

**LENGTH OF PROJECT**

Sabino Canyon Rd Sta 53+15.68 to 90+20.80 = 3,705.12'  
Gross & Net Length = 0.70 Miles

**DESIGN DATA**

Sabino Canyon Road  
Roadway Classification = Urban Arterial  
Design Speed = 45 MPH  
Posted Speed = 40 MPH  
Design Vehicle:  
Mainline = WB-50  
U Turns = P

Side Streets	Design Speed	Design Vehicle
Crestline Dr	25 mph	B-40/SU
Kolb Road	45 mph	WB-50

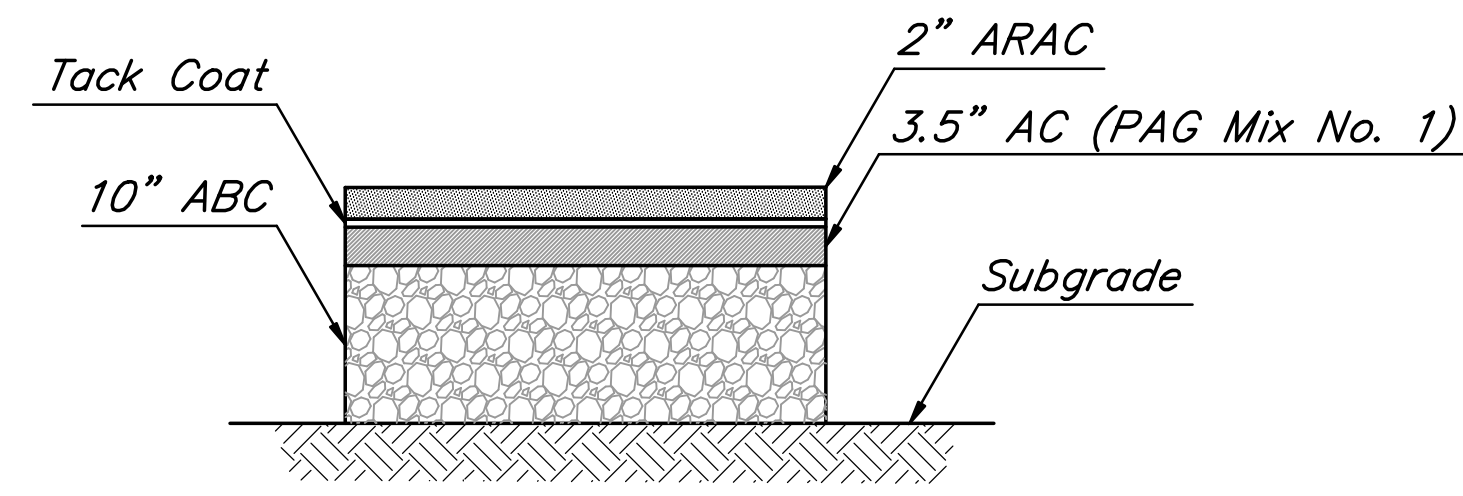
**EARTHWORK QUANTITIES**

Roadway Excavation	14,330 CY
20% Shrink	(2,866) CY
Drainage Excavation	769 CY
20% Shrink	(154) CY
Structural Excavation	3,434 CY
20% Shrink	(687) CY
Pipe Excavation	1,228 CY
20% Shrink	(246) CY
** Mullins Landfill V-Ditch Excavation	1,480 CY
Shrink	N/A
<b>Total Excavation</b>	<b>19,761 CY</b>
<b>Total Shrink</b>	<b>(3,953) CY</b>
<b>Total Excavation Available</b>	<b>15,808 CY</b>
Roadway Emb (Incl. Grnd. Comp.)	16,991 CY
Culvert Volume Adjustment	(444) CY
Structural Backfill	2,036 CY
* Pipe Backfill	538 CY
<b>Total Embankment Required</b>	<b>19,121 CY</b>
<b>Borrow (In Place)</b>	<b>3,313 CY</b>

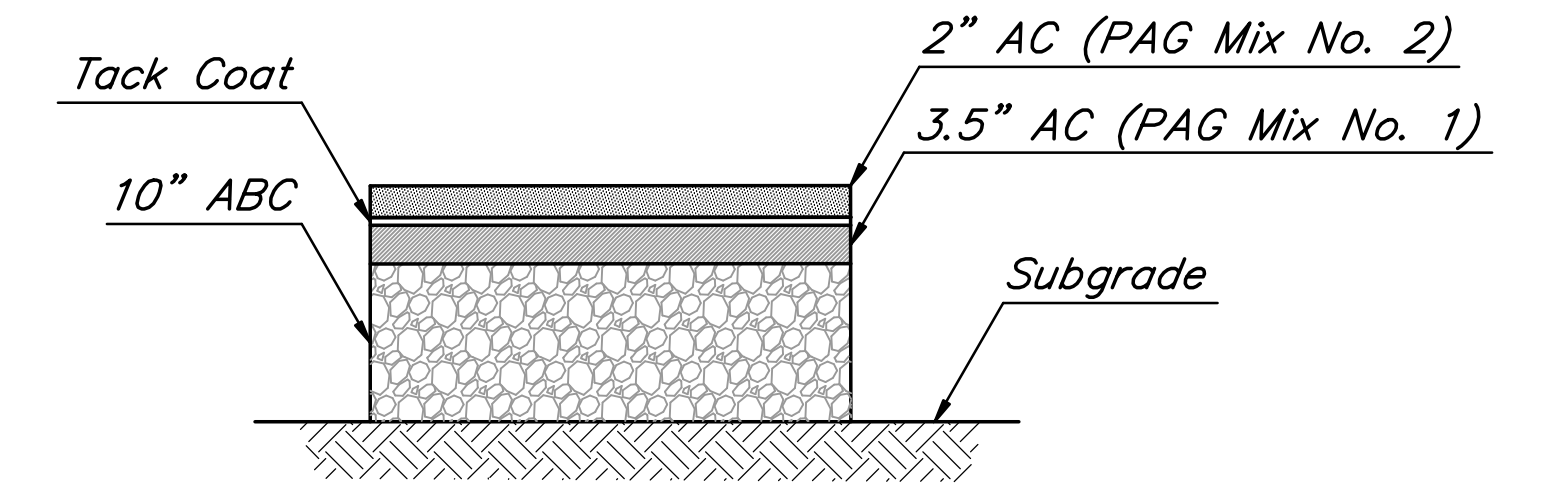
\* Informational Purposes Only  
\*\* Paid for as part of Roadway Excavation, and to be excluded from embankment and treated as waste.

**EARTHWORK FACTORS**

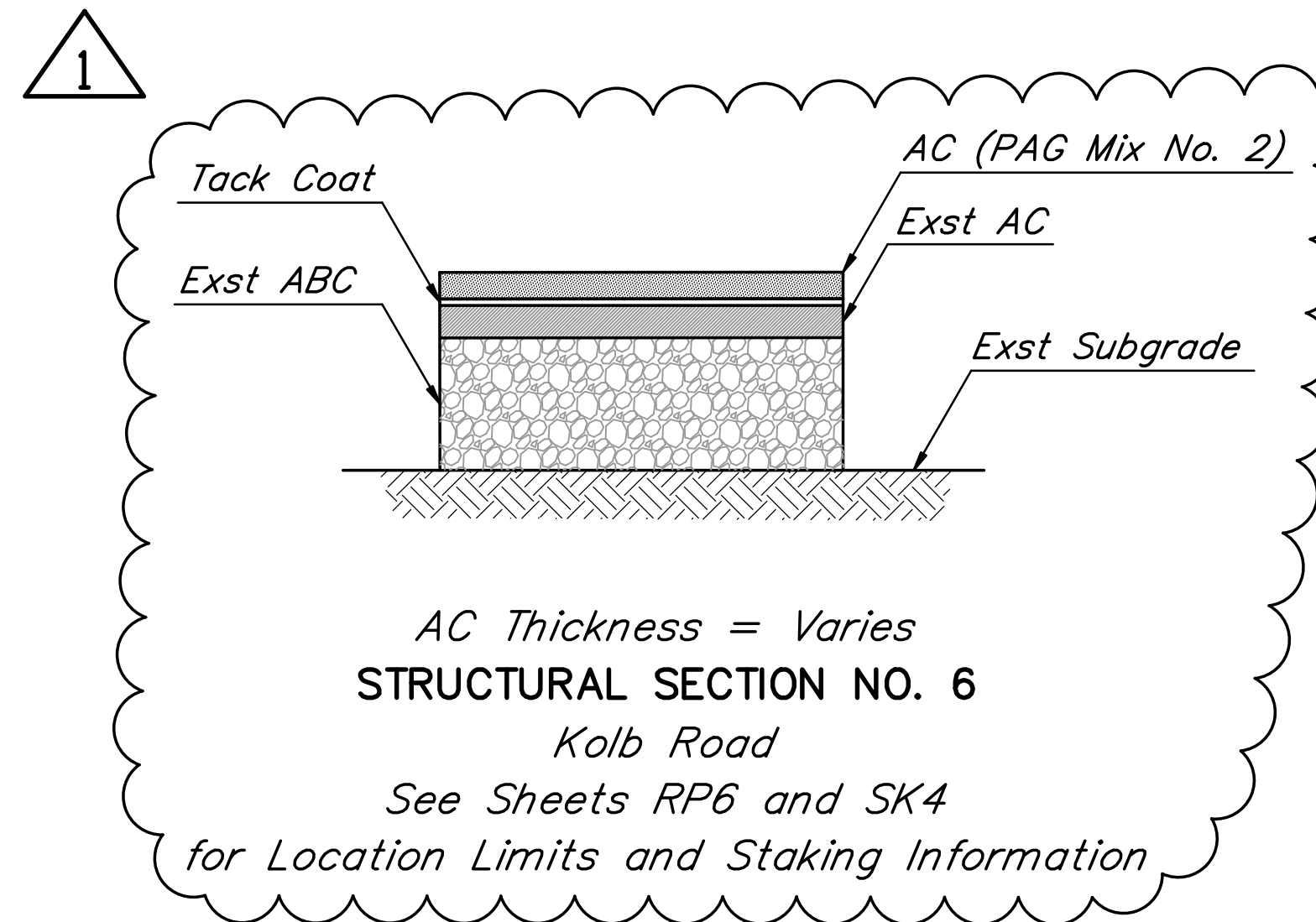
Station	Shrink	Ground Compaction
Entire Project	20%	0.20'



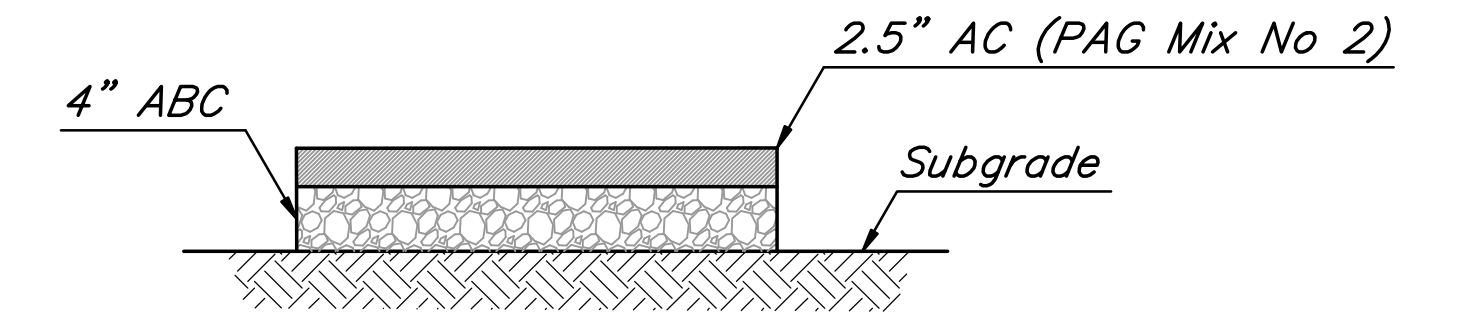
Total Thickness = 15.5"  
**STRUCTURAL SECTION NO. 1**  
Sabino Canyon Road



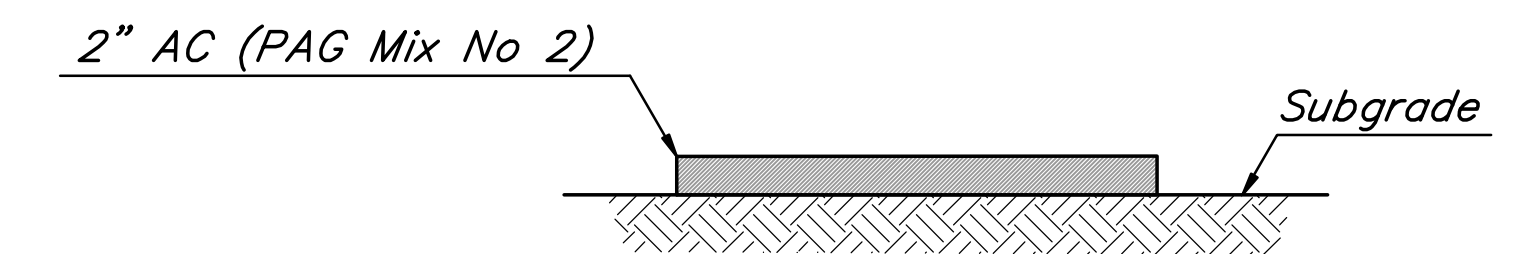
Total Thickness = 15.5"  
**STRUCTURAL SECTION NO. 2**  
Driveway 8, Booster Station, South of Pantano Bridge, Kolb Road



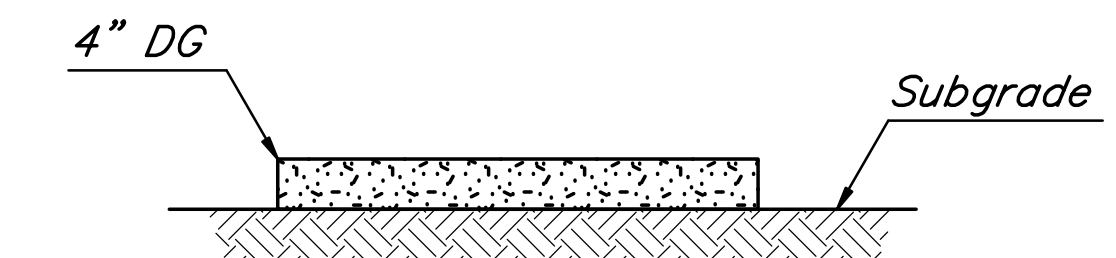
AC Thickness = Varies  
**STRUCTURAL SECTION NO. 6**  
Kolb Road  
See Sheets RP6 and SK4  
for Location Limits and Staking Information



