



Highway Attachment -Safety Lighting Plans and Signing Plans

Phoenix, Arizona

HWY21MH008

(15 pages)

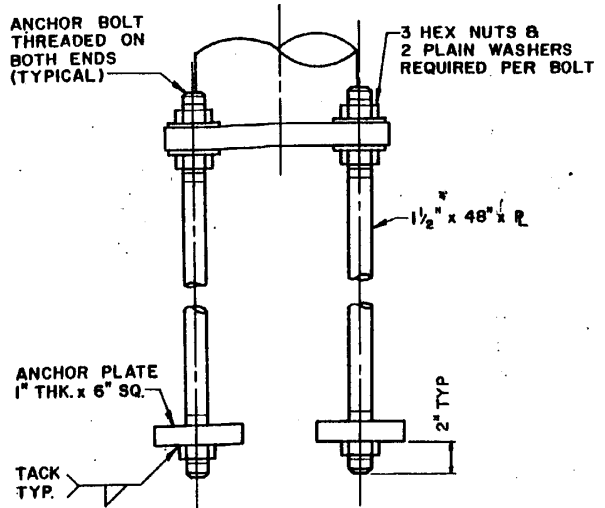
F.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	RAM-600-5-509	367	622	07/11-27-93 09/11-17-93
202L MA 4			7-7		

DESIGN ASSUMPTIONS:

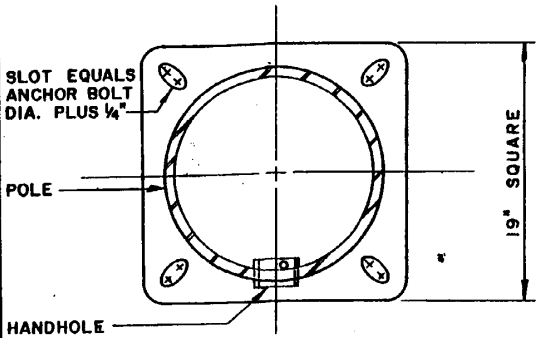
- A. DESIGN WIND VELOCITY IS AASHTO 80 MPH AND GUST SPEED 30%.
- B. THE WEIGHT AND PROJECT AREA OF EACH LUMINAIRE IS 60 LBS. AND 2.0 SQ. FT., RESPECTIVELY.
- C. POLES WAS DESIGNED USING 3 LUMINAIRES PER HIGH MAST POLE.

NOTES:

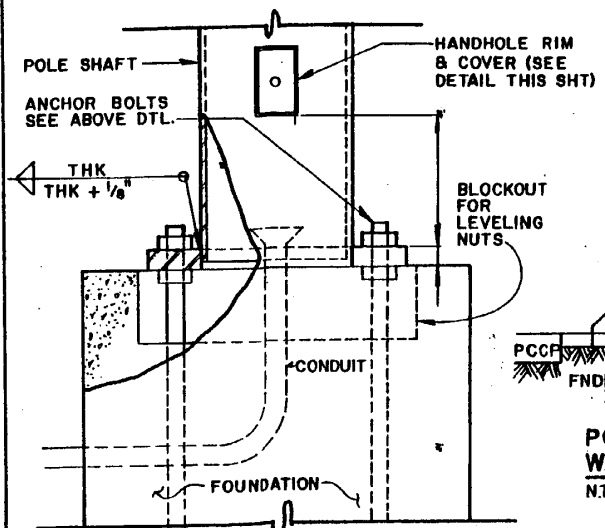
1. POLE BASE PLATE SHALL CONFORM TO ASTM A36 AND HAVE A MINIMUM YIELD STRENGTH OF 36,000 PSI. CONTACT SURFACES SHALL HAVE SMOOTH FINISH. EXPOSED EDGES SHALL BE NEATLY ROUNDED TO 1/8" RADIUS.
2. ANCHOR BOLTS SHALL BE 1 1/2" X 48" MIN. ASTM A-572 GRADE 50 WITH TWO HEX BOLTS AND TWO WASHERS PER BOLT FOR THE SQUARE BASE PLATE. THE ANCHOR BOLTS, WASHERS, AND NUTS SHALL BE FULLY GALVANIZED IN ACCORDANCE WITH ASTM A-153.
3. ANCHOR BOLTS SHALL PROJECT 7 1/2" MINIMUM ABOVE THE FOUNDATION.
4. ANCHOR BOLTS SHALL HAVE 1" X 6" SQUARE STEEL PLATE AND SHALL BE SECURED WITH 2 HEAVY HEX NUTS, ONE ABOVE AND ONE BELOW. THE NUTS SHALL BE TACK WELDED TO THE ANCHOR PLATES.
5. LIGHT POLE MANUFACTURER SHALL PROVIDE TEMPLATE FOR ANCHOR BOLT INSTALLATION.
6. ALL STEEL SHALL CONFORM TO ASTM STANDARDS.
7. ALL WELDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SUBSECTION 604.306 IN THE STANDARD SPECIFICATIONS.
8. ALL POLES SHALL BE INSTALLED USING A PROCEDURE APPROVED BY THE ENGINEER.
9. POLESHAFT SHALL BE WELDABLE SHEET STEEL, CONFORMING TO ASTM A-570 GRADE 45 WITH A MAXIMUM DESIGN YIELD OF 45,000 PSI.
10. A KEY AND SLOT ARRANGEMENT OR SOME OTHER ACCEPTABLE DEVICE SHALL BE PROVIDED TO INSURE THAT THE MAST ARMS ARE LOCATED 90° FROM THE ROADWAY CENTERLINE AS THE TWO POLE SECTIONS ARE ASSEMBLED.
11. CONDUCTORS HANGING WITHIN THE POLE SHALL BE SUPPORTED FROM THE TOP OF THE POLE BY AN APPROVED CABLE HANGER.
12. THE AREA BETWEEN THE BOTTOM OF THE POLE BASE PLATE AND THE CONCRETE FOUNDATION SHALL BE FILLED WITH A NON-SHRINK GROUT MATERIAL.
13. HAND HOLE SHALL BE PER T.S. 4-17.
14. ENTIRE UNIT SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123. THE COLORING OF GALVANIZING SHALL BE VERY UNIFORM AND WITHOUT BLOTCHES FOR THE ENTIRE POLESHAFT. ALL DAMAGED GALVANIZING SHALL BE REPAIRED PER SECTION 610-3.06. THE ENGINEER SHALL INSPECT AND APPROVE EACH POLE FOR UNIFORMITY OF COLOR PRIOR TO AND AFTER INSTALLATION. CONTRACTOR SHALL REPLACE OR REPAIR GALVANIZING TO THE ENGINEER'S SATISFACTION AT NO ADDITIONAL COST TO ADOT.
15. THE CONTRACTOR SHALL SUBMIT CALCULATIONS PREPARED BY A REGISTERED STRUCTURAL ENGINEER WHICH VERIFY THAT THE POLE, BASE PLATE, ANCHOR BOLTS, AND ALL WELDS HAVE BEEN PROPERLY DESIGNED. THE DESIGN ASSUMPTIONS LISTED ON THIS SHEET WILL BE USED AS A MINIMUM. OTHER POLE DESIGNS, SHOP DRAWINGS AND CALCULATIONS, MAY BE SUBMITTED TO THE ENGINEER FOR ANOTHER "OR APPROVED EQUAL" POLE DESIGN.



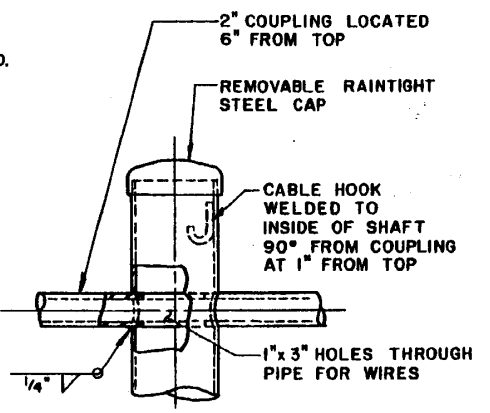
FND. TYPE ANCHOR BOLT DETAIL
N.T.S.



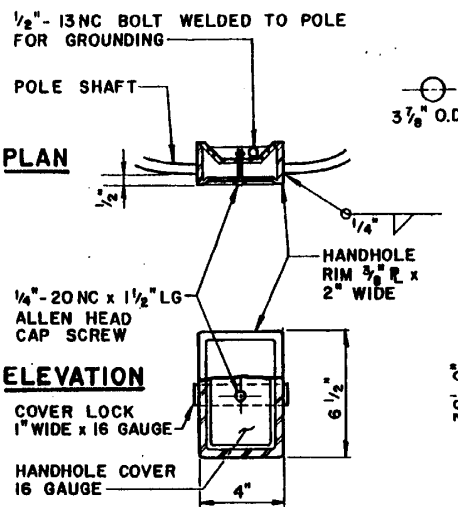
BASE PLAN
N.T.S.



