PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PIMA COUNTY
TRANSPORTATION

PIMA COUNTY BOARD OF SUPERVISORS

RICHARD ELIAS, CHAIR, DISTRICT 5
ALLY MILLER, DISTRICT 1 STEVE CHRISTY, DISTRICT 4
RAMON VALADEZ, DISTRICT 2 RICHARD ELIAS, DISTRICT 5
THIS PROJECT IS LOCATED WITHIN SUPERVISOR DISTRICT 3

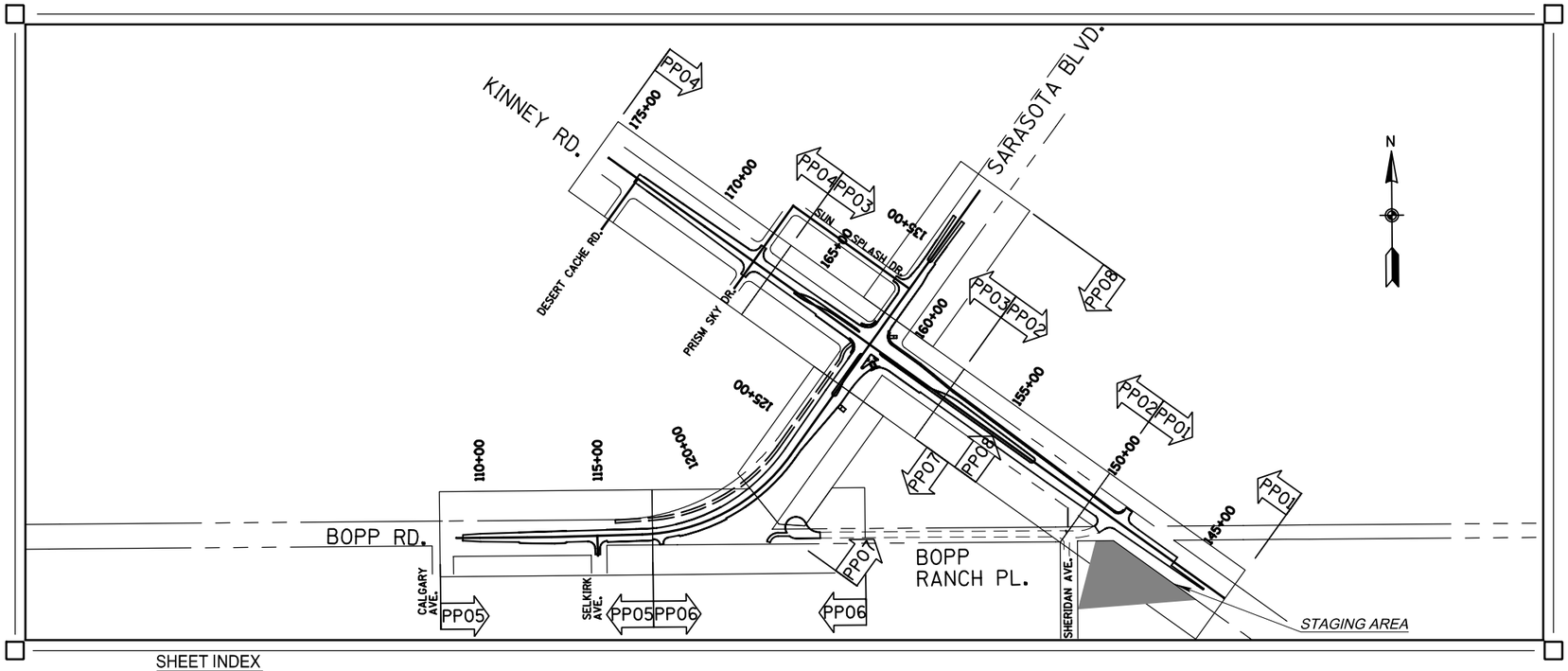
GENERAL DESCRIPTION OF PROJECT

IMPROVEMENTS TO 0.5 MILES OF KINNEY RD. AND REALIGNMENT OF BOPP RD. TO CREATE A FOUR-LEG INTERSECTION AT SARASOTA BLVD. IMPROVEMENTS INCLUDE NEW PAVED TRAVEL LANES, PAVED SHOULDERS, EXCLUSIVE TURN LANES, MEDIAN ISLANDS, CURB ACCESS RAMPS, CUL-DE-SAC ON BOPP RANCH PL., DRAINAGE FACILITIES, SIGNING, PAVEMENT MARKING, SIGNALIZED INTERSECTION, LANDSCAPING, AND IRRIGATION.

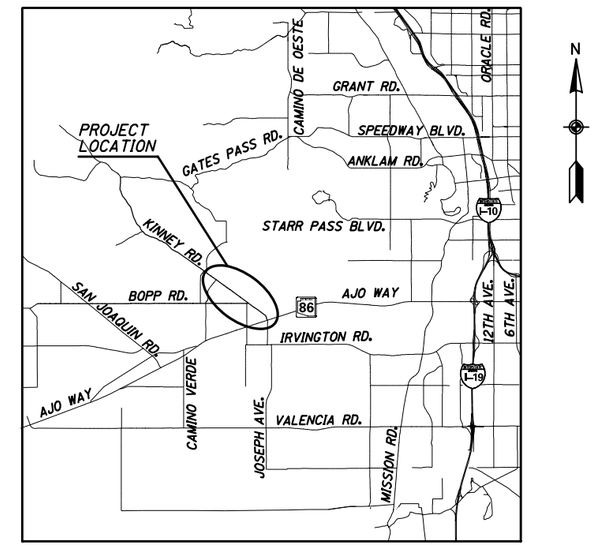
PIMA COUNTY PROJECT NUMBER

4KINBO

ADOT TRACS NO. - 0000 PM PPM T0134 01C
FEDERAL ID NO.- STP- PPM-0(261)D



INDEX TO PLAN SHEETS
NOT TO SCALE



Location Map
NOT TO SCALE

Sections 25, 26, 35 & 36
T - 14 - S, R - 12 - E,
G & S R & M
Pima County, Arizona

SHEET INDEX

SHEET NO.	PAGE NO.	DESCRIPTION
CS01	1	COVER SHEET
GN01-GN03	2-4	GENERAL NOTES SHEETS
GN04	5	EARTHWORK GENERAL NOTES & UTILITY POTHOLE DATA SHEET
TY01	6	PAVEMENT STRUCTURAL SECTIONS SHEET
TY02-TY07	7-12	TYPICAL SECTIONS SHEETS
SS01-SS03	13-15	SUMMARY SHEETS
RD01-RD09	16-24	DETAIL SHEETS
HC01	25	HORIZONTAL CONTROL SHEET
PP01-PP08	26-33	ROADWAY PLAN AND PROFILE SHEETS
DP01-DP04	34-37	SIDE STREET AND DRIVEWAY PLAN AND PROFILE SHEETS
GC01-GC05	38-42	GEOMETRIC DATA SHEETS
ST01-ST03	43-45	STAKING PLAN SHEETS
CC01-CC05	46-50	CROSS DRAINAGE AND CHANNEL PLAN AND PROFILE SHEETS
PM01-PM05	51-55	PAVEMENT MARKING PLAN SHEETS
SI01-SI09	56-64	SIGNING PLAN SHEETS
TS01-TS04	65-68	TRAFFIC SIGNAL PLAN SHEETS
NPI01-NPI02	69-70	NATIVE PLANT INVENTORY SUMMARY SHEETS
LP01-LP08	71-78	LANDSCAPE PLAN SHEETS
IR01-IR09	79-87	IRRIGATION PLAN SHEETS
EC01-EC10	88-97	EROSION AND POLLUTION CONTROL SHEETS
W01-W12	98-109	WATER MODIFICATIONS PLAN SHEETS

PCRWRD TRACKING NO. UPC-2017-036

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

Reviewed by	Engineer	Date
Mgr. Trans Engr.		
Mgr. Traffic Engr.		
Mgr. Field Engr.		
Mgr. WWM		

Approved: _____20__
Director

No.	Revisions	Engineer	Date

No.	As Built	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40990 MATTHEW P. KERSHNER Date Signed 5-24-18 EXPIRES 6-30-19

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

TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD, STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
AECOM
www.aecom.com

Project No. 4KINBO
Sheet No. CS01 of CS01
Page No. 01 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_CV.dgn DATE: 5/24/2018 TIME: 1:22:43 PM kershnerm

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

GENERAL NOTES

1. Construction shall be in conformance with the Specifications and Details listed in the Special Provisions.
2. Utility locations shown on plans were compiled based on the best information available to the department. Utility locations are not intended to be exact or complete. Prior to commencing construction, the contractor shall verify the location of all utilities with the appropriate organizations. Contact "Arizona 811" or 1-800-782-5348 two full working days prior to beginning construction (Saturdays and Sundays are not considered working days).
3. Right-of-way encroachments shall be removed only by order of Pima County, unless otherwise noted.
4. Removal of all cacti and native plants shall be in accordance with the provisions of the "Arizona Native Plant Law" A.R.S., Chapter 7.
5. The Basis of Bearing for this project was established using the Arizona Coordinate System, NAD 1983 (2011), Central Zone 0202. The Basis of Bearing was measured between a found 3" brass cap survey monument with no markings at the quarter corner between Sections 26 and 35, T14S R12E and a 2" brass cap survey monument with a punch stamped "42/014" at the southwest corner of Section 25, T14S R12E. Said bearing being N89°33'25"E.
6. The Basis of Elevation for this project is Pima County benchmark designation Kinney 3, a 2" brass cap survey monument with punch flush with pavement located in the left turn lane of northbound Kinney Road south of the intersection of Bopp Road, having an NAVD88 elevation of 2601.90 feet.
7. The Basis of Coordinates for this project is based on the surface value coordinates as observed from Pima County OPUS control point "14S12E_U20", a chiseled arrow cut over an existing chiseled arrow located on the top of a northwest headwall 0.55 miles southeast of the intersection of Kinney Road and Western Way, on the south side of Kinney Road. 14S12_U20 has a combined scale factor of 0.99985520. Surface coordinates for project Northings derived by dividing the grid coordinates by 0.99985520 and subtracting 400,000.
   Surface coordinates for project Eastings derived by dividing the grid coordinates by 0.99985520 and subtracting 900,000.
   The surface coordinates for point 14S12_U20 are:
   Northing=30680.492456 feet
   Easting=57327.40054 feet
8. Basis of Stationing: Stations for Kinney Road increase from southeast to northwest. Stations for Bopp Road/Sarasota Boulevard increase from west to east. Stationing for both roadways were taken from Pima County Department of Transportation Project No. 4KRAWB, Ajo Highway (SR 86)/Kinney Road.
9. Soils information will be made available to prospective bidders in the Geotechnical Report. Soils information so provided shall be for information purposes only, and is not to be considered a part of the contract documents. This information was developed as accurately as possible by the methods used. Pima County accepts no responsibility for any conditions encountered which vary from the information provided.
10. The contractor shall maintain access to all driveways, alleys, and mailboxes during construction. The contractor will not restrict emergency vehicles, U.S. postal delivery, solid waste collections, and/or access to the adjacent properties, except as approved by the Engineer.
11. Omissions or conflicts between various elements of the drawings, notes and details shall be brought to the attention of the Engineer and resolved before proceeding with the work.

GENERAL NOTES CONT.

12. All stationing shown on the plans and profiles is along the construction centerline, unless otherwise noted.
13. Existing topographic conditions shown on the plan and profile sheets reflect conditions as of April 28, 2017.
14. Existing utilities include, but may not be limited to overhead and underground electric, telephone, television, sewer, gas, and water and shall be moved by others unless otherwise noted and shown in these plans.
15. Any revisions made to these plans must be approved by Pima County DOT prior to construction.
16. The design vehicle used for this project is a WB-62.
17. The existing 48"x 80' C.M.P. located in the southeast quadrant of the Kinney Rd. and Sarasota Blvd. intersection shall be removed and disposed of by the Contractor, as directed by the Engineer. This work shall be paid under Bid Item No. 2020001, Removal of Structures and Obstructions.
18. All new detectable warning strips on the project shall be rust colored.

DESIGN SPEED

ROADWAY	DESIGN	POSTED
Kinney Rd.	50 mph	45 mph
Bopp Rd.	40 mph	35 mph
Sarasota Blvd.	40 mph	35 mph

ABBREVIATIONS NOT INCLUDED IN PAG STD. DTL.

Correction	Corr.
Edge of Pavement	E.P.
Horizontal Elliptical Reinforced Concrete Pipe	H.E.R.C.P.
Hydraulic Grade Line	H.G.L.
Point of Compound Curve	P.C.C.
Pounds	Lbs.
Schedule	SCH.
Shoulder	Shld.
Stopping Sight Distance	SDs
Vertical Curve	V.C.
Profile Grade Line	P.G.L.

LENGTH OF PROJECT

Kinney Rd. Sta. 143+91.43 to Sta. 173+53.45
Gross Length = 2,962.02' (0.56 Mile)

Bopp Rd./Sarasota Blvd. Sta. 109+27.80 to Sta. 136+50.00
Gross Length = 2,722.20' (0.52 Mile)

DESIGN DATA

DESIGN TRAFFIC	KINNEY RD. NORTH OF BOPP RD.	KINNEY RD. SOUTH OF BOPP RD.	BOPP RD. WEST OF KINNEY RD.
2017 ADT	8,580 veh/day	11,730 veh/day	7,350 veh/day
2045 ADT	10,000 veh/day	16,770 veh/day	6,920 veh/day

SANITARY SEWER MANHOLES

CONTROL LINE	STATION	OFFSET	MH NO.	EXIST. ELEV.	FINISHED ELEV.	CHANGE IN ELEV.	REMARKS
Bopp Rd.-Sarasota Blvd. Const. ℄	114+00.75	17.13' Lt.	4318-94	2592.96	2592.77	-0.19'	Adjust to Finished Grade
	118+97.60	21.88' Rt.	4318-95	2594.04	2593.43	-0.61'	Partial Reconstruction
	132+89.98	19.44' Lt.	4318-110	2613.33	2612.70	-0.63'	Partial Reconstruction

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

REGISTERED PROFESSIONAL ENGINEER (CIVIL) 40990 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
www.aecom.com

CALL 811 Know what's below. Call before you dig.
ARIZONA BLUE STAKE, INC.
Arizona Blue Stake, Inc. 1-800-782-5348

Pima County Department of Transportation

GENERAL NOTES SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet GN01 of GN04	Page 02 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_GN01.dgn DATE: 5/24/2018 TIME: 1:23:25 PM kershnerm

CENTRAL ARIZONA WATER CONSERVATION DISTRICT (CAWCD) GENERAL NOTES

1. CAWCD reserves the right to stop work on CAWCD's right-of-way or property for reasons of safety or protection of CAWCD facilities. Failure to comply with the construction contract requirements or terms of the Construction Period Land Use License shall be grounds for stopping work and/or suspension of the license.

2. Unless specifically granted by CAWCD, work shall be generally performed during normal business working hours of 6 a.m. to 6 p.m., Monday through Friday, except as otherwise indicated by CAWCD. The local jurisdiction's requirements shall prevail, if more stringent.

3. Prior to the start of any work on CAWCD's Right-of-Way or property, the Contractor shall comply with the following:

   a. At least 2-weeks prior to the commencement of any work, the Contractor shall contact CAWCD at (623) 869-2555 to schedule a construction coordination meeting. Failure to schedule and hold this meeting will prevent the start of construction operations. Mandatory attendees shall include representatives from all Prime and Sub-contract companies that will perform work within CAWCD's Right-of-Way or property. The Contractor shall lead discussions covering, at a minimum, their safety program, security and fencing considerations, dust abatement plans, storm water pollution protection plan, construction schedule, coordination issues, and plan of work for all items within CAWCD's Right-of-Way or property.

   b. The Contractor shall provide to CAWCD a list, with appropriate phone numbers and contact information, of all Prime and Sub-Prime contractors that will be operating within CAWCD's property or right-of-way. This list shall be updated and approved by CAWCD, prior to allowing additional Contractors access to CAWCD's property or right-of-way. All non-approved / non-listed Contractors will be escorted off of CAWCD property or right-of-way.

   c. No digging, excavation, or earthwork operations shall be undertaken without a CAWCD Dig Permit. The CAWCD Dig Permit shall be obtained through the CAWCD Inspection or Engineering employees assigned to the construction operations and will be at no cost to the Contractor. The Contractor shall anticipate turn around of the dig permit in no more than 10-days (working days).

   d. The Contractor shall submit, and obtain approval on, a Dust Control Plan. The Dust Control Plan shall be in compliance with the requirements of the Arizona County where the work is being done. Application of any dust palliatives shall only be undertaken after specific approval by CAWCD.

   e. The Contractor shall submit an approved Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be in compliance with the requirements of the Arizona County where the work is being undertaken. The plan shall address the means and measures being undertaken to prevent storm water from entering into the CAWCD canal or leaving the construction site.

   f. The Contractor shall submit, and obtain approval on, a Safety Plan. While working on CAWCD's property or Right-of-Way, the Contractor shall follow all applicable safety requirements of the plan, including compliance with the Reclamation Safety and Health Standards and the CAWCD's Safety Resource Manual. The submitted Safety Plan shall demonstrate an understanding of, and compliance with, the requirements of these manuals. Copies of both manuals can be obtained on the CAWCD's website (www.cap-az.com) under Contracting / Safety. The Contractor shall comply with the more stringent of the indicated safety standards.

4. Any vertical information submitted from C.A.P. is on NGVD29 datum. Potholing of C.A.P. facilities is required to verify actual elevations.

CAWCD GENERAL NOTES CONT.

5. The Contractor shall take all measures necessary to provide CAWCD access to CAWCD facilities during the entire construction period. The Contractor shall also place lighted barricades and flagging around the work area.

6. CAWCD property or Right-of-Way shall not be utilized for parking, maintenance, or fueling of construction equipment, unless specific consent is provided by CAWCD. To obtain this consent, the Contractor shall submit, and obtain approval on, a plan to accommodate these activities. The plan shall clearly demonstrate the measures taken to prevent contamination of soil or water resulting from these activities.

7. The Contractor shall remove all construction debris from CAWCD property or Right-of Way and dispose of it at the appropriate landfill or facility.

8. The Contractor is responsible for restricting the public's access to CAWCD's property and Right-of-Way during construction operations.

9. The Contractor is responsible to protect the CAWCD facilities from damage due to construction operations. All damage to CAWCD facilities caused directly, or indirectly, by Contractor operations shall be repaired to CAWCD's satisfaction at the Contractor's expense.

10. Mechanical excavation that is within 24-inches of any marked underground utility shall not proceed until the utility is exposed through hand excavation, vacuum excavation, or other CAWCD approved non-destructive means. Once exposed, the Contractor shall be responsible to protect and support all utilities in place and restore proper backfill and support.

11. Unless specifically stated otherwise, minimum compaction for all soil fill materials utilized on CAWCD's Right-of-Way or property shall be 95% of the maximum dry unit weight according to ASTM D 698. All soil shall be placed at a uniform moisture content that is within 2% of optimum. Satisfactory soil fill materials shall be groups GW, GP, GM, SW, SP, SM or a combination of these groups, as defined by ASTM D 2487. All fill shall be free of debris, waste, vegetation, and other deleterious material. The Contractor shall provide CAWCD with information on all imported soil to indicate compliance with these requirements. The Contractor shall submit to CAWCD compaction reports indicating compliance with these requirements.

Ana M. Olivares, P.E., Director

Designed	MPK		Date
Drawn	MPK		05/18
Checked	CJR		05/18
Proj. Engr.	MPK		05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40990 MATTHEW P. KERSHNER DATE SIGNED 5/30/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA Inc.
333 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

Call at least two full working days before you begin excavation
ARIZONA 811
BLUE STAKE, INC.
Arizona Law requires 2 working days notice before excavation

Pima County Department of Transportation

GENERAL NOTES SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet GN02 of GN04	Page 03 of 109

PCRWRD GENERAL NOTES

1. 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) and the Standard Specifications and Details for Construction 2016 (SSDC 2016). Said documents are available through the PCRWRD website (www.pima.gov/wastewaterreclamation).

2. The Contractor shall contact "Arizona 811" (dial 811 or 1-800-782-5348) a minimum of two (2) business days prior to commencing construction activities. The Contractor shall keep all underground facility location requests up-to-date and comply with Arizona Revised Statutes (A.R.S.), Title 40, Chapter 1, Article 6.3, Section 40-360.22. Concerns regarding the accuracy between the underground facility markings and the project plans shall be immediately reported to the design engineer.

3. Contractor shall maintain access to all sanitary sewer manholes at all times.

4. The Contractor shall field-verify existing sewer line elevations and alignments prior to construction. Verification may require pot-holing.

5. Immediately report any of the following to the PCRWRD Operations Control Center (OCC) at (520) 724-3400: 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.

6. Modification to or adjustment of existing Pima County sewer facilities shall not commence until: (A) the Contractor has obtained a PCRWRD Public Sewer Construction Permit (Contact the PCRWRD Permits section at (520) 724-6649 for permit application requirements); (B) 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 (C) a pre-construction meeting with the assigned Pima County project Field Inspector is scheduled at least three (3) full business days prior to commencing with sewer construction.

7. 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. 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's operations shall be the responsibility of the Contractor.

PCRWRD GENERAL NOTES CONT.

8. The Contractor shall submit a flow management plan (FMP) to PCRWRD Field Engineering for approval before proceeding with any work that may affect live sewers. The FMP shall identify and include all flow management costs in the construction bid. The FMP shall be submitted thirty (30) calendar days prior to the sewer pre-construction meeting. Field Engineering will review the FMP within ten (10) business days to accommodate review and revision cycles. Refer to PCRWRD SSDC 2016, Section 2 for FMP requirements. Please contact PCRWRD Field Engineering at (520) 724-2651 for any questions regarding flow management.

9. All Storm Water Pollution Prevention Plan (SWPPP) measures shall be installed to prevent all storm water, construction water, fuels, chemicals, liquids, or other contaminants, from being directed into or onto any sanitary sewer facilities. Protection of sanitary sewer facilities shall be a part of the approved construction SWPPP and best management practices. Protection devices shall be installed and maintained around all potentially affected sanitary sewer facilities within the project limits. Additional measures shall include, but are not limited to, the use of rain stoppers and manhole covers as deemed necessary by PCRWRD.

10. After the completion of pavement work, the Contactor shall verify that all sanitary sewer manhole covers and pick holes are clean and free of any construction materials, debris, and/or obstructions. Prior to the preconstruction meeting with PCRWRD, the Contractor shall identify all existing sanitary sewer manhole covers having foreign materials attached. Foreign materials shall be removed from the existing manhole covers regardless of existing or new conditions. If build-up is too heavy to be removed, the Contractor shall replace the manhole frame and cover and salvaged items shall be delivered to Pima County Conveyance at 3355 N. Dodge Blvd., Tucson, AZ. The Contractor shall coordinate with the PCRWRD Inspector to schedule a time to deliver the salvaged frames and covers.

11. Any work inside or around an existing sanitary sewer manhole, including manholes that are located within the rough grading limits for a project, shall be protected from falling debris by installing a temporary flow channel cover per PCRWRD Standard Specifications and Details for Construction, Standard Detail RWRD-306. The Contractor shall remove any debris that enters a manhole during construction. Failure by the Contractor to promptly remove debris from a manhole shall result in PCRWRD taking corrective action that will then be billed to the Contractor.

12. Prior to commencing with manhole adjustment work (i.e. removal of the manhole frame and cover), the Contractor shall visually inspect the condition of the manhole frame, cover and grade rings to identify any special coatings, linings or other conditions that may require additional work and inspection by PCRWRD. If such conditions are identified, the Contractor shall immediately notify Field Engineering at (520) 724-2651 for further direction.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40290 MATTHEW P. KERSHNER DATE SIGNED 5-30-18 EXPIRES 6-30-19 Arizona, U.S.A.

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438

www.aecom.com

CALL 811 Before You Dig
ARIZONA 811
BLUE STAKE, INC.
"Arizona's Underground Utility Protection Center"

Pima County Department of Transportation

GENERAL NOTES SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

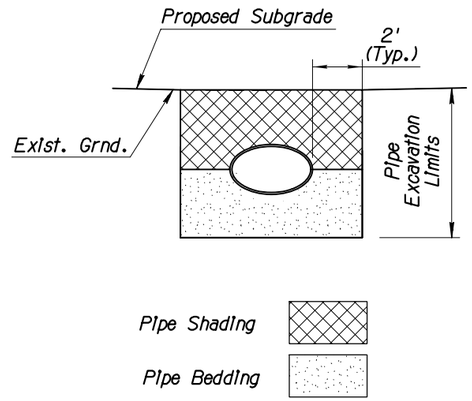
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

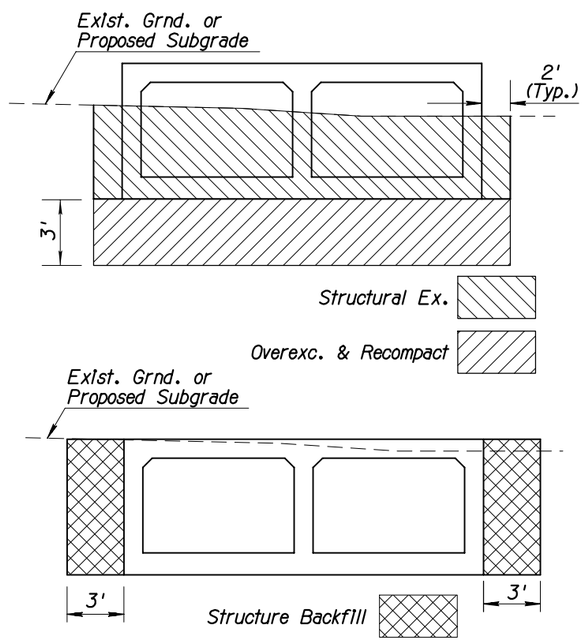
Scale:	N.T.S.	Sheet GN03 of GN04	Page 04 of 109

EARTHWORK NOTES

1. Excavation (Overexcavation and Recompaction) includes material which shall be excavated and recompacted.
2. Roadway Excavation is the total roadway volume excavated. Does not include structural, drainage, overexcavation & recompaction and existing pavement volume removal.
3. Drainage Excavation includes excavation related to the upstream and downstream grading for the box culverts. Does not include additional excavation required for riprap installation. See Detail RD06 for drainage excavation limits.
4. See Pipe Excavation, Shading and Bedding detail this sheet for limits. Pipe excavation, shading, bedding and trench backfill are included in the unit price of the pipe. Pipe excavation is included in the total excavation and is available for embankment after shrink factors are applied. Onsite materials are unsuitable for pipe shading and bedding requirements and import material shall be used.
5. Structural Excavation applies to the box culvert. Structural excavation is included in the total excavation and is available for embankment after shrink factors are applied. Onsite materials are unsuitable for structure backfill requirements and import materials shall be used. There is no separate payment for structural excavation or backfill as this is considered incidental to the cost of the box culvert.
6. Excavation to Install Riprap is the total volume excavated for the dumped and grouted riprap shown in the project plans. There is no separate payment for Excavation to Install Riprap as this is considered incidental to the cost of the riprap items.
7. Total Excavation = Excavation (Overexcavation and Recompaction) + Roadway Excavation + Drainage Excavation + Pipe Excavation + Structural Excavation + Excavation to Install Riprap.
8. Total Shrinkage is 7% for all excavation and overexcavation areas. Shrinkage does not include existing pavement removal along Kinney Road, Bopp Road and Sarasota Boulevard and any pavement millings.
9. Net Excavation = Total Excavation - Total Shrinkage. Net Excavation is the excavation available for embankment.
10. Roadway Embankment is the total roadway embankment volume required.
11. Overexcavation Embankment is the total roadway embankment volume required to place in overexcavation locations.
12. Ground Compaction = Embankment area x 0.05 ft.
13. Net Embankment volume is the total volume complete in place including ground compaction.
    Net Embankment = Roadway Embankment+ Overexcavation Embankment+ Ground Compaction
14. Waste = Net Excavation - Net Embankment
15. Existing Pavement Volume is the volume of pavement removed along Kinney Road, Bopp Road and Sarasota Boulevard. Pavement removal will be paid under Bid Item No. 2020001, Removal of Structures & Obstructions. The pavement volume was calculated using an assumed 4" pavement thickness for Kinney Road and 2" pavement thickness for Bopp Road and Sarasota Boulevard. The existing pavement quantities shall not be used in embankment areas.



PIPE EXCAVATION, SHADING & BEDDING
REFER TO PAG STD. DTL. 108
N.T.S.



STRUCTURAL EXCAVATION & STRUCTURE BACKFILL
REFER TO ADOT SD 6.01 (SHEET 4 of 5)
N.T.S.

EARTHWORK QUANTITIES SUMMARY

ITEM NO.	ITEM DESCRIPTION	TOTAL VOLUME (CY)
2030502	(1) Excavation (Overexcavation and Recompaction)	386
2030300	(2) Roadway Excavation	16,297
2030401	(3) Drainage Excavation	1,690
	(4) Pipe Excavation	134
	(5) Structural Excavation	775
	(6) Excavation to Install Riprap	3,635
	(7) Total Excavation	22,917
	(8) Total Shrinkage (7%)	1,604
	(9) NET EXCAVATION (Available for Embankment)	21,313
	(10) Roadway Embankment	1,275
	(11) Overexcavation Embankment	386
	(12) Ground Compaction (0.05 Ft.)	107
	(13) NET EMBANKMENT (Embankment Demand)	1,768
	(14) Waste	19,544
	Quantities Below are for Informational Purposes Only	
	(5) Structure Backfill	290
	(4) Shading (Pipes)	54
	(4) Bedding (Pipes)	38
	(15) Existing Pavement Volume	1,879

UTILITY POTHOLE DATA TABLE

POTHOLE NO.	CONTROL LINE	STATION	OFFSET	DESCRIPTION	TOP OF UTILITY ELEVATION
P01	Bopp-Sara.	113+65.5	23.0' Rt.	6" Sewer	2588.35
P02	Bopp-Sara.	118+87.6	26.7' Lt.	96" C.C.P.	2590.22
P03	Bopp-Sara.	120+31.9	27.9' Rt.	96" C.C.P.	2590.30
P04	Bopp-Sara.	121+78.9	0.0' Rt.	10" Sewer	2596.43
P05	Bopp-Sara.	122+00.0	0.0' Rt.	6" P.V.C. Water	2594.02
P06	Bopp-Sara.	121+51.1	193.0' Rt.	4" C.A. Water	2593.21
P07	Kinney Rd.	159+50.4	17.0' Lt.	8" C.A. Water	2605.31
P08	Kinney Rd.	159+46.6	51.9' Rt.	12" C.A. Water	2601.23
P09	Kinney Rd.	159+46.7	59.4' Rt.	12" C.A. Water	2603.97
P10	Kinney Rd.	160+14.8	17.0' Lt.	8" C.A. Water	2603.65
P11	Kinney Rd.	160+13.6	51.9' Rt.	12" C.A. Water	2603.62
P12	Kinney Rd.	160+14.5	59.4' Rt.	12" C.A. Water	2602.78
P13	Kinney Rd.	160+61.3	56.3' Lt.	96" C.C.P.	2600.33
P14	Kinney Rd.	160+61.0	17.0' Lt.	8" C.A. Water	2603.39
P15	Kinney Rd.	160+60.6	51.4' Rt.	12" C.A. Water	2603.70
P16	Kinney Rd.	160+60.6	53.7' Rt.	96" C.C.P.	2601.29
P17	Kinney Rd.	160+60.6	59.1' Rt.	12" C.A. Water	2602.94
P18	Kinney Rd.	161+05.7	98.0' Rt.	12" C.A. Water	2604.60
P19	Bopp-Sara.	132+72.0	32.0' Rt.	12" C.A. Water	2606.86
P20	Bopp-Sara.	132+99.6	0.0' Rt.	8" P.V.C. Water	2609.02
P21	Kinney Rd.	162+02.2	38.2' Lt.	2" Water	2605.92
P22	Kinney Rd.	164+31.4	16.3' Lt.	8" C.A. Water	2604.80
P23	Kinney Rd.	165+09.5	17.0' Lt.	8" C.A. Water	2606.35
P24	Kinney Rd.	163+84.1	38.0' Rt.	12" C.A. Water	2603.66
P25	Kinney Rd.	164+69.3	38.9' Rt.	12" C.A. Water	2603.16
P26	Kinney Rd.	165+33.3	39.0' Rt.	12" C.A. Water	2603.77

NOTE:
See Sheets PP03, PP05, PP06 and PP08 for pothole locations shown in plan view.

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5-30-18 Arizona U.S.A. EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

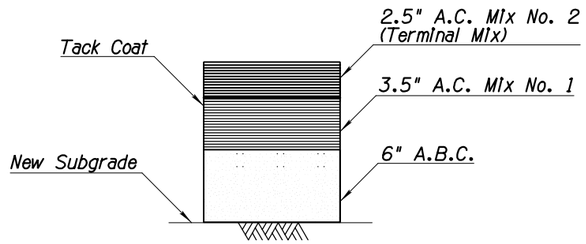
Pima County Department of Transportation

EARTHWORK GENERAL NOTES & UTILITY POTHOLE DATA TABLE SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: N.T.S. | Sheet GN04 of GN04 | Page 05 of 109

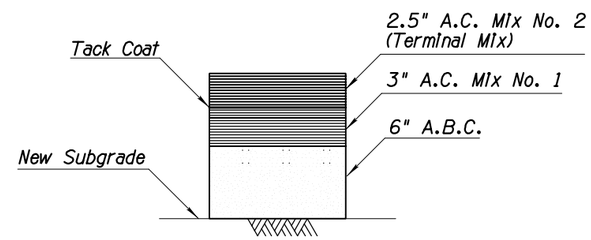
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_GN03.dgn | DATE: 5/24/2018 | TIME: 1:27:04 PM | kershnerm



Total Thickness = 12"

PAVEMENT STRUCTURAL SECTION NO. 1

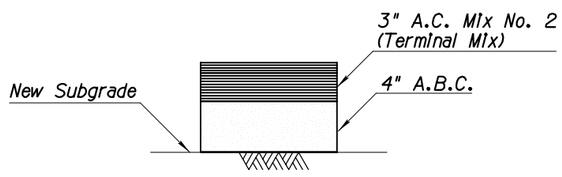
Kinney Rd.



Total Thickness = 11.5"

PAVEMENT STRUCTURAL SECTION NO. 2

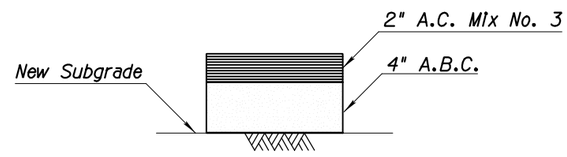
Bopp Rd. & Sarasota Blvd.



Total Thickness = 7"

PAVEMENT STRUCTURAL SECTION NO. 3

Side Streets & Driveways



Total Thickness = 6"

PAVEMENT STRUCTURAL SECTION NO. 4

Paved Pathway

Ana M. Olivares, P.E., Director

Designed	MPK	Date 05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 40990 MATTHEW P. KERSBINER STATE OF ARIZONA DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

Pima County Department of Transportation

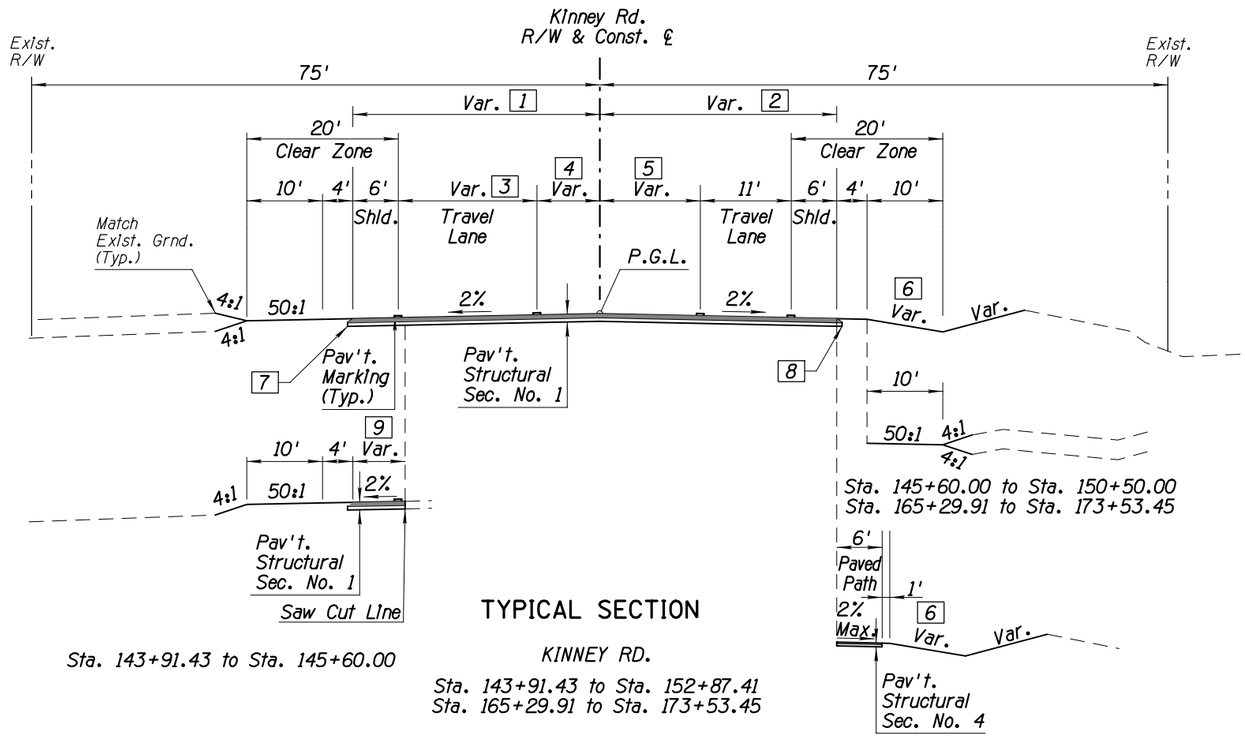
PAVEMENT STRUCTURAL SECTIONS
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet TYP01 of TYP07	Page 06 of 109

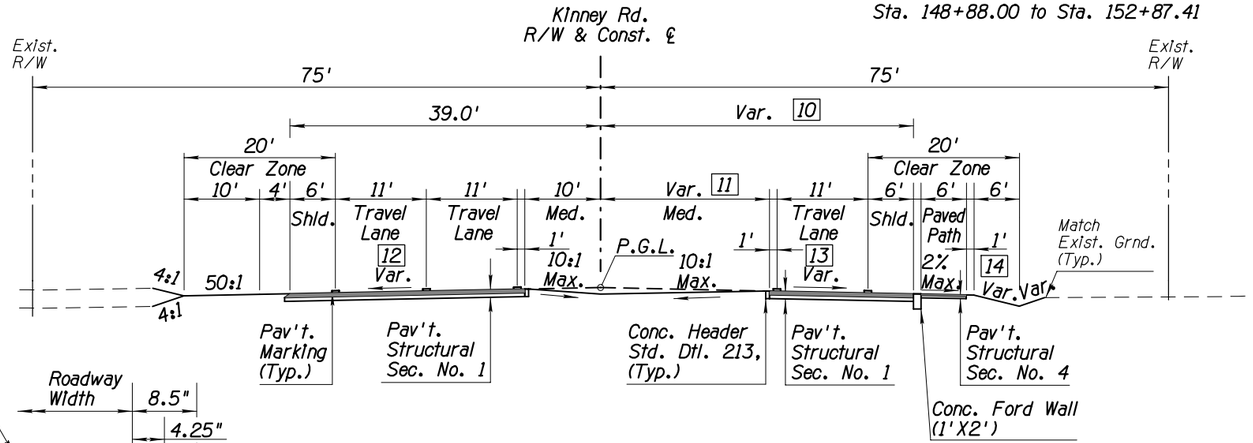
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_TYP01.dgn DATE: 5/24/2018 TIME: 2:18:23 PM kershnerm



TYPICAL SECTION

KINNEY RD.

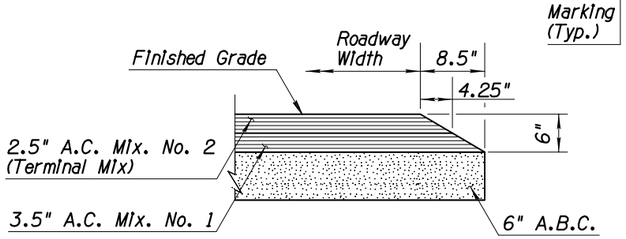
Sta. 143+91.43 to Sta. 152+87.41
Sta. 165+29.91 to Sta. 173+53.45



TYPICAL SECTION

KINNEY RD.

Sta. 152+87.41 to Sta. 157+40.48



SAFETY EDGE DETAIL FOR KINNEY ROAD

N.T.S.

KEY NOTES:

1. Varies from 23.4' at Sta. 143+91.43 to 39.0' at Sta. 151+90.46. 39.0' from Sta. 151+90.46 to Sta. 152+87.41. 28.0' from Sta. 165+29.91 to Sta. 168+00.00. Varies from 28.0' at Sta. 168+00.00 to 20.3' at Sta. 172+00.00. Varies from 20.3' at Sta. 172+00.00 to 20.0' at Sta. 173+53.45.

2. Varies from 24.6' at Sta. 145+60.02 to 33.1' at Sta. 152+87.41. Varies from 35.4' at Sta. 165+29.91 to 19.8' at Sta. 173+53.45.

3. Varies from 11.9' at Sta. 143+91.43 to 22.0' at Sta 152+87.41. 11.0' from Sta. 165+29.91 to 12.0' at Sta. 173+53.45.

4. Median width varies from 5.6' at Sta. 143+91.43 to 11.0' at Sta. 152+87.41. Varies from 18.4' at Sta. 165+29.91 to 0' at Sta. 173+53.45.

5. Varies from 6.0' at Sta. 143+91.43 to 16.1' at Sta. 152+87.41. Varies from 18.4' at Sta. 165+29.91 to 0' at Sta. 173+53.45.

6. Ditch foreslope and backslope varies. See Cross Drainage and Channel Plan and Profile Sheets CC04 and CC05.

7. Safety Edge from Sta. 143+91.43 to Sta. 148+46.46, Sta. 149+45.15 to Sta. 152+87.41, Sta. 165+29.91 to Sta. 167+00.17, Sta. 167+94.17 to Sta. 171+32.94, Sta. 172+84.36 to Sta. 173+53.45. See Detail this sheet. Safety Edge to be provided where there is no other edge treatment.
   Conc. Header from Sta. 171+32.94 to Sta. 172+84.36.

8. Safety Edge from Sta. 145+60.00 to Sta. 147+98.00, Sta. 148+88.00 to Sta. 150+85.00, Sta. 165+29.91 to Sta. 166+99.43, Sta. 173+30.00 to Sta. 173+53.45 See Detail this sheet. Safety Edge to be provided where there is no other edge treatment.
   Conc. Ford Wall (1'X2') from Sta. 150+85.00 to Sta. 152+87.41, Sta. 167+93.43 to Sta. 173+30.00.

9. Varies from 6.0' at Sta. 143+91.43 to 8.9' at Sta. 145+60.00.

10. Varies from 33.1' at Sta. 152+87.41 to 41.0' at Sta. 157+40.48.

11. Median varies from 15.3' at Sta. 152+87.41 to 19.7' at Sta. 157+40.48.

12. Cross slope is 2% from Sta. 152+87.41 to Sta. 156+92.50. Varies from 2% at Sta. 156+92.50 to -1.5% at Sta. 157+15.00. -1.5% from Sta. 157+15.00 to Sta. 157+40.48.

13. Cross slope is 2% from Sta. 152+87.41 to Sta. 156+92.50. Varies from -2% at Sta. 156+92.50 to -0.9% at Sta. 157+40.48.

14. Ditch foreslope and backslope varies. See Cross Drainage and Channel Plan and Profile Sheets CC04 and CC05.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

CAD all hard copies are working copies. Refer to the original signed and sealed plans on file for accuracy and authenticity.

Pima County Department of Transportation

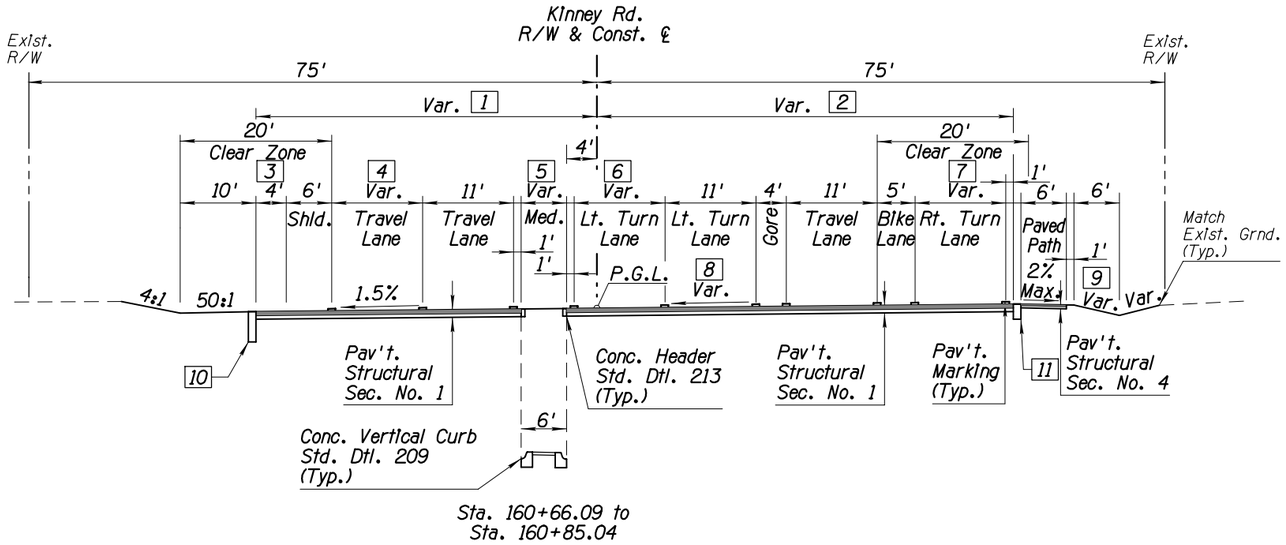
TYPICAL SECTIONS SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet TYP02 of TYP07	Page 07 of 109

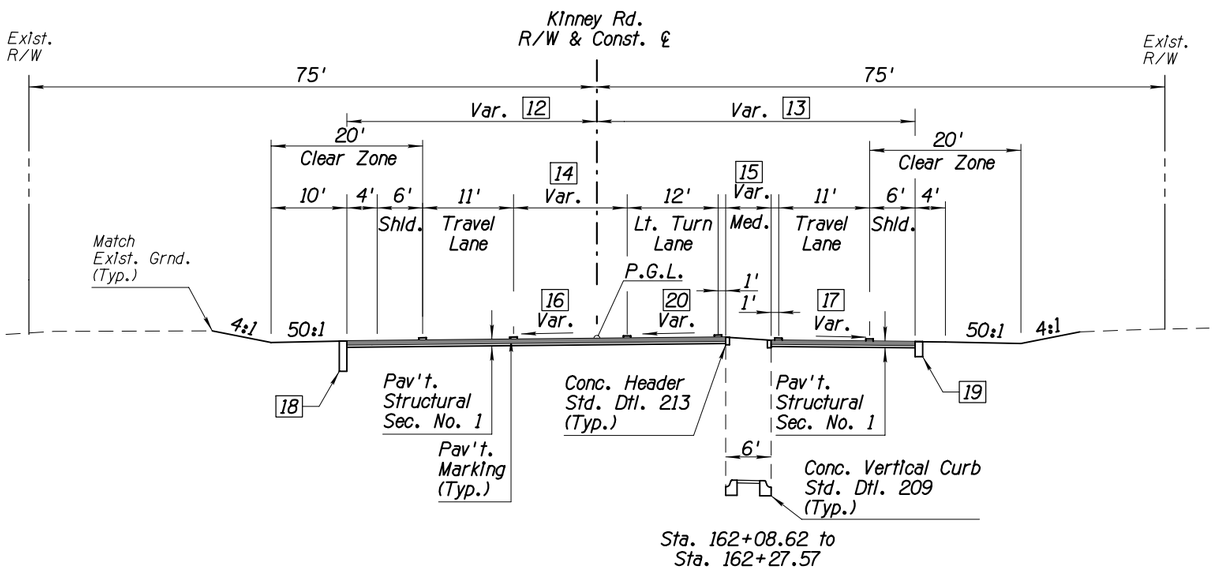
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_TYP02.dgn DATE: 5/24/2018 TIME: 2:18:49 PM kershnerm



TYPICAL SECTION

KINNEY RD.

Sta. 157+40.48 to Sta. 160+85.04
Intersection Opening Sta. 160+85.04 to Sta. 162+08.62



TYPICAL SECTION

KINNEY RD.

Sta. 162+08.62 to Sta. 164+17.29

20 See Staking Plan Sheet ST02.

KEY NOTES:

1. Varies from 39.0' at Sta. 157+40.48 to 51.6' at Sta. 160+56.88.
2. Varies from 41.0' at Sta. 157+40.48 to 56.2' at Sta. 160+85.04.
3. Pavement from Sta. 158+50.00 to Sta. 160+55.88.
4. Travel Lane width is 11.0' from Sta. 157+40.48 to Sta. 160+15.39. Varies from 11.0' at Sta. 160+15.39 to 31.8' at Sta. 160+70.07.
5. Median width varies from 29.7' at Sta. 157+40.48 to 0' at Sta. 160+85.04.
6. Left Turn Lane width varies from 0' at Sta. 157+40.48 to 12.0' at Sta. 157+82.67. 12.0' from Sta. 157+82.67 to Sta. 160+85.04.
7. Right Turn Lane width varies from 0' at Sta. 157+40.48 to 12.0' at Sta. 159+20.48. 12.0' from Sta. 159+20.48 to Sta. 160+85.04.
8. Cross slope varies from -0.9% at Sta. 157+40.48 to 1.5% at Sta. 160+85.04.
9. Ditch foreslope and backslope varies. See Cross Drainage and Channel Plan and Profile Sheets CC04 and CC05.
10. Safety Edge from Sta. 157+40.48 to Sta. 158+50.00. See Safety Edge Detail on Sheet TYP02. Safety Edge to be provided where there is no other edge treatment.
    Conc. Ford Wall (1'X4') from Sta. 158+50.00 to Sta. 160+55.88.
11. Conc. Ford Wall (1'X2') from Sta. 157+40.48 to Sta. 160+59.02.
    Conc. Vert. Curb from Sta. 160+59.02 to Sta. 160+85.04.
12. Varies from 35.2' at Sta. 161+98.62 to 28.0' at Sta. 162+24.54. Varies from 28' at Sta. 162+24.54 to 32' at Sta. 162+28.54. 32' from Sta. 162+28.54 to Sta. 163+98.73. Varies from 32' at Sta. 163+98.73 to 28' at Sta. 164+02.78. 28' from Sta. 164+02.78 to Sta. 164+17.29.
13. Varies from 49.8' at Sta. 161+98.62 to 37.7' at Sta. 164+17.29.
14. 15.0' from Sta. 161+98.62 to Sta. 162+53.06. Varies from 15.0' at Sta. 162+53.06 to 0' at Sta. 164+17.29.
15. Varies from 0' at Sta. 161+98.62 to 17.1' at Sta. 164+17.29.
16. Cross slope is -1.5% from Sta. 161+98.62 to Sta. 163+92.50. Varies from -1.5% at Sta. 163+92.50 to -2% at Sta. 164+15.00. -2% from Sta. 164+15.00 to Sta. 164+16.73.
17. Cross slope is 1.5% from Sta. 161+98.62 to Sta. 162+57.50. Varies from 1.5% at Sta. 162+57.50 to -2% at Sta. 164+15.00. -2% from Sta. 164+15.00 to Sta. 164+16.73.
18. Conc. Vert. Curb from Sta. 161+98.62 to Sta. 162+23.54. Conc. Ford Wall (1'X4') from Sta. 162+23.54 to Sta. 164+02.78. Safety Edge from Sta. 164+02.78 to Sta. 164+16.73. See Safety Edge Detail on Sheet TYP02. Safety Edge to be provided where there is no other edge treatment.
19. Conc. Vert. Curb from Sta. 161+98.62 to Sta. 162+21.98. Conc. Ford Wall (1'X2') from Sta. 162+12.98 to Sta. 164+03.54. Safety Edge from Sta. 164+03.54 to Sta. 164+16.73. See Safety Edge Detail on Sheet TYP02. Safety Edge to be provided where there is no other edge treatment.

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
3253 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

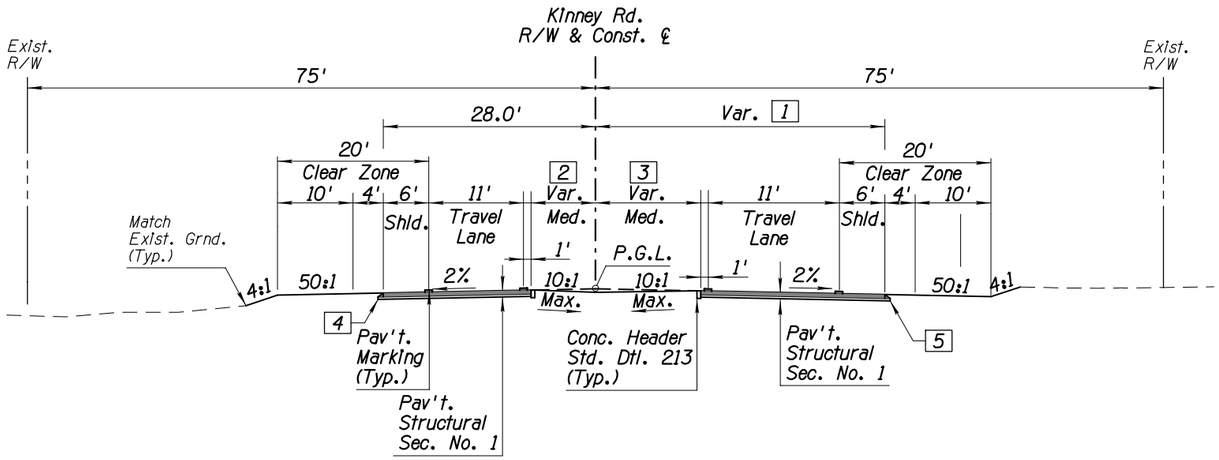
CALL 811 Know what's below. Call before you dig.
ARIZONA 811 BLUE STAKE, INC.
811 Blue Stake, Inc. 1-800-782-5348
Not to be used on projects beyond the scope of this plan

Pima County Department of Transportation

TYPICAL SECTIONS SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

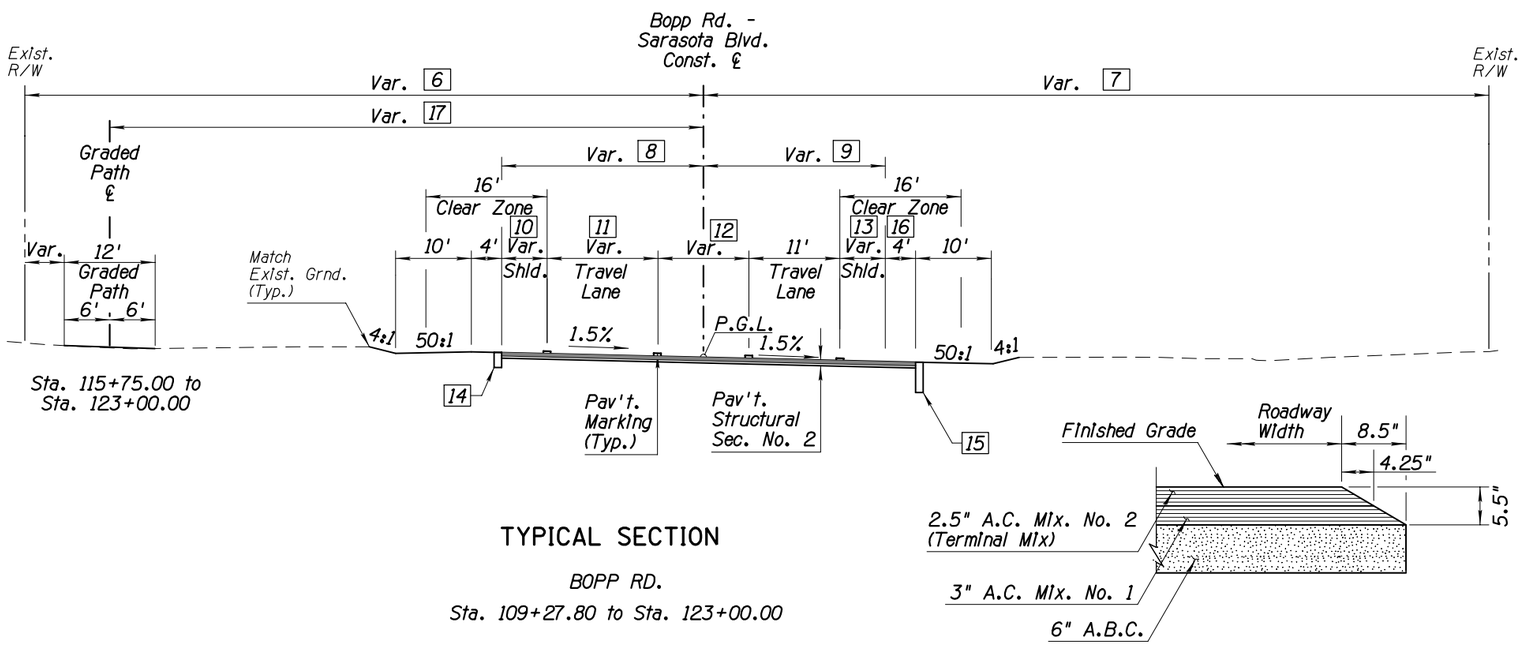
Scale:	N.T.S.	Sheet TYP03 of TYP07	Page 08 of 109



TYPICAL SECTION

KINNEY RD.

Sta. 164+17.29 to Sta. 165+29.91



TYPICAL SECTION

BOPP RD.

Sta. 109+27.80 to Sta. 123+00.00

SAFETY EDGE DETAIL FOR BOPP ROAD AND SARASOTA BOULEVARD

N.T.S.

KEY NOTES:

1. Varies from 37.7' at Sta. 164+17.29 to 35.4' at Sta. 165+29.91.
2. 0' from Sta. 164+17.29 to 164+26.62. Varies from 0' at Sta. 164+26.62 to 10.0' at Sta. 165+26.91.
3. Varies from 19.7' at Sta. 164+17.29 to 0' at Sta. 165+29.91.
4. Safety Edge from Sta. 164+17.29 to Sta. 165+29.91. See Safety Edge Detail on Sheet TYP02. Safety Edge to be provided where there is no other edge treatment.
5. Safety Edge from Sta. 164+17.29 to Sta. 165+29.91. See Safety Edge Detail on Sheet TYP02. Safety Edge to be provided where there is no other edge treatment.
6. Exist. R/W varies from 71.9' at Sta. 109+27.80 to 92.4' at Sta. 123+00.00.
7. Exist. R/W varies from 78.1' at Sta. 109+27.80 to 129.8' at Sta. 123+00.00.
8. Varies from 12.5' at Sta. 109+27.80 to 34.0' at Sta. 123+00.00.
9. Varies from 12.0' at Sta. 109+27.80 to 23.0' at Sta. 123+00.00.
10. Shoulder width varies from 1.0' at Sta. 109+27.80 to 6.0' at Sta. 110+02.95. 6.0' from Sta. 110+02.95 to Sta. 123+00.00.
11. 11' from Sta. 109+27.80 to Sta. 117+50.08. Varies from 11.0' at Sta. 117+50.08 to 22.0' at Sta. 123+00.00.
12. Varies from 0' at Sta. 109+27.80 to 12.0' at Sta. 113+03.33. 12.0' from Sta. 113+03.33 to Sta. 123+00.00.
13. Varies from 1.0' at Sta. 109+27.80 to 6.0' at Sta. 110+02.60. 6.0' from Sta. 110+02.60 to Sta. 123+00.00.
14. Safety Edge from Sta. 109+27.80 to Sta. 111+65.09,
    Sta. 113+65.51 to Sta. 115+36.69,
    Sta. 117+38.20 to Sta. 118+39.15,
    Sta. 120+46.35 to Sta. 123+00.00,
    See Safety Edge Detail on this sheet. Safety Edge to be provided where there is no other edge treatment.
    Conc. Ford Wall (1'X2') from Sta. 111+65.09 to
    Sta. 113+65.51,
    Sta. 115+36.69 to Sta. 117+38.20,
    Sta. 118+39.15 to Sta. 120+46.35.
15. Safety Edge from Sta. 109+27.80 to Sta. 111+65.98,
    Sta. 113+65.54 to Sta. 114+57.23,
    Sta. 117+94.00 to Sta. 118+40.10,
    See Safety Edge Detail on this sheet. Safety Edge to be provided where there is no other edge treatment.
    Conc. Ford Wall (1'X4') from Sta. 111+65.98 to
    Sta. 113+65.54,
    Sta. 115+37.23 to Sta. 117+32.65,
    Sta. 118+40.10 to Sta. 123+00.00.
16. Pavement from Sta. 111+65.98 to Sta. 113+65.54,
    Sta. 115+37.23 to Sta. 117+32.65,
    Sta. 118+40.10 to Sta. 120+47.42.
17. Graded Path ℄ varies from 57.3' to 62.5'

Ana M. Olivares, P.E., Director

			Date
Designed	MPK		05/18
Drawn	MPK		05/18
Checked	CJR		05/18
Proj. Engr.	MPK		05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE Signed 5/24/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig. ARIZONA BLUE STAKE, INC. 602.263.1100 Not Member Utilities Will Not Be Located

Pima County Department of Transportation

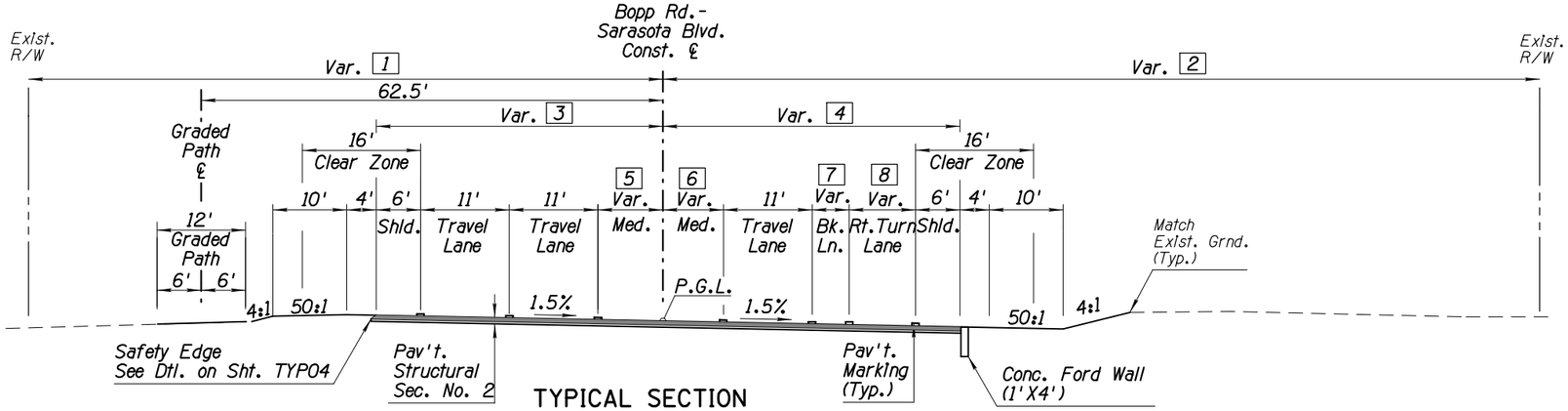
TYPICAL SECTIONS SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

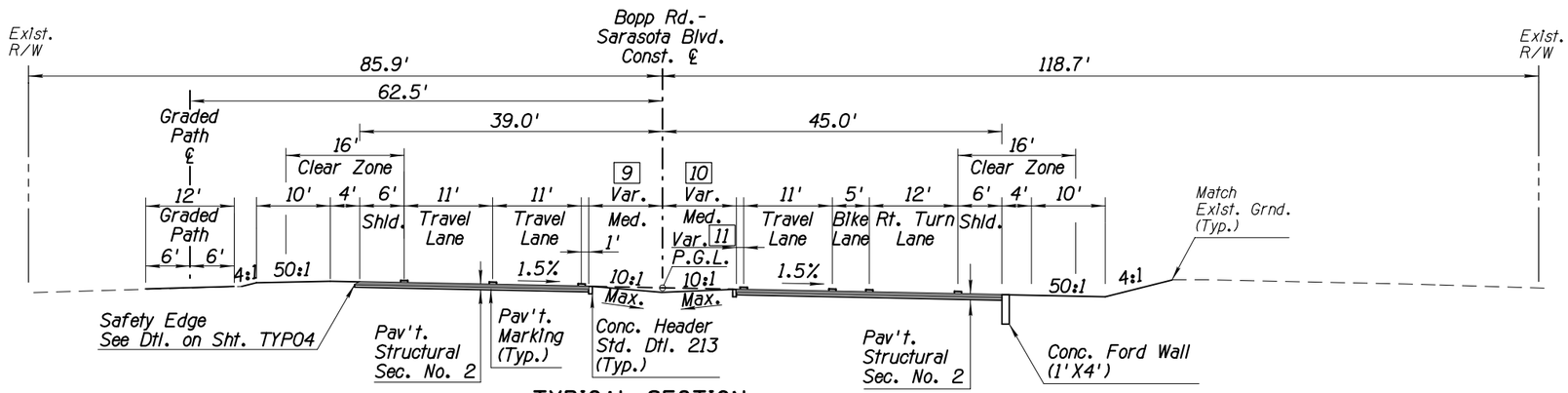
PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: N.T.S. | Sheet TYP04 of TYP07 | Page 09 of 109

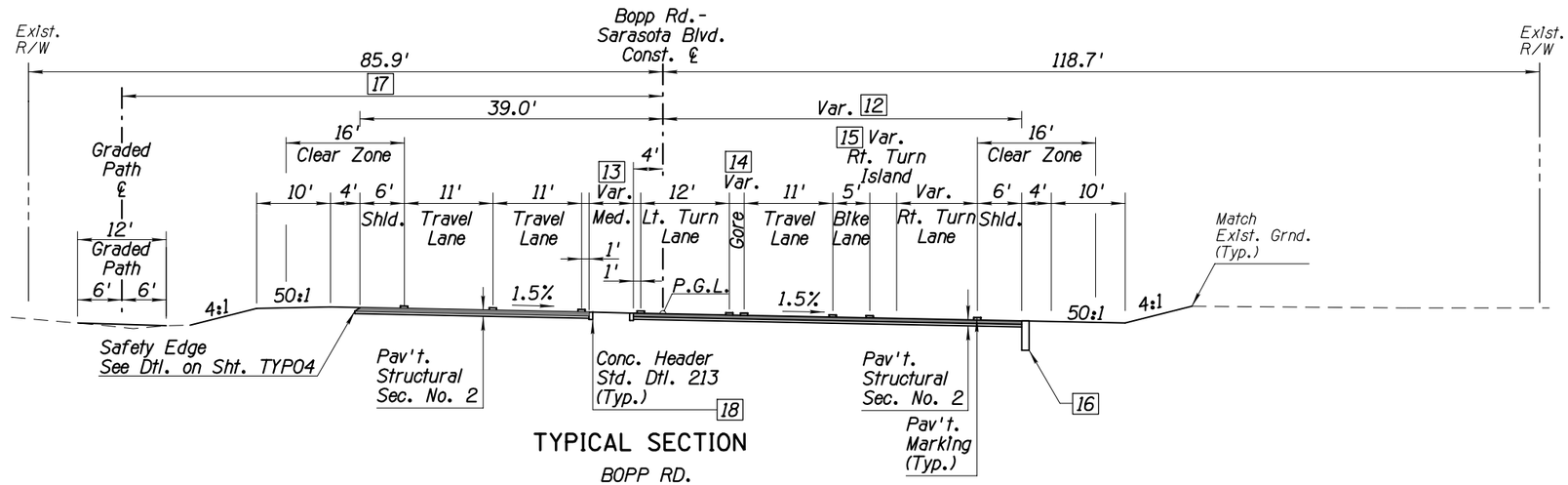
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_TYP04.dgn DATE: 5/24/2018 TIME: 2:19:32 PM kershnerm



TYPICAL SECTION
BOPP RD.
Sta. 123+00.00 to Sta. 127+34.41



TYPICAL SECTION
BOPP RD.
Sta. 127+34.41 to Sta. 128+18.51



TYPICAL SECTION
BOPP RD.
Sta. 128+18.51 to Sta. 129+48.39
Intersection Opening from Sta. 129+48.39 to Sta. 130+66.76

KEY NOTES:

1. Exist. R/W varies from 92.4' at Sta. 123+00.00 to 85.9' at Sta. 127.34.41.
2. Exist. R/W varies from 129.8' at Sta. 123+00.00 to 118.7' at Sta. 127+34.41.
3. Varies from 34.0' at Sta. 123+00.00 to 39.0' at Sta. 127+34.41.
4. Varies from 23.0' at Sta. 123+00.00 to 45.0' at Sta. 127+34.41.
5. 6.0' from Sta. 123+00.00 to Sta. 124+23.58. Varies from 6.0' at Sta. 124+23.58 to 11.0' at Sta. 127+34.41.
6. 6.0' from Sta. 123+00.00 to Sta. 124+23.58. Varies from 6.0' at Sta. 124+23.58 to 11.0' at Sta. 127+34.41.
7. Varies from 0' at Sta. 124+66.66 to 5.0' at Sta. 125+43.60. 5.0' from Sta. 125+43.60 to Sta. 127+34.41.
8. Varies from 0' at Sta. 125+43.60 to 12.0' at Sta. 127+21.96. 12.0' from Sta. 127+21.66 to Sta. 127+34.41.
9. Varies from 10.0' at Sta. 127+34.41 to 7.9' at Sta. 128+18.51.
10. Varies from 10.0'at Sta. 127+34.41 to 0' at Sta. 128+06.49.
11. Left Turn Lane varies from 0' at Sta. 127+34.41 to 13.1' at Sta. 128+18.51.
12. Varies from 45.0' at Sta. 128+18.51 to 86.7' at Sta. 129+48.39.
13. Varies from 7.9' at Sta. 128+18.51 to 0' at Sta. 129+48.39.
14. Gore varies from 0' at Sta. 128+18.51 to 2.0' at Sta. 128+44.44. 2.0' from Sta. 128+44.44 to Sta. 129+34.40
15. Rt. Turn Island varies from 0' at Sta. 128+45.42 to 26.2' at Sta. 129+48.39.
16. Conc. Ford Wall (1'X4') from Sta. 128+18.51 to Sta. 128+80.47. Conc. Vertical Curb from Sta. 128+80.47 to Sta. 129+48.39.
17. Graded Path ℄ varies from 62.5' to 72.3'. 62.5' from Sta. 128+18.15 to Sta. 128+68.38. Varies from Sta. 128+68.38 to Sta. 129+48.39. See Geometric Data Sheets.
18. Conc. Vertical Curb, Std. Dtl. 209, Type 1, from Sta. 129+29.43 to Sta. 129+48.39. See Dtl. RD03.

Ana M. Olivares, P.E., Director

			Date
Designed	MPK		05/18
Drawn	MPK		05/18
Checked	CJR		05/18
Proj. Engr.	MPK		05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 6-30-18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
3555 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.9600 F 520.887.9438
www.aecom.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 6-30-18 EXPIRES 6-30-19

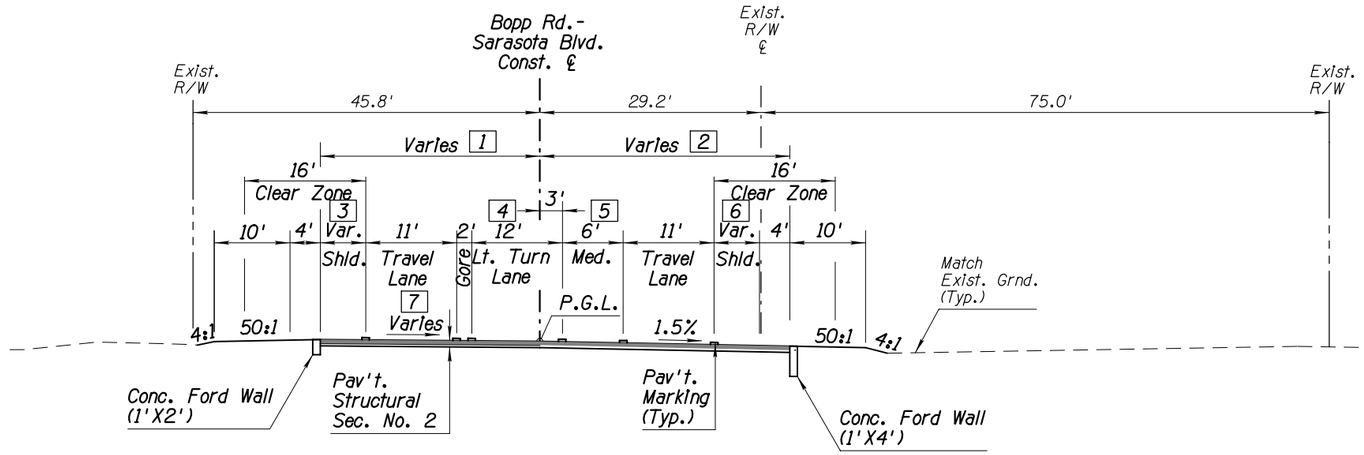
Pima County Department of Transportation

TYPICAL SECTIONS SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet TYP05 of TYP07	Page 10 of 109

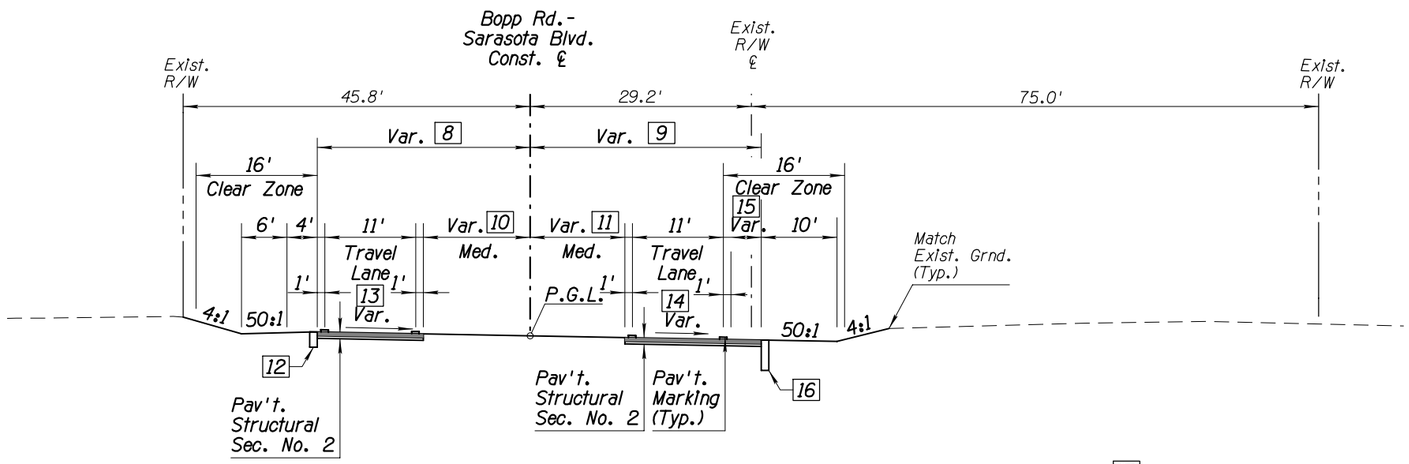
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_TYP05.dgn DATE: 5/24/2018 TIME: 2:19:56 PM kershnerm



TYPICAL SECTION

SARASOTA BLVD.

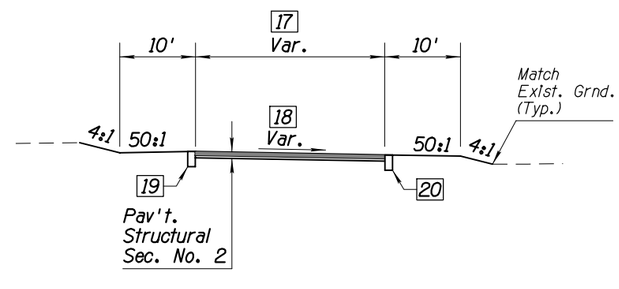
Sta. 130+66.76 to Sta. 134+31.12



TYPICAL SECTION

SARASOTA BLVD.

Sta. 134+31.12 to Sta. 136+50.00



TYPICAL SECTION

BOPP RANCH PL. CUL-DE-SAC

LOOKING EAST

KEY NOTES:

1. 28' from Sta. 130+66.76 to Sta. 133+37.83. Varies from 28' at Sta. 133+37.83 to 23' at Sta. 134+31.12.
2. 32' from Sta. 130+66.76 to Sta. 133+37.98. Varies from 32' at Sta. 133+37.98 to 27' at Sta. 133+88.02. 27' from Sta. 133+88.02 to Sta. 134+31.12.
3. 6' Shoulder from Sta. 130+66.76 to Sta. 133+37.83. Shoulder varies from 6' at Sta. 133+37.83 to 1' at Sta. 133+87.81. 1' Shoulder from Sta. 133+87.81 to Sta. 134+31.12.
4. 12' Lt. Turn Lane from Sta. 130+66.76 to Sta. 132+55.95.
5. 6' Median from Sta. 130+80.68 to Sta. 132+55.95.
6. 6' Shoulder from Sta. 130+80.68 to Sta. 133+37.98. Shoulder varies from 6' at Sta. 133+37.98 to 1' at Sta. 134+31.12.
7. Cross slope varies from 0.1% at Sta. 130+80.76 to 1.5% at Sta. 131+38.86.
8. Varies from 23.0' at Sta. 134+31.12 to 29.6' at Sta. 136+50.00.
9. Varies from 27.0' at Sta 134+31.12 to 27.3' at Sta. 136+50.00.
10. Varies from 10.0' at Sta. 134+31.12 to 16.0' at Sta. 136+50.00.
11. Varies from 10.0' at Sta. 134+31.12 to 13.5' at Sta. 136+50.00.
12. Conc. Ford Wall (1'X2') from Sta. 134+31.12 to Sta. 135+24.98. Safety Edge from Sta. 135+24.98 to Sta. 136+50.00. See Safety Edge Detail on Sheet TYP04. Safety Edge to be provided where there is no other edge treatment.
13. Cross Slope varies from 1.5% at Sta. 134+31.12 to -1.5% at Sta. 136+50.00.
14. Cross Slope varies from 1.5% at Sta. 134+31.12 to 1.5% at Sta. 136+50.00.
15. 4' Bump out from Sta. 134+31.12 to Sta. 134+37.12 Bump out varies from 4' at Sta. 134+37.12 to 0' at Sta. 134+41.12.
16. Conc. Ford Wall (1'X4') from Sta. 134+31.12 to Sta. 135+25.02. Safety Edge from Sta. 135+25.02 to Sta. 136+50.00. See Safety Edge Detail on Sheet TYP04. Safety Edge to be provided where there is no other edge treatment.
17. Width varies from 24.7' to 90.0'. See Geometric Data Sheets.
18. Cross slope varies. See Staking Plan Sheets.
19. Conc. Ford Wall (1'X2') from Sta. 122+69.56, 245.13' Rt. to Sta. 122+84.63, 307.85' Rt. Safety Edge from Sta. 121+33.10, 195.86' Rt. to Sta. 122+69.56, 245.13' Rt. See Safety Edge Detail on Sheet TYP04. Safety Edge to be provided where there is no other edge treatment.
20. Conc. Ford Wall (1'X2') from Sta. 122+07.64, 237.36' Rt. to Sta. 122+72.80, 326.26' Rt. Safety Edge from Sta. 121+39.76, 207.11' Rt. to Sta. 122+07.64, 237.36' Rt. See Safety Edge Detail on Sheet TYP04. Safety Edge to be provided where there is no other edge treatment.

Ana M. Olivares, P.E., Director

			Date
Designed	MPK		05/18
Drawn	MPK		05/18
Checked	CJR		05/18
Proj. Engr.	MPK		05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40990 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

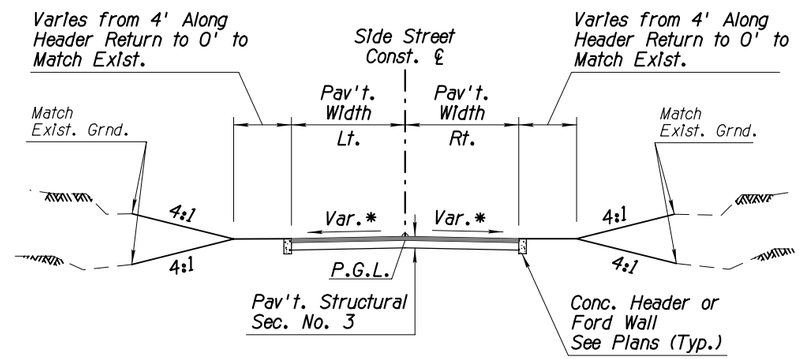
AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
www.aecom.com

Pima County Department of Transportation

TYPICAL SECTIONS SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

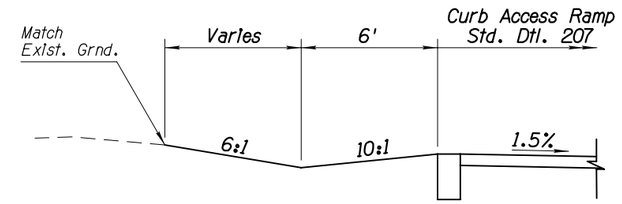
Scale:	N.T.S.	Sheet TYP06 of TYP07	Page 11 of 109



* See Staking Plans

TYPICAL SECTION

SIDE STREETS

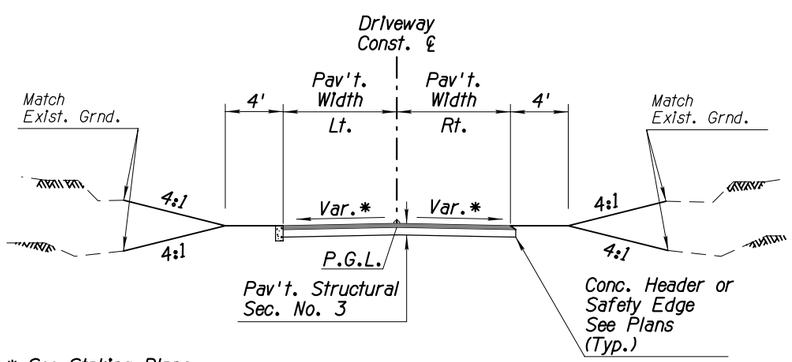


TYPICAL SECTION

KINNEY RD. & BOPP RD. INTERSECTION
GRADING BEHIND WEST CURB RETURN

SIDE STREETS SUMMARY TABLE

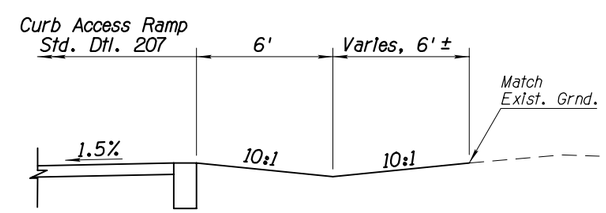
STREET NAME	LOCATION	PAV'T. WIDTH (LT.)	PAV'T. WIDTH (RT.)	DRIVEWAY SHEET NO.	STAKING SHEET NO.
Bopp Rd.	Kinney Rd. Sta. 149+05.77 Lt.	17.3'	17.3'	DP01	ST01
Prism Sky Dr.	Kinney Rd. Sta. 167+47.24 Lt.	12.0'	12.0'	DP02	ST03
Prism Sky Dr.	Kinney Rd. Sta. 167+47.24 Rt.	12.0'	12.0'	DP02	ST03
Selkirk Ave.	Bopp Rd.-Sarasota Blvd. Sta. 115+04.05 Rt.	4.3'	15.7'	DP03	ST03
Sun Splash Dr.	Bopp Rd.-Sarasota Blvd. Sta. 132+89.62 Lt.	12.0'	12.0'	DP04	ST03



* See Staking Plans

TYPICAL SECTION

DRIVEWAYS



TYPICAL SECTION

KINNEY RD. & SARASOTA BLVD. INTERSECTION
GRADING BEHIND NORTH CURB RETURN

DRIVEWAYS SUMMARY TABLE

DRIVEWAY NAME	LOCATION	PAV'T. WIDTH (LT.)	PAV'T. WIDTH (RT.)	DRIVEWAY SHEET NO.	STAKING SHEET NO.
Driveway No. 1	Kinney Rd. Sta. 148+42.40 Rt.	15'	15'	DP01	ST01
Driveway No. 2	Bopp Rd.-Sarasota Blvd. Sta. 117+63.81 Rt.	7'	7'	DP03	ST03
Driveway No. 3	Bopp Rd.-Sarasota Blvd. Sta 121+38.02 Rt.	7'	7'	-	ST03

Ana M. Olivares, P.E., Director

Designed	MPK	Date 05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5-30-18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

ARIZONA811 Call at least two full working days before you begin excavation. Arizona Blue Stake, Inc. 1-800-782-5348 Not to scale - dimensions vary from plan scale

Pima County Department of Transportation

TYPICAL SECTIONS SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet TYP07 of TYP07	Page 12 of 109

CURB, HEADER, SIDEWALK & FORD WALL SUMMARY SHEET

LOCATION	Conc. Curb (L.F.) Std. Dtl. 209, Type 1 Item #9080001	Conc. Header (L.F.) Std. Dtl. 213 Item #9080402	Conc. Ford Wall to Wedge Curb Transition (L.F.) See Dtl. RD-01, Item #9080105	Conc. Curb Terminal Section (EA.) (L=3 FT.) Std. Dtl. 212. See Note 5 Item #9080090	Conc. Sidewalk (S.F.) Std. Dtl. 200 Item #9080201	Conc. Ford Wall (D=2 FT.) (L.F.) ADOT Std. Dwg. C-19.10 Item #9080502	Conc. Ford Wall (D=4 FT.) (L.F.) ADOT Std. Dwg. C-19.10 Item #9080504	REMARKS
KINNEY RD. Lt. Sta.								
148+46.41, 32.30' Lt. to 148+78.13, 54.07' Lt.		41						
149+21.23, 67.92 Lt. to 149+45.15, 34.23' Lt.		49						
158+50.00, 39.00' Lt. to 160+55.88, 51.59' Lt.							209	
160+55.88, 51.59' Lt. to 160+89.30, 119.53' Lt.	72			2	76			
161+81.57, 100.18' Lt. to 162+25.54, 28.00' Lt.	94			2	114	60		
162+25.54, 28.00' Lt. to 164+02.78, 28.00' Lt.							181	
167+00.17, 28.00' Lt. to 167+35.19, 72.79' Lt.		65						
167+59.19, 73.14' Lt. to 167+94.17, 28.00' Lt.		65						
171+32.94, 21.15' Lt. to 172+84.36, 19.87' Lt.		151						
KINNEY RD. Med. Sta.								
160+63.09, 4.00' Lt. to 160+63.09, 10.00' Lt.		1569						
160+63.09, 4.00' Lt. to 160+63.09, 10.00' Lt.	40			2				
162+30.57, 17.00' Rt. to 162+30.57, 23.00' Rt.	40			2				
162+30.57, 17.00' Rt. to 162+30.57, 23.00' Rt.		608						
KINNEY RD. Rt. Sta.								
147+98.00, 25.25' Rt. to 148+88.00, 25.05' Rt.		154						
150+85.00, 29.00' Rt. to 160+66.09, 53.00' Rt.						982		
160+66.09, 53.00' Rt. to 161+10.18, 91.44' Rt.	57			2	69	47		
161+70.59, 97.64' Rt. to 162+23.97, 41.96' Rt.	80			2	283	66		
162+23.97, 41.96' Rt. to 164+03.54, 37.97' Rt.						180		
166+99.43, 31.98' Rt. to 167+35.13, 75.23' Rt.	6	55		1				
167+59.13, 75.24' Rt. to 167+93.43, 31.08' Rt.	4	56		1				
167+93.43, 31.08' Rt. to 173+30.00, 20.24' Rt.						537		
BOPP RD. Lt. Sta.								
111+65.09, 20.24' Lt. to 113+65.51, 23.00' Lt.						200		
115+36.69, 23.00' Lt. to 117+38.20, 23.00' Lt.						200		
118+39.15, 24.74' Lt. to 120+46.35, 28.93' Lt.						200		
SHEET TOTAL	393	2813		14	542	2472	390	

NOTES:

1. ALL STATIONS AND OFFSETS ARE MEASURED TO THE EDGE OF PAVEMENT.
2. ALL CURB LENGTHS DO NOT INCLUDE STORM DRAIN INLET LENGTHS AND SIDEWALK SCUPPERS.
3. REFER TO STD. DTL. 211 FOR CONCRETE CURB CONNECTIONS TO EXISTING CURB.
4. ALL STATIONS AND OFFSETS ARE REFERENCED FROM THE CONSTRUCTION CENTERLINE.
5. STATIONING IS INCLUSIVE OF THE CONCRETE CURB TERMINAL SECTION.
6. SEE GEOMETRIC DATA SHEETS AND STAKING PLANS FOR ADDITIONAL INFORMATION.

