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## **APPENDIX A – GRANT ROAD, ORACLE ROAD TO SWAN ROAD, FINAL DESIGN CONCEPT REPORT, ROADWAY PLANS AND TYPICAL SECTIONS**

The Grant Road, Oracle Road to Swan Road, Final Design Concept Report, Roadway and Drainage Improvements, 30% Construction Plans, were reviewed by City of Tucson staff. Comments provided by City staff were logged and are part of the Construction Plans dated October 2010.

CITY OF TUCSON, ARIZONA  
**GRANT ROAD**  
 ORACLE ROAD TO SWAN ROAD

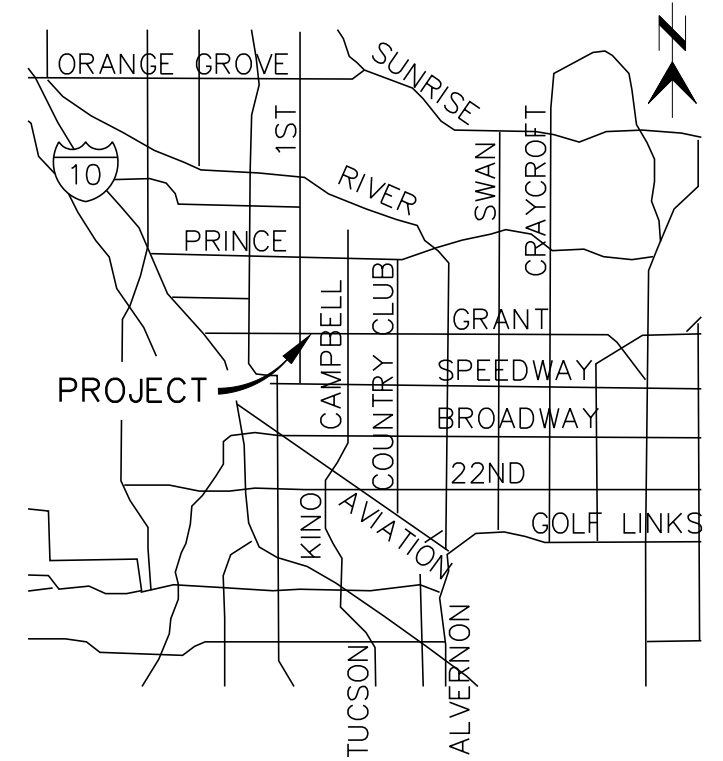
**FINAL DESIGN CONCEPT REPORT**  
**ROADWAY PLANS AND TYPICAL SECTIONS**

PROPOSED CONSTRUCTION BEGINS EAST OF N 15TH AVENUE AND ENDS WEST OF N ARCADIA AVENUE.  
 THE 5.49 MILES OF NEW ROADWAY IMPROVEMENTS INCLUDE A SIX LANE DIVIDED ROADWAY,  
 LOCAL ACCESS LANES, MULTI-USE LANES, MEDIANS, DRAINAGE IMPROVEMENTS,  
 INDIRECT LEFT TURN BAYS, WATER HARVESTING CELLS, BUS PULLOUTS, AND NEW TRAFFIC SIGNALS.

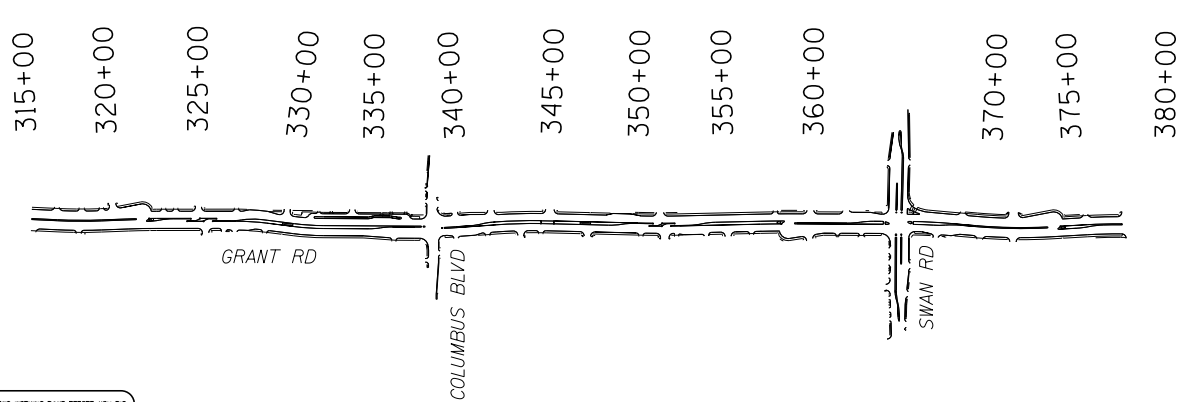
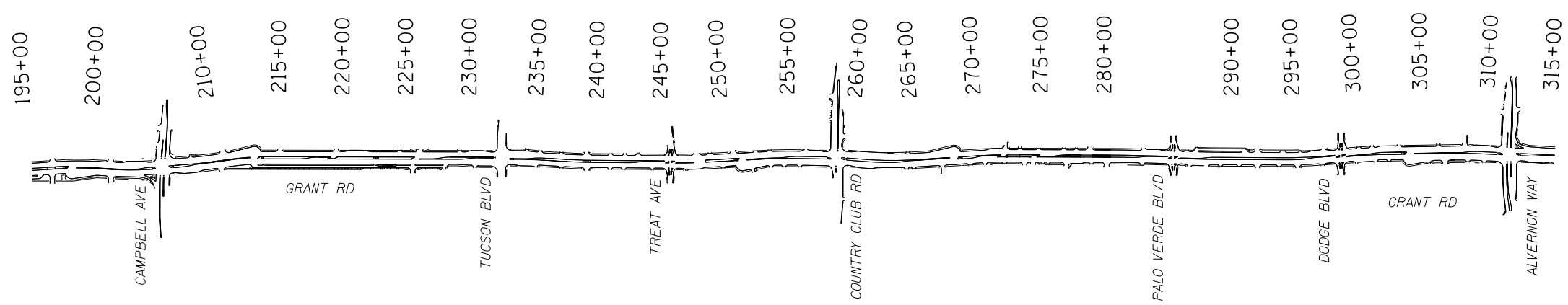
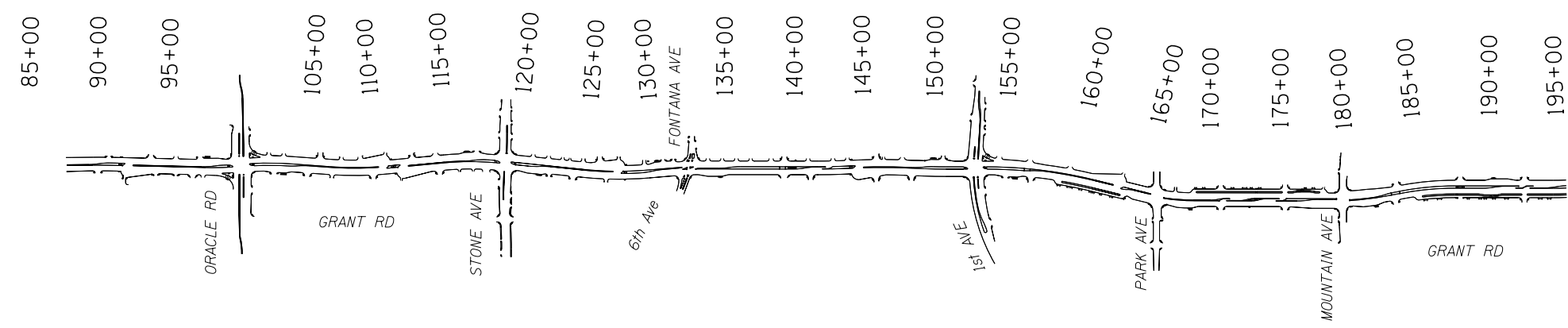
**LOCATION MAP**

Sections 35, 36  
 T-13-S, R-13-E  
 Sections 31, 32, 33, 34, and 35  
 T-13-S, R-14-E  
 Sections 2, 1  
 T-14-S, R-13-E  
 Sections 6, 5, 4, 3, and 2  
 T-14-S, R-14-E

Pima County, Arizona  
 Scale: NTS



SCALE: 1"=500'



**INDEX OF SHEETS**

| Sheet No. | Sheet Description              |
|-----------|--------------------------------|
| 1         | Cover Sheet                    |
| 2         | General Note Sheet             |
| 3-12      | Typical Roadway Section Sheets |
| 13-95     | Roadway Plan Sheets            |

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**CITY OF TUCSON**  
**PRELIMINARY 30% NOT FOR CONSTRUCTION**

| DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION |                          |                          |                             |
|---|--------------------------|--------------------------|-----------------------------|
| COVER SHEET                                       |                          |                          |                             |
| Approvals   | Signatory                | Date                     | Approved _____ 20__ 1 OF 95 |
| ENGINEERING ADMINISTRATOR                         |                          |                          | TRANSPORTATION DIRECTOR     |
| TRAFFIC PLANNING & DESIGN ADMINISTRATOR           |                          |                          |                             |
| STREETS AND TRAFFIC MAINTENANCE                   |                          |                          | REF. _____ SCALE: NTS       |
| LANDSCAPE ARCHITECT                               |                          |                          |                             |
| DRWN. BY M. HURGHIS 20 10                         | DSGN. BY B. BEEKEN 20 10 | CHKD. BY B. BEEKEN 20 10 | PLAN NO. _____              |

| NO. | DATE | REVISION | BY | CHKD. | APPR. |
|-----|------|----------|----|-------|-------|
|     |      |          |    |       |       |

