

Appendix B
**MRGCD System Diversion Structures
and Conveyance Channels**

Contents

- B-1 Profiles of El Vado Dam, Cochiti Dam, and MRGCD Irrigation Diversion Structures
- B-2 Schematic Diagrams of Conveyance Channels

Appendix B-1

Profiles of El Vado Dam, Cochiti Dam and MRGCD Irrigation Diversion Structures

El Vado Dam and Reservoir

Location: *Near El Vado, NM, on the Chama River, ±160 miles upstream of Albuquerque, NM.*

USBR Data Web Coordinates: *Lat: 36 35' 36"N, Long: 106 44' 48"W,*

Coordinates from RGIS: *State Plane 83 NM Central Zone,*

Northing: 2036114.1806

Easting: 1498864.9191

UTM NAD83 Zone 13

Northing: 4051311.7114

Easting: 345052.6531

Construction:	<i>Crest Elevation</i>	<i>6914.5 ft</i>
	<i>Normal Water Surface Elevations</i>	
	<i>Structural Height</i>	<i>175.0 ft</i>
	<i>Crest Length</i>	<i>642.0 ft</i>
	<i>Reservoir Capacity</i>	<i>±180,000 acre feet</i>
	<i>Service Spillway type:</i>	
	<i>"Uncontrolled" Crest</i>	<i>Yes</i>
	<i>Morning Glory</i>	<i>No</i>
	<i>Crest Length</i>	<i>36 ft</i>
	<i>Gated</i>	<i>No</i>
	<i>Auxillary Spillway</i>	<i>No</i>
	<i>Outlet Works:</i>	
	<i>Capacity at elevation 6908.6 ft</i>	<i>6850 cfs</i>
	<i>Drainage Area</i>	<i>492 sq mi</i>

Equipment: *None Noted*

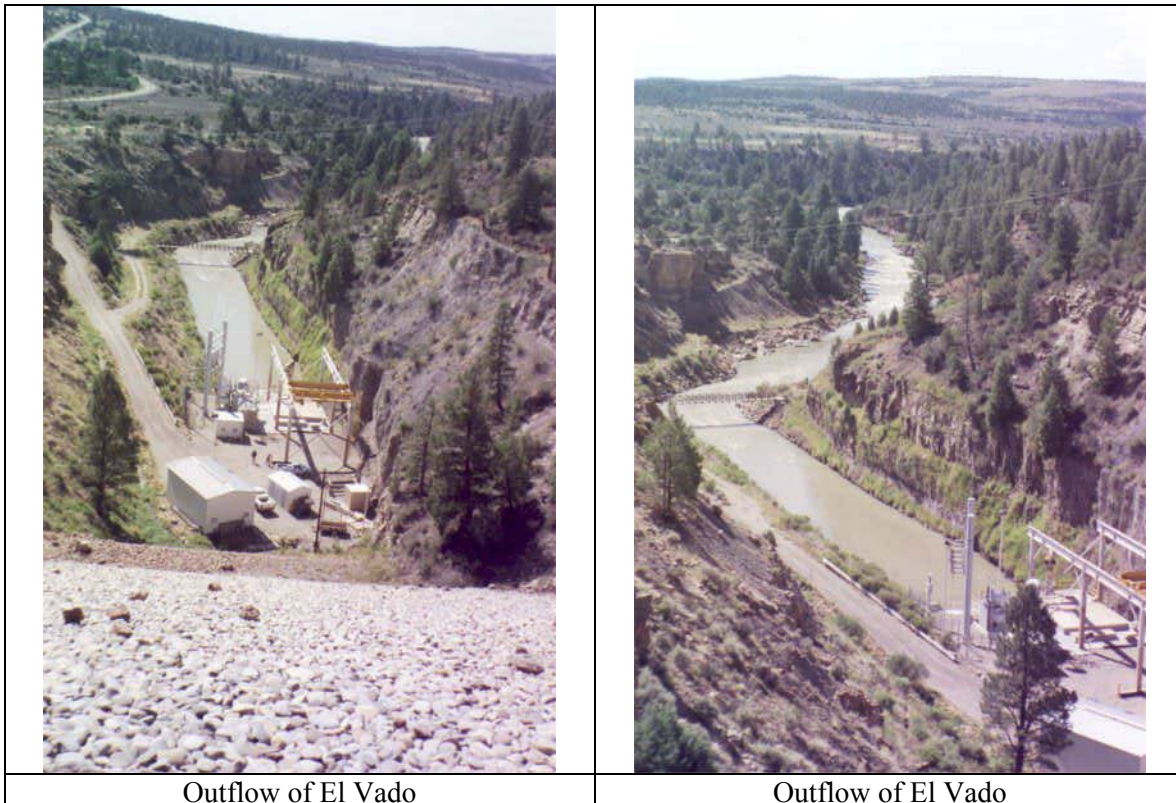
Gage Type and Condition: *None noted*

Remarks: *El Vado Dam, located on the Rio Chama about 160 miles north of Albuquerque, was built by the [MRGCD] conservation district in 1934-1955 and was rehabilitated by the Bureau of Reclamation in 1954-1955. A new outlet works was built by the Bureau of Reclamation in 1965-1966 to accommodate the additional water from the San Juan-Chama Project. The dam*

embankment is of rolled gravel fill with a steel membrane on the upstream face. It is 175 feet high, 1,326 feet long, and impounds a reservoir that holds a total capacity of ±180,000 acre-feet. (2001, Dataweb)



Source: <http://dataweb.usbr.gov/dams/nm10008.htm>



Cochiti Dam and Reservoir

Note: The Cochiti Dam is not under the MRGCD's regulation or control. Flow is diverted downstream of the Cochiti Dam at the outlet structure. The MRGCD maintains waters that flow into the Sili Main Canal and the Cochiti East Side Main Canal at this location.

Location: Cochiti Dam is within the Pueblo de Cochiti and about 50 miles upstream of Albuquerque, NM.

USBR Data Web Coordinates: Lat: 36 35' 36"N, Long: 106 44' 48"W

Coordinates from RGIS: State Plane 83 NM Central Zone,

Northing: 1679745.1923

Easting: 1620275.8585

UTM NAD83 Zone 13

Northing: 3942231.8708

Easting: 380656.2932

<i>Construction:</i>	<i>Crest Elevation</i>	<i>5479 ft</i>
	<i>Normal Water Surface Elevations</i>	<i>5340.27 ft</i>
	<i>Structural Height</i>	<i>251 ft</i>
	<i>Crest Length</i>	<i>28512 ft</i>
	<i>Reservoir Capacity</i>	<i>771,719 acre ft</i>

Remarks: One of the ten largest earthfill dams in the US, Cochiti Dam serves as a flood/sediment control structure for the Rio Grande and the Santa Fe River, as well as a recreational site for the area. Construction began in 1965; completion of the main embankment 1975; and opened to the public in July 1975. In 1976 the Cochiti Recreation Area, on the west shore, was opened to the public; and in 1983 the Tetilla Peak area on the east shore was opened. (2001, USACE)



Cochiti Dam



Outflow



Looking south from dam crest

Angostura Diversion Structure
ANGDV

ID: ANGDV		Name: Angostura Diversion Structure	
Division: Albuquerque		Date of Visit: April 30, 2001	
Operator: MRGCD		Original Construction: 1934	
State Plane 83 NM Central Zone (RGIS)		UTM NAD83 Zone 13(RGIS)	
Northing	Easting	Northing	Easting
1595985	1567596	3916910	364279
WGS84			
Lat: 35.38631		Long: 106.49433	

Location: *5 miles NW of Bernalillo, NM*

Construction: *Crest Elevation* 5,083.0 ft
 Structural Height 17 ft
 Hydraulic Height 4.5 ft
 Crest Length 800 ft
 Volume 1,500 cy
 Diversion capacity 650 cfs

Equipment: *Concrete, four 20- by 4-ft top-seal radial gates; supplies water to the Albuquerque Main Canal.*

Gage Type and Condition: *Not gaged, however outflow over the diversion is computed and used as a virtual gage (see ANGDV, Virtual Gages)*

Remarks: *The Angostura Diversion Dam was originally constructed by the MRGCD in 1934; it was rehabilitated by the Bureau of Reclamation in 1958. It serves the Albuquerque division by diverting water from the Rio Grande to the Albuquerque Main Canal. It consists of a concrete weir section 4.5 feet high and 800 feet long. (2001, Dataweb)*

Angostura Diversion Structure ANGDV



Looking downstream from above diversion eastside of river



Looking upstream from above diversion

Looking west across diversion

Isleta Diversion Structure ISLDV

ID: ISLDV		Name: Isleta Diversion Structure	
Division: Belen		Date of Visit: Not visited	
Operator: MRGCD		Original Construction: 1934	
State Plane 83 NM Central Zone		UTM NAD83 Zone 13	
Northing	Easting	Northing	Easting
1420079	1509043	3863525	345761
USGS Coordinates			
	Lat: 34.90244	Long: 106.68817	

Location: *13 mi S of Albuquerque, NM at Isleta Pueblo, spanning the Rio Grande approximately 1.0 mile west from State Highway 47, 1.2 mile from Isleta Pueblo, and about USGS mile 1,527.2*

Construction: *Crest Elevation 4886.6 ft*
Structural Height 21 ft
Hydraulic Height 5 ft
Crest Length 674 ft
Volume 3,900 cy
Diversion capacity 1,070 cfs