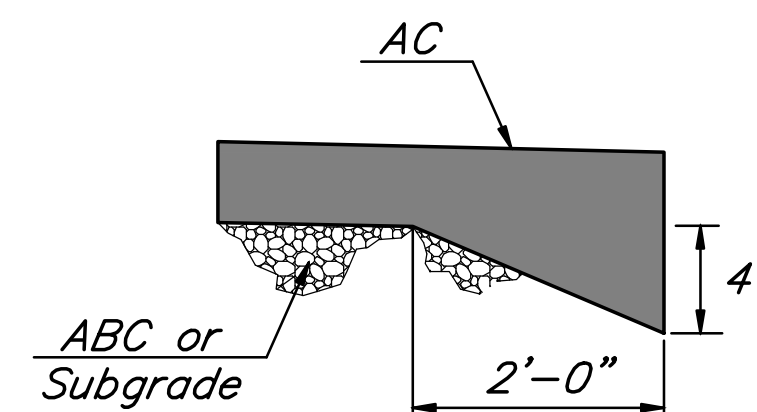
Total Thickness = 6.5"  
**STRUCTURAL SECTION NO. 3**  
Crestline Dr & Driveways



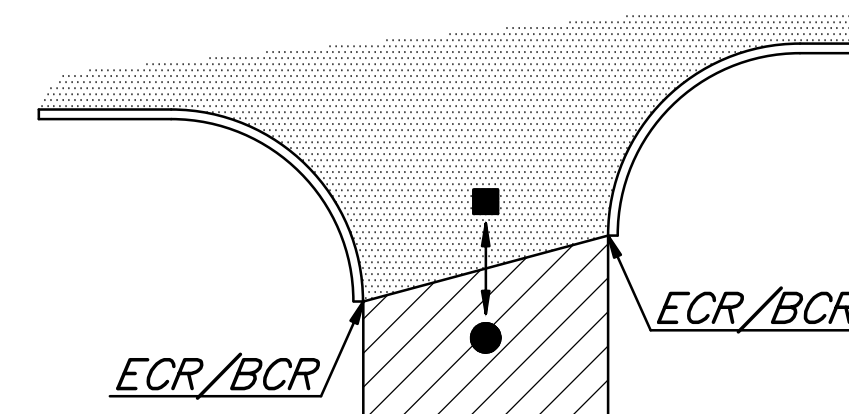
Total Thickness = 2"  
**STRUCTURAL SECTION NO. 4**  
Asphalt Path



Total Thickness = 4"  
**STRUCTURAL SECTION NO. 5**  
Decomposed Granite Path



**THICKENED PVMT EDGE**  
All Uncurbed Sections  
& Asphalt Paths

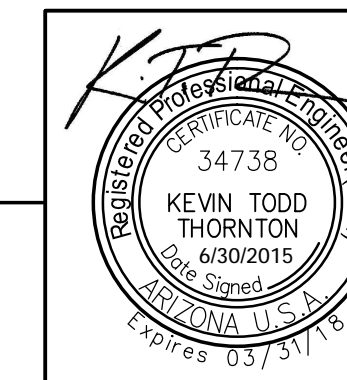


**SIDE STREET PAVEMENT SECTION TRANSITION DETAIL**

- Sabino Canyon Road Pvmnt Section
- Side Street Pvmnt Section

NO.	DATE	REVISION	BY	CHKD.	APPR.
1	8-19-15	Kolb Pvmnt Sect	MA	RC	KT

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www.psomas.com



DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION  
**SABINO CANYON ROAD**  
TANQUE VERDE ROAD TO KOLB ROAD

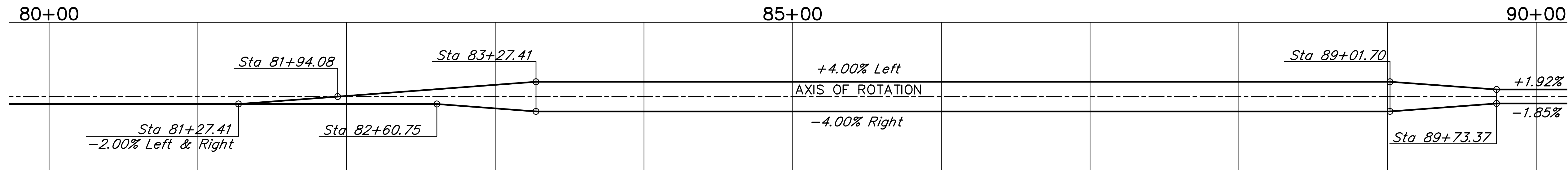
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DSGN. BY PS	06/15		V: N/A
CHKD. BY KTT	06/15	<b>PLAN NO. I-2010-006</b>	



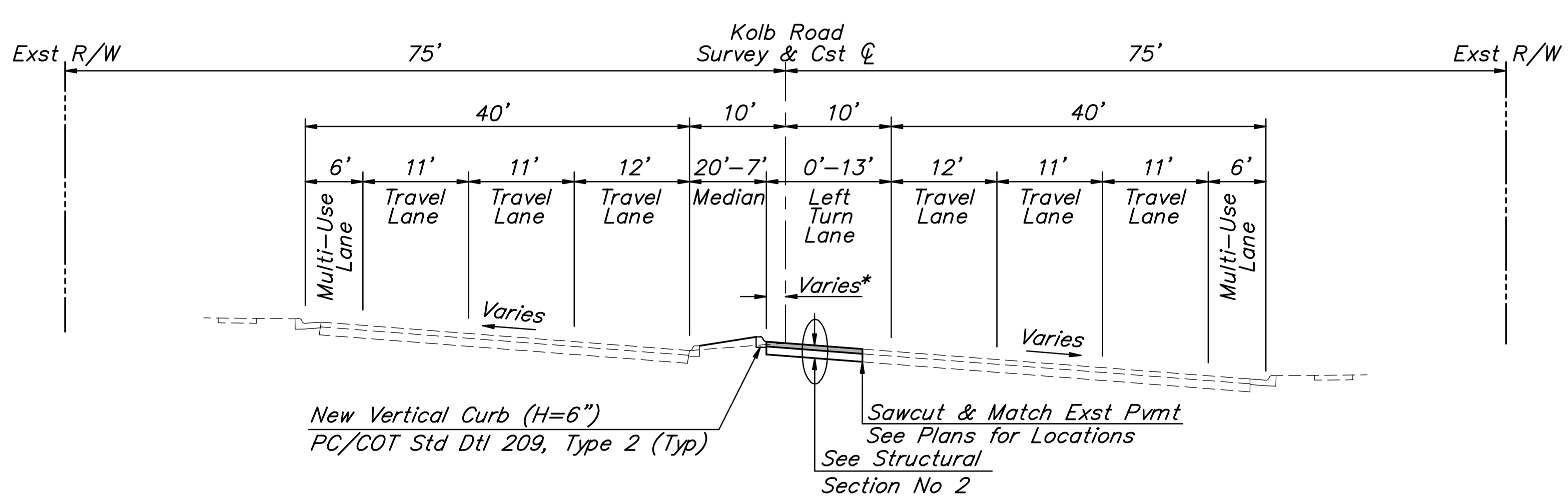
**DESIGN SHEET**

DS1  
OF  
DS1  
**3**  
OF  
**189**

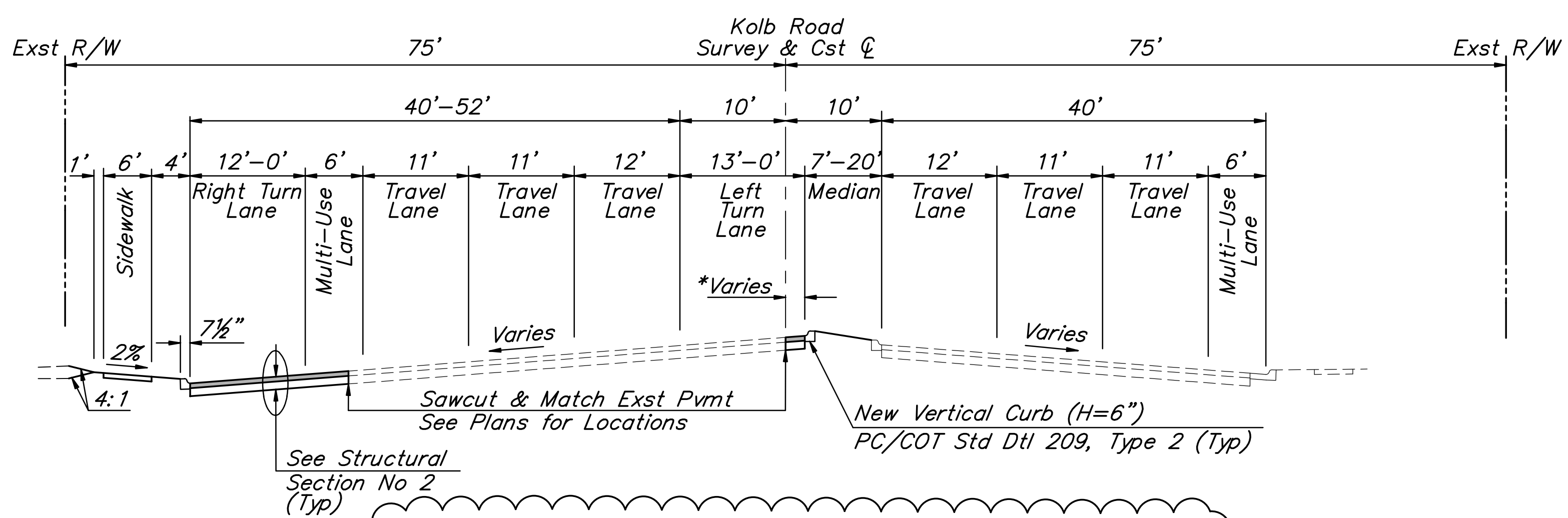
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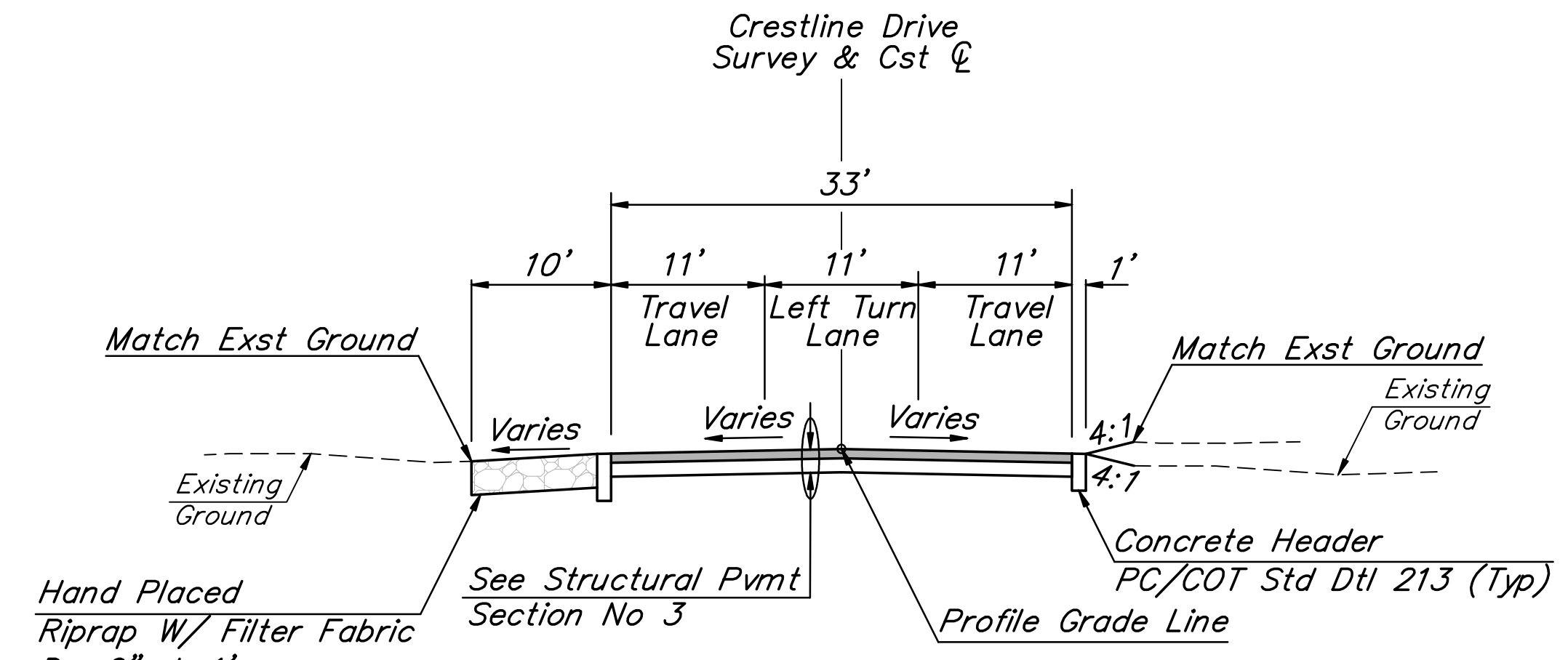
**SUPERELEVATION DIAGRAM**  
 SABINO CANYON ROAD  
 STA 81+27.41 TO STA 89+73.37



