

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	PPM 0(258) D	1	--	

0000 PM PPM



PIMA COUNTY TRANSPORTATION



BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS

Federal Project No. STP-PPM-0(258)D
Tracs No. 0000 PM PPM T0115 01C
Pima County Project No. CTR.4DRXXL

General Project Description

The overall project consists of the relocation of the intersection of Benson Hwy and Drexel Road. This will include the addition of an indirect left for southbound Benson Hwy to eastbound Drexel, a signalized pedestrian crossing, adjustments to existing medians, modifications to existing intersection lighting, sidewalk and accessible curb ramps, and landscape improvements.

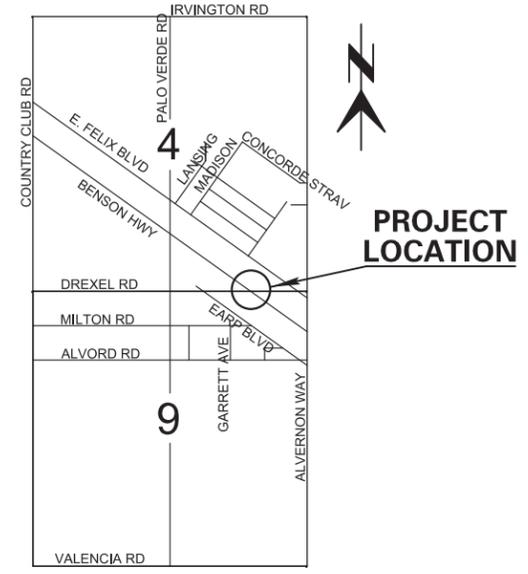
PIMA COUNTY BOARD OF SUPERVISORS

RICHARD ELIAS, CHAIR, DISTRICT 5

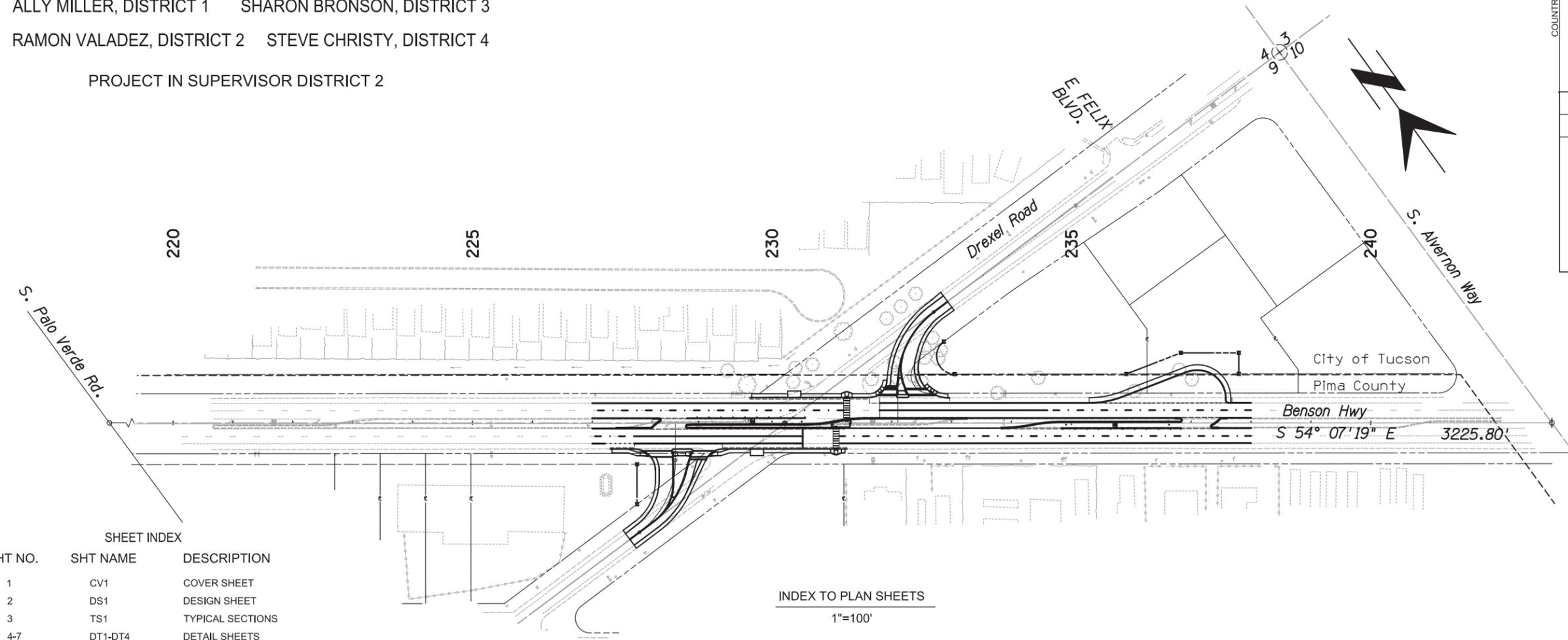
ALLY MILLER, DISTRICT 1 SHARON BRONSON, DISTRICT 3

RAMON VALADEZ, DISTRICT 2 STEVE CHRISTY, DISTRICT 4

PROJECT IN SUPERVISOR DISTRICT 2



Location Map
Not To Scale
Sections 4 & 9 of
T-15-S, R-14-E
G & S R B & M



SHT NO.	SHT NAME	DESCRIPTION
1	CV1	COVER SHEET
2	DS1	DESIGN SHEET
3	TS1	TYPICAL SECTIONS
4-7	DT1-DT4	DETAIL SHEETS
8	DM1	DEMOLITION PLANS
9	SC1	SURVEY CONTROL PLAN
10-11	GC1-GC2	GEOMETRIC CONTROL PLANS
12-14	C1-C3	ROADWAY PLAN & PROFILE
15-17	PM1-PM3	PAVEMENT MARKING
18-21	SL1-SL4	LIGHTING AND SIGNAL PLANS
22-27	SN1-SN6	SIGNING PLANS
28	TC1	TRAFFIC CONTROL PLAN
29-35	LP1-LP7	LANDSCAPING PLANS
36-38	EC1-EC3	EROSION CONTROL PLANS
39-42	RW1-RW4	RIGHT OF WAY PLANS

INDEX TO PLAN SHEETS
1"=100'

PCRWRD #UPC-2017-021

Pima County Department of Transportation
201 N. Stone Ave. 4th floor Tucson, Arizona 85701
Phone Number: 724-6410
Ana M. Olivares, P.E., Director



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No.	Revisions	Engineer	Date
No.	As Built	Engineer	Date

Reviewed by	Engineer	Date
Mgr. Trans Engr.		
Mgr. Traffic Engr.		
Mgr. Field Engr.		
Approved: _____ 20__		
Director		

Project No. CTR.4DRXXL

Sheet No. CV1 of CV1 Page No. 1 of 42

Benson Hwy at Drexel Road Improvements Project No. CTR.4DRXXL

2/23/2018 11:46:18 AM V:\1817\ACT\VE\1817\0203\UPC\INDS\SHEETS\CIVIL\180203_CV1RSH1.DGN

GENERAL NOTES

- (1) CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS AND DETAILS LISTED IN THE PROJECT SPECIAL PROVISIONS.
- (2) UTILITY LOCATIONS SHOWN ON PLANS WERE COMPILED BASED ON THE BEST INFORMATION AVAILABLE TO THE DEPARTMENT. UTILITY INFORMATION IS NOT INTENDED TO BE EXACT OR COMPLETE. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL UTILITIES WITH THE APPROPRIATE ORGANIZATION. THE CONTRACTOR SHALL CONTACT "BLUE STAKE" AT 1-800-782-5348 TWO (2) FULL WORKING DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION (SATURDAYS AND SUNDAYS ARE NOT CONSIDERED WORKING DAYS).
- (3) RIGHT-OF-WAY ENCROACHMENTS SHALL BE REMOVED ONLY BY ORDER OF PIMA COUNTY, UNLESS OTHERWISE NOTED.
- (4) REMOVAL OF ALL CACTI AND NATIVE PLANTS SHALL BE IN ACCORDANCE WITH THE LATEST PROVISIONS OF THE "ARIZONA NATIVE PLANT LAW", A.R.S., CHAPTER 7.
- (5) THE BASIS OF BEARING FOR THIS PROJECT WAS ESTABLISHED USING THE ARIZONA COORDINATE SYSTEM, NAD 1983 (2011), CENTRAL ZONE 0202, AS OBSERVED BETWEEN PIMA COUNTY OPUS CONTROL POINTS "15S14E_E11", BEING A 3-1*2" USC&GS BRASS DISK STAMPED "SCOTCH 1960", AND "15S14E_J18", BEING A 3-1*2" USC&GS BRASS DISK STAMPED "H 355 1960". THE BEARING BEING S 53°16'23"E.
- (6) THE BASIS OF ELEVATION FOR THIS PROJECT IS PIMA COUNTY OPUS CONTROL POINT "15S14E_E11" HAVING AN NAVD88 ELEVATION OF 2603.29 FEET, AS COMPUTED USING GEOID12B.
- (7) THE COORDINATES ARE DERIVED FROM STATE PLANE VALUES BY USING THE FOLLOWING FORMULAS. THE PUBLISHED COMBINED SCALE FACTOR PIMA COUNTY OPUS CONTROL POINT 7*3215S14E_E19*32WAS USED TO CONVERT GRID COORDINATES TO SURFACE COORDINATES FOR THIS PROJECT.

SURFACE NORTHING COORDINATES ARE DERIVED BY DIVIDING THE GRID COORDINATES BY 0.99988982 AND THEN SUBTRACTING 400,000. SURFACE EASTING COORDINATES ARE DERIVED BY DIVIDING THE GRID COORDINATE BY 0.99988982 AND THEN SUBTRACTING 900,000.

FOR PIMA COUNTY OPUS CONTROL POINT "15S14E_E11" THE SURFACE COORDINATES ARE:
NORTHING: (420170.512/ 0.99988982)- 400,000 = 20216.812
EASTING: (1009609.754/ 0.99988982)- 900,000 = 109721.005
- (8) THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS, ALLEYS, AND MAILBOXES DURING CONSTRUCTION, AND NOT RESTRICT EMERGENCY VEHICLES, U.S. POSTAL DELIVERY, SOLID WASTE COLLECTIONS, AND/OR ACCESS TO THE ADJACENT PROPERTIES, EXCEPT AS APPROVED BY THE ENGINEER.
- (9) OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, NOTES AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND RESOLVED BEFORE PROCEEDING WITH THE WORK.
- (10) ALL STATIONING SHOWN ON THE PLANS AND PROFILES IS ALONG THE CONSTRUCTION CENTER LINE UNLESS OTHERWISE NOTED.
- (11) EXISTING UTILITIES INCLUDE, BUT MAY NOT BE LIMITED TO OVERHEAD AND UNDERGROUND ELECTRIC, TELEPHONE, TELEVISION, SEWER,GAS, AND WATER AND SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED AND SHOWN ON THESE PLANS.
- (12) EXISTING TOPOGRAPHIC CONDITIONS SHOWN ON THE PLAN SHEETS REFLECT CONDITIONS AS OF DECEMBER 2016.
- (13) POSTED SPEED FOR BENSON HWY = 45 MPH.
- (14) POSTED SPEED FOR DREXEL RD = 35 MPH.
- (15) DESIGN VEHICLE = WB-67
- (16) SOILS INFORMATION WILL BE MADE AVAILABLE TO PROSPECTIVE BIDDERS IN THE GEOTECHNICAL. SOILS INFORMATION SO PROVIDED SHALL BE FOR INFORMATIONAL PURPOSES ONLY. THIS INFORMATION WAS DEVELOPED AS ACCURATELY AS POSSIBLE BY METHODS USED. PIMA COUNTY ACCEPTS NO RESPONSIBILITY FOR ANY CONDITIONS ENCOUNTERED WHICH VARY FROM THE INFORMATION PROVIDED.

SANITARY SEWER GENERAL NOTES

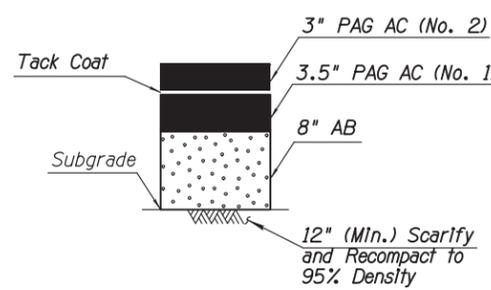
- (1) CONTRACTOR SHALL MAINTAIN ACCESS TO ALL SANITARY SEWER MANHOLES AT ALL TIMES.
- (2) ANY HOUSE CONNECTION SEWER (HCS) OR BUSINESS CONNECTION SEWER (BCS) LINES ENCOUNTERED DURING CONSTRUCTION SHALL BE PROTECTED, REPAIRED, OR REROUTED, AS THE SITUATION DICTATES, PER PCRWRD SSDC 2016 DETAIL NO. RWRD 400 AND AT NO EXPENSE TO THE PROPERTY OWNER OR PCRWRD. HCS AND BCS LINES ARE NOT OWNED OR MAINTAINED BY PCRWRD. PRIVATE CONNECTION SEWERS CONSTRUCTED PRIOR TO JANUARY 2006 ARE NOT REQUIRED TO BE LOCATED AND MARKED.
- (3) IMMEDIATELY REPORT ANY OF THE FOLLOWING TO THE PCRWRD OPERATIONS CONTROL CENTER (OCC) AT (520) 724-6500: ANY RELEASE OF SEWAGE, ANY DAMAGE TO THE PUBLIC SANITARY SEWER SYSTEM, OR THE DROPPING OF DEBRIS INTO A PUBLIC SANITARY SEWER MANHOLE. A PCRWRD REPRESENTATIVE WILL BE DISPATCHED TO THE SITE. THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION TO CONTAIN A SANITARY SEWAGE OVERFLOW (SSO). THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS TO REPAIR THE SYSTEM, MITIGATE THE RELEASE OF SEWAGE, DISINFECT THE RELEASE AREAS, AND ANY REGULATORY PENALTIES LEVIED ON PCRWRD FOR SEWAGE ENTERING A NATURAL DRAINAGE WAY OR STORM WATER DRAINAGE SYSTEM. THE CONTRACTOR SHALL REPAIR ALL DAMAGE AS DIRECTED AND APPROVED BY THE PCRWRD FIELD REPRESENTATIVE.
- (4) THE CONTRACTOR SHALL CONTACT "ARIZONA 811" (DIAL 811 OR 1-800-782-5348) A MINIMUM OF TWO (2) BUSINESS DAYS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL KEEP ALL UNDERGROUND FACILITY LOCATION REQUESTS UP-TO-DATE AND COMPLY WITH ARIZONA REVISED STATUTES (A.R.S.), TITLE 40, CHAPTER 1, ARTICLE 6.3, SECTION 40-360.22. CONCERNS REGARDING THE ACCURACY BETWEEN THE UNDERGROUND FACILITY MARKINGS AND THE PROJECT PLANS SHALL BE IMMEDIATELY REPORTED TO THE DESIGN ENGINEER.

DESIGN DATA

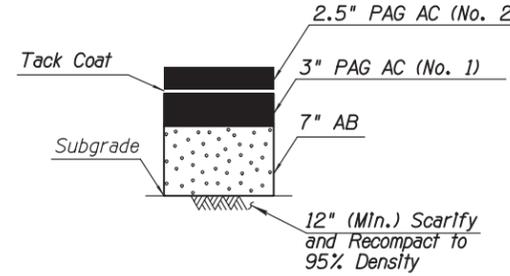
BENSON HIGHWAY 2014 ADT= 6838
DREXEL ROAD 2014 ADT= 3178
BENSON HIGHWAY DESIGN SPEED= 55 MPH
DREXEL ROAD DESIGN SPEED= 45 MPH

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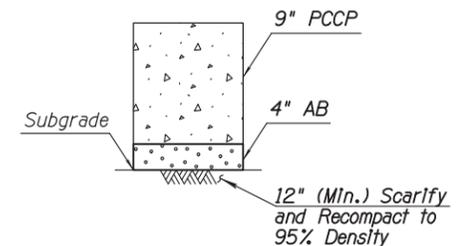
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Total Thickness = 14.5"
SECTION NO. 1



Total Thickness = 12.5"
SECTION NO. 2



Total Thickness = 13"
SECTION NO. 3

EXISTING	NEW

LEGEND

EARTHWORK QUANTITIES		Bid Item #
Roadway Excavation	1,092 CY	2030300
Pavement Removal	124 CY	
Shrink	145 CY	
Total Excavation Available for Embankment	823 CY	
Embankment (Incl Gnd Comp)	36 CY	
Waste	787 CY	

EARTHWORK FACTORS	
Shrink/Swell	Ground Compaction
15% Shrink	0.15'

Earthwork Notes:

- 1. Roadway Excavation does not Include Pavement Removal.
- 2. Sawcutting Is Incidental to the cost of pavement removal.

WATER SYSTEM GENERAL NOTES

- (1) THE CONTRACTOR SHALL PROTECT IN-PLACE ALL RAY WATER FACILITIES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL IMMEDIATELY CONTACT RAY WATER AT (520) 623-2366 TO REPORT ANY DAMAGE TO RAY WATER FACILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS OF REPAIR OF RAY WATER FACILITIES DAMAGED DURING CONSTRUCTION.
- (2) SPECIAL USE WATER PERMITS: PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL APPLY FOR ONE (1) SPECIAL WATER USE PERMIT FROM THE CITY OF TUCSON WATER DEPARTMENT COMMERCIAL SECTION OR RAY WATER.



Pima County Department of Transportation

Ana M. Olivares, P.E., Director

Date	Engineer	Revision Description	No.
11/2017	J. DANA		
11/2017	J. DANA		
11/2017	D. MOSEKE		
11/2017	D. MOSEKE		
11/2017	D. MOSEKE		

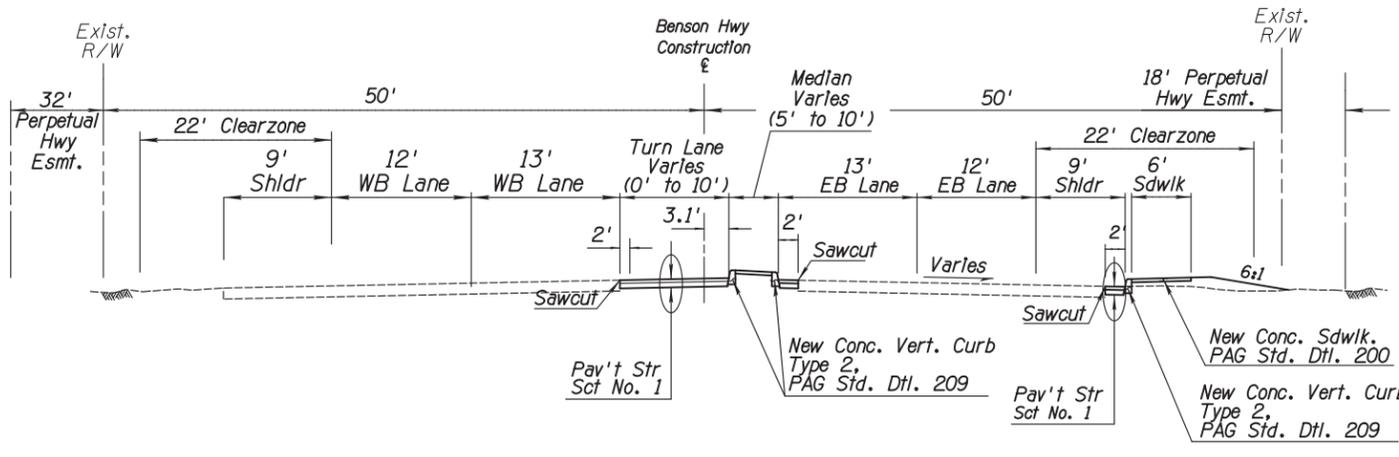
FINAL PS&E Review NOT FOR CONSTRUCTION OR RECORDING

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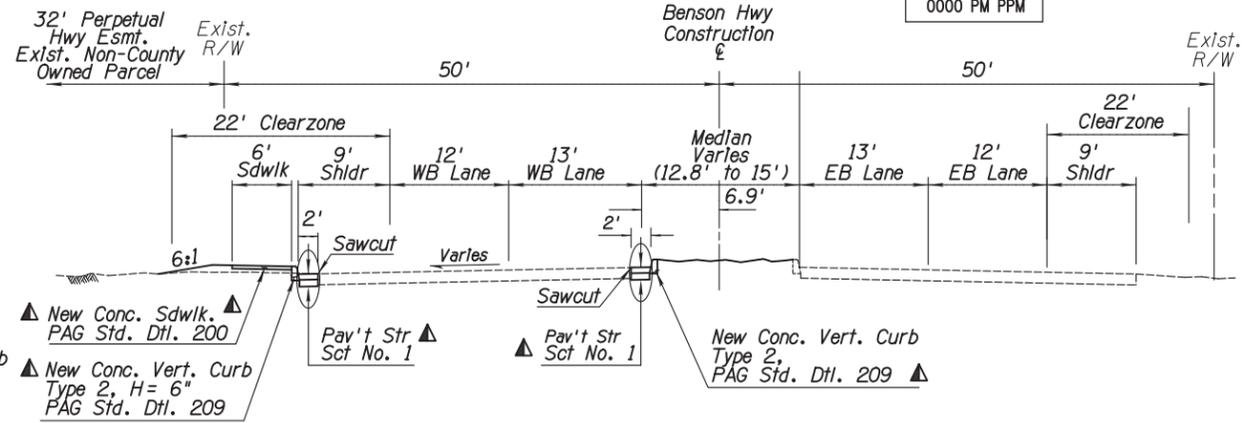
BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
Project No. CTR-4DRXXL
TRACTS No: 0000 PM PPM T015 01C

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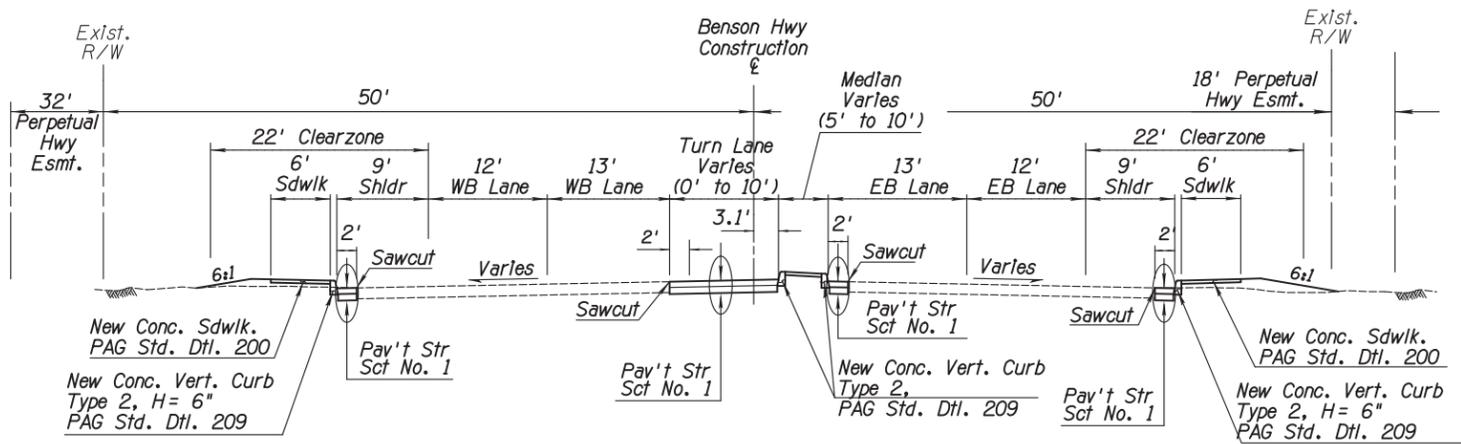
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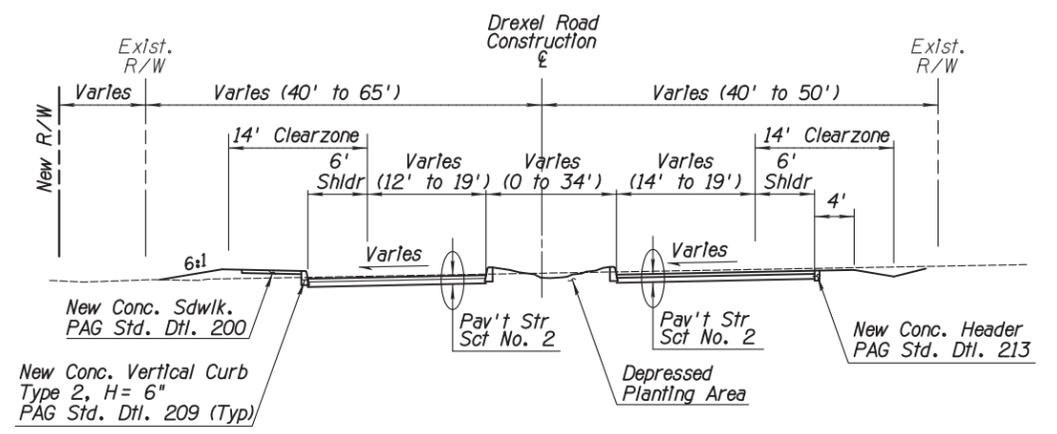
BENSON HWY TYPICAL SECTION
Sta 227+30.11 to 229+63.32



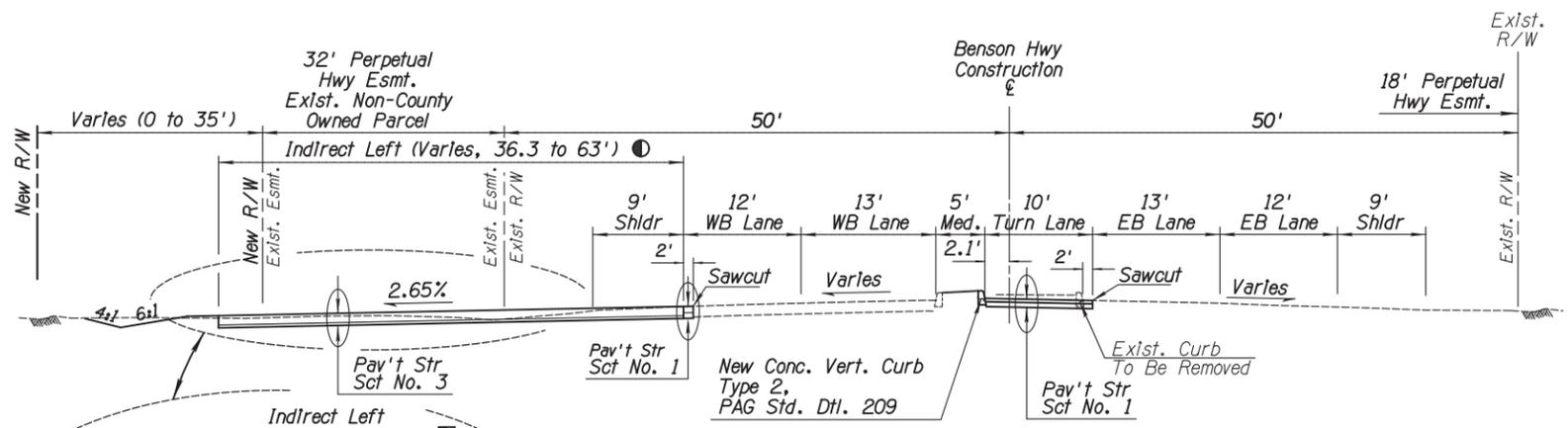
BENSON HWY TYPICAL SECTION ▲ Between Sta 233+26.10 to 233+83.14 Requires No New Pav't or Curbing
Sta 231+28.00 to 233+83.14



BENSON HWY TYPICAL SECTION
Sta 229+63.32 to 231+28.00

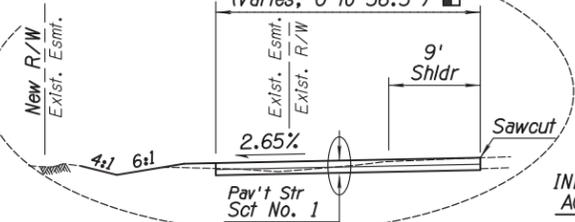


DREXEL ROAD TYPICAL SECTION
Sta 8+77.36 to 9+64.73 (Drexel West)
Sta 10+32.93 to 10+75.66 (Drexel East)

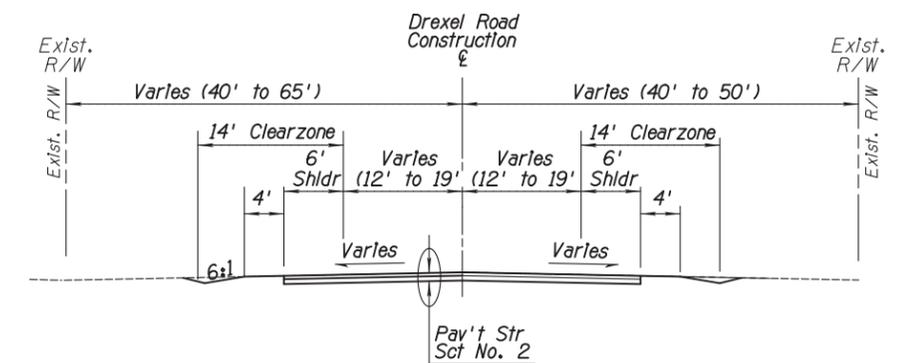


BENSON HWY TYPICAL SECTION
Sta 233+83.14 to 237+66.29

- Indirect Left PCCP Section Sta 236+29.29 to 237+66.29
- Indirect Left AC Section Sta 235+29.76 to 236+29.29



INDIRECT LEFT AC PAVEMENT



DREXEL ROAD TYPICAL SECTION
Sta 7+78.59 to 8+77.36 (Drexel West)
Sta 10+75.66 to 12+32.77 (Drexel East)



Ana M. Olivares, P.E., Director

Date	By
11/2017	J. DANA
11/2017	J. DANA
11/2017	D. MOSEKE
11/2017	D. MOSEKE
	P. ENGR.

No.	Revision Description	Engineer	Date

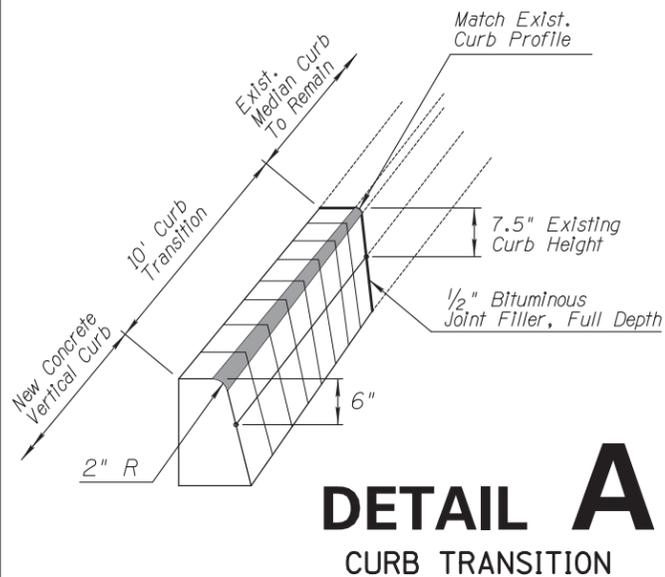
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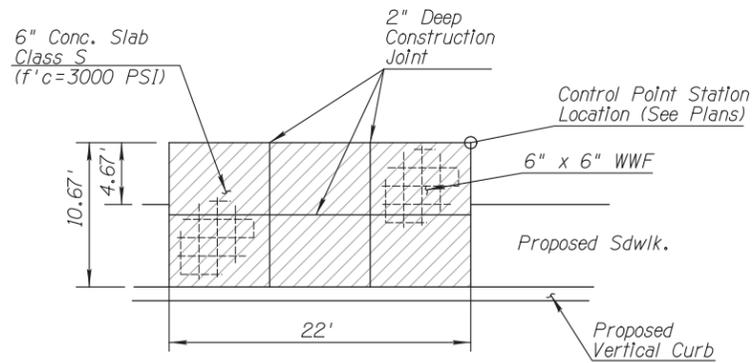
Pima County Department of Transportation
 BENSON HIGHWAY AT DREXEL ROAD
 IMPROVEMENTS
 Project No. CTR-4DRXXL
 TRACS No: 0000 PM PPM T015 OIC

General Notes:
 1. See PAG Std. Dtl. 209 for concrete curb general notes.