**ABBREVIATIONS**

|         |                                     |
|---------|-------------------------------------|
| ε       | Centerline                          |
| Δ       | Delta                               |
| ⊙       | Phase (Traffic)                     |
| AC      | Asphalt Concrete                    |
| Ave     | Avenue                              |
| Blvd    | Boulevard                           |
| CB      | Catch Basin                         |
| CATV    | Cable Television                    |
| COMM    | Communications                      |
| Const   | Construction                        |
| Corr    | Correlation                         |
| D       | Degree of Curvature                 |
| Dr      | Drive                               |
| Dtl     | Detail                              |
| E       | Easting                             |
| Elev    | Elevation                           |
| EP      | Edge of Pavement                    |
| Exst    | Existing                            |
| Ext.    | External                            |
| FL      | Flow Line                           |
| Fnd     | Found                               |
| FO      | Fiber Optic                         |
| Invt    | Invert                              |
| KV      | Kilo Volts                          |
| L       | Length                              |
| Lt      | Left                                |
| MH      | Manhole                             |
| N       | Northing                            |
| OH      | Overhead                            |
| PC      | Point of Curvature                  |
| PCC     | Portland Concrete Cement            |
| PC/COT  | Pima County/City of Tucson          |
| Ped     | Pedestrian                          |
| PGL     | Profile Grade Line                  |
| PI      | Point of Intersection               |
| Pl      | Place                               |
| POB     | Point of Beginning                  |
| POE     | Point of End                        |
| PT      | Point of Tangency                   |
| PVC     | Point of Vertical Curvature         |
| PVI     | Point of Vertical Intersection      |
| Pvmt    | Pavement                            |
| PVRC    | Point of Reverse Vertical Curvature |
| R       | Radius                              |
| R/W     | Right-of-Way                        |
| Ref No. | Reference Number                    |
| Rd      | Road                                |
| Rt      | Right                               |
| S       | Slope                               |
| SSD     | Stop Sight Distance                 |
| Sta     | Station                             |
| Std     | Standard                            |
| St      | Street                              |
| Swlk    | Sidewalk                            |
| T       | Tangent                             |
| TEP     | Tucson Electric Power               |
| Typ     | Typical                             |
| VC      | Vertical Curve                      |

**LEGEND**

**SYMBOL DESCRIPTION**

Centerline and Station

Catch Basin

Single Vertical Curb/EP

Detectable Warning Strip

Right-of-Way Line

Cut Slope

Fill Slope

Chain Link Fence

Storm Drain Pipe

Underground Power Line

Telephone Line

Sewer Line

Overhead Line

Natural Gas Line

Water Line

Property Line

Section Line

Utility Valve

Manhole

Fire Hydrant

Utility Pole

Street Light

Pole Mounted Sign

Vegetation

Bike Spot

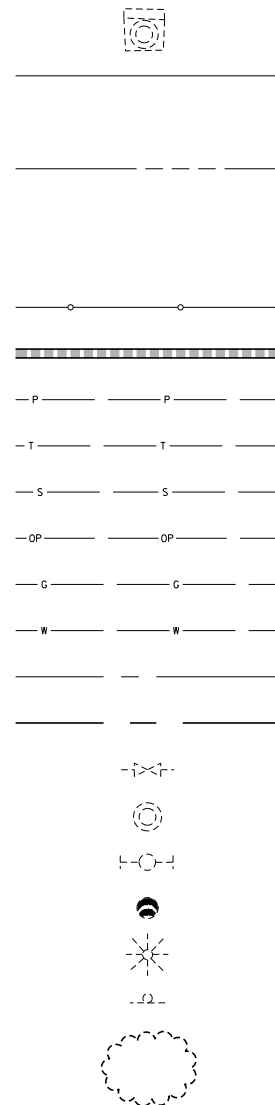
AC Pvmt

PCC Pvmt/Swlk

Landscaping

Water Harvesting

**EXST**



**NEW**



**GENERAL NOTES**

- 1 New Landscaping Features. Refer to LS sheets for Landscaping Plans.
- 2 New Vertical Curb Type 2, H=6", Per COT/PC Std D11 209
- 3 New Storm Drain. Refer to SD sheets for plan and profiles.
- 4 New 4-ft Sidewalk Per COT/PC Std D11 209
- 5 New 6-ft Sidewalk Per COT/PC Std D11 209
- 6 New Concrete Driveway Per "Roadway Design Criteria Memo" (page 26)
- 7 New Asphalt Driveway
- 8 New 8-ft Sidewalk Per COT/PC Std D11 209 (Modified)
- 9 New Water Harvesting Features. Refer to LS sheets for Landscaping Plans.
- 10 New Bus Pullout Per "Roadway Design Criteria Memo" (page 23) and Streetscape Plans.
- 11 Pelican Pedestrian Crossing Per "Roadway Design Criteria Memo" (page 24) and Streetscape Plans.
- 12 Indirect Left Turnaround Per "Roadway Design Criteria Memo" (page 18)
- 13 Double Bus Shelter (4'-8" x 34'). Refer to S Sheets for Streetscape layout and details.
- 14 Single Bus Shelter (4'-8" x 22'). Refer to S Sheets for Streetscape layout and details.
- 15 Raised Crosswalk Table Per "Roadway Design Criteria Memo" (page 22) and Streetscape Plans.
- 16 Channelized Right Turn Lane Per "Roadway Design Criteria Memo" (page 19) and Streetscape Plans.
- 17 Channelized Right Turn Lane, with Add Lane, Per "Roadway Design Criteria Memo" (page 20) and Streetscape Plans.
- 18 Toucan Pedestrian and Bicycle Crossing Per "Roadway Design Criteria Memo" (page 25) and Streetscape Plans.
- 19 New Apron Driveway Per COT/PC Std D11 206
- 20 New Reflective 8" Diameter White Ceramic Dome (3' On-Center Spacing)
- 21 New Concrete Wedge Curb Per COT/PC Std D11 209

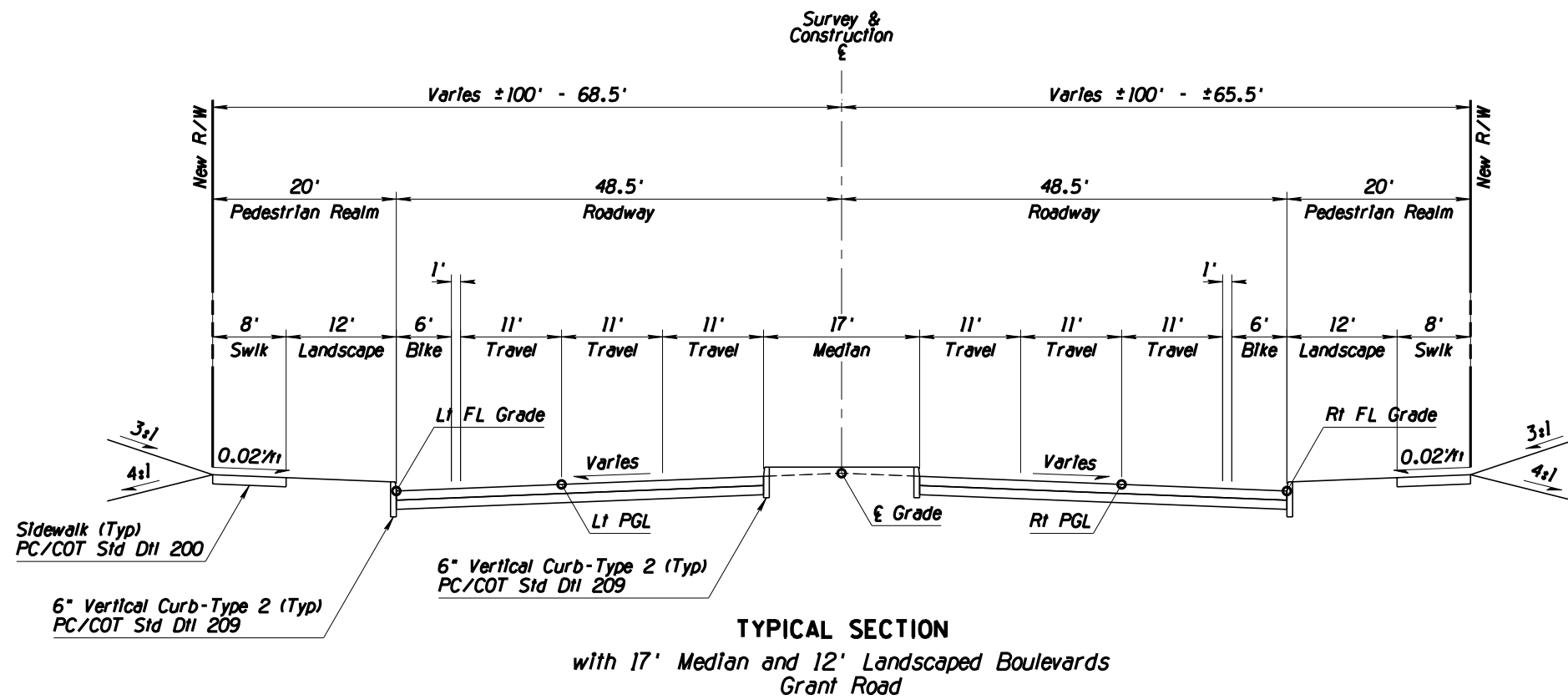
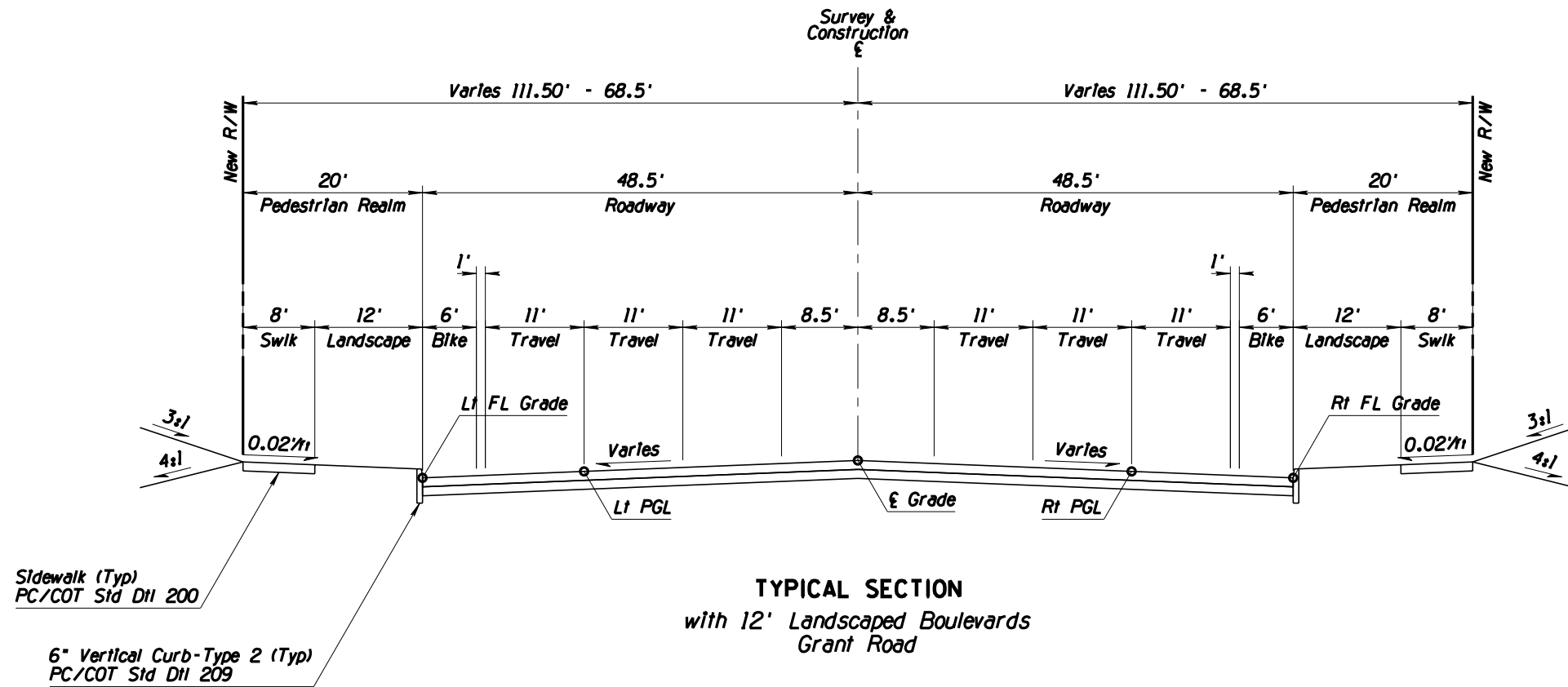