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig. ARIZONA 811 Blue Stake, Inc. (602) 263-1100 (520) 623-1065 (928) 526-1065

Pima County Department of Transportation

CURB, HEADER, SIDEWALK & FORD WALL SUMMARY SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet SS01 of SS03	Page 13 of 109

CURB, HEADER, SIDEWALK & FORD WALL SUMMARY SHEET

LOCATION	Conc. Curb (L.F.) Std. Dtl. 209, Type 1 Item #9080001	Conc. Header (L.F.) Std. Dtl. 213 Item #9080402	Conc. Ford Wall to Wedge Curb Transition (L.F.) See Dtl. RD-01, Item #9080105	Conc. Curb Terminal Section (EA.) (L=3 FT.) Std. Dtl. 212. See Note 5 Item #9080090	Conc. Sidewalk (S.F.) Std. Dtl. 200 Item #9080201	Conc. Ford Wall (D=2 FT.) (L.F.) ADOT Std. Dwg. C-19.10 Item #9080502	Conc. Ford Wall (D=4 FT.) (L.F.) ADOT Std. Dwg. C-19.10 Item #9080504	REMARKS
BOPP RD. Med. Sta.								
129+26.43, 10.00' Lt. to 129+26.43, 4.00' Lt.		397						
129+26.43, 10.00' Lt. to 129+26.43, 4.00' Lt.	40			2				
BOPP RD. Traffic Island Sta.								
128+98.00, 31.45' Rt. to 128+98.00, 31.45' Rt.	194							
BOPP RD. Rt. Sta.								
111+65.98, 20.24' Rt. to 113+65.54, 23.00' Rt.							204	
114+57.23, 23.00' Rt. to 115+37.23, 23.00' Rt.		166						
115+37.23, 23.00' Rt. to 117+57.20, 47.42' Rt.							240	
117+70.42, 47.42' Rt. to 117+94.00, 23.00' Rt.		38						
118+40.10, 23.00' Rt. to 122+00.00, 23.00' Rt.						375		
122+00.00, 23.00' Rt. to 128+80.47, 53.27' Rt.							689	
SARASOTA BLVD. Lt. Sta.								
130+97.64, 28.00' Lt. to 132+77.95, 75.27' Lt.			10			203		
133+01.96, 75.90' Lt. to 135+24.98, 25.46' Lt.			10			246		
SARASOTA BLVD. Med. Sta.								
134+41.12, 10.00' Lt. to 134+41.12, 10.00' Rt.		31						
SARASOTA BLVD. Rt. Sta.								
130+91.44, 32.42' Rt. to 135+25.02, 24.62' Rt.							436	
BOPP RANCH PL. CUL-DE-SAC								
122+04.43, 234.08' Rt. to 122+72.80, 326.26' Rt.						132		Sta. referenced from Bopp Rd.-Sarasota Blvd. Const. ℄
122+03.94, 215.46' Rt. to 122+69.95, 245.33' Rt.		152						Sta. referenced from Bopp Rd.-Sarasota Blvd. Const. ℄
122+69.95, 245.33' Rt. to 122+84.63, 307.85' Rt.						69		Sta. referenced from Bopp Rd.-Sarasota Blvd. Constr. ℄
SHEET TOTAL	234	784	20	2		1025	1569	

NOTES:

1. ALL STATIONS AND OFFSETS ARE MEASURED TO THE EDGE OF PAVEMENT.
2. ALL CURB LENGTHS DO NOT INCLUDE STORM DRAIN INLET LENGTHS AND SIDEWALK SCUPPERS.
3. REFER TO STD. DTL. 211 FOR CONCRETE CURB CONNECTIONS TO EXISTING CURB.
4. ALL STATIONS AND OFFSETS ARE REFERENCED FROM THE CONSTRUCTION CENTERLINE.
5. STATIONING IS INCLUSIVE OF THE CONCRETE CURB TERMINAL SECTION.
6. SEE GEOMETRIC DATA SHEETS AND STAKING PLANS FOR ADDITIONAL INFORMATION.

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 ARIZONA U.S.A. EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig. ARIZONA BLUE STAKE, INC. 1-800-782-5348

Pima County Department of Transportation

CURB, HEADER, SIDEWALK & FORD WALL SUMMARY SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: N.T.S. | Sheet SS02 of SS03 | Page 14 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_CGS02.dgn DATE: 5/24/2018 TIME: 2:22:09 PM kershnerm

BOX CULVERT DESCRIPTION / BOX CULVERT END TREATMENT / LENGTH OF BARREL & BARREL EXTENSIONS / APPROXIMATE QUANTITIES

Plan Reference Number ◯ & ⬢	Structure Number	New	Extend	Number of Barrels	Barrel Span (0.0)	Barrel Height (0.0)	Culvert Length (0.0)	Skew (Degree) (0)	SD 6.01-1, 6.01-2 Misc Details	SD 6.01-3 Extension Details	◪ Standard or Detail	▲ Location	Inlet Wings	Outlet Wings	◪ Standard or Detail	Apron	◪ Standard or Detail	Scour/Bank Protection	◪ Standard or Detail	Energy Dissipators	Detail	Linear Feet (0.0) ▲ Left of ℄ I	II	III	IV	V	V	IV	III	II	I ▲ Right of ℄	◑ Reinforcing Steel (0) Lbs.	◑ Place Dowels Ea.	◑ Class S Concrete f'c=3,000 PSI Cubic Yards	◑ Remove Str Concrete (0)	◑ Structural Excavation (0)	◑ Structure Backfill (0)	Berm Embankment (0)	REMARKS
1		X		2	10	3	127	0° Rt	X		SD 6.02	Left		X	RD06							62										22184	N/A	128	0	378	142	N/A	Omit Inlet Cutoff Wall
Station: 159+81 Kinney Rd.												Right	X		RD05																65	23257	N/A	134	0	397	148	N/A	
Existing: N/A																														Box Culvert Total	45441	N/A	262	0	775	290	N/A	
												Left																											
Station:												Right																											
Existing:																														Box Culvert Total									
												Left																											
Station:												Right																											
Existing:																														Box Culvert Total									

NOTE:
THE ZEROS IN PARENTHESES (0, 0.0 & 0.00) INDICATE THE DIMENSIONAL PRECISION FOR THAT COLUMN

◑ TOTALS SHOWN FOR THE BOX CULVERT INCLUDE THE QUANTITIES FOR HEADWALLS, WINGS, APRONS, CURBS, CUT-OFF WALLS AND LAPS AT CONSTRUCTION JOINTS.

NOTE:
FOR STRUCTURAL EXCAVATION, STRUCTURE BACKFILL PLACEMENT AND MEASUREMENT, SEE STRUCTURE DETAIL DRAWING SD 6.01 (4 OF 5)

◪ BRIDGE GROUP STRUCTURE DETAIL DRAWINGS SD 6.01 TO SD 6.11

▲ Construction ℄ Looking Ahead

NOTE:
THE ZEROS IN PARENTHESIS (0, 0.0 & 0.00) IN THE HEADING OF SOME OF THE COLUMNS ARE THE RECOMMENDED PRECISION OF THE VALUE TO BE ENTERED IN THE COLUMN.

NOTE:
FOR PIPE CULVERT PLACEMENT SEE ADOT STD. DWG. C-13.15

NOTE:
PIPE OPTIONS SELECTED ARE THOSE REQUIRED TO MEET MINIMUM SERVICE LIFE. SHADED PIPE OPTION FIELDS ARE NOT ALLOWABLE ALTERNATES.

CAP - CORRUGATED ALUMINUM PIPE
RCP - REINFORCED CONCRETE PIPE
NRCP - NON-REINFORCED CONCRETE PIPE
NRCIPCP - NON-REINFORCED CAST-IN-PLACE CONCRETE PIPE
CHDPEPP - CORRUGATED HIGH DENSITY POLYETHYLENE PLASTIC PIPE

PIPE CULVERT DESCRIPTION / PIPE CULVERT END TREATMENT / QUANTITIES

Station	Plan Ref No.	◒ Controlling Fill Height Range	Size, Corrugated (In.)	Size, Smooth (In.)	Length (0) (Ft.)	Skew (0) (Degree)	◪ Corrugation	Wall Thickness (0.00)	Uncoated	Bit. Coated	Class - Non Trench	Class - Trench	Class	Min Wall Thickness (0)	AASHTO M-294 Type C	AASHTO M-294 Type S	Pipe Bid Item *	C-13.20 & C-13.25	Detail -	Size, (In) Manhole	Standard or Detail	S-Single / D-Double	Location	D (0.0)	L Wing (0.0)	L 18" Slotted Drn (0)	L 24" Slotted Drn (0)	Type	Elev. (0.00)	Inlet Depression Grate (Ft.) Depth (In.)	Inlet Depression Grate (Ft.) L (0.0) (Ft.)	Pipe Exc (0)	Pipe Bk-fl (0) C-13.15	Drn Exc (0)	Berm/Dike Emb (0)	REMARKS
164+77 Kinney Rd.	1	1	N/A	45x29	111	30						IV									RD07											134	54			H.E.R.C.P

FILL HEIGHT RANGE TABLE (Ft.)													
RANGE NO.		1	2	3	4	5	6	7	8	9	10	11	12
FILL	>	1	3	5	8	11	15	20	25	30	40	55	70
HEIGHT (Ft.)	≤	3	5	8	11	15	20	25	30	40	55	70	90

◒ SHOULD FIELD CONDITIONS VARY FROM THE RANGE INDICATED, CONTACT DESIGN FOR RE-EVALUATION OF PIPE DESIGN REQUIREMENTS.

◪ PIPE CORRUGATION			
A	2⅔x½	D	6x2
B	3x1	E	3x1 or 9x2½
C	9x2½		

NEW BOX CULVERT AND PIPE CULVERT SUMMARY SHEET

Scale: N/A N/A | Sheet SS03 of SS03 | Page 15 of 109

DATE: 5/23/2018 TIME: 12:26:34 PM _USERNAME_

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001.sum01.dgn

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

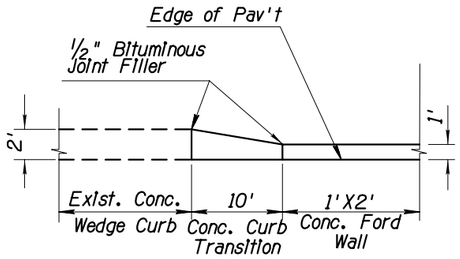
		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

Pima County Department of Transportation

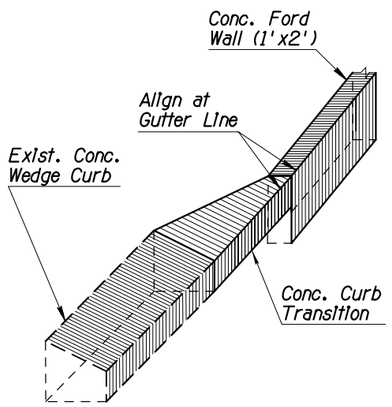
CULVERT SUMMARY SHEET
PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS
PROJECT NO. 4KINBO

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

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO



PLAN

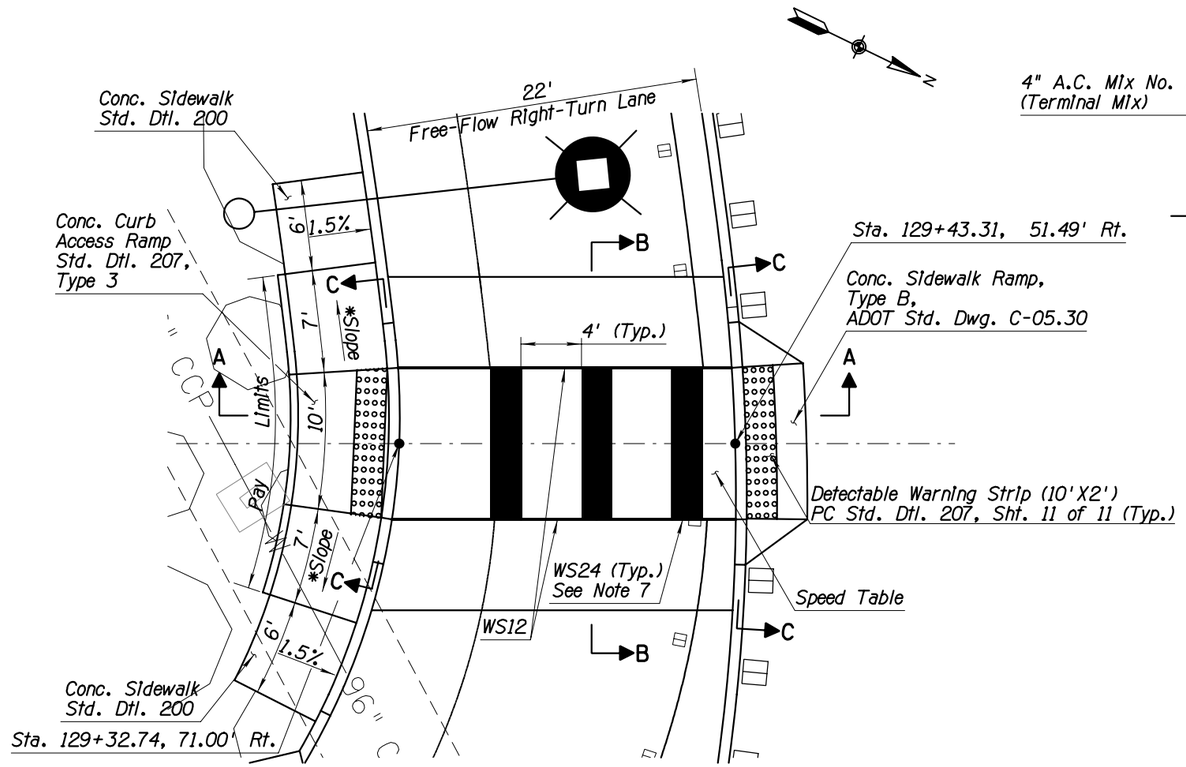


PERSPECTIVE

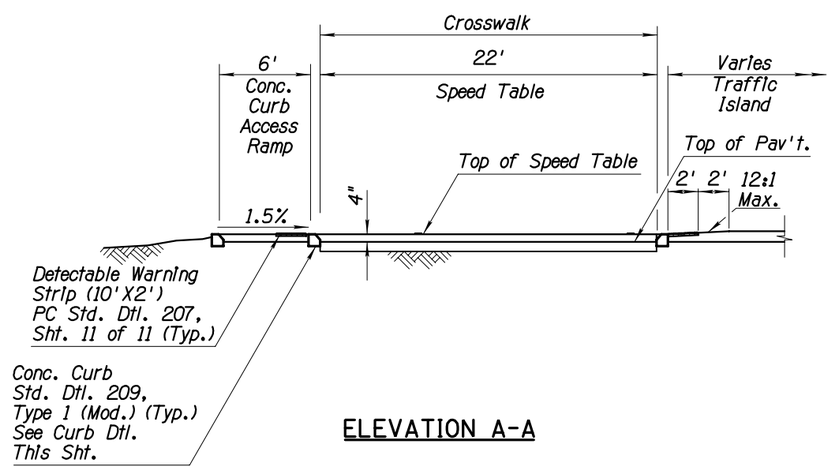
NOTE:
1. This curb transition shall be paid for under Bid Item No. 9080105, Concrete Curb Transition.

DETAIL RD01

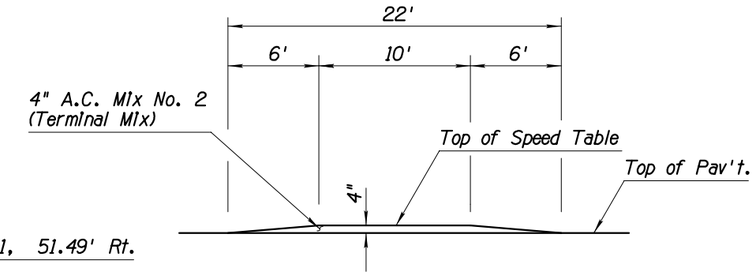
CURB TRANSITION SECTION
CONCRETE WEDGE CURB TO
CONCRETE FORD WALL



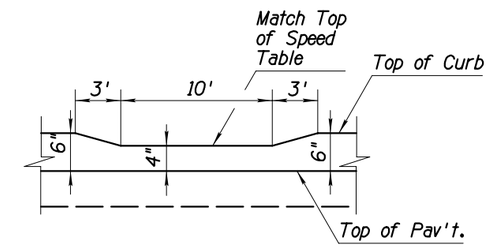
PLAN



ELEVATION A-A



SECTION B-B



SECTION C-C

CURB DETAIL

NOTES:
1. Stations and offsets are referenced from Bopp Rd.-Sarasota Blvd. Const. ℄, unless otherwise noted.
2. For additional information for the speed table, see Sheet No. 5-19 of the PC/COT Pavement Marking Design Manual.
3. The speed table shall be paid for under Bid Item No. 4060201, Asphaltic Concrete (Speed Table).
4. The concrete curb access ramp shall be paid for under Bid Item No. 9080282, Curb Access Ramp, Std. Dtl. 207, Type 3.
5. The concrete sidewalk ramp shall be paid for under Bid Item No. 9080295, Concrete Sidewalk Ramp, Type B (C-05.30).
6. *Slope max. 12:1 (8.33%).
7. See Sheet No. 5-16 of the PC/COT Pavement Marking Design Manual for additional information on the pavement marking for the speed table.
8. The concrete sidewalk shall be paid for under Bid Item No. 9080201, Concrete Sidewalk.

DETAIL RD02

SPEED TABLE & CONCRETE
CURB ACCESS RAMPS DETAILS

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

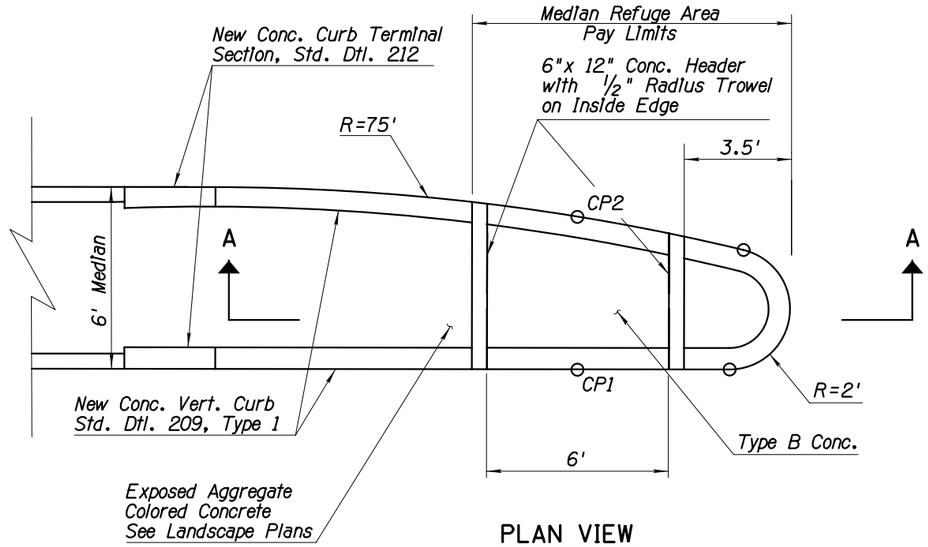
AECOM
TRANSPORTATION
AECOM USA, Inc.
3555 E. MILETO MORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

Pima County Department of Transportation
DETAIL SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

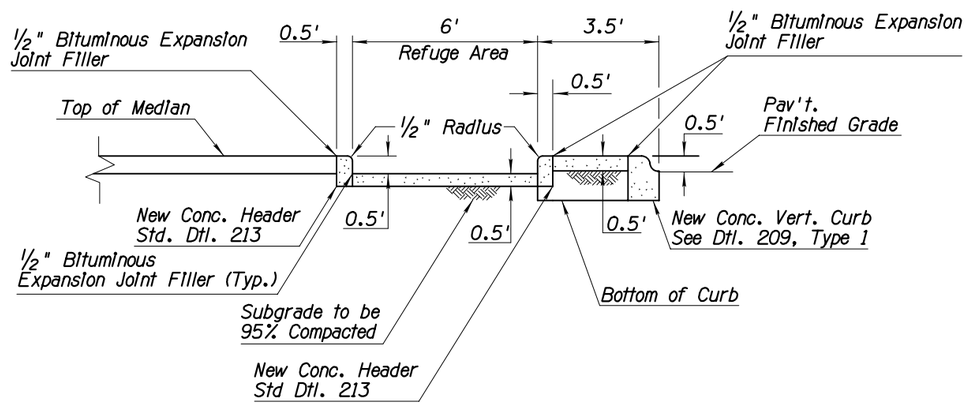
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1" = 20' Horiz. 1" = 4' Vert. | Sheet RD01 of RD09 | Page 16 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_RD01.dgn DATE: 5/24/2018 TIME: 2:22:41 PM kershnerm



PLAN VIEW



SECTION A-A

NOTES:
1. See Std. Dtl. 207 for joint requirements.
2. This median refuge area median nose shall be paid for under Bid Item No. 9080286, Median Refuge Area (Type 2).
3. See Geometric Data Sheets and Staking Plan Sheets for additional information.
4. Control points (CPX) represents the midpoint of the ramp.

MEDIAN REFUGE AREA MEDIAN NOSE CONTROL DATA

CONTROL POINT	STATION & OFFSET	ELEVATION	SLOPE BETWEEN CONTROL POINTS MEDIAN REFUGE SLOPE
CP1	Bopp Rd. Sta. 129+41.40, 4.00' Lt.	2607.24	1.19%
CP2	Bopp Rd. Sta. 129+41.40, 9.06' Lt.	2607.30	

DETAIL RD03

MEDIAN REFUGE

Scale: N.T.S. | Sheet RD02 of RD09 | Page 17 of 109

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
555 E. WILMORE RD, STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

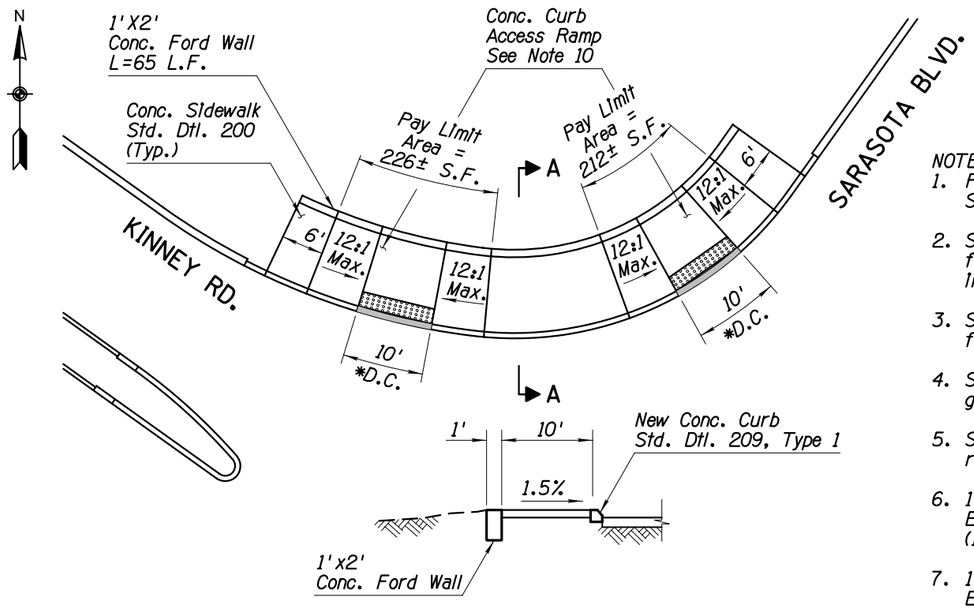
Call at least two full working days before you dig in Arizona 1-800-STAKE-IT (Arizona Blue Stake, Inc.) Or visit our website: azbluestake.com

Pima County Department of Transportation

DETAIL SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_RD02.dgn DATE: 5/24/2018 TIME: 2:23:02 PM kershnerm

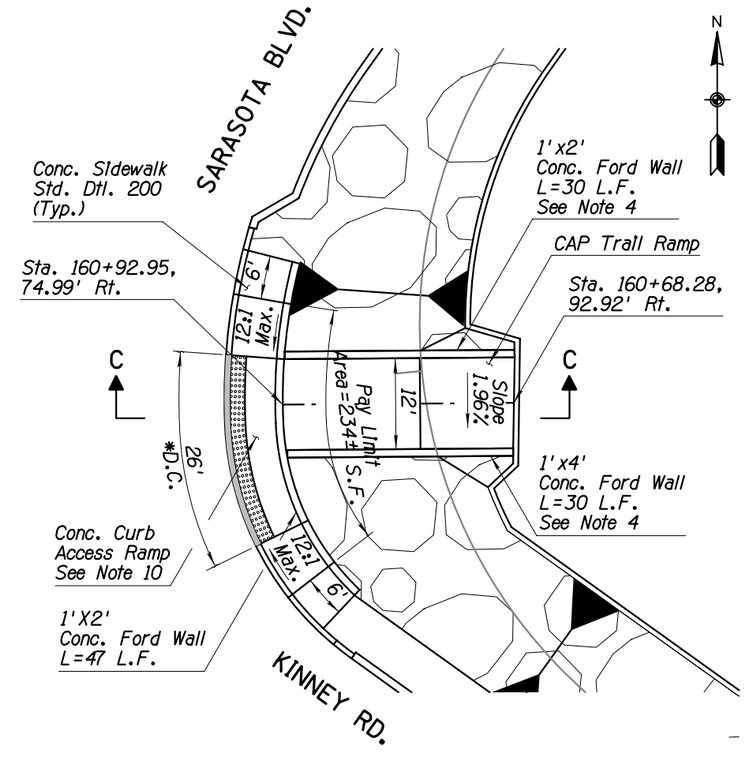


SECTION A-A
N.T.S.

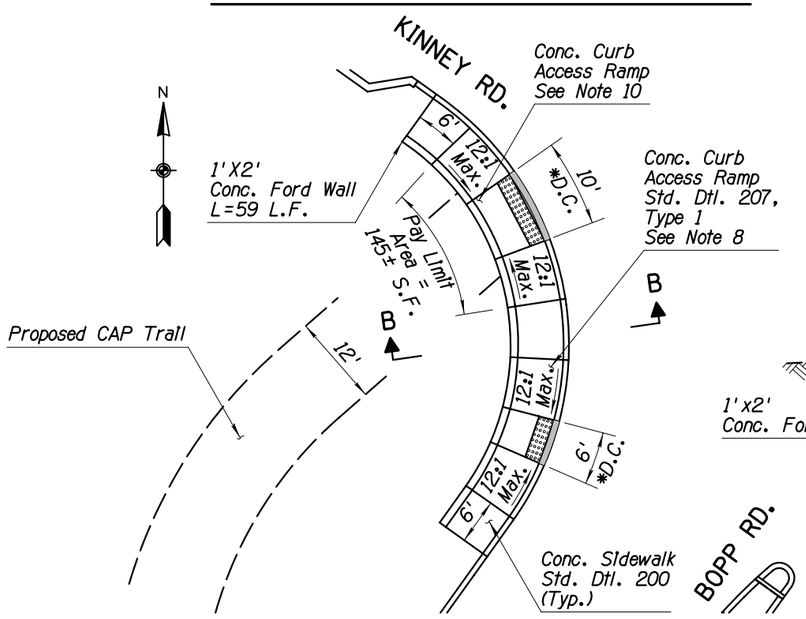
RAMP DETAILS AT NORTHEAST CORNER OF KINNEY RD. & SARASOTA BLVD.

NOTES:

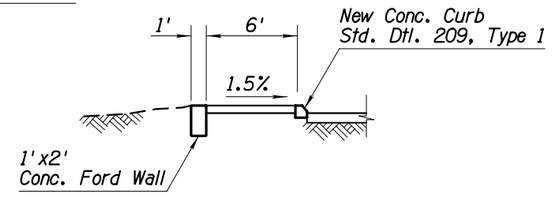
1. For additional information, See Std. Dtl. 207, Type 1 Double.
2. See Roadway Plan and Profile Sheets for ramp locations, quantities and pay item information.
3. See Staking Plan and Geometric Data Sheets for additional information.
4. See Drainage Sheet CC05 for staking of finished grade of ford walls.
5. See Std. Dtl. 206 for additional information regarding CAP Trail ramp.
6. 1'X2' Concrete ford walls shall be paid under Bid Item No. 9080502, Concrete Ford Wall (1'X2').
7. 1'X4' Concrete ford walls shall be paid under Bid Item No. 9080504, Concrete Ford Wall (1'X4').
8. Curb access ramp shall be paid under Bid Item No. 9080280, Curb Access Ramp, Std. Dtl. 207, Type 1.
9. CAP Trail Ramp shall be paid under Bid Item No. 9080301, Concrete Driveway Apron.
10. Curb access ramps shall be paid under Bid Item No. 9080290, Curb Access Ramp.



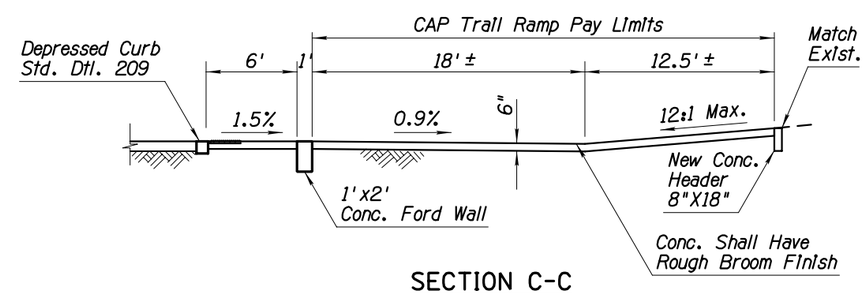
* Depressed Curb



RAMP DETAILS AT NORTHWEST CORNER OF KINNEY RD. & BOPP RD.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

RAMP DETAILS AT SOUTHEAST CORNER OF KINNEY RD. & SARASOTA BLVD.

DETAIL RD04

ADA RAMP DETAILS

Scale: 1" = 20' Horiz. 1" = 4' Vert.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438

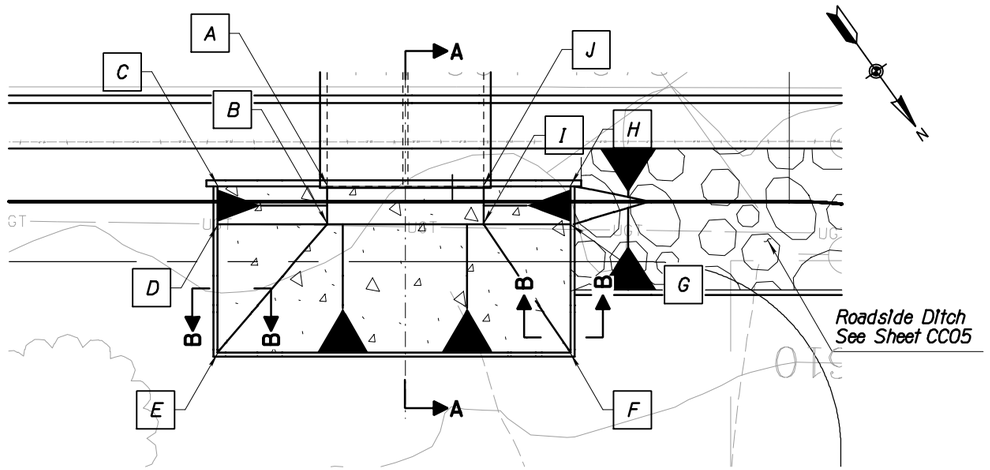
www.aecom.com

ARIZONA811 BLUE STAKE, INC. Call at least two full working days before you begin excavation. Arizona Law requires 48 hours notice before excavation. Visit Bluestake.com or Arizona811.com

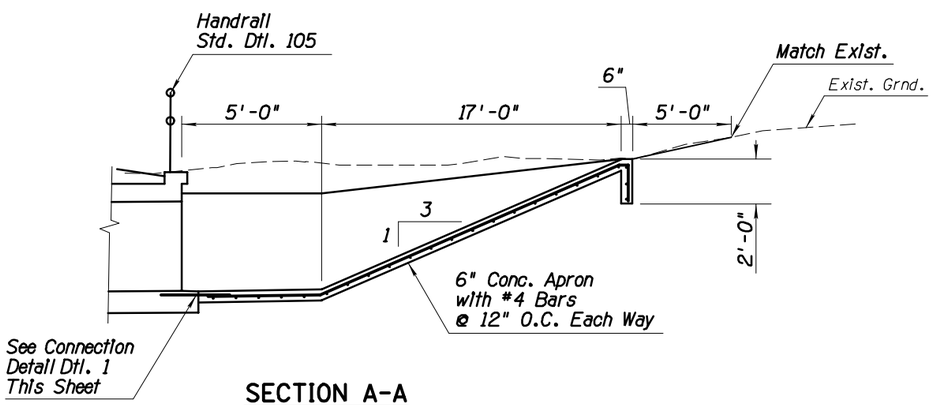
Pima County Department of Transportation

DETAIL SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

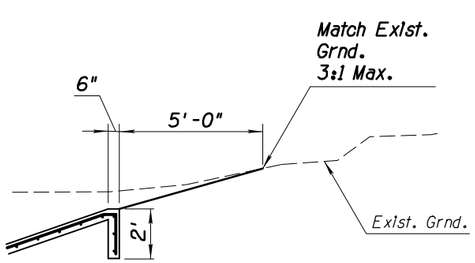
PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO



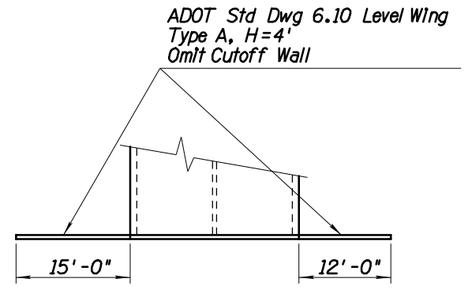
CULVERT INLET PLAN
N.T.S.



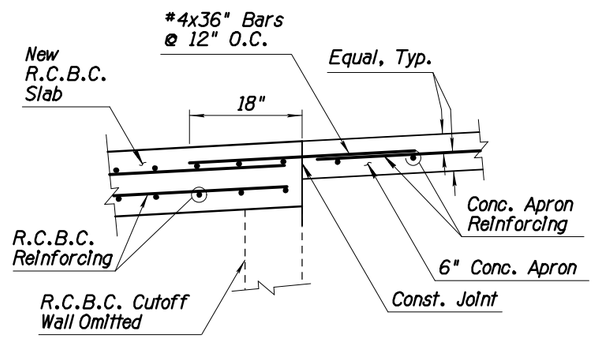
SECTION A-A
N.T.S.



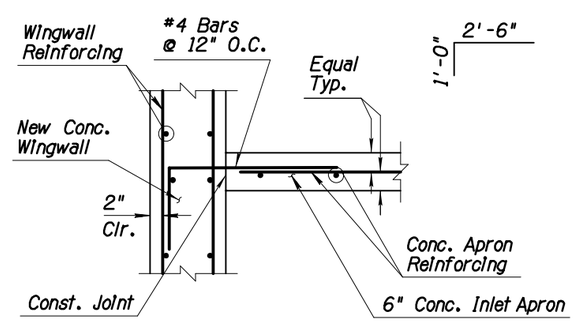
SECTION B-B
N.T.S.



MODIFIED WINGWALL PLAN
N.T.S.



DETAIL 1
CONNECTION AT R.C.B.C. SLAB
N.T.S.



DETAIL 2
CONNECTION AT WINGWALL
N.T.S.

APRON HORIZONTAL CONTROL

ID	STATION/OFFSET	ELEVATION
A	159+70.56, 65.00' Rt.	2603.95
B	159+70.56, 70.00' Rt.	2603.98
C	159+56.06, 65.00' Rt.	2608.78
D	159+56.06, 70.00' Rt.	2608.81
E	159+56.06, 87.00' Rt.	2609.65
F	160+02.72, 87.00' Rt.	2609.65
G	160+02.72, 70.00' Rt.	2608.81
H	160+02.72, 65.00' Rt.	2608.78
I	159+91.22, 70.00' Rt.	2603.98
J	159+91.22, 65.00' Rt.	2603.95

All Stations and Offsets are Measured from Kinney Road R/W & Const. ℄ and to the Inside Edge of the Apron Toe Down.

NOTES:

1. See ADOT Std. Dwg. No.s 6.01 and 6.10 for Additional Construction Details.
2. Concrete Apron Shall be Paid Under Item #6010721.
3. Handrail Shall be Paid Under Item 9330008.

DETAIL RD05
BOX CULVERT INLET DETAILS

Scale:	N/A	Sheet RD04 of RD09	Page 19 of 109

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

Pima County Department of Transportation

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

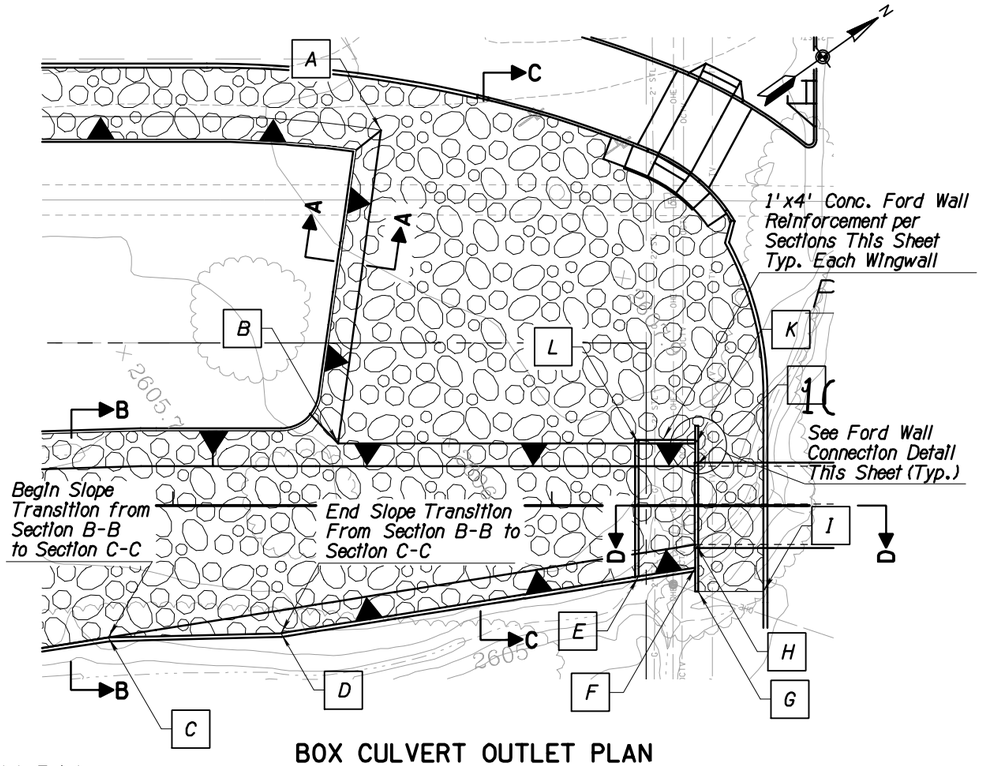
DETAIL SHEETS
PIMA COUNTY-BOPP RD.-SARASOTA
BLVD. AT KINNEY RD. IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

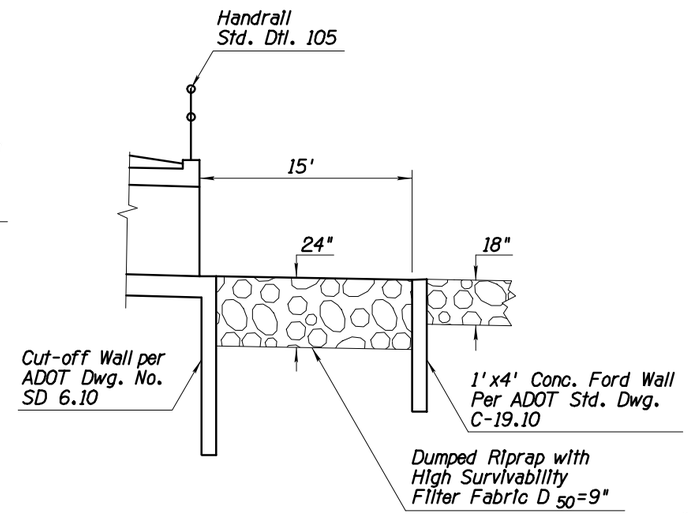
FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-dt01.dgn

DATE: 5/23/2018 TIME: 12:27:02 PM _USERNAME_



BOX CULVERT OUTLET PLAN

N.T.S.



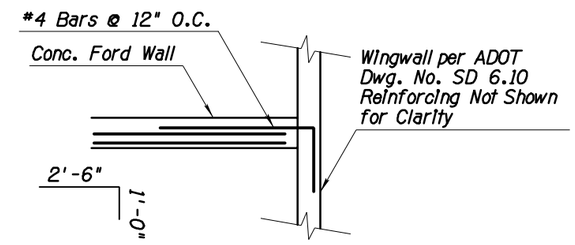
SECTION D-D

N.T.S.

RIPRAP APRON HORIZONTAL CONTROL

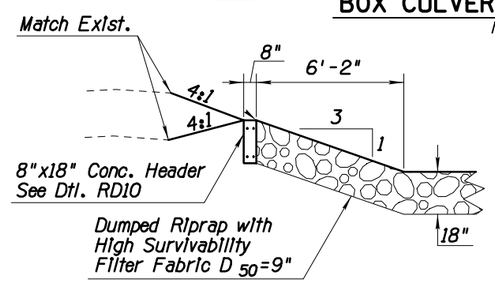
ID	STATION/OFFSET	ELEVATION
A	160+80.00, 145.02' Lt.	2604.38
B	159+97.39, 156.04' Lt.	2603.76
C	159+46.00, 217.03' Lt.	2601.33
D	159+47.13, 171.45' Lt.	2603.61
E	159+62.10, 77.00' Lt.	2604.13
F	159+64.48, 62.00' Lt.	2604.21
G	159+58.14, 61.25' Lt.	2606.56
H	159+70.64, 62.00' Lt.	2602.21
I	159+58.14, 44.00' Lt.	2606.56
J	159+91.14, 62.00' Lt.	2602.21
K	159+97.14, 62.00' Lt.	2604.21
L	159+97.14, 77.00' Lt.	2604.13

All Stations and Offsets are Measured from Kinney Road R/W & Const. ℄ and to the Inside Edge of the Apron Toe Down.



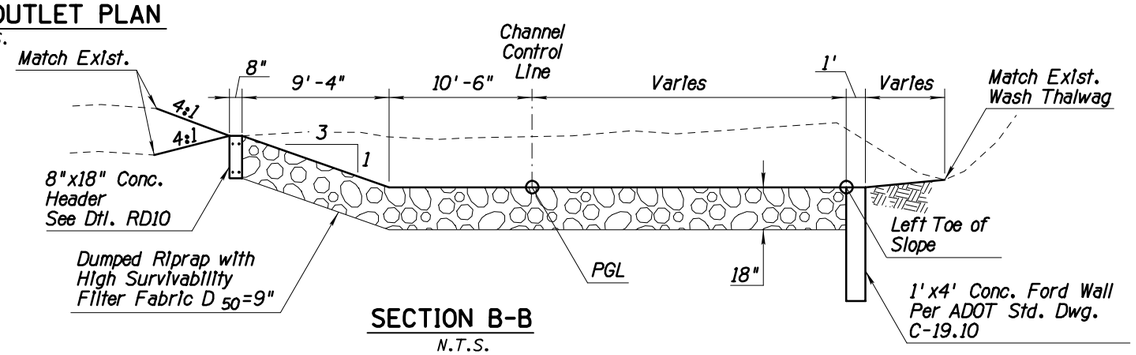
FORD WALL CONNECTION DETAIL

N.T.S.



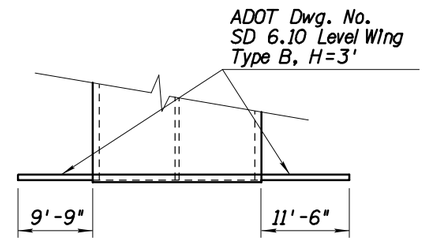
SECTION A-A

N.T.S.



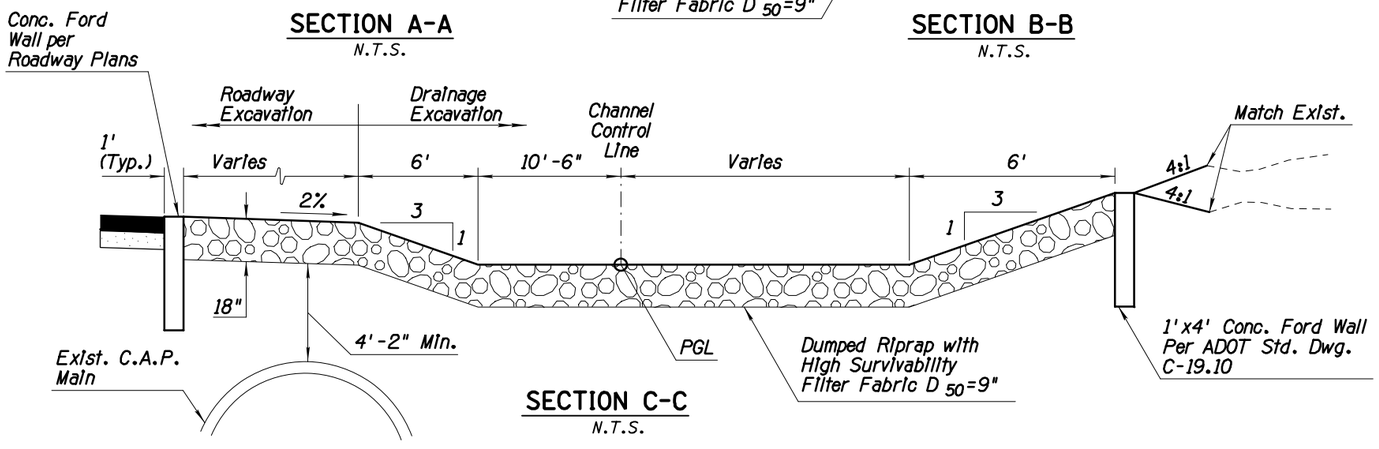
SECTION B-B

N.T.S.



MODIFIED WINGWALL PLAN

N.T.S.



SECTION C-C

N.T.S.

NOTES:

1. See ADOT Std. Dwg. No.s SD 6.01 and SD 6.10 for Additional Construction Details.
2. See Detail RD10 for Riprap Gradation Table.
3. Concrete Ford Wall (1'x4') to be Paid Under Item No. 9080504.
4. Riprap (Dumped) to be Paid Under Item No. 9130001.
5. Concrete Header (Special) to be Paid Under Item No. 9080403.

DETAIL RD06

BOX CULVERT OUTLET DETAILS

Scale:	N/A	Sheet RD05 of RD09	Page 20 of 109

Pima County Department of Transportation

Ana M. Olivares, P.E. Director

No.	Revision Description	Engineer	Date

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

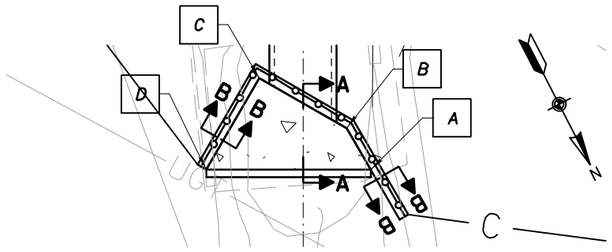
SCE ENGINEERING 510 E 4TH STREET TUCSON, AZ 85705 520-405-7353

DETAIL SHEETS PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

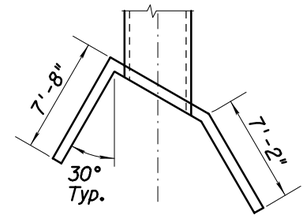
FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-dt02.dgn

DATE: 5/23/2018 TIME: 12:27:24 PM _USERNAME_



PIPE CULVERT STA 164+77 INLET PLAN

N.T.S.



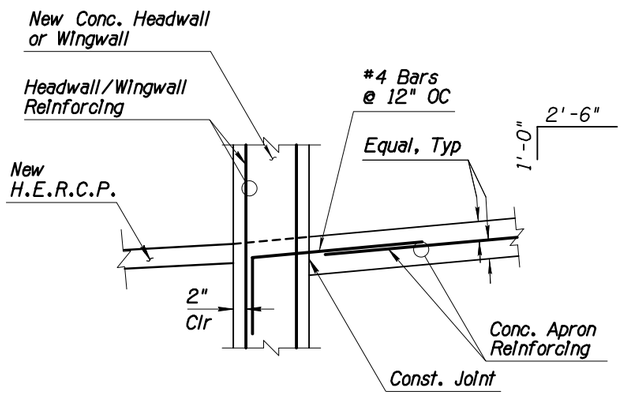
MODIFIED INLET WINGWALL PLAN

N.T.S.

APRON HORIZONTAL CONTROL

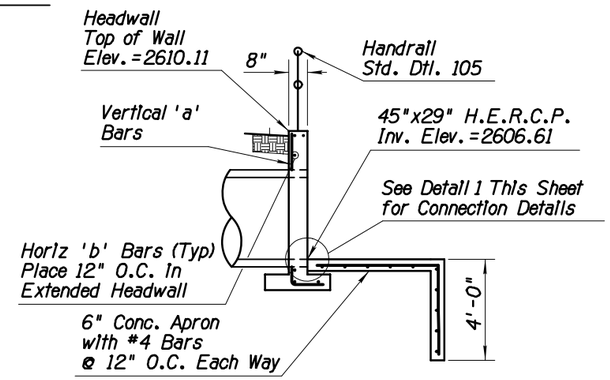
ID	STATION/OFFSET	ELEVATION
A	165+13.04, 53.62' Rt.	2606.61
B	165+03.28, 52.02' Rt.	2606.61
C	165+03.65, 52.02' Rt.	2606.61
D	165+03.64, 59.02' Rt.	2606.61
E	164+38.65, 54.04' Lt.	2606.31
F	164+42.29, 47.72' Lt.	2606.31
G	164+48.35, 44.22' Lt.	2606.31
H	164+54.98, 44.22' Lt.	2606.31
I	164+55.00, 51.22' Lt.	2606.31
J	165+79.72, 60.40' Lt.	2606.31

All Stations and Offsets are Measured from Kinney Road R/W & Const. ℄ and to the Inside Edge of the Apron Toe Down.



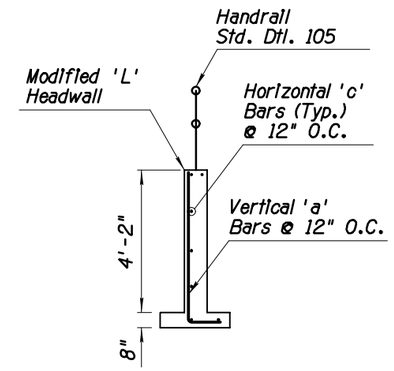
DETAIL 1 CONNECTION AT HEADWALL OR WINGWALL

N.T.S.



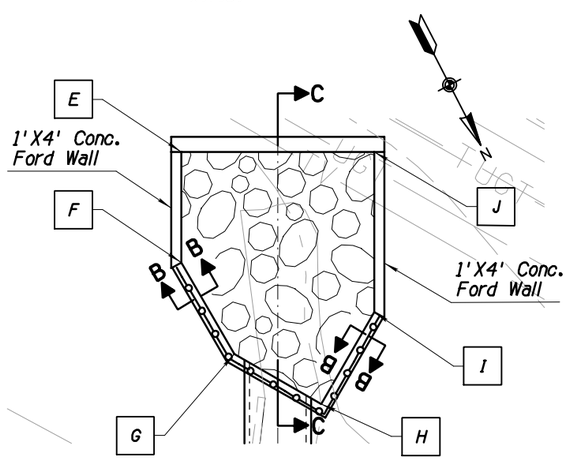
SECTION A-A

N.T.S.



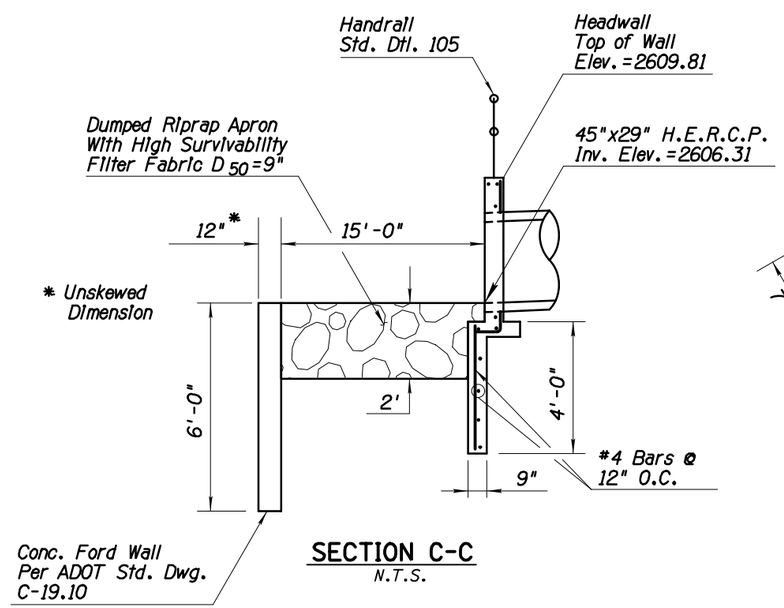
SECTION B-B

N.T.S.



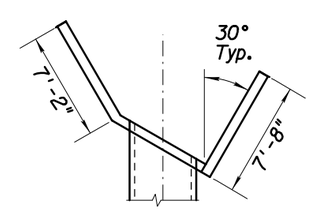
PIPE CULVERT STA 164+77 OUTLET PLAN

N.T.S.



SECTION C-C

N.T.S.



MODIFIED OUTLET WINGWALL PLAN

N.T.S.

NOTES:

1. Headwall Shall be ADOT Std. Dwg. No. SD 6.30 (2 of 5) for 30" Dia. Pipe with Modified "L" Wing. Total Number of Vertical 'a' Bars Shall be Increased to Meet Spacing Requirements Detailed in SD 6.30. Length of Horizontal 'b' Bars Shall be Adjusted, Similar.
2. See ADOT Std. Dwg. No.s SD 6.01 and SD 6.30 for Additional Construction Details.
3. See Sheet CC02 for Culvert Profile.
4. See Detail RD10 for Riprap Gradation Table.
5. Headwall Shall be Paid Under Item No. 6016087.
6. Concrete Apron Shall be Paid Under Item No. 6010721.
7. Riprap (Dumped) Shall be Paid Under Item No. 9130001.
8. Handrail (Std. Dtl 105) (Standard Lower Location) Shall be Paid Under Item No. 9330008.

DETAIL RD07

PIPE CULVERT INLET AND OUTLET DETAILS

Scale:	N/A	Sheet RD06 of RD09	Page 21 of 109

Pima County Department of Transportation

DETAIL SHEETS
PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS
PROJECT NO. 4KINBO

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

Ana M. Olivares, P.E. Director

Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

No.	Revision Description	Engineer	Date

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-dt03.dgn

DATE: 5/23/2018 TIME: 12:27:47 PM _USERNAME_

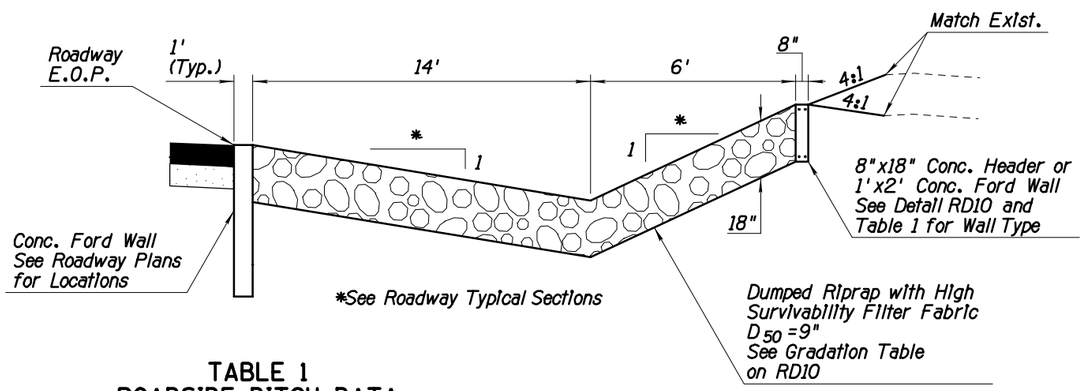
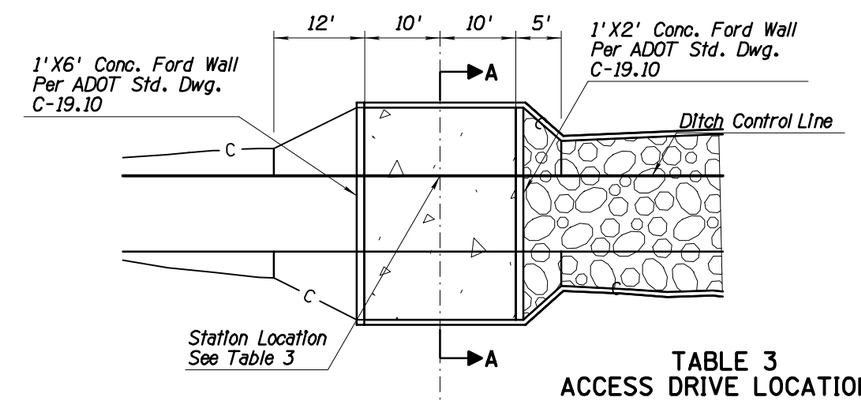


TABLE 1
ROADSIDE DITCH DATA

STATION LIMITS	WALL TYPE
120+43.62 to 121+67.13	Ford Wall
121+67.13 to 128+54.98	Header
131+35.47 to 134+37.54	Header

All Stations and Offsets are Measured from Bopp Rd.-Sarasota Blvd. Const. ℄

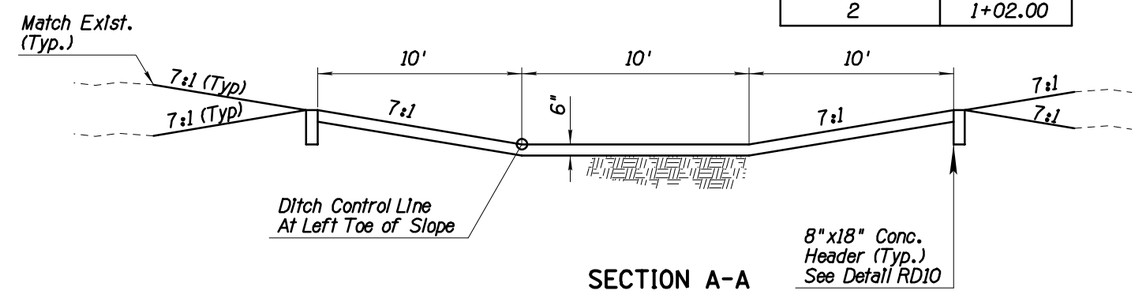
RIPRAP ADJACENT TO ROADWAY DETAIL
N.T.S.



PLAN
N.T.S.

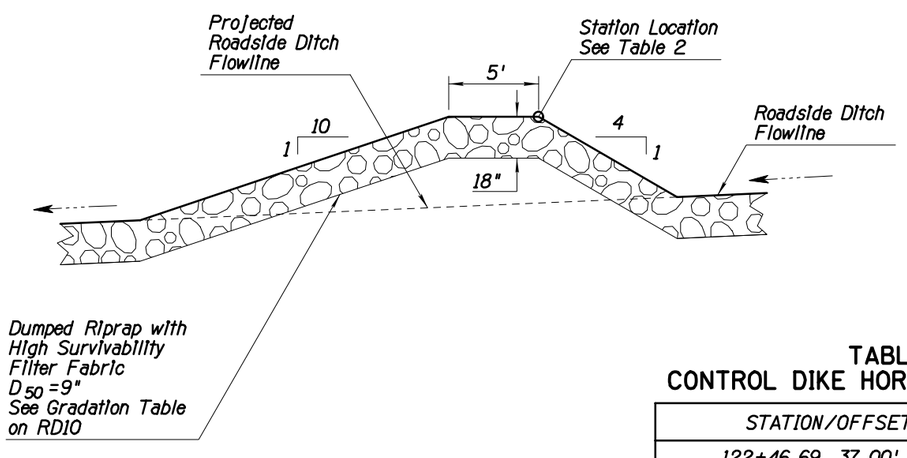
TABLE 3
ACCESS DRIVE LOCATIONS

DITCH NO.	STATION
1	0+67.75
2	1+02.00



SECTION A-A

ACCESS DRIVE AT DITCH 1 AND DITCH 2 DETAIL
N.T.S.

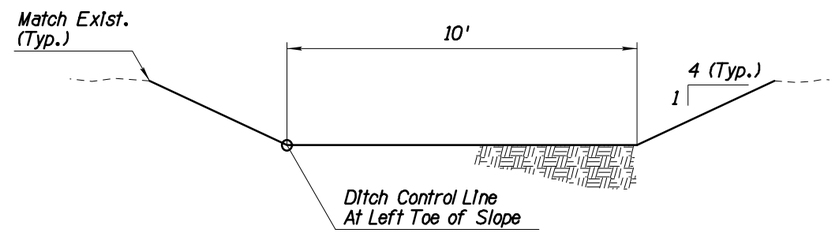


CONTROL DIKE TYPICAL SECTION
N.T.S.

TABLE 2
CONTROL DIKE HORIZONTAL CONTROL

STATION/OFFSET	ELEVATION
122+46.69, 37.00' Rt.	2597.85
124+97.95, 39.76' Rt.	2601.44

All Stations and Offsets are Measured from Bopp Rd.-Sarasota Blvd. Const. ℄ to Flowline of Roadside Ditch



DITCH 1 & 2 TYPICAL SECTION
N.T.S.

DETAIL RD08
MISCELLANEOUS DRAINAGE DETAILS

Scale:	N/A	Sheet RD07 of RD09	Page 22 of 109

Pima County Department of Transportation

DETAIL SHEETS
PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS
PROJECT NO. 4KINBO

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

Ana M. Olivares, P.E., Director

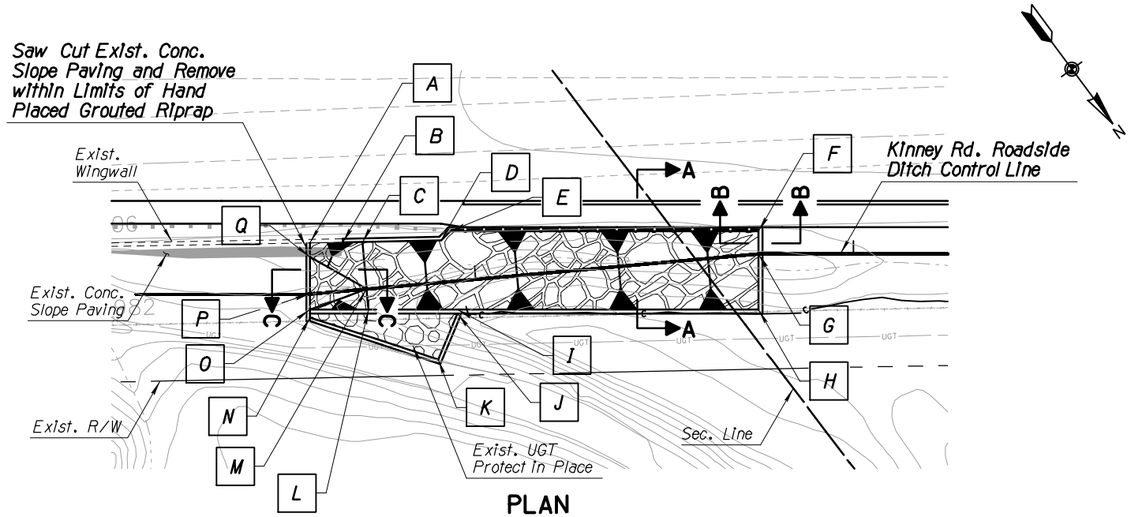
No.	Revision Description	Engineer	Date

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

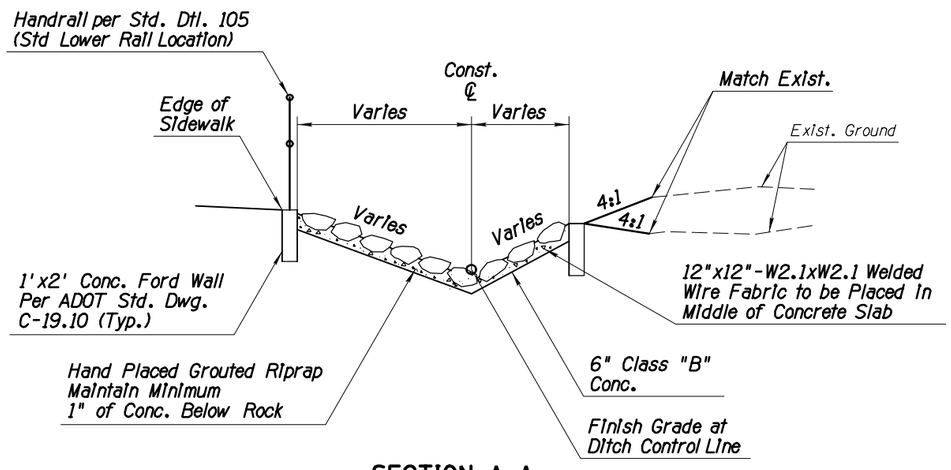
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-dt04.dgn

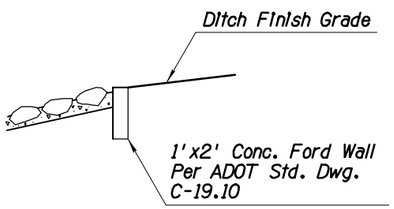
DATE: 5/23/2018 TIME: 12:28:16 PM _USERNAME_



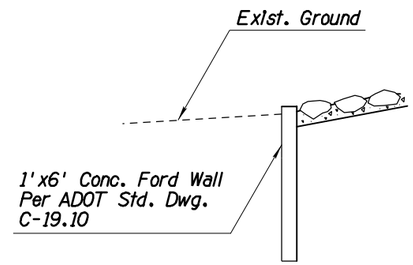
PLAN
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

RIPRAP APRON HORIZONTAL CONTROL

ID	STATION	OFFSET	ELEVATION
A	1+57.21	13.42' Lt.	2602.60
B	1+65.91	12.79' Lt.	2602.67
C	1+71.00	12.44' Lt.	2602.70
D	1+91.75	11.00' Lt.	2602.86
E	1+94.42	13.24' Lt.	2603.55
F	2+75.00	6.00' Lt.	2603.88
G	2+75.00	0.00' Lt.	2603.76
H	2+73.68	14.69' Rt.	2604.20
I	1+94.42	7.60' Rt.	2603.50
J	1+94.34	8.59' Rt.	2603.50
K	1+88.16	20.17' Rt.	2599.10
L	1+71.00	5.50. Rt.	2600.89
M	1+71.00	0.00' Lt.	2599.18
N	1+55.46	6.13' Rt.	2599.18
O	1+55.63	4.12' Rt.	2599.18
P	1+56.00	0.00' Lt.	2599.06
Q	1+56.87	9.73' Lt.	2600.64

All Stations and Offsets are Measured from Kinney Rd. Roadside Ditch Control Line and to the Inside Edge of the Apron Toe Down.

NOTES:

1. Hand Placed Grouted Riprap Shall be Placed Into Concrete Between Welded Wire Fabric so Minimum and Maximum Riprap Reveal Is 2" and 3", Respectively.
2. Riprap Rock for Hand Placed Grouted Riprap Shall Vary Between 4" and 8".
3. Rock Shall be Hand Placed In 6" Thick Concrete Bed with 1/2" to 2" Between Rocks.
4. Hand Placed Grouted Riprap Shall be Paid for Under Bid Item No. 9130009.
5. Concrete Ford Wall (1'x2') Shall be Paid for Under Bid Item No. 9080502.
6. Concrete Ford Wall (1'x6') Shall be Paid for Under Bid Item No. 9080506.
7. Handrail (Std. Dtl. 105) Shall be Paid for Under Bid Item No. 9130008.

DETAIL RD09

KINNEY ROAD ROADSIDE DITCH PROTECTION

Scale:	N/A	Sheet RD08 of RD09	Page 23 of 109

Ana M. Olivares, P.E., Director

Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

No.	Revision Description	Engineer	Date

Pima County Department of Transportation

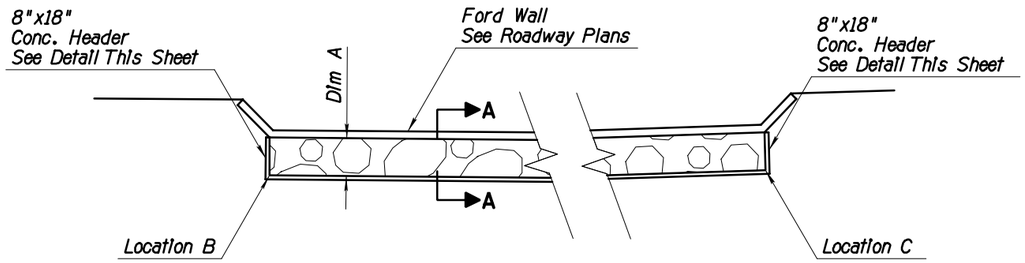
SCE ENGINEERING
510 E. 4TH STREET
TUCSON, AZ 85705
520-405-7353

DETAIL SHEETS
PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS
PROJECT NO. 4KINBO

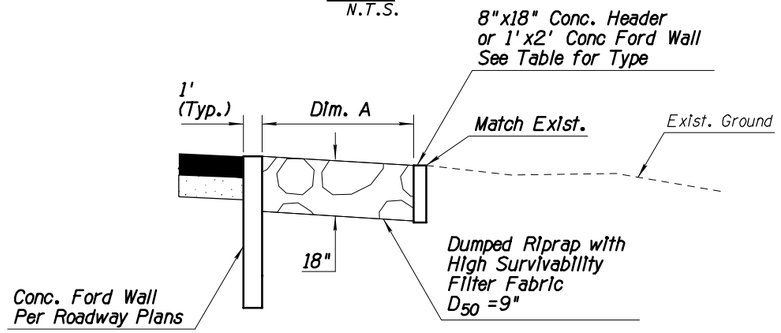
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-dt05.dgn

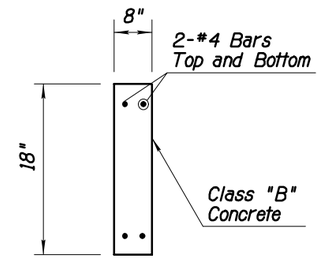
DATE: 5/23/2018 TIME: 12:28:38 PM _USERNAME_



PLAN
N.T.S.



SECTION A-A
N.T.S.



8"x18" Concrete Header Shall be Paid for Under Bid Item No. 9080403, Concrete Header (Special)

8"x18" CONCRETE HEADER
N.T.S.

DIP SECTION RIPRAP APRON HORIZONTAL CONTROL & QUANTITIES

DIM. A	LOCATION B	LOCATION C	RIPRAP QUANT.	WALL TYPE	CONC. HEADER/FORD WALL QUANT.
5'	111+69.28, 30.31' Rt	113+15.45, 33.00' Rt	41 C.Y.	Conc. Header	159 L.F.
5'	115+40.72, 33.00' Rt	117+29.11, 33.00' Rt	53 C.Y.	Conc. Header	202 L.F.
15'	118+43.56, 43.00' Rt	121+68.13, 43.00' Rt	See Sheet CC03	Conc. Ford Wall	See Sheet CC03
19'	N/A	134+37.54, 47.00' Rt	See Sheet CC05	Conc. Header	See Sheet CC05

NOTES:

1. All Stations and Offsets are Measured from Bopp Rd.-Sarasota Blvd. Const. ℄ and to the Inside Edge of the Apron Toe Down.
2. Quantities for Conc. Ford Wall are Shown on Roadway Plans.

RIPRAP GRADATION

D_{50} = 9"	
ROCK SIZE	PERCENT PASSING
18"	100
15"	85
9"	50
4.5"	15

DETAIL RD10
RIPRAP APRON AT DIP CROSSING

Scale: N/A | Sheet RD09 of RD09 | Page 24 of 109

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

Pima County Department of Transportation

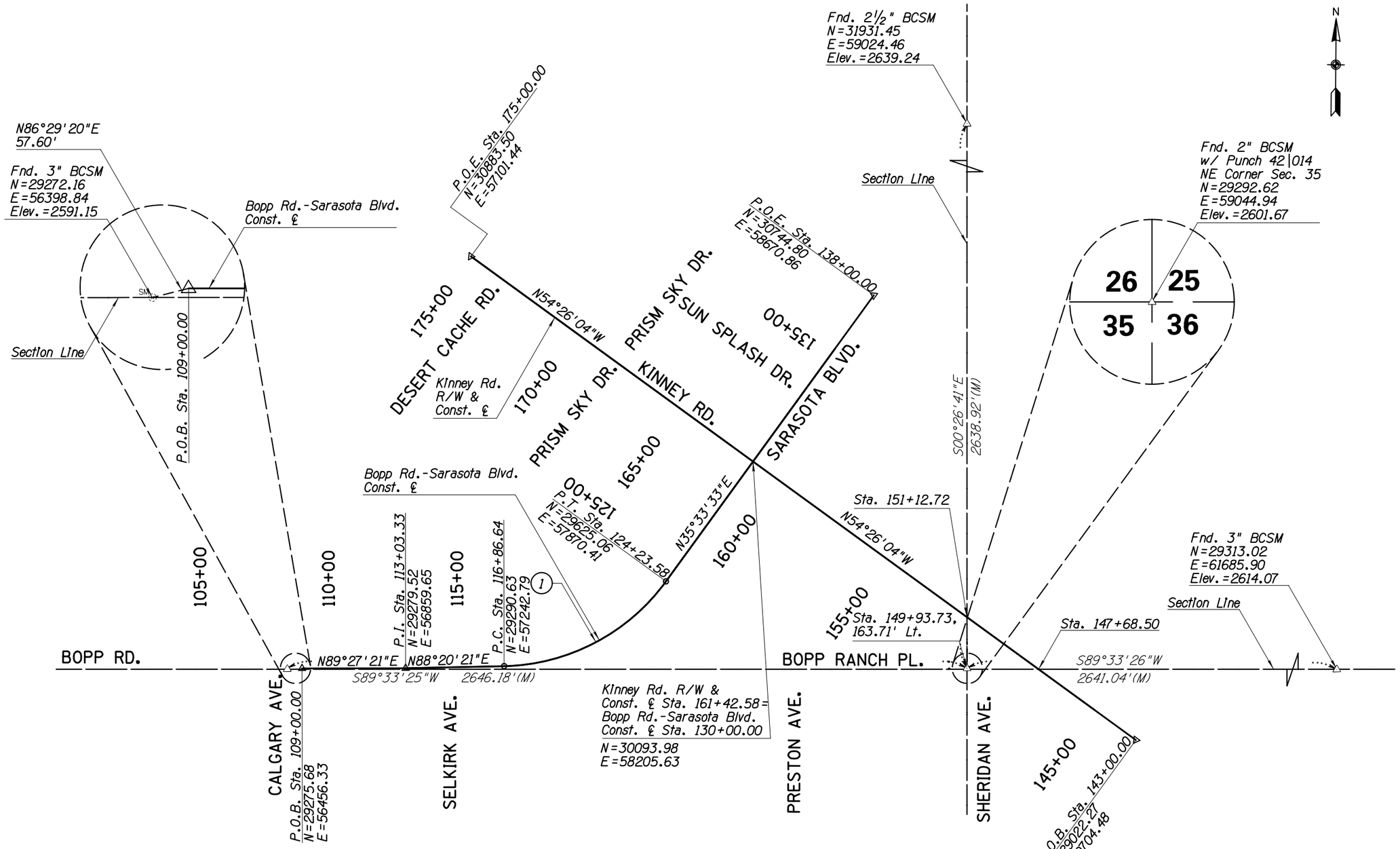
SCE ENGINEERING
510 E. 4TH STREET
TUCSON, AZ 85705
520-405-7353

DETAIL SHEETS
PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-dt06.dgn

DATE: 5/23/2018 TIME: 12:29:05 PM _USERNAME_



CURVE DATA TABLE

CURVE	DELTA	RADIUS	LENGTH	TANGENT
1	52°46'48"	800.00'	736.95'	396.95'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5-24-18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 22140 DATE SIGNED 5-24-18 EXPIRES 6-30-19

Pima County Department of Transportation

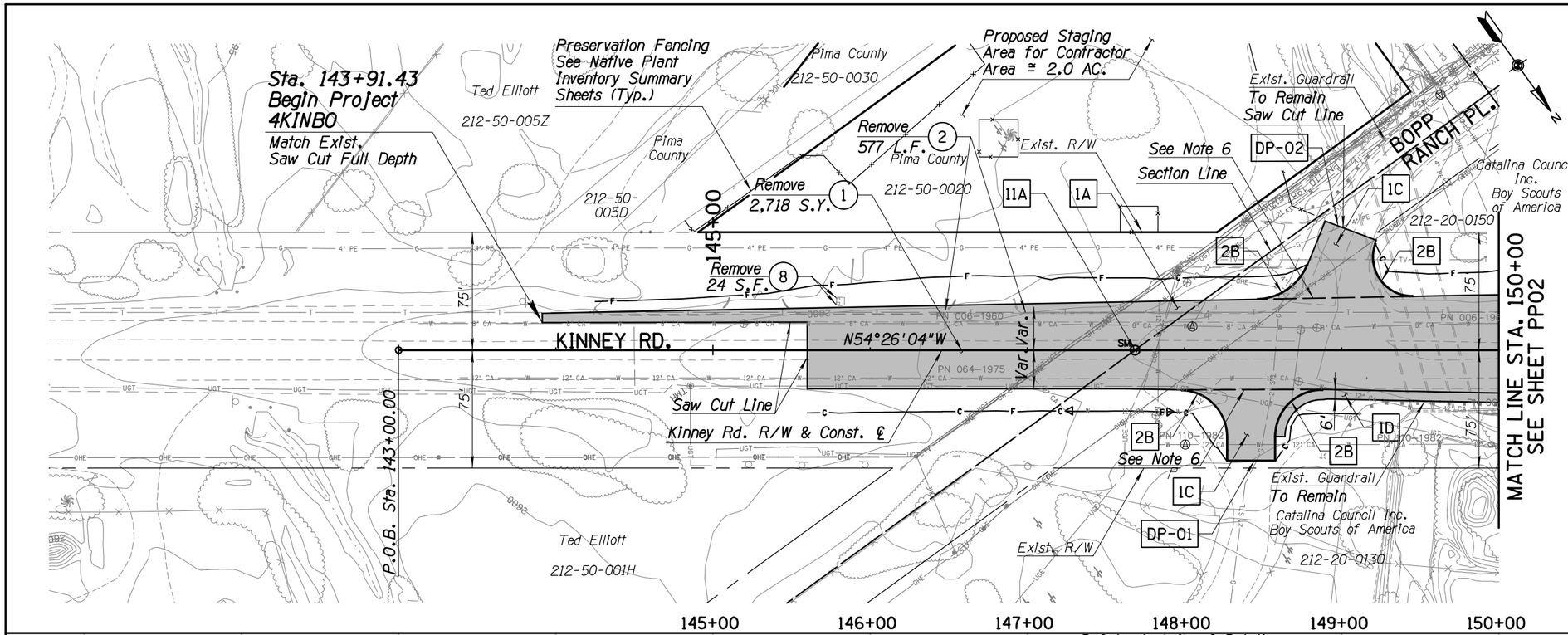
HORIZONTAL CONTROL SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

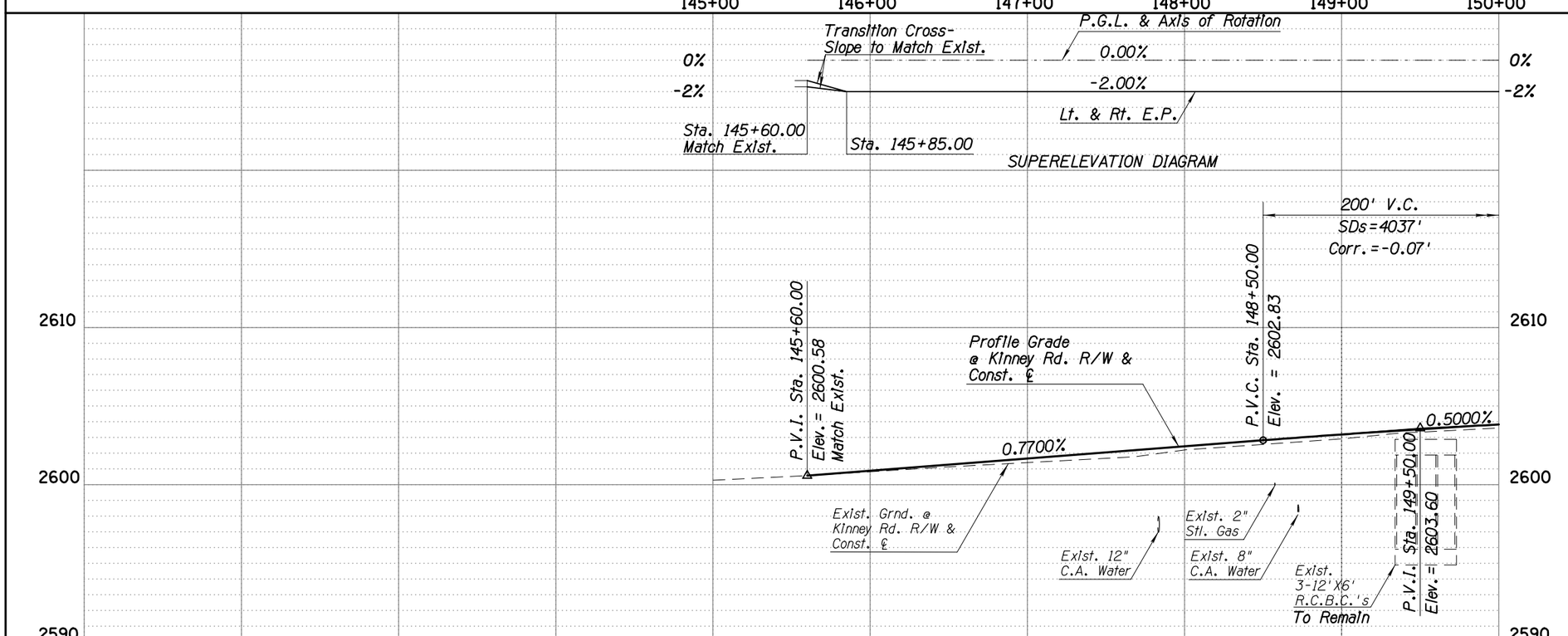
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 200' Horiz. | Sheet HC01 of HC01 | Page 25 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_HC01.dgn DATE: 5/24/2018 TIME: 2:23:53 PM kershnerm





REMOVAL ITEMS:

(1) Remove Pavement, Total=2,718 S.Y.

(2) Remove Vertical Curb, Total=577 L.F.

(8) Remove Conc. Slab, Total=24 S.F.

NEW ITEMS:

[1] Pavement
- [A] Structural Section No. 1 Install 25,949 S.F.
- [C] Structural Section No. 3 Install 3,762 S.F.
- [D] Structural Section No. 4 Install 926 S.F.

[2] Curb (See Shts. SS01-SS02)
- [B] Conc. Header Std. Dtl. 213 Bid Item No. 9080402 Install 244 L.F.

[11A] New Survey Monument with Frame and Cover Sta. 147+68.50, 0.00' Rt. PC Std. Dtl. 103 Bid Item No. 9090021 Install 1 EA.

[DP-01] See Side Street & Driveway Plan & Profile Sheet DP01

[DP-02] See Side Street & Driveway Plan & Profile Sheet DP01

NOTES:
1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.
5. Limits of Pavement Structural Section No. 3.
6. For Irrigation Sleeve Schedule, see Irrigation Plan Sheets. (PS X)
7. See Native Plant Inventory Summary Sheet NP101 for demolition information regarding landscape.

40 0 40 80'
SCALE: 1" =40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
3253 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

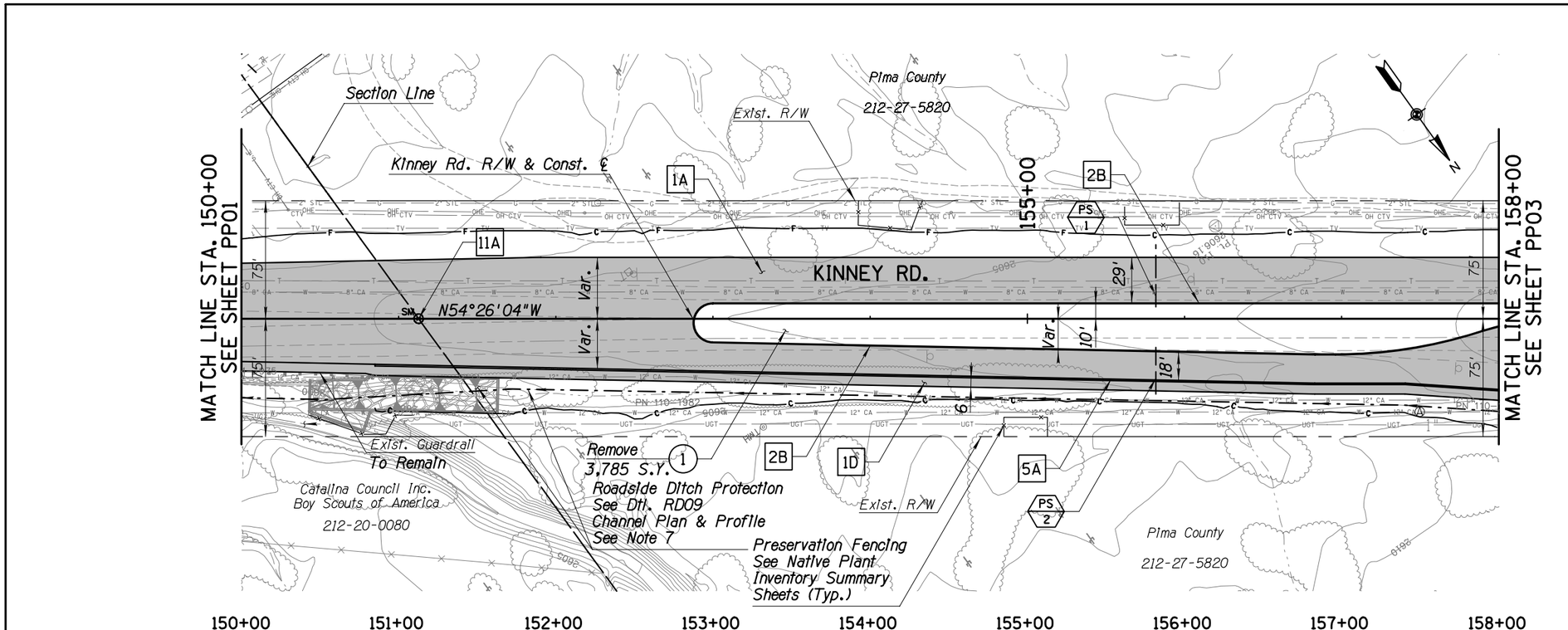
Pima County Department of Transportation

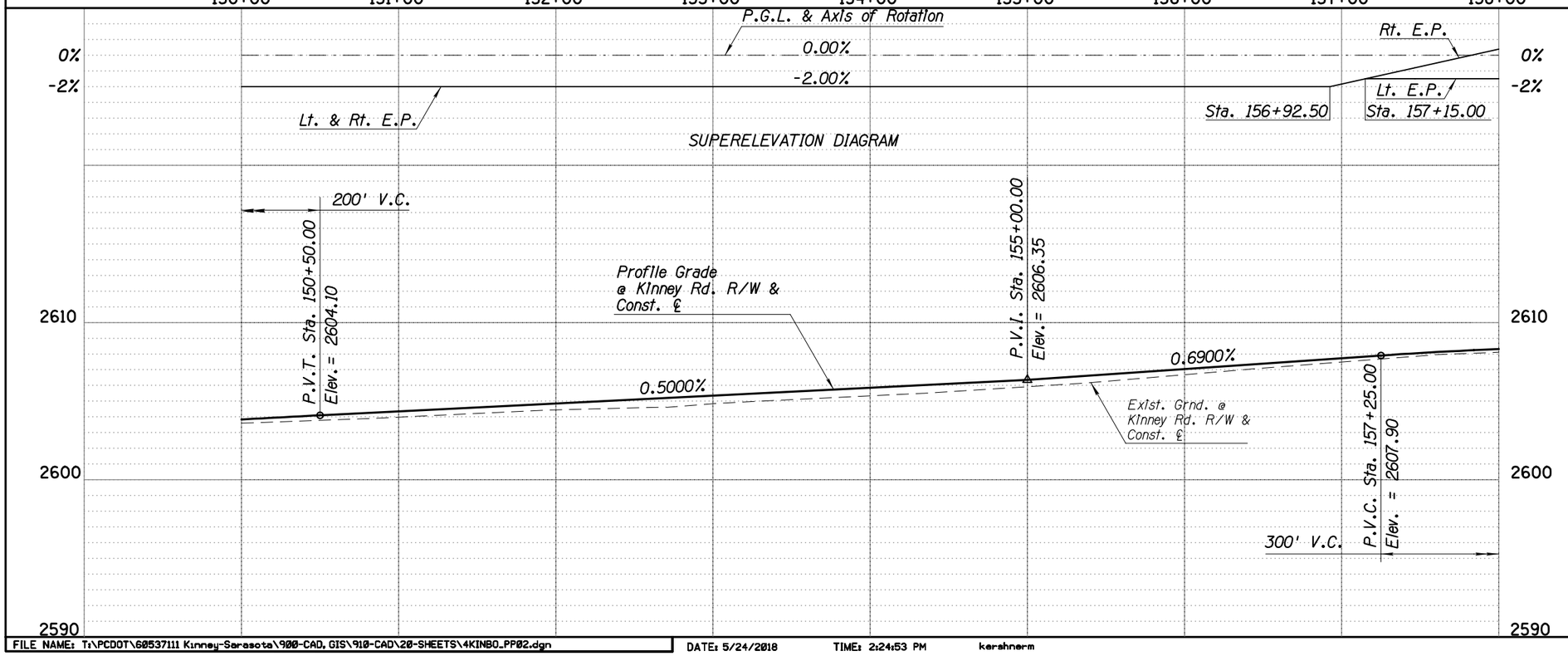
ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+91 TO STA. 150+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet PP01 of PP08 | Page 26 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP01.dgn DATE: 5/24/2018 TIME: 2:24:30 PM kershnerm





REMOVAL ITEMS:

(1) Remove Pavement, Total=3,785 S.Y.

NEW ITEMS:

1 Pavement
- A Structural Section No. 1
  Install 44,441 S.F.
- D Structural Section No. 4
  Install 4,803 S.F.

2 Curb (See Shts. SS01-SS02)
- B Conc. Header
  Std. Dtl. 213
  Bid Item No. 9080402
  Install 1,042 L.F.

5 Conc. Ford Wall
(See Shts. SS01-SS02)
- A 1'X2'
  ADOT Std. Dwg. C-19.10
  Bid Item No. 9080502
  Install 715 L.F.

11A New Survey Monument with
Frame and Cover
Sta. 151+12.72, 0.00' Rt.
PC Std. Dtl. 103
Bid Item No. 9090021
Install 1 EA.