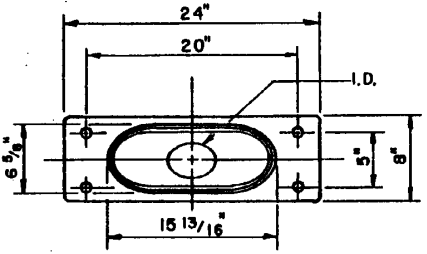
FOUNDATION BASE DETAIL
N.T.S.



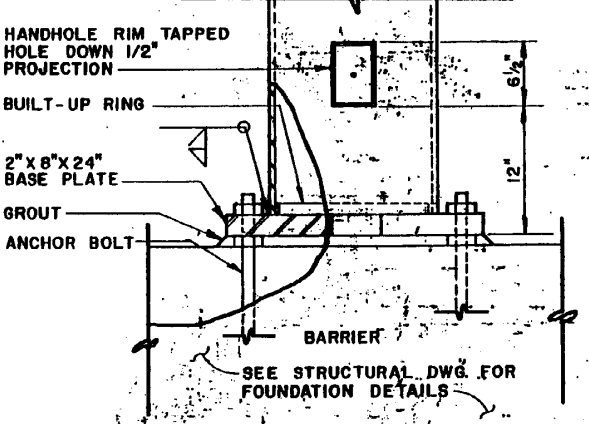
SHAFT TOP TYPICAL DETAIL
N.T.S.



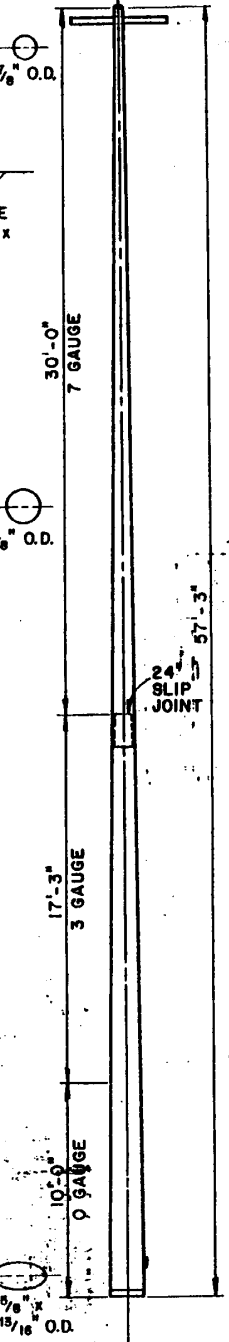
TYPICAL HANDHOLE DETAILS
N.T.S.



BARRIER BASE PLATE DETAIL
N.T.S.



BARRIER BASE DETAIL
N.T.S.

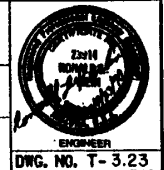


POLE ASSEMBLY
N.T.S.

**DO NOT DESTROY
RETURN TO:
TRAFFIC DESIGN SERVICES
ELECTRICAL DESIGN BRANCH**

DESIGN	RLK	10-90
DRAWN	CAJ	10-90
CHECK	RVS	10-90
SCALE	NTS	
DMJM IN ASSOCIATION WITH H.W. LUCHNER, INC.		
PROJECT NO.	RAM-600-5-509	LOCATION
EAST PAPAGO		(48th ST - PRIEST DR.)

ARIZONA DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC OPERATIONS SERVICES
POLE DETAIL (60 FT)
ENGINEER



TRACS NO. H 0860 01C

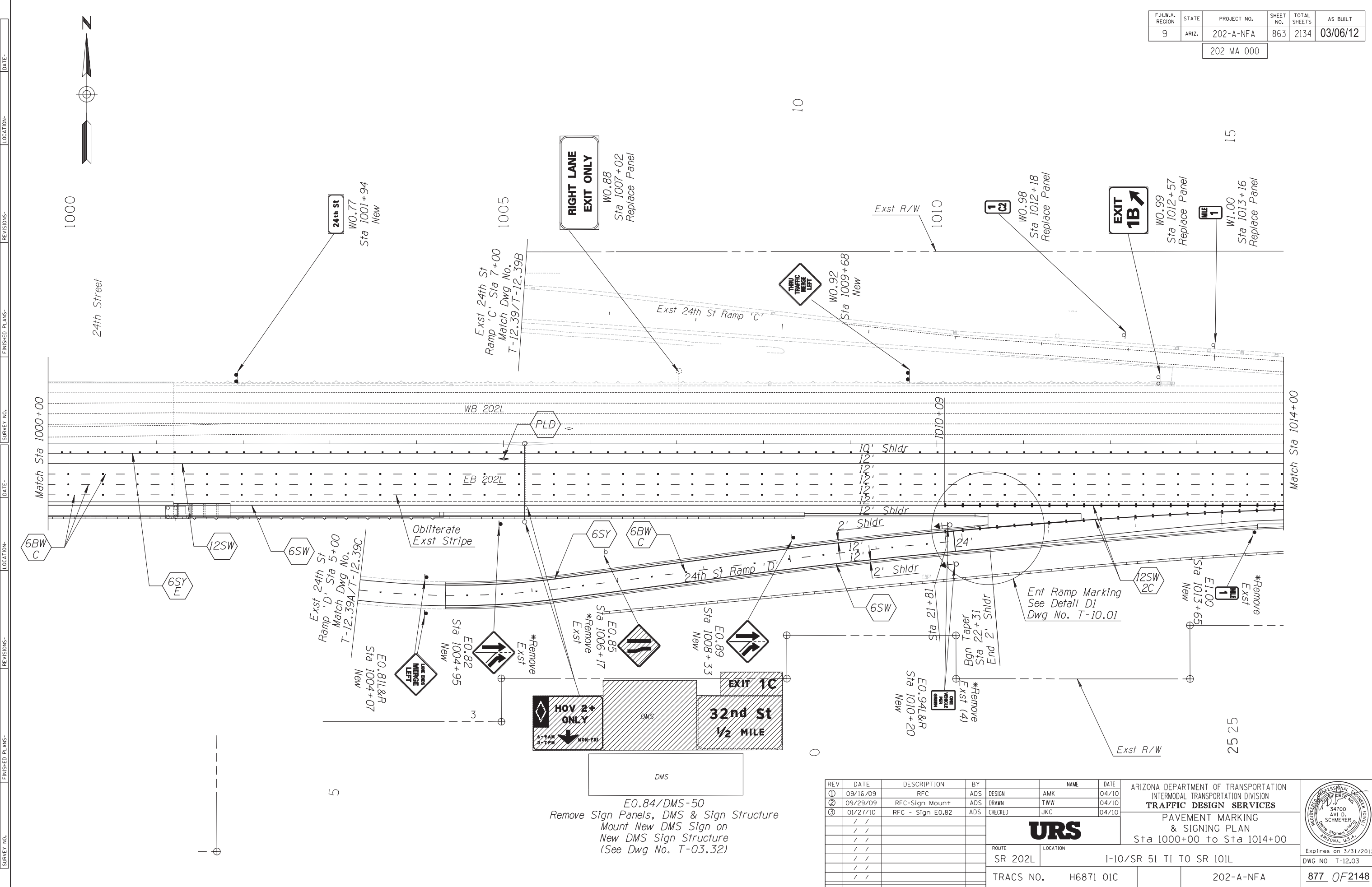
RAM 600-5-509
SHT 367 of 622

OF

"RECORD DRAWING, Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	863	2134	03/06/12

202 MA 000



REVISIONS-	FINISHED PLANS-	DATE-	LOCATION-	DATE-	FINISHED PLANS-	DATE-	LOCATION-	DATE-	FINISHED PLANS-	DATE-	LOCATION-

REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	AMK	04/10
②	09/29/09	RFC-Sign Mount	ADS	TWW	04/10
③	01/27/10	RFC - Sign E0.82	ADS	JKC	04/10

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES

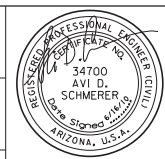
PAVEMENT MARKING
& SIGNING PLAN
Sta 1000+00 to Sta 1014+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C 202-A-NFA **877 OF 2148**