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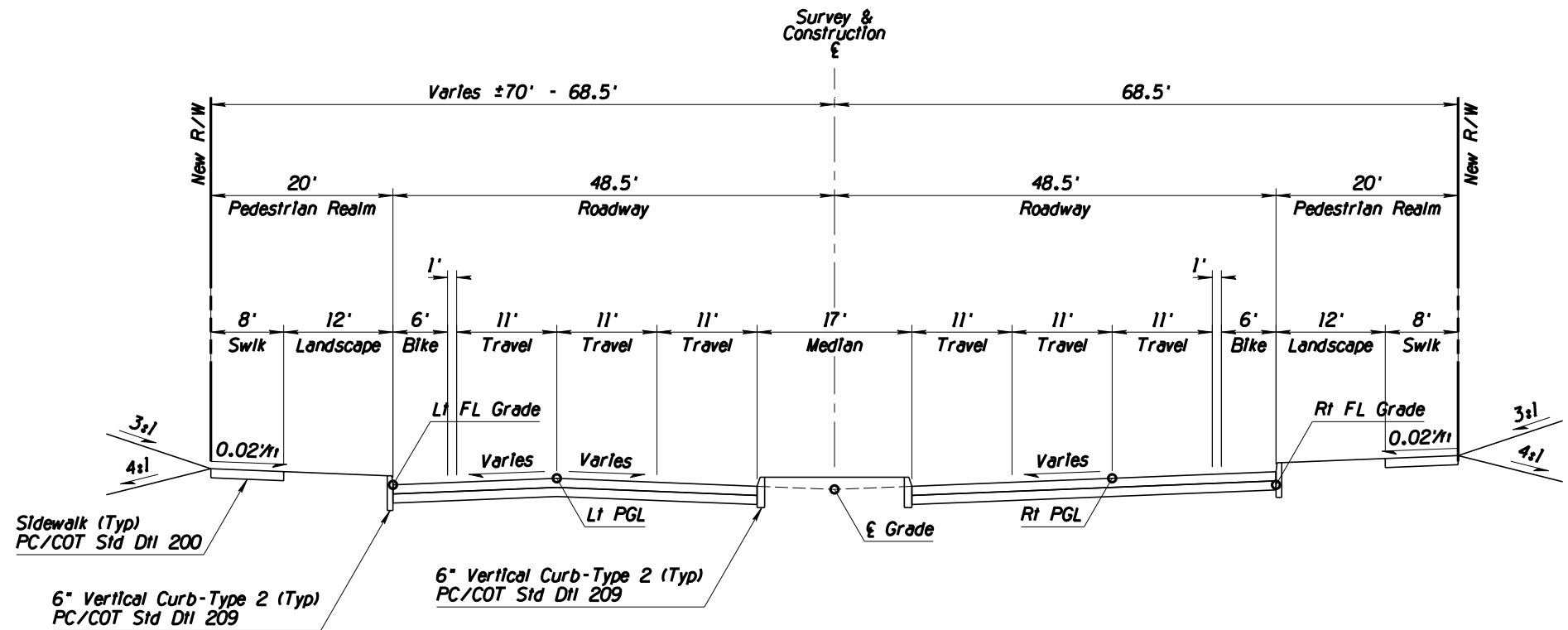
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| DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION |                              |       |                 |
| GENERAL NOTES                                     |                              |       |                 |
| CITY OF<br>TUCSON                                 | DSGN. BY <i>al. harrigan</i> | 08/10 | REF. SCALE: N/A |
|   | DRWN. BY <i>al. harrigan</i> | 08/10 |                 |
|   | CHKD. BY <i>al. harrigan</i> | 08/10 | PLAN NO.        |

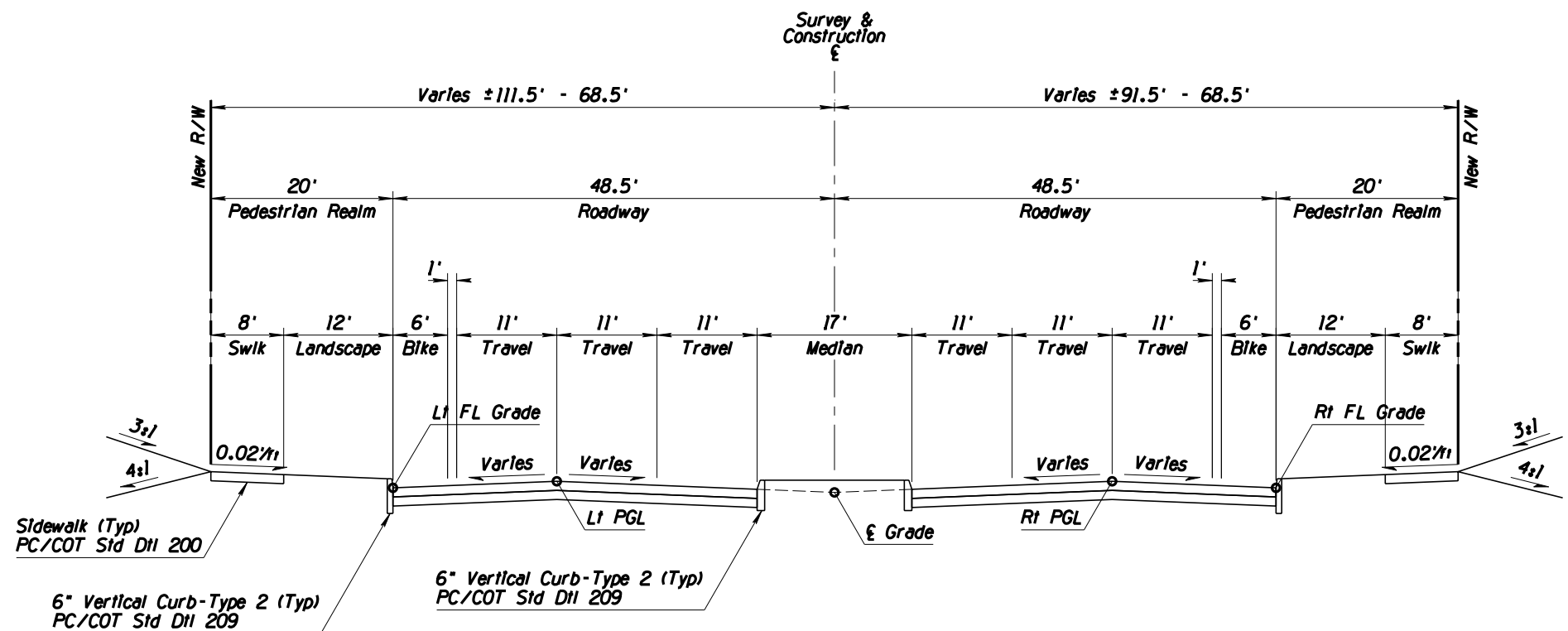


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|   |                    | GRANT ROAD<br>TYPICAL SECTIONS                    |          |            |          |        |
| CITY OF<br>TUCSON                             | DSGN. BY <i>RL</i> | 08/10   | REF.     | SCALE: NTS | 3 OF 362 |        |
|   | DRWN. BY <i>RL</i> | 08/10   | PLAN NO. |            |          |        |
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**TYPICAL SECTION**  
 with Crown and Superelevated Sections, 17' Median and 12' Landscaped Boulevards  
 Grant Road



