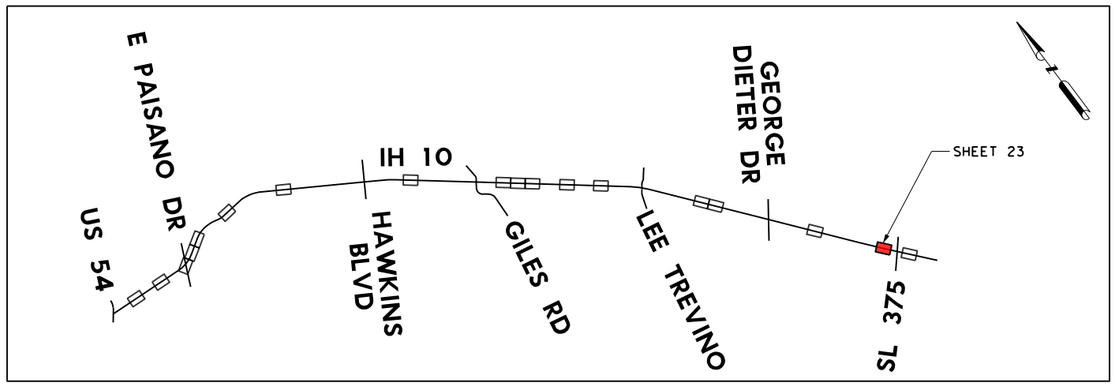
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6076	REMOVE SM RD SN SUP & AM	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 33 TRAFFIC SIGNING LAYOUTS

SHEET 23 OF 47

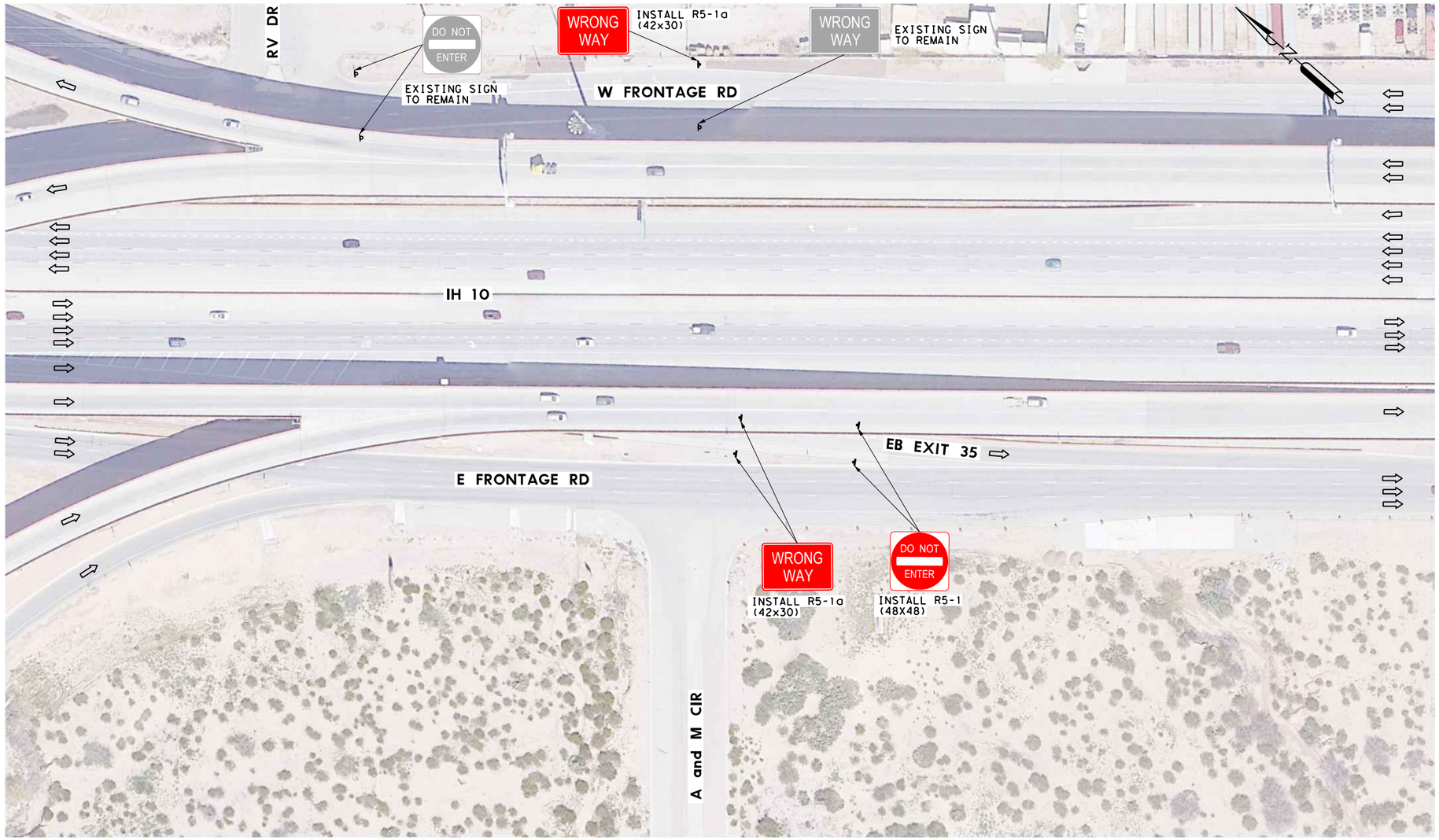
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		94

DATE: 3/22/2023 2:46:44 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_23.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

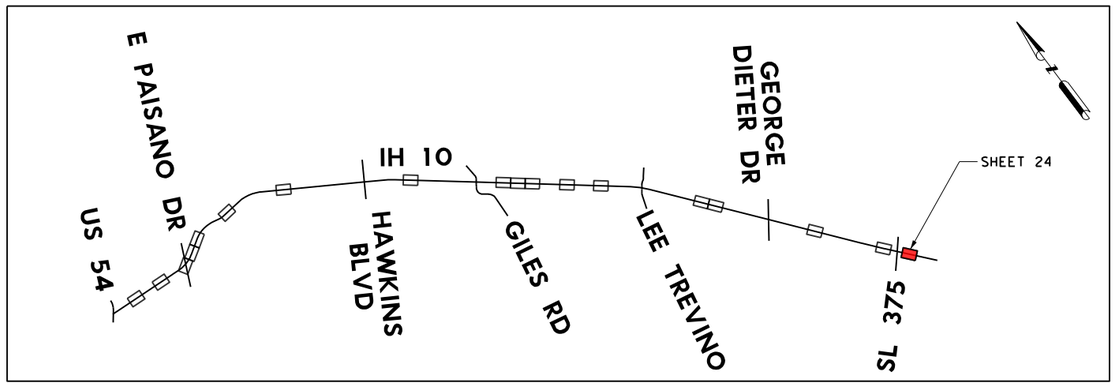
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	5

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 35 TRAFFIC SIGNING LAYOUTS

SHEET 24 OF 47

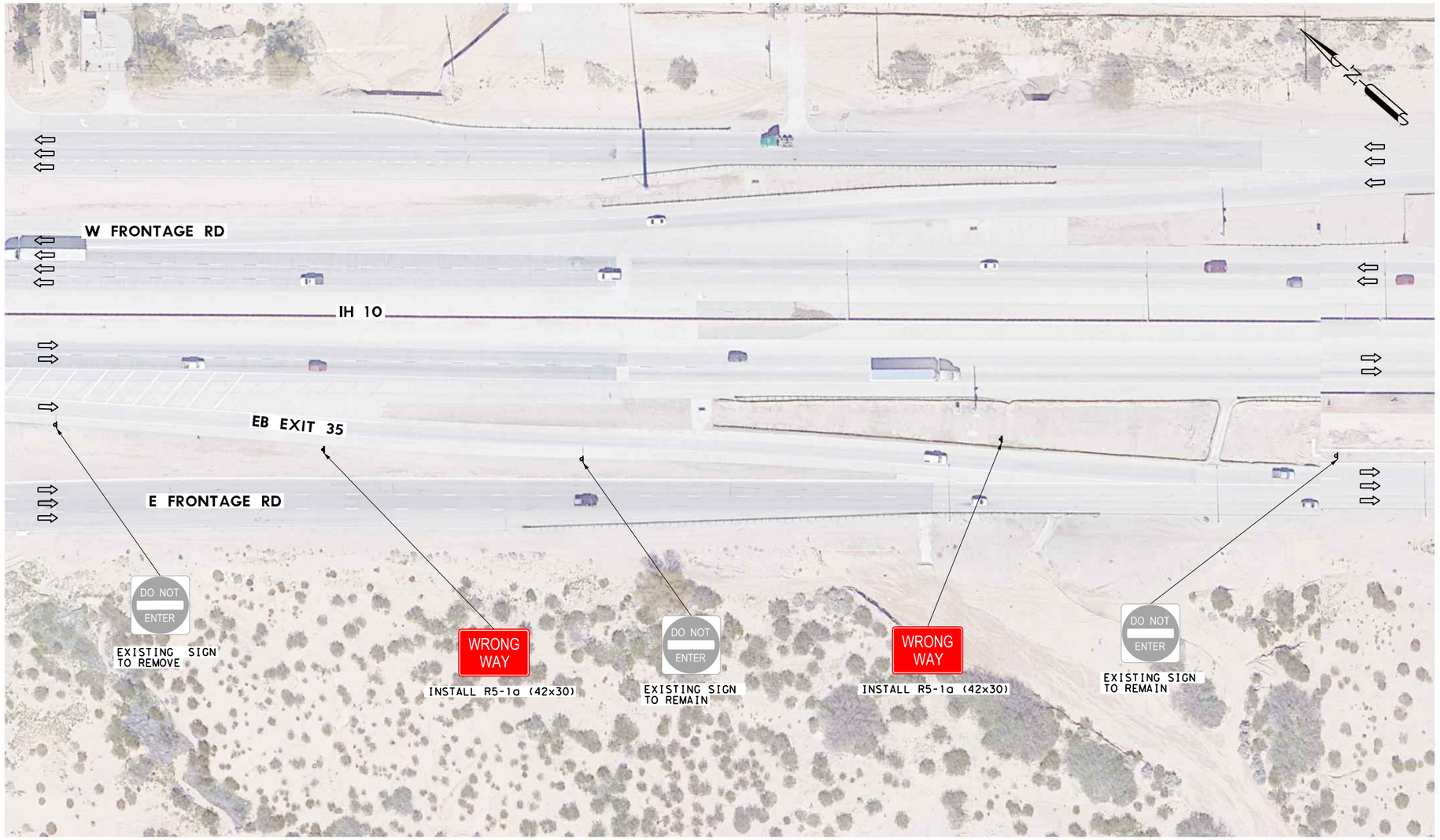
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		95

DATE: 3/22/2023 2:46:49 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_24.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

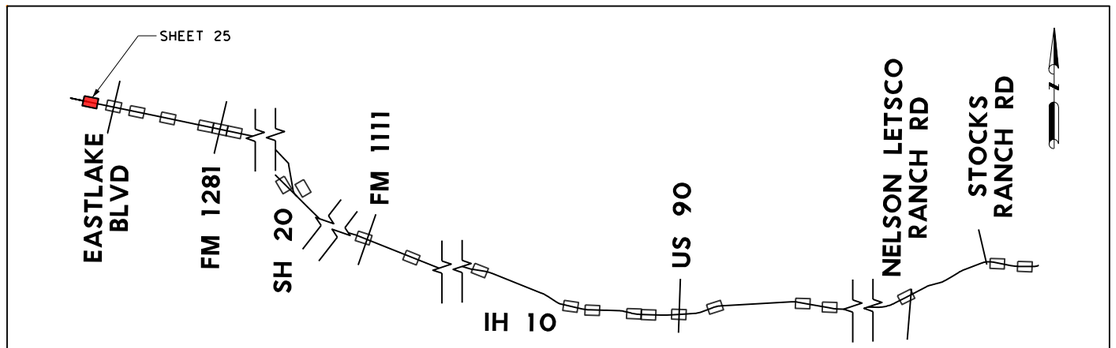
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6076	REMOVE SM RD SN SUP & AM	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 35 TRAFFIC SIGNING LAYOUTS

SHEET 25 OF 47

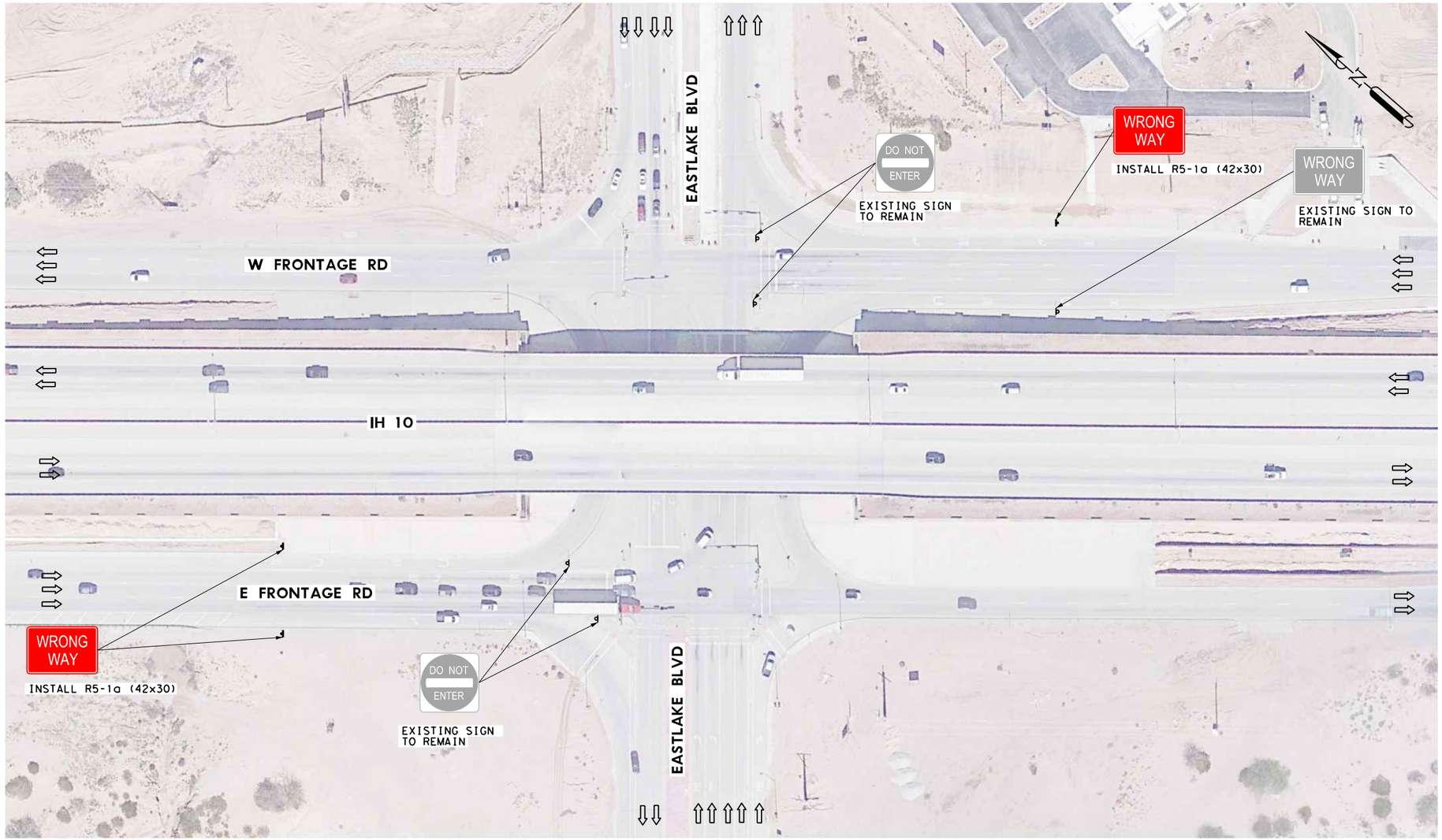
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		96

DATE: 3/22/2023 2:46:57 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_25.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

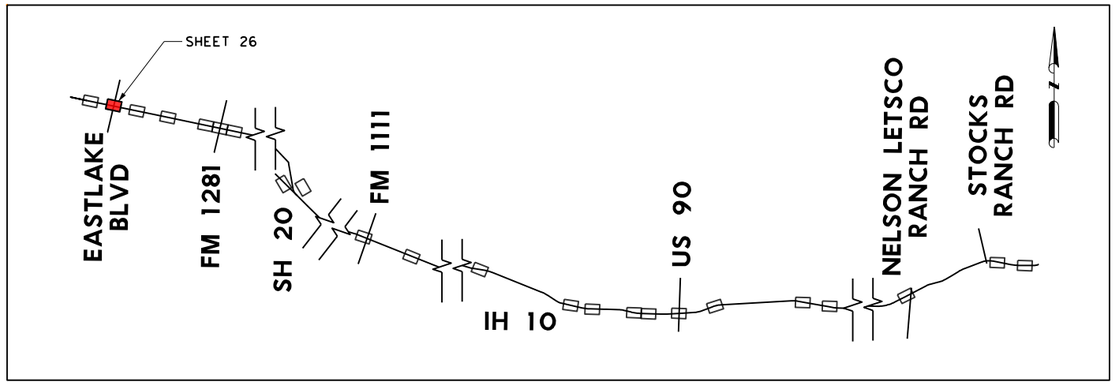
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EASTLAKE BLVD TRAFFIC SIGNING LAYOUTS