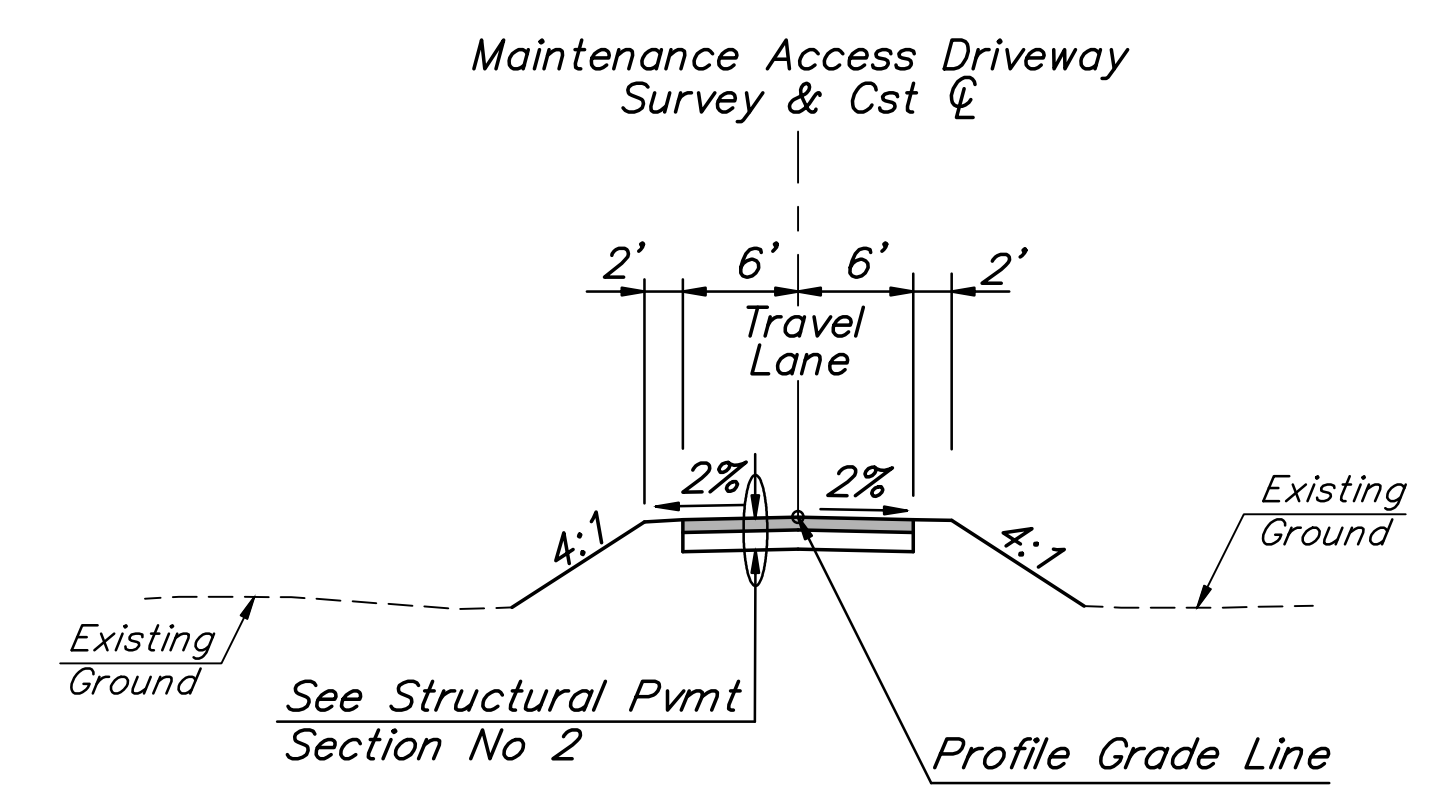
**TYPICAL SECTION - KOLB ROAD SB LEFT TURN LANE**  
 Sta 46+88.90 to Sta 47+88.90  
 \*Right Median Edge:  
 Varies 10' Rt to 3.09' Lt



**TYPICAL SECTION - KOLB ROAD NB RIGHT TURN LANE**  
 Sta 51+43.50 to Sta 53+61.56  
 \*Left Median Edge:  
 Varies 1.97' Rt to 10' Lt



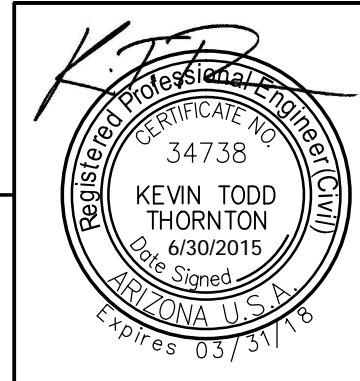
**TYPICAL SECTION CRESTLINE DRIVE**  
 Sta 20+40.07 to Sta 21+60.00



**TYPICAL SECTION MAINTENANCE ACCESS**  
 Sta 82+51.04

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

**TYPICAL SECTIONS**



DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION		TY5
SABINO CANYON ROAD		OF
TANQUE VERDE ROAD TO KOLB ROAD		TY5
DRWN. BY RLC	06/15	REF. SCALE: H: N/A
DSGN. BY PS	06/15	V: N/A
CHKD. BY KTT	06/15	PLAN NO. I-2010-006

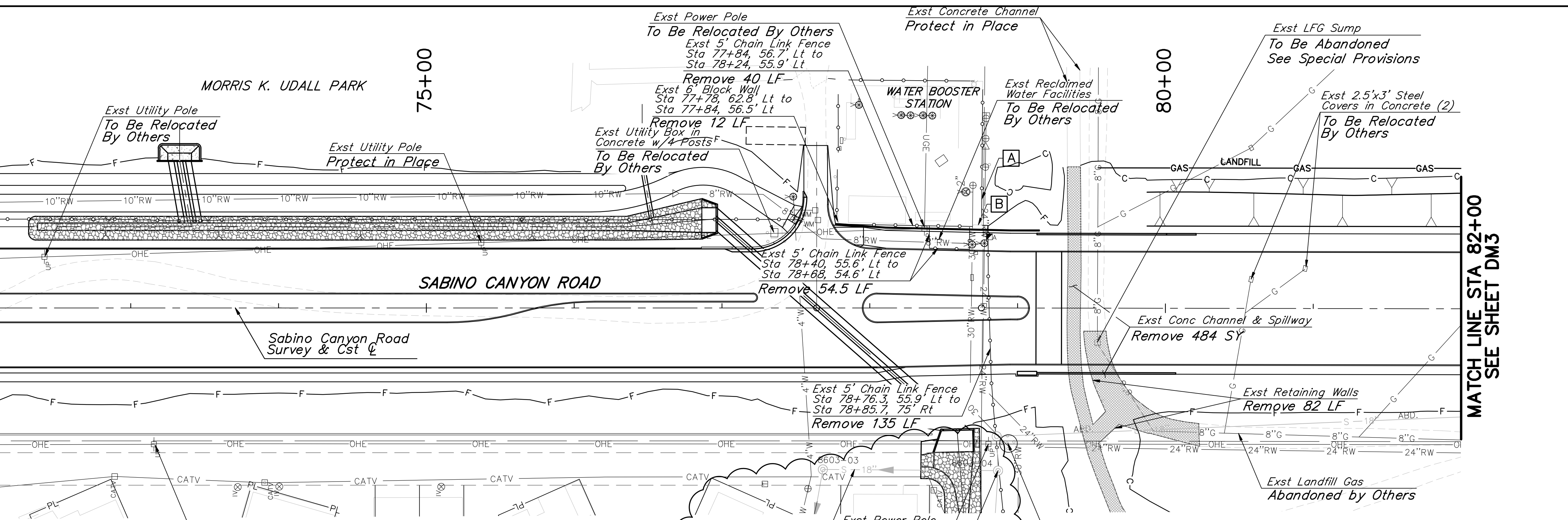
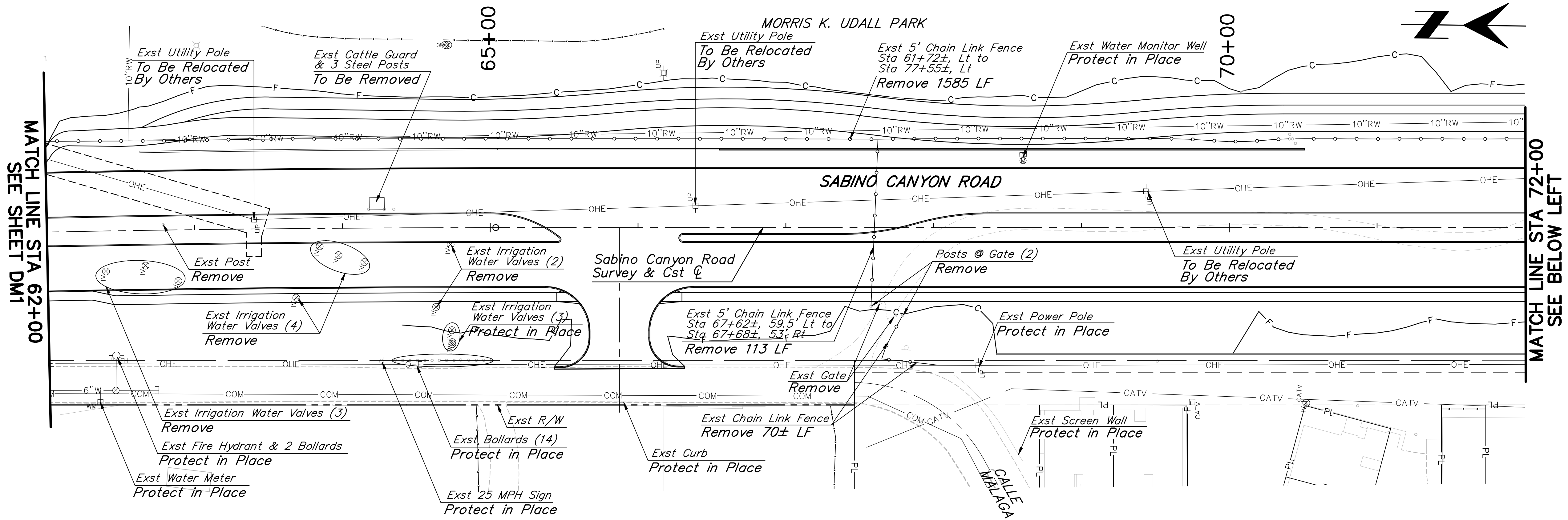
NO.	DATE	REVISION	BY	CHKD.	APPR.
8-19-15		Typ Sect Revision	MA	RC	KT

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T:\7105070901\TRANSP\SHETS\15\typsec\c-k01-sty05.dwg Sty05 Last Saved: August 19, 2015 By: RandyCheney Plotted: Wednesday, August 19, 2015 12:16:36 PM

**SHEET TOTALS**

- 1,998 LF Chainlink Fence Removal
- 1 Water Feature Relocations
- 9 Irrigation Valves Removal
- 1 Cattle Guard Removal
- 1 Gate Removal
- 484 SY Conc Spillway Removal
- 12 LF Block Wall Removal
- 82 LF Retaining Wall Removal

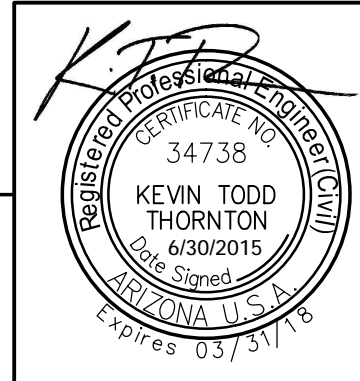


- A** Exst 5' Chain Link Fence Sta 77+84, 56.7' Lt to Sta 78+70, 55.2' Lt Protect in Place
- B** Exst 6' Block Wall Sta 78+70, 55.6' Lt to Sta 78+76, 61.8' Lt Protect in Place

**Note:**  
Abandon Sewer Manhole and Sewer Line per 2012 RWRD Engineering Design Standards Subsections 5.1.12 and 5.2.19 and the Standard Specifications and Details Subsections 3.2.3(H) and 3.3.3(E), and Detail No. RWRD 503. Payment will be under Item No 2020003

Exst 18" Sewer Line Abandon 120 LF Per Note

Exst MH 8603-04 Abandon Per Note



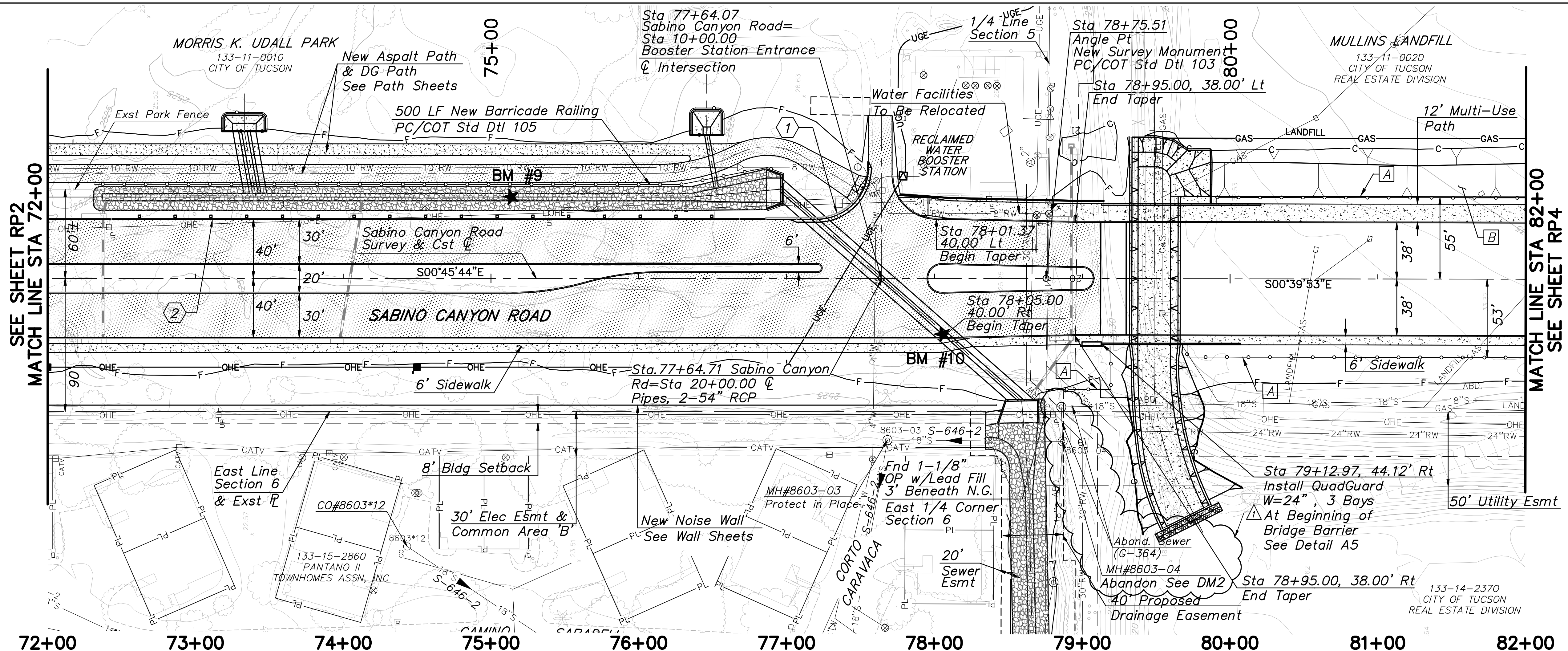
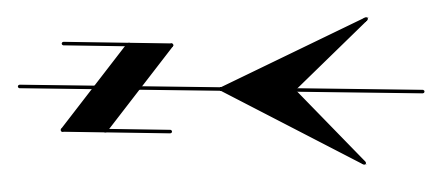
**DEMOLITION PLANS**

