
Final Drainage Report
100% Final PS&E
Revised March 9th, 2012
FCD Project No. 565-04-33

Durango Regional Conveyance Channel -
Elwood Street From 75th Avenue to 107th Avenue
Phase I FCD Contract No. 2010-C033
Phase II FCD Contract No. XXXX-XXXX

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Executive Summary

The Flood Control District of Maricopa County (FCDMC) has retained J2 Engineering & Environmental Design, LLC (J2) to prepare construction documents for the Durango Regional Conveyance Channel (DRCC) from 75th Avenue to 107th Avenue. The DRCC was initially recommended as part of a regional drainage solution in the Cities of Phoenix and Avondale in the Durango Area Drainage Master Plan (ADMP) completed in 2002. The conceptual design was updated for the portion from 75th Avenue to the Agua Fria River in the DRCC Candidate Assessment Report (CAR), completed in 2006, and in the Addendum to the Durango Regional conveyance Channel Candidate Assessment Report, completed in 2009. The conceptual design was further refined by J2 during the development of the DRCC Pre-Design report.

Available funding limitations required the project to be divided into two phases. Phase 1 extends from 83rd Avenue to 107th Avenue (including the 83rd Avenue culvert and fence at Tuscano Elementary School) and will construct a vast majority of the project. Phase 2 extends from 75th Avenue to 83rd Avenue.

The Phase I improvements include construction of a continuous channel system (with detention/retention basins at Riley Road and 107th Avenue) from 83rd Avenue to 107th Avenue. The project utilizes a large portion of existing drainage improvements that were constructed by the COP/private development. The DRCC corridor contains many box culverts (at arterial streets, collector streets, and APS/WAPA power poles) that will be improved. Phase I requires significant coordination with WAPA/APS/SRP and other utilities. SRP is responsible for the relocation design and construction of their irrigation facilities within the project limits. SRP construction documents are included in the 100% Final PS&E submittal for reference. The SRP irrigation and power improvements will be completed prior to the initiation of construction for the subject project.

The conceptual design was modified following the 90% submittal. The 103rd Avenue to 107th Avenue reach changed from the one channel concept with a surge basin at 107th Avenue to a dual channel concept. In the dual channel concept, the north channel flows directly into the 107th Avenue detention basin and the south channel will be routed directly to the future DRCC (west of 107th Avenue). The combined 100-year peak discharge immediately west of 107th Avenue will be approximately 934 cfs.

Phase II includes channel improvements from 75th Avenue to 83rd Avenue. Large portions of the future channel have been rough graded by private development in this reach. The Tuscano development went into bankruptcy and the drainage facilities were not completed. Phase II will include finish grading of the channel, construction of the 79th Avenue culvert crossing, excavation of the channel through the future



COP park site, and installation of erosion control (rip rap, rock mulch, and native seed). It is anticipated that Phase II may not be constructed until private development adjacent to the channel occurs.

The FCDMC is in the process of finalizing the right-of-way purchase for the project . It is anticipated that the purchase of rights-of-way and drainage easements will be complete prior to the construction advertisement..

Team members incorporated 100% plan submittal comments received from FCDMC, City of Phoenix (CoP), all utility companies affected, adjacent schools, and affected landowners into the 100% Final PS&E plans.

The original DRCC construction documents, general conditions, and special provisions were repackaged into Phase I (83rd Avenue to 107th Avenue) and Phase II (75th Avenue to 83rd Avenue) following the 90% submittal.



1.0 PROJECT DESCRIPTION

1.1 Purpose

The purpose of this project is to connect the existing private development drainage facilities to form a continuous regional conveyance channel. The regional conveyance channel will be constructed in two phases and will not include outlets/crossings at 107th Avenue. The subject reach originates at 75th Avenue and extends west to 107th Avenue. Two detention basins are located within this reach. The first detention basin is located south of the channel and east of 89th Avenue and will function as an offline basin. The second detention basin is located north of the channel and east of 107th Avenue and will function as an online basin for flow from the north and flow in the large existing stormwater conveyance channel from the northeast at 103rd Avenue and County Place Boulevard; the flow in the main DRCC will not be detained in the 107th Avenue Basin in the ultimate condition.

It is likely that this drainage facility will function as a retention basin for several years. It will not have an outlet until the 107th Avenue to Agua Fria River segment is constructed. The emergency spillway of the interim facility will be the existing sag in 107th Avenue. During the interim condition stormwater in this basin after large rainfall events will have to be pumped into an existing irrigation manhole located on the east side of 107th Avenue, north of the DRCC, south of the basin; pumping from the basin will also drain the DRCC per 2-24" RCP's that drain the DRCC into the 107th Avenue basin. The ultimate drainage facility will be designed to convey the 100-year storm event.

1.2 Background

Historically, the Elwood Street Corridor between 75th Avenue and 107th Avenue was agricultural (alfalfa fields and dairies). During the past few years the area has experienced rapid urbanization. In 2002, the Flood Control District of Maricopa County (FCDMC) recommended that the Durango Regional Conveyance Channel (DRCC) be part of a regional drainage system in the Durango Area Drainage Master Plan (Durango ADMP). The DRCC alignment is located along the WAPA and APS 230Kv power line easement. Since Durango ADMP was developed, several subdivisions have been constructed adjacent to the project corridor. The City of Phoenix (COP) and FCDMC attempted to incorporate the private development drainage facilities into the future regional system. The intent was to designate drainage easements and have the private developments maintain them. Unfortunately, type and level of service varied greatly between developments.



FCDMC commissioned Aspen Engineering to perform the Durango Regional Conveyance Channel Candidate Assessment Report (CAR) in 2006. In that report the conceptual design of the Elwood Street Corridor was updated between 75th Avenue and 107th Avenue. In 2009, the Addendum to the Durango Regional Conveyance Channel Candidate Assessment Report (ACAR) was developed by Prestige Engineering, LLC. The addendum defined the recommended design alternative for the corridor.

J2 Engineering and Environmental Design, LLC (J2) performed the Pre-Design Report for this project. The previous reports were analyzed and channel alternatives were designed to develop the optimum design. The report also evaluated different locations for detention/retention basins along the corridor. The recommended alternative was a single channel along the corridor, south of the developments' retention basins. The channel did utilize the existing retention basins/channels from 75th Avenue to 83rd Avenue and 91st Avenue to 107th Avenue. The private development retention basins between 83rd Avenue and 91st Avenue will remain intact.

1.3 Location

This project is located in Sections 20, 21, 22, and 23, Township 1 North, Range 1 East of the Gila and Salt River Base and Meridian in the City of Phoenix (Figure 1). More specifically, this project is bounded on the east by 75th Avenue, on the west by 107th Avenue, and on the north/south by subdivisions, City of Phoenix parks, and agricultural fields. The project alignment runs from west to east along the Elwood Street Corridor.

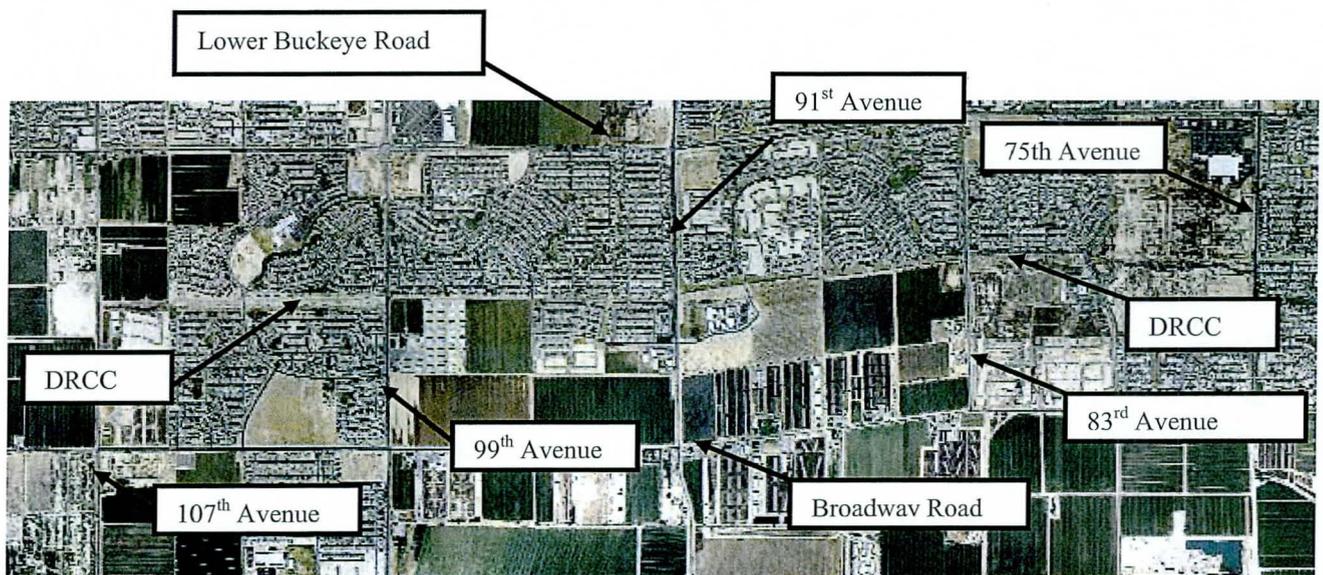


Figure 1 - Project Location Map



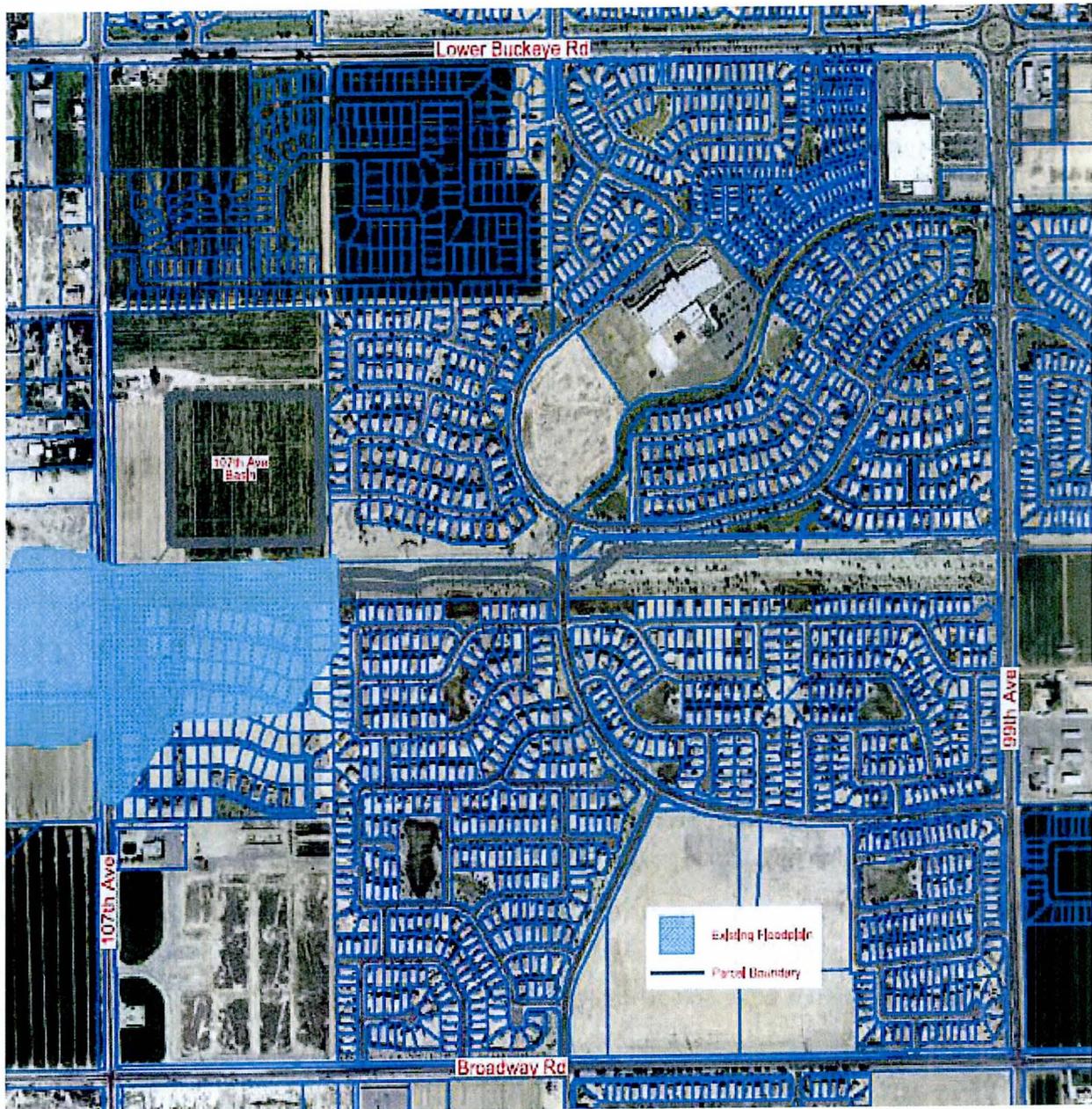
1.4 Field Conditions

Residential properties partially surround the Elwood Street Corridor between 75th Avenue and 107th Avenue (Figure 1). The developments include Lion's Gate, Country Place, Sunset Farms, Tivoli, Volterra, and Tuscano. City of Phoenix park property and agricultural fields comprise the remainder of the corridor. The present FEMA floodplain delineation includes the residential properties at the southeast corner of 107th Avenue and Elwood Street Corridor (Figure 2).

Elwood Street is located in the sag of a regional swale. Storm water runoff contributes to the DRCC from both the north and the south of Elwood Street. Storm water contributing to the east side of 75th Avenue is routed south via a regional storm drain in 75th Avenue. Storm water contained in the Elwood Street alignment east of 75th Avenue will not contribute to the DRCC. The volume of stormwater contributing to the DRCC at 75th Avenue (from the north) is limited by the channel/RCBC capacity immediately upstream of the DRCC. The hydraulic capacity of the existing channel located along the west side of 75th Avenue is limited by a 10' X 6' RCBC. The existing culvert (within the DRCC) at 76th Avenue is a 2 – 10' X 6' RCBC. Team members determined that the 76th Avenue RCBC is adequate to pass storm water contributing to it. It was assumed that flows identified in the regional hydrologic model would contribute to the DRCC via the large channel near 77th Avenue rather than at 75th Avenue and therefore, typical freeboard requirements of 1.0' using the entire regional flow upstream of 79th Avenue are not always met. It should also be noted here that in order to maintain existing drainage patterns adjacent to Tuscano Elementary School, west of 79th Avenue, the 1.0' of freeboard requirement could not be met within the DRCC Right-of-Way (ROW); the 100-yr water surface elevation is contained within the DRCC ROW, and the 1.0' of freeboard is met on the school property just outside/south of the DRCC ROW.

Currently, storm water flows through the adjacent subdivisions and outfalls into their respective retention basins. The retention basins fill up and sheet flow to the west along the Elwood Street Corridor between 75th Avenue and 107th Avenue. The lack of a continuous drainage facility creates high water surface elevations that may flood surrounding homes during large storm events. The channel has multiple roadway crossings between 75th Avenue and 107th Avenue.





**Figure 2 – DRCC FEMA Floodplain
(Including Future Storm Drain Pipe from MC-85)**

1.5 Right-of-Way

The majority of the project corridor is designated as an existing drainage easement within each development. The existing right-of-way along the Elwood Street Corridor that is not designated as a drainage easement belongs to the City of Phoenix or is agricultural property. It is anticipated that drainage easements will be established along the corridor as the agricultural property is developed. The corridor also has multiple existing utility easements that overlap the drainage easements and each other (WAPA, APS, SRP). The goal of this project is to utilize the existing drainage easements when feasible. Portions of the adjacent agricultural properties will need to be acquired for this project. COP has designated portion of their properties along the Elwood Street Corridor to be City parks. A portion of the park properties will be utilized for drainage facilities.

The FCDMC is in the process of finalizing the right-of-way/easement purchases required for the project. It is anticipated that the rights-of-way/easements required for the project will be obtained prior to the bid advertisement.

1.6 Utilities

The existing utilities in the project corridor include Arizona Public Service (APS) and Western Area Power Administration (WAPA) power lines, Salt River Project (SRP) irrigation systems, SRP Power, Southwest Gas lines, Qwest Communications, and several other private and City utilities. Several existing utilities will need to be relocated as part of this project. Team members conducted extensive utility relocation (approximately 100 potholes) during the design process. Team members used this data to determine existing utility locations as design constraints and designed the channel around them where possible to minimize disturbance. Conflicts and required relocations are incorporated in the 100% Final PS&E submittal.

There are two existing 230 Kv overhead power lines within the project limits. The power lines belong to WAPA/APS and travel along the entire length of the project. They will not be relocated and will remain in place without disturbance. The WAPA/APS design criteria are:

- Excavation will not be allowed within a 20-foot radius around the 230 Kv poles. Excavations adjacent to the 20-foot radius will be limited to a depth of 7. Shoring may be required in some locations. The 20-foot radius starts at the outside of the pole vs. the center.
- WAPA/APS have a "no tree" policy within their easement. Small shrubs are allowable as long as they are maintained to a maximum of 10-feet in height (on the preferred plant list).



- All pipes, manholes, or other proposed facilities to be located at or below grade in WAPA easement / ROW must be designed to withstand a minimum of 320 lb/sq inch spread over a 27” diameter outrigger pad.
- Maintenance road requirements are 30-foot maximum and 16-foot minimum.

Team members have met with WAPA and APS throughout the design process and have incorporated their design criteria and 100% plan submittal review comments into the 100% Final PS&E submittal.

The majority of utility crossings within the project are at the crossroads. Team members have designed the channel to reduce the impact to the existing utilities. The proposed channel will require several utility relocations (irrigation, electric, water, gas, telephone, and cable lines, etc.). **The utility relocations are quantified in the 100% Final PS&E submittal.** Team members have met with SRP staff since the 30% Pre-Design phase of the project.. The system was designed to eliminate the need for SRP siphons at 107th Avenue and 103rd Avenue. SRP has designed and will construct irrigation relocations at 83rd Avenue, 85th Avenue, and Riley Road. The 85th Avenue and Riley Road relocations will require irrigation siphons. The 83rd Avenue siphon will occur in the privately owned section of the irrigation system. In addition, a small section of 36” irrigation pipe will need to be removed and replaced for construction of the 107th Avenue basin conduit. SRP construction documents are included in the 100% Final PS&E submittal for reference.. **The** project does not adversely impact any existing sanitary sewer line. The utility maps are shown in Appendix B – Utility Maps, and each pothole location and testhole results are contained in Appendix D – Testhole Data.



2.0 HYDROLOGIC ANALYSIS

The base hydrologic model for the project was developed in 2002 as part of the Durango Area Drainage Master Plan by Dibble & Associates, Inc. (Dibble). The original condition hydrologic models were modified in 2005 by Aspen Engineering, Inc. (Aspen) to include the 75th Avenue storm drain, the DRCC Basin #4, and the DRCC upstream of DRCC Basin #4. In addition, the future condition models were modified by Aspen to include first flush retention for properties adjacent to the DRCC alignment, and the 100-year 2-hour retention for properties not adjacent to the DRCC.

The recent DRCC Candidate Assessment Report (CAR) prepared by Prestige Engineering modified the Aspen hydrologic models to remove the 95th Avenue multi-use basin and insert a new multi-use basin east of 107th Avenue and north of the DRCC.

J2 reviewed/refined the regional hydrologic models as part of their DRCC Pre-Design work effort. The modifications made to the hydrologic models (HEC-1) are described in detail in the Pre-Design Report. Additionally, after submittal of the Pre-Design Report, subarea ID1 was rerouted to the concentration point at 103rd Ave. Figure 3 shows the Durango ADMS Drainage Area Map. Table 1 reports the resulting pre-design HEC-1 peak discharge values for the project considering the offline detention basin upstream of 89th Avenue and the surge basin upstream of 107th Avenue. The regional HEC-1 model included preliminary analyses of channel storage and attenuation. The unsteady flow HEC-RAS analysis based on the final design configuration, discussed in section 3.0 Hydraulic Analysis of this report, refined channel storage and attenuation in order to determine the final project design flows. Additional modified HEC-1 models were produced in order to isolate the inflow hydrographs for input into the unsteady state HEC-RAS model. This was accomplished by diverting all of the upstream channel flow completely out of the modified model at each respective concentration point. This HEC-1 model was further modified to account for the location of the weir into the 89th Ave detention basin by breaking subarea ED1 into two subbasins ED1A and ED1B; ED1A was combined upstream of the weir, and ED1B was combined downstream of the weir. The HEC-1 model output file before dissection for input into the unsteady state HEC-RAS model is contained in Appendix A and the electronic files for all of the HEC-1 models along with a spreadsheet of the hydrographs taken from the HEC-1 models for input into the unsteady state HEC-RAS model are contained on the CD in the back pocket of this report.



Table 1 - HEC-1 Peak Discharge Values

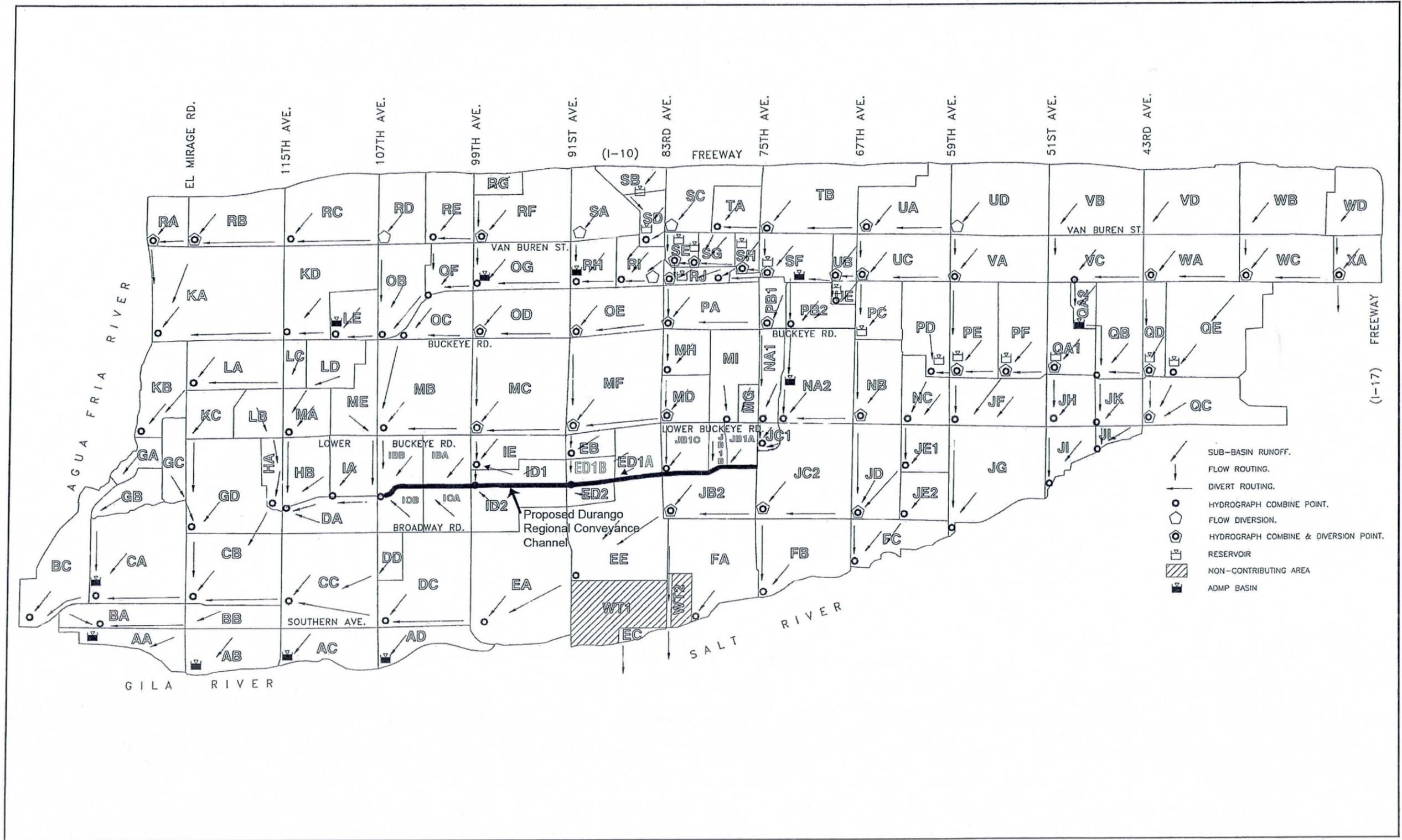
Physical Location	100-yr (cfs)
75 th Avenue	1112
79 th Avenue	1317
83 rd Avenue	1274
89 th Avenue	280
91 st Avenue	626
99 th Avenue	586
103 rd Avenue	1475

The City of Phoenix may construct storm drains along 83rd Avenue, 91st Avenue, 99th, and/or 107th Avenue that will discharge into the DRCC. The future storm drains are constrained by the relatively shallow depth (6 feet) of the DRCC throughout much of the corridor. The 103rd to 107th Avenue reach is deeper than the eastern portion of the channel. The COP storm drains will be designed to convey the 2-year storm event.

In addition, the City of Phoenix and MCDOT are jointly funding roadway improvements for MC-85 (Buckeye Road) between 75th Avenue and 107th Avenue. One of the design alternatives would be to construct a storm drain along MC-85 and route it south along 107th Avenue to the DRCC. Coordination between the Cop/MCDOT and the District is ongoing. The District will determine if the proposed MC-85 storm drain will function during the interim condition (no outlet) of the DRCC. Preliminary analyses indicate that the 107th Avenue multi-use basin could accommodate this flow. It is anticipated that construction of the MC-85 improvements will follow construction of the DRCC.



FIGURE 3 DRAINAGE SUB-AREA BOUNDARIES



Drainage Sub-Area Boundaries

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3.0 HYDRAULIC ANALYSIS

3.1 Overview

The phased private/public construction of the DRCC makes it a unique facility. The FCDMC and the COP developed plans for a regional drainage corridor in 2002. The project area experienced rapid urbanization during the housing boom of the early 2000's. The City worked with private development to design and construct "interim" drainage facilities (channels and retention basins) that could be converted into a regional system at a later date. The private developments designated drainage easements and developed trails along the WAPA/APS power (DRCC) corridor. The Home Owners Associations (HOA) along the corridor are responsible for maintenance within the drainage easement. A large portion of the regional channel was constructed by private development. The subject project will connect the existing drainage facilities and provide 100-year flood protection for the surrounding community. The project may be broken into four - one mile segments. The following paragraphs define the characteristics of each segment. Figures 4a and 4b show the proposed drainage features. Table 3 lists the existing and proposed DRCC culverts. Table 4 lists the Manning-n values assumed for the ultimate conditions. Table 5 lists the resulting peak velocities using multiple profiles ranging from 10 cfs all the way up to the 100-year peak discharge values to determine the maximum velocity at any time for any rainfall event return period.

The goal of the DRCC drainage facility is to provide 100-year flood protection for the adjacent community and to minimize the design discharge contributing to the adjacent segment of the DRCC to the west. The segment downstream/west of 107th Ave. will be designed and constructed in the future. Table 2 summarizes the peak discharge values determined from the unsteady state HEC-RAS model at key locations throughout the project.

There are several locations where storm drain pipes, overflow spillways from adjacent retention basins, and tributary channels discharge to the DRCC. Riprap has been placed at these locations. Calculations to estimate the peak discharge rates, riprap sizing, and a summary table titled *Q's into DRCC Summary (from pipes, basin spillways, and channels)* can be found in the back of Appendix C – Hydraulic Analysis.

Segment No. 1: 75th Avenue to 83rd Avenue

The Tuscano development rough graded an earth lined channel from 75th Avenue to 81st Avenue. The channel contains culvert crossings at 76th Drive and 79th Avenue. Relatively minor grading modifications



are required in this reach. The 79th Avenue culvert will be expanded from a 2 – 10' X 4' RCBC to a 4 – 10' X 4' RCBC. It was decided by the project team to not upsize the 76th Drive culvert because the volume of stormwater contributing to the DRCC at 75th Avenue (from the north) is limited by the channel/RCBC capacity immediately upstream of the DRCC. The hydraulic capacity of the existing channel located along the west side of 75th Avenue is limited by a 10' X 6' RCBC. The existing culvert (within the DRCC) at 76th Avenue is a 2 – 10' X 6' RCBC. Team members determined that the 76th Avenue RCBC is adequate to pass storm water contributing to it. It was assumed that flows identified in the regional hydrologic model would contribute to the DRCC via the large channel near 77th Avenue rather than at 75th Avenue; therefore, typical freeboard requirements of 1.0' using the entire regional flow upstream of 79th Avenue are not always met.

It should be noted that the existing channel from the north at 75th Avenue and from the north near 77th Drive (station 302+00) has not been excavated to ultimate depth by the developer. Excavating to ultimate depth will result in a smooth transition and reduced velocities from the north into the DRCC at these locations.

West of 79th Avenue at approximate station 281+50 to 285+50 freeboard on the south side of the channel is less than one foot. The 100yr event is contained within the DRCC right-of-way and there is one foot of freeboard on the Tuscano Elementary School property. Adding a berm at this location will disrupt the existing school site drainage and therefore a berm is not being constructed at this location. The proposed grading modifications will not impact the Tuscano Elementary School Site. The school requested that the District construct a chain link fence around the north portion of their site as part of the Phase I construction. The school doesn't utilize the channel area and would like to minimize their liability by separating the channel from the active school site.

The COP Parks Department owns a parcel along the south side of the DRCC from 81st Avenue to 83rd Avenue. The parcel contains two retention basins. The DRCC channel geometry will be widened to conform to the existing basin configuration. This segment of the DRCC will require minor modifications to convey the 100-year storm event. Currently there is not a culvert crossing at 83rd Avenue. A 3-12'x5' RCBC was designed at 83rd Avenue.

Segment No. 2 – 83rd Avenue to 91st Avenue

The conceptual design for the corridor assumed that the existing linear retention basins north of the WAPA/APS power lines would be connected to form the DRCC. Unfortunately, the grading for many of



the retention basins did not incorporate the ultimate channel geometry into the design (i.e., the longitudinal slope of the basins did not accommodate the ultimate channel configuration). During the Pre-Design phase of the project, team members evaluated several design alternatives and determined that it would be more cost effective to purchase new right-of-way on agricultural property and construct a drainage channel rather than utilizing the private retention basins (requires removal/replacement of turf, landscaping, decomposed granite, irrigation systems, etc.) . The proposed channel from 83rd Avenue to 90th Lane will be constructed south of the WAPA/APS power lines. The existing private retention basins will remain.

This segment contains two of the most severe design constraints in the DRCC corridor: the shallow 91st Avenue sanitary sewer and the vertical alignment of 89th Avenue. The DRCC must pass over the 72 inch sanitary sewer in 91st Avenue and under 89th Avenue. The backwater created by the 91st Avenue culvert crossing is higher than 89th Avenue. In order to mitigate these constraints, team members designed a detention/retention basin partially on the COP Park property east of 89th Avenue and partially on land owned by PTH Properties Ltd (Mr. Hurley) to be obtained between Riley Road and 85th Ave. Team members worked with the City to meet their basin site requirements for approximately 4 acres of the site to remain above the 100-year water surface elevation and to provide a flat area within the basin for a soccer field elevated above the bottom to keep the field dry during the approximate 5-yr and more frequent rainfall events. It was then that team members expanded the basin design to the east to include a portion of Mr. Hurley's property. The District and Mr. Hurley are currently negotiating the property acquisition. This is an offline basin with inflow controlled by a weir at the PTH properties site elevated approximately 1.3' above the channel bottom to contain frequent rainfall events and nuisance flow in the main channel; the two basin sites are connected by a 10'x6' RCBC equalizer culvert to function as one large basin. A future 2-6'x4' RCBC at Riley Road to be constructed by the developer is required to back high flows over the lateral weir and into the detention basin. The basin will reduce the peak discharge in the channel approximately 800' upstream/east of the future Riley Road crossing from approximately 1000 cfs to 300 cfs downstream through the 89th Avenue culvert to 91st Avenue where a large amount of flow enters the DRCC from the north.

A significant amount of grading in the area between 89th Avenue and 91st Avenue will be required to cut and align the proposed channel back over to the existing downstream alignment, to isolate the local retention basins from the DRCC, and to contain the 100-year peak flow.

Due to the shallow 72" sanitary sewer main and backwater from the 91st Avenue culvert, it was necessary to elevate 89th Drive to accommodate a 4-48" RCP culvert and provide 1' of freeboard above the 100-yr



water surface elevation. This significantly reduces size of the 91st Avenue structure and eliminates the shallow culvert opening (19 inches) at 89th Drive, and provides an all weather access crossing adjacent to Hurley Ranch Elementary School. Team members were concerned about the long term maintenance associated with the 89th Drive culvert.

This option shifts the sump location from north of the DRCC to a point approximately 170' south (in front of Hurley Ranch Elementary School). Team members reached an agreement with the school to provide a scupper and regrade their existing detention basin to accommodate the redirected stormwater runoff from the 100-yr, 2-hr rainfall event draining from Illini Street and 89th Drive. A little regrading of the schools parking lot and entrance drive are required. The City would not allow a scupper and small retention basin on the east side of 89th Avenue at this location so a catch basin and pipe with flapgate into the upstream/east side of 89th Avenue is also required to drain the east half of 89th Avenue .

The unsteady state main channel HEC-RAS model found on the CD in the back cover of this report contains 2 plans; one for the current design conditions including the future Riley Road culvert to be constructed by the developer, and one plan with a future channel crossing at 85th Avenue also to be constructed by the developer.

Segment No. 3 – 91st Avenue to 99th Avenue

The 89th Avenue detention basin system reduces the design discharge contributing to 91st Avenue, therefore allowing a 3-10'x4' RCBC at 91st avenue and the existing northern channel from 91st to 99th Avenue to safely convey the 660 cfs peak flow rate. The hydraulic capacity of the existing culverts at roadway and power pole crossings need to be expanded to match the channel capacity; only minor grading around the enlarged structures within this reach is necessary. The majority of the decomposed granite channel will be left undisturbed.

Segment No. 4 – 99th Avenue to 107th Avenue

For the existing northern channel alone from 99th to 103rd to safely convey the design flows significant channel modifications and upsizing of the culverts at the WAPA power pole sites were required. Therefore, it was determined that a dual channel system through this ½ mile reach is more cost effective . A culvert immediately west of 99th Ave will be constructed to provide WAPA all-weather access across the channel where the flow splits to a dual channel system. The existing DRCC siphons under an SRP irrigation line immediately east of 103rd Avenue is undersized for the proposed drainage facility; therefore, team members shifted the channel to the south around the SRP irrigation line effectively bypassing the undersized siphon. A new 3-8'x5' RCBC will be constructed at 103rd Ave. Another



culvert immediately east of 103rd avenue where the flow is recombined into a single channel system is also being provided for WAPA all weather access.

Team members determined that the most cost effective solution balanced with the highest level of service is to utilize a dual channel system downstream/west of 103rd Avenue. By designing a separate north channel downstream of 103rd Avenue, the flow in the main channel is isolated from the 1100 cfs coming from the large channel northeast at Country Place Boulevard and 103rd Avenue. This north channel will convey the large flow from the northeast directly to the 107th Avenue Detention Basin. This design eliminates the need for a 2-10'x4' "broken back" RCBC to be constructed under the SRP irrigation line immediately west of 103rd Avenue, reduces the amount of excavation in the main channel, and allows the use of the existing channel west of 104th Lane. This design also has the advantage of not needing to back flow up in the main channel at 107th Avenue into the detention basin via a reverse slope 3-8'x3' RCBC under the SRP irrigation line. A 1-6'x6' RCBC for the detention basin outlet under 107th Avenue is required for the ultimate condition when the 107th Avenue to Agua Fria River segment of the DRCC is constructed.

The negative feature of the preferred alternative is that in the interim condition the south channel does not have as much storage volume available during a large storm event. Storm water in excess of the channel capacity will overtop 107th Avenue at the existing sag location adjacent to the DRCC and will flow in its historic flow path west of 107th Avenue.

It should be noted here that in order to model the dual channel system from 99th Ave. to 103rd Ave. using the unsteady state option in HEC-RAS, the northern channel through this reach was modeled as two "storage areas" connected by a culvert. The flow into the "storage areas" is controlled by the existing 2-6'x4' RCBC at the power poles west of 99th Ave. balanced with the flow diverted to the south channel through the proposed 2-10'x4' RCBC. The flow in the "storage areas" is then re-combined with the south channel via a storage area outlet which represents the 2-6'x4' WAPA access culvert immediately east of 103rd Ave.

It should also be noted that in order to utilize the unsteady state HEC-RAS program for the main channel, the north channel from 103rd Ave to the 107th Ave Detention Basin had to be modeled separately. A steady state HEC-RAS model found on the CD in the back of this report was developed to design the north channel. Separately, from the HEC-1 model, the hydrograph into this north channel was combined with the hydrographs from the north along the east side of 107th Avenue and the runoff from the basin site/SUBIBB. This combined hydrograph was input into a PondPack model for detention routing and



outlet sizing and to develop an outflow hydrograph for the 107th Avenue Detention Basin. The PondPack model is on the CD in the back of this report, and the input and output summary report can be found in Appendix C – Hydraulic Analysis. The PondPack routed output hydrograph was then input back into the main channel unsteady state HEC-RAS model at the downstream side of the 107th Avenue main channel culvert to determine the combined ultimate peak discharge from the main channel DRCC and the 107th Avenue Detention basin of 934 cfs.