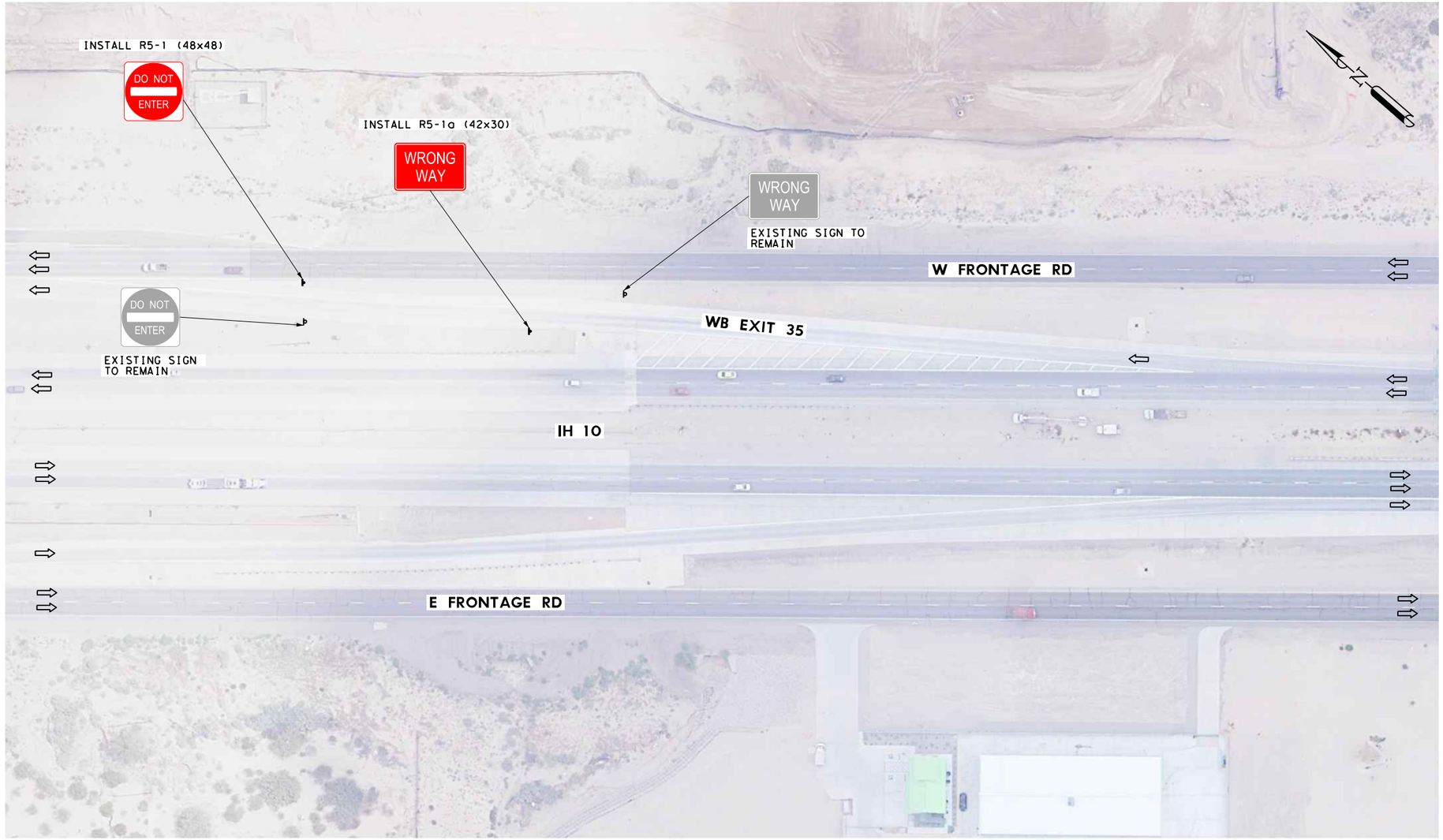
SHEET 26 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		97

DATE: 3/22/2023 2:47:06 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_26.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

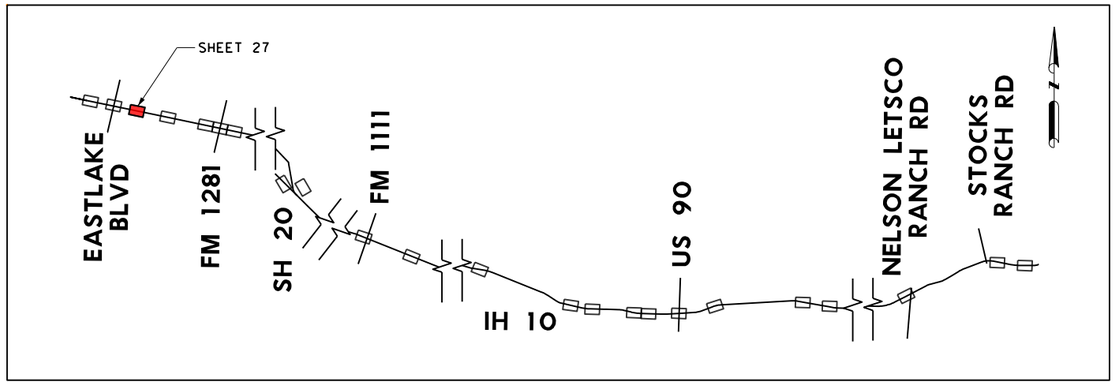
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 35 TRAFFIC SIGNING LAYOUTS

SHEET 27 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		98

DATE: 3/22/2023 2:47:11 PM
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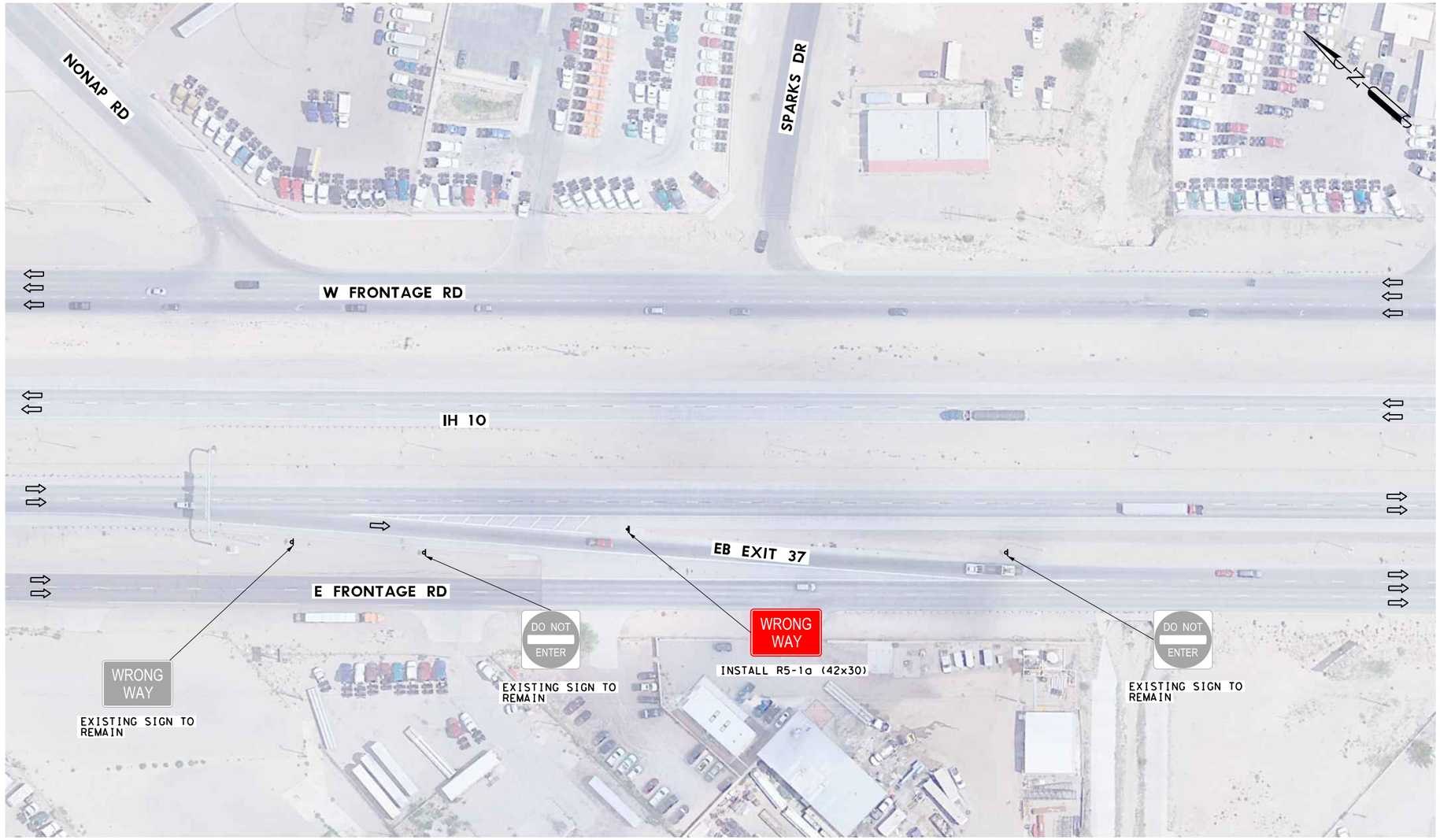


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

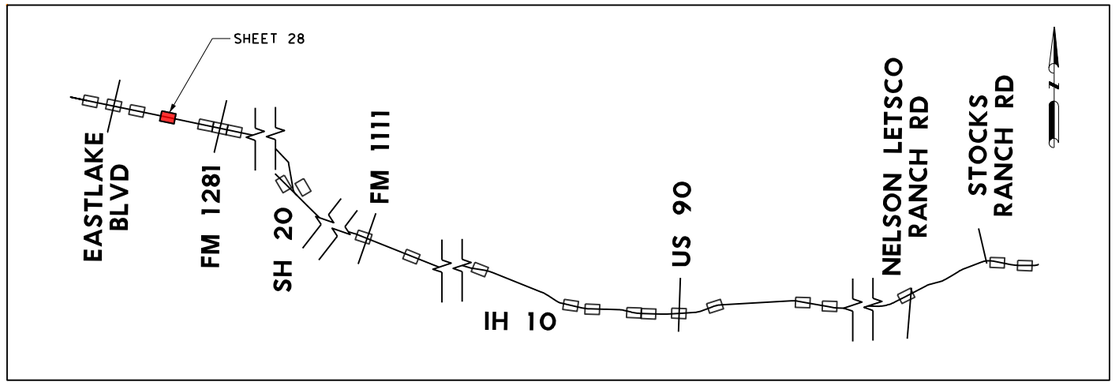
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 37 TRAFFIC SIGNING LAYOUTS

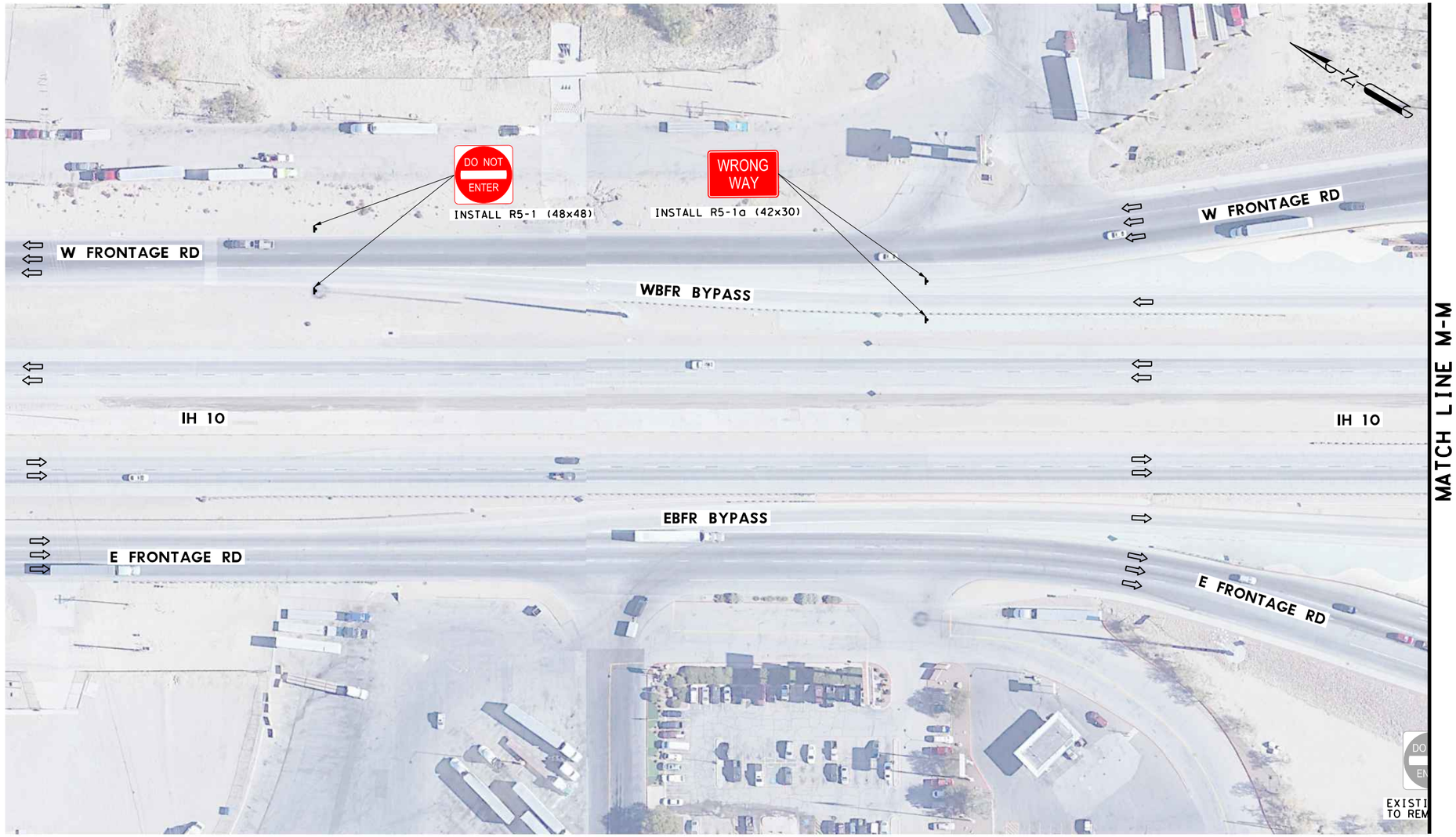
SHEET 28 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		99

DATE: 3/22/2023 2:47:13 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_28.dgn



MATCH LINE M-M

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

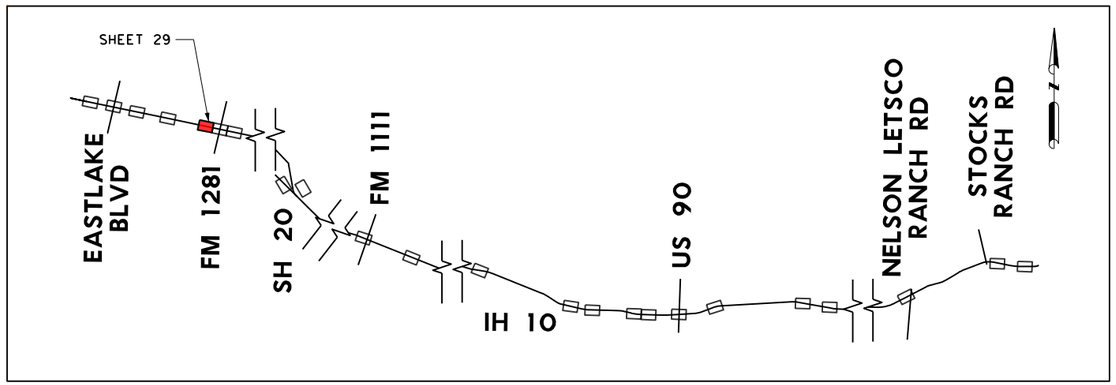
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WBFR BYPASS FM 1281 TRAFFIC SIGNING LAYOUTS

SHEET 29 OF 47

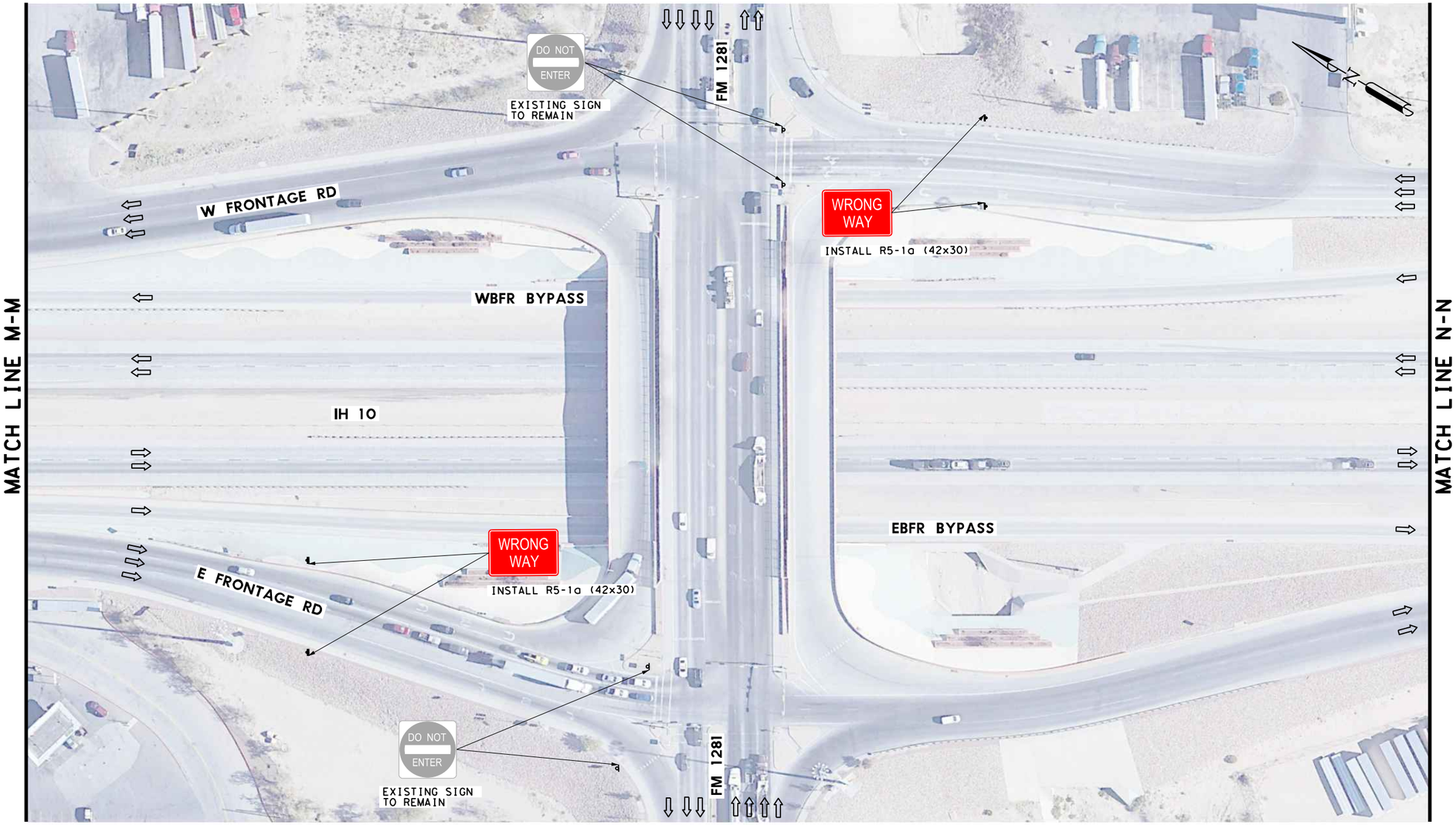
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		100