**TYPICAL SECTION**  
 with Double Crowns, 17' Median and 12' Landscaped Boulevards  
 Grant Road



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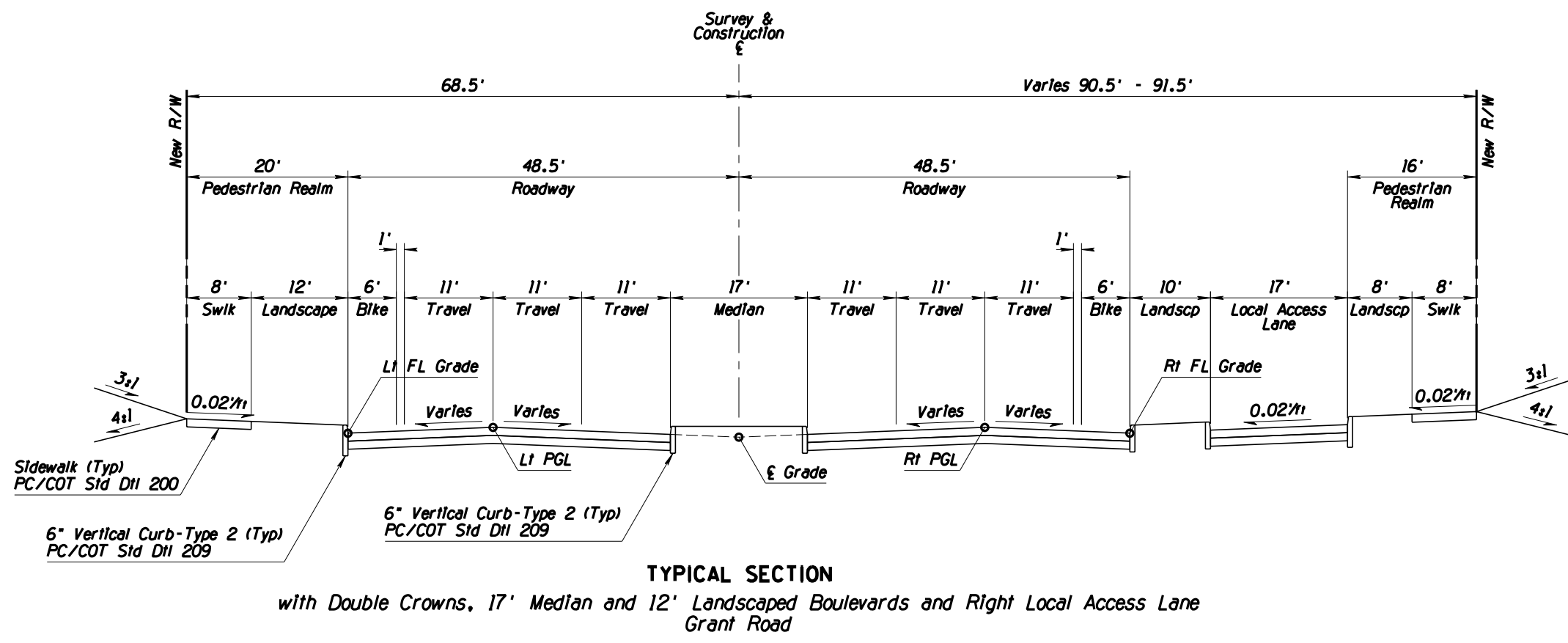
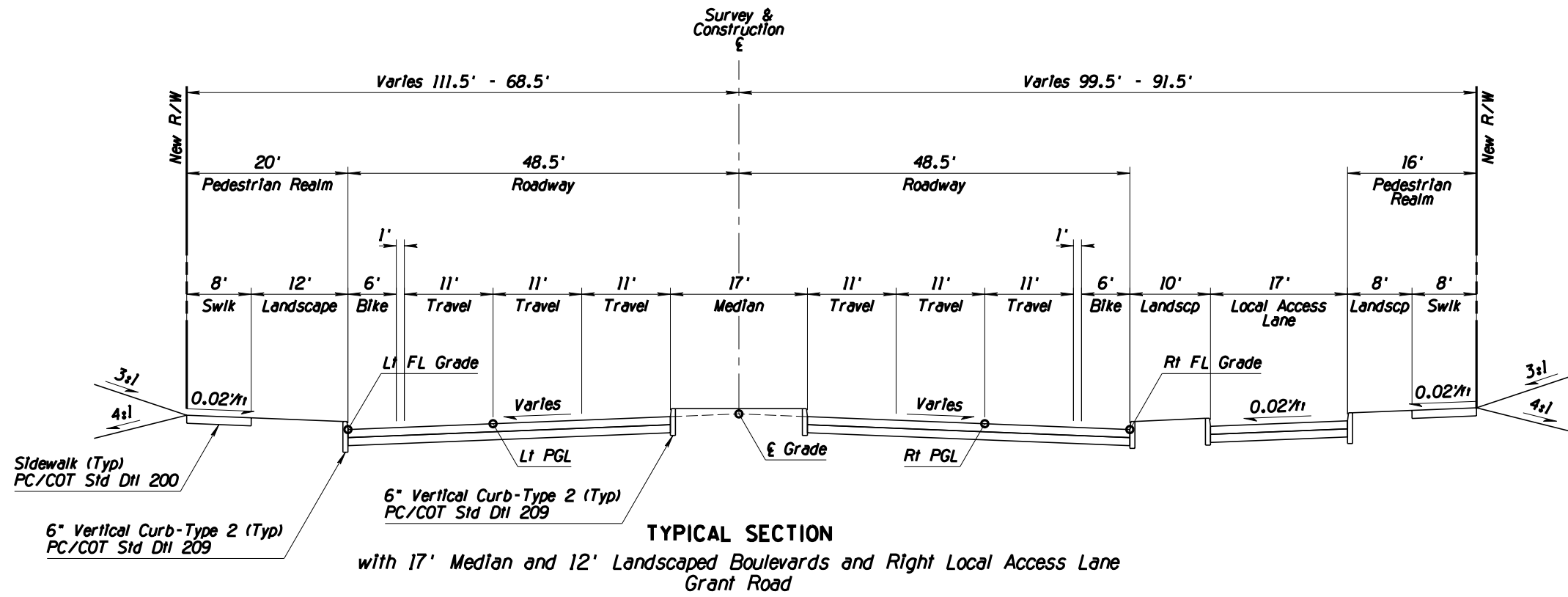
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GRANT ROAD  
 TYPICAL SECTIONS

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|-------------------|-----------------------------|-------|----------|------------|----------------|
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|                   | DRWN. BY <i>[Signature]</i> | 08/10 |          |            |                |
|                   | CHKD. BY <i>[Signature]</i> | 08/10 | PLAN NO. |            |                |

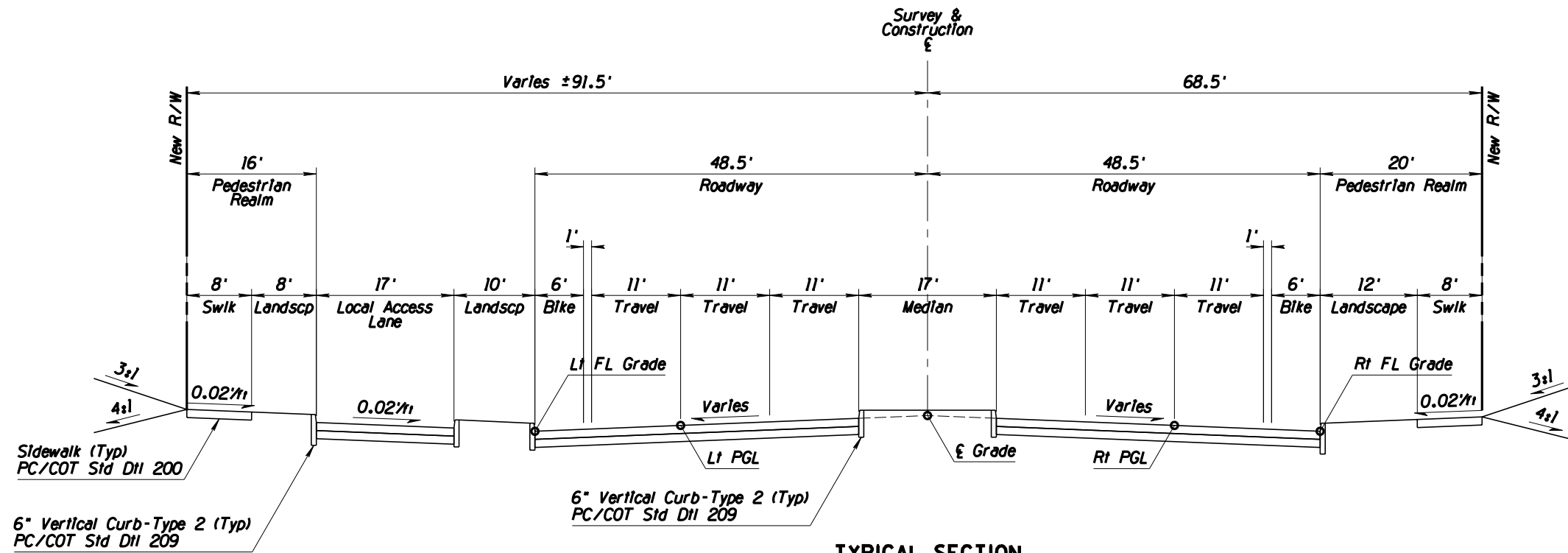
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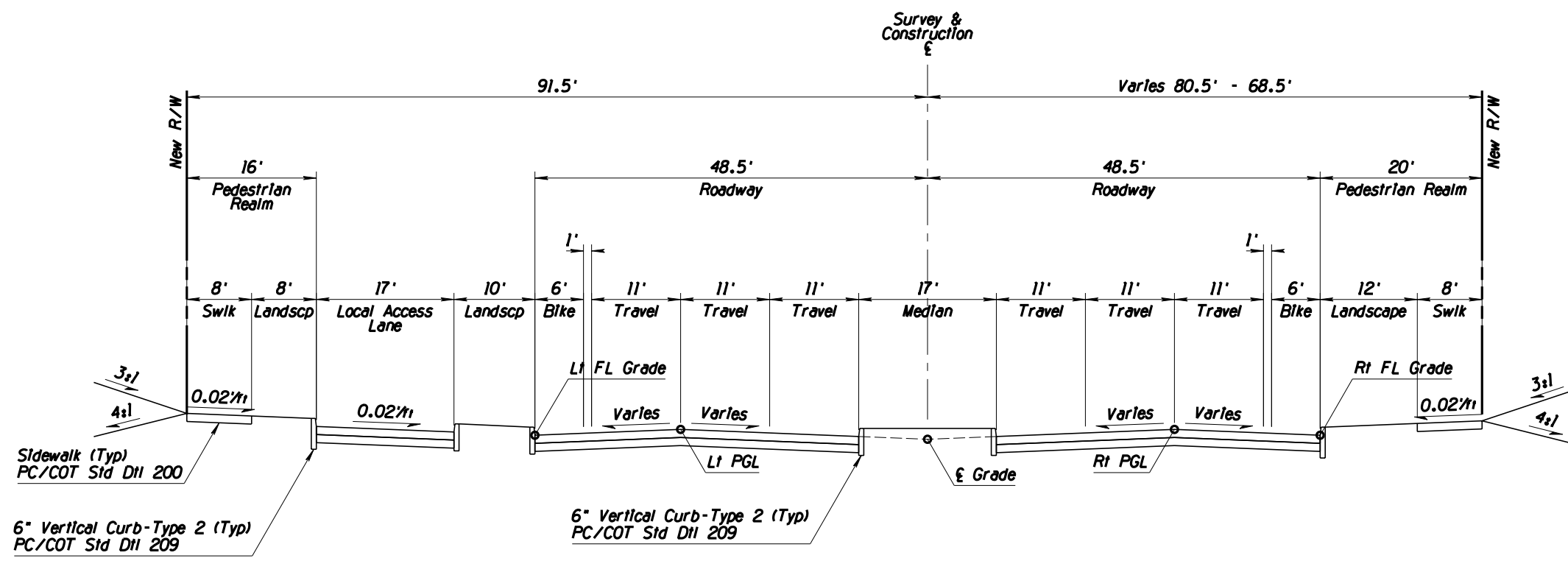
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**TYPICAL SECTION**  
 with 17' Median and 12' Landscaped Boulevards and Left Local Access Lane  
 Grant Road