2. Concrete curb transition shall be measured by the linear foot and will receive payment per Item # 9080105.



DETAIL A
CURB TRANSITION

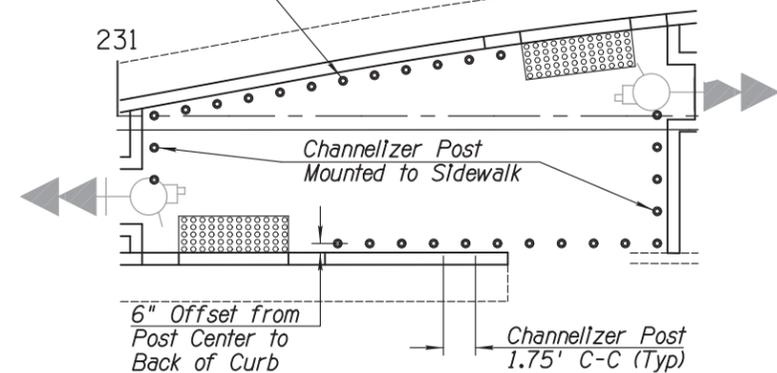


Notes:

1. New Concrete Bus Shelter Pad as detailed above shall be measured by the square foot and will receive payment per Item # 9080602. 6"x6" WWF shall be considered incidental to the cost of the new bus pad.
2. For existing bus shelters requiring to be relocated, the contractor shall remove, store, and reinstall the existing bus shelter to the new location. Relocate Bus Shelter shall be measured by the unit each and shall receive payment per Item # 9190005.
3. It is the contractor's responsibility to maintain reasonable access to the public transit system. Access must comply with the American Disabilities Act. The contractor is responsible for establishing temporary bus stops if signage is removed or access prohibited due to construction activity. The contractor shall coordinate with Sun Tran (Bea Paulus at 520-206-8826) prior to bus stop signage removal or access restrictions.

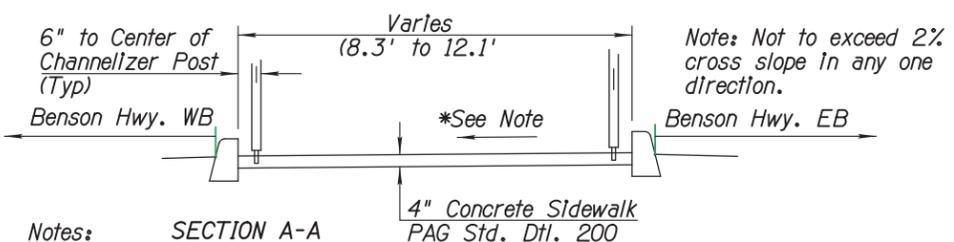
DETAIL A1
BUS PAD

Sidewalk Mounted Channelizer Post
See Note 1 (29 EA)



CHANNELIZER PLACEMENT

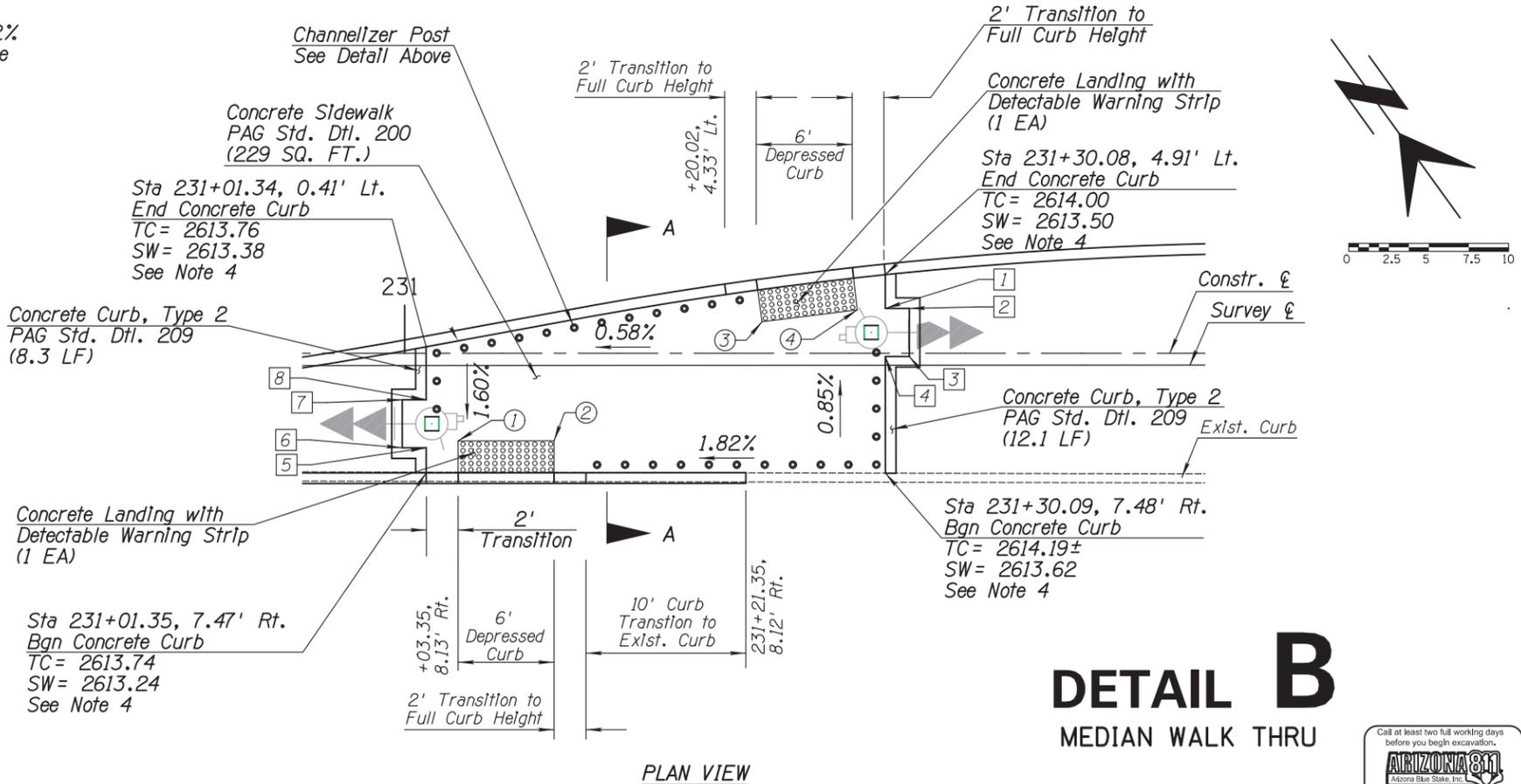
RAMP POINT TABLE		
No.	Sta/Off	Elev.
①	231+03.35, 5.47' Rt.	SW= 2613.28
②	231+09.35, 5.46' Rt.	SW= 2613.27
③	231+22.36, 1.97' Lt.	SW= 2613.48
④	231+28.32, 2.71' Lt.	SW= 2613.54



Notes:

1. Channelizer posts shall be installed in accordance with the manufacturer's specifications. All work shall be paid per Bld Item 9300114, Miscellaneous Work.
2. All channelizer posts shall match the following criteria unless otherwise directed by the Engineer. Height= 42", Diameter= 3", Color= white post with two bands of silver reflective sheeting.
3. All posts shall be embedded within the concrete surface with an embedded anchor cup.
4. New median top of curb to match roadway top of curb.

CURB POINT TABLE			
No.	Sta/Off	TC	SW
1	231+30.08, 2.80' Lt.	2614.03	2613.46
2	231+31.58, 2.80' Lt.	2614.03	2613.46
3	231+31.58, 0.20' Rt.	2614.08	2613.51
4	231+30.08, 0.20' Rt.	2614.08	2613.51
5	231+01.35, 5.90' Rt.	2613.74	2613.36
6	230+99.85, 5.90' Rt.	2613.74	2613.36
7	230+99.85, 2.90' Rt.	2613.75	2613.37
8	231+01.35, 2.90' Rt.	2613.75	2613.37



DETAIL B
MEDIAN WALK THRU
ROADWAY DETAILS

Ana M. Olivares, P.E., Director

Date	By	Checked	Project
11/2017	J. DANA	J. DANA	0000 PM PPM
11/2017	J. DANA	D. MOSEKE	
11/2017	J. DANA	D. MOSEKE	

No.	Revision Description	Engineer	Date

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0000 PM PPM

Ana M. Olivares, P.E., Director

Date	Designed	Checked	Proj. Engr.
11/2017	J. DANA	J. DANA	D. MOSEKE
11/2017			

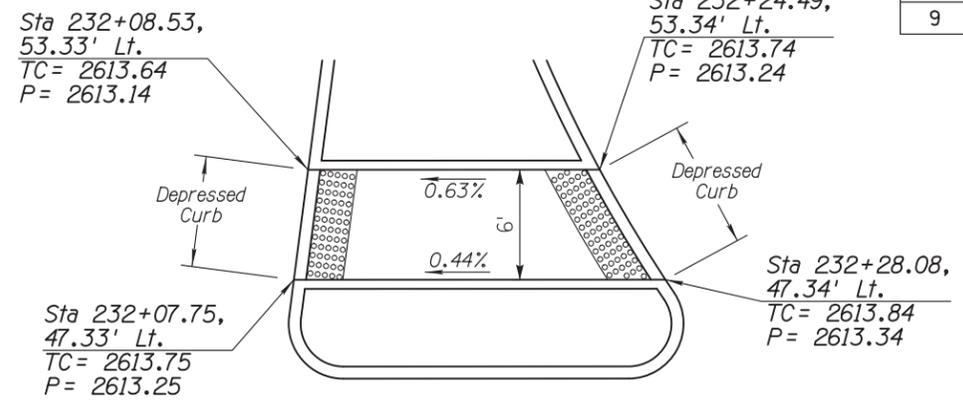
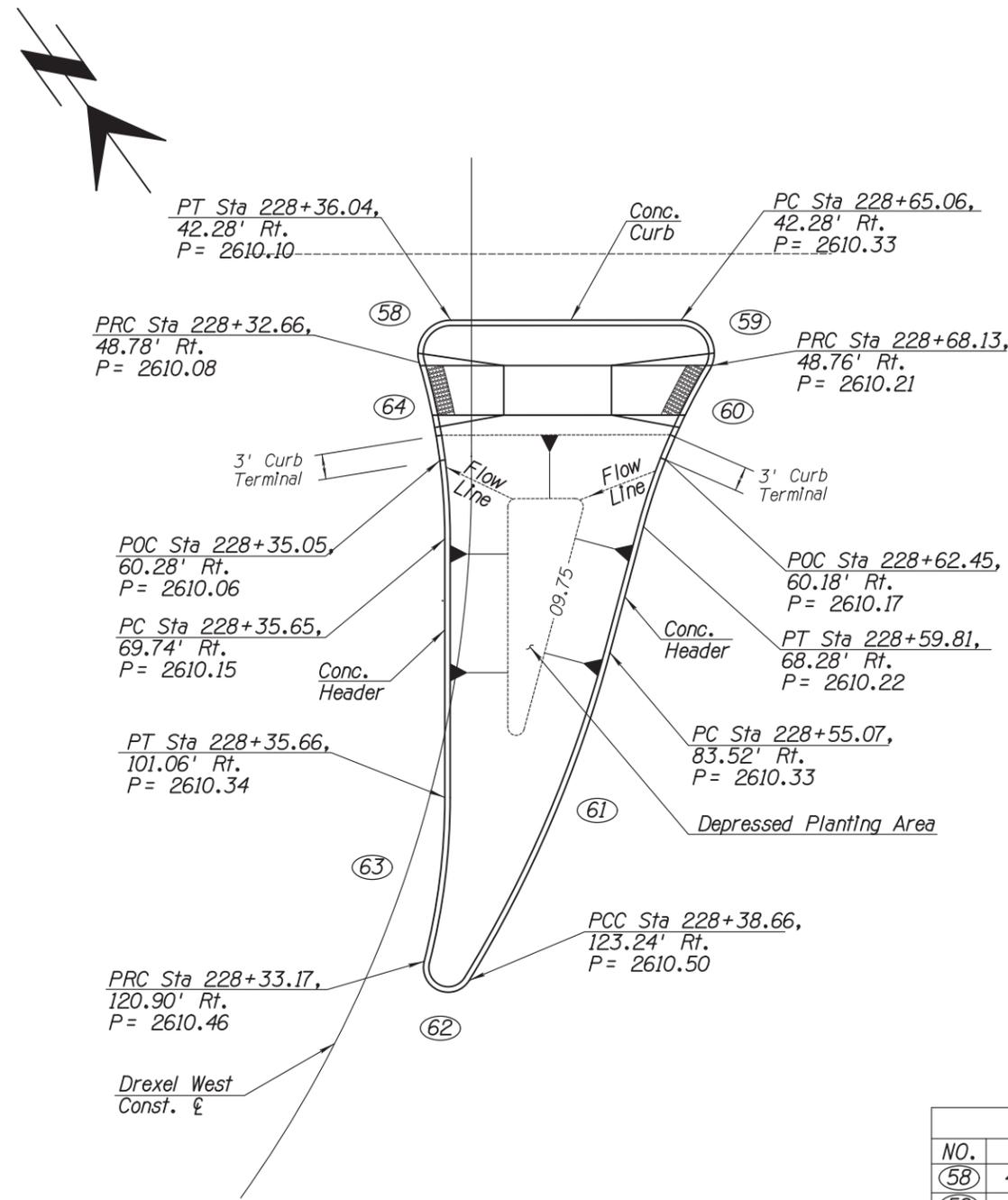
No.	Revision Description	Engineer	Date

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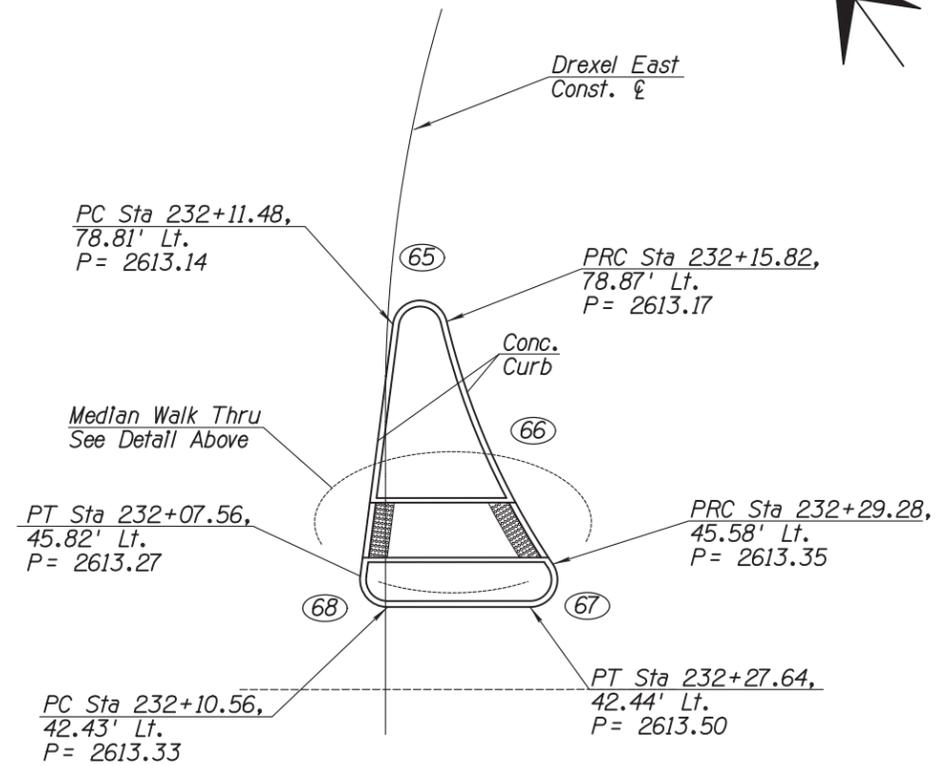
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BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
Project No. CTR-4DRXXL
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MEDIAN WALK THRU



DREXEL (EAST) MEDIAN DETAIL

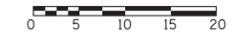
CURVE DATA				
NO.	R	Δ	L	T
58	4.00'	120°48'41"	7.44'	7.04'
59	4.00'	20°12'59"	8.43'	30.13'
60	75.00'	15°46'46"	20.66'	10.39'
61	150.00'	16°33'40"	43.36'	43.36'
62	3.00'	162°47'29"	8.52'	19.83'
63	80.00'	14°21'09"	20.04'	10.07'
64	75.00'	16°31'59"	21.64'	10.90'
65	3.00'	159°12'44"	8.34'	16.36'
66	81.00'	20°33'41"	29.07'	14.69'
67	3.00'	123°55'17"	6.49'	5.63'
68	3.00'	97°25'39"	5.10'	3.42'

- Notes:
- Unless otherwise noted, all stationing is based off the Benson Highway construction centerline.
 - All curve data was measured to the edge of pavement.

DETAIL C

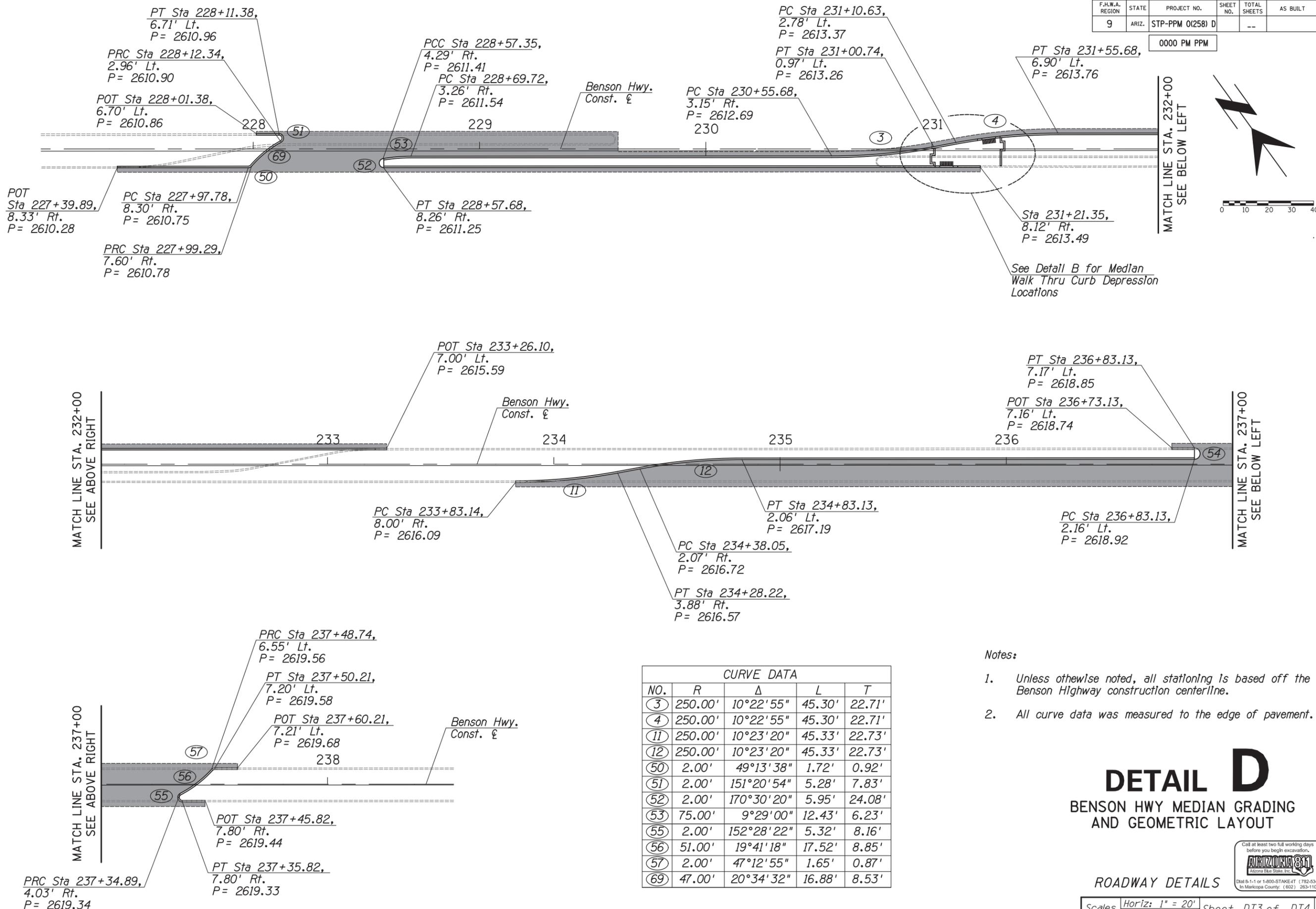
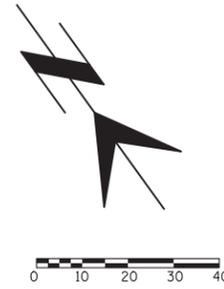
DREXEL MEDIAN GRADING AND GEOMETRIC LAYOUT

ROADWAY DETAILS



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0000 PM PPM



CURVE DATA				
NO.	R	Δ	L	T
3	250.00'	10°22'55"	45.30'	22.71'
4	250.00'	10°22'55"	45.30'	22.71'
11	250.00'	10°23'20"	45.33'	22.73'
12	250.00'	10°23'20"	45.33'	22.73'
50	2.00'	49°13'38"	1.72'	0.92'
51	2.00'	151°20'54"	5.28'	7.83'
52	2.00'	170°30'20"	5.95'	24.08'
53	75.00'	9°29'00"	12.43'	6.23'
55	2.00'	152°28'22"	5.32'	8.16'
56	51.00'	19°41'18"	17.52'	8.85'
57	2.00'	47°12'55"	1.65'	0.87'
69	47.00'	20°34'32"	16.88'	8.53'

Notes:

1. Unless otherwise noted, all stationing is based off the Benson Highway construction centerline.
2. All curve data was measured to the edge of pavement.

DETAIL D

BENSON HWY MEDIAN GRADING AND GEOMETRIC LAYOUT

Ana M. Olivares, P.E., Director

Date	By
11/2017	J. DANA
11/2017	J. DANA
11/2017	D. MOSEKE
11/2017	D. MOSEKE

No.	Revision Description	Engineer	Date

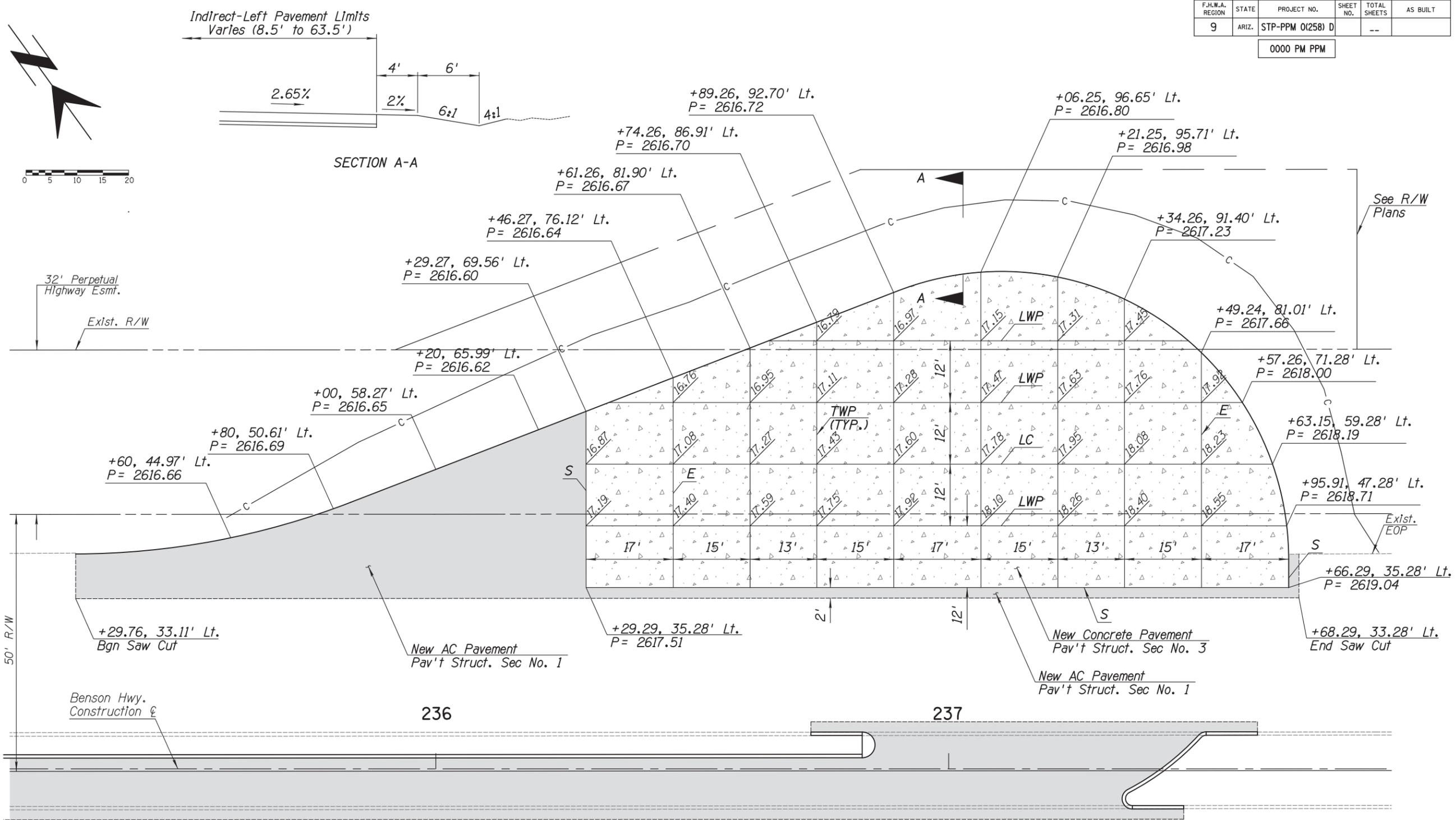
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 PS&E
 Review
 NOT FOR
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 OR RECORDING

Pima County Department of Transportation

BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
 Project No. CTR-4DRXXL
 TRACS No: 0000 PM PPM T015 OIC

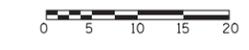
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

0000 PM PPM



Indirect-Left Pavement Limits Varies (8.5' to 63.5')

SECTION A-A



32' Perpetual Highway Esmf.
Exist. R/W

50' R/W

Benson Hwy. Construction

236

237

Notes:

- See ADOT Construction Standard Drawings C-07.01 and C-07.03 for additional construction joint information.
- PCCP texturing shall be performed by applying a longitudinal burlap drag followed by longitudinal texturing using steel tines.

PCCP Construction Joint Legend and Abbreviations

- S - AC/PCCP Edge- Seal Joint
- E - Expansion Joint
- TWP - Transverse Weekend Plane Joint
- LC - Longitudinal Construction Joint
- LWP - Longitudinal Weakened Plane Joint

DETAIL E

INDIRECT LEFT GRADING AND JOINT LAYOUT

ROADWAY DETAILS

Scales Horiz: 1" = 10'
Vert: N/A

Sheet DT4 of DT4 Page 7 of 42



Ana M. Olivares, P.E., Director

Date	Designed	Checked	Proj. Engr.
11/2017	J. DANA	J. DANA	D. MOSEKE
11/2017			
11/2017			

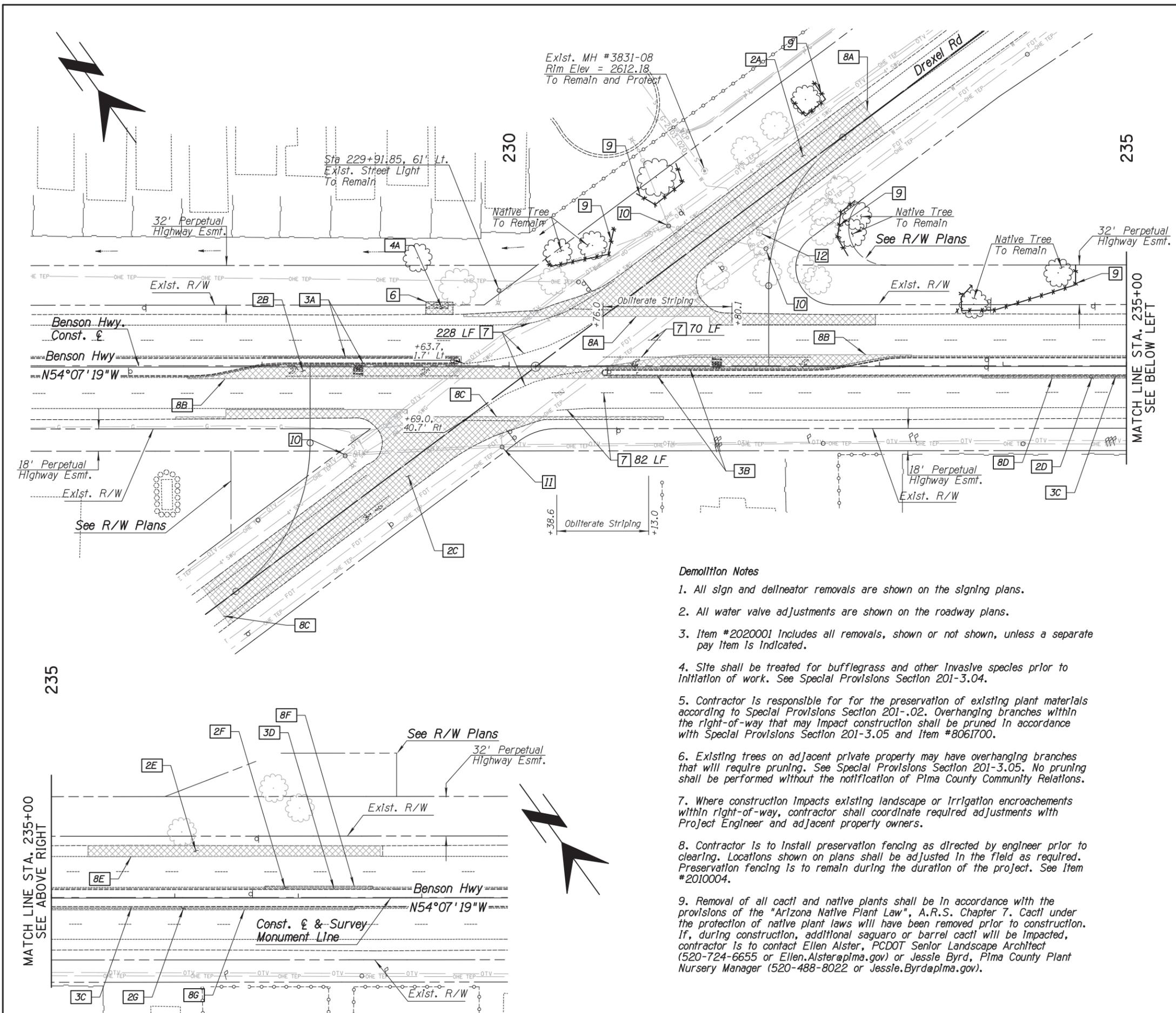
No.	Revision Description	Engineer	Date

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BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM T015 01C



Demolition Notes

1. All sign and delineator removals are shown on the signing plans.
2. All water valve adjustments are shown on the roadway plans.
3. Item #2020001 Includes all removals, shown or not shown, unless a separate pay item is indicated.
4. Site shall be treated for buffleggrass and other invasive species prior to initiation of work. See Special Provisions Section 201-3.04.
5. Contractor is responsible for the preservation of existing plant materials according to Special Provisions Section 201-.02. Overhanging branches within the right-of-way that may impact construction shall be pruned in accordance with Special Provisions Section 201-3.05 and Item #8061700.
6. Existing trees on adjacent private property may have overhanging branches that will require pruning. See Special Provisions Section 201-3.05. No pruning shall be performed without the notification of Pima County Community Relations.
7. Where construction impacts existing landscape or irrigation encroachments within right-of-way, contractor shall coordinate required adjustments with Project Engineer and adjacent property owners.
8. Contractor is to install preservation fencing as directed by engineer prior to clearing. Locations shown on plans shall be adjusted in the field as required. Preservation fencing is to remain during the duration of the project. See Item #2010004.
9. Removal of all cacti and native plants shall be in accordance with the provisions of the "Arizona Native Plant Law", A.R.S. Chapter 7. Cacti under the protection of native plant laws will have been removed prior to construction. If, during construction, additional saguaro or barrel cacti will be impacted, contractor is to contact Ellen Alster, PCDOT Senior Landscape Architect (520-724-6655 or Ellen.Alster@pima.gov) or Jessie Byrd, Pima County Plant Nursery Manager (520-488-8022 or Jessie.Byrd@pima.gov).