Equipment: *Shelters for transmitters. Gate structure: Concrete, thirty 20- by 5-ft radial gates. Headworks for the Peralta Main Canal: concrete, three 15- by 3.75-ft top seal radial gates; for the Belen Highline Canal: concrete, four 20- by 3.75-ft top seal radial gates.*

Gage Type and Condition: *5 Real time automated transmitters for downstream diversions*

Remarks: *Originally the Isleta Diversion Dam was constructed by the MRGCD in 1934; it was rehabilitated by the Bureau of Reclamation in 1955. It is a reinforced concrete structure, 5 feet high and 674 feet long with 30 radial gates. It serves the Belen Division of the MRGCD. (2001, Dataweb)*



Source: Isleta Diversion aerial photo Data Web

San Acacia Diversion Structure SNADV

ID: SNADV		Name: San Acacia Diversion Structure	
Division: Socorro		Date of Visit: May 2001	
Operator: MRGCD		Original Construction: 1934	
State Plane 83 NM Central Zone		UTM NAD83 Zone 13	
Northing	Easting	Northing	Easting
1184633	1448552	3791995	326436
USGS Coordinates			
Lat: 34.25461		Long: 106.88498	

Location: *Sevilleta Grant, spanning Rio Grande, approximately 0.5 mile east of San Acacia, ± 2 miles downstream from Rio Salado, and USGS mile 1,473.1*





Construction: *Crest Elevation* 4668.5 ft
 Structural Height 17 ft
 Hydraulic Height 7.5 ft
 Crest Length 700 ft
 Volume 2,700 cy
 Diversion capacity 283 cfs

Equipment: *Concrete, three 4- by 5-ft slide gates.*

Gage Type and Condition: *Not gaged, outflow over the diversion is computed and used as a virtual gage (see SANDV, Virtual Gages)*

Remarks: *Originally the San Acacia Diversion Dam was constructed by the MRGCD in 1934; it was rehabilitated by the Bureau of Reclamation in 1958. The San Acacia Diversion Dam serves the Socorro division of the MRGCD. It is a concrete gate structure 7.5 feet in height and 700 feet long with 23 radial gates. (2001, Dataweb)*

San Acacia Diversion Structure
SNADV

	
<p>Looking east just below the diversion</p>	
	
<p>Looking south at diversion spillway</p>	<p>Looking downstream above diversion</p>







Appendix B-2

Schematic Diagrams of Conveyance Channels

MIDDLE RIO GRANDE CONSERVANCY DISTRICT SYSTEM SCHEMATICS OF

COCHITI DIVISION
ALBUQUERQUE DIVISION
BELEN DIVISION
AND
SOCORRO DIVISION

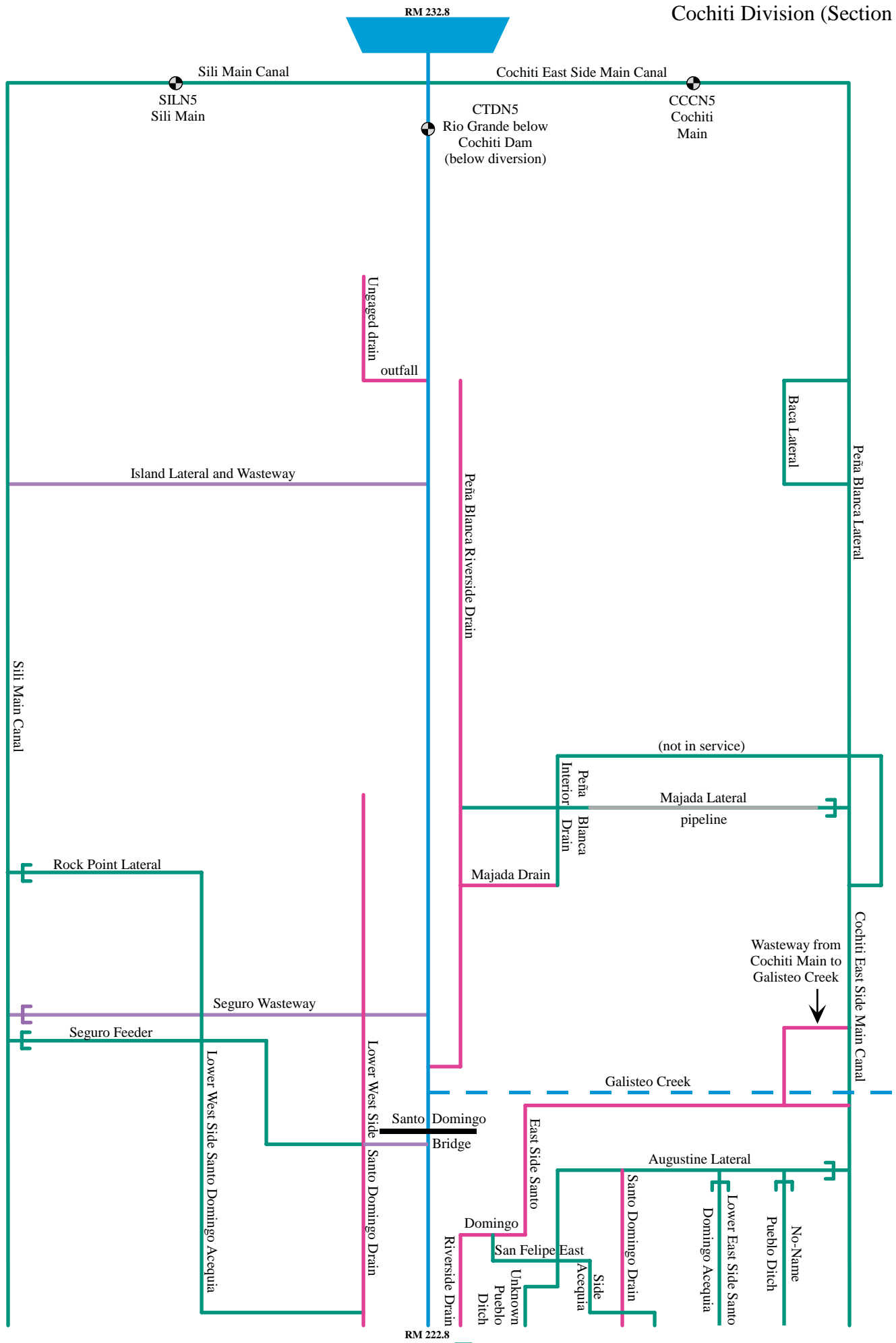
Legend

-  Rio Grande
-  Waterways
-  Drains
-  Wasteways
-  USGS gage
-  MRGCD gage

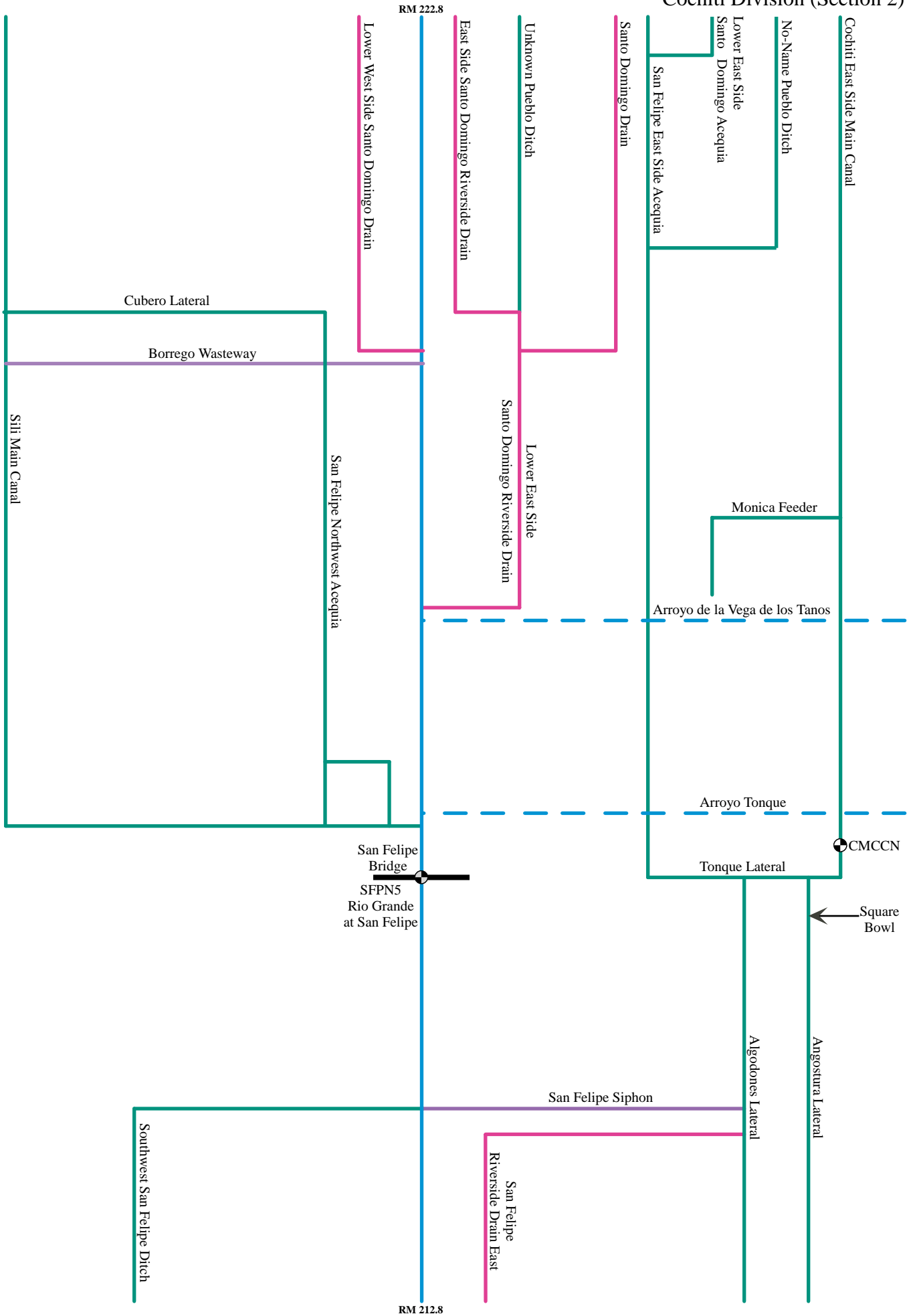
Note:

1. Schematic may not show actual geometric alignments horizontally
2. River mile (RM) distances along the Rio Grande were interpreted from 1992 aerial photos and field ground checks
3. Schematic has not been verified by MRGCD

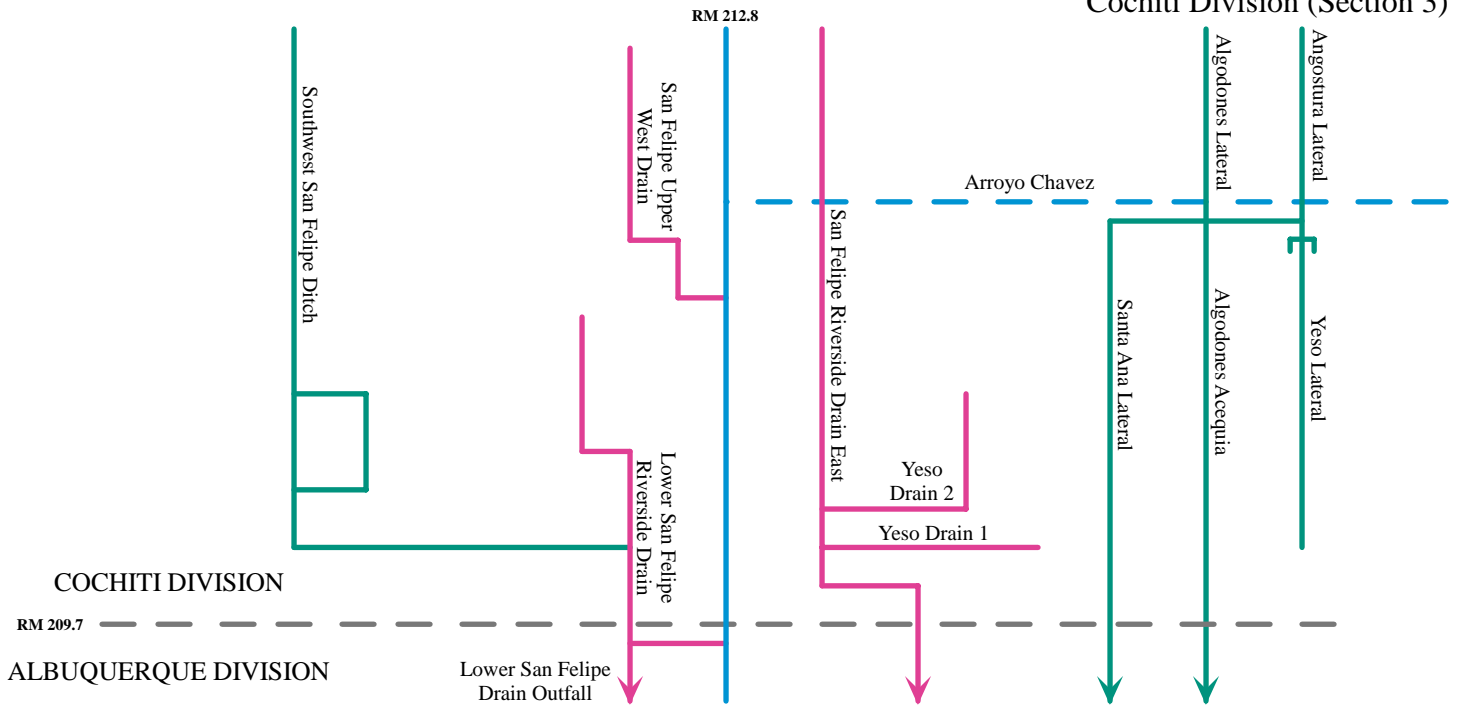
Produced by
S. S. Papadopoulos & Associates, Inc.
1877 Broadway, Suite 703
Boulder, Colorado 80302
303.939.8880



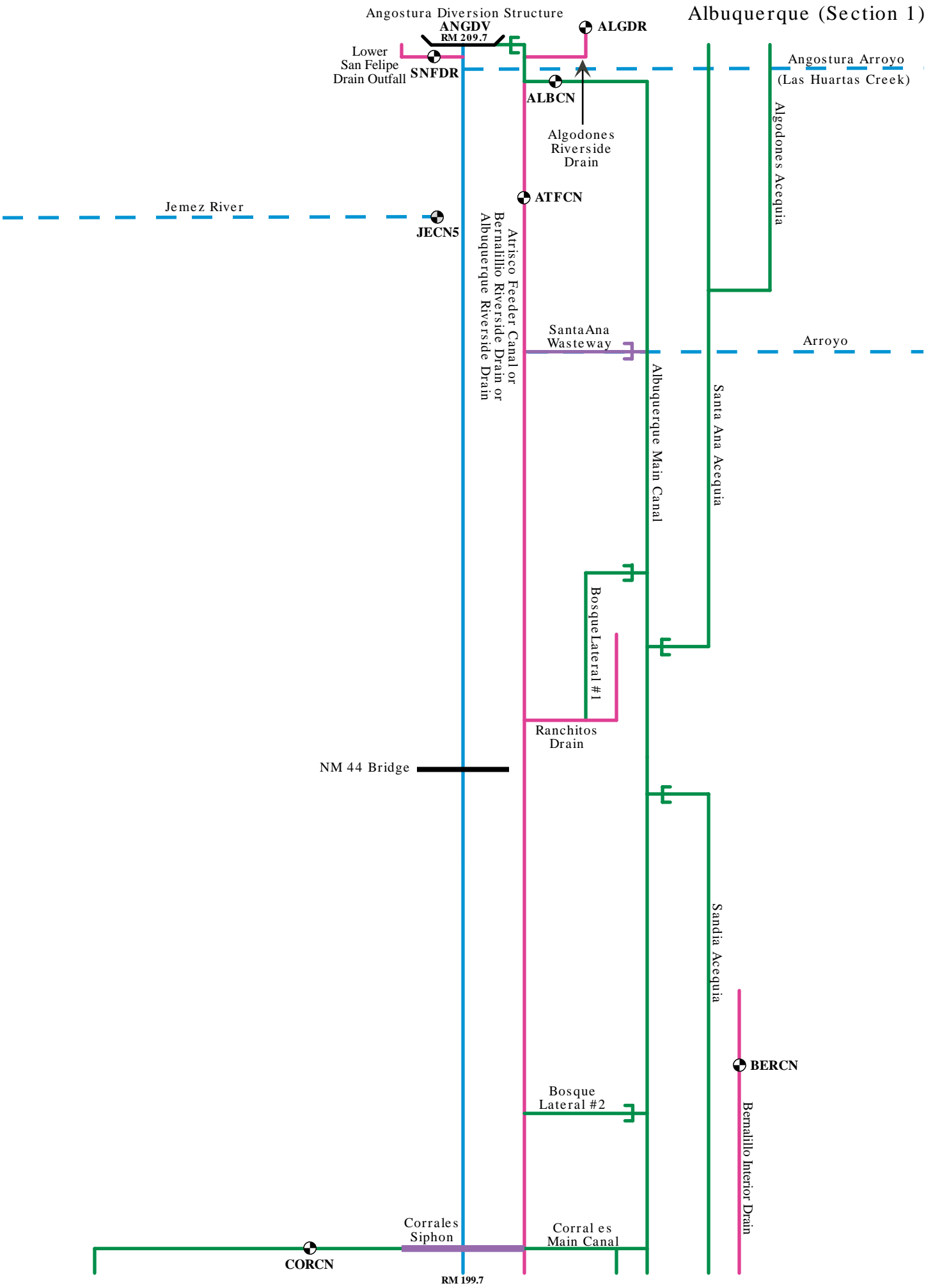
Cochiti Division (Section 2)