NOTES:
1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.
5. See Landscape Plans for median treatment.
6. For Irrigation Sleeve Schedule, see Irrigation Plan Sheets. (PS X)
7. For Cross Drainage and Channel Plan and Profile, see Sheets CC04 and CC05.
8. See Native Plant Inventory Summary Sheet NPI01 for demolition information regarding landscape.

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER Registered Professional Engineer (Civil) DATE SIGNED 5-30-18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

ARIZONA BLUE STAKE, INC. 1-800-782-5348 Call at least two full working days before you begin excavation

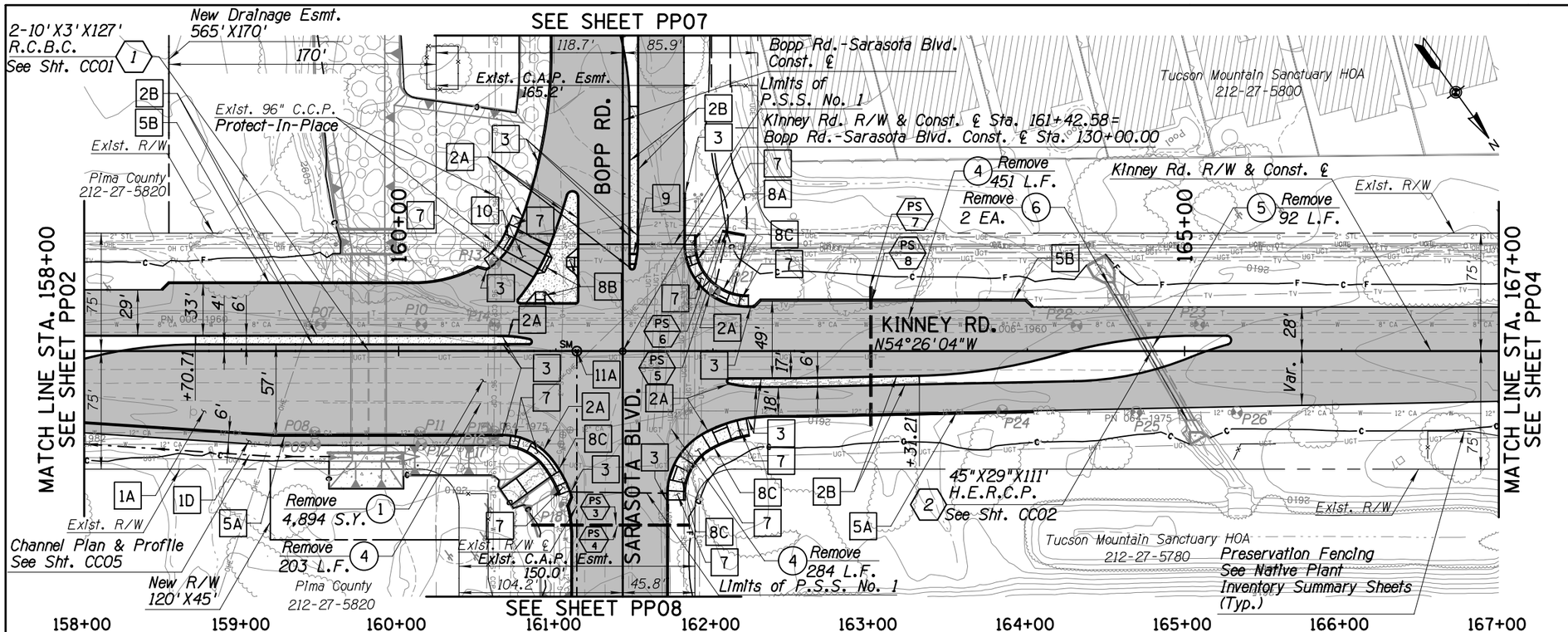
Pima County Department of Transportation

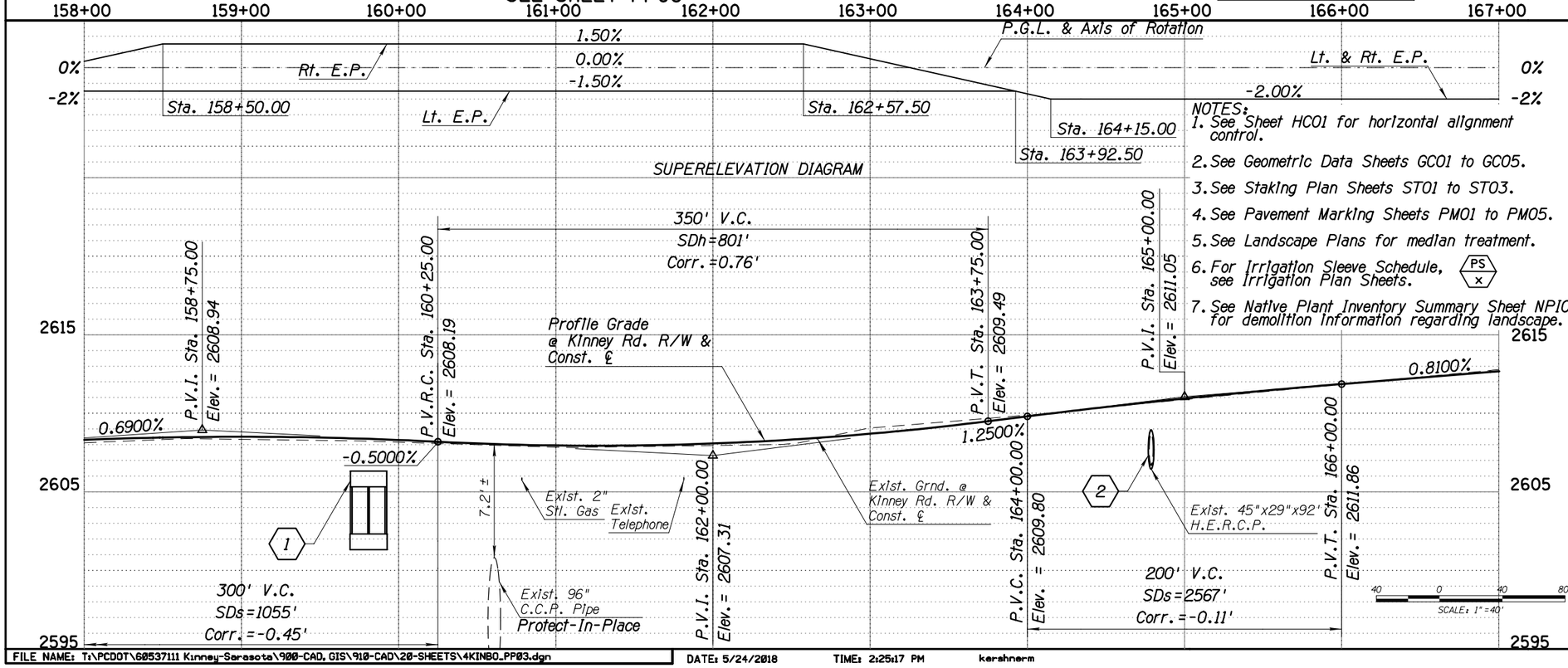
ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 150+00 TO STA. 158+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet PP02 of PP08 | Page 27 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP02.dgn DATE: 5/24/2018 TIME: 2:24:53 PM kershnerm





NOTES:

1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.
5. See Landscape Plans for median treatment.
6. For Irrigation Sleeve Schedule, see Irrigation Plan Sheets. (PS x)
7. See Native Plant Inventory Summary Sheet NP101 for demolition information regarding landscape.

REMOVAL ITEMS:

1. Remove Pavement, Total=4,894 S.Y.
4. Remove Ford Wall, Total=938 L.F.
5. Remove Pipe, Total=92 L.F.
6. Remove Headwall, Total=2 EA.

NEW ITEMS:

1 Pavement
- A Structural Section No. 1 Install 74,337 S.F.
- D Structural Section No. 4 Install 1,631 S.F.

2 Curb (See Shts. SS01-SS02)
- A Conc. Vertical Curb Std. Dtl. 209, Type 1 Bid Item No. 9080001 Install 619 L.F.
- B Conc. Header Std. Dtl. 213 Bid Item No. 9080402 Install 1,188 L.F.

3 Conc. Curb Terminal Section Std. Dtl. 212 Bid Item No. 9080090 Install 14 EA.

5 Conc. Ford Wall (See Shts. SS01-SS02)
- A 1'X2' ADOT Std. Dwg. C-19.10 Bid Item No. 9080502 Install 640 L.F.
- B 1'X4' ADOT Std. Dwg. C-19.10 Bid Item No. 9080504 Install 422 L.F.

7 Conc. Sidewalk (See Shts. SS01-SS02) Std. Dtl. 200 Bid Item No. 9080201 Install 542 S.F.

8 Curb Access Ramps
- A Std. Dtl. 207, Type 1 Sta. 161+83.23, 56.60' Lt. Bid Item No. 9080280 Install 1 EA.
- B ADOT Std. Dwg. C-5.30, Type B & Dtl. RD02 Sta. 129+43.31, 51.49' Rt. Sta. 160+90.06, 30.00' Lt. Sta. 161+14.58, 56.60' Lt. Bid Item No. 9080295 Install 3 EA.
- C Dtl. RD04 Sta. 160+95.27, 65.64' Rt. Sta. 162+03.62, 32.26' Lt. Sta. 161+73.07, 76.73' Rt. Sta. 162+03.63, 47.44' Rt. Bid Item No. 9080290 Install 820 S.F.

9 New Median Refuge See Dtl. RD03 Bid Item No. 9080286 Install 1 EA.

10 New Speed Table & Conc. Curb Access Ramps. See Dtl. RD02

11A New Survey Monument with Frame and Cover Sta. 161+13.42, 0.00' Rt. PC Std. Dtl. 103 Bid Item No. 9090021 Install 1 EA.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5-30-18 EXPIRES 6-30-19 Arizona, U.S.A.

AECOM
www.aecom.com
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

COPYRIGHT © 2018 AECOM USA, Inc. All rights reserved. This drawing is the property of AECOM USA, Inc. and shall not be reproduced in whole or in part without written permission.

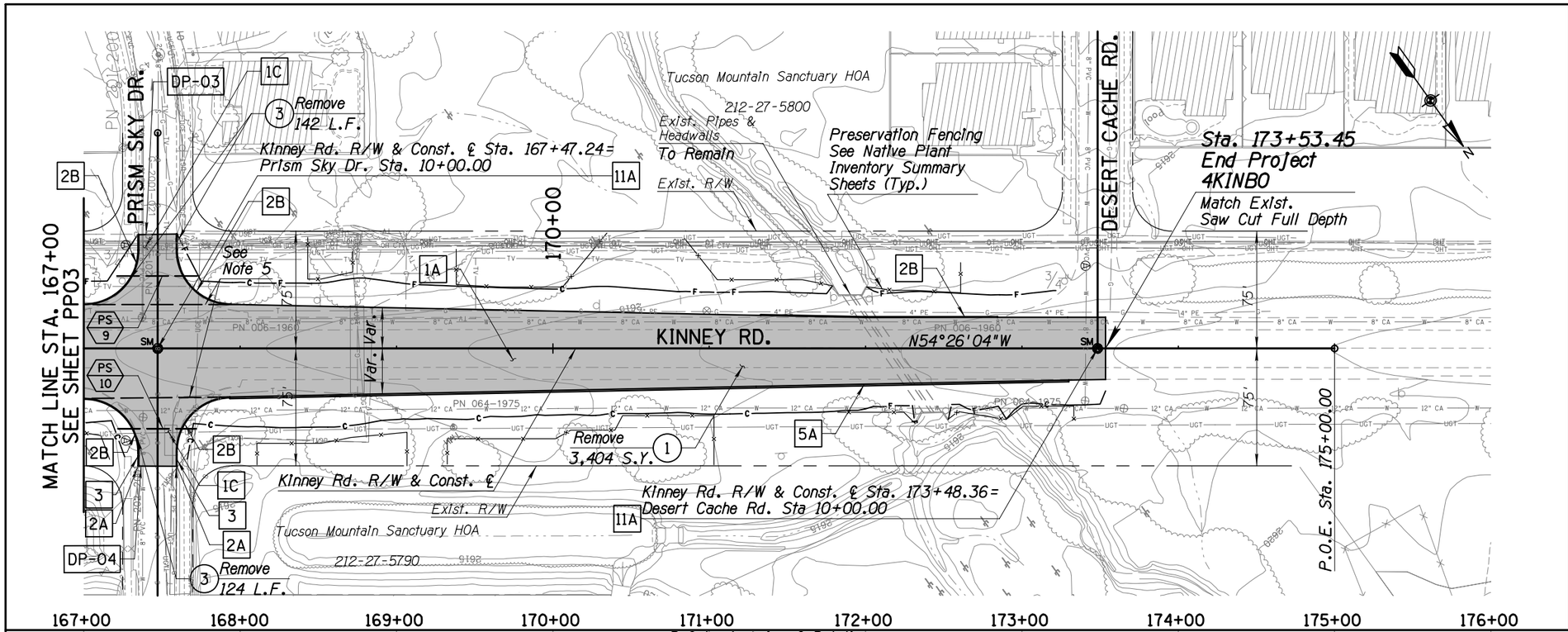
Pima County Department of Transportation

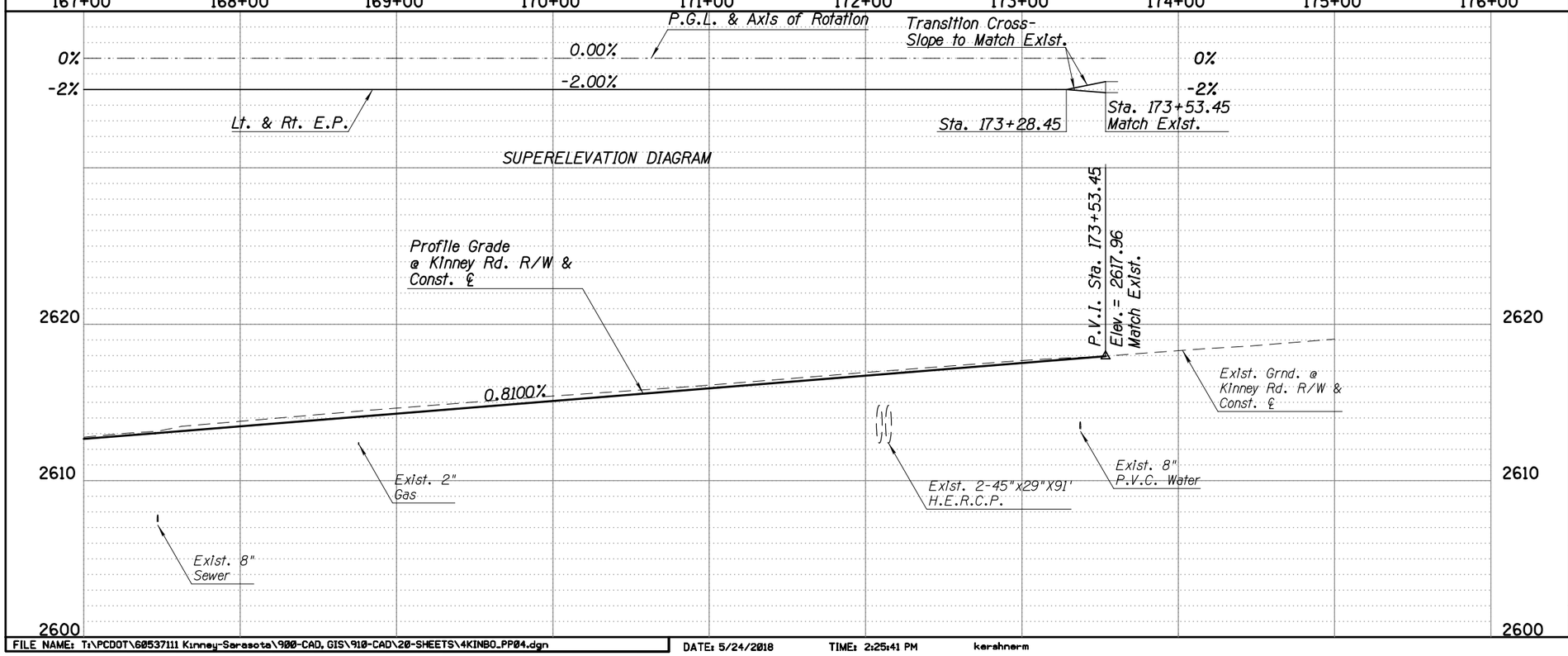
ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 158+00 TO STA. 167+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

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

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP03.dgn DATE: 5/24/2018 TIME: 2:25:17 PM kershnerm





REMOVAL ITEMS:

(1) Remove Pavement, Total=3,404 S.Y.

(3) Remove Conc. Header, Total=266 L.F.

NEW ITEMS:

1 Pavement
- **A** Structural Section No. 1 Install 32,585 S.F.
- **C** Structural Section No. 3 Install 3,180 S.F.

2 Curb (See Shts. SS01-SS02)
- **A** Conc. Vertical Curb Std. Dtl. 209, Type 1 Bid Item No. 9080001 Install 10 L.F.
- **B** Conc. Header Std. Dtl. 213 Bid Item No. 9080402 Install 393 L.F.

3 Conc. Curb Terminal Section Std. Dtl. 212 Bid Item No. 9080090 Install 2 EA.

5 Conc. Ford Wall (See Shts. SS01-SS02)
- **A** 1'X2' ADOT Std. Dwg. C-19.10 Bid Item No. 9080502 Install 537 L.F.

11A New Survey Monument with Frame and Cover Sta. 167+47.24, 0.00' Rt. Sta. 173+48.36, 0.00' Rt. PC Std. Dtl. 103 Bid Item No. 9090021 Install 2 EA.

DP-03 See Side Street & Driveway Plan & Profile Sheet DP02

DP-04 See Side Street & Driveway Plan & Profile Sheet DP02

NOTES:
1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.
5. Limits of Pavement Structural Section No. 3.
6. For Irrigation Sleeve Schedule, see Irrigation Plan Sheets. (PS / X)
7. See Native Plant Inventory Summary Sheet NP101 for demolition information regarding landscape.

40 0 40 80'
SCALE: 1" = 40'

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438
www.aecom.com

ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 167+00 TO STA. 173+53
PROJECT NO. 4KINBO

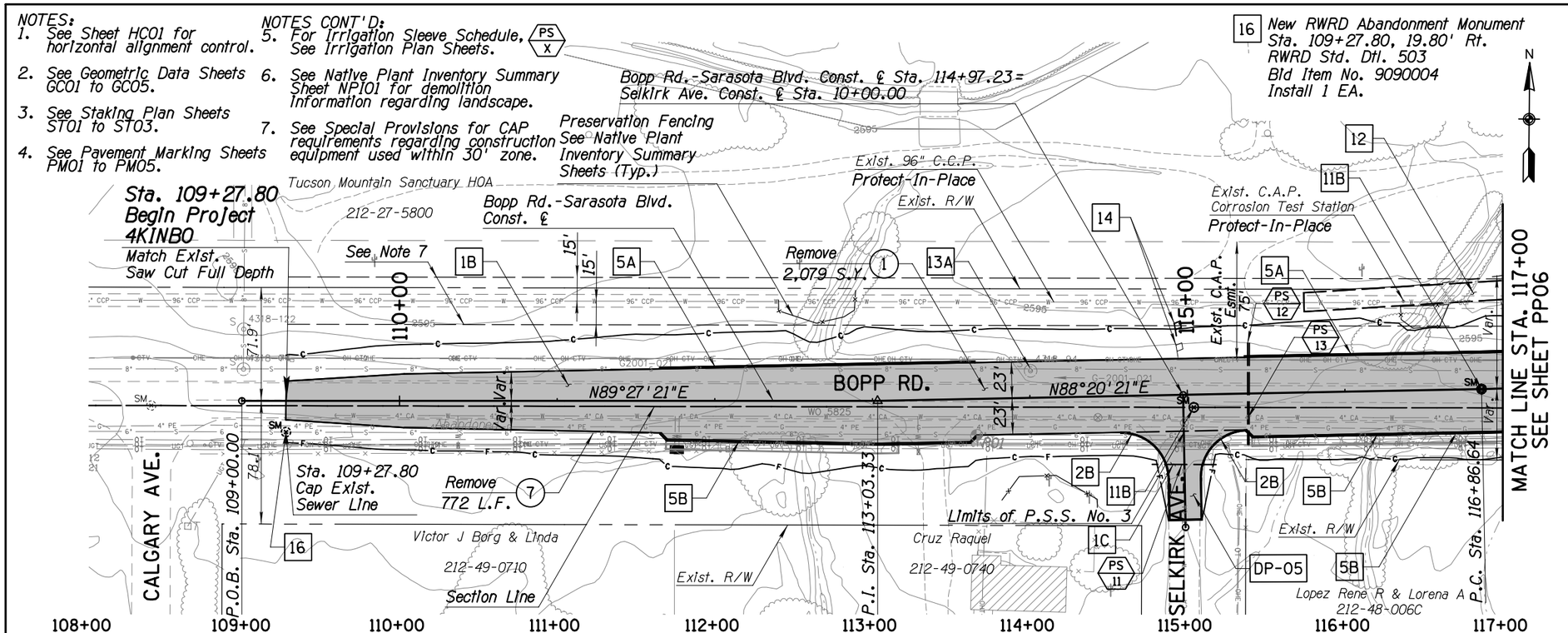
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

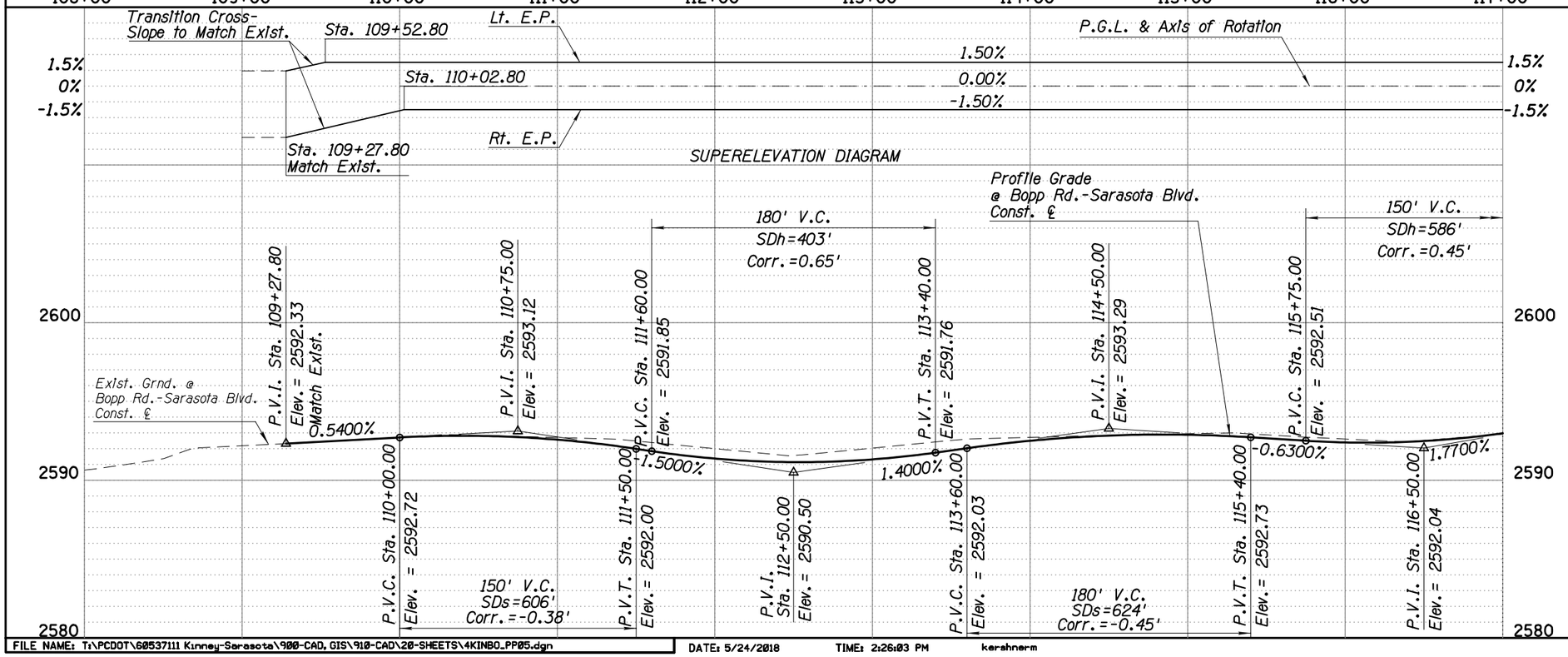
Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet PP04 of PP08 | Page 29 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP04.dgn DATE: 5/24/2018 TIME: 2:25:41 PM kershnerm

NOTES:
1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.

NOTES CONT'D:
5. For Irrigation Sleeve Schedule, See Irrigation Plan Sheets. (PS X)
6. See Native Plant Inventory Summary Sheet NP101 for demolition information regarding landscape.
7. See Special Provisions for CAP requirements regarding construction equipment used within 30' zone.





REMOVAL ITEMS:

(1) Remove Pavement, Total=2,079 S.Y.

(7) Remove 6" Sewer Pipe, Total=772 L.F.

NEW ITEMS:

[1] Pavement
- [B] Structural Section No. 2 Install 33,879 S.F.
- [C] Structural Section No. 3 Install 1,506 S.F.

[2] Curb (See Shts. SS01-SS02)
- [B] Conc. Header Std. Dtl. 213 Bid Item No. 9080402 Install 166 L.F.

[5] Conc. Ford Wall (See Shts. SS01-SS02)
- [A] 1'X2' ADOT Std. Dwg. C-19.10 Bid Item No. 9080502 Install 363 L.F.
- [B] 1'X4' ADOT Std. Dwg. C-19.10 Bid Item No. 9080504 Install 369 L.F.

[11B] New Survey Monument Sta. 115+03.88, 8.06' Rt. Sta. 116+86.64, 0.00' Rt. PC Std. Dtl. 103 Bid Item No. 9090002 Install 2 EA.

[12] New 12' Graded Path Sta. 115+75 to Sta. 117+00 Match Exist. Terrain Bid Item No. 2010001 Install 166 S.Y.

[13A] Adjust Manhole Rim to Finished Grade (4318-94) Sta. 114+00.75, 17.13' Lt. Exist. Rim Elev.=2592.96 New Rim Elev.=2592.77 Std. Dtl. RWRD 305 Bid Item No. 5090110 Install Concrete Collar per Std. Dtl. RWRD 211 Bid Item No. 5090020 Install 1 EA.

[14] Relocate Mailbox to Sta. 114+94.00, 37.5' Lt. Std. Dtl. 102 Bid Item No. 2020061 Install 1 EA.

[DP-05] See Side Street & Driveway Plan & Profile Sheet DP03

[16] New RWRD Abandonment Monument Sta. 109+27.80, 19.80' Rt. RWRD Std. Dtl. 503 Bid Item No. 9090004 Install 1 EA.

40 0 40 80'
SCALE: 1"=40'

No.	Revision Description	Engineer	Date

			Date
Designed	MPK		05/18
Drawn	MPK		05/18
Checked	CJR		05/18
Proj. Engr.	MPK		05/18

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

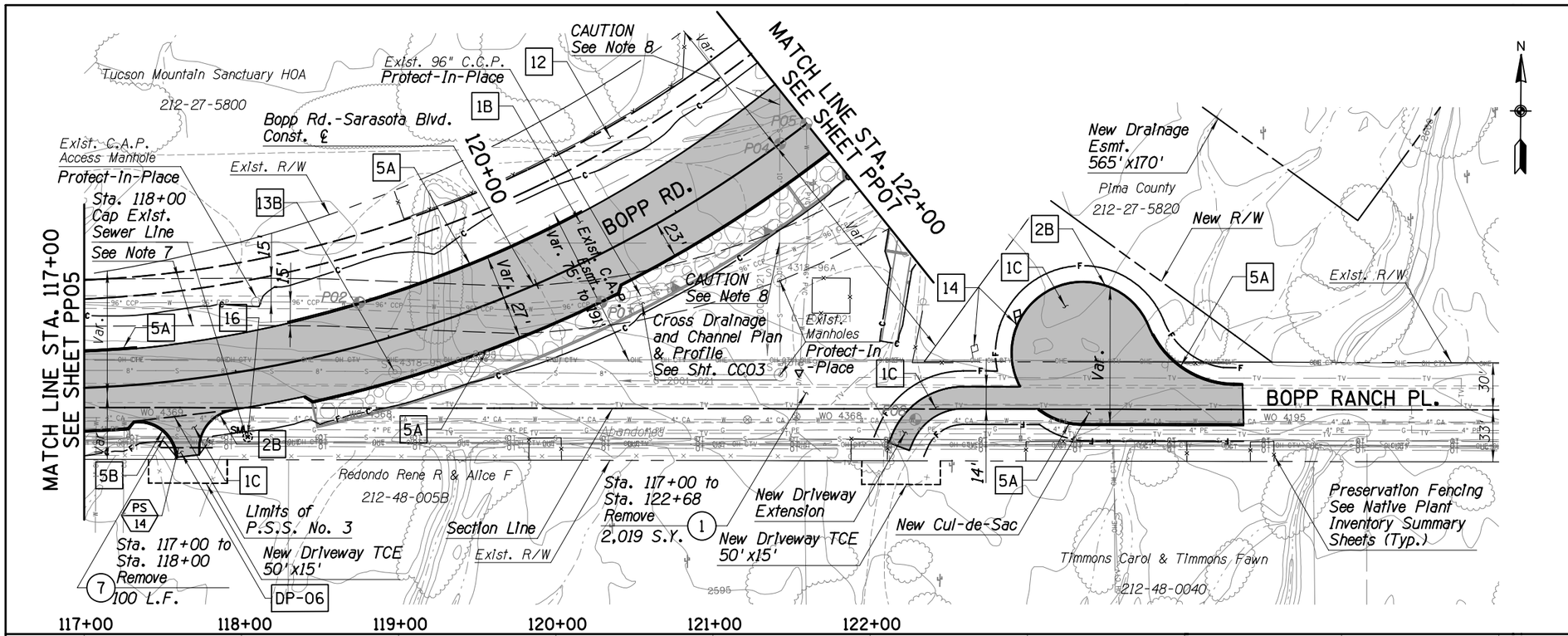
ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+28 TO STA. 117+00
PROJECT NO. 4KINBO

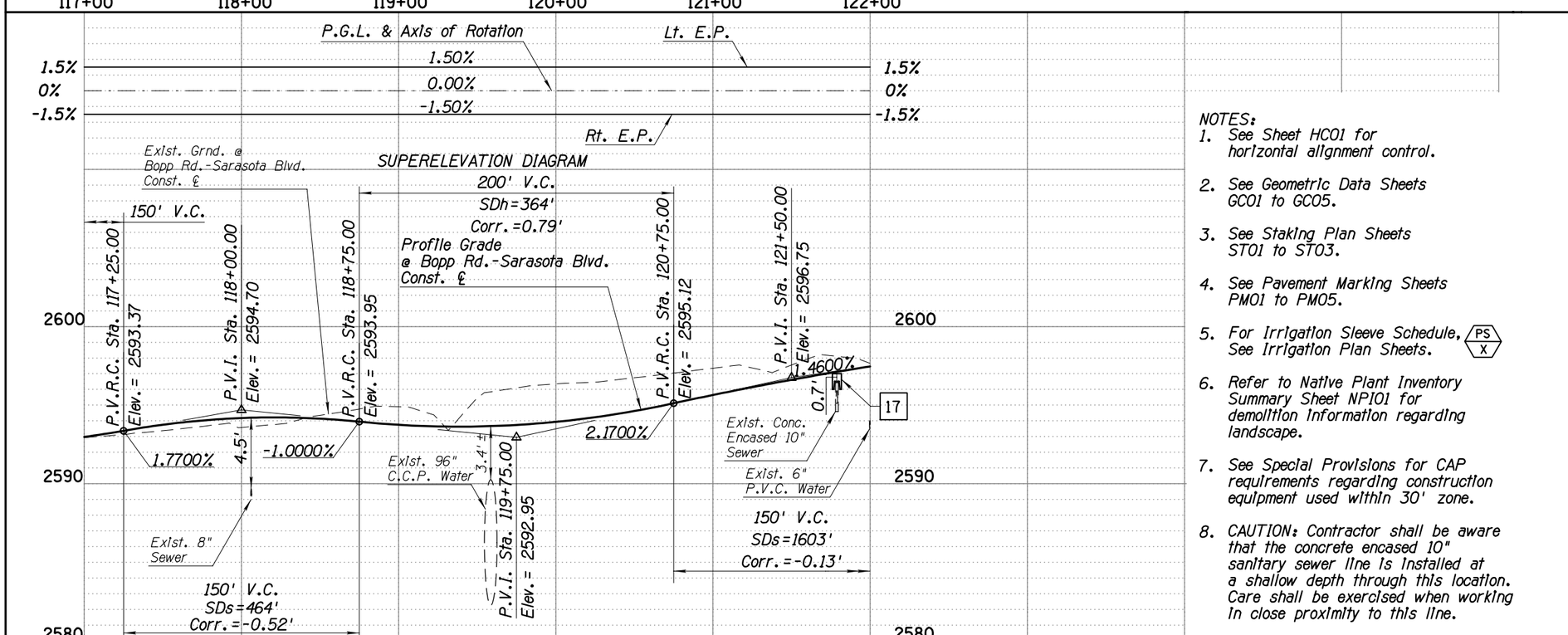
AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet PP05 of PP08 | Page 30 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP05.dgn | DATE: 5/24/2018 | TIME: 2:26:03 PM | kershnerm





NOTES:

1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.
5. For Irrigation Sleeve Schedule, (PS/X) See Irrigation Plan Sheets.
6. Refer to Native Plant Inventory Summary Sheet NP101 for demolition information regarding landscape.
7. See Special Provisions for CAP requirements regarding construction equipment used within 30' zone.
8. CAUTION: Contractor shall be aware that the concrete encased 10" sanitary sewer line is installed at a shallow depth through this location. Care shall be exercised when working in close proximity to this line.

REMOVAL ITEMS:

(1) Remove Pavement, Total=2,019 S.Y.

(7) Remove 6" Sewer Pipe, Total=100 L.F.

NEW ITEMS:

[1] Pavement
- [B] Structural Section No. 2 Install 25,891 S.F.
- [C] Structural Section No. 3 Install 10,663 S.F.

[2] Curb (See Shts. SS01-SS02)
- [B] Conc. Header Std. Dtl. 213 Bid Item No. 9080402 Install 190 L.F.

[5] Conc. Ford Wall (See Shts. SS01-SS02)
- [A] 1'X2' ADOT Std. Dwg. C-19.10 Bid Item No. 9080502 Install 778 L.F.
- [B] 1'X4' ADOT Std. Dwg. C-19.10 Bid Item No. 9080504 Install 75 L.F.

[12] New 12' Graded Path Sta. 117+00 to Sta. 122+00 Match Exist. Terrain Bid Item No. 2010001 Install 615 S.Y.

[13B] Reconstruct Manhole 4318-95 Sta. 118+97.60, 21.88' Rt. Exist. Rim Elev.=2594.04 New Rim Elev.=2593.43 Install Bolted Watertight Frame and Cover per Std. Dtl. RWRD 215 Bid Item No. 5090100 Install Concrete Collar per Std. Dtl. RWRD 211 Bid Item No. 5090020 Reconstruct 4.0 L.F.

[14] Relocate Mailbox to Sta. 122+22.25, 183.00' Rt. Std. Dtl. 102 Bid Item No. 2020061 Install 1 EA.

[16] New RWRD Abandonment Monument Sta. 118+00.00, 41.65' Rt. RWRD Std. Dtl. 503 Bid Item No. 9090004 Install 1 EA.

[DP-06] See Side Street & Driveway Plan & Profile Sheet DP03

40 0 40 80'
SCALE: 1"=40'

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5-30-18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

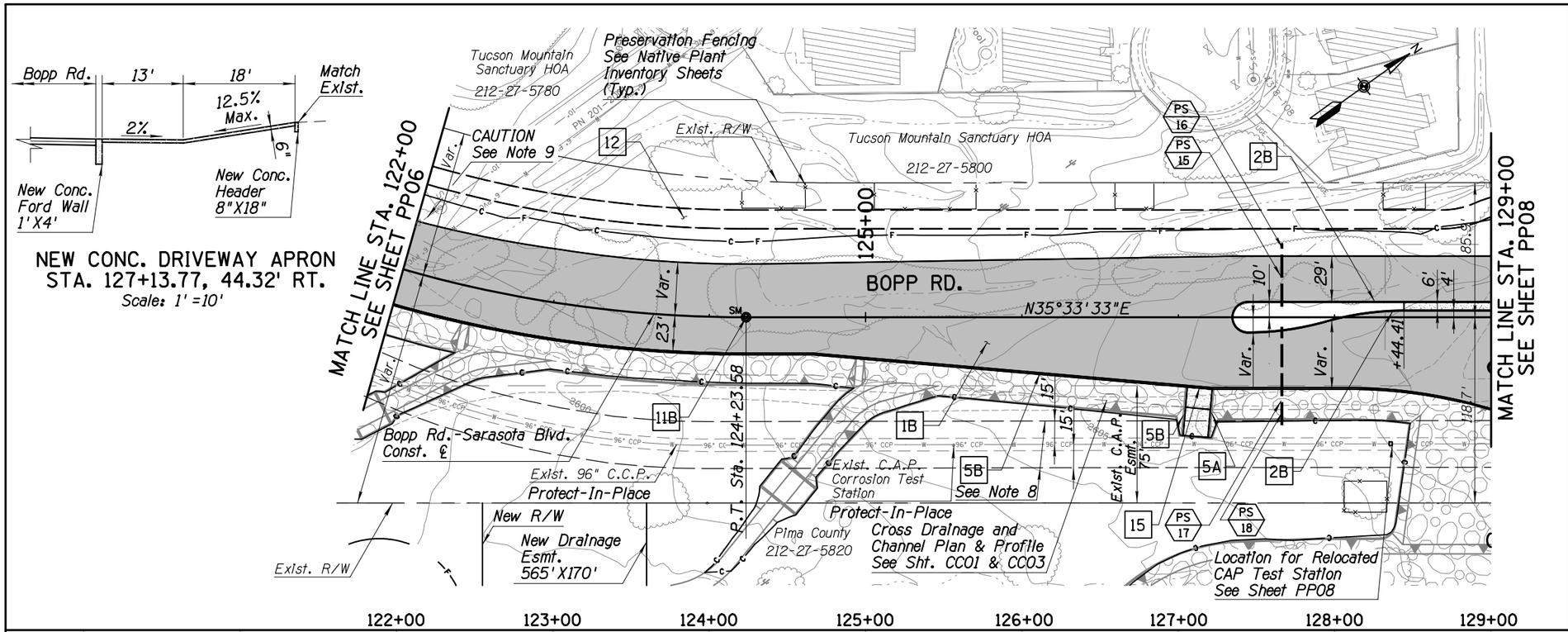
Pima County Department of Transportation

ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY - BOPP RD - SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 117+00 TO STA. 122+00
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet PP06 of PP08 | Page 31 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP06.dgn DATE: 5/24/2018 TIME: 2:26:27 PM kershnerm



REMOVAL ITEMS:

NEW ITEMS:

1 Pavement
- B Structural Section No. 2
  Install 46,646 S.F.

2 Curb (See Shts. SS01-SS02)
- B Conc. Header
  Std. Dtl. 213
  Bid Item No. 9080402
  Install 344 L.F.

5 Conc. Ford Wall
(See Shts. SS01-SS02)
- A 1'X2'
  ADOT Std. Dwg. C-19.10
  Bid Item No. 9080502
  Install 31 L.F.
- B 1'X4'
  ADOT Std. Dwg. C-19.10
  Bid Item No. 9080504
  Install 720 L.F.

11B New Survey Monument
Sta. 124+23.58, 0.00' Rt.
PC Std. Dtl. 103
Bid Item No. 9090002
Install 1 EA.

12 New 12' Graded Path
Sta. 122+00 to Sta. 129+00
Match Exist. Terrain
Bid Item No. 2010001
Install 912 S.Y.

15 New Conc. Driveway Apron
Sta. 127+13.77, 44.32' Rt.
Std. Dtl. 206
W=16'
See Profile This Sheet
Bid Item No. 9080301
Install 496 S.F.

NOTES:
1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.
5. See Landscape Plans for median treatment.
6. For Irrigation Sleeve Schedule, See Irrigation Plan Sheets. (PS X)
7. See Native Plant Inventory Summary Sheet NP101 for demolition information regarding landscape.
8. See Special Provisions for CAP requirements regarding construction equipment used within 30' zone.
9. CAUTION: Contractor shall be aware that the concrete encased 10" sanitary sewer line is installed at a shallow depth through this location. Care shall be exercised when working in close proximity to this line.

40 0 40 80'
SCALE: 1" =40'

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE Signed 6/20/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
3555 E. MILETI MORE RD. STE. 400
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig. ARIZONA BLUE STAKE, INC. 602.263.1100 Or Visit our website at www.azbluestake.com

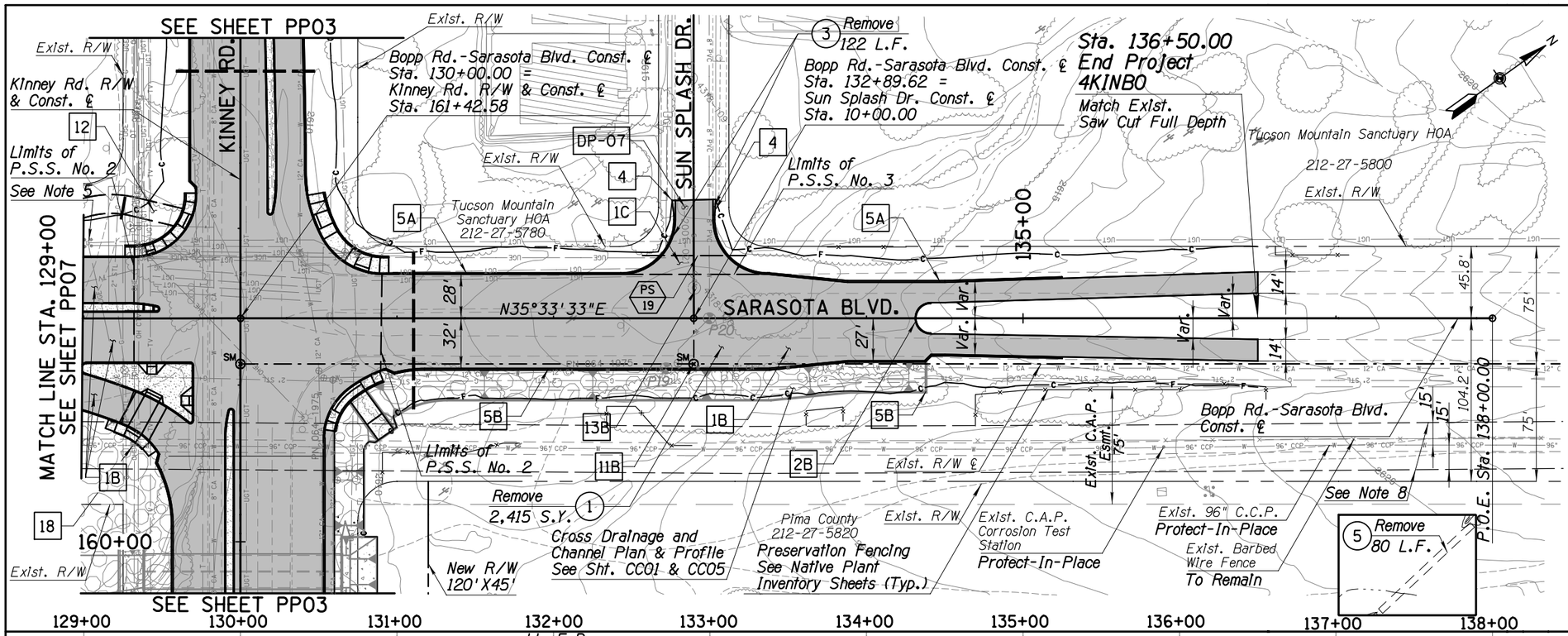
Pima County Department of Transportation

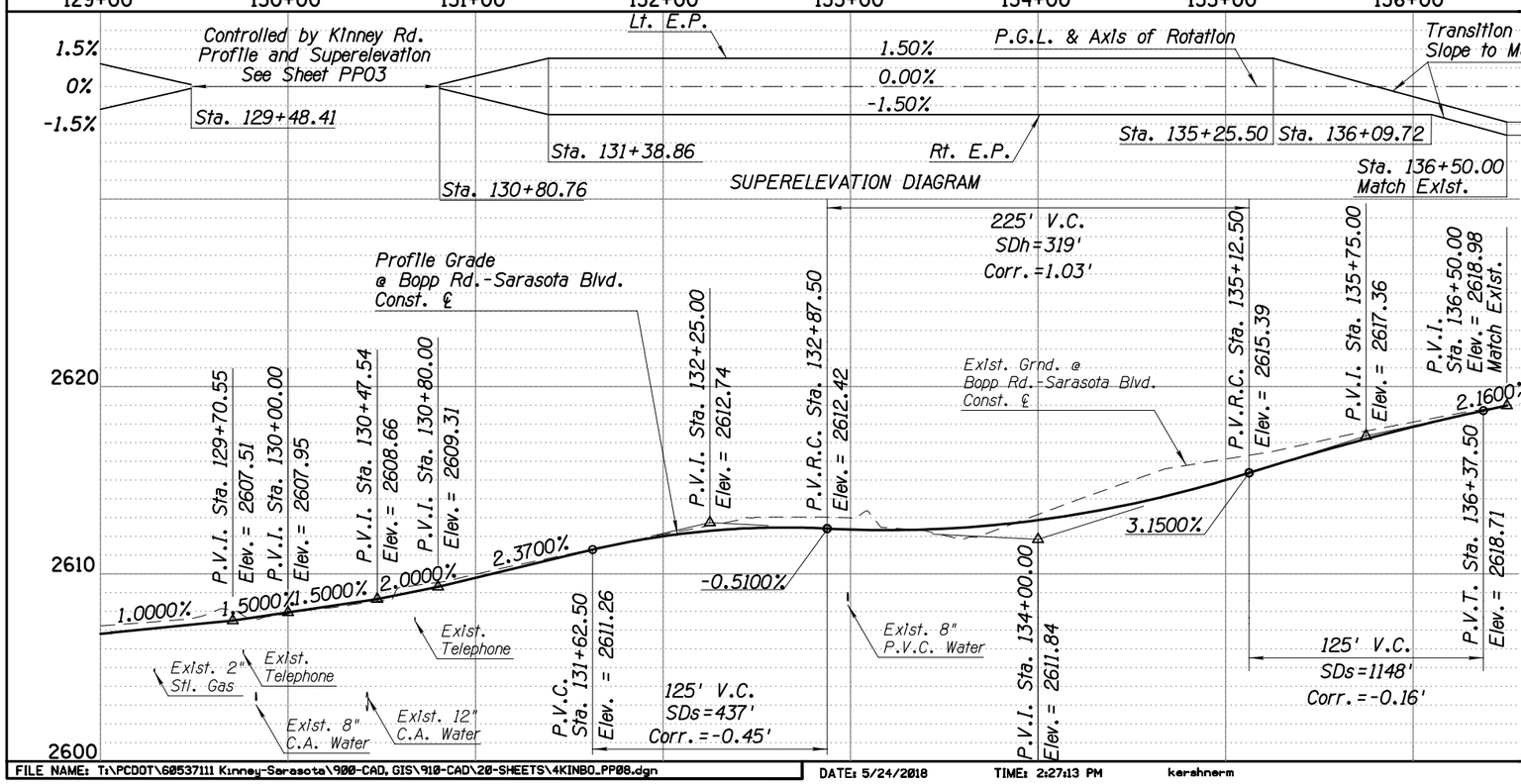
ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 122+00 TO STA. 129+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet PP07 of PP08 | Page 32 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP07.dgn DATE: 5/24/2018 TIME: 2:26:50 PM kershnerm





REMOVAL ITEMS:

1. Remove Pavement, Total=2,415 S.Y.
3. Remove Conc. Header, Total=122 L.F.
5. Remove Pipe (48" C.M.P.), Total=80 L.F.
   Sta. 137+28.46, 302.31' Rt. to
   Sta. 137+87.09, 247.23' Rt.

NEW ITEMS:

1 Pavement
- B Structural Section No. 2 Install 28,189 S.F.
- C Structural Section No. 3 Install 1,668 S.F.

2 Curb (See Shts. SS01-SS02)
- B Conc. Header Std. Dtl. 213 Bid Item No. 9080402 Install 31 L.F.

4 Conc. Curb Transition See Dtl. RD01 Bid Item No. 9080105 Install 20 L.F.

5 Conc. Ford Wall (See Shts. SS01-SS02)
- A 1'X2' ADOT Std. Dwg. C-19.10 Bid Item No. 9080502 Install 462 L.F.
- B 1'X4' ADOT Std. Dwg. C-19.10 Bid Item No. 9080504 Install 457 L.F.

11B New Survey Monument Sta. 132+89.59, 29.24' Rt. PC Std. Dtl. 103 Bid Item No. 9090002 Install 1 EA.

12 New 12' Graded Path Sta. 129+00 to Sta. 129+65 Match Exist. Terrain Bid Item No. 2010001 Install 82 S.Y.

13B Reconstruct Manhole 4318-110 Sta. 132+89.98, 19.44' Lt. Exist. Rim Elev.=2613.33 New Rim Elev.=2612.70 Bid Item No. 5090100 Install Concrete Collar per Std. Dtl. RWRD 211 Bid Item No. 5090020 Reconstruct 6.0 L.F.

18 Exist CAP Test Station To Be Relocated To Sta. 128+36.00, 81.00' Rt. Bid Item No. 5107305 Install 1 EA. See Special Provisions

40 0 40 80' SCALE: 1" =40'

NOTES:

1. See Sheet HC01 for horizontal alignment control.
2. See Geometric Data Sheets GC01 to GC05.
3. See Staking Plan Sheets ST01 to ST03.
4. See Pavement Marking Sheets PM01 to PM05.
5. Remove exist. abandoned rectifier and bollards. Bid Item No. 2020001
6. For Irrigation Sleeve Schedule, See Irrigation Plan Sheets. (PS x)
7. See Native Plant Inventory Summary Sheet NP101 for demolition information regarding landscape.
8. See Special Provisions for CAP requirements regarding construction equipment used within 30' zone.

DP-07 See Side Street & Driveway Plan & Profile Sheet DP04

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40290 MATTHEW P. KERSHNER DATE SIGNED 5/18/18 EXPIRES 6-30-19 Arizona, U.S.A.

AECOM
TRANSPORTATION
AECOM USA, Inc.
3253 E. WETMORE RD. STE 100
Tucson, Arizona 85716
T 520.881.1800 F 520.881.8438
www.aecom.com

ARIZONA 811 Call at least two full working days before you begin excavation. Arizona Blue Stake, Inc. 1-800-782-5348 Not to scale or dimensions exactly accurate.

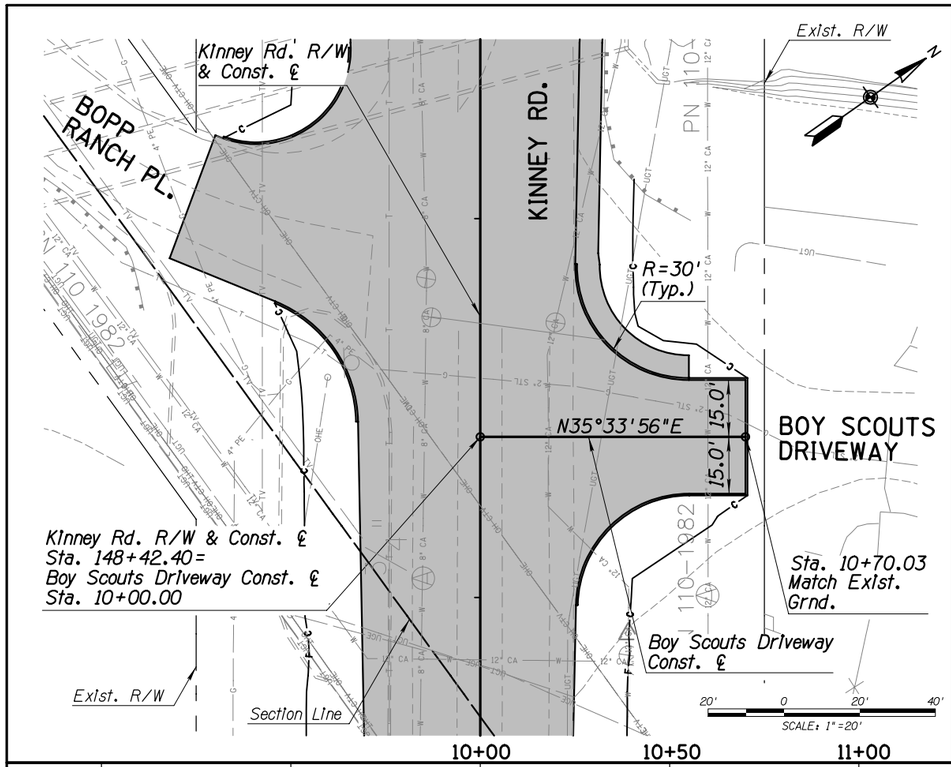
Pima County Department of Transportation

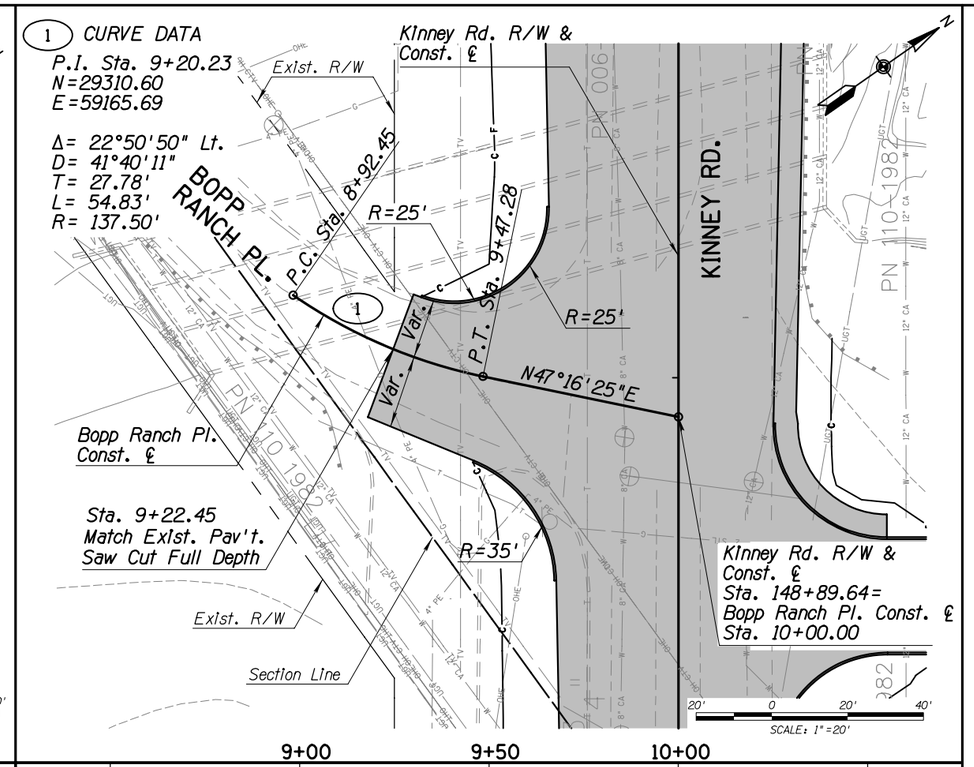
ROADWAY PLAN AND PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 129+00 TO STA. 136+50
PROJECT NO. 4KINBO

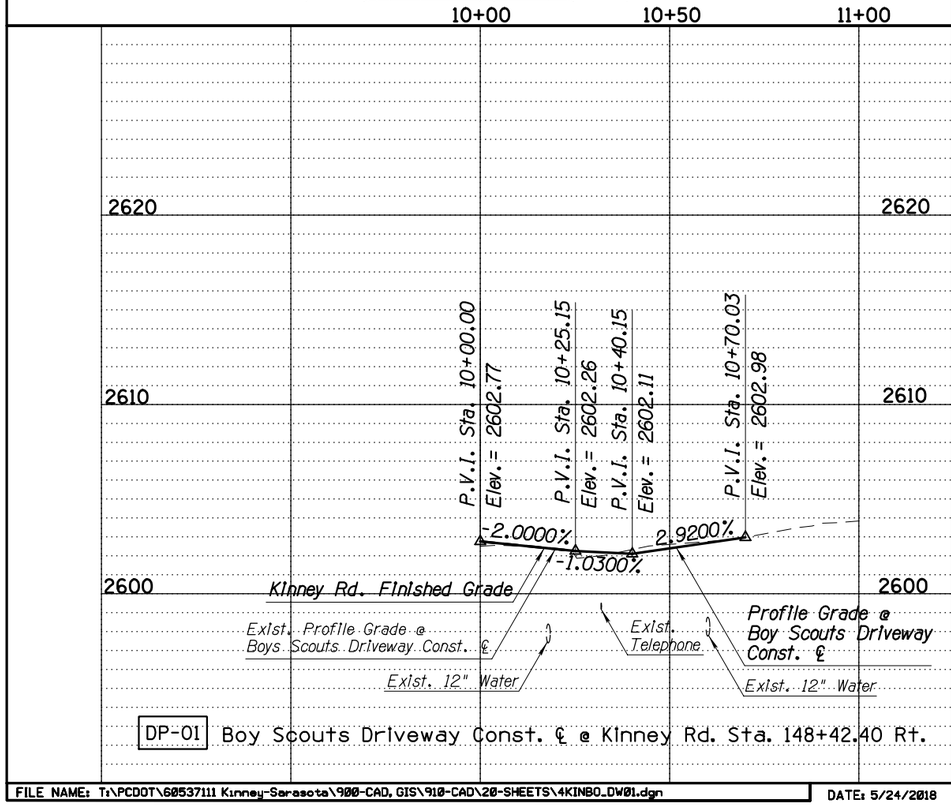
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet PP08 of PP08 | Page 33 of 109

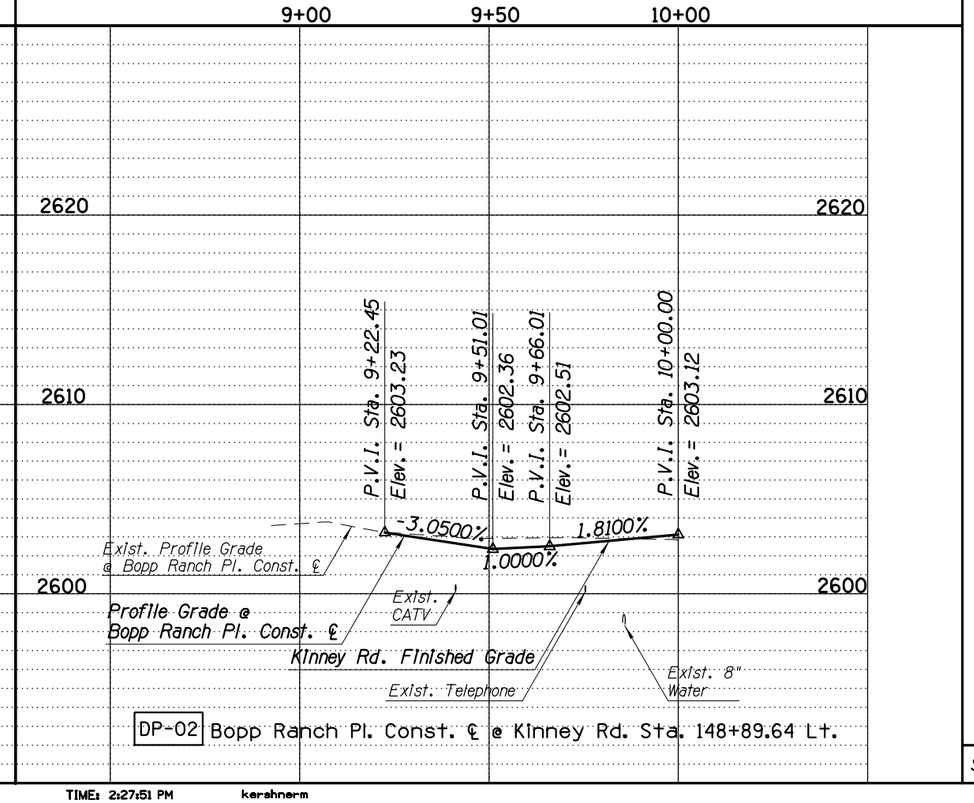
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PP08.dgn | DATE: 5/24/2018 | TIME: 2:27:13 PM | kershnerm







DP-01 Boy Scouts Driveway Const. ℄ @ Kinney Rd. Sta. 148+42.40 Rt.



DP-02 Bopp Ranch Pl. Const. ℄ @ Kinney Rd. Sta. 148+89.64 Lt.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19 ARIZONA, U.S.A.

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438

www.aecom.com

ARIZONA811 BLUE STAKE, INC. 811 Call at least two full working days before you begin excavation. Arizona Law requires all underground utilities to be located prior to excavation.

Pima County Department of Transportation

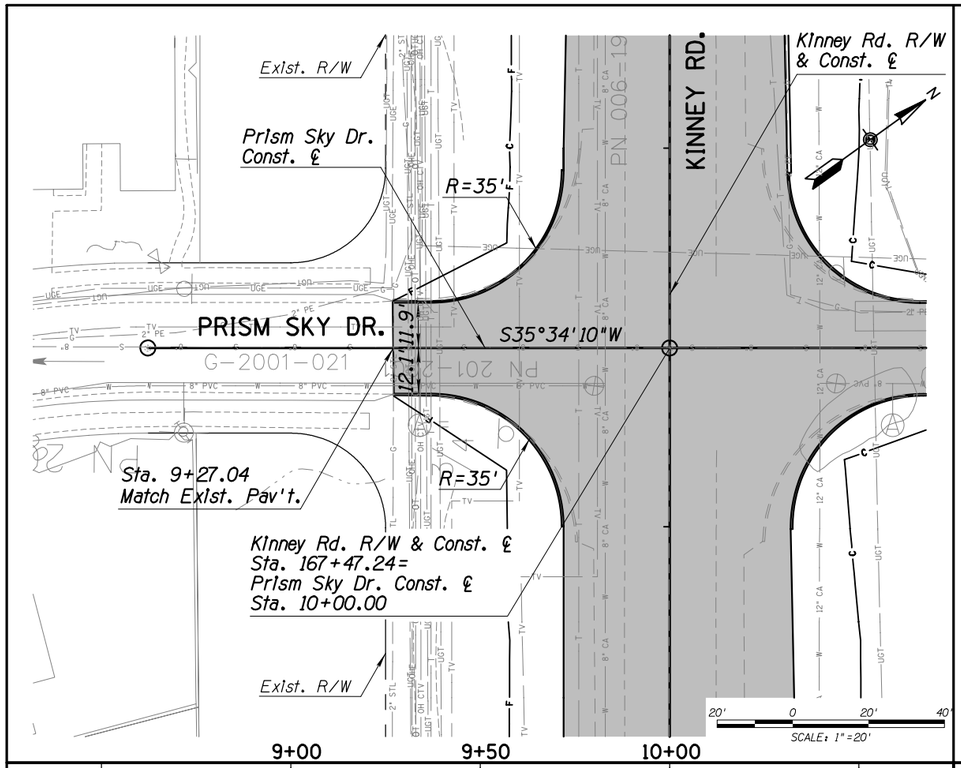
SIDE STREET & DRIVEWAY
PLAN AND PROFILE SHEET
PIMA COUNTY - BOPP RD - SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

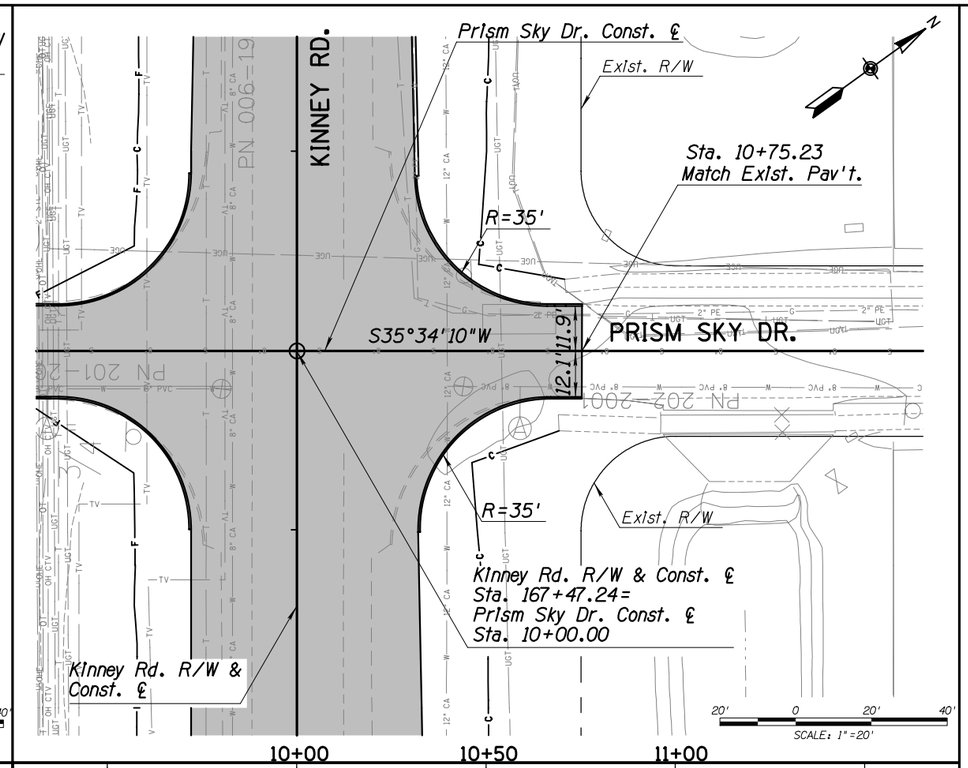
PROJECT NO. 4KINBO

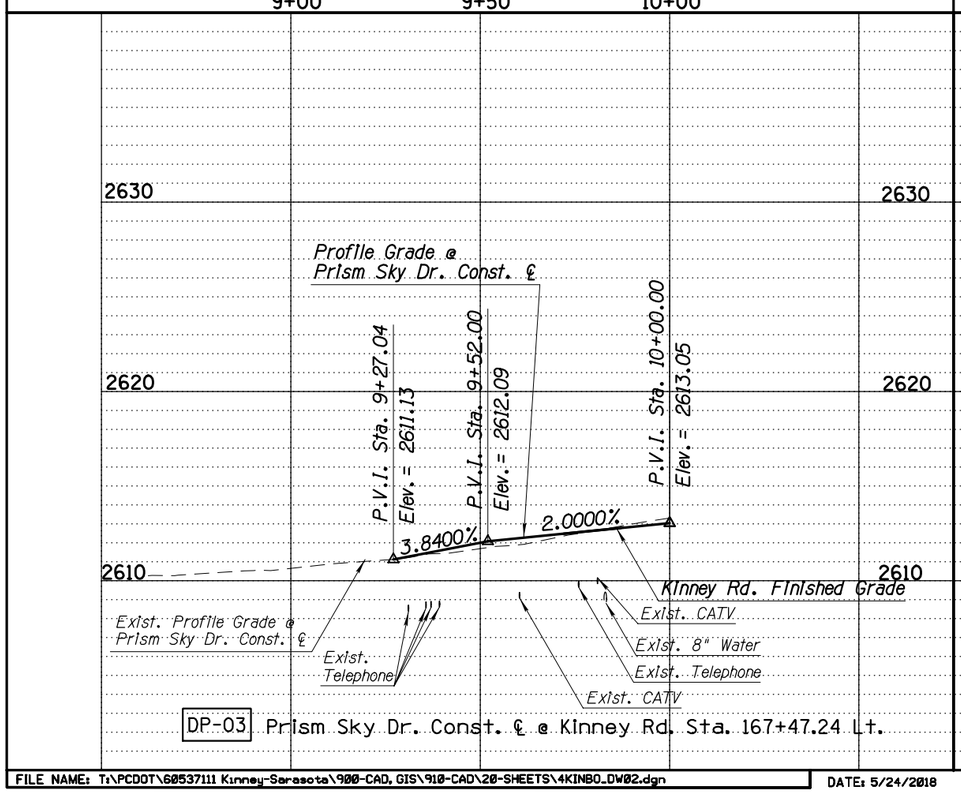
PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1" = 20' Horiz. 1" = 4' Vert. | Sheet DP01 of DP04 | Page 34 of 109

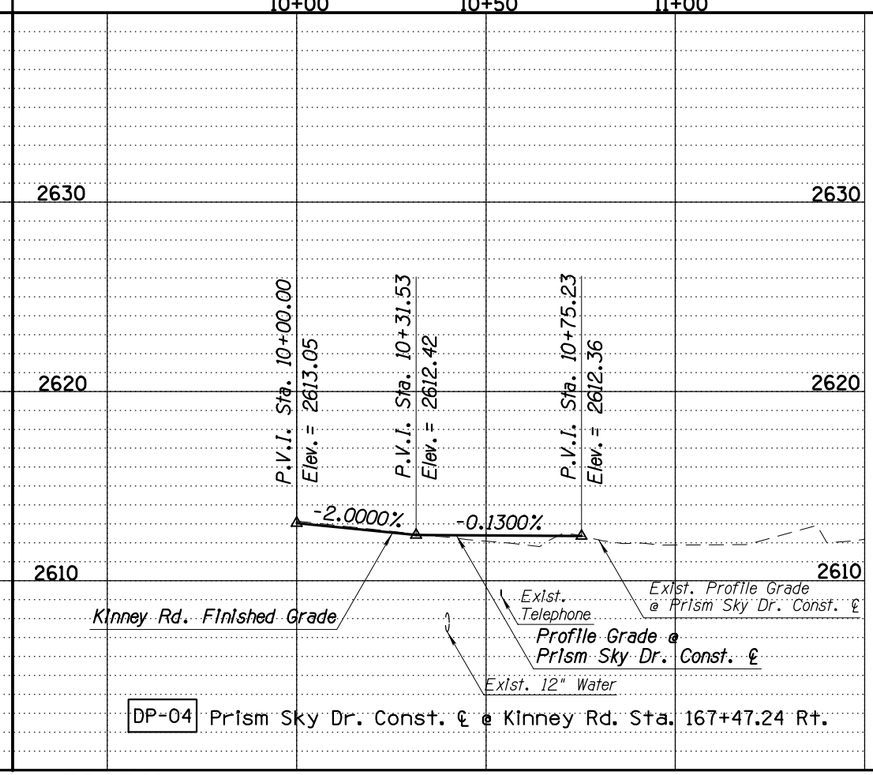
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_DW01.dgn DATE: 5/24/2018 TIME: 2:27:51 PM kershnerm







DP-03 Prism Sky Dr. Const. ℄ @ Kinney Rd. Sta. 167+47.24 Lt.



DP-04 Prism Sky Dr. Const. ℄ @ Kinney Rd. Sta. 167+47.24 Rt.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40990 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

Pima County Department of Transportation

SIDE STREET & DRIVEWAY
PLAN AND PROFILE SHEET
PIMA COUNTY - BOPP RD
BLVD AT KINNEY RD IMPROVEMENTS

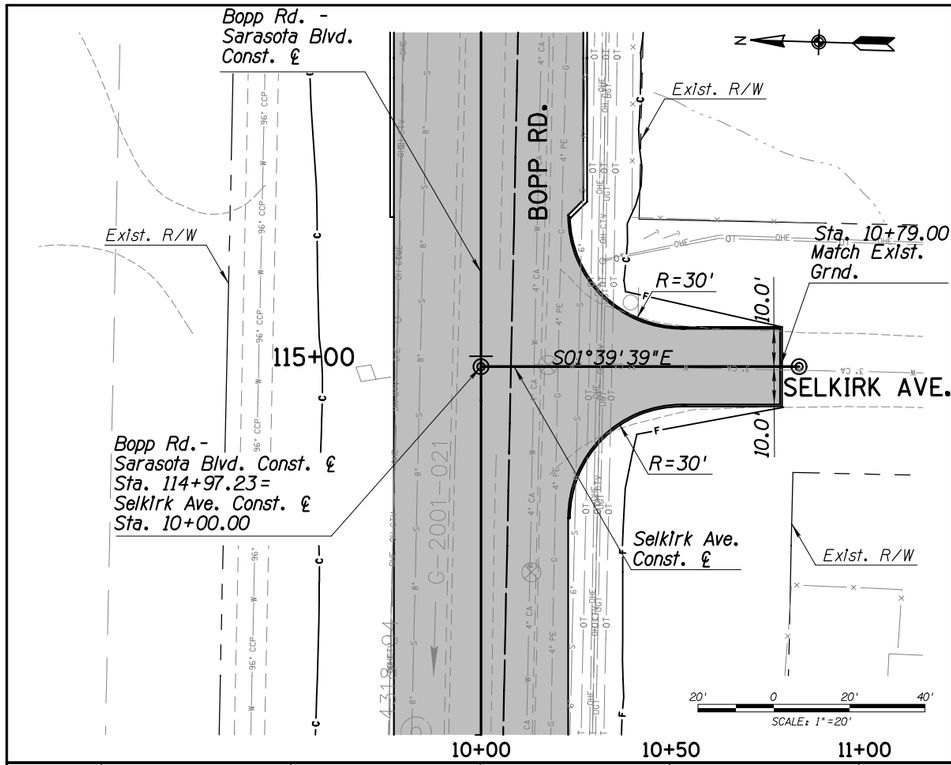
PROJECT NO. 4KINBO

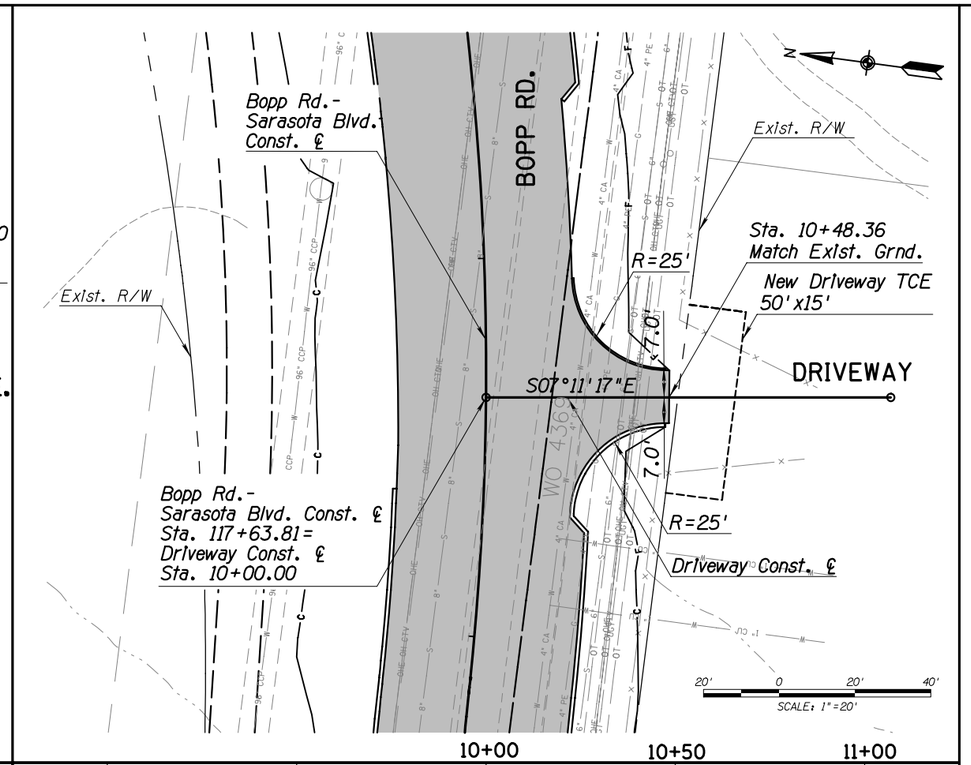
PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

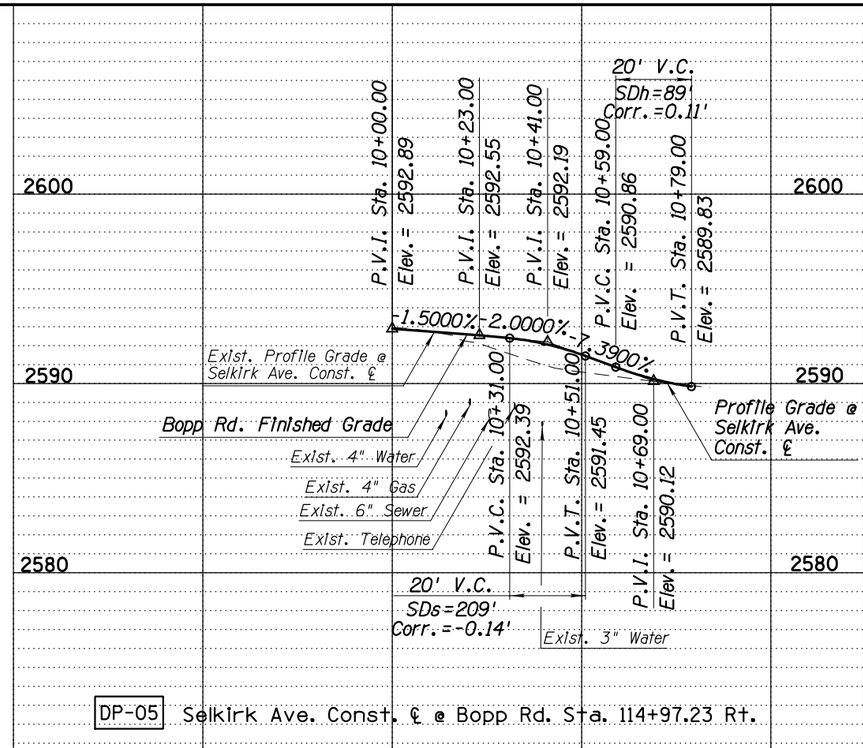
Scale: 1" = 20' Horiz. 1" = 4' Vert.

Sheet DP02 of DP04

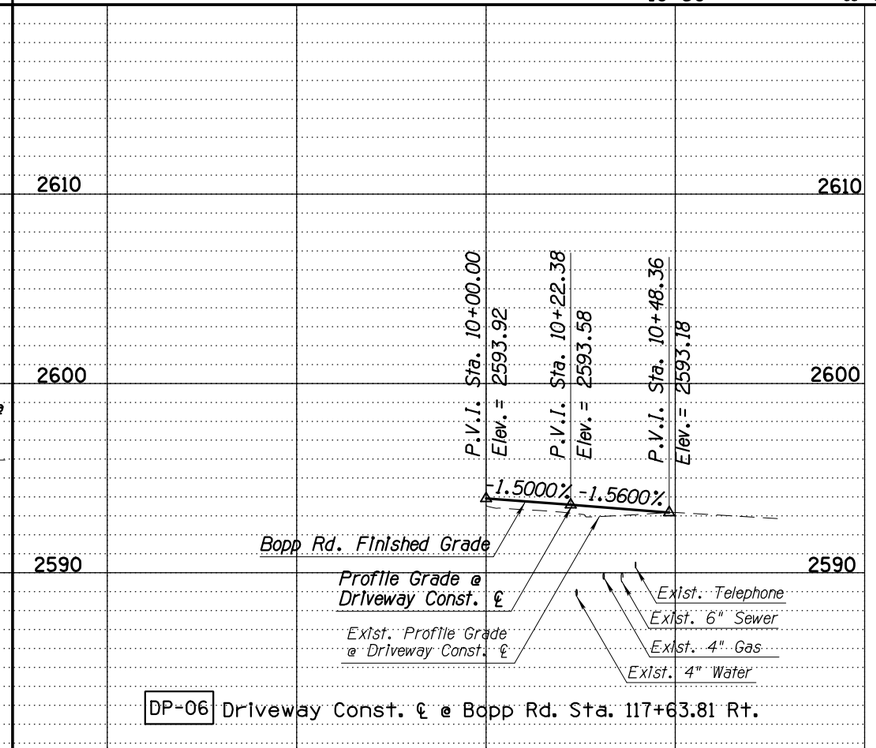
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_DW02.dgn DATE: 5/24/2018 TIME: 2:28:13 PM kershnerm







DP-05 Selkirk Ave. Const. ℄ @ Bopp Rd. Sta. 114+97.23 Rt.



DP-06 Driveway Const. ℄ @ Bopp Rd. Sta. 117+63.81 Rt.

No.	Revision Description	Engineer	Date

			Date
Designed	MPK		05/18
Drawn	MPK		05/18
Checked	CJR		05/18
Proj. Engr.	MPK		05/18

Ana M. Olivares, P.E., Director

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE Signed 5/24/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE. 400
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig, it's the law! ARIZONA BLUE STAKE, INC. 602.263.1100 Not to be used outside Arizona

Pima County Department of Transportation

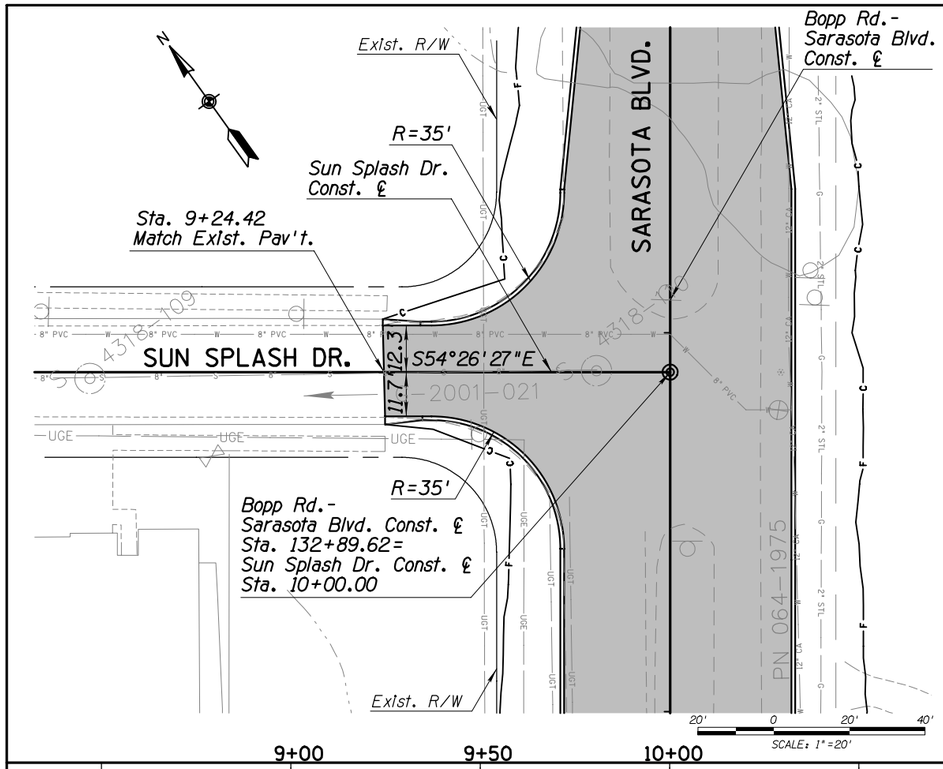
SIDE STREET & DRIVEWAY PLAN AND PROFILE SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

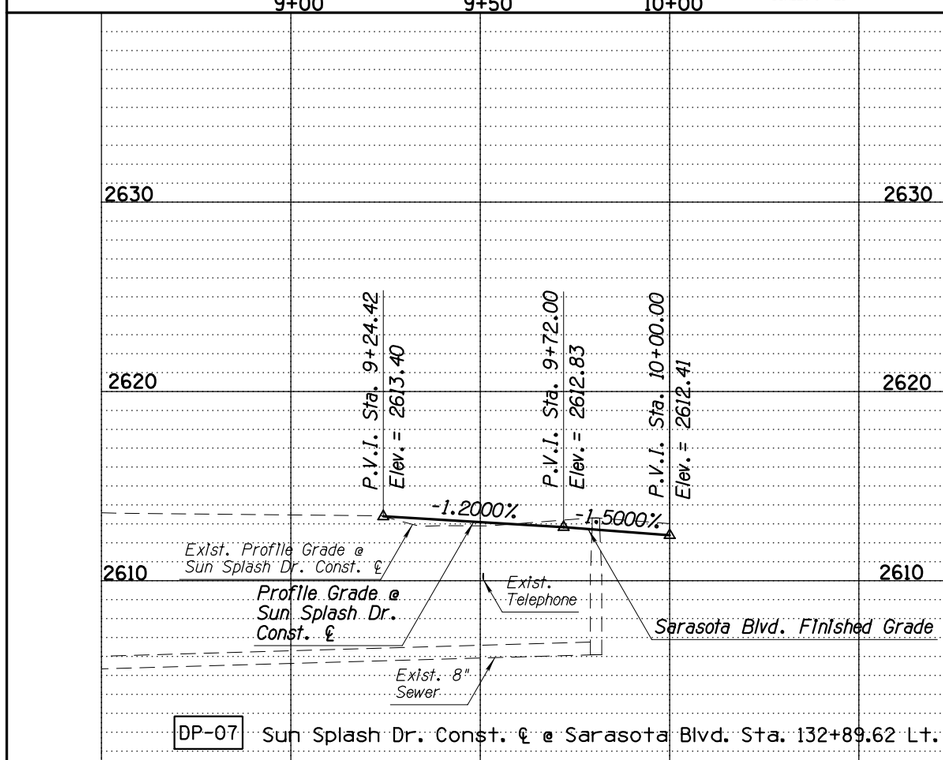
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1" = 20' Horiz. 1" = 4' Vert. | Sheet DP03 of DP04 | Page 36 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_DW03.dgn DATE: 5/24/2018 TIME: 2:28:34 PM kershnerm





DP-07 Sun Splash Dr. Const. ℄ @ Sarasota Blvd. Sta. 132+89.62 Lt.

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_DW04.dgn DATE: 5/24/2018 TIME: 2:28:55 PM kershnerm

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE Signed 5/24/2018 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. McMORE RD, STE 490
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig, it's the law
ARIZONA BLUE STAKE, INC.
Arizona Blue Stake, Inc. Member Number 140001

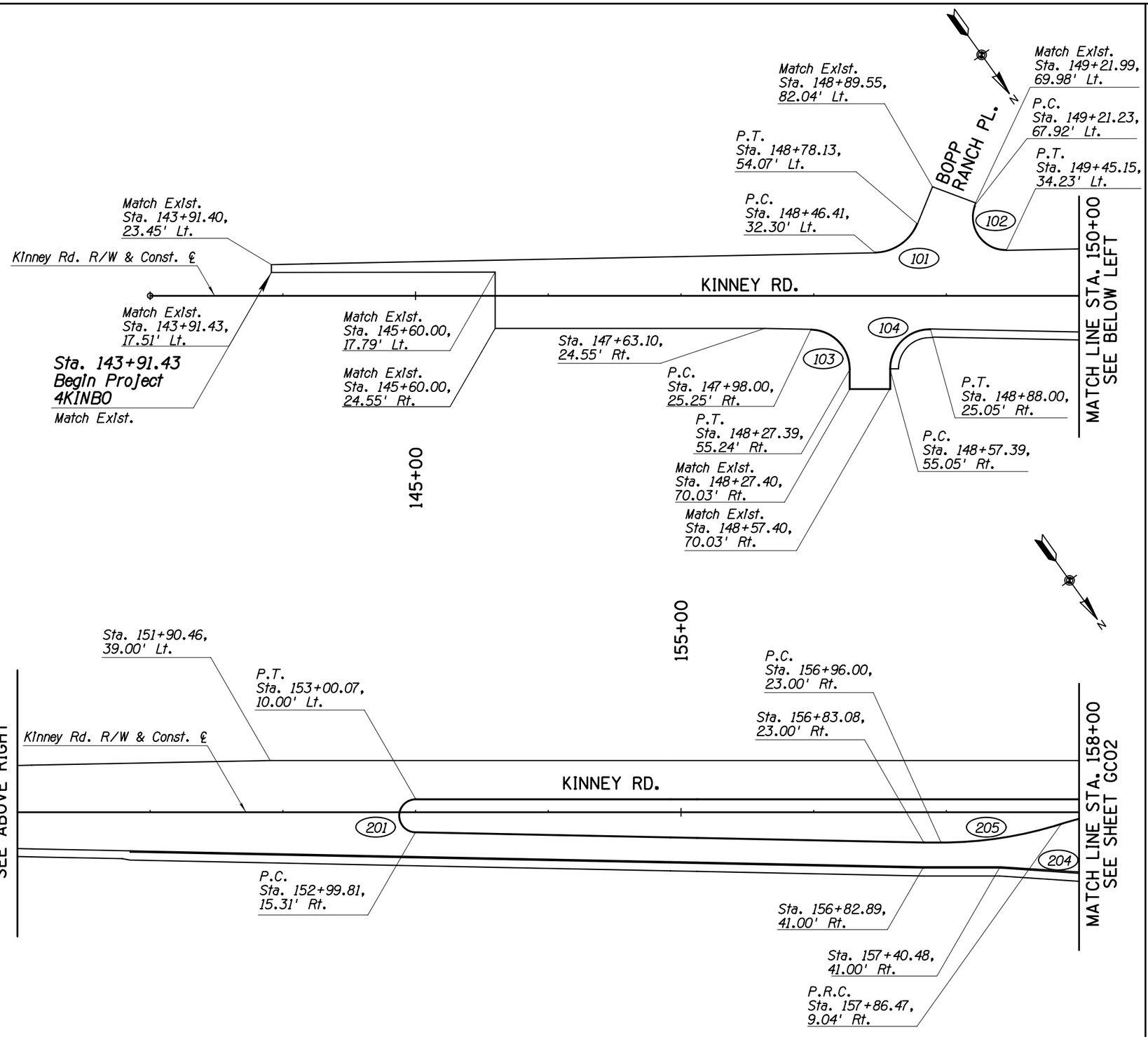
Pima County Department of Transportation

SIDE STREET & DRIVEWAY
PLAN AND PROFILE SHEET
PIMA COUNTY - BOPP RD - SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1" = 20' Horiz. 1" = 4' Vert. | Sheet DP04 of DP04 | Page 37 of 109



NOTES:

1. See Sheet HC01 for horizontal alignment control.
2. See Sheet GC05 for curve data table.
3. See Sheets PP01 to PP08 for Plan & Profile.
4. See Sheets PM01 to PM05 for Pavement Marking Plans.
5. Stations & offsets are measured to edge of pavement.
6. All stations and offsets are referenced from Kinney Rd. R/W & Const. ℄.