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

No.	Qty.	Unit	Description
1	1	AC	Clearing and Grubbing Bld Item 2010001
2	33307	SF	Removal of Bituminous Pavement Bld Item 2020001
2A	12665	SF	Sta 229+63.32, 39.79' Lt. to Sta 232+96.73, 32.98' Lt.
2B	5841	SF	Sta 227+39.89, 10.33' Rt. to Sta 233+26.10, 9.00' Lt.
2C	11919	SF	Sta 227+30.11, 41.33' Rt. to Sta 231+25.03, 41.12' Rt.
2D	230	SF	Sta 233+83.14, 10.00' Rt. to Sta 234+99.97, 10.00' Rt.
2E	2035	SF	Sta 235+29.76, 33.11' Lt. to Sta 237+66.29, 33.28' Lt.
2F	142	SF	Sta 236+83.13, 9.17' Lt. to Sta 237+55.21, 9.17' Lt.
2G	475	SF	Sta 233+00.00, 10.00' Rt. to Sta 237+40.82, 9.80' Rt.
3	1110	LF	Removal of Curb Bld Item 2020001
3A	378	LF	Sta 227+39.89, 8.33' Rt. to Sta 228+06.38, 6.71' Lt.
3B	302	LF	Sta 231+22.51, 8.12' Rt. to Sta 233+26.10, 7.00' Lt.
3C	358	LF	Sta 233+83.14, 8.00' Rt. to Sta 237+40.82, 7.80' Rt.
3D	72	LF	Sta 236+83.13, 7.17' Lt. to Sta 237+55.21, 7.21' Lt.
4	232	SF	Removal of Misc. Concrete Bld Item 2020001
4A	232	SF	Sta 229+32.56, 41.71' Lt. to Sta 229+54.55, 41.38' Lt.
5			(Not Used)
6	1	EA	Relocate Bus Shelter Bld Item 9190005
7	1	LS	Obliiterate Pavement Marking Bld Item 7010261
8	2447	LF	Sawcut Pavement Bld Item 2020001
8A	388	LF	Sta 229+63.32, 39.79' Lt. to Sta 232+96.73, 32.98' Lt.
8B	919	LF	Sta 227+39.89, 10.33' Rt. to Sta 233+26.10, 9.00' Lt.
8C	448	LF	Sta 227+30.11, 41.33' Rt. to Sta 231+25.03, 41.12' Rt.
8D	119	LF	Sta 233+83.14, 10.00' Rt. to Sta 234+99.97, 10.00' Rt.
8E	254	LF	Sta 235+29.76, 33.11' Lt. to Sta 237+66.29, 33.28' Lt.
8F	76	LF	Sta 236+83.13, 9.17' Lt. to Sta 237+55.21, 9.17' Lt.
8G	243	LF	Sta 233+00.00, 10.00' Rt. to Sta 237+40.82, 9.80' Rt.
9	387	LF	Preservation Fencing Bld Item 2010004

Adjustments by Utilities	
10	Relocate Power Pole By TEP (Non Pay Item)
11	Remove Dusk to Dawn Street Light By TEP (Non Pay Item)
12	Adjust Exlst. Water Valve By Ray Water (Non Pay Item)

DEMOLITION PLAN

Call at least two full working days before you begin excavation.

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Scales	Horiz: 1" = 40'	Sheet	DMI of DMI	Page	8 of 42
	Vert: N/A				

Pima County Department of Transportation
 BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
 Project No. CTR-4DRXXL
 TRACS No: 0000 PM PPM 10115 01C

Ana M. Olivares, P.E., Director

Date	By
11/2017	J. DANA
11/2017	J. DANA
11/2017	D. MOSEKE
11/2017	D. MOSEKE

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9	ARIZ.	STP-PPM 0(258) D		--	

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Ana M. Olivares, P.E., Director

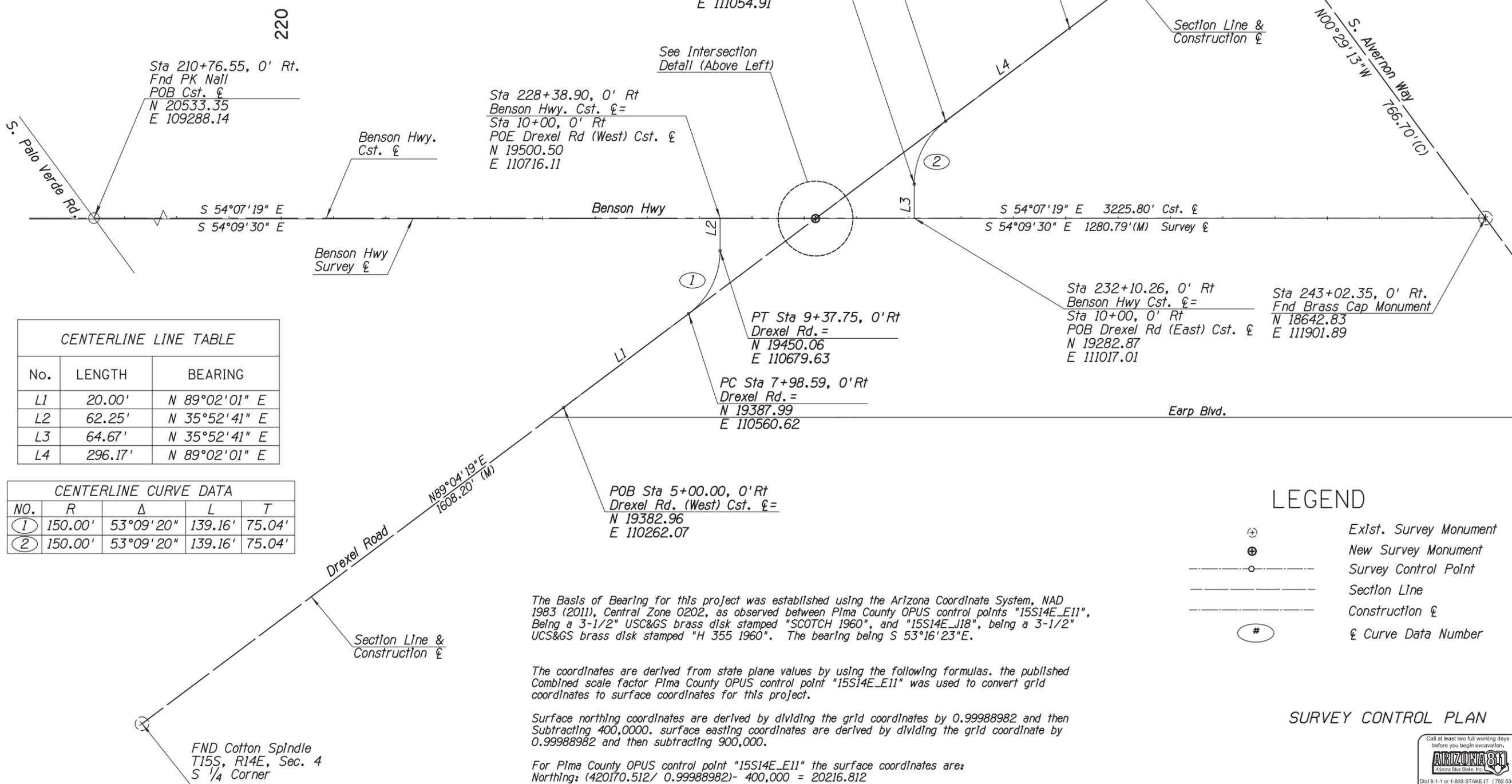
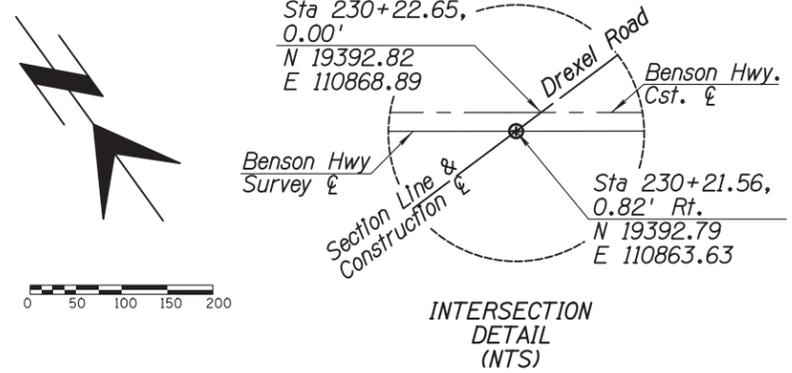
Date	By
11/2017	J. DANA
11/2017	J. DANA
11/2017	D. MOSEKE
11/2017	D. MOSEKE

No.	Revision Description	Engineer	Date

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IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM T015 01C



CENTERLINE LINE TABLE		
No.	LENGTH	BEARING
L1	20.00'	N 89°02'01" E
L2	62.25'	N 35°52'41" E
L3	64.67'	N 35°52'41" E
L4	296.17'	N 89°02'01" E

CENTERLINE CURVE DATA				
NO.	R	Δ	L	T
①	150.00'	53°09'20"	139.16'	75.04'
②	150.00'	53°09'20"	139.16'	75.04'

LEGEND

- \oplus Exst. Survey Monument
- \otimes New Survey Monument
- \circ Survey Control Point
- Section Line
- - - Construction ξ
- # ξ Curve Data Number

The Basis of Bearing for this project was established using the Arizona Coordinate System, NAD 1983 (2011), Central Zone 0202, as observed between Pima County OPUS control points "15S14E_E11", Being a 3-1/2" USC&GS brass disk stamped "SCOTCH 1960", and "15S14E_J18", being a 3-1/2" UCS&GS brass disk stamped "H 355 1960". The bearing being S 53°16'23"E.

The coordinates are derived from state plane values by using the following formulas. the published Combined scale factor Pima County OPUS control point "15S14E_E11" was used to convert grid coordinates to surface coordinates for this project.

Surface northing coordinates are derived by dividing the grid coordinates by 0.99988982 and then Subtracting 400,000. surface easting coordinates are derived by dividing the grid coordinate by 0.99988982 and then subtracting 900,000.

For Pima County OPUS control point "15S14E_E11" the surface coordinates are:
 Northing: (420170.512/ 0.99988982)- 400,000 = 20216.812
 Easting: (1009609.754/ 0.99988982)- 900,000 = 109721.005

SURVEY CONTROL PLAN

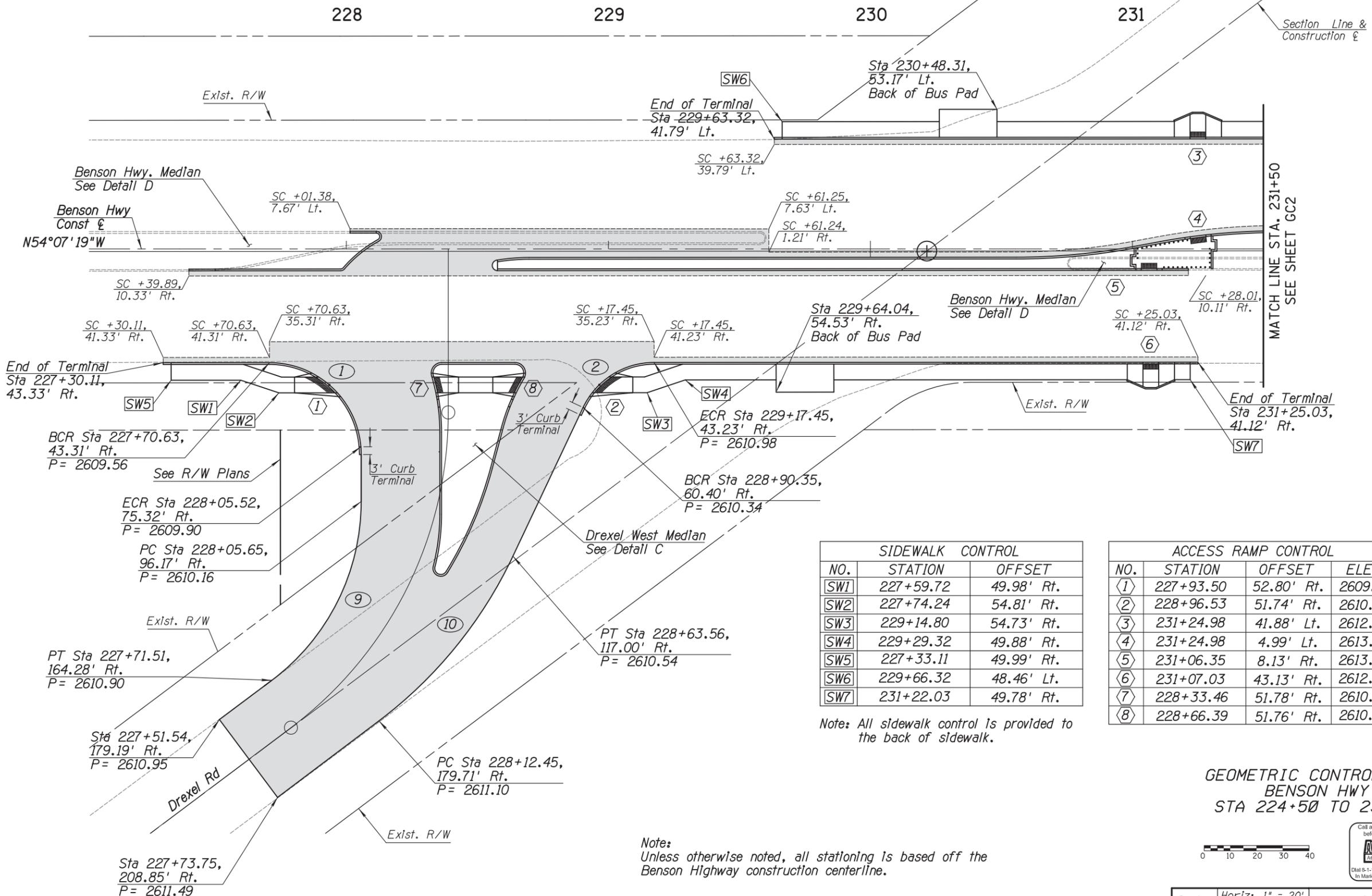




CURVE DATA				
NO.	R	Δ	L	T
①	35.00'	90°02'10"	55.00'	35.02'
②	30.00'	64°37'47"	33.84'	18.98'
⑨	85.00'	53°15'05"	79.00'	42.61'
⑩	169.00'	20°12'59"	59.63'	30.13'

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

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SIDEWALK CONTROL		
NO.	STATION	OFFSET
SW1	227+59.72	49.98' Rt.
SW2	227+74.24	54.81' Rt.
SW3	229+14.80	54.73' Rt.
SW4	229+29.32	49.88' Rt.
SW5	227+33.11	49.99' Rt.
SW6	229+66.32	48.46' Lt.
SW7	231+22.03	49.78' Rt.

ACCESS RAMP CONTROL			
NO.	STATION	OFFSET	ELEV.
①	227+93.50	52.80' Rt.	2609.61
②	228+96.53	51.74' Rt.	2610.65
③	231+24.98	41.88' Lt.	2612.63
④	231+24.98	4.99' Lt.	2613.48
⑤	231+06.35	8.13' Rt.	2613.26
⑥	231+07.03	43.13' Rt.	2612.34
⑦	228+33.46	51.78' Rt.	2610.96
⑧	228+66.39	51.76' Rt.	2610.26

Note: All sidewalk control is provided to the back of sidewalk.

Note: Unless otherwise noted, all stationing is based off the Benson Highway construction centerline.



Ana M. Olivares, P.E., Director

Date	Designed	Checked	Proj. Engr.
11/2017	J. DANA	J. DANA	D. MOSEKE
11/2017			
11/2017			

No.	Revision Description	Engineer	Date

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0000 PM PPM

Ana M. Olivares, P.E., Director

Date	By
11/2017	J. DANA
11/2017	J. DANA
11/2017	D. MOSEKE
11/2017	D. MOSEKE

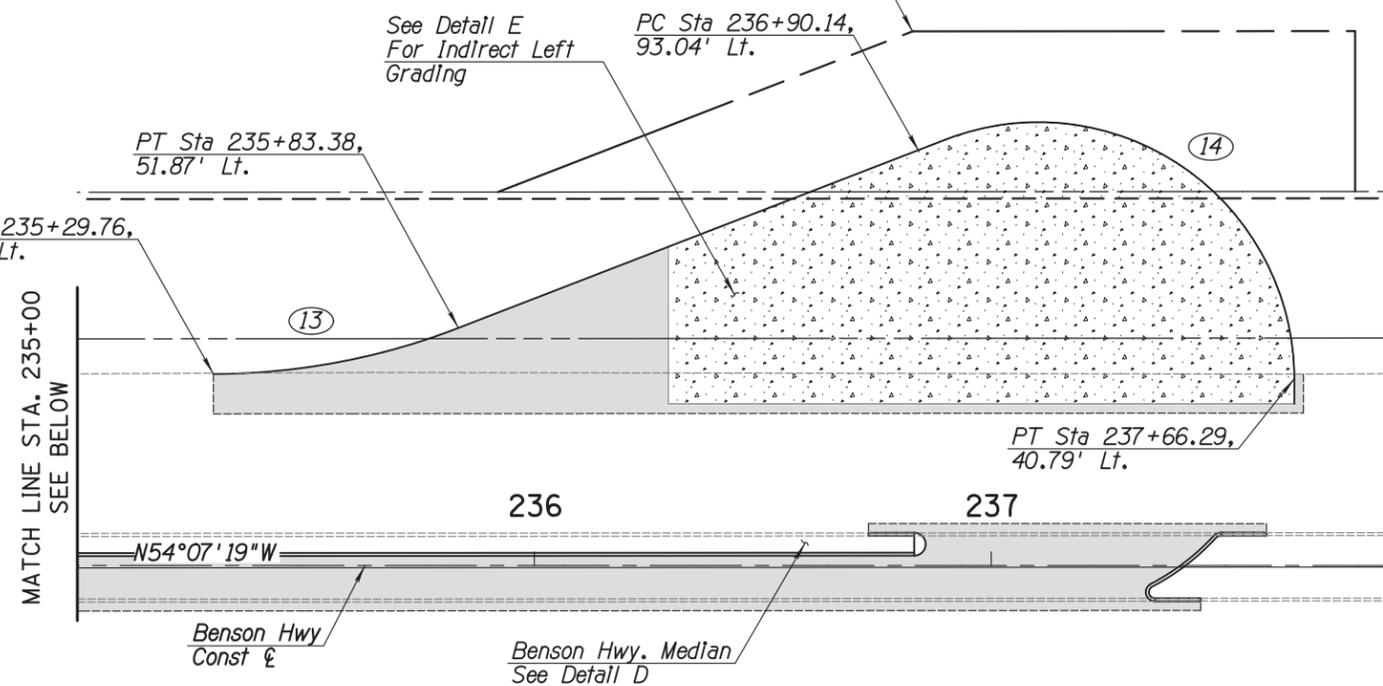
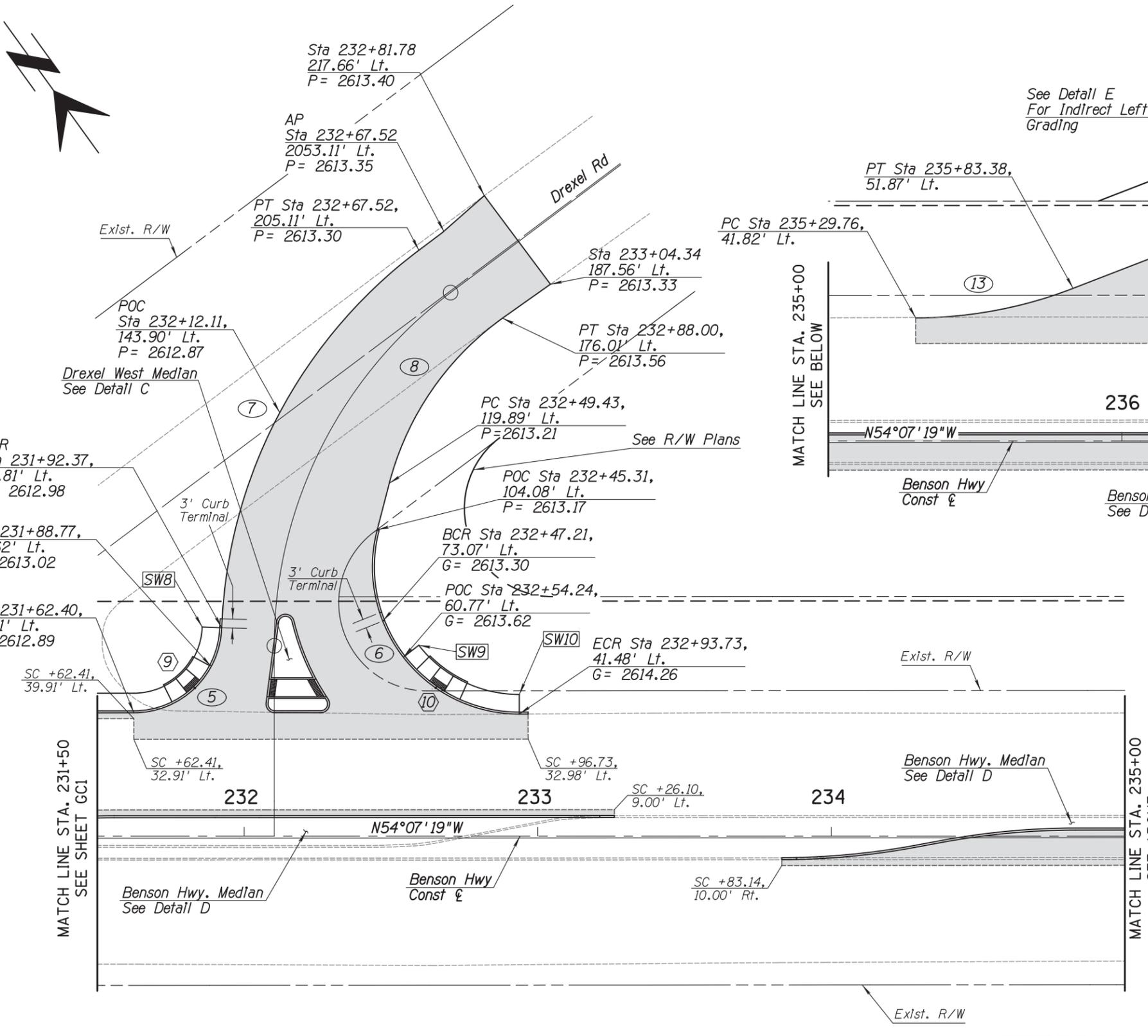
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Project No. CTR-4DRXXL
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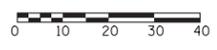
NO.	R	Δ	L	T
5	30.00'	87°52'21"	46.01'	28.91'
6	50.00'	104°37'20"	91.30'	64.72'
7	168.00'	51°03'41"	149.72'	80.24'
8	100.00'	39°48'53"	69.49'	36.21'
13	150.00'	20°57'32"	54.87'	27.75'
14	56.00'	111°05'33"	108.58'	81.62'

NO.	STATION	OFFSET	ELEV.
9	231+83.22	50.31' Lt.	2612.98
10	232+65.25	50.36' Lt.	2613.95

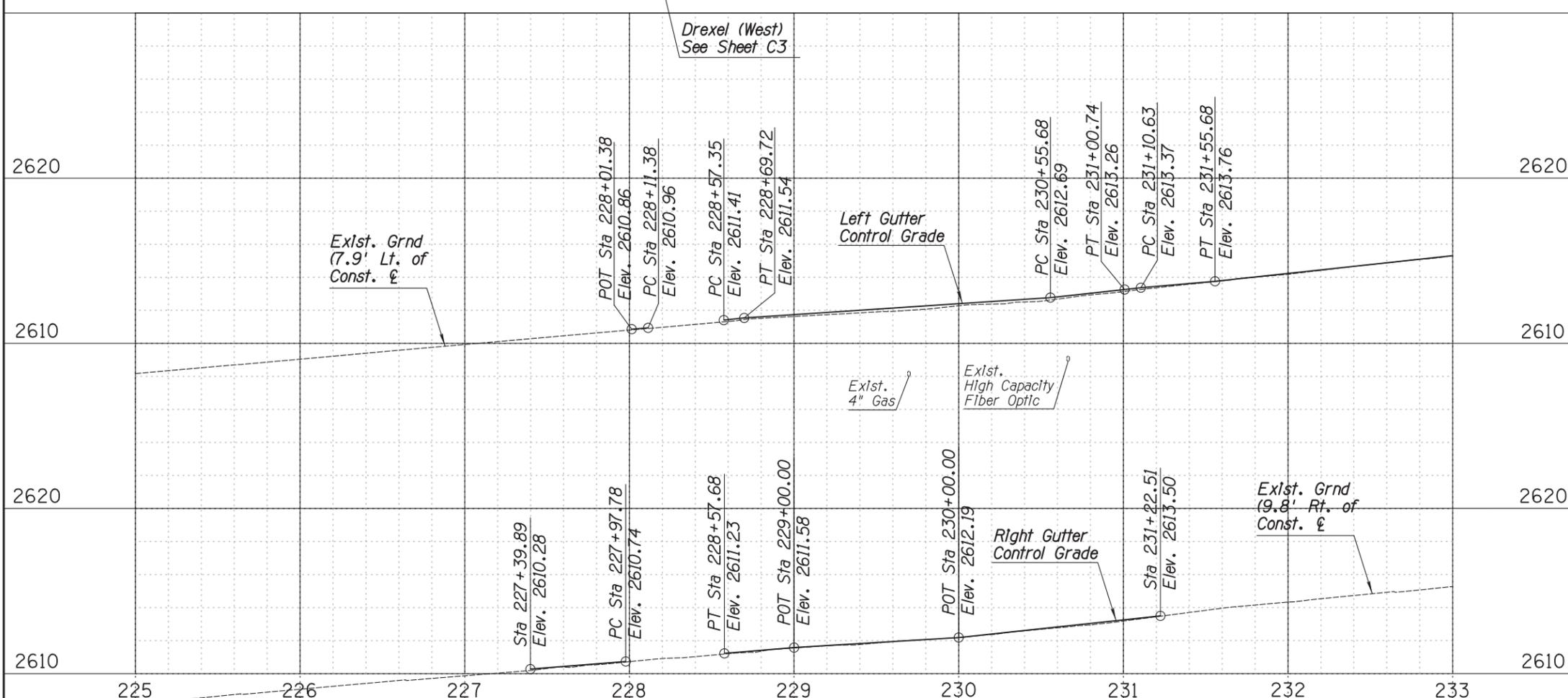
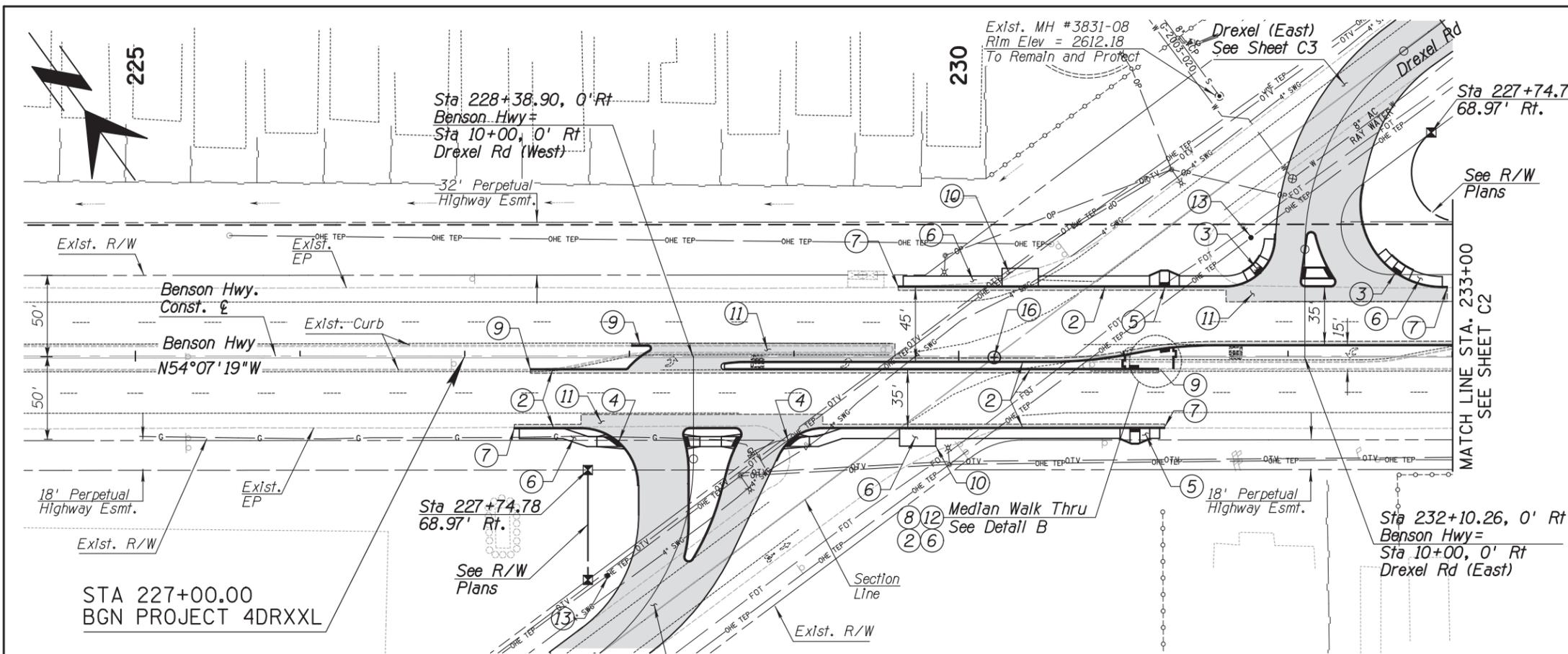
NO.	STATION	OFFSET
SW8	231+85.71	71.05' Lt.
SW9	232+59.50	64.86' Lt.
SW10	232+93.72	48.14' Lt.

Note: All sidewalk control is provided to the back of sidewalk.

**GEOMETRIC CONTROL PLAN
BENSON HWY
STA 224+50 TO 235+00**



Note: Unless otherwise noted, all stationing is based off the Benson Highway construction centerline.



F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D	D	--	

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CONSTRUCTION NOTES

- ② Concrete Curb, Type 2 1288 LF
PAG Std. Dtl. 209
Item # 9080005
- ③ Curb Access Ramp, Type 1 2 EA
PC Std. Dtl. 207
Item # 9080280
- ④ Curb Access Ramp, Type 2 2 EA
PC Std. Dtl. 207
Item # 9080281
- ⑤ Curb Access Ramp, Type 3 2 EA
PC Std. Dtl. 207
Item # 9080282
- ⑥ Concrete Sidewalk 2892 SF
PAG Std. Dtl. 200
Item # 9080201
- ⑦ Curb Terminal Section 4 EA
PAG Std. Dtl. 212
Item # 9080090
- ⑧ Channelizer Posts Miscellaneous Work 29 EA
Item # 9300114
- ⑨ Curb Transition 30 LF
Detail A
Item # 9080105
- ⑩ Concrete Bus Shelter Pad 468 SF
Detail A1
Item # 9080602
- ⑪ Pav't Struct. Sec. No. 1 744 SY
Asphaltic Concrete (No. 2) 125 TONS
Asphaltic Concrete (No. 1) 145 TONS
Aggregate Base 164 CY
- ⑫ Concrete Landing with Detectable Warning Strip 2 EA
Item # 9080292
- ⑬ New Power Pole, By TEP See Project Specifications
- ⑭ Survey Monument, Frame and Cover 1 EA
PC Std. Dtl. 103
Sta 230+21.56, 0.82' Rt.
Item # 9090021

**ROADWAY PLAN
BENSON HWY
STA 224+50 TO 235+00**

Scale: Horiz: 1" = 40'
Vert: 1" = 4'

Sheet C1 of C3 Page 12 of 42

Call at least two full working days before you begin excavation.