DATE: 3/22/2023 2:47:18 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_29.dgn



LEGEND

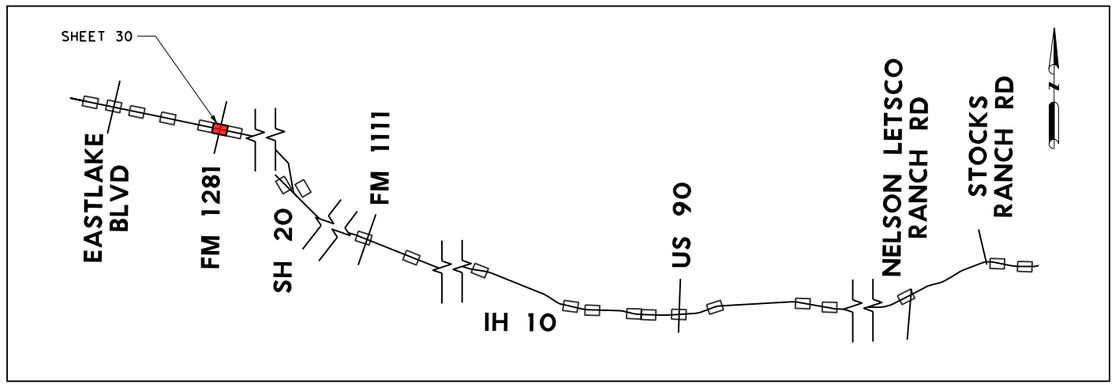
- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

IH 10 AT FM 1281
TRAFFIC SIGNING LAYOUTS

SHEET 30 OF 47

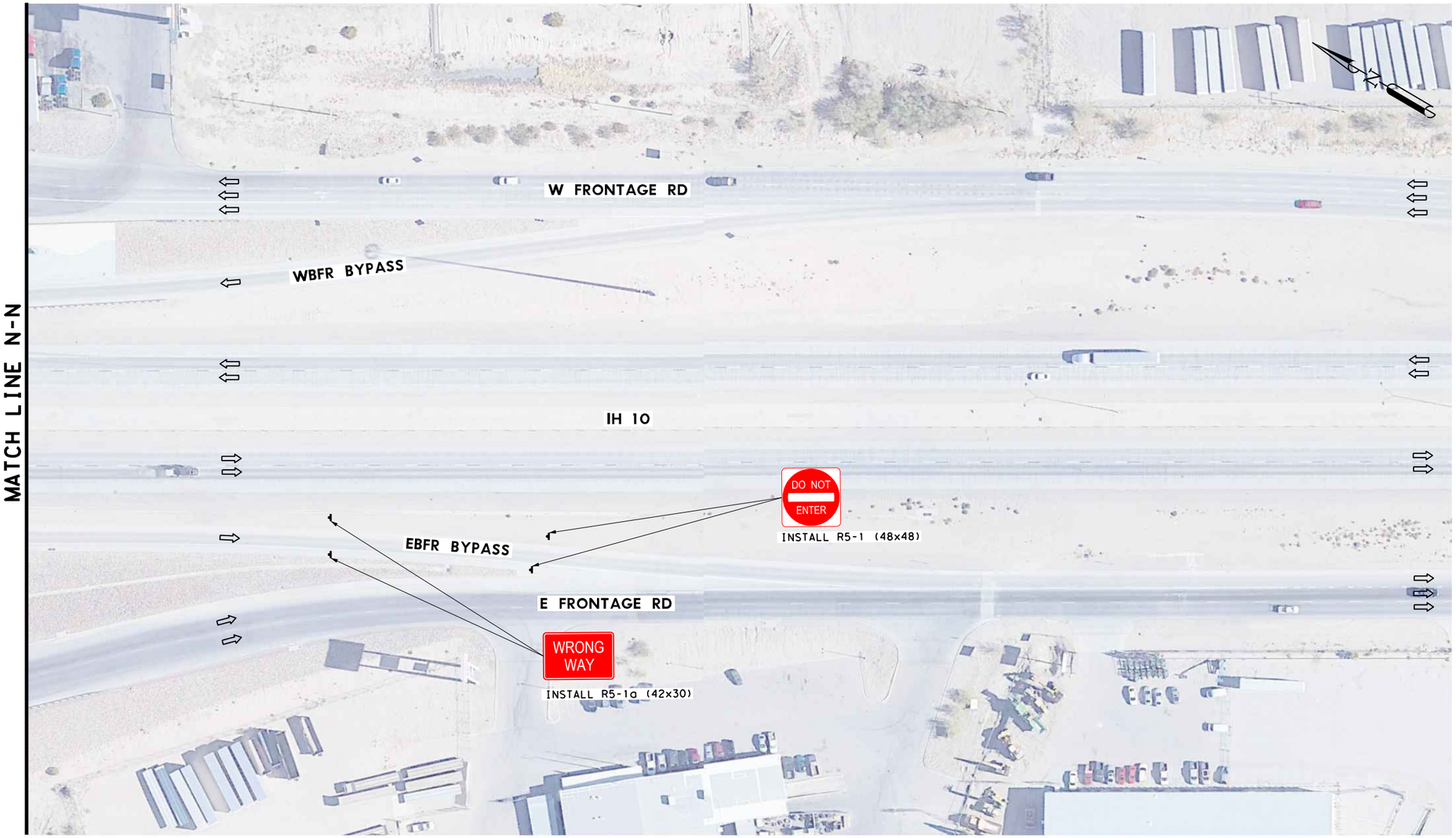
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		101

DATE: 3/22/2023 2:47:31 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_30.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

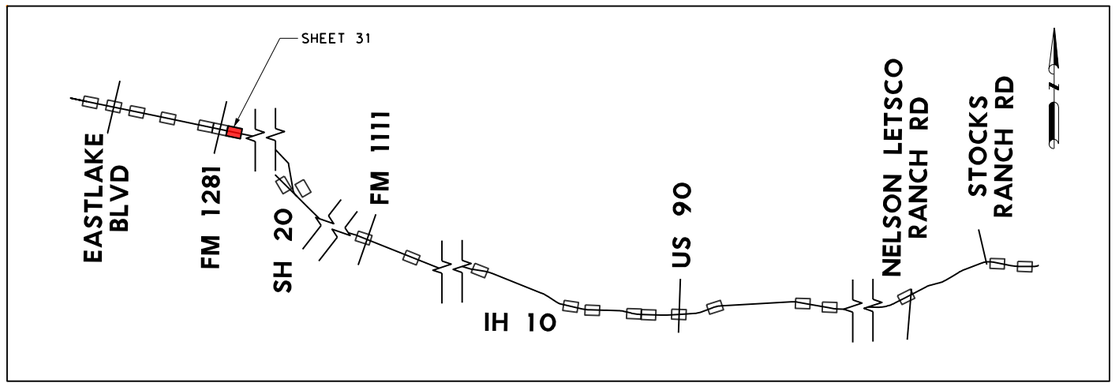
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EBFR BYPASS FM 1281 TRAFFIC SIGNING LAYOUTS

SHEET 31 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		102

DATE: 3/22/2023 2:47:33 PM
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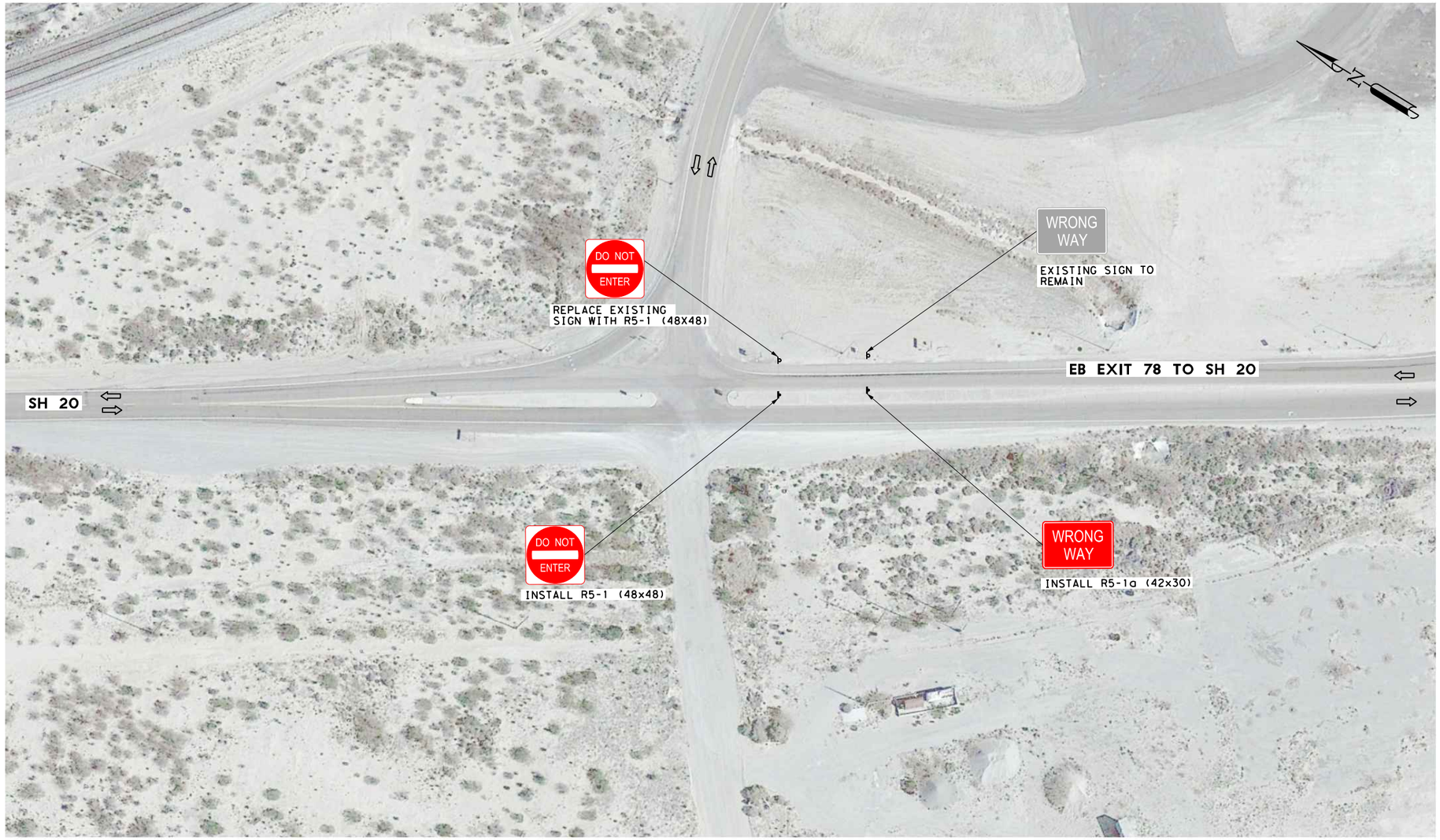


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen

03/23/2023

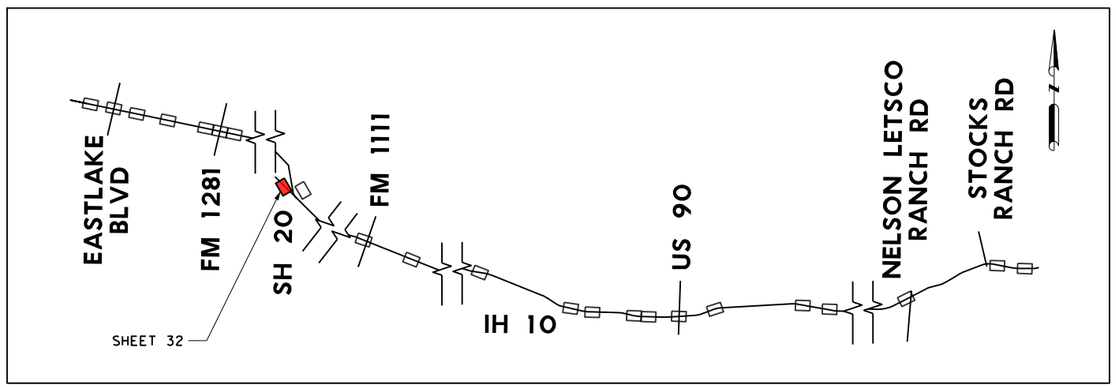
0 25 50 100

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 78 TO SH 20 TRAFFIC SIGNING LAYOUTS

SHEET 32 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		103

DATE: 3/22/2023 2:47:35 PM
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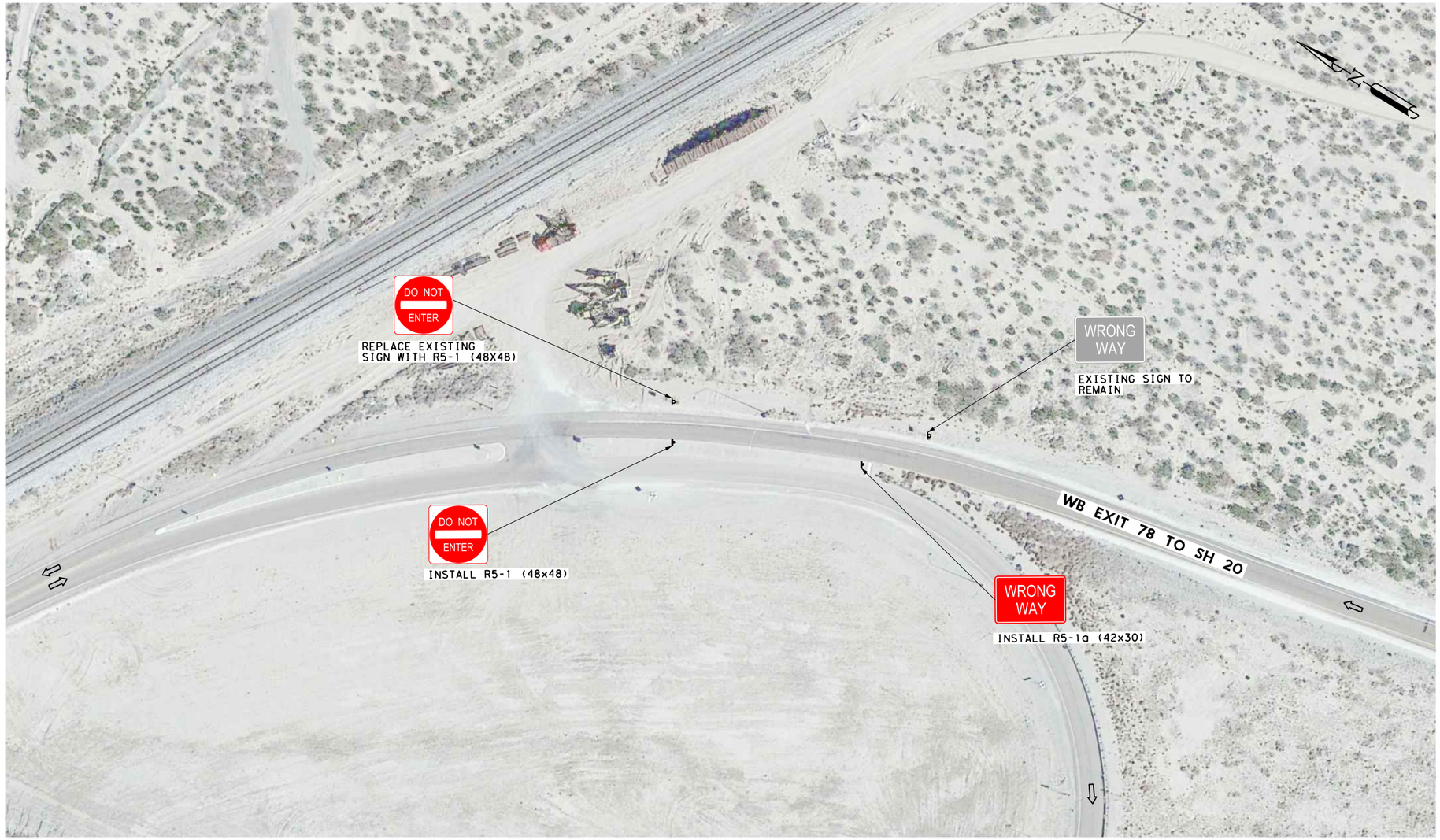