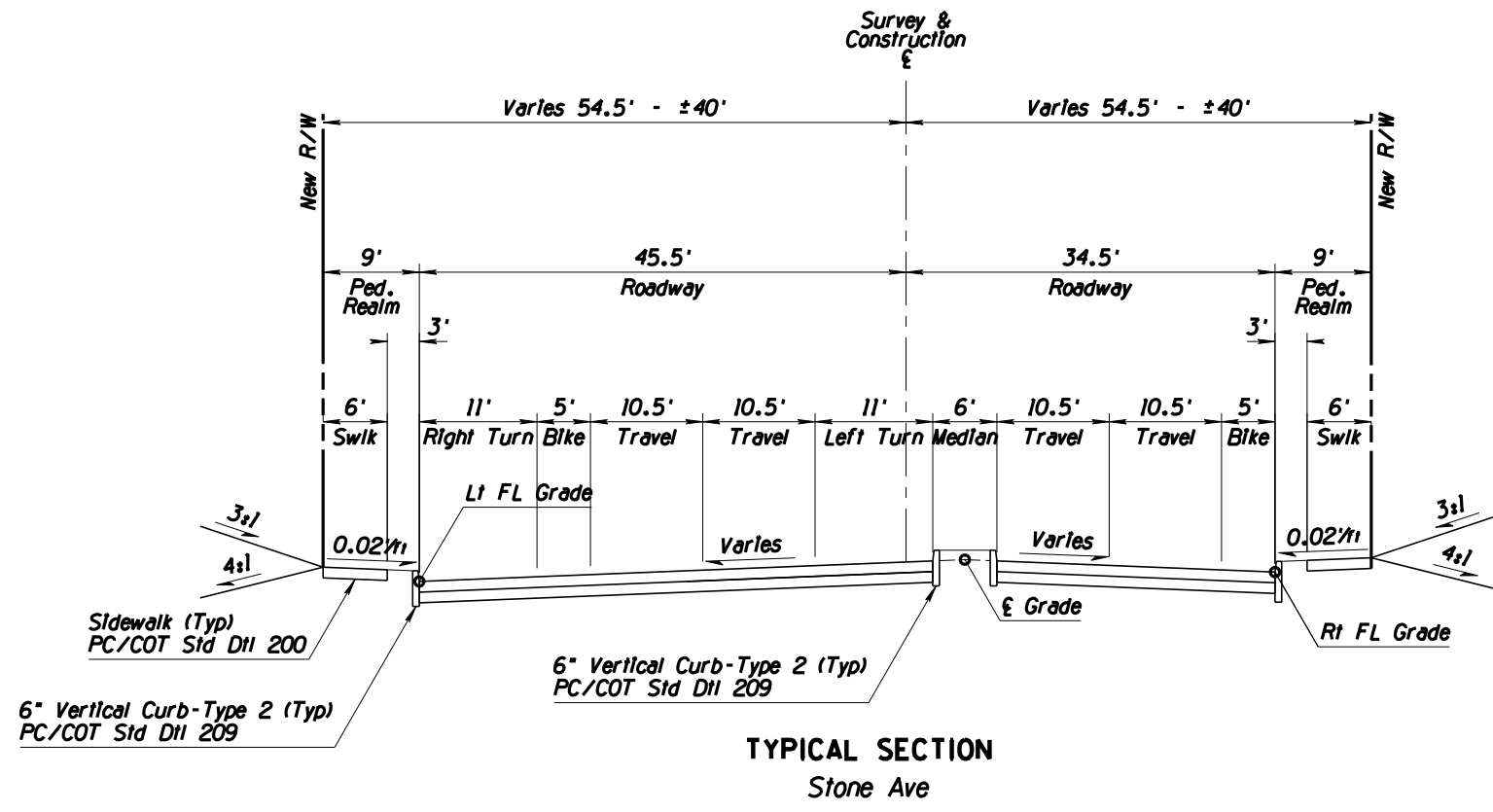
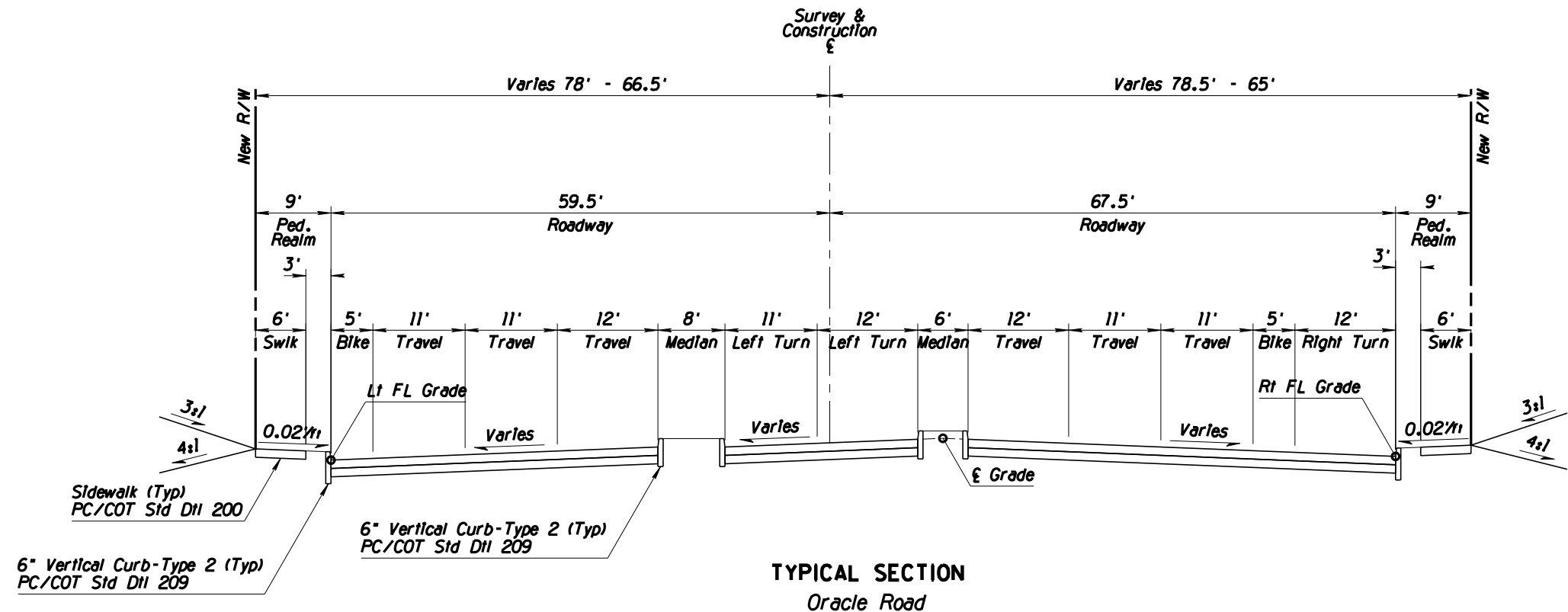
**TYPICAL SECTION**  
 with Double Crowns, 17' Median and 12' Landscaped Boulevards and Left Local Access Lane  
 Grant Road



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| CHKD. BY <i>RL</i>                            | 08/10 | PLAN NO.  |            |