<b>DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION</b>		<b>DM2</b>
<b>SABINO CANYON ROAD</b>		<b>OF</b>
<b>TANQUE VERDE ROAD TO KOLB ROAD</b>		<b>DM3</b>
	DRWN. BY RLC 06/15	REF. SCALE: H: 1"=40'
CITY OF TUCSON	DSGN. BY PS 06/15	V: N/A
CHKD. BY KTT 06/15	<b>PLAN NO. I-2010-006</b>	
<b>17</b>		<b>OF</b>
<b>189</b>		

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T:\UTUS070901\TRANSP\PROJECTS\DM3\DM3.dwg 06/15/15 12:16:49 PM



★BM #9  
Sta 75+13.51, 55.22' Lt  
5R w/Tag "Psomas Control"  
Elev=2525.49

★BM #10  
Sta 78+05.27, 37.77' Rt  
5R w/Tag "Psomas Control"  
Elev=2524.80

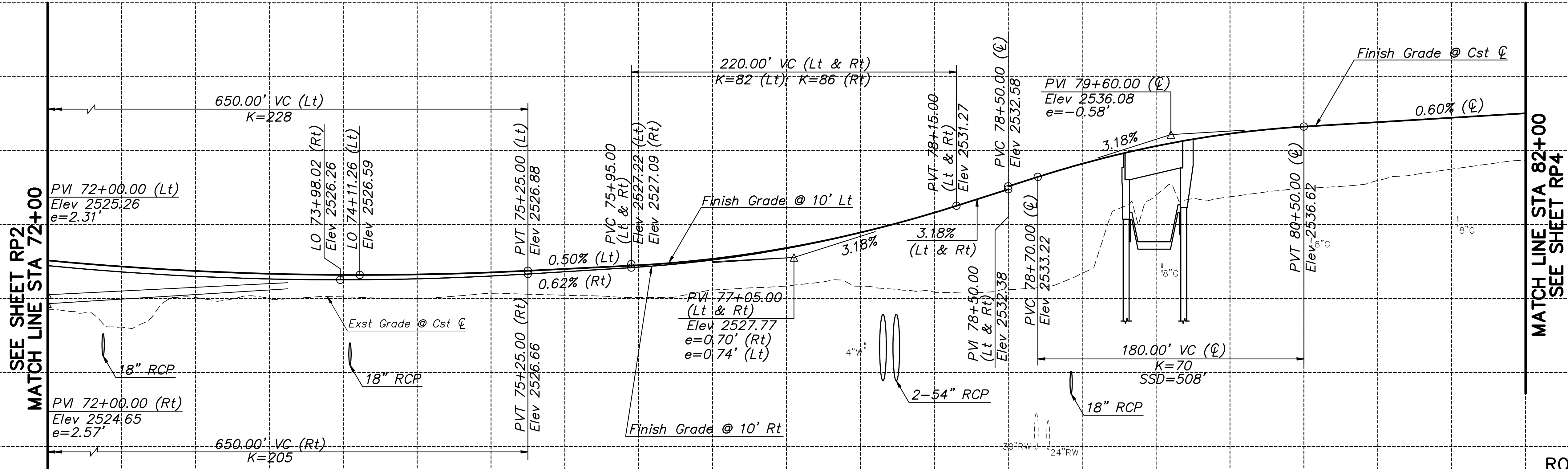
A New Chain Link Fence  
Type 1, Per ADOT Std  
C-12.20, H=72"

B Mullins Landfill Ditch  
See Sheet TY4 and  
Detail A3

1 Barrier Layout,  
See Detail A4

2 Sta 72+43.15 to  
Sta 76+68.15  
W-Beam Guardrail

REFERENCE:  
C, CURB & MEDIAN  
GEOMETRICS, SEE  
SHEETS HZ1-HZ4



ROADWAY PLANS



DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

**SABINO CANYON ROAD**  
TANQUE VERDE ROAD TO KOLB ROAD

DRWN. BY RLC 06/15 REF. SCALE: H: 1"=40'  
V: 1"=4'

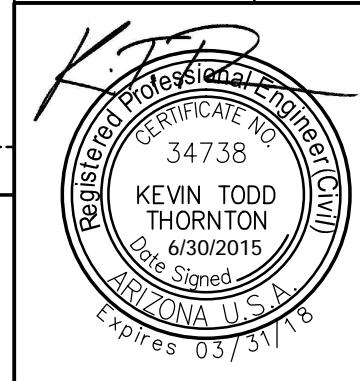
DSGN. BY PS 06/15

CHKD. BY KTT 06/15

RP3 OF RP9

26 OF 189

PLAN NO. I-2010-006

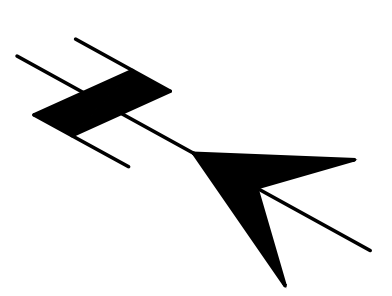
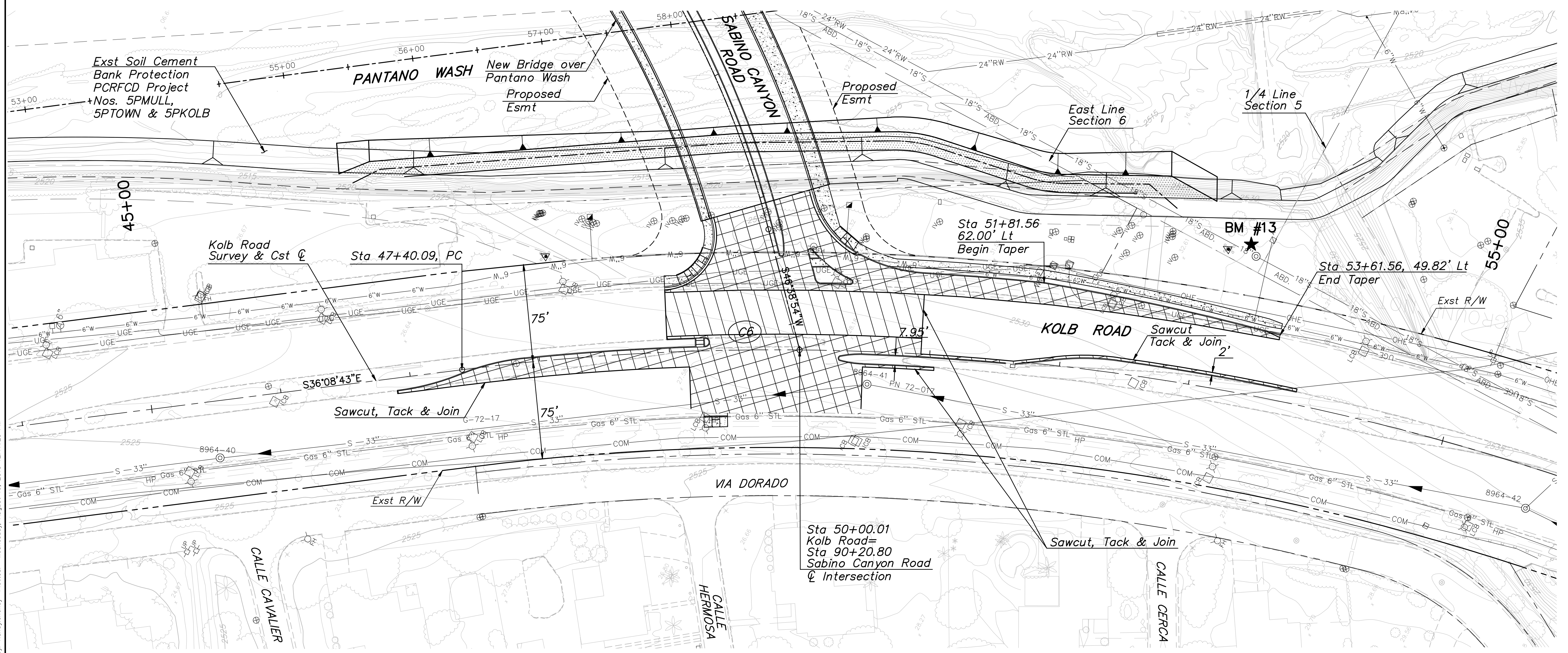


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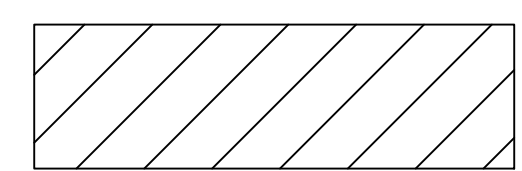
NO.	DATE	REVISION	BY	CHKD.	APPR.
1	08/19/2015	ABANDON SEWER	RC	MA	KT

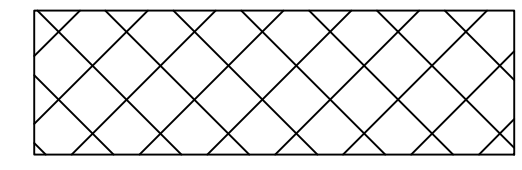
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**LEGEND**

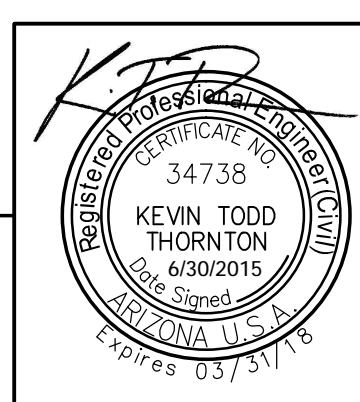
 STRUCTURAL SECTION NO. 6

 STRUCTURAL SECTION NO. 2

★ **BM #13**  
 Sta 53+29.34, 113.89' Lt 5R  
 W/TAG PSOMAS CONTROL  
 Elev=2533.071

NO.	DATE	REVISION	BY	CHKD.	APPR.
8-19-15		Legend & Pvmt Limits	MA	RC	KT

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**ROADWAY PLANS**

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

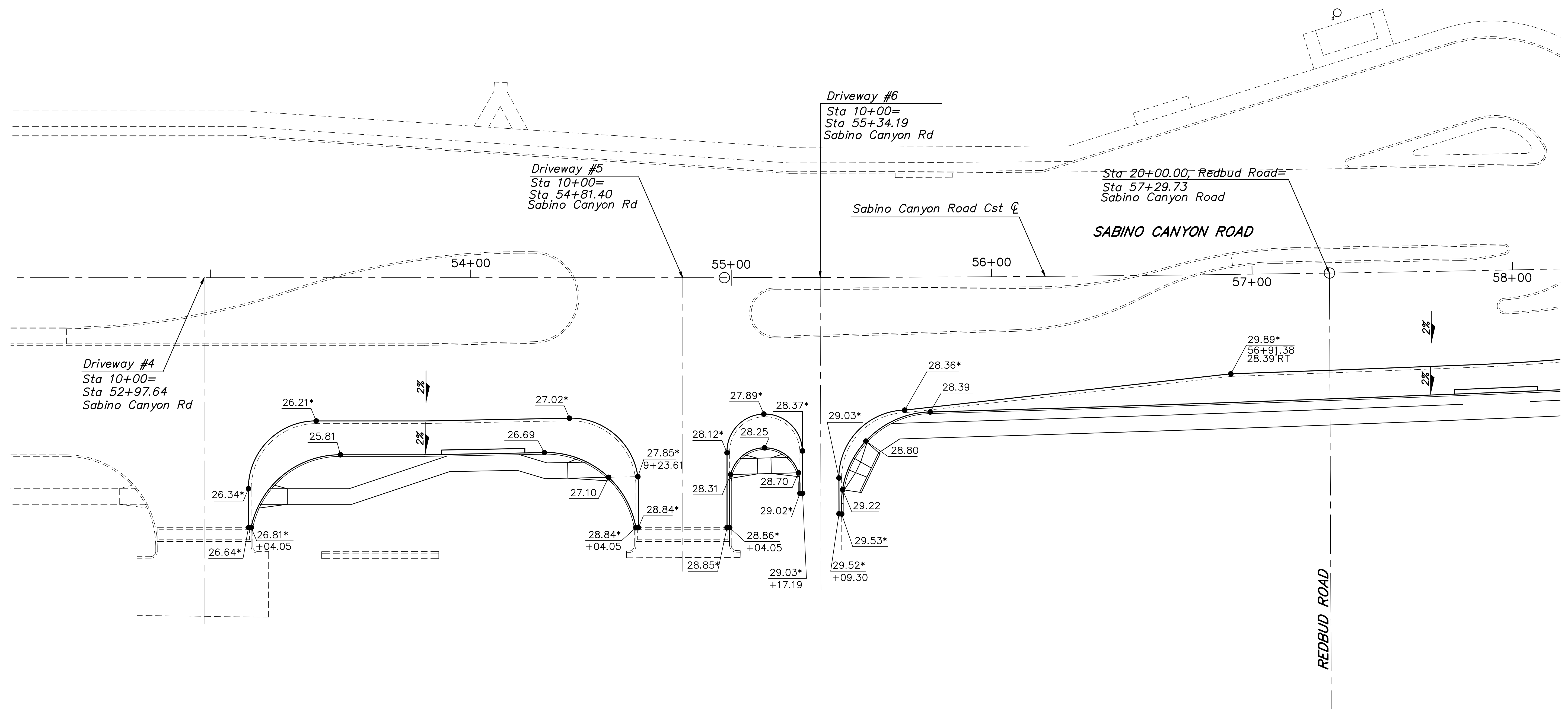
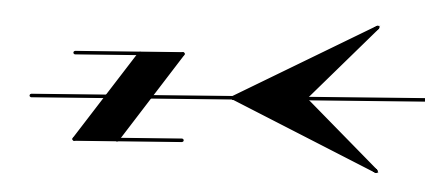
**SABINO CANYON ROAD**  
 TANQUE VERDE ROAD TO KOLB ROAD

CITY OF TUCSON

DRWN. BY RLC	06/15	REF.	SCALE: H: 1"=40'	RP6 OF RP9  29 OF 189
DSGN. BY PS	06/15		V: N/A	
CHKD. BY KTT	06/15			

PLAN NO. I-2010-006





T:\7165070901\TRANSP\SHEETS\stakeing\c--kr01--st101.dwg Set01 Last Saved: August 19, 2015 By: Randy Cheney Plotted: Wednesday, August 19, 2015 12:17:40 PM

\*Match Exst Elevation - Survey existing elevations a minimum of 7 calendar days prior to construction and notify Engineer if difference is more than  $\pm 0.10'$  than shown on plans.

Note: All elevations are pavement grades unless otherwise noted.