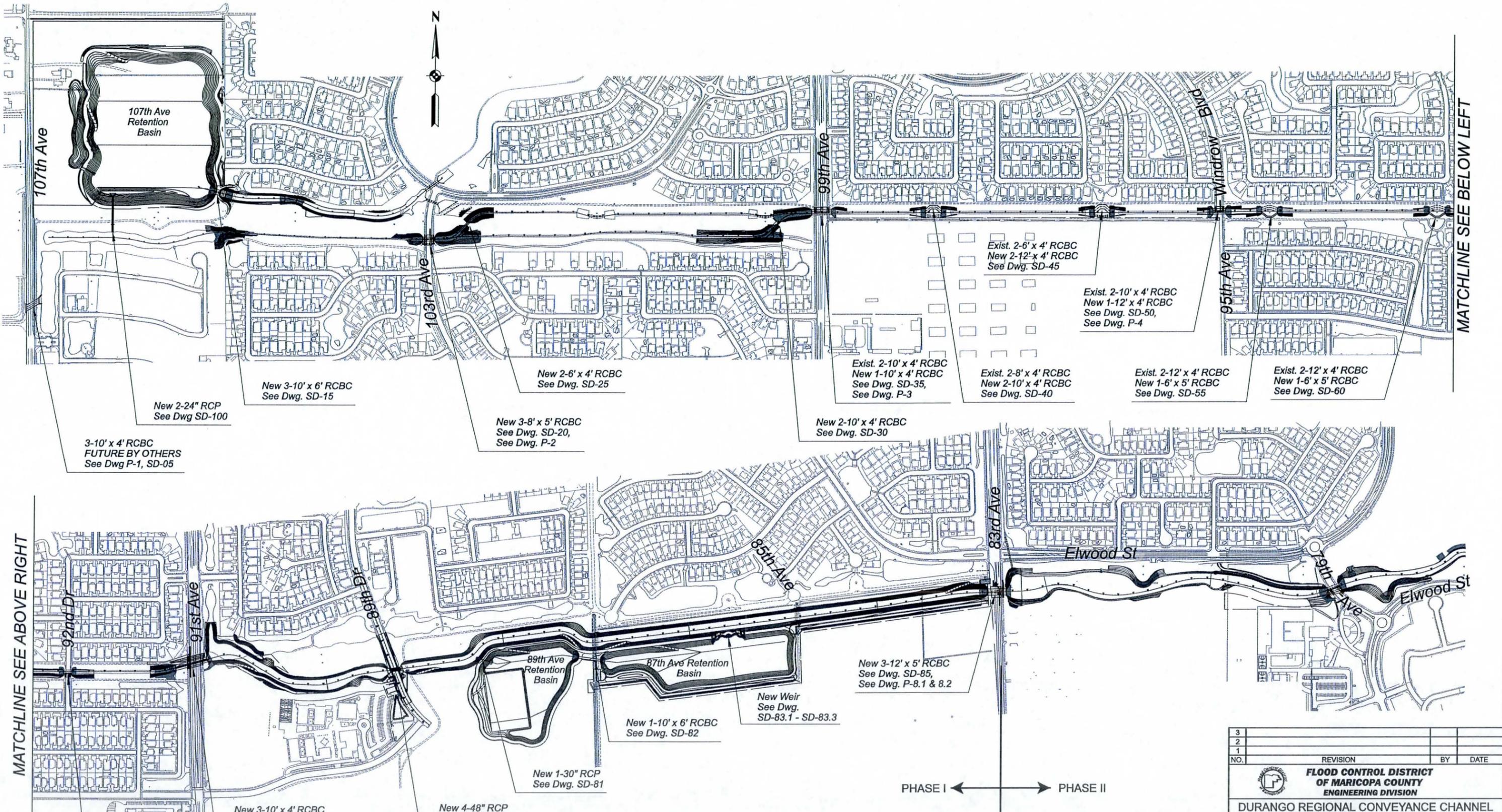
The 107th Avenue detention basin may be utilized by the COP as a park facility in the future. It may also serve as the outlet for the MC-85 drainage system. MCDOT and the COP are in the process of designing the MC-85 project at the current time. The area north of the 107th Ave basin can be used for future storage if needed.

***Table 2 - Unsteady State HEC-RAS Peak Discharge Values**

Station	Physical Location	100-yr (cfs)
310+05	76 th Avenue	803
287+43	79 th Avenue	1188
264+93	83 rd Avenue	1037
224+77	89 th Avenue	307
210+75	91 st Avenue	666
185+00	95 th Avenue	630
158+97	99 th Avenue	668
132+78	103 rd Avenue	670
103+56	107 th Avenue	640
101+54	Downstream side of 107 th Ave	934
601+46	North Channel @ RCB into 107 th Ave Basin	1118

* The flows reported in Table 2 above are based on the future construction a 2-6'x4' culvert at Riley Road, a 3-10'x4' culvert along the main channel at 107th Avenue, and a 1-6'x6' RCB outlet from the 107th Ave Detention Basin to the west under 107th Avenue.





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Table 3 - Culvert Summary

Number	Approximate Station	Existing Culvert	Proposed Culvert
Future	103+56 (107 th Ave Main Channel)	None	Future - 3-10'x4'
Future	107 th Ave Basin Outlet	None	1-6'x6'
SD-15	601+20	None	3-10'x6'
SD-20	132+78	None	3-8'x5'
SD-25	135+33	None	2-6'x4'
SD-30	155+92	None	2-10'x4'
SD-35	158+97	2-10'x4'	3-10'x4'
SD-40	166+31	2-8'x4'	2-8'x4' & 2-10'x4'
SD-45	177+28	2-6'x4'	2-6'x4' & 2-12'x4'
SD-50	185+00	2-10'x4'	2-10'x4' & 1-12'x4'
SD-55	188+27	2-12'x4'	2-12'x4' & 1-6'x5'
SD-60	199+21	2-12'x4'	2-12'x4' & 1-6'x5'
SD-65	202+67	2-12'x4'	2-12'x4' & 1-6'x4'
SD-70	210+75	6-30" RCP's	3-10'x4'
SD-80	224+77	1-24" RCP	4-48" RCP's
SD-82	238+50 (Connect Basins)	None	1-10'x6'
Future	238+53 (Riley Road)	None	2-6'x4'
SD-85	264+93	None	3-12'x5'
SD-95	287+43	2-10'x4'	4-10'x4'
N/A	310+05	2-10'x6'	2-10'x6' (no change)

3.2 Sediment Transport Analyses

The proposed drainage facility is comprised of mild slopes. In addition, there are numerous culverts (hard points) within the corridor. The culverts will severely limit the potential scour. Erosion is not a major concern within the corridor. Local scour protection is provided at culvert inlets and outlets, and locations in the channels where the velocity exceeds 6 ft/s determined using a HEC-RAS model run with a low Manning-n value of 0.023. See Table 5 – Maximum Velocities for Multiple Profiles with Manning n = 0.023. In the channels where riprap was deemed necessary, the extent of riprap protection downstream of



a bend in the channel was determined using the formula from Arizona Department of Water Resources (ADWR), 1996 State Standard for Watercourse System Sediment Balance, State Standard 5-96 (SS5-96), page 5.108. For locations with velocities greater than 6ft/s along straight channel segments, cross-sections were interpolated in the unsteady state HEC-RAS model every 10' and riprap was placed upstream and downstream at least 20' beyond where the velocity dropped below 6 ft/s. These calculations including a summary table of DDMWS 4.6.0 analysis results, Yang Incipient Motion and Competent Bottom Velocity Calculations, along with *Technical Memorandum, Durango Regional Conveyance 75th Avenue to 107th Avenue, Re: Sediment Transport Comment Response*, can be found in the back of Appendix C – Hydraulic Analysis.

3.3 Proposed Channel Hydraulics

The DRCC project is unique in that it interconnects a partially completed drainage facility. The longitudinal slope of the channel has been established for the majority of the corridor by existing culverts and/or utility constraints. In general, the longitudinal slope of the subject reach of the DRCC is relatively flat resulting in velocities around 3 - 5 fps.

The FCDMC publication entitled Drainage Design Manual, Volume II, Hydraulics and Drainage Design Manual, Volume III, Erosion Control were utilized for design of DRCC. The U.S. Army Corps of Engineers HEC-RAS version 4.1.0 unsteady state computer model was utilized for the hydraulic modeling of the DRCC. Team members developed an unsteady state model for the hydraulic analysis of the DRCC. Additional discussion of models and modeling methods can be found in the respective individual 1 mile segment reaches in Section 3.1 – Overview. HEC-RAS and PondPack model output summaries are included in Appendix C. An electronic copy of the hydraulic models are included on the CD in the back cover of this report.

Table 4 - Manning's n-Values

Ultimate Conditions Manning's n-Values				
Start River Station	End River Station	Left Bank n-value	Main Channel n-Value	Right Bank n-Value
318+76.08	185+58.06	0.040	0.035	0.040
184+41.81	159+83.03	0.030	0.030	0.030
158+11.39	133+45.77	0.040	0.035	0.040
132+10.23	101+53.57	0.040	0.030	0.040
614+12.02	600+00.00	0.050	0.023	0.050



4.0 DESIGN CONSTRAINTS

The proposed regional conveyance channel was designed in accordance with procedures and methodologies outlined in the following publications: *City of Phoenix Design Manual, Chapter 2, Drainage Design Manual for Maricopa County, Volume II Hydraulic*, and the *Urban Drainage Design Manual, Hydraulic Engineering Circular No. 22 (FHWA)*. The key design assumptions and constraints are summarized below:

- WAPA/APS 230 Kv Power corridor and associated maintenance requirements (vegetation and vehicle access)
- SRP 69 Kv line along east side of 91st Avenue
- 72 inch sanitary sewer crossing at 91st Avenue
- SRP/private irrigation crossings at 83rd Avenue, 85th Avenue, 87th Avenue, and 103rd Avenue
- Remove/reconstruct multiple landscape and irrigation systems for existing retention basins (Lion's Gate and Sunset Farms)
- Vertical alignment of 89th Avenue
- Hydraulic capacity of the existing channel and culvert crossings between 91st Avenue and 107th Avenue are inadequate for the 100-year storm event (without 89th Avenue detention/retention basin).
- Maintain 4 acres above the 100-year WSEL and provide flat area for sports field within the basin elevated above the basin bottom in COP park site at 89th Avenue.
- Minimize the 100-year discharge flowing west of 107th Avenue.



5.0 CONSTRUCTION COST ESTIMATE

The estimated cost to construct the Durango Regional Conveyance Channel, including all of the SRP irrigation facilities except for the PTLO structures, is approximately \$10.3 million for Phase I, and \$1.3 million for Phase II. The major cost item is channel and basin excavation. A small change in unit cost of these bid items will have a significant impact on the total cost of the project. The cost of excavation (waste project) is dependent upon the ability to dispose of the material in an efficient manner. Discussions with ADOT indicate that all of the excess material can be stockpiled at a site on 67th Avenue and Broadway Road. District personnel have stated that earthwork costs have been relatively low on several recent projects. The cost estimate is located in Appendix E – Quantities and Cost.

A large percentage of the project has been constructed by private development (COP). The FCDMC has instructed J2 to break out the cost of the existing drainage facilities that may be utilized as part of the DRCC. This cost will be credited to the COP. The cost will include excavation, culverts, landscape, and right-of-way. The total cost of the existing improvements (Existing Valuation Estimate) is being submitted separately. The FCDMC and COP will utilize this data for development of their cost share distribution for the DRCC.



Table 5 - Maximum Velocity for Multiple Profiles With Manning n = 0.023

Velocity (ft/s)	River Station (ft)								
N/A	32476.08	2.90	27561.43	1.32	21379.21	4.70	17095.16	N/A	13278.38
N/A	32276.08	4.26	27474.42	2.40	21217.51	4.90	16919.28	3.23	13210.32
N/A	32076.08	1.56	27350.50	N/A	21075.38	5.04	16821.09	3.91	13103.47
11.33	31876.08	1.11	27181.89	9.84	20961.75	3.33	16704.19	4.33	13014.97
4.34	31710.87	1.42	27020.02	3.14	20932.23	N/A	16631.38	4.27	12882.87
3.51	31484.78	1.57	26845.61	3.20	20847.85	3.24	16558.39	4.10	12745.94
3.09	31293.73	3.21	26632.73	2.87	20665.33	5.18	16427.74	4.02	12619.71
3.20	31076.01	N/A	26493.38	3.02	20481.33	5.91	16304.85	4.05	12410.35
N/A	31005.38	5.29	26354.66	2.52	20311.76	6.12	16164.04	4.47	12195.44
5.44	30934.78	3.81	26168.26	N/A	20267.38	3.99	15983.03	8.69	12026.49
3.13	30874.35	3.97	25950.01	3.12	20223.22	N/A	15897.38	4.95	11830.73
2.18	30795.85	4.14	25758.37	3.32	20105.92	4.95	15811.39	4.85	11601.37
4.05	30712.95	4.14	25563.00	2.75	19994.35	4.36	15728.14	3.91	11392.42
3.04	30609.89	4.18	25387.78	N/A	19921.38	N/A	15667.38	N/A	11209.57
3.22	30493.03	3.90	25118.28	3.20	19848.74	1.30	15646.16	3.28	11011.21
3.02	30393.85	4.48	24948.65	3.55	19738.19	1.58	15633.63	1.14	10788.03
2.90	30298.02	N/A	24750.00	3.49	19619.59	N/A	15592.38	1.36	10684.54
1.90	30136.87	3.60	24741.08	3.62	19452.59	9.03	15551.85	1.67	10561.20
3.85	29919.33	1.41	24574.94	3.29	19285.59	3.66	15530.00	1.72	10461.87
3.36	29782.91	1.25	24406.53	3.61	19118.59	2.63	15484.92	N/A	10356.38
3.64	29718.45	1.10	24239.95	3.69	19005.74	5.30	15367.25	1.97	10250.61
3.47	29641.93	1.57	23902.74	3.14	18891.83	4.15	15150.55	2.05	10188.73
3.47	29572.38	N/A	23853.38	N/A	18827.38	3.77	14929.12	4.15	10153.57
3.21	29498.90	3.63	23804.63	3.69	18762.64	3.71	14714.37	2.37	61414.41
3.35	29340.54	1.68	23625.24	4.10	18660.36	3.20	14499.18	3.39	61292.18
3.44	29170.83	1.56	23495.64	3.35	18558.06	3.75	14438.11	5.58	61197.56
2.50	28936.51	1.42	23342.25	N/A	18500.38	5.84	14332.18	4.51	61061.59
3.32	28808.68	1.30	23199.78	3.98	18441.81	6.14	14249.90	4.82	60955.80
N/A	28743.38	1.08	22937.83	4.26	18240.23	4.26	14110.87	4.13	60792.54
5.94	28676.98	1.01	22733.15	4.58	18040.23	3.48	13910.94	8.98	60651.21
4.26	28482.33	1.31	22544.93	4.51	17923.22	5.87	13708.37	5.00	60546.29
4.11	28267.36	N/A	22477.38	3.12	17799.53	5.61	13649.63	4.58	60446.39
4.07	28074.81	4.99	22408.02	N/A	17728.38	4.16	13533.37	4.85	60341.56
2.39	27952.91	2.41	22238.84	3.22	17656.04	N/A	13417.38	4.99	60249.59
3.76	27843.75	1.65	22079.38	4.62	17544.82	3.20	13373.25	6.84	60175.65
3.50	27783.14	1.82	21856.94	4.71	17444.33	3.34	13345.77	4.15	60145.99
2.55	27666.65	1.66	21574.73	4.43	17267.52	N/A	13278.38	4.56	60091.50

Velocity (ft/s)	River Station (ft)	Proposed solution or explanation where velocity is greater than 6 ft/s
11.33	31876.08	D50=12" riprap, T=2*D50=24" to 315+50 per ADWR required extent calc. using max D and Rh
9.84	20961.75	D50=9" riprap, T=2*D50=18"
6.12	16164.04	Undisturbed area. Only greater than 6 ft/s for short distance and short time/100-yr event.
9.03	15551.85	D50=9" riprap, T=2*D50=18"
6.14	14249.90	Undisturbed area. Only greater than 6 ft/s for short distance and short time/100-yr event.
8.69	12026.49	D50=12" riprap, T=2*D50=18" Extents per HEC-RAS interpolated sections run where V < 6 ft/s.
8.98	60651.21	D50=9" riprap, T=2*D50=18" Extents per HEC-RAS interpolated sections run where V < 6 ft/s.
6.84	60175.65	Concrete apron and D50=9" riprap, T=2*D50=18"

Note: Riprap size selected based on a combination of DDMSW 4.6.0 results, FCDMC comment requests, Yang Incipient Motion calculations, Competent Bottom Velocity calculations, and engineering judgement and experience.

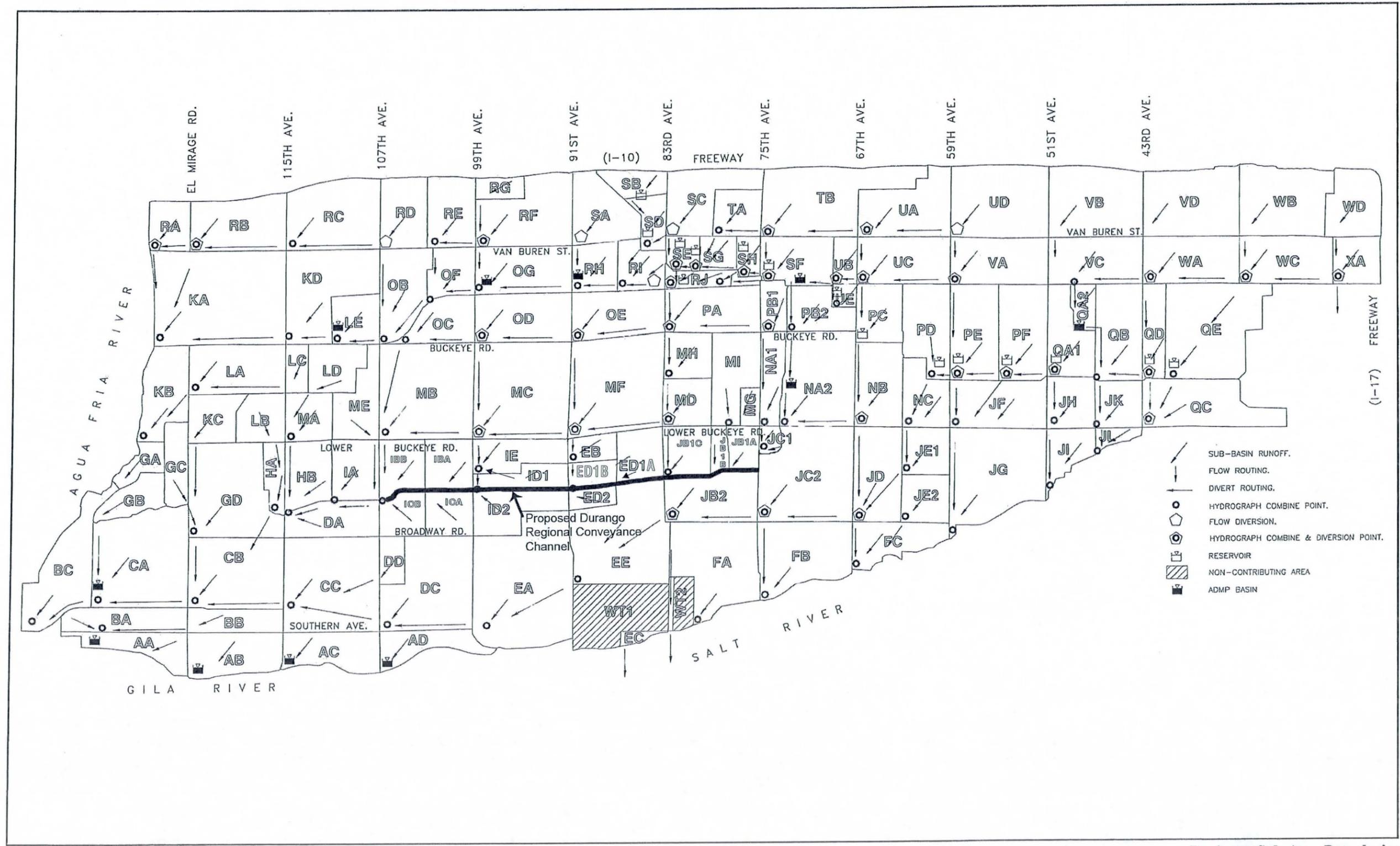


6.0 REFERENCES

1. Drainage Design Manual, Volume II Hydraulics, Flood Control District of Maricopa County, January 1996.
2. FlowMaster, Version 7.0, Haestad Methods, Inc., June 2003
3. HEC-1, version 4.1, U.S. Army Corps of Engineers, Los Angeles District, June 1998
4. GILA RIVER BASIN, Design Memorandum No. 2, U.S. Army Corps of Engineers, Los Angeles District, 1982
5. HEC-RAS, River Analysis System, Version 4.1.0 – Unsteady State, U.S. Army Corps of Engineers, Hydrologic Engineering Center, May 2003
6. Urban Drainage Design Manual, Hydraulic Engineering Circular No. 22, Federal Highway Administration, November 1996.
7. Bentley PondPack 10.0, Bentley Systems Inc., 2005



FIGURE 3 DRAINAGE SUB-AREA BOUNDARIES



Drainage Sub-Area Boundaries

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Appendices

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APPENDIX A

HEC-1 ANALYSES



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* FLOOD HYDROGRAPH PACKAGE (HEC-1)
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*
* U.S. ARMY CORPS OF ENGINEERS
* HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET
* DAVIS, CALIFORNIA 95616
* (916) 756-1104
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY, DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1

HEC-1 INPUT

PAGE 1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
1 ID FILE NAME: UFUT6J2S.DAT
2 ID 100-YEAR 6-HOUR MODEL
3 ID J2 ENGINEERING AND ENVIRONMENTAL DESIGN, LLC
4 ID THIS FILE IS A MODIFICATION OF ASPEN ENGINEERING FILE REC6.DAT
5 ID ADDED EXISTING 100YR-2HOUR RETENTION & MODIFIED FIRST FLUSH RETENTION
6 ID TO BASINS JB1, ED1, ID1, ID2, IB & IC
7 ID
8 ID J2 SUBDIVIDED BASINS JB, ED, ID, IC, AND IB ALONG THE PROPOSED DRCC
9 ID CORRIDOR INTO BASINS JB1A, JB1B, JB1C, ED1, ED2, ID1, ID2, ICA, ICB,
10 ID IBA, & IBB.
11 ID GREEN-AMPT SOIL LOSS PARAMETERS LEFT UNCHANGED EXCEPT FOR IA AND RTIMP
12 ID FOR SUBBASINS THAT WERE SPLIT.
13 ID
14 ID J2 MODIFIED THE FOLLOWING CHANNEL ROUTES: RTMGJB, MCJCJB, RTMFC,
15 ID RTMCIE, MCJBED, MCED95, MC95ID, MCIDIB, RTDIMB, & MCIBIB
16 ID
17 ID BASINS ADDED AT 107TH AVENUE (OPERATIONS 107U AND 107L)
18 ID ROUTED BASINS ID1 & IE THROUGH COUNTRY PLACE TO 103RD AVENUE OUTFALL
19 ID
20 ID *****
21 ID
22 ID REC6.DAT
23 ID ASPEN CONSULTING ENGINEERS, JCS and POL, NOV. 9, 2005
24 ID 6-HOUR RAINFALL
25 ID THIS IS THE SOUTH ALIGNMENT DRCC FROM 75TH AVE TO THE AF.
26 ID CHANGES MADE TO TOTDUR6.DAT MODEL ARE AS FOLLOWS:
27 ID
28 ID THIS IS THE DRCC IN AVONDALE WITH CULVERTS IN PHOENIX MODEL WITH FIRST
29 ID FLUSH RETENTION IN AVONDALE.
30 ID
31 ID SUNLAND CHANNEL INCLUDED AS PART OF PROJECT IMPROVEMENTS. FIRST FLUSH
32 ID RETENTION INCLUDED WHERE AVAILABLE.
33 ID
34 ID MODIFIED TO REFLECT "SOUTH" DRCC ALIGNMENT. FUTURE ARTERIAL ROADWAY
35 ID ROUTING MODIFIED TO FUTURE CONDITIONS.
36 ID
37 ID 1/2 INCH "FIRST FLUSH" RETENTION WAS USED FOR SUBBASINS DIRECTLY
38 ID ADJACENT TO THE DRCC IN AVONDALE.
39 ID
40 ID INSERTED 99BASIN TO REMODEL THE MULTIUSE BASIN BETWEEN 91ST AND 99TH AVE.
41 ID
42 ID RETENTION BASINS ADJACENT TO THE DRCC AND ROUTING FOR THE DRCC IN
43 ID PHOENIX WERE REPLACED BY MODIFIED PULS ROUTING IN ORDER TO MODEL THE
44 ID EFFECT OF PLACING 10-YR CULVERTS BETWEEN RETENTION BASINS. THE CULVERTS
45 ID WOULD BE PLACED AT 83RD AVE, 91ST AVE, 99TH AVE AND 107TH AVE.
46 ID CHANNEL ROUTING IN THIS SAME REACH REMOVED 75TH AVENUE TO 107TH
47 ID
48 ID ADDED/CHANGED SUBJB2 TO CPEE IN ORDER TO REINSERT SUBJB2 AND DIVERT
49 ID RETURNS.
50 ID
51 ID INSERTED DIBBLE MODEL 1084F6-IMP-R.DAT AFTER CPHA TO CHANGE MODEL TO THE
52 ID SOUTH DRCC ALIGNMENT. CHANGED DIBBLE SUBBASINS AND RETENTION TO ASPEN
53 ID FUTURE LAND USE SUBBASINS AND RETENTION. CHANGED SUNLAND CHANNEL ROUTING.
54 ID
55 ID CHANGED SUBBASINS AND RETENTION TO ACCOUNT FOR EXISTING DEVELOPMENT

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HEC-1 INPUT

PAGE 2

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
56 ID WITHOUT RETENTION. ACRES WITHOUT RETENTION: GB 67.5, GC 94.4, HB 83.1,
57 ID IA 90.8, DA 72.9, CC 19.3, CA1 18.8
58 ID
59 ID THE LG AND UI CARDS WERE CHANGED FOR SUBBASINS IDENTIFIED AS
60 ID CONTRIBUTING TO THE DRCC IN ORDER TO REFLECT FUTURE CONDITIONS LAND USE.
61 ID VALLEY S-GRAPH WAS USED INSTEAD OF AGRICULTURAL S-GRAPH.
62 ID
63 ID FUTURE LANDUSE 100-YEAR 2-HOUR RETENTION INSERTED AFTER SUBBASINS
64 ID IDENTIFIED AS CONTRIBUTING TO THE DRCC. 80% OF REQUIRED RETENTION USED.
65 ID

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66

ID CHANGED SUBGD2 BA CARD FROM 0.739 TO 0.211.

* The following is from the original model provided to Aspen by FCDMC *

67

ID TOTDUR6.DAT

68

ID 75th Avenue Storm Drain 100-Year/6-Hour Model, PJE

69

ID Future Condition Model

70

ID DRC #4 Basin Alternative 2, modeled in this run along with

71

ID 16.6 arce foot retention basin in SUBJ2.

72

ID The base hydrologic model used for this study is the model that was

73

ID developed for the Durango ADMP recommended design.

74

ID

75

ID Regional detention basins that are subject to the project area are sized and

76

ID analyzed to optimize storage function in order to reduce outfall storm drain

77

ID and potential channel size.

78

ID

79

ID Modifications are made to the original model to reflect changes in watershed

80

ID characteristics. Changes in sub-basin boundaries, land use and routing reaches

81

ID that have occurred since the completion of the Durango ADMP have been

82

ID incorporated into the model.

83

ID Changes made to the original model included:

84

ID 1) The area defined by the panhandle of Sub-Basin TB is revised to drain to

85

ID concentration point CPUA.

86

ID 2) Sub-basin SF is re-delineated to be consistent with drainage improvements

87

ID constructed as part of the Target Southwest Distribution Center.

88

ID 3) The 75th Avenue storm drain is evaluated to drain proposed Durango ADMP

89

ID regional detention facilities thus eliminating the conveyance channel between

90

ID Basin DRC #4 and Basin DRC #3 and downstream of Basin DRC #3.

91

ID 4) Street drainage that would be directly intercepted by the 75th Avenue

92

ID Storm Drain and laterals to the storm drain is modeled.

93

ID 5) Sub Basin JC is subdivided into Sub-Basin J1 and Sub-Basin J2.

94

ID 6) Lag times and s-graphs are developed for future conditions for watersheds

95

ID that were not already built out.

96

ID 7) The storm drain flow capacity of the 59th Avenue and the 67th Avenue

97

ID Storm Drains up stream of the Union Pacific Railroad are diverted from their

98

ID subject watersheds.

*DIAGRAM

* MODIFIED IT CARD FOR DSS RUN SLT

* IT 5 1200 2000

* IT 5 09MAR95 1200 2000

IT 2 09MAR95 1200 2000

IO 5

IN 15

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100

101

102

JD 3.23 0.01

HEC-1 INPUT

PAGE 3

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

103	PC	0.000	0.008	0.016	0.025	0.033	0.041	0.050	0.058	0.066	0.074
104	PC	0.087	0.099	0.118	0.138	0.216	0.377	0.834	0.911	0.931	0.950
105	PC	0.962	0.972	0.983	0.991	1.000					
106	JD	3.209	0.50								
107	JD	3.149	2.80								
108	PC	0.000	0.009	0.016	0.025	0.034	0.042	0.051	0.059	0.067	0.076
109	PC	0.087	0.100	0.120	0.163	0.252	0.451	0.694	0.837	0.900	0.938
110	PC	0.950	0.963	0.975	0.988	1.000					
111	JD	3.100	5.0								
112	JD	3.036	10.0								
113	JD	2.978	16.0								
114	PC	0.000	0.009	0.020	0.030	0.048	0.063	0.076	0.090	0.105	0.119
115	PC	0.135	0.152	0.175	0.222	0.304	0.472	0.670	0.796	0.868	0.912
116	PC	0.946	0.960	0.973	0.987	1.000					
117	JD	2.623	90.0								
118	PC	0.000	0.021	0.035	0.051	0.071	0.087	0.105	0.125	0.143	0.160
119	PC	0.179	0.201	0.232	0.281	0.364	0.500	0.658	0.773	0.841	0.888
120	PC	0.927	0.945	0.964	0.982	1.000					
121	JD	1.841	500.0								
122	PC	0.000	0.024	0.043	0.059	0.078	0.098	0.119	0.141	0.162	0.186
123	PC	0.212	0.239	0.271	0.321	0.408	0.515	0.627	0.735	0.814	0.864
124	PC	0.907	0.930	0.954	0.977	1.000					

125	KK	SUBWD	BASIN								
126	KM	VALLEY	S-GRAPH	WAS USED	FOR THIS	BASIN					
127	BA	0.393									
128	LG	0.20	0.19	7.00	0.17	12					
129	UI	32	42	116	157	189	226	281	403	348	281
130	UI	240	193	156	115	65	54	42	32	17	10
131	UI	10	10	10	9	0	0	0	0	0	0
132	UI	0	0	0	0	0	0	0	0	0	0

133	KK	RTWDXA	ROUTE	REACH							
134	KM		ROUTE FLOW FROM WD TO XA	(ALONG 27TH AVENUE).							
135	KM		TYPE C CHANNEL								
136	RS	4	-1	0							
137	RC	0.025	0.025	0.025	2500	0.0016	0.00				
138	RX	0.0	100.0	400.0	500.0	500.1	600.0	900.0	1000.0		
139	RY	5.0	4.0	1.0	0.0	0.0	1.0	4.0	5.0		

140	KK	SUBXA	BASIN								
141	KM	VALLEY	S-GRAPH	WAS USED	FOR THIS	BASIN					
142	BA	0.247									
143	LG	0.13	0.15	9.70	0.06	44					
144	UI	34	125	193	268	417	308	225	157	74	48
145	UI	29	10	11	11	0	0	0	0	0	0
146	UI	0	0	0	0	0	0	0	0	0	0

HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

147 KK CPXA1
148 KM ADD HYDROGRAPHS AT XA

149 HC 2 0.64
 *
 * KK RSXA
 * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
 * RS 1 STOR 0 0
 * SV .01 .07 1.0 5.1 14.0 28.5 50.0 79.1 117.4 165
 * SE1063.3 1063.5 1063.6 1064.1 1064.6 1065.1 1065.6 1066.1 1066.6 1067
 * SQ 0 15 43 455 1751 3879 6999 11192 17236 253
 *

150 KK DIXAO
 151 KM DIVERT FLOW FROM XA SOUTHWARD OVER SPRR AND OUT OF MODEL
 152 DT DIZZ1
 153 DI 0 0 43 455 1751 3879 6999 11192 17236 25382
 154 DQ 0 0 0 0 0 0 0 44 960 3141
 *

155 KK RTXAWC ROUTE REACH
 156 KM ROUTE FLOW FROM XA TO WC (ALONG SPRR).
 157 KM TYPE C CHANNEL
 158 RS 12 -1 0
 159 RC 0.035 0.035 0.035 5100 0.0016 0.00
 160 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 161 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

162 KK SUBWB BASIN
 163 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 164 BA 0.667
 165 LG 0.16 0.15 9.70 0.06 36
 166 UI 60 103 240 316 391 474 689 701 538 442
 167 UI 358 278 177 107 94 61 41 19 18 19
 168 UI 19 18 0 0 0 0 0 0 0 0
 169 UI 0 0 0 0 0 0 0 0 0 0
 *

170 KK RTWBWC ROUTE REACH
 171 KM ROUTE FLOW FROM WB TO WC (ALONG 35TH AVENUE).
 172 KM TYPE C CHANNEL
 173 RS 3 -1 0
 174 RC 0.025 0.025 0.025 2500 0.0020 0.00
 175 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 176 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

177 KK SUBWC BASIN
 178 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 179 BA 0.487
 180 LG 0.16 0.16 9.70 0.06 43
 181 UI 46 90 195 255 315 404 581 477 377 302
 182 UI 240 167 90 78 48 36 14 15 14 14
 183 UI 0 0 0 0 0 0 0 0 0 0
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

184 KK CPWC
 185 KM ADD HYDROGRAPHS AT WC.
 186 HC 3 1.76
 *
 * KK RSWC
 * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
 * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
 * KO 1
 * RS 1 STOR 0 0
 * SV 16.1 27.6 44.0 65.2 90.7 121.5 159.6 206.8 263.7 329
 * SE1057.1 1057.6 1058.1 1058.6 1059.1 1059.6 1060.1 1060.6 1061.1 1061
 * SQ 0 34 456 1381 2859 4933 7982 12958 19919 288
 *

187 KK DIWCWA
 188 KM DIVERT FLOW FROM WC TO QE
 189 KM Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP
 190 DT DIQE
 191 DI 0 34 456 1381 2859 4933 7982 12958 19919 28835
 192 DQ 0 0 0 0 0 0 141 1221 3463 6954
 *
 * KKDIWCQE
 * KM DIVERT FLOW FROM WC TO QE
 * DT DIQE
 * DI 0 115 608 1579 3086 5253 8972 15024 23745 350
 * DQ 0 0 0 0 0 40 951 3350 7104 121
 *

193 KK RTWCWA
 194 KM HEC-RAS REACH
 195 KM ROUTE FLOW FROM WC TO WA (ALONG SPRR).
 196 KM Channel geometry changed to match natural conditions 04.11.00 JEP
 197 KM Manning's N values changed to match approved values 04.11.00 JEP
 198 KM Method changed from Normal Depth Storage to Modified Puls 05.25.00 JEP
 199 KM Stage-storage values are based on HEC-2 analysis results 06.19.00 JEP
 200 KM Values transferred directly from HEC-2 file: Tape7_1 09.29.00 JEP
 201 RS 15 STOR 0 0
 202 SV 0 103 168 242 267 296 317 332 338 354
 203 SV 375
 204 SQ 0 200 400 800 1000 1200 1400 1600 1700 1900
 205 SQ 2200
 * RC .129 .129 .129 4850 .0010
 * RX 0 40 200 410 870 1240 1700 2160
 * RY 4.4 3.8 0 1.6 0 1.8 2.8 4.4
 *

206 KK SUBWA BASIN
 207 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 Page 3

208	BA	0.492									
209	LG	0.15	0.15	10.10	0.05	43					
210	UI	75	302	455	683	855	573	402	209	117	67
211	UI	23	23	23	0	0	0	0	0	0	0
212	UI	0	0	0	0	0	0	0	0	0	0
	*										

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1 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