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In Maricopa County: (602) 263-1100

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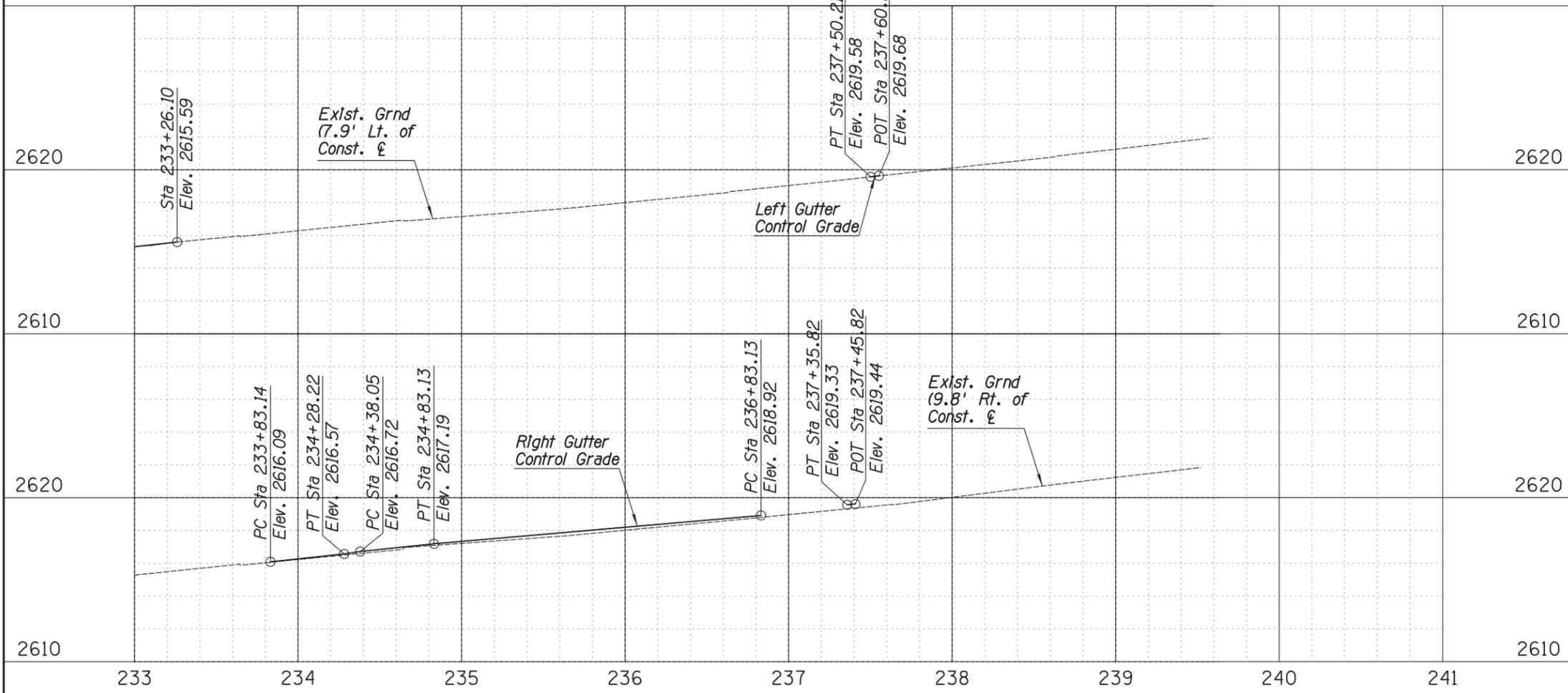
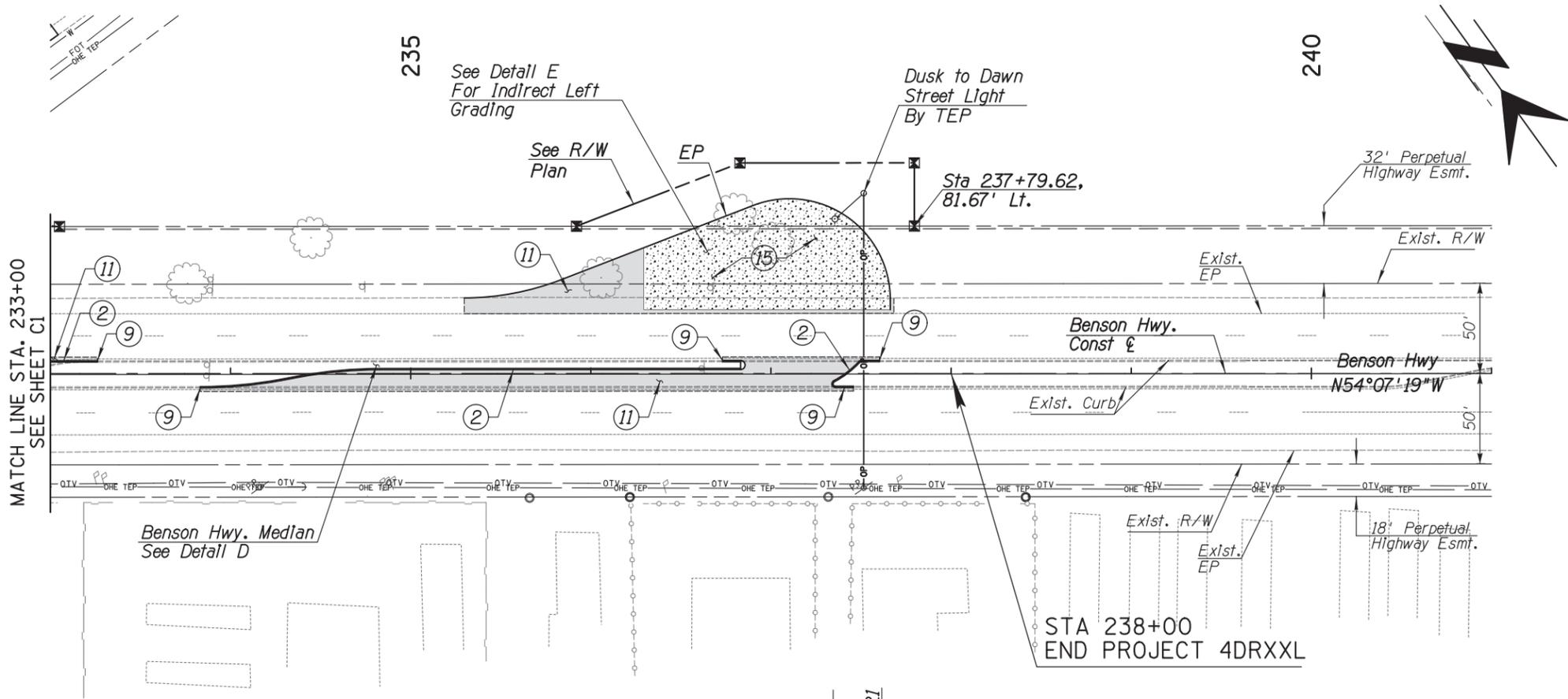
Ana M. Olivares, P.E., Director

Date	Engineer	Revision Description
11/2017	J. DANA	
11/2017	J. DANA	
11/2017	D. MOSEKE	
11/2017	D. MOSEKE	

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9	ARIZ.	STP-PPM 0(258) D		--	

0000 PM PPM

CONSTRUCTION NOTES

- ② Concrete Curb, Type 2
PAG Std. Dtl. 209
Item # 9080005 350 LF
- ⑨ Curb Transition
Detail A
Item # 9080105 50 LF
- ⑪ Pav't Struct. Sec. No. 1
Asphaltic Concrete (No. 2) 122 TONS
Asphaltic Concrete (No. 1) 142 TONS
Aggregate Base 161 CY
- ⑮ Pav't Struct. Sec. No. 3
PCCP 754 SY
Aggregate Base 84 CY

No.	Revision Description	Engineer	Date

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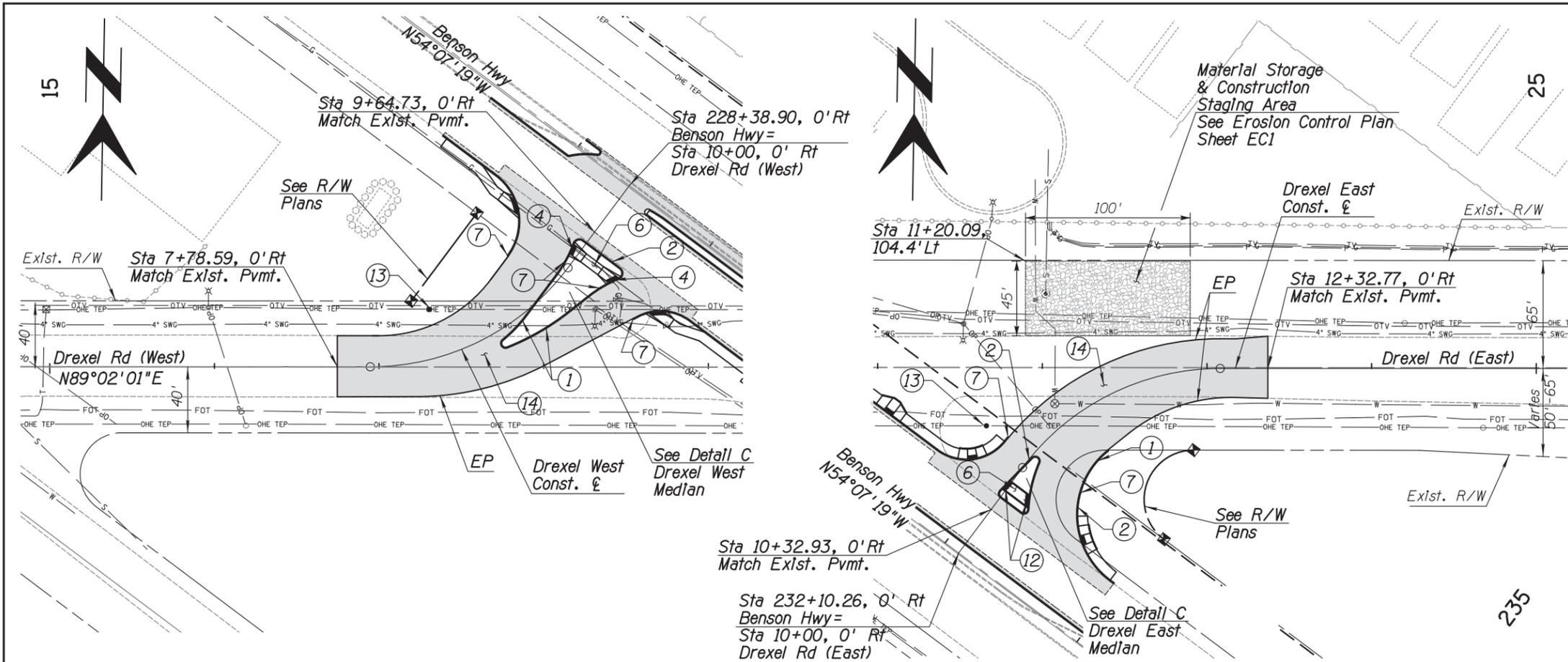
Pima County Department of Transportation

BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM T0115 OIC

**ROADWAY PLAN
BENSON HWY
STA 235+00 TO 241+00**

Scales: Horiz: 1" = 40'
Vert: 1" = 4'

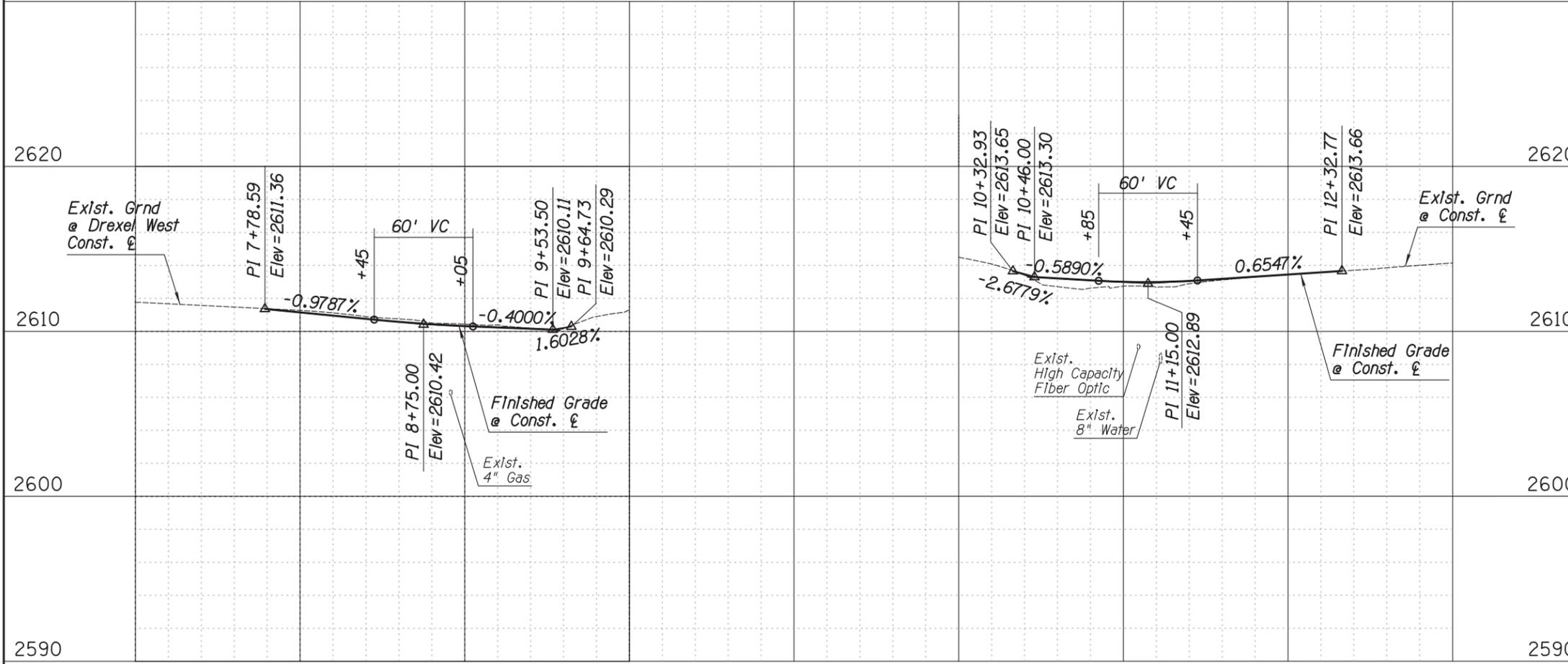
Sheet C2 of C3 Page 13 of 42



F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

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CONSTRUCTION NOTES	
① Concrete Header PAG Std. Dtl. 213 Item # 9080402	166 LF
② Concrete Curb, Type 2 PAG Std. Dtl. 209 Item # 9080005	219 LF
④ Curb Access Ramp, Type 2 PC Std. Dtl. 207 Item # 9080281	2 EA
⑥ Concrete Sidewalk PAG Std. Dtl. 200 Item # 9080201	186 SF
⑦ Curb Terminal Section PAG Std. Dtl. 212 Item # 9080090	6 EA
⑫ Concrete Landing with Detectable Warning Strip Item # 9080292	2 EA
⑬ New Power Pole, By TEP See Project Specifications	
⑭ Pav't Struct. Sec. No. 2 Asphaltic Concrete (No. 2) Asphaltic Concrete (No. 1) Aggregate Base	1941 SY 272 TONS 327 TONS 377 CY



ROADWAY PLAN
DREXEL ROAD

Scales: Horiz: 1" = 40'
Vert: 1" = 4'

Sheet C3 of C3 Page 14 of 42

Call at least two full working days before you begin excavation.

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PAVEMENT MARKING GENERAL NOTES

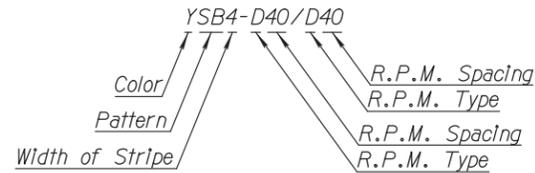
- All equipment/materials and construction shall meet or exceed the requirements Contained In the current Pima Association of Governments (PAG) Standard Specifications and the Standard Details for Public Improvements, the special provisions and the approved plans. All pavement marking shall be Installed In accordance with the PC/COT Pavement Marking Design Manual and applicable amendments.
- The striping contractor shall contact the Pima County pavement marking supervisor (520-740-2624) at least three working days in advance of any pavement marking layout being Installed to schedule Inspection and approval of pavement markings during normal business hours Monday through Friday, State holidays excluded.
- Upon approval of the pavement marking layout, the Pima County pavement marking supervisor will Issue written authorization to contractor to proceed with Installing all pavement markings and associated reflective raised pavement markings.
- The permanent pavement markings may be modified as directed and approved by the Traffic engineer or his designee.
- The design speed for the project Is 55 MPH. The design vehicle Is a WB-62. The posted speed limit for Is 45 mph.
- All lane dimensions are measured from the center of lane line, center of double lane line, or edge of pavement unless otherwise noted.
- The pavement marking drawings are schematic only. the contractor shall follow all dimensions, applicable marking details, and specified Pima County standards when Installing pavement striping, symbols, legends, and markers.
- Painted layout striping shall be 15 mils (0.015") thick, water based paint placed on the final pavement surface with 8 pounds per gallon of AASHTO M 247-13 Type I glass beads with adhesion/moisture proof coating. Painted layout striping shall be Installed within five working days of the final pavement surface being completed.
- Painted symbols and legends shall be applied at the same time as the painted striping, with the exception of bike lane symbols and words (such as stop, ahead, only etc.).
- The final longitudinal striping shall be 90 mil (0.090") thick ribbon extruded thermoplastic reflectorized striping placed over the painted layout striping with a single drop of 10 pounds per 100 square feet of AASHTO M 247-13 Type I glass beads. The final longitudinal striping shall be placed within 21 to 30 calendar days of the final pavement surface being completed. All previously exempted longline markings shall be applied during the final longitudinal striping.
- All final transverse striping including symbols and legends, shall be 90 mils (0.090") alkyd handcart extruded thermoplastic with 10 pounds per 100 square foot of AASHTO M247-13 Type I glass beads.
- The contractor shall be responsible for the layout and Installation of pavement markings on the final surface course following one control line per direction of travel consisting of control points that have been set to no more than 50 feet apart on curve sections and 200 feet in tangent sections where the pavement marking pattern does not change.
- It is the contractor's responsibility to ensure that the final surface course is placed so that the construction joint is no more than one foot offset from the final striping.
- All retroreflective raised pavement markers (RRPMs or RPMs) shall be Installed so that the reflective face of each marker is facing the direction of traffic and is perpendicular to the direction of traffic flow. Type C or Type G pavement markers shall be Installed so that clear (or white) reflective face of each marker is facing approaching traffic and perpendicular to the direction of traffic flow to which it applies.
- All raised pavement markers (RRPMs or RPMs) shall be Installed per the current edition of the PC/COT Pavement Marking Manual and applicable amendments.
- All removal of existing pavement markings shall be accomplished in accordance with Section 701 of the PAG Standard Specifications. painting over existing striping does not constitute approved striping obliteration.
- Unless otherwise noted, all pavement markings shall be Installed by the contractor.

- Upon final inspection a written acceptance or Itemized punch list of missing or unacceptable pavement markings shall be submitted to the contractor and Pima County by the Traffic Engineer or designated representative.
- The contractor shall be responsible for maintaining all striping until project is approved for "construction acceptance" by Pima County (fully open to traffic, all punch list items are completed, and one year warranties begin).
- The PC/COT Pavement Marking Manual is available online.
- In areas of existing pavement that will receive new pavement markings shall first have the surface thoroughly cleaned by pressure washing or other approved methods. Cost associated to cleaning the surface shall be considered incidental to the cost of the pavement marking application.

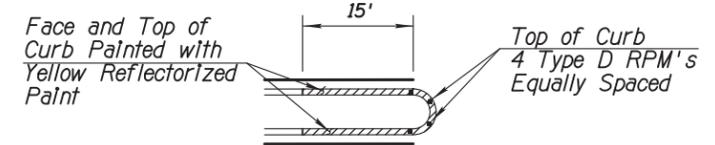
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

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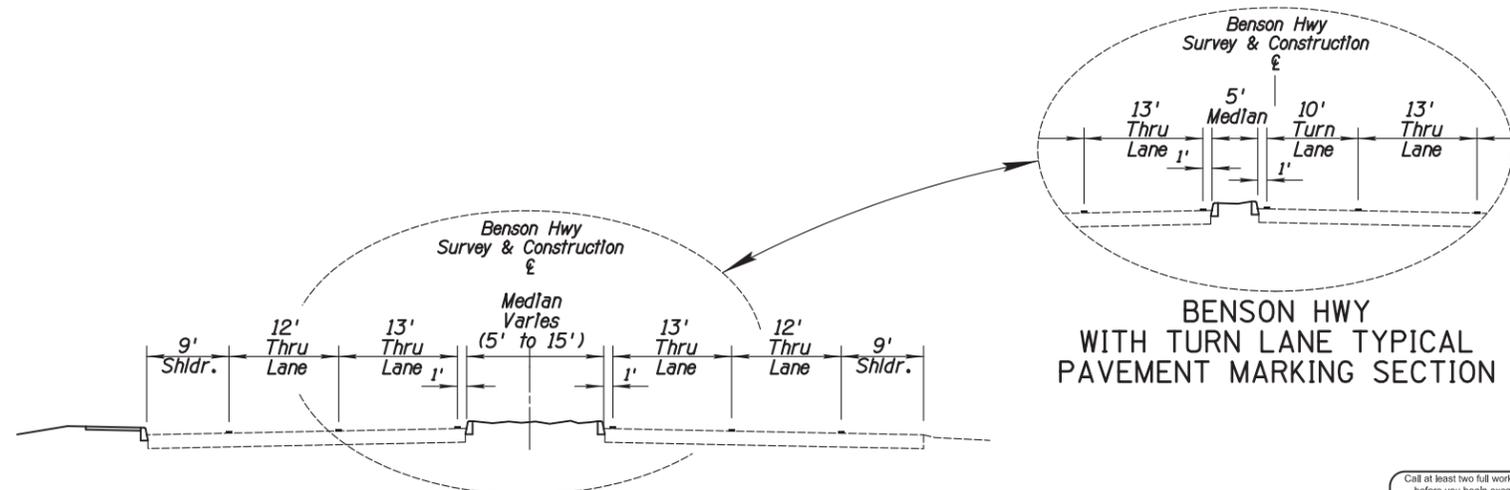
PAVEMENT MARKING QUANTITIES			
Bid Item	Item	Unit	Quantity
7040005	Pavement Marking (White Extruded Thermoplastic) (0.090")	L. Ft.	8919
7040006	Pavement Marking (Yellow Thermoplastic) (0.090")	L. Ft.	706
7040030	Pavement Legend (Preformed, Type 1, Single Arrow)	Each	4
7050060	Pavement Legend (Preformed, Type 1, Legend Only)	Each	2
7060020	Pavement Marker, Reflective, (Type C, Clear, Red)	Each	36
7060025	Pavement Marker, Reflective, (Type D, Yellow, Two Way)	Each	38
7060030	Pavement Marker, Reflective, (Type G, Clear, One Way)	Each	22
7080001	Painted Pavement Marking	L. Ft.	9625
7080010	Painted Pavement Symbol or Legend	Each	6



LINE STYLE DESIGNATION



MEDIAN END TREATMENT ADOT DTL. M1



BENSON HWY TYPICAL PAVEMENT MARKING SECTION

Pima County Department of Transportation

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

Designed	J. DANA	Date	11/2017
Drawn	J. DANA	Checked	11/2017
Checked	D. MOSEKE	Prof. Engr.	11/2017

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BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM T015 01C



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9	ARIZ.	STP-PPM 0(258) D		--	

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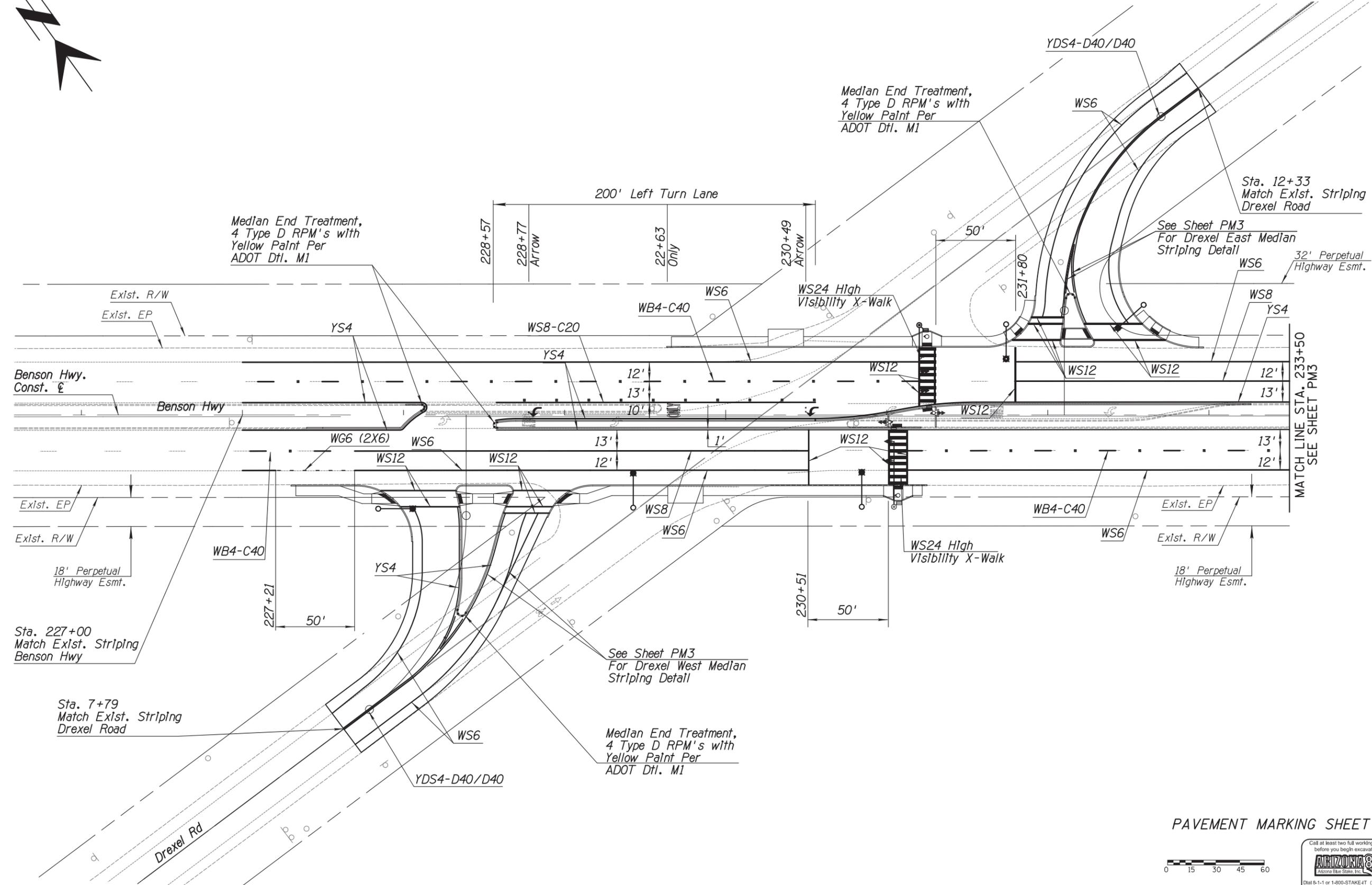


226

228

230

232



Date	Engineer
11/2017	J. DANA
11/2017	J. DANA
11/2017	D. MOSEKE
11/2017	D. MOSEKE

No.	Revision Description	Engineer	Date

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PAVEMENT MARKING SHEET



Scales	Horiz: 1" = 30' Vert: N/A	Sheet PM2 of PM3	Page 16 of 42
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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
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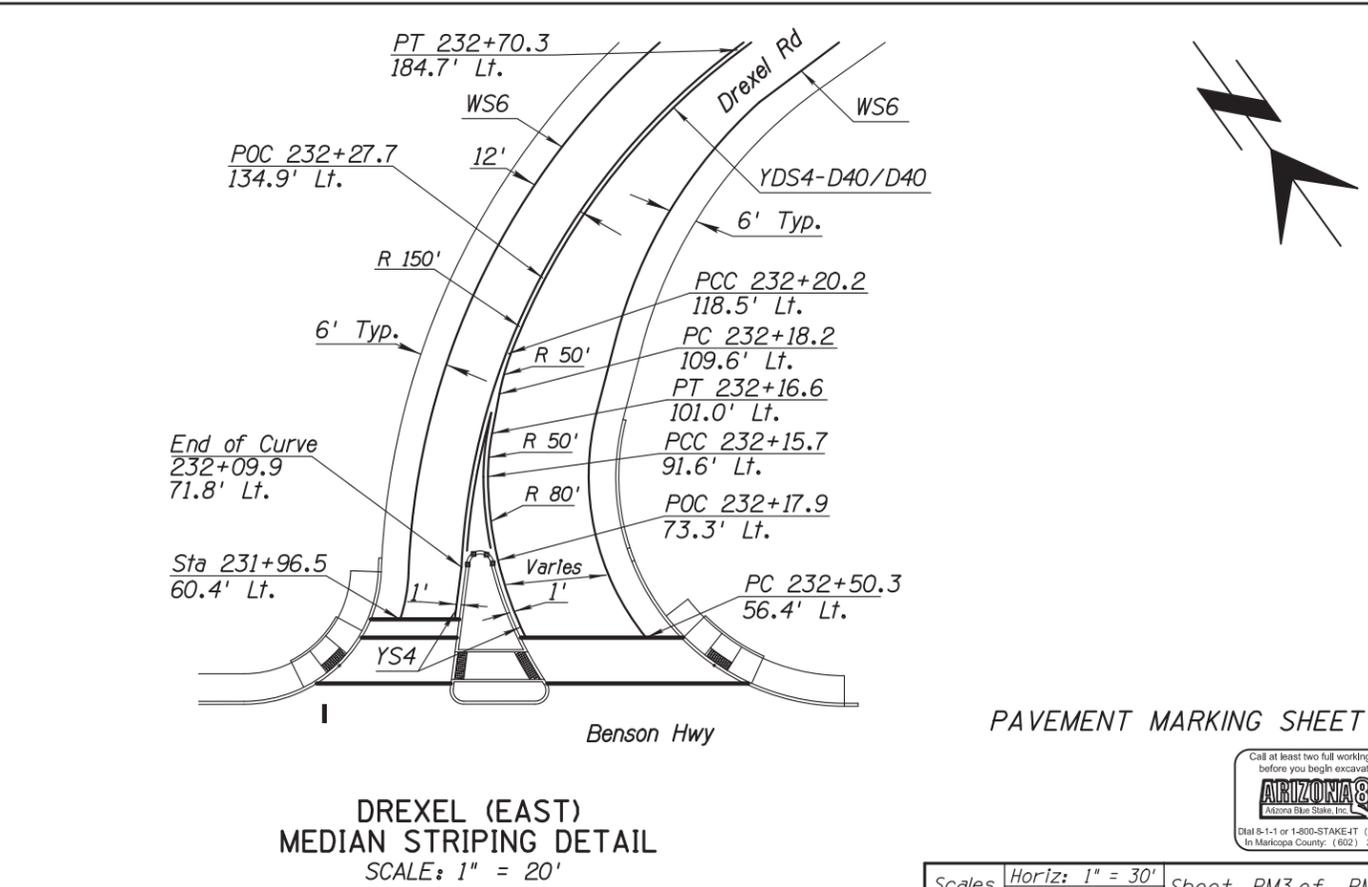
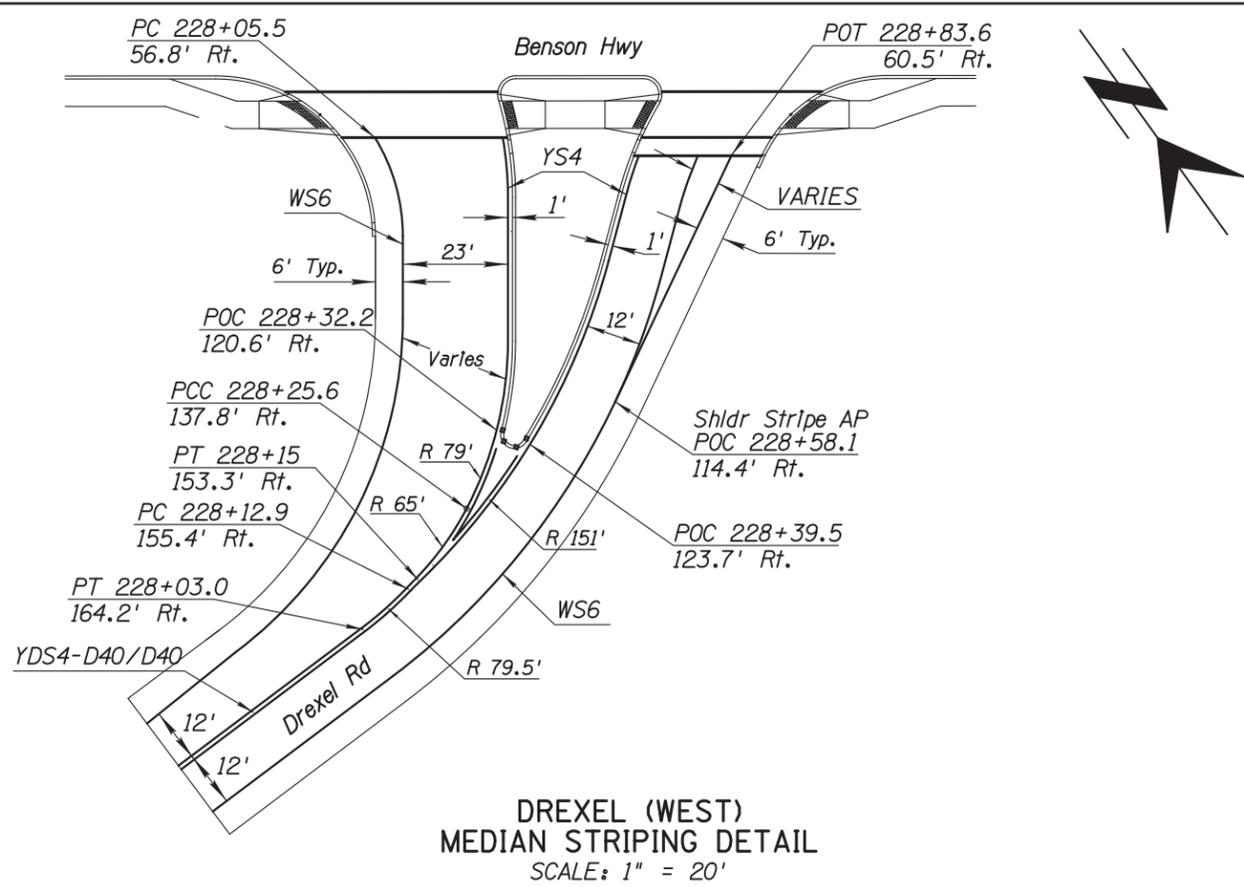
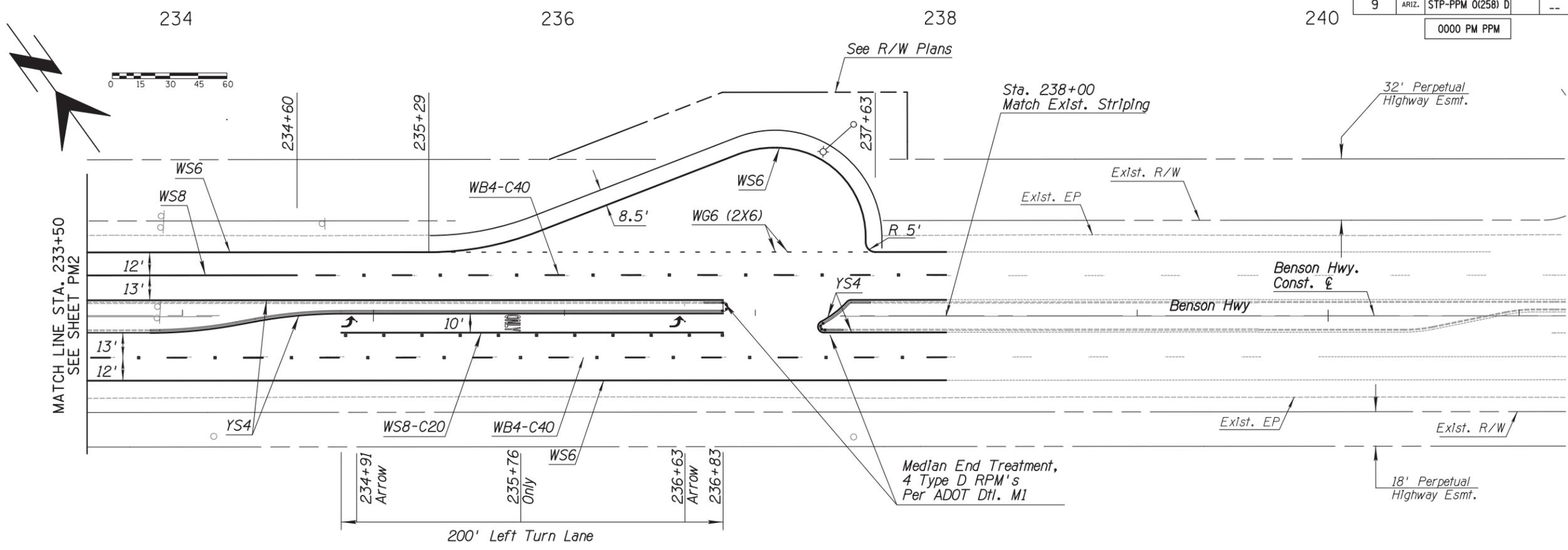
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11/2017	J. DANA	J. DANA	D. MOSEKE
11/2017			