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40990 MATTHEW P. KERSHNER DATE SIGNED 5-30-19 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

Call at least two full working days before you begin excavation
CALL ARIZONA 811
Arizona Blue Stake, Inc.
Stake all underground utilities within your work area

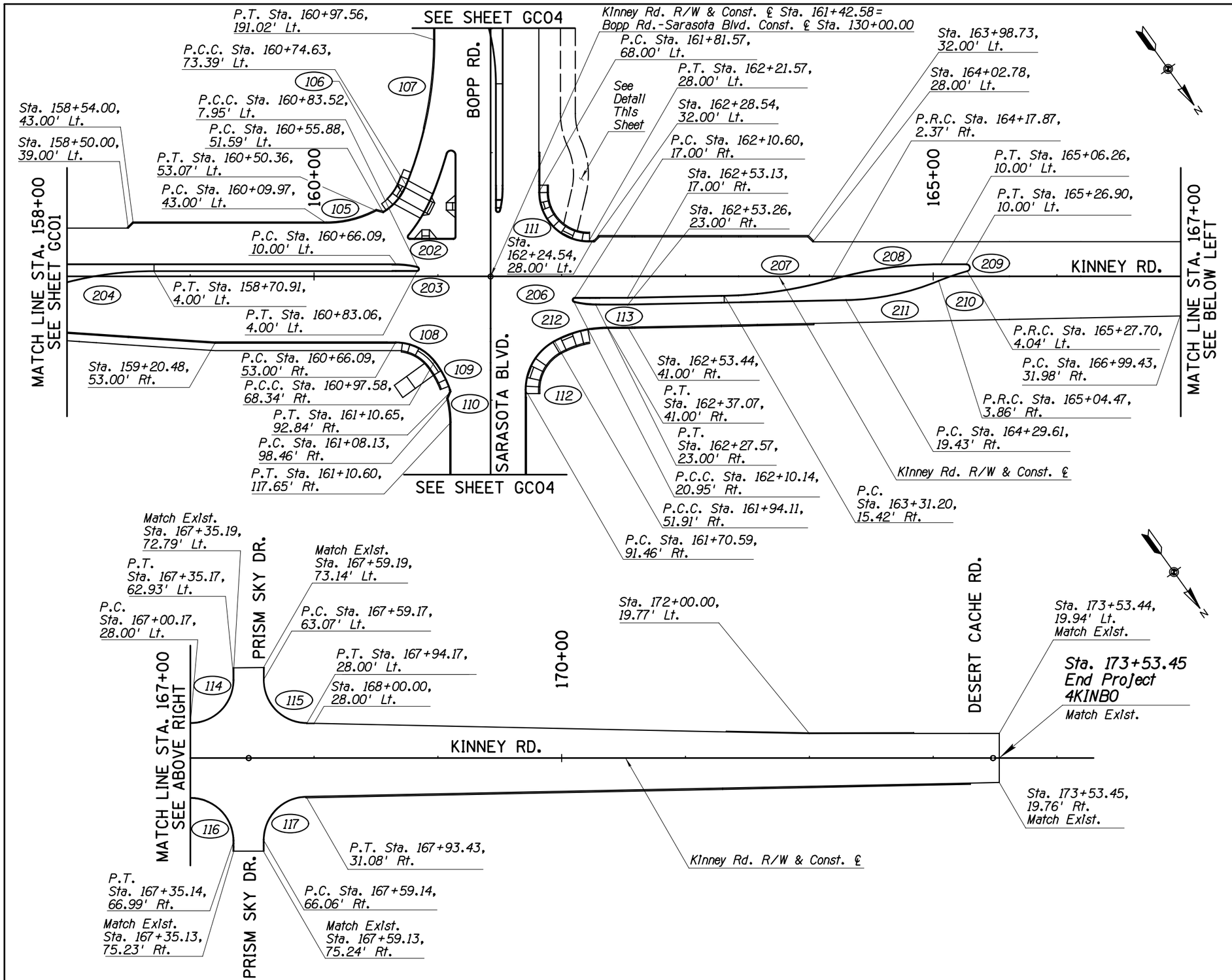
Pima County Department of Transportation

GEOMETRIC DATA SHEET
PIMA COUNTY - BOPP RD - SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+91 TO STA. 158+00
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet GC01 of GC05	Page 38 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_G01.dgn DATE: 5/24/2018 TIME: 2:29:22 PM kershnerm



NOTES:

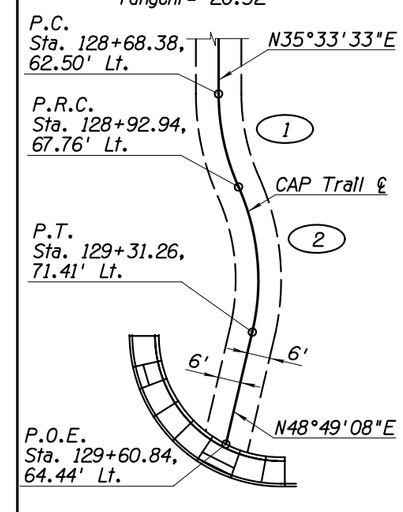
1. See Sheet HC01 for horizontal alignment control.
2. See Sheet GC05 for curve data table.
3. See Sheets PP01 to PP08 for Plan & Profile.
4. See Sheets PM01 to PM05 for Pavement Marking Plans.
5. Stations & offsets are measured to edge of pavement.
6. All stations and offsets are referenced from Kinney Rd. R/W & Const. ℄.

CURVE DATA (1)

Delta = 24°09'45"
Radius = 60.00'
Length = 25.30'
Tangent = 12.84'

CURVE DATA (2)

Delta = 37°25'20"
Radius = 60.00'
Length = 39.19'
Tangent = 20.32'



CAP TRAIL GEOMETRY DETAIL
N.T.S.

Ana M. Olivares, P.E., Director

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

EXPIRES 6-30-19

AECOM
www.aecom.com
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

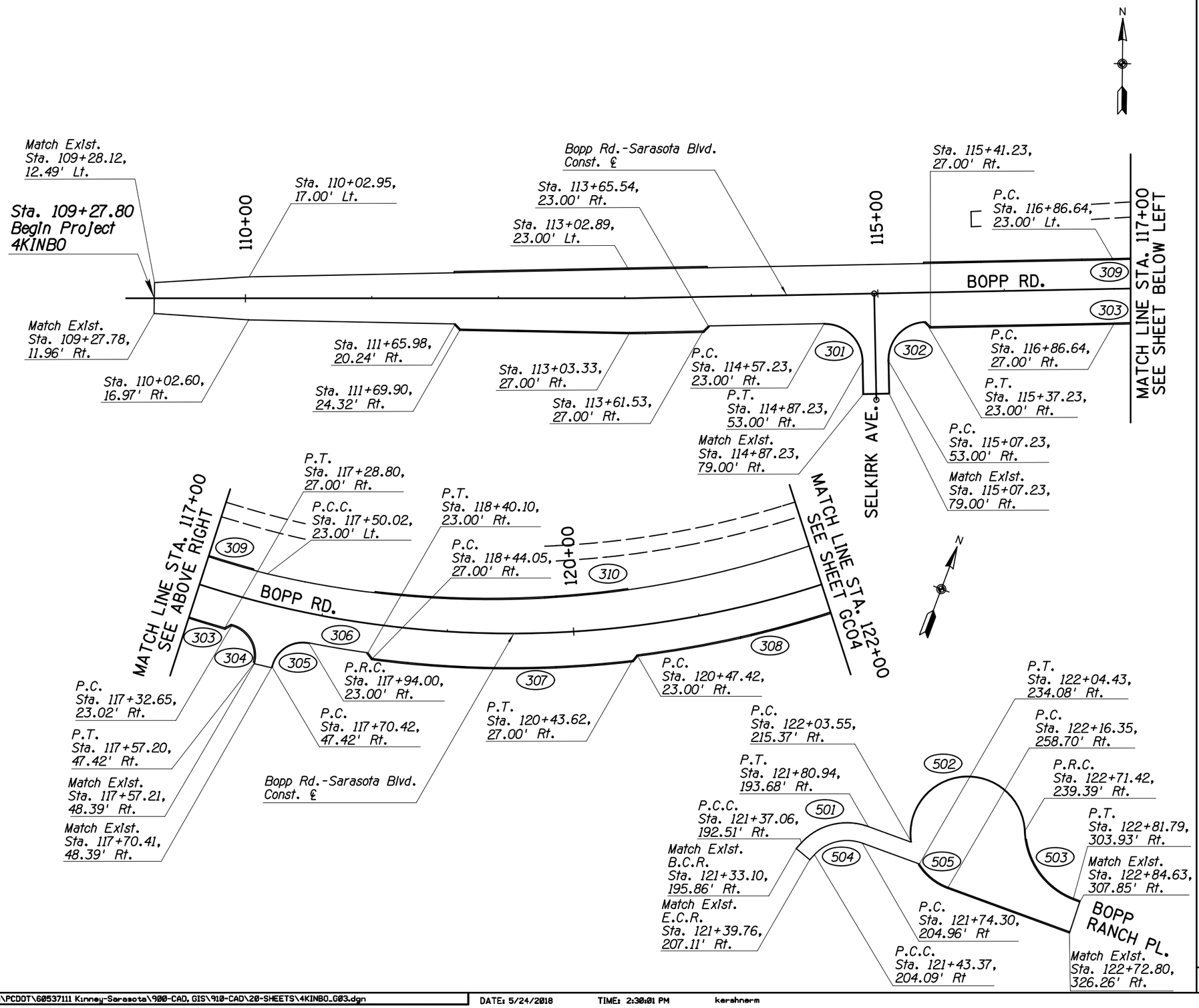
Pima County Department of Transportation

GEOMETRIC DATA SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 158+00 TO STA. 173+53
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet GC02 of GC05 | Page 39 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_G02.dgn DATE: 5/24/2018 TIME: 2:29:41 PM kershnerm



NOTES:

1. See Sheet HC01 for Horizontal Alignment Control.
2. See Sheet GC05 for Curve Data Table.
3. See Sheets PP01 to PP08 for Plan & Profile.
4. See Sheets PM01 to PM05 for Pavement Marking Plans.
5. Stations & offsets are measured to edge of pavement.
6. All stations and offsets are referenced from Bopp Rd.-Sarasota Blvd. Const. ℄.

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5-24-18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
3555 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

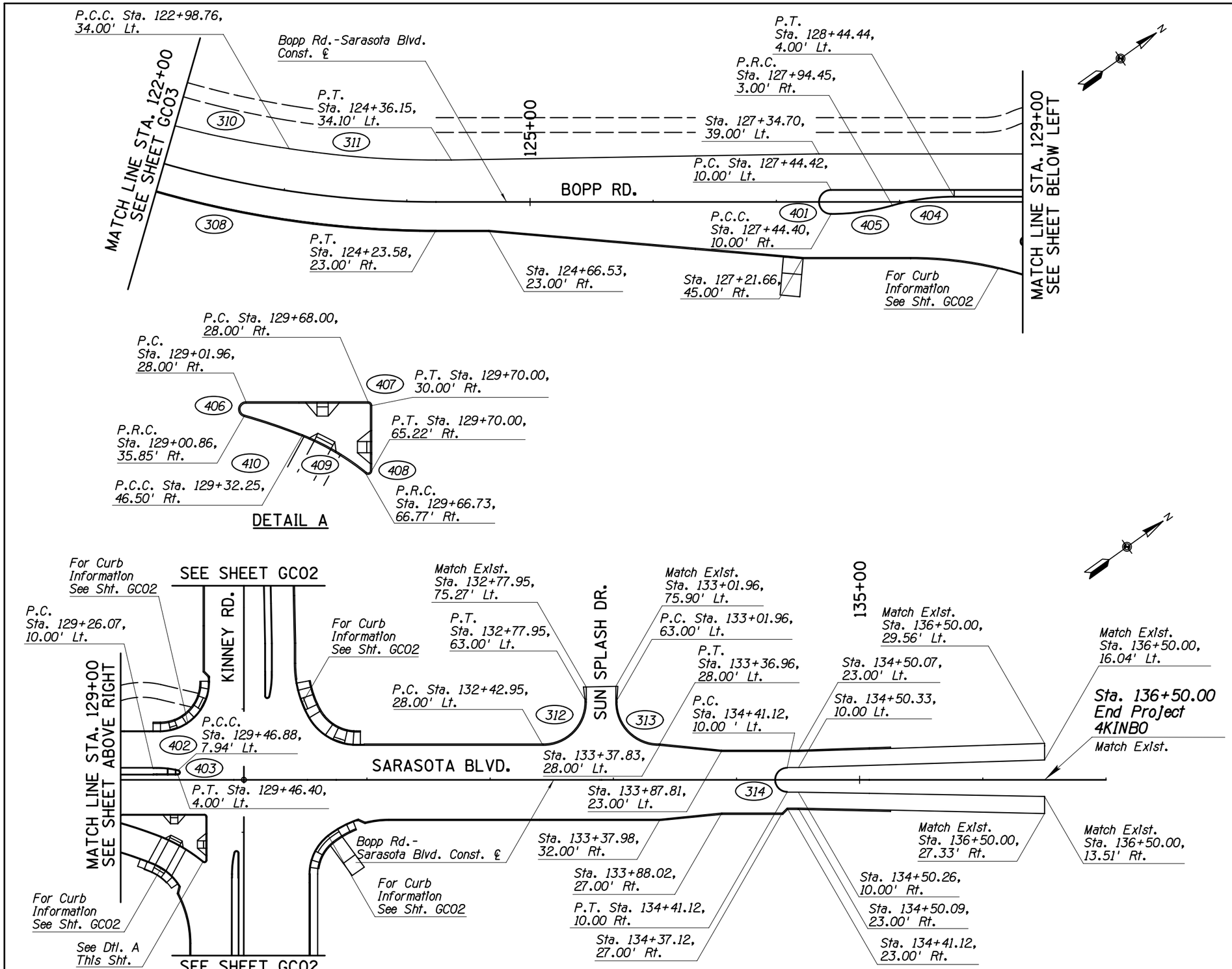
Pima County Department of Transportation

GEOMETRIC DATA SHEET
PIMA COUNTY - BOPP RD - SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+28 TO STA. 122+00
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet GC03 of GC05	Page 40 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_G03.dgn DATE: 5/24/2018 TIME: 2:30:01 PM kershnerm



NOTES:

1. See Sheet HC01 for horizontal alignment control.
2. See Sheet GC05 for curve data table.
3. See Sheets PP01 to PP08 for Plan & Profile.
4. See Sheets PM01 to PM05 for Pavement Marking Plans.
5. Stations & offsets are measured to edge of pavement.
6. All stations and offsets are referenced from Bopp Rd.-Sarasota Blvd. Const. ℄.

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

Pima County Department of Transportation

GEOMETRIC DATA SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 122+00 TO STA. 136+50
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet GC04 of GC05 | Page 41 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_G04.dgn | DATE: 5/24/2018 | TIME: 2:30:21 PM | kershnerm

CURVE DATA

NO.	DELTA	RADIUS	LENGTH	TANGENT
101	66°40'55"	35.00'	40.73'	23.03'
102	111°29'18"	25.00'	48.65'	36.71'
103	88°50'51"	30.00'	46.52'	29.40'
104	91°09'09"	30.00'	47.73'	30.61'
105	28°00'26"	86.00'	42.04'	21.45'
106	37°15'34"	45.00'	29.26'	15.17'
107	22°04'26"	313.00'	120.59'	61.05'
108	51°56'23"	40.00'	36.26'	19.48'
109	19°59'06"	80.00'	27.90'	14.10'
110	14°37'42"	76.00'	19.40'	9.75'
111	89°59'36"	40.00'	62.83'	40.00'
112	61°29'44"	45.00'	48.30'	26.77'
113	28°30'39"	90.00'	44.78'	22.87'
114	89°53'22"	35.00'	54.91'	34.93'
115	90°06'38"	35.00'	55.05'	35.07'
116	91°10'49"	35.00'	55.70'	35.73'
117	88°49'11"	35.00'	54.26'	34.29'
201	178°51'03"	12.66'	39.51'	1262.12'
202	13°26'34"	75.00'	17.60'	8.84'
203	166°33'26"	2.00'	5.81'	16.97'
204	17°33'02"	280.03'	85.78'	43.23'
205	17°33'02"	300.00'	91.89'	46.31'
206	166°33'26"	2.00'	5.81'	16.97'
207	14°48'39"	340.00'	87.89'	44.19'
208	16°00'08"	320.62'	89.55'	45.07'
209	164°45'57"	3.03'	8.72'	22.68'
210	7°06'13"	198.00'	24.55'	12.29'
211	21°11'03"	208.00'	76.90'	38.90'
212	13°26'34"	75.00'	17.60'	8.84'

CURVE DATA

NO.	DELTA	RADIUS	LENGTH	TANGENT
301	90°00'00"	30.00'	47.12'	30.00'
302	90°00'00"	30.00'	47.12'	30.00'
303	3°01'11"	827.00'	43.59'	21.80'
304	90°06'38"	25.00'	39.32'	25.05'
305	87°50'15"	25.00'	38.33'	24.07'
306	3°18'06"	823.00'	47.42'	23.72'
307	14°17'37"	827.00'	206.31'	103.69'
308	26°56'27"	823.00'	386.98'	197.14'
309	4°32'23"	777.00'	61.56'	30.80'
310	39°19'58"	771.05'	529.31'	275.56'
311	9°52'46"	766.00'	132.08'	66.20'
312	90°00'00"	35.00'	54.98'	35.00'
313	90°00'00"	35.00'	54.98'	35.00'
314	180°00'00"	10.00'	31.42'	-1.00'
401	180°01'54"	10.00'	31.43'	-1.00'
402	13°26'34"	75.00'	17.60'	8.84'
403	166°33'26"	2.00'	5.81'	16.97'
404	15°56'33"	182.00'	50.64'	25.49'
405	15°57'32"	182.00'	50.68'	25.51'
406	164°04'53"	4.00'	11.46'	28.61'
407	90°00'24"	2.00'	3.14'	2.00'
408	129°16'50"	2.00'	4.51'	4.22'
409	17°41'48"	130.00'	40.15'	20.24'
410	5°40'18"	335.00'	33.16'	16.59'
501	67°32'25"	49.00'	57.76'	32.77'
502	186°02'12"	45.00'	146.11'	-1.00'
503	66°45'12"	60.00'	69.90'	39.53'
504	67°24'53"	35.00'	41.18'	23.35'
505	37°46'57"	45.00'	29.67'	15.40'

Ana M. Olivares, P.E., Director

Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 40990 MATTHEW P. KERSHNER DATE SIGNED 5-30-18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

Pima County Department of Transportation

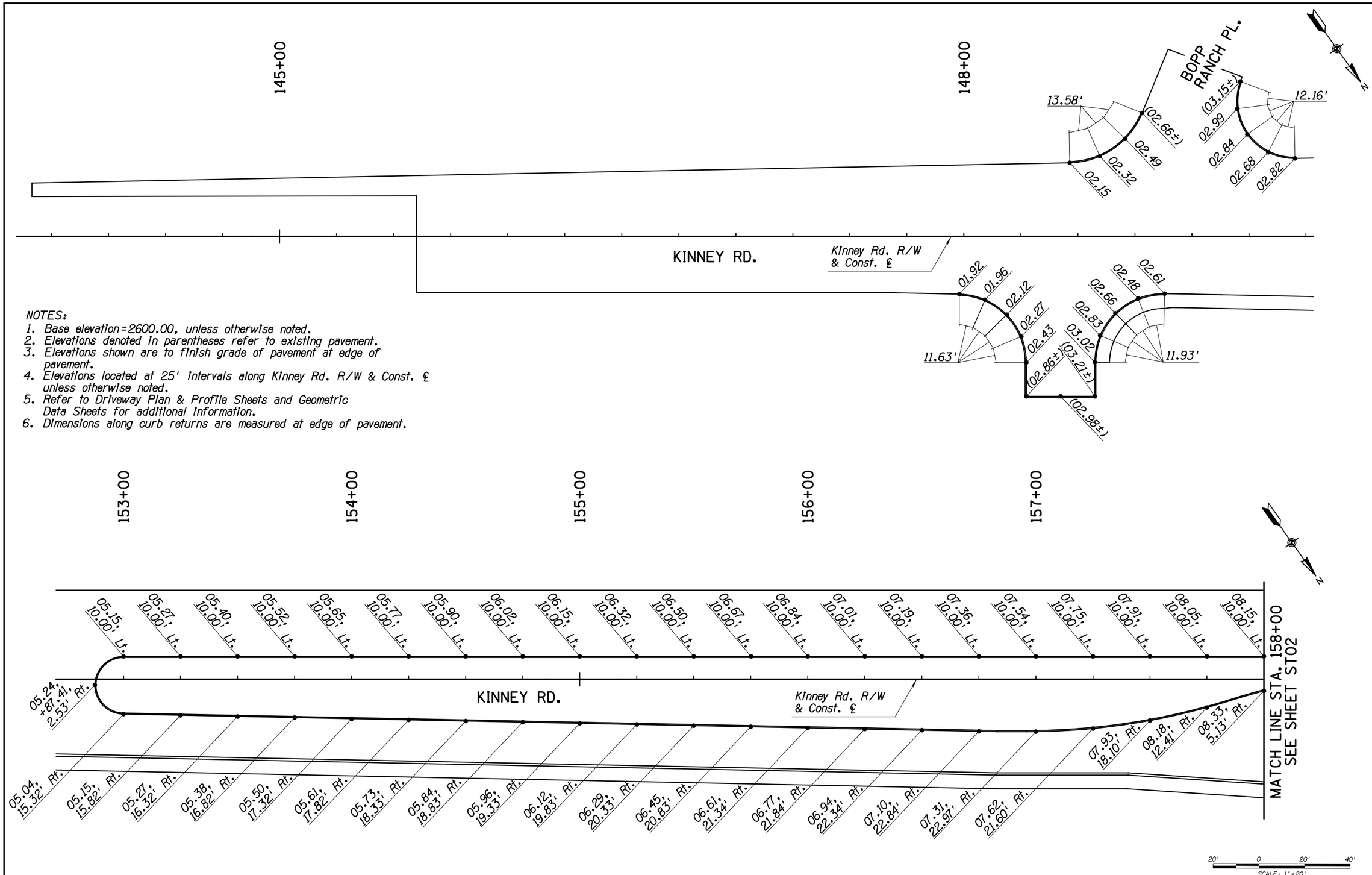
GEOMETRIC DATA SHEET
PIMA COUNTY - BOPP RD - SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N/A	Sheet GC05 of GC05	Page 42 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_G05.dgn DATE: 5/24/2018 TIME: 2:30:42 PM kershnerm



NOTES:
1. Base elevation=2600.00, unless otherwise noted.
2. Elevations denoted in parentheses refer to existing pavement.
3. Elevations shown are to finish grade of pavement at edge of pavement.
4. Elevations located at 25' intervals along Kinney Rd. R/W & Const. ℄ unless otherwise noted.
5. Refer to Driveway Plan & Profile Sheets and Geometric Data Sheets for additional information.
6. Dimensions along curb returns are measured at edge of pavement.

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

CALL at least two full working days before you begin excavation
ARIZONA 811
BLUE STAKE, INC.
Call 811 Before You Dig

Pima County Department of Transportation

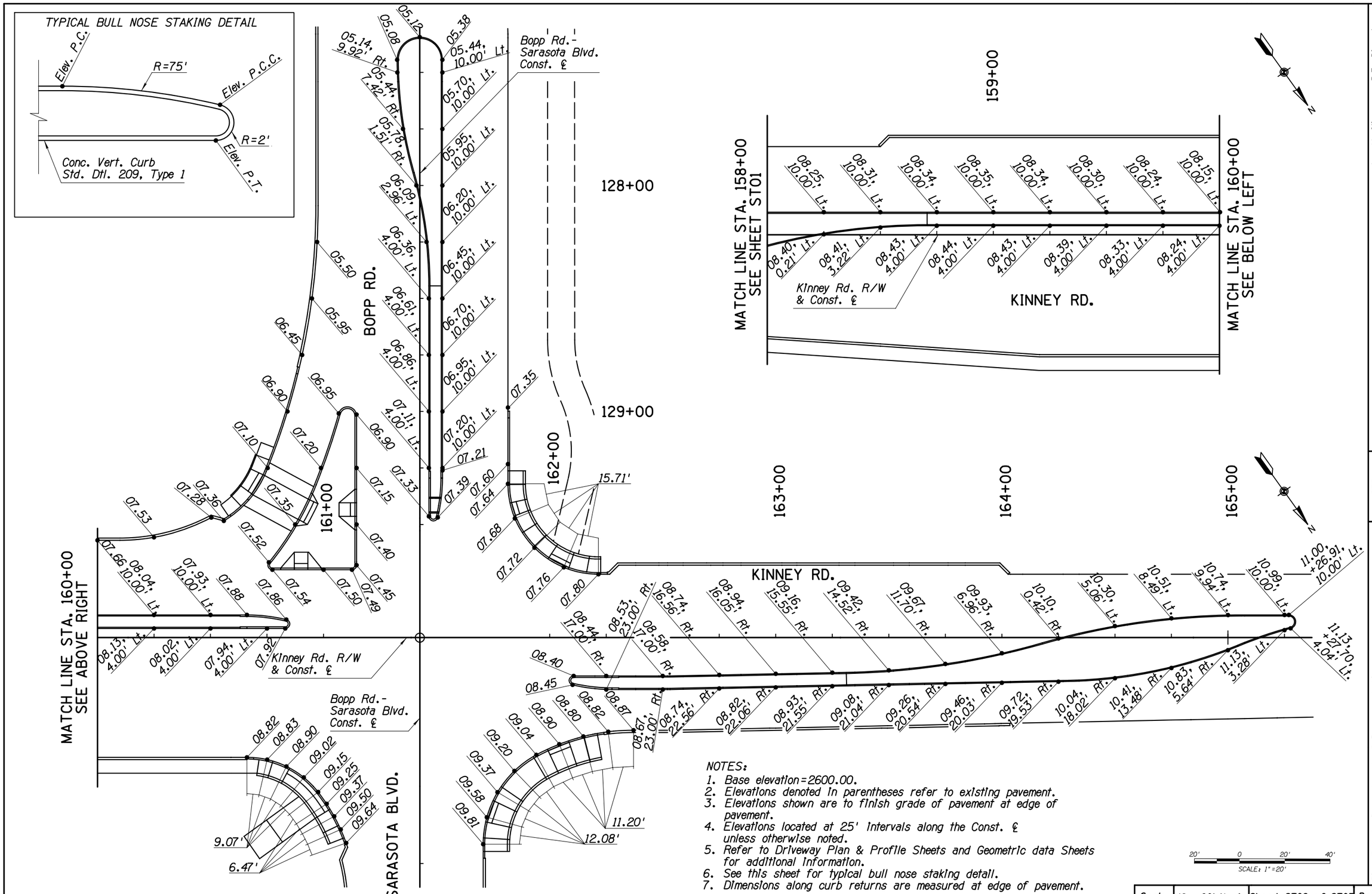
STAKING PLAN SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1" = 20' Horiz. | Sheet ST01 of ST03 | Page 43 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_ST01.dgn DATE: 5/24/2018 TIME: 2:31:14 PM kershnerm



NOTES:

1. Base elevation=2600.00.
2. Elevations denoted in parentheses refer to existing pavement.
3. Elevations shown are to finish grade of pavement at edge of pavement.
4. Elevations located at 25' intervals along the Const. ℄ unless otherwise noted.
5. Refer to Driveway Plan & Profile Sheets and Geometric data Sheets for additional information.
6. See this sheet for typical bull nose staking detail.
7. Dimensions along curb returns are measured at edge of pavement.

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Registered Professional Engineer (Civil) CERTIFICATE NO. 40900 MATTHEW P. KERSHNER DATE SIGNED 6/30/18 EXPIRES 6-30-19

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8408
www.aecom.com

ARIZONA 811
Call at least two full working days before you begin excavation
BLUE STAKES, INC.
1-800-782-5348
Not a locator, underground facilities location service

Pima County Department of Transportation

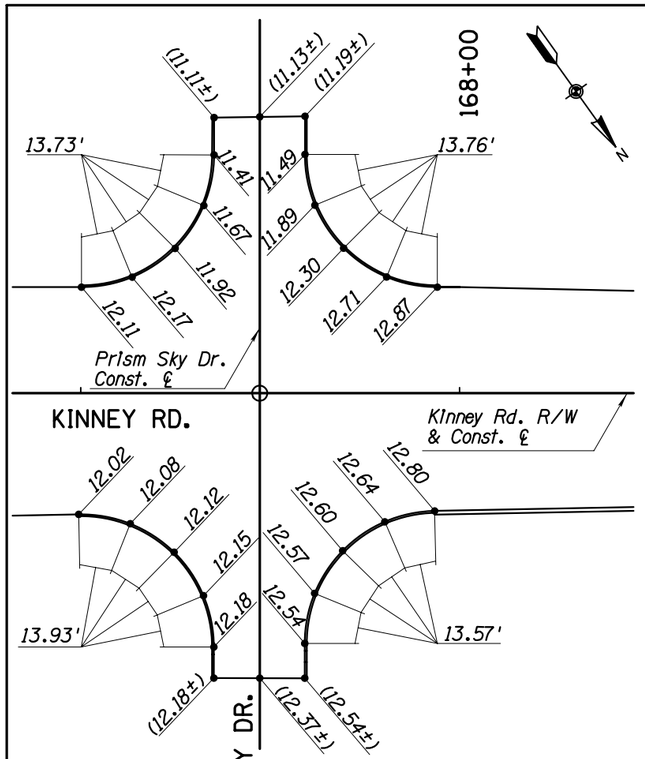
STAKING PLAN SHEET
PIMA COUNTY - BOPP RD - SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

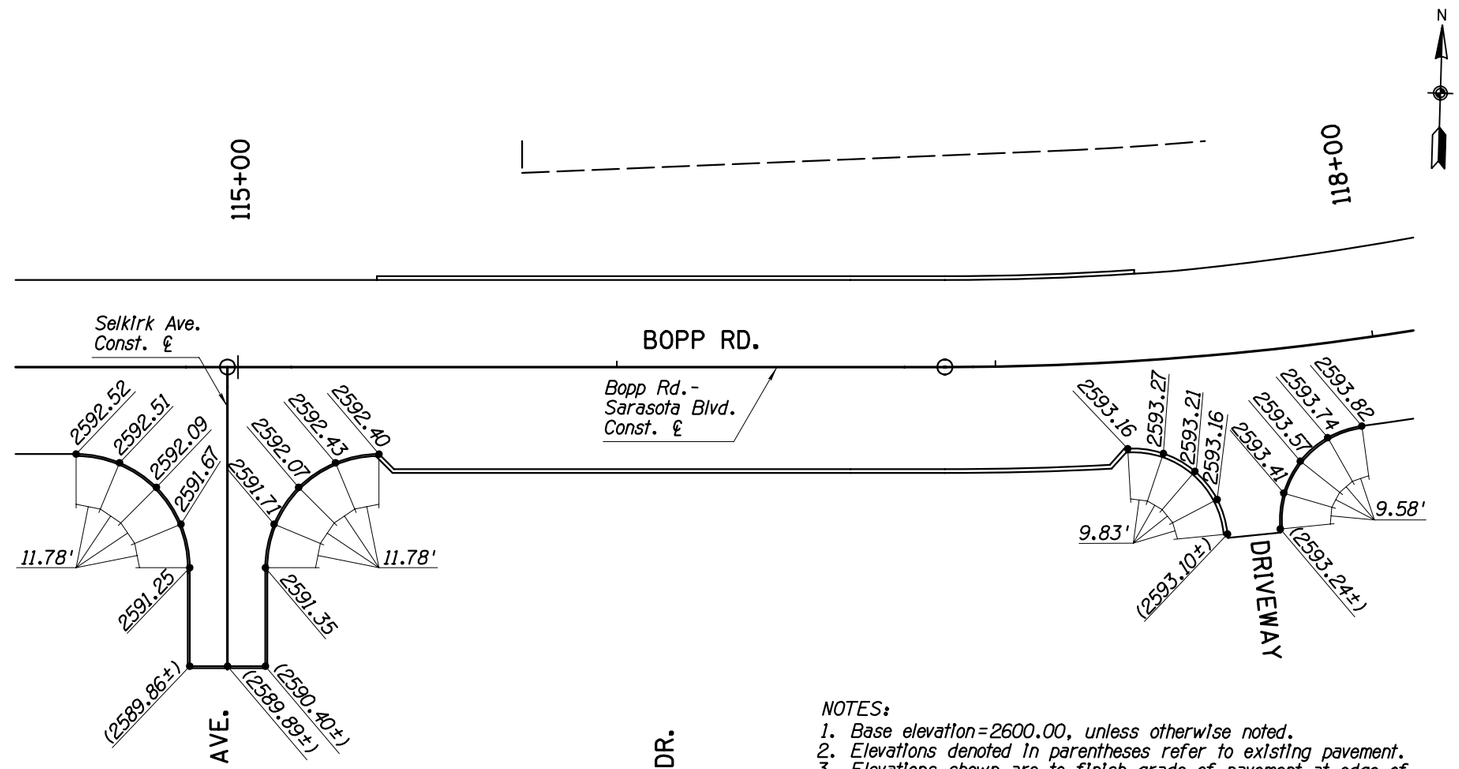
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1" = 20' Horiz. | Sheet ST02 of ST03 | Page 44 of 109

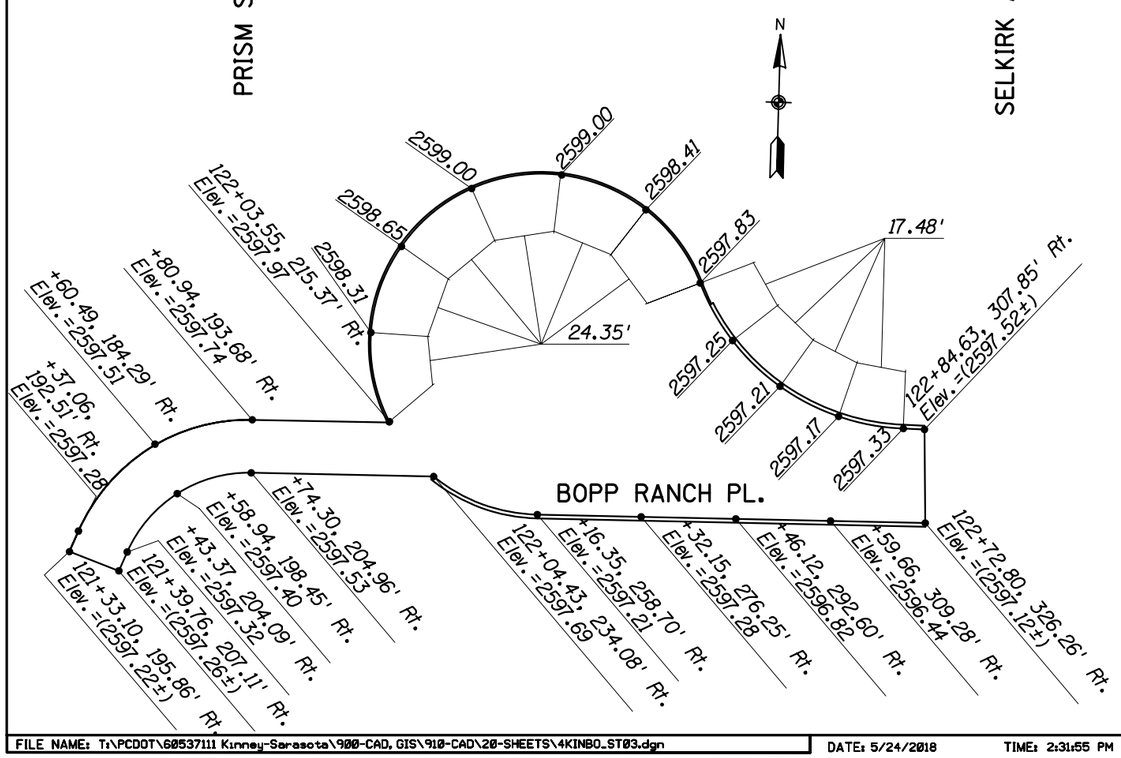
FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_ST02.dgn | DATE: 5/30/2018 | TIME: 2:07:18 PM | kershnerm

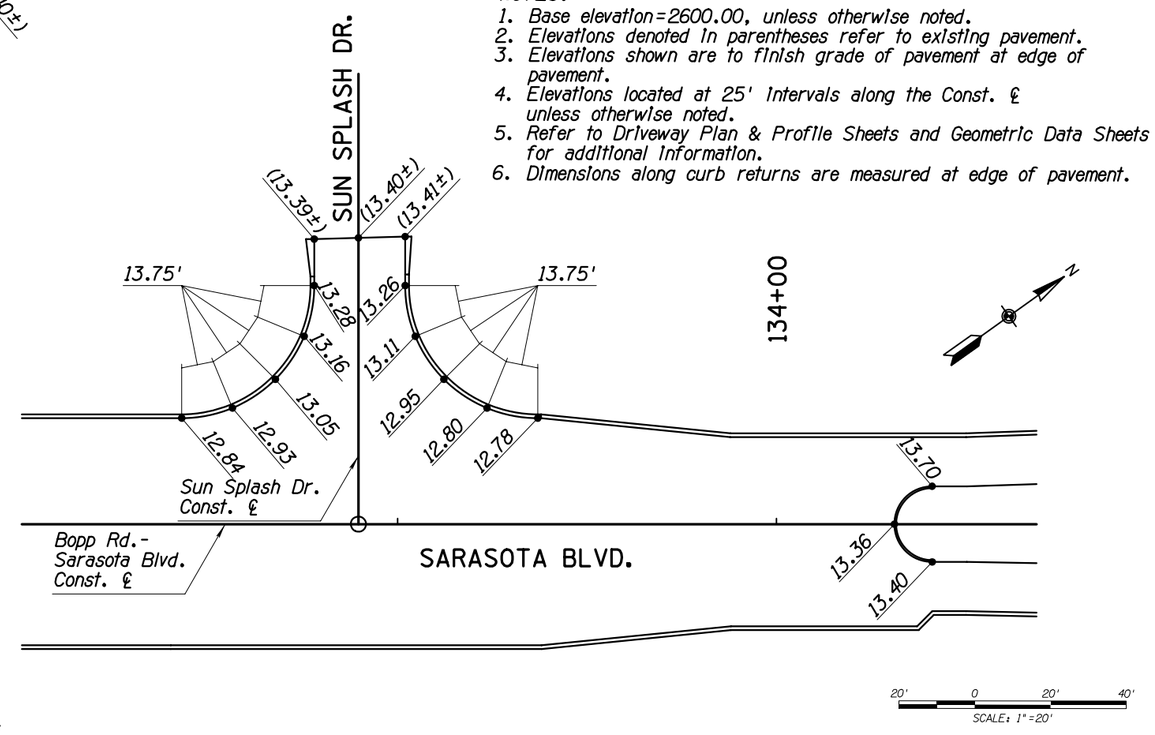




NOTES:

1. Base elevation=2600.00, unless otherwise noted.
2. Elevations denoted in parentheses refer to existing pavement.
3. Elevations shown are to finish grade of pavement at edge of pavement.
4. Elevations located at 25' intervals along the Const. ℄ unless otherwise noted.
5. Refer to Driveway Plan & Profile Sheets and Geometric Data Sheets for additional information.
6. Dimensions along curb returns are measured at edge of pavement.





Scale:	1" = 20' Horiz.	Sheet ST03 of ST03	Page 45 of 109

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	MPK	05/18
Drawn	MPK	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40290 MATTHEW P. KERSHNER DATE SIGNED 5/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

ARIZONA 811 Call at least two full working days before you begin excavation. Arizona Blue Stake, Inc. 1-800-782-5348 Non-Access Underground Facility Protection

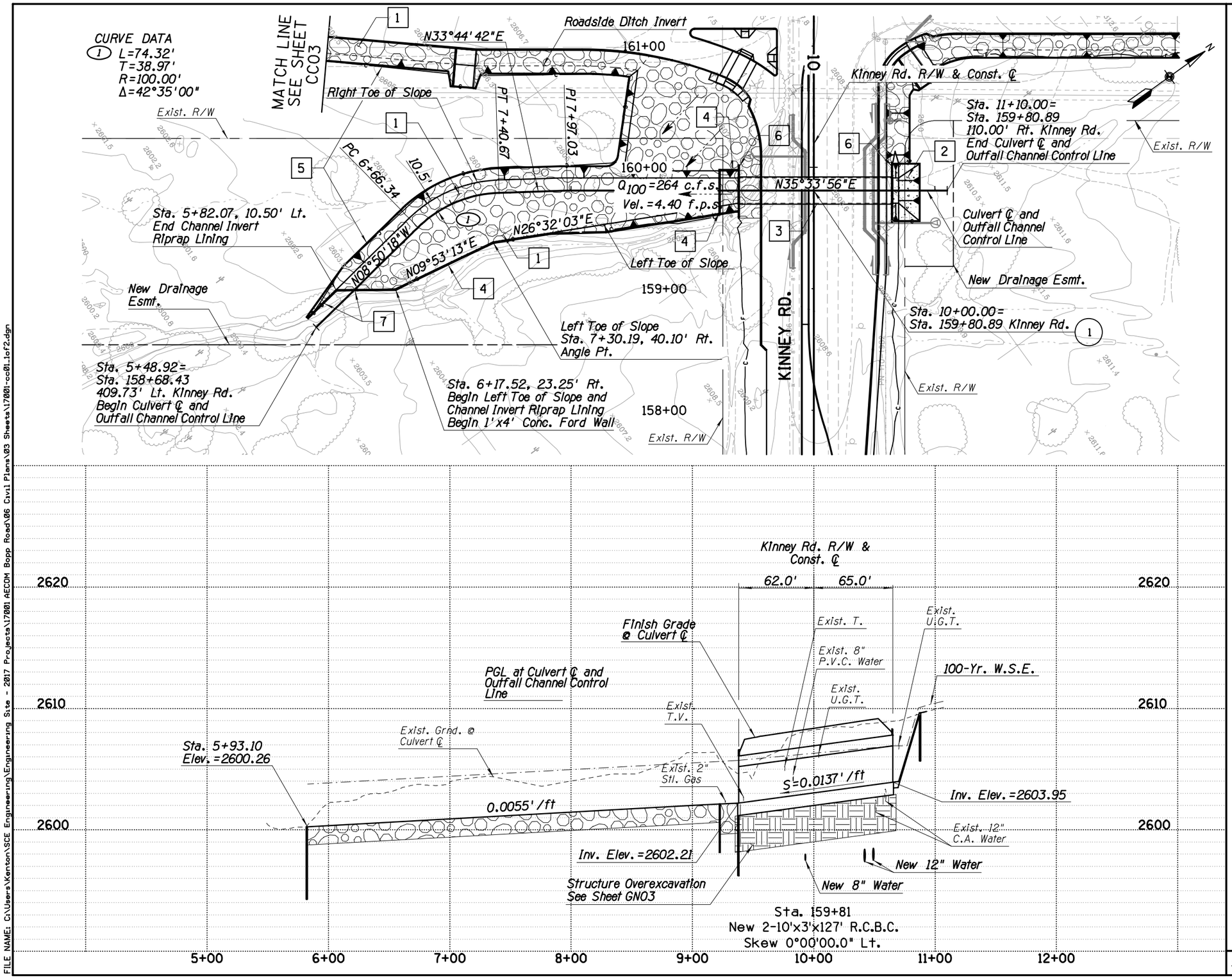
Pima County Department of Transportation

STAKING PLAN SHEET
PIMA COUNTY - BOPP RD - SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_ST03.dgn DATE: 5/24/2018 TIME: 2:31:55 PM kershnerm



1. Riprap (Dumped)
   Item No. 9130001
   Install 1782 C.Y.
2. Concrete Apron
   Item No. 6010721
   Install 121 S.Y.
3. Box Culvert
   Item No. 6010161
   Install 1 L.S.
4. Concrete Ford Wall (1'x4')
   Item No. 9080504
   Install 349 L.F.
5. Concrete Header (Special)
   Item No. 9080403
   Install 649 L.F.
6. Handrail (Std. Dtl. 105)
   (Standard Lower Rail Location)
   Item No. 9330008
   Install 93 L.F.
7. Concrete Ford Wall (1'x6')
   Item No. 9080506
   Install 82 L.F.

See Details RD05 and RD06 for Culvert Inlet and Outlet Details

Ana M. Olivares, P.E., Director

Designed	EGM	5/18
Drawn	KW	5/18
Checked	WJS	5/18
Proj. Engr.	EGM	5/18

No.	Revision Description	Engineer	Date

Pima County Department of Transportation

CROSS DRAINAGE AND CHANNEL PLAN AND PROFILE
PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS

PROJECT NO. 4KINBO

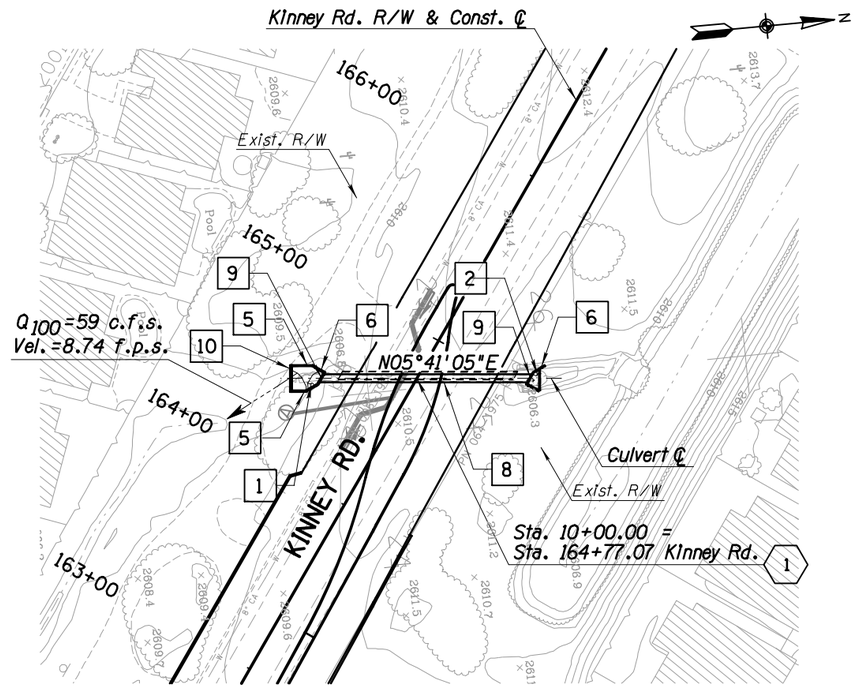
SCE ENGINEERING
510 E. 4TH STREET
TUCSON, AZ 85705
520-405-7353

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet CC01 of CC05 | Page 46 of 109

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-cc01_1of2.dgn

DATE: 5/23/2018 TIME: 12:30:10 PM _USERNAME_



1 Riprap (Dumped)
Item No. 9130001
Install 19 C.Y.

2 Concrete Apron
Item No. 6010721
Install 4 S.Y.

5 Concrete Header (Special)
Item No. 9080403
Install 19 L.F.

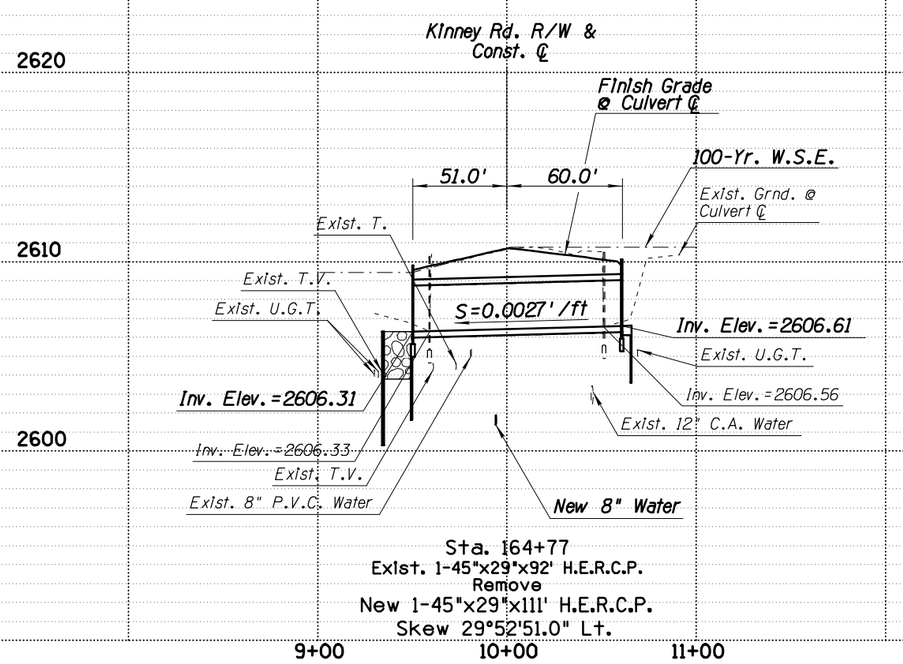
6 Handrail (Std. Dtl. 105)
(Standard Lower Rail Location)
Item No. 9330008
Install 44 L.F.

8 Pipe, Reinforce Concrete,
Class IV, 29"x45" H.E.R.C.P.
Item No. 5011264
Install 111 L.F.

9 Pipe Culvert Headwall
Item No. 6016087
Install 2 EA.

10 Concrete Ford Wall (1'x6')
Item No. 9080506
Install 14 L.F.

See Detail RD07 for Culvert
Inlet and Outlet Details



Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

Pima County Department of Transportation

CROSS DRAINAGE AND CHANNEL
PLAN AND PROFILE
PIMA COUNTY-BOPP RD.-SARASOTA
BLVD. AT KINNEY RD. IMPROVEMENTS

PROJECT NO. 4KINBO

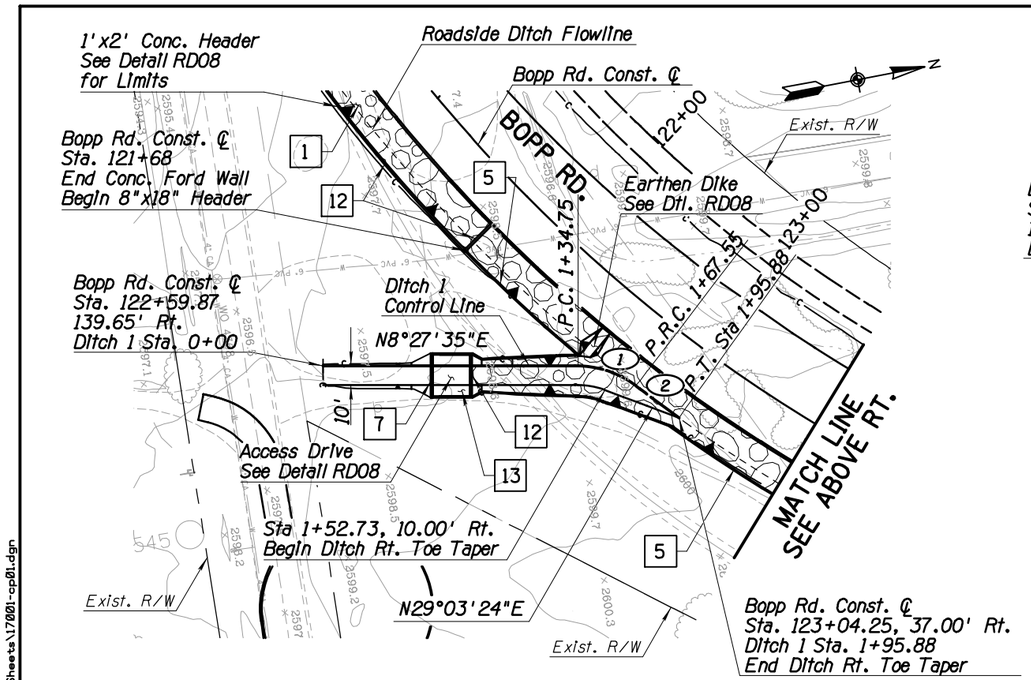
SCE ENGINEERING
510 E 4TH STREET
TUCSON, AZ 85705
520-405-7353

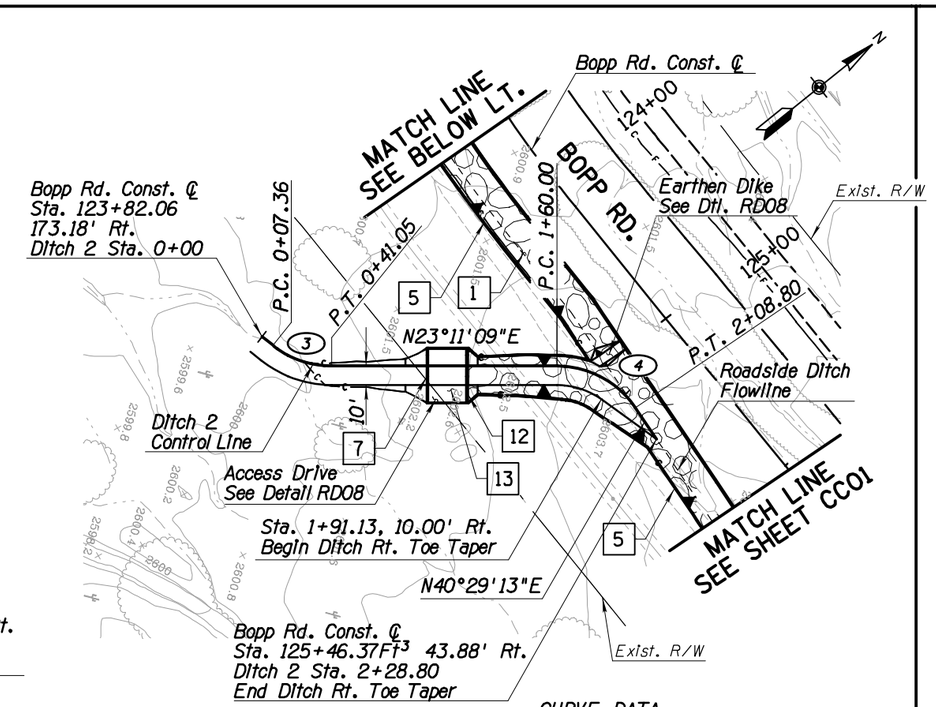
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet CC02 of CC05 | Page 47 of 109

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-cc02_2of2.dgn

DATE: 5/23/2018 TIME: 12:30:32 PM _USERNAME_





1 Riprap (Dumped)
Bid Item No. 9130001
Install 990 C.Y.
(Includes All Riprap From Sta. 118+43.56 to Ditch 1)

5 Concrete Header (Special)
Bid Item No. 9080403
Install 390 L.F.

7 Concrete Ford Wall (1'x6')
Bid Item No. 9080506
Install 53 L.F.

12 Concrete Ford Wall (1'x2')
Bid Item No. 9080502
Install 413 L.F.
(Includes Ford Wall From Sta. 118+43.56 to Sta. 121+68.10)

13 Concrete Driveway Apron
Bid Item No. 9080301
Install 1,000 S.F.

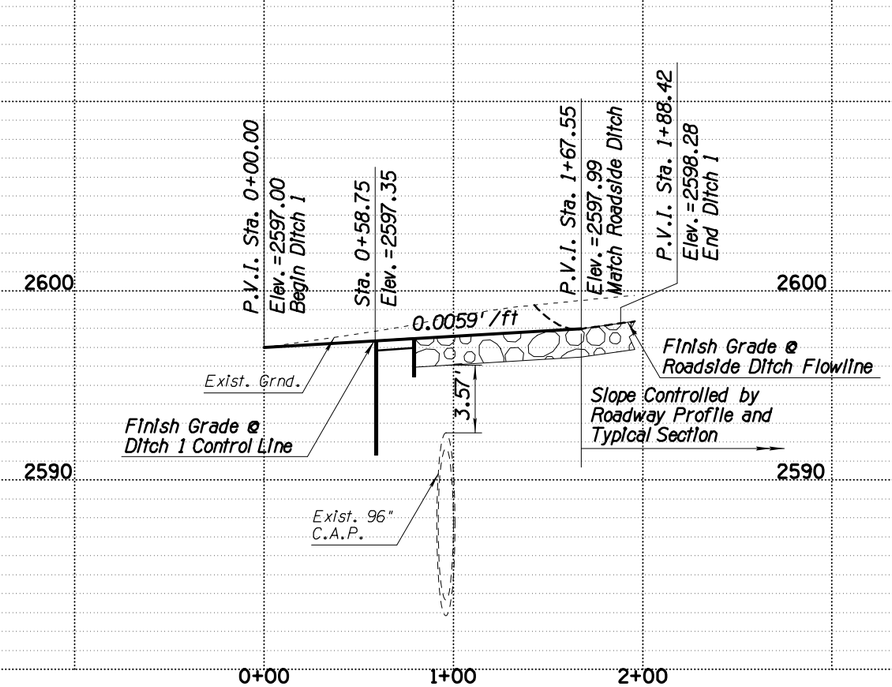
CURVE DATA

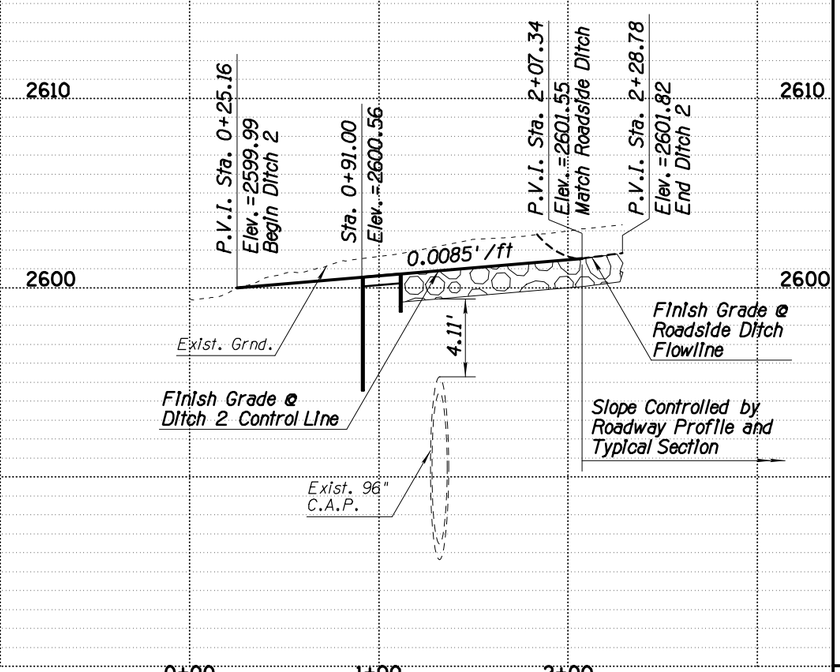
1 L=32.80' T=17.01' R=50.00' Δ=37°35'08"

2 L=28.33' T=14.17' R=837.00' Δ=6°50'43"

3 L=33.70' T=17.52' R=50.00' Δ=38°36'50"

4 L=48.79' T=26.54' R=50.00' Δ=55°54'54"





NOTE:
See Detail RD08 for Ditch 1 and 2 Typical Section, Dike Typical Section, and Dike Horizontal Control Information.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

Pima County Department of Transportation

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

CROSS DRAINAGE AND CHANNEL
PLAN AND PROFILE
PIMA COUNTY-BOPP RD.-SARASOTA
BLVD. AT KINNEY RD. IMPROVEMENTS

PROJECT NO. 4KINBO

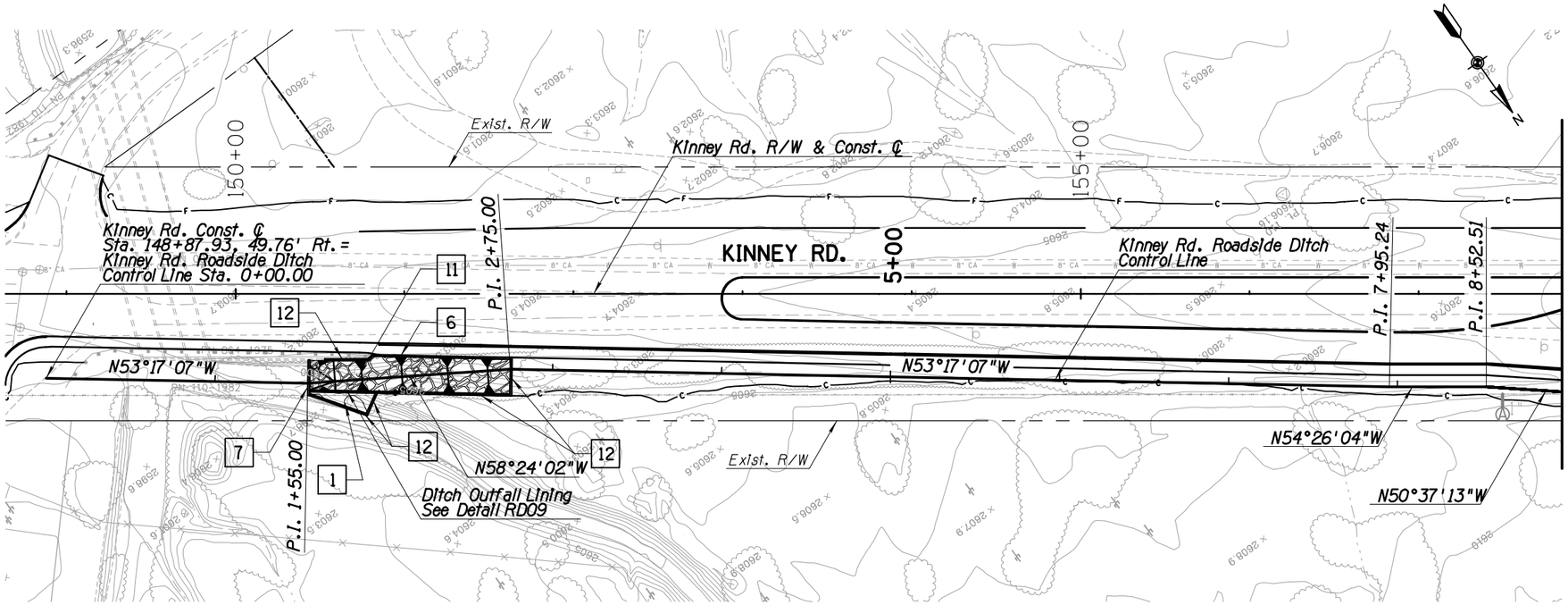
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

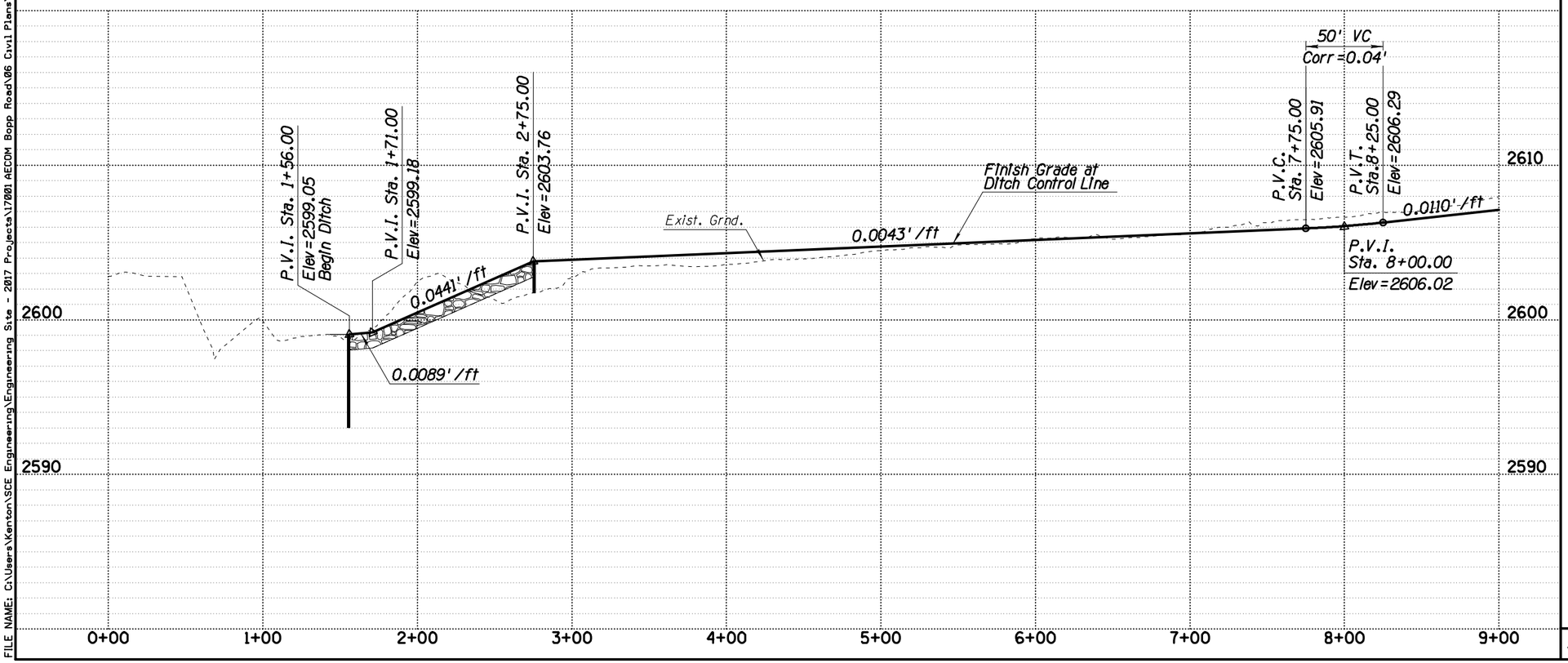
Scale: 1"= 40' Horiz. 1"= 4' Vert.

Sheet CC03 of CC05

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-cp01.dgn

DATE: 5/23/2018 TIME: 12:31:34 PM _USERNAME_





1	Riprap (Dumped) Bid Item No. 9130001 Install 15 C.Y.
6	Handrail (Std. Dtl. 105) (Standard Lower Rail Location Item No. 9330008 Install 81 L.F.
7	Concrete Ford Wall (1'x6') Bid Item No. 9080506 Install 26 L.F.
11	Riprap (Hand Placed) (Grouted) Bid Item No. 9130009 Install 280 S.Y.
12	Concrete Ford Wall (1'x2') Bid Item No. 9080502 Install 264 L.F.

Ana M. Olivares, P.E. Director

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

No.	Revision Description	Engineer	Date

Pima County Department of Transportation

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

CROSS DRAINAGE AND CHANNEL
PLAN AND PROFILE
PIMA COUNTY-BOPP RD.-SARASOTA
BLVD. AT KINNEY RD. IMPROVEMENTS

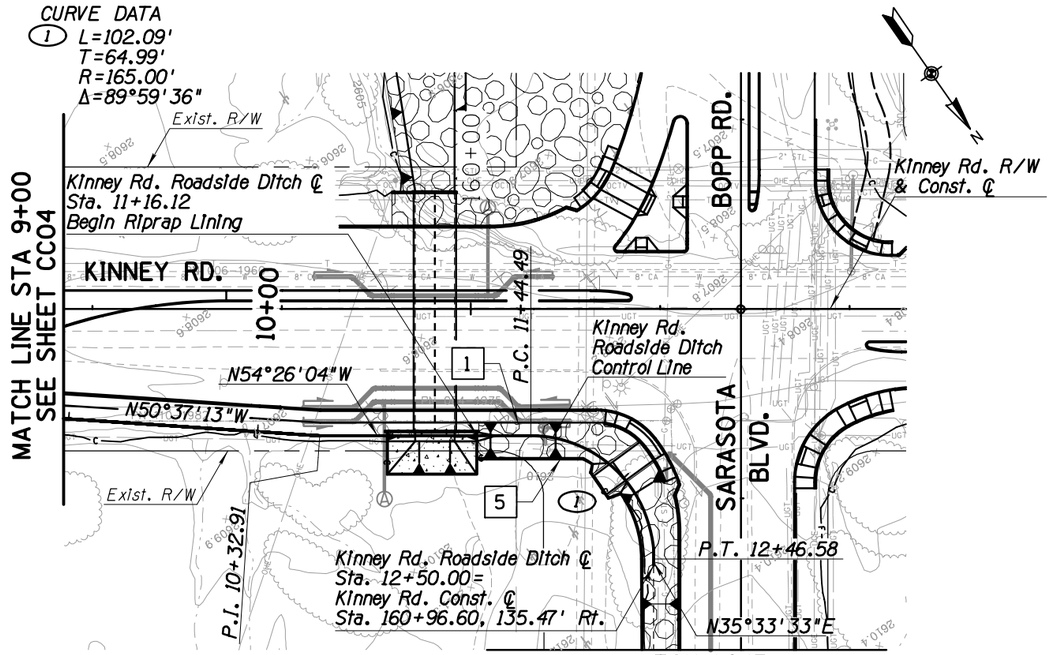
PROJECT NO. 4KINBO

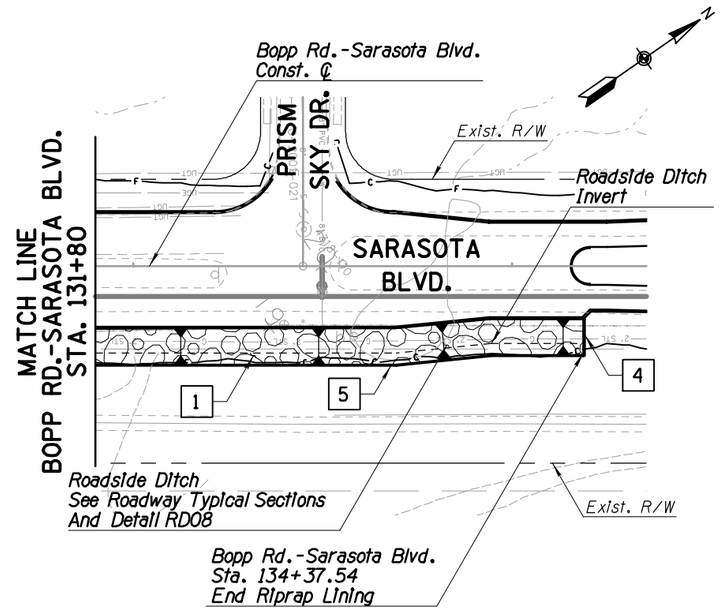
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet CC04 of CC05 | Page 49 of 109

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-cp02.dgn

DATE: 5/23/2018 TIME: 12:31:54 PM _USERNAME_

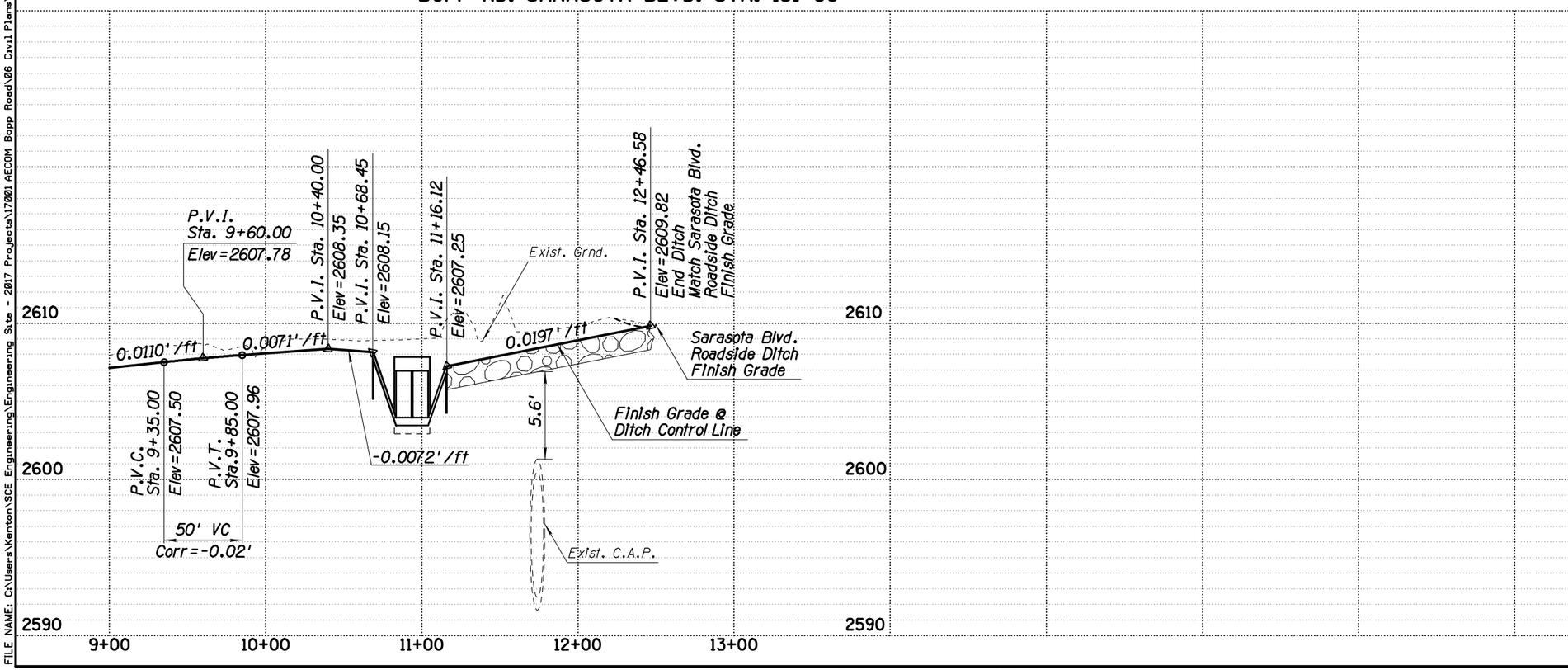




1 Riprap (Dumped)
Bid Item No. 9130001
Install 462 C.Y

4 Concrete Ford Wall (1'x4')
Bid Item No. 9080504
Install 19 L.F.

5 Concrete Header (Special)
Bid Item No. 9080403
Install 431 L.F.



No.	Revision Description	Engineer	Date

		Date
Designed	EGM	5/18
Drawn	KW	5/18
Checked	WDS	5/18
Proj. Engr.	EGM	5/18

Ana M. Olivares, P.E. Director

Pima County Department of Transportation

CROSS DRAINAGE AND CHANNEL
PLAN AND PROFILE
PIMA COUNTY-BOPP RD.-SARASOTA
BLVD. AT KINNEY RD. IMPROVEMENTS

PROJECT NO. 4KINBO

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

EDITH GRIFFITH METTEY 23987

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet CC05 of CC05 | Page 50 of 109

FILE NAME: C:\Users\Kenton\SCE Engineering\Engineering Site - 2017 Projects\17001 AECOM Bopp Road\06 Civil Plans\03 Sheets\17001-cp03.dgn

DATE: 5/23/2018 TIME: 12:32:14 PM _USERNAME_

PAVEMENT MARKING GENERAL NOTES

1. All equipment/materials and construction shall meet or exceed the requirements contained in the current Pima Association of Governments (PAG) Standard Specifications and Standard Details, the Special Provisions and the approved plans, unless otherwise noted. All pavement markings shall be installed in accordance with the PC/COT Pavement Marking Design Manual and applicable amendments unless otherwise noted.

2. The striping contractor shall contact the Pima County Pavement Marking Supervisor (520-724-2624) at least 3 working days in advance of any pavement marking layout being installed to schedule inspection and approval of pavement marking during normal business hours Monday thru Friday, State Holidays excluded.

3. Upon approval of the pavement marking layout, the Pima County Pavement Marking Supervisor will issue written authorization to the contractor to proceed with installing all pavement markings and associated reflective raised pavement markers.

4. The permanent pavement markings may be modified as directed and approved by the Traffic Engineer or their designee.

5. The design speed for Kinney Road is 50 miles per hour (mph). The posted speed limit is 45 mph. The design speed on Bopp Road is 40 mph. The posted speed limit is 35 mph. The design speed on Sarasota Boulevard is 40 mph. The posted speed limit is 35 mph. The Design Vehicle is WB-62.

6. All lane dimensions are from center of lane line, center of double lane line, or edge of pavement, unless otherwise noted.

7. The pavement marking drawings are schematic only. The contractor shall follow all dimensions, applicable marking details and specified Pima County standards when installing pavement striping, symbols, legends, and markers.

8. Painted layout striping shall be 15 mils (0.015") thick, water based paint placed on the final pavement surface with 8 pounds per gallon of AASHTO M 247-13 Type I glass beads with adhesion/moisture proof coating. Painted layout striping shall be installed within five working days of the final pavement surface being completed.

9. Painted symbols and legends shall be applied at the same time as the painted striping, with the exception of bike lane symbols and words (such as stop, ahead, only, etc.).

10. The final longitudinal striping shall be 90 mil (0.090") ribbon extruded thermoplastic reflectorized striping placed over the painted layout striping with a single drop of 10 pounds per 100 square foot of AASHTO M 247-13 Type I glass beads. The final longitudinal striping shall be placed within 21 to 30 calendar days of the final pavement surface being completed. All previously exempted longline markings shall be applied during the final longitudinal striping.

11. All final transverse striping, including symbols and legends, shall be 90 mil (0.090") alkyd hand cart extruded thermoplastic with 10 pounds per 100 square foot of AASHTO M 247-13 Type I glass beads.

12. The contractor shall be responsible for the layout and installation of pavement markings on the final surface course following one control line per direction of travel consisting of control points that have been set to no more than 50 feet apart on curve sections and 200 feet in tangent sections where the pavement marking pattern does not change.

13. It is the contractor's responsibility to ensure that the final surface course is placed so that the construction joint is no more than one foot offset from the final striping.

PAVEMENT MARKING GENERAL NOTES CONT.

14. All retroreflective raised pavement markers (RRPMs or RPMs) shall be installed so that the reflective face of each marker is facing the direction of traffic and is perpendicular to the direction of traffic flow. Type C or G pavement markers shall be installed so that the clear (or white) reflective face of each marker is facing approaching traffic and perpendicular to the direction of traffic flow to which it applies.

15. All RRPMs or RPMs shall be installed per the current edition of the PC/COT Pavement Marking Manual and applicable amendments.

16. All removal of existing pavement markings shall be accomplished in accordance with Section 701 of the PAG Standard Specifications. Painting over existing striping does not constitute approved striping obliteration. This work will be paid under Bid Item No. 7010260, Obliterate Pavement Marking.

17. Unless otherwise noted, all pavement markings shall be installed by the contractor.

18. Upon final inspection, a written acceptance or itemized punch list of missing or unacceptable pavement markings shall be submitted to the contractor and Pima County by the Traffic Engineer or designated representative.

19. The contractor shall be responsible for maintaining all striping until project is approved for "construction acceptance" by Pima County (fully open to traffic, all punch list items are completed, and the one-year minimum warranty begins). If the pavement marking material manufacturer offers a longer warranty, the contractor shall transfer that warranty to Pima County.

20. The PC/COT Pavement Marking Manual is available online.

APPROXIMATE PAVEMENT MARKING QUANTITIES

ITEM	ITEM NO.	UNIT	QUANTITIES
Pavement Marking (White Extruded Thermoplastic) (0.090")	7040005	L.F.	22,640
Pavement Marking (Yellow Extruded Thermoplastic) (0.090")	7040006	L.F.	14,790
Pavement Marking (White Extruded Thermoplastic) Sgl. Arrow (0.090")	7040032	EACH	14
Pavement Marking (White Extruded Thermoplastic) Merge Arrow (0.090")	7040052	EACH	6
Pavement Legend (White Extruded Thermoplastic) (ONLY) (0.090")	7040062	EACH	6
Pavement Marking (Colored Pavement Marking)	7040090	S.F.	150
Pavement Marking, Yield Line (White Isosceles Triangles)	7040091	S.F.	6
Pavement Marking (White Extruded Thermoplastic) (Transverse) (0.090")	7040130	L.F.	4,010
Pavement Marking (Yellow Extruded Thermoplastic) (Transverse) (0.090")	7040140	L.F.	1,530
Pavement Legend, Preformed, Type I, Bike Lane Legend and Symbol	7050080	EACH	3
Pavement Marker, Reflective, (Type C, Clear, Red)	7060020	EACH	62
Pavement Marker, Reflective, (Type D, Yellow, Two-Way)	7060025	EACH	169
Pavement Marker, Reflective, (Type G, Clear, One-Way)	7060030	EACH	102
Pavement Marker, Reflective, (Type H, Yellow, One-Way)	7060035	EACH	37
Pavement Marker, Reflective, (Type F, Blue, Two-Way)	7060040	EACH	2
Painted Pavement Marking	7080001	L.F.	42,970
Painted Pavement Symbol or Legend	7080010	EACH	26

The quantities for all pavement markings lengths are 4" equivalent.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33452 CHARLENE J. ROBINSON DATE SIGNED 3/31/20 Arizona U.S.A. EXPIRES 3-31-2020

AECOM

TRANSPORTATION

AECOM USA, Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

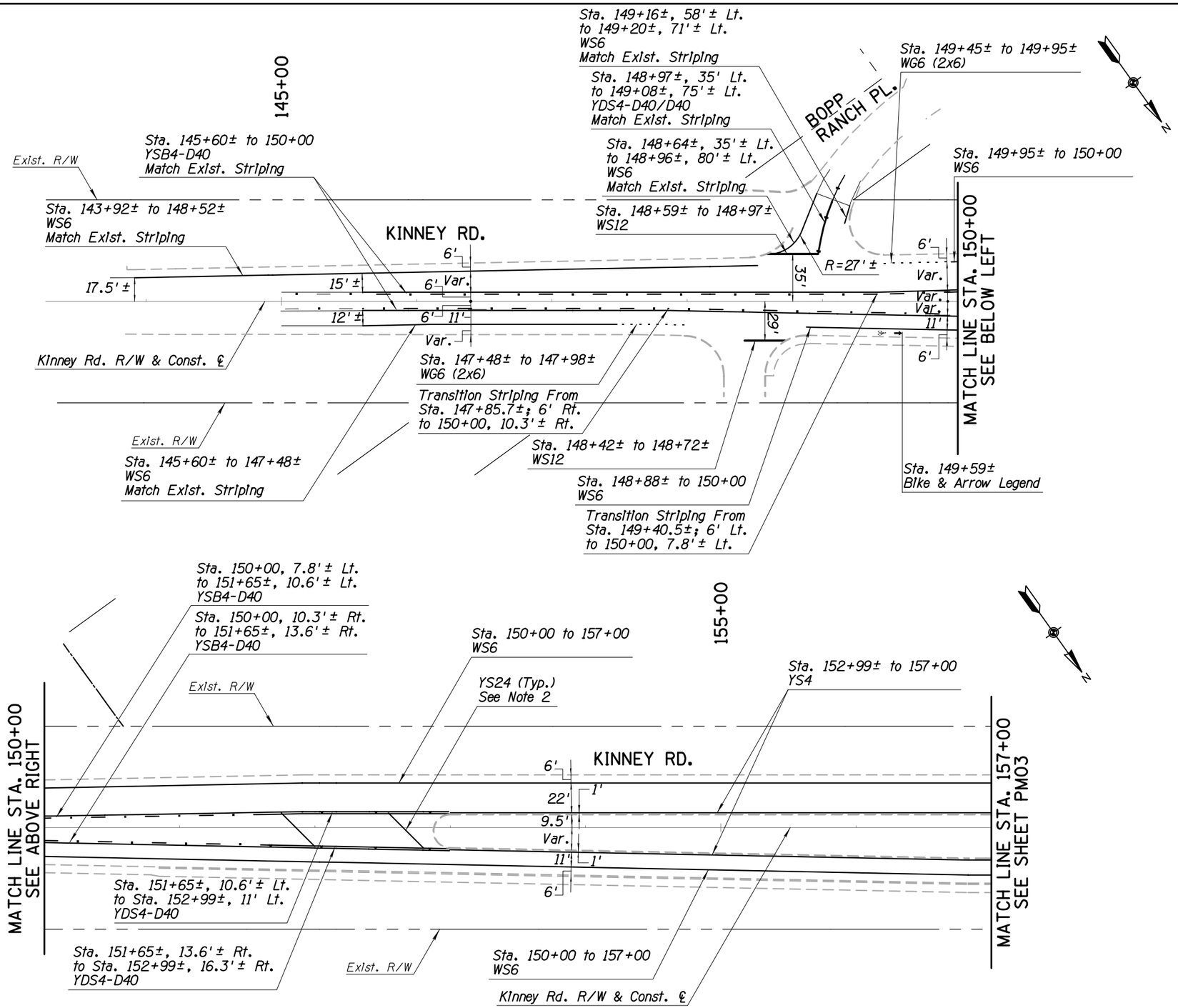
Pima County Department of Transportation

PAVEMENT MARKING GENERAL NOTES SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet PM01 of PM05	Page 51 of 109



NOTES:
1. All stations are referenced from the Kinney Rd. R/W & Const. ℄ unless otherwise noted.
2. Diagonal hatching shall be at 80' spacing and 45° angle in accordance with Sheet No. 4-5 of the PC/COT Pavement Marking Design Manual.
3. Obliterate existing striping as needed to match proposed striping.

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5-23-18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

CALL 811 Know what's below. Call before you dig.
ARIZONA 811 BLUE STAKE, INC.
Not to be used for underground excavation

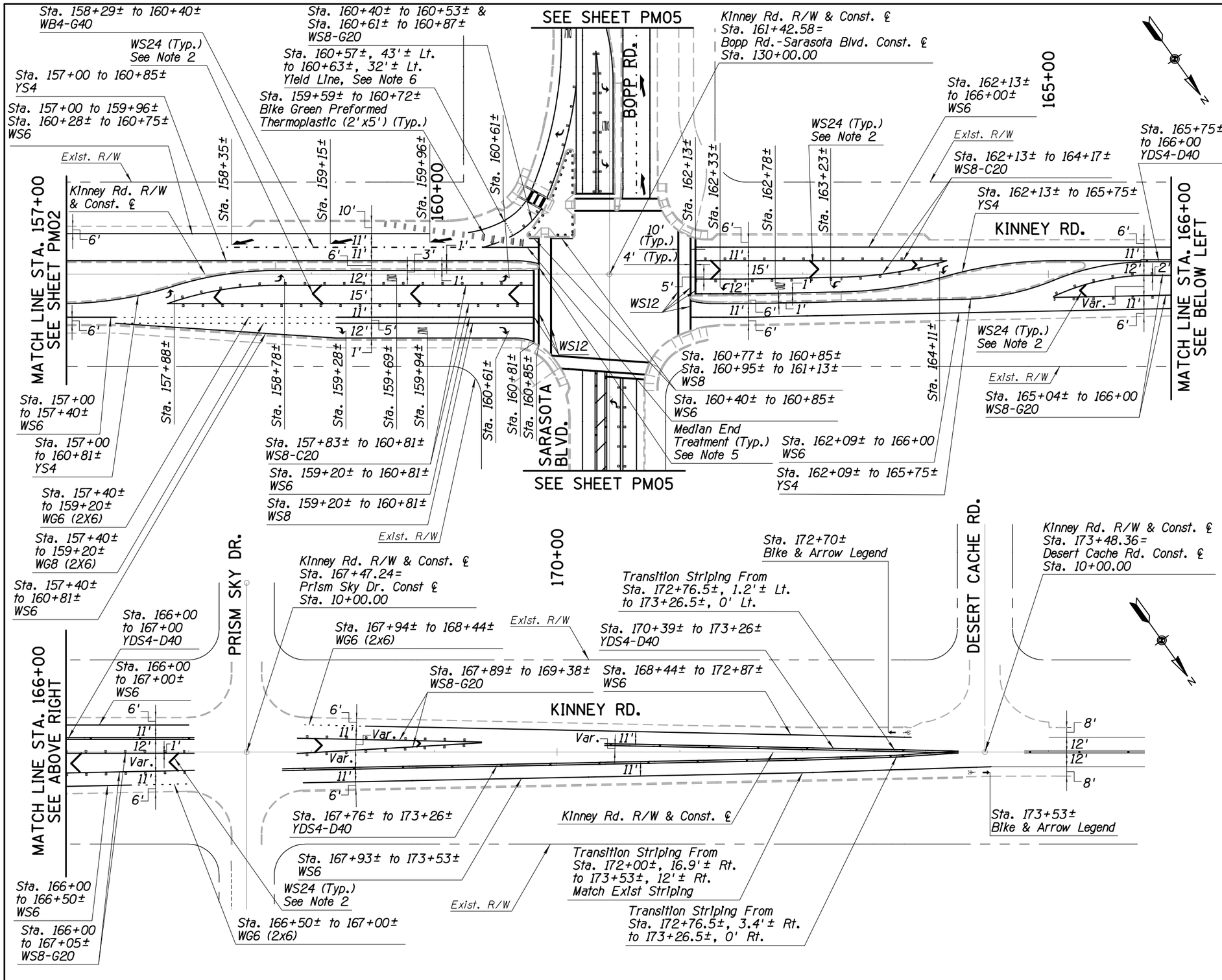
Pima County Department of Transportation

PAVEMENT MARKING SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+92 TO STA. 157+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet PM02 of PM05	Page 52 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PM02.dgn DATE: 5/24/2018 TIME: 2:32:47 PM kershnerm



NOTES:

1. All stations are referenced from the Kinney Rd. R/W & Const. ℄ unless otherwise noted.
2. Chevrons shall be at 80' spacing and 45° angle in accordance with Sheet No. 4-4 of the PC/COT Pavement Marking Design Manual.
3. Obliterate existing striping as needed to match proposed striping.
4. For pavement marking on Bopp Rd. and Sarasota Blvd., see Sheet PM05.
5. For median end treatment, see Detail 2 on Sheet No. 5-13 of the PC/COT Pavement Marking Design Manual.
6. Yield line layout shall be per Figure 3B-16 of the 2009 Edition of the MUTCD, (12" x 18").