213	KK	CPWA1									
214	KM	ADD HYDROGRAPH SUBWA TO RTWCWA									
215	HC	2 2.04									
	*										

216	KK	SUBVD	BASIN								
217	KM	VALLEY	S-GRAPH	WAS USED	FOR THIS	BASIN					
218	BA	0.697									
219	LG	0.16	0.16	9.70	0.06	36					
220	UI	63	108	251	330	408	495	720	733	562	461
221	UI	375	291	185	112	98	63	44	19	20	19
222	UI	20	19	0	0	0	0	0	0	0	0
223	UI	0	0	0	0	0	0	0	0	0	0
	*										

224	KK	RTVDWA	ROUTE	REACH							
225	KM	ROUTE FLOW FROM VD TO WA (ALONG 43RD AVENUE).									
226	KM	FUTURE ARTERIAL SECTION									
227	RS	1	-1	0							
228	RC	0.100	0.023	0.100	2500	0.0030	0.00				
229	RX	0.0	440	445	445.1	575.1	575.2	900	1000.0		
230	RY	105	105	105	99.75	99.75	105	105	105		
	*										

231	KK	CPWA2									
232	KM	ADD HYDROGRAPHS FROM SUBWA AND RTWCWA TO RTVDWA.									
233	HC	2 2.73									
	*										
	* KK	RSWA									
	* KM	MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.									
	* KM	Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0									
	* KO	1									
	* RS	1	STOR	0	0						
	* SV	1.3	1.9	2.4	3.1	4.0	8.5	16.7	29.9	48.5	74
	* SE	1050.7	1050.9	1051.1	1051.3	1051.4	1051.9	1052.4	1052.9	1053.4	1053
	* SQ	0	0	0	0	0	77	562	1532	3131	53
	*										

234	KK	DIWAVC									
235	KM	DIVERT FLOW FROM WA TO QD OVER SPRR									
236	KM	Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP									
237	KM	Revised DQ records based on HEC-2 analysis results. 06.28.00 JEP									
238	DT	DIQD									
239	DI	0	200	400	800	1000	1200	1400	1600	1700	1900
240	DQ	0	0	42	369	555	746	942	1140	1174	1370
	*										
	* KK	DIVCQD									
	* KM	DIVERT FLOW FROM VC TO QD OVER SPRR									
	* DT	DIQD									
	* DI	0	810	9237	10710						
	* DQ	0	0	0	63						
	*										

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1 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

241	KK	RTWAVC									
242	KM	HEC-RAS REACH									
243	KM	MODIFIED PULS ROUTE FLOW FROM WA TO VC (ALONG SPRR).									
	* KM	Channel geometry changed to match natural conditions 04.11.00 JEP									
	* KM	Manning's N values changed to match approved values 04.11.00 JEP									
244	KM	Method changed from Normal Depth Storage to Modified Puls 05.22.00 JEP									
245	KM	Stage-storage values based on HEC-2 analysis results. 06.19.00 JEP									
246	KM	values transferred directly from HEC-2 file: Tape7_2 9.29.00 JEP									
247	RS	15	STOR	0	0						
248	SV	0	146	178	193	201	208	212			
249	SQ	0	400	600	800	989	1247	1487			
250	* RC	.317	.317	.317	.317	.0005					
	* RX	0	50	120	390	810	950	1400	1700		
	* RY	6.8	0	0	1.8	2.8	3.8	5.1	6.8		
	*										

251	KK	SUBVC	BASIN								
252	KM	VALLEY	S-GRAPH	WAS USED	FOR THIS	BASIN					
253	BA	0.490									
254	LG	0.12	0.16	8.40	0.10	50					
255	UI	75	300	454	680	852	570	400	209	116	67
256	UI	23	23	23	0	0	0	0	0	0	0
257	UI	0	0	0	0	0	0	0	0	0	0
	*										

258	KK	CPVC1									
259	KM	ADD HYDROGRAPH SUBVC TO RTWAVC.									
260	HC	2 2.24									
	*										

261	KK	SUBVB	BASIN								
262	KM	VALLEY	S-GRAPH	WAS USED	FOR THIS	BASIN					
263	BA	0.720									
264	LG	0.15	0.17	9.70	0.06	45					
265	UI	121	489	718	1162	1201	810	529	243	146	66
266	UI	36	36	0	0	0	0	0	0	0	0
267	UI	0	0	0	0	0	0	0	0	0	0
	*										

268 KK RTVBVC ROUTE REACH
 269 KM ROUTE FLOW FROM VB TO VC (ALONG 51ST AVENUE).
 270 KM FUTURE ARTERIAL SECTION
 271 RS 1 -1 0
 272 RC 0.100 0.023 0.100 2500 0.0017 0.00
 273 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 274 RY 105 105 105 99.75 99.75 105 105 105
 *

275 KK CPVC2
 276 KM ADD HYDROGRAPHS FROM SUBVC AND RTWAVC TO RTVBVC.
 277 HC 2 2.96
 *

* KK RSVC
 * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
 * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
 * KO 1
 * RS 1 STOR 0 0
 * SV 70 83 97 113 121 170 192 216 284 3
 * SE1051.4 1051.6 1051.8 1052.0 1052.1 1052.6 1052.8 1053.0 1053.3 1053
 * SQ 16 246 746 1537 2048 5354 7033 8943 12315 147
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

278 KK DIVCQA
 279 KM DIVERT FLOW FROM VC TO VA OVER 51st AVE.
 280 KM Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP
 281 KM Revised DQ records based on HEC-2 analysis results. 06.19.00 JEP
 282 DT DIVA
 283 DI 0 100 400 600 800 989 1247 1487
 284 DQ 0 1 27 32 30 32 32 32
 *

* KK DIVCVA
 * KM DIVERT FLOW FROM VC TO VA OVER 51st AVE.
 * DT DIVA
 * DI 0 9 654 2822 7159
 * DQ 0 4 214 753 1814
 *

285 KK RTVCQA ROUTE REACH
 286 KM ROUTE FLOW FROM VC TO QA (ALONG 51ST AVENUE).
 287 KM FUTURE ARTERIAL SECTION
 288 RS 2 -1 0
 289 RC 0.100 0.023 0.100 5000 0.0030 0.00
 290 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 291 RY 105 105 105 99.75 99.75 105 105 105
 *

292 KK SUBQA BASIN
 293 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 294 BA 0.485
 295 LG 0.34 0.14 10.10 0.05 20
 296 UI 38 40 133 178 215 253 303 423 464 361
 297 UI 306 252 209 170 115 67 63 44 38 18
 298 UI 12 11 12 11 12 0 0 0 0 0
 299 UI 0 0 0 0 0 0 0 0 0 0
 *

300 KK CPOA2
 301 KM ADD HYDROGRAPHS AT QA
 302 HC 2 3.41
 *

303 KK RSQA
 304 KM MODIFIED PLUS ROUTING THROUGH PONDING BEHIND RID
 305 RS 1 STOR -1 0
 306 SV 6.6 9.4 13.0 17.4 22.4 28.1 34.6 42.1 50.4
 307 SE 1032.2 1032.4 1032.6 1032.8 1033.0 1033.2 1033.4 1033.6 1033.8
 308 SQ 0 69 1129 6033 11213
 309 SE 1031.9 1032.4 1032.9 1033.4 1033.9
 *

310 KK DIQAPF
 311 KM DIVERT FLOW FROM QA TO PF
 312 DT DIFP
 313 DI 0 69 1129 6033 11213
 314 DQ 0 39 462 1272 2210
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

315 KK RTQAJH ROUTE REACH
 316 KM ROUTE FLOW FROM QA TO JH (SHEET FLOW).
 317 KM TYPE A CHANNEL
 318 RS 11 -1 0
 319 RC 0.100 0.100 0.100 2800 0.0031 0.00
 320 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 321 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

322 KK SUBQE BASIN
 323 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 324 BA 0.913
 325 LG 0.15 0.13 10.10 0.04 56
 326 UI 92 200 409 529 670 915 1121 854 673 525
 327 UI 394 212 156 109 77 28 29 28 29 0
 328 UI 0 0 0 0 0 0 0 0 0 0
 *

329 KK DRQE
 330 KM RETURN DIVERT FROM WC
 331 DR DIQE

*
 332 KK RTDIQE ROUTE REACH
 333 KM ROUTE DIVERT FROM WC TO QE
 334 KM TYPE A CHANNEL
 335 RS 8 -1 0
 336 RC 0.025 0.025 0.025 6600 0.0030 0.00
 337 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 338 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

339 KK CPQE
 340 KM ADD HYDROGRAPHS AT QE
 341 HC 2 1.12
 *

342 KK RSQE
 343 KM MODIFIED PULS ROUTING BEHIND RID CANAL
 344 RS 1 STOR 0 0
 345 SV 9.5 11.0 14.9 20.2 26.5 33.8 55.23 82.5 95.6 159.9
 346 SE 1040.1 1040.2 1040.4 1040.6 1040.8 1041.0 1041.5 1042.0 1042.2 1043.0
 347 SQ 0 1.8 62.8 242.3 581.9 1158 4169 9977 13108 31180
 *

348 KK RTQEQC ROUTE REACH
 349 KM ROUTE FLOW FROM QE TO QC (SHEET FLOW).
 350 KM TYPE A CHANNEL
 351 RS 3 -1 0
 352 RC 0.025 0.025 0.025 3000 0.0027 0.00
 353 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 354 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

355 KK SUBQD BASIN
 356 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 357 BA 0.249
 358 LG 0.17 0.06 12.40 0.02 51
 359 UI 35 125 195 271 419 311 227 158 75 48
 360 UI 29 10 11 11 0 0 0 0 0 0
 361 UI 0 0 0 0 0 0 0 0 0 0
 *

362 KK DRQD
 363 KM RETURN DIVERT FROM WA
 364 DR DIQD
 *

365 KK RTDIQD ROUTE REACH
 366 KM ROUTE DIVERT FROM WA TO QD
 367 KM TYPE C CHANNEL
 368 RS 5 -1 0
 369 RC 0.100 0.023 0.100 5000 0.0030 0.00
 370 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 371 RY 105 105 105 99.75 99.75 105 105 105
 *

372 KK CPQD
 373 KM ADD HYDROGRAPHS AT QD
 374 HC 2 1.23
 *

375 KK RSQD
 376 KM MODIFIED PULS ROUTING BEHIND RID CANAL.
 377 RS 1 STOR 0 0
 378 SV 2.8 4.8 8.6 14.6 22.5 31.9 42.6 54.8 65.5
 379 SE 1038.1 1038.5 1039.0 1039.5 1040.0 1040.5 1041.0 1041.5 1042.0
 380 SQ 0 30.5 388.4 1580.9 4070.0 7936.6 13214.2 19810.4 26117.2
 *

381 KK DIQDQB
 382 KM DIVERT FLOW FROM QD TO QB
 383 DT DIQB
 384 DI 0 31 388 1580 4070 7937 13214 19810 26117
 385 DQ 0 0 71 591 1899 3883 6624 10067 13292
 *

386 KK RTQDQC ROUTE REACH
 387 KM ROUTE FLOW FROM QD TO QC.
 388 KM FUTURE ARTERIAL SECTION
 389 RS 1 -1 0
 390 RC 0.100 0.023 0.100 2600 0.0040 0.00
 391 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 392 RY 105 105 105 99.75 99.75 105 105 105
 *

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 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

393 KK SUBQC BASIN
 394 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 395 BA 0.606
 396 LG 0.23 0.16 10.10 0.04 32
 397 UI 63 146 285 371 474 679 733 552 429 333
 398 UI 233 119 98 64 33 20 20 19 20 0
 399 UI 0 0 0 0 0 0 0 0 0 0
 *

400 KK CPQC
 401 KM ADD HYDROGRAPHS AT QC
 402 HC 3 2.65
 *

403 KK DIQCR
 404 KM DIVERT 80% OF FLOW FROM QC TO RIVER
 405 DT DISR
 406 DI 0 25 50 75 100 150 200
 407 DQ 0 20 40 60 80 120 160
 *

408 KK RTQCJI ROUTE REACH
 409 KM ROUTE FLOW FROM QC TO JF
 410 KM TYPE A CHANNEL
 411 RS 15 -1 0
 412 RC 0.100 0.100 0.100 6500 0.0028 0.00
 413 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 414 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

415 KK SUBQB BASIN
 416 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 417 BA 0.505
 418 LG 0.30 0.11 11.20 0.03 27
 419 UI 40 48 143 194 234 276 336 483 465 366
 420 UI 316 253 211 166 97 69 63 41 34 12
 421 UI 13 12 13 12 13 0 0 0 0 0
 422 UI 0 0 0 0 0 0 0 0 0 0
 *

423 KK DRQB
 424 KM RETURN DIVERT FROM QD
 425 DR DIQB
 *

426 KK RTDIQB ROUTE REACH
 427 KM TYPE C CHANNEL
 428 RS 12 -1 0
 429 RC 0.100 0.100 0.100 2500 0.0028 0.00
 430 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 431 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

432 KK CPQB
 433 KM ADD HYDROGRAPHS AT QB
 434 HC 2 0.82
 *

435 KK RSQB
 436 KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND RID.
 437 KM THROUGH THE 43RD AVENUE.
 438 RS 1 STOR 0 0
 439 SV 9.4 13.9 19.2 25.5 33.1 41.8 51.7 62.9 75.3 89.1
 440 SE 1033.3 1033.6 1033.9 1034.2 1034.5 1034.8 1035.1 1035.4 1035.7 1036.0
 441 SQ 0 19.3 123.0 423.5 958.2 1718.8 2775.9 4426.7 6845.4 9954.3
 *

442 KK RTQBJH ROUTE REACH
 443 KM ROUTE FLOW FROM QB TO JH (SHEET FLOW).
 444 KM TYPE A CHANNEL
 445 RS 15 -1 0
 446 RC 0.100 0.100 0.100 3500 0.0028 0.00
 447 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 448 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

449 KK SUBJH BASIN
 450 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 451 BA 0.516
 452 LG 0.37 0.11 11.20 0.03 17
 453 UI 62 175 314 402 581 733 541 418 304 176
 454 UI 107 71 41 19 19 19 0 0 0 0
 455 UI 0 0 0 0 0 0 0 0 0 0
 *

456 KK CPJH
 457 HC 4 3.98
 *

458 KK RTJHJI ROUTE REACH
 459 KM ROUTE FLOW FROM JH TO JI (SHEET FLOW).
 460 KM TYPE A CHANNEL
 461 RS 14 -1 0
 462 RC 0.100 0.100 0.100 4000 0.0031 0.00
 463 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 464 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

465 KK SUBJI BASIN
 466 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 467 BA 0.308
 468 LG 0.39 0.11 11.20 0.03 21
 469 UI 52 209 307 497 514 346 227 104 62 28
 470 UI 16 15 0 0 0 0 0 0 0 0
 471 UI 0 0 0 0 0 0 0 0 0 0
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

472 KK CPJI
 473 KM COMBINE FLOWS AT JI
 474 HC 2 4.29
 *

475 KK DISRX

476 KM DUMMY DIVERT TO SALT RIVER (NOT RETURNED)
 477 DT DISR1
 478 DI 0 10000
 479 DQ 0 10000
 *

480 KK SUBPF BASIN
 481 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 482 BA 0.502
 483 LG 0.17 0.20 7.30 0.12 52 497 244 127 58 26
 484 UI 113 407 611 1001 766 0 0 0 0 0
 485 UI 28 0 0 0 0 0 0 0 0 0
 486 UI 0 0 0 0 0 0 0 0 0 0
 *

487 KK RETPF
 488 KM DIVERT RETENTION OUT OF MODEL DUE TO KNIGHT TRANSPORTATION
 489 KM PARKING LOT EXPANSION. -DCF
 490 KM TOTAL RETENTION IS 3.9 AF. 80% OF THAT IS USED HERE. -DCF
 491 DT RETPF 3.1
 492 DI 0 10000
 493 DQ 0 10000
 *

494 KK DRPF
 495 KM RETURN DIVERT FROM QA.
 496 DR DIPF
 *

497 KK RTDIPF ROUTE REACH
 498 KM ROUTE DIVERT FROM QA TO PF.
 499 KM TYPE C CHANNEL
 500 RS 11 -1 0
 501 RC 0.035 0.035 0.035 2600 0.0005 0.00
 502 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 503 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

504 KK @CPPF
 505 KM ADD HYDROGRAPHS AT PF
 506 HC 2 1.80
 *

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 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

507 KK RSPF
 508 KM MODIFIED PULS ROUTING BEHIND RID
 * KO 1
 509 RS 1 STOR 0 0
 510 SV 28.2 33.4 39.2 48.8 55.7 67.3 76.0 85.3 100.7 111.8
 511 SE 1032.2 1032.4 1032.6 1032.8 1033.0 1033.2 1033.4 1033.6 1033.8 1034.0
 512 SQ 0 19.4 124.9 457.5 1050.9 1875.2 2964.8 4437.1 6362.7 8725.9
 *

513 KK DIPFPE
 514 KM DIVERT FLOW FROM PF TO PE
 515 DT DIPE
 516 DI 0 255 1875 5340 11513
 517 DQ 0 0 0 160 1143
 *

518 KK RTPFJF ROUTE REACH
 519 KM ROUTE FLOW FROM PF TO JF.
 520 KM TYPE A CHANNEL
 521 RS 6 -1 0
 522 RC 0.035 0.035 0.035 4000 0.0040 0.00
 523 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 524 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

525 KK SUBUD BASIN
 526 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 527 KM L= 1.3 Lca= .6 S= 20.0 Kn= .020 LAG= 14.9
 528 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 529 BA .759
 530 LG .15 .15 9.70 .05 55.00
 531 UI 306. 941. 1739. 1494. 851. 324. 131. 53. 0. 0.
 532 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

533 KK RETUD
 534 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 535 KM 80% OF REQUIRED MODELED
 536 DT RETB1 38.7
 537 DI 0 10000
 538 DQ 0 10000
 *

539 KK SDDRUD
 540 KM DIVERT STORM DRAIN FLOW
 541 DT 59SD1D
 542 DI 0 102 10000
 543 DQ 0 102 102
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

544 KK DIUDUA
 545 KM DIVERT 25% OF FLOW FROM UD TO UA.
 546 DT DIA
 547 DI 0 25 50 75 100 150 200
 548 DQ 0 6 13 19 25 38 50
 *

549 KK RTUDVA ROUTE REACH
 550 KM ROUTE FLOW FROM UD TO VA (ALONG 59TH AVENUE).
 551 KM FUTURE ARTERIAL SECTION
 552 RS 1 -1 0
 553 RC 0.100 0.023 0.100 2600 0.0019 0.00
 554 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 555 RY 105 105 105 99.75 99.75 105 105 105
 *

556 KK SUBVA BASIN
 557 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 558 BA 0.493
 559 LG 0.10 0.15 8.40 0.10 58
 560 UI 75 303 456 684 857 574 402 210 117 67
 561 UI 23 23 24 0 0 0 0 0 0 0
 562 UI 0 0 0 0 0 0 0 0 0 0
 *

* THE FOLLOWING DIVERT RETURN IS REMOVED TO MODEL THE ADMP CONDITION

563 KK DRVA
 564 KM RETURN DIVERT FROM VC
 565 DR DIVA
 *

* KKRTDIVA
 * KM HEC-RAS REACH
 * KO 1
 * KM ROUTE FLOW FROM VC TO VA (ALONG SPRR).
 * KM Method changed from Normal Depth Storage to Modified Puls 06.19.00 JEP
 * KM Stage-storage values are based on HEC-2 analysis results. 06.19.00 JEP
 * KM Values transferred directly from HEC-2 file: Tape7_3 09.29.00 JEP
 * RS 15 STOR 0 0
 * SV 0 56 87 130 163 191 205 218 227
 * SQ 0 100 200 400 600 800 1000 1200 1500
 *

566 KK CPVAL
 567 KM ADD HYDROGRAPH SUBVA TO RTDIVA
 568 HC 3 1.10
 *

569 KK SDDRVA
 570 KM DIVERT STORM DRAIN FLOW
 571 DT 59SD2D
 572 DI 0 59 10000
 573 DQ 0 59 59
 *

* KK CPVA2
 * KM ADD HYDROGRAPHS SUBVA AND RTDIVA TO RTUDVA
 * HC 2
 *

* KK RSVA
 * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
 * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
 * KO 1
 * RS 1 STOR 0 0
 * SV 10.3 13.3 15.6 23.9 34.6 48.9 67.7 90.8 118.6
 * SE1044.2 1044.3 1044.5 1045.0 1045.5 1046.0 1046.5 1047.0 1047.5
 * SQ 0 2 39 1279 2904 5363 8613 13175
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

574 KK DIVAPE
 575 KM DIVERT FLOW FROM VA TO UC OVER 59TH AVE.
 576 KM Revised DQ records to reflect new weir analysis based on survey. 05.04.00 JEP
 577 KM REVISED DIVERSION RECORDS TO REROUTE DIVERSION AROUND CODE SEQUENCE.
 578 KM INSTEAD OF DIVERTING FLOW OVER THE WEIR TO THE SOUTH, FLOW IS BEING
 579 KM DIVERTED TO THE WEST. 06.02.00 -DCF
 580 KM Revised DQ records based on HEC-2 analysis results. 06.19.00 JEP
 581 DT DIUC
 582 DI 0 200 400 600 800 1000 1200 1500
 583 DQ 0 200 398 548 656 715 738 756
 * DI 0 2 39 397 1279
 * DQ 0 0 0 0 0
 *

584 KK RTVAPE ROUTE REACH
 585 KM ROUTE FLOW FROM VA TO PE (ALONG 59TH AVENUE).
 586 KM FUTURE ARTERIAL SECTION
 587 RS 2 -1 0
 588 RC 0.100 0.023 0.100 3000 0.0038 0.00
 589 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 590 RY 105 105 105 99.75 99.75 105 105 105
 *

591 KK SUBPE BASIN
 592 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 593 BA 0.504
 594 LG 0.13 0.26 6.20 0.22 56
 595 UI 130 449 692 1071 728 453 189 108 32 29
 596 UI 0 0 0 0 0 0 0 0 0 0
 *

597 KK DRPE
 598 KM RETURN DIVERT FROM PF
 599 DR DIPE
 *

600 KK RTDIPE
 601 KM ROUTE DIVERT FROM PF TO PE.
 602 KM TYPE C CHANNEL
 603 RS 3 -1 0
 604 RC .035 .035 .035 2000 .0005
 *

605 RX 0 20 35 50 50.1 250 450 550
 606 RY 5 5 2.5 0 0 2 4 5
 *

607 KK CPPE
 608 KM ADD HYDROGRAPHS AT PE
 609 HC 3 0.73
 *

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

610 KK RSPE
 611 KM RESERVOIR ROUTING BEHIND 59TH AVE AND RID CANAL
 612 RS 1 STOR 0 0
 613 SV 15.6 16.9 21.0 24.0 29.5 33.7 38.3 43.2
 614 SE 1032.5 1032.6 1032.8 1033.0 1033.2 1033.4 1033.6 1033.7
 615 SQ 0 1.44 23 194 637 1420 2516 3177
 *

616 KK DIPEPD
 617 KM DIVERT FLOW FROM PE TO PD
 618 DT DIPD
 619 DI 0 8.2 636 3177
 620 DQ 0 0 0 8.1
 *

621 KK RTPEJF ROUTE REACH
 622 KM ROUTE FLOW FROM PE TO JF (ALONG 59TH AVE).
 623 KM FUTURE ARTERIAL SECTION
 624 RS 1 -1 0
 625 RC 0.100 0.023 0.100 2600 0.0036 0.00
 626 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 627 RY 105 105 105 99.75 99.75 105 105 105
 *

628 KK SUBJF BASIN
 629 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 630 KM L= .7 Lca= .4 S= 11.1 Kn= .027 LAG= 22.9
 631 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
 632 BA 0.501
 633 LG 0.10 0.15 7.60 0.14 55
 634 UI 320 1108 1172 675 319 146 67 20 19 19
 635 UI 0 0 0 0 0 0 0 0 0 0
 *

636 KK CPJF
 637 KM COMBINE FLOWS AT JF.
 638 HC 3 2.95
 *

639 KK RTJFJG ROUTE REACH
 640 KM ROUTE FLOW FROM JF TO JE (ALONG 59TH AVE).
 641 KM FUTURE ARTERIAL SECTION
 642 RS 3 -1 0
 643 RC 0.100 0.023 0.100 6000 0.0036 0.00
 644 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 645 RY 105 105 105 99.75 99.75 105 105 105
 *

646 KK SUBJG BASIN
 647 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 648 KM L= .7 Lca= .4 S= 11.1 Kn= .027 LAG= 22.9
 649 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
 650 BA 0.901
 651 LG 0.12 0.16 8.40 0.10 51
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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

652 UI 195 717 1181 1396 1191 840 531 336 203 134
 653 UI 96 35 20 21 21 20 21 0 0 0
 654 UI 0 0 0 0 0 0 0 0 0 0
 *

655 KK CPJG
 656 KM COMBINE FLOWS AT SALT RIVER.
 657 HC 2 3.85
 *

658 KK CPJGSR
 659 KM COMBINE FLOWS AT SALT RIVER
 660 HC 2 3.85
 *

661 KK DRUC
 662 KM RETURN DIVERT FROM VA
 663 DR DIUC
 *

* KKRTVAUC ROUTE REACH
 * KM ROUTE FLOW FROM VA TO UC
 * KM channel geometry changed to match natural conditions 04.11.00 JEP
 * KM Manning's N values changed to match approved values 04.11.00 JEP
 * RS 9 -1 0
 * RC 0.035 0.035 0.035 5200 0.0012 0.00
 * RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 * RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

664 KK RTVAUC
 665 KM HEC-RAS REACH
 666 KM ROUTE FLOW FROM VA TO A POINT IN UC (ALONG SPRR).
 667 KM channel geometry changed to match natural conditions 04.11.00 JEP
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668 KM Manning's N values changed to match approved values 04.11.00 JEP
 669 KM Method changed from Normal Depth Storage to Modified Puls 05.25.00 JEP
 670 KM Stage-storage values are from HEC-2 results 06.19.00 JEP
 671 KM Values transferred directly from HEC-2 file: Tape7_4 09.29.00 JEP
 672 KM Values modified to reflect channelization downstream 06.11.01 JEP
 673 RS 9 STOR 0 0
 674 SV 0 46 62 76 90 102 114 125 137
 675 SQ 0 200 400 600 800 1000 1200 1400 1600

* KKSUBUC BASIN
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA 0.483
 * LG 0.23 0.15 9.70 0.06 28
 * UI 49 105 217 280 354 484 594 451 356 2
 * UI 208 113 83 57 41 15 15 14 15
 * UI 0 0 0 0 0 0 0 0 0
 * KK@CPUC1
 * KM ADD HYDROGRAPHS SUBUC1 TO RTVAUC
 * HC 2 1.73

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

676 KK MCUCUC ROUTE REACH
 677 KM ADMP CHANNEL
 678 KM MASTER CHANNEL ROUTE FROM UC1 TO UC2
 679 KM ROUTING RECORD ADDED, JEP 6/11/01
 680 RS 1 FLOW -1
 681 RC 0.014 0.014 0.014 2493 0.0014 0.00
 682 RX 0.0 16.0 16.0 16.0 46.0 46.0 46.0 62.0
 683 RY 4.8 5.1 2.6 0.0 0.0 2.6 5.1 4.8
 *

684 KK SUBUC BASIN
 685 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 686 BA 0.483
 687 LG 0.23 0.15 9.70 0.06 28
 688 UI 49 105 217 280 354 484 594 451 356 278
 689 UI 208 113 83 57 41 15 15 14 15 0
 690 UI 0 0 0 0 0 0 0 0 0 0
 *

691 KK @CPUC
 692 KM ADD HYDROGRAPHS SUBUC TO MCUCUC
 693 HC 2 0.89

694 KK SUBTB1
 695 KM BASIN TB1
 696 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 697 KM L= .9 Lca= .3 S= 9.4 Kn= .020 LAG= 10.4
 698 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 699 BA .14
 700 LG .25 .15 9.70 .05 30.00
 701 UI 118. 367. 381. 146. 40. 14. 0. 0. 0. 0.
 702 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

703 KK RETB1
 704 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 705 KM 80% OF REQUIRED MODELED
 706 DT RETB1 11.2
 707 DI 0 10000
 708 DQ 0 10000
 *

709 KK SDDTB1
 710 KM DIVERT STORM DRAIN FLOW
 711 DT 67SD1D
 712 DI 0 17 10000
 713 DQ 0 17 17
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

714 KK RTUAUC ROUTE REACH
 715 KM ROUTE FLOW FROM TB1 TO UA (ALONG 67TH AVENUE).
 716 KM FUTURE ARTERIAL SECTION
 717 RS 2 -1 0
 718 RC 0.100 0.023 0.100 2450 0.0015 0.00
 719 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 720 RY 105 105 105 99.75 99.75 105 105 105
 *

721 KK SUBUA BASIN
 722 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 723 BA 0.561
 724 LG 0.23 0.16 9.70 0.06 22
 725 UI 44 46 155 204 249 294 350 490 536 417
 726 UI 354 291 242 198 133 77 73 51 43 21
 727 UI 13 13 14 13 14 0 0 0 0 0
 728 UI 0 0 0 0 0 0 0 0 0 0
 *

729 KK DRUA
 730 KM RETURN DIVERT FROM UD
 731 DR DIUA
 *

732 KK RTDIUA ROUTE REACH
 733 KM ROUTE DIVERT TO UA
 734 KM FUTURE ARTERIAL SECTION
 735 RS 4 -1 0

736 RC 0.100 0.023 0.100 5000 0.0014 0.00
 737 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 738 RY 105 105 105 99.75 99.75 105 105 105
 *

739 KK @CPUA
 740 KM ADD HYDROGRAPHS AT UA
 741 HC 3 0.89
 *

742 KK SDDRUA
 743 KM DIVERT STORM DRAIN FLOW
 744 DT 67SD1D
 745 DI 0 96 10000
 746 DQ 0 96 96
 *

747 KK DIUAUC
 748 KM DIVERT 20% OF FLOW FROM UA TO TB
 749 DT DITB
 750 DI 0 25 50 75 100 150 200
 751 DQ 0 5 10 15 20 30 40
 *

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

752 KK RTUAUC ROUTE REACH
 753 KM ROUTE FLOW FROM UA TO UC (ALONG 67TH AVENUE).
 754 KM FUTURE ARTERIAL SECTION
 755 RS 2 -1 0
 756 RC 0.100 0.023 0.100 2400 0.0017 0.00
 757 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 758 RY 105 105 105 99.75 99.75 105 105 105
 *

759 KK ~CPUC2
 760 KM ADD HYDROGRAPHS SUBUC AND MCUCUC TO RTUAUC
 761 HC 2 1.25
 * KK RSUC
 * KM ROUTE FLOW FROM UC TO UB OVER 67th AVE.
 * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
 * KO 1
 * RS 1 STOR 0 0
 * SV 4.8 6.9 9.9 19.0 33.0 52.6 77.4 108.7 148.6
 * SE1036.2 1036.3 1036.5 1037.0 1037.5 1038.0 1038.5 1039.0 1039.5
 * SQ 0 0 76 811 2294 4562 7715 11722 16588
 *

762 KK DIUCPC
 763 KM DIVERT FLOW FROM UC TO PC OVER SPRR
 764 KM Revised DQ records to reflect new weir analysis based on survey. 05.04.00 JEP
 765 KM Revised DQ records based on HEC-2 results. 06.19.00 JEP
 766 KM REVERSE DIVERT TO ROUTE AROUND CODE SEQUENCE. 06.21.00 -DCF
 767 KM DIVERT EFFECTIVELY REMOVED DUE TO ADMP CHANNELIZATION. 06.11.01 -JEP
 768 DT DIUB
 769 DI 0 100 400 800 1000 1200 1400 1600
 770 DQ 0 100 400 800 1000 1200 1400 1600
 * DI 0 100 400 800 1000 1200 1400 1600
 * DQ 0 100 400 674 825 854 914 945
 * DI 0 100 400 800 1000 1200 1400 1600
 * DQ 0 0 0 126 175 346 486 655
 *

771 KK RTUCPC ROUTE REACH
 772 KM ROUTE FLOW FROM UC TO PC (ALONG 67TH AVE).
 773 KM FUTURE ARTERIAL SECTION
 774 RS 3 -1 0
 775 RC 0.100 0.023 0.100 3000 0.0038 0.00
 776 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 777 RY 105 105 105 99.75 99.75 105 105 105
 *

778 KK SUBPC BASIN
 779 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 780 BA 0.300
 781 LG 0.18 0.19 8.80 0.06 42
 782 UI 160 482 829 518 214 79 23 0 0 0
 783 UI 0 0 0 0 0 0 0 0 0 0
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

784 KK CPPC
 785 KM COMBINE POSSIBLE FLOWS FROM UC WITH FLOWS FROM PC
 786 HC 2 0.30
 *

787 KK RSPC
 788 KM MODIFIED PULS ROUTING FROM PC TO NB.
 789 RS 1 STOR 0 0
 790 SV 29.1 31.8 34.8 38.2 42 46 50.2 78.8 107.9 135.6
 791 SE 1029.8 1029.9 1030.0 1030.1 1030.2 1030.3 1030.4 1031.0 1031.5 1032.0
 792 SQ 5 27 70 134 225 357 545 3654 9263 17876
 *

793 KK RTPCNB ROUTE REACH
 794 KM ROUTE FLOW FROM PC TO NB (ALONG 67TH AVE).
 795 KM FUTURE ARTERIAL SECTION
 796 RS 7 -1 0
 797 RC 0.100 0.023 0.100 4800 0.0038 0.00
 798 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 799 RY 105 105 105 99.75 99.75 105 105 105
 *

*
 800 KK SUBNB BASIN
 801 KM BASIN NB
 802 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 803 KM L= 1.4 Lca= .7 S= 16.8 Kn= .020 LAG= 16.4
 804 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 805 BA .44
 806 LG .25 .15 6.80 .16 12.00
 807 UI 144. 464. 790. 956. 577. 284. 126. 48. 28. 0.
 808 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

809 KK RETNB
 810 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 811 KM 80% OF REQUIRED MODELED
 812 DT RETNB 33.5
 813 DI 0 10000
 814 DQ 0 10000

815 KK CPNB1
 816 KM ADD HYDROGRAPHS AT NB
 817 HC 2 0.74

* KKDINBNA
 * KM DIVERT 65% OF FLOW FROM NB TO NA
 * DT DINA
 * DI 0 25 50 75 100 150 200
 * DQ 0 16 33 49 65 98 130

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 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

818 KK RTNB JD ROUTE REACH
 819 KM ROUTE FLOW FROM NB TO JD (ALONG 67TH AVENUE).
 820 KM FUTURE ARTERIAL SECTION
 821 RS 3 -1 0
 822 RC 0.100 0.023 0.100 5200 0.0054 0.00
 823 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 824 RY 105 105 105 99.75 99.75 105 105 105

825 KK SUBPD BASIN
 826 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN
 827 BA 0.443
 828 LG 0.14 0.17 8.00 0.11 24
 829 UI 130 438 708 954 610 331 138 64 27 27
 830 UI 0 0 0 0 0 0 0 0 0 0

831 KK DRPD
 832 KM RETURN DIVERT FROM PE
 833 DR DDPD

834 KK CPPD2
 835 KM ADD HYDROGRAPH AT PD
 836 HC 2 0.44

837 KK RSPD
 838 KM MODIFIED PULS ROUTING FROM PD TO NC.
 * KO 1
 839 RS 1 STOR 0 0
 840 SV 25.6 37.6 42.4 51.8 53.9 56.1 58.2
 841 SE 1030.6 1030.7 1030.8 1030.9 1031.0 1031.1 1031.2
 842 SQ 0 4 28 101 246 487 820

843 KK RTPDNC ROUTE REACH
 844 KM ROUTE FLOW FROM PD TO NC (SHEET FLOW).
 845 KM TYPE A CHANNEL
 846 RS 5 -1 0
 847 RC 0.035 0.035 0.035 3000 0.0027 0.00
 848 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 849 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0

850 KK SUBNC BASIN
 851 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 852 KM L= .7 Lca= .3 S= 14.7 Kn= .092 LAG= 43.5
 853 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
 854 BA 0.306
 855 LG 0.47 0.25 5.30 0.35 51
 856 UI 86 341 534 508 379 219 121 71 44 23
 857 UI 9 8 8 9 8 0 0 0 0 0
 858 UI 0 0 0 0 0 0 0 0 0 0

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 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

859 KK CPNC
 860 KM ADD HYDROGRAPHS AT NC.
 861 HC 2 0.75

862 KK RTNCJE ROUTE REACH
 863 KM ROUTE FLOW FROM NC TO JE (SHEET FLOW).
 864 KM TYPE A CHANNEL
 865 RS 12 -1 0
 866 RC 0.035 0.035 0.035 5000 0.0014 0.00
 867 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0

868 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *
 869 KK SUBJE1 BASIN
 870 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 871 KM L= 1.1 Lca=.6 S= 12.7 Kn=.090 LAG= 66.1
 872 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
 873 BA 0.248
 874 LG 0.10 0.25 5.40 0.32 55
 875 UI 192 630 574 304 118 57 16 11 10 0
 876 UI 0 0 0 0 0 0 0 0 0 0