Expires on 3/31/2012
DWG NO T-12.03

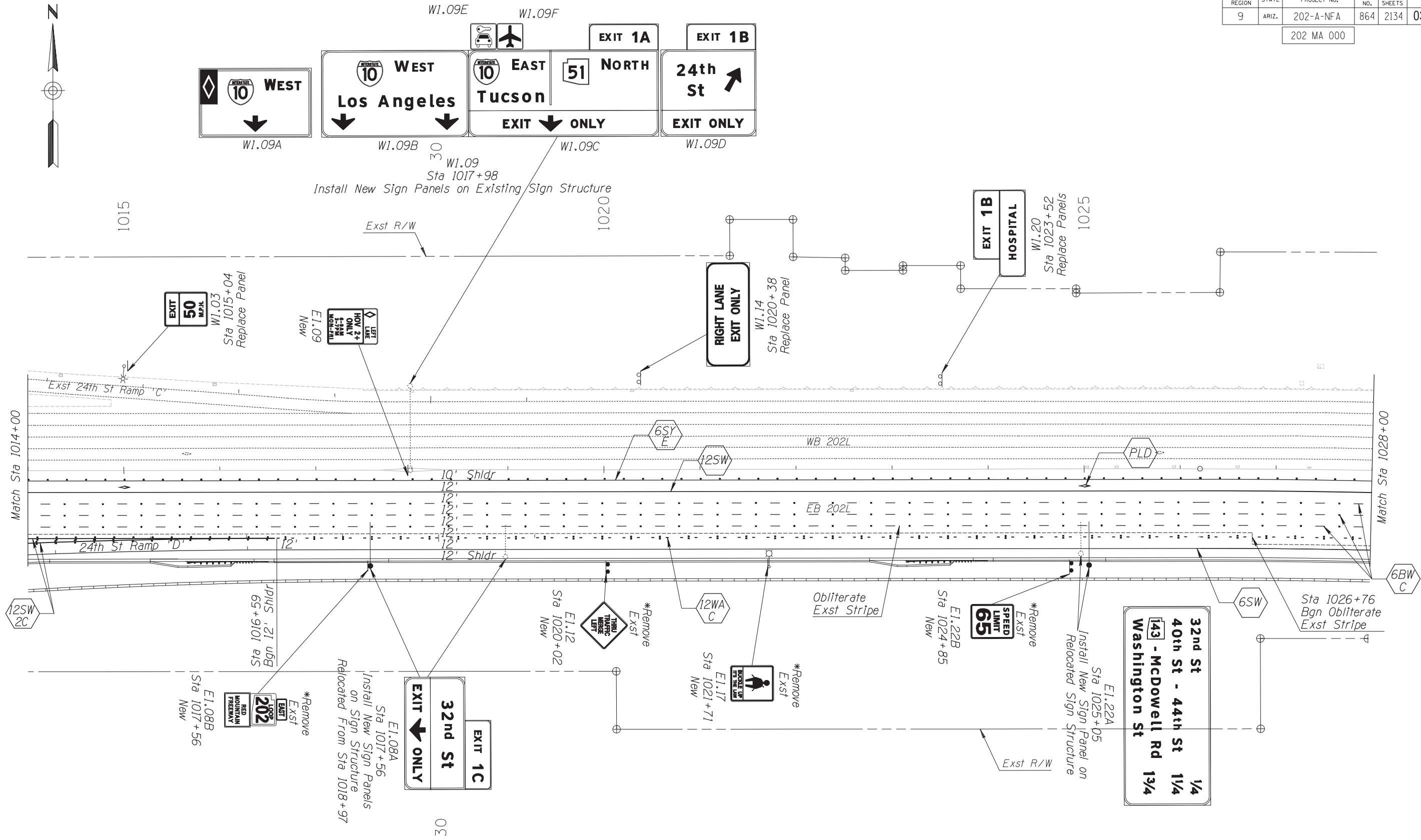


"RECORD DRAWING. Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____ DATE: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____

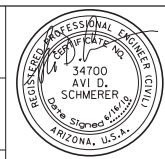
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	864	2134	03/06/12

202 MA 000



REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	AMK	04/10
	/ /			TWW	04/10
	/ /			JKC	04/10
	/ /				
	/ /				
	/ /				
	/ /				
	/ /				
	/ /				

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
 PAVEMENT MARKING
 & SIGNING PLAN
 Sta 1014+00 to Sta 1028+00



Expires on 3/31/2012
 DWG NO T-12.04

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

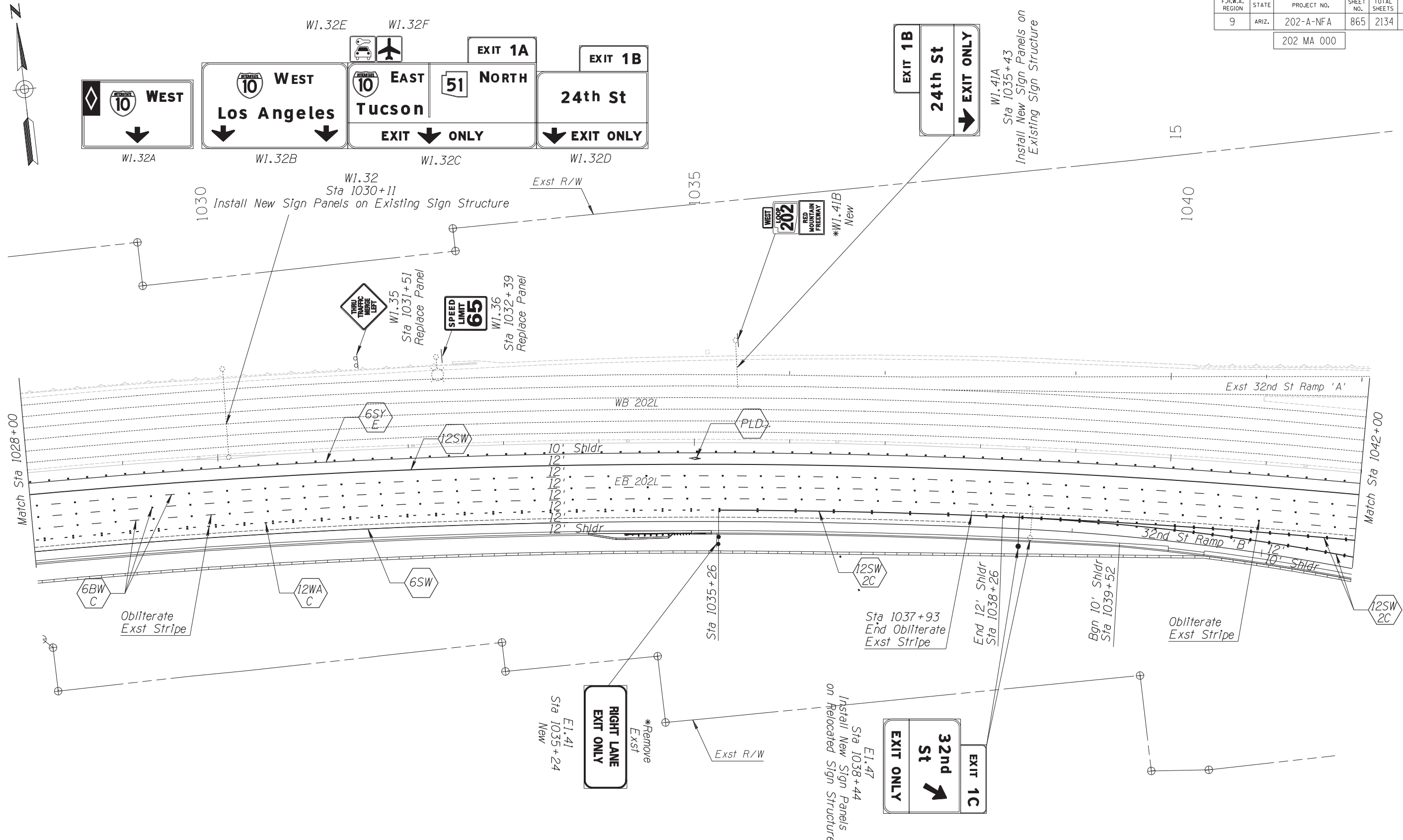
TRACS NO. H6871 01C PROJECT NO. 202-A-NFA SHEET NO. 878 OF 2148

"RECORD DRAWING, Record drawings are based on design changes and field observations.
No field survey to verify actual conditions has been completed."

DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO. DATE: LOCATION: REVISIONS: FINISHED PLANS: SURVEY NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	865	2134	03/06/12

202 MA 000



REV	DATE	DESCRIPTION	BY	NAME	DATE
1	09/16/09	RFC	ADS	AMK	04/10
2	09/29/09	RFC-Sign Mount	ADS	TWW	04/10
				JKC	04/10

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES

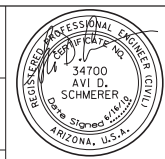
PAVEMENT MARKING
& SIGNING PLAN
Sta 1028+00 to Sta 1042+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C PROJECT NO. 202-A-NFA SHEET NO. 879 OF 2148