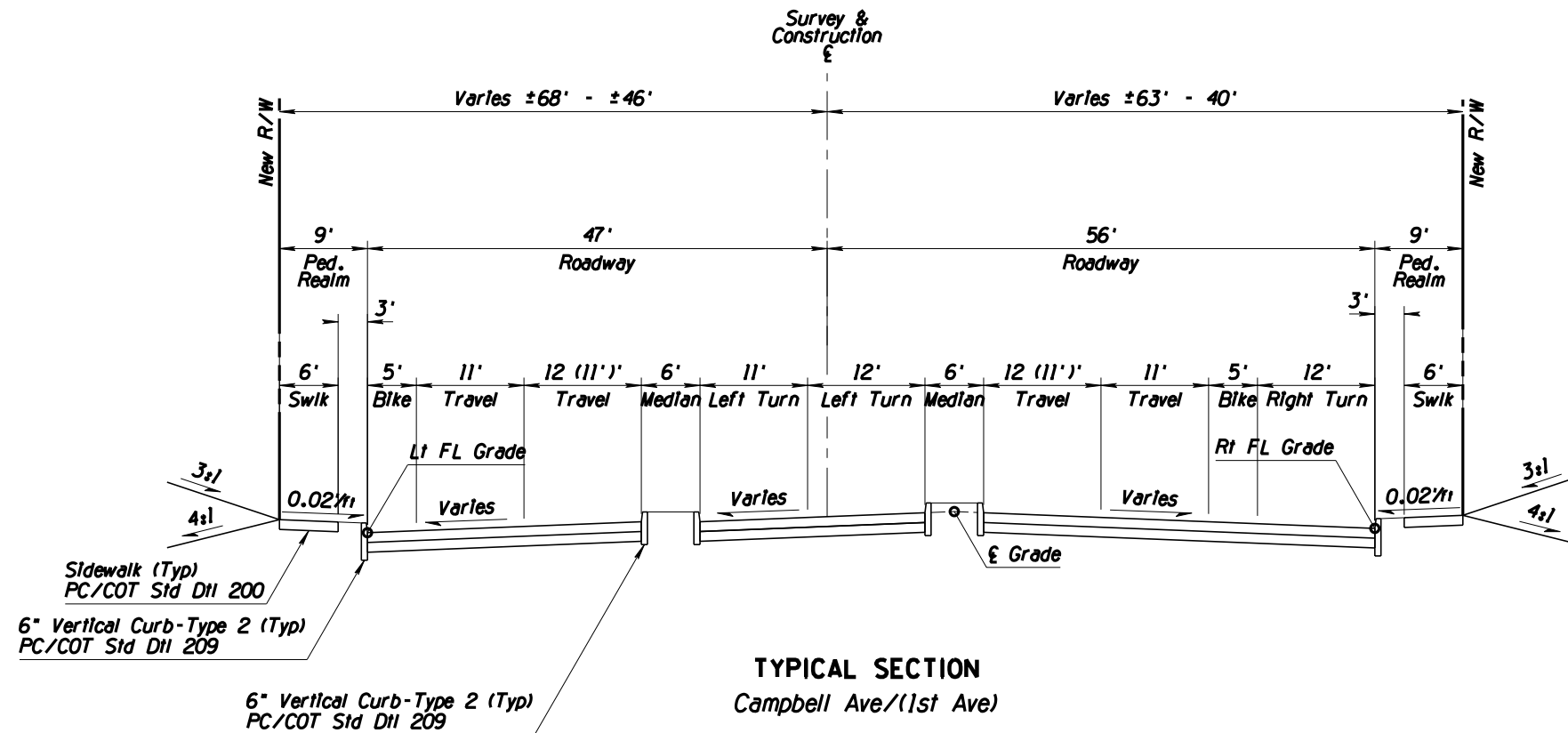
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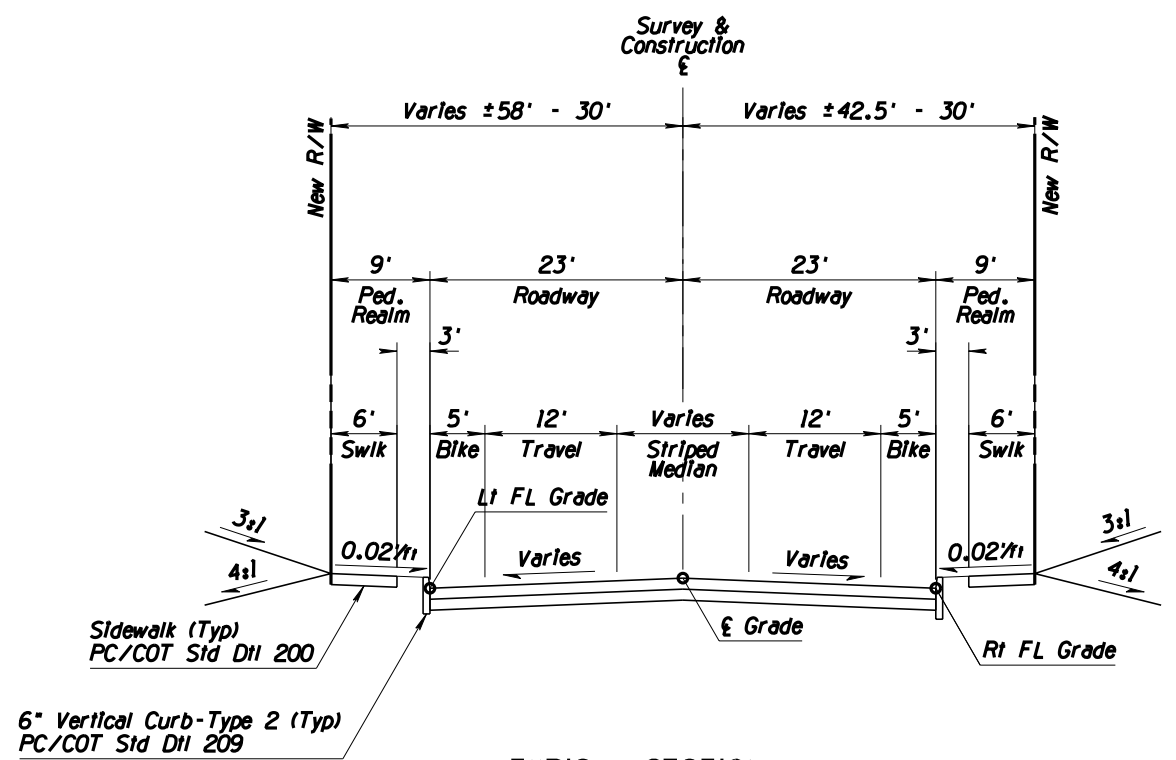
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|   | ORACLE ROAD/STONE AVE<br>TYPICAL SECTIONS         |   |  |                |
|   |   | DSN. BY <i>RL</i> 08/10<br>DRWN. BY <i>RL</i> 08/10<br>CHKD. BY <i>RL</i> 08/10 | REF. _____<br>SCALE: NTS<br>PLAN NO. _____ | ?<br>OF<br>362 |





**TYPICAL SECTION**  
Campbell Ave/(1st Ave)



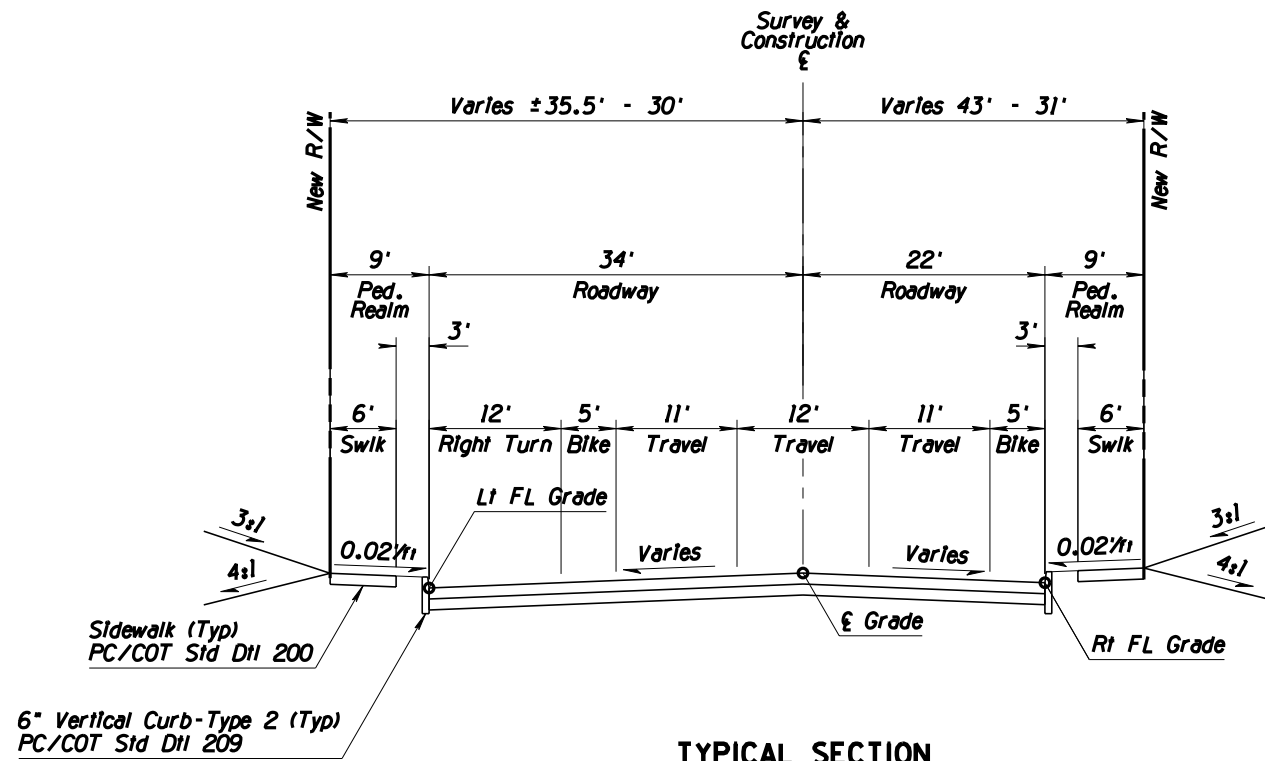
**TYPICAL SECTION**  
6th Ave



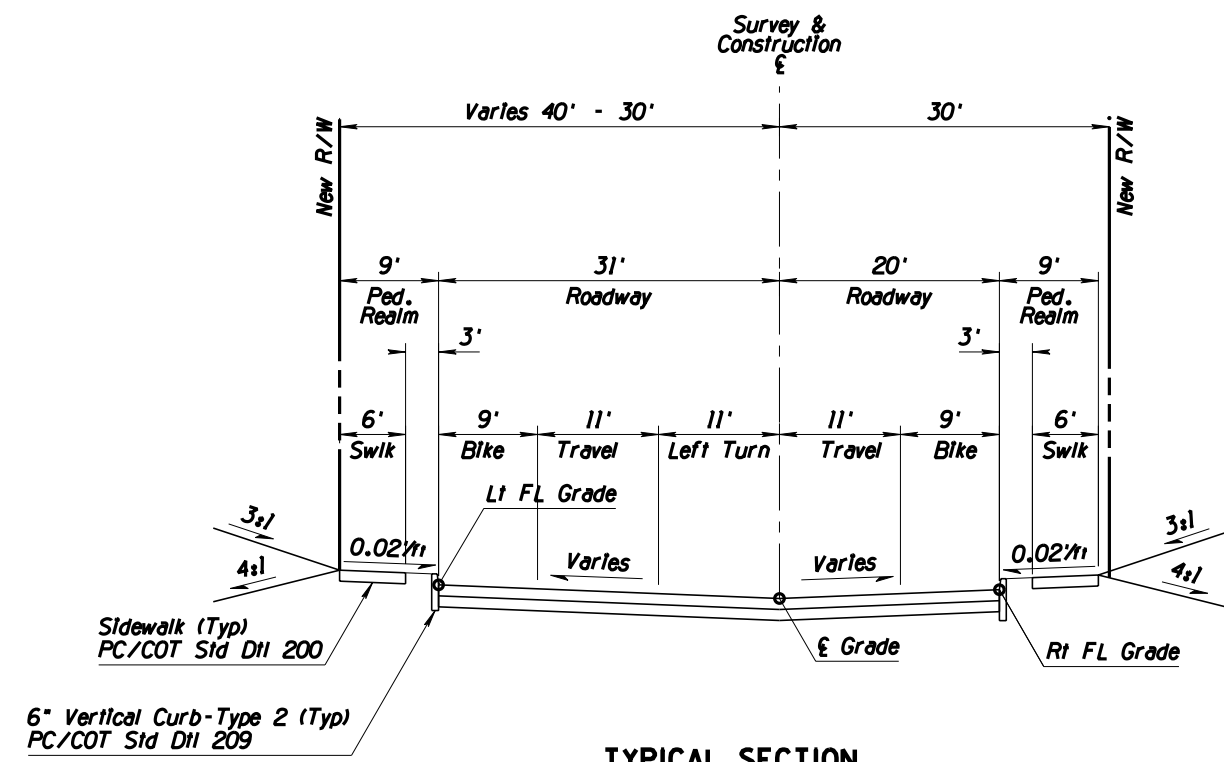
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|  | 1ST AVE/CAMPBELL AVE/6TH AVE<br>TYPICAL SECTIONS  |                                     |                     |            |
|  |   | DSN. BY <i>[Signature]</i><br>08/10 | REF. _____<br>08/10 | SCALE: NTS |
| CHKD. BY <i>[Signature]</i><br>08/10                               |   | PLAN NO. _____                      |                     |            |