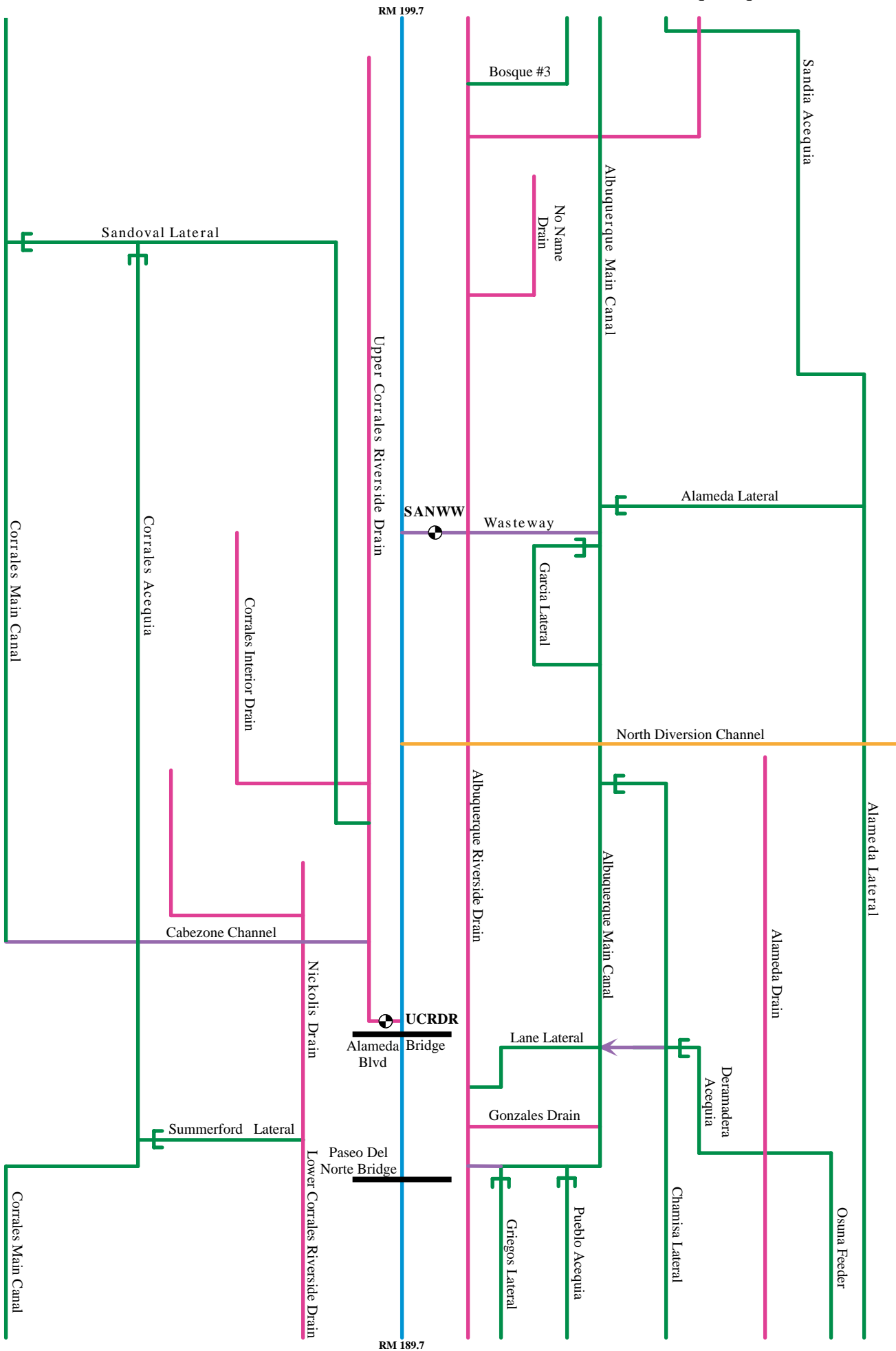
Cochiti Division (Section 3)



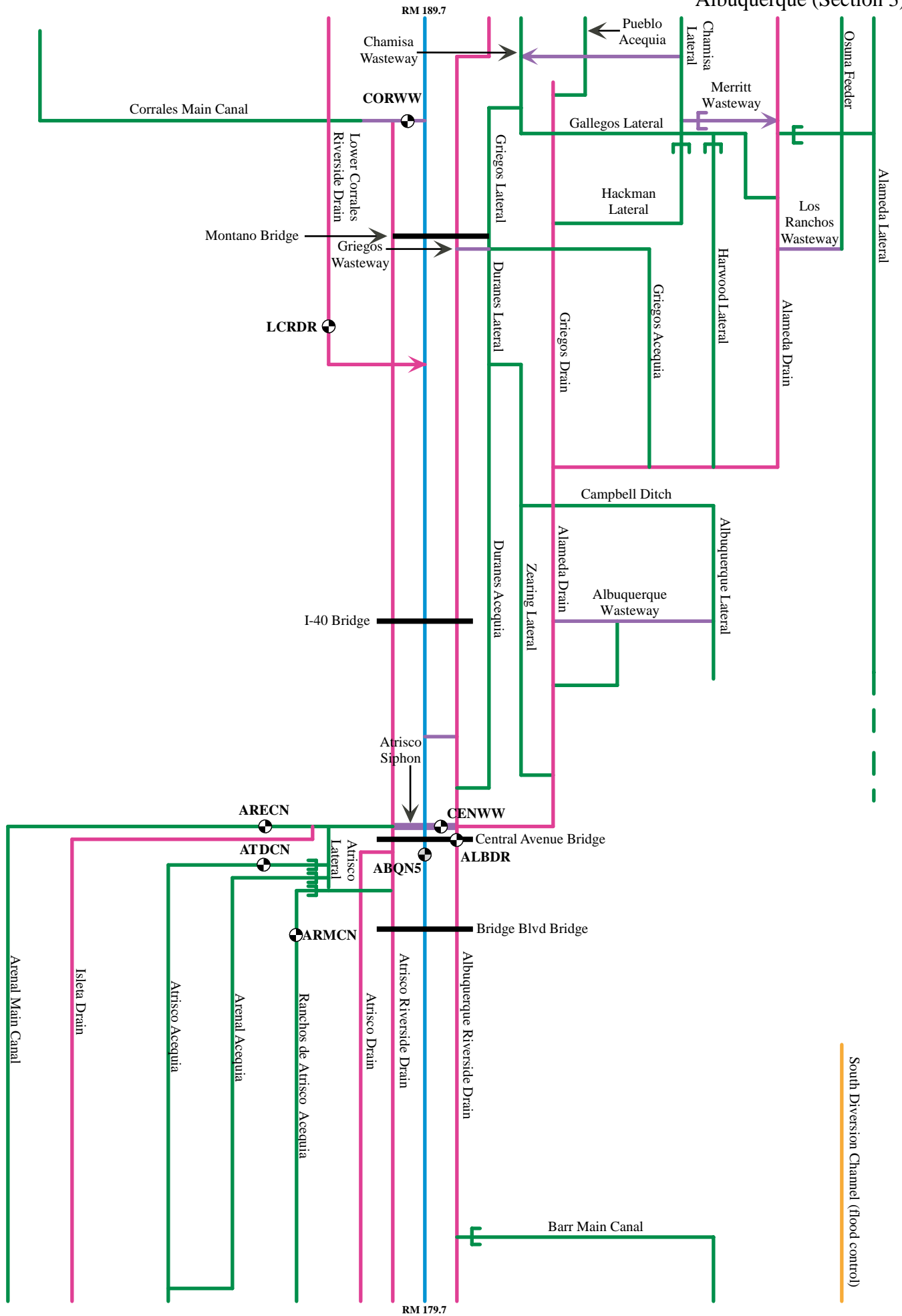
Albuquerque (Section 1)



Albuquerque (Section 2)

