

**WATER RESOURCES REPORT
ADDENDUM FOR THE
VALLEY HIGHWAY EIS,
DENVER, COLORADO**

Prepared for:

Federal Highway Administration
Colorado Department of Transportation

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Muller Engineering Company

October 2006

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1.0 INTRODUCTION

This document supplements the Water Resources Report originally submitted as part of the Draft Environmental Impact Statement (EIS). It provides water resources documentation for the selection of the Preferred Alternative and the proposed phasing scheme. It also addresses City and County of Denver (CCD) comments provided for the original Water Resources Report. The Best Management Practice (BMP) chapter, Chapter 6, from the Water Resources report shall be referenced, as the discussion and implementation of BMPs are applicable to the Preferred Alternative.

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2.0 PREFERRED ALTERNATIVE PLAN

The description of the Preferred Alternative is summarized below. Figures included in this addendum have notes referencing the related figure numbers from the original Water Resources report for cross referencing purposes.

2.1 US 6 Area

System Alternative 2 was selected as the Preferred Alternative for US 6 with some refinement. These principally include a revised East Bound braided on ramp from Federal Boulevard and replacement of the Barnum Park East Ball Fields. These revisions require a refinement of the water quality facilities as shown in **Figure 2-1A** and **Figure 2-1B**.

2.2 I-25/6th Avenue Interchange Outfall

The Preferred Alternative is compatible with the systems alternatives described previously and the drainage and water quality improvements for this area remain unchanged. They include the I-25/3rd Avenue Basin low flow connection to the 6th Avenue Water Quality Pond, the CCD-Ellsworth culvert across I-25 and the railroad, and the CCD 3rd Avenue culvert across I-25 and the railroad. **Figures 2-2** through **2-6** show the related improvements.

2.3 CCD-Ellsworth, Bayaud, and Alameda Basins

System Alternative 1 was selected as the Preferred Alternative for this area with a slight horizontal refinement of Santa Fe at the Consolidated Railroad and the Bayaud crossings to preserve access to businesses to the east. **Figure 2-7** shows the Preferred Alternative improvements.

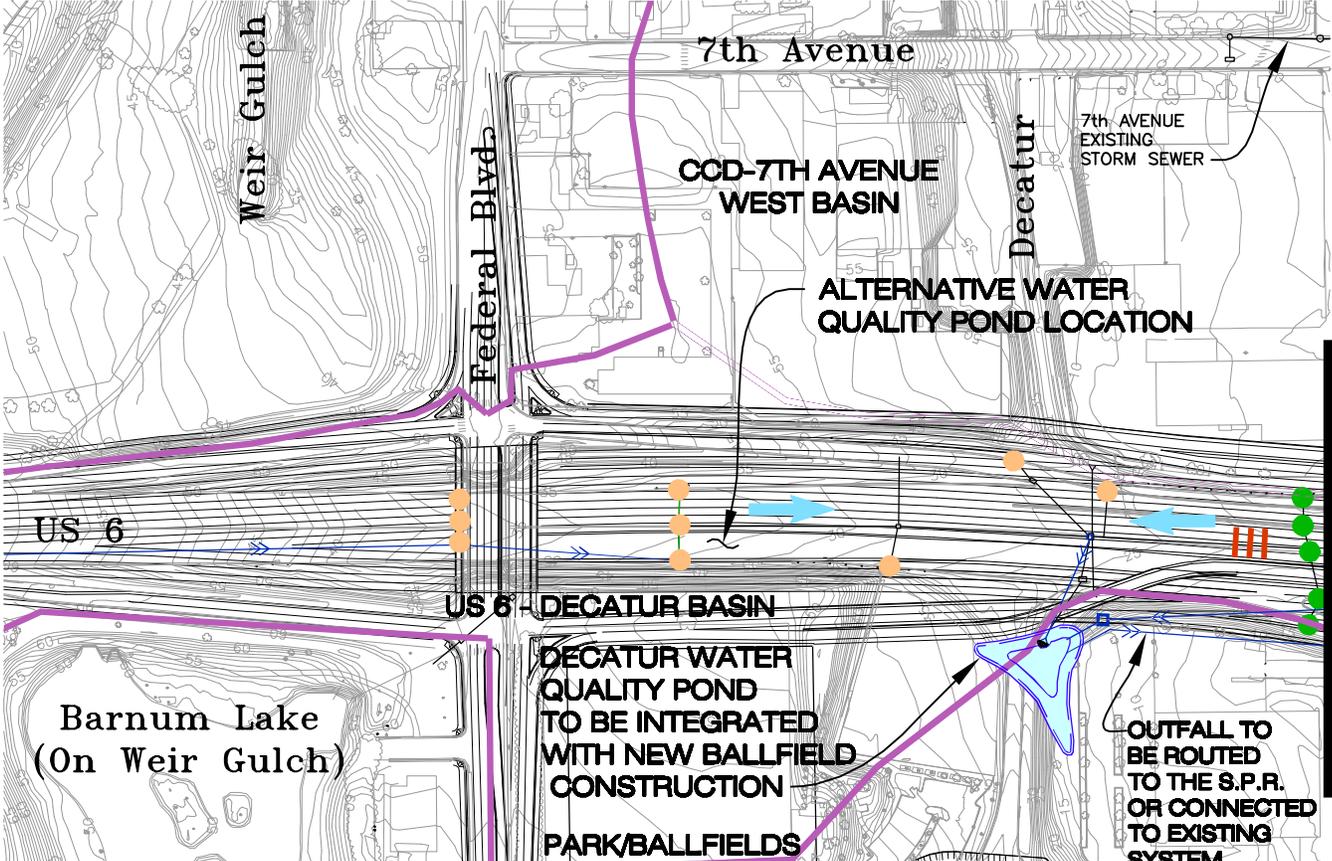
2.4 I-25 CCD-Alameda Basin and the Alameda Outfall

The improvements for this area were almost identical for all three Alternatives evaluated and is therefore with the Preferred Alternative. **Figure 2-8** and **Figure 2-9** show the Preferred Alternative improvements. **Figure 2-10** and **Figure 2-11** show the plan view of proposed drainage and water quality improvements for the area

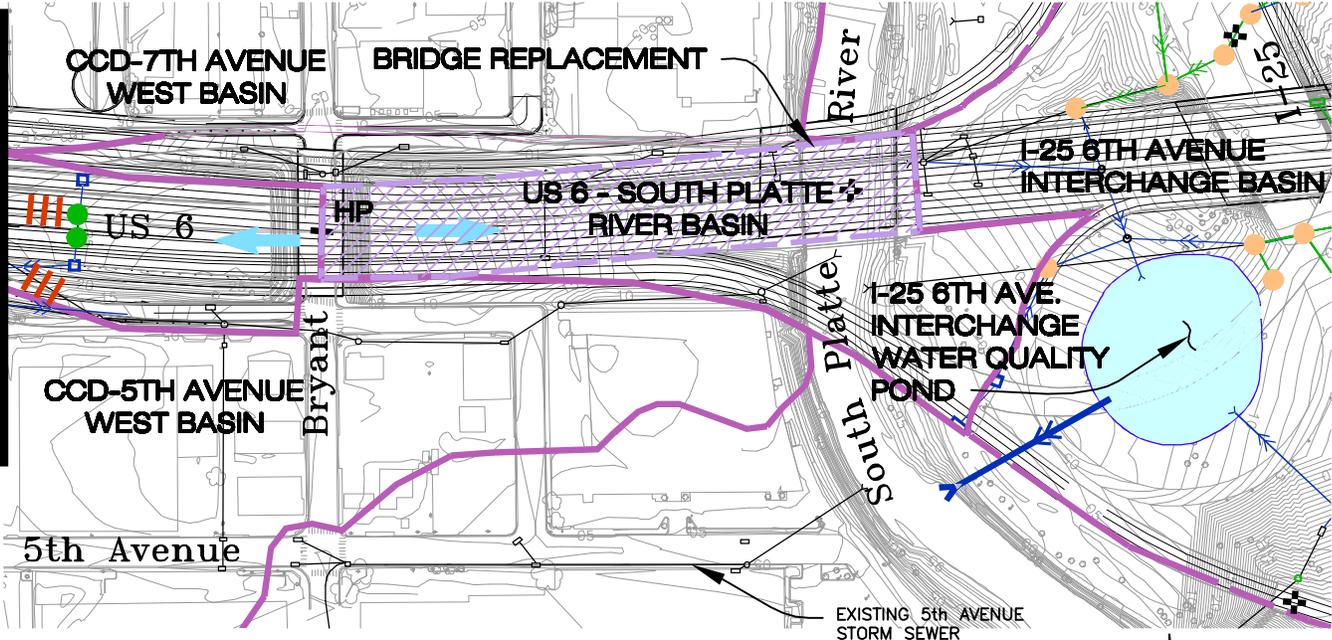
2.5 SH 85 Outfall

System Alternative 3 was chosen as the Preferred Alternative for this area. The pond should be located to the north of the existing 66-inch outfall as shown in **Figure 2-12**. No other changes are required for this location.