40 0 40 80'
SCALE: 1"=40'

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

AECOM

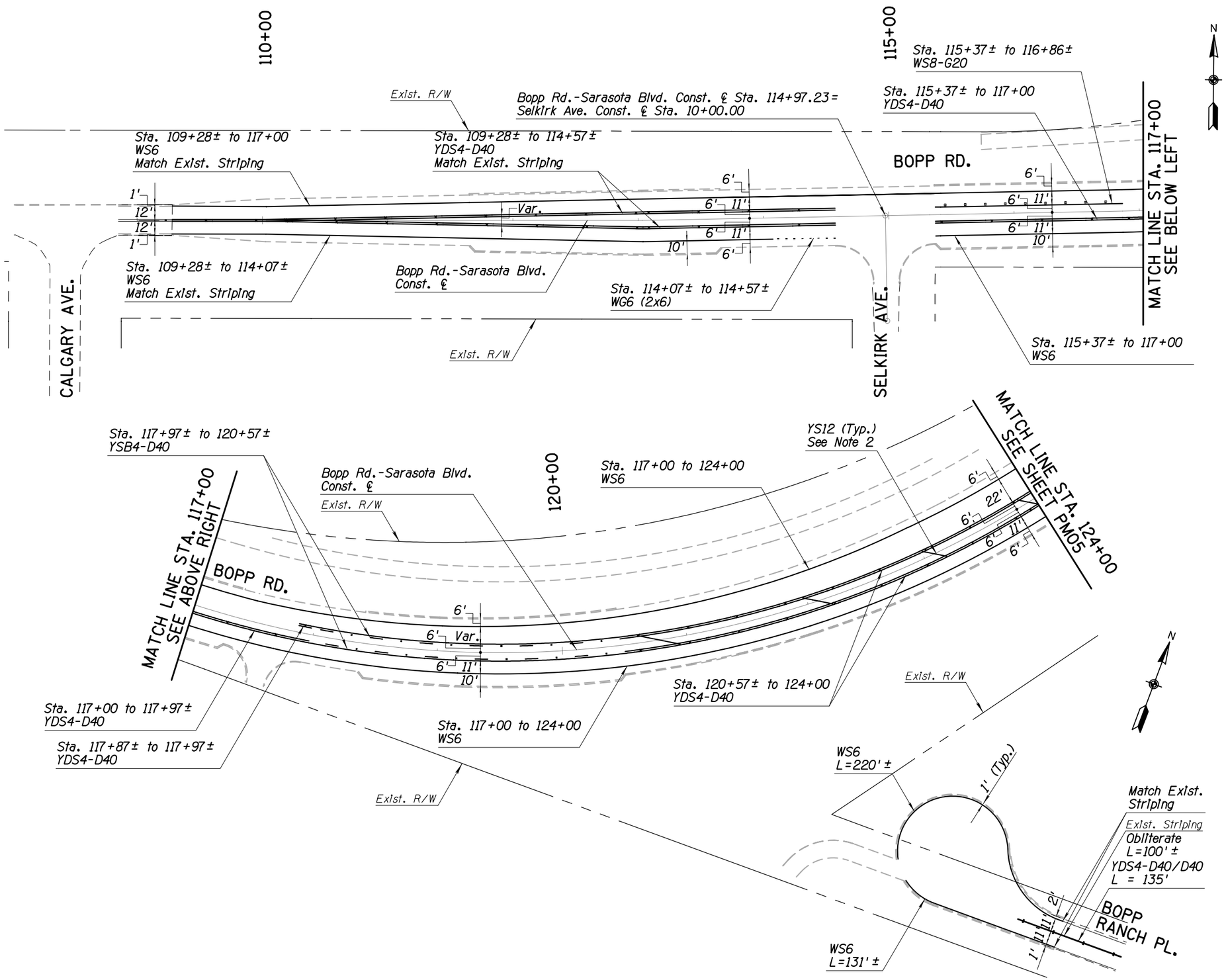
TRANSPORTATION
AECOM USA, Inc.
3555 E. WILLIAMS FIELD RD., STE. 400
Tucson, Arizona 85706
T 520.867.7800 F 520.867.8438
www.aecom.com

PAVEMENT MARKING SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 157+00 TO STA. 173+53
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet PM03 of PM05 | Page 53 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PM03.dgn | DATE: 5/24/2018 | TIME: 2:33:10 PM | kershnerm



NOTES:

1. All stations are referenced from the Bopp Rd.-Sarasota Blvd. Const. ℄ unless otherwise noted.
2. Diagonal hatching shall be at 80' spacing and 45° angle in accordance with Sheet No. 4-5 of the PC/COT Pavement Marking Design Manual.
3. Obliterate existing striping as needed to match proposed striping.

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

Designed	CJR		Date
Drawn	CJR		05/18
Checked	MPK		05/18
Proj. Engr.	MPK		05/18
			05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33452 CHARLENE J. ROBINSON DATE SIGNED 5/24/18 EXPIRES 3-31-2020

AECOM

TRANSPORTATION

AECOM USA, Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

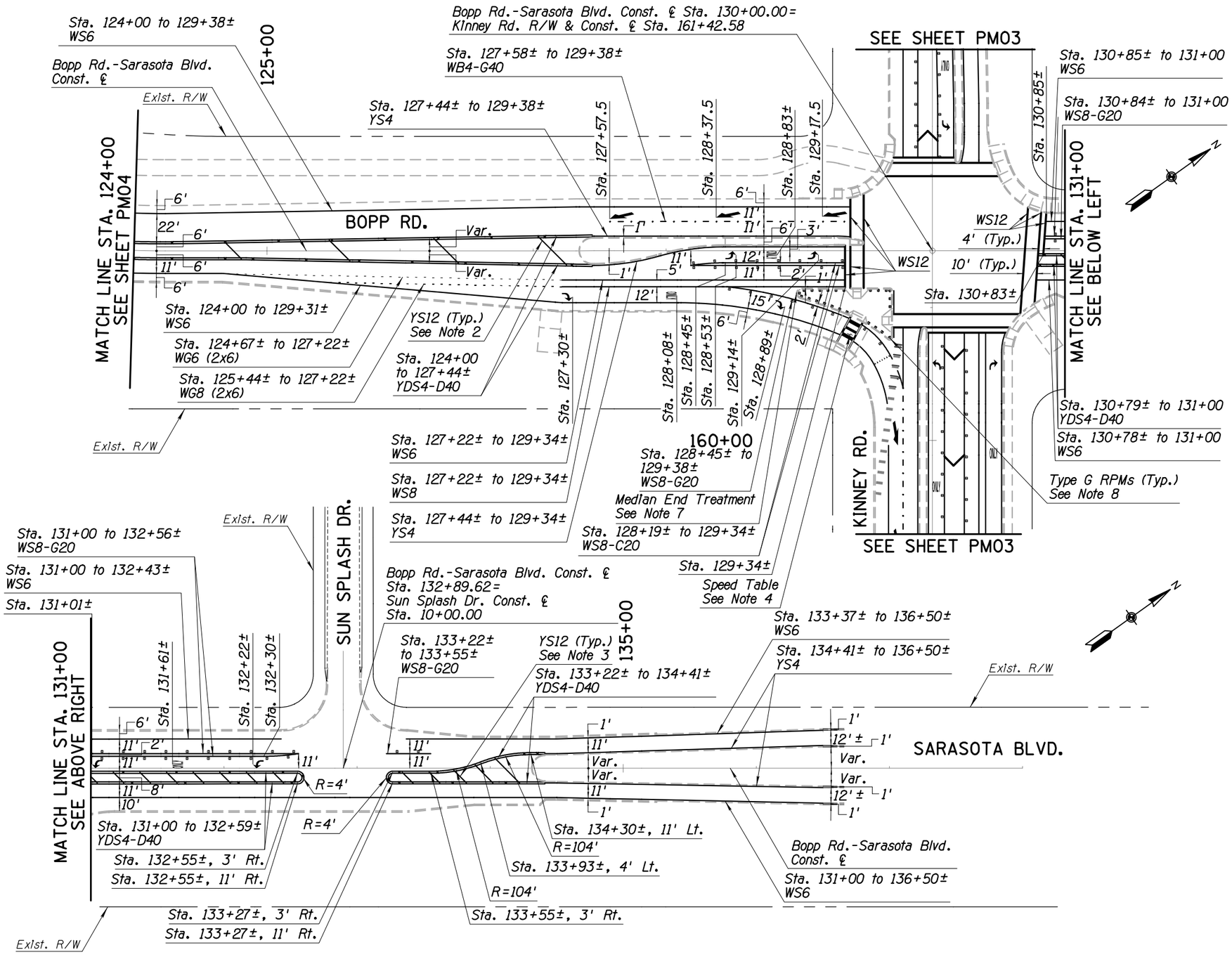
Pima County Department of Transportation

PAVEMENT MARKING SHEET
PIMA COUNTY–BOPP RD–SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+28 TO STA. 124+00
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet PM04 of PM05	Page 54 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PM04.dgn DATE: 5/24/2018 TIME: 2:33:37 PM kershnerm



NOTES:

1. All stations are referenced from the Bopp Rd.-Sarasota Blvd. Const. ℄ unless otherwise noted.
2. Diagonal hatching shall be at 80' spacing and 45° angle in accordance with Sheet No. 4-5 of the PC/COT Pavement Marking Design Manual.
3. Diagonal hatching shall be at 20' spacing and 45° angle in accordance with Sheet No. 4-5 of the PC/COT Pavement Marking Design Manual.
4. Obliterate existing striping as needed to match proposed striping.
5. For pavement marking on Kinney Rd., see Sheet PM03.
6. For pavement marking at the speed table, see Detail RD02.
7. Median Island end plus 15 feet of curb on each side of the Island shall be painted white.
8. Install Type G RPMs on the Island at 6' minimum spacing per Sheet No. 5-16 of the PC/COT Pavement Marking Design Manual. RPMs shall be placed so that the reflective face of the marker is facing traffic.

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

PAVEMENT MARKING SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 124+00 TO STA. 136+50
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet PM05 of PM05 | Page 55 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_PM05.dgn DATE: 5/24/2018 TIME: 2:33:59 PM kershnerm

SIGNING GENERAL NOTES

1. All equipment, materials and construction shall meet or exceed the requirements contained in the current Pima Association of Governments (PAG) Standard Specifications and the Standard Details For Public Improvements, the Special Provisions and the approved plans.
2. All signs shall be in compliance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD), the latest edition of the Pima County/City of Tucson Traffic Signing Design Manual, the PAG Standard Specifications, the Pima County Supplemental Specifications, any required Special Provisions, and these plans.
3. Signs may be modified and locations adjusted to fit conditions in the field at the discretion of the Traffic Engineer.
4. The design speed for Kinney Road is 50 miles per hour (mph). The posted speed limit is 45 mph. The design speed for Bopp Road is 40 mph. The posted speed limit is 35 mph. The design speed for Sarasota Boulevard is 40 mph. The posted speed limit is 35 mph. Sign placement shall be based on the posted speed limit.
5. Post lengths indicated on sign summary sheets are approximate. The contractor shall verify actual post lengths.
6. All perforated posts shall be installed in a concrete foundation, unless otherwise directed by the Traffic Engineer.
7. All sign station locations are approximate. The contractor shall verify actual sign locations with the Traffic Engineer prior to the installation of any signs.
8. The contractor shall be responsible for coordinating all work with Arizona 811 for installing all traffic signs in the field and for maintaining all signing until project is approved for "Construction Acceptance" by Pima County (fully open to traffic, all punch list items are completed, and one year warrantees begin).
9. All signs shall have Type XI sheeting, or an equivalent. All warning signs having yellow backgrounds shall use fluorescent yellow sheeting. All school signs shall use fluorescent yellow/green sheeting. All ground mounted signs shall have an anti graffiti coating applied to sign face, 3M #1160 film or equivalent.
10. A 3"x 2" pressure sensitive, UV resistant label indicating the sign manufacturers name and date of manufacture shall be placed in the upper right corner of the back of all signs except street name signs at the time of installation. Street name signs shall include a sign identification decal as shown on Pima County Signing Detail 9-22A.
11. All new signs shall have 0.080 gauge, radius corner, aluminum backing unless otherwise noted.
12. Prior to disturbing any traffic signs, a sign condition inventory of all existing signing shall be conducted by the contractor and provided to the Pima County Sign Shop Supervisor (520-724-2630). Inventory shall indicate current sign location and condition, including any existing damage or deficiencies.
13. Any signs and posts being re-used on this project shall be stockpiled in a manner to avoid damage and maintain the integrity of the signs. Safe storage of stockpile and payment for damage to stockpile shall be the responsibility of the contractor.
14. All signs and posts not being re-used on the project shall be dismantled, stacked and delivered to the owner (City or County) by the contractor. The contractor is responsible for the safe storage at the construction site until delivery, and the safe unloading of the salvaged material. Notification of delivery shall be made at least two working days prior to delivery. Pima County Sign Shop 1313 S. Mission Rd. (520-724-2630). No Friday deliveries.
15. Temporary traffic control change signs shall be installed prior to the signal being turned on and removed 30 days afterwards.

APPROXIMATE SIGNING QUANTITIES

ITEM		ITEM NO.	UNIT	QUANTITIES
Sign Post & Appurtenances	Sign Post (Perforated) (Single)	6070010	L.F.	620
	Foundation for Sign Post (Perforated)	6070110	EACH	49
Sign Panel Sheeting Type	Sign Panel (Traffic Control) (Permanent) (Type XI)	6080014	S.F.	352
	Metro Street Name Sign with Flag Mount	6080050	EACH	4
	Flat Sheet Aluminum w/ Direct Apply Or Silk-Screen Characters	6080081	S.F.	25
Miscellaneous	Object Marker (M-23) (Type 1 or 4)	7030015	EACH	2
	Delineator (OM2-2V (AD) (360 Degrees) (Yellow on Black)	7030075	EACH	4
	Delineator (OM2-2V (AD) (360 Degrees) (Red on Black)	7030076	EACH	2
	Object Marker (M-23) (Type 2)	7030082	EACH	4

DESIGN DATA

DESIGN TRAFFIC	KINNEY RD. NORTH OF BOPP RD.	KINNEY RD. SOUTH OF BOPP RD.	BOPP RD. WEST OF KINNEY RD.
2017 ADT	8,580 veh/day	11,730 veh/day	7,350 veh/day
2045 ADT	10,000 veh/day	16,770 veh/day	6,920 veh/day

MINIMUM DESIGN SPEED

ROADWAY	DESIGN	POSTED
Kinney Rd.	50 mph	45 mph
Bopp Rd.	40 mph	35 mph
Sarasota Blvd.	40 mph	35 mph

Y SB 4 - D 40 / H 40

COLOR
PATTERN
WIDTH OF STRIPE
LINE STYLE DESIGNATION
R.P.M. SPACING
R.P.M. TYPE
R.P.M. SPACING
R.P.M. TYPE

See 2008 Pima County and City of Tucson Pavement Marking Design Manual for further descriptions.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5-31-18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
3253 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
www.aecom.com

ARIZONA 811 Call at least two full working days before you begin excavation. Arizona Blue Stake, Inc. 1-800-782-5348 Not to be used in areas of Maricopa County

Pima County Department of Transportation

SIGNING GENERAL NOTES & QUANTITIES
PIMA COUNTY-BOPP RD.-SARASOTA BLVD. AT KINNEY RD. IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet SI01 of SI09	Page 56 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_SI01.dgn DATE: 5/24/2018 TIME: 2:34:36 PM kershnerm

Sign Number	Sign Code	Work: New	Work: Existing: Replace Panel	Work: Existing: Relocate Panel	Work: Existing: Remove Panel	Work: Existing: Remain	Sta (ft.)	Offset (ft.)	Panel: Legend	Panel: Provider	Panel: Width (in.)	Panel: Height (in.)	Panel: Area (sq. ft.)	Panel: Type	Panel: Sheeting Type	Ground Mounted: Foundations	Ground Mounted: Posts: Type	Ground Mounted: Posts: Total Length (ft.)	Ground Mounted: New Slipbases	Ground Mounted: Retrofit Slipbases	Ground Mounted: Stringer Type	Ground Mounted: Stringer Length (ft.)	Overhead: Structure Type	Overhead: Number of Lights	Remarks
KINNEY ROAD (NORTHBOUND)																									
N-1	R1-1	X					148+76	38' RT.	STOP	CONTR	36	36	9.0	R	XI	1	P1	12							
N-2	W6-1	X					150+92	42' RT.	DIVIDED HIGHWAY	CONTR	36	36	9.0	W	XI	1	P1	13							
N-3	R4-7	X					153+00	8' RT.	KEEP RIGHT	CONTR	24	30	5.0	R	XI	1	P1	12							MOUNT IN MEDIAN
	OM2-2H	X							OBJECT MARKER (M-23) (TYPE 2)	CONTR															MOUNT BELOW R4-7
N-4	W3-3	X					156+51	60' RT.	SIGNAL AHEAD (SYMBOL)	CONTR	36	36	9.0	W	XI	2	P1	30							
	D3-2	X							BOPP RD W/ A LEFT ARROW	CONTR	48	12	4.0	F-DA	XI										MOUNT BELOW W3-3
	D3-2	X							SARASOTA BLVD W/ A RIGHT ARROW	CONTR	70	12	5.8	F-DA	XI										MOUNT BELOW BOPP RD SIGN
N-5	R4-4	X					157+40	55' RT.	BEGIN RIGHT TURN LANE YIELD TO BIKES	CONTR	36	30	7.5	R	XI	1	P1	12							
N-6	R3-5fP	X					159+20	65' RT.	RIGHT LANE	CONTR	30	12	2.5	R	XI	1	P1	13							
	R3-5R	X							RIGHT TURN ONLY	CONTR	30	36	7.5	R	XI										MOUNT BELOW R3-5fP
N-7	SPR05-39			X			160+48	81' RT.	NO PARKING IN RIGHT OF WAY TO SELL VEHICLES TO ADVERTISE TO SELL GOODS VIOLATORS FINED							1	P1	10							
N-8	R10-15	X					160+85	70' RT.	TURNING VEHICLES YIELD TO PEDS	CONTR	30	30	6.3	R	XI										MOUNT ON SIGNAL POLE
N-9	R10-15	X					161+86	80' RT.	TURNING VEHICLES YIELD TO PEDS	CONTR	30	30	6.3	R	XI										MOUNT ON SIGNAL POLE
N-10	R4-7	X					162+11	19' RT.	KEEP RIGHT	CONTR	24	30	5.0	R	XI	1	P1	12							MOUNT IN MEDIAN
N-11	R2-1(45)	X					163+00	54' RT.	SPEED LIMIT (45)	CONTR	24	30	5.0	R	XI	1	P1	12							
N-12	D3-1	X							KINNEY RD 5600 W	CONTR	30	6	1.3	R	XI										POLE TOP MOUNT
	D3-1	X							PRISM SKY DR 3575 S	CONTR	42	9	2.6	R	XI										POLE TOP MOUNT
	R1-1	X					167+74	48' RT.	STOP	CONTR	36	36	9.0	R	XI	1	P1	15							
	OM2-2V(AD)	X							DELINEATOR (ALL DIRECTION)	CONTR															MOUNT BELOW R1-1
N-13	W1-7	X					148+94	37' RT	TWO-DIRECTION LARGE ARROW	CONTR	48	24	8.0	R	XI	2	P1	22							
	OM2-2V(AD)	X							DELINEATOR (ALL DIRECTION)	CONTR															MOUNT BELOW W1-7
	OM2-2V(AD)	X							DELINEATOR (ALL DIRECTION)	CONTR															MOUNT BELOW W1-7
KINNEY ROAD (SOUTHBOUND)																									
S-1	SPR05-32			X			146+74	48' LT.	NO TRESPASSING PIMA CO. PROPERTY	CONTR						1	P1	10							
	OM2-2V(AD)			X					DELINEATOR (ALL DIRECTION)	CONTR															MOUNT BELOW SPR05-32
S-2	D3-1	X							BOPP RANCH PL 3800 S	CONTR	54	9	3.4	R	XI										POLE TOP MOUNT
	D3-1	X							KINNEY RD 5400 W	CONTR	30	6	1.3	R	XI										POLE TOP MOUNT
	R1-1	X					148+67	48' LT.	STOP	CONTR	36	36	9.0	R	XI	1	P1	15							
	OM2-2V(AD)	X							DELINEATOR (ALL DIRECTION)	CONTR															MOUNT BELOW R1-1
S-3	W14-1	X					149+67	118' LT.	DEAD END	CONTR	36	36	9.0	W	XI	1	P1	14							
	W16-2aP	X							1000 FT	CONTR	36	12	3.0	W	XI										MOUNT BELOW W14-1
S-4	W2-2(L)	X					152+00	60' LT.	INTERSECTION WARNING	CONTR	36	36	9.0	W	XI	1	P1	14							
	D3-2	X							BOPP RANCH PL	CONTR	60	12	5.0	F-DA	XI										MOUNT BELOW W2-2L
S-5	W9-2(L)	X					153+41	53' LT.	LANE ENDS MERGE LEFT	CONTR	36	36	9.0	W	XI	1	P1	13							
S-6	W6-1	X					154+97	53' LT.	DIVIDED HIGHWAY	CONTR	36	36	9.0	W	XI	1	P1	13							
S-7	R2-1(45)	X					158+00	52' LT.	SPEED LIMIT (45)	CONTR	24	30	5.0	R	XI	1	P1	12							
S-8	W9-1R	X					159+56	53' LT.	RIGHT LANE ENDS	CONTR	36	36	9.0	W	XI	1	P1	13							
S-9	R4-7	X					160+69	7' LT.	KEEP RIGHT	CONTR	24	30	5.0	R	XI	1	P1	12							MOUNT IN MEDIAN

NOTE: ALL P1 POSTS SHALL BE SINGLE SQUARE TUBE POST, 2 INCH.

Notes:

1. The Engineer shall verify post lengths and elevations.
2. The Engineer may shift a sign in order to achieve a more desirable location.
3. Quantities are approximate and for the contractor's information only.

Panel Types:

R OR W: Regulatory or Warning

F-DA: Flat-sheet Aluminum with Direct Applied Digitally-Imaged, Electronic-Cut or Silk-Screen Characters

Abbreviations:

CONTR Contractor

All stations are along Kinney Rd. R/W & Const. ℄, unless noted otherwise.

SIGN SUMMARY TABLE

Scale: N.T.S. | Sheet S102 of S109 | Page 57 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_SS01.dgn DATE: 5/24/2018 TIME: 2:35:05 PM kershnerm

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 40090 MATTHEW P. KERSHNER DATE SIGNED 05/24/18 EXPIRES 6-30-19

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438

www.aecom.com

Pima County Department of Transportation

SIGN SUMMARY TABLE
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Sign Number	Sign Code	Work: New	Work: Existing: Replace Panel	Work: Existing: Relocate Panel	Work: Existing: Remove Panel	Work: Existing: Remain	Sta (ft.)	Offset (ft.)	Panel: Legend	Panel: Provider	Panel: Width (in.)	Panel: Height (in.)	Panel: Area (sq. ft.)	Panel: Type	Panel: Sheeting Type	Ground Mounted: Foundations	Ground Mounted: Posts: Type	Ground Mounted: Posts: Total Length (ft.)	Ground Mounted: New Slipbases	Ground Mounted: Retrofit Slipbases	Ground Mounted: Stringer Type	Ground Mounted: Stringer Length (ft.)	Overhead: Structure Type	Overhead: Number of Lights	Remarks
KINNEY ROAD (SOUTHBOUND)																									
S-10	R10-15	X					162+14	39' LT	TURNING VEHICLES YIELD TO PEDS	CONTR	30	30	6.3	R	XI										MOUNT ON SIGNAL POLE
S-11	R4-7	X					165+26	7' LT.	KEEP RIGHT	CONTR	24	30	5.0	R	XI	1	P1	12							MOUNT IN MEDIAN
	OM2-2H	X							OBJECT MARKER (M-23) (TYPE 2)	CONTR															MOUNT BELOW R4-7
S-12	W3-3	X					166+31	43' LT.	SIGNAL AHEAD (SYMBOL)	CONTR	36	36	9.0	W	XI	2	P1	30							
	D3-2	X							SARASOTA BLVD W/ A LEFT ARROW	CONTR	70	12	5.8	F-DA	XI										MOUNT BELOW W3-3
	D3-2	X							BOPP RD W/ A RIGHT ARROW	CONTR	48	12	4.0	F-DA	XI										MOUNT BELOW SARASOTA BLVD SIGN
BOPP ROAD & SARASOTA BOULEVARD (EASTBOUND)																									
E-1	W3-5	X						-	REDUCED SPEED LIMIT AHEAD	CONTR	36	36	9.0	W	XI	1	P1	13							
E-2	R2-1(35)	X					109+29	25' RT.	SPEED LIMIT (35)	CONTR	24	30	5.0	R	XI	1	P1	12							
E-3	W1-2(L)	X					113+39	37' RT.	HORIZONTAL ALIGNMENT	CONTR	36	36	9.0	W	XI	1	P1	13							
E-4	W1-8(L)	X					117+81	37' RT.	CHEVRON ALIGNMENT	CONTR	18	24	3.0	W	XI	1	P1	11							
E-5	W1-8(L)	X					118+59	50' RT.	CHEVRON ALIGNMENT	CONTR	18	24	3.0	W	XI	1	P1	11							
E-6	W1-8(L)	X					119+34	50' RT.	CHEVRON ALIGNMENT	CONTR	18	24	3.0	W	XI	1	P1	11							
E-7	W1-8(L)	X					120+09	50' RT.	CHEVRON ALIGNMENT	CONTR	18	24	3.0	W	XI	1	P1	11							
E-8	W1-8(L)	X					120+88	52' RT.	CHEVRON ALIGNMENT	CONTR	18	24	3.0	W	XI	1	P1	11							
E-9	W3-3	X					123+00	50' RT.	SIGNAL AHEAD (SYMBOL)	CONTR	36	36	9.0	W	XI	1	P1	13							
E-10	OM4-3	X					122+10	179' RT.	OBJECT MARKER (M-23) (TYPE 4)	CONTR															
E-11	W14-1	X					-	-	DEAD END	CONTR	36	36	9.0	W	XI	1	P1	14							
	W16-2aP	X							500 FT	CONTR	36	12	3.0	W	XI										MOUNT BELOW W14-1
E-12	R4-4	X					124+64	35' RT.	BEGIN RIGHT TURN LANE YIELD TO BIKES	CONTR	36	30	7.5	R	XI	1	P1	12							
E-13	SPW08-02 MOD.	X					125+92	48' RT.	SPEED TABLE AHEAD	CONTR	36	36	9.0	W	XI	1	P1	14							
	W13-1P	X							15 MPH	CONTR	18	18	2.3	W	XI										MOUNT BELOW SPW08-02 MOD.
E-14	R4-7	X					127+40	4' RT.	KEEP RIGHT	CONTR	24	30	5.0	R	XI	1	P1	12							MOUNT IN MEDIAN
	OM2-2H	X							OBJECT MARKER (M-23) (TYPE 2)	CONTR															MOUNT BELOW R4-7
E-15	R3-5fP	X					127+22	57' RT.	RIGHT LANE	CONTR	30	12	2.5	R	XI	1	P1	13							
	R3-5R	X							RIGHT TURN ONLY	CONTR	30	36	7.5	R	XI										MOUNT BELOW R3-5fP
E-16	OM1-3	X					129+10	34' RT.	OBJECT MARKER (M-23) (TYPE 1)	CONTR															
E-17	W11-2	X					129+14	73' RT.	PEDESTRIAN	CONTR	36	36	9.0	R	XI										MOUNT ON LIGHT POLE
	W16-7P(L)	X							DOWNWARD DIAGONAL ARROW	CONTR	24	12	2.0	W	XI										MOUNT BELOW W11-2
E-18	OM2-2V(AD)	X					129+37	42' RT.	DELINEATOR (ALL DIRECTION)	CONTR															
E-19	OM2-2V(AD)	X					129+21	77' RT.	DELINEATOR (ALL DIRECTION)	CONTR															
E-20	R1-2	X					129+42	107' RT.	YIELD (30" X 30" X 30")	CONTR	30	30	2.7	R	XI	1	P1	14							
	SPECIALTY	X							TO BIKES	CONTR	24	18	1.7	R	XI										MOUNT BELOW R1-2
	W16-7P(L)	X							DOWNWARD DIAGONAL ARROW	CONTR	24	12	2.0	W	XI										MOUNT BELOW SPECIALTY SIGN
E-21	R2-1(35)	X					132+00	57' RT.	SPEED LIMIT (35)	CONTR	24	30	5.0	R	XI	1	P1	12							
E-22	SPECIALTY			X			133+06	57' RT.	BORDERS TUCSON MOUNTAIN PARK	CONTR						1	P1	10							
E-23	R4-7	X					134+44	4' RT.	KEEP RIGHT	CONTR	24	30	5.0	R	XI	1	P1	12							MOUNT IN MEDIAN
	OM2-2H	X							OBJECT MARKER (M-23) (TYPE 2)	CONTR															MOUNT BELOW R4-7

NOTE: ALL P1 POSTS SHALL BE SINGLE SQUARE TUBE POST, 2 INCH.

Notes:

1. The Engineer shall verify post lengths and elevations.
2. The Engineer may shift a sign in order to achieve a more desirable location.
3. Quantities are approximate and for the contractor's information only.

Panel Types:

R OR W: Regulatory or Warning

F-DA: Flat-sheet Aluminum with Direct Applied Digitally-Imaged, Electronic-Cut or Silk-Screen Characters

Abbreviations:

CONTR Contractor

Stations under Kinney Road (Southbound) are along Kinney Rd. R/W & Const. ℄. Stations under Bopp Road and Sarasota Boulevard (Eastbound) are along Bopp Rd. - Sarasota Blvd. Const. ℄.

SIGN SUMMARY TABLE

Scale: N.T.S. | Sheet S103 of S109 | Page 58 of 109

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33452 CHARLENE J. ROBINSON DATE SIGNED 5/24/18 EXPIRES 3-31-2020

AECOM

TRANSPORTATION

AECOM USA Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

Call at least two full working days before you dig in Arizona
CALL 811
BLUE STAKE, INC.
(602) 263-1100
(520) 628-1826
(928) 526-1928
Outside Maricopa County (800) 782-5348

SIGN SUMMARY TABLE
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_SS02.dgn DATE: 5/24/2018 TIME: 2:35:26 PM kershnerm

Sign Number	Sign Code	Work: New	Work: Existing: Replace Panel	Work: Existing: Relocate Panel	Work: Existing: Remove Panel	Work: Existing: Remain	Sta (ft.)	Offset (ft.)	Panel: Legend	Panel: Provider	Panel: Width (in.)	Panel: Height (in.)	Panel: Area (sq. ft.)	Panel: Type	Panel: Sheeting Type	Ground Mounted: Foundations	Ground Mounted: Posts: Type	Ground Mounted: Posts: Total Length (ft.)	Ground Mounted: New Slipbases	Ground Mounted: Retrofit Slipbases	Ground Mounted: Stringer Type	Ground Mounted: Stringer Length (ft.)	Overhead: Structure Type	Overhead: Number of Lights	Remarks
BOPP ROAD & SARASOTA BOULEVARD (WESTBOUND)																									
W-1	R2-1(45)	X					109+29	25' LT.	SPEED LIMIT (45)	CONTR	24	30	5.0	R	XI	1	P1	12							
W-2	W9-2(L)	X					124+52	51' LT.	LANE ENDS MERGE LEFT	CONTR	36	36	9.0	R	XI	1	P1	13							
W-3	R2-1(35)	X					126+90	51' LT.	SPEED LIMIT (35)	CONTR	24	30	5.0	R	XI	1	P1	12							
W-4	W9-1R	X					128+82	51' LT.	RIGHT LANE ENDS	CONTR	36	36	9.0	W	XI	1	P1	13							
W-5	R4-7	X					129+36	7' LT.	KEEP RIGHT	CONTR	24	30	5.0	R	XI	1	P1	12							MOUNT IN MEDIAN
W-6	W3-3	X					133+90	37' LT.	SIGNAL AHEAD (SYMBOL)	CONTR	36	36	9.0	W	XI	1	P1	13							

NOTE: ALL P1 POSTS SHALL BE SINGLE SQUARE TUBE POST, 2 INCH.

Notes:

1. The Engineer shall verify post lengths and elevations.
2. The Engineer may shift a sign in order to achieve a more desirable location.
3. Quantities are approximate and for the contractor's information only.

Panel Types:

R OR W: Regulatory or Warning

F-DA: Flat-sheet Aluminum with Direct Applied Digitally-Imaged, Electronic-Cut or Silk-Screen Characters

Abbreviations:

CONTR Contractor

All stations are along Bopp Rd. - Sarasota Blvd. Const. ℄, unless noted otherwise.

SIGN SUMMARY TABLE

Scale:	N.T.S.	Sheet SI04 of SI09	Page 59 of 109

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5/24/18 EXPIRES 3-31-2020

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438

www.aecom.com

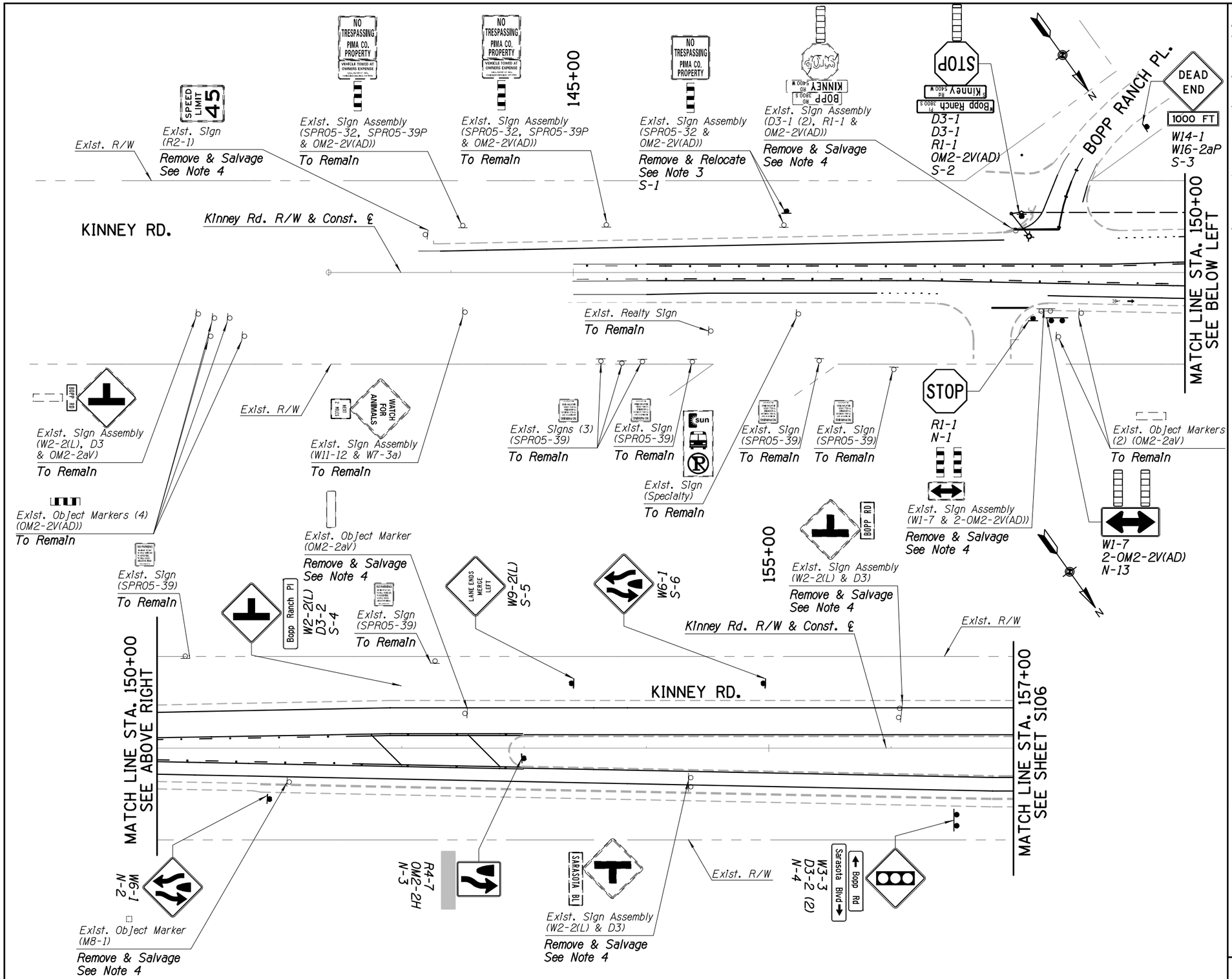
ARIZONA 811 BLUE STAKE, INC. Call at least two full working days before you begin excavation

Pima County Department of Transportation

SIGN SUMMARY TABLE
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO



NOTES:

1. All stations are referenced from the Kinney Rd. R/W & Const. ℄ unless otherwise noted.
2. See Sign Format Sheet SI09 for sign layout.
3. Existing sign panel(s) shall be removed and replaced onto a new post(s) and foundation(s) at the designated location. This work shall be paid for under Bid Item No. 2020001, Removal of Structures & Obstructions.
4. Existing sign panel(s) shall be removed and salvaged. This work shall be paid for under Bid Item No. 2020001, Removal of Structures & Obstructions.
5. OM2-2V(AD) placed under stop signs shall be red on black. All others shall be yellow on black.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5/24/18 EXPIRES 3-31-2020

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

ALL RIGHTS RESERVED
THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF AECOM USA, INC. (AECOM) AND IS NOT TO BE USED IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF AECOM.

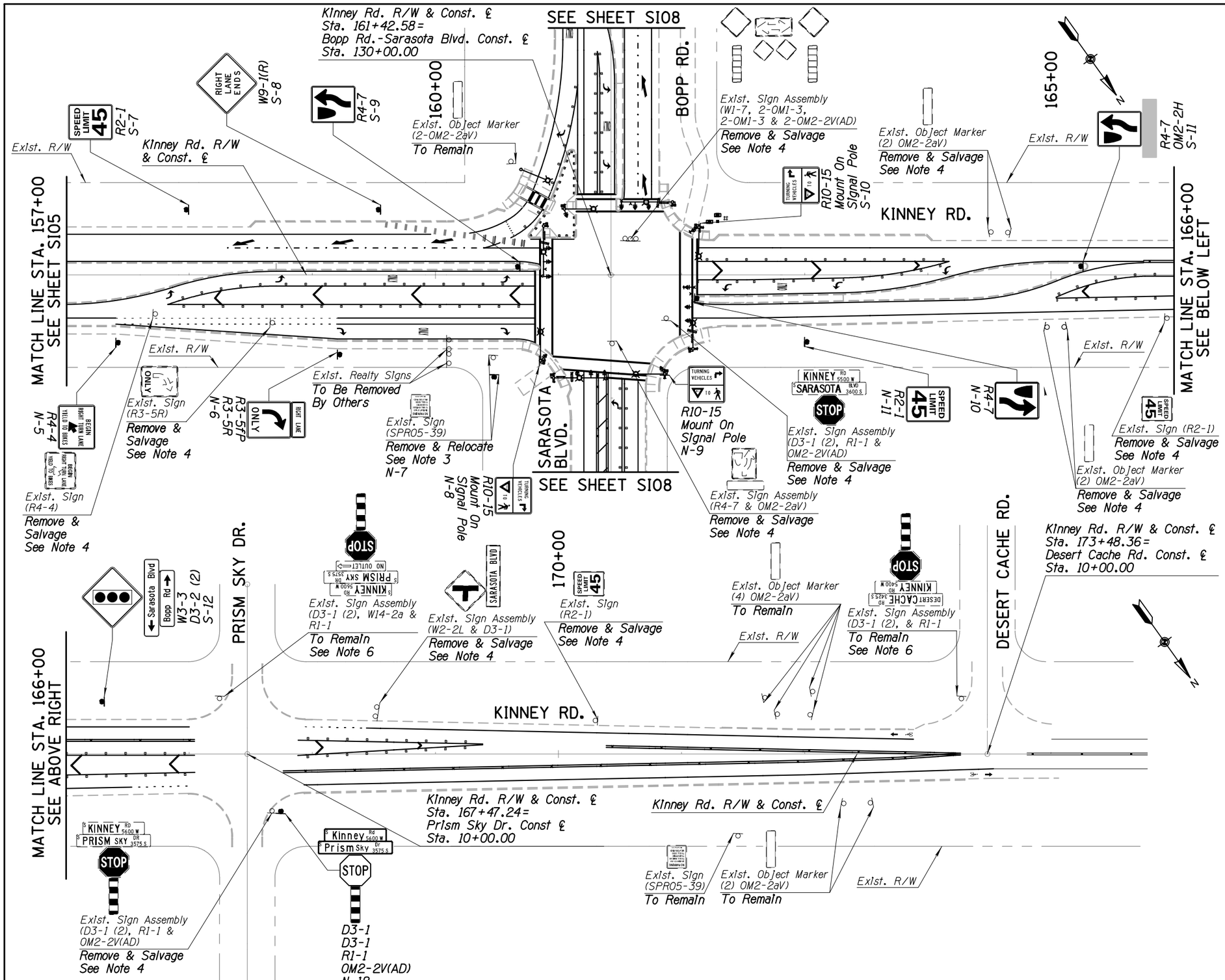
Pima County Department of Transportation

SIGNING PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+92 TO STA. 157+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet SI05 of SI09	Page 60 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_SI02.dgn DATE: 5/24/2018 TIME: 2:36:23 PM kershnerm



NOTES:

1. All stations are referenced from the Kinney Rd. R/W & Const. ℄ unless otherwise noted.
2. See Sign Format Sheet SI09 for sign layout.
3. Existing sign panel(s) shall be removed and replaced onto a new post(s) and foundation(s) at the designated location. This work shall be paid for under Bid Item No. 2020001, Removal of Structures & Obstructions.
4. Existing sign panel(s) shall be removed and salvaged. This work shall be paid for under Bid Item No. 2020001, Removal of Structures & Obstructions.
5. OM2-2V(AD) placed under stop signs shall be red on black.
6. Remove and replace existing yellow on black OM2-2V(AD) under existing stop signs to remain with a red on black OM2-2V(AD) within the project limits.

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

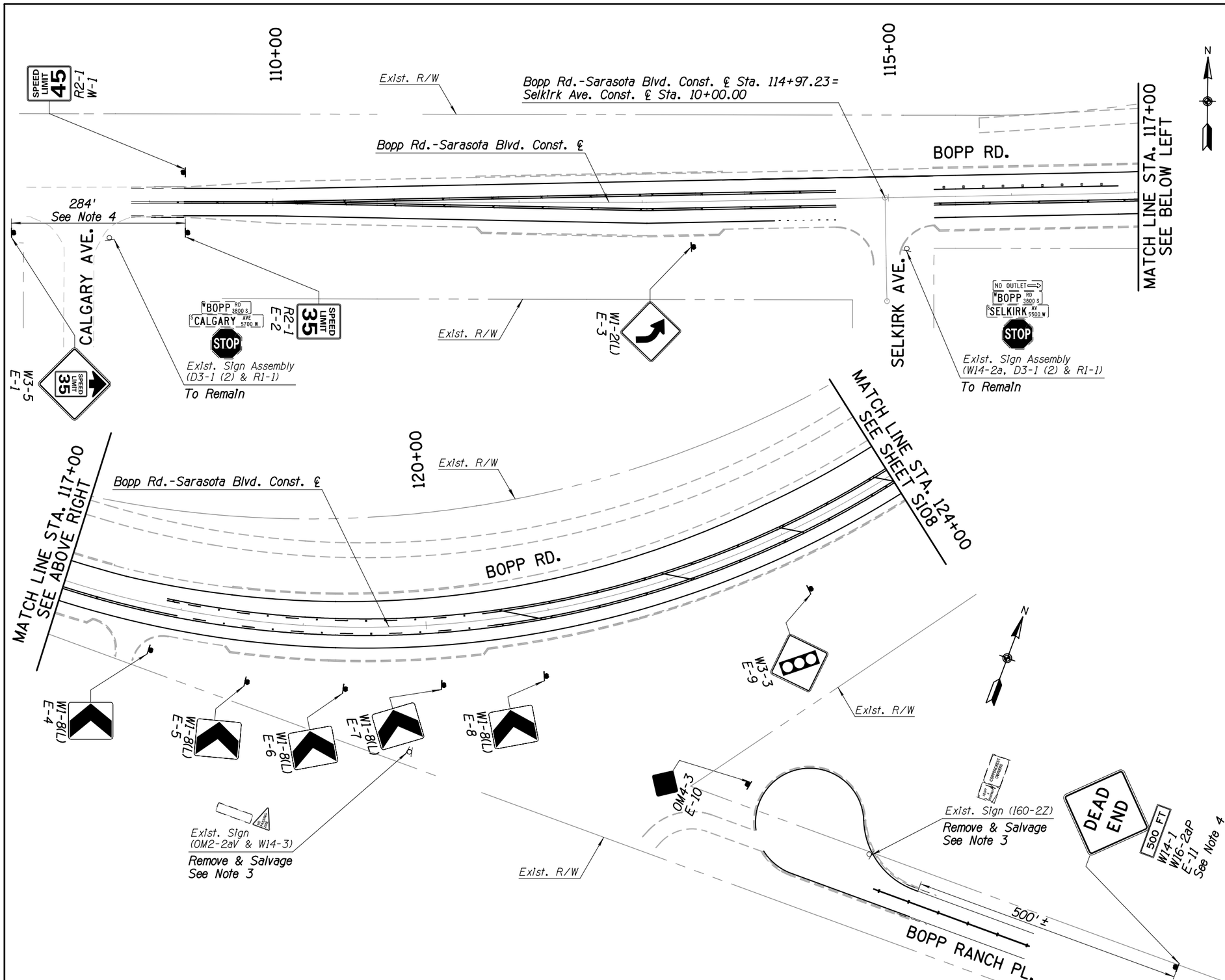
www.aecom.com

SIGNING PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 157+00 TO STA. 173+53
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet SI06 of SI09 | Page 61 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_SI03.dgn DATE: 5/24/2018 TIME: 2:36:47 PM kershnerm



NOTES:

1. All stations are referenced from the Bopp Rd.-Sarasota Blvd. Const. ℄ unless otherwise noted.
2. See Sign Format Sheet S109 for sign layout.
3. Existing sign panel(s) shall be removed and salvaged. This work shall be paid for under Bid Item No. 2020001, Removal of Structures & Obstructions.
4. Mount sign 12' from edge of pavement.

40 0 40 80'
SCALE: 1"=40'

Scale:	1"= 40' Horiz.	Sheet S107 of S109	Page 62 of 109

Pima County Department of Transportation

SIGNING PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+28 TO STA. 124+00
PROJECT NO. 4KINBO

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438
www.aecom.com

REGISTERED PROFESSIONAL ENGINEER (CIVIL)
CERTIFICATE NO. 33452
CHARLENE J. ROBINSON
EXPIRES 3-31-2020
DATE SIGNED 5-25-18

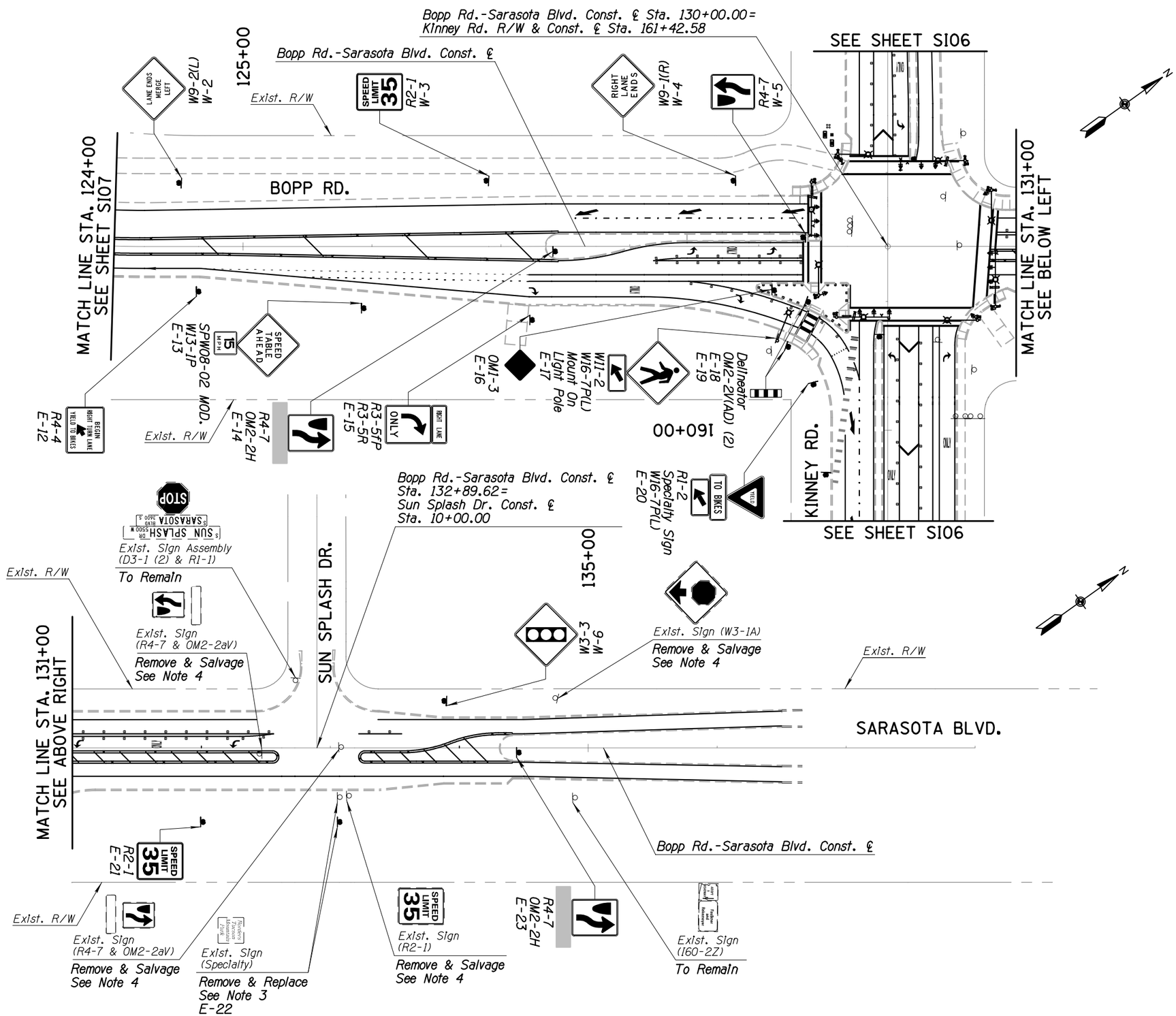
Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_S104.dgn DATE: 5/24/2018 TIME: 2:37:09 PM kershnerm



NOTES:

1. All stations are referenced from the Bopp Rd.-Sarasota Blvd. Const. ℄ unless otherwise noted.
2. See Sign Format Sheet SI09 for sign layout.
3. Existing sign panel(s) shall be removed and replaced onto a new post(s) and foundation(s) at the designated location. This work shall be paid for under Bid Item No. 2020001, Removal of Structures & Obstructions.
4. Existing sign panel(s) shall be removed and salvaged. This work shall be paid for under Bid Item No. 2020001, Removal of Structures & Obstructions.

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5-24-18 EXPIRES 3-31-2020

Pima County Department of Transportation

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

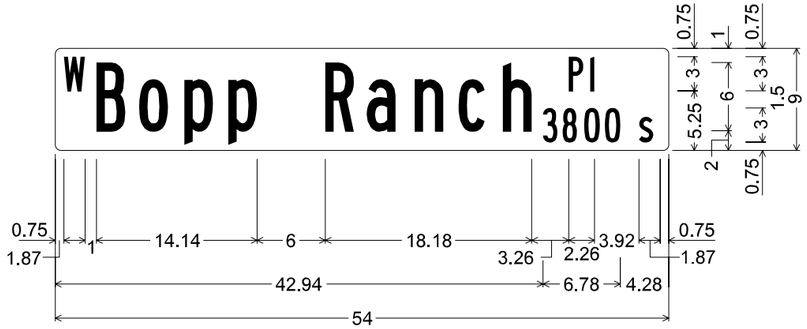
ARIZONA 811
CALL at least two full working days before you begin excavation
Arizona Blue Stake, Inc.
Call Before You Dig
Toll Free Number (Arizona Residents Only) 1-(800)-782-5348

SIGNING PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 124+00 TO STA. 136+50
PROJECT NO. 4KINBO

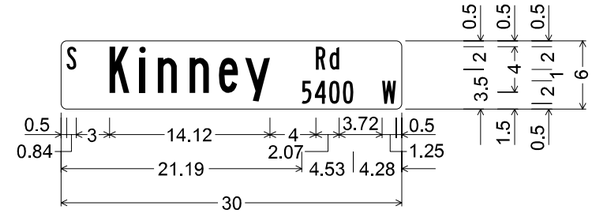
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet SI08 of SI09	Page 63 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_SI05.dgn DATE: 5/24/2018 TIME: 2:37:31 PM kershnerm

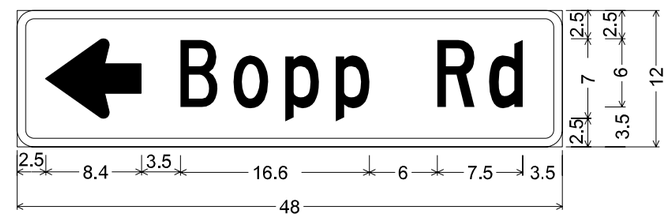


SIGN NO. S-2
0.50" Radius, No border, White on Green;
[W] B; [Bopp Ranch] B; [Pl] B; [5400] B; [W] B;

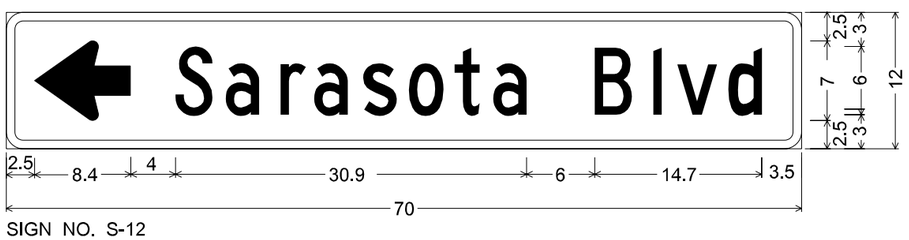


SIGN NO. S-2
0.50" Radius, No border, White on Green;
[S] B; [Kinney] B; [Rd] B;
[5400] B; [W] B;

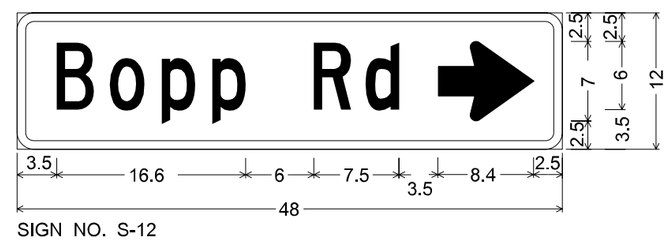
SIGN NO. N-4
d; 1.50" Radius, 0.75" Border, Black on Yellow;
Arrow 7" Type D1 - 8.4 X 7" 180°; [Sarasota Blvd] C;



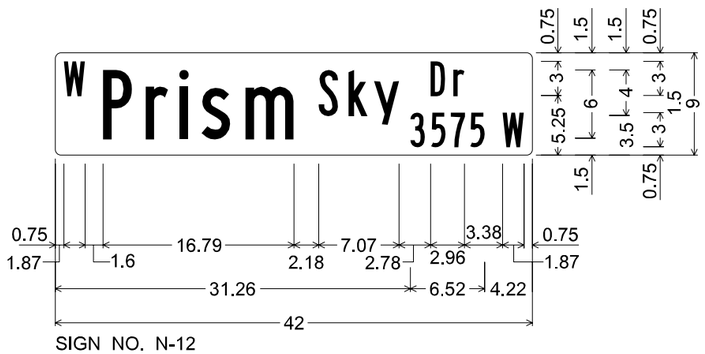
SIGN NO. N-4
d; 1.50" Radius, 0.75" Border, Black on Yellow;
Standard Arrow Custom 8.4" X 7" 180°;
[Bopp Rd] C [ ] D;



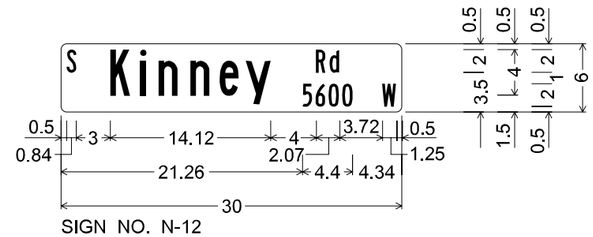
SIGN NO. S-12
d; 1.50" Radius, 0.75" Border, Black on Yellow;
Arrow 7" Type D1 - 8.4 X 7" 180°; [Sarasota Blvd] C;



SIGN NO. S-12
d; 1.50" Radius, 0.75" Border, Black on Yellow;
Standard Arrow Custom 8.4" X 7" 0°;
[Bopp Rd] C [ ] D;



SIGN NO. N-12
0.50" Radius, No border, White on Green;
[W] B; [PrismSky] B; [Dr] B; [3575] B; [W] B;



SIGN NO. N-12
0.50" Radius, No border, White on Green;
[S] B; [Kinney] B; [Rd] B;
[5600] B; [W] B;

NOTES:
1. All signs shown shall have Type XI sheeting. See Special Provisions for character sheeting type on guide signs.
2. All sign dimensions are in inches.
3. See the Sign Summary Tables for additional information.
4. All sign panels will be furnished and installed by the contractor.
5. The work for the Guide Signs will be paid under Bid Item No. 6080081, Flat Sheet Aluminum w/ Direct Apply or Silk-Screen Characters. The sign posts and foundations are paid under its respective bid item.
6. The work for the street name signs will be paid under Bid Item No. 6080014, Sign Panel (Traffic Control) (Permanent) (Type XI).

Ana M. Olivares, P.E., Director

Designed	MPK		05/18
Drawn	MPK		05/18
Checked	CJR		05/18
Proj. Engr.	MPK		05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5/24/18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438
www.aecom.com

ARIZONA 811 BLUE STAKE, INC. Call at least two full working days before you begin excavation

Pima County Department of Transportation

SIGN FORMAT SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet S109 of S109	Page 64 of 109

TRAFFIC SIGNAL GENERAL NOTES:

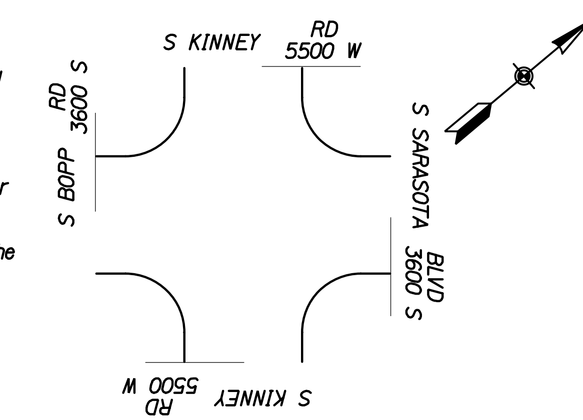
1. All equipment/materials and construction shall meet or exceed the requirements contained in the current Pima Associations of Governments (PAG) Standard Specifications and Standard Details for Public Improvements, the Special Provisions and the approved plans.
2. All pedestrian push button assemblies shall meet current ADA requirements. The signs that shall be used are identified in the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) as adopted by PCDOT Traffic Engineering Division. The specific sign face shall be verified with the Traffic Engineer.
3. Metro street name signs shall be installed such that the bottom of the sign is no less than 17 feet above the roadway pavement or no less than 16 feet above the finished grade beyond the shoulder, bike lane or multi-use lane.
4. The exact location of each new pole foundation, pull box, controller cabinet foundation, UPS cabinet foundation and electric service pedestal foundation shall be approved by the Traffic Engineer prior to installation.
5. The top of the pole foundation shall be level with the surrounding finished grade. If the slope or shoulder drops off from finished grade, the Contractor shall grade around pole foundation. The top of the foundation shall extend no more than 4 inches above surrounding finished grade.
6. Only new conduit, conductors and cable shall be installed.
7. All conduits shall be cleaned by compressed air and a properly sized conduit piston or mandrel shall be pulled through the conduit prior to conductor and cable installation.
8. Conduit installed under existing paved driveways, which are not scheduled to be reconstructed as part of this project, shall be installed by means of boring.
9. Pull boxes shall not be installed within concrete curb access ramps or landings. In addition, any pull boxes installed behind curbs shall be installed between the curb and the proposed/future sidewalk or beyond the proposed/future sidewalk. An exception to this note would be pull boxes installed in a median. Any pull boxes installed along an uncurbed roadway shall be installed 10 feet from edge of pavement to edge of pull box where right-of-way permits or as far from pavement as practical when there is insufficient right-of-way to provide the 10 foot offset.
10. A 3/4 inch x 10 foot ground rod shall be installed in the No. 7 pull box (with the extension) adjacent to the controller cabinet. Two ground rod clamps shall be furnished and installed for clamping the ground wire.
11. The high voltage cables should be separated from the low voltage cables as much as possible. Separate conduit should be used for high voltage and low voltage cables between the controller cabinet and the No. 7 pull boxes located on each corner of the intersection.
12. A #14 AWG IMSA 19-1-1984 7-conductor solid wire cable shall be installed from each traffic signal terminal strip to the concrete pull box adjacent to the pole foundation leaving 3 feet of slack for each cable (measured from the top of the pull box) in the pull box.
13. Three #10 AWG-XHHW conductors shall be installed from each luminaire to the concrete pull box adjacent to the pole foundation, leaving 3 feet of slack for each conductor (measured from the top of the pull box) in the pull box. Route four #10 AWG conductors to the luminaire with the photoelectric cell. An in-line fuse shall be installed for each luminaire in the associated pull box.
14. Poles with pedestrian signals and push button stations shall use one #14 AWG 7-conductor IMSA cable for both the push button station and the pedestrian signal. The outer cable jacket shall be removed at the hand hole height. Two conductors shall be routed to the push button station and the remaining conductors shall be routed to the pedestrian signal.
15. All vehicle roadway detection loop cables shall be #14 AWG IMSA 51-5-1985 cable. Lead-in cables shall be #16 AWG IMSA 50-2-1984 cable. No splices shall be allowed in the roadway detection loop cable except at the pull box adjacent to loop.
16. The detector lead-in cable shall not be spliced.
17. The emergency vehicle pre-emption sensor cable shall be Opticom Detector Cable Model No. 138. The cable shall not be spliced.
18. The Econolite Terra Branch Cable (Part No. 1175-01X) shall be installed for the video camera, unspliced, from the video camera to the traffic signal controller cabinet.
19. The Tucson Electric Power (TEP) Company Construction Department (918-8300) shall be contacted by the Contractor to verify the location of the electric service connection at the intersection. The Contractor shall be responsible for excavating and backfilling the trench and installing any necessary sleeves under sidewalks or driveways in which the electric service cable in conduit (CIC) is to be installed by TEP.
20. PCDOT shall contract separately with Smartwave Technologies, Inc., to provide and install wireless communications devices and Pan tilt zoom (PTZ) cameras at all new signalized intersections. Smartwave Technologies staff shall install the wireless communications devices and PTZ cameras after the Contractor's electrical work is complete and signals at the intersection are operational. At existing signalized intersections that already have wireless communications and PTZ cameras, PCDOT shall arrange to have the existing equipment removed or relocated by Smartwave Technologies, and subsequently installed on the new poles and mast arms after the Contractor's work is finished.

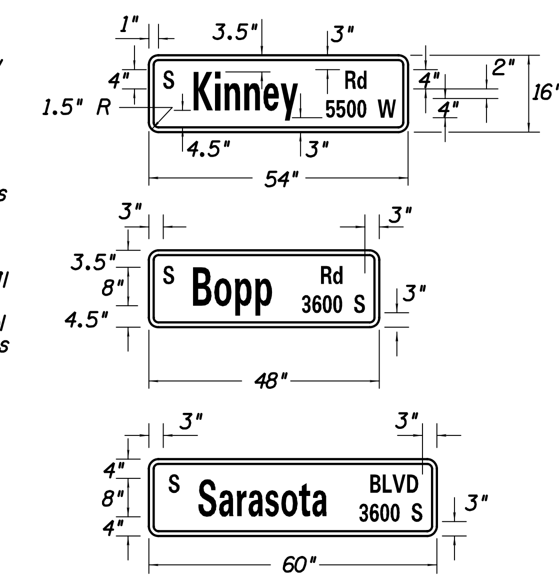
TRAFFIC SIGNAL GENERAL NOTES (Cont.):

21. All vehicle and pedestrian indications shall be LED. All vehicle and pedestrian led signal indications shall be the GE Lumination GTX series or GT1 series with tinted lenses to the color of the indication and be ETL certified or approved equal. All pedestrian signal faces shall be GT1 series pedestrian count down indications.
22. The Contractor shall contact Arizona 811 at 811 or 1-800-782-5348, a minimum of 2 working days prior to any excavation.
23. The Contractor shall maintain and allow access to all Pima County Waste Water manholes located within the right-of-way. Access must be maintained 24 hours per day, seven days per week. No electrical utilities may be placed within 6 feet of a force main.
24. Any equipment and/or utilities within the project limits that are damaged or destroyed by the Contractor shall be repaired or replaced at the sole expense of the Contractor.
25. Conduits for future use shall be sealed with a properly sized tapered polyethylene duct plug at each termination point. The #8 bare bond wire shall be looped through the plug pull tab and 2 feet of slack doubled back into the conduit.
26. The face of any vehicle or pedestrian signal head that is not in service shall be covered with a prefabricated nylon cover designed to completely cover the visors and lenses. The covers shall be securely held in place by integral nylon straps and buckles. The cover shall have a fine mesh strip through the center to permit testing of the signals without removing the cover. Out of service signal heads shall not be turned, covered with burlap, cardboard or other material.
27. The location of utilities shown on the plans is approximate. The Contractor is responsible for verifying/potholing underground utilities in the vicinity of the proposed pole foundations. The Contractor is also responsible for verifying clearance between overhead lines and traffic signal equipment prior to installation of poles and foundations.
28. Upon commencement of work, traffic control devices shall be posted and maintained by the Contractor until such a time as the work is complete. All traffic control devices shall be in accordance with the most recent edition of the MUTCD as adopted by Pima County and approved by the Engineer. All traffic control devices on federally funded projects shall be in accordance with the most recent edition of the MUTCD as adopted by the Arizona Department of Transportation and approved by the Engineer.

RESPONSIBILITIES:

1. The Contractor shall supply and install all equipment and materials for the installation of the traffic signal as specified on the approved plans and in the project specifications, unless otherwise noted.
2. The Contractor shall supply the signal communication system equipment and deliver it to the Pima County Traffic Engineering Department in accordance with the Special Provision for Bid Item No. 9300114 - Miscellaneous Work 4 (Signal Communication System).
3. The Contractor shall deliver the controller assembly(s) which includes the controller cabinet, the controller(s), the Opticom Model 764 multimode phase selector, the Opticom Model 768 auxiliary interface panel, and other auxiliary equipment specified in the approved plans and the project specifications to the PCDOT Maintenance Yard, 1313 S. Mission Road, Bldg. #28 for testing. This shall occur a minimum of two weeks prior to the installation(s) at the intersection(s). Contact Signal Shop Supervisor (724-5887) at least 2 working days prior to the delivery of the controller assembly(s) to PCDOT. PCDOT staff shall transport the controller assembly(s) from the PCDOT Maintenance Yard to the intersection(s) after the PCDOT staff has tested the equipment.
4. PCDOT staff shall install each traffic controller cabinet on its foundation and route all of the conductors into the controller cabinet. The PCDOT staff shall terminate the field conductors in the controller cabinet.
5. The Contractor shall provide all traffic signs, except for the overhead Metro street name signs. PCDOT shall fabricate all overhead Metro street name signs for the designated intersection and provide them to the Contractor for installation. The Contractor shall notify the Traffic Signal Inspector a minimum of 5 working days prior to Metro street name sign installation. The Contractor shall provide all mounting hardware for traffic signs and Metro street name signs. The mounting hardware required for the installation of a Metro street name sign is a Pelco Bracket (AS-304-48-PNC), a Pelco Gusseted Tube (AB-0390-94-PNC, and four Pelco 4" sign clamps (AB-0502-04-PNC) or approved equals. The Contractor shall install all signs.
6. The Contractor shall provide all materials and install all pavement markings required to complete the project.
7. The traffic signal will not be energized until all permanent signal related signs have been installed in their permanent locations and verified in place and all crosswalks, stop bars, and interim striping has been painted in its permanent location. All vehicle and pedestrian detection associated with the new signal must be installed and active. Once the new signal has been energized, traffic must be maintained on the appropriate side of the median. The re-alignment of new signal heads will not be permitted to accommodate lane shifts. The new signal phasing and operation will not be adjusted to accommodate lane shifts. Timing changes and temporary phase omissions will be permitted. The Pima County Signal Inspector must approve of the conditions prior to traffic signal turn. The Contractor must notify the Pima County Signal Inspector of their intent to energize the signal a minimum of 5 working days prior to turn-on.





METRO STREET NAME LEGEND

The Metro Street Name signs details shall conform to Pima County's Standard Detail Sheet No. 9-22C, Metro Street Name Aerial (D3-1M).

Ana M. Olivares, P.E., Director

Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) Certificate No. 33452 Charlene J. Robinson, Arizona, U.S.A. Date Signed 5/24/18 Expires 3-31-2020

AECOM www.aecom.com
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD, STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

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 Department of Transportation

TRAFFIC SIGNAL GENERAL NOTES SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

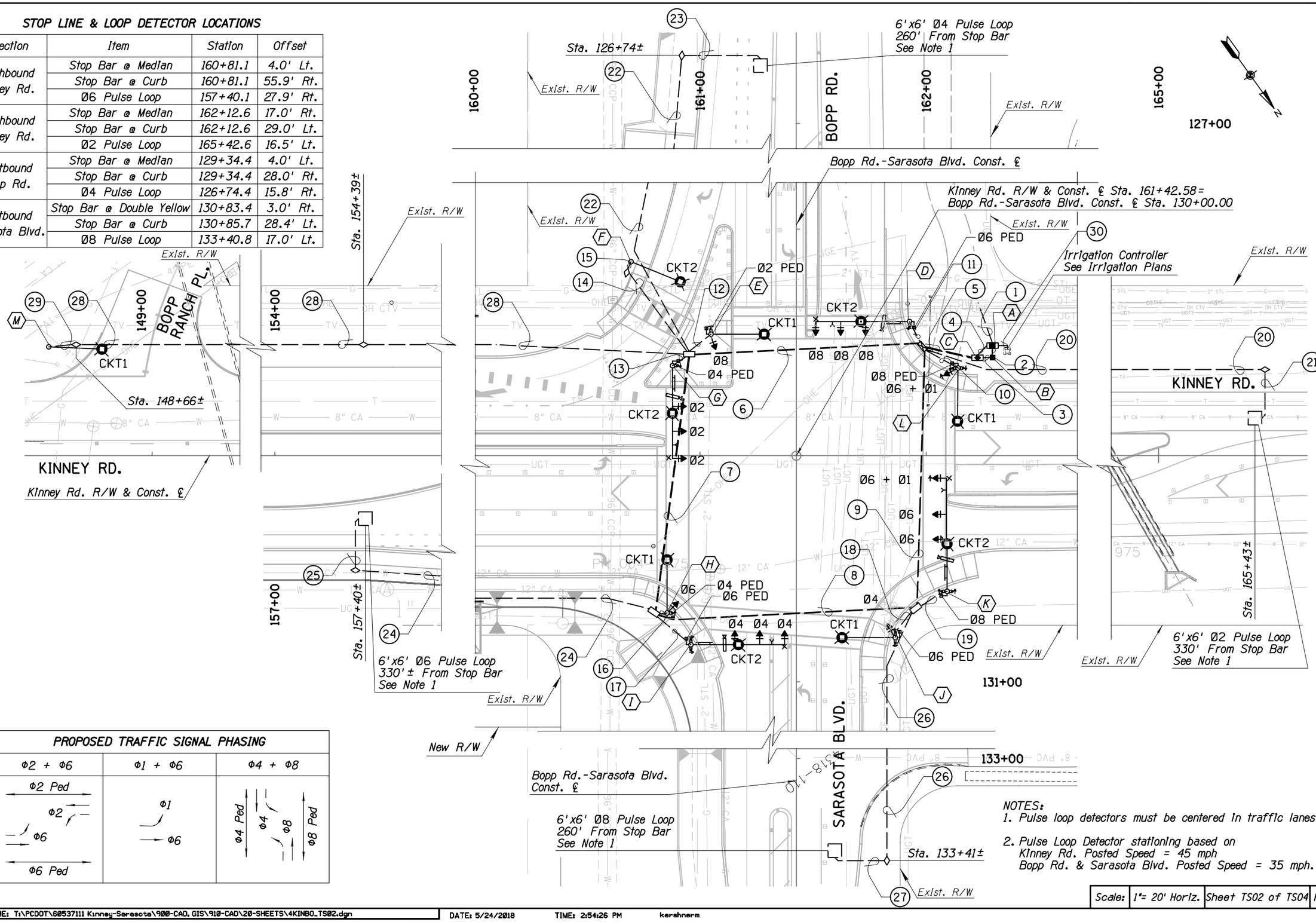
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: N/A | Sheet TS01 of TS04 |

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_TS01.dgn DATE: 5/24/2018 TIME: 2:54:02 PM kershnerm

STOP LINE & LOOP DETECTOR LOCATIONS

Direction	Item	Station	Offset
Northbound Kinney Rd.	Stop Bar @ Median	160+81.1	4.0' Lt.
	Stop Bar @ Curb	160+81.1	55.9' Rt.
	Ø6 Pulse Loop	157+40.1	27.9' Rt.
Southbound Kinney Rd.	Stop Bar @ Median	162+12.6	17.0' Rt.
	Stop Bar @ Curb	162+12.6	29.0' Lt.
	Ø2 Pulse Loop	165+42.6	16.5' Lt.
Eastbound Bopp Rd.	Stop Bar @ Median	129+34.4	4.0' Lt.
	Stop Bar @ Curb	129+34.4	28.0' Rt.
	Ø4 Pulse Loop	126+74.4	15.8' Rt.
Westbound Sarasota Blvd.	Stop Bar @ Double Yellow	130+83.4	3.0' Rt.
	Stop Bar @ Curb	130+85.7	28.4' Lt.
	Ø8 Pulse Loop	133+40.8	17.0' Lt.



PROPOSED TRAFFIC SIGNAL PHASING

NOTES:
1. Pulse loop detectors must be centered in traffic lanes.
2. Pulse Loop Detector stationing based on
   Kinney Rd. Posted Speed = 45 mph
   Bopp Rd. & Sarasota Blvd. Posted Speed = 35 mph.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE ROBINSON DATE SIGNED 5-31-2018 EXPIRES 3-31-2020

AECOM
AECOM USA, Inc.
3555 E. METROPOLE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
www.aecom.com
TRANSPORTATION

Call at least two full working days before you dig. ARIZONA BLUE STAKE, INC. Excavation Notice Line 1-(800)-782-5348

Pima County Department of Transportation

TRAFFIC SIGNAL PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 20' Horiz. | Sheet TS02 of TS04 | Page 66 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_TS02.dgn DATE: 5/24/2018 TIME: 2:54:26 PM kershnerm

CABINET AND POLE SCHEDULE

CABINET	TYPE	CONTROLLER	AUX. CONTROLLER	REMARKS	LOCATION	STANDARDS
A	MYERS 125 AMP 120/240V MEUG 16-125WTB, OR EQUAL	METERED SERVICE	1 - 30 AMP SINGLE POLE BREAKER FOR SIGNALS 1 - 50 AMP SINGLE POLE BREAKER FOR LIGHTING 1 - 20 AMP SINGLE POLE BREAKER FOR IRRIGATION	SHARE FOUNDATION W/ UPS, FOUNDATION SIZE IS 66"L X 36"W X 24"D	LOCATE BY ENGINEER IN THE FIELD, MIN. 12 FEET BEHIND EDGE OF CURB TO THE STREET SIDE OF FOUNDATION AND MIN. 18 FEET FROM NEAR EDGE OF THROUGH LANE.	T 1801
B UPS	MYERS BC1280 W/ MP2000E OR ALPHA EQUIVALENT WITH PULL OUT SHELVES	ICBM SNMP CARD & 4 ALPHA CELL 195 GXL BATTERIES	—	SHARE FOUNDATION W/ PEDESTAL FOUNDATION SIZE IS 66"L X 36"W X 24"D	LOCATE ADJACENT TO ELECTRIC SERVICE PEDESTAL ON A SHARED OR COMMON FOUNDATION, WITH SAME MINIMUM CLEARANCES TO CURB OR NEAR EDGE OF THROUGH LANE.	—
C	NEMA TS2-1-1998 TYPE IV, TS2 SIZE 6 CABINET W/ DETECTOR RACK CONFIGURATION 1 AND DUAL DOOR	NEMA TS-2 TYPE 1 ECONOLITE MODEL COBALT OR EQUAL	16 CHANNEL MMU. RACK MOUNTED LOOP DETECTORS. NEMA SOLID STATE LOAD SWITCHES, VIDEO DETECTION, A 3 POLE STREET LIGHTING CONTACTOR, (3) 20 AMP CIRCUIT BREAKERS, 3 CHANNEL AMPLIFIER AND GTT OPTICOM EVP DISCRIMINATOR	—	LOCATE BY ENGINEER IN THE FIELD, MIN. 12 FEET BEHIND EDGE OF CURB TO THE STREET SIDE OF FOUNDATION AND MIN. 18 FEET FROM NEAR EDGE OF THROUGH LANE.	T 203 T 312

POLE NUMBER	MAST ARM TYPE	MAST ARM SIGNAL	MAST ARM LUMINAIRE	SIGNALS MOUNTING	SIGNALS FACE	LUMINAIRE TYPE	PED. P.B. TYPE/SIGN	REMARKS	STATION KINNEY ROAD	OFFSET KINNEY ROAD	TOP OF FND. ELEV.	STANDARDS
D (F F F; 11' 11')	"Q"	40'	20'	(1) XI (3) ASTRO BRAC	(3) F (1) PED	LED, 280W TYPE III FULL CUTOFF	TYPE I 2" ADA P.B. P.B. SIGN R10-3eAZ(L)	INSTALL PHOTOCELL ON LUMINAIRE. INSTALL CAMERA ON LUMINAIRE MAST ARM. INSTALL OPTICOM DETECTOR 711	161+92±	59'± LT.	2608.3±	T 412 T 803 T 1901 T 417 T 804 T 1902 T 418 T 909 T 1903 T 801 T 1101 T 1905 T 802 T 1505
E H (F)	"G"	—	20'	(1) V (1) XI	(1) F (1) PED	LED, 280W TYPE III FULL CUTOFF	TYPE I 2" ADA P.B. P.B. SIGN R10-3eAZ(R)-H R10-3eAZ(L)-E		E 161+05± H 160+85±	54'± LT. 70'± RT.	2607.5± 2608.9±	T 407 T 802 T 909 T 417 T 803 T 1101 T 418 T 804 T 801 T 903
F M	"G"	—	20'	—	—	LED, 280W TYPE III FULL CUTOFF	—		F 160+70± M 148+54±	86'± LT. 48'± LT.	2607.0± 2602.0±	T 407
G (F F F; 11' 11')	"Q"	40'	20'	(1) XI (3) ASTRO BRAC	(3) F (1) PED	LED, 280W TYPE III FULL CUTOFF	2-TYPE I 2" ADA P.B. P.B. SIGN R10-3eAZ(L)	INSTALL CAMERA ON MAST ARM. INSTALL OPTICOM DETECTOR 711	160+88±	40'± LT.	2607.8±	T 412 T 803 T 1901 T 417 T 804 T 1902 T 418 T 909 T 1903 T 801 T 1101 T 1905 T 802 T 1505
I (F F F; 11' 11') *SEE REMARKS	"Q"	40'	20'	(1) XI (3) ASTRO BRAC	(3) F (1) PED	LED, 280W TYPE III FULL CUTOFF	2-TYPE I 2" ADA P.B. P.B. SIGN R10-3eAZ(L) *R10-4a(L)	INSTALL CAMERA ON MAST ARM. INSTALL OPTICOM DETECTOR 711 *P.B. FOR EQUESTRIAN USE SEE NOTE 3	160+96±	84'± RT.	2609.5±	T 412 T 803 T 1901 T 417 T 804 T 1902 T 418 T 909 T 1903 T 801 T 1101 T 1905 T 802 T 1505
J (F) *SEE REMARKS	"G"	—	20'	(1) V (1) XI	(1) F (1) PED	LED, 280W TYPE III FULL CUTOFF	2-TYPE I 2" ADA P.B. P.B. SIGN R10-3eAZ(R) *R10-4a(L)	*P.B. FOR EQUESTRIAN USE SEE NOTE 3	161+86±	80'± RT.	2609.8±	T 407 T 803 T 417 T 804 T 418 T 903 T 801 T 909 T 802 T 1101
K (F F Q; 11' 16') *SEE REMARKS	"R"	50'	20'	(1) XI (3) ASTRO BRAC	(2) F (1) Q (1) PED	LED, 280W TYPE III FULL CUTOFF	2-TYPE I 2" ADA P.B. P.B. SIGN R10-3eAZ(L) *R10-4a(L)	INSTALL CAMERA ON MAST ARM. INSTALL OPTICOM DETECTOR 711 *P.B. FOR EQUESTRIAN USE, SEE NOTE 3	162+09±	60'± RT.	2609.1±	T 413 T 803 T 1901 T 417 T 804 T 1902 T 418 T 909 T 1903 T 801 T 1101 T 1905 T 802 T 1505
L (Q) *SEE REMARKS	"G"	—	20'	(1) V (1) XI	(1) Q (1) PED	LED, 280W TYPE III FULL CUTOFF	2-TYPE I 2" ADA P.B. P.B. SIGN R10-3eAZ(R) *R10-4a(R)	INSTALL CAMERA ON MAST ARM. INSTALL OPTICOM DETECTOR 711 *P.B. FOR EQUESTRIAN USE, SEE NOTE 3	162+14±	39'± LT.	2608.4±	T 407 T 802 T 909 T 417 T 803 T 1101 T 418 T 804 T 801 T 903

NOTES:

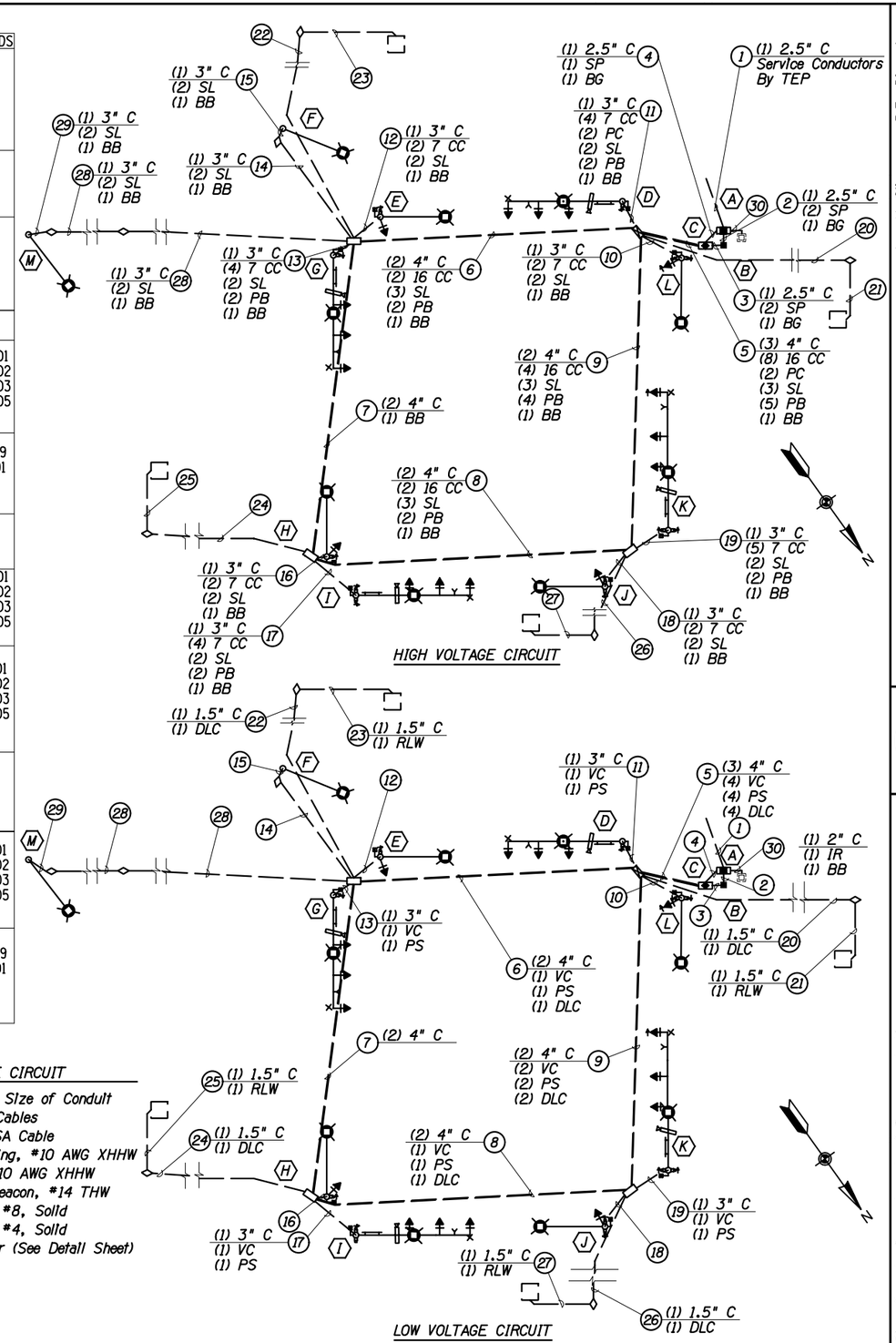
1. Astro-Brac mounting assemblies shall be Pelco Astro-Brac part number AS-0116, or approved equal.
2. All luminaires shall have photocell receptacles. All photocell receptables shall have shorting cap, except for the luminaire with photocell.
3. Pedestrian push button to be at 42 inches above finish grade to center of push button. Equestrian push button to be at 72 inches above finish grade to center of push button.
4. Furnish and install pedestrian push button signs R10-3eAZ (L) or (R) and R10-4a(L) or (R) with appropriate arrow per the latest edition of the MUTCD as adopted by PCDOT.
5. The welded tenon at end of mast arm for Astro-Brac shall be located 6 inches from the tip of mast arm to center hole of tenon.
6. PCDOT will contract with Smartwave Technologies, Inc. under a separate Purchase Order to provide and install PTZ camera and wireless communications device.
7. Refer to sheet TS01 for the Metro Street Name signs details.
8. Address for the new electrical service is TBD.
9. Electric service shall be to TEP supplied transformer.

LOW VOLTAGE CIRCUIT

(X) Y" C = Number and Size of Conduit
(X) = Number of Cables
VC = Video Detection Cable Econolite, Part No. 1175-00X
PS = Pre-Empt Sensor, Opticom #20 3 CC Shielded Cable (Model 138)
DLC = Detector Lead-In Cable, #16 AWG IMSA 50-2-1984
RLW = Roadway Loop Wire, #14 AWG IMSA 51-5-1985
IR = Irrigation

HIGH VOLTAGE CIRCUIT

(X) Y" C = Number and Size of Conduit
(X) = Number of Cables
# CC = #4 AWG IMSA Cable
SL = Street Lighting, #10 AWG XHHW
PC = Photocell, #10 AWG XHHW
PB = Pre-Empt Beacon, #14 THW
BB = Bare Bond, #8, Solid
BG = Bare Bond, #4, Solid
SP = Signal Power (See Detail Sheet)



Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

Designed	CJR	05/18
Drawn	CJR	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 31452 CHARLENE J. ROBINSON DATE SIGNED 5/24/2018 EXPIRES 3-31-2020

AECOM

TRANSPORTATION

AECOM USA Inc.
555 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1600 F 520.887.8438

www.aecom.com

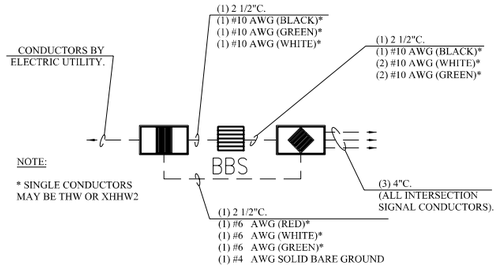
Call at least two full working days before you dig in Arizona
ARIZONA BLUE STAKE, INC.
(Formerly Arizona Underground Protection Center)
Arizona Law requires a minimum of two (2) full working days for underground utilities to mark their facilities after receipt of a valid notification.

Pima County Department of Transportation

TRAFFIC SIGNAL POLE AND CONDUCTOR SCHEDULE SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet TS03 of TS04	Page 67 of 109

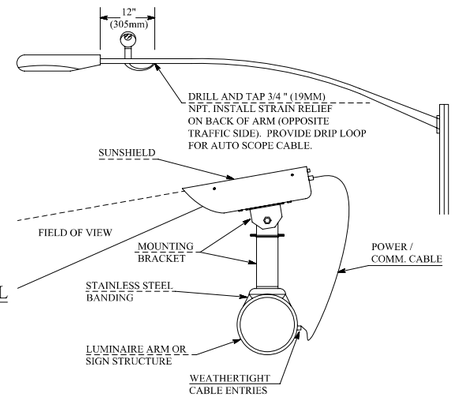


NOTE:

* SINGLE CONDUCTORS
MAY BE THW OR XHHW2

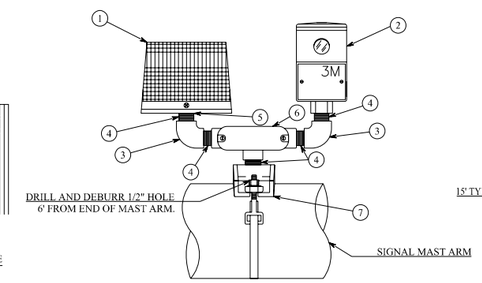
BATTERY BACK-UP POWER SUPPLY (BBS) SCHEMATIC DETAIL

N.T.S.



VIDEO DETECTION SYSTEM AUTO SCOPE INSTALLATION

N.T.S.



LOCATE EVP ASSEMBLY 8' 6" FROM END TENON, USE FACTORY WELDED 1" NPT NIPPLE WHEN PROVIDED.