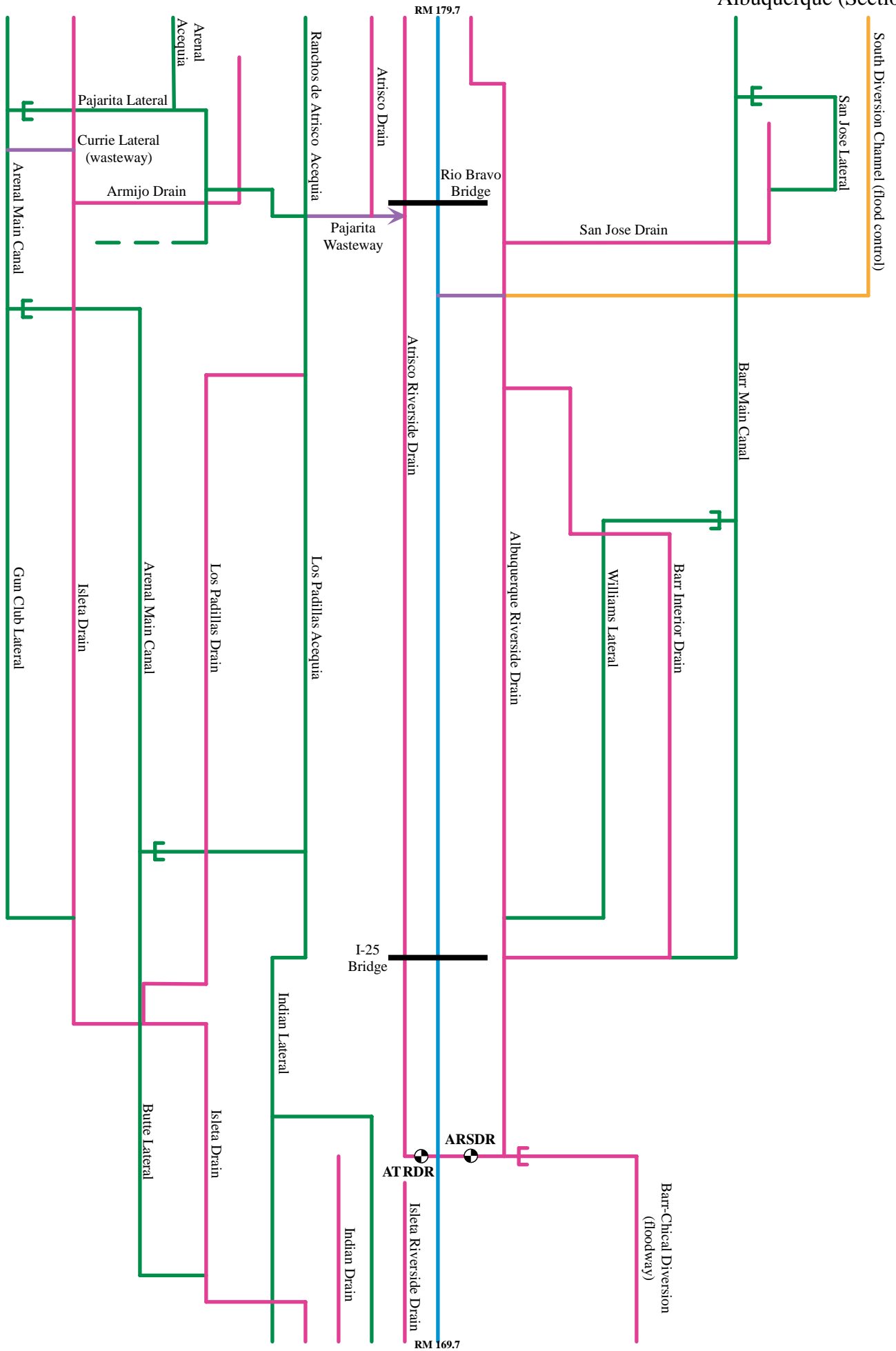


Albuquerque (Section 3)



South Diversion Channel (flood control)

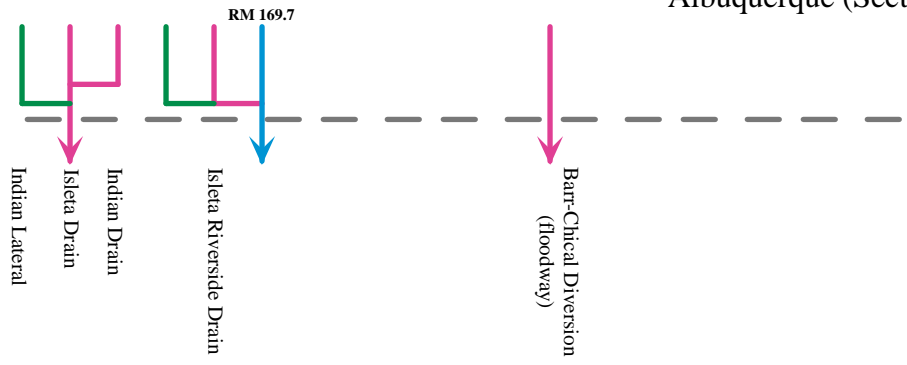
Albuquerque (Section 4)