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

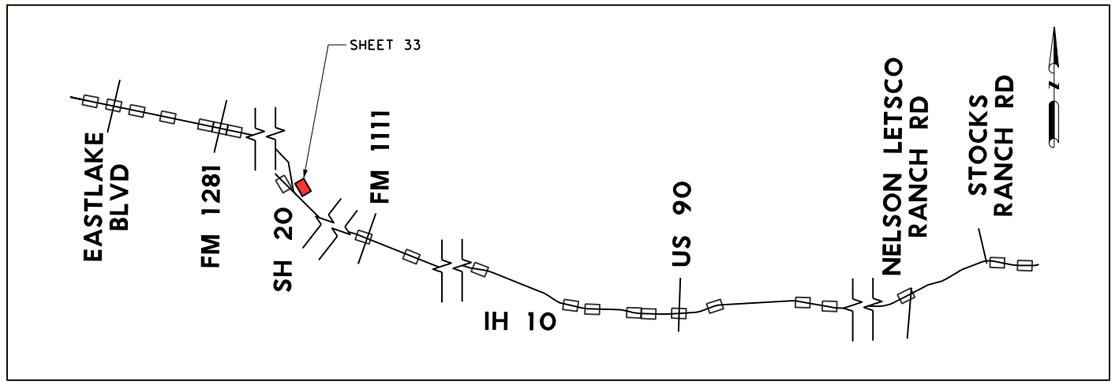
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 78 TO SH 20 TRAFFIC SIGNING LAYOUTS

SHEET 33 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		104

DATE: 3/22/2023 2:47:40 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_33.dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

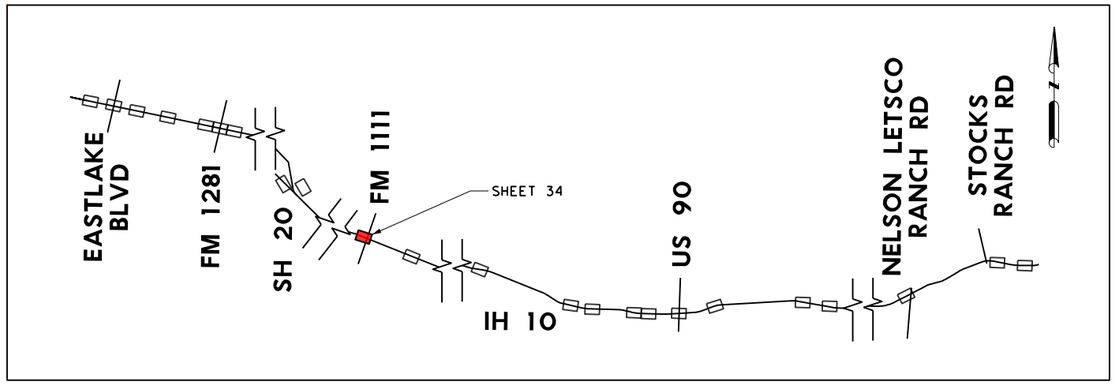
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3
644	6067	IN SM RD SN SUP & AM (INST SIGN ONLY)	EA	2
644	6076	REMOVE SM RD SN SUP & AM	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 107 TO FM 1111 TRAFFIC SIGNING LAYOUTS

SHEET 34 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc, F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		105

DATE: 3/22/2023 2:47:46 PM
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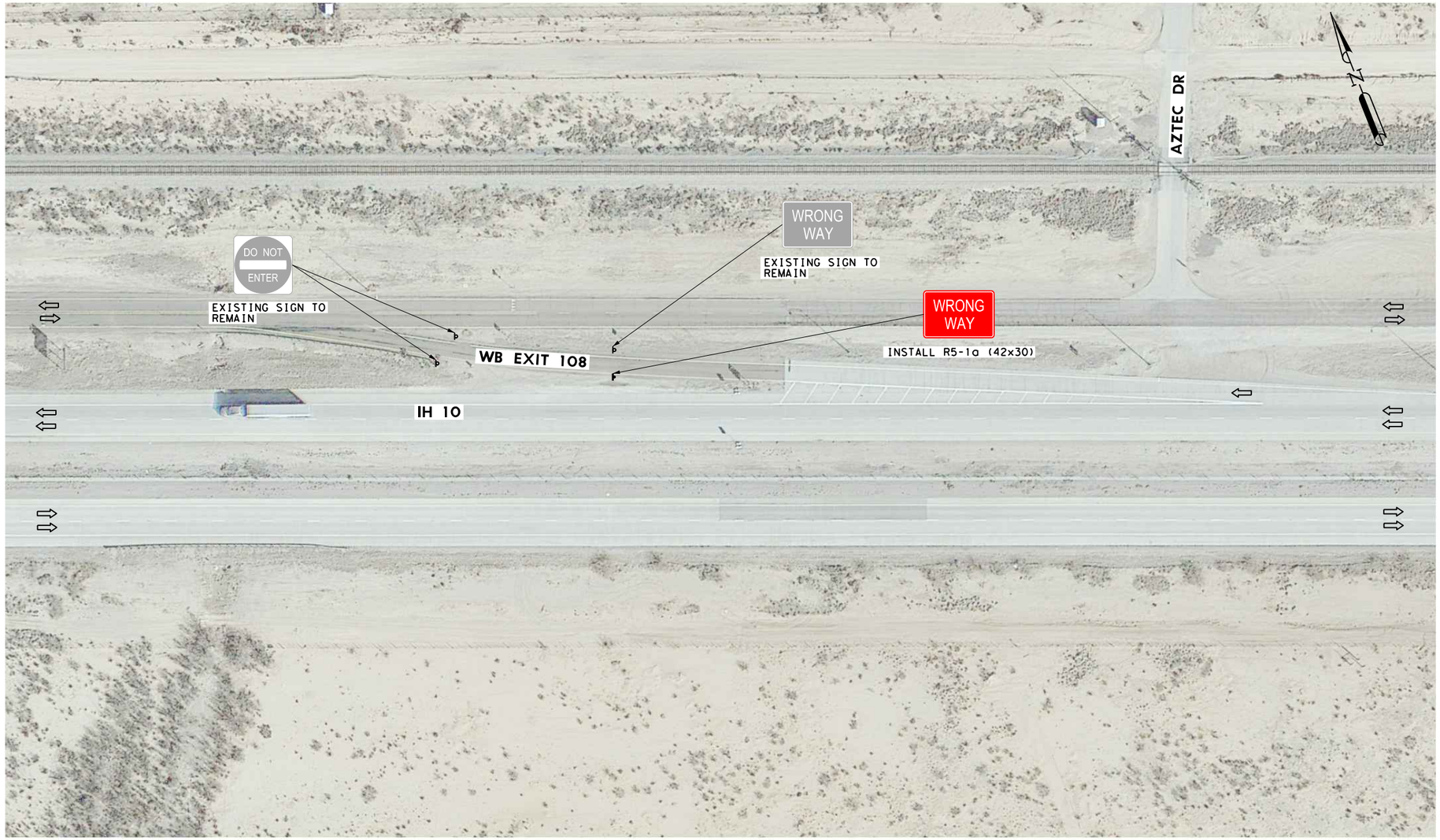


LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

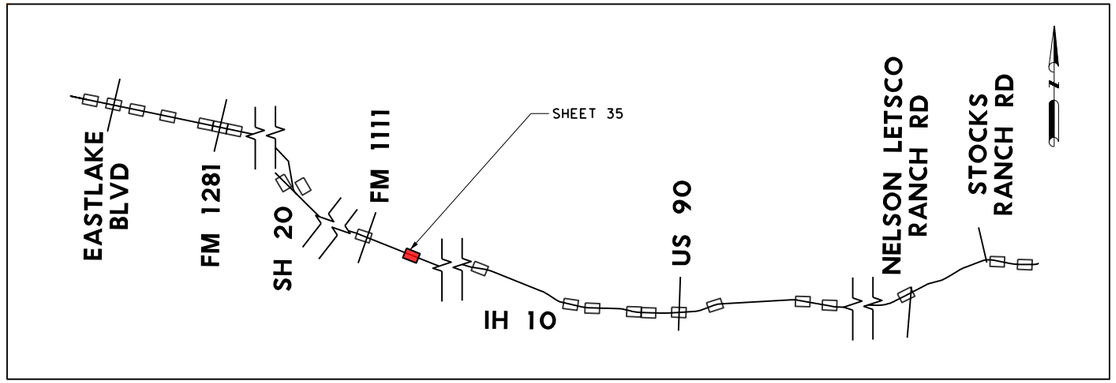
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 108 TRAFFIC SIGNING LAYOUTS

SHEET 35 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		106

DATE: 3/22/2023 2:47:51 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_35.dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

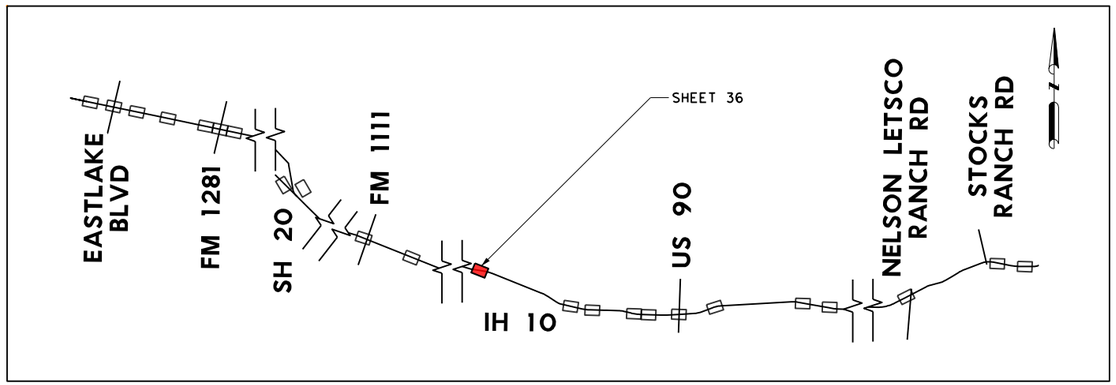
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT 133 TRAFFIC SIGNING LAYOUTS

SHEET 36 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		107

DATE: 3/22/2023 2:47:57 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_36.dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS

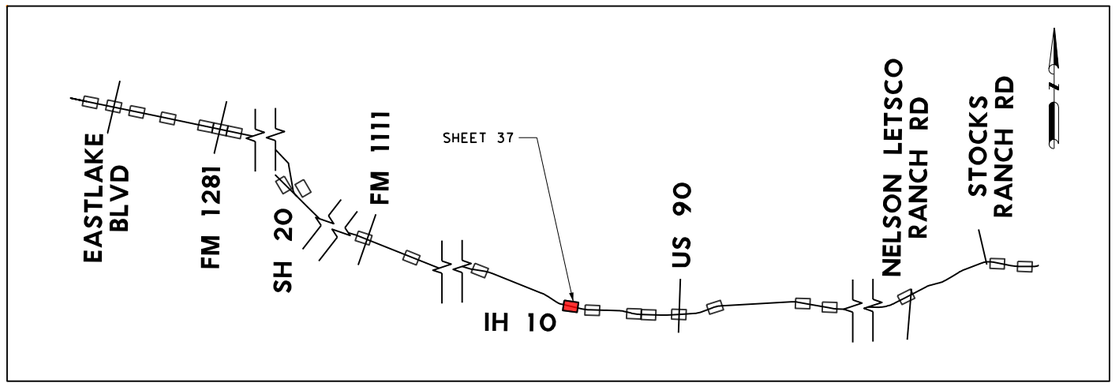
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT TO SCENIC OVERLOOK TRAFFIC SIGNING LAYOUTS

SHEET 37 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		108

DATE: 3/22/2023 2:48:03 PM
FILE: TFQ_ELP_1H10_WWDC_SHEET_37.dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

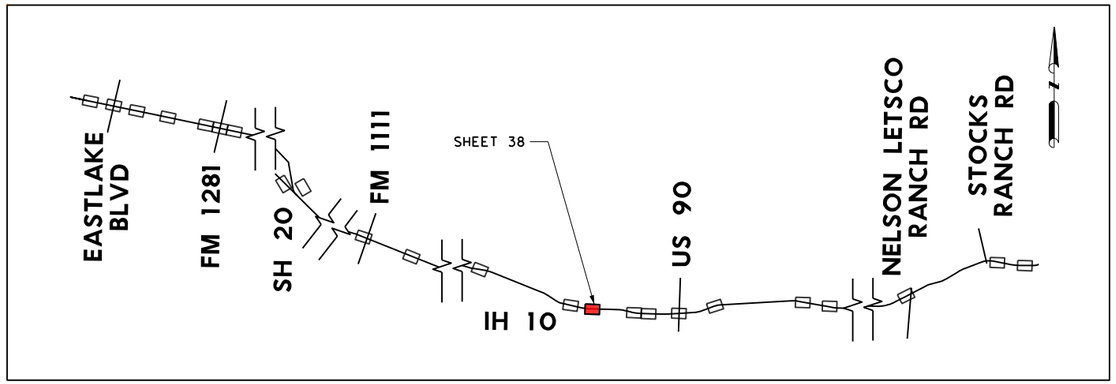
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT WEIGH STATION TRAFFIC SIGNING LAYOUTS

SHEET 38 OF 47

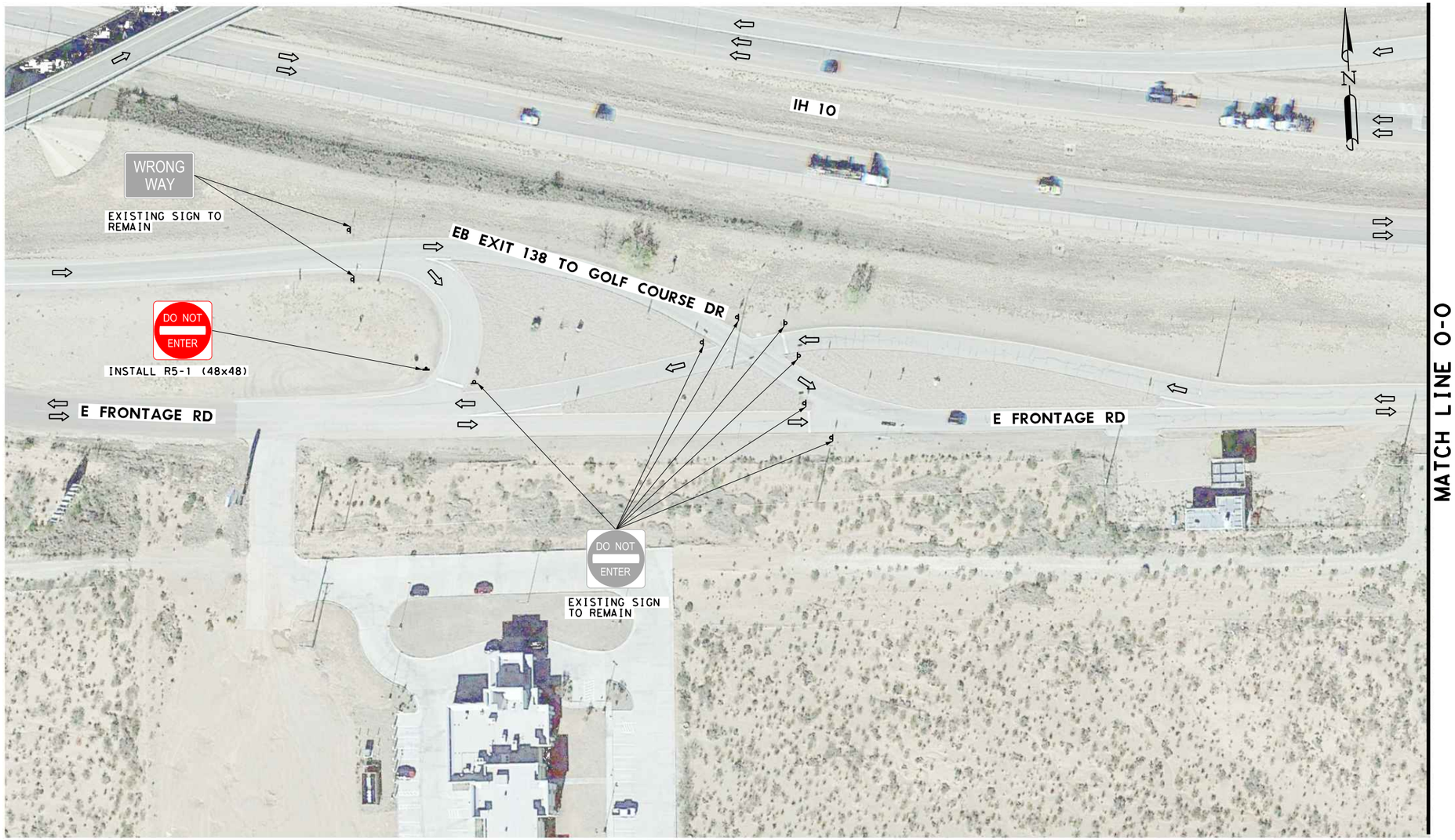
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		109

DATE: 3/22/2023 2:48:09 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_38.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

