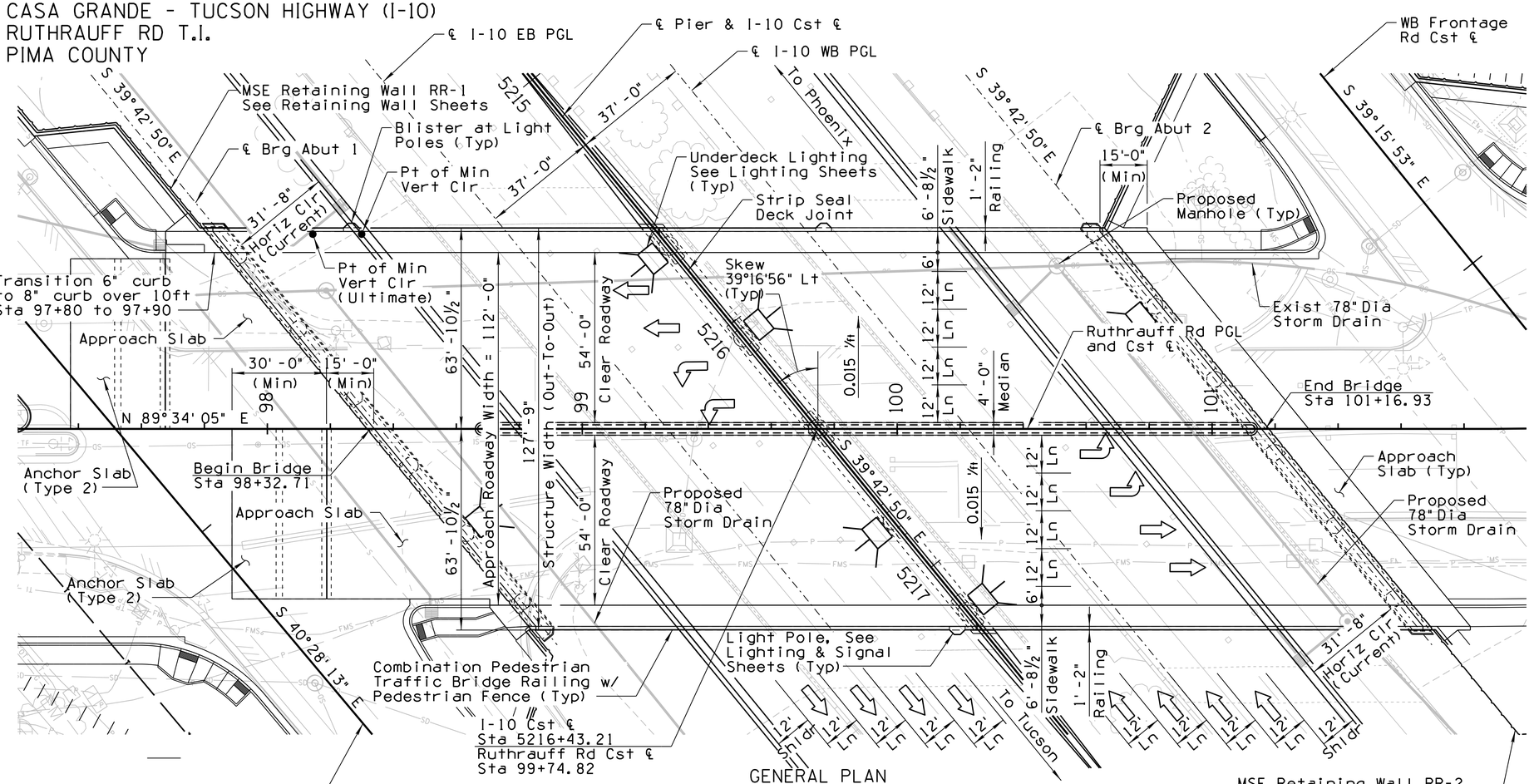
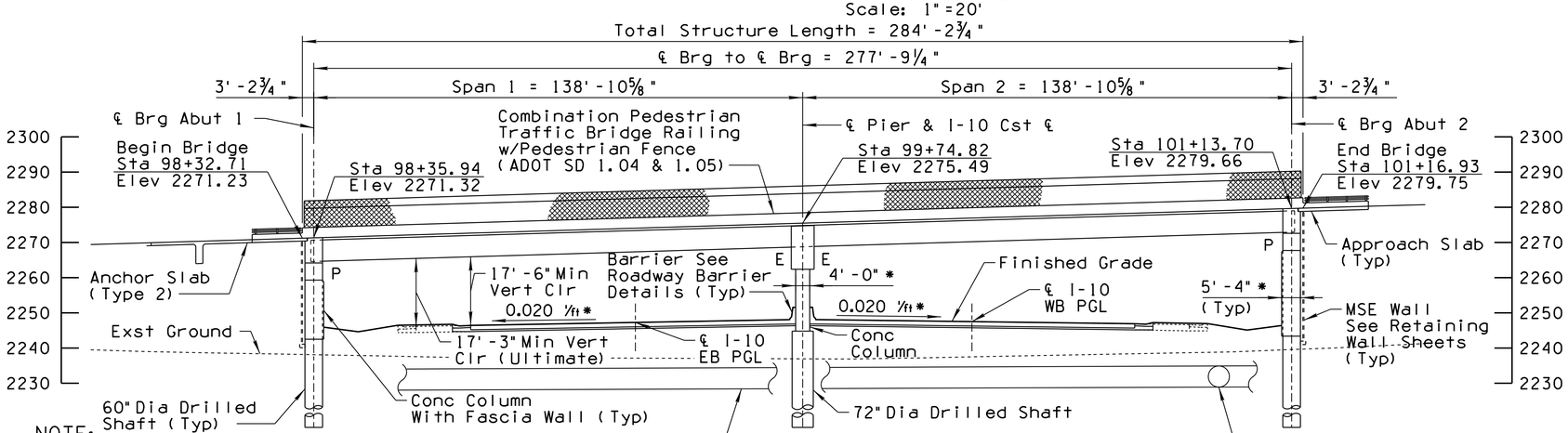
CASA GRANDE - TUCSON HIGHWAY (I-10)
RUTHRAUFF RD T.I.
PIMA COUNTY



GENERAL PLAN

New 2 Span Precast Prestressed AASHTO Type VI Girder Bridge
Skew = 39°16'56"
1' Contour Interval
Scale: 1" =20'



ELEVATION

Scale: 1" =20'

* Measured Perpendicular to I-10 Cst ℄

NOTE:
Bridge Stations, length and elevations measured along Ruthrauff Rd Cst ℄.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	614	849	
		010 PM 252			

INDEX OF DRAWINGS

EXISTING STRUCTURE NOTE:

Existing Structure Numbers 00872 & 00873 are two parallel three span Steel Plate Girder Bridges constructed in 1965 under ADOT Project No. I-10-4(31).

LEGEND

E = Expansion
P = Pinned

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
GENERAL PLAN AND ELEVATION

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION RUTHRAUFF ROAD T.I.

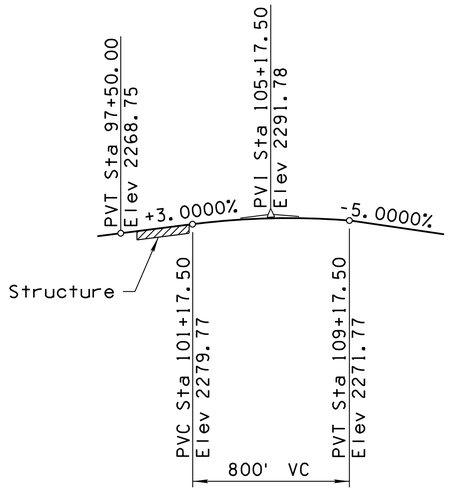
TRACS NO. H 8480 01C | 010-D(213)S | DWG NO. S-1.01 | ___ OF ___

Registered Professional Engineer — CERTIFICATE NO. 50678 — JASON CARLAFTES — Date signed 5/24/19 — ARIZONA, U.S.A.

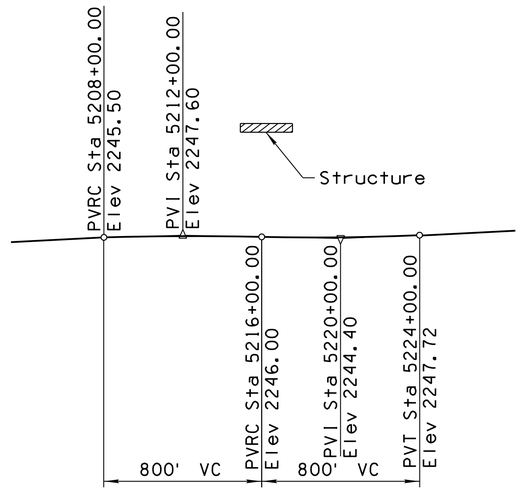
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

Fri 24 May 2019, 11:29:08 \\prdpwics01\ics_workingdir\13365\42600_44\S20159gp.dgn

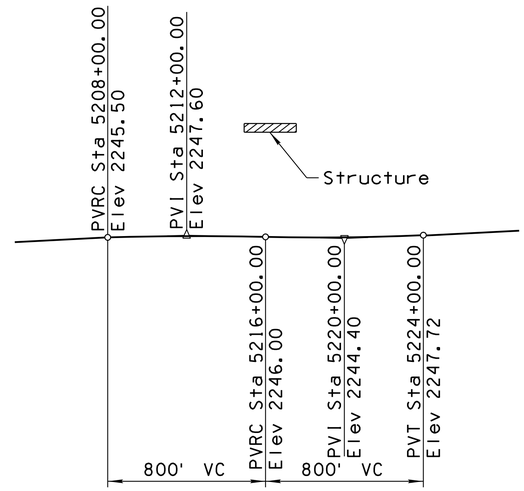
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	615	849	
		010 PM 252			



RUTHRAUFF ROAD CST ℄ PROFILE GRADE LINE
N. T. S.



I-10 MAINLINE WESTBOUND PGL (37' FROM CST ℄)
N. T. S.



I-10 MAINLINE EASTBOUND PGL (37' FROM CST ℄)
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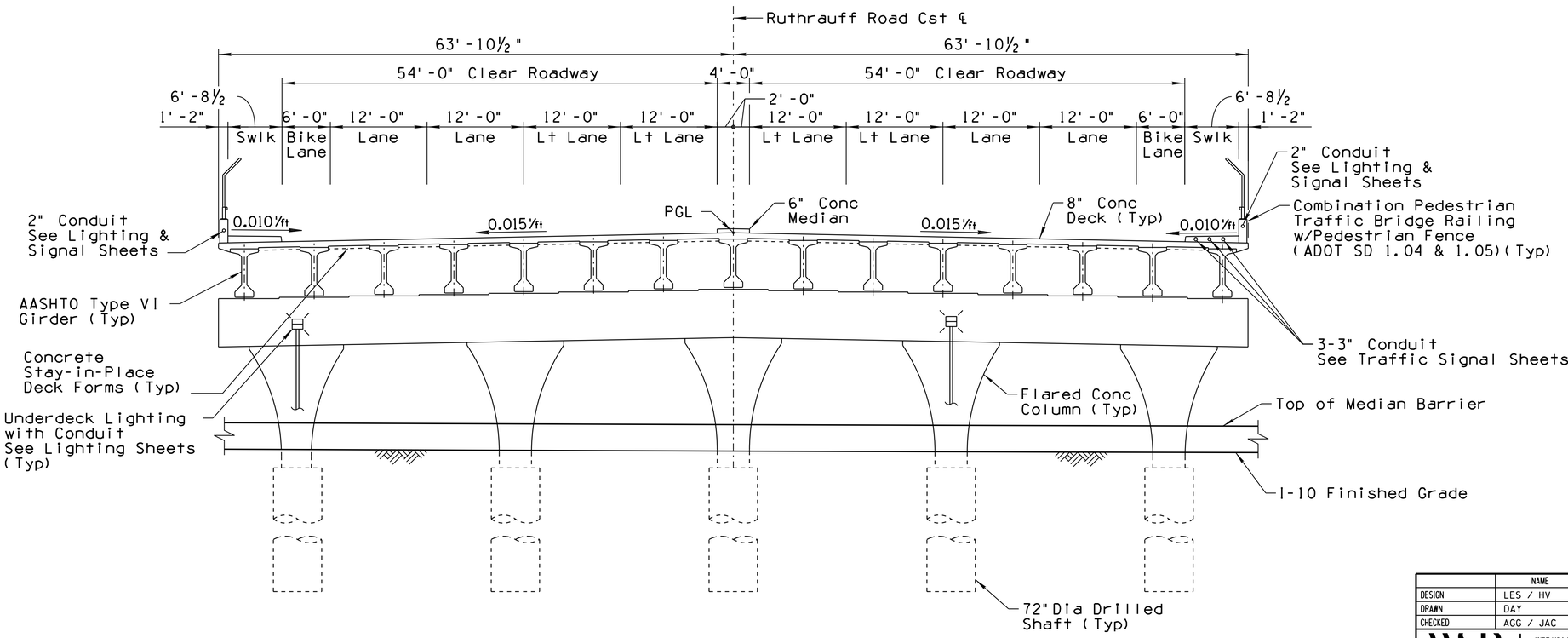

TYPICAL SECTION
Looking Ahead Station
Scale: ⅛" = 1' -0"

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
TYPICAL SECTION

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

Registered Professional Engineer (Civil/Structural)
50678
JASON CARLAFTES
Date Signed 5/24/19
ARIZONA, U.S.A.

DWG NO. S-1.02
___ OF ___

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

Fri 24 May 2019, 11:30:15
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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	616	849	
		010 PM 252			

GENERAL NOTES:

Construction Specification
Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, Edition of 2008 and Special Provisions.

Design Specifications
AASHTO LRFD Bridge Design Specifications, 7th Edition 2014, with 2015 and 2016 interim revisions.

Dead Load
Dead Load includes allowance of 25 pounds per square foot for Future Wearing Surface (FWS). The Bridge Design has an assumed dead load of 15 psf for stay-in-place deck panels and the associated additional non-structural concrete.

Live Load
Loading Class = HL-93

Seismic
Bridge Site is classified as Seismic Zone 1, Site Class D with Peak Ground Acceleration (PGA) A_S = 0.120g and Spectral Acceleration at 0.2 sec. S_{DS} = 0.278g and at 1.0 sec. S_{D1} = 0.118g as modified by the appropriate Site Factors.

Inventory and Operating
Ratings for HL-93 are in accordance with the AASHTO Manual for Bridge Evaluation, 2nd Edition with Interim Revisions through 2016 and in accordance with the Load and Resistance Factor Rating (LRFR) method.

Inventory Load Rating 1.20 (LRFR)
Operating Load Rating 2.09 (LRFR)

Concrete
All concrete shall be ADOT Class "S" unless noted otherwise.

Reinforcing Steel
Reinforcing steel Shall conform to ASTM Specification A615 (AASHTO M31). All reinforcing shall be furnished as Grade 60.

All bends and hooks shall meet the requirements of AASHTO Article 5.10.2 unless noted otherwise. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2" clear cover unless noted otherwise.

All mechanical splices shall conform to the requirements for mechanical connections in Section 605-3.02 of the Standard Specifications.

Prestressing
Steel strands shall conform to ASTM A416 (AASHTO M203), Grade 270, Low Relaxation Strands.

Transformed sections for prestressing strands was used for girder analysis.

Construction Joints
All construction joints shall be intentionally roughened to an amplitude of 1/4" unless noted otherwise, and be cleared of dirt, oil and otherwise deleterious debris.

Mechanical Splices may be used at all construction joints and formed joints where reinforcing must pass between pours, unless noted otherwise.

Barriers
Shall be constructed after spans have taken dead load deflection. Barriers shall not be slip formed.

Chamfer
All exposed corners 3/4" unless noted otherwise.

Dimensions
Dimensions shall not be scaled from the drawings.

GENERAL NOTES (CONTINUED):

Rustication and Paint
Bridge shall be rusticated and painted in accordance with the Architectural Treatment Details, the Construction Specifications, and the Special Provisions.

Fencing shall be installed with decorative metalwork. See the Architectural Treatment Details, the Construction Specifications, and the Special Provisions.

Material strengths (unless noted otherwise)

Precast Prestressed Beams ...	f'ci = See Girder Detail Sheets f'c = See Girder Detail Sheets
Deck and Diaphragms ...	f'c = 4.5 ksi
Parapet, Sidewalk & Median ...	f'c = 4.0 ksi
Abutments, Pier, and Drilled Shafts ...	f'c = 3.5 ksi
All other Class "S" Concrete ...	f'c = 3.5 ksi
Grade 60 transverse deck reinforcement ...	fs = 24.0 ksi
All other Grade 60 reinforcement ...	fy = 60.0 ksi
Prestressing Steel ...	fpu = 270.0 ksi

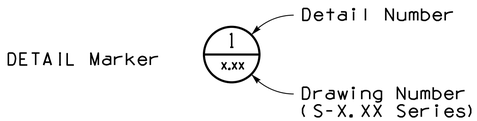
(0.6" dia 7-wire Low Relaxation Strand)

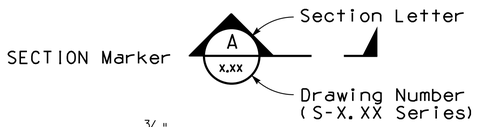
Welds
All welding shall conform to the requirements of the American Welding Society, ANSI/AASHTO/AWS D1.5 Bridge Welding code, 2015.

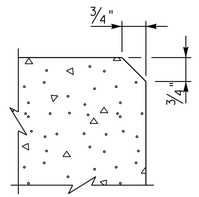
Electrical
Lighting and ITS conduit and fixture mounting details and locations shall be in accordance with the Lighting and ITS Drawings.

Standard List
ADOT Bridge Group Structure Detail (SD)
Drawings: 1.01, 1.04, 1.05, 1.11, 2.01, 2.03, 3.02, 5.01, and 5.02

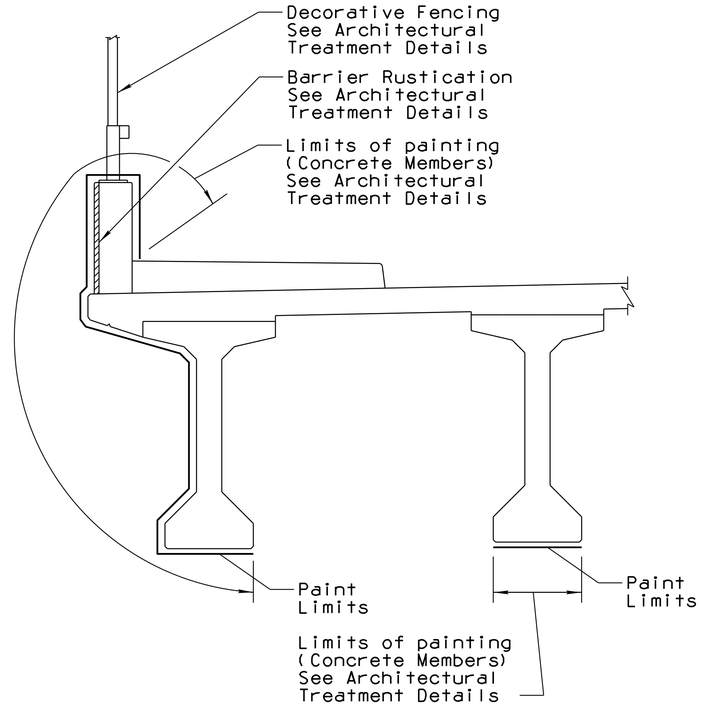
Legend







CHAMFER DETAIL (1)
No Scale



Aesthetic Details
No Scale

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
GENERAL NOTES

I-10	252.00	20159
ROUTE	MILEPOST	STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678
JASON
CARLAFTES
Date Signed 03/31/19
ARIZONA, U.S.A.
EXPIRES 3/31/2019

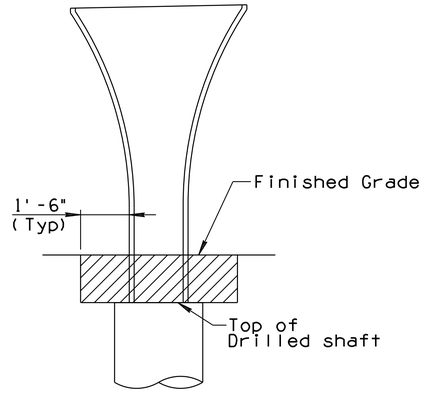
DWG NO. S-1.03

___ OF ___

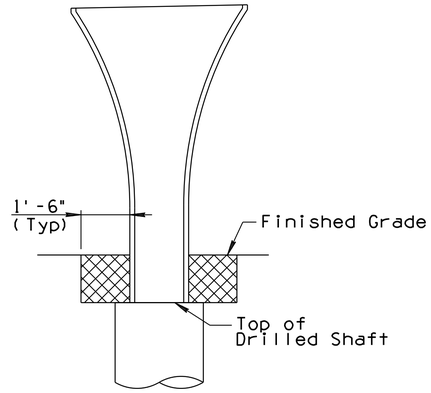
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

Tue 19 Mar 2019, 11:33:11 \\prdpwics02\ics_workingdir\2227\42600_19\S20159nq.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	617	849	
		010 PM 252			



STRUCTURAL EXCAVATION PAYMENT LIMITS



STRUCTURE BACKFILL PAYMENT LIMITS

LEGEND

Structural Excavation

Structure Backfill

RUTHRAUFF ROAD APPROXIMATE QUANTITIES

ITEM	STRUCT EXC	STRUCT BACKFILL	CLASS "S" CONCRETE			REINFORCING STEEL	AASHTO TYPE VI GIRDERS	DRILLED SHAFTS			
								60" Φ		72" Φ	
			f'_c=3,500psi	f'_c=4,000psi	f'_c=4,500psi						
UNIT	CY	CY	CY	CY	CY	LB	LF	NO.	LF	NO.	LF
Abutment 1	50	30	296			66,442		6	540		
Pier	55	35	332			102,808				5	475
Abutment 2	50	35	378			82,294		6	540		
Superstructure				18	1644	357,009	4144				
Total	155	100	1006	18	1644	608,553	4144	12	1080	5	475
As-Built Total											

Deck Joint Assembly (Strip Seal Joint).....164 LF
Combination Pedestrian-Traffic Bridge Railing.....621 LF
Pedestrian Fence for Combination Pedestrian-Traffic Bridge Railing....597 LF
Approach Slab (SD 2.01).....6597 SF
Anchor Slab (Type 2)(SD2.03).....3240 SF
Restrainers, Vertical Earthquake (Expansion).....28 EA
Restrainers Vertical Earthquake (Fixed).....28 EA
Remove Bridge (NB & SB I-10 OVER RUTHRAUFF RD.....1 L.Sum
Underdeck Lighting (Ruthrauff Road T.I. Underpass).....1 L.Sum

NOTES:

1. An additional ¾" of deck concrete for stay-in-place forms is included in Class "S" Concrete f'c=4500 psi (9.4 psf applied over the area of the deck between girder flanges). The cost of stay-in-place forms is included with the cost of the deck concrete and will not be paid for separately.

2. Cost of temporary shoring is included with the cost of other bridge contract items. No separate payment will be made for temporary shoring.

3. The cost for lighting is not included with the cost of the structure. See Lighting Sheets.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
EXCAVATION,BACKFILL & QUANTITIES

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. S-1.04

___ OF ___

Registered Professional Engineer
CERTIFICATE NO.
50678
JASON
CARL AFTES
DATE EXPIRES
ARIZONA U.S.A.

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

Fri 26 Apr 2019, 13:51:29

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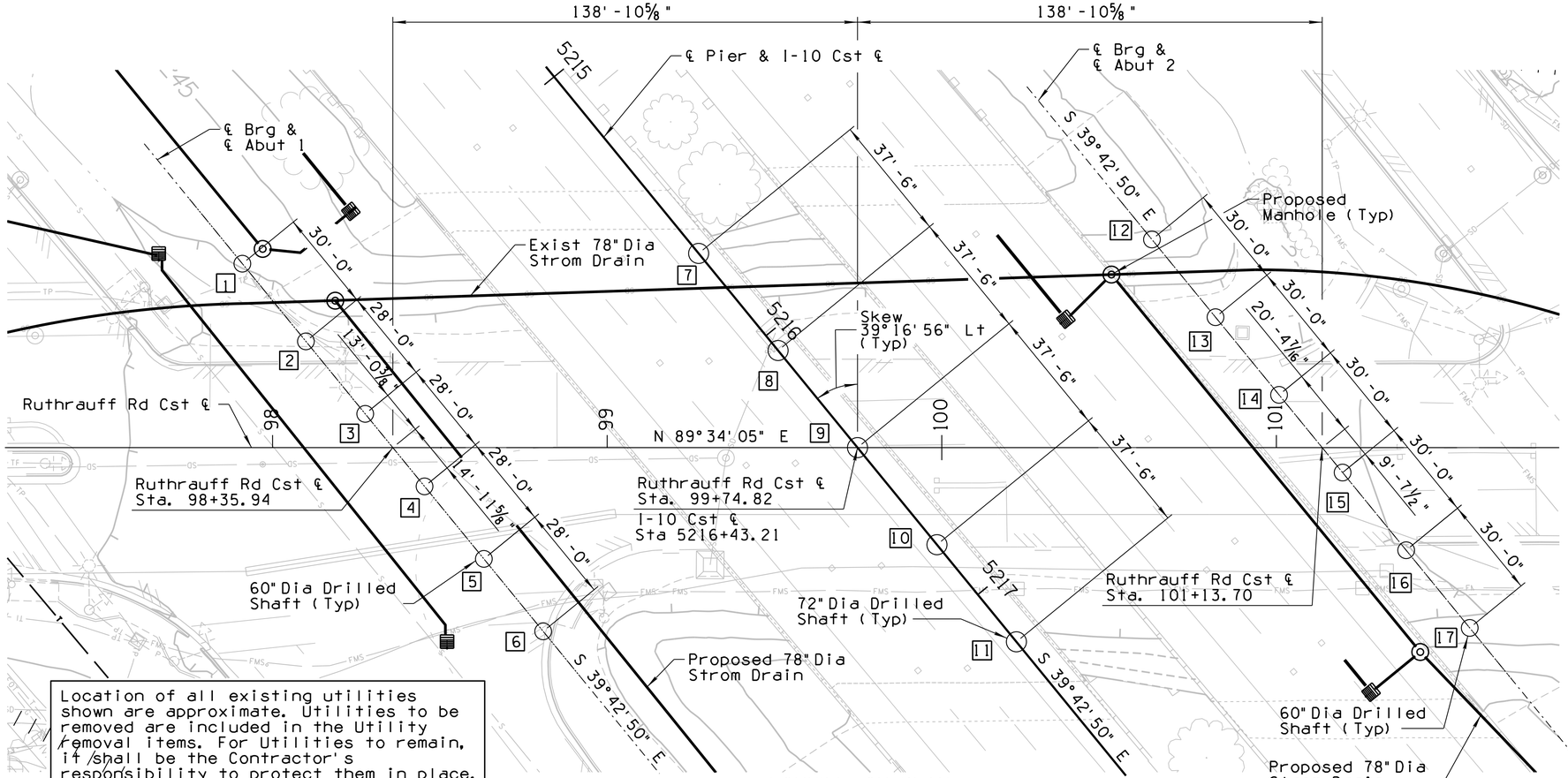
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	618	849	
		010 PM 252			



Location of all existing utilities shown are approximate. Utilities to be removed are included in the Utility removal items. For Utilities to remain, it shall be the Contractor's responsibility to protect them in place.

FOUNDATION PLAN
1' Contour Interval
Scale: 1" =20'

NOTES:

1. [1] Indicates drilled shaft foundation identification number.
2. The Contractor shall select one 72" Dia drilled shaft as a confirmation shaft per Section 609 of the Standard Specifications. The selected shaft shall be indicated in the Contractor's drilled shaft installation plan.
3. For Project Geotechnical Information, see the Final Geotechnical Report by NCS Consultants, Inc. dated March 31, 2015.
4. Contractor shall submit a plan detailing the drilling construction procedures for approval in the Drilled Shaft Installation Plan prior to starting drilled shaft construction.
5. Temporary Support of Steel Casing (if needed) is the Contractor's responsibility and is considered included in the drilled shaft pay item.
6. See Utility Relocation Plans for additional information and details.
7. It is anticipated that the shafts will be installed after I-10 roadway embankment. The Contractor shall wait 5 days after the embankment is placed before constructing any shafts. If a different construction sequence is used, notify the engineer prior to construction for approval.

FOUNDATION PLAN					
Location	Shaft No	Ruthrauff Rd Cst ℄		I-10 Cst ℄	
		Station	Offset	Station	Offset
Abut 1	1	97+90.97	54.98 Lt	5214+85.25	107.50 Rt
	2	98+09.96	31.76 Lt	5215+14.25	107.50 Rt
	3	98+27.69	10.09 Lt	5215+42.25	107.50 Rt
	4	98+45.42	11.59 Rt	5215+70.25	107.50 Rt
	5	98+63.14	33.26 Rt	5215+98.25	107.50 Rt
	6	98+80.87	54.93 Rt	5216+26.25	107.50 Rt
Pier	7	99+27.34	58.05 Lt	5215+68.21	--
	8	99+51.08	29.03 Lt	5216+05.71	--
	9	99+74.82	--	5216+43.21	--
	10	99+98.56	29.03 Rt	5216+80.71	--
	11	100+22.31	58.05 Rt	5217+18.21	--
Abut 2	12	100+62.82	62.21 Lt	5216+50.78	107.50 Lt
	13	100+81.81	38.99 Lt	5216+80.78	107.50 Lt
	14	101+00.81	15.77 Lt	5217+10.78	107.50 Lt
	15	101+19.80	7.45 Rt	5217+40.78	107.50 Lt
	16	101+38.79	30.68 Rt	5217+70.78	107.50 Lt
	17	101+57.79	53.90 Rt	5218+00.78	107.50 Lt

DRILLED SHAFT DATA								
	Top of Shaft (Elev.)	Bottom of Shaft (Elev.)	Shaft Diameter (In)	Shaft Length (Ft)	Service Limit State (Kips)	Strength Limit State (Kips)	Estimated Design Settlement (In)	Unfactored Down Drag Load (Kips)
Abut 1	2246.00	2156.00	60"	90'	2201	3340	0.20"	1000
Pier	2245.00	2150.00	72"	95'	2103	2799	0.20"	--
Abut 2	2245.00	2155.00	60"	90'	2201	3340	0.20"	1000

Loads are modified for non-redundant and/or group effects. Estimated design settlement is the total settlement that occurs after construction of the shaft.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION PLAN

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

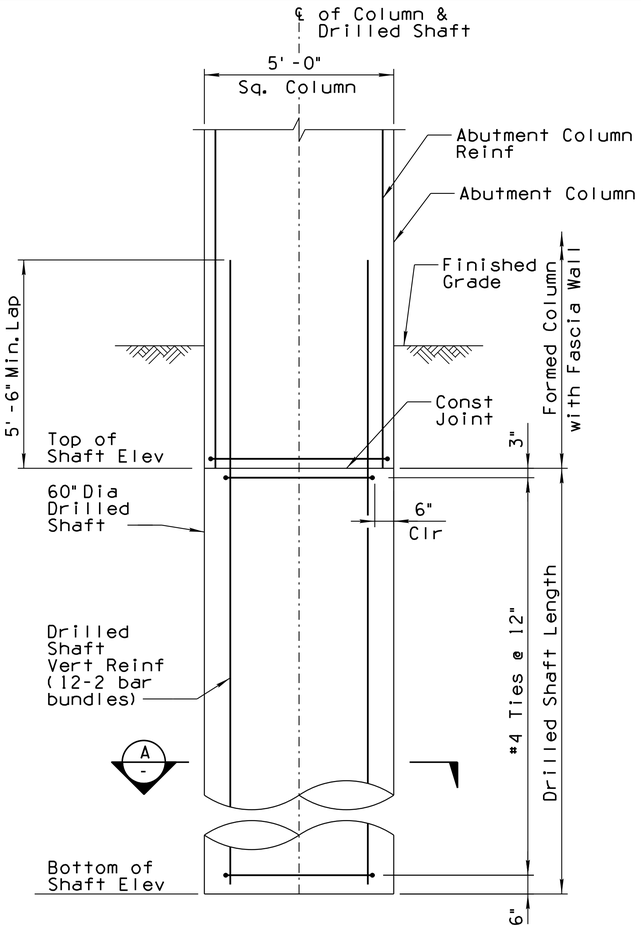
50678 JASON CARLAFTES
Registered Professional Engineer
Date signed 2/28/19
ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-1.05

___ OF ___

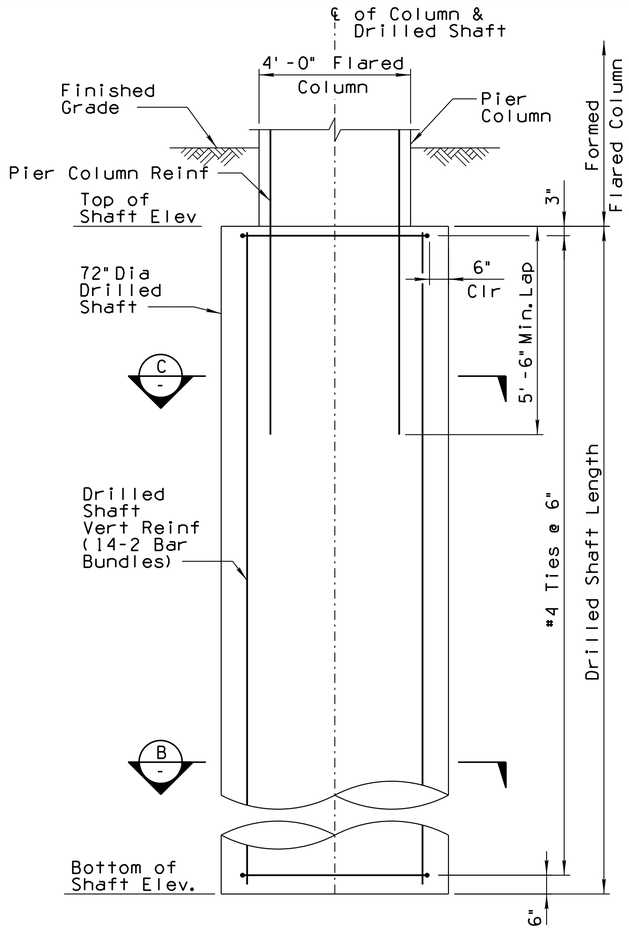
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

Tue 19 Mar 2019, 11:34:18 \\prdpwics02\ics_workingdir\2227\42600_45\S20159f1.dgn



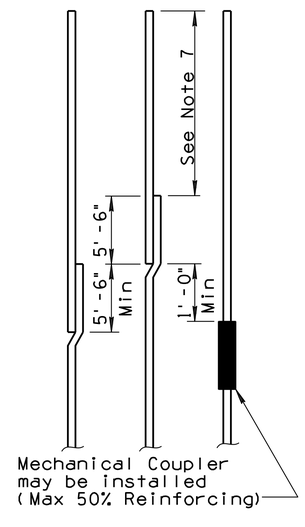
ABUTMENT DRILLED SHAFT DETAIL

Scale: ½" = 1' -0"



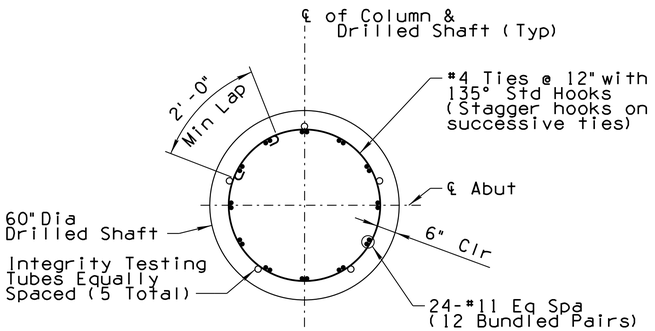
PIER DRILLED SHAFT DETAIL

Scale: ½" = 1' -0"



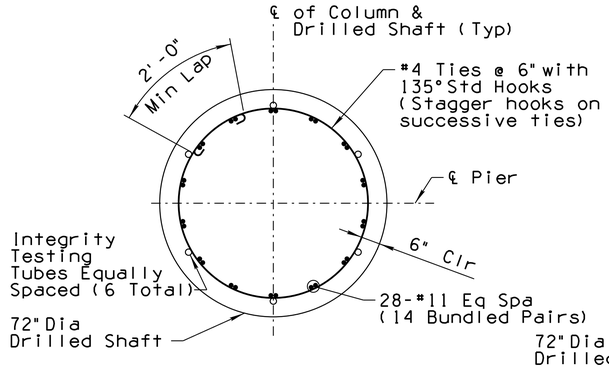
RESTRICTION ON SPLICE
AT DRILLED SHAFTS

N. T. S.



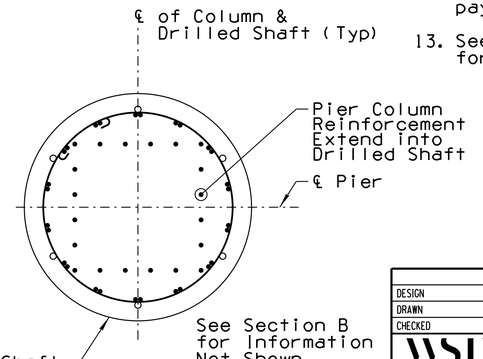
SECTION - ABUTMENT (A -)

Scale: ½" = 1' -0"



SECTION - PIER (B -)

Scale: ½" = 1' -0"



SECTION - PIER (C -)

Scale: ½" = 1' -0"

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	619	849	

010 PM 252

DRILLED SHAFT NOTES:

1. Drilled Shafts shall be constructed into existing grade and/or compacted roadway embankment.
2. Shaft concrete shall be placed within 24 hours after the excavation has been completed and the reinforcing cage placed in position.
3. Drilled shaft excavation will not be permitted until the concrete of any adjacent drilled shaft has been in place a minimum of 48 hours. An adjacent drilled shaft is any drilled shaft within 4 diameters measured from center to center.
4. Construction joints not shown on the project plans shall require the approval of the Engineer prior to construction.
5. In the event of a weak layer (silt, clay, loose sand, etc) at the recommended tip elevation, the shaft shall be extended to bear on firm soil as determined by the Engineer.
6. The contractor shall orient the drilled shaft reinforcing cage to minimize conflict with the reinforcing in the columns.
7. Drilled shaft reinforcing shall not be spliced in the upper 1/3 of the shaft. Lap splices shall be staggered as far as possible below this region.
8. Integrity Testing Tubes shall be installed in all shafts. The size, type, and details of tubes shall be per the Standard Specifications and the Special Provisions. Tubes shall not be attached to vertical reinforcing.
9. The Integrity Testing Tubes shall be extended to within 6" of the completed tip elevation. If the tip elevation is greater than 3'-0" below plan, support reinforcing for the tubes shall be installed to provide a maximum unsupported length of 3'-0".
10. The cost of drilled shaft vertical reinforcing projection above top elevation, any mechanical couplers, any casings and any additional concrete required for oversized casings shall be considered incidental to the drilled shaft pay item.
11. Shaft cage shall be held in position during placement of shaft concrete.
12. Payment for any and all work required below the tip elevation shown shall be based on the unit price per linear foot for the drilled shaft pay item.
13. See Standard Specifications and Special Provisions for additional requirements.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
DRILLED SHAFT DETAILS

I-10	252.00	20159	RUTHRAUFF ROAD T.I.
ROUTE	MILEPOST	STRUCTURE NO.	LOCATION

50678
JASON
CARLAFTES
Registered Professional Engineer
Date Signed 03/31/19
ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-1.06

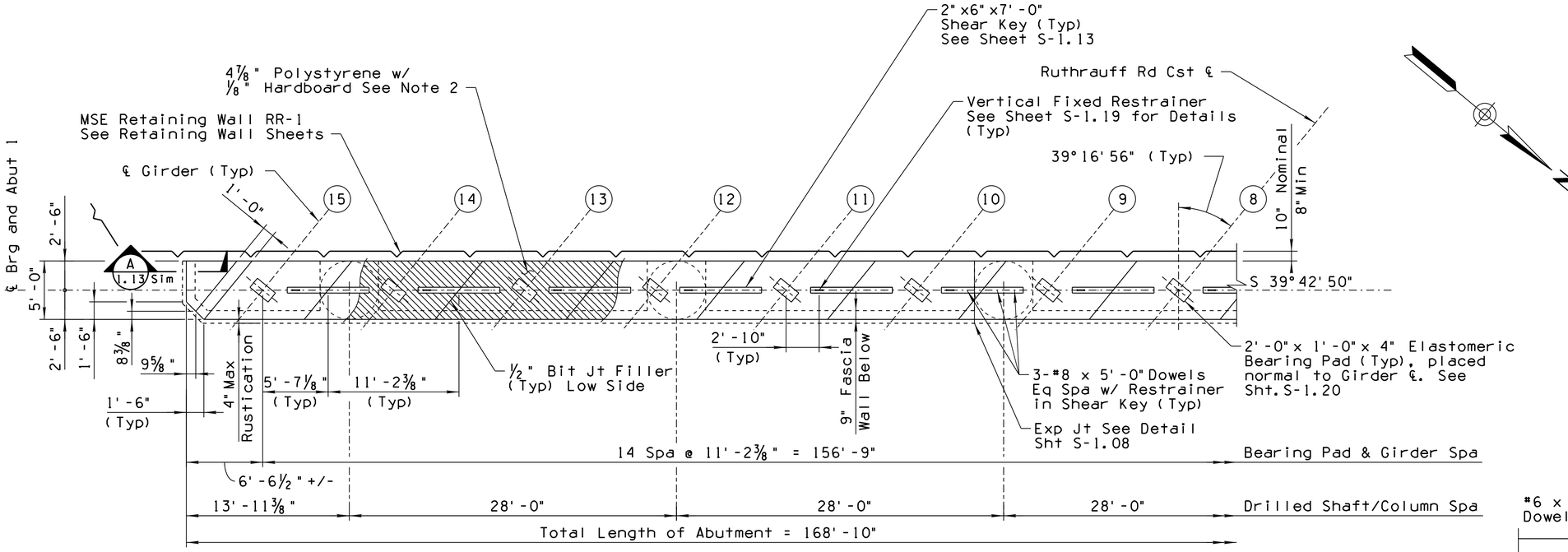
TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

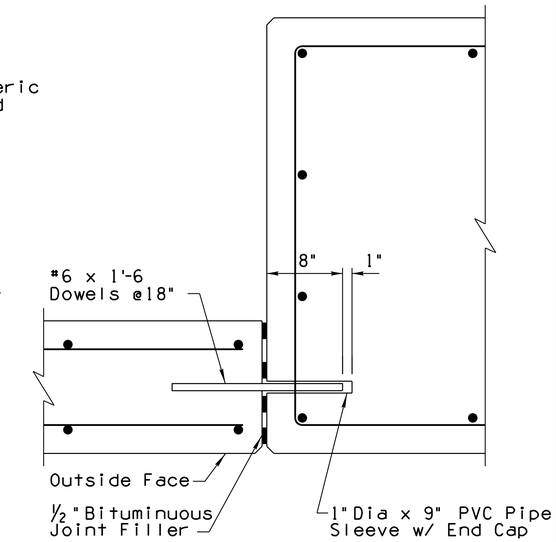
Tue 19 Mar 2019, 11:33:58

\\prdpwics02\ics_workingdir\2227\42600.36\S20159ds.dgn

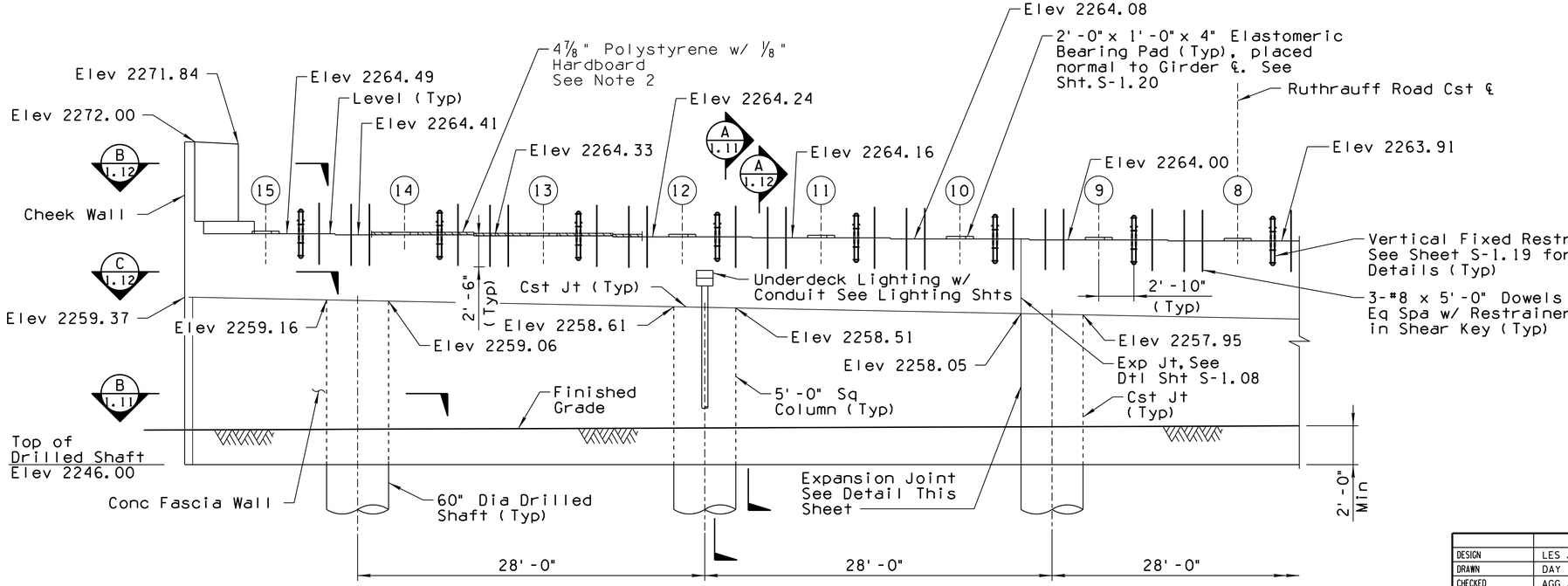
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	620	849	
		010 PM 252			



PLAN
Looking Back Station
Scale: 1/4" = 1'-0"



EXPANSION JOINT DETAIL - FASCIA WALL



ELEVATION
Looking Back Station
Scale: 1/4" = 1'-0"

Notes:

1. Verify all bridge seats elevations prior the erection of the girders.
2. Polystyrene + Hardboard thickness accounts for the 1" Bevel PL thickness at ℄ Brg

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT 1 PLAN & ELEVATION 1

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — State of Arizona, U.S.A. — Date Signed 03/19/19 — EXPIRES 3/31/2019

DWG NO. S-1.07

___ OF ___

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

Tue 19 Mar 2019, 11:33:51

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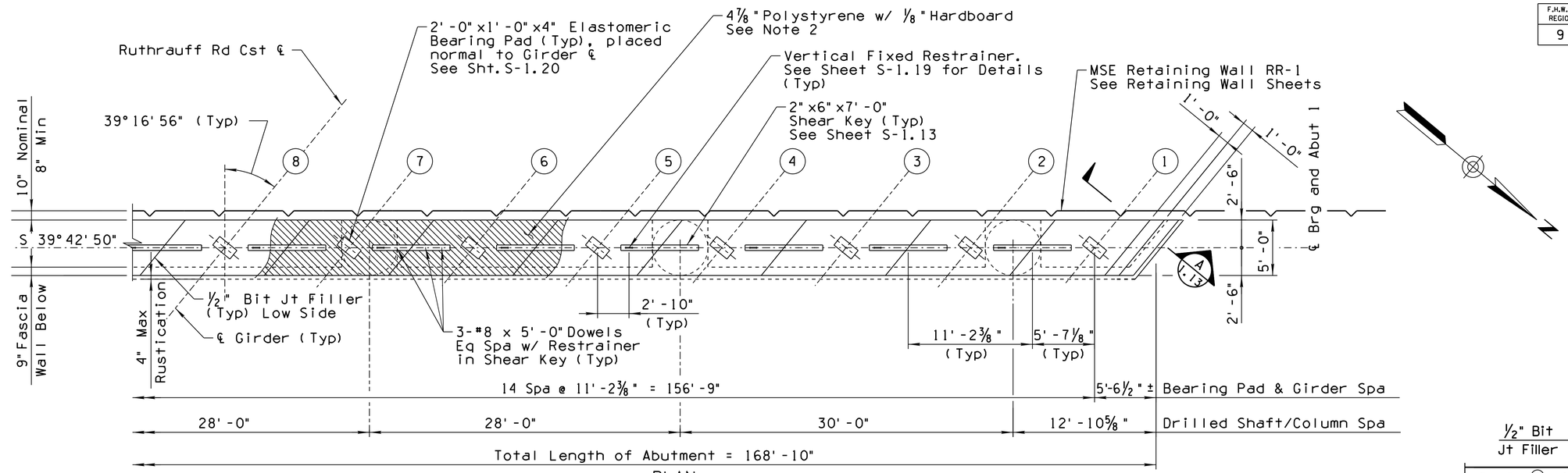
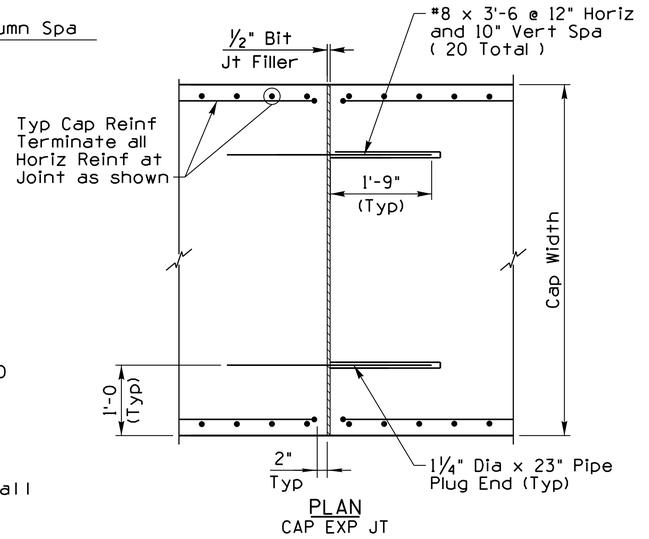
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	621	849	
		010 PM 252			



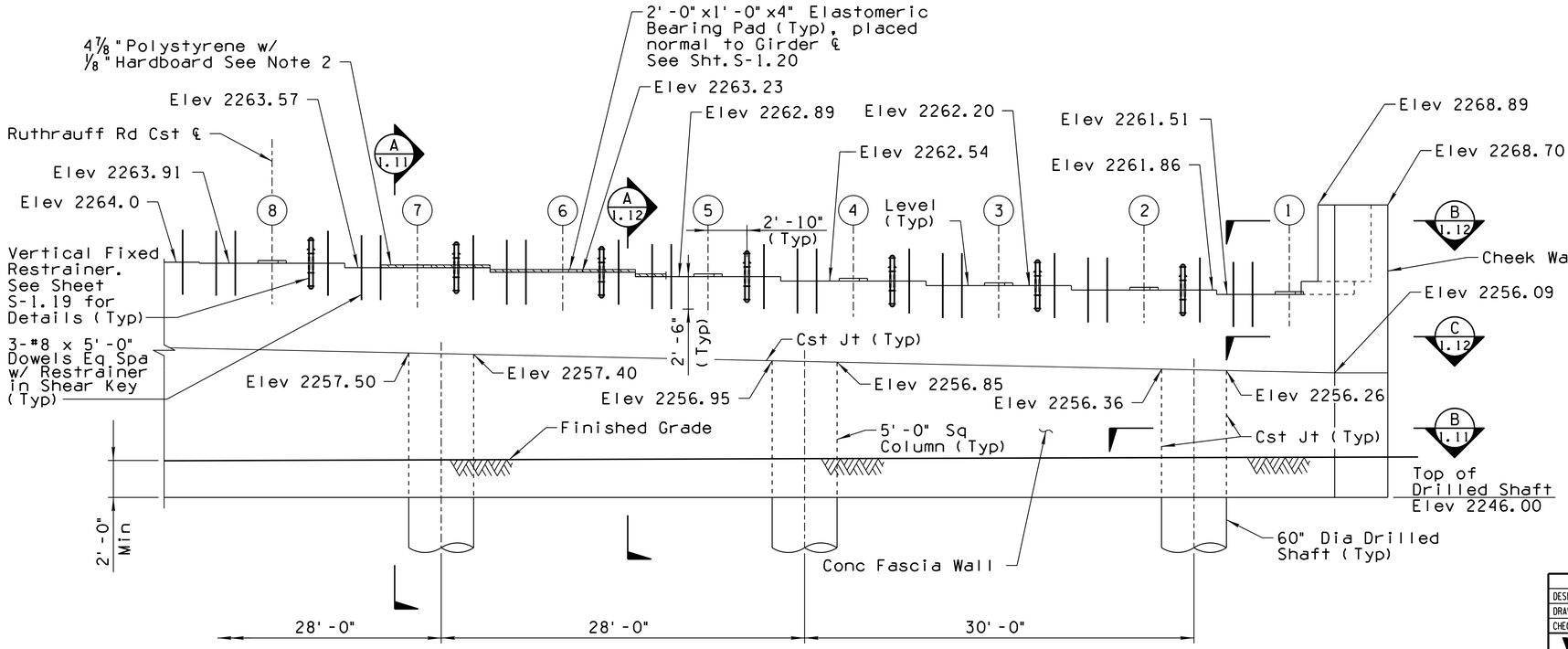
PLAN

Looking Back Station
Scale: 1/4" = 1'-0"



PLAN
CAP EXP JT

EXPANSION JOINT DETAIL - ABUTMENT CAP (1 / -)
No Scale



ELEVATION

Looking Back Station
Scale: 1/4" = 1'-0"

NOTES:

1. Verify all bridge seats elevations prior to the erection of the girders.
2. Polystyrene + Hardboard thickness accounts for the 1" Bevel PL thickness at ℄ Brg

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1100
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT 1 PLAN & ELEVATION 2

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION
RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C

010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — Date Signed 3/31/19 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.08

___ OF ___

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

Tue 19 Mar 2019, 11:33:27

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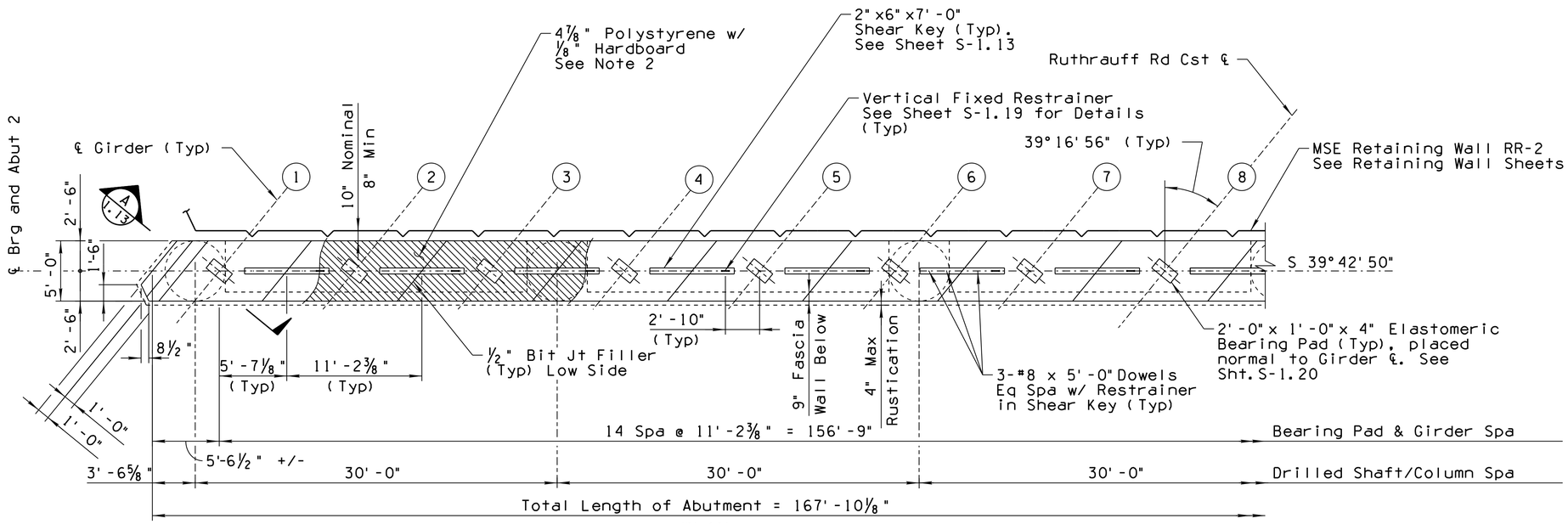
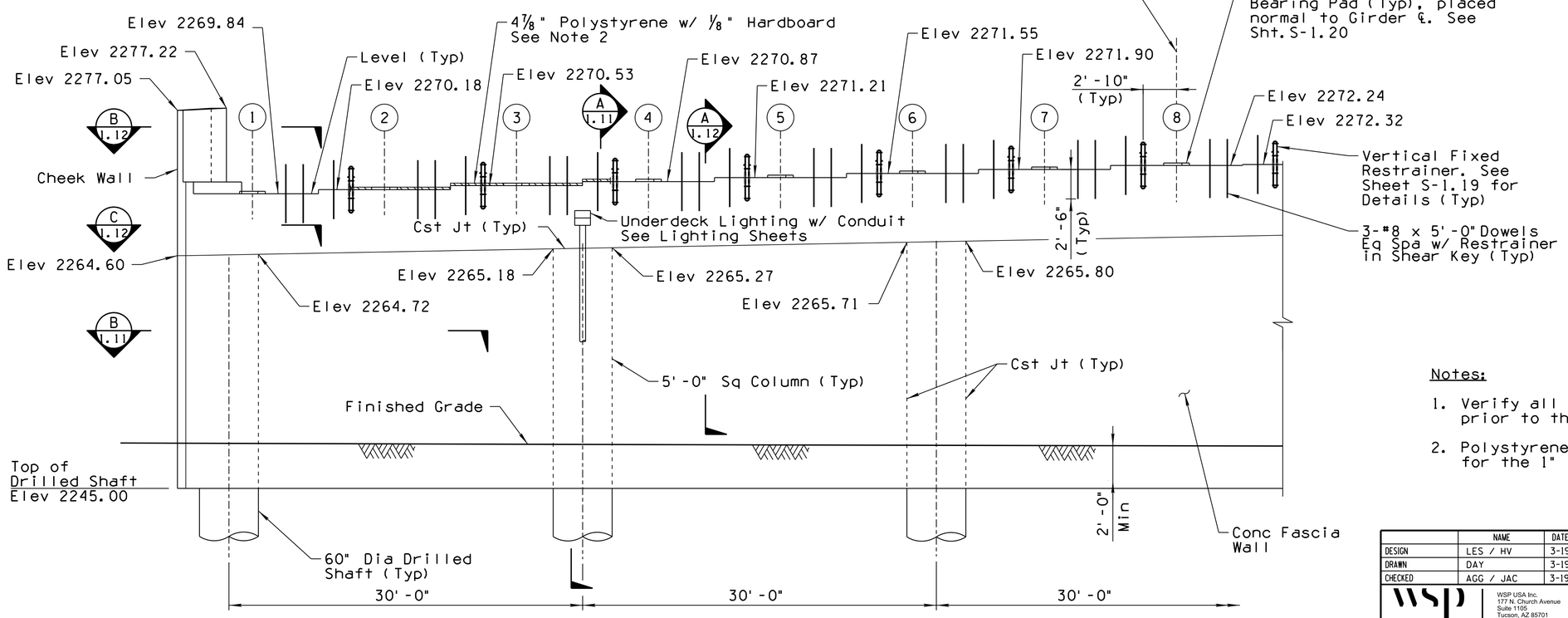
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	622	849	
		010 PM 252			



PLAN
Looking Ahead Station
Scale: ¼" = 1'-0"



ELEVATION
Looking Ahead Station
Scale: ¼" = 1'-0"

Notes:

1. Verify all bridge seat elevations prior to the erection of the girders.
2. Polystyrene + Hardboard thickness accounts for the 1" Bevel ℙ thickness at ℄ Brg

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT 2 PLAN & ELEVATION 1

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

50678 JASON CARLAFTES — Registered Professional Engineer — State of Arizona, U.S.A. — Date Signed 3/31/19 — EXPIRES 3/31/2019

DWG NO. S-1.09

TRACS NO. H 8480 01C

010-D(213)S

____ OF ____

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

Tue 19 Mar 2019, 11:34:06

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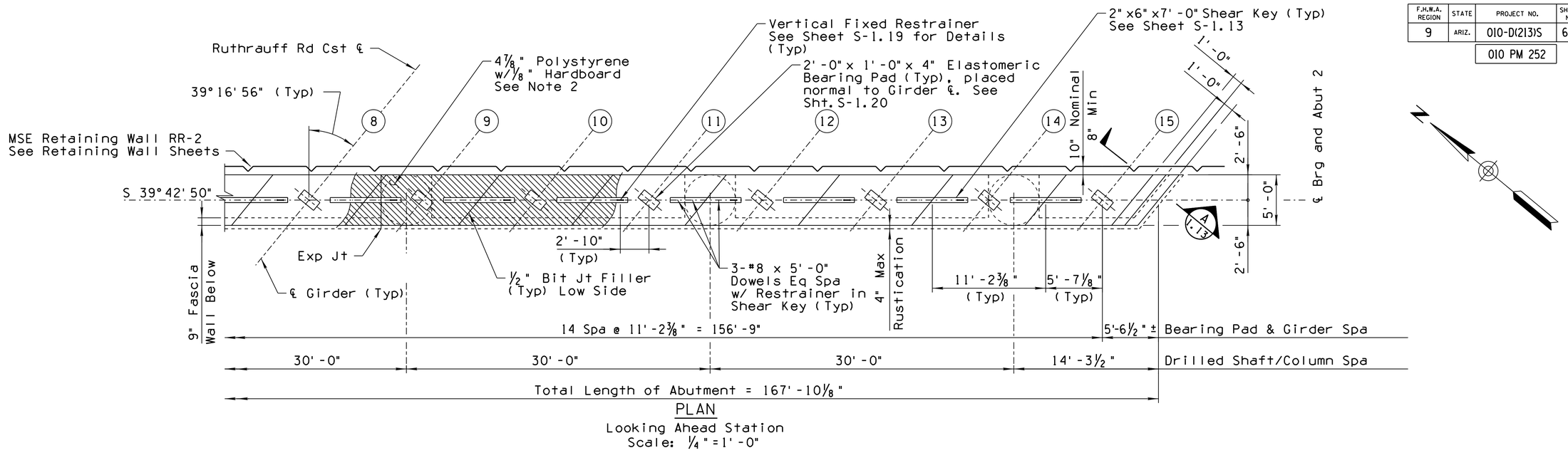
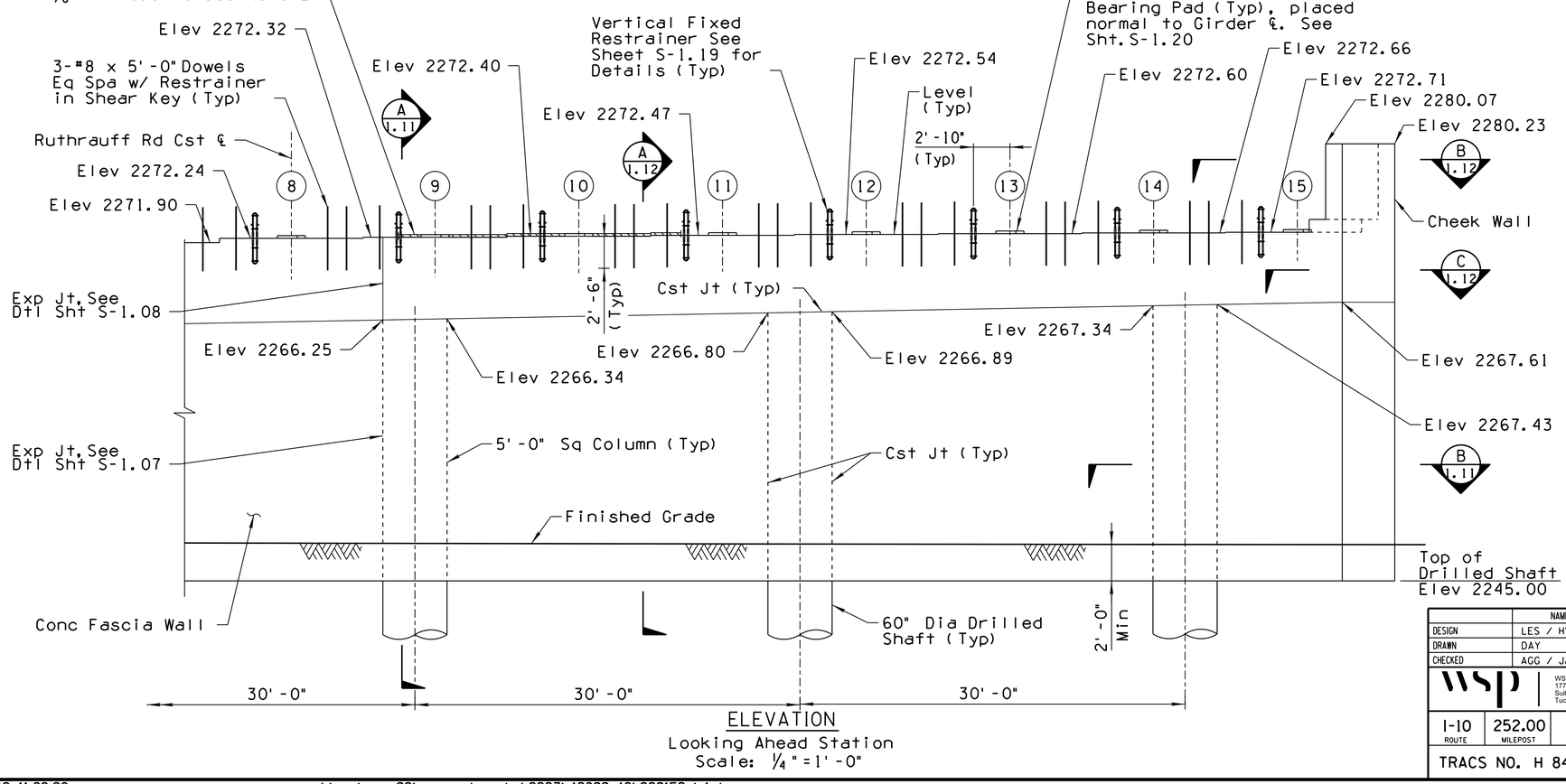
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	623	849	
		010 PM 252			



PLAN

Looking Ahead Station
Scale: ¼" = 1'-0"



ELEVATION

Looking Ahead Station
Scale: ¼" = 1'-0"

Notes:

1. Verify all Bridge seats elevations prior to the erection of the girders.
2. Polystyrene + Hardboard thickness accounts for the 1" Bevel PL thickness at ℄ Brg

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
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Suite 1105
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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT 2 PLAN & ELEVATION 2

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C

010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — State of Arizona — Date Signed 2/28/19 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.10

___ OF ___

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

Tue 19 Mar 2019, 11:33:28

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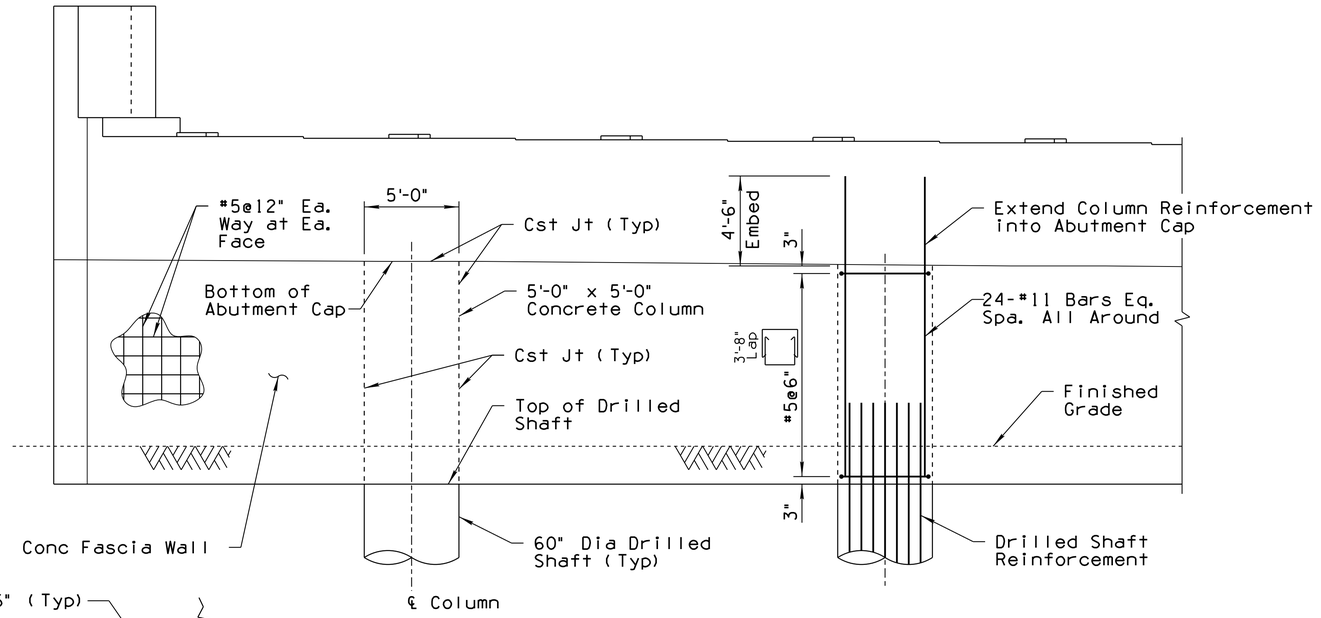
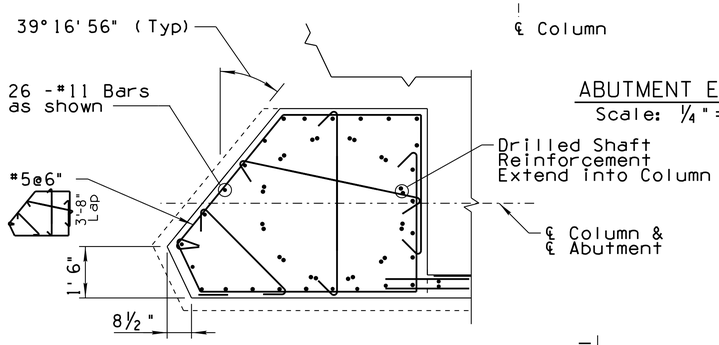
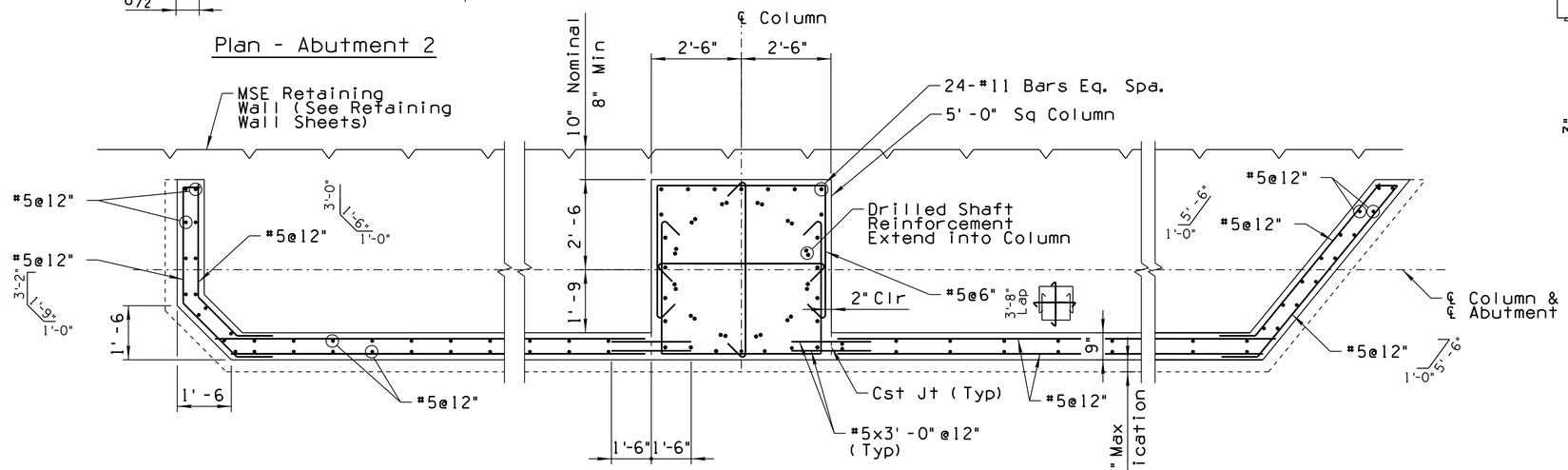
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	624	849	
		010 PM 252			



ABUTMENT ELEVATION
Scale: 1/4" = 1'-0"

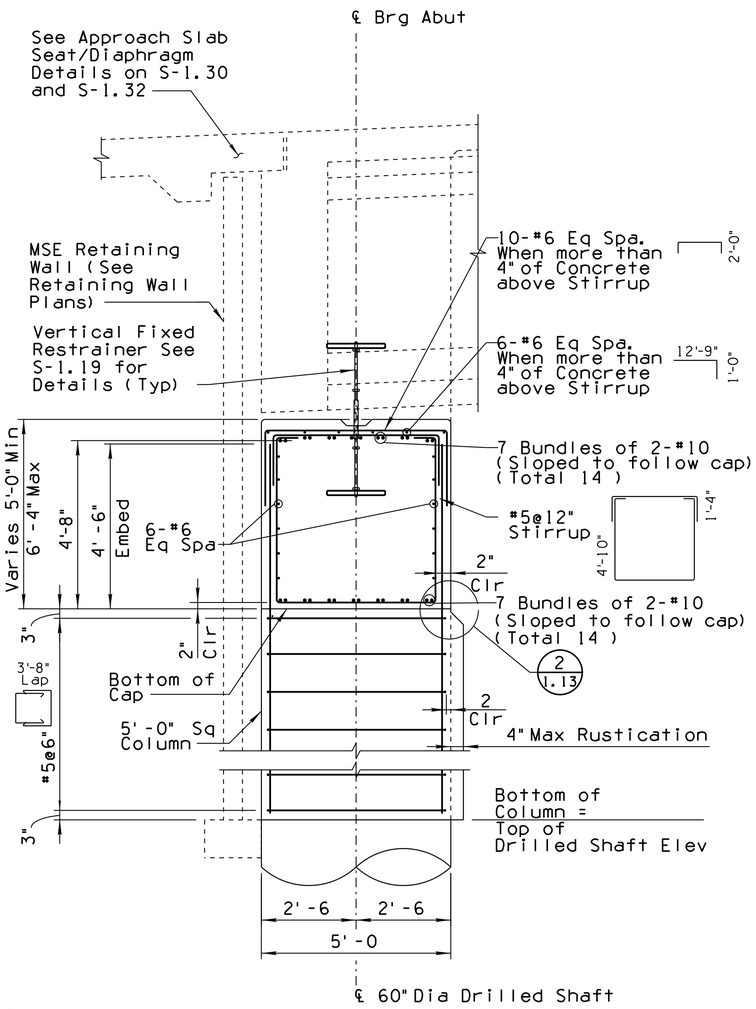


Plan - Abutment 2



Plan - Abutment 1

SECTION - WALL AND COLUMN
Scale: 1/2" = 1'-0"
B 1.07 | B 1.08 | B 1.09 | B 1.10



SECTION - ABUTMENT AT COLUMN
Scale: 1/2" = 1'-0"
A 1.07 | A 1.08 | A 1.09 | A 1.10 | A 1.12

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT DETAILS 1

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678 JASON CARLAFTES REGISTERED PROFESSIONAL ENGINEER ARIZONA, U.S.A. Date Signed 3/31/2019
EXPIRES 3/31/2019

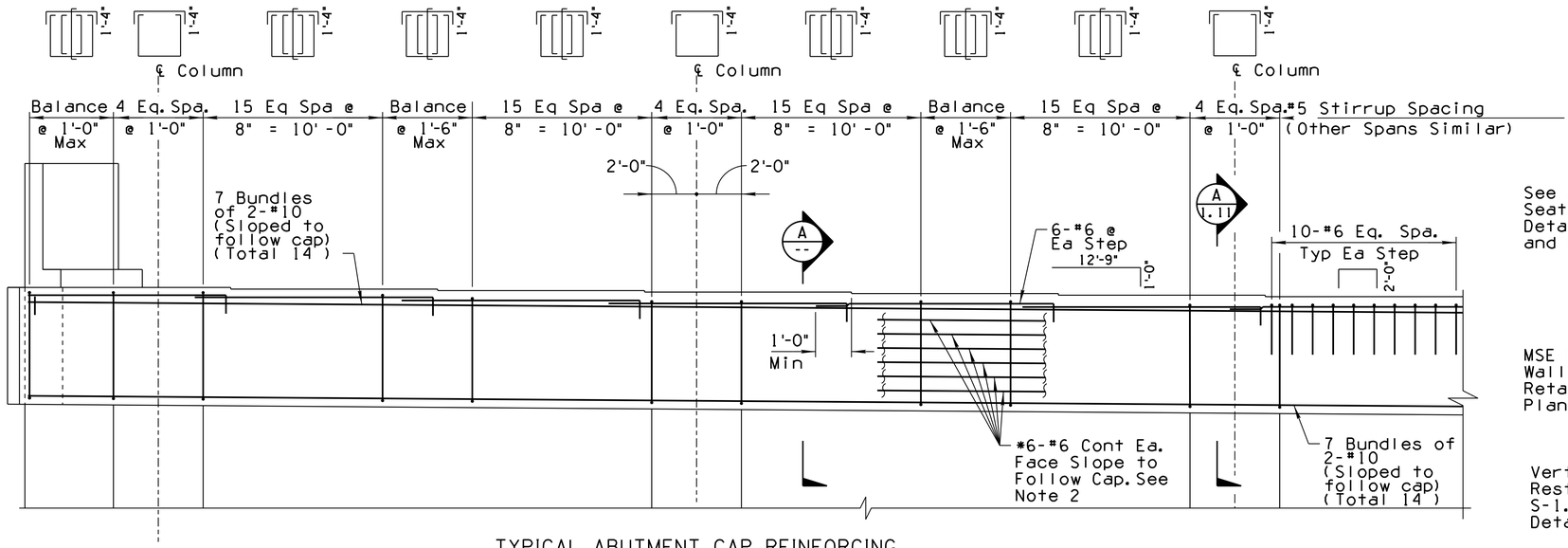
DWG NO. S-1.11

___ OF ___

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

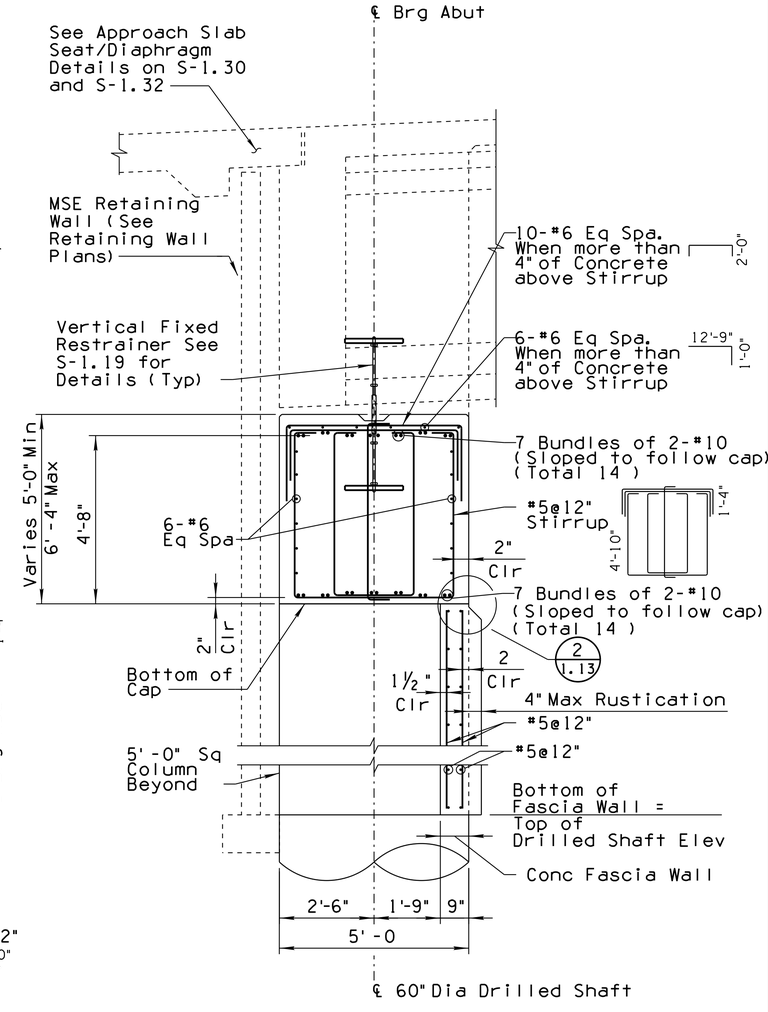
Tue 19 Mar 2019, 11:33:33 \\prdpwics02\ics_workingdir\2227\42600_51\S20159ad1.dgn

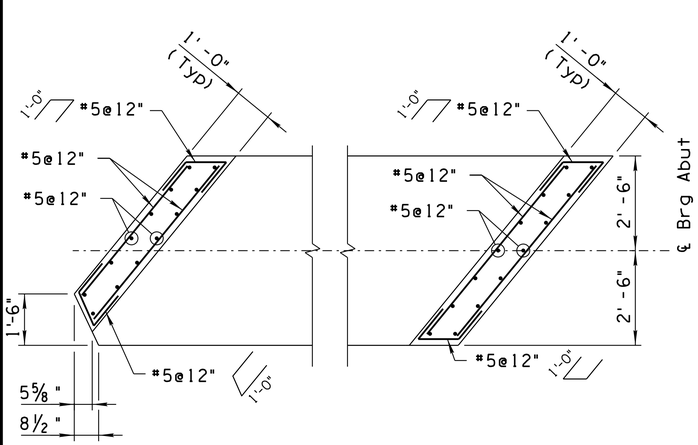
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	625	849	
		010 PM 252			



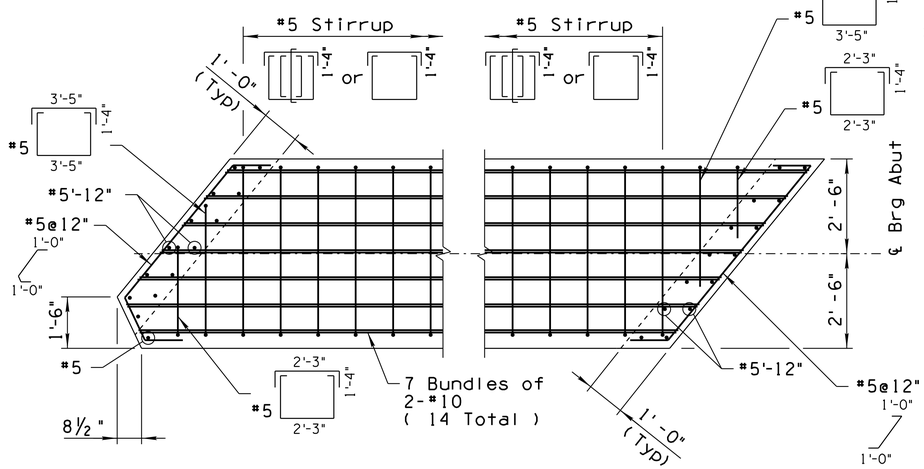
TYPICAL ABUTMENT CAP REINFORCING

Looking Ahead Station
Abutment 2 Shown, Abutment 1 Similar
Scale: 1/4" = 1'-0"





SECTION - CHEEK WALL (B 1.07) (B 1.08) (B 1.09) (B 1.10)
Scale: 1/2" = 1'-0"
Abutment 2 shown, Abutment 1 Similar



SECTION - CAP (C 1.07) (C 1.08) (C 1.09) (C 1.10)
Scale: 1/2" = 1'-0"
Abutment 2 shown, Abutment 1 Similar

SECTION - ABUTMENT AT WALL (A 1.07) (A 1.08) (A 1.09) (A 1.10)
Scale: 1/2" = 1'-0"

Notes:

1. See Dwg No. S-1.13 for Abutment Cap Reinforcing lap splice details.
2. #6 bars shall be spliced 2'-3 min. as required. Adjacent bars shall not be spliced at the same location and shall be staggered.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
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Suite 1105
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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT DETAILS 2

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C

010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — State of Arizona, U.S.A. — Date Signed 3/31/2019 — EXPIRES 3/31/2019

DWG NO. S-1.12

OF

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

Tue 19 Mar 2019, 11:34:23

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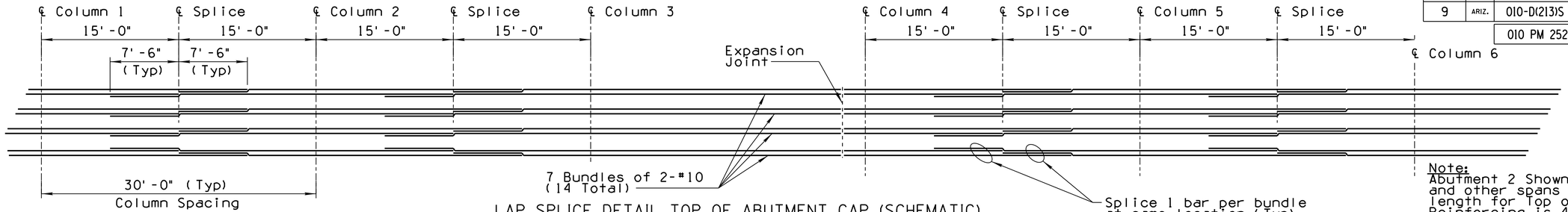
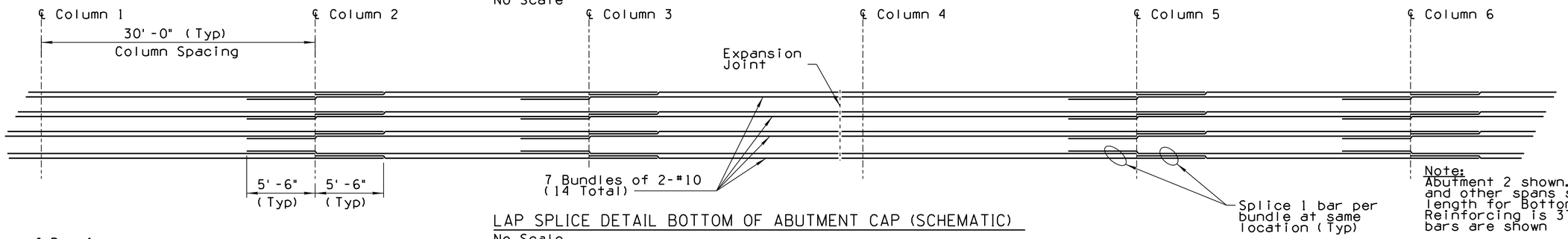
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	626	849	
		010 PM 252			



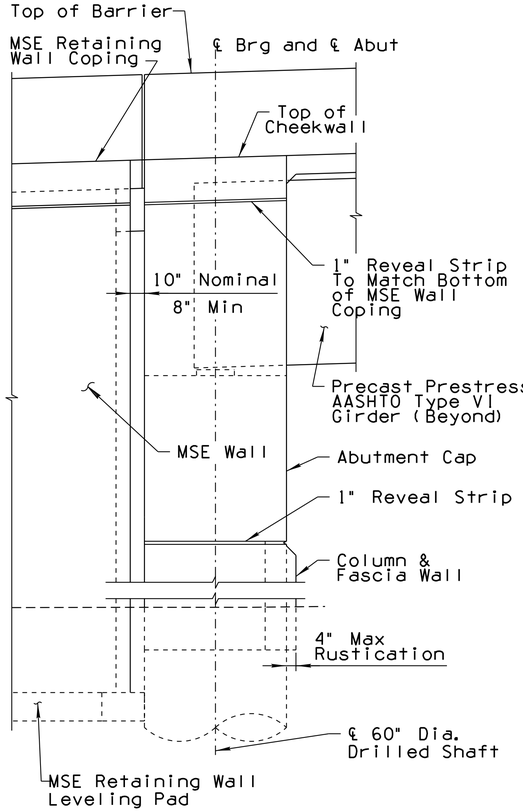
LAP SPLICE DETAIL TOP OF ABUTMENT CAP (SCHEMATIC)
No Scale

Note:
Abutment 2 Shown. Abutment 1 and other spans similar. Max bar length for Top of Abutment Cap Reinforcing is 49'-10". Not all bars are shown

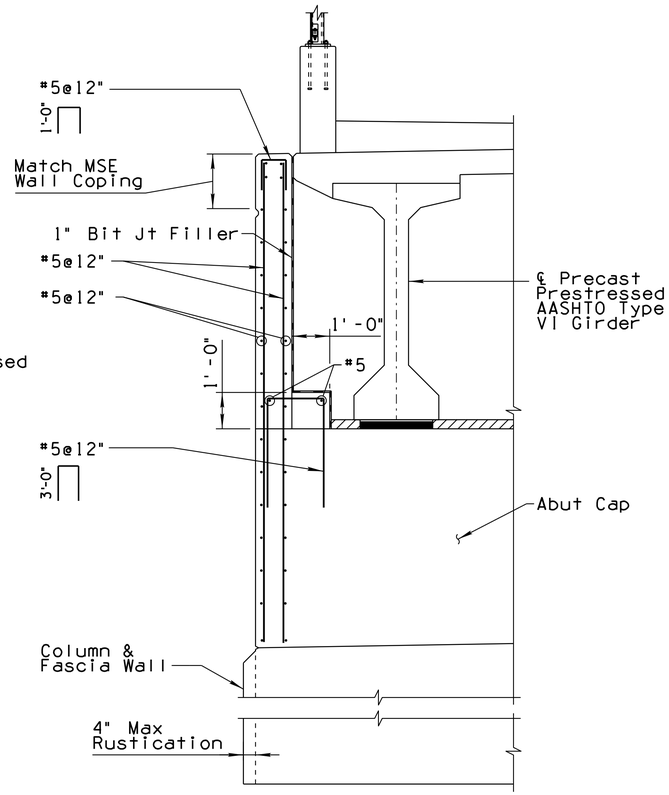


LAP SPLICE DETAIL BOTTOM OF ABUTMENT CAP (SCHEMATIC)
No Scale

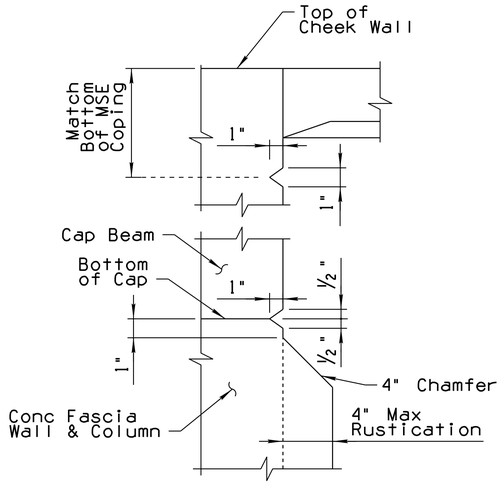
Note:
Abutment 2 shown. Abutment 1 and other spans similar. Max bar length for Bottom of Abutment Cap Reinforcing is 37'-10". Not all bars are shown



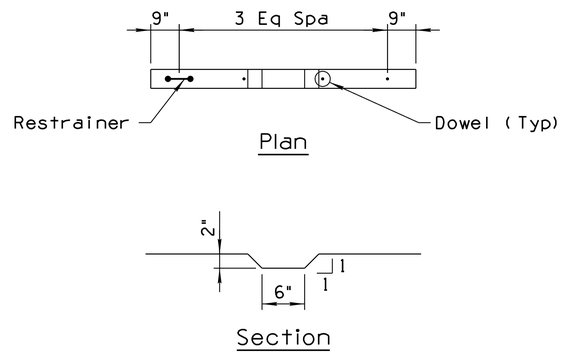
DETAIL -AESTHETICS (1)
No Scale



SECTION (A 1.07 / A 1.08 / A 1.09 / A 1.10)
Scale: ½" = 1'-0"



DETAIL - REVEAL (2)
No Scale



DETAIL - SHEAR KEY DETAIL (3)
No Scale

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
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Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT DETAILS 3

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — State of Arizona, U.S.A. — Date Signed 03/31/19 — EXPIRES 3/31/2019

DWG NO. S-1.13

___ OF ___

Tue 19 Mar 2019, 11:34:20

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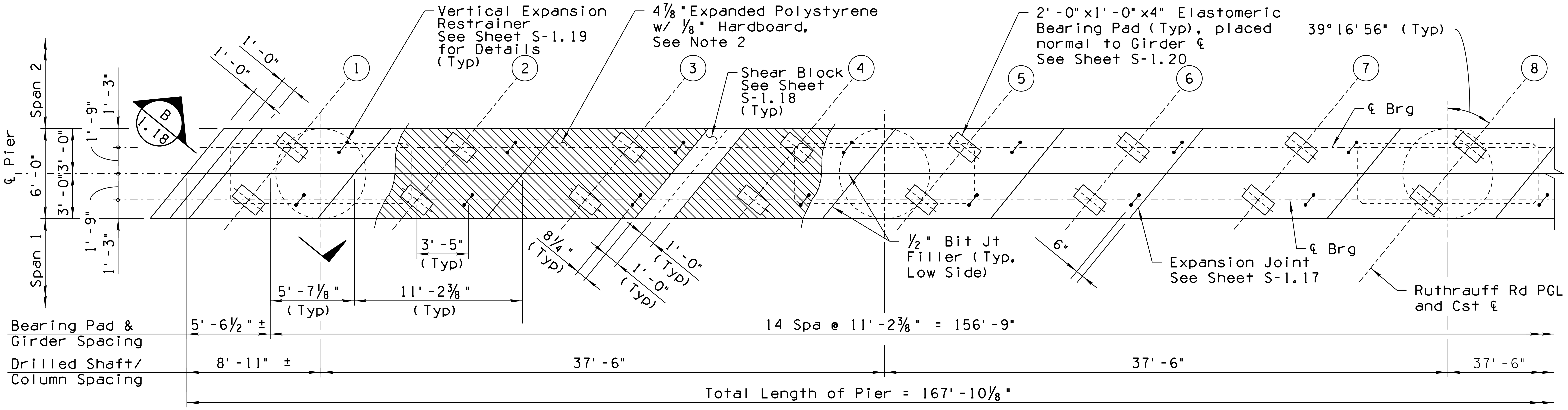
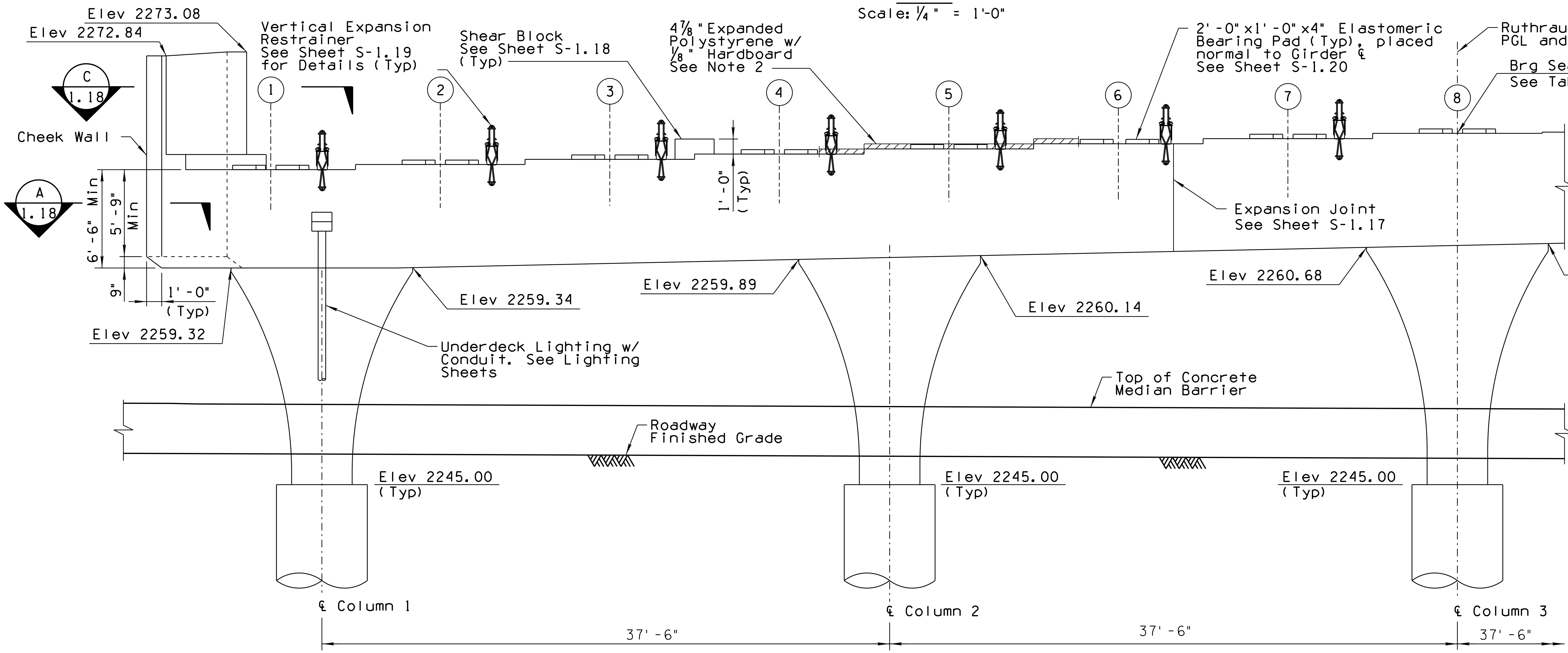
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	627	849	

010 PM 252



PLAN
Scale: ¼" = 1'-0"



ELEVATION
Scale: ¼" = 1'-0"
(Looking Ahead Station)

BEARING SEAT ELEVATIONS @ ℄ BRG PIER

Girder	Span 1 (Back Sta)	Span 2 (Ahead Sta)
1	2265.61	2265.74
2	2265.95	2266.08
3	2266.29	2266.43
4	2266.63	2266.77
5	2266.98	2267.11
6	2267.32	2267.46
7	2267.66	2267.80
8	2268.01	2268.14

Notes:

1. Verify all Bridge seats elevations prior erection of the girders.
2. Polystyrene + Hardboard Thickness accounts for the 1" Bevel ℘ Thickness @ ℄ Brg.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc. 177 N. Church Avenue Suite 1105 Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
PIER PLAN & ELEVATION 1

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

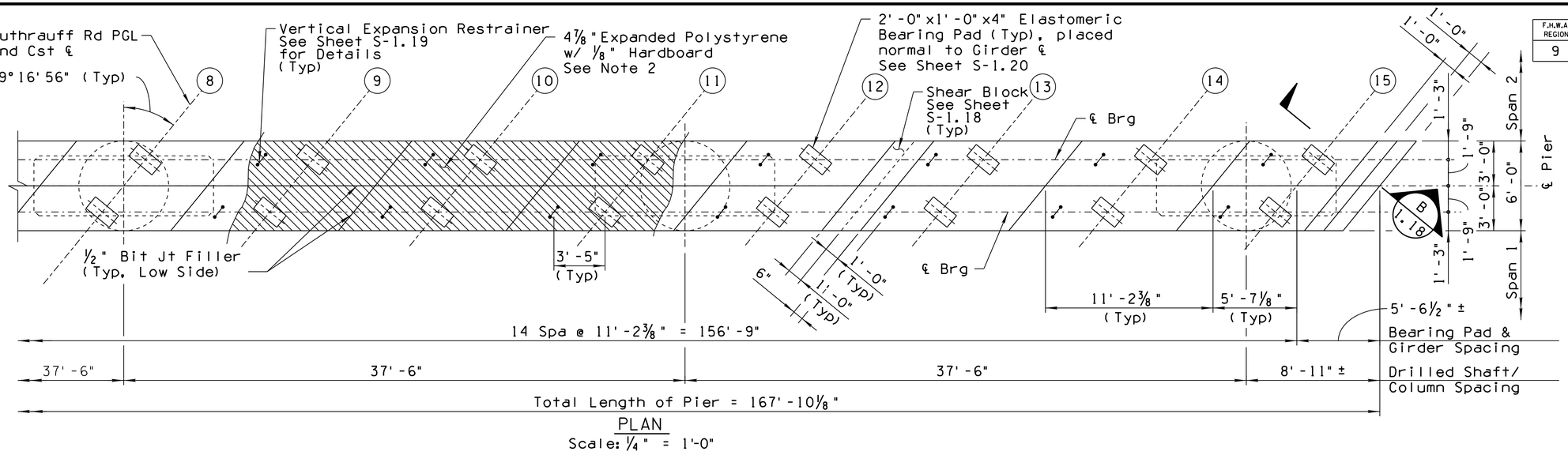
Registered Professional Engineer 50678 JASON CARLAFTES ARIZONA, U.S.A. EXPIRES 3/31/2019

DWG NO. S-1.14

TRACS NO. H 8480 01C 010-D(213)S ____ OF ____

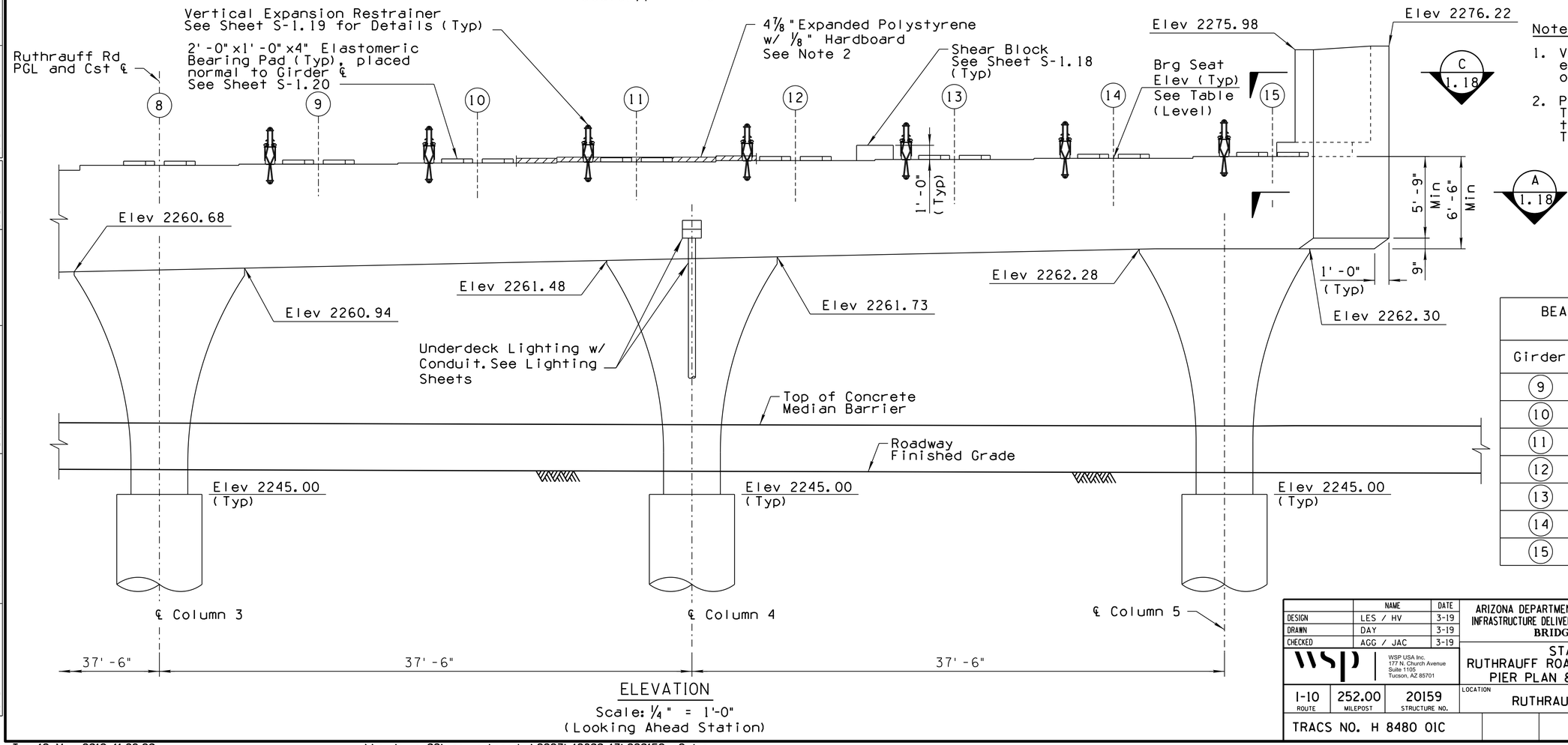
Tue 19 Mar 2019, 11:33:25 \\prdpwics02\ics_workingdir\2227\42600.21\S20159ppl.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	628	849	
		010 PM 252			



PLAN

Scale: ¼" = 1'-0"



ELEVATION

Scale: ¼" = 1'-0"

(Looking Ahead Station)

Notes:

1. Verify all Bridge seats elevations prior erection of the girders.
2. Polystyrene + Hardboard Thickness accounts for the 1" Bevel ℙ Thickness @ ℄ Brg.

BEARING SEAT ELEVATIONS @ ℄ BRG PIER		
Girder	Span 1 (Back Sta)	Span 2 (Ahead Sta)
(9)	2268.09	2268.22
(10)	2268.17	2268.31
(11)	2268.25	2268.39
(12)	2268.34	2268.47
(13)	2268.42	2268.55
(14)	2268.50	2268.64
(15)	2268.58	2268.72

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
PIER PLAN & ELEVATION 2

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — Date Signed 03/31/19 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.15

___ OF ___

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

Tue 19 Mar 2019, 11:33:20

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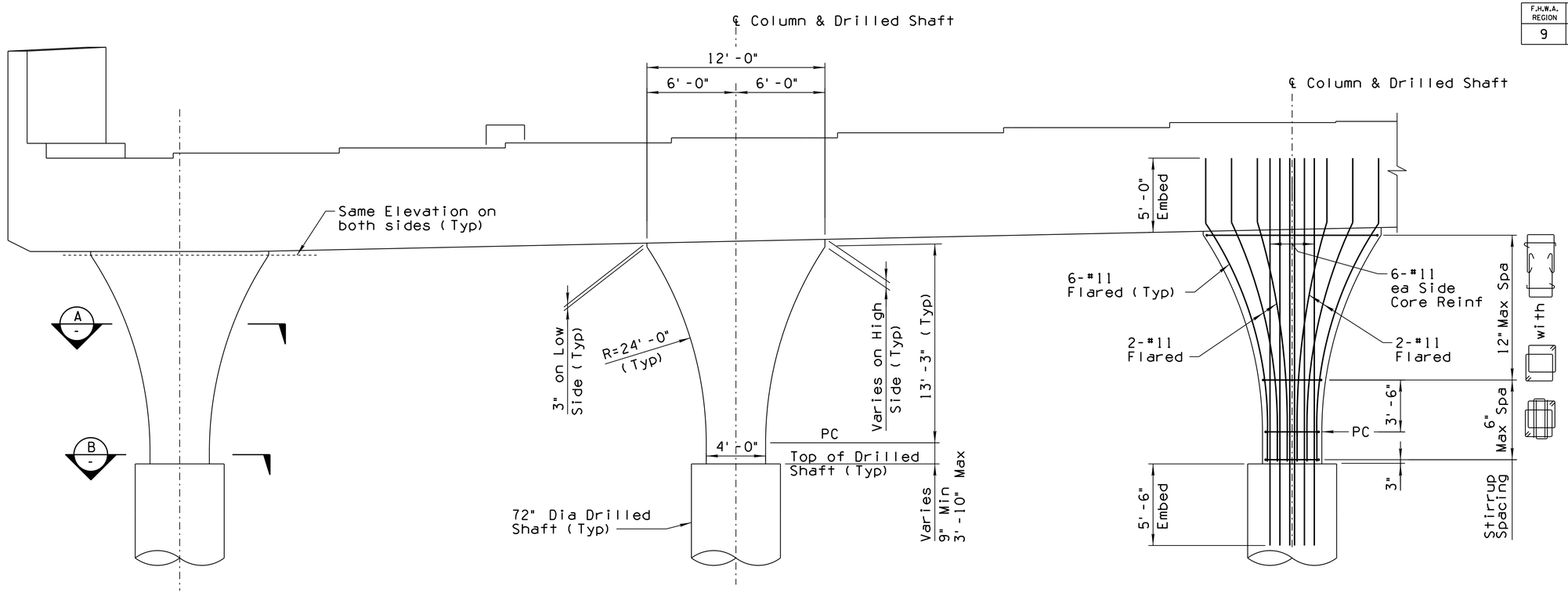
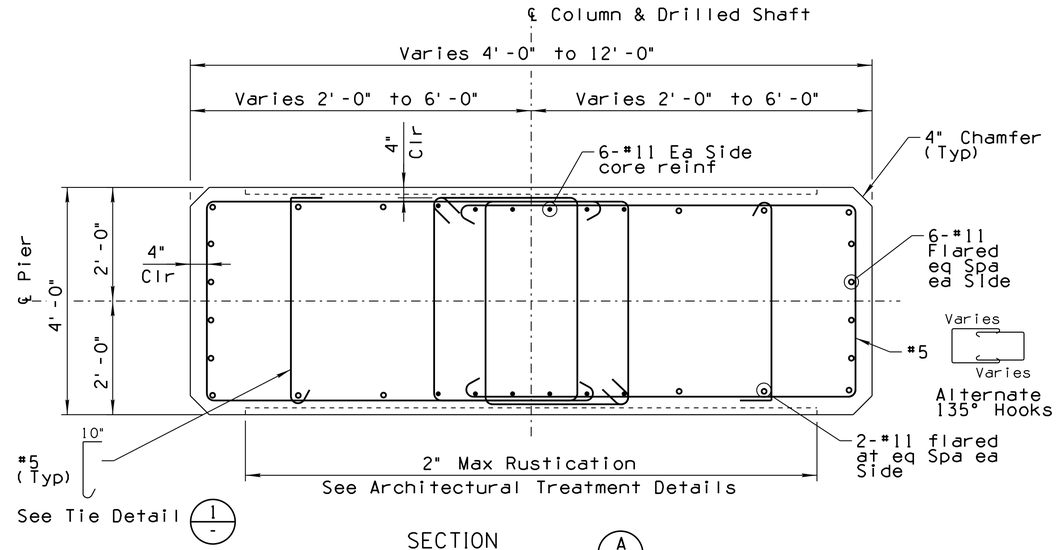
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	629	849	
		010 PM 252			

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

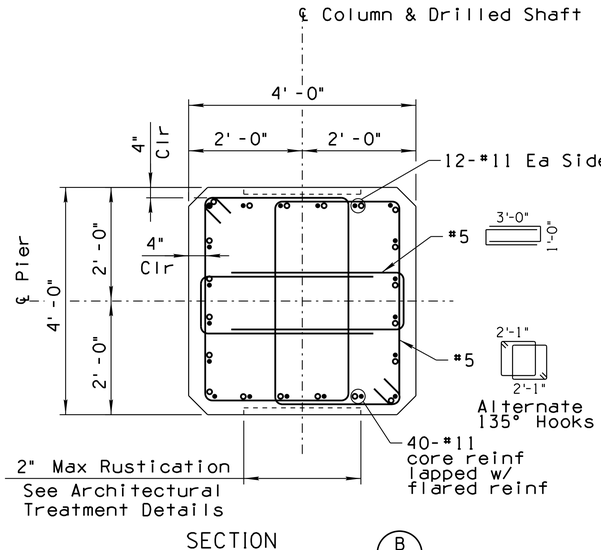


TYPICAL PIER ELEVATION

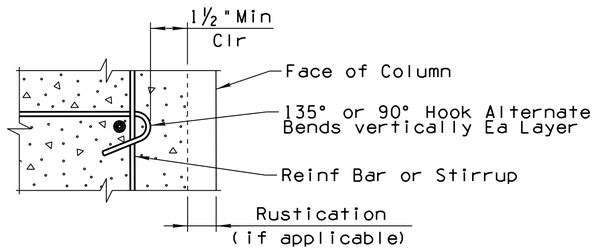
Scale: 1/4" = 1' -0"



SECTION A - Scale: 3/4" = 1' -0"



SECTION B - Scale: 3/4" = 1' -0"



DETAIL - TIE 1 - N. T. S.

LEGEND

- ● Straight Bars
- o Flared Bars

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
PIER DETAILS 1

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

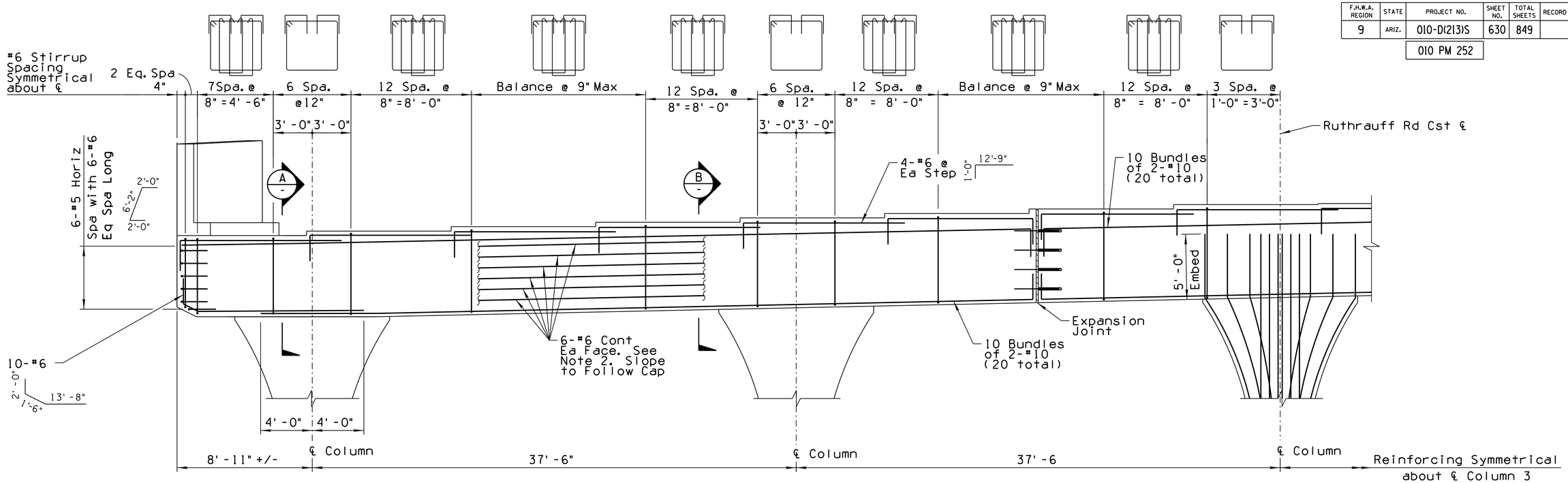
Registered Professional Engineer - Certificate No. 50678 - JASON CARLAFTES - Date Signed 3/31/2019 - ARIZONA, U.S.A. - EXPIRES 3/31/2019

DWG NO. S-1.16

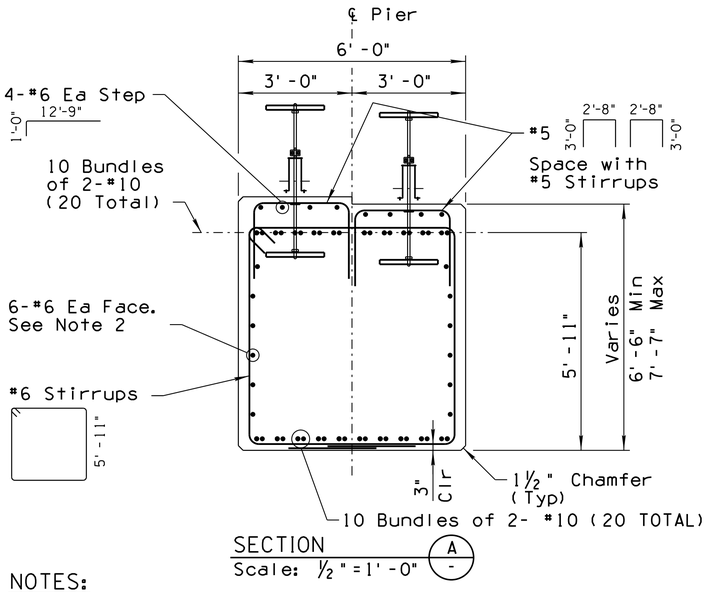
___ OF ___

Tue 19 Mar 2019, 11:34:09 \\prdpwics02\ics_workingdir\2227\42600_47\S20159pd1.dgn

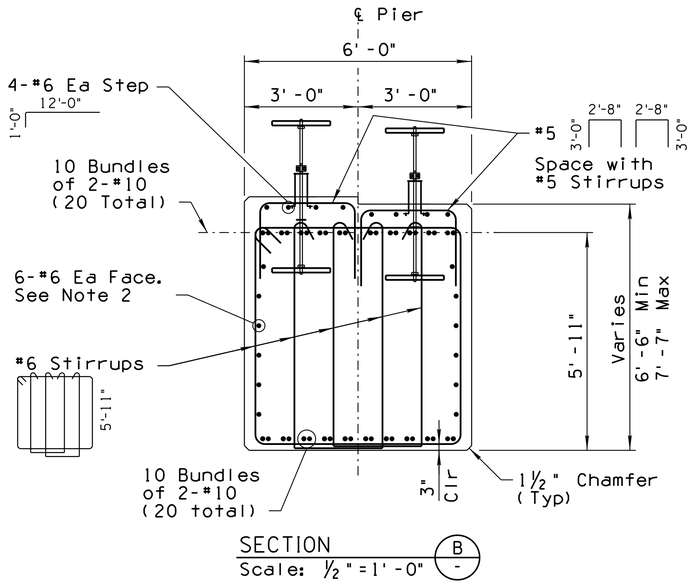
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	630	849	
		010 PM 252			



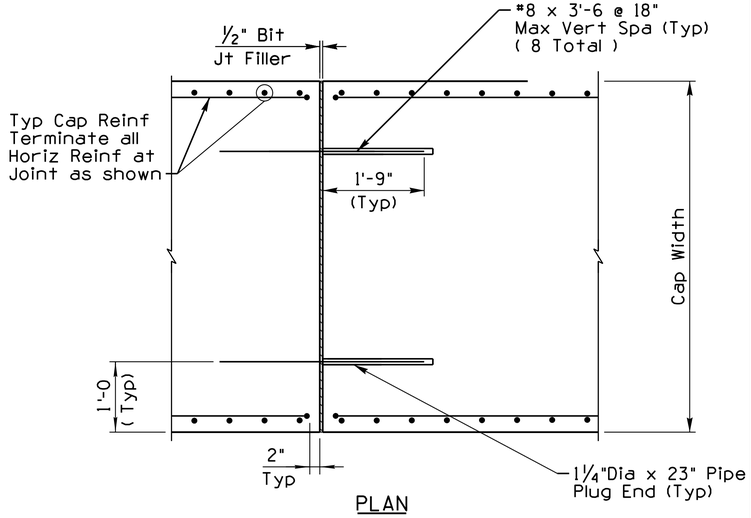
PARTIAL PIER CAP REINFORCING
Scale: 1/4" =1' -0"



SECTION A
Scale: 1/2" =1' -0"



SECTION B
Scale: 1/2" =1' -0"



PLAN

DETAIL - EXPANSION JOINT (1 / -)
No Scale

NOTES:

1. See Dwg No. S-1.18 for Pier Cap Reinforcing lap splice details.
2. #6 bars shall be spliced 2'-3 min as required. Adjacent bars shall not be spliced @ the same location and all splices shall be staggered.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
PIER DETAILS 2

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

50678 JASON CARLAFTES — Registered Professional Engineer — Date Signed 3/31/2019 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

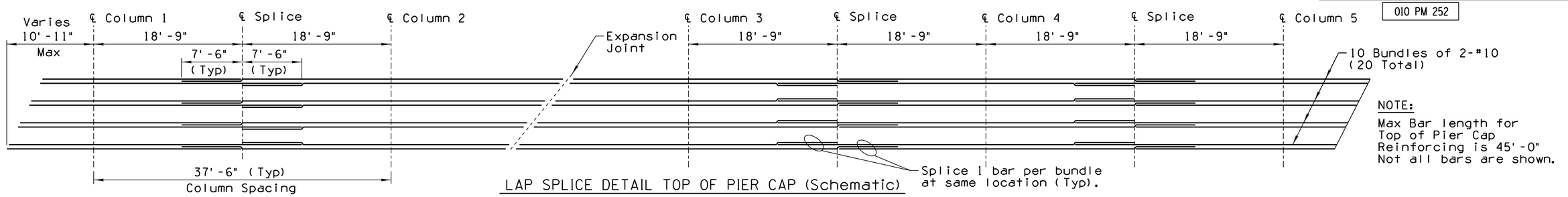
DWG NO. S-1.17

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

Tue 19 Mar 2019, 11:33:41 \\prdpwics02\ics_workingdir\2227\42600.53\S20159pd2.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	631	849	

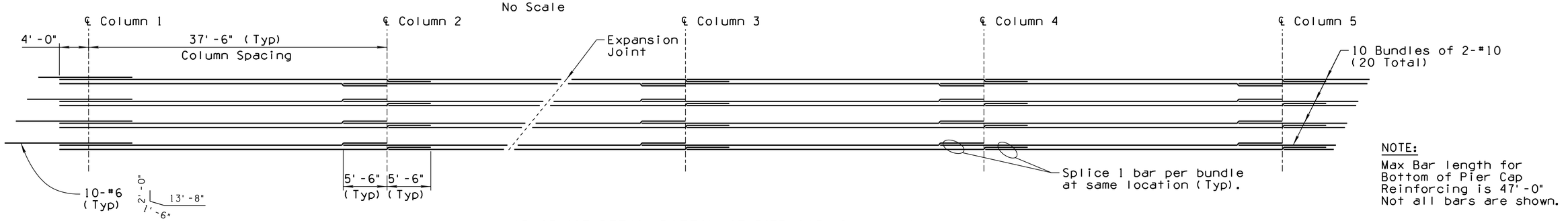
010 PM 252



LAP SPLICE DETAIL TOP OF PIER CAP (Schematic)

No Scale

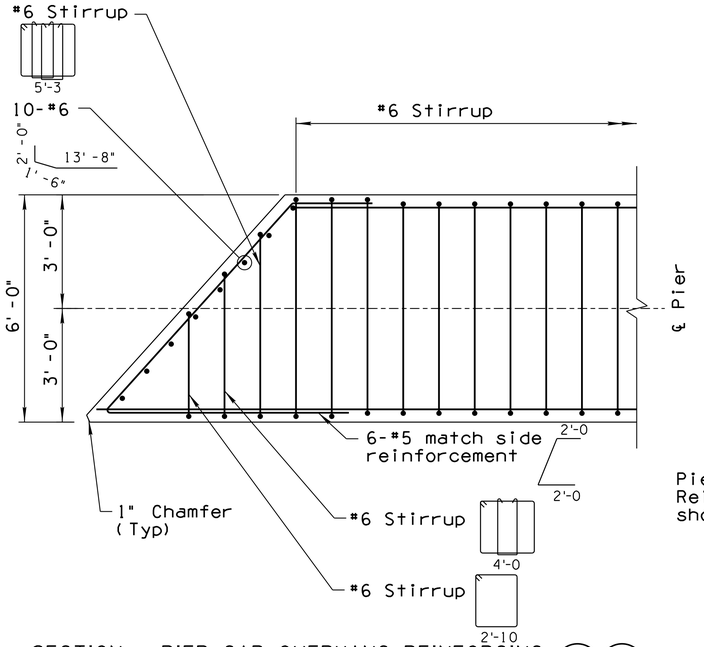
NOTE:
Max Bar length for Top of Pier Cap Reinforcing is 45'-0"
Not all bars are shown.



LAP SPLICE DETAIL BOTTOM OF PIER CAP (Schematic)

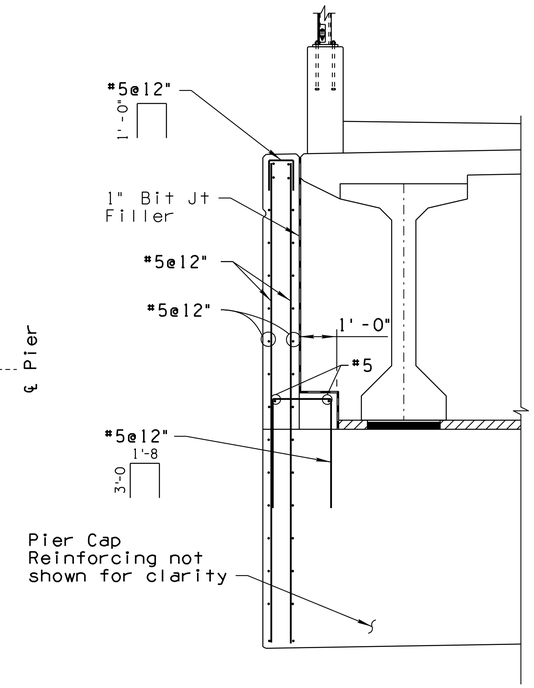
No Scale

NOTE:
Max Bar length for Bottom of Pier Cap Reinforcing is 47'-0"
Not all bars are shown.



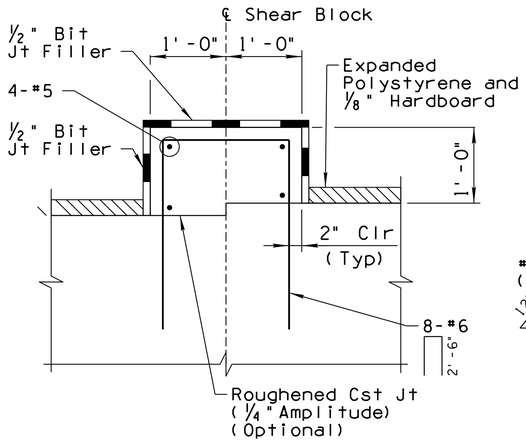
SECTION - PIER CAP OVERHANG REINFORCING (A 1.14 / A 1.15)

Scale : ½" = 1'-0"



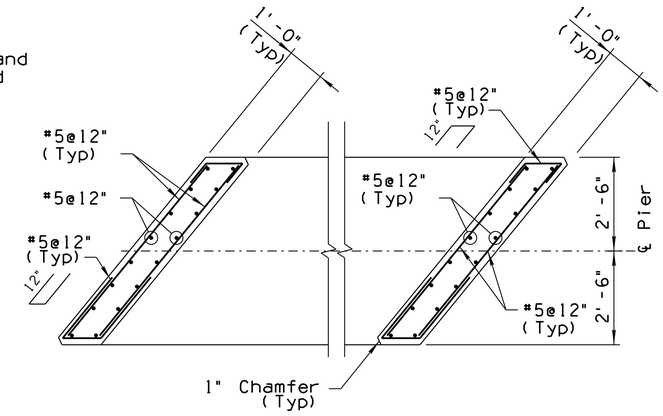
SECTION - PIER CHEEK WALL REINFORCING (B 1.14 / B 1.15)

Scale : ⅜" = 1'-0"



DETAIL-SHEAR BLOCK (1 / -)

Scale: 1" = 1'-0"



SECTION (C 1.14 / C 1.15)

Scale: ½" = 1'-0"

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
PIER DETAILS 3

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

50678 JASON CARLAFTES — Registered Professional Engineer — ARIZONA, U.S.A. — Date Signed 3/31/2019 — EXPIRES 3/31/2019

DWG NO. S-1.18

TRACS NO. H 8480 01C

010-D(213)S

___ OF ___

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

Tue 19 Mar 2019, 11:34:37

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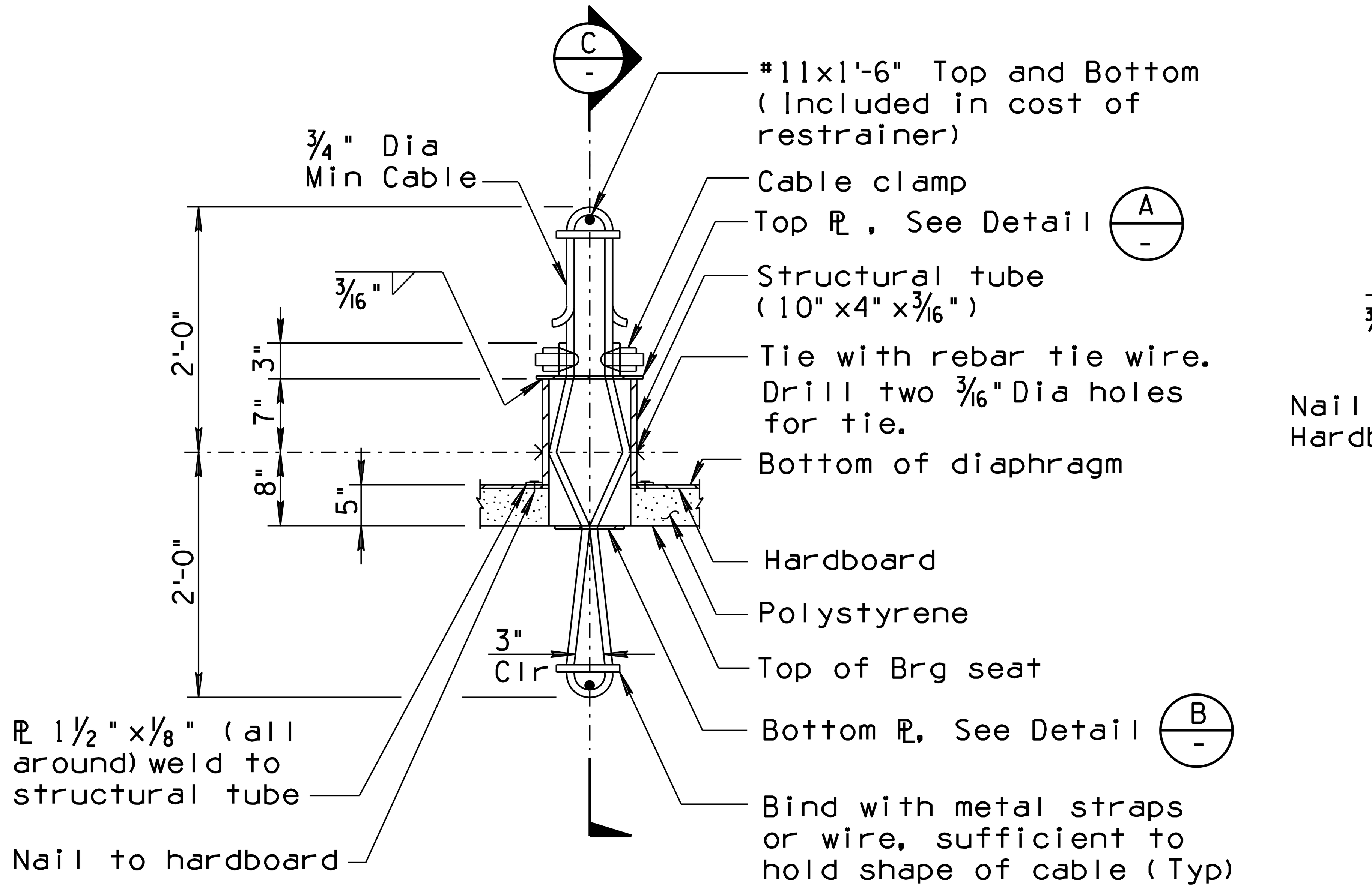
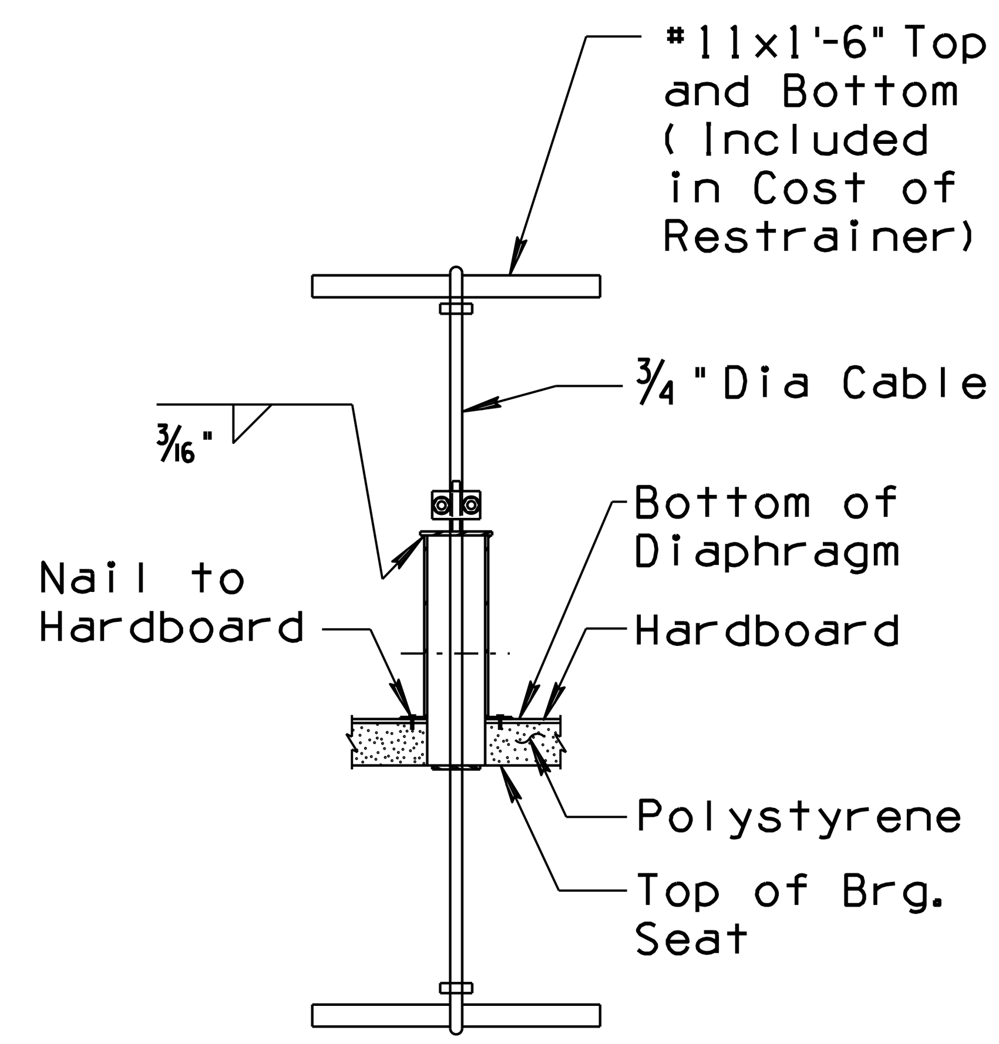
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	632	849	

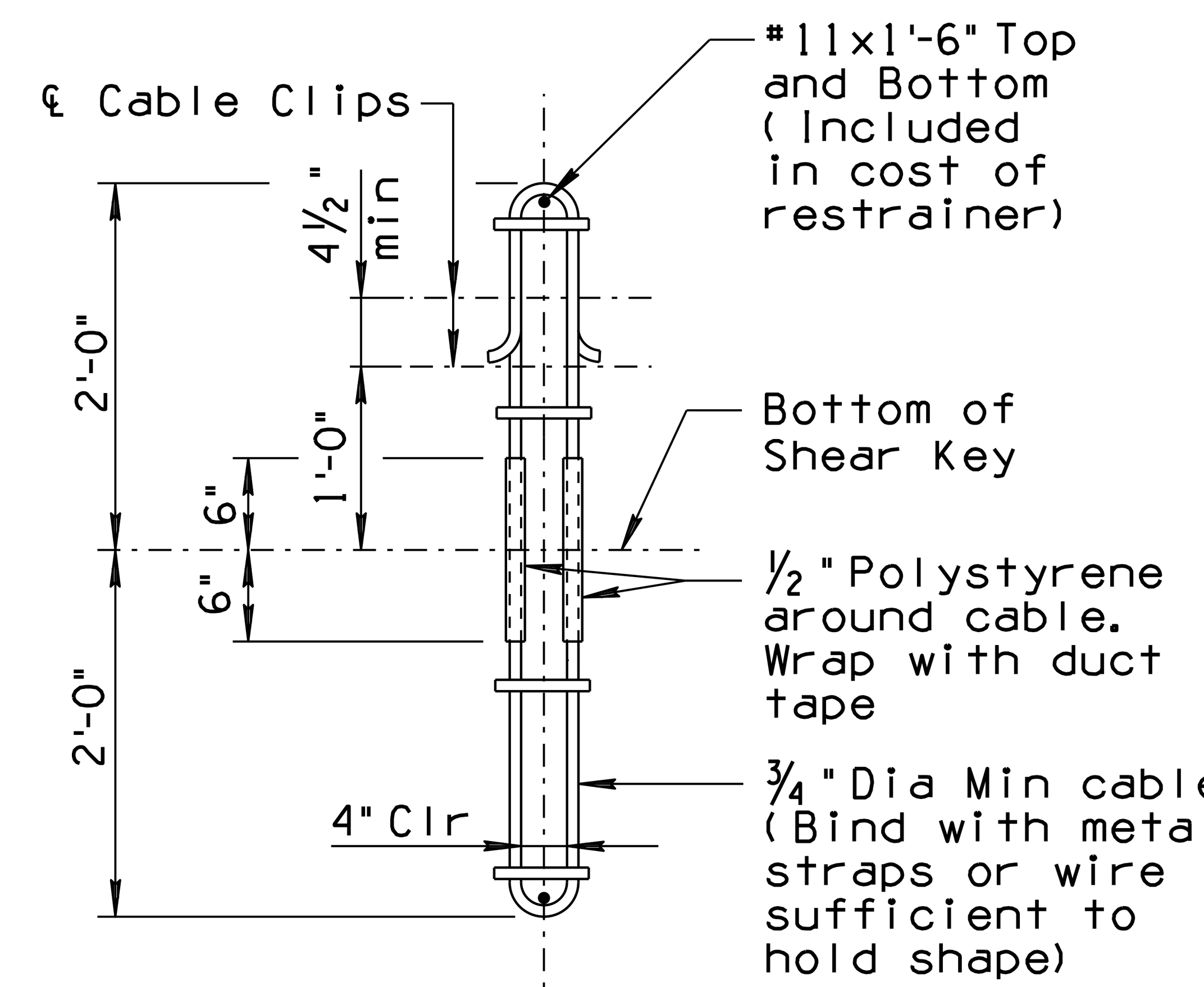
010 PM 252



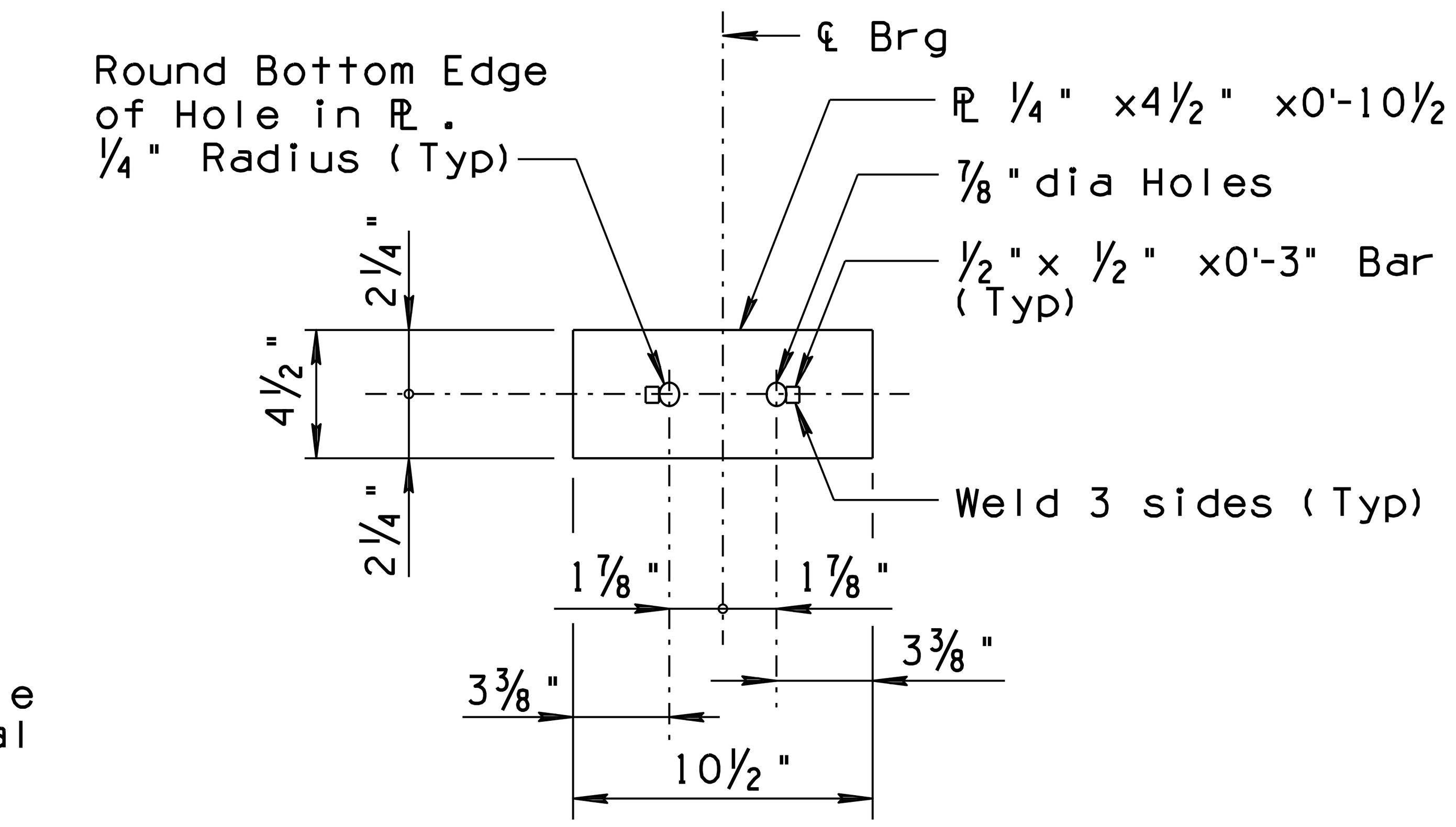


SECTION C
Scale : 1"=1'-0"

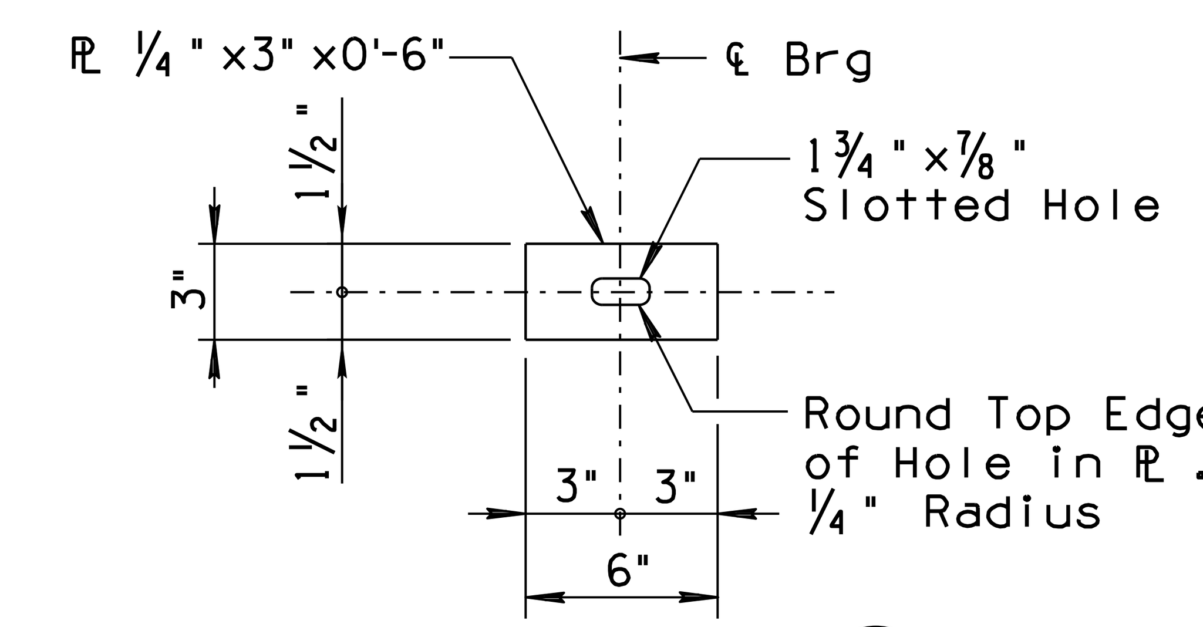
VERTICAL EXPANSION RESTRAINER DETAIL
Scale : 1"=1'-0"



VERTICAL FIXED RESTRAINER DETAIL
Scale : 1"=1'-0"



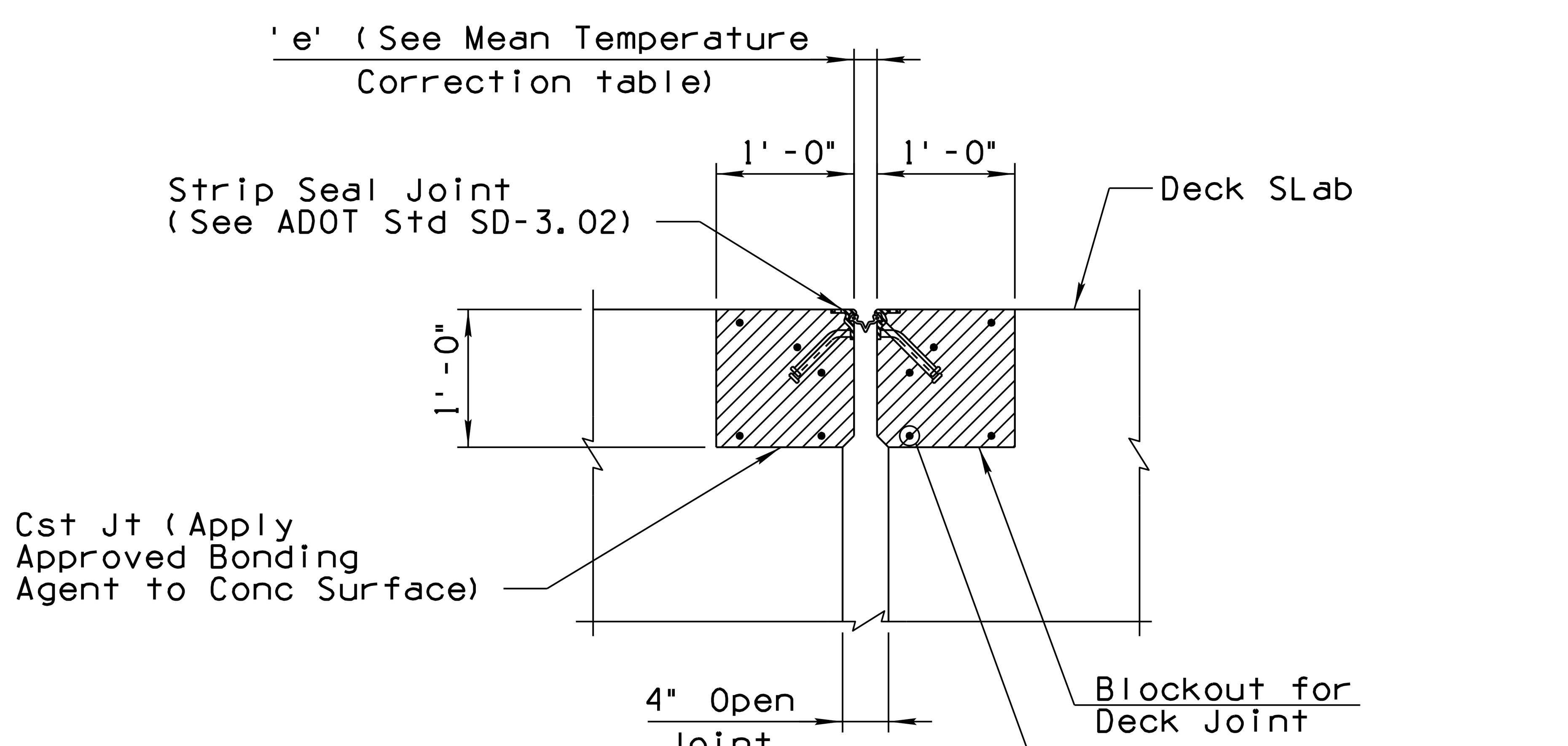
DETAIL A
Scale: 2"=1'-0"



DETAIL B
Scale: 1/2"=1'-0"

RESTRAINER NOTES:

1. Seal all openings in structural tube to prohibit concrete intrusion.
2. Restrainer cables shall be 3/4" dia min preformed 6"x 19" galvanized with the min breaking strength of 42 kips. One sample of cable 3 feet in length shall be furnished to the Engineer for testing.



Indicates Secondary Closure Pour for Joint f'c=4,500psi

DECK JOINT DETAILS
No Scale

MEAN TEMPERATURE CORRECTION TABLE	
Temp (°F)	e (inch)
35	2 3/4"
45	2 7/16"
55	2 5/16"
65	2 1/8"
75*	2"
85	1 7/8"
95	1 11/16"
105	1 1/2"
Movt Rating**	2"

* Mean Temperature

** The difference between the smallest & the largest width of Seal in Place

EXPANSION JOINT NOTES:

1. The Contractor shall provide water tight strip seal expansion joint at the pier, with a minimum Movement Rating equal to or greater than the movement rating shown in the table. See ADOT Bridge Group Standard Dwg SD 3.02.
2. Joint opening shall be adjusted according to Temperature Correction Table.
3. The Contractor shall take due care in the placement of the concrete under the joint angles to ensure that proper consolidation is achieved. After placement, the engineer shall inspect the joint for voids by sounding the angle with a hammer. All voids shall be repaired by the Contractor by epoxy injection.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
RESTRAINER & JOINT DETAILS

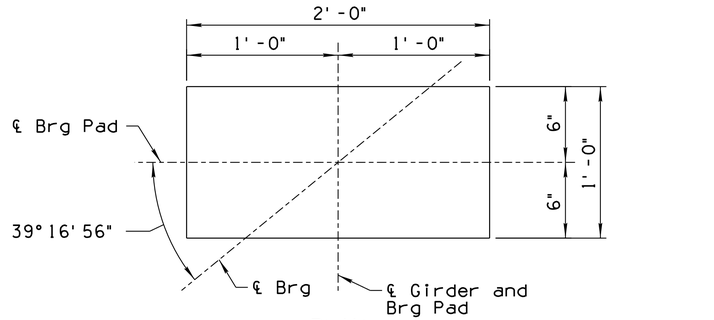
50678 JASON CARLAFTES — EXPIRES 3/31/2019 — ARIZONA, U.S.A.

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION	DWG NO.
I-10	252.00	20159	RUTHRAUFF ROAD T.I.	S-1.19

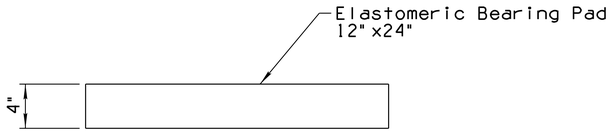
TRACS NO. H 8480 01C — 010-D(213)S — ____ OF ____

Tue 19 Mar 2019, 11:33:08 \\prdpwics02\ics_workingdir\2227\42600_9\S20159md1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	633	849	
		010 PM 252			

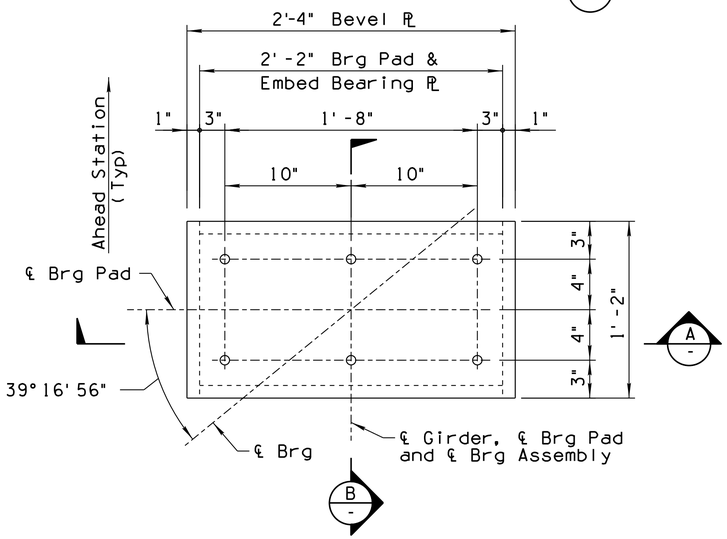


PLAN

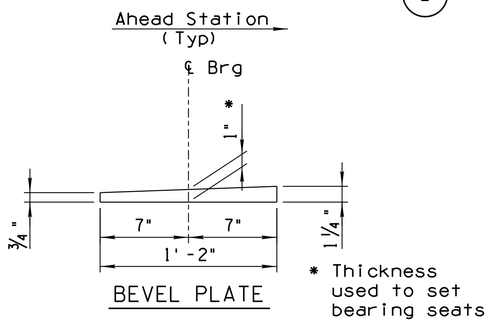


ELEVATION

DETAIL - ELASTOMERIC BEARING PAD (1)



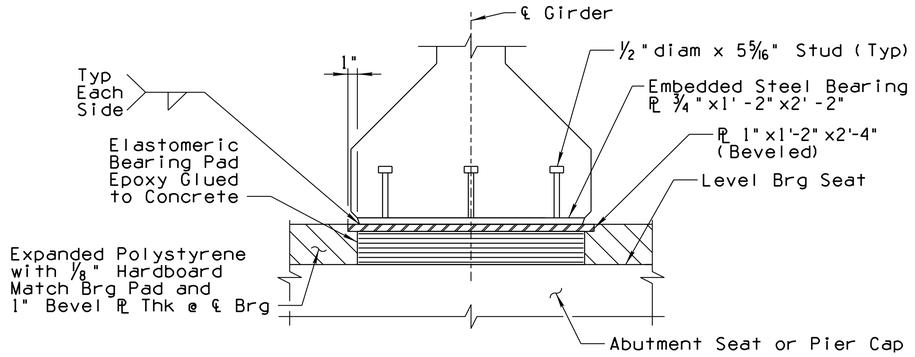
DETAIL - BEARING ASSEMBLY (2)



BEVEL PLATE

* Thickness used to set bearing seats

SECTION
Scale: 1½" = 1' -0" (B / -)



SECTION
Scale: 1½" = 1' -0" (A / -)

ELASTOMERIC BEARING PAD NOTES:

1. Install bearing Pads Level.
2. Bearing pads shall be steel reinforced and have a Shear Modulus of G=130 psi at 73°F, and a mean durometer hardness of 55.
3. Bearing Design Method A.
4. Max Design Loads Service DL=182 Kips
   Service DL+LL (No impact)=324 Kips
5. Elastomeric Grade 0.
6. Low Temperature Zone A.
7. Elastomeric bearing pads shall be 100% virgin chloroprene and conform to AASHTO material specification M251. Elastomeric bearing pads shall be reinforced with steel reinforcement.
8. Use Structural Steel conforming to AASHTO M270 Grade 36 for bearing plate and bevel plate. Galvanize according to AASHTO M111 after fabrication.
9. Minimum in service rotational capacity = 0.01 rad.
10. Seal all openings around bearing to prohibit concrete intrusion under bottom girder flange and sliding surface.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
BEARING PAD DETAILS

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S | DWG NO. S-1.20 | ___ OF ___

Registered Professional Engineer — 50678 JASON CARLAFTES — Date Signed 3/31/2019 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	634	849	
		010 PM 252			

℄ Brg and Abut 1

277'-9¼" (℄ Brg to ℄ Brg)

138'-10⅝" SPAN 1 (℄ Brg to ℄ Pier)

℄ Pier

138'-10⅝" SPAN 2

69'-0" Measured along ℄ Girder (Typ)

7'-1⅛" (Typ)

S 39°42'50" E

End of girder

Lt Edge of Deck

℄ Int. Diagphragm

4 / 1.29

℄ Brg

S 39°42'50" E

Combination Pedestrian-Traffic Bridge Railing with Fence. See ADOT Std Dwgs SD 1.04 & SD 1.05

Sidewalk

3'-2½"

63'-10½"

127'-9"

14 Spa @ 8'-8" = 121'-4"

63'-10½"

3'-2½"

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Face of Curb

℄ Girder (Typ)

9" (Typ) **

Strip Seal Deck Joint w/ 4" Open Joint below

Skew 39°16'56" Lt (Typ)

50°43'04" (Typ)

Traffic Sign, See Traffic Sheets

129°16'56" (Typ)

Conc Median

Ruthrauff Rd Cst ℄

N 89°34'05" E

Begin Bridge
Sta 98+32.71

1'-0" Approach slab seat

℄ Pier
Sta 99+74.82

2 / 1.24

1 / 1.24

Abutment Diaphragm. See Sheet S-1.30

90°00'00" (Typ)

Pier Diaphragm. See Sheet S-1.31

Face of Curb

Sidewalk

Rt Edge of Deck

Light Pole Blister (Typ) See Sheet S-1.33

Edge of diaphragm

Edge of diaphragm

2'-6" *

2'-6" *

1'-9" *

3'-0" *

1'-9" *

3'-0" *

Combination Pedestrian-Traffic Bridge Railing with Fence. See ADOT Std Dwgs SD 1.04 & SD 1.05

N

FRAMING PLAN (SPAN 1)

Scale: 1"=10'

NOTES

1. *Dimensions are normal to ℄ Abut/Pier.
2. **9" thickness is perpendicular to ℄ intermediate diaphragm.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FRAMING PLAN 1

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

50678 JASON CARL AFTES — Registered Professional Engineer — ARIZONA, U.S.A. — Date Signed 2/20/19 — EXPIRES 3/31/2019

DWG NO. S-1.21

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

Tue 19 Mar 2019, 11:33:48

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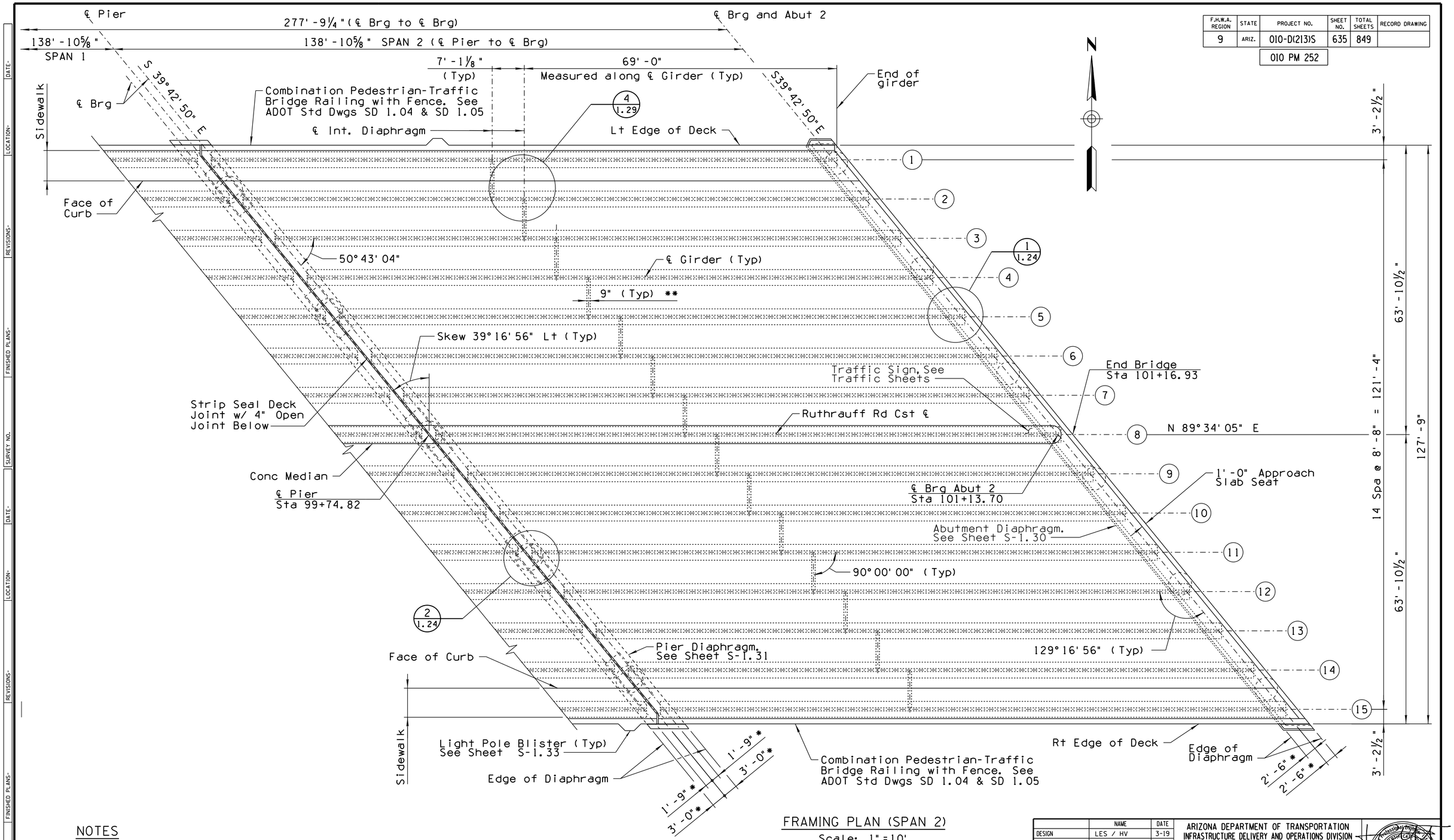
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	635	849	
		010 PM 252			



FRAMING PLAN (SPAN 2)

Scale: 1" = 10'

NOTES

1. *Dimensions are normal to ℄ Abut/Pier.
2. **9" thickness is perpendicular to ℄ intermediate diaphragm.

	NAME	DATE
DESIGN	LES / HV	3-19
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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FRAMING PLAN 2

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

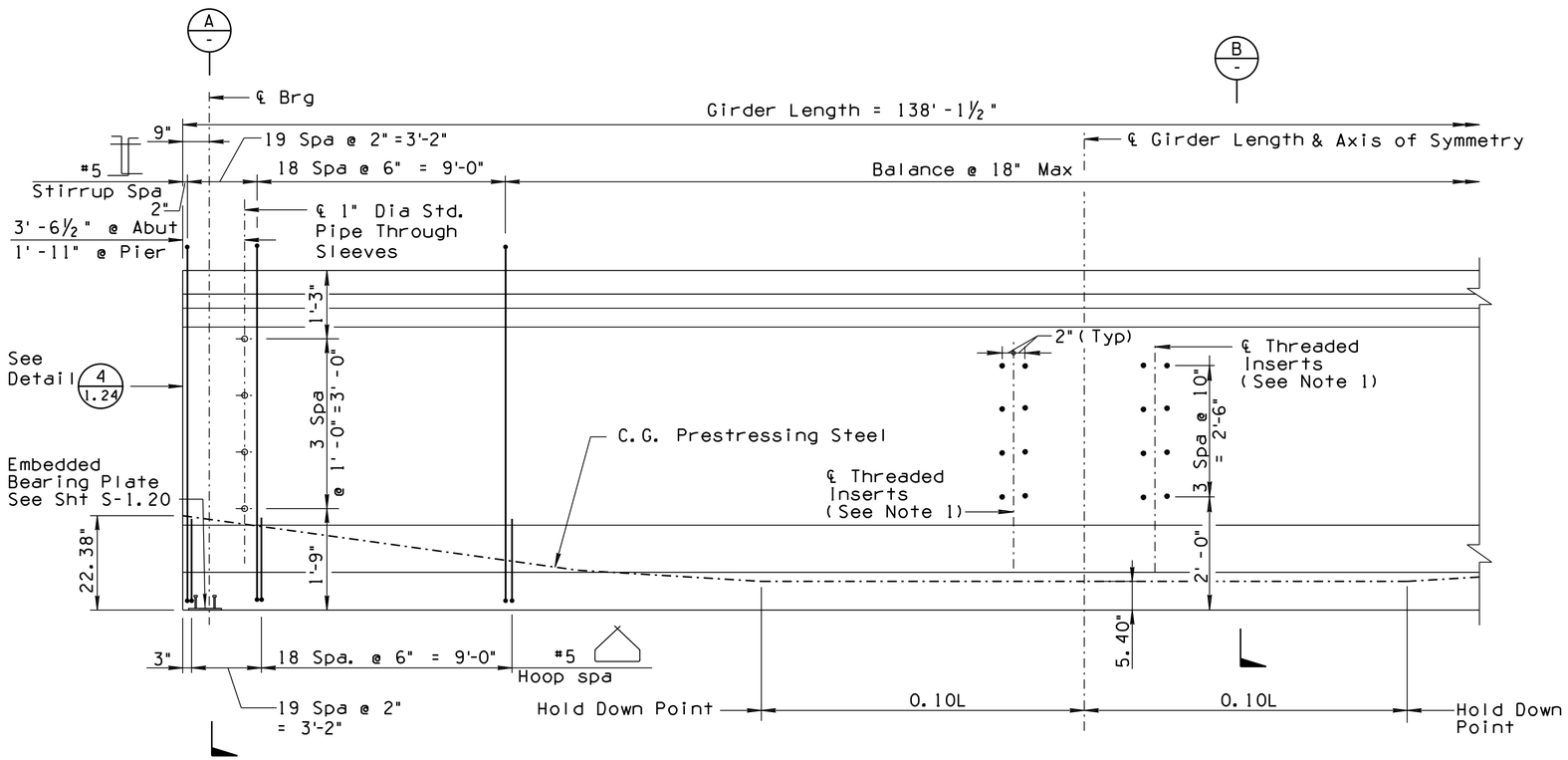
Registered Professional Engineer — Certificate No. 50678 — JASON CARLAFTES — Date Signed 3/31/2019 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.22

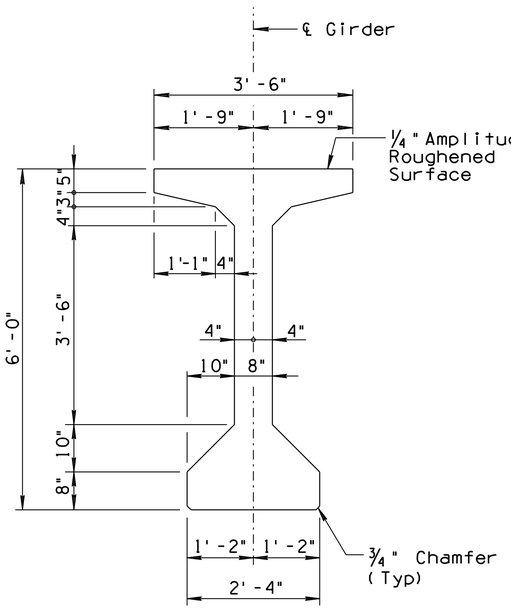
___ OF ___

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

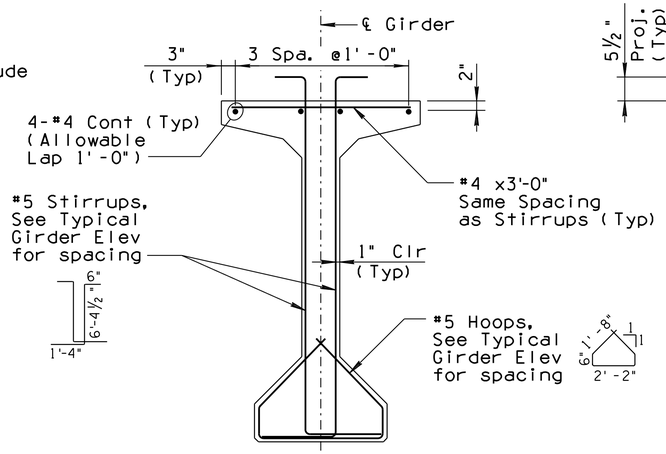
Tue 19 Mar 2019, 11:33:25 \\prdpwics02\ics_workingdir\2227\42600_38\S20159fp2.dgn



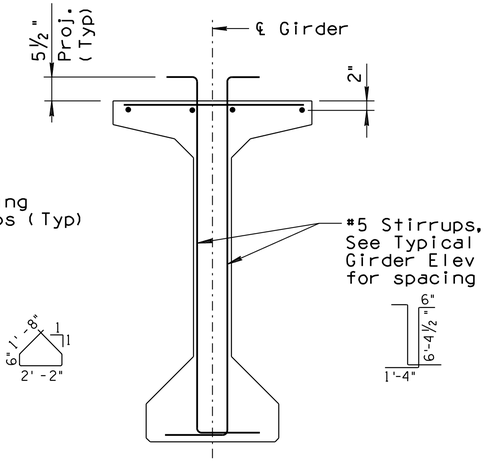
TYPICAL GIRDER ELEVATION
N.T.S.



AASHTO TYPE VI
TYPICAL GIRDER SECTION
Scale: ¾" = 1'-0"



SECTION A
Scale: ¾" = 1'-0"



SECTION B
Scale: ¾" = 1'-0"

PRESTRESSING NOTES:

CONCRETE

f'ci = 6000 psi minimum concrete strength at transfer.
f'c = 7500 psi minimum concrete strength at 28 days.

The contact surface of the top flange shall be intentionally roughened to an amplitude of approx ¼".

The Contractor shall adjust the dimensions shown on the drawings to account for elastic shortening, creep and shrinkage occurring between the time of casting and the erection of girder.

PRESTRESSING

1. Girders shall be prestressed by pretensioning method only.
2. All low relaxation strands shall be stressed to 0.75 fpu.
3. Debonding of strands will not be allowed.
4. Total Jacking Force in all strands is Pjack = 2,329 Kips.
5. Total Force in all strands after all losses is Pw = 1,890 Kips.

STRANDS

1. 0.6" dia ASTM A416 grade 270, 7-Wire low relaxation prestressing strands. f's = 270,000 psi.

GIRDER BRACING NOTE:

The Contractor shall provide temporary bracing for the girders immediately after erection to ensure that they remain stable until the permanent intermediate diaphragms are constructed. The temporary bracing must remain in place until the intermediate diaphragms are poured and the concrete has reached the required 28-day strength. The cost of the temporary bracing shall be incidental to the cost of the girders.

NOTES:

1. 1" diameter through sleeves shall be used for interior/exterior girders at Abutment Diaphragms and Pier Diaphragms. Threaded inserts for ¾" diameter threaded bar shall be used for interior girders and inside face of exterior girders at intermediate Diaphragms .
2. Threaded inserts shall be ferrule loop type which develop an ultimate pullout strength of 10,800 lbs.
3. All through sleeves shall be skewed to match diaphragm face.
4. All dimensions shown in Typical Girder Elevation are along Girder ℄.
5. Installation of Lifting Loops is permitted. Lifting Loops shall be used in a manner that will not cause damage, bending, or torsional forces. Lifting Loops may be cut off flush when no longer needed.
6. See Sheets S-1.21 & 1.22 for Intermediate Diaphragm locations and see Sheet S-1.29 for connection details.
7. See Signing Sheets for locations and installation details of signs attached to girders.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	636	849	
		010 PM 252			

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
GIRDER DETAILS 1

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

Registered Professional Engineer — 50678 JASON CARLAFTES — Date Signed 2/28/19 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

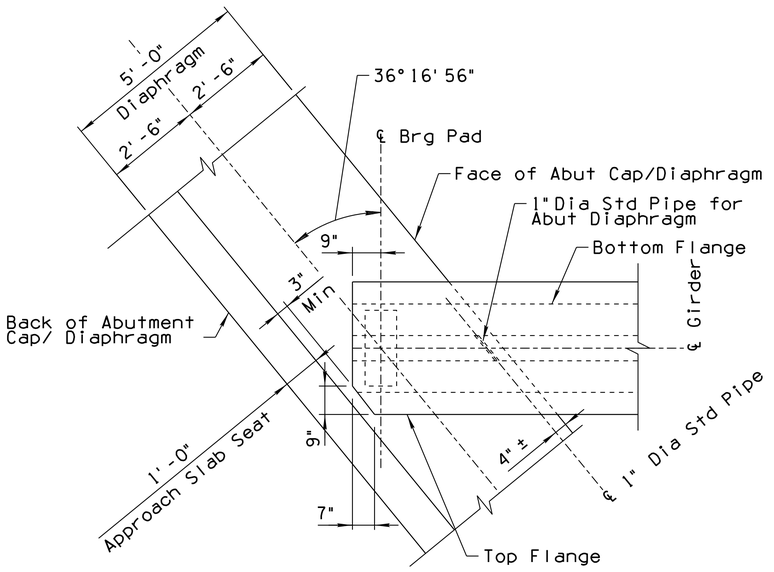
DWG NO. S-1.23

___ OF ___

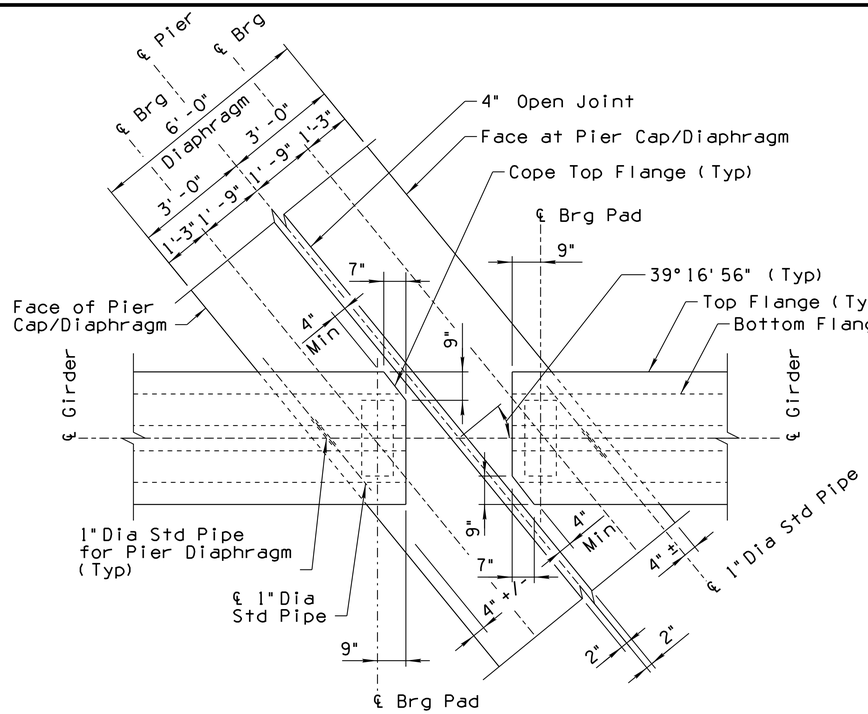
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

Tue 19 Mar 2019, 11:33:34 \\prdpwics02\ics_workingdir\2227\42600_31\S20159gd1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	637	849	
		010 PM 252			



DETAIL - COPING AT ABUTMENT (1 / 1.21, 1 / 1.22)
Scale: ½" = 1'-0"



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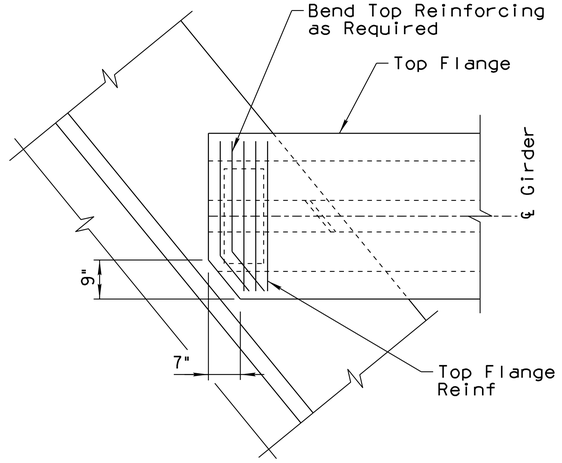
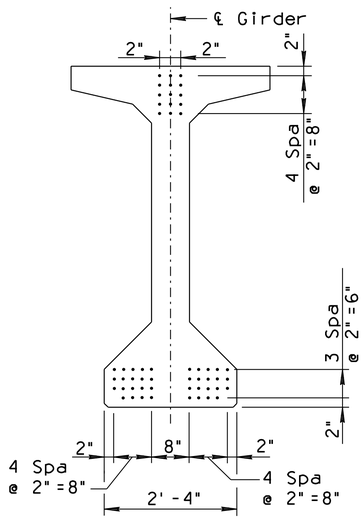
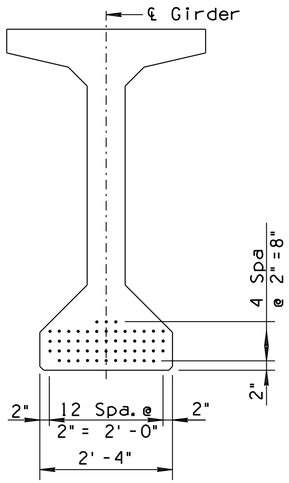
Scale: ½" = 1'-0"



DETAIL - GIRDER COPING (3 / -)
Scale: ¾" = 1'-0"

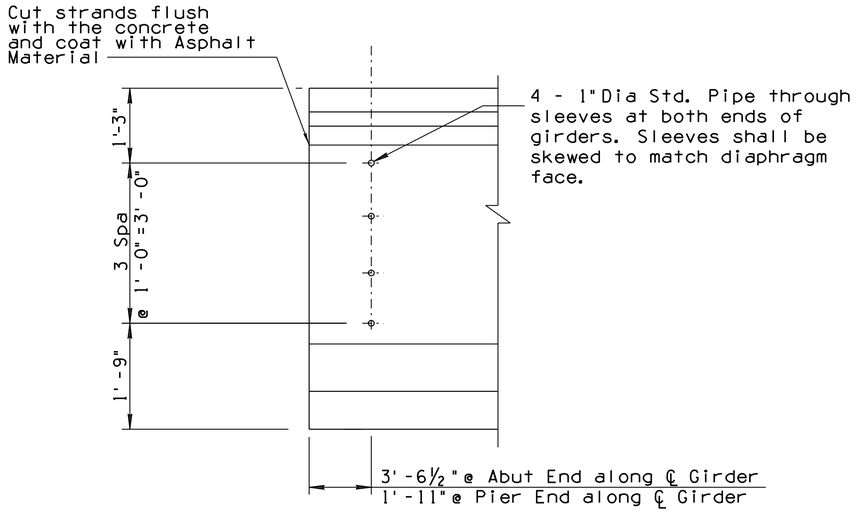


ENDS
Y_E = 22.38"



MIDSPAN
Y_C = 5.40"

STRAND PATTERN
Scale: ¾" = 1'-0"
(53 TOTAL STRANDS)



DETAIL (4 / 1.23)
Scale: ¾" = 1'-0"

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DRAWN	DAY	3-19
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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
GIRDER DETAILS 2

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — ARIZONA, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.24

___ OF ___

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

Tue 19 Mar 2019, 11:34:02

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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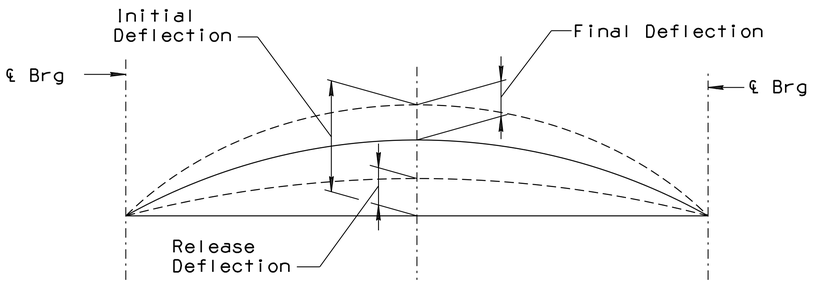
		010 PM 252			



DEFLECTION DIAGRAM

No Scale

DEFLECTION NOTES:

1. Release Deflection equals the deflection that the prestressed girder undergoes at the time of strand release. The Release Deflection includes the dead load of the girder and the release prestressing force (including the effects of the elastic shortening).

2. Initial Deflection equals the deflection the prestressed girder undergoes at the time of erection prior to the diaphragm or deck pours. The Initial Deflection includes the deflection due to the dead load of the girder, the initial prestressing and the effects of creep & loss of prestress up to the time of erection. (Assumed at 60 days after release).

3. Final Deflection equals elastic deflection due to the dead load of the deck slab, diaphragms, barriers, sidewalks, median and the effects of long term creep & loss of prestress. The effects of future wearing surface loading are not included.

4. Due to intermediate diaphragm action, final deflection shown is the average final deflection for all beams within the spans.

ERECTION NOTE:

1. Girders shall be braced to prevent tipping and to control Lateral Bending during shipping. The contractor shall provide temporary bracing for the girders immediately after erection to ensure they remain stable until the diaphragms have been constructed.

2. The contractor shall provide the as-built girder bearing seat elevations at abutments and pier as well as as-built girder top elevations (Release and Initial) at tenth points to the Engineer for verification of screed grade elevations prior to setting deck formwork.