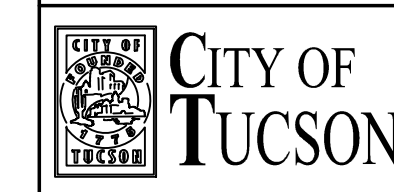


STAKING PLANS

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

SABINO CANYON ROAD  
TANQUE VERDE ROAD TO KOLB ROAD

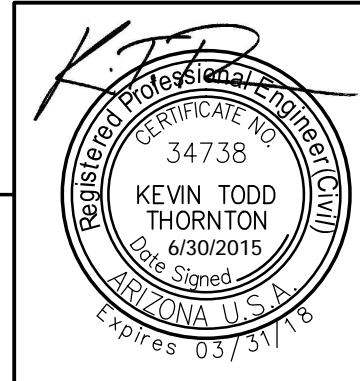
SK1  
OF  
SK4



DRWN. BY	RLC	06/15
DSGN. BY	PS	06/15
CHKD. BY	KTT	06/15

REF.	SCALE: H: 1"=20'
	V: N/A
PLAN NO. I-2010-006	

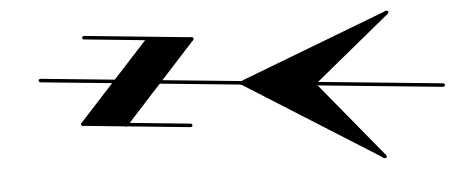
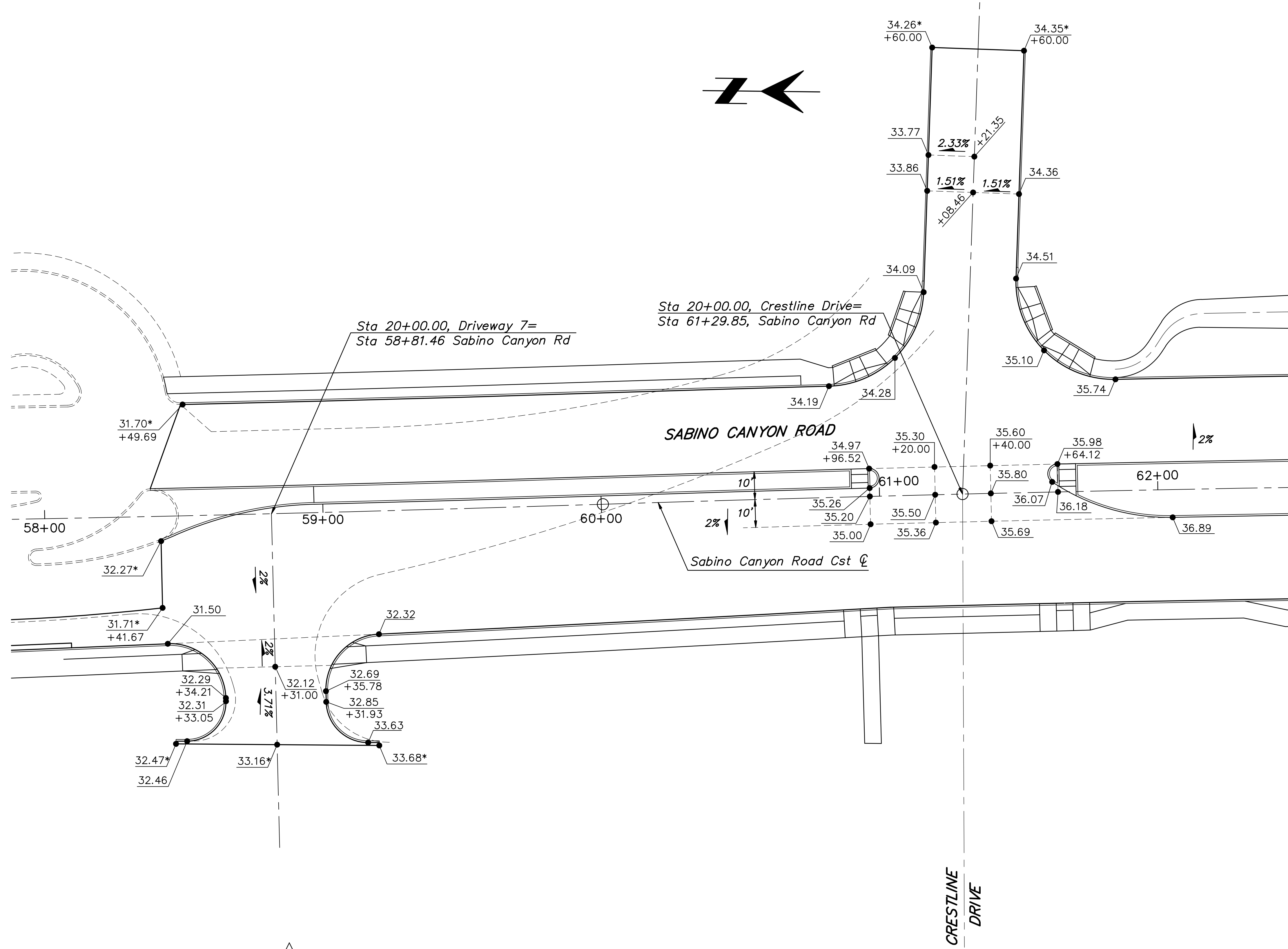
37  
OF  
189



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NO.	DATE	REVISION	BY	CHKD.	APPR.
1	08/19/2015	REVISED NOTE	RC	MA	KT

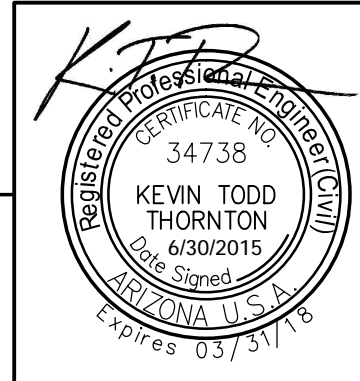
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\* Match Exst Elevation – Survey existing elevations a minimum of 7 calendar days prior to construction and notify Engineer if difference is more than ± 0.10' than shown on plans.  
 Note: All elevations are pavement grades unless otherwise noted.

NO.	DATE	REVISION	BY	CHKD.	APPR.
1	08/19/2015	REVISED NOTE	RC	MA	KT

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**STAKING PLANS**

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

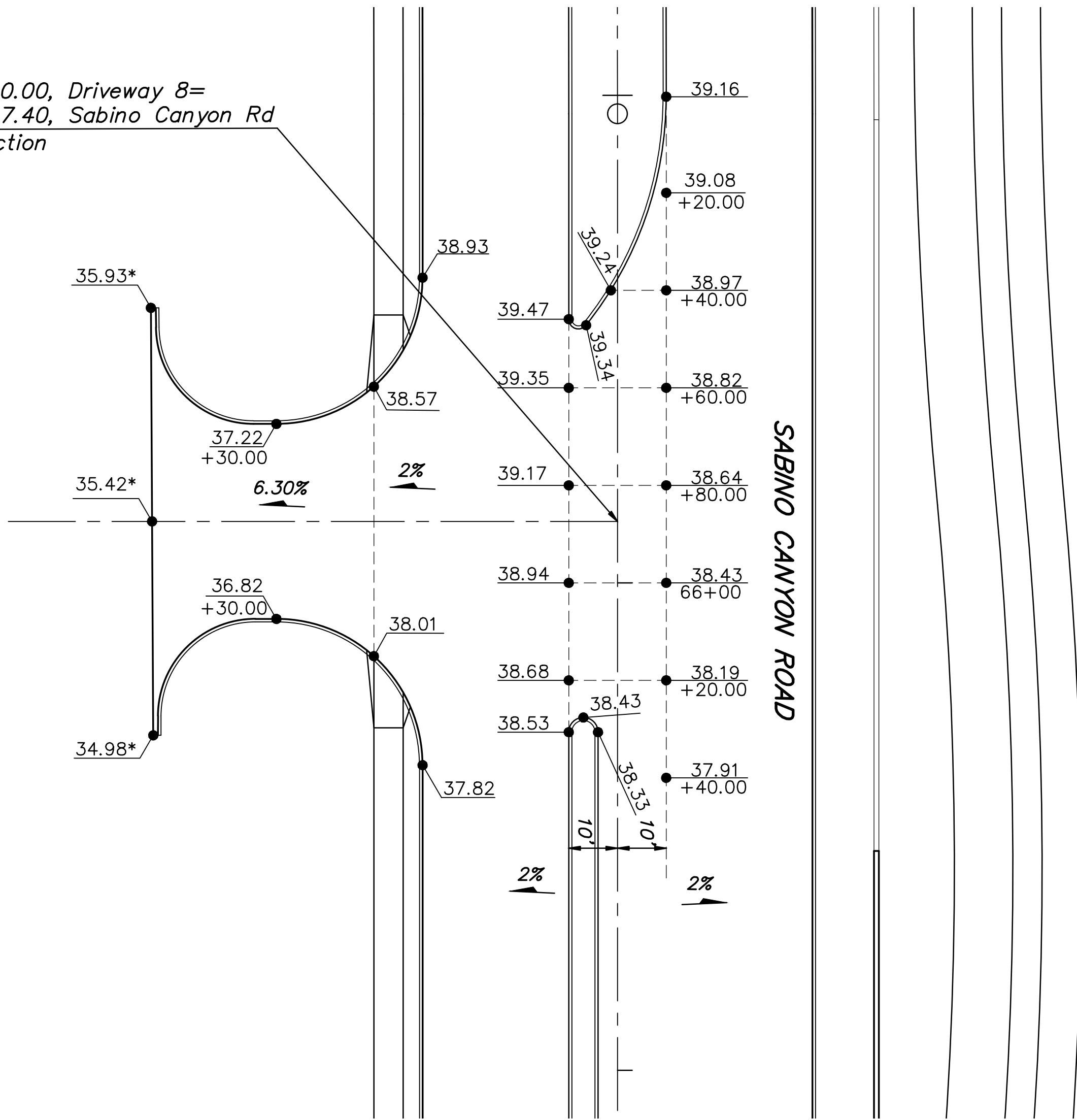
**SABINO CANYON ROAD**  
 TANQUE VERDE ROAD TO KOLB ROAD

DRWN. BY RLC	06/15	REF.	SCALE: H: 1"=20'	SK2 OF SK4  38 OF 189
DSGN. BY PS	06/15		V: N/A	
CHKD. BY KTT	06/15	PLAN NO. I-2010-006		



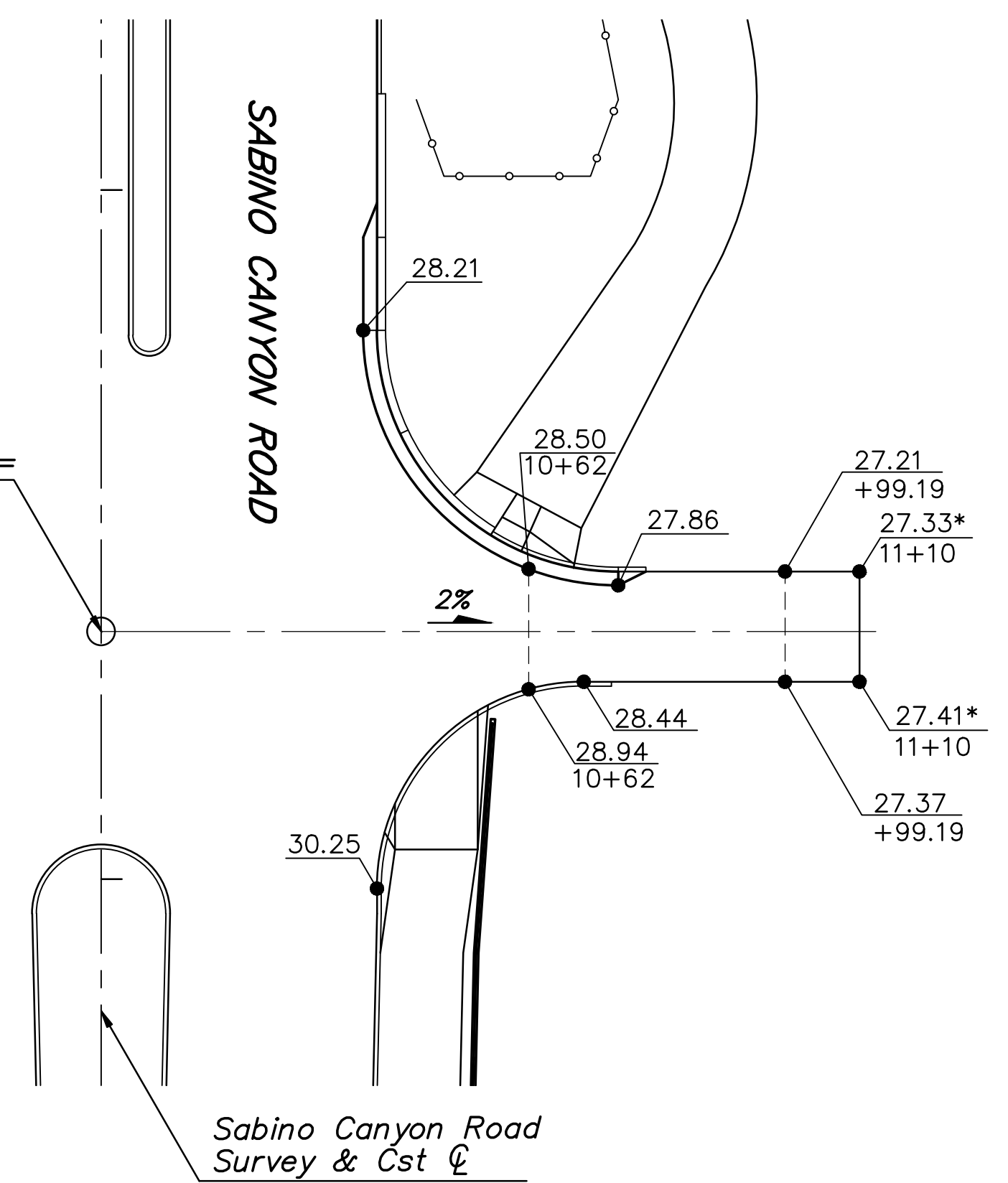
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Sta 20+00.00, Driveway 8=  
Sta 65+87.40, Sabino Canyon Rd  
C Intersection



MORRIS K. UDALL  
PARK

Sta 10+00.00  
Booster Station Entrance=  
Sta 77+64.07  
Sabino Canyon Road



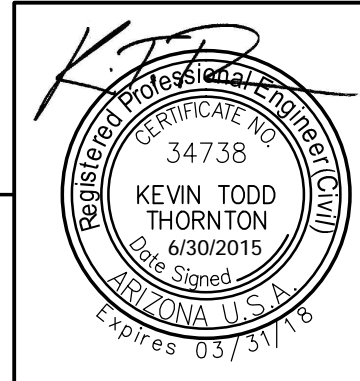
Sabino Canyon Road  
Survey & Cst C

\* Match Exst Elevation - Survey existing elevations a minimum of 7 calendar days prior to construction and notify Engineer if difference is more than ± 0.10' than shown on plans.  
Note: All elevations are pavement grades unless otherwise noted.