CONTINUES FOR APPROXIMATELY 1000 LF



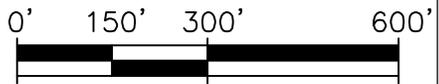
MATCHLINE



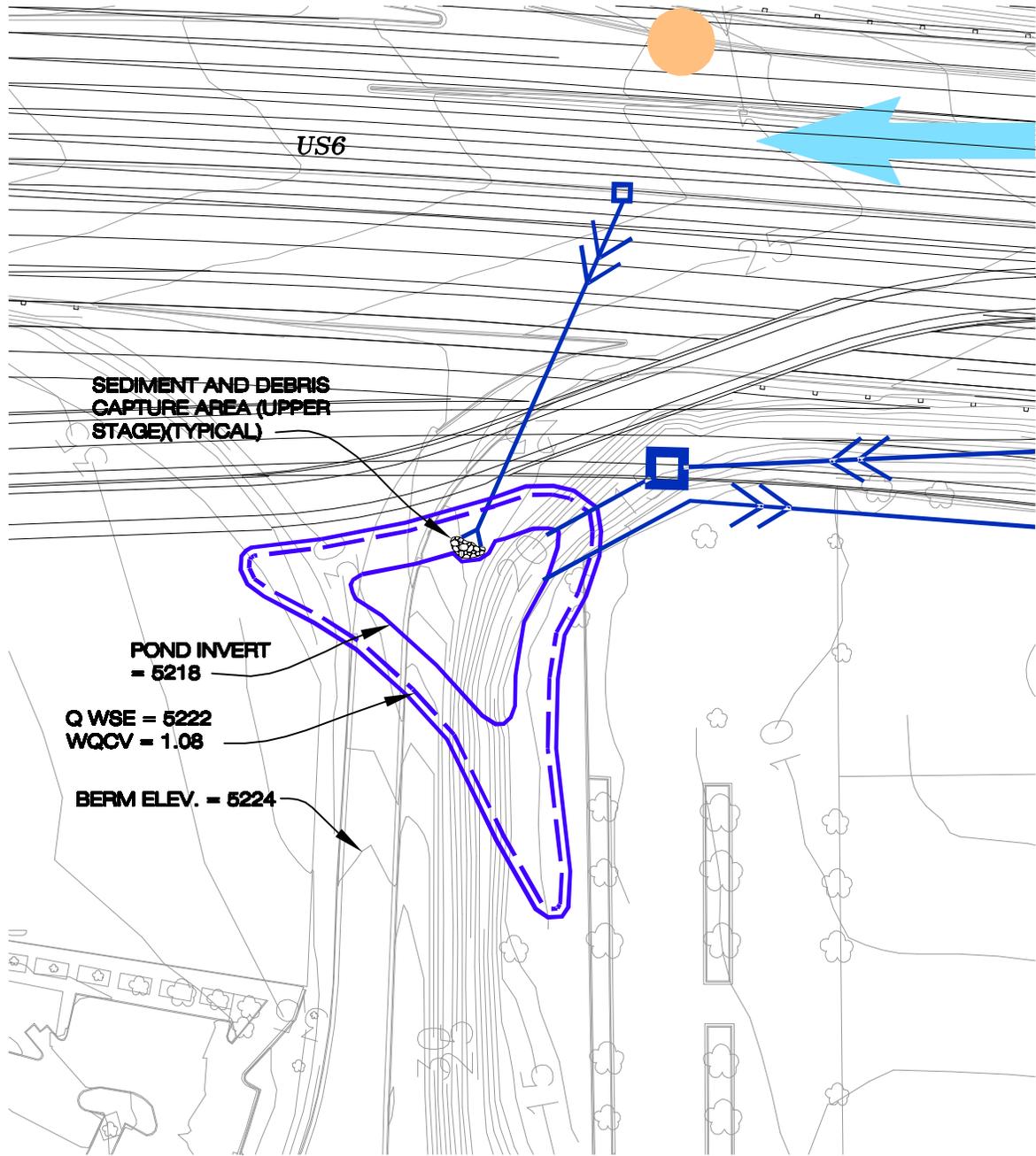
LEGEND

- | | | | |
|--|--|--|-------------------------------------|
| | A BASIN DESIGNATION | | US 6 BASIN BOUNDARY |
| | B BASIN AREA | | US 6 SUB-BASIN BOUNDARIES |
| | C % IMPERVIOUS | | DRAINAGE FLOW ARROW |
| | NEW INLET | | SWALE |
| | REMOVE PIPE | | US 6 - SOUTH PLATTE RIVER SUB-BASIN |
| | REMOVE STRUCTURE | | |
| | MODIFY OR REMOVE AND REPLACE INLET/MANHOLE | | |
| | MODIFY OR REMOVE AND REPLACE EXISTING PIPE | | |
| | EXISTING PIPE | | |
| | NEW PIPE | | |

NOTE:
THIS FIGURE IS AN UPDATE TO
THE WATER RESOURCES REPORT
FIGURE 7-1A.

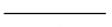


US 6 - DECATUR BASIN(S)

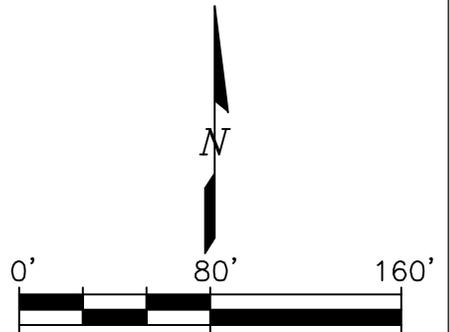


NOTE:
 THIS FIGURE IS AN UPDATE TO
 THE WATER RESOURCES REPORT
 FIGURE 7-1B.

LEGEND

-  NEW INLET
-  TRICKLE CHANNEL
-  EXISTING PIPE
-  NEW PIPE

**US 6 - DECATUR WATER
 QUALITY POND**

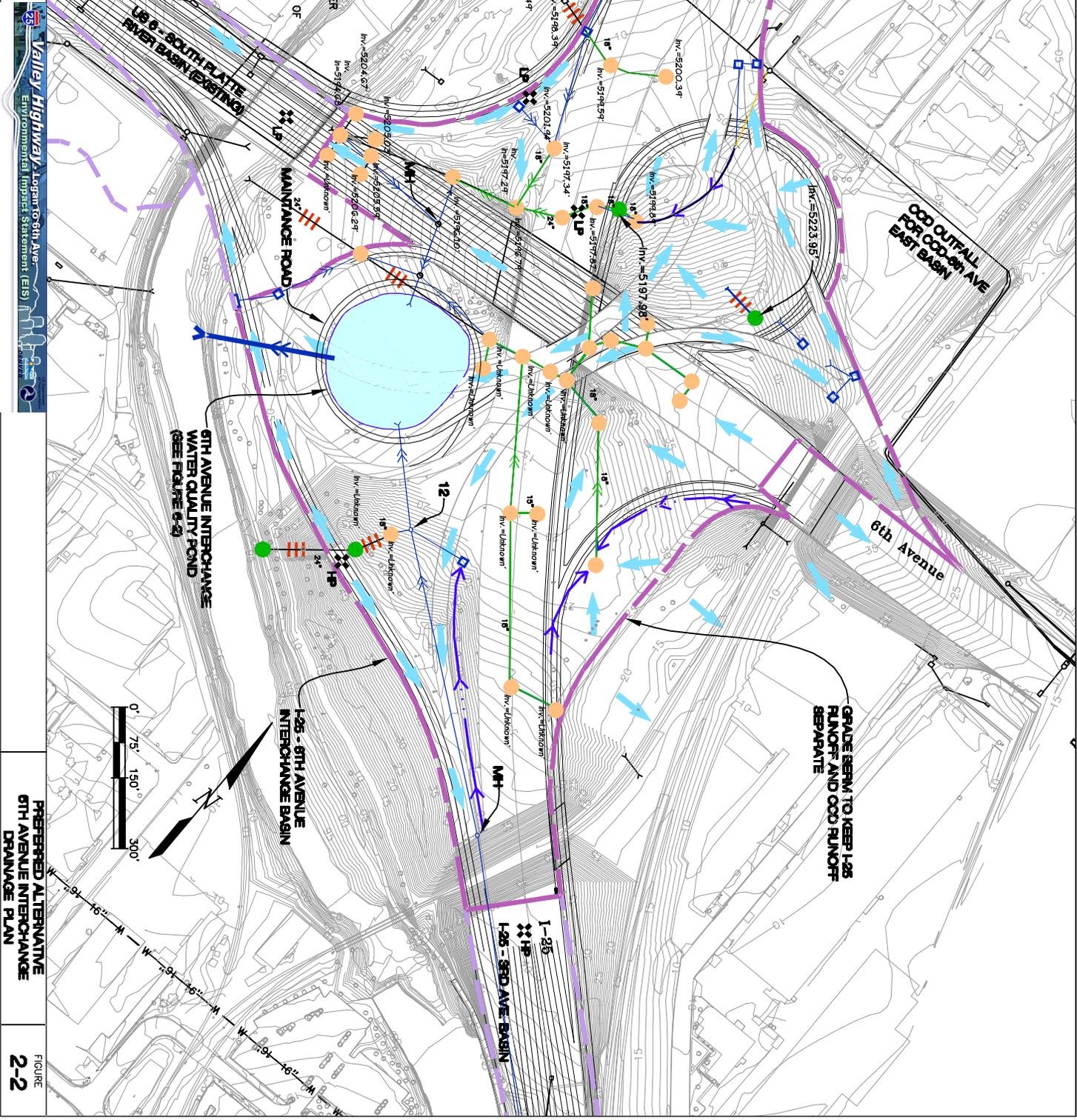


LEGEND

- REMOVE STRUCTURE
- MODIFY OR REMOVE AND REPLACE INLET/MANHOLE
- NEW INLET
- ▭ REMOVE PIPE
- NEW PIPE (WITH FLOW DIRECTION)
- EXISTING PIPE
- MODIFY OR REMOVE AND REPLACE PIPE
- POSSIBLE DIVERSION PIPE FOR CSD RUNOFF
- 1-25 - 6TH AVENUE BASIN BOUNDARY
- OTHER BASIN BOUNDARY
- DRAINAGE FLOW ARROW
- ◻ SWALE

NOTES:

1. MANHOLE INVERT ELEVATIONS ARE FROM DENVER STORM SEWER MAP WITH A 25.2' SHIFT DOWN.
2. THIS FIGURE IS CONSISTENT WITH FIGURE 7-2 OF THE WATER RESOURCES REPORT.

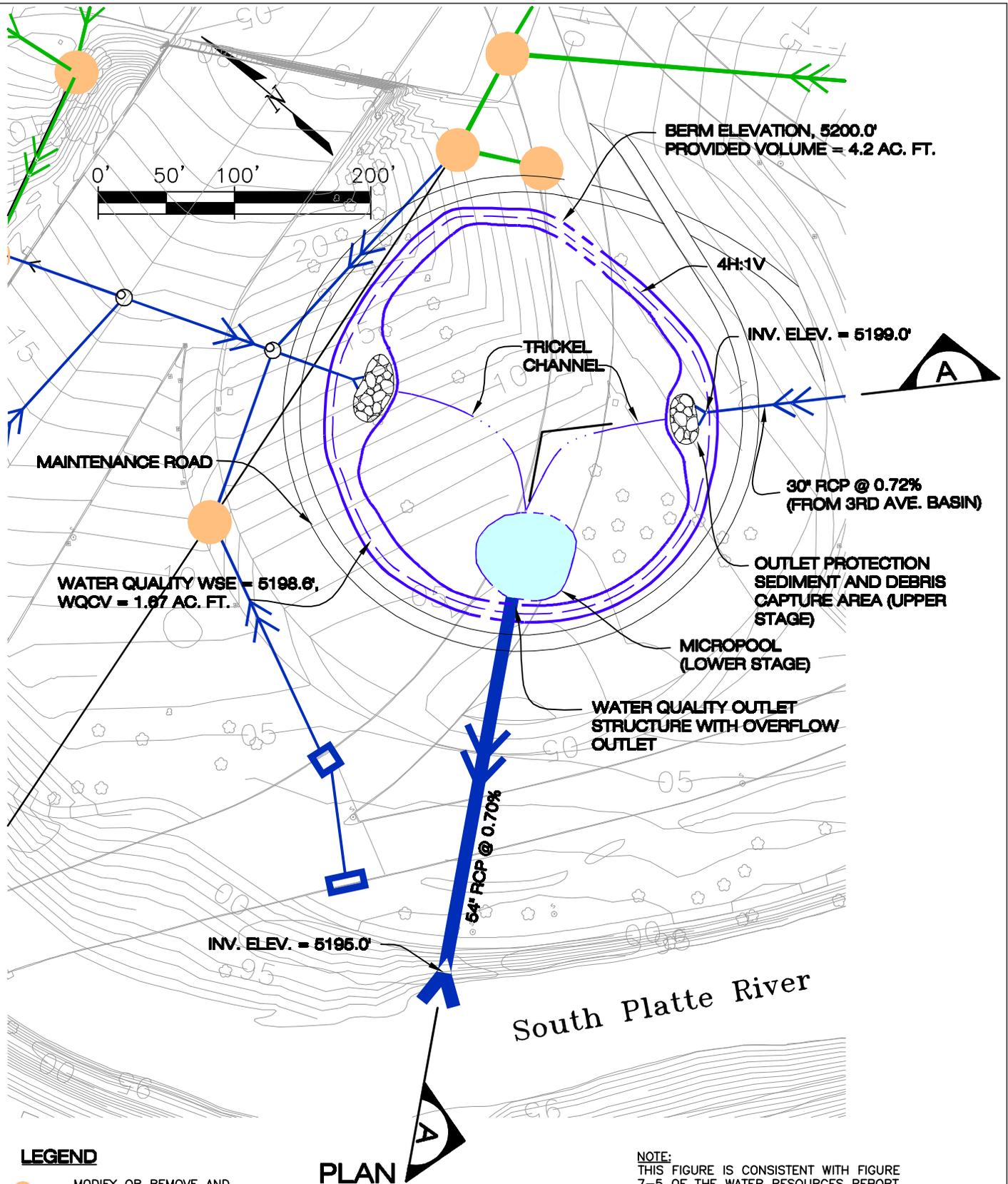


Valley Highway - Logan to 6th Ave
 Environmental Impact Statement (EIS)