DEFLECTION AT TENTH POINTS (FT)

	LOCATION	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.00
SPAN 1	Release	0.000	0.092	0.163	0.215	0.245	0.255	0.245	0.215	0.163	0.092	0.000
	Initial	0.000	0.162	0.288	0.378	0.431	0.449	0.431	0.378	0.288	0.162	0.000
	Final	0.000	-0.071	-0.126	-0.166	-0.189	-0.197	-0.189	-0.166	-0.126	-0.071	0.000
SPAN 2	Release	0.000	0.092	0.163	0.215	0.245	0.255	0.245	0.215	0.163	0.092	0.000
	Initial	0.000	0.162	0.288	0.378	0.431	0.449	0.431	0.378	0.288	0.162	0.000
	Final	0.000	-0.071	-0.126	-0.166	-0.189	-0.197	-0.189	-0.166	-0.126	-0.071	0.000

Note: Positive values represent upward deflection, and negative values represent downward deflection.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
GIRDER DETAILS 3

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

50678
JASON
CARLAFTES
Date Signed 3/31/2019
ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-1.25

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

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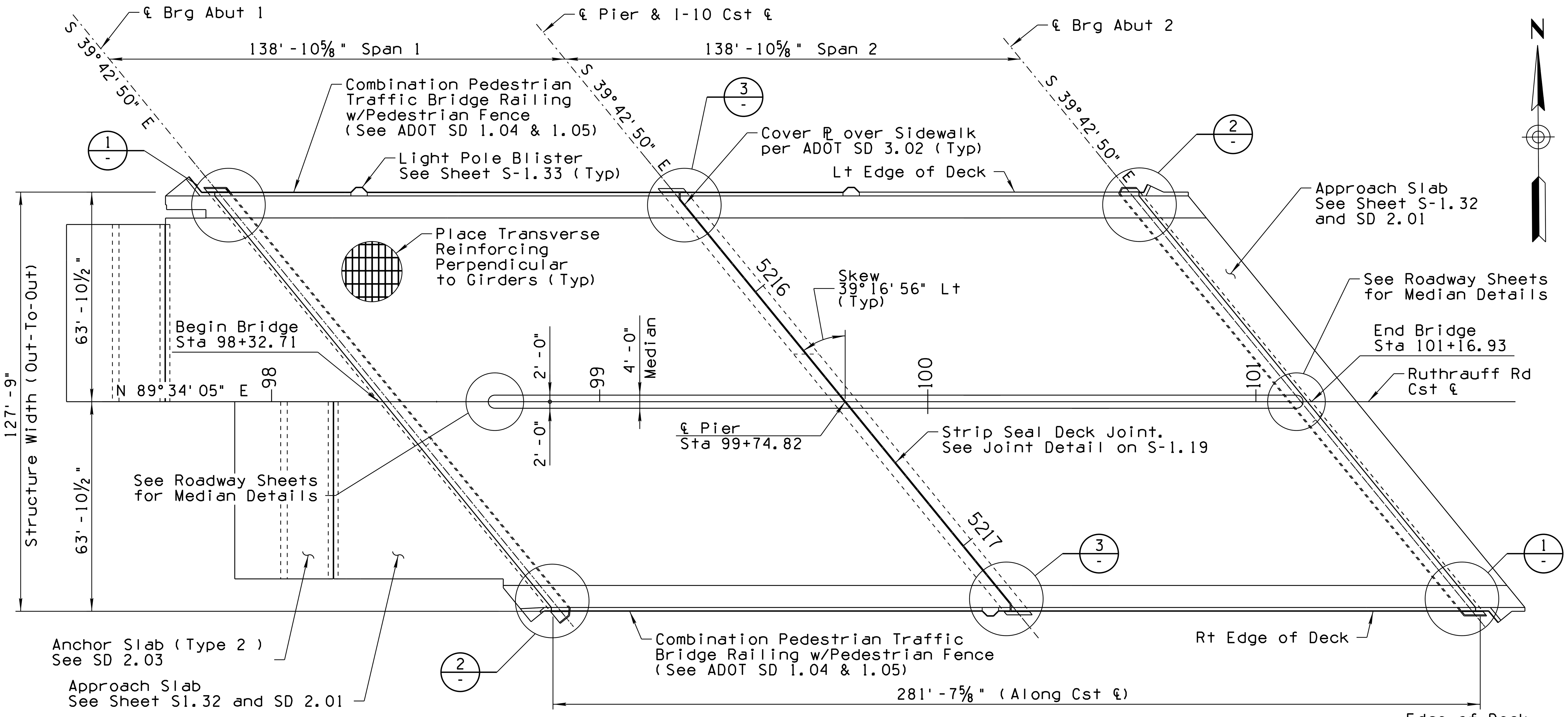
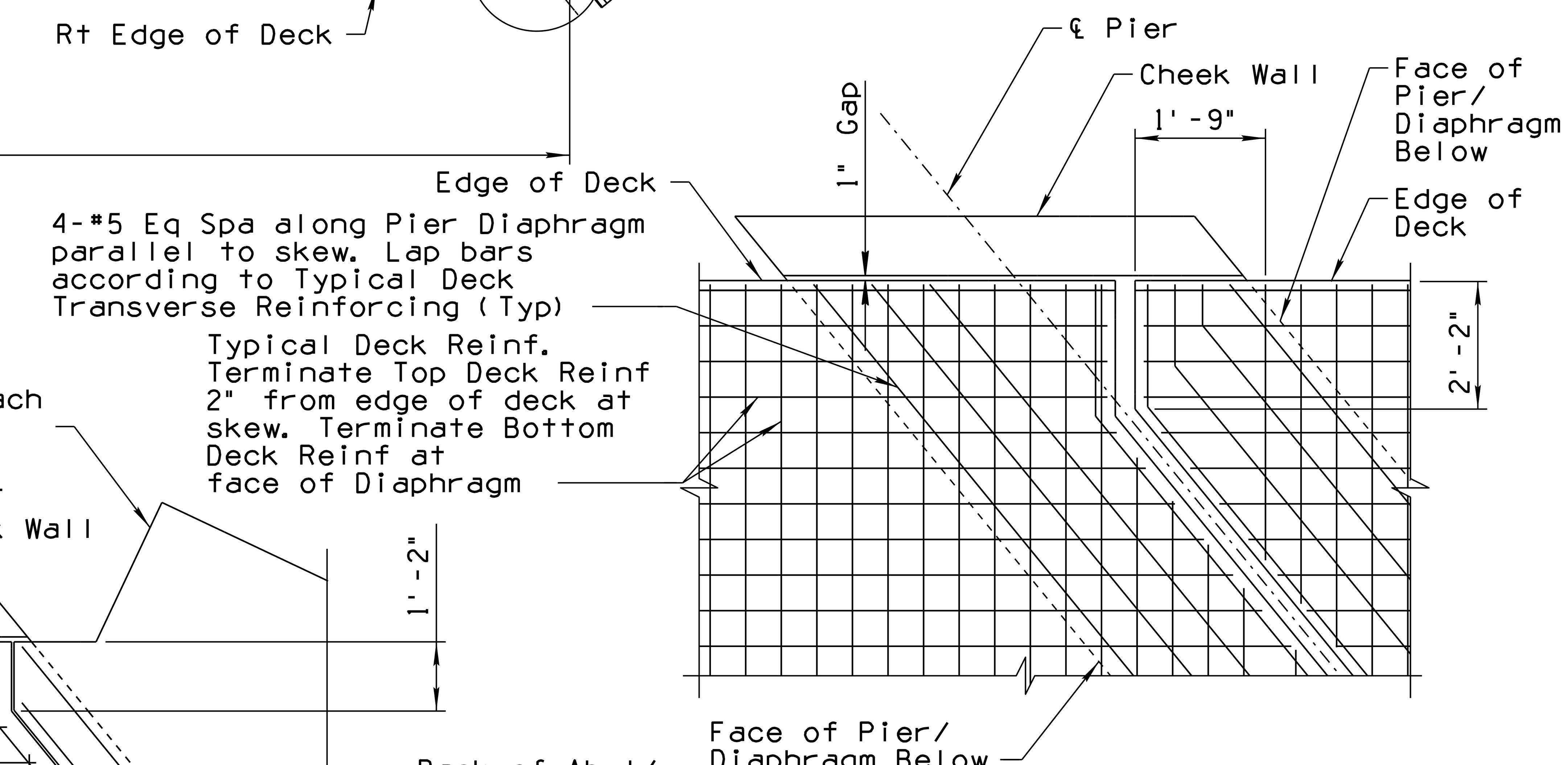
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	639	849	

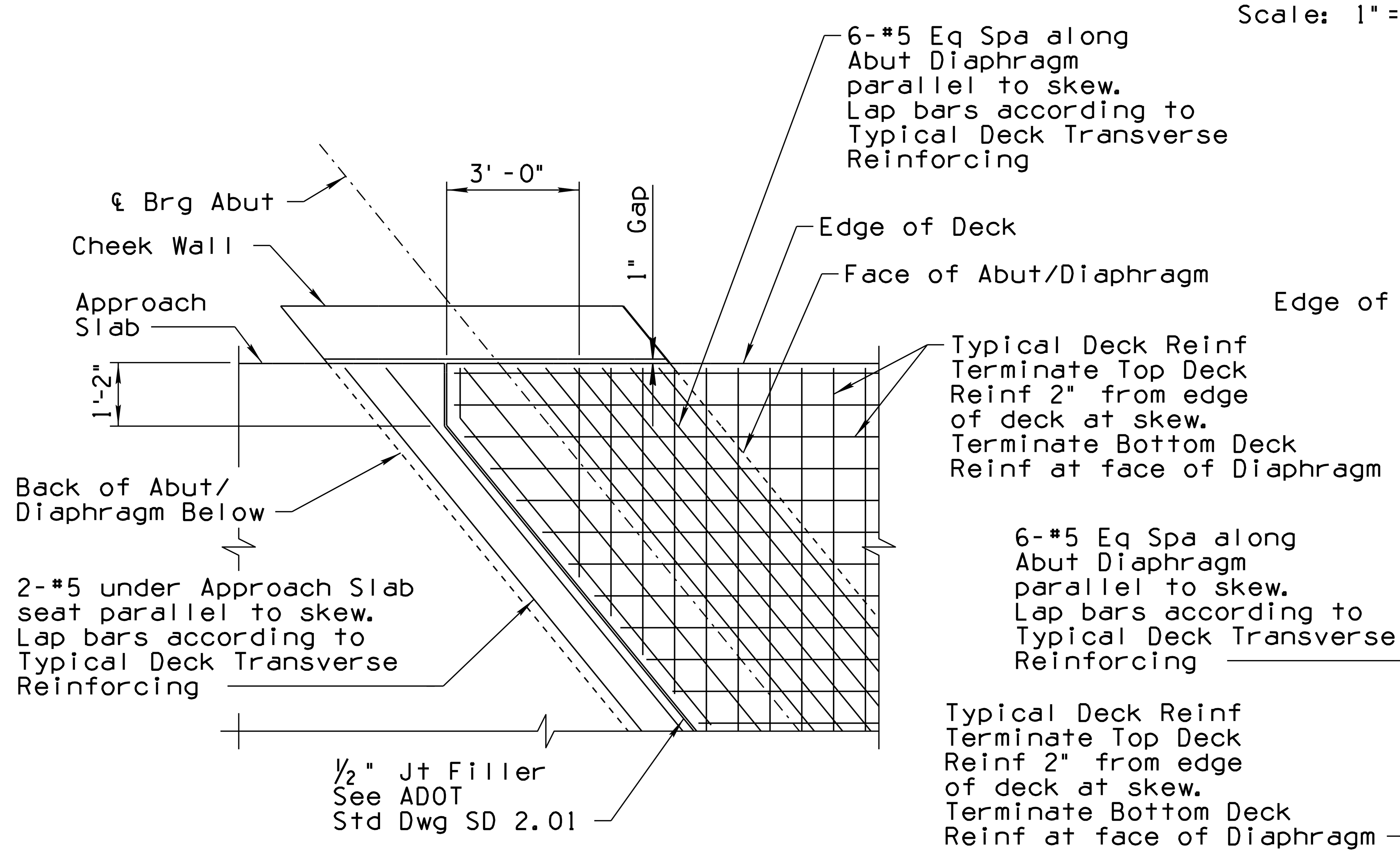
010 PM 252



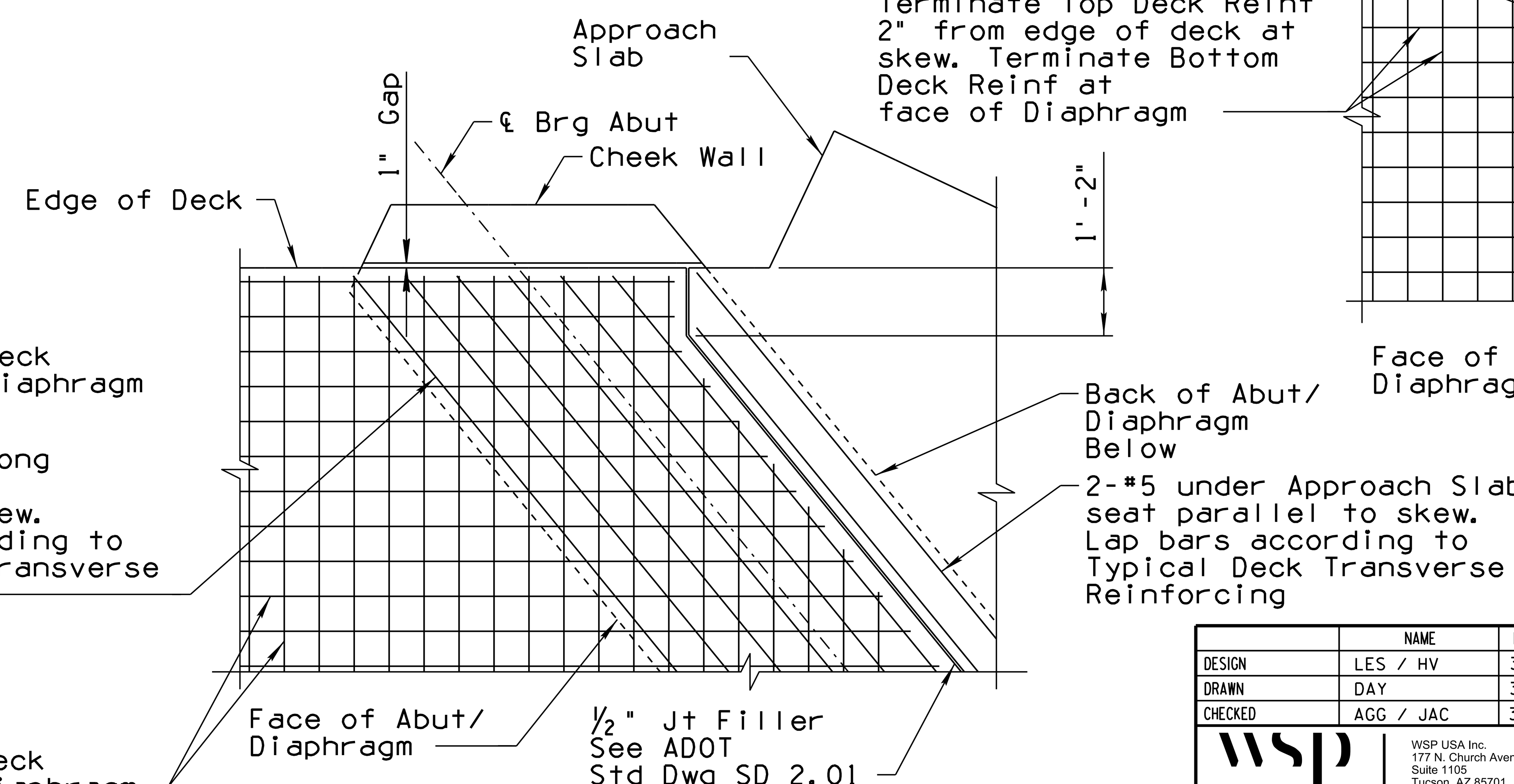
DECK PLAN
Scale: 1"=20'



DETAIL 3
Scale: ½"=1'-0"



DETAIL 1
Scale: ½"=1'-0"



DETAIL 2
Scale: ½"=1'-0"

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
DECK PLAN

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C — 010-D(213)S

Registered Professional Engineer (Structural) 50678 JASON CARLAFTES ARIZONA, U.S.A. EXPIRES 3/31/2019

DWG NO. S-1.26

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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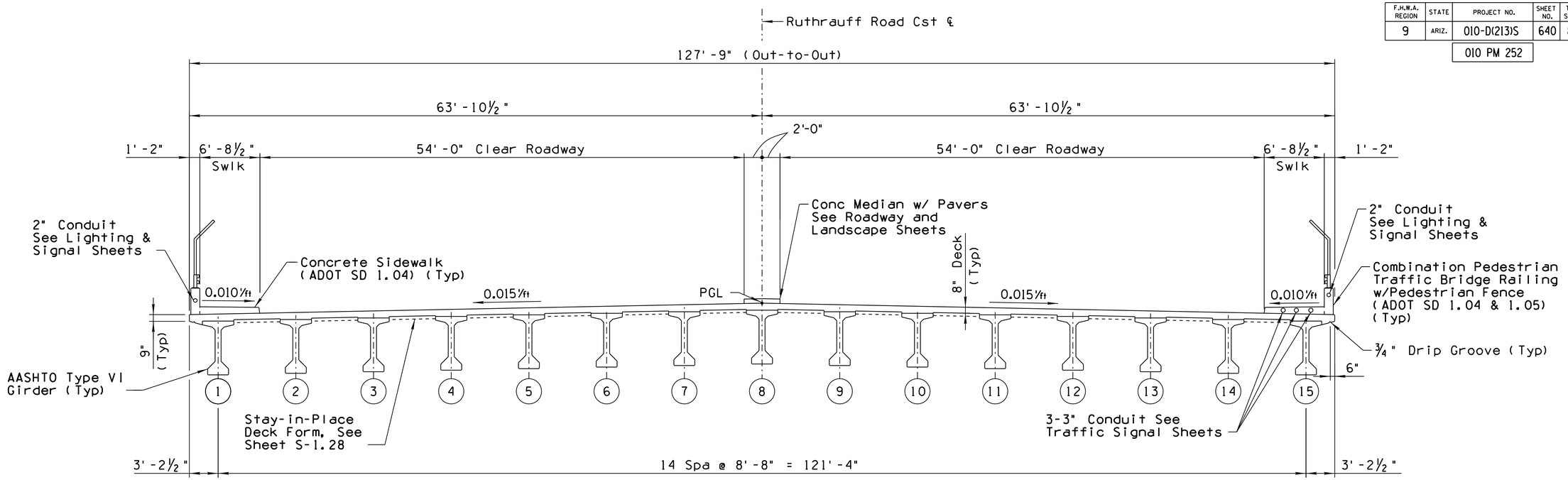
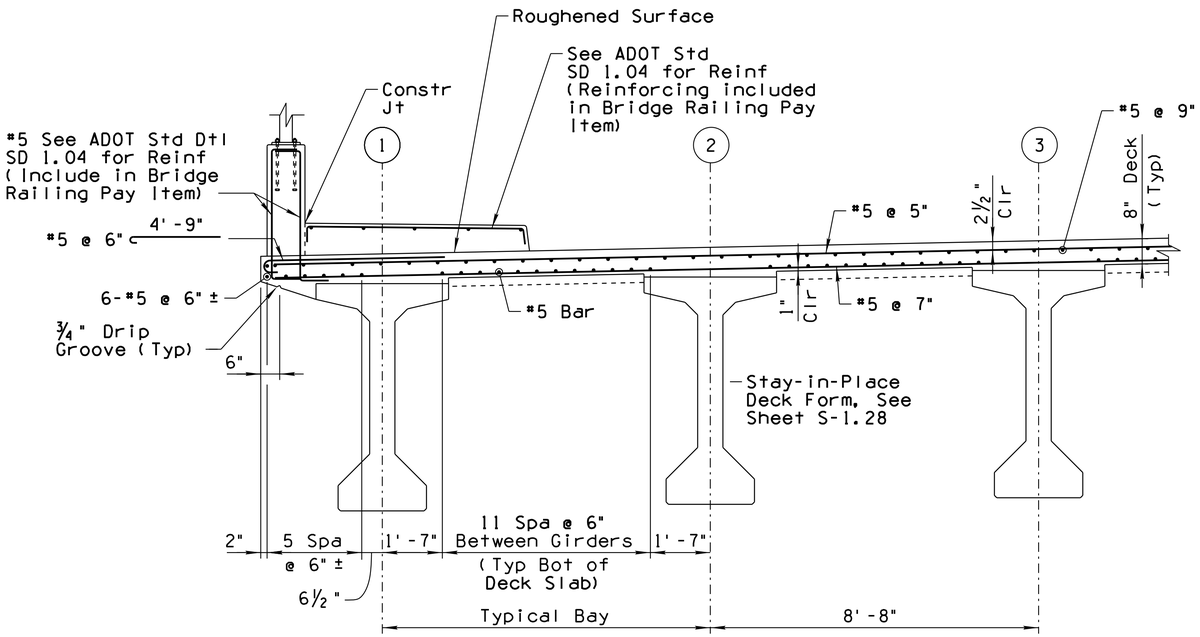
		010 PM 252			



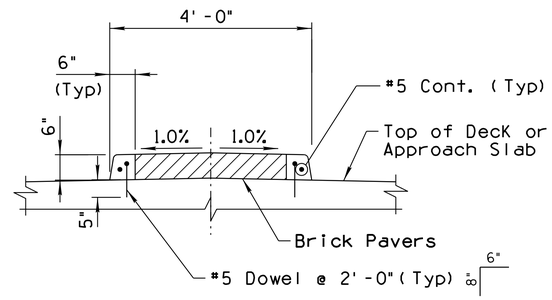
TYPICAL DECK SECTION

Scale: 3/16" = 1'-0"
(Dimensions shown perpendicular to Cst ℄)



TYPICAL PARTIAL SECTION - REINFORCEMENT

Scale: ¾" = 1'-0"



NOTES:

Median reinforcing Shall Be Included in Deck Reinforcing

MEDIAN DETAIL

Scale: ¾" = 1'-0"
(Median Concrete Shall Be Class "S" Concrete, f'c =4.0 Ksi. Quantity under Superstructure Concrete, f'c =4.0 Ksi.)
Pavers are paid for elsewhere. See Landscape Sheets.

Notes:

1. All longitudinal reinforcement shall be placed parallel to Construction ℄.
2. All continuous #5 horizontal bars in deck slab and barriers, including transverse slab bars, may be spliced with minimum lap length of 1'-8".
3. Top transverse straight bars in deck slab shall be spliced at center of span between girders. Bottom transverse straight bars in deck slab shall be spliced at centerline of girder.
4. Bars shall not be spliced within the required lap length of adjacent bars.
5. (X) Indicates girder number.
6. Dowels shall be installed using an epoxy from the Approved Products List. Install per Manufacturer's recommendations.

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
DECK SECTION

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

Registered Professional Engineer — Certificate No. 50678 — JASON CARLAFTES — Date Signed 5/23/19 — ARIZONA, U.S.A.

DWG NO. S-1.27

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

Fri 24 May 2019, 11:32:58

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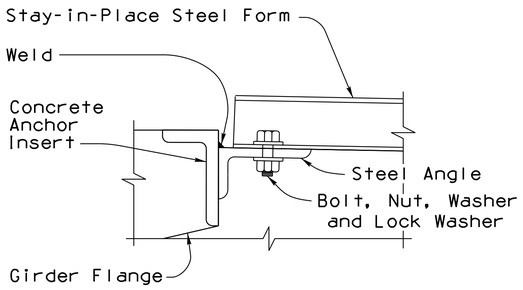
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	641	849	
		010 PM 252			



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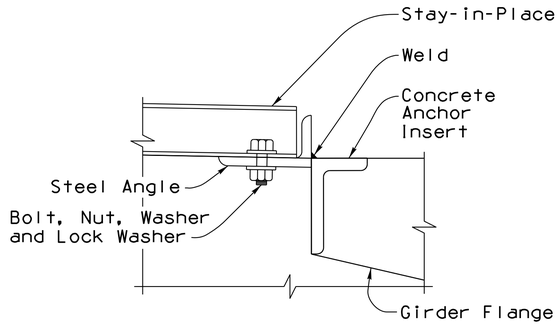
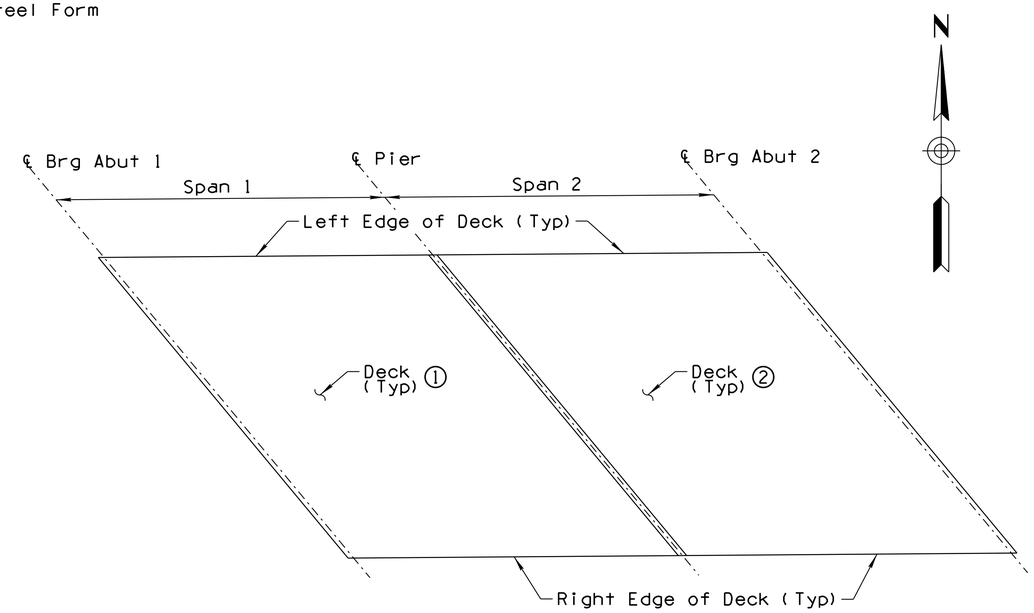


DETAIL 2

STAY-IN-PLACE STEEL DECK FORM DETAIL
No Scale



DECK POUR SEQUENCE
No Scale

STAY IN PLACE STEEL DECK FORM NOTES:

1. The concrete insert anchors may be cast with the girder to accommodate the use of stay-in-place forms. Alternate methods of support will be considered provided the detail is adequate to support the loads, prevent leakage and allow for the adjustment for the varying build-up to maintain a constant deck thickness.
2. The Steel Forms panels and angles shall be galvanized in accordance with ASTM A123. All bolts shall conform to ASTM Specification A325. All nuts, bolts and washers shall be galvanized in accordance with the requirements of ASTM A153.
3. The Contractor shall determine the sizes of all bolts, welds, angles, etc to support the required loads.
4. The Contractor shall submit shop drawings showing details of the stay-in-place Steel forms including the method of installation and adjustment to the Bridge Engineer for approval. The Steel form submittal must be made simultaneously with the precast girder shop drawings to ensure coordination between the girder fabrication and the stay-in-place steel form design. Stay-in-place steel form details shall be sealed by a Professional Engineer Licensed in the State of Arizona.
5. The Contractor shall use due care in the placement of the girders to ensure a constant distance is maintained between girder flanges.
6. The bridge design has an assumed dead load of 15 psf for the stay-in-place steel forms and additional concrete.

POUR NOTES:

1. Numbers ① and ② indicate placing sequence of deck concrete on each span.
2. Intermediate Diaphragm, Pier and Abutment Diaphragms for each Span shall be poured prior to the Deck Pour.
3. Span 1 and Span 2 are separate pours.
4. The Contractor shall submit a Pour Schedule to the Engineer for approval prior to placing concrete.
5. It shall be the Contractor's responsibility to brace/shore girders/diaphragm formwork/falsework adequately prior to deck pour and during the pour until deck/diaphragm concrete hardens fully. The cost of the bracing is included in the cost of the deck concrete.
6. Pours Shall not occur over live traffic.

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
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STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
DECK DETAILS

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

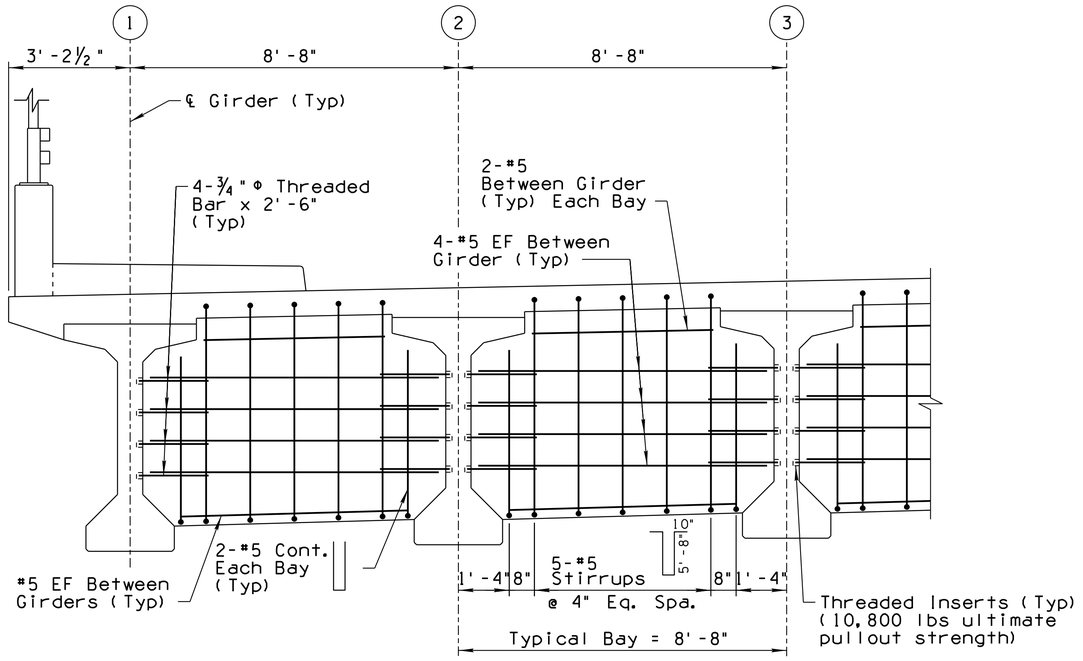
50678 JASON CARLAFTES — Registered Professional Engineer — ARIZONA, U.S.A. — Date Signed 3/31/2019 — EXPIRES 3/31/2019

DWG NO. S-1.28

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

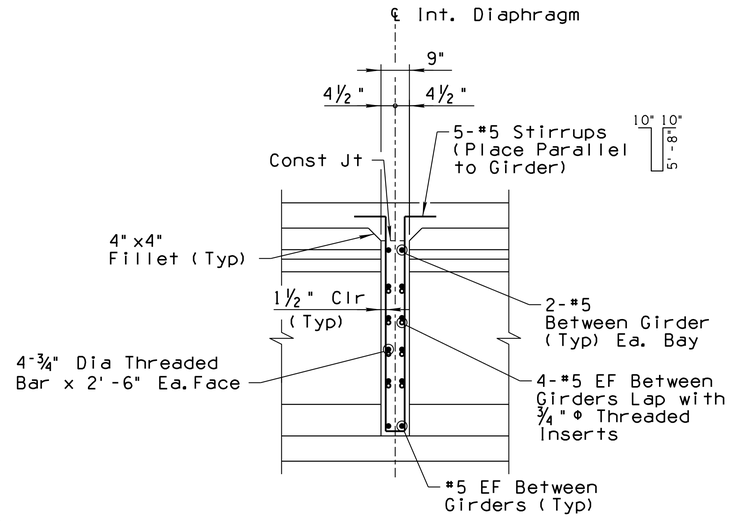
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	642	849	
		010 PM 252			



ELEVATION

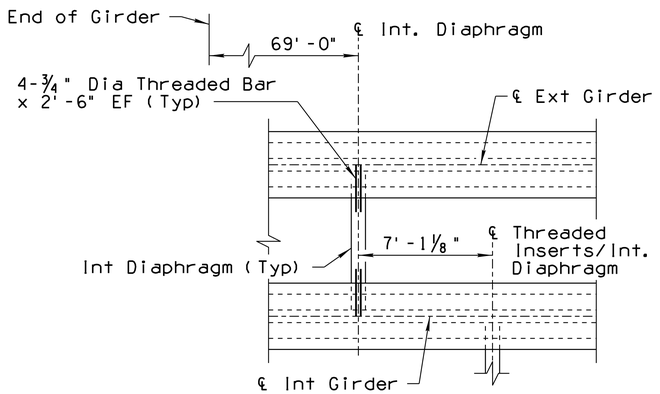
* Intermediate Diaphragm Concrete shall be Class "S", f'c=4.5 ksi under Superstructure Concrete



SECTION

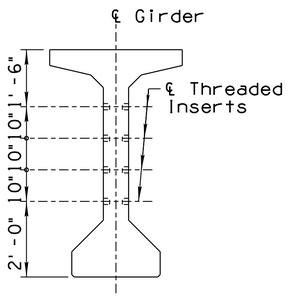
INTERMEDIATE DIAPHRAGM DETAIL

Scale: ½ " = 1' -0"



DETAIL

Scale: ½ " = 1' -0" (4 / 1.21) (4 / 1.22)



TYPICAL GIRDER INSERT DETAIL

@ Int. Diaphragm only

INSERT NOTES:

1. Threaded inserts in Intermediate Diaphragms are Ferrule Loop inserts for ¾ " Φ Threaded bars. Inserts shall have a 10,800 lbs ultimate pullout strength.
2. Threaded inserts shall be placed normal to girder web.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
INT DIAPHRAGM DETAILS

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

Registered Professional Engineer — 50678 JASON CARLAFTES — Date Signed 03/31/19 — ARIZONA, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.29

____ OF ____

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

Tue 19 Mar 2019, 11:33:10

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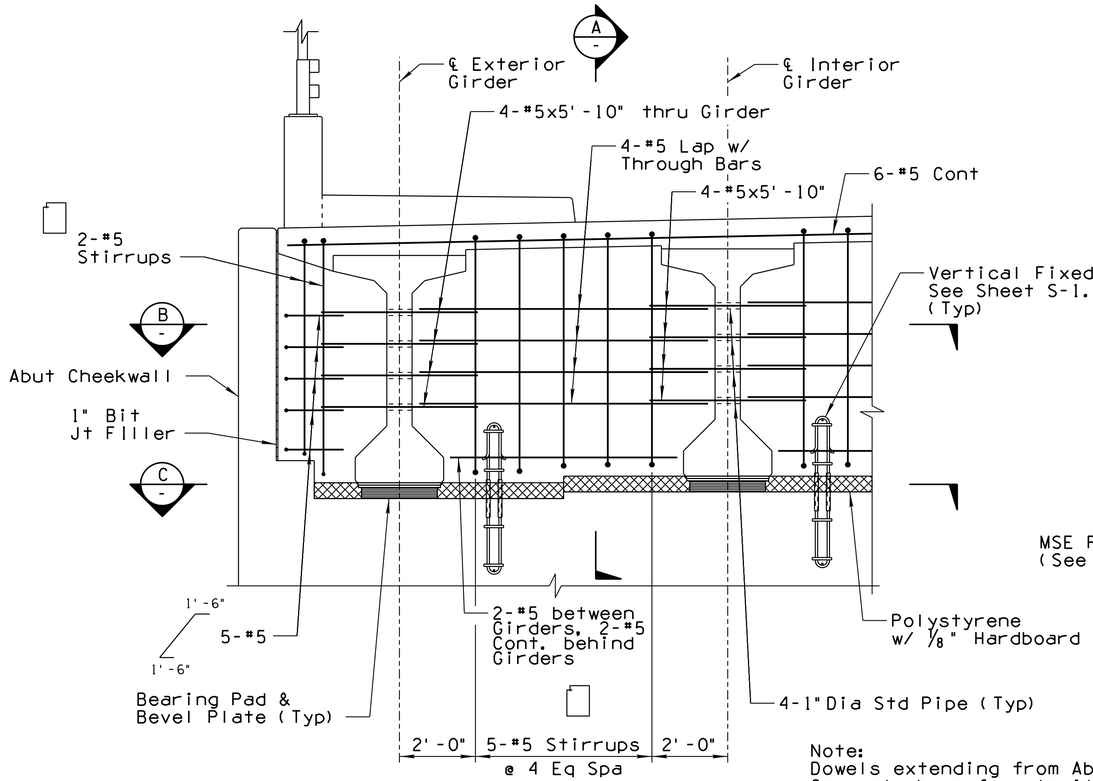
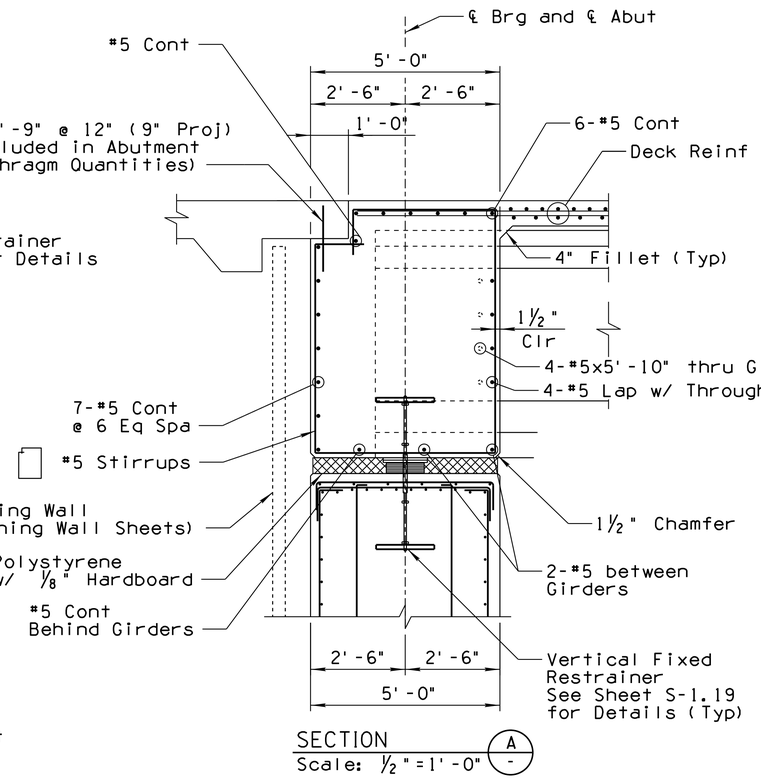
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	643	849	
		010 PM 252			



PARTIAL ELEVATION AT ABUTMENT

Scale: 1/2"=1'-0"

Note:
Dowels extending from Abutment Cap not shown for clarity.

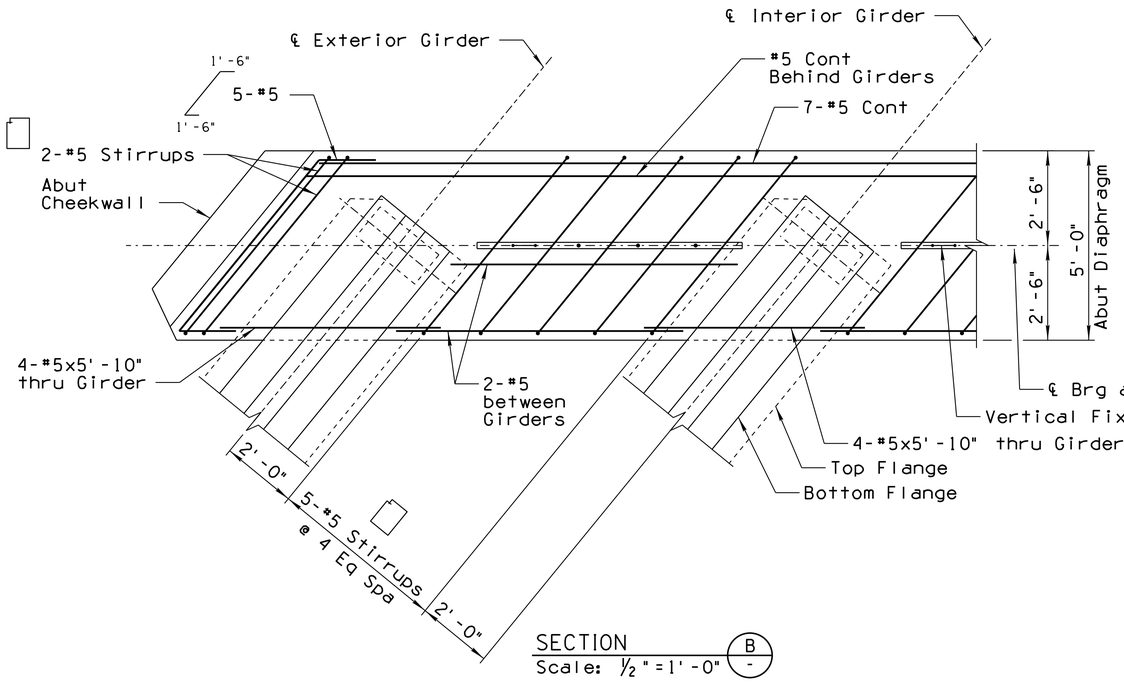


SECTION

Scale: 1/2"=1'-0" (A)

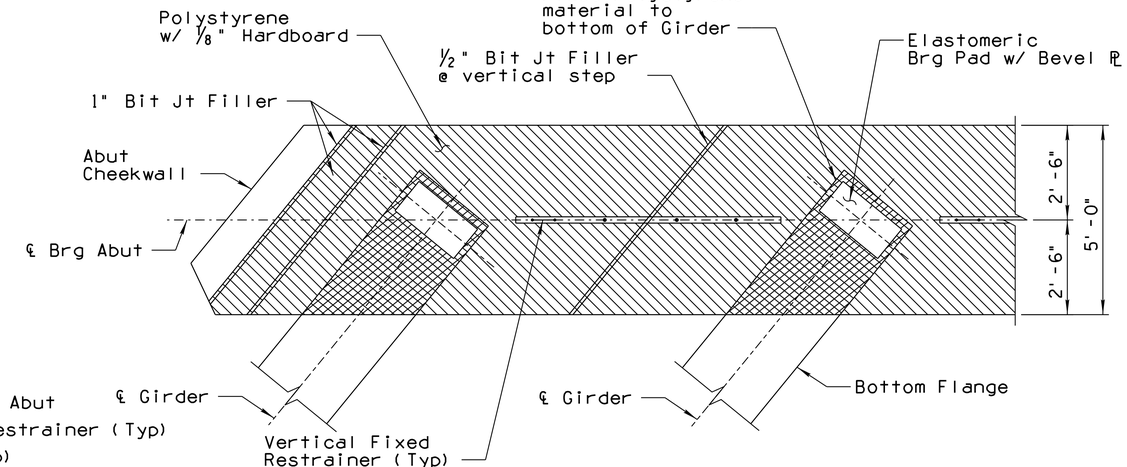
Notes:

1. Abutment Diaphragm Concrete shall be f'c=4.5 ksi under (Superstructure Concrete f'c=4.5 ksi)



SECTION

Scale: 1/2"=1'-0" (B)



SECTION

Scale: 1/2"=1'-0" (C)

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
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Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
ABUTMENT DIAPHRAGM DETAILS

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — State of Arizona, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.30

___ OF ___

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

Tue 19 Mar 2019, 11:33:30

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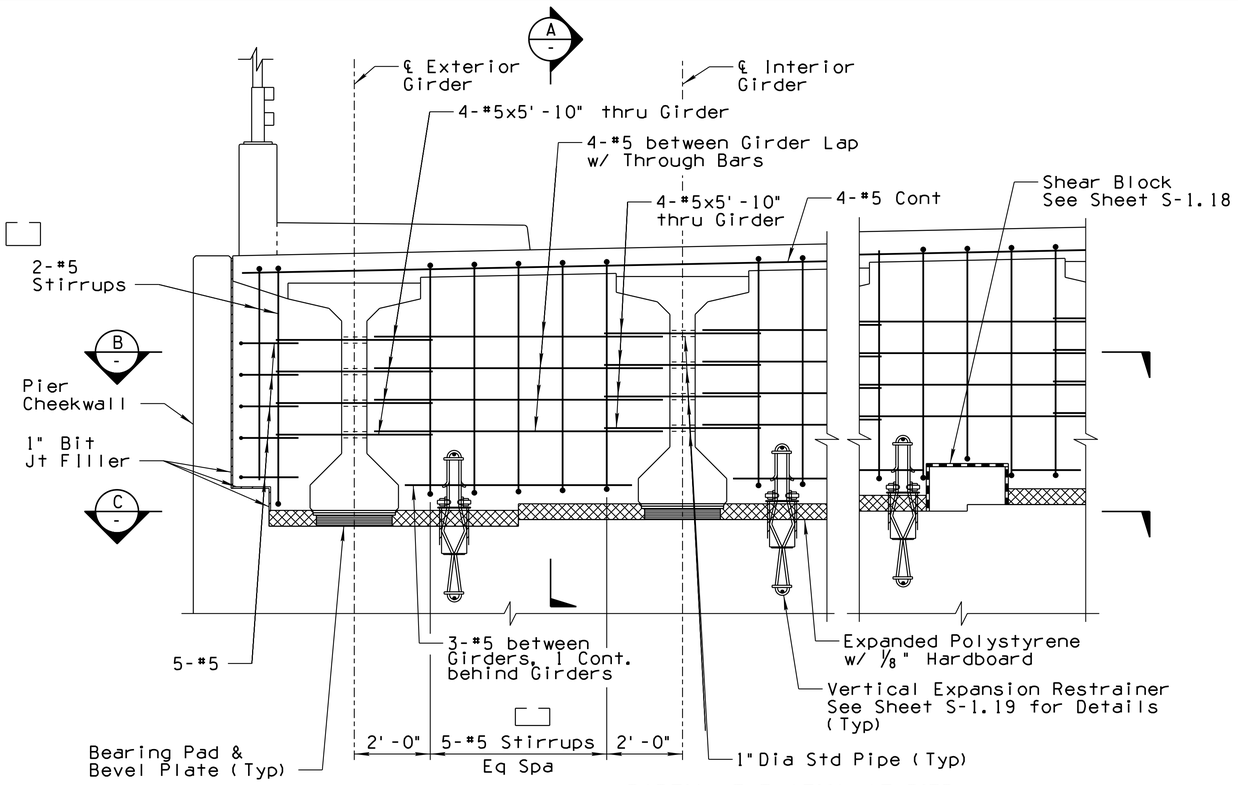
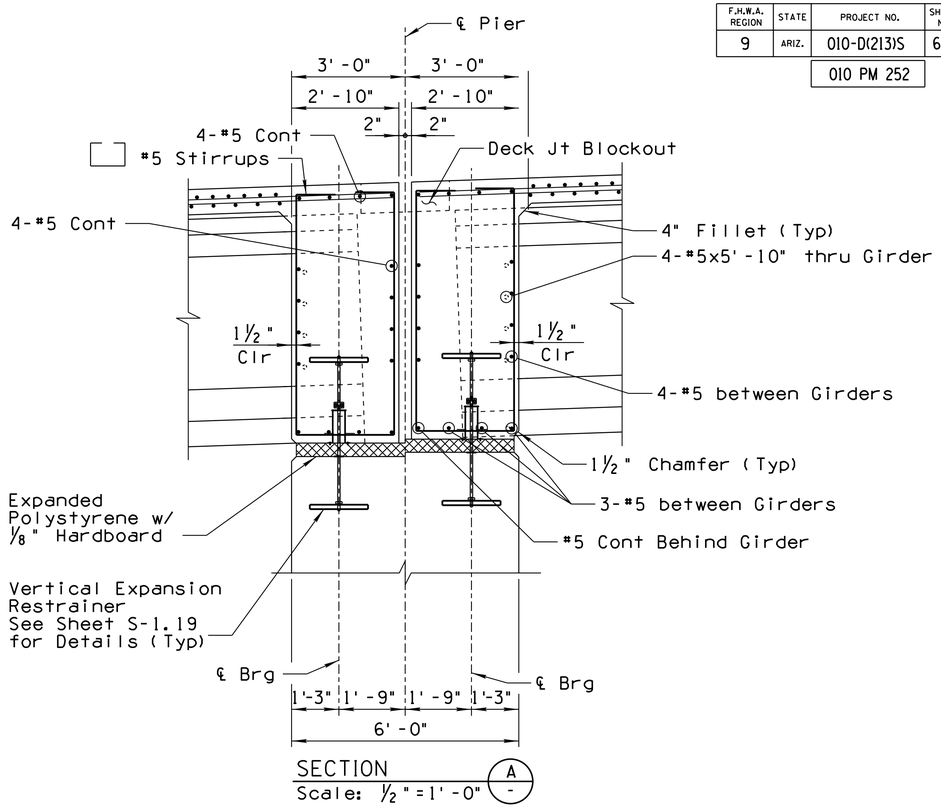
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	644	849	
		010 PM 252			



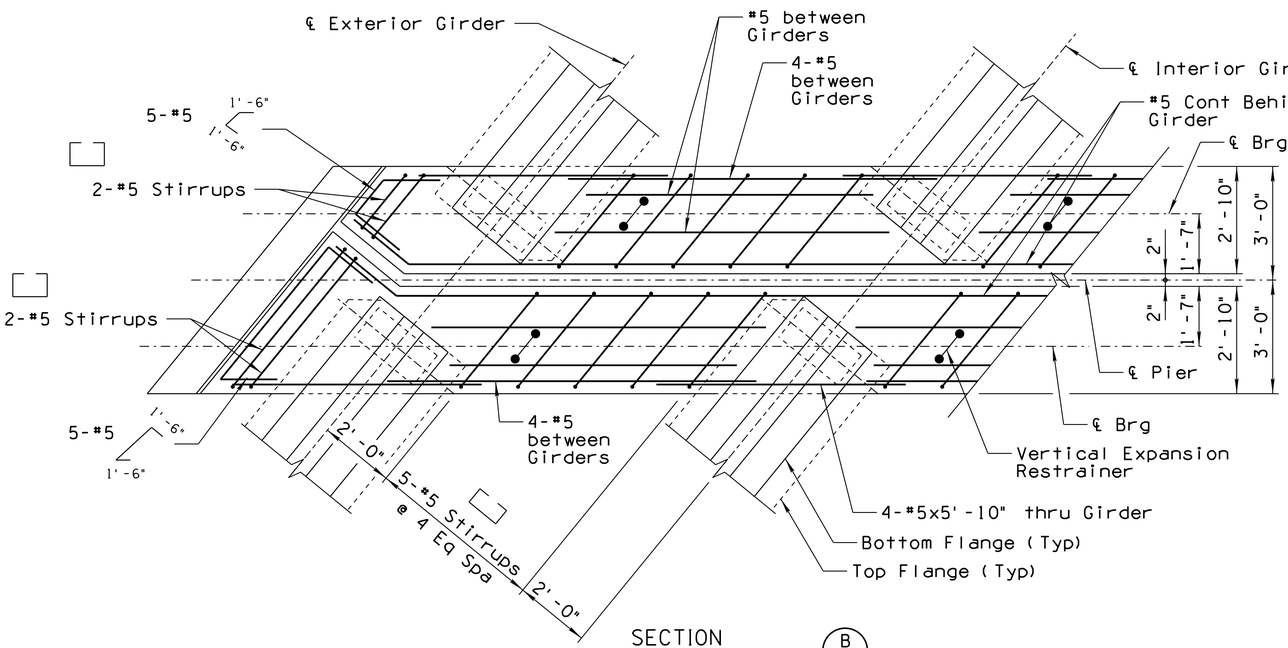
PARTIAL ELEVATION AT PIER

Scale: 1/2" = 1'-0"



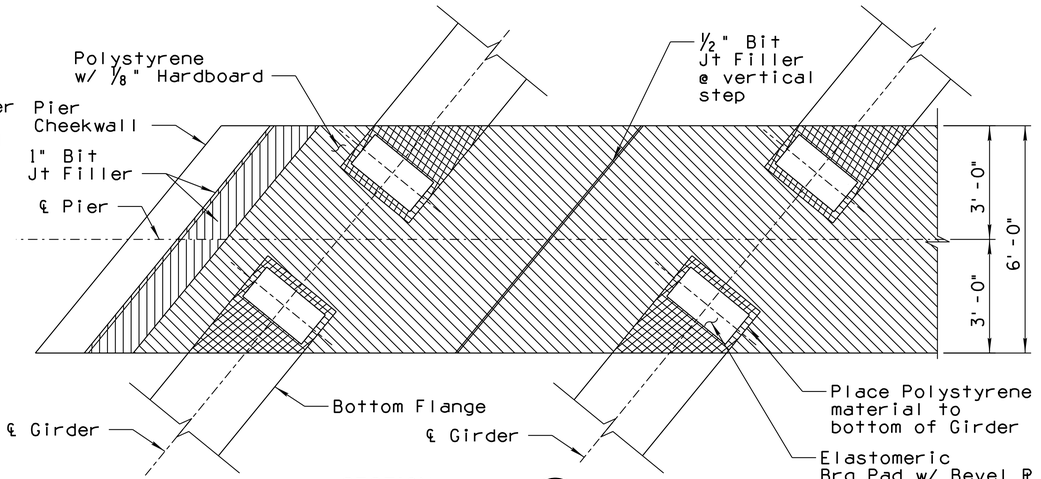
SECTION

Scale: 1/2" = 1'-0" (A)



SECTION

Scale: 1/2" = 1'-0" (B)



SECTION

Scale: 1/2" = 1'-0" (C)

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
PIER DIAPHRAGM DETAILS

I-10	252.00	20159
ROUTE	MILEPOST	STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

50678 JASON CARLAFTES — Registered Professional Engineer — ARIZONA, U.S.A. — EXPIRES 3/31/2019

DWG NO. S-1.31

TRACS NO. H 8480 01C

010-D(213)S

OF

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

Tue 19 Mar 2019, 11:34:15

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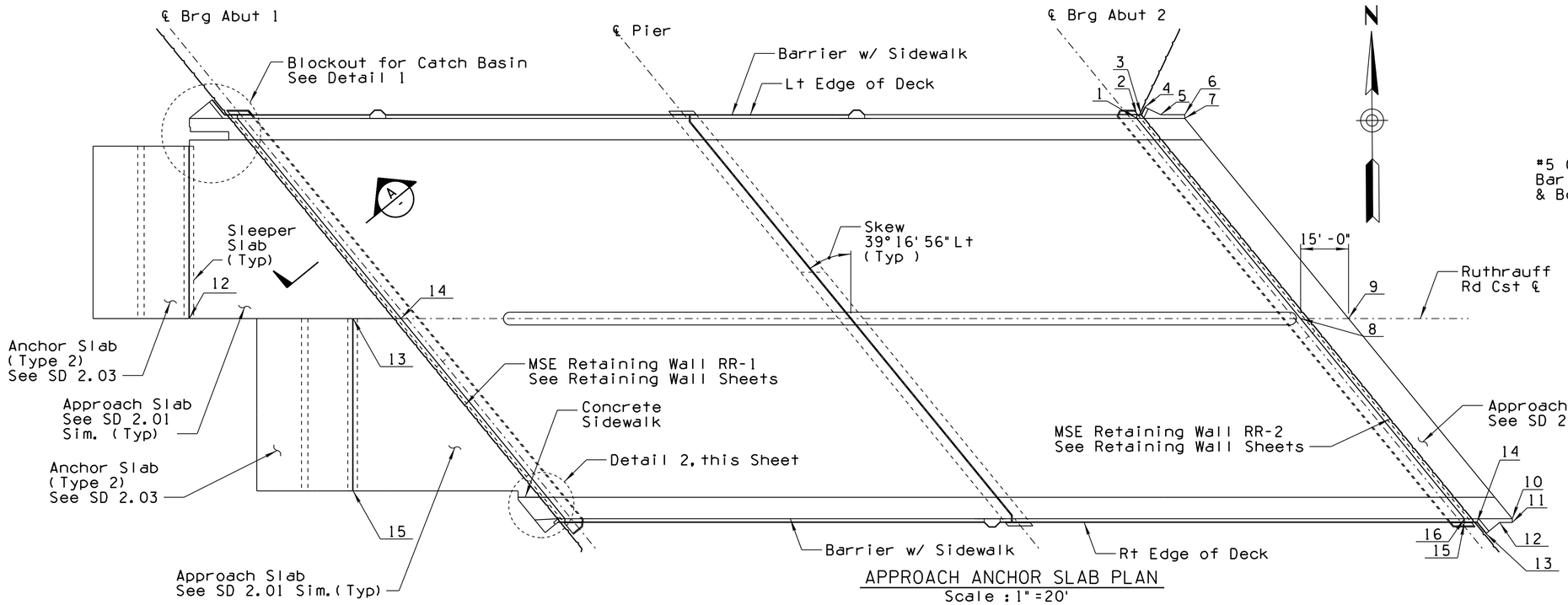
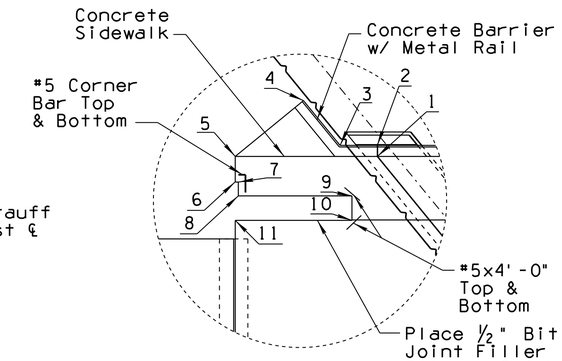
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	645	849	

010 PM 252



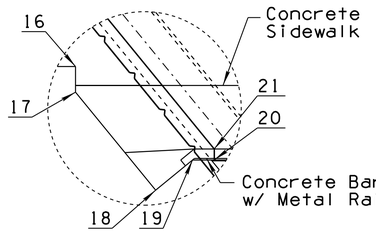
APPROACH ANCHOR SLAB PLAN
Scale : 1" =20'



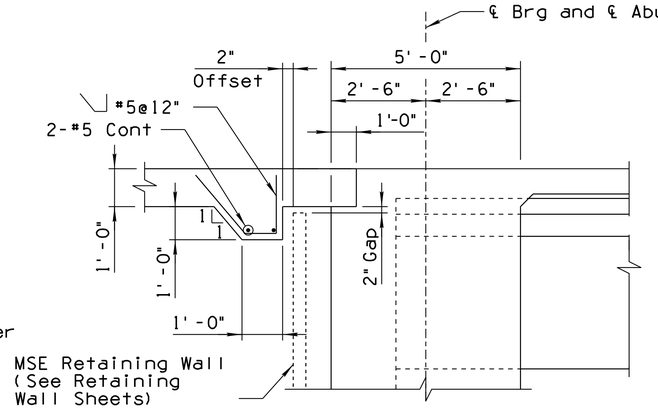
DETAIL 1 / -
Scale : ⅛" =1'-0"

ABUT 1 APPROACH SLAB ELEVS			
POINT	STATION	OFFSET	ELEV
1	97+82.67	62.69 Lt	2268.78
2	97+82.67	63.88 Lt	2268.77
3	97+78.74	63.88 Lt	2268.65
4	97+74.87	68.60 Lt	2268.46
5	97+67.67	62.71 Lt	2268.33
6	97+67.67	60.00 Lt	2268.38
7	97+67.99	60.00 Lt	2268.38
8	97+67.99	58.54 Lt	2268.41
9	97+79.99	58.54 Lt	2268.77
10	97+79.99	55.96 Lt	2268.81
11	97+67.67	55.96 Lt	2268.44
12	97+67.67	--	2269.28
13	98+18.95	--	2270.81
14	98+33.95	--	2271.26
15	98+18.95	54.00 Rt	2270.00
16	98+70.62	54.00 Rt	2271.55
17	98+70.62	56.71 Rt	2271.51
18	98+79.08	67.06 Rt	2271.61
19	98+82.97	63.87 Rt	2271.78
20	98+85.25	63.87 Rt	2271.84
21	98+85.25	62.72 Rt	2271.86

ABUT 2 APPROACH SLAB ELEVS			
POINT	STATION	OFFSET	ELEV
1	100+64.39	62.72 Lt	2277.24
2	100+64.39	63.88 Lt	2277.22
3	100+65.77	63.88 Lt	2277.26
4	100+66.88	66.22 Lt	2277.26
5	100+71.86	63.88 Lt	2277.44
6	100+79.40	63.88 Lt	2277.67
7	100+79.40	62.71 Lt	2277.69
8	101+15.69	--	2279.72
9	101+30.69	--	2280.16
10	101+81.99	62.71 Rt	2280.56
11	101+81.99	63.87 Rt	2280.54
12	101+78.01	63.87 Rt	2280.44
13	101+73.75	67.36 Rt	2280.29
14	101+70.90	63.87 Rt	2280.27
15	101+66.98	63.87 Rt	2280.17
16	101+66.98	62.69 Rt	2280.19



DETAIL 2 / -
Scale : ⅛" =1'-0"



SECTION A / -
Scale: ½" =1'-0"

NOTES:

1. Anchor slab layout is to fit with pavement joints. See PCCP Joint Plans.
2. Stations and offsets are given along Ruthrauff Road Construction ℄.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
BRIDGE APPROACH DETAILS

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

50678 JASON CARLAFTES — Registered Professional Engineer — ARIZONA, U.S.A. — Date Signed 3/31/2019
EXPIRES 3/31/2019

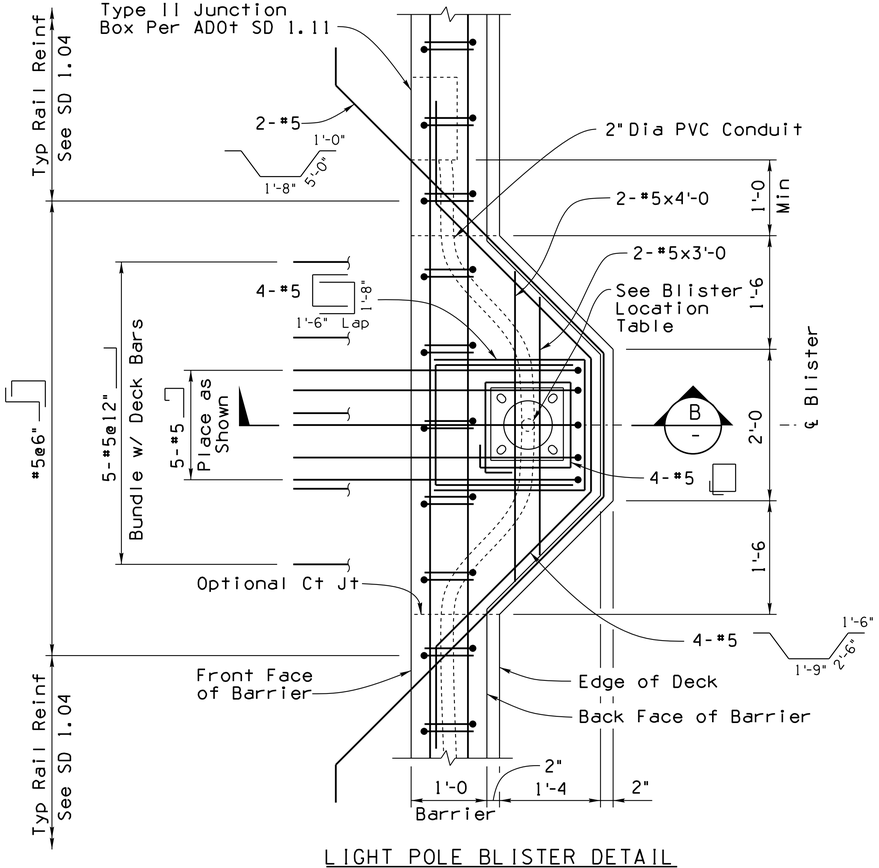
DWG NO. S-1.32

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

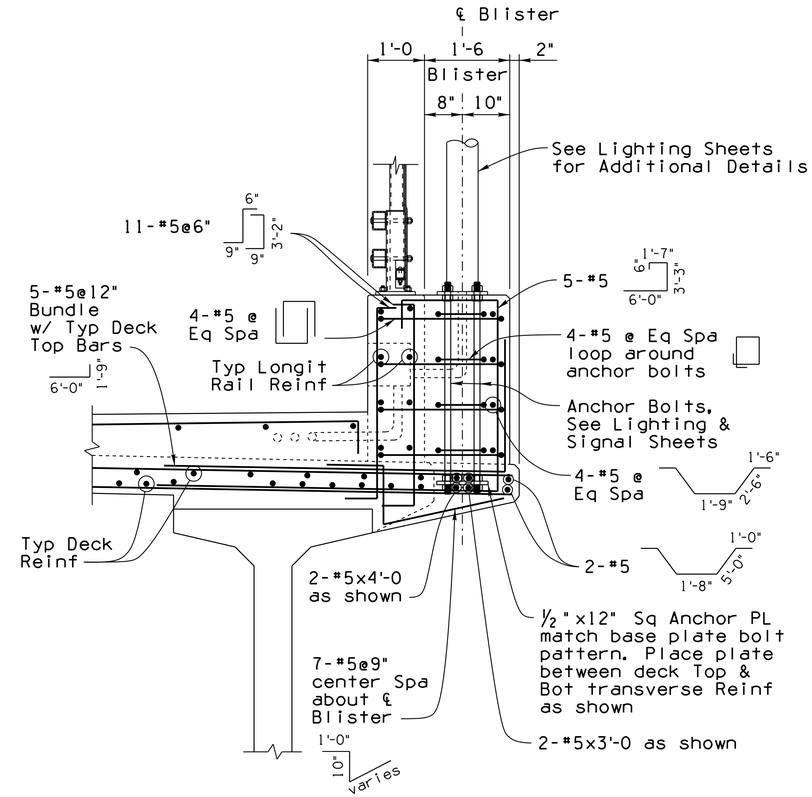
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

Tue 19 Mar 2019, 11:34:34 \\prdpwics02\ics_workingdir\2227\42600_55\S20159ap.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	646	849	
		010 PM 252			

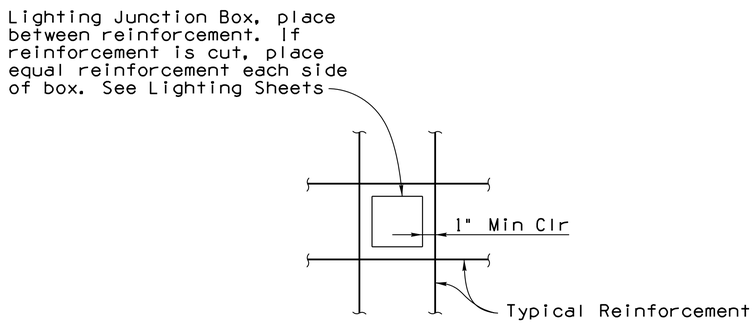


LIGHT POLE BLISTER DETAIL
Scale: 1" = 1'-0



SECTION B
Scale: ¾" = 1'-0

℄ Blister Location Table		
#	Station	Offset
1	98+26.66	64.25 Lt
2	100+19.08	64.25 Rt
3	99+76.65	64.25 Lt



JUNCTION BOX DETAIL
Scale: 2" = 1'-0

Notes:

1. Light Pole Blister Concrete and Reinforcing Shall be Considered Included in payment for the Combination Pedestrian - Traffic Bridge Railing (SD 1.04). No separate payment will be made for these Items.
2. All Structural Steel shall be galvanized. Contractor shall submit shop drawings for any alternative lighting support for review and approval. All materials for furnishing and application of Lighting shall be included in Lighting pay Items requiring the materials.

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
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Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
LIGHTING DETAILS

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678 JASON CARLAFTES — Registered Professional Engineer — CERTIFICATE NO. — 5/24/19 — ARIZONA, U.S.A.

DWG NO. S-1.33

___ OF ___

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

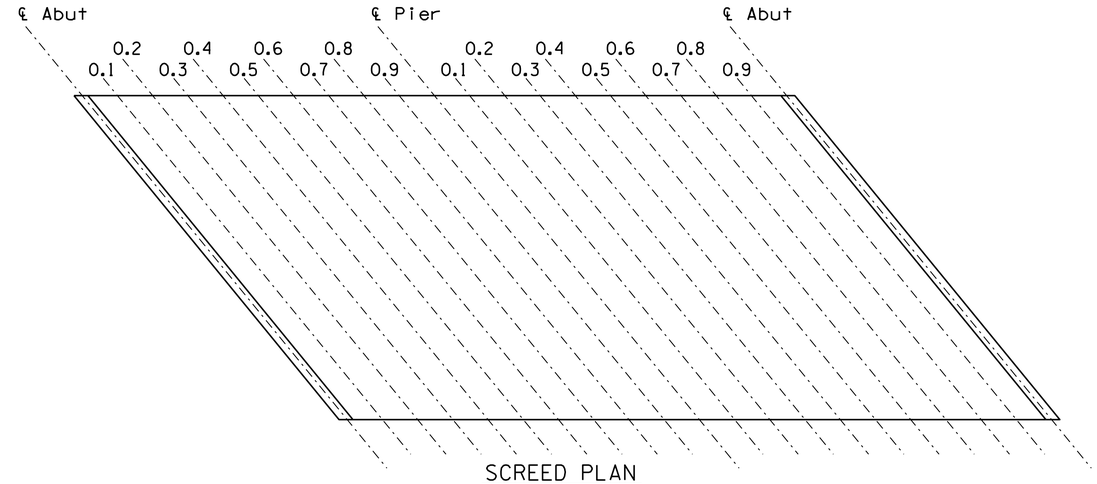
Fri 24 May 2019, 11:34:33 \\prdpwics01\ics_workingdir\13369\42600_56\S20159md2.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	647	849	
		010 PM 252			

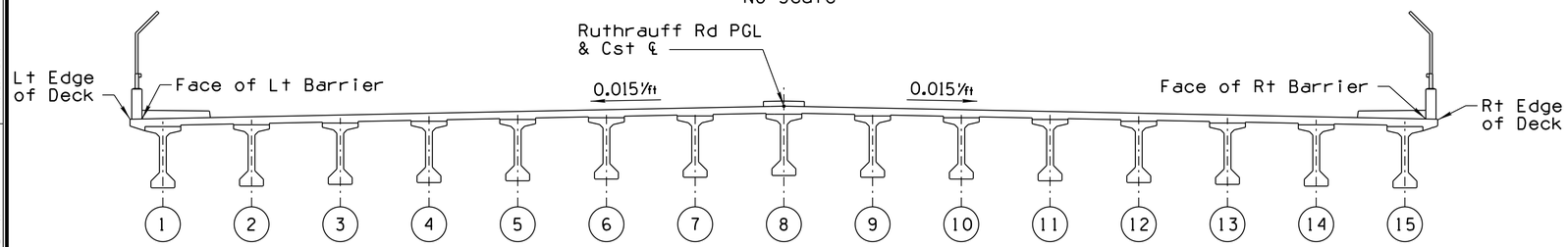
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

BRIDGE SCREED ELEVATIONS - SPAN 1

	℄ Brg Abut 1	0.1 pt	0.2 pt	0.3 pt	0.4 pt	0.5 pt	0.6 pt	0.7 pt	0.8 pt	0.9 pt	℄ Pier
LT EDGE OF DECK	2268.81	2269.29	2269.76	2270.21	2270.65	2271.08	2271.49	2271.88	2272.26	2272.62	2272.97
FF LT BARRIER	2268.85	2269.34	2269.81	2270.27	2270.71	2271.13	2271.54	2271.94	2272.32	2272.69	2273.04
℄ GIRDER 1	2268.93	2269.41	2269.87	2270.32	2270.75	2271.17	2271.57	2271.96	2272.33	2272.69	2273.01
℄ GIRDER 2	2269.28	2269.76	2270.22	2270.67	2271.11	2271.52	2271.93	2272.31	2272.68	2273.04	2273.38
℄ GIRDER 3	2269.62	2270.10	2270.57	2271.01	2271.45	2271.87	2272.27	2272.65	2273.02	2273.38	2273.72
℄ GIRDER 4	2269.96	2270.44	2270.91	2271.36	2271.79	2272.21	2272.61	2273.00	2273.37	2273.72	2274.06
℄ GIRDER 5	2270.31	2270.79	2271.25	2271.70	2272.13	2272.55	2272.95	2273.34	2273.71	2274.06	2274.40
℄ GIRDER 6	2270.65	2271.13	2271.59	2272.04	2272.48	2272.89	2273.30	2273.68	2274.05	2274.41	2274.75
℄ GIRDER 7	2270.99	2271.47	2271.94	2272.39	2272.82	2273.24	2273.64	2274.03	2274.40	2274.75	2275.09
℄ GRDR 8 & BRIDGE	2271.33	2271.81	2272.28	2272.73	2273.16	2273.58	2273.98	2274.37	2274.74	2275.09	2275.43
℄ GIRDER 9	2271.42	2271.90	2272.36	2272.81	2273.24	2273.66	2274.06	2274.45	2274.82	2275.18	2275.51
℄ GIRDER 10	2271.50	2271.98	2272.44	2272.89	2273.33	2273.74	2274.15	2274.53	2274.90	2275.26	2275.60
℄ GIRDER 11	2271.58	2272.06	2272.53	2272.98	2273.41	2273.83	2274.23	2274.62	2274.99	2275.34	2275.68
℄ GIRDER 12	2271.66	2272.14	2272.61	2273.06	2273.49	2273.91	2274.31	2274.70	2275.07	2275.42	2275.76
℄ GIRDER 13	2271.75	2272.23	2272.69	2273.14	2273.58	2273.99	2274.39	2274.78	2275.15	2275.51	2275.85
℄ GIRDER 14	2271.83	2272.31	2272.77	2273.22	2273.66	2274.08	2274.48	2274.86	2275.23	2275.59	2275.93
℄ GIRDER 15	2271.91	2272.39	2272.85	2273.30	2273.73	2274.15	2274.55	2274.94	2275.31	2275.67	2276.01
FF RT BARRIER	2271.93	2272.41	2272.88	2273.34	2273.78	2274.20	2274.61	2275.00	2275.38	2275.75	2276.10
RT EDGE OF DECK	2271.94	2272.43	2272.90	2273.35	2273.79	2274.21	2274.62	2275.02	2275.39	2275.76	2276.11



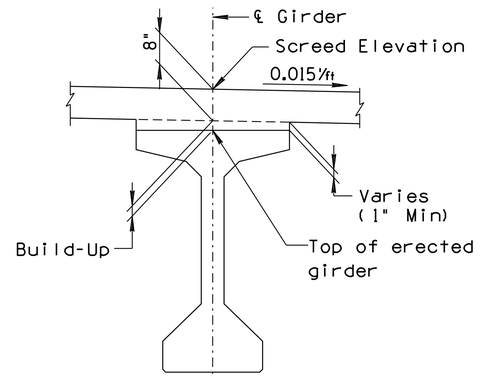
SCREED PLAN
No Scale



BRIDGE SECTION
No Scale

SCREED ELEVATION NOTES:

1. Screed elevations are given along lines parallel to ℄ Abut/Pier at intervals of 1/10 the distance between centerline of bearings at abutment and ℄ of pier.
2. Release and initial Deflections shall be measured at tenth points for each girder and the data provided to the Engineer for evaluation.
3. The top of Erected Girder Elevations shall be measured in the field at tenth points and the information shall be provided to the Engineer for review & approval prior to setting formwork or screed elevations.
4. The tabulated Screed Elevation includes an allowance for the deflection due to dead load of the deck slab, diaphragms, barriers, sidewalks, median, and the effect of long term creep.
5. The build-up is calculated based on the measured elevations at the top of girder. (Build-up) = (Screed Elevation) - (Deck Slab Thickness) - (Measured Erected Elevation at Top of Girder).
6. The tabulated Screed Elevations shall be used in setting screeds. Adjustments to the screed elevations, if necessary, will be determined by the Engineer after reviewing the top of erected girder elevations. (DO NOT USE FINISHED GRADE ELEVATIONS FOR SETTING SCREEDS).
7. Contractor shall screed bridge such that screed machine progresses along skew.



SCREED ELEVATION SECTION
No Scale

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
SCREED ELEVATIONS 1

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

TRACS NO. H 8480 01C | 010-D(213)S

50678
JASON
CARLAFTES
Date signed 2/21/19
ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-1.34

___ OF ___

Tue 19 Mar 2019, 11:33:09

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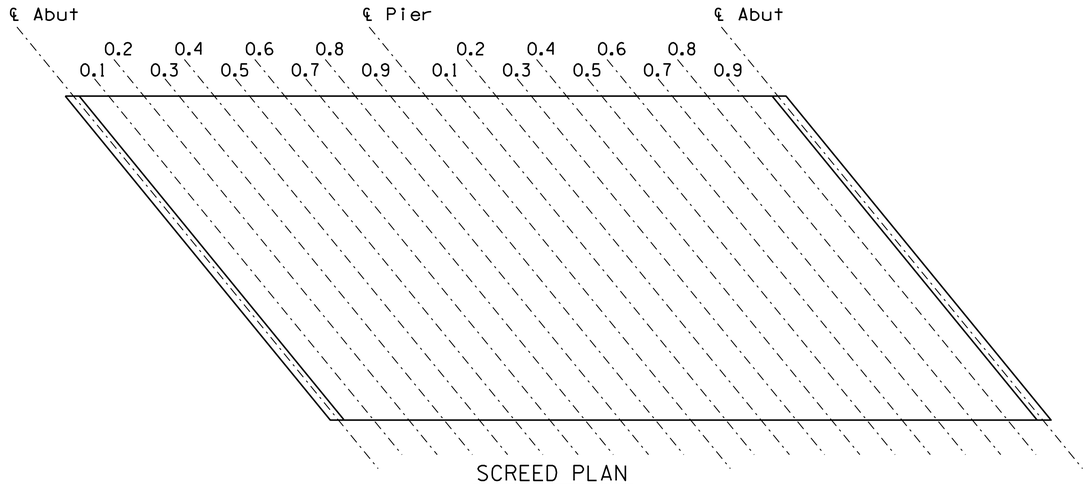
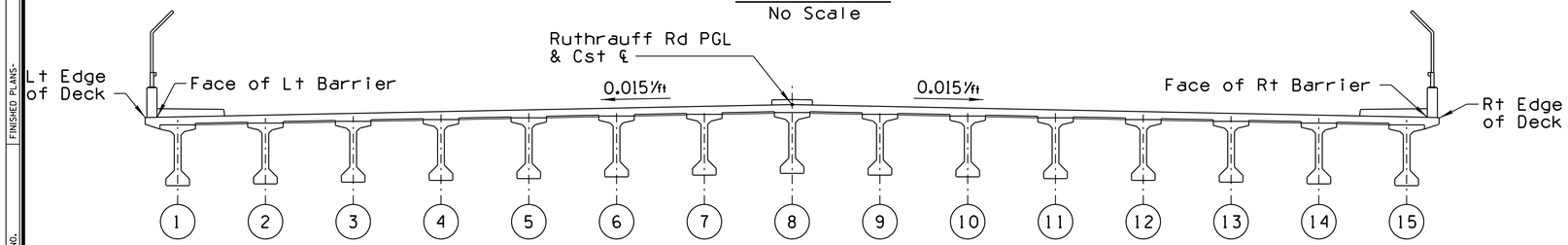
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	648	849	
		010 PM 252			

BRIDGE SCREED ELEVATIONS - SPAN 2

	℄ Pier	0.1 pt	0.2 pt	0.3 pt	0.4 pt	0.5 pt	0.6 pt	0.7 pt	0.8 pt	0.9 pt	℄ Brg Abut 2
LT EDGE OF DECK	2272.97	2273.46	2273.93	2274.38	2274.82	2275.24	2275.65	2276.05	2276.43	2276.79	2277.14
FF LT BARRIER	2273.04	2273.52	2273.99	2274.44	2274.88	2275.30	2275.71	2276.10	2276.48	2276.84	2277.19
℄ GIRDER 1	2273.17	2273.65	2274.11	2274.55	2274.99	2275.40	2275.81	2276.19	2276.57	2276.92	2277.27
℄ GIRDER 2	2273.51	2273.99	2274.46	2274.91	2275.34	2275.76	2276.16	2276.55	2276.92	2277.27	2277.61
℄ GIRDER 3	2273.85	2274.34	2274.80	2275.25	2275.68	2276.10	2276.50	2276.89	2277.26	2277.61	2277.95
℄ GIRDER 4	2274.20	2274.68	2275.14	2275.59	2276.03	2276.44	2276.85	2277.23	2277.60	2277.96	2278.30
℄ GIRDER 5	2274.54	2275.02	2275.49	2275.93	2276.37	2276.79	2277.19	2277.57	2277.94	2278.30	2278.64
℄ GIRDER 6	2274.88	2275.36	2275.83	2276.28	2276.71	2277.13	2277.53	2277.92	2278.29	2278.64	2278.98
℄ GIRDER 7	2275.22	2275.70	2276.17	2276.62	2277.05	2277.46	2277.86	2278.25	2278.62	2278.97	2279.31
℄ GRDR 8 & BRIDGE	2275.57	2276.05	2276.51	2276.96	2277.40	2277.81	2278.22	2278.60	2278.97	2279.33	2279.67
℄ GIRDER 9	2275.65	2276.13	2276.60	2277.05	2277.48	2277.90	2278.30	2278.68	2279.06	2279.41	2279.75
℄ GIRDER 10	2275.73	2276.21	2276.68	2277.13	2277.56	2277.98	2278.38	2278.77	2279.14	2279.49	2279.83
℄ GIRDER 11	2275.82	2276.30	2276.76	2277.21	2277.64	2278.06	2278.46	2278.85	2279.22	2279.57	2279.90
℄ GIRDER 12	2275.90	2276.38	2276.84	2277.29	2277.73	2278.14	2278.55	2278.93	2279.30	2279.65	2279.97
℄ GIRDER 13	2275.98	2276.46	2276.93	2277.38	2277.81	2278.23	2278.63	2279.02	2279.38	2279.72	2280.03
℄ GIRDER 14	2276.06	2276.54	2277.01	2277.46	2277.89	2278.31	2278.71	2279.10	2279.46	2279.79	2280.09
℄ GIRDER 15	2276.15	2276.62	2277.09	2277.53	2277.96	2278.38	2278.78	2279.17	2279.53	2279.85	2280.14
FF RT BARRIER	2276.10	2276.58	2277.05	2277.50	2277.94	2278.37	2278.78	2279.17	2279.53	2279.86	2280.15
RT EDGE OF DECK	2276.11	2276.59	2277.06	2277.52	2277.95	2278.38	2278.79	2279.18	2279.54	2279.87	2280.16



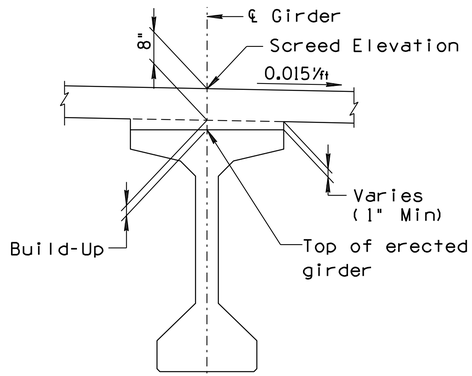
SCREED PLAN
No Scale



BRIDGE SECTION
No Scale

SCREED ELEVATION NOTES:

1. Screed elevations are given along lines parallel to ℄ Abut/Pier at intervals of 1/10 the distance between centerline of bearings at abutment and ℄ of pier.
2. Release and initial Deflections shall be measured at tenth points for each girder and the data provided to the Engineer for evaluation.
3. The top of Erected Girder Elevations shall be measured in the field at tenth points and the information shall be provided to the Engineer for review & approval prior to setting formwork or screed elevations.
4. The tabulated Screed Elevation includes an allowance for the deflection due to dead load of the deck slab, diaphragms, barriers, sidewalks, median, and the effect of long term creep.
5. The build-up is calculated based on the measured elevations at the top of girder. (Build-up) = (Screed Elevation) - (Deck Slab Thickness) - (Measured Erected Elevation at Top of Girder).
6. The tabulated Screed Elevations shall be used in setting screeds. Adjustments to the screed elevations, if necessary, will be determined by the Engineer after reviewing the top of erected girder elevations. (DO NOT USE FINISHED GRADE ELEVATIONS FOR SETTING SCREEDS).
7. Contractor shall screed bridge such that screed machine progresses along skew.



SCREED ELEVATION SECTION
No Scale

	NAME	DATE
DESIGN	LES / HV	3-19
DRAWN	DAY	3-19
CHECKED	AGG / JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
SCREED ELEVATIONS 2

I-10	252.00	20159	RUTHRAUFF ROAD T.I.
ROUTE	MILEPOST	STRUCTURE NO.	LOCATION

TRACS NO. H 8480 01C | 010-D(213)S

50678
JASON
CARLAFTES
Registered Professional Engineer
Date Signed 3/31/2019
ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-1.35

___ OF ___

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

Tue 19 Mar 2019, 11:33:39 \\prdpwics02\ics_workingdir\2227\42600_34\S20159se2.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	649	849	
		010 PM 252			

GENERAL NOTES

1. General soil and rock (where encountered) strata descriptions and indicated boundaries are based on engineering interpretation of available subsurface information by the geotechnical engineer and may not reflect actual variation in subsurface conditions between borings and samples. The location of contacts between strata may be gradual rather than abrupt. Classification of soil material is in general accordance with ASTM D 2488-93 and is presented in the Geotechnical Report.

2. The observed water levels and/or moisture conditions indicated on the boring logs are as recorded at the time of field investigation. These water levels and/or moisture conditions may vary considerably with time according to the prevailing climate, rainfall or other factors and are otherwise dependent upon the duration of and methods used in the field investigation program.

3. Sound engineering judgment was exercised in preparing the subsurface information presented on these sheets. This information was prepared and is intended for design and estimating purposes. Its presentation on the plans or elsewhere is for the purpose of providing intended users with access to the same information as was provided to the State and its designers. Interpretations of subsurface information are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations or judgment of the contractor.

4. A 140 lb. hammer, 30-inch free-fall, was used to drive both the Standard Penetration Test (SPT) split-spoon sampler and the ring-lined sampler in general conformance with ASTM D 1586-96 and D 3550-01, respectively.

5. For further information, refer to NCS report "Final Geotechnical Report; I-10, Ruthrauff Road Traffic Interchange," submitted to HDR on March 31, 2015 and any addenda.

6. Reaction to dilute HCl (as per ASTM D 2488) does not necessarily correlate to the degree of carbonate cementation. For example, a "strong" reaction to HCl and a low SPT N-value may indicate that the soil particles are coated with calcium carbonate or lime but the voids are mostly clear, i.e. the particles are not significantly cemented to each other; therefore, the density is loose. In other cases, soil may exhibit "no" to "weak" reaction to HCl but appear to be strongly cemented due to induration. Thus, the user should consider the reported reaction to HCl and SPT N-values in conjunction with other relevant factors to evaluate the degree of cementation and its effect on construction activities.

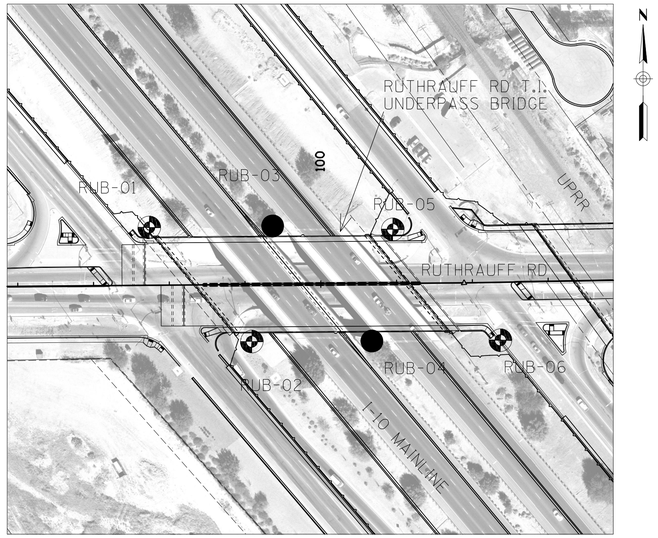
7. Refusal SPT N-values may be indicative of the presence of cobbles or boulders whose size cannot be determined by the investigative techniques used for this project. Cobbles and boulders will likely be encountered during the construction of the drilled shafts. Additionally, cemented layers may form cobble or boulder size pieces when broken up. The contractor should mobilize the appropriate equipment for removing this material.

8. The site soils contain random zones of poorly graded sands and gravels. These soils are prone to caving. Therefore, localized caving should be anticipated during drilled shaft construction. These local zones may be up to 20-ft thick and can occur at various depths.

9. The site soils contain random zones of gravels, cobbles and boulders. These materials experience large fluid loss during slurry-assisted drilled shaft construction.

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

OTHER TERMINOLOGY

Quantity:	
Trace	< 5%
Few	5-10%
Little	15-25%
Some	30-45%
Mostly	> 50%

Reaction to HCl:	
No reaction	No visible reaction
Weak reaction	Some reaction, with bubbles forming slowly
Strong reaction	Violent reaction, with bubbles forming immediately

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION DATA (1 OF 7)

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 03/11/2019 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-1.36

____ OF ____

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

3/7/2019 10:58:37 PM ...\dms42598\s8480fds_Ruthr01.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	650	849	
		010 PM 252			

SCE BORING LOG: RUB-01 (1 of 2)

5214+54, 124 Rt. (Ref. Al. I-10 CL)
NORTHING: 472,052 EASTING: 973,992
ELEV.: 2,241.2 TOTAL DEPTH: 130.2

STARTED: 04/07/2010 09:00 AM
FINISHED: 04/07/2010 03:30 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: JDG
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2240					FAT CLAY WITH SAND (native), very stiff, dry to moist, brown, high plasticity CLAY, little fine to coarse sand, no cementation, no reaction with HCl. (CH)
5	2235		S		3-7-11	
						POORLY-GRADED SAND WITH SILT, medium dense, dry, brown, fine to medium SAND, few low plasticity fines, no cementation, no reaction with HCl. (SP-SM)
10	2230		S		4-7-9	
						WELL-GRADED SAND WITH SILT AND GRAVEL, dense, dry, brown, fine to coarse SAND, little fine gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.75". (SW-SM)
15	2225		S		7-15-17	
						2" gravel in cuttings.
20	2220		S		7-9-7	Becomes medium dense. No recovery.
						POORLY-GRADED GRAVEL WITH SAND, very dense, dry, brown, fine to coarse GRAVEL, some fine to coarse sand, trace nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (GP)
25	2215		S		17-25-48	
						Cobbles present at 28' based on drilling.
30	2210		S		11-23-50/3	
35	2205		S		30-50/4	
40	2200		S		50/5	Becomes max. particle size 4" based on cuttings.
						WELL-GRADED SAND WITH SILT AND GRAVEL, very dense, dry, light brown, fine to coarse SAND, little fine gravel, few low plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SM)
45	2195		S		17-47-40	
50	2190		S		27-40-42	Becomes few low to medium plasticity fines.
						POORLY-GRADED GRAVEL WITH CLAY AND SAND, dense, dry to moist, brown, fine to coarse GRAVEL, some fine to coarse sand, few high plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (GP-GC)
55	2185		S		15-17-19	Occasional cobbles, based on drilling.
						CLAYEY SAND WITH GRAVEL, dense, dry to moist, brown, fine to coarse SAND, little low plasticity fines, little fine gravel, no cementation, no reaction with HCl, max. particle size 2.5". (SC)
60	2180		S		12-17-18	
65	2175		S		11-14-29	
						No cobbles noted.
70						

REPORT sce tds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.ggi - LIBRARY sce gintlib v2.1.glb - LAST MOD 03/31/15 03:06 pm - EXPORTED 11/22/17 09:07 am

SCE BORING LOG: RUB-01 (2 of 2)

5214+54, 124 Rt. (Ref. Al. I-10 CL)
NORTHING: 472,052 EASTING: 973,992
ELEV.: 2,241.2 TOTAL DEPTH: 130.2

STARTED: 04/07/2010 09:00 AM
FINISHED: 04/07/2010 03:30 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: JDG
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

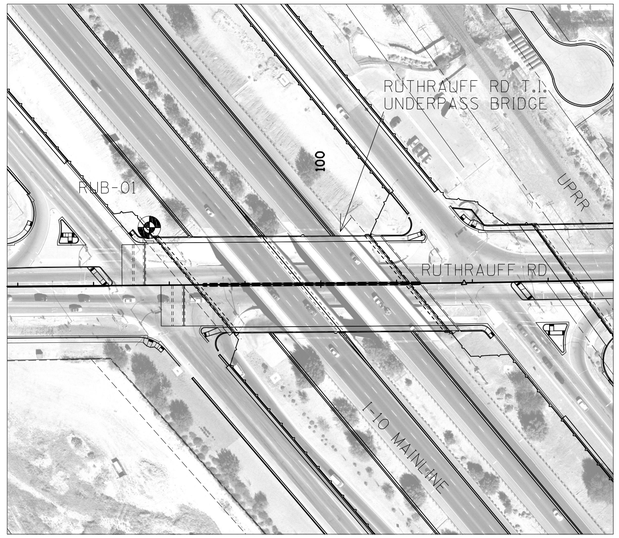
Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
70	2170		S		17-24-18	
75	2165		S		15-17-20	
80	2160		S		24-31-28	Becomes very dense, some fine gravel, max. particle size 0.75".
85	2155		S		22-32-28	
90	2150		S		17-20-35	Becomes little medium plasticity fines.
95	2145		S		26-32-40	
100	2140		S		22-24-24	Becomes dense.
105	2135		S		40-37-50/5	Becomes very dense, weak cementation, weak reaction with HCl.
110	2130		S		50/5	Becomes some fine to coarse gravel, max. particle size 1".
115	2125		S		27-50/5	
120	2120		S		50/4	
125	2115		S		44-50/5	
130	2110		S		50/2	No recovery. Rock in sampler tip.
						End of boring at 130'. Sampler stopped at 130.2'. No groundwater encountered. Backfilled with cuttings to 20'. Grout to surface.
135	2105					
140						

REPORT sce tds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.ggi - LIBRARY sce gintlib v2.1.glb - LAST MOD 03/31/15 03:06 pm - EXPORTED 11/22/17 09:07 am

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION DATA (2 OF 7)

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 09/21/18 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-1.37

OF

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	651	849	
		010 PM 252			

SCE BORING LOG: RUB-02 (1 of 2)

5216+50, 126 Rt. (Ref. Al. I-10 CL)
NORTHING: 471,901 EASTING: 974,118
ELEV.: 2,239.2 TOTAL DEPTH: 131.5

STARTED: 04/14/2010 12:45 PM
FINISHED: 04/15/2010 03:30 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: JDG
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
						CLAYEY SAND (native), loose, dry to moist, brown, fine SAND, some medium plasticity fines, no cementation, no reaction with HCl. (SC)
5	2235		S		3-4-6	POORLY-GRADED SAND WITH SILT, loose, dry, brown, fine to medium SAND, few nonplastic fines, trace fine gravel, no cementation, no reaction with HCl, max. particle size 0.25". (SP-SM)
10	2230		S		2-2-6	Becomes dry to moist.
15	2225		S		3-6-8	Becomes medium dense with some 1" layers of silty sand.
20	2220		S		11-13-16	WELL-GRADED SAND WITH SILT AND GRAVEL, medium dense, dry, brown, fine to coarse SAND, little fine to coarse gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.25". (SW-SM) Occasional cobbles based on drilling.
25	2215		S		10-18-26	Becomes dense, recovered crushed rock in sampler tip. Slow auger advance.
30	2210		S		36-50/3	Becomes very dense.
35	2205		S		23-50/5	
40	2200		S		30-28-25	Cobbles present, slow auger advance.
45	2195		S		20-37-50/5	No cobbles noted at 47'.
50	2190		S		15-14-25	Becomes dense, increasing fines.
55	2185		S		14-16-21	CLAYEY SAND WITH GRAVEL, dense, dry, brown, fine to coarse SAND, little medium plasticity fines, little fine to coarse gravel, no cementation, no reaction with HCl, max. particle size 1". (SC) 2.5" gravel present in cuttings.
60	2180		S		9-14-20	
65	2175		S		18-14-14	Becomes medium dense, moist.
70	2170					

SCE BORING LOG: RUB-02 (2 of 2)

5216+50, 126 Rt. (Ref. Al. I-10 CL)
NORTHING: 471,901 EASTING: 974,118
ELEV.: 2,239.2 TOTAL DEPTH: 131.5

STARTED: 04/14/2010 12:45 PM
FINISHED: 04/15/2010 03:30 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler
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RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

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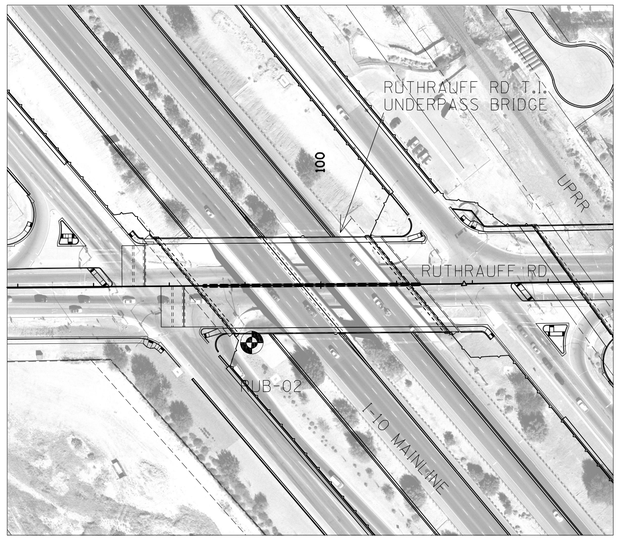
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
75	2165		S		9-26-35	Becomes very dense, dry with decreasing fines.
80	2160		S		19-22-17	Becomes dense, some fine to coarse gravel, little low plasticity fines.
85	2155		S		34-32-50/5	Becomes very dense.
90	2150		S		13-12-24	Becomes dense, some low plasticity fines.
95	2145		S		29-35-42	Becomes very dense, some fine gravel, little low plasticity fines, max. particle size 0.75".
100	2140		S		24-40-40	
105	2135		S		30-37-49	
110	2130		S		21-38-41	
115	2125		S		28-50/6	
120	2120		S		30-50/6	
125	2115		S		50/4	
130	2110		S		50/5	Becomes dry to moist.
135	2105		S		30-30-49	Becomes max. particle size 1".
140	2100					End of boring at 130'. Sampler stopped at 131.5'. No groundwater encountered. Backfilled with cuttings to 20'. Grout to surface.

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

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	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION DATA (3 OF 7)

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

Registered Professional Engineer CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 09/11/19 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-1.38

TRACS NO. H8480 01C | 010-D(213)S | ____ OF ____

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

REPORT scs fds boring log - PROJECT I 10 - ina to ruthrauff - phase 1 and 2.ggt - LIBRARY scs gintlib v2.1.glb - LAST MOD 03/31/15 03:07 pm - EXPORTED 11/22/17 09:57 am

3/7/2019 11:08:53 PM ...\dms42598\s8480fds_Ruthr03.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	652	849	

010 PM 252

SCE BORING LOG: RUB-03 (1 of 2)

5215+48, 19 Lt. (Ref. Al. I-10 CL)
NORTHING: 472,062 EASTING: 974,147
ELEV.: 2,257.3 TOTAL DEPTH: 150.5

STARTED: 08/26/2013 12:30 PM
FINISHED: 08/27/2013 05:30 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler/R. Quezada
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 75/95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	☒	Split Spoon	1.375"	2"	18"
R	▮	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

DEPTH (FT): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80
ELEV. (FT): 2255, 2250, 2245, 2240, 2235, 2230, 2225, 2220, 2215, 2210, 2205, 2200, 2195, 2190, 2185, 2180

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
		CLAYEY SAND WITH GRAVEL (fill), medium dense, dry, brown, fine to coarse SAND, some low plasticity fines, little fine to coarse subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 1.25". (SC)
R	13-18	SANDY LEAN CLAY (fill), stiff, dry, brown, medium plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 0.75", some calcium carbonates. (CL)
CU R	17-34	CLAYEY SAND (fill), medium dense, dry, brown, fine to coarse SAND, some low plasticity fines, few fine to coarse subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 1.5", some calcium carbonates. (SC)
R	11-19	SILTY SAND (fill), medium dense, dry, brown, fine to medium SAND, some low plasticity fines, little fine to coarse subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 1.5", some calcium carbonates. (SM)
R	10-18	SILTY SAND (native), medium dense, dry, light brown, fine to medium SAND, little nonplastic fines, trace fine subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 0.5". (SM)
R	8-10	Becomes loose, fine SAND, no reaction with HCl, max. particle size 0.25".
S	4-12-13	Becomes medium dense, fine to medium SAND, few fine to coarse subrounded to subangular gravel, max. particle size 1.25".
S	8-11-11	No recovery.
S	20-24-13	Becomes SILTY SAND WITH GRAVEL, dense, little fine to coarse subrounded to subangular gravel, max. particle size 1.5".
S	26-7-8	Becomes medium dense. No recovery.
S	6-6-15	POORLY-GRADED GRAVEL WITH CLAY AND SAND, medium dense, wet, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, few medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GP-GC)
R	50/4	Becomes very dense, moist.
S	32-50/4	Noted 2" gravel in cuttings.
S	17-29-37	SILTY, CLAYEY SAND, very dense, moist, brown, fine to medium SAND, little low plasticity fines, few fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SC-SM)
R	50/4	CLAYEY GRAVEL WITH SAND, very dense, moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little low plasticity fines, no cementation, no reaction with HCl, max. particle size 2.5". (GC) Noted 3" gravel in cuttings.
S	50/2	No recovery.
		CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to

REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 12/31/14 03:17 pm - EXPORTED 11/27/17 02:25 pm

SCE BORING LOG: RUB-03 (2 of 2)

5215+48, 19 Lt. (Ref. Al. I-10 CL)
NORTHING: 472,062 EASTING: 974,147
ELEV.: 2,257.3 TOTAL DEPTH: 150.5

STARTED: 08/26/2013 12:30 PM
FINISHED: 08/27/2013 05:30 PM

CONTRACTOR: GSI
DRILLER: C. Fiesler/R. Quezada
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 75/95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	☒	Split Spoon	1.375"	2"	18"
R	▮	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

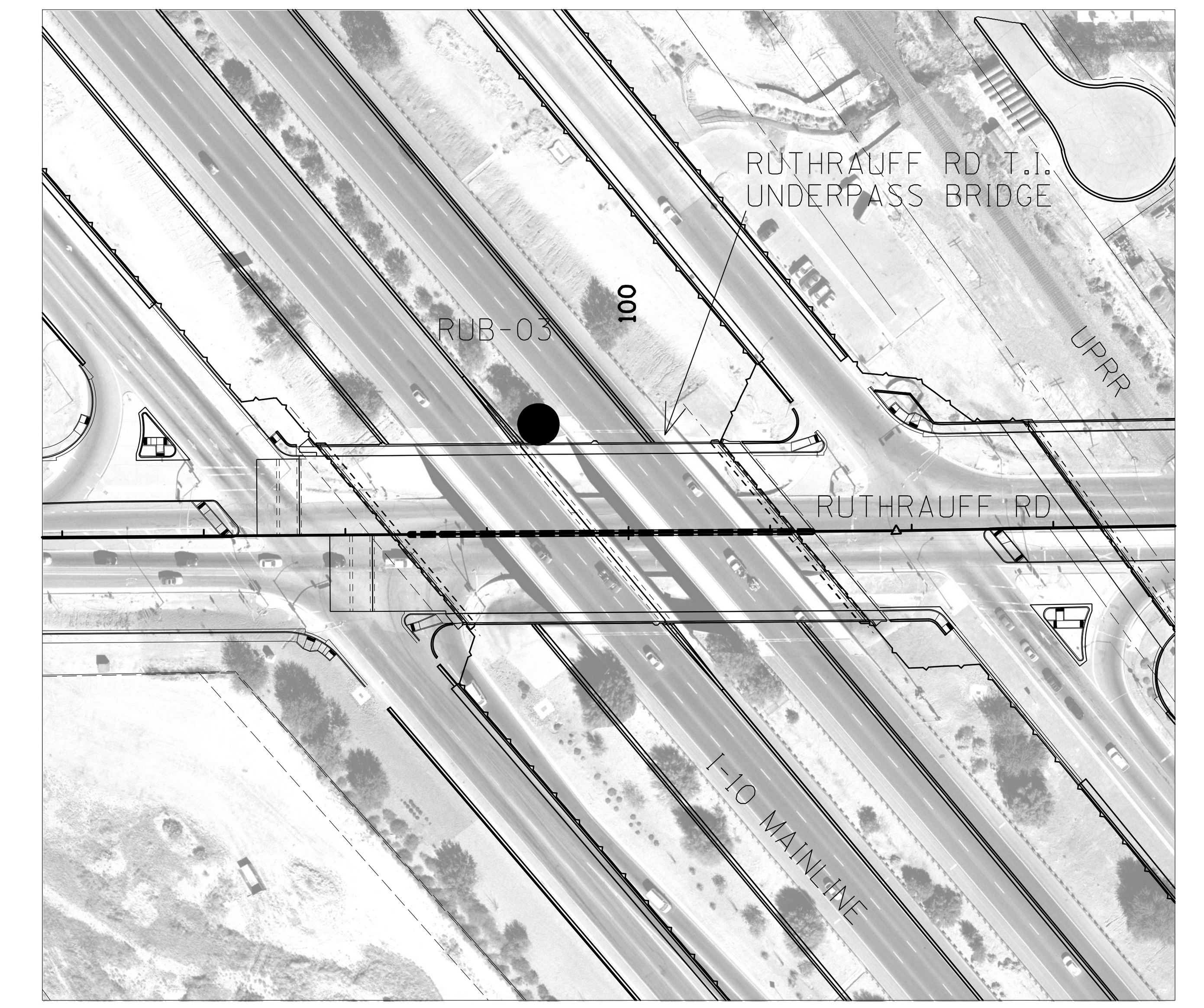
DEPTH (FT): 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 140, 145, 150, 155, 160
ELEV. (FT): 2175, 2170, 2165, 2160, 2155, 2150, 2145, 2140, 2135, 2130, 2125, 2120, 2115, 2110, 2105, 2100

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
S	11-22-31	coarse SAND, little fine subrounded to subangular gravel, little medium plasticity fines, no cementation, no reaction with HCl, max. particle size 0.75". (SC)
S	35-27-33	
R	30-50/5	Added 5 gallons of water to boring at 90'.
S	24-15-17	Becomes dense.
S	29-35-42	Becomes very dense. Added 5 gallons of water to boring at 100'.
S	20-29-33	Becomes little fine subangular gravel.
R	26-50/5	Added 5 gallons of water to boring at 110'.
S	27-36-31	Becomes some fine subangular gravel.
S	28-33-39	Becomes some fine to coarse subangular gravel, max. particle size 1.5". Added 5 gallons of water to boring at 120'.
S	24-32-38	Added 5 gallons of water to boring at 125'.
R	50/2	Becomes little fine subangular gravel, max. particle size 0.75". Added 5 gallons of water to boring at 130'.
S	28-38-50/5	Becomes max. particle size 0.5". Added 10 gallons of water to boring at 135'.
S	30-50/5	Added 5 gallons of water to boring at 140'.
S	37-50/4	Added 5 gallons of water to boring at 145'.
R	50/6	Becomes little fine to coarse subangular gravel, max. particle size 1".
		End of boring at 150'. Stopped sampler at 150.5'. No groundwater encountered. Backfilled with portland cement and sand mixture.

REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 12/31/14 03:17 pm - EXPORTED 11/27/17 02:25 pm

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION
PHASE 2 BORING LOCATION

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION DATA (4 OF 7)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20159	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C

010-D(213)S

Registered Professional Engineer (Civil)
CERTIFICATE NO. 57429
JOSEPH B. HARRIS
Date Signed 03/11/19
ARIZONA U.S.A.
Expires 06/30/20

DWG NO. S-1.39

___ OF ___

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

3/7/2019 11:10:50 PM ...\dms42598\s8480fds_Ruthr04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	653	849	
		010 PM 252			

SCE BORING LOG: RUB-04 (1 of 2)

5217+75, 17 Lt. (Ref. Al. I-10 CL)
NORTHING: 471,887 EASTING: 974,291
ELEV.: 2,257.1 TOTAL DEPTH: 150.6

STARTED: 08/19/2013 09:00 AM
FINISHED: 08/20/2013 10:30 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2255					CLAYEY SAND (fill), medium dense, dry, brown, fine to medium SAND, some low plasticity fines, trace fine to coarse subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 1". (SC)
5	2250		R		10-14	
			CU			SANDY LEAN CLAY (fill), very stiff, dry, brown, medium plasticity CLAY, some fine to coarse sand, few fine to coarse subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 1". (CL)
10	2245		R		12-37	
15	2240		R		13-13	Becomes stiff, some fine to medium sand, trace fine subrounded to subangular gravel, max. particle size 0.5", some calcium carbonates.
20	2235		R		7-10	SILTY SAND (native), loose, dry, brown, fine SAND, some nonplastic fines, no cementation, strong reaction with HCl. (SM)
25	2230		R		6-16	SILTY, CLAYEY SAND, loose, dry, brown, fine to medium SAND, some low plasticity fines, no cementation, no reaction with HCl. (SC-SM)
30	2225		S		7-10-12	SILTY SAND WITH GRAVEL, medium dense, dry, brown, fine to coarse SAND, little fine subrounded to subangular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.75". (SM)
35	2220		S		10-14-11	
40	2215		S		6-17-24	Becomes dense.
45	2210		S		4-5-5	Becomes SILTY SAND, loose, moist, yellow-brown, fine SAND, trace fine to coarse subrounded to subangular gravel, max. particle size 1".
50	2205		S		50/4	SILTY GRAVEL WITH SAND, very dense, dry, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.5". (GM) Noted 4" cobbles in cuttings.
55	2200		R		50/5	POORLY-GRADED GRAVEL WITH CLAY AND SAND, very dense, dry, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, few low plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GP-GC) Noted 4" cobbles in cuttings.
60	2195		S		37-24-38	
65	2190		R		28-50/2	
70	2185		S		9-17-15	SILTY SAND, dense, dry, light brown, fine to coarse SAND, little nonplastic fines, no cementation, no reaction with HCl. (SM)
75	2180		S		15-9-20	CLAYEY SAND WITH GRAVEL, medium dense, moist, brown, fine to coarse SAND, some fine to coarse subangular gravel, little medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SC)
80						

REPORT sce tds boring log - PROJECT I 10 - Ina to ruthrauff - phase 1 and 2.ggb - LIBRARY sce gINTb v2.1.gb - LAST MOD 12/31/14 03:17 pm - EXPORTED 11/27/17 02:25 pm

SCE BORING LOG: RUB-04 (2 of 2)

5217+75, 17 Lt. (Ref. Al. I-10 CL)
NORTHING: 471,887 EASTING: 974,291
ELEV.: 2,257.1 TOTAL DEPTH: 150.6

STARTED: 08/19/2013 09:00 AM
FINISHED: 08/20/2013 10:30 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

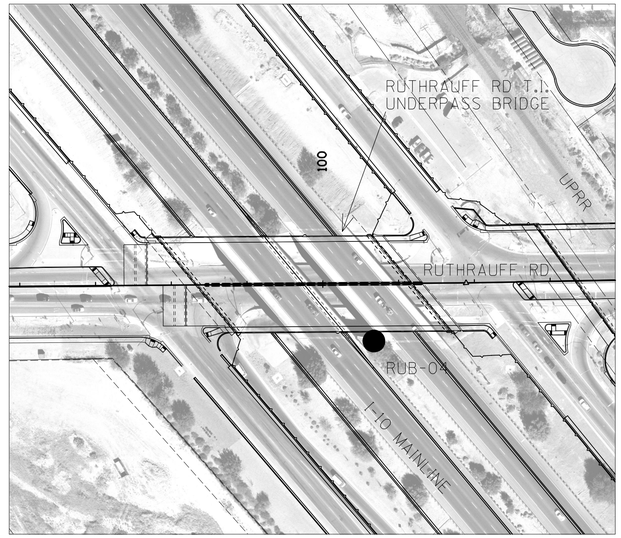
Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
80	2175		S		11-13-22	Becomes dense.
85	2170		S		13-21-22	
90	2165		S		9-27-26	Becomes very dense.
95	2160		S		13-20-34	Becomes little fine subangular gravel, max. particle size 0.5".
100	2155		S		24-33-34	Added 5 gallons of water to boring at 100'.
105	2150		S		13-23-24	Becomes dense. Added 5 gallons of water to boring at 105'.
110	2145		S		15-21-36	Becomes very dense. Added 5 gallons of water to boring at 110'.
115	2140		S		30-41-45	Added 5 gallons of water to boring at 115'.
120	2135		S		18-32-50	Becomes some fine subangular gravel, max. particle size 0.75". Added 5 gallons of water to boring at 120'.
125	2130		S		40-50/3	Added 5 gallons of water to boring at 125'.
130	2125		S		31-50/4	Becomes dry, some fine to coarse subangular gravel, max. particle size 1". Added 5 gallons of water to boring at 130'.
135	2120		S		50/5	Becomes max. particle size 1.5". Added 5 gallons of water to boring at 135'.
140	2115		R		40-50/2	Added 5 gallons of water to boring at 140'.
145	2110		S		37-50/6	Added 5 gallons of water to boring at 145'.
150	2105		S		41-50/1	End of boring at 150'. Stopped sampler at 150.6'. No groundwater encountered. Backfilled with portland cement and sand mixture.
155	2100					
160						

REPORT sce tds boring log - PROJECT I 10 - Ina to ruthrauff - phase 1 and 2.ggb - LIBRARY sce gINTb v2.1.gb - LAST MOD 12/31/14 03:17 pm - EXPORTED 11/27/17 02:25 pm

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
810 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION DATA (5 OF 7)

I-10	252.00	20159	LOCATION: RUTHRAUFF ROAD T.I.
ROUTE	MILEPOST	STRUCTURE NO.	

TRACS NO. H8480 01C | 010-D(213)S

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 57429
JOSEPH B. HARRIS
Date Signed 03/13/2019
ARIZONA U.S.A.
Expires 06/30/20

DWG NO. S-1.40

____ OF ____

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	654	849	
		010 PM 252			

SCE BORING LOG: RUB-05 (1 of 2)

5216+73, 128 Lt. (Ref. Al. I-10 CL)
NORTHING: 472,049 EASTING: 974,326
ELEV.: 2,241.5 TOTAL DEPTH: 131.4

STARTED: 04/08/2010 10:40 AM
FINISHED: 04/09/2010 11:00 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: JDG
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2240					POORLY-GRADED SAND (native), loose, dry, brown, fine to medium SAND, no cementation, no reaction with HCl. (SP)
5	2235		S		4-3-4	
10	2230		S		3-5-6	Becomes medium dense, trace fine gravel, max. particle size 0.75".
15	2225		S		3-6-7	Becomes dry to moist, trace nonplastic fines.
20	2220		S		5-6-9	Occasional cobbles present based on drilling at 22'.
25	2215		S		5-9-17	No recovery.
30	2210		S		50/2	WELL-GRADED SAND WITH SILT AND GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, some fine gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SM) No recovery. Increasing cobbles present with depth.
35	2205		S		23-42-38	Slow auger advance. Cobbles present.
40	2200		S		26-50/5	
45	2195		S		13-19-26	CLAYEY SAND WITH GRAVEL, dense, moist, brown, fine to coarse SAND, some medium plasticity fines, little fine gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SC)
50	2190		S		18-17-24	Pulled auger stem to retooth. Significant wear on drilling bit.
55	2185		S		15-9-25	Reduced cobbles.
60	2180		S		18-11-24	SILTY SAND WITH GRAVEL, dense, moist, brown, fine to coarse SAND, some fine gravel, few low plasticity fines, no cementation, no reaction with HCl. (SM) Cobbles no longer present based on drilling.
65	2175		S		12-22-26	Becomes dry.
70						CLAYEY SAND WITH GRAVEL, medium dense, moist, brown, fine to coarse SAND, some medium plasticity fines, little fine gravel, no

SCE BORING LOG: RUB-05 (2 of 2)

5216+73, 128 Lt. (Ref. Al. I-10 CL)
NORTHING: 472,049 EASTING: 974,326
ELEV.: 2,241.5 TOTAL DEPTH: 131.4

STARTED: 04/08/2010 10:40 AM
FINISHED: 04/09/2010 11:00 AM

CONTRACTOR: GSI
DRILLER: C. Fiesler
INSPECTOR: JDG
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

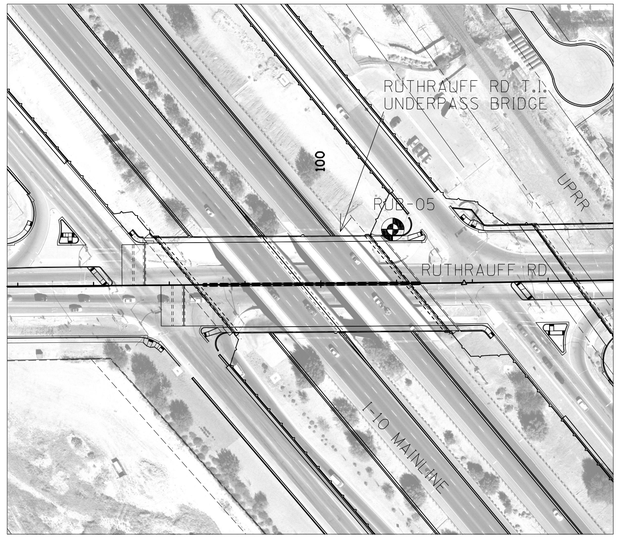
SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
						cementation, no reaction with HCl. (SC)
75	2165		S		19-18-19	Becomes dense.
80	2160		S		24-34-34	Becomes very dense.
85	2155		S		22-32-26	
90	2150		S		18-18-28	Becomes dense.
95	2145		S		18-29-28	Becomes very dense.
100	2140		S		28-38-29	WELL-GRADED SAND WITH CLAY AND GRAVEL, very dense, dry, brown, fine to coarse SAND, some fine gravel, few medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SC)
105	2135		S		43-40-48	
110	2130		S		38-41-49	CLAYEY SAND WITH GRAVEL, very dense, dry, brown, fine to coarse SAND, some medium plasticity fines, little fine gravel, no cementation, no reaction with HCl. (SC)
115	2125		S		30-50/5	
120	2120		S		43-46-48	SILTY, CLAYEY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, some fine gravel, few low plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SC-SM)
125	2115		S		50/4	
130	2110		S		30-39-50/5	
135	2105					End of boring at 130'. Sampler stopped at 131.4'. No groundwater encountered. Backfilled with cuttings to 20'. Grout to surface.
140						

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION DATA (6 OF 7)

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer
CERTIFICATE NO.
57429
JOSEPH B. HARRIS
Date Signed 09/21/18
ARIZONA U.S.A.
Expires 06/30/20

DWG NO. S-1.41

OF

Call at least two full working days before you begin excavation.
ARIZONA 811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

3/7/2019 11:13:49 PM ...\dms42598\s8480fds_Ruthr06.dgn

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

REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.ggi - LIBRARY sce gintb v2.1.gdt - LAST MOD 03/31/15 03:08 pm - EXPORTED 11/22/17 09:07 am

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	655	849	
		010 PM 252			

SCE BORING LOG: RUB-06 (1 of 2)

5218+68, 133 Lt. (Ref. Al. I-10 CL)
NORTHING: 471,903 EASTING: 974,456
ELEV.: 2,244.8 TOTAL DEPTH: 130.4

STARTED: 06/22/2009 07:30 AM
FINISHED: 06/23/2009 04:00 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: Tyler Carstensen
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
						POORLY-GRADED SAND (native), medium dense, dry, brown, fine SAND, no cementation, no reaction with HCl. (SP)
5	2240		S		4-5-8	
10	2235		S		5-6-5	POORLY-GRADED SAND WITH CLAY, medium dense, brown, fine SAND, few nonplastic fines, trace fine to coarse gravel, no cementation, no reaction with HCl. (SP-SC)
15	2230		S		6-8-11	WELL-GRADED SAND WITH SILT AND GRAVEL, medium dense, dry, brown, medium to coarse SAND, little fine to coarse gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SM)
20	2225		S		7-12-18	
25	2220		S		7-12-15	WELL-GRADED SAND WITH GRAVEL, medium dense, moist, brown, fine to coarse SAND, little fine to coarse gravel, no cementation, no reaction with HCl. (SW)
30	2215		S		12-13-9	No recovery.
35	2210		S		50/2	Obstruction from 35.2' to 37'. No recovery. (Most likely a boulder)
40	2205		S		46-50/6	WELL-GRADED SAND WITH SILT AND GRAVEL, very dense, dry, light brown, fine to coarse SAND, little fine gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.75". (SW-SM)
45	2200		S		16-35-33	POORLY-GRADED GRAVEL WITH CLAY AND SAND, very dense, dry, brown and white, fine to coarse GRAVEL, some fine to coarse sand, few medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GP-GC)
50	2195		S		50/1	No recovery.
55	2190		S		24-28-46	
60	2185		S		21-30-35	
65	2180		S		16-18-20	Becomes dense.
70	2175					CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to coarse SAND, some fine gravel, little medium plasticity fines, no

REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.ppj - LIBRARY sce gintlb v2.1.gdb - LAST MOD 02/16/15 08:32 am - EXPORTED 11/22/17 09:07 am

SCE BORING LOG: RUB-06 (2 of 2)

5218+68, 133 Lt. (Ref. Al. I-10 CL)
NORTHING: 471,903 EASTING: 974,456
ELEV.: 2,244.8 TOTAL DEPTH: 130.4

STARTED: 06/22/2009 07:30 AM
FINISHED: 06/23/2009 04:00 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: Tyler Carstensen
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

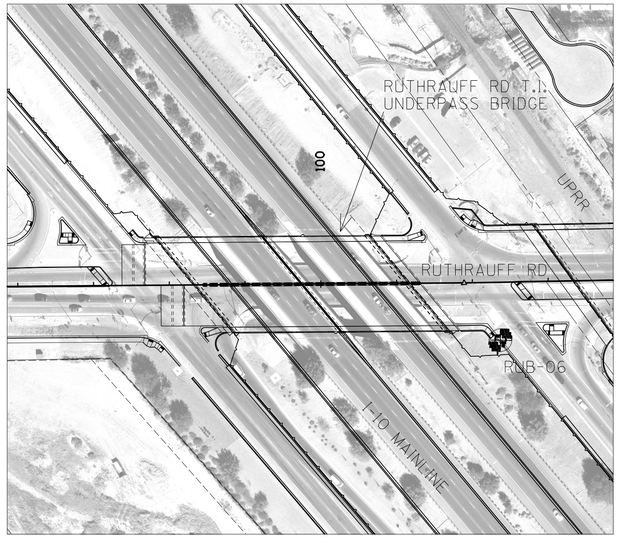
Type	Symbol	Description	I.D.	O.D.	Length
S		Split Spoon	1.375"	2"	18"
R		Ring Sampler	2.5"	3"	18"
U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
			S		24-34-25	cementation, no reaction with HCl, max. particle size 1". (SC)
75	2170		S		16-23-36	Becomes dark brown.
80	2165		S		31-30-28	
85	2160		S		9-12-17	Becomes medium dense.
90	2155		S		19-17-27	Becomes dense, little fine gravel.
95	2150		S		50/4	Becomes very dense.
100	2145		S		38-50/6	
105	2140		S		37-50/4	Becomes brown and white.
110	2135		S		50/6	Becomes dry.
115	2130		S		49-50/4	Becomes little low plasticity fines, max. particle size 0.75".
120	2125		S		41-50/5	
125	2120		S		34-48-50/3	Becomes some fine gravel, little medium plasticity fines.
130	2115		S		50/5	Becomes little fine gravel.
135	2110					End of boring at 130'. Sampler stopped at 130.4'. No groundwater encountered. Backfilled to 20' with cuttings. Grout to surface with ADWR compliant grout.
140	2105					

REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.ppj - LIBRARY sce gintlb v2.1.gdb - LAST MOD 02/16/15 08:32 am - EXPORTED 11/22/17 09:07 am

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
810 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 99+
RUTHRAUFF ROAD T.I. UNDERPASS
FOUNDATION DATA (7 OF 7)

I-10 ROUTE	252.00 MILEPOST	20159 STRUCTURE NO.	LOCATION RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 03/31/2020 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-1.42

OF

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

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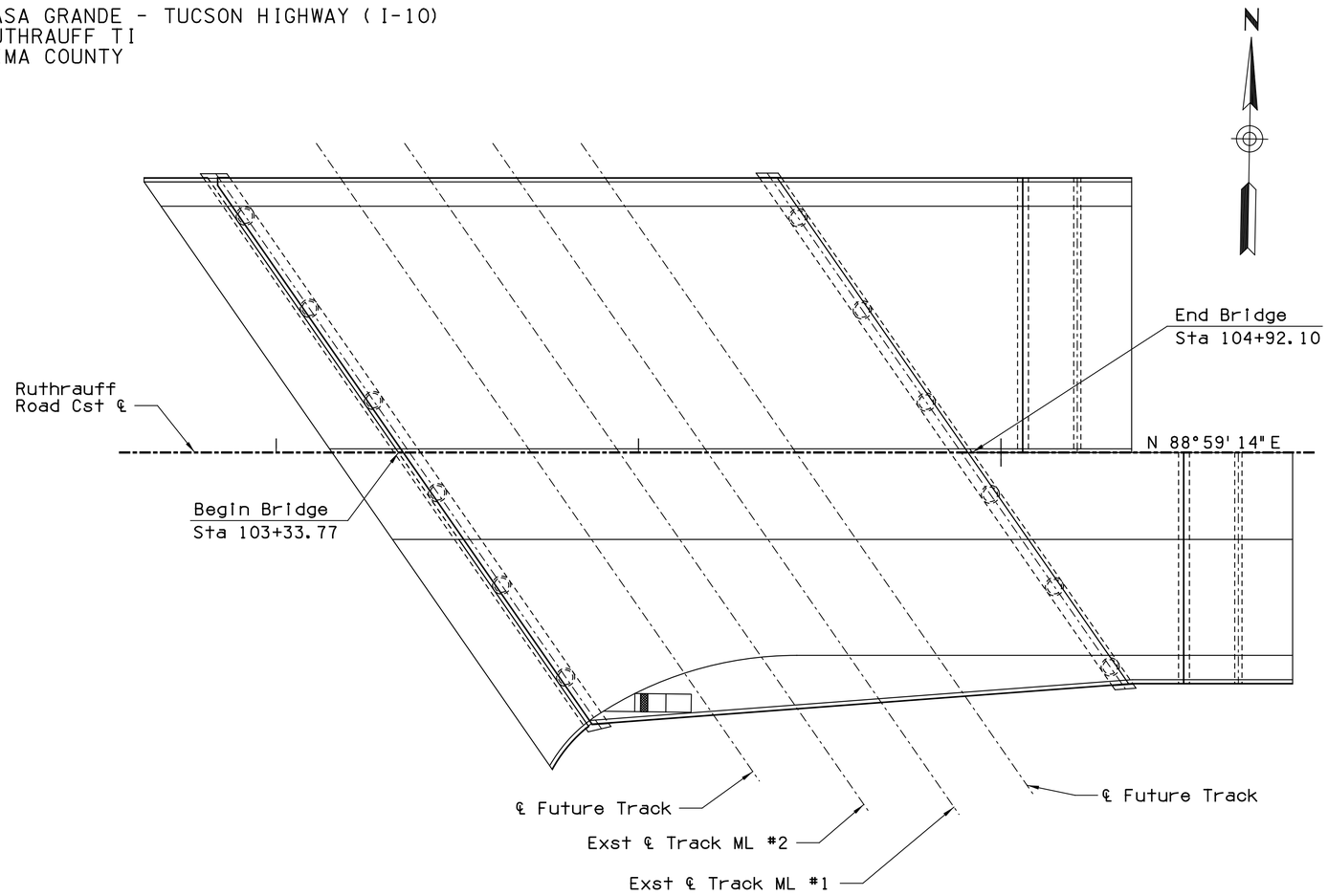
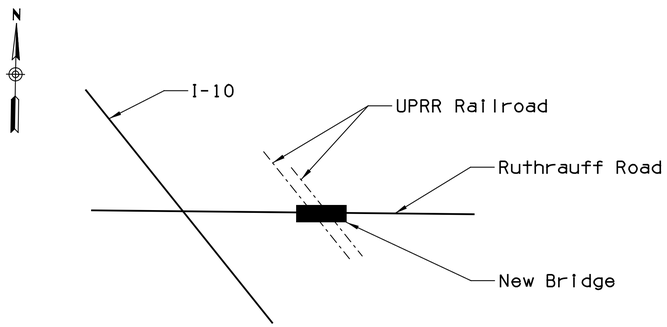
CASA GRANDE - TUCSON HIGHWAY (I-10)
RUTHRAUFF TI
PIMA COUNTY

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	656	849	
		010 PM 252			



GENERAL PLAN
Scale: 1"=10'-0



KEY MAP
Not To Scale

INDEX OF DRAWINGS

LEGEND:

DETAIL Marker — 1 / 2.01 — Detail Number / Drawing Number

SECTION Marker — A / 2.01 — Section Letter / Drawing Number

NOTE:

A line (—) in place of the Drawing Number indicates that the SECTION or DETAIL is located on the same Drawing that the SECTION or DETAIL is cut.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

T.Y. LIN INTERNATIONAL
engineers | planners | scientists
60 E. Rio Salado Parkway, Suite 501
Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
GENERAL PLAN & INDEX OF DWGS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

37060 KODI-LIN HOE — Registered Professional Engineer — Date Signed 03/08/19 — ARIZONA, U.S.A. — Expires: 12/31/2019

DWG. S-2 .01

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

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

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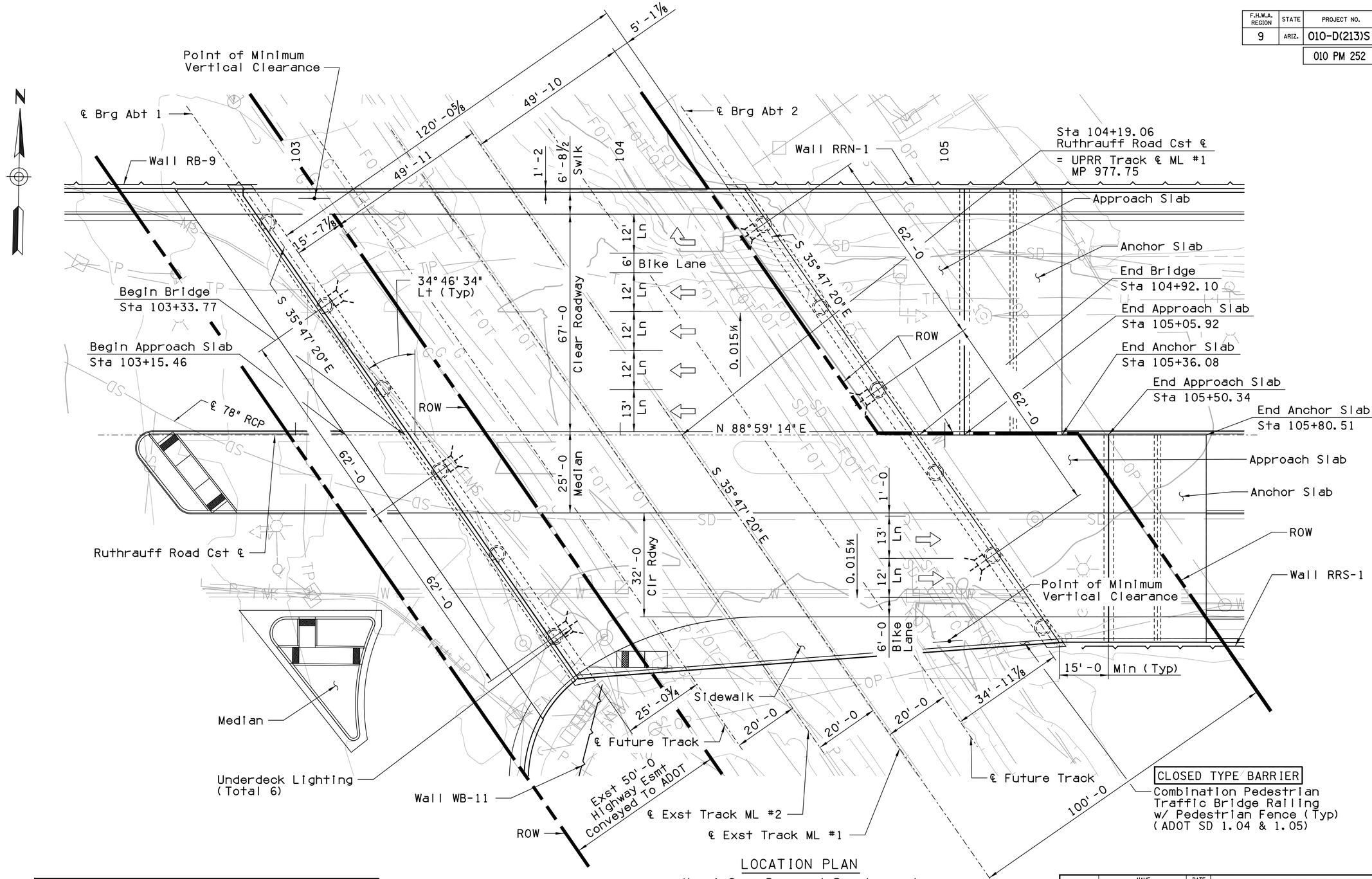
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	657	849	
		010 PM 252			



LOCATION PLAN

New 1-Span Prescast Prestressed
AASHTO Type Super VI Modified Girder Bridge
Skew: 34°46'34" Lt
Scale: 1" = 15'-0

NOTE:
No drainage water on the bridge deck will be discharged to Railroad Right-of-Way.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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60 E. Rio Salado Parkway, Suite 501
Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
LOCATION PLAN

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIM HOE — Registered Professional Engineer — Certificate No. — 03/08/19 — ARIZONA, U.S.A.
Expires: 12/31/2019

DWG. S-2 .02

___ OF ___

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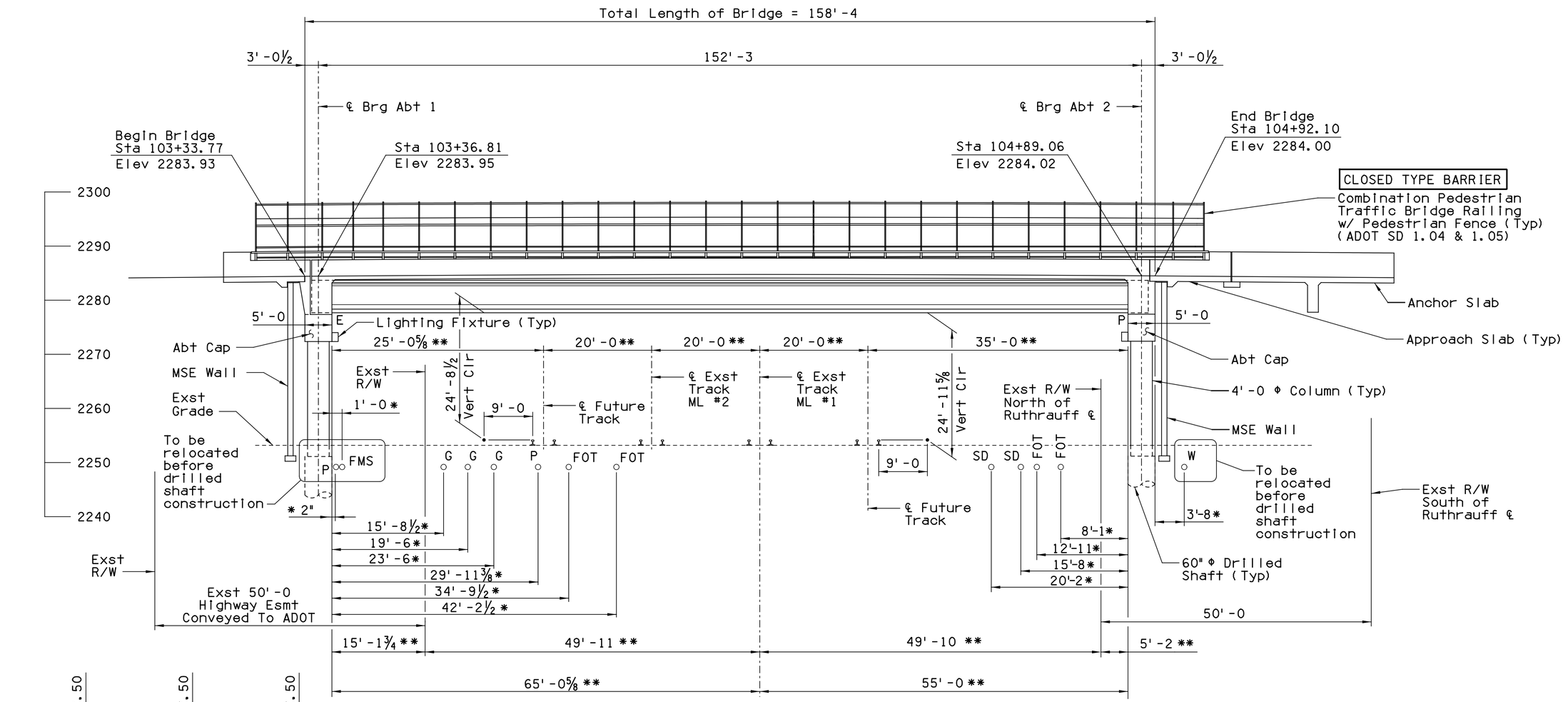
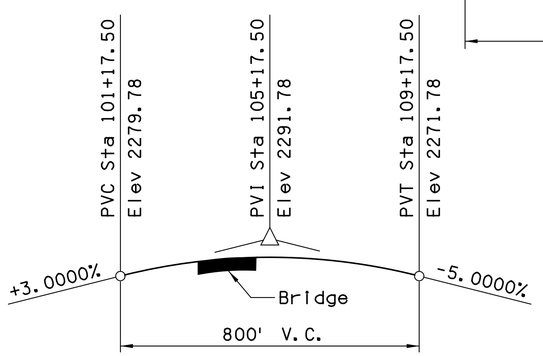
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	658	849	
		010 PM 252			



* Minimum distance from abutment cap
** Measured Perpendicular to ℄ Track

ELEVATION

(Stations, Elevations & Dimensions Taken Along Ruthrauff Rd Cst ℄)
Scale: 1"=20'-0



PROFILE GRADE @ RUTHRAUFF ROAD CST ℄

NOTE:

No drainage water on the bridge deck will be discharged to Railroad Right-of-Way.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
ELEVATION and PROFILE

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

37060 KODI-LIN HOE — Registered Professional Engineer — Date Signed 01/08/19 — ARIZONA, U.S.A. — Expires: 12/31/2019

DWG. S-2 .03

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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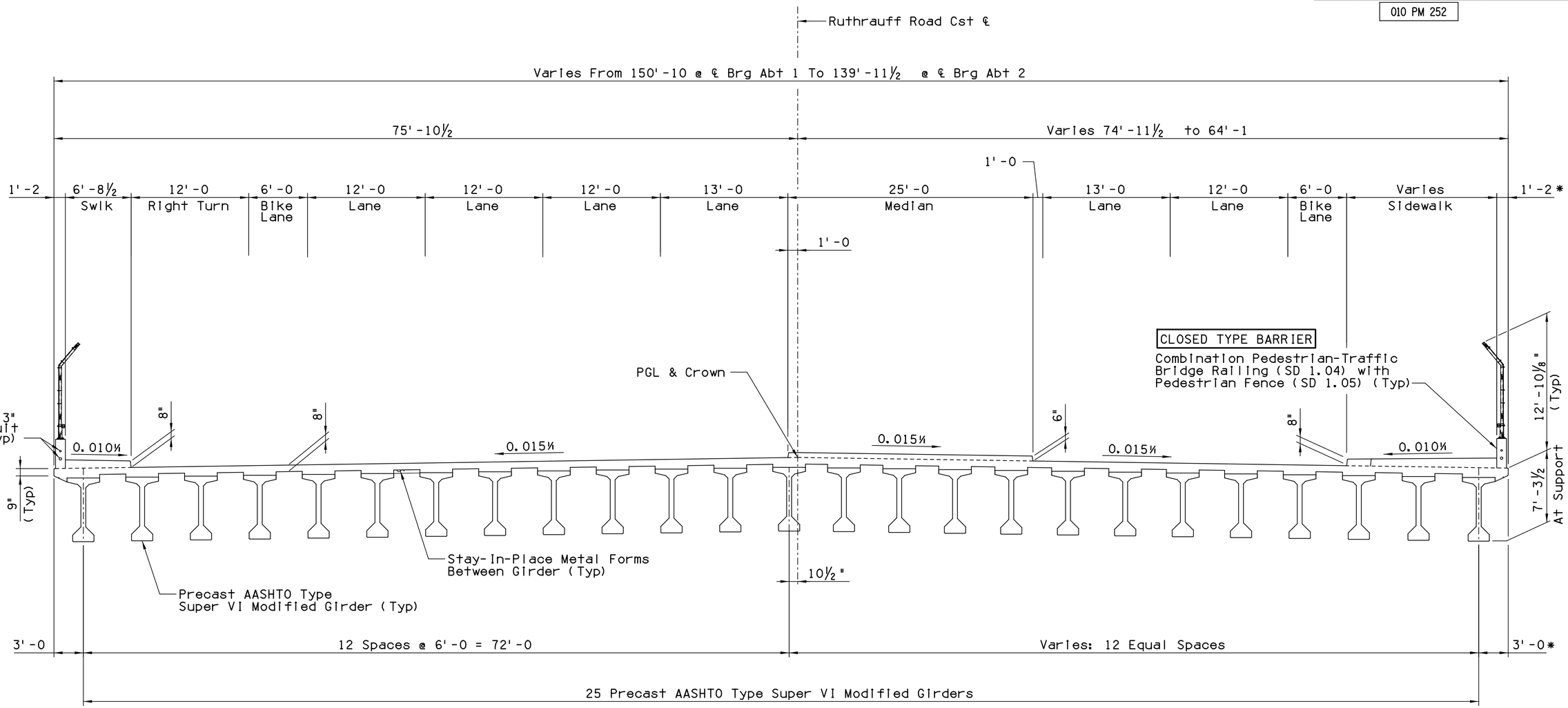
010 PM 252



TYPICAL SECTION
Scale: 3/16" = 1'-0

* Normal to edge of deck

NOTE:
No drainage water on the bridge deck will be discharged to Railroad Right-of-Way.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
TYPICAL SECTION

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION
RUTHRAUFF TI

37060 KODI-LIM HOE
Date Signed 01/08/19
Registered Professional Engineer
CERTIFICATE
ARIZONA, U.S.A.
Expires: 12/31/2019

DWG. S-2 .04

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

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

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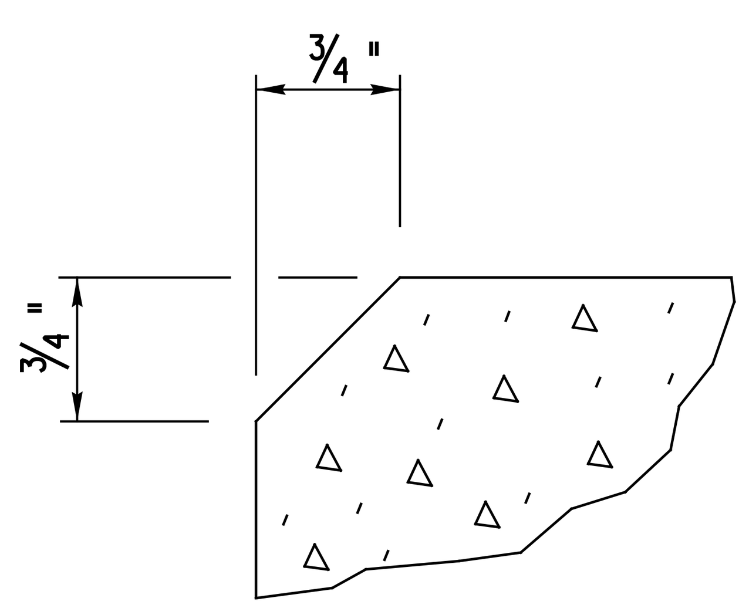
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	660	849	

010 PM 252

APPROXIMATE QUANTITIES

ITEM	STRUCTURAL EXCAVATION C.Y.	STRUCTURE BACKFILL C.Y.	CLASS S CONCRETE f'c=3500 PSI C.Y.	CLASS S CONCRETE f'c=4000 PSI C.Y.	CLASS S CONCRETE f'c=4500 PSI C.Y.	REINFORCING STEEL LBS	PRECAST AASHTO TYPE SUPER VI MODIFIED GIRDER	DRILLED SHAFT 60" Φ L.F.
ABUTMENT 1	65	50	349		7	103,590		480
ABUTMENT 2	45	35	271			86,700		480
SUPERSTRUCTURE			313	123	764	150,980	3796	
TOTAL	110	85	933	123	771	341,270	3796	960
AS-BUILT								

Combination Pedestrian-Traffic Bridge Railing (SD 1.04)............486 L.F.
Vertical Restrainers (Expansion)...................................24 Ea.
Vertical Restrainers (Fixed).......................................48 Ea.
Deck Joint Assembly (Strip Seal) (SD 3.02).........................181 L.F.
Approach Slab (SD 2.01)..8,412 S.F.
Anchor Slab (Type 2) (SD 2.03)...................................4193 S.F.
Misc Steel.. 15,010 LBS.
Stay-In-Place forms included in price of Concrete Class S (f'c = 4500 psi)



CHAMFER DETAIL

Not To Scale

GENERAL NOTES:

Construction Specification - Arizona Department of Transportation, Standard Specifications for Road and Bridge Construction, Edition of 2008.

Design Specification - American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications for Highway Bridges, 7th Edition 2014.

Dead Load - includes allowance of 25 pounds per square foot (psf) for future wearing surface (FWS) and 15 psf for metal stay-in-place forms.

Loading Class - HL-93.

Bridge site is classified as Seismic Zone 1 with Peak Ground Acceleration (PGA) = 0.075

Inventory and operating ratings for HL-93 are in accordance with AASHTO Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFD) of Highway Bridges, 2nd Edition and 2015 Interm Revisions.

Inventory Rating RF=1.00
Operating Rating RF=2.38

All concrete shall be Class "S" unless noted otherwise.

Reinforcing steel shall conform to ASTM Specification A615 except reinforcing to be welded shall conform to ASTM A706. All reinforcing shall be furnished as Grade 60.

All bends and hooks shall meet the requirements of AASHTO Article 5.10.2 unless noted otherwise. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2 inch clear cover unless noted otherwise.

Stresses:
Deck.................................f'c = 4.5 ksi
Bridge Parapet, Dado, Sidewalk,
Raised Median, & Approach Slabs.......f'c = 4.0 ksi
Abutments, Abutment Diaphragm,
Intermediate Diaphragm,
Piers, & Drilled Shafts...............f'c = 3.5 ksi
Other Class "S" concrete..............f'c = 3.0 ksi
Grade 60 transverse deck reinf........fs = 24 ksi
All other reinforcing.................fy = 60 ksi
Prestressing Steel....................fpu = 270 ksi
(0.6" dia. 7-wire Low Relaxation Strand)

Parapets shall be constructed after spans have taken dead load deflection.

Parapets shall not be slip formed.

Chamfer all exposed corners ¾" per Chamfer Detail unless noted otherwise.

Dimensions shall not be scaled from drawings.

STRUCTURE DETAIL DRAWINGS:

SD 1.04, SD 1.05, SD 2.01, SD 2.03, SD 3.02

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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60 E. Rio Salado Parkway, Suite 501
Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
GENERAL NOTES AND QUANTITIES

37060 KOOI-LIM HOE
Expires: 12/31/2019

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.000	20160	RUTHRAUFF TI

DWG. S-2 .05

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	661	849	
		010 PM 252			

GENERAL SHORING NOTES:

1. All dimensions are measured perpendicular to ℄ track.
2. Prior to commencing any work, the contractor shall submit for approval by the railroad, detailed plans and calculations indicating the nature & extent of the track protection shoring proposed. The contractor shall install the temporary shoring system per the approved plans. Design of the temporary shoring system shall comply with RailRoad Guidelines for Temporary Shoring.
3. For excavations which encroach into zone A or B, shoring plans shall be accompanied by design calculations. Plans & calculations must be signed & stamped by a professional engineer in the state of Arizona.

RAILROAD NOTES:

1. Railroad's review and approval of shoring, demolition, erection, and falsework are required. Allow a minimum of four weeks for the review and approval of each submittal.
2. Any shoring system that impacts the Railroad's operation and/or supports the Railroad's embankment shall be designed and constructed per Railroad Guidelines for Temporary Shoring.
3. All demolition within the Railroad's right-of-way and/or demolition that may impact the Railroad's tracks or operation shall comply with the Railroad's Demolition requirements.
4. Erection over the Railroad's right of way shall be designed to cause no interruption to Railroad's operation and shall be planned such that it enables the track to remain open to traffic per Railroad requirements.
5. The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction.
6. The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the Railroad ditches and/or drainage structures. The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.
7. For Railroad coordination please refer to the Railroad's Coordination Requirements as part of the Specifications or Special Provisions of the project.
8. Minimum Construction Clearance Envelopes of 21'-6 vertical above the plane of top-of-rail and 15 feet horizontal at right angle from centerline of track shall be maintained at all times during construction. All permanent clearances shall be verified before project closeout.
9. Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment.
10. False-work clearances shall comply with minimum construction clearances.
11. Provide the following excavation safety measures, either of the following methods are approved to provide sufficient safety for unattended excavations:

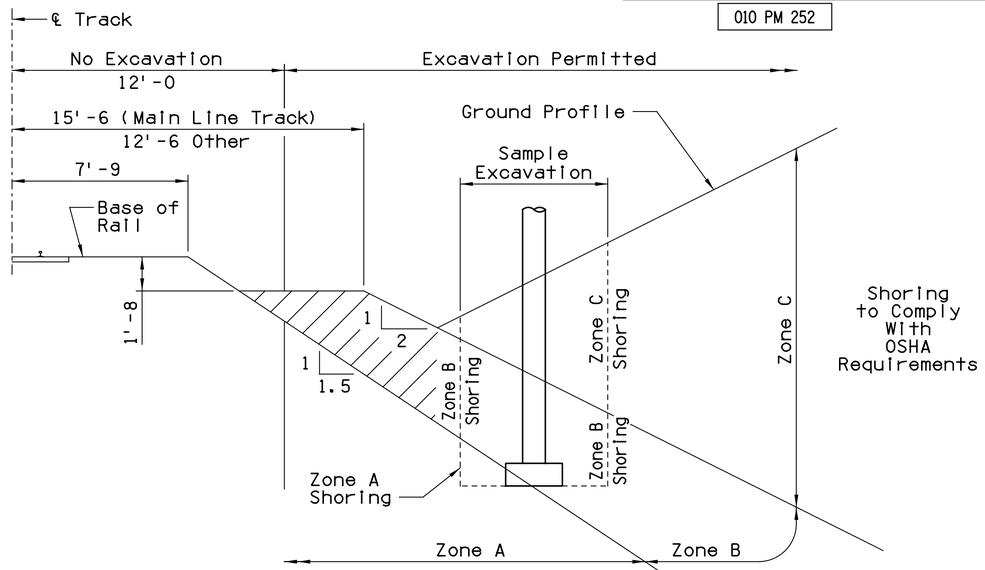
    a. Guardrails:

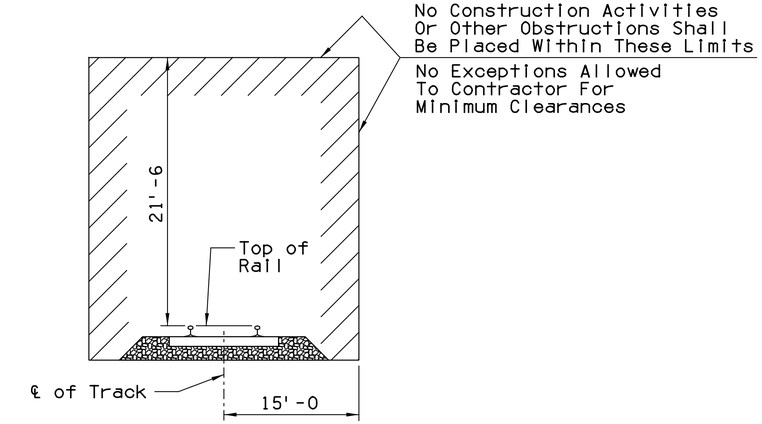
        I. Guardrails shall be provided to surround unattended excavations of Railroad right-of-way per OSHA Standard Number 1926.502 as follows:

        1. The guardrail height shall be at least 42 inches above the walking surface.
        2. The smallest dimension for openings in the guardrail shall be no greater than 19 inches.
        3. Guardrails systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge of the guardrail.

    b. Steel Plate:

        I. Steel plates may be used to cover unattended, supported, shoring systems.
        II. The area shall be surrounded by orange safety fence at an effective distance from excavtion edge.





MINIMUM CONSTRUCTION CLEARANCES

(Normal To Railroad)
(Not To Scale)

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

T.Y. LIN INTERNATIONAL
engineers | planners | scientists
60 E. Rio Salado Parkway, Suite 501
Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
RAILROAD NOTES 1

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.	LOCATION RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIN HOE — Registered Professional Engineer — Certificate Expires 12/31/2019 — Date Signed 03/19/19 — ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .06

___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT PDF FULL.plt | Pentable: ...\TYLI_PLTDRV\pen\STDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

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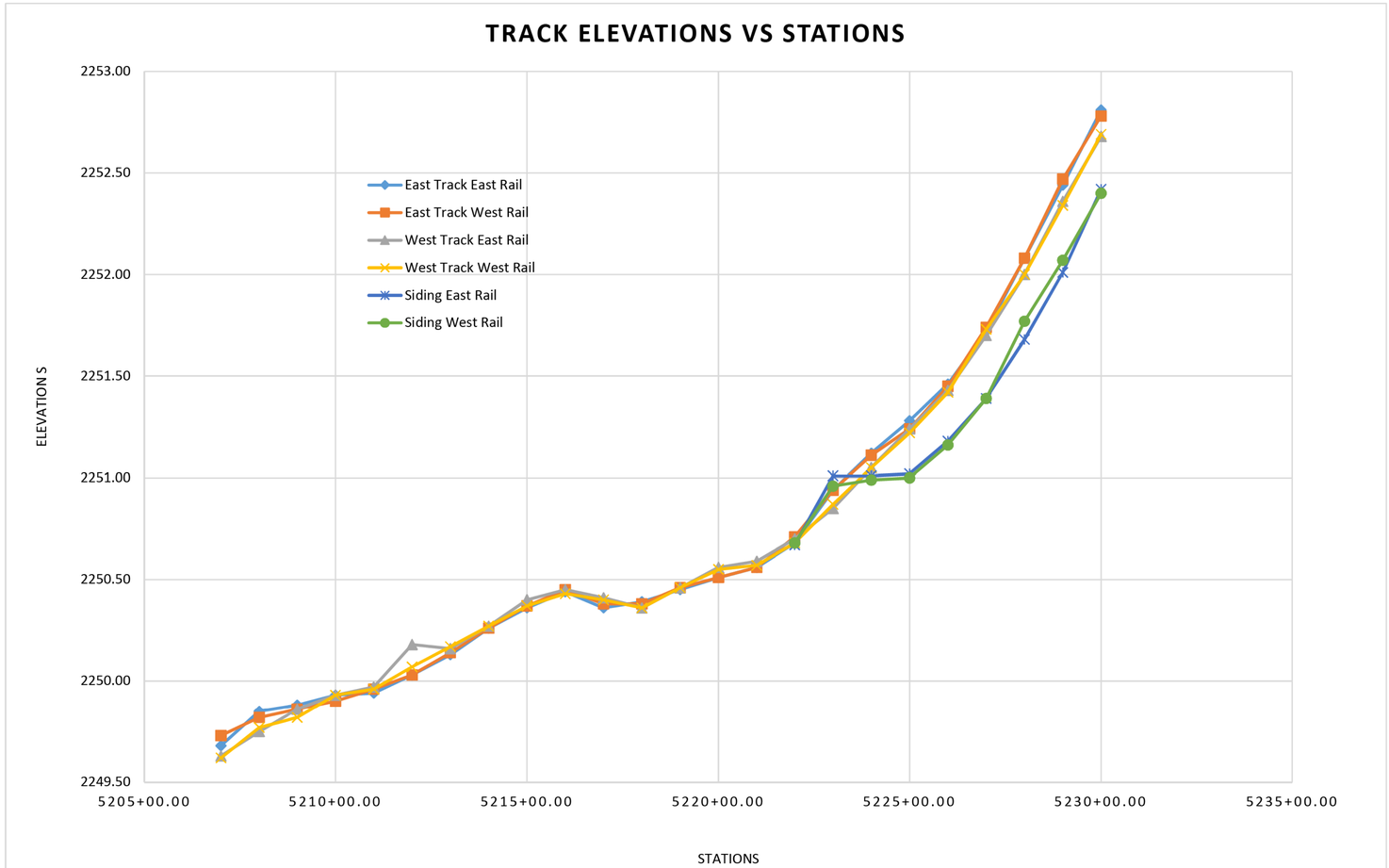
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	662	849	

010 PM 252



I-10 Cst Centerline Station	Track Elevations					
	East Track East Rail	East Track West Rail	West Track East Rail	West Track West Rail	Siding East Rail	Siding West Rail
5207+00.00	2249.68	2249.73	2249.63	2249.62	N/A	N/A
5208+00.00	2249.85	2249.82	2249.75	2249.77	N/A	N/A
5209+00.00	2249.88	2249.86	2249.86	2249.82	N/A	N/A
5210+00.00	2249.93	2249.90	2249.93	2249.93	N/A	N/A
5211+00.00	2249.94	2249.96	2249.97	2249.96	N/A	N/A
5212+00.00	2250.03	2250.03	2250.18	2250.07	N/A	N/A
5213+00.00	2250.13	2250.14	2250.16	2250.17	N/A	N/A
5214+00.00	2250.26	2250.26	2250.27	2250.27	N/A	N/A
5215+00.00	2250.36	2250.37	2250.40	2250.37	N/A	N/A
5216+00.00	2250.44	2250.45	2250.45	2250.43	N/A	N/A
5217+00.00	2250.36	2250.38	2250.41	2250.40	N/A	N/A
5218+00.00	2250.39	2250.38	2250.36	2250.36	N/A	N/A
5219+00.00	2250.45	2250.46	2250.46	2250.46	N/A	N/A
5220+00.00	2250.51	2250.51	2250.56	2250.55	N/A	N/A
5221+00.00	2250.56	2250.56	2250.59	2250.57	N/A	N/A
5222+00.00	2250.68	2250.71	2250.70	2250.68	2250.67	2250.68
5223+00.00	2250.94	2250.94	2250.85	2250.87	2251.01	2250.96
5224+00.00	2251.12	2251.11	2251.05	2251.05	2251.01	2250.99
5225+00.00	2251.28	2251.24	2251.24	2251.22	2251.02	2251.00
5226+00.00	2251.46	2251.45	2251.43	2251.42	2251.18	2251.16
5227+00.00	2251.72	2251.74	2251.70	2251.73	2251.39	2251.39
5228+00.00	2252.08	2252.08	2252.00	2252.00	2251.68	2251.77
5229+00.00	2252.44	2252.47	2252.36	2252.34	2252.01	2252.07
5230+00.00	2252.81	2252.78	2252.68	2252.69	2252.42	2252.40

Stations of Railroad Intersections			
Railroad Tracks	I-10 Cst Centerline Station	I-10 Cst Centerline Offset	Ruthrauff Road Cst Centerline Station
West Track West Rail	5219+05.70	324.15' Lt	103+91.93
West Track East Rail	5219+09.44	328.82' Lt	103+97.91
East Track West Rail	5219+20.91	343.13' Lt	104+16.25
East Track East Rail	5219+24.65	347.79 Lt	104+22.23

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
RAILROAD NOTES 2

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.	LOCATION RUTHRAUFF TI

Registered Professional Engineer
CERTIFICATE
37060
KODI-LIM
HOE
Date Signed 03/08/19
ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .07

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.plt | Pentable: ...\TYLI_PLTDRV\pen\STDPLOT_TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

AZDOT_STR_TEMPE 9:47:24 AM 3/19/2019 c:\projectwise\pb\projectwiseint\anthony.macias\dms42601\07s20160rn2.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	663	849	
		010 PM 252			

℄ Brg Abt 1

S 35°47'20"E

Existing Power Lines to be relocated/removed before drilled shafts construction

S 35°47'20"E

℄ Brg Abt 2

S 35°47'20"E

Existing Power Lines to be relocated/removed before drilled shafts construction

DS1

DS2

DS3

DS4

DS5

DS6

DS7

DS8

DS9

DS10

DS11

DS12

60" Φ Drilled Shaft (Typ)

31'-0

31'-0

103

31'-0

5 Spa @ 31'-0 = 155'-0

17'-5⅝

13'-6⅜

31'-0

31'-0

104

31'-0

4 Spa @ 31'-0 = 124'-0

16'-11⅛

14'-0⅞

31'-0

105

31'-0

151'-0

27'-0

34°46'34" Skew Lt) (Typ)

34°46'34" Skew Lt) (Typ)

Ruthrauff Road Cst ℄

N 88°59'14"E

℄ Brg Abt 1 Sta 103+36.81

℄ Brg Abt 2 Sta 104+89.06

Existing Water Lines to be relocated/removed before drilled shafts construction

Existing Power Lines to be relocated/removed before drilled shafts construction

Existing FMS Line to be relocated/removed before drilled shafts construction

Existing Storm Drain to be relocated/removed before drilled shafts construction

Existing Power Lines to be relocated/removed before drilled shafts construction

20'-0

20'-0

20'-0

℄ Exst Track ML #2

Exst ℄ Track ML #1

℄ Future Track

℄ Future Track

Existing Overhead Power Line to be relocated/removed before drilled shafts construction

N

FOUNDATION PLAN

Scale: 1"=10'-0

FOUNDATION NOTE:

Contractor shall verify if existing utilities are in conflict with drilled shaft location prior to construction.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
FOUNDATION LAYOUT

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIN HOE
Registered Professional Engineer
Date Signed 03/08/19
ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .08

___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.plt | Pentable: ...\TYLI_PLTDRV\penSTDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

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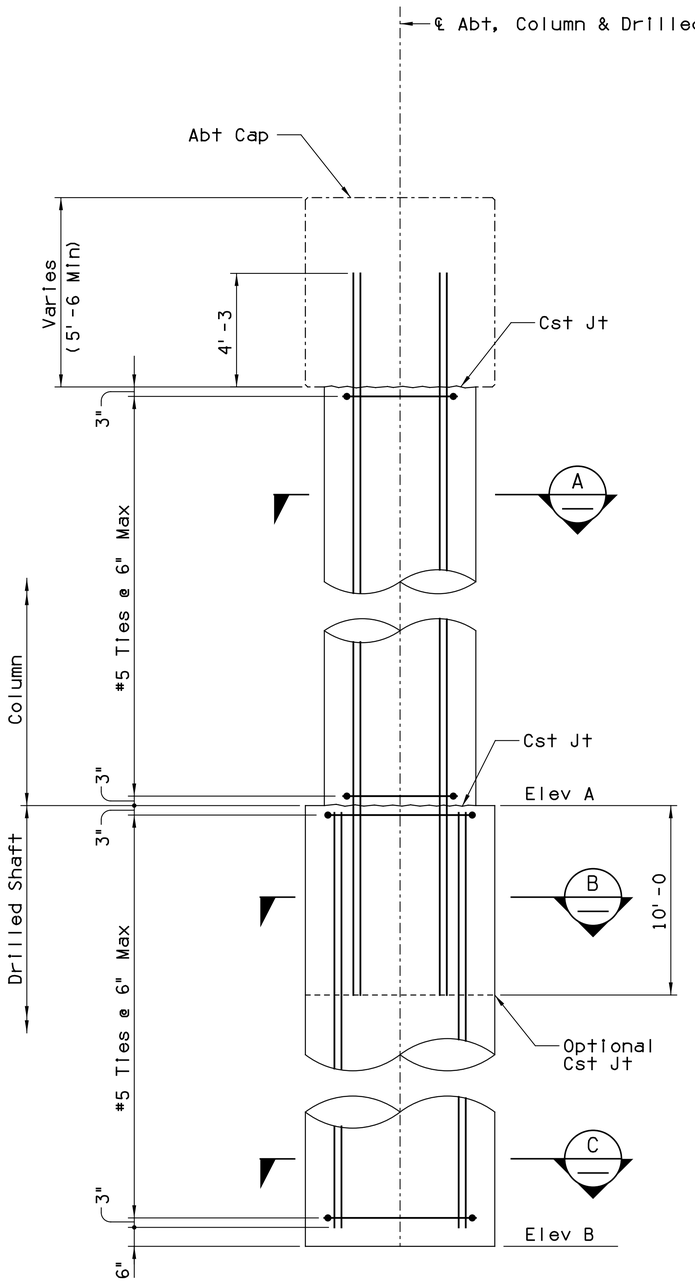
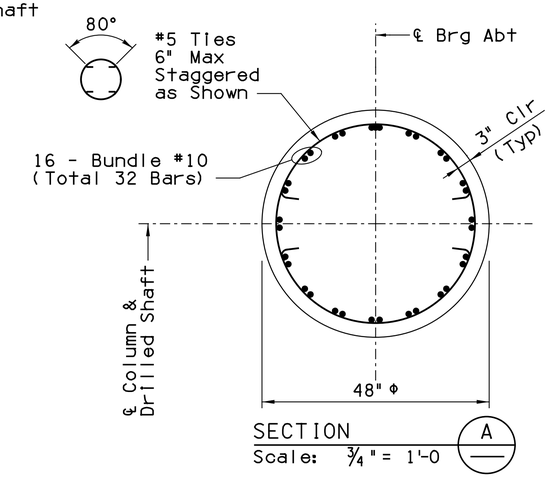
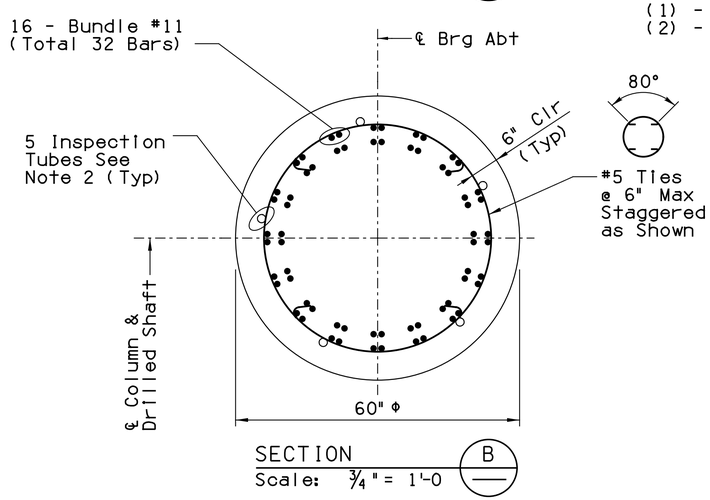
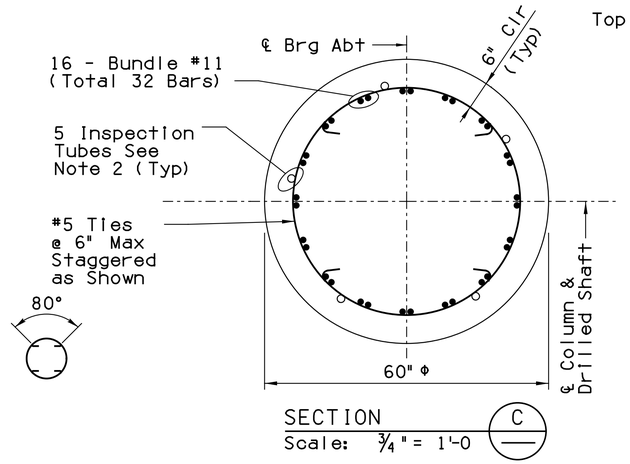
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	664	849	
		010 PM 252			

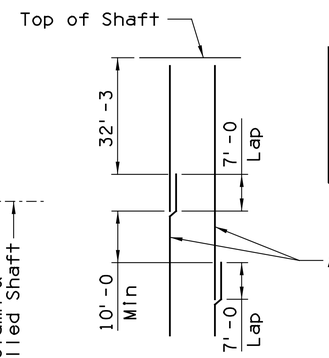


ABUTMENT DRILLED SHAFT DETAIL
Scale: ½" = 1'-0









DRILLED SHAFT-#11
LAP SPLICE DETAIL
Not to Scale

DRILLED SHAFT TABLE					
Shaft No	Elev A (ft)	Elev B (ft)	(1) Total Unfactored Load (Kips)	(2) Total Unfactored Load (Kips)	Total Settlement (Inch)
DS 1	2245	2165	1403	1403	0.15
DS 2	2245	2165	1403	1403	0.15
DS 3	2245	2165	1403	1403	0.15
DS 4	2245	2165	1403	1403	0.15
DS 5	2245	2165	1403	1403	0.15
DS 6	2245	2165	1403	1403	0.15
DS 7	2245	2165	1403	1403	0.15
DS 8	2245	2165	1403	1403	0.15
DS 9	2245	2165	1403	1403	0.15
DS 10	2245	2165	1403	1403	0.15
DS 11	2245	2165	1403	1403	0.15
DS 12	2245	2165	1403	1403	0.15

(1) - No increase for redundancy or group efficiency effects.
(2) - Increased for redundancy or group efficiency effects.

DRILLED SHAFT NOTES:

1. Drilled shaft excavation is not permitted within 48 hours of the completion of concrete placement of an adjacent drilled shaft. An adjacent drilled shaft is any drilled shaft within 4 diameters measured center-to-center.
2. Inspection tube size, type and details shall be per Standard Specifications and Special Provisions. Inspection tubes shall not be attached to the longitudinal reinforcement.
3. In the event of a weak layer (silt, clay, loose sand, ect.) at the recommended elevation of the shaft bottom the shaft shall be extended to bear on firm soil as determined by the Engineer.
4. Concrete shall be placed immediately after excavation has been completed and the reinforcing cage placed in its position.
5. Any construction joint not shown on the project plans shall require the approval of the engineer prior to construction.

NOTE:

Per Kinder Morgan requirement, drilling of the shafts for the West bridge abutment of the UPRR Overpass shall be done using the rotary method due to their proximity to KME petroleum lines.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
DRILLED SHAFT DETAILS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI L LIM HOE — Registered Professional Engineer — Date Signed 03/08/19 — ARIZONA, U.S.A. — Expires: 12/31/2019

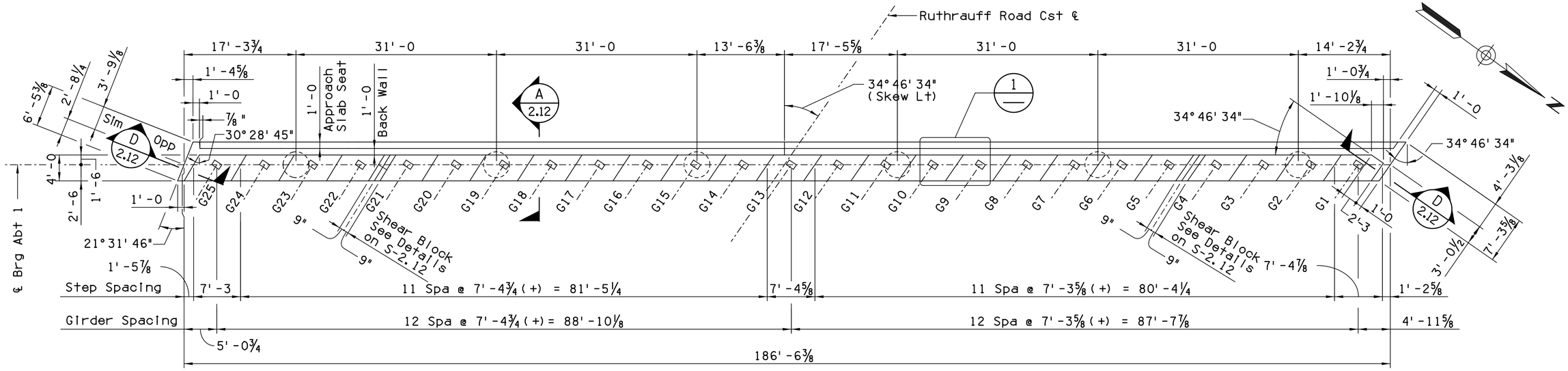
DWG. S-2 .09

___ OF ___

ABUTMENT 1 GIRDER STEP ELEVATION																			
Girder	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18	
Elevation	2274.70	2274.84	2274.99	2275.13	2275.26	2275.40	2275.54	2275.67	2275.80	2275.93	2276.04	2276.17	2276.27	2276.28	2276.22	2276.16	2276.10	2276.03	
Girder	G19	G20	G21	G22	G23	G24	G25												
Elevation	2275.96	2275.90	2275.83	2275.75	2275.68	2275.60	2275.53												

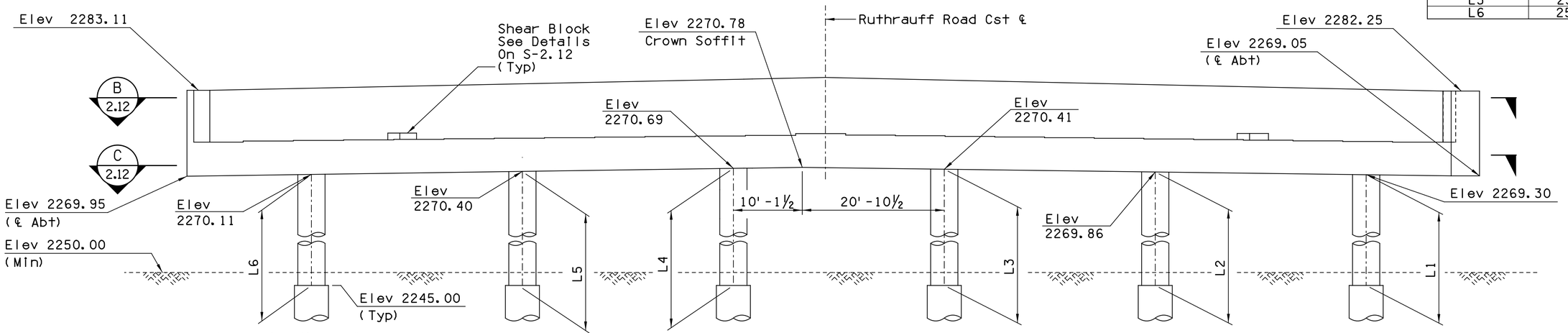
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	665	849	

010 PM 252

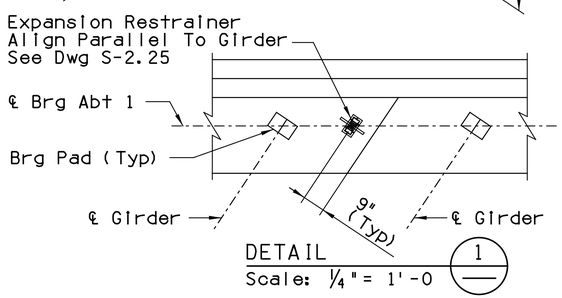


ABUTMENT 1 PLAN
Scale: ⅛"=1'-0

COLUMN LENGTH (FT)	
L1	24.30
L2	24.86
L3	25.41
L4	25.69
L5	25.40
L6	25.11



ABUTMENT 1 ELEVATION
(Looking Back Station)
Scale: ⅛"=1'-0



DETAIL 1
Scale: ¼"= 1'-0

NOTES:

1. All dimensions and elevations shown are measured along ℄ Brg Abt.
2. The bridge seat elevations shall be verified by the contractor prior to the erection of the girders.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
ABUTMENT 1 PLAN & ELEVATION

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION
RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIN HOE — Registered Professional Engineer — Civil — Date Signed 01/08/19 — ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .10

___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.plt | PentaMic ...\TYLI_PLTDRV\penSTDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

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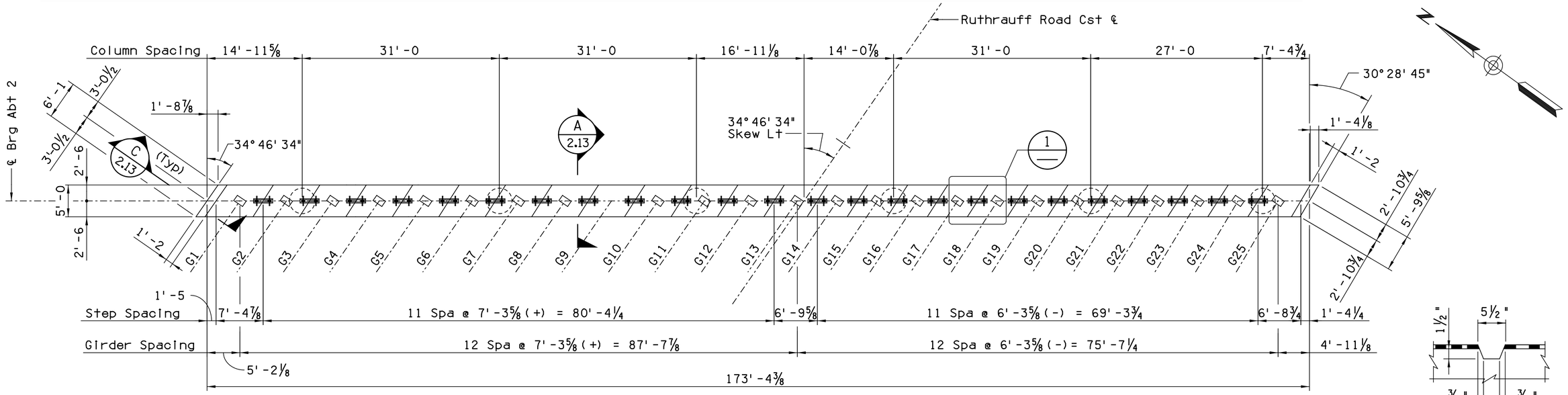
ABUTMENT 2 GIRDER STEP ELEVATION

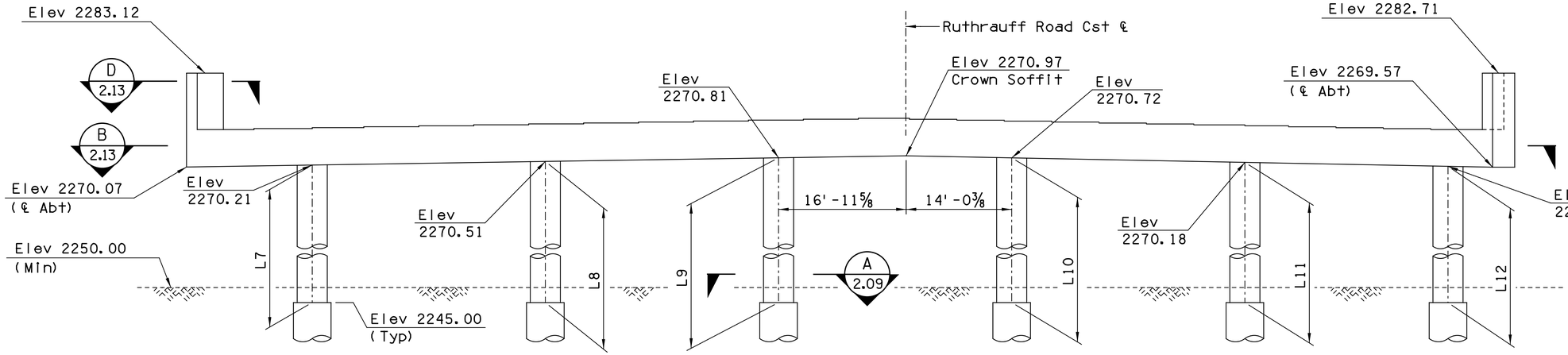
Girder	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18
Elevation	2275.66	2275.75	2275.82	2275.90	2275.98	2276.05	2276.12	2276.19	2276.26	2276.33	2276.37	2276.43	2276.47	2276.44	2276.33	2276.23	2276.12	2276.01
Girder	G19	G20	G21	G22	G23	G24	G25											
Elevation	2275.90	2275.79	2275.68	2275.56	2275.45	2275.33	2275.21											

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	666	849	
		010 PM 252			



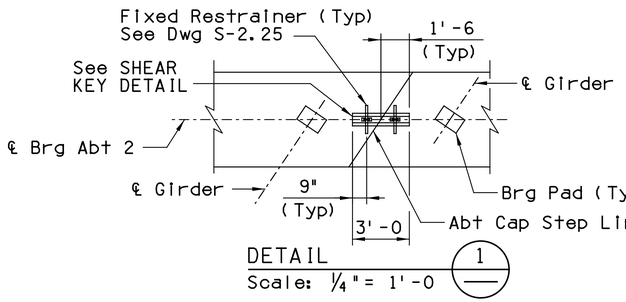
ABUTMENT 2 PLAN
Scale: ⅛" = 1'-0

SHEAR KEY DETAIL
Not to Scale



ABUTMENT 2 ELEVATION
(Looking Upstation)
Scale: ⅛" = 1'-0

COLUMN LENGTH (FT)	
L7	25.21
L8	25.51
L9	25.81
L10	25.72
L11	25.18
L12	24.70



DETAIL 1
Scale: ¼" = 1'-0

NOTES:

1. All dimensions and elevations shown are measured along ℄ Brg Abt.
2. The bridge seat elevations shall be verified by the contractor prior to the erection of the girders.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
ABUTMENT 2 PLAN & ELEVATION

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

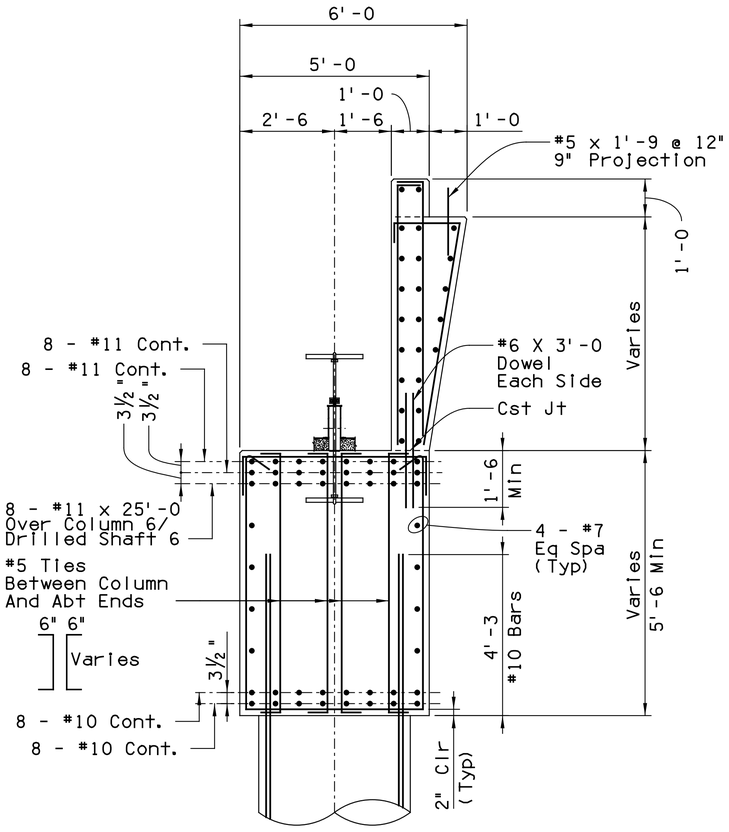
LOCATION: RUTHRAUFF TI

Registered Professional Engineer — Certificate No. 37060 — KOOI-LIM HOE — Date Signed 03/19/19 — ARIZONA, U.S.A. — Expires: 12/31/2019

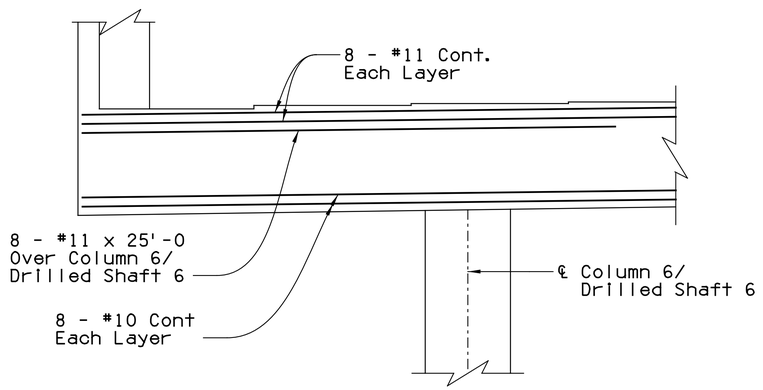
DWG. S-2 .11

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

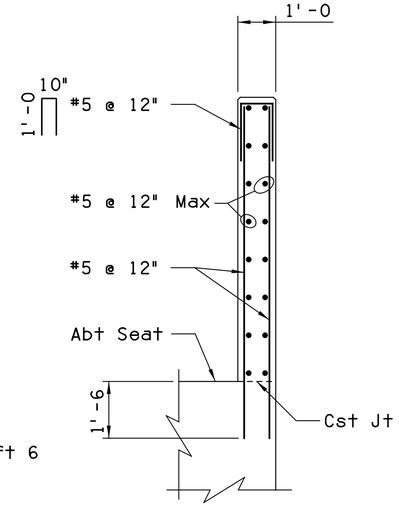
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	667	849	
		010 PM 252			



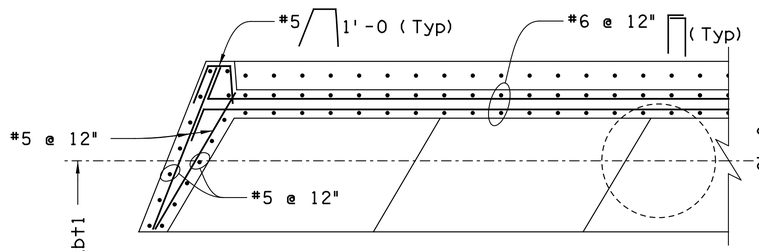
SECTION A 2.10
Scale: ½"=1'-0

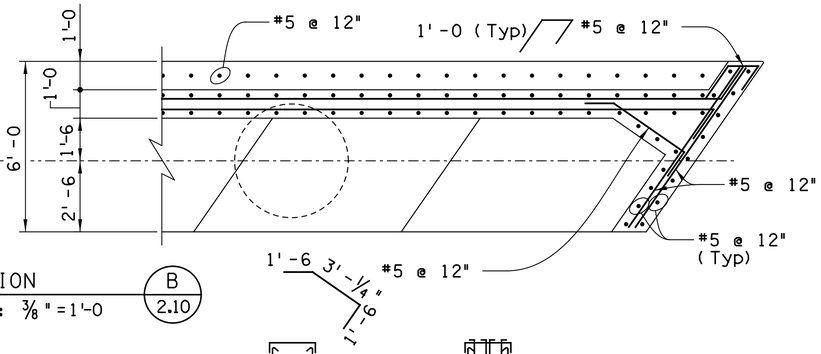


ABT 1 PARTIAL ELEVATION
Scale: ½"=1'-0



SECTION D 2.10
Scale: ½"=1'-0





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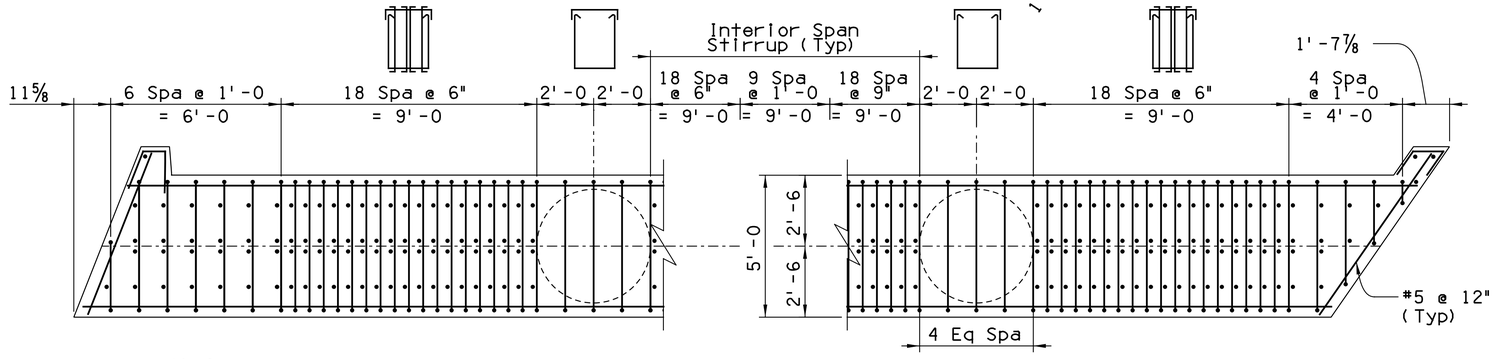
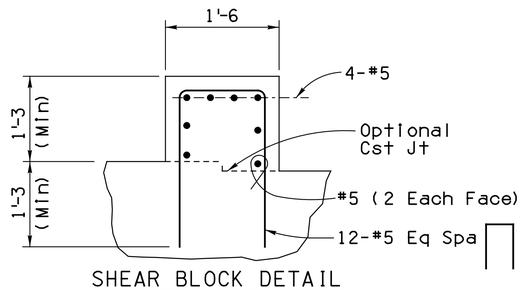


SECTION C 2.10
Scale: ⅜"=1'-0



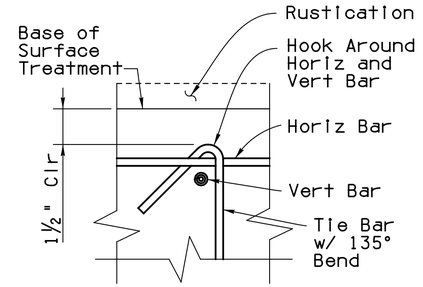
SHEAR BLOCK DETAIL
Not To Scale

NOTE:

Minimum lap length of bar splices shall be:

Non-Staggered Splices
#11 Bars.....12'-6 (Top Bar)
#11 Bars.....9'-0 (Bottom Bar)
#10 Bars.....10'-0 (Top Bar)
#10 Bars.....7'-6 (Bottom Bar)
#7 Bars.....4'-9

Staggered Splices
#11 Bars.....9'-6 (Top Bar)
#11 Bars.....6'-10 (Bottom Bar)
#10 Bars.....7'-9 (Top Bar)
#10 Bars.....5'-9 (Bottom Bar)
#7 Bars.....3'-9



NOTE:

135° and 90° Hooked Ends shall be Alternated for each Vertical bar per tie layer.