STAKING PLANS

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION		SK3
SABINO CANYON ROAD		OF
TANQUE VERDE ROAD TO KOLB ROAD		SK4
DRWN. BY RLC	06/15	SCALE: H: 1"=20' V: N/A
DSGN. BY PS	06/15	
CHKD. BY KTT	06/15	
REF. _____		39
PLAN NO. I-2010-006		OF
		189

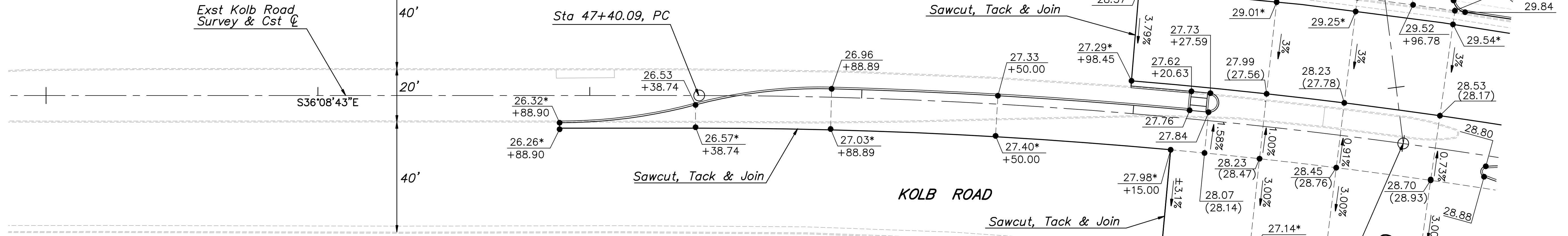


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NO.	DATE	REVISION	BY	CHKD.	APPR.
1	08/19/2015	REVISED NOTE	RC	MA	KT



45+00

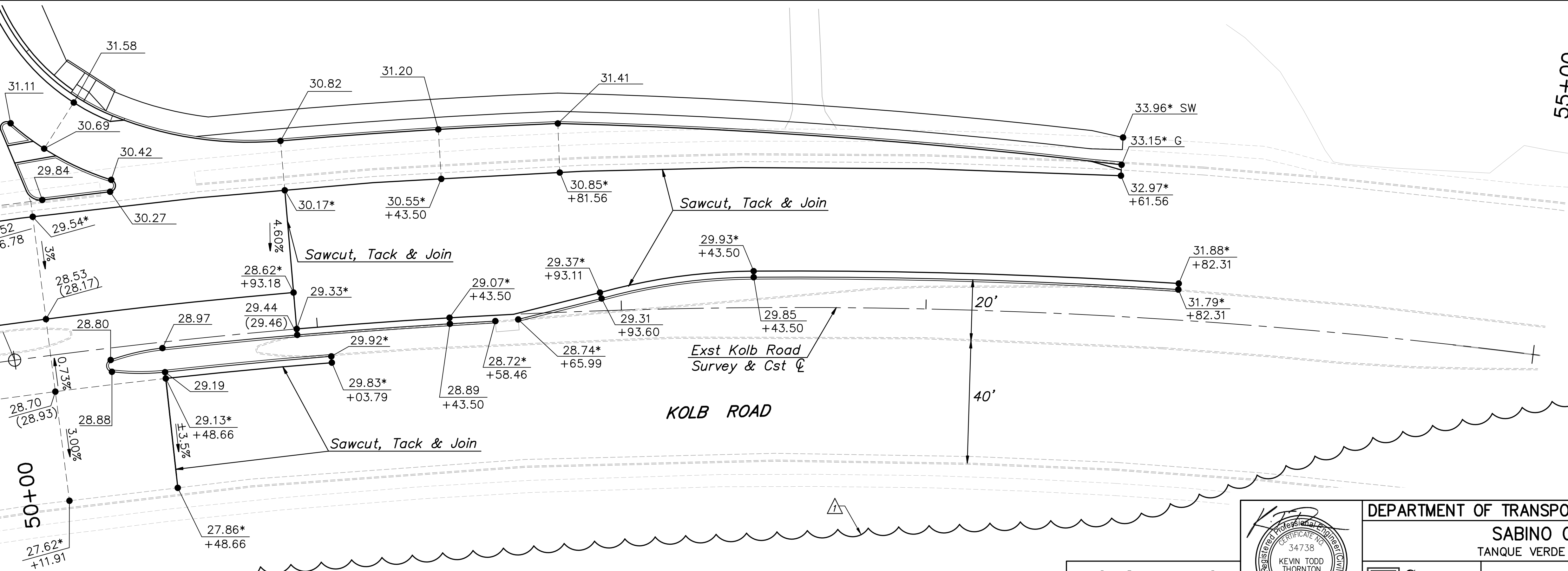


(###) Exst Elevation

\* Match Exst Elevation - Survey existing elevations a minimum of 7 calendar days prior to construction and notify Engineer if difference is more than ± 0.10' than shown on plans.

Note: All elevations are pavement grades unless otherwise noted.

Sta 50+00.01  
Kolb Road=  
Sta 90+20.80  
Sabino Canyon Road  
C Intersection



50+00

55+00



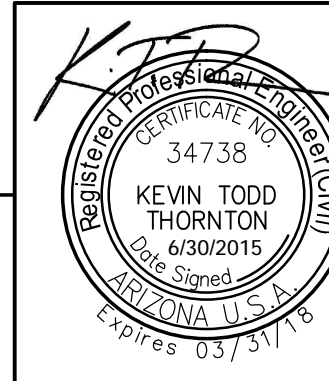
STAKING PLANS

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

SABINO CANYON ROAD  
TANQUE VERDE ROAD TO KOLB ROAD

DRWN. BY RLC	06/15	REF.	SCALE: H: 1"=20'
DSGN. BY PS	06/15		V: N/A
CHKD. BY KTT	06/15	PLAN NO. I-2010-006	

SK 4  
OF  
SK 4  
40  
OF  
189



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NO.	DATE	REVISION	BY	CHKD.	APPR.
1	08/19/2015	STAKING POINTS	RC	MA	KT

T:\TUS070901\TRANSP\SHETS\steking\c-kolb-Sst04-Kolb.dwg Sst04\_Kolb Last Saved: August 19, 2015 By: Randy Cheney Plotted: Wednesday, August 19, 2015 12:18:15 PM

**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 PIMA COUNTY / CITY OF TUCSON STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, 2003 EDITION.
  - B. CITY OF TUCSON STANDARDS SPECIFICATIONS AND DETAILS, 2011 EDITION AND 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 THREE (3) DAYS PRIOR TO ANY WATER WORK. THE CONTRACTOR SHALL REFER TO THE CITY OF TUCSON WATER DEPARTMENT PLAN NO. 4-053-2015.
- 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. SHUT DOWN OF TRANSMISSION MAINS:**

- A. CONSTRUCTION ON THE 24" MAIN SHALL TAKE PLACE ONLY IN THE OFF PEAK SEASON BETWEEN NOVEMBER 15 AND MARCH 30. MAIN SHUT DOWNS SHALL NOT BE CONCURRENT. SEPARATE SHUTDOWNS OF THE MAINS ARE REQUIRED AND ARE TO BE COORDINATED WITH TUCSON WATER BY THE CONTRACTOR.
- B. THE CONTRACTOR SHALL BE ALLOWED A MAXIMUM OF TWO (2) CALENDAR DAYS DOWN TIME FOR ANY ONE SHUT-DOWN UNLESS PRIOR APPROVAL HAS BEEN OBTAINED IN WRITING FROM TUCSON WATER.
- C. MULTIPLE SHUT DOWNS WILL BE ALLOWED WITH A MAXIMUM OF TWO (2) CALENDAR DAYS BETWEEN SHUT DOWNS UNLESS PRIOR APPROVAL HAS BEEN OBTAINED IN WRITING FROM TUCSON WATER.
- D. WORKING PRESSURE FOR THE 24" RECLAIMED LINE = 150 PSI.

**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.

**6. SHUT DOWN OF CITY OF TUCSON PARKS & RECREATION WATER MAIN (PRIVATE)**

- 48-HOUR NOTICE TO CITY OF TUCSON PARKS & RECREATION DEPARTMENT IS REQUIRED PRIOR TO ANY SHUT DOWNS OF THE 12" MAIN. SHUT DOWNS OF THE 12" MAIN WILL BE ALLOWED ACCORDING TO THE FOLLOWING SCHEDULE:
  - A. OCTOBER/NOVEMBER - NO SHUT DOWNS PERMITTED.
  - B. DECEMBER THRU FEBRUARY - 7 DAY SHUT DOWN PERIOD PERMITTED WITH 48-HOURS NOTICE TO CITY OF TUCSON PARKS & RECREATION DEPARTMENT.
  - C. MARCH - 5 DAY SHUT DOWN PERIOD PERMITTED WITH 48-HOURS NOTICE TO CITY OF TUCSON PARKS & RECREATION DEPARTMENT.
  - D. APRIL - 72 HOUR SHUT DOWN PERIOD PERMITTED WITH 48-HOURS NOTICE TO CITY OF TUCSON PARKS & RECREATION DEPARTMENT.
  - E. MAY THRU SEPTEMBER - 48 HOUR SHUT DOWN PERIOD PERMITTED WITH 48-HOURS NOTICE TO CITY OF TUCSON PARKS & RECREATION DEPARTMENT.

**7. 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 FEET (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 LINES.

C. THESE MINIMUMS SHALL APPLY TO ALL SERVICE LINES UNLESS OTHERWISE NOTED ON THE PLANS.

**8. FIRE PROTECTION SHUT DOWN:**

FIVE (5) 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.

**9. MAINTAIN SERVICE TO CUSTOMERS:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO ALL WATER CUSTOMERS DURING CONSTRUCTION. IT SHALL BE THE CONTRACTORS 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.

**10. 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.
  - F. CONSTRUCTION WATER SPECIAL PERMIT: THERE WILL BE NO CHARGE FOR THIS PERMIT, BUT THE CONTRACTOR MUST PAY THE SUM OF \$150 PLUS TAX AS THE ESTIMATED COST OF THE WATER TO BE USED. THIS WATER MAY ONLY BE USED FOR TRENCH SETTLING, DISINFECTION, AND TESTING.
  - G. METERED FIRE HYDRANT ONLY PERMIT: THIS NONTRANSFERABLE 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.

**11. NEW MATERIAL:**

ALL MATERIAL, 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.

**12. VALVE BOXES:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL NEW AND EXISTING WATER VALVE BOXES TO THE FINISHED GRADE PER SD-300.

**13. 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, THE CONTRACTOR MAY USE CONCRETE THRUST BLOCKING IN LIEU OF MECHANICALLY RESTRAINED JOINTS. CONCRETE THRUST BLOCKING SHALL COMPLY WITH STANDARD DETAIL SD-610.

**14. 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.

**15. 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.

**16. TRACER WIRE:**

THIS PROJECT WILL HAVE TRACER WIRE INSTALLED. IF ANY EXISTING TRACER WIRE IS DISTURBED OR DESTROYED DURING CONSTRUCTION, THE CONTRACTOR SHALL FURNISH AND INSTALL NEW TRACER WIRE TO REPLACE THE EXISTING. THERE SHALL BE NO ADDITIONAL CHARGE FOR THIS REINSTALLATION.

THE TRACER WIRE SHALL BE CERTIFIED BY A LICENSED ELECTRICAL CONTRACTOR FOR CONTINUITY PRIOR TO FINAL ROADWAY PAVEMENT. FINAL ACCEPTANCE WILL NOT BE GRANTED UNTIL CERTIFICATION IS RECEIVED BY TUCSON WATER.

ALL TRACER WIRE SPLICES ALONG THE 12" RECLAIMED MAIN NORTH OF THE MASTER WATER METER SHALL BE PLACED IN A JUNCTION BOX.

**17. 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.

**18. PVC PIPE DEFLECTION:**

THE CONTRACTOR MAY NOT DEFLECT PVC PIPE AT GASKETED BELL AND SPIGOT JOINTS. THE CONTRACTOR MAY USE THE FOLLOWING METHODS TO DEFLECT PVC PIPE:

- A. MECHANICAL JOINT SOLID SLEEVE FITTING OR STANDARD DUCTILE IRON BENDS OR FITTINGS. PVC PIPE MAY BE DEFLECTED AT BENDS OR FITTINGS PROVIDED THE DEFLECTION IS WITHIN THE MANUFACTURERS' ALLOWABLE DEFLECTION FOR THAT BEND OR FITTING.

**19. LEAD FREE REQUIREMENT:**

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. DISCHARGING OF WATER:**

DISCHARGES OF RECLAIMED WATER INTO THE PANTANO WASH IS NOT ALLOWED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH EXISTING TUCSON WATER GUIDELINES AND ADEQ STANDARDS AS WELL AS COORDINATION WITH PIMA COUNTY FOR DISCHARGING WATER TO A LOCAL SANITARY SEWER SYSTEM.

**21. PIPE INSULATION:**

ALL TWO-INCH AND SMALLER WATER PIPING EXPOSED OUTDOORS SHALL BE INSULATED WITH TECHLITE SSL 279 FOR OUTDOOR APPLICATION, AS MANUFACTURED BY ACCESSIBLE PRODUCTS COMPANY, OR EQUAL. A LOCKING TRACK OR FASTENER WELD FOR THE JACKET SHALL BE USED TO SNAP THE INSULATION ON THE PIPE. FITTINGS, VALVES, AND FLANGES SHALL BE INSULATED WITH FIBERGLASS PERMOLDED FITTING COVERS. INSULATION SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS NOT EXCEEDING FLAME SPREAD 25 AND SMOKE DEVELOPED 5. INSULATION, JACKET, AND ADHESIVE SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, AND SHALL BE ONE-INCH THICK.

**BASIS OF BEARING**

THE BASIS OF BEARING FOR THIS PROJECT IS SOUTH 00° 45' 44" WEST, UPON THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 14 SOUTH, RANGE 15 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA, AS SHOWN ON PAGE 2 OF THE ROW PLANS (NOT INCLUDED IN THIS SUBMITTAL). THE REFERENCE MERIDIAN IS RELATIVE TO ACS 83 GRID NORTH.