**TYPICAL SECTION**  
Park Ave

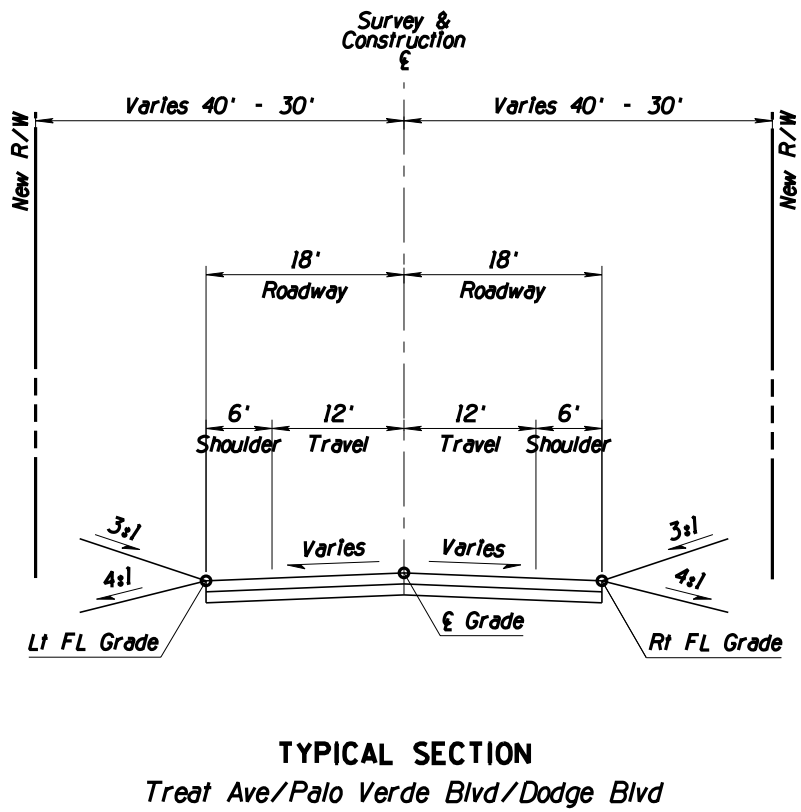
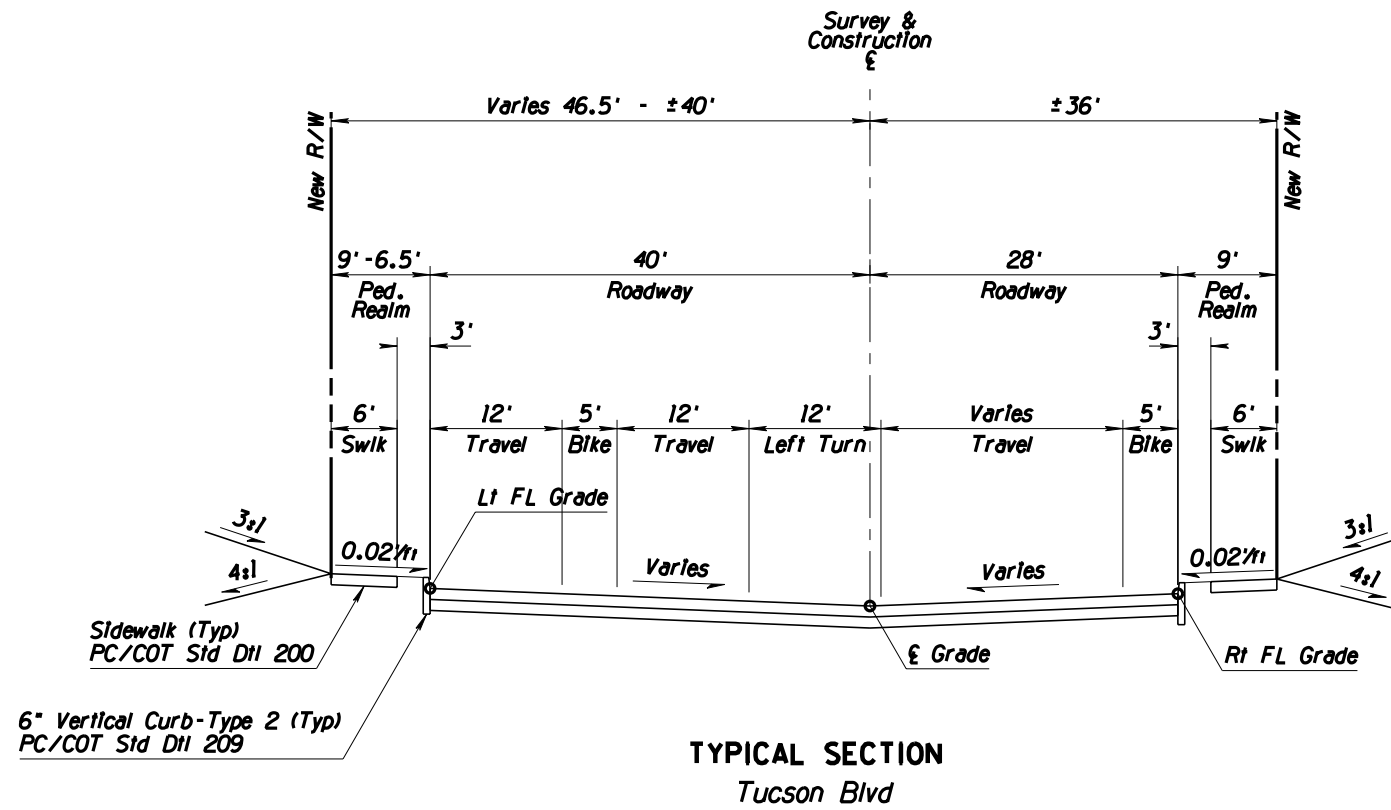


**TYPICAL SECTION**  
Mountain Ave

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|  | PARK AVE/MOUNTAIN AVE<br>TYPICAL SECTIONS   |                         |                              |                        |
|  | DESIGNED BY: <i>[Signature]</i><br>DRAWN BY: <i>[Signature]</i><br>CHECKED BY: <i>[Signature]</i> | 08/10<br>08/10<br>08/10 | REF. _____<br>PLAN NO. _____ | SCALE: NTS<br>1" = 30' |

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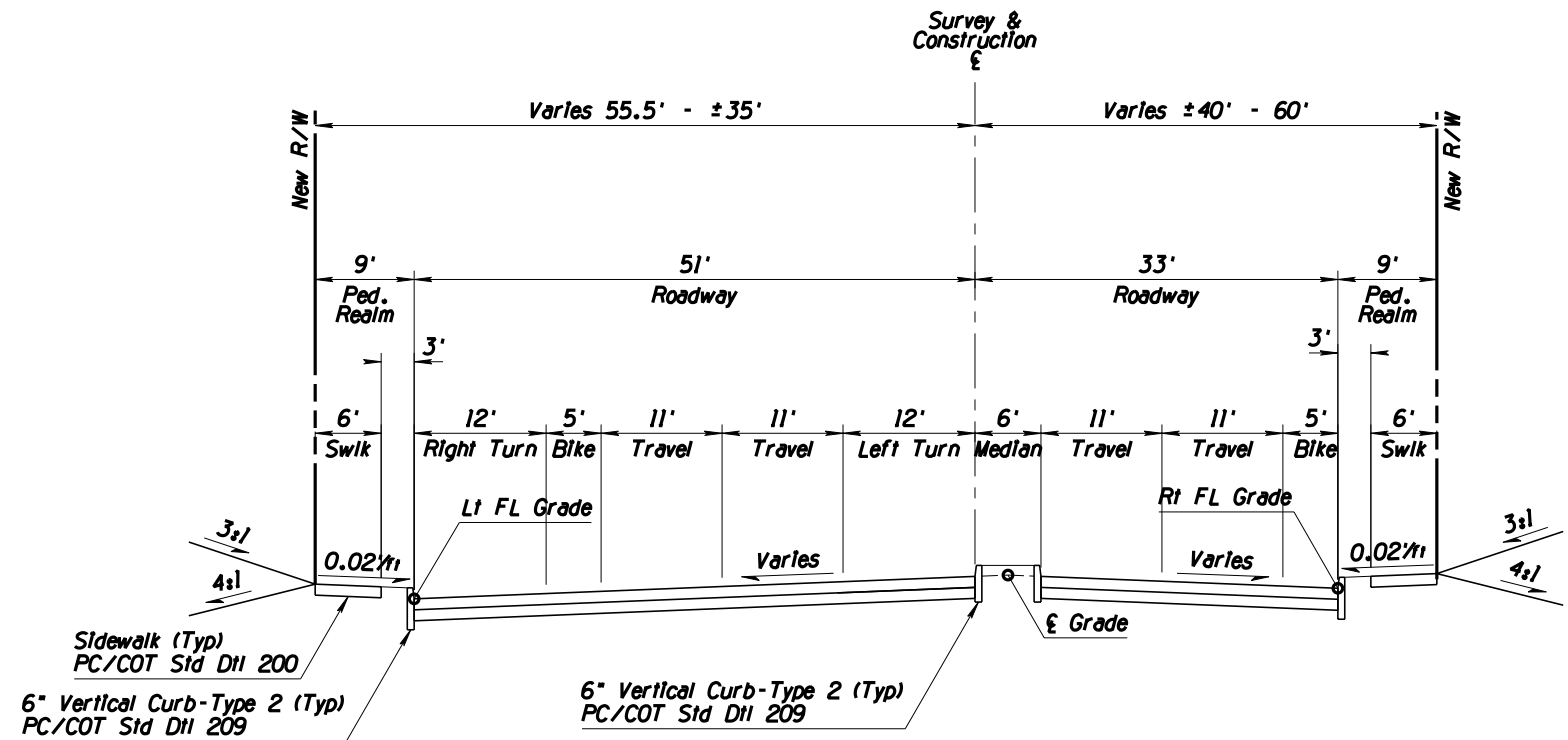