No.	Revision Description	Engineer	Date

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PAVEMENT MARKING SHEET



LIGHTING AND SIGNAL GENERAL NOTES

- All equipment/materials and construction shall meet or exceed the requirements contained in the current PAG Standard Specifications for Public Improvements and Standard Details for Public Improvements, the special provisions and the approved plans.
- The exact location of each new pole foundation, pull box, or electric service pedestal foundation shall be approved by the Traffic Engineer prior to installation.
- The top of the pole foundation shall be level with the surrounding finished grade. If the slope or shoulder drops off from finished grade, the contractor shall grade around pole foundation. The top of the foundation shall extend no more than four (4) inches above surrounding finished grade.
- Spread foundations, if required by field inspection or as identified on the approved plans, shall be constructed in accordance with PAG Std. Dtl. T-433. The contractor shall verify pole bolt pattern & dimensions required for the project. Pole locations of such foundations shall be identified by the Inspector.
- Pole foundations shall maintain a minimum of six (6) feet horizontal distance from existing water mains, measured from outside of the foundation wall to the outside of pipe wall.
- Pull boxes are shown on plans as diagrammatic representations. Final location of pull box is adjacent to pole only at locations preapproved by the Inspector.
- Pull boxes shall not be installed within concrete curb access ramps or landings. In addition, any pull boxes installed behind curbs shall be installed between the curb and the proposed / future sidewalk or beyond the proposed / future sidewalk. An exception to this note would be pull boxes installed in a median. Any pull boxes installed along an uncurbed roadway shall be installed ten (10) feet from edge of pavement to edge of pull box where right-of-way permits or as far from pavement as practical when there is insufficient right-of-way to provide the ten (10) foot offset.
- A three quarter (3/4) inch by 10 foot ground rod shall be installed in the No. 7 pull box (with extension) adjacent to the controller cabinet. A 3/4 inch by 10 foot ground rod shall be installed in the No. 3 1/2 pull box at the end of each street light circuit. Two ground rod clamps shall be furnished and installed for each ground rod for clamping the ground wire.
- Only new conduit and cable shall be installed.
- The conduit locations shown on plan are diagrammatic representations only. Contractor shall install conduit to avoid conflicts. All conduits shall be installed within existing right-of-way unless otherwise approved.
- Conduit installed under existing paved driveways, that are not scheduled to be reconstructed as part of this project, shall be installed by means of boring.
- All conduit shall be installed a minimum of 36 inches to top of conduit, below finished grade. Except when conduits cross culverts or are routed along bridge and wing walls. Any conduit installed less than 36 inches deep shall be encased in concrete per PAG Standard 732-3.01.
- All roadway street light system conduit shall be PVC Schedule 40 unless noted otherwise. Conduit adjacent to curb shall be installed six (6) inches back of curb and 36 inches below top of curb.
- All conduits shall be cleaned by compressed air. A properly sized conduit piston or mandrel shall be pulled through the conduit prior to cable installation.
- Conduits for future use shall be sealed with a properly sized tapered polyethylene duct plug at each termination point. The #8 bare bond wire shall be looped through the plug pull tab and two feet of slack doubled back into the conduit.
- Avoid placing underground conduit over existing water mains and maintain 36 inches minimum horizontal separation, typical for all conduit installations throughout project.
- All poles shall be wired and grounded per PAG Std. Dtl. T-107, with the exception of the wire type. Refer to note 18 for wire size and type unless otherwise noted on the plans.
- Two #10 awg-xhhw conductors shall be installed from each luminaire to the concrete pull box adjacent to the pole foundation, leaving three feet of slack for each conductor (measured from the top of the pull box) in the pull box. Route four conductors to the luminaire with the photoelectric cell. An in-line fuse shall be installed for each luminaire in the associated pull box.
- The street lighting photoelectric cell shall be mounted on the luminaire pole closest to the street lighting controller or, if a controller is not required, the luminaire pole closest to the meter pedestal.

- The Tucson Electric Power Company construction department (918-8300) shall be contacted by the contractor to verify the location of the electric service connection at the Intersection. The contractor shall be responsible for excavating and backfilling the trench and installing any necessary sleeves under sidewalks or driveways in which the electric service cable in conduit (CIC) is to be installed by TEP.
 - A minimum of ten (10) foot radial clearance shall be maintained between all metallic parts and overhead electric conductors while installing poles and luminaires. Blue Stake shall be contacted if contractor requires overhead protection.
 - A minimum horizontal separation of 24 inches shall be maintained from all gas lines.
 - Upon commencement of work, traffic control devices shall be posted and maintained by the contractor until such a time as the work is complete. All traffic control devices shall be in accordance with the most recent edition of the Manual of Uniform Traffic Control Devices and approved by the Engineer.
- Responsibilities:
- The contractor shall obtain all permits required by all governmental agencies.
 - The contractor shall contact Blue Stake at 1-800-782-5348, a minimum of two (2) working days prior to any excavation.
 - The contractor shall maintain and allow access to all Pima County Waste Water manholes located within the ROW. Access must be maintained 24 hours per day, seven days per week. No electrical utilities may be placed within six feet of a force main.
 - The location of utilities shown on the plans is approximate. The contractor is responsible for verifying / potholing underground utilities in the vicinity of the proposed pole foundations. The contractor is also responsible for verifying clearance between overhead lines and street lighting equipment prior to installation of poles and foundations.
 - Any equipment and/or utilities within the project limits that are damaged or destroyed by the contractor shall be repaired or replaced at the sole expense of the contractor.
 - The contractor shall supply and install the following equipment and materials as specified in the plans: steel pole anchor bolts (with nuts and washers), concrete pole foundations with reinforcement (where specified), concrete pull boxes, electrical conduit, ground rods and connectors, bare bond wire and all other conductors, poles, mast arms, luminaires, photocells, electric service pedestal(s) and concrete foundation(s), and all other appurtenances necessary for the installation and operation of the street lights, except as modified in the plans.
 - The contractor shall provide all traffic and overhead Metro Pedestrian crossing signs. The contractor shall provide all mounting hardware for traffic signs and Metro Pedestrian crossing signs. The mounting hardware required for the installation of a Metro Pedestrian crossing sign is a Pelco Bracket (AS-304-48-PNC), a Pelco Gusseted Tube (AB-0390-94-PNC), and four Pelco 4" sign clamps (AB-0502-04-PNC) or approved equals.

LIGHTING LEGEND

- Conduit Run
- Luminaire
- Luminaire w/ Photocell Mount on Mast Arm
- ◇ PAG Pull Box No. 3 1/2
- PAG Pull Box No. 7
- ⊠ PAG Pull Box No. 7 w/ Extension
- PAG Meter Pedestal w/ Foundation
- ◀▶ PAG Traffic Control Cabinet w/ Foundation
- ⏏ Uninterrupted Power Supply
- Ⓐ Pole Number
- ⑤ Conduit Number

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

0000 PM PPM

Ana M. Olivares, P.E., Director

Date	Designed	Checked	Proj. Engr.
11/2017	J. DANA	J. DANA	D. MOSEKE
11/2017			
11/2017			

No.	Revision Description	Engineer	Date

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IMPROVEMENTS
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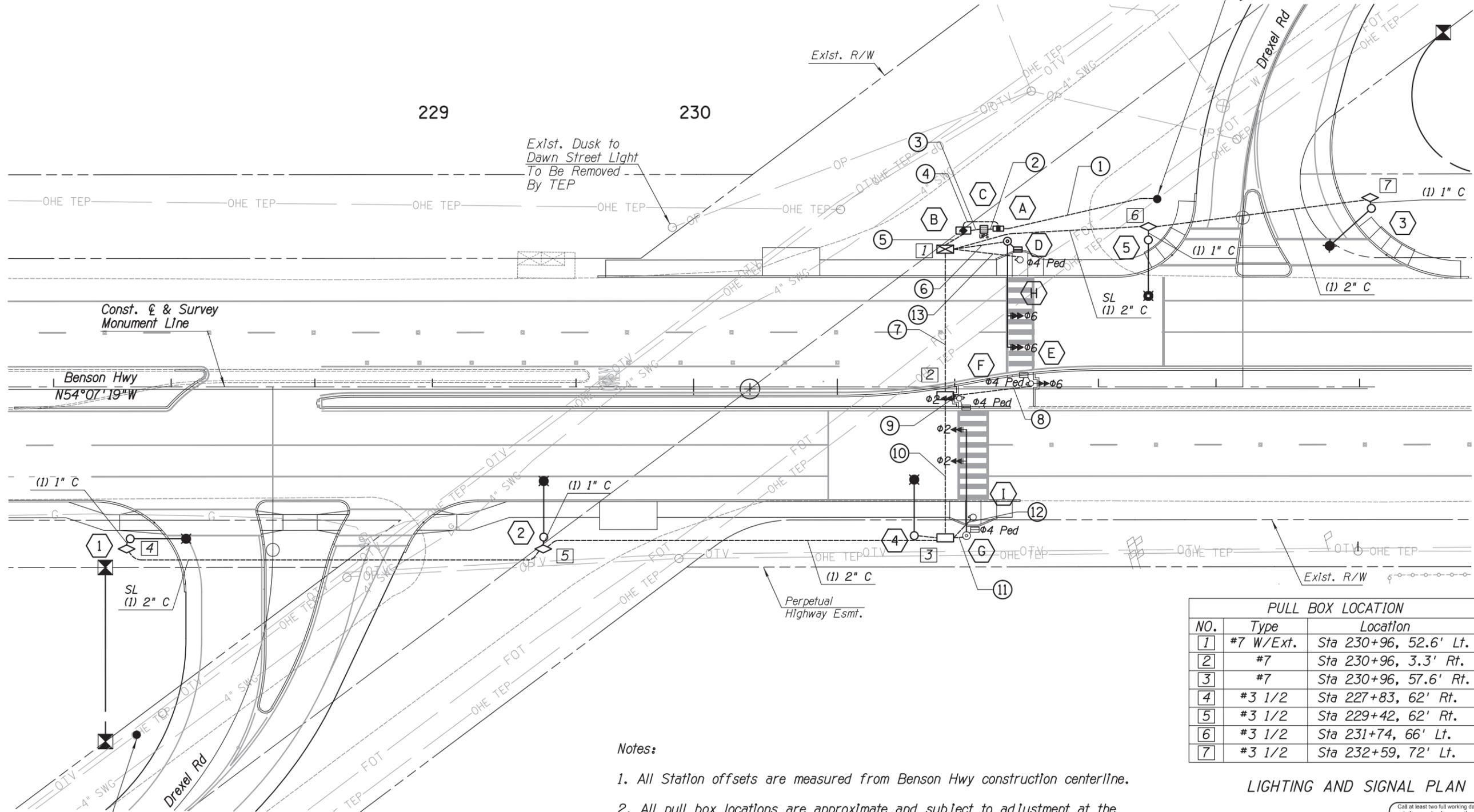
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NO.	Location	Location Elev.	Foundation Type	Base Type	Pole Type	Luminaire Type	Luminaire Wattage	Circuit Voltage	Meter Pedestal Cabinet
1	Sta 227+84, 58' Rt.	2609.60	Type 2B (T-445)	Standard	Type 2B (T-445)	LED	250W HPS Eqv.	120 VAC	A
2	Sta 229+14, 58' Rt.	2610.90	Type 2B (T-445)	Standard	Type 2B (T-445)	LED	250W HPS Eqv.	120 VAC	A
3	Sta 232+60, 68' Lt.	2613.90	Type 2B (T-445)	Standard	Type 2B (T-445)	LED	250W HPS Eqv.	120 VAC	A
4	Sta 230+84, 50' Rt.	2612.42	Type 2B (T-445)	Standard	Type 2B (T-445)	LED	250W HPS Eqv.	120 VAC	A
5	Sta 231+74, 56' Rt.	2612.30	Type 2B (T-445)	Standard	Type 2B (T-445)	LED	250W HPS Eqv.	120 VAC	A

231



Approximate Location of New Power Pole W/ Power Drop By TEP



NO.	Type	Location
1	#7 W/Ext.	Sta 230+96, 52.6' Lt.
2	#7	Sta 230+96, 3.3' Rt.
3	#7	Sta 230+96, 57.6' Rt.
4	#3 1/2	Sta 227+83, 62' Rt.
5	#3 1/2	Sta 229+42, 62' Rt.
6	#3 1/2	Sta 231+74, 66' Lt.
7	#3 1/2	Sta 232+59, 72' Lt.

LIGHTING AND SIGNAL PLAN

Notes:

- All Station offsets are measured from Benson Hwy construction centerline.
- All pull box locations are approximate and subject to adjustment at the direction of the Traffic Engineer.
- Street light pole #5 to have a luminaire with photocell.



Ana M. Olivares, P.E., Director

Date	By
11/2017	J. DANA
11/2017	J. DANA
11/2017	D. MOSEKE
11/2017	D. MOSEKE
11/2017	D. MOSEKE

No.	Revision Description	Engineer	Date

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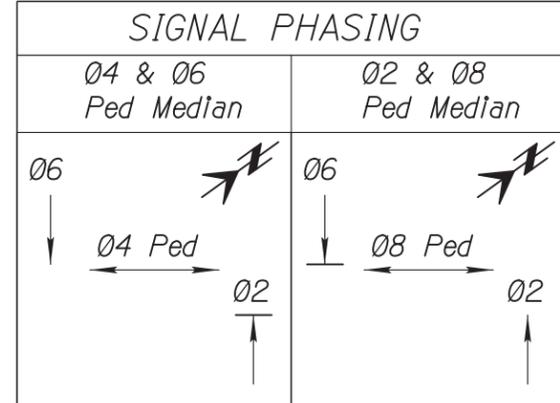
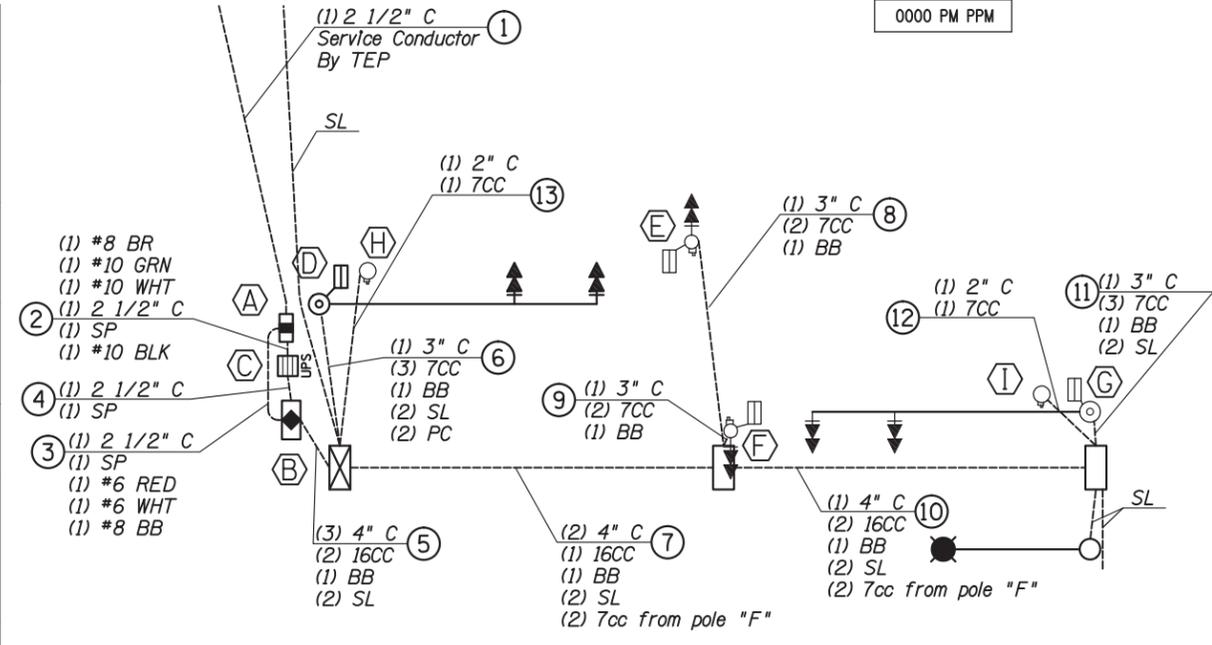
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 Project No. CTR-4DRXXL
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POLE & EQUIPMENT SCHEDULE

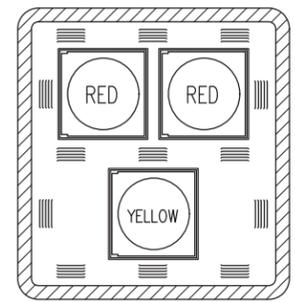
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D	D	--	

TRAFFIC SIGNAL CONTROLLER				REMARKS	LOCATION	STANDARDS				
CABINET	TYPE	CONTROLLER	AUX. CONTROLLER							
	MYERS 125A 120/240V MUEG16-125WTB	METERED SERVICE PEDISTAL W/2 SINGLE POLE 50 AMP CIRCUIT BREAKERS	(1) 30 AMP SINGLE POLE CIRCUIT BREAKER FOR BEACONS. (1) 50 AMP SINGLE POLE CIRCUIT BREAKER FOR LUMINAIRES	SHARE FOUNDATION W/UPS, FOUNDATION SIZE IS 66" L X 36" W X 24" D	STA 231+16 OFF 61' LT.	T 308				
	NEMA TS2-1998 TYPE IV TS2 SIZE 6 DETECTOR RACK CONFIGURATION 1	NEMA TS-2 TYPE 1 ECONOLITE MODEL COBALT OR EQUAL	PER PCDOT STORED SPECIFICATION 734		STA 231+04 OFF 60' LT.	T 203 T 312				
	MYERS BC1280 W/MP2000E ICBMSNMPCARD & 4-ALPHA CELL 195 GXL BATTERIES				STA 231+11 OFF 60' LT.					
POLE		MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
NUMBER	TYPE	SIG	LUM	MTG	FACE					
	J	40'	-	(2) ASTRO- BRAC (1) TYPE XI	(2) MOD F (1) MH	-	-	INSTALL (1) DETAIL A SIGN BETWEEN POLE AND INSIDE SIGNAL HEAD. INSTALL (1) R10-23 SIGN BETWEEN HEADS ON MASTARM.	STA 231+20.1 OFF 55.6' LT.	T 410 T 909 T 417 T 418 T 801 T 802 T 803 T 804
	A 15'	-	-	(1) TYPE XI	(1) MOD F (1) MH	-	TYPE 1 2" ADA PPB & PPB SIGN R10-4b(L)	17" FRANGIBLE BASE	STA 231+29.2 OFF 1.3' LT.	T 401 T 804 T 417 T 902 T 418 T 909 T 801 T 1101 T 802 T 1104 T 803
	A 15'	-	-	(1) TYPE XI	(1) MOD F (1) MH	-	TYPE 1 2" ADA PPB & PPB SIGN R10-4b(L)	17" FRANGIBLE BASE	STA 231+01.7 OFF 4.4' RT.	T 401 T 804 T 417 T 902 T 418 T 909 T 801 T 1101 T 802 T 1104 T 803
	J	40'	-	(2) ASTRO- BRAC (1) TYPE XI	(2) MOD F (1) MH	-	-	INSTALL (1) DETAIL A SIGN BETWEEN POLE AND INSIDE SIGNAL HEAD. INSTALL (1) R10-23 SIGN BETWEEN HEADS ON MASTARM.	STA 231+04.5 OFF 56.8' RT.	T 410 T 909 T 417 T 418 T 801 T 802 T 803 T 804
	TYPE I PED PUSH BUTTON POST	-	-	-	-	-	(1) TYPE 1 W/2" ADA ACCESSIBLE PUSH BUTTON R10-4b(R)	-	STA 231+25.0 OFF 48.5' RT.	T 419 T 1101 T 1104
	TYPE I PED PUSH BUTTON POST	-	-	-	-	-	(1) TYPE 1 W/2" ADA ACCESSIBLE PUSH BUTTON R10-4b(L)	-	STA 231+07.2 OFF 49.8' RT.	T 419 T 1101 T 1104



HIGH VOLTAGE CIRCUIT	
(X) _" C	Number & Size of Conduit
(X)	Number of Cables and Conductors
# CC	#14 AWG IMSA Cable
SL	Street Lighting, #10 AWG XHHW
PC	Photo Cell, #10 AWG XHHW
BB	Bare Bond, #8, Solid
SP	Signal Power (1) #6 AWG THW (White) (1) #6 AWG THW (Red) (1) #10 AWG THW (White) (1) #10 AWG THW (Green) (1) #10 AWG THW (Black)

- Notes:**
- Astro-Brac mounting assemblies shall be Pelco Astro-Brac part number AS-0116, or approved equal.
 - Pedestrian push button to be at 42 Inches above finish grade to center of push button.
 - Furnish and install pedestrian push button signs R10-3b(L) and R10-3b(R) as shown on Section 2B.51 of the 2009 MUTCD.
 - The welded tenon at the end of the mast arm, shall be located 6 Inches from the tip of the mast arm at the center of the tenon.



Note:
 1. 5" border with 1/2" reinforcing bends top, sides and bottom with 1" yellow retroreflective border.
MODIFIED F

POLE SCHEDULE, CONDUIT, AND CONDUCTOR SHEET



Ana M. Olivares, P.E., Director

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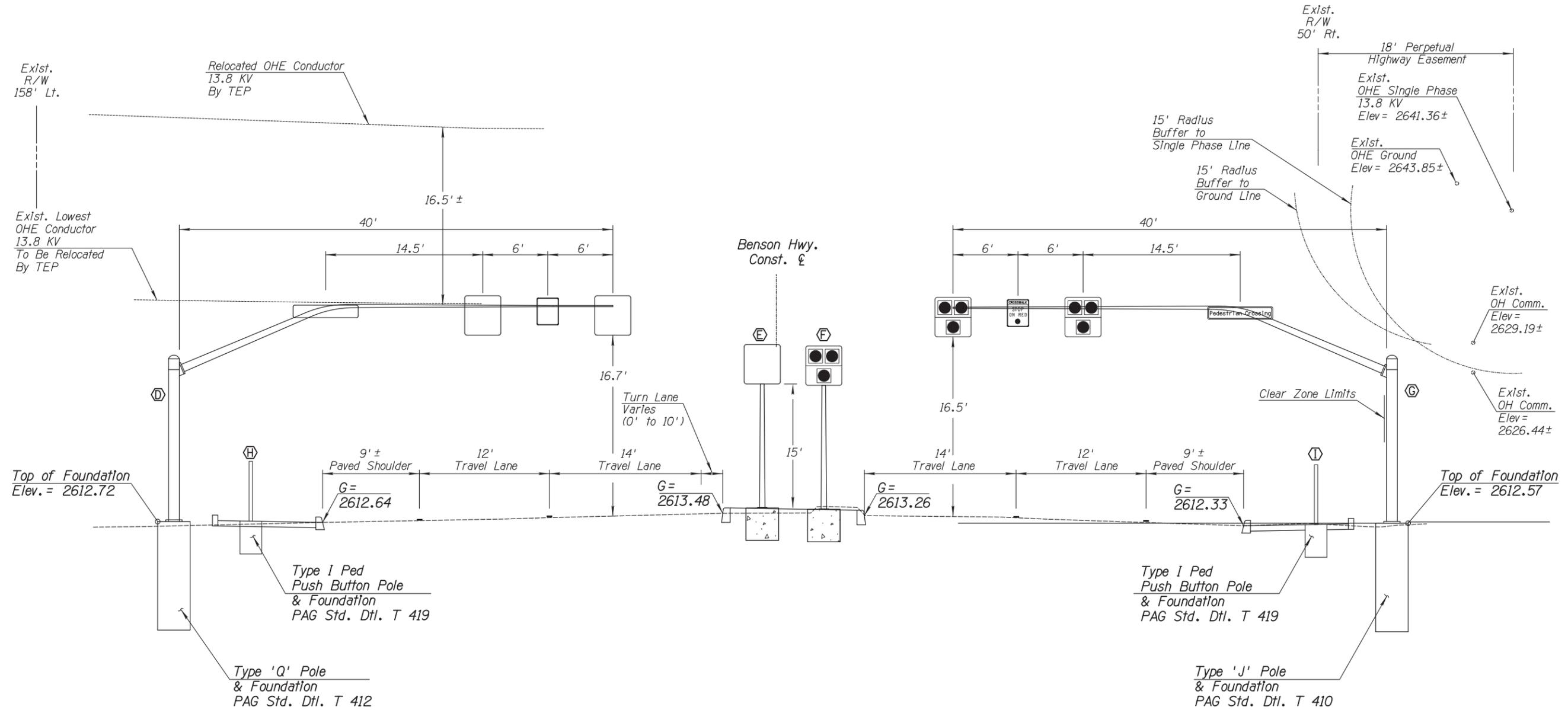
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Notes:

CAUTION: The contractor shall follow the National Electric Safety Code when installing new signal and street light poles in the vicinity of the existing overhead electrical system. For bidding purposes the contractor shall assume the existing overhead conductors are located as they are displayed in the section on this sheet.

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Date	Designed	Checked	Proj. Engr.
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11/2017			
11/2017			

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**TRAFFIC SIGNAL
ELEVATION SHEET**



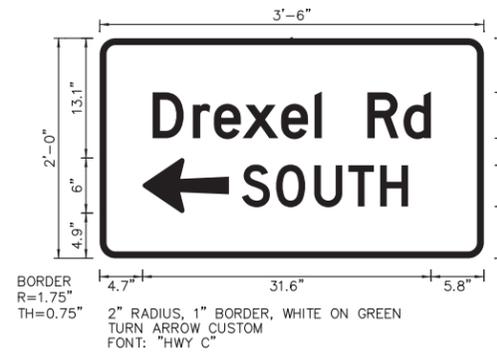
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SIGNING GENERAL NOTES

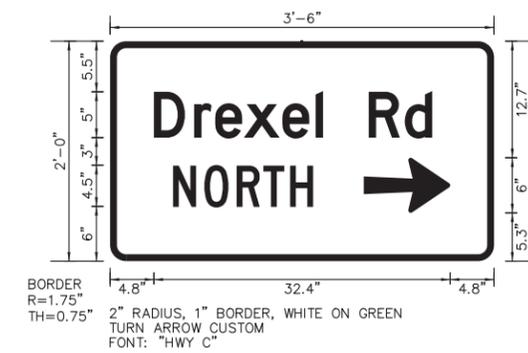
- All equipment, materials and construction shall meet or exceed the requirements contained in the current City of Tucson/Pima County (COT/PC) Standard Specifications and the Standard Details for Public Improvements, the special provisions and the approved plans.
- All signs shall be in compliance with the latest edition of the Manual on Uniform Traffic Control Devices, the latest edition of the Pima County/City of Tucson Traffic Signing Design Manual, the PAG Standard Specifications, the Pima County supplemental specifications, and any required special provisions and these plans.
- Signs may be modified and locations adjusted to fit conditions at the discretion of the Traffic Engineer.
- The design speed for Benson Highway is 55 MPH. The posted speed limit is 45 MPH. Sign placement is based on the posted speed limit.
- Post lengths indicated on sign summary sheets are approximate. The contractor shall verify actual post lengths.
- All perforated posts shall be installed in a concrete foundation, unless otherwise directed by the Traffic Engineer.
- All sign station locations are approximate. The contractor shall verify actual sign locations with the Traffic Engineer prior to the installation of all signs.
- The contractor shall be responsible for coordinating all work with Arizona 811 for installing all traffic signs in the field and for maintaining all signing until project is approved for "Construction Acceptance" by Pima County (fully open to traffic, all punch list items are completed, and one year warranties begin).
- All signs shall have Type XI sheeting or equivalent. All warning signs having yellow backgrounds shall use fluorescent yellow sheeting. All school signs shall use fluorescent yellow/green sheeting. All ground mounted signs shall have anti graffiti coating applied to sign face, 3M#1160 film or equivalent.
- A 3"x2" pressure sensitive, UV resistant label indicating the sign manufacturer's name and date of manufacture shall be placed in the upper right corner of the back of all signs except street name signs at the time of installation. Street name signs shall include a sign identification decal as shown on Pima County Signing Detail 9-22A.
- All new signs shall have 0.080 gauge, radius corner, aluminum backing unless otherwise noted.
- Prior to disturbing any traffic signs, a sign condition inventory of all existing signing shall be conducted by the contractor and provided to the sign shop supervisor (520-724-2630). Inventory shall indicate current sign location and condition, including any existing damage or deficiencies.
- Any signs and posts being re-used on this project shall be stockpiled in a manner to avoid damage and maintain the integrity of the signs. Safe storage of stockpile and payment for damage to stockpile shall be the responsibility of the contractor.
- All signs and posts not being re-used on the project shall be dismantled, stacked and delivered to the owner (City or County) by the contractor. The contractor is responsible for the safe storage at the construction site until delivery, and the safe unloading of the salvaged material. Notification of delivery shall be made at least two working days prior to delivery. Pima County Sign Shop 1313 S. Mission Road (520-724-2630). No Friday deliveries.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

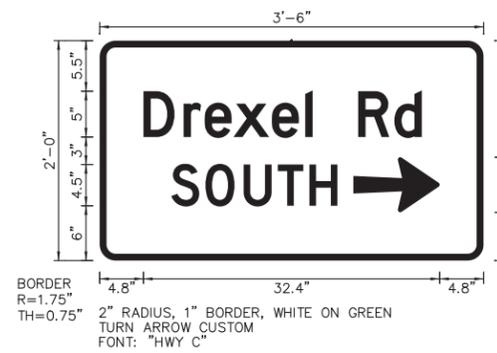
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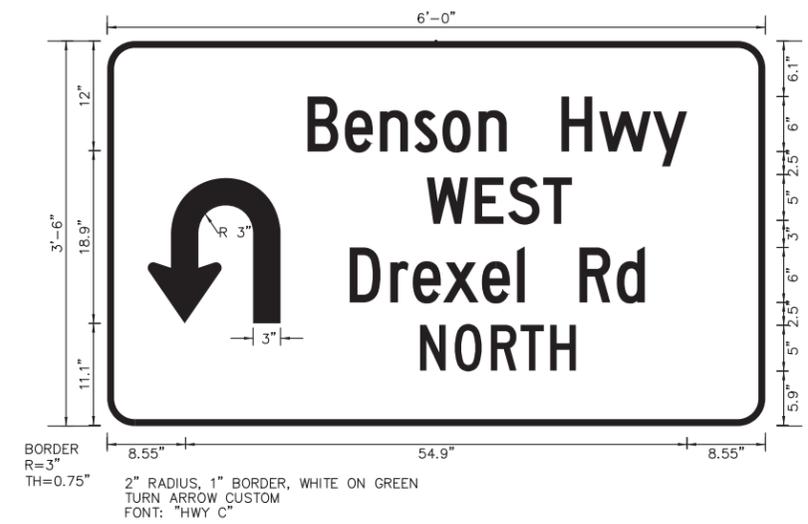
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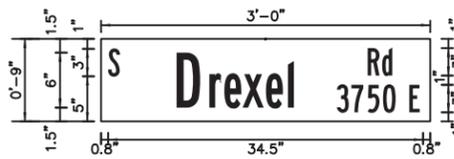
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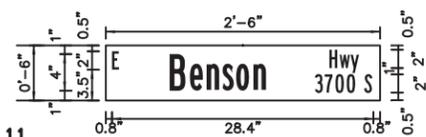
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SPECIALITY SIGN No. 37

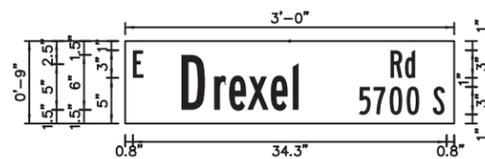


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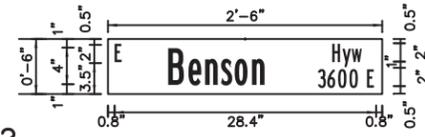


WHITE ON GREEN
FONT: "HWY B"

D-3 SIGN No. 11



WHITE ON GREEN
FONT: "HWY B"



WHITE ON GREEN
FONT: "HWY B"

D-3 SIGN No. 22



Pima County Department of Transportation

Ana M. Olivares, P.E., Director

Date	Engineer	Revision Description	No.
11/2017	J. DANA		
11/2017	J. DANA		
11/2017	D. MOSEKE		
11/2017	D. MOSEKE		
	ProJ. Engr.		