877 KK CPJE1
 878 KM COMBINE FLOWS FROM NC AND JE1
 879 HC 2 1.00
 *

880 KK RTJEJD ROUTE REACH
 881 KM ROUTE FLOW FROM JE TO JD.
 882 KM FUTURE ARTERIAL SECTION
 883 RS 3 -1 0
 884 RC 0.100 0.023 0.100 2500 0.0080 0.00
 885 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 886 RY 105 105 105 99.75 99.75 105 105 105

887 KK SUBJD BASIN
 888 KM BASIN JD
 889 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 890 KM L= 1.1 Lca=.6 S= 12.7 Kn=.020 LAG= 14.7
 891 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 892 BA .51
 893 LG .25 .17 8.00 .10 22.50
 894 UI 211. 648. 1201. 988. 552. 203. 82. 36. 0. 0.
 895 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

896 KK RETJD
 897 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 898 KM 80% OF REQUIRED MODELED
 * KO 3 21
 899 DT RETJD 35.0
 900 DI 0 10000
 901 DQ 0 10000
 *

902 KK CPJD
 903 KM ADD HYDROGRAPHS AT JD
 904 HC 3 2.25
 *
 * KKSDDRJD
 * KM DIVERT STORM DRAIN FLOW
 * DT59SDJD
 * DI 0 207 10000
 * DQ 0 207 207
 *

905 KK DIJJD
 906 KM DIVERT 37% OF FLOW AT JD TO JC2.
 907 DT DIJJC2
 908 DI 0 25 50 100 150 200
 909 DQ 0 9 19 37 56 74
 *

910 KK RTJDFC ROUTE REACH
 911 KM ROUTE FLOW FROM JD TO FC.
 912 KM FUTURE ARTERIAL SECTION
 913 RS 1 -1 0
 914 RC 0.100 0.023 0.100 3000 0.0053 0.00
 915 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 916 RY 105 105 105 99.75 99.75 105 105 105

917 KK SUBJE2 BASIN
 918 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 919 KM L= 1.1 Lca=.5 S= 19.8 Kn=.097 LAG= 63.6
 920 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
 921 BA 0.253
 922 LG 0.12 0.13 10.10 0.05 44
 923 UI 109 427 539 421 225 108 59 33 9 8
 924 UI 8 9 0 0 0 0 0 0 0 0
 925 UI 0 0 0 0 0 0 0 0 0 0

926 KK RETJE2
 927 KM DIVERT RETENTION OUT OF MODEL DUE TO RIO DEL REY DEVELOPMENT. -DCF
 928 KM TOTAL RETENTION IS 5.9 AF. 80% OF THAT IS USED HERE. -DCF
 929 DT RETJE 4.7
 930 DI 0 10000
 931 DQ 0 10000
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

932 KK RTJEFC ROUTE REACH
 933 KM ROUTE FLOW FROM JE TO FC (SHEET FLOW).
 934 KM TYPE A CHANNEL
 935 RS 4 -1 0
 936 RC 0.035 0.035 0.035 4000 0.0080 0.00
 937 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0

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938 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
*
939 KK SUBFC BASIN
940 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
941 KM L= 1.0 Lca= .4 S= 18.6 Kn= .097 LAG= 55.3
942 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
943 BA 0.357
944 LG 0.12 0.16 7.60 0.13 51
945 UI 101 397 624 592 442 256 140 84 50 28
946 UI 10 9 10 10 10 0 0 0 0 0
947 UI 0 0 0 0 0 0 0 0 0 0
*

```

```

948 KK CPFC
949 KM ADD HYDROGRAPHS AT FC
950 HC 3 2.03
*

```

```

951 KK CPFCSR
952 KM COMBINE HYDROGRAPHS INTO SALT RIVER AT FC
953 HC 2 5.88
*

```

```

* *****
*
* *****
*

```

```

954 KK DRUCUB
955 KM RETURN DIVERT FROM UC
956 DR DIUB
*

```

```

957 KK MCUCUB ROUTE REACH
958 KM ADMP CHANNEL
959 KM MASTER CHANNEL ROUTE FROM UC2 TO UB
960 KM ROUTING RECORD ADDED, JEP 6/11/01
961 RS 1 FLOW -1
962 RC 0.014 0.014 0.014 1287 0.0010 0.00
963 RX 0.0 16.0 16.0 16.0 51.0 51.0 51.0 67.0
964 RY 4.8 5.1 2.5 0.0 0.0 2.5 5.1 4.8
*

```

```

* KKRTUCUB
* KM HEC-RAS REACH
* KM ROUTE FLOW FROM UC TO UB
* KM Channel geometry changed to match natural conditions 04.11.00 JEP
* KM Manning's N values changed to match approved values 04.11.00 JEP
* RS 4 -1 0
* RC 0.035 0.035 0.035 1400 0.0043 0.00
* RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
* RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
*

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1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

965 KK SUBUB
966 KM BASIN UB
967 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
968 KM L= .8 Lca= .4 S= 16.2 Kn= .048 LAG= 26.9
969 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
970 BA .14
971 LG .25 .14 8.80 .08 30.00
972 UI 18. 53. 91. 119. 176. 199. 143. 106. 76. 38.
973 UI 27. 18. 6. 5. 5. 5. 0. 0. 0. 0.
974 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

975 KK ~@CPUB
976 KM ADD HYDROGRAPHS AT UB
977 HC 2 1.39
*

```

```

* KK71PASS
* KM DIVERT LOW FLOW AROUND BASIN
* DT71PASS
* DI 0 0 10000
* DQ 0 0 0
*

```

```

978 KK SUBSF1
979 KM BASIN SF1
980 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
981 KM L= .5 Lca= .3 S= 9.2 Kn= .100 LAG= 45.9
982 KM AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
983 BA .13
984 LG .50 .15 9.70 .07 .00
985 UI 10. 11. 24. 46. 58. 74. 81. 86. 86. 74.
986 UI 75. 62. 58. 42. 35. 30. 25. 18. 15. 13.
987 UI 10. 9. 7. 6. 6. 5. 1. 1. 1. 1.
988 UI 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
989 UI 1. 0. 0. 0. 0. 0. 0. 0. 0. 0.
990 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

991 KK DRTB
992 KM RETURN DIVERT FROM UA
993 DR DITB
*

```

```

994 KK RTDITB ROUTE REACH
995 KM ROUTE DIVERT TO SF1 (REACH LENGTH SUBJECT TO CHANGED
996 KM BASED ON BASIN 3 LOCATION)
997 KM TYPE A CHANNEL

```

998 RS 8 -1 0
 999 RC 0.025 0.025 0.025 1400 0.0019 0.00
 1000 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 1001 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1002 KK CPBA3
 1003 KM COMBINE CPUB, SF1, DITB
 1004 HC 3 1.61
 *

1005 KK SUBTB2
 1006 KM BASIN TB2
 1007 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1008 KM L= 1.8 Lca= .9 S= 10.3 Kn= .046 LAG= 50.5
 1009 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1010 BA .75
 1011 LG .15 .15 8.80 .06 55.00
 1012 UI 50. 50. 127. 204. 251. 289. 334. 391. 512. 630.
 1013 UI 541. 450. 392. 333. 284. 242. 184. 119. 88.
 1014 UI 59. 50. 36. 15. 15. 15. 15. 15. 15.
 1015 UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1016 KK RETTB
 1017 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 1018 KM 80% OF REQUIRED MODELED
 1019 DT RETTB 19.6
 1020 DI 0 10000
 1021 DQ 0 10000
 *

1022 KK DITBTA
 1023 KM DIVERT 25% OF FLOW TO TA
 1024 DT DITA
 1025 DI 0 25 50 75 100 150 200
 1026 DQ 0 6 13 19 25 38 50
 *

1027 KK RTTBSF ROUTE REACH
 1028 KM ROUTE FLOW FROM TB TO SF (ALONG 75TH AVENUE).
 1029 KM TARGET CHANNEL
 1030 RS 4 ELEV 27.35 0
 1031 RC 0.030 0.030 0.030 2160 0.0010 0.00
 1032 RX 100 107.0 127.0 133.0 151.0 157.0 179.0 193.0
 1033 RY 32.5 32.0 27.35 27.35 27.35 27.35 32.0 32.5
 *

1034 KK SUSFB2
 1035 KM BASIN SFB2
 1036 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1037 KM L= .5 Lca= .3 S= 2.9 Kn= .020 LAG= 11.4
 1038 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1039 BA .11
 1040 LG .15 .15 9.70 .07 50.00
 1041 UI 78. 231. 324. 153. 46. 13. 0. 0. 0. 0.
 1042 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1043 KK SUSF2A
 1044 KM BASIN SF2A
 1045 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1046 KM L= .6 Lca= .2 S= 5.9 Kn= .020 LAG= 9.2
 1047 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1048 BA .14
 1049 LG .15 .15 9.70 .07 80.00
 1050 UI 154. 478. 336. 89. 19. 0. 0. 0. 0. 0.
 1051 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1052 KK RSSF2A
 1053 KM TARGET NORTH BASIN
 1054 KM 28.51 Acre Feet of Sorage Provided per Target Drainage Report
 1055 DT RETSF2 28.51
 1056 DI 0 10000
 1057 DQ 0 10000
 *

* KKRSSF2A
 * KM TARGET NORTH RETENTION BASIN
 * RS 1 STOR 0 0
 * SA 5.57 6.03 6.50 6.98 6.56 8.03 12.56 20.42 28.51 37.
 * SE 0 1 2 3 4 5 6 7 8
 * SQ 0 0 0 0 0 0 0 0 0 3
 *

1058 KK CPSF2B
 1059 KM COMBINE FLOW FROM TB1, SF2A AMD SF2B
 1060 HC 3 0.81
 *

1061 KK CPBA3
 1062 KM Combine Target with regional basin
 1063 HC 2 2.42
 *

1064 KK BSN71
 1065 KM PROPOSED DETENTION BASIN DRC #4
 1066 KM INCLUDES TARGET SOUTH RETETNION BASIN AREA
 1067 RS 1 ELEV 1010

1068	SV	0	0.001	0.001	10.40	15.34	53.24	74.82	118.92	163.57	349.40
1069	SQ	0	18.38	45.77	52.41	55.24	73.97	78.64	86.98	90.38	96.00
1070	SE	1010	1012.12	1015	1016	1016.47	1020.00	1021	1023.00	1024	1028

1071 KK DBSN71
 1072 KM DIVERT FLOWS FROM DETENTION BASIN DCR4 TO STORM DRAIN
 1073 DT BSN71
 1074 DI 0 10000
 1075 DQ 0 10000
 *

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HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1076 KK SUBPB
 * KO 3 21
 1077 KM BASIN PB
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.1 Lca= .5 S= 5.3 Kn= .020 LAG= 16.9
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .41
 * LG .25 .15 8.80 .06 55.00
 * UI 123. 405. 671. 887. 553. 301. 126. 56. 25. 2
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1078 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1079 KM L= 1.1 Lca= .5 S= 5.3 Kn= .020 LAG= 16.7
 1080 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1081 BA .41
 1082 LG .25 .15 8.80 .06 55.00
 1083 UI 83. 97. 294. 400. 475. 566. 697. 983. 944. 747.
 1084 UI 630. 516. 424. 326. 193. 142. 123. 83. 65. 25.
 1085 UI 25. 25. 25. 25. 0. 0. 0. 0. 0. 0.
 1086 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1087 KK RETPB
 1088 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 1089 KM 80% OF REQUIRED MODELED
 * KO 3 21
 1090 DT RETPB 42.9
 1091 DI 0 10000
 1092 DQ 0 10000
 *

1093 KK PB75
 1094 KM BASIN PB75 (ROADWAY DRAINAGE)
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= .5 Lca= .3 S= 12.0 Kn= .020 LAG= 8.1
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .01
 * LG .15 .15 9.70 .04 80.00
 * UI 14. 39. 19. 4. 0. 0. 0. 0. 0. 0.
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1095 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1096 KM L= .5 Lca= .3 S= 12.0 Kn= .020 LAG= 8.7
 1097 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1098 BA .01
 1099 LG .15 .15 9.70 .04 80.00
 1100 UI 4. 16. 23. 36. 43. 29. 20. 10. 6. 3.
 1101 UI 1. 1. 1. 0. 0. 0. 0. 0. 0. 0.
 1102 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1103 KK PBBU
 1104 KM BASIN PBBU (ROADWAY DRAINAGE)
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.0 Lca= .5 S= 6.0 Kn= .020 LAG= 15.8
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .02
 * LG .15 .15 8.00 .07 80.00
 * UI 7. 23. 42. 44. 26. 11. 5. 2. 1. 0.
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1105 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1106 KM L= 1.0 Lca= .5 S= 6.0 Kn= .020 LAG= 15.8
 1107 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1108 BA .02
 1109 LG .15 .15 8.00 .07 80.00
 1110 UI 4. 6. 16. 21. 26. 31. 42. 53. 43. 35.
 1111 UI 29. 23. 18. 11. 7. 6. 4. 3. 1. 1.
 1112 UI 1. 1. 1. 0. 0. 0. 0. 0. 0. 0.
 1113 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1114 KK CPBSD
 * KO 3 21
 1115 KM COMBINE STREET DRAINAGE
 1116 HC 2 0.03
 *

1117 KK DPBSD1
 1118 KM DIVERT STORM DRAIN FLOW (75TH AVENUE)
 1119 DT SD75PB
 1120 DI 0 23 10000
 1121 DQ 0 23 23
 *

1122 KK DPBSD2
 1123 KM DIVERT STORM DRAIN FLOW (BUCKEYE ROAD DRAINAGE)
 1124 DT SDBRPB
 1125 DI 0 39 10000

1126 DQ 0 39 39
 *
 1127 KK CPPB
 * KO 3 21
 1128 KM ADD HYDROGRAPHS AT PB
 1129 HC 2 0.42
 *
 1130 KK DIPBPA
 1131 KM DIVERT 19% OF FLOW FROM PB TO PA(ADMP DIVERSION)
 1132 DT DIPAL
 1133 DI 0 25 50 75 100 150 200 400 800 10000
 1134 DQ 0 5 10 14 19 29 38 76 152 1900
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1135 KK CPPB1
 * KO 3 21
 1136 KM ADD HYDROGRAPHS AT PB
 1137 HC 2 0.34
 *
 1138 KK RTPBNA ROUTE REACH
 1139 KM ROUTE FLOW FROM PB TO NA ALONG 75th AVE.
 1140 KM FUTURE ARTERIAL SECTION
 * KO 3 21
 * RS 4 ELEV -1 0
 RS 10 ELEV -1 0
 1141 RC 0.100 0.023 0.100 5280 0.0032 0.00
 1142 RX 0.0 440 445 445.1 575.1 575.2
 1143 RY 105 105 105 99.75 99.75 105 105 105
 1144 *

1145 KK SUBNA
 1146 KM BASIN NA
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 2.0 Lca= 1.0 S= 10.5 Kn= .020 LAG= 24.0
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .94
 * LG .25 .15 8.00 .08 51.00
 * UI 132. 473. 742. 1029. 1568. 1184. 859. 588. 280. 18
 * UI 106. 40. 40. 40. 0. 0. 0. 0. 0. 0.
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1147 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1148 KM L= 2.0 Lca= 1.0 S= 10.5 Kn= .020 LAG= 24.0
 1149 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1150 BA .94
 1151 LG .25 .15 8.00 .08 51.00
 1152 UI 132. 132. 206. 463. 579. 678. 762. 859. 983. 1147.
 1153 UI 1477. 1705. 1412. 1209. 1075. 948. 823. 719. 628. 500.
 1154 UI 351. 234. 223. 217. 136. 132. 114. 40. 40. 40.
 1155 UI 40. 40. 40. 40. 40. 0. 0. 0. 0. 0.
 1156 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1157 KK RETNA
 1158 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 1159 KM 80% OF REQUIRED MODELED
 1160 DT RETNA 89.6
 1161 DI 0 10000
 1162 DQ 0 10000
 *
 1163 KK NA75
 * KM BASIN NA75 (75 AVENUE ROADWAY DRAINAGE)
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.0 Lca= .5 S= 15.2 Kn= .020 LAG= 13.1
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .02
 * LG .15 .15 7.60 .08 80.00
 * UI 11. 32. 55. 35. 14. 5. 2. 0. 0.
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1164 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1165 KM L= 1.0 Lca= .5 S= 15.2 Kn= .020 LAG= 13.2
 1166 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1167 BA .02
 1168 LG .15 .15 7.60 .08 80.00
 1169 UI 5. 11. 22. 29. 36. 50. 62. 46. 37. 29.
 1170 UI 22. 12. 9. 6. 4. 2. 2. 2. 2. 0.
 1171 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1172 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1173 KK NALB
 1174 KM BASIN NALB (LOWER BUCKEYE ROADWAY DRAINAGE)
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.0 Lca= .5 S= 6.0 Kn= .020 LAG= 15.8
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .02
 * LG .15 .19 6.60 .12 80.00
 * UI 7. 23. 42. 44. 26. 11. 5. 2. 1.
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1175 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1176 KM L= 1.0 Lca= .5 S= 6.0 Kn= .020 LAG= 15.8
 1177 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1178 BA .02
 1179 LG .15 .19 6.60 .12 80.00
 1180 UI 4. 6. 16. 21. 26. 31. 42. 53. 43. 35.
 1181 UI 29. 23. 18. 11. 7. 6. 4. 3. 1. 1.

1182 UI 1. 1. 1. 0. 0. 0. 0. 0. 0. 0.
 1183 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1184 KK CNASD
 * KO 3 21
 1185 KM COMBINE STREET DRAINAGE
 1186 HC 2 0.04
 *

1187 KK CPNA1
 1188 KM COMBINE ROUTED FLOW FROM PB
 1189 HC 3 1.32
 *

1190 KK DNASD1
 1191 KM DIVERT STORM DRAIN FLOW (75TH AVENUE)
 1192 DT SD75NA
 1193 DI 0 40 10000
 1194 DQ 0 40 40
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1195 KK DNASD2
 1196 KM DIVERT STORM DRAIN FLOW (LOWER BUCKEYE)
 1197 DT SDLBNA
 1198 DI 0 38 10000
 1199 DQ 0 38 38
 *

1200 KK DADMP1
 * KM DIVERT STREET FLOW TO ADMP CHANNEL
 1201 KM DIVERT ALL BUT 73 CFS INTO DRCC (73 CFS CONTINUES SOUTH ON 75TH AVE.)
 1202 DT ADMP1
 * DI 0 220 10000
 * DQ 0 220 10000
 1203 DI 0 73 4000
 1204 DQ 0 0 3927
 *

1205 KK SUBJC1
 1206 KM BASIN JC1
 1207 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1208 KM L= 1.5 Lca= 1.0 S= 10.7 Kn= .020 LAG= 21.4
 1209 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1210 BA .47
 1211 LG .25 .15 7.00 .13 30.00
 1212 UI 76. 304. 456. 712. 797. 538. 365. 173. 102. 52.
 1213 UI 23. 23. 0. 0. 0. 0. 0. 0. 0. 0.
 1214 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1215 KK RETJC1
 * KO 3 21
 1216 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 1217 KM 80% OF REQUIRED MODELED
 1218 DT RETJC1 35.5
 1219 DI 0 10000
 1220 DQ 0 10000
 *

1221 KK JC75
 1222 KM BASIN JC75 (ROADWAY DRAINAGE)
 1223 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1224 KM L= 1.0 Lca= .5 S= 13.0 Kn= .020 LAG= 13.6
 1225 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1226 BA .02
 1227 LG .15 .15 7.00 .10 80.00
 1228 UI 10. 31. 56. 38. 18. 7. 2. 2. 0. 0.
 1229 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1230 KK CJCSD1
 * KO 3 21
 1231 KM COMBINE STREET DRAINAGE AND RETENTION OVERFLOW
 1232 HC 2 0.49
 *

1233 KK SUBJC2
 1234 KM BASIN JC2
 1235 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1236 KM L= 1.5 Lca= 1.0 S= 11.3 Kn= .020 LAG= 21.2
 1237 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1238 BA .48
 1239 LG .25 .15 7.00 .13 .24
 1240 UI 81. 317. 475. 753. 805. 544. 365. 165. 101. 49.
 1241 UI 23. 23. 0. 0. 0. 0. 0. 0. 0. 0.
 1242 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1243 KK RETJC2
 * KO 3 21
 1244 KM DIVERT REQUIRED DEVELOPMENT RETENTION OUT OF MODEL
 1245 KM 140 ACRES OF EXISTING DEVELOPMENT NOT INCLUDED IN CALCULATIONS
 1246 KM 80% OF REQUIRED MODELED
 1247 DT RETJC2 19.6
 1248 DI 0 10000
 1249 DQ 0 10000
 *

1250 KK DETJC2
 1251 KM DIVERT PROPOSED RETENTION OUT OF MODEL FOR APPROXIMATELY 140 ACRES
 1252 KM OF EXISTING DEVELOPMENT THAT DOES NOT HAVE RETENTION
 1253 KM 80% OF REQUIRED MODELED
 1254 DT DETJC2 16.6
 1255 DI 0 10000
 1256 DQ 0 10000
 *

1257 KK RTJJC ROUTE REACH
 1258 KM ROUTE FLOW FROM JC2 TO JC1 ALONG 75th AVE.
 1259 KM FUTURE ARTERIAL SECTION
 * KO 3 21
 RS 2 ELEV -1 0
 RC 0.100 0.023 0.100 2640 0.0021 0.00
 1261 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 1262 RY 105 105 105 99.75 99.75 105 105 105
 1263 *

1264 KK CPJC1A
 1265 KM COMBINE FLOW FROM JC2 WITH FLOW FROM JC3
 1266 HC 2 0.97
 *

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1267 KK JCBR
 1268 KM BASIN JCBR (ROADWAY DRAINAGE)
 1269 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1270 KM L= 1.0 Lca= .5 S= 11.0 Kn= .020 LAG= 14.0
 1271 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1272 BA .02
 1273 LG .15 .17 6.90 .11 80.00
 1274 UI 10. 29. 53. 39. 20. 7. 3. 2. 0. 0.
 1275 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1276 KK CJCSD2
 * KO 3 21
 1277 KM COMBINE STREET DRAINAGE AND RETENTION OVERFLOW
 1278 HC 2 0.99
 *

1279 KK CPJC1B
 * KO 3 21
 1280 KM COMBINE JC1, JC2 AND STREET DRAINAGE
 1281 HC 2 0.99
 *

1282 KK DJC2SD
 1283 KM DIVERT OFFSITE TO STORM DRAIN FLOW (BROADWAY STORM DRAIN FLOW)
 1284 DT SDOBSR
 1285 DI 0 41 10000
 1286 DQ 0 41 41
 *

1287 KK DJCSD1
 1288 KM DIVERT STORM DRAIN FLOW (75TH AVE. STORM DRAIN FLOW)
 1289 DT SD75JC
 1290 DI 0 42 10000
 1291 DQ 0 42 42
 *

1292 KK DIJD
 1293 KM RETURN DIVERTED FLOW FROM BASIN SUBJD
 1294 DR DIJC2
 *

1295 KK RTJJC ROUTE REACH
 1296 KM ROUTE FLOW FROM JD TO JC1 ALONG 75th AVE.
 1297 KM FUTURE ARTERIAL SECTION
 * KO 3 21
 RS 5 ELEV -1 0
 1299 RC 0.100 0.023 0.100 5280 0.0021 0.00
 1300 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 1301 RY 105 105 105 99.75 99.75 105 105 105
 *

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1302 KK CPJC2
 * KO 3 21
 1303 KM COMBINE SPLIT FLOW FROM SUBJD WITH FLOW AT CPCJ1
 1304 HC 2 1.08
 *

1305 KK DIJCJB
 1306 KM DIVERT 46% OF FLOW AT JC TO JB. (ADMP DIVERSION)
 * KO 3 21
 1307 DT DIJB2
 1308 DI 0 25 50 75 100 150 200 1346 2000
 1309 DQ 0 12 23 35 46 69 92 605.7 920
 *

1310 KK RTJCFB ROUTE REACH
 1311 KM ROUTE FLOW FROM JC1 TO FB ALONG 75th AVE.
 1312 KM FUTURE ARTERIAL SECTION
 * KO 3 21
 RS 3 ELEV -1 0
 1314 RC 0.100 0.023 0.100 4200 0.0032 0.00
 1315 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 1316 RY 105 105 105 99.75 99.75 105 105 105

```

*
1317 KK DRB71
1318 KM RETURN DIVERTED FLOW FROM BASIN DRC #4
1319 DR BSN71
*

1320 KK RT71PB ROUTE REACH
1321 KM ROUTE FLOW FROM BASIN TO PB ALONG 71th AVE AND
1322 KM BUCKEYE RD.
1323 KM
1324 RT 2
*

1325 KK RSDPB1
1326 KM RETURN STORM DRAIN FLOW FROM PB
1327 DR SD75PB
*

1328 KK CPPBS1
* KO 3 21
1329 KM COMBINE STORM DRAIN FLOWS
1330 HC 2 2.44
*

1331 KK RSDPB2
1332 KM RETURN STORM DRAIN FLOW FROM PB
1333 DR SDBRPB
*

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

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1334 KK CPPBS2
* KO 3 21
1335 KM COMBINE STORM DRAIN FLOWS
1336 HC 2 2.44
*

1337 KK RTPBNA ROUTE REACH
1338 KM ROUTE FLOW FROM PB TO NA IN STORM DRAIN
1339 KM
1340 RT 2
*

1341 KK RSDNA1
1342 KM RETURN DIVERTED STORM DRAIN FLOW FROM NA
1343 DR SD75NA
*

1344 KK CPNAS1
* KO 3 21
1345 KM COMBINE STORM DRAIN FLOWS
1346 HC 2 3.10
*

1347 KK RSDNA2
1348 KM RETURN DIVERTED STORM DRAIN FLOW FROM NA
1349 DR SDLBNA
*

1350 KK CPNAS2
* KO 3 21
1351 KM COMBINE STORM DRAIN FLOWS
1352 HC 2 3.43
*

1353 KK RTNAJC ROUTE REACH
1354 KM ROUTE FLOW FROM NA TO JC IN STORM DRAIN
1355 KM
1356 RT 2
*

1357 KK RSDJC1
1358 KM RETURN DIVERTED STORM DRAIN FLOW FROM JC (75TH AVENUE)
1359 DR SD75JC
*

1360 KK CPJCS1
* KO 3 21
1361 KM COMBINE STORM DRAIN FLOWS
1362 HC 2 3.67
*
* KK RSDJC2
* KM RETURN DIVERTED STORM DRAIN FLOW FROM JC (BROADWAY ROAD)
* DR SDBRJC
*

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

1363 KK RSDJC3
1364 KM RETURN DIVERTED STORM DRAIN FLOW FROM JC1 and JC2
1365 DR SDOSBR
*
* KKCPJCS2
* KO 3 21
* KM COMBINE STORM DRAIN FLOWS
* HC 2 0.50
*

1366 KK CPJCS3
* KO 3 21
1367 KM COMBINE STORM DRAIN FLOWS
1368 HC 2 4.17

```

*
 1369 KK RTJCFB ROUTE REACH
 1370 KM ROUTE FLOW FROM JC TO FB ALONG 75th AVE.
 1371 KM
 1372 RT 2
 *
 1373 KK FB75
 1374 KM BASIN FB75 (ROADWAY DRAINAGE)
 1375 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1376 KM L= .8 Lca= .4 S= 10.7 Kn= .020 LAG= 12.4
 1377 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1378 BA .02
 1379 LG .15 .25 4.70 .25 80.00
 1380 UI 11. 32. 52. 29. 10. 3. 2. 0. 0. 0.
 1381 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1382 KK CPF8 21
 * KO 3
 1383 KM ADD HYDROGRAPHS AT FB
 1384 HC 2 4.19
 *
 * ADDED BY SLT MAR16,2005 TO ELIMINATE ERROR

1385 KK DUMM
 1386 KM ELIMINATE UNNECESSARY HYDROGRAPHS
 1387 HC 3 10.65
 *
 *
 * ADDED RETURNS TO ADD TO DDS FOR NEW STUDY - SLT 3/03/05
 *
 * KK SLT1
 * KM RETURN DIVERT FROM TB
 * DR DITA
 * ZW A=DURANGO B=SLT1 C=FLOW E=5MIN F=6-HR
 *
 * KK SLT2
 * KM RETURN DIVERT FROM ADMP1
 * DR ADMP1
 * ZW A=DURANGO B=SLT2 C=FLOW E=5MIN F=6-HR
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1388 KK SUBSH BASIN
 1389 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1390 KM L= .4 Lca= .2 S= 11.1 Kn= .030 LAG= 11.5
 1391 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1392 BA 0.103
 1393 LG 0.15 0.16 9.70 0.07 55
 1394 UI 72 211 303 147 44 13 8 0 0 0
 1395 UI 0 0 0 0 0 0 0 0 0 0
 *

1396 KK RETSH
 1397 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1398 DT RETSH 10.3
 1399 DI 0 10000
 1400 DQ 0 10000
 *

1401 KK RSSH
 1402 KM MODIFIED PULS ROUTING BEHIND RID.
 * KO 1
 1403 RS 1 STOR 0 0
 1404 SV 19 21 24 30 37 44 46.4
 1405 SE 1027.0 1027.1 1027.2 1027.5 1027.7 1028.0 1028.2
 1406 SQ 0 138.6 475.2 1277.3
 1407 SE 1027.0 1027.6 1027.8 1028.1
 *
 *

1408 KK DISHRJ
 1409 KM DIVERT FLOW FROM SH TO RJ2
 1410 DT DIRJ2
 1411 DI 0 138.6 475.2 1277.3
 1412 DQ 0 88.6 375.2 1077.3
 *
 *

1413 KK RTSHSG ROUTE REACH
 1414 KM ROUTE FLOW FROM SH TO SG
 1415 KM TYPE C CHANNEL
 1416 RS 8 -1 0
 1417 RC 0.035 0.035 0.035 2600 0.0008 0.00
 1418 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 1419 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

1420 KK SUBTA BASIN
 1421 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1422 KM L= .8 Lca= .4 S= 10.5 Kn= .03 LAG= 17.1
 1423 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1424 BA 0.241
 1425 LG 0.15 0.15 7.00 0.18 55
 1426 UI 71 234 382 523 328 186 76 35 15 14
 1427 UI 3 0 0 0 0 0 0 0 0 0
 1428 UI 0 0 0 0 0 0 0 0 0 0
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1429 KK RETTA
 1430 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1431 DT RETTA 24.1
 1432 DI 0 10000
 1433 DQ 0 10000
 *

1434 KK DRTA
 1435 KM RETURN DIVERT FROM TB
 1436 KM RETURN DIVERT FROM TB
 1437 DR DITA
 * BA 0
 * ZR =QI A=DURANGO B=SLT1 C=FLOW E=5MIN F=6-HR
 *

1438 KK RTDITA ROUTE REACH
 1439 KM ROUTE DIVERT TO TA
 1440 KM TYPE A CHANNEL
 1441 RS 8 -1 0
 1442 RC 0.025 0.025 0.024 2600 0.0004 0.00
 1443 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 1444 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

1445 KK @CPTA
 1446 KM ADD HYDROGRAPHS AT TA
 1447 HC 2 0.43
 *

1448 KK RTTASG ROUTE REACH
 1449 KM ROUTE FLOW FROM TA TO SG (SHEET FLOW).
 1450 KM TYPE A CHANNEL
 1451 RS 2 -1 0
 1452 RC 0.025 0.025 0.025 2200 0.0050 0.00
 1453 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 1454 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

1455 KK SUBSG BASIN
 1456 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1457 KM L= .6 Lca= .3 S= 5.0 Kn= .03 LAG= 16.6
 1458 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1459 BA 0.136
 1460 LG 0.15 0.15 8.80 0.09 55
 1461 UI 43 139 233 294 180 92 40 16 8 8
 1462 UI 0 0 0 0 0 0 0 0 0 0
 *

1463 KK RETSG
 1464 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1465 DT RETSG 13.6
 1466 DI 0 10000
 1467 DQ 0 10000
 *

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1468 KK CPSG
 1469 KM ADD HYDROGRAPHS AT SG
 1470 HC 3 0.59
 *

1471 KK RSSG
 1472 KM MODIFIED PULS ROUTING BEHIND RID AND 81ST AVENUE
 * KO 1
 1473 RS 1 STOR 0 0
 1474 SV 12.3 13.3 14.9 16.5 18.4 22.4 25.9 35.2
 1475 SE 1026.4 1026.6 1026.8 1027.0 1027.2 1027.4 1027.6 1027.9
 1476 SQ 0 9 114 525 1221 2143 3276 5343
 *

1477 KK DISGRJ
 1478 KM DIVERT FLOW FROM SG TO RJ
 1479 DT DIRJ4
 1480 DI 0 9 114 525 1221
 1481 DQ 0 1 70 400 964
 *

1482 KK RTSGSE ROUTE REACH
 1483 KM ROUTE FLOW FROM SG TO SE
 1484 KM TYPE C CHANNEL
 1485 RS 2 -1 0
 1486 RC 0.035 0.035 0.035 1200 0.0030 0.00
 1487 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 1488 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

1489 KK SUBSC BASIN
 1490 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1491 KM L= 1.3 Lca= .7 S= 15.2 Kn= .029 LAG= 23.9
 1492 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1493 BA 0.453
 1494 LG 0.14 0.26 5.00 0.39 58
 1495 UI 64 229 360 500 758 569 409 284 133 88
 1496 UI 50 19 20 20 6 0 0 0 0 0
 1497 UI 0 0 0 0 0 0 0 0 0 0
 *

1498 KK RETSC
 1499 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1500 DT RETSC 45.4
 1501 DI 0 10000
 1502 DQ 0 10000
 *

1503 KK DISCSD
 1504 KM DIVERT 54% OF FLOW AT SC TO SD.
 1505 DT DISD
 1506 DI 0 25 50 100 150 200
 1507 DQ 0 14 27 54 81 108
 *

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1 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1508 KK RTSCSE ROUTE REACH
 1509 KM ROUTE FLOW FROM SC TO SE (ALONG 83RD AVENUE).
 1510 KM FUTURE ARTERIAL SECTION
 1511 RS 1 -1 0
 1512 RC 0.100 0.023 0.100 1000 0.0022 0.00
 1513 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 1514 RY 105 105 105 99.75 99.75 105 105 105
 *

1515 KK SUBSE BASIN
 1516 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1517 KM L= .3 Lca= .2 S= 26.5 Kn= .03 LAG= 7.8
 1518 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1519 BA 0.125
 1520 LG 0.15 0.25 4.80 0.39 55
 1521 UI 185 511 220 40 11 0 0 0 0 0
 1522 UI 0 0 0 0 0 0 0 0 0 0
 *

1523 KK RETSE
 1524 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1525 DT RETSE 12.5
 1526 DI 0 10000
 1527 DQ 0 10000
 *

1528 KK CPSE
 1529 KM ADD HYDROGRAPHS AT SE
 1530 HC 3 0.65
 *

1531 KK RSSE
 1532 KM MODIFIED PULS ROUTING AT SE BEHIND THE RID CANAL
 * KO 1
 1533 RS 1 STOR 0 0
 1534 SV 13.5 14.8 17.6 20.5
 1535 SE 1025.9 1026.0 1026.5 1026.9
 1536 SQ 3.14 14.3 479.44 2013.01
 *

1537 KK DISERJ
 1538 KM DIVERT FLOW FROM SE TO RJ
 1539 DT DIRJ5
 1540 DI 0 3 142 1100
 1541 DQ 0 3 142 1100
 *

1542 KK RTSERI ROUTE REACH
 1543 KM ROUTE FLOW FROM SE TO RI
 1544 KM TYPE A CHANNEL
 1545 RS 4 -1 0
 1546 RC 0.035 0.035 0.035 2000 0.0019 0.00
 1547 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 1548 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

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1 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1549 KK SUBRJ BASIN
 1550 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1551 KM L= .7 Lca= .4 S= 5.6 Kn= .03 LAG= 19.8
 1552 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1553 BA 0.163
 1554 LG 0.15 0.15 7.00 0.18 55
 1555 UI 33 122 184 307 254 170 98 46 25 8
 1556 UI 9 7 0 0 0 0 0 0 0 0
 1557 UI 0 0 0 0 0 0 0 0 0 0
 *

1558 KK RETRJ
 1559 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1560 DT RETRJ 16.3
 1561 DI 0 10000
 1562 DQ 0 10000
 *

1563 KK CPRJ2
 1564 KM RETURN DIVERSION FROM SH
 1565 DR DIRJ2
 *

1566 KK RTSHRJ ROUTE REACH
 1567 KM ROUTE HYDROGRAPH FROM SH TO RJ2
 1568 KM TYPE C CHANNEL
 1569 RS 7 -1 0
 1570 RC 0.050 0.050 0.050 2000 0.0015 0.00
 1571 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 1572 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

1573 KK RTRJ3 ROUTE REACH
 1574 KM ROUTE HYDROGRAPH FROM RJ3 TO RJ
 1575 KM TYPE C CHANNEL

1576 RS 8
 1577 RC 0.035 0.035 -1 0
 1578 RX 0.0 20.0 35.0 50.0 0.0015 0.00
 1579 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

1580 KK CPRJ4A
 1581 KM RETURN DIVERT FROM SG
 1582 DR DIRJ4
 *

1583 KK CPRJ4B
 1584 KM COMBINE HYDROGRAPHS AT RJ4
 1585 HC 2 0.35
 *

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1586 KK RTSGRJ ROUTE REACH
 1587 KM ROUTE DIVERT FROM SG TO RJ
 1588 KM TYPE C CHANNEL
 1589 RS 3 -1 0
 1590 RC 0.035 0.035 0.035 1400 0.0019 0.00
 1591 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 1592 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

1593 KK CPRJ5
 1594 KM RETURN DIVERT FROM SE
 1595 DR DIRJ5
 *

1596 KK RTSERJ ROUTE REACH
 1597 KM ROUTE DIVERT FROM SE TO RJ
 1598 KM TYPE C CHANNEL
 1599 RS 9 -1 0
 1600 RC 0.035 0.035 0.035 1000 0.0001 0.00
 1601 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 1602 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

1603 KK @CPRJ6
 1604 KM ADD HYDROGRAPHS AT RJ
 1605 HC 3 1.16
 *

1606 KK RSRJ
 1607 KM RESERVOIR ROUTING AT RJ BEHIND 83RD AVE AND THE SPRR
 * KO 1
 1608 RS 1 STOR 0 0
 1609 SV 3.5 6.2 11.0 18.4 30.9 52.2 76.3
 1610 SE 1022.1 1022.5 1023.0 1023.5 1024.0 1024.5 1024.9
 1611 SQ 0 50 100 506 899 1369
 1612 SE 1022.1 1022.7 1022.9 1023.7 1024.0 1024.2
 *

1613 KK DIRJPA
 1614 KM DIVERT FLOW OVER SPRR FROM RJ TO PA
 1615 DT DIPAZ
 1616 DI 0 50 100 506 899 1369
 1617 DQ 0 0 0 6 149 369
 *

1618 KK RTRJRI ROUTE REACH
 1619 KM ROUTE FLOW FROM RJ TO RI1
 1620 KM TYPE C CHANNEL
 1621 RS 5 -1 0
 1622 RC 0.035 0.035 0.035 2600 0.0019 0.00
 1623 RX 0.0 20.0 35.0 50.0 50.1 250.0 450.0 550.0
 1624 RY 5.0 5.0 2.5 0.0 0.0 2.0 4.0 5.0
 *

* THE FOLLOWING DIVERT REMOVED TO MODEL THE ADMP CONDITION
 * KKDIRIOE
 * KM DIVERT FLOW FROM RI TO OE OVER SPRR.
 * KM 1/4 MILE WEST OF 83RD AVE.
 * DT DIOE3
 * DI 100 400 1392 1300 1400
 * DQ 0 55 370 680 730
 *

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1625 KK RTRIRI
 1626 KM TYPE C CHANNEL
 1627 RS 4 -1 0
 1628 RC .035 .035 .035 1550 .0019
 1629 RX 0 20 35 50 50.1 250 450 550
 1630 RY 5 5 2.5 0 0 2 4 5
 *

1631 KK SUBRI BASIN
 1632 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1633 KM L=.6 Lca=.2 S=19.3 Kn=.03 LAG=10.6
 1634 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1635 BA 0.232
 1636 LG 0.15 0.15 7.60 0.14 55
 1637 UI 193 596 651 255 72 23 7 0 0 0
 1638 UI 0 0 0 0 0 0 0 0 0 0
 *

1639 KK RETRI
 1640 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
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1641 DT RETRI 23.2
 1642 DI 0 10000
 1643 DQ 0 10000
 *
 1644 KK SUBSB BASIN
 1645 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1646 KM L= .5 Lca= .3 S= 15.1 Kn= .03 LAG= 12.3
 1647 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1648 BA 0.168
 1649 LG 0.15 0.15 9.70 0.07 55
 1650 UI 102 299 486 271 95 30 14 5 0 0
 1651 UI 0 0 0 0 0 0 0 0 0 0 0
 *

1652 KK RETSB
 1653 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1654 DT RETSB 16.8
 1655 DI 0 10000
 1656 DQ 0 10000
 *

1657 KK RSSB
 1658 KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND RID CANAL.
 * KO 1
 1659 RS 1 STOR 0 0
 1660 SV 2.2 5.6 11.9 21.4 33.8
 1661 SE 1024.0 1024.5 1025.0 1025.5 1025.9
 1662 SQ 0 94 581 2114 4864
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1663 KK SUBSD BASIN
 1664 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1665 KM L= .6 Lca= .3 S= 12.3 Kn= .03 LAG= 14.4
 1666 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 1667 BA 0.168
 1668 LG 0.15 0.28 6.60 0.18 55
 1669 UI 73 222 410 319 173 61 24 12 7 0
 1670 UI 0 0 0 0 0 0 0 0 0 0
 *

1671 KK RETSD
 1672 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1673 DT RETSD 16.8
 1674 DI 0 10000
 1675 DQ 0 10000
 *

1676 KK DRSD
 1677 KM RETURN DIVERT FROM SC.
 1678 DR DISD
 *

1679 KK @CPSD
 1680 KM ADD HYDROGRAPHS AT SD.
 1681 KM ROUTING STEP NOT INCLUDED DUE TO SHORT ROUTING LENGTH
 1682 HC 3 0.58
 *

1683 KK RSSD
 1684 KM MODIFIED PULS ROUTING BEHIND CANAL, NORTH OF VAN BUREN.
 * KO 1
 1685 RS 1 STOR 0 0
 1686 SV 0 .01 .1 .6 1.8 5 9 14 23
 1687 SE 1021.4 1022.8 1023 1023.3 1023.6 1024 1024.3 1024.6 1025
 1688 SQ 0 .16 46 534 939 1427 1993 2767
 1689 SE 1021.4 1021.5 1022 1023 1023.5 1024 1024.5 1025
 *

1690 KK RTSDRI ROUTE REACH
 1691 KM ROUTE FLOW FROM SD TO RI
 1692 KM TYPE A CHANNEL
 1693 RS 3 -1 0
 1694 RC 0.035 0.035 0.035 2400 0.0046 0.00 0.00 0.00 0.00
 1695 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 1696 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

1697 KK ~@CPRI
 1698 KM ADD HYDROGRAPHS AT RI (1/2 MILE WEST OF 83RD AVE)
 1699 HC 4 1.81
 *

* THE FOLLOWING PONDING REMOVED TO MODEL THE ADMP CONDITION

* KK RSRI
 * KM MODIFIED PULS ROUTING BEHIND SPRR.
 * KO 1
 * RS 1 STOR -1 0
 * SV 0 0 .1 .3 1.2 3.0 6.5 13.76 21.8 35
 * SE 1014.0 1014.1 1014.5 1015.0 1015.5 1016.0 1016.5 1017.0 1017.5 1018
 * SQ 0 4 142 573 1333 3217 5957 9319 13343 182
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1700 KK MCRIRH ROUTE REACH
 1701 KM ADMP CHANNEL
 1702 KM ROUTE FLOW FROM RI TO RH
 1703 RS 3 FLOW -1
 1704 RC 0.040 0.040 0.040 2482 0.0015 0.00
 1705 RX 0.0 16.0 33.7 51.3 71.3 89.0 106.7 122.7
 1706 RY 5.6 5.9 3.0 0.0 0.0 3.0 5.9 5.6
 *