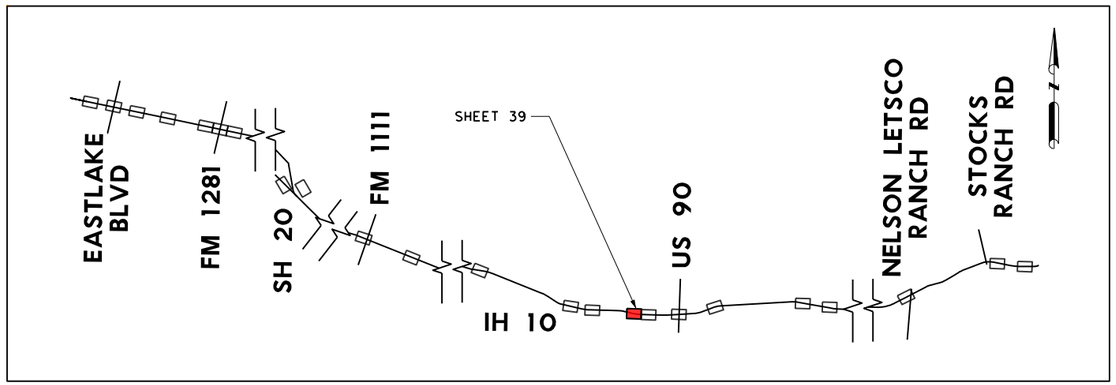
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 138 TO GOLF COURSE DR TRAFFIC SIGNING LAYOUTS

SHEET 39 OF 47

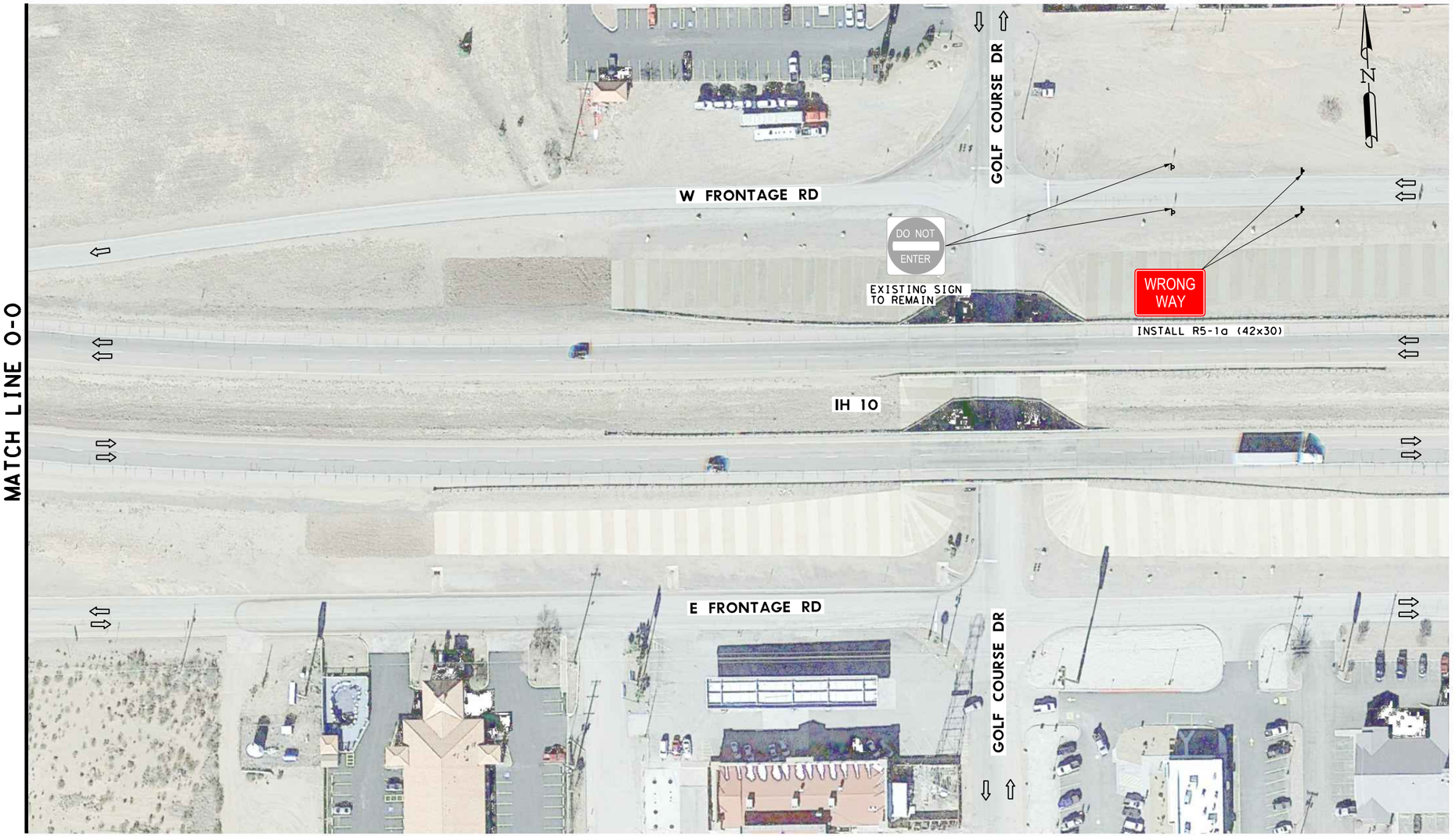
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		110

DATE: 3/22/2023 2:48:14 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_39.dgn



LEGEND

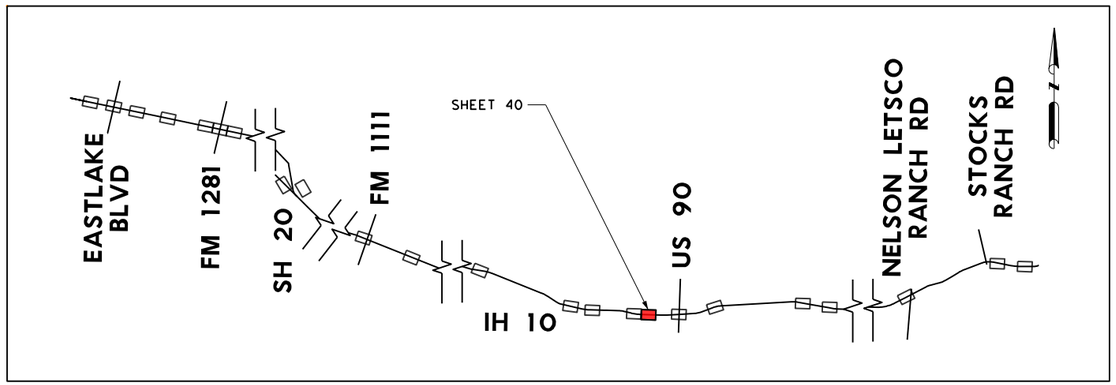
- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT GOLF COURSE DR TRAFFIC SIGNING LAYOUTS

SHEET 40 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

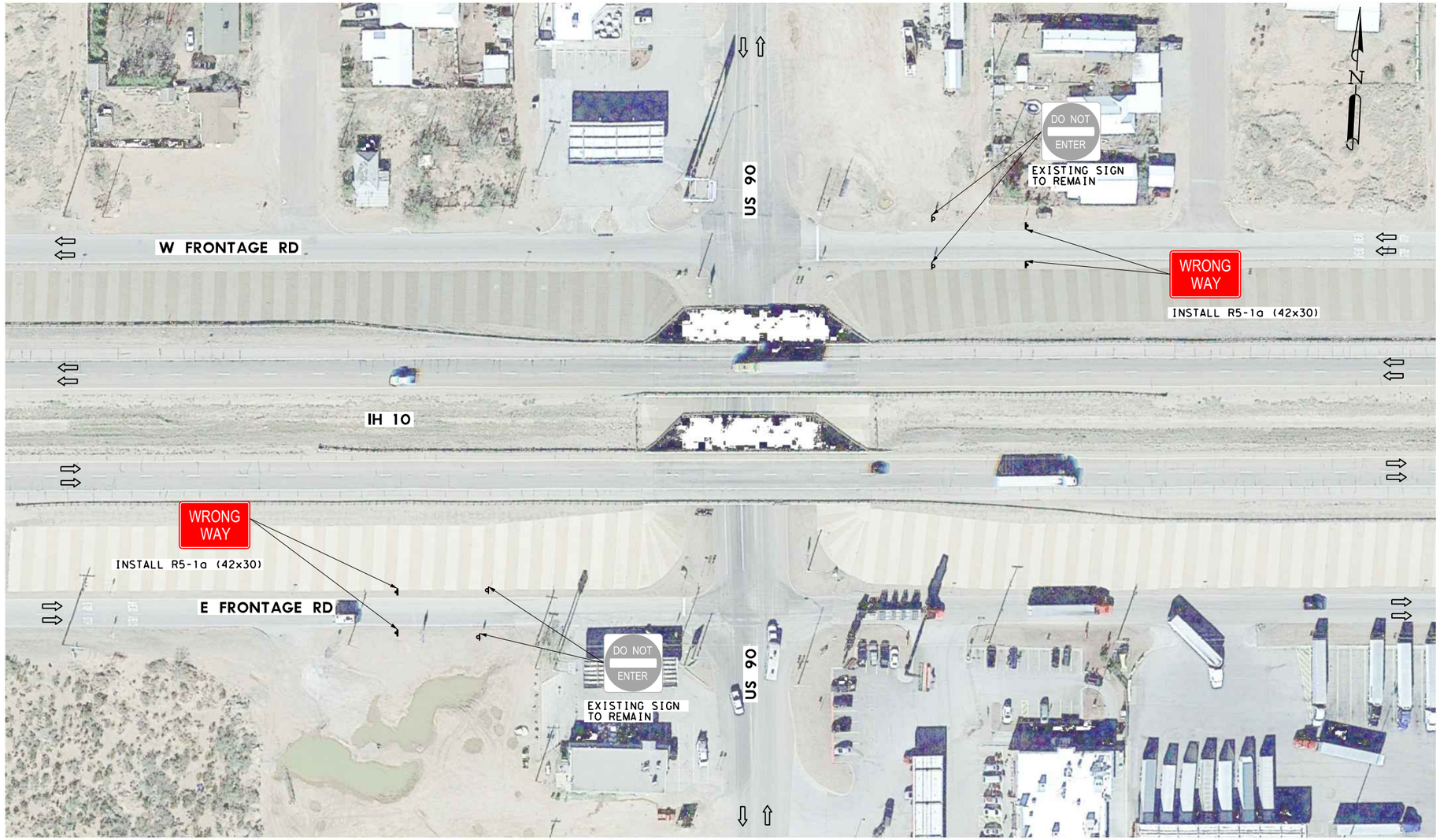
AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		111

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

DATE: 3/22/2023 2:48:24 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_40.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

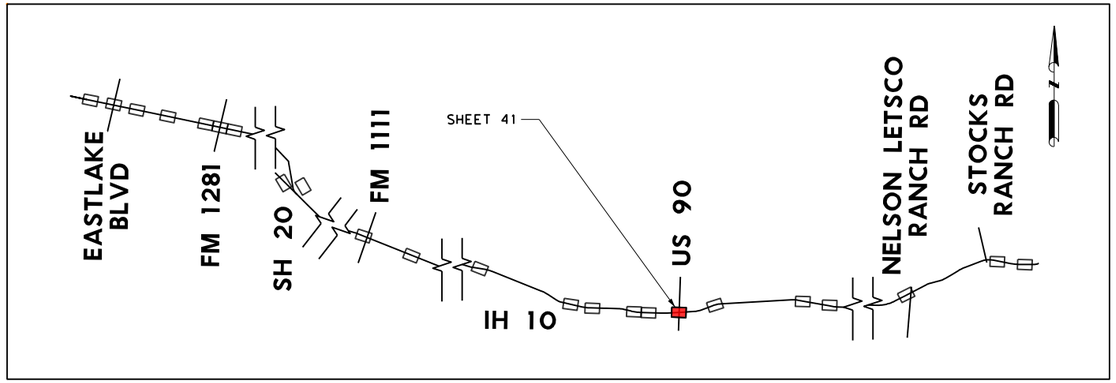
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	4

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT US 90 TRAFFIC SIGNING LAYOUTS

SHEET 41 OF 47

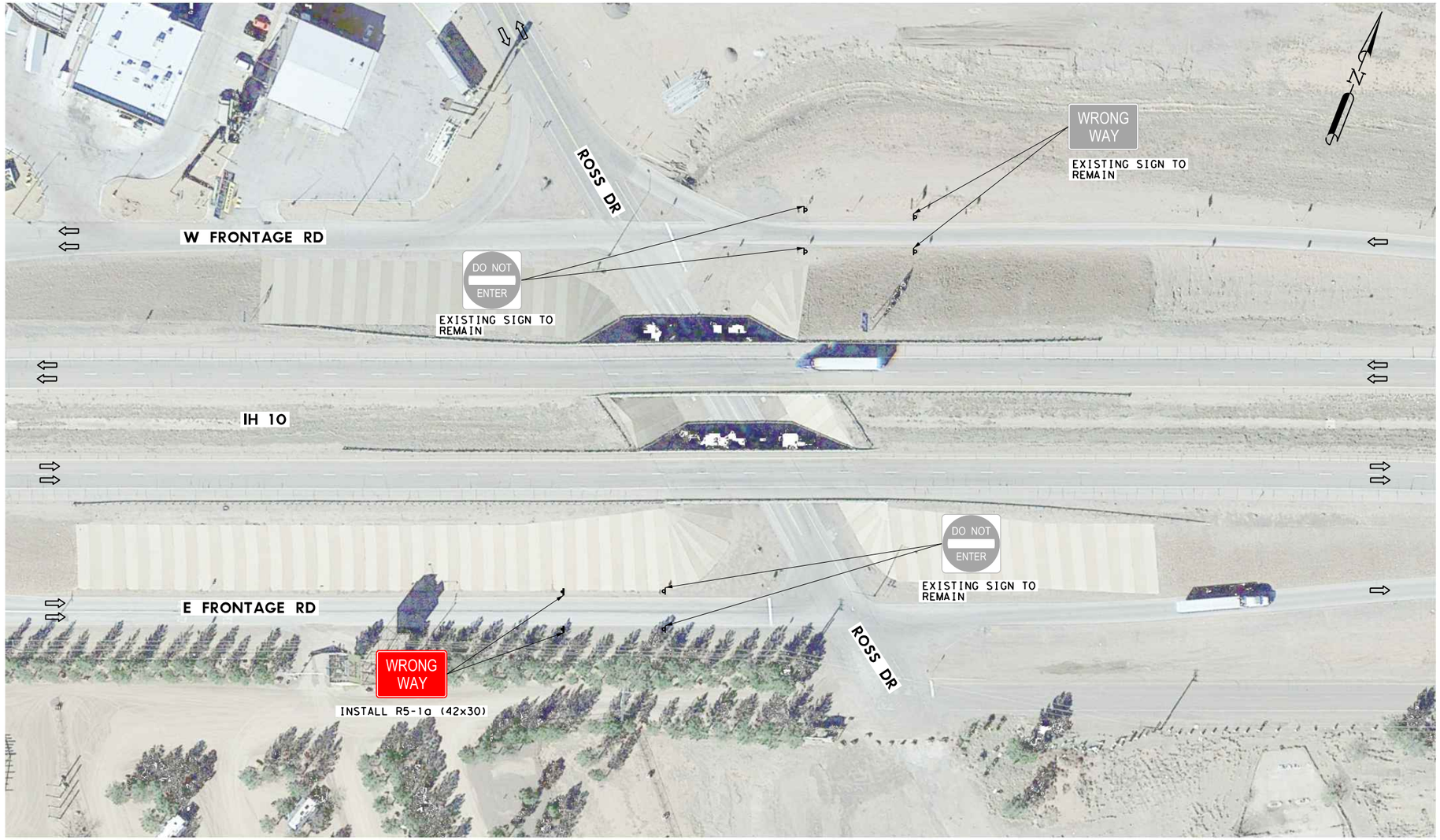
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		112

DATE: 3/22/2023 2:48:26 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_41.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

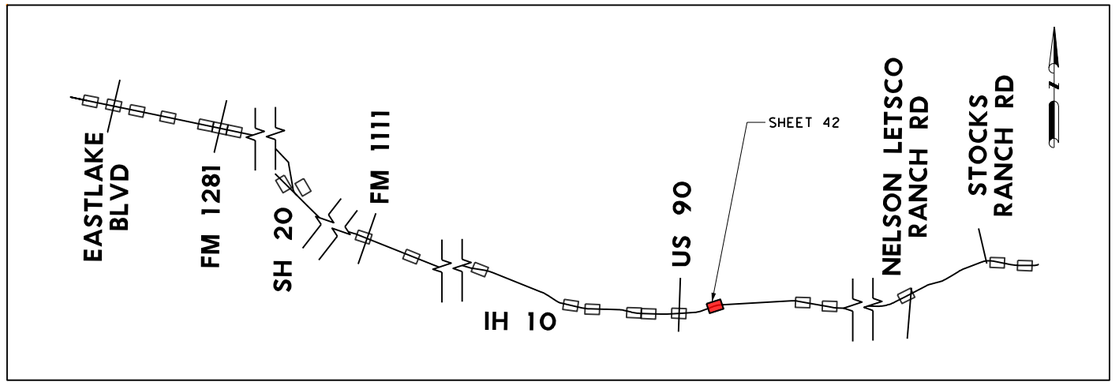
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT ROSS DR TRAFFIC SIGNING LAYOUTS

SHEET 42 OF 47

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		113

DATE: 3/22/2023 2:48:31 PM
FILE: TFO_ELP_IH10_WWOC_SHEET_42.dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