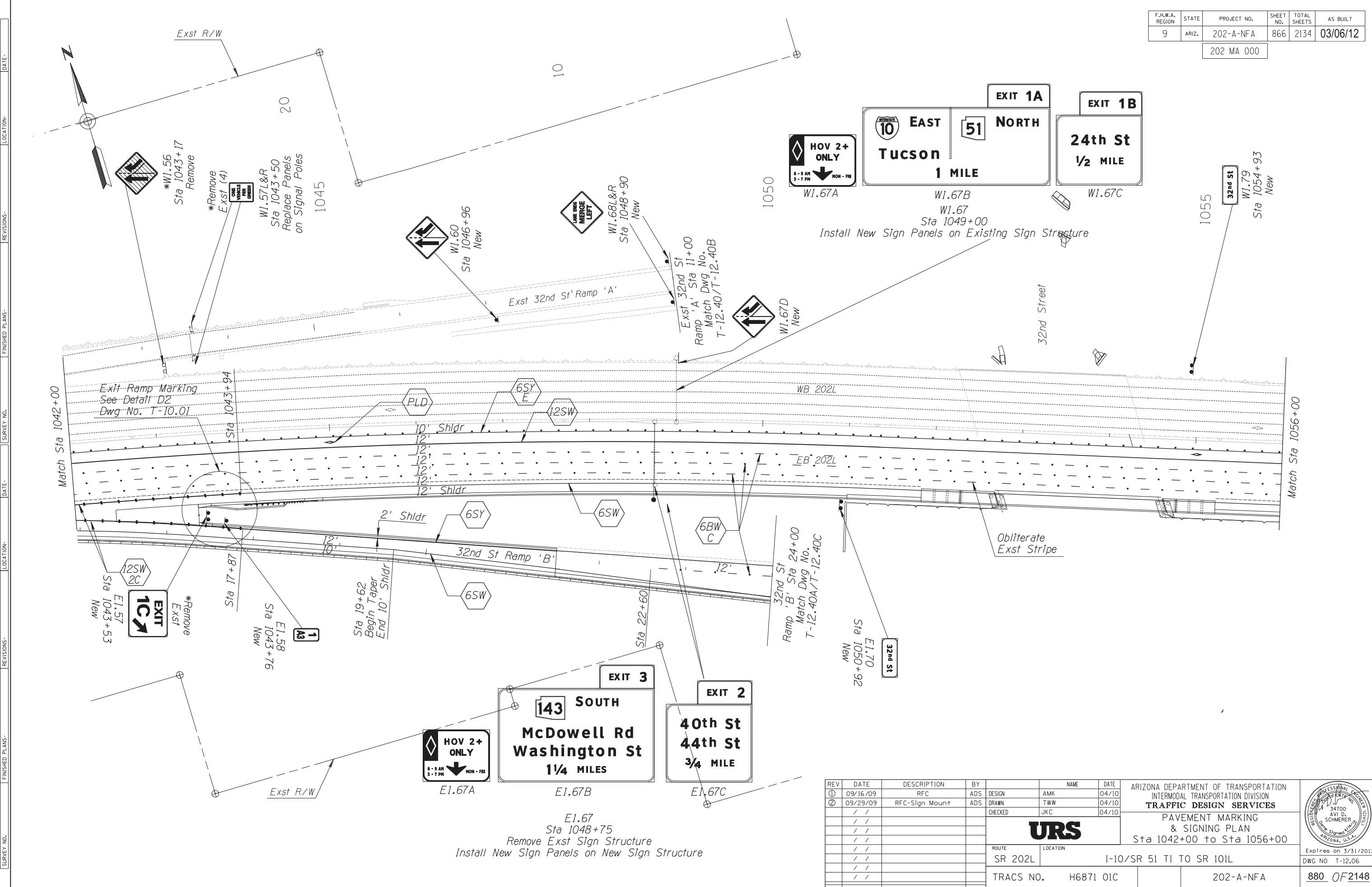
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DWG NO T-12.05



"RECORD DRAWING, Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	866	2134	03/06/12

202 MA 000



EXIT 3
143 SOUTH
McDowell Rd
Washington St
1 1/4 MILES

EXIT 2
40th St
44th St
3/4 MILE

E1.67
 Sta 1048+75
 Remove Exst Sign Structure
 Install New Sign Panels on New Sign Structure

REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	AMK	04/10
②	09/29/09	RFC-Sign Mount	ADS	TWW	04/10
				JKC	04/10

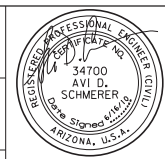
ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES

PAVEMENT MARKING
 & SIGNING PLAN
 Sta 1042+00 to Sta 1056+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C PROJECT NO. 202-A-NFA SHEET NO. 880 OF 2148

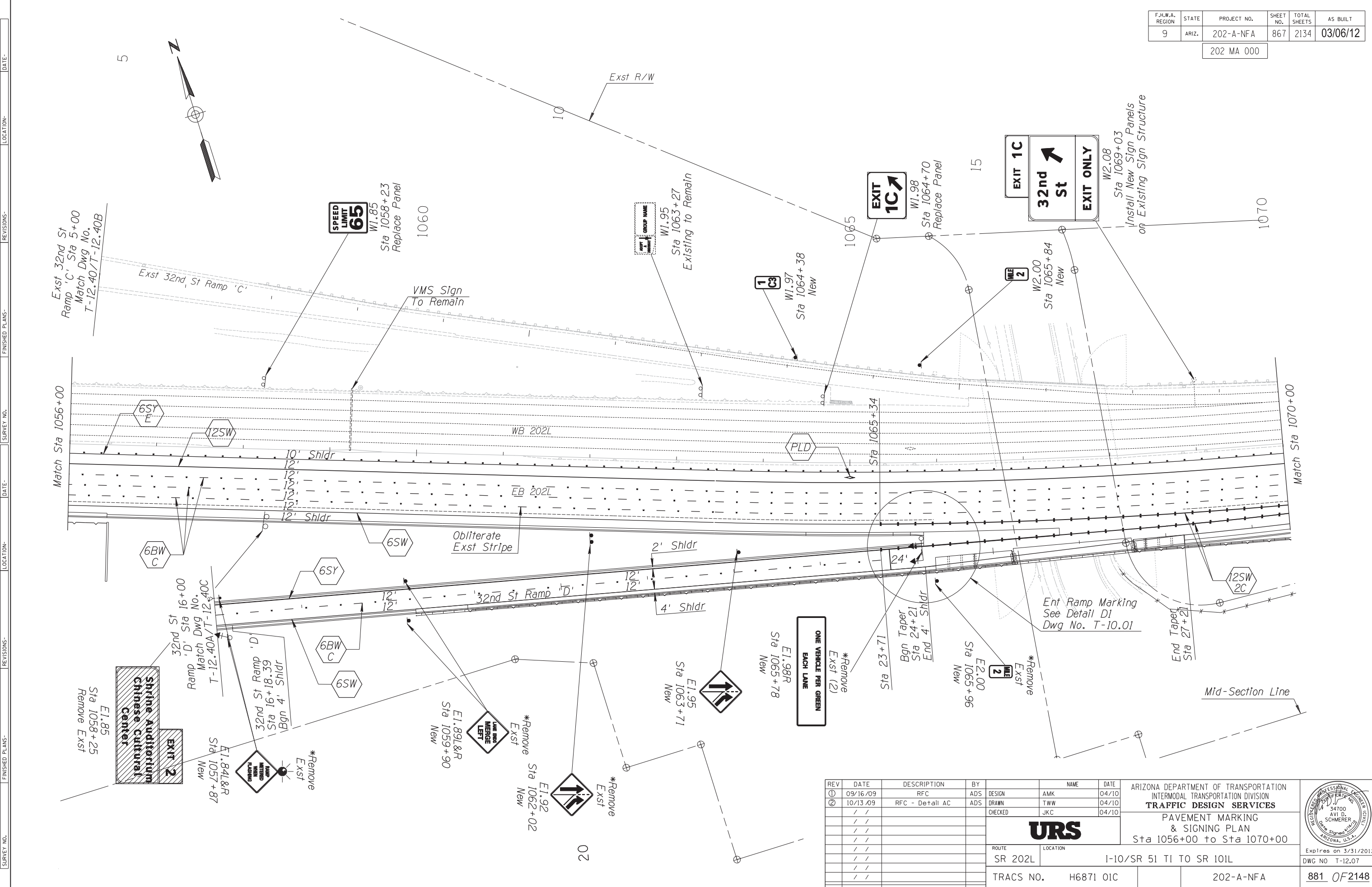


Expires on 3/31/2012
 DWG NO T-12.06

"RECORD DRAWING, Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	867	2134	03/06/12

202 MA 000



REVISIONS-	FINISHED PLANS-	DATE-	LOCATION-	DATE-	LOCATION-	REVISIONS-	FINISHED PLANS-	DATE-	LOCATION-

REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	AMK	04/10
②	10/13/09	RFC - Detail AC	ADS	TWW	04/10
				JKC	04/10

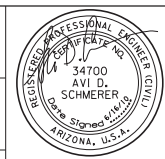
ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
 PAVEMENT MARKING & SIGNING PLAN
 Sta 1056+00 to Sta 1070+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C PROJECT NO. 202-A-NFA SHEET NO. 881 OF 2148