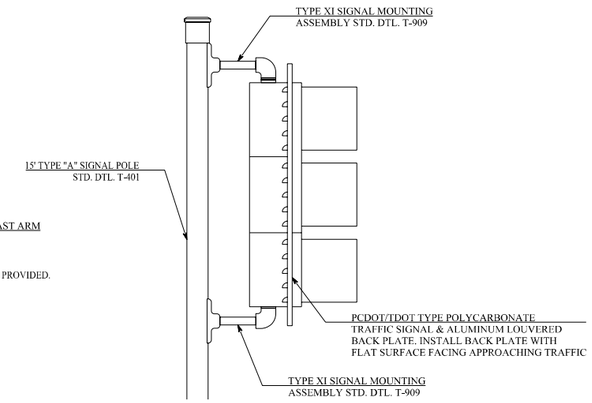
LIST OF MATERIALS

ITM.	QU.	DESCRIPTION
1	1	WHELEN STROBE LIGHT (P/N 1S3220LC OR IS3220L)*
2	1	3M OPTICOM DETECTOR (P/N 711 OR PER PLAN)*
3	2	3/4" GALVANIZED 90 ELBOWS
4	5	3/4" GALVANIZED CLOSE NIPPLE
5	1	1" - 3/4" REDUCER
6	1	3/4" TB CONDULET
7	1	PELCO AB0155-29

* - AS PER PLAN

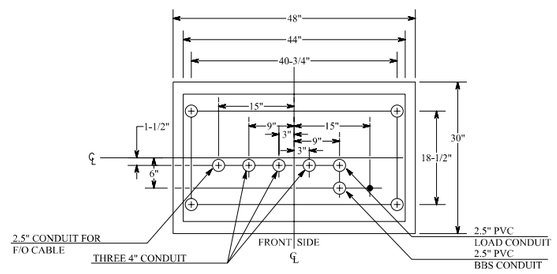
PRE-EMPTION MOUNTING ASSEMBLY DETAIL

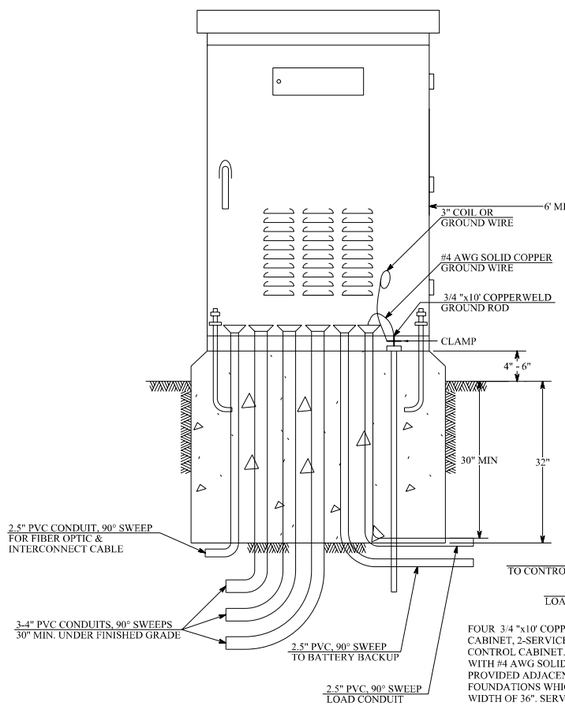
N.T.S.

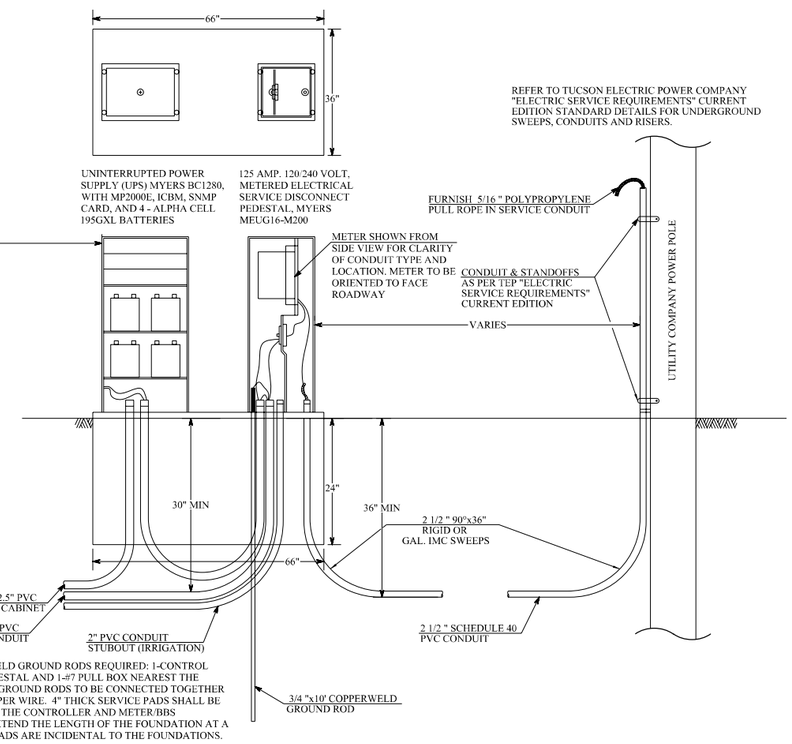


PCDOT A POLE SIGNAL MOUNTING ASSMBLY & BACKPLATE ORIENTATION

N.T.S.



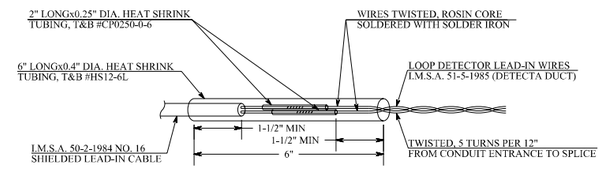




FOUR 3/4 "x10' COPPERWELD GROUND RODS REQUIRED: 1-CONTROL CABINET, 2-SERVICE PEDESTAL AND 1-#7 PULL BOX NEAREST THE CONTROL CABINET. ALL GROUND RODS TO BE CONNECTED TOGETHER WITH #4 AWG SOLID COPPER WIRE. 4" THICK SERVICE PADS SHALL BE PROVIDED ADJACENT TO THE CONTROLLER AND METER/BBS FOUNDATIONS WHICH EXTEND THE LENGTH OF THE FOUNDATION AT A WIDTH OF 36". SERVICE PADS ARE INCIDENTAL TO THE FOUNDATIONS.

TRAFFIC SIGNAL ELECTRICAL SERVICE

N.T.S.

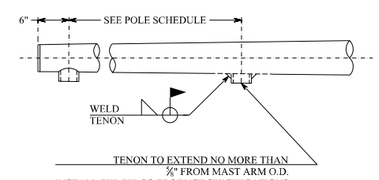


LOOP DETECTOR SPLICE

N.T.S.

1. LOOPS INSTALLED IN THE FINAL LIFT OF PAVEMENT SHALL BE SEALED WITH BLACK 3M DETECTOR LOOP SEALANT 5000 OR APPROVED EQUAL. LOOPS IN THE LEVELING COURSE MAY USE AN APPROVED ASPHALTIC EMULSION
2. ALL 6'x6' SHALL BE WOUND IN A CLOCKWISE DIRECTION.
3. TAG EACH LOOP WIRE AT THE PULL BOX AS START (S) , OR FINISH (F). LOOPS SHALL BE IDENTIFIED PER LANE AND DIRECTION AS PER STANDARD SPECIFICATIONS.
4. ALL SIDE BY SIDE 6'x6' LOOPS TO BE CONNECTED IN SERIES (START TO FINISH TO START TO FINISH, ETC.)

LOOP INSTALLATION NOTES



TENON DETAIL

N.T.S.

Ana M. Olivares, P.E., Director

Designed	PCDOT	05/18
Drawn	PCDOT	05/18
Checked	PCDOT	05/18
Proj. Engr.	PCDOT	05/18

No.	Revision Description	Engineer	Date

DETAIL PROVIDED BY PIMA COUNTY

AECOM

TRANSPORTATION

AECOM USA, Inc.
333 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

www.aecom.com

Pima County Department of Transportation

TRAFFIC SIGNAL DETAIL SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS

PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N/A	Sheet TS04 of TS04	Page 68 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_TS04.dgn DATE: 5/30/2018 TIME: 2:08:24 PM kershnerm

NATIVE PLANT INVENTORY NOTES:

1. The Native Plant Inventory was conducted in conformance with the PCDOT Memorandum of July 2015 Update to Appendix 4D of the Environmentally Sensitive Roadway Design Guidelines, Pima County DOT Roadway Design Manual.

2. All protected native plants listed in the Update to Appendix 4D of the Environmentally Sensitive Roadway Design Guidelines (Pima County DOT Roadway Design Manual) within the project area (Right-of-Way to Right-of-Way and all easements) have been inventoried. All protected trees with a minimum caliper of three (3) inches (Acacias - eight (8) inches), or protected multiple trunk plants with a three (3) inch combined caliper measurement of the three (3) largest trunks were included in the native plant inventory. All caliper measurements were taken one (1) foot from ground level.

3. All inventoried plants were assigned a number, located and caliper/height documented. These plant numbers correspond to the numbers listed in the Native Plant Inventory provided to the Pima County Landscape Architect.

4. Proposed mitigation numbers of protected native plants is consistent with the standards and tables in the July 2015 Update to Appendix 4D of the Environmentally Sensitive Roadway Design Guidelines, Pima County DOT Roadway Design Manual.

5. In no case may native understory plants be removed, destroyed, or relocated from an existing stand of native plants which is to be preserved in place. The perimeter of the area preserved in place shall be designated in accordance with standards set forth in the Pima County Environmentally Sensitive Roadway Design Guidelines Native Plant Preservation, Salvage, and Mitigation, subsection B.7.c.ii.

6. Protected native plants shall not be destroyed, mutilated, removed from the premises or relocated on the premises except in accordance with an approved native plant preservation, salvage and mitigation plan and all Arizona Department of Agriculture and Horticulture requirements.

LANDSCAPE DEMOLITION NOTES:

1. Site shall be treated for buffelgrass and other invasive species prior to initiation of work. See Special Provisions 201-3.04.

2. Contractor is responsible for the preservation of existing plant materials according to Special Provisions Section 201-3.02. Overhanging branches within the right-of-way that may impact construction shall be pruned in accordance with Special Provisions Section 201-3.05 and Item #8061700.

3. Existing trees on adjacent property may have overhanging branches that will require pruning. See Special Provisions 201-3.05. No pruning shall be performed without the notification of Pima County Community Relations.

4. Where construction impacts existing landscape or irrigation encroachments within right-of-way, contractor shall coordinate required adjustments with Project Engineer and adjacent property owners. See also Special Provisions.

5. Contractor is to install preservation fencing as directed by engineer prior to clearing. Locations shown on plans shall be adjusted in the field as required. Preservation fencing is to remain during duration of project. See Item #2010004.

6. Removal of all cacti and native plants shall be in accordance with the provisions of the "Arizona Native Plant Law", A.R.S. Chapter 7. Cacti under the protection of native plant laws will have been removed prior to construction. If, during construction, additional saguaro or barrel cacti will be impacted, contractor is to contact Ellen Alster, PCDOT Senior Landscape Architect (520-724-6655 or Ellen.Alster@pima.gov) or Jessie Byrd, Pima County Plant Nursery Manager (520-488-8022 or Jessie.Byrd@pima.gov).

Plant Inventory Quantity Summary

BOTANICAL NAME	QTY	TR	RFS	PIP
Acacia constricta Whitethorn Acacia	4	0	2	2
Acacia greggii Catclaw Acacia	15	0	10	5
Carnegiea gigantea Saguaro	169	0	89	80
Chilopsis linearis Desert Willow	1	0	1	0
Celtis reticulata Canyon Hackberry	0	0	0	0
Olneya tesota Ironwood	1	0	1	0
Parkinsonia florida Blue Palo Verde	45	0	25	20
Parkinsonia microphylla Foothills Palo Verde	69	0	35	34
Prosopis Velutina Velvet Mesquite	84	0	61	23
Prosopis Pubescens Screwbean Mesquite	0	0	0	0

TR = Transplant
RFS = Remove from Site
PIP = Preserve in Place

Saguaro Inventory

Height	Quantity
0-2'	20
2'-4'	33
4'-6'	17
6'-8'	12
Over 8'	7
TOTAL	89

NOTES:
1. Saguaros are to be mitigated at 1:1 in the sizes indicated unless salvaged and transplanted on site.

2. Refer to LP01 for replacement Saguaros.

Ana M. Olivares, P.E., Director

Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT 46501 WILLIAM A. BRIZAEL ARIZONA U.S.A.
EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

ARIZONA811
CALL 811 BEFORE YOU DIG!
IT'S THE LAW!
ARIZONA BLUE STAKE, INC.
1-800-STAKE-IT (782-5348)

Pima County Department of Transportation

NATIVE PLANT INVENTORY
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
SUMMARY SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet NP101 of NP102	Page 69 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_NP101 Summary.dgn DATE: 5/29/2018 TIME: 1:38:15 PM estoicof

Native Plant Mitigation Calculations

Calculations are in conformance with the PCDOT Memorandum of July 2015 - Update to Appendix 4D of the Environmentally Sensitive Roadway Design Guidelines, Pima County DOT Roadway Design Manual.

Disturbed Area (acres)	15.97
Plantable Area (acres)	1.3
ESR Multiplier (Plantable Area/Disturbed Area)	8.1%

Replacement Diameter: (total diameter) * 125% * ESR Multiplier

	Total Diameter	Replacement Diameter
Whitethorn Acacia	16	1.6
Acacia constricta		(32 * 125% * 8.1%)
Catclaw Acacia	84	8.5
Acacia greggii		(141 * 125% * 8.1%)
Chilopsis linearis	15	1.5
Desert Willow		(15 * 125% * 8.1%)
Ironwood	8	0.8
Olneya tesota		(8 * 125% * 8.1%)
Blue Palo Verde	273	27.8
Parkinsonia floridum		(441 * 125% * 8.1%)
Foothills Palo Verde	428	43.6
Parkinsonia microphyllum		(842 * 125% * 8.1%)
Velvet Mesquite	445	45.3
Prosopis velutina		(699 * 125% * 8.1%)
TOTAL	1269	129.1

NOTE: This sheet for reference only.

Distribution of Tree Sizes

Scientific Name	Size Range (inches)	No. of Trees	Percentage as Total No. of Trees	Replacement Diameter per Size Range (inches)	Replacement Container Size	Diameter per Container (inches)	Diameter per Container (inches)	No. of Trees per Container*
Acacia constricta	>12	0	0 tree/2 trees = 0.00%	1.6*0.00% = 0.0	48 inch box	6	0.0/6 = 0.0	0
	8-11.9	2	2 tree/2 trees = 100.00%	1.6*100.00% = 1.6	36 inch box	4	1.6/4 = 0.4	1
	6-7.9	0	0 trees/2 trees = 0.00%	1.6*0.00% = 0.0	24 inch box	2.5	0.0/2.5 = 0.0	0
	<6	0	0 trees/2 trees = 0.00%	1.6*0.00% = 0.0	15 gallon container	1	0.0/1 = 0.0	0
Acacia greggii	>12	1	1 tree/10 trees = 10.00%	8.5*10.00% = 0.9	48 inch box	6	0.9/6 = 0.1	1
	8-11.9	8	8 tree/10 trees = 80.00%	8.5*80.00% = 6.8	36 inch box	4	6.8/4 = 1.7	2
	6-7.9	1	1 trees/10 trees = 10.00%	8.5*10.00%= 0.9	24 inch box	2.5	0.9/2.5 = 0.3	1
	<6	0	0 trees/10 trees = 0.00%	8.5*0.00%= 0.0	15 gallon container	1	0.0/1 = 0.0	0
Chilopsis linearis	>12	1	1 tree/1 trees = 100.00%	1.5*100.00% = 1.5	48 inch box	6	1.5/6 = 0.3	1
	8-11.9	0	0 tree/1 trees = 0.00%	1.5*0.00% = 0.0	36 inch box	4	0.0/4 = 0.0	0
	6-7.9	0	0 trees/1 trees = 0.00%	1.5*0.00%= 0.0	24 inch box	2.5	0.0/2.5 = 0.0	0
	<6	0	0 trees/1 trees = 0.00%	1.5*0.00%= 0.0	15 gallon container	1	0.0/1 = 0.0	0
Olneya tesota	>12	0	0 tree/1 trees = 0.00%	0.8*0.00% = 0.0	48 inch box	6	0.0/6 = 0.0	0
	8-11.9	1	1 trees/1 trees = 100.00%	0.8*100.00%= 0.8	36 inch box	4	0.8/4 = 0.2	1
	6-7.9	0	0 trees/1 trees = 0.00%	0.8*0.00%= 0.0	24 inch box	2.5	0.0/2.5 = 0.0	0
	<6	0	0 trees/1 trees = 0.00%	0.8*0.00%= 0.0	15 gallon container	1	0.0/1 = 0.0	0
Parkinsonia floridum	>12	11	11 trees/25 trees = 44.00%	27.8*44.00%= 12.2	48 inch box	6	12.2/6 = 2.0	2
	8-11.9	5	5 trees/25 trees = 20.00%	27.8*20.00%= 5.6	36 inch box	4	5.6/4 = 1.4	2
	6-7.9	2	2 trees/25 trees = 8.00%	27.8*8.00%= 2.2	24 inch box	2.5	2.2/2.5 = 0.9	1
	<6	7	7 trees/25 trees = 28.00%	27.8*28.00%= 7.8	15 gallon container	1	7.8/1 = 7.8	8
Parkinsonia microphyllum	>12	15	15 trees/35 trees = 42.86%	43.6*42.86%= 18.7	48 inch box	6	18.7/6 = 3.1	3
	8-11.9	9	9 trees/35 trees = 25.71%	43.6*25.71%= 11.2	36 inch box	4	11.2/4 = 2.8	3
	6-7.9	7	7 trees/35 trees = 20.00%	43.6*20.00%= 8.7	24 inch box	2.5	8.7/2.5 = 3.5	3
	<6	4	4 trees/35 trees = 11.43%	43.6*11.43%= 5.0	15 gallon container	1	5.0/1 = 5.0	5
Prosopis velutina	>12	9	9 trees/61 trees = 14.75%	45.3*14.75%= 6.7	48 inch box	6	6.7/6 = 1.1	2
	8-11.9	14	14 trees/61 trees = 22.95%	45.3*22.95%= 10.4	36 inch box	4	10.4/4 = 2.6	3
	6-7.9	10	10 trees/61 trees -= 16.39%	45.3*16.39%= 7.4	24 inch box	2.5	7.4/2.5 = 3.0	3
	<6	28	28 trees/61 trees = 45.90%	45.3*45.90%= 20.8	15 gallon container	1	20.8/1 = 20.8	21

Distribution of Tree Sizes: 25gal, 15gal & 24" tree pot

Replacement Container Size	Diameter per Container (inches)	Diameter per Container (inches)	No. of Trees per Container*
25 gallon container	2.5	0.7/2.5 = 0.3	0
15 gallon container	1	0.3/1 = 0.3	0
24" treepot	1	0.7/1 = 0.7	2
25 gallon container	2.5	3.4/2.5 = 1.4	2
15 gallon container	1	1.7/1 = 1.7	0
24" treepot	1	3.4/1 = 3.4	5
25 gallon container	2.5	0.6/2.5 = 0.2	0
15 gallon container	1	0.3/1 = 0.3	1
24" treepot	1	0.6/1 = 0.6	1
25 gallon container	2.5	0.3/2.5 = 0.1	0
15 gallon container	1	0.2/1 = 0.2	1
24" treepot	1	0.3/1 = 0.3	0
25 gallon container	2.5	11.1/2.5 = 4.4	5
15 gallon container	1	5.6/1 = 5.6	6
24" treepot	1	11.1/1 = 11.1	12
25 gallon container	2.5	17.4/2.5 = 7.0	7
15 gallon container	1	8.7/1 = 8.7	9
24" treepot	1	17.4/1 = 17.4	18
25 gallon container	2.5	18.1/2.5 = 7.2	8
15 gallon container	1	9.1/1 = 9.1	10
24" treepot	1	18.1/1 = 18.1	19

*Only 25 gal, 15 gal and 24" treepots are to be used on this project. Total replacement diameter to meet mitigation calculations.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 45201 — WILLIAM D. CHRISTIAN — EXPIRES 9-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

CLB an Equal Opportunity Employer
KINNEY CONSTRUCTION
Heavy Civil Specialists
Tel: 520-624-2000 | 6802 E. Rita Road | Tucson, AZ 85747

Pima County Department of Transportation

NATIVE PLANT INVENTORY
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
MITIGATION SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet NP102 of NP102	Page 70 of 109

LANDSCAPE SCHEDULE

SYM./KEY	BOTANICAL NAME	COMMON NAME	SIZE	QTY	BID TAB NUMBER
TREES (NURSERY STOCK)					
	Acacia constricta	Whitethorn Acacia	15 Gal.	27	8061005
	Acacia greggii	Catclaw Acacia	15 Gal. 25 Gal.	8 5	8061005 8061006
	Chilopsis linearis	Desert Willow	15 Gal.	11	8061005
	Olneya tesota	Ironwood	15 Gal.	14	8061005
	Parkinsonia microphylla	Foothills Palo Verde	15 Gal. 25 Gal.	16 47	8061005 8061006
	Prosopis pubescens (Screwbean Mesquite substituted for required mitigation Blue Palo Verdes due to infestation of Witches' Broom)	Screwbean Mesquite	15 Gal. 25 Gal.	11 12	8061005 8061006
	Prosopis velutina	Velvet Mesquite	15 Gal. 25 Gal.	18 28	8061005 8061006
ACCENTS / CACTUS (NURSERY STOCK & TRANSPLANT)			TR = TRANSPLANT		
	Carnegiea gigantea	Saguaro	0'-2' 2'-4' 4'-6' 6'-8' Over 8'	20 33 17 12 7	8061615 8061616 8061617 8061618 8061619
	Cylindropuntia fulgida	Chain-fruit Cholla	5 Gal.	42	8061611
	Cylindropuntia leptocaulis	Christmas Cholla	5 Gal.	38	8061611
	Cylindropuntia spinosior	Cane Cholla	5 Gal.	32	8061611
	Ferocactus wislizenii	Fishhook Barrel	5 Gal.	40	8061612
	Fouquieria splendens	Ocotillo	5 Gal.	40	8061652
	Opuntia basilaris	Beavertail Prickly Pear	5 Gal.	30	8061613
	Opunita engelmanii	Engelman's Prickly Pear	5 Gal.	33	8061613
	Opuntia violacea	Santa Rita Purple Prickly Pear	5 Gal.	40	8061613
EXISTING PLANTS					
	Existing Plants To Remain In Place				

PLATING/HARDSCAPE MATERIALS	QTY	NOTES / REFERENCE	
Granite Mulch (7/8" Screened)	9,360 S.Y.	Installed Depth of Granite Mulch shall be 2". Color to be Apache Brown. See Granite Mulch Screening Matrix Below.	8030040
Decorative Concrete Pavement	360 S.Y.	Decorative Concrete Pavement (Exposed Aggregate). Color "Davis Colors - San Diego Buff". See Special Provisions.	9310006

MISCELLANEOUS MATERIALS	QTY	NOTES / REFERENCE	
Preservation Fencing	3,950 L.F.	See Detail 3, Sheet LP03, and Roadway Plan & Profile Sheets	2010004

Refer to NATIVE PLANT INVENTORY Sheet NP102, Page 70 for: Native Plant Mitigation Calculations: Replacement Diameter and Distribution of Tree Sizes Charts, and Landscape Demolition Notes.

AP indicates plants that are Agency Provided.

Item # 8030040 Granite Mulch (7/8" Screened)

Sieve Size	Percent Passing
1 Inch	100
7/8 Inch	80-100
1/2 Inch	0-10

LANDSCAPE SCHEDULE

SYM./KEY	BOTANICAL NAME	COMMON NAME	PLS RATE	QTY	BID TAB NUMBER
SEED MIX (CLASS II)					
Seed Mix - Low Growing	Ambrosia deltoidea	Triangle Leaf Bursage	3.0 lbs./ac.	4.1 AC	8050004
	Aristida purpurea	Purple Threeawn	1.5 lbs./ac.		
	Bailey multiradiata	Desert Marigold	2.0 lbs./ac.		
	Bouteloua aristidiodes	Needle Grama	1.0 lbs./ac.		
	Bouteloua curtipendula	Sideoats Grama	1.0 lbs./ac.		
	Bouteloua rothrockii	Rothrock Grama	2.0 lbs./ac.		
	Dyssodia pentachaeta	Golden Dyssodia	1.0 lbs./ac.		
	Encelia farinosa	Brittlebush	2.0 lbs./ac.		
	Escholtzia mexicana	Desert Poppy	2.0 lbs./ac.		
	Isocoma tenuisecta	Burrowweed	1.0 lbs./ac.		
	Lesquerella gordonii	Bladderpod	1.0 lbs./ac.		
	Lupinus sparsiflorus	Lupine	1.0 lbs./ac.		
	Plantago insularis	Desert Indian Wheat	3.0 lbs./ac.		
	Senna covesii	Desert Senna	2.0 lbs./ac.		
	Sphaeralcea ambigua	Desert Globemallow	1.0 lbs./ac.		
	Zinnia acerosa	Desert Zinnia	0.5 lbs./ac.		
	TOTAL PLS RATE:		25 PLS/ACRE		
Seed Mix - Desert Scrub	Acacia constricta	Whitethorn Acacia	1.5 lbs./ac.	1.0 AC	8050004
	Ambrosia deltoidea	Bursage	0.5 lbs./ac.		
	Aristida purpurea	Purple Threeawn	0.5 lbs./ac.		
	Atriplex polycarpa	Cattle Saltbush	0.5 lbs./ac.		
	Bailey multiradiata	Desert Marigold	1.0 lbs./ac.		
	Bouteloua aristidiodes	Needle Grama	1.0 lbs./ac.		
	Bouteloua curtipendula	Sideoats Grama	1.5 lbs./ac.		
	Bouteloua rothrockii	Rothrock Grama	1.0 lbs./ac.		
	Calliandra eriophylla	Fairy Duster	1.0 lbs./ac.		
	Digitaria californica	Arizona Cottontop	1.0 lbs./ac.		
	Encelia farinosa	Brittlebush	1.0 lbs./ac.		
	Escholtzia mexicana	Desert Poppy	1.0 lbs./ac.		
	Isocoma tenuisecta	Burrowweed	1.0 lbs./ac.		
	Larrea tridentata	Creosote	2.0 lbs./ac.		
	Lesquerella gordonii	Bladderpod	1.0 lbs./ac.		
	Lupinus sparsiflorus	Lupine	1.0 lbs./ac.		
	Lycium andersonii	Wolfberry	2.0 lbs./ac.		
	Parkinsonia microphyllum	Foothills Palo Verde	1.5 lbs./ac.		
	Prosopis velutina	Velvet Mesquite	1.0 lbs./ac.		
	Psilostrophe cooperi	Paperflower	1.0 lbs./ac.		
	Senna covesii	Desert Senna	1.0 lbs./ac.		
	Sphaeralcea ambigua	Desert Globemallow	0.5 lbs./ac.		
	Sporobolus cryptandrus	Sand Dropseed	1.0 lbs./ac.		
	Zinnia acerosa	Desert Zinnia	0.5 lbs./ac.		
	TOTAL PLS RATE:		25 PLS/ACRE		

Saguaro Inventory

Height	Quantity
0-2'	20
2'-4'	33
4'-6'	17
6'-8'	12
Over 8'	7
TOTAL	89

NOTES:
1. Saguaros are to be mitigated at 1:1 in the sizes indicated unless salvaged and transplanted on site.
2. Refer to LP01 for replacement Saguaros.

1. This Landscape Plan is in conformance with the Pima County Roadway Design Manual and Environmentally Sensitive Roadways (ESR) Design Guidelines.
2. It is the intent of the ESR Guidelines that proposed planting will replicate approximate densities and species of existing pre-construction vegetation. All proposed plant species have been selected from the Pima County ESR Approved Plant Species list. The Planting Plan reflects the plant densities and species of adjacent existing vegetative communities.
3. Depressed planting areas (8" max. depth) in medians and other areas within the Right-of-Way whenever feasible in order to capture and take advantage of natural rainfall.
4. All plant sizes are in conformance with the minimum requirements as shown in the Pima County Approved Plant Species for Environmentally Sensitive Roadways.
5. Plants and Seed Mix installed within Sight Visibility Triangles (SVTs) shall have a mature height of less than thirty inches (30").
6. Trees to be planted a minimum of eight feet (8') from sidewalks and six feet (6') from face of curb. Small/upright trees may be placed a minimum of 4'-6' from the edge of sidewalk. Cacti to be planted a minimum of four feet (4') from sidewalks and face of curb.
7. Trees shall be located to avoid conflicts with overhead and underground utilities.
   a. Sewer: Tree trunks shall be 16' min. from manholes, and all parts of trees shall be 10' min. from sewer lines.
   b. Gas: Tree trunks shall be 8' min. from all gas lines.
   c. Electric: Tree trunks shall be 10' min. from all electrical lines.
   d. Water: Tree trunks shall be 10' min. from all water lines.
8. Refer to Special Provisions, Irrigation Plans, and Civil Plans for Additional Information.
9. All disturbed areas to receive seed mix or plating material. Seed mix shall be installed to 10' from cut/fill line, Right-of-Way line, or limits of disturbance, whichever is greater.
10. Tillage shall be performed in seeded areas to form minor ridges and furrows parallel to new slope contours and as specified in Section 805 of the Project Specifications.
11. Tree symbols on plans with a number "15" indicate a container size of 15 gallon. Tree symbols with no number indicate a container size of 25 gallon.
12. All plant material located within ten (10) feet horizontally of the public sanitary sewer and manholes and/or within the public sewer easements shown hereon shall be in accordance with planting guidelines contained within Section 7.7, PCRWRD Engineering Design Standards, 2016 Edition.
13. All medians shall receive Granite Mulch and/or Decorative Concrete Pavement.

Ana M. Olivares, P.E., Director

			Date
Designed	WDC		05/18
Drawn	WDC		05/18
Checked	WDC/LM		05/18
Proj. Engr.			

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — LAURA MARIE MOSS — 46591 — EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

CALL at least two full working days before you begin excavation
ARIZONA 811
BLUE STAKE, INC.
"Arizona's Underground Protection Center"

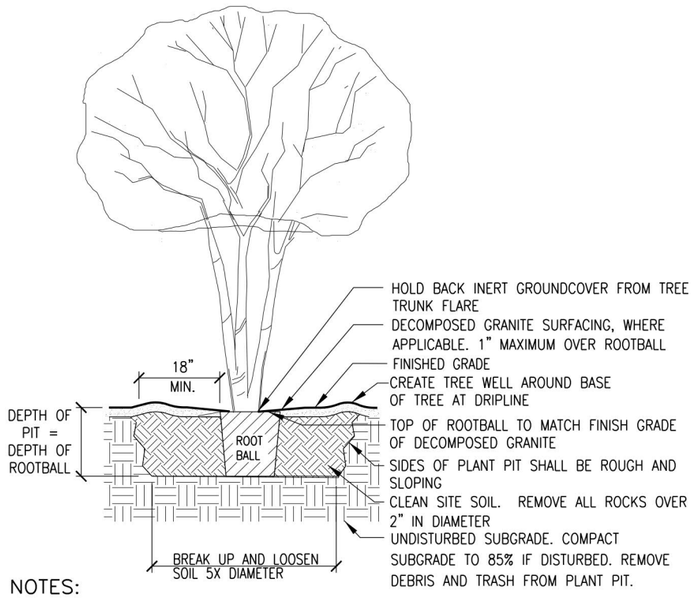
Pima County Department of Transportation

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
SUMMARY SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet LP01 of LP08	Page 71 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_LP01 Summary.dgn DATE: 5/29/2018 TIME: 1:42:55 PM estoicof

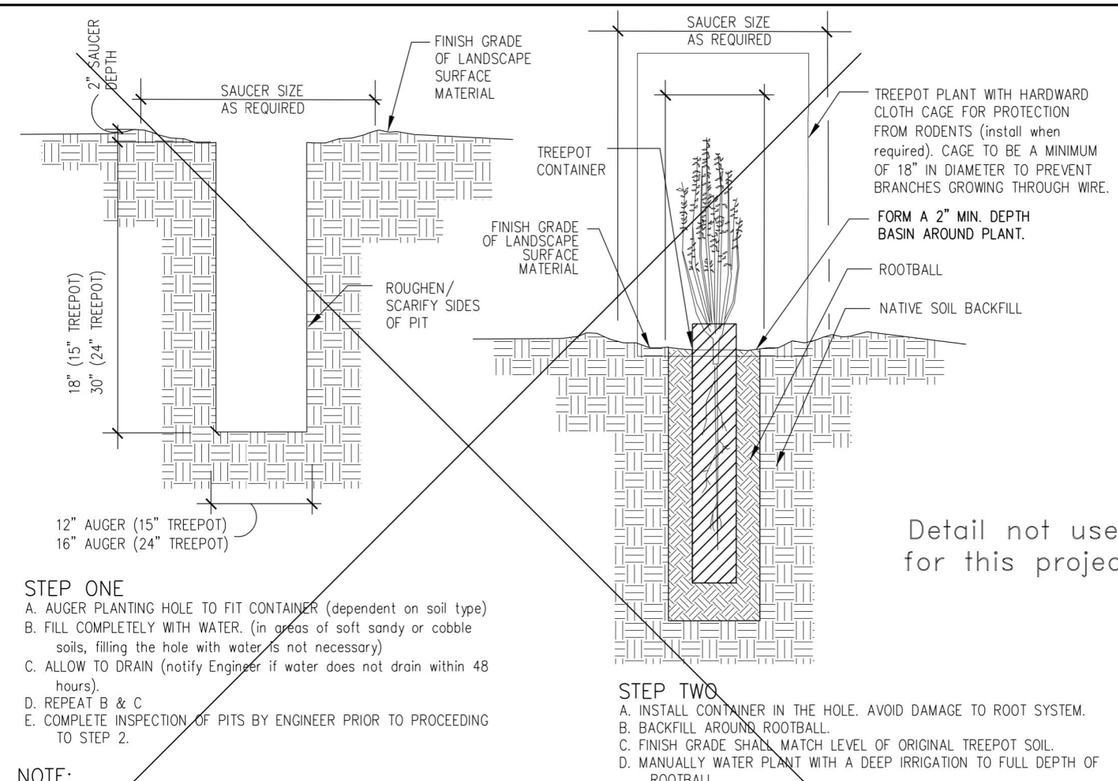


NOTES:

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

1 TREE PLANTING (CONTAINER GROWN)

N.T.S.



Detail not used for this project.

STEP ONE

A. AUGER PLANTING HOLE TO FIT CONTAINER (dependent on soil type)
B. FILL COMPLETELY WITH WATER. (in areas of soft sandy or cobble soils, filling the hole with water is not necessary)
C. ALLOW TO DRAIN (notify Engineer if water does not drain within 48 hours).
D. REPEAT B & C
E. COMPLETE INSPECTION OF PITS BY ENGINEER PRIOR TO PROCEEDING TO STEP 2.

STEP TWO

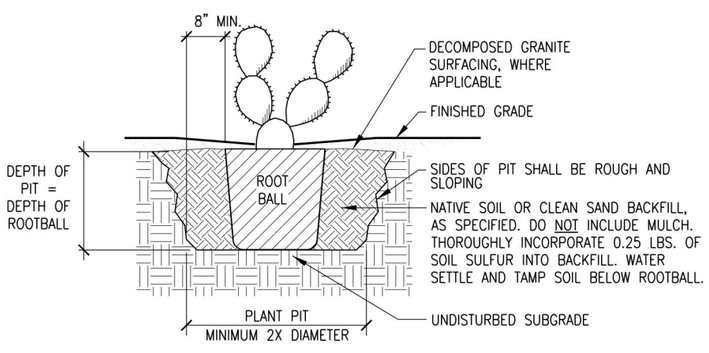
A. INSTALL CONTAINER IN THE HOLE. AVOID DAMAGE TO ROOT SYSTEM.
B. BACKFILL AROUND ROOTBALL.
C. FINISH GRADE SHALL MATCH LEVEL OF ORIGINAL TREEPOT SOIL.
D. MANUALLY WATER PLANT WITH A DEEP IRRIGATION TO FULL DEPTH OF ROOTBALL.
E. RETURN CONTAINER TO PIMA COUNTY NATIVE PLANT NURSERY.
F. COMPLETE IRRIGATION INSTALLATION WHERE APPLICABLE.

NOTE:

1. REFER TO STANDARD SPECIFICATIONS 806-3.02 FOR SPECIAL PROCEDURE IN AREAS OF CALICHE, LARGER PLANTING PITS REQUIRED IN AREAS OF CALICHE OR HARD DIGGING CONDITIONS. SEE SECTION 806 FOR COMPLETE INSTRUCTIONS.

2 TREEPOT

N.T.S.

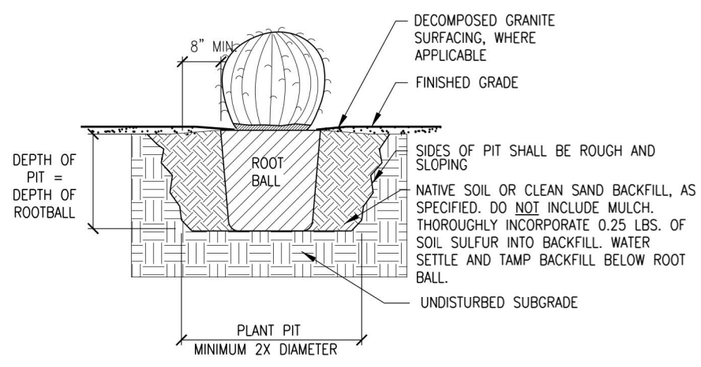


NOTES:

1. SET STEM SUCCULENT SO THAT TOP OF ROOTBALL MATCHES ADJACENT GRADE.
2. THIS DETAIL APPLIES TO NURSERY GROWN STOCK OF THE GENUS OPUNTIA.

3 PRICKLY PEAR (CONTAINER GROWN)

N.T.S.

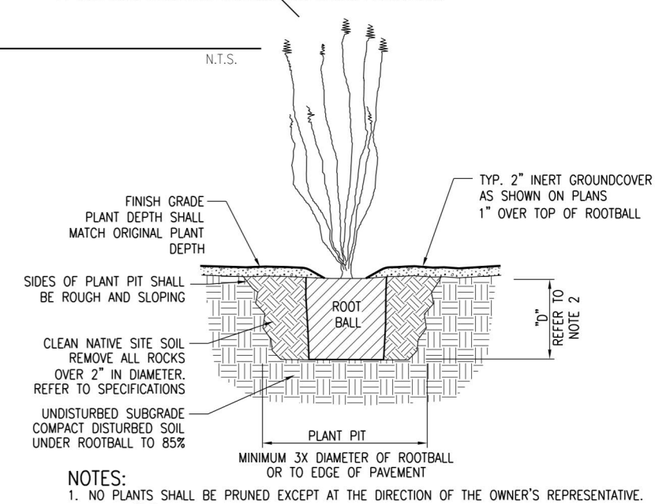


NOTES:

1. SET CACTUS SO THAT TOP OF ROOTBALL MATCHES ADJACENT GRADE.
2. THIS DETAIL APPLIES TO NURSERY GROWN STOCK OF THE GENERA CARNEGIEA, CEREUS, FERROCACTUS AND STENOCEREUS.

4 BARREL CACTUS (CONTAINER GROWN)

N.T.S.



NOTES:

1. NO PLANTS SHALL BE PRUNED EXCEPT AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE.
2. DEPTH ("D") OF PLANT PIT TO BE EQUAL TO DEPTH OF ROOTBALL.
3. TEST PLANTING PIT DRAINAGE AND PROVIDE DRAINAGE CHIMNEYS AS REQUIRED BY SPECIFICATIONS.
4. FINISH GRADE OF ROOTBALL SHALL MATCH FINISH GRADE OF SURROUNDING SOIL. ROOTBALL MAY BE PLACED UP TO 1" ABOVE SURROUNDING SOIL TO ALLOW FOR SETTLING. DO NOT PLACE MULCH AT BASE OF PLANT.

5 OCOTILLO PLANTING (CONTAINER GROWN)

N.T.S.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 45501 — LEONARD MICHAEL MIRANDA — EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

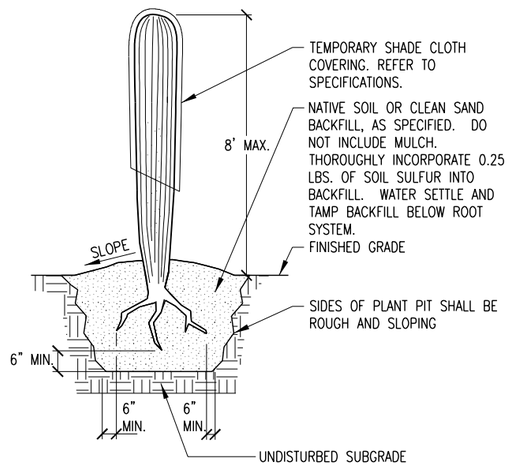
Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Not Blue Stake = Dead Stake 24 hours

Pima County Department of Transportation

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

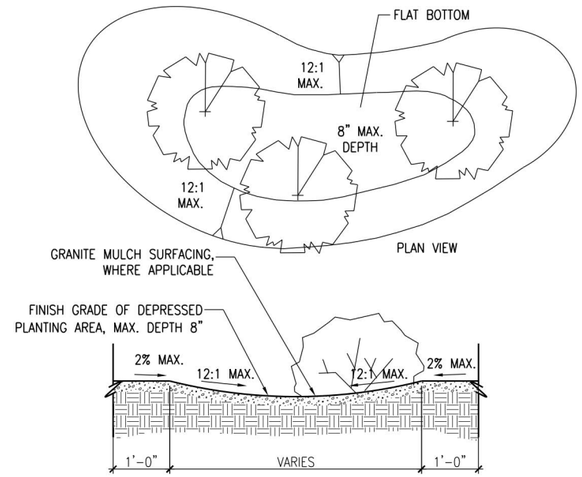
Scale:	N/A	Sheet LP02 of LP08	Page 72 of 109



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

1 SAGUARO (CONTAINER GROWN)

N.T.S.

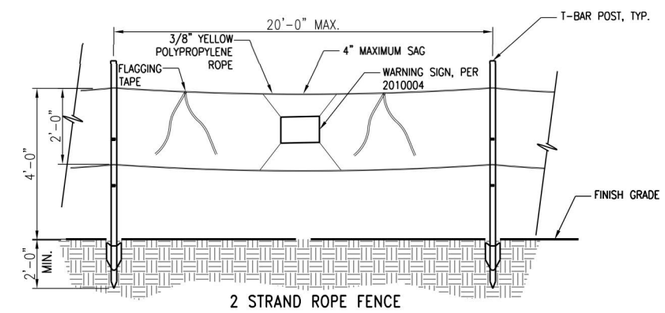


NOTES:
1. REFER TO LANDSCAPE SUMMARY SHEET LP01 FOR GRANITE MULCH COLOR AND SIZE.
2. MAXIMUM DEPTH OF PLANTING AREA TO BE 8".
3. DEPRESSED PLANTING AREAS SHALL BE LOCATED IN PLANTING AREAS WHERE WIDTH IS GREATER THAN SIX FEET (6').

2 DEPRESSED PLANTING AREA

Bid Item 8020010

N.T.S.



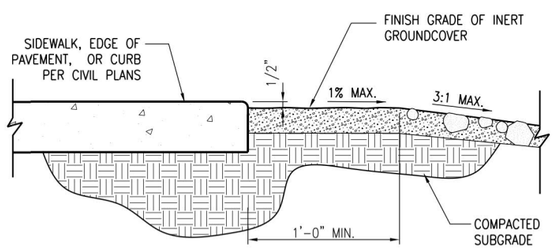
2 STRAND ROPE FENCE

NOTE:
1. POSTS TO BE EITHER HARDWOOD STAKES OR METAL T-POSTS SIX FEET (6') LONG MINIMUM WITH A MINIMUM EMBEDMENT OF TWO FEET (2') INTO THE GROUND.
2. ROPE TO BE ATTACHED TO FENCE POSTS USING PLASTIC OR WIRE TIES.
3. WARNING SIGN SHALL BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERING TO BE TIMES NEW ROMAN OR AERIAL FONT, RED IN COLOR, MINIMUM 1" IN HEIGHT, SECURELY ATTACHED IN THE UPPER HALF OF THE FENCE, AND PLACED AT 50-FOOT MAXIMUM INTERVALS.
4. FLAGGING TAPE SHALL BE 1 $\frac{3}{16}$ INCH, 4-MIL THICKNESS, NO-ADHESSIVE VINYL, FLUORESCENT SOLID COLOR, AND ATTACHED TO THE TOP ROPE ON BOTH SIDES OF THE WARNING SIGN.
5. PRESERVATION FENCE (TYPE B) MAY BE USED IN LIEU OF PRESERVATION FENCING WHEN DIRECTED BY THE ENGINEER OR SPECIFIED ON THE PROJECT PLANS.

3 PRESERVATION FENCING TYPE A

Bid Item 2010004

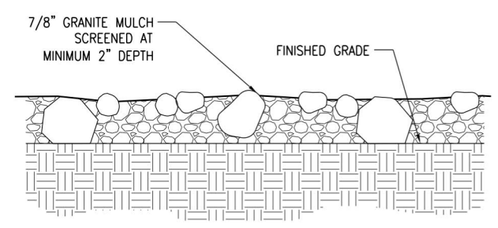
N.T.S.



NOTE:
1. REFER TO LANDSCAPE SUMMARY SHEET LP01 FOR GRANITE MULCH COLOR AND SIZE.

4 FINISH GRADE AT CONCRETE PAVEMENT

N.T.S.



NOTE:
1. REFER TO LANDSCAPE SUMMARY SHEET LP01 FOR GRANITE MULCH COLOR AND SIZE.

5 GRANITE MULCH

Bid Item 8030040

N.T.S.

Ana M. Olivares, P.E., Director

Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — REGISTRANT 46501 — EXPIRES 6-30-2019

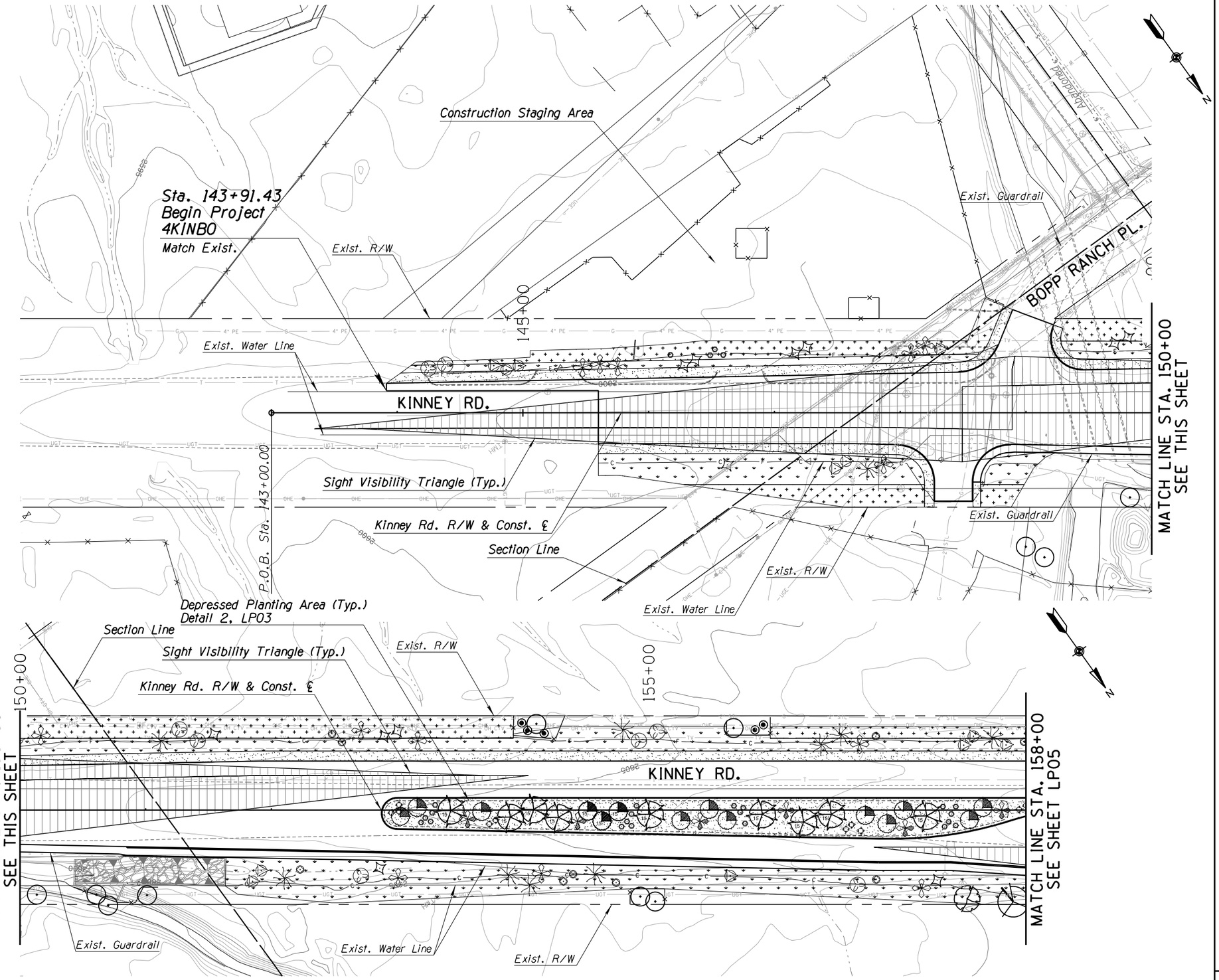
WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

Pima County Department of Transportation

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

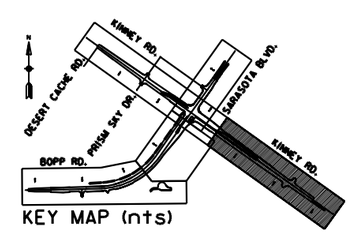
Scale:	N/A	Sheet LP03 of LP08	Page 73 of 109



LANDSCAPE LEGEND

SYM./KEY	BOTANICAL NAME / COMMON NAME
TREES	
	Acacia constricta Whitethorn Acacia
	Acacia greggii Catclaw Acacia
	Chilopsis linearis Desert Willow
	Olneya tesota Ironwood
	Parkinsonia microphylla Foothills Palo Verde
	Prosopis pubescens Screwbean Mesquite
	Prosopis velutina Velvet Mesquite
CACTUS	
	Carnegiea gigantea Saguaro
	Cylindropuntia fulgida Chain-fruit Cholla
	Cylindropuntia leptocaulis Christmas Cholla
	Cylindropuntia spinosior Cane Cholla
	Ferocactus wislizenii Fishhook Barrel
	Fouquieria splendens Ocotillo
	Opuntia basilaris Beavertail Prickly Pear
	Opuntia engelmannii Engleman's Prickly Pear
	Opuntia violacea var. santa-rita Purple Prickly Pear
EXISTING PLANTS	
	Existing Plants to Remain in Place
PLATING/HARDSCAPE MATERIALS	
	Granite Mulch (7/8" Screened)
	Decorative Concrete Pavement
SEED MIX (CLASS II)	
	Seed Mix - Low Growing
	Seed Mix - Desert Scrub
MISCELLANEOUS MATERIALS	
—x—	*Preservation Fencing*

NOTE: Tree symbols on plans with a number "15" indicate a container size of 15 gallon. Trees symbols with no number indicate a container size of 25 gallon.



KEY MAP (nts)

40 0 40 80'

SCALE: 1" = 40'

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+91 TO STA. 158+00
PROJECT NO. 4KINBO

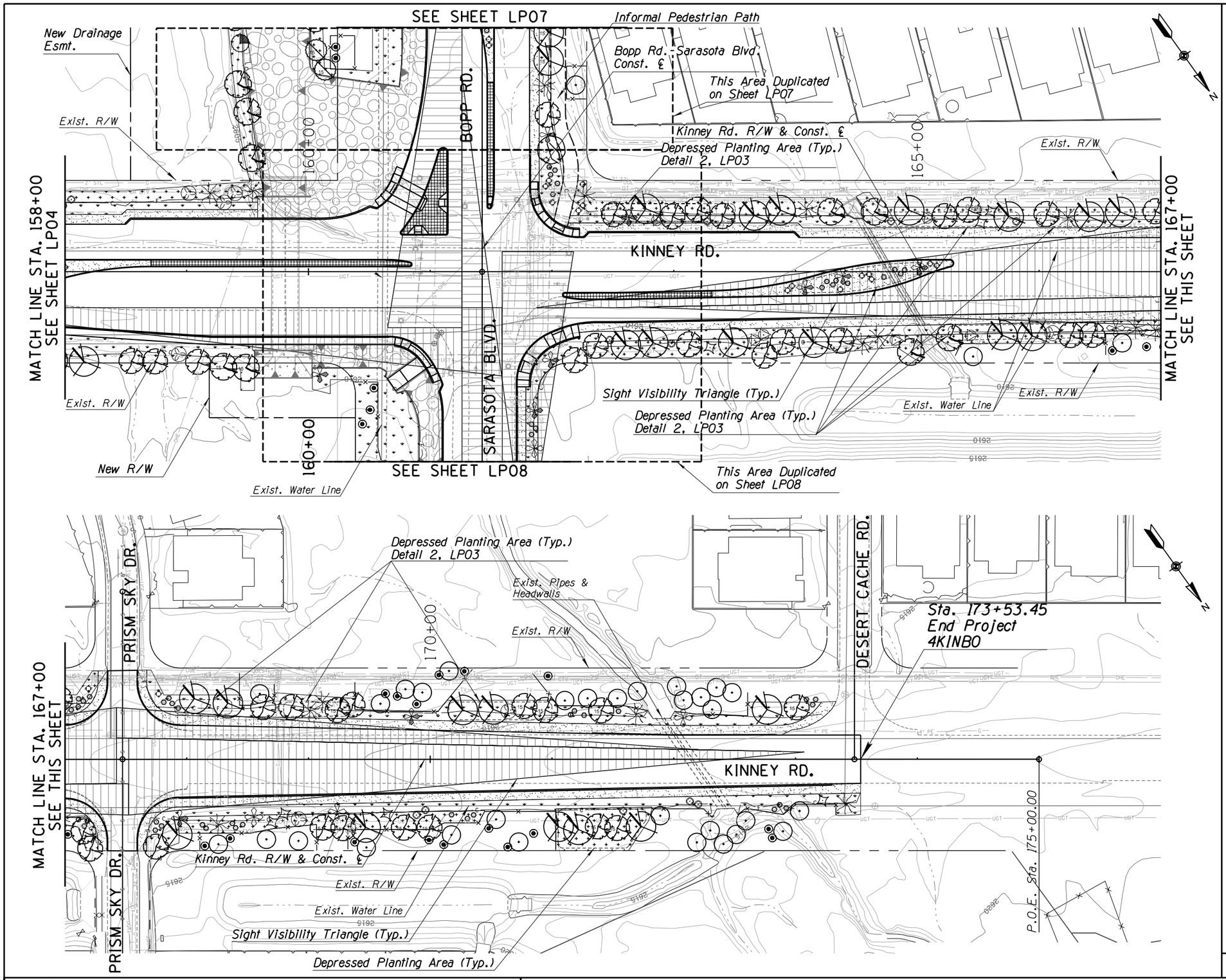
WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

REGISTERED LANDSCAPE ARCHITECT — 45501 — ARIZONA — EXPIRES 6-30-2019

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet LP04 of LP08 | Page 74 of 109

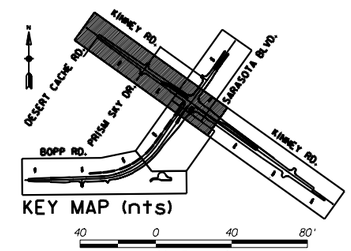
FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_LP04 Plan Sheet.dgn | DATE: 5/29/2018 | TIME: 1:43:00 PM | astoicof



LANDSCAPE LEGEND

SYM./KEY	BOTANICAL NAME / COMMON NAME
TREES	
	Acacia constricta Whitethorn Acacia
	Acacia greggii Catclaw Acacia
	Chilopsis linearis Desert Willow
	Olneya tesota Ironwood
	Parkinsonia microphylla Foothills Palo Verde
	Prosopis pubescens Screwbean Mesquite
	Prosopis velutina Velvet Mesquite
CACTUS	
	Carnegiea gigantea Saguaro
	Cylindropuntia fulgida Chain-fruit Cholla
	Cylindropuntia leptocaulis Christmas Cholla
	Cylindropuntia spinosior Cane Cholla
	Ferocactus wislizenii Fishhook Barrel
	Fouquieria splendens Ocotillo
	Opuntia basilaris Beavertail Prickly Pear
	Opuntia engelmannii Engleman's Prickly Pear
	Opuntia violacea var. santa-rita Purple Prickly Pear
EXISTING PLANTS	
	Existing Plants to Remain in Place
PLATING/HARDSCAPE MATERIALS	
	Granite Mulch (7/8" Screened)
	Decorative Concrete Pavement
SEED MIX (CLASS II)	
	Seed Mix - Low Growing
	Seed Mix - Desert Scrub
MISCELLANEOUS MATERIALS	
—x—	*Preservation Fencing*

NOTE: Tree symbols on plans with a number "15" indicate a container size of 15 gallon. Trees symbols with no number indicate a container size of 25 gallon.



KEY MAP (nts)

40 0 40 80'

SCALE: 1" = 40'

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS STA. 158+00 TO STA. 173+53 PROJECT NO. 4KINBO

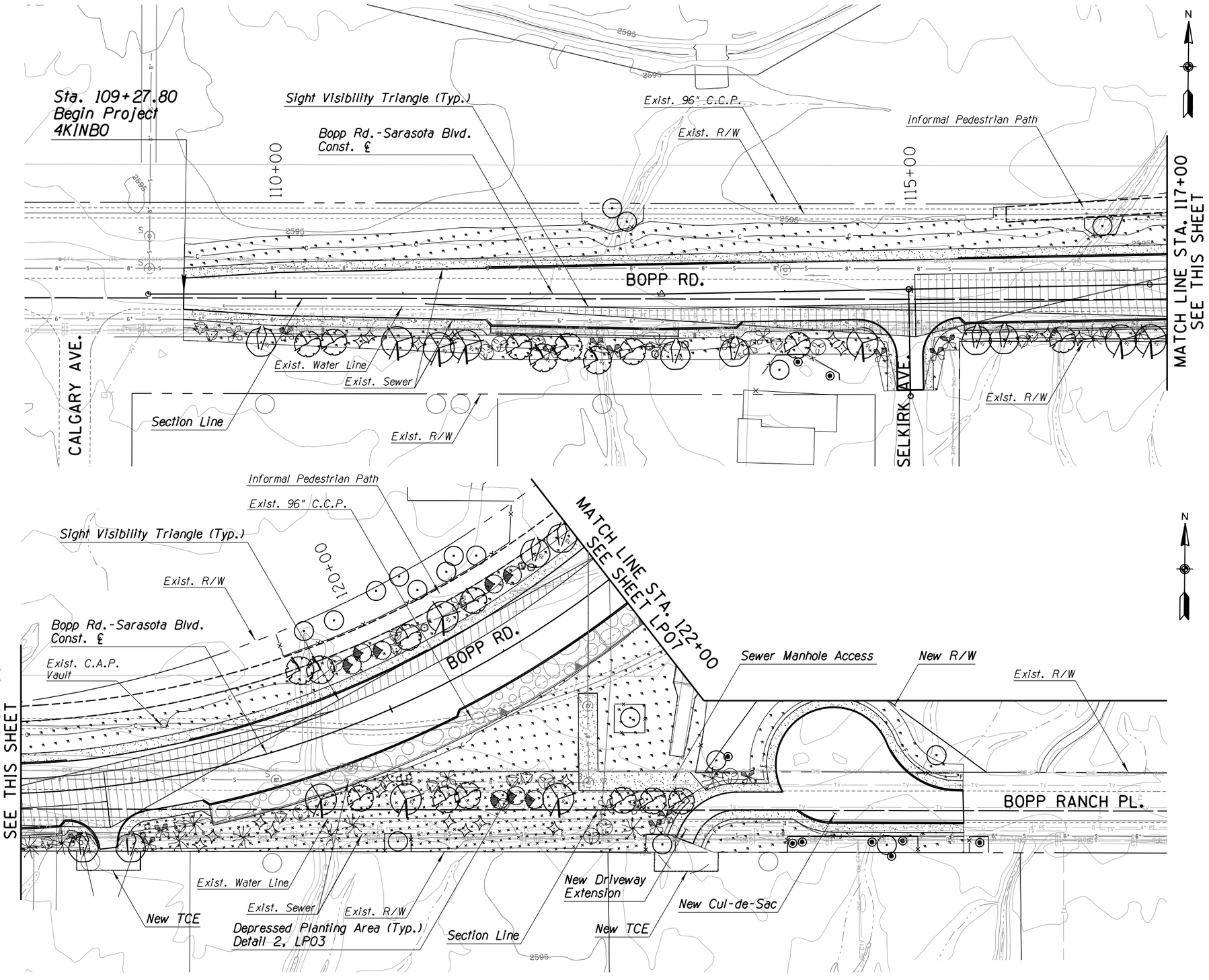
WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520-884-7911 | www.WHEATDESIGNGROUP.COM

EXPIRES 6-30-2019

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet LP05 of LP08 | Page 75 of 109

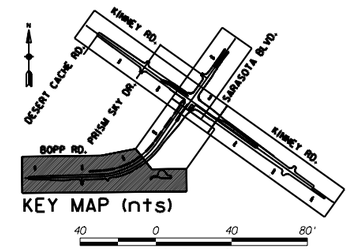
FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_LP05 Plan Sheet.dgn | DATE: 5/29/2018 | TIME: 1:43:01 PM | estoicof



LANDSCAPE LEGEND

SYM./KEY	BOTANICAL NAME / COMMON NAME
TREES	
	Acacia constricta — Whitethorn Acacia
	Acacia greggii — Catclaw Acacia
	Chilopsis linearis — Desert Willow
	Olneya tesota — Ironwood
	Parkinsonia microphylla — Foothills Palo Verde
	Prosopis pubescens — Screwbean Mesquite
	Prosopis velutina — Velvet Mesquite
CACTUS	
	Carnegiea gigantea — Saguaro
	Cylindropuntia fulgida — Chain-fruit Cholla
	Cylindropuntia leptocaulis — Christmas Cholla
	Cylindropuntia spinosior — Cane Cholla
	Ferocactus wislizenii — Fishhook Barrel
	Fouquieria splendens — Ocotillo
	Opuntia basilaris — Beavertail Prickly Pear
	Opuntia engelmannii — Engleman's Prickly Pear
	Opuntia violacea var. santa-rita — Purple Prickly Pear
EXISTING PLANTS	
	Existing Plants to Remain In Place
PLATING/HARDSCAPE MATERIALS	
	Granite Mulch (7/8" Screened)
	Decorative Concrete Pavement
SEED MIX (CLASS II)	
	Seed Mix - Low Growing
	Seed Mix - Desert Scrub
MISCELLANEOUS MATERIALS	
—x—	*Preservation Fencing*

NOTE: Tree symbols on plans with a number "15" indicate a container size of 15 gallon. Trees symbols with no number indicate a container size of 25 gallon.



KEY MAP (nts)

40 0 40 80'

SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 46501 — LAURA M. MILLER — EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

AZ LAND SURVEYOR LAW OF ARIZONA REVISED STATUTES 32-151 — ARIZONA — LAND SURVEYOR — EXPIRES 6-30-2019

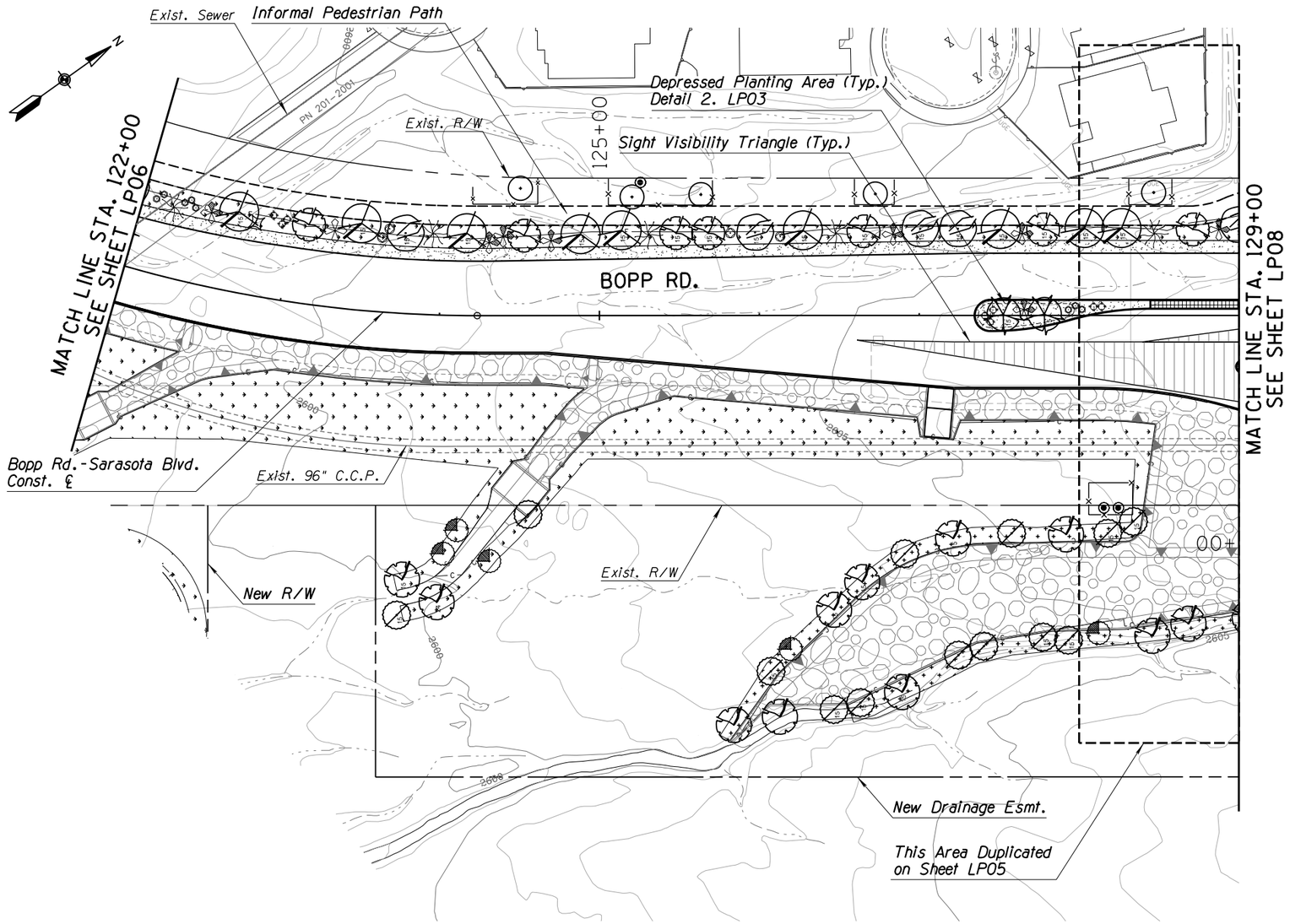
Pima County Department of Transportation

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+27 TO STA. 122+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet LP06 of LP08	Page 76 of 109

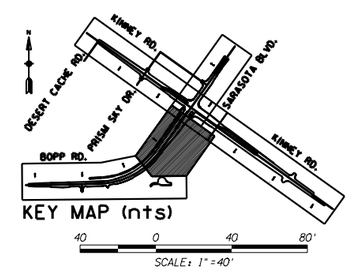
FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_LP06 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:02 PM estoicof



LANDSCAPE LEGEND

SYM./KEY	BOTANICAL NAME / COMMON NAME
TREES	
	Acacia constricta Whitethorn Acacia
	Acacia greggii Catclaw Acacia
	Chilopsis linearis Desert Willow
	Olneya tesota Ironwood
	Parkinsonia microphylla Foothills Palo Verde
	Prosopis pubescens Screwbean Mesquite
	Prosopis velutina Velvet Mesquite
CACTUS	
	Carnegiea gigantea Saguaro
	Cylindropuntia fulgida Chain-fruit Cholla
	Cylindropuntia leptocaulis Christmas Cholla
	Cylindropuntia spinosior Cane Cholla
	Ferocactus wislizenii Fishhook Barrel
	Fouquieria splendens Ocotillo
	Opuntia basilaris Beavertail Prickly Pear
	Opuntia engelmannii Engleman's Prickly Pear
	Opuntia violacea var. santa-rita Purple Prickly Pear
EXISTING PLANTS	
	Existing Plants to Remain in Place
PLATING/HARDSCAPE MATERIALS	
	Granite Mulch (7/8" Screened)
	Decorative Concrete Pavement
SEED MIX (CLASS II)	
	Seed Mix - Low Growing
	Seed Mix - Desert Scrub
MISCELLANEOUS MATERIALS	
—x—	*Preservation Fencing*

NOTE: Tree symbols on plans with a number "15" indicate a container size of 15 gallon. Trees symbols with no number indicate a container size of 25 gallon.



No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

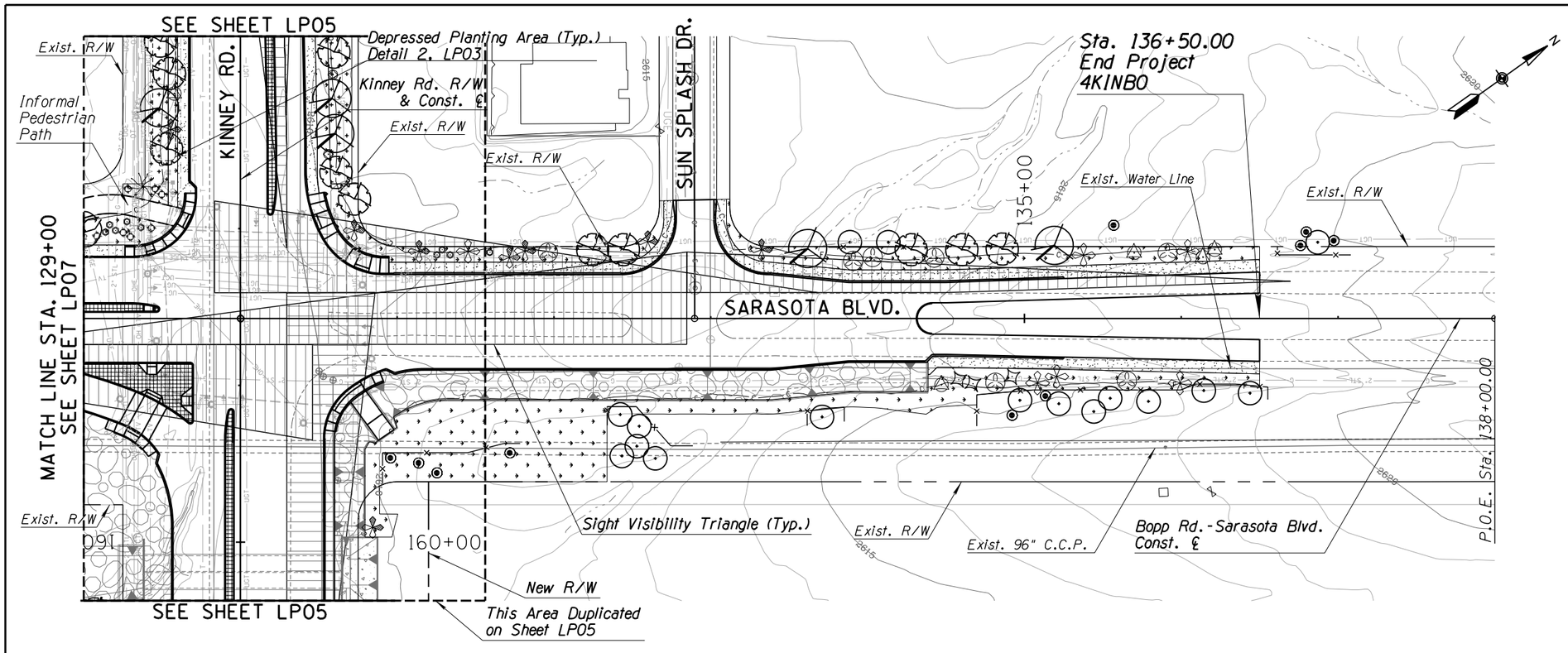
WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 122+00 TO STA. 129+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet LP07 of LP08 | Page 77 of 109

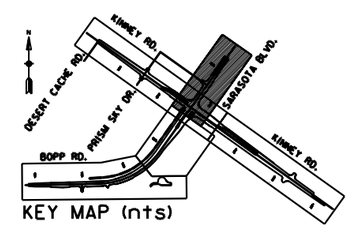
FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_LP07 Plan Sheet.dgn | DATE: 5/29/2018 | TIME: 1:43:03 PM | astoicof



LANDSCAPE LEGEND

SYM./KEY	BOTANICAL NAME / COMMON NAME
TREES	
	Acacia constricta Whitethorn Acacia
	Acacia greggii Catclaw Acacia
	Chilopsis linearis Desert Willow
	Olneya tesota Ironwood
	Parkinsonia microphylla Foothills Palo Verde
	Prosopis pubescens Screwbean Mesquite
	Prosopis velutina Velvet Mesquite
CACTUS	
	Carnegiea gigantea Saguaro
	Cylindropuntia fulgida Chain-fruit Cholla
	Cylindropuntia leptocaulis Christmas Cholla
	Cylindropuntia spinosior Cane Cholla
	Ferocactus wislizenii Fishhook Barrel
	Fouquieria splendens Ocotillo
	Opuntia basilaris Beavertail Prickly Pear
	Opuntia engelmannii Engleman's Prickly Pear
	Opuntia violacea var. santa-rita Purple Prickly Pear
EXISTING PLANTS	
	Existing Plants to Remain in Place
PLATING/HARDSCAPE MATERIALS	
	Granite Mulch (7/8" Screened)
	Decorative Concrete Pavement
SEED MIX (CLASS II)	
	Seed Mix - Low Growing
	Seed Mix - Desert Scrub
MISCELLANEOUS MATERIALS	
—x—	*Preservation Fencing*

NOTE: Tree symbols on plans with a number "15" indicate a container size of 15 gallon. Trees symbols with no number indicate a container size of 25 gallon.



KEY MAP (nts)

40 0 40 80'

SCALE: 1"=40'

Ana M. Olivares, P.E., Director

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — 4501 WILLIAM WHEATEAT — ARIZONA — EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

Pima County Department of Transportation

LANDSCAPE PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 129+00 TO STA. 136+50
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet LP08 of LP08 |

IRRIGATION EQUIPMENT SCHEDULE

SYMBOL	ITEM	SIZE	QTY.
A	Controller A - Leit XRC, Solar Irrigation Controller	10 STA	1
M	New Water Meter	1½"	1
	R.P. Backflow Preventer Assembly	1½"	1
	Control Valve (Remote) (Electric) with Filter	1"	6
	Pressure Regulator Riser	1"	14
	Mainline Isolation Ball Valve	1½"	4
P	Control Wire Pull Box	N/A	8
	Mainline PVC SCH 40	1½"	3,165'
	Submain Class SCH 40 PVC	1"	4,190'
	Lateral Line SCH 40 PVC (Trees)	1"	6,305'
	Lateral End Cap Assembly	N/A	28
	Sleeve SCH 40 PVC	6"	373'
	Sleeve SCH 40 PVC	4"	311'
	Sleeve SCH 40 PVC	2"	373'
Not Shown	Emitter Assembly (Multi-port 0.5 gph, 1 gph, 2 gph each)	N/A	197

PLANT EMITTER SCHEDULE

SYM./KEY	BOTANICAL NAME	COMMON NAME	SIZE	# OF OUTLETS	GPH OUTLET	TOTAL GPH
TREES (NURSERY STOCK & TRANSPLANT)						
	Acacia constricta	Whitethorn Acacia	15 gal.	3	1	3
	Acacia greggii	Catclaw Acacia	15 gal. 25 gal.	4 6	1 1	4 6
	Chilopsis linearis	Desert Willow	15 gal.	6	1	6
	Olneya tesota	Ironwood	15 gal.	4	1	4
	Parkinsonia microphylla	Foothills Palo Verde	15 gal. 25 gal.	4 6	1 1	4 6
	Prosopis pubescens	Screwbean Mesquite	15 gal. 25 gal.	6 4	1 2	6 8
	Prosopis velutina	Velvet Mesquite	15 gal. 25 gal.	6 4	1 2	6 8

GENERAL IRRIGATION NOTES:

1. Placement of all Irrigation components, including location of pipe, points of connection, valves, controllers and meters shall be field staked and approved by the Engineer prior to installation.
2. Irrigation Mainline, Water Meters, Valves, Controllers, and Backflow Preventers shall be located outside of Utility Easements and within Pima County R/W. Wherever possible, Submains and lateral shall be located outside of Utility Easements.
4. Landscape Irrigation System, including Sleeves, shall be paid for under Bid Item 8080001.
5. All 6" Sleeves shall have an accompanying 2" sleeve to accommodate valve wiring. 2" sleeves are not shown on the project plans.
6. Irrigation provided for trees only. Cacti to be hand watered during establishment period.

PIPE SLEEVE SUMMARY CHART

ROADWAY SLEEVES							
SLEEVE LABEL	DIAMETER (IN)	LENGTH (FT)	MATERIAL	STATION	OFFSET		ROADWAY
PS1	Not Used						
PS2	Not Used						
PS3	Not Used						
PS4	4	39.5	Sch 40 PVC	155 + 81.83	7.50	LT	Kinney Rd.
PS5	4	29.5	Sch 40 PVC	155 + 81.83	18.47	RT	Kinney Rd.
PS6	2	99.5	Sch 40 PVC	131 + 10.18	0.00		Sarasota Blvd.
PS7	6	99.5	Sch 40 PVC	131 + 10.18	0.00		Sarasota Blvd.
PS8	2	16.3	Sch 40 PVC	162 + 06.16	76.73	LT	Kinney Rd.
PS9	6	16.3	Sch 40 PVC	162 + 06.16	76.73	LT	Kinney Rd.
PS10	2	89.8	Sch 40 PVC	163 + 00.00	0.00		Kinney Rd.
PS11	6	89.8	Sch 40 PVC	163 + 00.00	0.00		Kinney Rd.
PS12	4	51.8	Sch 40 PVC	167 + 21.26	46.30	LT	Kinney Rd.
PS13	4	49.9	Sch 40 PVC	167 + 21.90	51.24	RT	Kinney Rd.
PS14	4	40.5	Sch 40 PVC	114 + 76.83	43.69	RT	Bopp Rd.
PS15	2	64.3	Sch 40 PVC	115 + 38.18	0.00		Bopp Rd.
PS16	6	64.3	Sch 40 PVC	115 + 38.18	0.00		Bopp Rd.
PS17	4	33.0	Sch 40 PVC	117 + 47.59	41.23	RT	Bopp Rd.
PS18	2	40.0	Sch 40 PVC	126 + 65.77	6.98	LT	Bopp Rd.
PS19	6	40.0	Sch 40 PVC	126 + 65.77	6.98	LT	Bopp Rd.
PS20	2	62.2	Sch 40 PVC	126 + 65.77	6.44	RT	Bopp Rd.
PS21	6	62.2	Sch 40 PVC	126 + 65.77	6.44	RT	Bopp Rd.
PS22	4	66.1	Sch 40 PVC	132 + 56.92	40.00	LT	Sarasota Blvd.

Landscape Water Plan

Botanical Name	Common Name	Quantity	Water Use Type (need)	ADWR Annual Use at Maturity (GAL)	Annual Water Use (GAL)	Monthly Water Use (GAL)
TREES						
Acacia constricta	Whitethorn Acacia	27	1	1,754	47,358	3,947
Acacia greggii	Catclaw Acacia	13	1	1,754	22,802	1,900
Chilopsis linearis	Desert Willow	11	2	5,702	62,722	5,227
Olneya tesota	Desert Ironwood	14	1	2,741	38,374	3,198
Parkinsonia microphylla	Foothills Palo Verde	63	1	1,754	110,502	9,209
Prosopis pubescens	Screwbean Mesquite	23	2	5,702	131,146	10,929
Prosopis velutina	Velvet Mesquite	46	2	5,702	262,292	21,858
				TOTAL	675,196	56,266

Season											
Winter		Spring			Summer	Monsoon				Winter	
Month											
1	2	3	4	5	6	7	8	9	10	11	12
Year 3:											
Continue to increase irrigation water use as needed as plants mature up to, but not exceeding 100%											
ADWR value by end of year. (average monthly water use = 56,266 gal/month)											
54,000	54,000	59,000	59,000	73,500	73,500	36,000	36,000	59,000	57,500	54,000	54,000
						TOTAL (100% ADWR=		675,196	GAL/YEAR)		669,500
Year 4:											
Begin gradually decreasing irrigation to buffer, median and ROW areas in order to reach zero irrigation in those areas by											
end ofyear 5. (to reach 75% of ADWR by end of year, average monthly water use = 42,200 gal/month)											
38,000	38,000	42,000	44,000	53,000	55,000	33,500	33,500	44,000	44,000	38,000	36,000
						TOTAL (75% ADWR=		506,397	GAL/YEAR)		499,000
Year 5:											
Continue decreasing irrigation to buffer, median and ROW areas. By end of year 5, irrigation to buffer, median, and											
ROW areas must be zero, and total amount of water used at site must meet 50% of ADWR maturity value.											
(Average monthly water use = 28133 gal/month)											
26,500	26,500	28,000	30,000	37,500	37,500	17,500	19,500	30,200	28,500	26,500	24,500
						TOTAL (50% ADWR=		337,598	GAL/YEAR)		332,700

Ana M. Olivares, P.E., Director

Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — 46501 — LEIGH M. MALONEY — STATE OF ARIZONA — EXPIRES 6-30-2019

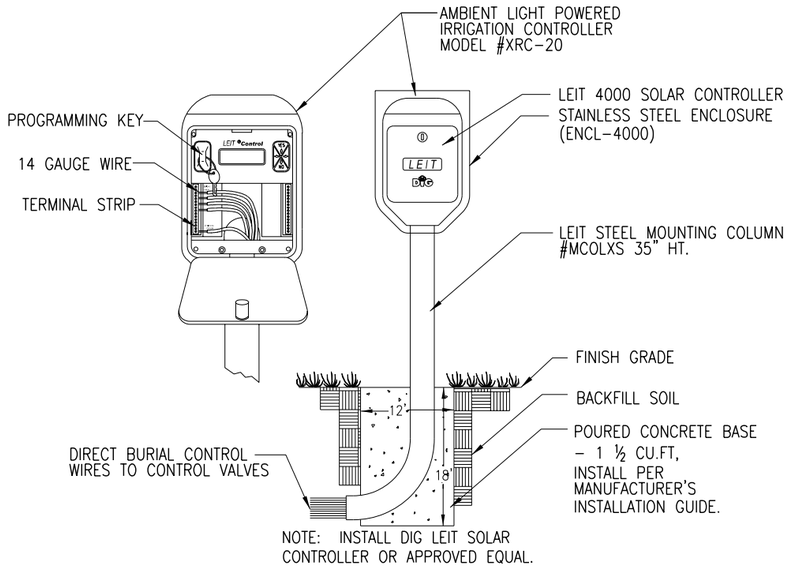
WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

Pima County Department of Transportation

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
SUMMARY SHEET
PROJECT NO. 4KINBO

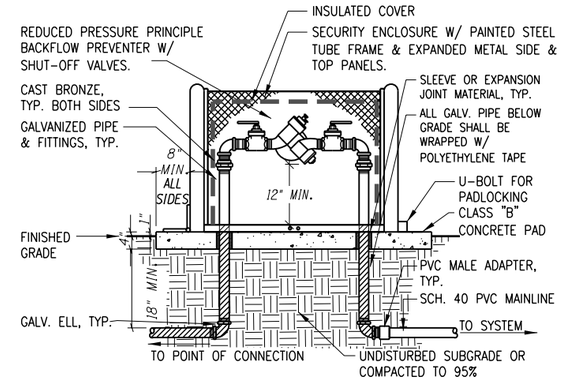
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet IR01 of IR09	Page 79 of 109



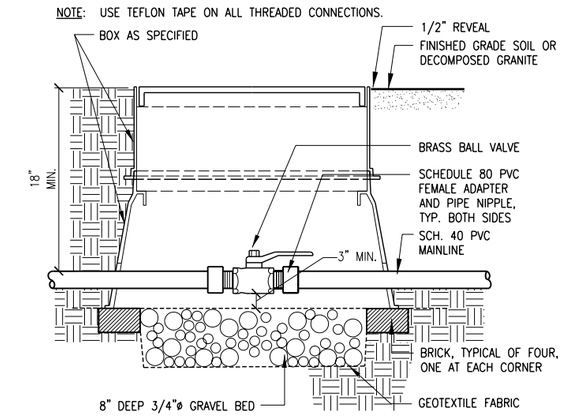
1 SOLAR CONTROLLER DETAIL

NTS



2 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER IN SECURITY ENCLOSURE

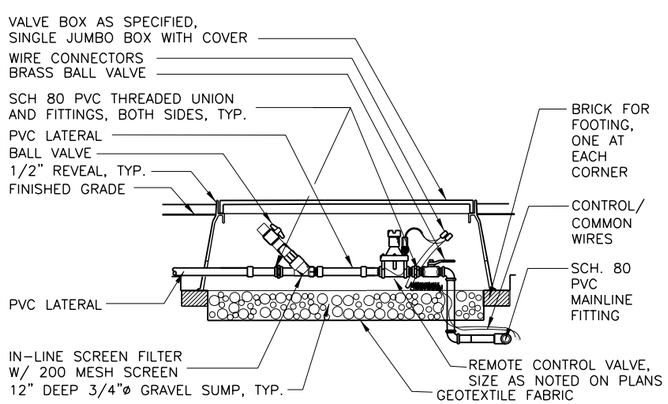
N.T.S.



3 MAINLINE ISOLATION BALL VALVE

N.T.S.

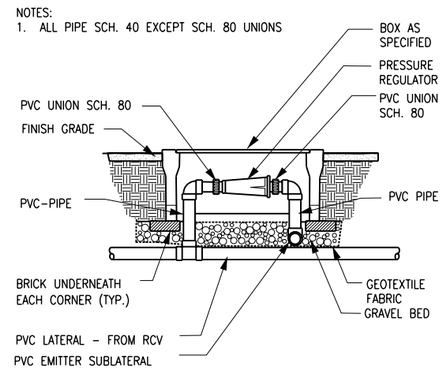
NOTES:
1. ALL WIRES TO BE INSTALLED PER LOCAL CODE. TAPE AND BUNDLE WIRES EVERY 7'. PROVIDE EXPANSION COIL AT EACH WIRE CONNECTION IN VALVE BOX (WRAP AROUND 1/2" DIA. PIPE 15 TIMES).
2. COMPACT SOIL AROUND VALVE BOX TO SAME DENSITY AS ADJACENT UNDISTURBED SOIL.
3. ALL THREADED PVC JOINTS SHALL BE WRAPPED WITH TEFLON TAPE.



4 REMOTE CONTROL VALVE ASSEMBLY

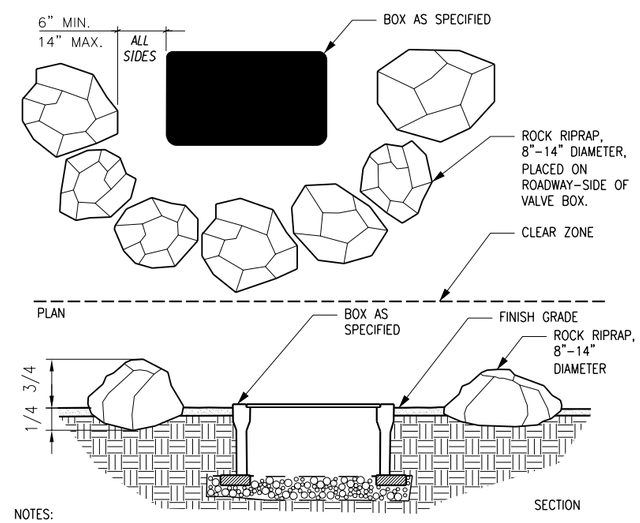
N.T.S.

NOTES:
1. ALL PIPE SCH. 40 EXCEPT SCH. 80 UNIONS



5 PRESSURE REGULATOR ASSEMBLY

N.T.S.



NOTES:
1. IN ORDER TO PROTECT VALVE BOXES/PRESSURE REGULATOR FROM DAMAGE, IRRIGATION ELEMENTS BETWEEN EDGE OF ROADWAY AND SIDEWALK/PATH SHALL BE INSTALLED WITH ROCK PROTECTION. DETAIL DOES NOT APPLY TO PRESSURE REGULATORS LOCATED BEHIND CURB/GUARDRAIL OR ON FAR SIDE OF PATH/SIDEWALK.
2. ALL PRESSURE REGULATOR VALVE BOXES AND ROCK PROTECTION SHALL BE OUTSIDE OF THE ROADWAY CLEAR ZONE (20' ON KINNEY RD., 16' ON BOPP RD. AND SARASOTA BLVD. - MEASURED FROM EDGE OF TRAVEL LANE). NO ROCK GREATER THAN 4" IN DIAMETER SHALL BE PLACED WITHIN THE CLEAR ZONE.
3. ROCK RIPRAP TO SURROUND ROADWAY-SIDE OF PRESSURE REGULATOR BOX.
4. RIPRAP TO BE SET WITH 1/4 MASS BELOW FINISHED GRADE.
5. SET ROCKS FIRMLY TO PREVENT MOVEMENT. COMPACT SOIL AROUND EDGES.
6. COLOR OF ROCK RIPRAP SHALL MATCH COLOR SELECTED FOR ITEM 8030040 GRANITE MULCH, REFER TO PLANTING PLANS.
7. COST OF ROCK PROTECTION IS INCIDENTAL TO COST OF PRESSURE REGULATOR.

6 ROCK PROTECTION FOR IRRIGATION BOXES

N.T.S.

Ana M. Olivares, P.E., Director

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 40501 — LEIGHANNE MARIE MOORE — EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

ARIZONA811 — CLAY AT BLUE STAKES, INC. — ARIZONA811.COM — 1-800-STAKE-IT (782-5348)

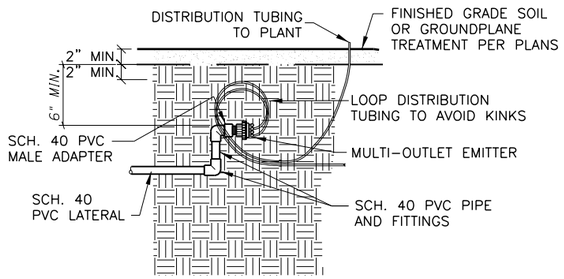
Pima County Department of Transportation

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet IR02 of IR09	Page 80 of 109

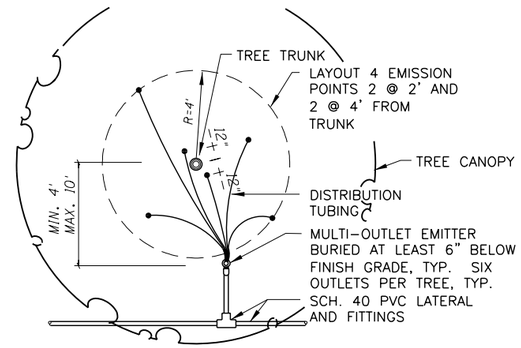
FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR02 Details.dgn DATE: 5/29/2018 TIME: 1:43:17 PM astoicof



1 MULTI OUTLET EMITTER – SIX OUTLET

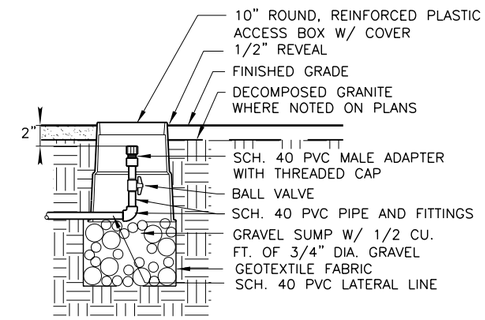
N.T.S.