PREFERRED ALTERNATIVE
 6TH AVENUE INTERCHANGE
 DRAINAGE PLAN

FIGURE
2-2

NAME: P:\9904_025_Broadway_Santa_Fe\GIS\CAD-BWA\FIGURES\REVIEWS-072506\9904_06-6TH-WQ1.dwg DATE: SEP 13, 2006 TIME: 10:07 AM



LEGEND

- MODIFY OR REMOVE AND REPLACE INLET/MANHOLE
- NEW INLET
- NEW PIPE
- - - MODIFY OR REMOVE AND REPLACE PIPE
- - - TRICKLE CHANNEL

PLAN

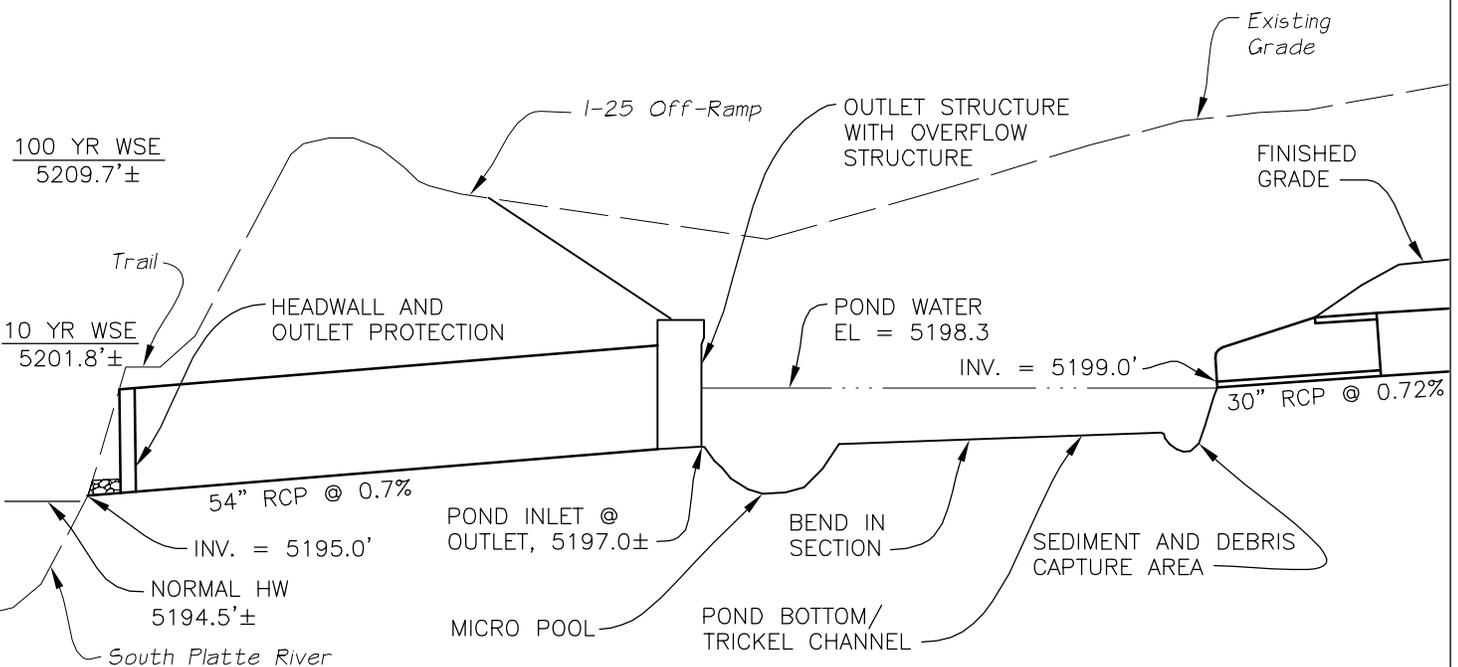
SCALE: 1" = 100'

NOTE: THIS FIGURE IS CONSISTENT WITH FIGURE 7-5 OF THE WATER RESOURCES REPORT.

**PREFERRED ALTERNATIVE
6th AVENUE INTERCHANGE
WATER QUALITY POND**

DATE: SEP 13, 2006 TIME: 10:09 AM

NAME: P:\9904_025_Broadway_Santa Fe\GIS\CAD-Dwg\FIGURES\REVIEWS-072506\9904_06-6TH-WQ1.dwg



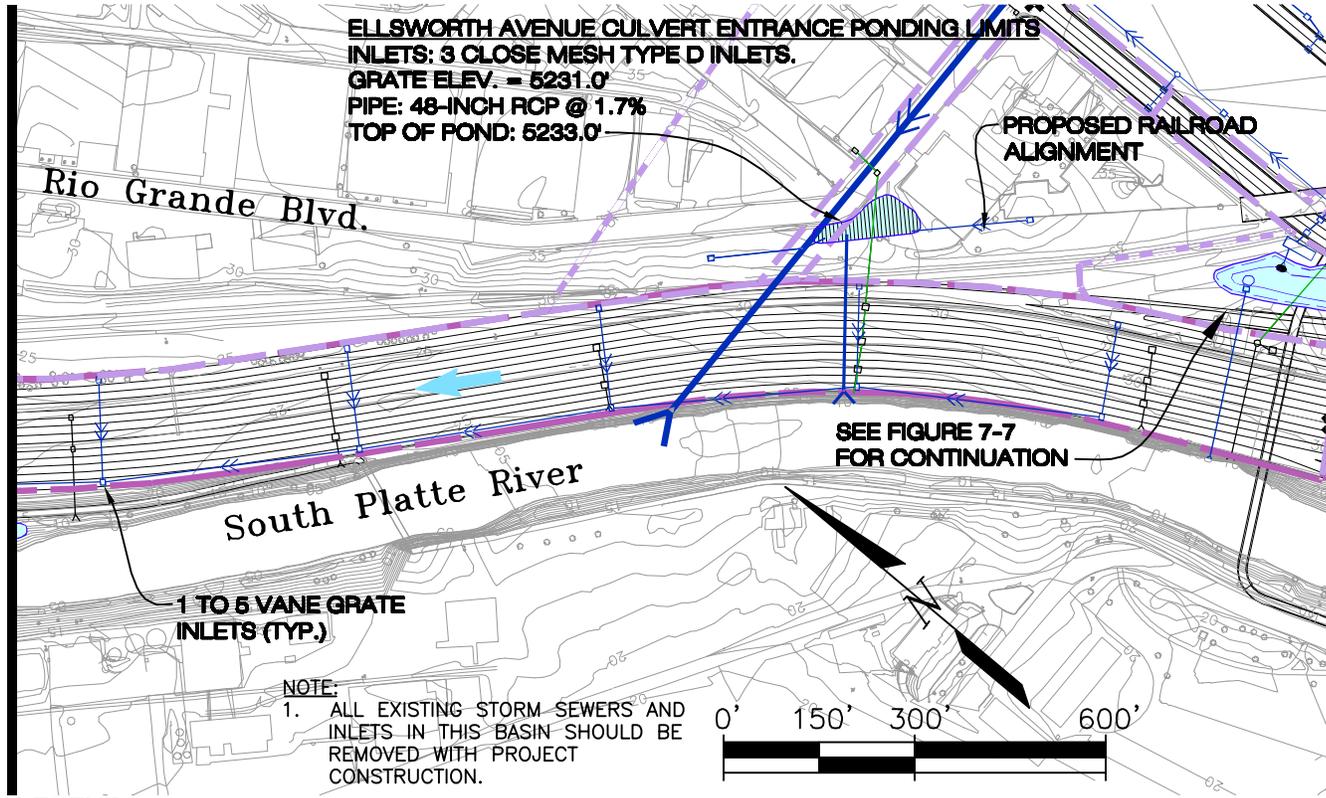
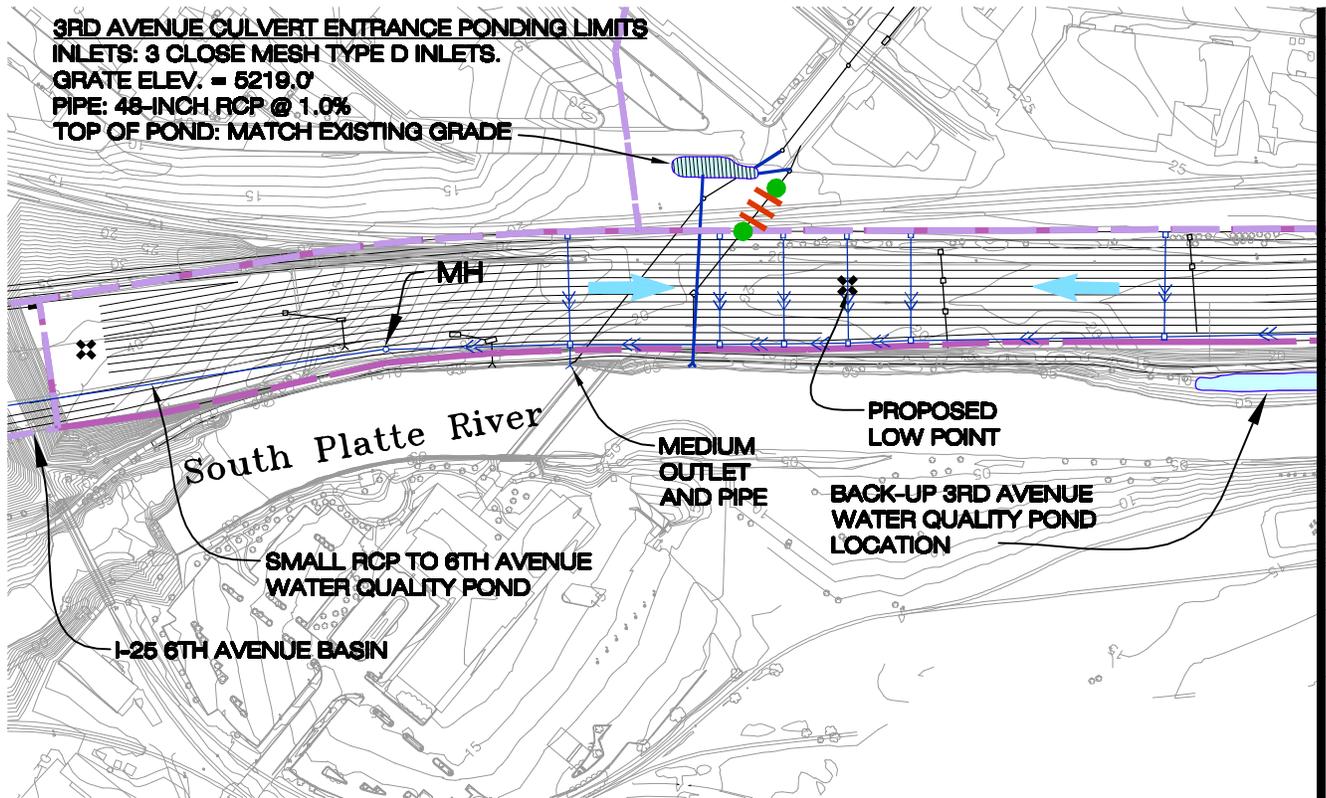
SECTION A

SCALE: 1" = 100' HORIZ., 1" = 10' VERT.