Expires on 3/31/2012
 DWG NO T-12.07

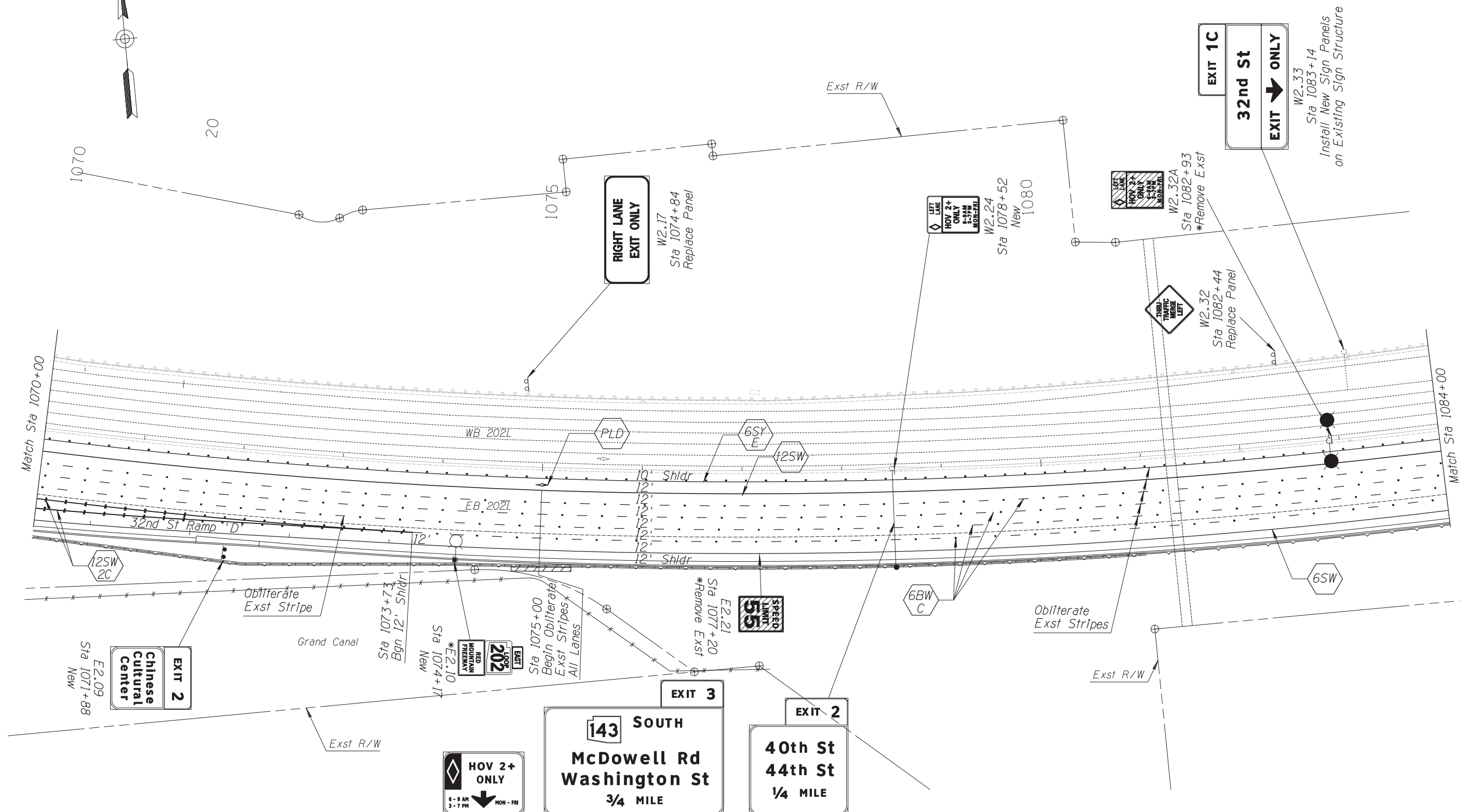


"RECORD DRAWING, Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____ DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	868	2134	03/06/12

202 MA 000



HOV 2+ ONLY
6 - 9 AM
3 - 7 PM
MON - FRI

EXIT 3
143 SOUTH
McDowell Rd
Washington St
3/4 MILE

EXIT 2
40th St
44th St
1/4 MILE

E2.24A
E2.24
Sta 1078+50
Remove Exst Sign Structure
Install New Sign Structure

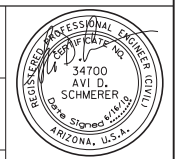
REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	AMK	04/10
	/ /			TWW	04/10
	/ /			RKS	04/10
	/ /				
	/ /				
	/ /				
	/ /				
	/ /				
	/ /				
	/ /				

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C 202-A-NFA

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
PAVEMENT MARKING
& SIGNING PLAN
Sta 1070+00 to Sta 1084+00



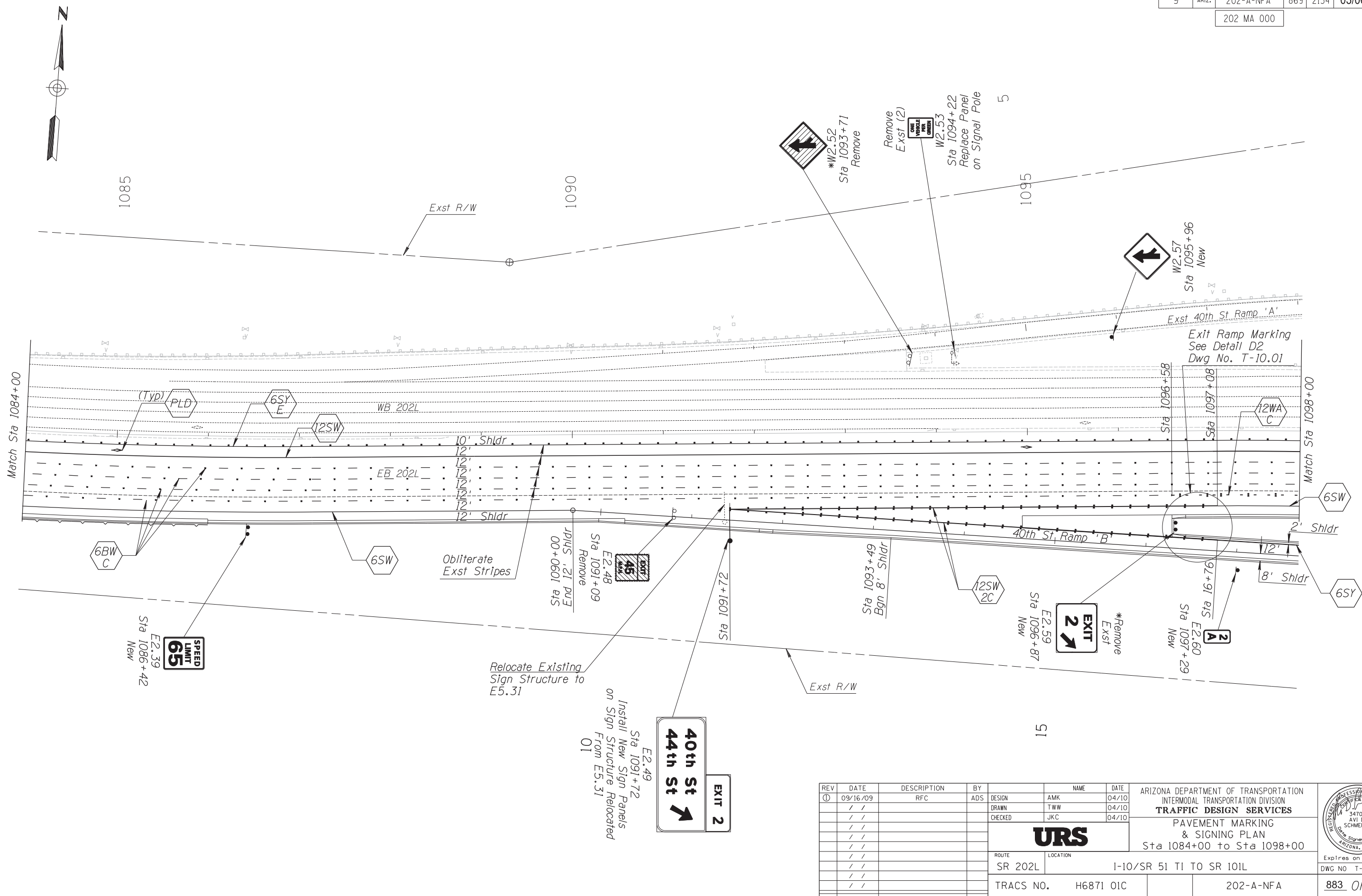
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DWG NO T-12.08

"RECORD DRAWING, Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

SURVEY NO.	FINISHED PLANS	DATE	REVISIONS
LOCATION	FINISHED PLANS	DATE	REVISIONS

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	869	2134	03/06/12

202 MA 000



REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	AMK	04/10
	/ /			TWW	04/10
	/ /			JKC	04/10

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
 PAVEMENT MARKING
 & SIGNING PLAN
 Sta 1084+00 to Sta 1098+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C PROJECT NO. 202-A-NFA