```

*
* *****
1707 KK ~DUMMY
1708 KM COMBINE HYDROGRAPHS SO STACK DOES NOT EXCEED 5
1709 HC 2
*

1710 KK SUBPA BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= 1.1 Lca= .6 S= 16.7 Kn= .03 LAG= 21.5
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.477
* LG 0.15 0.17 7.30 0.14 55
* UI 76 307 461 716 812 547 372 178 105
* UI 23 23 19 0 0 0 0 0 0
* UI 0 0 0 0 0 0 0 0 0

1711 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1712 KM L= 1.1 Lca= .6 S= 16.7 Kn= .030 LAG= 21.6
1713 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1714 BA .477
1715 LG .15 .17 7.30 .14 55.00
1716 UI 74. 74. 162. 281. 356. 412. 464. 542. 636. 840.
1717 UI 941. 761. 650. 574. 489. 423. 362. 291. 194. 131.
1718 UI 124. 107. 74. 74. 31. 23. 23. 23. 23. 23.
1719 UI 23. 23. 0. 0. 0. 0. 0. 0. 0. 0.
1720 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

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1721 KK RETPA
1722 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
1723 DT RETPA 47.8
1724 DI 0 10000
1725 DQ 0 10000
*

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1726 KK DRPA2
1727 KM RETURN DIVERT FROM RJ.
1728 DR DIPAZ
*

```

```

1729 KK RTRJPA ROUTE REACH
1730 KM ROUTE DIVERT FROM RJ TO PA
1731 KM FUTURE ARTERIAL SECTION
* RS 2 -1 0
RS 5 -1 0
1732 RC 0.100 0.023 0.100 2400 0.0054 0.00
1733 HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
1734 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
1735 RY 105 105 105 99.75 99.75 105 105 105
*

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1736 KK CPPA
1737 KM ADD HYDROGRAPHS AT PA
1738 HC 2 0.64
*

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```

1739 KK DIPAOE
1740 KM DIVERT 18% OF FLOW AT PA TO OE.
1741 DT DIOE
1742 DI 0 25 50 75 100 150 200
1743 DQ 0 5 9 14 18 27 36
*

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1744 KK RTPAMH ROUTE REACH
1745 KM ROUTE FLOW FROM PA TO MH (ALONG 83RD AVENUE).
1746 KM FUTURE ARTERIAL SECTION
* RS 2 -1 0
RS 5 -1 0
1747 RC 0.100 0.023 0.100 2640 0.0012 0.00
1748 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
1749 RY 105 105 105 99.75 99.75 105 105 105
1750 *

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```

1751 KK SUBMH BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .7 Lca= .3 S= 8.8 Kn= .05 LAG= 19.7
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.239
* LG 0.25 0.15 8.80 0.09 30
* UI 49 179 272 452 372 249 141 66 36
* UI 12 10 0 0 0 0 0 0 0

1752 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1753 KM L= .7 Lca= .3 S= 8.8 Kn= .050 LAG= 26.3
1754 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1755 BA .239
1756 LG .25 .15 8.80 .09 30.00
1757 UI 31. 31. 31. 99. 123. 146. 167. 183. 205. 232.
1758 UI 269. 339. 399. 340. 291. 260. 234. 205. 183. 159.
1759 UI 144. 111. 83. 54. 52. 50. 38. 31. 31. 18.
1760 UI 9. 9. 9. 9. 9. 9. 9. 9. 9. 0.
1761 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
1762 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

1763 KK RETMH
1764 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
1765 DT RETMH 19.8
1766 DI 0 10000
1767 DQ 0 10000
*

```

```

1 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
Page 27

```

1768 KK CPMH
 1769 KM ADD HYDROGRAPHS AT MH
 1770 HC 2 0.77
 *

1771 KK RTMHMD ROUTE REACH
 1772 KM ROUTE FLOW FROM PA TO MD (ALONG 83RD AVENUE).
 1773 KM FUTURE ARTERIAL SECTION
 * RS 2 -1 0
 RS 5 -1 0
 1774 RC 0.100 0.023 0.100 2640 0.0012 0.00
 1775 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 1776 RY 105 105 105 99.75 99.75 105 105 105
 1777 *

1778 KK SUBMD BASIN
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.4 Lca=.6 S= 14.3 Kn=.05 LAG= 41.7
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 * BA 0.255
 * LG 0.25 0.08 7.60 0.11 30
 * UI 21 24 73 100 119 142 175 247 234 1
 * UI 156 127 106 80 47 35 30 21 15
 * UI 6 6 6 6 6 0 0 0 0 0

1779 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1780 KM L= 1.4 Lca=.6 S= 14.3 Kn=.050 LAG= 40.7
 1781 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1782 BA .255
 1783 LG .25 .08 7.60 .11 30.00
 1784 UI 21. 21. 21. 21. 37. 69. 80. 92. 101. 110.
 1785 UI 118. 126. 135. 146. 159. 170. 193. 232. 255. 278.
 1786 UI 244. 219. 199. 185. 173. 163. 148. 137. 126. 117.
 1787 UI 107. 100. 88. 74. 61. 44. 37. 37. 35. 35.
 1788 UI 32. 21. 21. 21. 21. 13. 6. 6. 6. 6.
 1789 UI 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.
 1790 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1791 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1792 KK RETMD
 1793 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1794 DT RETMD 21.1
 1795 DI 0 10000
 1796 DQ 0 10000
 *

1797 KK CPMD
 1798 KM ADD HYDROGRAPHS AT MD
 1799 HC 2 1.02
 *

HEC-1 INPUT

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1800 KK DIMDJB
 1801 KM DIVERT 21% OF FLOW FROM MD TO JB.
 1802 DT DIJB1
 1803 DI 0 25 50 75 100 150 200
 1804 DQ 0 5 10 16 21 32 42
 *

1805 KK DIMDMF
 1806 KM DIVERT FLOW FROM MD TO MF
 1807 KM DUMMY DIVERT TO ROUTE FLOW AROUND CODE SEQUENCE.
 1808 DT DIMFX
 1809 DI 0 10000
 1810 DQ 0 10000
 *

1811 KK SUBMI BASIN
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= .7 Lca=.3 S= 8.8 Kn=.043 LAG= 16.9
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 * BA 0.409
 * LG 0.21 0.15 8.40 0.11 38
 * UI 122 402 662 886 553 306 126 57 25
 * UI 3 0 0 0 0 0 0 0 0

1812 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1813 KM L= .7 Lca=.3 S= 8.8 Kn=.043 LAG= 22.6
 1814 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1815 BA .409
 1816 LG .21 .15 8.40 .11 38.00
 1817 UI 61. 61. 116. 220. 283. 326. 365. 421. 482. 616.
 1818 UI 768. 694. 578. 507. 446. 384. 333. 289. 221. 151.
 1819 UI 108. 101. 89. 61. 61. 32. 19. 19. 19. 19.
 1820 UI 19. 19. 19. 0. 0. 0. 0. 0. 0. 0.
 1821 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1822 KK RETMI
 1823 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1824 DT RETMI 35.3
 1825 DI 0 10000
 1826 DQ 0 10000
 *

1827 KK SUBMG BASIN
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= .7 Lca=.3 S= 8.8 Kn=.04 LAG= 11.7
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 * BA 0.082
 * LG 0.20 0.15 7.00 0.17 43
 * UI 55 162 241 120 37 11 7 0 0

1828 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 Page 28

1829 KM L= .7 Lca= .3 S= 8.8 Kn= .040 LAG= 21.1
 1830 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1831 BA .082
 1832 LG .20 .15 7.00 .17 43.00
 HEC-1 INPUT

1

LINE	ID	1	2	3	4	5	6	7	8	9	10
1833	UI	13.	13.	30.	51.	64.	74.	84.	98.	119.	159.
1834	UI	157.	127.	110.	96.	82.	70.	59.	43.	27.	23.
1835	UI	22.	14.	13.	9.	4.	4.	4.	4.	4.	4.
1836	UI	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1837	UI	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

1838 KK RETMG
 1839 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 1840 DT RETMG 7.3
 1841 DI 0 10000
 1842 DQ 0 10000
 *

1843 KK CPMG
 1844 KM COMBINE FLOWS FROM MI AND MG.
 1845 HC 2 0.49
 *

1846 KK RTMGJB ROUTE REACH
 1847 KM ROUTE FLOW ALONG 48FT BW CHANNEL TO DRCC
 * RS 4 FLOW -1 0
 1848 RS 10 FLOW -1 0
 1849 RC 0.035 0.035 0.035 2692 0.0015 0.00
 * RC 0.035 0.035 0.035 5050 0.0024 0.00
 RX 0 34 46 50 98 102 122 150
 1850 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 1851 *

* KK-CNAMG
 * KM COMBINE FLOWS FROM NA AND MG INTO ADMP CHANNEL
 * HC 3
 *

* KKMCMGJB ROUTE REACH
 * KM ADMP CHANNEL
 * RS 3 FLOW -1
 * RC 0.040 0.040 0.040 4374 0.0029 0.00
 * RX 0.0 16.0 33.9 51.9 86.9 104.8 122.8 138.8
 * RY 5.7 6.0 3.0 0.0 0.0 3.0 6.0 5.7
 *

* KKSUBJB1 BASIN
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.3 Lca= .7 S= 17.4 Kn= .050 LAG= 39.7
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 * BA 0.494
 * LG 0.25 0.25 5.00 0.41 30
 * UI 42 58 157 209 250 303 397 524 425 3
 * UI 286 233 186 117 73 67 42 35 13
 * UI 13 13 13 9 0 0 0 0 0
 *

HEC-1 INPUT

1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1852 KK SBJB1A
 1853 KM BASIN SUBJB1A
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= .9 Lca= .4 S= 11.1 Kn= .050 LAG= 30.9
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .15
 * LG .16 .25 5.70 .31 65.00
 * UI 16. 38. 74. 95. 122. 184. 169. 129. 100. 7
 * UI 45. 27. 20. 14. 5. 5. 5. 5. 0.
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0.

1854 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1855 KM L= .9 Lca= .4 S= 11.1 Kn= .050 LAG= 30.9
 1856 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1857 BA .15
 1858 LG .16 .25 5.70 .31 65.00
 1859 UI 16. 38. 74. 95. 122. 184. 169. 129. 100. 7
 1860 UI 116. 127. 149. 182. 213. 192. 166. 148. 135. 124.
 1861 UI 110. 100. 90. 80. 71. 56. 44. 29. 29. 27.
 1862 UI 27. 16. 16. 16. 11. 5. 5. 5. 5. 5.
 1863 UI 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.
 1864 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1865 KK RTJB1A
 1866 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
 1867 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL
 1868 KM FF for 15.00 acres; FF V= 0.63ac-ft
 1869 DT RTJB1A 0.50
 1870 DI 0 10000
 1871 DQ 0 10000
 *

1872 KK RTJB1A
 1873 KM EXISTING
 1874 KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: SUNDANCE RANCH 2;
 1875 KM TUSCANO TOWN CENTER; TUSCANO (PHASE1, PHASE 2 & PARCEL D & E)
 1876 KM TOTAL RETENTION IS 13.64ac-ft. 80% OF THAT IS USED HERE.
 1877 DT RTJB1A 10.91
 1878 DI 0 10000
 1879 DQ 0 10000
 *

1880 KK ADMP1
 * KO 1 2
 1881 KM RETURN DIVERT FROM 75TH SD MODEL - SLT 3/9/2005
 Page 29

1882 KM RETURN DIVERT FROM ADMP1
 1883 DR ADMP1
 * BA 0
 * ZR =QI A=DURANGO B=SLT2 C=FLOW E=5MIN
 *

HEC-1 INPUT

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1884 KK MCJCB
 1885 KM ROUTE REACH FROM 75TH AVE TO DRCC
 1886 KM ADMP CHANNEL
 * KM MASTER CHANNEL ROUTE FROM JC1 TO JB1
 * KM POL AUGUST 26 2005
 * RS 2 FLOW -1
 RS 5 FLOW -1
 1887 RC 0.035 0.035 0.035 2650 0.0030
 1888 RX 0 0.1 10 42 54 86 96 96.1
 1889 RY 9 8 8 0 0 8 8 9
 1890 *

1891 KK MCJCB
 1892 KM ROUTE REACH ALONG DRCC FROM 75TH AVE TO CPJB1C
 1893 KM ADMP CHANNEL
 1894 KM MASTER CHANNEL ROUTE FROM JC1 TO JB1
 * RS 2 FLOW -1
 RS 5 FLOW -1
 1895 RC 0.035 0.035 0.035 1550 0.0015
 1896 RX 0 0.1 10 42 82 114 124 124.1
 1897 RY 9 8 8 0 0 8 8 9
 1898 *

1899 KK CPJB1A
 1900 KM COMBINE FLOWS FROM JC1A, MG, MI AND ADMP1
 1901 HC 3 0.97
 *

1902 KK RJB1A
 1903 KM ROUTE REACH FROM CPJB1A TO CPJB1B
 * RS 2 FLOW -1
 RS 5 FLOW -1
 1904 RC 0.035 0.035 0.035 1350 0.0015 0.00
 1905 RX 0 0.1 10 42 82 114 124 124.1
 1906 RY 9 8 8 0 0 8 8 9
 1907 *

1908 KK SBJB1B
 1909 KM BASIN SUBJB1B
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= .5 Lca= .3 S= 16.4 Kn= .050 LAG= 20.6
 * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 * BA .10
 * LG .16 .25 5.70 .31 50.00
 * UI 18. 67. 102. 166. 157. 107. 68. 30. 18.
 * UI 5. 5. 0. 0. 0. 0. 0. 0. 0.
 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1910 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 1911 KM L= .5 Lca= .3 S= 16.4 Kn= .050 LAG= 20.6
 1912 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 1913 BA .10
 1914 LG .16 .25 5.70 .31 50.00
 HEC-1 INPUT

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

1915 UI 16. 16. 40. 66. 81. 93. 107. 125. 157. 207.
 1916 UI 185. 152. 132. 113. 98. 82. 68. 45. 29. 27.
 1917 UI 23. 16. 16. 5. 5. 5. 5. 5. 5. 5.
 1918 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 1919 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

1920 KK RTJB1B
 1921 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
 1922 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL
 1923 KM FF for 36.26 acres; FF V= 1.51ac-ft
 1924 DT RTJB1B 0.88
 1925 DI 0 10000
 1926 DQ 0 10000
 *

1927 KK RTJB1B
 1928 KM EXISTING
 1929 KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: SUNDANCE RANCH 2;
 1930 KM TUSCANO TOWN CENTER; TUSCANO (PHASE1, PHASE 2 & PARCEL D & E)
 1931 KM TOTAL RETENTION IS 5.31ac-ft. 80% OF THAT IS USED HERE.
 1932 DT RTJB1B 4.25
 1933 DI 0 10000
 1934 DQ 0 10000
 *

1935 KK CPJB1B
 1936 KM COMBINE FLOWS FROM JC1A, MG, MI AND ADMP1
 1937 HC 2 1.07
 *

1938 KK RJB1B
 1939 KM ROUTE REACH FROM CPJB1B TO 83RD AVE
 1940 KM ADMP CHANNEL
 * RS 2 FLOW -1
 RS 5 FLOW -1
 1941 RC 0.035 0.035 0.035 2200 0.0015 0.00
 1942 RX 0 0.1 10 42 82 114 124 124.1
 1943 RY 9 8 8 0 0 8 8 9
 1944 *

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*
*
1945 KK SBJB1C
1946 KM BASIN SUBJB1C
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .7 Lca= .4 S= 16.7 Kn= .050 LAG= 26.0
* KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
* BA .25
* LG .27 .25 5.70 .31 39.00
* UI 33. 103. 172. 229. 354. 343. 250. 183. 120. 5
* UI 42. 24. 10. 10. 10. 0. 0. 0. 0. 0.
* UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
1947 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1948 KM L= .7 Lca= .4 S= 16.7 Kn= .050 LAG= 26.0
1949 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
HEC-1 INPUT

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1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

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1950 BA .25
1951 LG .27 .25 5.70 .31 39.00
1952 UI 32. 32. 33. 108. 132. 156. 177. 195. 221. 248.
1953 UI 293. 372. 419. 349. 302. 270. 243. 211. 189. 164.
1954 UI 144. 109. 78. 57. 54. 53. 34. 32. 32. 11.
1955 UI 10. 10. 10. 10. 10. 10. 10. 10. 0. 0.
1956 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

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1957 KK RTJB1C
1958 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
1959 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL
1960 KM FF for 36.26 acres; FF V= 1.51ac-ft
1961 DT RTJB1C 1.21
1962 DI 0 10000
1963 DQ 0 10000
*

```

```

1964 KK RTJB1
1965 KM EXISTING
1966 KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: SUNDANCE RANCH 2;
1967 KM TUSCANO TOWN CENTER; TUSCANO (PHASE1, PHASE 2 & PARCEL D & E)
1968 KM TOTAL RETENTION IS 18.30ac-ft. 80% OF THAT IS USED HERE.
1969 DT RTJB1C 14.64
1970 DI 0 10000
1971 DQ 0 10000
*

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```

1972 KK DRJB
1973 KM RETURN DIVERT FROM MD
1974 DR DIJB1
*

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1975 KK RDIJB1
1976 KM ROUTE DIVERT FROM MD TO JB
1977 KM FUTURE ARTERIAL SECTION
* RS 4 -1 0
RS 10 -1 0
1978 RC .1 0.023 .1 2640 .0030
1979 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
1980 RY 105 105 105 99.75 99.75 105 105 105
1981 *
*

```

```

1982 KK ~CPJB1
1983 KM COMBINE FLOWS FROM MD, JC1, MG AND JB1 INTO ADMP CHANNEL
1984 KM COMBINE ADDED, JEP 5/10/01
1985 HC 4 1.54
*
* KKDCPJB1
* KM DIVERT FLOW IN EXCESS OF 300 CFS OUT OF MODEL (POSSIBLE OFFLINE BASIN)
* KO 1
* DT DBAS1
* DI 0 300 2000
* DQ 0 0 1700
*
* J2 MODIFICATION: DEACTIVATE RRJB1
*
* KK RRJB1
* KM MODIFIED PULS ROUTING
* KM DETENTION IN DRCC RIGHT OF WAY AT JB1 (83RD AVENUE) POL
* RS 1 STOR 0 0
* SV 0 29 35 41
* SQ 0 294 559 1044
*

```

1

HEC-1 INPUT

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

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1986 KK DIED
1987 KM DIVERT FLOWS AT JB TO ED. THIS IS DONE TO ROUTE FLOW AS NEEDED
1988 KM FOR THE ADMP
1989 DT DIED
1990 DI 0 10000
1991 DQ 0 10000
*
*

```

```

1992 KK SUBOE BASIN
1993 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= 1.1 Lca= .6 S= 17.3 Kn= .03 LAG= 20.8
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.469
* LG 0.15 0.23 6.20 0.24 55
* UI 84 321 482 784 767 519 338 150 92

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```

* UI 23 23 10 0 0 0 0 0 0
* UI 0 0 0 0 0 0 0 0 0
1994 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1995 KM L= 1.1 Lca=.6 S= 17.3 Kn=.030 LAG= 21.5
1996 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1997 BA .469
1998 LG .15 .23 6.20 .24 55.00
1999 UI 74. 74. 163. 281. 355. 410. 462. 540. 640. 847.
2000 UI 921. 742. 637. 561. 476. 412. 353. 273. 181. 130.
2001 UI 121. 98. 74. 73. 23. 23. 23. 23. 23.
2002 UI 23. 23. 0. 0. 0. 0. 0. 0. 0. 0.
2003 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

2004 KK RETOE
2005 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
2006 DT RETOE 47.0
2007 DI 0 10000
2008 DQ 0 10000
*
* REMOVED BY JCS
* KK RETOE
* KM DIVERT RETENTION OUT OF MODEL DUE TO WILLAMETTE IND. DEVELOPMENT. -DCF
* KM TOTAL RETENTION IS 5.3 AF. 80% OF THAT IS USED HERE. -DCF
* DT RETOE 4.2
* DI 0 10000
* DQ 0 10000
*

```

```

2009 KK CPOE1
2010 KM RETURN DIVERT FROM PA.
2011 DR DIOE
*

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HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

2012 KK RTDIOE ROUTE REACH
2013 KM ROUTE DIVERT FROM PA TO OE
2014 KM FUTURE ARTERIAL SECTION
* RS 7 -1 0
2015 RS 18 -1 0
2016 RC 0.100 0.023 0.100 5000 0.0013 0.00
2017 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
2018 RY 105 105 105 99.75 99.75 105 105 105
*

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```

* THE FOLLOWING RETURNS REMOVED TO MODEL THE ADMP CONDITION.
* KK CPOE2
* KM RETURN DIVERT FROM RH
* DR DIOE2
*
* KK CPOE3
* KM RETURN DIVERT FROM RI
* DR DIOE3
*

```

```

2019 KK @CPOE
2020 KM ADD HYDROGRAPHS AT OE
2021 HC 2 0.58
*

```

```

2022 KK DIOEOD
2023 KM DIVERT 17% OF FLOW FROM OE2 TO OD
2024 DT DIOD
2025 DI 0 25 50 75 100 150 200
2026 DQ 0 4 9 12 17 26 34
*

```

```

2027 KK RTOEMF ROUTE REACH
2028 KM ROUTE FLOW FROM OE TO MF.
2029 KM FUTURE ARTERIAL SECTION
* RS 4 -1 0
2030 RS 10 -1 0
2031 RC 0.100 0.023 0.100 5200 0.0021 0.00
2032 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
2033 RY 105 105 105 99.75 99.75 105 105 105
*

```

```

2034 KK SUBMF BASIN
2035 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= 1.4 Lca=.7 S= 12.9 Kn=.050 LAG= 44.0
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.971
* LG 0.25 0.15 8.40 0.10 30
* UI 74 74 256 341 414 483 581 777 936 7
* UI 619 520 429 362 256 153 125 105 74
* UI 23 23 23 22 22 22 6 0
2036 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2037 KM L= 1.4 Lca=.7 S= 12.9 Kn=.050 LAG= 44.0
2038 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2039 BA .971

```

HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

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2040 LG .25 .15 8.40 .10 30.00
2041 UI 74. 74. 74. 74. 74. 235. 261. 290. 342. 364.
2042 UI 397. 420. 445. 474. 509. 555. 582. 651. 744. 862.
2043 UI 981. 936. 827. 752. 694. 646. 608. 577. 527. 488.
2044 UI 457. 429. 387. 363. 342. 289. 242. 214. 144. 132.
2045 UI 132. 122. 122. 122. 78. 74. 74. 74. 74. 30.
2046 UI 23. 23. 23. 23. 23. 23. 23. 23. 23. 23.
2047 UI 23. 23. 23. 23. 23. 0. 0. 0. 0. 0.
2048 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

2049 KK RETMF
 2050 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2051 DT RETMF 80.3
 2052 DI 0 10000
 2053 DQ 0 10000
 *

2054 KK CPMF
 2055 KM RETURN ROUTING DIVERT FROM MD (DIMFX).
 2056 DR DIMFX
 *

2057 KK RTDMDF ROUTE REACH
 2058 KM ROUTE FLOW FROM MD TO MF (ALONG LOWER BUCKEYE ROAD).
 2059 KM FUTURE ARTERIAL SECTION
 * RS 6 -1 0
 RS 15 -1 0
 2060 RC 0.100 0.023 0.100 5200 0.0015 0.00
 2062 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 2063 RY 105 105 105 99.75 99.75 105 105 105
 *

2064 KK CPMF1
 2065 KM ADD HYDROGRAPHS AT MF
 2066 HC 3 2.25
 *

2067 KK DIMFEB
 2068 KM DIVERT 47% OF FLOW AT MF TO EB.
 2069 DT DIEB
 2070 DI 0 25 50 75 100 150 200
 2071 DQ 0 12 23 35 47 71 94
 *

2072 KK RTMFMC ROUTE REACH
 2073 KM ROUTE FLOW FROM MF TO MC (ALONG LOWER BUCKEYE ROAD).
 2074 KM FLOWS INTERCEPTED BY TRAP DITCH FOR COUNTRY PLACE
 2075 KM FUTURE ARTERIAL SECTION
 * RS 4 -1 0
 RS 10 -1 0
 2077 RC 0.100 0.023 0.100 4530 0.0015 0.00
 2078 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2079 RY 105 105 105 99.75 99.75 105 105 105
 *

2080 KK SUBOD BASIN
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.1 Lca= .6 S= 18.2 Kn= .030 LAG= 20.6
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 * BA 0.509
 * LG 0.15 0.15 9.70 0.07 55
 * UI 94 354 533 874 825 556 357 157 97
 * UI 25 26 7 0 0 0 0 0 0
 * UI 0 0 0 0 0 0 0 0 0
 2081 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2082 KM L= 1.1 Lca= .6 S= 18.2 Kn= .030 LAG= 21.3
 2083 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 2084 BA .51
 2085 LG .15 .15 9.70 .07 55.00
 2086 UI 81. 81. 183. 311. 391. 451. 512. 597. 715. 953.
 2087 UI 988. 798. 687. 602. 513. 440. 379. 278. 183. 141.
 2088 UI 132. 97. 81. 68. 25. 25. 25. 25. 25. 25.
 2089 UI 25. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 2090 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

2091 KK RETOD
 2092 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2093 DT RETOD 63.7
 2094 DI 0 10000
 2095 DQ 0 10000
 *

2096 KK DROD
 2097 KM RETURN DIVERT FROM OE.
 2098 DR DIOD
 *

2099 KK RTDIOD ROUTE REACH
 2100 KM FUTURE ARTERIAL SECTION
 * RS 4 -1 0
 RS 10 -1 0
 2102 RC 0.100 0.023 0.100 2700 0.0013 0.00
 2103 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 2104 RY 105 105 105 99.75 99.75 105 105 105
 *

* THE FOLLOWING RETURNS REMOVED TO MODEL THE ADMP CONDITION
 * KK DROD2
 * KM RETURN DIVERT FROM OG1
 * DR DIOD1
 *
 * KK DROD3
 * KM RETURN DIVERT FROM OG2.
 * DR DIOD2
 *

HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2105 KK CPOD

```

2106 KM ADD HYDROGRAPHS AT OD.
2107 HC 2 0.61
*

2108 KK DIODOC
2109 KM DIVERT 18% OF FLOW FROM OD TO OC.
2110 DT DIOC
2111 DI 0 25 50 75 100 150 200
2112 DQ 0 5 9 14 18 27 36
*

2113 KK RTODMC ROUTE REACH
2114 KM ROUTE FLOW FROM OD TO MC.
2115 KM FUTURE ARTERIAL SECTION
* RS 5 -1 0
RS 13 -1 0
2117 RC 0.100 0.023 0.100 5200 0.0023 0.00
2118 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
2119 RY 105 105 105 99.75 99.75 105 105 105
*

2120 KK SUBMC BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= 1.4 Lca= .7 S= 13.6 Kn= .035 LAG= 30.5
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.999
* LG 0.18 0.15 8.80 0.09 59
* UI 110 271 519 667 869 1308 1136 873 663 5
* UI 275 187 126 81 34 34 34 34 7
2121 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2122 KM L= 1.4 Lca= .7 S= 13.6 Kn= .035 LAG= 30.5
2123 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2124 BA .999
2125 LG .18 .15 8.80 .09 59.00
2126 UI 110. 110. 110. 236. 389. 467. 534. 602. 649. 713.
2127 UI 800. 878. 1038. 1275. 1450. 1249. 1089. 977. 894. 811.
2128 UI 722. 653. 580. 526. 449. 341. 249. 195. 187. 181.
2129 UI 150. 110. 110. 110. 38. 34. 34. 34. 34. 34.
2130 UI 34. 34. 34. 34. 34. 0. 0. 0. 0. 0.
2131 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

2132 KK RETMC
2133 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
2134 DT RETMC 95.4
2135 DI 0 10000
2136 DQ 0 10000
*

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HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

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2137 KK CPM1
2138 KM ADD HYDROGRAPHS AT MC
2139 HC 3 2.69
*

2140 KK DIMCMB
2141 KM DIVERT 44% OF FLOW AT MC WEST TO MB.
2142 DT DIMB
2143 DI 0 25 50 75 100 150 200
2144 DQ 0 11 22 33 44 66 88
*

2145 KK DIMCMB
2146 KM J2 MODIFICATION.
2147 KM FLOW BEING DIVERTED SOUTH WEST THROUGH COUNTRY PLACE
2148 KM DIVERT 100% OF THE REMAINDER OF THE FLOW AT 99TH AVE & JUST SOUTH OF
2149 KM LOWER BUCKEY
2150 DT SW103
2151 DI 0 10000
2152 DQ 0 10000
*

2153 KK RTMCIE ROUTE REACH
2154 KM ROUTE FLOW FROM MC TO IE (ALONG 99TH AVENUE).
2155 KM FUTURE ARTERIAL SECTION
2156 KM J2 MODIFICATION UPDATED CROSS SECTION
* RS 3 FLOW -1
RS 8 FLOW -1
2158 RC 0.03 0.03 0.03 2000 0.0030
2159 RX 0.0 0.1 10 34 64 88 98 98.1
2160 RY 7 6 6 0 0 6 6 7
* RC 0.100 0.023 0.100 2000 0.0030 0.00
* RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
* RY 105 105 105 99.75 99.75 105 105 105
*

2161 KK DREB
2162 KM RETURN DIVERT FROM MF TO EB
2163 DR DIEB
*

2164 KK SUBEB BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .5 Lca= .3 S= 11.3 Kn= .050 LAG= 22.1
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.139
* LG 0.25 0.21 6.40 0.23 30
* UI 21 85 127 192 240 164 114 60 34
* UI 6 6 6 1 0 0 0 0 0
2165 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2166 KM L= .5 Lca= .3 S= 11.3 Kn= .050 LAG= 22.1
2167 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2168 BA .139
2169 LG .25 .21 6.40 .23 30.00

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LINE	ID	1	2	3	4	5	6	7	8	9	10
2170	UI	21.	21.	43.	78.	100.	116.	130.	151.	174.	227.
2171	UI	272.	228.	192.	170.	147.	127.	108.	92.	67.	42.
2172	UI	36.	35.	23.	21.	17.	6.	6.	6.	6.	6.
2173	UI	6.	6.	0.	0.	0.	0.	0.	0.	0.	0.
2174	UI	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2175	KK	RETEB	80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS								
2176	KM	DIVERT	80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS								
2177	DT	RETEB	11.5								
2178	DI	0	10000								
2179	DQ	0	10000								
2180	KK	CPEB	2 1.20								
2181	HC	2	1.20								
2182	KK	RDIED	RETURN DIVERT FROM JB1 TO ED1								
2183	KM	RETURN	DIVERT FROM JB1 TO ED1								
2184	DR	DIED	DIVERT FROM JB1 TO ED1								
	*	REACTIVATE	MCJBED								
	*	ROUTING	BELOW REMOVED BY POL FOR DETENTION BASIN ROUTING								
2185	KK	MCJBED	ROUTE	REACH							
2186	KM	ADMP	CHANNEL								
2187	KM	ROUTE	FLOW FROM JB1 TO ED1								
2188	RS	7	FLOW	-1							
2189	RS	18	FLOW	-1							
2190	RC	0.040	0.040	0.040	5128	0.0007	0.00				
2191	RX	0	0.1	10	42	54	86	96	96.1		
2192	RY	9	8	8	0	0	8	8	9		
2193	KK	SUBED1	BASIN	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
	* KM	L=	1.2	Lca=	.6	S=	9.4	Kn=	.050	LAG=	42.1
	* KM	VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS									
	* BA	0.382									
	* LG	0.25	0.25	5.70	0.31	30					
	* UI	30	35	108	147	174	208	254	357	356	2
	* UI	237	193	161	127	75	53	49	30	27	0
	* UI	9	9	9	9	9	2	0	0	0	0
2194	KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
2195	* KM	L=	1.2	Lca=	.6	S=	9.4	Kn=	.050	LAG=	41.5
2196	* KM	PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN									
2197	* BA	.382									
2198	* LG	.25	.25	5.70	.31	30.00					
2199	* UI	31.	31.	31.	31.	47.	102.	115.	131.	147.	159.
2200	* UI	171.	181.	194.	209.	228.	242.	270.	311.	364.	412.
2201	* UI	378.	336.	305.	281.	262.	247.	230.	209.	194.	182.
2202	* UI	165.	153.	143.	122.	100.	89.	56.	55.	54.	51.