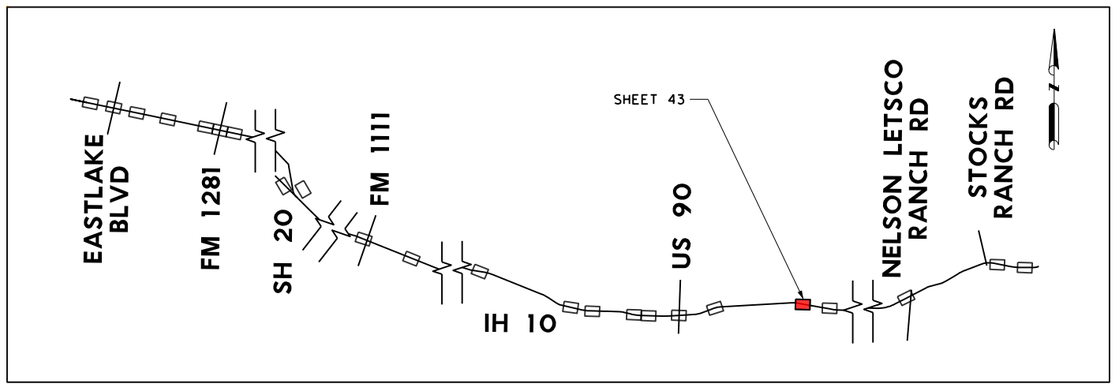
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT TO REST AREA TRAFFIC SIGNING LAYOUTS

SHEET 43 OF 47

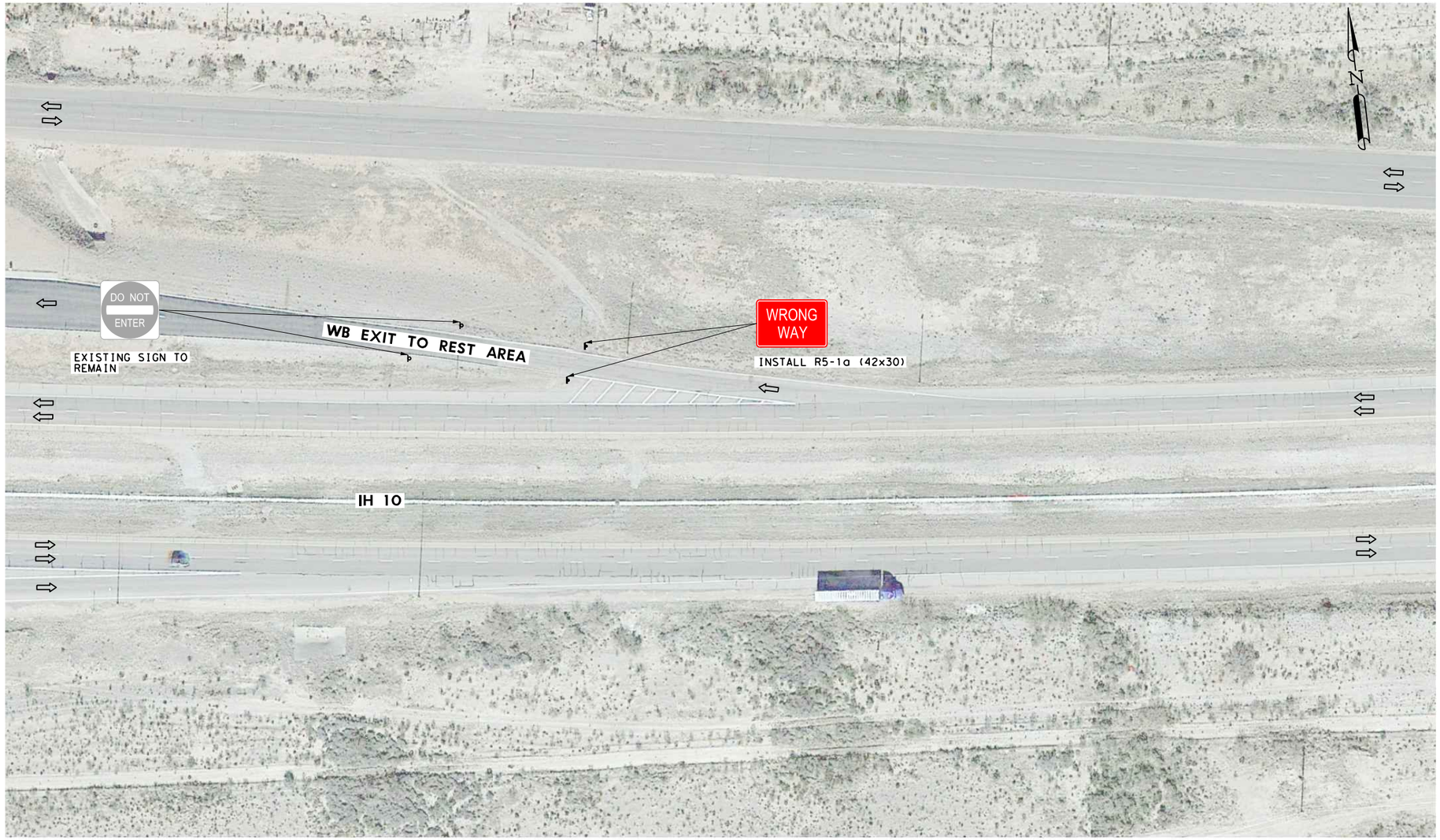
TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		114

DATE: 3/22/2023 2:48:37 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_43.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

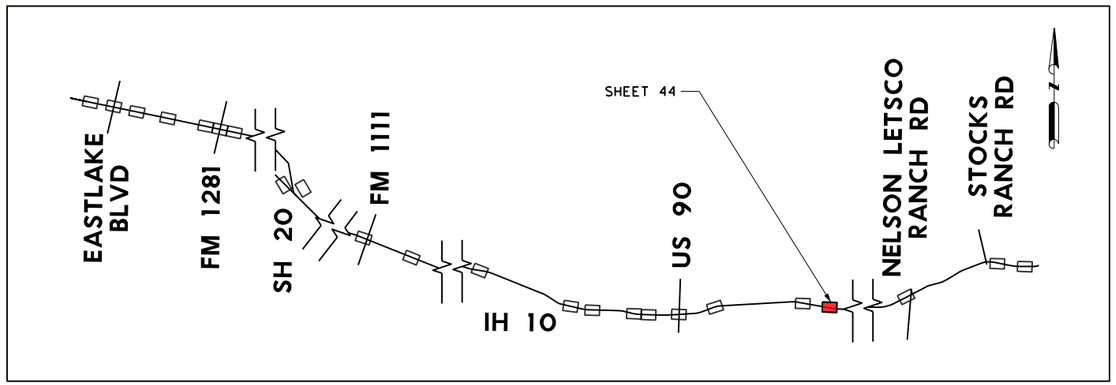
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT TO REST AREA TRAFFIC SIGNING LAYOUTS

SHEET 44 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		115

DATE: 3/22/2023 2:48:43 PM
FILE: TFQ_ELP_IH10_WWDC_SHEET_44.dgn

LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

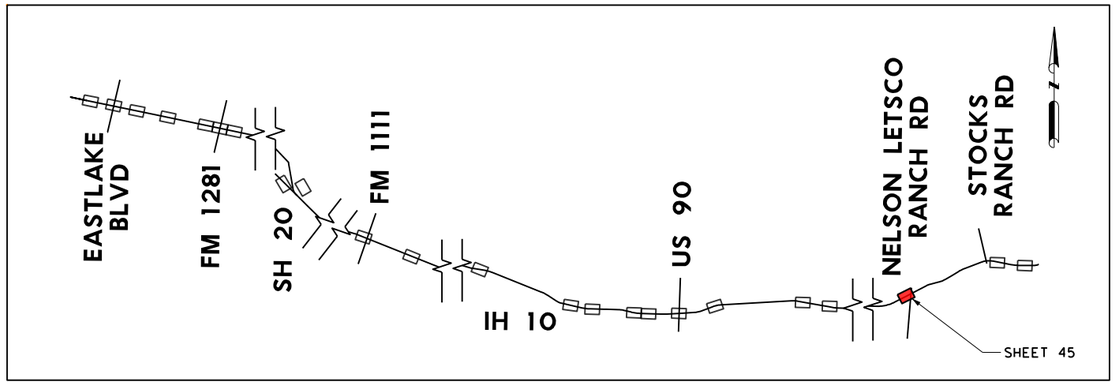
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	1

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT NELSON LETSCO RANCH RD TRAFFIC SIGNING LAYOUTS

SHEET 45 OF 47

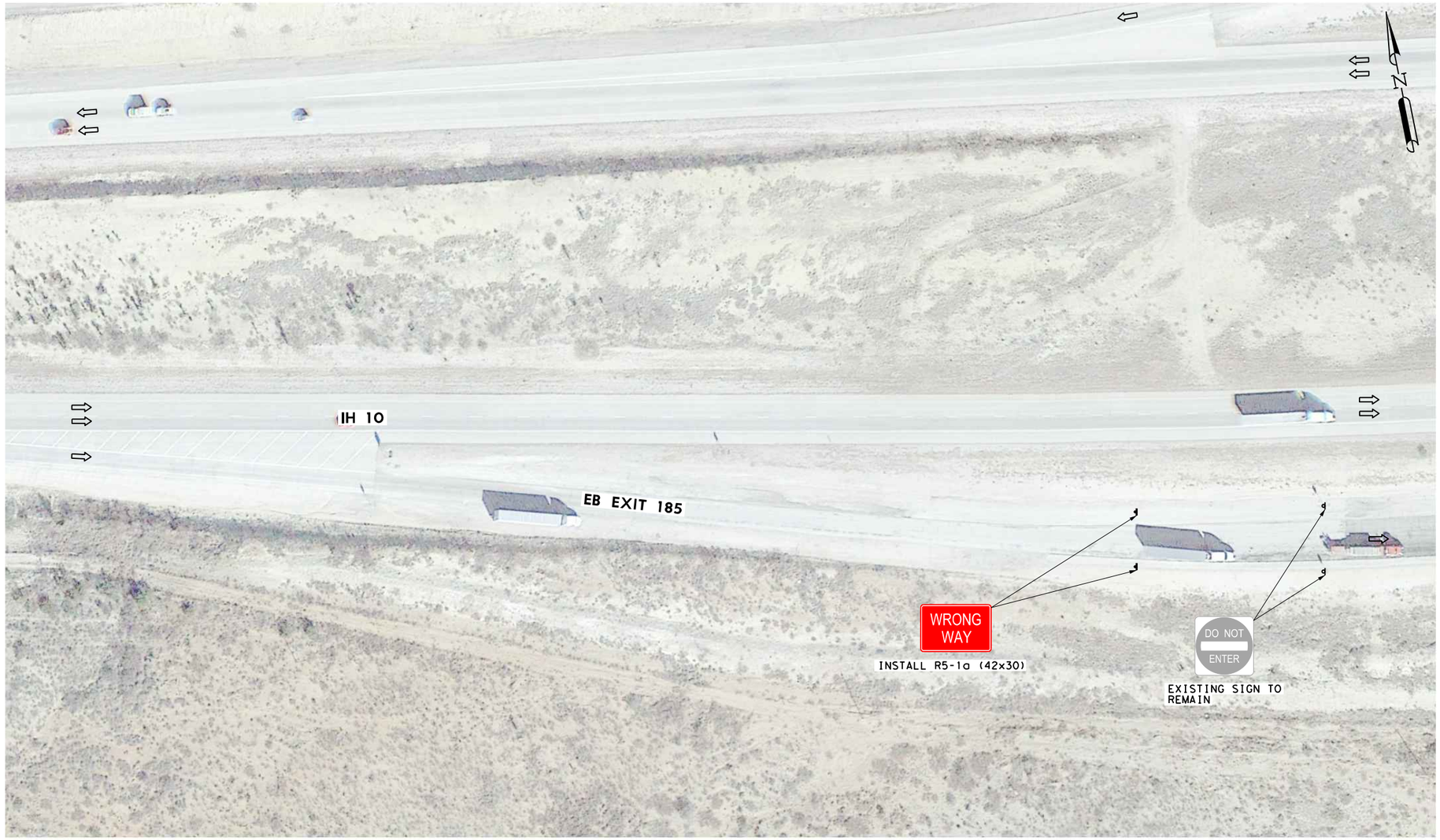
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		116

DATE: 3/22/2023 2:48:50 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_45.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

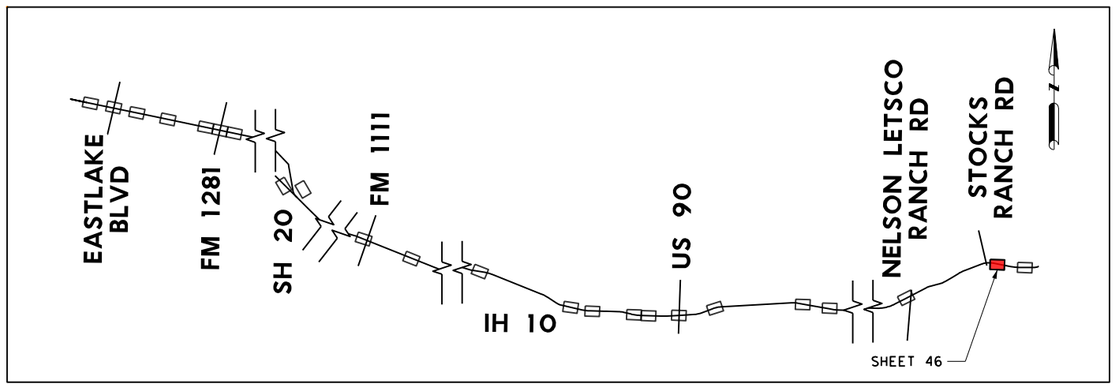
Shuaiyu Chen 03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	2

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT EB EXIT 185 TRAFFIC SIGNING LAYOUTS

SHEET 46 OF 47

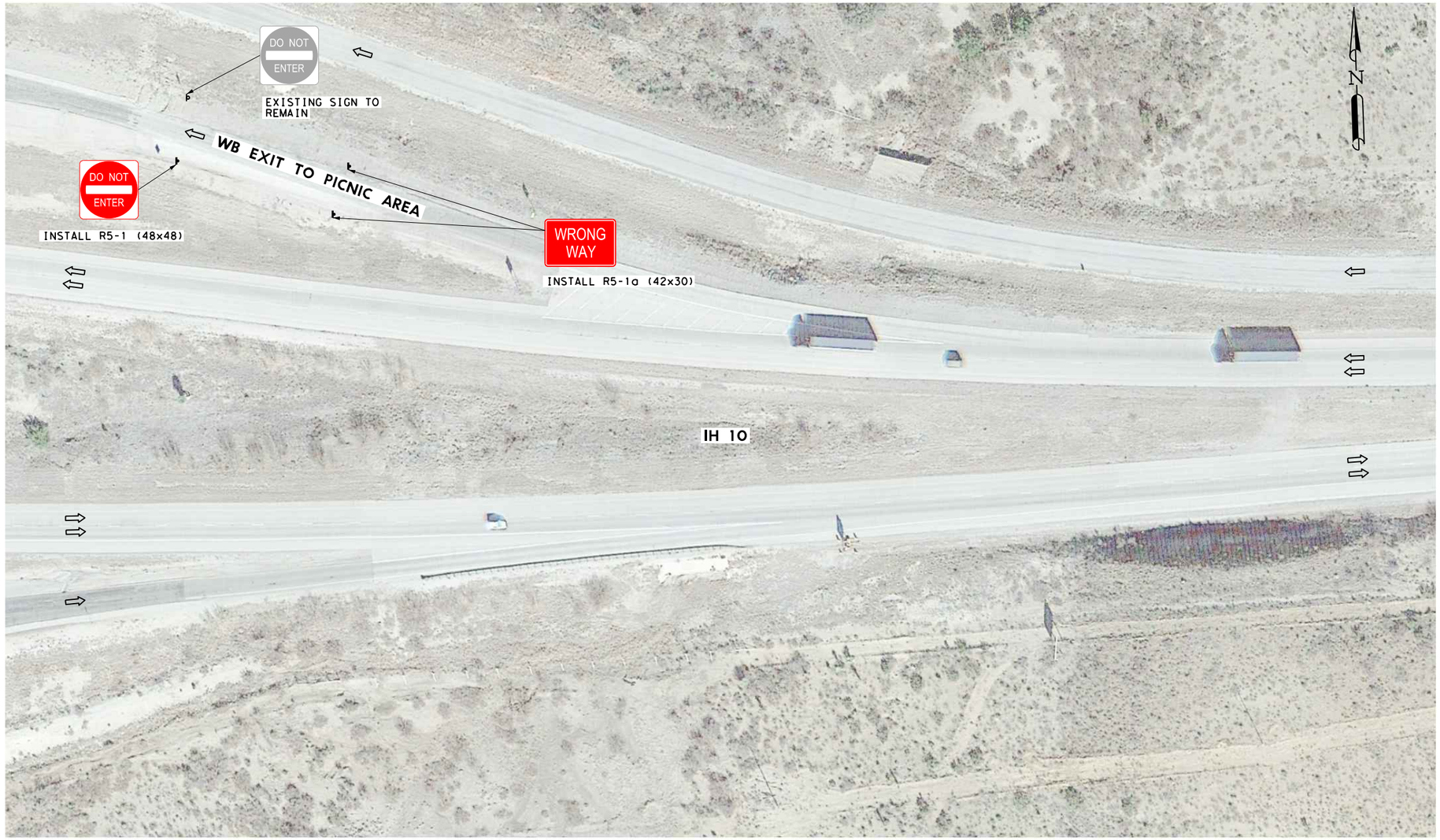
TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		117

DATE: 3/22/2023 2:48:56 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_46.dgn



LEGEND

- EXISTING SIGN ON POST
- PROPOSED SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

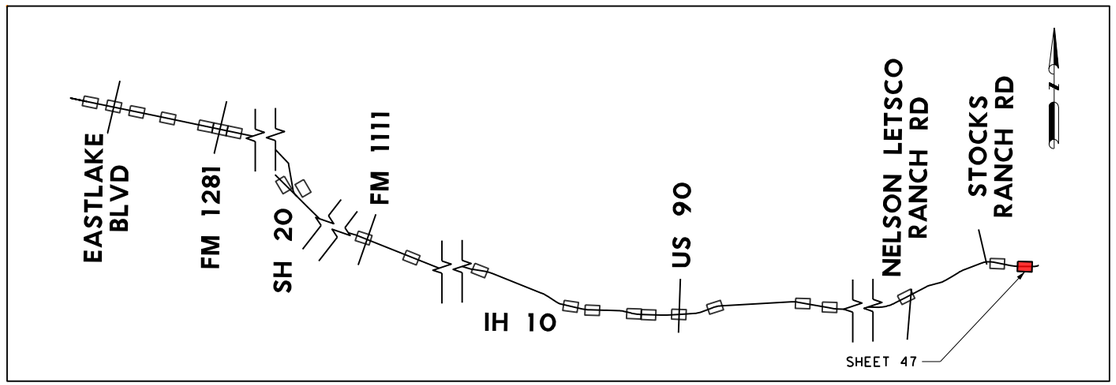
STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

0 25 50 100
SCALE: 1"=100'

SUMMARY SHEET OF ESTIMATED QUANTITIES				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6002	IN SM RD SN SUP & AM TY 10BWG(1) SA (P-BM)	EA	3

NOTES:

1. ALL SIGN LOCATIONS ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
2. RETRO-REFLECTIVE TAPE TO BE INSTALLED ON ALL WW & DNE SIGN POLES. IT IS SUBSIDIARY TO ITEM 644.
3. INSTALL NECESSARY MOUNTING HARDWARE FOR REPLACING EXISTING "DO NOT ENTER" SIGN. IT IS SUBSIDIARY TO ITEM 644.