COLUMN TIE DETAIL
Not To Scale

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
ABUTMENT 1 DETAILS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION
RUTHRAUFF TI

Registered Professional Engineer — Certificate 37060 — KODI-LIM HOE — Date Signed 01/08/19 — ARIZONA, U.S.A.
Expires: 12/31/2019

DWG. S-2 .12

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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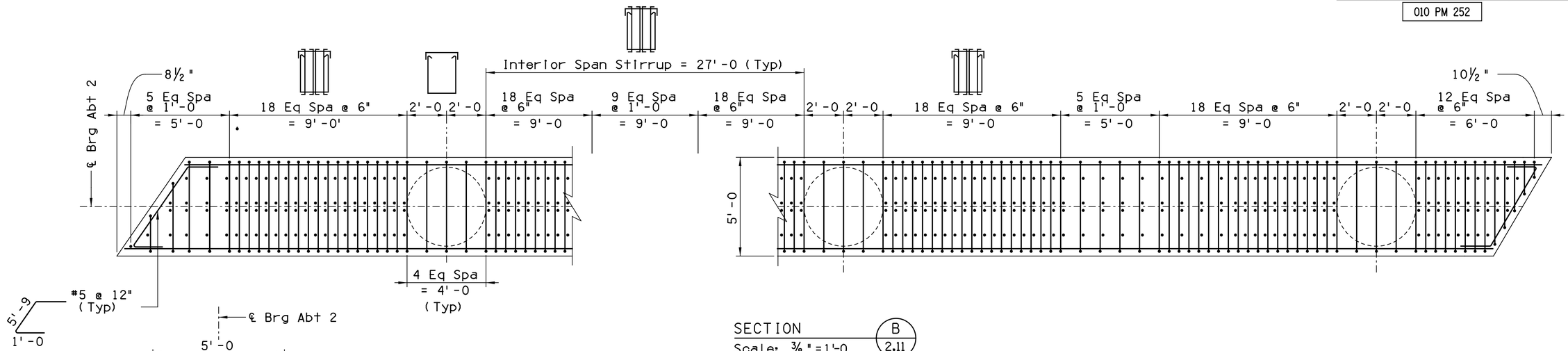
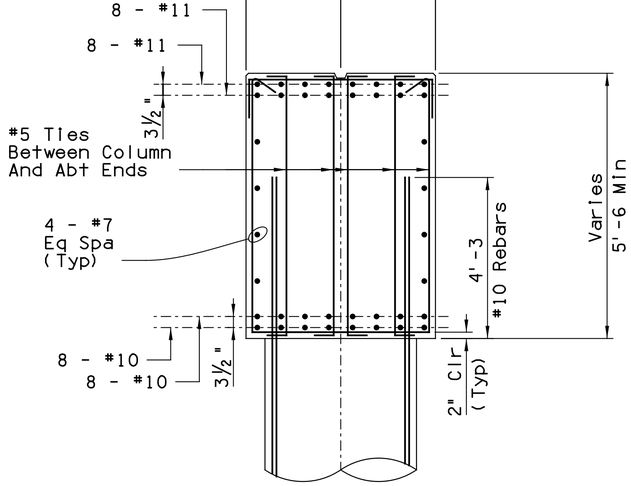
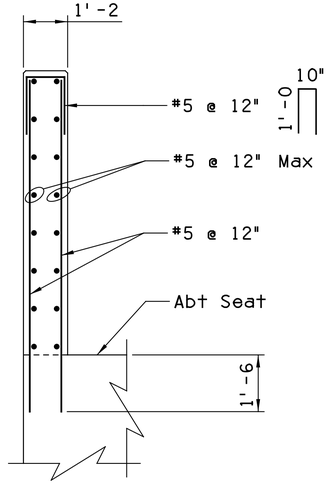
		010 PM 252			



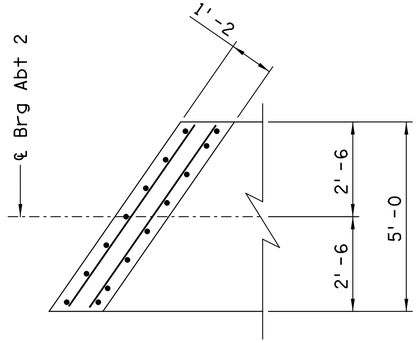
SECTION B
Scale: ⅜"=1'-0
2.11



SECTION A
Scale: ½"=1'-0
2.11



SECTION C
Scale: ½"=1'-0
2.11



SECTION D
Scale: ½"=1'-0
2.11

NOTE:

Minimum lap length of bar splices shall be:

Non-Staggered Splices
#11 Bars.....12'-6 (Top Bar)
#11 Bars.....9'-0 (Bottom Bar)
#10 Bars.....10'-0 (Top Bar)
#10 Bars.....7'-6 (Bottom Bar)
#7 Bars.....4'-9

Staggered Splices
#11 Bars.....9'-6 (Top Bar)
#11 Bars.....6'-10 (Bottom Bar)
#10 Bars.....7'-9 (Top Bar)
#10 Bars.....5'-9 (Bottom Bar)
#7 Bars.....3'-9

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
ABUTMENT 2 DETAILS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION
RUTHRAUFF TI

37060
KOOI-LIM HOE
Registered Professional Engineer
CERTIFICATE
ARIZONA, U.S.A.
Expires: 12/31/2019

DWG. S-2 .13

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

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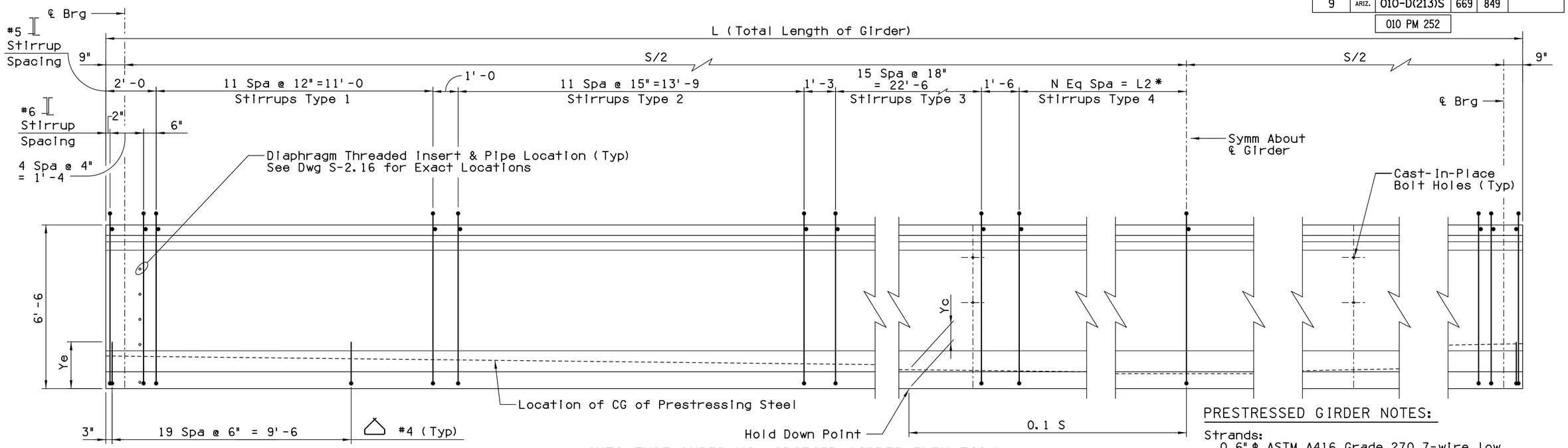
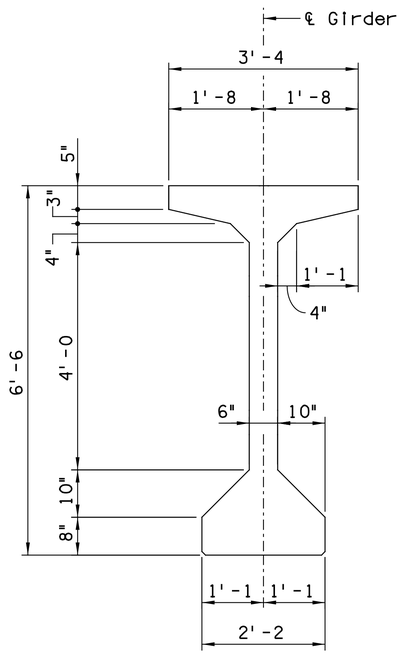
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	669	849	
		010 PM 252			



AASHTO TYPE SUPER VI MODIFIED GIRDER ELEVATION

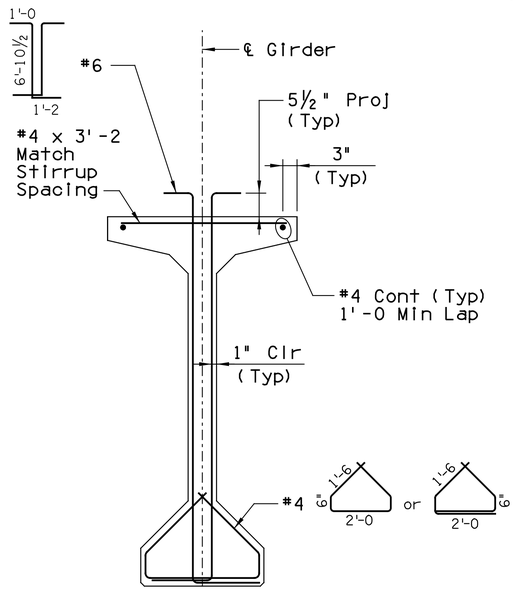
Scale: ½"=1'-0



AASHTO TYPE SUPER VI MODIFIED GIRDER

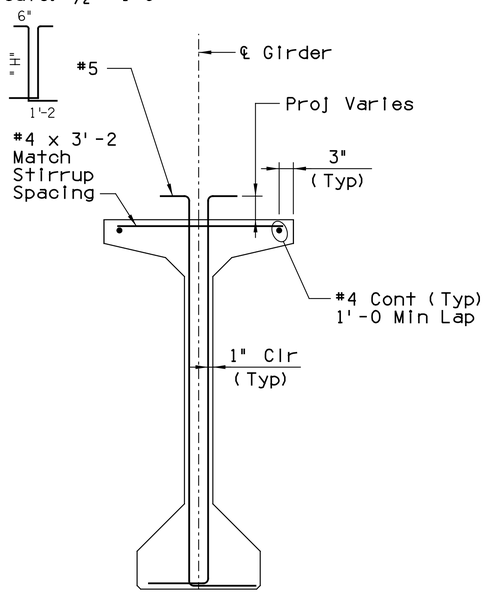
(0.6" Φ 270 ksi Low Relaxation Strands)

Scale: ¾"=1'-0



SECTION THRU END

Scale: ¾"=1'-0



SECTION THRU MIDSPAN

Scale: ¾"=1'-0

STIRRUP	
TYPE	H
1	6'-10
2	6'-11½
3	7'-1
4	7'-2

PRESTRESSED GIRDER NOTES:

Strands:
0.6" Φ ASTM A416 Grade 270 7-wire low relaxation prestressing strand with initial strand tension equal to 43,942 lbs (0.75fpu). fpu = 270 ksi.
Nominal area of strand = 0.217 sq.in.
The use of masked strands will not be allowed.
The minimum spacing for strands is 2" on centers. Approval of the Engineer is required for deviation.

Prestressing Force:
Pi = * kips initial force per girder at release.
Pw = * kips working force - total force remaining per girder after losses.

Prestressing:
All girders shall be prestressed by the pretensioning method only.

Concrete Strength:
f'ci = * ksi minimum strength at transfer.
f'c = * ksi minimum strength at 28 day.

Girder Details:
The girder length shown does not include elastic shortening effects. Casting lengths shall be increased as necessary to account for shortening effects.
The Contact surface of the top flange shall be roughened to a depth of approximately ¼ inch.

Girder ends shall be cast vertical.

* See Dwg S-2.15.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
GIRDER DETAILS 1

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer — CERTIFICATE — 37060 — KOO1-LIM — HOE — Date Signed 03/08/19 — ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .14

___ OF ___

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

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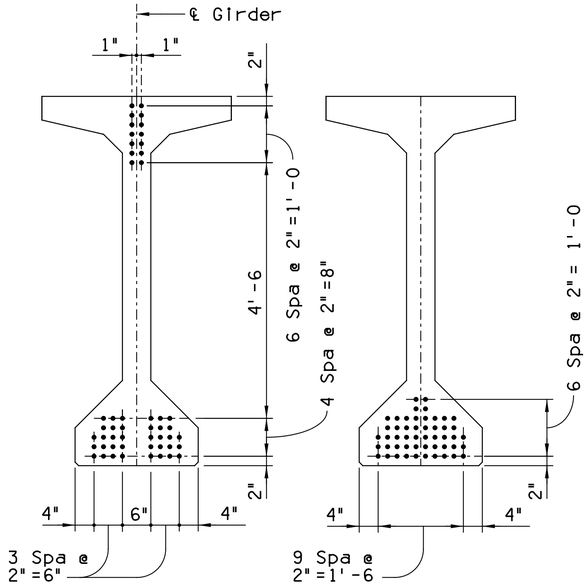
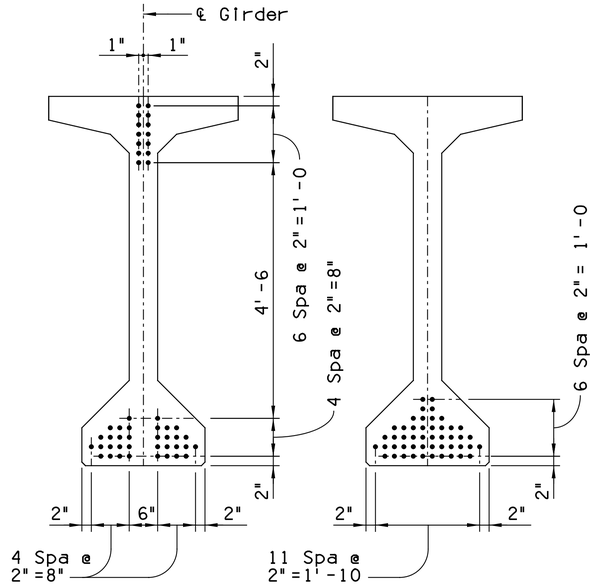


END SECTION
(Ye=23.68")

MIDSPAN SECTION
(Yc=6.23")

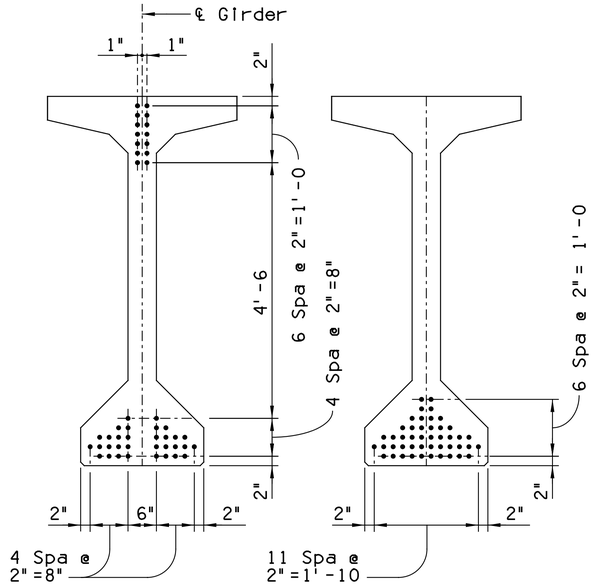
STRAND PATTERN (50)
Scale: 3/4"=1'-0



END SECTION
(Ye=24.00")

MIDSPAN SECTION
(Yc=5.92")

STRAND PATTERN (48)
Scale: 3/4"=1'-0



END SECTION
(Ye=24.70")

MIDSPAN SECTION
(Yc=5.83")

STRAND PATTERN (46)
Scale: 3/4"=1'-0

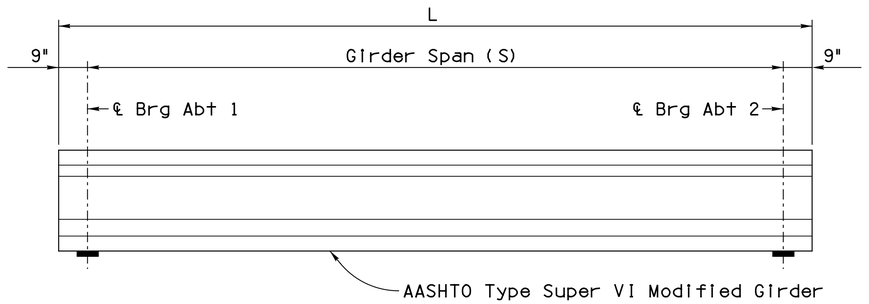
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	670	849	
		010 PM 252			

NOTE:

(50) Refers to strand pattern with 50 strands.

GIRDER TABLE

Girder			Prestressing			Minimum Concrete Strength		Number of Girders	Shear Stirrups	
Mark	Length "L" (feet)	Girder Span (S) (feet)	Strand Pattern	Initial Force Pi (kips)	Working Force Pw (kips)	f'ci (ksi)	f'c (ksi)	Each	Number Spa N	L2 (feet)
G1-12	153.75	152.25	50	2197	1582	6.0	8.0	12	12	23.13
G13	153.75	152.25	50	2197	1582	6.0	8.0	1	12	23.13
G14	153.12	151.62	50	2197	1581	6.0	8.0	1	12	22.81
G15	152.50	151.00	48	2109	1522	5.8	7.5	1	12	22.50
G16	151.89	150.39	48	2109	1521	5.8	7.5	1	11	22.20
G17	151.28	149.78	48	2109	1520	5.8	7.5	1	11	21.89
G18	150.67	149.17	48	2109	1520	5.8	7.5	1	11	21.59
G19	150.07	148.57	48	2109	1519	5.8	7.5	1	11	21.29
G20	149.48	147.98	48	2109	1518	5.8	7.5	1	11	20.99
G21	148.90	147.40	46	2021	1460	5.6	7.0	1	11	20.70
G22	148.31	146.81	46	2021	1460	5.6	7.0	1	11	20.41
G23	147.74	146.24	46	2021	1459	5.6	7.0	1	11	20.12
G24	147.17	145.67	46	2021	1458	5.6	7.0	1	10	19.84
G25	146.61	145.11	46	2021	1458	5.6	7.0	1	10	19.56



GIRDER ELEVATION
Not To Scale

GIRDER MARK LEGEND:

1-12 Designates girders 1 through 12 for the span.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
GIRDER DETAILS 2

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.	LOCATION RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIN HOE — Registered Professional Engineer — CERTIFICATE EXPIRES — Date Signed 03/19/19 — ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .15

____ OF ____

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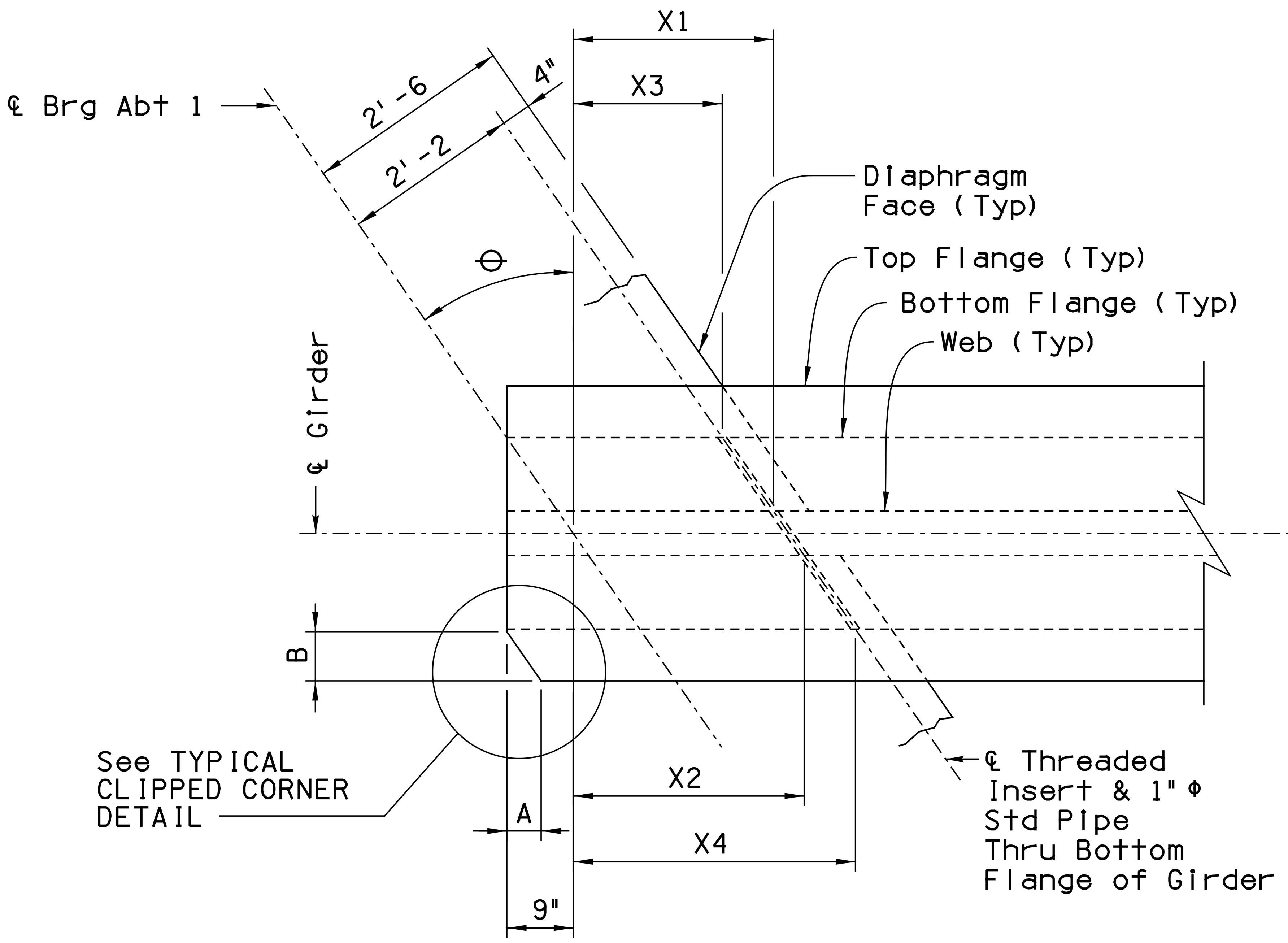
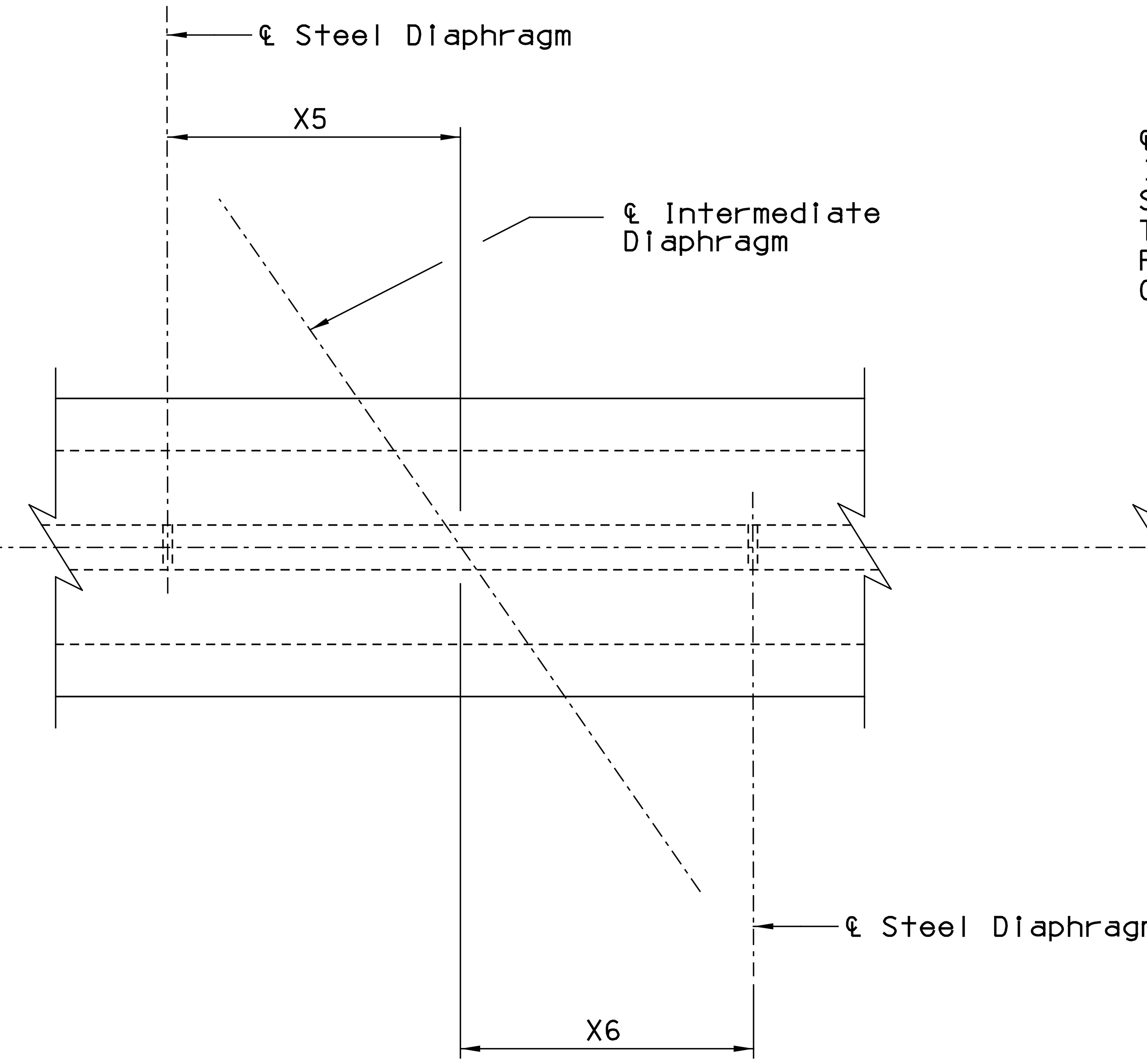
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	671	849	

010 PM 252

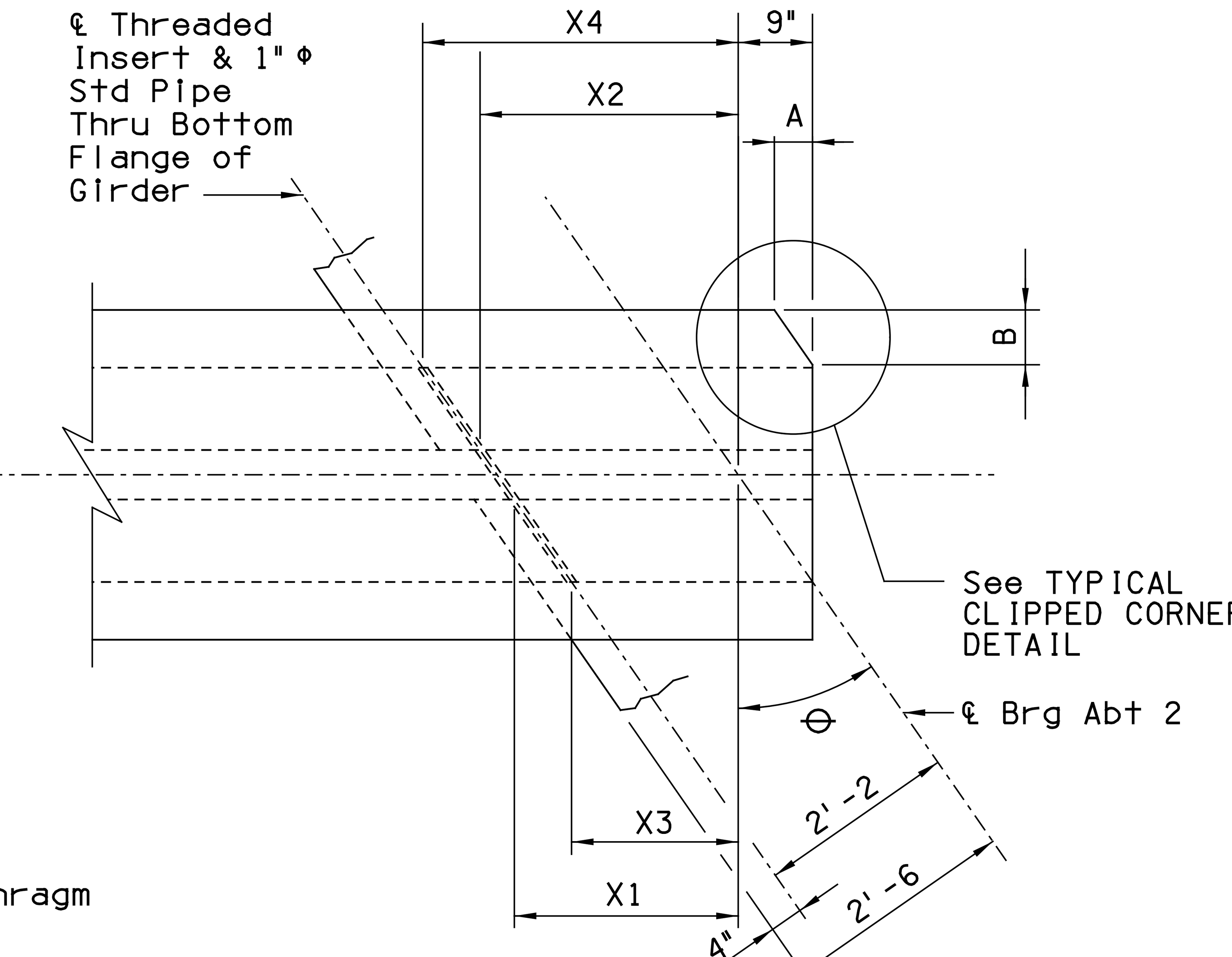


PLAN AT ABUTMENT 1 (EXPANSION)



THREADED INSERT PLACEMENT DETAILS

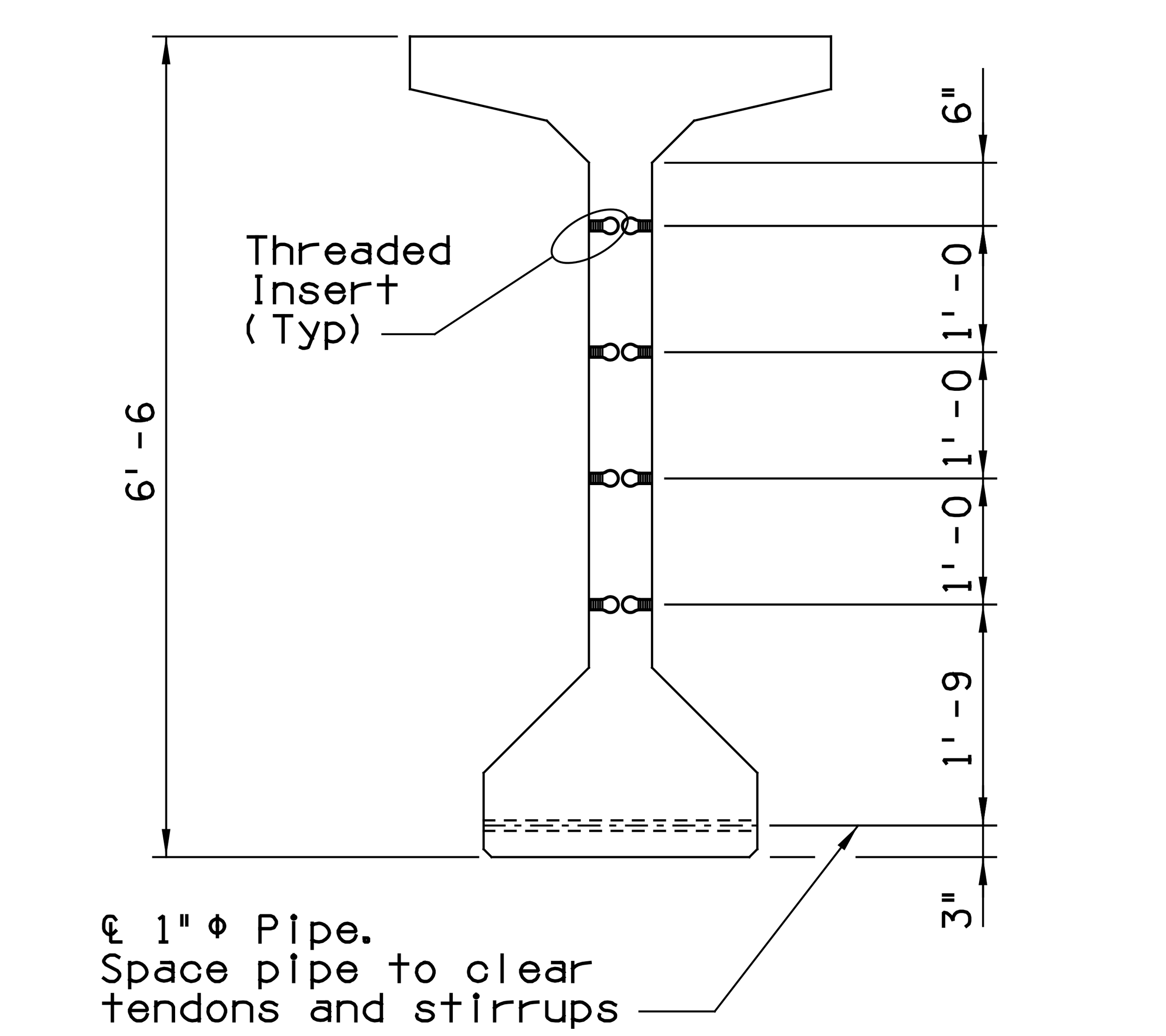
Not to Scale



PLAN AT ABUTMENT 2 (PINNED)

NOTES:

1. X1 and X2 measured along web.
2. X3 and X4 measured along bottom flange.



AASHTO TYPE SUPER VI MODIFIED GIRDER

INSERT DETAIL

Scale: ¾"=1'-0

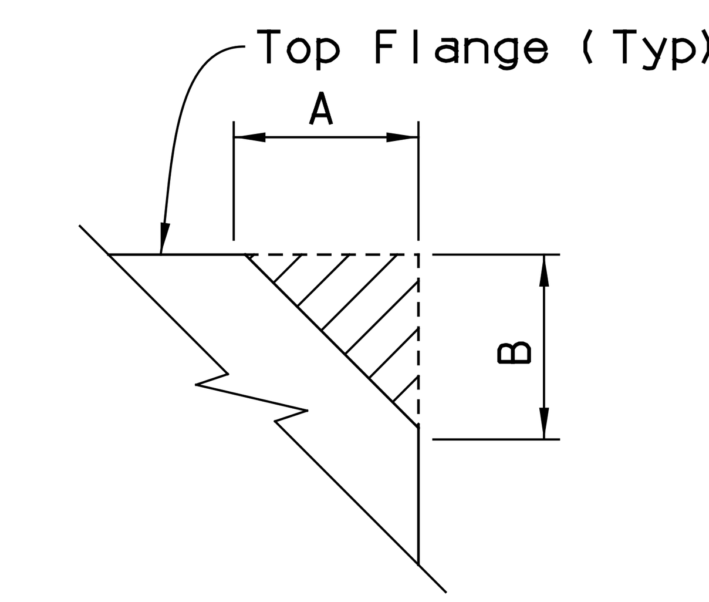
NOTES:

1. Threaded inserts shall be ferrule loop inserts for ¾"Φ threaded rods (Typ). Ultimate pullout strength of 10800 Lbs.

2. Threaded inserts shall be placed parallel to the ℄ Brg Abts. The Contractor may place the inserts normal to the girder with the approval of the Engineer. In this case shop drawings shall be submitted showing the plan for the placement of the inserts and diaphragm reinforcement. Threaded rods may be field bent to align with face of diaphragm. Bending shall not occur within 6" of the inserted end. The Contractor shall furnish bending procedure for approval by the Engineer.

3. Pipe sleeves for girders shall be placed to align with the girder skew θ.

4. Provide threaded inserts on the inside face of the exterior girders only.



TYPICAL CLIPPED CORNER DETAIL

Not To Scale

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
GIRDER DETAILS 3

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.000	20160	RUTHRAUFF TI

Registered Professional Engineer, Certificate No. 37060, KOOI-LIM HOE, Arizona, U.S.A., Date Signed 03/08/19

Expires: 12/31/2019

DWG. S-2.16

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

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

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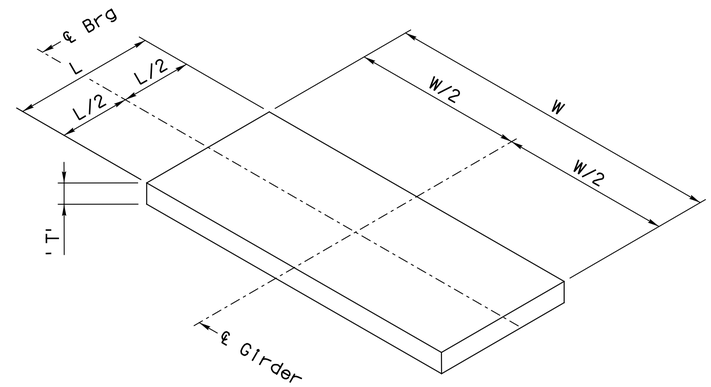
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	672	849	
		010 PM 252			

ABUTMENT 1 & 2 INSERTS				
Mark	X1 feet	X2 feet	X3 feet	X4 feet
G1	2.46	2.81	1.89	3.39
G2 to G13	2.46	2.81	1.89	3.39
G14	2.46	2.80	1.88	3.37
G15	2.45	2.79	1.88	3.35
G16	2.44	2.77	1.88	3.33
G17	2.43	2.76	1.88	3.31
G18	2.42	2.75	1.88	3.29
G19	2.41	2.73	1.88	3.27
G20	2.41	2.72	1.88	3.25
G21	2.40	2.71	1.88	3.23
G22	2.39	2.70	1.88	3.21
G23	2.38	2.69	1.88	3.19
G24	2.37	2.67	1.88	3.17
G25	2.37	2.66	1.88	3.15

INTERMEDIATE DIAPHRAGM INSERTS				
Mark	Diaphragm 1		Diaphragm 2	
	X5 feet	X6 feet	X5 feet	X6 feet
G1		2.08		2.08
G2 to G12	2.08	2.08	2.08	2.08
G13	2.08	2.00	2.08	1.89
G14	2.00	1.98	1.89	1.88
G15	1.98	1.96	1.88	1.86
G16	1.96	1.95	1.86	1.84
G17	1.95	1.93	1.84	1.83
G18	1.93	1.91	1.83	1.81
G19	1.91	1.89	1.81	1.79
G20	1.89	1.87	1.79	1.77
G21	1.87	1.85	1.77	1.76
G22	1.85	1.83	1.76	1.74
G23	1.83	1.81	1.74	1.72
G24	1.81	1.79	1.72	1.70
G25	1.79		1.70	



ELASTOMERIC BEARING PAD DETAIL

Not To Scale

ELASTOMERIC BEARING PAD CRITERIA

Design Method A
Design Load (DL+LL) as shown in Table
Low Temperature Zone (A)
Elastomeric Grade 0
Shear Modulus = 130 psi @ 73° F
Mean Durometer Hardness = 55

Elastomeric bearing pad shall be 100% virgin chloroprene and conform to AASHTO material specifications M251.

Elastomeric bearing pad shall be reinforced with steel reinforcement.

Elastomeric bearing pads required for all girders. See Schedule for thickness 'T', length 'L' and width 'W'.

BEARING PAD SCHEDULE						
Location	T	W	L	Type	DL+LL (Kips)	Number
Abt 1	4"	20"	12"	Exp	267	25
Abt 2	2.5"	20"	12"	Fixed	284	25

	Angle, ⊖			Clipped Corner Dim* (inches)	
Mark	Degrees	Minutes	Seconds	A	B
G1-G13	34	46	34	5.84	8.42
G14	34	26	0	5.74	8.37
G15	34	5	19	5.63	8.32
G16	33	44	26	5.52	8.27
G17	33	23	23	5.41	8.22
G18	33	2	9	5.31	8.16
G19	32	40	46	5.20	8.10
G20	32	19	11	5.09	8.04
G21	31	57	27	4.98	7.98
G22	31	35	32	4.87	7.91
G23	31	13	27	4.75	7.84
G24	30	51	11	4.64	7.77
G25	30	28	45	4.53	7.69

* Clipped corner dimensions shown are minimum. Dimensions may be grouped for ease of fabrication.

INTERMEDIATE DIAPHRAGM LENGTH		
Mark	Int. Diaphragm 1 feet	Int. Diaphragm 2 feet
G1 To G12	6.00	6.00
G12 to G13	6.00	6.00
G13 To G14	5.79	5.49
G14 to G15	5.82	5.51
G15 to G16	5.84	5.53
G16 to G17	5.86	5.56
G17 to G18	5.89	5.58
G18 to G19	5.91	5.60
G19 to G20	5.93	5.62
G20 to G21	5.96	5.65
G21 to G22	5.98	5.67
G22 to G23	6.01	5.69
G23 to G24	6.03	5.71
G24 to G25	6.05	5.74

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
GIRDER DETAILS 4

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

37060 KOOI-LIM HOE — Certificate No. — Registered Professional Engineer — State of Arizona, U.S.A. — Expires: 12/31/2019

DWG. S-2 .17

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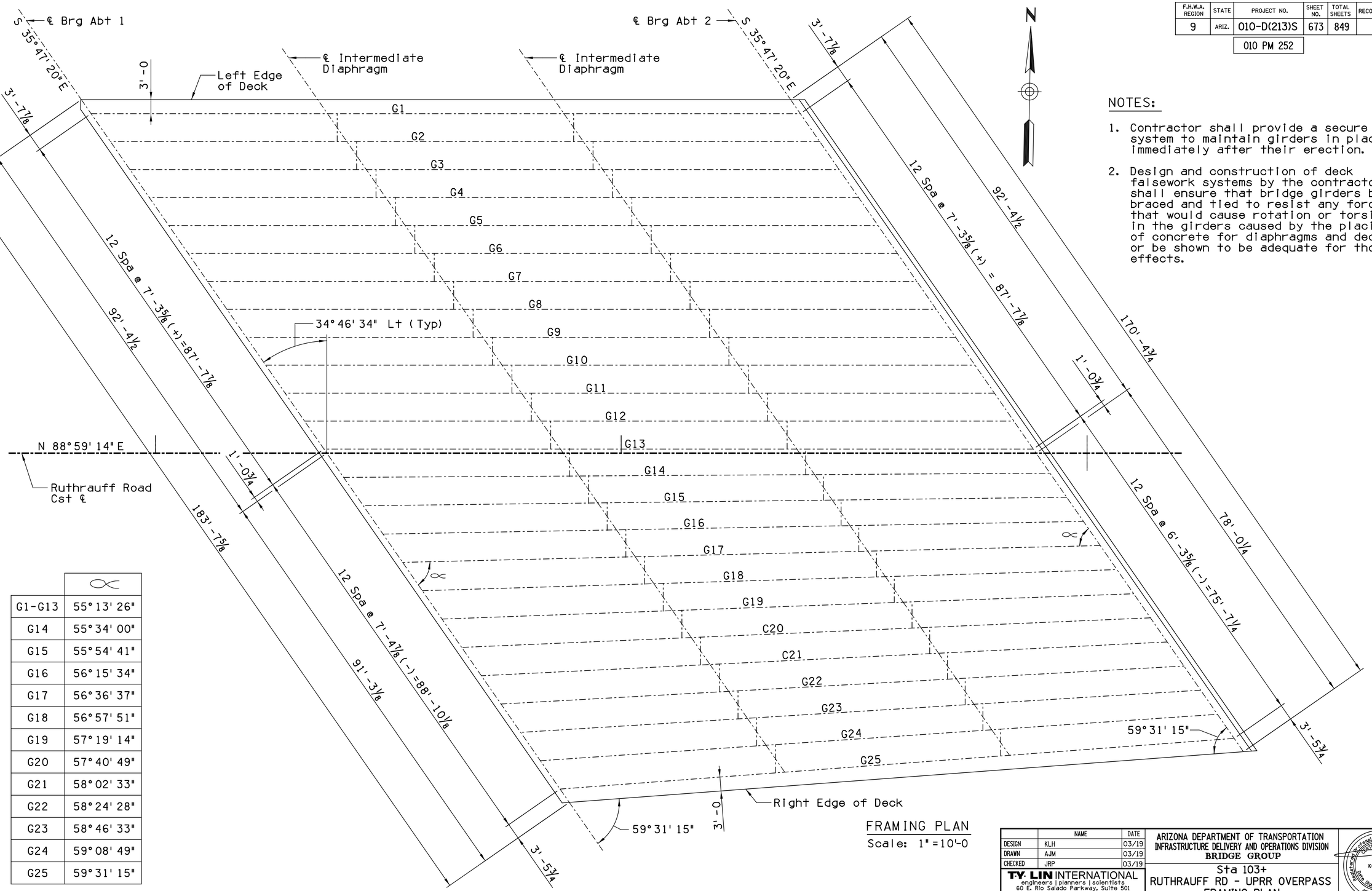
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	673	849	
		010 PM 252			



	∝
G1-G13	55° 13' 26"
G14	55° 34' 00"
G15	55° 54' 41"
G16	56° 15' 34"
G17	56° 36' 37"
G18	56° 57' 51"
G19	57° 19' 14"
G20	57° 40' 49"
G21	58° 02' 33"
G22	58° 24' 28"
G23	58° 46' 33"
G24	59° 08' 49"
G25	59° 31' 15"

NOTES:

1. Contractor shall provide a secure system to maintain girders in place immediately after their erection.
2. Design and construction of deck falsework systems by the contractor, shall ensure that bridge girders be braced and tied to resist any forces that would cause rotation or torsion in the girders caused by the placing of concrete for diaphragms and decks or be shown to be adequate for those effects.

FRAMING PLAN
Scale: 1"=10'-0

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
FRAMING PLAN

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

Registered Professional Engineer
CERTIFICATE
37060
KODI-LIM HOE
Date Signed 03/08/19
ARIZONA, U.S.A.
Expires: 12/31/2019

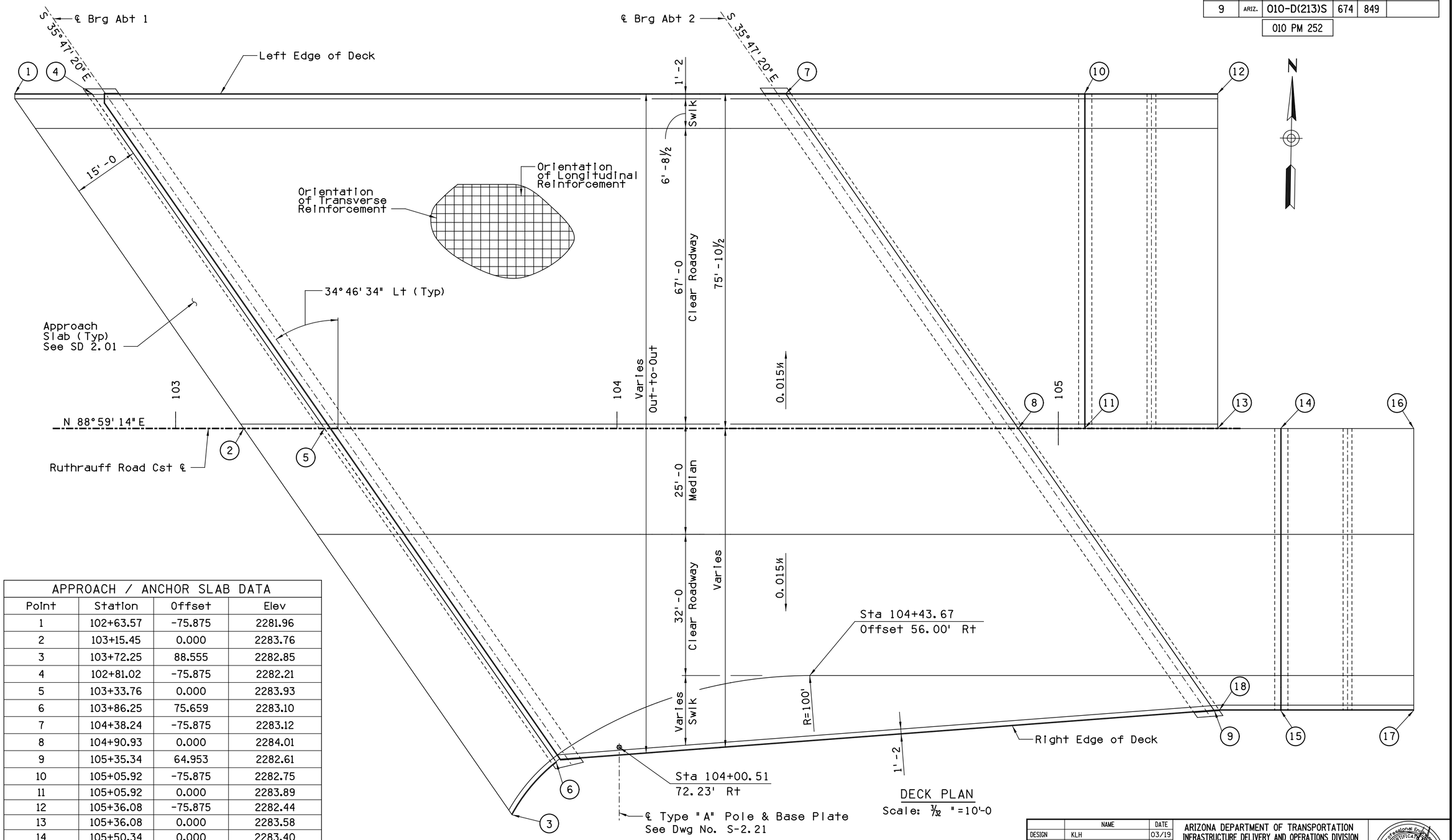
DWG. S-2 .18

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.plt | Pentable: ...\TYLI_PLTDRV\pen\STDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE- | SURVEY NO.

AZDOT_STR_TEMPE 10:01:24 AM 3/19/2019 c:\projectwise\pb\projectwiseint\anthony.macias\dms42601\18s20160fp.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	674	849	
		010 PM 252			



DECK PLAN
Scale: 3/32 "=10'-0

APPROACH / ANCHOR SLAB DATA			
Point	Station	Offset	Elev
1	102+63.57	-75.875	2281.96
2	103+15.45	0.000	2283.76
3	103+72.25	88.555	2282.85
4	102+81.02	-75.875	2282.21
5	103+33.76	0.000	2283.93
6	103+86.25	75.659	2283.10
7	104+38.24	-75.875	2283.12
8	104+90.93	0.000	2284.01
9	105+35.34	64.953	2282.61
10	105+05.92	-75.875	2282.75
11	105+05.92	0.000	2283.89
12	105+36.08	-75.875	2282.44
13	105+36.08	0.000	2283.58
14	105+50.34	0.000	2283.40
15	105+50.34	63.875	2282.44
16	105+80.51	0.000	2282.95
17	105+80.51	63.875	2281.99
18	105+36.38	63.875	2282.62

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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60 E. Rio Salado Parkway, Suite 501
Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
DECK PLAN

ROUTE	MILEPOST	STRUCTURE NO.
I-10	252.000	20160

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIM HOE — Registered Professional Engineer — Certificate No. — Date Signed 01/08/19 — ARIZONA, U.S.A.

Expires: 12/31/2019

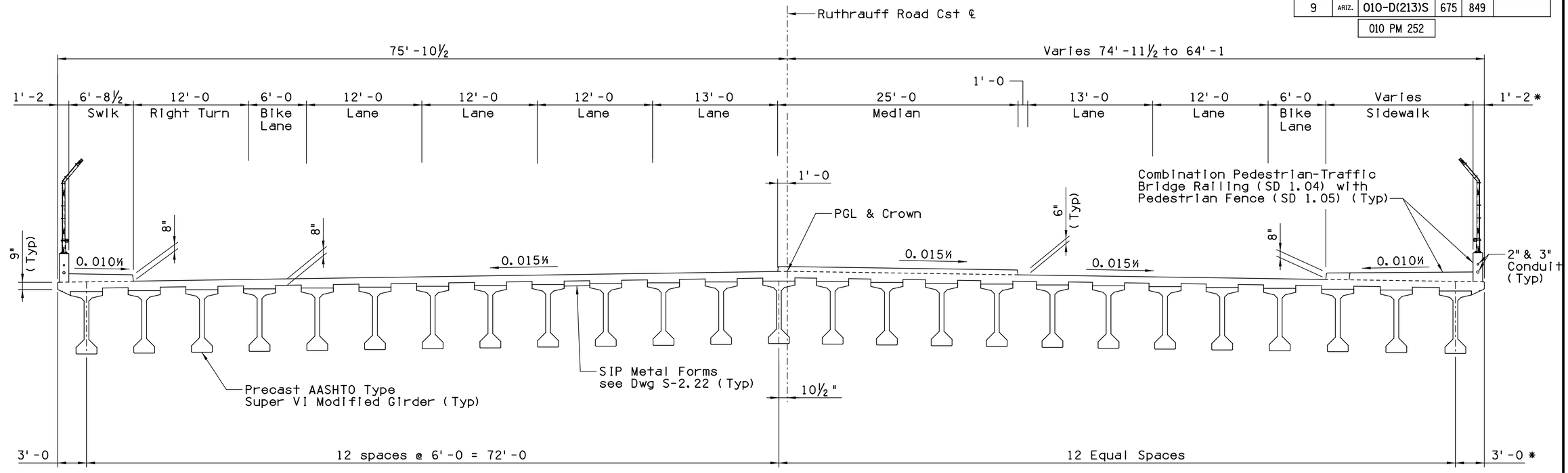
DWG. S-2 .19

___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.plt | Penstable: ...\TYLI_PLTDRV\penSTDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

AZDOT_STR_TEMPE 10:02:08 AM 3/19/2019 c:\projectwise\pb\projectwiseint\anthony.macias\dms42601\19s20160dp.dgn

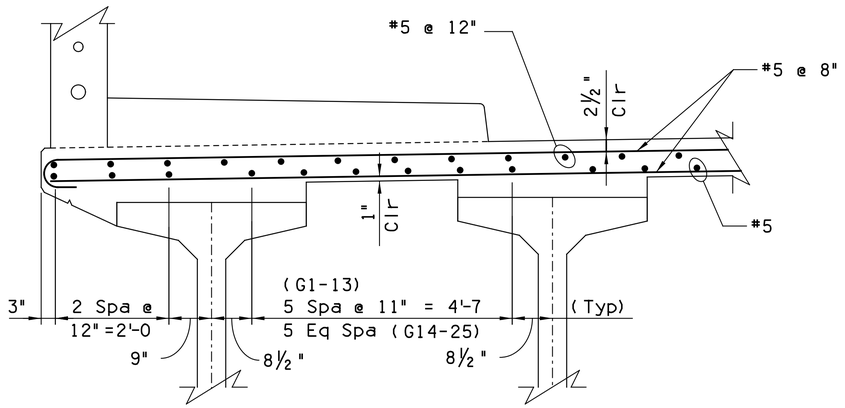
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	675	849	
		010 PM 252			



* Normal to edge of deck

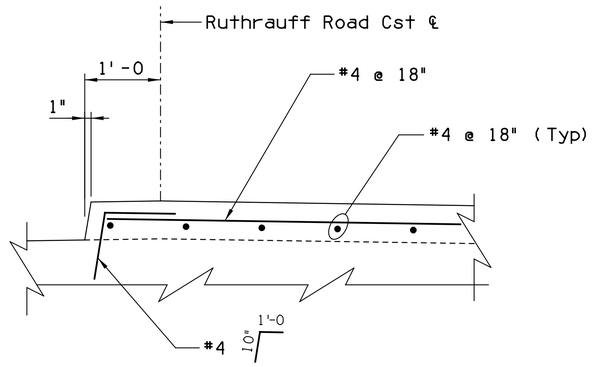
TYPICAL DECK SECTION

Scale: 3/16" = 1'-0



TYPICAL DECK REINFORCING

Scale: ¾" = 1'-0



PARTIAL MEDIAN REINFORCING

Scale: 1" = 1'-0

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
DECK SECTION & REINFORCING

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KOOI-LIM HOE — Registered Professional Engineer — Expires: 12/31/2019

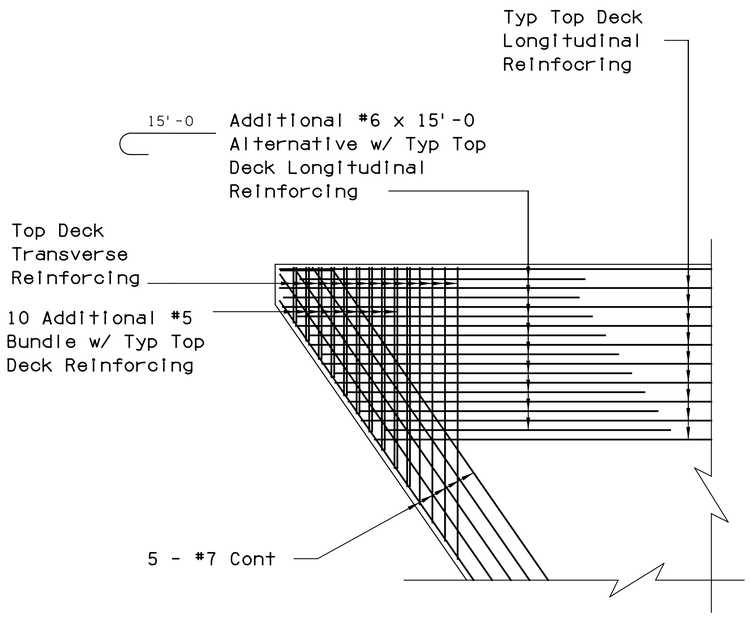
DWG. S-2 .20

___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.plt | Pentable: ...\TYLI_PLTDRV\pen\STDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

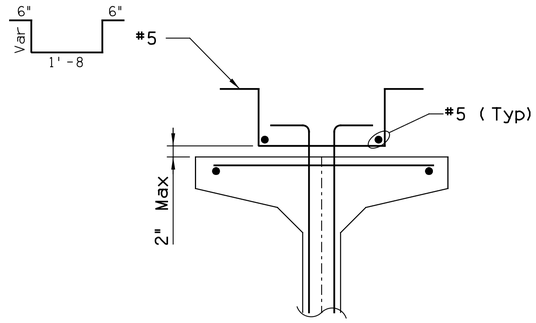
AZDOT_STR_TEMPE 10:03:47 AM 3/19/2019 c:\projectwise\pb\projectwiseint\anthony.macias\dms42601\20s20160dxs .dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	676	849	
		010 PM 252			

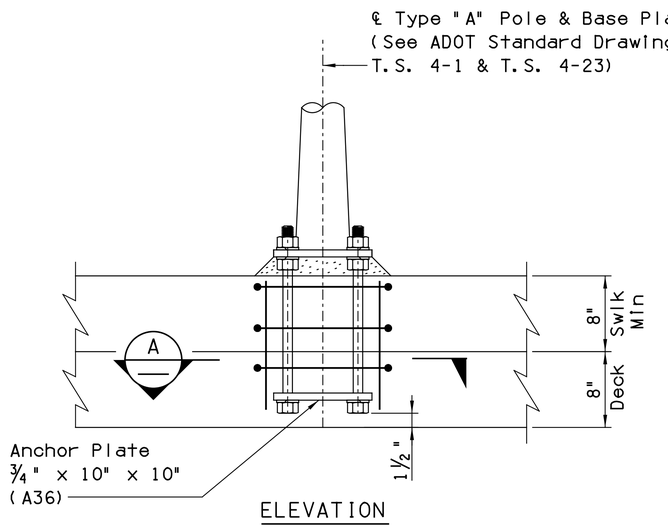


TYPICAL DECK CORNER REINFORCING DETAILS
Scale: 1/4" = 1'-0

Additional Stirrup Use
When Girder Stirrup
Is Embeded Less Than
2" Into Deck

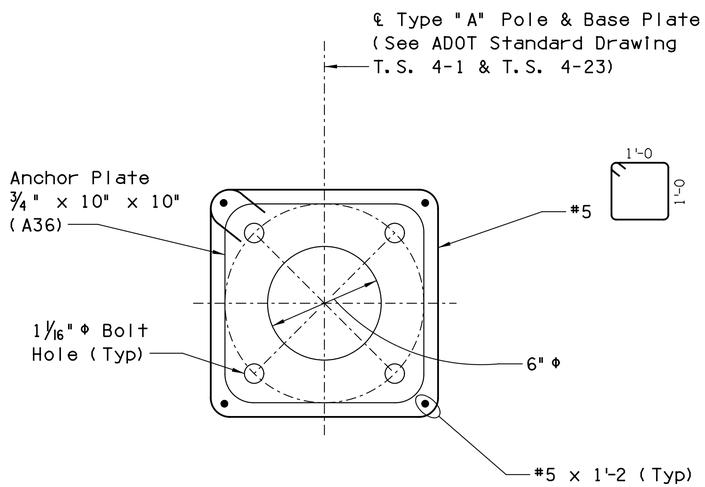


ADDITIONAL STIRRUP DETAILS
Scale: 1/16" = 1'-0



ELEVATION

DETAIL
Scale: 1 1/2" = 1'-0



SECTION A
Scale: 3" = 1'-0

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
DECK DETAILS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

Registered Professional Engineer
CERTIFICATE NO.
37060
KOOI-LIM
HOE
Date Signed 03/19/19
ARIZONA, U.S.A.
Expires: 12/31/2019

DWG. S-2 .21

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.plt | Pentable: ...\TYLI_PLTDRV\penSTDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

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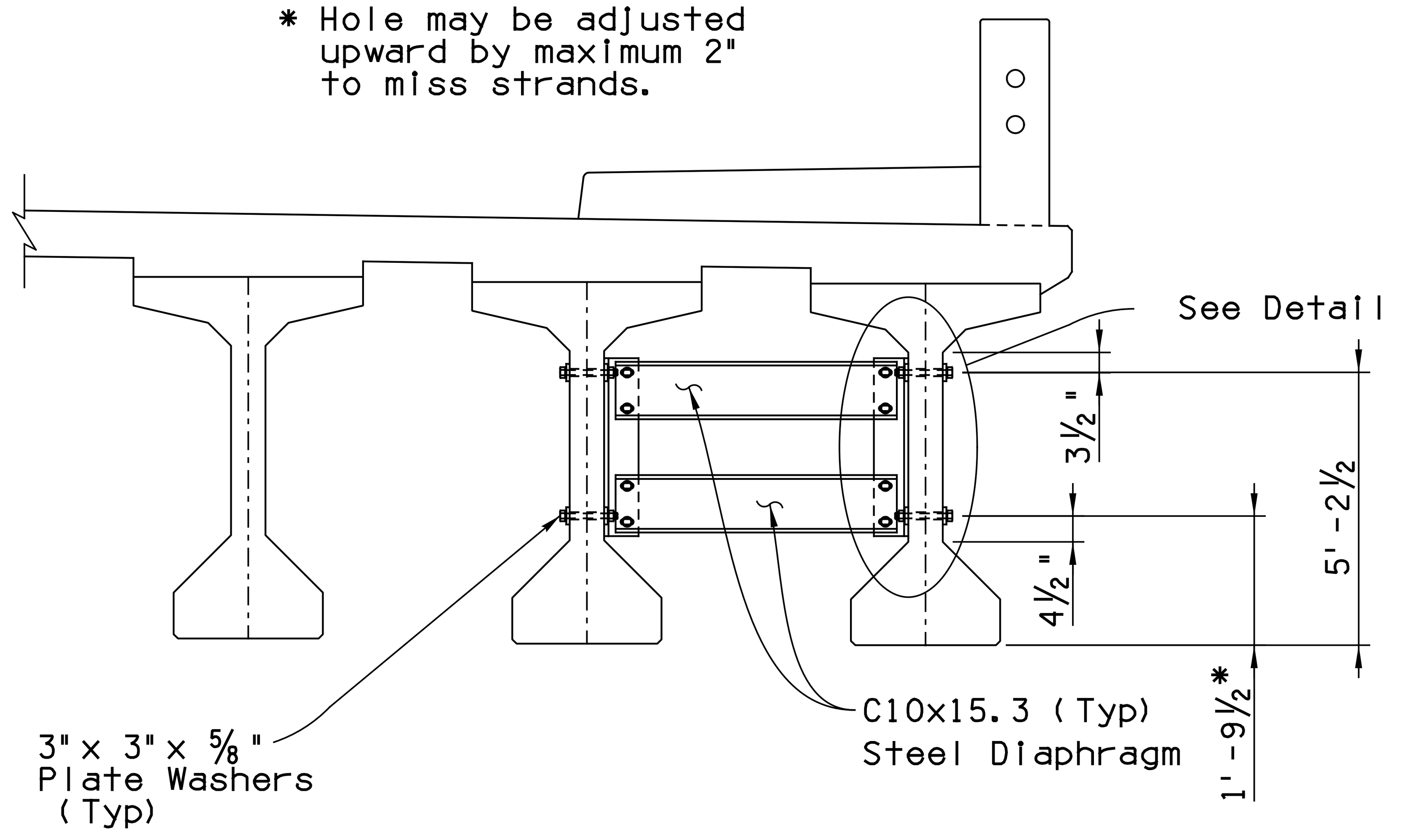
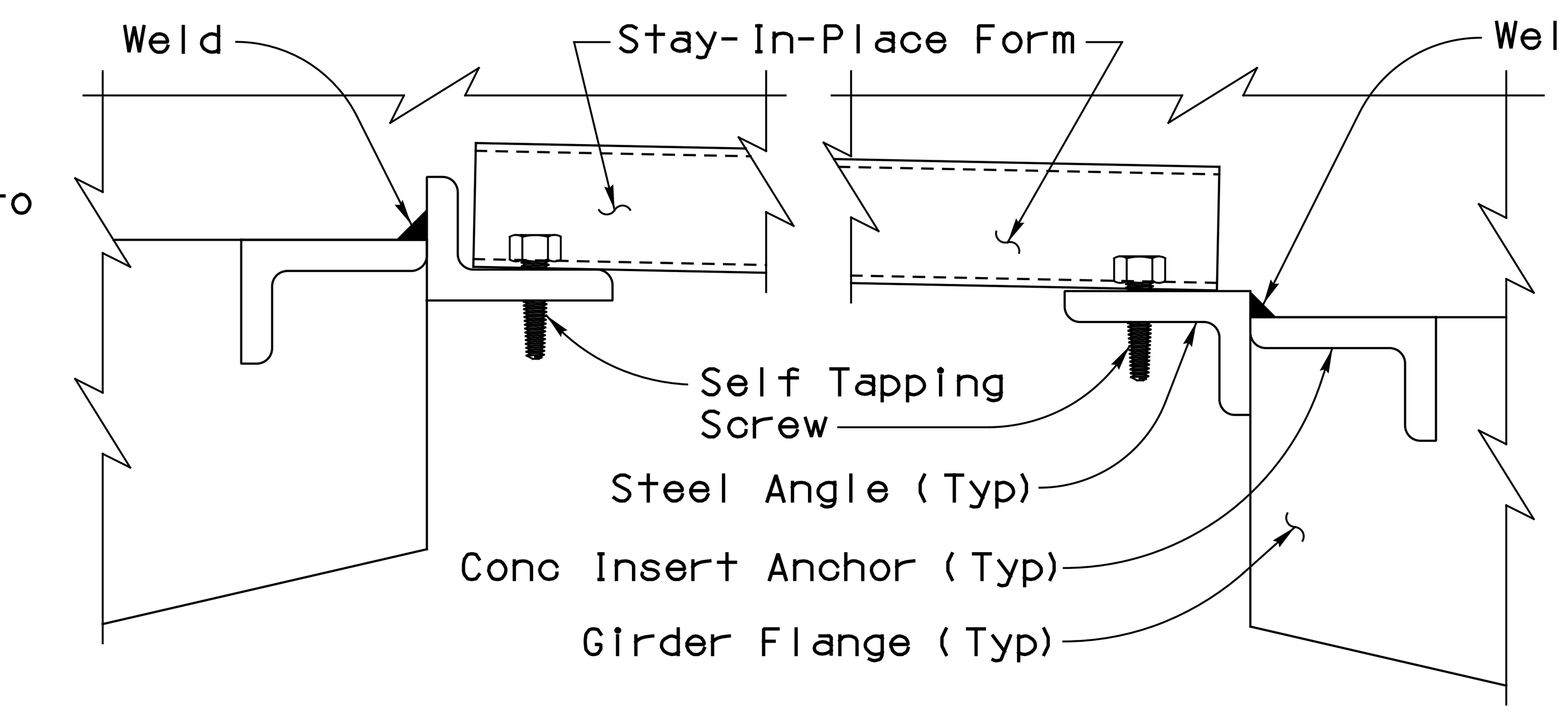


TYPICAL INTERMEDIATE DIAPHRAGM

Scale: ½"=1'-0

STEEL INTERMEDIATE DIAPHRAGM NOTES:

1. All structural steel shall be ASTM A36, galvanized as per ASTM A153, Class C.
2. All bolts are ⅞"dia. ASTM A325, Type 1. All bolts, nuts and washers shall be galvanized as per ASTM A153, Class C.
3. Bolt holes in the concrete girder webs shall be located to avoid prestressing strands.
4. The placement of deck concrete shall not proceed until all intermediate diaphragms have been properly installed.
5. Intermediate diaphragm should be bolted immediately after girder placement.
6. Bolt holes shall be cast-in-place and not drilled.



TYPICAL STAY-IN-PLACE DECK FORM DETAIL

Not To Scale

STAY-IN-PLACE DECK FORM NOTES:

The elevation at the top of the girders shall be measured after erection of the girders and prior to placement of the deck forms.

The concrete insert anchors may be cast with the girder to accommodate the use of stay-in-place forms. Alternate methods of support will be considered provided the detail is adequate to support the loads, prevent leakage and allow for the adjustment for the varying build-up to maintain a constant deck thickness.

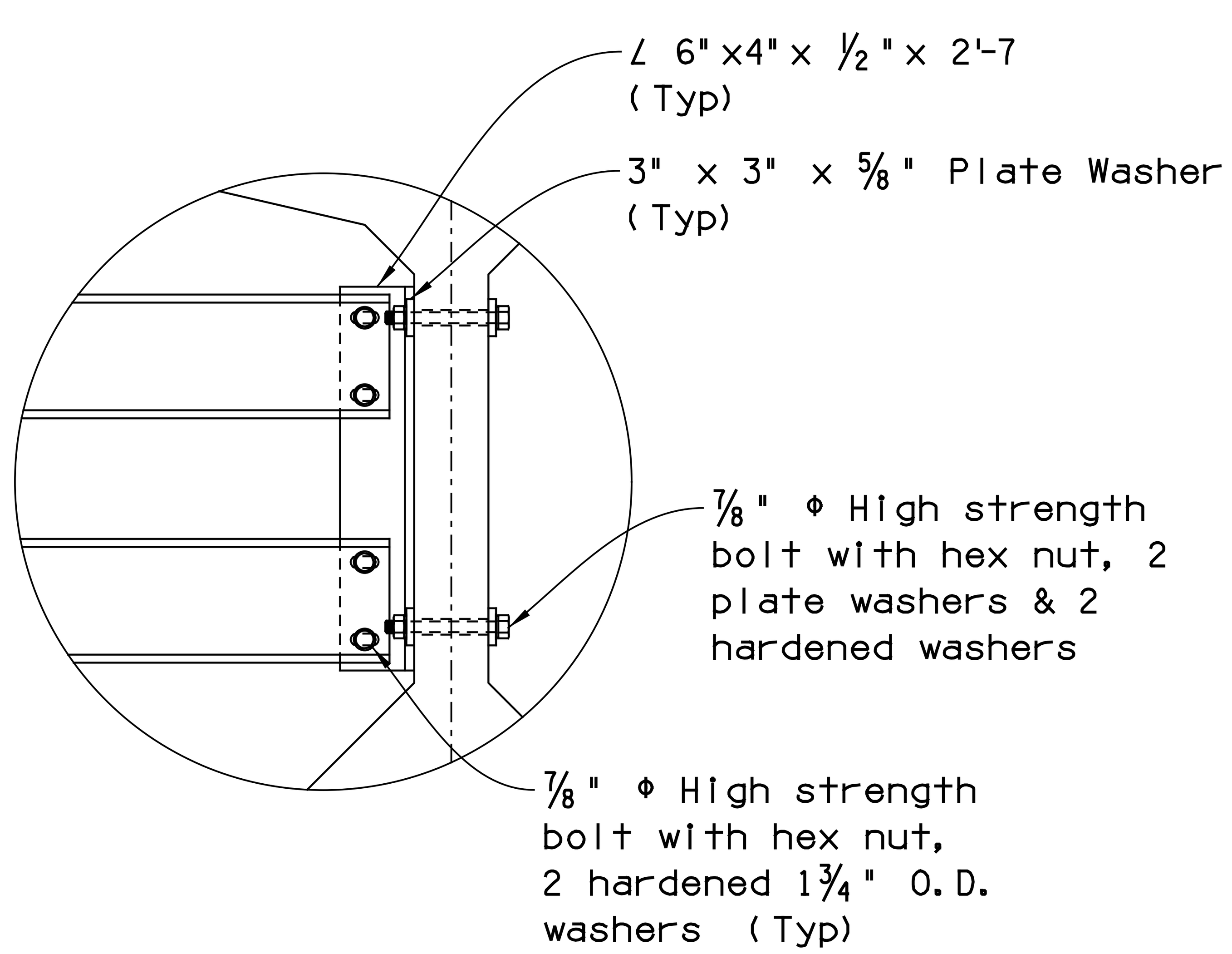
The deck panels, angles and screws shall be galvanized in accordance with the manufacturer's recommendations.

The Contractor shall submit drawings showing details of the stay-in-place deck forms including the method of installation and adjustment to the Bridge Engineer for approval. The deck form submittal must be made simultaneously with the precast girder shop drawings to ensure coordination between the girder fabrication and the stay-in-place forms design.

The Contractor shall determine the sizes of all welds, screws, angles, etc to support the required loads.

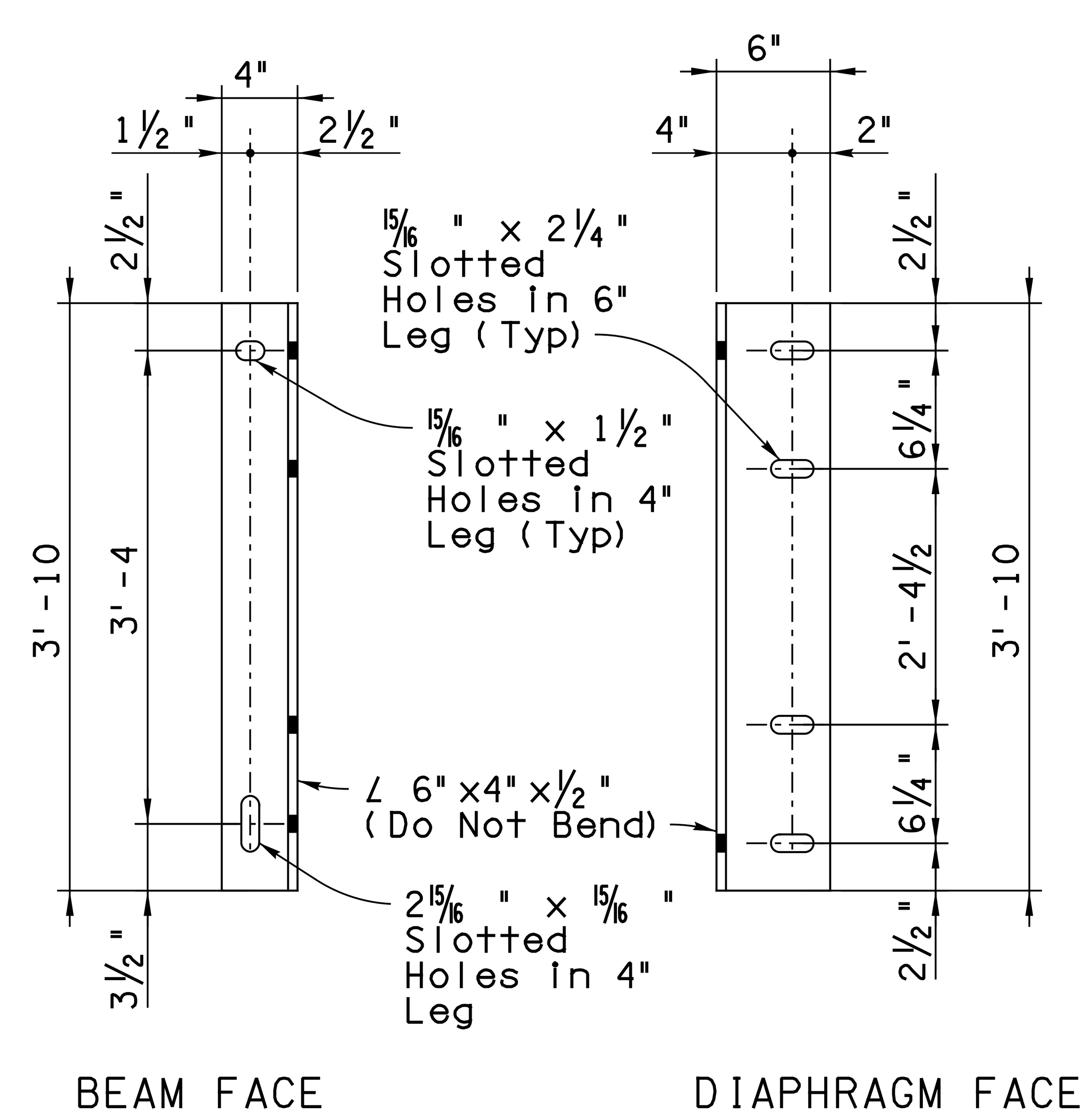
The cost of stay-in-place forms is included in the cost of deck concrete. The quantity of deck concrete includes the concrete in the stay-in-place deck forms.

The bridge has been designed for a maximum dead load of 15.0 psf for stay-in-place deck panels and extra concrete.



DETAIL 1

Scale: 1" = 1'-0



DIAPHRAGM SUPPORT DETAILS

Scale: 1½"=1'-0

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
SUPERSTRUCTURE DETAILS

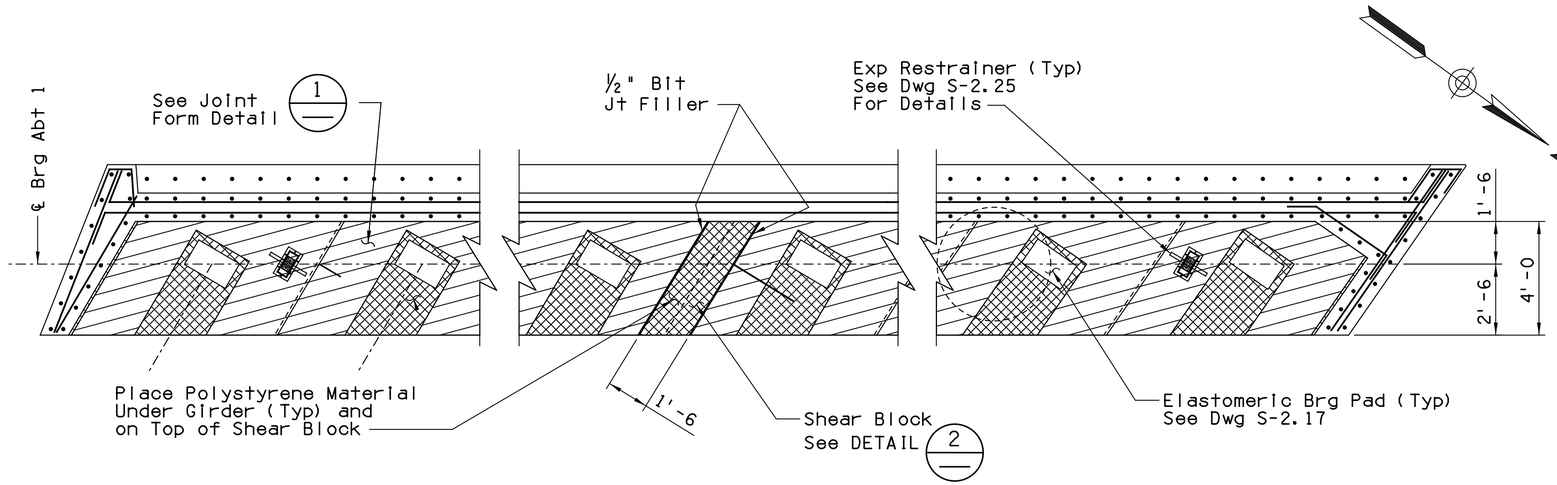
ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.000	20160	RUTHRAUFF TI

Registered Professional Engineer, Certificate No. 37060, KOOI-LIM HOE, Date Signed 03/08/19, Arizona, U.S.A. Expires: 12/31/2019

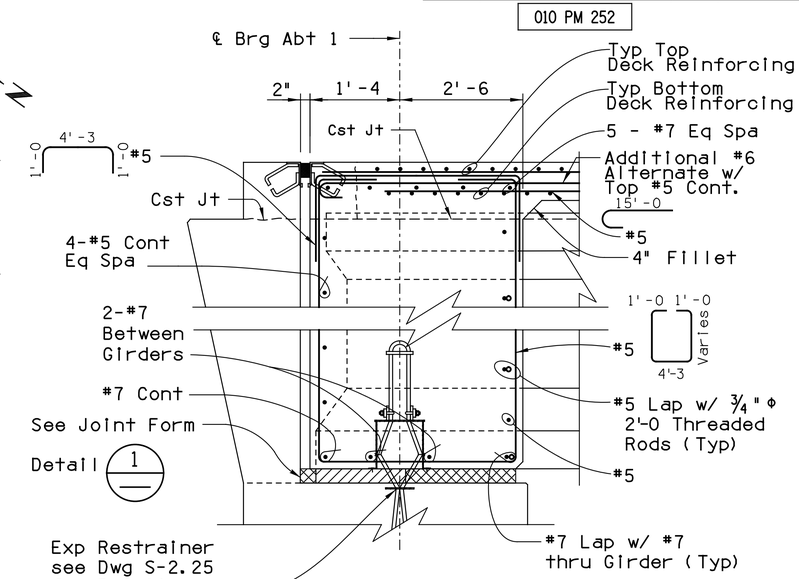
DWG. S-2 .22

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

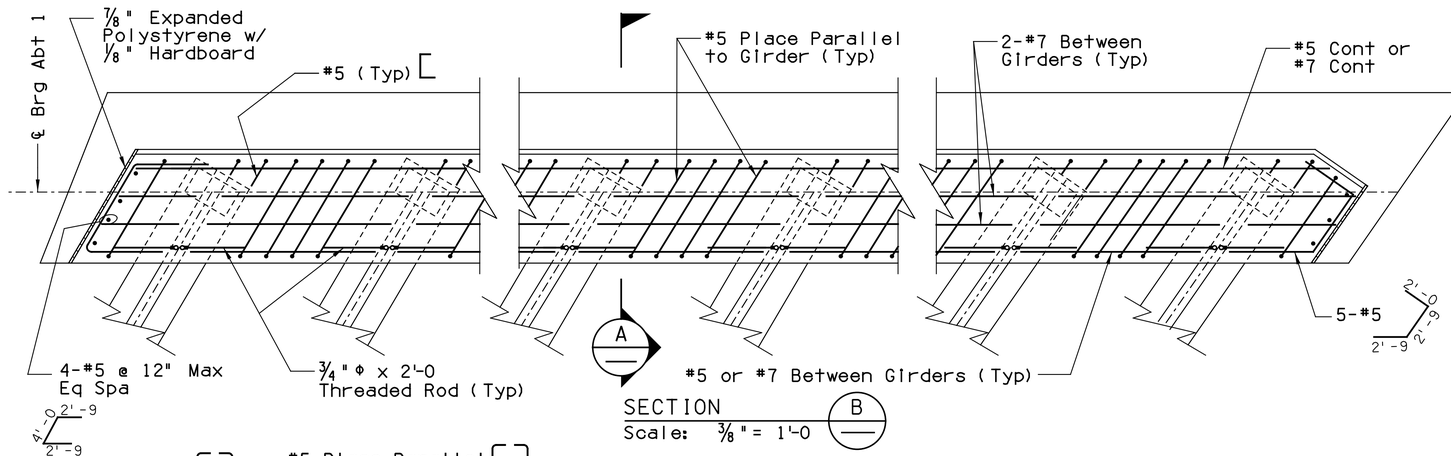
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	678	849	
		010 PM 252			



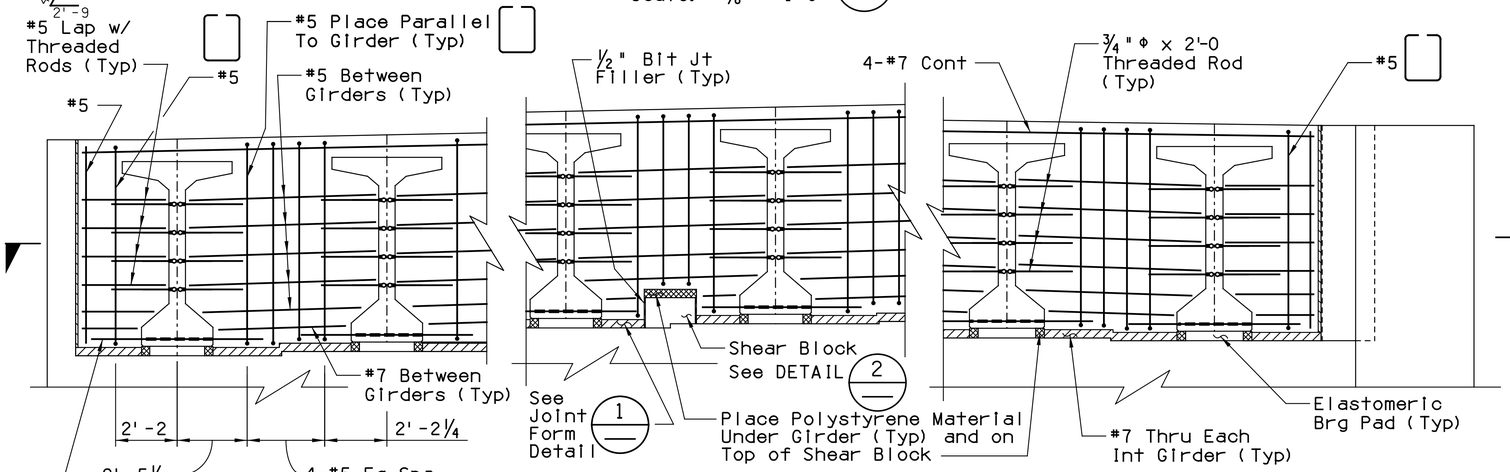
PARTIAL PLAN AT ABUTMENT 1
Scale: ⅜" = 1'-0



SECTION
Scale: ¾" = 1'-0 (A)

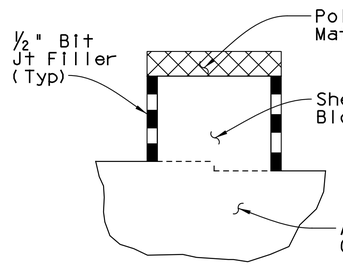


SECTION
Scale: ⅜" = 1'-0 (B)

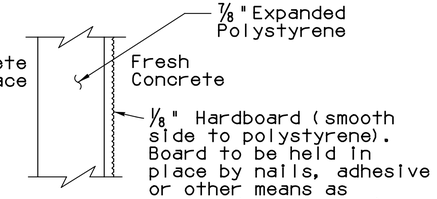


PARTIAL DIAPHRAGM ELEVATION AT ABUTMENT 1
Scale: ⅜" = 1'-0

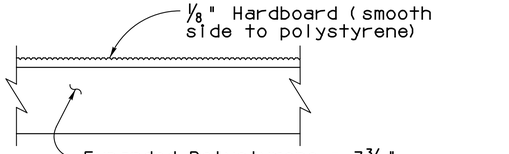
* Install Rebar Prior To Setting Girder Between Shear Keys



DETAIL
Not To Scale (2)



VERTICAL



HORIZONTAL

NOTE:
Hardboard to be used on any polystyrene face against which concrete is to be placed.

JOINT FORM DETAIL
Not To Scale (1)

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
ABUTMENT DIAPHRAGM DETAILS 1

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIM HOE — Registered Professional Engineer — Date Signed 03/08/19 — ARIZONA, U.S.A. — CERTIFICATE

Expires: 12/31/2019

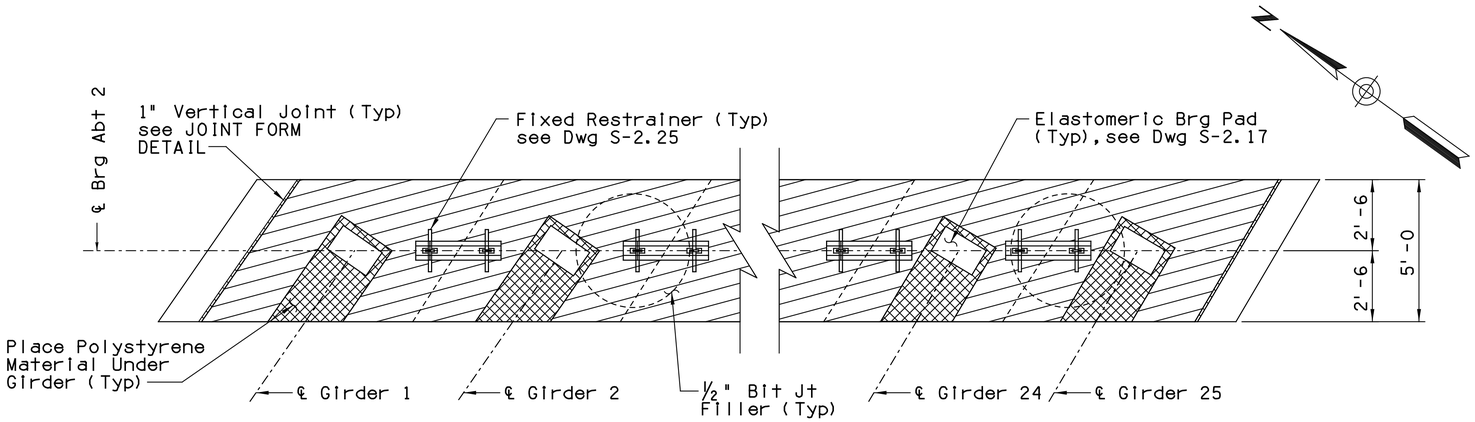
DWG. S-2 .23

___ OF ___

Plot Driver: ...\TYLI_PLTDRV\ADOT_PDF_FULL.pltPentable: ...\TYLI_PLTDRV\pen\STDPLOT.TBL
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE- | SURVEY NO.

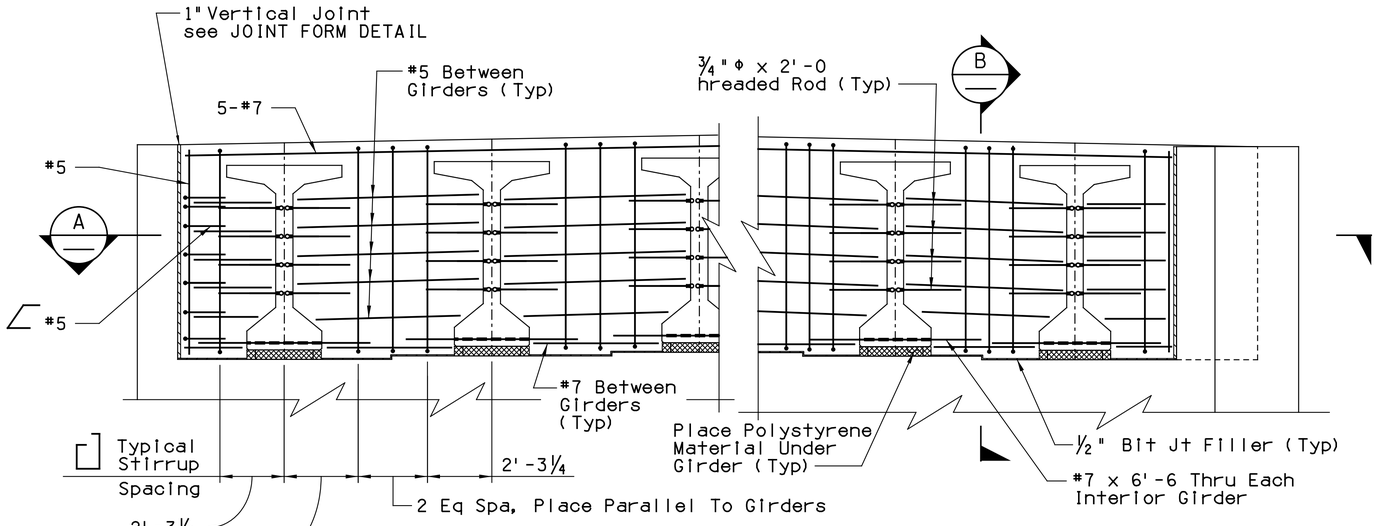
AZDOT_STR_TEMPE 10:05:54 AM 3/19/2019 c:\projectwise\pb\projectwiseint\anthony.macias\dms42601\23s20160af1.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	679	849	
		010 PM 252			



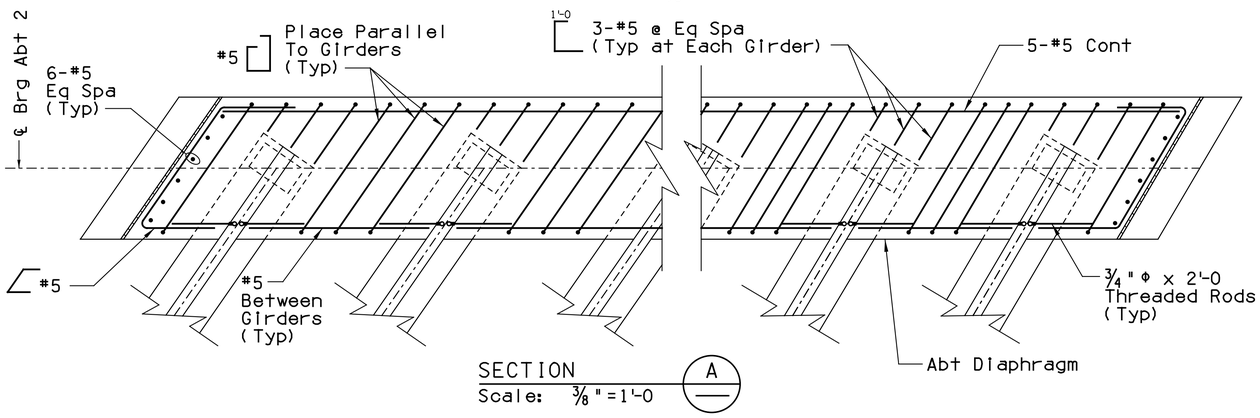
PARTIAL PLAN AT ABUTMENT 2

Scale: ⅜" = 1'-0



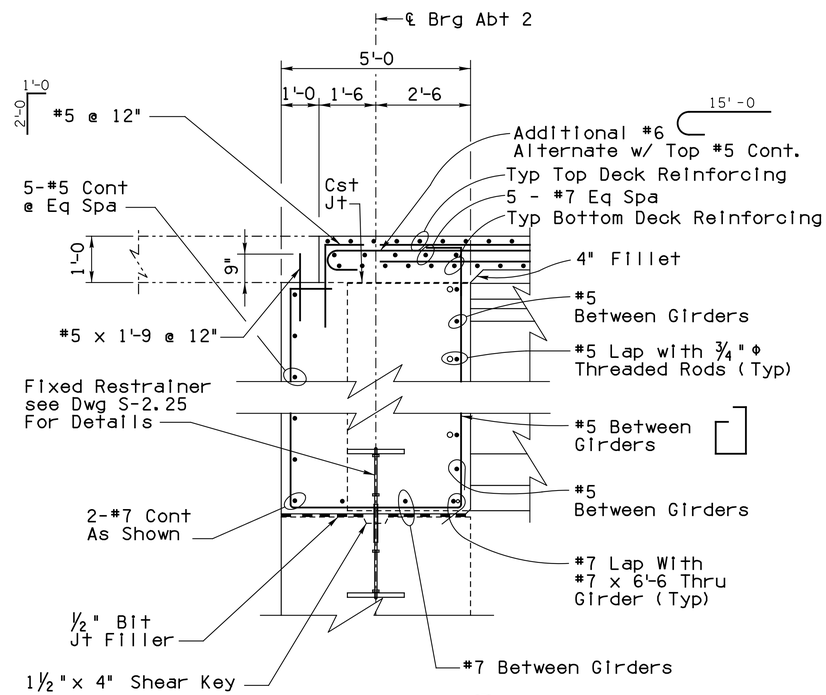
PARTIAL DIAPHRAGM ELEVATION AT ABUTMENT 2

Scale: ⅜" = 1'-0



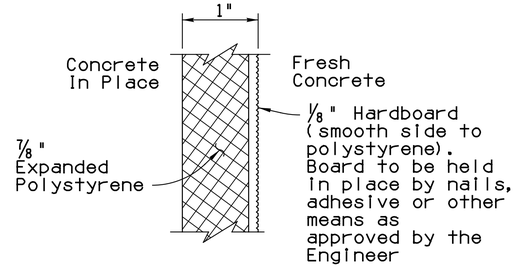
SECTION A

Scale: ⅜" = 1'-0



SECTION B

Scale: ½" = 1'-0



VERTICAL

NOTE:

Hardboard to be used on any polystyrene face against which concrete is to be placed.

JOINT FORM DETAIL

Not To Scale

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
ABUTMENT DIAPHRAGM DETAILS 2

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

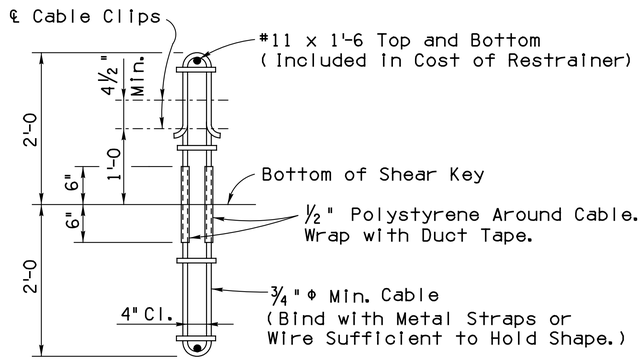
TRACS NO. H8480 01C | 010-D(213)S

37060 KODI-LIN HOE — Registered Professional Engineer — Date Signed 03/19/19 — ARIZONA, U.S.A. — Expires: 12/31/2019

DWG. S-2 .24

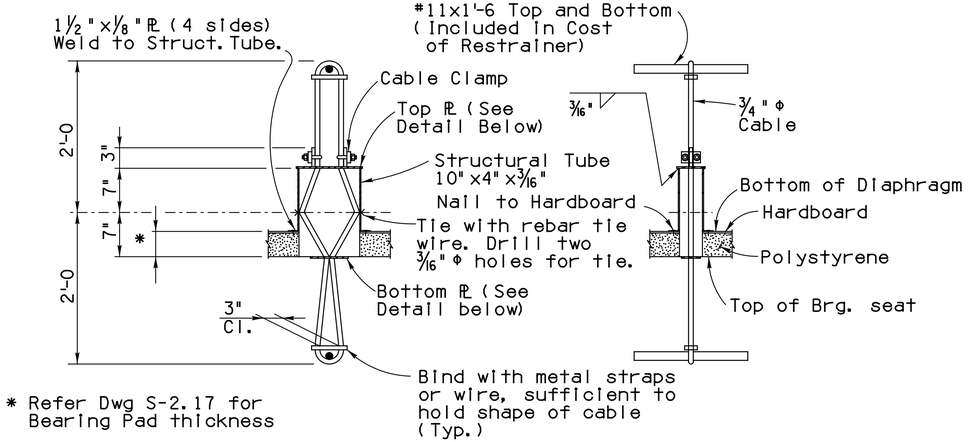
____ OF ____

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	680	849	
		010 PM 252			



FIXED RESTRAINER DETAIL

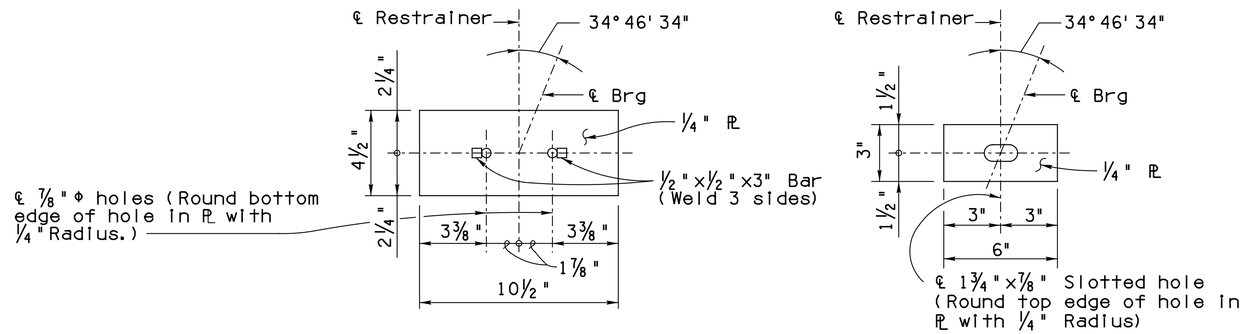
Not To Scale



* Refer Dwg S-2.17 for
Bearing Pad thickness

ELEVATION

SECTION

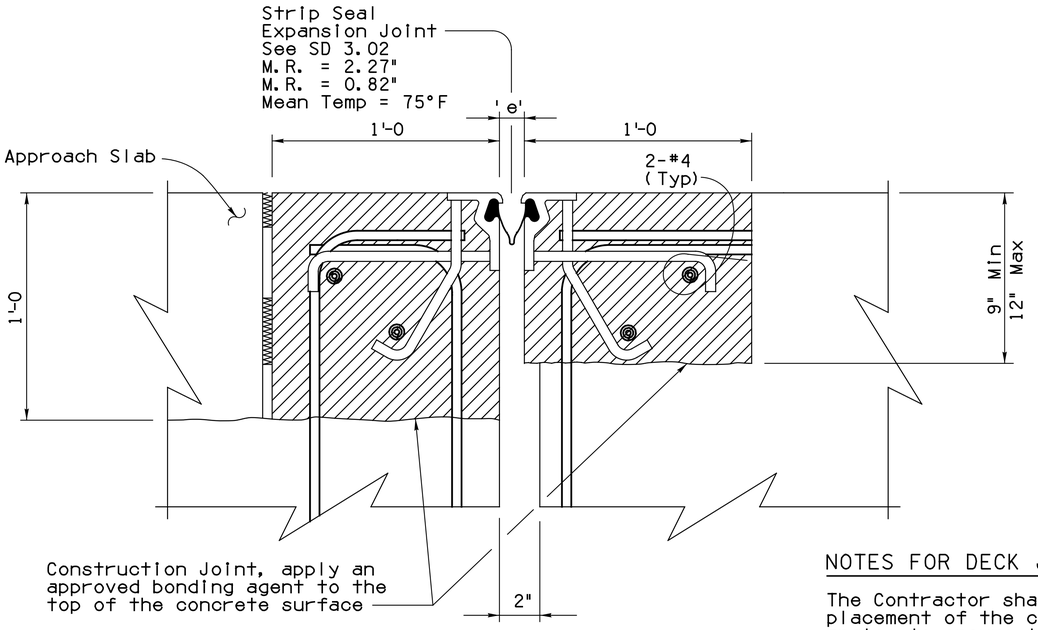


TOP PLATE

BOTTOM PLATE

EXPANSION RESTRAINER

Not To Scale



EXPANSION JOINT DETAIL

(Abt 1 Only)
Scale: 3" = 1'-0

TEMPERATURE CORRECTION TABLE	
	e' (In)
	Abt 1
105	2.23
95	2.32
85	2.41
75	2.50
65	2.59
55	2.68
45	2.77
35	2.86

NOTES FOR DECK JOINT DETAIL:

The Contractor shall take due care in the placement of the concrete under the joint angles to ensure that proper consolidation is achieved. After placement, the Engineer shall inspect the joint for voids by sounding the angles with a hammer. All voids shall be repaired by the Contractor by epoxy injection at no cost to the State.

NOTES:

Seal all openings in structural tube to prohibit concrete intrusion.

Restrainer Cables shall be ¾" Φ preformed 6x19 galvanized with the minimum breaking strength of 42 kips. One sample of cable 3 feet in length shall be furnished to the Engineer for testing.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
MISCELLANEOUS DETAILS 1

I-10	252.000	20160
ROUTE	MILEPOST	STRUCTURE NO.

LOCATION
RUTHRAUFF TI

37060
KODI-LIN
HOE
ARIZONA, U.S.A.
Date Signed 03/19/19
Expires: 12/31/2019

DWG. S-2 .25

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

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

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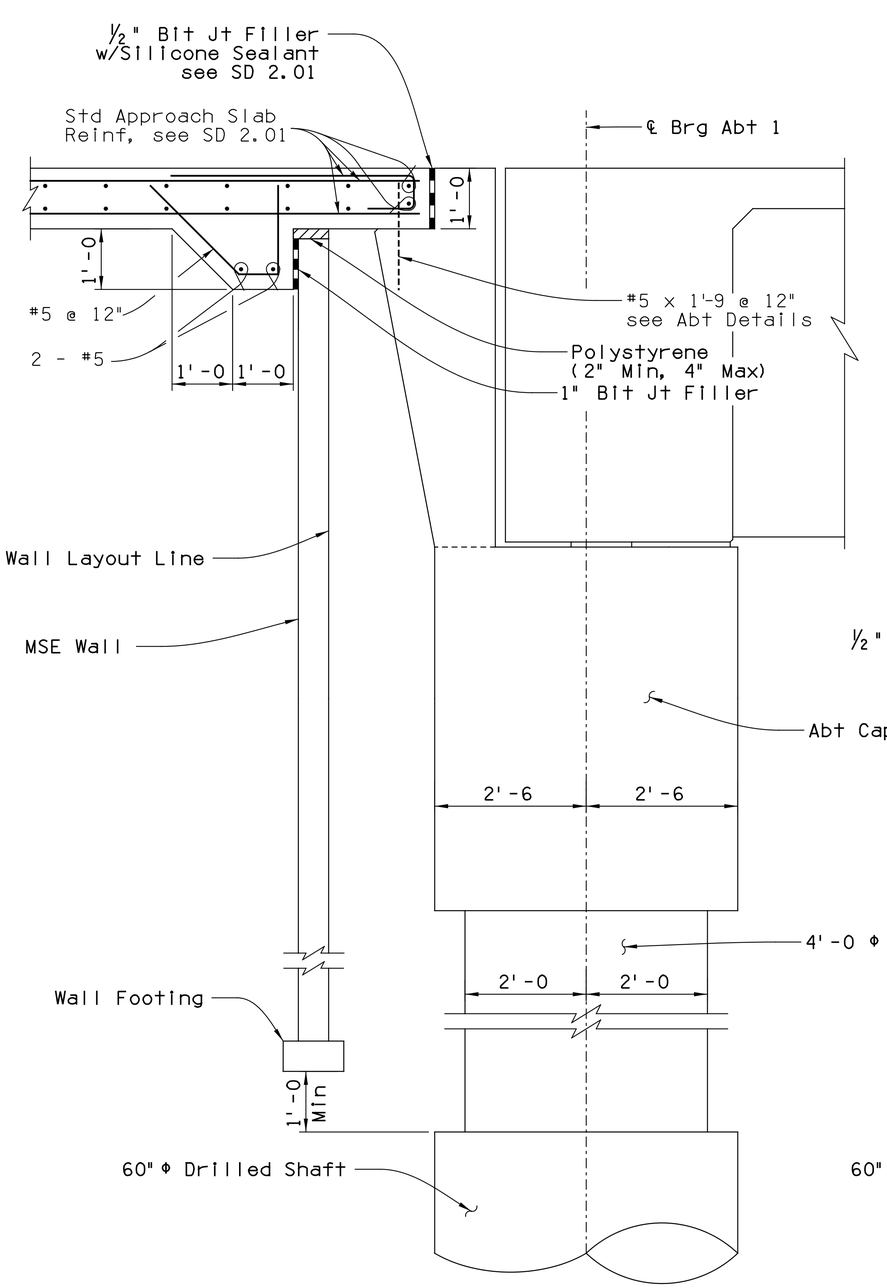
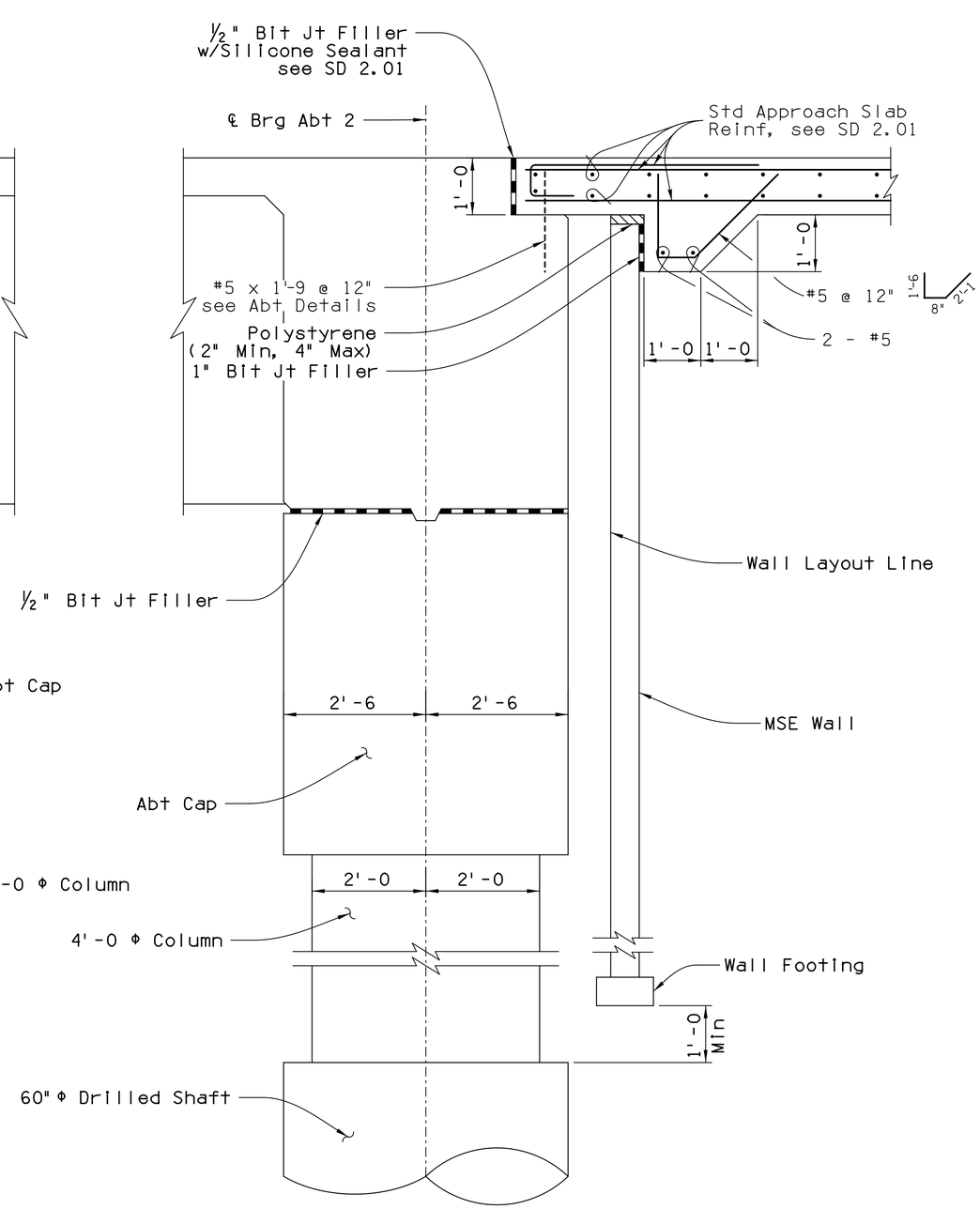
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	681	849	
		010 PM 252			



EXPANSION ABUTMENT 1

MSE WALL CONNECTION DETAIL

Scale: ¾" = 1'-0



PINNED ABUTMENT 2

MSE WALL CONNECTION DETAIL

Scale: ¾" = 1'-0

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
MISCELLANEOUS DETAILS 2

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

37060 KODI-LIN HOE — Registered Professional Engineer — Date Signed 01/08/19 — ARIZONA, U.S.A. — Expires: 12/31/2019

DWG. S-2 . 26

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

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

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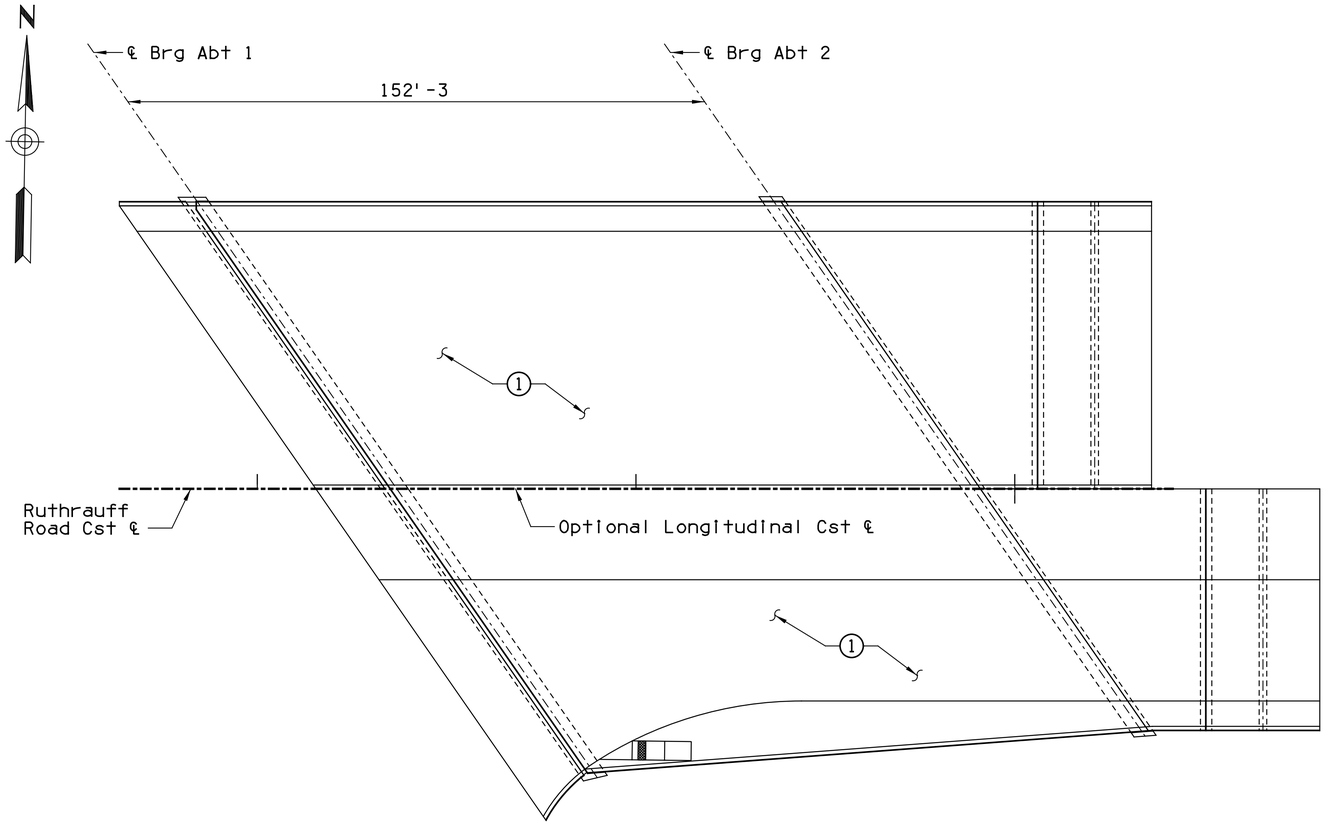
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	682	849	
		010 PM 252			

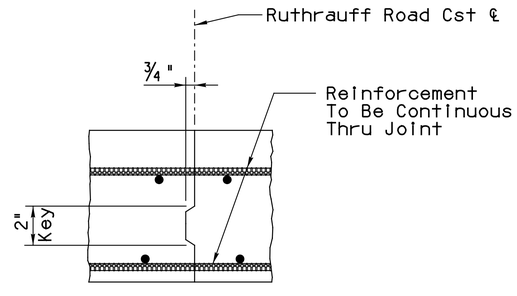


DECK POUR SEQUENCE PLAN

Scale: 1"=20'-0

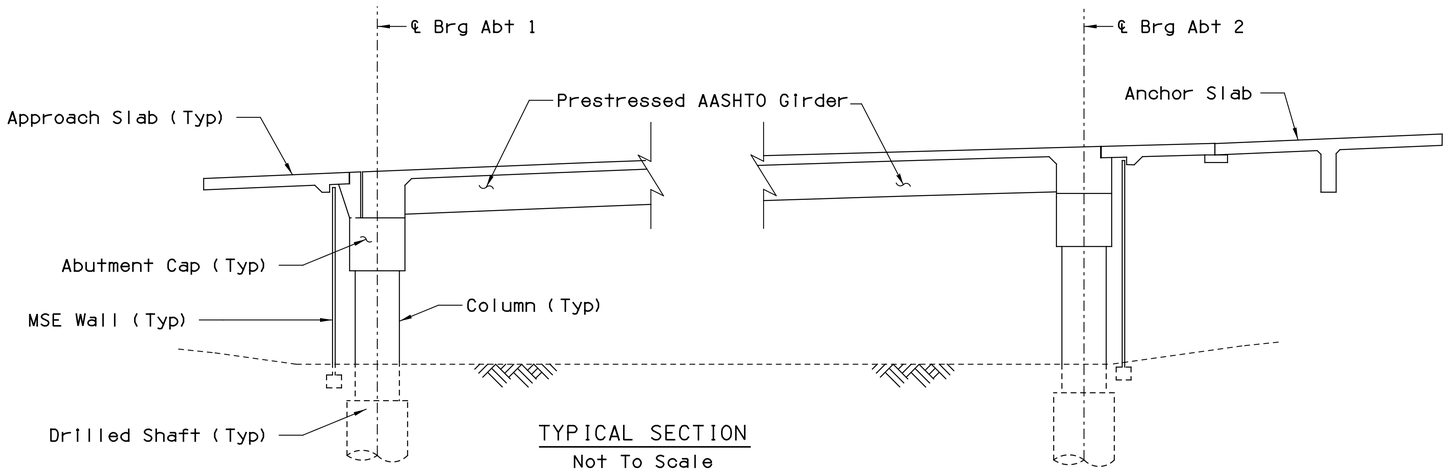
CONCRETE PLACEMENT NOTES:

1. Numbers ① indicate section and placing sequence of deck concrete.
2. Steel Intermediate diaphragms shall be erected and abutment diaphragms shall be placed prior to the deck pour.
3. An optional longitudinal construction joint may be located at the Cst ℄.
4. The contractor shall submit a Deck Pour Schedule to the Engineer for approval prior to placing concrete.



KEYED CONSTRUCTION JOINT DETAIL

Not To Scale



TYPICAL SECTION

Not To Scale

CONSTRUCTION SEQUENCE:

1. Construct drilled shafts.
2. Construct columns and caps.
3. Erect girders, construct diaphragms and pour deck.
4. Pour approach slab and anchor slab.
5. Construct sidewalks and barriers.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
CONSTRUCTION SEQUENCE

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer
37060
KOOI-LIM HOE
ARIZONA, U.S.A.
Date Signed 01/08/19
Expires: 12/31/2019

DWG. S-2 .27

___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	683	849	

010 PM 252

CAMBER DEFLECTIONS G1-G14

Deflection (Ft) at Tenth Points

	℄ Brg	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ Brg
Release	0.000	0.094	0.167	0.220	0.253	0.264	0.253	0.220	0.167	0.094	0.000
Initial	0.000	0.154	0.272	0.359	0.413	0.430	0.413	0.359	0.272	0.154	0.000
Final G1-G12	0.000	0.158	0.302	0.415	0.487	0.515	0.487	0.415	0.302	0.158	0.000
Final G13	0.000	0.155	0.295	0.405	0.476	0.502	0.475	0.405	0.294	0.154	0.000
Final G14	0.000	0.149	0.285	0.392	0.459	0.485	0.459	0.390	0.284	0.148	0.000

CAMBER DEFLECTIONS G15-G20

Deflection (Ft) at Tenth Points

	℄ Brg	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ Brg
Release	0.000	0.089	0.159	0.210	0.242	0.252	0.242	0.210	0.159	0.089	0.000
Initial	0.000	0.146	0.259	0.342	0.393	0.410	0.393	0.342	0.259	0.146	0.000
Final G15	0.000	0.154	0.294	0.404	0.473	0.500	0.473	0.402	0.293	0.153	0.000
Final G16	0.000	0.148	0.281	0.386	0.452	0.477	0.451	0.384	0.279	0.146	0.000
Final G17	0.000	0.141	0.268	0.368	0.431	0.455	0.430	0.366	0.266	0.139	0.000
Final G18	0.000	0.134	0.255	0.350	0.410	0.433	0.409	0.348	0.253	0.132	0.000
Final G19	0.000	0.127	0.242	0.332	0.389	0.411	0.388	0.330	0.240	0.125	0.000
Final G20	0.000	0.120	0.229	0.314	0.368	0.388	0.367	0.312	0.227	0.119	0.000

CAMBER DEFLECTIONS G21-G24

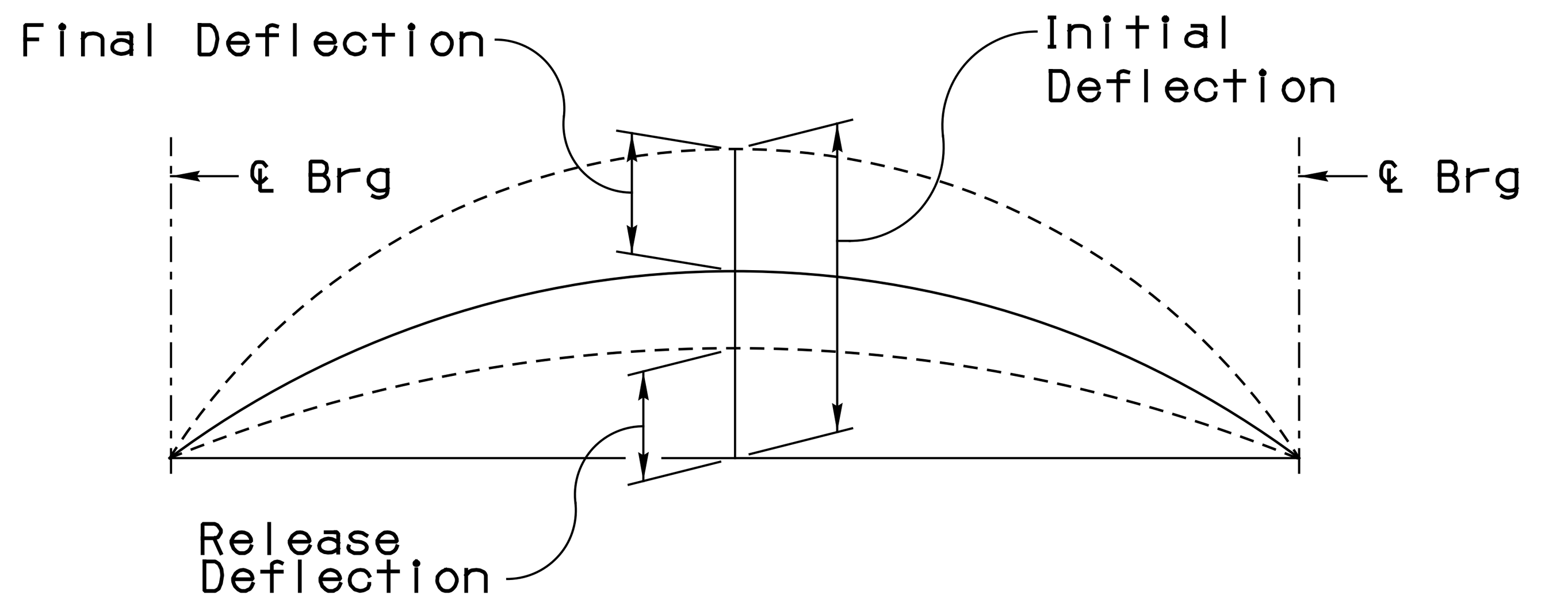
Deflection (Ft) at Tenth Points

	℄ Brg	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ Brg
Release	0.000	0.083	0.149	0.197	0.228	0.237	0.228	0.197	0.149	0.083	0.000
Initial	0.000	0.136	0.242	0.321	0.370	0.386	0.370	0.321	0.242	0.136	0.000
Final G21	0.000	0.125	0.238	0.326	0.382	0.403	0.381	0.324	0.236	0.124	0.000
Final G22	0.000	0.123	0.234	0.321	0.376	0.397	0.375	0.319	0.232	0.122	0.000
Final G23	0.000	0.121	0.230	0.316	0.370	0.390	0.369	0.314	0.229	0.120	0.000
Final G24	0.000	0.119	0.227	0.311	0.364	0.384	0.363	0.309	0.225	0.118	0.000

CAMBER DEFLECTIONS G25

Deflection (Ft) at Tenth Points

	℄ Brg	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ Brg
Release	0.000	0.083	0.149	0.197	0.228	0.238	0.228	0.197	0.149	0.083	0.000
Initial	0.000	0.136	0.243	0.322	0.371	0.387	0.371	0.322	0.243	0.136	0.000
Final G25	0.000	0.149	0.284	0.390	0.456	0.482	0.456	0.389	0.283	0.149	0.000



DEFLECTION DIAGRAM

Not To Scale

DEFLECTION NOTES:

1. Release Deflection equals the deflection that the prestressed girder undergoes at the time of strand release. The Release Deflection includes the dead load of the girder and the release prestressing force (including the effects of elastic shortening).
2. Initial Deflection equals the deflection the prestressed girder undergoes at the time of erection prior to the diaphragm and deck pours. The Initial Deflection includes the deflection due to the dead load of the girder, the initial prestressing and the effects of creep up to the time of erection (assumed at 60 days after release).
3. Final Deflection equals the deflection due to the dead load of the deck slab, diaphragms, parapets, sidewalks, and medians, and the effects of long term creep on the composite girders.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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Tempe, Arizona 85281

I-10	252.000	20160
ROUTE	MILEPOST	STRUCTURE NO.

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
CAMBER DETAILS

LOCATION RUTHRAUFF TI

37060 KOOI-LIM HOE — Expires: 12/31/2019

DWG. S-2 .28

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	684	849	
		010 PM 252			

	BRIDGE SCREED ELEVATIONS - G1-13										
Location	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Lt Edge Deck	2282.25	2282.60	2282.91	2283.17	2283.37	2283.49	2283.54	2283.52	2283.44	2283.30	2283.12
Girder 1	2282.32	2282.67	2282.98	2283.24	2283.43	2283.55	2283.59	2283.57	2283.48	2283.34	2283.16
Girder 2	2282.47	2282.81	2283.11	2283.36	2283.54	2283.66	2283.70	2283.67	2283.58	2283.43	2283.25
Girder 3	2282.61	2282.94	2283.24	2283.48	2283.66	2283.77	2283.80	2283.77	2283.67	2283.51	2283.32
Girder 4	2282.75	2283.08	2283.37	2283.60	2283.78	2283.88	2283.91	2283.86	2283.76	2283.60	2283.40
Girder 5	2282.89	2283.21	2283.49	2283.72	2283.89	2283.99	2284.01	2283.96	2283.85	2283.68	2283.48
Girder 6	2283.03	2283.34	2283.62	2283.84	2284.00	2284.09	2284.11	2284.05	2283.93	2283.76	2283.55
Girder 7	2283.16	2283.47	2283.74	2283.96	2284.11	2284.20	2284.20	2284.14	2284.02	2283.84	2283.62
Girder 8	2283.30	2283.60	2283.86	2284.07	2284.22	2284.30	2284.30	2284.23	2284.10	2283.91	2283.69
Girder 9	2283.43	2283.69	2283.95	2284.16	2284.31	2284.39	2284.39	2284.32	2284.19	2284.00	2283.76
Girder 10	2283.56	2283.78	2284.04	2284.25	2284.40	2284.48	2284.48	2284.41	2284.28	2284.09	2283.83
Girder 11	2283.69	2283.83	2284.10	2284.32	2284.47	2284.56	2284.56	2284.50	2284.38	2284.20	2283.89
Girder 12	2283.81	2283.96	2284.22	2284.43	2284.58	2284.66	2284.66	2284.59	2284.46	2284.27	2283.95
Girder 13	2283.94	2284.04	2284.30	2284.51	2284.66	2284.74	2284.74	2284.67	2284.54	2284.36	2284.02
Cst CL	2283.95	2284.22	2284.45	2284.62	2284.74	2284.78	2284.75	2284.65	2284.49	2284.28	2284.02

	BRIDGE SCREED ELEVATIONS - G14-25										
Location	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Cst CL	2283.95	2284.22	2284.45	2284.62	2284.74	2284.78	2284.75	2284.65	2284.49	2284.28	2284.02
Girder 14	2283.90	2284.16	2284.38	2284.55	2284.65	2284.69	2284.66	2284.56	2284.40	2284.19	2283.94
Girder 15	2283.85	2284.10	2284.32	2284.48	2284.59	2284.62	2284.58	2284.48	2284.31	2284.09	2283.83
Girder 16	2283.78	2284.03	2284.23	2284.39	2284.48	2284.52	2284.47	2284.36	2284.20	2283.98	2283.73
Girder 17	2283.72	2283.95	2284.15	2284.29	2284.38	2284.41	2284.36	2284.25	2284.08	2283.87	2283.62
Girder 18	2283.66	2283.87	2284.06	2284.20	2284.27	2284.29	2284.24	2284.13	2283.97	2283.76	2283.51
Girder 19	2283.59	2283.80	2283.97	2284.10	2284.17	2284.18	2284.13	2284.02	2283.85	2283.64	2283.40
Girder 20	2283.52	2283.72	2283.88	2283.99	2284.06	2284.07	2284.01	2283.90	2283.74	2283.53	2283.29
Girder 21	2283.45	2283.65	2283.81	2283.92	2283.98	2283.99	2283.93	2283.81	2283.64	2283.42	2283.18
Girder 22	2283.38	2283.55	2283.71	2283.83	2283.89	2283.90	2283.84	2283.72	2283.56	2283.34	2283.06
Girder 23	2283.30	2283.46	2283.62	2283.74	2283.80	2283.81	2283.75	2283.64	2283.47	2283.26	2282.95
Girder 24	2283.23	2283.36	2283.52	2283.64	2283.71	2283.72	2283.67	2283.57	2283.41	2283.21	2282.83
Girder 25	2283.15	2283.31	2283.50	2283.64	2283.71	2283.73	2283.67	2283.55	2283.37	2283.13	2282.71
Rt Edge Deck	2283.11	2283.31	2283.47	2283.58	2283.63	2283.62	2283.54	2283.39	2283.19	2282.94	2282.65

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
SCREED ELEVATIONS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

Registered Professional Engineer — CERTIFICATE NO. 37060 — KOOI-LIM HOE — Date Signed 03/19/19 — ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .29

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

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SCREED RAIL ELEVATIONS - LEFT DECK

Location	Elevation
0.0	2282.25
2.50	2282.31
5.00	2282.37
7.50	2282.43
10.00	2282.49
12.50	2282.54
15.00	2282.60
17.50	2282.65
20.00	2282.70
22.50	2282.76
25.00	2282.81
27.50	2282.86
30.00	2282.91
32.50	2282.95
35.00	2283.00
37.50	2283.04
40.00	2283.08
42.50	2283.12
45.00	2283.16
47.50	2283.20
50.00	2283.23
52.50	2283.27
55.00	2283.30
57.50	2283.33
60.00	2283.36
62.50	2283.38
65.00	2283.41
67.50	2283.43
70.00	2283.45
72.50	2283.47
75.00	2283.49
77.50	2283.50
80.00	2283.51
82.50	2283.52
85.00	2283.53
87.50	2283.54
90.00	2283.54
92.50	2283.54
95.00	2283.54
97.50	2283.54
100.00	2283.54
102.50	2283.53
105.00	2283.53
107.50	2283.52
110.00	2283.51
112.50	2283.50
115.00	2283.48
117.50	2283.47
120.00	2283.45
122.50	2283.43
125.00	2283.41
127.50	2283.39
130.00	2283.37

SCREED RAIL ELEVATIONS - LEFT DECK (CONT.)

Location	Elevation
132.50	2283.34
135.00	2283.32
137.50	2283.29
140.00	2283.27
142.50	2283.24
145.00	2283.21
147.50	2283.18
150.00	2283.15
152.25	2283.12

SCREED RAIL ELEVATIONS - CONST. CL

Location	Elevation
0.0	2283.95
2.50	2284.00
5.00	2284.05
7.50	2284.09
10.00	2284.13
12.50	2284.18
15.00	2284.22
17.50	2284.26
20.00	2284.30
22.50	2284.34
25.00	2284.38
27.50	2284.41
30.00	2284.45
32.50	2284.48
35.00	2284.52
37.50	2284.55
40.00	2284.57
42.50	2284.60
45.00	2284.63
47.50	2284.65
50.00	2284.67
52.50	2284.69
55.00	2284.71
57.50	2284.73
60.00	2284.74
62.50	2284.76
65.00	2284.77
67.50	2284.78
70.00	2284.78
72.50	2284.79
75.00	2284.79
77.50	2284.79
80.00	2284.79
82.50	2284.79
85.00	2284.78
87.50	2284.78
90.00	2284.77
92.50	2284.76
95.00	2284.74
97.50	2284.73
100.00	2284.71
102.50	2284.69
105.00	2284.67
107.50	2284.65
110.00	2284.63
112.50	2284.60
115.00	2284.58
117.50	2284.55
120.00	2284.52
122.50	2284.49
125.00	2284.46
127.50	2284.42
130.00	2284.39

SCREED RAIL ELEVATIONS - CONST. CL (CONT.)

Location	Elevation
132.50	2284.35
135.00	2284.31
137.50	2284.27
140.00	2284.23
142.50	2284.19
145.00	2284.15
147.50	2284.11
150.00	2284.06
152.25	2284.02

SCREED RAIL ELEVATIONS - RIGHT DECK

Location	Elevation
0.0	2283.11
2.50	2283.15
5.00	2283.19
7.50	2283.22
10.00	2283.25
12.50	2283.29
15.00	2283.32
17.50	2283.35
20.00	2283.38
22.50	2283.40
25.00	2283.43
27.50	2283.46
30.00	2283.48
32.50	2283.50
35.00	2283.52
37.50	2283.54
40.00	2283.56
42.50	2283.58
45.00	2283.59
47.50	2283.60
50.00	2283.61
52.50	2283.62
55.00	2283.63
57.50	2283.63
60.00	2283.64
62.50	2283.64
65.00	2283.64
67.50	2283.64
70.00	2283.63
72.50	2283.62
75.00	2283.61
77.50	2283.60
80.00	2283.59
82.50	2283.57
85.00	2283.56
87.50	2283.54
90.00	2283.52
92.50	2283.49
95.00	2283.47
97.50	2283.44
100.00	2283.41
102.50	2283.38
105.00	2283.35
107.50	2283.32
110.00	2283.28
112.50	2283.25
115.00	2283.21
117.50	2283.17
120.00	2283.13
122.50	2283.08
125.00	2283.04
127.50	2282.99
130.00	2282.95

SCREED RAIL ELEVATIONS - RIGHT DECK (CONT.)

Location	Elevation
132.50	2282.90
135.00	2282.85
137.50	2282.80
140.00	2282.75
142.50	2282.70
145.00	2282.65
145.11	2282.65

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	685	849	
		010 PM 252			

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

T.Y. LIN INTERNATIONAL
engineers | planners | scientists
60 E. Rio Salado Parkway, Suite 501
Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
SCREED RAIL ELEVATIONS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF TI

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

37060 KODI-L LIN HOE — Registered Professional Engineer — Date Signed 03/08/19 — ARIZONA, U.S.A.

Expires: 12/31/2019

DWG. S-2 .30

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

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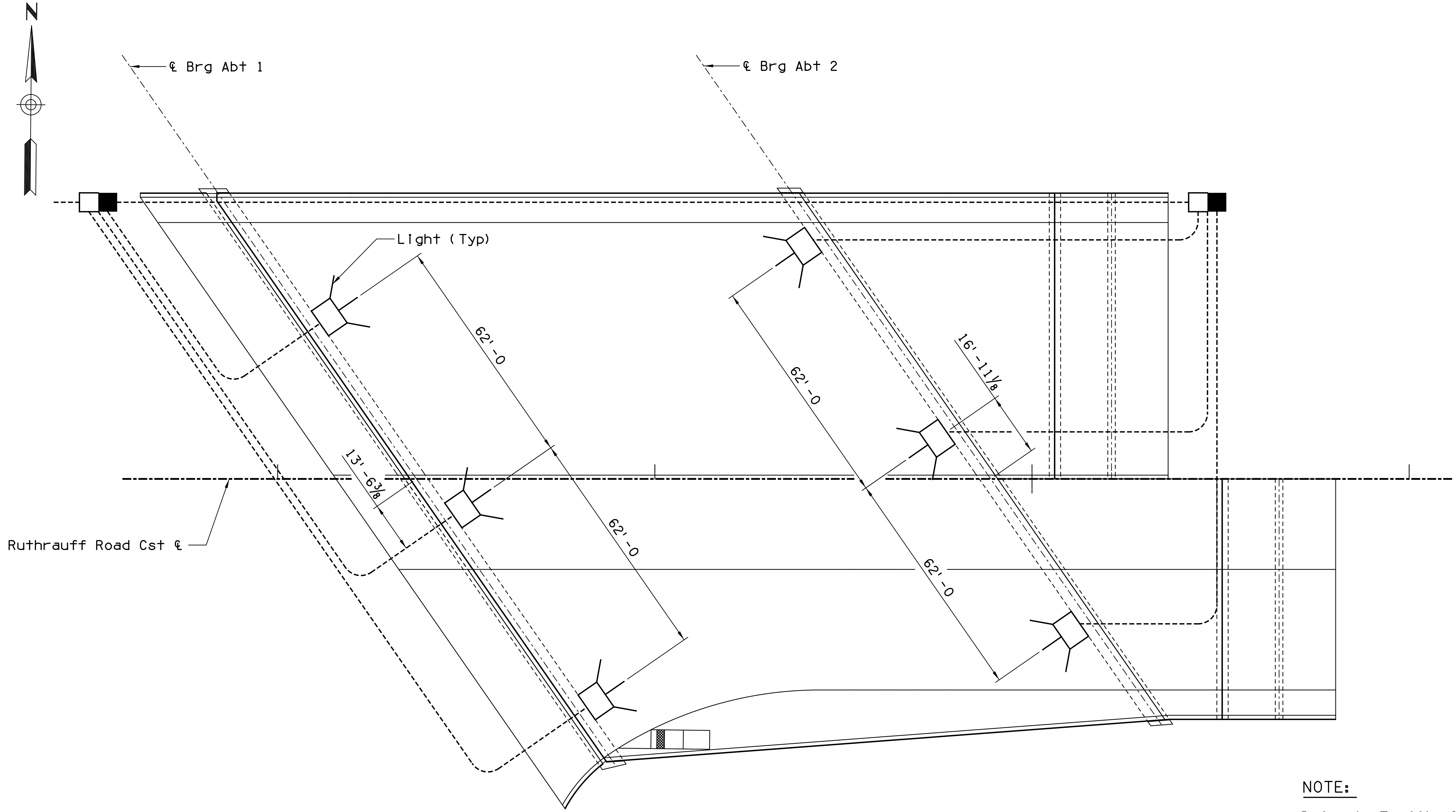
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	686	849	

010 PM 252



UNDER DECK LIGHTING PLAN

Scale: 1"=15'-0

NOTE:

Refer to Traffic Sheet for Light Details.

	NAME	DATE
DESIGN	KLH	03/19
DRAWN	AJM	03/19
CHECKED	JRP	03/19

T.Y. LIN INTERNATIONAL
engineers | planners | scientists
60 E. Rio Salado Parkway, Suite 501
Tempe, Arizona 85281

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

Sta 103+
RUTHRAUFF RD - UPRR OVERPASS
UPRR UNDERDECK LIGHTING & DETS

I-10 ROUTE	252.000 MILEPOST	20160 STRUCTURE NO.	LOCATION RUTHRAUFF TI

Registered Professional Engineer, Certificate 37060, KOOI-LIM HOE, Date Signed 03/08/19, Arizona, U.S.A. Expires: 12/31/2019

DWG. S-2 .31

TRACS NO. H8480 01C | 010-D(213)S | ____ OF ____

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	687	849	
		010 PM 252			

GENERAL NOTES

1. General soil and rock (where encountered) strata descriptions and indicated boundaries are based on engineering interpretation of available subsurface information by the geotechnical engineer and may not reflect actual variation in subsurface conditions between borings and samples. The location of contacts between strata may be gradual rather than abrupt. Classification of soil material is in general accordance with ASTM D 2488-93 and is presented in the Geotechnical Report.

2. The observed water levels and/or moisture conditions indicated on the boring logs are as recorded at the time of field investigation. These water levels and/or moisture conditions may vary considerably with time according to the prevailing climate, rainfall or other factors and are otherwise dependent upon the duration of and methods used in the field investigation program.

3. Sound engineering judgment was exercised in preparing the subsurface information presented on these sheets. This information was prepared and is intended for design and estimating purposes. Its presentation on the plans or elsewhere is for the purpose of providing intended users with access to the same information as was provided to the State and its designers. Interpretations of subsurface information are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations or judgment of the contractor.

4. A 140 lb. hammer, 30-inch free-fall, was used to drive both the Standard Penetration Test (SPT) split-spoon sampler and the ring-lined sampler in general conformance with ASTM D 1586-96 and D 3550-01, respectively.

5. For further information, refer to NCS report "Final Geotechnical Report; I-10, Ruthrauff Road Traffic Interchange," submitted to HDR on March 31, 2015 and any addenda.

6. Reaction to dilute HCl (as per ASTM D 2488) does not necessarily correlate to the degree of carbonate cementation. For example, a "strong" reaction to HCl and a low SPT N-value may indicate that the soil particles are coated with calcium carbonate or lime but the voids are mostly clear, i.e. the particles are not significantly cemented to each other; therefore, the density is loose. In other cases, soil may exhibit "no" to "weak" reaction to HCl but appear to be strongly cemented due to induration. Thus, the user should consider the reported reaction to HCl and SPT N-values in conjunction with other relevant factors to evaluate the degree of cementation and its effect on construction activities.

7. Refusal SPT N-values may be indicative of the presence of cobbles or boulders whose size cannot be determined by the investigative techniques used for this project. Cobbles and boulders will likely be encountered during the construction of the drilled shafts. Additionally, cemented layers may form cobble or boulder size pieces when broken up. The contractor should mobilize the appropriate equipment for removing this material.

8. The site soils contain random zones of poorly graded sands and gravels. These soils are prone to caving. Therefore, localized caving should be anticipated during drilled shaft construction. These local zones may be up to 20-ft thick and can occur at various depths.

9. The site soils contain random zones of gravels, cobbles and boulders. These materials experience large fluid loss during slurry-assisted drilled shaft construction.

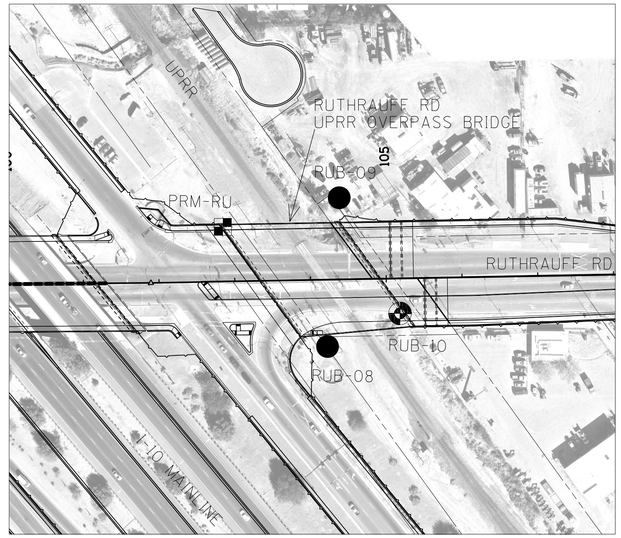
OTHER TERMINOLOGY

Quantity:	
Trace	< 5%
Few	5-10%
Little	15-25%
Some	30-45%
Mostly	> 50%

Reaction to HCl:	
No reaction	No visible reaction
Weak reaction	Some reaction, with bubbles forming slowly
Strong reaction	Violent reaction, with bubbles forming immediately

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

PRESSUREMETER BORING LOCATION

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 103+
RUTHRAUFF RD - UPRR OVERPASS
FOUNDATION DATA (1 OF 5)

I-10 ROUTE	252.00 MILEPOST	20160 STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer — CERTIFICATE NO. 57429 — JOSEPH B. HARRIS — Date Signed 03/11/2019 — ARIZONA U.S.A. — Expires 06/30/20

DWG NO. S-2.32

____ OF ____

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	688	849	

010 PM 252

SCE BORING LOG: PRM-RU (1 of 2)

5217+83, 286 Lt. (Ref. Al. I-10 CL)
NORTHING: 472,053 EASTING: 974,503
ELEV.: 2,247.5 TOTAL DEPTH: 129

STARTED: 08/29/2012 06:20 AM
FINISHED: 08/30/2012 03:50 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	☒	Split Spoon	1.375"	2"	18"
R	◨	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
		SANDY SILT (native), soft, dry, brown, nonplastic SILT, some fine to coarse sand, trace fine gravel, weak cementation, strong reaction with HCl, max. particle size 0.75". (ML)
S	5-3-3	Attempted pressuremeter test at 8'.
R	16-19	SILTY SAND, medium dense, dry, brown, fine SAND, some low plasticity fines, weak cementation, strong reaction with HCl. (SM) No recovery. Sent split spoon sampler to recover lost soil. Recovered 12". Placed catcher in ring sampler. Attempted pressuremeter test at 12.5'.
S	3-6-8	Becomes fine to medium SAND, little nonplastic fines. Added 1 gallon of water to boring at 15'.
S	4-5-8	POORLY-GRADED SAND, medium dense, dry, brown, fine to medium SAND, trace nonplastic fines, no cementation, no reaction with HCl. (SP) Attempted pressuremeter test at 17.5'.
R	12-35	POORLY-GRADED SAND WITH SILT, medium dense, dry, brown, fine SAND, few nonplastic fines, trace fine subrounded gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SP-SM) Added 1 gallon of water to boring at 20'. Attempted pressuremeter test at 22.5'. Difficult drilling from 23' to 24'.
S	12-19-19	SILTY SAND, medium dense, dry, brown, fine to medium SAND, little fine subrounded to subangular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.75". (SM) Rock in sampler tip. Difficult drilling from 28' to 60'.
S	16-21-18	WELL-GRADED SAND WITH SILT AND GRAVEL, dense, dry, brown, fine to coarse SAND, some fine to coarse subrounded to subangular gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SW-SM) Placed catcher in split spoon sampler.
CU		
R	50/5	WELL-GRADED GRAVEL WITH SILT AND SAND, dense, dry to moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, few low plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GW-GM) Rock in sampler tip at 35'. Added 1 gallon of water to boring at 35'. Attempted pressuremeter test at 36'. Becomes very dense. No recovery.
S	26-50/6	SILTY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, little fine subrounded to subangular gravel, little low plasticity fines, weak cementation, no reaction with HCl, max. particle size 0.75". (SM) Noted 2" gravel in cuttings. Removed catchers from samplers.
S	16-28-27	POORLY-GRADED SAND WITH CLAY AND GRAVEL, very dense, moist, brown, fine to coarse SAND, some fine to coarse subrounded to subangular gravel, few medium plasticity fines, weak cementation, no reaction with HCl, max. particle size 1", strong hydro-carbon odor. (SP-SC)
R	50/1	No recovery. Rock in sampler tip.
S	23-30-32	CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to coarse SAND, some fine to coarse subrounded to subangular gravel, little high plasticity fines, weak cementation, no reaction with HCl, max. particle size 1", faint hydro-carbon odor. (SC) Attempted pressuremeter test at 57'.
S	14-21-19	Attempted pressuremeter test at 65'. Added 5 gallons of water to boring at 65'. Becomes dense, little medium plasticity fines.

REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 01/14/15 03:44 pm - EXPORTED 11/22/17 09:07 am

SCE BORING LOG: PRM-RU (2 of 2)

5217+83, 286 Lt. (Ref. Al. I-10 CL)
NORTHING: 472,053 EASTING: 974,503
ELEV.: 2,247.5 TOTAL DEPTH: 129

STARTED: 08/29/2012 06:20 AM
FINISHED: 08/30/2012 03:50 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: JBH
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

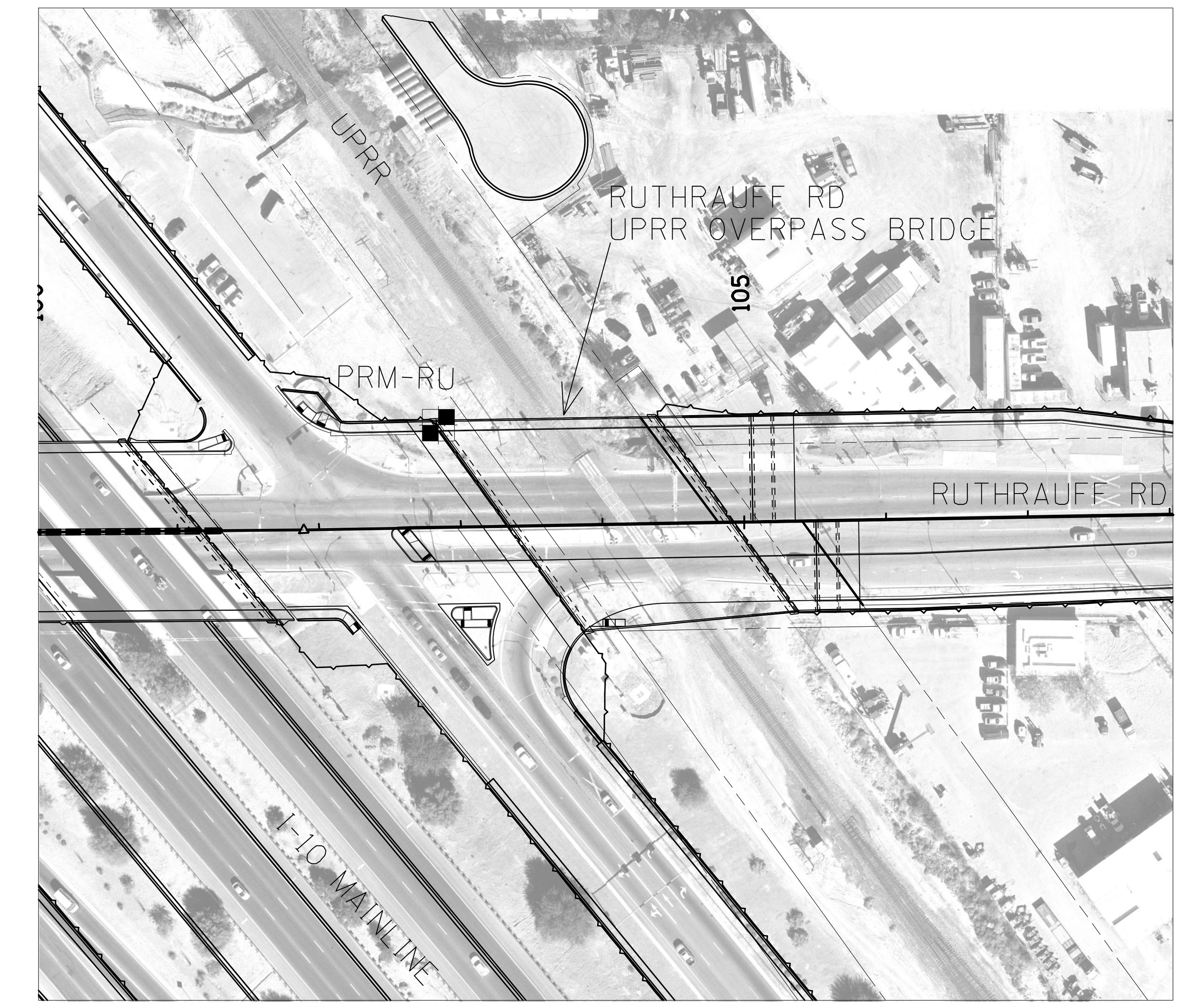
Type	Symbol	Description	I.D.	O.D.	Length
S	☒	Split Spoon	1.375"	2"	18"
R	◨	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
S	22-24-23	Becomes dry to moist, little fine subrounded to subangular gravel, max. particle size 0.75" Added 5 gallons of water to boring at 70'. Attempted pressuremeter test at 73'.
R	27-50/4	Becomes very dense, moist, little fine to coarse subrounded to subangular gravel, max. particle size 1". Added 5 gallons of water to boring at 75'.
S	31-34-34	Becomes dry to moist, little fine subrounded to subangular gravel, max. particle size 0.75", very faint hydro-carbon odor. Added 5 gallons of water to boring at 80'.
S	12-19-26	Becomes dense, little fine to coarse subrounded to subangular gravel, max. particle size 1", no noted hydro-carbon odor. Added 5 gallons of water to boring at 85'.
S	19-27-30	Becomes very dense, some fine to coarse subrounded to subangular gravel. Added 5 gallons of water to boring at 90'. Attempted pressuremeter test at 93'.
R	50/5	Becomes little fine subrounded to subangular gravel, max. particle size 0.75". Added 5 gallons of water to boring at 95'.
S	27-40-50/3	Becomes little low plasticity fines. Added 10 gallons of water to boring at 100'.
S	30-50/4	CLAYEY GRAVEL WITH SAND, very dense, dry to moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little medium plasticity fines, weak cementation, no reaction with HCl, max. particle size 1". (GC) Added 5 gallons of water to boring at 105'.
S	23-22-37	CLAYEY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, little fine subrounded to subangular gravel, little medium plasticity fines, weak cementation, no reaction with HCl, max. particle size 0.75". (SC) Added 5 gallons of water to boring at 110'.
R	50/6	SILTY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, little fine subrounded to subangular gravel, little nonplastic fines, weak cementation, no reaction with HCl, max. particle size 0.75". (SM) Attempted pressuremeter test at 113'. Added 5 gallons of water to boring at 115'.
S	36-50/6	CLAYEY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, some fine to coarse subrounded to subangular gravel, little medium plasticity fines, weak cementation, no reaction with HCl, max. particle size 1.5" (SC) Added 5 gallons of water to boring at 120'.
S	15-25-45	Becomes little fine subrounded to subangular gravel, max. particle size 0.75". Attempted pressuremeter test at 128'.
		End of boring with 8" OD HSA at 125'. Advanced boring to 129' with 3" air rotary for pressuremeter test at 128'. No groundwater encountered. Backfilled with neat cement grout.

REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 01/14/15 03:44 pm - EXPORTED 11/22/17 09:07 am

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION
PHASE 2 BORING LOCATION
PRESSUREMETER BORING LOCATION

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 103+
RUTHRAUFF RD - UPRR OVERPASS
FOUNDATION DATA (2 OF 5)

I-10	252.00	20160
ROUTE	MILEPOST	STRUCTURE NO.

LOCATION: RUTHRAUFF ROAD T.I.

Registered Professional Engineer (Civil) CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 03/11/19 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-2.33

TRACS NO. H8480 01C | 010-D(213)S | ___ OF ___

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	689	849	
		010 PM 252			

SCE BORING LOG: RUB-08 (1 of 2)

104+21, 88 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,894 EASTING: 974,641
ELEV.: 2,248.2 TOTAL DEPTH: 120.8

STARTED: 08/28/2013 07:00 AM
FINISHED: 08/29/2013 12:00 PM

CONTRACTOR: GSI
DRILLER: R. Quezada
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2245		S		7-10-6	CLAYEY SAND WITH GRAVEL (native), medium dense, dry, brown, fine to coarse SAND, some medium plasticity fines, little fine to coarse subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 1". (SC)
5			CU		12-8	Becomes loose.
	2240		R			SANDY LEAN CLAY, stiff, moist, dark brown, medium plasticity CLAY, some fine to medium sand, few fine subrounded to subangular gravel, no cementation, strong reaction with HCl, max. particle size 0.75". (CL)
10			R		9-11	SILTY SAND, loose, moist, brown, fine SAND, some nonplastic fines, no cementation, no reaction with HCl. (SM)
	2235					WELL-GRADED SAND WITH SILT, medium dense, moist, brown, fine to medium SAND, little fine subrounded to subangular gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.75". (SW-SM)
15			S		5-9-9	
	2230					
20			S		6-12-10	
	2225					
25			S		7-8-9	Becomes dry, little fine to coarse subrounded to subangular gravel, max. particle size 1".
	2220					WELL-GRADED GRAVEL WITH SILT AND SAND, loose, moist, brown, fine to coarse subrounded GRAVEL, some fine to coarse sand, few low plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GW-GM)
30			R		5-8	
	2215					
35			S		16-20-25	Becomes dense. Noted 4" cobbles in cuttings.
	2210					
40			S		11-22-35	Becomes very dense.
	2205					CLAYEY GRAVEL WITH SAND, very dense, moist, brown, fine to coarse subangular GRAVEL, some fine to coarse sand, little low plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GC)
45			R		50/1	No recovery.
50	2200		S		50/4	
	2195					
55			S		6-27-38	Becomes gray-brown, noted hydrocarbon odor at 55'.
	2190					CLAYEY SAND WITH GRAVEL, very dense, moist, gray-brown, fine to coarse SAND, some fine subrounded to subangular gravel, little low plasticity fines, no cementation, no reaction with HCl, max. particle size 0.75", noted hydrocarbon odor at 60'. (SC)
60			S		10-22-29	
	2185					
65			S		26-19-13	Becomes dense, little fine subrounded to subangular gravel. Added 5 gallons of water to boring at 65'.
	2180					
70						

SCE BORING LOG: RUB-08 (2 of 2)

104+21, 88 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,894 EASTING: 974,641
ELEV.: 2,248.2 TOTAL DEPTH: 120.8

STARTED: 08/28/2013 07:00 AM
FINISHED: 08/29/2013 12:00 PM

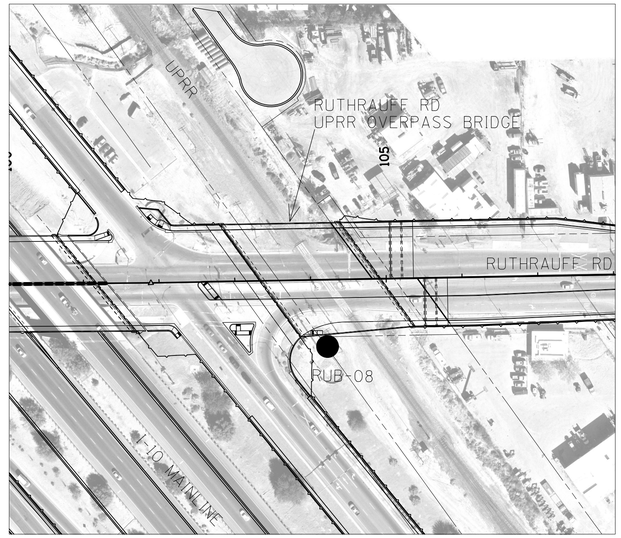
CONTRACTOR: GSI
DRILLER: R. Quezada
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
70	2175		R		30-22	Becomes medium dense, brown, no noted hydrocarbon odor. Added 5 gallons of water to boring at 70'.
75			S		15-29-30	Becomes very dense.
	2170					
80			S		32-32-36	Becomes little medium plasticity fines.
	2165					
85			S		20-28-27	Added 5 gallons of water to boring at 85'.
	2160					
90			S		12-14-20	Becomes dense, max. particle size 0.5".
	2155					
95			S		19-25-27	Becomes very dense, max. particle size 0.75".
	2150					
100			R		50/6	Becomes some fine to coarse subrounded to subangular gravel, max. particle size 1".
	2145					
105			S		26-34-34	
	2140					
110			S		26-31-21	
	2135					
115			S		32-37-50/5	
	2130					
120			S		46-50/4	
	2125					End of boring at 120'. Stopped sampler at 120.8'. No groundwater encountered. Backfilled with portland cement and sand mixture.
125						
	2120					
130						
	2115					
135						
	2110					
140						

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

PRESSUREMETER BORING LOCATION

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	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
810 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 103+
RUTHRAUFF RD - UPRR OVERPASS
FOUNDATION DATA (3 OF 5)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20160	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C

010-D(213)S

REGISTERED PROFESSIONAL ENGINEER CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 03/11/2019 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-2.34

OF

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REPORT sce fds boring log - PROJECT i 10 - ina to ruthrauff - phase 1 and 2.ggi - LIBRARY sce gintls v2.1.gdt - LAST MOD 12/30/14 04:08 pm - EXPORTED 11/22/17 09:07 am

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	690	849	
		010 PM 252			

SCE BORING LOG: RUB-09 (1 of 2)

104+40, 108 Lt. (Ref. Al. Ruthrauff CL)
NORTHING: 472,091 EASTING: 974,657
ELEV.: 2,246.7 TOTAL DEPTH: 130.4

STARTED: 08/26/2013 08:05 AM
FINISHED: 08/26/2013 03:00 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
	2245	S		4-4-5	SANDY LEAN CLAY (native), stiff, moist, dark brown, medium plasticity CLAY, little fine to coarse sand, few fine to coarse gravel, no cementation, weak reaction with HCl, max. particle size 1". (CL)
5		CU			
	2240	R		8-10	Becomes medium stiff, light brown, strong reaction with HCl.
10	2235	S		5-4-6	SILTY, CLAYEY SAND, loose, dry to moist, light brown, fine SAND, some low plasticity fines, no cementation, strong reaction with HCl. (SC-SM)
15	2230	R		6-10	FAT CLAY, medium stiff, moist, black, high plasticity CLAY, few fine sand, no cementation, weak reaction with HCl, lensed with fine to medium sand approximately 5" to 6" thick. (CH)
20	2225	S		4-4-5	WELL-GRADED SAND WITH SILT, loose, dry to moist, light brown, fine to coarse SAND, few fine subrounded to subangular gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.25". (SW-SM)
25	2220	S		6-6-6	WELL-GRADED GRAVEL WITH SILT AND SAND, medium dense, dry to moist, light brown, fine to coarse subrounded GRAVEL, little fine to coarse sand, few low plasticity fines, no cementation, weak reaction with HCl, max. particle size 1.5". (GW-GM) Noted 4" cobbles in cuttings. Auger chatter and difficult drilling from 23' to 48'.
30	2215	R		40-50/1	Becomes very dense, max. particle size 2.5". Rock in sampler tip.
35	2210	S		17-15-24	Becomes dense.
40	2205	S		30-50/5	WELL-GRADED SAND WITH SILTY CLAY AND GRAVEL, very dense, dry to moist, light brown, fine to coarse SAND, some fine to coarse subrounded gravel, few low plasticity fines, no cementation, weak reaction with HCl, max. particle size 1". (SW-SC)
45	2200	S		50/5	
50	2195	R		50/3	CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to coarse SAND, little fine subrounded to subangular gravel, little low to medium plasticity fines, no cementation, strong reaction with HCl, max. particle size 0.25". (SC) Noted 3" gravel in cuttings.
55	2190	S		50/5	
60	2185	S		14-18-23	Becomes dense, little fine to coarse subrounded to subangular gravel, weak reaction with HCl, max. particle size 1.5". Noted hydrocarbon odor at 60'.
65	2180	S		21-34-40	Becomes very dense, dry to moist, some fine to coarse subangular to angular gravel, little medium plasticity fines, weak cementation.
70					

SCE BORING LOG: RUB-09 (2 of 2)

104+40, 108 Lt. (Ref. Al. Ruthrauff CL)
NORTHING: 472,091 EASTING: 974,657
ELEV.: 2,246.7 TOTAL DEPTH: 130.4

STARTED: 08/26/2013 08:05 AM
FINISHED: 08/26/2013 03:00 PM

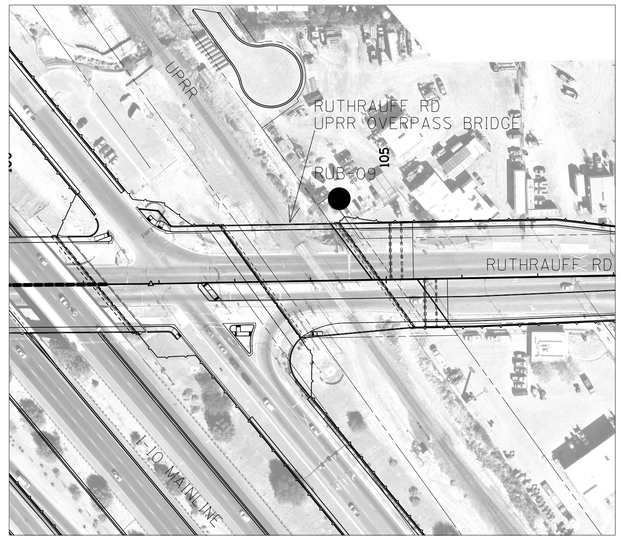
CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	SAMPLE TYPE	SAMPLE SYMBOL	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
	2175	R		43-45	Becomes dense, max. particle size 2". No noted hydrocarbon odor at 70'.
75	2170	S		7-10-23	WELL-GRADED SAND WITH CLAY AND GRAVEL, dense, moist, brown, fine to coarse SAND, little fine subangular to angular gravel, few low plasticity fines, weak cementation, weak reaction with HCl, max. particle size 0.25". (SW-SC)
80	2165	S		29-12-21	Becomes trace fine subangular to angular gravel, no cementation.
85	2160	S		16-20-28	Added 5 gallons of water to boring at 85'.
90	2155	R		50/6	Becomes very dense, redish brown, weak cementation. Added 5 gallons of water to boring at 90'.
95	2150	S		18-21-38	CLAYEY SAND, very dense, moist, brown, fine to coarse SAND, little low plasticity fines, few fine subangular to angular gravel, weak cementation, weak reaction with HCl, max. particle size 0.25". (SC)
100	2145	S		37-44-50/3	Becomes CLAYEY SAND WITH GRAVEL, dry to moist, some fine subangular to angular gravel, little medium plasticity fines, max. particle size 0.75".
105	2140	S		40-43-44	Becomes yellow-brown, trace fine subangular to angular gravel, max. particle size 0.25".
110	2135	S		23-17-47	SILTY, CLAYEY SAND, very dense, dry to moist, brown, fine to coarse SAND, little low plasticity fines, trace fine subangular to angular gravel, no cementation, no reaction with HCl, max. particle size 0.25". (SC-SM)
115	2130	S		23-26-40	CLAYEY SAND WITH GRAVEL, very dense, dry to moist, brown, fine to coarse SAND, little fine to coarse subangular to angular gravel, little medium plasticity fines, weak cementation, no reaction with HCl, max. particle size 1". (SC)
120	2125	R		50/4	
125	2120	S		50/4	Becomes CLAYEY SAND, orange-brown, few fine to coarse subangular to angular gravel.
130	2115	S		50/5	Becomes CLAYEY SAND WITH GRAVEL, little fine to coarse subangular to angular gravel. End of boring at 130'. Stopped sampler at 130.4'. No groundwater encountered. Backfilled with portland cement and sand mixture.
135	2110				
140					

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

PRESSUREMETER BORING LOCATION

Call at least two full working days before you begin excavation.
ARIZONA811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
810 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 103+
RUTHRAUFF RD - UPRR OVERPASS
FOUNDATION DATA (4 OF 5)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	20160	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

Registered Professional Engineer
CERTIFICATE NO.
57429
JOSEPH B. HARRIS
Date Signed 09/11/19
ARIZONA U.S.A.
Expires 06/30/20

DWG NO. S-2.35

____ OF ____

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

EXPORTED 11/22/17 09:07 am
REPORT scx fds boring log - PROJECT I 10 - ina to ruthrauff - phase I and 2.ggi - LIBRARY scx gintlb v2.1.gdb - LAST MOD: 12/31/14 09:32 am

3/7/2019 11:26:59 PM ...\dms42598\s8480fds_UPRR04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	691	849	

010 PM 252

SCE BORING LOG: RUB-10 (1 of 2)

105+17, 46 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,938 EASTING: 974,737
ELEV.: 2,247.8 TOTAL DEPTH: 131.4

STARTED: 05/10/2010 08:30 AM
FINISHED: 05/11/2010 12:30 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: NAB
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	■	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

DEPTH (FT): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70
ELEV. (FT): 2245, 2240, 2235, 2230, 2225, 2220, 2215, 2210, 2205, 2200, 2195, 2190, 2185, 2180

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
		LEAN CLAY WITH SAND (native), stiff, dry, dark brown, medium plasticity CLAY, little fine to coarse sand, weak cementation, strong reaction with HCl. (CL)
S	4-5-5	
S	3-4-6	Becomes little fine sand.
S	3-6-6	CLAYEY SAND, medium dense, moist, brown, fine to medium SAND, some low plasticity fines, few fine subrounded gravel, no cementation, weak reaction with HCl, max. particle size 0.75". (SC)
S	4-6-11	SILTY SAND, medium dense, moist, light brown, fine to medium SAND, little nonplastic fines, few fine gravel, no cementation, no reaction with HCl, max. particle size 0.75". (SM)
S	3-12-14	CLAYEY SAND WITH GRAVEL, medium dense, moist, brown, fine to coarse sand, little low plasticity fines, little fine subrounded gravel, no cementation, weak reaction with HCl, max. particle size 0.75". (SC)
S	5-17-12	POORLY-GRADED SAND WITH SILT AND GRAVEL, medium dense, moist, brown, fine to coarse SAND, some fine subrounded gravel, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (SP-SM)
S	23-12-7	WELL-GRADED GRAVEL WITH SILT AND SAND, medium dense, dry, brown, fine to coarse subrounded GRAVEL, little fine to coarse sand, few nonplastic fines, no cementation, no reaction with HCl, max. particle size 1". (GW-GM)
S	30-47-20	CLAYEY GRAVEL WITH SAND, very dense, moist, brown, fine to coarse subrounded GRAVEL, some fine to coarse sand, little medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (GC)
S	24-50/6	Becomes some fine subrounded gravel, little medium plasticity fines, max. particle size 1".
S	24-50/5	Strong odor of hydrocarbons in sample at 50'.
S	50/6	CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to coarse SAND, little fine subrounded gravel, little medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SC) Strong odor of hydrocarbons.
S	8-13-16	Becomes medium dense. Faint odor of hydrocarbons.
S	8-17-17	Becomes CLAYEY SAND, dense, few fine subrounded gravel. Faint odor of hydrocarbons.

SCE BORING LOG: RUB-10 (2 of 2)

105+17, 46 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,938 EASTING: 974,737
ELEV.: 2,247.8 TOTAL DEPTH: 131.4

STARTED: 05/10/2010 08:30 AM
FINISHED: 05/11/2010 12:30 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: NAB
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES

Type	Symbol	Description	I.D.	O.D.	Length
S	⊠	Split Spoon	1.375"	2"	18"
R	■	Ring Sampler	2.5"	3"	18"
U	▯	Shelby Tube			

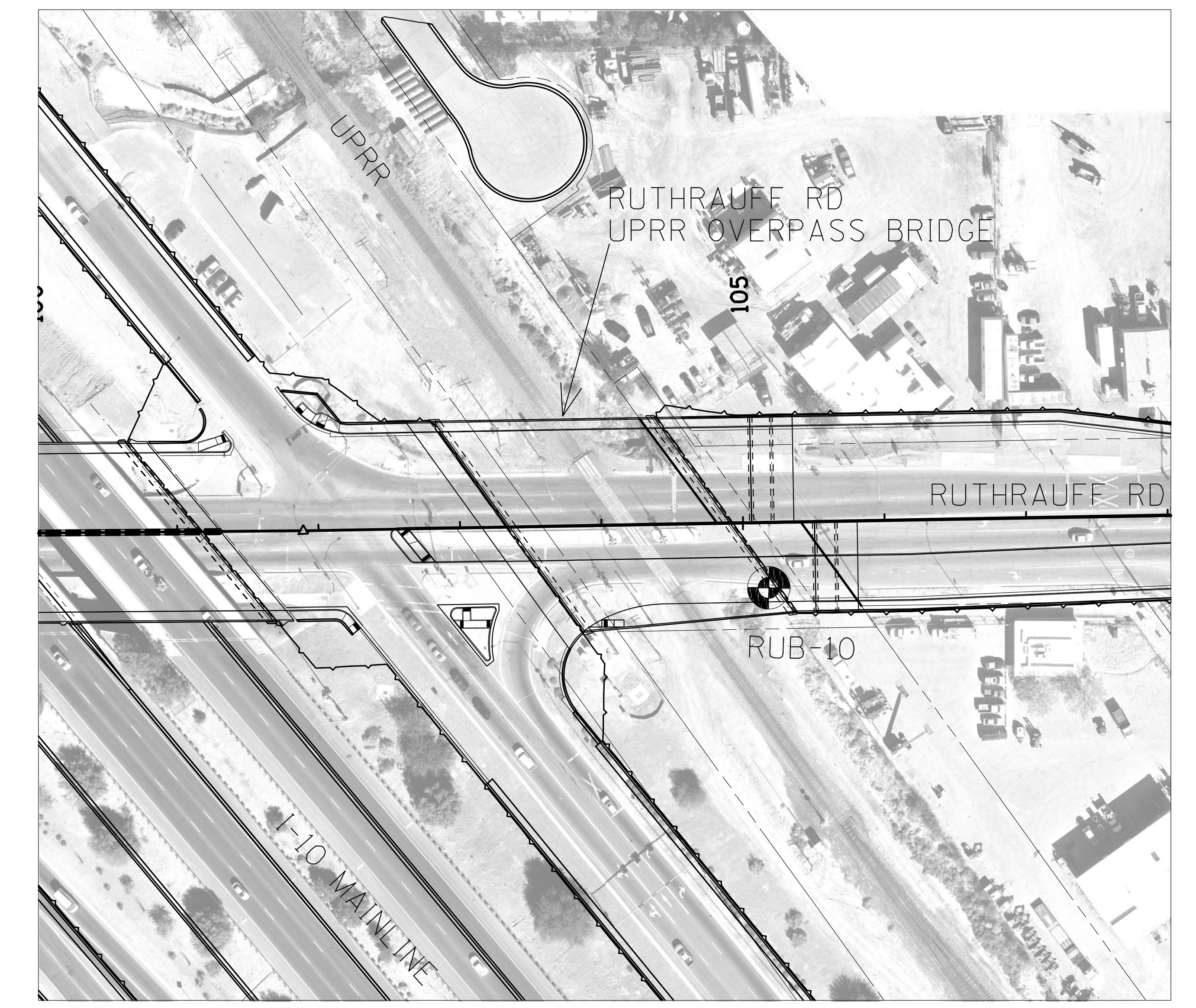
DEPTH (FT): 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 140
ELEV. (FT): 2175, 2170, 2165, 2160, 2155, 2150, 2145, 2140, 2135, 2130, 2125, 2120, 2115, 2110

SAMPLE TYPE	BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
S	3-14-15	Becomes CLAYEY SAND WITH GRAVEL, medium dense, little fine subrounded gravel. No hydrocarbon odor detected.
S	13-15-23	Becomes dense.
S	26-27-38	Becomes very dense.
S	10-33-33	
S	30-25-31	
S	20-28-30	Becomes some medium plasticity fines.
S	19-20-15	Becomes dense, little medium plasticity fines.
S	13-16-22	
S	37-50/3	Becomes very dense. Added 2 gallons of water to boring.
S	21-28-50	Becomes some medium plasticity fines. Added 1 gallon of water to boring.
S	21-38-33	Becomes CLAYEY SAND, little medium plasticity fines, few fine subrounded gravel. Added 1 gallon of water to boring.
S	27-37-50	Becomes CLAYEY SAND WITH GRAVEL, some medium plasticity fines, little fine subrounded gravel.
S	29-25-50/5	Becomes little medium plasticity fines.
		End of boring at 130'. Sampler stopped at 131.4'. No groundwater encountered. Backfilled with 1-sack sand-cement slurry to 20'. Grout to surface.