NOTES:
1. LAYOUT DISTRIBUTION TUBING AS SHOWN AND LOCATE.
2. DISCHARGE POINT 2" ABOVE FINISHED GRADE.
3. MAXIMUM LENGTH OF DISTRIBUTION TUBING TO BE 15'.



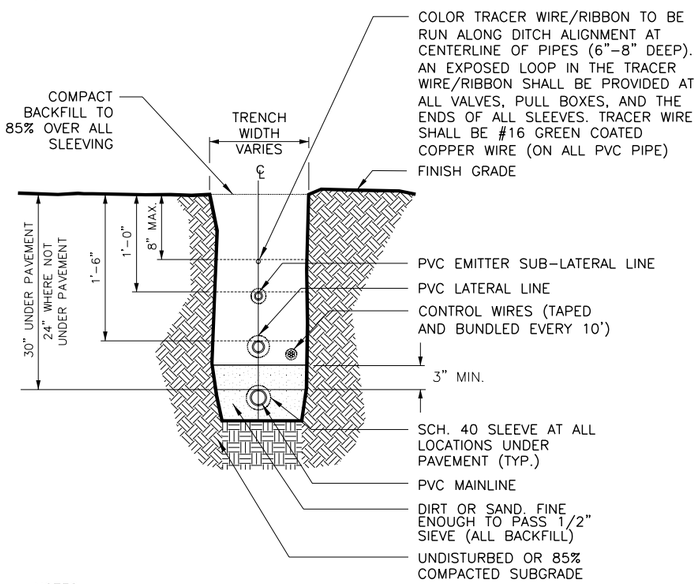
2 EMITTER DISTRIBUTION TUBING LAYOUT AT TREE – SIX OUTLET

N.T.S.



3 EMITTER LINE FLUSH CAP IN ACCESS BOX

N.T.S.

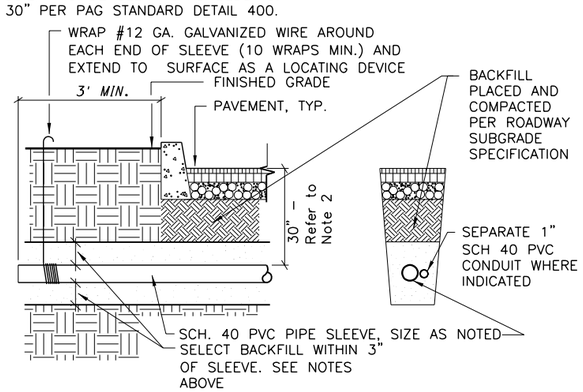


NOTES:
1. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. NO PIPE OR WIRE SHALL BE LOCATED UNDER PAVING UNLESS IT IS SLEEVED.

4 IRRIGATION SYSTEM TRENCHING

N.T.S.

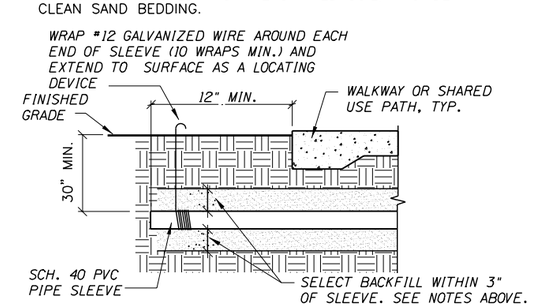
NOTES:
1. BACKFILL WITHIN 3" OF SLEEVE SHALL BE FREE OF ROCKS AND STONES LARGER THAN 1/4"ø. IF ROCK CANNOT BE REMOVED FROM EXCAVATED SOIL, PROVIDE CLEAN SAND BEDDING.
2. 30" PER PAG STANDARD DETAIL 400.



5 SLEEVE UNDER ROAD OR DRIVEWAY

N.T.S.

NOTES:
1. SLEEVES UNDER WALKWAYS SHALL BE SCHEDULE 40 PVC PIPE. SIZE SHALL BE AS NOTED ON PLANS.
2. BACKFILL WITHIN 3" OF SLEEVE SHALL BE FREE OF ROCKS AND STONES LARGER THAN 1/4" DIA. IF ROCK CANNOT BE REMOVED FROM EXCAVATED SOIL, PROVIDE CLEAN SAND BEDDING.



6 SLEEVE UNDER WALKWAY OR SHARED USE PATH

N.T.S.

Ana M. Olivares, P.E., Director

Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 46201 — WHEAT, WILLIAM — EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

CUT or Save Time and Money by Calling 811 Two Working Days Before You Begin Excavation
ARIZONA 811 BLUE STAKE, INC.
Call Before You Dig!

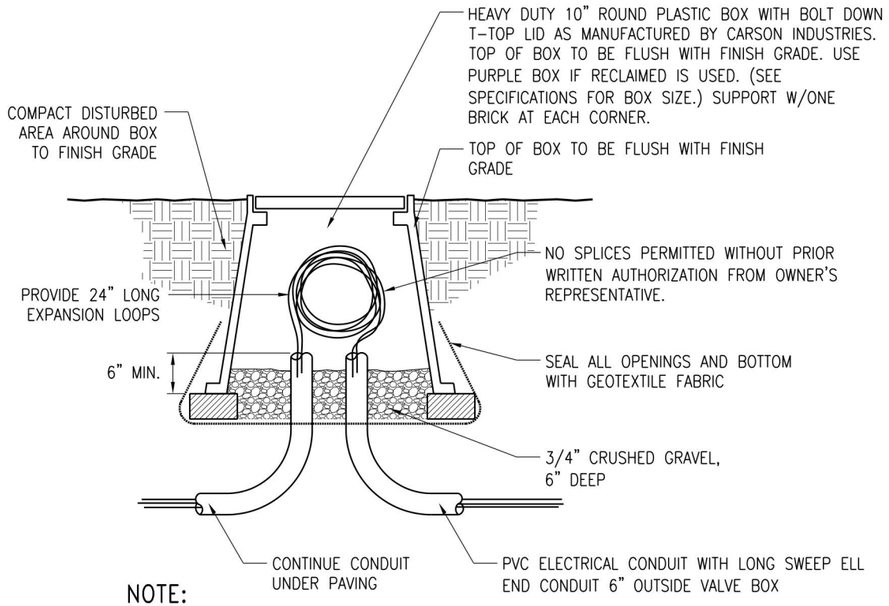
Pima County Department of Transportation

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N/A	Sheet IR03 of IR09	Page 81 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR03 Details.dgn DATE: 5/29/2018 TIME: 1:43:18 PM estoicof



NOTE:
LOCATE PULL BOXES AT EACH END OF SLEEVES CROSSING ROADWAYS AS SHOWN ON PLANS.

1 PULL BOX DETAIL

N.T.S.

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT
45281
LAUREN K. MARK
ARIZONA, U.S.A.
EXPIRES 6-30-2019

Pima County Department of Transportation

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

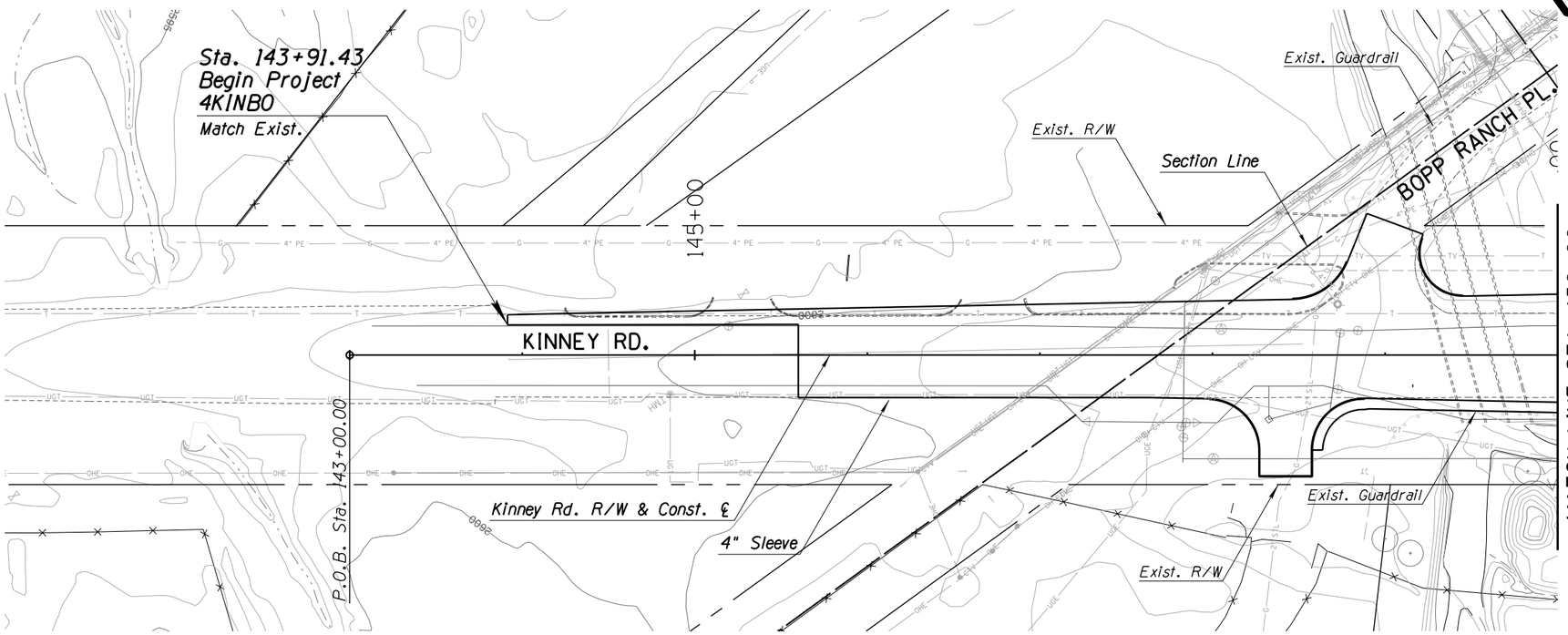
Call at least two full working days before you dig
ARIZONA 811
BLUE STAKE, INC.
Not to be a substitute for other utilities

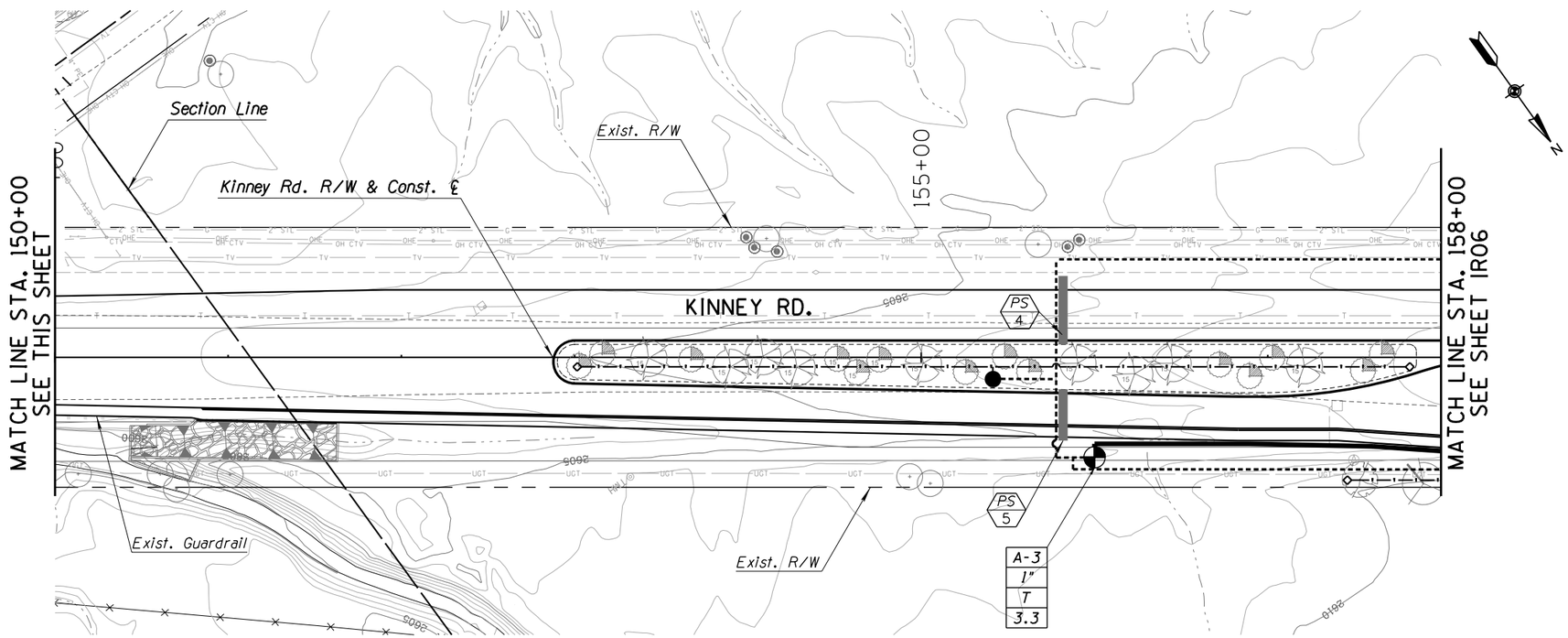
IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet IR04 of IR09	Page 82 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR04 Details.dgn DATE: 5/29/2018 TIME: 1:43:19 PM estoicof





IRRIGATION LEGEND

SYMBOL	ITEM
A	Controller A, Leit XRC Solar Irrigation Controller
M	New Water Meter
	R.P. Backflow Preventer
	Control Valve (Remote) (Electric)
	Pressure Regulator Riser
	Mainline Isolation Ball Valve
P	Control Wire Pull Box
	Mainline
	Submain
	Lateral Line (Trees)
	Lateral End Cap Assembly
	Sleeve 6" (Size As Sleeve 4" Noted On Sleeve 2" Plans)

VALVE IDENTIFICATION

A-4	Controller & Station
1"	Size
T	Tree
4.1	Flow (GPM)

Valve

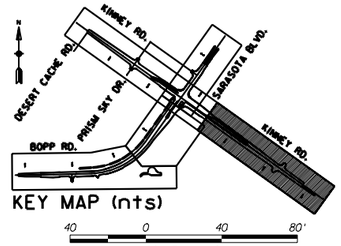
RISER IDENTIFICATION

Valve ID — A-3 | T | 2 — Riser Number

Tree or Shrub

Pressure Regulator Riser

NOTE:
1. Refer to Sheet IR01 for Irrigation Schedule, Notes, and Additional Information.



KEY MAP (nts)

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 40501 — LEIGHANNE MARIE MOORE — EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

ARIZONA811 — CLIK on Icons for all utility companies — Call 811 or 1-800-STAKE-IT (Arizona Blue Stake, Inc.) — Not Blue Stake? Contact directly to locate — www.Arizona811.com

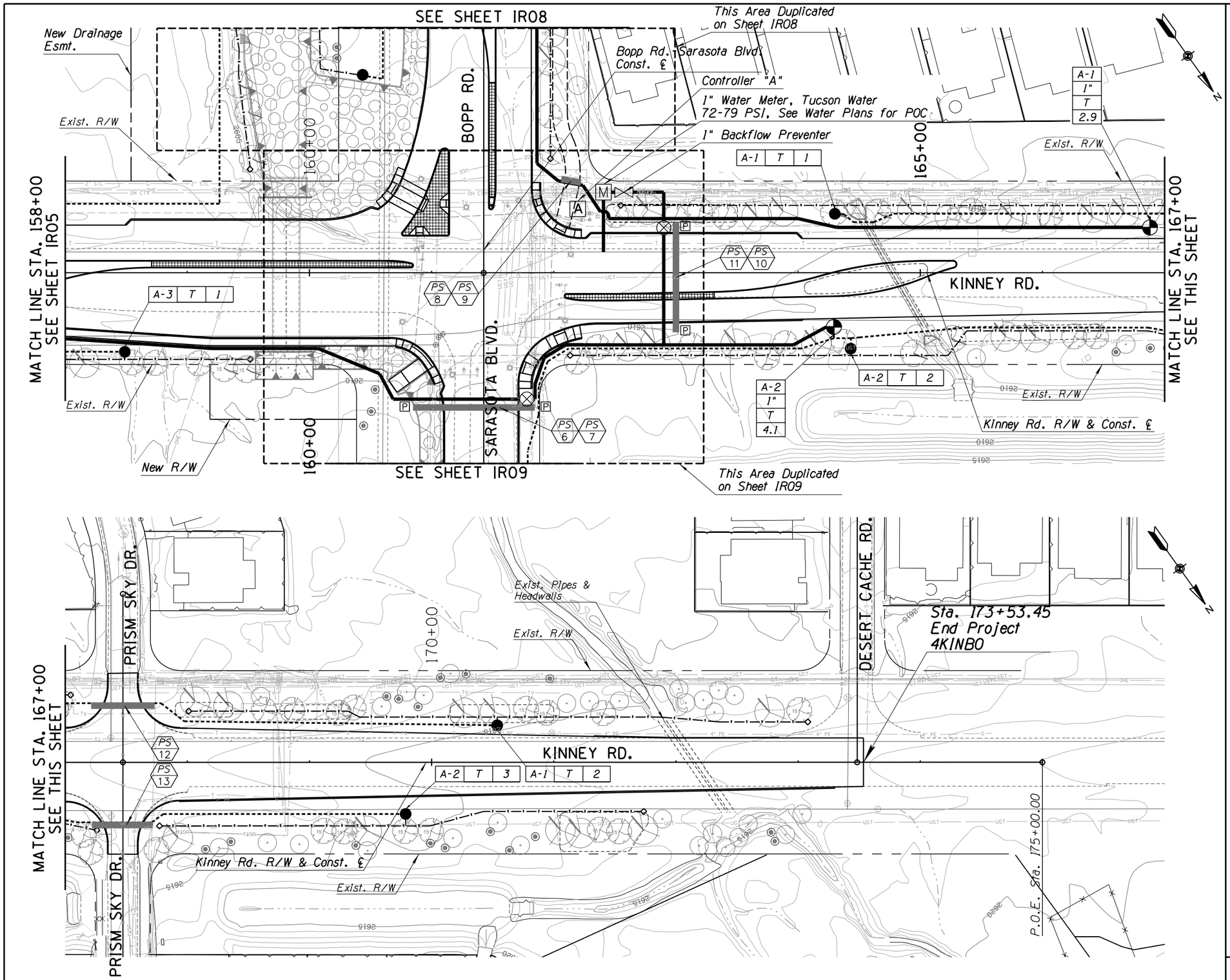
Pima County Department of Transportation

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+91 TO STA. 158+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet IR05 of IR09	Page 83 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR05 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:21 PM astoicof



IRRIGATION LEGEND

SYMBOL	ITEM
A	Controller A, Leit XRC Solar Irrigation Controller
M	New Water Meter
	R.P. Backflow Preventer
	Control Valve (Remote) (Electric)
	Pressure Regulator Riser
	Mainline Isolation Ball Valve
P	Control Wire Pull Box
	Mainline
	Submain
	Lateral Line (Trees)
	Lateral End Cap Assembly
	Sleeve 6" (Size As Sleeve 4" Noted On Sleeve 2" Plans)

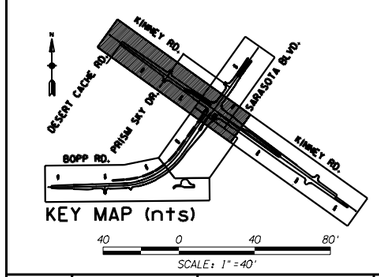
VALVE IDENTIFICATION

A-4 — Controller & Station
1" — Size
T — Tree
4.1 — Flow (GPM)
Valve

RISER IDENTIFICATION

Valve ID — A-3 | T | 2 — Riser Number
Tree or Shrub
Pressure Regulator Riser

NOTE:
1. Refer to Sheet IR01 for Irrigation Schedule, Notes, and Additional information.



No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

Ana M. Olivares, P.E., Director

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 46501 — LEIGHANNE MARIE MCCLELLAN — EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

ARIZONA 811 — Call at least two full working days before you begin excavation. Protect yourself, your crew and the underground utility lines. Failure to do so may result in injury, property damage and service interruption.

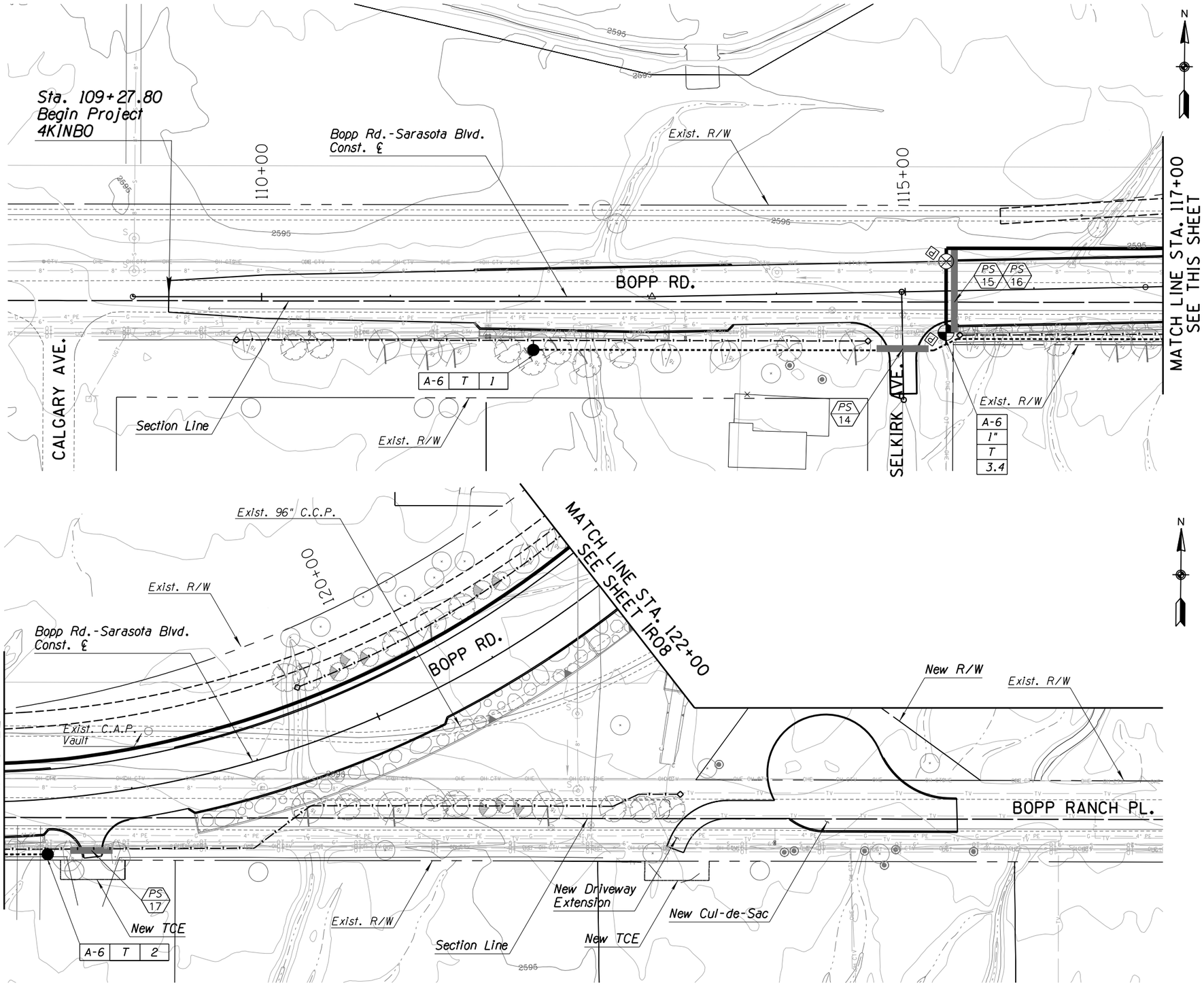
Pima County Department of Transportation

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 158+00 TO STA. 173+53
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet IR06 of IR09 | Page 84 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR06 Plan Sheet.dgn | DATE: 5/29/2018 | TIME: 1:43:21 PM | estoicof



IRRIGATION LEGEND

SYMBOL	ITEM
A	Controller A, Leit XRC Solar Irrigation Controller
M	New Water Meter
	R.P. Backflow Preventer
	Control Valve (Remote) (Electric)
	Pressure Regulator Riser
	Mainline Isolation Ball Valve
P	Control Wire Pull Box
	Mainline
	Submain
	Lateral Line (Trees)
	Lateral End Cap Assembly
	Sleeve 6" (Size As Sleeve 4" Noted On Sleeve 2" Plans)

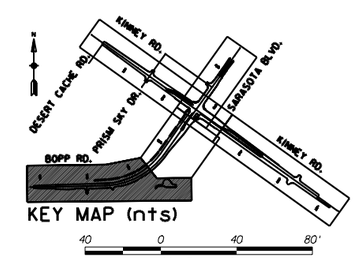
VALVE IDENTIFICATION

A-4 — Controller & Station
1" — Size
T — Tree
4.1 — Flow (GPM)
Valve

RISER IDENTIFICATION

Valve ID — A-3 | T | 2 — Riser Number
Tree or Shrub
Pressure Regulator Riser

NOTE:
1. Refer to Sheet IR01 for Irrigation Schedule, Notes, and Additional Information.



No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

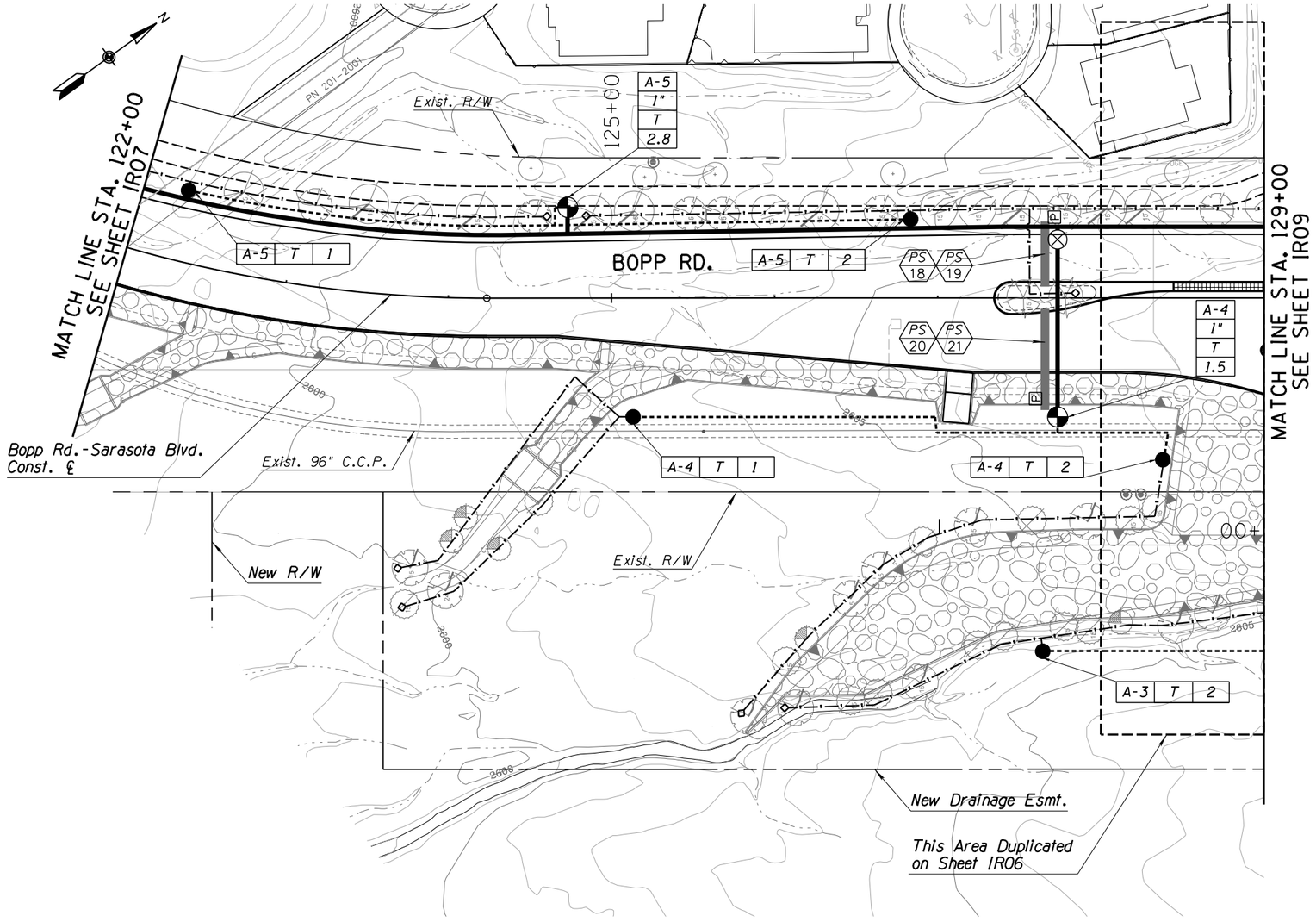
WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+27 TO STA. 122+00
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet IR07 of IR09 | Page 85 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR07 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:22 PM astoicof



IRRIGATION LEGEND

SYMBOL	ITEM
A	Controller A, Leit XRC Solar Irrigation Controller
M	New Water Meter
	R.P. Backflow Preventer
	Control Valve (Remote) (Electric)
	Pressure Regulator Riser
	Mainline Isolation Ball Valve
P	Control Wire Pull Box
	Mainline
	Submain
	Lateral Line (Trees)
	Lateral End Cap Assembly
	Sleeve 6" (Size As Sleeve 4" Noted On Sleeve 2" Plans)

VALVE IDENTIFICATION

A-4 — Controller & Station
1" — Size
T — Tree
4.1 — Flow (GPM)
Valve

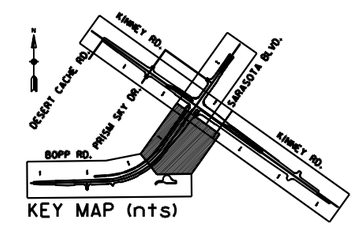
RISER IDENTIFICATION

Valve ID — A-3 | T | 2 — Riser Number

Tree or Shrub

Pressure Regulator Riser

NOTE:
1. Refer to Sheet IR01 for Irrigation Schedule, Notes, and Additional information.



KEY MAP (nts)

40 0 40 80'
SCALE: 1" = 40'

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

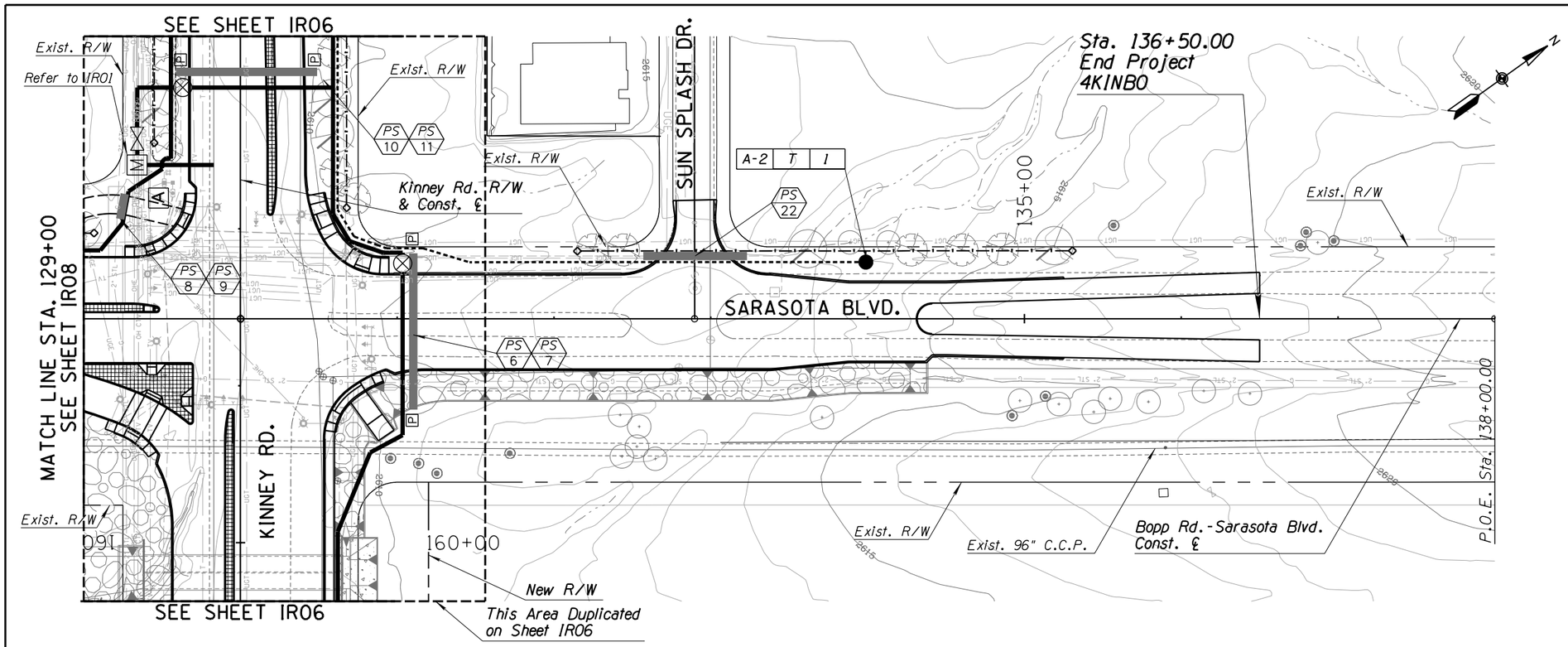
WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 122+00 TO STA. 129+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet IR08 of IR09 | Page 86 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR08 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:23 PM astoicof



IRRIGATION LEGEND

SYMBOL	ITEM
A	Controller A, Leit XRC Solar Irrigation Controller
M	New Water Meter
	R.P. Backflow Preventer
	Control Valve (Remote) (Electric)
	Pressure Regulator Riser
	Mainline Isolation Ball Valve
P	Control Wire Pull Box
	Mainline
	Submain
	Lateral Line (Trees)
	Lateral End Cap Assembly
	Sleeve 6" (Size As Sleeve 4" Noted On Sleeve 2" Plans)

VALVE IDENTIFICATION

A-4 — Controller & Station
1" — Size
T — Tree
4.1 — Flow (GPM)
Valve

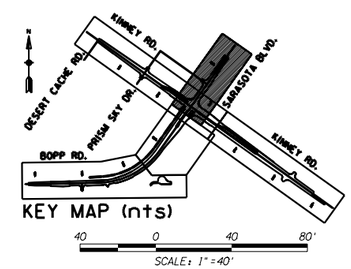
RISER IDENTIFICATION

Valve ID — A-3 | T | 2 — Riser Number

Tree or Shrub

Pressure Regulator Riser

NOTE:
1. Refer to Sheet IR01 for Irrigation Schedule, Notes, and Additional Information.



Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 45501 — WILLIAM D. CHRISTIE — EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

Pima County Department of Transportation

IRRIGATION PLAN
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 129+00 TO STA. 136+50
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet IR09 of IR09	Page 87 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_IR09 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:24 PM astoicof

EROSION AND POLLUTION CONTROL BMP SUMMARY OF QUANTITIES

SYMBOL	BMP	UNIT	QTY.	REFERENCE	BID ITEM NO.
	9" Dia. Sediment Wattle	L.F.	1,175	Detail E1	8100001
	20" Dia. Sediment Log in Ditch/Channel	L.F.	580	Detail E2	8100001
	Sediment Control Berm	L.F.	8,430	Detail E3	8100001
	Stabilized Construction Entrance/Exit Gravel Pad	EACH	2	Detail E4	8100001
	Seeding (Class II) Low Growing. For reference. See landscape plans.	AC	4.1	N/A	8050004
	Seeding (Class II) Desert Scrub. For reference. See landscape plans.	AC	1.0	N/A	8050004
	Granite Mulch (7/8" Screened). For reference. See landscape plans.	S.Y.	9,360	N/A	8030040

GENERAL NOTES:

1. Areas outside of the Project Disturbance Limits or Right of Way shall remain undisturbed. Should additional area require disturbance, the Engineer, Owner and appropriate parties must be notified. Any project related activities or disturbance beyond the Project Disturbance Limits or Right-of-Way will require historic and cultural resources compliance to have been included before any disturbance can occur. The Plans and NOI must be updated accordingly and reflect additional BMPs.
2. All disturbed soils shall be stabilized including all Easements.
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. Seeding limits shall extend to existing Right-of-Way and Easements unless otherwise shown on Project Plans.
4. No erosion control measures shall be installed inside the temporary fencing areas for existing preserve in place cactus.
5. Refer to Drainage Plans and Details for permanent erosion control structures.
6. All Erosion Control Measures shall be installed within 14 days of establishing rough grade. Disturbed areas where construction is delayed for more than 14 days require Temporary Erosion Control Measures.
7. Erosion Control Measures shall be installed at perimeter of Limits of Disburbance, as shown on plans.
8. Sediment Control Measures shall be installed on all side slope boundaries. Sediment controls shall be placed on side slope boundaries when adjacent side slope is at lower elevation than project area with potential to receive stormwater runoff. Adjacent slopes at higher elevation than project area do not require perimeter control unless run-off is anticipated.
9. Contractor shall determine final location of Stabilized Construction Entrance/Exit Gravel Pad according to site conditions and/or construction sequencing, with approval from the Engineer. Use of other access points must be approved by the Engineer.
10. Sweeping and/or vacuuming may be required as a secondary measure if trackout is visible.
11. Containment Areas shall be identified on Contractor's Stormwater Pollution Prevention Plan.
12. Spill response equipment shall be accessible in case of a spill, and located within/near the Containment Area.
13. Quantities shown in Summary of Quantities are for Contractor convenience. Contractor to verify all quantities.
14. All work and materials relating to the BMPs detailed within these Plans (including all materials used for BMPs, all ground preparation, furnishing, installing, maintenance, final removal, and disposal of temporary BMPs, as well as returning the area to an acceptable condition as approved by the Engineer) shall be paid for under Bid Item Number 8100001.

SEED MIX SCHEDULE

SYM./KEY	BOTANICAL NAME	COMMON NAME	PLS RATE	QTY	BID TAB NUMBER
SEED MIX (CLASS II)					
Seed Mix - Low Growing	Ambrosia deltoidea	Triangle Leaf Bursage	3.0 lbs./ac.	4.1 AC	8050004
	Aristida purpurea	Purple Threeawn	1.5 lbs./ac.		
	Bailey multiradiata	Desert Marigold	2.0 lbs./ac.		
	Bouteloua aristidiodes	Needle Grama	1.0 lbs./ac.		
	Bouteloua curtipendula	Sideoats Grama	1.0 lbs./ac.		
	Bouteloua rothrockii	Rothrock Grama	2.0 lbs./ac.		
	Dyssodia pentachaeta	Golden Dyssodia	1.0 lbs./ac.		
	Encelia farinosa	Brittlebush	2.0 lbs./ac.		
	Escholtzia mexicana	Desert Poppy	2.0 lbs./ac.		
	Isocoma tenuisecta	Burrowweed	1.0 lbs./ac.		
	Lesquerella gordonii	Bladderpod	1.0 lbs./ac.		
	Lupinus sparsiflorus	Lupine	1.0 lbs./ac.		
	Plantago insularis	Desert Indian Wheat	3.0 lbs./ac.		
	Senna covesii	Desert Senna	2.0 lbs./ac.		
	Sphaeralcea ambigua	Desert Globemallow	1.0 lbs./ac.		
	Zinnia acerosa	Desert Zinnia	0.5 lbs./ac.		
	TOTAL PLS RATE:		25 PLS/ACRE		
Seed Mix - Desert Scrub	Acacia constricta	Whitethorn Acacia	1.5 lbs./ac.	1.0 AC	8050004
	Ambrosia deltoidea	Bursage	0.5 lbs./ac.		
	Aristida purpurea	Purple Threeawn	0.5 lbs./ac.		
	Atriplex polycarpa	Cattle Saltbush	0.5 lbs./ac.		
	Bailey multiradiata	Desert Marigold	1.0 lbs./ac.		
	Bouteloua aristidiodes	Needle Grama	1.0 lbs./ac.		
	Bouteloua curtipendula	Sideoats Grama	1.5 lbs./ac.		
	Bouteloua rothrockii	Rothrock Grama	1.0 lbs./ac.		
	Calliandra eriophylla	Fairy Duster	1.0 lbs./ac.		
	Digitaria californica	Arizona Cottontop	1.0 lbs./ac.		
	Encelia farinosa	Brittlebush	1.0 lbs./ac.		
	Escholtzia mexicana	Desert Poppy	1.0 lbs./ac.		
	Isocoma tenuisecta	Burrowweed	1.0 lbs./ac.		
	Larrea tridentata	Creosote	2.0 lbs./ac.		
	Lesquerella gordonii	Bladderpod	1.0 lbs./ac.		
	Lupinus sparsiflorus	Lupine	1.0 lbs./ac.		
	Lycium andersonii	Wolfberry	2.0 lbs./ac.		
	Parkinsonia microphyllum	Foothills Palo Verde	1.5 lbs./ac.		
	Prosopis velutina	Velvet Mesquite	1.0 lbs./ac.		
	Psilostrophe cooperi	Paperflower	1.0 lbs./ac.		
	Senna covesii	Desert Senna	1.0 lbs./ac.		
	Sphaeralcea ambigua	Desert Globemallow	0.5 lbs./ac.		
	Sporobolus cryptandrus	Sand Dropseed	1.0 lbs./ac.		
	Zinnia acerosa	Desert Zinnia	0.5 lbs./ac.		
	TOTAL PLS RATE:		25 PLS/ACRE		

Note: Seeding information for reference only. See Landscape Plans.

Ana M. Olivares, P.E., Director

Designed	WDC		Date
Drawn	WDC		05/18
Checked	WDC/LM		05/18
Proj. Engr.			05/18

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — ARIZONA — 46201 — LAURA MICHAEL WHEAT — EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

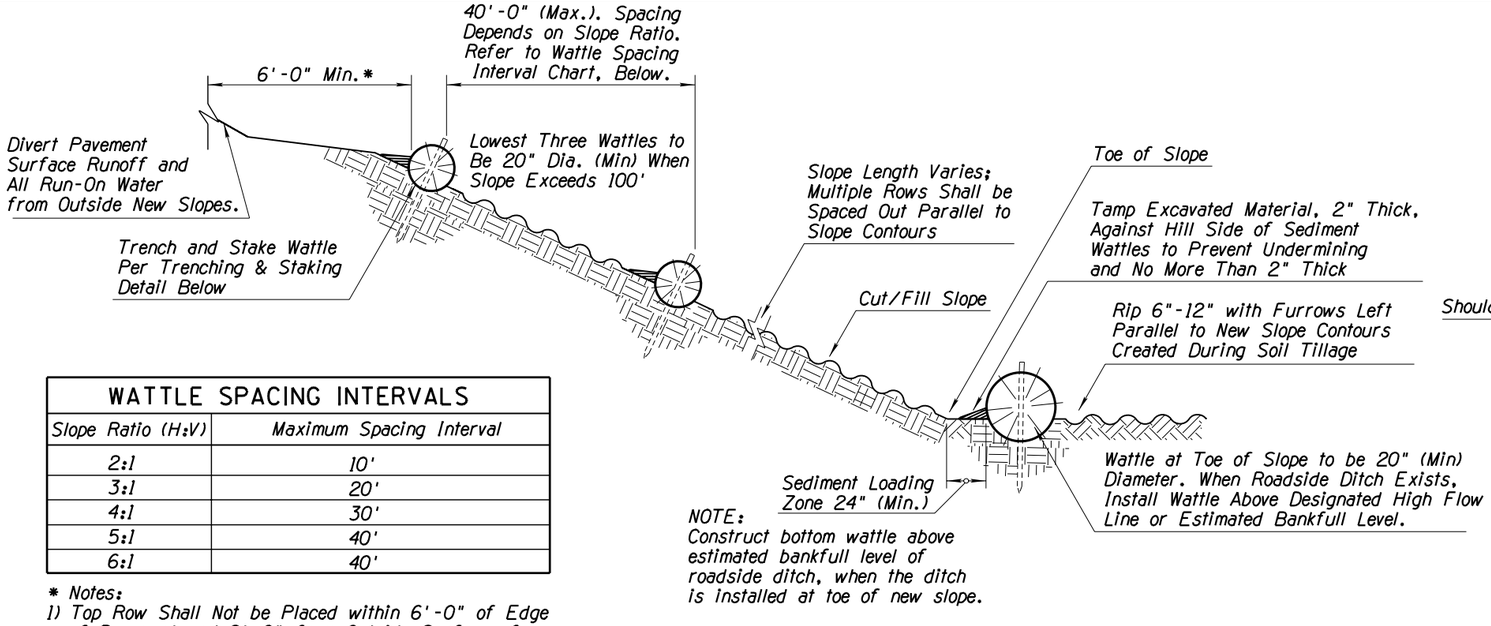
CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU DIG
ARIZONA 811
CALL BLUE STAKE, INC. 602-263-1100
Not Member of Underground Service Alert, Inc.

Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
SUMMARY SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet EC01 of EC10	Page 88 of 109

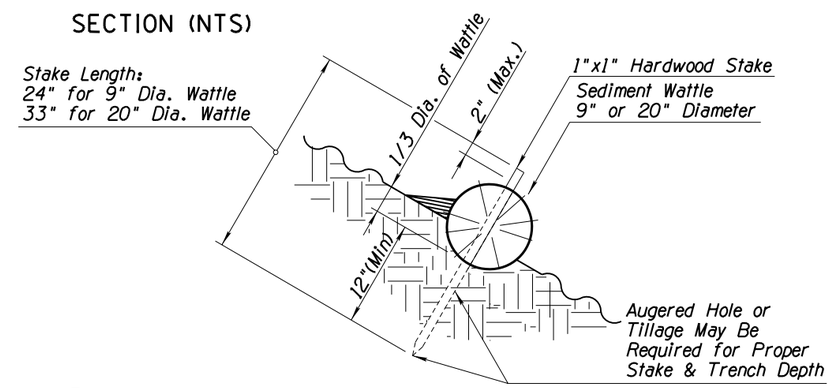


NOTE:
Construct bottom wattle above estimated bankfull level of roadside ditch, when the ditch is installed at toe of new slope.

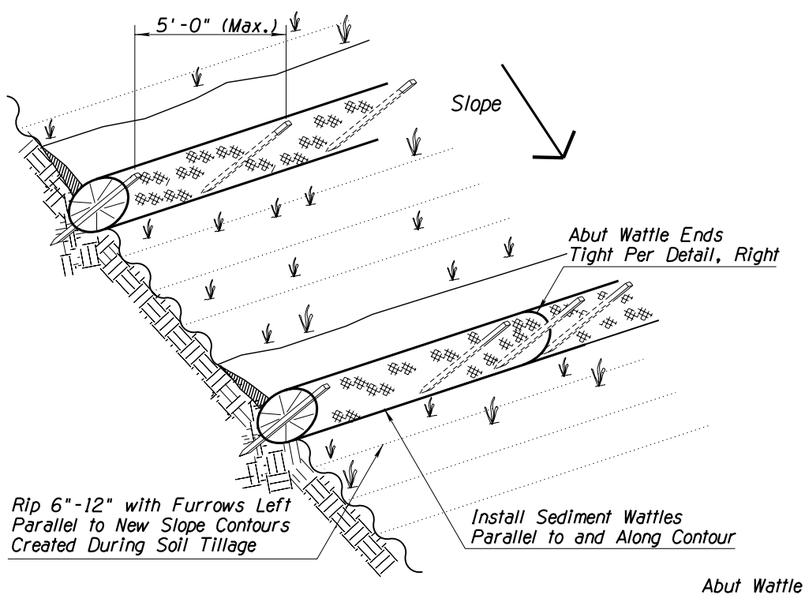
SECTION (NTS)

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'

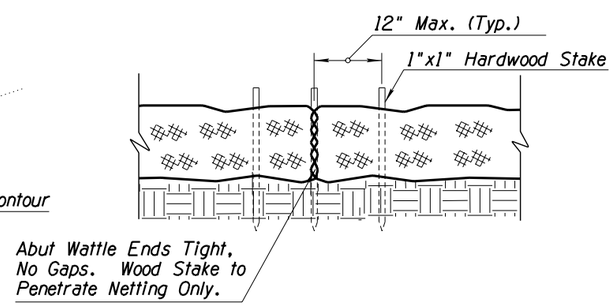
* Notes:
1) Top Row Shall Not be Placed within 6'-0" of Edge of Pavement and 9'-0" from Outside Surface of Barrier.
2) For erosive soils, place rows of wattles closer together.
3) For soils with low erosive potential, place rows of wattles further apart.



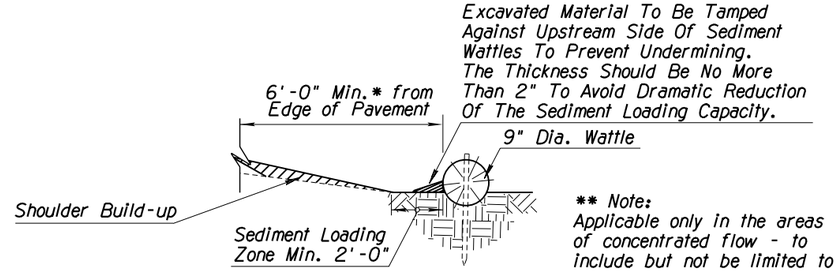
SEDIMENT WATTLE STAKING DETAIL (NTS)



SEDIMENT WATTLE LAYOUT (NTS)



SEDIMENT WATTLE OVERLAP (NTS)



NEW SHOULDER BUILDUP ** PROTECTION SECTION (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.

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. 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 Project Specifications.
6. 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.
7. Installation and maintenance of Sediment Wattle BMPs shall not negatively impact traffic safety, nor the designed function of roadway or bridge drainage facilities.
8. Install and maintain Sediment Wattle BMPs to carry the stormwater of at least 2-year, 24-hour events.
9. Refer to Project Specification Section 810 for Sediment Wattle material specifications.
10. Make field adjustments and corrections to ensure NO sensitive biological resources (native species / habitats) will be adversely impacted.

DETAIL E1
SEDIMENT WATTLE

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — 4501 LEE LUCAS — STATE OF ARIZONA — EXPIRES 6-30-2019

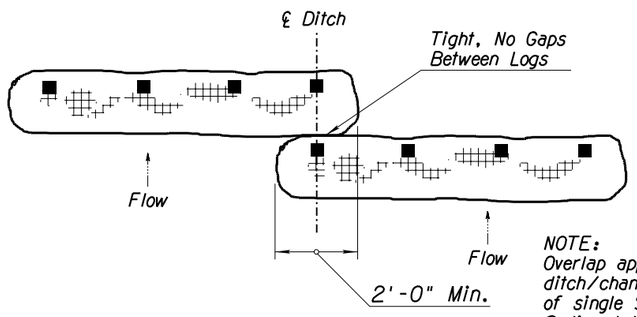
WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

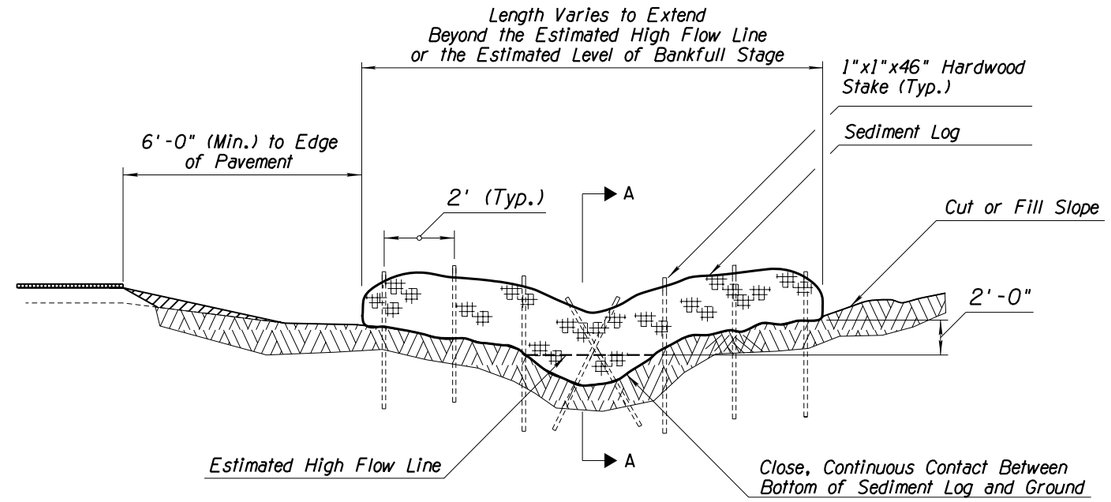
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet EC02 of EC10	Page 89 of 109



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)



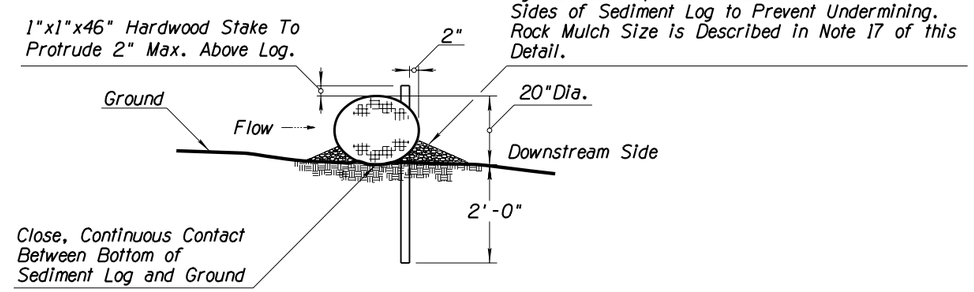
SEDIMENT LOG IN DITCH/CHANNEL SECTIONAL ELEVATION (NTS)

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 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 Rock Mulch. Natural river-run materials such as rounded river rocks/cobblestones and pebbles are NOT acceptable. Rock Mulch gradation is as follows:

ROCK MULCH GRADATION

Sieve Size	Percent Passing
3 Inch	100%
2 Inch	50-75%
1 Inch	10-20%



SECTION A-A (NTS)

DETAIL E2
SEDIMENT LOG

Scale:	N/A	Sheet EC03 of EC10	Page 90 of 109

Ana M. Olivares, P.E., Director

Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

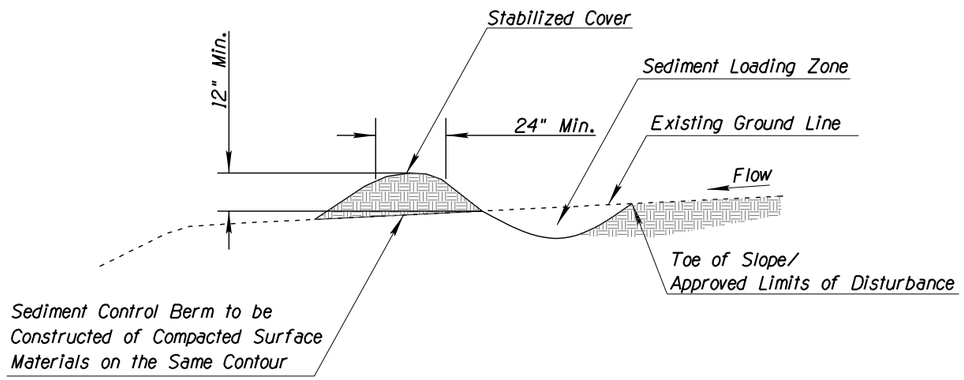
REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 4501 LAUREN K. WHEAT — EXPIRES 1-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO



SEDIMENT CONTROL BERM
SECTION (NTS)

NOTES:

1. Locate Sediment Control Berms as indicated on plans or as directed by the Engineer.
2. Surface materials i.e. soil, rock, branches, leaves, slash and chips shall be scraped from the existing grade as needed to construct the berm prior to placement of roadway embankment. After scraping material into berm, compact berm as shown. Rock and slash shall extend no more than 4" above the surface.
3. Construct Sediment Control Berm on the same contour as the toe of new slope and a miniumum of 2'-0" beyond the toe of new slope. For the seeded areas, till to form minor ridges and furrows parallel to new slope contours and as specified in Section 805 of the Standard Specifications and the Special Provisions.
4. The installation and maintenance of Sediment Control Berm BMPs shall not negatively impact traffic safety, nor the designed function of roadway or bridge drainage facilities. For erosion/sediment control purposes, Sediment Control Berm BMPs shall be installed and maintained to carry the stormwater of at least 2-year, 24-hour events.
5. Remove Sediment Control Berms per the direction of the Engineer or as soon as practicable upon stabilization of the construction disturbed area.
6. Make field adjustments and corrections of Sediment Control Berm BMP immediately if it is causing flooding, erosion, and/or affecting roadway safety.
7. Sediment Control Berms may be paid as a part of slope construction/ roadway excavation. When paid separately, the Sediment Control Berm 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.
8. OPTION TO SEDIMENT CONTROL BERM: When shown on layout plans and/or called for in Special Provisions, for urban situations, or where surface materials are not available, use wattles. Wattles shall be selected, installed, and maintained in accordance with manufacturers' specifications and good engineering practices. Refer to Sediment Wattle BMP detail.
9. Make field adjustments and corrections to ensure NO sensitive biological resources (native species / habitats) will be adversely impacted.

DETAIL E3
SEDIMENT CONTROL BERM

Ana M. Olivares, P.E., Director

Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT 46501 LAURA E. MICHAEL ARIZONA U.S.A. EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

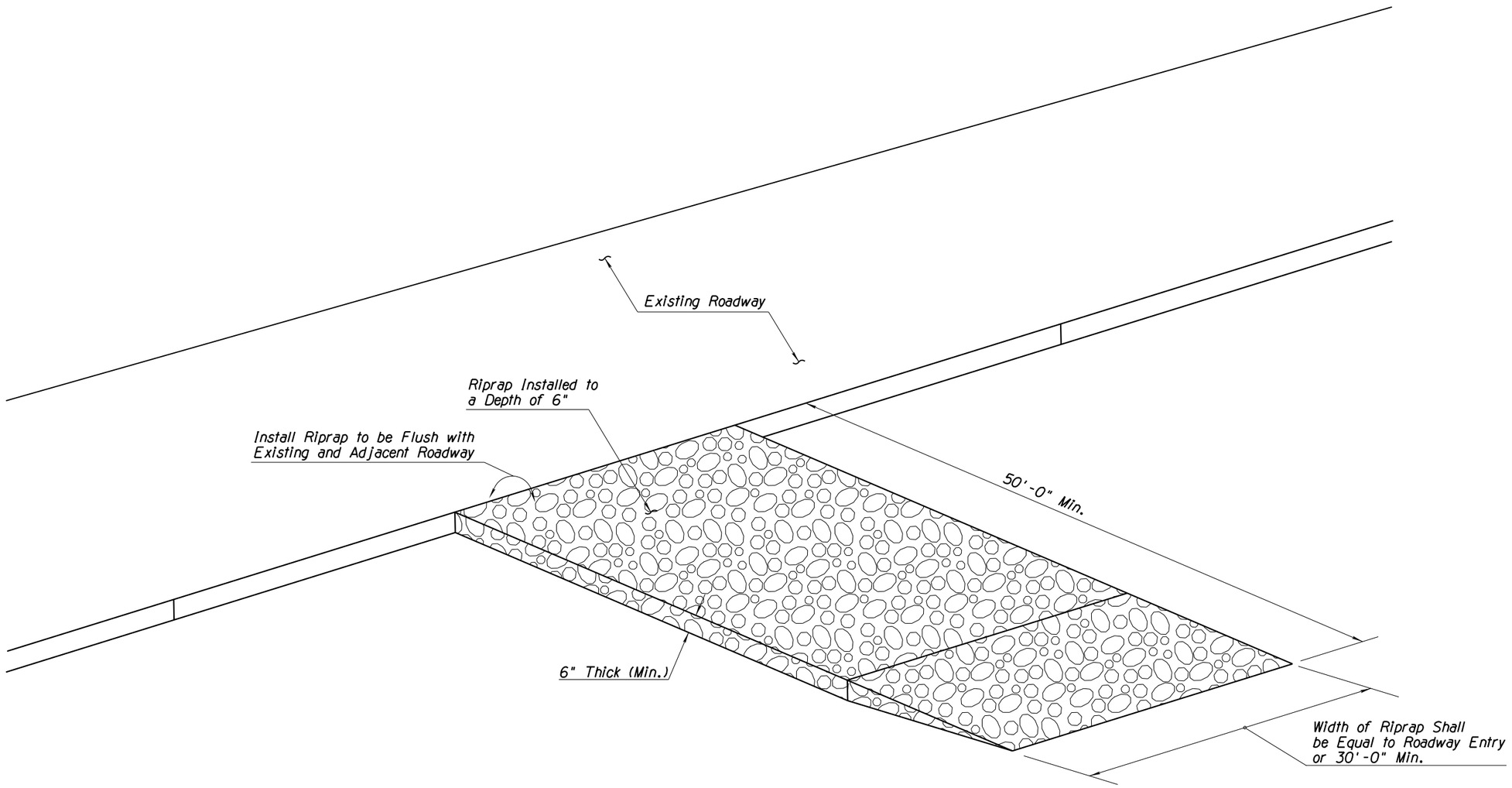
ARIZONA811 BLUE STAKE, INC.
CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU BEGIN EXCAVATION
NOTICE TO CONTRACTORS: ARIZONA REVISED STATUTES 40-360.21 A.1 REQUIRES 2 FULL WORKING DAYS NOTICE BEFORE YOU DIG

Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet EC04 of EC10	Page 91 of 109



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 Riprap materials in drive paths when dirt or mud accumulates.
3. Riprap materials shall be fractured/crushed rocks in angular shape. Natural river-run materials, especially rounded natural river rocks, are not acceptable.
4. Field adjust and correct Construction Entrance/Exit Riprap Pad BMP immediately if it is causing flooding and/or affecting roadway safety.

DETAIL E4

STABILIZED CONSTRUCTION ENTRANCE/EXIT

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT 46501 WILLIAM D. BOPP STATE OF ARIZONA
EXPIRES 6-30-2019

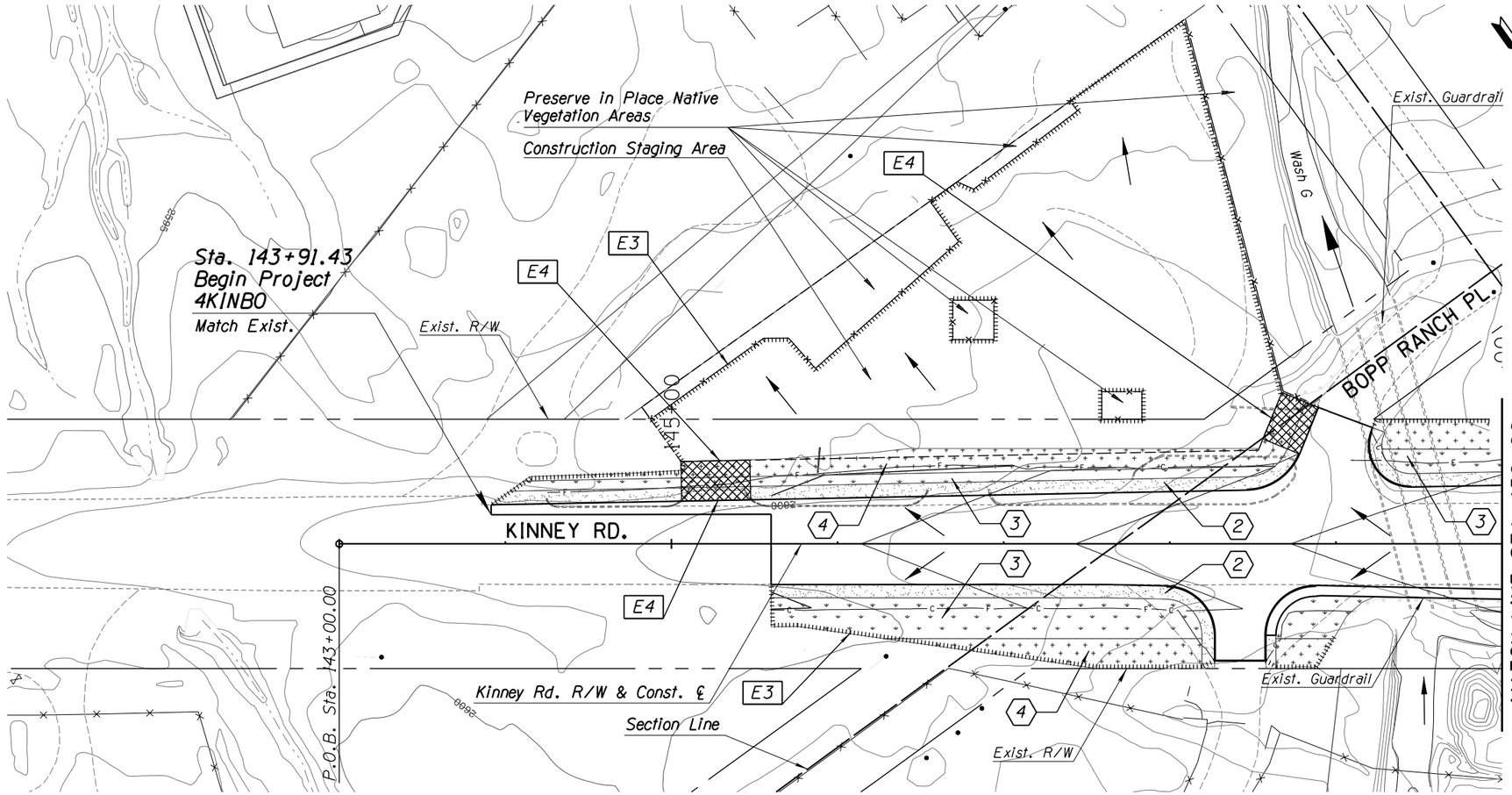
WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

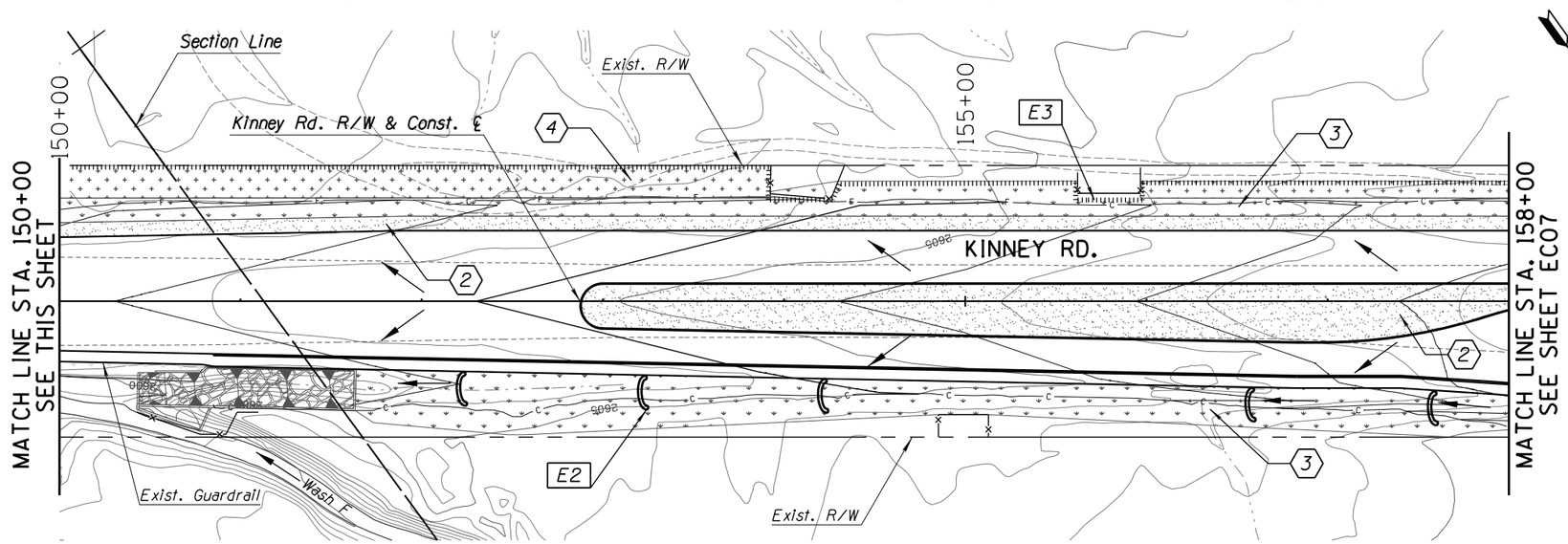
Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
DETAIL SHEET
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	N/A	Sheet EC05 of EC10	Page 92 of 109





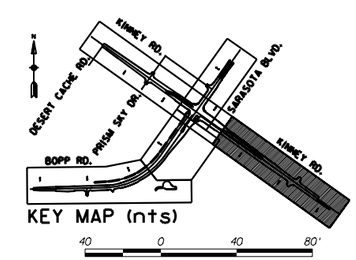
LEGEND

1	Pavers	
2	Granite Mulch (7/8" Screened)	
3	Seeding (Class II) Low Growing	
4	Seeding (Class II) Desert Scrub	

EROSION AND POLLUTION CONTROL BMP SCHEDULE

KEYNOTE	BMP	SYMBOL
E1-9"	9" Dia. Sediment Wattle	
E2	20" Dia. Sediment Log	
E3	Sediment Control Berm	
E4	Stabilized Construction Entrance	
	Flow Arrow	
	Preservation Fencing (for reference only)	

NOTES:
1. Refer to Summary of Quantities & Notes Sheet, EC01, for quantities and General Notes.
2. Refer to Project Specifications for additional information.
3. Refer to Drainage Details for permanent erosion control structures and all inlet/outlet protection.
4. Refer to Drainage Plans and Details for Riprap locations.



Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 46501 — LAWRENCE MICHAEL — EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

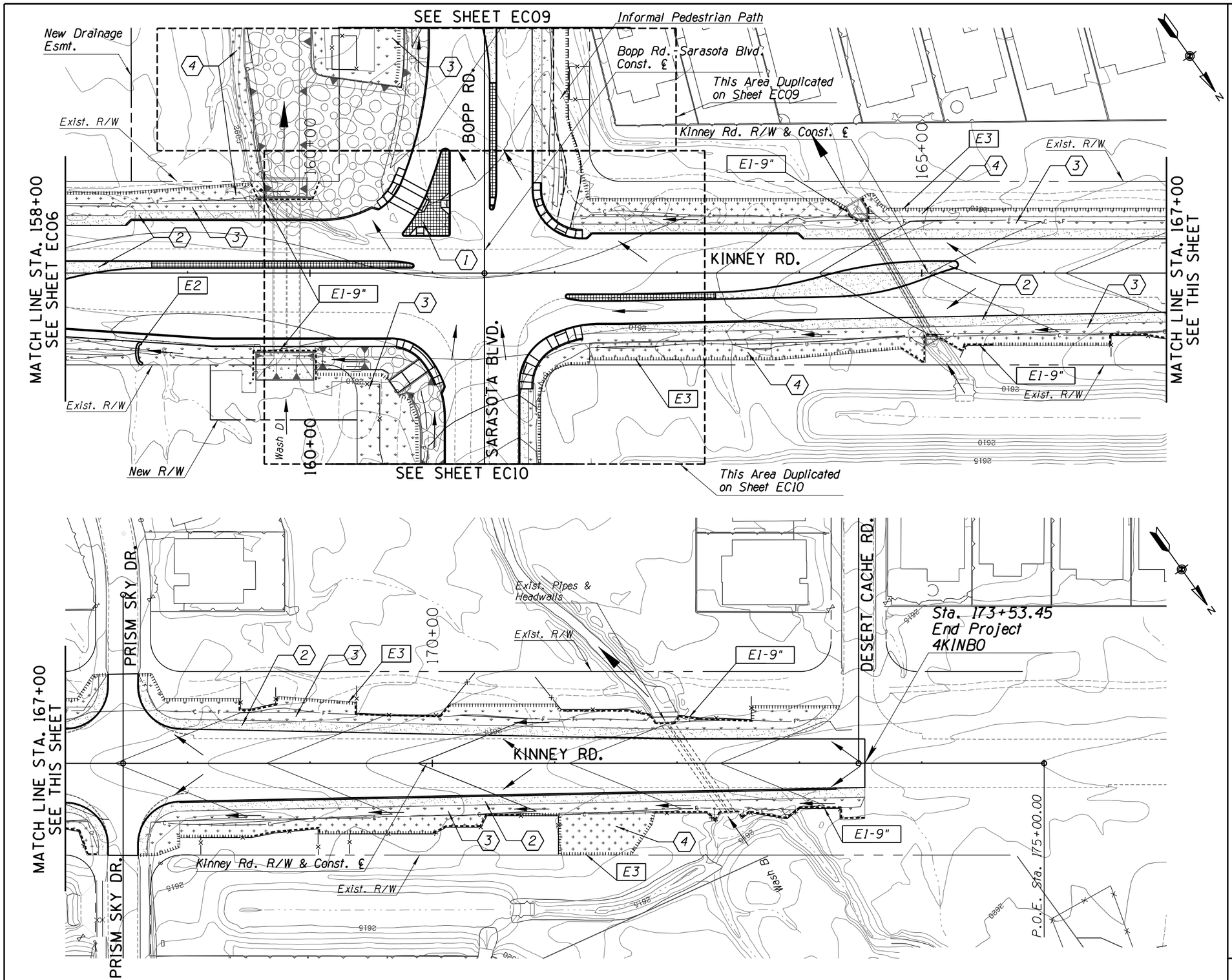
Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+91 TO STA. 158+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet EC06 of EC10 | Page 93 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_EC06 Plan Sheet.dgn | DATE: 5/29/2018 | TIME: 1:43:29 PM | estoicof



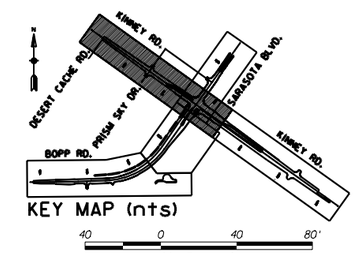
LEGEND

1	Pavers	
2	Granite Mulch (7/8" Screened)	
3	Seeding (Class II) Low Growing	
4	Seeding (Class II) Desert Scrub	

EROSION AND POLLUTION CONTROL BMP SCHEDULE

KEYNOTE	BMP	SYMBOL
E1-9"	9" Dia. Sediment Wattle	
E2	20" Dia. Sediment Log	
E3	Sediment Control Berm	
E4	Stabilized Construction Entrance	
	Flow Arrow	
	Preservation Fencing (for reference only)	

NOTES:
1. Refer to Summary of Quantities & Notes Sheet, EC01, for quantities and General Notes.
2. Refer to Project Specifications for additional information.
3. Refer to Drainage Details for permanent erosion control structures and all inlet/outlet protection.
4. Refer to Drainage Plans and Details for Riprap locations.



Scale:	1"= 40' Horiz.	Sheet EC07 of EC10	Page 94 of 109

Ana M. Olivares, P.E., Director

Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

No.	Revision Description	Engineer	Date

REGISTERED LANDSCAPE ARCHITECT — 46501 — MICHAEL LEE KEEFE — ARIZONA — EXPIRES 6-30-2019

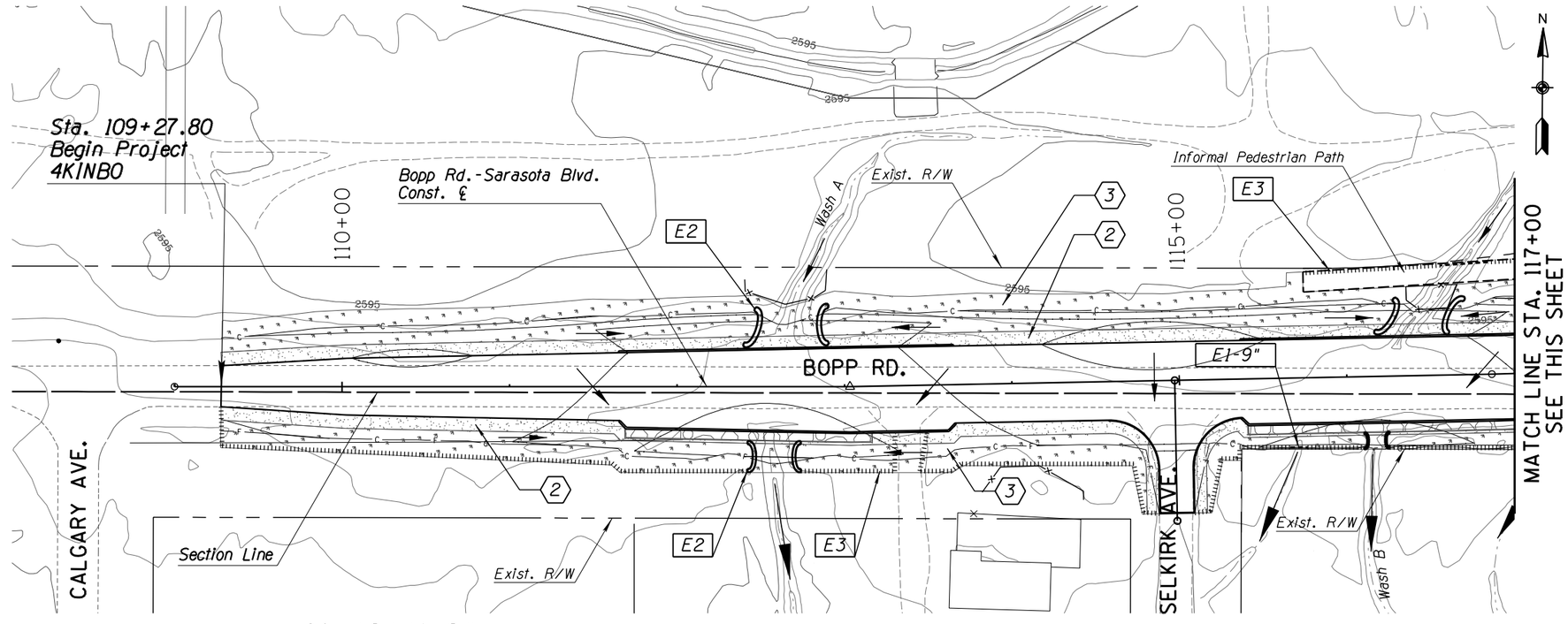
WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

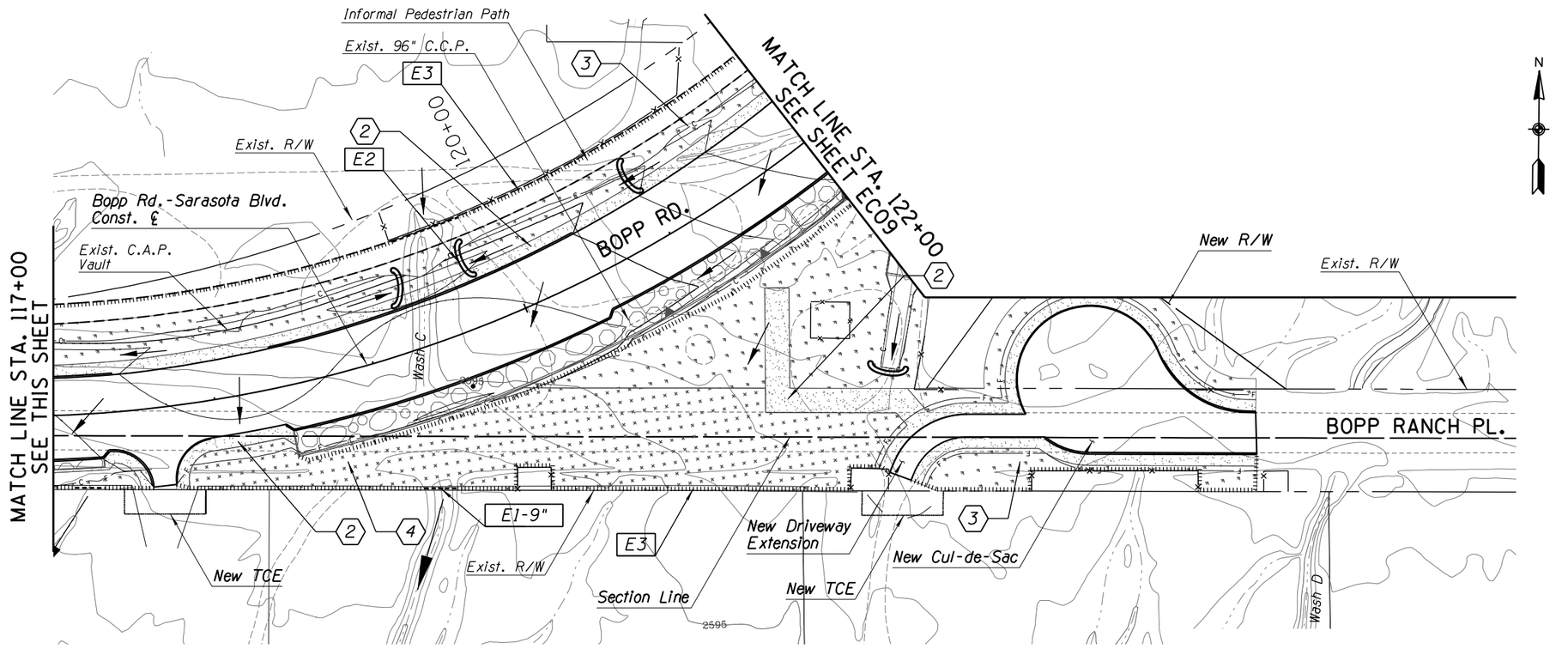
Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 158+00 TO STA. 173+53
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_EC07 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:30 PM estoicof





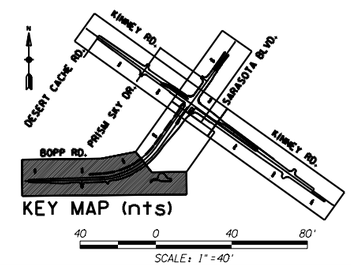
LEGEND

1	Pavers	
2	Granite Mulch (7/8" Screened)	
3	Seeding (Class II) Low Growing	
4	Seeding (Class II) Desert Scrub	

EROSION AND POLLUTION CONTROL BMP SCHEDULE

KEYNOTE	BMP	SYMBOL
E1-9"	9" Dia. Sediment Wattle	
E2	20" Dia. Sediment Log	
E3	Sediment Control Berm	
E4	Stabilized Construction Entrance	
	Flow Arrow	
	Preservation Fencing (for reference only)	

NOTES:
1. Refer to Summary of Quantities & Notes Sheet, EC01, for quantities and General Notes.
2. Refer to Project Specifications for additional information.
3. Refer to Drainage Details for permanent erosion control structures and all inlet/outlet protection.
4. Refer to Drainage Plans and Details for Riprap locations.



KEY MAP (nts)

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — LAURIE MICHAEL BUCHANAN — 46501 — EXPIRES 6-30-2019

WHEAT | DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

CLM AZ Inc. dba CLM Arizona Corp.
Civil Engineers & Land Surveyors
Phone: 520-881-8181 Fax: 520-881-8184
Tucson, Arizona 85712
Mr. Mike Lane, Director, REGISTERED CIVIL ENGINEER

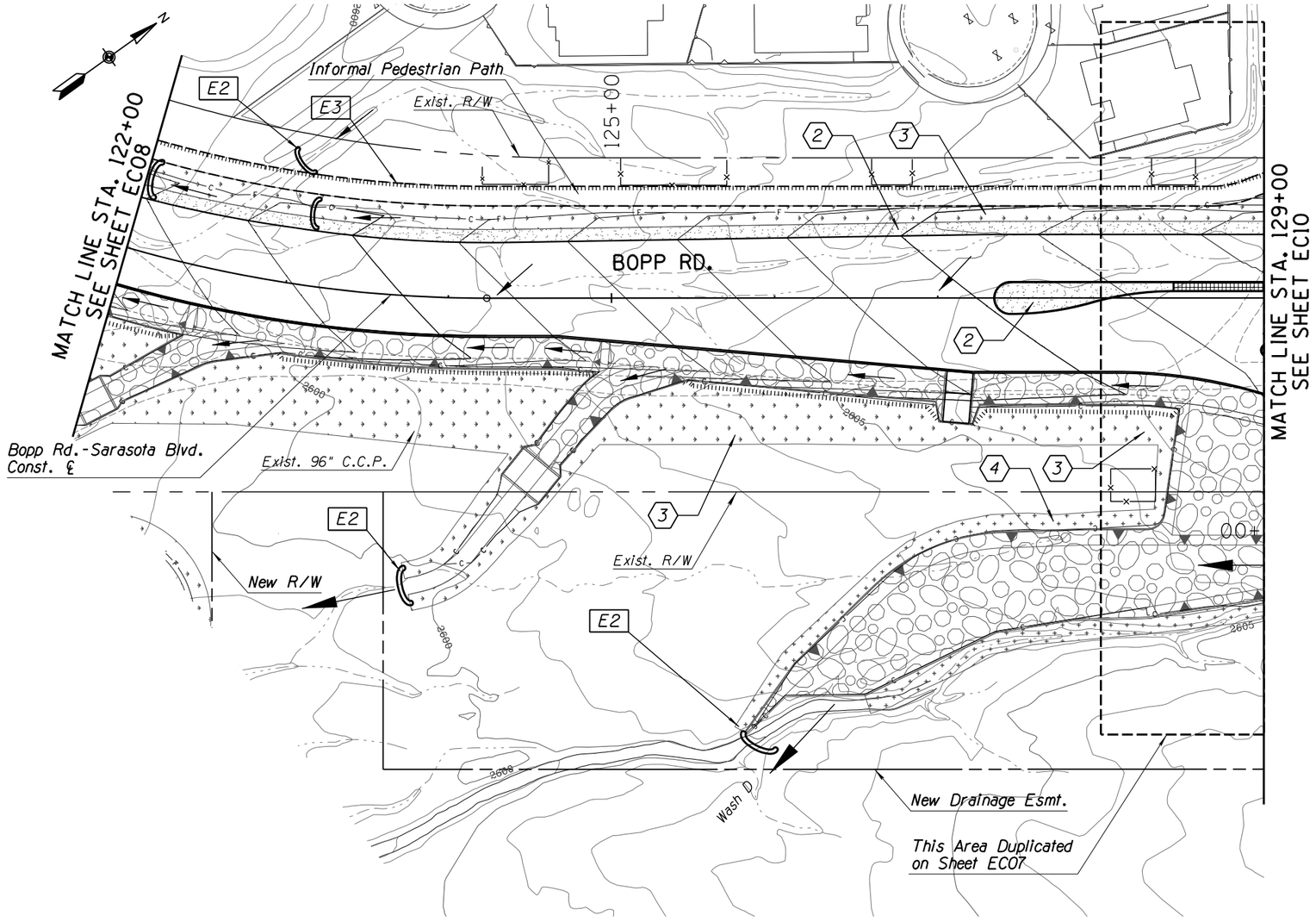
Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+27 TO STA. 122+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet EC08 of EC10	Page 95 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_EC08 Plan Sheet.dgn | DATE: 5/29/2018 | TIME: 1:43:30 PM | astoicof



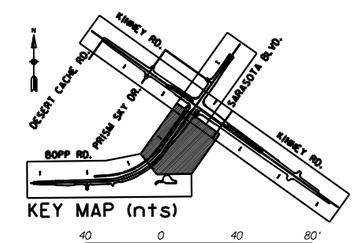
LEGEND

1	Pavers	
2	Granite Mulch (7/8" Screened)	
3	Seeding (Class II) Low Growing	
4	Seeding (Class II) Desert Scrub	

EROSION AND POLLUTION CONTROL BMP SCHEDULE

KEYNOTE	BMP	SYMBOL
E1-9"	9" Dia. Sediment Wattle	
E2	20" Dia. Sediment Log	
E3	Sediment Control Berm	
E4	Stabilized Construction Entrance	
	Flow Arrow	
	Preservation Fencing (for reference only)	

NOTES:
1. Refer to Summary of Quantities & Notes Sheet, EC01, for quantities and General Notes.
2. Refer to Project Specifications for additional information.
3. Refer to Drainage Details for permanent erosion control structures and all inlet/outlet protection.
4. Refer to Drainage Plans and Details for Riprap locations.