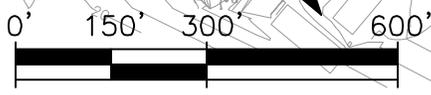
NOTE:
THIS FIGURE IS CONSISTENT WITH FIGURE
7-6 OF THE WATER RESOURCES REPORT.

PREFERRED ALTERNATIVE 6th AVENUE INTERCHANGE WATER QUALITY POND

NAME: P:\9904 125 Broadway Santa Fe\GIS\CAO-Dwg\FIGURES\REVIEWS-072506\9904_06-3RD-S1.dwg DATE: SEP 13, 2006 TIME: 10:23 AM



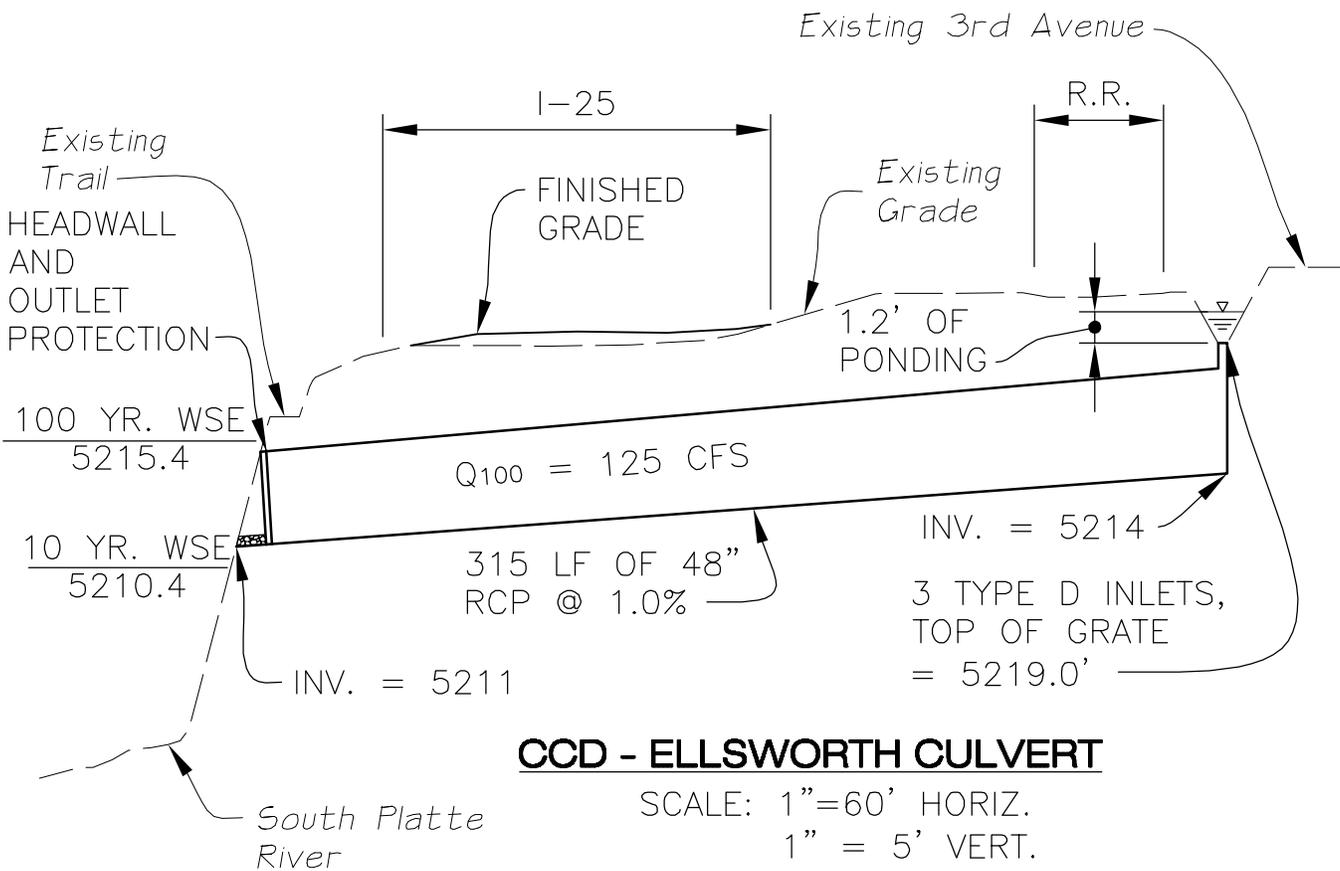
- NOTE:**
1. ALL EXISTING STORM SEWERS AND INLETS IN THIS BASIN SHOULD BE REMOVED WITH PROJECT CONSTRUCTION.
 2. THIS FIGURE IS CONSISTENT WITH FIGURE 7-3 OF THE WATER RESOURCES REPORT.



LEGEND

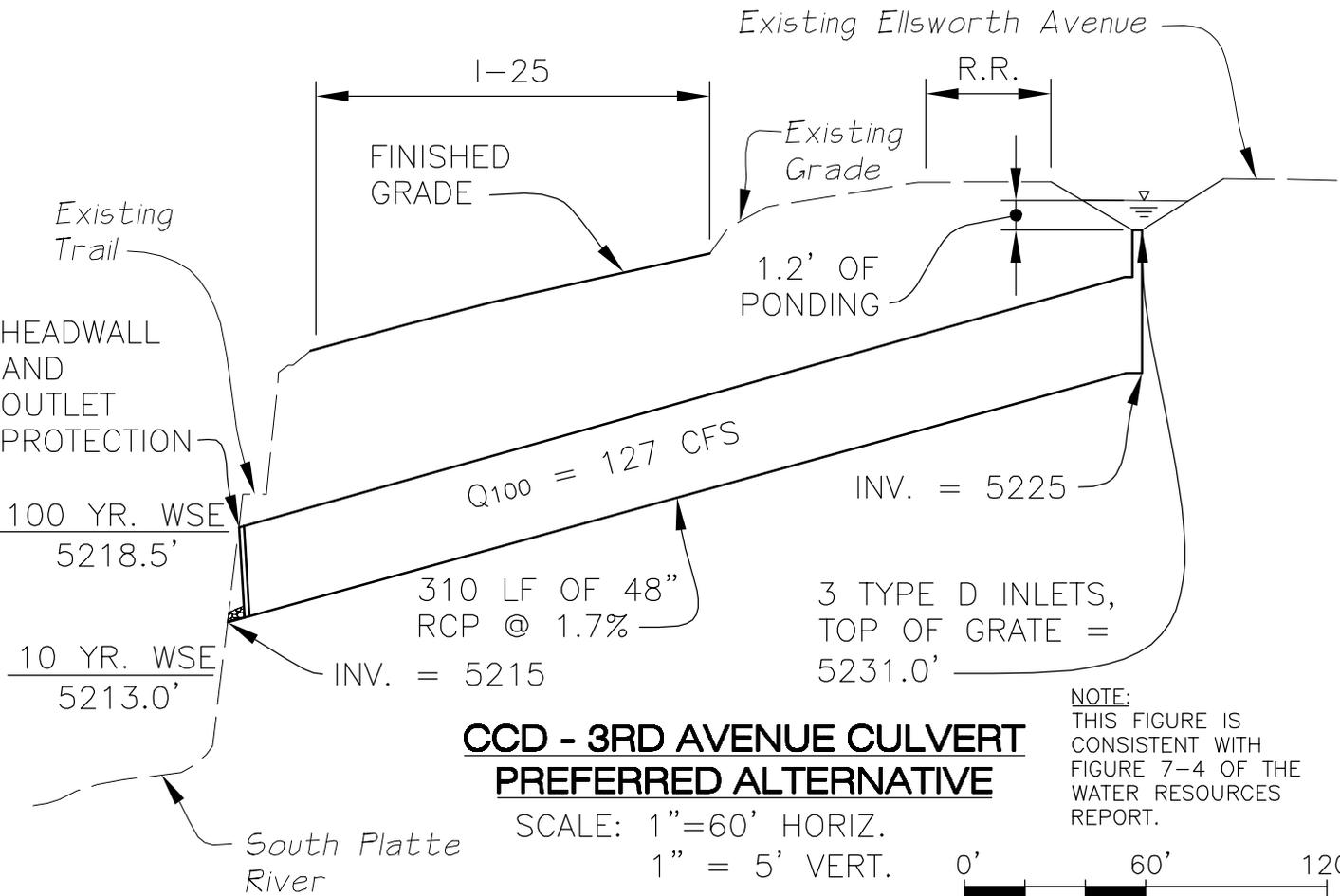
- NEW INLET
- REMOVE PIPE
EXISTING PIPE
NEW PIPE
- I-25 3RD AVENUE BASIN BOUNDARY
OTHER BASIN BOUNDARY
- DRAINAGE FLOW ARROW
- SWALE
- REMOVE STRUCTURE

**I-25 3RD AVENUE DRAINAGE
PREFERRED ALTERNATIVE**



CCD - ELLSWORTH CULVERT

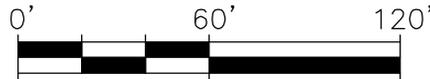
SCALE: 1"=60' HORIZ.
1" = 5' VERT.



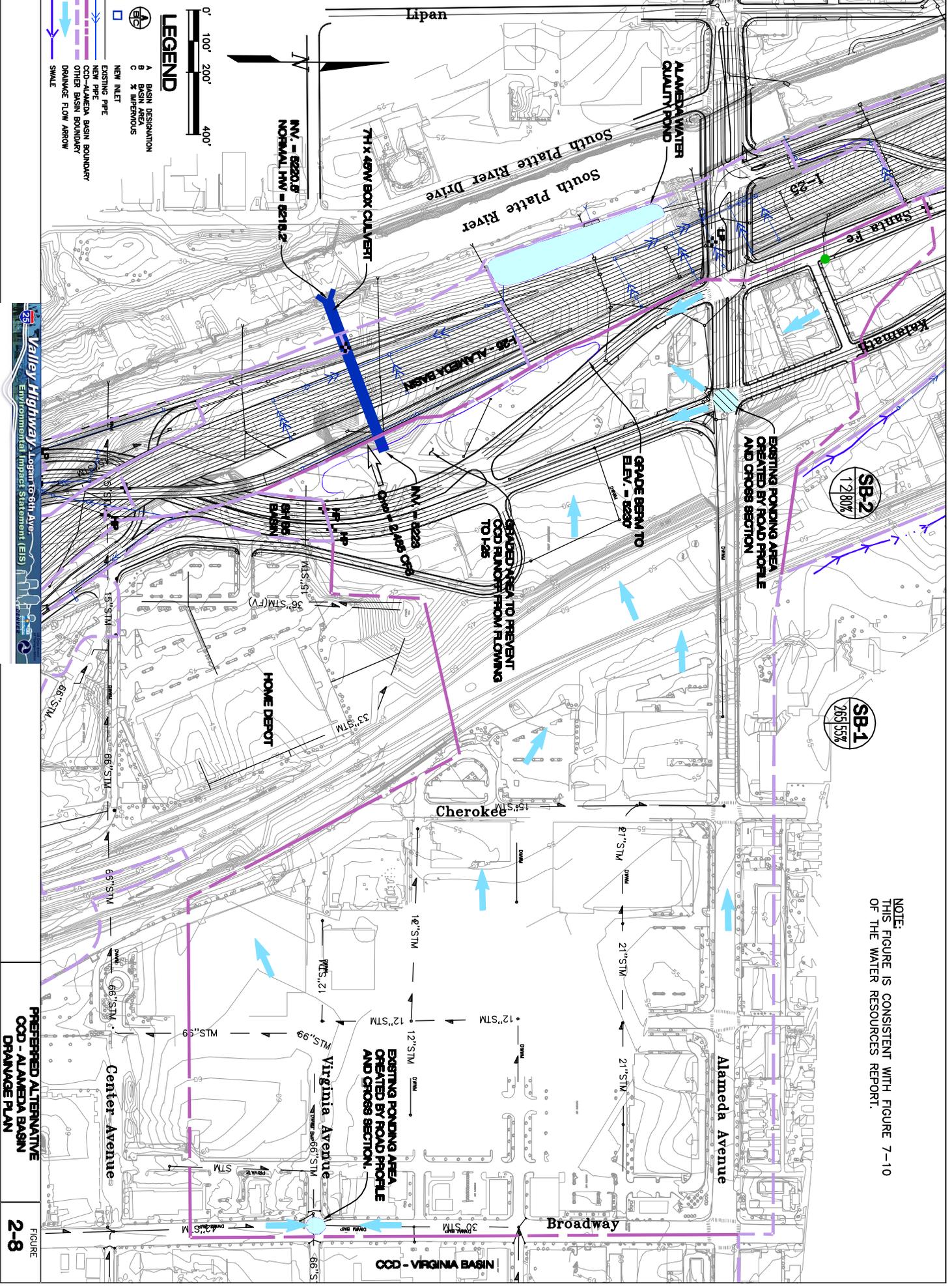
**CCD - 3RD AVENUE CULVERT
PREFERRED ALTERNATIVE**

SCALE: 1"=60' HORIZ.
1" = 5' VERT.