REPORT sce fds boring log - PROJECT: I 10 - ina to ruthrauff - phase 1 and 2.gpj - LIBRARY sce gintlib v2.1.glb - LAST MOD 03/31/15 03:08 pm - EXPORTED 11/22/17 09:07 am

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

PRESSUREMETER BORING LOCATION

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 103+
RUTHRAUFF RD - UPRR OVERPASS
FOUNDATION DATA (5 OF 5)

Registered Professional Engineer (Civil) CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 03/11/19 ARIZONA U.S.A. Expires 06/30/20

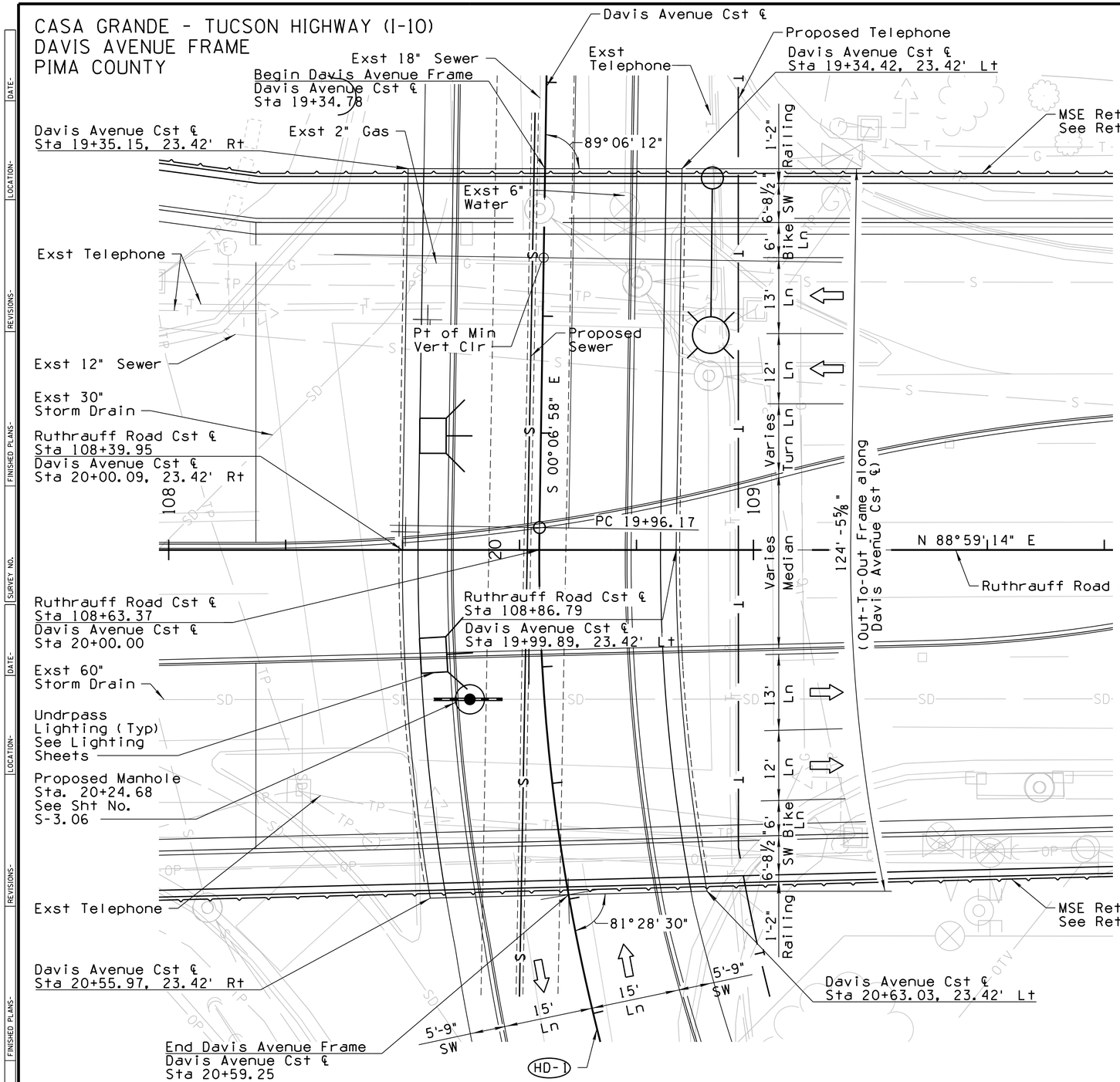
I-10	252.00	20160	LOCATION RUTHRAUFF ROAD T.I.	DWG NO. S-2.36
ROUTE	MILEPOST	STRUCTURE NO.		

TRACS NO. H8480 01C | 010-D(213)S | ____ OF ____

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

CASA GRANDE - TUCSON HIGHWAY (I-10)
DAVIS AVENUE FRAME
PIMA COUNTY

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	692	849	
		010 PM 252			



PLAN

New Concrete Frame Structure
Skew = 00°53'48"
1' Contour Interval
Scale: 1"=10'

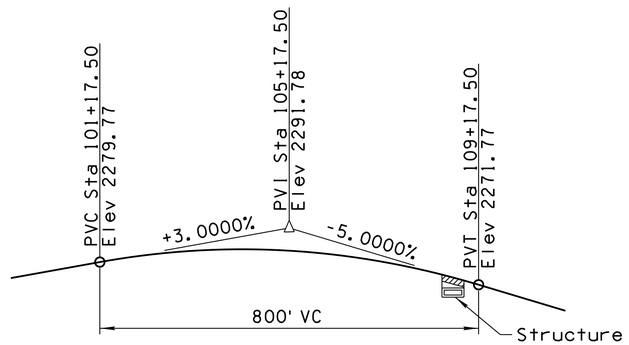
INDEX OF DRAWINGS

(HD-1) Davis Avenue Curve Data

PC Sta 19+96.17
PI STa 21+02.95
PT Sta 22+02.84
Δ = 35°33'34" Lt
D = 17°12'21"
R = 333.00'
L = 206.67'
T = 106.78"
EXIT BEARING = S35°40'32"E

NOTE:

Frame Stations, Length and Elevations measured along or perpendicular to Ruthrauff Road Cst ℄ or Davis Avenue Cst ℄, unless noted otherwise.



RUTHRAUFF ROAD CST ℄ PROFILE GRADE LINE

No Scale

	NAME	DATE
DESIGN	CR	3-19
DRAWN	DAY	3-19
CHECKED	JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
GENERAL PLAN

I-10 ROUTE	252.00 MILEPOST	11551 STRUCTURE NO.	LOCATION: DAVIS AVENUE

TRACS NO. H 8480 01C | 010-D(213)S

Registered Professional Engineer
50678
JASON CARLAFTES
Date Signed 3/31/19
ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-3.01

___ OF ___

Tue 19 Mar 2019, 11:44:33

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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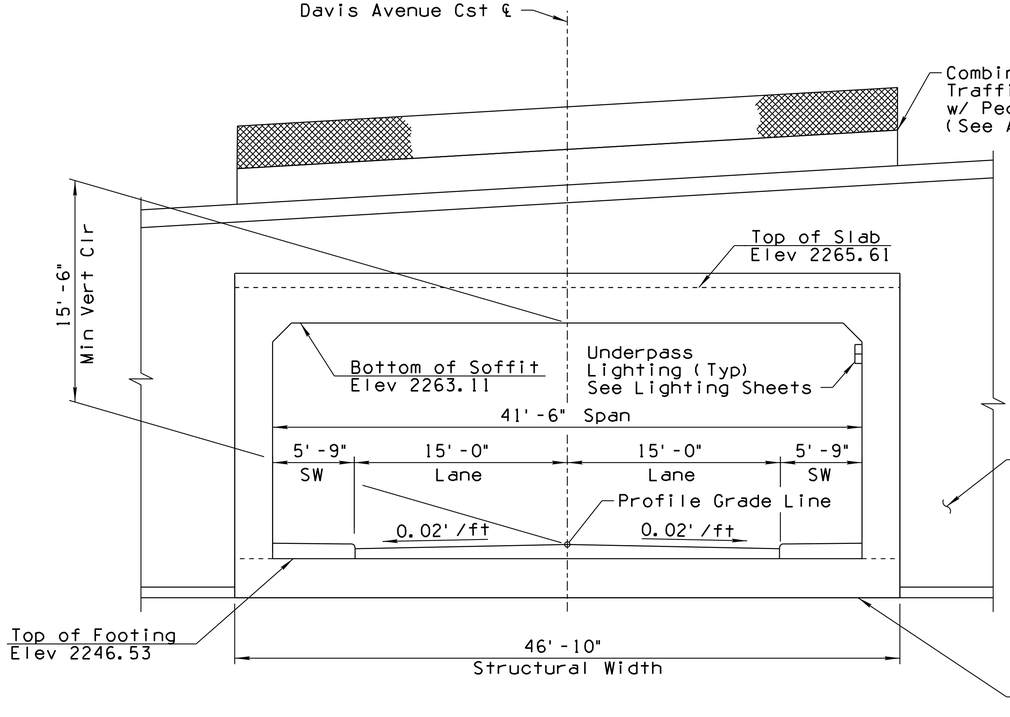
		010 PM 252			



ELEVATION - NORTH PORTAL

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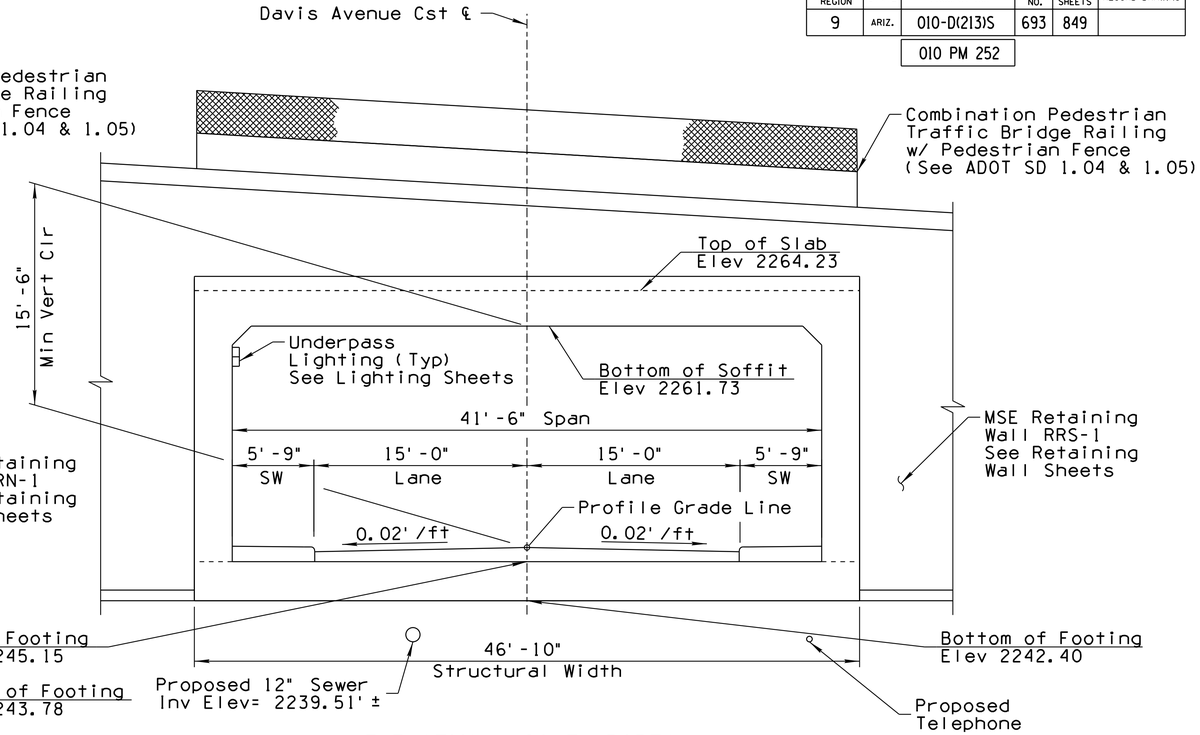
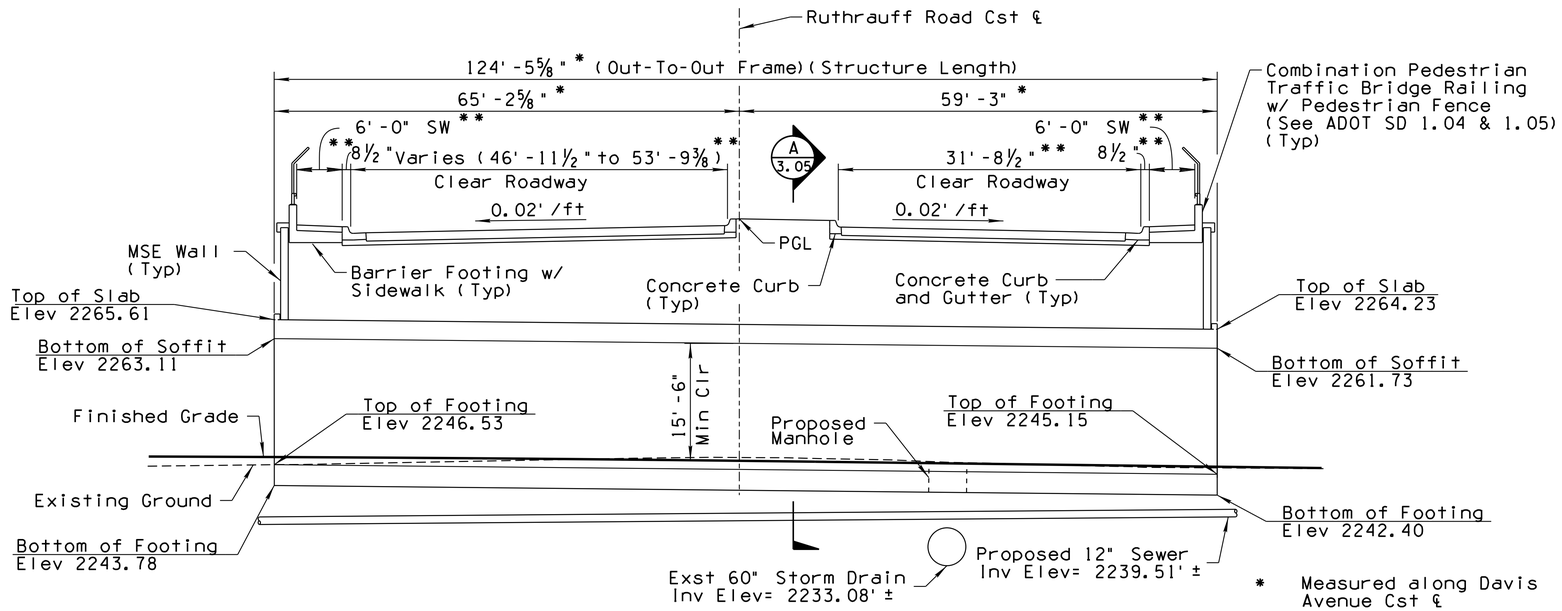


ELEVATION - SOUTH PORTAL

No Scale

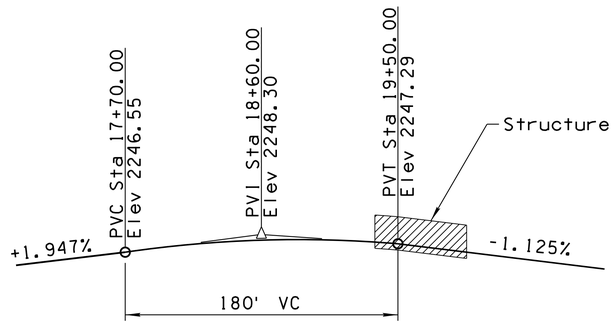


TYPICAL SECTION ALONG DAVIS AVENUE CONSTRUCTION ℄

Scale: 1"=10'

* Measured along Davis Avenue Cst ℄

** Measured perpendicular to Ruthrauff Road Cst ℄



DAVIS AVENUE CST ℄ PROFILE GRADE LINE

No Scale

	NAME	DATE
DESIGN	CR	3-19
DRAWN	DAY	3-19
CHECKED	JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
ELEVATIONS AND TYPICAL SECTION

I-10 ROUTE	252.00 MILEPOST	11551 STRUCTURE NO.	LOCATION: DAVIS AVENUE

TRACS NO. H 8480 01C | 010-D(213)S

Registered Professional Engineer Certificate No. 50678 JASON CARLAFTES Date Signed 3/31/19 ARIZONA, U.S.A. EXPIRES 3/31/2019

DWG NO. S-3.02

___ OF ___

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

Tue 19 Mar 2019, 11:44:29

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	694	849	
		010 PM 252			

GENERAL NOTES:

Construction Specification
Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, Edition of 2008 and Special Provisions.

Design Specifications
AASHTO LRFD Bridge Design Specifications, 7th Edition 2014, with 2015 and 2016 Interim Revisions.

Dead Load
Dead Loads are per AASHTO Table 3.5.1-1, Except as noted.

Live Load
Loading Class - HL - 93

Earth Load
Parameters are based on the Final Geotechnical Report by NCS Consultants, Inc. Dated March 31, 2015.

Soil Density = 0.130 kcf
Active Earth Pressure 0.035 kcf
At Rest Earth Pressure 0.055 kcf
Passive Earth Pressure 0.200 kcf
Maximum Factored Bearing Resistance (Strength Limit) = 3.0 ksf

Seismic
Bridge Site is classified as Seismic Zone 1, Site Class D with Peak Ground Acceleration (PGA) A_s =0.120g and Spectral Acceleration at 0.2 sec. S_{DS}=0.278g and at 1.0 sec. S_{D1}=0.118g as modified by the appropriate Site Factors.

Inventory and Operating
Ratings for HL-93 and HS-20 are in accordance with the AASHTO Manual for Bridge Evaluation, 2nd Edition with Interim Revisions through 2016 and in accordance with the Load and Resistance Factor Rating (LRFR) method and the Load Factor Resistance (LFR) method.

Inventory Load Rating: 2.66 (LFR) 1.60 (LRFR)
Operating Load Rating: 4.45 (LFR) 2.00 (LRFR)

Concrete
All concrete shall be Class "S" unless noted otherwise.

Reinforcing Steel
Reinforcing steel shall conform to ASTM Specification A615 (AASHTO M31). All reinforcing shall be furnished as Grade 60.

All bends and hooks shall meet the requirements of AASHTO Article 5.10.2 unless noted otherwise. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing steel shall have 2" clear cover unless noted otherwise.

All mechanical splices shall conform to the requirements for mechanical connections in Section 605-3.02 of the Specifications.

GENERAL NOTES (CONT'D):

Material Strengths
Walls, Top Slab and Bottom Slab . . . . . f'c = 3.5 ksi
Other Class "S" Concrete . . . . . f'c = 3.5 ksi
Grade 60 reinforcement . . . . . .fy = 60.0 ksi

Chamfer
Chamfer all exposed corners ¾" unless noted otherwise.

Dimensions
Dimensions shall not be scaled from the drawings.

Rustication and Paint
Bridge shall be rusticated and painted in accordance with the Architectural Drawings and Specifications.

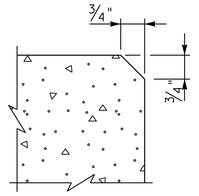
Electrical
Lighting and ITS conduit and fixture mounting details and locations shall be in accordance with the Lighting and ITS Sheets.

Standard List
ADOT Bridge Group Structure Detail (SD) Drawings: 1.01, 1.04, 1.05, 5.01 & 5.02

LEGEND:

DETAIL Marker — 1 / XXX — Detail Number; Drawing Number (S-XXX Series)

SECTION Marker — A / XXX — Section Letter; Drawing Number (S-XXX Series)

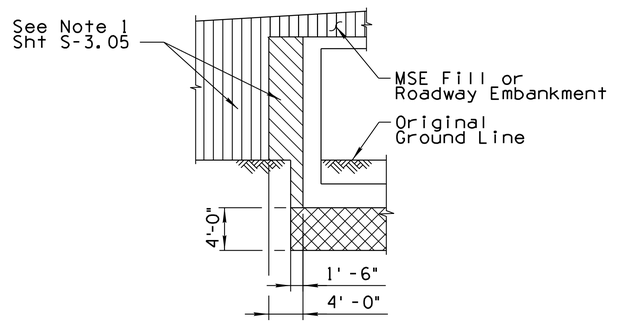


CHAMFER DETAIL 1
No Scale

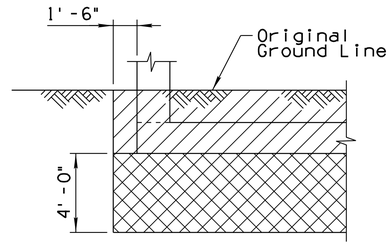
DAVIS AVENUE FRAME APPROXIMATE QUANTITIES				
ITEM	STRUCT EX	STRUCT BACKFILL	CLASS "S" CONCRETE f'_c=3,500psi	REINFORCING STEEL
UNIT	CY	CY	CY	LB
Total	885	740	1596	448,525
As-Built Total				

The cost of Overexcavation is considered included with the cost of the Structural Excavation work and will not be paid for separately.
Estimated Quantity of Overexcavation is 945 CY.

The cost of Damproofing and Waterproofing is included in the cost of the Concrete and will not be paid for separately.
Estimated Quantity of Damproofing is 5435 sf.
Estimated Quantity of Waterproofing is 5830 sf.



STRUCTURE BACKFILL PAYMENT LIMITS



STRUCTURAL EXCAVATION PAYMENT LIMITS

LEGEND

- Limits of Structural Excavation
- Indicates Over Excavation for Engineered Fill See Sheet S-3.04 for Detail
- Limits of Structure Backfill
- Indicates MSE or Roadway Embankment Fill

NOTES:

1. Cost of temporary shoring is incidental to cost of Frame Structure contract items.
2. See Construction Phasing Details for limits of phased bridge construction.

	NAME	DATE
DESIGN	CR	3-19
DRAWN	DAY	3-19
CHECKED	JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
GENERAL NOTES & QUANTITIES

I-10 ROUTE	252.00 MILEPOST	11551 STRUCTURE NO.

LOCATION: DAVIS AVENUE

TRACS NO. H 8480 01C | 010-D(213)S

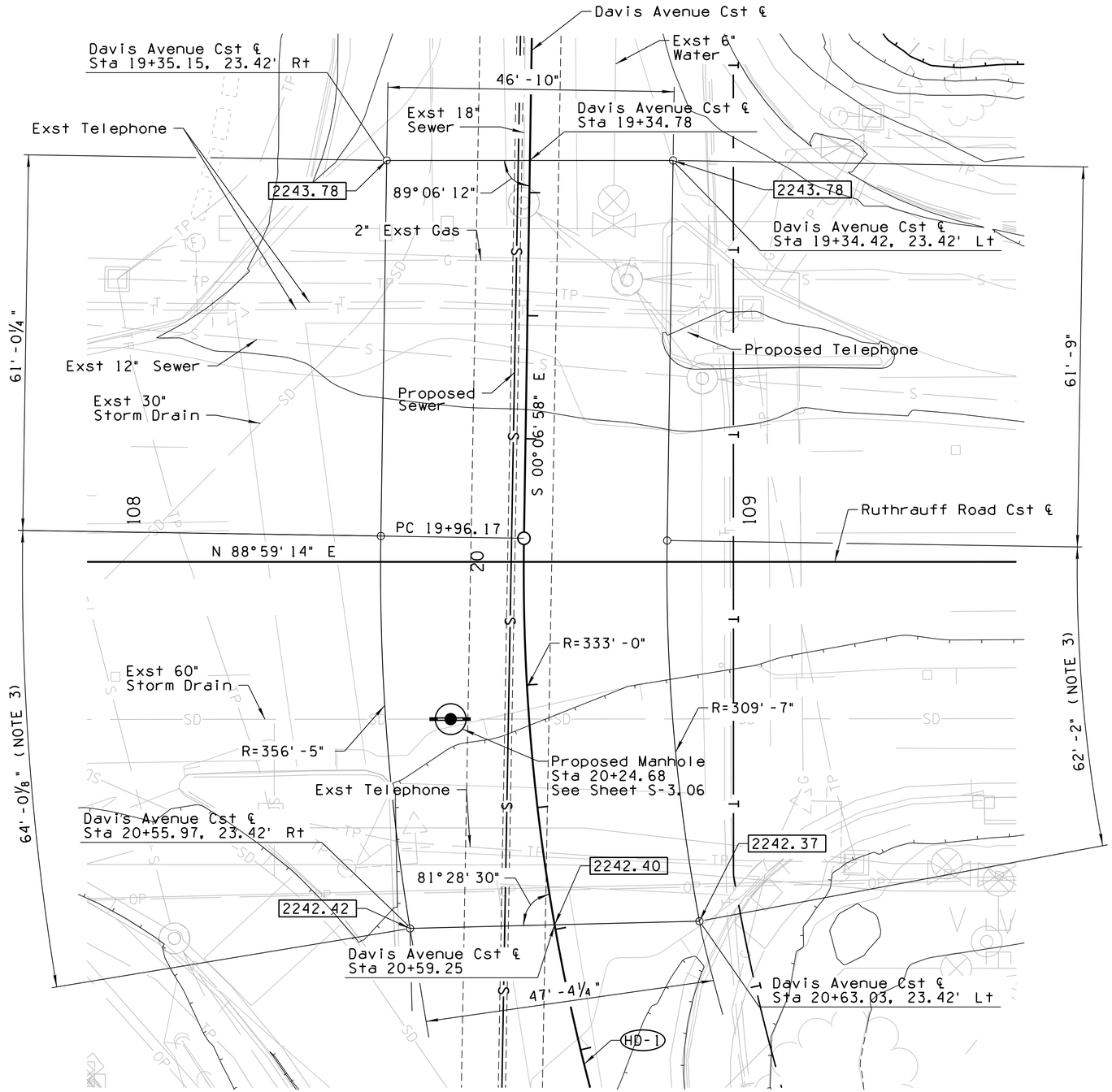
Registered Professional Engineer Certificate No. 50678 JASON CARLAFTES Date Signed 2/28/19 ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-3.03
___ OF ___

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

Tue 19 Mar 2019, 11:44:24 \\prdpwics01\ics_workingdir\5369\248064_2\S11551nq.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	695	849	
		010 PM 252			

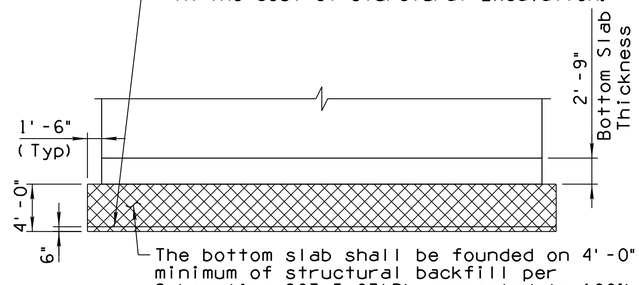


FOUNDATION PLAN

1' Contour Interval
Scale: 1"=10'

When soil with large moisture content is found, provide Geogrid Reinforcement or other approved ground improvement, as needed. See the Geotechnical Report Section 5.1.3, and Appendix B for additional information.

The cost of ground improvement is included in the cost of Sturctural Excavation.



The bottom slab shall be founded on 4'-0" minimum of structural backfill per Subsection 203-5.03(B) compacted to 100% maximum density determined with requirements of applicable test methods of ADOT Materials Testing Manual. The cost of this work shall be considered included with the cost of Structural Excavation. See the Geotechnical Report for additional information.

OVER EXCAVATION AND ENGINEERED FILL DETAIL

No Scale

NOTES:

1. The location of all Utilities is approximate and reflects findings from survey and substructure utility exploration. Contractor is responsible for field verification prior to construction.
2. XXXX.XX indicates bottom of footing elevation.
3. Length is measured along the curve.

	NAME	DATE
DESIGN	CER	3-19
DRAWN	DAY	3-19
CHECKED	JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
FOUNDATION PLAN

I-10	252.00	11551
ROUTE	MILEPOST	STRUCTURE NO.

LOCATION: DAVIS AVENUE

TRACS NO. H 8480 01C | 010-D(213)S

Registered Professional Engineer — Certificate No. 50678 — JASON CARLAFTES — 3/31/19 — Date Signed — ARIZONA, U.S.A.
EXPIRES 3/31/2019

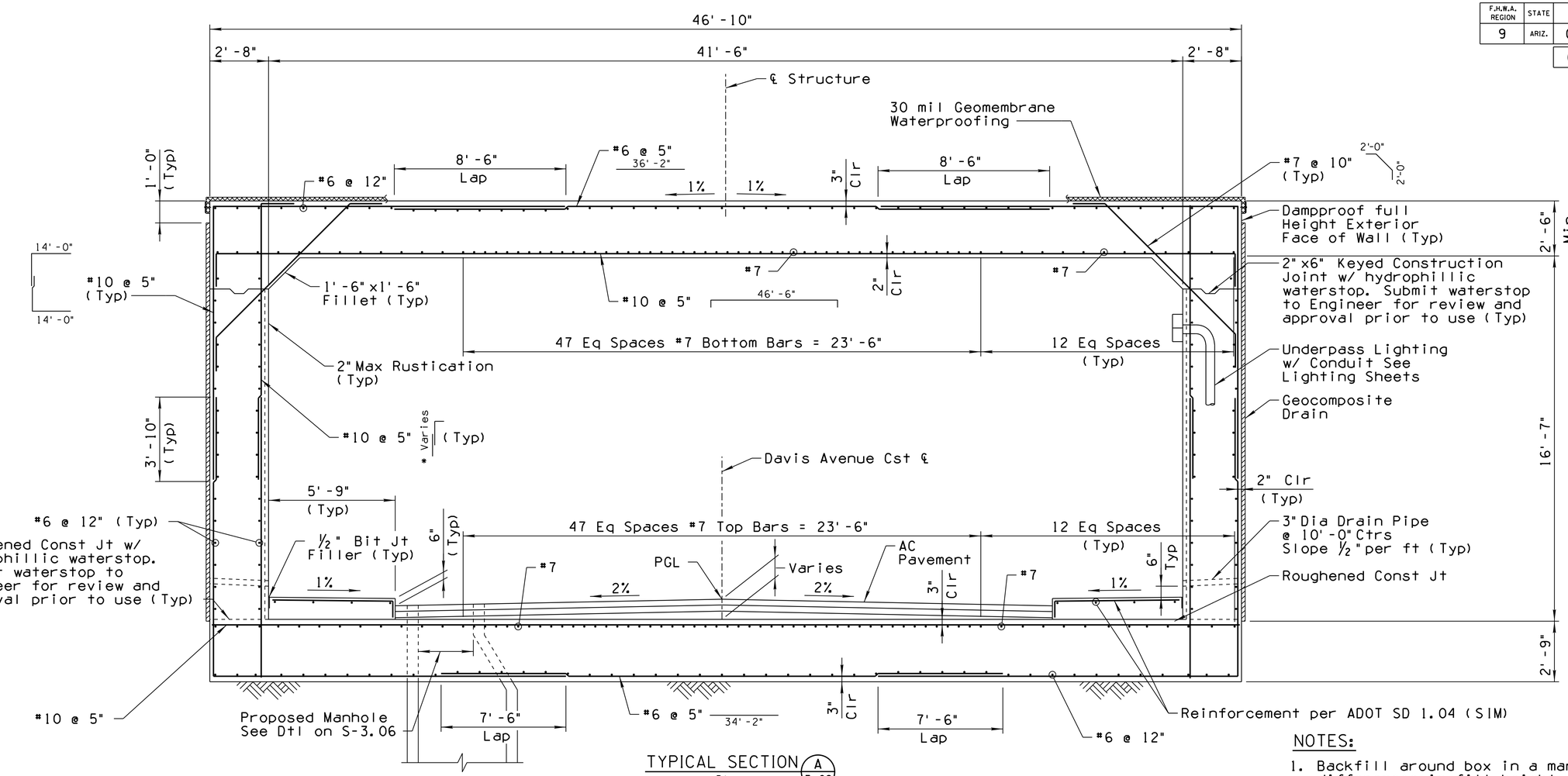
DWG NO. S-3.04

___ OF ___

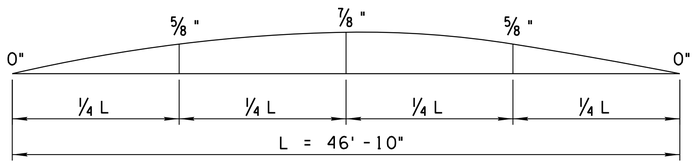
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

Tue 19 Mar 2019, 11:44:34 \\prdpwics01\ics_workingdir\5369\248064_5\S11551f1.dgn

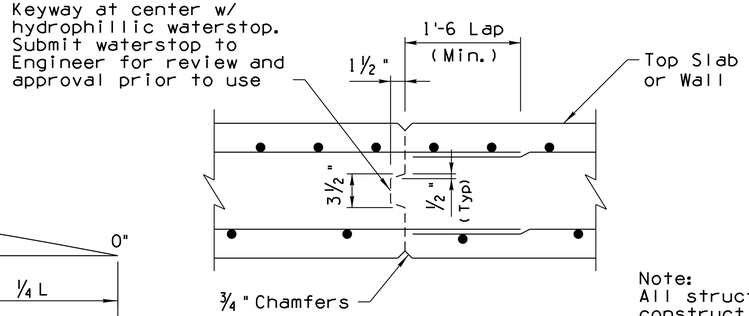
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	696	849	
		010 PM 252			



TYPICAL SECTION (A / 3.02)
Scale: 3/8" = 1'-0"



DETAIL - TOP SLAB CAMBER DIAGRAM
No Scale



DETAIL - CONSTRUCTION JOINT
No Scale

Note:
All structures shall have formed construction joints in the top slab and walls (optional in floor slab) and spaced not more than 60'-0" apart. Joints shall be perpendicular to the centerline of the box.

NOTES:

1. Backfill around box in a manner to minimize differences in fill height. The maximum difference between any two points, same and opposite side of box, is 16 inches. See the Geotechnical Report for additional requirements. Backfill Shall not begin prior to top slab achieving 70% of the 28-day compressive strength.
2. Top Slab is Cambered. See Camber Diagram.
3. Dampproofing and geomembrane water proofing are considered incidental to the cost of the structure.
4. #6 bars shall be spliced 2'-3 min. as required. #7 bars shall be spliced 2'-10" min. as required. Adjacent bars shall not be spliced @ the same location and shall be staggered.
5. See Architectural Treatment Details for rustication/formliner information.

	NAME	DATE
DESIGN	CER	3-19
DRAWN	DAY	3-19
CHECKED	JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
FRAME DETAILS

Registered Professional Engineer
CERTIFICATE NO. 50678
JASON CARLAFTES
Date Signed 3/31/19
ARIZONA, U.S.A.
EXPIRES 3/31/2019

I-10 ROUTE	252.00 MILEPOST	11551 STRUCTURE NO.	LOCATION DAVIS AVENUE

DWG NO. S-3.05

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

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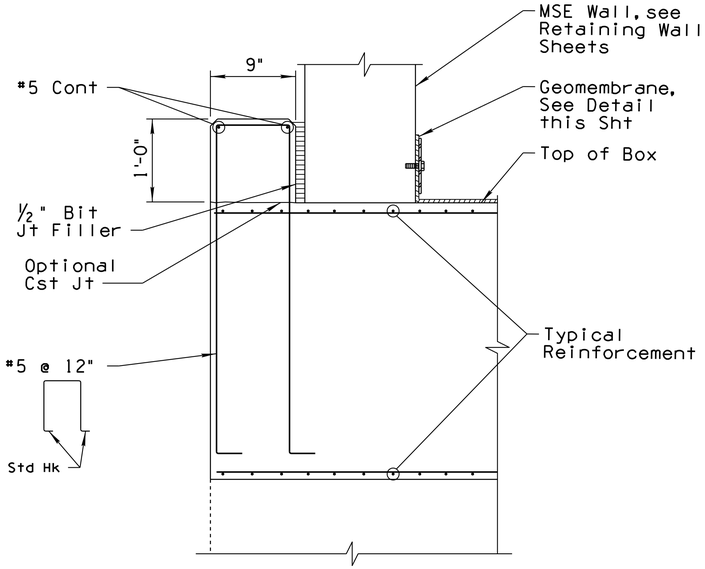
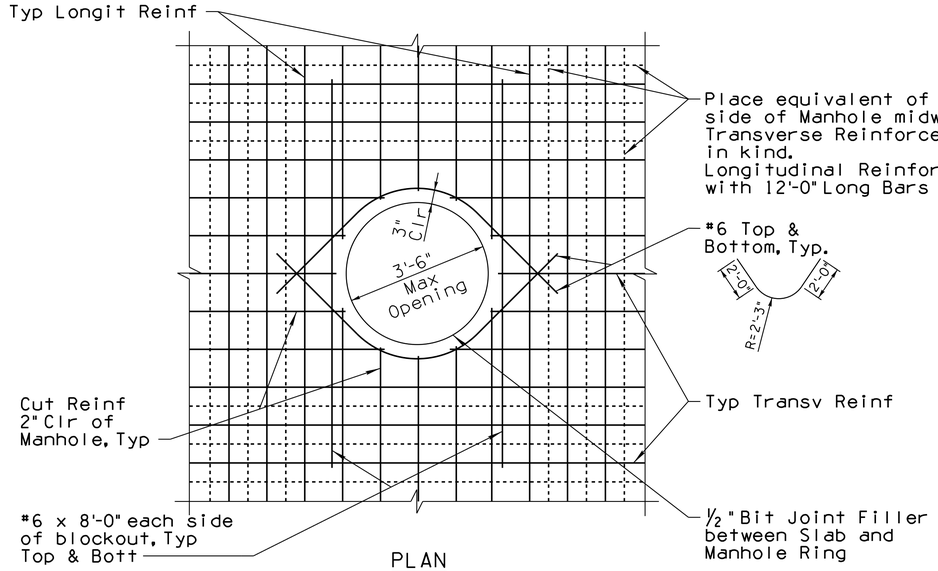
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	697	849	
		010 PM 252			



DETAIL - PORTAL CURB

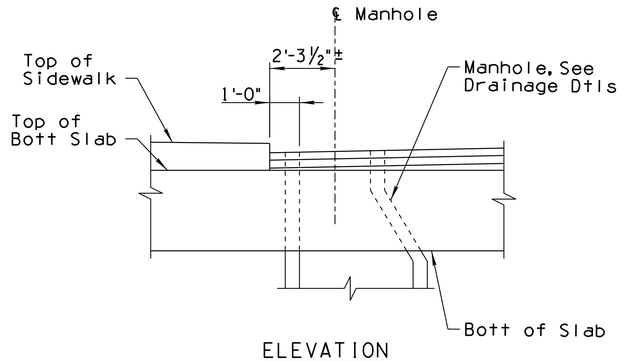
No Scale



PLAN

DETAIL - MANHOLE BLOCKOUT

No Scale



ELEVATION

DETAIL - MANHOLE BLOCKOUT

No Scale

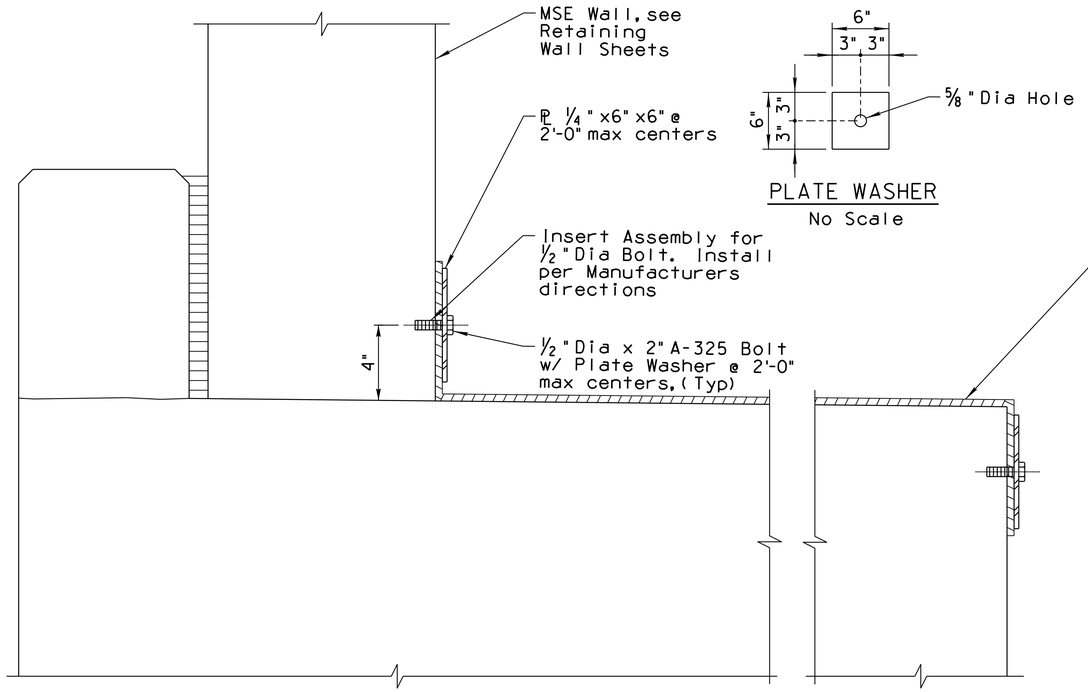


PLATE WASHER

No Scale

Note:
1. Plate Washers shall be galvanized.

DETAIL - GEOMEMBRANE

No Scale

	NAME	DATE
DESIGN	CER	3-19
DRAWN	DAY	3-19
CHECKED	JAC	3-19

WSP USA Inc.
177 N. Church Avenue
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
MISCELLANEOUS DETAILS

ROUTE	MILEPOST	STRUCTURE NO.
I-10	252.00	11551

LOCATION: DAVIS AVENUE

TRACS NO. H 8480 01C

010-D(213)S

Registered Professional Engineer
CERTIFICATE NO.
50678
JASON CARLAFTES
Date Signed 3/29/19
ARIZONA, U.S.A.
EXPIRES 3/31/2019

DWG NO. S-3.06

___ OF ___

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

Tue 19 Mar 2019, 11:44:28

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	698	849	
		010 PM 252			

GENERAL NOTES

1. General soil and rock (where encountered) strata descriptions and indicated boundaries are based on engineering interpretation of available subsurface information by the geotechnical engineer and may not reflect actual variation in subsurface conditions between borings and samples. The location of contacts between strata may be gradual rather than abrupt. Classification of soil material is in general accordance with ASTM D 2488-93 and is presented in the Geotechnical Report.

2. The observed water levels and/or moisture conditions indicated on the boring logs are as recorded at the time of field investigation. These water levels and/or moisture conditions may vary considerably with time according to the prevailing climate, rainfall or other factors and are otherwise dependent upon the duration of and methods used in the field investigation program.

3. Sound engineering judgment was exercised in preparing the subsurface information presented on these sheets. This information was prepared and is intended for design and estimating purposes. Its presentation on the plans or elsewhere is for the purpose of providing intended users with access to the same information as was provided to the State and its designers. Interpretations of subsurface information are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations or judgment of the contractor.

4. A 140 lb. hammer, 30-inch free-fall, was used to drive both the Standard Penetration Test (SPT) split-spoon sampler and the ring-lined sampler in general conformance with ASTM D 1586-96 and D 3550-01, respectively.

5. For further information, refer to NCS report "Final Geotechnical Report; I-10, Ruthrauff Road Traffic Interchange," submitted to HDR on March 31, 2015 and any addenda.

6. Reaction to dilute HCl (as per ASTM D 2488) does not necessarily correlate to the degree of carbonate cementation. For example, a "strong" reaction to HCl and a low SPT N-value may indicate that the soil particles are coated with calcium carbonate or lime but the voids are mostly clear, i.e. the particles are not significantly cemented to each other; therefore, the density is loose. In other cases, soil may exhibit "no" to "weak" reaction to HCl but appear to be strongly cemented due to induration. Thus, the user should consider the reported reaction to HCl and SPT N-values in conjunction with other relevant factors to evaluate the degree of cementation and its effect on construction activities.

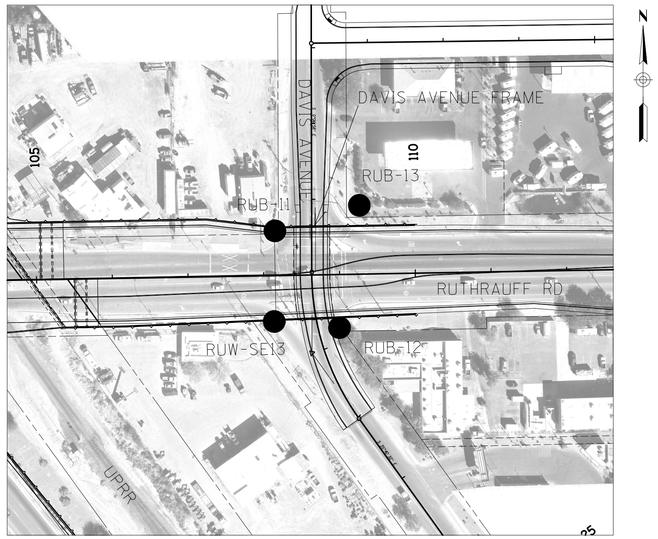
7. Refusal SPT N-values may be indicative of the presence of cobbles or boulders whose size cannot be determined by the investigative techniques used for this project. Cobbles and boulders will likely be encountered during the construction of the drilled shafts. Additionally, cemented layers may form cobble or boulder size pieces when broken up. The contractor should mobilize the appropriate equipment for removing this material.

8. The site soils contain random zones of poorly graded sands and gravels. These soils are prone to caving. Therefore, localized caving should be anticipated during drilled shaft construction. These local zones may be up to 20-ft thick and can occur at various depths.

9. The site soils contain random zones of gravels, cobbles and boulders. These materials experience large fluid loss during slurry-assisted drilled shaft construction.

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

OTHER TERMINOLOGY

Quantity:	
Trace	< 5%
Few	5-10%
Little	15-25%
Some	30-45%
Mostly	> 50%

Reaction to HCl:	
No reaction	No visible reaction
Weak reaction	Some reaction, with bubbles forming slowly
Strong reaction	Violent reaction, with bubbles forming immediately

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
FOUNDATION DATA (1 OF 5)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	11551	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C

010-D(213)S

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
57429
JOSEPH B. HARRIS
Date Signed 03/11/2019
ARIZONA U.S.A.
Expires 06/30/20

DWG NO. S-3.07

___ OF ___

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	699	849	
		010 PM 252			

SCE BORING LOG: RUB-11 (1 of 2)

108+16, 59 Lt. (Ref. Al. Ruthrauff CL)
NORTHING: 472,049 EASTING: 975,033
ELEV.: 2,247.3 TOTAL DEPTH: 99.5

STARTED: 08/28/2013 12:15 PM
FINISHED: 08/28/2013 04:30 PM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2245		S		2-3-11	LEAN CLAY WITH SAND (native), stiff, moist, dark brown, low to medium plasticity CLAY, little fine to medium sand, no cementation, strong reaction with HCl. (CL)
5			S		2-3-3	Becomes medium stiff.
	2240		R		5-5	CLAYEY SAND, loose, moist, brown, fine to coarse SAND, little medium plasticity fines, weak cementation, strong reaction with HCl. (SC)
10			S		4-5-10	FAT CLAY, stiff, moist, dark brown, high plasticity CLAY, few fine to coarse sand, no cementation, strong reaction with HCl. (CH)
15	2235		R		5-6	Becomes medium stiff, little fine to coarse sand.
	2230					
20			S		4-6-11	SILTY SAND WITH GRAVEL, medium dense, moist, brown, fine to coarse SAND, little fine subrounded to subangular gravel, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 0.75". (SM)
	2225					
25			S		4-7-13	
	2220					
30			S		17-12-26	SILTY GRAVEL WITH SAND, dense, moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.5". (GM)
	2215					
35			R		5-6	CLAYEY SAND, loose, moist, brown, fine to coarse SAND, little medium plasticity fines, no cementation, strong reaction with HCl. (SC)
	2210					
40			S		5-9-12	Becomes medium dense, fine to medium SAND, trace fine subrounded to subangular gravel, no reaction with HCl, max. particle size 0.25".
45	2205		S		50/3	Becomes very dense.
	2200					
50			S		50/5	SILTY GRAVEL WITH SAND, very dense, dry to moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.5". (GM) Rock in sampler tip.
	2195					
55			S		50/1	CLAYEY SAND, very dense, moist, brown, fine to coarse SAND, little high plasticity fines, trace fine subrounded gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SC)
60	2190					
	2185		S		10-19-20	Becomes CLAYEY SAND WITH GRAVEL, dense, some fine subrounded to subangular gravel, max. particle size 0.75".
65			R		43-50/4	Becomes very dense.
	2180					
70						

SCE BORING LOG: RUB-11 (2 of 2)

108+16, 59 Lt. (Ref. Al. Ruthrauff CL)
NORTHING: 472,049 EASTING: 975,033
ELEV.: 2,247.3 TOTAL DEPTH: 99.5

STARTED: 08/28/2013 12:15 PM
FINISHED: 08/28/2013 04:30 PM

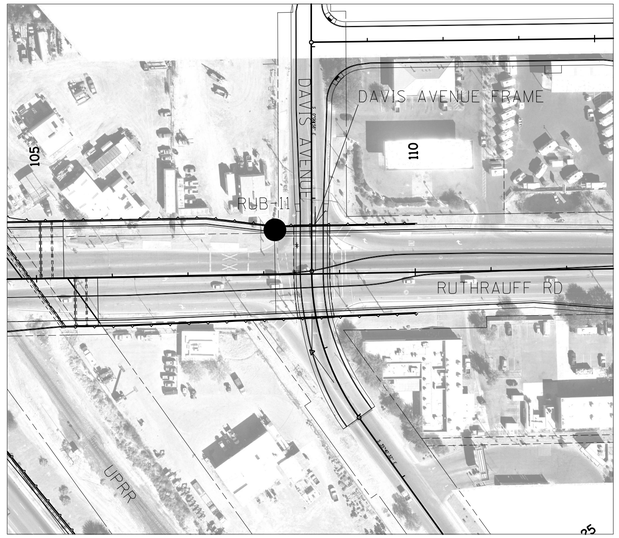
CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
75	2175		S		16-30-27	Added 5 gallons of water to boring at 70'.
	2170		S		18-19-12	Becomes dense, little fine subangular to angular gravel, little low to medium plasticity fines. Added 5 gallons of water to boring at 75'.
80	2165		S		10-12-21	Becomes CLAYEY SAND, few fine subangular to angular gravel. Added 5 gallons of water to boring at 80'.
85	2160		S		18-18-38	Becomes CLAYEY SAND WITH GRAVEL, very dense, little fine subangular to angular gravel, little medium plasticity fines. Added 5 gallons of water to boring at 85'.
90	2155		R		5-35	Becomes medium dense. Added 5 gallons of water to boring at 90'.
95	2150		S		21-25-30	Becomes very dense.
100			S		23-26-18	Becomes dense.
	2145					End of boring at 98'. Stopped sampler at 99.5'. No groundwater encountered. Backfilled with portland cement and sand mixture.
105	2140					
110	2135					
115	2130					
120	2125					
125	2120					
130	2115					
135	2110					
140						

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
FOUNDATION DATA (2 OF 5)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	11551	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C

010-D(213)S

Registered Professional Engineer CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 03/31/2019 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-3.08

OF

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

REPORT sce tds boring log - PROJECT I 10 - ina to ruthrauff - phase 1 and 2.ppj - LIBRARY sce gintls v2.1.glb - LAST MOD 03/26/15 10:38 am - EXPORTED 11/22/17 09:57 am

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	700	849	
		010 PM 252			

SCE BORING LOG: RUB-12 (1 of 2)

108+99, 70 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,921 EASTING: 975,119
ELEV.: 2,246.9 TOTAL DEPTH: 99.5

STARTED: 09/04/2013 07:15 AM
FINISHED: 09/04/2013 02:45 PM

CONTRACTOR: GSI
DRILLER: R. Quezada
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2245		R		6-6	LEAN CLAY (native), medium stiff, moist, brown, medium plasticity CLAY, few fine to coarse sand, no cementation, strong reaction with HCl. (CL)
5	2240		CU S		2-3-5	
10	2235		R		4-12	
15	2230		S		4-6-9	Becomes LEAN CLAY WITH SAND, stiff, little fine to coarse sand, weak cementation.
20	2225		S		9-11-9	Becomes very stiff, no cementation.
25	2220		S		16-24-27	SILTY SAND WITH GRAVEL, very dense, dry, gray-brown, fine to coarse SAND, some fine to coarse subrounded to subangular gravel, little low plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (SM)
30	2215		R		5-12	LEAN CLAY, medium stiff, moist, dark brown, low to medium plasticity CLAY, few fine to medium sand, weak cementation, strong reaction with HCl. (CL)
35	2210		S		17-25-37	WELL-GRADED GRAVEL WITH SILT AND SAND, very dense, dry, gray, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, few nonplastic fines, no cementation, weak reaction with HCl, max. particle size 1.5". (GW-GM)
40	2205		S		23-50/2	Becomes few low plasticity fines.
45	2200		S		50/6	No recovery.
50	2195		S		15-8-27	CLAYEY SAND WITH GRAVEL, dense, dry, gray-brown, fine to coarse SAND, some fine to coarse subangular to angular gravel, little low to medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1". (SC)
55	2190		S		18-21-25	Becomes moist, brown.
60	2185		R		16-25	Becomes CLAYEY SAND, medium dense, little medium plasticity fines, few fine subrounded to subangular gravel, max. particle size 0.75".
65	2180		S		20-22-28	Becomes CLAYEY SAND WITH GRAVEL, dense, little fine subrounded to subangular gravel, max. particle size 0.5".
70						

SCE BORING LOG: RUB-12 (2 of 2)

108+99, 70 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,921 EASTING: 975,119
ELEV.: 2,246.9 TOTAL DEPTH: 99.5

STARTED: 09/04/2013 07:15 AM
FINISHED: 09/04/2013 02:45 PM

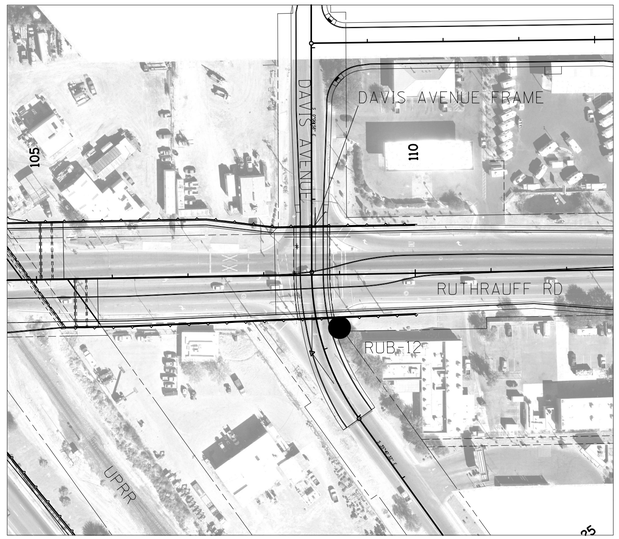
CONTRACTOR: GSI
DRILLER: R. Quezada
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
75	2175		S		21-23-22	Becomes some fine subrounded to subangular gravel, max. particle size 0.75".
80	2170		S		29-31-27	Becomes very dense, dry, light brown, little fine subrounded to subangular gravel.
85	2165		S		25-23-18	Becomes dense, moist.
90	2160		S		38-50/5	Becomes very dense, brown, little fine subangular to angular gravel, max. particle size 0.5".
95	2155		R		50/5	Added 5 gallons of water to boring at 90'.
100	2150		S		20-25-24	Becomes dense.
105	2145		S		24-44-37	Becomes very dense, some fine subrounded to subangular gravel, little low plasticity fines.
110	2140					End of boring at 98'. Stopped sampler at 99.5'. No groundwater encountered. Backfilled with portland cement and sand mixture.
115	2135					
120	2130					
125	2125					
130	2120					
135	2115					
140	2110					

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

REPORT sce tda boring log - PROJECT I 10 - tia to ruthrauff - phase 1 and 2.ggt - LIBRARY sce gintlib v2.1.gdb - LAST MOD 12/31/14 10:57 am - EXPORTED 11/22/17 09:07 am

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
FOUNDATION DATA (3 OF 5)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	11551	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

DWG NO. S-3.09 ____ OF ____

Registered Professional Engineer CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 09/11/19 ARIZONA U.S.A. Expires 06/30/20

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

3/7/2019 10:50:27 PM ...\dms42598\s8480fds_Davis03.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	701	849	
		010 PM 252			

SCE BORING LOG: RUB-13 (1 of 2)

109+28, 91 Lt. (Ref. Al. Ruthrauff CL)
NORTHING: 472,082 EASTING: 975,145
ELEV.: 2,244.8 TOTAL DEPTH: 99.5

STARTED: 08/30/2013 06:30 AM
FINISHED: 08/30/2013 11:30 AM

CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
						LEAN CLAY WITH SAND (native), moist, dark brown, medium plasticity CLAY, little fine sand, no cementation, weak reaction with HCl. (CL)
			R		6-9	
5	2240					SILTY, CLAYEY SAND, loose, moist, brown, fine SAND, some low plasticity fines, no cementation, weak reaction with HCl. (SC-SM)
			CU			
			S		4-5-6	SANDY LEAN CLAY, stiff, moist, dark brown, medium plasticity CLAY, some fine sand, no cementation, strong reaction with HCl, some calcium carbonates. (CL) Becomes medium stiff.
			R		5-12	
10	2235					
			S		7-11-17	Becomes very stiff, some fine to medium sand.
15	2230					SILTY SAND, medium dense, moist, light brown, fine to medium SAND, little nonplastic fines, trace fine subrounded to subangular gravel, no cementation, no reaction with HCl, max. particle size 0.5". (SM)
			S		3-7-8	
20	2225					
			R		11-14	Becomes fine to coarse SAND, few fine subrounded to subangular gravel, max. particle size 0.75".
25	2220					
			S		4-12-13	Becomes SILTY SAND WITH GRAVEL, brown, little fine to coarse subrounded to subangular gravel, max. particle size 1".
30	2215					
			S		3-19-50/5	Becomes very dense.
						SILTY GRAVEL WITH SAND, very dense, moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little nonplastic fines, no cementation, no reaction with HCl, max. particle size 1.5". (GM) Noted 4" to 6" cobbles in cuttings from 31' to 42'.
35	2210		S		16-50/6	
						CLAYEY GRAVEL WITH SAND, very dense, moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, little low to medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (GC)
40	2205		R		27-50/4	
45	2200		S		31-50/1	Added 2.5 gallons of water to boring at 45'.
						CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to coarse SAND, some fine to coarse subrounded to subangular gravel, little medium plasticity fines, no cementation, no reaction with HCl, max. particle size 1.5". (SC)
50	2195		S		17-30-33	
55	2190		S		21-24-29	
60	2185		R		50/4	Added 2.5 gallons of water to boring at 60'.
65	2180		S		34-50/6	Added 2.5 gallons of water to boring at 65'.
70	2175					

SCE BORING LOG: RUB-13 (2 of 2)

109+28, 91 Lt. (Ref. Al. Ruthrauff CL)
NORTHING: 472,082 EASTING: 975,145
ELEV.: 2,244.8 TOTAL DEPTH: 99.5

STARTED: 08/30/2013 06:30 AM
FINISHED: 08/30/2013 11:30 AM

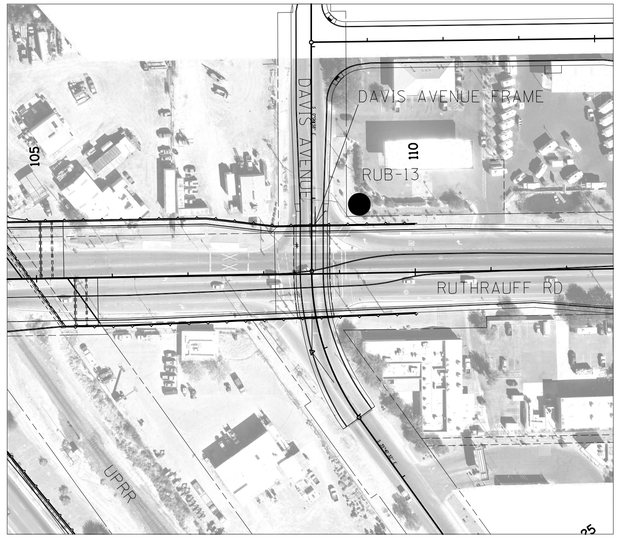
CONTRACTOR: GSI
DRILLER: S. Bradshaw
INSPECTOR: E. Everts
RIG TYPE: Truck mt. CME 75
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
			S		24-34-33	Becomes little fine subangular gravel, max. particle size 0.75". Added 2.5 gallons of water to boring at 70'.
75	2170		S		34-37-30	Becomes some fine to coarse subangular gravel, max. particle size 1.5". Added 2.5 gallons of water to boring at 75'.
80	2165		S		16-16-32	Becomes dense, max. particle size 1". Added 2.5 gallons of water to boring at 80'.
85	2160		R		31-50/5	Becomes very dense. Added 2.5 gallons of water to boring at 85'.
90	2155		S		33-40-50/4	Added 2.5 gallons of water to boring at 90'.
95	2150		S		22-45-48	Added 2.5 gallons of water to boring at 95'.
100	2145		S		32-37-36	
						End of boring at 98'. Stopped sampler at 99.5'. No groundwater encountered. Backfilled with portland cement and sand mixture.
105	2140					
110	2135					
115	2130					
120	2125					
125	2120					
130	2115					
135	2110					
140	2105					

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
FOUNDATION DATA (4 OF 5)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	11551	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C

010-D(213)S

Registered Professional Engineer CERTIFICATE NO. 57429 JOSEPH B. HARRIS Date Signed 03/11/19 ARIZONA U.S.A. Expires 06/30/20

DWG NO. S-3.10

OF

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

REPORT sce tds boring log - PROJECT I 10 - ina to ruthrauff - phase 1 and 2.ppj - LIBRARY sce gintls v2.1.gdb - LAST MOD 12/31/14 11:10 am - EXPORTED 11/22/17 09:57 am

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	702	849	
		010 PM 252			

SCE BORING LOG: RUW-SE13 (1 of 2)

108+13, 61 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,929 EASTING: 975,032
ELEV.: 2,246.3 TOTAL DEPTH: 98.1

STARTED: 09/03/2013 07:00 AM
FINISHED: 09/03/2013 02:20 PM

CONTRACTOR: GSI
DRILLER: R. Quezada
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
0	2245		R		3-13	FAT CLAY WITH SAND (native), medium stiff, moist, brown, high plasticity CLAY, little fine to coarse sand, few fine subrounded to subangular gravel, weak cementation, strong reaction with HCl, max. particle size 0.75". (CH)
5	2240		CU S		5-2-2	Becomes soft.
10	2235		S		5-5-6	LEAN CLAY WITH SAND, stiff, moist, brown, medium plasticity CLAY, little fine sand, weak cementation, strong reaction with HCl. (CL)
15	2230		R		6-8	Becomes medium stiff.
20	2225		S		5-7-10	WELL-GRADED SAND WITH CLAY, medium dense, dry to moist, dark orange, fine to coarse SAND, few fine subrounded to subangular gravel, few medium plasticity fines, no cementation, no reaction with HCl, max. particle size 0.25". (SW-SC)
25	2220		S		7-4-4	Becomes loose.
30	2215		R		22-20	WELL-GRADED GRAVEL WITH SILTY CLAY AND SAND, medium dense, dry to moist, brown, fine to coarse subrounded to subangular GRAVEL, some fine to coarse sand, few low plasticity fines, no cementation, weak reaction with HCl, max. particle size 1.5". (GW-GC)
35	2210		S		23-29-50/4	Becomes very dense, max. particle size 1".
40	2205		S		50/6	Becomes dry, gray-brown, fine subrounded to subangular GRAVEL, no reaction with HCl, max. particle size 0.5".
45	2200		S		50/5	CLAYEY SAND WITH GRAVEL, very dense, dry, gray, fine to coarse SAND, little fine subangular to angular gravel, little medium plasticity fines, no cementation, no reaction with HCl, max. particle size 0.5". (SC)
50	2195		S		50/2	Becomes CLAYEY SAND, moist, brown, few fine to coarse subrounded to subangular gravel, max. particle size 1".
55	2190		S		40-24-23	Becomes CLAYEY SAND WITH GRAVEL, dense, some fine to coarse subrounded to subangular gravel, max. particle size 1.5".
60	2185		R		19-30	WELL-GRADED SAND WITH CLAY AND GRAVEL, medium dense, moist, brown, fine to coarse SAND, little fine subrounded to subangular gravel, few medium plasticity fines, no cementation, no reaction with HCl, max. particle size 0.5". (SW-SC)
65	2180		S		20-23-27	Becomes dense.
70						

REPORT: sce fds boring log - PROJECT: I-10 - ina to ruthrauff - phase 1 and 2.ppj - LIBRARY: sce gintlb v2.1.glb - LAST MOD: 12/31/14 10:16 am - EXPORTED: 11/22/17 09:07 am

SCE BORING LOG: RUW-SE13 (2 of 2)

108+13, 61 Rt. (Ref. Al. Ruthrauff CL)
NORTHING: 471,929 EASTING: 975,032
ELEV.: 2,246.3 TOTAL DEPTH: 98.1

STARTED: 09/03/2013 07:00 AM
FINISHED: 09/03/2013 02:20 PM

CONTRACTOR: GSI
DRILLER: R. Quezada
INSPECTOR: C. Lavayen
RIG TYPE: Truck mt. CME 95
DRILLING METHOD: 8" OD HSA
HAMMER TYPE: Auto Hammer
SCE PROJECT #: J2009-14/J2012-07

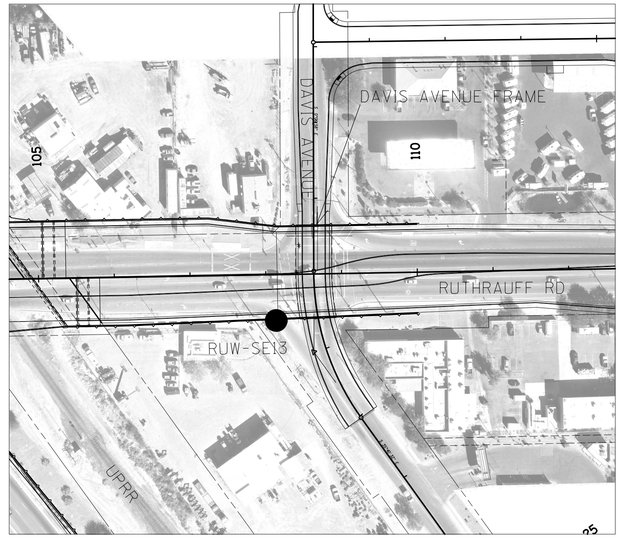
SAMPLER TYPES	Type	Symbol	Description	I.D.	O.D.	Length
	S		Split Spoon	1.375"	2"	18"
	R		Ring Sampler	2.5"	3"	18"
	U		Shelby Tube			

DEPTH (FT)	ELEV. (FT)	GRAPHIC	SAMPLE TYPE	SAMPLE SYMBOL	SAMPLE BLOWS	VISUAL SOIL IDENTIFICATION / DESCRIPTION AND REMARKS
75	2175		S		26-25-25	Becomes dry to moist, weak reaction with HCl, max. particle size 0.75".
80	2170		S		24-26-35	Becomes very dense.
85	2165		R		35-45	POORLY-GRADED GRAVEL WITH CLAY AND SAND, dense, dry to moist, brown, fine subrounded to subangular GRAVEL, some fine to coarse sand, few medium plasticity fines, no cementation, no reaction with HCl, max. particle size 0.5". (GP-GC)
90	2160		S		38-50/6	Becomes very dense. Added 5 gallons of water to boring at 85'.
95	2155		S		21-29-48	CLAYEY SAND WITH GRAVEL, very dense, moist, brown, fine to coarse SAND, little fine subrounded to subangular gravel, little medium plasticity fines, weak cementation, no reaction with HCl, max. particle size 0.75". (SC)
100	2150		S		22-30-45	Becomes no cementation.
105	2145		R		50/1	No recovery. End of boring at 98'. Stopped sampler at 98.1'. No groundwater encountered. Backfilled with portland cement and sand mixture.
110	2140					
115	2135					
120	2130					
125	2125					
130	2120					
135	2115					
140	2110					

REPORT: sce fds boring log - PROJECT: I-10 - ina to ruthrauff - phase 1 and 2.ppj - LIBRARY: sce gintlb v2.1.glb - LAST MOD: 12/31/14 10:16 am - EXPORTED: 11/22/17 09:07 am

BORING PLAN

SCALE 1:100



PHASE 1 BORING LOCATION

PHASE 2 BORING LOCATION

Call at least two full working days before you begin excavation.
ARIZONA 811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

	NAME	DATE
DESIGN	JBH	3-19
DRAWN	JBH	3-19
CHECKED	KW	3-19

SCE ENGINEERING
810 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP

STA 20+
DAVIS AVENUE FRAME
FOUNDATION DATA (5 OF 5)

ROUTE	MILEPOST	STRUCTURE NO.	LOCATION
I-10	252.00	11551	RUTHRAUFF ROAD T.I.

TRACS NO. H8480 01C | 010-D(213)S

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 57429
JOSEPH B. HARRIS
Date Signed 03/11/2019
ARIZONA U.S.A.
Expires 06/30/20

DWG NO. S-3.11

OF

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

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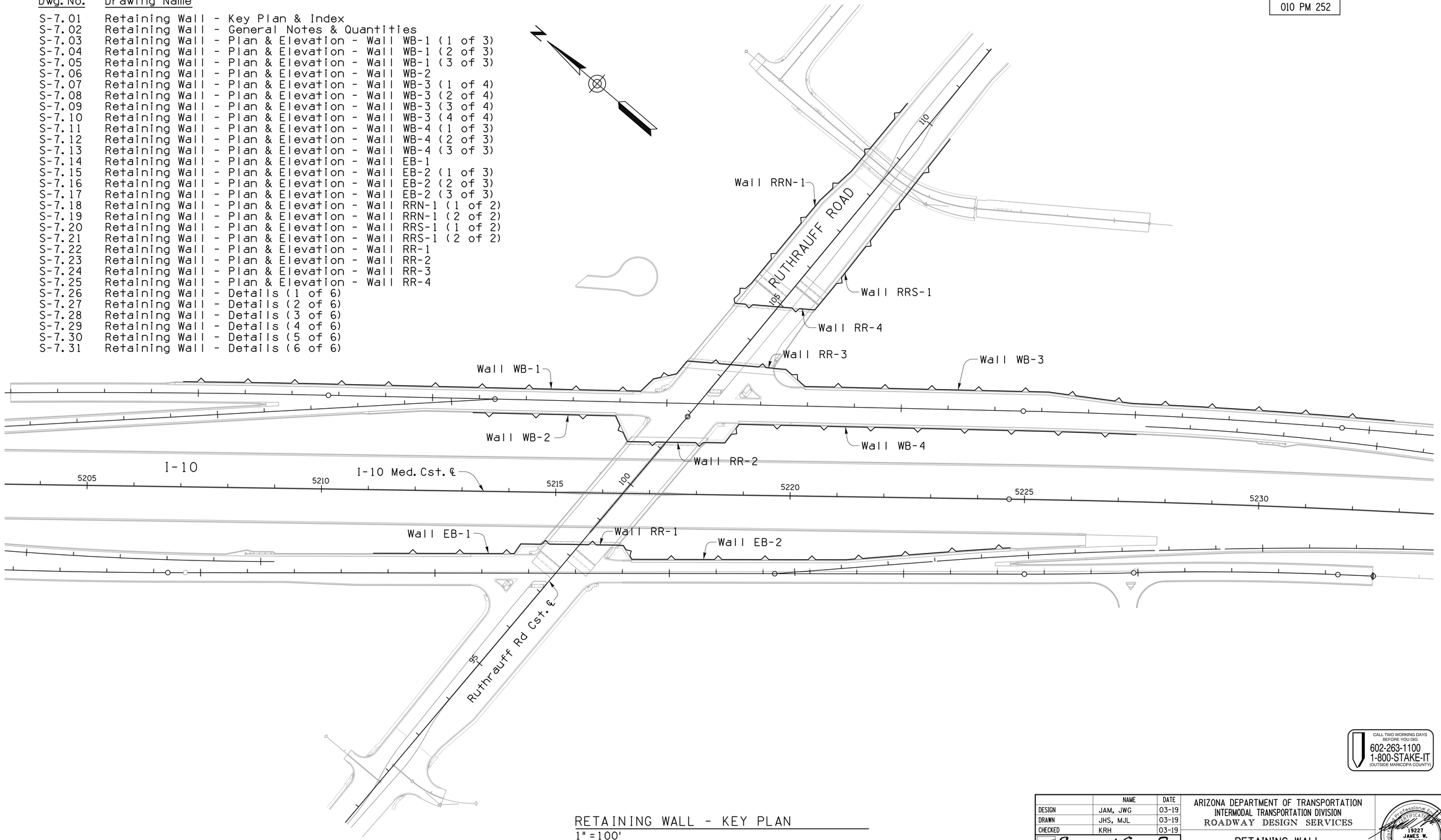
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	703	849	

010 PM 252

INDEX OF DRAWINGS



RETAINING WALL - KEY PLAN
1" = 100'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
KEY PLAN & INDEX

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 ARIZONA, U.S.A.
Expires 12/31/20

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. S-7.01

___ OF ___

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

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w01.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	704	849	

010 PM 252

GENERAL NOTES

Construction Specification:
Arizona Department of Transportation Standard Specifications for Road and Bridge Construction, 2008 Edition and the Special Provisions.

Design Specifications:
AASHTO LRFD Bridge Design Specifications, 6th Edition 2012.

The site is classified as Site Class D with Peak Ground Acceleration (PGA) = 0.120 and Spectrum Acceleration Coefficients: at Period 0.2 sec (S_S) = 0.278 and at Period 1.0 sec (S_1) = 0.118. The site is assigned to Seismic Zone 1.

Soil Properties - See Final Geotechnical Report by NCS Consultants, LLC, March 31, 2015.

All concrete shall be Class "S" ($f'c \geq 3000$ psi).

Reinforcing steel shall conform to ASTM Specification A615. All reinforcing shall be furnished as Grade 60.

All bends and hooks for reinforcing steel shall meet the requirements of AASHTO LRFD Section 5.10.2. All bend dimensions for reinforcing steel shall be out-to-out of bars. All placement dimensions for reinforcing steel shall be to center of bars unless noted otherwise.

All reinforcing shall have 2 inches clear cover unless noted otherwise.

All mechanical splices shall conform to the requirements for mechanical connections in Section 605-3.02 of the Standard Specifications.

Utilities - The Contractor shall coordinate all existing conditions during construction of the project. Utility information & locations shown on the plans are approximate and may not be complete or accurately depict the location of all existing, new, relocated and abandoned utilities with the project plans and notify respective owners before commencing the work of excavation and any temporary shoring construction. Conflicts shall be brought to the attention of the Engineer and resolved prior to proceeding with the work. See roadway and utility drawings for additional information.

Temporary Shoring - The Contractor shall be responsible for providing temporary shoring as required to maintain traffic, to protect utilities, for protection of workers, or as otherwise needed to accomplish the work. The Contractor will submit a plan outlining construction procedures, shoring requirements, and design to the Engineer for review and approval prior to proceeding with the work. See Standard Specifications and Special Provisions for additional information.

GENERAL NOTES (CONT'D)

Geometry for all retaining walls is referenced to the Wall Layout Line.

Length of wall segments is measured along the Wall Layout Line.

Refer to roadway drawings for flowline elevations, roadway horizontal alignment and roadway typical section information.

The thickness of the rustication shall be considered as an addition to the wall thickness. Rustication and surface texture shall extend to a minimum of 1'-0" below final grade.

All exposed surfaces of walls shall be painted to a minimum depth of 1'-0" below final grade. Retaining walls shall be painted in accordance with the Standard Specifications and Special Provisions unless noted otherwise.

Rustication shall be provided for all walls in accordance with the Architectural Treatment Details and Special Provisions.

Mechanically Stabilized Earth (MSE) retaining walls are to be designed by the MSE wall Manufacturer and constructed in accordance with the Manufacturer's recommendations and the Special Provisions.

Reinforced backfill and retained backfill for MSE Walls shall be paid under Item No. 2030509 Structure Backfill (MSE Wall Backfill).

Dimensions shall not be scaled from drawings.

Chamfer all exposed corners 3/4" unless noted otherwise.

RETAINING WALL APPROXIMATE QUANTITIES

Retaining Wall Mark	Retaining Wall 5½" (MSE Wall) (SF)	Retaining Wall 30" (MSE Wall) (SF)
WB-1	23,003	
WB-2	5,352	
WB-3	6,591	21,897
WB-4	18,529	
EB-1	4,296	
EB-2	10,931	
RRN-1	17,830	
RRS-1	13,839	
RR-1	5,421	
RR-2	7,194	
RR-3	3,661	4,586
RR-4	2,775	3,813
TOTAL	119,423	30,296
AS-BUILT TOTAL		

Approximate quantities for overexcavation and structural excavation for MSE walls will not be paid for separately. The cost for those items is considered included in the square foot cost of the walls.

LEGEND:

Detail Marker

1 / 2.01 — Detail Number; Sheet Number

Section Marker

C / 2.01 — Section Letter; Sheet Number

Note:
A line (-) in place of the Sheet number indicates that the SECTION or DETAIL is located on the same Sheet that the SECTION or DETAIL is cut.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
GENERAL NOTES & QUANTITIES

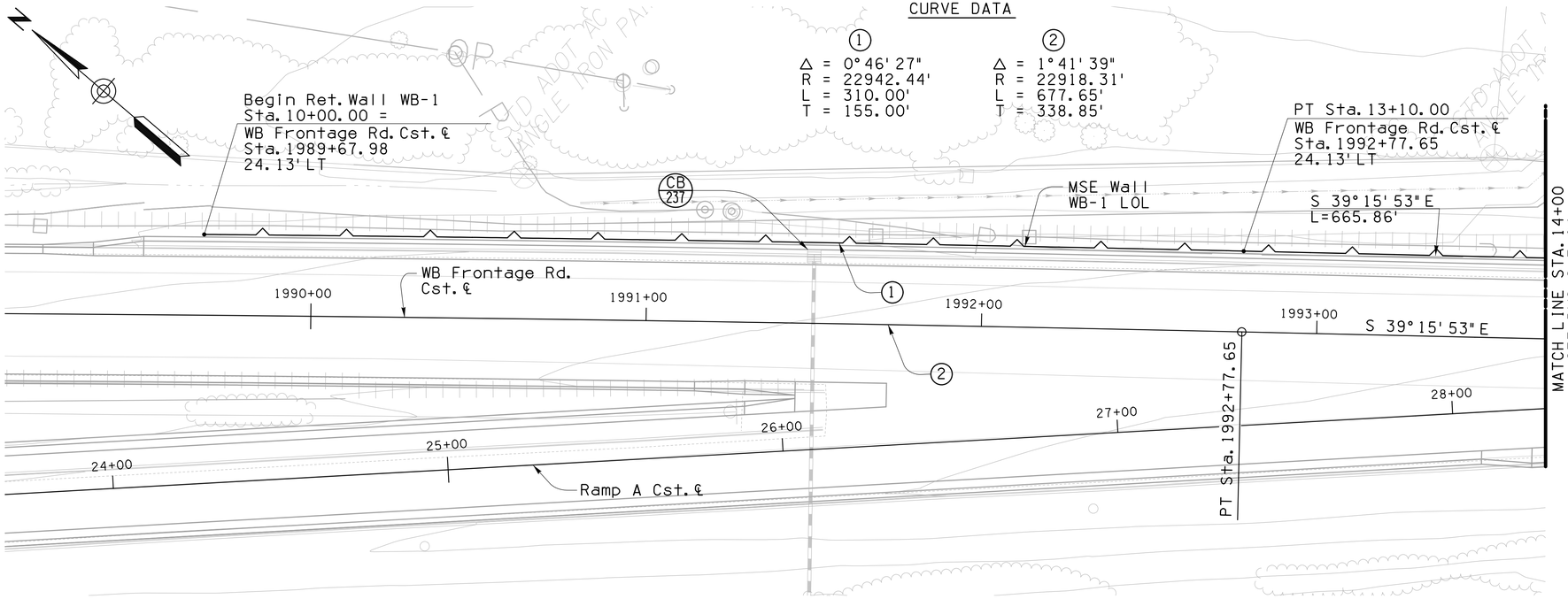
Registered Professional Engineer, Certificate No. 19227, JAMES W. GLOCK, Date Signed 3/8/19, Arizona, U.S.A. Expires 12/31/20

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI | DWG NO. S-7.02

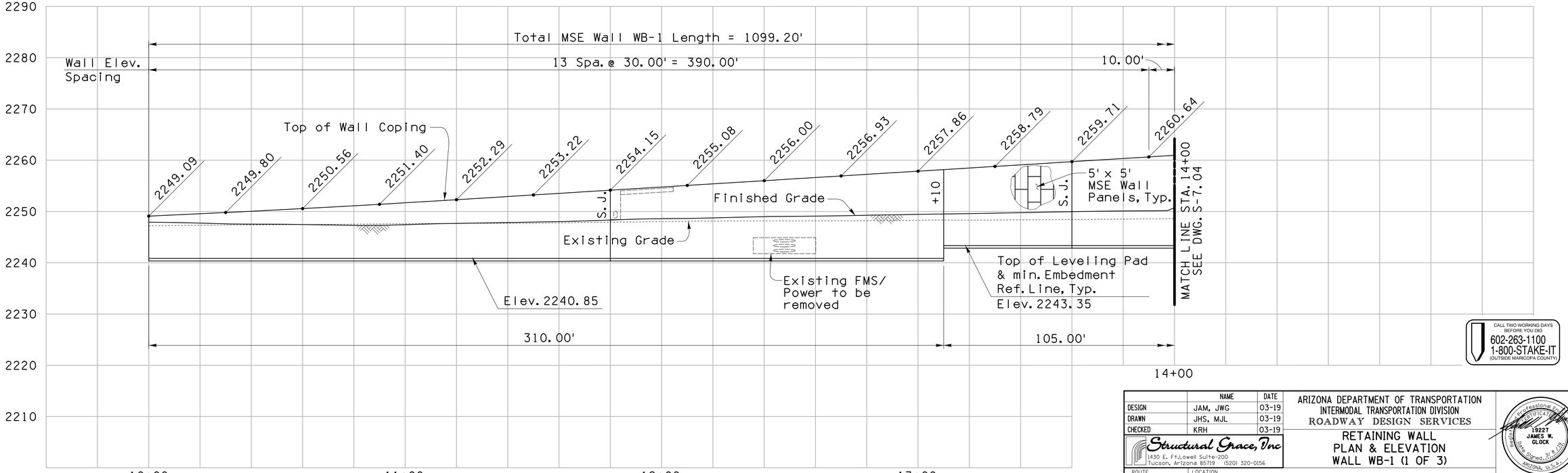
TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w02.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	705	849	
		010 PM 252			



PLAN - WALL WB-1 (MSE)
1"=20'



ELEVATION - WALL WB-1 (MSE)
Horiz.: 1"=20'; Vert. 1"=10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

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(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
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ARIZONA DEPARTMENT OF TRANSPORTATION
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ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-1 (1 OF 3)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 Arizona, U.S.A. Expires 12/31/20

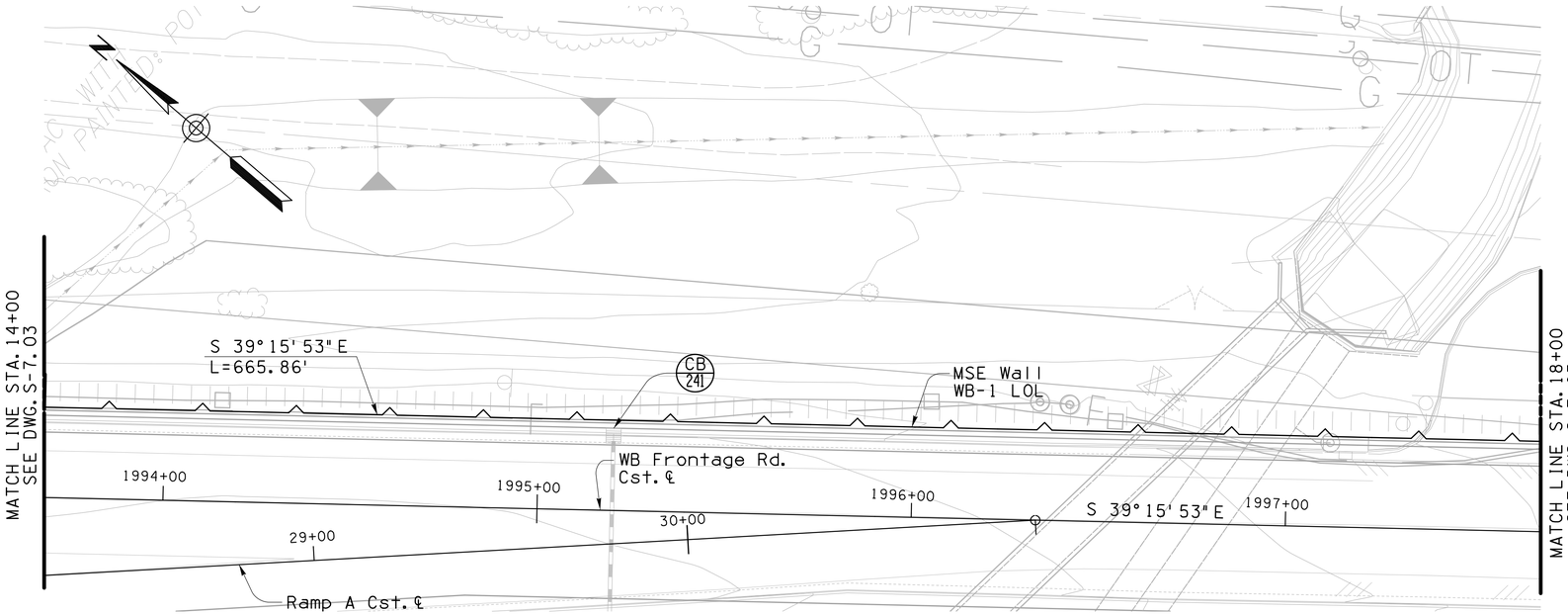
ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.03

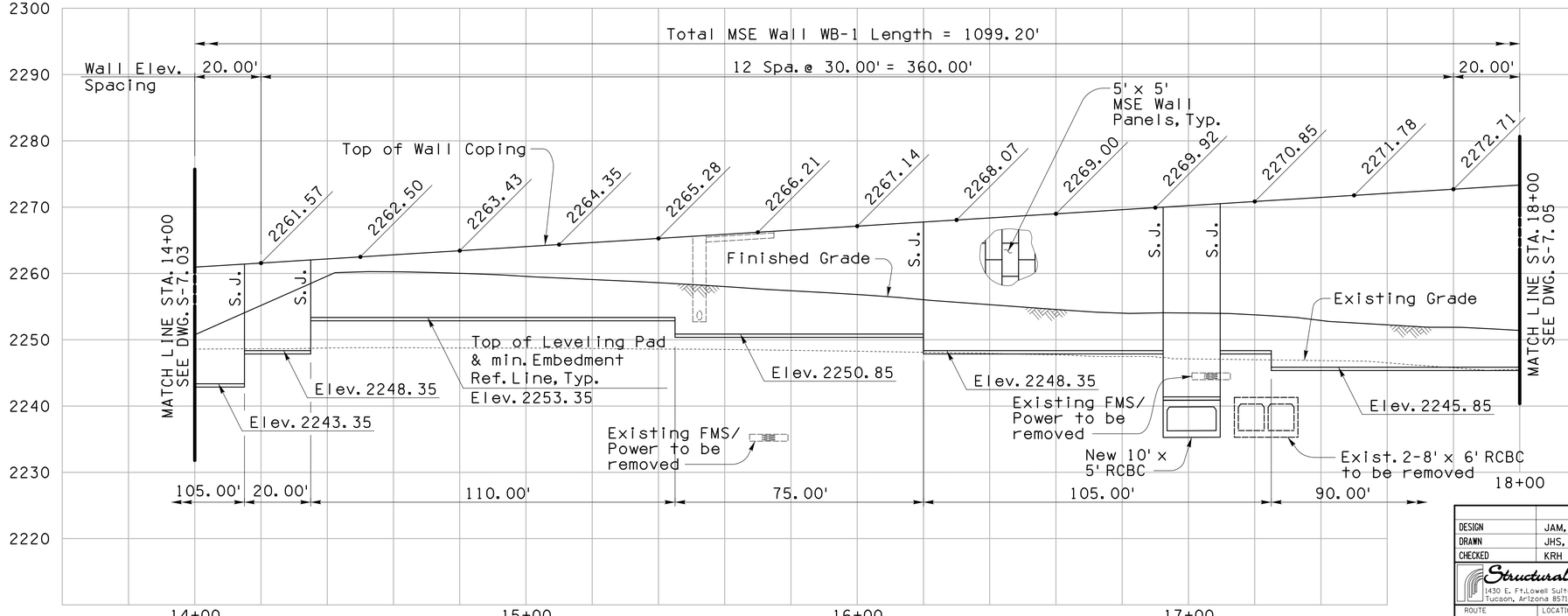
TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w03.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	706	849	
		010 PM 252			



PLAN - WALL WB-1 (MSE)
1" = 20'



ELEVATION - WALL WB-1 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

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CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
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ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-1 (2 OF 3)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/2019 ARIZONA, U.S.A. Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

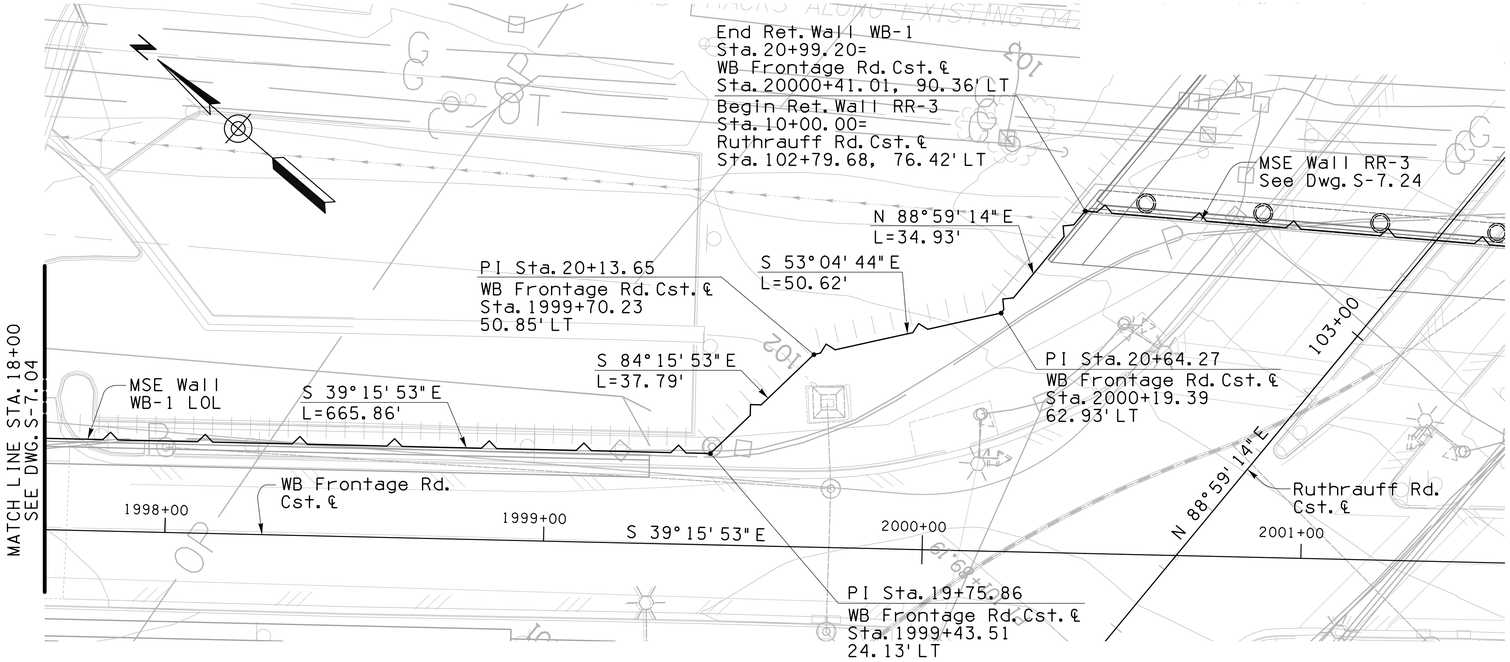
DWG NO. S-7.04

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

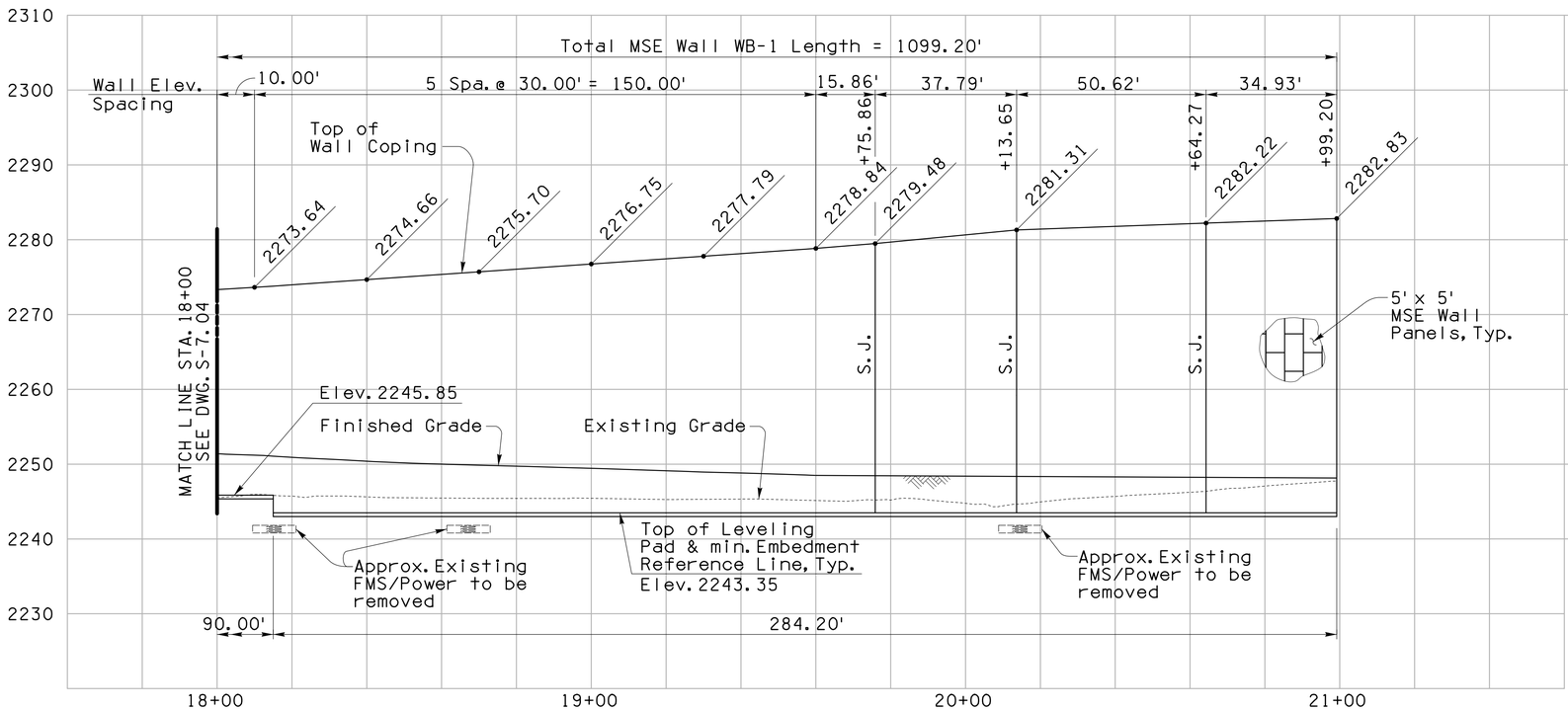
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	707	849	
		010 PM 252			



PLAN - WALL WB-1 (MSE)
1" = 20'



ELEVATION - WALL WB-1 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

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CALL TWO WORKING DAYS BEFORE YOU DIG
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(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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RETAINING WALL
PLAN & ELEVATION
WALL WB-1 (3 OF 3)

Registered Professional Engineer
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JAMES W. GLOCK
Date Signed
ARIZONA, U.S.A.
Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

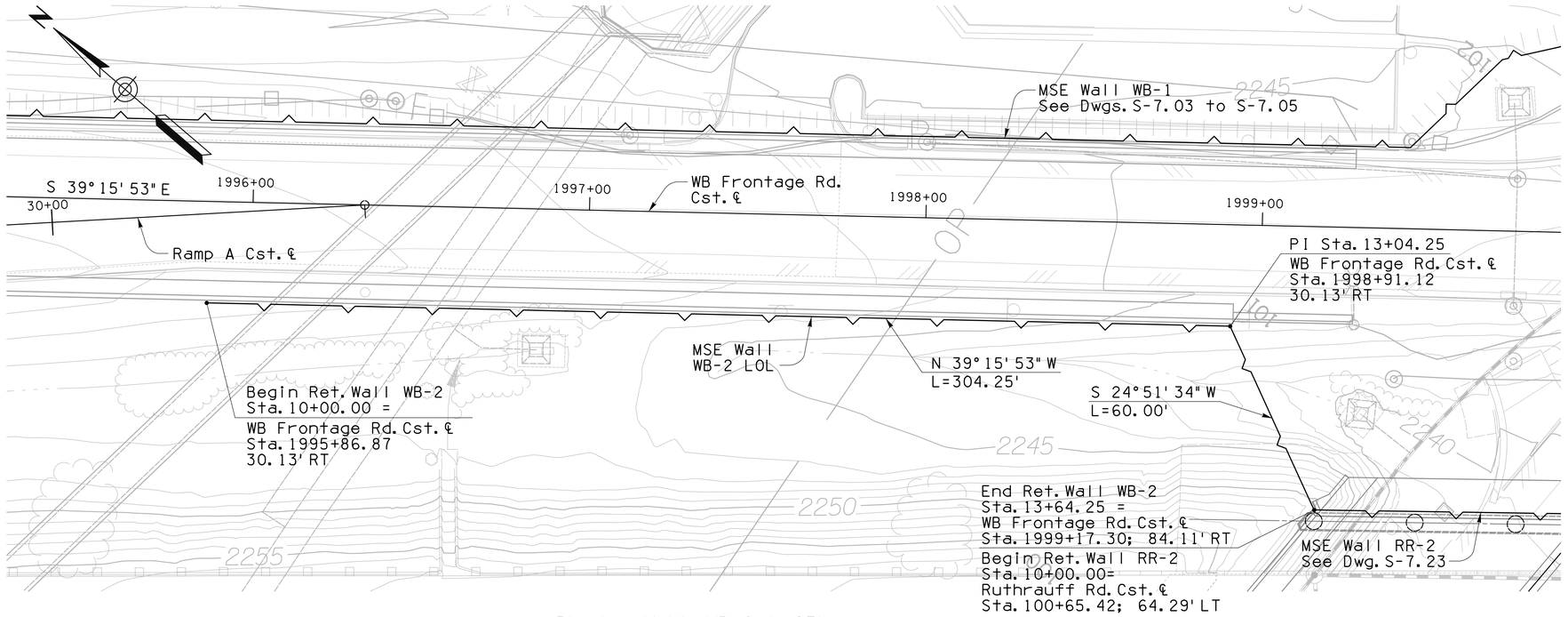
DWG NO. S-7.05

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w05.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	708	849	
		010 PM 252			



PLAN - WALL WB-2 (MSE)
1" =20'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

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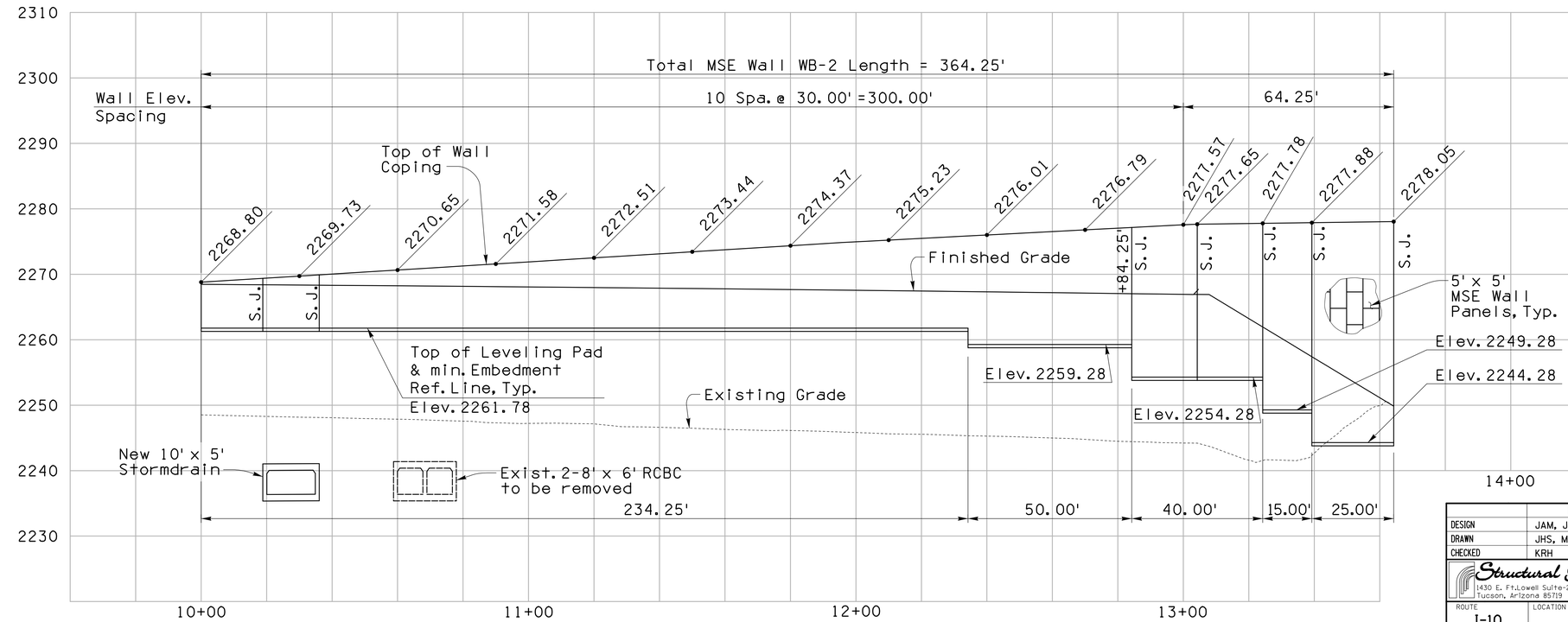

ELEVATION - WALL WB-2 (MSE)
Horiz.: 1" =20'; Vert.: 1" =10'

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1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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RETAINING WALL
PLAN & ELEVATION
WALL WB-2

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ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.06

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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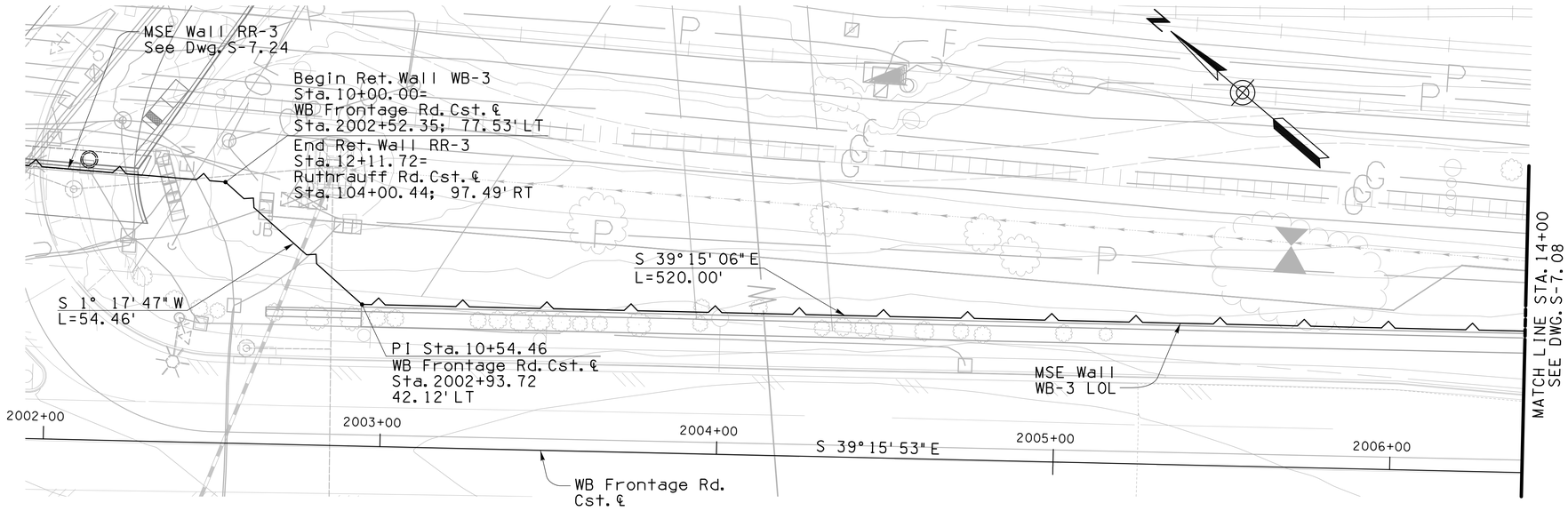
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	709	849	
		010 PM 252			



PLAN - WALL WB-3 (MSE)
1" = 20'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

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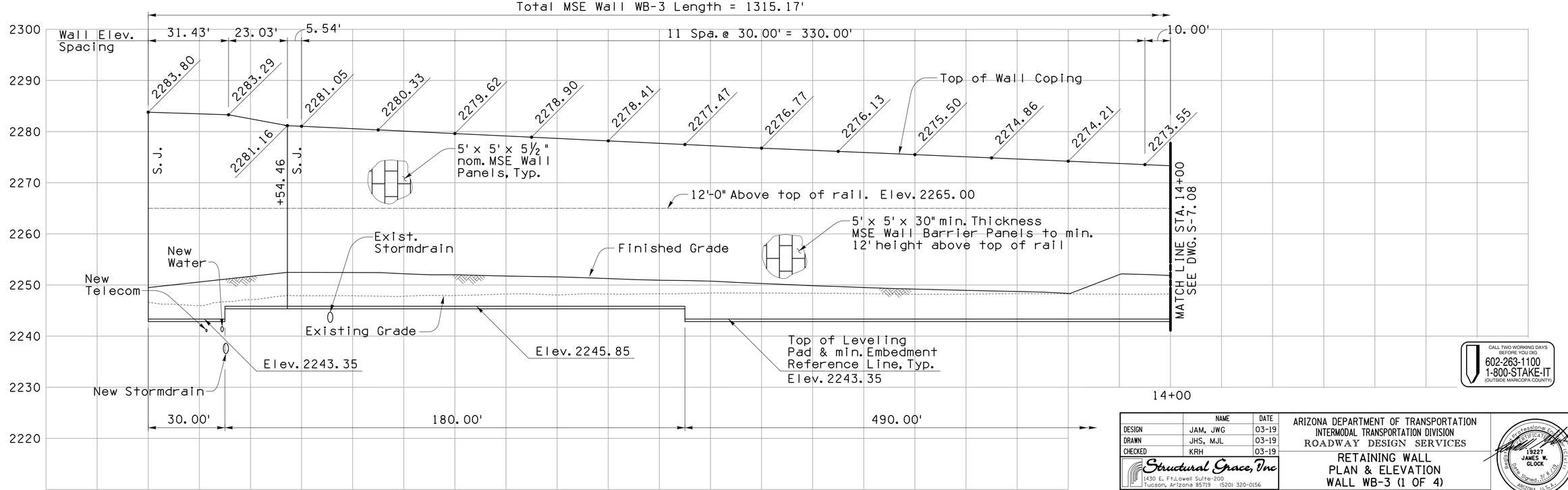

ELEVATION - WALL WB-3 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

CALL TWO WORKING DAYS BEFORE YOU DIG
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1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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RETAINING WALL
PLAN & ELEVATION
WALL WB-3 (1 OF 4)

Professional Engineer CERTIFICATE 19227 JAMES W. GLOCK Date Signed 3/8/19 ARIZONA, U.S.A. Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.07

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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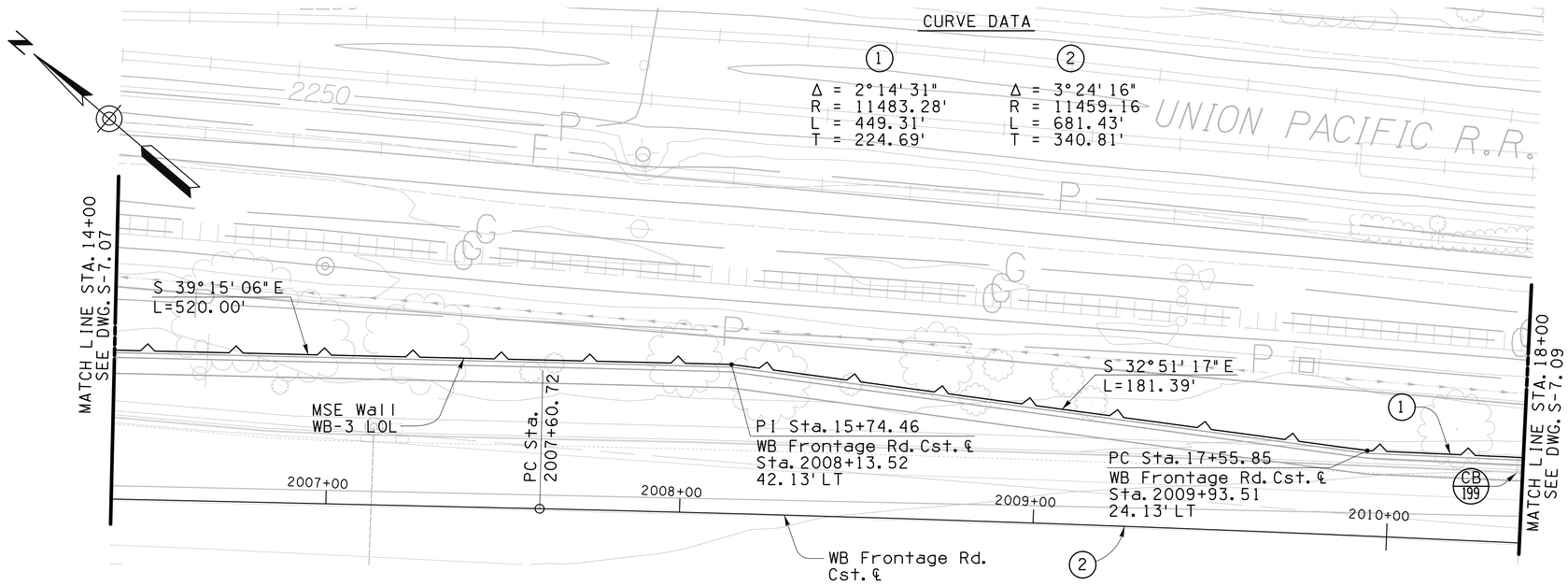
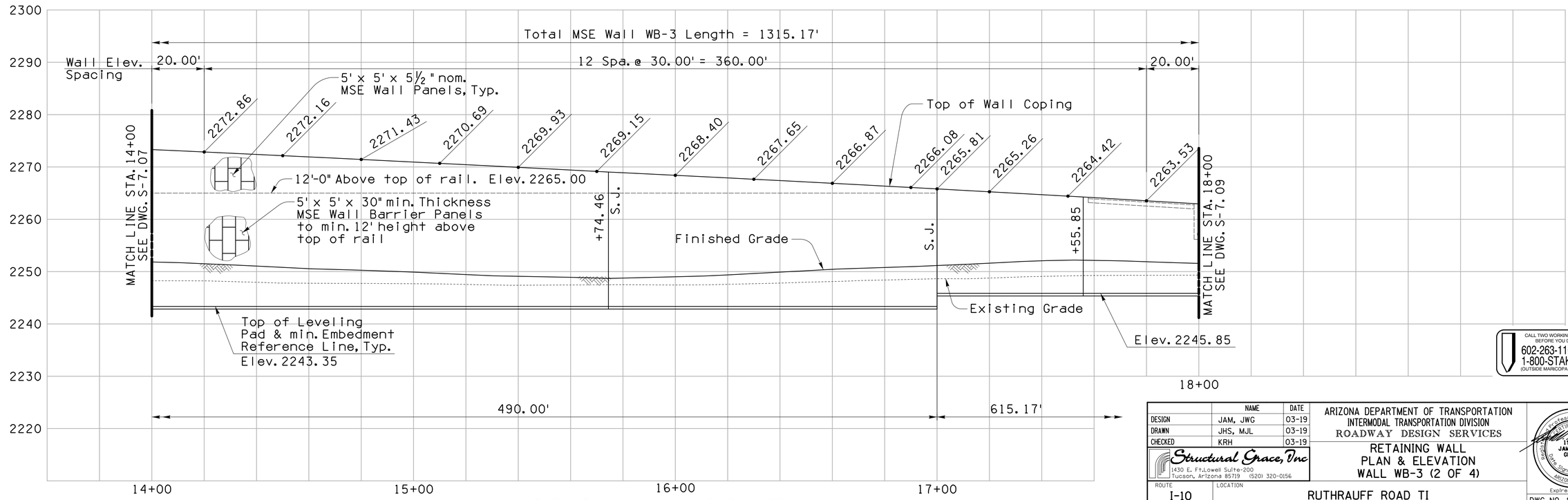
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	710	849	
		010 PM 252			



PLAN - WALL WB-3 (MSE)
1" =20'



ELEVATION - WALL WB-3 (MSE)
Horiz.: 1" =20'; Vert.: 1" =10'

Note:

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CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-3 (2 OF 4)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 11/8/19 ARIZONA, U.S.A. Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.08

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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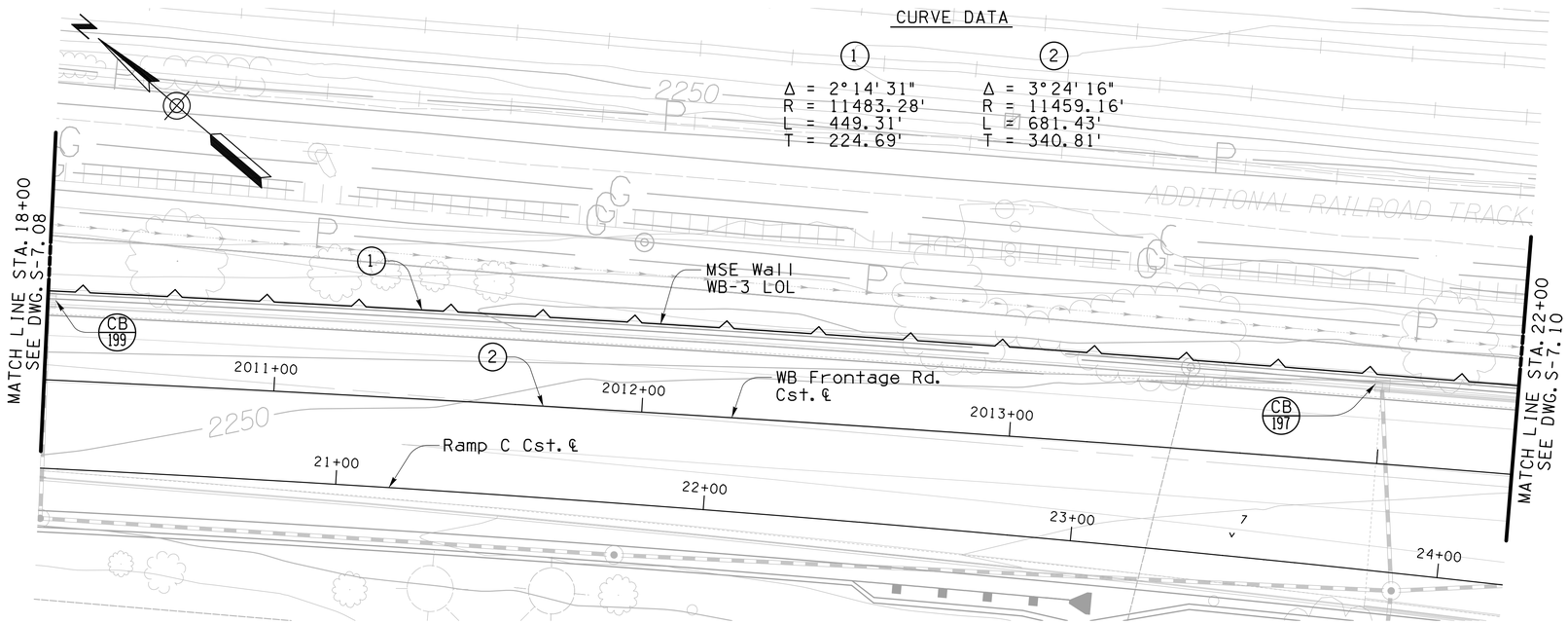
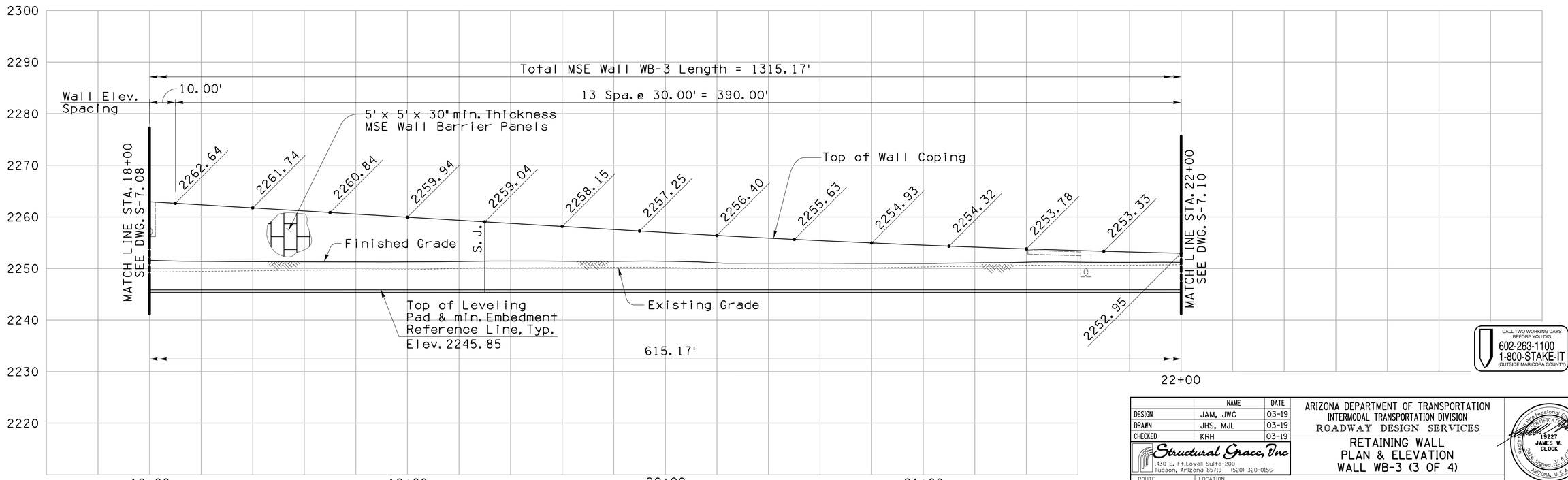
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	711	849	
		010 PM 252			

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



PLAN - WALL WB-3 (MSE)
1"=20'



ELEVATION - WALL WB-3 (MSE)
Horiz.: 1"=20'; Vert.: 1"=10'

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CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
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	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
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ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-3 (3 OF 4)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 ARIZONA, U.S.A. Expires 12/31/20

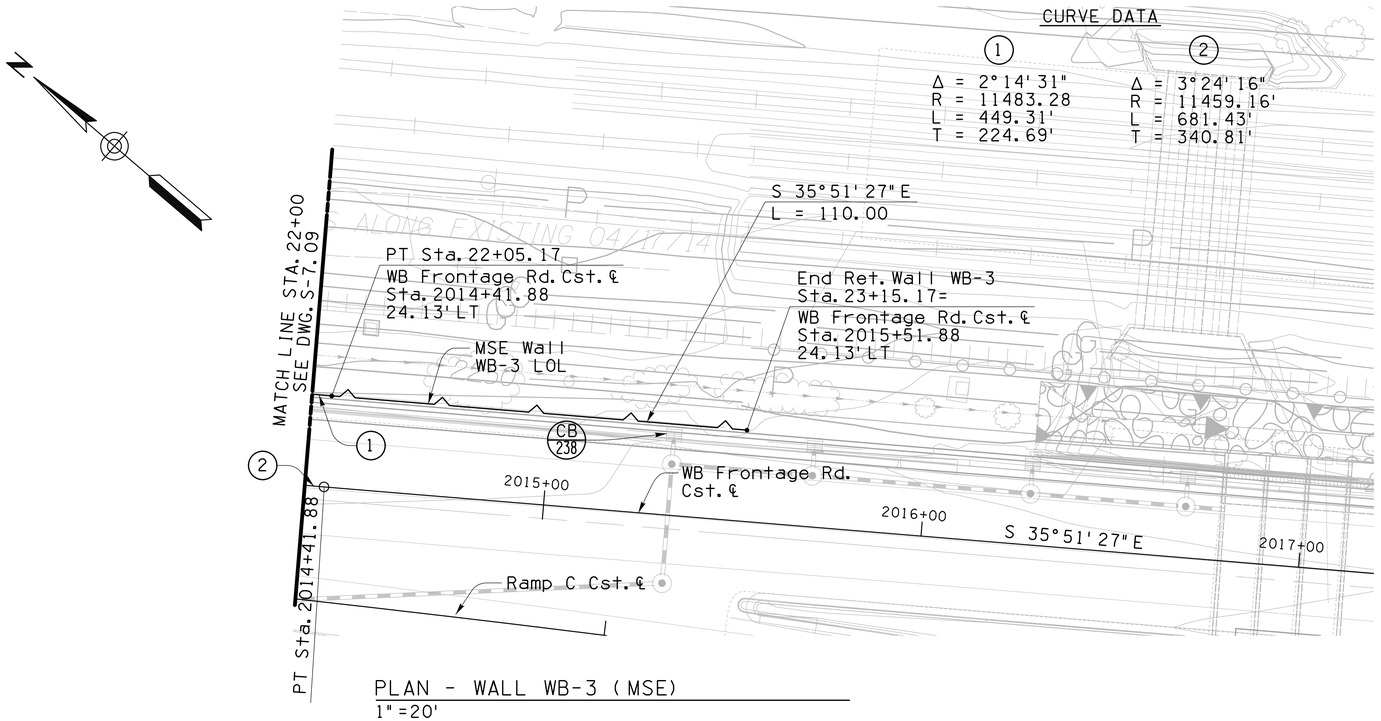
ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.09

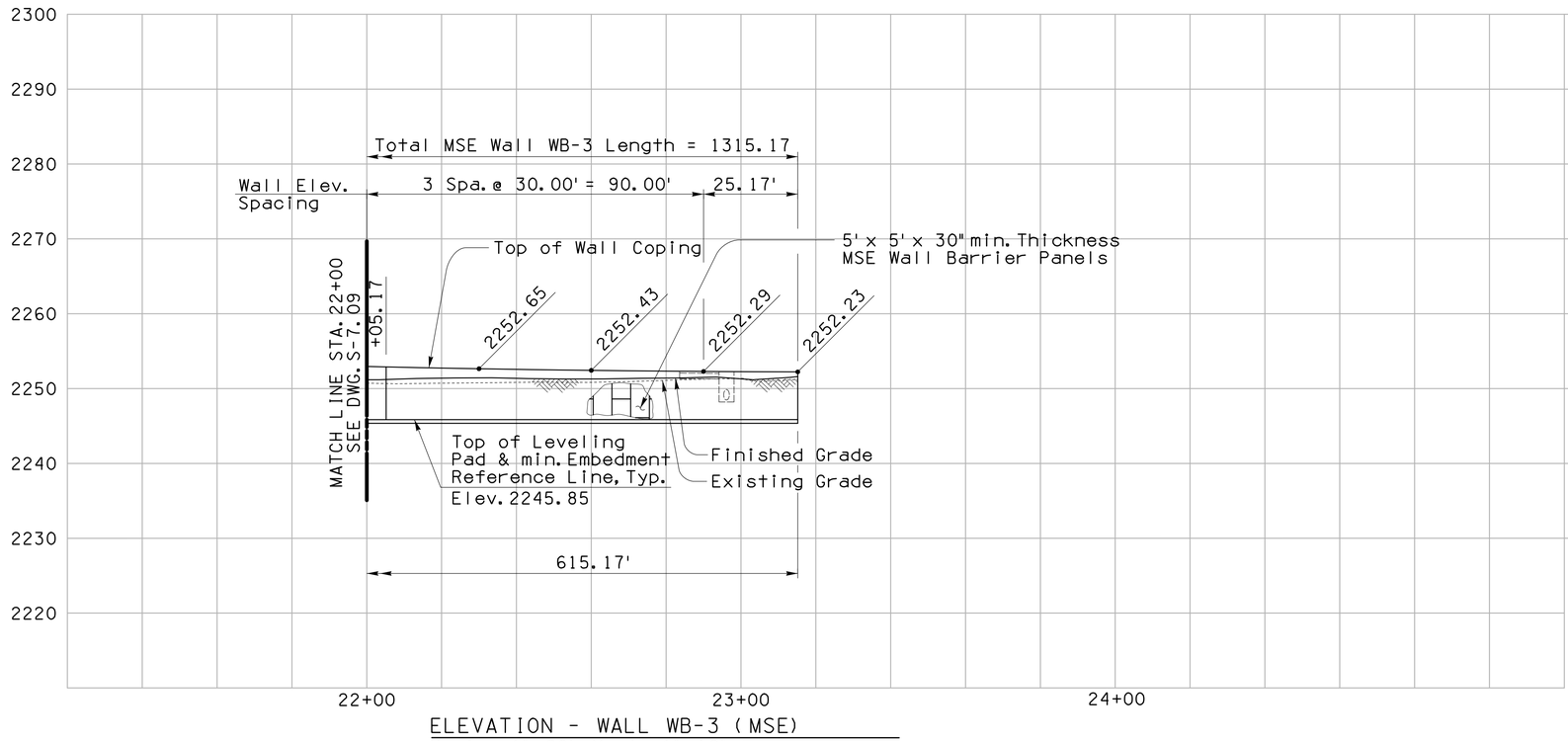
TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w09.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	712	849	
		010 PM 252			



PLAN - WALL WB-3 (MSE)
1"=20'



ELEVATION - WALL WB-3 (MSE)
Horiz.: 1"=20'; Vert.: 1"=10'

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1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-3 (4 OF 4)

Registered Professional Engineer
CERTIFICATE NO.
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JAMES W. GLOCK
Date Signed
ARIZONA, U.S.A.
Expires 12/31/20

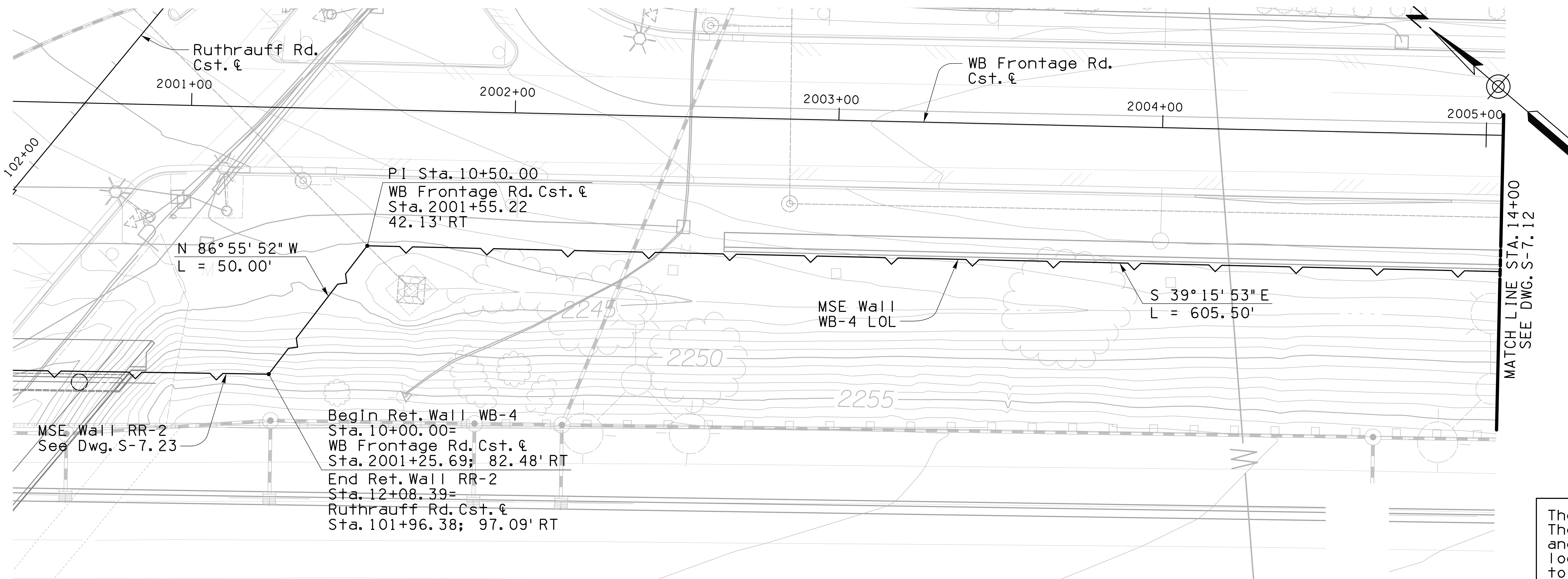
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	S-7.10
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w10.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	713	849	

010 PM 252



PLAN - WALL WB-4 (MSE)
1" = 20'

Note:

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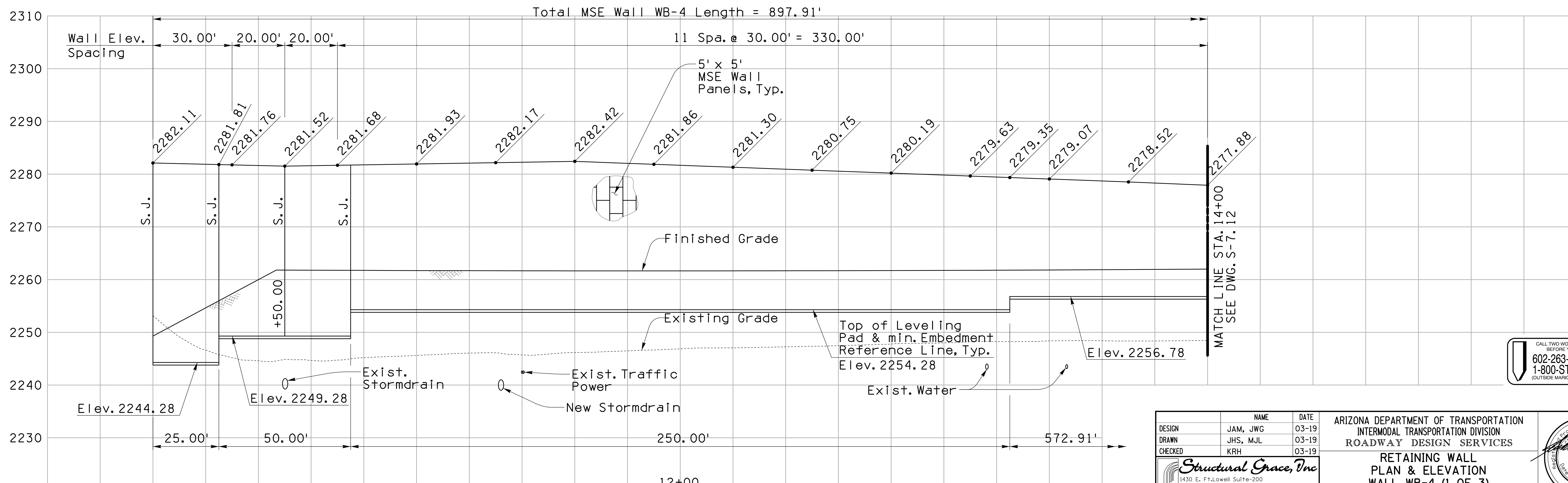

ELEVATION - WALL WB-4 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-4 (1 OF 3)

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

19227 JAMES W. GLOCK
ARIZONA, U.S.A.
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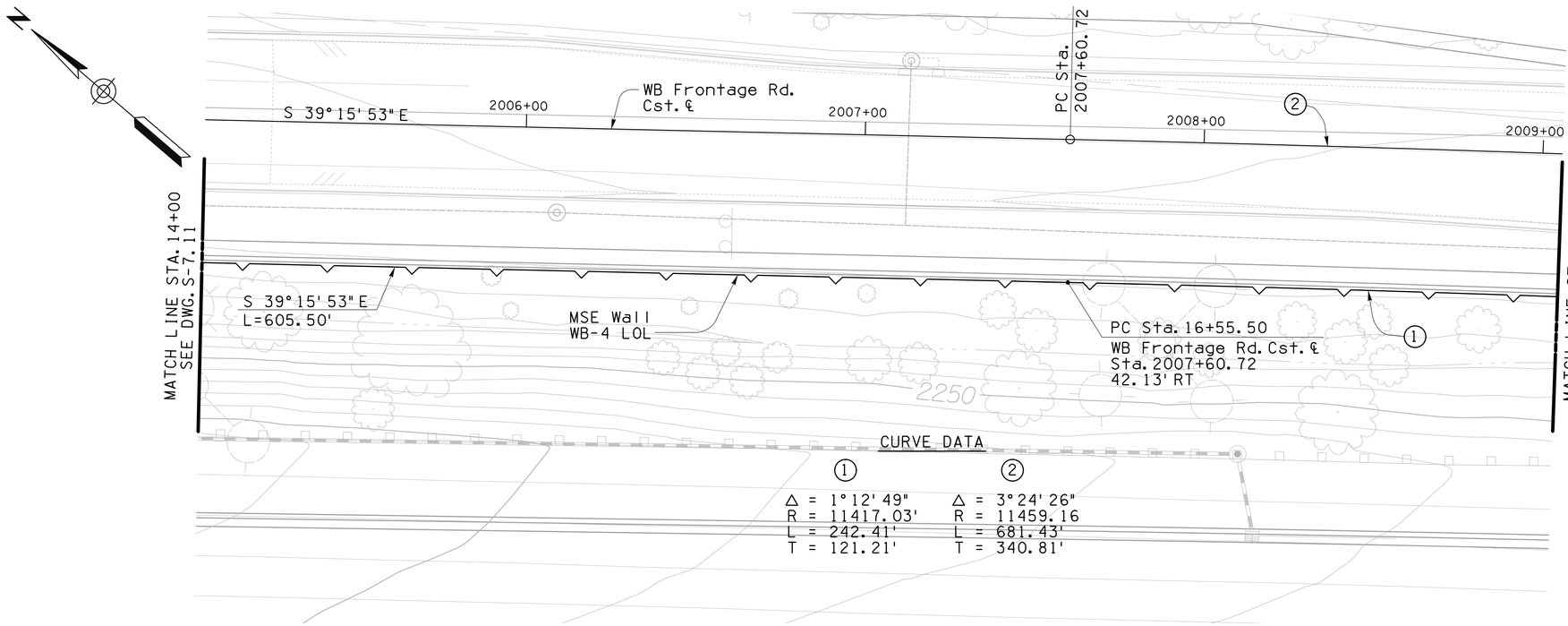
DWG NO. S-7.11

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

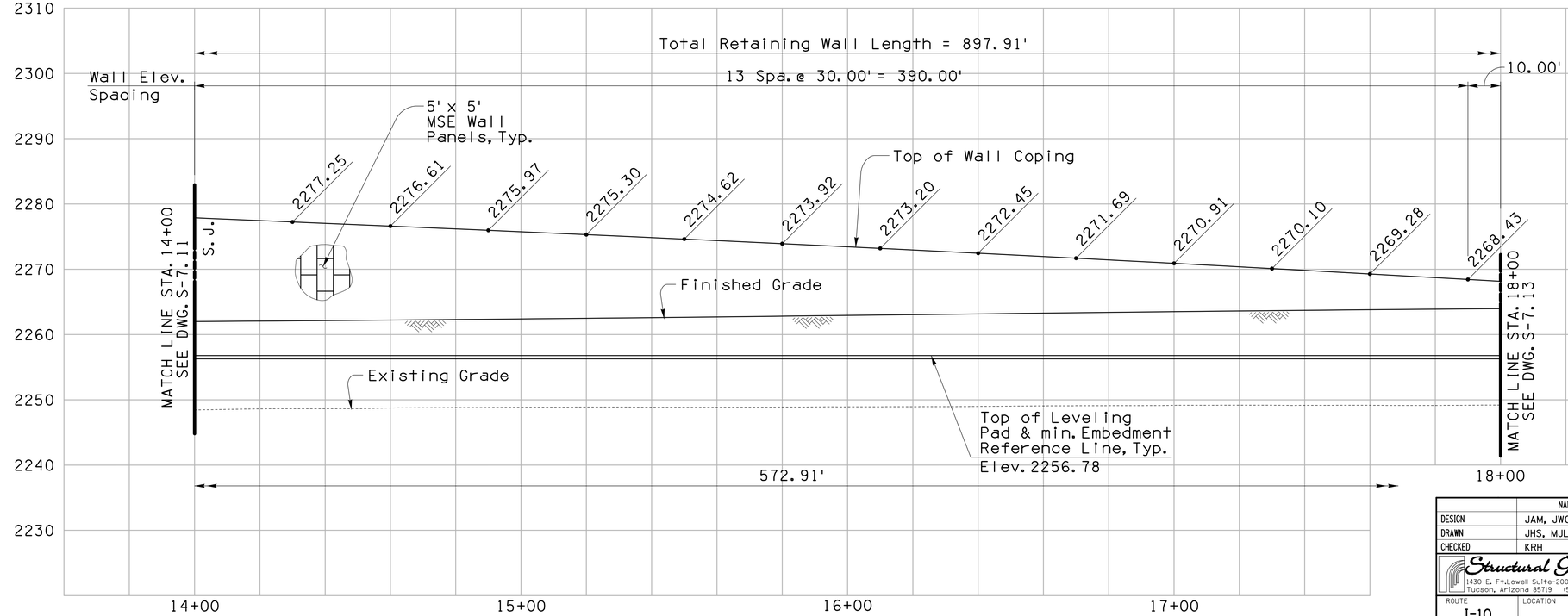
DATE- | LOCATION- | REVISIONS- | FINISHED PLANS- | SURVEY NO.

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w11.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	714	849	
		010 PM 252			



PLAN - WALL WB-4 (MSE)
1"=20'



ELEVATION - WALL WB-4 (MSE)
Horiz.: 1"=20'; Vert. 1"=10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

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DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-4 (2 OF 3)

Registered Professional Engineer
CERTIFICATE
19227
JAMES W. GLOCK
Date Signed
ARIZONA, U.S.A.
Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

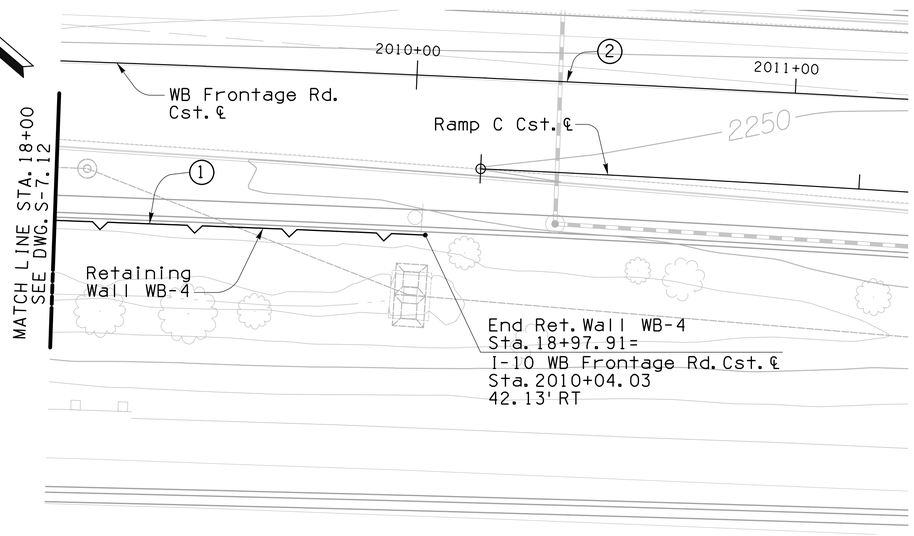
DWG NO. S-7.12

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w12.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	715	849	
		010 PM 252			



CURVE DATA

①

△ = 1°12'49"
R = 11417.03'
L = 242.41'
T = 121.21'

②

△ = 3°24'26"
R = 11459.16
L = 681.43'
T = 340.81'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

PLAN - WALL WB-4 (MSE)
1"=20'

ELEVATION - WALL WB-4 (MSE)
Horiz.: 1"=20'; Vert.: 1"=10'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL WB-4 (3 OF 3)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 11/8/19 Arizona, U.S.A. Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

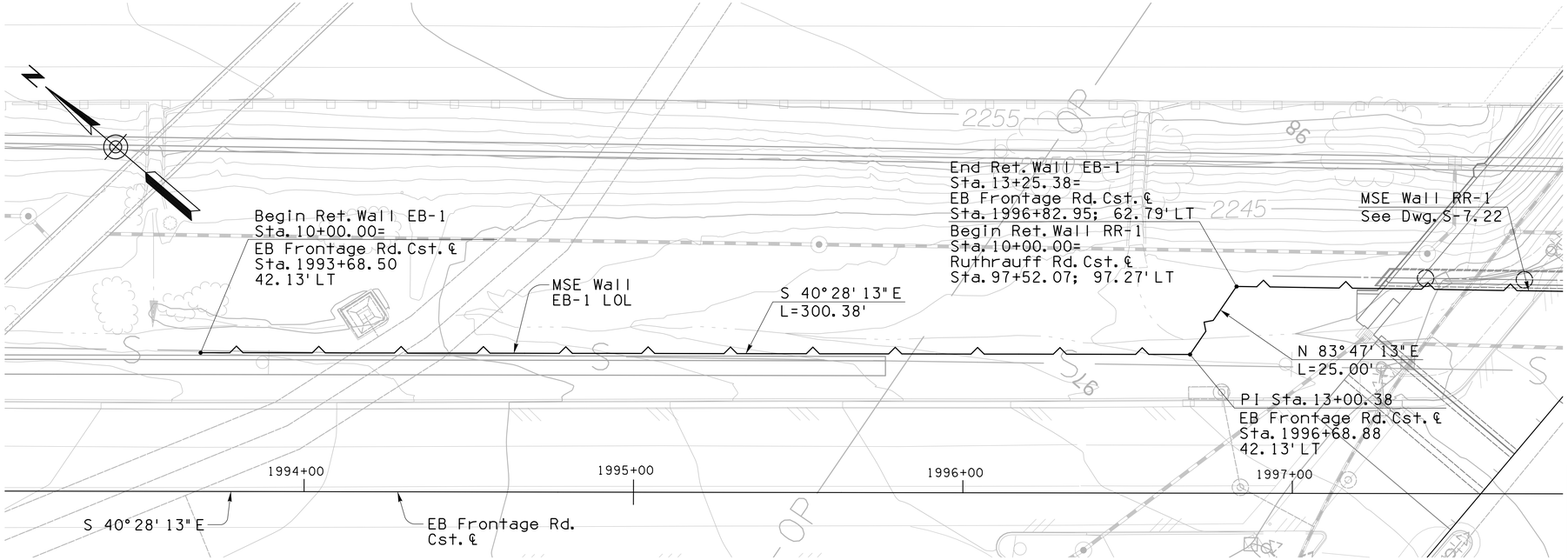
DWG NO. S-7.13

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

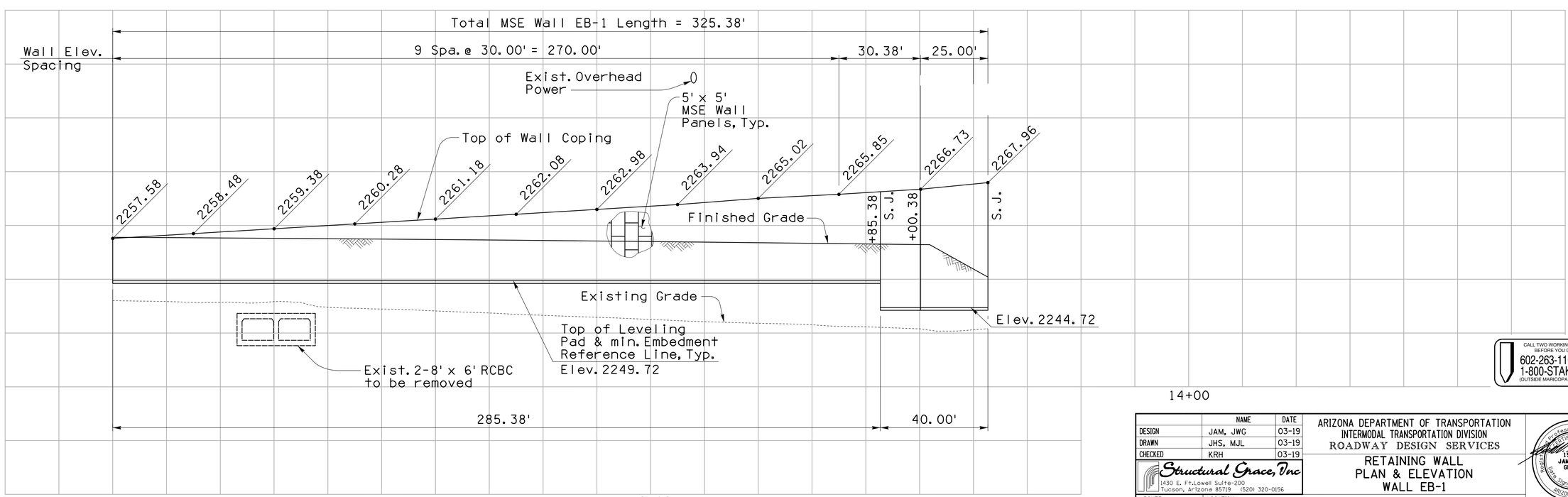
3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w13.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	716	849	
		010 PM 252			



PLAN - WALL EB-1 (MSE)
1" = 20'



ELEVATION - WALL EB-1 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

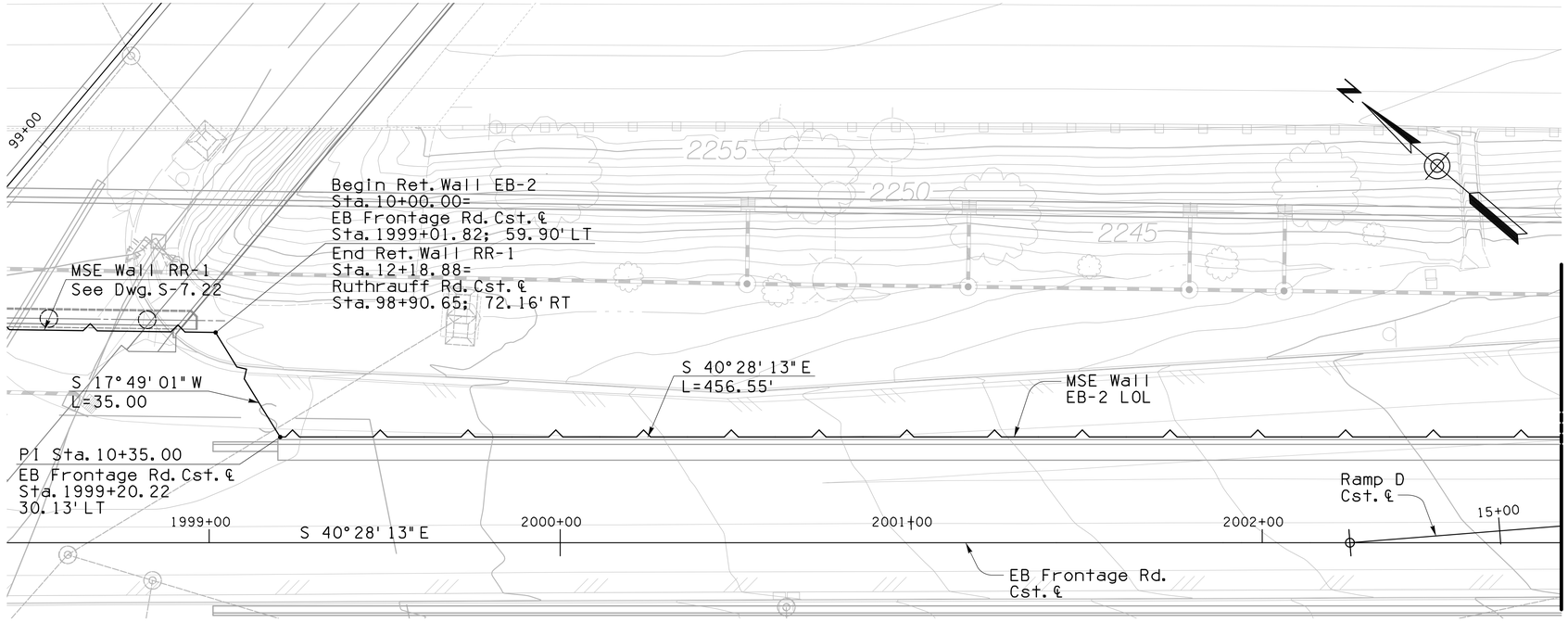
RETAINING WALL
PLAN & ELEVATION
WALL EB-1

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 11/8/19 Expires 12/31/20

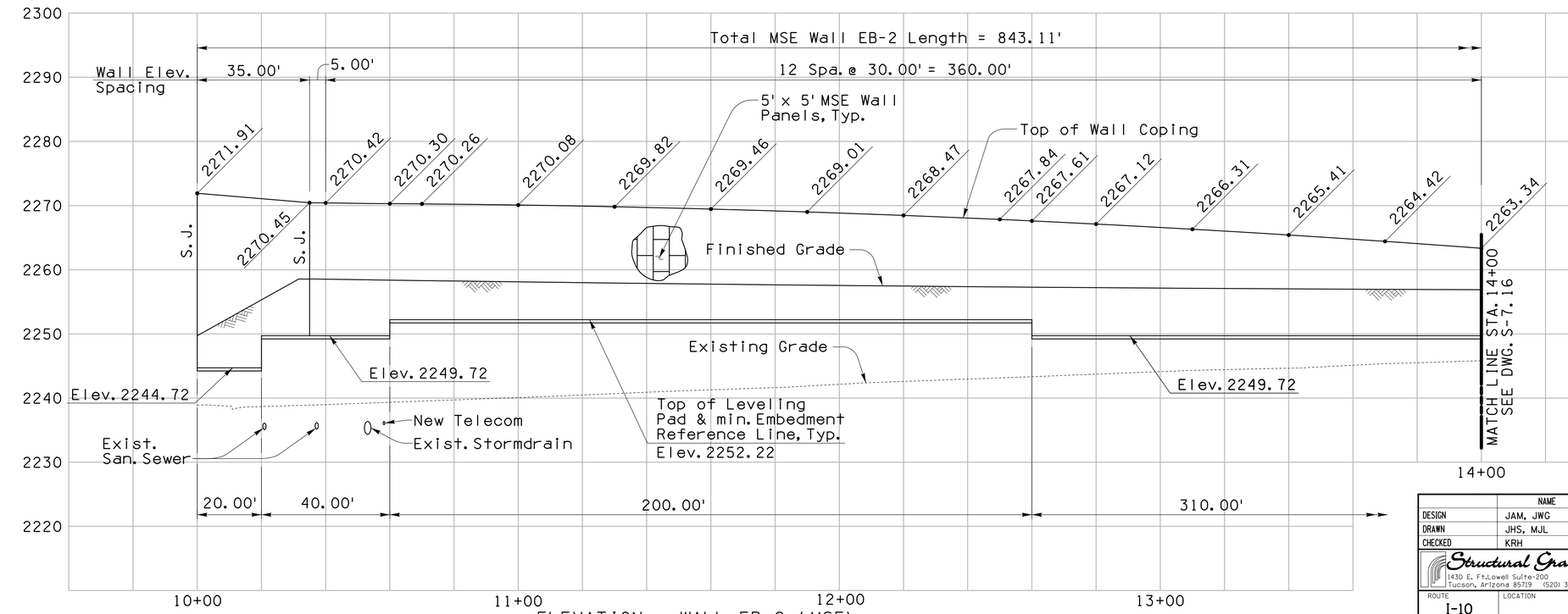
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	S-7.14
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w14.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	717	849	
		010 PM 252			



PLAN - WALL EB-2 (MSE)
1" =20'



ELEVATION - WALL EB-2 (MSE)
Horiz.: 1" =20'; Vert.: 1" =10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL EB-2 (1 OF 3)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 Arizona, U.S.A.
Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.15

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w15.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	718	849	
		010 PM 252			

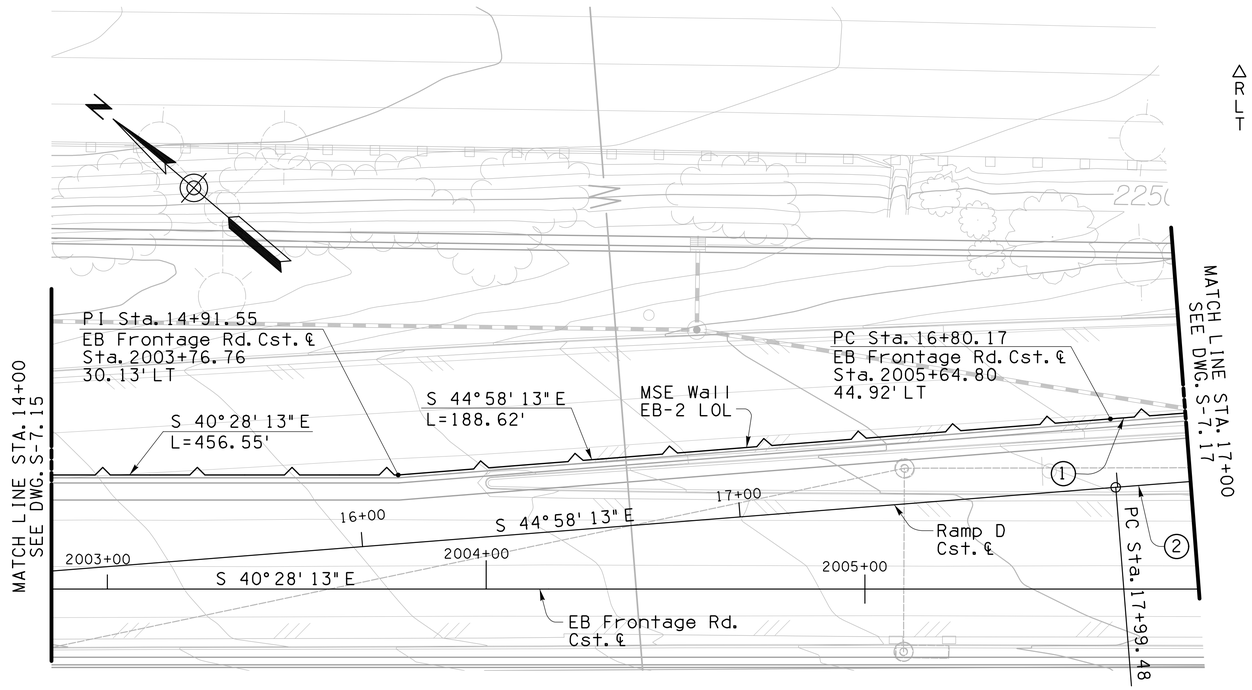
CURVE DATA

①	②
Δ = 1°05'3"	Δ = 3°09'55"
R = 8612.49'	R = 8594.67'
L = 162.95'	L = 474.78'
T = 81.47'	T = 237.39'

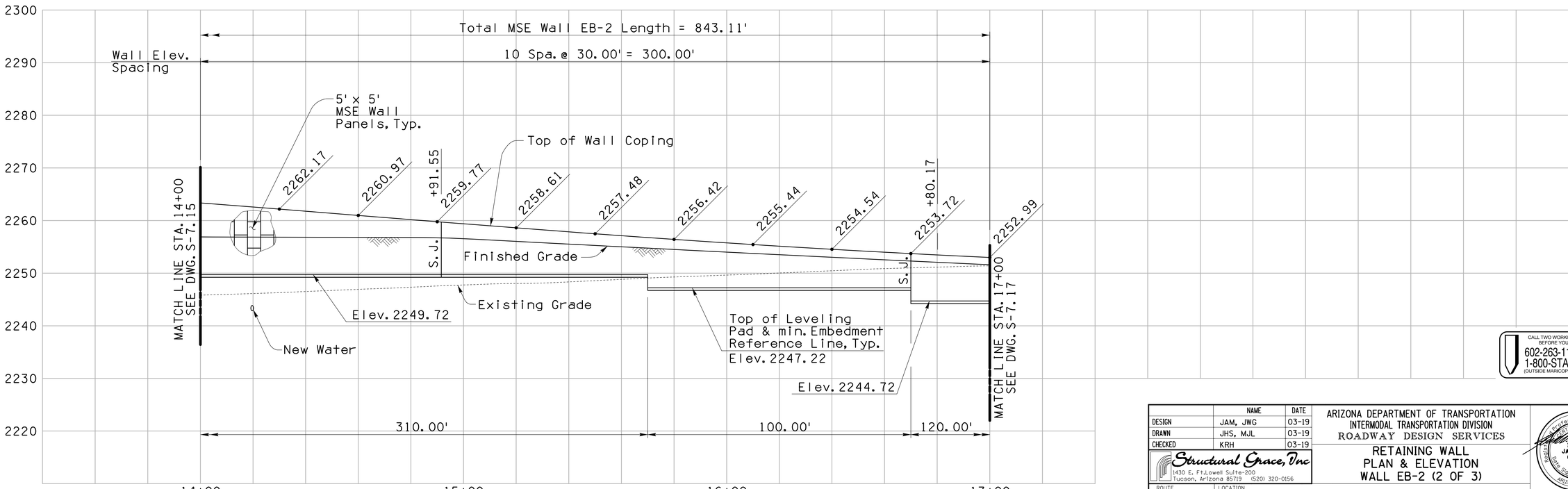
Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.



PLAN - WALL EB-2 (MSE)
1" = 20'



ELEVATION - WALL EB-2 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL EB-2 (2 OF 3)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 11/8/19 Arizona U.S.A. Expires 12/31/20

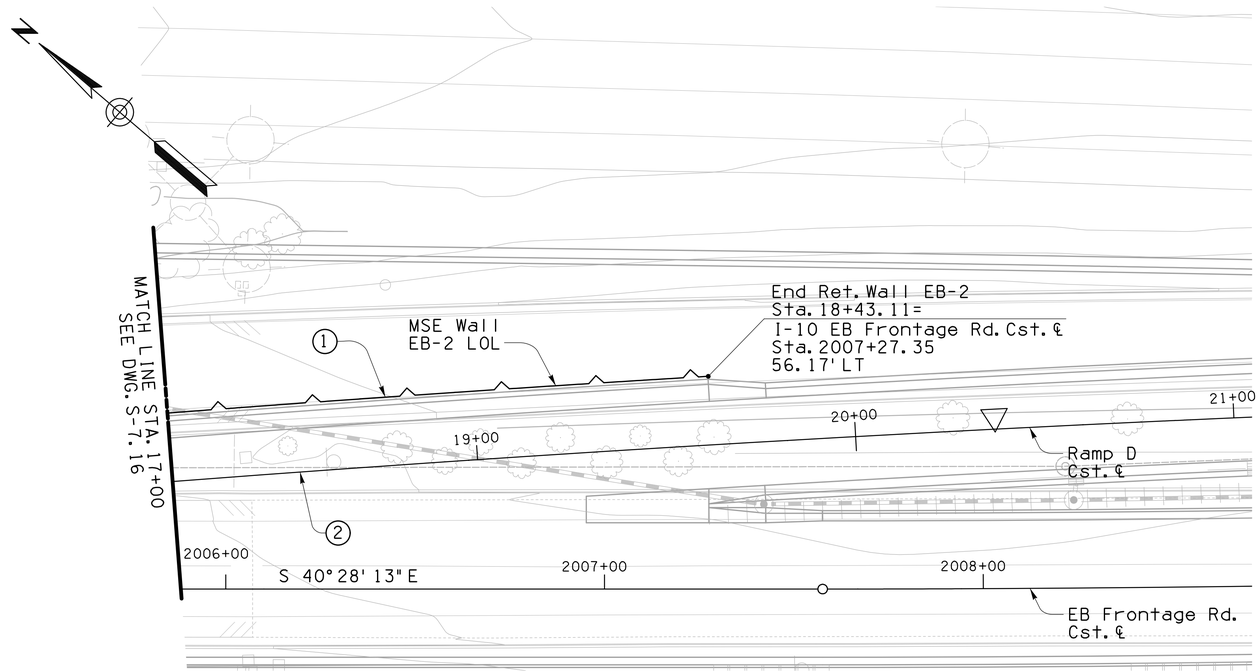
ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.16

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w16.dgn



PLAN - WALL EB-2 (MSE)
1"=20'

CURVE DATA

①	②
Δ = 1°05'3"	Δ = 3°09'55"
R = 8612.49'	R = 8594.67'
L = 162.95'	L = 474.78'
T = 81.47'	T = 237.39'

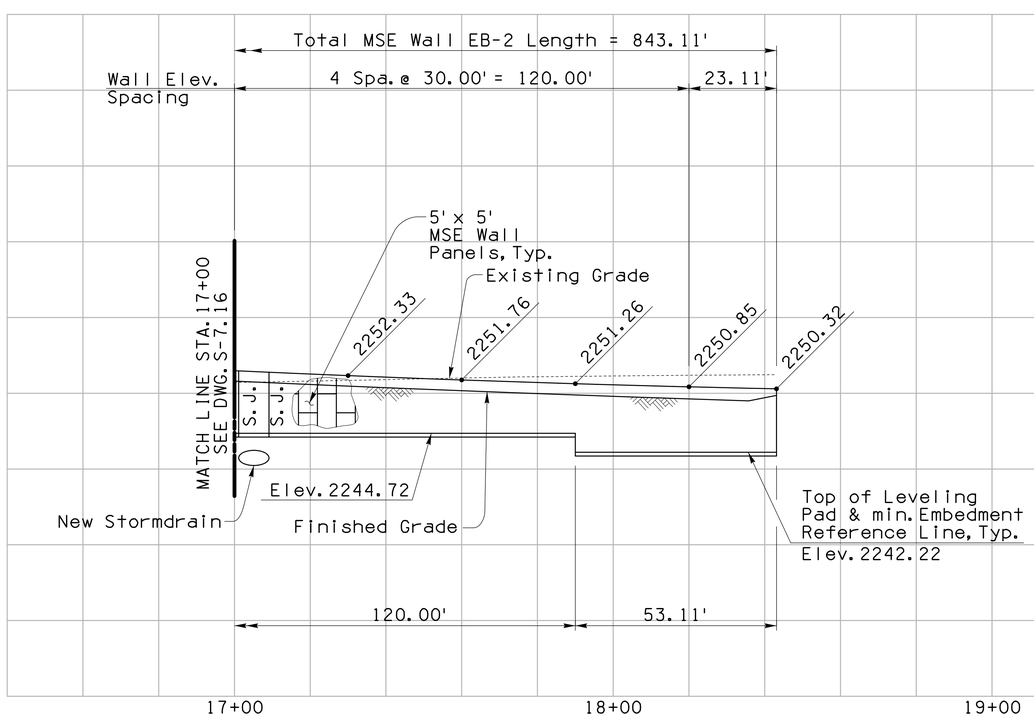
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	719	849	
		010 PM 252			

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.



ELEVATION - WALL EB-2 (MSE)
Horiz.: 1"=20'; Vert.: 1"=10'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL EB-2 (3 OF 3)

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 Arizona, U.S.A. Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

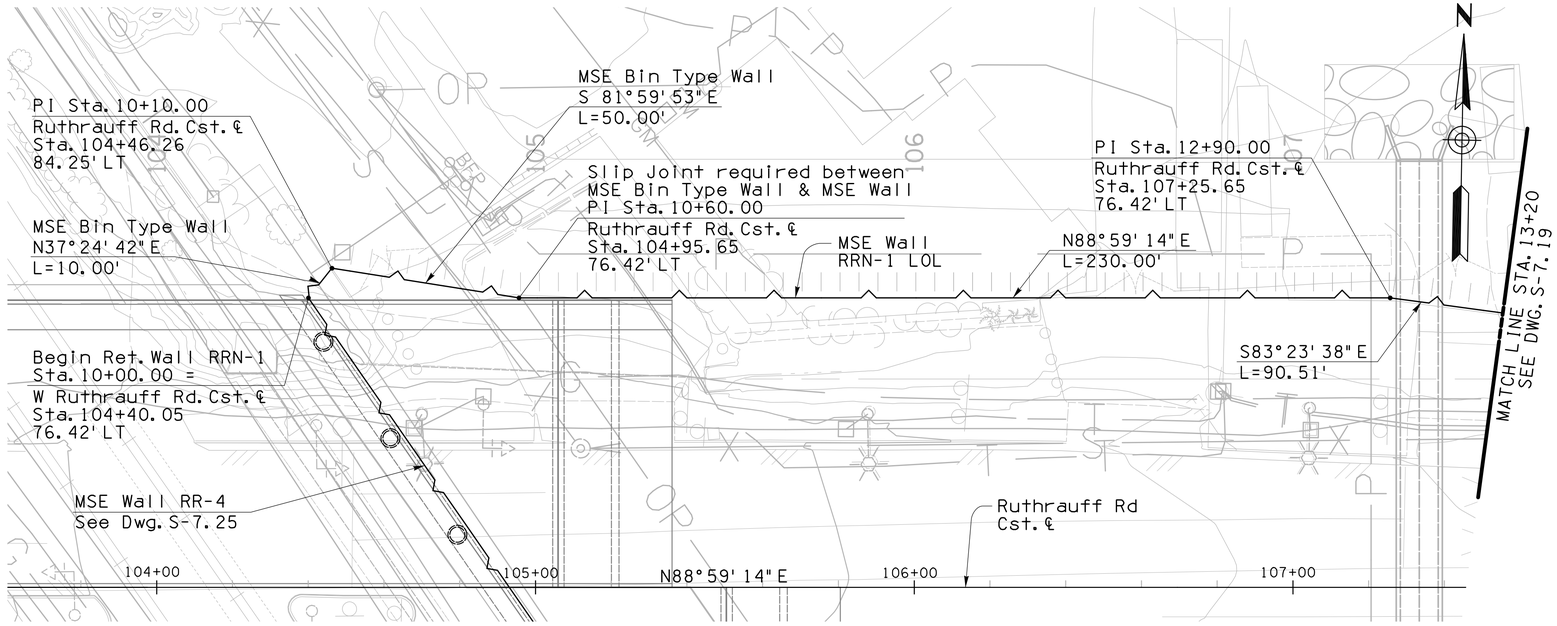
DWG NO. S-7.17

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

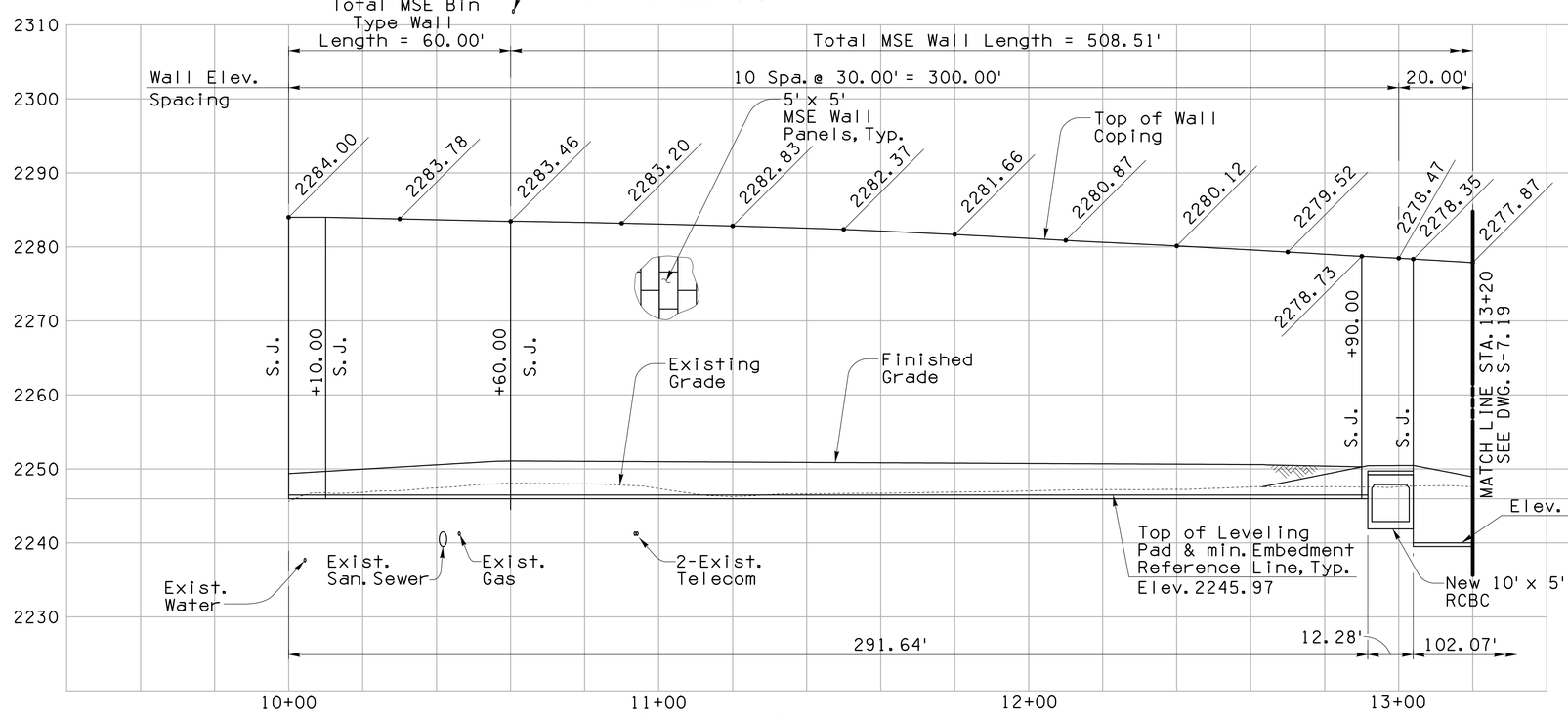
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w17.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	720	849	
		010 PM 252			



PLAN - WALL RRN-1 (MSE)
1"=20'



ELEVATION - WALL RRN-1 (MSE)
Horiz.: 1"=20'; Vert.: 1"=10'

Notes:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Measurement and Payment for MSE Bin Type wall shall be the same as MSE wall.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	KRH	03-19
DRAWN	JHS, MJL	03-19
CHECKED	JWG	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL RRN-1 (1 OF 2)

Professional Engineer Certificate No. 61634 KELLIE R. HERNANDEZ Date Signed 3/8/19 ARIZONA, U.S.A.
Expires 3/31/22

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. S-7.18

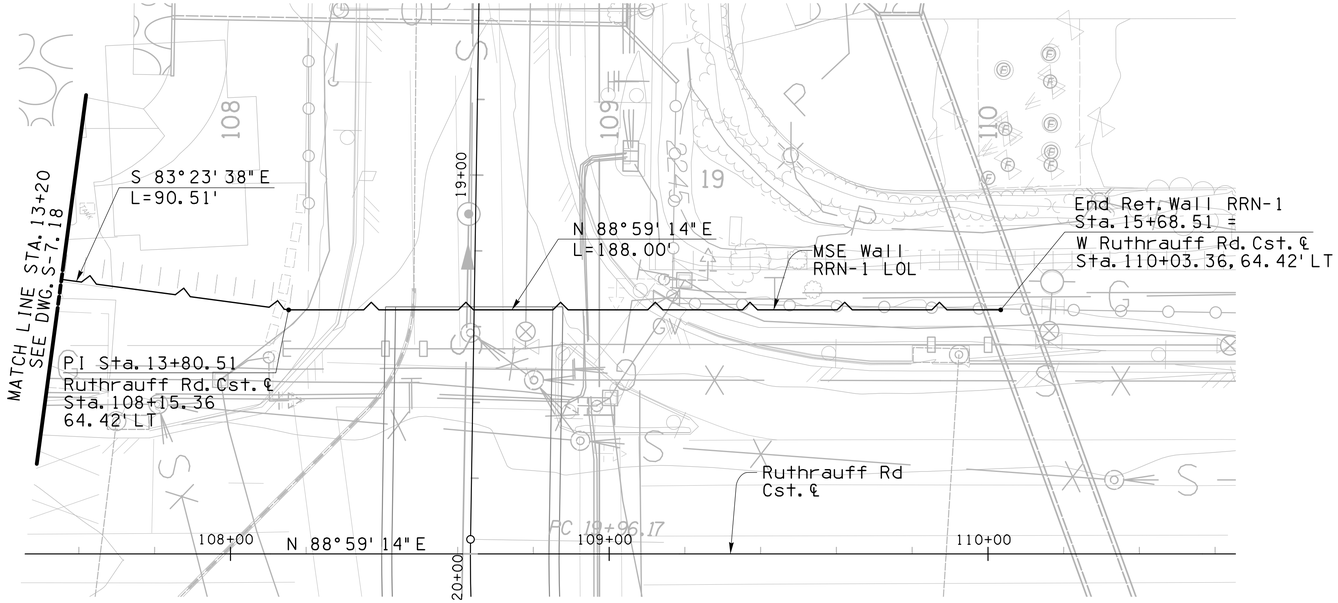
TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

3/8/2019
W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w18.dgn

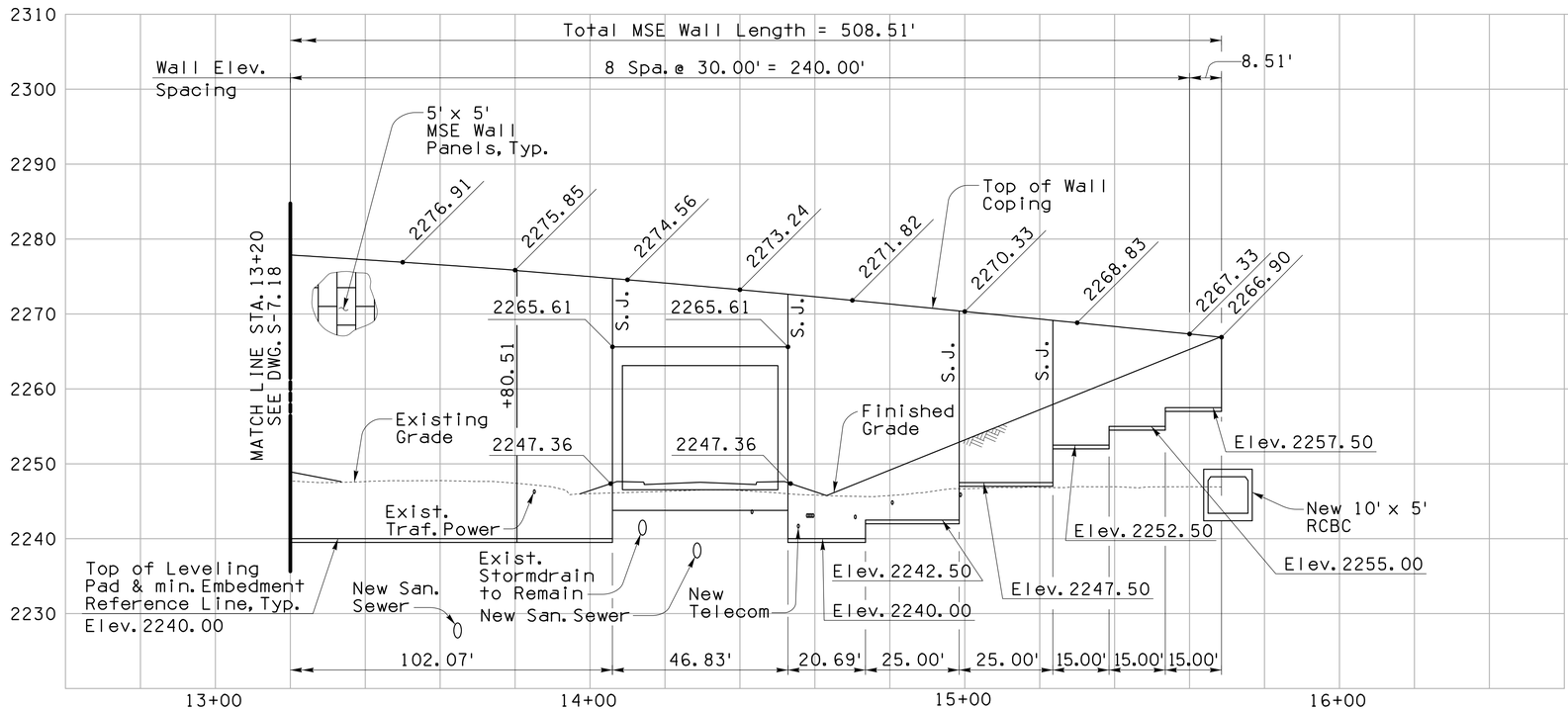
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	721	849	

010 PM 252



PLAN - WALL RRN-1 (MSE)
1"=20'



ELEVATION - WALL RRN-1 (MSE)
Horiz.: 1"=20'; Vert.: 1"=10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	KRH	03-19
DRAWN	JHS, MJL	03-19
CHECKED	JWG	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL RRN-1 (2 OF 2)

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

Registered Professional Engineer Certificate 61634 KELLIE R. HERNANDEZ Date Signed 3/8/19 ARIZONA, U.S.A.
Expires 3/31/22

DWG NO. S-7.19

OF

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

3/8/2019

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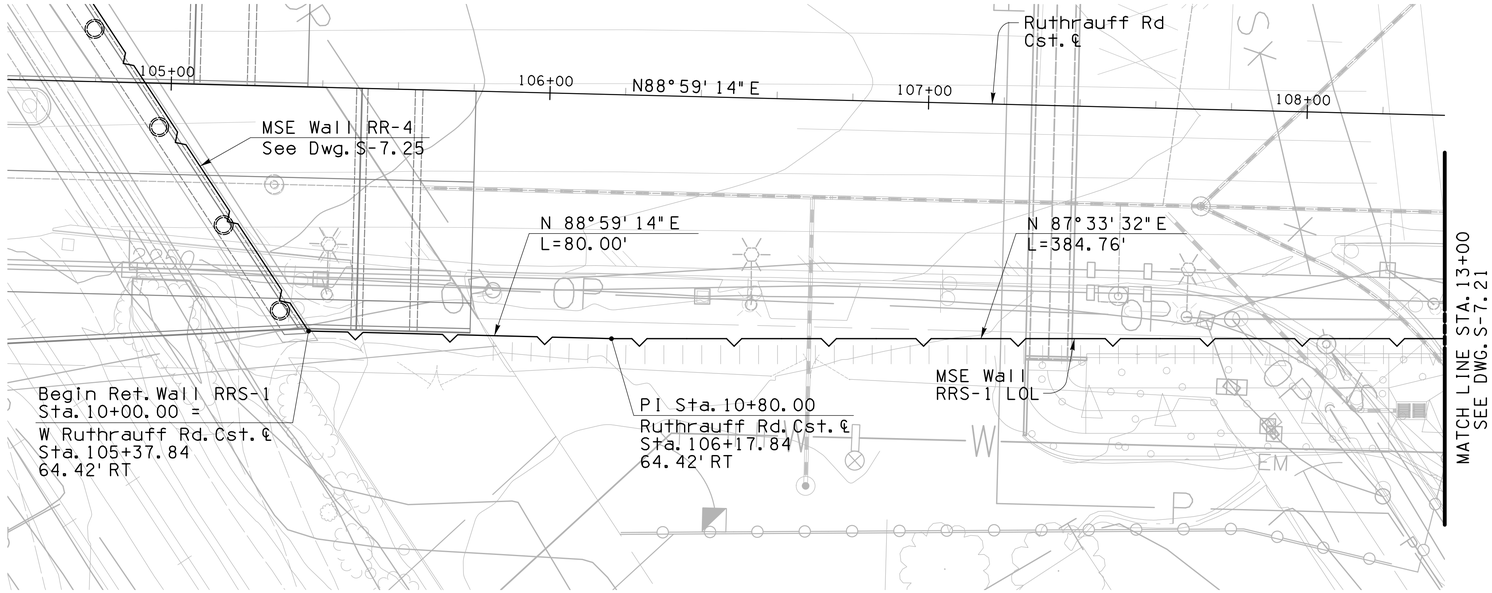
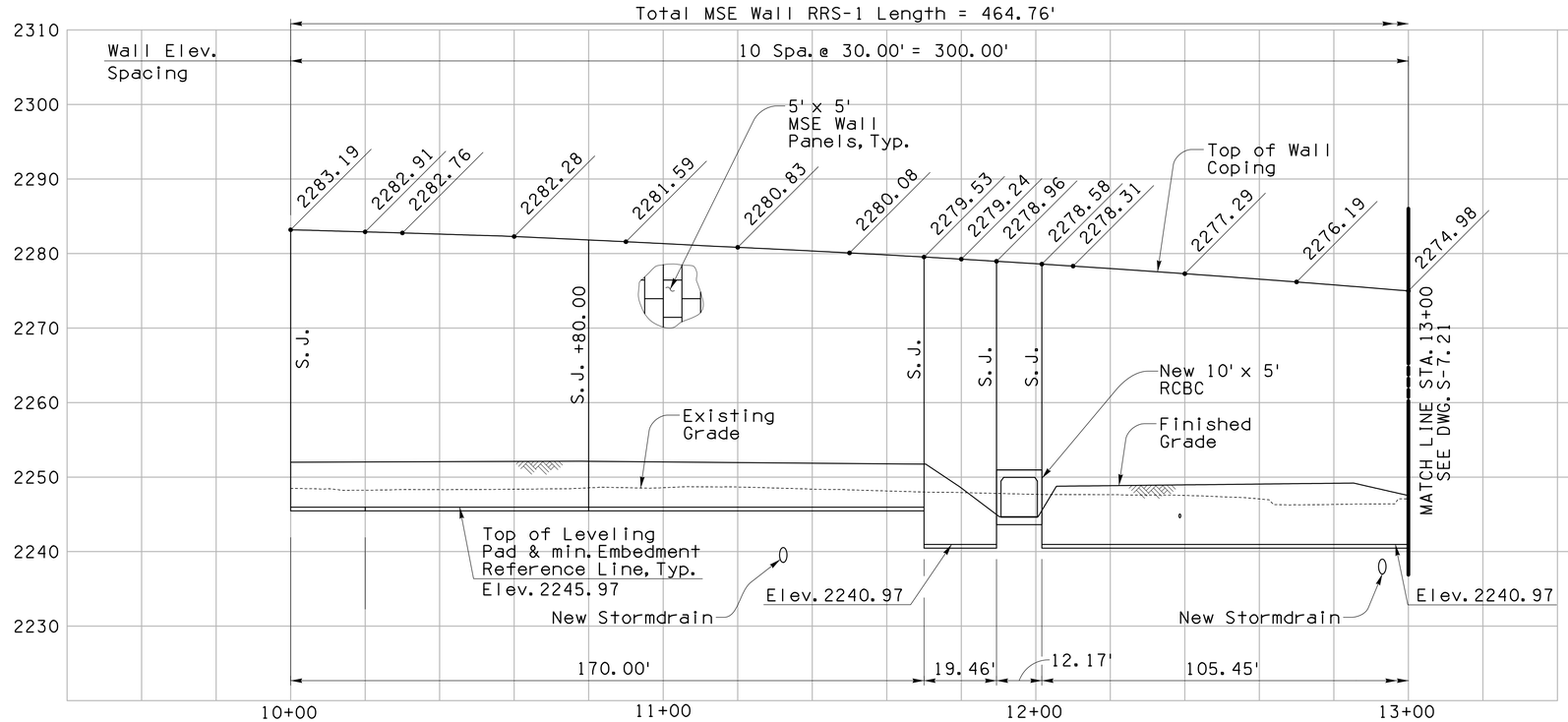
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	722	849	
		010 PM 252			



PLAN - WALL RRS-1 (MSE)
1" =20'



ELEVATION - WALL RRS-1 (MSE)
Horiz.: 1" =20'; Vert.: 1" =10'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

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602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	KRH	03-19
DRAWN	JHS, MJL	03-19
CHECKED	JWG	03-19

Structural Grace, Inc
1430 E. Ft Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL RRS-1 (1 OF 2)

Registered Professional Engineer
61634
KELLIE R. HERNANDEZ
Date Signed 3/31/20
ARIZONA U.S.A.
Expires 3/31/22

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

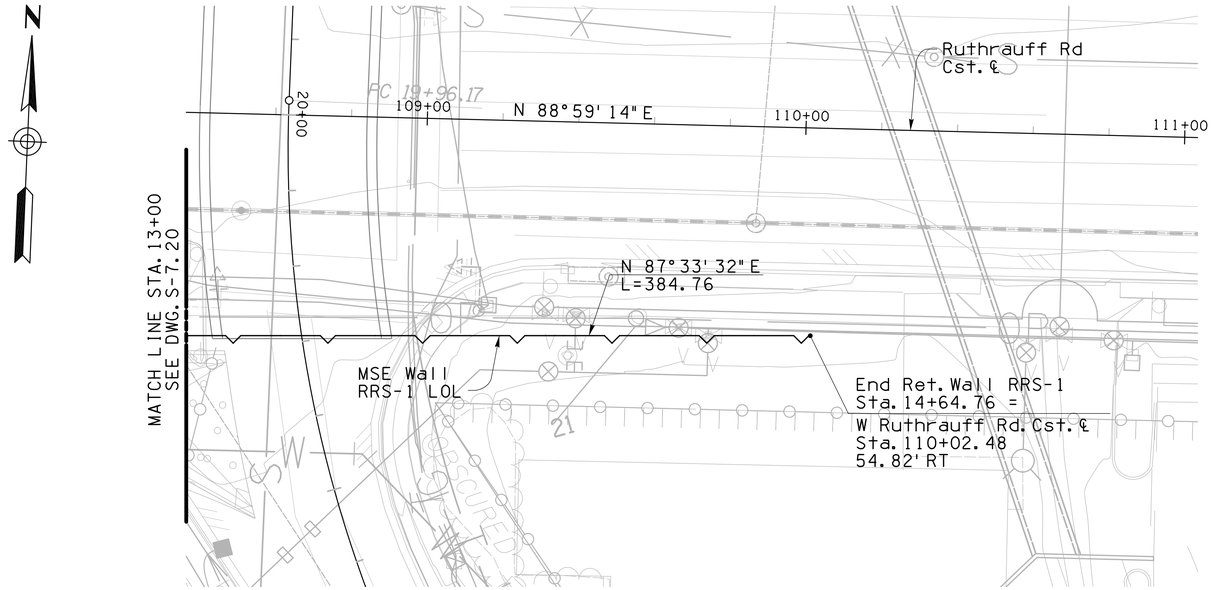
DWG NO. S-7.20

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

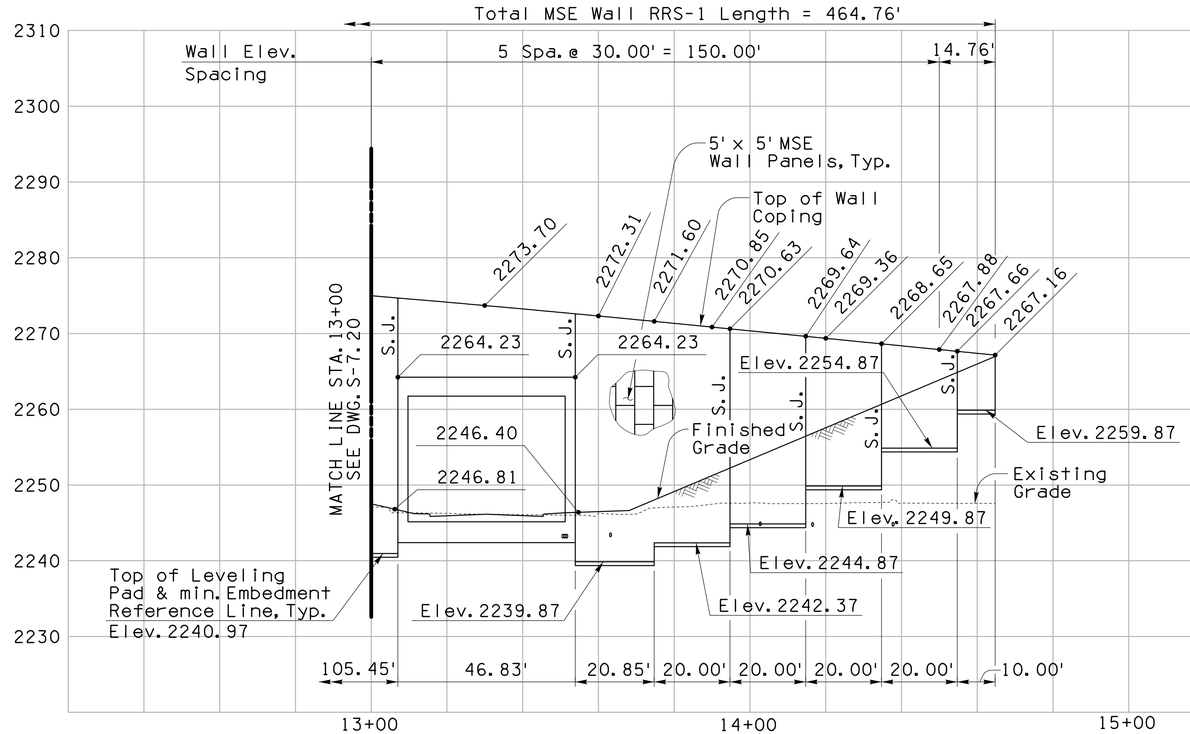
3/8/2019
W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w20.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	723	849	
		010 PM 252			



PLAN - WALL RRS-1 (MSE)
1"=20'



ELEVATION - WALL RRS-1 (MSE)
Horiz.: 1"=20'; Vert.: 1"=10'

Note:

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CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	KRH	03-19
DRAWN	JHS, MJL	03-19
CHECKED	JWG	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL RRS-1 (2 OF 2)

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S | DWG NO. S-7.21 | ___ OF ___

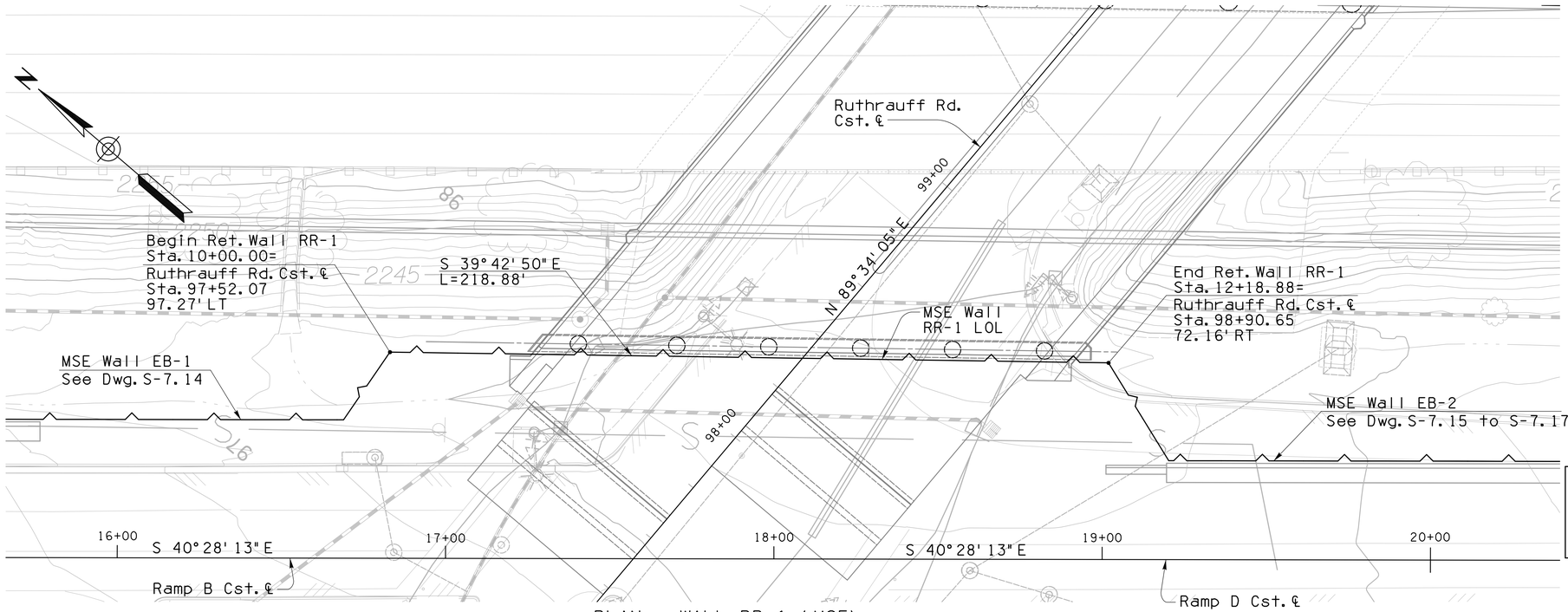
CERTIFICATE NO. 61634
KELLIE R. HERNANDEZ
Date Signed: 3/5/2019
ARIZONA, U.S.A.
Expires 3/31/22

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w21.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	724	849	

010 PM 252



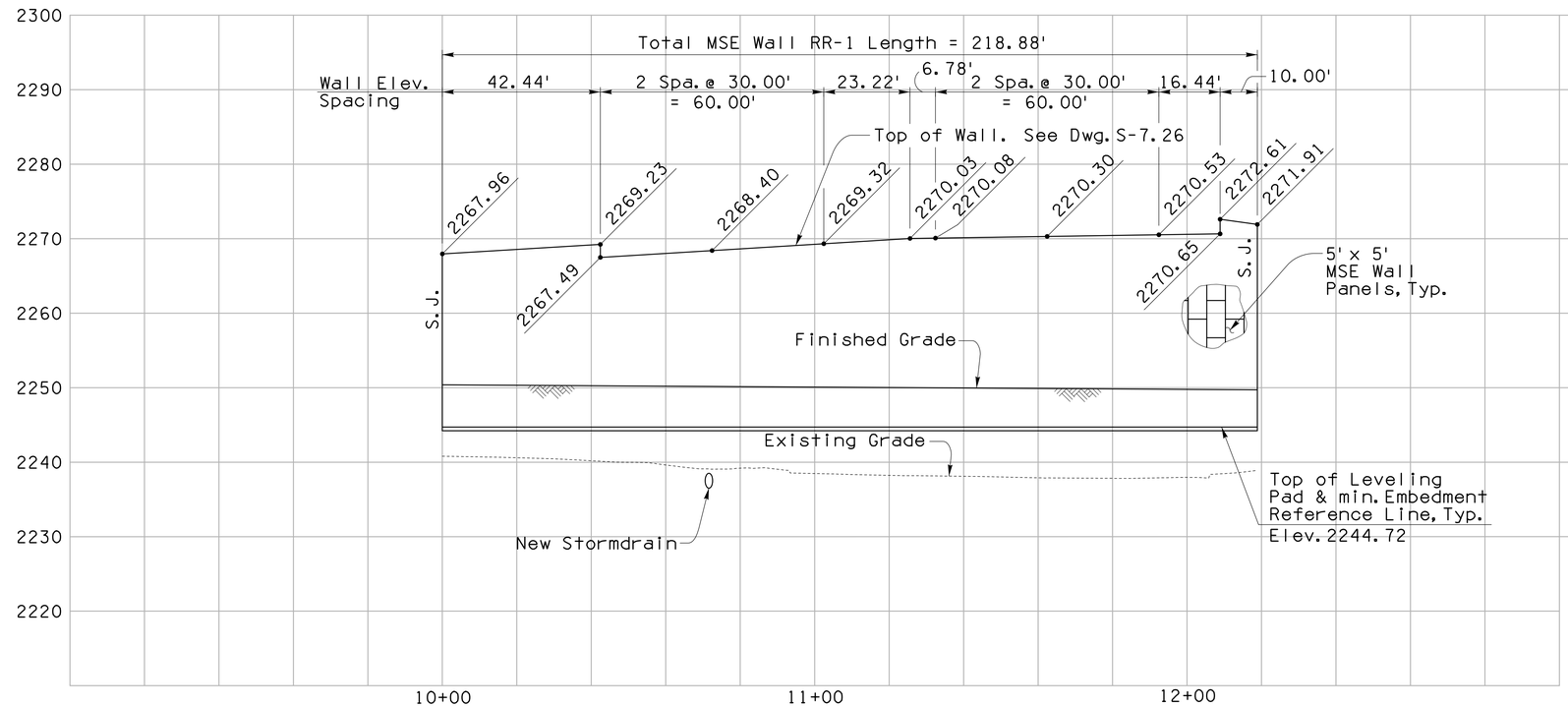
PLAN - WALL RR-1 (MSE)
1" = 20'

Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.