IH 10 AT WB EXIT TO PICNIC AREA TRAFFIC SIGNING LAYOUTS

SHEET 47 OF 47

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	IH 10
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		118

DATE: 3/22/2023 2:49:01 PM
FILE: TFO_ELP_IH10_WWDC_SHEET_47.dgn

CK:
DW:
CK:
DN:

SUMMARY OF DO NOT ENTER SIGNS

HIGHWAY	FC	DIRECTION	EXIT NO.	CROSSSTREET	LATITUDE	LONGITUDE	644 6067 IN SM RD SN SUP & AM (INST SIGN ONLY) (EA)
SS 601	PRINCIPAL ARTERIAL	EB	EXIT 22	TO SGT MAJOR BLVD	31.8255161543944 N	106.405199678114 W	1
SS 601	PRINCIPAL ARTERIAL	EB	EXIT 22	TO SGT MAJOR BLVD	31.8254225309333 N	106.405160443178 W	1
SS 601	PRINCIPAL ARTERIAL	EB	N/A	FROM SGT MAJOR BLVD	31.8256642520583 N	106.405009546858 W	1
SS 601	PRINCIPAL ARTERIAL	EB	N/A	FROM SGT MAJOR BLVD	31.8256443418778 N	106.4049056586 W	1
US 54	PRINCIPAL ARTERIAL	NB	EXIT 21 B	YANDELL DR	31.7814759298361 N	106.440414743631 W	1
US 54	PRINCIPAL ARTERIAL	NB	EXIT 21 B	YANDELL DR	31.7814689670861 N	106.440601844514 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 21C		31.7855804054583 N	106.441983687614 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 21C		31.7854955800528 N	106.441914291483 W	1
US 54	PRINCIPAL ARTERIAL	NB	EXIT 28		31.8730470697417 N	106.440370365622 W	1
US 54	PRINCIPAL ARTERIAL	NB	EXIT 28		31.8730242551 N	106.440275249208 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 27		31.8783849969972 N	106.441407386019 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 27		31.8783886931111 N	106.441288899044 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 28		31.8946194635028 N	106.441778880558 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 28		31.8946171862806 N	106.441668552389 W	1
US 54	PRINCIPAL ARTERIAL	NB	EXIT 29	SL 375	31.8980572333694 N	106.440921311644 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 29	SL 375	31.8993837994056 N	106.441823703439 W	1
US 54	PRINCIPAL ARTERIAL	SB	EXIT 29	SL 375	31.8993779456139 N	106.442074211514 W	1
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 11B	N RESLER DR	31.907073870475 N	106.56661031275 W	1
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 11B	N RESLER DR	31.9069251166306 N	106.566884718172 W	1
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 11B	N RESLER DR	31.9075974429722 N	106.566202461067 W	1
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 11B	N RESLER DR	31.9077690892944 N	106.565905806278 W	1
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 12	PASEO DEL NORTE DR	31.9047943899528 N	106.550107347278 W	1
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 12	PASEO DEL NORTE DR	31.9046497622806 N	106.550170601967 W	1
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 12	PASEO DEL NORTE DR	31.9053907486944 N	106.549632730575 W	1
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 12	PASEO DEL NORTE DR	31.9052174419667 N	106.549688406 W	1
SL 375	PRINCIPAL ARTERIAL	NB	EXIT 39	PEBBLE HILLS BLVD	31.7759852012194 N	106.267346342864 W	1
IH 10	INTERSTATE	EB	EXIT 13	SUNLAND PARK DR	31.8148776686861 N	106.550307890356 W	1
IH 10	INTERSTATE	EB	EXIT 13	SUNLAND PARK DR	31.814972610075 N	106.550184418708 W	1
IH 10	INTERSTATE	WB	EXIT 13	SUNLAND PARK DR	31.8153613676528 N	106.548952052325 W	1
IH 10	INTERSTATE	WB	EXIT 13	SUNLAND PARK DR	31.8154564989111 N	106.548812949986 W	1
IH 10	INTERSTATE	EB	EXIT 23B	CHELSEA ST	31.7770706267139 N	106.425620265928 W	1
IH 10	INTERSTATE	EB	EXIT 23B	CHELSEA ST	31.7769222064528 N	106.425621533875 W	1
IH 10	INTERSTATE	WB	N/A	CHELSEA ST	31.7778595129694 N	106.425357592831 W	1
IH 10	INTERSTATE	WB	N/A	CHELSEA ST	31.7777187618333 N	106.425350115667 W	1
IH 10	INTERSTATE	WB	EXIT 25		31.77298053765 N	106.379860071178 W	1
IH 10	INTERSTATE	EB	EXIT 26	HAWKINS BLVD	31.7713528833806 N	106.377594949781 W	1
IH 10	INTERSTATE	EB	EXIT 26	HAWKINS BLVD	31.7712254343333 N	106.377696095142 W	1
IH 10	INTERSTATE	EB	N/A	TURNAROUND	31.641100123825 N	106.224673815533 W	1
IH 10	INTERSTATE	EB	N/A	TURNAROUND	31.641026541475 N	106.224796546389 W	1
IH 10	INTERSTATE	WB	N/A	TURNAROUND	31.6410033632083 N	106.226014480033 W	1
IH 10	INTERSTATE	WB	N/A	TURNAROUND	31.6410773380083 N	106.225881910489 W	1
IH 10	INTERSTATE	EB	EXIT 129	GUEST RANCH RD	31.07093903425 N	105.008035635561 W	1
IH 10	INTERSTATE	EB	EXIT 129	GUEST RANCH RD	31.0710039459806 N	105.007899918331 W	1
IH 10	INTERSTATE	EB	EXIT 184		31.0825869795889 N	104.103724763336 W	1
IH 10	INTERSTATE	EB	EXIT 184		31.0826527350444 N	104.103624005903 W	1
						TOTAL	45

NOTES:
1. DNE SIGNS SHOWN IN THE TABLE ARE NOT SHOWN IN THE PLAN SHEETS.
2. REPLACE EXISTING DNE SIGNS (36X36) SHOWN IN THE TABLE WITH R5-1 (48X48).
3. DNE SIGN LOCATIONS (GPS COORDINATES) SHOWN IN TABLE ARE APPROXIMATE. VERIFY LOCATION IN THE FIELD AS NECESSARY.
4. INSTALL PREFABRICATED T-BRACKET IF NEEDED FOR REPLACING EXISTING DNE SIGNS. IT IS SUBSIDARY TO ITEM 644.

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER

Shuaiyu Chen
03/23/2023

DATE: 3/22/2023 2:08:21 PM
FILE: TFO_ELP_WWDC_DNE01.dgn

SUMMARY OF DNE SIGNS

SHEET 1 OF 1

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		119

SUMMARY OF WRONG WAY ARROWS

HIGHWAY	FC	DIRECTION	EXIT NO.	CROSSSTREET	EXIT SIGN LOCATION		APPLICABLE CASE	WRONG WAY ARROW (EA)	672 6008
					LATITUDE	LONGITUDE			REFL PAV MRKR TY I-R (EA)
SH 178	PRINCIPAL ARTERIAL	EB	EXIT	DONIPHAN DR	31.8783935668611 N	106.600763595308 W	2	1	14
SH 178	PRINCIPAL ARTERIAL	WB	EXIT	DONIPHAN DR	31.8804250943528 N	106.591755184308 W	2	1	14
SS 601	PRINCIPAL ARTERIAL	EB	EXIT 21	CHAFEE RD	31.8261386920833 N	106.420801664933 W	3	1	14
SS 601	PRINCIPAL ARTERIAL	EB	EXIT 22	SGT MAJOR BLVD	31.8261521826306 N	106.408167324806 W	3	2	28
SS 601	PRINCIPAL ARTERIAL	EB	EXIT 25	GLOBAL REACH DR	31.8244237283056 N	106.372266117586 W	3	1	14
SS 601	PRINCIPAL ARTERIAL	WB	EXIT 25	GLOBAL REACH DR	31.8322187353194 N	106.361880794625 W	3	1	14
SS 601	PRINCIPAL ARTERIAL	EB	EXIT 26	CONSTITUTION AVE	31.8391855291361 N	106.351506987525 W	3	1	14
SS 601	PRINCIPAL ARTERIAL	WB	EXIT 26	CONSTITUTION AVE	31.8411308757222 N	106.338483646878 W	3	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 20	EL PASO DR	31.763122518025 N	106.445822619508 W	1	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 20A	EL PASO DR	31.7696050000667 N	106.447084722906 W	3	4	56
US 54	PRINCIPAL ARTERIAL	NB	EXIT 21B	YANDELL DR	31.7778177316139 N	106.441893825897 W	3	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 21C	MONTANA DR	31.788805316975 N	106.441670893989 W	2	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 22A	TROWBRIDGE DR	31.7838786327583 N	106.440772457947 W	2	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 22B	PERSHING DR	31.7946666971694 N	106.440748962364 W	2	3	42
US 54	PRINCIPAL ARTERIAL	SB	EXIT 22	PERSHING DR	31.8161305555556 N	106.441566666667 W	1	2	28
US 54	PRINCIPAL ARTERIAL	NB	EXIT 23	CASSIDY RD	31.7974480288444 N	106.440744729264 W	3	2	28
US 54	PRINCIPAL ARTERIAL	SB	EXIT 24A	FRED WILSON AVE	31.8297488473472 N	106.439830564694 W	2	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 25	ELLERTHORPE AVE	31.8338225839333 N	106.439499977486 W	2	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 25	ELLERTHORPE AVE	31.8487000177556 N	106.440399840225 W	2	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 26	DYER ST	31.8418173234583 N	106.439744028692 W	2	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 26	HERCULES AVE	31.8601994419028 N	106.440764629964 W	2	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 27	HONDO PASS DR	31.8654902710139 N	106.4404458361 W	2	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 27	HONDO PASS DR	31.8809777777778 N	106.441163888889 W	1	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 28	DIANA DR	31.8709036426111 N	106.440646619753 W	1	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 28	DIANA DR	31.8966387608528 N	106.441541348614 W	1	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 29	SL 375	31.8842067582528 N	106.440922632483 W	1	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 29	SL 375	31.9056363436472 N	106.4417288511 W	1	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 30	SUN VALLEY DR	31.8992811838361 N	106.441256102753 W	2	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 31	KENWORTHY ST	31.9169595030806 N	106.441652398392 W	2	1	14
US 54	PRINCIPAL ARTERIAL	SB	EXIT 31	KENWORTHY ST	31.9266278318556 N	106.433305047289 W	2	1	14
US 54	PRINCIPAL ARTERIAL	NB	EXIT 32	SEAN HAGGERTY DR	31.9285539189444 N	106.428520045708 W	1	1	14
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 11A	NORTHWESTERN DR	31.9082814056722 N	106.579281590986 W	3	5	70
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 11B	RESLER DR	31.9076570994278 N	106.571698363242 W	1	1	14
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 11B	RESLER DR	31.9061803466778 N	106.559188121711 W	1	1	14
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 12		31.905293135125 N	106.554395200364 W	1	1	14
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 12		31.90498462405 N	106.545694393425 W	3	4	56
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 21	US 54	31.8987980905056 N	106.433958657258 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 22	RUSHING RD	31.8986247882694 N	106.430174768606 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 24	BOMARC ST	31.8989784167889 N	106.405271110956 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 24A	BOMARC ST	31.8993067109028 N	106.395746911453 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 24B	RAILROAD DR	31.8992938159861 N	106.382331981567 W	1	2	28
SL 375	PRINCIPAL ARTERIAL	NB	EXIT	SGT MAJOR BLVD	31.8711361111111 N	106.342263888889 W	3	1	14
SL 375	PRINCIPAL ARTERIAL	SB	EXIT	SGT MAJOR BLVD	31.8803611111111 N	106.347972222222 W	3	3	42
SL 375	PRINCIPAL ARTERIAL	NB	EXIT 35	US 62	31.7997140588639 N	106.268063949028 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	NB	EXIT 38	EDGEMERE BLVD	31.7858338014306 N	106.267905705314 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	SB	EXIT 38	EDGEMERE BLVD	31.797466976625 N	106.268382271781 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	NB	EXIT 39	PEBBLE HILLS BLVD	31.7692062869806 N	106.267734119917 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	SB	EXIT 39	PEBBLE HILLS BLVD	31.7812963903361 N	106.268200549797 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	SB	EXIT 40	MONTWOOD DR	31.767625 N	106.268047222222 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	NB	EXIT 42B	BOB HOPE DR	31.7127950104083 N	106.273873355322 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	SB	EXIT 45A	AMERICAS AVE	31.6995464485583 N	106.286406091822 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	SB	EXIT 45	NORTH LOOP DR	31.6903415936667 N	106.294969528936 W	2	1	14
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 48	S ZARAGOZA RD	31.6765710736167 N	106.338574425833 W	3	3	42
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 49	PADRES DR	31.6954566870556 N	106.346847524103 W	3	2	28
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 49	PADRES DR	31.6895416216778 N	106.343800347864 W	3	2	28
SL 375	PRINCIPAL ARTERIAL	EB	EXIT	PLANT RD	31.7033333333333 N	106.354277777778 W	3	1	14
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 51	S YARBROUGH DR	31.7125584674667 N	106.370263560922 W	3	2	28
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 51	S YARBROUGH DR	31.7094583184528 N	106.364188045794 W	3	2	28
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 53	MIDWAY DR	31.7335469109222 N	106.381334733842 W	3	2	28
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 53	MIDWAY DR	31.7276227055361 N	106.376093689197 W	3	1	14
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 56	FONSECA DR	31.7540192422778 N	106.421849569519 W	3	2	28
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 56	FONSECA DR	31.7522080776417 N	106.415188863839 W	3	2	28
SL 375	PRINCIPAL ARTERIAL	EB	EXIT 64	EXECUTIVE CENTER BLVD	31.7930166254306 N	106.524303293458 W	3	3	42
SL 375	PRINCIPAL ARTERIAL	WB	EXIT 64	EXECUTIVE CENTER BLVD	31.7891814374222 N	106.51977705905 W	3	2	28
IH 10	INTERSTATE	EB	EXIT 13	SUNLAND PARK DR	31.8166830104583 N	106.551722210706 W	3	5	70
IH 10	INTERSTATE	WB	EXIT 13	SUNLAND PARK DR	31.8097092480472 N	106.540936443228 W	3	4	56

NOTES:
1. EXIT SIGN LOCATIONS (GPS COORDINATES) ARE FOR CONTRACTOR INFORMATION ONLY.
2. SEE WRONG WAY ARROW DETAIL SHEET FOR APPLICABLE CASE.