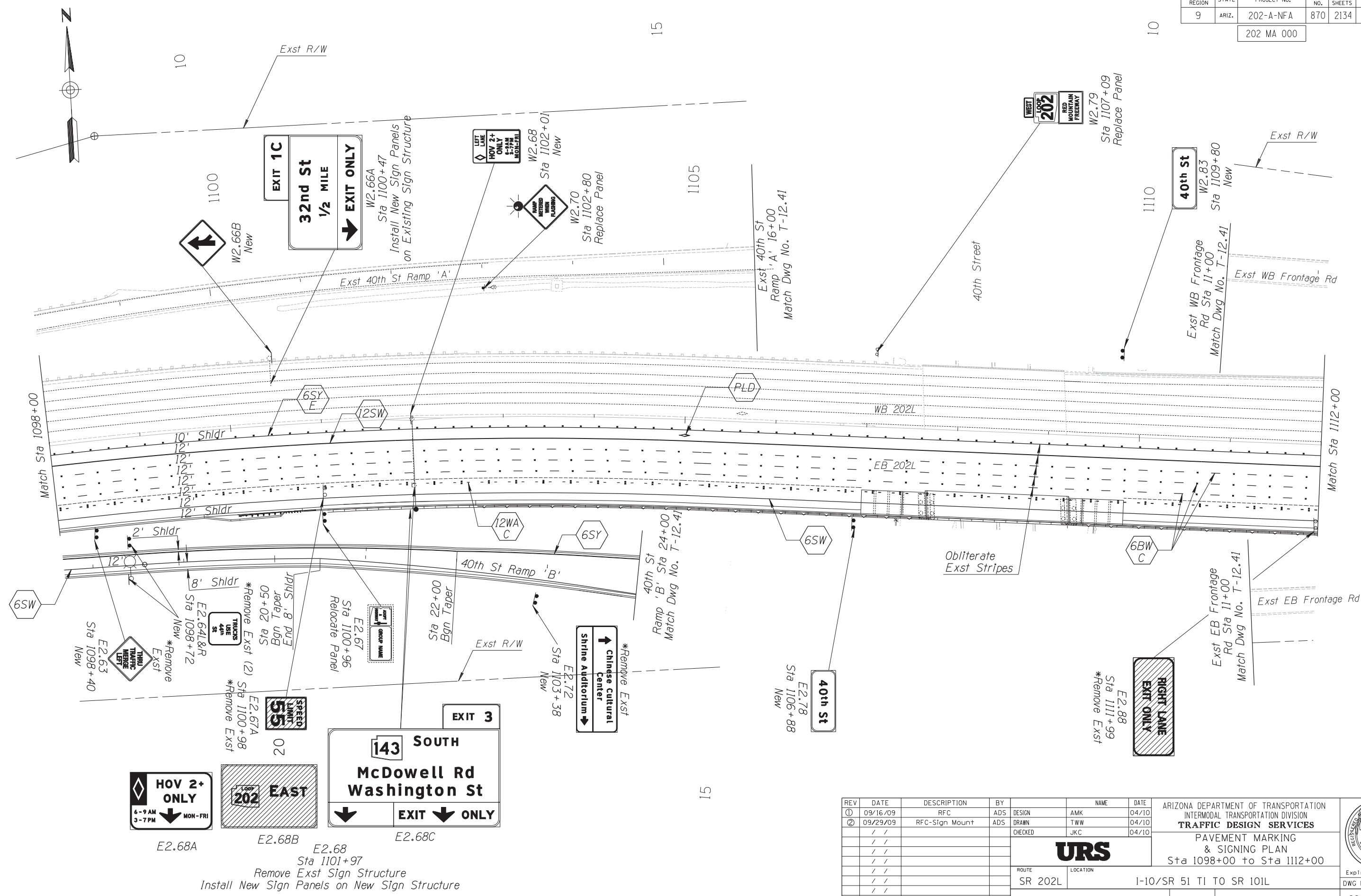
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 DWG NO T-12.09
883 OF 2148

"RECORD DRAWING. Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____ DATE: _____ LOCATION: _____ REVISIONS: _____ FINISHED PLANS: _____ SURVEY NO. _____

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	870	2134	03/06/12

202 MA 000



REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	AMK	04/10
②	09/29/09	RFC-Sign Mount	ADS	TWW	04/10
/	/			JKC	04/10
/	/				
/	/				
/	/				
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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES

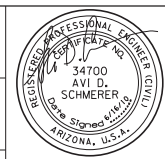
PAVEMENT MARKING
& SIGNING PLAN
Sta 1098+00 to Sta 1112+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C PROJECT NO. 202-A-NFA SHEET NO. 884 OF 2148

Expires on 3/31/2012
DWG NO T-12.10

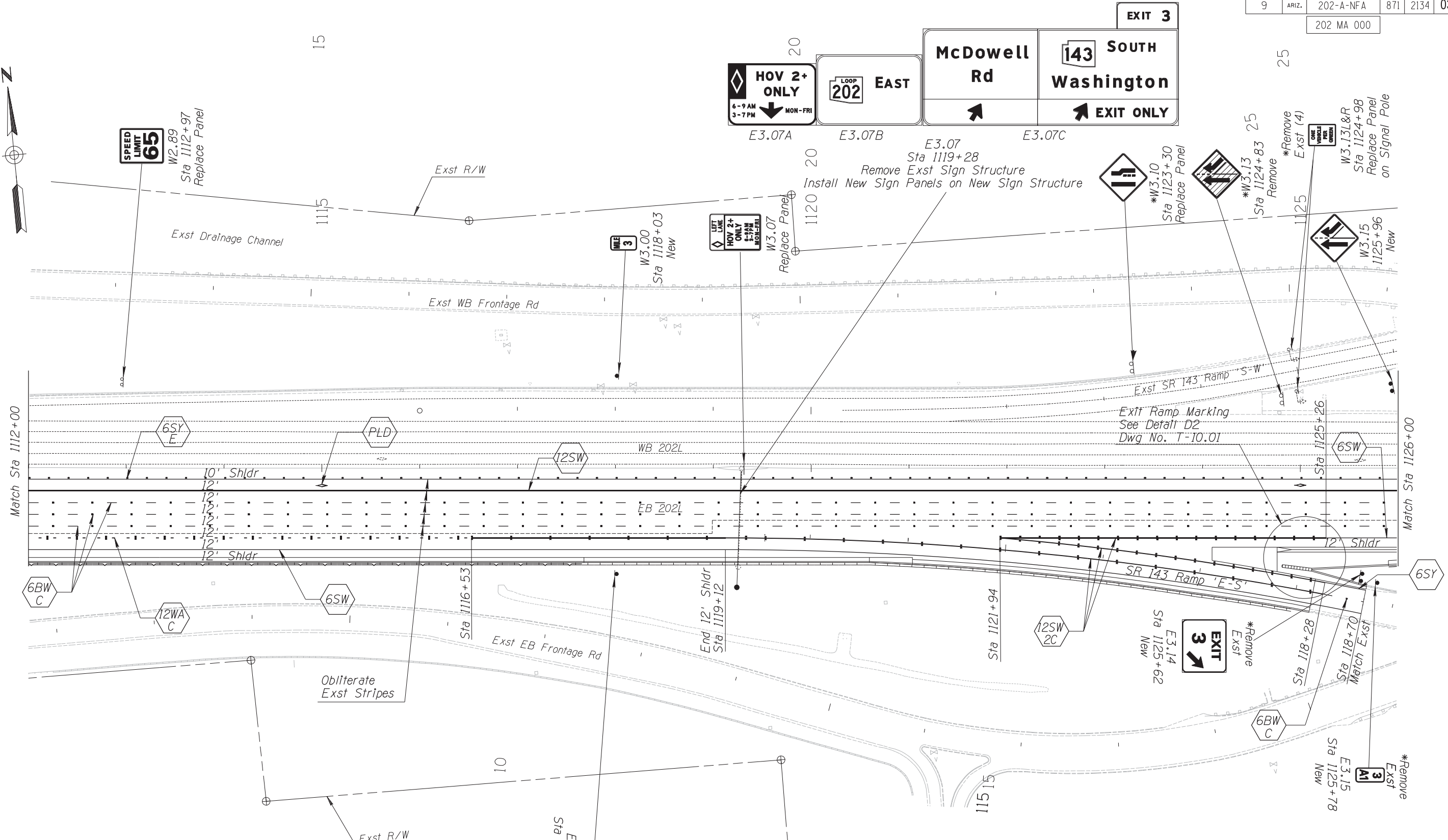


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SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

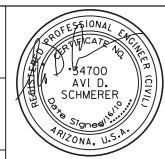
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	871	2134	03/06/12

202 MA 000



REV	DATE	DESCRIPTION	BY	NAME	DATE
1	09/16/09	RFC	ADS	AMK	04/10
2	10/13/09	RFC - Detail AC	ADS	TWW	04/10
				JKC	04/10

ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
 PAVEMENT MARKING
 & SIGNING PLAN
 Sta 1112+00 to Sta 1126+00



ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L
 TRACS NO. H6871 01C 202-A-NFA