ELEVATION - WALL RR-1 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL RR-1

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 11/8/19 Arizona, U.S.A.
Expires 12/31/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

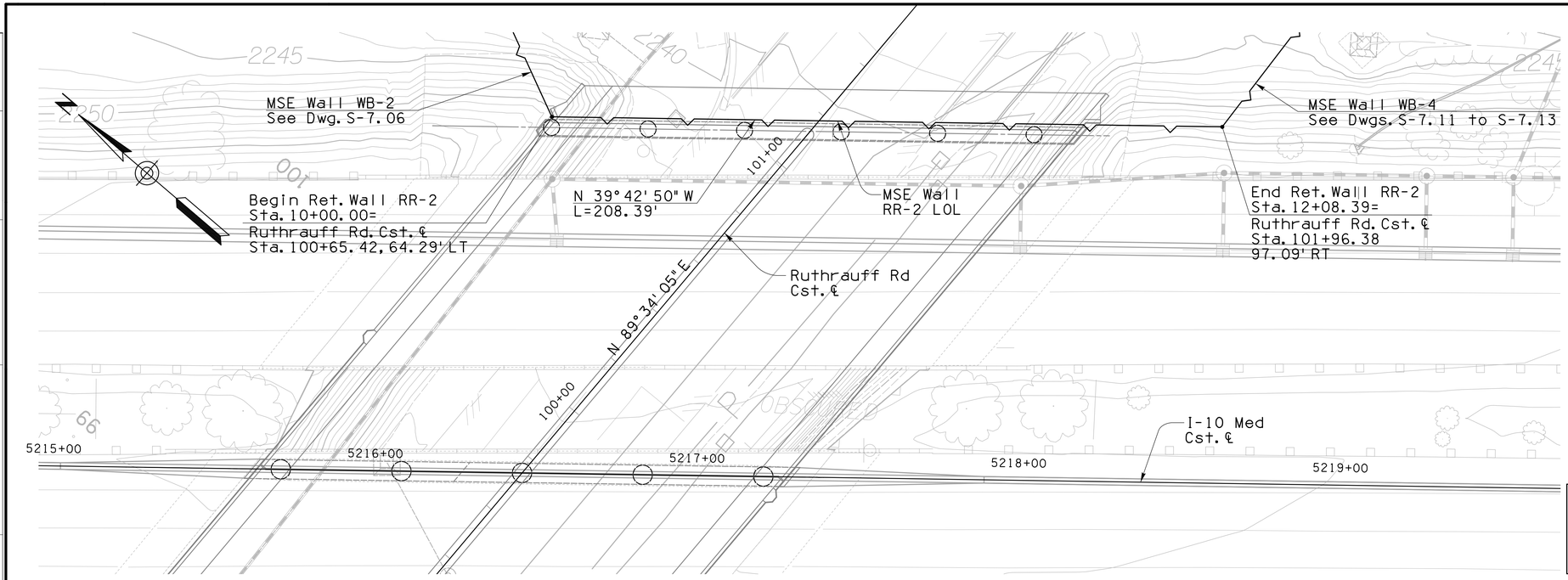
DWG NO. S-7.22

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w22.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	725	849	
		010 PM 252			



PLAN - WALL RR-2 (MSE)
1" = 20'

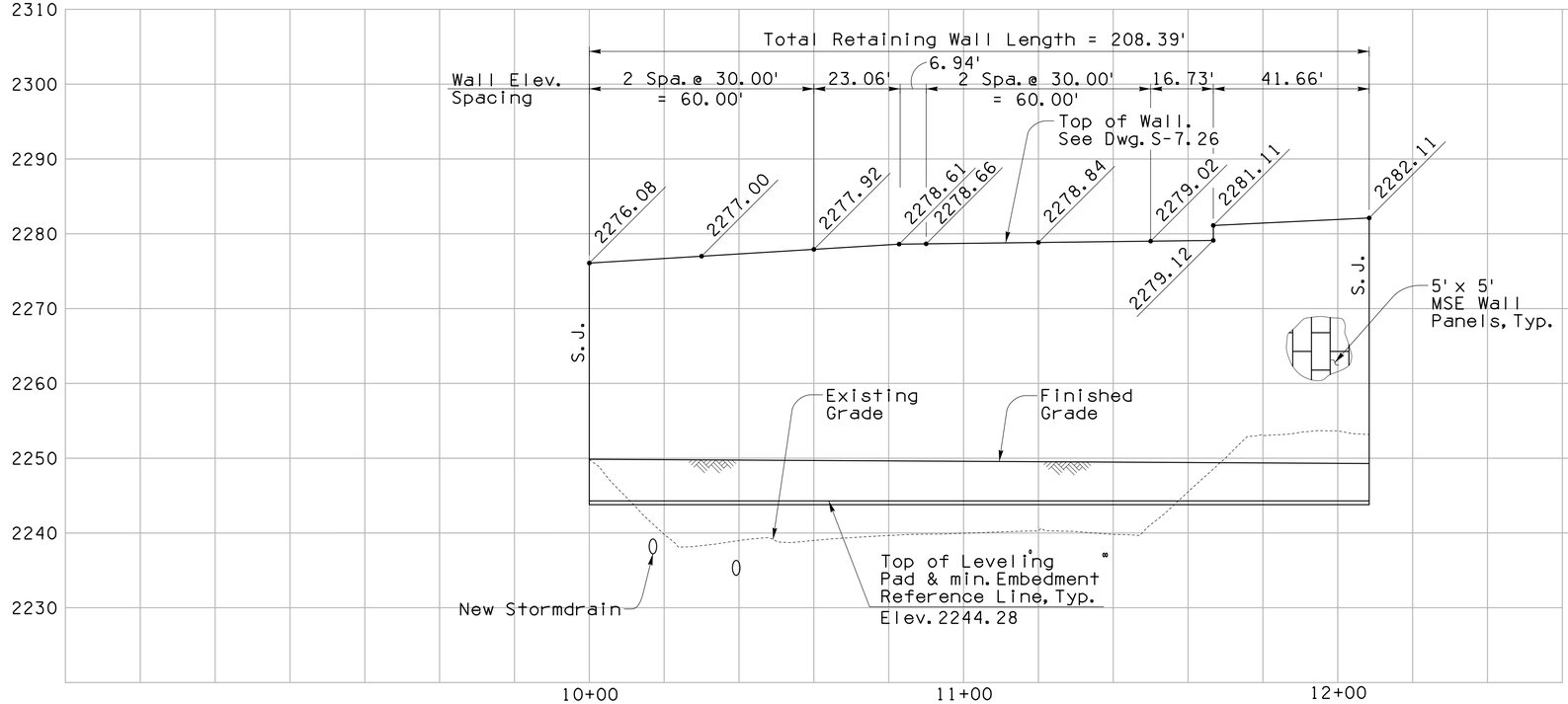
Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

See detail on Dwg. T-14.13 for Conduits through wall to cross bridge



ELEVATION - WALL RR-2 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

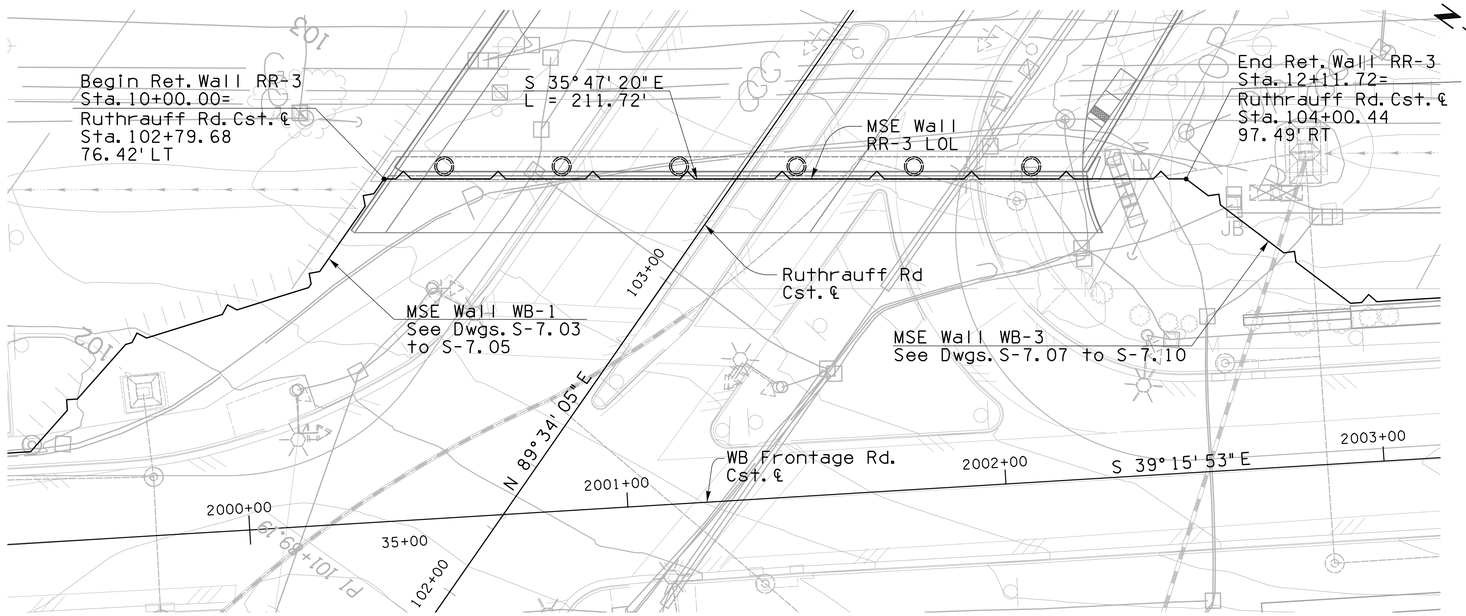
RETAINING WALL
PLAN & ELEVATION
WALL RR-2

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 ARIZONA, U.S.A.
Expires 12/31/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	S-7.23
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

3/8/2019
W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w23.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	726	849	
		010 PM 252			



PLAN - WALL RR-3 (MSE)
1" = 20'

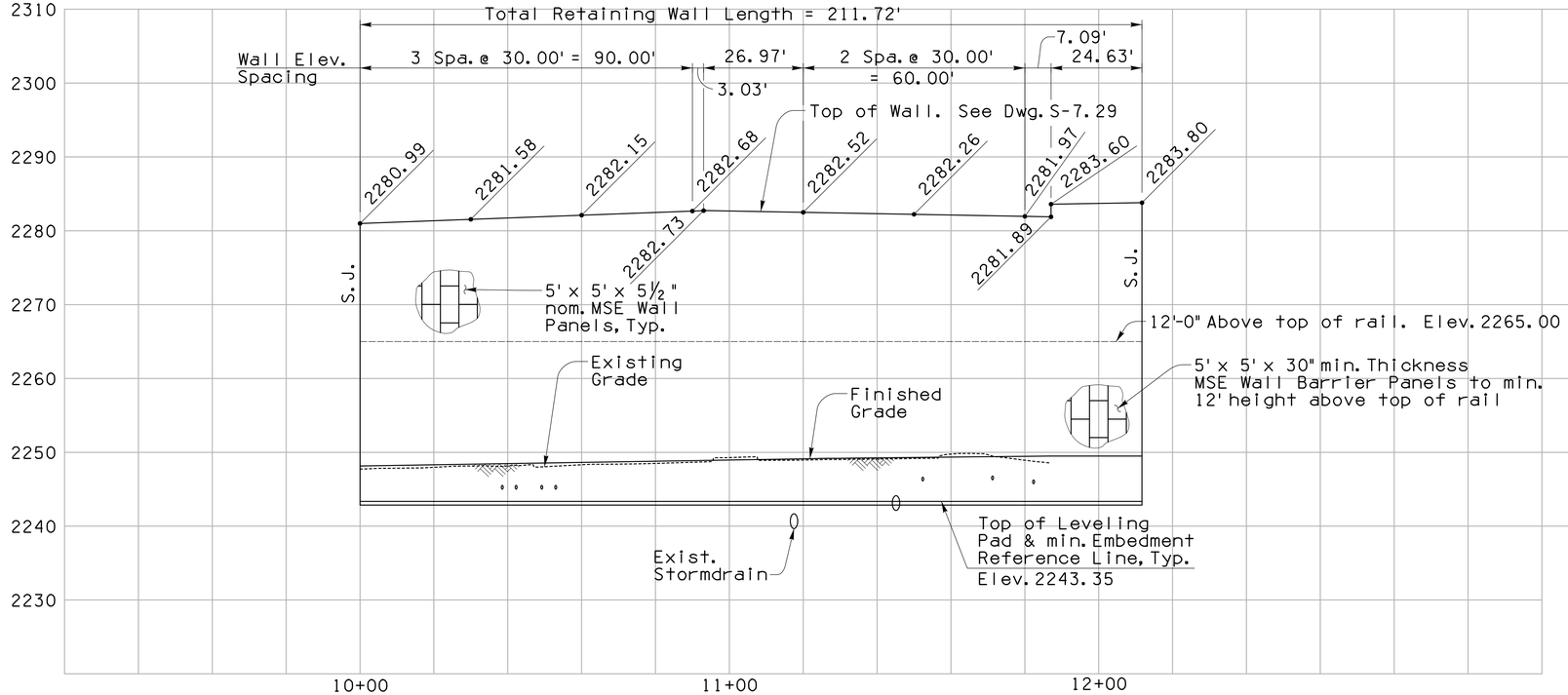
Note:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.

See detail on Dwg. T-14.14 for Conduits through wall to cross bridge



ELEVATION - WALL RR-3 (MSE)
1" = 20'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
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Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

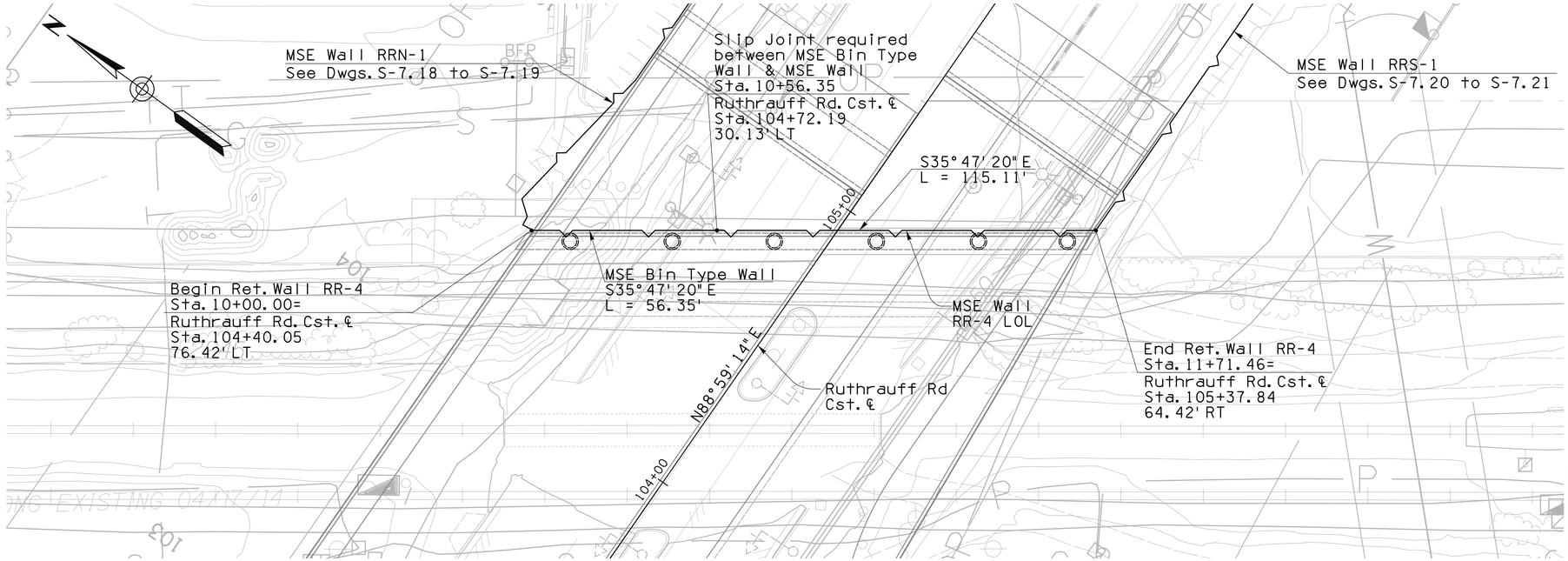
RETAINING WALL
PLAN & ELEVATION
WALL RR-3

Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 ARIZONA, U.S.A.
Expires 12/31/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	S-7.24
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

3/8/2019
W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w24.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	727	849	
		010 PM 252			



PLAN - WALL RR-4 (MSE)
1" = 20'

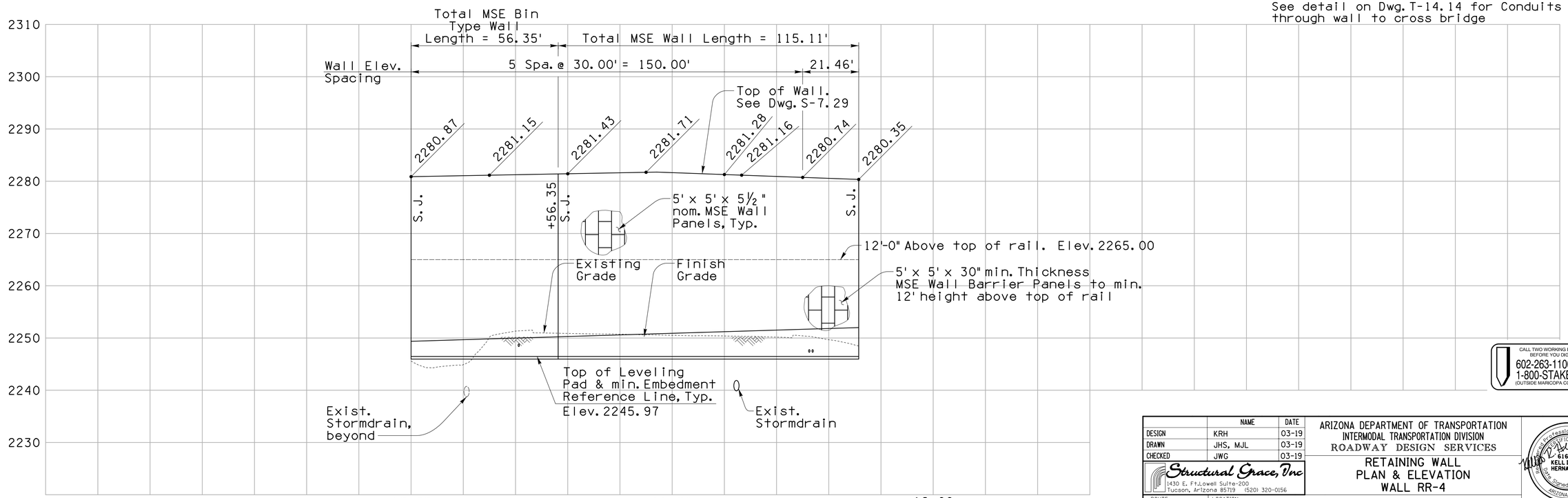
Notes:

Contractor shall see Architectural Treatment Plans for the MSE icon designs, vertical rustication pattern and blank panel requirements. Full-scale mock-ups are required for each specific design.

Measurement and Payment for MSE Bin Type wall shall be the same as MSE wall.

Slip Joints shall be positioned such that they do not bisect the architectural wall treatments. Not all of the slip joints are shown on the plans. The Contractor shall follow the Special Provisions for placement of the other required slip joint locations, plus other locations required per the wall manufacturer's design.

The location of all utilities is approximate. The contractor shall review the utility plans and potholing information to confirm the location of new and existing utilities prior to construction.



ELEVATION - WALL RR-4 (MSE)
Horiz.: 1" = 20'; Vert.: 1" = 10'

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	KRH	03-19
DRAWN	JHS, MJL	03-19
CHECKED	JWG	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
PLAN & ELEVATION
WALL RR-4

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

REGISTERED PROFESSIONAL ENGINEER
61634
KELLIE R. HERNANDEZ
ARIZONA, U.S.A.
Date Signed 3/31/20
Expires 3/31/22

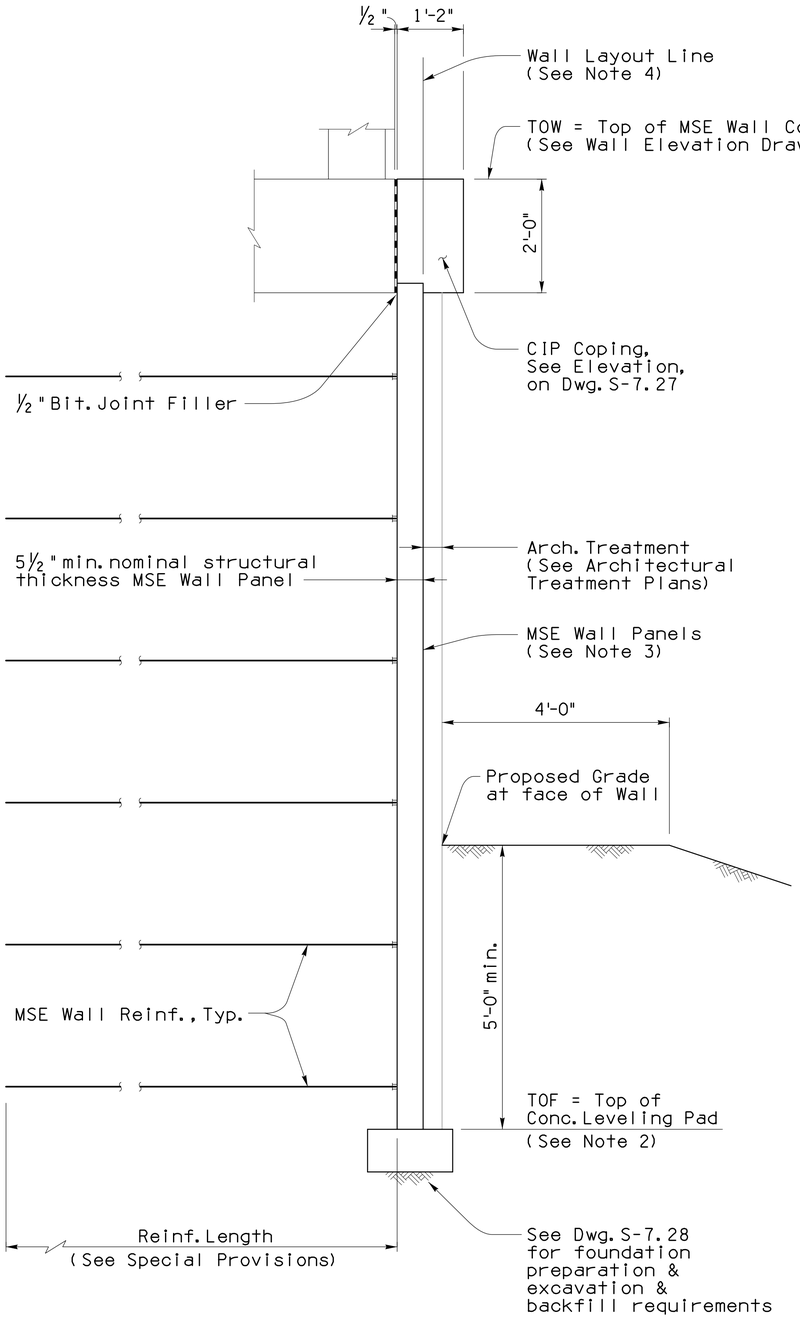
DWG NO. S-7.25

____ OF ____

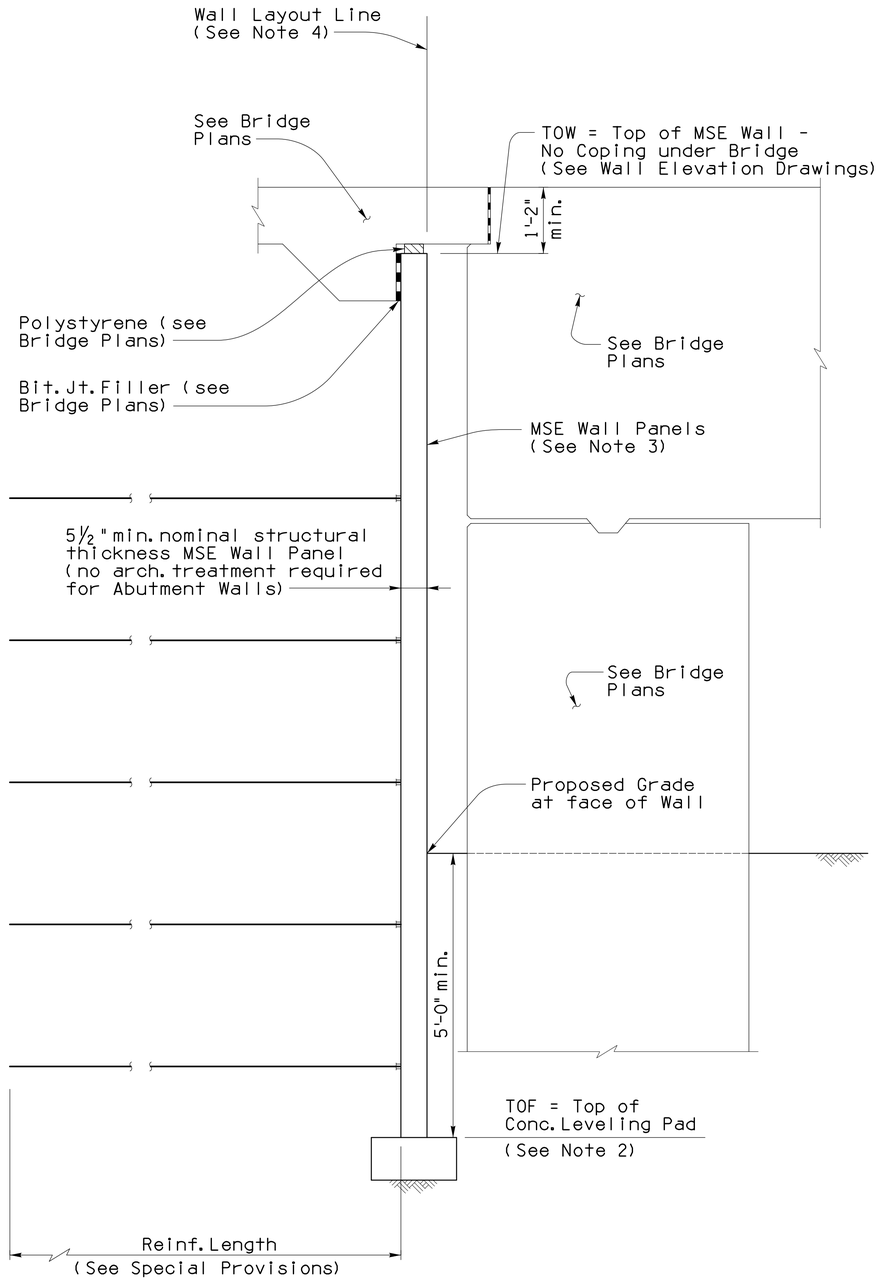
3/8/2019

W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w25.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	728	849	
		010 PM 252			



MSE RETAINING WALL - TYPICAL SECTION
¾" = 1'-0"



MSE RETAINING WALL - AT I-10 BRIDGE ABUTMENT
¾" = 1'-0"

Notes:

1. The MSE wall Manufacturer is responsible for designing the MSE walls to accommodate obstructions located within the reinforced backfill zone. These obstructions include catch basins, pole foundations and other items as shown on the project plans.
2. See Wall Elevation Plans for top of leveling pad elevations. The leveling pad size shall be determined by the MSE wall Manufacturer's requirements (6" deep x 12" wide minimum) for 5½" min. nominal structural thickness MSE wall panels.
3. MSE wall panels shall be 5' wide x 5' tall, nominal.
4. Wall layout line is based on an assumed minimum nominal structure MSE wall panel thickness excluding rustication as shown.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
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Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
DETAILS (1 OF 6)

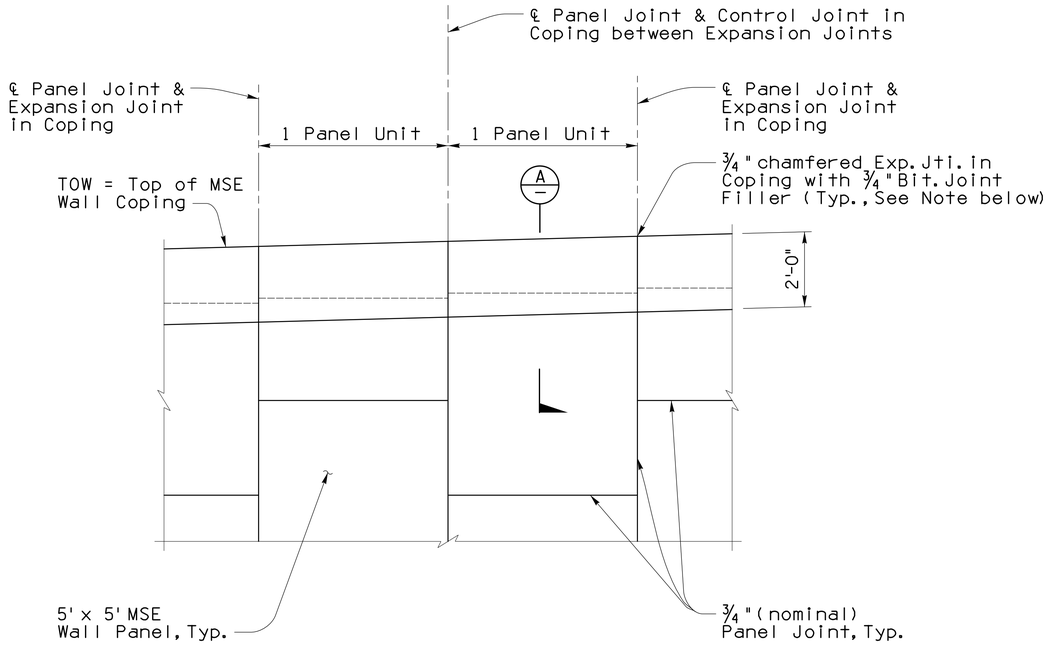
Professional Engineer Certificate 19227 JAMES W. GLOCK Date Signed 3/8/19 ARIZONA, U.S.A. Expires 12/31/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	S-7.26
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w26.dgn

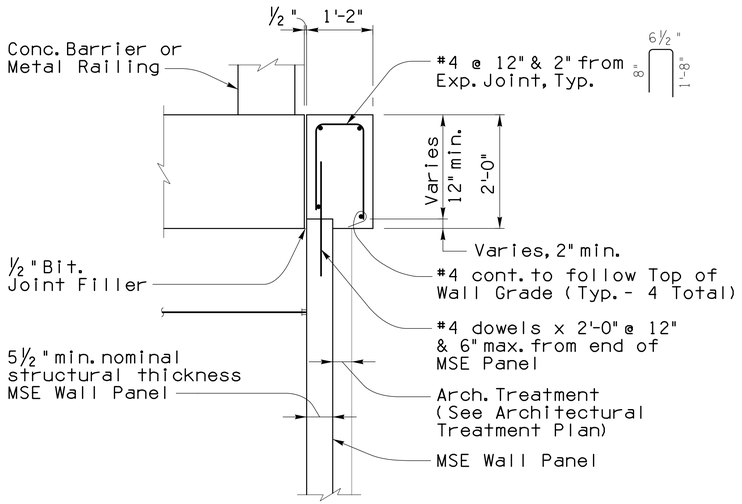
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	729	849	
		010 PM 252			



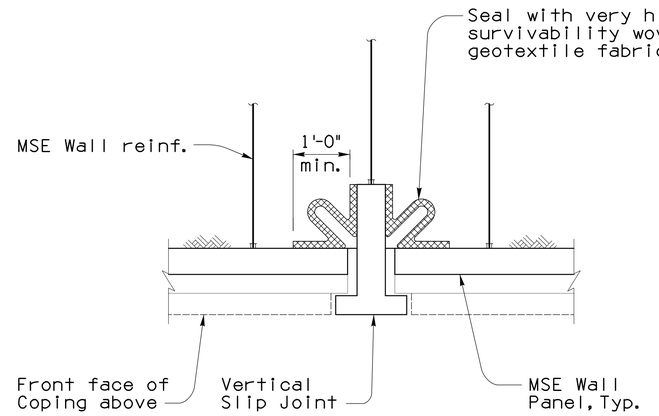
Note:

Coping longitudinal reinforcement shall be cut 2" clear of each side of the expansion joints.

ELEVATION
½" = 1'-0"



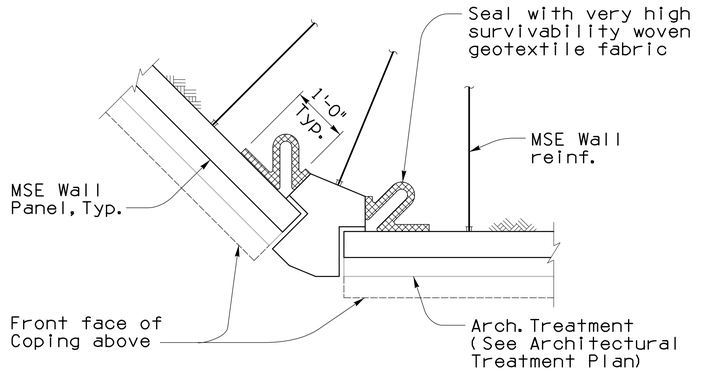
MSE WALL COPING BEAM SECTION (A)
¾" = 1'-0"



VERTICAL SLIP JOINT (SJ) DETAIL
¾" = 1'-0"

Notes:

1. See wall plans for approximate slip joint locations (90' max. except as shown).



ANGLE POINT (AP) DETAIL (90° TO 270°)
¾" = 1'-0"

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL DETAILS (2 OF 6)

Registered Professional Engineer
CERTIFICATE
19227
JAMES W. GLOCK
Date Signed
ARIZONA, U.S.A.
Expires 12/31/20

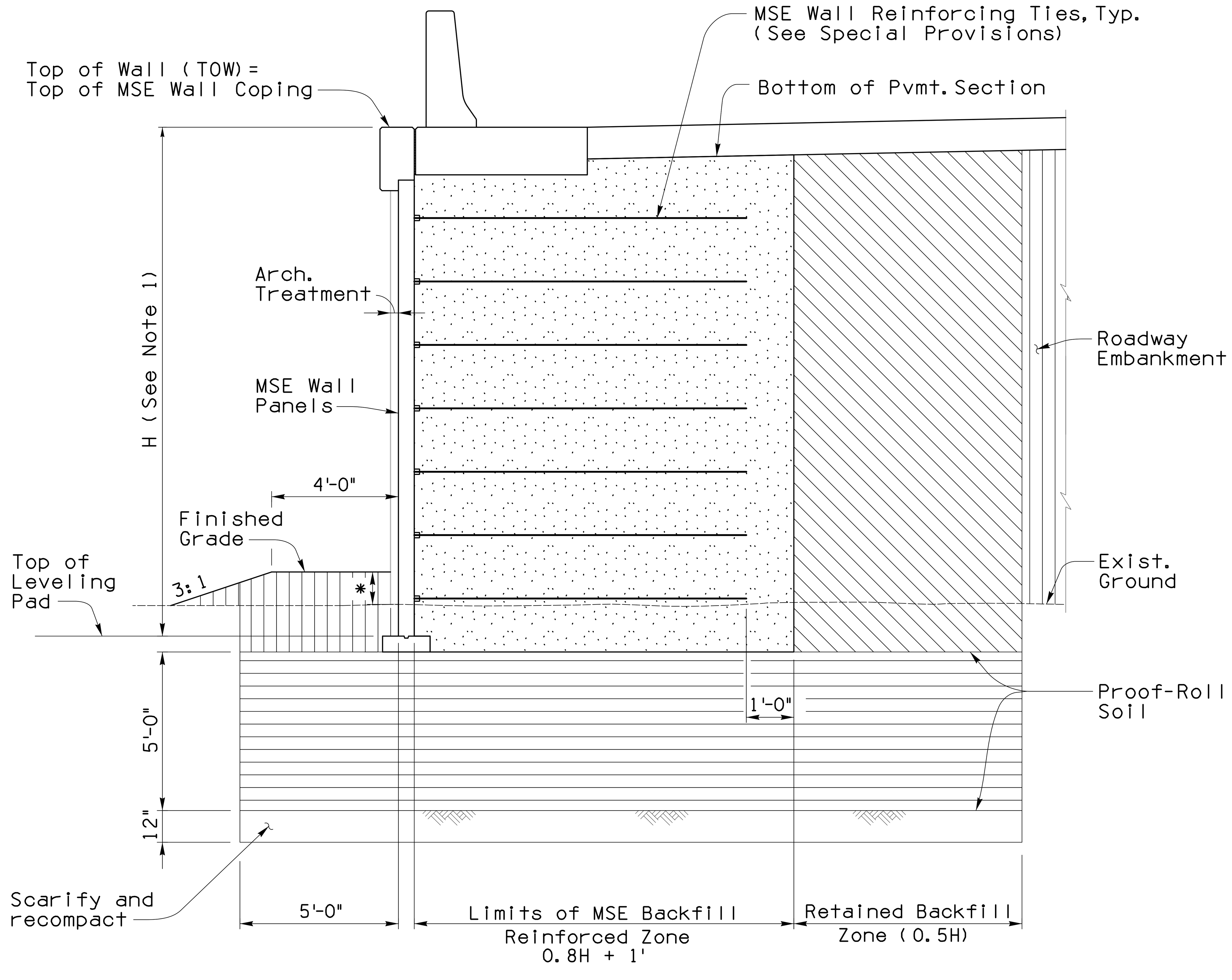
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	S-7.27
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

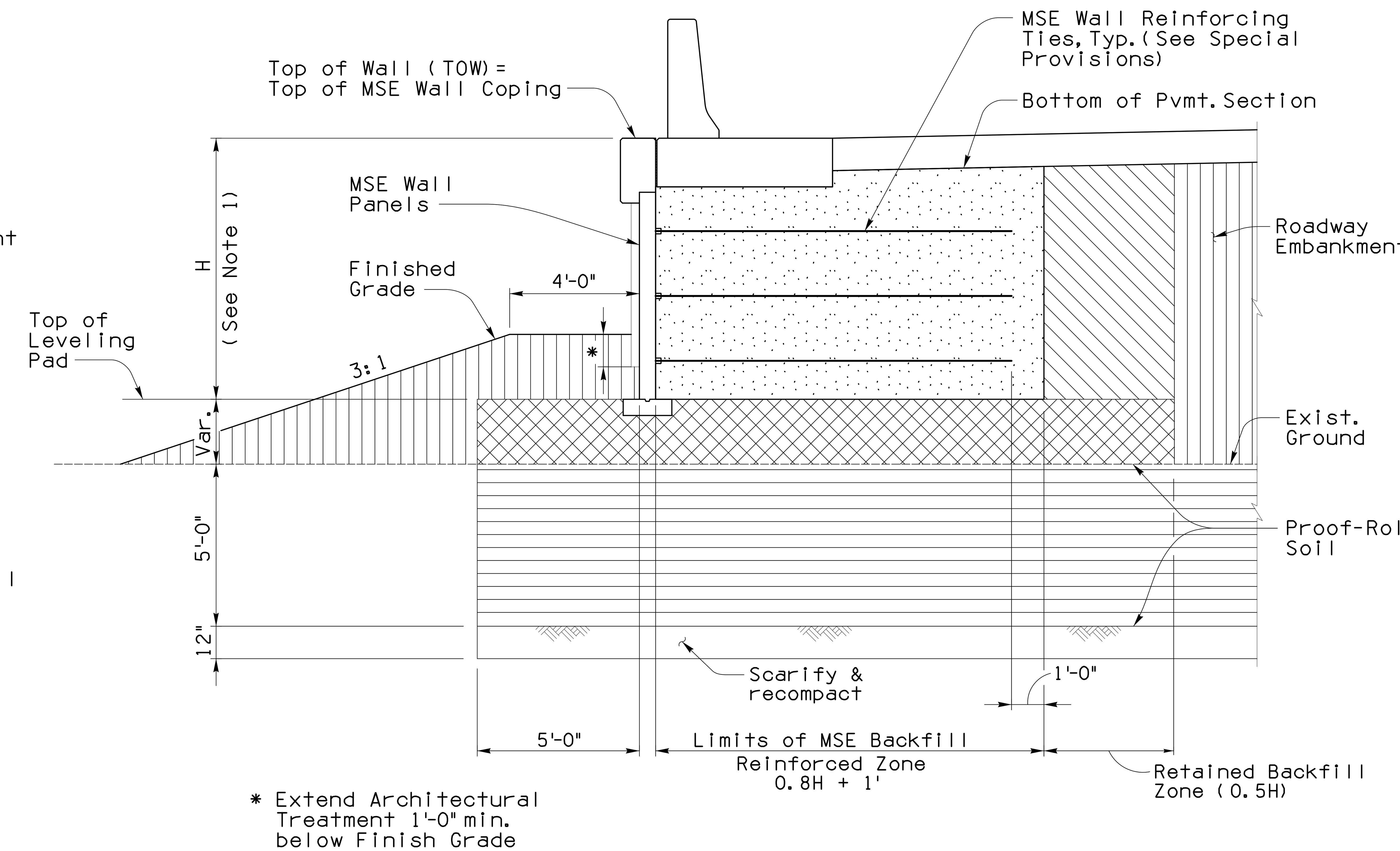
3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w27.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	730	849	

010 PM 252



MSE WALL SECTION IN CUT
No Scale



MSE WALL SECTION IN FILL
No Scale

LEGEND:

- Reinforced Backfill
- Retained Backfill
- Roadway Embankment
- Overexcavation & Recompaction
- Special Foundation Backfill

Notes:

1. H = Wall height measured from top of coping beam to top of concrete leveling pad.
2. Roadway embankment and Special Foundation Backfill shall be constructed to top of leveling pad prior to construction of leveling pad.
3. Roadway embankment shall be constructed to finished grade at front face of wall before MSE wall is constructed to 0.5H.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
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Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL
DETAILS (3 OF 6)

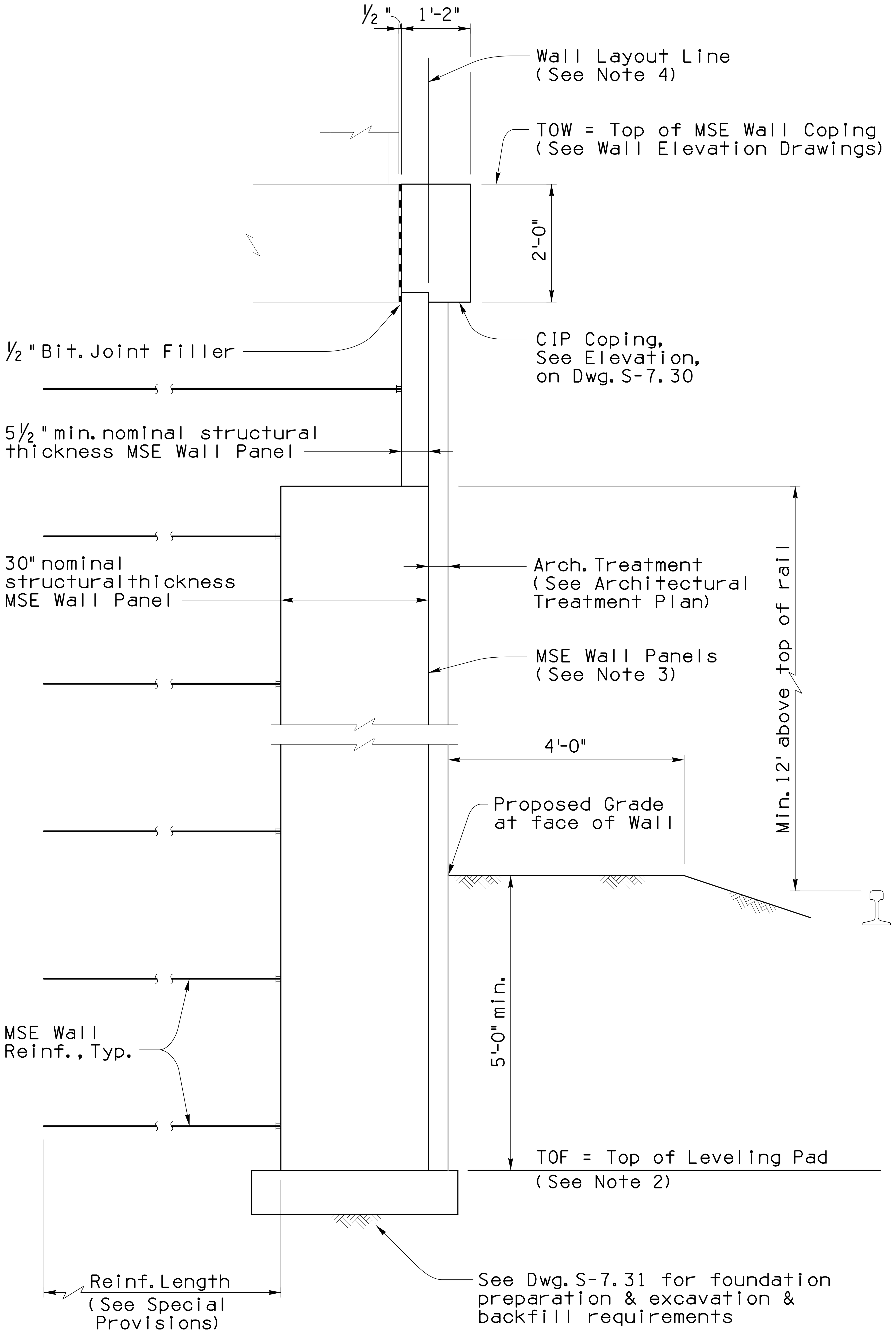
ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

19227 JAMES W. GLOCK
ARIZONA, U.S.A.
Expires 12/31/20

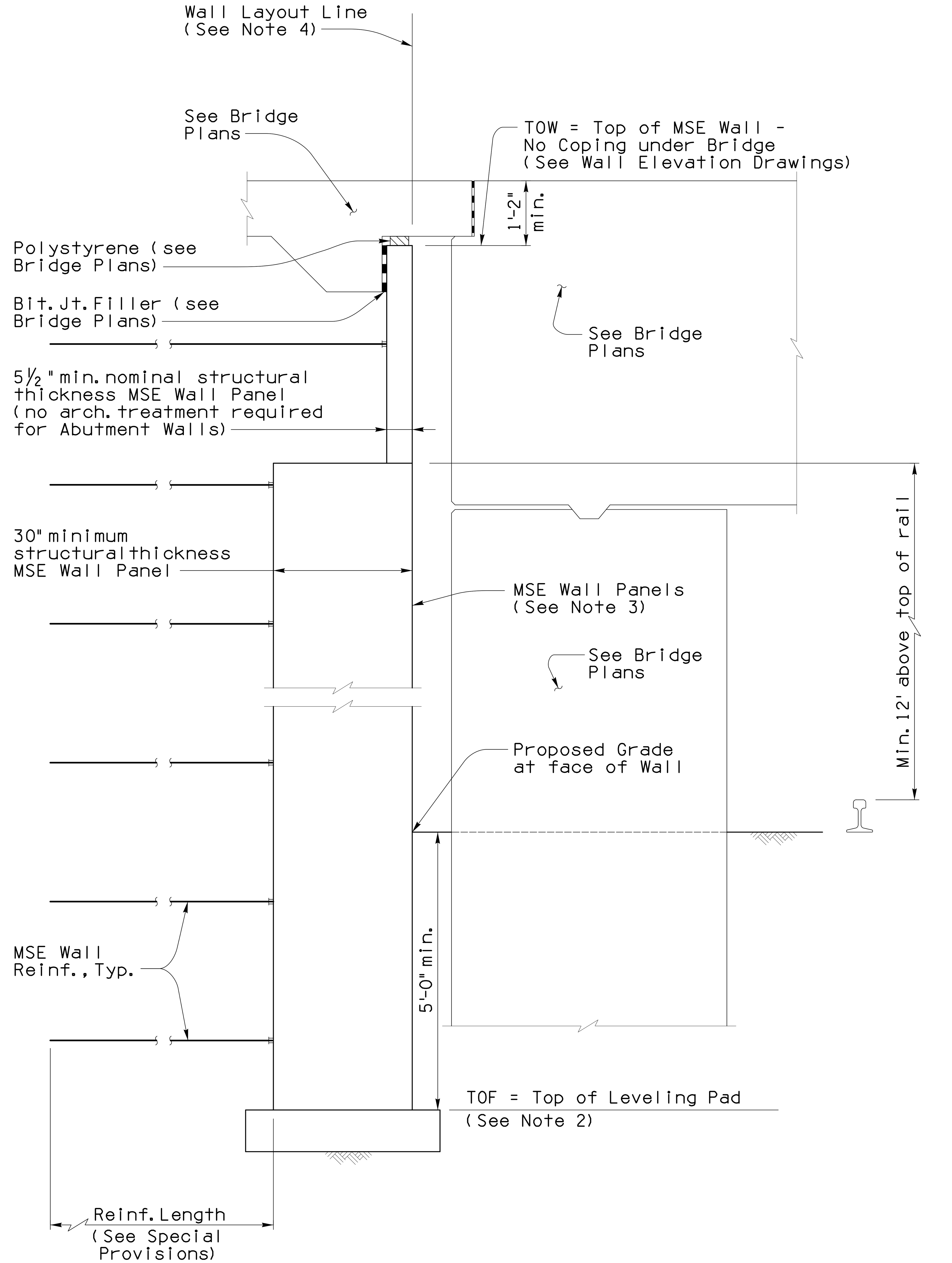
DWG NO. S-7.28

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w28.dgn



MSE RETAINING WALL (30")
TYPICAL SECTION
¾" = 1'-0"



MSE RETAINING WALL (30") -
AT UPRR BRIDGE ABUTMENT
¾" = 1'-0"

Notes:

1. The MSE wall Manufacturer is responsible for designing the MSE walls to accommodate obstructions located within the reinforced backfill zone. These obstructions include catch basins, pole foundations and other items as shown on the project plans.
2. See Wall Elevation Plans for top of leveling pad elevations. The leveling pad size shall be determined by the MSE wall Manufacturer's requirements (6" deep x 3' wide minimum) for 30" minimum structural thickness MSE wall panels.
3. MSE wall panels shall be 5' wide x 5' tall, nominal.
4. Wall layout line is based on an assumed minimum nominal structure MSE wall panel thickness excluding rustication as shown.
5. 30" thick MSE panels required on walls WB-3, RR-3 and RR-4. Panels shall extend to at least 12' above the top of adjacent rail. Where top of wall is less than 12' above top of rail, 30" panel shall extend to the bottom of barrier footing. 30" panel and bottom of footing shall be separated by bond breaker as approved by the Engineer.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
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Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

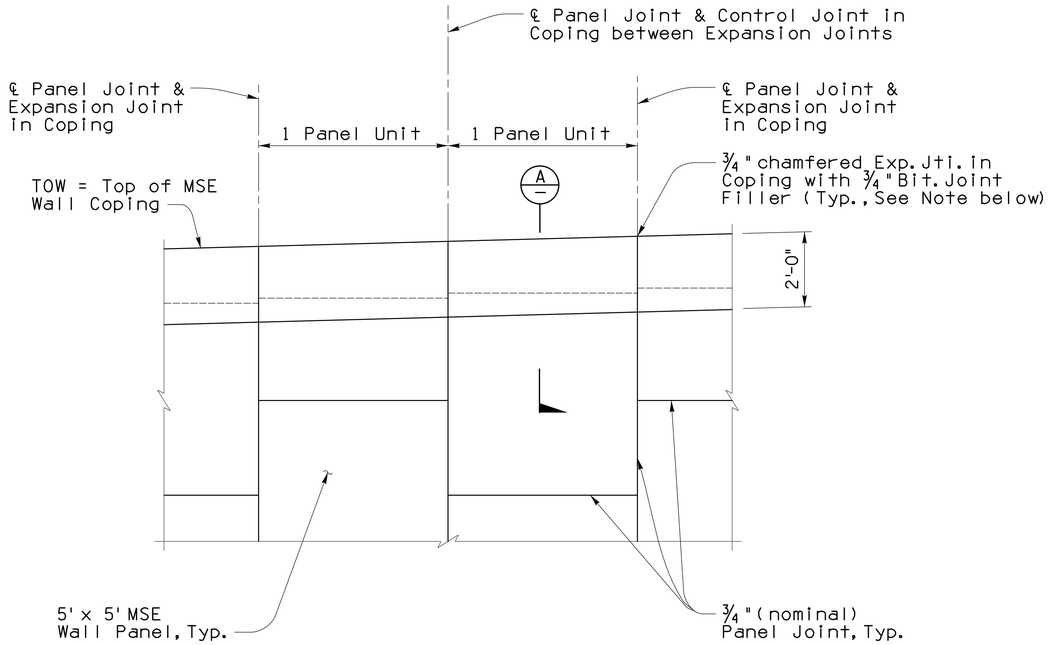
RETAINING WALL
DETAILS (4 OF 6)

19227 JAMES W. GLOCK
ARIZONA, U.S.A.
Expires 12/31/20

ROUTE I-10
LOCATION RUTHRAUFF ROAD TI
DWG NO. S-7.29

TRACS NO. H 8480 01C
010-D(213)S
___ OF ___

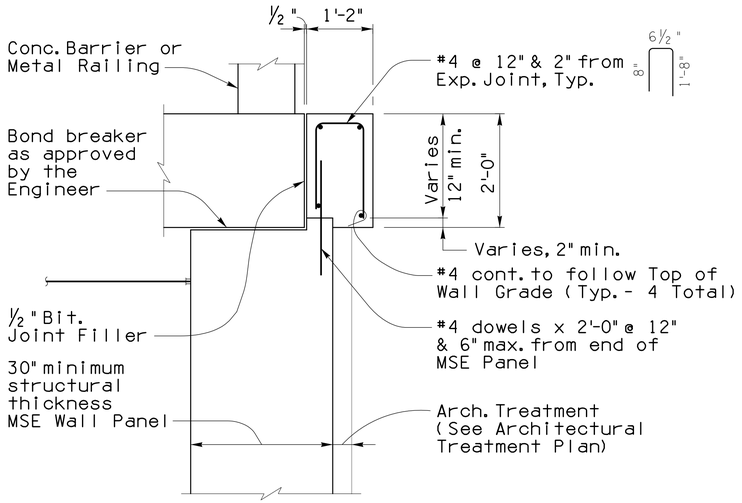
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	732	849	
		010 PM 252			



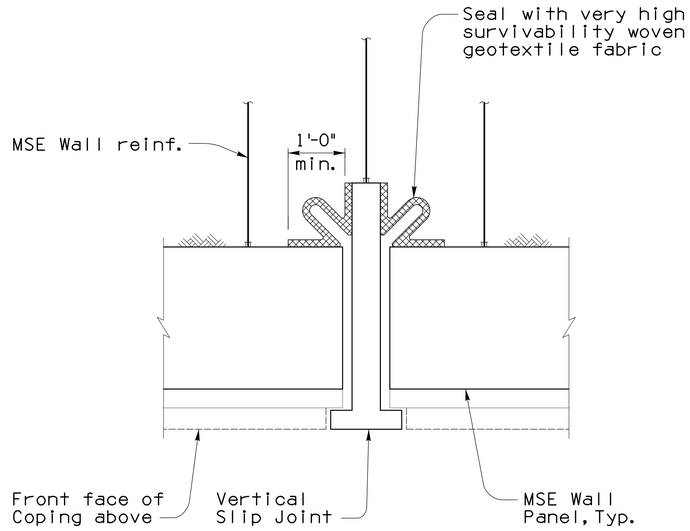
Note:

Coping longitudinal reinforcement shall be cut 2" clear of each side of the expansion joints.

ELEVATION
½" = 1'-0"



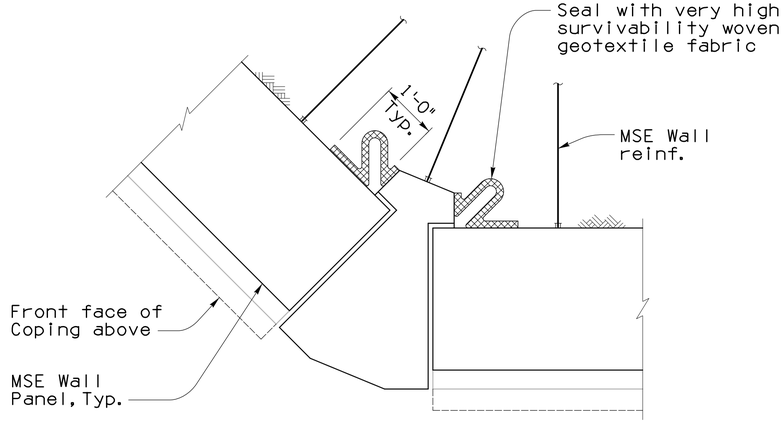
MSE WALL COPING BEAM SECTION FOR 30" PANELS (A)
¾" = 1'-0"



Notes:

1. See wall plans for approximate slip joint locations (90' max. except as shown).
2. Slip joints shall be placed on either side of drilled shafts that encroach underneath leveling pad of MSE panels.

VERTICAL SLIP JOINT (SJ) DETAIL FOR 30" PANELS
¾" = 1'-0"



ANGLE POINT (AP) DETAIL (90° TO 270°) FOR 30" PANELS
¾" = 1'-0"

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL DETAILS (5 OF 6)

Registered Professional Engineer
CERTIFICATE
19227
JAMES W. GLOCK
Date Signed 3/8/19
ARIZONA, U.S.A.
Expires 12/31/20

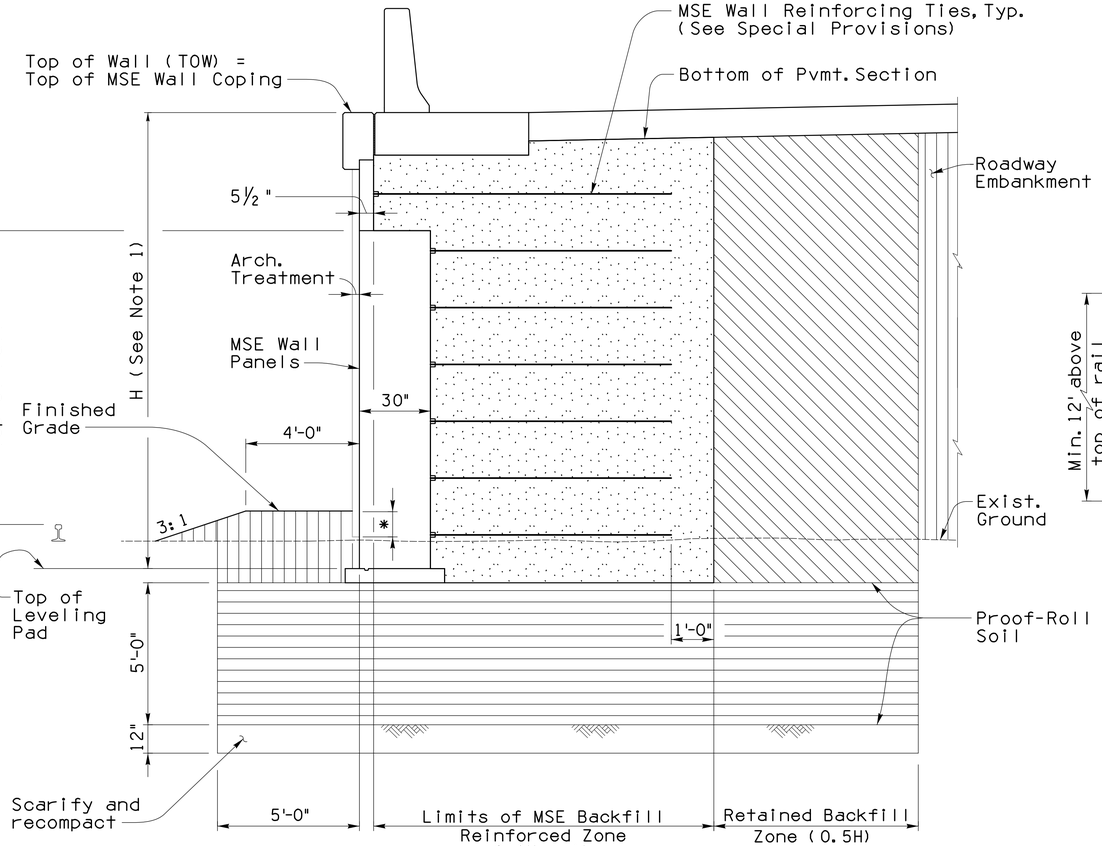
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	S-7.30
TRACS NO. H 8480 01C	010-D(213)S	OF

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w30.dgn

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

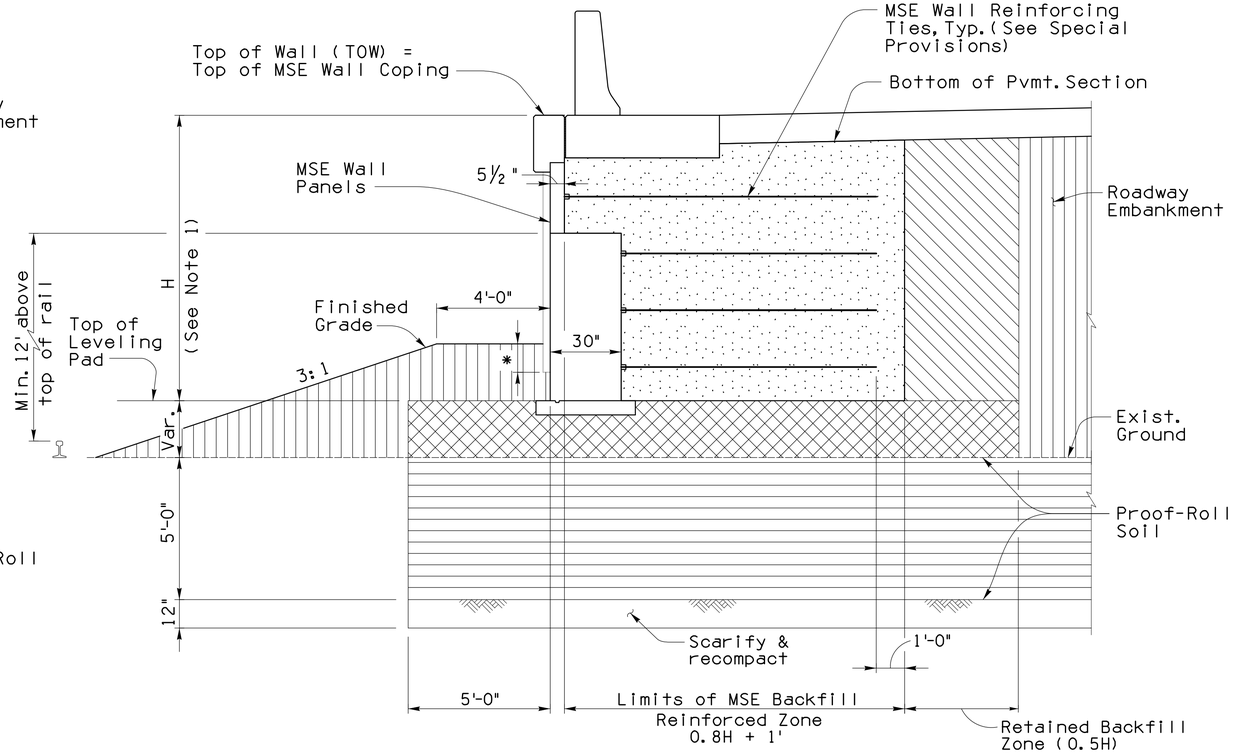
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
9	ARIZ.	010-D(213)S	733	849	

010 PM 252



* Extend Architectural Treatment 1'-0" min. below Finished Grade

MSE WALL SECTION IN CUT (30")
No Scale



* Extend Architectural Treatment 1'-0" min. below Finished Grade

MSE WALL SECTION IN FILL (30")
No Scale

LEGEND:

- Reinforced Backfill
- Retained Backfill
- Roadway Embankment
- Overexcavation & Recompaction
- Special Foundation Backfill

Notes:

1. H = Wall height measured from top of coping beam to top of concrete leveling pad.
2. Roadway embankment and Special Foundation Backfill shall be constructed to top of leveling pad prior to construction of leveling pad.
3. Roadway embankment shall be constructed to finished grade at front face of wall before MSE wall is constructed to 0.5H.
4. 30" thick MSE panels required on walls WB-3, RR-3 and RR-4. Panels shall extend to at least 12' above the top of adjacent rail. Where top of wall is less than 12' above top of rail, 30" panel shall extend to the bottom of barrier footing. 30" panel and bottom of footing shall be separated by bond breaker as approved by the Engineer.

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

	NAME	DATE
DESIGN	JAM, JWG	03-19
DRAWN	JHS, MJL	03-19
CHECKED	KRH	03-19

Structural Grace, Inc
1430 E. Ft. Lowell Suite-200
Tucson, Arizona 85719 (520) 320-0156

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

RETAINING WALL DETAILS (6 OF 6)

Registered Professional Engineer
13227
JAMES W. GLOCK
Date Signed 11-5-19
ARIZONA, U.S.A.
Expires 12/31/20

ROUTE	LOCATION	DWG NO. S-7.31
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

3/8/2019 W:\Jobs\2012\1228_Ruthrauff_TI\1228_Working\h8480w31.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	734	849	
		010 PM 252			

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

ARCHITECTURAL TREATMENT GENERAL NOTES:

1. Dimensions Shown in these plans shall be used to construct Architectural Treatments only. Refer to Roadway and Bridge Plans for construction dimensions.
2. The Contractor shall notify the Engineer of any discrepancies prior to fabrication of Formliners or Metal Work.
3. Concrete Finish and Textures shall be in accordance with the Architectural Treatment Plans and Special Provisions.
4. The Engineer and Landscape Architect shall be notified when surface defects occur and coordinate to address issue.
5. All exposed surfaces on bridge structures, piers, abutments, wingwalls, barrier, parapet, retaining walls, concrete sign structures, as well as 2' below grade shall receive paint. Refer to the Architectural Treatment Details and the Special Provisions.
6. All Painting and Paint Colors shall be in accordance with Section 610 of the Special Provisions.
7. The Contractor shall determine the number and size of Formliners.
8. Adjustments to Architectural Treatment Details will require approval from the Engineer and Roadside Development Section.
9. All Rustication Formliners shall extend a minimum of 2'-0" below finish grade (Typ) except where noted on the Plans.
10. Architectural Treatment Elevations and Sections represent concrete, except where noted as metal.
11. Contractor is to provide shop drawings for all the aesthetic features including metal work on the Pedestrain Fence for review and approval from ADOT Roadside Development through the ADOT Resident Engineer prior to fabrication and construction.
12. Interior facade of Davis Structure to receive Diagonal Rib Formliner.

ARCHITECTURAL TREATMENT SUMMARY TABLE

STRUCTURE	TREATMENT
Retaining Wall WB-1	Formliner Architectural Treatment
Retaining Wall WB-2	Formliner Architectural Treatment
Retaining Wall WB-3	Formliner Architectural Treatment
Retaining Wall WB-4	Formliner Architectural Treatment
Retaining Wall EB-1	Formliner Architectural Treatment
Retaining Wall EB-2	Formliner Architectural Treatment
Retaining Wall RR-1	No Treatment (Behind Abutment 1)
Retaining Wall RR-2	No Treatment (Behind Abutment 2)
Retaining Wall RR-3	Formliner Architectural Treatment
Retaining Wall RR-4	Formliner Architectural Treatment

STRUCTURE	TREATMENT
Retaining Wall RRN-1	Formliner Architectural Treatment
Retaining Wall RRS-1	Formliner Architectural Treatment
Abutment Wall #1	Formliner Architectural Treatment
Abutment Wall #2	Formliner Architectural Treatment
Davis Structure	Formliner Architectural Treatment
Bridge Barrier (SD 1.04)	Formliner Architectural Treatment
F-Shape Barrier (SD 1.02)	Formliner Architectural Treatment
Piers	Formliner Architectural Treatment
I-10 Pedestrian Fence	Metal Work
UPRR Pedestrian Fence	Metal Work

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WGD	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ARCHITECTURAL TREATMENT SUMMARY SHEET

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO. 46501
LAURA E. WIELGAREK
Date Signed 5-8-2019
ARIZONA, U.S.A.

EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. A-1.01

____ OF ____

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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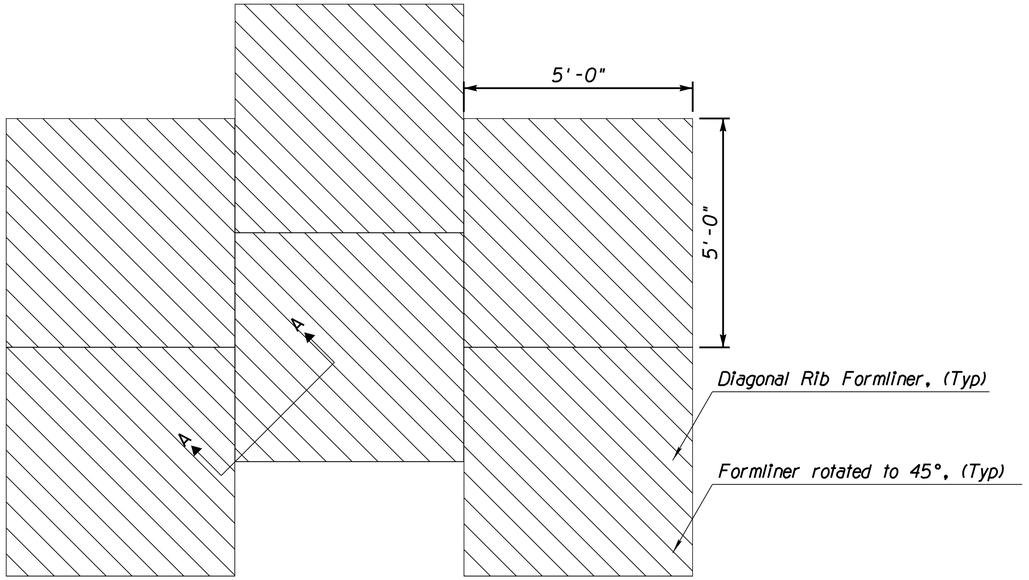
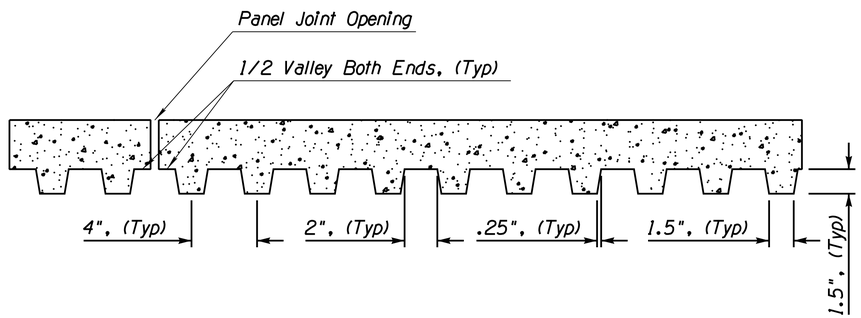
		010 PM 252			



MSE PANEL LAYOUT

NTS

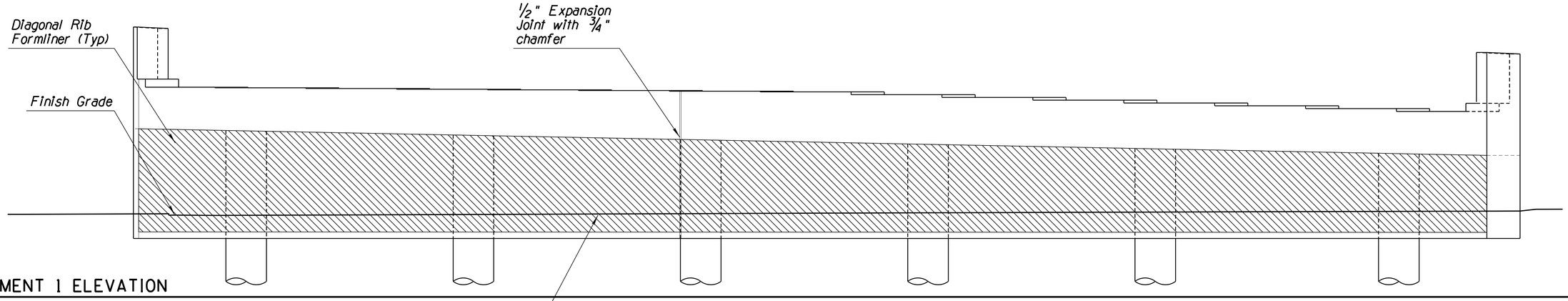


DIAGONAL RIB FORMLINER SECTION 'A-A'

NTS

NOTES:

1. All MSE Panels have an approximate dimension of 5' x 5'. Should the overall dimensions of the MSE Panel change, all horizontal and vertical alignments shall be scaled proportionally. Relief dimensions shall not be altered.
2. All MSE Panels shall be painted. Refer to Section 610 of the Special Provisions.



ABUTMENT 1 ELEVATION

NTS

RELIEF LEGEND

F = Flush
R1 = Recessed 1/2"
R2 = Recessed 1"
R3 = Recessed 1 1/2"
R4 = Recessed 2"
R5 = Recessed 2 1/2"
R6 = Recessed 3"
R7 = Recessed 3 1/2"
R8 = Recessed 4"

PAINT LEGEND

Base: "ADOT Tan" (Flat Finish)
Accent 1: "Shiitake" (Semi-Gloss Finish)
Accent 2: "Black Deco" (Gloss Finish)
Accent 3: "Iris White" (Semi-Gloss Finish)

NOTES:

1. Formliner shall extend 2'-0" below finish grade, (Typ).
2. Refer to Structural Plans for additional Information.
3. Refer to Special Provisons for additional Paint Information.
4. Fabrication of Formliner and Abutment Patterns to be generated from full scale electronic CADD data.

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ARCHITECTURAL TREATMENT
ABUTMENT 1 ELEVATION

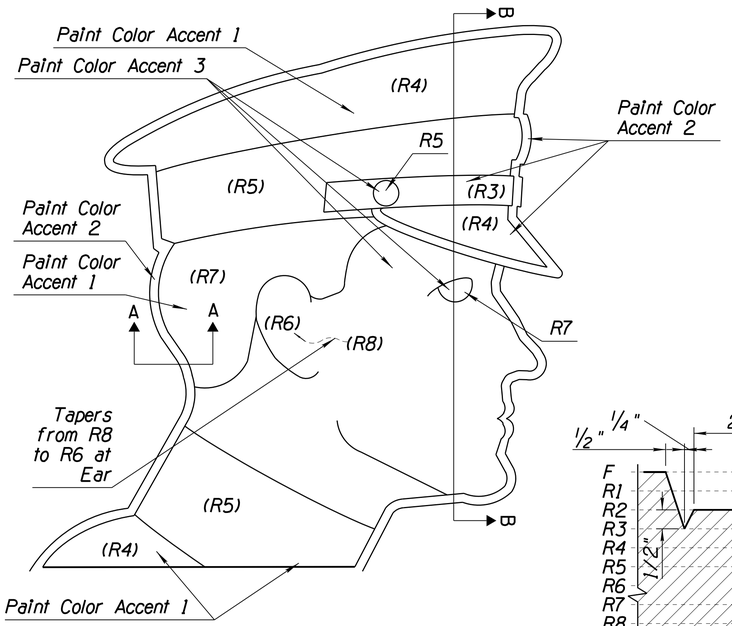
REGISTERED LANDSCAPE ARCHITECT
46501 LAURA E. MIELCAREK
Date Signed 6-30-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. A-2.01

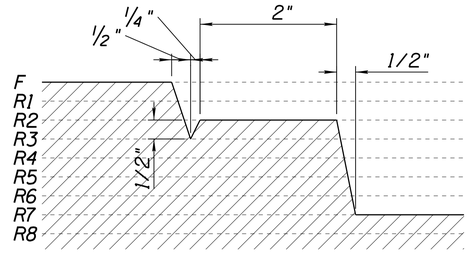
TRACS NO.			SHEET
H 8480 01C		010-D(213)S	___ OF ___

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



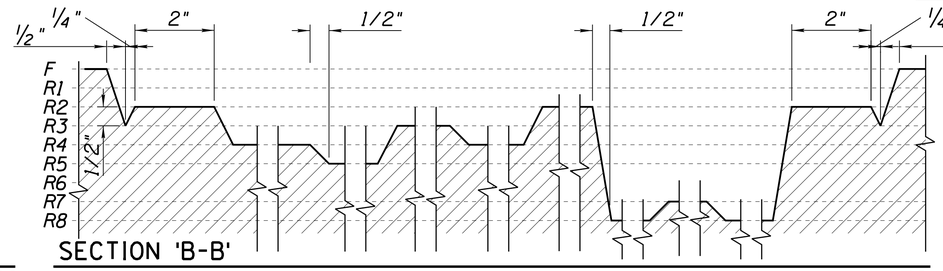
RUTHRAUFF PROFILE DETAIL

NTS



SECTION 'A-A'

NTS

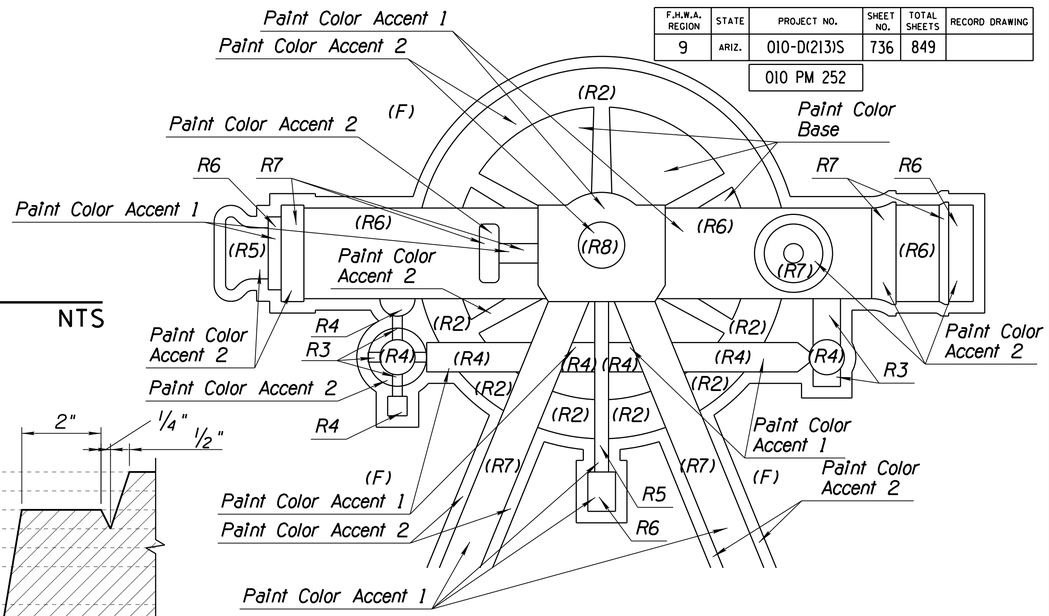


SECTION 'B-B'

NTS

NOTE:

1. The purpose of Sections 'A-A' and 'B-B' is to illustrate relief values. Horizontal values are not to scale.

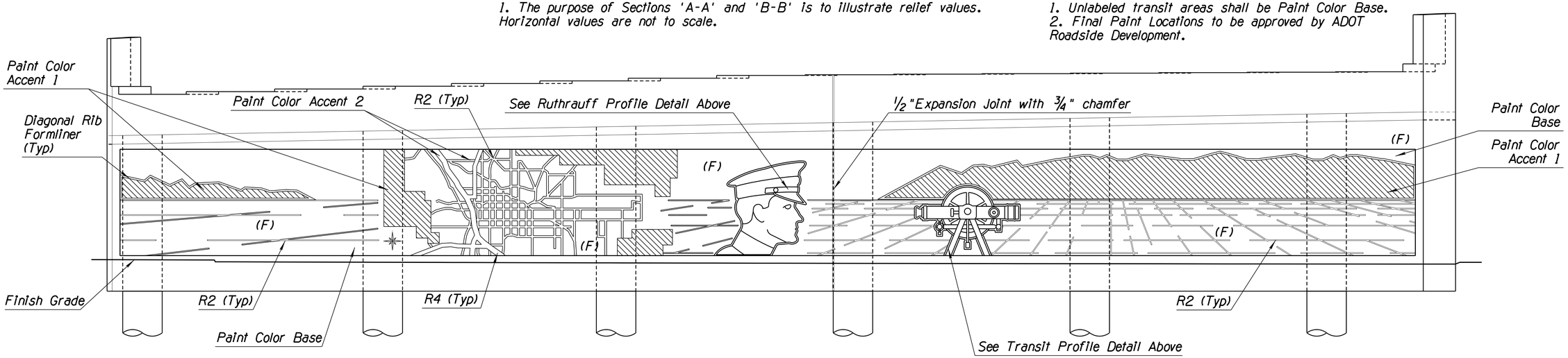


TRANSIT DETAIL

NTS

NOTES:

1. Unlabeled transit areas shall be Paint Color Base.
2. Final Paint Locations to be approved by ADOT Roadside Development.



ABUTMENT 2 ELEVATION

NTS

RELIEF LEGEND

F = Flush
R1 = Recessed 1/2"
R2 = Recessed 1"
R3 = Recessed 1 1/2"
R4 = Recessed 2"
R5 = Recessed 2 1/2"
R6 = Recessed 3"
R7 = Recessed 3 1/2"
R8 = Recessed 4"

PAINT LEGEND

Base: "ADOT Tan" (Flat Finish)
Accent 1: "Shiitake" (Semi-Gloss Finish)
Accent 2: "Black Deco" (Gloss Finish)
Accent 3: "Iris White" (Semi-Gloss Finish)

NOTES:

1. Formliner shall extend 2'-0" below finish grade, (Typ).
2. Refer to Structural Plans for additional information.
3. Refer to Special Provisons for additional Paint information.
4. Fabrication of Formliner and Abutment Patterns to be generated from full scale electronic CADD data.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	736	849	

010 PM 252

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ARCHITECTURAL TREATMENT
ABUTMENT 2 ELEVATION DETAILS

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. A-2.02

___ OF ___

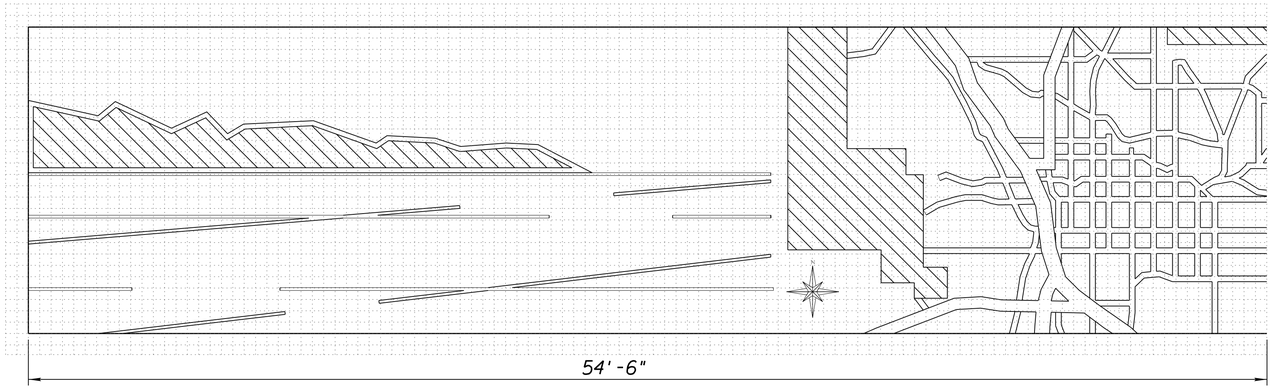
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

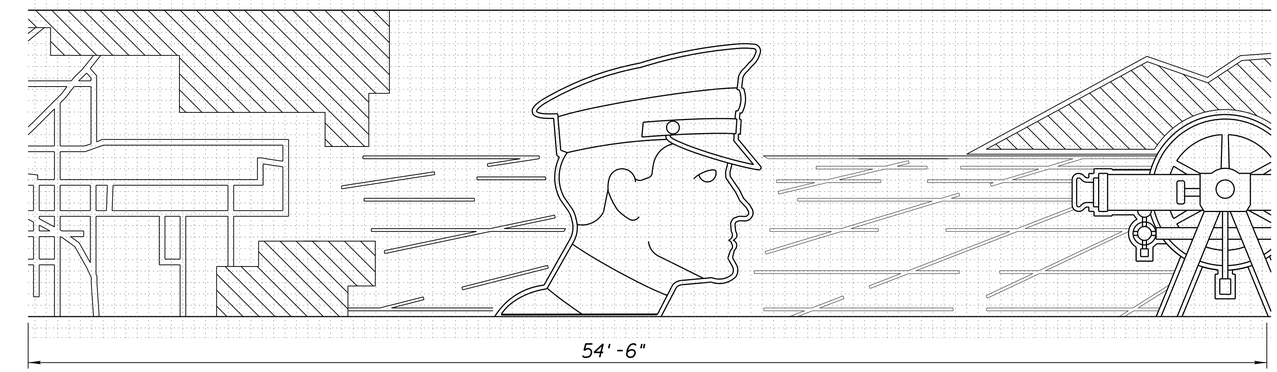
cccccSYSTIMEccccc

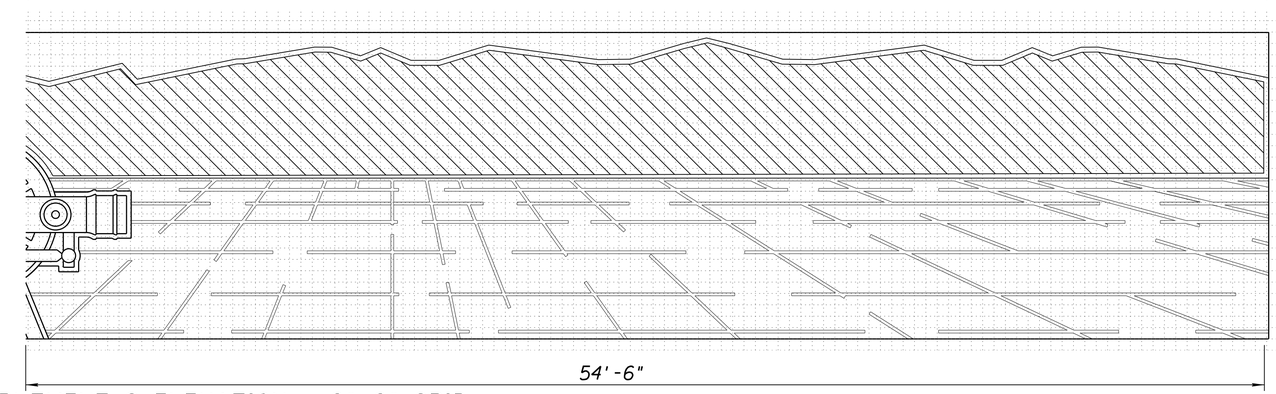
ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	737	849	

010 PM 252







ABUTMENT 2 ELEVATION - 6"x6" GRID

NTS

RELIEF LEGEND

F = Flush
R1 = Recessed 1/2"
R2 = Recessed 1"
R3 = Recessed 1 1/2"
R4 = Recessed 2"
R5 = Recessed 2 1/2"
R6 = Recessed 3"
R7 = Recessed 3 1/2"
R8 = Recessed 4"

PAINT LEGEND

Base: "ADOT Tan" (Flat Finish)
Accent 1: "Shiitake" (Semi-Gloss Finish)
Accent 2: "Black Deco" (Gloss Finish)
Accent 3: "Iris White" (Semi-Gloss Finish)

NOTES:

1. Formliner shall extend 2'-0" below finish grade, (Typ).
2. Refer to Structural Plans for additional information.
3. Refer to Special Provisons for additional Paint information.
4. Fabrication of Formliner and Abutment Patterns to be generated from full scale electronic CADD data.

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ARCHITECTURAL TREATMENT
ABUTMENT 2 DIMENSIONS

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.

EXPIRES 6-30-2019

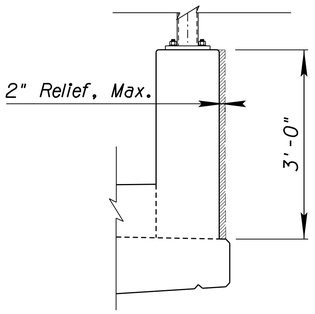
ROUTE	LOCATION		
I-10	RUTHRAUFF ROAD TI		
TRACS NO. H 8480 01C		010-D(213)S	

DWG NO. A-2.03

___ OF ___

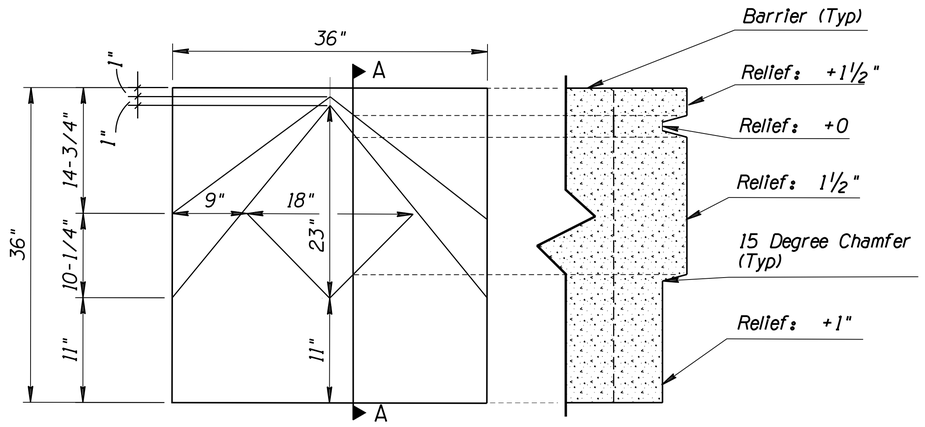
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	738	849	
		010 PM 252			



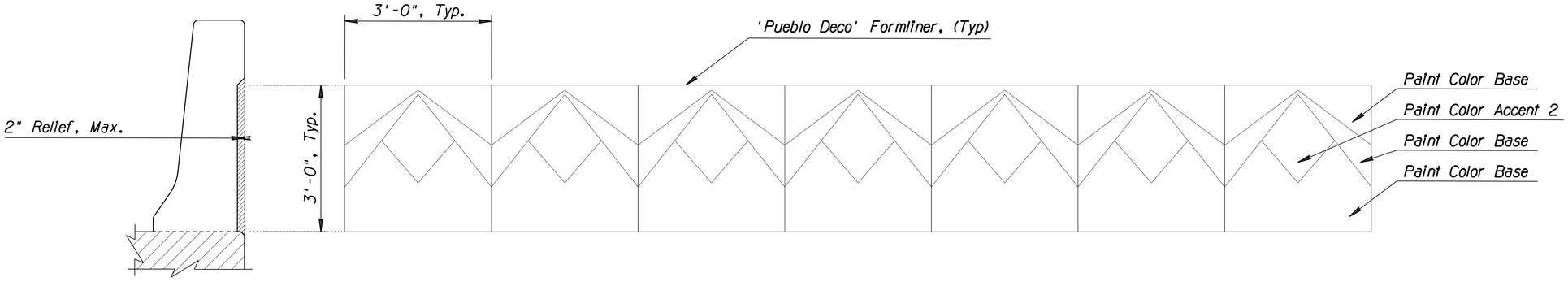
FORMLINER ON BRIDGE BARRIER (ADOT SD 1.04)

NTS



'PUEBLO DECO' FORMLINER - DETAIL & SECTION A-A

NTS



FORMLINER ON F-SHAPE BARRIER (ADOT SD 1.02)

NTS

RELIEF LEGEND

F = Flush
R1 = Recessed 1/2"
R2 = Recessed 1"
R3 = Recessed 1 1/2"
R4 = Recessed 2"
R5 = Recessed 2 1/2"
R6 = Recessed 3"
R7 = Recessed 3 1/2"
R8 = Recessed 4"

PAINT LEGEND

Base: "ADOT Tan" (I
Accent 1: "Shiitake" -
Accent 2: "Black Dec
Accent 3: "Iris White

NOTES:

1. Intent is not to cut any 'Pueblo Deco' formliner in half. Approval of 'Pueblo Deco' layout on Bridge Barrier and F-Shape Barrier is required by ADOT Roadside Development through the ADOT Resident Engineer.
2. Paint colors shown in Architectural Treatment Details is typical paint color for all 'Pueblo Deco' formliners. Refer to Special Provisions for additional paint color information.
3. Relief is measured from the Face of Barrier, which is assigned a depth of +0". The high point of the barrier protrudes from the Face a maximum of +1½".
4. Refer to Bridge Plans for additional Bridge Barrier and F-Shape Barrier information.
5. Bridge Barrier and F-Shape Barrier shall have Formliner 'Pueblo Deco', maximum relief 1½".

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ARCHITECTURAL TREATMENT BARRIER DETAILS

REGISTERED LANDSCAPE ARCHITECT 46501 LAURA E. MIELCAREK Date Signed 3-8-2019 ARIZONA, U.S.A.

EXPIRES 6-30-2019

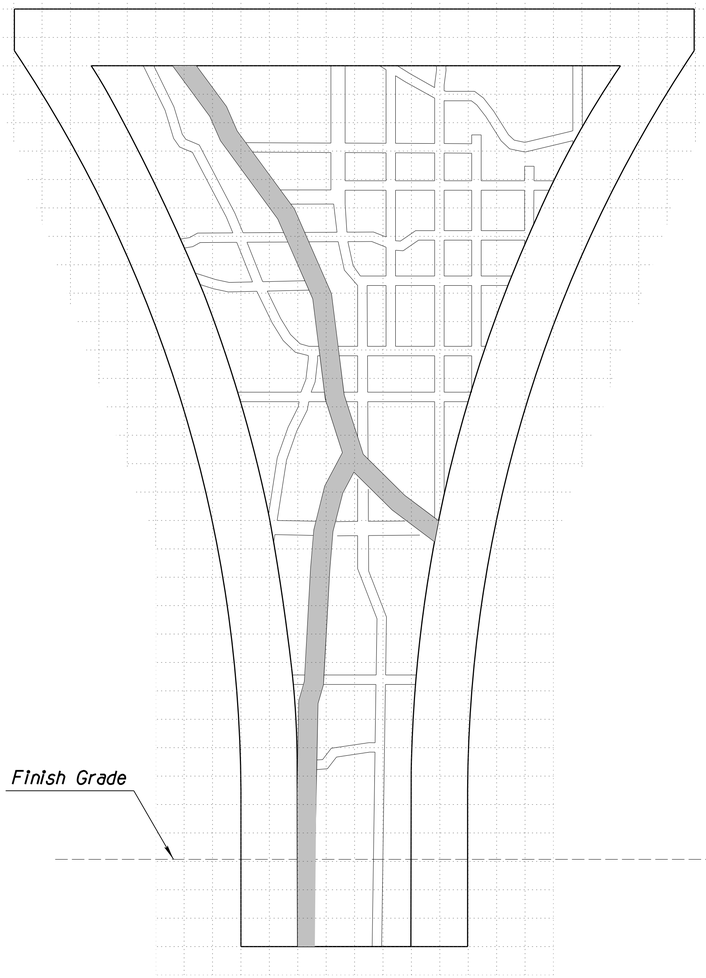
ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. A-2.04

___ OF ___

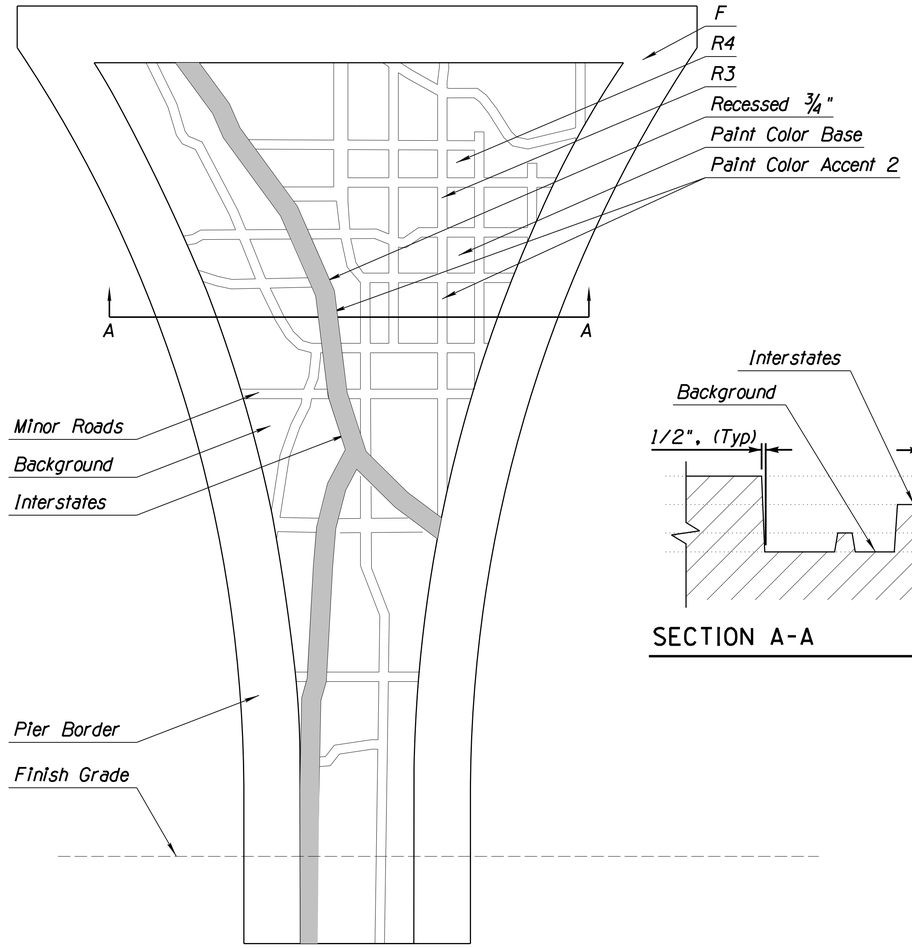
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	739	849	
		010 PM 252			



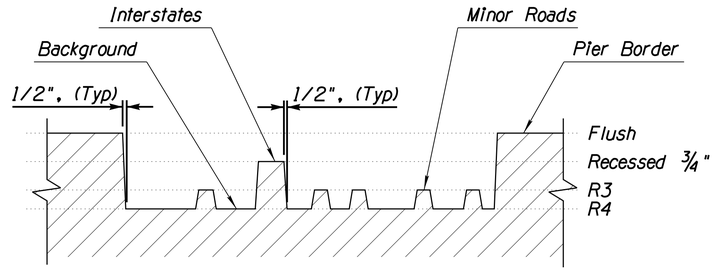
I-10 BRIDGE PIER ELEVATION - 6"X6" GRID

NTS



I-10 BRIDGE PIER ELEVATION
RELIEF AND PAINT

NTS



SECTION A-A

NTS

RELIEF LEGEND

F = Flush
R1 = Recessed 1/2"
R2 = Recessed 1"
R3 = Recessed 1 1/2"
R4 = Recessed 2"
R5 = Recessed 2 1/2"
R6 = Recessed 3"
R7 = Recessed 3 1/2"
R8 = Recessed 4"

PAINT LEGEND

Base: "ADOT Tan" (Flat Finish)
Accent 1: "Shiitake" (Semi-Gloss Finish)
Accent 2: "Black Deco" (Gloss Finish)
Accent 3: "Iris White" (Semi-Gloss Finish)

NOTES:

1. Formliner shall extend 2'-0" below finish grade, (Typ).
2. Refer to Structural Plans for additional information.
3. Refer to Special Provisons for additional Paint Information.
4. Fabrication of Formliner and Abutment Patterns to be generated from full scale electronic CADD data.

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ARCHITECTURAL TREATMENT
PIER DETAIL

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION		
I-10	RUTHRAUFF ROAD TI		
TRACS NO. H 8480 01C		010-D(213)S	

DWG NO. A-2.05

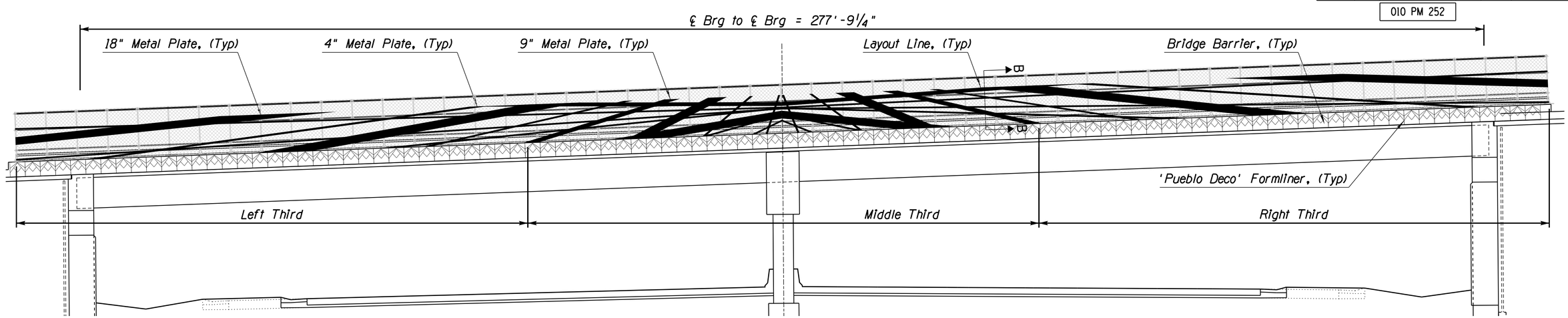
____ OF ____

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

ccccSYSTIMEccccc

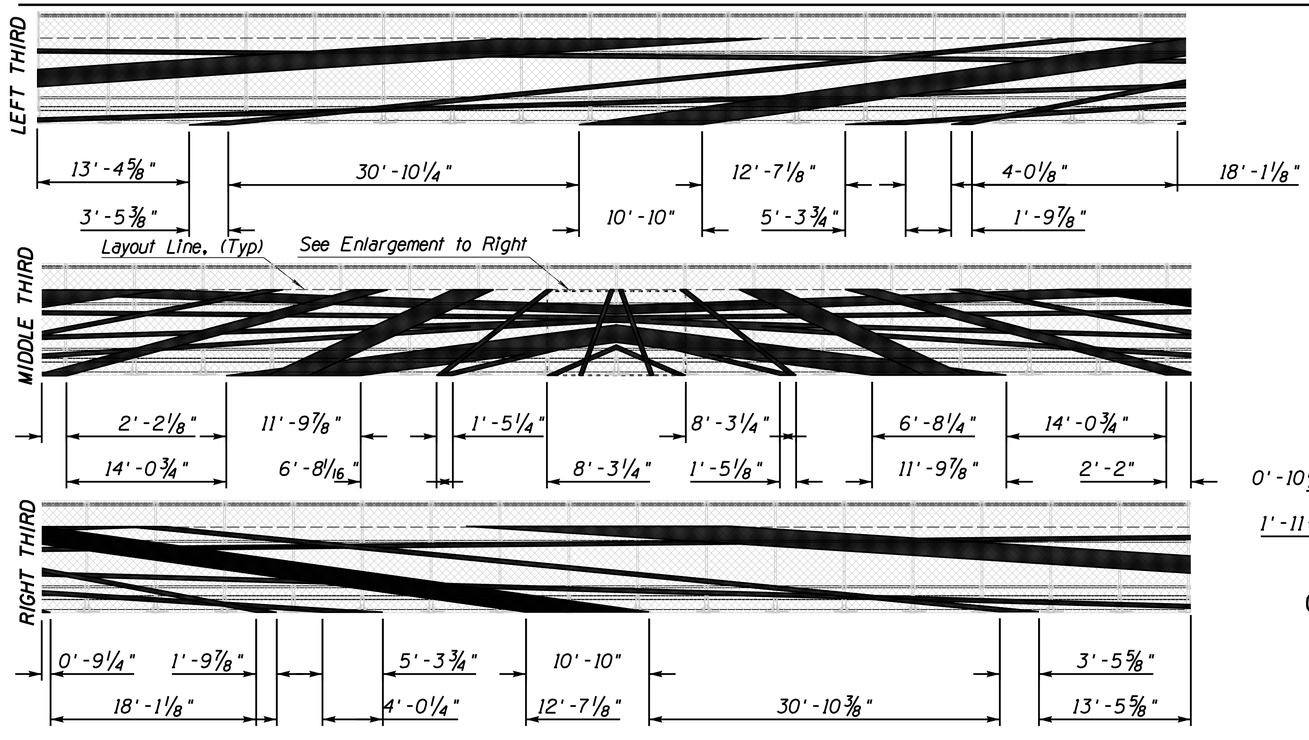
ccccDGNcSPECIFICATIONcccc

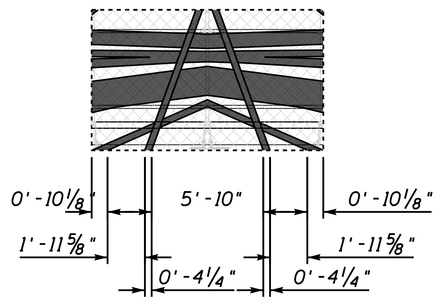
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	740	849	
		010 PM 252			



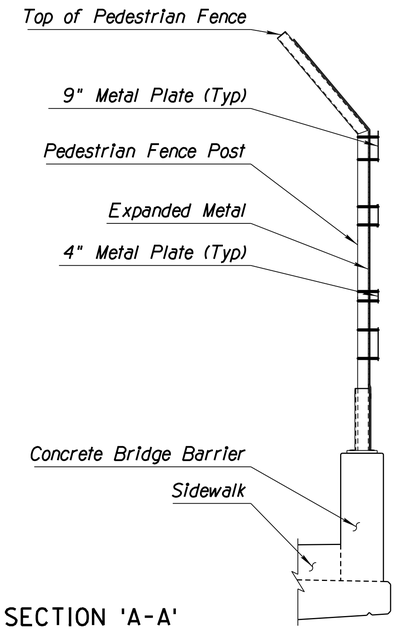
PEDESTRIAN FENCE ELEVATION

SCALE 1"=20'





CENTER ENLARGEMENT



SECTION 'A-A'

NTS

NOTE:
Section is Schematic. Shop Drawings shall be provided.

GENERAL NOTES:

1. *Refer to ADOT Standard Detail SD 1.05 and Bridge Plans for additional information.*
2. *Dimensions Shown in the Drawings Shall be Used to Construct Architectural Treatments only. Refer to Roadway and Bridge Drawings for Construction Dimensions. The Contractor Shall Notify the Engineer of any Discrepancies Prior to Fabrication of Metal Work.*
3. *Contractor/Metal Fabricator Shall Provide Samples and Shop Drawings prior to Fabrication. Refer to Special Provisions.*
4. *Fabrication of Metal Patterns to be generated from full scale electronic CADD data. Refer to Special Provisions.*
5. *Metal work to be placed on outside of Pedestrian Fence, on both sides of bridges.*
6. *UPRR Bridge to match Layout of I-10 Bridge. Layout will be cropped to length of UPRR bridge.*

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ARCHITECTURAL TREATMENT
FENCE SHEET

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	A-2.06

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	741	849	
		010 PM 252			

PART 1 - To be completed by the Landscape Architect or Design Engineer

I. PROJECT DESCRIPTION

A. Owner Name and Address:

Arizona Department of Transportation
205 South 17th Avenue
Phoenix, Arizona 85007-3213

B. Project TRACS Number: H8480 01D

C. Project Location: I-10, Ruthrauff Rd. T.I.

City: Tucson County: Pima

Beginning Latitude (NAD 83):

Beginning Longitude (NAD 83):

Ending Latitude (NAD 83):

Ending Longitude (NAD 83):

To obtain the project latitude/longitude data, refer to the ADOT Web Link below:
http://tpd.azdot.gov/website/receiving_waters/viewer.htm

D. Project Description: Construction of new traffic interchange at I-10 and Ruthrauff Road.

II. HYDROLOGIC INFORMATION

A. Project Size:

Length (Mi.) 4.7 miles (I-10), 0.77 (Ruthrauff Rd)

Area (Ac.) 126 ac.

B. Area to be Graded (Ac.):

C. Percentage of the site that is impervious before and after construction:

Percentage before Construction:

Percentage after Construction:

D. Receiving Water(s), refer to the same ADOT Web Link above:

Santa Cruz River

III. PRESERVATION OF EXISTING VEGETATION

A. In accordance with the specifications, existing vegetation will be preserved. Clearing limits shall be confined to areas that require grading. Existing vegetation outside the boundaries of the cleared area shall be protected from damage by construction activities. Existing trees within the area to be cleared shall be preserved and protected, wherever possible.

IV. SOIL STABILIZATION MEASURES

A. All disturbed soil, which will not be paved, riprapped or otherwise covered to prevent erosion, will be revegetated and/or landscaped in accordance with the project plans and specifications.

B. Scheduling of the revegetation effort can be found on PART 2 of this sheet under SCHEDULE OF MAJOR ACTIVITIES.

V. MEASURES TO CONTROL EROSION AND SEDIMENT

A. Construction (temporary) Erosion and Sediment Controls: (Refer to the Following SWPPP Site Plan and Specifications)

- ___ Erosion Control Mattings
- ___ Temporary Diversion Dikes
- ___ Check Dams
- X Rock Inlet/Outlet Protection
- ___ Sediment Control Berms
- ___ Silt Fences
- X Wattles (Excelsior/Straw)
- X Excelsior Logs / Sediment Logs
- X Seeding (Class II with mulch)
- X Others Describe:

Curb inlet protection

Stabilized Construction Entrance/Exit

Gravel Pad

B. Post-Construction (permanent) Erosion and Sediment Controls and Storm Water ManagementMeasures: (Refer to SWPPP Site Plan and Specifications)

- ___ Crown Ditch/Dike
- ___ Rock Protection
- ___ Rock Riprap Channel Lining
- ___ Sediment Basin
- ___ Embankment Curb
- ___ Spillways and Downdrains
- ___ Minibenching
- X Seeding established as a perennial vegetative cover with a density of 70% of the native background vegetative cover.
- ___ Others Describe:

VI. MAINTENANCE AND INSPECTIONS

A. Frequency of Inspections:

- ___ At least once every 7 calendar days, OR
- X Every 14 calendar days and within 24 hours after a rainfall of 0.5 inches (12.7 mm) or more.

NOTE: RAINFALL GAUGE TO BE KEPT ON-SITE TO DETERMINE DEPTH OF RAINFALL

B. Inspection Procedure:

ADOT's Contractor's Inspection Log and Compliance Evaluation Report (CER) will be completed by the contractor or his representative and will be kept on file for 3 years. A signed copy of the CER will be sent to the ADOT resident engineer. If repairs are necessary, they shall be initiated within 24 hours of the inspection report.

PART 2 - To be completed by ADOT & CONTRACTOR

http://www.azdot.gov/Highways/OES/Water_Quality/Stormwater/Docs/swppp_construction_template.dot

I. SCHEDULE OF MAJOR ACTIVITIES

A. Project Schedule:

Start Date:

End Date:

B. Construction Sequencing Schedule: (Attach Additional Sheets) Construction Activities

II. INVENTORY OF POLLUTANTS

A. The materials or substances checked below are expected to be onsite during construction:

- ___ Concrete
- ___ Paints
- ___ Herbicides
- ___ Fuel
- ___ Others, List:
- ___ Asphalt
- ___ Fertilizer
- ___ Wood
- ___ Oil

III. POLLUTION CONTROL MEASURES

A. Other Best Management Practices:

- ___ Wind Erosion and Dust Control
- ___ Solid Waste Management
- ___ Equipment Maintenance Procedures
- ___ Designated Washout Areas
- ___ Stabilized Construction Entrance
- ___ Protected Chemical and Material Storage Area
- ___ Other, Describe:

IV. SPILL PREVENTION AND RESPONSE

A. Spill Prevention:
The procedures outlined in the Best Management Practices listed under Pollution Control Measures will be followed to prevent and contain spills of hazardous material. These preventative action include BMP's on equipment maintenance and proper handling, storage and disposal of chemicals and materials. All manufacturer's recommendations for usage, clean-up and disposal shall be followed.

B. Spill Response:
In the event of any accidental spill of chemicals or hazardous materials, contact the ADOT Traffic Operations Center at 800-379-3701. If a reportable quantity is discharged into the storm water, ADOT shall contact the National Response Center and document the spill to the EPA. ADOT's Hazardous Materials Specialist shall provide instructions.

V. CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

A. This Storm Water Pollution Prevention Plan (SWPPP) has been prepared in accordance with the latest updated version of ADOT's EROSION AND POLLUTION CONTROL MANUAL FOR HIGHWAY DESIGN AND CONSTRUCTION, published by ADOT Intermodal Transportation Division.

___ SWPPP is in compliance with other Federal, State Laws, or Local Regulations.

VI. POLLUTION PREVENTION PLAN CERTIFICATION

A. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Applies to VI. B., C., and D)

B. The operator/contractor as defined in AZPDES should sign the SWPPP in accordance with CGP Part VII. K, and retain the SWPPP on-site at the construction site or other location easily accessible during normal business hours.

Signature: (operator/contractor)
Date:
Name:
Title:
Company:

C. ADOT Resident Engineer

Signature: (owner)
Date:
Name:
Title:
ADOT District:

D. MUNICIPALITY for Municipal Separate Storm Sewer System (MS4)

Signature:
Date:
Name:
Title:
MS4 Name:

VII. OTHER REQUIREMENTS

A. A copy of the General Permit and NOI are attached in accordance to AZPDES General Permit Storm Water Discharges From Construction Activities To The Water Of The United States.

B. Projects that are within ¼ mile of impaired or unique waters require the SWPPP to be sent to ADEQ in combination with the NOI. To check the ADOT Outstanding, Impaired and Not-attaining Waters Interactive Web Map, please turn on the Buffers and Mile Markers Layers:
http://www.azdot.gov/inside_adot/OES/Water_Quality/Stormwater/outstanding_unique_waters_maps_by_county.asp

C. For further requirements, check the ADEQ's Smart NOI Web Page: *https://az.gov/webapp/noi*

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

STORMWATER QUALITY PROTECTION & EROSION/SEDIMENT CONTROL AZDES SWPPP INDEX SHEET

ROUTE I-10 LOCATION RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

REGISTERED LANDSCAPE ARCHITECT 46501 LAURA E. MIELCAREK Date Signed 3-29-2019 ARIZONA, U.S.A.

EXPIRES 6-30-2019

DWG NO. E-1.01

___ OF ___

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

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	742	849	
		010 PM 252			

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

EROSION AND SEDIMENT CONTROL BMP SUMMARY OF QUANTITIES

SYMBOL	BMP	UNIT	QTY.	REFERENCE	ITEM NO.
----------	9" Dia. Sediment Wattle	LF	30,951	Detail ES1	8101021
- - - - - -	20" Dia. Sediment Wattle	LF	15,054	Detail ES1	8101014
⬭	20" Dia. Sediment Log	LF	1,160	Detail ES2	8101035
⬚	Storm Drain Inlet Protection 20" Dia. Sediment Log Rock Mulch Gradation C	 LF CY	 2,914 174	Detail ES3 Detail ES2 Detail ES4	 8101035 8101029
⌄	Headwall Protection Rock Mulch Gradation C	 CY	 56	 Detail ES4	 8101029
——	Catch Basin Protection Fabric Filter	SY	314	Refer to Item 8101018 of the Special Provisions	8101018
	Seed Mix (Class II)	AC	13	Refer to Item 8050003 of the Special Provisions	8050003
Not Shown on Plans	Stabilized Construction Entrance/Exit Gravel Pad	SY	1,250	Detail ES5 Refer to Item 8101030 of the Special Provisions	8101030
←	Flow Arrow	N/A	N/A	N/A	N/A

GENERAL NOTES:

1. Right-of-Way and easements are the Limits of Disturbance, or Project Limits. Areas outside the Project Limits shall remain undisturbed. Any project related activities or disturbance beyond the project limits will require historic preservation and cultural resources compliance to have been included
   before any disturbance can occur outside the project limits. The Plans and NOI must be updated accordingly and reflect additional BMPs.
2. Apply seed mix per Erosion & Pollution Control plans.
3. Seeding limits shown on plans are estimated on anticipated limits of soil disturbance. Seeding shall be field adjusted to match limits of soil disturbance.
4. Sediment Logs/Wattles shall be installed on slopes, per Erosion & Sediment Control plans, and per Detail ES1 & ES2.
5. 20" Sediment Logs shall be placed every 150 feet on center where indicated on the Erosion & Pollution Control plans, unless otherwise noted.
6. All Erosion Control Measures shall be installed within 14 days of establishing rough grade.
7. Disturbed areas where construction is delayed for more than 14 days require Temporary Erosion Control Measures.
8. 20" diameter sediment logs shall be used for curb opening catch basins and fabric filter shall be used for grated catch basins. Refer to plans for locations.
9. Sediment Control Measures shall be installed on all side slope boundaries in lieu of sediment basins.
10. Ends of Wattles shall be turned at a 45 Degree Angle Upslope, 3' min., Typ.
11. Refer to Drainage Plans for permanent erosion control structures.
12. Contractor shall determine final location of Stabilized Construction Entrances according to site conditions and/or construction sequencing, with approval from the Engineer. Use of other access points must be approved by the Engineer.
13. Sweeping and/or vacuuming may be required as a secondary measure if trackout is visible.
14. Containment Areas shall be identified on contractor's Stormwater Pollution Prevention Plan.
15. Spill response equipment shall be accessible in case of a spill, and located within/near the Containment Area.
16. There are no wetlands within the limits of the project, or adjacent to the project.
17. Refer to Civil Plans and Typical Section for Topsoil Plating locations.
18. Quantities shown in Summary of Quantities are for contractor convenience. Contractor to verify all quantities.

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

STORMWATER QUALITY PROTECTION & EROSION/SEDIMENT CONTROL SUMMARY SHEET

REGISTERED LANDSCAPE ARCHITECT
46501 LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION		
I-10	RUTHRAUFF ROAD TI		
TRACS NO. H 8480 01C		010-D(213)S	___ OF ___

DWG NO. E-1.02

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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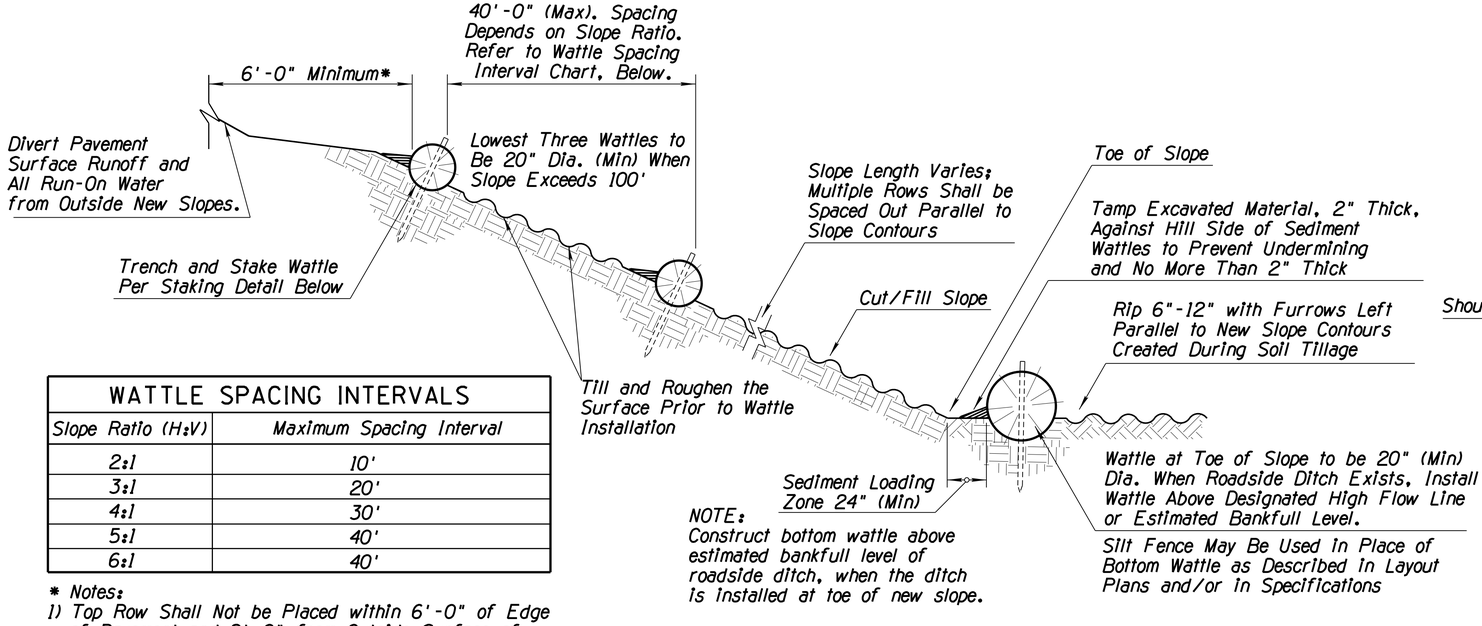
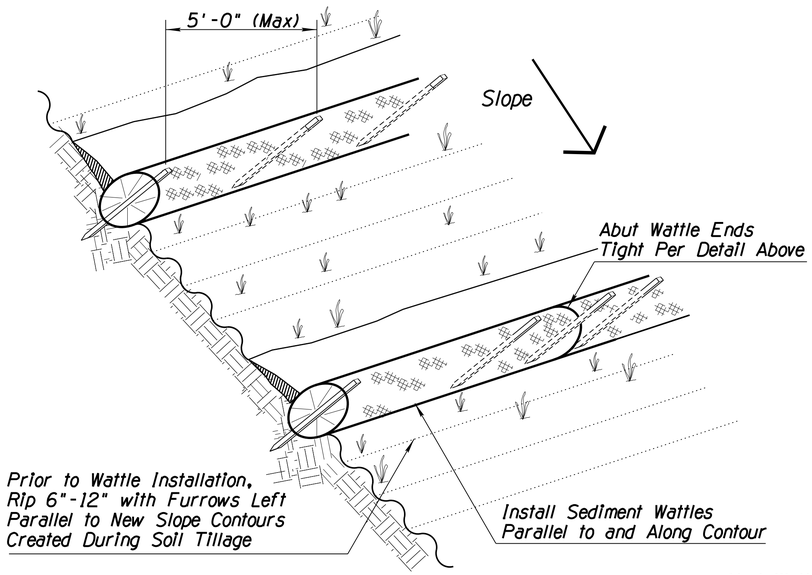
		010 PM 252			



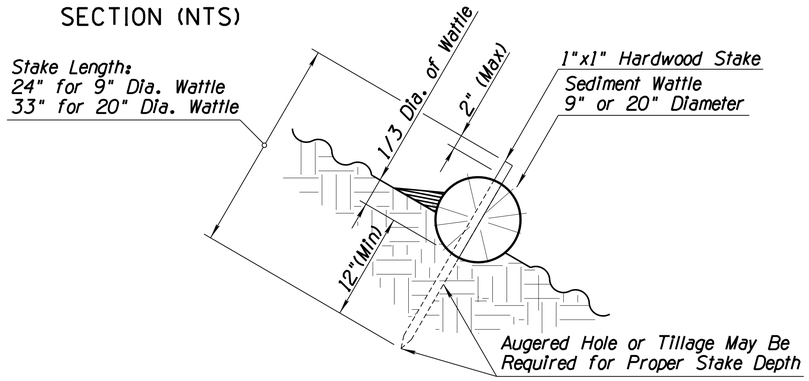
SECTION (NTS)

WATTLE SPACING INTERVALS	
Slope Ratio (H:V)	Maximum Spacing Interval
2:1	10'
3:1	20'
4:1	30'
5:1	40'
6:1	40'

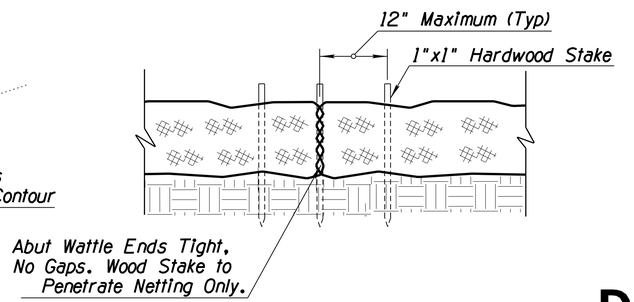
* Notes:
1) Top Row Shall Not be Placed within 6'-0" of Edge of Pavement and 9'-0" from Outside Surface of Barrier.
2) For erosive soils, place rows of wattles closer together.
3) For soils with low erosive potential, place rows of wattles further apart.



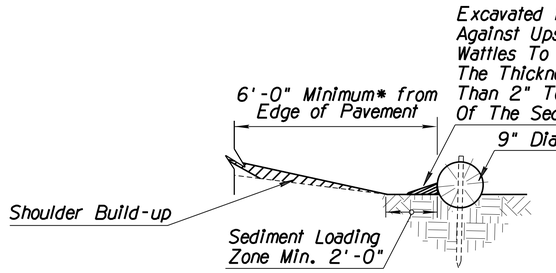
SEDIMENT WATTLE LAYOUT (NTS)



SEDIMENT WATTLE STAKING DETAIL (NTS)



SEDIMENT WATTLE OVERLAP (NTS)



** Note:
Applicable only in the areas of concentrated flow - to include but not be limited to roadway sag spots and drop-off repair locations as per the direction of the Engineer.

NEW SHOULDER BUILDUP ** PROTECTION SECTION (NTS)

NOTES:
1. Install Sediment Wattles as slopes are constructed to grade or as directed by the Engineer. Select, install and maintain in conformance with manufacturers' specifications to meet site conditions for slope protection and in accordance with good engineering practices. No Sediment Wattles shall be installed in urban freeway medians, nor where cable barrier systems are employed.
2. Sediment Wattles shall be in continuous contact with trench bottom and sides. Do not overlap wattle ends on top of each other. A 20" Dia. wattle may be made from 2-3 rolled excelsior or straw blankets.
3. Butt adjoining wattles tightly against each other. Drive the first end stake of the second wattle at an angle toward the first wattle to help abut them tightly.
4. Repair any rills or gullies promptly. Make field adjustments and corrections of Wattle BMP immediately if it is causing flooding, erosion, and/or affecting roadway safety.
5. Construction of cut slopes 2:1 and steeper in soil and rock materials that can be ripped shall be constructed, whenever possible, by Minibenching. Refer to Slope Minibenching BMP Detail.
6. Loosening surface soil is not required where Minibenches are used. For seeded areas, tillage shall be performed to form minor ridges and furrows parallel to new slope contours and as specified in Section 805 of the Specifications.
7. Divert and direct run-on water from outside of the slopes to the spillways and/or rock riprap/rock mulch. Diversion dikes and/or ditches are necessary on natural undisturbed slopes beyond the top limits of new slopes to divert run-on water.
8. Installation and maintenance of Sediment Wattle BMPs shall not negatively impact traffic safety, nor the designed function of roadway or bridge drainage facilities.
9. Install and maintain Sediment Wattle BMPs to carry the stormwater of at least 2-year, 24-hour events.
10. The Sediment Wattle BMP's pay/bid item shall include all materials used for this BMP: all ground preparation, furnishing, installing, maintenance, final removal, and disposal of this temporary BMP, as well as returning the area to an acceptable condition as approved by the Engineer.
11. Refer to Section 810-2.06(C) of the Specifications for Sediment Wattle material.
12. Make field adjustments and corrections to ensure NO sensitive biological resources (native species / habitats) will be adversely impacted.

DETAIL ES1
SEDIMENT WATTLE

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

STORMWATER QUALITY PROTECTION & EROSION/SEDIMENT CONTROL DETAIL SHEET

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 46501 LAURA E. WIELCAREK — Date Signed — U.S.A.
EXPIRES 6-30-2019

DWG NO. E-2.01

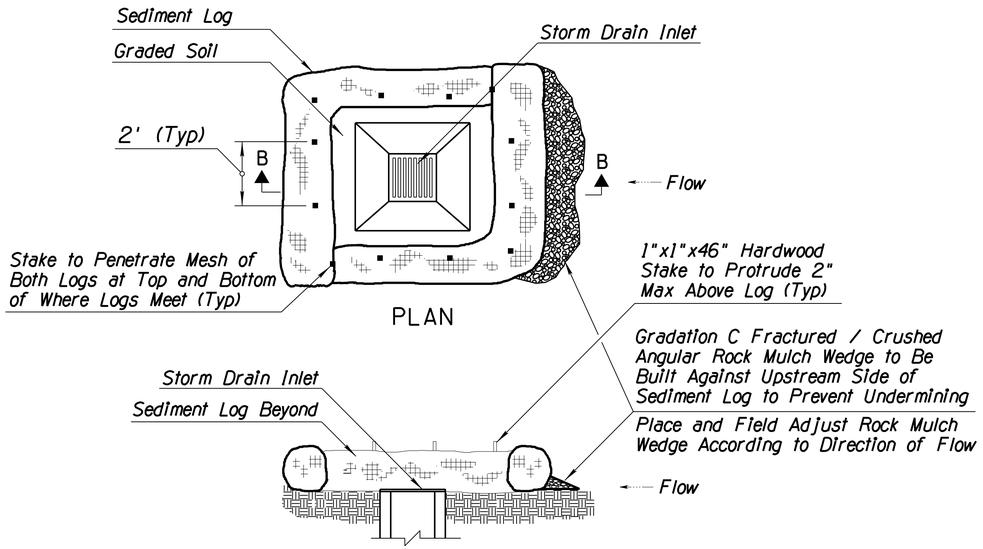
____ OF ____

cccccSYSTIMEccccc

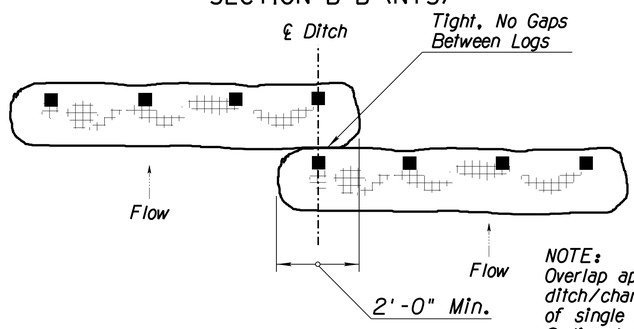
cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	744	849	

010 PM 252

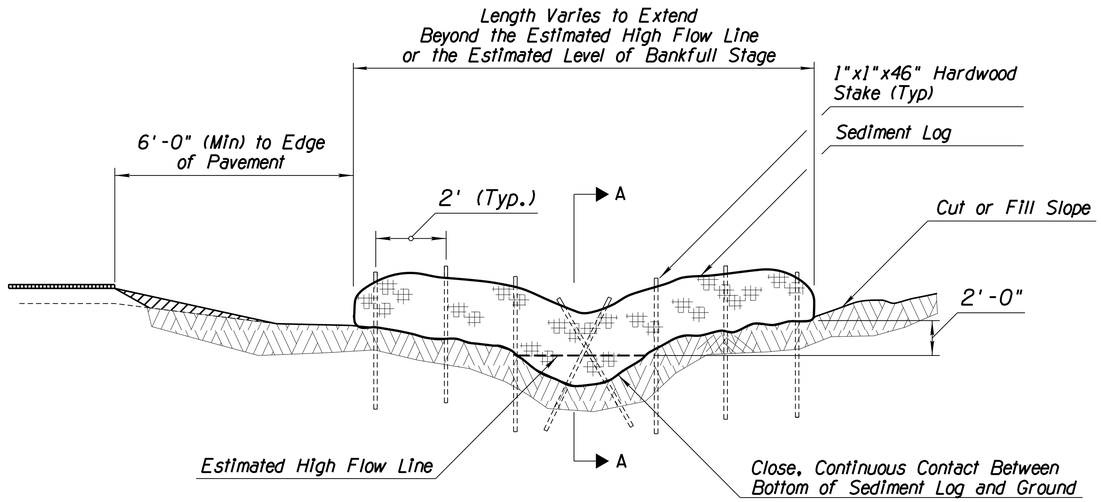


SEDIMENT LOG AT STORM DRAIN
SECTION B-B (NTS)

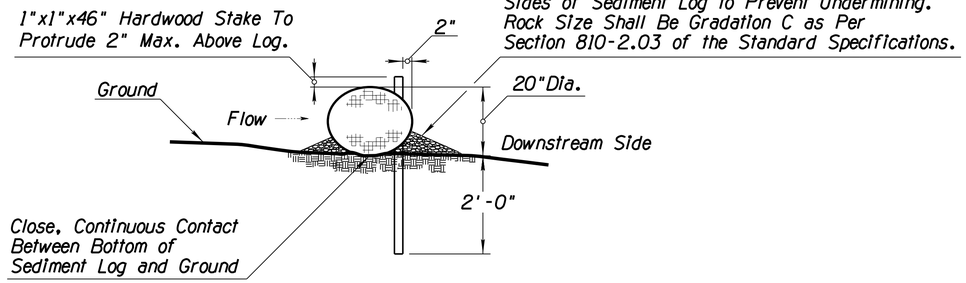


NOTE:
Overlap applies to situations where ditch/channel is wider than length of single Sediment Log. Two or multiple Sediment Logs may be necessary.

TYPICAL OVERLAP
PLAN (NTS)



SEDIMENT LOG IN DITCH/CHANNEL
SECTIONAL ELEVATION (NTS)



SECTION A-A (NTS)

NOTES:
1. Sediment Logs shall not be installed in the urban freeway medians, nor where cable barrier systems are employed.
2. Locate Sediment Logs as indicated in plans, SWPPP or as directed by the Engineer.
3. Select, install and maintain Logs per manufacturers' specifications and good engineering practices.
4. Lay Sediment Log across prepared roadside ditch or channel. Trenching or burial of Sediment Logs is not required. The close, continuous contact between the bottom of the Log and the ground is mandatory. The Logs shall be installed in the roadside ditch, swale or channel bottom perpendicular to the flow of water as shown on detail this sheet.
5. Stake Log as shown. Stakes shall be placed through downstream side only as shown.
6. DO NOT drive stakes through center of the Log. Stakes must be driven into the ground as shown.
7. Ensure that no gaps exist between soil and bottom of Sediment Log. Repair any rills or undercuts promptly.
8. Placement of Sediment Logs shall be evaluated by the Engineer in rocky soil conditions.
9. Remove Sediment Log BMPs within the ditches/channels and around the storm drain inlets as per the direction of the Engineer or as soon as practicable upon stabilization of the construction disturbed area.
10. Dispose of Sediment Logs and trapped sediment material and fill trench created by Sediment Log.
11. The installation and maintenance of Sediment Log BMPs shall not negatively impact traffic safety, nor the designed function of roadway or bridge drainage facilities. Sediment Logs shall be installed and maintained to carry the stormwater of at least 2-year, 24-hour events.
12. Make field adjustments and corrections of Sediment Log BMP immediately if it is causing flooding, erosion, and/or affecting roadway safety.
13. Rock mulch/riprap may be required for channel/ditch lining or rock check dams for longitudinal ditch slopes that exceed 5% and/or for soil conditions not suitable for Log installation.
14. The Sediment Log BMP's pay/bid item shall include all materials used for this BMP: all ground preparation, furnishing, installing, maintenance, final removal, and disposal, as well as returning the area to an acceptable condition as approved by the Engineer.
15. Refer to Standard Specification Section 810-2.06(B) for Sediment Log material specifications.
16. Make field adjustments and corrections to ensure NO sensitive biological resources (native species / habitats) will be adversely impacted.
17. Construct Rock Wedge with angular-shaped Gradation C Rock Mulch as defined in Section 810-2.03 of the Standard Specifications and these special provisions. Natural river-run materials such as rounded river rocks/cobblestones and pebbles are NOT acceptable.

DETAIL ES2

SEDIMENT LOG

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

STORMWATER QUALITY PROTECTION & EROSION/SEDIMENT CONTROL DETAIL SHEET

REGISTERED LANDSCAPE ARCHITECT 46501 LAURA E. MIELCAREK Date Signed 5-30-2019 ARIZONA, U.S.A.

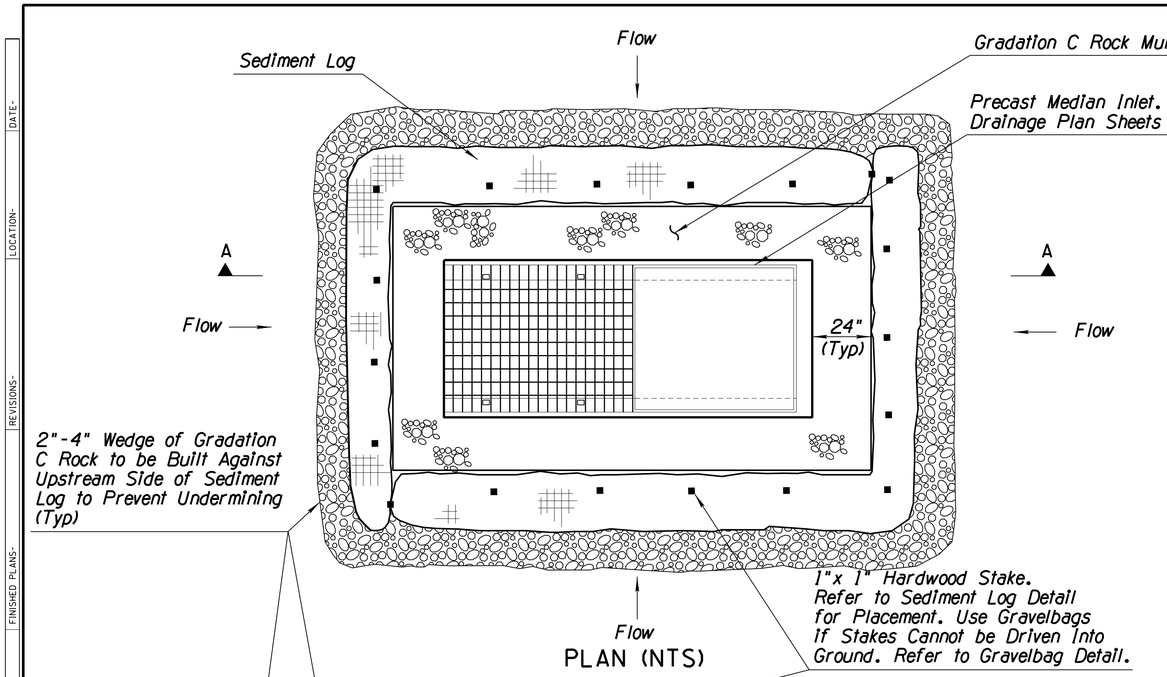
EXPIRES 6-30-2019

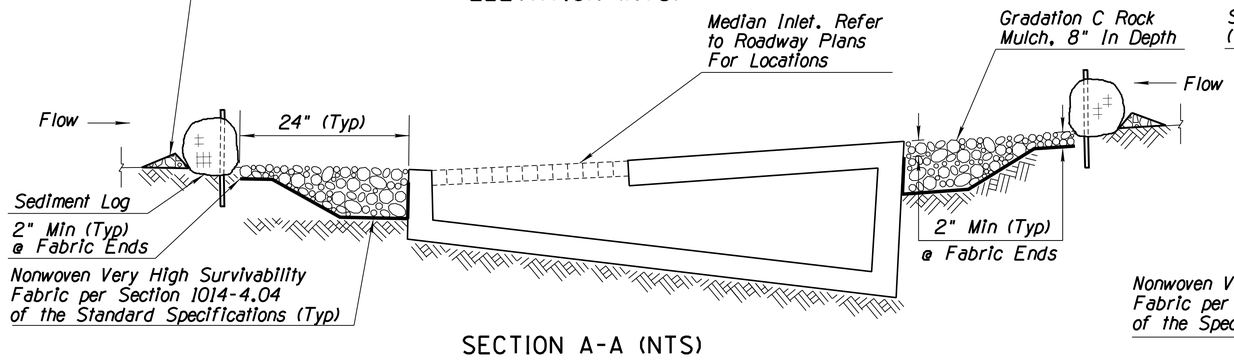
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	E-2.02

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

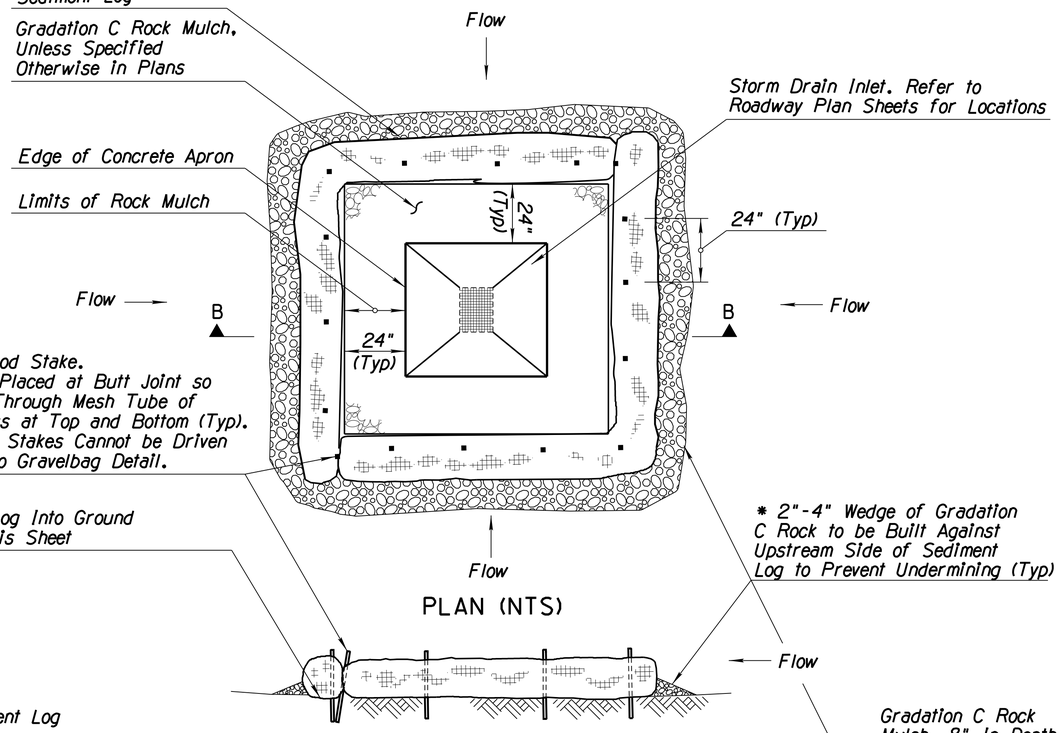
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

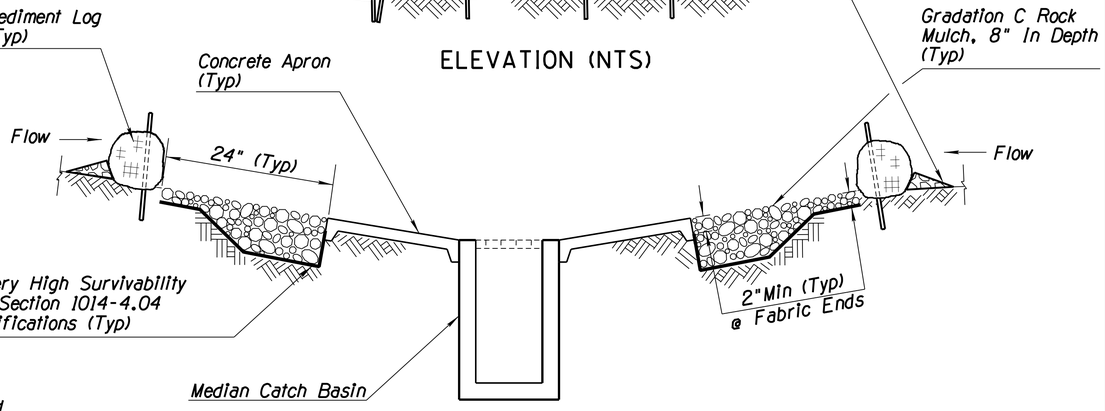
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	745	849	
		010 PM 252			





SECTION A-A (NTS)





SECTION B-B (NTS)

NOTES:

1. Sediment logs shall be located as indicated on plans or as directed by the Engineer. They shall be selected, installed, and maintained per manufacturer's specifications and good engineering practices. Log shall be installed perpendicular to the flow of water. Continuous contact between the bottom of the log and the ground is mandatory.
2. Stake log with 1"x1"x46" Min. hardwood stakes 24" on center. The stake shall be placed through the downstream side only. It is necessary for the stakes to grab one or two inches of netting. Do not drive stake through center of log. The stakes must be driven into the ground 24". Stakes at corners shall be placed in an "X" pattern.
3. Make sure no gaps exist between subgrade and sediment log. Runoff must not pass under sediment log. May require subgrade preparation as directed by Engineer.
4. Repair any rills or gullies promptly.
5. Remove Sediment Log and stakes once construction activities are complete. Dispose of sediment logs and trapped sediment material and fill trench created by sediment log.
6. Refer to Roadway and Drainage Plans and Details for Locations of Inlets and Catch Basins.
7. Make field adjustments and corrections of Inlet Protection BMP immediately if it is causing flooding, erosion, and/or affecting roadway safety.
8. Make field adjustments and corrections to ensure NO sensitive biological resources (native species / habitats) will be adversely impacted.
9. * Construct Rock Wedge with angular-shaped Gradation C Rock Mulch as defined in Section 810-2.03 of the Specifications. Natural river-run materials such as rounded river rocks/cobblestones and pebbles are NOT acceptable.

DETAIL ES3

INLET PROTECTION COMBINED BMPS

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

STORMWATER QUALITY PROTECTION & EROSION/SEDIMENT CONTROL DETAIL SHEET

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

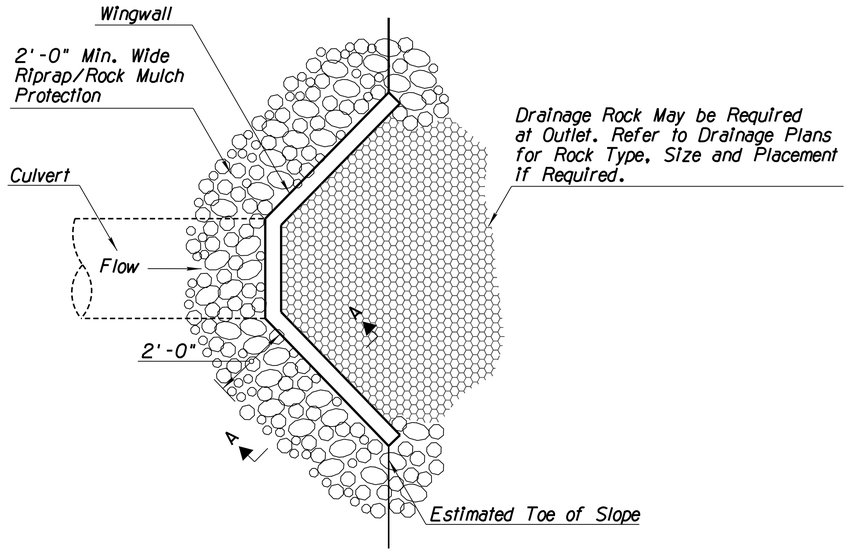
DWG NO. E-2.03

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

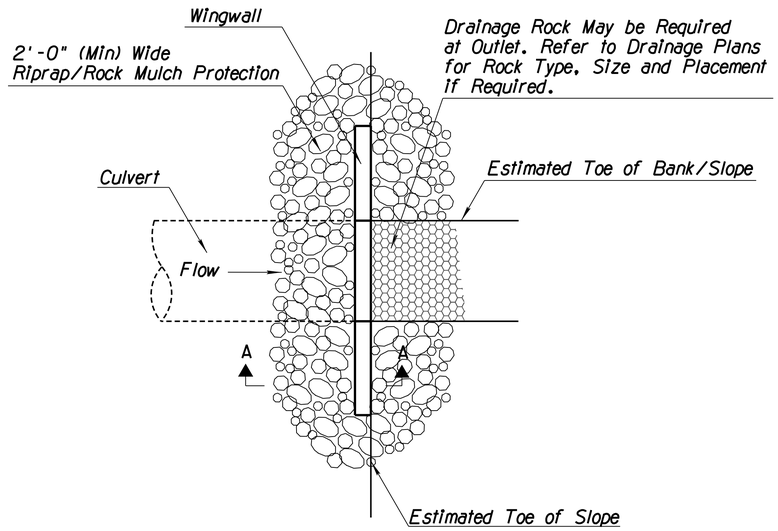
SURVEY NO. | DATE | LOCATION | REVISIONS | FINISHED PLANS

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	746	849	

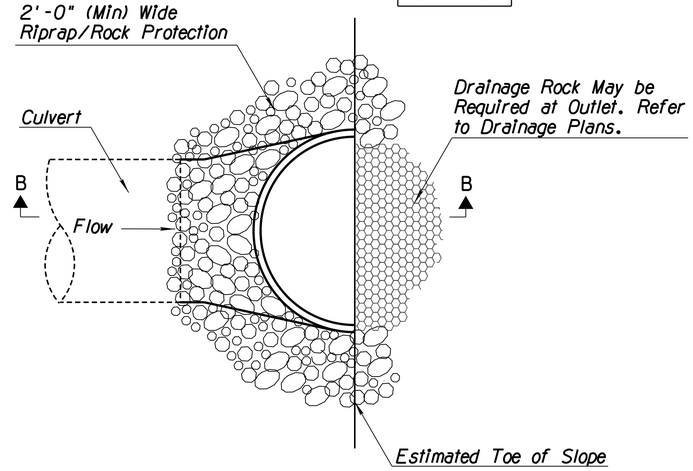
010 PM 252



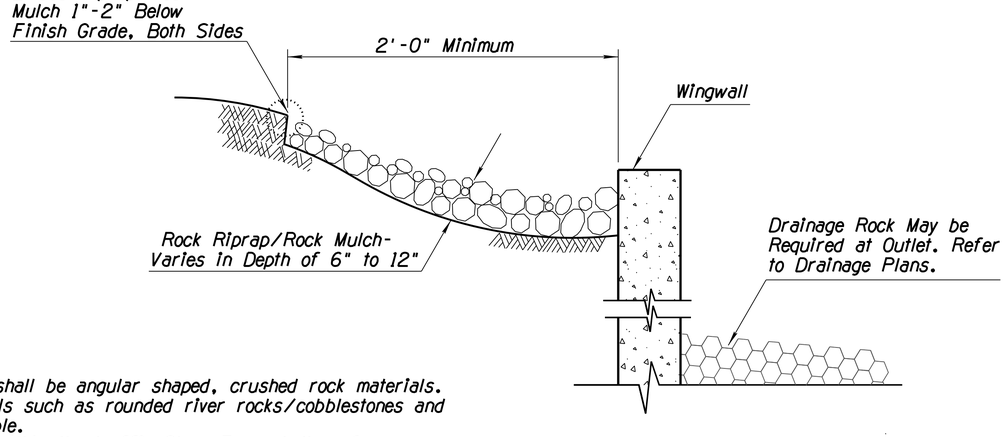
ANGLED HEADWALL
PLAN VIEW (NTS)



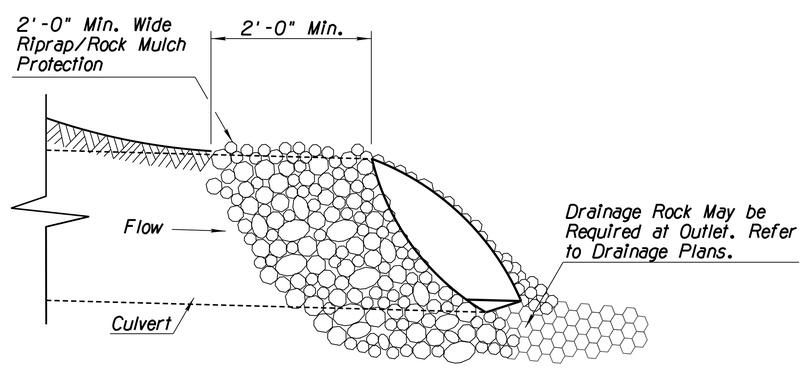
FLUSH HEADWALL
PLAN VIEW (NTS)



FLARED END
PLAN VIEW (NTS)



WINGWALL
SECTION A-A (NTS)



FLARED END
SECTION B-B (NTS)

NOTES:

1. Rock Riprap/Rock Mulch shall be angular shaped, crushed rock materials. Natural river-run materials such as rounded river rocks/cobblestones and pebbles are NOT acceptable.
2. Rock Riprap/Rock Mulch within the traffic Clear Zone shall conform to the requirements of Section 810-2.03 Sieve Size Gradation A and/or Gradation C, and Section 913 of the Specifications.
3. Embed rock within traffic recovery area/clear zone into the finished grade so that any portion of the rock above the grade will be less than 4" in height.
4. The installation and maintenance of Rock Protection BMPs shall not negatively impact traffic safety, nor the designed function of roadway or bridge drainage facilities. Rock Protection BMPs shall be installed and maintained to carry the stormwater of at least 2-year, 24-hour events.
5. Make field adjustments and corrections of Rock Protection BMP immediately if it is causing flooding, erosion, and/or affecting roadway safety.
6. The Rock Protection BMP's pay/bid item shall include all materials used for this BMP: all ground preparation, furnishing, installing, maintaining as well as returning the area to an acceptable condition as approved by the Engineer.
7. Make field adjustments and corrections to ensure NO sensitive biological resources (native species / habitats) will be adversely impacted.

DETAIL ES4

ROCK PROTECTION FOR INLETS, OUTLETS AND HEADWALL TRANSITION

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

STORMWATER QUALITY PROTECTION & EROSION/SEDIMENT CONTROL DETAIL SHEET

REGISTERED LANDSCAPE ARCHITECT
46501 LAURA E. WIELCAREK
Date Signed 3-29-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

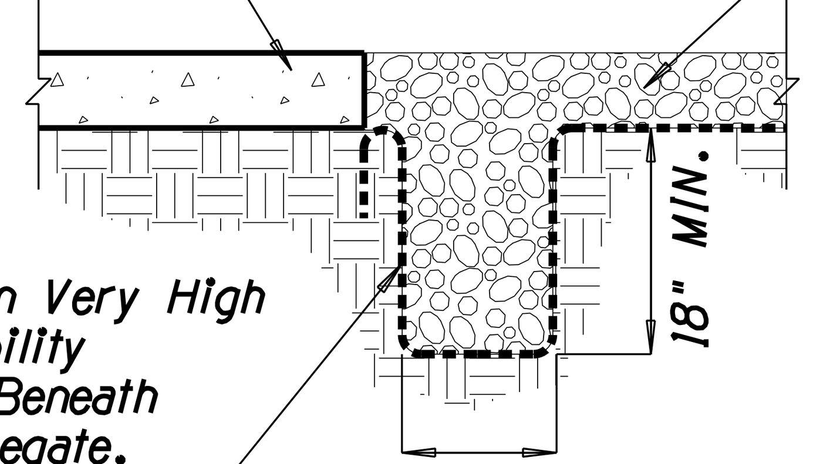
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	E-2.04

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	747	849	

010 PM 252



EDGE TREATMENT TRENCHING
TYPICAL SECTION (NTS)

NOTES II:

1. Install nonwoven fabric when water is applied for construction vehicle/equipment cleaning on Gravel Pad.
2. Edge treatment trenching and nonwoven fabric shall not be required if NO wash water is used for vehicle/equipment cleaning.
3. The depth of Gravel Pad varies from 6" to 12" based on the necessities of construction vehicle/equipment as per the approval of the Engineer.

BIRD'S EYE VIEW (NTS)

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. Nonwoven Very High Survivability Fabric shall conform to the standards of Subsection 1014-4.04 of the Standard Specifications.
4. Rock Mulch materials shall be fractured/crushed rocks in angular shape and as defined in the Subsection 810-2.03 of the Standard Specifications. Natural river-run materials, especially rounded natural river rocks are not acceptable.
5. Make field adjustments and corrections of Construction Entrance/Exit Gravel Pad BMP immediately if it is causing flooding and/or affecting roadway safety.
6. When paid separately, the Stabilized Construction Entrance/Exit Gravel Pad BMP's 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.
7. * Fence/barricade pay/bid item shall be included as a component of the Stabilized Construction Entrance/Exit Gravel Pad BMP pay/bid item.
8. Make field adjustments and corrections to ensure NO sensitive biological resources (native species / habitats) will be adversely impacted.

DETAIL ES5

STABILIZED CONSTRUCTION ENTRANCE/EXIT GRAVEL PAD

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

STORMWATER QUALITY PROTECTION
& EROSION/SEDIMENT CONTROL
DETAIL SHEET

REGISTERED LANDSCAPE ARCHITECT 46501 LAURA E. MIELCAREK ARIZONA, U.S.A.
EXPIRES 6-30-2019

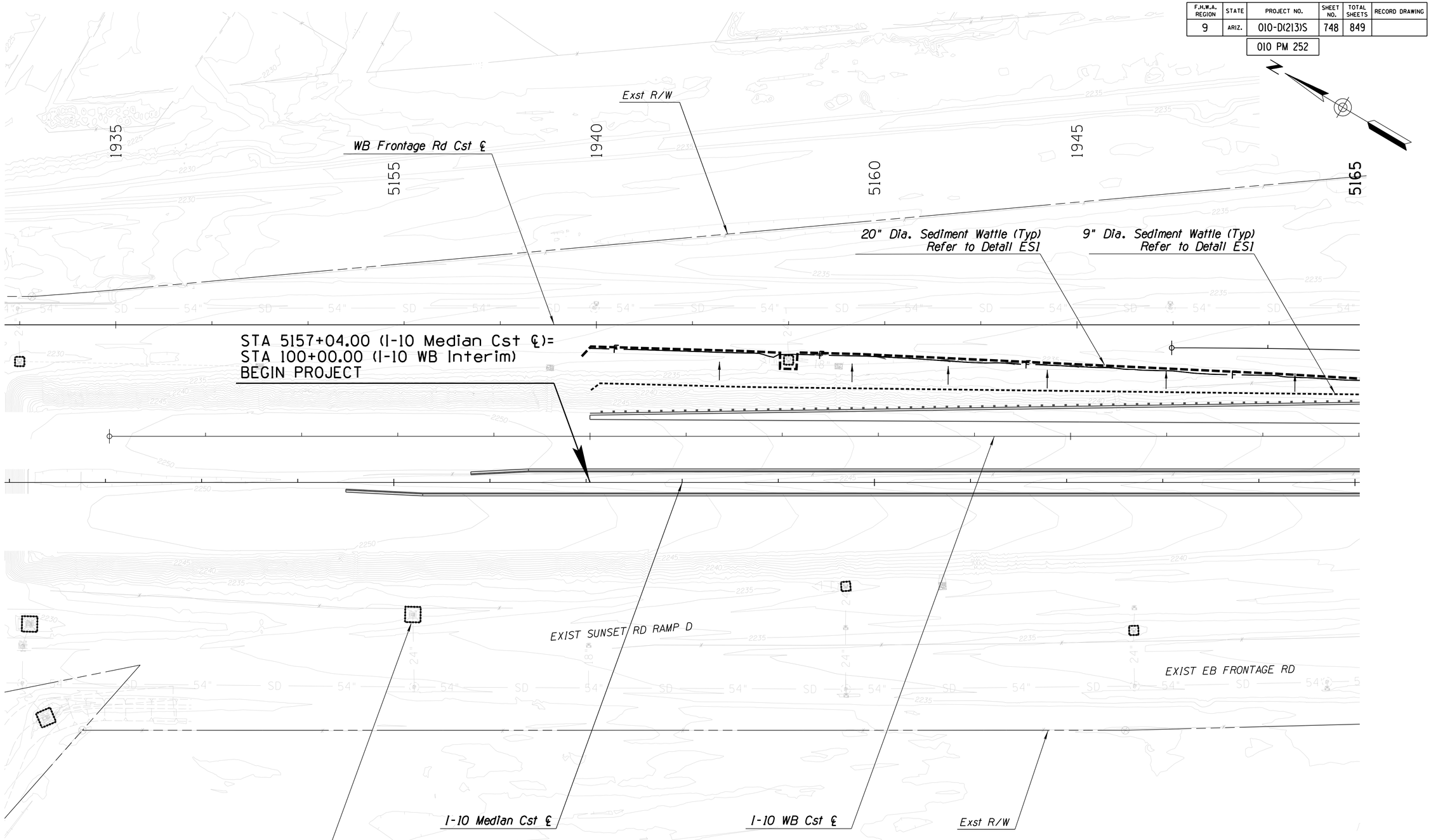
ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	DWG NO. E-2.05

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	748	849	

010 PM 252



	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5151+00 TO 5165+00

REGISTERED LANDSCAPE ARCHITECT
46501 LAURA E. MIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	E-3.01

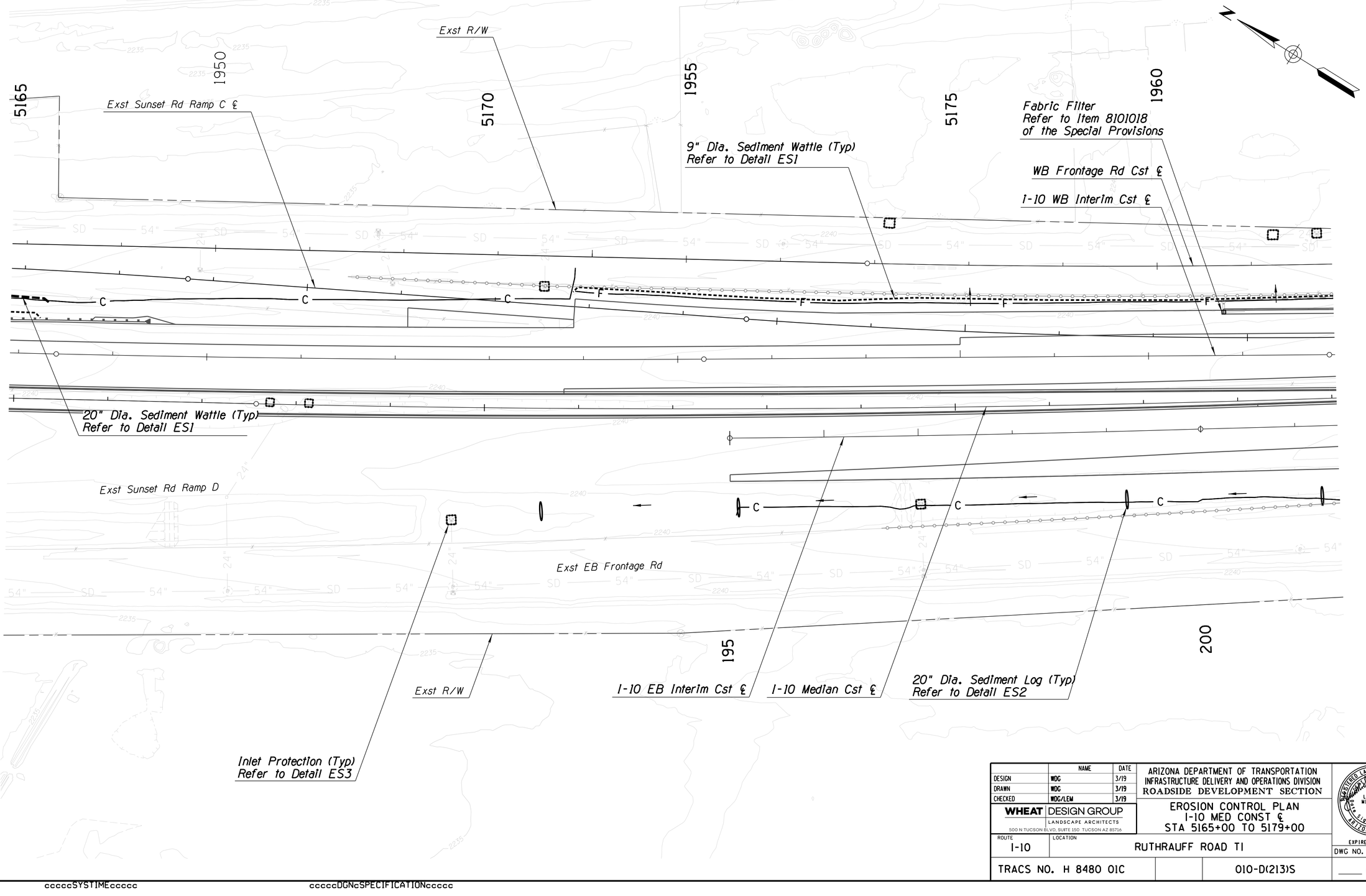
TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	749	849	

010 PM 252

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



	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5165+00 TO 5179+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. E-3.02

___ OF ___

ccccSYSTIMEcccc

ccccDGNcSPECIFICATIONcccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	750	849	

010 PM 252

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

5180 1965 5185 1970 5190 1975

I-10 WB Interim Cst ℄

Inlet Protection (Typ)
Refer to Detail ES3

Exst R/W

WB Frontage Rd Cst ℄

I-10 Median Cst ℄

Ruthrauff Rd Ramp A Cst ℄

9" Dia. Sediment Wattle (Typ)
Refer to Detail ES1

20" Dia. Sediment Log (Typ)
Refer to Detail ES2

Fabric Filter (Typ)
Refer to Item 8101018
of the Special Provisions

Exst R/W

I-10 EB Interim Cst ℄

EB Frontage Rd Cst ℄

Ruthrauff Rd Ramp B Cst ℄

1965 205 1965 1970 1970 1975

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5179+00 TO 5193+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 5-30-2019
ARIZONA, U.S.A.

EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. E-3.03

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONcccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	751	849	

010 PM 252

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

UNION PACIFIC R.R.

1980 1985 1986

5195 5200 5205

15 20

WB Frontage Rd Cst ℄

I-10 Median Cst ℄

Ruthrauff Rd Ramp A Cst ℄

Exst R/W

Inlet Protection (Typ) Refer to Detail ES3

20" Dia. Sediment Log (Typ) Refer to Detail ES2

Seed Mix (Class II)

9" Dia. Sediment Wattle (Typ) Refer to Detail ES1

Fabric Filter (Typ) Refer to Item 8101018 of the Special Provisions

EB Frontage Rd Cst ℄

Exst R/W

DIAMOND ST

1979 1980 1985

Ruthrauff Rd Ramp B Cst ℄

20" Dia. Sediment Wattle (Typ) Refer to Detail ES1

9" Dia. Sediment Wattle (Typ) Refer to Detail ES1

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5193+00 TO 5207+00

REGISTERED LANDSCAPE ARCHITECT
46501 LAURA E. MIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. E-3.04

___ OF ___

ccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	752	849	

010 PM 252

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

Seed Mix (Class II) (Typ)

SHANNON RD

New R/W

Ruthrauff Rd
Ramp A Cst ℄

1990

5210

1995

30

2000

25

WB Frontage Rd Cst ℄

Exst R/W

5215

5220

I-10 Median Cst ℄

001

Inlet Protection (Typ)
Refer to Detail ES3

Fabric Filter (Typ)
Refer to Item 8101018
of the Special Provisions

Headwall Protection (Typ)
Refer to Detail ES4

Exst EB Frontage Rd Cst ℄

Ruthrauff Rd
Ramp B Cst ℄

95

New R/W

Exst R/W

9" Dia. Sediment Wattle (Typ)
Refer to Detail ES1

20" Dia. Sediment Wattle (Typ)
Refer to Detail ES1

1990

30

1995

35

EL CAMINO DEL CERRO

EB Frontage Rd Cst ℄

20" Dia. Sediment Log (Typ)
Refer to Detail ES2

Ruthrauff Rd Cst ℄

2000

Exst R/W

New R/W

Ruthrauff Rd
Ramp D Cst ℄

15

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5207+00 TO 5221+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed 3-20-19
ARIZONA, U.S.A.

EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. E-3.05

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

ccccc SYSTIME ccccc ccccc DGN c SPECIFICATION ccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	753	849	

010 PM 252

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

Exst R/W

2005 | 5225 | 2010 | 5230 | 2015 | 5235

I-10 Median Cst ℄

Ruthrauff Rd Ramp C Cst ℄

WB Frontage Rd Cst ℄

Exst R/W

9" Dia. Sediment Wattle (Typ) Refer to Detail ES1

20" Dia. Sediment Wattle (Typ) Refer to Detail ES1

Seed Mix (Class II) (Typ)

Headwall Protection Refer to Detail ES4

9" Dia. Sediment Wattle (Typ) Refer to Detail ES1

Fabric Filter (Typ) Refer to Item 8101018 of the Special Provisions

20" Dia. Sediment Log (Typ) Refer to Detail ES2

Ruthrauff Rd Ramp D Cst ℄

New R/W

New TCE

EB Frontage Rd Cst ℄

Exst R/W

Exst EB Frontage Rd Cst ℄

15 | 20 | 010 | 25

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5221+00 TO 5235+00

REGISTERED LANDSCAPE ARCHITECT 46501 LAURA E. MIELCAREK Signed 4-8-2019 ARIZONA, U.S.A.

EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

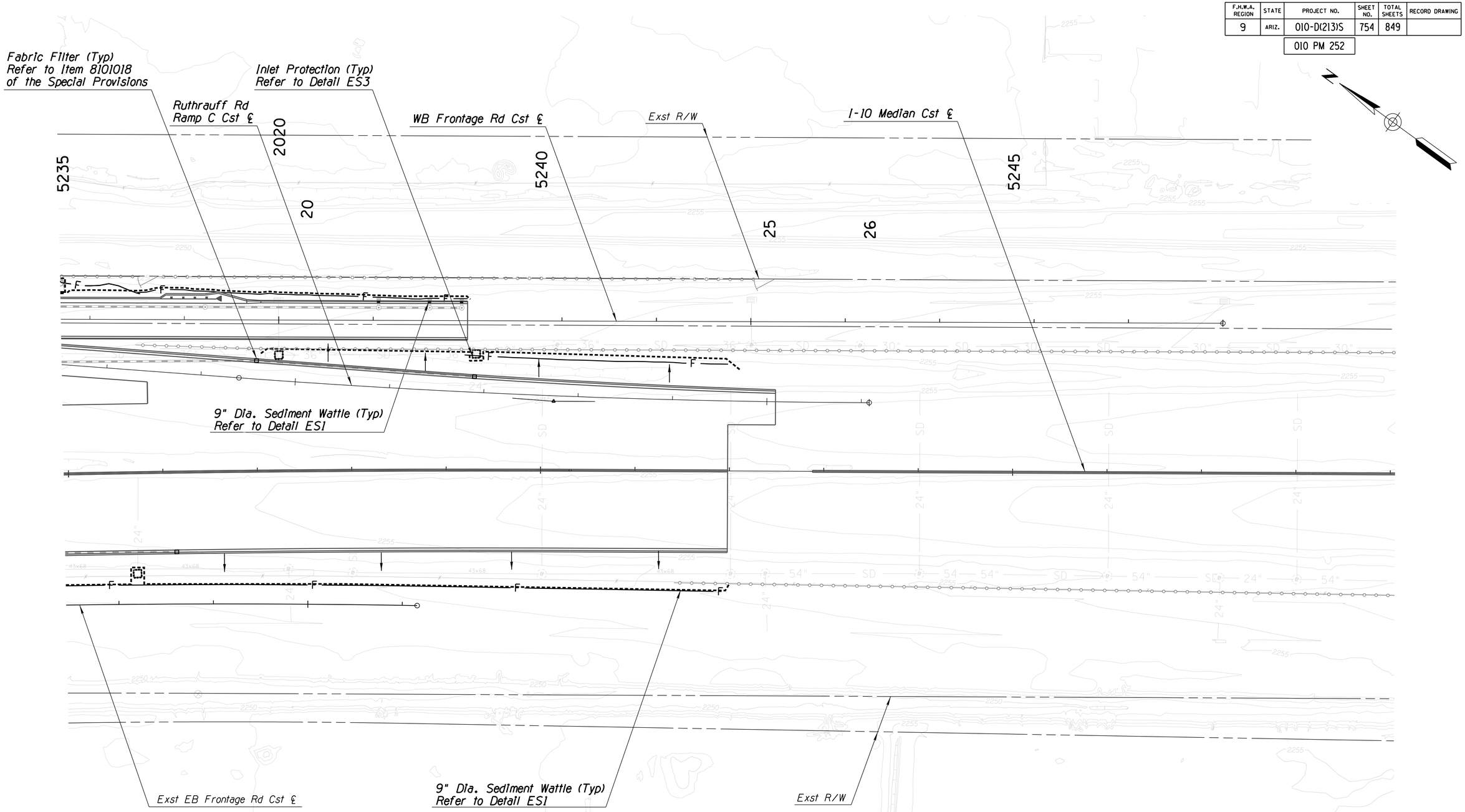
DWG NO. E-3.06

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

ccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	754	849	
		010 PM 252			



	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5235+00 TO 5249+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-20-19
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. E-3.07

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	755	849	

010 PM 252

I-10 Median Cst ℄

Exst R/W

5250

No Erosion Control on this Sheet

Exst R/W

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
I-10 MED CONST ℄
STA 5249+00 TO 5263+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. E-3.08

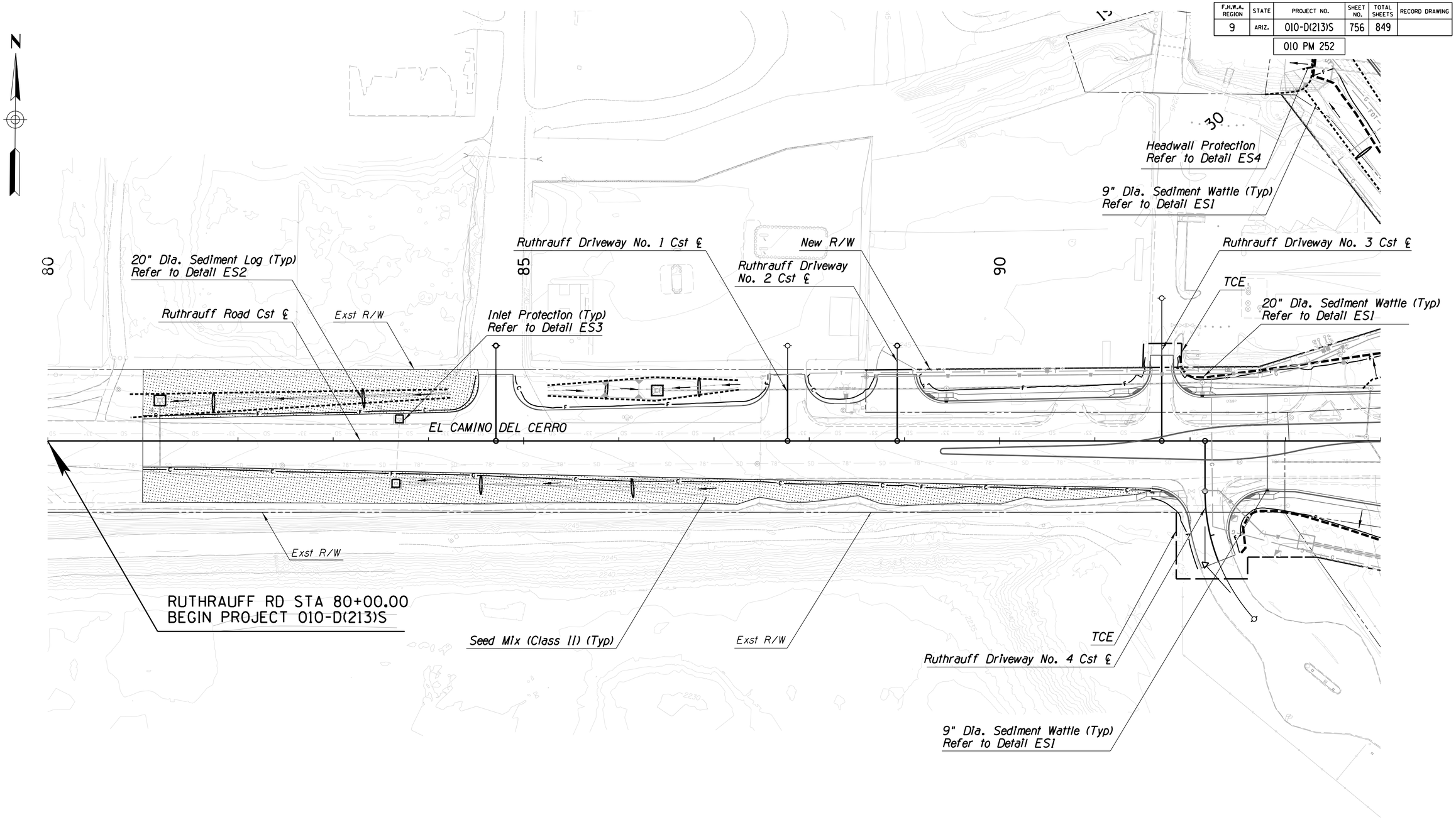
TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	756	849	

010 PM 252



NOTE: The local street names are El Camino Del Cerro west of I-10 and Ruthrauff Road east of I-10. The construction ℄ has been designated as Ruthrauff Road Cst ℄ for entire length.

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
RUTHRAUFF ROAD
STA 81+00 TO 94+00

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO. 46501
LAURA E. MIELCAREK
Date Signed 5-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. E-3.09

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	757	849	
		010 PM 252			

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

WB Frontage Rd
Cst ℄

Headwall Protection (Typ)
Refer to Detail ES4

New R/W

Seed Mix
(Class II) (Typ)

N

525

Exst R/W

2000

105

New R/W

95

100

1995

Headwall Protection (Typ)
Refer to Detail ES4

EL CAMINO DEL CERRO

35

RUTHRAUFF ROAD

520

Ruthrauff Road Cst ℄

New R/W

9" Dia. Sediment Wattle (Typ)
Refer to Detail ES1

WB Frontage Rd
Cst ℄

2005

Fabric Filter (Typ)
Refer to Item 8101018
of the Special Provisions

Exst R/W

Inlet Protection (Typ)
Refer to Detail ES3

20" Dia. Sediment Wattle (Typ)
Refer to Detail ES1

2000

New R/W

EB Frontage Rd
Cst ℄

I-10 Median
Cst ℄

20" Dia. Sediment Log (Typ)
Refer to Detail ES2

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
RUTHRAUFF ROAD
STA 94+00 TO 108+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	E-3.10

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	758	849	

010 PM 252

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

Exst R/W
New R/W
9" Dia. Sediment Wattle (Typ)
Refer to Detail ES1
MARYVALE AVENUE
New R/W
TCE
Maryvale Connector Cst ℄
SUNRISE AVENUE
CHESTER WAY
North Loop Road Cst ℄
TCE
DAVIS AVENUE
Highway Drive Cst ℄
110
Exst R/W
MARYVALE AVENUE
115
9" Dia. Sediment Wattle (Typ)
Refer to Detail ES1
120
PLANE AVENUE
Exst R/W
RUTHRAUFF ROAD
20" Dia. Sediment Wattle (Typ)
Refer to Detail ES1
Exst R/W
New R/W
TCE
Exst R/W
Ruthrauff Road Cst ℄
Headwall Protection (Typ)
Refer to Detail ES4
RUTHRAUFF RD STA 118+10.00
END PROJECT 010-D(213)S
New R/W
Seed Mix (Class II) (Typ)
New R/W
HIGHWAY DRIVE
25
MARYVALE AVENUE
PARKWAY DRIVE
Exst R/W
5225
South Maryvale Avenue Cst ℄
VIOLET DRIVE
Exst R/W

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

EROSION CONTROL PLAN
RUTHRAUFF ROAD
STA 108+00 TO 122+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-29-19
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. E-3.11

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

ccccc SYSTIME ccccc ccccc DGN c SPECIFICATION ccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	759	849	
		010 PM 252			

NURSERY PLANT MATERIALS

AVERAGE SIZE OF NURSERY STOCK

SYMBOL	BOTANICAL NAME/ COMMON NAME	QUANTITY	SIZE	ITEM NUMBER	HEIGHT	WIDTH	CALIPER	TYP. O.C. SPACING	TYPE	REMARKS
	TREES									
	Chilopsis linearis Desert Willow	16	15 gal	8061005	5'	2'	0.75"	20'	Single Trunk	Double Staked
	Parkinsonia spp Hybrid Palo Verde	25	15 gal	8061005	6'	2'	1.0"	30'	Multi-Trunk Low Break	Triple Staked
	Prosopis velutina Velvet Mesquite	37	15 gal	8061005	4'	2'	0.75"	20'	Multi-Trunk Low Break	Triple Staked
	SHRUBS									
	Caesalpinia mexicana Mexican Bird of Paradise	40	15 gal	8061299	36"	24"	N/A	15'		
	Calliandra eriophylla Fairyduster	71	5 gal	8061298	18"	12"	N/A	6'		
	Dodonaea viscosa Hopbush	173	5 gal	8061298	18"	12"	N/A	8'		
	Larrea tridentata Creosote	195	5 gal	8061298	18"	12"	N/A	8'		
	Leucophyllum langmaniae 'Lynn's Legacy' Lynn's Legacy Texas Ranger	257	5 gal	8061298	18"	12"	N/A	8'		
	Senna wislizeni Shrubby Senna	35	5 gal	8061298	18"	12"	N/A	8'		
	CACTI & ACCENTS									
	Carnegiea gigantea Saguaro	32 32 33	0'-6' 6'-8' 8'-10'	8061603 8061604 8061605	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	10' 10' 10'		
	Dasylirion wheeleri Desert Spoon	417	18"-24"	8061390	12"	12"	N/A	6'		
	Ferocactus pilosus Mexican Fire Barrel	55	5 gal	8061645	12"	12"	N/A	4'		
	Fouquieria splendens Ocotillo	51	24" Box Container Grown 6'-8' Tall	8061655	12"	12"	N/A	6'		
	Hesperaloe funifera Giant Hesperaloe	138	5 gal	8061298	18"	12"	N/A	6'		
	Hesperaloe parviflora Red Yucca	238	5 gal	8061424	12"	12"	N/A	4'		
	Opuntia Gomei 'Old Mexico' Old Mexico Prickly Pear	81	5 gal	8061631	12"	12"	N/A	6'		
	Opuntia santa-rita Purple Prickly Pear	311	5 gal	8061631	12"	12"	N/A	8'		
	Yucca rigida Blue Yucca	90	15 gal	8061427	12"	12"	N/A	10'		
	SEED MIX									
	Seeding (Class II)	13	Acre	850003	N/A	N/A	N/A	N/A		

LANDSCAPE PLATING MATERIALS

SYMBOL	ITEM	QUANTITY	UNIT	ITEM NUMBER	NOTES
	Granite Mulch (1 1/4")	130,617	Sq. Yd.	8030092	Granite mulch not shown on plans. All landscaped areas shall receive granite mulch.
	Rock Mulch (2"-4")	6,377	Sq. Yd.	8030117	Color for Granite Mulch and Rock to be Apache Brown.
	Median Paving (Concrete Pavers)	3,090	Sq. Yd.	9210012	Refer to Special Provisions for Paver Color.
———	Preservation Fencing	1,127	L.F.	9030008	

	NAME	DATE
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CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE SCHEDULE

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 6-30-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	R-1.01
TRACS NO. H 8480 01C		010-D(213)S ___ OF ___

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

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	760	849	
		010 PM 252			

General Landscape Notes:

1. All landscape installation shall be installed per the approved plans and will comply with the Specifications. Any deviations to the approved plans require the approval of the Engineer.

2. The contractor is responsible for obtaining any required permits prior to the commencement of any work.

3. It is the contractor's responsibility to inspect the job site to become familiar with all existing conditions that could affect the installation of any work set forth in these plans and the Specifications prior to submitting a bid.

4. Contractor shall verify rock and soil conditions within the project site prior to bidding. No extra payment or time extension will be given due to rocky soil conditions. Contractor is responsible for conducting site inspections and checking testing logs to determine subsurface conditions prior to bidding.

5. Clear zone requirements:
   A. Concrete Drainage Channels:
      Maintain a 15' clear zone between the edge of the concrete drainage channel and trees.
   B. Paved surfaces:
      Maintain a 5' clear zone between mature spread of existing shrubs and ground covers and all paved surfaces. Minimum setback from paved surface edge to plant center shall be 10'. 30' clear zone shall be maintained between tree trunks and the closest driving lane.
   C. Critical Slopes:
      Includes slopes exceeding 4:1 and not protected with a barrier as specified in the AASHTO Roadway Design Guidelines. Existing trees located adjacent to downward sloping critical slopes shall maintain a 10' clear zone beyond the toe of slope. It is the contractor's responsibility to insure that the tree trunk locations of the trees comply with the ADOT clear zone standards.

6. Provide a 6' clear zone between right-of-way fence and the nearest existing plant center along the project.

7. Existing plants shall be field adjusted to allow for maintenance roadway access into each area, all adjustments/removals require prior approval from the Engineer.

8. The term Landscape Architect, Resident Landscape Architect, and Resident Engineer are used interchangeably throughout the document. The term Landscape Architect, Resident Landscape Architect, and Resident Engineer shall be interpreted to mean the Engineer.

9. The landscape contractor shall provide a 12 month landscape establishment period in accordance with Section 807 of the Specifications.

10. The contractor shall maintain field record drawings and present the field record drawings to the Engineer at a minimum of every two weeks for the duration of construction. A final presentation of field record drawings to ADOT's Resident Landscape Architect is required for approval.

Landscape Establishment

1. Repair erosion damage immediately.

2. Remove any paper and container debris from the ROW.

3. Control noxious weeds and undesirable grasses from the ROW.

4. Remove tree stakes and braces as soon as possible.

5. Trees shall be pruned to remove broken, crossed or diseased branches.

6. Prune for visability of traffic, signs, delineators and curb edges.

7. Do not prune trees or shrubs up after landscape establishment unless needed for sight visibility or utility line clearances.

8. Allow all plants to grow into a natural multi-trunk tree/shrub formation.

Landscape Planting Notes:

1. No trees shall be located within 10 feet of sewer or water lines, or overhead utility lines. All trees shall be planted in conformance with this standard. Trees shall be field adjusted if conditions differ from these plans, with approval from the engineer.

2. No trees shall be located within 8 feet of gaslines.

3. The minimum spacing between existing water mains and the edge of prepared soil for trees shall be a minimum of 5 feet horizontal distance from the outside of the prepared soil to the outside wall of the water pipe.

4. No plants shall be planted within 10 feet of retaining walls.

5. Install plants a minimum of 5 feet away from traffic control devices and lightpoles for maintenance access.

6. The trunk of all trees shall be located no closer than 8 feet from face of curb.

7. Trunks of all trees shall be located outside all clear zones.

8. No trees or shrubs shall be planted so as to conceal the view of any highway sign or signal.

9. ADOT reserves the right to inspect all containerized plants for condition of the root ball. The contractor shall supply additional plants at no additional cost to the Department if the plant is rejected.

10. The plant pit depth shall be measured on the low side of the plant pit when on a slope.

11. All plants shall be centered in plant pits.

12. Install Granite Mulch in all planting areas within the ROW, except for seeded areas and areas receiving Rock Mulch, as shown on project plans. Refer to Planting Plans & Special Provisions for additional information.

13. Refer to Landscape and Erosion Control plans for Seed Mix Location.

14. Quantity schedules are shown for the contractor's convenience only. Actual quantities shall be taken from the plans.

15. The contractor is responsible for all finished grading operations and shall meet existing grade at project limits. The contractor shall also insure positive drainage throughout the landscape areas to the designed drainage system and shall not create berms which obstruct flow, unless indicated per plans.

16. The contractor shall install Granite Mulch in accordance with the Specifications. Place and water settle to a minimum of two inches (2") total depth over a minimum of 85% compacted subgrade. A pre-emergent herbicide shall be applied before and after granite mulch placement.

17. The contractor shall provide Granite Mulch samples to the Engineer for approval prior to installation.

18. All trees to be staked shall include the cost for staking and/or guying as directed by the Engineer.

19. Saguaros shall be placed according to Landscape Plans. Contractor to evenly distribute differing sizing of Saguaros throughout the project.

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE NOTES

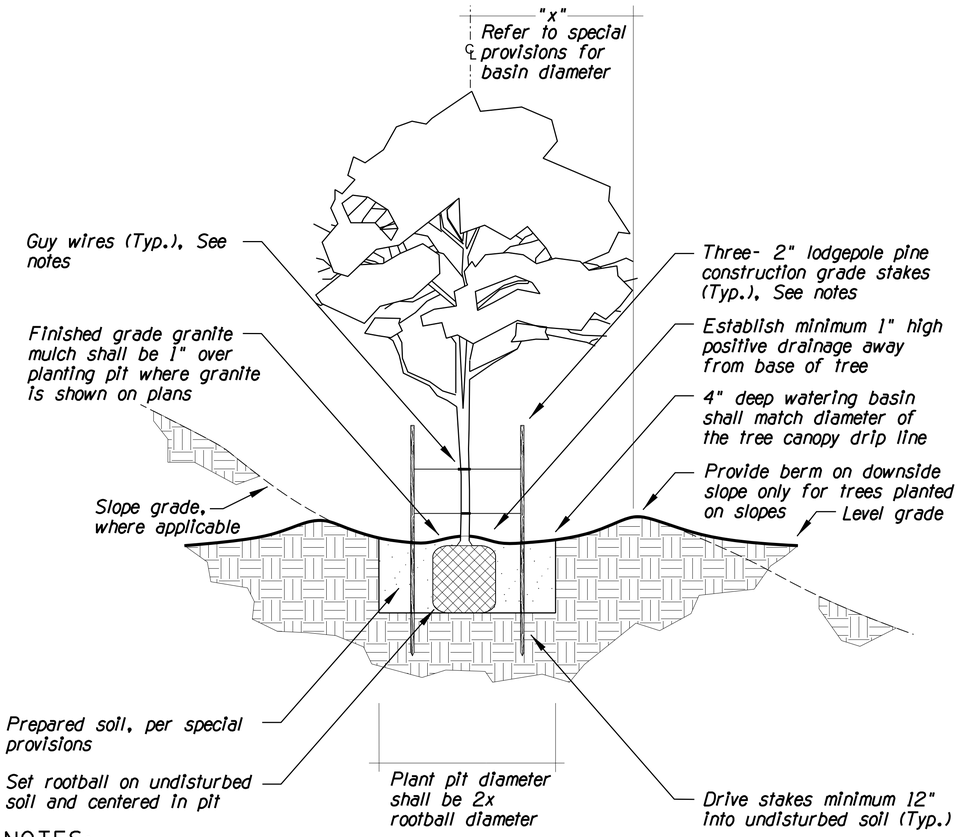
REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO. 46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	DWG NO. R-1.02
TRACS NO. H 8480 01C		010-D(213)S ___ OF ___

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

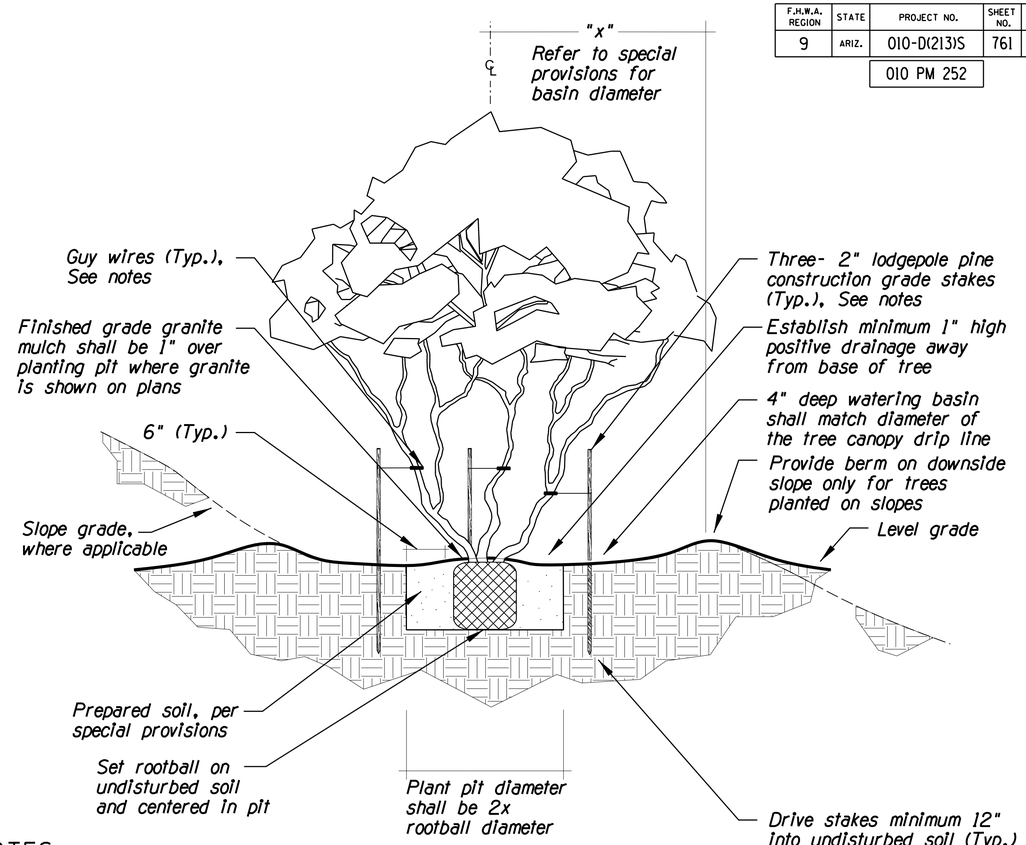
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	761	849	
		010 PM 252			

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



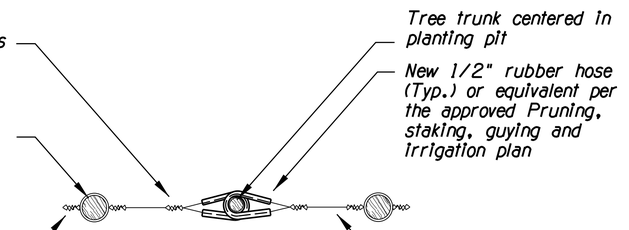
NOTES:
1. Staking installed per approved "Pruning, Staking, Guying & Irrigation Plan".
2. Staking shall be constructed so that trunks have flexibility.
3. Refer to special provisions for planting pit width and basin diameter.

DETAIL P1
STANDARD TRUNK TREE PLANTING AND STAKING



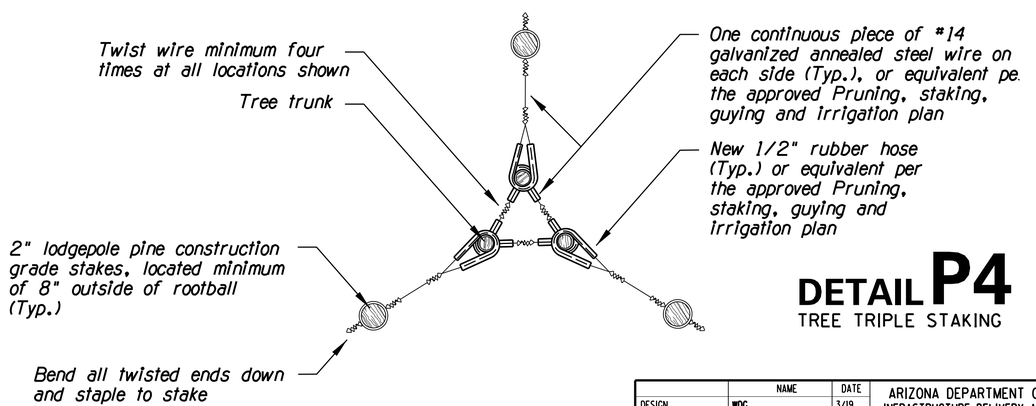
NOTES:
1. Staking installed per approved "Pruning,Staking, Guying & Irrigation Plan".
2. Staking shall be constructed so that trunks have flexibility.
3. Remove entire box when planting.
4. Refer to special provisions for planting pit width and basin diameter.

DETAIL P2
MULTI-TRUNK TREE PLANTING AND STAKING



NOTES:
1. Contractor may use tree strap or equivalent product in lieu of steel wire per approval of the RLA.
2. Staking shall be constructed so that trunks have flexibility.

DETAIL P3
TREE DOUBLE STAKING



NOTES:
1. Contractor may use tree strap or equivalent product in lieu of steel wire per approval of the RLA.
2. Staking shall be constructed so that trunks have flexibility.

DETAIL P4
TREE TRIPLE STAKING

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
DETAIL SHEET

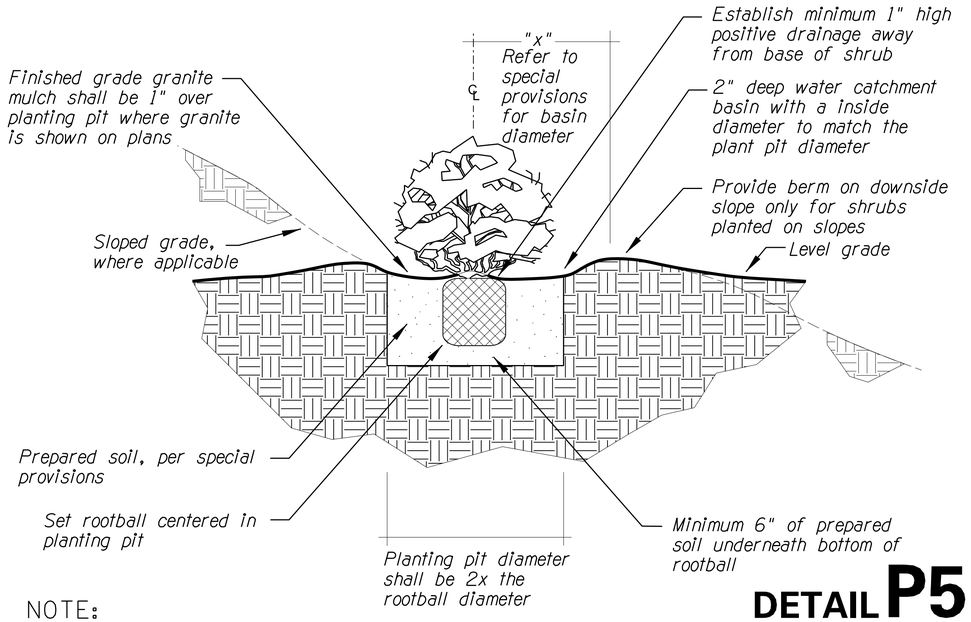
REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
ARIZONA, U.S.A.
Date Signed 5-30-2019
EXPIRES 6-30-2019

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	R-2.01

TRACS NO.			SHEET NO.
H 8480 01C		010-D(213)S	___ OF ___

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

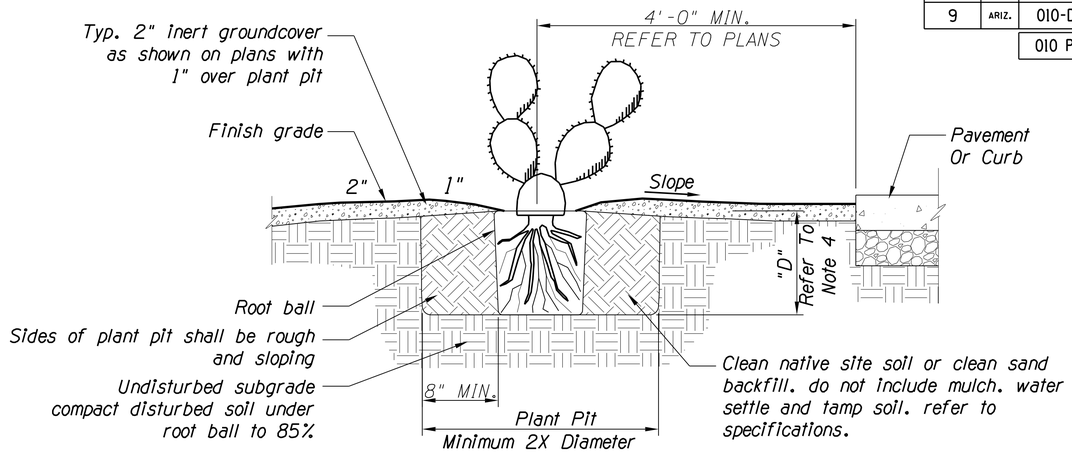
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	762	849	
		010 PM 252			



NOTE:

1. Refer to special provisions for planting pit width and basin diameter.

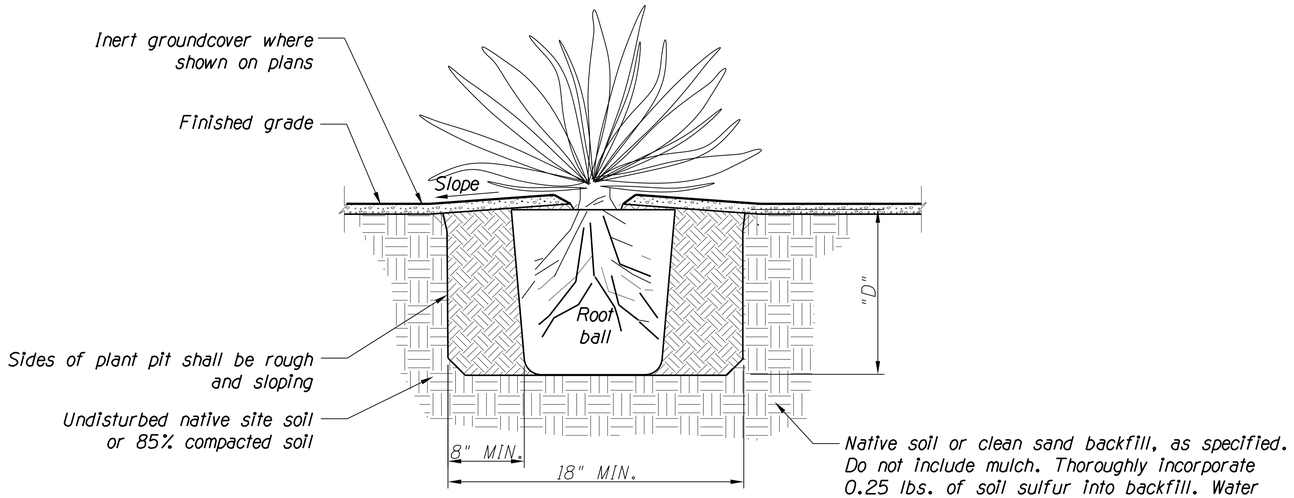
DETAIL P5
SHRUB PLANTING



NOTES:

1. This detail applies to nursery grown stock of cactus.
2. Do not create a basin at base of plant. slope backfill away from stem.
3. Set stem succulent so that top of root ball matches adjacent grade.
4. Depth ("d") of plant pit to be equal to depth of root ball.

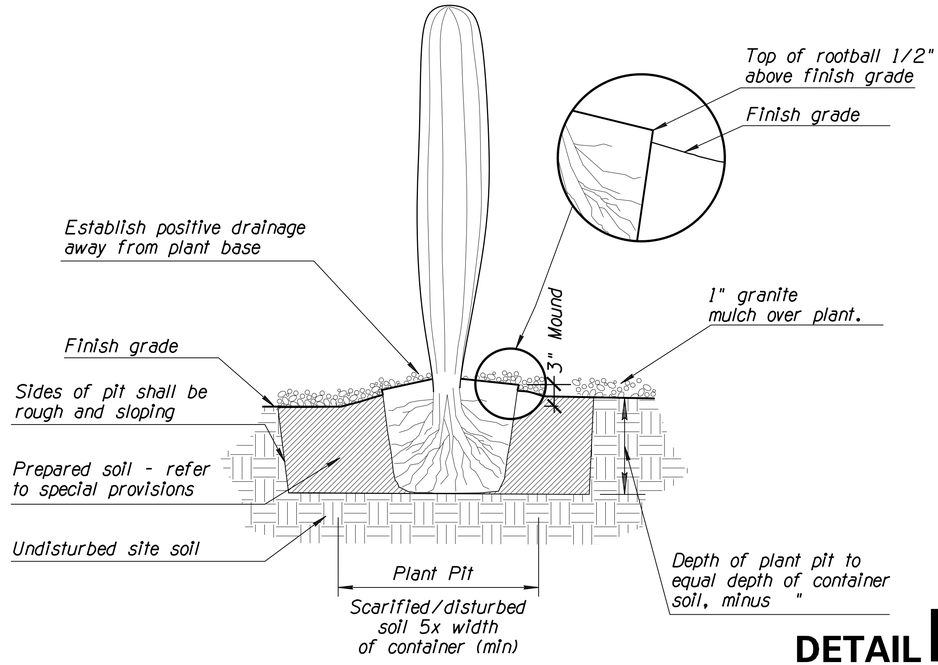
DETAIL P6
CACTUS PLANTING



NOTES:

1. Do not create a basin at base of plant. Slope backfill away from stem.
2. Set stem succulent so that top of root ball matches adjacent grade.
2. Depth ("D") of plant pit to be equal to depth of rootball.
3. Maintain intact rootball. Root prune all shredded or damaged roots. Ensure that all wounds to the root system are clean cut before planting.
4. Backfill with dry site soil only.
5. This detail applies to nursery grown stock of the Genera Agave, Aloe, Dasylirion, Hesperaloe, Nolina and Yucca.

DETAIL P7
YUCCA PLANTING



DETAIL P8
SAGUARO PLANTING

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
DETAIL SHEET

REGISTERED LANDSCAPE ARCHITECT
46501 LAURA E. WIELCAREK
Date Signed 5-30-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION		
I-10	RUTHRAUFF ROAD TI		DWG NO. R-2.02
TRACS NO. H 8480 01C		010-D(213)S	___ OF ___

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

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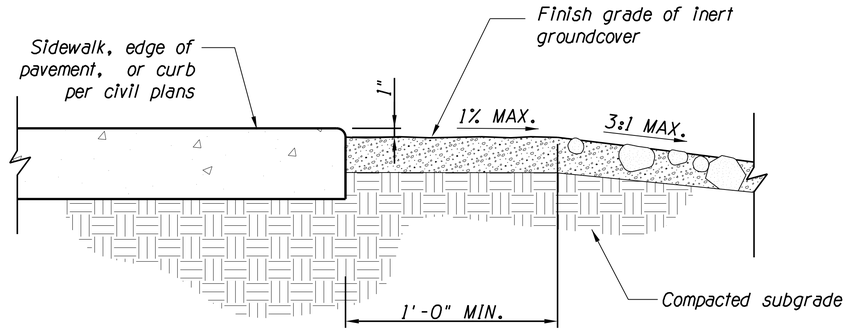
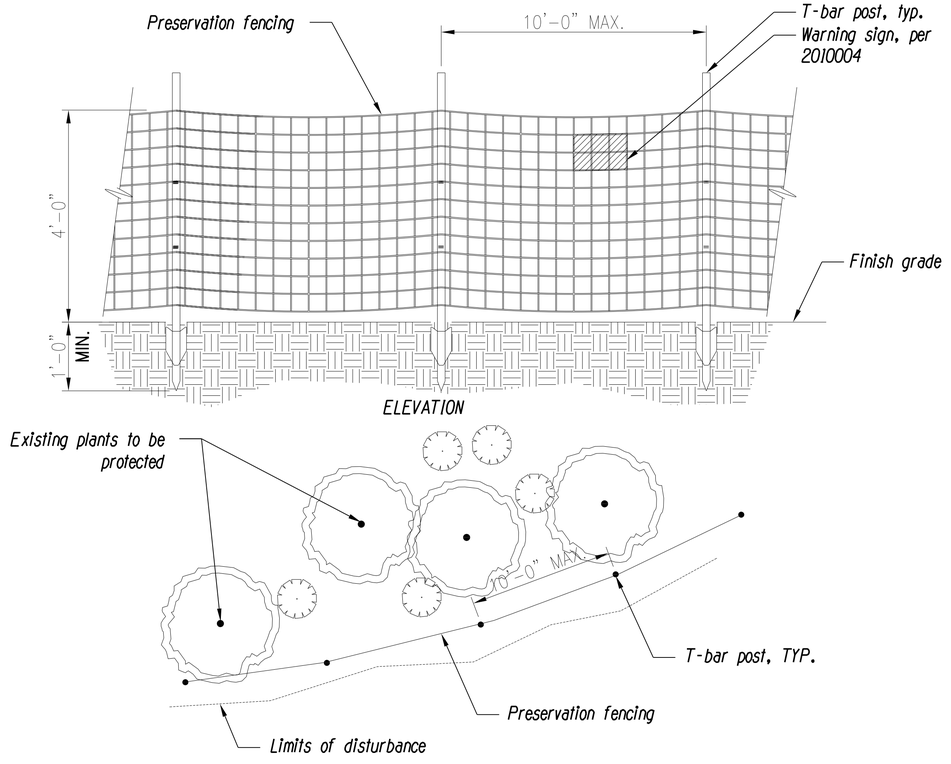
9	ARIZ.	010-D(213)S	763	849	
		010 PM 252			



NOTE:
1. Refer to Landscape Summary Sheet LP01 for Granite Mulch Color and Size.

DETAIL P9
FINISH GRADE



NOTE:
1. Preservation fencing is Tensar 4' orange mesh fence or approved equal.

DETAIL P10
PRESERVATION FENCING

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
DETAIL SHEET

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

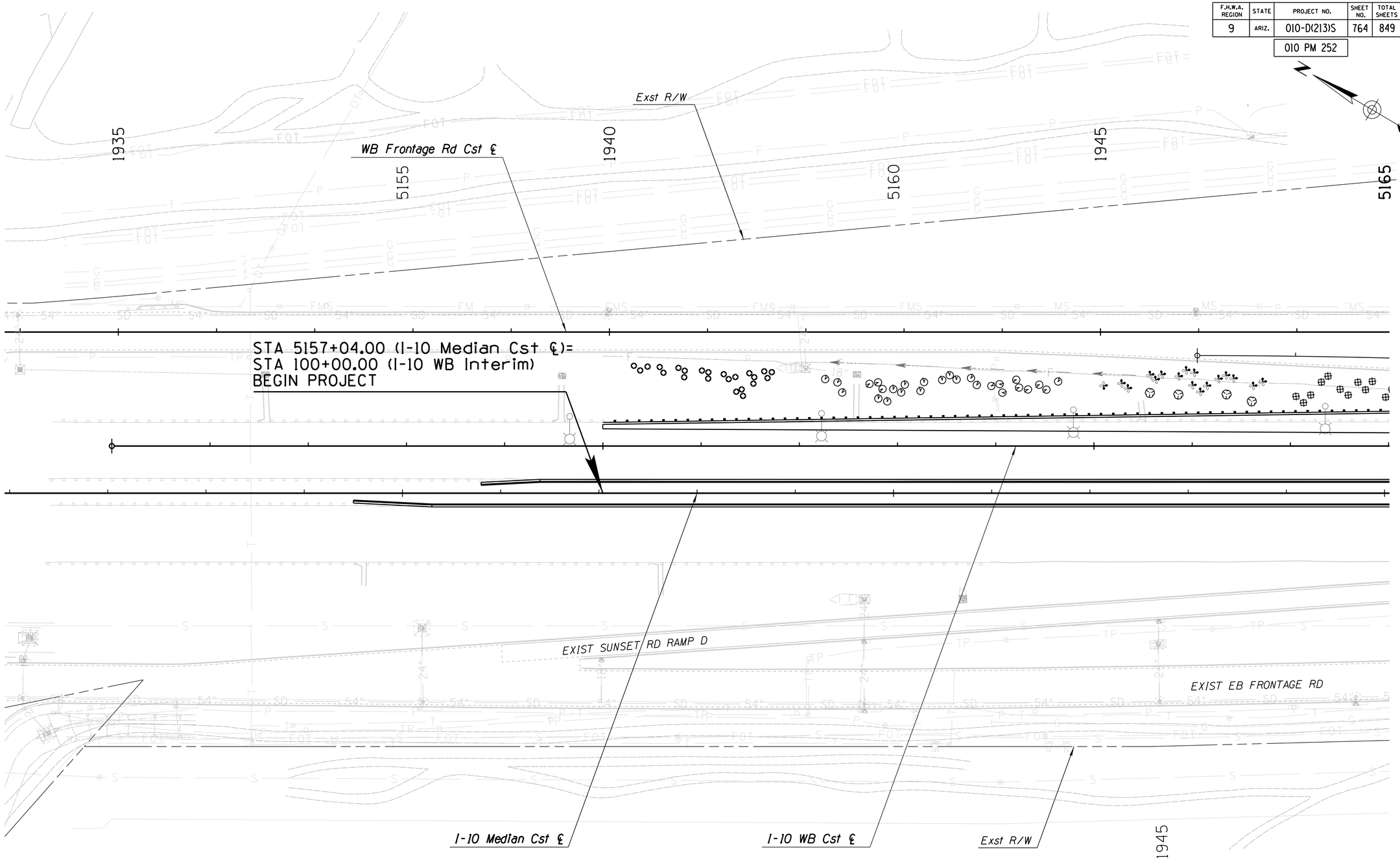
DWG NO. R-2.03
___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	764	849	

010 PM 252

DATE
LOCATION
REVISIONS
FINISHED PLANS
SURVEY NO.



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DESIGN	WDG	3/19
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WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5151+00 TO 5165+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI
DWG NO. R-3.01

TRACS NO. H 8480 01C
010-D(213)S
___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	765	849	

010 PM 252

5165

1950

Exst Sunset Rd Ramp C ℄

5170

1955

Exst R/W

5175

1960

WB Frontage Rd Cst ℄

I-10 WB Interim Cst ℄

Exst Sunset Rd Ramp D

Exst EB Frontage Rd

I-10 Median Cst ℄

195

200

Exst R/W

I-10 EB Interim Cst ℄

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5165+00 TO 5179+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.

EXPIRES 6-30-2019

ROUTE	LOCATION		
I-10	RUTHRAUFF ROAD TI		
TRACS NO. H 8480 01C		010-D(213)S	

DWG NO. R-3.02

___ OF ___

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

cccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	766	849	

010 PM 252

DATE
LOCATION
REVISIONS
FINISHED PLANS
SURVEY NO.

5180
1965
I-10 WB Interim Cst ℄
5185
1970
I-10 Median Cst ℄
5190
1975
I-10 Median Cst ℄
Exst R/W
WB Frontage Rd Cst ℄
Ruthrauff Rd
Ramp A Cst ℄
10
Exst R/W
I-10 EB Interim Cst ℄
205
1965
1965
1970
EB Frontage Rd Cst ℄
1970
Ruthrauff Rd
Ramp B Cst ℄
1975

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5179+00 TO 5193+00

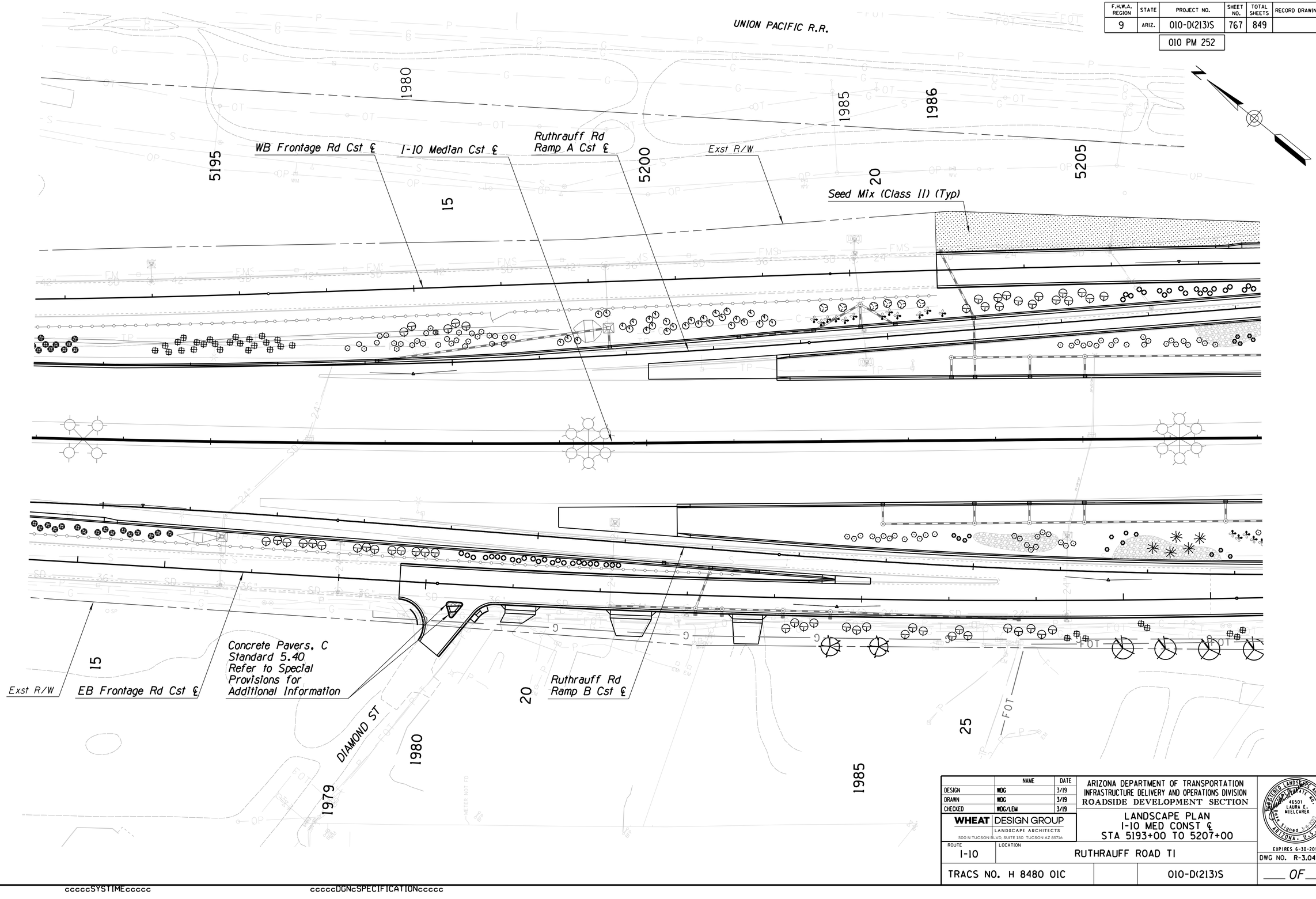
REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-29-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. R-3.03
___ OF ___

ccccSYSTIMEccccc
ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	767	849	
		010 PM 252			



	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5193+00 TO 5207+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. R-3.04

___ OF ___

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

ccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	768	849	
		010 PM 252			

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

SHANNON RD

New R/W

Exst R/W

Seed Mix (Class II) (Typ)

Ruthrauff Rd
Ramp A Cst ℄

WB Frontage
Rd Cst ℄

I-10 Median Cst ℄

Concrete Pavers, C
Standard 5.40
Refer to Special
Provisions for
Additional Information,
(Typ).

1990 | 25 | 5210 | 1995 | 30 | 5215 | 2000 | 5220

Concrete Pavers, C Standard 5.40
Refer to Special Provisions for Additional
Information, (Typ).

Ruthrauff Rd
Ramp B Cst ℄

Concrete Pavers, C Standard 5.40
Refer to Special Provisions for
Additional Information, (Typ).

Concrete Header,
C Standard 5.40
Sta 93+74.8

EL CAMINO DEL CERRO

Exst EB Frontage Rd Cst ℄

EB Frontage Rd Cst ℄

New R/W

Exst R/W

New R/W

Ruthrauff Rd
Ramp D Cst ℄

1990 | 30 | 1995 | 35 | 2000 | 15

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5207+00 TO 5221+00

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Signed 3-8-2019
ARIZONA, U.S.A.

EXPIRES 6-30-2019

DWG NO. R-3.05

___ OF ___

ccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	769	849	
		010 PM 252			

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

2005 5225 2010 10 5230 2015 15 5235

Exst R/W

Seed Mix (Class II) (Typ)

I-10 Median Cst ℄

Ruthrauff Rd
Ramp C Cst ℄

WB Frontage Rd Cst ℄

Ruthrauff Rd
Ramp D Cst ℄

New R/W

EB Frontage Rd Cst ℄

Concrete Pavers,
C Standard 5.40
Refer to Special
Provisions for
Additional
Information

Exst R/W

New TCE

Exst R/W

EB Frontage Rd Cst ℄

Exst EB Frontage Rd Cst ℄

25 20 15 010

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5221+00 TO 5235+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.

EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

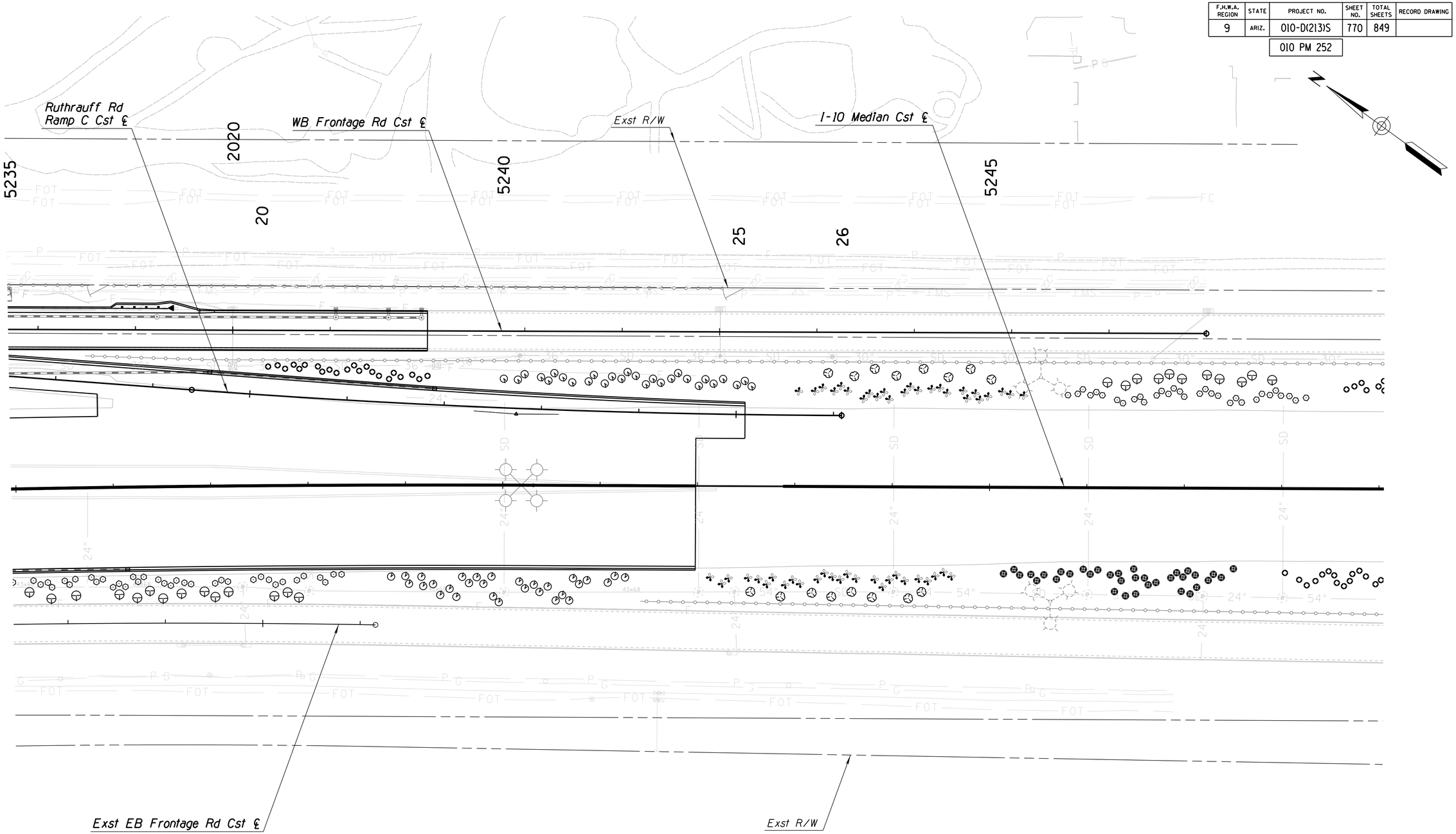
DWG NO. R-3.06

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

ccccSYSTIMEcccc ccccDGNcSPECIFICATIONcccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	770	849	

010 PM 252



	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5235+00 TO 5249+00

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-31-19
ARIZONA, U.S.A.

EXPIRES 6-30-2019

DWG NO. R-3.07

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	771	849	

010 PM 252

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

I-10 Median Cst ℄

Exst R/W

5250

SD — 30" — SD — 30" — SD — 30" — SD

SD — 54" — SD — 24" — SD — 24" — SD — 24" — SD — 24" — SD — 24" — SD — 24" — SD — 24" — SD — 24" — SD — 24"

Exst R/W

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
I-10 MED CONST ℄
STA 5249+00 TO 5263+00

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.

EXPIRES 6-30-2019

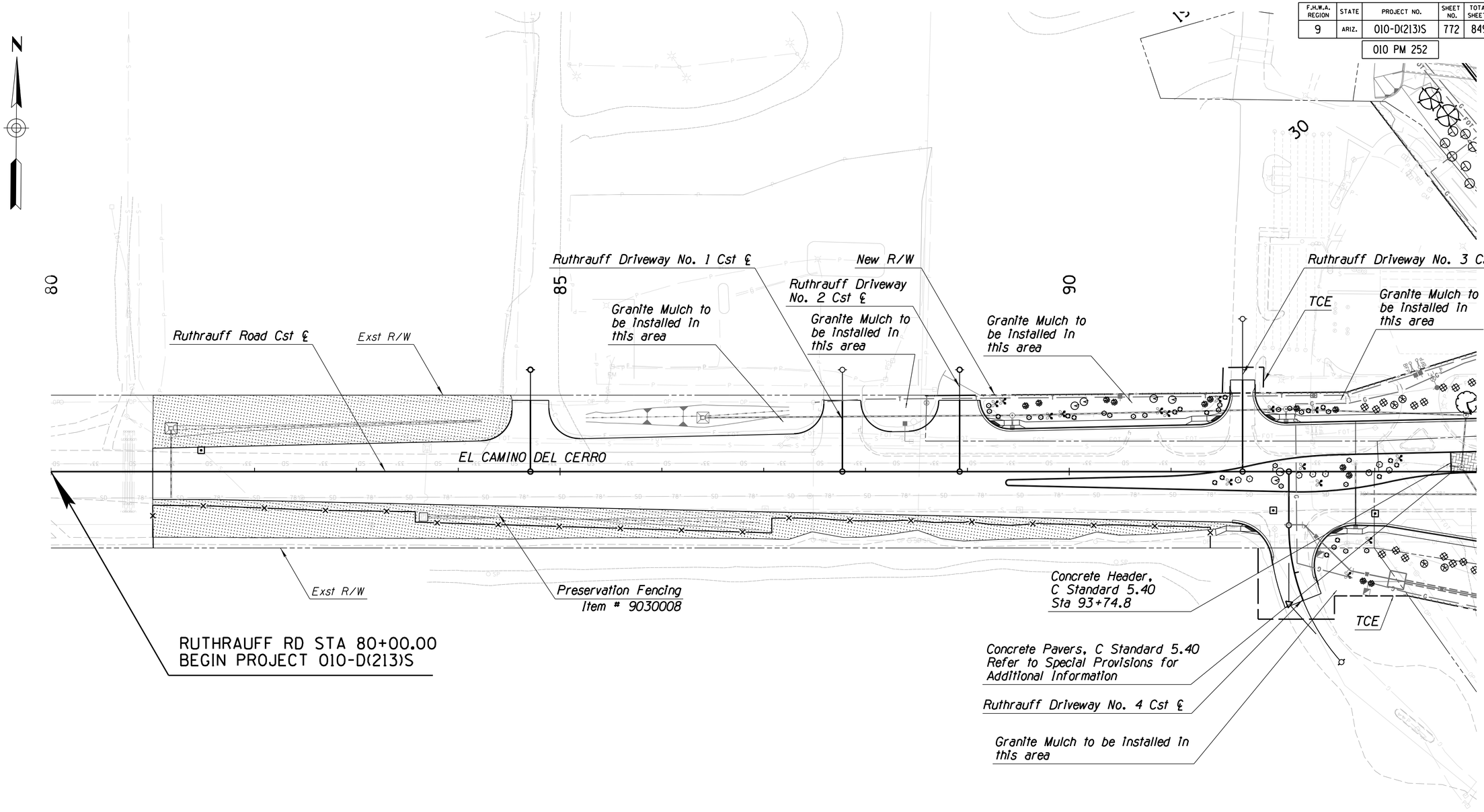
DWG NO. R-3.08

____ OF ____

ccccc SYSTIME ccccc ccccc DGN c SPECIFICATION ccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	772	849	

010 PM 252



NOTE: The local street names are El Camino Del Cerro west of I-10 and Ruthrauff Road east of I-10. The construction ℄ has been designated as Ruthrauff Road Cst ℄ for entire length.

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
RUTHRAUFF ROAD
STA 81+00 TO 94+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. R-3.09

____ OF ____

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	773	849	
		010 PM 252			

WB Frontage Rd
Cst ℄

Exst R/W

New R/W

Seed Mix
(Class II) (Typ)

N

New R/W

EL CAMINO DEL CERRO

RUTHRAUFF ROAD

Concrete Pavers,
C Standard 5.40
Refer to Special
Provisions for
Additional
Information

Exst R/W

New R/W

EB Frontage Rd
Cst ℄

I-10 Median
Cst ℄

Concrete Pavers,
C Standard 5.40
Refer to Special
Provisions for
Additional
Information

Ruthrauff Road Cst ℄

Concrete Header,
C Standard 5.40
Sta 105+81.0

New R/W

WB Frontage Rd
Cst ℄

Exst R/W

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
RUTHRAUFF ROAD
STA 94+00 TO 108+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. R-3.10

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	774	849	

010 PM 252

TCE
Exst R/W
Granite Mulch to be installed on north side of sidewalk
New R/W
CHESTER WAY
DAVIS AVENUE
Highway Drive Cst ℄
110
Exst R/W
MARYVALE AVENUE
115
New R/W
TCE
Maryvale Connector Cst ℄
Granite Mulch to be installed in this area
North Loop Road Cst ℄
TCE
Concrete Pavers, C Standard 5.40 Refer to Special Provisions for Additional Information
Granite Mulch to be installed in this area
SUNRISE AVENUE
120
PLANE AVENUE
TCE
Exst R/W
RUTHRAUFF ROAD
Granite Mulch to be installed in this area
New R/W
TCE
Exst R/W
Ruthrauff Road Cst ℄
RUTHRAUFF RD STA 118+10.00
END PROJECT 010-D(213)S
Exst R/W
Granite Mulch to be installed in this area
MARYVALE AVENUE
PARKWAY DRIVE
New R/W
Seed Mix (Class II) (Typ)
25
Granite Mulch to be installed in this area
HIGHWAY DRIVE
Exst R/W
5225
VIOLET DRIVE
South Maryvale Avenue Cst ℄
Exst R/W

N

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

LANDSCAPE PLAN
RUTHRAUFF ROAD
STA 108+00 TO 122+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI
DWG NO. R-3.11

TRACS NO. H 8480 01C
010-D(213)S
___ OF ___

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

ccccSYSTIMEccccc
ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	775	849	

010 PM 252

UNION PACIFIC R.R.

1980 1985 1986

5195 5200 5205

WB Frontage Rd Cst ℄ | I-10 Median Cst ℄ | Ruthrauff Rd Ramp A Cst ℄ | Exst R/W

15 20

A3 A2 A1

Exst R/W | EB Frontage Rd Cst ℄ | 15 | DIAMOND ST | 1979 | 1980 | Ruthrauff Rd Ramp B Cst ℄ | 20 | 25 | 1985

Z1 Z2 Z4 Z3

Y1 Y2 Y3 Y4 Y5

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

PLATING MATERIALS
I-10 MED CONST ℄
STA 5193+00 TO 5207+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. MIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. R-4.01

___ OF ___

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

ccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	776	849	
		010 PM 252			

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

SHANNON RD

New R/W

Exst R/W

1990

25

5210

D3 D2 D4 D5 D6 D1

E6 E2 E1

Ruthrauff Rd Ramp A Cst ℄

1995

30

E4 E5 E3

WB Frontage Rd Cst ℄

F3 F4 F2 F5 F1

5215

2000

G5 G6 G7 G1 G4 G3 G2

5220

H4 H3 H5 H2 H1

B3 B2 B4 B1

C3 C2 C4 C1

A4 A3

I-10 Median Cst ℄

100

X1 X2 X6 X3 X5 X4

W1 W6 W2

W5 W4 W3

V1 V2 V3 V4 V5

U1 U2 U6

U3 U5 U4

T1 T2 T6 T3 T5 T4

95

1990

30

1995

RUTHRAUFF RD

35

Ruthrauff Rd Ramp B Cst ℄

Exst R/W

Exst EB Frontage Rd Cst ℄

EB Frontage Rd Cst ℄

New R/W

S1 S2 S5 S4 S3

2000

R1 R2 R5 R3 R4

Exst R/W

New R/W

Q1 Q2 Q3 Q4

15

Ruthrauff Rd Ramp D Cst ℄

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

PLATING MATERIALS
I-10 MED CONST ℄
STA 5207+00 TO 5221+00

ROUTE: I-10 | LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
ARIZONA, U.S.A.
Signed 5-8-2019

EXPIRES 6-30-2019

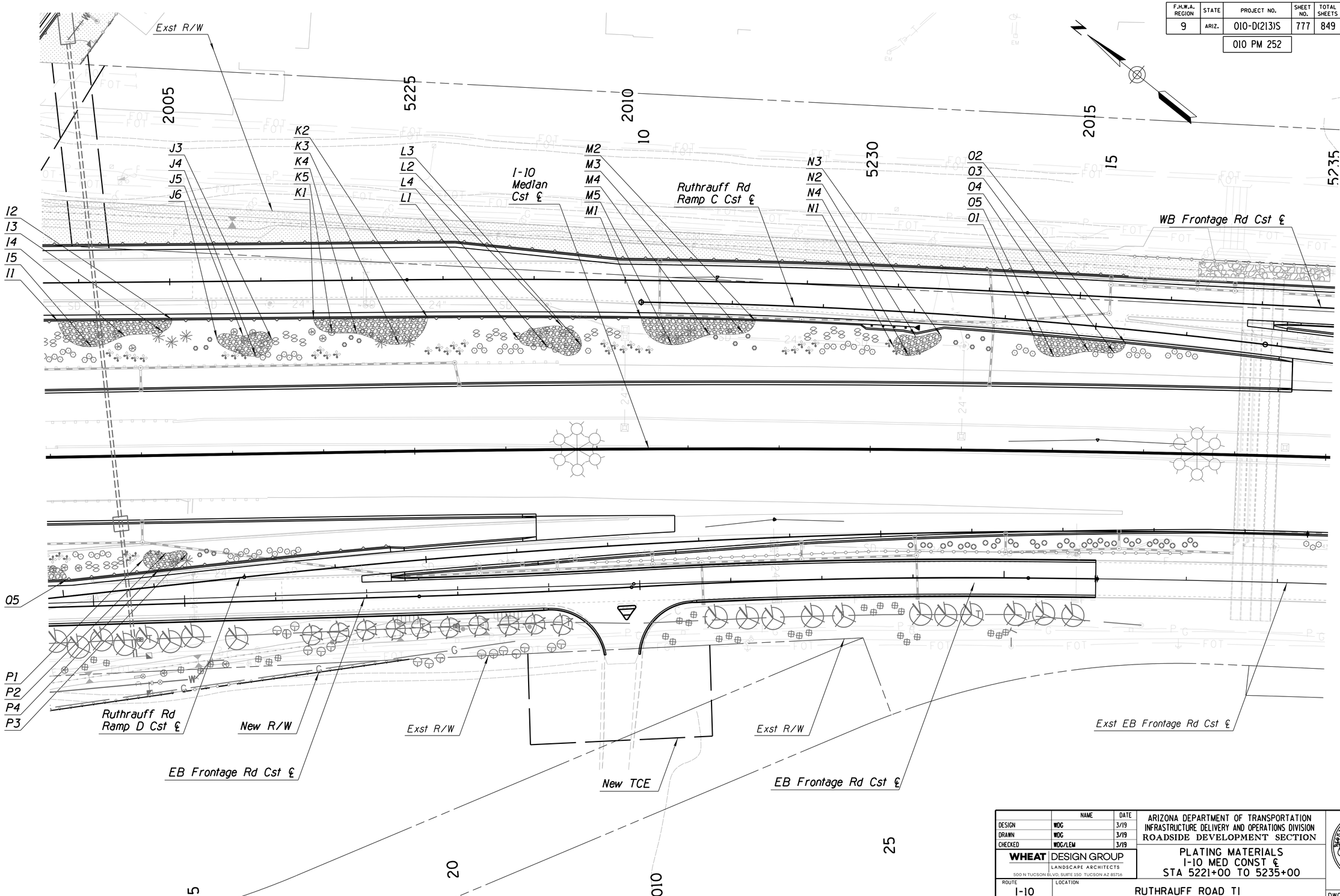
DWG NO. R-4.02

___ OF ___

ccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	777	849	
		010 PM 252			



	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD. SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

PLATING MATERIALS
I-10 MED CONST ℄
STA 5221+00 TO 5235+00

REGISTERED LANDSCAPE ARCHITECT
46501
LAURA E. WIELCAREK
Date Signed 3-8-2019
ARIZONA, U.S.A.
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. R-4.03

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

ccccSYSTIMEcccc

ccccDGNcSPECIFICATIONcccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	778	849	
		010 PM 252			

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

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

Rock Mulch Locations

VERTEX	STATION	OFFSET	VERTEX	STATION	OFFSET	VERTEX	STATION	OFFSET	VERTEX	STATION	OFFSET
A1	5206+28.0	129.28	H4	5220+61.0	126.87	Q2	5220+23.1	107.04	X3	5207+80.8	111.5
A2	5207+53.1	138.14	H5	5220+24.3	104.36	Q3	5220+69.8	118.82	X4	5208+09.1	108.51
A3	5207+04.8	117.88	I1	5221+10.7	149.21	Q4	5221+00.3	119.94	X5	5207+84.3	131.86
A4	5206+66.8	104.5	I2	5222+35.9	147.93	Q5	5221+16.0	134.4	X6	5207+59.0	120.23
B1	5208+32.3	129.2	I3	5222+25.6	135.84	R1	5218+03.5	128.02	Y1	5205+32.0	137.02
B2	5208+87.4	152.5	I4	5221+83.8	131.79	R2	5218+44.1	105.9	Y2	5205+70.1	110.6
B3	5209+15.3	124.77	I5	5221+46.7	120.57	R3	5219+01.8	114.19	Y3	5206+10.4	122.6
B4	5208+71.4	124.16	J1	5222+84.8	126.93	R4	5219+43.2	119.91	Y4	5206+42.1	125.13
C1	5209+90.5	127.75	J2	5223+45.2	29.85	R5	5218+71.4	128.82	Y5	5206+57.42	140.23
C2	5210+37.9	139.62	J3	5223+27.2	125.21	S1	5216+45.7	110.83	Z1	5203+73.6	110.19
C3	5210+89.4	141.2	J4	5223+13.5	107.28	S2	5216+85.8	120.32	Z2	5204+05.1	108.03
C4	5210+51.9	104.49	K1	5223+91.0	147.01	S3	5217+38.0	111.15	Z3	5204+70.7	116.52
D1	5211+37.3	163.5	K2	5225+16.7	145.93	S4	5217+19.4	129.74	Z4	5204+48.1	128.66
D2	5212+15.3	169.01	K3	5224+84.4	117.67	S5	5217+12.1	139.73			
D3	5212+57.0	168.68	K4	5224+38.28	130.24	T1	5213+38.7	115.02			
D4	5212+30.8	134.7	K5	5224+11.2	131.52	T2	5213+59.8	104.87			
D5	5211+93.26	144.23	L1	5226+15.9	121.31	T3	5213+81.5	112.86			
D6	5211+57.2	139.94	L2	5226+62.9	135.01	T4	5214+26.8	110.83			
E1	5212+80.7	134.9	L3	5226+83.7	114.09	T5	5213+65.5	132.31			
E2	5213+10.4	147.1	L4	5226+47.1	112.43	T6	5213+54.4	120.82			
E3	5213+79.6	138.1	M1	5227+48.9	143.92	U1	5212+22.3	127.86			
E4	5214+62.7	126.8	M2	5228+73.6	140.75	U2	5212+55.9	104.49			
E5	5214+19.1	106.1	M3	5228+60.6	127.05	U3	5212+72.3	115.96			
E6	5213+28.3	124.4	M4	5228+24.4	125.23	U4	5212+89.6	121.45			
F1	5215+48.7	113.9	M5	5227+82.4	114.36	U5	5212+77.1	130.63			
F2	5215+68.8	147.8	N1	5230+24.9	113.11	U6	5212+50.0	124.9			
F3	5215+77.4	165.4	N2	5230+48.9	123.98	V1	5209+87.2	138.07			
F4	5216+50.7	110.8	N3	5230+76.4	125.3	V2	5209+97.7	124.6			
F5	5215+95.4	128.52	N4	5230+41.3	103.09	V3	5210+37.8	120.42			
G1	5218+59.1	110.83	O1	5231+77.0	127.13	V4	5210+82.6	108.43			
G2	5219+39.7	150.55	O2	5232+78.1	119.87	V5	5211+12.8	136.41			
G3	5219+34.9	138.18	O3	5232+66.2	109.14	W1	5208+71.4	120.04			
G4	5219+55.7	120.15	O4	5232+38.3	110.12	W2	5209+11.3	105.05			
G5	5219+37.6	107.43	O5	5231+99.8	104.07	W3	5209+34.6	122.82			
G6	5219+03.6	115.75	P1	5221+99..3	113.83	W4	5209+21.8	132.82			
G7	5218+81.5	105.48	P2	5222+24.8	107.28	W5	5209+02.8	126.68			
H1	5219+99.1	120.86	P3	5222+48.2	108.02	W6	5208+86.7	128.68			
H2	5220+13.6	137.7	P4	5222+16.4	125.76	X1	5207+41+7	112.46			
H3	5220+33.3	130.82	Q1	5219+90.3	136.06	X2	5207+54.1	105.53			

	NAME	DATE
DESIGN	WDG	3/19
DRAWN	WDG	3/19
CHECKED	WDG/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

ROCK MULCH LOCATIONS

REGISTERED LANDSCAPE ARCHITECT — 46501 LAURA E. WIELCAREK — STATE OF ARIZONA, U.S.A. — Date Signed 6-30-2019
EXPIRES 6-30-2019

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. R-4.04

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	779	849	
		010 PM 252			

IRRIGATION EQUIPMENT SCHEDULE

SYMBOL	EQUIPMENT	SIZE	QTY
A-1	Equiptment Assembly and Enclosure		1
A	Computerized Control System		1
not shown	Hydrometer	1-1/2"	2
⋈	Existing Reduced Pressure Backflow Prevenfor (ADOT) to be Replaced	2"	1
M	Existing 2" Water Meter (ADOT) to be Preserved	2"	1
⊕	Gate Valve (ADOT)	2"	11
⊕	Gate Valve (ADOT)	1-1/2"	3
◕	New Remote Control Valve (ADOT)	1"	23
◕	Existing Remote Control Valve (ADOT)	1"	16
●	Pressure Regulator Riser (ADOT)	1"	40
———	Mainline (ADOT), PVC Sch 40 Pipe (lin. ft.)	1 1/2"	776 LF
———	Mainline (ADOT), PVC Sch 40 Pipe (lin. ft.)	2"	20,030 LF
·····	Existing Mainline	N/A	N/A
- - - -	Sub-main PVC Class 200 Pipe (lin. ft.)	1"	12,153 LF
—·—·—	Lateral Line - Tree PVC Class 200 Pipe (lin. ft.)	3/4"	3,452 LF
—·—·—	Lateral Line - Shrub PVC Class 200 Pipe (lin. ft.)	3/4"	24,146 LF
not shown	Emitter Assembly (ADOT) (multi-port, 0.6 gph, 1 gph, 2 gph each)	0.6/1.2/ 2.3 GPH	637
not shown	Emitter Assembly - (single outlet, 0.6 gph each)	0.6/GPH	964
———	New Sleeve (ADOT), (lin. ft.)	12"	1,423 LF
———	New Sleeve (ADOT), (lin. ft.)	6"	213 LF
———	New Sleeve (ADOT), (lin. ft.)	4"	376 LF
———	New Sleeve (ADOT), (lin. ft.)	2"	213 LF
·····	Existing Sleeve (ADOT), (lin. ft.)	12"	N/A
—◇	Lateral End Cap Assembly	N/A	99
P	Pullbox	N/A	N/A

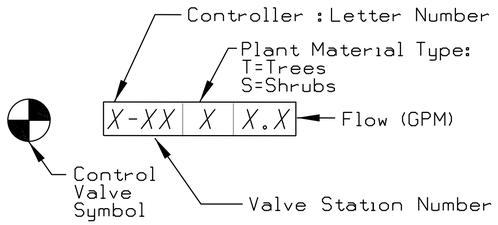
NOTES:
1. QUANTITIES ARE APPROXIMATE
2. SEE CIVIL SHEETS FOR IRRIGATION SUPPLY LINE LOCATION

WATER USE CALCULATIONS

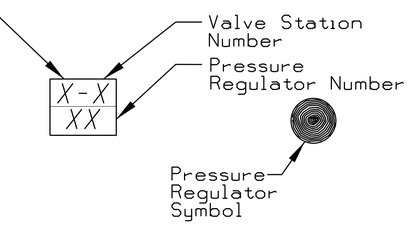
ZONE / AREA MAINLINE LOCATION	IRRIGATION CONTROLLER IDENTIFICATION	ANNUAL VOLUME
ADOT	A	6.5 ACRE FEET
TOTAL PROJECT USAGE VOLUME		6.5 ACRE FEET

WATER USE SCHEDULING CALCULATIONS:

1. Available water per 1' depth of soil = 1.75"
2. Management allowable depletion between irrigation = 50%
3. Plant root depth: Trees: 24", Shrubs: 12"
4. Maximum allowable loss between irrigation cycles: Trees: 1.75", Shrubs: 0.875"
5. Irrigation is required any time total of daily ET equals the maximum allowable loss.
6. Run times: Trees: 3 Hours, Shrubs: 1 Hour
7. Adjust run times for seasonal and soil variations.



CONTROL VALVE TAG



PRESSURE REGULATOR TAG

GENERAL IRRIGATION NOTES:

1. All irrigation equipment noted as existing shall be protected in place.
2. Sleeves are existing at crossings unless noted otherwise.
3. Irrigation lines may be shown outside of landscape areas for graphic clarity - locate all lines within planting areas and within ADOT Right-of-Way.
4. Contractor shall locate all existing utilities, including existing landscape irrigation lines, prior to any construction activities.
5. Preserve existing Point of Connection and Structure including Electrical and Water Service at Sta 5205+00.00.
6. Preserve existing Water Meter at Sta 5200+00.00.
7. Cap existing Mainline at Northern End of Project at last existing valves to be preserved in place so that Mainline can be reconnected during Irrigation Construction.
8. Preserve existing Sleeves Outside of Roadway Construction.
9. Cap existing Irrigation electrical wires with coil and wire nuts in a junction box.
10. Refer to Irrigation Plans for Existing and Proposed Irrigation Design.

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
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Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN SUMMARY SHEET

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. I-1.01

____ OF ____

REGISTERED LANDSCAPE ARCHITECT — CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2020

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

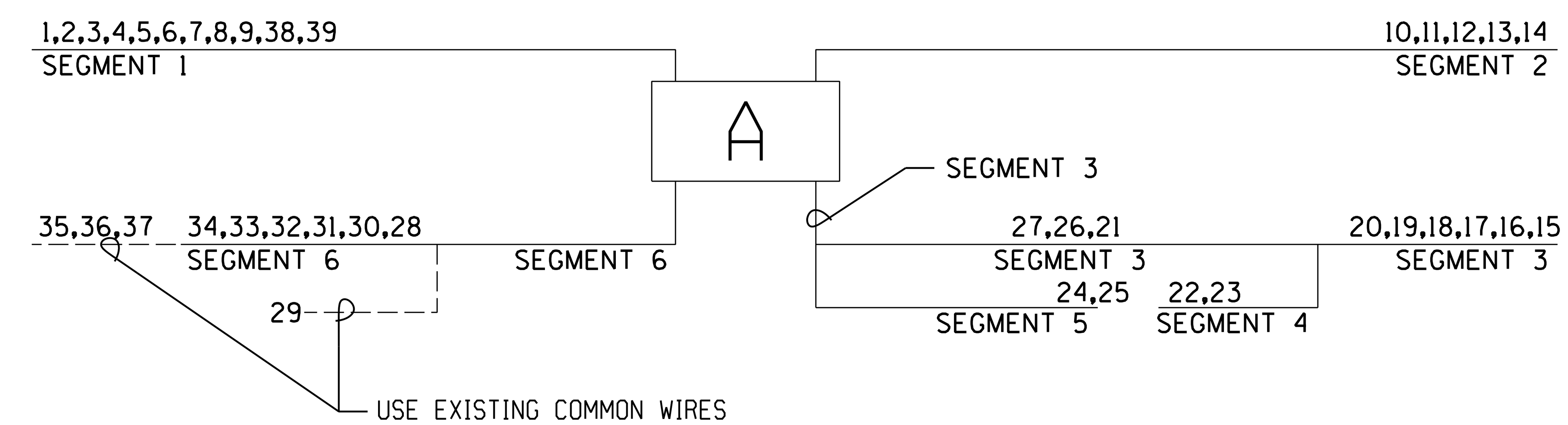
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	780	849	

010 PM 252

CONTROLLER A - CONTROL WIRE SCHEDULE

Valve No.	EXISTING	TYPE	SEGMENT	LENGTH (FT)	COMMON WIRE	CIRCUIT WIRE
A-1	EXISTING	S	1	5200	#8	#10
A-2	EXISTING	T	1	5200	#8	#8
A-3	EXISTING	S	1	5000	#8	#10
A-4	EXISTING	T	1	5000	#8	#8
A-5	EXISTING	S	1	3500	#8	#10
A-6	EXISTING	S	1	3600	#8	#10
A-7	EXISTING	T	1	3600	#8	#8
A-8		S	1	2000	#8	#14
A-9		S	1	950	#8	#14
A-10		S	2	1050	#8	#14
A-11		S	2	2000	#8	#14
A-12		S	2	2800	#8	#12
A-13		S	2	4200	#8	#10
A-14		S	2	5200	#8	#10
A-15	EXISTING	S	3	5100	#8	#8
A-16		S	3	4800	#8	#8
A-17		S	3	3500	#8	#10
A-18	EXISTING	S	3	3500	#8	#8
A-19		T	3	2400	#8	#12
A-20		S	3	2400	#8	#12
A-21		S	3	1800	#8	#14
A-22		T	3,4	2200	#8,#10	#14
A-23		S	3,4	2200	#8,#10	#14
A-24		T	3,5	900	#8,#12	#14
A-25		S	3,5	900	#8,#12	#14
A-26		S	3	600	#8	#14
A-27		T	3	200	#8	#14
A-28		S	6	1300	#8	#14
A-29	EXISTING	S	6	1500	#8	#12
A-30		S	6	2900	#8	#10
A-31		T	6	3000	#8	#10
A-32	EXISTING	S	6	3000	#8	#10
A-33	EXISTING	T	6	3600	#8	#10
A-34	EXISTING	S	6	3600	#8	#10
A-35	EXISTING	S	6	4600	#8	#10
A-36	EXISTING	S	6	4800	#8	#8
A-37	EXISTING	T	6	4800	#8	#10
A-38	EXISTING	T	1	1100	#8	#14
A-39	EXISTING	S	1	1100	#8	#14

COMMON WIRE DIAGRAM CONTROLLER 'A'



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Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
SUMMARY SHEET

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

REGISTERED LANDSCAPE ARCHITECT · CERTIFICATE NO. · CARL S. KOMINSKY · ARIZONA, U.S.A. · EXPIRES 6/30/2021

DWG NO. I-1.02

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	781	849	

010 PM 252

VALVE SEQUENCING CHARTS - CONTROLLER A

MAINLINE 1

GROUP 1 - Tree	
Valve No.	GPM
A-2	4.2
A-38 (EXIST)	3.0
Total	7.2
Hours Per Cycle	8.0
Max Cycles/Week	3.0

GROUP 2 - Tree	
Valve No.	GPM
A-4 (EXIST)	2.4
A-7 (EXIST)	3.5
Total	5.9
Hours Per Cycle	8.0
Max Cycles/Week	3.0

GROUP 3 - Shrub	
Valve No.	GPM
A-1 (EXIST)	1.2
A-11	0.8
A-12	1.1
Total	3.1
Hours Per Cycle	4.0
Max Cycles/Week	3.0

GROUP 4 - Shrub	
Valve No.	GPM
A-3 (EXIST)	2.4
A-9	3.0
A-14	1.0
Total	6.4
Hours Per Cycle	4.0
Max Cycles/Week	3.0

GROUP 5 - Shrub	
Valve No.	GPM
A-6 (EXIST)	0.5
A-8	2.5
Total	3.0
Hours Per Cycle	4.0
Max Cycles/Week	3.0

GROUP 6 - Shrub	
Valve No.	GPM
A-5	1.9
A-10	1.9
A-13	1.3
A-39 (EXIST)	1.0
Total	6.1
Hours Per Cycle	4.0
Max Cycles/Week	3.0

MAINLINE 2

GROUP 1 - Tree	
Valve No.	GPM
A-19	4.2
A-27	2.2
A-37 (EX)	3.6
Total	10.0
Hours Per Cycle	8.0
Max Cycles/Week	3.0

GROUP 2 - Tree	
Valve No.	GPM
A-22	5.6
A-24	3.0
Total	8.6
Hours Per Cycle	8.0
Max Cycles/Week	3.0

GROUP 3 - Tree	
Valve No.	GPM
A-31 (EXIST)	4.7
A-33 (EXIST)	4.5
Total	9.2
Hours Per Cycle	8.0
Max Cycles/Week	3.0

GROUP 4 - Shrub	
Valve No.	GPM
A-15 (EXIST)	2.7
A-18 (EXIST)	2.2
A-29 (EXIST)	4.5
A-30	2.9
A-34 (EXIST)	1.5
Total	13.8
Hours Per Cycle	4.0
Max Cycles/Week	3.0

GROUP 5 - Shrub	
Valve No.	GPM
A-16	1.6
A-17	1.9
A-28	3.2
A-35 (EXIST)	2.1
Total	8.8
Hours Per Cycle	4.0
Max Cycles/Week	3.0

GROUP 6 - Shrub	
Valve No.	GPM
A-21	1.0
A-26	1.4
A-32 (EXIST)	0.5
A-36 (EXIST)	1.5
Total	4.4
Hours Per Cycle	4.0
Max Cycles/Week	3.0

GROUP 7 - Shrub	
Valve No.	GPM
A-20	1.7
A-23	2.7
A-25	2.9
Total	7.3
Hours Per Cycle	4.0
Max Cycles/Week	3.0

IRRIGATION EMITTER SCHEDULE

BOTANICAL NAME	PEAK DAILY DEMAND GALS.	RUN HRS PER IRRIGATION DAY PEAK*	PEAK IRRIGATION FREQUENCY DAYS/WEEK	RUN HRS YR	MAT. WATER USE PER YR	EMITTER PLACEMENT TYPE	EMITTER TYPE M/S	# OF DISTRIB. TUBES @ CONST./MAT.	OUTLET GPH	TOTAL GPH
TREES										
Chilopsis linearis		8	3	600	7200	A	M	6	2	12
Parkinsonia spp.		8	3	600	7200	A	M	6	2	12
Prosopis velutina		8	3	600	7200	A	M	6	2	12
SHRUBS										
Caesalpinia mexicana		4	3	200	600	B	M	3	1	3
Dodonaea viscosa		4	3	200	400	B	M	2	1	2
Larrea tridentata		4	3	200	200	D/E	M	1	1	1
Leucophyllum langmaniae 'Lynn's Legacy'		4	3	200	400	B	M	2	1	2
Vauqelinia californica		4	3	200	800	C	M	4	1	4
CACTUS & ACCENT PLANTS										
Carnegia gigantea		4	3	200	100	D	S	1	0.5	0.6
Dastlirion wheeleri		4	3	200	100	D	S	1	0.5	0.6
Fouqueria splendens		4	3	200	100	D	S	1	0.5	0.6
Hesperaloe funifera		4	3	200	200	D	S	1	1	1
Hersperaloe parviflora		4	3	200	200	D	S	1	1	1
Opuntia gomei 'Old Mexico'		4	3	200	100	D	S	1	0.5	0.6
Opuntia santa-rita		4	3	200	100	D	S	1	0.5	0.6
Yucca rigida		4	3	200	200	D	S	1	1	1

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	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN SUMMARY SHEET

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI | DWG NO. I-1.03

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

REGISTERED LANDSCAPE ARCHITECT CERTIFICATE NO. 40935 CARL S. KOMINSKY ARIZONA, U.S.A. EXPIRES 6/30/2021

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

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	782	849	
		010 PM 252			

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

Existing Valves C3-S and C4-T

A-2 Tree

A-1 Shrub

A-3 Shrub

A-4 Tree

Tie into existing Tree and Shrub Submains

Irrigation Mainline

Existing Valves C5-S and C6-T

A-7 Tree

A-6 Shrub

A-5 Shrub

A-8 Shrub

Existing Valves C 8-T and C9-S

A-38 Tree

A-39 Shrub

A-9 Shrub

5145 1930 1935 95 5150 5155 100 1940 5160 105 1945 50 5165 110 1950 55 5170 115 1955 5175 60 120 1960 65 5180 125 1965 5185 1970 5190 133 1975 10 5195 15 1980 5200

SUNSET ROAD

A-35 Shrub

Existing Valve C27-S

A-36 Shrub

A-37 Tree

Existing Valves C29-T and C30-S

Extend Mainline to tie into Existing

A-34 Shrub

A-33 Tree

Existing Valves C26-S and C25-T

198 200 205 1965 1970 1975 15 1980 20

A-32 Shrub

A-31 Tree

Existing Valves C23-S and C24-T

A-30 Shrub

Existing Valve C-20

A-29 Shrub

A-28 Shrub

Preserve Existing 2" Potable Water Meter 67 PSI

Replace Existing 2" RP Backflow Preventer

M

08

IRRIGATION CONSULTANT:
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	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
MAINLINE VALVE MASTERPLAN
STA 5145+00 TO 5202+00

REGISTERED LANDSCAPE ARCHITECT CARL S. KOMINSKY Date Signed ARIZONA, U.S.A. EXPIRES 6/30/2021

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	I-2.01
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	783	849	
		010 PM 252			

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

RUTHRAUFF ROAD

A-10 Shrub

A-11 Shrub

A-12 Shrub

A-13 Shrub

A-14 Shrub

A-15 Shrub

A-16 Shrub

A-17 Shrub

A-18 Shrub

A-19 Tree

A-20 Shrub

A-21 Shrub

A-22 Tree

A-23 Shrub

A-24 Tree

A-25 Shrub

A-26 Shrub

A-27 Tree

A-1

Tap for future 1" Water Meter (County) at STA 110+75 RT. See Civil.

Existing Valve A-25

Cut and cap existing Mainline. Cut and seal wires and coil in pull box.

Tap for future 1" Water Meter (City) at STA 91+00 RT. See Civil.

Preserve Existing Water Supply and Power Source. Provide New Enclosure.

Exst RP Backflow ADOT to be Replaced New Controllers (2) "A"&"B"

EL CAMINO DEL CERRO

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
MAINLINE VALVE MASTERPLAN
STA 5202+00 TO 5250+00

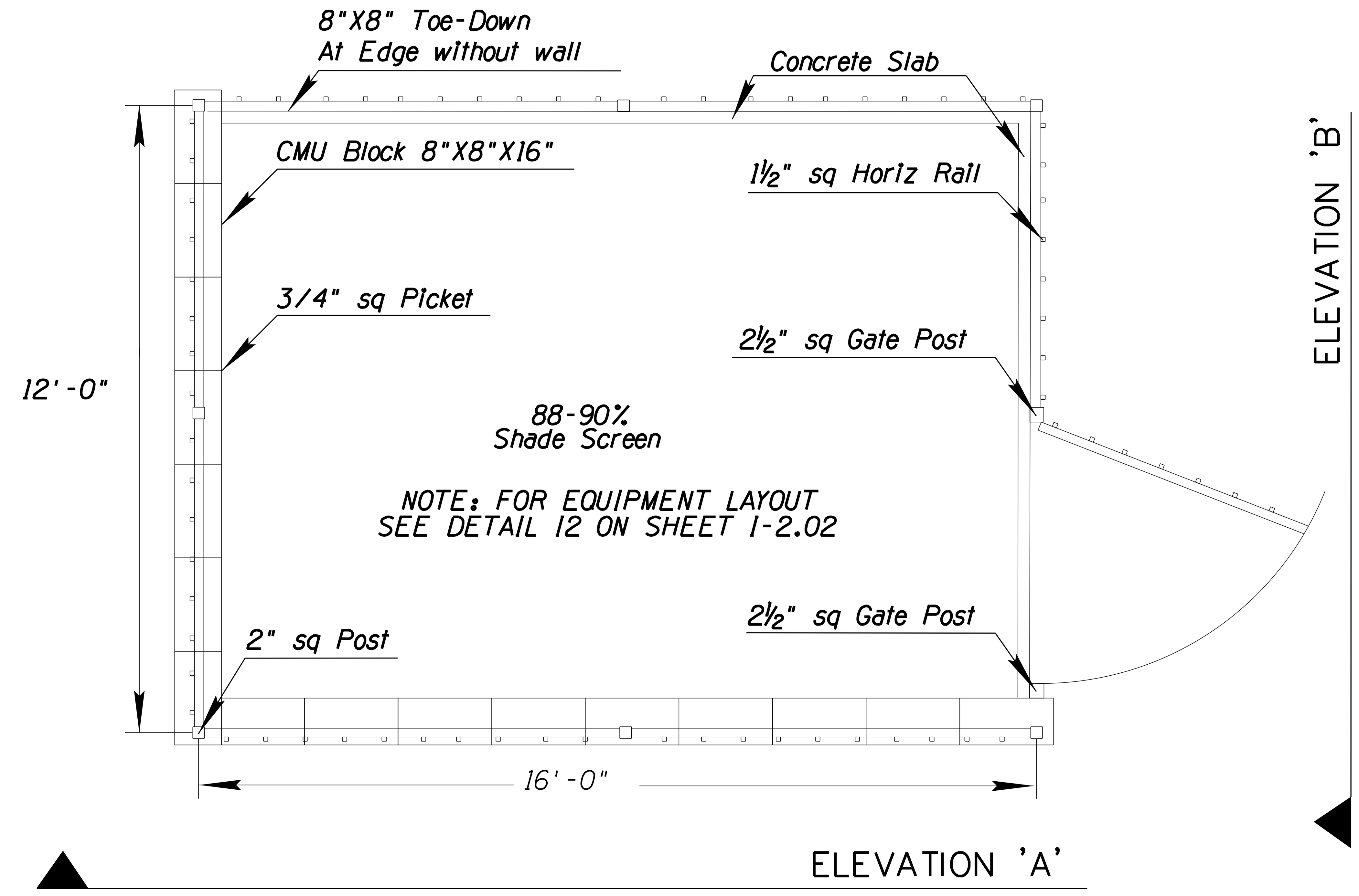
REGISTERED LANDSCAPE ARCHITECT
CARL S. KOMINSKY
Not Valid Unless Signed
ARIZONA, U.S.A.
EXPIRES 6/30/2021

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	I-2.02
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

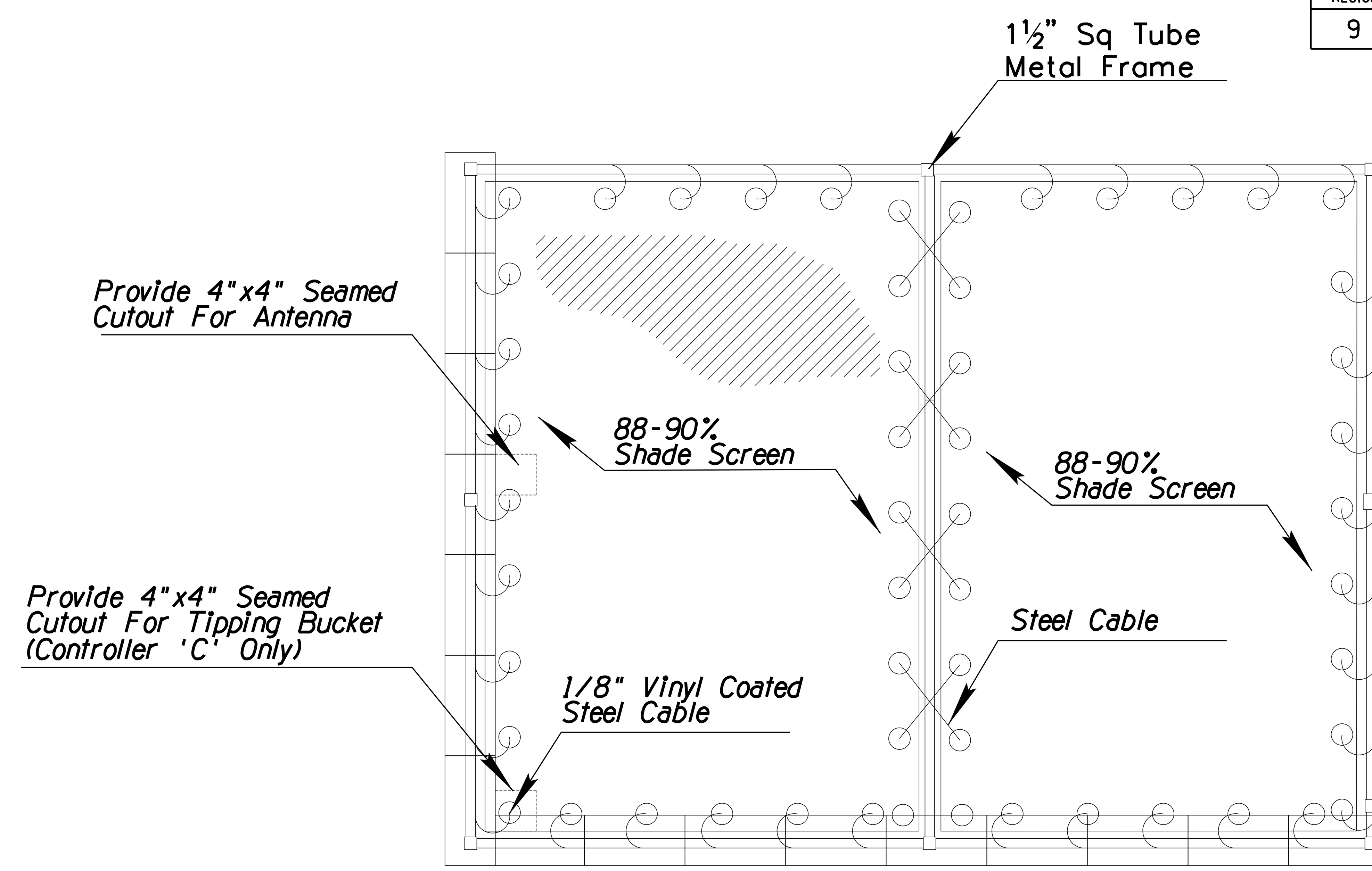
ccccSYSTIMEcccc ccccDGNcSPECIFICATIONcccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	784	849	

010 PM 252



PLAN VIEW



TOP VIEW

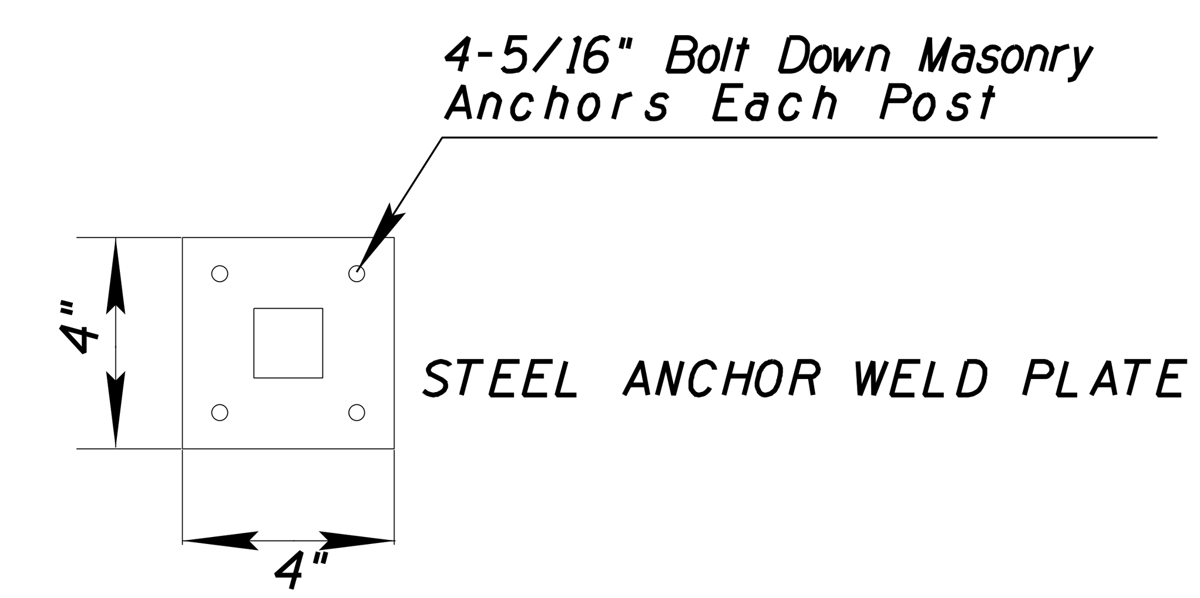
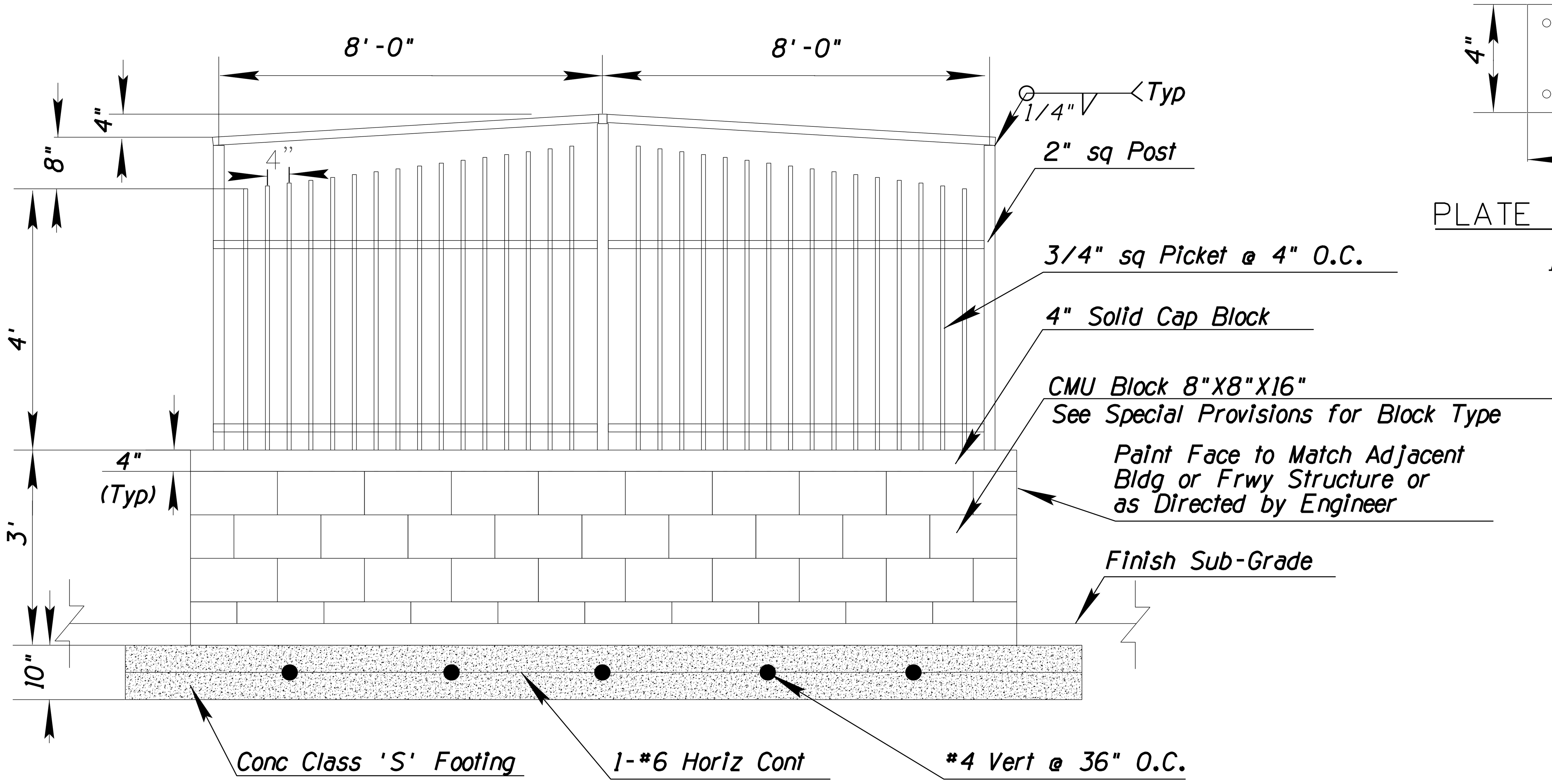
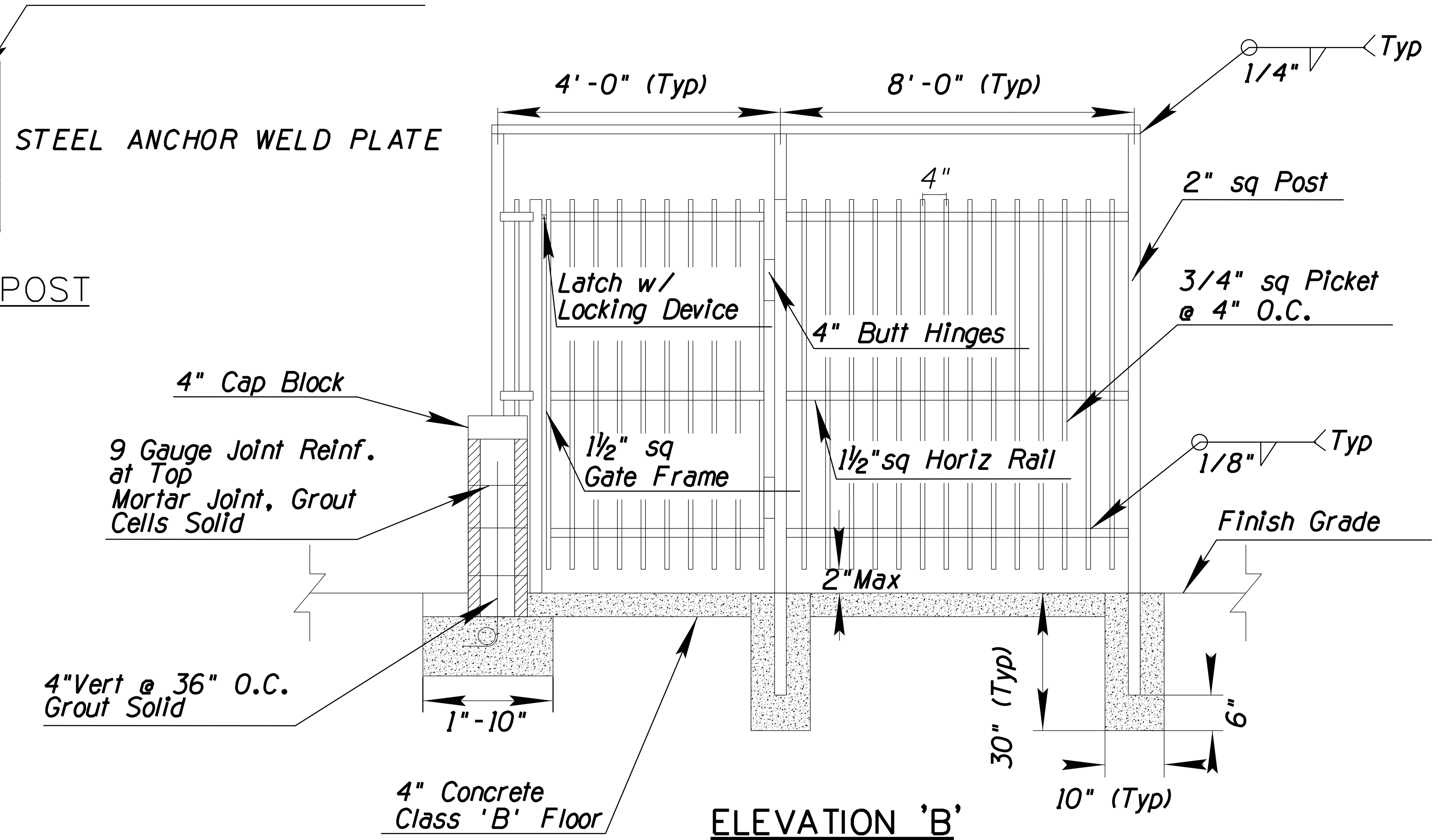


PLATE FOR POST

1/4"



ELEVATION 'A'



ELEVATION 'B'

DETAIL I1

CONTROLLER ENCLOSURE

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
DETAIL SHEET

ROUTE I-10
LOCATION RUTHRAUFF ROAD TI

REGISTERED LANDSCAPE ARCHITECT CERTIFICATE NO. CARL S. KOMINSKY ARIZONA, U.S.A. EXPIRES 6/30/2021

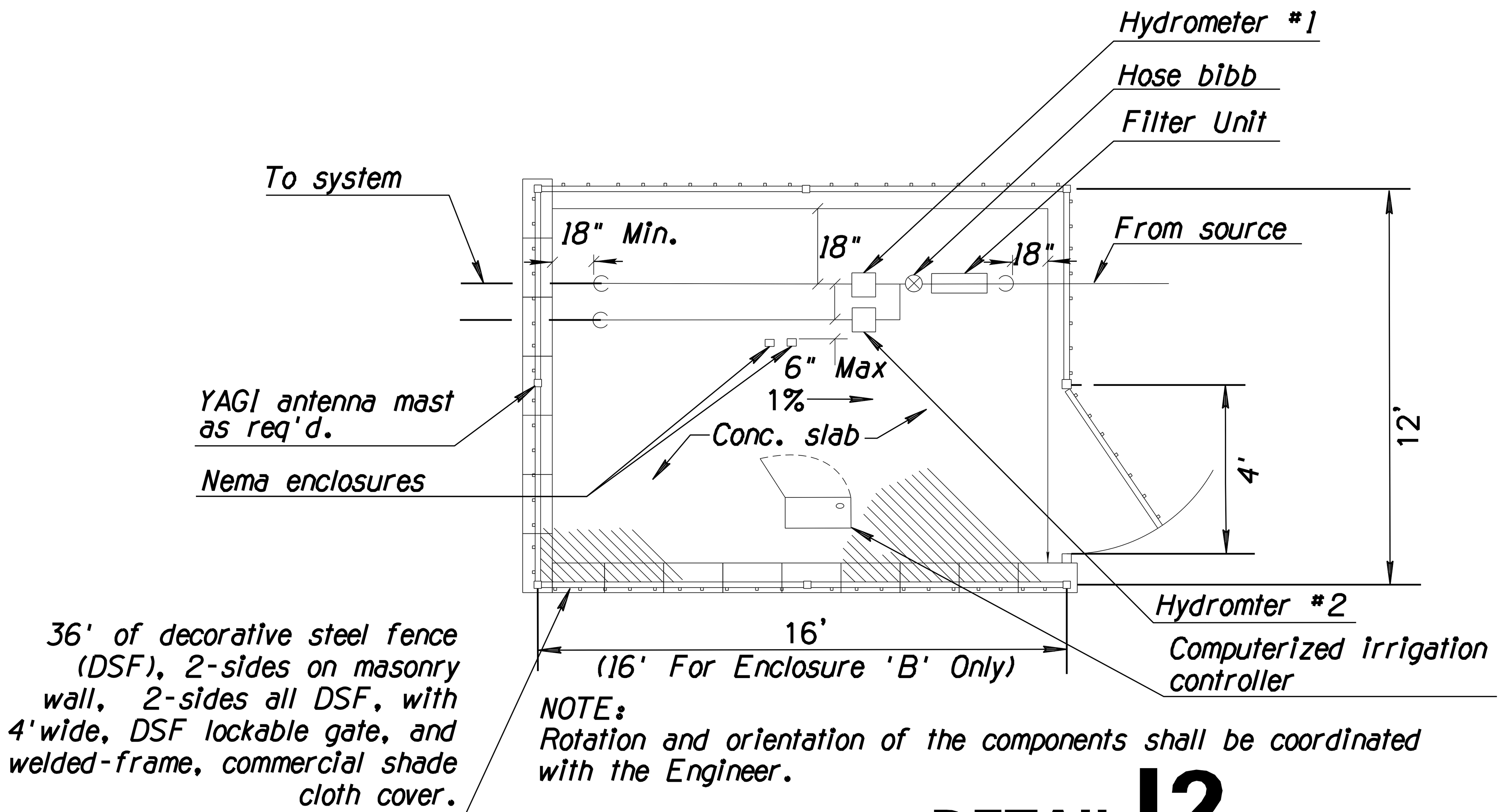
DWG NO. I-3.01

TRACS NO. H 8480 01C
010-D(213)S
____ OF ____

ccccc SYSTIME ccccc
ccccc DGNcSPECIFICATION ccccc

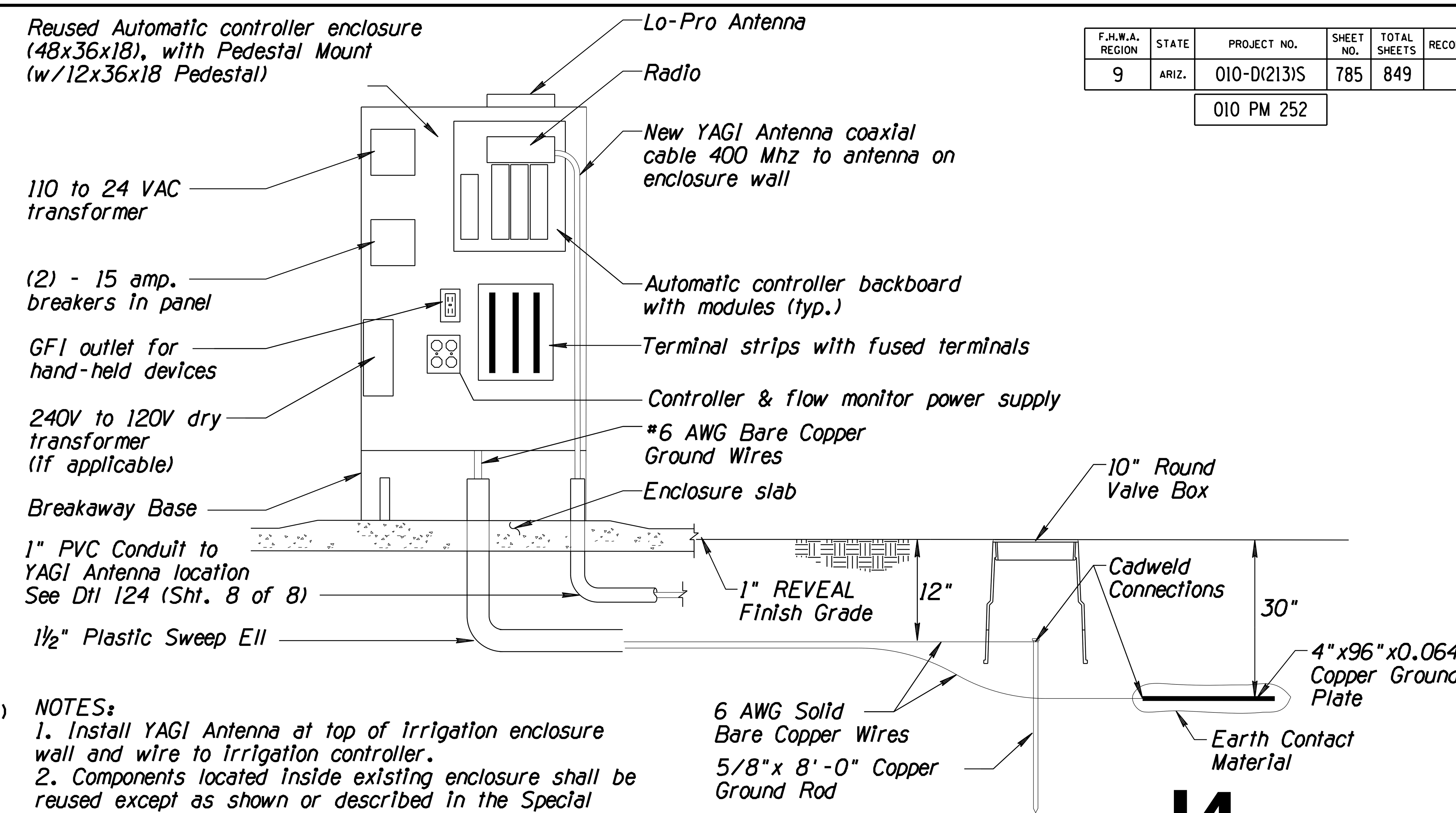
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	785	849	

010 PM 252



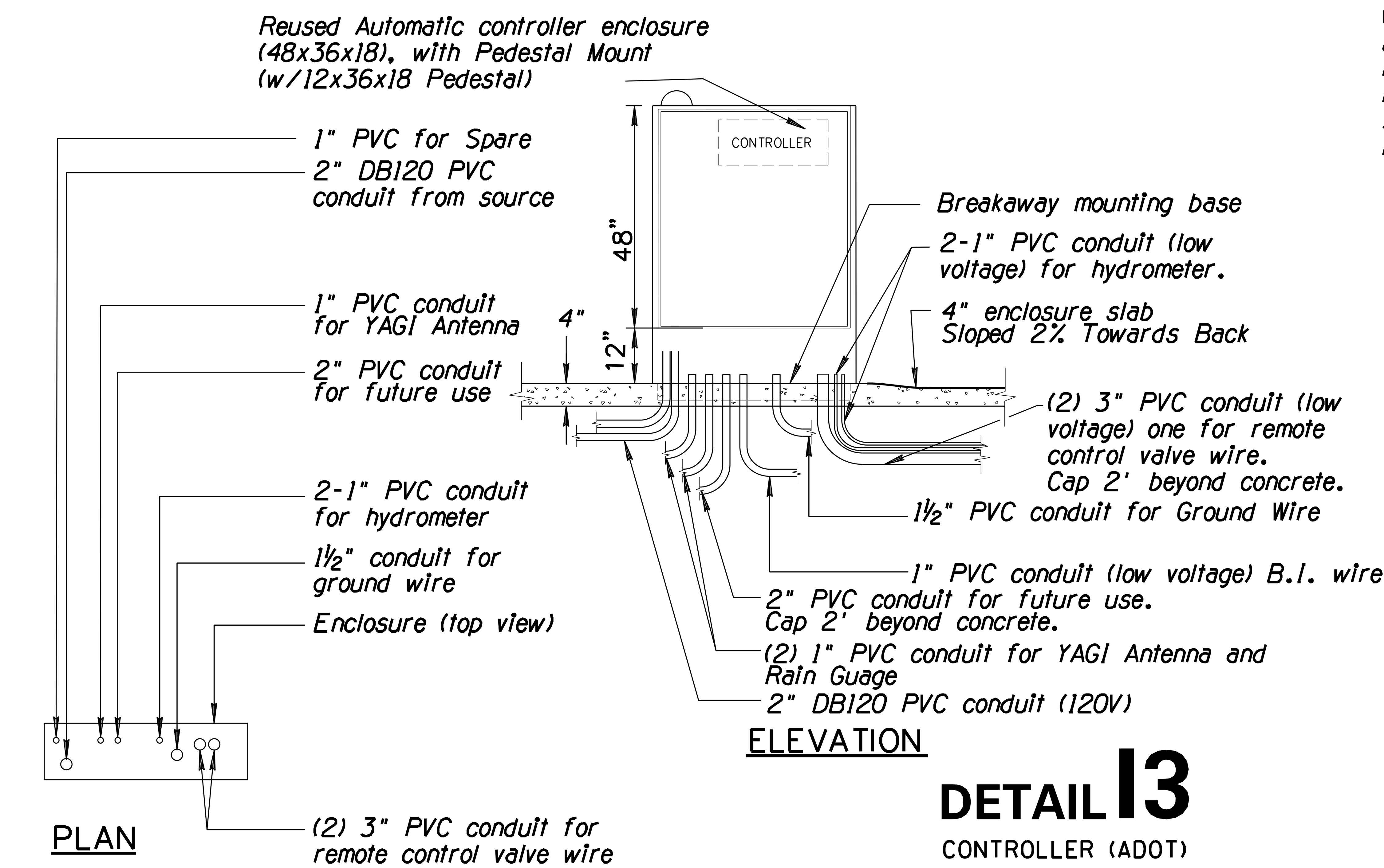
NOTE:
Rotation and orientation of the components shall be coordinated with the Engineer.

DETAIL I2
DUAL MAINLINE CONTROLLER ENCLOSURE (ADOT)

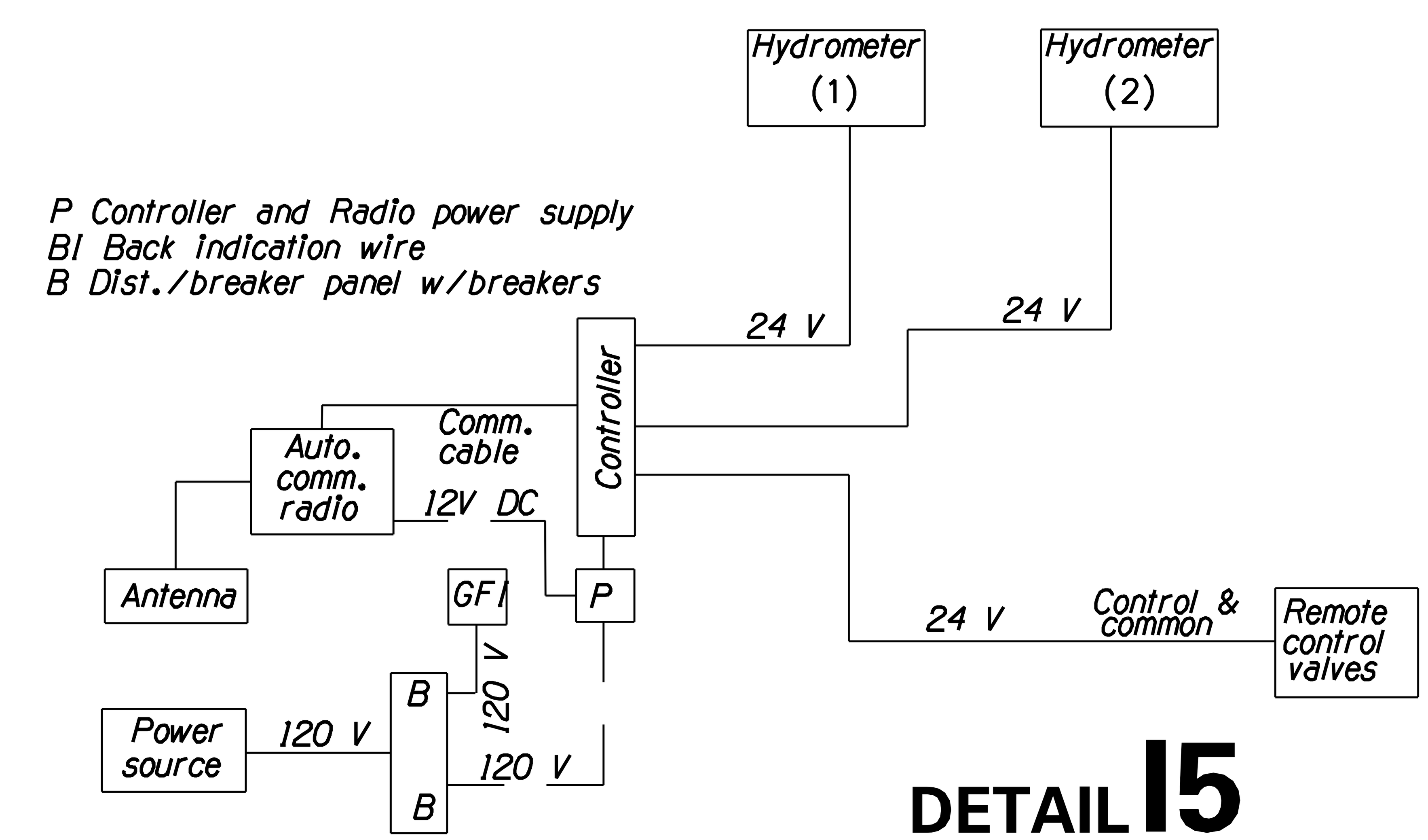


NOTES:
1. Install YAGI Antenna at top of irrigation enclosure wall and wire to irrigation controller.
2. Components located inside existing enclosure shall be reused except as shown or described in the Special Provisions.
3. The Enclosure and Components shall be removed and reinstalled as described in the Special Provisions.

DETAIL I4
CONTROLLER ENCLOSURE COMPONENTS (ADOT)



DETAIL I3
CONTROLLER (ADOT)



DETAIL I5
CONTROL SYSTEM FLOW CHART (ADOT)

Notes:
1. Where possible, all wire shall be routed within conduit.
2. All wiring not in conduit shall be bundled.
3. All electric components and installations shall be in accordance with applicable codes.
4. All pipe to be Type K copper.
5. Test prior to final acceptance.
6. Stainless steel screen shall be 40 mesh for filter.
7. See Irrigation Summary & Project Specifications for sizes, approved manufacturers, model numbers, and colors of all equipment.
8. Two parallel assemblies required for ADOT Enclosure.

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
DETAIL SHEET

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

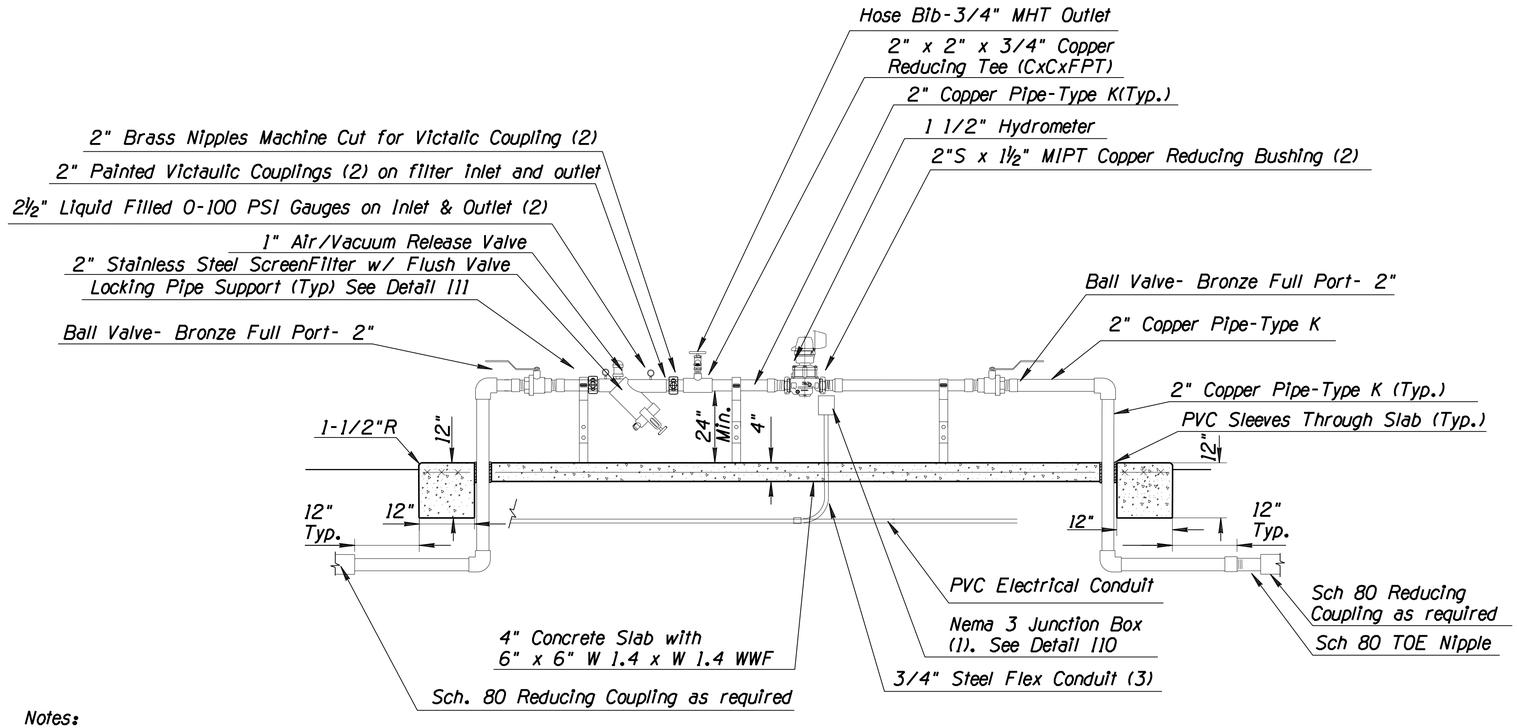
CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2021

DWG NO. I-3.02

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

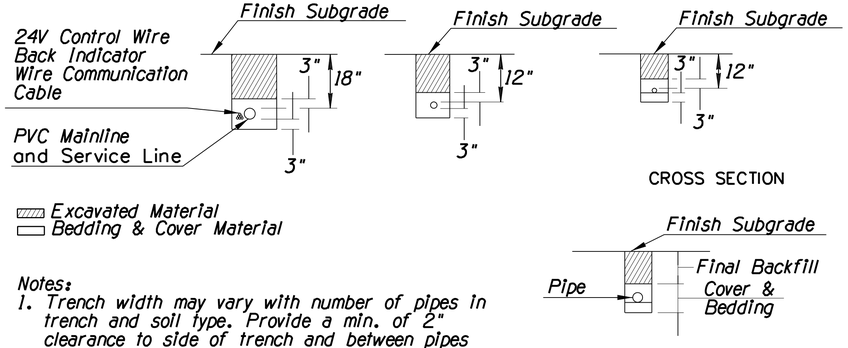
cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	786	849	
		010 PM 252			



Notes:
1. Where possible, all wire shall be routed within conduit.
2. All wiring not in conduit shall be bundled.
3. All electric components and installations shall be in accordance with applicable codes.
4. All pipe to be Type K copper.
5. Test prior to final acceptance.
6. Stainless steel screen shall be 40 mesh for filter.
7. See Irrigation Summary & Project Specifications for sizes, approved manufacturers, model numbers, and colors of all equipment.
8. Two parallel assemblies required for ADOT Enclosure.

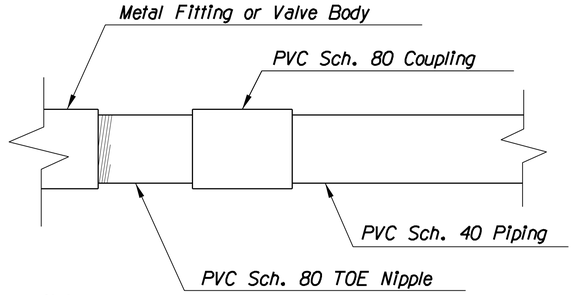
DETAIL 16
HYDROMETER/FILTER ASSEMBLY



CROSS SECTION

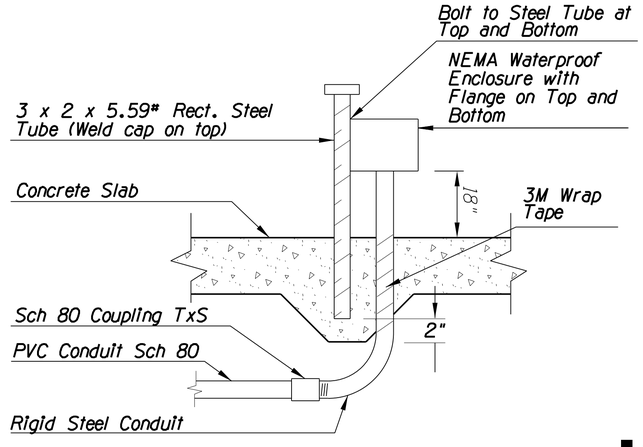
Notes:
1. Trench width may vary with number of pipes in trench and soil type. Provide a min. of 2" clearance to side of trench and between pipes both vertically and horizontally.
2. Where two mainlines are shown in the same trench, place lines at same depth and maintain 3" separation between mainlines.
3. Magenetic tape/locator wire shall be installed in all supply line/mainliine locations where there is no control wire.

DETAIL 17
TRENCHING CROSS SECTION



Note:
This detail applies to all PVC-to-Metal connections throughout the project.

DETAIL 18
PVC TO METAL CONNECTION DETAIL



DETAIL 19
NEMA BOX (ADOT)

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
DETAIL SHEET

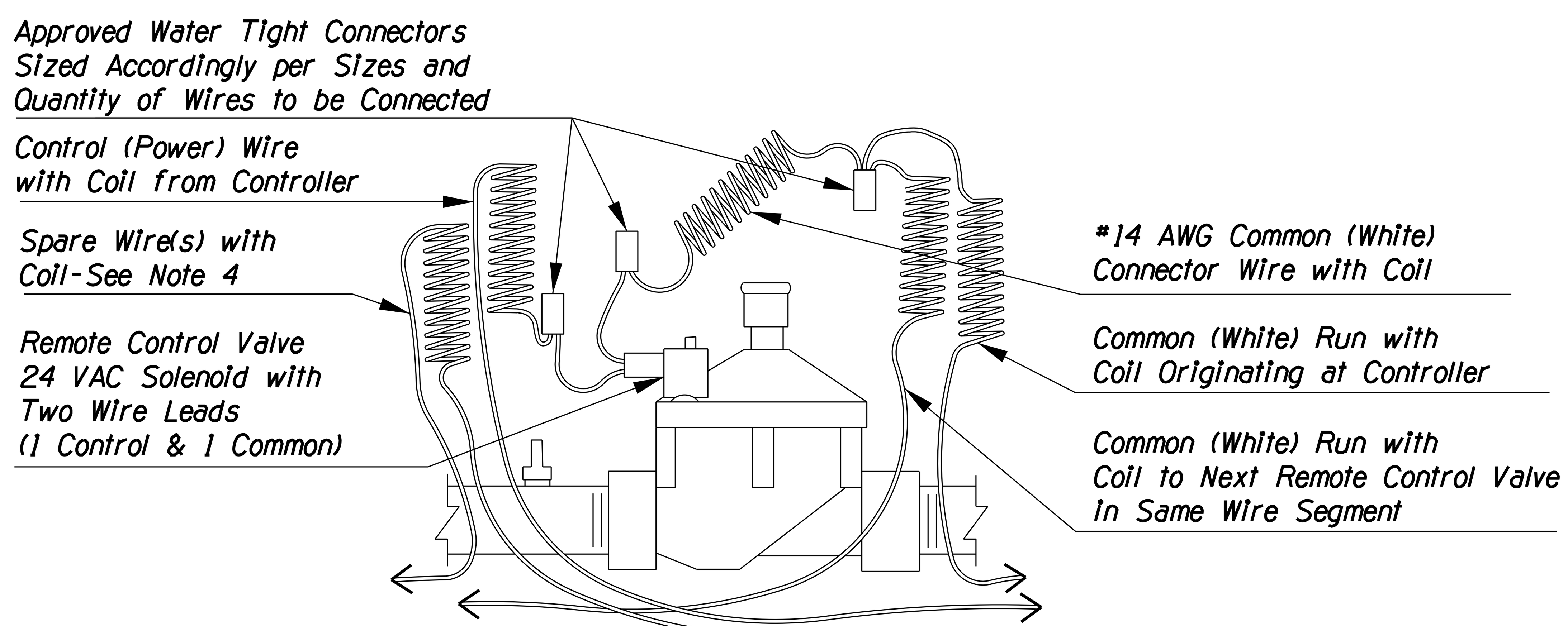
REGISTERED LANDSCAPE ARCHITECT — CERTIFICATE NO. — CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2021

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	I-3.03
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	787	849	

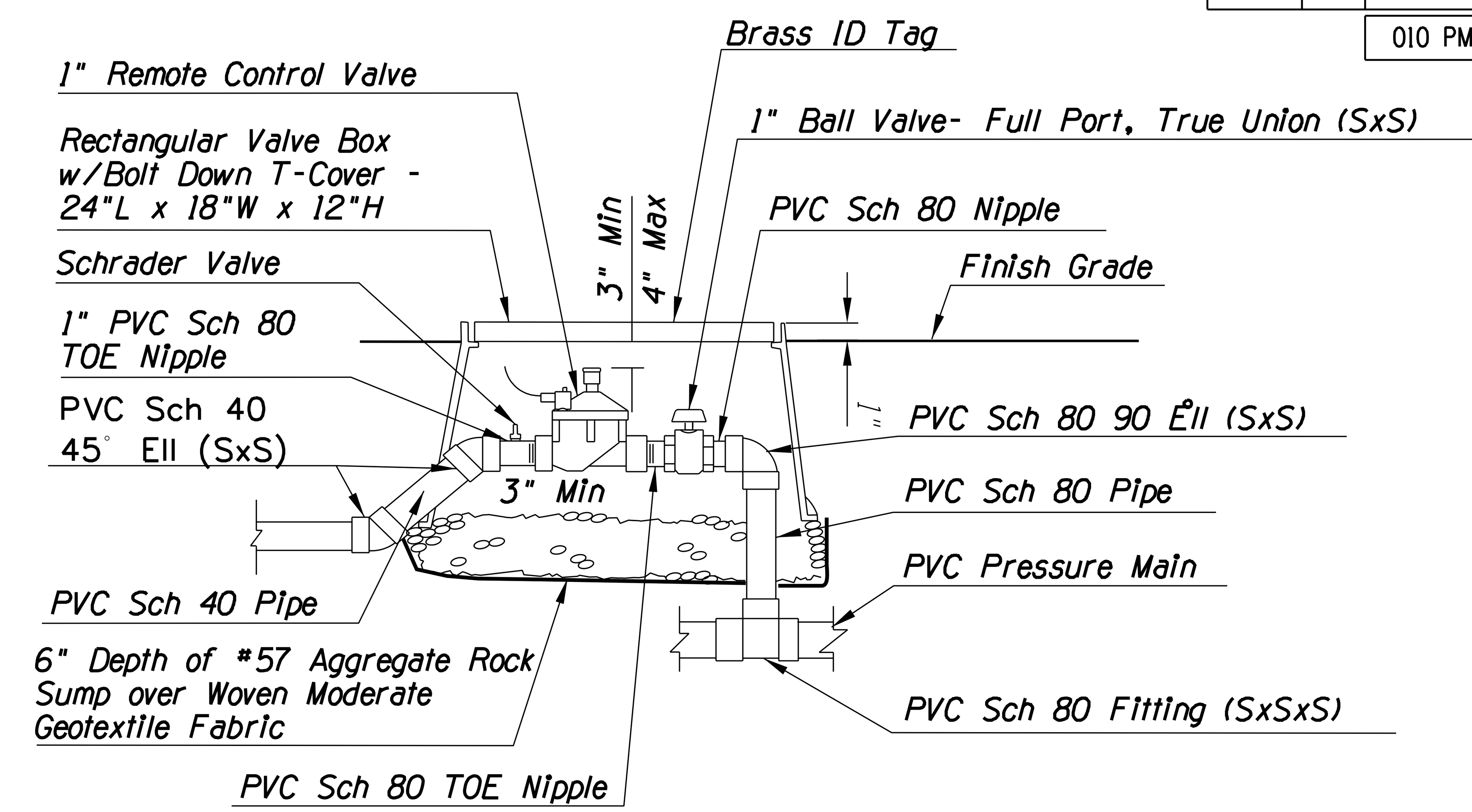
010 PM 252



Notes:
1. All 24 VAC wires shall be UL approved, 600 volt, type UF single conductor wire with 60-mil PVC insulation suitable for direct burial in earth conforming to requirements of Subsection 808-2.01 (F) of the Standard Specifications.
2. Wire sizes and colors not specifically noted in detail shall be per Project Special Provisions or as noted per plans.
3. Wire coils shall be created by wrapping wire a minimum of 10 times around 1" pipe.
4. Provide continuous spare wire loop(s) from controller to each remote control valve box along wire segment until terminating at furthest valve location- Do NOT Cut or Splice spare wires. Spare wire size(s) shall equal largest wire size utilized with wire segment. Color(s) and quantity of spare wire(s) shall be per Project Special Provisions or as noted per plans. Spare wires shall be clearly labeled in controller with wire segment number and terminating control valve station.

DETAIL I10

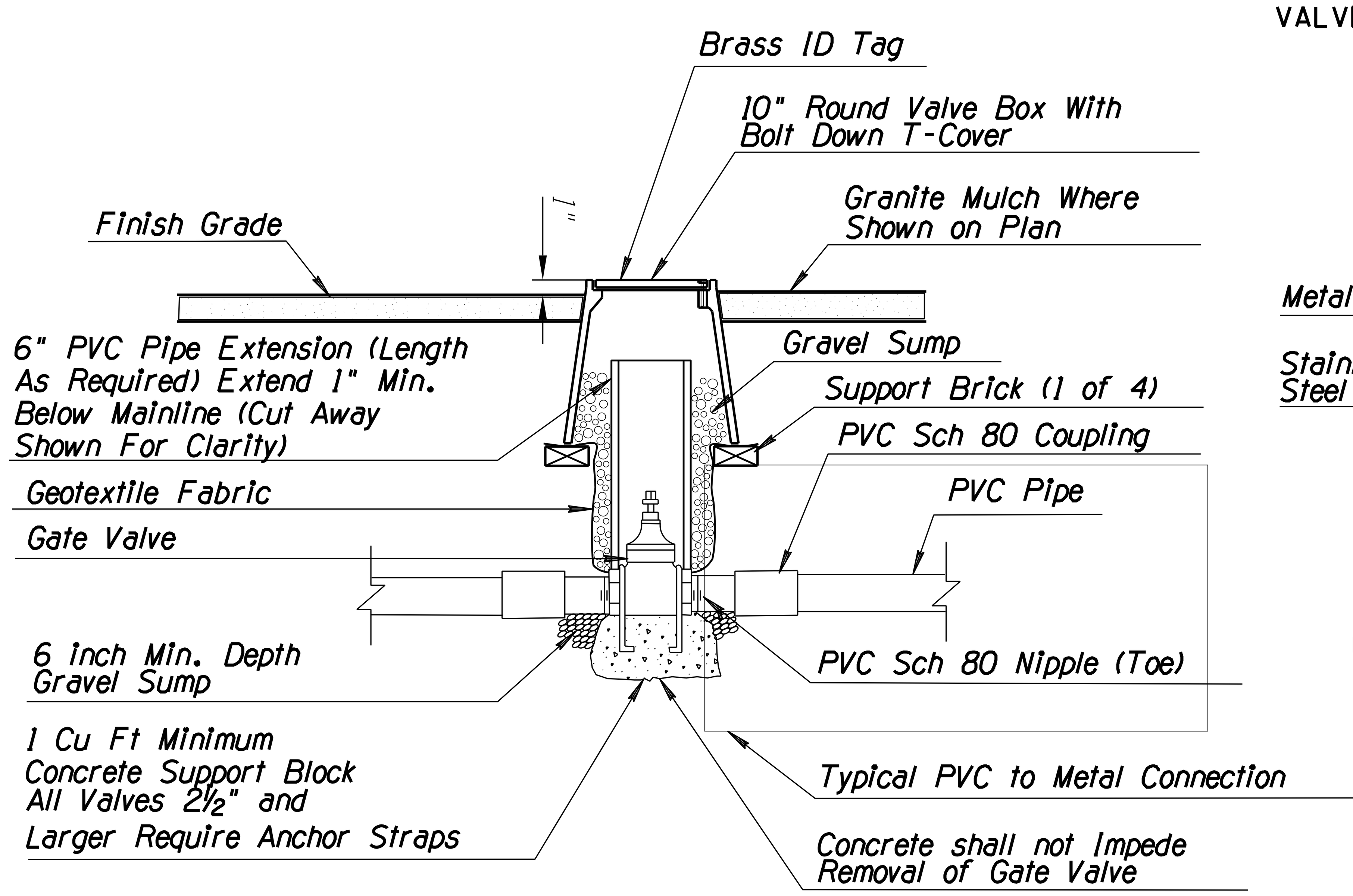
VALVE WIRING (ADOT)



Notes:
1. Provide Expansion Coil for Each Wire in Valve Box. Wrap 10 Times Around 1" Pipe.
2. Provide 2" Round Brass ID Tags for ADOT Valves on top of box.

DETAIL I12

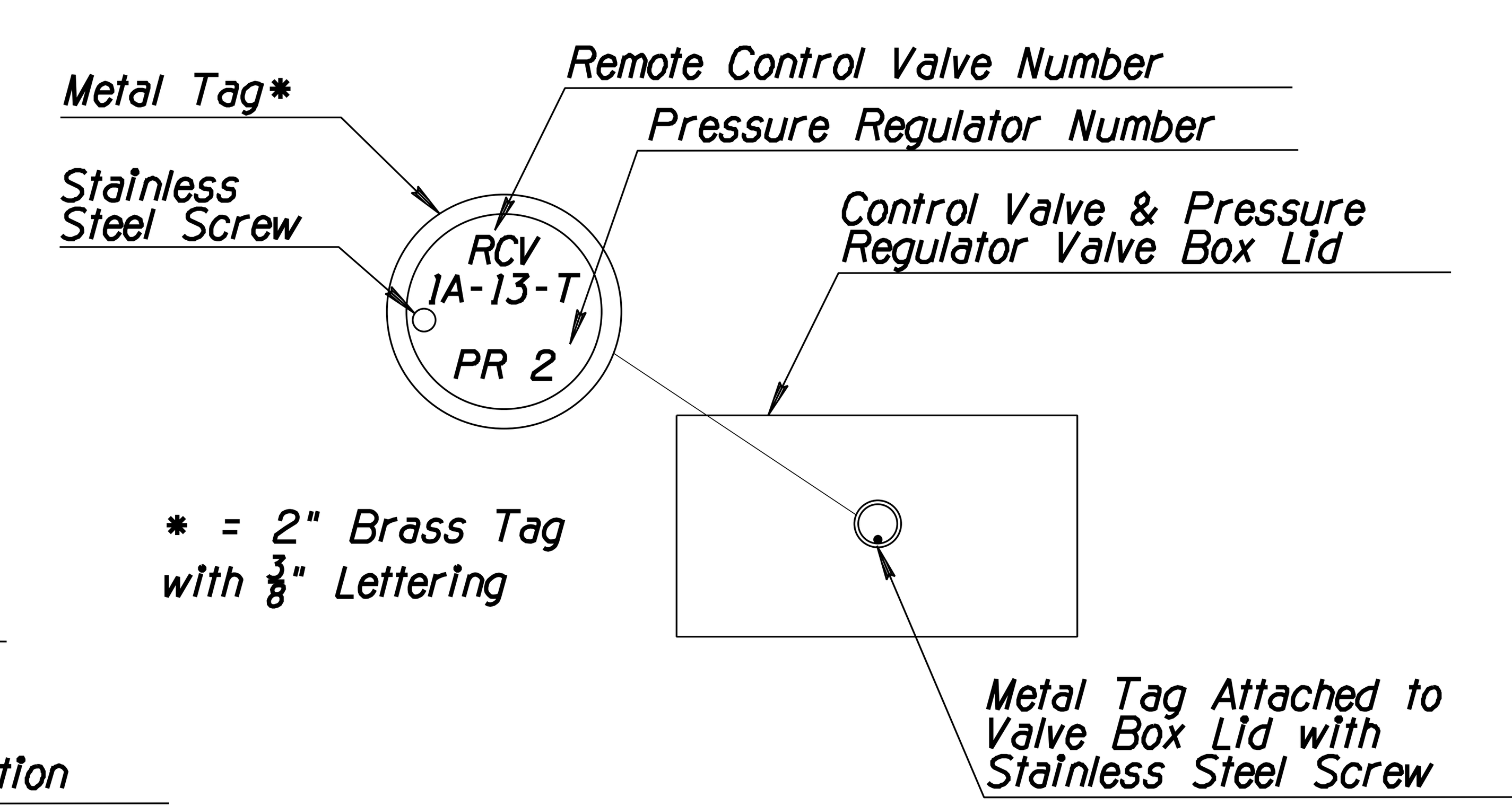
CONTROL VALVE (ADOT)



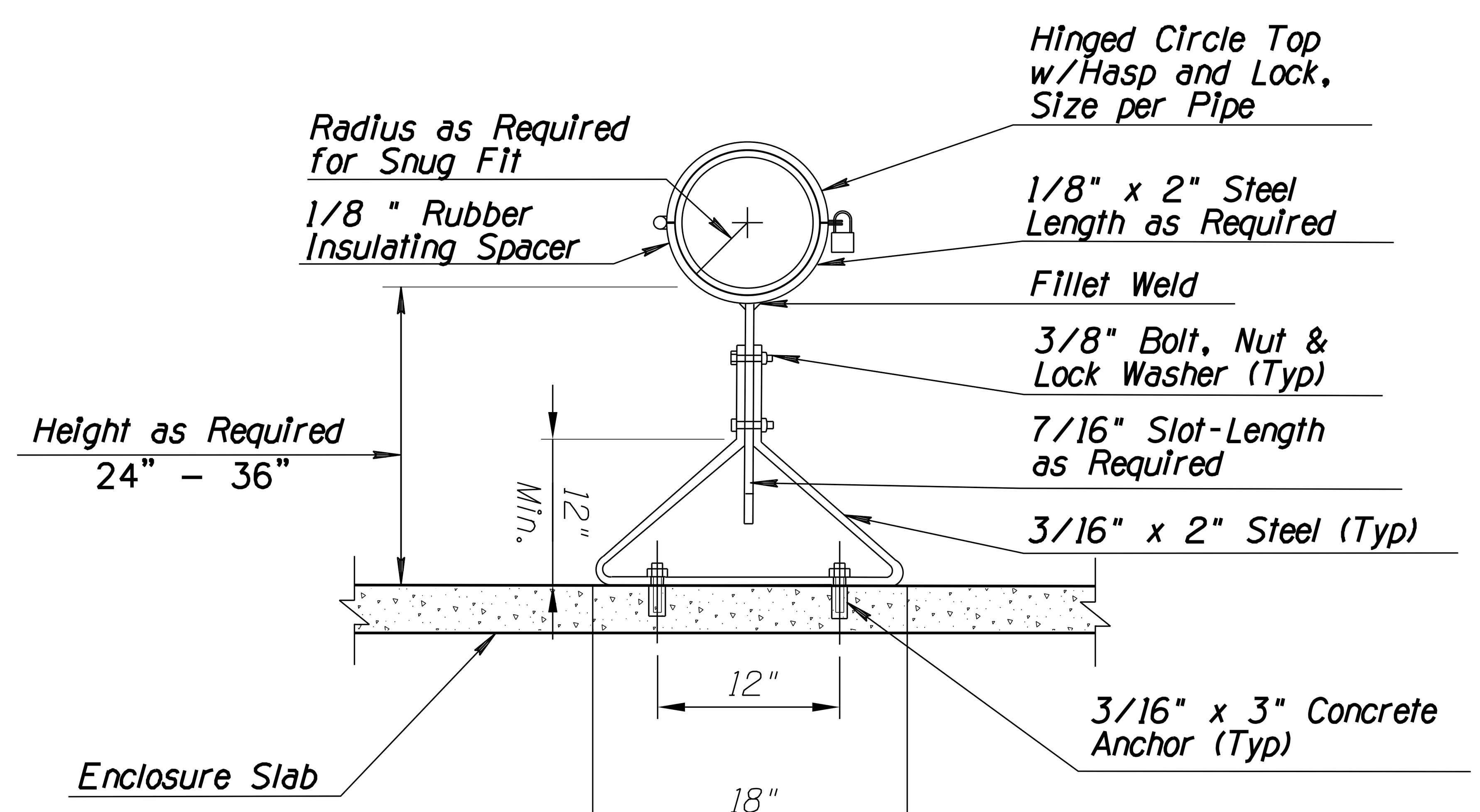
NOTE
1. Concrete Shall Not Impede Removal of the Gate Valve.

DETAIL I11

GATE VALVE - LESS THAN 3" SIZE



REMOTE CONTROL AND PRESSURE REGULATOR VALVE IDENTIFICATION



DETAIL I13

LOCKING PIPE SUPPORT (ADOT)

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
DETAIL SHEET

REGISTERED LANDSCAPE ARCHITECT CERTIFICATE NO. 40925 CARL S. KOMINSKY Date Signed ARIZONA, U.S.A. EXPIRES 6/30/2021

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI | DWG NO. I-3.04

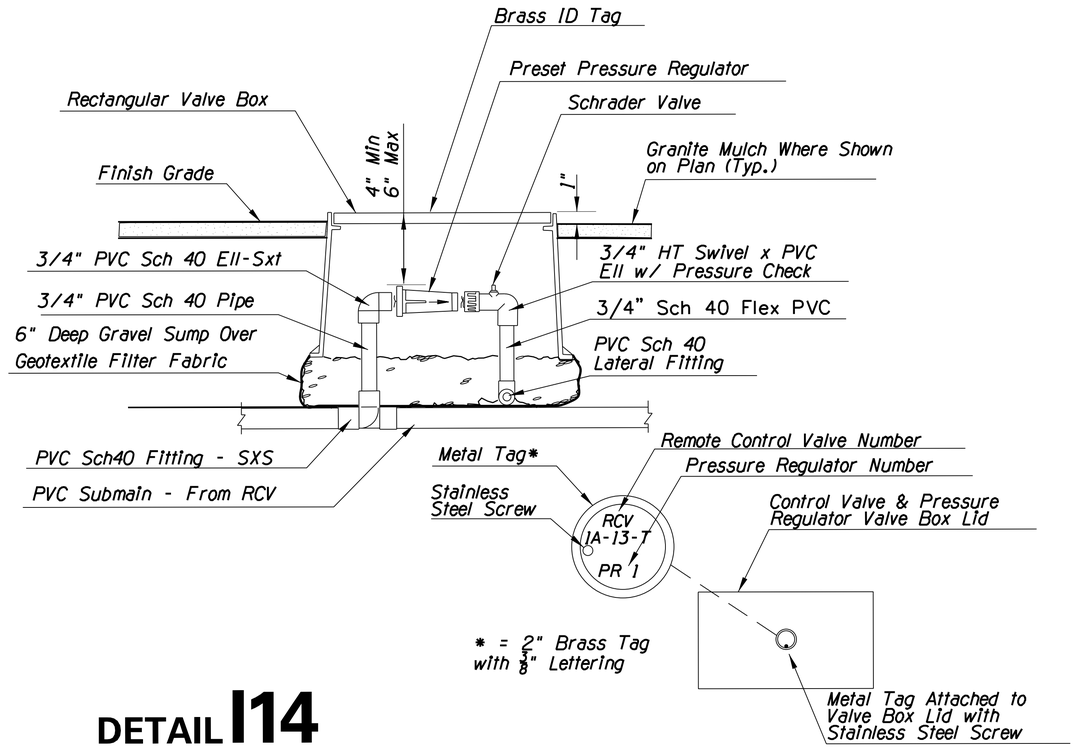
TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	788	849	

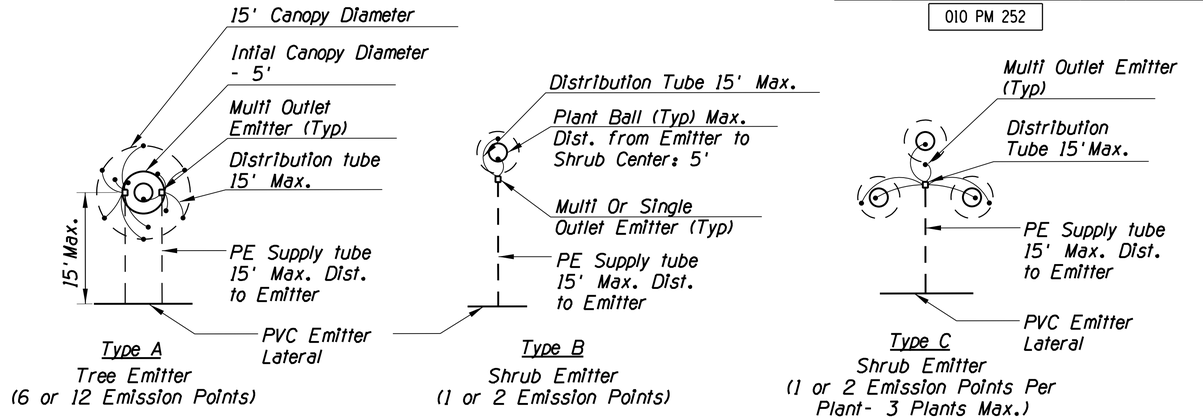
010 PM 252



DETAIL I14

PRESSURE REGULATOR RISER (ADOT)

REMOTE CONTROL AND PRESSURE REGULATOR VALVE IDENTIFICATION

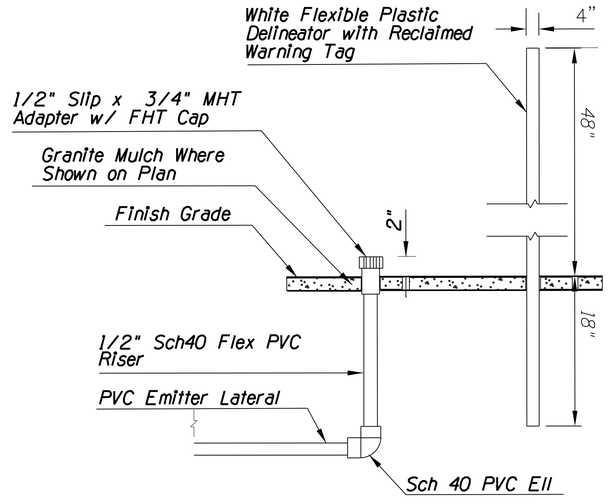


Notes:

1. Where tree center exceeds 15'-0" from PVC emitter lateral, contractor to install a PVC sublateral branch to tree, as required.
2. All emission points shall be located on the uphill side of plant material where slopes occur.
3. Distribution tubing shall not exceed 15'-0" in length, as shown.
4. Elevation differences between emission points (along common laterals) shall not exceed 8'-0".
5. Locate 1 emission point directly over the root ball as shown.
6. Multiple plants (shrubs) can be serviced by one emitter when the distribution tube length does not exceed 15', and when the plant water requirements are the same.
7. See Emitter Schedule on Dwg No I-1.02 for required number of emission points per plant species.

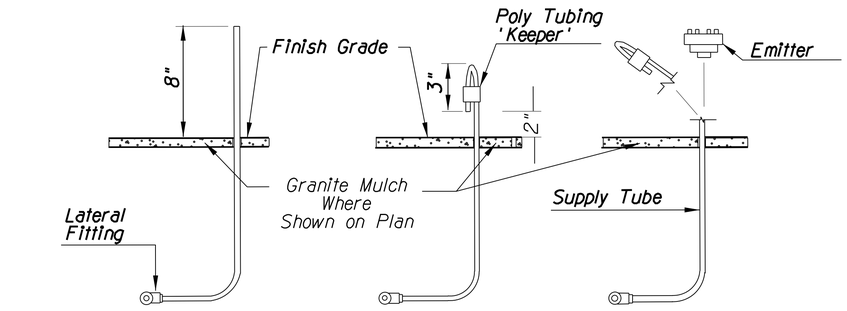
DETAIL I16

EMITTER/EMISSION POINT PLACEMENT



DETAIL I15

LATERAL END CAP (ADOT)



Notes:

1. Crimp in supply tube must be in discarded portion of tube.

DETAIL I17

EMITTER FLUSHING (ADOT)

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

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CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
DETAIL SHEET

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. I-3.05

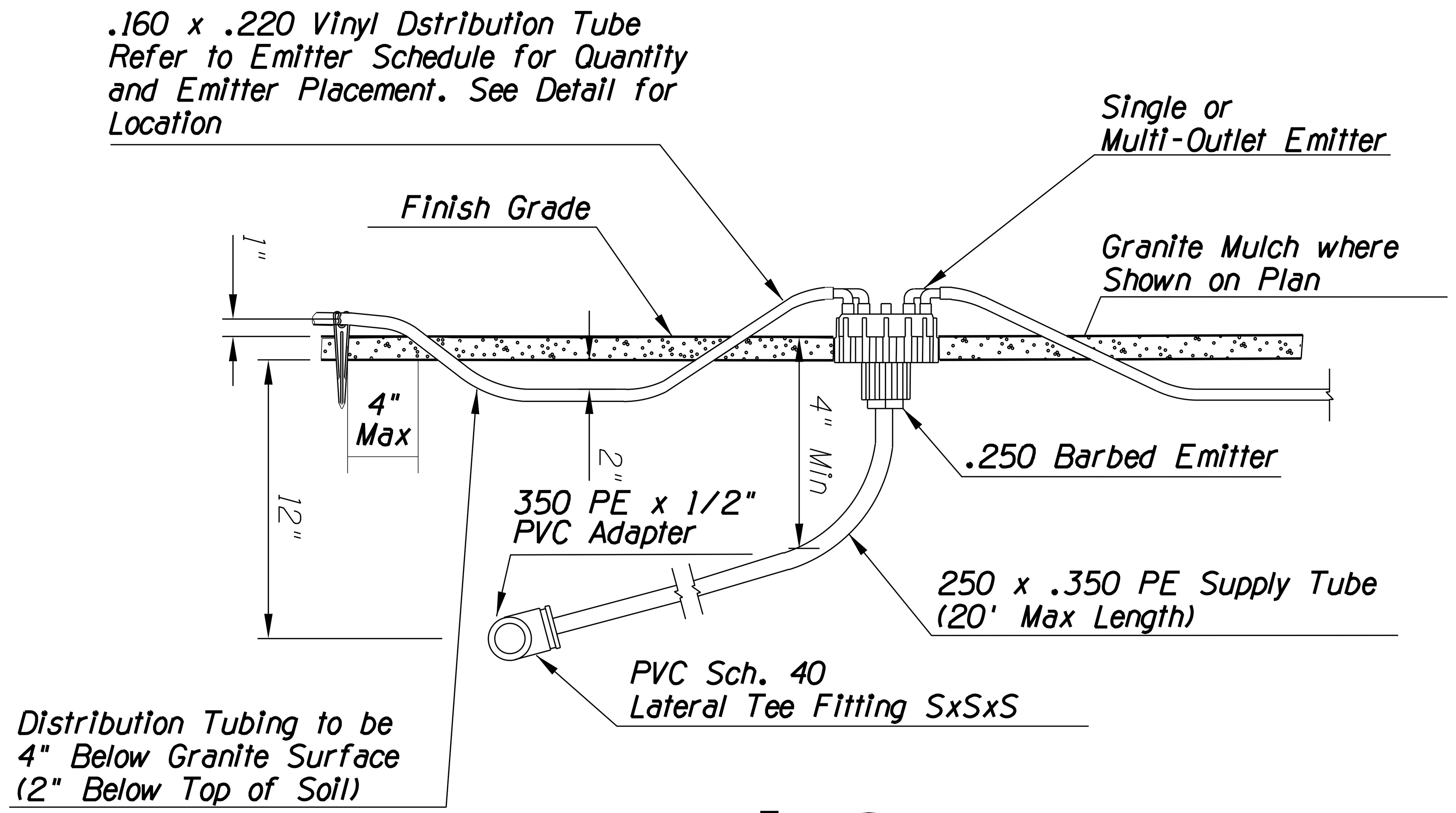
____ OF ____

REGISTERED LANDSCAPE ARCHITECT — CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2021

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

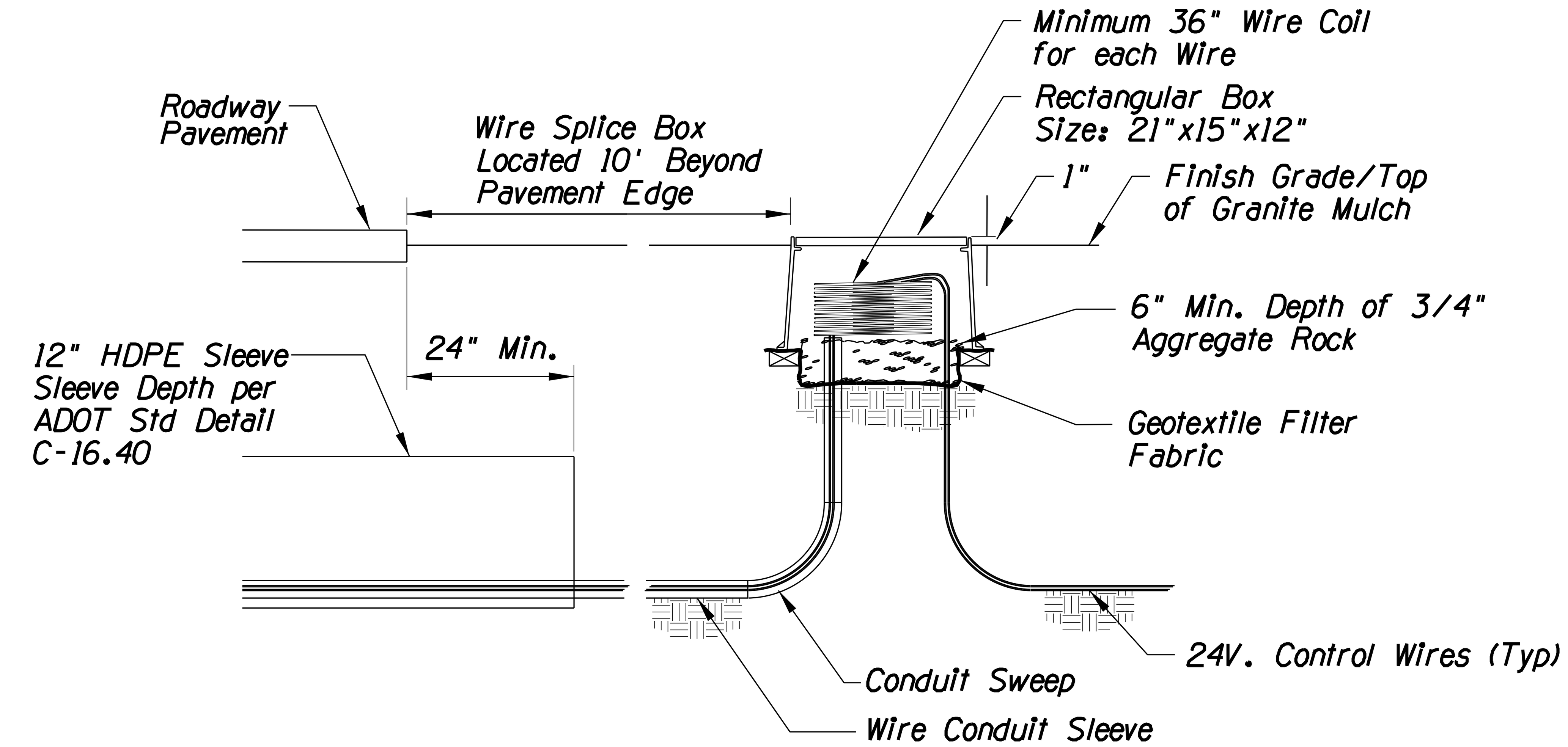
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	789	849	

010 PM 252



DETAIL I18

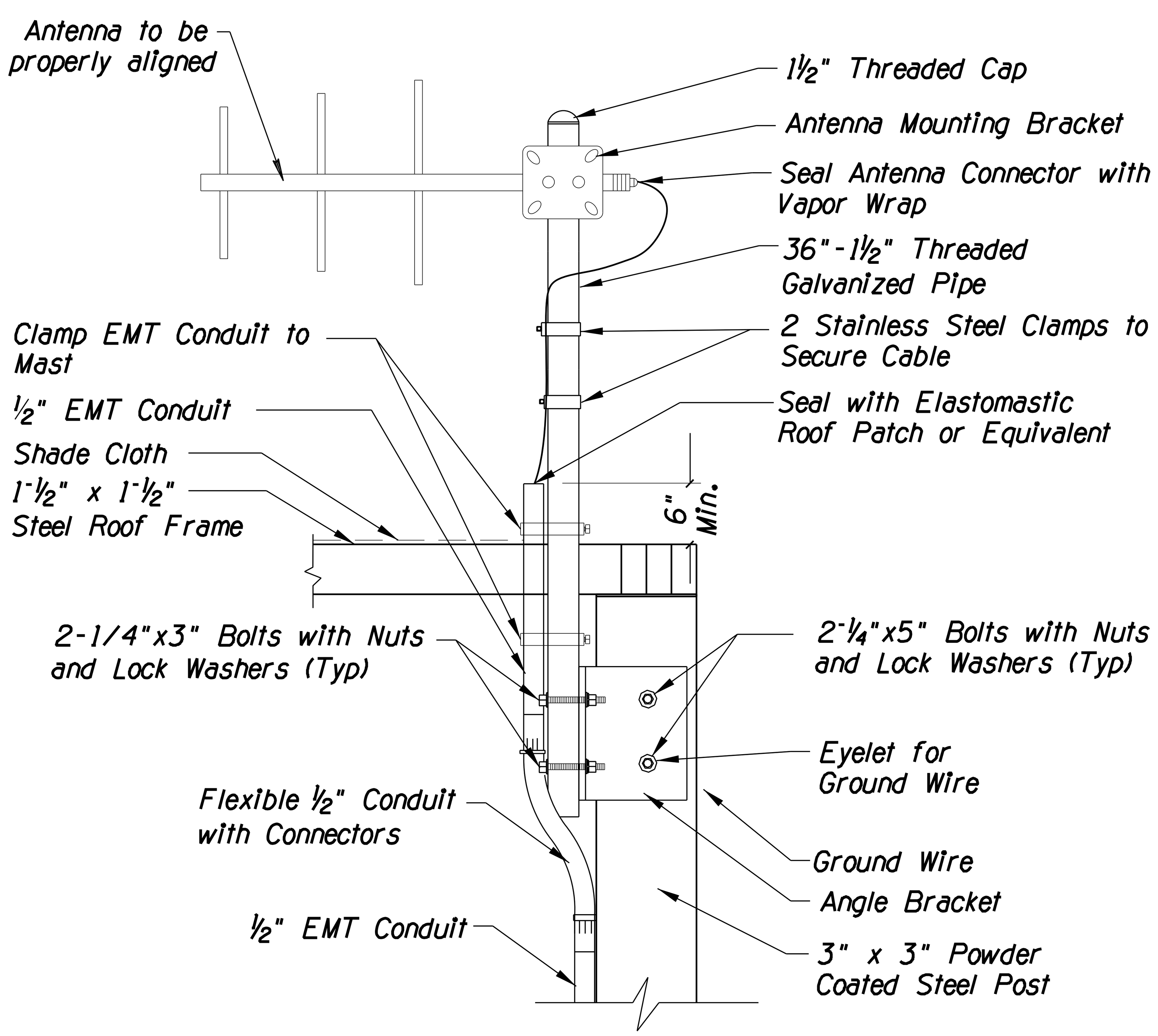
EMITTER SINGLE/MULTI-OUTLET (ADOT)



Notes:
1. Provide Minimum 36" Wire Coil for each Wire in the Splice Box.
2. Emboss Splice Box Covers with Copper Tag. Tag to Indicate 'Irrigation Wire'.
3. Any Necessary Wire Splices to Conform to Wire Splice Requirements for Remote Control Valve.

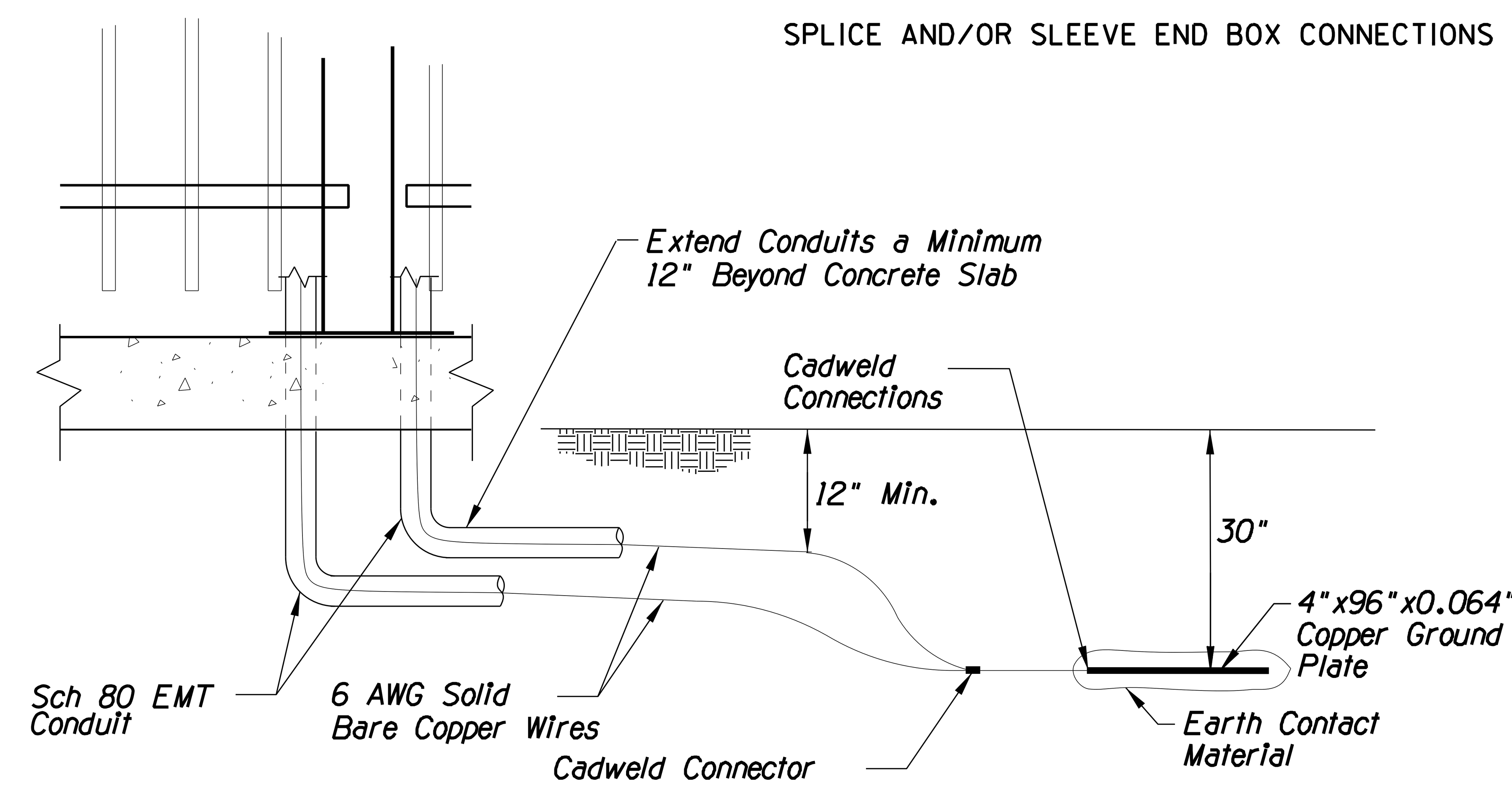
DETAIL I20

SPLICE AND/OR SLEEVE END BOX CONNECTIONS



DETAIL I19

YAGI ANTENNA MOUNTING DETAIL



DETAIL I21

ANTENNA GROUNDING DETAIL

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

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CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
DETAIL SHEET

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO. [illegible]
CARL S. KOMINSKY
ARIZONA, U.S.A.
EXPIRES 6/30/2021

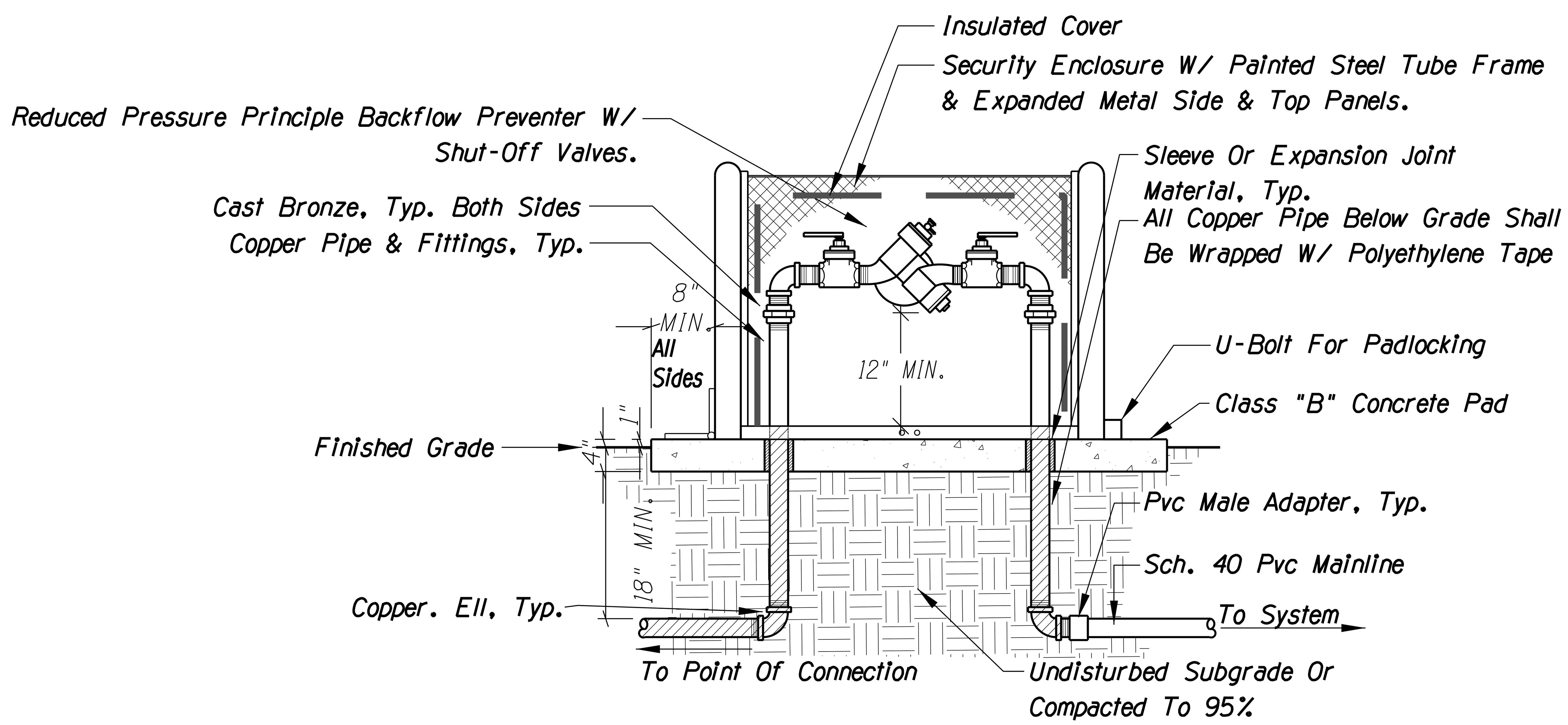
DWG NO. I-3.06

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

ccccсSYSTIMEccccc ccccсDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	790	849	

010 PM 252



1 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER IN SECURITY ENCLOSURE

N.T.S.

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

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WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
DETAIL SHEET

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI | DWG NO. I-3.07

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

REGISTERED LANDSCAPE ARCHITECT, CERTIFICATE NO. [illegible], CARL S. KOMINSKY, ARIZONA, U.S.A., EXPIRES 6/30/2021

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

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

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	791	849	

010 PM 252

1935 1940 1945

5155 5160 5165

Exst R/W

Exst Pipe Sleeve

Tie Into existing Tree Submain

Tie Into existing Shrub Submain

A-1 | S | EX
Exst Valve C-3S

A-2 | T | EX
Exst Valve C-4T

WB Frontage Rd Cst ℄

A-3
1

A-4 | T | EX

A-3 | S | 2.4

STA 5157+04.00 (I-10 Median Cst ℄)=
STA 100+00.00 (I-10 WB Interim)
BEGIN PROJECT

54" SD

24"

2"

A-35 | S | EX
Exst Valve C-27S

EXIST SUNSET RD RAMP D

EXIST EB FRONTAGE RD

Exst Pipe Sleeve

A-37 | S | EX
Exst Valve C-30S

A-36 | T | EX
Exst Valve C-29T

I-10 WB Cst ℄

I-10 Median Cst ℄

Exst R/W

1945

IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5151+00 TO 5165+00

REGISTERED LANDSCAPE ARCHITECT
CARL S KOMINSKY
Date Signed
ARIZONA, U.S.A.
EXPIRES 6/30/2020

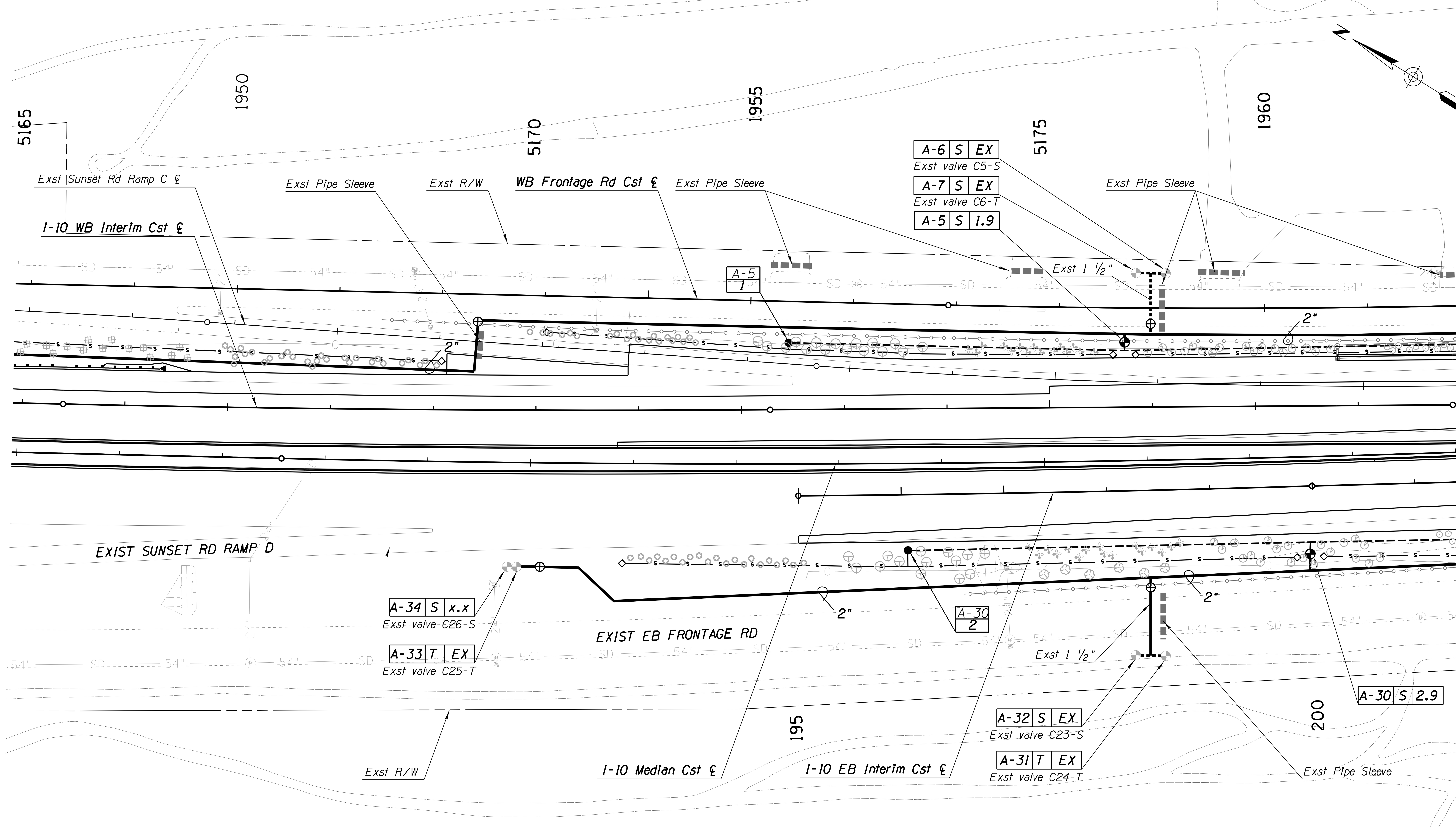
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	I-4.01
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	792	849	

010 PM 252



IRRIGATION CONSULTANT:
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CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5165+00 TO 5179+00

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

REGISTERED LANDSCAPE ARCHITECT — CERTIFICATE NO. — CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2021

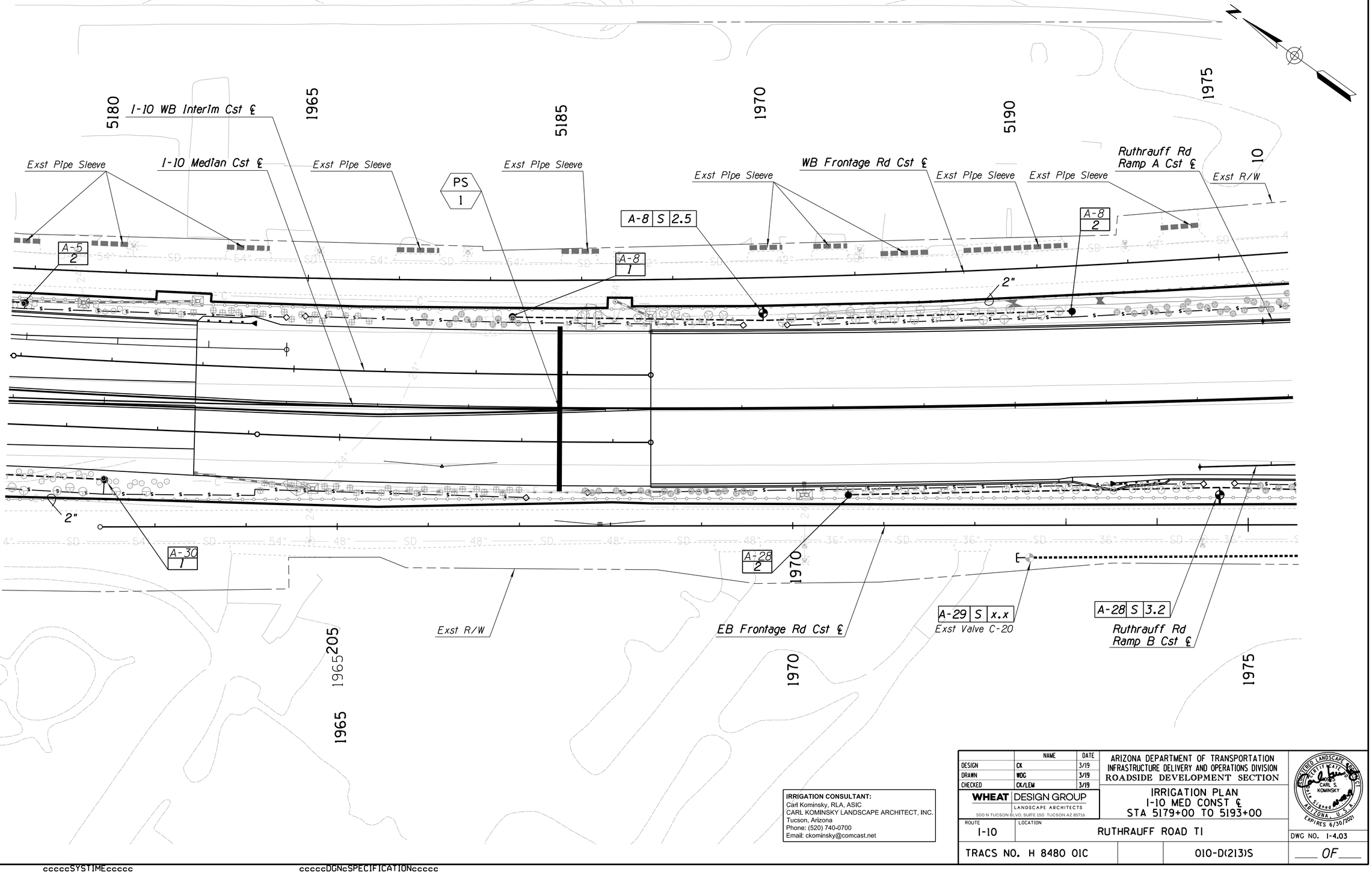
DWG NO. I-4.02

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	793	849	
		010 PM 252			

DATE
LOCATION
REVISIONS
FINISHED PLANS
SURVEY NO.