NOTE:
THIS FIGURE IS
CONSISTENT WITH
FIGURE 7-4 OF THE
WATER RESOURCES
REPORT.



NAME: P:\9904_025_Broadway Santa Fe\GIS\CAO-Dwg\FIGURES\REVIEWS-072506\9904_06-3RD-W01.dwg DATE: SEP 13, 2006 TIME: 10:42 AM



LEGEND

- NORTH
- BASSIN DESIGNATION
- BASSIN
- IMPERVIOUS
- NEW INLET
- EXISTING PIPE
- NEW PIPE
- CCD-ALAMEDA BASSIN BOUNDARY
- OTHER BASSIN BOUNDARY
- DRAINAGE FLOW ARROW
- SWALE

SB-2
12180%

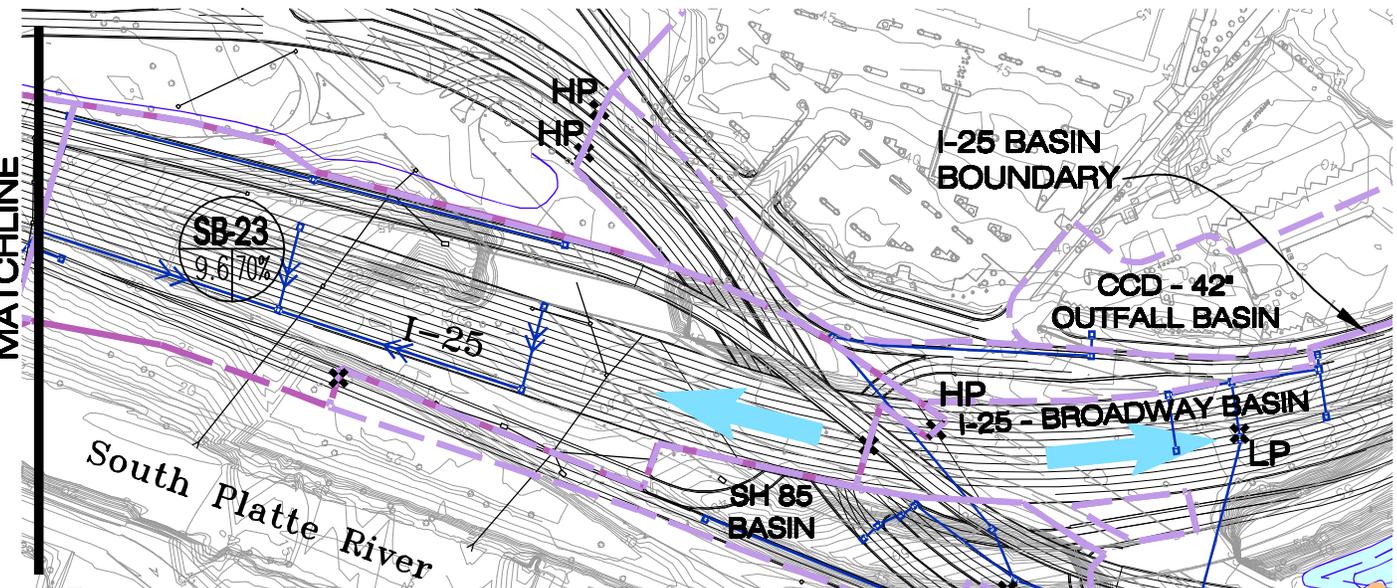
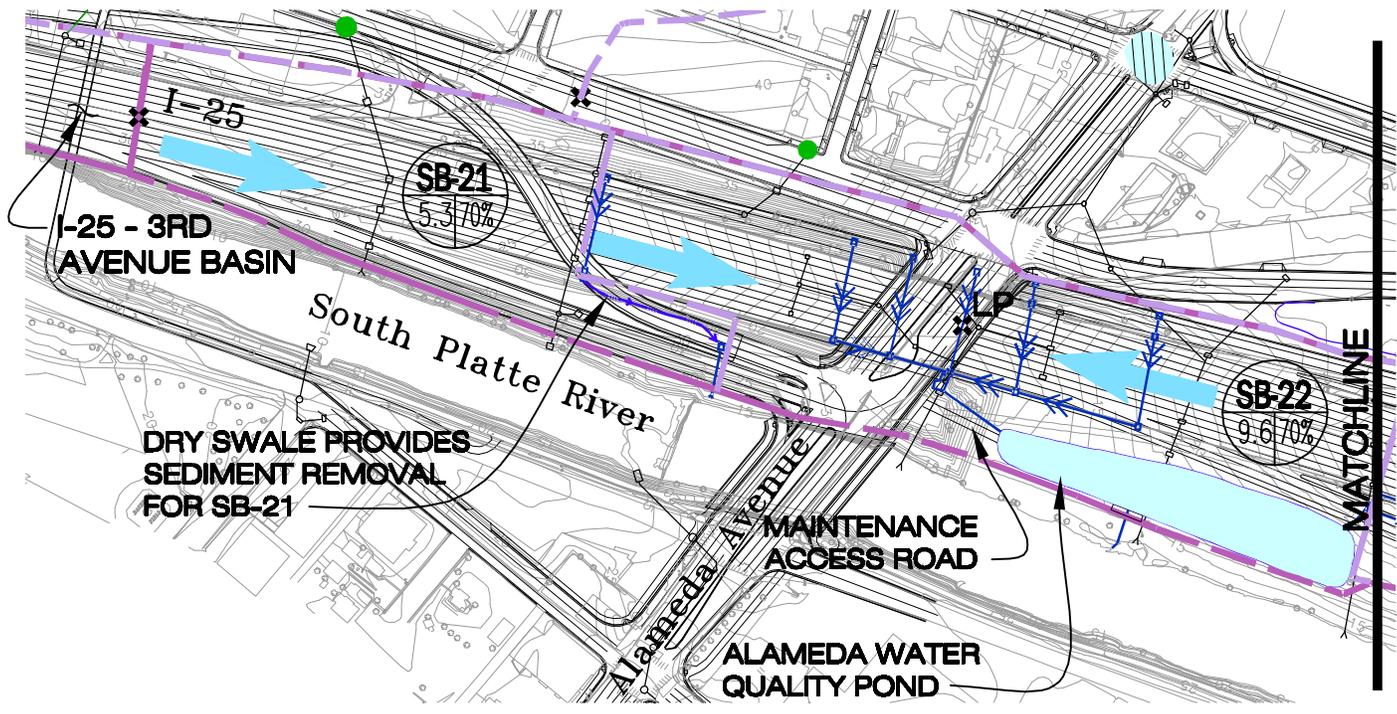
SB-1
265155%

EXISTING PONDING AREA
OPERATED BY ROAD PROFILE
AND CROSS SECTION

EXISTING PONDING AREA
OPERATED BY ROAD PROFILE
AND CROSS SECTION.

NOTE:
THIS FIGURE IS CONSISTENT WITH FIGURE 7-10
OF THE WATER RESOURCES REPORT.

DATE: SEP 13, 2006 TIME: 10:52 AM
 NAME: P:\9904_125_Broadway_Santa Fe\GIS\CAD-Dwg\FIGURES\REVIEWS-072506\9904_06-ALA-S1.dwg

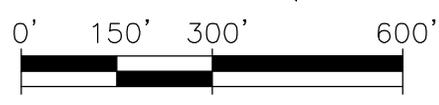


LEGEND

- A
B
C A BASIN DESIGNATION
B BASIN AREA
C % IMPERVIOUS
- NEW INLET
- EXISTING PIPE
- NEW PIPE
- I-25 ALAMEDA BASIN BOUNDARY
- ALAMEDA SUB BASIN BOUNDARIES
- OTHER BASIN BOUNDARY
- ➔ DRAINAGE FLOW ARROW
- ➔ SWALE

NOTE:

1. ALL EXISTING STORM SEWERS AND INLETS SHOULD BE REMOVED WITH PROJECT CONSTRUCTION.
2. THIS FIGURE IS CONSISTENT WITH FIGURE 7-13 OF THE WATER RESOURCES REPORT.



**PREFERRED ALTERNATIVE
 I-25 ALAMEDA DRAINAGE PLAN**

NAME: P:\9904_125_Broadway_Santa_Fe\GIS\CAD-DWG\FIGURES\REVIEWS-072506\9904_06-ALA-W01-A.dwg DATE: SEP 13, 2006 TIME: 10:56 AM

POSSIBLE WETLAND AREA

TRICKLE CHANNEL

WATER QUALITY OUTLET STRUCTURE WITH OVERFLOW GRATE

OUTLET PROTECTION AND SEDIMENT AND DEBRIS CAPTURE AREA (UPPER STAGE)

BERM ELEVATION, 5228.0'

OVERFLOW SPILLWAY WITH RIPRAP PROTECTION

WATER QUALITY WSE, 5223.0'

MICROPOOL (LOWER STAGE)

TRICKLE CHANNEL

South Platte River

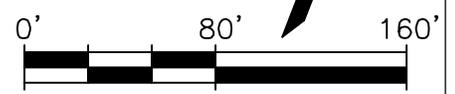
OUTLET PROTECTION AND SEDIMENT AND DEBRIS CAPTURE AREA (UPPER STAGE)