LINE	ID	1	2	3	4	5	6	7	8	9	10
2203	UI	51.	44.	31.	31.	31.	31.	19.	9.	9.	9.
2204	UI	9.	9.	9.	9.	9.	9.	9.	9.	9.	9.
2205	UI	9.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2206	UI	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
2207	KK	RETED1	RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI								
2208	KM	DIVERT	80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS								
2209	KM	FF	FOR 20.88 acres; FF V= 0.87ac-ft								
2210	* DTRETED1	8.1									
2211	DT	RETED1	0.70								
2212	DI	0	10000								
2213	DQ	0	10000								
2214	KK	RETED1	EXISTING								
2215	KM	DIVERT	RETENTION OUT OF MODEL DUE TO DEVELOPMENT: HURLEY RANCH PARCEL 3 & 4								
2216	KM	VOLTERRA;	83RD AVENUE & LOWER BUCKEYE RD								
2217	KM	TOTAL	RETENTION IS 32.94 AF. 80% OF THAT IS USED HERE.								
2218	KM	RETED1	26.35								
2219	DT	0	10000								
2220	DI	0	10000								
2221	DQ	0	10000								
2222	KK	SUBED2	BASIN	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN							
	* KM	L=	0.6	Lca=	.3	S=	9.4	Kn=	.050	LAG=	24.5
	* KM	VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS									
	* BA	0.114									
	* LG	0.30	0.25	5.70	0.31	15					
	* UI	16	54	87	118	184	146	107	76	38	0
	* UI	15	5	5	5	3	0	0	0	0	0
2223	KM	THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN									
2224	* KM	L=	.6	Lca=	.3	S=	9.4	Kn=	.050	LAG=	24.5
2225	* KM	PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN									
2226	* BA	.114									
2227	* LG	.30	.25	5.70	.31	15.00					
2228	* UI	16.	16.	22.	54.	67.	79.	89.	99.	114.	130.
2229	* UI	168.	200.	177.	149.	132.	118.	102.	90.	78.	67.
2230	* UI	50.	33.	27.	26.	22.	16.	16.	9.	5.	5.
2231	* UI	5.	5.	5.	5.	5.	5.	0.	0.	0.	0.
2232	* UI	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

2233 KK RETED2
 2234 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
 2235 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 2236 DT RETED2 2.4
 2237 DI 0 10000
 2238 DQ 0 10000
 *

HEC-1 INPUT

1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2239 KK ~CPED1
 2240 KM ADD HYDROGRAPHS AT ED1
 2241 HC 3 2.06
 *

2242 KK 89BSN
 2243 KM DIVERTING FLOW TO BASIN AT 89TH AVE
 * KO 1 2
 2244 DT 89BSN
 2245 DI 0 147 1131
 2246 DQ 0 0 851
 *

2247 KK ~CPED2
 2248 KM COMBINE FLOW FROM EB & ED WITH FLOW FROM MF DIVERSION
 * KO 1
 2249 HC 2 3.26
 *

2250 KK R89BSN
 2251 KM RETRIEVE 89BSN
 2252 DR 89BSN
 *

2253 KK D89BN
 2254 KM ROUTE 89BSN THROUGH PROPOSED DETENTION BASIN
 2255 KM OUTLET PIPE = 24" X 1455 LF RCP
 2256 RS 1 STOR 0
 2257 SV 0 24 50 77.95 107.8
 2258 SQ 0 0 4.2 8.7 11.6
 2259 SE 986 988 990 992 994
 *

2260 KK CPED2A
 2261 KM COMBINE ~CPED2 WITH ROUTED FLOW FROM D89BN
 2262 HC 2 3.26
 *

* J2 MODIFICATION: DEACTIVATE RRED, REACTIVATE MCED95 AND MC95ID

* KKRRED
 * KM MODIFIED PULS ROUTING
 * KM DETENTION IN DRCC RIGHT OF WAY AT ED1 (91ST AVENUE) POL
 * RS 1 STOR 0 0
 * SV 0 28 33 39
 * SQ 0 643 908 1393
 *

* THE FOLLOWING ROUTING REMOVED BY POL FOR DETENTION BASIN ROUTING IN DRCC RIGHT

2263 KK MCED95 ROUTE REACH
 * KO 3 2
 2264 KM ADMP CHANNEL
 2265 KM ROUTE FLOW FROM ED TO BASIN 95
 * RS 2 FLOW -1
 2266 RS 5 FLOW -1
 *

HEC-1 INPUT

1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2267 RC 0.040 0.040 0.040 2278 0.0010 0.00
 2268 RX 0 0.1 10 42 82 114 124 124.1
 2269 RY 9 8 8 0 0 8 8 9
 *

* THE FOLLOWING DIVERSION REMOVED BY POL FOR DETENTION BASIN ROUTING

* KK95PASS
 * KO 3
 * KM DIVERT OVERFLOW INTO BASIN - JLM 5/21/01
 * DT D-B95
 * DI 0 1050 1051 2000
 * DQ 0 0 1 950
 *

* THE FOLLOWING ROUTING REMOVED BY POL FOR DETENTION BASIN ROUTING IN DRCC RIGHT

2270 KK MC95ID ROUTE REACH
 2271 KM ADMP CHANNEL
 2272 KM ROUTE FLOW FROM BASIN 95 TO ID
 * RS 2 FLOW -1
 2273 RS 5 FLOW -1
 2274 RC 0.040 0.040 0.040 2278 0.0027 0.00
 2275 RX 0 0.1 10 42 82 114 124 124.1
 2276 RY 9 8 8 0 0 8 8 9
 *

* KM HEC-RAS REACH
 * KM BFC
 * KM ROUTE FLOW FROM EB TO IE.
 * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
 * KM HEC-RAS MODEL. 06.07.00 -DCF
 * RS 8 STOR 0
 * SV 0 82 138.4 188.1 233 277.3 316.8 355 389.7 406
 * SQ 0 400 800 1200 1600 2000 2400 2800 3200 34
 *

* KKSUBID1 BASIN
 * * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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* * KM L= 1.0 Lca= .4 S= 7.1 Kn= .05 LAG= 35.0
* * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* * BA 0.204
* * LG 0.25 0.15 8.00 0.11 30
* * UI 20 37 82 107 131 170 242 199 159
* * UI 101 71 38 32 20 15 6 6 6
* * UI 6 0 0 0 0 0 0 0 0
* * UI 0 0 0 0 0 0 0 0 0
* * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* * KM L= 1.0 Lca= .4 S= 7.1 Kn= .050 LAG= 35.0
* * KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
* * BA .204
* * LG .25 .15 8.00 .11 30.00
* * UI 20 20. 20. 20. 63. 72. 86. 95. 106. 11
* * UI 122. 133. 148. 160. 189. 225. 259. 232. 204. 18
* * UI 168. 156. 143. 129. 118. 107. 98. 90. 75. 5
* * UI 43. 35. 34. 32. 32. 21. 20. 20. 20.
* * UI 6. 6. 6. 6. 6. 6. 6. 6. 6.
* * UI 6. 6. 0. 0. 0. 0. 0. 0. 0.
* * UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
*
* KKRETID1
* KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROU
* KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
* KM FF for 22.49 acres; FF V= 0.94ac-ft
* * DTRETID1 4.4
* DTRETID1 0.75
* DI 0 10000
* DQ 0 10000
*
* KKRETID1
* KM EXISTING
* KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: COUNTRY PLACE
* KM TOTAL RETENTION IS 10.26ac-ft. 80% OF THAT IS USED HERE.
* DTRETID1 8.2
* DI 0 10000
* DQ 0 10000
*

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HEC-1 INPUT

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1
LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
2277 KK SUBID2 BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= 1.0 Lca= .4 S= 7.1 Kn= .05 LAG= 35.0
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* * BA 0.360
* * LG 0.25 0.25 4.90 0.40 30
* * UI 34 65 145 188 231 298 426 351 280 2
* * UI 177 124 67 57 36 26 11 10 11
* * UI 10 0 0 0 0 0 0 0 0
* * UI 0 0 0 0 0 0 0 0 0
2278 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2279 KM L= 1.0 Lca= .4 S= 7.1 Kn= .050 LAG= 35.0
2280 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2281 BA .36
2282 LG .25 .25 4.90 .40 30.00
2283 UI 35. 35. 35. 35. 112. 128. 151. 168. 187. 199.
2284 UI 216. 236. 261. 283. 334. 397. 458. 410. 360. 323.
2285 UI 296. 276. 252. 227. 208. 190. 172. 158. 133. 100.
2286 UI 76. 61. 60. 57. 57. 37. 35. 35. 35. 14.
2287 UI 11. 11. 11. 11. 11. 11. 11. 11. 11. 11.
2288 UI 11. 11. 0. 0. 0. 0. 0. 0. 0. 0.
2289 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*
2290 KK RETID2
2291 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
2292 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
2293 KM FF for 166.68 acres; FF V= 6.94ac-ft
* DTRETID2 7.7
2294 DT RETID2 5.56
2295 DI 0 10000
2296 DQ 0 10000
*
2297 KK RETID2
2298 KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: TIVOLI
2299 KM TOTAL RETENTION IS 15.36ac-ft . 80% OF THAT IS USED HERE.
2300 DT RETID2 12.29
2301 DI 0 10000
2302 DQ 0 10000
*
2303 KK ~CPID1
2304 HC 2 3.62
*
* J2: DISABLE RRID1 ROUTING OPERATION IN DRCC
*
* KK RRID1
* KM MODIFIED PULS ROUTING
* KM DETENTION IN DRCC RIGHT OF WAY AT ID1 (99TH AVENUE) POL
* RS 1 STOR 0 0
* SV 0 23 33 39
* SQ 0 188 700 1342
*
* J2: DISABLE 99BASIN OPERATION IN DRCC
*
* KK99BASIN
* KO 3 21
* KM DIVERT TO MULTIUSE BASIN BEFORE 99TH AVE - JCS
* KM GENERAL BASIN DIMENTIONS
* KM 15.7 AC = TOP, 14.3 AC = BOTTOM, TOP SIDE = 826 FT, BOTTOM SIDE = 790 FT,
* KM 6:1 SIDES, 3 FT = ACTIVE DEPTH, 6 FT= TOTAL DEPTH, 45 AF = VOLUME
* KM SIDE WEIR DIMENSIONS

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* KM L = 150FT, MAX DEPTH = 1.5 FT, DESIGN DEPTH = 1.0 FT, C = 3.0
* DT 99BSN 45
* DI 0 188 700 1342
* DQ 0 0 450 827
*
* KK SUBIE BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .8 Lca= .4 S= 6.0 Kn= .05 LAG= 34.3
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.302
* LG 0.25 0.15 8.80 0.09 30
* UI 30 58 126 164 203 267 368 289 232 1
* UI 137 135 135 132 113 115 126 84 88
* UI 146 93 51 44 30 16 9 9 9
* UI 5 0 0 0 0 0 0 0 0
*
* KK RETIE
* KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
* DT RETIE 25.0
* DI 0 10000
* DQ 0 10000
*

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HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

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2305 KK CPID2
2306 HC 2 3.62
*
* J2 MODIFICATION: REACTIVATE MCIDIB
*
* THE FOLLOWING ROUTING REMOVED BY POL FOR DETENTION BASIN ROUTING IN DRCC RIGHT
2307 KK MCIDIB ROUTE REACH
2308 KM ADMP CHANNEL
2309 KM ROUTE FLOW FROM BASIN ID TO IBA @ 103RD AVE
* RS 2 FLOW -1
2310 RS 5 FLOW -1
2311 RC 0.040 0.040 0.040 2600 0.0032 0.00
2312 RX 0 0.1 10 42 82 114 124 124.1
2313 RY 9 8 8 0 0 8 8 9
*
* KM HEC-RAS REACH
* KM BFC
* KM ROUTE FLOW FROM ID TO IB.
* KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
* KM HEC-RAS MODEL. 06.07.00 -DCF
* RS 5 STOR 0
* SV 0 58.3 100.7 135.4 164 190.3 214 236.2 258.3 269
* SQ 0 400 800 1200 1600 2000 2400 2800 3200 34
*

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2314 KK SUBIBA BASIN
* KM BASIN SUBIBA
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .7 Lca= .3 S= 14.2 Kn= .050 LAG= 25.5
* KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
* BA .24
* LG .28 .15 8.40 .11 43.00
* UI 32. 104. 170. 228. 358. 320. 234. 170. 102. 5
* UI 36. 18. 10. 10. 10. 0. 0. 0. 0.
* UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
2315 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2316 KM L= .7 Lca= .3 S= 14.2 Kn= .050 LAG= 24.0
2317 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2318 BA .24
2319 LG .28 .15 8.40 .11 43.00
2320 UI 34. 34. 52. 118. 147. 172. 194. 218. 250. 290.
2321 UI 374. 435. 362. 310. 275. 243. 211. 184. 160. 130.
2322 UI 91. 59. 57. 55. 36. 34. 30. 10. 10.
2323 UI 10. 10. 10. 10. 10. 0. 0. 0. 0.
2324 UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

2325 KK RETIBA
2326 KM RETENTION MODIFIED FROM REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTING -
2327 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL
2328 KM FF for 20.00 acres; FF V= 0.83ac-ft
2329 DT ETIBBA 0.67
2330 DI 0 10000
*

```

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

2331 DQ 0 10000
*
2332 KK RETIBA
2333 KM EXISTING
2334 KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: COUNTRY PLACE
2335 KM TOTAL RETENTION IS 15.62ac-ft. MINUS 3.12ac-ft FOR COUNTRY PLACE PARCELS 2&3
2336 KM TOTAL 12.5 ac-ft 80% OF THAT IS USED HERE.
2337 DT RETIBA 10.00
2338 DI 0 10000
2339 DQ 0 10000
*
2340 KK SUBICA BASIN
2341 KM BASIN SUBICA
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .7 Lca= .3 S= 4.7 Kn= .050 LAG= 31.4
* KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
* BA -.23
* LG .36 .25 5.30 .34 28.00
* UI 25. 57. 113. 145. 185. 276. 272. 206. 160. 12
* UI 79. 43. 34. 25. 9. 8. 8. 8. 0.

```

```

2342 * UI 0. 0. 0. 0. 0. 0. 0. 0. 0.
KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2343 KM L= .7 Lca=.3 S= 4.7 Kn=.050 LAG= 29.6
2344 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2345 BA .23
2346 LG .36 .25 5.30 .34 28.00
2347 UI 26. 26. 26. 61. 94. 113. 130. 144. 157. 174.
2348 UI 194. 217. 265. 323. 328. 278. 244. 221. 202. 180.
2349 UI 162. 144. 129. 113. 89. 67. 46. 45. 43. 39.
2350 UI 26. 26. 26. 11. 8. 8. 8. 8. 8. 8.
2351 UI 8. 8. 8. 8. 0. 0. 0. 0. 0. 0.
2352 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

2353 KK RETICA
2354 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
2355 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL
2356 KM FF for 64.88 acres; FF V= 2.70ac-ft
2357 DT RETICA 2.16
2358 DI 0 10000
2359 DQ 0 10000
*

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```

2360 KK RETICA
2361 KM EXISTING
2362 KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: SUNSET FARMS UNIT 2&3
2363 KM TOTAL RETENTION IS 12.54ac-ft. 80% OF THAT IS USED HERE.
2364 DT RETICA 10.03
2365 DI 0 10000
2366 DQ 0 10000
*

```

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1
LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

2367 KK DR103
2368 KM RETURN DIVERT FROM MC.
2369 DR SW103
*

```

```

2370 KK SUBIE BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .8 Lca=.4 S= 6.0 Kn=.05 LAG= 34.3
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.302
* LG 0.25 0.15 8.80 0.09 30
* UI 30 58 126 164 203 267 368 289 232 1
* UI 137 135 135 132 113 115 126 84 88
* UI 146 93 51 44 30 16 9 9 9
* UI 5 0 0 0 0 0 0 0 0

```

```

2371 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2372 KM L= .8 Lca=.4 S= 6.0 Kn=.050 LAG= 33.2
2373 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2374 BA .302
2375 LG .25 .15 8.80 .09 30.00
2376 UI 31. 31. 31. 43. 101. 118. 143. 155. 169. 184.
2377 UI 201. 223. 242. 281. 343. 397. 368. 320. 286. 261.
2378 UI 242. 219. 197. 181. 162. 147. 129. 103. 82. 54.
2379 UI 54. 50. 50. 37. 31. 31. 31. 12. 9. 9.
2380 UI 9. 9. 9. 9. 9. 9. 9. 9. 9. 0.
2381 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
2382 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

2383 KK RETIE
2384 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
2385 DT RETIE 25.0
2386 DI 0 10000
2387 DQ 0 10000
*

```

```

2388 KK SUBID1 BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= 1.0 Lca=.4 S= 7.1 Kn=.05 LAG= 35.0
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.204
* LG 0.25 0.15 8.00 0.11 30
* UI 20 37 82 107 131 170 242 199 159 1
* UI 101 71 38 32 20 15 6 6 6
* UI 6 0 0 0 0 0 0 0 0
* UI 0 0 0 0 0 0 0 0 0

```

```

2389 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2390 KM L= 1.0 Lca=.4 S= 7.1 Kn=.050 LAG= 35.0
2391 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2392 BA .204
2393 LG .25 .15 8.00 .11 30.00
2394 UI 20. 20. 20. 20. 63. 72. 86. 95. 106. 113.
2395 UI 122. 133. 148. 160. 189. 225. 259. 232. 204. 183.
2396 UI 168. 156. 143. 129. 118. 107. 98. 90. 75. 56.

```

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

2397 UI 43. 35. 34. 32. 32. 21. 20. 20. 20. 8.
2398 UI 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.
2399 UI 6. 6. 0. 0. 0. 0. 0. 0. 0. 0.
2400 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

2401 KK RETID1
2402 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
2403 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
2404 KM FF for 22.49 acres; FF V= 0.94ac-ft
* DTRETID1 4.4
2405 DT RETID1 0.75
2406 DI 0 10000

```


2466	LG	.31	.25	5.30	.34	37.00								
2467	UI	26.	26.	26.	61.	94.	113.	130.	144.	157.	174.			
2468	UI	194.	217.	265.	323.	328.	278.	244.	221.	202.	180.			
2469	UI	162.	144.	129.	113.	89.	67.	46.	45.	43.	39.			
2470	UI	26.	26.	26.	11.	8.	8.	8.	8.	8.	8.			
2471	UI	8.	8.	8.	8.	0.	0.	0.	0.	0.	0.			
2472	UI	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			

2473 KK RETICB
 2474 KM RETENTION MODIFIED FROM 80% REQUIRED TO FIRST FLUSH FOR DETENTION BASIN ROUTI
 2475 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL
 2476 KM FF for 37.19 acres; FF V= 1.55ac-ft
 2477 DT RETICB 1.24
 2478 DI 0 10000
 2479 DQ 0 10000
 *

2480 KK RETICB
 2481 KM EXISTING
 2482 KM DIVERT RETENTION OUT OF MODEL DUE TO DEVELOPMENT: SUNSET FARMS UNIT 1 AND
 2483 KM LION'S GATE
 2484 KM TOTAL RETENTION IS 15.28ac-ft. 80% OF THAT IS USED HERE.
 2485 DT RETICB 12.22
 2486 DI 0 10000
 2487 DQ 0 10000
 *

2488 KK ~CPIB1
 2489 KM ADD HYDROGRAPHS AT IB.
 2490 HC 3 6.57
 *

2491 KK DV107A
 2492 KM DIVERT FLOW ABOVE 1200 CFS INTO LOWER 107TH AVE BASIN
 2493 DT 107L
 2494 DI 0 1200 1250 1300 1350 1400 1450 10000
 2495 DQ 0 0 50 100 150 200 250 8800
 *

2496 KK SUBOC BASIN
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= .8 Lca= .4 S= 13.2 Kn= .03 LAG= 17.6
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 * BA 0.310
 * LG 0.15 0.15 9.70 0.07 59
 * UI 85 285 452 670 436 263 109 56 18
 * UI 10 0 0 0 0 0 0 0 0
 * UI 0 0 0 0 0 0 0 0 0
 2497 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2498 KM L= .8 Lca= .4 S= 13.2 Kn= .03 LAG= 17.2
 2499 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 2500 BA .31

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LINE	ID12345678910
2501	LG	.15	.15	9.70	.07	59.00					
2502	UI	61.	65.	214.	286.	343.	407.	491.	678.	740.	577.
2503	UI	487.	402.	333.	270.	180.	108.	100.	69.	61.	26.
2504	UI	19.	19.	19.	19.	19.	0.	0.	0.	0.	0.
2505	UI	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

2506 KK RETOC
 2507 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2508 DT RETOC 31.1
 2509 DI 0 10000
 2510 DQ 0 10000
 *

2511 KK DROC
 2512 KM RETURN DIVERT FROM OD.
 2513 DR DIOC
 *

2514 KK RTDIOC ROUTE REACH
 2515 KM ROUTE DIVERT FROM OD TO OC
 2516 KM FUTURE ARTERIAL SECTION
 * RS 7 -1 0
 2517 RS 18 -1 0
 2518 RC 0.100 0.023 0.100 4000 0.0010 0.00
 2519 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 2520 RY 105 105 105 99.75 99.75 105 105 105
 *

2521 KK CPOC
 2522 KM ADD HYDROGRAPHS AT OC
 2523 HC 2 0.42
 *

2524 KK RTOCMB ROUTE REACH
 2525 KM ROUTE FLOW FROM OC TO MB.
 2526 KM FUTURE ARTERIAL SECTION
 * RS 3 -1 0
 2527 RS 8 -1 0
 2528 RC 0.100 0.023 0.100 5200 0.0038 0.00
 2529 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 2530 RY 105 105 105 99.75 99.75 105 105 105
 *

2531 KK SUBMB BASIN
 * KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 * KM L= 1.4 Lca= .7 S= 17.6 Kn= .0425 LAG= 34.5
 * KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 * BA 0.995
 * LG 0.21 0.15 8.40 0.10 46
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* UI 97 190 413 535 664 866 1210 956 766 5
 * UI 486 313 171 148 98 58 30 30 30
 * UI 17 0 0 0 0 0 0 0 0
 * UI 0 0 0 0 0 0 0 0 0

1

2532 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2533 KM L= 1.4 Lca= .7 S= 17.6 Kn= .0425 LAG= 35.2
 2534 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 2535 BA .995
 2536 LG .21 .15 8.40 .10 46.00
 2537 UI 95. 95. 95. 95. 302. 350. 413. 459. 512. 547.
 2538 UI 589. 645. 712. 771. 902. 1080. 1251. 1145. 998. 900.
 2539 UI 822. 764. 704. 630. 581. 528. 478. 444. 372. 288.
 2540 UI 228. 168. 167. 156. 156. 115. 95. 95. 95. 54.
 2541 UI 29. 29. 29. 29. 29. 29. 29. 29. 29. 29.
 2542 UI 29. 29. 0. 0. 0. 0. 0. 0. 0. 0.
 2543 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 *

2544 KK RETMB
 2545 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2546 DT RETMB 88.4
 2547 DI 0 10000
 2548 DQ 0 10000
 *

2549 KK DRMB
 2550 KM RETURN DIVERT FROM MC.
 2551 DR DIMB
 *

2552 KK RTDIMB ROUTE REACH
 2553 KM ROUTE DIVERT FROM MC TO MB
 2554 KM FUTURE ARTERIAL SECTION
 * RS 4 -1 0
 2555 RS 10 -1 0
 2556 RC 0.100 0.023 0.100 5200 0.0023 0.00
 2557 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 2558 RY 105 105 105 99.75 99.75 105 105 105
 *

2559 KK @CPMB
 2560 KM ADD HYDROGRAPHS AT MB.
 2561 HC 3 1.42
 *

2562 KK DIMBIB
 2563 KM DIVERT 50% OF FLOW AT MB TO IBB ALONG WEST SIDE OF 107TH AVE
 2564 DT DIIBW
 2565 DI 0 50 100 1000 10000
 2566 DQ 0 25 50 500 5000
 *

2567 KK RTMBIB ROUTE REACH
 2568 KM ROUTE FLOW FROM MB TO IB (ALONG 107TH AVENUE).
 2569 KM FUTURE ARTERIAL SECTION
 * RS 8 -1
 2570 RS 20 FLOW -1
 2571 RC 0.100 0.030 0.100 2600 0.0015
 2572 RX 0 0.1 10 42 82 114 124 124.1
 2573 RY 9 8 8 0 0 8 8 9
 *

1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2574 KK DV107B
 2575 KM DIVERT 100% OF FLOW INTO UPPER 107TH AVE BASIN
 2576 DT 107U
 2577 DI 0 10000
 2578 DQ 0 10000
 *

2579 KK @CPIB2
 2580 KM COMBINE FLOW FROM IB & IC WITH FLOWS FROM MB
 2581 HC 2 6.57
 *

2582 KK RRIB
 2583 KM MODIFIED PULS ROUTING
 2584 KM DETENTION IN DRCC RIGHT OF WAY AT IB (107TH AVENUE) POL
 2585 RS 1 STOR 0 0
 2586 SV 0 57 66 85
 2587 SQ 0 546 811 1924
 *

2588 KK MCIBIA ROUTE REACH
 2589 KM ADMP CHANNEL
 2590 KM ROUTE FLOW FROM IB TO IA
 * RS 4 FLOW -1
 2591 RS 10 FLOW -1
 2592 RC 0.040 0.040 0.040 2493 0.0005 0.00
 2593 RX 1.0 17.0 35.2 53.3 263.3 281.5 299.7 315.7
 2594 RY 5.7 6.1 3.0 0.0 0.0 3.0 6.1 5.7
 *

* KM HEC-RAS REACH
 * KM BFC
 * KM ROUTE FLOW FROM IB TO IA (ALONG 107TH AVENUE).
 * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
 * KM HEC-RAS MODEL. 06.07.00 -DCF
 * RS 3 STOR 0
 * SV 0 17 45.4 77 106 135.9 167.9 199.8 228.7 2
 * SQ 0 400 800 1200 1600 2000 2400 2800 3200 34
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```

*
* KM FUTURE ARTERIAL SECTION
* RS 1 -1 0
* RC 0.100 0.023 0.100 500 0.0120 0.00
* RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
* RY 105 105 105 99.75 99.75 105 105 105
*

```

```

2595
KK SUBME BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= 1.0 Lca= .4 S= 20.6 Kn= .050 LAG= 30.1
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* BA 0.326
* LG 0.29 0.26 4.70 0.44 18
* UI 36 91 172 222 290 437 366 282 215 1
* UI 83 61 39 23 11 11 11 11 0 0
* UI 0 0 0 0 0 0 0 0 0 0
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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

2596 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2597 KM L= 1.0 Lca= .4 S= 20.6 Kn= .050 LAG= 28.6
2598 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2599 BA .326
2600 LG .29 .26 4.70 .44 18.00
2601 UI 38. 38. 38. 101. 141. 174. 196. 217. 237. 266.
2602 UI 295. 344. 426. 502. 438. 378. 338. 307. 275. 244.
2603 UI 220. 193. 173. 136. 103. 68. 66. 63. 56. 38.
2604 UI 38. 38. 12. 12. 12. 12. 12. 12. 12. 12.
2605 UI 12. 12. 0. 0. 0. 0. 0. 0. 0. 0.
2606 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

2607 KK RETME
2608 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
2609 DT RETME 22.8
2610 DI 0 10000
2611 DQ 0 10000
*

```

```

2612 KK RDIIBW
2613 KM RETURN DIVERT FROM MB COMBINE 1/2 MB FLOW WITH ME
2614 DR DIIBW
*

```

```

2615 KK CPME
2616 KM ADD HYDROGRAPHS AT ME.
2617 HC 2 1.04
*

```

```

2618 KK RTMEIA ROUTE REACH
2619 KM ROUTE FLOW FROM ME TO IA (ALONG 107TH AVENUE).
2620 KM FUTURE ARTERIAL SECTION
* RS 3 -1 0
RS 8 -1 0
RC 0.100 0.023 0.100 3400 0.0034 0.00
RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
RY 105 105 105 99.75 99.75 105 105 105
*

```

```

2625 KK SUBIA BASIN
* KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
* KM L= .8 Lca= .4 S= 17.1 Kn= .05 LAG= 26.2
* KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
* KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
* KM WITHOUT RETENTION. - JCS
* BA 0.309
* LG 0.27 0.25 6.00 0.25 23.1
* UI 40 125 210 277 426 426 309 227 152
* UI 53 32 12 12 12 8 0 0 0
* UI 0 0 0 0 0 0 0 0 0

```

```

2626 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2627 KM L= .8 Lca= .4 S= 17.1 Kn= .050 LAG= 27.2
2628 KM PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
2629 BA .309
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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

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2630 LG .27 .25 6.00 .25 23.10
2631 UI 38. 38. 38. 114. 148. 180. 202. 223. 248. 280.
2632 UI 314. 393. 478. 464. 390. 343. 311. 278. 245. 219.
2633 UI 192. 168. 130. 94. 68. 65. 63. 46. 38. 38.
2634 UI 23. 12. 12. 12. 12. 12. 12. 12. 12. 12.
2635 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
2636 UI 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
*

```

```

2637 KK RETIA
2638 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
2639 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
2640 KM WITHOUT RETENTION. - JCS
2641 DT RETIA 3.6
2642 DI 0 10000
2643 DQ 0 10000
*