IRRIGATION CONSULTANT:
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CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5179+00 TO 5193+00

REGISTERED LANDSCAPE ARCHITECT
CARL S. KOMINSKY
Date Signed
ARIZONA, U.S.A.
EXPIRES 6/30/2020

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	I-4.03
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

ccccSYSTIMEccccc ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	794	849	

010 PM 252

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

UNION PACIFIC R.R.

1980 | 1985 | 1986

5195 | 5200 | 5205

WB Frontage Rd Cst ℄ | I-10 Median Cst ℄ | Exst R/W | Ruthrauff Rd. Ramp A Cst ℄

15 | 20

A-9 | S | 4.1

A-36 | T | EX
Exst Valve C-8

A-35 | S | EX
Exst Valve C-9

Exst 1 ½"

PS 2 | PS 7 | PS 8 | PS 9

A-9/1 | A-9/2

42" SD | 36" SD | 24" SD

2"

A-26/3

A-28/1

EB Frontage Rd Cst ℄ | Exst R/W | Ruthrauff Rd Ramp B Cst ℄

PS 3 | PS 4 | PS 5 | PS 6

DIAMOND ST

1979 | 1980 | 1985

Exst Water Meter

Existing Backflow Preventer To Be Replaced

2" M | A-1 | E

ADOT Equipment Enclosure

Existing Electric Source to be Preserved

FOT

A-27 | T | 2.2

A-25/3 | PS 10

1 ½"

IRRIGATION CONSULTANT:
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Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5193+00 TO 5207+00

REGISTERED LANDSCAPE ARCHITECT — CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2021

ROUTE	LOCATION		DWG NO.
I-10	RUTHRAUFF ROAD TI		I-4.04
TRACS NO. H 8480 01C		010-D(213)S	___ OF ___

ccccSYSTIMEccccc

ccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	795	849	

010 PM 252

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

New R/W
SHANNON RD
1990
5210
1995
30
2000
25
Exst R/W
Ruthrauff Rd
Ramp A Cst ℄
WB Frontage Rd Cst ℄
5215
5220
A-10 1
I-10 Median Cst ℄
A-10 S 1.9
A-10 2
A-10 3
A-11 S 0.8
2"
A-27 1
A-26 S 1.4
A-26 2
A-26 1
Exst EB Frontage Rd Cst ℄
A-22 2
A-21 2
A-21 1
A-25 1
1 1/2
Ruthrauff Rd
Ramp B Cst ℄
EB Frontage Rd Cst ℄
New R/W
Exst R/W
A-24 2
A-25 S 2.9
A-24 T 3.0
A-25 2
A-24 1
1990
30
1995
35
EL CAMINO DEL CERRO
A-23 3
A-22 3
A-23 1
2000
A-23 2
Exst R/W
New R/W
A-23 S 2.7
A-22 T 5.6
Ruthrauff Rd
Ramp D Cst ℄
15
Ruthrauff Rd Cst ℄

IRRIGATION CONSULTANT:
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Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5207+00 TO 5221+00

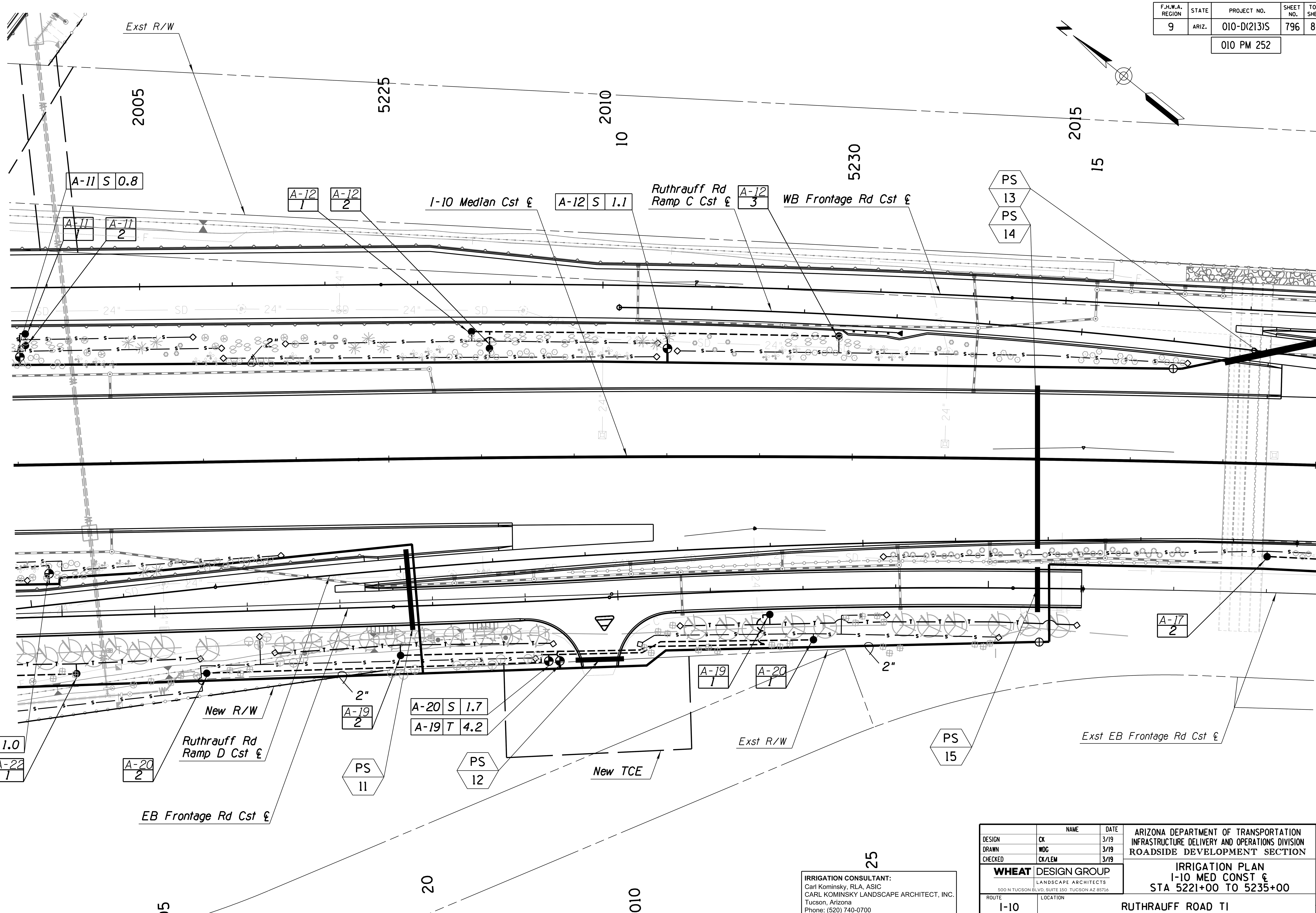
REGISTERED LANDSCAPE ARCHITECT
CARL S. KOMINSKY
ARIZONA, U.S.A.
EXPIRES 6/30/2020

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	I-4.05

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	796	849	

010 PM 252



IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5221+00 TO 5235+00

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO. [illegible]
CARL S. KOMINSKY
ARIZONA, U.S.A.
EXPIRES 6/30/2021

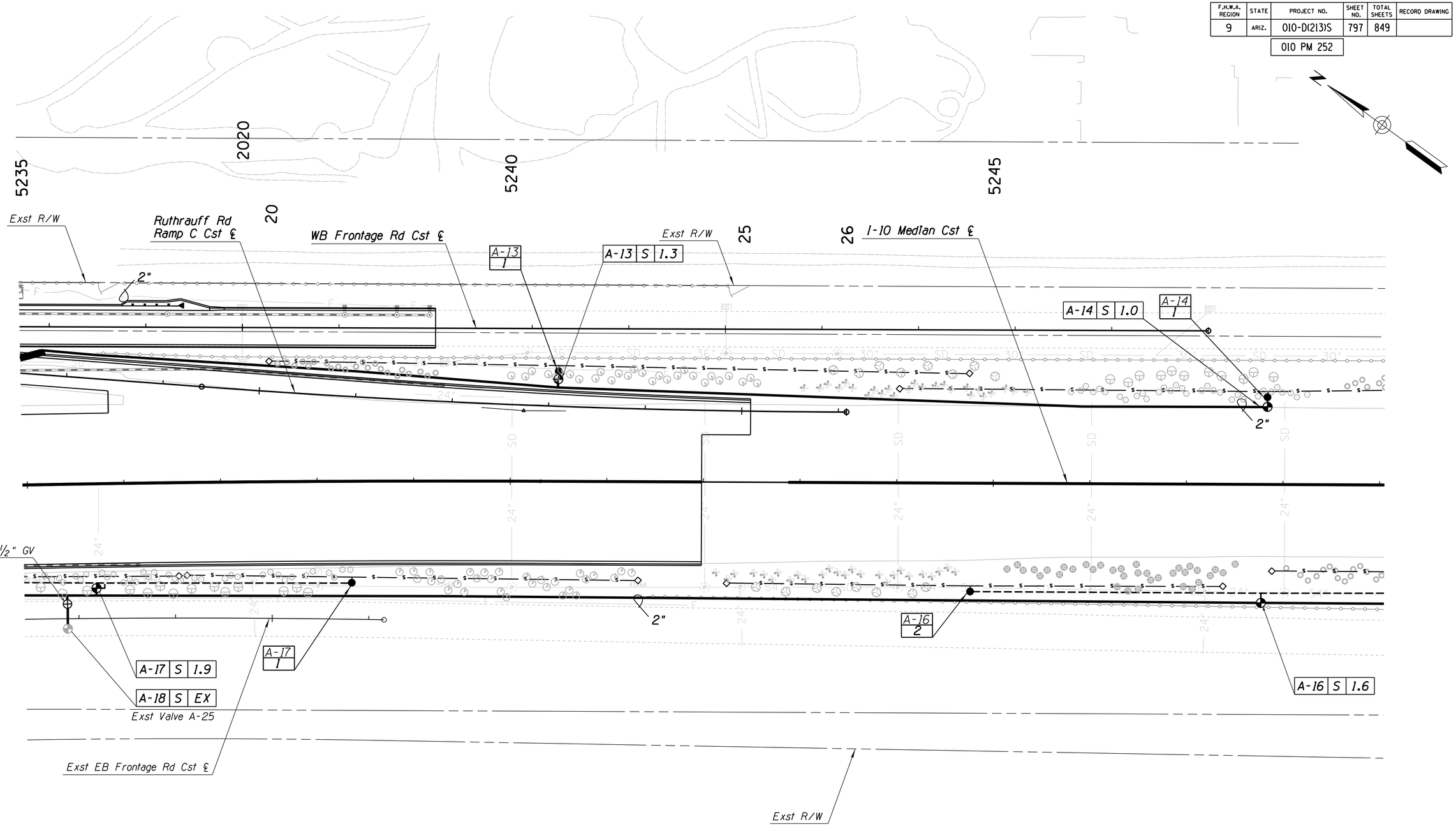
DWG NO. I-4.06

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

cccccSYSTIMEccccc ccccсDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	797	849	

010 PM 252



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Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5235+00 TO 5249+00

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO.
CARL S. KOMINSKY
Date Signed
ARIZONA, U.S.A.
EXPIRES 6/30/2020

DWG NO. I-4.07

___ OF ___

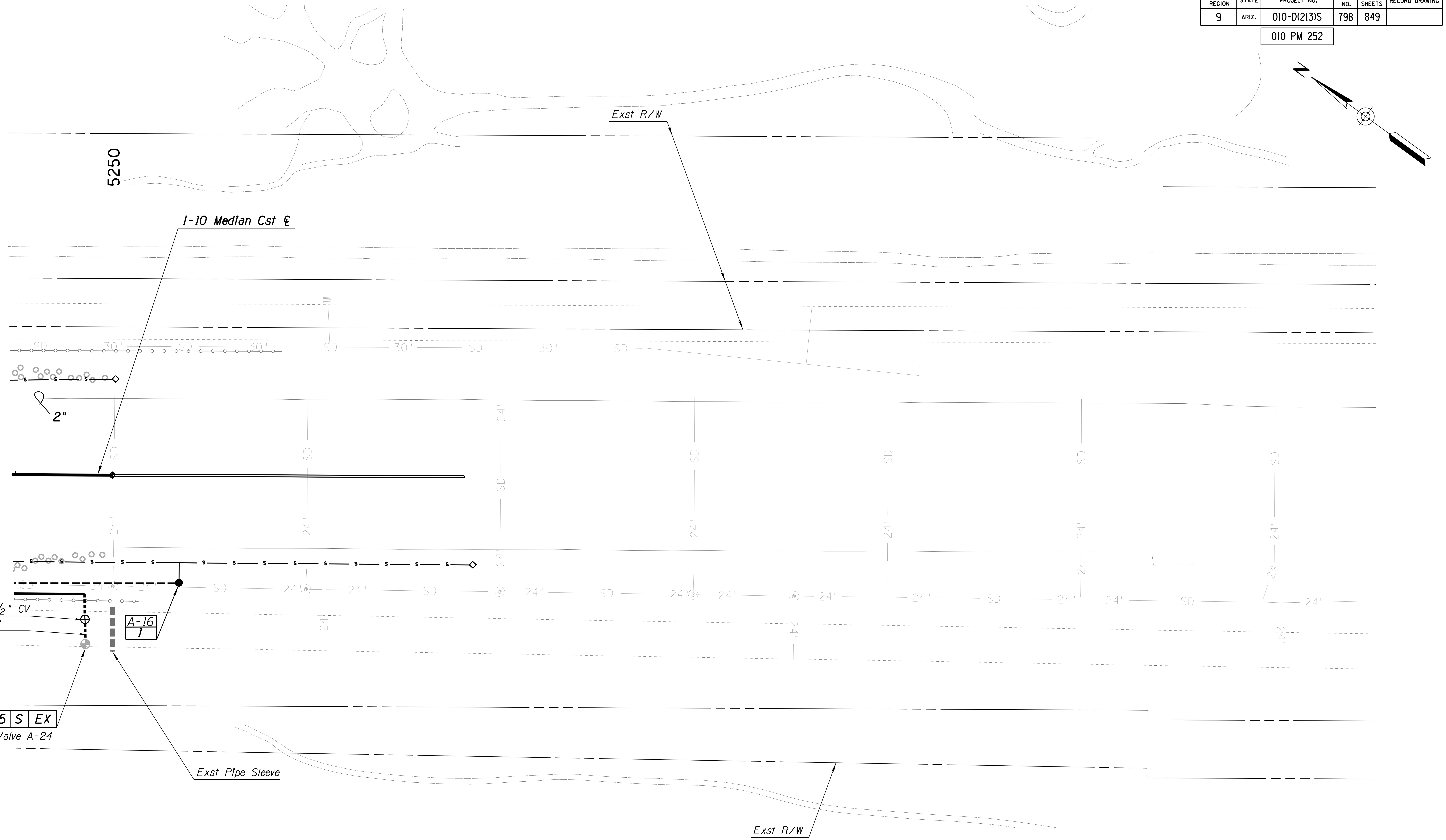
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

cccccSYSTIMEccccc

ccccDGNcSPECIFICATIONcccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	798	849	

010 PM 252



IRRIGATION CONSULTANT:
Carl Kominsky, RLA, ASIC
CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
I-10 MED CONST ℄
STA 5249+00 TO 5263+00

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO. 40925
CARL S. KOMINSKY
Date Signed
ARIZONA, U.S.A.
EXPIRES 6/30/2021

ROUTE I-10
LOCATION RUTHRAUFF ROAD TI
DWG NO. I-4.08

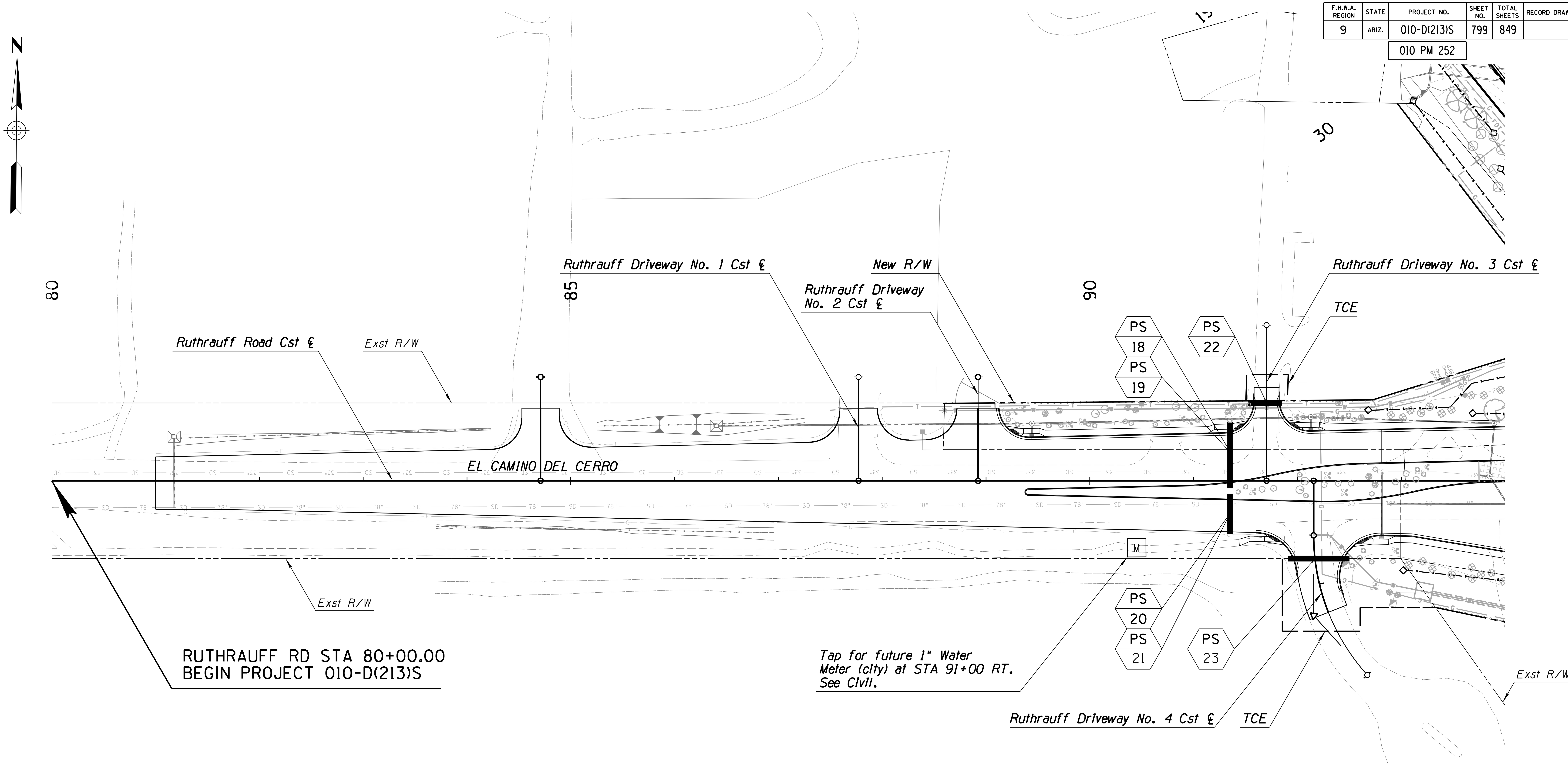
TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

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

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	799	849	

010 PM 252



NOTE: Plants within City of Tucson and Pima County R/W are not irrigated.

NOTE: The local street names are El Camino Del Cerro west of I-10 and Ruthrauff Road east of I-10. The construction ℄ has been designated as Ruthrauff Road Cst ℄ for entire length.

IRRIGATION CONSULTANT:
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Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
RUTHRAUFF ROAD
STA 81+00 TO 94+00

REGISTERED LANDSCAPE ARCHITECT
CERTIFICATE NO. 40925
CARL S. KOMINSKY
Date Signed
ARIZONA, U.S.A.
EXPIRES 6/30/2021

ROUTE I-10

LOCATION RUTHRAUFF ROAD TI

DWG NO. I-4.09

TRACS NO. H 8480 01C

010-D(213)S

___ OF ___

ccccсSYSTIMEccccc ccccсDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	800	849	

010 PM 252

IRRIGATION CONSULTANT:
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Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEW	3/19

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
RUTHRAUFF ROAD
STA 94+00 TO 108+00

ROUTE: I-10 | LOCATION: RUTHRAUFF ROAD TI

REGISTERED LANDSCAPE ARCHITECT — CERTIFICATE NO. — CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2021

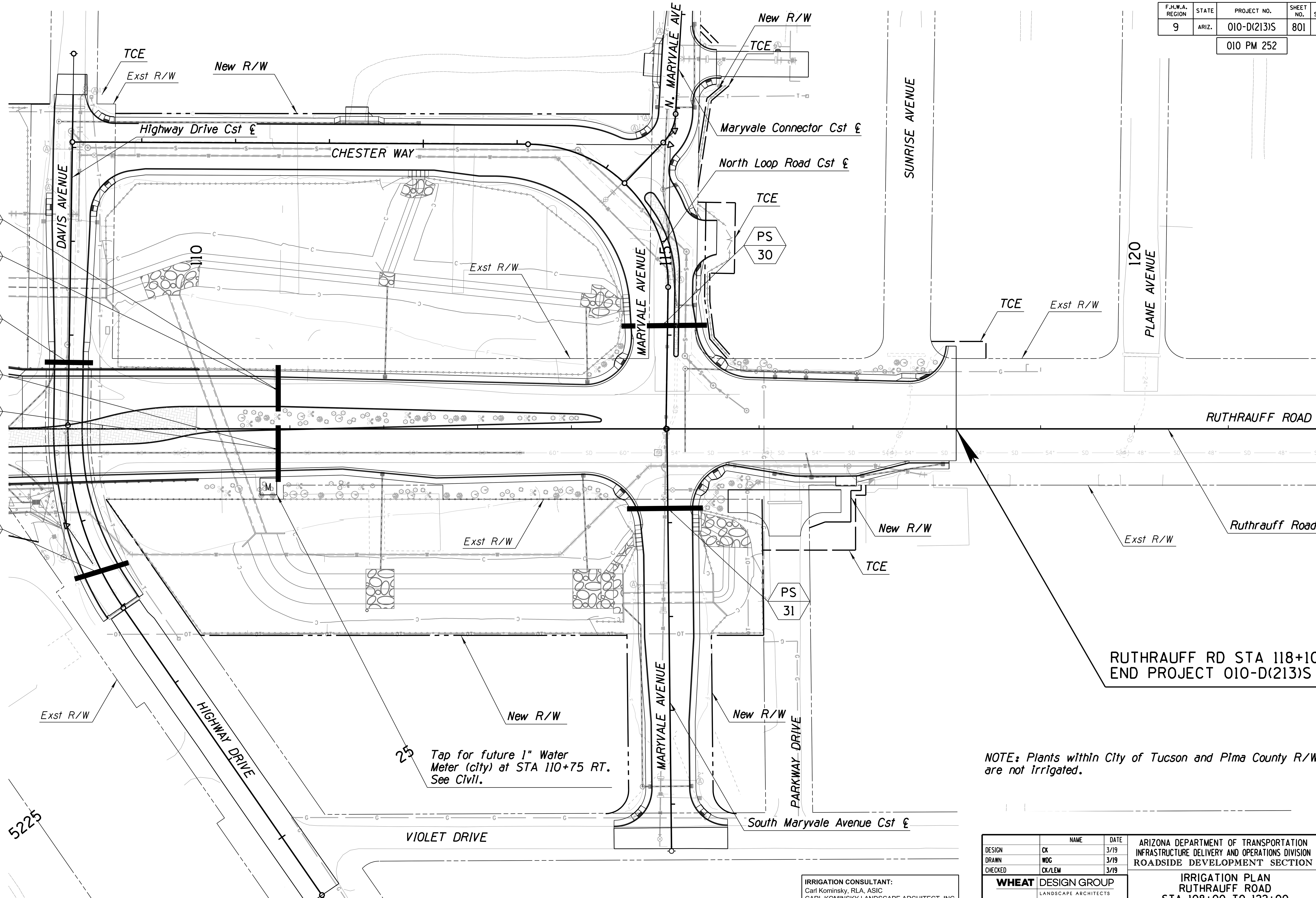
DWG NO. I-4.10

TRACS NO. H 8480 01C | 010-D(213)S | OF

cccccSYSTIMEccccc cccccDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	801	849	

010 PM 252



NOTE: Plants within City of Tucson and Pima County R/W are not irrigated.

IRRIGATION CONSULTANT:
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CARL KOMINSKY LANDSCAPE ARCHITECT, INC.
Tucson, Arizona
Phone: (520) 740-0700
Email: ckominsky@comcast.net

	NAME	DATE
DESIGN	CK	3/19
DRAWN	WDG	3/19
CHECKED	CK/LEM	3/19

WHEAT DESIGN GROUP — LANDSCAPE ARCHITECTS — 500 N TUCSON BLVD, SUITE 150 TUCSON AZ 85716

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADSIDE DEVELOPMENT SECTION

IRRIGATION PLAN
RUTHRAUFF ROAD
STA 108+00 TO 122+00

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

Seal: REGISTERED LANDSCAPE ARCHITECT — CARL S. KOMINSKY — ARIZONA, U.S.A. — EXPIRES 6/30/2021

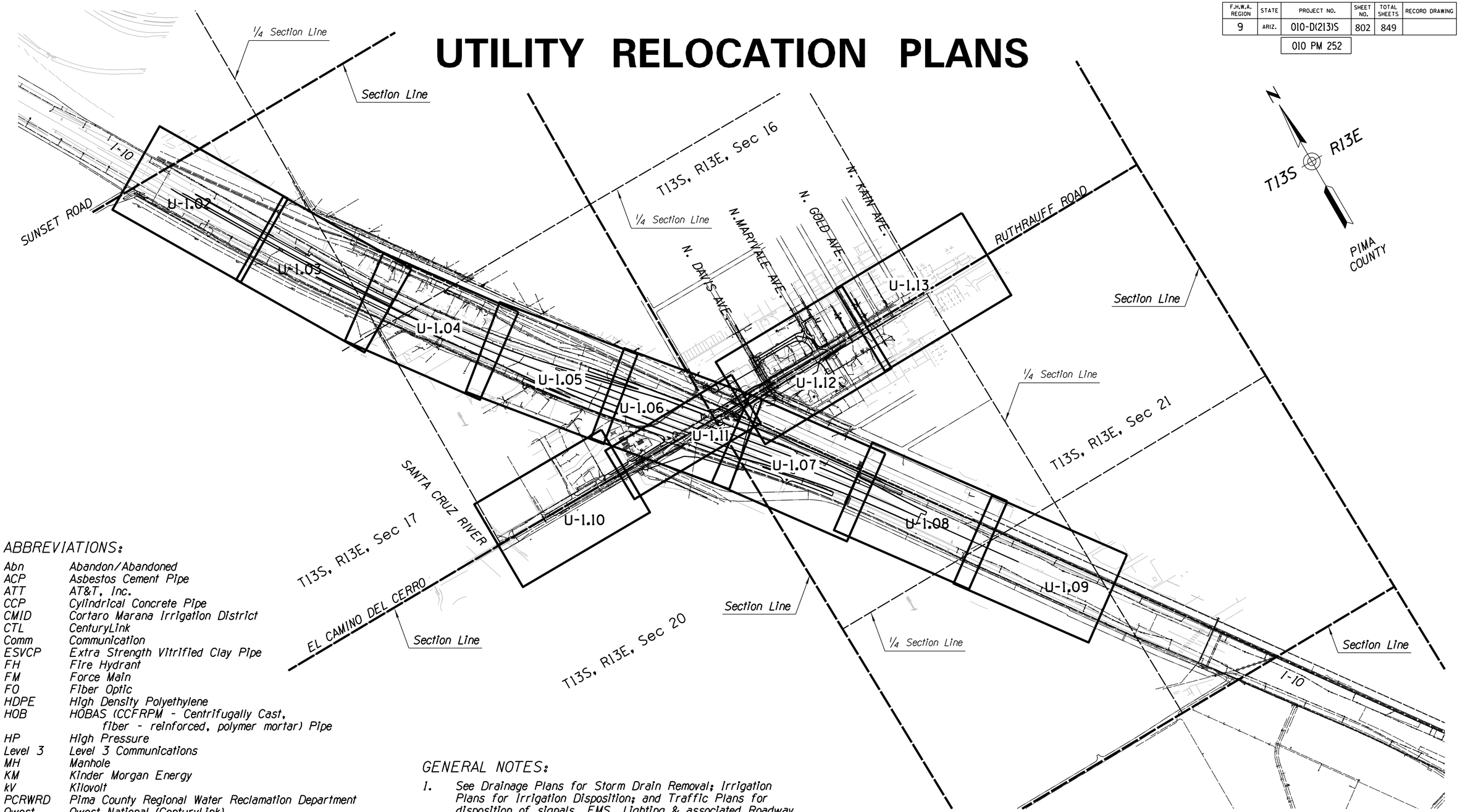
DWG NO. I-4.11

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

ccccсSYSTIMEccccc ccccсDGNcSPECIFICATIONccccc

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	802	849	
		010 PM 252			

UTILITY RELOCATION PLANS



ABBREVIATIONS:

Abn	Abandon/Abandoned
ACP	Asbestos Cement Pipe
ATT	AT&T, Inc.
CCP	Cylindrical Concrete Pipe
CMID	Cortaro Marana Irrigation District
CTL	CenturyLink
Comm	Communication
ESVCP	Extra Strength Vitrified Clay Pipe
FH	Fire Hydrant
FM	Force Main
FO	Fiber Optic
HDPE	High Density Polyethylene
HOB	HOBAS (CCFRPM - Centrifugally Cast, fiber - reinforced, polymer mortar) Pipe
HP	High Pressure
Level 3	Level 3 Communications
MH	Manhole
KM	Kinder Morgan Energy
kV	Kilovolt
PCRWRD	Pima County Regional Water Reclamation Department
Qwest	Qwest National (CenturyLink)
SCADA	
Stl	Steel
SWG	Southwest Gas
Tel	Telephone
TEP	Tucson Electric Power
TLOC	T-LOC Lined Pipe
TW	Tucson Water
UPRR	Union Pacific Railroad
WT	WilTel Communications
WV	Water Valve

GENERAL NOTES:

1. See Drainage Plans for Storm Drain Removal; Irrigation Plans for Irrigation Disposition; and Traffic Plans for disposition of signals, FMS, Lighting & associated Roadway Electrical Systems.
2. All existing utilities are shown to Quality Level "B" and existing drainage facilities are shown to Quality Level "C", unless noted otherwise.
3. Sheets U02-U09 Station & Offsets are referenced from I-10 Cst ℄ and Sheets U10-U13 Station & Offsets are referenced from El Camino Del Cerro/Ruthrauff Rd ℄, unless otherwise noted.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
KEY MAP & ABBREVIATIONS

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-1.01
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

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UTILITY DISPOSITION LEGEND

- (A) *To Remain in Service*
- (B) *Remove*
- (C) *Adjust to Grade*
- (D) *Remove by Others*
- (E) *Relocate by Others*
- (F) *Abandon in Place*

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	803	849	

010 PM 252

W. SUNSET RD

UPRR

1940 1945 5155 5160 5165

Exst R/W

(A) Exst Gas (KM)
6" STL
12" STL
8" STL

Access Control

Exst FMS (ADOT)
See FMS Plans

WB FRONTAGE RD

WB Frontage Rd Cst ℄

I-10 Cst ℄

I-10 WB

Exst 24" Abn
Sewer (PCRWRD)
To Remain

I-10 EB

Exst Telephone (CTL) (A)

SIGNAL LOST

EB FRONTAGE RD

EB Frontage Rd Cst ℄

1935 1940 1945

(A) Exst 72" Sewer (PCRWRD)

(A) Exst 8" FM
Sewer (PCRWRD)
Exst FO
(PCRWRD SCADA)

(A) Exst Utility Corridor
(CTL/TEP/SWG)

(A) Exst 6" Irrigation

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5150+50 TO 5165+50

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

37622
FRANK EMMETT
FRY IV
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

DWG NO. U-1.02

___ OF ___

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	804	849	

010 PM 252

Union Pacific Railroad

Exst Gas (KM)
6" STL
12" STL
8" STL

Access Control

Exst FMS (ADOT)
See FMS Plans

Exst R/W

Exst Overhead Power (TEP)

Exst Power (TEP)

WB Frontage Rd Cℓ

WB FRONTAGE RD

Exst Power (ADOT)
See Lighting Plans

I-10 Cst Cℓ

I-10 WB

I-10 EB

Exst 24" Adn Sewer (PCRWRD)
To Remain

EB FRONTAGE RD

Access Control

EB Frontage Rd Cℓ

Exst R/W

Exst 8" FM Sewer (PCRWRD)
Exst FO (PCRWRD SCADA)

Exst 6" Irrigation

Exst Power (TEP)

Exst Telephone (CTL)

Exst 4" Gas (SWG)

Exst 72" Sewer (PCRWRD)

1950 1955 1960 5170 5175 5180

UTILITY DISPOSITION LEGEND

- A — To Remain in Service
- B — Remove
- C — Adjust to Grade
- D — Remove by Others
- E — Relocate by Others
- F — Abandon in Place

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5165+50 TO 5180+00

37622
FRANK EMMETT
FRY IV
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. U-1.03

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	805	849	

010 PM 252

5180 5185 5190

1965 1970 1975

STORAGE AREA

ASPHALT PARKING LOT

DIRT PARKING LOT

CONCRETE BLOCKS

Exst FMS (ADOT)
See FMS Plans

Access Control

Exst R/W

WB Frontage Rd Cst ℄

WB FRONTAGE RD

I-10 WB

I-10 EB

I-10 Cst ℄

EB Frontage Rd Cst ℄

EB FRONTAGE RD

Exst Power (ADOT)
See Lighting Plans

Exst 4" Gas (SWG)

Exst 2" Gas (SWG)

Exst 2"
Gas (SWG)

Exst 8" Sewer (PCRWRD)

Exst 24" Abn
Sewer (PCRWRD)
To Remain

Exst FO
(CTL)

Exst 72"
Sewer (PCRWRD)

Exst 8" FM /
Sewer (PCRWRD)

Exst Power (TEP)
Inside Joint Utility Duct Bank

Exst Telephone (CTL)

Exst Joint Utility Duct Bank

I-10 Ramp B Cst ℄

VALVE NOT FD

UTILITY DISPOSITION LEGEND

- A — To Remain In Service
- B — Remove
- C — Adjust to Grade
- D — Remove by Others
- E — Relocate by Others
- F — Abandon in Place

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
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Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5180+00 TO 5193+00

37622
FRANK EMMETT
FRY IV
Registered Professional Engineer (Civil)
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

DWG NO. U-1.04

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

Wed 20 Mar 2019, 16:05:15 \\prdpwics01\ics_workingdir\5765\43865_78\h8480u04.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S			
		010 PM 252			

UTILITY DISPOSITION LEGEND

- (A) To Remain in Service
- (B) Remove
- (C) Adjust to Grade
- (D) Remove by Others
- (E) Relocate by Others
- (F) Abandon in Place

UPRR

(A) Exst Overhead Telephone (CTL)

(A) Exst 12" Water (TW)

(A) Exst 8" Sewer (PCRWRD)

(A) Exst Overhead Power (TEP)

(A) Exst Gas (KM)
6" STL
8" STL
12" STL

1980 | 5195 | 5200 | 1985 | 5205

WB Frontage Rd Cst ℄

Exst FMS (ADOT)
See FMS Plans

Exst R/W

Access Control

I-10 Ramp A Cst ℄

Access Control

WB FRONTAGE RD

I-10 WB

Exst 24" Abn Sewer (PCRWRD)
Sta 5193+00, 135' Rt to 5197+00, 135' Rt
To Remain

Exst Power (ADOT)
See Lighting Plans

I-10 Cst ℄

I-10 EB

(B) Exst 24" Abn Sewer (PCRWRD)
Sta 5197+00, 135' Rt to 5207+00, 135' Rt
Remove 1,000 LF

Exst Power (ADOT)
See Lighting Plans

I-10 Ramp B Cst ℄

EB FRONTAGE RD

(A) Exst Gas (SWG)

(A) Exst Power (TEP)
Inside Joint
Utility Duct Bank

(A) Exst Telephone (CTL)

(A) Exst Joint Utility Duct Bank

Access Control

EB Frontage Rd Cst ℄

Exst 4" Gas (SWG)
(EB Frontage Rd ℄)
Sta 1979+41, 35' Rt
to 1989+55, 47' Rt

(B) Remove 1,020 LF

(A) Exst 8" Water (TW)

New Gas (SWG)
(EB Frontage Rd ℄)
Sta 1979+41, 35' Rt
to 1989+55, 47' Rt

(E)

Exst R/W

Exst Underground Power (TEP)
Inside Joint Utility Duct Bank
(EB Frontage Rd ℄)
Sta 1982+00, 27' Rt to 1989+55, 28' Rt

(E)

New UG Power (TEP)
(EB Frontage Rd ℄)
Sta 1982+00, 27' Rt to 1989+55, 56' Rt

(E)

Exst Joint Utility Duct Bank
(EB Frontage Rd ℄)
Sta 1982+00, 27' Rt to
1987+00, 26' Rt

(B)

Remove 500 LF

Access Control

Exst Joint Utility Duct Bank
(EB Frontage Rd ℄)
Sta 1987+00, 26' Rt to
1989+55, 28' Rt

(F)

METER NOT FD

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

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ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5193+00 TO 5207+00

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C
010-D(213)S

Registered Professional Engineer
37622
FRANK EMMETT FRY IV
Date Signed 5/30/19
ARIZONA, U.S.A.
Expires 06/30/20

DWG NO. U-1.05
___ OF ___

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

Thu 30 May 2019, 15:33:51 \\prdpwics01\ics_workingdir\13899\43865_79\h8480u05.dgn

UTILITY DISPOSITION LEGEND

- (A) To Remain in Service
- (B) Remove
- (C) Adjust to Grade
- (D) Remove by Others
- (E) Relocate by Others
- (F) Abandon in Place
- ◪ See Sewer Plans
- ◐ See Water Plans

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S			
		010 PM 252			

Exst FO (Level 3)

Exst 2" Gas (SWG) See Sheet U-1.11

Exst 16" Water (TW) (WB Frontage Rd ℄) Sta 1999+41, 230' Lt to 2003+07, 225' Lt — Remove 449 LF

Exst 12" Sewer (PCRWRD) (WB Frontage Rd ℄) Sta 1999+05, 257' Lt to 2002+16, 248' Lt — Remove 311 LF

Exst FOT (CTL)

Exst FOT (Sprint)

Exst Gas (KM) 6" STL 12" STL 8" STL

Exst Telephone (CTL) See Sheet U-1.11

New Sewer MH

New TCE

RUTHRAUFF ROAD

Exst Overhead Telephone (CTL)

Exst FMS (ADOT) See FMS Plans

Access Control

Exst R/W

Exst FO MCI & Level 3

Exst Telephone (CTL)

WB FRONTAGE RD

I-10 Ramp A Cst ℄

WB Frontage Rd Cst ℄

Exst Underground Power (TEP) (WB Frontage Rd ℄) Sta 1991+17, 33' Lt to 2003+65, 65' Lt

I-10 Cst ℄

I-10 WB

I-10 EB

Exst Telephone (CTL) (EB Frontage Rd ℄) Sta 1996+83, 196' Rt to Sta 2003+54, 71' Rt — Remove 717 LF

New Telephone (CTL) (EB Frontage Rd ℄) Sta 1989+68, 35' Rt to 2003+54, 38' Rt

I-10 Ramp D Cst ℄

Exst 24" Abn Sewer (PCRWRD) Sta 5207+00, 135' Rt to 5217+30, 324' Rt — Remove 1,195 LF

New OH Power (TEP) See Sheet U-1.11

Exst Joint Utility Duct Bank (TEP/CTL) (EB Frontage Rd ℄) Sta 1991+25, 28' Rt to 1993+50, 35' Rt — Remove 225 LF

Exst MH (CTL) (EB Frontage Rd ℄) Sta 1997+66, 135' Rt — Remove 1 EA

New Gas (SWG) (EB Frontage Rd ℄) Sta 1998+68, 164' Rt to 2003+54, 109' Rt

Exst Joint Utility Duct Bank(TEP/CTL) (EB Frontage Rd ℄) Sta 1989+55, 28' Rt to 1991+25, 28' Rt

EB Frontage Rd Cst ℄

New UG Power (TEP) (EB Frontage Rd ℄) Sta 1989+55, 56' Rt to 1994+69, 151' Rt

EB FRONTAGE RD

New R/W

Exst R/W

Access Control

Exst 6" Water (TW)

New Gas (SWG) (EB Frontage Rd ℄) Sta 1989+55, 47' Rt to 1994+78, 124' Rt

Exst Telephone (CTL) Inside Joint Utility Duct Bank (EB Frontage Rd ℄) Sta 1989+68, 35' Rt to 2003+54, 71' Rt

Exst 4" Gas (SWG) (EB Frontage Rd ℄) Sta 1989+55, 44' Rt to 2003+54, 59' Rt — Remove 1,409 LF

Exst Underground Power (TEP) Inside Joint Utility Duct Bank (EB Frontage Rd ℄) Sta 1989+55, 28' Rt to 2003+55, 57' Rt

W. EL CAMINO DEL CERRO

Exst Joint Utility Duct Bank (TEP/CTL) (EB Frontage Rd ℄) Sta 1993+50, 35' Rt to 2003+55, 57' Rt

Exst 16" Water (TW) (EB Frontage Rd ℄) Sta 1997+65, 50' Rt to 2003+54, 68' Rt — Remove 600 LF

Exst 24" Abn Sewer (PCRWRD) To Remain

Exst 4" Gas (SWG) See Sheet U-1.11

New Gas (SWG) See Sheet U-1.11

New R/W

Access Control

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc. 177 N. Church Ave. Suite 1105 Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5207+00 TO 5221+00

37622 FRANK EMMETT FRY IV — Registered Professional Engineer (Civil) — State of ARIZONA, U.S.A. — Date Signed — Expires 06/30/20

ROUTE	LOCATION		
I-10	RUTHRAUFF ROAD TI		
TRACS NO. H 8480 01C		010-D(213)S	

DWG NO. U-1.06 — ___ OF ___

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

Thu 30 May 2019, 15:34:02 \\prdpwics01\ics_workingdir\13899\43865_80\h8480u06.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S			
		010 PM 252			

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

Exst FOT (Sprint) (A)
Exst FOT (CTL) (A)
Exst FO (Level 3) (A)
Exst FO (WT) (A)
Exst FO (CTL) (A)
Exst Gas (KM) (A)
6" STL
12" STL
8" STL
Exst FO (MCI) (A)
UPRR
Access Control
Exst FMS (ADOT)
See FMS Plans
Exst R/W
Exst Power (UPRR) (A)
LOS SIGNAL
PILE
EM
2005
2010
2015
5225
5230
5235
I-15
I-10 WB
I-10 EB
I-10 Cst ℄
I-10 Ramp C Cst ℄
I-10 Ramp D Cst ℄
WB FRONTAGE RD
EB FRONTAGE RD
WB Frontage Rd Cst ℄
EB Frontage Rd Cst ℄
New TCE
New 24" Water (TW)
Exst Underground Power (TEP) (WB Frontage Rd ℄) Sta 2003+65, 65' Lt to 2016+70, 37' Lt (E)
New Gas (SWG) (EB Frontage Rd ℄) Sta 2003+54, 109' Rt to 2010+50, 55' Rt (E)
New Underground Power (TEP) (EB Frontage Rd ℄) Sta 2010+63, 52' Rt to 2015+40, 56' Rt (E)
New Telephone (CTL) (EB Frontage Rd ℄) Sta 2003+54, 38' Rt to 2015+53, 53' Rt (E)
Exst Joint Utility Duct Bank (TEP/CTL) (EB Frontage Rd ℄) Sta 2003+55, 57' Rt to 2005+25, 53' Rt (F)
Exst Underground Power (TEP) Inside Joint Utility Duct Bank (EB Frontage Rd ℄) Sta 2003+55, 57' Rt to 2015+40, 53' Rt (E)
Exst R/W
New R/W
Access Control
TCE
Exst 16" Water (TW) (EB Frontage Rd ℄) Sta 2003+54, 68' Rt to 2005+41, 64' Rt
Remove 171 LF (B)
Exst 4" Gas (SWG) (EB Frontage Rd ℄) Sta 2003+54, 59' Rt to Sta 2010+50, 55' Rt
Remove 699 LF (B)
Exst MH (CTL) (EB Frontage Rd ℄) Sta 2005+68, 68' Rt
Remove 1 EA (B)
New OH Power (TEP) (EB Frontage Rd ℄) Sta 2010+42, 293' Rt to 2010+63, 52' Rt (E)
Access Control
EB Frontage Rd Cst ℄
Exst Joint Utility Duct Bank (TEP/CTL) (EB Frontage Rd ℄) Sta 2010+50, 50' Rt to 2015+40, 53' Rt (F)
Exst 4" Gas (SWG) (A)
Exst Water (TW) (A)
Exst Power (TEP) Inside Joint Utility Duct Bank (A)
Exst Telephone (CTL) (A)
Exst Joint Utility Duct Bank (A)
Exst Telephone (CTL) (EB Frontage Rd ℄) Sta 2003+54, 71' Rt to 2014+08, 76' Rt
Remove 1,052 LF (B)
Exst Joint Utility Duct Bank (TEP/CTL) (EB Frontage Rd ℄) Sta 2005+25, 53' Rt to 2010+50, 50' Rt
Remove 526 LF (B)

UTILITY DISPOSITION LEGEND

- (A) To Remain in Service
- (B) Remove
- (C) Adjust to Grade
- (D) Remove by Others
- (E) Relocate by Others
- (F) Abandon in Place
- See Water Plans

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5221+00 TO 5235+00

ROUTE: I-10 | LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

37622 FRANK EMMETT FRY IV Registered Professional Engineer Date Signed 5/30/19 ARIZONA, U.S.A. Expires 06/30/20

DWG NO. U-1.07

___ OF ___

Thu 30 May 2019, 15:33:53

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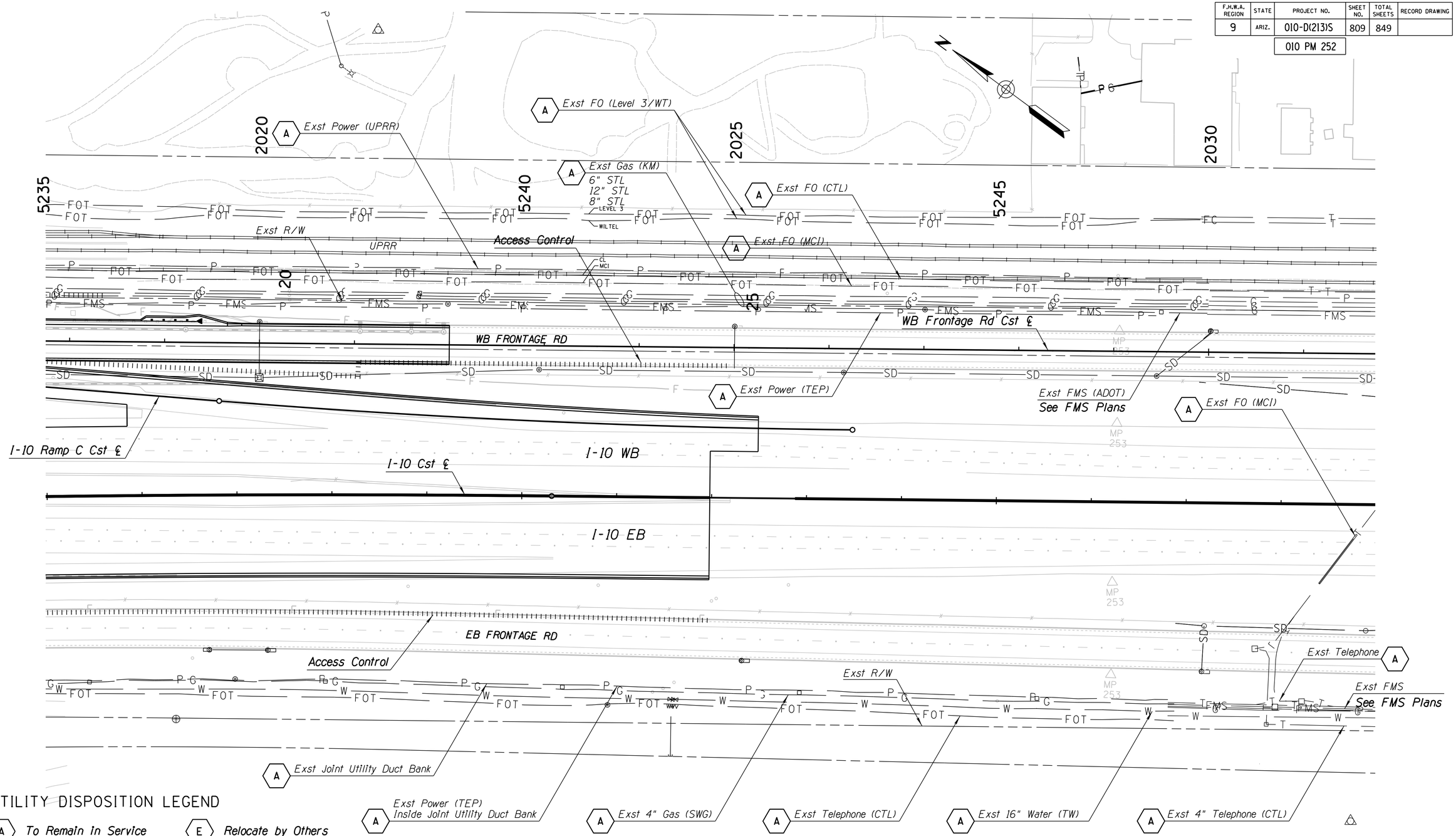
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	809	849	

010 PM 252



UTILITY DISPOSITION LEGEND

- (A) To Remain In Service
- (B) Remove
- (C) Adjust to Grade
- (D) Remove by Others
- (E) Relocate by Others
- (F) Abandon in Place

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5235+00 TO 5249+00

Registered Professional Engineer (Civil)
37622
FRANK EMMETT FRY IV
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-1.08

TRACS NO.			SHEET
H 8480 01C		010-D(213)S	___ OF ___

Wed 20 Mar 2019, 16:05:30 \\prdpwics01\ics_workingdir\5765\43865.85\h8480u08.dgn

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

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	810	849	
		010 PM 252			

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

N

W. PLACITA DESIERTO MORADO

2035 2040 2045

5250 5255 5260

A Exst FOT (Level 3/WT)

A Exst Power

A Exst Gas (KM)
6" STL
12" STL
8" STL

A Exst FO (MCI)

A Exst FO (MCI)

Exst R/W

UPRR

A Exst Power (UPRR)

WB FRONTAGE RD

WB Frontage Rd Cst ℄

A Exst Power (TEP)

Exst FMS (ADOT)
See FMS Plans

I-10 WB

I-10 Cst ℄

I-10 EB

EB FRONTAGE RD

Exst R/W

A Exst Joint Utility Duct Bank

A Exst Power (TEP)
Inside Joint Utility Duct Bank

A Exst 4" Gas (SWG)

A Exst 16" Water (TW)

A Exst Telephone

A Exst 4" Telephone (CTL)

Exst FMS
See FMS Plans

UTILITY DISPOSITION LEGEND

- A — To Remain in Service
- B — Remove
- C — Adjust to Grade
- D — Remove by Others
- E — Relocate by Others
- F — Abandon in Place

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
I-10 MAINLINE
STA 5249+00 TO 5263+00

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-1.09
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

Wed 20 Mar 2019, 16:05:18 \\prdpwics01\ics_workingdir\5765\43865_86\h8480u09.dgn

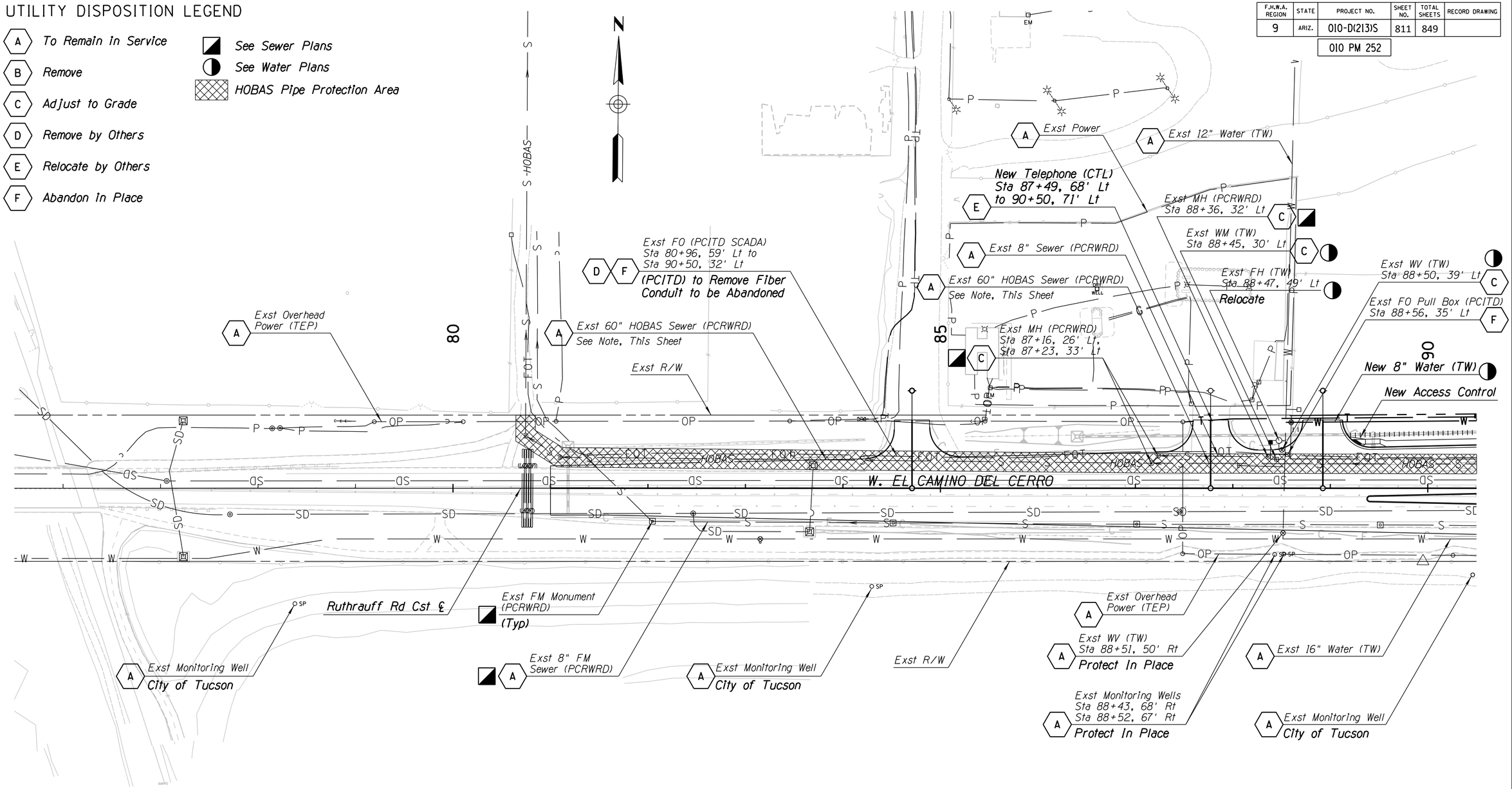
UTILITY DISPOSITION LEGEND

- (A) To Remain in Service
- (B) Remove
- (C) Adjust to Grade
- (D) Remove by Others
- (E) Relocate by Others
- (F) Abandon in Place

- See Sewer Plans
- See Water Plans
- HOBAS Pipe Protection Area

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	811	849	

010 PM 252



NOTE:

1. Contractor shall protect the existing HOBAS pipe in place. Live Loads exceeding HL-93 loading, including heavy hauls, crane pad placement, etc., are not acceptable within 10 feet either side of the existing HOBAS pipe (as measured from the pipe centerline). Only non-vibratory compaction methods shall be used within the HOBAS Pipe Protection Area. Excavation depths shall not exceed 2 feet within the Protection Area without approval by the Engineer. Roadway Overexcavation per Detail Q shall not be performed within the Protection Area. Stockpiling, placement of spoils and/or material is not acceptable within the Protection Area. See the General Requirements section of the Special Provisions for additional information.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1100
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
EL CAMINO DEL CERRO
STA 80+00 TO 90+50

Registered Professional Engineer Certificate
37622
FRANK EMMETT
FRY IV
Date Signed 3-27-19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-1.10

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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

Fri 22 Mar 2019, 12:43:28 \\prdpwics01\ics_workingdir\6107\43865_87\h8480u10.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S			
		010 PM 252			

N

New Gas (SWG)
See Sheet U-1.06
E

New Telephone (CTL)
See Sheet U-1.06
E

Exst FO Pull Box
(PCITD SCADA)
Sta 93+01, 43' Rt
F

New R/W

Exst FO (PCITD SCADA)
Sta 90+50, 32' Lt to
Sta 94+10, 105' Rt
D F
(PCITD) to Remove Fiber
Conduit to be Abandoned

Exst Shut-Off
Valve Chamber
(PCRWRD)
Sta 93+41, 100' Rt
A
Protect In Place

Exst Telephone (CTL)
Sta 92+40, 73' Lt to
Sta 93+03, 68' Rt
B
Remove 180 LF

New 8" Water (TW)

New 16" Water (TW)

New OH Power (TEP)
Sta 91+93, 82' Lt to
Sta 93+41, 119' Rt
E

Exst 16" Water (TW)
Sta 92+11, 52' Rt
to 103+31, 49' Rt
B
Remove 1,135 LF

Exst Overhead Power (TEP)
Sta 93+02, 69' Rt
to 95+97, 69' Rt
E

Exst 7'X5.58' Sewer
Rodding Station (PCRWRD)
Sta 93+28, 82' Rt
A

New Access
Control

New UG Power (TEP)
See Sheet U-1.06
E

Exst 24" ABS Sewer (PCRWRD)
See Sheets U-1.05 & U-1.06
B

New OH Power (TEP)
Sta 94+23, 209' Lt to
Sta 103+88, 231' Lt
E

Exst 1", 2", 6" & 12" Water (TW)
Sta 94+04, 32' Lt to 97+19, 44' Rt
B
Remove 168 LF, 1"
Remove 168 LF, 2"
Remove 187 LF, 6" &12"

New Telephone (CTL)
Sta 90+50, 71' Lt to
Sta 94+96, 219' Lt
E

Exst MH (PCRWRD)
Sta 93+06, 24' Lt
C

Exst Underground Power (TEP)
Sta 95+57, 64' Rt
to 104+13, 134' Rt
F

Ruthrauff Rd Cst ℄

New OH Power (TEP)
Sta 91+93, 82' Lt to
Sta 94+23, 209' Lt
E

Exst Telephone (CTL)
See Sheet U-1.06
B

Exst FO Pull Box
(PCITD SCADA)
Sta 94+10.32, 105' Rt
A
Protect In Place

Exst 4" Gas (SWG)
Sta 92+24, 90' Rt
to 97+06, 55' Rt
B
Remove 514 LF

New Gas (SWG)
Sta 94+77, 134' Lt
to 96+97, 190' Rt
E

New R/W

New
24" Water (TW)

Exst 4" Gas (SWG)
See Sheet U-1.06
B

New Gas (SWG)
See Sheet U-1.06
E

Exst Power (TEP)
See Sheet U-1.06
E

Exst Telephone (CTL)
See Sheet U-1.06
B

Exst 16" Water (TW)
See Sheet U-1.06
B

New Access Control

Exst Telephone (CTL)
A

Exst Power Pole & Guy Wire (TEP)
Protect In Place
A

New Sewer MH

New R/W

Exst Overhead
Power (TEP)
A

Exst Telephone (CTL)
Sta 102+97, 347' Lt
to 104+88, 97' Lt
B
Remove 315 LF

New Telephone (CTL)
Sta 104+15, 103' Lt to
Sta 105+50, 337' Lt
E

Exst Overhead Power (TEP)
Sta 103+13, 336' Lt
to Sta 105+50, 0.2' Rt
E

Exst Overhead Power (TEP)
Sta 104+58, 131' Lt
to 105+50, 133' Lt
E

Exst 2" Gas (SWG)
Sta 102+30, 430' Lt
to 105+01, 55' Lt
B
Remove 463 LF

New TCE

New 16" Water (TW)

Exst 12" Water (TW)
See Sheet U-1.06
B

New Power (TEP)
Sta 103+13, 336' Lt
to 105+50, 88' Lt
E

Exst Telephone (CTL)
A

I-10 WB

I-10 EB

Exst Telephone (CTL)
Sta 103+72, 165' Lt
to 104+88, 97' Lt
B
Remove 170 LF

Exst Telephone (CTL)
Sta 104+88, 97' Lt
to 105+50, 45' Lt
B
Remove 97 LF

Exst 2" Gas (SWG)
Sta 105+01, 55' Lt to 105+50, 54' Lt
B
Remove 50 LF

Exst Power Pole and
Power Source (UPRR/TEP)
Sta 5220+43, 299' Lt
A

Exst Overhead Power (TEP)
Sta 103+75, 97' Rt to 105+50, 60' Rt
E

Exst 12" Sewer (PCRWRD)
Sta 105+12, 37' Lt to 105+50, 37' Lt
B
Remove 38 LF

New TCE

New Access
Control

New TCE

New
24" Water (TW)

BUSINESS CENTER DRIVE

Exst 8" Sewer (PCRWRD)
A

Exst FO (PCRWRD SCADA)
A

Exst 72" HOBAS Sewer (PCRWRD)
See Note, Sheet U-1.10
A

New Access Control

UTILITY DISPOSITION LEGEND

- A — To Remain in Service
- B — Remove
- C — Adjust to Grade
- D — Remove by Others
- E — Relocate by Others
- F — Abandon in Place

- See Sewer Plans
- See Water Plans
- HOBAS Pipe Protection Area

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
RUTHRAUFF ROAD
STA 90+50 TO 105+50

Registered Professional Engineer (Civil)
37622
FRANK EMMETT
FRY IV
Date Signed 5/30/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-1.11

___ OF ___

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

Thu 30 May 2019, 15:34:03

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	813	849	
		010 PM 252			

UTILITY DISPOSITION LEGEND

- A — To Remain in Service
- B — Remove
- C — Adjust to Grade
- D — Remove by Others
- E — Relocate by Others
- F — Abandon in Place
- See Sewer Plans
- See Water Plans

Exst OH Power (TEP)
Exst OH TV(Comcast)
New Telephone (CTL)
Sta 105+50, 337' Lt
to 108+90, 337' Lt
Exst MH
(PCRWRD)
Exst 6" Water (TW)
(Highway Dr ℄)
Sta 16+17, 13' Lt
to 19+45, 14' Lt
Remove 330 LF
Exst 18" Sewer (PCRWRD)
(Highway Dr ℄)
Sta 16+80, 1' Rt to 19+54, 16' Lt
Remove 280 LF
Exst Telephone (CTL)
Sta 105+50, 45' Lt to 109+06, 105' Lt
Remove 422 LF
Exst Overhead Power (TEP)
(Highway Dr ℄)
Sta 16+55, 25' Rt
to 18+57, 36' Rt
New
16" Water (TW)
New 12"
Sewer (PCRWRD)
Exst 2" Gas (SWG)
Sta 105+50, 54' Lt
to 109+03, 47' Lt
Remove 358 LF
Exst Overhead Power (TEP)
(Highway Dr ℄)
Sta 18+55, 44' Lt
to 18+57, 36' Rt
Exst R/W
Exst 12" Sewer (PCRWRD)
Sta 105+50, 37' Lt to
108+92, 30' Lt
Remove 231 LF
Exst R/W
New R/W
Exst OH Power (TEP)
Sta 105+50, 60' Rt
to 105+86, 52' Rt
Exst Telephone (CTL)
Sta 18+94, 41' Lt
to 22+63, 30' Lt
Remove 363 LF
New UG Power (TEP)
Sta 105+50, 88' Lt
to 109+05, 219' Rt
Exst 12"
Sewer (PCRWRD)
(Highway Dr ℄)
Sta 19+61, 83' Rt
to 21+30, 30' Rt
Exst R/W
Remove 198 LF
Exst 12" Water (TW)
(Highway Dr ℄)
Sta 20+79, 106' Lt
to 21+25, 47' Rt
Remove 176 LF
Exst 2" Gas (SWG)
(Highway Dr ℄)
Sta 19+32, 42' Lt
to 22+67, 40' Lt
Remove 324 LF
Exst Telephone (CTL)
Highway
Dr Cst ℄
Exst Power Pole (TEP)
New Telephone (CTL) (Highway Dr ℄)
Sta 16+00, 20' Lt to 23+00, 31' Lt
Exst Underground Power (TEP) Highway Dr ℄
Sta 16+55, 25' Rt to 16+79, 69' Rt
Exst Telephone (CTL) (Highway Dr ℄)
Sta 16+25, 20' Lt to 18+94, 41' Lt
Remove 282 LF
North Loop Cst ℄
New R/W
W. CHESTER WAY
New 18" Sewer (PCRWRD)
Exst Telephone (CTL)
Sta 109+06, 105' Lt
to 111+26, 75' Lt
Remove 250 LF
Exst R/W
Exst 12" Sewer (PCRWRD)
Sta 108+80, 46' Lt
to 108+92, 30' Lt
Remove 20 LF
Exst 4" Sewer (PCRWRD), (Highway Dr ℄)
Sta 17+47, 2' Rt to 17+47, 102' Lt
Remove 104 LF
Exst OH Power (TEP)
(Highway Dr ℄)
Sta 20+43, 85' Rt
to 21+50, 21' Rt
New
Access Control
Exst R/W
New OH Power (TEP)
Sta 109+05, 219' Rt
to 112+67, 219' Rt
Exst OH Power (TEP)
Exst OH TV (Comcast)
Sta 110+35, 211' Rt
to 118+24, 223' Rt
N. HIGHWAY DR.
Exst 1 1/4" Gas (SWG)
Sta 109+91, 220' Rt
to 113+90, 223' Rt
Remove 403 LF
Exst OH Power (TEP)
Sta 105+50, 0.2' Rt
to 115+73, 54' Rt
Exst OH TV (Comcast)
Sta 107+82, 55' Rt to 115+73, 54' Rt
New Gas (SWG)
Sta 111+02, 415' Rt to 116+16, 61' Lt
Exst 8" Water (TW)
Sta 110+68, 54' Rt to 110+69, 55' Lt
Remove 109 LF
Exst Gas 4" (SWG)
Sta 109+06, 67' Lt to 116+38, 66' Lt
Exst 8" Water (TW)
Sta 108+14, 54' Lt
to 116+35, 70' Lt
Remove 824 LF
Exst 15" Sewer (PCRWRD)
Sta 108+80, 46' Lt
to 115+51, 46' Lt
Remove 671 LF
New
16" Water (TW)
Exst Overhead Power (TEP)
Sta 112+42, 73' Lt
to 112+63, 52' Rt
Exst 4"
Sewer (PCRWRD)
Sta 113+69, 45' Lt
to 113+69, 100' Lt
Remove 55 LF
New
Access Control
RUTHRAUFF ROAD
Ruthrauff Rd Cst ℄
Exst 12" & 16" Water (TW)
Sta 105+50, 49' Rt
to 116+06, 57' Rt
Remove 1,029 LF
Exst 16" Water (TW)
Sta 105+50, 49' Rt
to 117+79, 49' Rt
Remove 1,205 LF
New 24" Water (TW)
New R/W
N. MARYVALE AVE.
N. Maryvale Cst ℄
New Gas (SWG)
(North Loop ℄)
Sta 16+76, 205' Lt
to 17+38, 237' Lt
Exst 4" Gas (SWG)
New Telephone (CTL)
Sta 17+04, 87' Lt to 17+56, 208' Lt
Exst OH Power (TEP)
Exst OH TV (Comcast)
(North Loop ℄)
Sta 17+04, 87' Lt
to 17+70, 4' Lt
Exst OH Power (TEP)
Exst OH TV (Comcast)
Sta 113+86, 227' Lt
to 114+88, 228' Lt
Exst Telephone (CTL)
(North Loop ℄)
Sta 16+77, 178' Lt to 19+40, 26' Lt
Remove 434 LF
Exst Gas
4" (SWG)
Exst Telephone (CTL)
Sta 113+77, 72' Lt to 116+42, 102' Lt
Remove 325 LF
New 10" Sewer (PCRWRD)
N. SUNRISE AVE.
Exst OH Power (TEP)
Exst OH TV (Comcast)
Exst MH
(PCRWRD)
Exst MH
(PCRWRD)
Exst 10" Sewer (PCRWRD)
Sta 108+92, 30' Lt
to 115+87, 19' Lt
Remove 695 LF
Exst 6", 12"
& 16" Water (TW)
Exst MH
(PCRWRD)
Exst OH Power (TEP)
Exst OH TV (Comcast)
N. PARKWAY DR.
Exst OH Telephone (CTL)
New OH Power (TEP)
Sta 115+73, 54' Rt to 115+73, 223' Rt
New OH TV (Comcast)
Sta 109+05, 219' Rt to 115+73, 54' Rt
N. PLANE AVE.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
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Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
RUTHRAUFF ROAD
STA 105+50 TO 120+50

Registered Professional Engineer (Civil)
37622
FRANK EMMETT
FRY IV
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-1.12
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

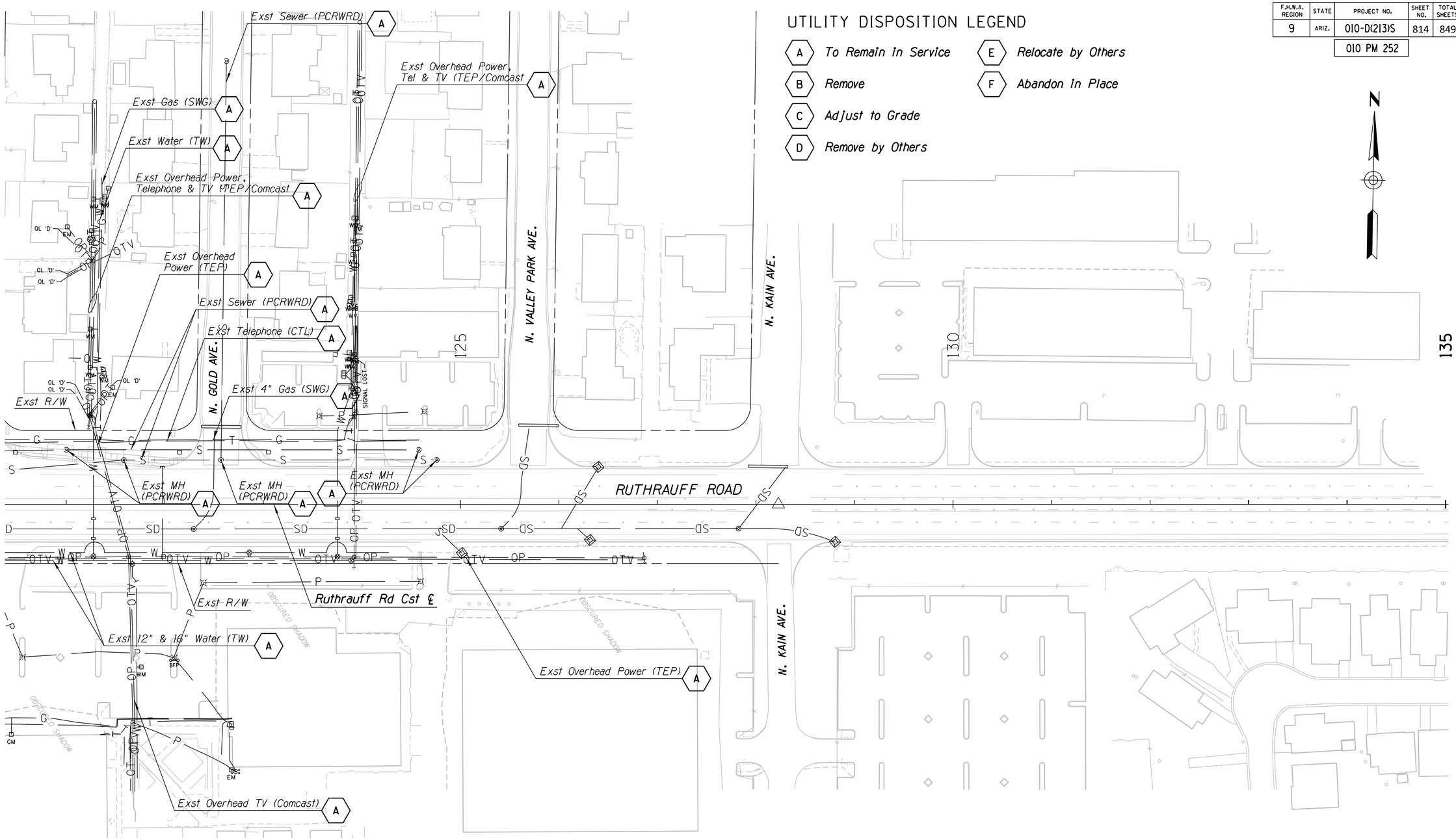
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

Wed 20 Mar 2019, 16:05:33 \\prdpwics01\ics_workingdir\5765\43865_89\h8480u12.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	814	849	
		010 PM 252			

UTILITY DISPOSITION LEGEND

- A — To Remain in Service
- B — Remove
- C — Adjust to Grade
- D — Remove by Others
- E — Relocate by Others
- F — Abandon in Place



	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

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Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

UTILITY RELOCATION PLAN
RUTHRAUFF ROAD
STA 120+50 TO 135+00

Registered Professional Engineer (Civil)
37622
FRANK EMMETT FRY IV
Date Signed 3/20/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-1.13
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

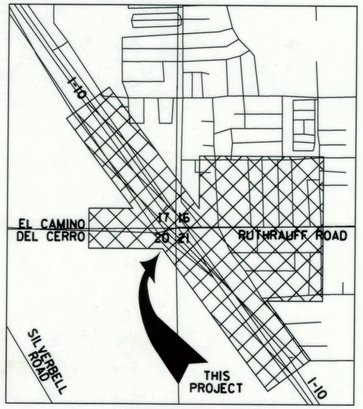
DATE | LOCATION | REVISIONS | FINISHED PLANS | SURVEY NO.

Wed 20 Mar 2019, 16:05:20 \\prdpwics01\ics_workingdir\5765\43865_90\h8480u13.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	815	849	
		010 PM 252			

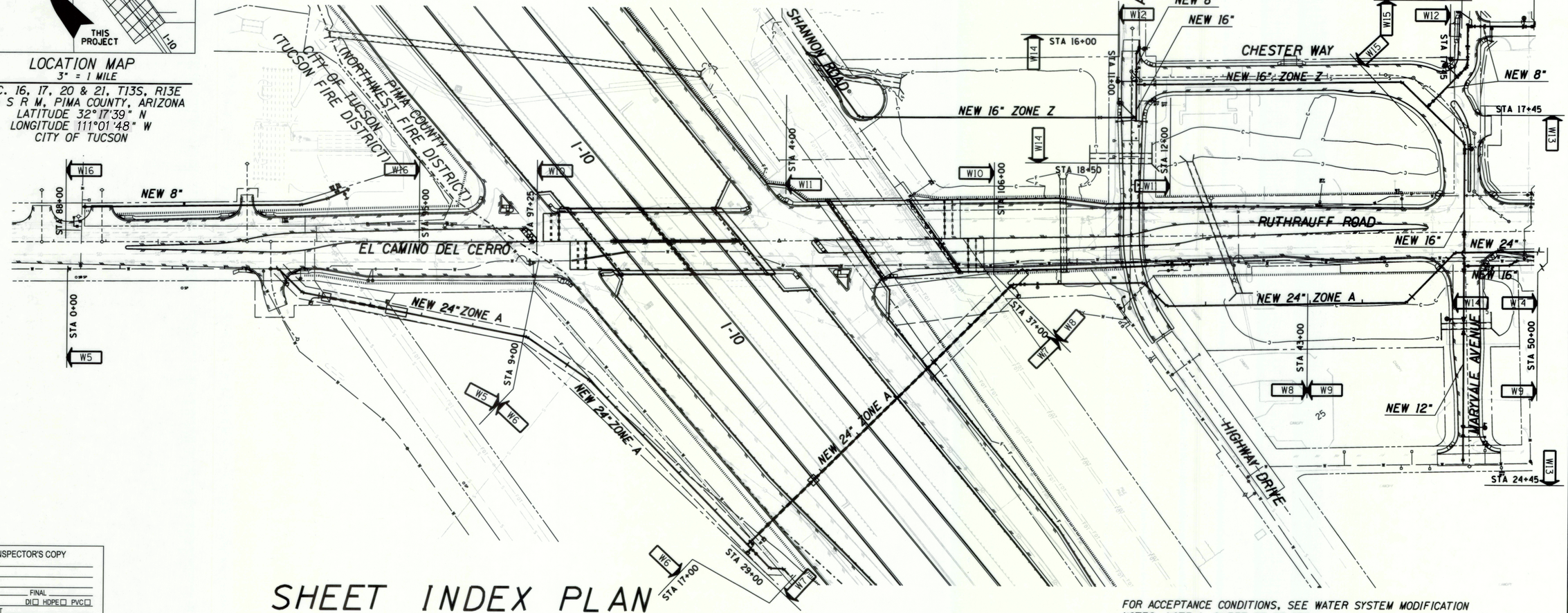
INTERSTATE 10 – RUTHRAUFF ROAD T.I.
PROJECT NO. 010 PM 252 H8480 01C

WATER SYSTEM MODIFICATIONS
PN 5–176–2018



LOCATION MAP
3" = 1 MILE

SEC. 16, 17, 20 & 21, T13S, R13E
G & S R M, PIMA COUNTY, ARIZONA
LATITUDE 32°17'39" N
LONGITUDE 111°01'48" W
CITY OF TUCSON



SHEET INDEX PLAN

PAGE NO.	SHEET NO.	DESCRIPTION
815	W1	COVER SHEET
816	W2	NOTES
817	W3	GEOMETRY CONTROL SHEET
818	W4	MATERIAL QUANTITIES SUMMARY
819-823	W5-W9	TRANSMISSION PLAN & PROFILE
824	W10	TRANSMISSION REMOVALS
825-828	W11-W13	TRANSMISSION PLAN & PROFILE
829-830	W14-W16	DISTRIBUTION PLAN & PROFILE

1"=100'

FOR ACCEPTANCE CONDITIONS, SEE WATER SYSTEM MODIFICATION NOTES, NOTE 1, SHEET W2 OF W16.

INSPECTOR'S COPY
INSPCT. _____
CONTR. _____
START _____ FINAL _____
PIPE _____ DI☐ HDPE☐ PVC☐
SVC LINE MAT _____
B.F.'S _____
GATES _____
F.H.'S BRAND _____ MAT _____
MAGNETIC TAPE INST YES☐ NO☐
REBAR RINGS INST YES☐ NO☐
ZONE _____ PSI _____
MAPPING INFO
PLOTTED _____ ON VM _____
checked _____ date _____
ALL VALVES WERE INSTALLED PER PLAN.
Signature _____
Date _____

RESERVED FOR ENGINEERING AS-BUILT STAMP

TUCSON FIRE DISTRICT — 3.20.19 — DATE

NORTHWEST FIRE DISTRICT — 3-20-2019 — DATE

Jignesh Patel — 3/21/2019
CITY OF TUCSON WATER DEPARTMENT — DATE

WATER SHEET W1 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
COVER SHEET

Registered Professional Engineer — 37622 FRANK EMMETT FRY IV — Date Signed 3/19/19 — ARIZONA, U.S.A. — Expires 06/30/20

ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-2.01
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

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

Tue 19 Mar 2019, 17:24:52

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SURVEY NO.	FINISHED PLANS	REVISIONS	LOCATION	DATE

WATER SYSTEM MODIFICATION NOTES

1. **ACCEPTANCE CONDITIONS:**
   A. THIS PROJECT IS ACCEPTED BY THE CITY OF TUCSON WATER DEPARTMENT FOR SUBSTANTIAL CONCURRENCE WITH STANDARD SPECIFICATIONS AND DETAILS.
   B. ACCEPTANCE OF THESE PLANS IS VALID FOR 2 YEARS AFTER THE DATE OF THE SIGNATURE.
   C. THE WARRANTEE AND GUARANTEE DURATION FOR ALL WATER WORK ON THIS PROJECT SHALL BE TWO (2) YEARS COMMENCING ON THE DATE OF FINAL ACCEPTANCE OF THE I-10 AND RUTHRAUFF ROAD IMPROVEMENT PROJECT.

2. **CURRENT STANDARDS:**
   ALL WATER SYSTEM MODIFICATION CONSTRUCTION WORK SHALL CONFORM TO THE FOLLOWING STANDARDS AND SPECIAL PROVISIONS:
   A. THE CITY OF TUCSON STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC IMPROVEMENTS, 2017 EDITION.
   B. THE WATER SYSTEMS MODIFICATIONS SPECIAL PROVISIONS FOR THIS PROJECT.

3. **WATER SYSTEM MODIFICATION PRE-CONSTRUCTION PROCEDURE:**
   A. THE CONTRACTOR SHALL CONTACT THE CITY OF TUCSON WATER DEPARTMENT CONSTRUCTION SECTION (791-2665) A MINIMUM OF FIVE (5) DAYS PRIOR TO ANY WATER WORK. THE CONTRACTOR SHALL REFER TO THE CITY OF TUCSON WATER DEPARTMENT PLAN NO. 5-176-2018.
   B. THE CITY OF TUCSON WATER DEPARTMENT CONSTRUCTION SECTION WILL SCHEDULE THE TIME AND PLACE FOR THE MEETING.
   C. NO WATER SYSTEM CONSTRUCTION SHALL BEGIN UNTIL A "NOTICE TO PROCEED" HAS BEEN ISSUED BY THE CITY OF TUCSON WATER DEPARTMENT.
   D. ANY WATER WORK INSTALLED PRIOR TO THE NOTICE TO PROCEED DATE SHALL BE REMOVED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

4. **DIMENSIONS SLOPES AND GRADES:**
   ALL DIMENSIONS, SLOPES, AND GRADES OF EXISTING WATER LINES ARE TAKEN FROM "AS BUILT" DRAWINGS, VALVE NUT, SURVEY DATA OR POTHOLE DATA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT INFORMATION BEFORE ORDERING ANY SPECIAL FITTINGS OR EQUIPMENT.

5. **SHUT DOWN OF TRANSMISSION MAINS (16" AND LARGER):**
   A. CONSTRUCTION ON ZONE Z TRANSMISSION MAIN SHALL TAKE PLACE ONLY IN THE OFF PEAK SEASON BETWEEN OCTOBER 1 AND MARCH 30. THE ZONE A TRANSMISSION MAIN THAT RUNS EAST-WEST SHALL NOT BE INTERRUPTED EXCEPT FOR CONNECTION PURPOSES ONLY. WHILE CONNECTING THE ZONE A TRANSMISSION MAIN TO EXISTING, THE SHUT DOWN PERIOD SHALL NOT EXCEED 12 HOURS, OR AS APPROVED BY THE ENGINEER. BYPASS PIPING, 10" OR LARGER, MEETING THE APPROVAL OF TUCSON WATER, MAY BE USED BUT WILL BE CONSIDERED TO THE BENEFIT OF THE CONTRACTOR AND SHALL BE INCIDENTAL. NO ADDITIONAL PAYMENT WILL BE MADE.
   B. THE CONTRACTOR SHALL BE ALLOWED A MAXIMUM OF FIVE (5) CALENDAR DAYS DOWN TIME FOR ANY ONE SHUT-DOWN.
   C. MULTIPLE SHUT-DOWNS WILL BE ALLOWED WITH A MINIMUM OF FIVE (5) CALENDAR DAYS BETWEEN SHUT-DOWNS.

6. **DEPTH OF NEW WATER MAINS:**
   A. NEW WATER MAINS SHALL BE INSTALLED AT A MINIMUM DEPTH OF THREE FEET (3.0') FROM THE BOTTOM OF ANY EXCAVATION OR SCARIFICATION TO THE TOP OF THE NEW PIPE. THIS DEPTH SHALL BE MAINTAINED FOR FIVE FEET (5.0') BEYOND ANY EXCAVATION, MEASURED PERPENDICULAR TO THE PROPOSED STRUCTURE OR EDGE OF THE PROPOSED ROADWAY.
   B. IN NO CASE SHALL NEW WATER MAINS BE INSTALLED LESS THAN THREE AND SIXTY SEVEN HUNDREDTHS OF A FOOT (3.67') DEEP FROM THE FINISHED GRADE TO THE TOP OF THE NEW PIPE.
   C. THESE MINIMUMS SHALL APPLY TO ALL WATER MAINS UNLESS OTHERWISE NOTED ON THE PLANS.

7. **DEPTH OF NEW SERVICE LINES:**
   A. NEW SERVICE LINES, TWO INCH (2") AND SMALLER, SHALL BE INSTALLED AT A MINIMUM DEPTH OF TWO FEET (2.0') FROM THE BOTTOM OF ANY EXCAVATION OR SCARIFICATION TO THE TOP OF THE NEW SERVICE LINE. THIS DEPTH SHALL BE MAINTAINED FOR FIVE FEET (5') BEYOND ANY EXCAVATION, MEASURED PERPENDICULAR TO THE PROPOSED STRUCTURE OR EDGE OF THE PROPOSED ROADWAY.
   B. IN NO CASE SHALL NEW SERVICE LINES BE INSTALLED LESS THAN THREE FEET (3.0') DEEP FROM THE FINISHED GRADE TO THE TOP OF THE NEW SERVICE LINE.
   C. THESE MINIMUMS SHALL APPLY TO ALL SERVICE LINES UNLESS OTHERWISE NOTED ON THE PLANS.

8. **WATER METERS AND METER BOXES:**
   THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WATER METERS AND METER BOXES IN THE CONSTRUCTION AREA. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
   A. REMOVAL OF EXISTING METERS, REPLACEMENT COORDINATION AND INSTALLATION OF THE NEW AUTOMATIC METER READING (AMR) WATER METERS.
   B. DURING THIS OPERATION, EXISTING METERS SHALL BE TAGGED WITH THE CORRECT ADDRESS AND RETURNED TO TUCSON WATER. ALL EXISTING WATER METERS THAT ARE TO BE LOCATED AS PART OF THIS PROJECT THAT ARE NOT ALREADY AUTOMATED, ARE TO BE REPLACED WITH AMR TYPE METERS AT LOCATIONS/ADDRESSES SPECIFIED ON THE PLANS.
   C. PROTECTION OF METERS. AT ALL TIMES THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID ANY DAMAGE TO METERS. THE CONTRACTOR SHALL PROVIDE FOR THEIR SAFE STORAGE AND THE PROPER EQUIPMENT FOR THEIR HANDLING.
   D. ACCESS TO METERS. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL IN-SERVICE METERS DURING CONSTRUCTION. AT THE CLOSE OF THE PROJECT THE CONTRACTOR SHALL ENSURE THAT ALL METERS ARE LEFT ACCESSIBLE AND THAT ALL METER BOXES ARE ADJUSTED TO FINAL GRADE.
   E. TUCSON WATER SHALL SUPPLY ALL NEW AMR WATER METERS TO BE INSTALLED AS PART OF THIS PROJECT.

9. **FIRE PROTECTION SHUT DOWN:**
   FORTY-EIGHT (48) HOURS PRIOR TO SHUT-DOWN OF ANY FIRE HYDRANTS OR FIRE PROTECTION SERVICE LINES THE CONTRACTOR SHALL PROVIDE THE CITY OF TUCSON WATER DEPARTMENT CONSTRUCTION INSPECTOR WITH A WRITTEN REPORT INDICATING THE LOCATION AND DURATION OF ANY FIRE HYDRANT OR FIRE PROTECTION SERVICE SHUT-DOWNS.

   THE CONTRACTOR SHALL NOTIFY THE CITY OF TUCSON WATER DEPARTMENT CONSTRUCTION INSPECTOR WHEN FIRE HYDRANTS OR FIRE PROTECTION SERVICES ARE BACK IN SERVICE.

10. **MAINTAIN SERVICE TO CUSTOMERS:**
    THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO ALL WATER CUSTOMERS DURING CONSTRUCTION.

    IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHICH SERVICES WILL BE AFFECTED BY THIS PROJECT.

    IT MAY BE NECESSARY TO ACCOMPLISH TIE-OVERS, RE-CONNECTIONS, ETC., WHILE BUSINESS CUSTOMERS ARE CLOSED.

    IF INTERRUPTION OF SERVICE IS UNAVOIDABLE THE CONTRACTOR SHALL NOTIFY THE WATER INSPECTOR A MINIMUM OF A 48 HOURS IN ADVANCE TO COORDINATE SHUT-DOWNS. EVERY EFFORT SHALL BE MADE TO MINIMIZE DISRUPTION TO THE CUSTOMER.

    IF THE CONTRACTOR CHOOSES TO ABANDON ANY PORTION OF THE EXISTING WATER SUPPLY SYSTEM WITHOUT CONCURRENT NEW CONSTRUCTION AS CALLED FOR ON THE PLANS THE CONTRACTOR SHALL PROVIDE ANY AND ALL MATERIALS AND CONSTRUCTION OF A TEMPORARY OR PERMANENT WATER SYSTEM TO MAINTAIN CONTINUED WATER SERVICE TO CUSTOMERS AT NO ADDITIONAL COST.

11. **SPECIAL USE WATER PERMITS:**
    PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL APPLY FOR TWO (2) SPECIAL WATER USE PERMITS FROM THE CITY OF TUCSON DEPARTMENT COMMERICAL SECTION
    A. CONSTRUCTION WATER SPECIAL PERMIT:
       THERE WILL BE NO CHARGE FOR THIS PERMIT, BUT THE CONTRACTOR MUST PAY THE SUM OF ($821.38) PLUS TAX AS THE ESTIMATED COST OF THE WATER TO BE USED. THIS WATER IS TO BE USED FOR TRENCH SETTLING, DISINFECTION AND TESTING.
    B. METERED FIRE HYDRANT ONLY PERMIT:
       THIS NON-TRANSFERABLE PERMIT WILL ENTITLE THE CONTRACTOR TO USE WATER THROUGH A METER FROM EXISTING FIRE HYDRANTS AT APPROVED LOCATIONS. WATER USED UNDER THIS PERMIT IS FOR GENERAL CONSTRUCTION PUPOSES SUCH AS DUST CONTROL, SITE PREPARATION, ETC.

12. **NEW MATERIAL:**
    ALL MATERIALS, FITTINGS, AND APPURTENANCES CALLED FOR ON THE PLANS, OR REQUIRED FOR A COMPLETE INSTALLATION, SHALL BE NEW. NO REFURBISHED ITEMS OR MATERIALS WILL BE ALLOWED.

13. **VALVE BOXES:**
    THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL NEW AND EXISTING WATER VALVE BOXES TO THE FINISHED GRADE PER SD-300.

14. **JOINT RESTRAINT:**
    THE CONTRACTOR SHALL USE MECHANICALLY RESTRAINED JOINTS AT ALL CHANGES OF DIRECTION IN THE WATER MAINS. THE LENGTHS OF RESTRAINED PIPE ON BOTH SIDES OF THE RESTRAINED JOINT SHALL BE AS CALLED FOR ON THE PLANS OR AS PER STANDARD DETAIL W-600. WITH THE APPROVAL OF THE ENGINEER AND THE CITY OF TUCSON WATER DEPARTMENT, THE CONTRACTOR MAY USE CONCRETE THRUST BLOCKING IN LIEU OF MECHANICALLY RESTRAINED JOINTS. CONCRETE THRUST BLOCKING SHALL COMPLY WITH STANDARD DETAIL SD-610.

15. **MARKING TAPE:**
    IF ANY EXISTING DETECTABLE MARKING TAPE IS DISTURBED OR DESTROYED DURING CONSTRUCTION, THE CONTRACTOR SHALL FURNISH AND INSTALL APPROVED NEW TAPE. NEW MARKING TAPE SHALL BE INCIDENTAL TO CONSTRUCTION AND THERE SHALL BE NO ADDITIONAL CHARGE FOR REINSTALLATION.

16. **TRACER WIRE:**
    THIS PROJECT WILL HAVE TRACER WIRE INSTALLED. IF ANY EXISTING TRACER WIRE IS DISTURBED OR DESTROYED DURING CONSTRUCTION, THE CONTRACTOR SHALL FURNISH AND INSTALL NEW TRACER WIRE TO REPLACE THE EXISTING. THERE SHALL BE NO ADDITIONAL CHARGE FOR THIS REINSTALLATION. THE TRACER WIRE SHALL BE CERTIFIED BY A LICENSED ELECTRICAL CONTRACTOR FOR CONTINUITY PRIOR TO FINAL ROADWAY PAVEMENT. FINAL ACCEPTANCE WILL NOT BE GRANTED UNTIL CERTIFICATION IS RECEIVED BY TUCSON WATER.

17. **WATERLINE CONNECTION:**
    THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION AND DEPTH OF EACH WATER MAIN TIE-IN LOCATION AND CONNECTION. ASSOCIATED COSTS ARE TO BE INCIDENTAL TO WATER LINE WORK.

18. **EASEMENTS:**
    EASEMENTS AND THEIR LOCATIONS ARE PRESENTED BASED ON LIMITED RECORD DOCUMENTS. CONTRACTOR SHALL COORDINATE WITH UTILITIES REGARDING WORK IN THE VICINITY OF THEIR LINES.

19. **CLEARANCES:**
    THE MINIMUM HORIZONTAL SEPARATION IS FIVE (5) FEET (FROM OUTSIDE WATER LINE TO OUTSIDE ELECTRICAL POLE/CONDUIT). MINIMUM VERTICAL SEPARATION IS ONE (1) FOOT (FROM OUTSIDE WATER LINE TO OUTSIDE ELECTRICAL CONDUIT) OR ANY OTHER FEATURE.

20. **VERTICAL DATUM:**
    ELEVATION BASED UPON NAVD 88.

    MAP COORDINATES ARE NAD 83/92 MODIFIED CENTRAL ZONE STATE PLANE COORDINATES USING G.A.F. = 1.00016

21. **BASIS OF BEARING:**
    BASIS OF BEARING: DESIGN INFORMATION BASED UPON AERIAL PHOTOGRAMMETRIC MAPPING SUPPLIED BY ADOT. PHOTOGRAMMETRY JOB NO. 3803 - AERIAL PHOTOGRAPHY DATED OCTOBER 29, 2008.

22. **EXISTING UTILITIES:**
    EXISTING UTILITIES, AS DEPICTED ON THE PROJECT PLANS, ARE BASED ON LEVEL "D", "C", "B" & "A" SUE AND/OR AS-BUILT PLANS. EXISTING UTILITY ELEVATION DATA, AS DEPICTED IN PROFILE, IS BASED ON LEVEL "A" SUE (POTHOLE DATA), AS-BUILT PLANS AND/OR APPROXIMATE BURIAL DEPTH. CONTRACTOR SHALL FIELD VERIFY UTILITY CONFLICTS AND ADJUST WATER LINE INSTALLATION, AT THE DIRECTION OF THE ENGINEER.

23. **LEAD FREE:**
    THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PIPE, FITTINGS, APPURTENANCES OR ANY OTHER MATERIALS TO BE IN CONTACT WITH POTABLE WATER IN ACCORDANCE WITH THE LEAD-FREE REQUIREMENTS DEFINED BY THE "REDUCTION OF LEAD IN DRINKING WATER ACT OF 2011" AMMENDING SECTION 1417 OF THE SAFE DRINKING WATER ACT.

24. **PVC PIPE DEFLECTION:**
    A. THE CONTRACTOR MAY NOT DEFLECT PVC PIPE AT BELL & SPIGOT GASKETED JOINTS OR AS LONGITUDINAL BENDING IN THE PIPE SEGMENT.
    B. THE CONTRACTOR SHALL ONLY DEFLECT PVC PIPE AT DUCTILE IRON BENDS/FITTINGS PROVIDED THE DEFLECTION DOES NOT EXCEED MANUFACTURER'S ALLOWABLE DEFLECTION.

ABBREVIATIONS

ARV	AIR RELEASE VALVE
AVE.	AVENUE
BOT	BOTTOM
B & C	BOX AND COVER
CA	CEMENT ASBESTOS
&	CENTERLINE
CL	CLASS
CON	CONNECTION
CU	COPPER
DIA.	DIAMETER
DR	DIMENSION RATIO
DRWY.	DRIVEWAY
DIP	DUCTILE IRON PIPE
EA	EACH
EXIST.	EXISTING
FPS	FIRE PROTECTION SERVICE
FL	FLANGE
ELEV.	ELEVATION
G	GAS
HZ/HORIZ.	HORIZONTAL
INV.	INVERT
LT.	LEFT
LF	LINEAR FOOT
MATL.	MATERIAL
MJ	MECHANICAL JOINT
MIN.	MINIMUM
NPI	NON PAY ITEM
N.	NORTH
PVC	POLYVINYL CHLORIDE
℄	PROPERTY LINE
RT.	RIGHT
R/W OR ROW	RIGHT-OF-WAY
ST.	STREET
STA.	STATION
SD	STORM DRAIN
TH	THICKNESS
VT/VERT.	VERTICAL

SERVICE WORK SYMBOLS

(S) SERVICE STUB (NO METER): SIMILAR TO SD-310 SERVICE RENEWAL, WITH NEW METER BOX. METER AND ALL CONNECTION FEES TO BE THE RESPONSIBILITY OF THE OWNER AND OBTAINED THROUGH THE NEW SERVICES DIVISION.

(T) PROPOSED TIE-OVER OF EXISTING SERVICE LINE.

(MA) PROPOSED ADJUSTMENT OF EXISTING WATER METER AND BOX.

(MR) PROPOSED RELOCATION OF EXISTING WATER METER AND BOX, WITH RENEWAL OF EXISTING WATER SERVICE LINE.

(SR) REMOVAL OF SERVICE. INCLUDES REMOVAL OF SERVICE LINE, METER, METER BOX, AND ALL APURTENANCES PER SD-350. SALVAGE METER TO TUCSON WATER.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	816	849	

010 PM 252

WATER SYSTEM MODIFICATION LEGEND

EXISTING	WATER SYMBOLS	NEW
6" CI — PN XXX-YEAR — W	WATER MAIN	
6" — W	GATE VALVE	
	FIRE HYDRANT	
	FIRE SERVICE	
1½" — W	SERVICE LINE & METER BOX	
	CUT & PLUG	6" — W
	BENDS, HORIZ. & VERT.	
8" — W — 6"	REDUCER/INCREASER	
	END CAP	
	AIR RELEASE VALVE W/SIZE	1" (A)
	DRAIN VALVE ASSEMBLY	
	MATERIAL CHANGE	
	SHEET NUMBER	XX
	SERVICE LINE TIE-OVER	(V)
	METER RELOCATION SERVICE LINE ADJUSTMENT	(MA)
	WATER RELOCATION SERVICE LINE RENEWAL	(MR)
	WATER RELOCATION SERVICE LINE REMOVAL	(SR)
	SERVICE STUB	(S)
	CORROSION TEXT STATION	

BOUNDARY SYMBOLS	
	CENTER LINE
	RIGHT-OF-WAY
×—×—×—×—×—×—×	FENCE
	BARRICADE RAILING
— — — — — — — —	EASEMENT BOUNDARY LINE
	WALL

UTILITIES SYMBOLS		
FOT	FIBER OPTIC TELEPHONE	FOT
S	SANITARY SEWER	S
T	UNDERGROUND PHONE LINE	UTV
TV	TELEVISION LINE	TV
SD	STORM DRAIN	
P	UNDERGROUND POWER	P
OP — ○ — OP	OVERHEAD POWER & POLES	OP — ● — OP
G	GAS	G
	CUT LINE	C
	FILL LINE	F
	DRAINAGE CULVERTS	

PROFILE SYMBOLS	
	POTABLE GATE VALVE
	POTABLE WATER MAIN
	END CAP TAPPED
	CORROSION TEXT STATION

CULTURE SYMBOLS	
	PAVED ROADWAY

WATER SHEET W2 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP — WSP USA Inc. 177 N. Church Ave. Suite 1105 Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
GENERAL NOTES

Registered Professional Engineer Certification — 37622 FRANK EMMETT FRY IV — Date Signed 3/19/19 — ARIZONA, U.S.A. — Expires 06/30/20

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI | DWG NO. U-2.02

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

Tue 19 Mar 2019, 17:31:11 \\prdpwics01\ics_workingdir\5783\43865_101\h8480w102.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	817	849	

010 PM 252

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

N

STA 101+38.99, 308.75' LT
RUTHRAUFF ROAD CST ℄ =

POB STA 4+00.00
NORTH LOOP CST ℄
N 472286.912
E 974355.464

SECTION LINE

NORTH LOOP CST ℄

STA 108+69.61, 399.95' LT
RUTHRAUFF ROAD CST ℄ =

POB STA 16+00.00
HIGHWAY DR CST ℄
N 472390.466
E 975081.233

HIGHWAY DRIVE CST ℄

STA 16+94.21
HIGHWAY DR CST ℄ =

STA 11+26.02
NORTH LOOP CST ℄
N 472296.256
E 975081.424

S 0°06'58" E
94.21

N 89°15'45" E
726.02

N 89°15'45" E
485.64

S 0°11'22" E
67.29

PC 16+11.66
N 472302.506
E 975567.028

R=48'

STA 115+20.04, 541.76' LT
RUTHRAUFF RD CST ℄ =

POB STA 17+00.00
MARYVALE CONNECTOR CST ℄
N 472543.754
E 975729.058

MARYVALE
CONNECTOR CST ℄

PI 17+67.29
N 472476.469
E 975729.281

S 2°18'00" W
139.15

PC 19+06.44
N 472337.427
E 975723.696

PT 19+40.22
N 472306.847
E 975711.053

S 42°37'34" W
59.78

POE 154+56.90
N 472071.656
E 979674.881

RUTHRAUFF RD CST ℄

SECTION LINE

PI 75+41.32
N 471958.596
E 971760.196

STA 92+11.13, 52.19' RT,
RUTHRAUFF RD CST ℄ =

CONNECT TO EXST STA 3+84.07
WATERLINE
TRANSMISSION 1 CST ℄
N 471918.993
E 973430.353

PI 101+89.19
N 471978.554
E 974407.993

PC 19+96.17
N 471994.301
E 975082.035

S 0°06'58" E
301.96

STA 17+25.23
NORTH LOOP CST ℄ =

POE STA 20+00.00
MARYVALE CONNECTOR CST ℄
N 472262.861
E 975670.568

PT 18+48.82
N 472152.915
E 975718.958

R=150'

S 0°09'06" E
151.18

STA 108+63.37
RUTHRAUFF ROAD CST ℄ =

STA 20+00.00
HIGHWAY DR CST ℄
N 471990.469
E 975082.065

STA 108+63.89, 0.03' RT,
RUTHRAUFF RD CST ℄

51010

17 | 16 | 20 | 21

N 89°34'05" E
2647.87

N 88°59'14" E

5267.71

N 88°58'53" E
111.98

N 471874.141
E 973495.866

N 471919.045
E 973450.307

N 89°36'24" E
404.03

S 79°10'55" E
438.87

N 471791.768
E 973926.935

S 55°40'55" E
144.95

S 45°24'54" E
63.97

N 471710.050
E 974046.649

S 44°00'46" E
501.73

N 471897.434
E 974854.608

N 88°59'14" E
250.69

R=333'

N 471901.865
E 975105.264

S 46°00'46" E
63.64

N 88°59'14" E
458.38

N 471865.769
E 975609.358

N 471857.668
E 975151.052

N 43°59'14" E
133.47

PT 22+02.84
N 471800.771
E 975144.528

S 35°40'32" E
97.16

N 44°59'14" E
711.38

STA 109+77.73, 270.69' RT
RUTHRAUFF ROAD CST ℄ =

POE STA 23+00.00
HIGHWAY DR CST ℄
N 471721.842
E 975201.193

SOUTH MARYVALE
AVENUE CST ℄

S 1°38'10" E
495.00

STA 118+84.67, 48.93' RT
RUTHRAUFF ROAD CST ℄ =

POE STA 50+20.40
WATERLINE TRANSMISSION 2 CST ℄
N 471959.601
E 976104.073

STA 115+01.76
RUTHRAUFF ROAD CST ℄ =

STA 20+00.00
SOUTH MARYVALE AVE CST ℄
N 472001.752
E 975720.358

STA 115+00.76
RUTHRAUFF ROAD CST ℄ =

STA 20+00.00
NORTH LOOP CST ℄
N 472001.734
E 975719.358

STA 115+07.15, 494.97' RT
RUTHRAUFF ROAD CST ℄ =

STA 24+95.00
SOUTH MARYVALE AVE CST ℄
N 471506.952
E 975734.491

STA 88+27.06, 52.02' RT,
RUTHRAUFF RD CST ℄ =

POB STA 0+00.00
WATERLINE TRANSMISSION 1 CST ℄
N 471916.270
E 973046.288

WATERLINE TRANSMISSION 1 CST ℄

WATERLINE
TRANSMISSION 2 CST ℄

STA 101+28.50, 583.81' RT,
RUTHRAUFF RD CST ℄ =
STA 14+90.85
WATERLINE TRANSMISSION 1 CST ℄ =

POB STA 30+00.00
WATERLINE TRANSMISSION 2 CST ℄
N 471394.301
E 974351.698

S 88°35'48" E
26.00

N 471349.211
E 974395.261

N 471348.574
E 974421.255

S 41°11'11" E
320.46

STA 102+01.13, 641.46' RT,
RUTHRAUFF RD CST ℄ =

CONNECT TO EXST STA 15+94.54
WATERLINE
TRANSMISSION 1 CST ℄
N 471337.406
E 974431.269

STA 103+98.04, 874.97' RT,
RUTHRAUFF RD CST ℄ =

POE STA 19+00.00
WATERLINE TRANSMISSION 1 CST ℄
N 471107.412
E 974632.275

STA 117+79.21, 48.94' RT
RUTHRAUFF ROAD CST ℄ =

CONNECT TO EXST STA 49+14.94
WATERLINE
TRANSMISSION 2 CST ℄
N 471957.725
E 975998.626

N 471961.802
E 975702.054

N 471966.120
E 975944.966

N 88°58'53" E
242.95

S 79°46'07" E
47.91

N 471957.611
E 975992.109

NOTE: Coordinates are NAD 83/92 Modified Central Zone State Plane Coordinates Using G.A.F. = 1.00016

GEOMETRIC CONTROL POINT DATA

	NORTHING	EASTING	DESCRIPTION
51010	471990.451	975082.589	FND 2IN BCFL RUTHRAUFF DAVIS

WATER SHEET W3 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

		NAME	DATE
DESIGN		DL	3-19
DRAWN		CPG	3-19
CHECKED		FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
GEOMETRIC CONTROL SHEET

Registered Professional Engineer Certificate
37622
FRANK EMMETT
FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. U-2.03

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

VERT: 1"=4'
HORZ: 1"=40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

Tue 19 Mar 2019, 17:31:44

\\prdpwics01\ics_workingdir\5783\43865_184\h8480w103.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	818	849	

010 PM 252

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

BID SCHEDULE MATERIAL QUANTITIES SUMMARY

ITEM NO.	ITEM DESCRIPTION		SHEET W05		SHEET W06		SHEET W07		SHEET W08		SHEET W09		SHEET W10		SHEET W11		SHEET W12		SHEET W13		SHEET W14		SHEET W15		SHEET W16		TOTALS	
			EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT	EST.	AS BUILT
2020121	REMOVE (WATER LINE PIPE) (CA)	LF	474						1819		1386		285		257						330						4551	
2020123	REMOVE (WATER LINE PIPE) (NON CA)	LF	261		745				65		25		568										3				1667	
2020155	REMOVE (FIRE HYDRANT)	EA	1						2		2																5	
2020173	REMOVE (BACKFLOW PREVENTION)	EA	2								3		1						1		3						10	
5010600	JACKING, BORING OR TUNNELING PIPE	LF	110				515		7																		632	
8080032	BACKFLOW PREVENTION UNIT (REDUCED PRESSURE) (1")	EA																							1		1	
8080035	BACKFLOW PREVENTION UNIT (REDUCED PRESSURE) (2")	EA																							1		1	
8080188	AIR/VACUUM RELEASE VALVE (1")	EA																			2		4				6	
8080189	AIR/VACUUM RELEASE VALVE (2")	EA													1				3								4	
8080221	GATE VALVE (6")	EA																	1								1	
8080222	GATE VALVE (8")	EA																			1		2		1		4	
8080224	GATE VALVE (12")	EA																	1								1	
8080232	GATE VALVE (16")	EA	1		1						1				1		1				1						6	
8080288	PIPE (PVC) (6") (DR14) (CL305)	LF																	6		8						14	
8080293	PIPE (PVC) (12") (DR14) (CL305)	LF																	324								324	
8080299	PIPE (PVC) (8") (DR14) (CL305)	LF																					199		515		714	
8080378	PIPE (PVC) (16") (DR18) (CL235)	LF			91										616		596		259		181						1743	
8080617	PROVIDE WATER SERVICE (1")	EA							1										1		2				1		5	
8080638	RELOCATE WATER METER (MR)	EA																							3		3	
8080646	RESET FRAME AND COVER FOR VALVE BOX	EA																							2		2	
8080651	FIRE HYDRANT	EA																			1		1		1		3	
8080901	DRAIN VALVE ASSEMBLY	EA							1																		1	
8081714	PIPE, DUCTILE IRON (24") (CL 200)	LF	387		605		30		588		529																2139	
8082106	PIPE, DUCTILE IRON, 6" (CL 350)	LF																			5						5	
8082108	PIPE, DUCTILE IRON, 8" (CL 350)	LF																			80		130				210	
8082112	PIPE, DUCTILE IRON, 12" (CL 350)	LF																	46								46	
8082116	PIPE, DUCTILE IRON, 16" (CL 200)	LF	20								86				105				72								283	
8082124	PIPE, DUCTILE IRON, 24" (CL 250)	LF	110				670		11																		791	
8084024	BUTTERFLY VALVE (24")	EA					1		1																		2	
8090704	CASING (40", OPEN CUT)	LF					155																				155	
9240160	MISCELLANEOUS WORK (ABANDON AND GROUT, 16" PIPE)	LF											352														352	
9240169	MISCELLANEOUS WORK (REMOVE STEEL CASING PIPE)	LF											184														184	
9240172	MISCELLANEOUS WORK (WATER SERVICE REMOVAL) (SR)	EA							2		7		1						1		3						14	
9240173	MISCELLANEOUS WORK (THRUST RESTRAINT PER SD-610)	EA	1												1				1		1				1		5	
9240176	MISCELLANEOUS WORK (CORROSION TEST STATIONS)	EA	3		1		1		1		1																7	
9240178	MISCELLANEOUS WORK (JACK AND BORE EQUIP, SURVEY, ETC.)	EA	1				0.9		0.1																		2	

WATER SHEET W4 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES
RUTHRAUFF ROAD
WATER MODIFICATION PLANS
QUANTITIES SUMMARY SHEET

ROUTE: I-10 | LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-2.04 | ___ OF ___

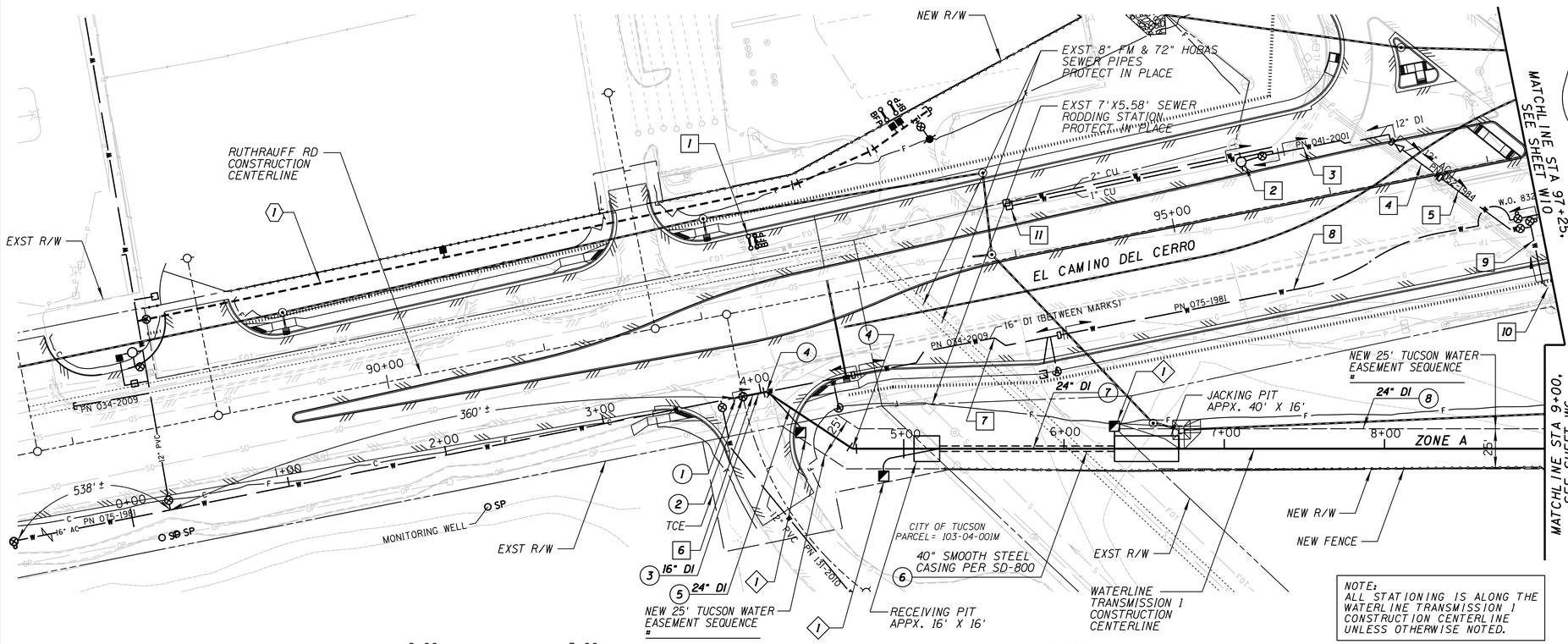
37622 FRANK EMMETT FRY IV 3/20/19 Date Signed ARIZONA, U.S.A. Expires 06/30/20

NO.	DATE	REVISION	BY	CHKD.	APPR.

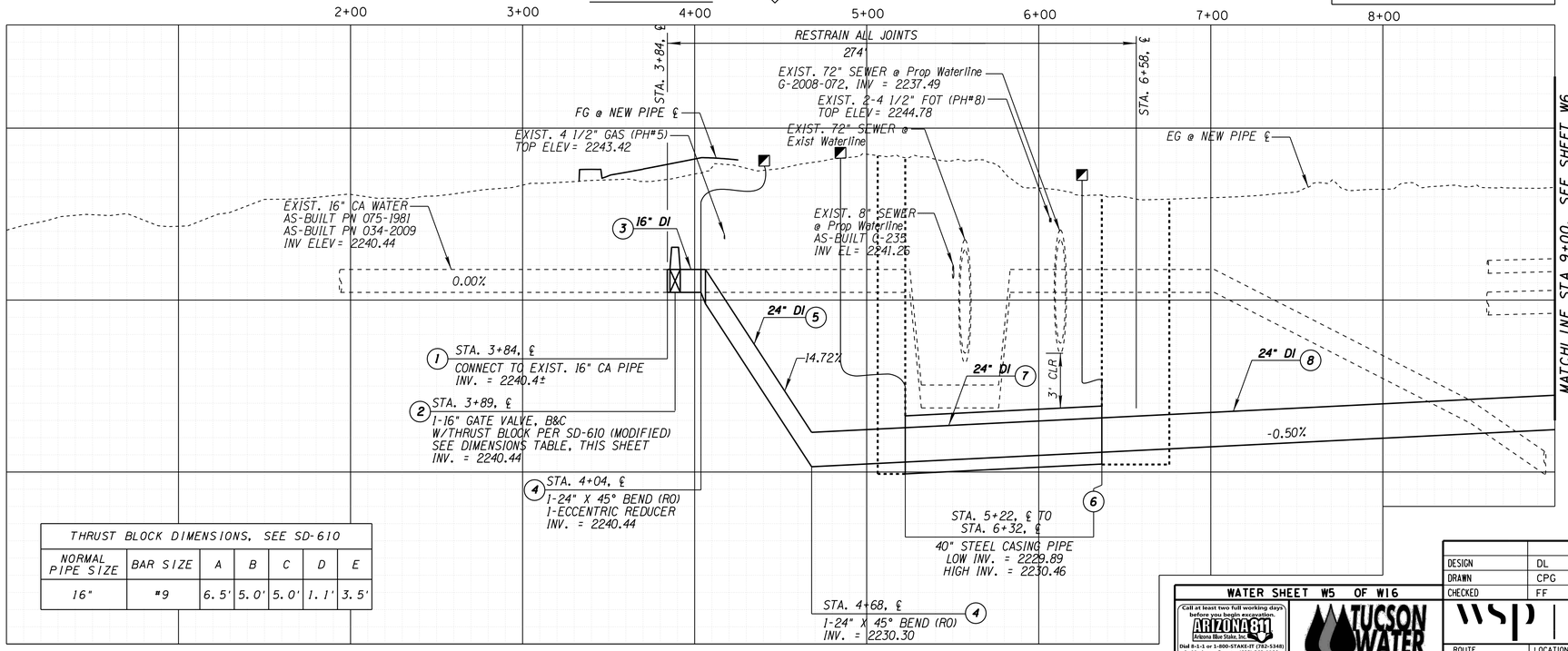
Wed 20 Mar 2019, 17:31:20 \\prdpwics01\ics_workingdir\5783\43865_102\h8480w104.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	819	849	

010 PM 252



NOTE:
ALL STATIONING IS ALONG THE WATERLINE TRANSMISSION 1 CONSTRUCTION CENTERLINE UNLESS OTHERWISE NOTED.



1 STA. 3+84, ℄
CONNECT TO EXIST. 16" CA PIPE
INV. = 2240.4±

2 STA. 3+89, ℄
1-16" GATE VALVE, B&C
W/THRUST BLOCK PER SD-610 (MODIFIED)
SEE DIMENSIONS TABLE, THIS SHEET
INV. = 2240.44

4 STA. 4+04, ℄
1-24" X 45° BEND (RO)
1-ECCENTRIC REDUCER
INV. = 2240.44

6 STA. 5+22, ℄ TO STA. 6+32, ℄
40" STEEL CASING PIPE
LOW INV. = 2229.89
HIGH INV. = 2230.46

4 STA. 4+68, ℄
1-24" X 45° BEND (RO)
INV. = 2230.30

THRUST BLOCK DIMENSIONS, SEE SD-610						
NORMAL PIPE SIZE	BAR SIZE	A	B	C	D	E
16"	#9	6.5'	5.0'	5.0'	1.1'	3.5'

VERT: 1" = 4'
HORZ: 1" = 40'

REMOVE / ABANDON NOTES

1 RUTHRAUFF RD ℄
STA. 92+39, 41' LT.
STA. 92+42, 41' LT.
REMOVE BACKFLOW PREVENTION 2 EA

2 RUTHRAUFF RD ℄
STA. 95+52, 31' LT.
REMOVE FIRE HYDRANT INSTALLATION PER SD-500 1 EA

3 RUTHRAUFF RD ℄
STA. 95+65, 32' LT. TO 96+43.29' LT.
REMOVE AND DISPOSE 6" DI PIPE 79 LF

4 RUTHRAUFF RD ℄
STA. 96+43, 29' LT. TO 96+69, 3' RT.
REMOVE AND DISPOSE 12" DI PIPE 40 LF

5 RUTHRAUFF RD ℄
STA. 96+69, 3' RT. TO 97+19, 44' RT.
REMOVE AND DISPOSE 12" CA PIPE 68 LF

6 RUTHRAUFF RD ℄
STA. 92+11, 52' RT. TO 92+86, 53' RT.
REMOVE AND DISPOSE 16" CA PIPE 75 LF

7 RUTHRAUFF RD ℄
STA. 92+86, 53' RT. TO 94+17, 53' RT.
REMOVE AND DISPOSE 16" DI PIPE 136 LF

8 RUTHRAUFF RD ℄
STA. 94+17, 53' RT. TO 97+25, 38' RT.
REMOVE AND DISPOSE 16" CA PIPE 311 LF

9 RUTHRAUFF RD ℄
STA. 97+19, 38' RT. TO 97+19, 58' RT.
REMOVE AND DISPOSE 16" CA PIPE 20 LF

10 STA. 8+94, 125' LT. TO 9+00, 102' LT.
REMOVE AND DISPOSE 16" PVC PIPE 6 LF

11 SEE SHEET W16 FOR SERVICE WORK

CONSTRUCTION NOTES

1 STA. 3+84, ℄
CONNECT TO EXIST. 16" CA PIPE 1 EA(NPI)

2 STA. 3+89, ℄
16" GATE VALVE, B&C 1 EA
W/ THRUST BLOCK PER SD-610 (MODIFIED) 1 EA
SEE DIMENSION TABLE, THIS SHEET.

3 STA. 3+89, ℄ TO
STA. 4+04, ℄
16" DI (CL 200) 20 LF

4 STA. 4+04, ℄
STA. 4+68, ℄
24" X 45° BEND (RO) 2 EA(NPI)
24" TO 16" ECCENTRIC REDUCER 1 EA(NPI)

5 STA. 4+04, ℄ TO
STA. 5+22, ℄
24" DI (CL 200) 119 LF

6 STA. 5+22, ℄ TO
STA. 6+32, ℄
40" STEEL CASING
PIPE (TH=⅜") PER SD-800
JACKING AND BORING 110 LF

7 STA. 5+22, ℄ TO
STA. 6+32, ℄
24" DI (CL 250) 110 LF

8 STA. 6+32, ℄ TO
STA. 9+00, ℄
24" DI (CL 200) 268 LF

REFERENCE NOTES

1 DISTRIBUTION WATER MAIN PLAN & PROFILE, SEE SHEET W16

MONITORING AND PROTECTION

1 STA. 4+34.7' RT., TYPE 5, DTL. NO. CP-1
STA. 4+88.14' RT., TYPE 2/5, DTL. NO. CP-3
STA. 6+32.11' LT., TYPE 2/5, DTL. NO. CP-4
CTS ABOVE GROUND PER TYPE & DETAIL 3 EA
SPECIFY ABOVE & TUCSON WATER
STANDARD DETAIL SD-706. SEE ITEM
NO. 9240176 IN THE SPECIAL PROVISIONS

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1100
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
TRANSMISSION PLAN AND PROFILE

Registered Professional Engineer — 37622 — FRANK EMMETT — FRY IV — Date Signed 3/19/19 — ARIZONA, U.S.A. — Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-2.05

___ OF ___

WATER SHEET W5 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

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

Tue 19 Mar 2019, 17:31:29

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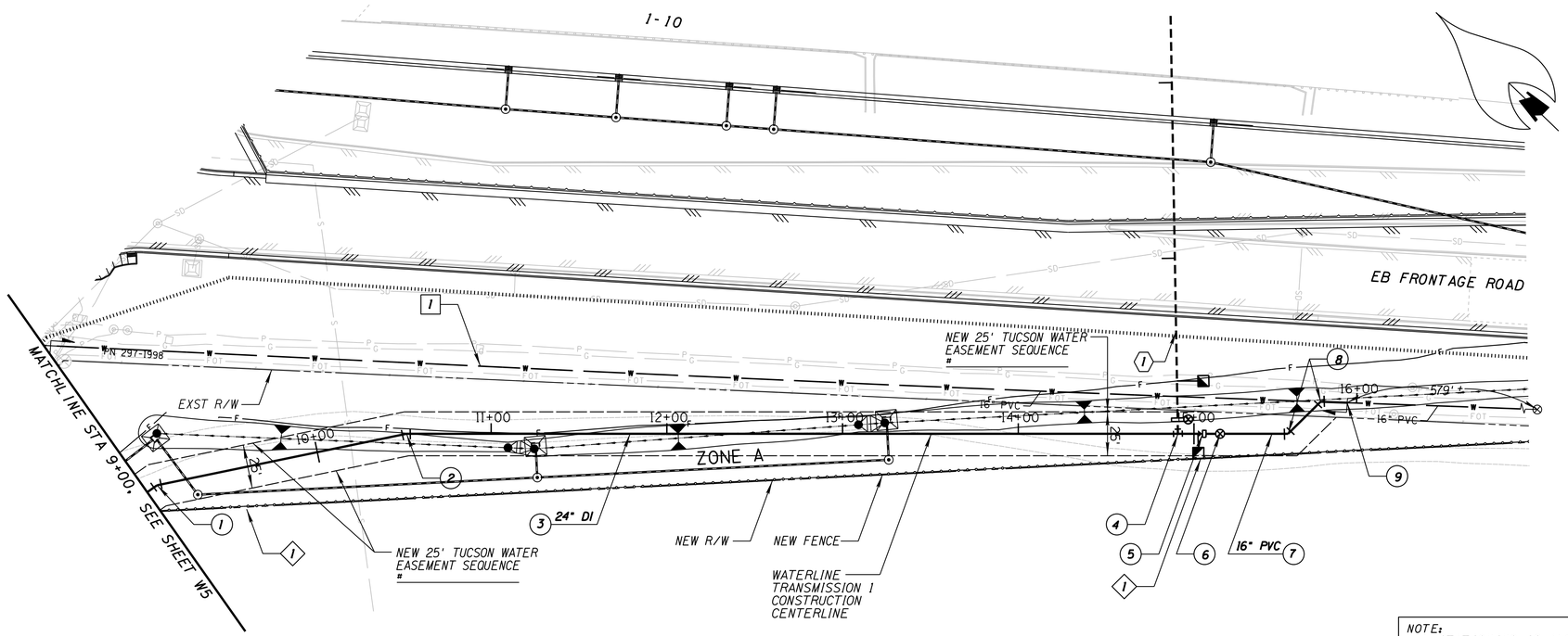
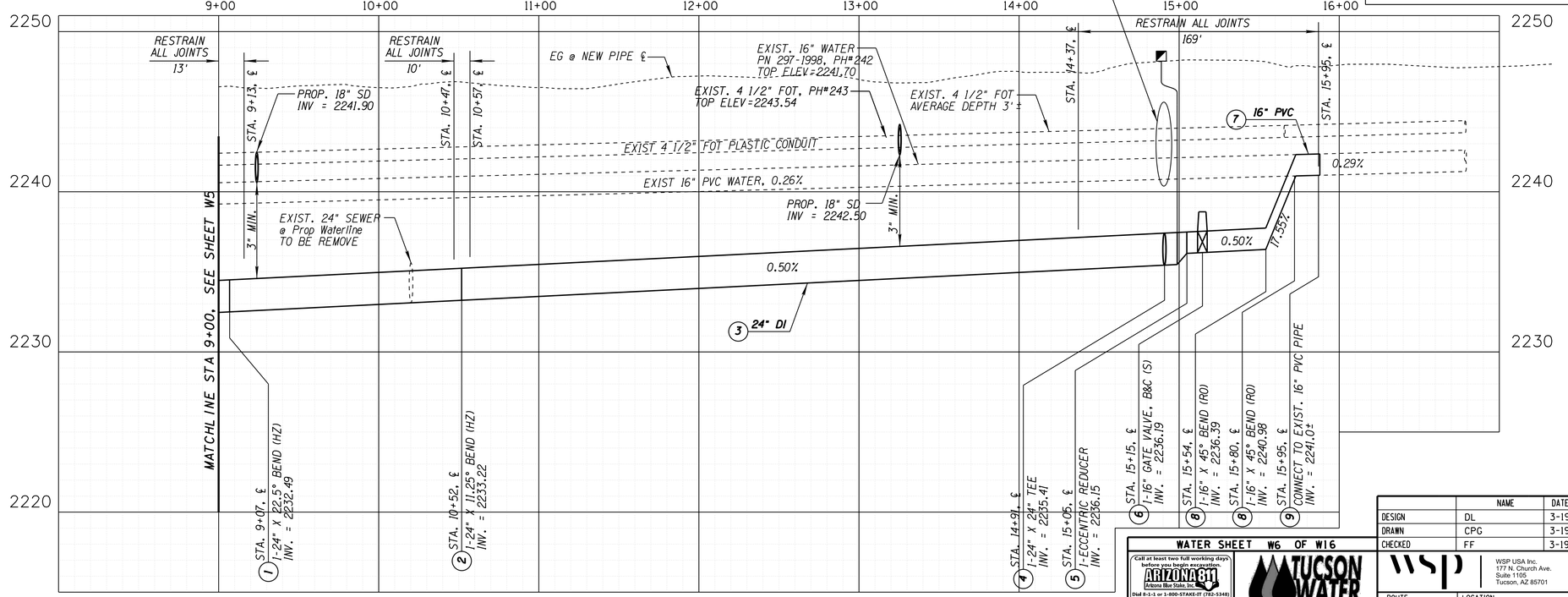
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	820	849	

010 PM 252



NOTE:
ALL STATIONING IS ALONG THE WATERLINE TRANSMISSION 1 CONSTRUCTION CENTERLINE UNLESS OTHERWISE NOTED.



VERT: 1" = 4'
HORZ: 1" = 40'

REMOVE / ABANDON NOTES

1 STA. 9+00, 102' LT. TO 15+95, ℄
REMOVE AND DISPOSE 16" PVC PIPE — 745 LF

CONSTRUCTION NOTES

1. STA. 9+07, ℄ 24" X 22.5° BEND (HZ) — 1 EA(NPI)
2. STA. 10+52, ℄ 24" X 11.25° BEND (HZ) — 1 EA(NPI)
3. STA. 9+00, ℄ TO STA. 15+05, ℄ 24" DI (CL 200) PIPE — 605 LF
4. STA. 14+91, ℄ 24" X 24" TEE — 1 EA(NPI)
5. STA. 15+05, ℄ 24" TO 16" ECCENTRIC REDUCER — 1 EA(NPI)
6. STA. 15+15, ℄ 16" GATE VALVE, B&C — 1 EA
7. STA. 15+05, ℄ TO STA. 15+95, ℄ 16" PVC DR18 (CL235) — 91 LF
8. STA. 15+54, ℄, STA. 15+80, ℄ 16" X 45° BEND (RO) — 2 EA(NPI)
9. STA. 15+95, ℄ CONNECT TO EXIST. 16" PVC PIPE — 1 EA(NPI)

REFERENCE NOTES

1. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W7

MONITORING AND PROTECTION

1. STA. 15+02, 8' RT. TYPE 5 ABOVE GROUND CTS PER DETAIL NO. CP-2 & TUCSON WATER STANDARD DETAIL SD-706. SEE ITEM NO. 9240176 IN THE SPECIAL PROVISIONS — 1 EA

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WATER SHEET W6 OF W16

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

WSP USA Inc. 177 N. Church Ave. Suite 1105 Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
TRANSMISSION PLAN AND PROFILE

37622 FRANK EMMETT FRY IV 3/19/19 Date Signed ARIZONA, U.S.A. Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI
DWG NO. U-2.06

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

NO.	DATE	REVISION	BY	CHKD.	APPR.

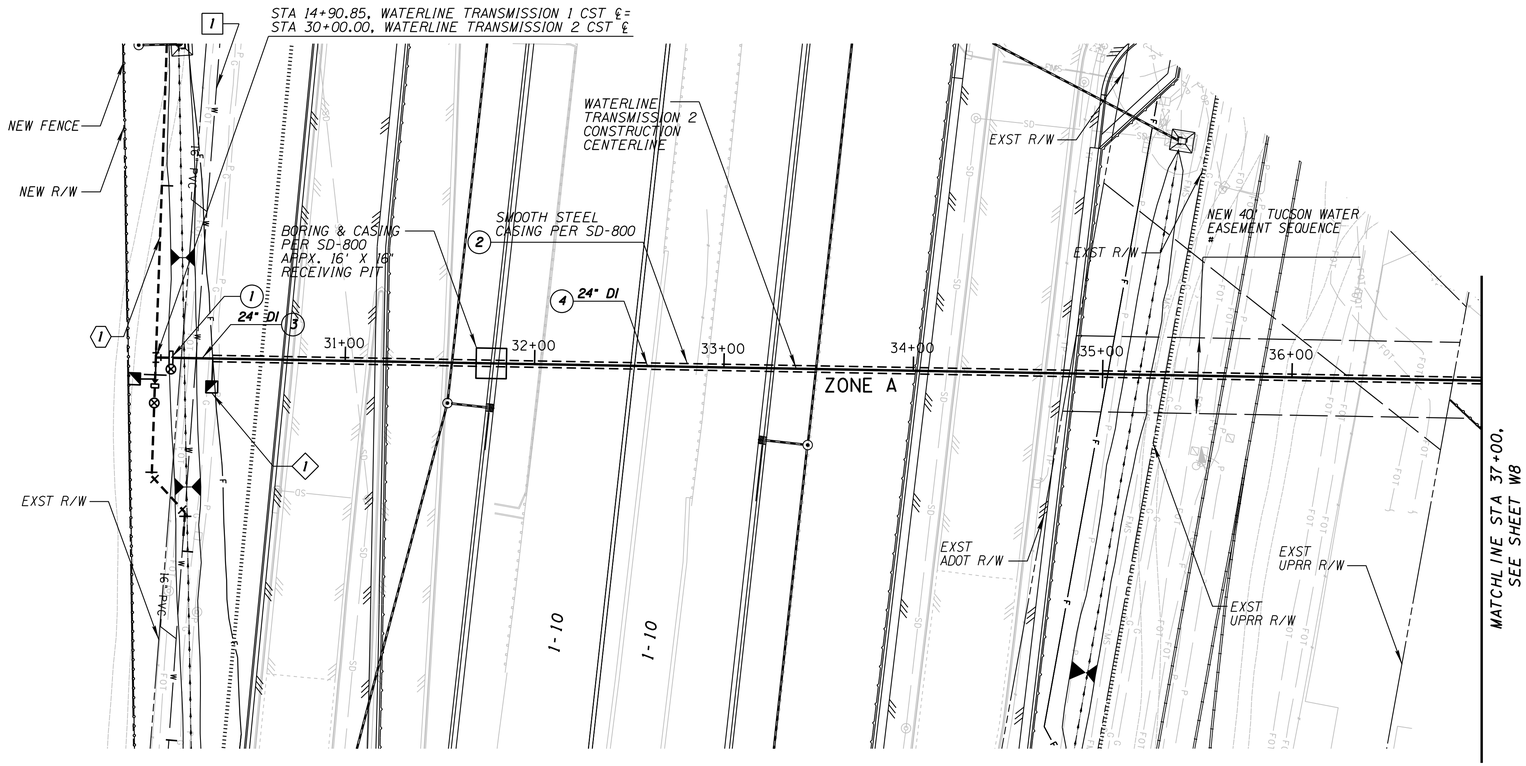
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

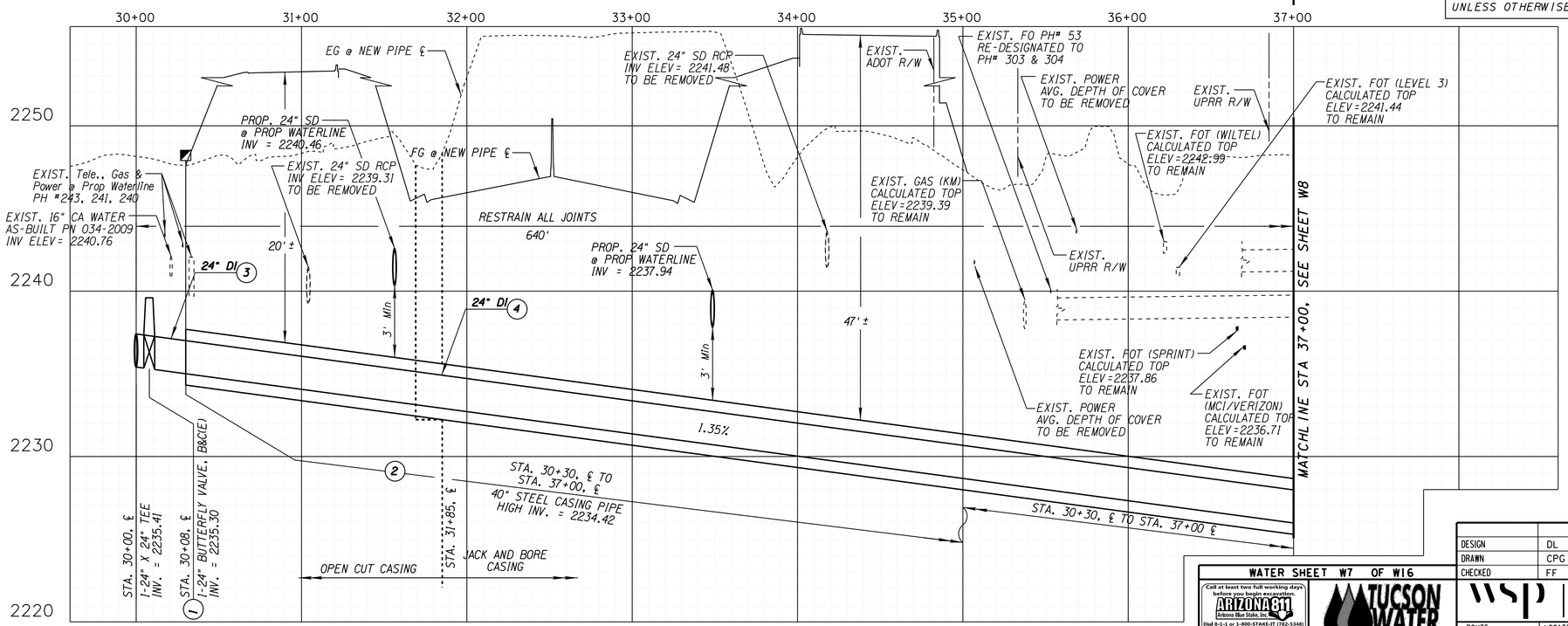
Tue 19 Mar 2019, 17:31:28 \\prdpwics01\ics_workingdir\5783\43865_156\h8480w106.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	821	849	

010 PM 252

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





NOTE:
ALL STATIONING IS ALONG THE WATERLINE TRANSMISSION 2 CONSTRUCTION CENTERLINE UNLESS OTHERWISE NOTED.

REMOVE / ABANDON NOTES

(1) SEE SHEET W6 FOR REMOVAL OF EXISTING PIPE

CONSTRUCTION NOTES

(1) STA. 30+08, ℄
24" BUTTERFLY VALVE, B&C(E) — 1 EA

(2) STA. 30+30, ℄ TO STA. 31+85, ℄
40" STEEL CASING PIPE PER SD-800
OPEN CUT — 155 LF
STA. 31+85, ℄ TO STA. 35+00, ℄
40" STEEL CASING PIPE (TH=9/16")
PER SD-800 JACKING AND BORING — 515 LF

(3) STA. 30+00, ℄ TO
STA. 30+30, ℄
24" DI (CL 200) — 30 LF

(4) STA. 30+30, ℄ TO
STA. 37+00, ℄
24" DI (CL 250) — 670 LF

REFERENCE NOTES

(1) TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W6

MONITORING AND PROTECTION

(1) STA. 30+30, 12' RT.
TYPE 2/5 ABOVE GROUND CTS PER DETAIL NO. CP-4 & TUCSON WATER STANDARD DETAIL SD-706. SEE ITEM NO. 9240176 IN THE SPECIAL PROVISIONS — 1 EA

WATER SHEET W7 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

VERT: 1" = 4'
HORZ: 1" = 40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
TRANSMISSION PLAN AND PROFILE

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-2.07

___ OF ___

Registered Professional Engineer — 37622 — FRANK EMMETT — FRY IV — Date Signed 3/19/19 — ARIZONA, U.S.A. — Expires 06/30/20

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	822	849	

010 PM 252

REMOVE / ABANDON NOTES

13 RUTHRAUFF RD ℄
STA. 110+00, 55'LT. TO 112+04, 55'LT.
REMOVE AND DISPOSE 8" CA PIPE 204 LF

14 RUTHRAUFF RD ℄
STA. 110+17, 72'LT.
REMOVE FIRE HYDRANT INSTALLATION
PER SD-500 1 EA

15 RUTHRAUFF RD ℄
STA. 110+59, 86'RT.
REMOVE FIRE HYDRANT INSTALLATION
PER SD-500 1 EA

16 RUTHRAUFF RD ℄
STA. 108+42, 139'RT. TO 108+65, 116'RT.
REMOVE AND DISPOSE 12" CA PIPE 32 LF

17 RUTHRAUFF RD ℄
STA. 108+65, 116'RT. TO 108+72, 109'RT.
REMOVE AND DISPOSE 12" DI PIPE 10 LF

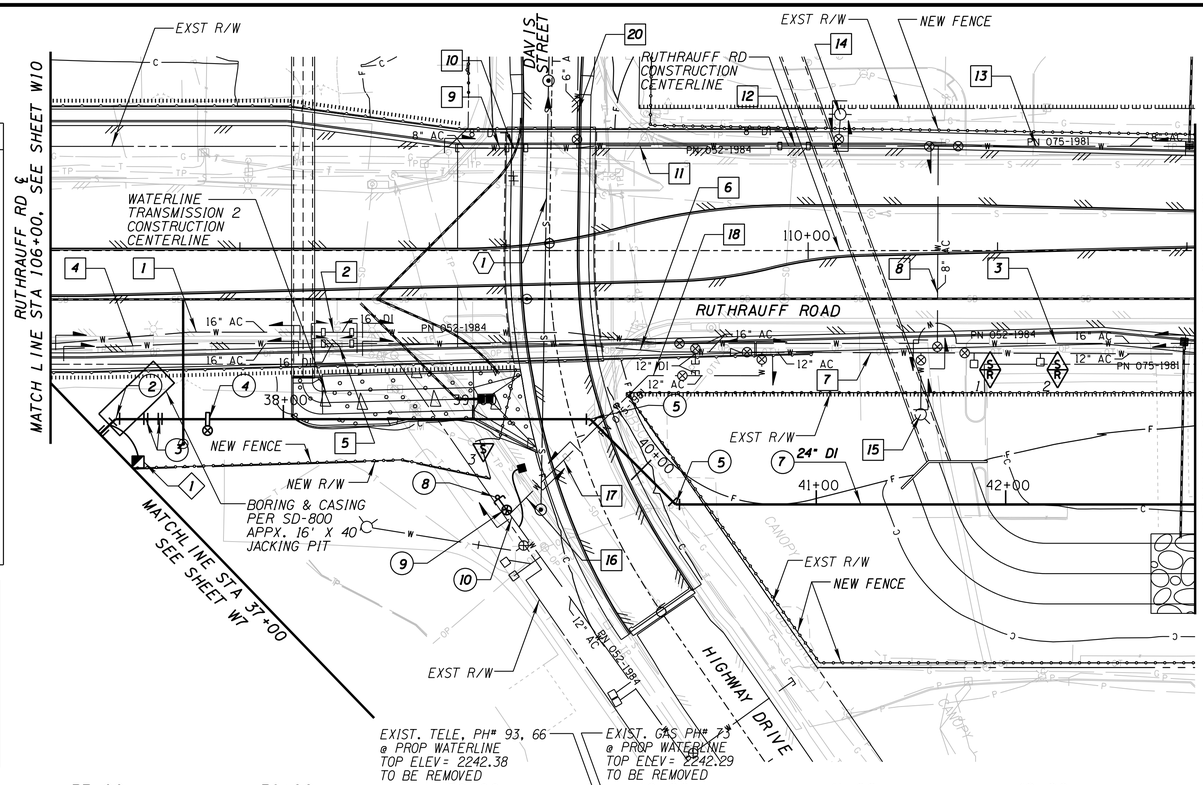
18 RUTHRAUFF RD ℄
STA. 108+72, 109'RT. TO 109+76, 54'RT.
REMOVE AND DISPOSE 12" CA PIPE 134 LF

19 SEE SHEET W14 FOR REMOVAL OF EXISTING PIPE

20 SEE SHEET W14 FOR REMOVAL OF EXISTING PIPE

SERVICE WORK

#	ADDRESS/STA	EXST. SERV.	SERV. WORK	EXIST. CONNECTION DIA. - MATL.	NEW CONNECTION DIA. - MATL.
1	2755 W. RUTHRAUFF RD	M( )	S R		
2	2745 W. RUTHRAUFF RD	M( )	S R		
3	STA. 108+47 ± 116' RT (IRRIGATION)	-	S	-	1"-CU



NOTE:
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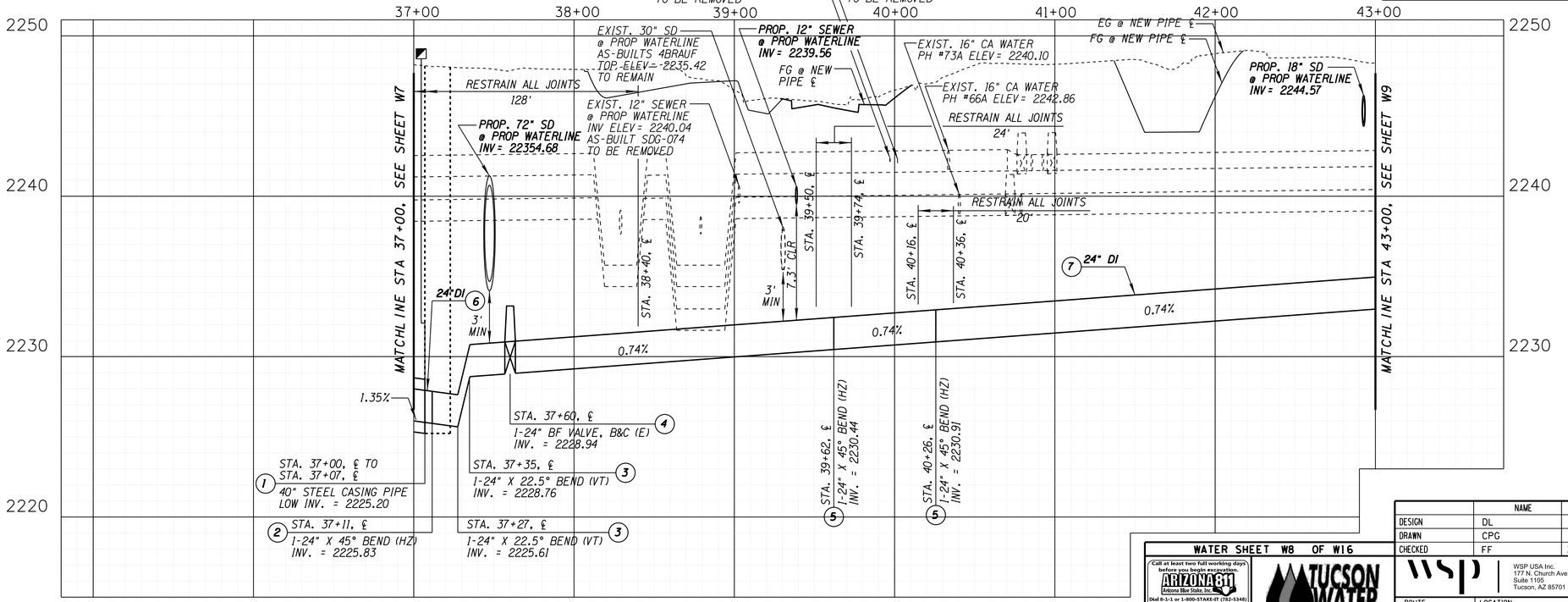


REMOVE / ABANDON NOTES

1 RUTHRAUFF RD ℄
STA. 106+00, 49'RT. TO 107+44, 43'RT.
REMOVE AND DISPOSE 16" CA PIPE 144 LF

2 RUTHRAUFF RD ℄
STA. 107+44, 43'RT. TO 107+59, 43'RT.
REMOVE AND DISPOSE 16" DI PIPE 15 LF

3 RUTHRAUFF RD ℄
STA. 107+59, 43'RT. TO 112+04, 49'RT.
REMOVE AND DISPOSE 16" CA PIPE 446 LF

4 RUTHRAUFF RD ℄
STA. 106+00, 52'RT. TO 107+44, 49'RT
REMOVE AND DISPOSE 16" CA PIPE 144 LF

5 RUTHRAUFF RD ℄
STA. 107+44, 49'RT. TO 107+59, 49'RT
REMOVE AND DISPOSE 16" DI PIPE 15 LF

6 RUTHRAUFF RD ℄
STA. 107+59, 49'RT. TO 109+64, 54'RT
REMOVE AND DISPOSE 16" CA PIPE 205 LF

7 RUTHRAUFF RD ℄
STA. 109+64, 54'RT. TO 112+04, 55'RT
REMOVE AND DISPOSE 12" CA PIPE 240 LF

8 RUTHRAUFF RD ℄
STA. 110+68, 54'RT. TO 110+69, 55'LT.
REMOVE AND DISPOSE 8" CA PIPE 109 LF

9 RUTHRAUFF RD ℄
STA. 108+14, 54'LT. TO 108+41, 54'LT.
REMOVE AND DISPOSE 8" CA PIPE 27 LF

10 RUTHRAUFF RD ℄
STA. 108+41, 54'LT. TO 108+51, 54'LT.
REMOVE AND DISPOSE 8" DI PIPE 10 LF

11 RUTHRAUFF RD ℄
STA. 108+51, 54'LT. TO 109+85, 55'LT.
REMOVE AND DISPOSE 8" CA PIPE 134 LF

12 RUTHRAUFF RD ℄
STA. 109+85, 55'LT. TO 110+00, 55'LT.
REMOVE AND DISPOSE 8" DI PIPE 15 LF

CONSTRUCTION NOTES

1 STA. 35+00, ℄ TO
STA. 37+07, ℄
40" STEEL CASING PIPE PER SD-800 7 LF

2 STA. 37+11, ℄
24" x 45° BEND (HZ) 1 EA(NPI)

3 STA. 37+27, ℄ &
STA. 37+35, ℄
24" x 22.5° BEND (VT) 2 EA(NPI)

4 STA. 37+60, ℄
24" BUTTERFLY VALVE, B&C(E) 1 EA

5 STA. 39+62, ℄,
STA. 40+26, ℄
24" x 45° BEND (HZ) 2 EA(NPI)

6 STA. 37+00, ℄ TO
STA. 37+11, ℄
24" DI (CL 250) 11 LF

7 STA. 37+11, ℄ TO
STA. 43+00, ℄
24" DI (CL 200) 588 LF

8 STA. 39+14, 42'RT
END CAP 1 EA(NPI)
STANDARD METER BOX PER SD-307 1 EA(NPI)

9 STA. 39+18, 48'RT
DRAIN VALVE ASSEMBLY PER SD-400 1 EA

10 STA. 39+20, 50'RT
CONNECT TO EXIST. 12" CA PIPE 1 EA(NPI)

REFERENCE NOTES

1 SANITARY SEWER PLAN & PROFILE, SEE SHEET SS6

MONITORING AND PROTECTION

1 STA. 37+21, 19' RT.
TYPE 2/5 ABOVE GROUND CTS PER DETAIL NO. CP-4 & TUCSON WATER STANDARD DETAIL SD-706. SEE ITEM NO. 9240176 IN THE SPECIAL PROVISIONS 1 EA

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
TRANSMISSION PLAN & PROFILE

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ROUTE I-10 LOCATION RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S | DWG NO. U-2.08

WATER SHEET W8 OF W16

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

VERT: 1" = 4'
HORZ: 1" = 40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

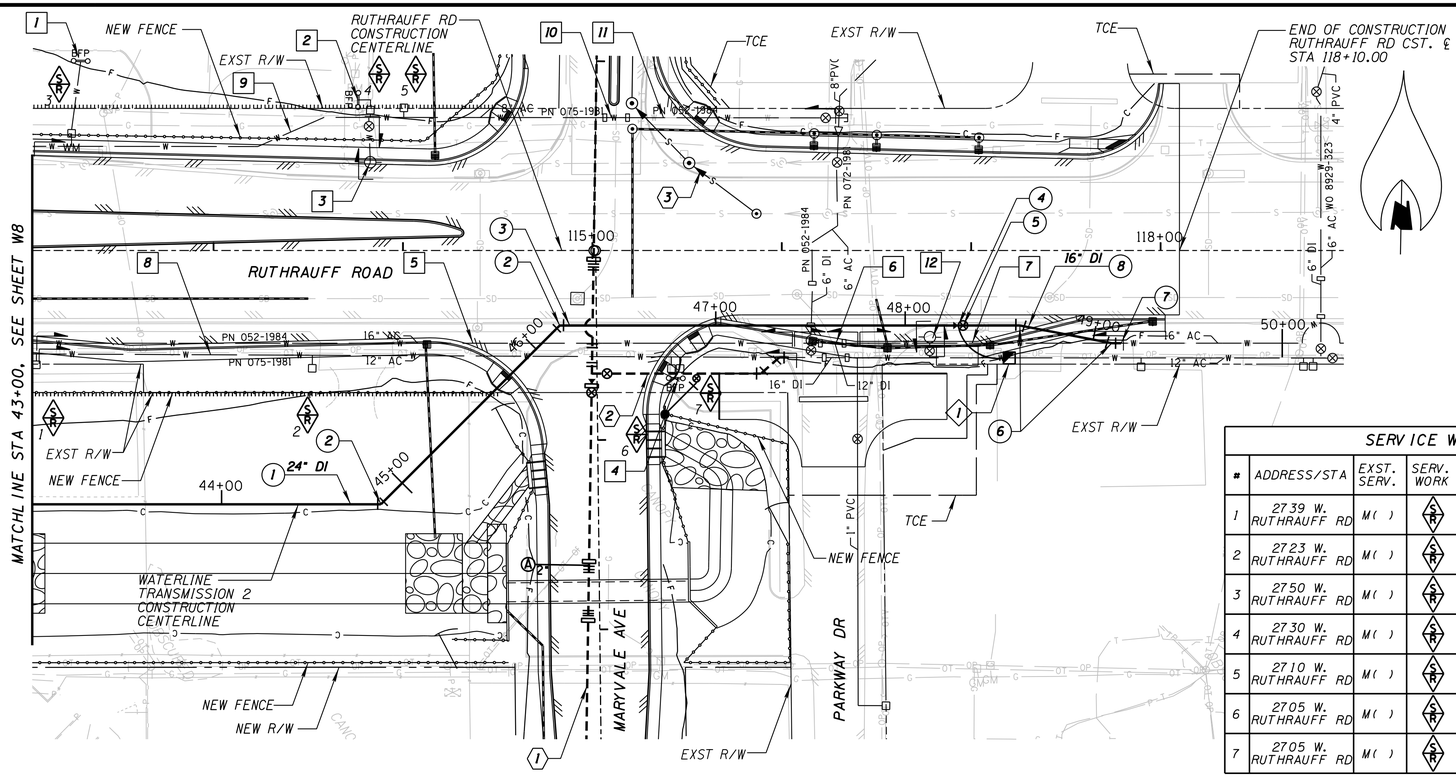
Registered Professional Engineer Certificate
37622
FRANK EMMETT FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

___ OF ___

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

Tue 19 Mar 2019, 17:31:46 \\prdpwics01\ics_workingdir\5783\43865_159\h8480w108.dgn

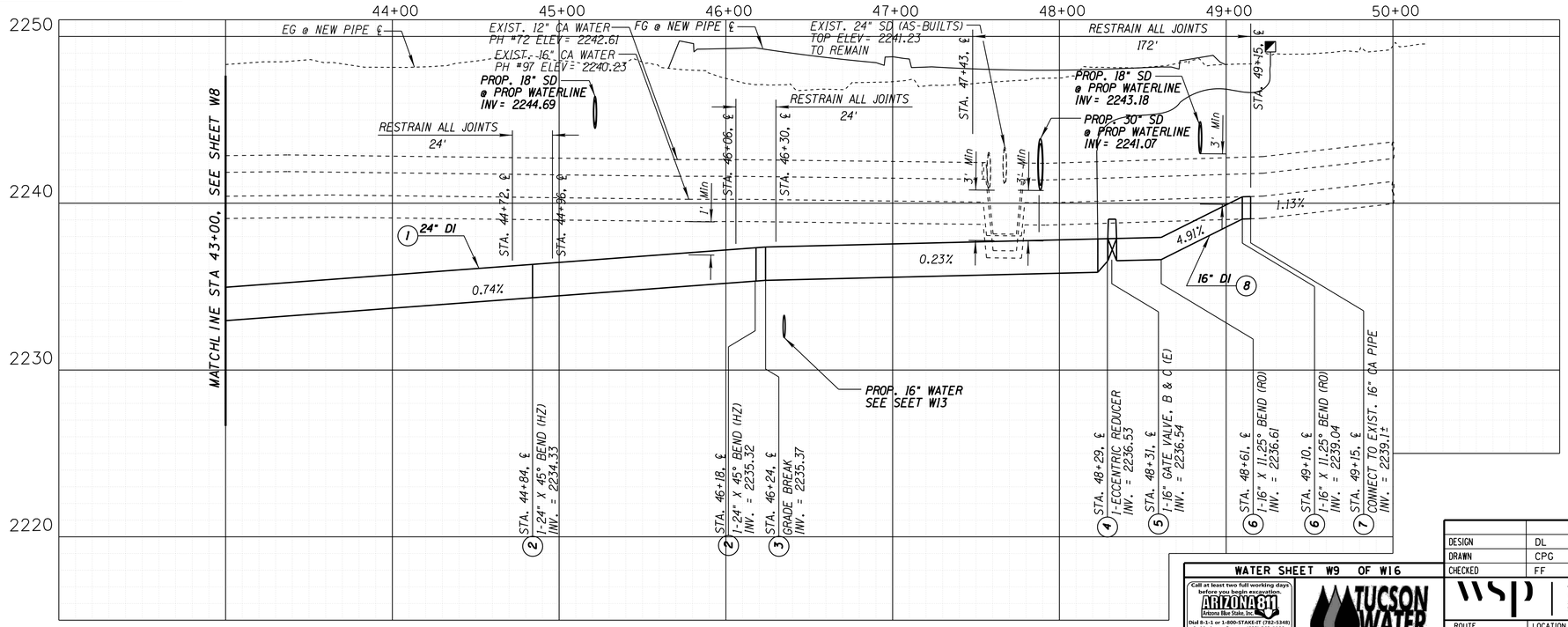
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	823	849	
		010 PM 252			



NOTE:
ALL STATIONING IS ALONG THE WATERLINE TRANSMISSION 2 CONSTRUCTION CENTERLINE UNLESS OTHERWISE NOTED.

SERVICE WORK

#	ADDRESS/STA	EXST. SERV.	SERV. WORK	EXIST. CONNECTION DIA. - MATL.	NEW CONNECTION DIA. - MATL.
1	2739 W. RUTHRAUFF RD	M( )	SR		
2	2723 W. RUTHRAUFF RD	M( )	SR		
3	2750 W. RUTHRAUFF RD	M( )	SR	1"-CU	
4	2730 W. RUTHRAUFF RD	M( )	SR		
5	2710 W. RUTHRAUFF RD	M( )	SR		
6	2705 W. RUTHRAUFF RD	M( )	SR	1-½-CU	
7	2705 W. RUTHRAUFF RD	M( )	SR		



VERT: 1" = 4'
HORZ: 1" = 40'

REMOVE / ABANDON NOTES

1. RUTHRAUFF RD ℄ STA. 112+30, 100' LT. REMOVE BACKFLOW PREVENTION — 1 EA
2. RUTHRAUFF RD ℄ STA. 113+76, 80' LT. REMOVE BACKFLOW PREVENTION — 1 EA
3. RUTHRAUFF RD ℄ STA. 113+82, 47' LT. REMOVE FIRE HYDRANT INSTALLATION PER SD-500 — 1 EA
4. RUTHRAUFF RD ℄ STA. 45+44, 67' RT. REMOVE BACKFLOW PREVENTION — 1 EA
5. RUTHRAUFF RD ℄ STA. 112+04, 49' RT. TO 116+20, 49' RT. REMOVE AND DISPOSE 16" CA PIPE — 416 LF
6. RUTHRAUFF RD ℄ STA. 116+20, 49' RT. TO 116+33, 49' RT. REMOVE AND DISPOSE 16" DI PIPE — 13 LF
7. RUTHRAUFF RD ℄ STA. 116+33, 49' RT. TO 117+79, 49' RT. REMOVE AND DISPOSE 16" CA PIPE — 146 LF
8. RUTHRAUFF RD ℄ STA. 112+04, 55' RT. TO 116+06, 56' RT. REMOVE AND DISPOSE 12" CA PIPE — 402 LF
9. RUTHRAUFF RD ℄ STA. 112+04, 55' LT. TO 115+07, 70' LT. REMOVE AND DISPOSE 8" CA PIPE — 306 LF
10. RUTHRAUFF RD ℄ STA. 115+07, 70' LT. TO 115+19, 70' LT. REMOVE AND DISPOSE 8" DI PIPE — 12 LF
11. RUTHRAUFF RD ℄ STA. 115+19, 70' LT. TO 116+35, 70' LT. REMOVE AND DISPOSE 8" CA PIPE — 116 LF
12. RUTHRAUFF RD ℄ STA. 116+78, 46' RT. REMOVE FIRE HYDRANT PER SD-500 — 1 EA

CONSTRUCTION NOTES

1. STA. 43+00, ℄ TO STA. 48+29, ℄ 24" DI (CL 200) — 529 LF
2. STA. 44+84, ℄, STA. 46+18, ℄ 24" X 45° BEND (HZ) — 2 EA(NPI)
3. STA. 46+24, ℄ GRADE BREAK — 1 EA(NPI)
4. STA. 48+29, ℄ 24" TO 16" ECCENTRIC REDUCER — 1 EA(NPI)
5. STA. 48+31, ℄ 16" GATE VALVE, B&C (E) — 1 EA
6. STA. 48+61, ℄, STA. 49+10, ℄ 16" X 11.25° BEND (RO) — 2 EA(NPI)
7. STA. 49+15, ℄ CONNECT TO EXIST. 16" CA PIPE — 1 EA(NPI)
8. STA. 48+29, ℄ TO STA. 49+15, ℄ 16" DI (CL 200) — 86 LF

REFERENCE NOTES

1. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W13
2. DISTRIBUTION WATER MAIN PLAN & PROFILE, SEE SHEET W14
3. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS8

MONITORING AND PROTECTION

1. STA. 48+55, 17' RT. TYPE 5 ABOVE GROUND CTS PER DETAIL NO. CP-2 & TUCSON WATER STANDARD DETAIL SD-706. SEE ITEM NO. 9240176 IN THE SPECIAL PROVISIONS — 1 EA

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1100
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
TRANSMISSION PLAN & PROFILE

37622 FRANK EMMETT FRY IV Date Signed 3/19/19 ARIZONA, U.S.A. Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

DWG NO. U-2.09

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

WATER SHEET W9 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

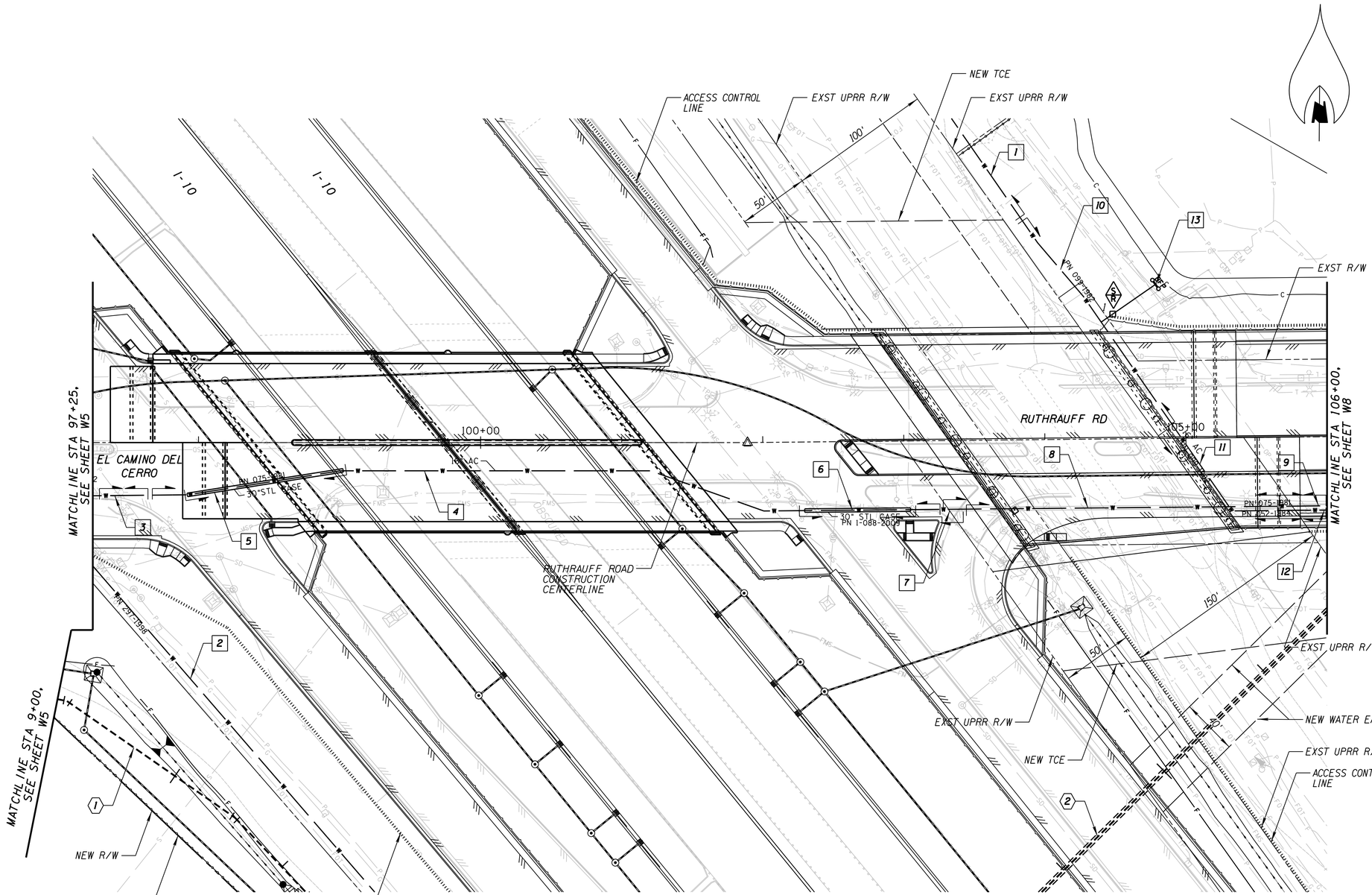
NO.	DATE	REVISION	BY	CHKD.	APPR.

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

Tue 19 Mar 2019, 17:31:30 \\prdpwics01\ics_workingdir\5783\43865_160\h8480w109.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	824	849	

010 PM 252



REMOVE / ABANDON NOTES

1. SEE SHEET W11 FOR REMOVAL OF EXISTING PIPE
2. SEE SHEET W6 FOR REMOVAL OF EXISTING PIPE
3. STA. 97+25, 38' RT. TO 97+63, 37' RT. REMOVE AND DISPOSE 16" CA PIPE — 38 LF
4. STA. 97+63, 37' RT. TO 103+24, 49' RT. REMOVE AND DISPOSE 16" DI PIPE — 568 LF
5. STA. 97+93, 37' RT. TO 99+00, 20' RT. REMOVE AND DISPOSE 30" X 5/16" STEEL CASING PIPE — 109 LF
6. STA. 102+29, 49' RT. TO 103+04, 48' RT. REMOVE AND DISPOSE 30" X 5/16" STEEL CASING PIPE — 75 LF
7. STA. 103+24, 49' RT. TO 103+31, 49' RT. REMOVE AND DISPOSE 16" CA PIPE — 7 LF
8. STA. 103+31, 49' RT. TO 105+75, 49' RT. ABANDON AND GROUT 16" CA PIPE AND 30" STEEL CASING PIPE IN UPRR R/W PER SD-350 AND UPRR PIPELINE CROSSING AGREEMENT, FOLDER 03133-65 — 244 LF
9. STA. 105+75, 49' RT. TO 106+00, 49' RT. REMOVE AND DISPOSE 16" CA PIPE — 25 LF
10. STA. 103+85, 156' LT. TO 104+97, ℄ REMOVE AND DISPOSE 16" CA PIPE — 192 LF
11. STA. 104+97, ℄ TO 105+77, 52' RT. ABANDON AND GROUT 16" CA PIPE IN UPRR R/W PER SD-350 AND UPRR PIPELINE CROSSING AGREEMENT, FOLDER 03133-65 — 108 LF
12. STA. 105+77.52' RT. TO 106+00, 52' RT. REMOVE AND DISPOSE 16" CA PIPE — 23 LF
13. STA. 104+79.109' LT. REMOVE BACKFLOW PREVENTION — 1 EA

REFERENCE NOTES

1. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W6
2. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W7

SERVICE WORK

#	ADDRESS/STA	EXST. SERV.	SERV. WORK	EXIST. CONNECTION DIA. - MATL.	NEW CONNECTION DIA. - MATL.
1	2840 W. RUTHRAUFF RD	M( )	S R		

NOTE:
ALL STATIONING IS ALONG THE RUTHRAUFF ROAD CONSTRUCTION CENTERLINE UNLESS OTHERWISE NOTED.