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen
03/23/2023

SUMMARY OF WRONG WAY ARROWS

SHEET 1 OF 3

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		120

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SUMMARY OF WRONG WAY ARROWS

HIGHWAY	FC	DIRECTION	EXIT NO.	CROSSSTREET	EXIT SIGN LOCATION		APPLICABLE CASE	WRONG WAY ARROW (EA)	672 6008
					LATITUDE	LONGITUDE			REFL PAV MRKR TY I-R (EA)
IH 10	INTERSTATE	EB	EXIT 16	EXECUTIVE CENTER BLVD	31.80443459575 N	106.521947572469 W	3	2	28
IH 10	INTERSTATE	WB	EXIT 16	EXECUTIVE CENTER BLVD	31.7902497790583 N	106.5192621912 W	3	2	28
IH 10	INTERSTATE	EB	EXIT 18A	W SCHUSTER AVE	31.7684550686722 N	106.509522251622 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 18A	W SCHUSTER AVE	31.7628472222222 N	106.505211111111 W	3	2	28
IH 10	INTERSTATE	EB	EXIT 18B	PORTFIRIO DIAZ ST	31.7607011066056 N	106.503942363464 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 18B	PORTFIRIO DIAZ ST	31.7591676276194 N	106.499560143369 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 19	N SANTA FE ST	31.7593999428917 N	106.495666483336 W	3	2	28
IH 10	INTERSTATE	WB	EXIT 19A	MESA ST	31.7651234365028 N	106.484294602028 W	3	2	28
IH 10	INTERSTATE	WB	EXIT 19B	MISSOURI AVE	31.7660636185639 N	106.482826905139 W	1	2	28
IH 10	INTERSTATE	EB	EXIT 20	N DALLAS ST	31.7697790277917 N	106.476370416311 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 20	N COTTON ST	31.7783955473111 N	106.462080525872 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 21	N PIEDRAS ST	31.7754402510056 N	106.467483664189 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 21	N PIEDRAS ST	31.7783513854972 N	106.453175052067 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 22A	N COPIA ST	31.7779439222472 N	106.458602394036 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 22A	N COPIA ST	31.7777202273 N	106.444016410381 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 23A	RAYNOLDS ST	31.7773298645639 N	106.4405828007 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 23A	RAYNOLDS ST	31.7776138551972 N	106.428854934567 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 23B	PAISANO DR	31.7772793260194 N	106.431090993644 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 23B	PAISANO DR	31.7798762238 N	106.418078723144 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 24A	TROWBRIDGE DR	31.7777598693722 N	106.421106370525 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 24B	GERONIMO DR	31.7796819626028 N	106.417767567131 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 24	GERONIMO DR	31.7822405985528 N	106.400506087558 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 25	AIRWAY BLVD	31.7795343622778 N	106.395223559503 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 25	AIRWAY BLVD	31.7730653492833 N	106.380193535661 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 26	HAWKINS BLVD	31.7765544572472 N	106.388716527189 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 26	HAWKINS BLVD	31.7653583333333 N	106.365725 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 27	HUNTER DR	31.7703065269861 N	106.37516488085 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 28A	McRAE BLVD	31.7620350288528 N	106.360791885233 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 28A	McRAE RD	31.7560520761472 N	106.350669980531 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 28B	N YARBROUGH DR	31.7544312570389 N	106.348502522897 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 28B	N YARBROUGH DR	31.7490075883333 N	106.339257001011 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 29	LOMALAND DR	31.7465843919444 N	106.335815275597 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 30	LEE TREVINO DR	31.7433227470611 N	106.330592975628 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 30	LEE TREVINO DR	31.7276812741139 N	106.31198057705 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 32	ZARAGOZA RD	31.7286261588806 N	106.313400051308 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 32	ZARAGOZA RD	31.7133454218889 N	106.29697491945 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 34B	AMERICAS AVE	31.7068173908556 N	106.290813908906 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 33	DON HASKINS DR	31.7038428080694 N	106.286779677936 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 35	EASTLAKE BLVD	31.7007888888889 N	106.283933333333 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 35	EASTLAKE BLVD	31.6906855283528 N	106.272493832731 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 35	EASTLAKE BLVD	31.6815090810917 N	106.261677333319 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 37	HORIZON BLVD	31.6709055555556 N	106.250177777778 W	2	1	14
IH 10	INTERSTATE	WB	EXIT 37	HORIZON BLVD	31.6521663240472 N	106.233846117706 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 42	FM 1110	31.6050003504667 N	106.197713254747 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 42	FM 1110	31.5954860390361 N	106.189719488386 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 78	TX 20	31.241967315125 N	105.788009534164 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 78	TX 20	31.233911430975 N	105.783059607981 W	3	1	14
IH 10	INTERSTATE	EB	EXIT 81	FM 2217	31.2063464560361 N	105.747787582667 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 81	FM 2217	31.2003388559889 N	105.739019621417 W	3	1	14
IH 10	INTERSTATE	EB	EXIT 107	FM 1111	31.1737020224972 N	105.361179797614 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 107	FM 1111	31.17199220805 N	105.349698177906 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 108		31.1696222222222 N	105.3376 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 129	GUEST RANCH RD	31.0740564429 N	105.013271695542 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 129	GUEST RANCH RD	31.0681091443333 N	104.996420517272 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 133		31.0542027777778 N	104.949313888889 W	1	1	14
IH 10	INTERSTATE	WB	EXIT	SCENIC OVERLOOK	31.0382305555556 N	104.896 W	1	1	14
IH 10	INTERSTATE	EB	EXIT	WEIGHT STATION	31.0367777777778 N	104.884113888889 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 138	GOLF COURSE DR	31.0367982256806 N	104.867592438056 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 138	GOLF COURSE DR	31.0358616652778 N	104.851166376961 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 140	US 90	31.0362090281056 N	104.836210752881 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 140	US 90	31.0375324647306 N	104.825469454817 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 140	ROSS DR	31.0382862162111 N	104.820933244358 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 140	ROSS DR	31.0413037245944 N	104.813775579353 W	3	1	14
IH 10	INTERSTATE	EB	EXIT	REST AREA	31.043475 N	104.758266666667 W	1	1	14
IH 10	INTERSTATE	WB	EXIT	REST AREA	31.042925 N	104.748358333333 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 146		31.0437174959667 N	104.724396244222 W	2	1	14

NOTES:
1. EXIT SIGN LOCATIONS (GPS COORDINATES) ARE FOR CONTRACTOR INFORMATION ONLY.
2. SEE WRONG WAY ARROW DETAIL SHEET FOR APPLICABLE CASE.

DATE: 3/22/2023 2:08:22 PM
FILE: TFO_ELP_WWDC_WWA02.dgn

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

SUMMARY OF WRONG WAY ARROWS

SHEET 2 OF 3

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		121

CK:
DW:
CK:
DN:

SUMMARY OF WRONG WAY ARROWS

HIGHWAY	FC	DIRECTION	EXIT NO.	CROSSSTREET	EXIT SIGN LOCATION		APPLICABLE CASE	WRONG WAY ARROW (EA)	672 6008
					LATITUDE	LONGITUDE			REFL PAV MRKR TY I-R (EA)
IH 10	INTERSTATE	WB	EXIT 146		31.04495189465 N	104.715171959256 W	2	1	14
IH 10	INTERSTATE	EB	EXIT 153	RICHARD KANE RD	31.0528084524167 N	104.613155625853 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 153	RICHARD KANE RD	31.0542657744583 N	104.602180527194 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 159	MOON RD	31.0617420870861 N	104.504388924458 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 159	MOON RD	31.0637804915222 N	104.493652824431 W	3	1	14
IH 10	INTERSTATE	EB	EXIT 166	BORACHO RD	31.0716922931139 N	104.394187805808 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 166	BORACHO RD	31.0713696954361 N	104.384987724311 W	3	1	14
IH 10	INTERSTATE	EB	EXIT 173	HURDS DRAW RD	31.0619419802111 N	104.284281562219 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 173	HURDS DRAW RD	31.0634751708667 N	104.275886147483 W	3	1	14
IH 10	INTERSTATE	EB	EXIT 176	TX 118	31.0670475844083 N	104.2232516192 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 176	TX 118	31.0658358997 N	104.211726784489 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 181	NELSON LETSCO RANCH RD	31.065943656975 N	104.143452542856 W	3	1	14
IH 10	INTERSTATE	WB	EXIT 181	NELSON LETSCO RANCH RD	31.0685006430472 N	104.139446518075 W	3	1	14
IH 10	INTERSTATE	EB	EXIT 184	STOCKS RANCH RD	31.0823271901889 N	104.105313973553 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 184	STOCKS RANCH RD	31.0849364509111 N	104.098029684342 W	1	1	14
IH 10	INTERSTATE	EB	EXIT 185		31.0830916666667 N	104.087316666667 W	1	1	14
IH 10	INTERSTATE	WB	EXIT 185		31.0831472222222 N	104.078991666667 W	1	1	14
							TOTAL	192	2688

NOTES:
1. EXIT SIGN LOCATIONS (GPS COORDINATES) ARE FOR CONTRACTOR INFORMATION ONLY.
2. SEE WRONG WAY ARROW DETAIL SHEET FOR APPLICABLE CASE.

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

DATE: 3/22/2023 2:08:23 PM
FILE: TFO_ELP_WWDC_WWA03.dgn

SUMMARY OF WRONG WAY ARROWS

SHEET 3 OF 3

TRAF·IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
221 N. KANSAS STREET
EL PASO, TEXAS 79901
AECOM Technical Services Inc. F-3580

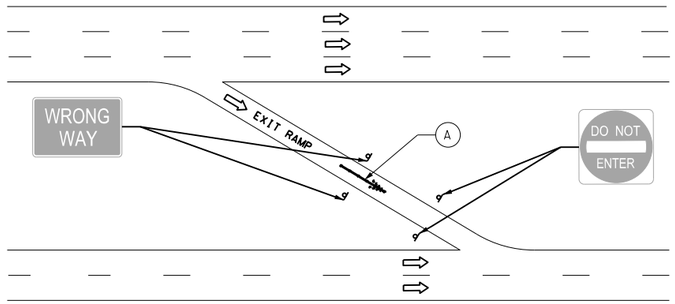
Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		122

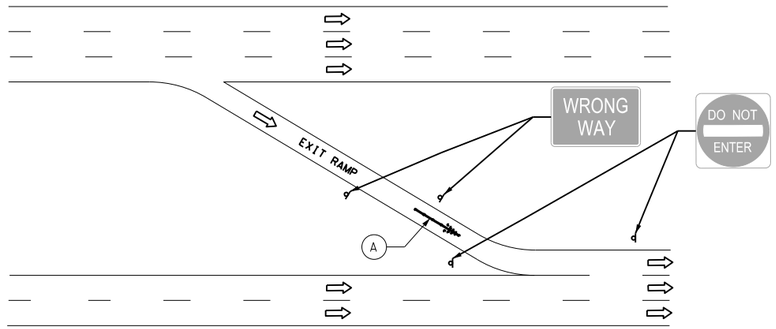
LEGEND

⇦ DIRECTION OF TRAFFIC FLOW

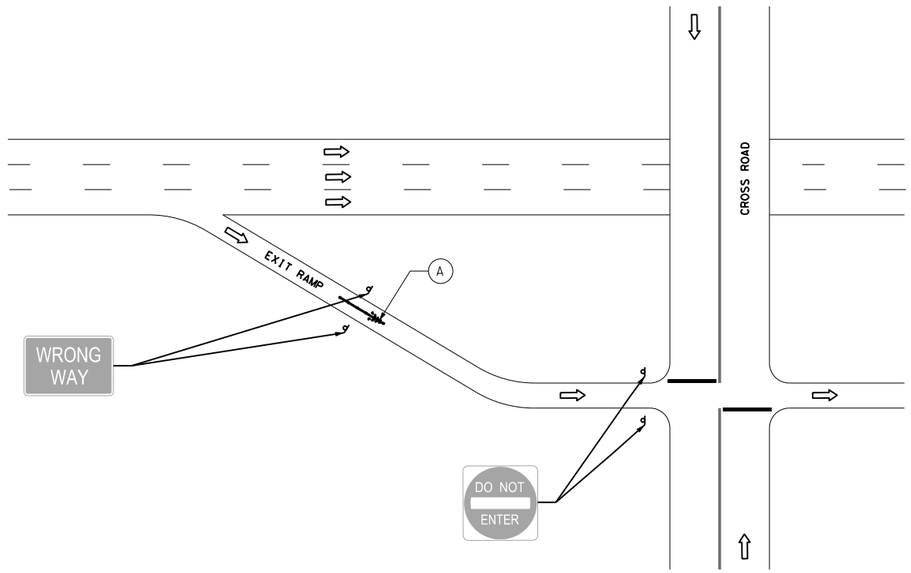
(A) REFL PAV MRKER TY I-R (WRONG WAY ARROW)



CASE 1



CASE 2



CASE 3

NOTES:
1. SEE FPM(1)-12 FOR WRONG WAY ARROW DETAIL.
2. INSTALL WRONG WAY ARROW ALIGNED WITH WRONG WAY SIGN (R5-1a).
3. INSTALL WRONG WAY ARROW ON EACH LANE IF THERE ARE MULTIPLE LANES ON EXIT RAMP.

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED PROFESSIONAL ENGINEER

Shuaiyu Chen 03/23/2023

WRONG WAY ARROW DETAILS

SHEET 1 OF 1

TRAF-IQ
14811 ST. MARY'S LANE, SUITE 180
HOUSTON, TEXAS 77079
832.399.1100
TEXAS PE FIRM REG # F-18726

AECOM
AECOM Technical Services Inc. F-3580
221 N. KANSAS STREET
EL PASO, TEXAS 79901

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
0924	00	145	VAR
DIST	COUNTY		SHEET NO.
ELP	EL PASO, ETC.		123

DATE: 3/22/2023 2:08:24 PM
FILE: TFO_ELP_WWDC_DETAILS.dgn

SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	POSTS 1 or 2	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	MOUNTING DESIGNATION PREFABRICATED P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE TY N TY S
31-118		R5-1		48X48			10BWG	1	SA	P	BM	
31-118		R5-1a		42X30			10BWG	1	SA	P	BM	

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

NOTE:

1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE: sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0924	00	145	VAR
4-16 8-16	DIST	COUNTY		SHEET NO.
	ELP	EL PASO, ETC.		124

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with TxDOT policy for projects disturbing less than 1 acre of soil, and not part of a larger common plan of development.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept at the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans, and the project's environmental permits, issues, and commitments (EPICs).

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):
0924-00-145

1.2 PROJECT LIMITS:
From: DISTRICTWIDE

To: N/A

1.3 PROJECT COORDINATES: REFER TO TITLE SHEET

BEGIN: (Lat)_____,(Long)_____

END: (Lat)_____,(Long)_____

1.4 TOTAL PROJECT AREA (Acres): 274.3 CL MILES

1.5 TOTAL AREA TO BE DISTURBED (Acres): <1.0 AC

1.6 NATURE OF CONSTRUCTION ACTIVITY:
SIGNAGE AND PAVEMENT MARKINGS INSTALLATION

1.7 MAJOR SOIL TYPES:

Soil Type	Description
N/A	

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):
PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

☐ PSLs determined during preconstruction meeting
☐ PSLs determined during construction
☐ No PSLs planned for construction

Type	Sheet #s
N/A	

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:
(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.3.)

☐ Mobilization
☐ Install sediment and erosion controls
☐ Blade existing topsoil into windrows, prep ROW, clear and grub
☐ Remove existing pavement
☐ Grading operations, excavation, and embankment
☐ Excavate and prepare subgrade for proposed pavement widening
☐ Remove existing culverts, safety end treatments (SETs)
☐ Remove existing metal beam guard fence (MBGF), bridge rail
☐ Install proposed pavement per plans
☐ Install culverts, culvert extensions, SETs
☐ Install mow strip, MBGF, bridge rail
☐ Place flex base
☐ Rework slopes, grade ditches
☐ Blade windrowed material back across slopes
☐ Revegetation of unpaved areas
☐ Achieve site stabilization and remove sediment and erosion control measures
☒ Other: INSTALL SIGNAGE
☒ Other: INSTALL PAVEMENT MARKINGS
☐ Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

☐ Sediment laden stormwater from stormwater conveyance over disturbed area
☒ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
☒ Solvents, paints, adhesives, etc. from various construction activities
☐ Transported soils from offsite vehicle tracking
☒ Construction debris and waste from various construction activities
☐ Contaminated water from excavation or dewatering pump-out water
☒ Sanitary waste from onsite restroom facilities
☐ Trash from various construction activities/receptacles
☐ Long-term stockpiles of material and waste
☐ Other: _____
☐ Other: _____
☐ Other: _____

1.11 RECEIVING WATERS:
Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
N/A	

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

X Development of plans and specifications
X Perform SWP3 inspections
X Maintain SWP3 records and update to reflect daily operations
☐ Other: _____
☐ Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

X Day To Day Operational Control
X Maintain schedule of major construction activities
X Install, maintain and modify BMPs
☐ Other: _____
☐ Other: _____
☐ Other: _____

STATE OF TEXAS
SHUAIYU CHEN
107204
LICENSED
PROFESSIONAL ENGINEER
Shuaiyu Chen
03/23/2023

STORMWATER POLLUTION PREVENTION PLAN (SWP3) (Less Than 1 Acre)

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	SEE TITLE SHEET		125
STATE	STATE DIST.	COUNTY	
TEXAS	ELP	EL PASO, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0924	00	145	VAR

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- ☐ ☐ Protection of Existing Vegetation
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Soil Retention Blankets
- ☐ ☐ Geotextiles
- ☐ ☐ Mulching/ Hydromulching
- ☐ ☐ Soil Surface Treatments
- ☐ ☐ Temporary Seeding
- ☐ ☐ Permanent Planting, Sodding or Seeding
- ☐ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Vertical Tracking
- ☐ ☐ Interceptor Swale
- ☐ ☐ Riprap
- ☐ ☐ Diversion Dike
- ☐ ☐ Temporary Pipe Slope Drain
- ☐ ☐ Embankment for Erosion Control
- ☐ ☐ Paved Flumes
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- ☐ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Dewatering Controls
- ☐ ☐ Inlet Protection
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Sandbag Berms
- ☐ ☐ Sediment Control Fence
- ☐ ☐ Stabilized Construction Exit
- ☐ ☐ Floating Turbidity Barrier
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Vegetated Filter Strips
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To
N/A		

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☐ Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☐ Loaded haul trucks to be covered with tarpaulin
- ☐ Stabilized construction exit
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☒ Chemical Management
- ☒ Concrete and Materials Waste Management
- ☒ Debris and Trash Management
- ☐ Dust Control
- ☒ Sanitary Facilities
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To
N/A		

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- ☒ Fire hydrant flushings
- ☒ Irrigation drainage
- ☒ Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- ☒ Potable water sources
- ☒ Springs
- ☒ Uncontaminated groundwater
- ☒ Water used to wash vehicles or control dust
- ☒ Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3 .

2.9 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3.

STORMWATER POLLUTION PREVENTION PLAN (SWP3) (Less Than 1 Acre)

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	SEE TITLE SHEET		126
STATE	STATE DIST.	COUNTY	
TEXAS	ELP	EL PASO, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0924	00	145	VAR