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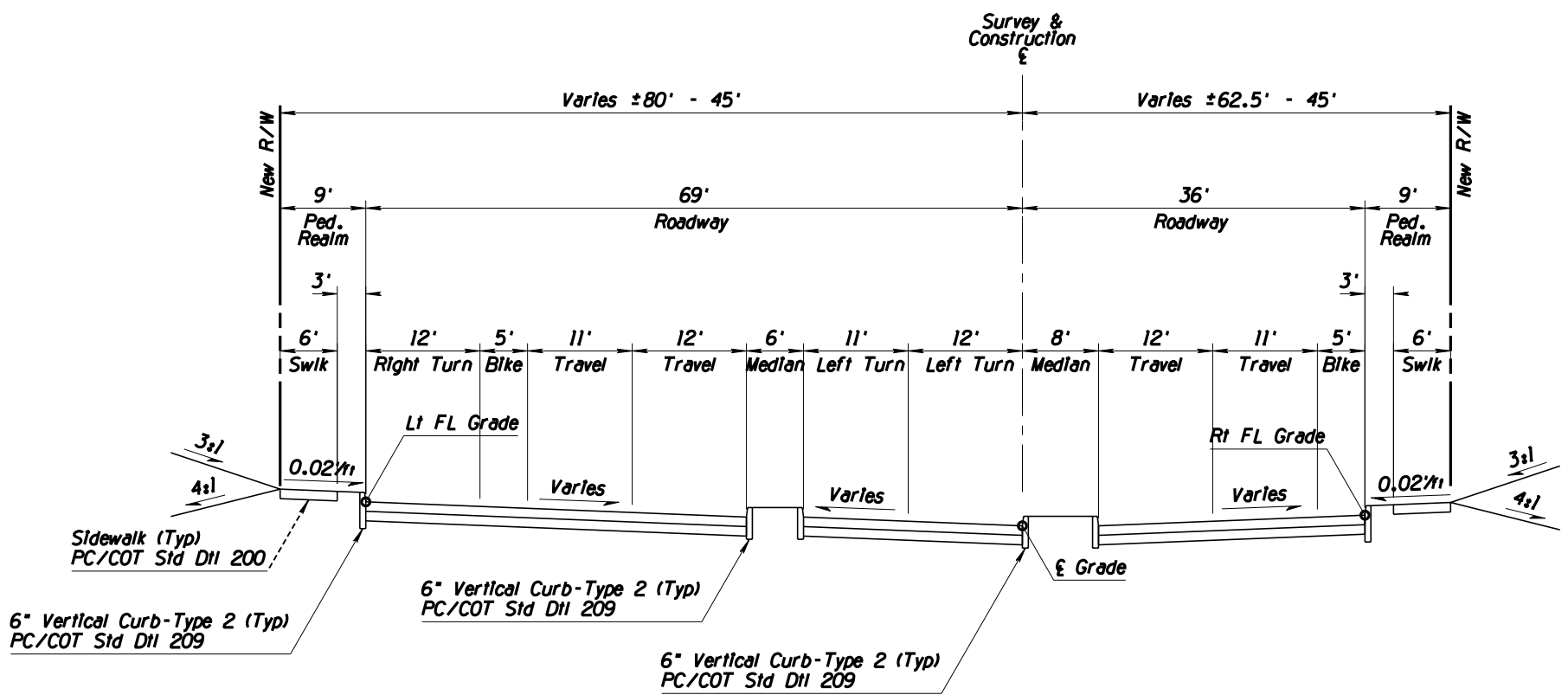
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|   | TUCSON BLVD/TREAT AVE/PALO VERDE BLVD/DODGE BLVD<br>TYPICAL SECTIONS |   |  |                 |
|   |  | DSN. BY <i>RL</i> 08/10<br>DRWN. BY <i>RL</i> 08/10<br>CHKD. BY <i>RL</i> 08/10 | REF. _____<br>SCALE: NTS<br>PLAN NO. _____ | 11<br>OF<br>362 |



TYPICAL SECTION  
Country Club Road

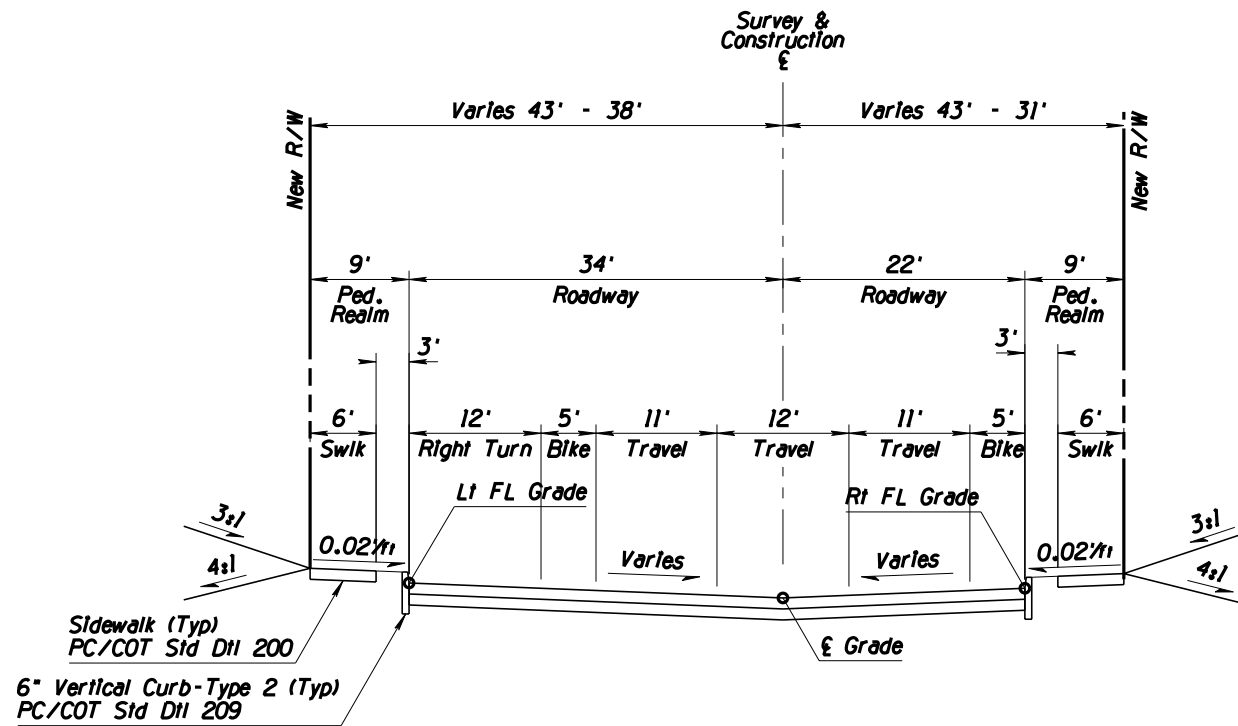


TYPICAL SECTION  
Alvernon Way

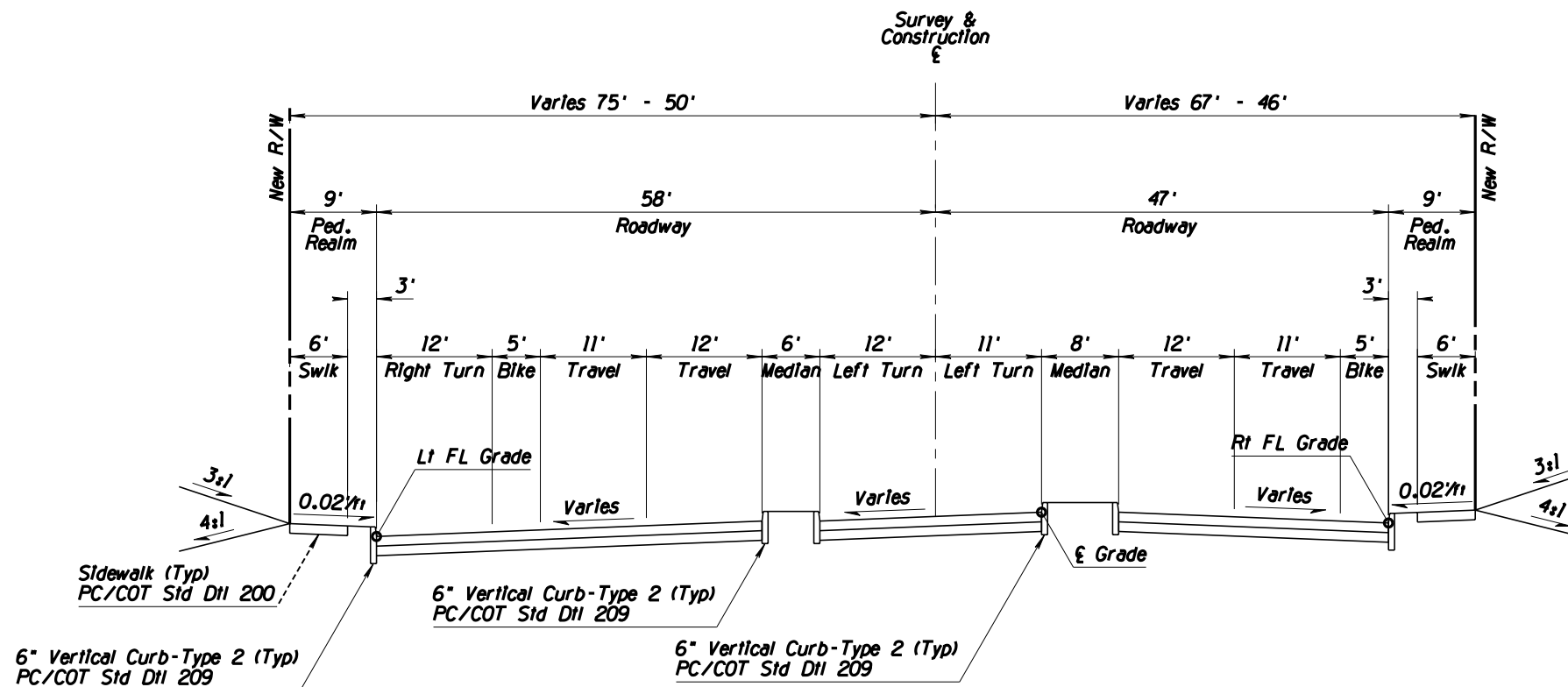
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|   | COUNTRY CLUB ROAD/ALVERNON WAY<br>TYPICAL SECTIONS |  |          |            |                 |
|   | CITY OF<br>TUCSON                                  | DESIGN BY: <i>[Signature]</i><br>08/10 | REF.:    | SCALE: NTS |                 |
|   |  | DRWN. BY: <i>[Signature]</i><br>08/10  |          |            |                 |
|   |  | CHKD. BY: <i>[Signature]</i><br>08/10  | PLAN NO. |            |                 |

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**TYPICAL SECTION**  
Columbus Blvd



**TYPICAL SECTION**  
Swan Road

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|  | COLUMBUS BLVD/SWAN ROAD<br>TYPICAL SECTIONS       |                                     |                     |             |                       |
|  |   | DSN. BY <i>[Signature]</i><br>08/10 | REF. _____<br>08/10 | SCALE: NTS  | 12 OF 12              |
| NO. _____<br>DATE _____  | REVISION _____                                    | BY _____                            | CHKD. _____         | APPR. _____ | PLAN NO. _____<br>362 |