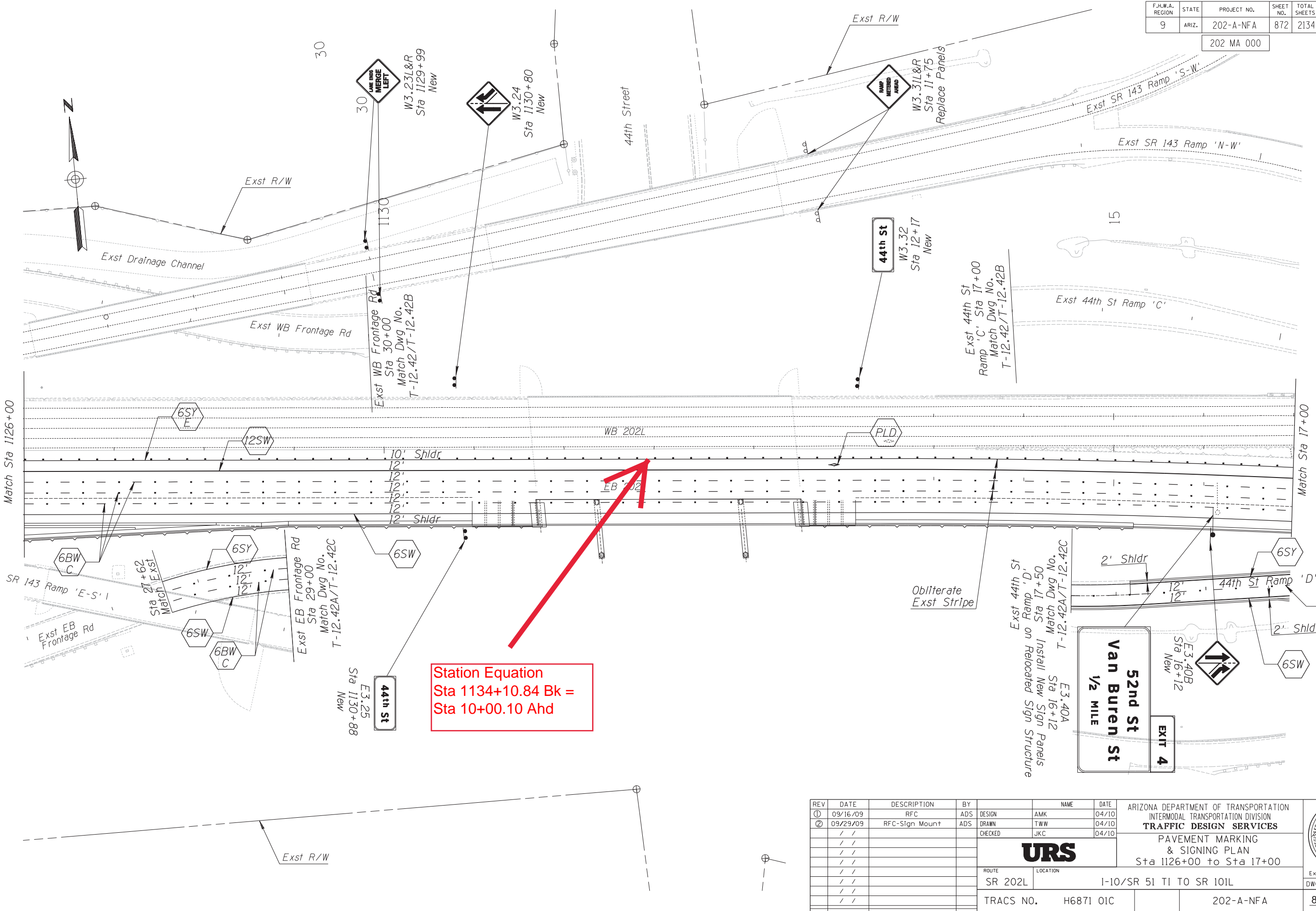
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 DWG NO T-12.11
885 OF 2148

"RECORD DRAWING, Record drawings are based on design changes and field observations.
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SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	872	2134	03/06/12

202 MA 000



Station Equation
Sta 1134+10.84 Bk =
Sta 10+00.10 Ahd

REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/16/09	RFC	ADS	DESIGN	AMK 04/10
②	09/29/09	RFC-Sign Mount	ADS	DRAWN	TWW 04/10
/	/			CHECKED	JKC 04/10
/	/				
/	/				
/	/				
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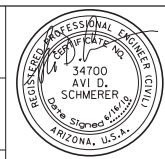
ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
PAVEMENT MARKING
& SIGNING PLAN
Sta 1126+00 to Sta 17+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C 202-A-NFA 886 OF 2148

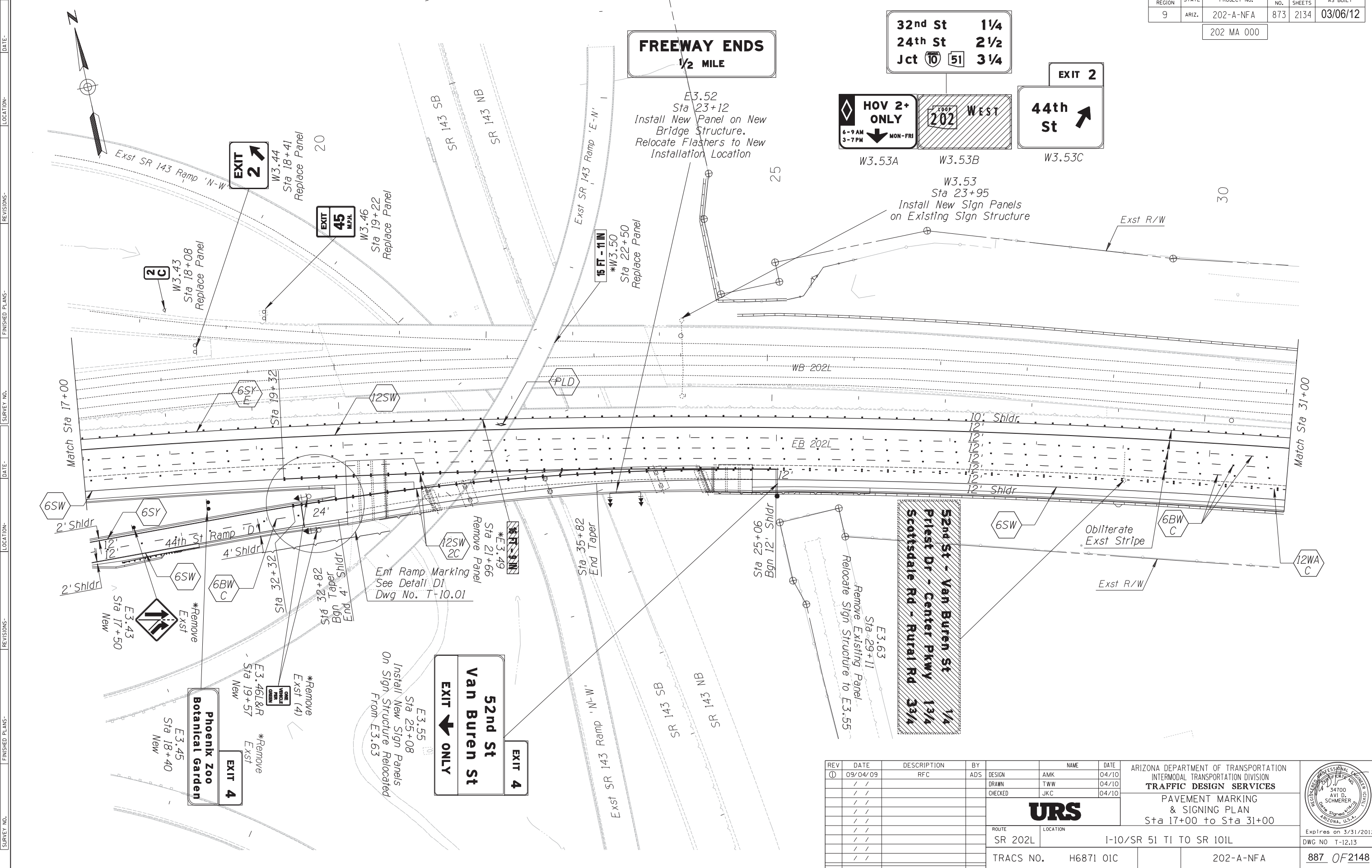
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DWG NO T-12.12



"RECORD DRAWING. Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	873	2134	03/06/12

202 MA 000



REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/04/09	RFC	ADS	AMK	04/10
	/ /			TWW	04/10
	/ /			JKC	04/10
	/ /				
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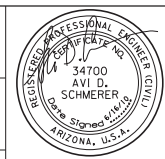
ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
 PAVEMENT MARKING
 & SIGNING PLAN
 Sta 17+00 to Sta 31+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C PROJECT NO. 202-A-NFA SHEET NO. 887 OF 2148