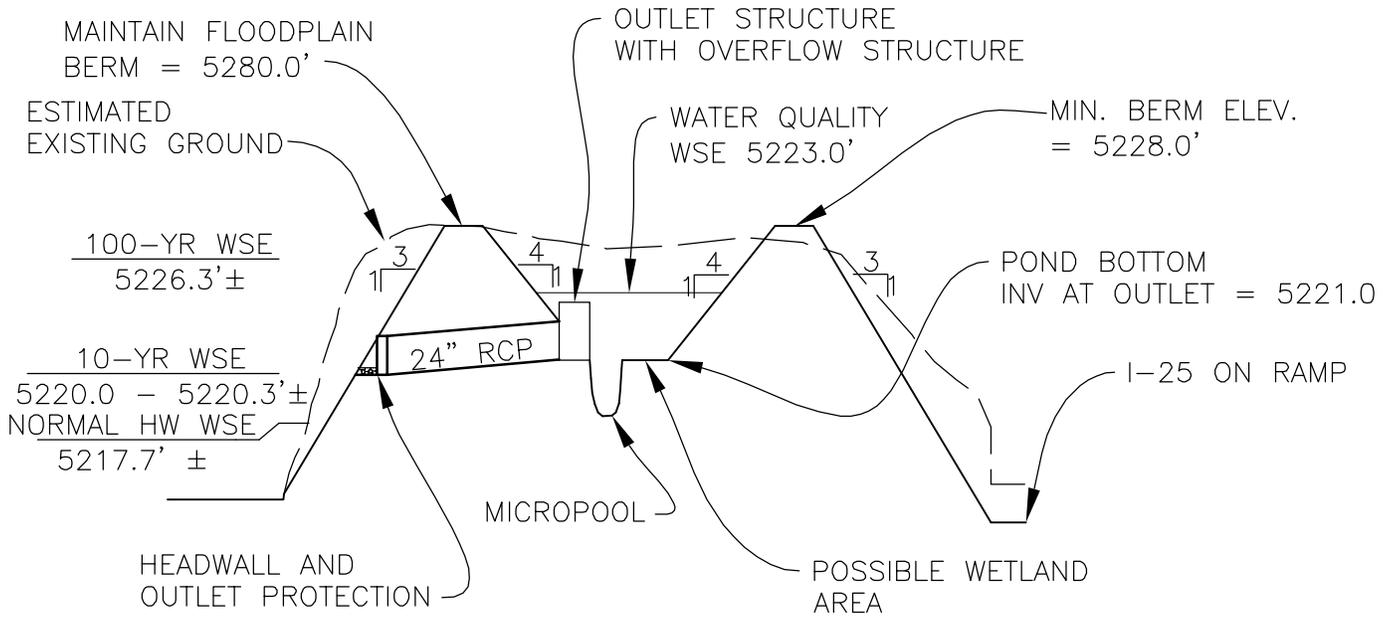
LEGEND

-  NEW INLET
 -  NEW PIPE
 -  TRICKLE CHANNEL
 -  ESTIMATED GRADING
- CONTOURS BASED ON FIELD VISITS

NOTE: THIS FIGURE IS CONSISTENT WITH FIGURE 7-14 OF THE WATER RESOURCES REPORT.

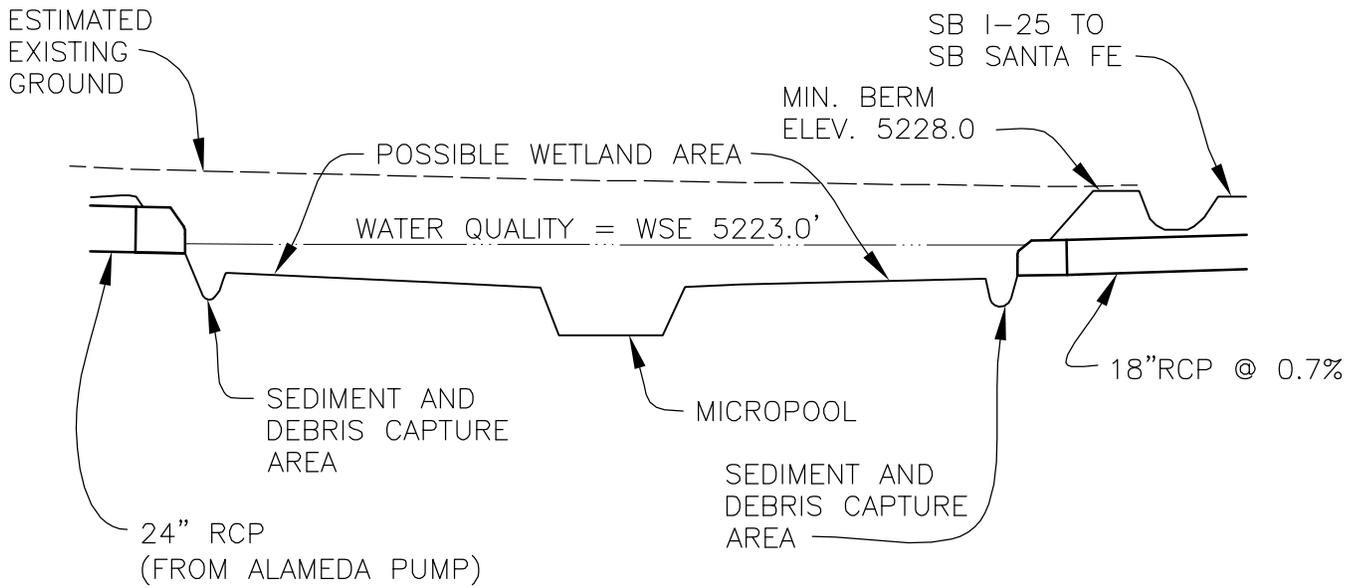
PREFERRED ALTERNATIVE I-25 ALAMEDA BASIN WATER QUALITY POND





SECTION A

SCALE: 1" = 50' HORIZ., 1" = 10' VERT.



SECTION B

SCALE: 1" = 100' HORIZ., 1" = 10' VERT.

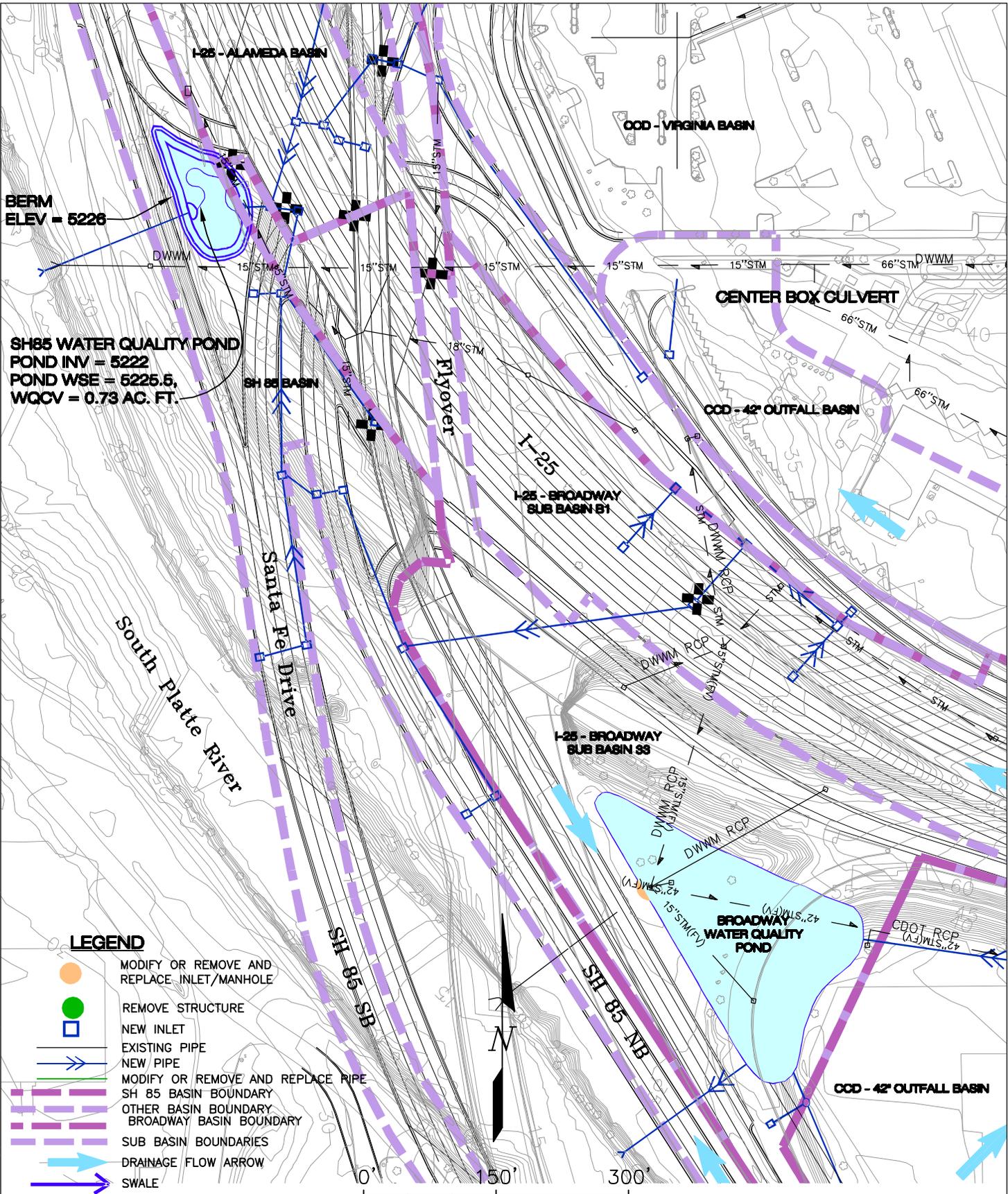
NOTE:

1. EXISTING SURVEY NOT SHOWN. SURVEY AVAILABLE AT TIME OF REPORT WAS INACCURATE.
2. THIS FIGURE IS CONSISTENT WITH FIGURE 7-15 OF THE WATER RESOURCES REPORT.

I-25 ALAMEDA BASIN WATER QUALITY POND

NAME: P:\9904_125_Broadway_Santa_Fe\EIS\CAD-Dwg\FIGURES\REVIEWS-072506\9904_06-AL-101.dwg DATE: SEP 13, 2006 TIME: 10:58 AM

DATE: SEP 13, 2006 TIME: 11:02 AM
 NAME: P:\9904_25 Broadway Santa Fe\GIS\CAD-Dwg\FIGURES\REVIEWS-072506\9904_06-SH85-BROAD-W01.dwg