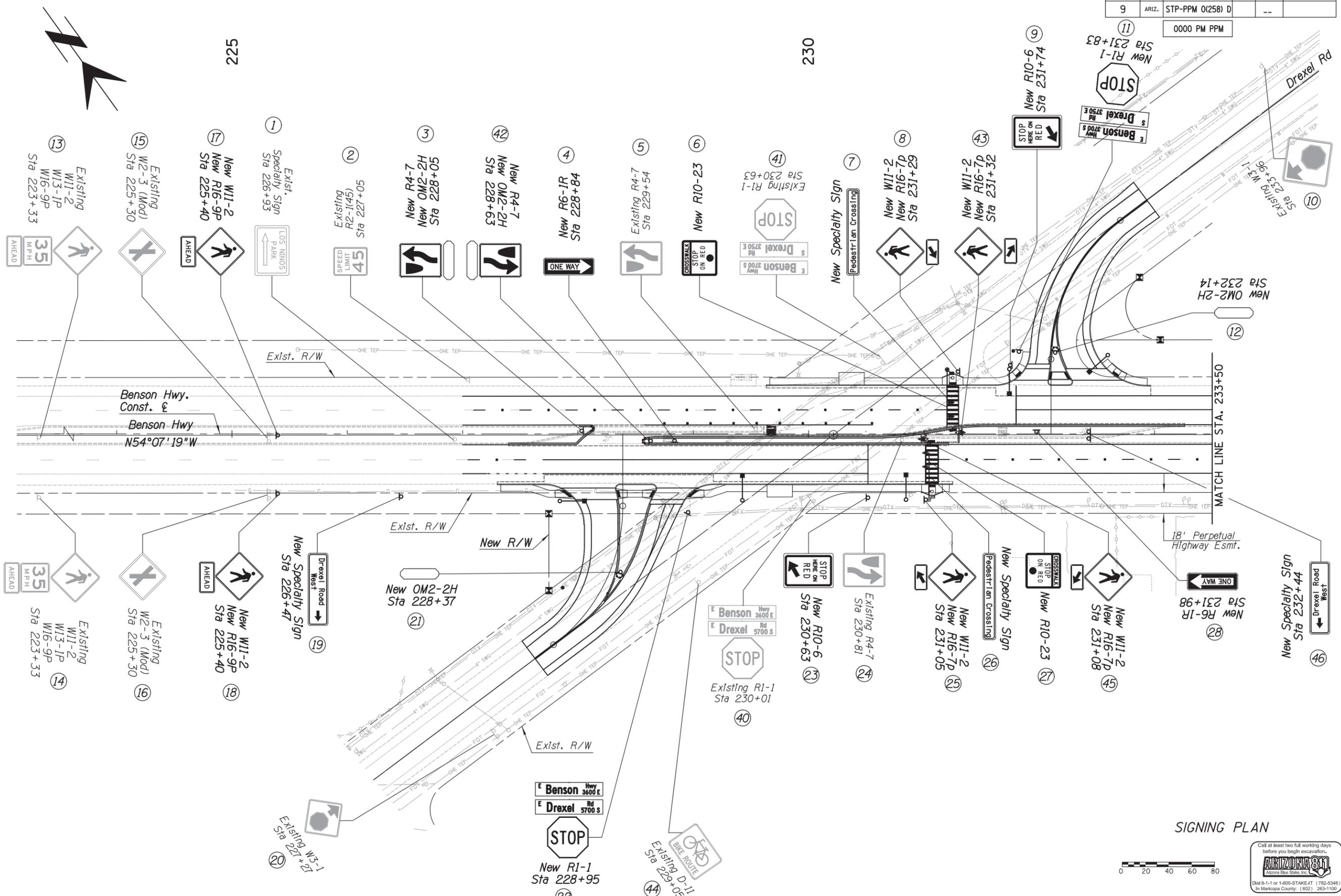
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TUCSON, AZ 85711
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BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM TO15 OIC

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D	D	--	

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SIGNING PLAN

Scales	Horiz: 1" = 40'	Vert: N/A	Sheet SN2 of SN6	Page 23 of 42
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Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

Designed	J. DANA	Date	11/2017
Drawn	J. DANA	Checked	11/2017
Checked	D. MOSEKE	Proj. Engr.	11/2017

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Pima County Department of Transportation
BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM T0115 OIC

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SIGN SUMMARY

Sign No.	Sign Code	Offset (ft.)	Work					Panel					Ground Mounted					Remarks			
			New	Existing				Width (Inches)	Height (Inches)	Area (Sq. Ft.)	Type	Min. Sheeting Type	Bld Item Number	Posts			New Slip Bases		Retrofit Slip Bases	Stringer Type	
				Remain	Remove	Replace Panel	Relocate							See Remarks	Post Type	Foundations					Total Length
17	W11-2 R16-9P	0' RT	X					PEDESTRIAN WALKING SYMBOL AHEAD	36 24	36 12	9 2	RWM RWM	XI XI	6080014 6080014	2S 2	22					
18	W11-2 R16-9P	53' RT	X					PEDESTRIAN WALKING SYMBOL AHEAD	36 24	36 12	9 2	RWM RWM	XI XI	6080014 6080014	2S 2	22					
19	SP	53' RT	X				X	DREXEL RD WEST	42	24	7	F-DA	XI	6080014	2S	2	22				SPECIALTY SIGN, SEE SHEET SNI, SIGN 19
20	W3-1	259' RT		X				STOP AHEAD													
21	R4-7	118' RT	X					OBJECT MARKER	24	6	1	RWM	XI	6080014	2S	1	6				
22	R1-1 D3 D3	63' RT	X X X				X X	STOP STREET NAME SIGN (BENSON) STREET NAME SIGN (DREXEL)	36 36 30	36 9 6	9 2 2	RWM RWM RWM	XI XI XI	6080014 6080014 6080014	2S 2 2	24					SEE SHEET SNI, SIGN 22 SEE SHEET SNI, SIGN 22
23	R10-6	55' RT	X					STOP HERE ON RED	24	36	6	RWM	XI	6080014	2S	1	11				
24	R4-7	5' RT		X				KEEP RIGHT													
25	W11-2 R16-7P	55' RT	X X				X	PEDESTRIAN WALKING SYMBOL ARROW	36 24	36 12	9 2	RWM RWM	XI XI	6080014 6080014							MOUNT TO SIGNAL POLE.
26	SP01-02	20' RT	X				X	PEDESTRIAN CROSSING	16	72	9	F-DA	XI	6080014							MOUNT ON SIGNAL MAST ARM.
27	R10-23	34' RT	X				X	CROSSWALK- STOP ON RED	48	48	16	RWM	XI	6080014							MOUNT ON SIGNAL MAST ARM.
28	R6-1R	2' RT	X					ONE WAY	36	12	3	RWM	XI	6080014	2S	1	7				
29	W11-2 R16-9P	0' RT	X X				X	PEDESTRIAN WALKING SYMBOL AHEAD	36 24	36 12	9 2	RWM RWM	XI XI	6080014 6080014	2S 2	22					MOUNT TO SIGNAL POLE.
30	W11-2 R16-9P	50' LT	X X				X	PEDESTRIAN WALKING SYMBOL AHEAD	36 24	36 12	9 2	RWM RWM	XI XI	6080014 6080014	2S 2	22					MOUNT TO LIGHT POLE.
31	W2-3 (MOD)	0' RT		X				INTERSECTING ROADWAY													
32	W2-3 (MOD)	50' LT		X				INTERSECTING ROADWAY													
33	SP	52' LT	X				X	DREXEL RD EAST	42	24	7	F-DA	XI	6080014							SPECIALTY SIGN, SEE SHEET SNI, SIGN 33.

Notes:

1. Signing General Notes, see Sheet PM1
2. The Engineer shall verify post lengths and elevations.
3. The Engineer may shift a sign in order to achieve a more desirable location.
4. Quantities are approximate and for contractor's information only.
5. Height of Post Includes 2.5' Foundation.

Panel Types:

RWM: Regulatory, Warning, or Marker
 F-DA: Flat-sheet aluminum with direct applied or silk-screened characters
 F-Dem: Flat-sheet aluminum with demountable characters
 Ext: Aluminum extrusions
 Incr: Aluminum sheet increment
 Over: Overhead (New overlaid extrusions)

Stringer Types:

P: Square-tube post
 T: T-section (WT 3x6)

Ana M. Olivares, P.E., Director

Date	11/2017
Designed	J. DANA
Drawn	J. DANA
Checked	D. MOSEKE
Proj. Engr.	

No.	Revision Description	Engineer	Date

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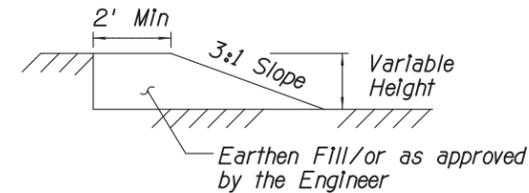
BENSON HIGHWAY AT DREXEL ROAD
 IMPROVEMENTS
 Project No. CTR-4DRXXL
 TRACS No: 0000 PM PPM T0115 01C

TRAFFIC CONTROL GENERAL NOTES:

1. The contractor shall prepare an alternative traffic control plan for any work activity in accordance with Section 701 of the Specifications. All traffic control plans are subject to the approval of the Engineer before beginning construction. The contractor shall submit its traffic control plan at least 2 weeks in advance of construction.
2. All existing signs in conflict with the construction signs shall be removed, relocated, or covered in place, as directed by the Engineer. The contractor shall store and reinstall items which have been removed or relocated in a manner approved by the Engineer.
3. The retroreflective sheeting on all construction signs shall meet criteria established in Section 1007 of ADOT Specifications.
4. All signing, pavement markings, barrier, barricades, and street closures shall be in accordance with Section 701 of ADOT Specifications, the Pavement Marking and Signing Manual (2002), the Manual On Uniform Traffic Control Devices (MUTCD) (2009 Edition), the ADOT Supplement to the MUTCD (2009 edition), and the ADOT Traffic Control Design Guidelines (TCDG) (2011 Edition).
5. Barricades and other devices shall have sandbags placed on their bases, as appropriate to prevent them from being knocked or blown over.
6. All signs shown on the plans be on spring mounted posts. All spring mounted signs may be installed on spring stands one foot above the pavement.
7. All construction signs shall have black letters on an orange background, except as otherwise noted.
8. Flags shall be mounted on top of all construction signs except the "END ROAD WORK THANK YOU" sign. Type A flashing warning lights shall be required on all nighttime construction signs except the "END ROAD WORK THANK YOU" sign.
9. Type C steady burning yellow light shall be mounted on every vertical panel used for channelling.
10. Maintain a minimum of 11 foot travel lanes during all times.
11. Construction signs shall not be displayed to traffic more than 24 hours prior to the actual start of construction. These signs may be installed sooner but they must be covered or turned away from traffic. The cost for covering or turning them shall be considered part of the sign installation cost. No further compensation will be made. These signs shall be removed within 24 hours after the completion of construction activities.
12. Temporary striping shall be standard reflectorized paint.
13. Speed limit signing is preliminary and is subject to review and change by the Engineer as dictated by field conditions.
14. The roadway surface shall be cleaned of excess dirt at the end of each day.
15. The contractor shall clean the roadway surface to the satisfaction of the Engineer, by sweeping and air-jet blowing, immediately prior to the placement of all temporary pavement markings. The roadway surface shall be dry.
16. It shall be the responsibility of the contractor to make periodic inspections (daily minimum) of the traffic control devices and to reset, correct or make changes as needed.
17. Any signs damaged by the contractor shall be replaced by the contractor at no additional cost to the County.
18. For nighttime work, a Type "C" steady-burning yellow light shall be mounted on every drum, barricade, or vertical panel in tapers, and on alternating drums, barricades, or vertical panels in tangents.
29. During nighttime the contractor shall not utilize cones for channelization devices unless otherwise directed by the engineer.
20. An adequate number of Type 3 barricades shall be placed across each roadway to be closed. A 60-inch by 36-inch "ROAD CLOSED" sign shall be attached to one of the Type 3 barricades closing the roadway. A Type "A" flashing warning light shall be mounted on each end of each Type 3 barricade during nighttime activities.

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Variable Depth Fillet Detail

NOTE:

Use only when the height of the drop-off alongside the pavement is greater than 2 inches, the condition is left overnight, and the roadway is open to traffic. No measurement or direct payment will be provided for constructing and removing the wedge, the cost being considered as included in the price of contract items.

TRAFFIC CONTROL NOTES

Ana M. Olivares, P.E., Director

Date	Designed	Checked	Proj. Engr.
11/2017	J. DANA	J. DANA	D. MOSEKE
11/2017			
11/2017			

No.	Revision Description	Engineer	Date

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LANDSCAPE SCHEDULE

SYM./KEY BOTANICAL NAME	BOTANICAL NAME	SIZE	QTY	BID TAB NUMBER
TREES (NURSERY STOCK)				
	<i>Acacia constricta</i> Whitethorn Acacia	24" Treepot	3	8062024
	<i>Chilopsis linearis</i> Desert Willow	15 gal. 24" Treepot	10 7	8061004/8061005 8062024
	<i>Prosopis pubescens</i> Screwbean Mesquite	24" Treepot	4	8062024
	<i>Prosopis velutina</i> Velvet Mesquite	15 gal. 24" Treepot	5 2	8061004/8061005 8062024
ACCENTS / CACTUS (NURSERY STOCK)				
	<i>Carnegiea gigantea</i> Saguaro	5 Gal.	11	8061607
	<i>Cylindropuntia leptocaulis</i> Christmas Cholla	5 Gal.	9	8061610
	<i>Ferocactus wislizenii</i> Fishhook Barrel	5 Gal.	54	8061614
	<i>Fouquieria splendens</i> Ocotillo	5 Gal.	13	8061654
	<i>Opuntia engelmannii</i> Engelman's Prickly Pear	5 Gal.	13	8061610
	<i>Opuntia violacea</i> Santa Rita Purple Prickly Pear	5 Gal.	13	8061610
	<i>Yucca thompsoniana</i> Thompson's Yucca	5 Gal.	9	8061430
SHRUBS				
	<i>Acacia constricta</i> Whitethorn Acacia	15" Treepot	13	8062015
	<i>Atriplex canescens</i> Fourwing Saltbush	15" Treepot	11	8062015
	<i>Larrea tridentata</i> Creosote	15" Treepot	6	8062015
EXISTING PLANTS				
	Existing Plants To Remain In Place			
PLATING MATERIALS				
	Granite Mulch (7/8" Screened)	1,329 S.Y.	Installed Depth of Granite Mulch shall be 2".	8030040
	Rock Mulch (Desert Carpet)	144 S.Y.	7/8" Granite Mulch Screened and 2"-3.75" Rock Mulch Mixed to Achieve 100% Coverage at Minimum 2" Depth. Color: Apache Brown	8030035
	Boulder	6	Size of boulder to be 2' x 2'.	8030073
	Preservation Fencing		For reference only. Refer to Demo Plans.	2010004

LANDSCAPE SCHEDULE

SYM./KEY	BOTANICAL NAME	COMMON NAME	PLS RATE	QTY	BID TAB NUMBER
SEED MIX					
	<i>Seed Mix - Low Growing</i>				
	<i>Ambrasia deltoidea</i>	Triangle Leaf Bursage	3.0 lbs./ac.	1.10 AC	8050004
	<i>Aristida purpurea</i>	Purple Threeawn	1.5 lbs./ac.	25PLS/ACRE	8050009
	<i>Bailey multiradiata</i>	Desert Marigold	2.0 lbs./ac.		
	<i>Bouteloua aristidiflora</i>	Needle Grama	1.0 lbs./ac.		
	<i>Bouteloua curtipendula</i>	Sideoats Grama	1.0 lbs./ac.		
	<i>Bouteloua rostrata</i>	Rothrock Grama	2.0 lbs./ac.		
	<i>Dyssodia pentachaeta</i>	Golden Dyssodia	1.0 lbs./ac.		
	<i>Encelia farinosa</i>	Bitterbush	2.0 lbs./ac.		
	<i>Escholtzia mexicana</i>	Desert Poppy	2.0 lbs./ac.		
	<i>Isocoma tenuisecta</i>	Burrowweed	1.0 lbs./ac.		
	<i>Lesquerella gordonii</i>	Bladderpod	1.0 lbs./ac.		
	<i>Lupinus sparsiflorus</i>	Lupine	1.0 lbs./ac.		
	<i>Plantago insularis</i>	Desert Indian Wheat	3.0 lbs./ac.		
	<i>Senna covesii</i>	Desert Senna	2.0 lbs./ac.		
	<i>Sphaeralcea ambigua</i>	Desert Globemallow	1.0 lbs./ac.		
	<i>Zinnia acerosa</i>	Desert Zinnia	0.5 lbs./ac.		

LANDSCAPE NOTES:

- It is the Intent of the ESR Guidelines that proposed planting will replicate approximate densities and species of existing pre-construction vegetation. All proposed plant species have been selected from the Pima County ESR Approved Plant Species list. The Planting Plan reflects the plant densities and species of adjacent existing vegetative communities.
- Depressed planting areas (8" max. depth) within the ROW where shown on Landscape Plans in order to capture and take advantage of natural rainfall.
- All plant sizes are in conformance with the minimum requirements as shown in the Pima County Approved Plant Species for Environmentally Sensitive Roadways.
- Plants and Seed Mix installed within Sight Visibility Triangles (SVTs) shall have a mature height of less than thirty inches (30").
- Trees to be planted a minimum of eight feet (8') from sidewalks and six feet (6') from face of curb. Small/upright trees may be placed a minimum of 4-6' from the edge of sidewalk. Cacti to be planted a minimum of four feet (4') from sidewalks and face of curb.
- Trees shall be located to avoid conflicts with overhead and underground utilities.
 - Sewer: Tree trunks shall be 16' min. from manholes, and all parts of trees shall be 10' min. from sewer lines.
 - Gas: Tree trunks shall be 8' min. from all gas lines.
 - Electric: Tree trunks shall be 10' min. from all electrical lines.
 - Water: Tree trunks shall be 10' min. from all water lines.
- Agency grown container-grown stock (to be determined) are required to be obtained from the Pima County Native Plant Nursery. Agency grown container-grown stock shall be owner-provided at no cost to contractor. Contractor is required to pick up and transport plants from Pima County Native Plant Nursery at contractor's cost. Refer to Terms and Conditions for ordering plants through the Pima County Native Plant Nursery (PCPNP).
- Refer to Civil Plans for Additional Information.
- Rock Mulch Desert Carpet and Granite Mulch color to be Apache Brown.
- All disturbed areas to receive seed mix or plating material. Seed mix shall be installed to 10' from cut/fill line, ROW line, or limits of disturbance, whichever is greater, as shown on plans.
- 15 gallon trees to be 90% agency provided and 10% contractor to provide from a commercial source.
- Tree symbols on plans with a number "24" indicate a container size of 24" treepot. Trees symbols with no number are 15 gallon container size.

Ana M. Olivares, P.E., Director

Date	02/2018	02/2018	02/2018
Designed	WDC	WDC	WDC
Drawn		Checked	
		Procl. Engr.	

No.	Revision Description	Engineer	Date

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WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 130 | TUCSON, ARIZONA 85716
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LANDSCAPE PLAN SCHEDULE
BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
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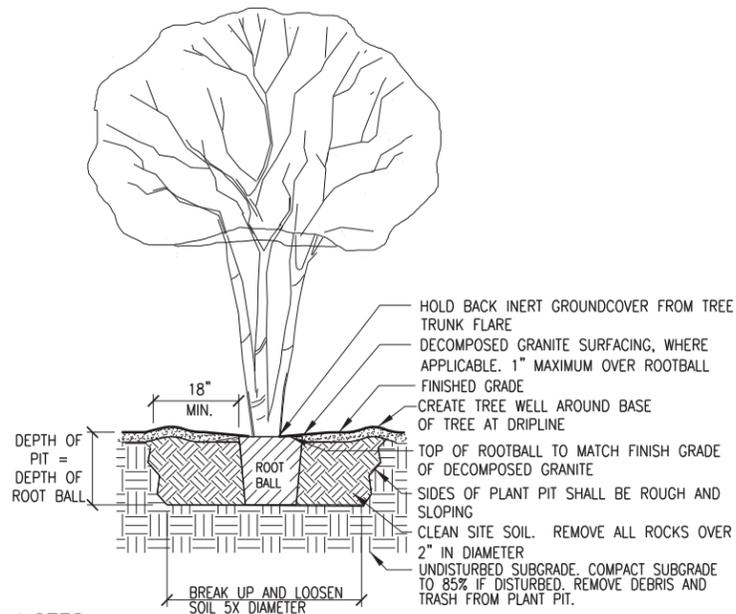
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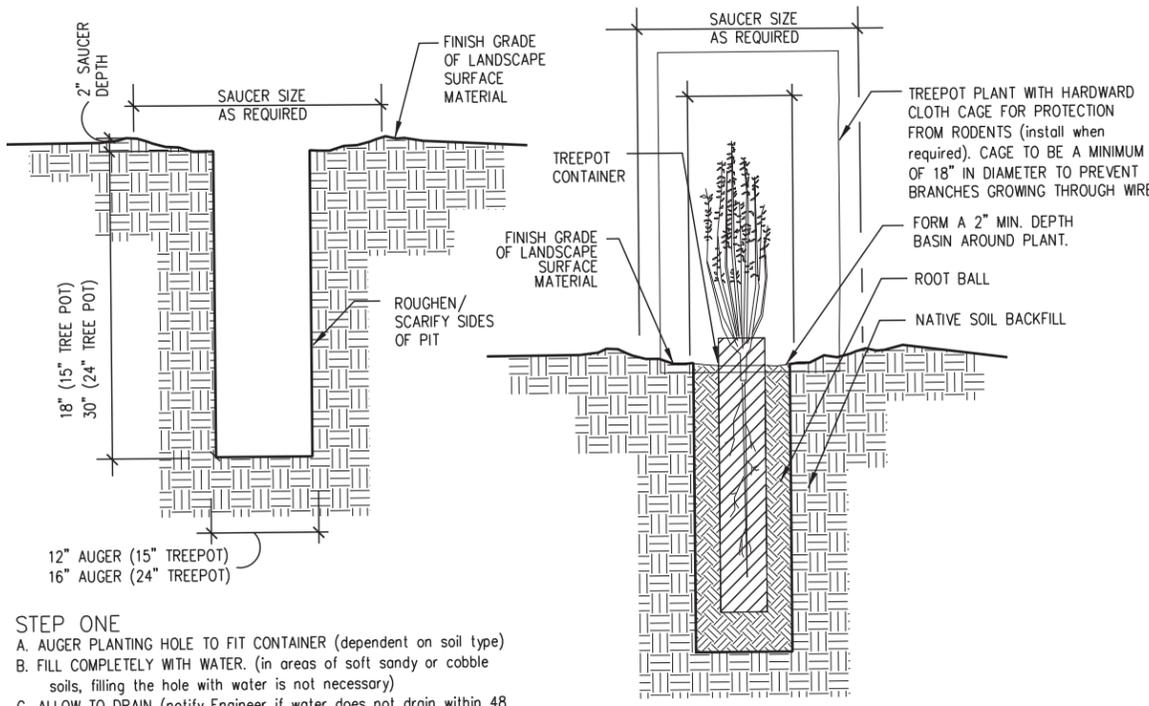
Date	Engineer	Revision Description

Ana M. Olivares, P.E., Director



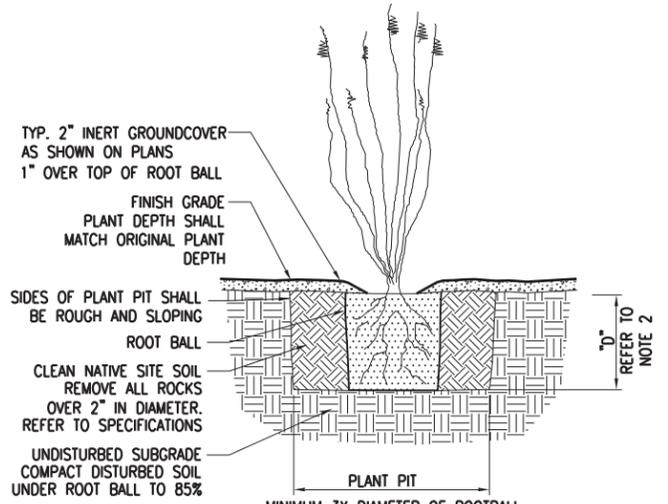
- NOTES:**
- ALL TREES TO BE LOW BRANCHING OR MULTI-TRUNK. NO STANDARD TREES TO BE USED.
 - NO TREES TO BE STAKED EXCEPT AT THE DIRECTION OF THE ENGINEER
 - DEPTH OF PLANT PIT = DEPTH OF ROOT BALL
 - FINISH GRADE OF ROOT BALL SHALL MATCH FINISH GRADE OF SURROUNDING SOIL. ROOT BALL MAY BE PLACED UP TO 1" ABOVE SURROUNDING SOIL TO ALLOW FOR SETTLING. DO NOT PLACE INERT GROUNDCOVER AT BASE OF PLANT.

1 TREE PLANTING N.T.S.



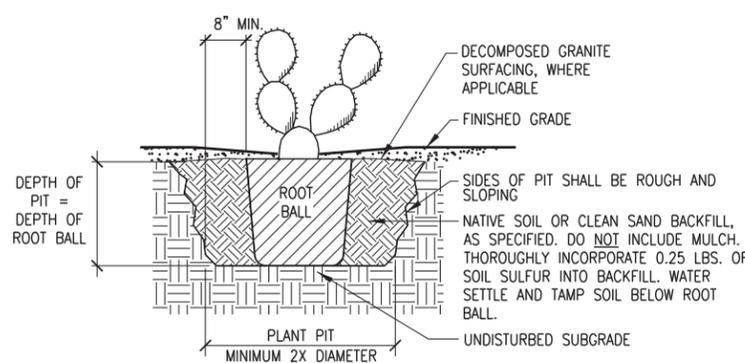
- STEP ONE**
- AUGER PLANTING HOLE TO FIT CONTAINER (dependent on soil type)
 - FILL COMPLETELY WITH WATER. (in areas of soft sandy or cobble soils, filling the hole with water is not necessary)
 - ALLOW TO DRAIN (notify Engineer if water does not drain within 48 hours).
 - REPEAT B & C
 - COMPLETE INSPECTION OF PITS BY ENGINEER PRIOR TO PROCEEDING TO STEP 2.
- STEP TWO**
- INSTALL CONTAINER IN THE HOLE. AVOID DAMAGE TO ROOT SYSTEM.
 - BACKFILL AROUND ROOTBALL.
 - FINISH GRADE SHALL MATCH LEVEL OF ORIGINAL TREPOT SOIL.
 - MANUALLY WATER PLANT WITH A DEEP IRRIGATION TO FULL DEPTH OF ROOTBALL.
 - RETURN CONTAINER TO PIMA COUNTY NATIVE PLANT NURSERY.
 - COMPLETE IRRIGATION INSTALLATION WHERE APPLICABLE.
- NOTE:**
- REFER TO SPECIAL PROVISIONS 806-3.02 FOR SPECIAL PROCEDURE IN AREAS OF CALICHE, LARGER PLANTING PITS REQUIRED IN AREAS OF CALICHE OR HARD DIGGING CONDITIONS. SEE SECTION 806 FOR COMPLETE INSTRUCTIONS.

2 TREPOT PLANTING N.T.S.



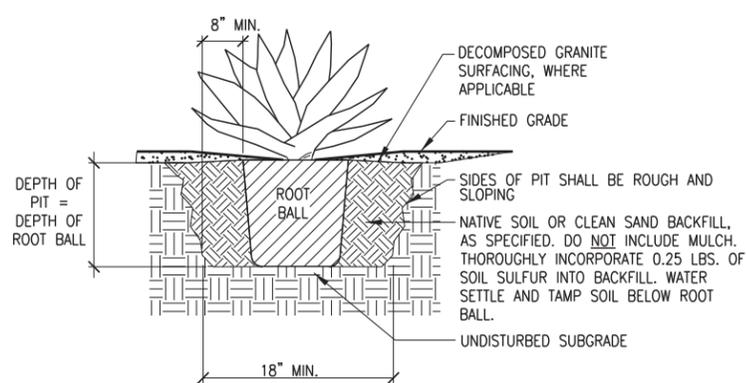
- NOTES:**
- No plants shall be pruned except at the direction of the Owner's representative.
 - Depth ("D") of plant pit to be equal to depth of rootball.
 - Test planting pit drainage and provide drainage chimneys as required by Specifications.
 - Finish grade of root ball shall match finish grade of surrounding soil. Root ball may be placed up to 1" above surrounding soil to allow for settling. Do not place mulch at base of plant.

3 OCOTILLO PLANTING (CONTAINER GROWN) N.T.S.



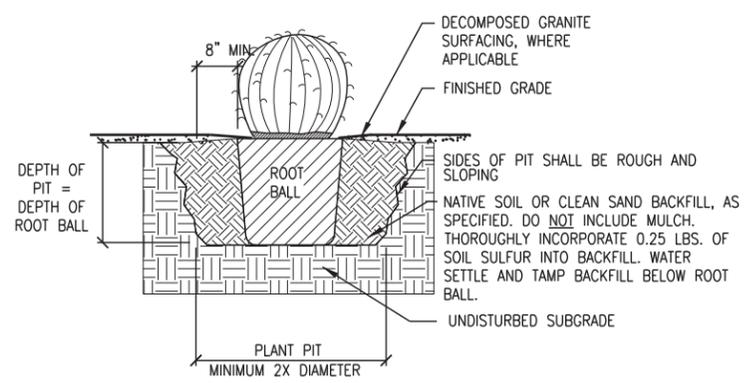
- NOTES:**
- SET STEM SUCCULENT SO THAT TOP OF ROOT BALL MATCHES ADJACENT GRADE.
 - THIS DETAIL APPLIES TO NURSERY GROWN STOCK OF THE GENUS OPUNTIA.

4 PRICKLY PEAR (CONTAINER GROWN) N.T.S.



- NOTES:**
- SET STEM SUCCULENT SO THAT TOP OF ROOT BALL MATCHES ADJACENT GRADE.
 - THIS DETAIL APPLIES TO NURSERY GROWN STOCK OF THE GENERA AGAVE, ALOE, DASYLIRION, HESPERALOE, NOLINA AND YUCCA.

5 YUCCA PLANTING DETAIL N.T.S.



- NOTES:**
- SET CACTUS SO THAT TOP OF ROOT BALL MATCHES ADJACENT GRADE.
 - THIS DETAIL APPLIES TO NURSERY GROWN STOCK OF THE GENERA CARNEGIEA, CEREUS, FERROCACTUS AND STENOCACTUS.