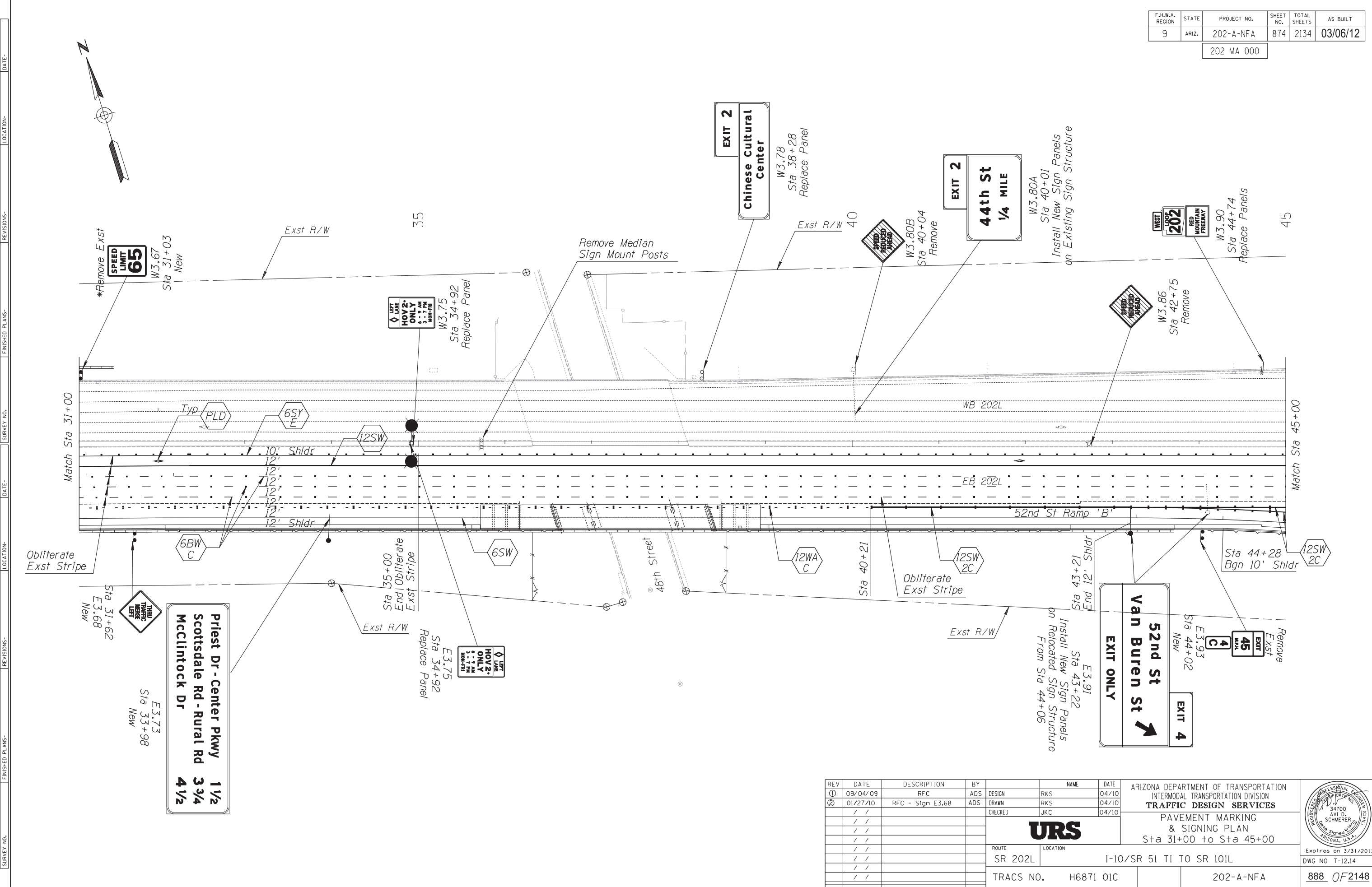
Expires on 3/31/2012
 DWG NO T-12.13



"RECORD DRAWING, Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	874	2134	03/06/12

202 MA 000



REVISIONS-	FINISHED PLANS-	DATE-	LOCATION-	DATE-	FINISHED PLANS-	REVISIONS-

REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/04/09	RFC	ADS	RKS	04/10
②	01/27/10	RFC - Sign E3.68	ADS	RKS	04/10
				JKC	04/10

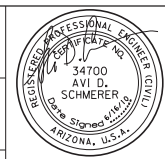
ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
 PAVEMENT MARKING
 & SIGNING PLAN
 Sta 31+00 to Sta 45+00

URS

ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C PROJECT NO. 202-A-NFA SHEET NO. 888 OF 2148

Expires on 3/31/2012
 DWG NO T-12.14

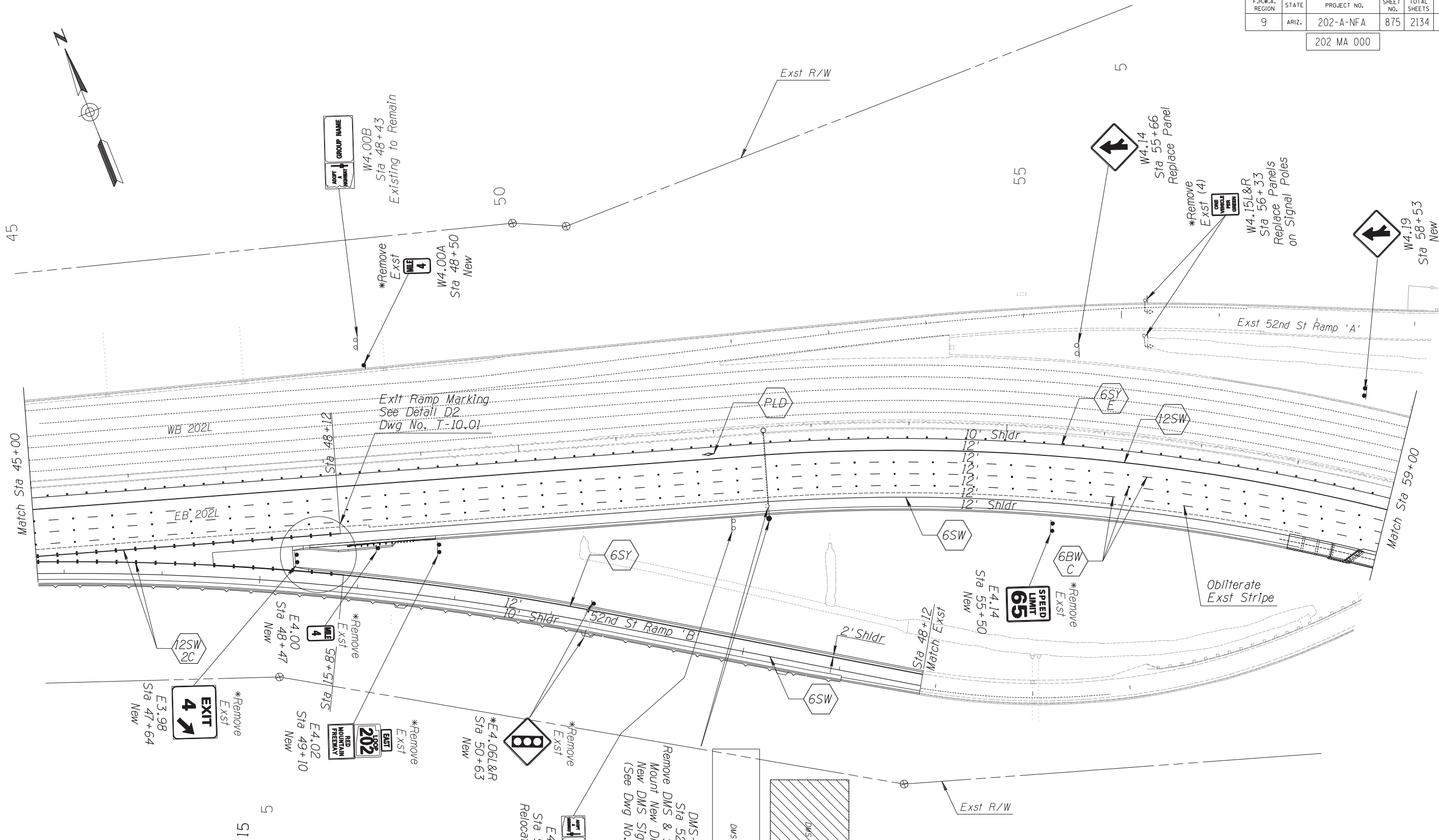


"RECORD DRAWING, Record drawings are based on design changes and field observations. No field survey to verify actual conditions has been completed."

SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE SURVEY NO. FINISHED PLANS DATE REVISIONS LOCATION DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	202-A-NFA	875	2134	03/06/12

202 MA 000



REV	DATE	DESCRIPTION	BY	NAME	DATE
①	09/04/09	RFC	ADS	RKS	04/10
	/ /			RKS	04/10
	/ /			JKC	04/10
	/ /				
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ARIZONA DEPARTMENT OF TRANSPORTATION
 INTERMODAL TRANSPORTATION DIVISION
TRAFFIC DESIGN SERVICES
 PAVEMENT MARKING
 & SIGNING PLAN
 Sta 45+00 to Sta 59+00



ROUTE: SR 202L LOCATION: I-10/SR 51 TI TO SR 101L

TRACS NO. H6871 01C 202-A-NFA 889 OF 2148



Expires on 3/31/2012
 DWG NO T-12.15