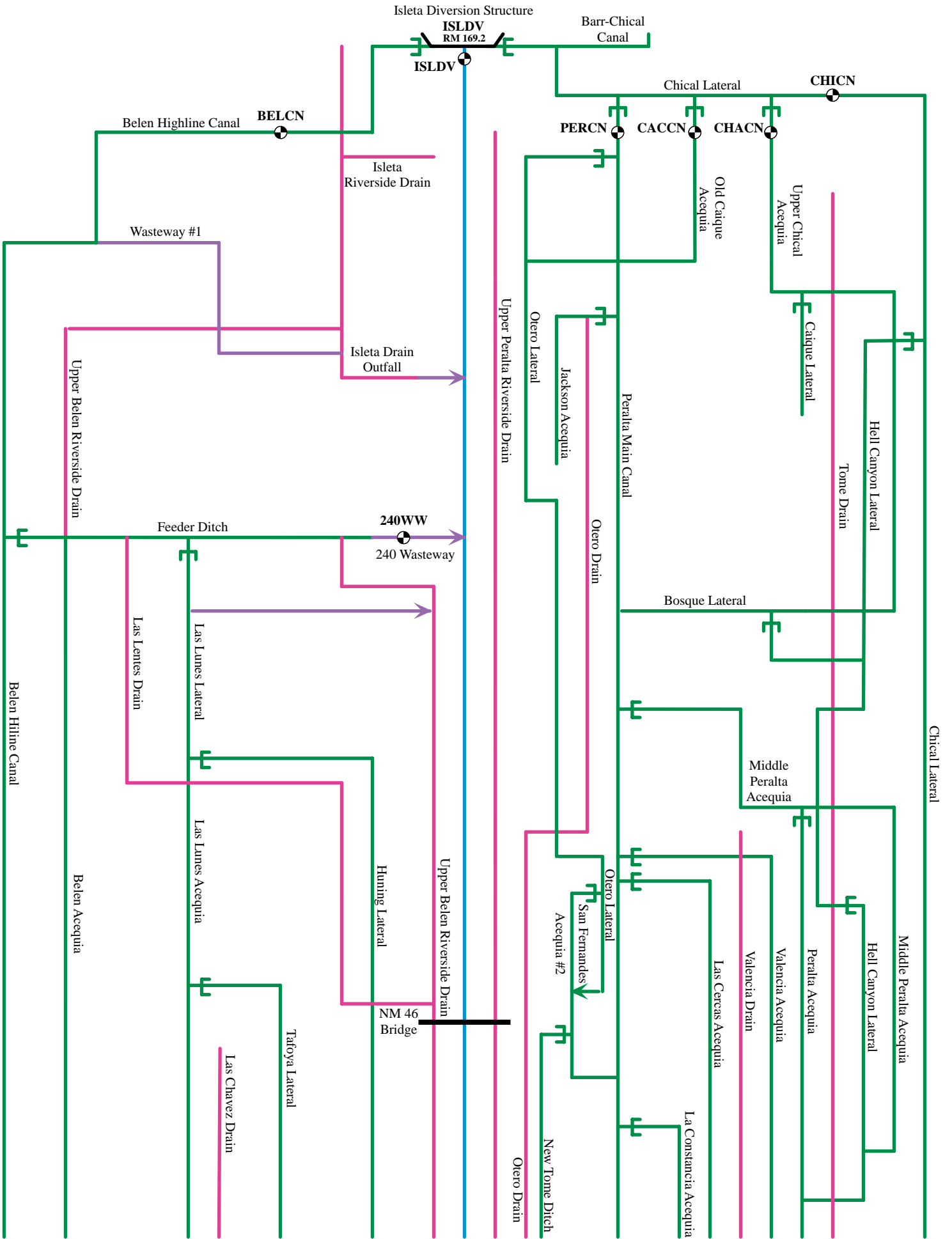
ALBUQUERQUE DIVISION

RM 169.2

BELEN DIVISION

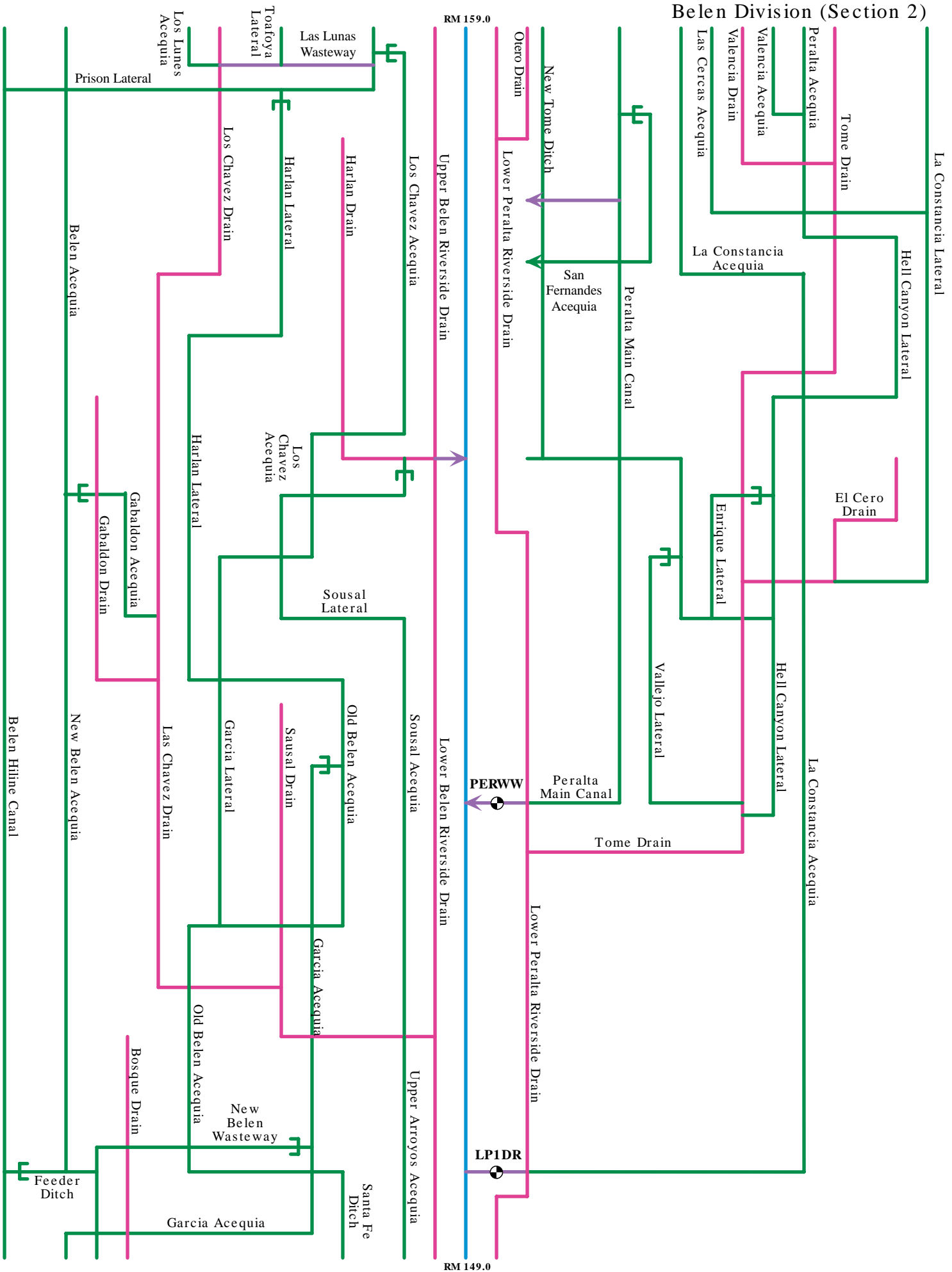


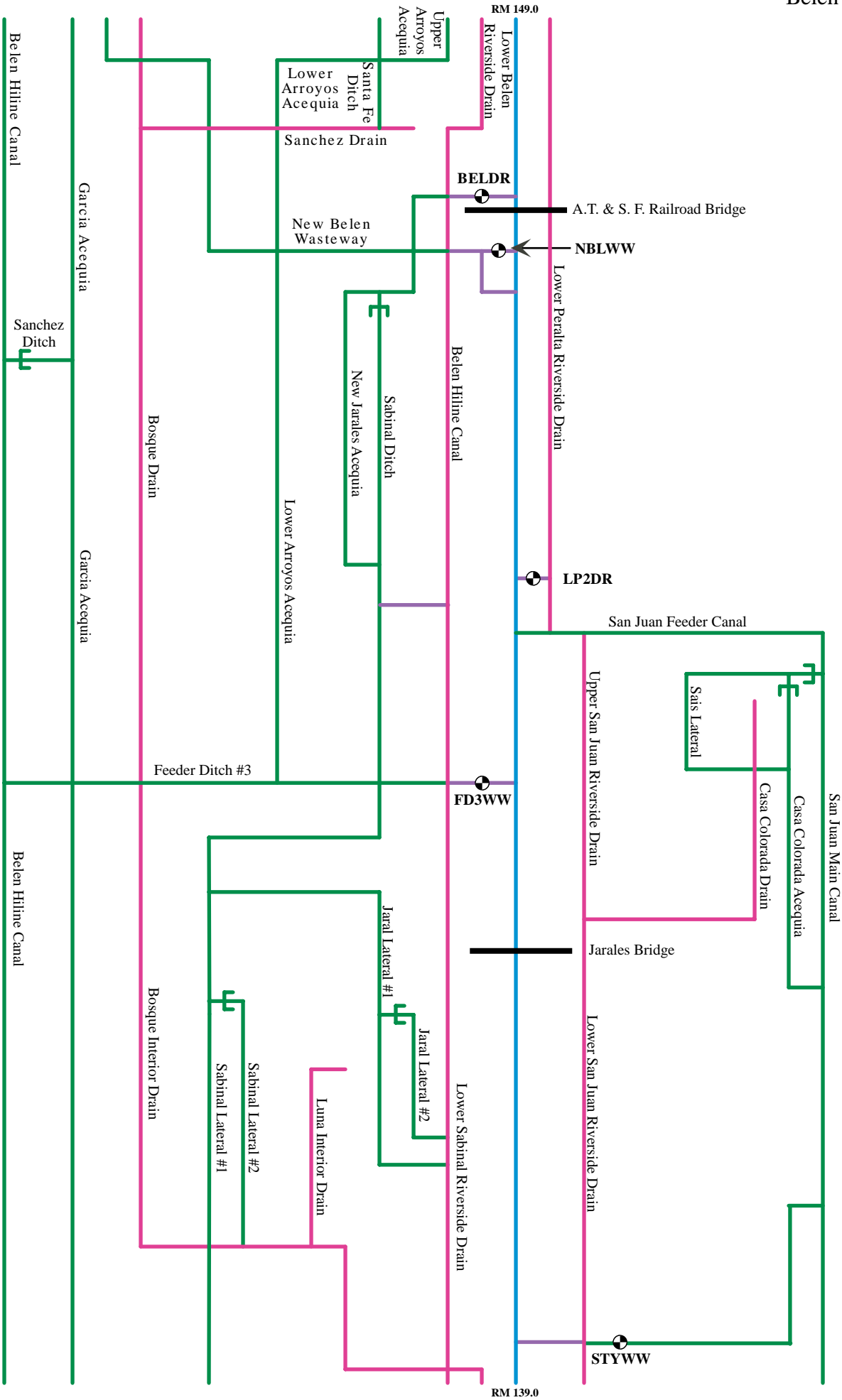
Belen Division (Section 1)



RM 159.0

Belen Division (Section 2)