6 CACTUS PLANTING (CONTAINER GROWN) N.T.S.



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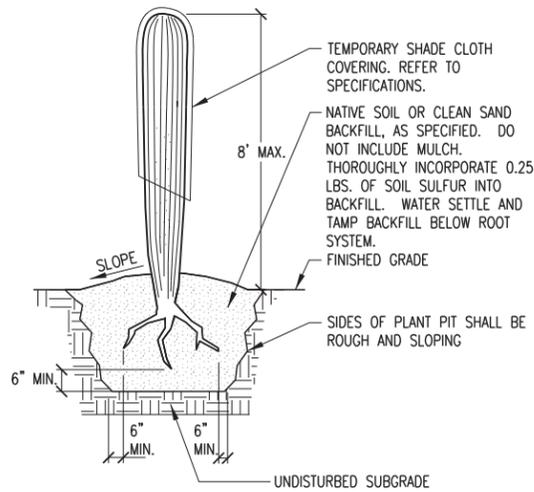
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LANDSCAPE PLAN DETAILS
BENSON HIGHWAY AT DREVEL ROAD IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No. 0000 PM PPM 70115 01C

Pima County Department of Transportation

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

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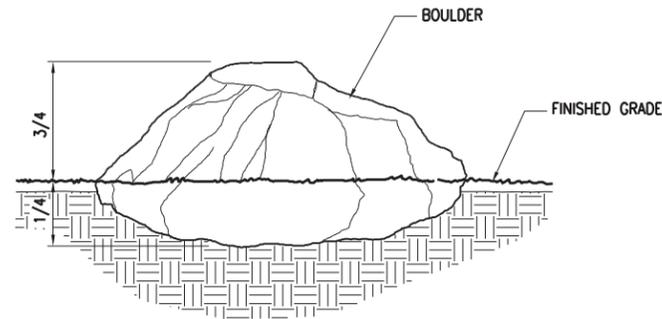


NOTES:

1. SET MAIN STEM OF CACTUS PLUMB AS VIEWED FROM ALL SIDES.
2. DO NOT CREATE A BASIN AT BASE OF CACTUS. SLOPE BACKFILL AWAY FROM STEM.
3. PLANT SAGUARO WITH SAME ORIENTATION AS IN ORIGINAL LOCATION. MARK NORTH SIDE OF SAGUARO WITH WATER BASED PAINT PRIOR TO START OF SALVAGE WORK.
4. ROOT PRUNE ALL SHREDDED OR DAMAGED ROOTS. TREAT ENTIRE ROOT SYSTEM WITH WETTABLE SULPHUR AND AGRI-MYCIN 17.
5. MOUND AT BASE OF SAGUARO TO BE 4-6" MAXIMUM IN HEIGHT.

1 SAGUARO PLANTING - TRANSPLANT

N.T.S.

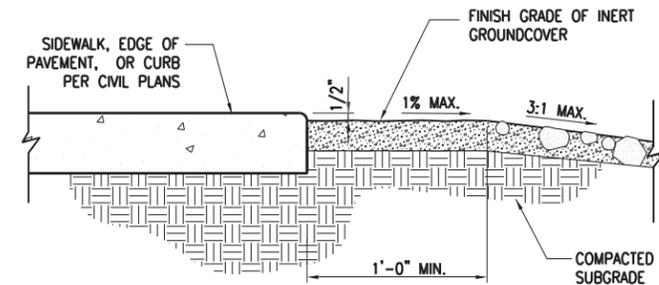


NOTES:

1. BOULDER TO BE SET WITH 1/4" MASS BELOW FINISHED GRADE.
2. SET BOULDERS FIRMLY SO THEY DO NOT ROCK. COMPACT SOIL AROUND EDGES.
3. ALL BOULDERS TO HAVE WEATHERED SURFACE EXPOSED.

2 BOULDER PLACEMENT

N.T.S.

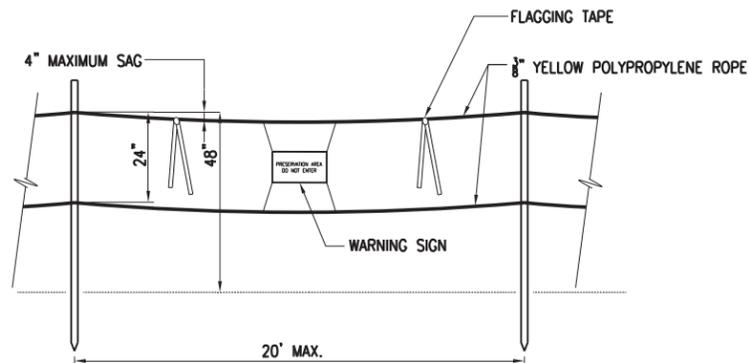


NOTES:

1. REFER TO SUMMARY SHEET FOR INERT GROUNDCOVER COLOR AND SIZE.
2. INERT GROUNDCOVER TO BE APPLIED 2" IN DEPTH.

3 FINISH GRADE AT CONCRETE PAVEMENT

N.T.S.

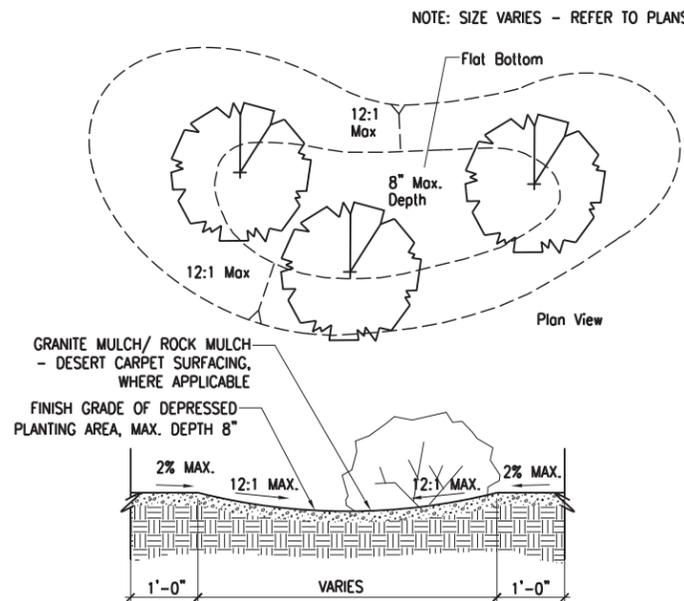


NOTES:

1. POSTS TO BE EITHER HARDWOOD STAKES OR METAL T-POSTS SIX FEET (6') LONG MINIMUM WITH A MINIMUM EMBEDMENT OF TWO FEET (2') INTO THE GROUND.
2. ROPE TO BE ATTACHED TO FENCE POSTS USING PLASTIC OR WIRE TIES.
3. WARNING SIGN SHALL BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERING TO BE TIMES NEW ROMAN OR AERIAL FONT, RED IN COLOR, MINIMUM 1" IN HEIGHT, SECURELY ATTACHED IN THE UPPER HALF OF THE FENCE, AND PLACED AT 50-FOOT MAXIMUM INTERVALS.
4. FLAGGING TAPE SHALL BE 1 1/8" INCH, 4-MIL THICKNESS, NO-ADHESIVE VINYL, FLUORESCENT SOLID COLOR, AND ATTACHED TO THE TOP ROPE ON BOTH SIDES OF THE WARNING SIGN.
5. CONSTRUCTION FENCE (PC STD DTL 121) MAY BE USED IN LIEU OF PRESERVATION WHEN DIRECTED BY THE ENGINEER OR SPECIFIED ON THE PROJECT PLANS.

4 2-STRAND ROPE PRESERVATION FENCE

N.T.S.

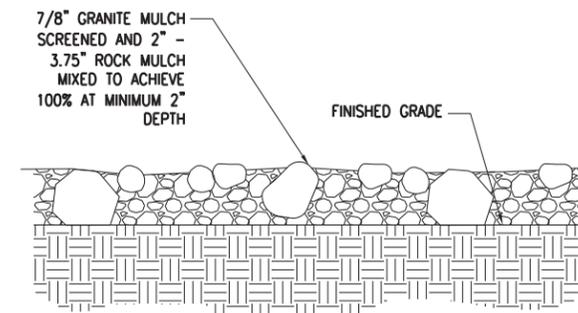


NOTES:

1. REFER TO LANDSCAPE SUMMARY SHEET FOR INERT GROUNDCOVER COLOR AND SIZE.
2. MAXIMUM DEPTH OF PLANTING AREA TO BE 8".
3. DEPRESSED PLANTING AREAS SHALL BE LOCATED IN PLANTING AREAS WHERE WIDTH IS GREATER THAN SIX FEET (6'). LOCATIONS NOTED ON PLANS.

5 DEPRESSED PLANTING AREA

N.T.S.



NOTE:

1. 7/8" GRANITE MULCH SCREENED AND 2"-3.75" ROCK MULCH MIXED TO ACHIEVE 100% COVERAGE AT MINIMUM 2" DEPTH. COLOR: APACHE BROWN.

6 ROCK MULCH (DESERT SPECIAL)

N.T.S.



Date	WDC	WDC	WDC
02/2018			
02/2018			
02/2018			

Date	Engineer	Revision Description

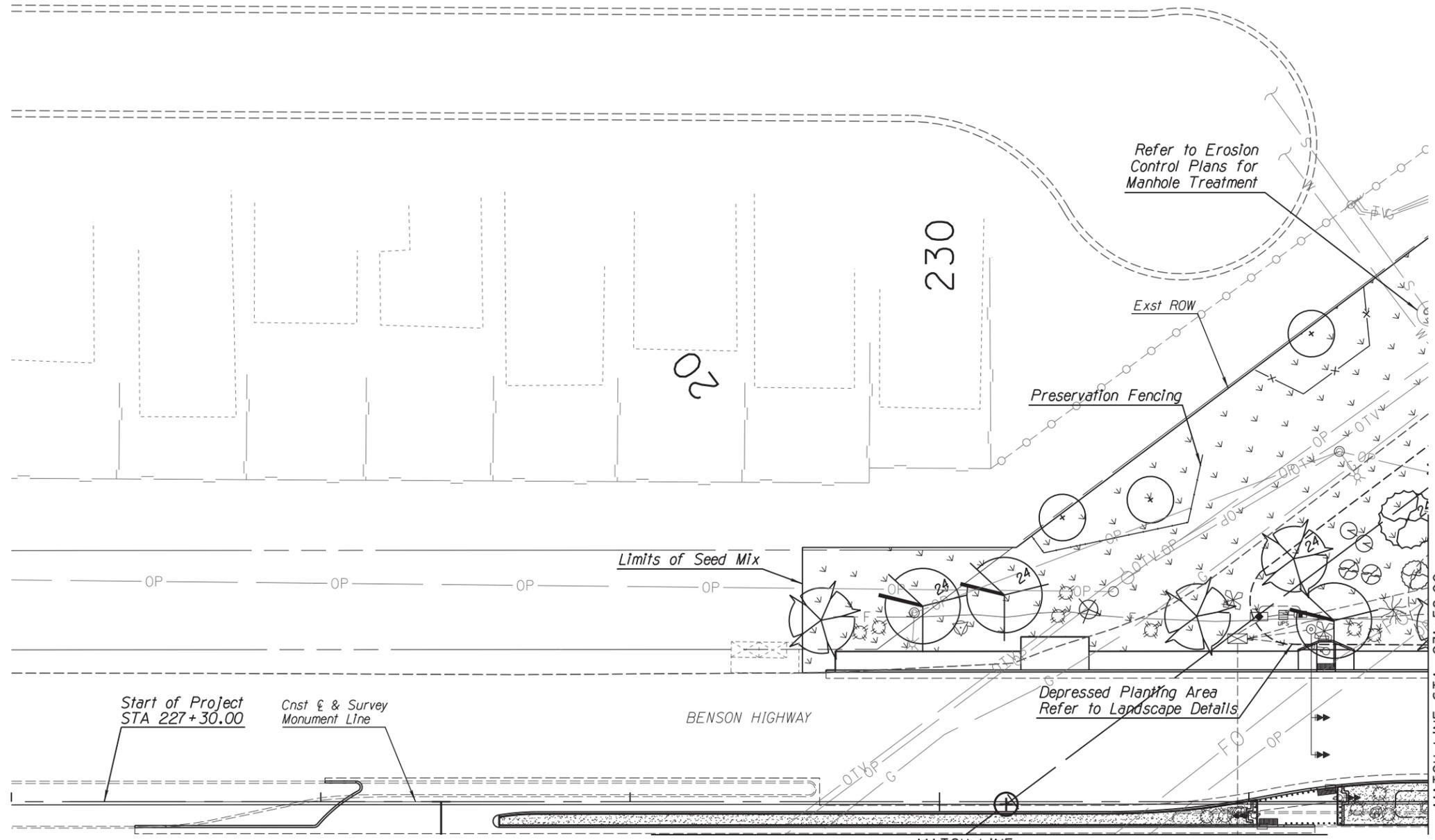
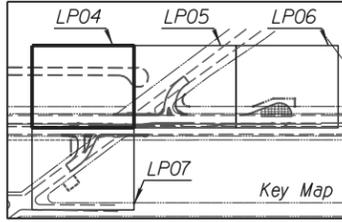
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LANDSCAPE PLAN DETAILS
Pima County Department of Transportation
BENSON HIGHWAY AT DREVEL ROAD IMPROVEMENTS
Project No. CTR-40RXXL
TRACS No. 0000 PM PPM 10115 01C

Pima County Department of Transportation

Ana M. Olivares, P.E., Director



F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

0000 PM PPM

LANDSCAPE LEGEND

SYM./KEY	BOTANICAL NAME COMMON NAME
TREES	
	<i>Acacia constricta</i> Whitethorn Acacia
	<i>Chilopsis linearis</i> Desert Willow
	<i>Prosopis pubescens</i> Screwbean Mesquite
	<i>Prosopis velutina</i> Velvet Mesquite
	Existing trees to remain in place
CACTUS / ACCENTS	
	<i>Carnegiea gigantea</i> Saguaro
	<i>Cylindropuntia leptocaulis</i> Christmas Cholla
	<i>Ferocactus wislizeni</i> Fishhook Barrel
	<i>Opuntia engelmannii</i> Engleman's Prickly Pear
	<i>Opuntia violacea</i> var. <i>santa-rita</i> Purple Prickly Pear
	<i>Yucca thompsoniana</i> Thompson's Yucca
	<i>Fouquieria splendens</i> Ocotillo
SHRUBS	
	<i>Acacia constricta</i> Whitethorn Acacia
	<i>Atriplex canescens</i> Fourwing Saltbush
	<i>Larrea tridentata</i> Creosote
SEED MIXES (CLASS II)	
	Seed Mix - Low Growing
PLATING MATERIALS	
	Granite Mulch (1/8" Screened)
	Rock Mulch - Desert Carpet (1/8" Granite Mulch Screened and 2"-3.75" Rock Mulch Mixed to Achieve 100% Coverage at Minimum 2" Depth)
	Boulder - 2' x 2'
	Preservation Fencing

No.	Revision Description	Engineer	Date
			02/2018
			02/2018
			02/2018

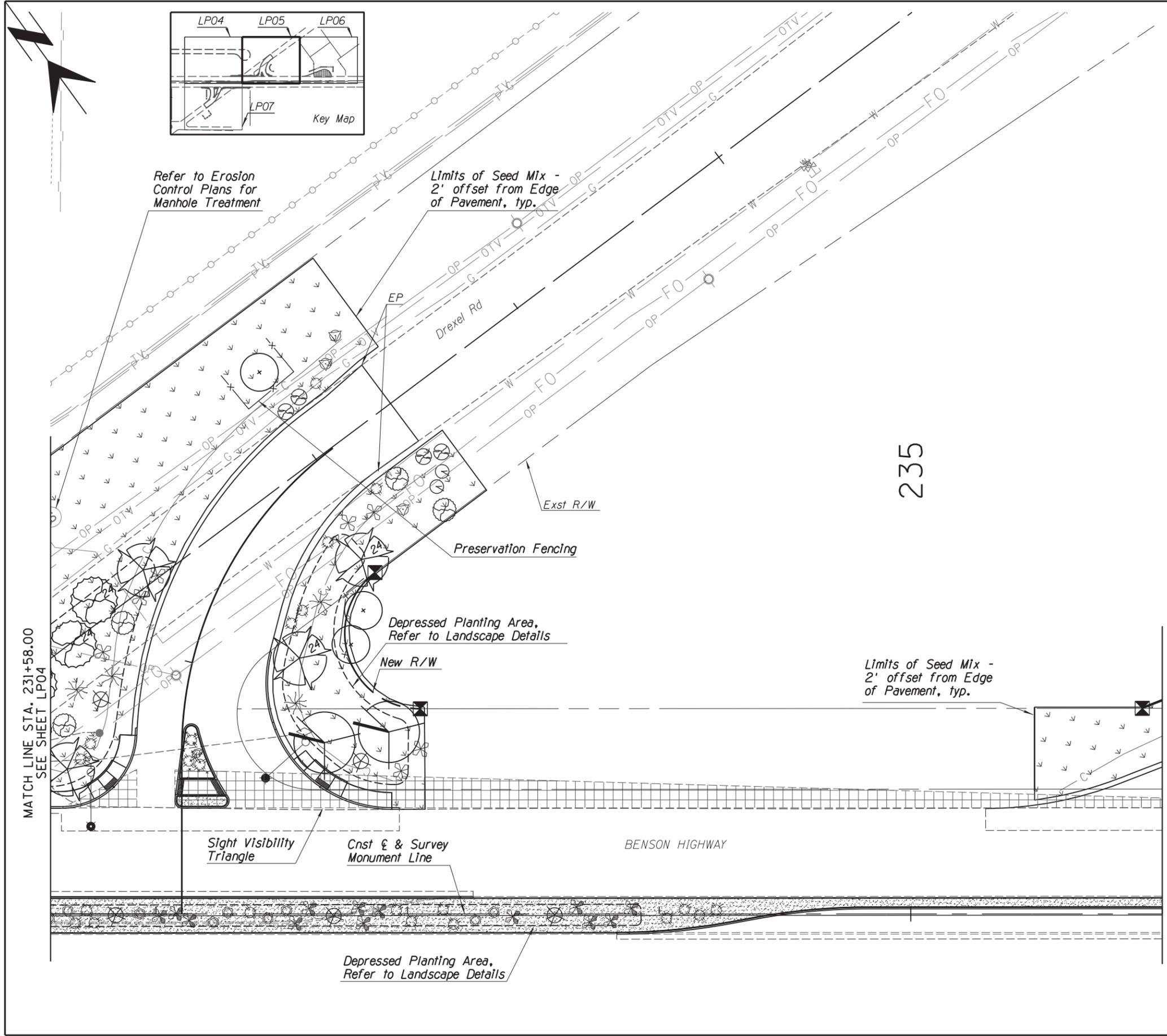
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Pima County Department of Transportation
LANDSCAPE PLAN
STA 226+00 TO STA 231+58.00
BENSON HIGHWAY AT DREVEL ROAD IMPROVEMENTS
Project No. CTR-4DRXL
TRACS No. 0000 PM PPM 1015 01C

Ana M. Olivares, P.E., Director





F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

0000 PM PPM

LANDSCAPE LEGEND

SYM./KEY BOTANICAL NAME
COMMON NAME

- TREES**
- Acacia constricta*
Whitethorn Acacia
 - Chilopsis linearis*
Desert Willow
 - Prosopis pubescens*
Screwbean Mesquite
 - Prosopis velutina*
Velvet Mesquite
 - Existing trees to remain in place

- CACTUS / ACCENTS**
- Carnegiea gigantea*
Saguaro
 - Cylindropuntia leptocaulis*
Christmas Cholla
 - Ferocactus wislizeni*
Fishhook Barrel
 - Opuntia engelmannii*
Engleman's Prickly Pear
 - Opuntia violacea*
var. *santa-rita*
Purple Prickly Pear
 - Yucca thompsoniana*
Thompson's Yucca
 - Fouquieria splendens*
Ocotillo

- SHRUBS**
- Acacia constricta*
Whitethorn Acacia
 - Atriplex canescens*
Fourwing Saltbush
 - Larrea tridentata*
Creosote

- SEED MIXES (CLASS II)**
- Seed Mix - Low Growing

- PLANTING MATERIALS**
- Granite Mulch (1/8" Screened)
 - Rock Mulch - Desert Carpet
(1/8" Granite Mulch Screened and 2"-3.75" Rock Mulch Mixed to Achieve 100% Coverage at Minimum 2" Depth)
 - Boulder - 2' x 2'
 - Preservation Fencing

No.	Revision Description	Engineer	Date
			02/2018
			02/2018
			02/2018

No.	Revision Description	Engineer	Date

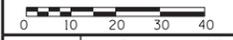
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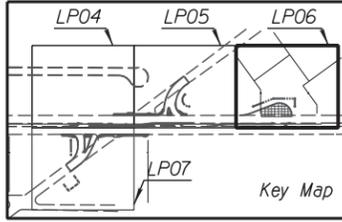
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LANDSCAPE PLAN
STA 231+58.00 TO STA 236+00
BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No. 0000 PM PPM 10115 DIC

Ana M. Olivares, P.E., Director

Pima County Department of Transportation



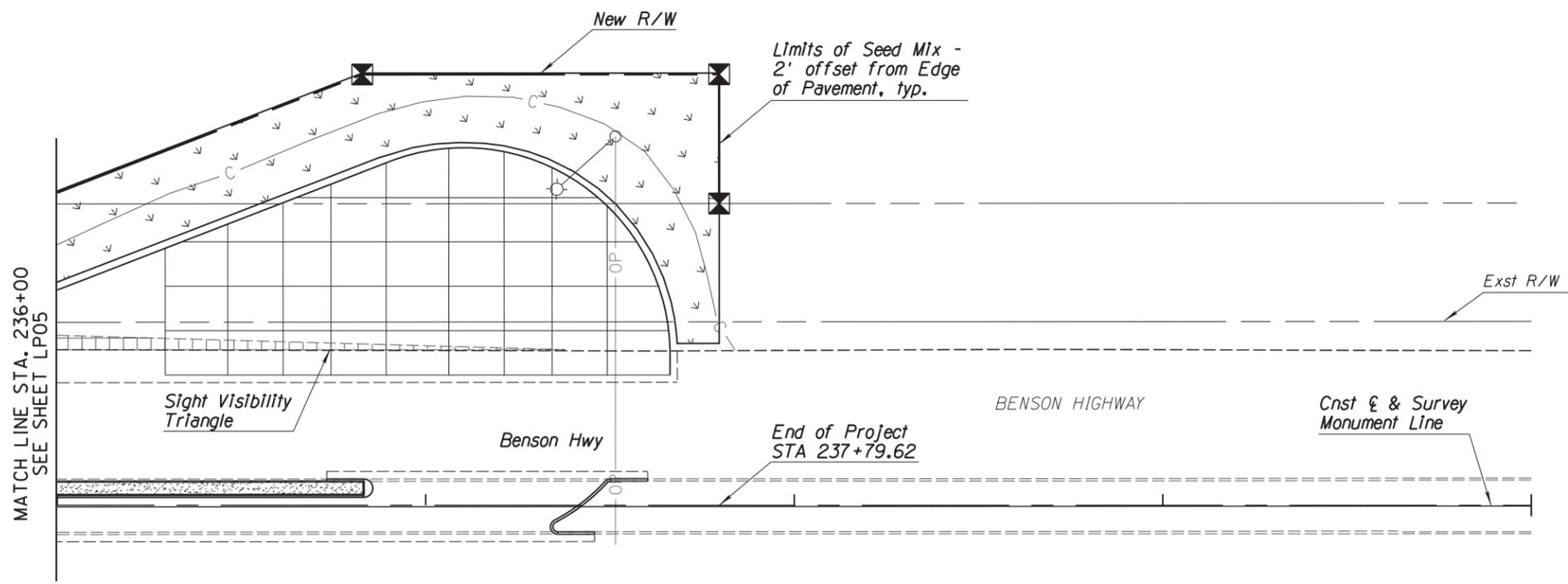


F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

0000 PM PPM

LANDSCAPE LEGEND

SYM./KEY	BOTANICAL NAME COMMON NAME
TREES	
	<i>Acacia constricta</i> Whitethorn Acacia
	<i>Chilopsis linearis</i> Desert Willow
	<i>Prosopis pubescens</i> Screwbean Mesquite
	<i>Prosopis velutina</i> Velvet Mesquite
	Existing trees to remain in place
CACTUS / ACCENTS	
	<i>Carnegiea gigantea</i> Saguaro
	<i>Cylindropuntia leptocaulis</i> Christmas Cholla
	<i>Ferocactus wislizeni</i> Fishhook Barrel
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	<i>Yucca thompsoniana</i> Thompson's Yucca
	<i>Fouquieria splendens</i> Ocotillo
SHRUBS	
	<i>Acacia constricta</i> Whitethorn Acacia
	<i>Atriplex canescens</i> Fourwing Saltbush
	<i>Larrea tridentata</i> Creosote
SEED MIXES (CLASS II)	
	Seed Mix - Low Growing
PLATING MATERIALS	
	Granite Mulch (1/8" Screened)
	Rock Mulch - Desert Carpet (1/8" Granite Mulch Screened and 2"-3.75" Rock Mulch Mixed to Achieve 100% Coverage at Minimum 2" Depth)
	Boulder - 2' x 2'
	Preservation Fencing



240

Scales
 Horiz: 1" = 20'
 Vert: N/A

Sheet LP06 of LP07 Page 34 of 42



Ana M. Olivares, P.E., Director

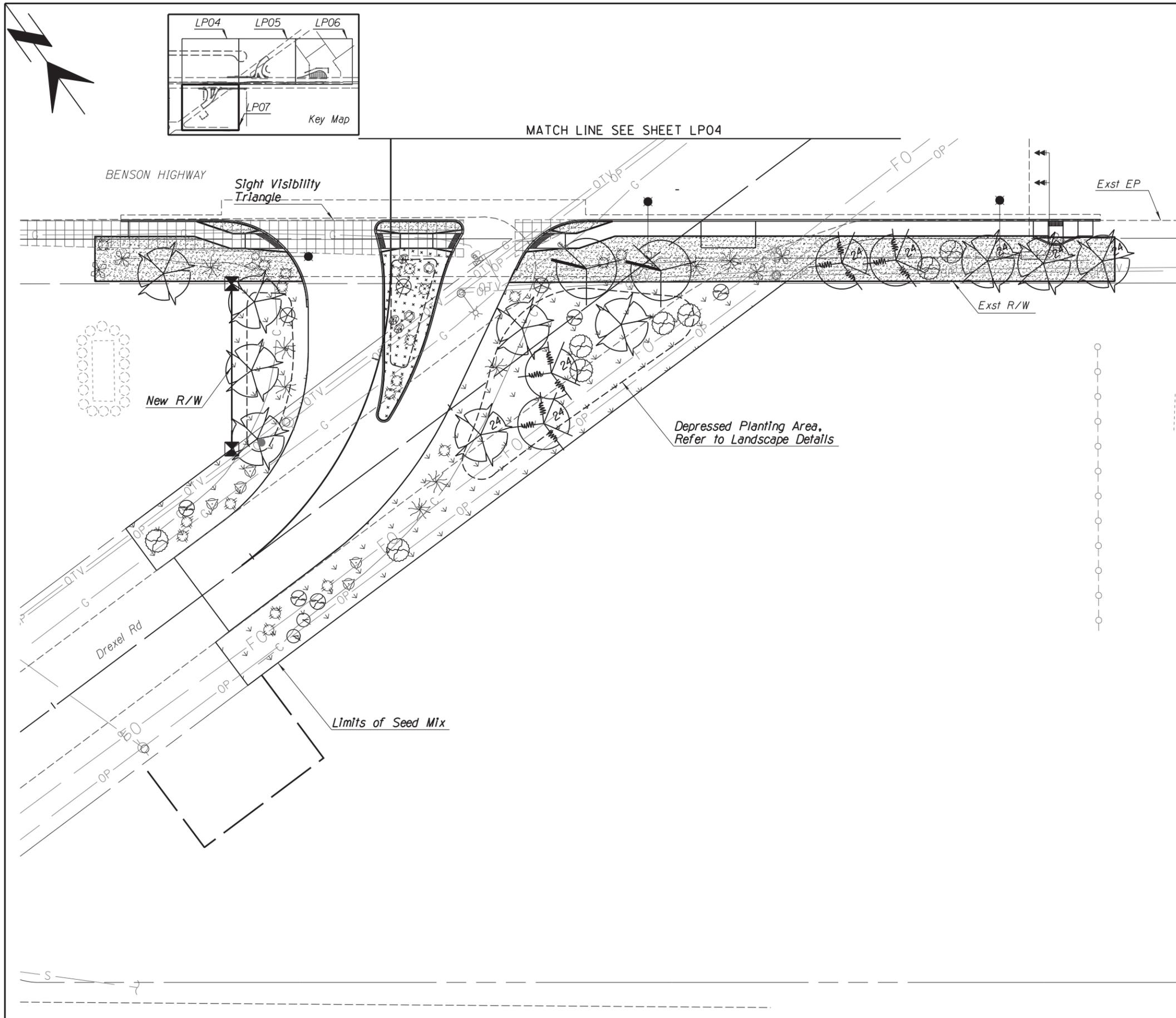
No.	Revision Description	Engineer	Date
			02/2018
			02/2018
			02/2018

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Pima County Department of Transportation

LANDSCAPE PLAN
 STA 236+00 TO STA. 240+00
 BENSON HIGHWAY AT DREVEL ROAD IMPROVEMENTS
 Project No. CTR-4DRXXL
 TRACS No. 0000 PM PPM T0115 01C



F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM 0(258) D		--	

0000 PM PPM

LANDSCAPE LEGEND

SYM./KEY BOTANICAL NAME
COMMON NAME

TREES

- Acacia constricta*
Whitethorn Acacia
- Chilopsis linearis*
Desert Willow
- Prosopis pubescens*
Screwbean Mesquite
- Prosopis velutina*
Velvet Mesquite
- Existing trees to remain in place

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Engleman's Prickly Pear
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var. *santa-rita*
Purple Prickly Pear
- Yucca thompsoniana*
Thompson's Yucca
- Fouquieria splendens*
Ocotillo

SHRUBS

- Acacia constricta*
Whitethorn Acacia
- Atriplex canescens*
Fourwing Saltbush
- Larrea tridentata*
Creosote

SEED MIXES (CLASS II)

- Seed Mix - Low Growing

PLATING MATERIALS

- Granite Mulch (1/8" Screened)
- Rock Mulch - Desert Carpet
(1/8" Granite Mulch Screened and 2"-3.75" Rock Mulch Mixed to Achieve 100% Coverage at Minimum 2" Depth)
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No.	Revision Description	Engineer	Date
			02/2018
			02/2018
			02/2018

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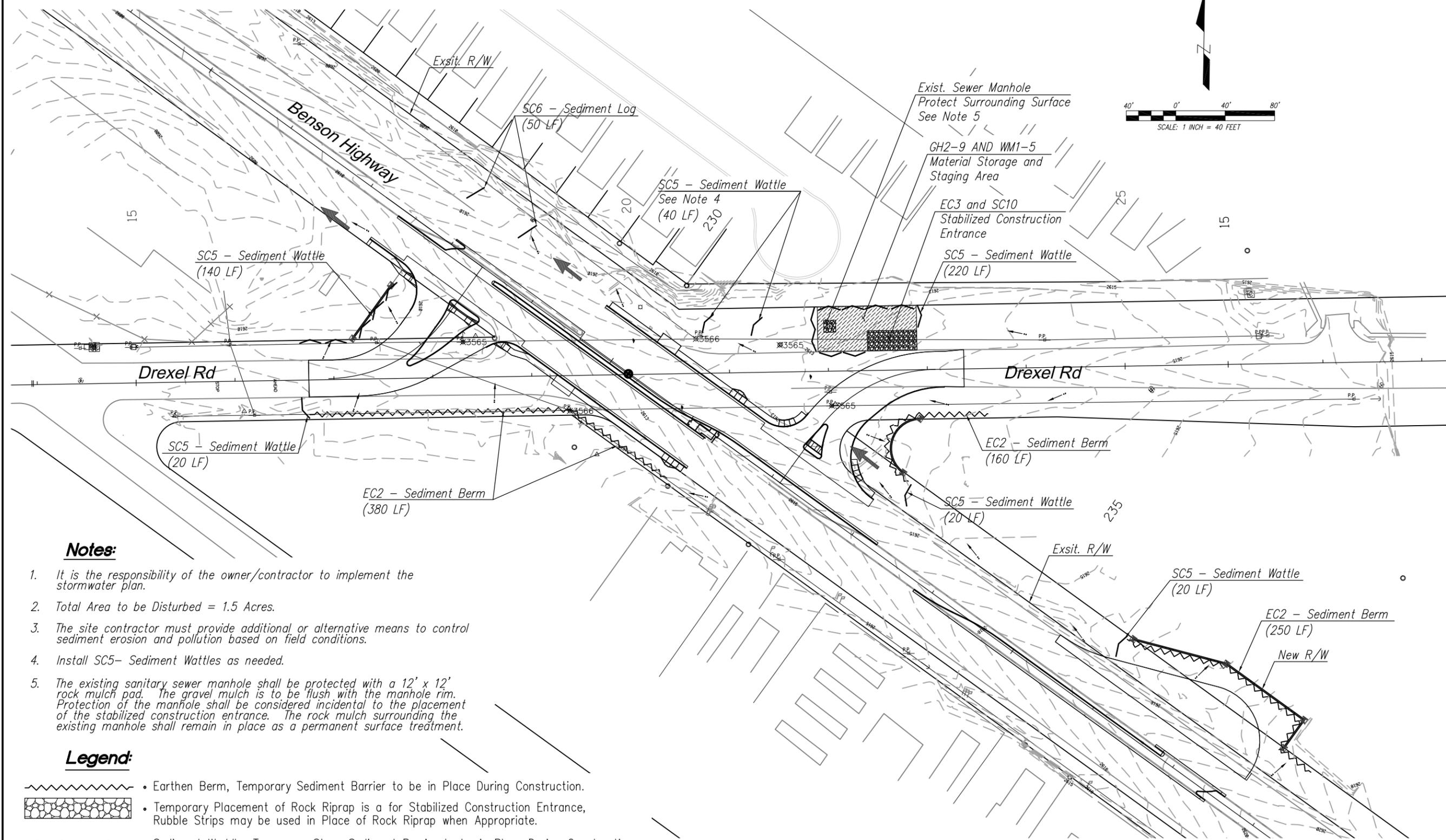
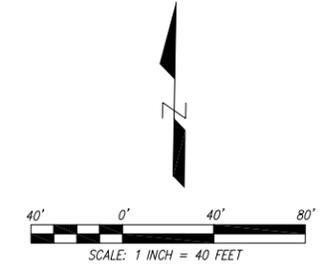
Pima County Department of Transportation
LANDSCAPE PLAN
DREXEL RD
BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No. 0000 PM PPM TO115 01C



Ana M. Olivares, P.E., Director

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM_0(258)_D			

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Notes:

1. It is the responsibility of the owner/contractor to implement the stormwater plan.
2. Total Area to be Disturbed = 1.5 Acres.
3. The site contractor must provide additional or alternative means to control sediment erosion and pollution based on field conditions.
4. Install SC5- Sediment Wattles as needed.
5. The existing sanitary sewer manhole shall be protected with a 12' x 12' rock mulch pad. The gravel mulch is to be flush with the manhole rim. Protection of the manhole shall be considered incidental to the placement of the stabilized construction entrance. The rock mulch surrounding the existing manhole shall remain in place as a permanent surface treatment.