THIS PROJECT UTILIZES THE ARIZONA COORDINATE SYSTEM, 1983 (ACS 83), HARN92, INTERNATIONAL FEET, AND IS LOCATED IN THE CENTRAL ZONE. THE CONTROL NETWORK WAS SURVEYED IN DECEMBER, 2007 USING TRIMBLE GPS UNITS UTILIZING RTK METHODS AND INCORPORATED THE FOLLOWING CITY OF TUCSON GEODETIC CONTROL POINTS:

PT. NO.	STATION	PID
1	C05	E1415C05S01 * PRIMARY CONTROL POINT
2	E07	E1415E071996-07-16S01
3	E05	E1415E05S01
4	C03	E1415C031996-07-16S01
5	A03	E1415A03S01
6	Z04	E1315Z04S01
7	A05	E1415A05S01

SURFACE COORDINATES AND/OR DISTANCES WERE COMPUTED FROM THE ACS 83 COORDINATES BY APPLYING A PROJECT SPECIFIC GRID TO SURFACE COMBINED ELEVATION AND SCALE FACTOR AT A CENTRAL POINT (NO. 8) AND THEN SUBTRACTING A CONSTANT FROM THE RESULTING COORDINATES:

$$NP\ LOC = (NP\ ACS83 - NCP\ ACS83) * CF + NCP\ ACS83 -KN$$

$$EP\ LOC = (EP\ ACS83 - ECP\ ACS83) * CF + ECP\ ACS83 -KE$$

- WHERE:
- NP LOC = LOCAL NORTH
  - NP ACS83 = ACS 83 NORTH
  - NCP ACS83 = ACS 83 AT CENTRAL POINT
  - EP LOC = LOCAL EAST
  - EP ACS83 = ACS 83 EAST
  - ECP ACS83 = ACS 83 AT CENTRAL POINT

COMBINED FACTOR (CF) = 1.0000893064  
CONSTANT (K) = N 400000.000, E 1000000.000

CENTRAL POINT N: 453825.093(ACS83) N: 53825.093 (LOCAL)  
E: 1032612.758(ACS83) E: 32612.758 (LOCAL)

**BASIS OF ELEVATION**

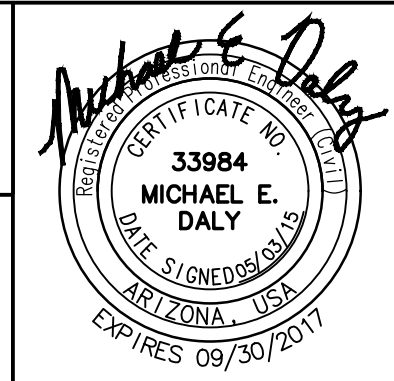
THE VERTICAL DATUM FOR THIS PROJECT IS THE NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD88).

THE PRIMARY BENCHMARK USED FOR THIS PROJECT IS POINT NO. 145 (STATION 60E) WITH AN ELEVATION OF 2526.88' AND DESCRIBED AS A "T" SCRIBED IN CONCRETE ON THE SOUTHWEST CORNER OF A CATCH BASIN AT THE SOUTHEAST CORNER OF SABINO CANYON AND TANQUE VERDE ROADS AS DESCRIBED IN COT FB 1989 E1, PG. 6.



**WATER NOTES**

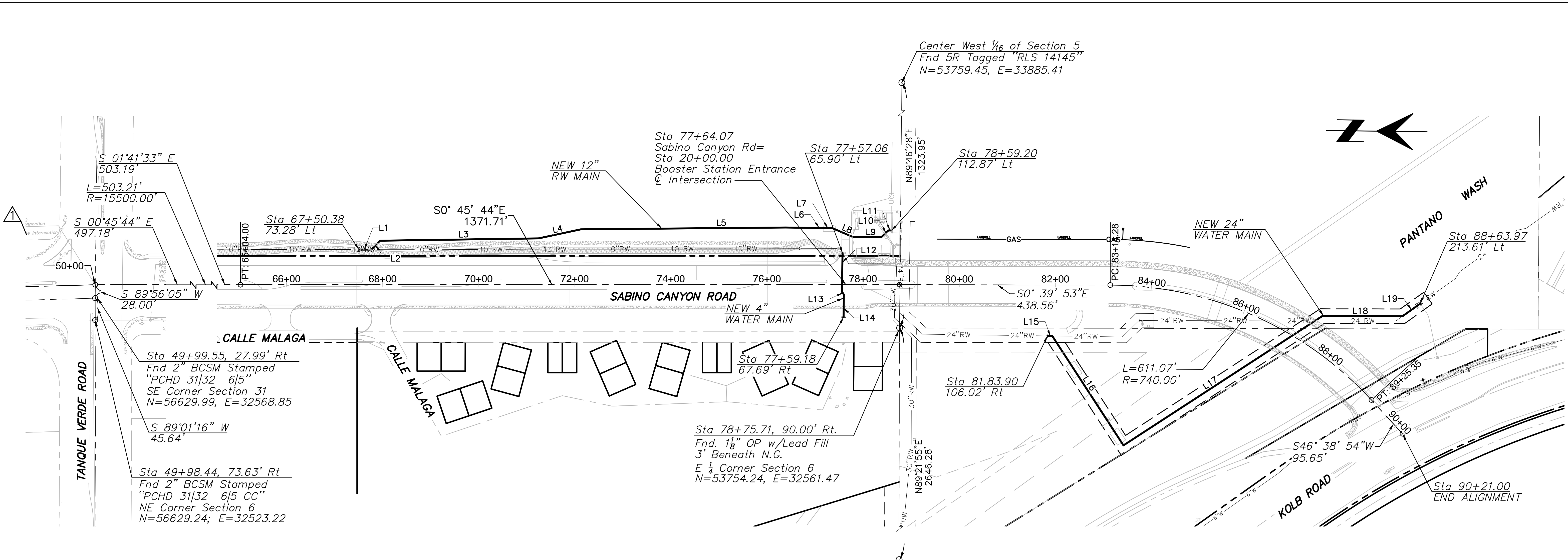
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION		W2 OF W12
SABINO CANYON ROAD		
TANQUE VERDE ROAD TO KOLB ROAD		
DRWN. BY KUL	06/15	REF. SCALE: H: N/A
DSGN. BY KUL	06/15	V: N/A
CHKD. BY MED	06/15	<b>89 OF 189</b>
PLAN NO. I-2010-006		



NO.	DATE	REVISION	BY	CHKD.	APPR.
8	19/15	Revise Plan No.	MED	CJ	

T:\TUS070901\TRANSP\SHEETS\WaterMains\South-Cr01-5 Wtr 02.dwg S Wtr 02 Last Saved: July 9, 2015 By: Mady Plotted: Wednesday, August 19, 2015 12:47:06 PM

T:\TUCSON\TRANSP\PROJECTS\WaterMains\South\c-wr01-s-wr-04.dwg S:Wtr 04 Last Saved: August 19, 2015 By: Mady PlotTied: Wednesday, August 19, 2015 11:06:23 PM



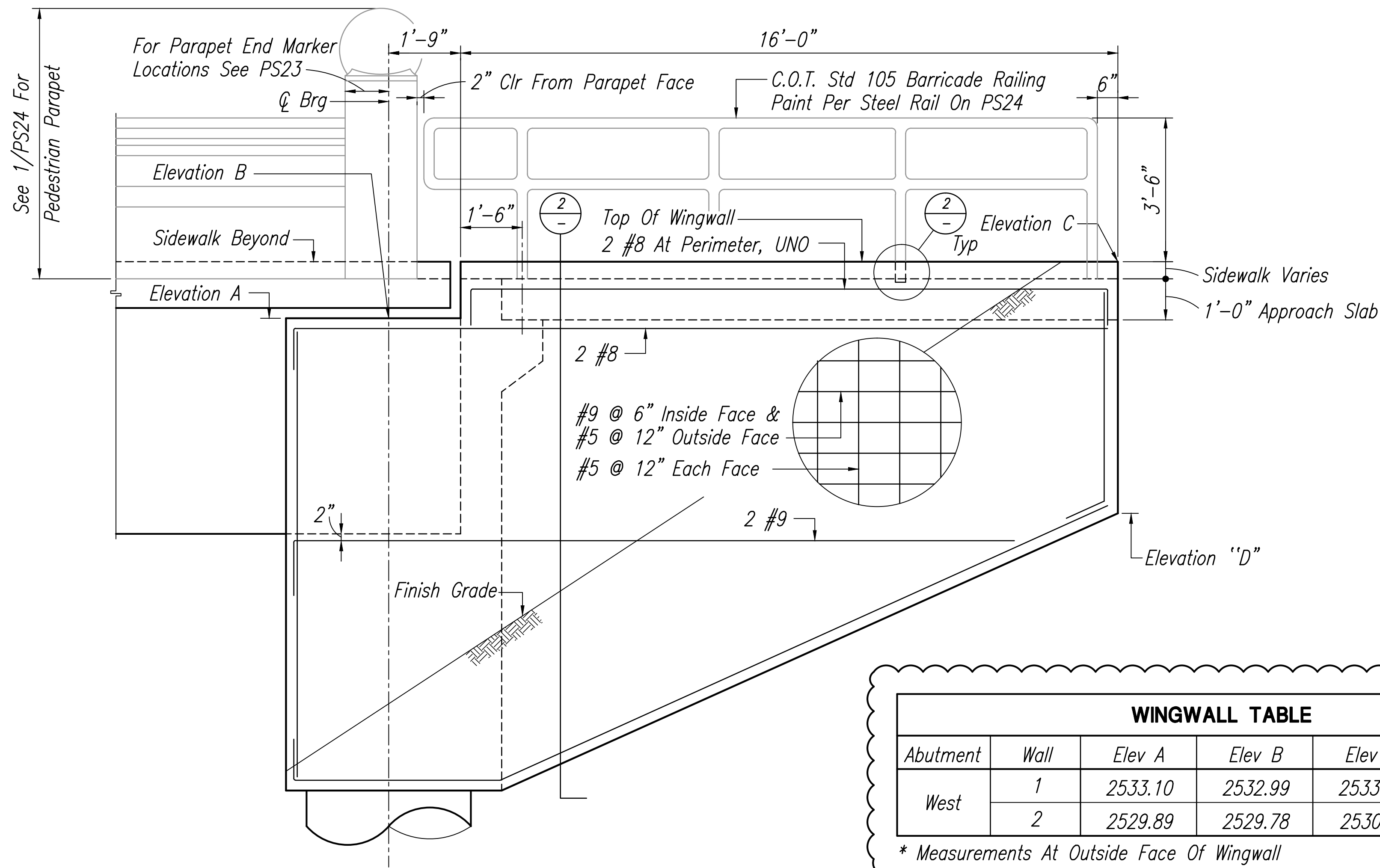
Line Table		
Line #	Length	Direction
L1	20.00'	S0° 44' 44"E
L2	25.75'	S46° 35' 00"E
L3	330.00'	S1° 35' 00"E
L4	90.00'	S12° 50' 00"E
L5	426.35'	S1° 17' 47"E
L6	83.70'	S0° 07' 17"W
L7	13.59'	S0° 00' 00"E
L8	46.04'	S22° 30' 00"W
L9	59.37'	S0° 00' 00"E
L10	20.39'	S45° 00' 00"E
L11	7.10'	S0° 00' 00"E
L12	80.63'	N89° 55' 05"W
L13	6.83'	S54° 08' 08"W
L14	47.40'	S89° 59' 09"W
L15	10.00'	S0° 00' 00"E
L16	271.74'	S56° 12' 11"W
L17	493.88'	S33° 47' 49"E
L18	166.79'	S0° 39' 53"E
L19	45.00'	S36° 10' 48"E

Center West 1/6 of Section 5  
 Fnd 5R Tagged "RLS 14145"  
 N=53759.45, E=33885.41

Center of Section 6  
 Fnd 1-1/2" LC on 5R  
 0.5' Beneath N.G.  
 N=53724.93, E=29915.35



Horizontal Control					DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION		W4 OF W12																														
<b>TUCSON WATER</b>					<b>SABINO CANYON ROAD</b>		SCALE: H: 1"=40'																														
<b>PSOMAS</b>					TANQUE VERDE ROAD TO KOLB ROAD		V: N/A																														
333 E. Wetmore Road, Suite 450 Tucson, AZ 85719 (520) 292-2300 (520) 292-1290 fax www.psomas.com					CITY OF TUCSON		91 OF 189																														
<table border="1"> <tr><td>NO.</td><td>DATE</td><td>REVISION</td><td>BY</td><td>CHKD.</td><td>APPR.</td></tr> <tr><td>8/19/15</td><td></td><td>Correct Lengths</td><td>MED</td><td>CJ</td><td></td></tr> </table>					NO.	DATE	REVISION	BY	CHKD.	APPR.	8/19/15		Correct Lengths	MED	CJ		<table border="1"> <tr><td>DRWN. BY</td><td>KUL</td><td>06/15</td><td>REF.</td><td></td></tr> <tr><td>DSGN. BY</td><td>KUL</td><td>06/15</td><td></td><td></td></tr> <tr><td>CHKD. BY</td><td>MED</td><td>06/15</td><td></td><td></td></tr> </table>		DRWN. BY	KUL	06/15	REF.		DSGN. BY	KUL	06/15			CHKD. BY	MED	06/15			<table border="1"> <tr><td>PLAN NO.</td><td>I-2010-006</td></tr> </table>		PLAN NO.	I-2010-006
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PLAN NO.	I-2010-006																																				



WINGWALL TABLE					
Abutment	Wall	Elev A	Elev B	Elev C	Elev D
West	1	2533.10	2532.99	2533.33	2528.33
	2	2529.89	2529.78	2530.61	2525.61