WATER SHEET W10 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
REMOVAL

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C
010-D(213)S

DWG NO. U-2.10
SHEET ___ OF ___

37622 FRANK EMMETT FRY IV Date Signed 3/19/19 ARIZONA, U.S.A. Expires 06/30/20

VERT: 1" = 4'
HORZ: 1" = 40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

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

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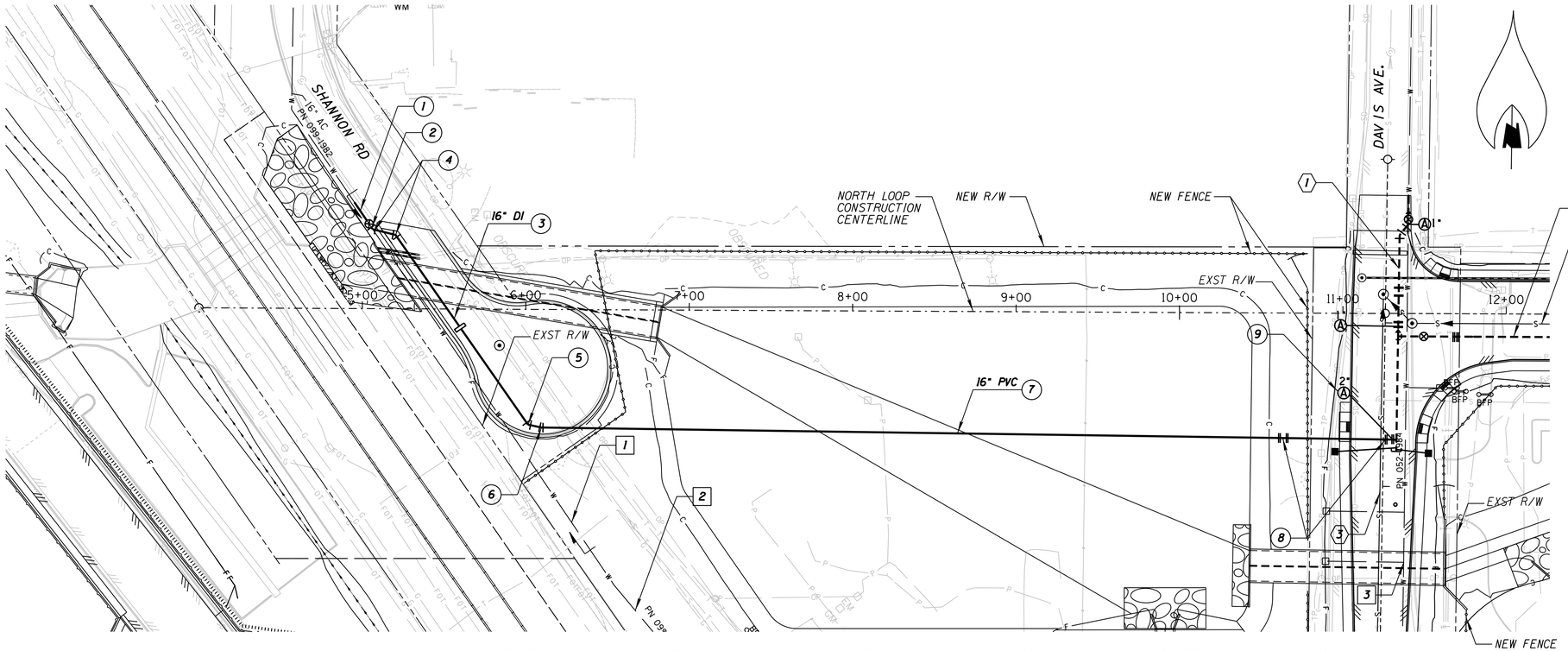
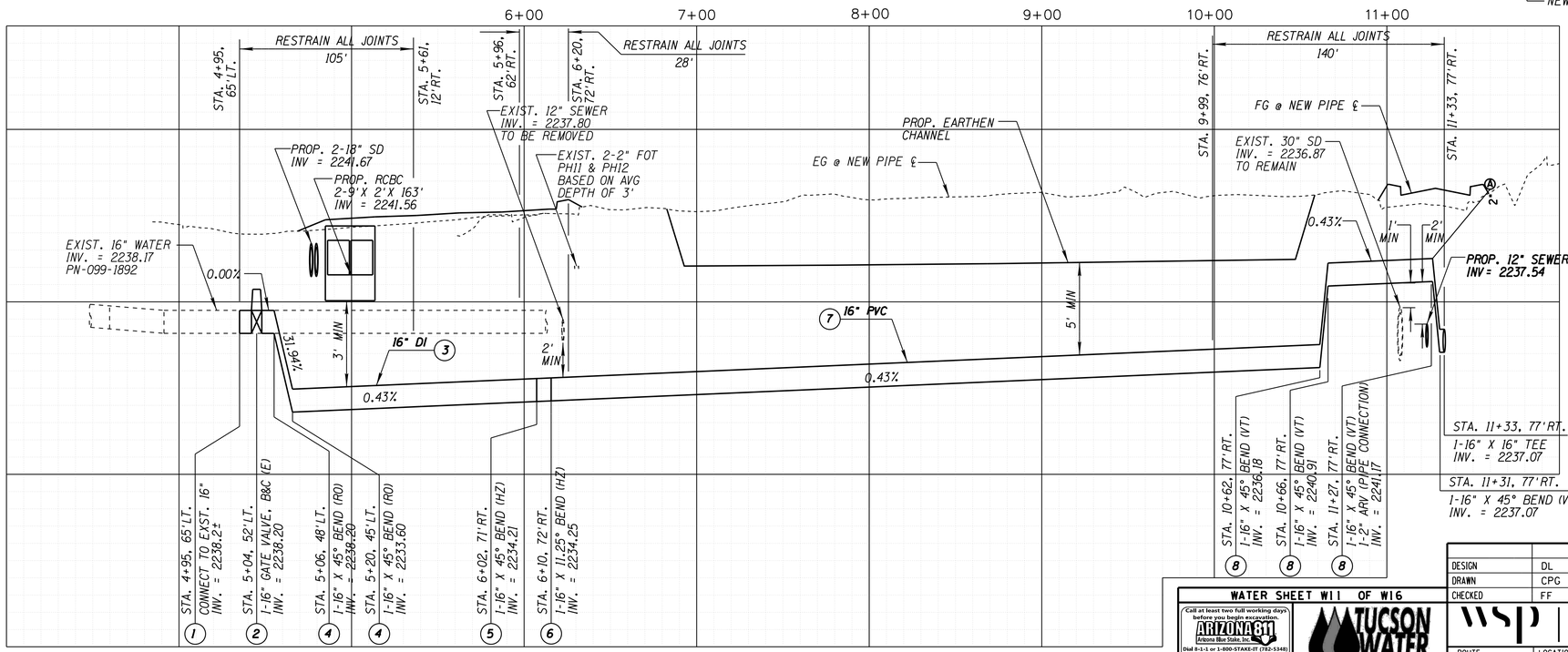
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	825	849	

010 PM 252

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





REMOVE / ABANDON NOTES

1. STA. 4+98, 60' LT. TO 6+44, 152' RT.
   REMOVE AND DISPOSE 16" CA PIPE — 257 LF
2. SEE SHEET W10 FOR REMOVAL OF EXISTING PIPE
3. SEE SHEET W14 FOR REMOVAL OF EXISTING PIPE

CONSTRUCTION NOTES

1. STA. 4+95, 65' LT.
   CONNECT TO EXST. 16" CA PIPE — 1 EA (NPI)
2. STA. 5+04, 52' LT.
   16" GATE VALVE, B&C (E) — 1 EA
   W/ THRUST BLOCK PER SD-610(MODIFY) — 1 EA
   SEE TABLE, SHEET W5
3. STA. 4+95, 65' LT. TO
   STA. 5+61, 12' RT.
   16" DI (CL 200) — 105 LF
4. STA. 5+06, 48' LT. TO
   STA. 5+20, 45' LT.
   16" X 45° BEND (RO) — 2 EA (NPI)
5. STA. 6+02, 71' RT.
   16" X 45° BEND (HZ) — 1 EA (NPI)
6. STA. 6+10, 72' RT.
   16" x 11.25° BEND (HZ) — 1 EA (NPI)
7. STA. 5+61, 12' RT. TO
   STA. 11+33, 77' RT.
   16" PVC DR18 (CL 235) — 616 LF
8. STA. 10+62, 77' RT.,
   STA. 10+66, 77' RT.,
   STA. 11+27, 77' RT.,
   STA. 11+31, 77' RT.
   16" X 45° BEND (VT) — 4 EA (NPI)
9. STA. 11+04, 50' RT.
   (LOCATION OF ARV)
   2" ARV PER SD-331 — 1 EA

REFERENCE NOTES

1. DISTRIBUTION WATER MAIN PLAN & PROFILE, SEE SHEET W14
2. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W12
3. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS6
4. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS7

WATER SHEET W11 OF W16

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TUCSON WATER

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
DISTRIBUTION PLAN AND PROFILE

Registered Professional Engineer — 37622 FRANK EMMETT FRY IV — 3/19/19 — Date Signed — ARIZONA, U.S.A. — Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

DWG NO. U-2.11

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

VERT: 1" = 4'
HORZ: 1" = 40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

Tue 19 Mar 2019, 17:31:25

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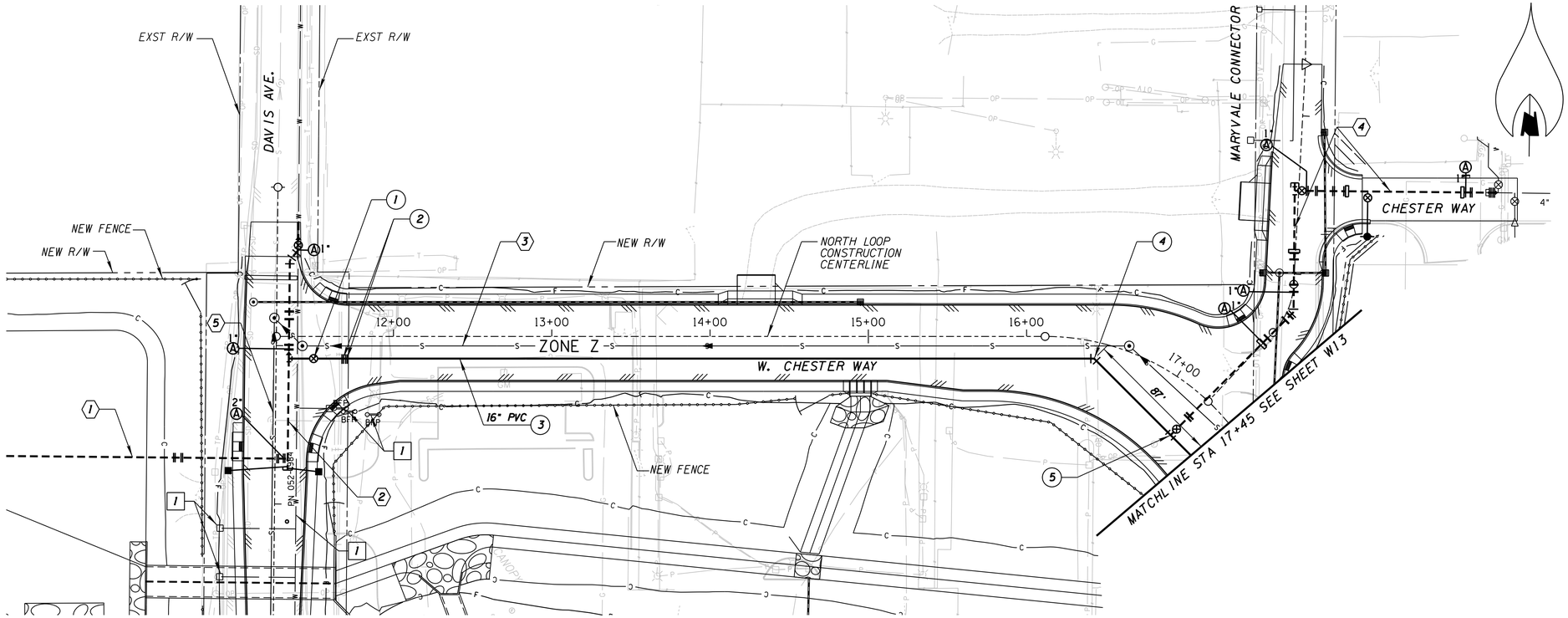
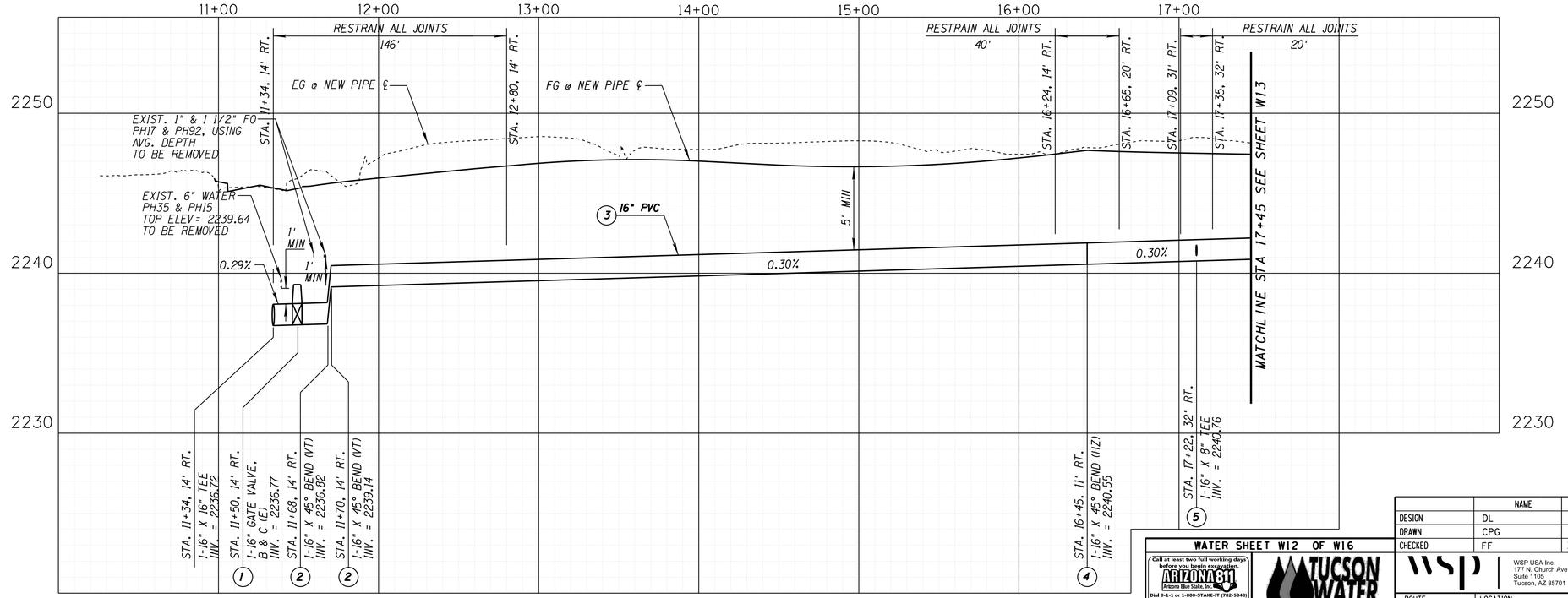
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	826	849	
		010 PM 252			





VERT: 1" = 4'
HORZ: 1" = 40'

REMOVE / ABANDON NOTES

1 SEE SHEET W14 FOR REMOVAL OF EXISTING PIPES AND SERVICE WORK

CONSTRUCTION NOTES

1. STA. 11+50, 14' RT., 16" GATE VALVE B & C (E) — 1 EA
2. STA. 11+68, 14' RT., STA. 11+70, 14' RT., 16" X 45° BEND (VT) — 2 EA (NPI)
3. STA. 11+34, 14' RT. TO STA. 17+45, 31' RT., 16" PVC DR18 (CL 235) — 596 LF
4. STA. 16+45, 11' RT., 16" X 45° BEND (HZ) — 1 EA(NPI)
5. STA. 17+22, 32' RT., 16" X 8" TEE — 1 EA(NPI)

REFERENCE NOTES

1. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W11
2. DISTRIBUTION WATER MAIN PLAN & PROFILE, SEE SHEET W14
3. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS7
4. DISTRIBUTION PLAN AND PROFILE, SEE SHEET W15
5. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS6

WATER SHEET W12 OF W16

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
DISTRIBUTION PLAN AND PROFILE

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-2.12

SHEET ___ OF ___

37622
FRANK EMMETT
FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

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

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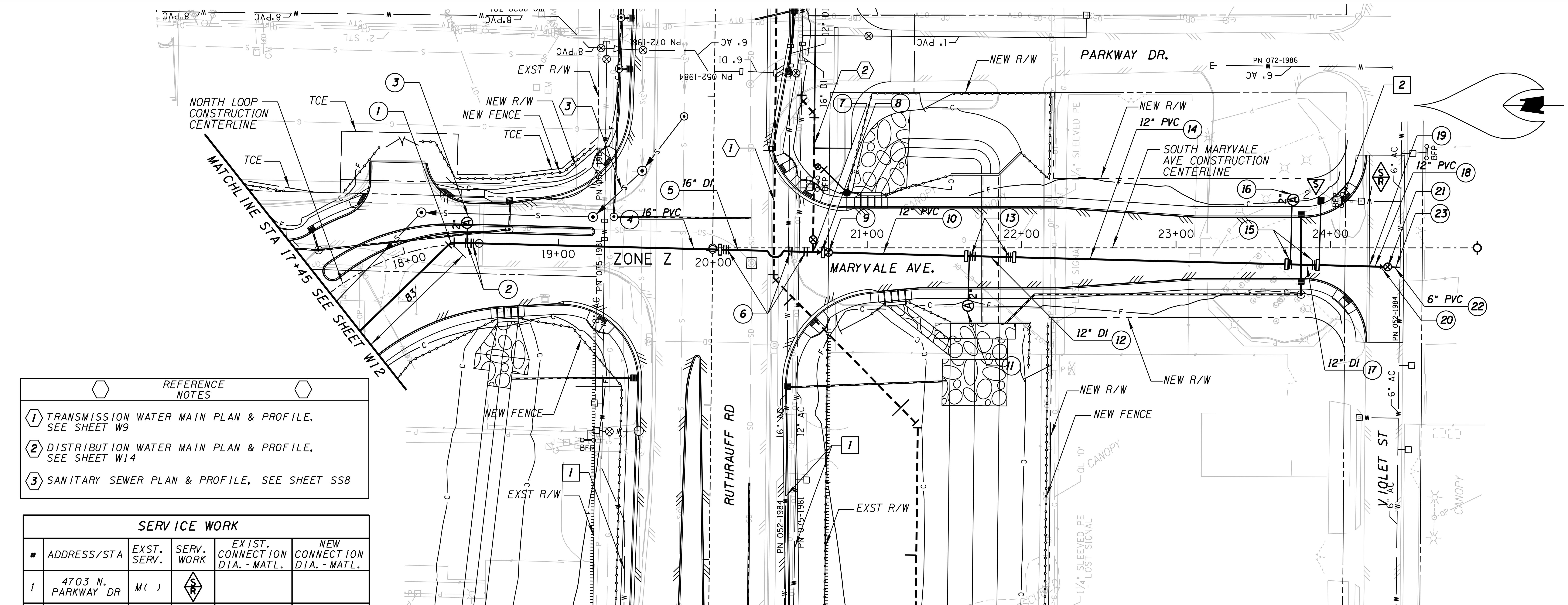
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	827	849	

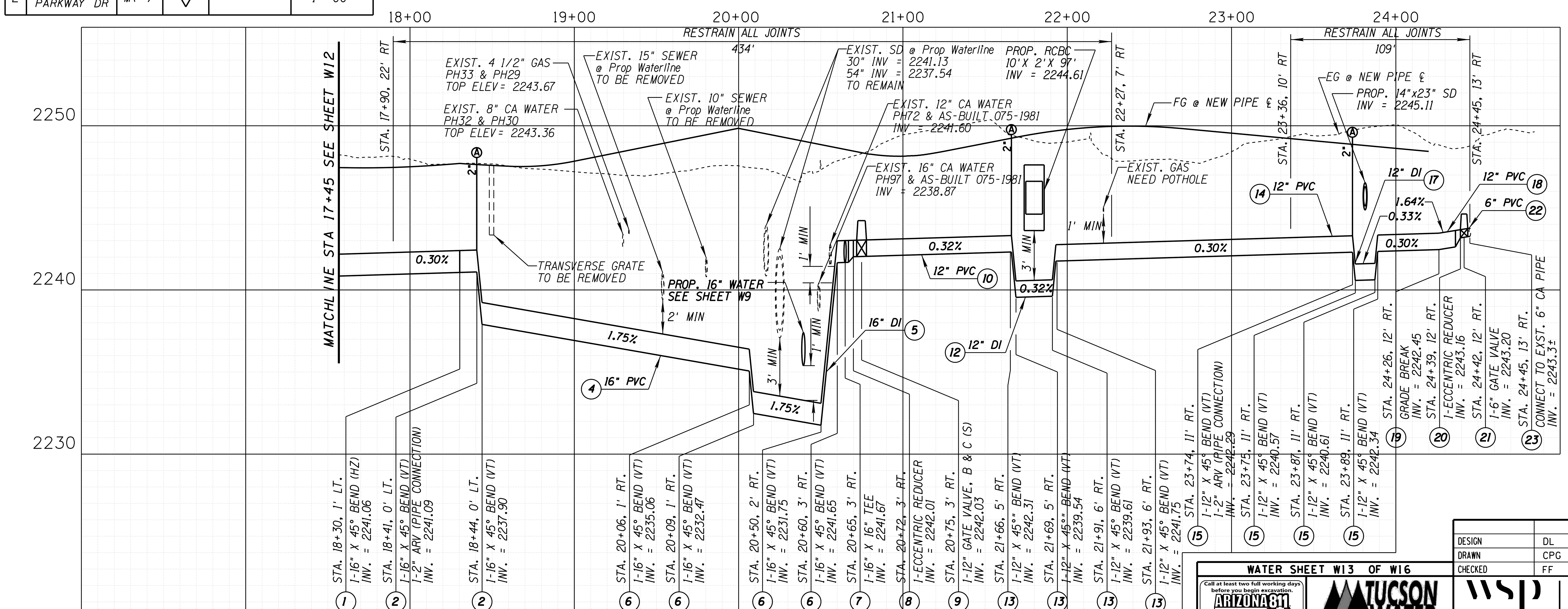
010 PM 252



REFERENCE NOTES
(1) TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W9
(2) DISTRIBUTION WATER MAIN PLAN & PROFILE, SEE SHEET W14
(3) SANITARY SEWER PLAN & PROFILE, SEE SHEET SS8

SERVICE WORK

#	ADDRESS/STA	EXST. SERV.	SERV. WORK	EXIST. CONNECTION DIA.-MATL.	NEW CONNECTION DIA.-MATL.
1	4703 N. PARKWAY DR	M( )	R/S		
2	4703 N. PARKWAY DR	M( )	S		1"-CU



REMOVE / ABANDON NOTES	
[1] SEE SHEET W9 FOR REMOVAL OF EXISTING PIPE	
[2] SOUTH MARYVALE AVE CST ℄ STA 24+08, 31' LT. REMOVE BACKFLOW PREVENTION	1 EA

CONSTRUCTION NOTES	
(1) STA. 18+30, 1' LT., 16" X 45° BEND (HZ)	1 EA (NPI)
(2) STA. 18+41, 0' LT., STA. 18+44, 0' LT., 16" X 45° BEND (VT)	2 EA (NPI)
(3) STA. 18+41, 13' LT., (LOCATION OF ARV) 2" ARV PER SD-331	1 EA
(4) STA. 17+45, 31' RT. TO STA. 20+06, 1' RT. 16" PVC DR18 (CL 235)	259 LF
(5) STA. 20+06, 1' RT. TO STA. 20+73, 3' RT. 16" DI (CL 200)	72 LF
(6) STA. 20+06, 1' RT., STA. 20+09, 1' RT., STA. 20+50, 2' RT., STA. 20+60, 3' RT., 16" X 45° BEND (VT)	4 EA(NPI)
(7) STA. 20+65, 3' RT., 16" X 16" TEE	1 EA(NPI)
(8) STA. 20+72, 3' RT., 16" TO 12" ECCENTRIC REDUCER	1 EA(NPI)
(9) STA. 20+75, 3' RT., 12" GATE VALVE B & C(S)	1 EA
(10) STA. 20+72, 3' RT. TO STA. 21+66, 5' RT., 12" PVC DR14 (CL 305)	93 LF
(11) STA. 21+65, 37' RT., (LOCATION OF ARV) 2" ARV PER SD-331	1 EA
(12) STA. 21+66, 5' RT. TO STA. 21+93, 6' RT., 12" DI (CL 350)	29 LF
(13) STA. 21+66, 5' RT., STA. 21+69, 5' RT., STA. 21+91, 6' RT., STA. 21+93, 6' RT., 12" X 45° BEND (VT)	4 EA(NPI)
(14) STA. 21+93, 6' RT. TO STA. 23+74, 11' RT. 12" PVC DR14 (CL 305)	181 LF
(15) STA. 23+74, 11' RT., STA. 23+75, 11' RT., STA. 23+87, 11' RT., STA. 23+89, 11' RT., 12" X 45° BEND (VT)	4 EA(NPI)
(16) STA. 23+76, 31' RT., (LOCATION OF ARV) 2" ARV PER SD-331	1 EA
(17) STA. 23+74, 11' RT. TO STA. 23+89, 11' RT. 12" DI (CL 350)	17 LF
(18) STA. 23+89, 11' RT. TO STA. 24+39, 12' RT. 12" PVC DR14 (CL 305)	50 LF
(19) STA. 24+26, 12' RT., GRADE BREAK	1 EA(NPI)
(20) STA. 24+39, 12' RT., 12" TO 6" ECCENTRIC REDUCER	1 EA(NPI)
(21) STA. 24+42, 12' RT., 6" GATE VALVE B&C WITH THRUST BLOCK PER SD-610	1 EA 1 EA
(22) STA. 24+39, 12' RT. TO STA. 24+45, 13' RT. 6" PVC DR14 (CL 305)	6 LF
(23) STA. 24+45, 13' RT., CONNECT TO EXST. 6" CA PIPE	1 EA(NPI)

WATER SHEET W13 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811. Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348). In Maricopa County: (602) 263-1100

TUCSON WATER

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc. 177 N. Church Ave. Suite 1105 Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
DISTRIBUTION PLAN & PROFILE

Registered Professional Engineer (Civil) 37622 FRANK EMMETT FRY IV. Date Signed 3/19/19. ARIZONA U.S.A. Expires 06/30/20

DWG NO. U-2.13

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

NO.	DATE	REVISION	BY	CHKD.	APPR.

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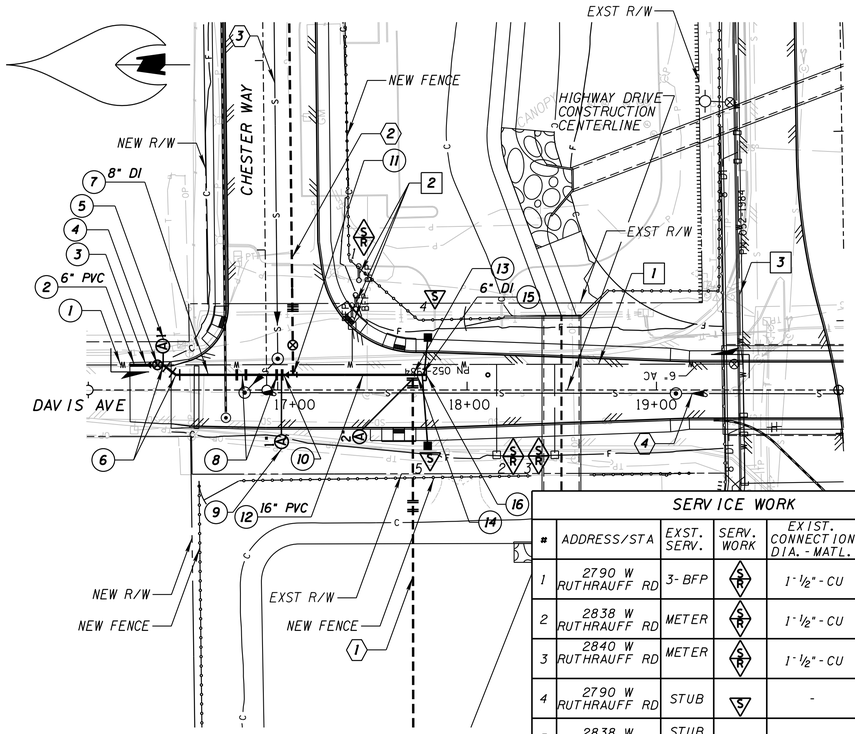
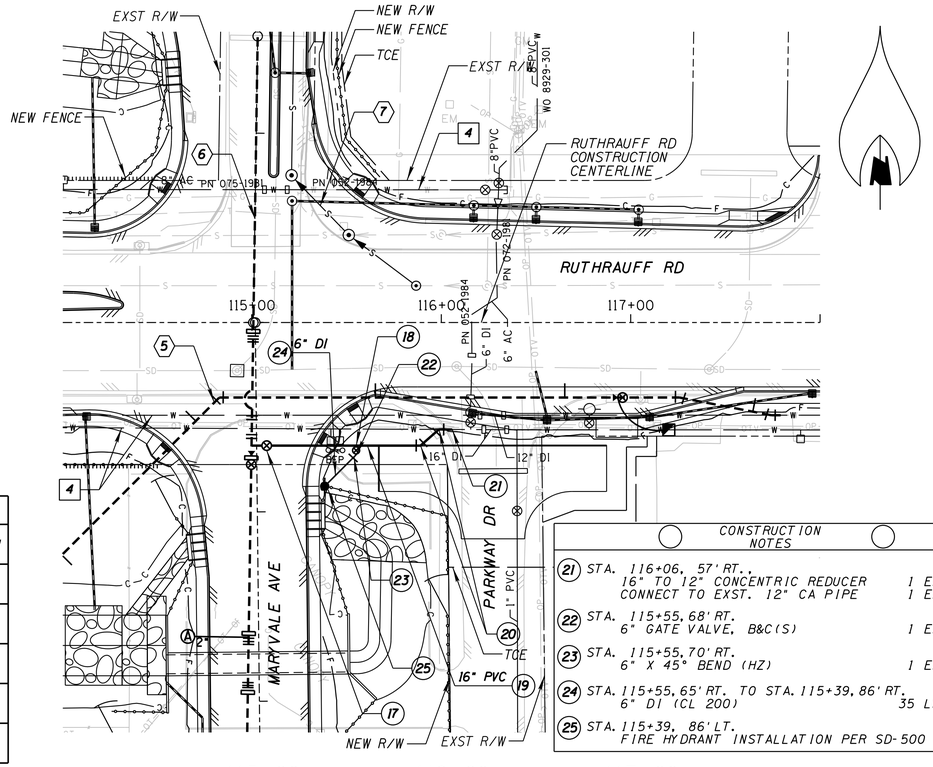
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	828	849	

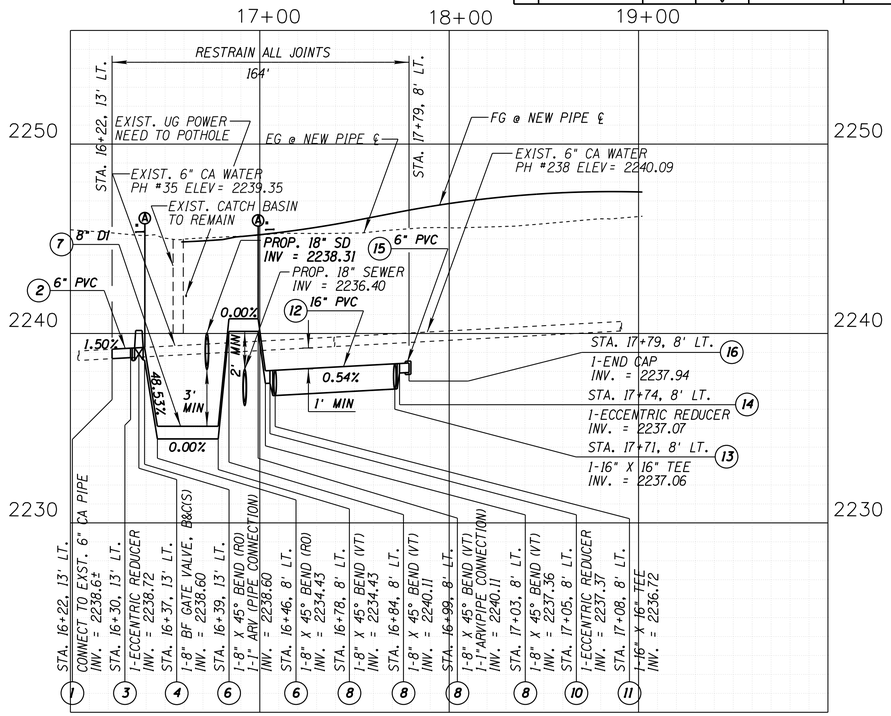
010 PM 252

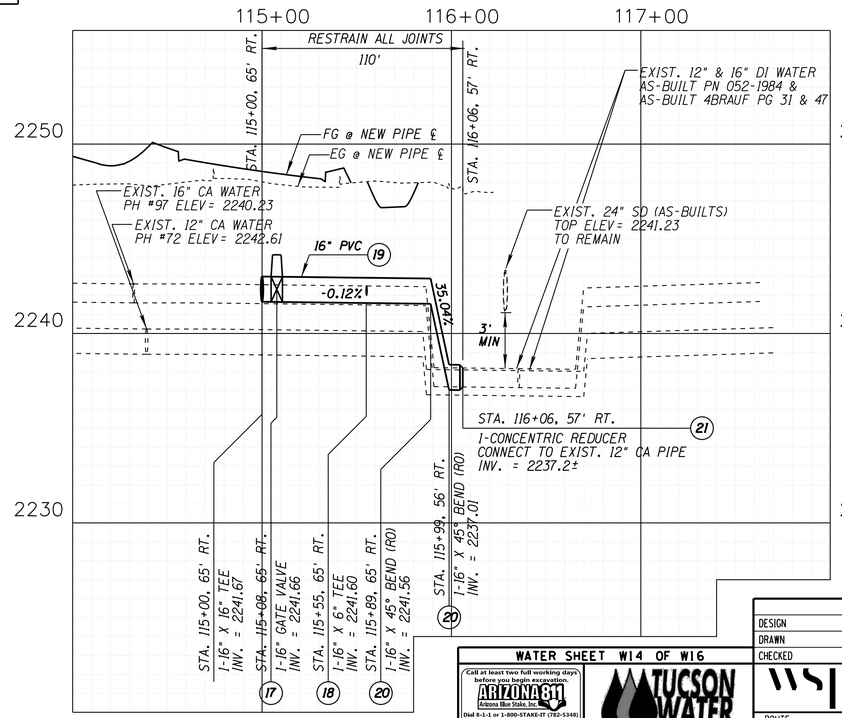




SERVICE WORK

#	ADDRESS/STA	EXST. SERV.	SERV. WORK	EXIST. CONNECTION DIA. - MATL.	NEW CONNECTION DIA. - MATL.
1	2790 W RUTHRAUFF RD	3-BFP	S R	1-½"-CU	-
2	2838 W RUTHRAUFF RD	METER	S R	1-½"-CU	-
3	2840 W RUTHRAUFF RD	METER	S R	1-½"-CU	-
4	2790 W RUTHRAUFF RD	STUB	S	-	1"-CU
5	2838 W RUTHRAUFF RD	STUB	S	-	1"-CU





REMOVE / ABANDON NOTES

1. STA. 16+17, 13' LT. TO 19+45, 14' LT
   REMOVE AND DISPOSE 6" CA PIPE 330 LF
2. STA. 17+39, 41' LT.
   STA. 17+41, 46' LT.
   STA. 17+43, 62' LT.
   REMOVE BACKFLOW PREVENTION 3 EA
3. SEE SHEET W8 FOR REMOVAL OF EXISTING PIPE
4. SEE SHEET W9 FOR REMOVAL OF EXISTING PIPE

CONSTRUCTION NOTES

1. STA. 16+22, 13' LT.
   CONNECT TO EXIST. 6" CA PIPE 1 EA(NPI)
2. STA. 16+22, 13' LT. TO
   STA. 16+30, 13' LT.
   6" PVC DR14 (CL305) 8 LF
3. STA. 16+30, 13' LT.,
   8" TO 6" ECCENTRIC REDUCER 1 EA(NPI)
4. STA. 16+37, 13' LT.,
   8" GATE VALVE, B & C(S) 1 EA
   W/ THRUST BLOCK PER SD-610 1 EA
5. STA. 16+39, 23' LT.
   (LOCATION OF ARV),
   1" ARV PER SD-330 1 EA
6. STA. 16+39, 13' LT.,
   STA. 16+46, 8' LT.
   8" X 45° BEND (RO) 2 EA(NPI)
7. STA. 16+30, 13' LT. TO
   STA. 17+05, 8' LT.
   8" DI (CL 350) 80 LF
8. STA. 16+78, 8' LT., STA. 16+84, 8' LT.,
   STA. 16+99, 8' LT., STA. 17+03, 8' LT.,
   8" X 45° BEND (VT) 4 EA(NPI)
9. STA. 17+02, 27' LT.
   (LOCATION OF ARV),
   1" ARV PER SD-330 1 EA
10. STA. 17+05, 8' LT.,
    16" TO 8" ECCENTRIC REDUCER 1 EA(NPI)
11. STA. 17+08, 8' LT.,
    16" X 16" TEE 1 EA(NPI)
12. STA. 17+05, 8' LT. TO STA. 17+34, 8' LT.
    16" PVC DR18 (CL235) 71 LF
13. STA. 17+71, 8' LT.
    16" X 16" TEE 1 EA(NPI)
14. STA. 17+74, 8' LT.,
    16" TO 6" ECCENTRIC REDUCER 1 EA(NPI)
15. STA. 17+74, 8' LT. TO STA. 17+79, 8' LT.
    6" DI (CL 200) 5 LF
16. STA. 17+79, 8' LT.
    END CAP 1 EA(NPI)
17. STA. 115+08, 65' RT.
    16" GATE VALVE, B&C(S) 1 EA
18. STA. 115+55, 65' RT.
    16" X 6" TEE 1 EA(NPI)
19. STA. 115+00, 65' RT. TO STA. 116+06, 57' RT.
    16" PVC DR18 (CL235) 110 LF
20. STA. 115+89, 65' RT. & STA. 115+99, 56' RT.
    16" X 45° BEND (RO) 2 EA(NPI)

CONSTRUCTION NOTES

21. STA. 116+06, 57' RT.,
    16" TO 12" CONCENTRIC REDUCER 1 EA(NPI)
    CONNECT TO EXST. 12" CA PIPE 1 EA(NPI)
22. STA. 115+55, 68' RT.
    6" GATE VALVE, B&C(S) 1 EA(NPI)
23. STA. 115+55, 70' RT.
    6" X 45° BEND (HZ) 1 EA(NPI)
24. STA. 115+55, 65' RT. TO STA. 115+39, 86' RT.
    6" DI (CL 200) 35 LF(NPI)
25. STA. 115+39, 86' LT.
    FIRE HYDRANT INSTALLATION PER SD-500 1 EA

REFERENCE NOTES

1. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W11
2. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W12
3. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS7
4. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS6
5. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W9
6. TRANSMISSION WATER MAIN PLAN & PROFILE, SEE SHEET W13
7. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS8

WATER SHEET W14 OF W16

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TUCSON WATER

VERT: 1" = 4'
HORZ: 1" = 40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
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WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
DISTRIBUTION PLAN & PROFILE

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

DWG NO. U-2.14

____ OF ____

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

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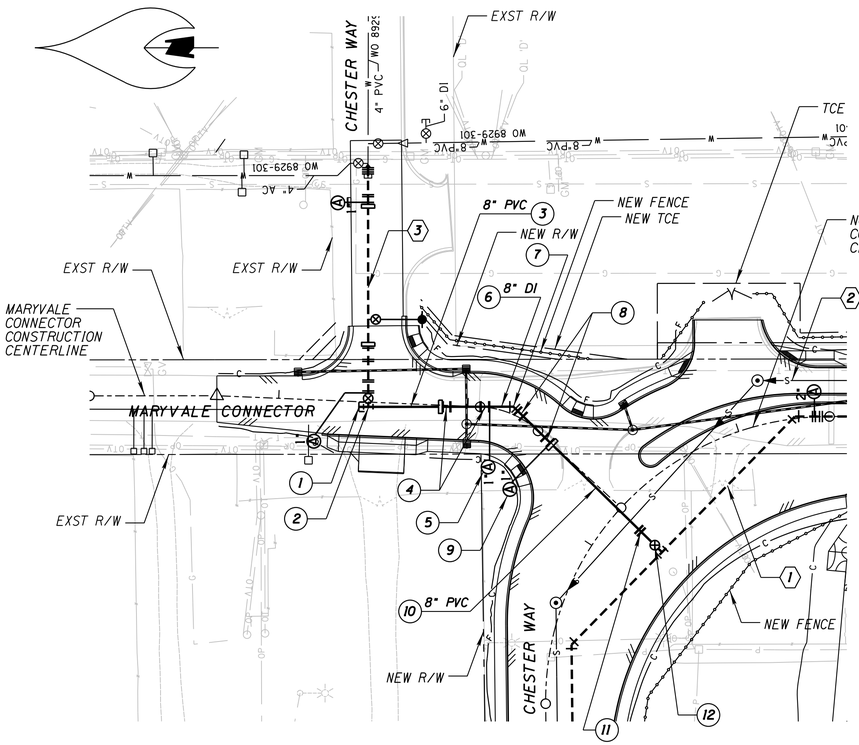
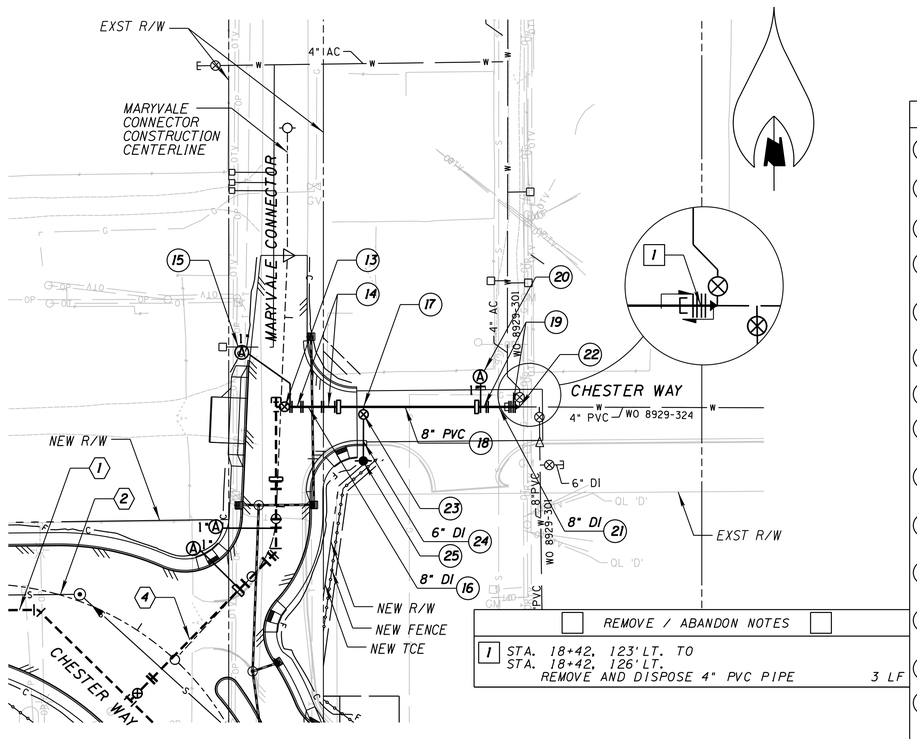
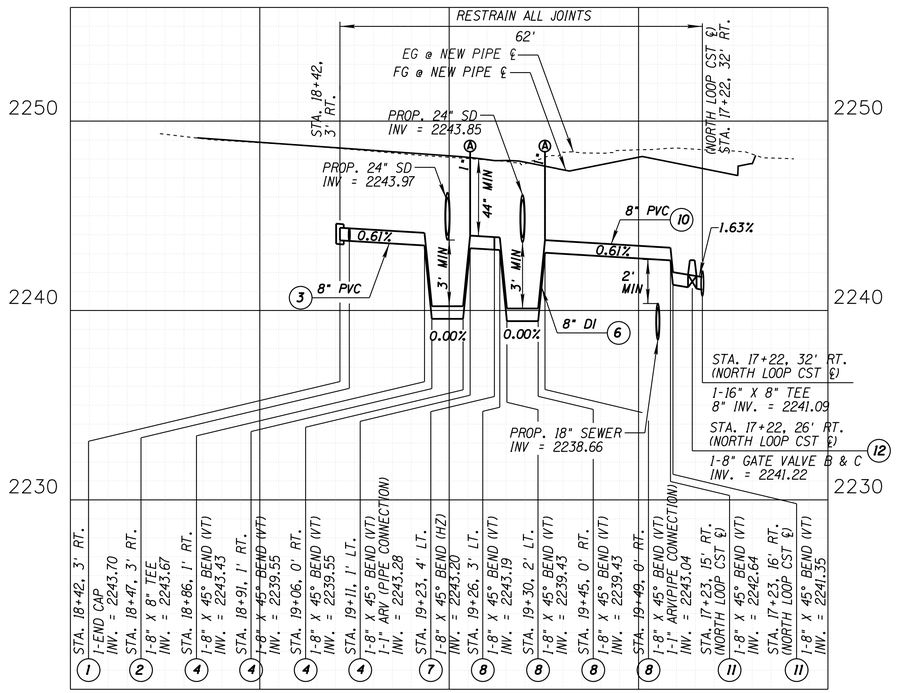
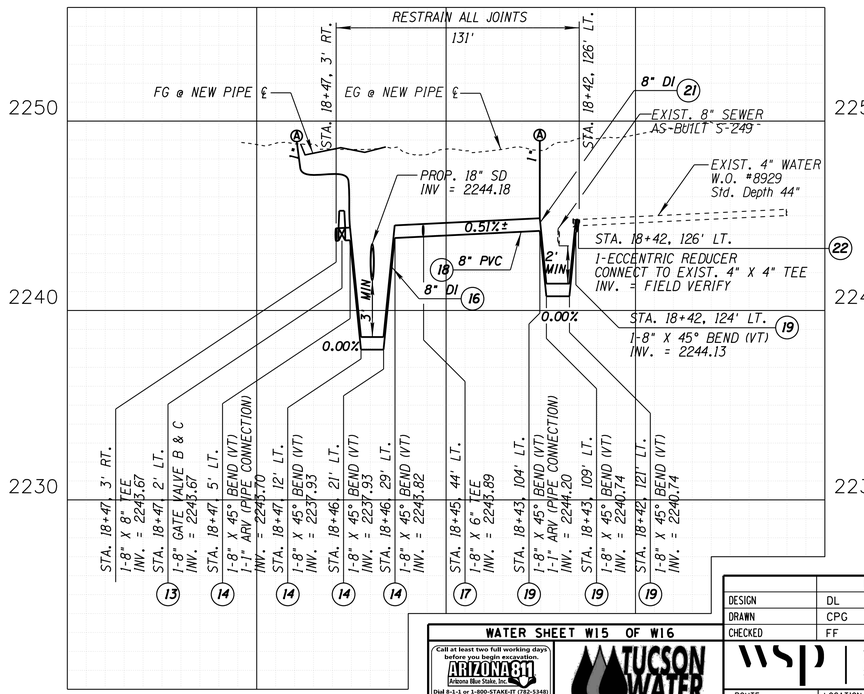
SURVEY NO.	FINISHED PLANS	REVISIONS	LOCATION	DATE









F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S			

010 PM 252

CONSTRUCTION NOTES

1. STA. 18+42, 3' RT. END CAP — 1 EA(NPI)
2. STA. 18+47, 3' RT. 8" X 8" TEE — 1 EA(NPI)
3. STA. 18+42, 3' RT. TO STA. 18+86, 1' RT. 8" PVC DR14 (CL305) — 43 LF
4. STA. 18+86, 1' RT. & STA. 18+91, 1' RT. STA. 19+06, 0' RT. & STA. 19+11, 1' LT. 8" X 45° BEND (VT) — 4 EA(NPI)
5. STA. 17+22, 31' RT. (LOCATION OF ARV) 1" ARV PER SD-330 — 1 EA
6. STA. 18+86, 1' RT. TO STA. 19+49, 0' RT. 8" DI (CL 350) — 70 LF
7. STA. 19+23, 4' LT., 8" X 45° BEND (HZ) — 1 EA(NPI)
8. STA. 19+26, 3' LT. & STA. 19+30, 2' LT. STA. 19+45, 0' LT. & STA. 19+49, 0' LT. 8" X 45° BEND (VT) — 4 EA(NPI)
9. STA. 19+50, 33' RT. (LOCATION OF ARV) 1" ARV PER SD-330 — 1 EA
10. STA. 19+49, 0' RT. TO STA. 17+22, 32' RT. (NORTH LOOP CST ℄) 8" PVC DR14 (CL305) — 83 LF
11. STA. 17+23, 15' RT. & STA. 17+23, 16' RT. (NORTH LOOP CST ℄) 8" X 45° BEND (VT) — 2 EA(NPI)
12. STA. 17+22, 26' RT. (NORTH LOOP CST ℄) 8" GATE VALVE B & C — 1 EA
13. STA. 18+47, 2' LT. 8" GATE VALVE B & C — 1 EA
14. STA. 18+47, 5' LT. & STA. 18+47, 12' LT. STA. 18+46, 21' LT. & STA. 18+46, 29' LT. 8" X 45° BEND (VT) — 4 EA(NPI)
15. STA. 18+19, 22' RT. (LOCATION OF ARV) 1" ARV PER SD-330 — 1 EA
16. STA. 18+47, 3' RT. TO STA. 18+46, 29' LT. 8" DI (CL 350) — 36 LF
17. STA. 18+45, 44' LT. 8" X 6" TEE — 1 EA(NPI)
18. STA. 18+46, 29' LT. TO STA. 18+43, 104' LT. 8" PVC DR 14 (CL 305) — 73 LF
19. STA. 18+43, 104' LT. & STA. 18+43, 109' LT., STA. 18+42, 121' LT. & STA. 18+42, 124' LT. 8" X 45° BEND (VT) — 4 EA(NPI)
20. STA. 18+27, 104' LT. (LOCATION OF ARV) 1" ARV PER SD-330 — 1 EA
21. STA. 18+43, 104' LT. TO STA. 18+42, 126' LT. 8" DI (CL 350) — 24 LF
22. STA. 18+42, 126' LT. 8" TO 4" ECCENTRIC REDUCER — 1 EA(NPI)
    CONNECT TO EXST. 4"X4" TEE — 1 EA(NPI)
23. STA. 18+49, 44' LT. 6" GATE VALVE B & C — 1 EA(NPI)
24. STA. 18+45, 44' LT. TO STA. 18+74, 45' LT. 6" DI (CL 200) — 29 LF(NPI)
25. STA. 18+74, 45' LT. FIRE HYDRANT INSTALLATION PER SD-500 — 1 EA

REMOVE / ABANDON NOTES

1. STA. 18+42, 123' LT. TO STA. 18+42, 126' LT. REMOVE AND DISPOSE 4" PVC PIPE — 3 LF

REFERENCE NOTES

1. TRANSMISSION WATER MAIN PLAN & PROFILE SEE SHEET WI2 & WI3
2. SANITARY SEWER PLAN & PROFILE, SEE SHEET SS7 & SS8
3. DISTRIBUTION WATER MAIN, SEE SHEET WI5, RIGHT PLAN & PROFILE
4. DISTRIBUTION WATER MAIN, SEE SHEET WI5, LEFT PLAN & PROFILE

WATER SHEET WI5 OF WI6

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

VERT: 1" = 4'
HORZ: 1" = 40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C

010-D(213)S

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
LATERAL PLAN & PROFILE

Registered Professional Engineer — 37622 FRANK EMMETT FRY IV — Date Signed 5/30/19 — ARIZONA, U.S.A. — Expires 06/30/20

DWG NO. U-2.15

OF

Thu 30 May 2019, 16:16:25

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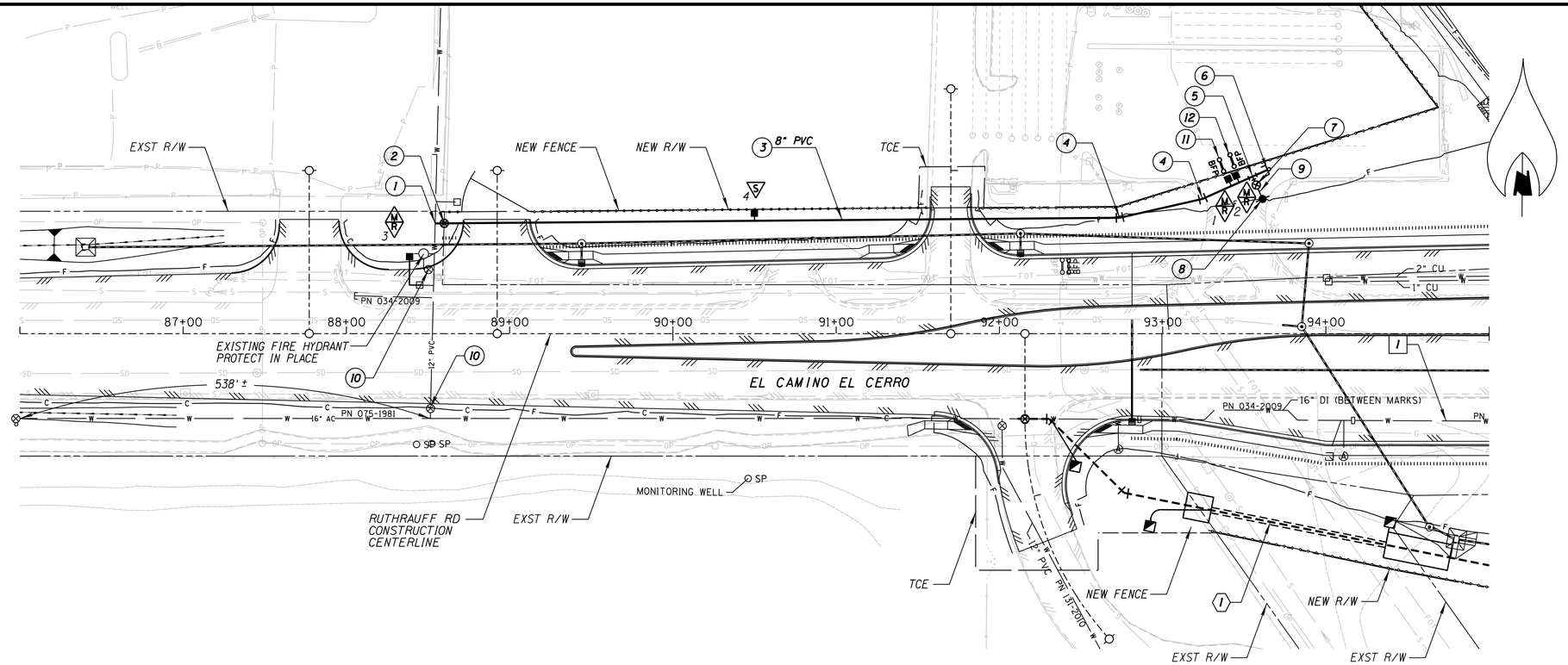
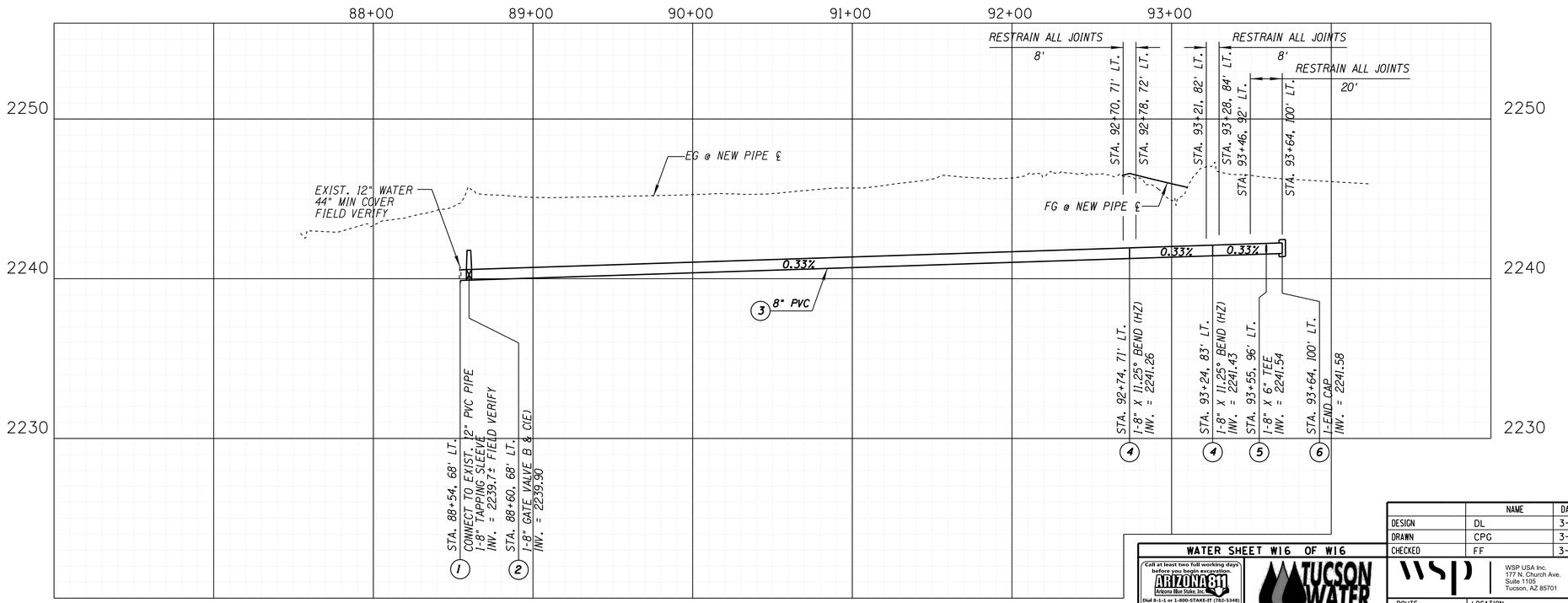
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	830	849	

010 PM 252





REMOVE / ABANDON NOTES

(1) SEE SHEET W5 FOR REMOVAL OF EXISTING PIPE.

CONSTRUCTION NOTES

(1) STA. 88+54, 68' LT.
CONNECT TO EXST 12" PVC PIPE — 1 EA(NPI)
8" TAPPING SLEEVE — 1 EA(NPI)

(2) STA. 88+60, 68' LT.
8" GATE VALVE, B&C(S) — 1 EA
WITH THRUST BLOCK PER SD-610 — 1 EA

(3) STA. 88+54, 68' LT. TO STA. 93+64, 100' LT.
8" PVC DR14 (CL305) — 515 LF

(4) STA. 92+74, 71' LT.. STA. 93+24, 83' LT.
8" X 11.25° BEND (HZ) — 2 EA(NPI)

(5) STA. 93+55, 96' LT.
8" X 6" TEE W/ BLIND FLANGE — 1 EA(NPI)

(6) STA. 93+64, 100' LT.
END CAP — 1 EA(NPI)

(7) STA. 93+57, 91' LT.
6" GATE VALVE B & C — 1 EA(NPI)

(8) STA. 93+61, 83' LT.
FIRE HYDRANT INSTALLATION PER SD-500 — 1 EA

(9) STA. 93+55, 96' LT. TO STA. 93+61, 83' LT.
6" DI (CL350) — 20 LF(NPI)

(10) STA. 88+50, 39' LT.. STA. 88+52, 46' RT.
ADJUST VALVE TO GRADE PER SD-305 — 2 EA

(11) BACKFLOW DEVICE, 2" — 1 EA
3030 W. EL CAMINO DEL CERRO
LOCATE SERVICE ACCORDING TO EXISTING PLUMBING.

(12) BACKFLOW DEVICE, 1" — 1 EA
3030 W. EL CAMINO DEL CERRO
LOCATE SERVICE ACCORDING TO EXISTING PLUMBING.

REFERENCE NOTES

(1) TRANSMISSION WATER MAIN PLAN & PROFILE. SEE SHEET W5

SERVICE WORK

#	ADDRESS/STA	EXST. SERV.	SERV. WORK	EXIST. CONNECTION DIA. - MATL.	NEW CONNECTION DIA. - MATL.
1	3030 W. EL CAMINO DEL CERRO	M( )	MR	2"-CU	2"-CU
2	STA. 93+47± 93' LT (IRRIGATION)	M( )	MR	1"-CU	1"-CU
3	STA. 88+45± 45' LT	M (5/8")	MR	1"-CU	1"-CU
4	STA. 9+50± 69' LT (IRRIGATION)	-	S	-	1"-CU

WATER SHEET W16 OF W16

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TUCSON WATER

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
WATER MODIFICATION PLANS
DISTRIBUTION PLAN AND PROFILES

Registered Professional Engineer — 37622 FRANK EMMETT FRY IV — Date Signed 3/19/19 — ARIZONA, U.S.A. — Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI
DWG NO. U-2.16
TRACS NO. H 8480 01C
010-D(213)S
___ OF ___

VERT: 1" = 4'
HORZ: 1" = 40'

NO.	DATE	REVISION	BY	CHKD.	APPR.

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

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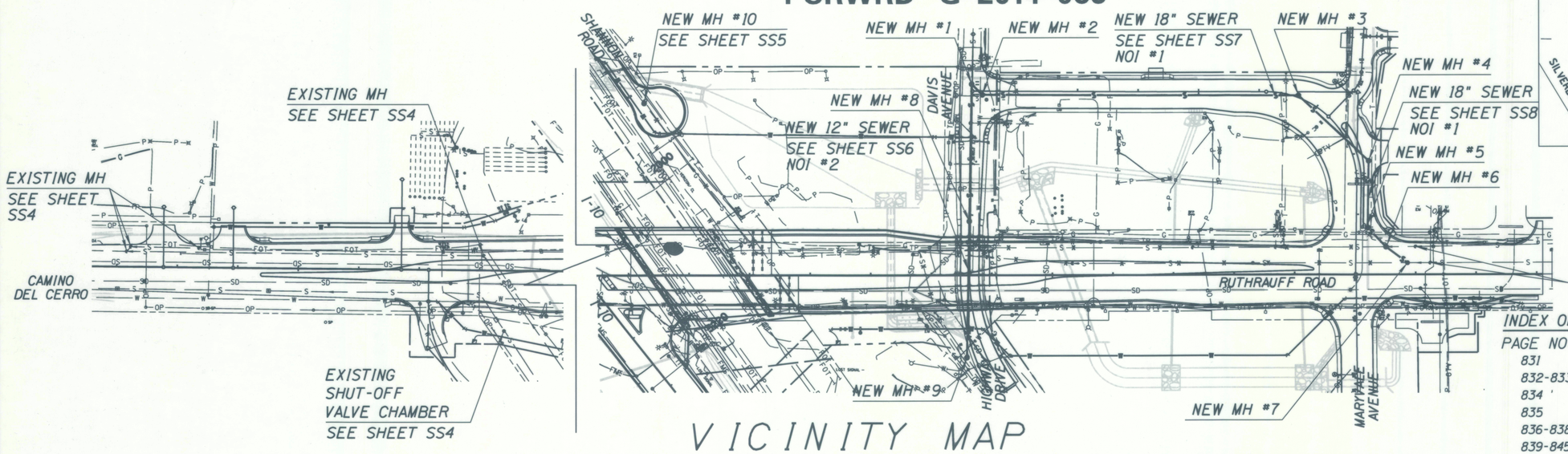
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	831	849	

010 PM 252

PIMA COUNTY
WASTEWATER RECLAMATION

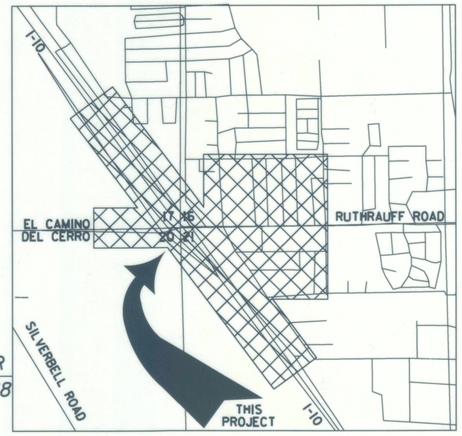
PIMA COUNTY
REGIONAL WASTEWATER
RECLAMATION DEPARTMENT

RUTHRAUFF ROAD GRAVITY SEWER MODIFICATION PLANS
I-10 AND RUTHRAUFF ROAD
PCRWRD G-2014-085



VICINITY MAP

1"=100'



LOCATION MAP

SEC. 16, 17, 20 & 21, T13S, R13E
G & S R M, PIMA COUNTY, ARIZONA
LATITUDE 32°17'39" N
LONGITUDE 111°01'48" W
CITY OF TUCSON
3" = 1 MILE

INDEX OF SHEETS

PAGE NO.	SHEET NO.	DESCRIPTION
831	SS1	COVER SHEET
832-833	SS2-SS3	GENERAL NOTES
834	SS4	FRAME AND COVER ADJUST
835	SS5	SEWER PLAN
836-838	SS6-SS8	PLAN & PROFILE
839-845	SS9-SS15	PCRWRD DETAIL SHEETS
846-847	SS16-SS17	FLOW MANAGEMENT
848-849	SS18-SS19	SEWER PIPE REMOVAL

BOARD OF SUPERVISORS

DISTRICT 1	ALLY MILLER	MEMBER
DISTRICT 2	RAMÓN VALADEZ	MEMBER
DISTRICT 3	SHARON BRONSON	MEMBER
DISTRICT 4	STEVE CHRISTY	MEMBER
DISTRICT 5	RICHARD ELÍAS	CHAIR

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT

PIMA COUNTY DEPARTMENT OF TRANSPORTATION (For Sewer Locations In R/W ONLY) DATE

CITY OF TUCSON (For Sewer Locations In R/W ONLY) DATE

G-2014-085

ACCEPTED BY:

PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT
DIRECTOR
JACKSON JENKINS 3/27/19 DATE

DEPUTY DIRECTOR, PLANNING AND ENGINEERING
ERIC WIEDUWILT, PE 3/27/19 DATE

DEPUTY DIRECTOR, CONVEYANCE
JAIME RIVERA 27 Mar 19 DATE

As-Built Certificate

AS-BUILT:
I hereby certify that the As-Built annotations provided on these drawings were based on an As-Built survey conducted under my supervision and accurately depict existing field conditions to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR (OR REGISTERED P.E.) DATE

CONTACT INFORMATION

UTILITY AND OTHER LISTINGS	
ORGANIZATION	PHONE NUMBER
TUCSON ELECTRIC POWER	(520) 918-8246
COX CABLE	(520) 629-8511
CENTURY LINK COMM.	(520) 292-7555
COMCAST CABLE	(520) 744-1900
TUCSON WATER	(520) 791-2648
PIMA COUNTY DOT	(520) 724-6367
SOUTHWEST GAS	(520) 794-6021

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

PIMA COUNTY WASTEWATER RECLAMATION

UPC-2014-167

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
COVER SHEET

Registered Professional Engineer (Civil) 37622 FRANK EMMETT FRY IV Date Signed 3/19/19 ARIZONA, U.S.A. Expires 06/30/20

ROUTE	LOCATION	TRACS NO.		
I-10	RUTHRAUFF ROAD TI	H 8480 01C	010-D(213)S	DWG NO. U-3.01

SHEET SSI OF SS19 ___ OF ___

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	832	849	
		010 PM 252			

SEWER GENERAL NOTES

1. BASIS OF BEARING: DESIGN INFORMATION BASED UPON AERIAL PHOTOGRAMMETRIC MAPPING SUPPLIED BY ADOT. PHOTOGRAMMETRY JOB NO. 3803 - AERIAL PHOTOGRAPHY DATED OCTOBER 29, 2008. SEE SURVEY CONTROL SHEETS (C-1.01 TO C-1.02) AND GEOMETRIC DATA SHEETS (C-2.01 TO C-2.12).

2. VERTICAL DATUM: ELEVATION BASED UPON NAVD 88.

   MAP COORDINATES ARE NAD 83/92 MODIFIED CENTRAL ZONE STATE PLANE COORDINATES USING G.A.F. = 1.00016. SEE SURVEY CONTROL SHEETS (C-1.01 TO C-1.02) AND GEOMETRIC DATA SHEETS (C-2.01 TO C-2.12).

3. ALL DESIGN STANDARDS, MATERIALS AND WORKMANSHIP FOR PUBLIC SANITARY SEWERS SHALL BE IN ACCORDANCE WITH THE PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT (PCRWRD) ENGINEERING DESIGN STANDARDS 2016 (EDS 2016) WITH JUNE 2017 UPDATES AND THE STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION 2016 (SSDC 2016) WITH JUNE 2017 UPDATES. SAID DOCUMENTS ARE AVAILABLE THROUGH THE PCRWRD WEBSITE (www.pima.gov/wastewaterreclamation).

4. CONSTRUCTION LIMITS TO BE USED BY THE CONTRACTOR SHALL BE WITHIN THE RIGHT-OF-WAY & UTILITY EASEMENTS. THE CONTRACTOR, EXCEPT TO TRANSPORT EQUIPMENT & MATERIALS, SHALL CONFINE OPERATIONS TO WITHIN THESE LIMITS.

5. SEWER CONSTRUCTION SHALL NOT COMMENCE UNTIL: (A) THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ) OR ITS DELEGATED AUTHORITY HAS ISSUED A CONSTRUCTION AUTHORIZATION FOR THIS PROJECT; (B) THE CONTRACTOR HAS OBTAINED A PCRWRD PUBLIC SEWER CONSTRUCTION PERMIT (CONTACT THE PCRWRD PERMITS SECTION AT (520) 724-6649 FOR PERMIT APPLICATION REQUIREMENTS); (C) THE CONTRACTOR'S FLOW MANAGEMENT PLAN HAS BEEN SUBMITTED THIRTY (30) CALENDAR DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING AND APPROVED BY PCRWRD FIELD ENGINEERING; AND (D) A PRE-CONSTRUCTION MEETING WITH THE ASSIGNED PIMA COUNTY PROJECT FIELD INSPECTOR OR SCHEDULED AT LEAST THREE (3) FULL BUSINESS DAYS PRIOR TO COMMENCING WITH SEWER CONSTRUCTION.

6. 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.

7. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) REGULATIONS AT ALL TIMES.

8. THE CONTRACTOR SHALL CONTACT "ARIZONA 811" (DIAL 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.

9. THE PCRWRD CONVEYANCE DIVISION SHALL BE NOTIFIED AT (520) 724-3400 A MINIMUM OF TWO (2) BUSINESS DAYS PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES THAT IMPACTS THE FLOW WITHIN A LIVE SANITARY SEWER SYSTEM OR INVOLVES CONNECTING TO A LIVE SANITARY SEWER. SEE PCRWRD SSDC 2016, SECTION 2 FOR MORE INFORMATION.

10. THE CONTRACTOR SHALL ADJUST OR RECONSTRUCT ALL SANITARY SEWER MANHOLES TO FINISHED GRADE. ALL FRAMES AND COVER ADJUSTMENTS SHALL BE IN ACCORDANCE WITH PCRWRD SSDC 2016, DETAIL NOS. RWRD 211, 212, 304 OR 305 (AS APPLICABLE). THE CONTRACTOR SHALL PROTECT THE BENCH AND FLOW CHANNELS WITH A COVER PER PCRWRD SSDC 2016, DETAIL NO. RWRD 306. PRIOR TO COMMENCING ANY WORK TO THE MANHOLE AND REMOVE THE COVER AFTER ALL WORK IS COMPLETED.

10. CONT. THE CONTRACTOR SHALL ENSURE THAT FRAMES AND COVERS ARE CLEAN AND FREE FROM ANY AND ALL ATTACHED MATERIALS (ASPHALT, CONCRETE, ETC.) AND THAT ALL VENT HOLES ARE OPEN AND CLEAR OF OBSTRUCTIONS, AS APPROVED BY THE PCRWRD FIELD ENGINEER. EXISTING FRAMES AND/OR COVERS THAT ARE DAMAGED OR CANNOT BE COMPLETELY CLEANED SHALL BE REPLACED WITH A NEW FRAME AND COVER IN ACCORDANCE WITH PCRWRD SSDC 2016, DETAIL NO. RWRD 213 - 218. COSTS ASSOCIATED WITH EXISTING FRAMES AND COVERS THAT ARE LOST OR DAMAGED DUE TO THE CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

11. STORM WATER AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY INSTALLED TO PROTECT PCRWRD MANHOLES AT THE BEGINNING OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSTANTLY MAINTAIN STORM WATER AND SEDIMENT CONTROL MEASURES THAT PROTECT PCRWRD FACILITIES UNDER ALL CONDITIONS FOR THE DURATION OF THE PROJECT. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR ALLOW STORM WATER, SEDIMENT, OR POTENTIAL POLLUTANTS FROM A CONSTRUCTION SITE TO ENTER A PCRWRD MANHOLE. THE CONTRACTOR SHALL ENSURE THAT THEIR FLOW MANAGEMENT OPERATIONS INCLUDE CONTROLS TO PREVENT ANY INTRODUCTION OF STORM WATER, SEDIMENT, OR POLLUTANTS INTO THE PUBLIC SANITARY SEWER SYSTEM. FAILURE TO CONFORM TO THESE REQUIREMENTS SHALL RESULT IN CANCELLATION OF THE SEWER CONSTRUCTION PERMIT.

12. SPECIAL CARE SHALL BE TAKEN TO ENSURE DESIGN SLOPES ARE MAINTAINED. SEWERS CONSTRUCTED AT INSUFFICIENT SLOPES WILL NOT BE ACCEPTED BY PCRWRD FIELD ENGINEERING AND/OR ADEQ. CORRECTIVE ACTION, INCLUDING RE-CONSTRUCTION OF THE SEWER(S), WILL BE AT THE SOLE EXPENSE OF THE PROJECT OWNER/CONTRACTOR.

13. WHERE CONNECTIONS TO EXISTING MAHOLES ARE TO BE MADE, THE CONTRACTOR SHALL CONSTRUCT NEW INVERTS IN THE EXISTING BASE TO SMOOTHLY DIRECT THE FLOW IN THE PROPER DIRECTION.

14. THE WORDS "PIMA COUNTY SANITARY SEWER" SHALL BE IMPRINTED ONLY ON COVERS OF MANHOLES WHICH ARE TO BE PART OF THE PIMA COUNTY REGIONAL WASTEWATER RECLAMATION (PUBLIC) SANITARY SEWER CONVEYANCE SYSTEM.

15. ALL DISTURBED AREAS SHALL BE REGRADED TO PROVIDE POSITIVE DRAINAGE PATTERNS. WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT WITH NO SEPARATE COMPENSATION PROVIDED.

16. NO REGULATORY FEMA FLOODPLAINS EXIST WITHIN THE PROJECT LIMITS. THE PROJECT IS LOCATED ENTIRELY WITHIN ZONE X.

17. SEE SHEET SS17 & SS18 FOR ADDITIONAL REMOVAL OF SEWER PIPE.

ADEQ NOTES

1. ALL SEWER LINES SHALL BE COVERED WITH AT LEAST 4 FEET OF BACKFILL PER PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT (PCRWRD).

2. THE FULL LENGTH OF SEWER MAIN SHALL BE DEFLECTION TESTED PER A.A.C. R18-9-E301 (D) (2) (i).

3. EACH SEGMENT OF THE SEWER MAIN SHALL BE LEAKAGE TESTED PER A.A.C. R18-9-E301 (D) (2) (j).

4. THE FULL LENGTH OF SEWER MAIN SHALL BE TESTED FOR UNIFORM SLOPE PER A.A.C. R18-9-E301 (D) (2) (k).

5. ALL MANHOLES SHALL BE DESIGNED PER A.A.C. R18-9-E301 (D) (3) (c) AND THE PCRWRD.

6. ALL MANHOLES SHALL BE LEAK TESTED PER A.A.C. R18-9-E301 (D) (3) (e).

FLOW MANAGEMENT GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE THE FINAL FLOW MGMT PLAN FOR THE PROJECT FOR REVIEW AND APPROVAL BY THE PCRWRD FIELD ENGINEERING MANAGER. THE WASTEWATER FLOW MGMT GUIDELINES PROVIDED HEREIN SHALL NOT SERVE AS THE APPROVED FLOW MANAGEMENT PLAN.

2. FOR THE DURATION OF ALL PUMPING, THE CONTRACTOR WILL PROVIDE CONTINUOUS PUMP WATCH BY TRAINED AND QUALIFIED PUMP PERSONNEL, WHO SHALL MONITOR PUMPS, FUEL SOURCE, HIGHLINES, FLOW THROUGH PLUGS, FITTINGS AND APPURTENANCES, SURCHARGING AT IMMEDIATE UPSTREAM MANHOLES, AND ALL EQUIPMENT ASSOCIATED WITH THE BYPASS PUMPING OPERATION.

3. A 1/2 INCH PLYWOOD COVER, PER RWRD 306, SHALL BE USED INSIDE THE MANHOLES TO COVER THE OPEN PIPE WHILE BEING STACKED.

4. THE PUMPS AND BACKUP PUMPS SHALL BE CAPABLE OF PUMPING THE PEAK DRY WEATHER FLOW AT A TOTAL DYNAMIC HEAD AS SHOWN IN THE FLOW AND PUMP DATA TABLE PROVIDED ON THIS SHEET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THE MINIMUM SUCTION HEAD (NPSH) IS SATISFIED.

5. SUFFICIENT FUEL SHALL BE STORED ON-SITE TO ACCOMMODATE 24 HOURS CONTINUOUS PUMPING AT FULL DUTY CYCLE. FUEL SHALL BE STORED USING DOUBLE WALL UL2085 CONTAINERS, INCLUDING SPILL CONTAINMENT. FUEL STORAGE SHALL BE OSHA SAFE. FUEL CONTAINMENT SHALL BE PROTECTED FROM RUNOFF RESULTING FROM STORM EVENTS.

6. PUMPS DISCHARGE TO BYBASS IN GENERAL CONFORMANCE WITH APPROVED FLOW MANAGEMENT PLAN, PUMPS AND SUCTION PIPING SHALL BE PROTECTED USING CONCRETE BARRIERS OR OTHER APPROVED CONTROL SECURED BY THE CONTRACTOR.

7. CONTRACTOR SHALL VERIFY FLOWS INTO THE EXISTING 18" SEWER IN DAVIS AVENUE PRIOR TO SUBMITTING THE FINAL FLOW MGMT PLAN TO THE THE ENGINEER FOR REVIEW AND APPROVAL.

8. ALL PIPING AND PUMP CONNECTIONS SHALL BE PRESSURE TESTED USING FRESH WATER TO 60 POUNDS PER SQUARE INCH PRIOR TO CONNECTION TO THE FLOW THROUGH PLUGS AND TO OPERATION OF THE PUMP(S).

9. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. ALL EXCAVATION WITHIN 2 FT. OF A LIVE SEWER SHALL BE COMPLETED BY HAND.

10. PER RWRD SSDC 2.7.5, AT LEAST 6 GALLONS OF 12.5% LIQUID SODIUM HYPOCHLORITE SOLUTION WILL BE ON-SITE FOR 12-INCH OR LESS, AND 50 GALLONS FOR ANYTHING LARGER THAN 12-INCH.

11. PCRWRD SHALL NOT BE HELD LIABLE OR RESPONSIBLE FOR ANY ERRORS AND OR OMISSIONS ON THE FMP. ITEMS NOT MEETING PIMA COUNTY STANDARDS SHALL BE REPAIRED OR REPLACED AT NO COST TO THE DEPARTMENT.

12. THE CONTRACTOR SHALL PROVIDE ONE LANE IN EACH DIRECTION OF TRAVEL ON ANY ACTIVE ROADWAY FOR THE DURATION OF ALL BYPASS PUMPING. LANE CLOSURES MUST BE APPROVED BY THE ENGINEER PRIOR TO THE INSTALLATION OF THE BYPASS EQUIPMENT.

13. THE CONTRACTOR SHALL PLACE PUMPS AND SPILL PREVENTION MATERIALS NEAR THE UPSTREAM MANHOLE, ON A FLAT AREA CLEAR OF TRAFFIC AND/OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR'S FINAL FMP SHALL CLEARLY DEPICT THESE LOCATIONS.

SHEET SS2 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1100
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
GENERAL NOTES

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

DWG NO. U-3.02

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

37622 FRANK EMMETT FRY IV 3/19/19 Date Signed ARIZONA, U.S.A. Expires 06/30/20

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

G-2014-085

Tue 19 Mar 2019, 15:03:55 \\prdpwics01\ics_workingdir\5458\43865_96\h8480ss02.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	833	849	
		010 PM 252			

G-2014-085

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

MANHOLE AS-BUILT INFO

MH NO.	STATE PLANE COORDINATES (AZ CENTRAL) NAD 83/92 INTERNATIONAL FEET	
	NORTHING	EASTING
MH# 1		
MH# 2		
MH# 3		
MH# 4		
MH# 5		
MH# 6		
MH# 7		
MH# 8		
MH# 9		
MH# 10		

HCS AS-BUILT INFO

	STATE PLANE COORDINATES (AZ CENTRAL) NAD 83/92 INTERNATIONAL FEET AT CLEANOUT		DISTANCE FROM TAP TO DOWNSTREAM MANHOLE	SEWER LINE STATIONING AT HCS/BCS CONNECTION
PARCEL NO.	NORTHING	EASTING		

FORCE MAIN/ABANDONMENT MONUMENT

EXST MONUMENT NO.	NEW MONUMENT NO.	NORTHING	EASTING	ROAD	APPROX. STATION	OFFSET	COMMENTS
N/A	1	471984.10	972366.25	EL CAMINO DEL CERRO	81+48	20.93' LT	NEW
4	2	471929.74	972423.67	EL CAMINO DEL CERRO	82+05	33.85' RT	REPLACE EXISTING
3	3	471929.86	972670.60	EL CAMINO DEL CERRO	84+51	35.59' RT	REPLACE EXISTING
2	4	471930.48	972920.49	EL CAMINO DEL CERRO	87+01	36.86' RT	REPLACE EXISTING
1	5	471931.56	973170.36	EL CAMINO DEL CERRO	89+51	37.66' RT	REPLACE EXISTING
N/A	6	471932.96	973419.49	EL CAMINO DEL CERRO	92+00	38.14' RT	NEW
N/A	7	471930.68	973519.49	EL CAMINO DEL CERRO	93+00	41.18' RT	NEW

NOTES:

1. ALL FORCE MAIN MONUMENTS SHALL BE PER STANDARD DETAIL RWRD 503.
2. SEE SHEET U-3.04 FOR PLAN VIEW.

FORCE MAIN MONUMENT NOTES:

1. THE CONTRACTOR SHALL DOCUMENT BY STATION & OFFSET AND BY GPS COORDINATES THE EXISTING FORCE MAIN (FM) MONUMENTS PRIOR TO PAVEMENT REMOVAL. THE CONTRACTOR SHALL PROVIDE FM MONUMENT LOCATION DOCUMENTATION TO PCRWRD. THE SURVEY GPS DATA SHALL BE IN THE MOST RECENT STATE PLANE COORDINATES (NAD 1983 STATE PLANE ARIZONA CENTRAL) AND WILL BE GATHERED USING SURVEY QUALITY EQUIPMENT, AND ACCURATE TO WITHIN 0.5-FEET. THE BASIS OF COORDINATES WILL BE INCLUDED. THE DATA WILL BE CATEGORIZED BY STREET SEGMENT AND LABELED WITH STREET NAMES AND SUPPLIED AS RAW DATA IN TEXT FORMAT, IN AN EXCEL WORKBOOK AND AUTOCAD DWG FORMAT. THE FORMAT SHALL INCLUDE COORDINATES IN NORTHINGS AND EASTINGS AS WELL AS BY STATION AND OFFSET. EACH POINT SHALL CONTAIN A DESCRIPTION OF THE SURVEY MONUMENT.
2. POTHOLE AND REFERENCE PER NOTE 1 THE LOCATIONS OF THE 8" FORCE MAIN (FM) INDICATED ON SHEET U-3.04, INCLUDING THE ELBOWS AT NEW MONUMENT NUMBERS 2 AND 7.
3. THE CONTRACTOR SHALL PROVIDE SWING TIE REFERENCE POINTS THAT WILL REMAIN UNDISTURBED FOR THE DURATION OF THE PROJECT, OR OTHER METHODS, IN ORDER TO AID IN THE LOCATION AND MARKING (BLUE-STAKE) OF THE PUBLIC FORCE MAIN SEWER DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL NEW ELECTRONIC MARKER BALLS ABOVE THE FORCE MAIN SEWER AT LOCATION OF FORCE MAIN MONUMENTS, NO DEEPER THAN 3' FROM FINISH GRADE OF THESE PROJECT IMPROVEMENTS.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL FORCE MAIN MONUMENTS ABOVE THE FORCE MAIN SEWER AND ELECTRONIC MARKER BALLS PER STANDARD DETAIL RWRD 503 AT ANY ANGLE POINTS AND A MAXIMUM SPACING OF 250'.
6. THE WORK DESCRIBED ABOVE TO LOCATE EXISTING AND PLACE NEW FM MONUMENTS AND TO INSTALL NEW ELECTRONIC MARKER BALLS SHALL BE PAID FOR BY BID ITEM NO. 9090005, SURVEY MONUMENT (FORCE MAIN MONUMENT) (RWRD 503) (WITH MARKER BALL).

MANHOLE LOCATING NOTES:

1. THE CONTRACTOR SHALL GPS REFERENCE ALL SANITARY SEWER MANHOLES (CENTER OF BASES NOT THE CENTER OF THE FRAMES AND COVERS) WITH SURVEY QUALITY COORDINATES.
2. THE SURVEY GPS DATA SHALL BE IN THE MOST RECENT STATE PLANE COORDINATES (NAD 1983 STATE PLANE ARIZONA CENTRAL) AND WILL BE GATHERED USING SURVEY QUALITY EQUIPMENT, AND ACCURATE TO WITHIN 0.5-FEET. THE BASIS OF COORDINATES WILL BE INCLUDED. THE DATA WILL BE CATEGORIZED BY STREET NAMES AND SUPPLIED AS RAW DATA IN TEXT FORMAT, IN AN EXCEL WORKBOOK AND AUTOCAD DWG FORMAT. THE FORMAT SHALL INCLUDE COORDINATES IN NORTHINGS AND EASTINGS AS WELL AS BY STATION AND OFFSET. EACH POINT SHALL CONTAIN A DESCRIPTION OF THE MANHOLE.
3. THE CONTRACTOR WILL ASSIST PCRWRD WITH THE FIELD LOCATION (BLUE-STAKE) OF THE MANHOLES AND SEWER PIPE DURING CONSTRUCTION.
4. THE WORK DESCRIBED ABOVE SHALL BE INCIDENTAL TO THE WORK ITEMS DESCRIBED IN THE SEWER MODIFICATION PLANS.

SHEET SS3 OF SS19

NO.	DATE	REVISION	BY	CHKD.	APPR.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
GENERAL NOTES

Registered Professional Engineer (Civil)
37622
FRANK EMMETT FRY IV
3/19/19
Date Signed
ARIZONA, U.S.A.
Expires 06/30/20

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

PIMA COUNTY
WASTEWATER RECLAMATION

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. U-3.03

TRACS NO. H 8480 01C		010-D(213)S	___ OF ___

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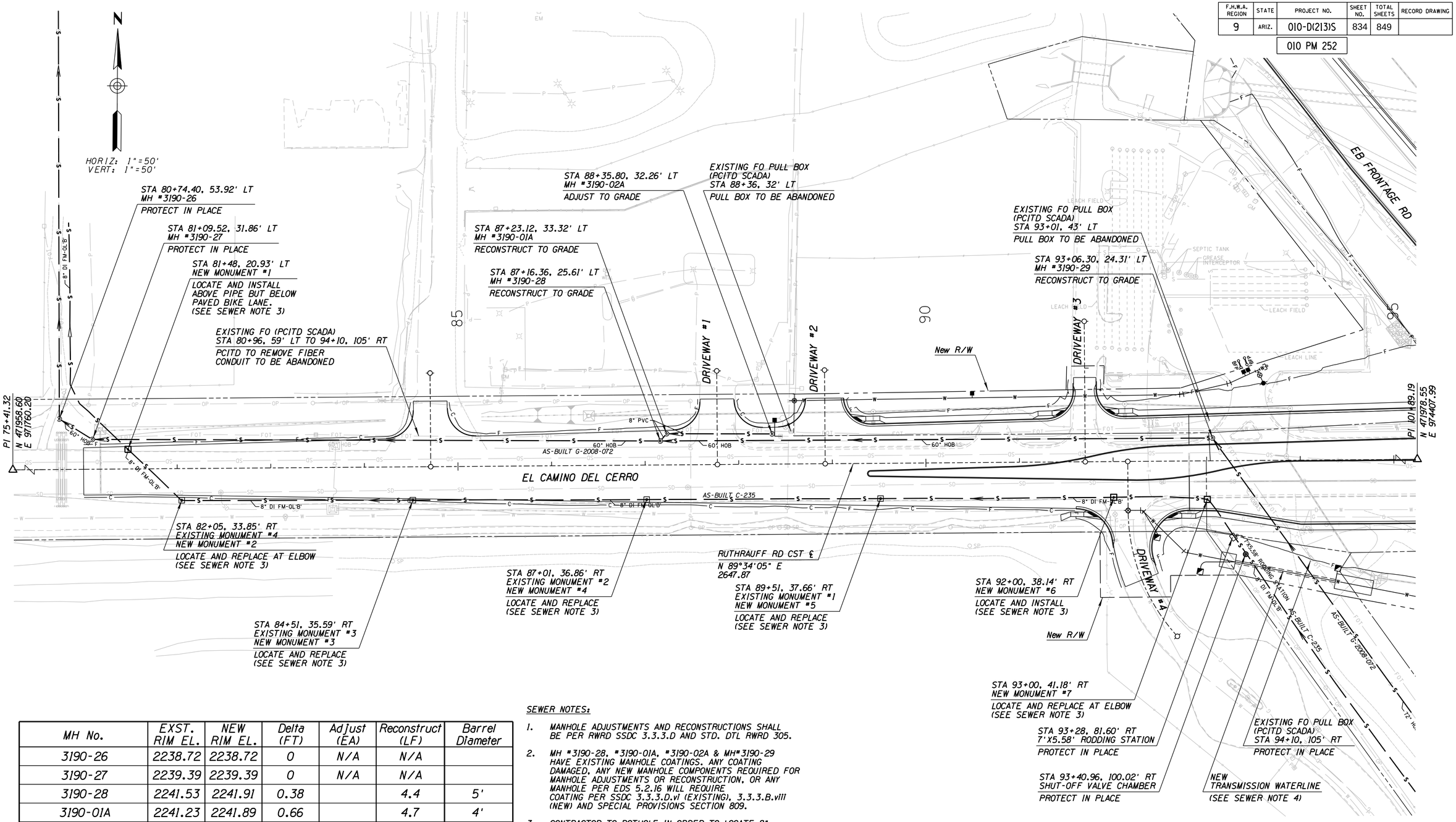
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	834	849	

010 PM 252



MH No.	EXST. RIM EL.	NEW RIM EL.	Delta (FT)	Adjust (EA)	Reconstruct (LF)	Barrel Diameter
3190-26	2238.72	2238.72	0	N/A	N/A	
3190-27	2239.39	2239.39	0	N/A	N/A	
3190-28	2241.53	2241.91	0.38		4.4	5'
3190-01A	2241.23	2241.89	0.66		4.7	4'
3190-02A	2244.63	2244.05	-0.58	1		4'
3190-29	2247.12	2250.72	3.6		7.6	5'
9717-33	2247.76	2247.97	0.21	1		
2903-01	2247.65	2248.42	0.77		4.8	5'

SEE MANHOLE RECONSTRUCTION DETAIL IN SHEET SSI5 AND NOTE 2 THIS SHEET.

SEWER NOTES:

1. MANHOLE ADJUSTMENTS AND RECONSTRUCTIONS SHALL BE PER RWRD SSDC 3.3.3.D AND STD. DTL RWRD 305.
2. MH #3190-28, #3190-01A, #3190-02A & MH#3190-29 HAVE EXISTING MANHOLE COATINGS. ANY COATING DAMAGED, ANY NEW MANHOLE COMPONENTS REQUIRED FOR MANHOLE ADJUSTMENTS OR RECONSTRUCTION, OR ANY MANHOLE PER EDS 5.2.16 WILL REQUIRE COATING PER SSDC 3.3.3.D.vi (EXISTING), 3.3.3.B.viii (NEW) AND SPECIAL PROVISIONS SECTION 809.
3. CONTRACTOR TO POTHOLE IN ORDER TO LOCATE 8" FORCE MAIN. EXISTING FORCE MAIN MONUMENTS TO BE SURVEYED AND REPLACED. MONUMENTS SHALL BE FURNISHED & INSTALLED PER STD. DTL. RWRD-503 AND PER ITEM SPEC. 9090004. REINFORCING BARS SHALL BE DELETED AND REPLACED WITH AN APPROVED ELECTRONIC MARKER SYSTEM. CONTRACTOR SHALL SUBMIT DOCUMENTATION TO PCRWRD FOR APPROVAL BEFORE INSTALLING MONUMENTS. SEE FORCE MAIN MONUMENT NOTES AND TABLE ON SHEET SS3.
4. CONTRACTOR SHALL POTHOLE VERIFY THE SEPARATION BETWEEN THE 60" HOBAS PIPE AND THE NEW JACK AND BORED WATER CASING.

NO.	DATE	REVISION	BY	CHKD.	APPR.

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

PIMA COUNTY WASTEWATER RECLAMATION

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc. 177 N. Church Ave. Suite 1105 Tucson, AZ 85701

ROUTE I-10 LOCATION RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
FRAME AND COVER ADJUST

Registered Professional Engineer (Civil) 37622 FRANK EMMETT FRY IV Date Signed 3/19/19 ARIZONA U.S.A. Expires 06/30/20

DWG NO. U-3.04

SHEET SS4 OF SSI9

G-2014-085

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

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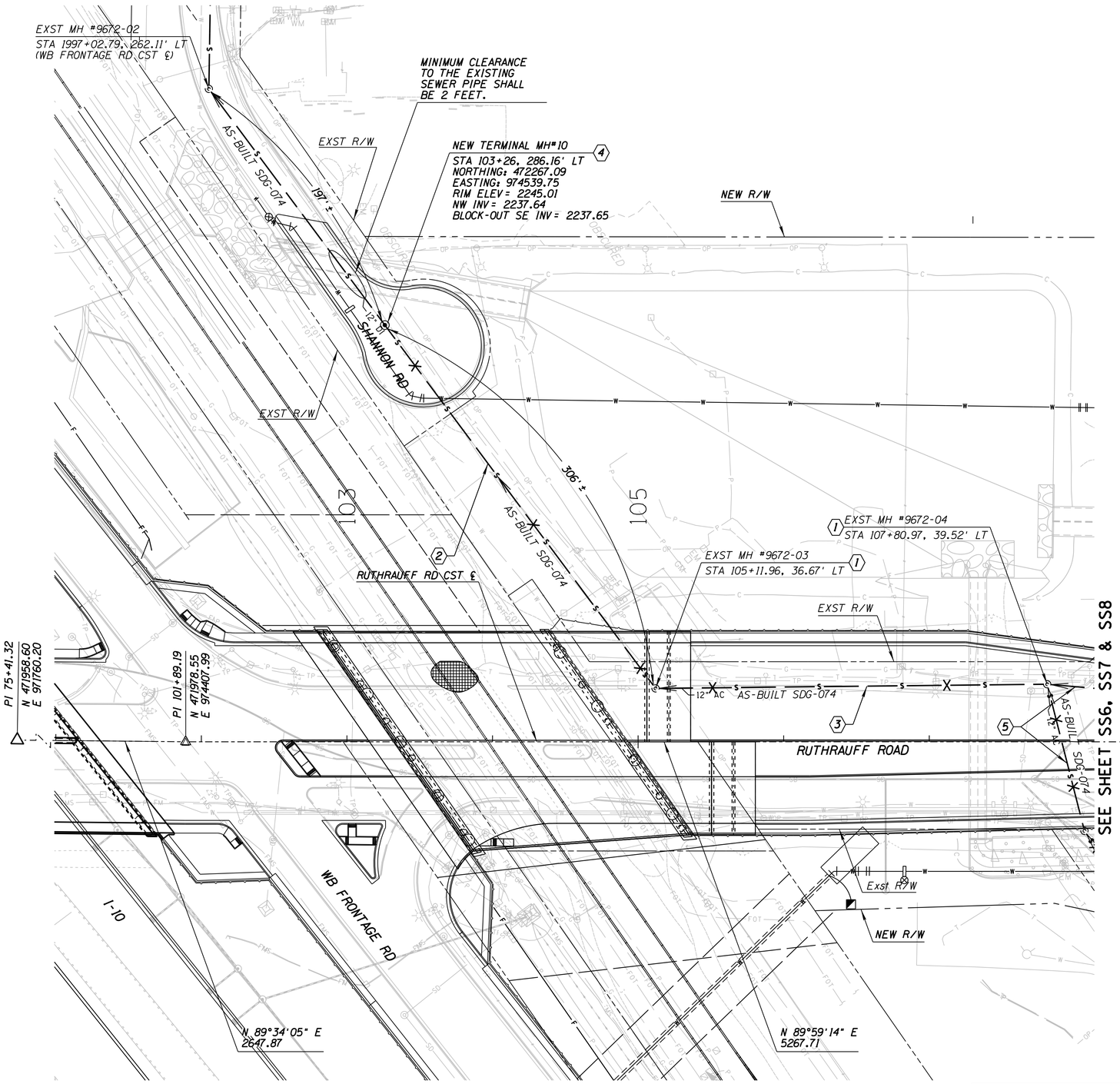

HORIZ: 1"=40'
VERT: 1"=4'

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	835	849	

010 PM 252

KEYNOTES

1. EXISTING MANHOLES TO BE REMOVED. CONTRACTOR SHALL REMOVE THE FRAME AND COVER. THE SALVAGED FRAME AND COVER SHALL BE DELIVERED TO PCRWRD AT THE LOCATION SPECIFIED BY THE INSPECTOR. THE MANHOLES WILL BE COMPLETELY DEMOLISHED, THE EXCAVATION FILLED WITH SELECT MATERIAL AND COMPACTED IN ACCORDANCE WITH THE STANDARDS SET BY THE AGENCY CONTROLLING THE RIGHT-OF-WAY. IN ALL CASES A MINIMUM OF 95% OF THE STANDARD PROCTOR DENSITY, IN ACCORDANCE WITH THE PROVISIONS OF THE ARIZONA TEST METHOD 225, SHALL BE ACHIEVED. THE CONTRACTOR SHALL DISPOSE OF ALL MANHOLE DEMOLITION MATERIAL OFF-SITE AT A LANDFILL OR OTHER APPROVED LOCATION.
2. REMOVE 311 LF OF EXST 12" CIPP LINED DIP PUBLIC SEWER FROM NEW MH#10 TO EXST MH#9672-03.
3. REMOVE 269 LF OF EXST 12" CIPP LINED ACP PUBLIC SEWER FROM EXST MH#9672-03 TO EXST MH#9672-04.
4. NEW SEWER MANHOLE #10 OVER EXST SEWER LINE PER PCRWRD STD. DTL. RWRD 303. CONSTRUCT MANHOLE PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL BLOCK-OUT AT SE INVERT PER PCRWRD STD. DTL. RWRD 203. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)
5. SEE SHEET SS6 FOR REMOVAL OF EXISTING PIPE.

NOTES:

1. NEW MH #10 STATION & OFFSET BASED ON RUTHRAUFF ROAD CST ℄.
2. ANY COATING DAMAGED OR ANY MANHOLE PER EDS 5.2.16. WILL REQUIRE COATING PER SSDC 3.3.3 D vi (EXISTING), 3.3.3 B viii (NEW) AND SPECIAL PROVISIONS, SECTION 809.
3. SEE SHEET SS17 & SS18 FOR ADDITIONAL REMOVAL OF ABANDONED PIPE.

SHEET SS5 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
SEWER PLAN

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-3.05

____ OF ____

Registered Professional Engineer (Civil)
37622
FRANK EMMETT FRY IV
3/19/19
Date Signed
ARIZONA, U.S.A.
Expires 06/30/20

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PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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

G-2014-085

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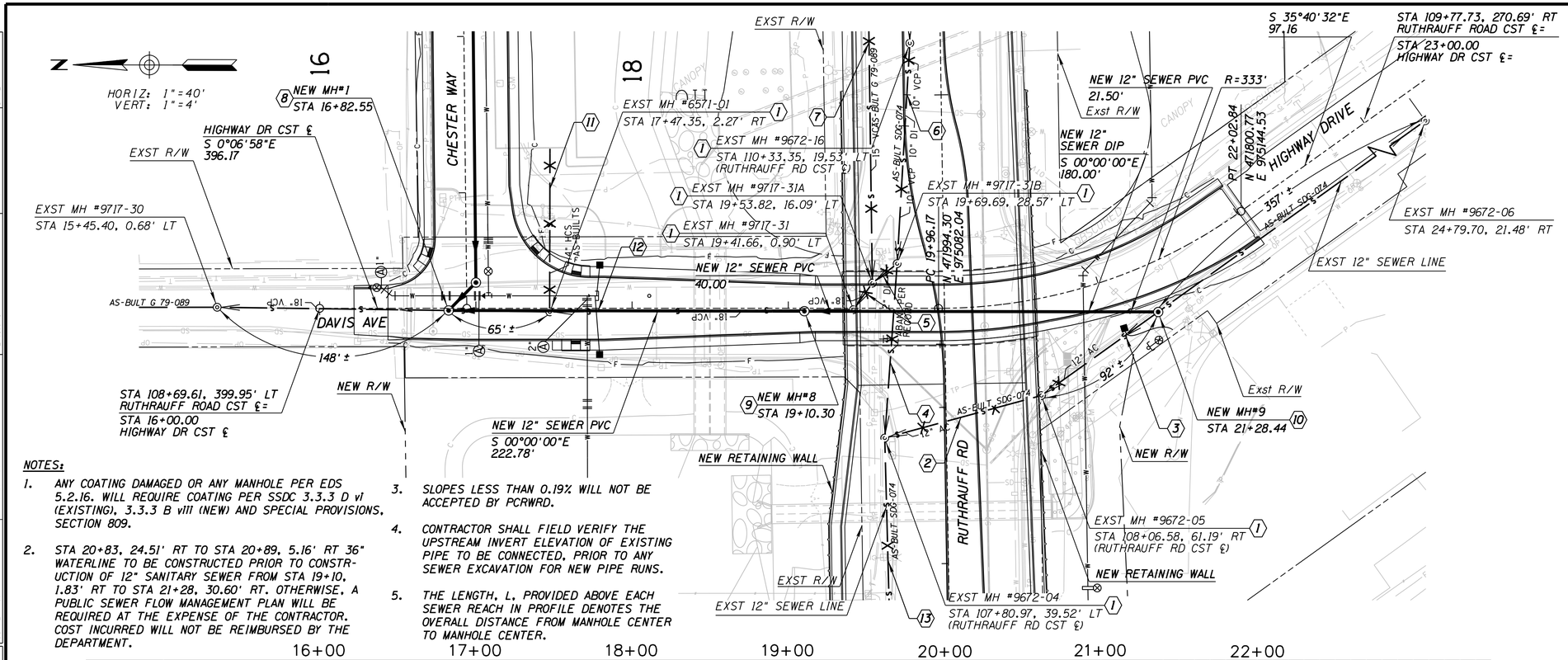
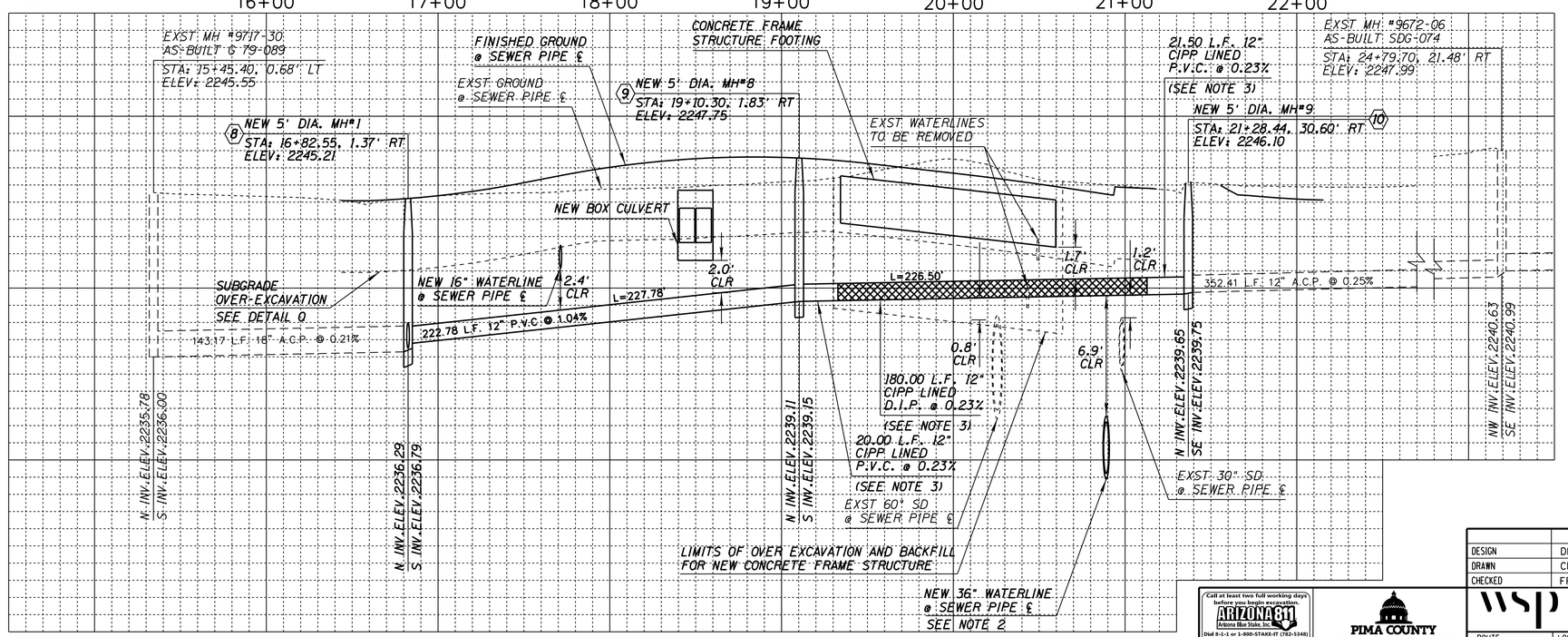


NOTES:

1. ANY COATING DAMAGED OR ANY MANHOLE PER EDS 5.2.16. WILL REQUIRE COATING PER SSDC 3.3.3 D vi (EXISTING), 3.3.3 B viii (NEW) AND SPECIAL PROVISIONS, SECTION 809.
2. STA 20+83, 24.51' RT TO STA 20+89, 5.16' RT 36" WATERLINE TO BE CONSTRUCTED PRIOR TO CONSTRUCTION OF 12" SANITARY SEWER FROM STA 19+10, 1.83' RT TO STA 21+28, 30.60' RT. OTHERWISE, A PUBLIC SEWER FLOW MANAGEMENT PLAN WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. COST INCURRED WILL NOT BE REIMBURSED BY THE DEPARTMENT.
3. SLOPES LESS THAN 0.19% WILL NOT BE ACCEPTED BY PCRWRD.
4. CONTRACTOR SHALL FIELD VERIFY THE UPSTREAM INVERT ELEVATION OF EXISTING PIPE TO BE CONNECTED, PRIOR TO ANY SEWER EXCAVATION FOR NEW PIPE RUNS.
5. THE LENGTH, L, PROVIDED ABOVE EACH SEWER REACH IN PROFILE DENOTES THE OVERALL DISTANCE FROM MANHOLE CENTER TO MANHOLE CENTER.



F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	836	849	
		010 PM 252			

KEYNOTES

(1) EXISTING MANHOLES TO BE REMOVED. CONTRACTOR SHALL REMOVE THE FRAME AND COVER. THE SALVAGED FRAME AND COVER SHALL BE DELIVERED TO PCRWRD AT THE LOCATION SPECIFIED BY THE INSPECTOR. THE MANHOLES WILL BE COMPLETELY DEMOLISHED. THE EXCAVATION FILLED WITH SELECT MATERIAL AND COMPACTED IN ACCORDANCE WITH THE STANDARDS SET BY THE AGENCY CONTROLLING THE RIGHT-OF-WAY. IN ALL CASES A MINIMUM OF 95% OF THE STANDARD PROCTOR DENSITY, IN ACCORDANCE WITH THE PROVISIONS OF THE ARIZONA TEST METHOD 225, SHALL BE ACHIEVED. THE CONTRACTOR SHALL DISPOSE OF ALL MANHOLE DEMOLITION MATERIAL OFF-SITE AT A LANDFILL OR OTHER APPROVED LOCATION.

(2) REMOVE 104 LF OF EXST 12" ACP PUBLIC SEWER FROM EXST MH#9672-04 TO EXST MH#9672-05.

(3) REMOVE 92 LF OF EXST 12" ACP PUBLIC SEWER FROM EXST MH#9672-05 TO NEW MH#9.

(4) REMOVE 112 LF OF EXST 12" VCP ABAN. PUBLIC SEWER FROM EXST MH#9672-04 TO EXST MH#9717-31B.

(5) REMOVE 41 LF OF EXST 18" VCP & 12" DI PUBLIC SEWER FROM EXST MH#9717-31B TO EXST MH#9717-31A & MH#9717-31.

(6) REMOVE 141 LF OF EXST 10" VCP PUBLIC SEWER FROM EXST MH#9717-31B TO EXST MH#9672-16.

(7) REMOVE 352 LF OF EXST 15" VCP PUBLIC SEWER FROM EXST MH#9717-31A TO EXST MH#9717-32 (SEE SHEET SS8).

(8) NEW SEWER MANHOLE #1 OVER EXST SEWER LINE PER PCRWRD STD. DTL. RWRD 303. CONSTRUCT MANHOLE PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)

(9) NEW SEWER MANHOLE #8 PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213.

(10) NEW SEWER MANHOLE #9 OVER EXST SEWER LINE PER PCRWRD STD. DTL. RWRD 303. CONSTRUCT MANHOLE PER PCRWRD STD. DTL. RWRD 201, 207 (TYPE II) & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 212. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 216.

(11) REMOVE 103 LF OF EXST 4" HCS FROM MH #6571-01 TO EXST HCS. CONTRACTOR TO REMOVE AND EXST HCS.

(12) SEE SHEET SS7 FOR REMOVAL OF EXISTING PIPE.

(13) SEE SHEET SS5 FOR REMOVAL OF EXISTING PIPE.

G-2014-085

SHEET SS6 OF SSI9

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
PLAN AND PROFILE

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

37622
FRANK EMMETT FRY IV
3/19/19
Date Signed
ARIZONA, U.S.A.
Expires 06/30/20

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI
DWG NO. U-3.06
TRACS NO. H 8480 01C
010-D(213)S
___ OF ___

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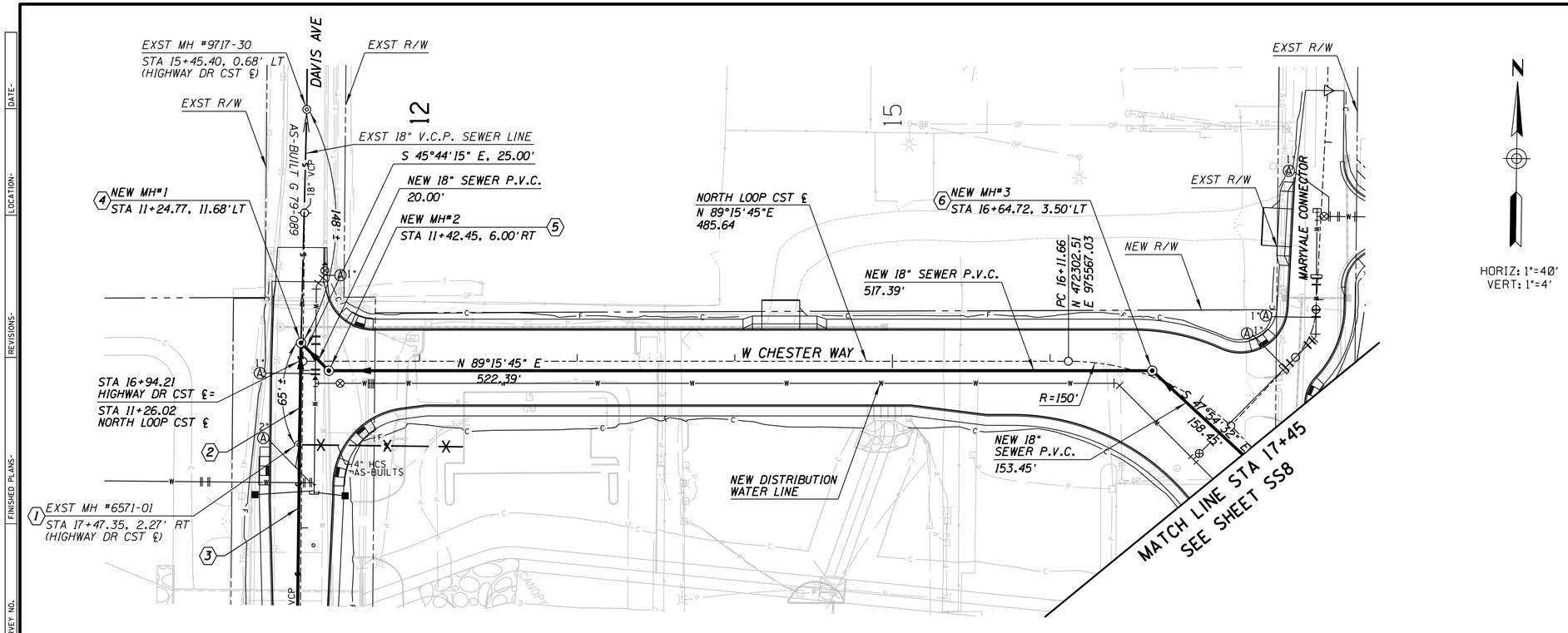
PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

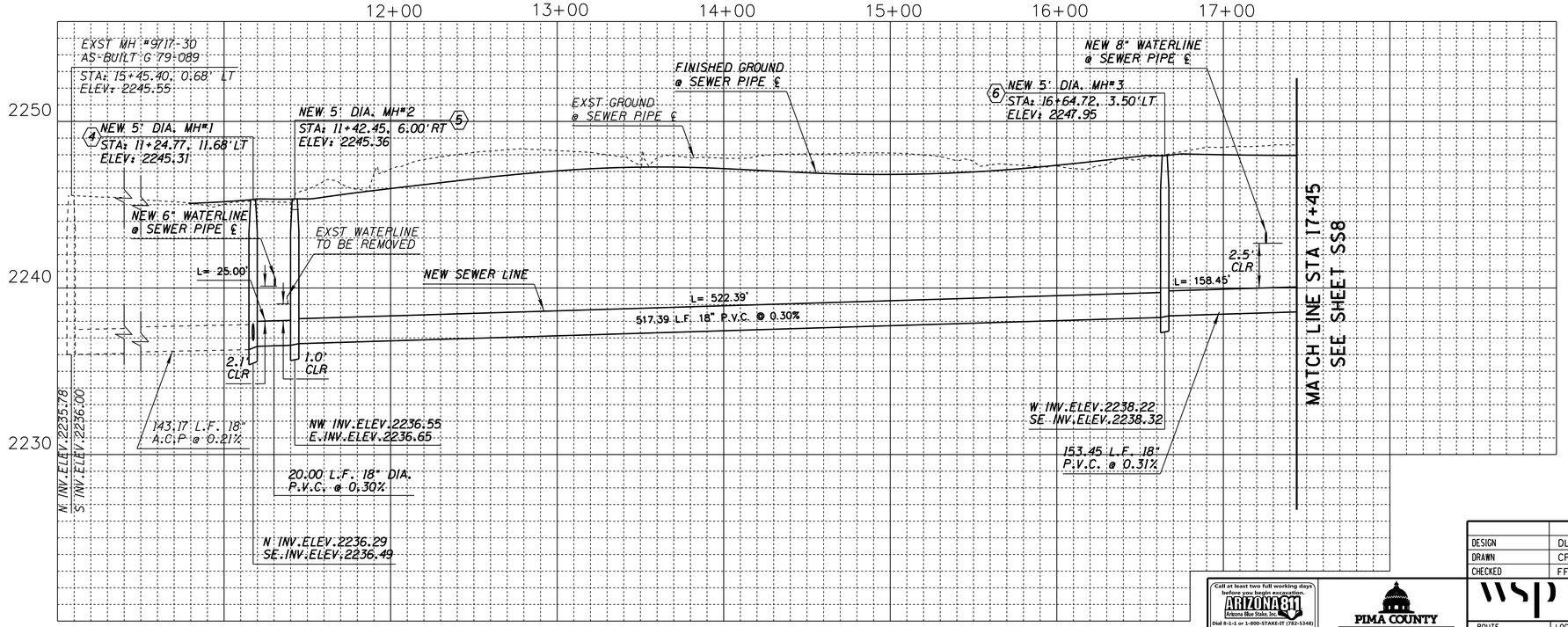
SURVEY NO. | FINISHED PLANS | REVISIONS | LOCATION | DATE

Tue 19 Mar 2019, 15:04:32 \\prdpwics01\ics_workingdir\5458\43865_170\h8480ss06.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	837	849	
		010 PM 252			



HORIZ: 1"=40'
VERT: 1"=4'



KEYNOTES

1. EXISTING MANHOLES TO BE REMOVED. CONTRACTOR SHALL REMOVE THE FRAME AND COVER. THE SALVAGED FRAME AND COVER SHALL BE DELIVERED TO PCRWRD AT THE LOCATION SPECIFIED BY THE INSPECTOR. THE MANHOLES WILL BE COMPLETELY DEMOLISHED. THE EXCAVATION FILLED WITH SELECT MATERIAL AND COMPACTED IN ACCORDANCE WITH THE STANDARDS SET BY THE AGENCY CONTROLLING THE RIGHT-OF-WAY. IN ALL CASES A MINIMUM OF 95% OF THE STANDARD PROCTOR DENSITY, IN ACCORDANCE WITH THE PROVISIONS OF THE ARIZONA TEST METHOD 225, SHALL BE ACHIEVED. THE CONTRACTOR SHALL DISPOSE OF ALL MANHOLE DEMOLITION MATERIAL OFF-SITE AT A LANDFILL OR OTHER APPROVED LOCATION.
2. REMOVE 65 LF OF EXST 18" VCP PUBLIC SEWER FROM NEW MH#1 TO EXST MH#6571-01.
3. REMOVE 194 LF OF EXST 18" VCP PUBLIC SEWER FROM EXST MH#6571-01 TO EXST MH#9717-31 (SEE SHEET SS6).
4. NEW SEWER MANHOLE #1 OVER EXST SEWER LINE PER PCRWRD STD. DTL. RWRD 303. CONSTRUCT MANHOLE PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)
5. NEW SEWER MANHOLE #2 PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)
6. NEW SEWER MANHOLE #3 PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)

NOTES:

1. ANY COATING DAMAGED OR ANY MANHOLE PER EDS 5.2.16. WILL REQUIRE COATING PER SSDC 3.3.3 D vi (EXISTING), 3.3.3 B viii (NEW) AND SPECIAL PROVISIONS, SECTION 809.
2. CONTRACTOR SHALL FIELD VERIFY THE UPSTREAM INVERT ELEVATION OF EXISTING PIPE TO BE CONNECTED PRIOR TO ANY SEWER EXCAVATION FOR NEW PIPE RUNS.
3. THE LENGTH, L, PROVIDED ABOVE EACH SEWER REACH IN PROFILE DENOTES THE OVERALL DISTANCE FROM MANHOLE CENTER TO MANHOLE CENTER.

SHEET SS7 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
PLAN AND PROFILE

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-3.07

OF

Registered Professional Engineer (Civil)
37622
FRANK EMMETT FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

Call at least two full working days before you begin excavation.
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Arizona Blue Stake, Inc.
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In Maricopa County: (602) 263-1100

PIMA COUNTY
WASTEWATER RECLAMATION

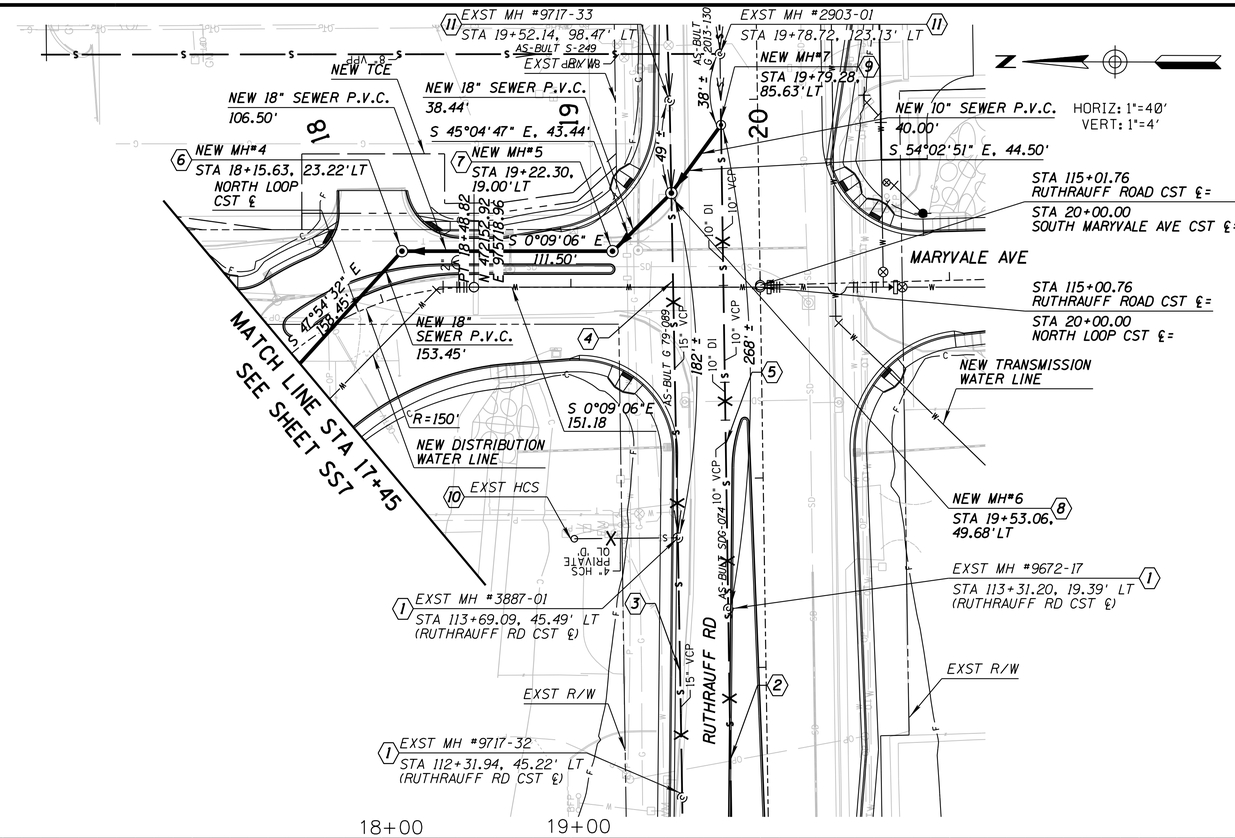
NO.	DATE	REVISION	BY	CHKD.	APPR.

G-2014-085

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

Tue 19 Mar 2019, 15:04:17 \\prdpwics01\ics_workingdir\5458\43865_93\h8480ss07.dgn

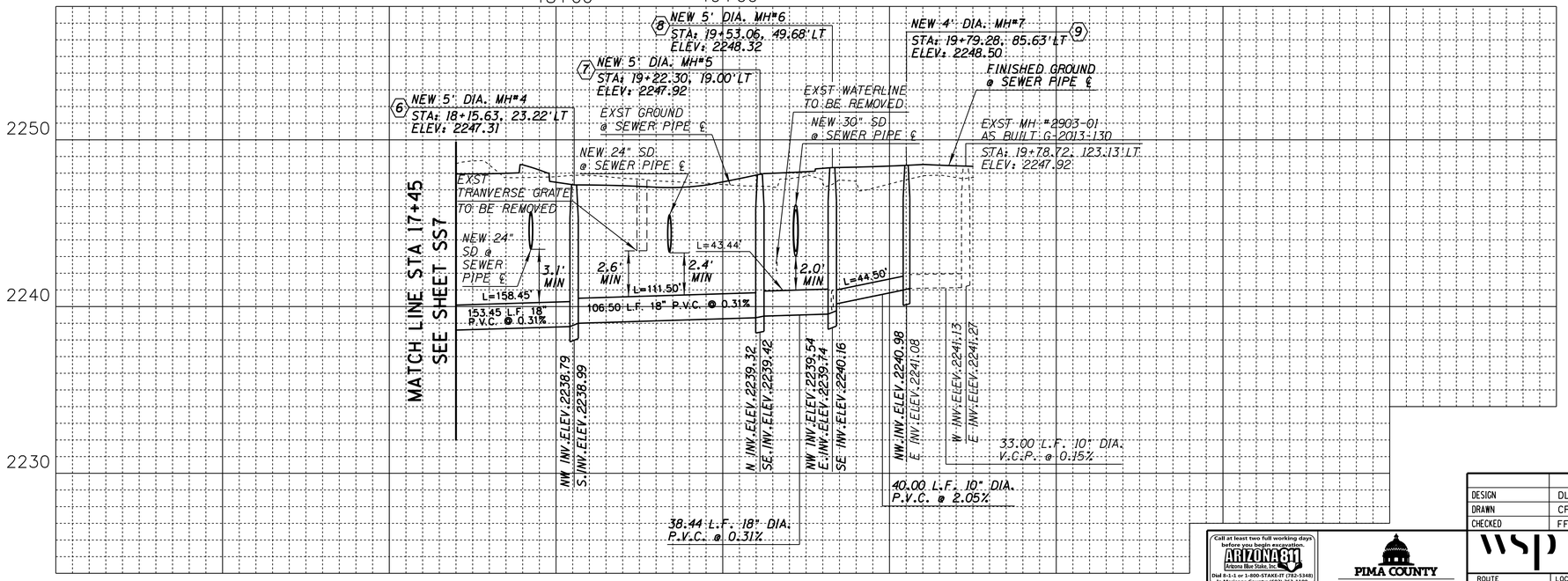
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	838	849	
		010 PM 252			



NOTES: CON'T

2. CONTRACTOR SHALL FIELD VERIFY THE UPSTREAM INVERT ELEVATION OF EXISTING PIPE TO BE CONNECTED PRIOR TO ANY SEWER EXCAVATION FOR NEW PIPE RUNS.

3. THE LENGTH, L, PROVIDED ABOVE EACH SEWER REACH IN PROFILE DENOTES THE OVERALL DISTANCE FROM MANHOLE CENTER TO MANHOLE CENTER.



KEYNOTES

(1) EXISTING MANHOLES TO BE REMOVED. CONTRACTOR SHALL REMOVE THE FRAME AND COVER. THE SALVAGED FRAME AND COVER SHALL BE DELIVERED TO PCRWRD AT THE LOCATION SPECIFIED BY THE INSPECTOR. THE MANHOLES WILL BE COMPLETELY DEMOLISHED. THE EXCAVATION FILLED WITH SELECT MATERIAL AND COMPACTED IN ACCORDANCE WITH THE STANDARDS SET BY THE AGENCY CONTROLLING THE RIGHT-OF-WAY. IN ALL CASES A MINIMUM OF 95% OF THE STANDARD PROCTOR DENSITY, IN ACCORDANCE WITH THE PROVISIONS OF THE ARIZONA TEST METHOD 225, SHALL BE ACHIEVED. THE CONTRACTOR SHALL DISPOSE OF ALL MANHOLE DEMOLITION MATERIAL OFF-SITE AT A LANDFILL OR OTHER APPROVED LOCATION.

(2) REMOVE 299 LF OF EXST 10" VCP PUBLIC SEWER FROM EXST MH#9672-17 TO EXST MH#9672-16 (SEE SHEET SS6).

(3) REMOVE 137 LF OF EXST 15" VCP PUBLIC SEWER FROM EXST MH#3887-01 TO EXST MH#9717-32.

(4) REMOVE 182 LF OF EXST 15" VCP PUBLIC SEWER FROM NEW MH#6 TO EXST MH#3887-01.

(5) REMOVE 268 LF OF EXST 10" VCP PUBLIC SEWER FROM EXST MH#9672-17 TO NEW MH#7.

(6) NEW SEWER MANHOLE #4 PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)

(7) NEW SEWER MANHOLE #5 PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)

(8) NEW SEWER MANHOLE #6 OVER EXST SEWER LINE PER PCRWRD STD. DTL. RWRD 303. CONSTRUCT MANHOLE PER PCRWRD STD. DTL. RWRD 201, 206 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)

(9) NEW SEWER MANHOLE #7 OVER EXST SEWER LINE PER PCRWRD STD. DTL. RWRD 303. CONSTRUCT MANHOLE PER PCRWRD STD. DTL. RWRD 201, 205 & 208. INSTALL CONCRETE COLLAR PER PCRWRD STD. DTL. RWRD 211. MANHOLE SHALL HAVE FRAME AND COVER PER PCRWRD STD. DTL. RWRD 213. (SEE NOTE 1)

(10) REMOVE 55 LF OF EXST 4" HCS FROM EXST MH#3887-01 TO EXST HCS. CONTRACTOR TO REMOVE AND DISPOSE EXST HCS.

(11) ADJUST OR RECONSTUCT EXISTING MH #9717-33 AT STA 115+99.94, 46.38' LT & FOR EXISTING MH #2903-01 AT STA 116+24.20, 19.42' LT PER PCRWRD STD. DTL. RWRD 305. INSTALL CONCRETE COLLAR PER STD. DTL. RWRD 211. SEE TABLE IN SHEET SS4. PROVIDE FULL MANHOLE COATING PER 3.3.3 B viii (NEW). (SEE NOTE 1)

NOTES:

1. ANY COATING DAMAGED, ANY NEW MANHOLE COMPONENTS REQUIRED FOR MANHOLE ADJUSTMENTS OR RECONSTRUCTION, OR ANY MANHOLE PER EDS 5.2.16. WILL REQUIRE COATING PER SSDC 3.3.3 D vi (EXISTING), 3.3.3 B viii (NEW) AND SPECIAL PROVISIONS, SECTION 809.

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
PLAN AND PROFILE

37622 FRANK EMMETT FRY IV Date Signed 3/19/19 ARIZONA, U.S.A. Expires 06/30/20

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

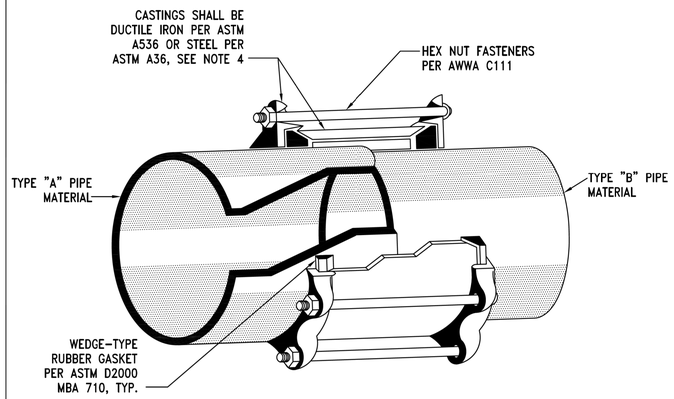
ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI
DWG NO. U-3.08
TRACS NO. H 8480 01C
010-D(213)S
___ OF ___

G-2014-085

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

Tue 19 Mar 2019, 15:04:06 \\prdpwics01\ics_workingdir\5458\43865_94\h8480ss08.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	839	849	
		010 PM 252			

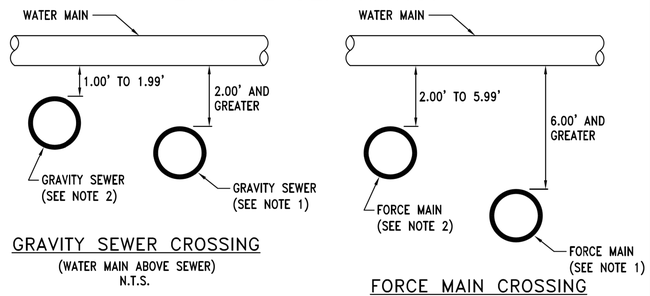


NOTES:

1. COUPLINGS SHALL BE RIGID, COMPRESSION TYPE COUPLINGS AS SHOWN, APPROPRIATELY SIZED AND SUITABLE FOR SANITARY SEWER APPLICATIONS. APPROVED COUPLINGS SHALL BE IN THE DEPARTMENT'S LIST OF APPROVED PRODUCTS.
2. ADJUSTABLE REPAIR COUPLINGS (I.E. MISSION) FOR SANITARY SEWER APPLICATIONS MAY BE PERMITTED ON A CASE-BY-CASE BASIS FOR EXISTING 12" DIAMETER VCP OR CONCRETE SEWER PIPE AND SMALLER, ONLY WITH PRIOR APPROVAL BY THE FIELD ENGINEER.
3. WHERE THERE IS A 1" DIFFERENTIAL IN INTERNAL DIAMETERS OF THE 2 DIFFERENT PIPE TYPES, A SPECIAL CONNECTION, APPROVED BY THE FIELD ENGINEER, SHALL BE USED TO ELIMINATE THE DIFFERENTIAL AT THE INVERT.
4. CASTINGS SHALL HAVE AN APPROVED FACTORY-APPLIED INTERIOR AND EXTERIOR CORROSION-RESISTANT COATINGS FOR SANITARY SEWER APPLICATIONS.
5. SEE SUBSECTION 3.4.3 - FOR A CURRENT LIST OF APPROVED PRODUCTS FOR PUBLIC SEWERS, CHECK THE DEPARTMENT'S WEBSITE OR CONTACT THE FIELD ENGINEERING SECTION.

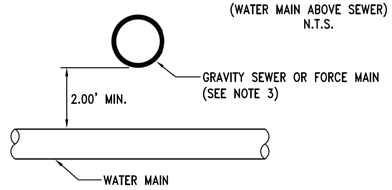
ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	COUPLING FOR UNLIKE PIPE MATERIALS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 103
REVISED: 10/15			SHEET 1 OF 1

VERTICAL SEPARATION



GRAVITY SEWER CROSSING
(WATER MAIN ABOVE SEWER)
N.T.S.

FORCE MAIN CROSSING
(WATER MAIN ABOVE SEWER)
N.T.S.



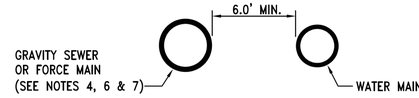
GRAVITY OR FORCE MAIN CROSSING
(WATER MAIN BELOW SEWER)
N.T.S.

NOTES:

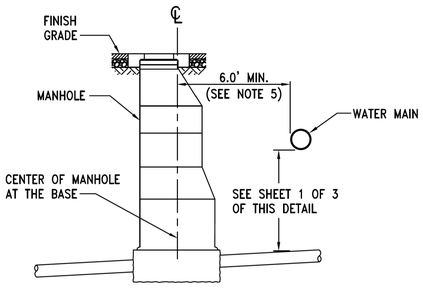
1. WHERE A WATER MAIN CROSSES ABOVE A GRAVITY SEWER WITH 2' OR GREATER VERTICAL CLEARANCE (OUTSIDE SURFACE TO OUTSIDE SURFACE), NO EXTRA PROTECTION IS REQUIRED. WHERE A WATER MAIN CROSSES ABOVE A FORCE MAIN WITH 6' OR GREATER VERTICAL CLEARANCE, NO EXTRA PROTECTION IS REQUIRED.
2. WHERE A WATER MAIN MUST CROSS ABOVE A GRAVITY SEWER WITH LESS THAN 2' OF CLEARANCE OR ABOVE A FORCE MAIN WITH LESS THAN 6' OF CLEARANCE, CONSTRUCT OR REPLACE THE SEWER LINE WITH DUCTILE IRON PIPE (D.I.P.) OR APPROVED EQUAL. IN NO CASE SHALL THE WATER MAIN HAVE LESS THAN 1' OF CLEARANCE ABOVE A GRAVITY SEWER OR 2' OF CLEARANCE ABOVE A FORCE MAIN. IF THE JOINT IS LOCATED LESS THAN 6' FROM THE OUTSIDE SURFACE OF THE WATER MAIN, THEN A RESTRAINED JOINT OR APPROVED EQUAL SHALL BE USED. REFER TO SHEET 3 OF 3.
3. WHERE A WATER MAIN CROSSES BELOW EITHER A GRAVITY SEWER OR A FORCE MAIN, CONSTRUCT OR REPLACE THE SEWER LINE WITH D.I.P. OR APPROVED EQUAL FOLLOWING THE GUIDELINES GIVEN IN NOTE NO. 2. IN NO CASE SHALL THE WATER MAIN BE LESS THAN 2' BELOW EITHER A GRAVITY SEWER OR FORCE MAIN.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	SEWER/WATER CROSSING DETAILS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 108
REVISED: 10/15			SHEET 1 OF 3

HORIZONTAL SEPARATION



WATER MAIN SEPARATION WITH SEWER LINES
(PARALLEL ALIGNMENTS)
N.T.S.



WATER MAIN SEPARATION WITH SEWER MANHOLE
N.T.S.

NOTES (CONTINUED):

4. THE MINIMUM HORIZONTAL CLEARANCE WITHOUT EXTRA PROTECTION BETWEEN A WATER MAIN AND A FORCE MAIN OR GRAVITY SEWER LINE SHALL BE 6' OUTSIDE SURFACE TO OUTSIDE SURFACE.
5. THE MINIMUM HORIZONTAL CLEARANCE BETWEEN A WATER MAIN AND A SEWER MANHOLE SHALL BE 6' FROM THE OUTSIDE SURFACE OF THE WATER MAIN TO THE CENTER OF MANHOLE.
6. WHERE A 6' HORIZONTAL CLEARANCE CANNOT BE MAINTAINED WITH A GRAVITY SEWER, CONSTRUCT OR REPLACE THE SEWER LINE WITH D.I.P. OR APPROVED EQUAL FOLLOWING THE GUIDELINES GIVEN IN NOTE NO. 2. IN NO CASE SHALL A GRAVITY SEWER LINE BE LOCATED LESS THAN 2' HORIZONTALLY FROM A WATER MAIN.
7. IN NO CASE SHALL A FORCE MAIN BE LOCATED LESS THAN 6' HORIZONTALLY FROM A WATER MAIN.
8. THE AMERICAN NATIONAL STANDARD FOR THE THICKNESS DESIGN OF D.I.P. (ANSI/AWWA C150/A21.50) SHALL BE USED TO DETERMINE THE REQUIRED PRESSURE CLASS EXCEPT FOR D.I.P. WITH A DIAMETER OF 3" THRU 24", A MINIMUM PRESSURE CLASS OF 350 IS REQUIRED. FOR D.I.P. WITH A DIAMETER GREATER THAN 24", A MINIMUM PRESSURE CLASS OF 200 IS REQUIRED.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	SEWER/WATER CROSSING DETAILS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 108
REVISED: 12/12			SHEET 2 OF 3

G-2014-085

SHEET SS9 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc.
177 N. Church Ave.
Suite 1100
Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
DETAIL SHEET

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-3.09

___ OF ___

37622 FRANK EMMETT FRY IV 3/19/19 Date Signed ARIZONA, U.S.A. Expires 06/30/20

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PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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

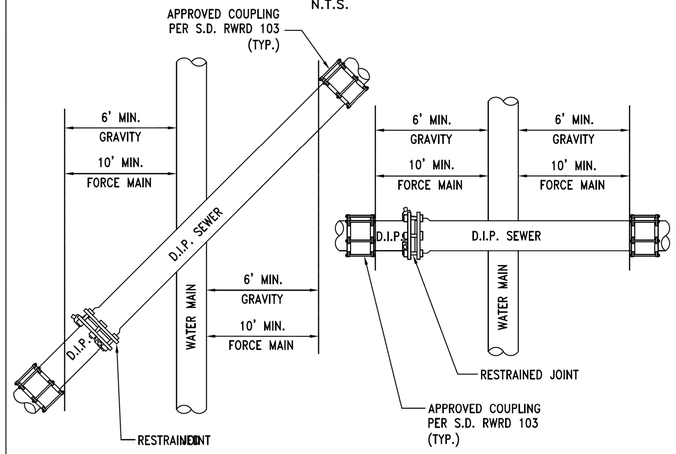
Tue 19 Mar 2019, 15:04:28 \\prdpwics01\ics_workingdir\5458\43865_105\h8480ss09.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	840	849	
		010 PM 252			

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

G-2014-085

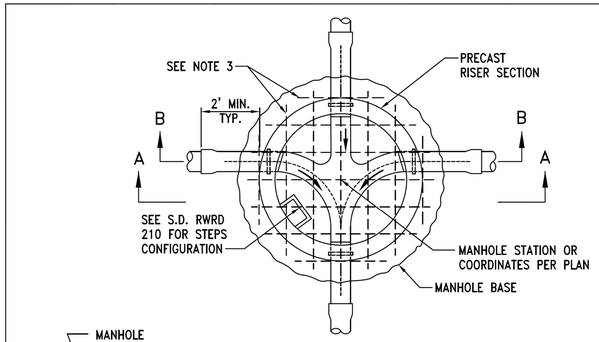
PLAN VIEWS
N.T.S.



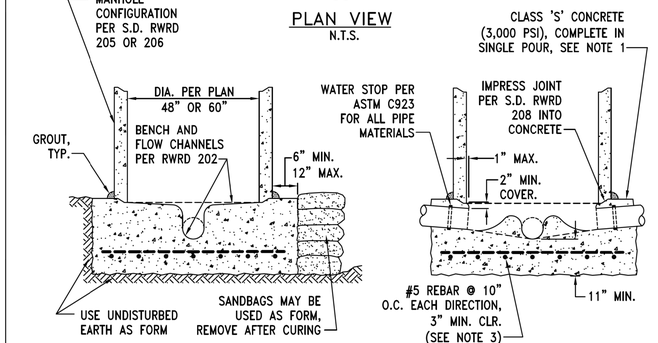
NOTES (CONTINUED):

9. WHERE THE SEWER LINE IS A GRAVITY SEWER, THE D.I.P. INSTALLATION OR REPLACEMENT SHALL EXTEND A MINIMUM OF 6' BEYOND EACH SIDE OF THE WATER MAIN, MEASURED HORIZONTALLY FROM AND PERPENDICULAR TO THE WATER MAIN.
10. WHERE THE SEWER LINE IS A FORCE MAIN, THE D.I.P. INSTALLATION OR REPLACEMENT SHALL EXTEND A MINIMUM OF 10' BEYOND EACH SIDE OF THE WATER MAIN, MEASURED HORIZONTALLY FROM AND PERPENDICULAR TO THE WATER MAIN.
11. WHEN UNUSUAL CONDITIONS SUCH AS, BUT NOT LIMITED TO, HIGHWAY OR BRIDGE CROSSINGS PREVENT THE WATER AND SEWER LINE SEPARATIONS REQUIRED BY THIS DETAIL FROM BEING MET, PCRWRD WILL REVIEW AND MAY APPROVE (SUBJECT TO APPROVAL BY THE ENVIRONMENTAL REGULATORY AGENCY HAVING JURISDICTION), REQUESTS FOR AUTHORIZATION TO USE ALTERNATE CONSTRUCTION TECHNIQUES, MATERIALS AND JOINTS ON A CASE-BY-CASE BASIS.
12. ALL DUCTILE IRON PIPE SHALL BE INTERNALLY LINED AND EXTERNALLY WRAPPED PER SUBSECTION 3.2.2(D).

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	SEWER/WATER CROSSING DETAILS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 108
REVISED: 12/12			SHEET 3 OF 3



PLAN VIEW
N.T.S.



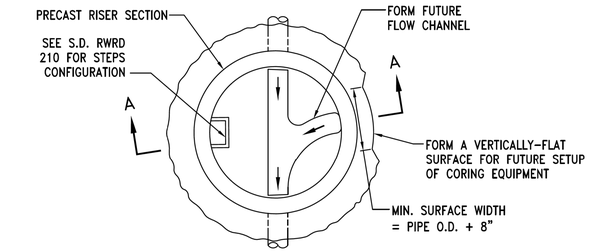
SECTION A-A
N.T.S.

SECTION B-B
N.T.S.

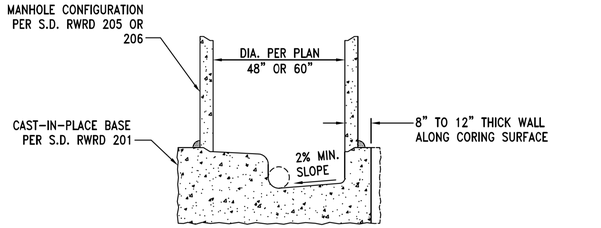
NOTES:

1. FOR NEXT DAY INSTALLATIONS OF PRECAST SECTIONS ON A NEWLY-POURED CONCRETE BASE, USE HIGH-EARLY, CLASS 'S' CONCRETE HAVING A MIN. COMPRESSIVE STRENGTH OF 2,000 PSI AT 24 HOURS AS DEMONSTRATED BY LABORATORY TESTING OF SAMPLE CYLINDERS.
2. SEE SUBSECTION 3.3.3(B)(i) FOR MORE INFORMATION.
3. REINFORCEMENT REQUIRED FOR MANHOLE DEPTHS (RIM TO INVERT) OF 20' OR GREATER.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	CAST-IN-PLACE MANHOLE BASE	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 201
REVISED: 10/15			SHEET 1 OF 1



PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.

NOTES:

1. THIS DETAIL APPLIES TO 4' AND 5' DIAMETER MANHOLES. FOR LARGER DIAMETER MANHOLES, REFER TO PLAN FOR BLOCK-OUT REQUIREMENTS.
2. FOR PRECAST BASES, MANUFACTURER SHALL FURNISH BLOCK-OUT CAPS FOR THE PRE-INSTALLED MANHOLE CONNECTOR IN LIEU OF USING 2" MORTAR COVER.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	BLOCK-OUTS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 203
REVISED: 12/12			SHEET 1 OF 1

SHEET SS10 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1100
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
DETAIL SHEET

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C | 010-D(213)S

DWG NO. U-3.10 | ___ OF ___

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PIMA COUNTY WASTEWATER RECLAMATION

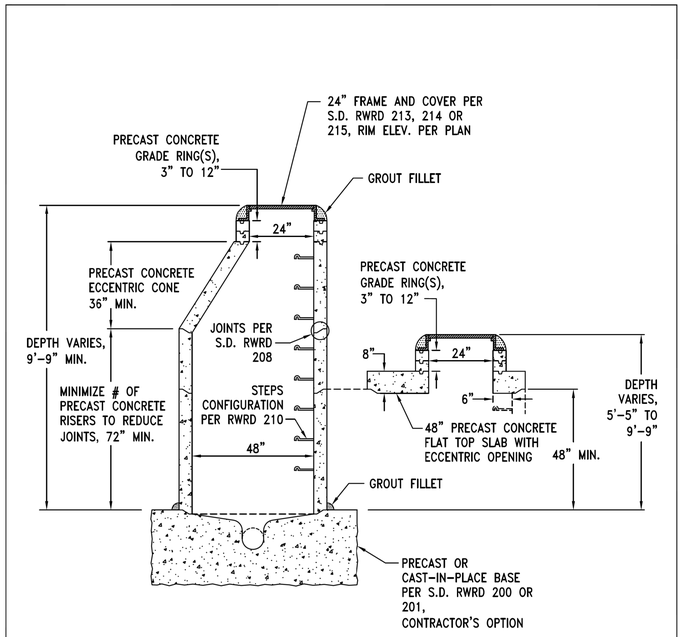
NO.	DATE	REVISION	BY	CHKD.	APPR.

37622 FRANK EMMETT FRY IV Date Signed 3/19/19 Registered Professional Engineer Certificate ARIZONA, U.S.A. Expires 06/30/20

Tue 19 Mar 2019, 15:04:18 \\prdpwics01\ics_workingdir\5458\43865_106\h8480ss10.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	841	849	
		010 PM 252			

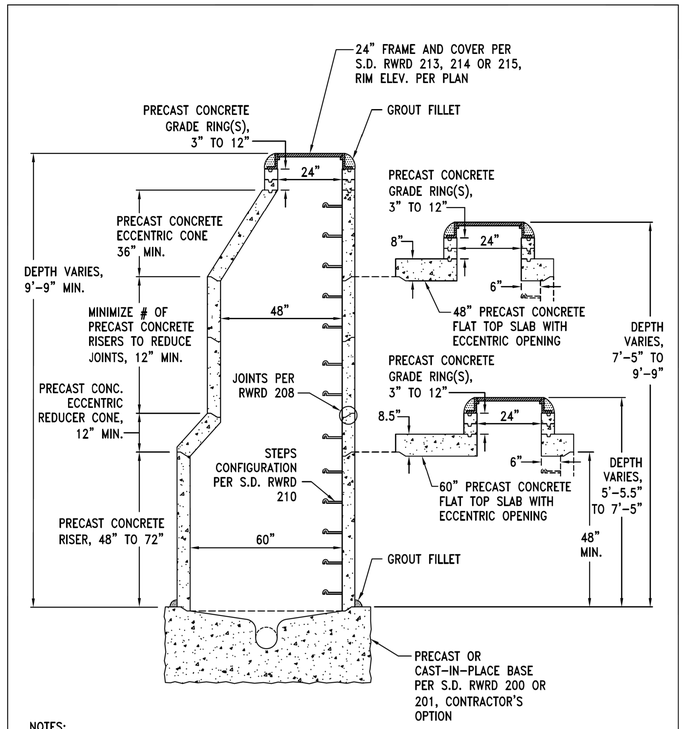
G-2014-085



NOTES:

1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C478 AND AASHTO M199.
2. FOR 4' DIAMETER MANHOLE DEPTHS LESS THAN 5'-5" (SHALLOW MANHOLES), SEE S.D. RWRD 207; TYPE I.
3. SEE SUBSECTIONS 3.3.2(E) AND 3.3.3 FOR MORE INFORMATION.

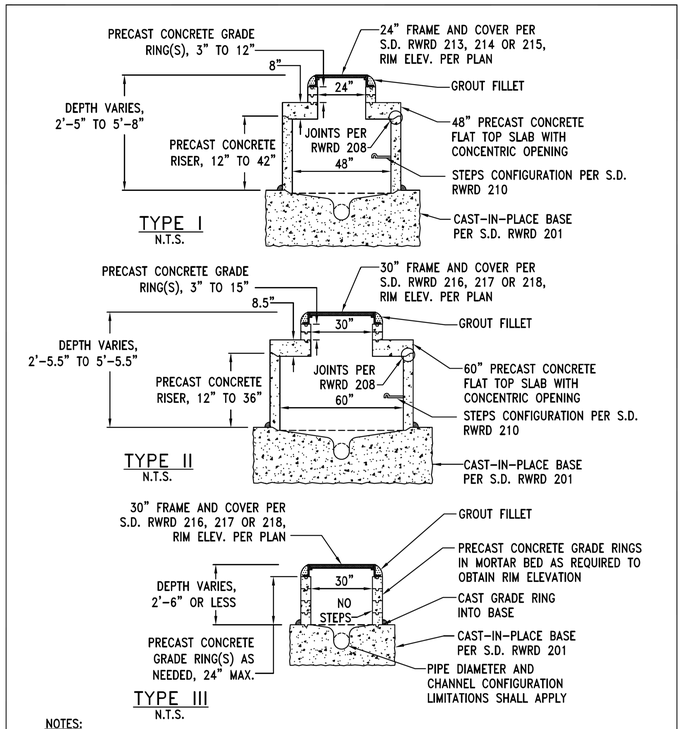
ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	4' DIAMETER MANHOLE CONFIGURATIONS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 205
REVISED: 10/15			SHEET 1 OF 1



NOTES:

1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C478 AND AASHTO M199.
2. FOR 5' DIAMETER MANHOLE DEPTHS LESS THAN 5'-5.5" (SHALLOW MANHOLES), SEE S.D. RWRD 207; TYPE II.
3. SEE SUBSECTIONS 3.3.2(E) AND 3.3.3 FOR MORE INFORMATION.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	5' DIAMETER MANHOLE CONFIGURATIONS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 206
REVISED: 10/15			SHEET 1 OF 1



NOTES:

1. THIS SPECIAL STANDARD DETAIL MAY BE USED BY THE CONTRACTOR IF APPROVED IN THE PLANS OR IN WRITING BY THE FIELD ENGINEER.
2. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C478 AND AASHTO M199.
3. SEE SUBSECTIONS 3.3.2(E) AND 3.3.3 FOR MORE INFORMATION.

ISSUED:	SPECIAL STANDARD DETAIL		DETAIL NO.
8/92	SHALLOW MANHOLES	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 207
REVISED: 10/15			SHEET 1 OF 1

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

SHEET SS11 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
DETAIL SHEET

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

PIMA COUNTY
WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	
TRACS NO. H 8480 01C		010-D(213)S

DWG NO. U-3.11

____ OF ____

Tue 19 Mar 2019, 15:04:24

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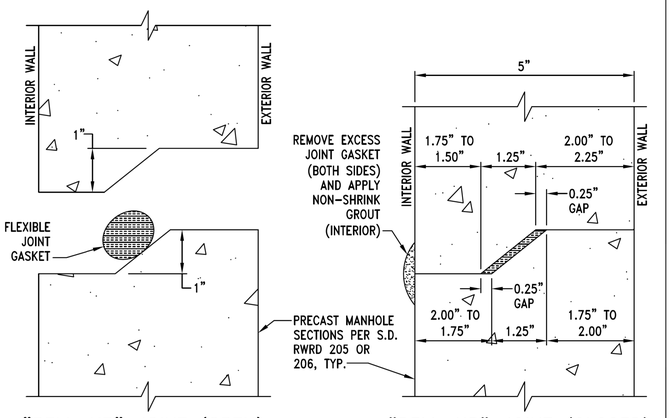
F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	842	849	
		010 PM 252			

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



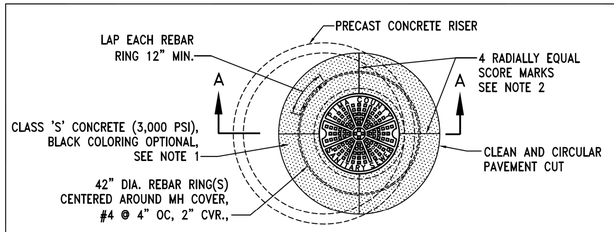
"BELL-UP" JOINT (OPEN)
N.T.S.

"BELL-UP" JOINT (CLOSED)
N.T.S.

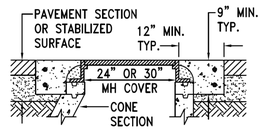
NOTES:

1. THIS DETAIL APPLIES TO 4' AND 5' DIAMETER PRECAST MANHOLE SECTIONS. SHOP DRAWINGS AND JOINT DETAILS FOR LARGER MANHOLE DIAMETERS SHALL BE SUBMITTED TO THE FIELD ENGINEER FOR REVIEW AND APPROVAL.
2. THE MIXING OF JOINTS WITHIN A MANHOLE IS NOT PERMITTED WITHOUT APPROVAL BY THE FIELD ENGINEER.
3. SEE SUBSECTION 3.3.3(B)(iii) FOR MORE INFORMATION.

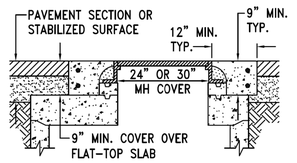
ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92 (WWM-226)	MANHOLE JOINTS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 208
REVISED: 12/12			SHEET 1 OF 1



PLAN VIEW
N.T.S.



SECTION A-A FOR CONE-TOP
N.T.S.

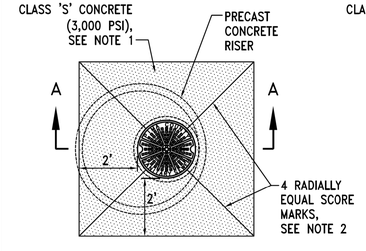


SECTION A-A FOR FLAT-TOP
N.T.S.

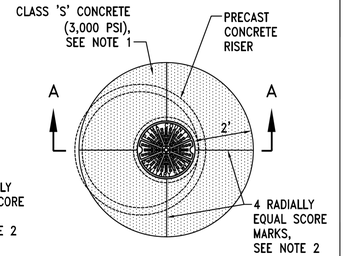
NOTES:

1. FOR MANHOLES LOCATED WITHIN RIGHT-OF-WAY, OPTIONS SHOWN (E.G. COLORING AGENTS AND CONCEALED/ REVEALED COLLARS) WILL BE DICTATED BY THE TRANSPORTATION AGENCY HAVING JURISDICTION.
2. FINISH ALL CONCRETE EDGES AND SCORE MARKS WITH A HAND TROWEL HAVING A 1/4" RADIUS. EXPOSED SURFACES SHALL HAVE A MEDIUM BROOM FINISH.
3. MINIMUM COLLAR THICKNESS MAY BE REDUCED TO 6" FOR SLAB COVER DEPTHS OF 11" OR LESS.

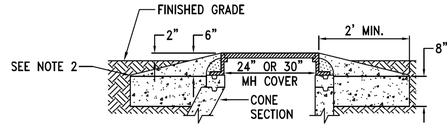
ISSUED:	STANDARD DETAIL		DETAIL NO.
12/12	CONCRETE COLLAR FOR PAVED AREAS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 211
REVISED:			SHEET 1 OF 1



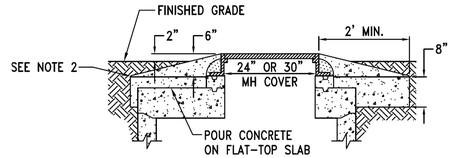
PLAN VIEW
SQUARE COLLAR
N.T.S.



PLAN VIEW
ROUND COLLAR
N.T.S.



SECTION A-A (FOR CONE SECTIONS)
N.T.S.



SECTION A-A (FOR FLAT-TOP SLABS)
N.T.S.

NOTES:

1. SQUARE OR ROUND TYPE COLLARS SHOWN ARE CONTRACTOR'S OPTION. ALL COLLARS SHALL BE FORMED.
2. FINISH ALL CONCRETE EDGES AND SCORE MARKS WITH A HAND TROWEL HAVING A 1/4" RADIUS. EXPOSED CONCRETE SURFACES SHALL HAVE A MEDIUM BROOM FINISH.

ISSUED:	STANDARD DETAIL		DETAIL NO.
9/93	CONCRETE COLLAR FOR UNPAVED AREAS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 212
REVISED: 12/12			SHEET 1 OF 1

G-2014-085

SHEET SS12 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
DETAIL SHEET

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
3/19/19
Date Signed
ARIZONA, U.S.A.
Expires 06/30/20

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

PIMA COUNTY WASTEWATER RECLAMATION

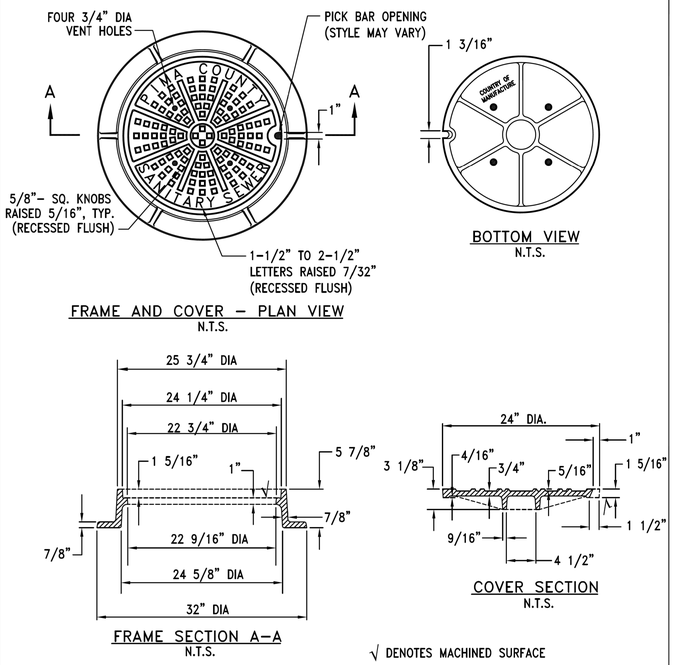
ROUTE	LOCATION	DWG NO.
I-10	RUTHRAUFF ROAD TI	U-3.12
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

NO.	DATE	REVISION	BY	CHKD.	APPR.

Tue 19 Mar 2019, 15:04:48 \\prdpwics01\ics_workingdir\5458\43865_179\h8480ss12.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	843	849	
		010 PM 252			

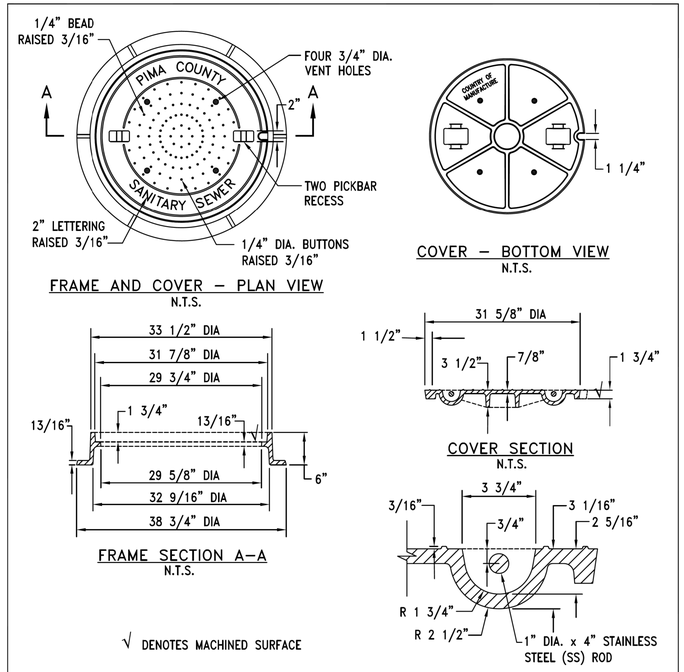
SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-



NOTES:

1. COVER STYLE MAY SLIGHTLY VARY WITH APPROVAL BY THE FIELD ENGINEER.
2. FRAME WEIGHT 180 LBS. (APPROX.) AND COVER WEIGHT 130 LBS. (APPROX.)
3. REFER TO SECTION 3.3.2(H) FOR MORE INFORMATION.

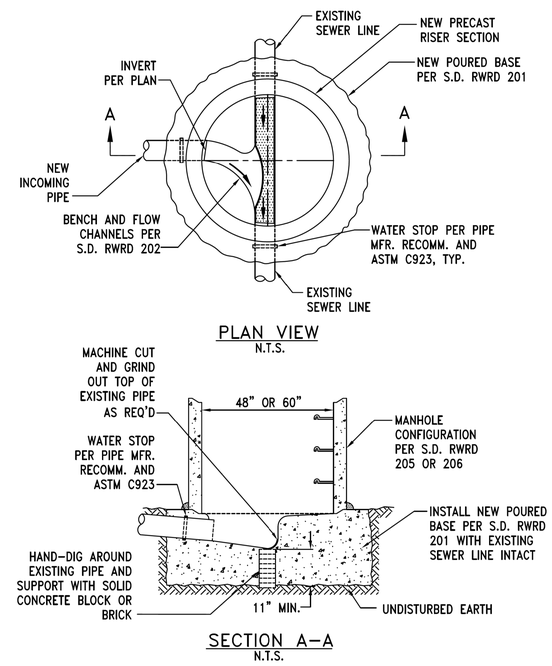
ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	24" FRAME AND COVER	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 213
REVISED: 12/12			SHEET 1 OF 1



NOTES:

1. COVER STYLE MAY SLIGHTLY VARY WITH APPROVAL BY THE FIELD ENGINEER.
2. THE COVER SHALL HAVE PICK BAR RECESSES.
3. FRAME WEIGHT 200 LBS. (APPROX.) AND COVER WEIGHT 217 LBS. (APPROX.)
4. REFER TO SECTION 3.3.2(H) FOR MORE INFORMATION.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92 (WWM-214.0)	30" FRAME AND COVER	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 216
REVISED: 12/12			SHEET 1 OF 1



NOTES:

1. FOUNDATION PER S.D. RWRD 104 TO THE FIRST JOINT BEYOND OPEN TRENCH CONDITIONS MAY BE REQUIRED DEPENDING ON DEPTH OF EXCAVATION AND TYPE OF SOIL.
2. SEE SUBSECTION 3.3.3(D)(v) FOR MORE INFORMATION.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	NEW MANHOLE OVER EXISTING SEWER LINE	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 303
REVISED: 12/12			SHEET 1 OF 1

G–2014–085

SHEET SS13 OF SS19

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

PIMA COUNTY WASTEWATER RECLAMATION

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

WSP USA Inc. 177 N. Church Ave. Suite 1105 Tucson, AZ 85701

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
DETAIL SHEET

Registered Professional Engineer (Civil) 37622 FRANK EMMETT FRY IV Date Signed 3/19/19 ARIZONA, U.S.A. Expires 06/30/20

ROUTE	LOCATION	
I-10	RUTHRAUFF ROAD TI	DWG NO. U-3.13
TRACS NO. H 8480 01C	010-D(213)S	___ OF ___

NO.	DATE	REVISION	BY	CHKD.	APPR.

Tue 19 Mar 2019, 15:05:27 \\prdpwics01\ics_workingdir\5458\43865_180\h8480ss13.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
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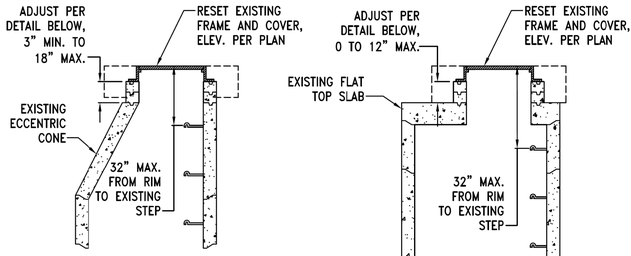
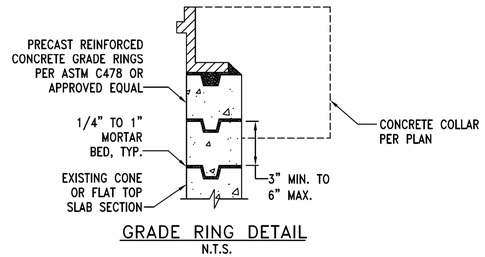
		010 PM 252			



PRECAST MANHOLE WITH CONE SECTION
N.T.S.

PRECAST MANHOLE WITH FLAT-TOP SLAB
N.T.S.

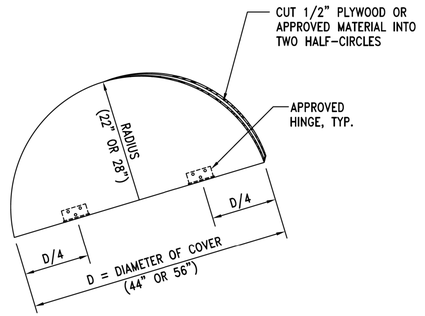


GRADE RING DETAIL
N.T.S.

NOTES:

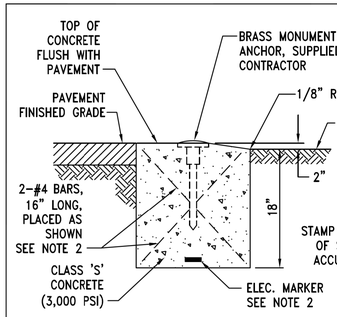
1. A SEWER CONSTRUCTION PERMIT FROM PCRWRD IS REQUIRED PRIOR TO REMOVAL OF THE FRAME AND COVER ON EXISTING PUBLIC MANHOLES. GRADE ADJUSTMENT WORK SHALL BE INSPECTED AND APPROVED BY THE FIELD ENGINEER.
2. RECONSTRUCTION OF THE EXISTING PRECAST MANHOLE SHALL BE REQUIRED FOR VIOLATION OF THE DIMENSIONAL RANGES NOTED ABOVE, AGE OF THE EXISTING MANHOLE, CONDITION OR TYPE OF MATERIAL WARRANTING SUCH REPLACEMENT, AS DIRECTED BY THE FIELD ENGINEER.
3. SEE SUBSECTION 3.3.3(D)(i) FOR MORE INFORMATION.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92	GRADE ADJUSTMENT FOR EXISTING PRECAST MANHOLE	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 305
REVISED: 10/15			SHEET 1 OF 1

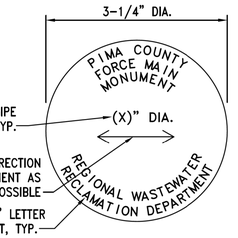


NOTE:
FOR CONSTRUCTION DETAILS SEE SUBSECTION 3.3.3(D)(i).

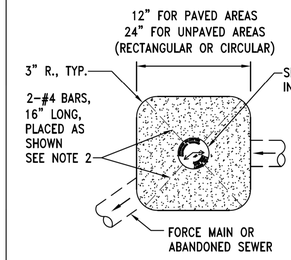
ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92 (WWM-307)	FLOW CHANNEL COVER	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 306
REVISED: 12/12			SHEET 1 OF 1



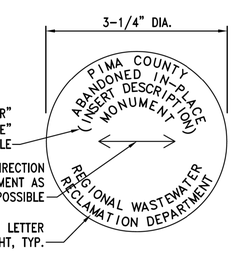
SECTION VIEW
N.T.S.



FORCE MAIN MONUMENT
N.T.S.



PLAN VIEW
N.T.S.



ABANDONED IN-PLACE MONUMENT
N.T.S.

NOTES:

1. MONUMENT DATA SHALL BE AS SHOWN, WITH THE EXCEPTION OF THE NOTATION IN PARENTHESIS TO BE MODIFIED AS NOTED.
2. REINFORCING BARS MAY BE DELETED WITH THE INSTALLATION OF AN APPROVED ELECTRONIC MARKER SYSTEM PLACED AT THE BASE OF THE MONUMENT AS SHOWN.
3. ABANDONMENT MONUMENTS SHALL BE PLACED AT THE TERMINAL ENDS OF ABANDONED SEWER LINES/FORCE MAINS WITH A MAXIMUM SPACING OF 250' AND CENTERED ABOVE ABANDONED MANHOLES.

ISSUED:	STANDARD DETAIL		DETAIL NO.
8/92 (WWM-507/508)	FORCE MAIN AND ABANDONMENT MONUMENTS	PIMA COUNTY WASTEWATER RECLAMATION	RWRD 503
REVISED: 12/12			SHEET 1 OF 1

G-2014-085

SHEET SS14 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
DETAIL SHEET

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

DWG NO. U-3.14

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

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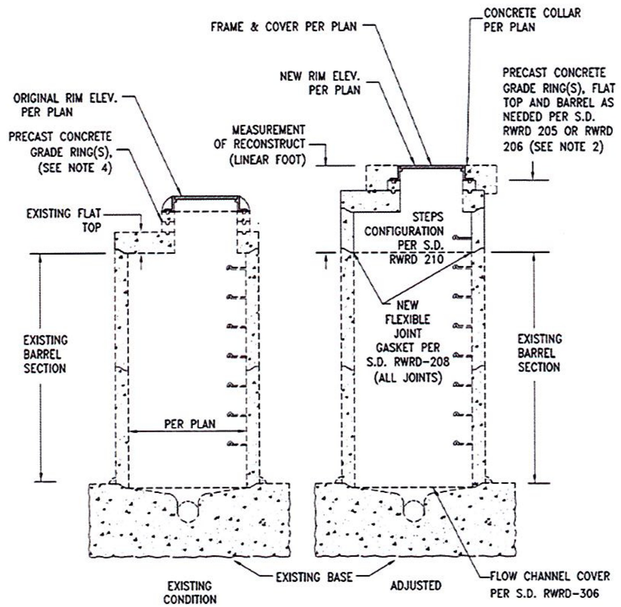
PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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

Tue 19 Mar 2019, 15:04:28 \\prdpwics01\ics_workingdir\5458\43865_181\h8480ss14.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	845	849	
		010 PM 252			

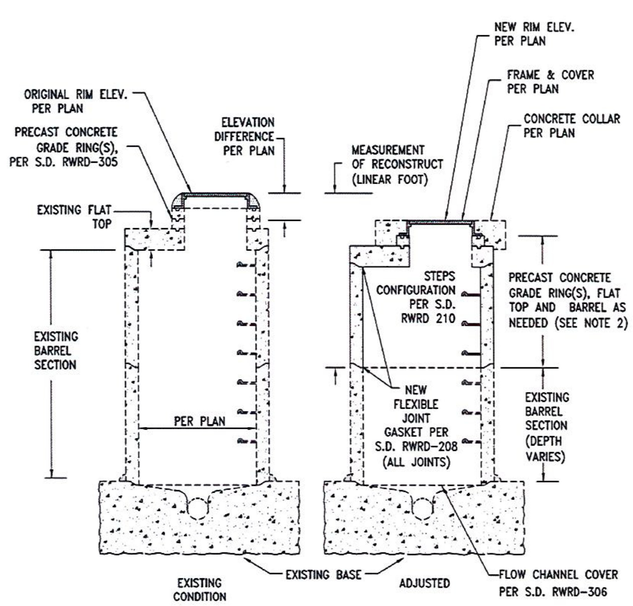


RAISE FRAME & COVER OF FLAT TOP MANHOLE

N.T.S.

NOTES:

1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C478 AND AASHTO M199.
2. ONLY NEW MANHOLE COMPONENTS SHALL BE USED.
3. SEE SUBSECTIONS 3.3.2(E) AND 3.3.3 FOR MORE INFORMATION.
4. RECONSTRUCTION OF AN EXISTING MANHOLE SHALL BE REQUIRED FOR VIOLATION OF THE DIMENSIONAL RANGES NOTED IN STANDARD DETAILS RWRD 304 AND RWRD 305 AND TYPICALLY WHEN THE ADJUSTMENT IN RIM ELEVATION EXCEEDS 12".



LOWER FRAME & COVER OF FLAT TOP MANHOLE

N.T.S.

NOTES:

1. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C478 AND AASHTO M199.
2. ONLY NEW MANHOLE COMPONENTS SHALL BE USED.
3. SEE SUBSECTIONS 3.3.2(E) AND 3.3.3 FOR MORE INFORMATION.
4. RECONSTRUCTION OF AN EXISTING MANHOLE SHALL BE REQUIRED FOR VIOLATION OF THE DIMENSIONAL RANGES NOTED IN STANDARD DETAILS RWRD 304 AND RWRD 305 AND TYPICALLY WHEN THE ADJUSTMENT IN RIM ELEVATION EXCEEDS 12".

MANHOLE RECONSTRUCTION DETAIL

G-2014-085

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

SHEET SS15 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
DETAIL SHEET

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

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PIMA COUNTY
WASTEWATER RECLAMATION

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

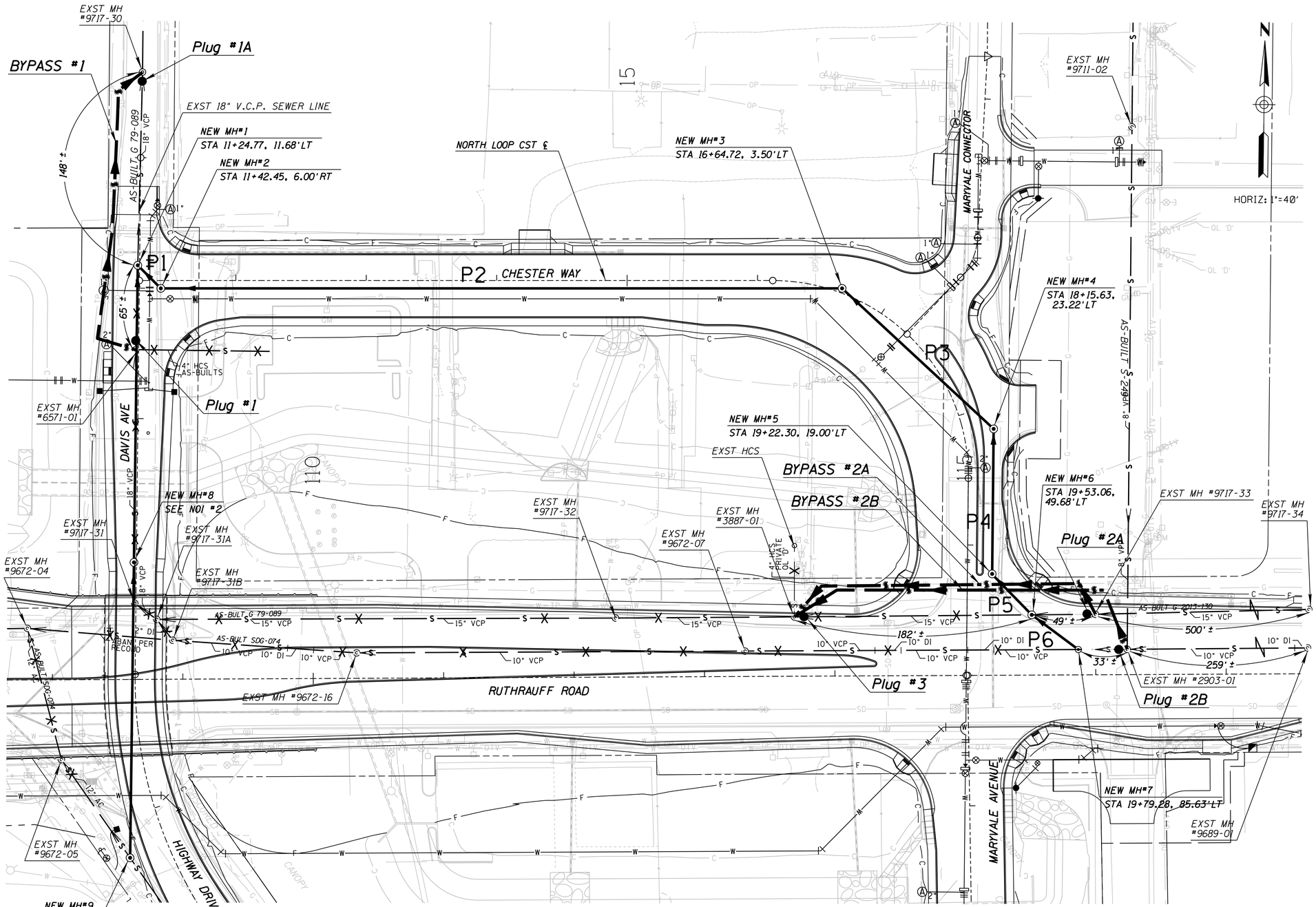
DWG NO. U-3.15

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

NO.	DATE	REVISION	BY	CHKD.	APPR.

Tue 19 Mar 2019, 15:04:46 \\prdpwics01\ics_workingdir\5458\43865_195\h8480ss15.dgn

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	846	849	
		010 PM 252			



NOI #1 - Flow Management Plan:

(FOR CONSTRUCTION OF PIPES P1-P6 & NEW MH NOS. 1-7)

1. CONSTRUCT NEW MH #1 OVER EXIST. PIPE WITH STUB-OUT FOR NEW SEWER TO THE SOUTHEAST. PLUG STUB-OUT TO SE.
2. CONSTRUCT NEW SEWER PIPE #P1, #P2, #P3, #P4, & #P5 WITH NEW MH #2, #3, #4, & #5 TO THE LOCATION OF NEW MH #6.
3. CONSTRUCT NEW MH #6 & NEW MH #7 OVER EXISTING PIPES WITH NEW SEWER PIPE #6.
4. MH #1, #2, #3, #4, #5, #6, & #7 SHALL BE TESTED & AS-BUILT, AS REQUIRED, TO SUBMIT & RECEIVE ADEQ DISCHARGE AUTHORIZATION.
5. OBTAIN ADEQ DISCHARGE AUTHORIZATION.
6. PROVIDE MH COATING FOR EXIST. MH #9717-33 & 2903-01. CONTRACTOR SHALL USE FLOW-THROUGH BYPASS PLUGS FOR THE COATING OF THESE TWO MANHOLES (BID ITEM NO. 9240056).
7. INSTALL BYPASS #1 FROM EXIST. MH #6571-01 TO EXIST. MH #9717-30 WITH PLUGS #1 & # 1A (BID ITEM NO. 9240054).
8. REMOVE EXISTING 18" PIPE WITHIN NEW MH #1. SHAPE FLOWLINE FROM SOUTH AND SOUTHEAST TO NORTH. RESIZE EXIST. 18" SOUTH INVERT TO ACCOMODATE PROPOSED 12" CONNECTION. COAT MH & LET CURE. PLUG NEW SOUTH 12" INLET.
9. REMOVE BYPASS #1.
10. INSTALL BYPASS #2A & 2B, FROM EXIST. MH #9717-33 & MH #2903-01 TO EXIST. MH #3887-01 WITH PLUGS #2A, #2B, & #3 (BID ITEM NO. 9240054).
11. REMOVE EXISTING 15" PIPE WITHIN NEW MH #6. SHAPE FLOWLINE FROM EAST AND SOUTHEAST TO NORTHWEST. GROUT SOLID ORIGINAL OUTFALL TO WEST. THICKNESS OF GROUT TO MATCH THICKNESS OF EXIST. MANHOLE.
12. REMOVE EXISTING 10" PIPE WITHIN NEW MH #7. SHAPE FLOWLINE FROM EAST TO NORTHWEST. GROUT SOLID ORIGINAL OUTFALL TO WEST. THICKNESS OF GROUT TO MATCH THICKNESS OF EXIST. MANHOLE.
13. REMOVE BYPASS #2A, & 2B.
14. RELEASE FLOWS FROM EXIST. 10-INCH & 15-INCH SEWERS INTO NEW SEWER.
15. REMOVE EXIST. 10-INCH SEWER & MANHOLES BETWEEN NEW MH #6 & MH #9717-31A. REMOVE EXIST. 15-INCH SEWER & MANHOLES BETWEEN NEW MH #7 & MH #9717-31A. REMOVE EXIST. 18-INCH SEWER & MANHOLES BETWEEN MH #9717-31A & NEW MH #1.

NOTE:

1. SEE FMP GENERAL NOTES ON SHEET SS2.

Flow & Pump Data:

Location	Exist. Dia.	Plug #	Plug Size	Design Flow	NPSHa	TDH	Size	Number of Pumps	Bypass Length
Bypass #1	18 In.	1 & 1A	18 In.	1400 GPM	19.8 Ft.	24 Ft.	12 In.	2 (Including 1 Backup)	263 Ft.
Bypass #2A	15 In.	2A & 3	15 In.	1100 GPM	19.5 Ft.	24 Ft.	10 In.	2 (Including 1 Backup)	281 Ft.
Bypass #2B	10 In.	2B	10 In.	300 GPM	22.3 Ft.	21 Ft.	6 In.	2 (Including 1 Backup)	343 Ft.

SHEET SSI6 OF SSI9

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
FLOW MANAGEMENT PLAN 1 OF 2

Registered Professional Engineer
37622
FRANK EMMETT
FRY IV
Date Signed 3/19/19
ARIZONA, U.S.A.
Expires 06/30/20

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

PIMA COUNTY WASTEWATER RECLAMATION

ROUTE	LOCATION
I-10	RUTHRAUFF ROAD TI

DWG NO. U-3.16

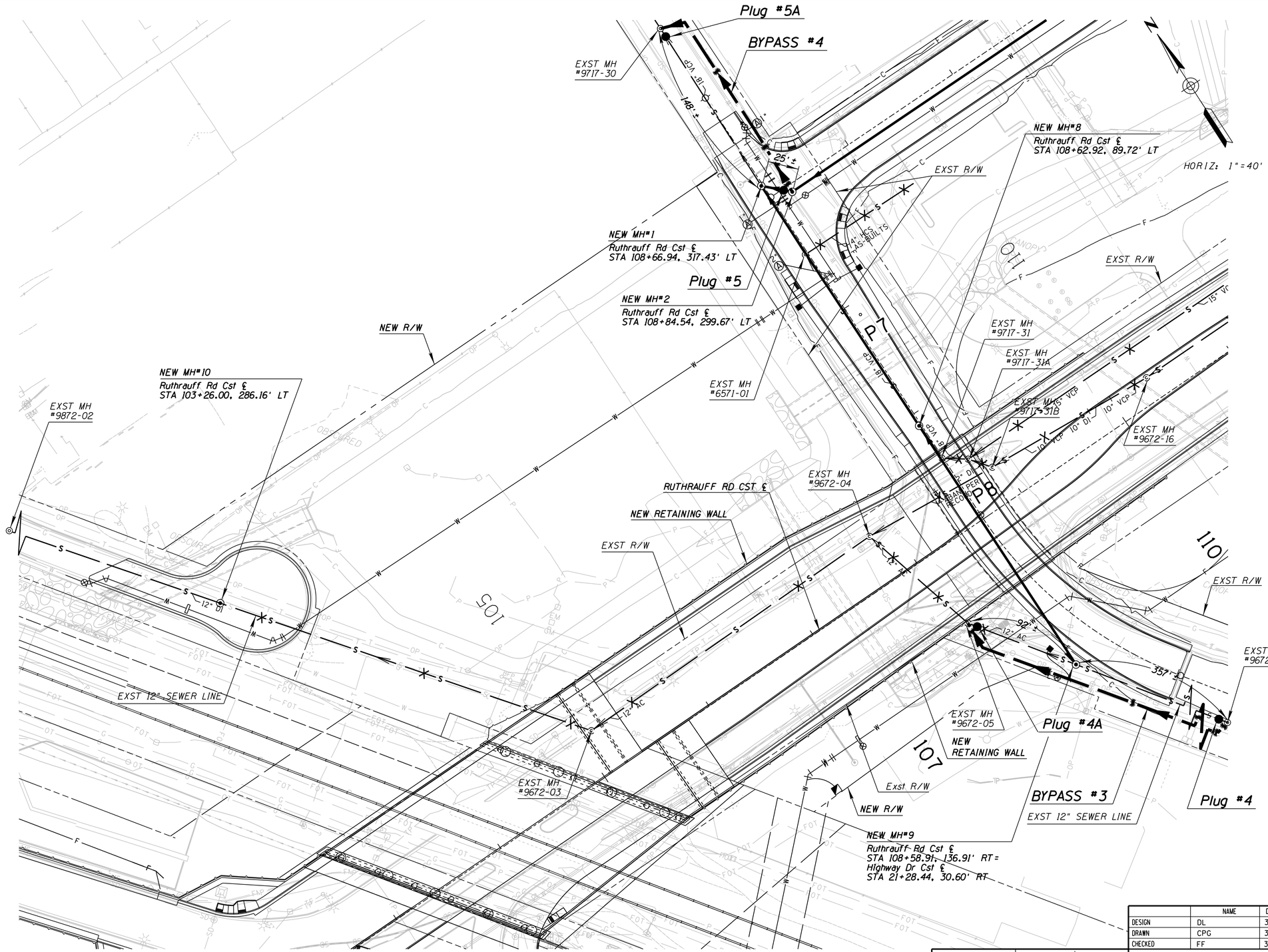
NO.	DATE	REVISION	BY	CHKD.	APPR.

TRACS NO. H 8480 01C | 010-D(213)S | ____ OF ____

G-2014-085

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

Tue 19 Mar 2019, 15:04:36 \\prdpwics01\ics_workingdir\5458\43865_177\h8480ss16.dgn



Flow & Pump Data:

Location	Exist. Dia.	Plug #	Plug Size	Design Flow	NPSH	TDH	Size	Number of Pumps	Bypass Length
Bypass #3	12 in.	4 & 4A	12 in.	800 GPM	15.5 Ft.	29 Ft.	8 in.	2 (Including 1 Backup)	499 Ft.
Bypass #4	18 in.	5 & 5A	18 in.	1400 GPM	22.3 Ft.	24 Ft.	12 in.	2 (Including 1 Backup)	223 Ft.

F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S			
		010 PM 252			

NOI #2 - Flow Management Plan:

(FOR CONSTRUCTION OF PIPES P7-P8 & NEW MH NOS. 8-10)

1. FOLLOWING REMOVAL OF EXISTING 18-INCH SEWER BETWEEN EXISTING MH #9717-31A TO NEW MH #1, CONSTRUCT NEW SEWER PIPE #P7 & #P8 WITH NEW MH #8 TO THE LOCATION OF NEW MH #9.
2. CONSTRUCT NEW MH #9 OVER EXISTING PIPE WITH STUB-OUT FOR NEW SEWER TO THE NORTH. PLUG STUB-OUT TO THE NORTH.
3. CONSTRUCT NEW MH #10 OVER EXISTING PIPE.
4. NEW MH #8, #9, & #10 SHALL BE TESTED & AS-BUILT, AS REQUIRED, TO SUBMIT & RECEIVE ADEQ DISCHARGE AUTHORIZATION.
5. OBTAIN ADEQ DISCHARGE AUTHORIZATION.
6. INSTALL BYPASS #3 FROM EXISTING MH #9672-06 TO EXISTING MH #9672-05 WITH PLUGS #4 & 4A (BID ITEM NO. 9240055).
7. REMOVE EXISTING 12-INCH PIPE WITHIN NEW MH #9. SHAPE FLOWLINE FROM SOUTHEAST TO NORTH. GROUT SOLID ORIGINAL OUTFALL TO THE NORTHWEST. THICKNESS OF GROUT TO MATCH THICKNESS OF EXIST. MANHOLE.
8. INSTALL BYPASS #4 FROM NEW MH #2 TO EXISTING MH #9717-30 WITH PLUGS #5 & 5A (BID ITEM No. 9240055).
9. CONNECT PIPE #P7 TO NEW MH #1.
10. REMOVE BYPASS #3 & #4.
11. RELEASE FLOWS FROM EXISTING 12-INCH SEWER INTO NEW SEWER.
12. REMOVE EXISTING 12-INCH PIPE WITHIN NEW MH #10. SHAPE FLOWLINE FROM SOUTHEAST TO NORTHWEST. GROUT SOLID ORIGINAL INLET TO THE SOUTHEAST. THICKNESS OF GROUT TO MATCH THICKNESS OF EXIST. MANHOLE.
13. REMOVE EXISTING 12-INCH SEWER & MANHOLES BETWEEN NEW MH #9 & NEW MH #10.

NOTE:

1. SEE FMP GENERAL NOTES ON SHEET SS2.

SHEET SS17 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
FLOW MANAGEMENT PLAN 2 OF 2

ROUTE: I-10 | LOCATION: RUTHRAUFF ROAD TI

DWG NO. U-3.17

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

37622 FRANK EMMETT FRY IV 5/30/19 Date Signed ARIZONA, U.S.A. Expires 06/30/20

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PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

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

G-2014-085

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	848	849	

010 PM 252

UPRR

Exst Overhead Telephone (CTL)

Exst 12" Water (TW)

Exst 8" Sewer (PCRWRD) To Remain

Exst Overhead Power (TEP)

Exst Gas (KM)
6" STL
8" STL
12" STL

1980 5195 5200 1985 5205

WB Frontage Rd Cst ℄

Exst FMS (ADOT) See FMS Plans

Exst R/W

Access Control

I-10 Ramp A Cst ℄

WB FRONTAGE RD

I-10 WB

Exst 24" Abn Sewer (PCRWRD)
Sta 5193+00, 135'Rt to 5197+00, 135'Rt
To Remain

Exst Power (ADOT) See Lighting Plans

I-10 Cst ℄

I-10 EB

Exst 24" Abn Sewer (PCRWRD)
Sta 5197+00, 135' Rt to 5207+00, 135' Rt
Remove 1,000 LF

I-10 Ramp B Cst ℄

EB FRONTAGE RD

EB Frontage Rd Cst ℄

Exst R/W

Access Control

Exst Gas (SWG)

Exst Power (TEP)

Exst Telephone (CTL)

Exst Joint Utility Duct Bank

METER NOT FD

SHEET SS18 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1105
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
ABN SEWER REMOVAL

ROUTE I-10 | LOCATION RUTHRAUFF ROAD TI

DWG NO. U-3.18

TRACS NO. H 8480 01C | 010-D(213)S | ___ OF ___

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PIMA COUNTY WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

37622 FRANK EMMETT FRY IV 3/19/19 Date Signed ARIZONA, U.S.A. Expires 06/30/20

G-2014-085

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

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F.H.W.A. REGION	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	RECORD DRAWING
9	ARIZ.	010-D(213)S	849	849	

010 PM 252

Exst 12" Sewer (PCRWRD)
(WB Frontage Rd ℄)
Sta 1998+07, 259' Lt
to 2002+16, 248' Lt

See Sheet SS5

UPRR

New Sewer MH

See Sheet SS5

New TCE

RUTHRAUFF ROAD

Access Control

Exst R/W

New TCE

WB FRONTAGE RD

WB Frontage Rd Cst ℄

I-10 Ramp A Cst ℄

Ruthrauff Rd Cst ℄

001

I-10 Cst ℄

I-10 WB

I-10 EB

I-10 Ramp A Cst ℄

Exst 24" Abn Sewer (PCRWRD)
Sta 5207+00, 135' Rt to 5217+30, 324' Rt
Remove 1,195 LF

I-10 Ramp D Cst ℄

EB Frontage Rd Cst ℄

EB FRONTAGE RD

Exst R/W

Access Control

New R/W

W. EL CAMINO DEL CERRO

Exst 24" Abn Sewer (PCRWRD)
To Remain

Access Control

New R/W

1990 1995 2000

5210 5215 5220

25 30

SHEET SS19 OF SS19

	NAME	DATE
DESIGN	DL	3-19
DRAWN	CPG	3-19
CHECKED	FF	3-19

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
ROADWAY DESIGN SERVICES

WSP USA Inc.
177 N. Church Ave.
Suite 1100
Tucson, AZ 85701

RUTHRAUFF ROAD
SEWER MODIFICATION PLANS
ABN SEWER REMOVAL

ROUTE: I-10
LOCATION: RUTHRAUFF ROAD TI

TRACS NO. H 8480 01C
010-D(213)S

DWG NO. U-3.19

____ OF ____

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In Maricopa County: (602) 263-1100

PIMA COUNTY
WASTEWATER RECLAMATION

NO.	DATE	REVISION	BY	CHKD.	APPR.

37622
FRANK EMMETT
FRY IV
3/19/19
Date Signed
ARIZONA, U.S.A.
Expires 06/30/20

G-2014-085

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

Tue 19 Mar 2019, 15:04:31

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