Legend:

- Earthen Berm, Temporary Sediment Barrier to be in Place During Construction.
- Temporary Placement of Rock Riprap is a for Stabilized Construction Entrance, Rubble Strips may be used in Place of Rock Riprap when Appropriate.
- Sediment Wattle, Temporary Straw Sediment Barrier to be in Place During Construction.
- New R/W
- Directional Flow Arrow.
- Concentration Flow

EROSION CONTROL PLAN

Scales	Horiz: 1" = 40'	Sheet EC1 of EC3	Page 36 of 42
	Vert: N/A		

Date	Designed	Checked	Proj. Engr.
02/2018	J. DANA	J. DANA	D. MOSEKE
02/2018			
02/2018			

No.	Revision Description	Engineer	Date

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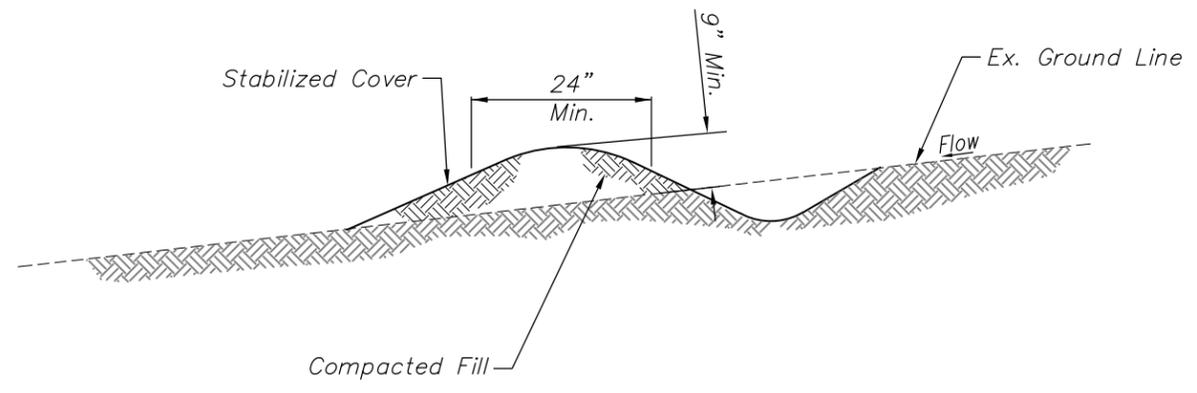
Pima County Department of Transportation
BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
 Project No. CTR-4DRXXL
 TRACS No: 0000 PM PPM T0115 01C

Ana M. Olivares, P.E., Director

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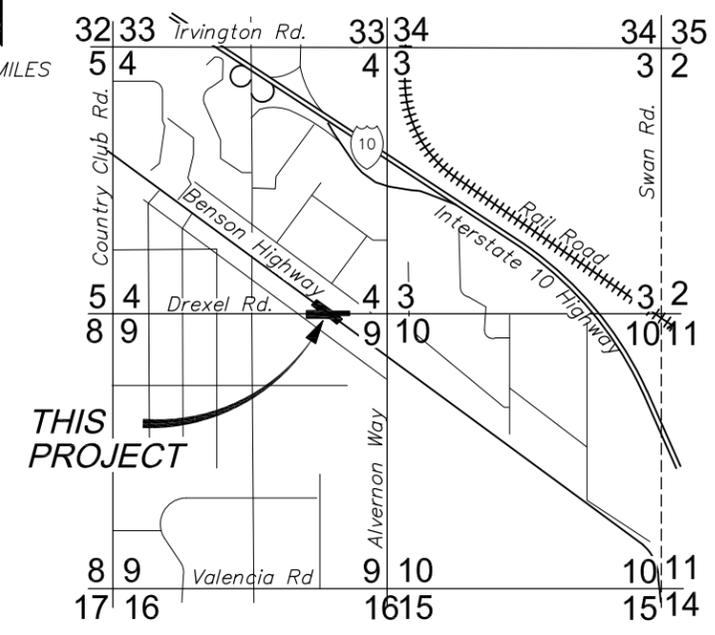
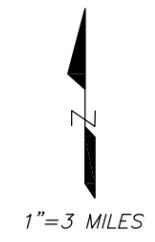
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM_0(258).D			

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NOTES:

1. Locate Sediment Control Berms as Indicated on plans or as directed by the Engineer.
2. Surface Material i.e soil, rock, branches, leaves, slash and chips shall be scraped from the existing grade as needed to construct the berm prior to placement of roadway embankment. After scraping material into berm, compact berm as shown. Rock and slash shall extend no more than 4" above the surface.
3. Construct Sediment Control Berm on the same contour as the toe of new slope and a minimum of 2'-0" beyond the toe of new slope. For the seeded areas, till to form minor ridges and furrows parallel to new slope contours and as specified in Section 805 of the Standard Specifications.
4. The installation and maintenance of Sediment Control Berm BMPs shall not negatively impact safety, nor the designed function of roadway or bridge drainage facilities. For erosion/sediment control purposes. Sediment Control Berm BMPs shall be installed and maintained to carry the stormwater of at least 2-year events.
5. Remove Sediment Control Berms per the direction of the Engineer or as soon as practicable upon stabilization of the construction disturbed area.
6. Field adjust and correct Sediment Control Berm BMP immediately if it is causing flooding, erosion, and/or affecting roadway safety.
7. Sediment Control Berms may be paid as a part of slope construction/roadway excavation. When paid separately, the Sediment Control Berm BMPs pay/bid item shall include all materials used for this BMP: all ground preparation, furnishing, installing final removal, and disposal of this temporary BMP, as well as returning the area to an acceptable condition as approved by the Engineer.
8. **OPTION TO SEDIMENT CONTROL BERM:** When shown on layout plans and/or called for in Special Provisions, for urban situations, or where surface material are not available, use wattles. Wattles shall be selected, installed, and maintained in accordance with manufacturer's specifications and good engineering practices. Refer to sediment Wattles BMP.



Ana M. Olivares, P.E., Director

Date	Designed	Checked	Proj. Engr.
02/2018	J. DANA	J. DANA	D. MOSEKE
02/2018			
02/2018			

No.	Revision Description	Engineer	Date

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www.stantec.com

Pima County Department of Transportation

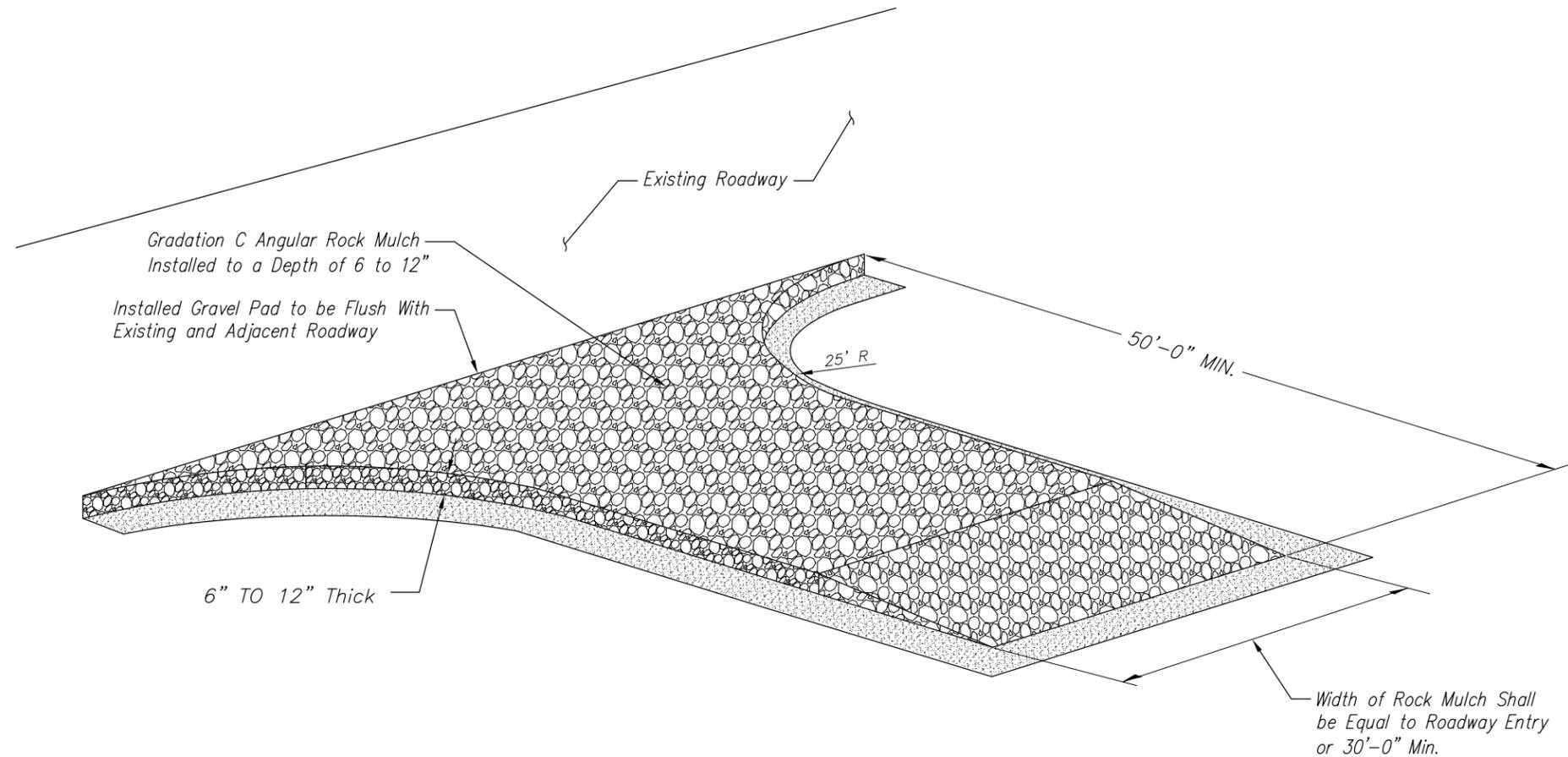
**BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS**
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM T0115 01C

EROSION CONTROL DETAIL

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	STP-PPM_0(258)_D			

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STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.

NOTES:

1. Install stabilized construction entrance/exit gravel pad bmp for traffic entering or exiting a construction site where sedimentation, clay, silt or other pollutants can be tracked onto public roads and/or adjacent water bodies, as approved by the Engineer. It may also be applied for construction entrance/exit wind erosion/dust control, as approved by the Engineer.
2. Locate new construction entrance(s)/exit(s) at appropriate project entrance/exit points as determined in field with the approval of the Engineer. Relocate stabilized construction entrance/exit gravel pad bmp as needed as project progresses. replace rock mulch materials in drive paths when dirt or mud accumulates.
3. Rock mulch material shall be fractured/crushed rock in angular shape. Natural river-run material, especially rounded natural river rocks are not acceptable.
4. Make field adjustments and corrections of construction entrance/exit gravel pad bmp immediately if it is causing flooding and/or affecting safety.
5. Make field adjustments and corrections to ensure no sensitive biological resources (native species/habitats) will be adversely impacted.
6. The depth of gravel pad varies from 6" to 12" based on the necessities of construction vehicle/equipment as per the approval of Engineer.

EROSION CONTROL DETAIL

Scales	Horiz: N/A	Sheet EC3 of EC3	Page 38 of 42
	Vert: N/A		

Date	Designed	Checked	Proj. Engr.
02/2018	J. DANA	J. DANA	
02/2018		D. MOSEKE	
02/2018			

No.	Revision Description	Engineer	Date

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Tucson, AZ 85714
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Pima County Department of Transportation

BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
Project No. CTR-4DRXXL
TRACS No: 0000 PM PPM T0115 01C

Ana M. Olivares, P.E., Director

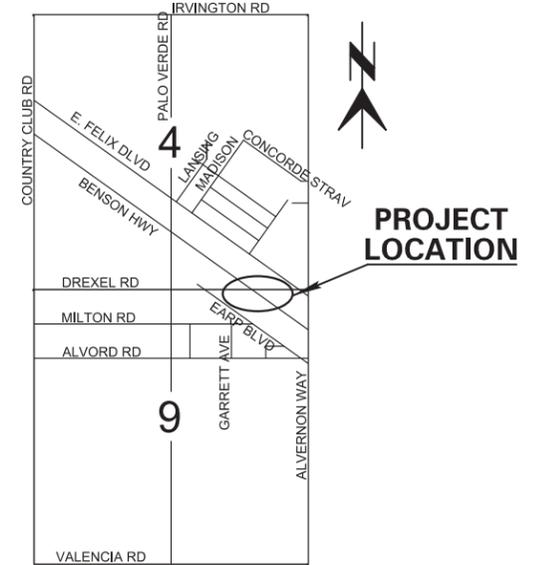
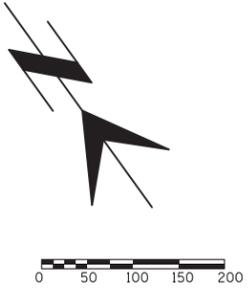
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RIGHT-OF-WAY PLANS BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS

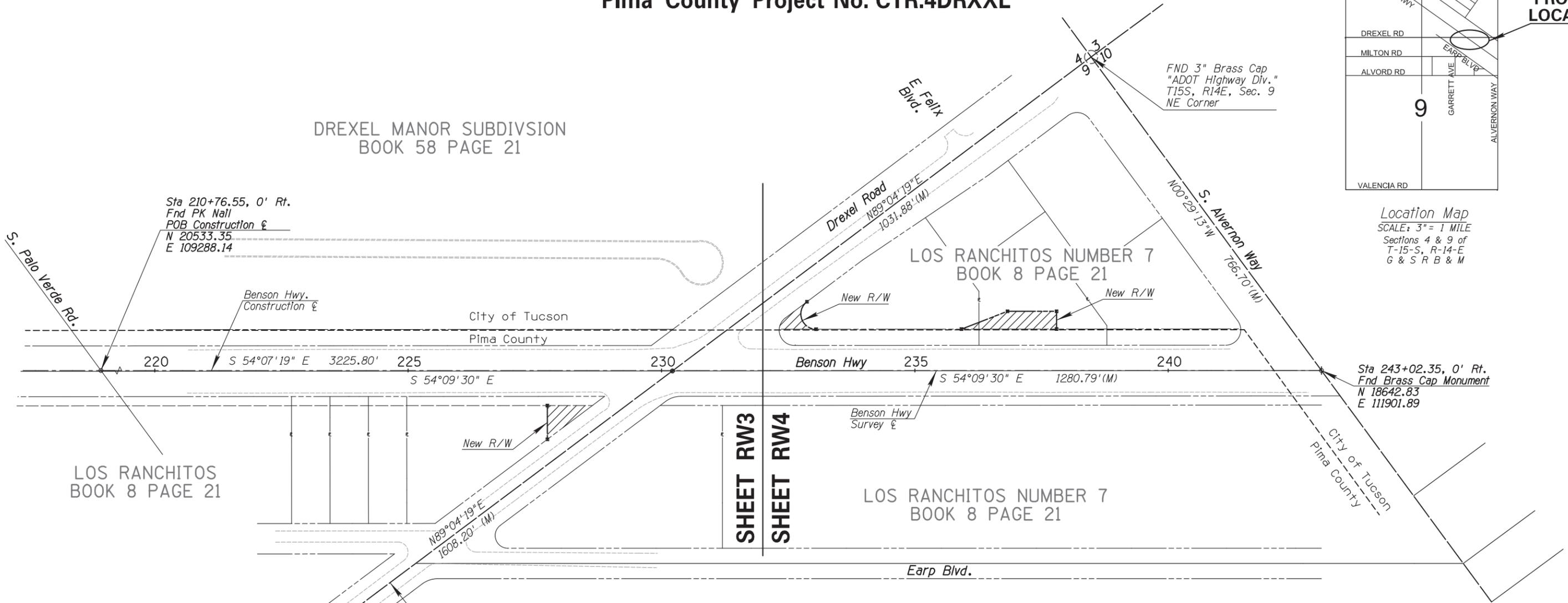
Federal Project No. STP-PPM-0(258)D
Tracs No. 0000 PM PPM T0115 01C
Pima County Project No. CTR.4DRXXL

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	PPM 0(258) D	1	--	

0000 PM PPM



Location Map
SCALE: 3" = 1 MILE
Sections 4 & 9 of
T-15-S, R-14-E
G & S R B & M



Sta 210+76.55, 0' Rt.
Fnd PK Nail
POB Construction &
N 20533.35
E 109288.14

FND 3" Brass Cap
"ADOT Highway Div."
T15S, R14E, Sec. 9
NE Corner

Sta 243+02.35, 0' Rt.
Fnd Brass Cap Monument
N 18642.83
E 111901.89

I HEREBY CERTIFY THAT THIS SURVEY WAS PERFORMED BY ME OR UNDER MY DIRECTION AND THAT THEY ARE AN ACCURATE DEPICTION OF ALL EXISTING AND PROPOSED CONDITIONS.

KENT M. GROH, R.L.S.

Pima County Department of Transportation
201 N. Stone Ave. 4th floor Tucson, Arizona 85701
Phone Number: 724-6410
Ana M. Olivares, P.E., Director



5151 East Broadway Blvd. Suite 400
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PH: [520] 750-7474
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www.stantec.com



No.	Revisions	Engineer	Date

No.	As Built	Engineer	Date

FINAL PS&E Review NOT FOR CONSTRUCTION OR RECORDING	Reviewed by	Engineer	Date	Approved: _____ 20____ Director
	Mgr. Trans Engr.			
	Mgr. Traffic Engr.			
	Mgr. Field Engr.			

2/23/2018 3:25:43 PM V:\1817\ACT\VE\1817\0203\DRAWINGS\SHEETS\CIVIL\180205_PWL.DGN

RIGHT-OF-WAY NOTES

1. According to Arizona Statutes It is unlawful to disturb or destroy a land survey monument that bears and agency's name or the registration number of a land surveyor.
2. The Basis of Bearing for this project was established using the Arizona Coordinate System, NAD 1983 (2011), Central Zone 0202, as observed between Pima County OPUS control points "15S14E_E11", Being a 3-1/2" USC&GS brass disk stamped "SCOTCH 1960", and "15S14E_J18", being a 3-1/2" UCS&GS brass disk stamped "H 355 1960". The bearing being S 53°16'23"E.
3. The coordinates are derived from state plane values by using the following formulas. the published Combined scale factor Pima County OPUS control point "15S14E_E11" was used to convert grid coordinates to surface coordinates for this project.

Surface northing coordinates are derived by dividing the grid coordinates by 0.99988982 and then Subtracting 400,0000. surface easting coordinates are derived by dividing the grid coordinate by 0.99988982 and then subtracting 900,000.

For Pima County OPUS control point "15S14E_E11" the surface coordinates are:
 Northing: (420170.512/ 0.99988982)- 400,000 = 20216.812
 Easting: (1009609.754/ 0.99988982)- 900,000 = 109721.005

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0000 PM PPM

LEGEND

- ⊕ BCSM
- ⊗ FOUND POINT AS NOTED
- ⊠ 1/2" REBAR TO BE SET BY A REGISTERED LAND SURVEYOR
- (M) DIMENSION FROM FIELD MEASUREMENT
- (R) DIMENSION FROM RECORDED SOURCE
- (C) DIMENSION CALCULATED FROM MEASURED DATA APPLIED TO RECORDED DATA
-  AREA TO BE ACQUIRED
-  PROPOSED RIGHT-OF-WAY
-  EXIST. RIGHT-OF-WAY

PARCEL DATA

PARCEL NUMBER	DOCKET	PAGE	OWNER NAME	TYPE OF ACQUISITION	EXIST. GROSS AREA (SQ.FT.) *	AREA TO BE ACQUIRED (SQ. FT.)	SIZE OF T.C.E. (SQ. FT.)	REMAINING AREA (SQ. FT.)
140-09-0010	12467	6140	Gee Family Partnership #3 LLLP	New Right-of-Way	55,813	2,960		52,853
140-30-001R	13356	127	Caravan Inc.	New Right-of-Way New Right-of-Way	62,226	1,436 228		60,562
140-30-001N	13356	131	Caravan Inc.	New Right-of-Way	48,145	4,749		43,396

* Existing gross area quantities are based off information provided in the 2018 Pima County Mapguide link to Pima County Assessor Office for parcel information.

RIGHT-OF-WAY NOTES & PARCEL ACQUISITION TABLE



Scales Horiz: N/A Vert: N/A Sheet RW2 of RW4 Page 40 of 42

No.	Revision Description	Engineer	Date

FINAL PS&E Review NOT FOR CONSTRUCTION OR RECORDING

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 Tucson, AZ 85714
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Pima County Department of Transportation
 BENSON HIGHWAY AT DREXEL ROAD IMPROVEMENTS
 Project No. CTR-4DRXXL
 TRACS No: 0000 PM PPM T015 01C

Ana M. Olivares, P.E., Director

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Ana M. Olivares, P.E., Director

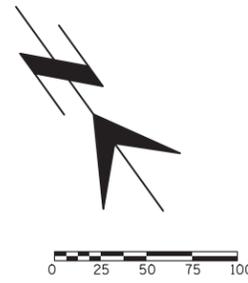
Date	Designed	Checked	Proj. Engr.
11/2017	J. DANA	J. DANA	D. MOSEKE
11/2017			
11/2017			

No.	Revision Description	Engineer	Date

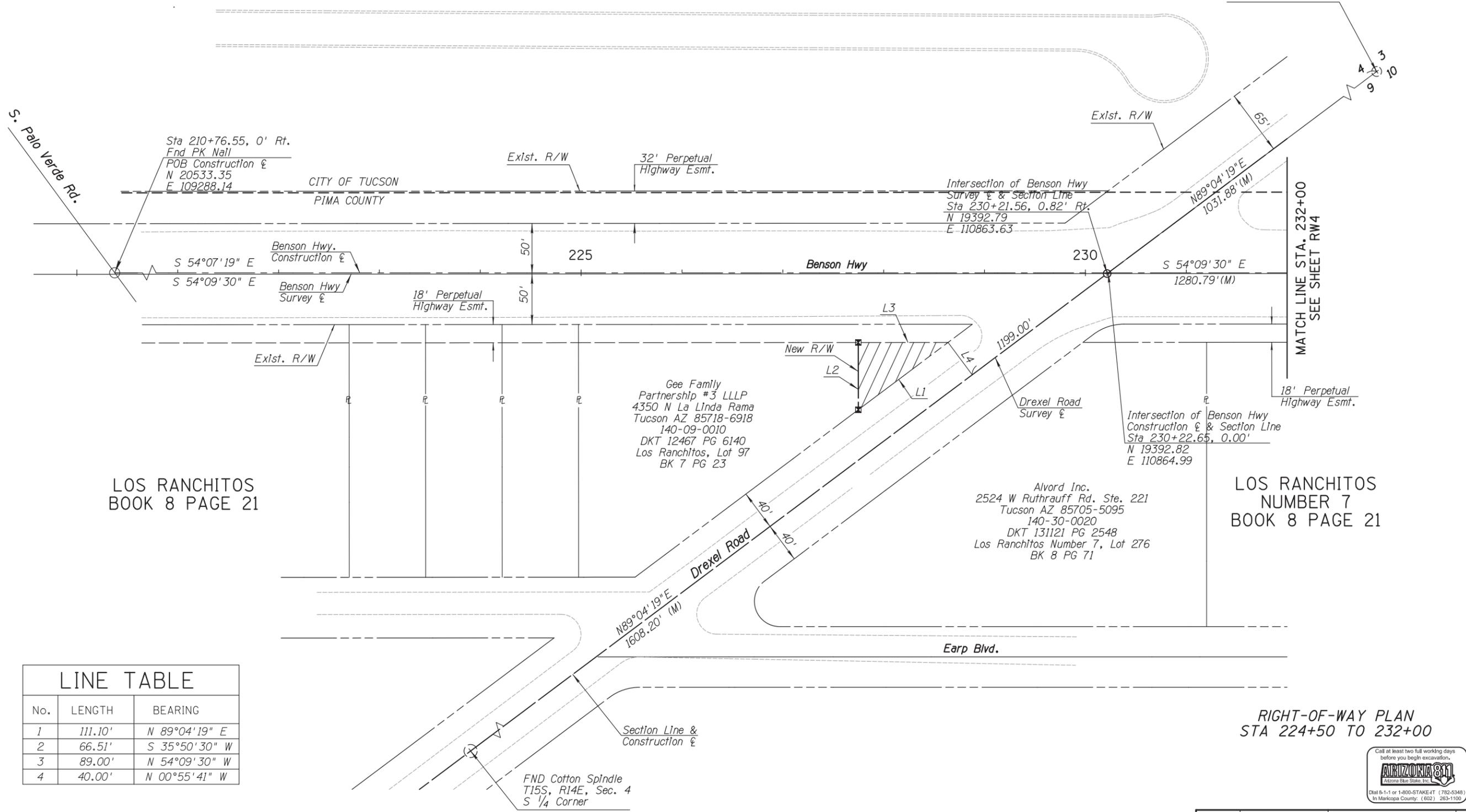
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BENSON HIGHWAY AT DREXEL ROAD
IMPROVEMENTS
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DREXEL MANOR SUBDIVISION
BOOK 58 PAGE 21



No.	LENGTH	BEARING
1	111.10'	N 89°04'19" E
2	66.51'	S 35°50'30" W
3	89.00'	N 54°09'30" W
4	40.00'	N 00°55'41" W

RIGHT-OF-WAY PLAN
STA 224+50 TO 232+00



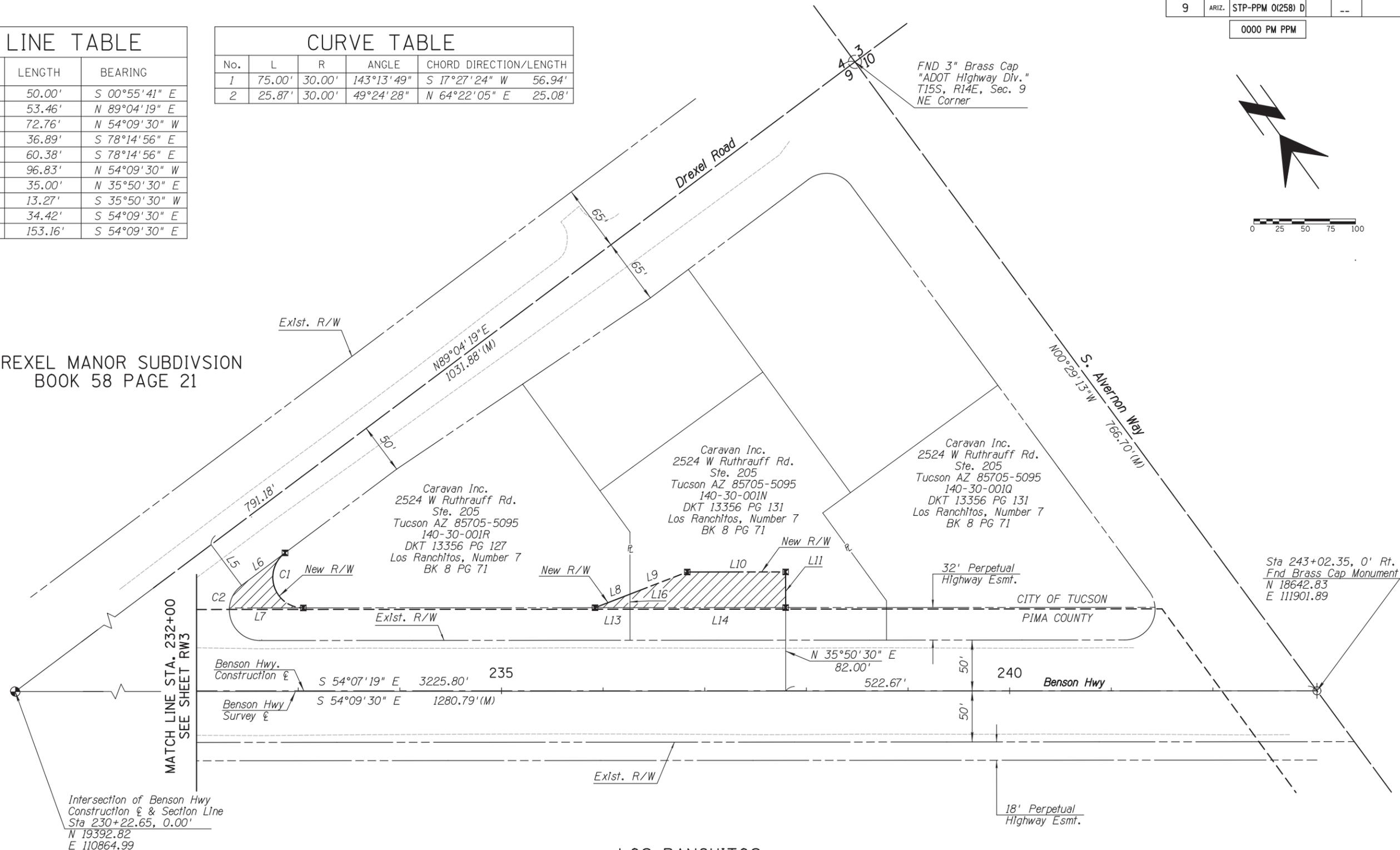
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0000 PM PPM

LINE TABLE		
No.	LENGTH	BEARING
5	50.00'	S 00°55'41" E
6	53.46'	N 89°04'19" E
7	72.76'	N 54°09'30" W
8	36.89'	S 78°14'56" E
9	60.38'	S 78°14'56" E
10	96.83'	N 54°09'30" W
11	35.00'	N 35°50'30" E
12	13.27'	S 35°50'30" W
13	34.42'	S 54°09'30" E
14	153.16'	S 54°09'30" E

CURVE TABLE				
No.	L	R	ANGLE	CHORD DIRECTION/LENGTH
1	75.00'	30.00'	143°13'49"	S 17°27'24" W 56.94'
2	25.87'	30.00'	49°24'28"	N 64°22'05" E 25.08'

DREXEL MANOR SUBDIVISION
BOOK 58 PAGE 21



Intersection of Benson Hwy
Construction & Section Line
Sta 230+22.65, 0.00'
N 19392.82
E 110864.99

LOS RANCHITOS
NUMBER 7
BOOK 8 PAGE 21

RIGHT-OF-WAY PLAN
STA 232+00 TO 243+02.35



Ana M. Olivares, P.E., Director

Date	Designed	Drawn	Checked	Proj. Engr.
11/2017	J. DANA	J. DANA	D. MOSEKE	
11/2017				
11/2017				

No.	Revision Description	Engineer	Date

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