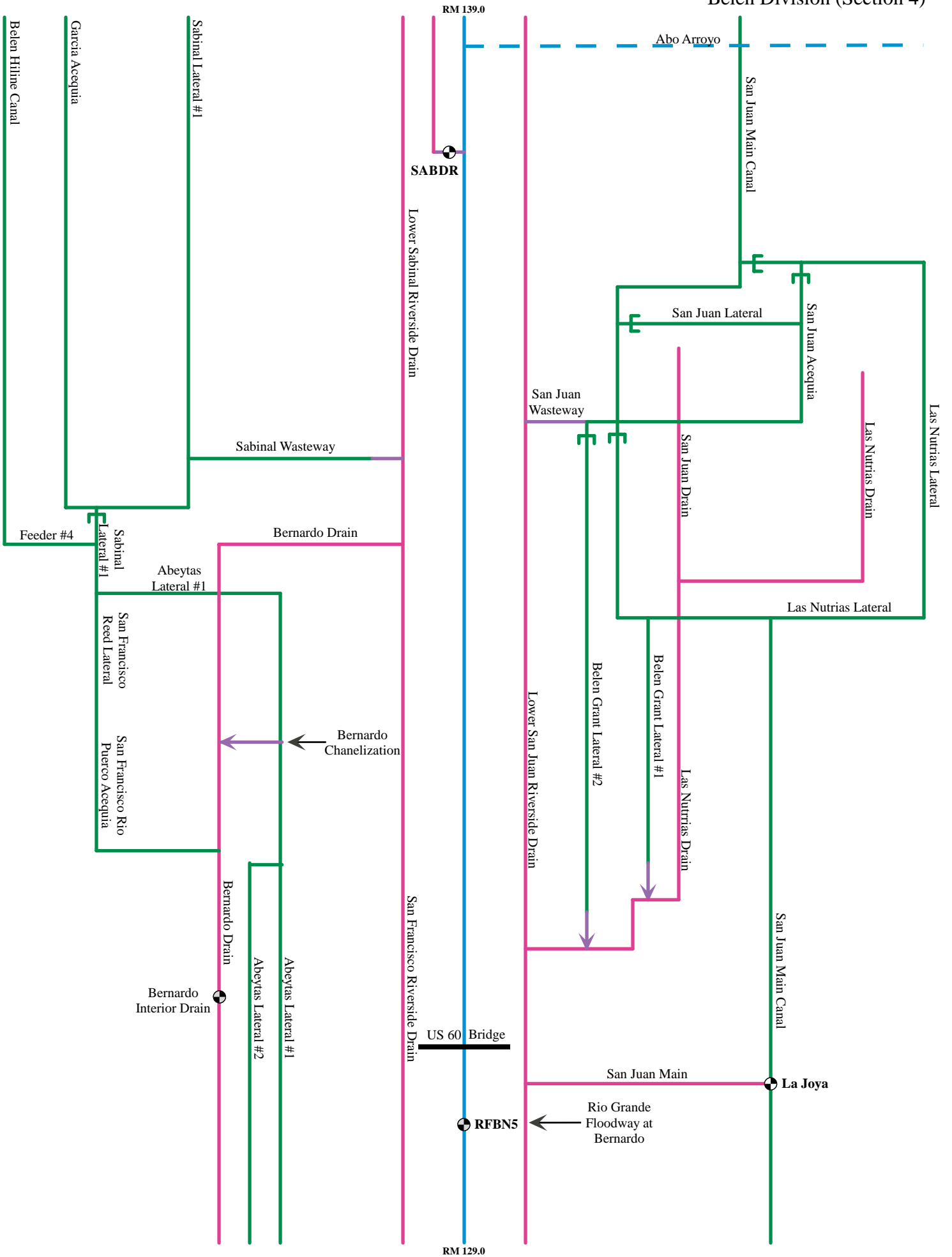




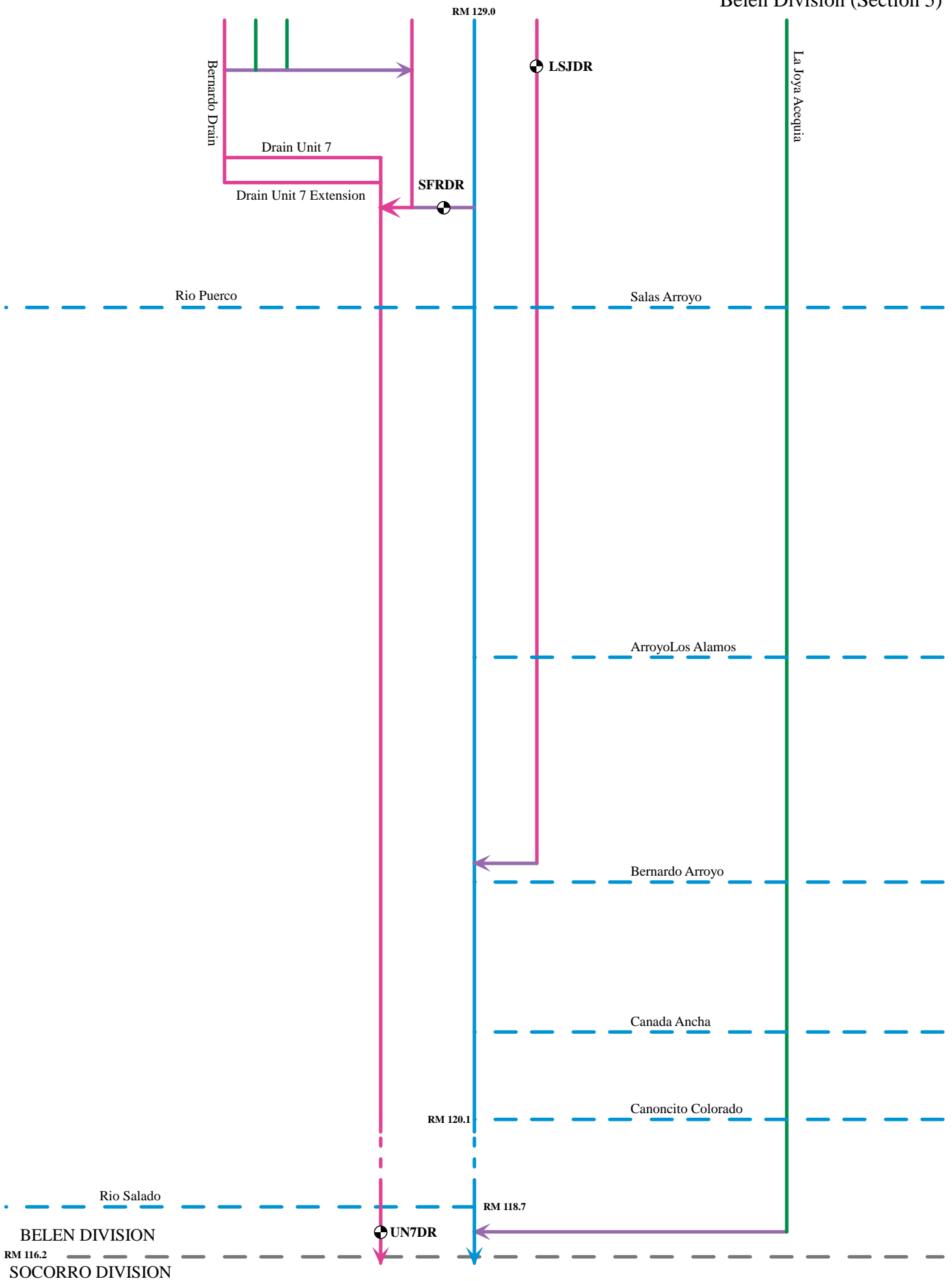
RM 139.0

RM 149.0

Belen Division (Section 4)



Belen Division (Section 5)