KEY MAP (nts)

40 0 40 80'

SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDG	05/18
Drawn	WDG	05/18
Checked	WDG/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT 46501 LAURA MICHELE MILLER STATE OF ARIZONA
EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.COM

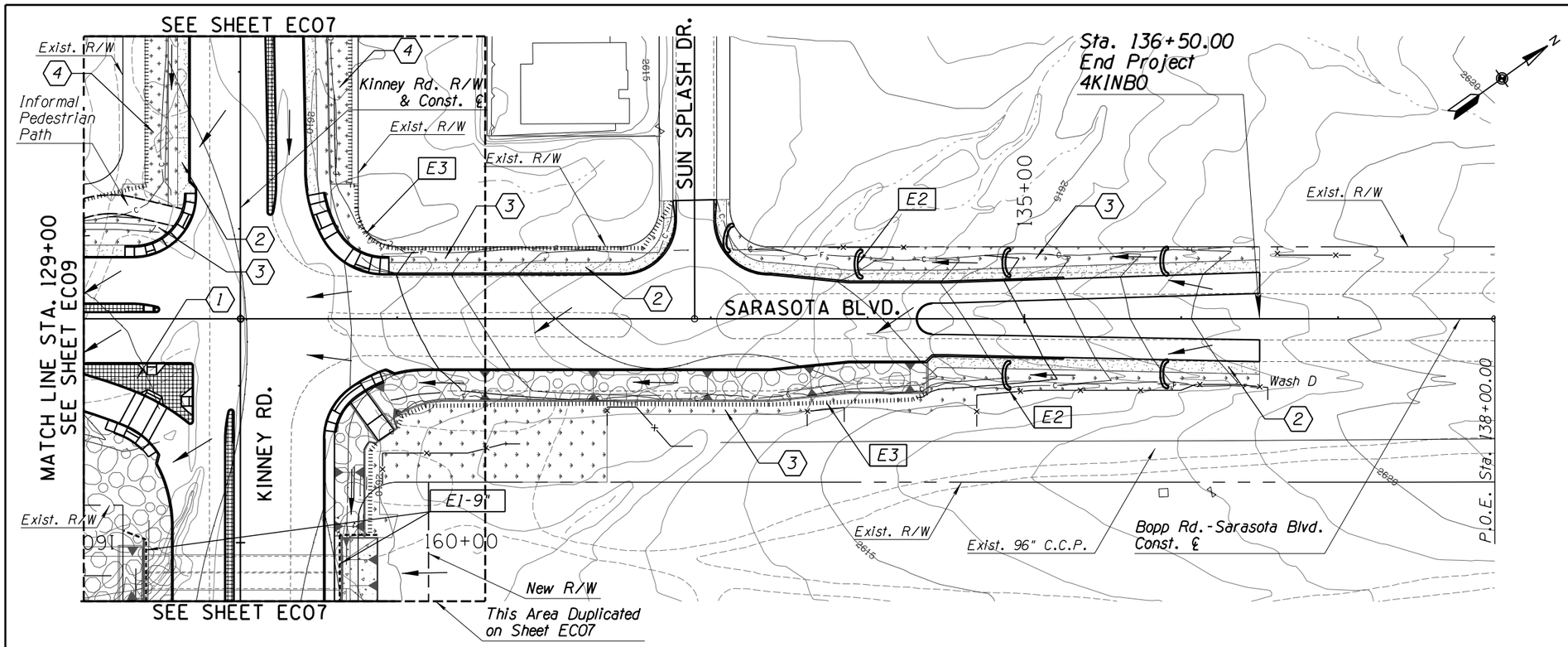
Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA.122+00 TO STA.129+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet EC09 of EC10 | Page 96 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_EC09 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:31 PM estoicof



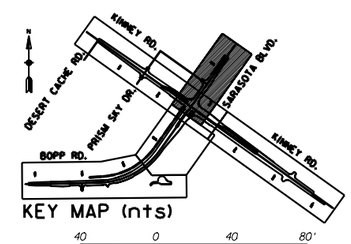
LEGEND

1	Pavers	
2	Granite Mulch (7/8" Screened)	
3	Seeding (Class II) Low Growing	
4	Seeding (Class II) Desert Scrub	

EROSION AND POLLUTION CONTROL BMP SCHEDULE

KEYNOTE	BMP	SYMBOL
E1-9"	9" Dia. Sediment Wattle	
E2	20" Dia. Sediment Log	
E3	Sediment Control Berm	
E4	Stabilized Construction Entrance	
	Flow Arrow	
	Preservation Fencing (for reference only)	

NOTES:
1. Refer to Summary of Quantities & Notes Sheet, EC01, for quantities and General Notes.
2. Refer to Project Specifications for additional information.
3. Refer to Drainage Details for permanent erosion control structures and all inlet/outlet protection.
4. Refer to Drainage Plans and Details for Riprap locations.



KEY MAP (nts)

40 0 40 80'

SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	WDC	05/18
Drawn	WDC	05/18
Checked	WDC/LM	05/18
Proj. Engr.		

REGISTERED LANDSCAPE ARCHITECT — STATE OF ARIZONA — 46501 — WILLIAM D. CLARK — EXPIRES 6-30-2019

WHEAT DESIGN GROUP
LANDSCAPE ARCHITECTS
500 N. TUCSON BLVD. SUITE 150 | TUCSON ARIZONA 85716
T: 520 884 7911 | www.WHEATDESIGNGROUP.com

Pima County Department of Transportation

EROSION AND POLLUTION CONTROL
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 129+00 TO STA. 136+50
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

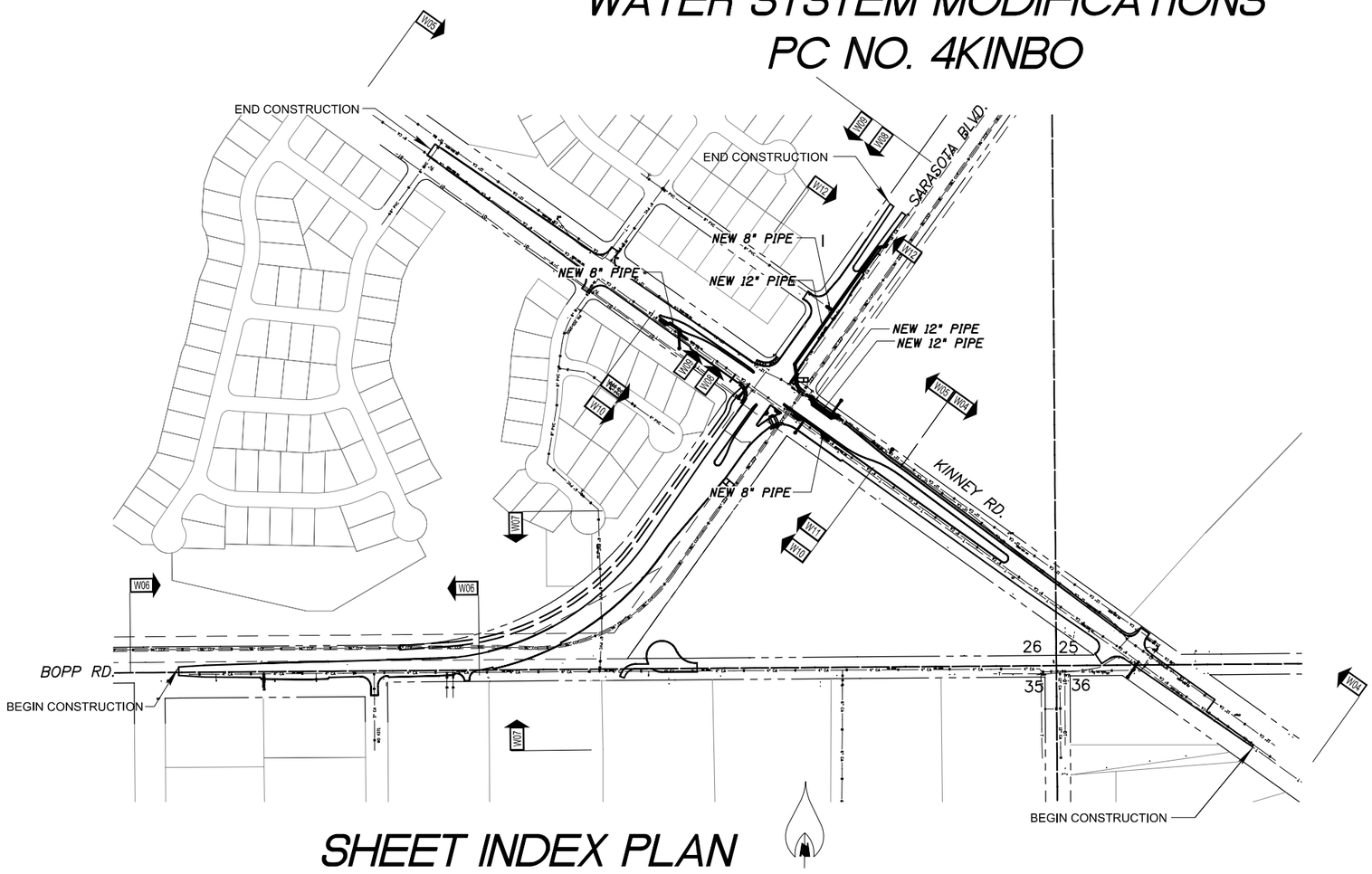
Scale:	1"= 40' Horiz.	Sheet EC10 of EC10	Page 97 of 109

FILE NAME: M:\Bopp Road-17904-Data\Sheet Files\4KINBO_EC10 Plan Sheet.dgn DATE: 5/29/2018 TIME: 1:43:32 PM astoicof

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS

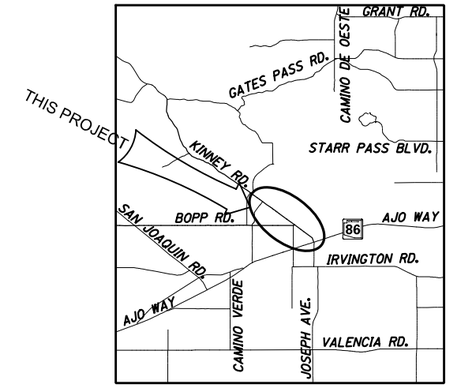
WATER SYSTEM MODIFICATIONS

PC NO. 4KINBO



SHEET INDEX PLAN

1"=200'



LOCATION MAP

SEC. 25, 26, 35 & 36 T. 14 S., R. 12 E.
LATITUDE 32°10'39" N, LONGITUDE 111°04'45" W
G. & S.R.B. & M.
WARD 3
PIMA COUNTY, ARIZONA
3" = 0.5 MILE

INSPECTOR'S RECORD DRAWING COMMENTS

INSPCT. _____
CONTR. _____
_____
START _____ FINAL _____
PIPE MFR. PVC _____
PIPE MFR. DIP _____
PIPE MFR. OTHER _____
SVC LINE MAT _____
B.F.'S _____
GATES _____
F.H.'S BRAND _____ MAT _____
MAGNETIC TAPE INST. YES ☐ NO ☐
TRACER WIRE INST. YES ☐ NO ☐
ZONE _____ PSI _____

MAPPING INFORMATION

PLOTTED _____ ON VM _____
CHECKED _____ DATE _____

RESERVED FOR ENGINEERING RECORD DRAWING STAMP

Date:

Accepted by P.C.D.O.T. for Location in Right-Of-Way

Date:

Pima County Regional Wastewater Reclamation Department

Date:

Accepted by City of Tucson Engineer for Location in Right-Of-Way

SHEET INDEX

PAGE	SHEET	DESCRIPTION
98	W01	COVER SHEET
99	W02	NOTES, LEGEND AND ABBREVIATIONS SHEET
100	W03	BID SCHEDULE MATERIALS QUANTITIES SUMMARY SHEET
101-103	W04-W06	WATER MODIFICATION PLAN SHEETS
104-109	W07-W12	WATER MODIFICATION PLAN AND PROFILE SHEETS

FOR ACCEPTANCE CONDITIONS, SEE THE WATER SYSTEM MODIFICATION NOTES, NOTE 1, SHEET W02 OF W12.

CITY OF TUCSON, WATER DEPARTMENT DATE

Ana M. Olivares, P.E., Director

Designed	DJB	05/18
Drawn	DJB	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5-31-18 EXPIRES 3-31-2020 Arizona U.S.A.

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

CALL at least two full working days before you dig
ARIZONA BLUE STAKE, INC.
(602) 263-1100 (800) 782-5348

Pima County Department of Transportation

COVER SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale:	N.T.S.	Sheet W01 of W12	Page 98 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W01.dgn DATE: 5/24/2018 TIME: 3:12:06 PM kershnerm

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 WARRANTY AND GUARANTEE DURATION FOR ALL WATER WORK ON THIS PROJECT SHALL BE TWO (2) YEARS COMMENCING ON THE DATE OF FINAL ACCEPTANCE OF THE AGENCY ROADWAY IMPROVEMENTS PROJECT.

2. CURRENT STANDARDS:

ALL WATER SYSTEM MODIFICATION CONSTRUCTION WORK SHALL CONFORM TO THE FOLLOWING STANDARDS AND SPECIAL PROVISIONS:
A. THE LATEST EDITION OF THE PIMA ASSOCIATION OF GOVERNMENTS (PAG) STANDARDS AND THE TUCSON WATER STANDARD SPECIFICATIONS AND DETAILS MANUAL, AND THE SPECIAL PROVISIONS FOR THIS PROJECT.
B. THE WATER SYSTEM 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) CALENDAR DAYS PRIOR TO ANY WATER WORK. THE CONTRACTOR SHALL REFER TO THE CITY OF TUCSON WATER DEPARTMENT PLAN NO. 5-092-2017.
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. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT INFORMATION BEFORE ORDERING ANY SPECIAL FITTINGS OR EQUIPMENT.

5. SHUT DOWN OF DISTRIBUTION MAINS:

SHUT-DOWN OF THE EXISTING WATER SYSTEM REQUIRING THE OPERATION OF TUCSON WATER VALVES SHALL BE COORDINATED THROUGH A CITY OF TUCSON WATER DEPARTMENT CONSTRUCTION INSPECTOR A MINIMUM OF FIVE (5) CALENDAR DAYS IN ADVANCE.

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 (5.0') 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 RELOCATED 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:

FIVE (5) WORKING DAYS 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 FIVE (5) DAYS 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 WATER DEPARTMENT COMMERCIAL SECTION.
A. CONSTRUCTION WATER SPECIAL PERMIT:
THERE WILL BE NO CHARGE FOR THIS PERMIT, BUT THE CONTRACTOR MUST PAY THE SUM OF $30.00 PLUS TAX AS THE ESTIMATED COST OF THE WATER TO BE USED, THIS WATER MAY ONLY 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 PURPOSES 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 SD-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 APPROPRIATE NEW TAPE. THERE SHALL BE NO ADDITIONAL CHARGE FOR THIS REINSTALLATION.

16. CORROSION CONTROL:

THIS PROJECT HAS CORROSION CONTROL/MONITORING WORK INCLUDED AS PART OF THE CONTRACT. THE CONTRACTOR SHALL PROVIDE ALL SUBMITTALS, COMPONENTS AND REPORTS OF THE CORROSION WORK AS CALLED FOR ON THESE PLANS AND IN THE SPECIAL PROVISIONS.

17. 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.

18. 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.

19. 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" AMENDING SECTION 1417 OF THE SAFE DRINKING WATER ACT.

20. FIRE HYDRANTS:

COORDINATE ANY REMOVAL OF OLD LOCKS AND INSTALLATION OF NEW LOCKS WITH THE TUCSON WATER CONSTRUCTION INSPECTOR FOR ALL FIRE HYDRANTS WITHIN THE PROJECTAREA.

21. PROXIMITY WATER CONFLICTS:

AT THE DISCRETION OF THE TUCSON WATER REPRESENTATIVE, RECONSTRUCTION OF EXISTING WATER PIPELINE FACILITIES WILL BE REQUIRED IF THE PUBLIC AGENCY PROJECT HAS FACILITIES THAT HAVE LESS THAN TWO FEET VERTICAL WORKING COVER OVER THE WATER FACILITIES. THE CONTRACTOR MAY BE REQUIRED TO EXPOSE WATER FACILITIES IN THE VICINITY OF THE PROPOSED WORK.

WATER SYSTEM MODIFICATION LEGEND & ABBREVIATIONS

PLAN SYMBOLS

EXISTING	PLAN SYMBOLS	NEW
6" CA PN 123-1963 W	POTABLE WATER MAIN	
6" CA PN 123-1963 R	RECLAIMED WATER MAIN	R
	POTABLE GATE VALVE	
	POTABLE BUTTERFLY VALVE	
	RECLAIMED BUTTERFLY VALVE	
	END CAP	
	BENDS, HORIZ. & VERT.	
6" W	MATERIAL CHANGE	
1" W	SERVICE LINE & METER BOX	
¾"	AIR RELEASE VALVE W/ SIZE	SIZE A
	CORROSION TEST STATION	
	SERVICE STUB W/ METER BOX	SIZE S
	SERVICE LINE ADJUSTMENT	S A
	METER ADJUSTMENT	M A
	RIGHT-OF-WAY	
	PROPERTY LINE	
	CONSTRUCTION CENTERLINE & SECTION LINE	
001-27-1917	PIMA COUNTY ASSESOR PARCEL NUMBER	
\\\\\	CITY OF TUCSON LIMITS	

ARV	AIR RELEASE VALVE	EXIST.	EXISTING
CCP	CONCRETE CYLINDER PIPE	L.F.	LINEAR FEET (FOOT)
CONC.	CONCRETE	LT.	LEFT
CONST. ℄	CONSTRUCTION CENTERLINE	P.N.	PARCEL NUMBER
CTS	CORROSION TEST STATION	PN	PLAN NUMBER
CU	COPPER	PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE	RW	RECLAIMED WATER
EOP	EDGE OF PAVEMENT	RD.	ROAD
ESMT	EASEMENT	RT.	RIGHT
		R/W	RIGHT-OF-WAY
		STA.	STATION

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS PROJECT WAS ESTABLISHED USING THE ARIZONA COORDINATE SYSTEM, NAD 1983 (2011), CENTRAL ZONE 0202. THE BASIS OF BEARING WAS MEASURED BETWEEN A FOUND 3" BRASS CAP SURVEY MONUMENT WITH NO MARKINGS AT THE QUARTER CORNER BETWEEN SECTIONS 26 AND 35, T14S R12E AND A 2" BRASS CAP SURVEY MONUMENT WITH A PUNCH STAMPED "42/014" AT THE SOUTHWEST CORNER OF SECTION 25, T14S R12E. SAID BEARING BEING N89°33'25"E.

BASIS OF ELEVATION

THE BASIS OF ELEVATION FOR THIS PROJECTIS PIMA COUNTY BENCHMARK DESIGNATION KINNEY 3, A 2" BRASS CAP SURVEY MONUMENT WITH PUNCH FLUSH WITH PAVEMENT LOCATED IN THE LEFT TURN LANE OF NORTHBOUND KINNEY ROAD SOUTH OF THE INTERSECTION OF BOPP ROAD, HAVING AN NAVD88 ELEVATION OF 2601.90 FEET.

Ana M. Olivares, P.E., Director

Designed	DJB	05/18
Drawn	DJB	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33452 CHARLENE J. ROBINSON DATE SIGNED 5/24/18 ARIZONA, U.S.A. EXPIRES 3-31-2020

AECOM www.aecom.com
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD, STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438

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 Department of Transportation

NOTES, LEGEND & ABBREVIATIONS SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

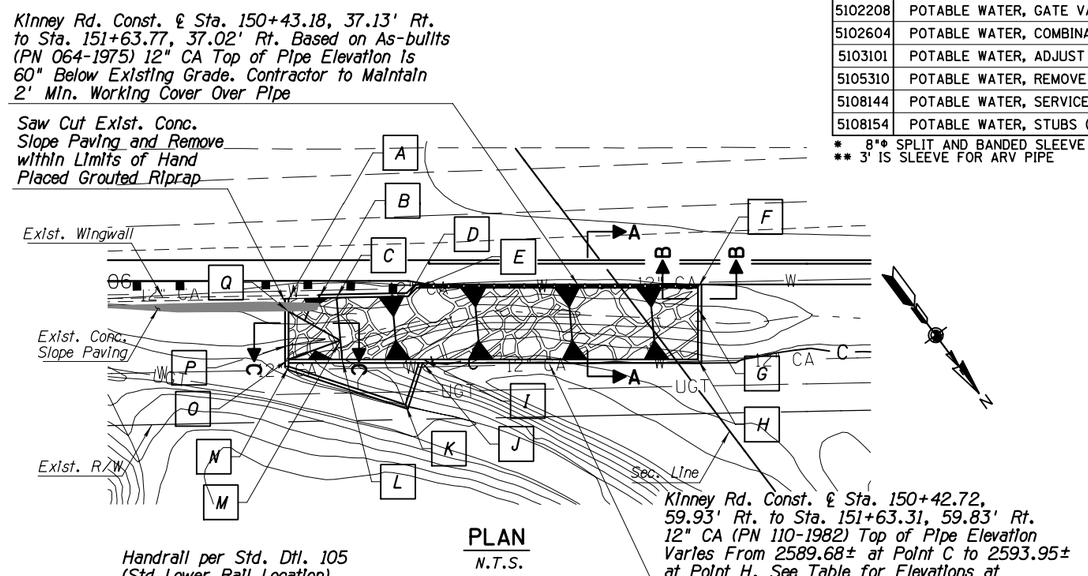
Scale:	N.T.S.	Sheet W02 of W12	Page 99 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD,GIS\910-CAD\20-SHEETS\4KINBO_W02.dgn DATE: 5/24/2018 TIME: 3:12:29 PM kershnerm

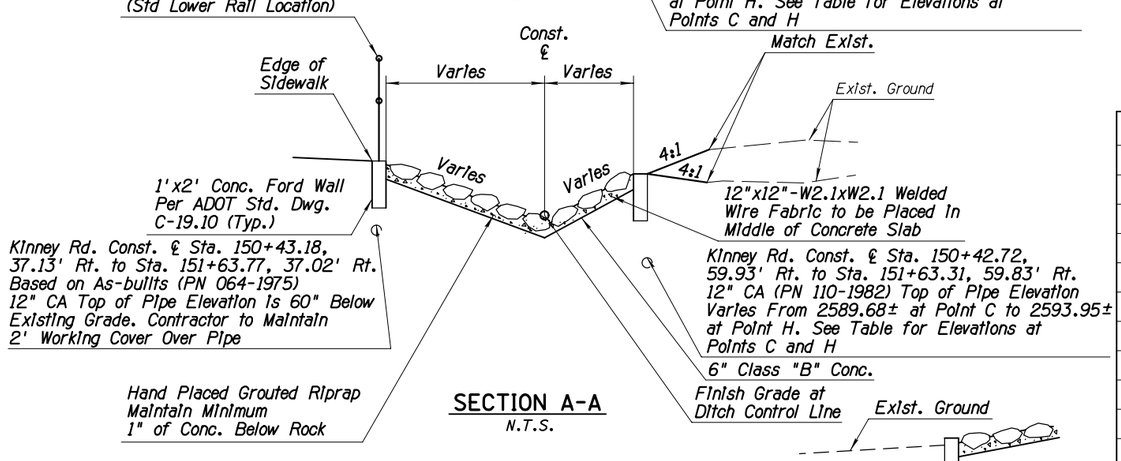
BID SCHEDULE MATERIAL QUANTITIES SUMMARY

ITEM NUMBER	ITEM DESCRIPTION	SHEET W04		SHEET W05		SHEET W06		SHEET W07		SHEET W08		SHEET W09		SHEET W10		SHEET W11		SHEET W12		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
5101106	POTABLE WATER PIPE, DI, 6" (CL 350)	-		50		-		-		-		-		-		-		-		50	
5101408	POTABLE WATER PIPE, PVC, 8", DR 14 (CL 305)	-		-		21*		-		-		240**		-		-		21		261	
5101412	POTABLE WATER PIPE, PVC, 12", DR 14 (CL 305)	-		-		-		-		525		-		149		149		-		823	
5102208	POTABLE WATER, GATE VALVE, 8"	-		-		-		-		-		-		-		-		1		1	
5102604	POTABLE WATER, COMBINATION AIR RELEASE VALVE, 1"	1		1		-		-		-		2		-		1		-		5	
5103101	POTABLE WATER, ADJUST VALVE BOX & COVER	4		7		3		-		-		-		-		-		-		14	
5105310	POTABLE WATER, REMOVE & DISPOSE FIRE HYDRANT	-		1		-		-		-		-		-		-		-		1	
5108144	POTABLE WATER, SERVICE LINE ADJUSTMENT (S/A), 1"	-		-		2		-		-		-		-		-		-		2	
5108154	POTABLE WATER, STUBS (S), 1"	-		1		-		-		-		-		-		-		-		1	

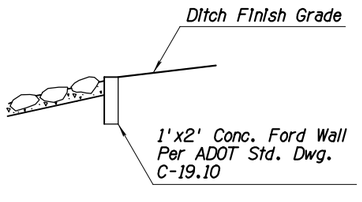
* 8"Φ SPLIT AND BANDED SLEEVE
** 3' IS SLEEVE FOR ARV PIPE



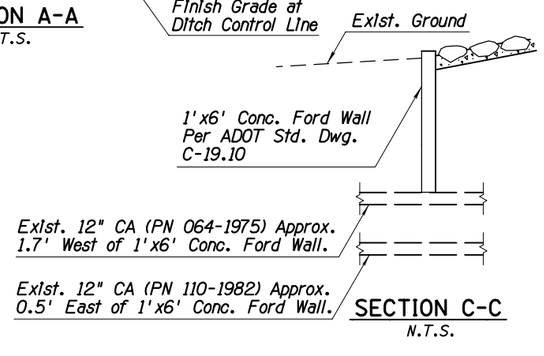
PLAN
N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



SECTION C-C
N.T.S.

RIPRAP APRON HORIZONTAL CONTROL

ID	STATION	OFFSET	ELEVATION
A	150+44.14	39.33' Rt.	2602.60
B	150+52.90	39.35' Rt.	2602.67
C	150+58.00	39.35' Rt.	2602.70
D	150+78.80	39.35' Rt.	2602.86
E	150+81.32	36.93' Rt.	2603.55
F	151+62.73	38.57' Rt.	2603.88
G	151+62.61	44.57' Rt.	2603.76
H	151+62.32	59.31' Rt.	2604.20
I	150+82.80	57.72' Rt.	2603.50
J	150+82.55	58.71' Rt.	2603.50
K	150+77.38	70.70' Rt.	2599.10
L	150+59.24	57.25' Rt.	2600.89
M	150+58.86	51.76' Rt.	2599.18
N	150+43.74	58.94' Rt.	2599.18
O	150+43.78	59.94' Rt.	2599.18
P	150+43.87	52.80' Rt.	2599.06
Q	150+44.06	43.01' Rt.	2600.64

All Stations and Offsets are Measured from Kinney Rd. Const. ℄ and to the Inside Edge of the Apron Toe Down.

UTILITY POTHOLE DATA TABLE

POTHOLE NO.	CONTROL LINE	STATION	OFFSET	DESCRIPTION	TOP OF UTILITY ELEVATION
P01	Bopp-Sara.	113+65.5	23.0' Rt.	6" Sewer	2588.35
P02	Bopp-Sara.	118+87.6	26.7' Lt.	96" C.C.P.	2590.22
P03	Bopp-Sara.	120+31.9	27.9' Rt.	96" C.C.P.	2590.30
P04	Bopp-Sara.	121+78.9	0.0' Rt.	10" Sewer	2596.43
P05	Bopp-Sara.	122+00.0	0.0' Rt.	6" P.V.C. Water	2594.02
P06	Bopp-Sara.	121+51.1	193.0' Rt.	4" C.A. Water	2593.21
P07	Kinney Rd.	159+50.4	17.0' Lt.	8" C.A. Water	2605.31
P08	Kinney Rd.	159+46.6	51.9' Rt.	12" C.A. Water	2601.23
P09	Kinney Rd.	159+46.7	59.4' Rt.	12" C.A. Water	2603.97
P10	Kinney Rd.	160+14.8	17.0' Lt.	8" C.A. Water	2603.65
P11	Kinney Rd.	160+13.6	51.9' Rt.	12" C.A. Water	2603.62
P12	Kinney Rd.	160+14.5	59.4' Rt.	12" C.A. Water	2602.78
P13	Kinney Rd.	160+61.3	56.3' Lt.	96" C.C.P.	2600.33
P14	Kinney Rd.	160+61.0	17.0' Lt.	8" C.A. Water	2603.39
P15	Kinney Rd.	160+60.6	51.4' Rt.	12" C.A. Water	2603.70
P16	Kinney Rd.	160+60.6	53.7' Rt.	96" C.C.P.	2601.29
P17	Kinney Rd.	160+60.6	59.1' Rt.	12" C.A. Water	2602.94
P18	Kinney Rd.	161+05.7	98.0' Rt.	12" C.A. Water	2604.60
P19	Bopp-Sara.	132+72.0	32.0' Rt.	12" C.A. Water	2606.86
P20	Bopp-Sara.	132+99.6	0.0' Rt.	8" P.V.C. Water	2609.02
P21	Kinney Rd.	162+02.2	38.2' Lt.	2" Water	2605.92
P22	Kinney Rd.	164+31.4	16.3' Lt.	8" C.A. Water	2604.80
P23	Kinney Rd.	165+09.5	17.0' Lt.	8" C.A. Water	2606.35
P24	Kinney Rd.	163+84.1	38.0' Rt.	12" C.A. Water	2603.66
P25	Kinney Rd.	164+69.3	38.9' Rt.	12" C.A. Water	2603.16
P26	Kinney Rd.	165+33.3	39.0' Rt.	12" C.A. Water	2603.77

Ana M. Olivares, P.E., Director

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Certificate of Professional Engineer (Civil) 33450 CHARLENE J. ROBINSON Registered Professional Engineer (Civil) DATE SIGNED 5-31-18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA Inc.
333 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

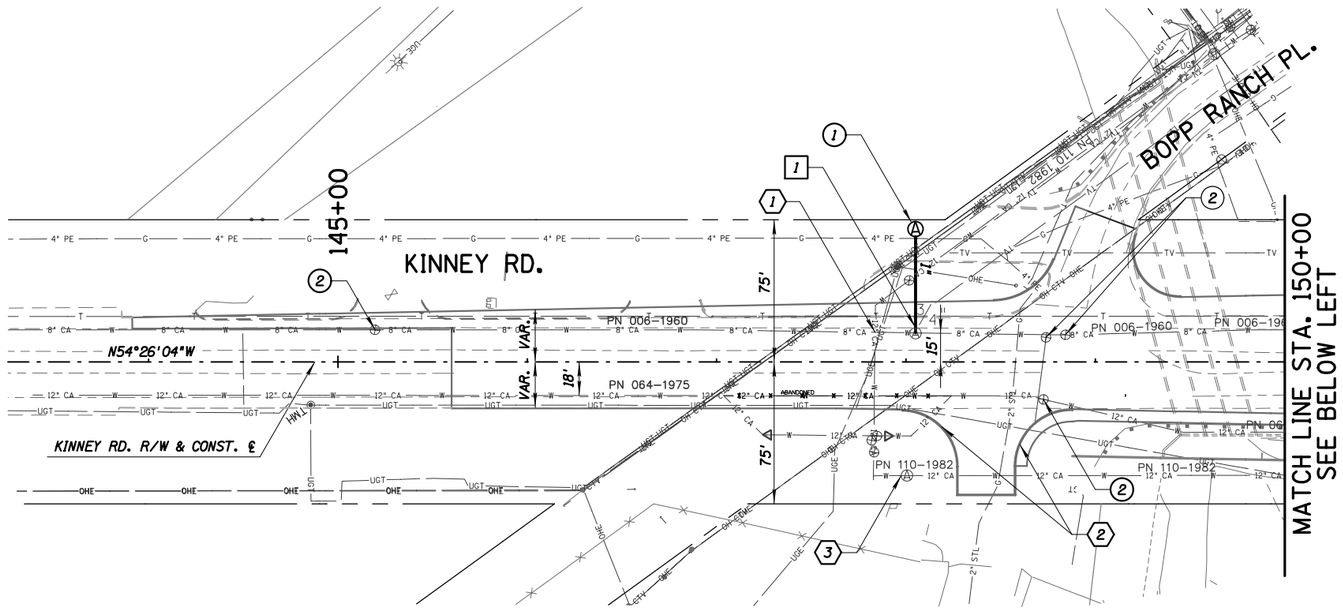
Pima County Department of Transportation

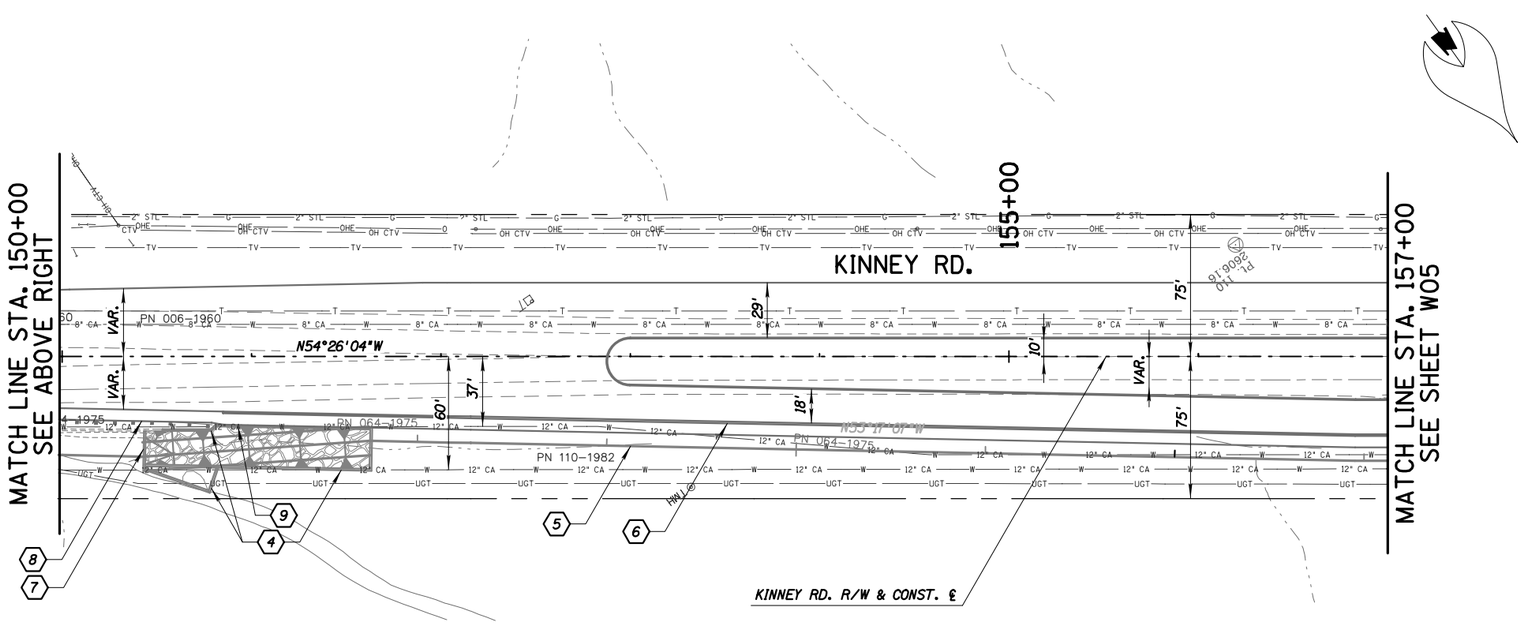
BID SCHEDULE MATERIAL QUANTITIES SUMMARY SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: N.T.S. | Sheet W03 of W12 | Page 100 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W03.dgn | DATE: 5/24/2018 | TIME: 3:13:04 PM | kershnerm





REMOVE / ABANDON NOTES

1. STA. 148+05, 15' LT.
   REMOVE AND DISPOSE EXIST.
   ARV & APPURTENANCES — 1 EA (NPI)

CONSTRUCTION NOTES

1. STA. 148+05, 70' LT.
   1" ARV PER SD-330 & SD-332 — 1 EA
   1" CU PIPE — 50 LF (NPI)
2. STA. 145+20. 17' LT.
   STA. 148+74, 13' LT.
   STA. 148+84, 14' LT.
   STA. 148+73, 20' RT.
   ADJUST EXIST. VALVE B & C — 4 EA
   PER SD-300

REFERENCE NOTES

1. THERE IS NO CONNECTION HERE BETWEEN THE 8" CA AND THE 12" CA
2. PROPOSED CONCRETE HEADER, DEPTH = 1'
3. EXIST. ARV TO REMAIN
4. PROPOSED ROADSIDE DITCH PROTECTION W/ CONCRETE FORD WALL, DEPTH = 2' (WEST SIDE) AND DEPTH = 2' (EAST SIDE) SEE DETAIL ON SHEET W03
5. PROPOSED CHANNEL PLAN AND PROFILE, MAINTAIN 44" MINIMUM COVER OVER WATER MAIN
6. PROPOSED CONCRETE FORD WALL, DEPTH = 2' SEE DETAIL ON SHEET W03
7. PROPOSED CONCRETE FORD WALL, DEPTH = 6' SEE DETAIL ON SHEET W03
8. EXIST. GUARDRAIL TO REMAIN
9. PROPOSED NEW HANDRAIL SEE DETAIL ON SHEET W03

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLES T. ROBINSON DATE SIGNED 5-31-18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

CALL at least two full working days before you dig, it is the law!
ARIZONA BLUE STAKE, INC.
(602) 263-1100
Not for Locates (Utility Owners Only)

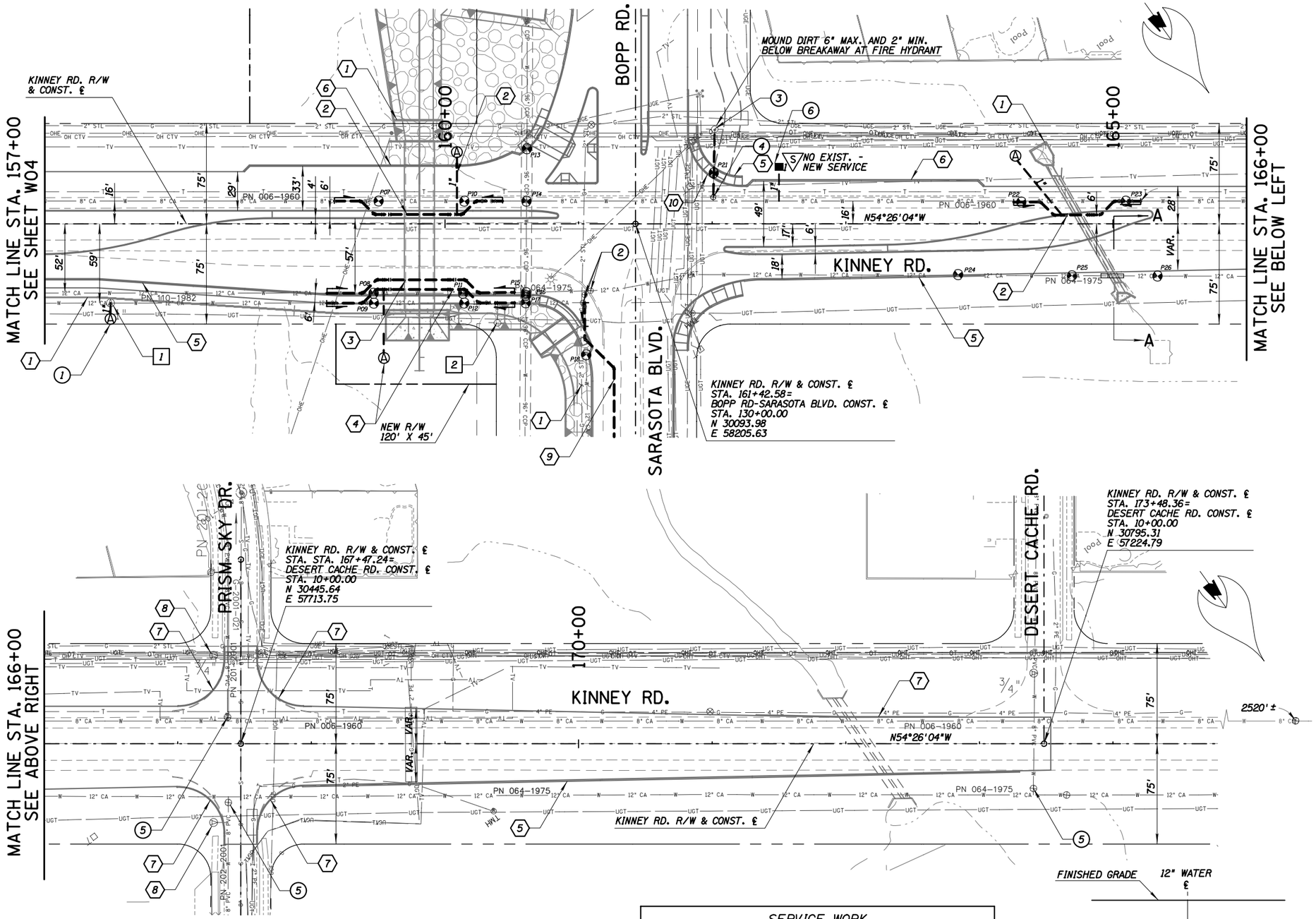
Pima County Department of Transportation

WATER MODIFICATION PLAN SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 143+92 TO STA. 157+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

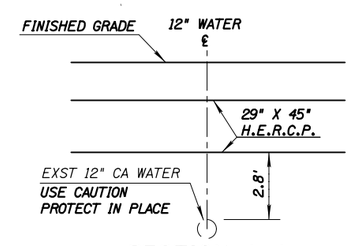
Scale:	1"= 40' Horiz.	Sheet W04 of W12	Page 101 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W04.dgn DATE: 5/24/2018 TIME: 3:13:27 PM kershnerm



SERVICE WORK					
	ADDRESS/STA.	EXST. SERV.	** SERV. WORK	EXST. CONNECTION DIA. - MATL.	NEW CONNECTION DIA. - MATL.
1	STATION 162+50± (IRRIGATION)	-	S	-	1" - CU

** "S" SERVICE STUB



SECTION A-A

40 0 40 80'
SCALE: 1" = 40'

REMOVE / ABANDON NOTES

1. STA. 157+50, 59' RT.
   REMOVE & DISPOSE EXIST.
   ARV & APPURTENANCES — 1 EA (NPI)
2. STA. 160+39, 74' RT.
   REMOVE & DISPOSE EXIST. FIRE
   HYDRANT ASSEMBLY & APPURTENANCES — 1 EA

CONSTRUCTION NOTES

1. STA. 157+50, 71' RT.
   1" ARV PER SD-330 & SD-332 — 1 EA
   1" CU PIPE — 8 LF (NPI)
2. STA. 161+03, 59' RT.
   STA. 161+05, 53' RT.
   STA. 161+09, 50' RT.
   ADJUST EXIST. VALVE B & C
   PER SD-300 — 3 EA
3. STA. 162+02, 71' LT.
   EXIST. FIRE HYDRANT TO REMAIN
   6" DI (CL 350) PIPE PER SD-500 — 50 LF
4. STA. 162+01, 20' LT.
   ADJUST EXIST. VALVE B & C
   PER SD-300 — 1 EA
5. STA. 167+37, 20' LT.
   STA. 167+38, 44' RT.
   STA. 173+40, 33' RT.
   ADJUST EXIST. VALVE B & C
   PER SD-300 — 3 EA
6. STA. 162+50, 43' LT.
   METER BOX (1") PER SD 311 — 1 EA (NPI)

REFERENCE NOTES

1. PROPOSED CROSS DRAINAGE AND CHANNEL
2. SEE SHEET W09 FOR 8" CA WATER RELOCATION PLAN
3. SEE SHEET W10 FOR 12" CA WATER RELOCATION PLAN
4. SEE SHEET W11 FOR 12" CA WATER RELOCATION PLAN
5. PROPOSED CONCRETE FORD WALL, DEPTH = 2'
6. PROPOSED CONCRETE FORD WALL, DEPTH = 4'
7. PROPOSED CONCRETE HEADER, DEPTH = 1'
8. EXIST. ARV TO REMAIN
9. SEE SHEET W08 FOR 12" CA WATER RELOCATION PLAN
10. PROPOSED CONCRETE CURB, DEPTH = 9"

Ana M. Olivares, P.E., Director

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	MPK	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Certificate of Professional Engineer (Civil) — Registered Professional Engineer (Civil) Certificate No. 33462 CHARLENE J. ROBINSON — Date Signed 5/24/18 — Expires 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
3555 E. WETMORE RD. STE 100
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

Arizona Blue Stake, Inc. — Call at least two full working days before you begin excavation. Arizona Blue Stake, Inc. 1-800-782-5348 or 602-263-1069

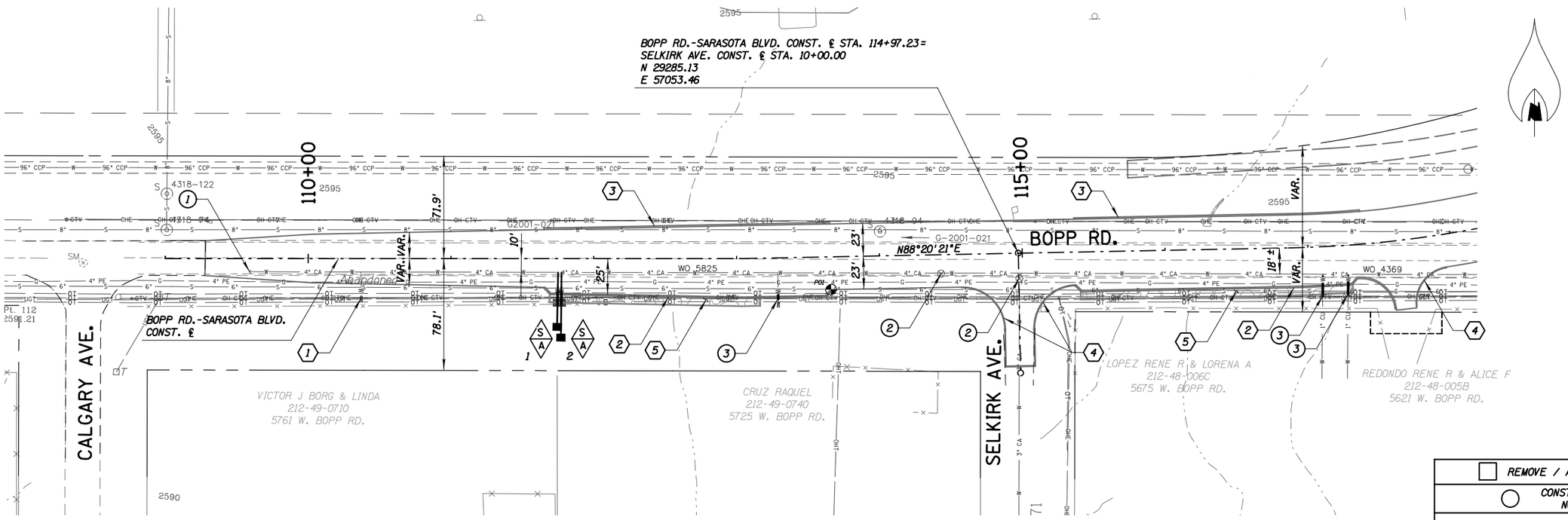
WATER MODIFICATION PLAN SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 157+00 TO STA. 173+53
PROJECT NO. 4KINBO

Pima County Department of Transportation

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. | Sheet W05 of W12 | Page 102 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W05.dgn | DATE: 5/24/2018 | TIME: 3:13:49 PM | kershnerm



SERVICE WORK					
	ADDRESS/STA.	EXST. SERV.	SERV. WORK	EXST. CONNECTION DIA. - MATL.	NEW CONNECTION DIA. - MATL.
1	5761 W. BOPP RD.	*	S A	¾" - CU	1" - CU
2	5761 W. BOPP RD.	*	S A	¾" - CU	1" - CU

* NO METER

REMOVE / ABANDON NOTES

CONSTRUCTION NOTES

(1) STA. 109+59, 9' RT.
ADJUST EXIST. DRAIN VALVE B & C
PER SD-300 & SD-400 — 1 EA

(2) STA. 114+43, 13' RT.
STA. 114+98, 18' RT.
ADJUST EXIST. VALVE B & C
PER SD-300 — 2 EA

(3) STA. 113+29±, 26' RT. TO
STA. 113+29±, 29' RT.

STA. 117+09±, 26' RT. TO
STA. 117+09±, 35' RT.

STA. 117+27±, 26' RT. TO
STA. 117+26±, 35' RT.
INSTALL 8"Φ SPLIT AND BANDED
PVC SLEEVE CENTERED ON PIPE
PRIOR TO CONCRETE FORD WALL
CONSTRUCTION — 21 LF

REFERENCE NOTES

(1) STA. 110+37, 28' RT.
EXIST. WATER METER TO REMAIN

(2) PROPOSED CONCRETE FORD WALL, DEPTH = 4'

(3) PROPOSED CONCRETE FORD WALL, DEPTH = 2'

(4) PROPOSED CONCRETE HEADER, DEPTH = 1'

(5) PROPOSED RIPRAP APRON W/ CONCRETE
HEADER (SPECIAL), DEPTH = 18"

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

			Date
Designed	DJB		05/18
Drawn	DJB		05/18
Checked	MPK		05/18
Proj. Engr.	MPK		05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5-23-18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig in Arizona
ARIZONA 811
BLUE STAKE, INC.
Not to be used on projects outside of Arizona

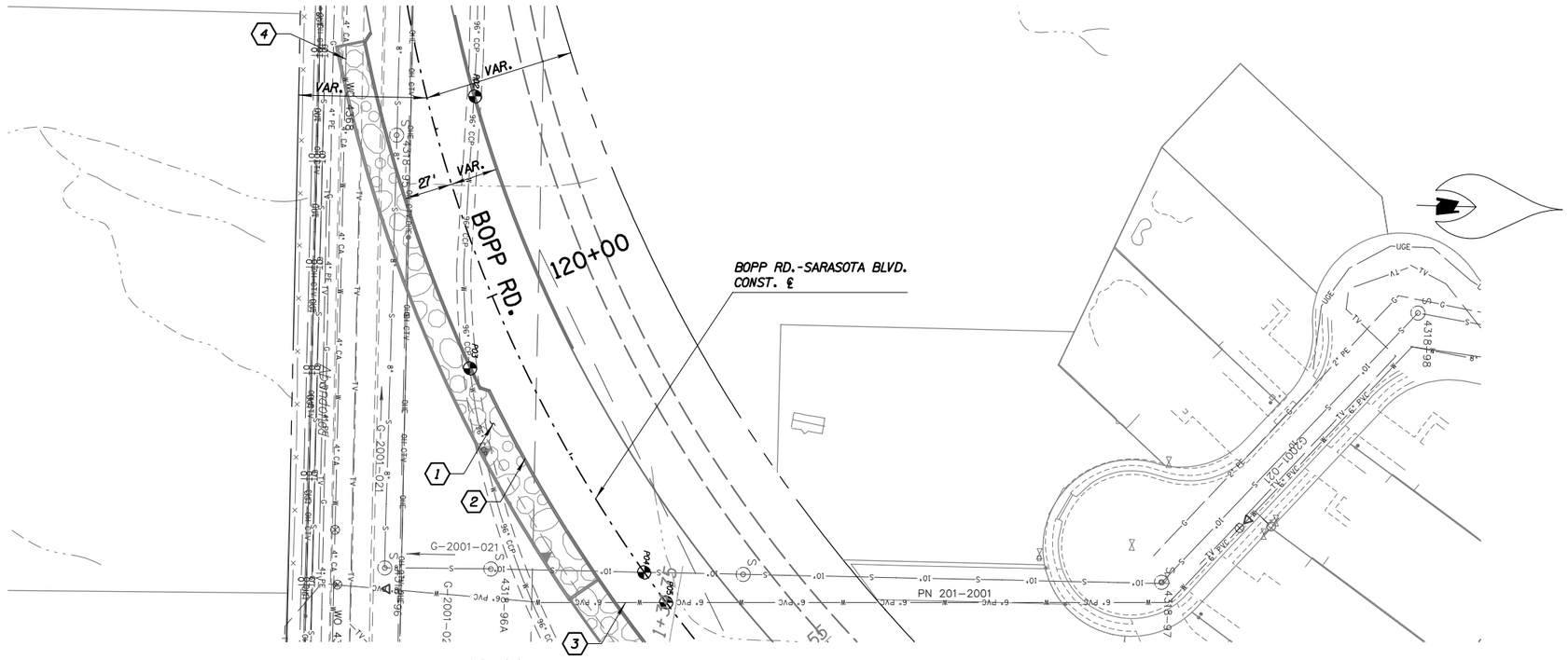
Pima County Department of Transportation

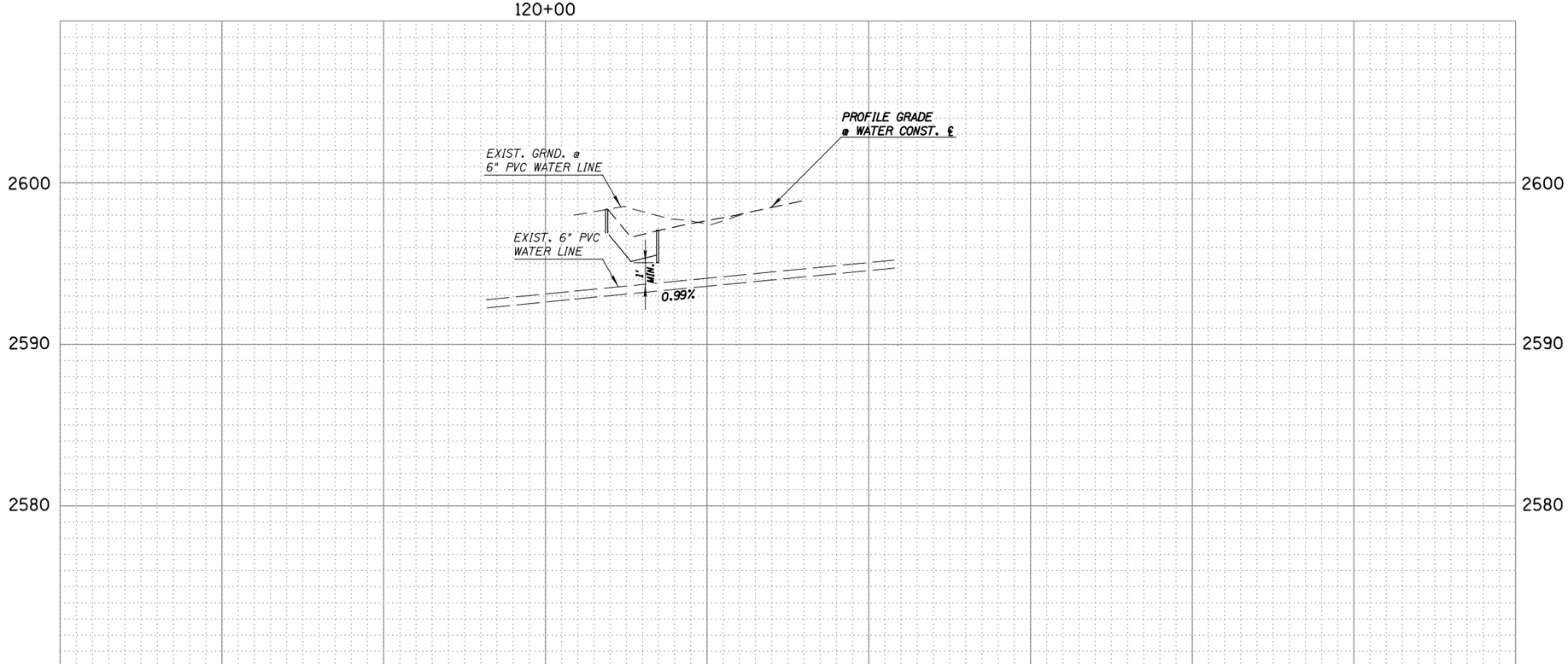
WATER MODIFICATION PLAN SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 109+28 TO STA. 118+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz.	Sheet W06 of W12	Page 103 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W06.dgn DATE: 5/24/2018 TIME: 3:15:05 PM kershnerm





REMOVE / ABANDON NOTES

CONSTRUCTION NOTES

REFERENCE NOTES

1. PROPOSED RIPRAP APRON W/ CONCRETE HEADER (SPECIAL), DEPTH = 18"
2. PROPOSED CONCRETE FORD WALL, DEPTH = 2'
3. EXIST. 6" PVC WATER LINE TO REMAIN. USE CAUTION TO PROTECT AND PRESERVE EXISTING MAIN. MAINTAIN A MINIMUM OF 12" UNDISTURBED COVER OVER MAIN. NOTIFY TUCSON WATER REPRESENTATIVE WHEN WORKING IN THIS AREA.
4. EXIST. 4" CA WATER LINE TO REMAIN. USE CAUTION TO PROTECT AND PRESERVE EXISTING MAIN. MAINTAIN A MINIMUM OF 12" UNDISTURBED COVER OVER MAIN. NOTIFY TUCSON WATER REPRESENTATIVE WHEN WORKING IN THIS AREA.

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SEALED 5/24/18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
www.aecom.com

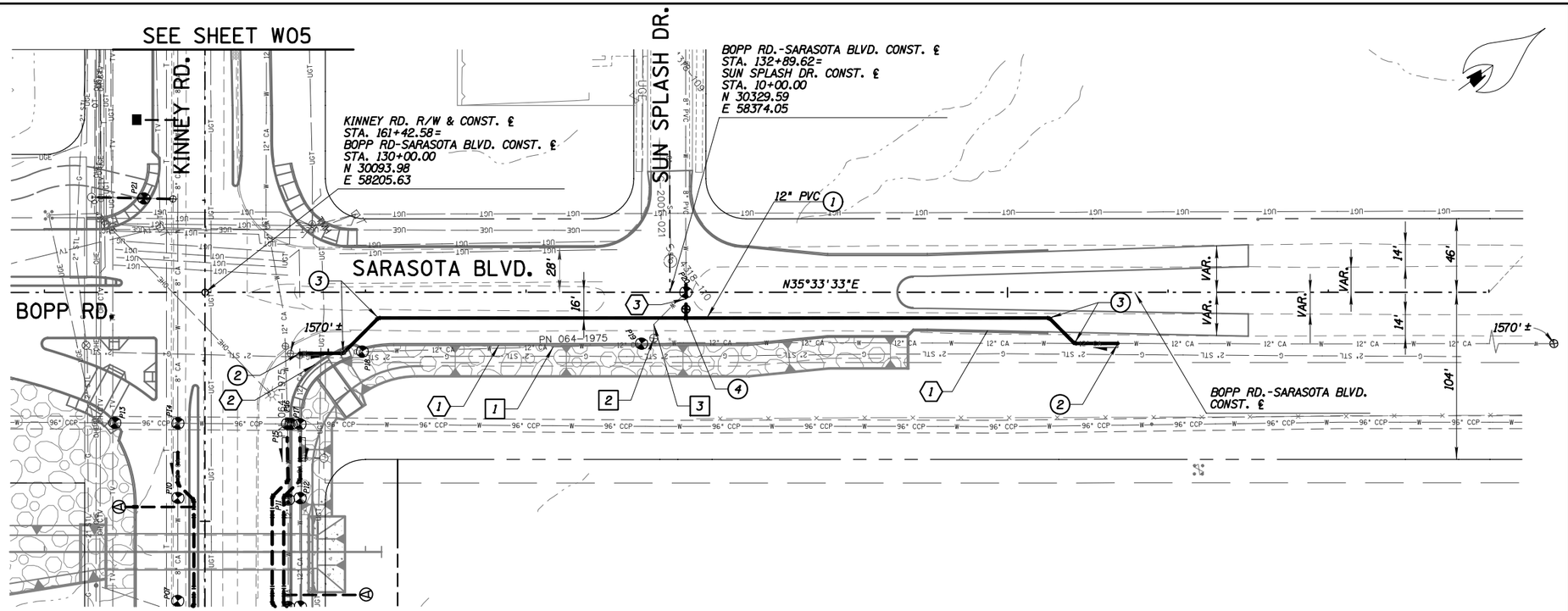
Pima County Department of Transportation

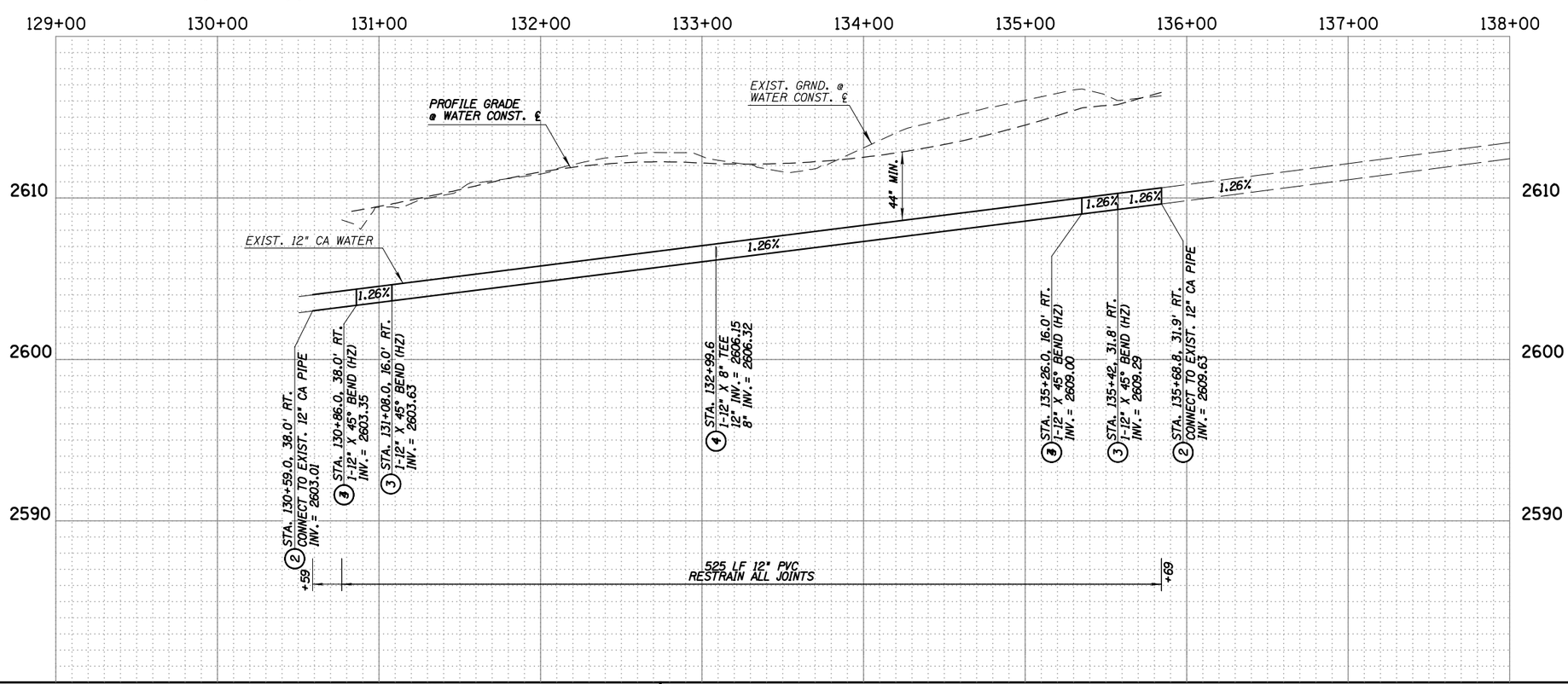
WATER MODIFICATION PLAN & PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 120+00 TO STA. 124+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet W07 of W12 | Page 104 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W07.dgn DATE: 5/24/2018 TIME: 3:15:28 PM kershnerm





REMOVE / ABANDON NOTES

1. STA. 130+59, 38' RT. TO STA. 135+69, 32' RT. REMOVE AND DISPOSE 12" CA AND LARGER PIPE TO NEAREST JOINT PER SD-350 — 510 LF (NPI)
2. STA. 132+80, 13' RT. REMOVE AND DISPOSE EXIST. VALVE & APPURTENANCES — 1 EA (NPI)
3. STA. 132+80, 32' RT TO STA. 133+00, 5' LT. REMOVE AND DISPOSE EXIST. 10" AND SMALLER PIPE TO NEAREST JOINT PER SD-350 — 45 LF (NPI)

CONSTRUCTION NOTES

1. STA. 130+59, 38' RT. TO STA. 135+69, 32' RT. 12" PVC, DR 14 (CL 305) — 525 LF
2. STA. 130+59, 38' RT. STA. 135+69, 32' RT. CONNECT TO EXIST. 12" CA PIPE — 2 EA (NPI)
3. STA. 130+86, 38' RT. STA. 131+08, 16' RT. STA. 135+26, 16' RT. STA. 135+42, 32' RT. 12" 45° BEND — 4 EA (NPI)
4. STA. 133+00, 16' RT. 12" X 8" TEE — 1 EA (NPI)

REFERENCE NOTES

1. PROPOSED CONCRETE FORD WALL, DEPTH = 4',
2. PROPOSED CONCRETE CURB, DEPTH = 9"
3. SEE SHEET W12 FOR 8" PVC WATER RELOCATION PLAN

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SEALED 5/24/18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
3131 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.9600 F 520.887.9438
www.aecom.com

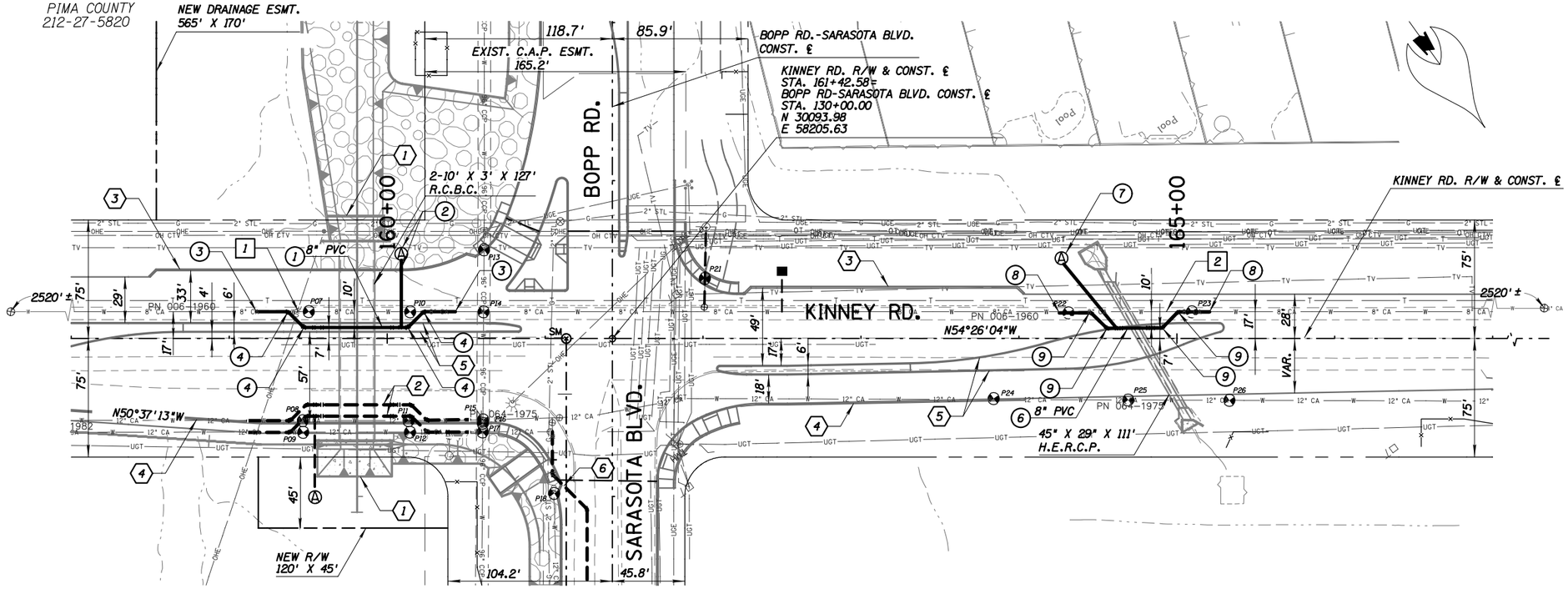
Pima County Department of Transportation

WATER MODIFICATION PLAN & PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS
STA. 129+00 TO STA. 138+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet W08 of W12 | Page 105 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W08.dgn DATE: 5/24/2018 TIME: 3:15:48 PM kershnerm



REMOVE / ABANDON NOTES

1. STA. 159+37, 17' LT. TO STA. 160+43, 17' LT.
   REMOVE AND DISPOSE 10" CA
   AND SMALLER PIPE TO NEAREST
   JOINT PER SD-350 — 126 LF (NPI)
2. STA. 164+26, 17' LT. TO STA. 165+21, 17' LT.
   REMOVE AND DISPOSE 10" CA
   AND SMALLER PIPE TO NEAREST
   JOINT PER SD-350 — 95 LF (NPI)

CONSTRUCTION NOTES

1. STA. 159+17, 17' LT. TO STA. 160+43, 17' LT.
   8" PVC, DR 14 (CL 305) PIPE — 134 LF
2. STA. 160+09, 54' LT.
   1" ARV PER SD-330 & SD-332 — 1 EA
   1" CU PIPE — 43 LF (NPI)
   INSTALL 8"Φ PVC SLEEVE CENTERED
   ON ARV PIPE PRIOR TO CONCRETE
   FORD WALL CONSTRUCTION — 3 LF
3. STA. 159+17, 17' LT.
   STA. 160+43, 17' LT.
   CONNECT TO EXIST. 8" CA — 2 EA (NPI)
4. STA. 159+37, 17' LT.
   STA. 159+47, 7' LT.
   STA. 160+13, 7' LT.
   STA. 160+23, 17' LT.
   8" 45° BEND (HZ) — 4 EA (NPI)
5. STA. 159+54, 7' LT.
   STA. 159+59, 7' LT.
   STA. 160+03, 7' LT.
   STA. 160+08, 7' LT.
   8" 45° BEND (VT) — 4 EA (NPI)
6. STA. 164+26, 17' LT. TO STA. 165+21, 17' LT.
   8" PVC, DR 14 (CL 305) PIPE — 103 LF
7. STA. 164+27, 51' LT.
   1" ARV PER SD-330 & SD-332 — 1 EA
   1" CU PIPE — 53 LF (NPI)
8. STA. 164+26, 17' LT.
   STA. 165+21, 17' LT.
   CONNECT TO EXIST. 8" CA PIPE — 2 EA (NPI)
9. STA. 164+46, 17' LT.
   STA. 164+56, 7' LT.
   STA. 164+91, 7' LT.
   STA. 165+01, 17' LT.
   8" 45° BEND (HZ) — 4 EA (NPI)
10. STA. 164+62, 7' LT.
    STA. 164+65, 7' LT.
    STA. 164+82, 7' LT.
    STA. 164+85, 7' LT.
    8" 45° BEND (VT) — 4 EA (NPI)

REFERENCE NOTES

1. PROPOSED CROSS DRAINAGE
2. SEE SHEET W10 AND W11 FOR 12" CA WATER RELOCATION PLAN
3. PROPOSED CONCRETE FORD WALL, DEPTH = 4'
4. PROPOSED CONCRETE FORD WALL, DEPTH = 2'
5. PROPOSED CONCRETE HEADER, DEPTH = 1'
6. SEE SHEET W08 FOR 12" CA WATER RELOCATION PLAN

40 0 40 80'
SCALE: 1" = 40'

No.	Revision Description	Date

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Ana M. Olivares, P.E., Director

Pima County Department of Transportation

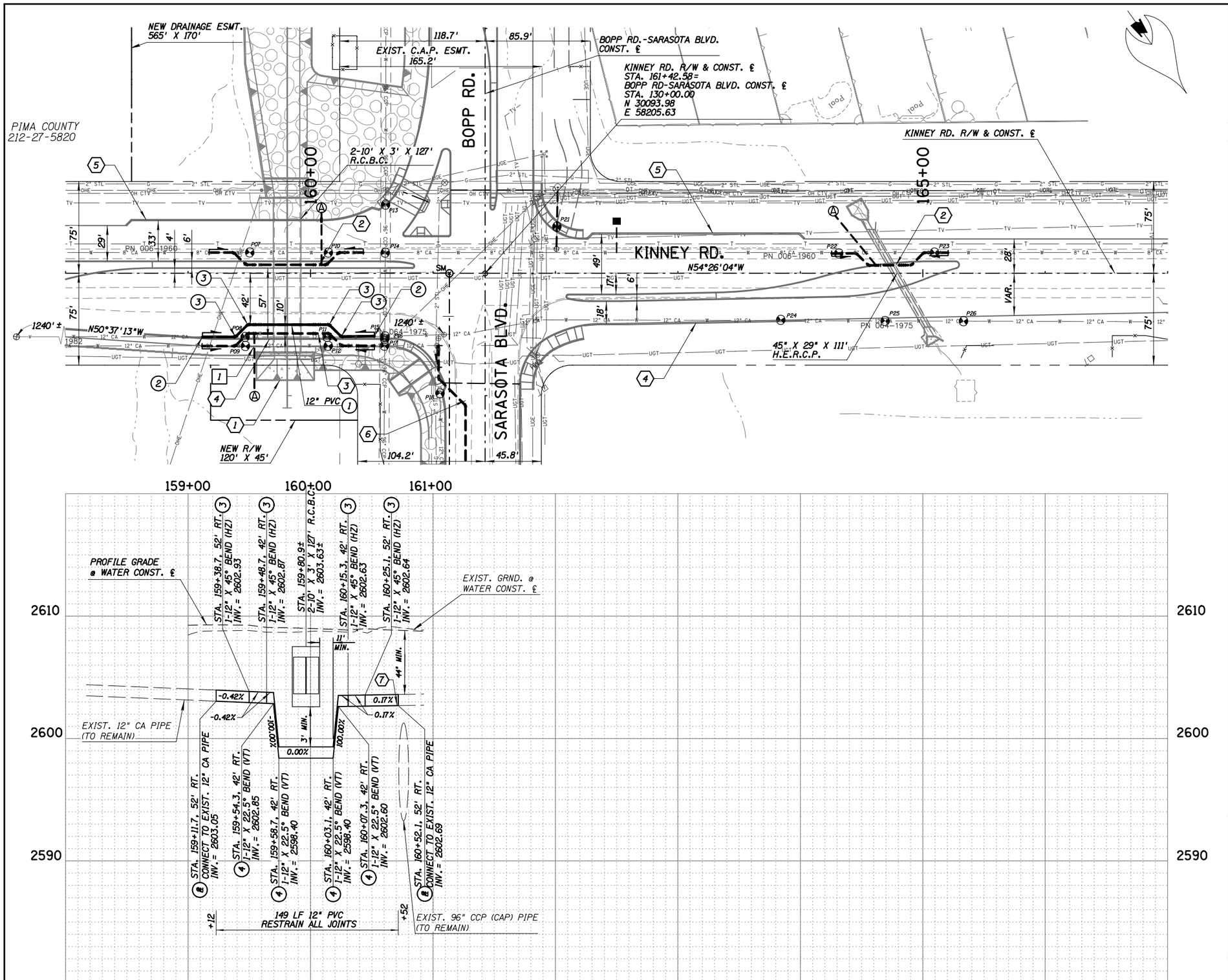
AECOM
TRANSPORTATION
AECOM USA Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

WATER MODIFICATION
PLAN & PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 158+00 TO STA. 167+00
PROJECT NO. 4KINBO

PIMA COUNTY–BOPP RD–SARASOTA BLVD AT KINNEY RD IMPROVEMENTS – PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet W09 of W12 | Page 106 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W09.dgn DATE: 5/24/2018 TIME: 3:16:12 PM kershnerm



REMOVE / ABANDON NOTES

1. STA. 159+12, 52' RT. TO STA. 160+25, 52' RT. REMOVE AND DISPOSE 12" CA AND LARGER PIPE TO NEAREST JOINT PER SD-350 — 140 LF (NPI)

CONSTRUCTION NOTES

1. STA. 159+12, 52' RT. TO STA. 160+52, 52' RT. 12" PVC, DR 14 (CL 305) PIPE — 149 LF
2. STA. 159+12, 52' RT.
   STA. 160+52, 52' RT.
   CONNECT TO EXIST. 12" CA PIPE — 2 EA (NPI)
3. STA. 159+39, 52' RT.
   STA. 159+49, 42' RT
   STA. 160+15, 42' RT.
   STA. 160+25, 52' RT
   12" 45° BEND (HZ) — 4 EA (NPI)
4. STA. 159+54, 42' RT.
   STA. 159+59, 42' RT.
   STA. 160+03, 42' RT.
   STA. 160+07, 42' RT.
   12" 22.5° BEND (VT) — 4 EA (NPI)

REFERENCE NOTES

1. PROPOSED CROSS DRAINAGE
2. SEE SHEET W09 FOR 8" CA WATER RELOCATION PLAN
3. SEE SHEET W11 FOR 12" CA WATER RELOCATION PLAN
4. PROPOSED CONCRETE FORD WALL, DEPTH = 2'
5. PROPOSED CONCRETE FORD WALL, DEPTH = 4'
6. SEE SHEET W08 FOR 12" CA WATER RELOCATION PLAN
7. CONTRACTOR SHALL HAND DIG WITHIN 2' OF EXISTING 96" CAP PIPE

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

No.	Revision Description	Engineer	Date

Registered Professional Engineer (Civil) CERTIFICATE NO. 33452 CHARLENE J. ROBINSON DATE SEALED 5/24/18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA Inc.
335 E. WILMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.1800 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig. ARIZONA BLUE STAKE, INC. 602.263.1100 Outside Maricopa County 1.800.782.5348

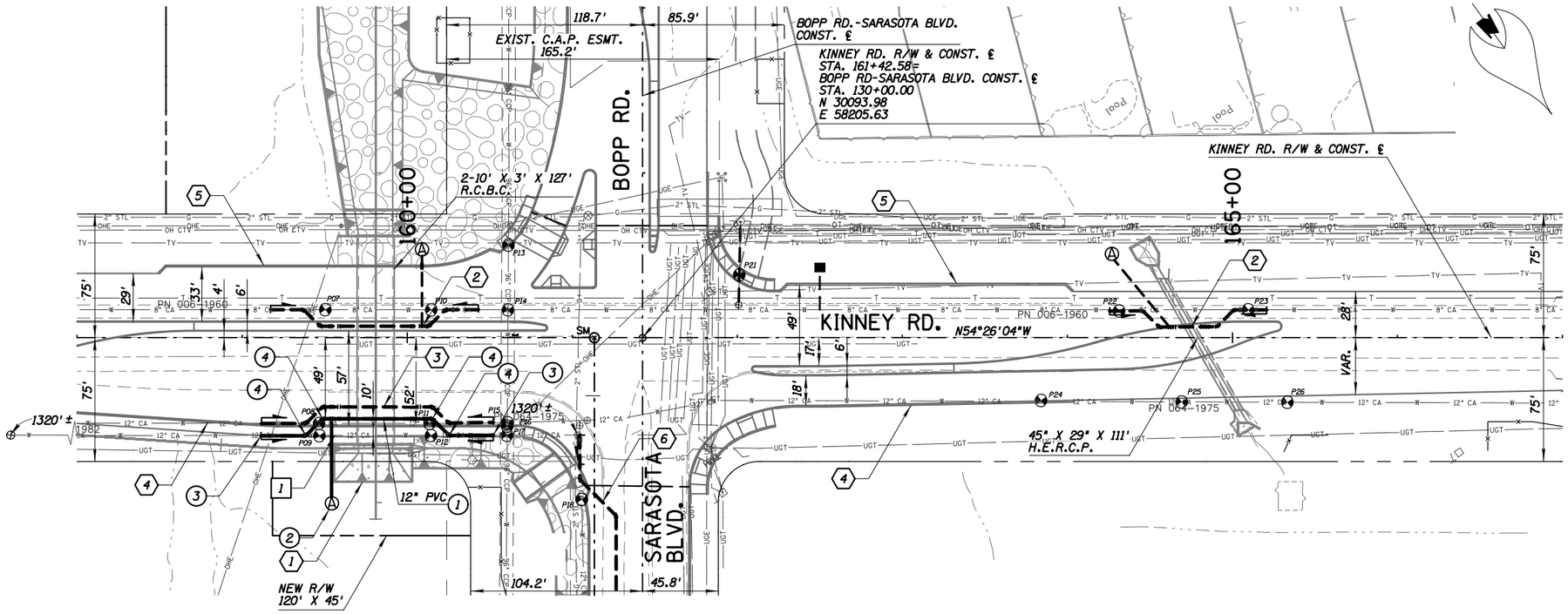
Pima County Department of Transportation

WATER MODIFICATION
PLAN & PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA.158+00 TO STA.167+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale:	1"= 40' Horiz. 1"= 4' Vert.	Sheet W10 of W12	Page 107 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W10.dgn DATE: 5/24/2018 TIME: 3:16:35 PM kershnerm



REMOVE / ABANDON NOTES

1. STA. 159+12, 59' RT. TO STA. 160+52, 59' RT.
   REMOVE AND DISPOSE 12" CA
   AND LARGER PIPE TO NEAREST
   JOINT PER SD-350 — 141 LF (NPI)

CONSTRUCTION NOTES

1. STA. 159+12, 59' RT. TO STA. 160+52, 59' RT.
   12" PVC, DR 14 (CL 305) PIPE — 149 LF
2. STA. 159+54, 99' RT.
   1" ARV PER SD-330 & SD-332 — 1 EA
   1" CU PIPE — 47 LF (NPI)
3. STA. 159+12, 59' RT.
   STA. 160+52, 59' RT. — 2 EA (NPI)
   CONNECT TO EXIST. 12" CA PIPE
4. STA. 159+38, 59' RT.
   STA. 159+49, 49' RT.
   STA. 160+15, 49' RT.
   STA. 160+25, 59' RT. — 4 EA (NPI)
   12" 45° BEND (HZ)
5. STA. 159+54, 49' RT.
   STA. 159+59, 49' RT.
   STA. 160+03, 49' RT.
   STA. 160+10, 49' RT. — 4 EA (NPI)
   12" 22.5° BEND (VT)

REFERENCE NOTES

1. PROPOSED CROSS DRAINAGE
2. SEE SHEET W09 FOR 8" CA WATER RELOCATION PLAN
3. SEE SHEET W10 FOR 12" CA WATER RELOCATION PLAN
4. PROPOSED CONCRETE FORD WALL, DEPTH = 2'
5. PROPOSED CONCRETE FORD WALL, DEPTH = 4'
6. SEE SHEET W08 FOR 12" CA WATER RELOCATION PLAN
7. CONTRACTOR SHALL HAND DIG WITHIN 2' OF EXISTING 96" CAP PIPE

40 0 40 80'
SCALE: 1" = 40'

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33452 CHARLENE J. ROBINSON DATE SIGNED 5-31-2018 Arizona U.S.A. EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA Inc.
335 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7800 F 520.887.8438
www.aecom.com

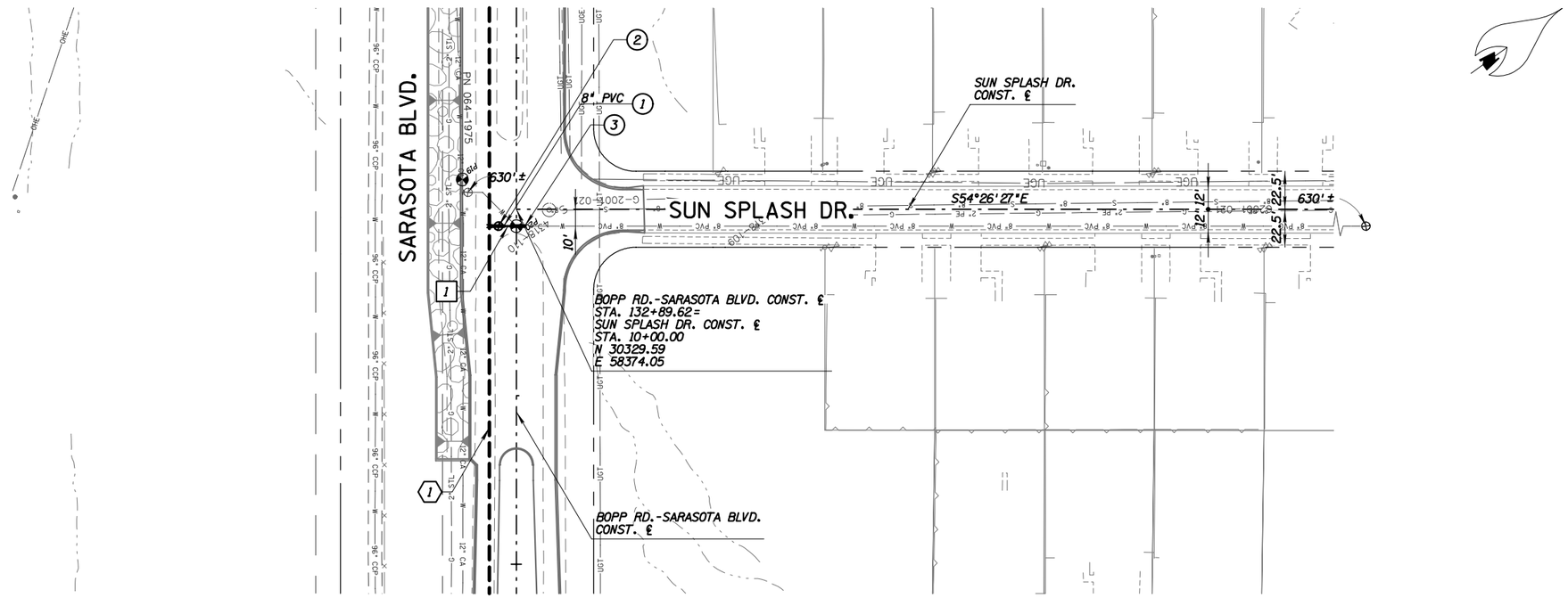
Pima County Department of Transportation

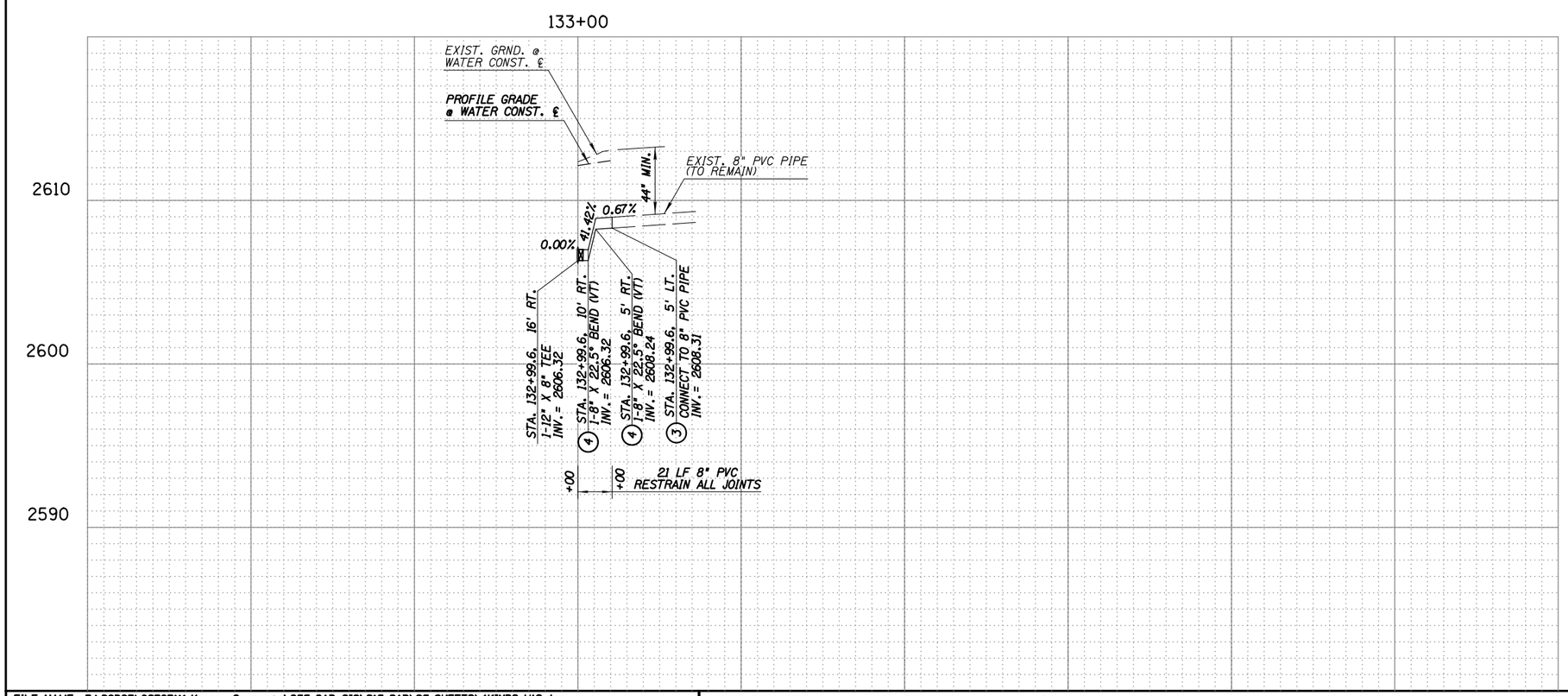
WATER MODIFICATION
PLAN & PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 158+00 TO STA. 167+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

Scale: 1"= 40' Horiz. 1"= 4' Vert. | Sheet W11 of W12 | Page 108 of 109

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W11.dgn DATE: 5/24/2018 TIME: 3:16:56 PM kershnerm





REMOVE / ABANDON NOTES

1. STA. 132+99, 16' RT. TO STA. 132+99, 5' LT.
   REMOVE AND DISPOSE 10"
   AND SMALLER PIPE TO
   NEAREST JOINT PER SD-350 — 45 LF (NPI)

CONSTRUCTION NOTES

1. STA. 132+99, 16' RT. TO STA. 132+99, 5' LT.
   8" PVC, DR 14 (CL 305) PIPE — 21 LF
2. STA. 132+99, 16' RT.
   8" GATE VALVE, B & C — 1 EA
3. STA. 132+99, 5' LT.
   CONNECT TO EXIST. 8" PVC PIPE — 1 EA (NPI)
4. STA. 132+99, 10' RT.
   STA. 132+99, 5' RT.
   8" 22.5° BEND (VT.) — 2 EA (NPI)

REFERENCE NOTES

1. SEE SHEET W08 FOR 12" CA WATER RELOCATION PLAN

40 0 40 80'
SCALE: 1" =40'

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

Sheet W12 of W12

Ana M. Olivares, P.E., Director

No.	Revision Description	Engineer	Date

		Date
Designed	DJB	05/18
Drawn	DJB	05/18
Checked	CJR	05/18
Proj. Engr.	MPK	05/18

Registered Professional Engineer (Civil) CERTIFICATE NO. 33450 CHARLENE J. ROBINSON DATE SIGNED 5-31-18 EXPIRES 3-31-2020

AECOM
TRANSPORTATION
AECOM USA, Inc.
333 E. WETMORE RD. STE 400
Tucson, Arizona 85705
T 520.887.7600 F 520.887.8438
www.aecom.com

Call at least two full working days before you dig, it's the law
ARIZONA BLUE STAKE, INC.
Arizona Law requires 2 working days notice

Pima County Department of Transportation

WATER MODIFICATION PLAN &
PROFILE SHEET
PIMA COUNTY-BOPP RD-SARASOTA
BLVD AT KINNEY RD IMPROVEMENTS
STA. 10+00 TO STA. 105+00
PROJECT NO. 4KINBO

PIMA COUNTY-BOPP RD-SARASOTA BLVD AT KINNEY RD IMPROVEMENTS - PROJECT NO. 4KINBO

FILE NAME: T:\PCDOT\60537111 Kinney-Sarasota\900-CAD, GIS\910-CAD\20-SHEETS\4KINBO_W12.dgn DATE: 5/24/2018 TIME: 3:17:18 PM kershnerm