\* Measurements At Outside Face Of Wingwall

**WINGWALL ELEVATION - WEST ABUTMENT**

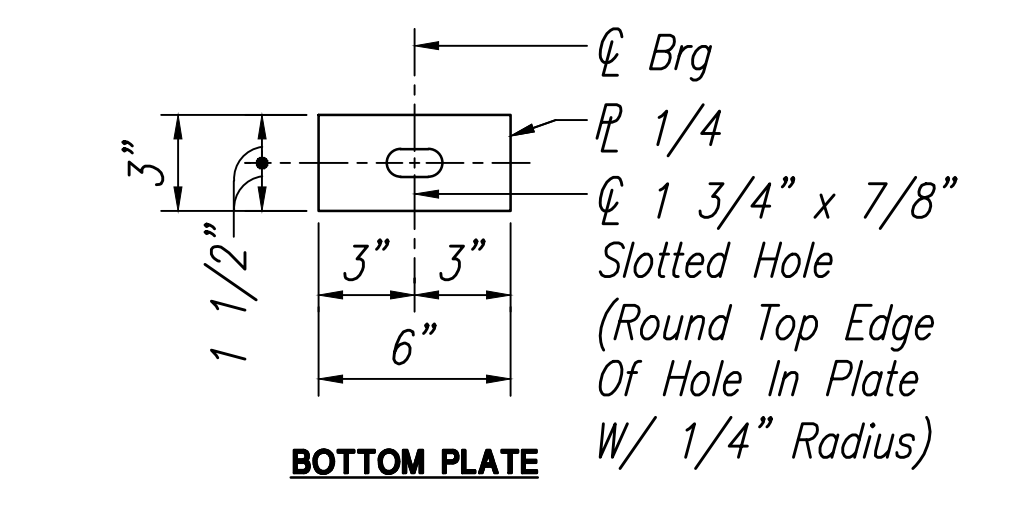
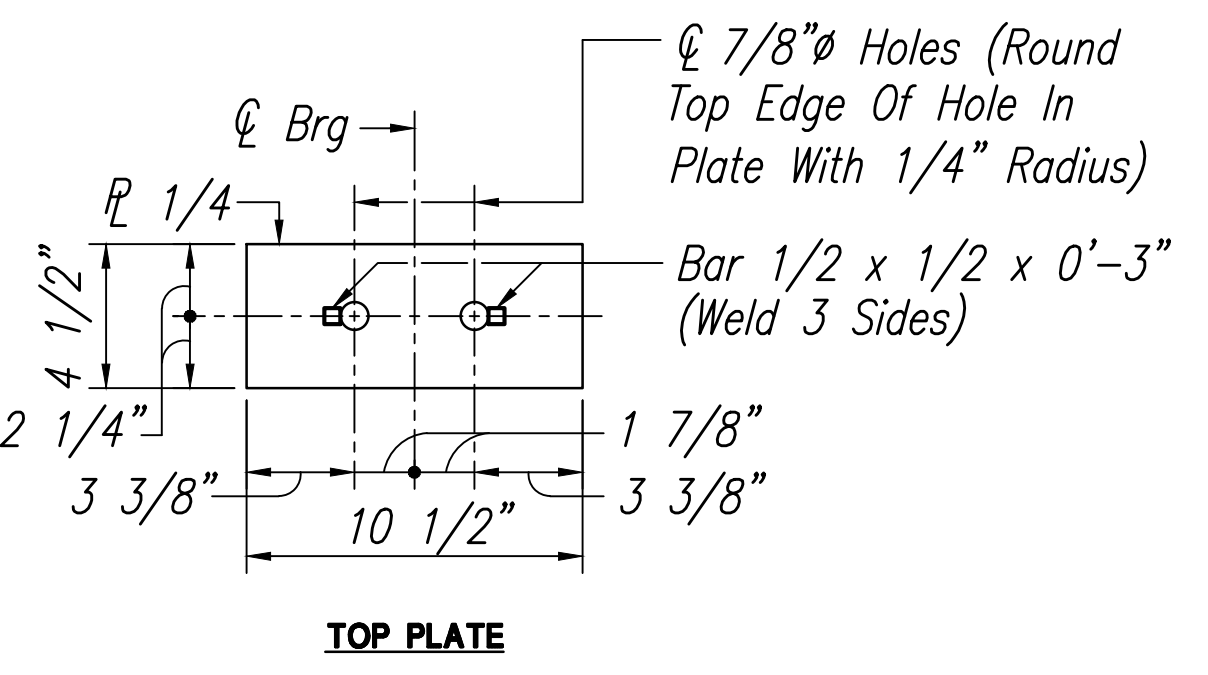
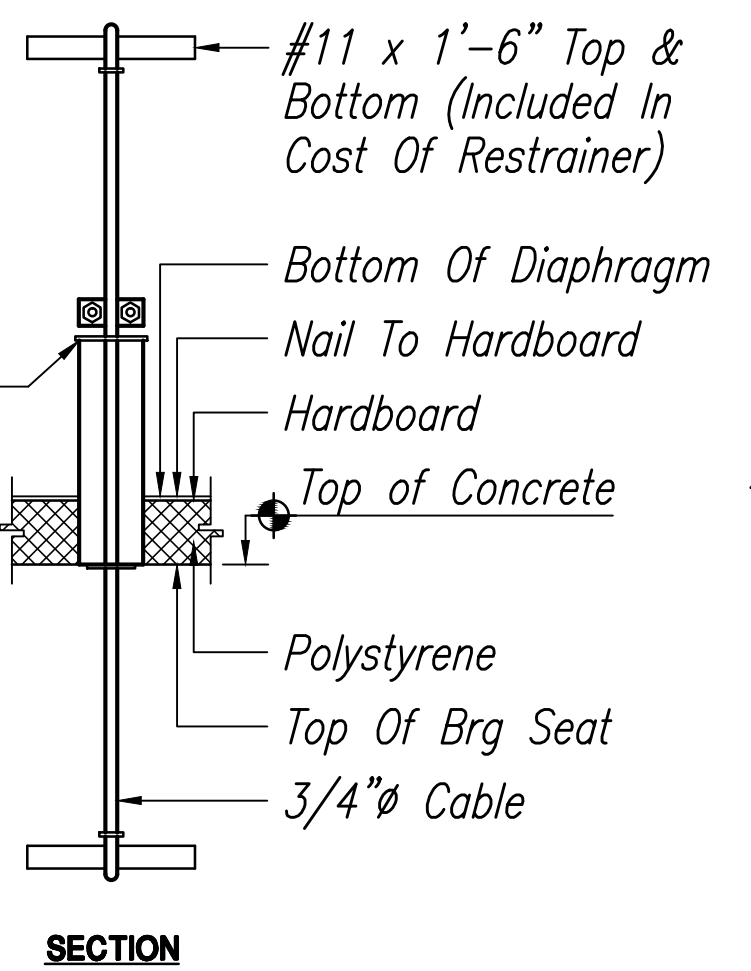
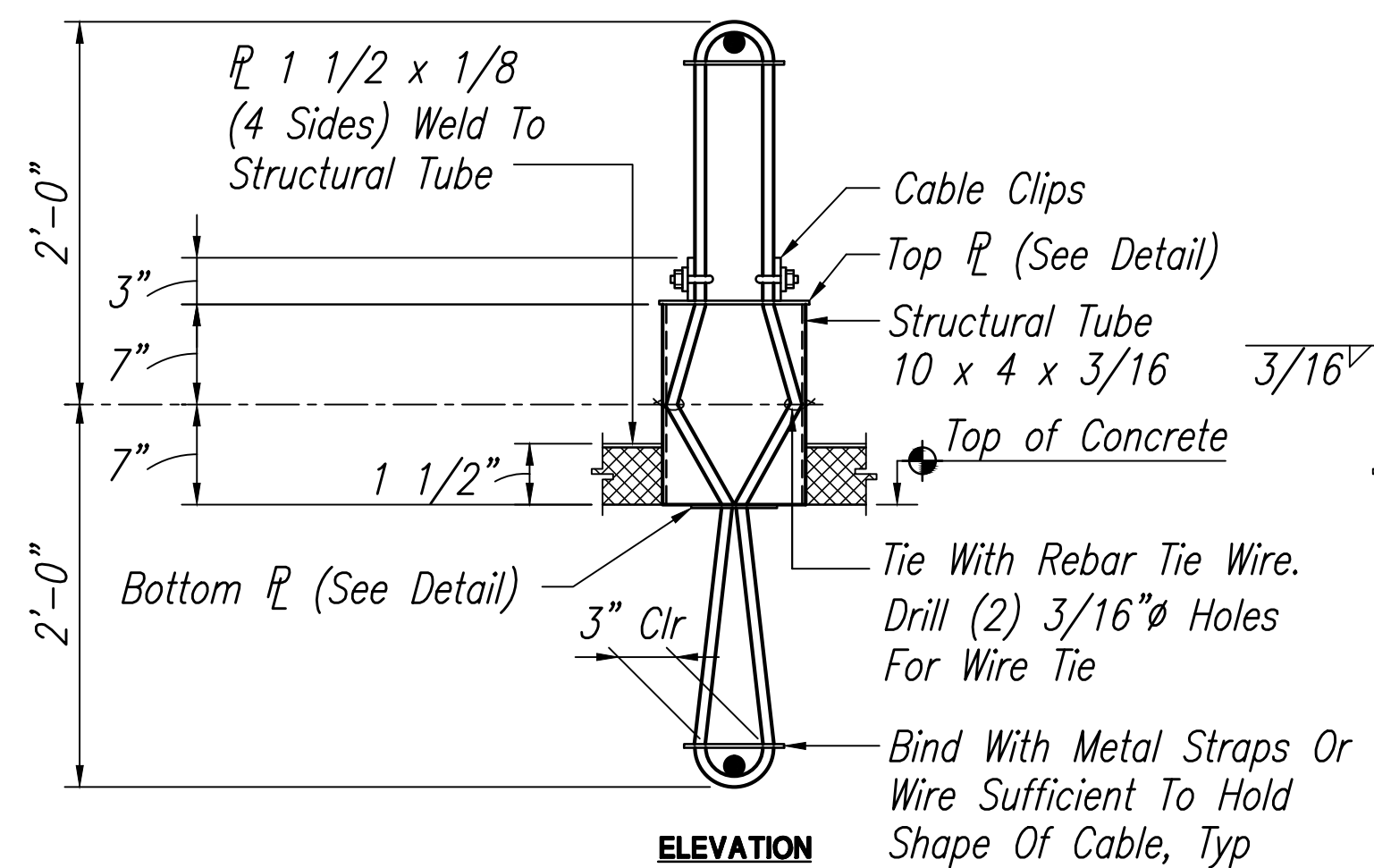
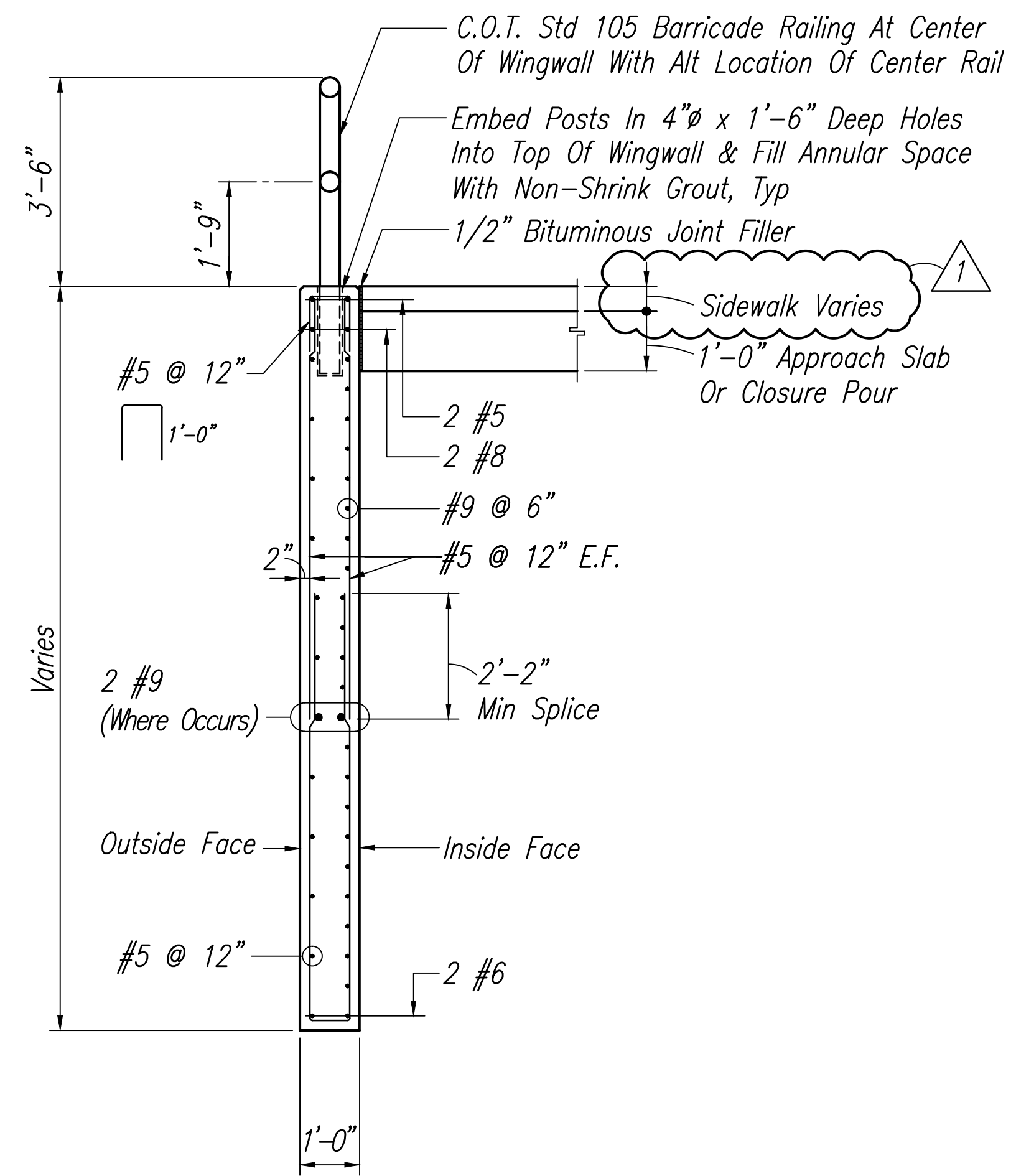
Scale 1/2" = 1'-0"

09153PS10 1

**WINGWALL SECTION**

Scale 1/2" = 1'-0"

09153PS10 2

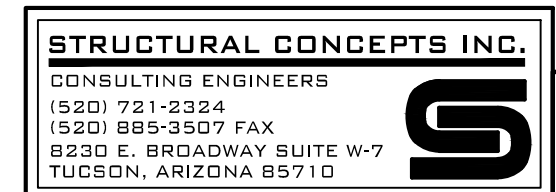


**Note**  
Seal all openings in structural tube to prohibit concrete intrusion. Restrainer cables shall be 3/4" diameter preformed 6 x 19 galvanized with the minimum breaking strength of 42 kips. One sample of cable 3 feet in length shall be furnished to the Engineer for testing.

**EXPANSION RESTRAINER DETAIL**

Scale 1/2" = 1'-0"

09153PS10 3



DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION		PS10
SABINO CANYON ROAD		OF
TANQUE VERDE ROAD TO KOLB ROAD		PS30
DRWN. BY TR	6.15	REF. _____ SCALE: H: _____
DSGN. BY AMG, DRL		V: _____
CHKD. BY DRL, AMG		142
		OF
		162
PLAN NO. I-2009-029		

NO.	DATE 6/15	REVISION	BY DRL	CHKD.	APPR.
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