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```

2644 KK ~CPIA
2645 KM ADD HYDROGRAPHS AT IA.
2646 HC 3 9.81
*

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```

2647 KK MCIAB ROUTE REACH
2648 KM ADMP CHANNEL
2649 KM ROUTE FLOW FROM BASIN IA TO HB
* RS 4 FLOW -1

```

2650 RS 10 FLOW -1
 2651 RC 0.040 0.040 0.040 2646 0.0005 0.00
 2652 RX 0.0 16.0 34.1 52.2 262.2 280.3 298.4 314.4
 2653 RY 5.7 6.0 3.0 0.0 0.0 3.0 6.0 5.7
 * KM HEC-RAS REACH
 * KM BFC
 * KM ROUTE FLOW FROM IA TO HB.
 * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
 * KM HEC-RAS MODEL. 06.07.00 -DCF
 * RS 2 STOR 0
 * SV 0 23.3 45.2 73 102.7 132.9 160.6 189.4 212.1 222
 * SQ 0 400 800 1200 1600 2000 2400 2800 3200 34
 *

2654 KK SUBHB BASIN
 2655 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2656 KM L= .8 Lca= .4 S= 25.0 Kn= .050 LAG= 25.1
 2657 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2658 KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2659 KM WITHOUT RETENTION. - JCS
 2660 BA 0.343
 2661 LG 0.27 0.25 4.80 0.41 24.3
 2662 UI 46 154 250 336 531 450 329 239 132 78
 2663 UI 48 21 14 14 14 0 0 0 0 0
 2664 UI 0 0 0 0 0 0 0 0 0 0
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2665 KK RETHB
 2666 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 2667 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2668 KM WITHOUT RETENTION. - JCS
 2669 DT RETHB 4.5
 2670 DI 0 10000
 2671 DQ 0 10000
 *

2672 KK CPHB1
 2673 KM ADD HYDROGRAPHS AT HB.
 2674 HC 2 10.15
 *

2675 KK SUBDA BASIN
 2676 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2677 KM L= 1.0 Lca= .6 S= 17.6 Kn= .05 LAG= 34.0
 2678 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2679 KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2680 KM WITHOUT RETENTION. - JCS
 2681 BA 0.328
 2682 LG 0.30 0.17 6.80 0.18 15
 2683 UI 32 65 140 181 225 302 400 311 249 195
 2684 UI 154 94 56 46 33 14 10 10 10 10
 2685 UI 3 0 0 0 0 0 0 0 0 0
 2686 UI 0 0 0 0 0 0 0 0 0 0
 *

2687 KK RETDA
 2688 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 2689 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2690 KM WITHOUT RETENTION. - JCS
 2691 DT RETDA 4.6
 2692 DI 0 10000
 2693 DQ 0 10000
 *

2694 KK ~CPDA
 2695 KM ADD HYDROGRAPHS AT DA.
 2696 HC 2 10.48
 *

2697 KK SUBLD BASIN
 2698 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2699 KM L= .8 Lca= .4 S= 13.3 Kn= .05 LAG= 30
 2700 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2701 BA 0.278
 2702 LG 0.28 0.26 4.80 0.37 29
 2703 UI 32 82 153 197 263 386 305 236 179 126
 2704 UI 65 49 32 14 10 10 9 6 0 0
 2705 UI 0 0 0 0 0 0 0 0 0 0
 *

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1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2706 KK RETLD
 2707 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2708 DT RETLD 20.7
 2709 DI 0 10000
 2710 DQ 0 10000
 *
 * THE FOLLOWING RETURN AND ROUTE REMOVED TO MODEL THE ADMP CONDITION
 * KK DRLD
 * KM RETURN DIVERT FROM LE TO LD
 * DR DILD
 *
 * KKRTDILD ROUTE REACH
 * KM ROUTE DIVERT FROM LE TO LD
 * KM TYPE A CHANNEL
 * RS 4 -1 0
 * RC 0.025 0.025 0.025 2500 0.0016 0.00
 * RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 * RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

2711 KK RTLDMA ROUTE REACH
 2712 KM ROUTE FLOW FROM LD TO MA
 2713 KM TYPE A CHANNEL
 2714 RS 3 -1 0
 2715 RC 0.025 0.025 0.025 2600 0.0035 0.00
 2716 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 2717 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

2718 KK SUBMA BASIN
 2719 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2720 KM L= .7 Lca=.3 S= 14.7 Kn=.050 LAG= 24.8
 2721 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2722 BA 0.247
 2723 LG 0.30 0.25 4.55 0.52 15
 2724 UI 33 115 184 250 392 320 234 167 88 55
 2725 UI 34 12 10 10 8 0 0 0 0 0
 2726 UI 0 0 0 0 0 0 0 0 0 0
 *

2727 KK RETMA
 2728 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2729 DT RETMA 16.3
 2730 DI 0 10000
 2731 DQ 0 10000
 *

2732 KK CPMA
 2733 KM ADD HYDROGRAPHS AT MA
 2734 HC 2 0.53
 *

HEC-1 INPUT

1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2735 KK RTMAHB ROUTE REACH
 2736 KM ROUTE FLOW FROM MA TO HB (ALONG 115TH AVENUE).
 2737 KM FUTURE ARTERIAL SECTION
 2738 RS 3 -1 0
 2739 RC 0.100 0.023 0.100 4000 0.0071 0.00
 2740 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 2741 RY 105 105 105 99.75 99.75 105 105 105
 *

2742 KK CPHB2
 2743 KM ADD HYDROGRAPHS AT HB.
 2744 HC 2 11.00
 *

* THE FOLLOWING ROUTES REMOVED TO MODEL THE ADMP CONDITION
 * ROUTING TO DA NO LONGER OCCURS BUT IS COMBINED INTO CHANNEL AT HB
 * KKRTHBDA
 * KM HEC-RAS REACH
 * KM BFC
 * KM ROUTE FLOW FROM HB TO DA (ALONG 115TH AVENUE).
 * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
 * KM HEC-RAS MODEL. 06.07.00 -DCF
 * RS 2 STOR 0
 * SV 0 11.3 18.3 26.4 34.3 40.3 46.2 51.7 56.5 59
 * SQ 0 400 800 1200 1600 2000 2400 2800 3200 34
 *
 * KKRTDACC
 * KM HEC-RAS REACH
 * KM BFC
 * KM ROUTE FLOW FROM DA TO CC.
 * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
 * KM HEC-RAS MODEL. 06.07.00 -DCF
 * RS 6 STOR 0
 * SV 0 49.6 80.6 107.1 129.8 149.2 167 184.1 200.2 207
 * SQ 0 400 800 1200 1600 2000 2400 2800 3200 34
 *

2745 KK SUBLB BASIN
 2746 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2747 KM L= .7 Lca=.3 S= 8.8 Kn=.050 LAG= 27
 2748 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2749 BA 0.249
 2750 LG 0.30 0.25 4.60 0.49 15
 2751 UI 31 90 158 206 297 358 258 192 142 72
 2752 UI 50 31 14 10 10 9 3 0 0 0
 2753 UI 0 0 0 0 0 0 0 0 0 0
 *

2754 KK RETLB
 2755 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2756 DT RETLB 16.4
 2757 DI 0 10000
 2758 DQ 0 10000
 *

HEC-1 INPUT

1
 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2759 KK RTLBA ROUTE REACH
 2760 KM ROUTE FLOW FROM LB TO HA (SHEET FLOW).
 2761 KM TYPE A CHANNEL
 2762 RS 13 -1 0
 2763 RC 0.100 0.100 0.100 4000 0.0065 0.00
 2764 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 2765 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

2766 KK SUBHA BASIN
 2767 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2768 KM L= .8 Lca=.4 S= 33.8 Kn=.05 LAG= 23.5
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2769 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2770 BA 0.150
 2771 LG 0.25 0.25 4.70 0.44 30
 2772 UI 21 79 122 172 255 186 133 089 42 27
 2773 UI 14 7 7 7 0 0 0 0 0 0
 2774 UI 0 0 0 0 0 0 0 0 0 0
 *

2775 KK RETHA
 2776 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 2777 DT RETHA 3.2
 2778 DI 0 10000
 2779 DQ 0 10000
 *

2780 KK CPHA
 2781 KM ADD HYDROGRAPHS AT HA
 2782 HC 3 11.40
 * *****
 * INSERTED SOUTH ALIGNMENT FROM 1084F6-IMP-R.DAT - JCS
 * ADDED/CHANGED SUBJB2 TO CPEE IN ORDER TO REINSERT SUBJB2 - JCS
 *

2783 KK MCHACB ROUTE REACH
 2784 KM ADMP CHANNEL
 2785 KM ROUTE FLOW FROM HA TO CB.
 2786 RS 8 FLOW -1
 2787 RC 0.040 0.040 0.040 9163 0.0017 0.00
 2788 RX 0.0 16.0 33.7 51.4 201.4 219.4 228.1 244.1
 2789 RY 5.6 5.9 3.0 0.0 0.0 3.0 5.9 5.6
 *

2790 KK SUBJB2
 2791 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2792 KM L= 1.3 Lca= .7 S= 17.4 Kn=.050 LAG= 40
 2793 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2794 BA 0.493
 2795 LG 0.30 0.21 6.40 0.18 15
 2796 UI 41 54 151 203 242 293 372 515 433 350
 2797 UI 292 237 194 133 73 68 46 41 14 13
 2798 UI 12 13 13 13 2 0 0 0 0 0
 *

1

HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2799 KK RETJB2
 2800 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2801 DT RETJB2 32.4
 2802 DI 0 10000
 2803 DQ 0 10000
 *

2804 KK DRJB2
 2805 KM RETURN DIVERT FROM JC2
 2806 DR DIJB2
 *

2807 KK RTJCB ROUTE REACH
 2808 KM ROUTE DIVERT FROM JC2 TO JB2
 2809 KM FUTURE ARTERIAL SECTION
 2810 RS 4 -1 0
 2811 RC 0.100 0.023 0.100 5000 0.0015 0.00
 2812 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 2813 RY 105 105 105 99.75 99.75 105 105 105
 *

2814 KK @CPJB2
 2815 KM ADD HYDROGRAPHS AT JB2
 2816 HC 2 0.99
 *

2817 KK DIJBEE
 2818 KM DIVERT 64% OF FLOW AT JB2 TO FA AND THE SALT RIVER. - JCS
 2819 DT DIFA
 2820 DI 0 25 50 75 100 150 2000
 2821 DQ 0 16 32 48 64 96 1280
 *

2822 KK RTJBEE ROUTE REACH
 2823 KM ROUTE DIVERT FROM JB TO EE
 2824 KM TYPE A CHANNEL
 2825 RS 10 -1 0
 2826 RC 0.100 0.023 0.100 7500 0.0015 0.00
 2827 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 2828 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

2829 KK SUBBEE
 2830 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2831 KM L= 1.6 Lca= 1.0 S= 16.0 Kn=.05 LAG= 50.8
 2832 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2833 BA 0.958
 2834 LG 0.20 0.25 4.90 0.34 15
 2835 UI 63 63 159 258 318 366 421 494 637 802
 2836 UI 695 577 504 428 362 314 244 157 113 104
 2837 UI 79 64 51 19 20 20 19 20 20 20
 2838 UI 7 0 0 0 0 0 0 0 0 0
 2839 UI 0 0 0 0 0 0 0 0 0 0
 *

1

HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2840 KK RETEE

2841 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2842 DT RETEE 63.0
 2843 DI 0 10000
 2844 DQ 0 10000
 *

2845 KK CPEE
 2846 KM ADD HYDROGRAPHS AT EE
 2847 HC 2 1.31
 *

2848 KK RTEEEA
 2849 KM HEC-RAS REACH
 2850 KM ROUTE FLOW FROM EE TO EA.
 2851 KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES OBTAINED FROM THE
 2852 KM DIBBLE MODEL DUR-6im.DAT. POL 9-6-2005
 2853 RS 9 STOR 0
 2854 SV 0 63.2 84.9 119 148.6 174.2 197.9 220.2 241.2 263.1
 2855 SQ 0 100 200 400 600 800 1000 1200 1400 1600

* KKRTTEEA ROUTE REACH
 * KM ROUTE FLOW FROM EE TO EA
 * KM TYPE A CHANNEL
 * RS 9 -1 0
 * RC 0.035 0.035 0.035 5300 0.0030 0.00
 * RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 * RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

2856 KK SUBEA BASIN
 2857 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2858 KM L= 1.5 Lca= .8 S= 21.3 Kn= .05 LAG= 44.3
 2859 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2860 BA 1.321
 2861 LG 0.29 0.25 5.30 0.34 16
 2862 UI 100 101 340 457 556 647 776 1034 1263 1015
 2863 UI 846 715 587 501 364 221 170 151 100 89
 2864 UI 31 31 31 30 30 30 15 0 0 0
 2865 UI 0 0 0 0 0 0 0 0 0 0
 *

2866 KK RETEA
 2867 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2868 DT RETEA 89.2
 2869 DI 0 10000
 2870 DQ 0 10000
 *

HEC-1 INPUT

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2871 KK CPEA
 2872 KM ADD HYDROGRAPHS AT EA
 2873 HC 2 2.63
 *

* KKP-99SO
 * KO 1 2
 * KM DIVERT OVERFLOW INTO BASIN - JLM 6/17/02
 * DTB-99SO
 * DI 0 260 260 2000 5000
 * DQ 0 0 1 1740 4740
 *

2874 KK RTEADC ROUTE REACH
 2875 KM ROUTE FLOW FROM EA TO DC
 2876 KM SUNLAND CHANNEL
 2877 RS 7 -1 0
 2878 RC 0.040 0.040 0.040 4951 0.0018 0.00
 2879 RX 0.0 100.0 101.0 137.0 157.0 193.0 194.0 294.0
 2880 RY 6.0 6.0 6.0 0.0 0.0 6.0 6.0 6.0
 *

2881 KK SUBDC BASIN
 2882 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2883 KM L= 1.4 Lca= .4 S= 22.1 Kn= .05 LAG= 33.5
 2884 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2885 KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2886 KM WITHOUT RETENTION. - JCS
 2887 BA 0.830
 2888 LG 0.29 0.25 6.00 0.27 16
 2889 UI 83 170 363 469 584 800 1016 778 624 486
 2890 UI 377 216 142 108 83 26 26 26 26 25
 2891 UI 2 0 0 0 0 0 0 0 0 0
 2892 UI 0 0 0 0 0 0 0 0 0 0
 *

2893 KK RETDC
 2894 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL (43%) - JCS
 2895 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL (12%) - JCS
 2896 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2897 KM WITHOUT RETENTION. (45%) - JCS
 2898 DT RETDC 25.9
 2899 DI 0 10000
 2900 DQ 0 10000
 *

2901 KK ~CPDC
 2902 KM ADD HYDROGRAPHS AT DC
 2903 HC 2 3.46
 *

HEC-1 INPUT

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2904 KK RTDCCC ROUTE REACH

2905 KM ROUTE FLOW FROM DC TO CC.
 2906 KM SUNLAND CHANNEL
 2907 RS 5 -1 0
 2908 RC 0.040 0.040 0.040 5103 0.0022 0.00
 2909 RX 0.0 100.0 101.0 137.0 167.0 203.0 204.0 304.0
 2910 RY 6.0 6.0 6.0 0.0 0.0 6.0 6.0 6.0
 *

2911 KK SUBDD BASIN
 2912 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2913 KM L= .5 Lca= .3 S= 28.3 Kn= .050 LAG= 18.2
 2914 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2915 BA 0.133
 2916 LG 0.25 0.25 4.65 0.43 30
 2917 UI 34 115 178 281 193 123 53 30 10 8
 2918 UI 7 0 0 0 0 0 0 0 0 0
 2919 UI 0 0 0 0 0 0 0 0 0 0
 *

2920 KK RETDD
 2921 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 2922 DT RETDD 11.0
 2923 DI 0 10000
 2924 DQ 0 10000
 *

2925 KK RTDDCCROUTE REACH
 2926 KM ROUTE FLOW FROM DD TO CC.
 2927 KM TYPE A CHANNEL
 2928 RS 7 -1 0
 2929 RC 0.035 0.035 0.035 5000 0.0040 0.00
 2930 RX 0.0 100.0 400.0 500.0 500.1 600.0 900.0 1000.0
 2931 RY 5.0 4.0 1.0 0.0 0.0 1.0 4.0 5.0
 *

2932 KK SUBCC BASIN
 2933 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2934 KM L= 1.4 Lca= .7 S= 22.8 Kn= .05 LAG= 38.6
 2935 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2936 KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2937 KM WITHOUT RETENTION. - JCS
 2938 BA 0.981
 2939 LG 0.30 0.24 6.20 0.21 15
 2940 UI 85 130 328 437 522 639 869 1062 820 677
 2941 UI 546 446 331 189 145 111 86 42 26 26
 2942 UI 26 25 26 2 0 0 0 0 0 0
 2943 UI 0 0 0 0 0 0 0 0 0 0
 *

1

HEC-1 INPUT

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2944 KK RETCC
 2945 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL (54%) - JCS
 2946 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL (24%) - JCS
 2947 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 2948 KM WITHOUT RETENTION. (40%) - JCS
 2949 DT RETCC 34.2
 2950 DI 0 10000
 2951 DQ 0 10000
 *

2952 KK ~CPCC
 2953 HC 3 4.57
 *

2954 KK RTCCSC
 2955 KM ROUTE FLOW FROM CC TO DRCC
 2956 KM SUNLAND CHANNEL
 2957 RS 4 -1 0
 2958 RC 0.040 0.040 0.040 3027 0.0008 0.00
 2959 RX 0.0 100.0 101.0 137.0 167.0 203.0 204.0 304.0
 2960 RY 6.0 6.0 6.0 0.0 0.0 6.0 6.0 6.0
 *

2961 KK RTCCSC
 2962 KM HEC-RAS REACH
 2963 KM BFC
 2964 KM ROUTE SUNLAND IN DRCC
 2965 KM DRCC CHANNEL
 2966 RS 2 -1 0
 2967 RC 0.040 0.040 0.040 2256 0.0017 0.00
 2968 RX 0.0 100.0 101.0 137.0 287.0 353.0 354.0 454.0
 2969 RY 6.0 6.0 6.0 0.0 0.0 6.0 6.0 6.0
 *

2970 KK SUBCB BASIN
 2971 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2972 KM L= 1.2 Lca= .5 S= 11.1 Kn= .05 LAG= 36.9
 2973 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2974 BA 0.739
 2975 LG 0.30 0.15 9.70 0.07 15
 2976 UI 67 114 268 355 429 535 768 774 596 488
 2977 UI 390 310 194 117 102 68 43 21 21 21
 2978 UI 21 21 1 0 0 0 0 0 0 0
 2979 UI 0 0 0 0 0 0 0 0 0 0
 *

2980 KK RETCB
 2981 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 2982 DT RETCB 15.8
 2983 DI 0 10000
 2984 DQ 0 10000
 *

1

HEC-1 INPUT

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

2985 KK ~CPCB1
 2986 HC 3 16.71
 *

2987 KK SUBGD1 BASIN
 2988 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 2989 KM L= 1.1 Lca= .6 S= 33.3 Kn= .05 LAG= 31.6
 2990 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 2991 BA 0.629
 2992 LG 0.25 0.25 5.30 0.33 30
 2993 UI 67 155 306 394 501 742 750 564 440 342
 2994 UI 225 116 96 68 26 21 21 20 18 0
 2995 UI 0 0 0 0 0 0 0 0 0 0
 *

2996 KK RETGD1
 2997 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 2998 DT RETGD1 13.4
 2999 DI 0 10000
 3000 DQ 0 10000
 *

3001 KK SUBGD2
 3002 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 3003 KM L= 1.2 Lca= .5 S= 11.1 Kn= .05 LAG= 37.5
 3004 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 3005 BA 0.211
 3006 LG 0.25 0.15 9.70 0.07 30
 3007 UI 66 108 259 345 414 512 722 791 604 498
 3008 UI 395 327 218 119 109 69 56 21 21 20
 3009 UI 21 20 9 0 0 0 0 0 0 0
 3010 UI 0 0 0 0 0 0 0 0 0 0
 *

3011 KK RETGD2
 3012 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 3013 DT RETGD2 15.8
 3014 DI 0 10000
 3015 DQ 0 10000
 *

3016 KK CPGD
 3017 KM RECOMBINE SUBBASIN GD - JCS
 3018 HC 2 0.84
 *

3019 KK SUBKC BASIN
 3020 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 3021 KM L= .8 Lca= .4 S= 26.3 Kn= .050 LAG= 25
 3022 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 3023 BA 0.264
 3024 LG 0.25 0.25 4.60 0.50 30
 3025 UI 35 119 193 260 409 346 253 183 101 60
 3026 UI 37 16 11 11 11 0 0 0 0 0
 HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

3027 UI 0 0 0 0 0 0 0 0 0 0
 *

3028 KK RETKC
 3029 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 3030 DT RETKC 21.8
 3031 DI 0 10000
 3032 DQ 0 10000
 *

3033 KK RTKCGDROUTE REACH
 3034 KM ROUTE FLOW FROM KC TO GD1 (ALONG EL MIRAGE RD).
 3035 KM ASSUME NEGLIGIBLE CHANNEL TRANSMISSION LOSS.
 3036 KM FUTURE ARTERIAL SECTION
 3037 RS 3 -1 0
 3038 RC 0.100 0.023 0.100 4090 0.0049 0.00
 3039 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 3040 RY 105 105 105 99.75 99.75 105 105 105
 *

3041 KK SUBGC BASIN
 3042 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 3043 KM L= .8 Lca= .4 S= 26.5 Kn= .045 LAG= 23.3
 3044 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 3045 KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 3046 KM WITHOUT RETENTION. - JCS
 3047 BA 0.215
 3048 LG 0.28 0.26 4.70 0.34 19.7
 3049 UI 31 116 178 254 368 265 189 123 57 38
 3050 UI 19 10 9 9 0 0 0 0 0 0
 3051 UI 0 0 0 0 0 0 0 0 0 0
 *

3052 KK RETGC
 3053 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 3054 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 3055 KM WITHOUT RETENTION. - JCS
 3056 DT RETGC 5.0
 3057 DI 0 10000
 3058 DQ 0 10000
 *

3059 KK RTGCGD ROUTE REACH
 3060 KM ROUTE FLOW FROM GC TO GD1 (ALONG EL MIRAGE ROAD).
 3061 KM FUTURE ARTERIAL SECTION
 3062 RS 1 -1 0

3063 RC 0.100 0.023 0.100 820 0.0049 0.00
 3064 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 3065 RY 105 105 105 99.75 99.75 105 105 105
 *

HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

3066 KK CPGD1
 3067 KM ADD ALL HYDROGRAPHS AT GD1.
 3068 HC 3 1.32
 *

3069 KK RTGDCB ROUTE REACH
 3070 KM ROUTE FLOW FROM GD1 TO CB
 3071 RS 6 FLOW -1
 3072 RC 0.100 0.023 0.100 3880 0.0010 0.00
 3073 RX 0.0 440 445 445.1 575.1 575.2 900 1000.0
 3074 RY 105 105 105 99.75 99.75 105 105 105
 *

3075 KK ~CPCB2
 3076 KM COMBINE FLOWS FROM CB TO CHANNEL
 3077 HC 2 18.03
 *

3078 KK MCCBCA
 3079 KM ADMP CHANNEL
 3080 KM ROUTE FLOW FROM CB TO CA.
 3081 RS 8 FLOW -1
 3082 RC 0.040 0.040 0.040 5026 0.0014 0.00
 3083 RX 0.0 16.0 33.7 51.4 201.4 219.4 228.1 244.1
 3084 RY 5.6 5.9 3.0 0.0 0.0 3.0 5.9 5.6
 *

3085 KK SUBCA1 BASIN
 3086 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 3087 KM L= 1.0 Lca= .5 S= 6.4 Kn= .05 LAG= 38.9
 3088 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 3089 KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 3090 KM WITHOUT RETENTION. - JCS
 3091 BA 0.143
 3092 LG 0.26 0.15 7.60 0.14 26.9
 3093 UI 12 18 47 63 75 92 124 154 120 99
 3094 UI 81 65 50 29 21 17 12 7 4 4
 3095 UI 4 4 4 1 0 0 0 0 0 0
 3096 UI 0 0 0 0 0 0 0 0 0 0
 *

3097 KK RETCA1
 3098 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 3099 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 3100 KM WITHOUT RETENTION. - JCS
 3101 DT RETCA1 2.4
 3102 DI 0 10000
 3103 DQ 0 10000
 *

HEC-1 INPUT

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

3104 KK SUBCA2 BASIN
 3105 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 3106 KM L= 1.0 Lca= .5 S= 7.8 Kn= .05 LAG= 37.4
 3107 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 3108 BA 0.841
 3109 LG 0.30 0.15 8.80 0.09 15
 3110 UI 76 123 297 297 393 474 585 829 898 566
 3111 UI 448 369 247 134 124 76 63 23 23 23
 3112 UI 23 23 9 0 0 0 0 0 0 0
 3113 UI 0 0 0 0 0 0 0 0 0 0
 *

3114 KK RETCA2
 3115 KM DIVERT 80% OF FIRST FLUSH 1/2" RETENTION OUT OF MODEL - JCS
 3116 DT RETCA2 17.9
 3117 DI 0 10000
 3118 DQ 0 10000
 *

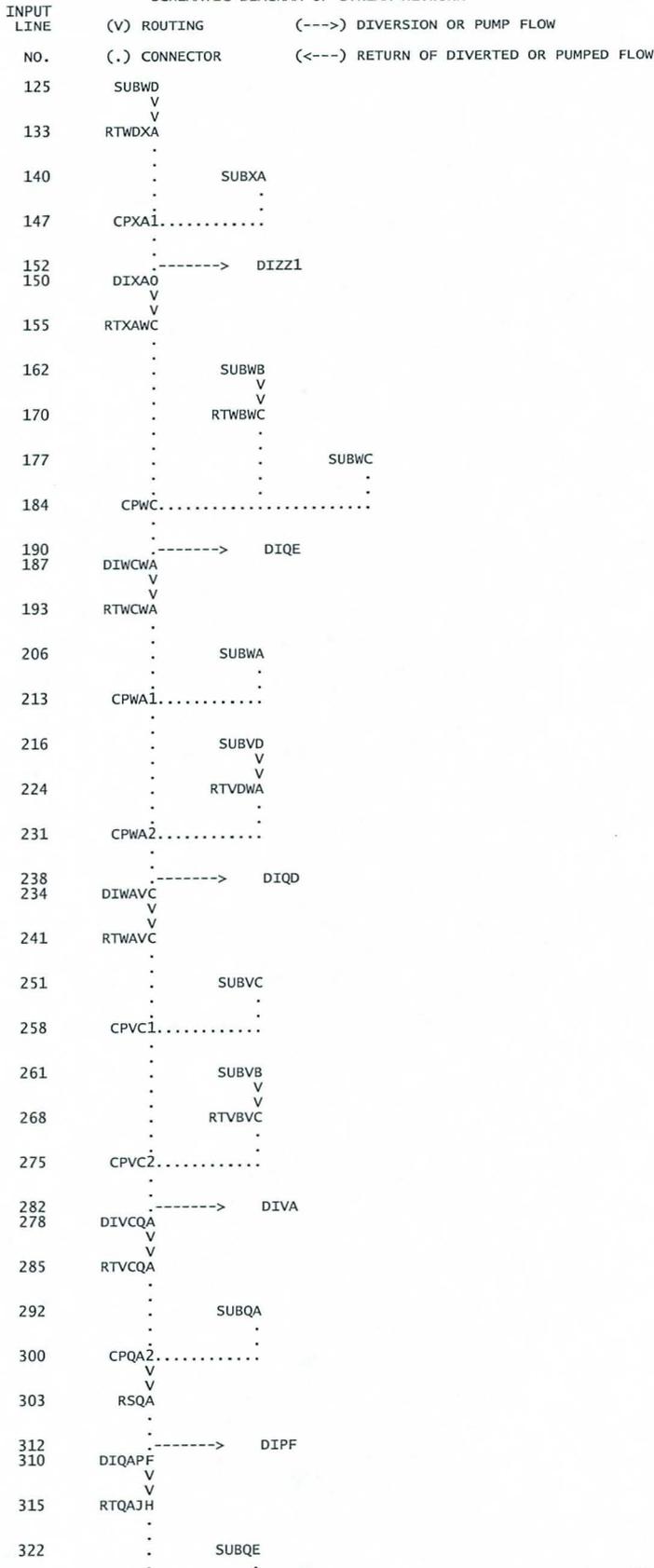
3119 KK ~CPCA1
 3120 KM COMBINE FLOWS AT CA
 3121 KM RECOMBINE SUBBASIN CA - JCS
 3122 HC 3 19.01
 *

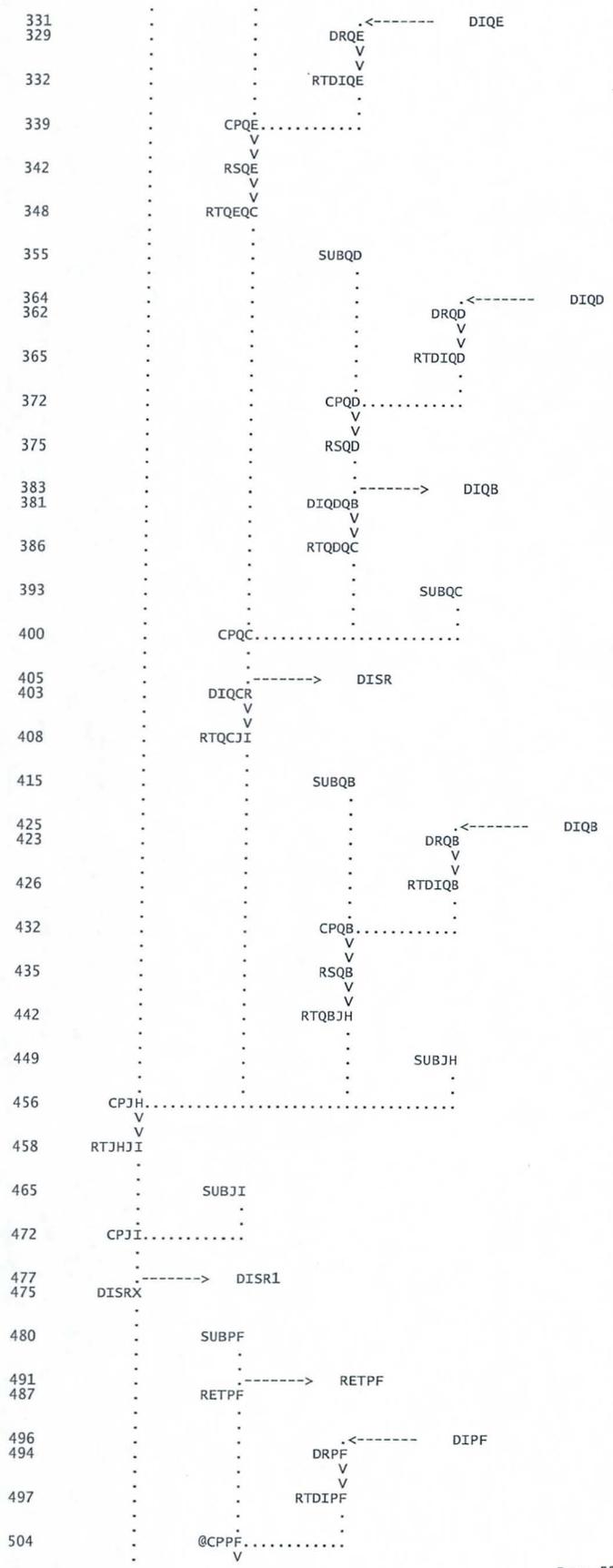
3123 KK SUBGB BASIN
 3124 KM THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 3125 KM L= .8 Lca= .6 S= 36.1 Kn= .05 LAG= 27.4
 3126 KM VALLEY S-GRAPH WAS USED FOR THIS BASIN - JCS
 3127 KM THIS SUBBASIN HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 3128 KM WITHOUT RETENTION. - JCS
 3129 BA 0.221
 3130 LG 0.30 0.25 4.55 0.42 15
 3131 UI 27 79 139 181 260 318 230 171 127 65
 3132 UI 45 27 13 8 8 8 3 0 0 0
 3133 UI 0 0 0 0 0 0 0 0 0 0
 *

3134 KK RETGB
 3135 KM DIVERT 80% REQUIRED DEVELOPMENT RETENTION OUT OF MODEL - JCS
 3136 KM THIS DIVERSION HAS BE MODIFIED TO ACCOUNT FOR EXISTING DEVELOPMENT
 3137 KM WITHOUT RETENTION. - JCS
 3138 DT RETGB 8.3
 3139 DI 0 10000

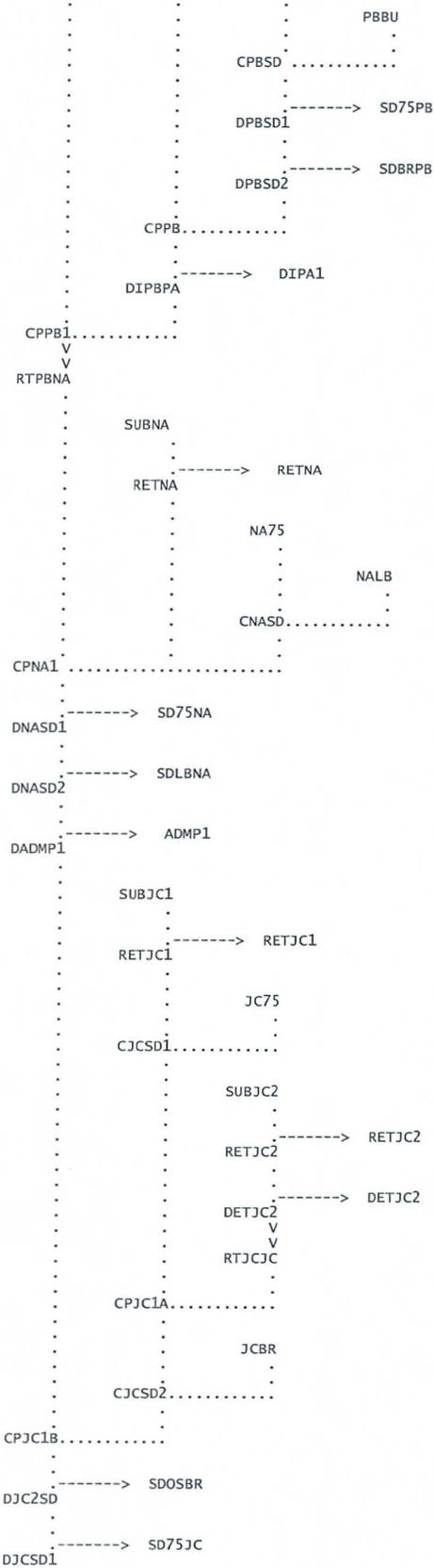
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SCHEMATIC DIAGRAM OF STREAM NETWORK

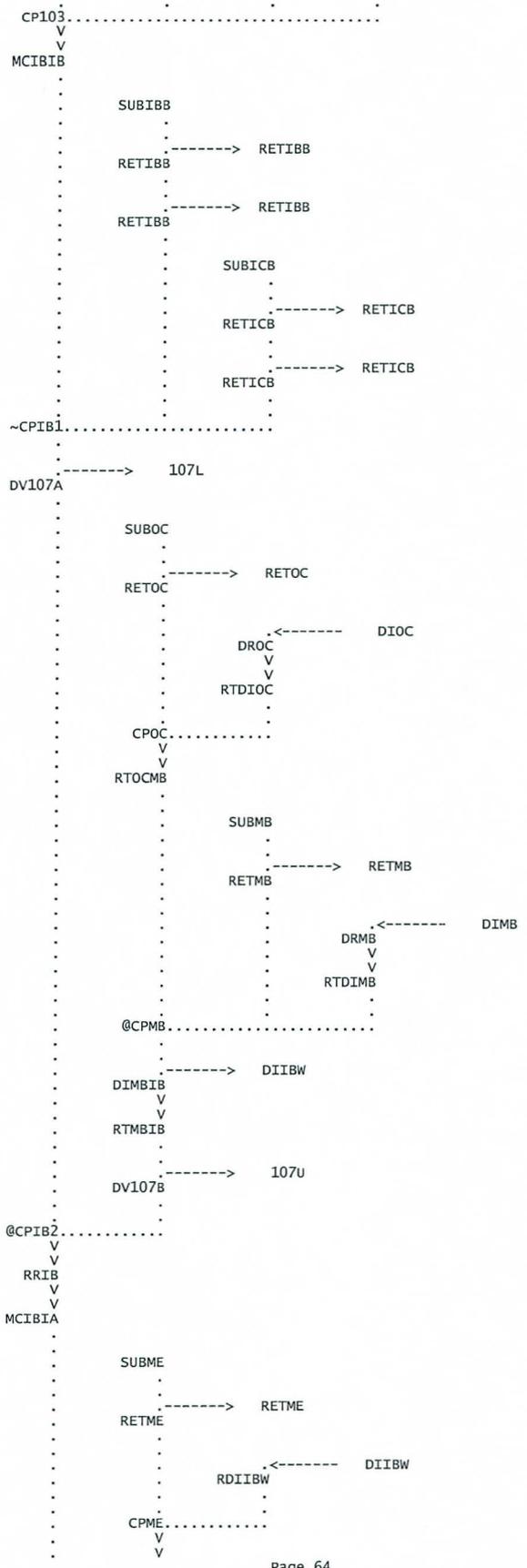




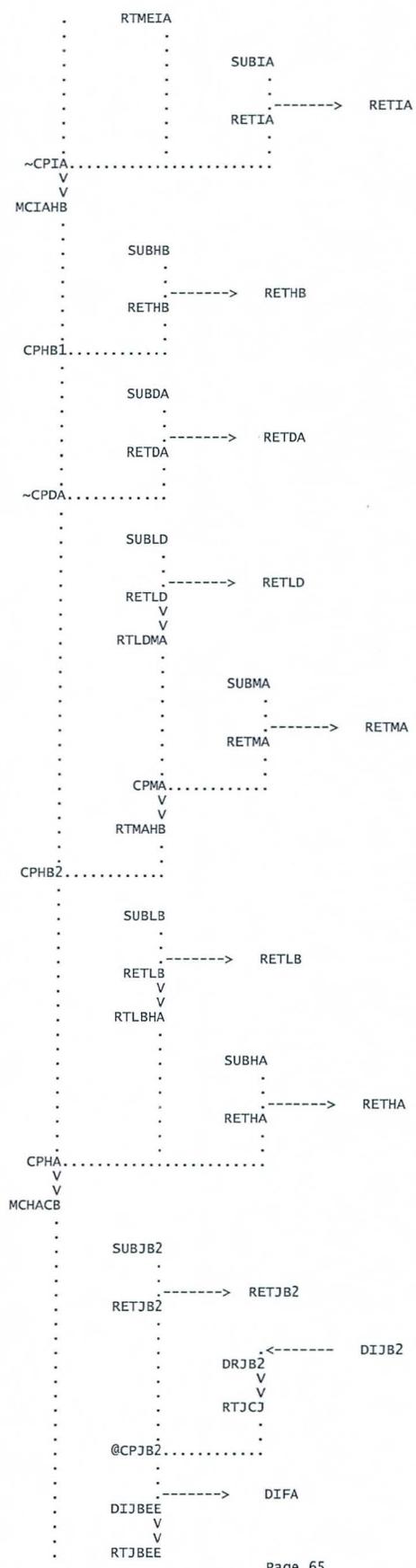
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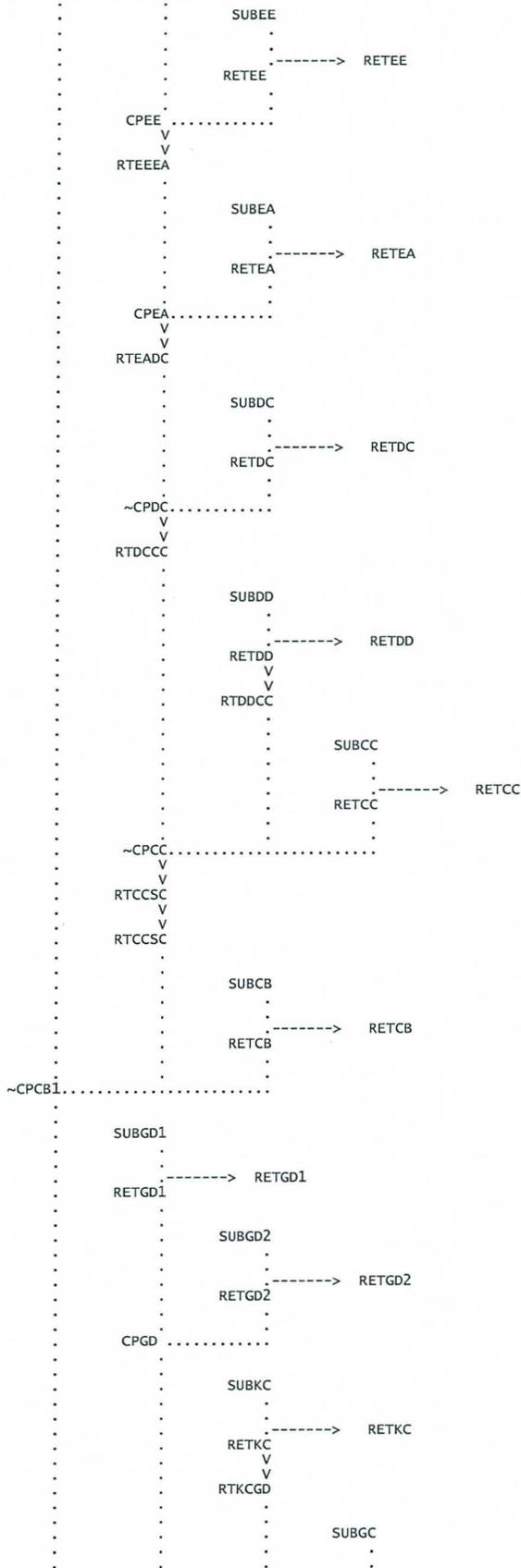
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3056 . . . . . RETGC -----> RETGC
3052 . . . . . V
. . . . . V
3059 . . . . . RTGCGD
. . . . .
3066 . . . . . CPGD1 ----->
. . . . . V
3069 . . . . . RTGDCB
. . . . .
3075 . . . . . ~CPCB2 ----->
. . . . . V
3078 . . . . . MCCBCA
. . . . .
3085 . . . . . SUBCA1
. . . . .
3101 . . . . . RETCA1 -----> RETCA1
3097 . . . . .
. . . . .
3104 . . . . . SUBCA2
. . . . .
3116 . . . . . RETCA2 -----> RETCA2
3114 . . . . .
. . . . .
3119 . . . . . ~CPCA1 ----->
. . . . .
3123 . . . . . SUBGB
. . . . .
3138 . . . . . RETGB -----> RETGB
3134 . . . . . V
. . . . . V
3141 . . . . . RTGBCA
. . . . .
3148 . . . . . ~CPCA2 ----->
. . . . .
3153 . . . . . B-DRCC -----> B-DRCC
3151 . . . . . P-DRCC
. . . . . V
3156 . . . . . MCCABC
. . . . .
3162 . . . . . SUBBC1
. . . . .
3172 . . . . . RETBC1 -----> RETBC1
3170 . . . . .
. . . . .