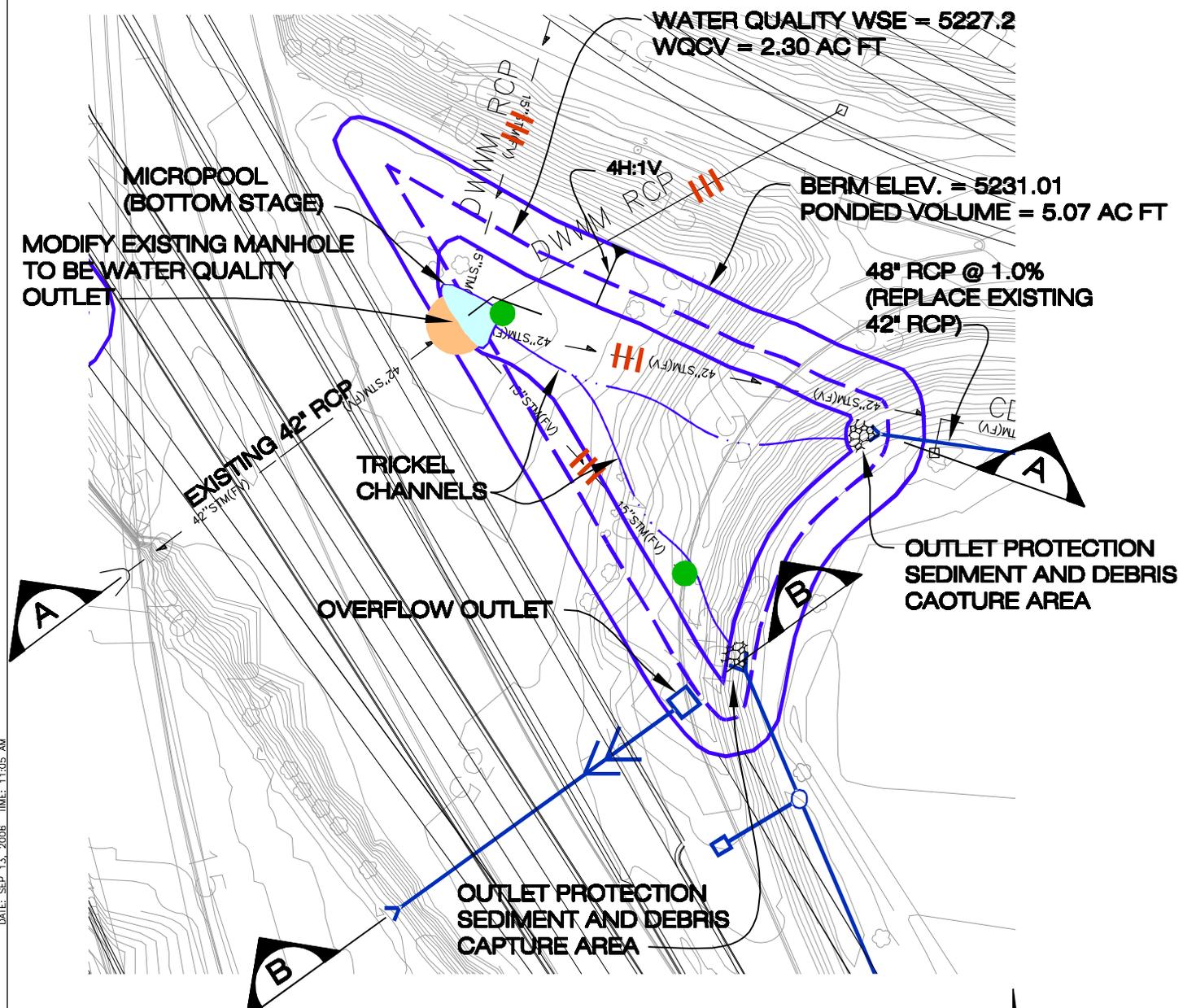
NOTE:
 THIS FIGURE IS CONSISTENT
 WITH FIGURE 7-19 OF THE
 WATER RESOURCES REPORT.

PREFERRED ALTERNATIVE SH 85 WATER QUALITY POND

2.6 Broadway Area

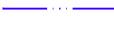
The Preferred Alternative is similar to System Alternative 3 in this area. All descriptions shown for Section 1.6.1 apply. **Figures 2-13** and **2-14** show the Broadway water quality pond improvements. Since the tunnel as shown for System Alternative 2 is not part of the Preferred Alternative, Section 1.6.2 of the original Water Resources Report no longer is applicable.

NAME: P:\9904_025_Broadway_Santa_Fe\GIS\CAD-BWA\FIGURES\REVIEWS-072506\9904_06-BROAD-WQ1.dwg DATE: SEP 13, 2006 TIME: 11:05 AM

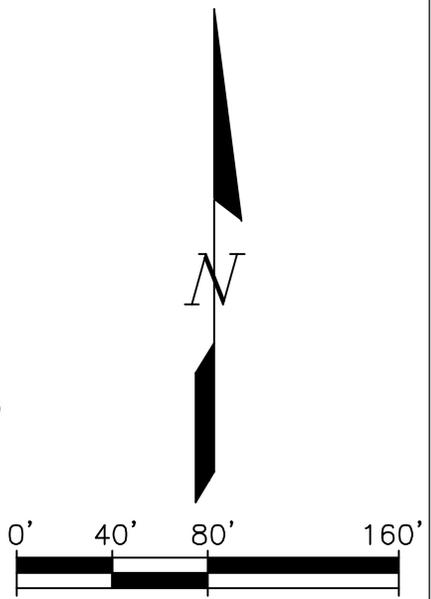


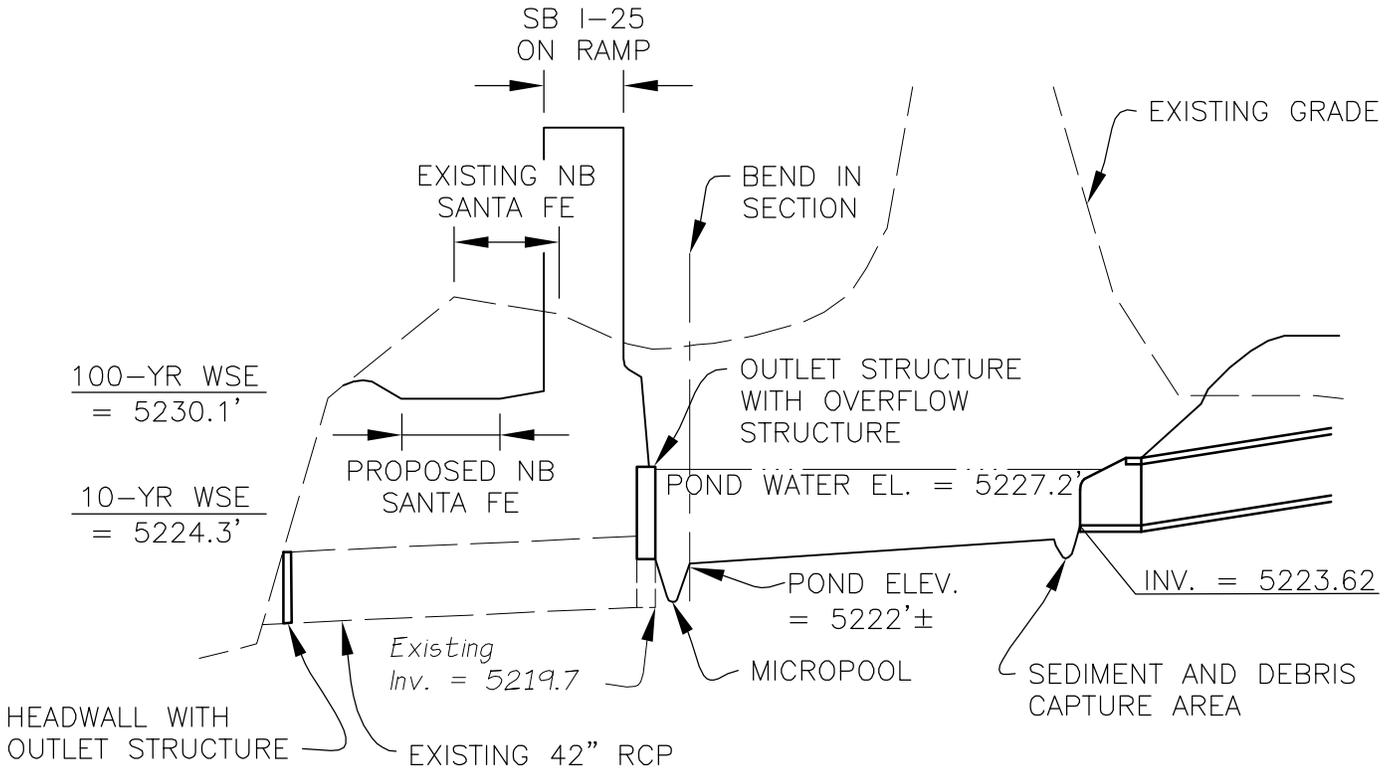
NOTE:
THIS FIGURE IS CONSISTENT
WITH FIGURE 7-20 OF THE
WATER RESOURCES REPORT.

LEGEND

-  NEW INLET
-  NEW PIPE
-  EXISTING PIPE
-  TRICKEL CHANNEL
-  MODIFY OR REMOVE AND REPLACE INLET/MANHOLE
-  REMOVE STRUCTURE
-  REMOVE PIPE

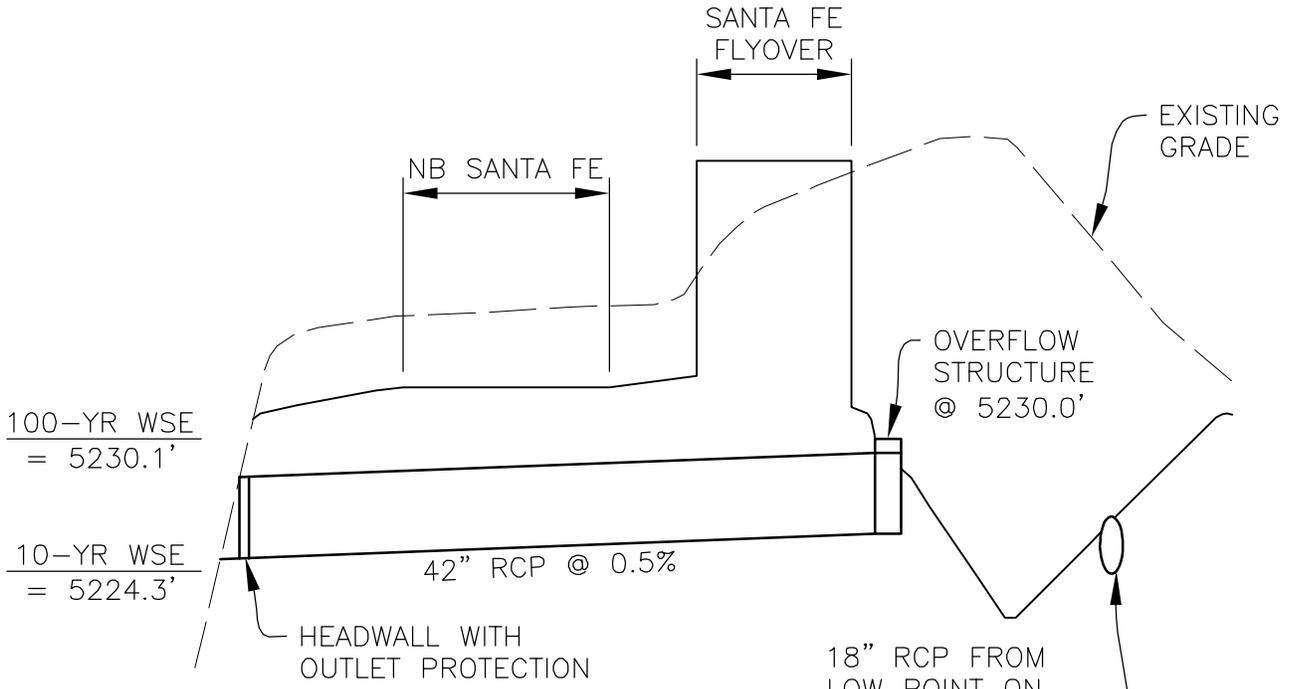
BROADWAY WATER QUALITY POND





SECTION A

SCALE: 1" = 100' HORIZ., 1" = 10' VERT.



SECTION B

SCALE: 1" = 50' HORIZ., 1" = 10' VERT.

BROADWAY WATER QUALITY POND

NOTE:
THIS FIGURE IS CONSISTENT
WITH FIGURE 7-21 OF THE
WATER RESOURCES REPORT.

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3.0 PHASED IMPLEMENTATION

The Preferred Alternative will be constructed in six separate phases. The phasing will allow the project to be built as the funds are available. Federal Highway Administration (FHWA) and Colorado Department of Transportation (CDOT) are committed to constructing the entire project but acknowledge that funding is not in place for all of it. A Record of Decision (ROD) will be issued for Phase 1 construction which is funded. Subsequent RODs will be issued for the other phases as funding becomes available.