Bernardo Drain

Drain Unit 7

Drain Unit 7 Extension

RM 129.0

LSJDR

SFRDR

Rio Puerco

Salas Arroyo

La Joya Acequia

Arroyo Los Alamos

Bernardo Arroyo

Canada Ancha

Canoncito Colorado

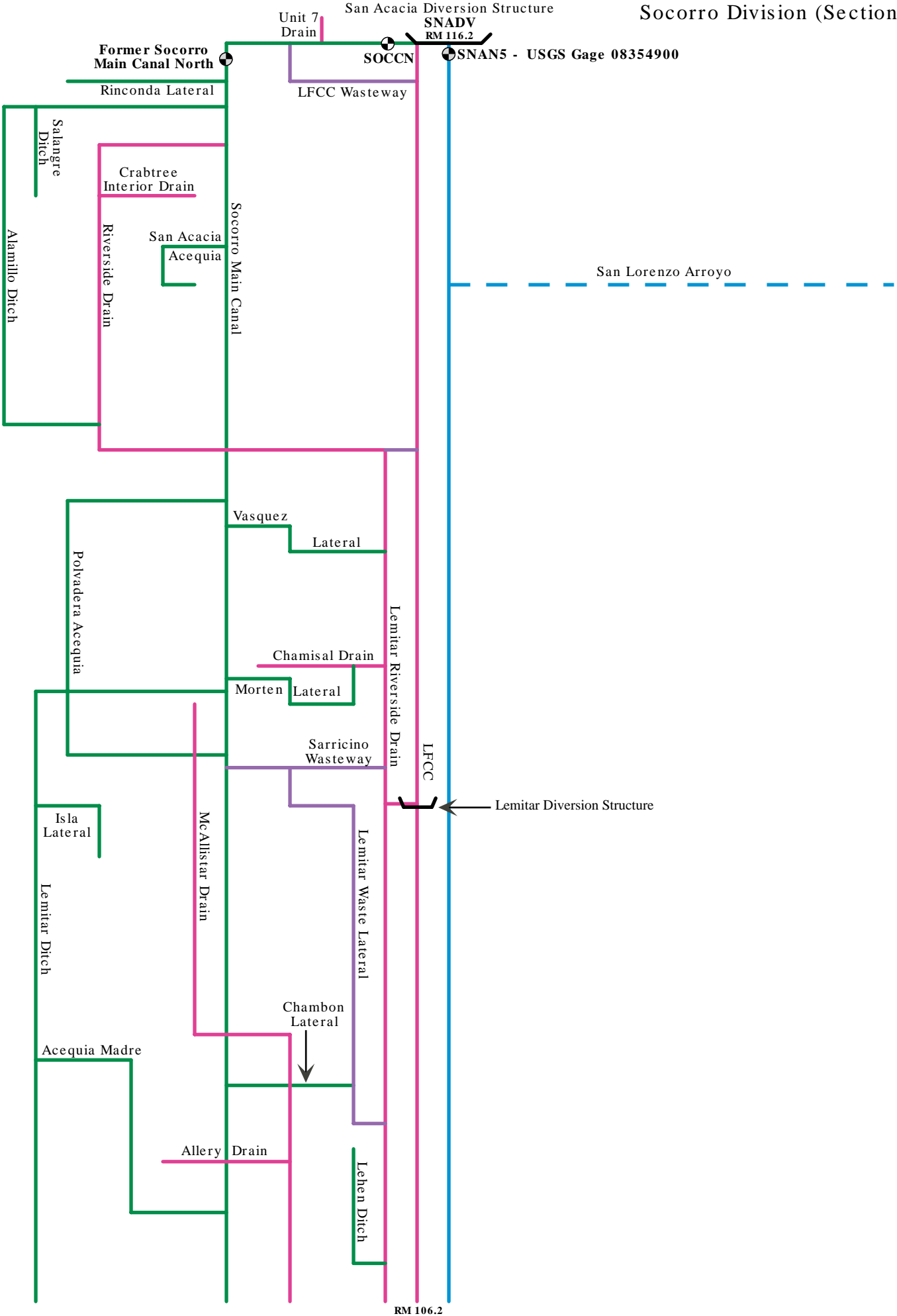
RM 120.1

Rio Salado

RM 118.7

UN7DR

BELEN DIVISION
RM 116.2
SOCORRO DIVISION



Unit 7 Drain

San Acacia Diversion Structure
SNADV
RM 116.2

Former Socorro Main Canal North

SOCCN

SNAN5 - USGS Gage 08354900

Rinconda Lateral

LFCC Wasteway

Salangre Ditch

Crabtree Interior Drain

San Acacia Acequia

Riverside Drain

Socorro Main Canal

San Lorenzo Arroyo

Alamillo Ditch

Vasquez Lateral

Lateral

Polvadera Acequia

Chamisal Drain

Morten Lateral

Sarricino Wasteway

LFCC

Lemitar Diversion Structure

Isla Lateral

McAllister Drain

Lemitar Waste Lateral

Lemitar Ditch

Chambon Lateral

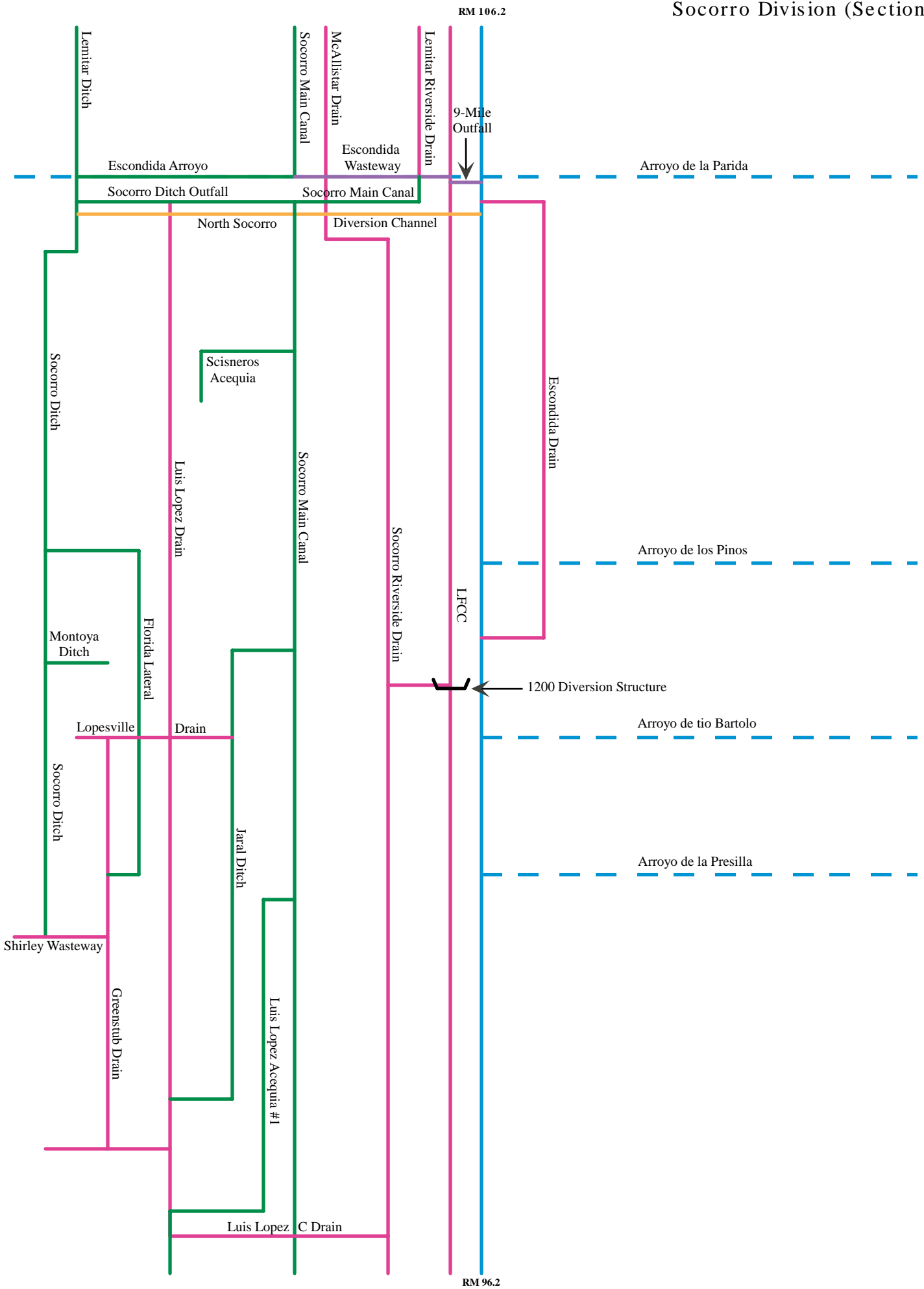
Acequia Madre

Allery Drain

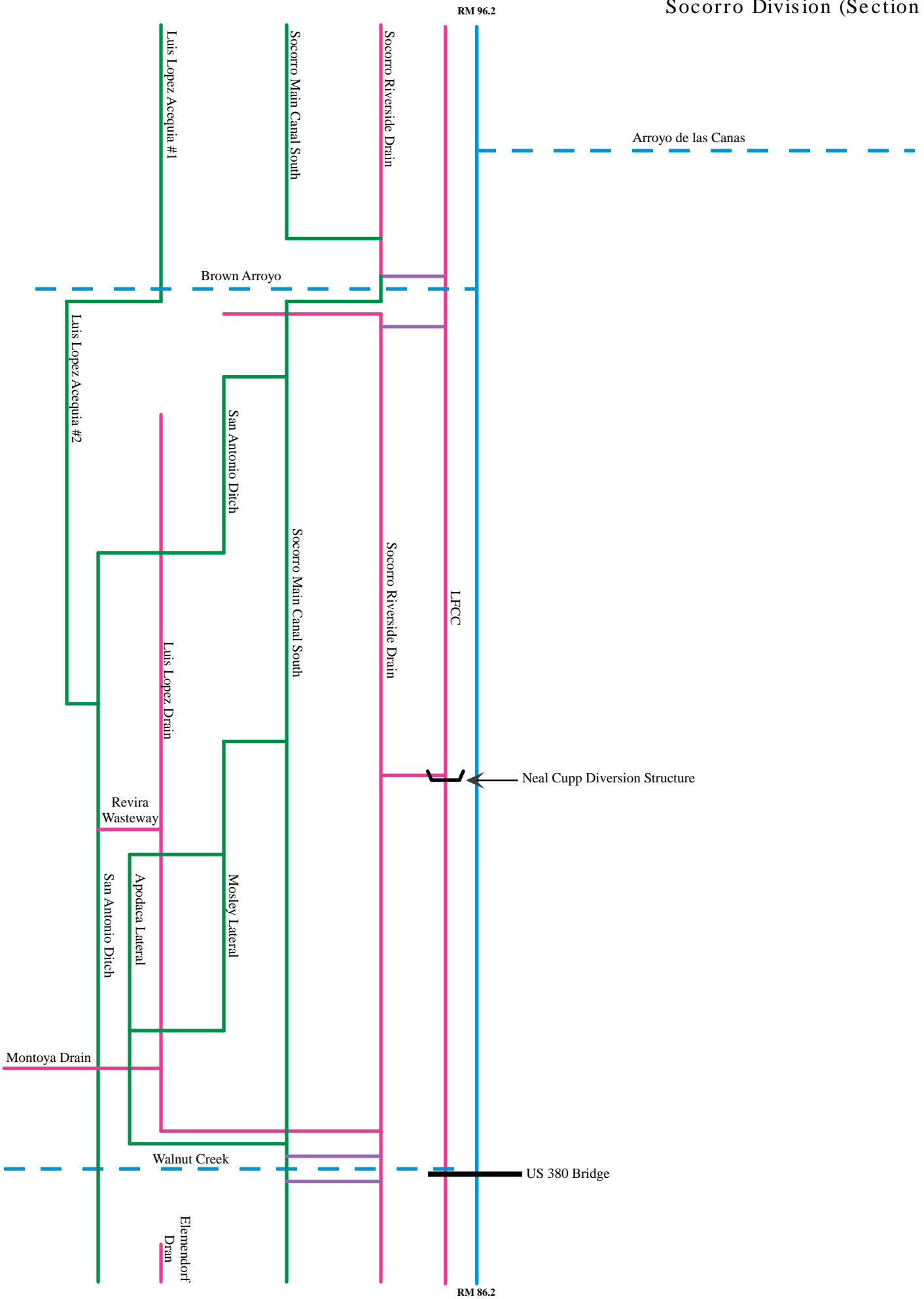
Lehen Ditch

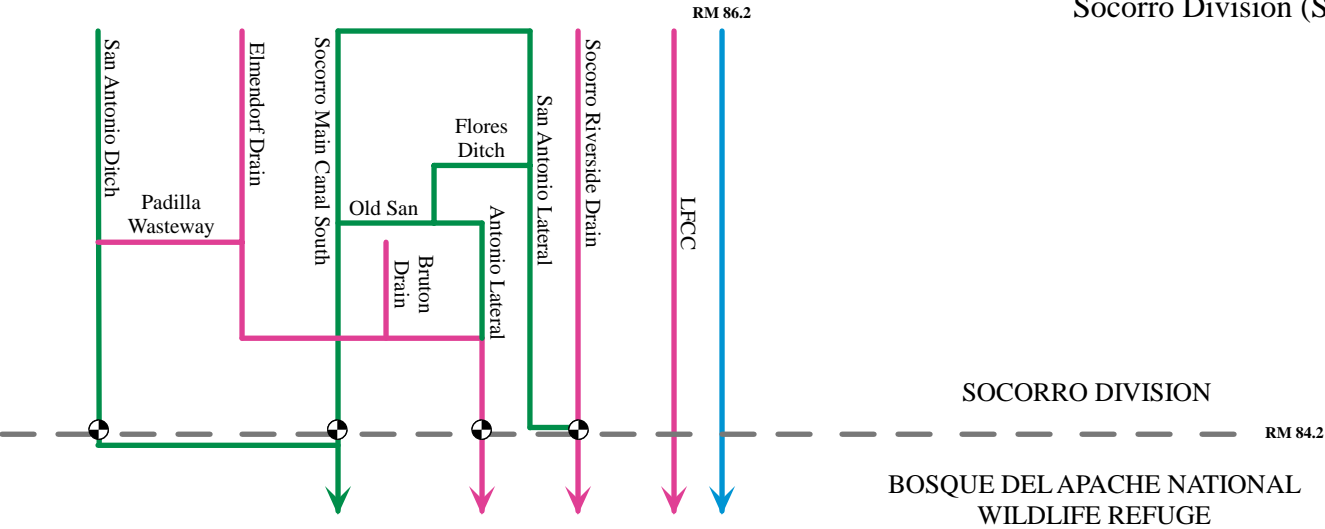
RM 106.2

Socorro Division (Section 2)



Socorro Division (Section 3)





Note: Additional gages used for planning and river monitoring purposes