3.1 Phase 1 Construction

Phase 1 will include work on the 6th Avenue and Federal Ramps, the reconstruction of the ball field complex in the South East quadrant of the interchange, the 5th Avenue realignment, and Decatur water quality pond. Phase 1 will also include the construction of I-25 from the Broadway Viaduct to Alameda. Construction in this area will also include the Santa Fe to northbound I-25 flyover, the Santa Fe and Kalamath realignment to the south of Alameda and the Santa Fe and I-25 ramps. This phase will also include the construction of the large box culvert outfall from the Santa Fe / Kalamath grade separation, the Alameda, SH 85, and the Broadway water quality ponds and related drainage infrastructure improvements.

3.2 Phase 2 Construction

Phase 2 will include improvements along Alameda including the northbound on ramp flyover. No significant drainage and water resource construction is required for this phase.

3.3 Phase 3 Construction

Phase 3 will include the construction of the I-25 mainline from Alameda to the south end of the 6th Avenue interchange. The construction of the 3rd Avenue outfall, the Ellsworth Avenue culvert entrance and inlet system, and the pipe from the 3rd Avenue outfall to the 6th Avenue water quality pond are required in this phase. The pipe extending to the 6th Avenue water quality pond may require the construction of a temporary outfall to the river until the pond is constructed. A temporary sediment deposition area should be included in the design of this temporary outfall situation to improve water quality for the interim. Another option may be to construct the entire water quality pond during this phase versus waiting until Phase 5, which is when the pond is shown as being constructed. The pipe required to cross I-25 for the CCD-Bayaud water quality pond shall also be included in this phase.

3.4 Phase 4 Construction

Phase 4 construction will include the Santa Fe and Kalamath construction to the north of Alameda including the grade separation from the Consolidated Railroad line. Construction of a drainage interceptor and pump system is required for this area. Other improvements to be constructed with this phase include the CCD-Bayaud water quality pond.

3.5 Phase 5 Construction

Phase 5 construction will include the remainder of construction required along 6th Avenue and at the I-25 / 6th Avenue interchange. This phase of construction shall also include the 6th Avenue water quality pond. The Decatur water quality pond may provide a BMP benefit during the construction of this phase if it is constructed as part of Phase 1.

3.6 Phase 6 Construction

Phase 6 construction shall include neighborhood street improvements around Broadway. No significant water resource improvements are planned. Local drainage issues will need to be addressed for this phase of improvements

4.0 RESPONSE TO CITY AND COUNTY OF DENVER COMMENTS

Muller Engineering Company responses to Denver Comments to the Water Resources Report (Nos. 146 to 163). The inclusion of the comments and the responses noted is the simplest method to include into this addendum document. Any additional clarification added to this addendum is denoted by text in italics.

146. Pg 1-7, Section 1.4: The Denver Storm Drainage Master Plan dated April 2005 is now complete with a full update for all CCD storm drainage basins.

Muller referenced a completion date of December 2003 in the Water Resources Report for the City and County of Denver Master Plan. The addenda (Final EIS Addenda submittal document) shall reference the April 2005 completion date for referencing the City and County of Denver Master Plan. *Consider this Addendum document to meet the aforementioned addendum documentation shown in the response.*

147. Water Resources Report, Pg. 2.2, Table 2.1: Refer to comment # 146 for the latest data in the referenced Storm Drainage Criteria Manual and its supporting appendices.

No specific reference to the Master Plan is made in this table. Table 2.1 shows existing outfall locations and sizes, not Master Plan sizes.

148. Water Resources Report Pg. 3-1, paragraph 3.0, line 11 TSS is Total Suspended Solids.

This clarification has been made in the original Water Resources document.

149. Water Resources Report Pg. 5-7, paragraph 5.3.1, line 17 CCD has placed the Alameda / Santa Fe project mentioned on hold pending the completion of the Final EIS, CCD did clear and improve the existing drainage but, this interim step did not provide a 5-year level of service. In general, the CCD has put a hold on all drainage projects crossing the Valley Highway EIS project limits until the Final EIS is completed and final alignments are set.

Muller will acknowledge that the improvements at Santa Fe and Alameda were less than 5-year capacity in the Addenda. Muller will also acknowledge Denver's intent to not implement any drainage improvements across the corridor as noted in the comment as part of the addenda text and that any implementation of Final EIS improvements shall be coordinated with CCD Drainage Master Plan improvements.

150. Water Resources Report Pg. 6-1. The Municipal Separate Storm Sewer System (MS4) permit for CDOT requires that 100% water quality capture volume must be provided for the project area. Denver suggests that consultation with Colorado Water Quality Control Division be referenced and documented regarding any variance to this requirement.

Muller called Colorado Department of Public Health and Environment (CDPHE) on 6-21-06 and Nathan Moore they said that the project needs to meet the requirements of the MS4 permit and that we should discuss with Rick Willard regarding our situation. Mr. Moore thought CDOT was

in the process of possibly modifying their MS4 permit to allow flexibility for situations similar to this issue. Muller will note that the 11.0 acres of area not routed through Water Quality Capture Volume (WQCV) facilities shall include other BMPs to meet the requirements of CDOT's MS4 permit in the Addendum. Rick Willard indicated that any BMPs suggested to be used as a substitute for providing WQCV needs to be reviewed by CDOT maintenance personnel prior to implementation.

151. Water Resources Report Pg. 6-3. However the basin will have non-structural BMPs such as street sweeping and using deicing agents. A description of the frequency of street sweeping and its anticipated benefit to water quality should be addressed in this document to a sufficient extent. A further explanation of the type, frequency, and type of management of the deicing chemicals should be provided. It is expected that the proposed management of these chemicals will result in a *deminimus* negative water quality effect on the receiving water (South Platte River) over the existing condition.

CDOT maintenance personnel attended a meeting on October 22, 2003 where they indicated that they do not use any sand / salt mixtures for road treatment and that the amount of solids coming off I-25 have been reduced by 300%. CDOT uses a product called Ice Slicer (a granular salt) or magnesium chloride as deicers in this area. They use rates that have been deemed to result in pollutant levels being below threshold levels. The rates are 60# per lane-mile and 35 gallons per lane-mile for Ice Slicer and mag-chloride respectively. They also indicated that they sweep the streets within four days after a snow event, and at least every two weeks otherwise. CDOT has completed research studies regarding the use of deicers and their impacts to aquatic environments. This research helps CDOT determine appropriate types and amounts of deicers to utilize trying balancing public safety and impacts to the environment.

152. Water Resources Report Pg. 6-3. Reference, present or further describe the "standard operating guidance has been established for the efficient application and management of the deicing chemicals."

CDOT maintenance personnel were contacted and provided information that they use both Ice Slicer and magnesium chloride in this area. See response to comment No. 151 shown above.

153. Water Resources Report Pg. 6-3. In general, the bulleted items on this page should be more prescriptive replacing words like could with will, shall, etc.

More prescriptive statements will be added to the Addendum text for additional BMPs for identified sensitive waters.

- *Work with City and County of Denver to provide public signs requesting the public to pick up fecal material from their dogs. Dispensers for plastic bags to collect this material will be provided. The South Platte River currently is not meeting water quality standards due to fecal coliform, and pets are one of many sources.*
- *The use of deicing chemicals (magnesium chloride and other products) reduces the amount of traction sand that has been used historically. Deicing chemicals eliminate the need to add a sediment/salt mixture on to the road to improve safety conditions for the driving public. This maintenance activity reduces the amount of sediment that enter the drainage system and ultimately enter the South Platte River. Standard operating guidance has been established for the efficient application and management of the deicing chemicals.*

- *Sweeping of I-25 will help reduce the amount of sediment and debris that would enter the South Platte River. This action is currently being performed in the area as part of Air Quality Regulation No. 16.*
- *Post-construction monitoring programs will ensure that the BMPs are operating as designed and being maintained in a timely fashion. Indicator parameters can be used to determine the post-construction effectiveness of the BMP.*
- *CDOT and City and County of Denver could work together to improve the South Platte River in the project area and in Denver Metropolitan Area. Possible improvements include public education, landscape enhancements, improved riparian vegetation, and water quality monitoring programs.*

154. Page 6-4. Reference concurrence with Colorado Water Quality Control Division supports less than 100% routing for water quality enhancement. (94% of the 162 acres will be routed through a BMP)

Muller will provide additional text in the Addendum to state that 94% will be routed through water quality ponds and the remaining 6% of area will require alternative BMP facilities to treat the runoff from these areas. These can include inlet traps, local sediment trap areas for easy maintenance to remove sediment deposition, and others as identified during actual design phases are implemented.

155. Water Resources Report, Pg. 7-5, paragraph 7, last sentence: UDFCD and CCD should review...

Muller notes that any reference to UDFCD review should also include the local agency of CCD as another review entity.

156. Water Resources Report, Page 7-6, paragraph 1: Denver prefers a line to the river.

Muller acknowledges that Denver prefers the extension of the line to the river and will document this in the Addenda documentation.

157. Water Resources Report, Page 7-16, general: Denver recommends that emergency power be provided for the pumps required in applicable alternatives and that consideration be given to locating the pump motors above the potential ponding level.

The City's desire to consider locating the pump motors above flood elevations and the provision of an emergency power source will be noted to be incorporated into the evaluation matrix of future design development.

158. Water Resources Report, Page 7-16, general: Denver has completed a Stormwater Drainage Master Plan, design of any of the alternatives needs to include that plan as input data. The scheduling is not yet clear, but the planned work is ultimately needed and crossings and outfalls should be included while the transportation project is constructed.

The addendum shall identify that the transportation project shall include coordination with CCD to implement either master plan improvements or those required to eliminate 100-year flooding of the highway through the project corridor.

159. Water Resources Report, Page 7-37, para 7.6.2, last line: Denver has great concerns about creating the large sumps being considered and the requirements imposed by such designs including the pump stations and associated emergency power requirements.

The aforementioned comment is related to the Broadway tunnel location. It appears that the Broadway tunnel system is not selected as the recommended plan, so this concern at this location is no longer a concern.

160. Water Resources Report, Page 7-5.: Flap gates cause concern for safety particularly in light of the homeless population residing in this reach of the South Platte River. Careful consideration must be given in recommending the use of flap gates. Please explain what is meant by flap gate or other similar device.

Flap gates are required to keep river floodwaters from flooding local storm sewer systems. Local storm sewer outfalls can be flooded by high river water without the use of flap gates. Therefore, the use of flap gates to prevent flooding may actually provide a benefit if homeless populations use the local culvert outfall locations to sleep in.

161. Water Resources Report, Page 7-5. The structural integrity of the existing inlets and pipes should be reviewed before reusing them. A further yet limited discussion of the criteria that will be used may prove useful to the discussion. Is there specific CDOT Criteria that will be used?

There is no specific criteria that will be used to determine whether existing pipes and inlets will be used. The use of existing infrastructure should also consider the longevity of the improvements versus the remaining life of the existing infrastructure to determine if replacement is required. Certainly the condition of existing facilities being considered will need to be investigated prior to determining to use them.

162. Page 7-6. Explain further “may be structurally fit to be reused...”

The existing system may be considered structurally fit to be reused if the existing system is relatively new or has been in use for numerous years yet shows very little signs of wear and appears to have a long life expectancy, then it can be reused. Other factors such as changes in fill depths or lack of capacity can also impact consideration of using existing systems.

163. Page 7-6. Construction of the Denver County project could commence in 2006 not 2005.

The comment is duly noted. Based on our involvement with the West Corridor Light Rail project, the construction could commence in 2007 at the earliest. This will be described in the Addendum text.