3175 . . . . . SUBBC2
. . . . .
3187 . . . . . RETBC2 -----> RETBC2
3185 . . . . .
. . . . .
3190 . . . . . ~CPBC ----->
. . . . .
3194 . . . . . CPAFBC ----->

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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 17MAR10 TIME 15:09:49 *
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* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
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FILE NAME: UFUT6J2S.DAT
100-YEAR 6-HOUR MODEL
J2 ENGINEERING AND ENVIRONMENTAL DESIGN, LLC
THIS FILE IS A MODIFICATION OF ASPEN ENGINEERING FILE REC6.DAT
ADDED EXISTING 100YR-2HOUR RETENTION & MODIFIED FIRST FLUSH RETENTION
TO BASINS JB1, ED1, ID1, ID2, IB & IC

J2 SUBDIVIDED BASINS JB, ED, ID, IC, AND IB ALONG THE PROPOSED DRCC
CORRIDOR INTO BASINS JB1A, JB1B, JB1C, ED1, ED2, ID1, ID2, ICA, ICB,
IBA, & IBB.
GREEN-AMPT SOIL LOSS PARAMETERS LEFT UNCHANGED EXCEPT FOR IA AND RTIMP
FOR SUBBASINS THAT WERE SPLIT.

J2 MODIFIED THE FOLLOWING CHANNEL ROUTES: RTMGJB, MCJCJB, RTMFCM,
RTMCIE, MCJBED, MCE95, MC95ID, MCIDIB, RTDIMB, & MCIBIB
BASINS ADDED AT 107TH AVENUE (OPERATIONS 107U AND 107L)
Page 67

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ROUTED BASINS ID1 & IE THROUGH COUNTRY PLACE TO 103RD AVENUE OUTFALL

REC6.DAT

ASPEN CONSULTING ENGINEERS, JCS and POL, NOV. 9, 2005
6-HOUR RAINFALL

THIS IS THE SOUTH ALIGNMENT DRCC FROM 75TH AVE TO THE AF.
CHANGES MADE TO TOTDUR6.DAT MODEL ARE AS FOLLOWS:

THIS IS THE DRCC IN AVONDALE WITH CULVERTS IN PHOENIX MODEL WITH FIRST
FLUSH RETENTION IN AVONDALE.

SUNLAND CHANNEL INCLUDED AS PART OF PROJECT IMPROVEMENTS. FIRST FLUSH
RETENTION INCLUDED WHERE AVAILABLE.

MODIFIED TO REFLECT "SOUTH" DRCC ALIGNMENT. FUTURE ARTERIAL ROADWAY
ROUTING MODIFIED TO FUTURE CONDITIONS.

1/2 INCH "FIRST FLUSH" RETENTION WAS USED FOR SUBBASINS DIRECTLY
ADJACENT TO THE DRCC IN AVONDALE.

INSERTED 99BASIN TO REMODEL THE MULTIUSE BASIN BETWEEN 91ST AND 99TH AVE.

RETENTION BASINS ADJACENT TO THE DRCC AND ROUTING FOR THE DRCC IN
PHOENIX WERE REPLACED BY MODIFIED PULS ROUTING IN ORDER TO MODEL THE
EFFECT OF PLACING 10-YR CULVERTS BETWEEN RETENTION BASINS. THE CULVERTS
WOULD BE PLACED AT 83RD AVE, 91ST AVE, 99TH AVE AND 107TH AVE.
CHANNEL ROUTING IN THIS SAME REACH REMOVED 75TH AVENUE TO 107TH

ADDED/CHANGED SUBJB2 TO CPEE IN ORDER TO REINSERT SUBJB2 AND DIVERT
RETURNS.

INSERTED DIBBLE MODEL 1084F6-IMP-R.DAT AFTER CPHA TO CHANGE MODEL TO THE
SOUTH DRCC ALIGNMENT. CHANGED DIBBLE SUBBASINS AND RETENTION TO ASPEN
FUTURE LAND USE SUBBASINS AND RETENTION. CHANGED SUNLAND CHANNEL ROUTING.

CHANGED SUBBASINS AND RETENTION TO ACCOUNT FOR EXISTING DEVELOPMENT
WITHOUT RETENTION. ACRES WITHOUT RETENTION: GB 67.5, GC 94.4, HB 83.1,
IA 90.8, DA 72.9, CC 19.3, CA1 18.8

THE LG AND UI CARDS WERE CHANGED FOR SUBBASINS IDENTIFIED AS
CONTRIBUTING TO THE DRCC IN ORDER TO REFLECT FUTURE CONDITIONS LAND USE.
VALLEY S-GRAPH WAS USED INSTEAD OF AGRICULTURAL S-GRAPH.

FUTURE LANDUSE 100-YEAR 2-HOUR RETENTION INSERTED AFTER SUBBASINS
IDENTIFIED AS CONTRIBUTING TO THE DRCC. 80% OF REQUIRED RETENTION USED.

CHANGED SUBGD2 BA CARD FROM 0.739 TO 0.211.

TOTDUR6.DAT

75th Avenue Storm Drain 100-Year/6-Hour Model, PJE
Future Condition Model
DRC #4 Basin Alternative 2, modeled in this run along with
16.6 acre foot retention basin in SUBJC2.
The base hydrologic model used for this study is the model that was
developed for the Durango ADMP recommended design.

Regional detention basins that are subject to the project area are sized and
analyzed to optimize storage function in order to reduce outfall storm drain
and potential channel size.

Modifications are made to the original model to reflect changes in watershed
characteristics. Changes in sub-basin boundaries, land use and routing reaches
that have occurred since the completion of the Durango ADMP have been
incorporated into the model.

Changes made to the original model included:

- 1) The area defined by the panhandle of Sub-Basin TB is revised to drain to
concentration point CPUA.
- 2) Sub-basin SF is re-delineated to be consistent with drainage improvements
constructed as part of the Target Southwest Distribution Center.
- 3) The 75th Avenue storm drain is evaluated to drain proposed Durango ADMP
regional detention facilities thus eliminating the conveyance channel between
Basin DRC #4 and Basin DRC #3 and downstream of Basin DRC #3.
- 4) Street drainage that would be directly intercepted by the 75th Avenue
storm drain and laterals to the storm drain is modeled.
- 5) Sub Basin JC is subdivided into Sub-Basin JC1 and Sub-Basin JC2.
- 6) Lag times and s-graphs are developed for future conditions for watersheds
that were not already built out.
- 7) The storm drain flow capacity of the 59th Avenue and the 67th Avenue
storm drains up stream of the Union Pacific Railroad are diverted from their
subject watersheds.

100 IO

OUTPUT CONTROL VARIABLES

IPRNT 5 PRINT CONTROL
IPLOT 0 PLOT CONTROL
QSCAL 0. HYDROGRAPH PLOT SCALE

IT

HYDROGRAPH TIME DATA

NMIN 2 MINUTES IN COMPUTATION INTERVAL
IDATE 9MAR95 STARTING DATE
ITIME 1200 STARTING TIME
NQ 2000 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 12MAR95 ENDING DATE
NDTIME 0638 ENDING TIME
ICENT 19 CENTURY MARK

COMPUTATION INTERVAL .03 HOURS
TOTAL TIME BASE 66.63 HOURS

ENGLISH UNITS

DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-Feet
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

WARNING --- ROUTED OUTFLOW (1607.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1564.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1490.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1406.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1518.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
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 WARNING --- ROUTED OUTFLOW (1587.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
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 WARNING --- ROUTED OUTFLOW (1560.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1573.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1531.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1461.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1380.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1499.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1562.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1553.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1500.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1425.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1344.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1398.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1522.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1555.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1528.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1467.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING --- ROUTED OUTFLOW (1390.) IS GREATER THAN MAXIMUM OUTFLOW (1331.) IN STORAGE-OUTFLOW TABLE
 WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

1

RUNOFF SUMMARY
 FLOW IN CUBIC FEET PER SECOND
 TIME IN HOURS, AREA IN SQUARE MILES

+	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
					6-HOUR	24-HOUR	72-HOUR			
	HYDROGRAPH AT	SUBWD	410.	4.13	34.	9.	3.	.39		
	ROUTED TO	RTWDXA	332.	4.37	34.	9.	3.	.39		
	HYDROGRAPH AT	SUBXA	341.	4.03	28.	7.	3.	.25		
	2 COMBINED AT	CPXA1	374.	4.33	62.	16.	6.	.64		
	DIVERSION TO	DIZZ1	0.	.00	0.	0.	0.	.64		
	HYDROGRAPH AT	DIXA0	374.	4.33	62.	16.	6.	.64		
	ROUTED TO	RTXAWC	331.	4.87	61.	16.	6.	.64		
	HYDROGRAPH AT	SUBWB	729.	4.10	74.	18.	7.	.67		
	ROUTED TO	RTWBWC	622.	4.30	73.	18.	7.	.67		

+	HYDROGRAPH AT	SUBWC	586.	4.10	55.	14.	5.	.49
+	3 COMBINED AT	CPWC	828.	4.20	182.	46.	17.	1.76
+	DIVERSION TO	DIQE	0.	.00	0.	0.	0.	1.76
+	HYDROGRAPH AT	DIWCWA	828.	4.20	182.	46.	17.	1.76
+	ROUTED TO	RTWCWA	262.	8.87	167.	46.	17.	1.76
+	HYDROGRAPH AT	SUBWA	692.	4.03	57.	14.	5.	.49
+	2 COMBINED AT	CPWA1	452.	4.03	167.	60.	22.	2.04
+	HYDROGRAPH AT	SUBVD	752.	4.10	77.	19.	7.	.70
+	ROUTED TO	RTVDWA	665.	4.20	76.	19.	7.	.70
+	2 COMBINED AT	CPWA2	770.	4.07	191.	78.	28.	2.73
+	DIVERSION TO	DIQD	345.	4.07	31.	8.	3.	2.73
+	HYDROGRAPH AT	DIWAVC	425.	4.07	163.	70.	25.	2.73
+	ROUTED TO	RTWAVC	196.	13.97	153.	70.	25.	2.73
+	HYDROGRAPH AT	SUBVC	684.	4.03	56.	14.	5.	.49
+	2 COMBINED AT	CPVC1	405.	4.03	153.	84.	30.	2.24
+	HYDROGRAPH AT	SUBVB	912.	4.03	81.	20.	7.	.72
+	ROUTED TO	RTVBVC	752.	4.10	81.	20.	7.	.72
+	2 COMBINED AT	CPVC2	825.	4.07	197.	103.	37.	2.96
+	DIVERSION TO	DIVA	32.	4.30	8.	4.	1.	2.96
+	HYDROGRAPH AT	DIVCQA	795.	4.07	189.	100.	36.	2.96
+	ROUTED TO	RTVCQA	687.	4.23	184.	100.	36.	2.96
+	HYDROGRAPH AT	SUBQA	525.	4.13	50.	12.	4.	.49
+	2 COMBINED AT	CPQA2	984.	4.20	225.	111.	40.	3.41
+	ROUTED TO	RSQA	914.	4.33	222.	111.	40.	3.41
+	DIVERSION TO	DIPF	376.	4.33	100.	53.	19.	3.41
+	HYDROGRAPH AT	DIQAPF	538.	4.33	122.	58.	21.	3.41
+	ROUTED TO	RTQAJH	468.	4.97	118.	58.	21.	3.41
+	HYDROGRAPH AT	SUBQE	975.	4.07	110.	28.	10.	.91
+	HYDROGRAPH AT	DRQE	0.	.00	0.	0.	0.	1.76
+	ROUTED TO	RTDIQE	0.	.00	0.	0.	0.	1.76
+	2 COMBINED AT	CPQE	975.	4.07	110.	28.	10.	1.12
+	ROUTED TO	RSQE	664.	4.23	88.	23.	8.	1.12
+	ROUTED TO	RTQEQC	555.	4.47	88.	23.	8.	1.12
+	HYDROGRAPH AT	SUBQD	350.	4.03	31.	8.	3.	.25
+	HYDROGRAPH AT	DRQD	345.	4.07	31.	8.	3.	2.73
+	ROUTED TO	RTDIQD	266.	4.43	31.	8.	3.	2.73

+	2 COMBINED AT	CPQD	470.	4.33	68.	18.	6.	1.23
	ROUTED TO	RSQD	421.	4.43	63.	16.	6.	1.23
+	DIVERSION TO	DIQB	99.	4.40	10.	3.	1.	1.23
+	HYDROGRAPH AT	DIQDQB	324.	4.43	53.	14.	5.	1.23
+	ROUTED TO	RTQDQC	281.	4.57	53.	14.	5.	1.23
+	HYDROGRAPH AT	SUBQC	722.	4.07	67.	17.	6.	.61
+	3 COMBINED AT	CPQC	831.	4.43	196.	51.	18.	2.65
+	DIVERSION TO	DISR	665.	4.43	157.	41.	15.	2.65
+	HYDROGRAPH AT	DIQCR	166.	4.43	39.	10.	4.	2.65
+	ROUTED TO	RTQCJI	96.	6.67	37.	10.	4.	2.65
+	HYDROGRAPH AT	SUBQB	564.	4.13	56.	14.	5.	.50
+	HYDROGRAPH AT	DRQB	99.	4.40	10.	3.	1.	1.23
+	ROUTED TO	RTDIQB	54.	5.37	10.	3.	1.	1.23
+	2 COMBINED AT	CPQB	564.	4.13	68.	17.	6.	.82
+	ROUTED TO	RSQB	181.	4.43	45.	12.	4.	.82
+	ROUTED TO	RTQBJH	109.	5.80	42.	12.	4.	.82
+	HYDROGRAPH AT	SUBJH	668.	4.07	55.	14.	5.	.52
+	4 COMBINED AT	CPJH	491.	4.93	217.	92.	33.	3.98
+	ROUTED TO	RTJHJI	415.	5.90	211.	92.	33.	3.98
+	HYDROGRAPH AT	SUBJI	434.	4.03	33.	8.	3.	.31
+	2 COMBINED AT	CPJI	420.	5.90	219.	99.	36.	4.29
+	DIVERSION TO	DISR1	420.	5.90	219.	99.	36.	4.29
+	HYDROGRAPH AT	DISRX	0.	.00	0.	0.	0.	4.29
+	HYDROGRAPH AT	SUBPF	710.	4.00	57.	14.	5.	.50
+	DIVERSION TO	RETPF	74.	3.43	6.	2.	1.	.50
+	HYDROGRAPH AT	RETPF	710.	4.00	50.	13.	5.	.50
+	HYDROGRAPH AT	DRPF	376.	4.33	100.	53.	19.	3.41
+	ROUTED TO	RTDIPF	350.	4.80	98.	53.	19.	3.41
+	2 COMBINED AT	@CPPF	709.	4.00	139.	65.	24.	1.80
+	ROUTED TO	RSPF	189.	5.40	82.	50.	18.	1.80
+	DIVERSION TO	DIPE	0.	.00	0.	0.	0.	1.80
+	HYDROGRAPH AT	DIPFPE	189.	5.40	82.	50.	18.	1.80
+	ROUTED TO	RTPFJF	176.	5.93	80.	50.	18.	1.80
+	HYDROGRAPH AT	SUBUD	992.	4.00	90.	23.	8.	.75
+	DIVERSION TO	RETBI	992.	4.00	78.	20.	7.	.75
+	HYDROGRAPH AT							

+		RETU	197.	4.17	12.	3.	1.	.75
+	DIVERSION TO	59SD1D	78.	4.17	10.	2.	1.	.75
+	HYDROGRAPH AT	SDDRUD	119.	4.17	2.	1.	0.	.75
+	DIVERSION TO	DIUA	30.	4.17	1.	0.	0.	.75
+	HYDROGRAPH AT	DIUDUA	89.	4.17	2.	0.	0.	.75
+	ROUTED TO	RTUDVA	12.	4.33	2.	0.	0.	.75
+	HYDROGRAPH AT	SUBVA	692.	4.03	58.	15.	5.	.49
+	HYDROGRAPH AT	DRVA	32.	4.30	8.	4.	1.	2.96
+	3 COMBINED AT	CPVA1	692.	4.03	65.	18.	7.	1.10
+	DIVERSION TO	59SD2D	59.	3.40	23.	8.	3.	1.10
+	HYDROGRAPH AT	SDDRVA	515.	4.03	41.	10.	4.	1.10
+	DIVERSION TO	DIUC	470.	4.03	40.	10.	4.	1.10
+	HYDROGRAPH AT	DIVAPE	45.	4.03	1.	0.	0.	1.10
+	ROUTED TO	RTVAPE	11.	4.27	1.	0.	0.	1.10
+	HYDROGRAPH AT	SUBPE	706.	4.00	55.	14.	5.	.50
+	HYDROGRAPH AT	DRPE	0.	.00	0.	0.	0.	1.80
+	ROUTED TO	RTDIPE	0.	.00	0.	0.	0.	1.80
+	3 COMBINED AT	CPPE	706.	4.00	57.	14.	5.	.73
+	ROUTED TO	RSPE	120.	4.23	21.	6.	2.	.73
+	DIVERSION TO	DIPD	0.	.00	0.	0.	0.	.73
+	HYDROGRAPH AT	DIPEPD	120.	4.23	21.	6.	2.	.73
+	ROUTED TO	RTPEJF	75.	4.53	21.	6.	2.	.73
+	HYDROGRAPH AT	SUBJF	727.	4.00	58.	14.	5.	.50
+	3 COMBINED AT	CPJF	371.	4.00	123.	67.	25.	2.95
+	ROUTED TO	RTJFJG	296.	4.23	119.	67.	25.	2.95
+	HYDROGRAPH AT	SUBJG	1034.	4.03	102.	25.	9.	.90
+	2 COMBINED AT	CPJG	861.	4.03	204.	90.	34.	3.85
+	2 COMBINED AT	CPJGSR	861.	4.03	204.	90.	34.	3.85
+	HYDROGRAPH AT	DRUC	470.	4.03	40.	10.	4.	1.10
+	ROUTED TO	RTVAUC	105.	6.40	40.	10.	4.	1.10
+	ROUTED TO	MCUCUC	104.	6.53	40.	10.	4.	1.10
+	HYDROGRAPH AT	SUBUC	590.	4.07	51.	13.	5.	.48
+	2 COMBINED AT	@CPUC	505.	4.07	87.	23.	8.	.89
+	HYDROGRAPH AT	SUBTB1	203.	4.00	15.	4.	1.	.14
+	DIVERSION TO	RETB1	203.	4.00	15.	4.	1.	.14
+	HYDROGRAPH AT	RETB1	0.	.00	0.	0.	0.	.14

+	DIVERSION TO	67SD1D	0.	.00	0.	0.	0.	.14
	HYDROGRAPH AT	SDDTB1	0.	.00	0.	0.	0.	.14
+	ROUTED TO	RTUAUC	0.	.00	0.	0.	0.	.14
	HYDROGRAPH AT	SUBUA	591.	4.13	58.	14.	5.	.56
+	HYDROGRAPH AT	DRUA	30.	4.17	1.	0.	0.	.75
+	ROUTED TO	RTDIUA	2.	5.27	1.	0.	0.	.75
+	3 COMBINED AT	@CPUA	591.	4.13	58.	15.	5.	.89
	DIVERSION TO	67SD1D	96.	3.67	24.	6.	2.	.89
+	HYDROGRAPH AT	SDDRUA	431.	4.13	33.	8.	3.	.89
	DIVERSION TO	DITB	86.	4.13	7.	2.	1.	.89
+	HYDROGRAPH AT	DIUAUC	345.	4.13	27.	7.	2.	.89
+	ROUTED TO	RTUAUC	286.	4.30	27.	7.	2.	.89
+	2 COMBINED AT	~CPUC2	595.	4.17	112.	29.	10.	1.25
	DIVERSION TO	DIUB	595.	4.17	112.	29.	10.	1.25
+	HYDROGRAPH AT	DIUCPC	0.	.00	0.	0.	0.	1.25
+	ROUTED TO	RTUCPC	0.	.00	0.	0.	0.	1.25
+	HYDROGRAPH AT	SUBPC	439.	4.00	34.	8.	3.	.30
+	2 COMBINED AT	CPPC	439.	4.00	34.	8.	3.	.30
+	ROUTED TO	RSPC	5.	.00	5.	5.	5.	.30
+	ROUTED TO	RTPCNB	5.	.00	5.	5.	5.	.30
+	HYDROGRAPH AT	SUBNB	617.	4.00	40.	10.	4.	.44
	DIVERSION TO	RETNB	617.	4.00	40.	10.	4.	.44
+	HYDROGRAPH AT	RETNB	0.	.00	0.	0.	0.	.44
+	2 COMBINED AT	CPNB1	5.	.00	5.	5.	5.	.74
+	ROUTED TO	RTNBJD	5.	.00	5.	5.	5.	.74
+	HYDROGRAPH AT	SUBPD	628.	4.00	45.	11.	4.	.44
+	HYDROGRAPH AT	DRPD	0.	.00	0.	0.	0.	.73
+	2 COMBINED AT	CPPD2	628.	4.00	45.	11.	4.	.44
+	ROUTED TO	RSPD	0.	.00	0.	0.	0.	.44
+	ROUTED TO	RTPDNC	0.	.00	0.	0.	0.	.44
+	HYDROGRAPH AT	SUBNC	406.	4.00	31.	8.	3.	.31
+	2 COMBINED AT	CPNC	358.	4.00	30.	7.	3.	.75
+	ROUTED TO	RTNCJE	176.	4.77	29.	7.	3.	.75
+	HYDROGRAPH AT	SUBJE1	350.	4.00	26.	7.	2.	.25
+	2 COMBINED AT	CPJE1	284.	4.00	53.	14.	5.	1.00
+	ROUTED TO	RTJEJD	268.	4.07	53.	14.	5.	1.00

+	HYDROGRAPH AT	SUBJD	723.	4.00	50.	13.	5.	.51
+	DIVERSION TO	RETJD	723.	4.00	50.	13.	5.	.51
+	HYDROGRAPH AT	RETJD	0.	.00	0.	0.	0.	.51
+	3 COMBINED AT	CPJD	268.	4.07	58.	19.	10.	2.25
+	DIVERSION TO	DIJC2	73.	4.07	21.	7.	4.	2.25
+	HYDROGRAPH AT	DIJDJC	124.	4.07	35.	12.	6.	2.25
+	ROUTED TO	RTJDFC	81.	5.20	35.	12.	6.	2.25
+	HYDROGRAPH AT	SUBJE2	369.	4.00	29.	7.	3.	.25
+	DIVERSION TO	RETJE	167.	3.80	9.	2.	1.	.25
+	HYDROGRAPH AT	RETJE2	369.	4.00	20.	5.	2.	.25
+	ROUTED TO	RTJEFC	184.	4.33	20.	5.	2.	.25
+	HYDROGRAPH AT	SUBFC	502.	4.00	40.	10.	4.	.36
+	3 COMBINED AT	CPFC	372.	4.03	92.	26.	11.	2.03
+	2 COMBINED AT	CPFCSR	1164.	4.03	288.	114.	44.	5.88
+	HYDROGRAPH AT	DRUCUB	595.	4.17	112.	29.	10.	1.25
+	ROUTED TO	MCUCUB	585.	4.20	112.	29.	10.	1.25
+	HYDROGRAPH AT	SUBUB	184.	4.03	15.	4.	1.	.14
+	2 COMBINED AT	~@CPUB	666.	4.17	125.	32.	12.	1.39
+	HYDROGRAPH AT	SUBSF1	120.	4.13	11.	3.	1.	.13
+	HYDROGRAPH AT	DRTB	86.	4.13	7.	2.	1.	.89
+	ROUTED TO	RTDITB	80.	4.33	7.	2.	1.	.89
+	3 COMBINED AT	CPBA3	767.	4.17	140.	36.	13.	1.61
+	HYDROGRAPH AT	SUBTB2	705.	4.20	89.	22.	8.	.75
+	DIVERSION TO	RETTB	618.	4.07	40.	10.	4.	.75
+	HYDROGRAPH AT	RETTB	705.	4.20	50.	12.	4.	.75
+	DIVERSION TO	DITA	171.	4.20	12.	3.	1.	.75
+	HYDROGRAPH AT	DITBTA	534.	4.20	37.	9.	3.	.75
+	ROUTED TO	RTTBSF	449.	4.40	37.	9.	3.	.75
+	HYDROGRAPH AT	SUSFB2	162.	4.00	13.	3.	1.	.11
+	HYDROGRAPH AT	SUSF2A	209.	4.00	18.	5.	2.	.14
+	DIVERSION TO	RETSF2	209.	4.00	18.	5.	2.	.14
+	HYDROGRAPH AT	RSSF2A	0.	.00	0.	0.	0.	.14
+	3 COMBINED AT	CPSF2B	451.	4.40	49.	12.	4.	.81
+	2 COMBINED AT	CPBA3	906.	4.37	184.	47.	17.	2.42
+	ROUTED TO	BSN71	76.	7.43	75.	47.	17.	2.42
+	DIVERSION TO							

+		BSN71	76.	7.43	75.	47.	17.	2.42
+	HYDROGRAPH AT	DBSN71	0.	.00	0.	0.	0.	2.42
+	HYDROGRAPH AT	SUBPB	1149.	4.13	121.	30.	11.	.41
+	DIVERSION TO	RETPB	1149.	4.13	87.	22.	8.	.41
+	HYDROGRAPH AT	RETPB	873.	4.27	35.	9.	3.	.41
+	HYDROGRAPH AT	PB75	36.	4.03	3.	1.	0.	.01
+	HYDROGRAPH AT	PBBU	59.	4.10	6.	2.	1.	.02
+	2 COMBINED AT	CPBSD	91.	4.07	10.	2.	1.	.03
+	DIVERSION TO	SD75PB	23.	3.67	6.	1.	1.	.03
+	HYDROGRAPH AT	DPBSD1	68.	4.07	4.	1.	0.	.03
+	DIVERSION TO	SDBRPB	39.	3.93	3.	1.	0.	.03
+	HYDROGRAPH AT	DPBSD2	29.	4.07	1.	0.	0.	.03
+	2 COMBINED AT	CPPB	873.	4.27	36.	9.	3.	.42
+	DIVERSION TO	DIPA1	166.	4.27	7.	2.	1.	.42
+	HYDROGRAPH AT	DIPBPA	707.	4.27	29.	7.	3.	.42
+	2 COMBINED AT	CPPB1	707.	4.27	29.	7.	3.	.34
+	ROUTED TO	RTPBNA	301.	4.67	29.	7.	3.	.34
+	HYDROGRAPH AT	SUBNA	1927.	4.23	267.	67.	24.	.94
+	DIVERSION TO	RETNA	1927.	4.23	181.	45.	16.	.94
+	HYDROGRAPH AT	RETNA	1265.	4.47	87.	22.	8.	.94
+	HYDROGRAPH AT	NA75	63.	4.07	7.	2.	1.	.02
+	HYDROGRAPH AT	NALB	58.	4.10	6.	2.	1.	.02
+	2 COMBINED AT	CNASD	121.	4.10	13.	3.	1.	.04
+	3 COMBINED AT	CPNA1	1263.	4.47	124.	31.	11.	1.32
+	DIVERSION TO	SD75NA	40.	3.77	23.	6.	2.	1.32
+	HYDROGRAPH AT	DNASD1	1223.	4.47	101.	25.	9.	1.32
+	DIVERSION TO	SDLBNA	38.	4.47	14.	4.	1.	1.32
+	HYDROGRAPH AT	DNASD2	1185.	4.47	86.	22.	8.	1.32
+	DIVERSION TO	ADMP1	1112.	4.47	72.	18.	6.	1.32
+	HYDROGRAPH AT	DADMP1	73.	4.47	15.	4.	1.	1.32
+	HYDROGRAPH AT	SUBJC1	644.	4.03	48.	12.	4.	.47
+	DIVERSION TO	RETJC1	644.	4.03	48.	12.	4.	.47
+	HYDROGRAPH AT	RETJC1	0.	.00	0.	0.	0.	.47
+	HYDROGRAPH AT	JC75	32.	4.00	3.	1.	0.	.02
+	2 COMBINED AT	CJCSD1	32.	4.00	3.	1.	0.	.49
+	HYDROGRAPH AT	SUBJC2	644.	4.03	42.	10.	4.	.48

+	DIVERSION TO	RETJJC2	644.	4.03	40.	10.	4.	.48
+	HYDROGRAPH AT	RETJJC2	89.	4.30	2.	0.	0.	.48
+	DIVERSION TO	DETJJC2	89.	4.30	2.	0.	0.	.48
+	HYDROGRAPH AT	DETJJC2	0.	.00	0.	0.	0.	.48
+	ROUTED TO	RTJJCJC	0.	.00	0.	0.	0.	.48
+	2 COMBINED AT	CPJJC1A	32.	4.00	3.	1.	0.	.97
+	HYDROGRAPH AT	JCBR	32.	4.00	3.	1.	0.	.02
+	2 COMBINED AT	CJCS2	51.	4.00	5.	1.	0.	.99
+	2 COMBINED AT	CPJJC1B	78.	4.47	20.	5.	2.	.99
+	DIVERSION TO	SD0SBR	41.	4.47	14.	3.	1.	.99
+	HYDROGRAPH AT	DJC2SD	37.	4.47	6.	2.	1.	.99
+	DIVERSION TO	SD75JC	37.	4.47	6.	2.	1.	.99
+	HYDROGRAPH AT	DJCS2	7.	4.03	0.	0.	0.	.99
+	HYDROGRAPH AT	DIJD	73.	4.07	21.	7.	4.	2.25
+	ROUTED TO	RTJJCJC	43.	5.83	21.	7.	4.	2.25
+	2 COMBINED AT	CPJJC2	47.	5.57	22.	7.	4.	1.08
+	DIVERSION TO	DIJB2	22.	5.57	10.	3.	2.	1.08
+	HYDROGRAPH AT	DIJCJB	25.	5.57	11.	4.	2.	1.08
+	ROUTED TO	RTJCFC	23.	6.43	11.	4.	2.	1.08
+	HYDROGRAPH AT	DRB71	76.	7.43	75.	47.	17.	2.42
+	ROUTED TO	RT71PB	76.	7.50	75.	47.	17.	2.42
+	HYDROGRAPH AT	RSDPB1	23.	3.67	6.	1.	1.	.03
+	2 COMBINED AT	CPPBS1	88.	4.50	77.	49.	18.	2.44
+	HYDROGRAPH AT	RSDPB2	39.	3.93	3.	1.	0.	.03
+	2 COMBINED AT	CPPBS2	108.	4.10	80.	50.	18.	2.44
+	ROUTED TO	RTPBNA	108.	4.17	80.	50.	18.	2.44
+	HYDROGRAPH AT	RSDNA1	40.	3.77	23.	6.	2.	1.32
+	2 COMBINED AT	CPNAS1	147.	4.17	101.	55.	20.	3.10
+	HYDROGRAPH AT	RSDNA2	38.	4.47	14.	4.	1.	1.32
+	2 COMBINED AT	CPNAS2	177.	4.10	115.	59.	21.	3.43
+	ROUTED TO	RTNAJC	177.	4.17	115.	59.	21.	3.43
+	HYDROGRAPH AT	RSDJC1	37.	4.47	6.	2.	1.	.99
+	2 COMBINED AT	CPJCS1	211.	4.53	121.	60.	22.	3.67
+	HYDROGRAPH AT	RSDJC3	41.	4.47	14.	3.	1.	.99
+	2 COMBINED AT	CPJCS3	251.	4.53	134.	63.	23.	4.17
+	ROUTED TO	RTJCFC	251.	4.60	134.	63.	23.	4.17

+	HYDROGRAPH AT	FB75	27.	4.00	2.	1.	0.	.02
+	2 COMBINED AT	CPFB	254.	4.60	136.	64.	23.	4.19
+	3 COMBINED AT	DUMM	1300.	4.07	417.	175.	67.	10.65
+	HYDROGRAPH AT	SUBSH	153.	4.00	12.	3.	1.	.10
+	DIVERSION TO	RETSH	153.	4.00	12.	3.	1.	.10
+	HYDROGRAPH AT	RETSH	0.	.00	0.	0.	0.	.10
+	ROUTED TO	RSSH	0.	.00	0.	0.	0.	.10
+	DIVERSION TO	DIRJ2	0.	.00	0.	0.	0.	.10
+	HYDROGRAPH AT	DISHRJ	0.	.00	0.	0.	0.	.10
+	ROUTED TO	RTSHSG	0.	.00	0.	0.	0.	.10
+	HYDROGRAPH AT	SUBTA	346.	4.00	27.	7.	2.	.24
+	DIVERSION TO	RETTA	346.	4.00	27.	7.	2.	.24
+	HYDROGRAPH AT	RETTA	0.	.00	0.	0.	0.	.24
+	HYDROGRAPH AT	DRTA	171.	4.20	12.	3.	1.	.75
+	ROUTED TO	RTDITA	73.	5.03	12.	3.	1.	.75
+	2 COMBINED AT	@CPTA	77.	5.00	12.	3.	1.	.43
+	ROUTED TO	RTTASG	63.	5.30	12.	3.	1.	.43
+	HYDROGRAPH AT	SUBSG	198.	4.00	16.	4.	1.	.14
+	DIVERSION TO	RETSG	198.	4.00	16.	4.	1.	.14
+	HYDROGRAPH AT	RETSG	0.	.00	0.	0.	0.	.14
+	3 COMBINED AT	CPSG	63.	5.30	12.	3.	1.	.59
+	ROUTED TO	RSSG	0.	.00	0.	0.	0.	.59
+	DIVERSION TO	DIRJ4	0.	.00	0.	0.	0.	.59
+	HYDROGRAPH AT	DISGRJ	0.	.00	0.	0.	0.	.59
+	ROUTED TO	RTSGSE	0.	.00	0.	0.	0.	.59
+	HYDROGRAPH AT	SUBSC	596.	4.03	49.	12.	4.	.45
+	DIVERSION TO	RETSC	596.	4.03	49.	12.	4.	.45
+	HYDROGRAPH AT	RETSC	0.	.00	0.	0.	0.	.45
+	DIVERSION TO	DISD	0.	.00	0.	0.	0.	.45
+	HYDROGRAPH AT	DISCSD	0.	.00	0.	0.	0.	.45
+	ROUTED TO	RTSCSE	0.	.00	0.	0.	0.	.45
+	HYDROGRAPH AT	SUBSE	177.	4.00	13.	3.	1.	.13
+	DIVERSION TO	RETSE	177.	4.00	13.	3.	1.	.13
+	HYDROGRAPH AT	RETSE	0.	.00	0.	0.	0.	.13
+	3 COMBINED AT	CPSE	0.	.00	0.	0.	0.	.65
+	ROUTED TO							

+		RSSE	3.	.00	3.	3.	3.	.65
+	DIVERSION TO	DIRJ5	3.	.00	3.	3.	3.	.65
+	HYDROGRAPH AT	DISERJ	0.	.00	0.	0.	0.	.65
+	ROUTED TO	RTSERI	0.	.00	0.	0.	0.	.65
+	HYDROGRAPH AT	SUBRJ	229.	4.00	19.	5.	2.	.16
+	DIVERSION TO	RETRJ	229.	4.00	19.	5.	2.	.16
+	HYDROGRAPH AT	RETRJ	0.	.00	0.	0.	0.	.16
+	HYDROGRAPH AT	CPRJ2	0.	.00	0.	0.	0.	.10
+	ROUTED TO	RTSHRJ	0.	.00	0.	0.	0.	.10
+	ROUTED TO	RTRJ3	0.	.00	0.	0.	0.	.10
+	HYDROGRAPH AT	CPRJ4A	0.	.00	0.	0.	0.	.59
+	2 COMBINED AT	CPRJ4B	0.	.00	0.	0.	0.	.35
+	ROUTED TO	RTSGRJ	0.	.00	0.	0.	0.	.35
+	HYDROGRAPH AT	CPRJ5	3.	.00	3.	3.	3.	.65
+	ROUTED TO	RTSERJ	3.	.00	3.	3.	3.	.65
+	3 COMBINED AT	@CPRJ6	3.	.00	3.	3.	3.	1.16
+	ROUTED TO	RSRJ	3.	21.40	3.	3.	2.	1.16
+	DIVERSION TO	DIPA2	0.	.00	0.	0.	0.	1.16
+	HYDROGRAPH AT	DIRJPA	3.	21.40	3.	3.	2.	1.16
+	ROUTED TO	RTRJRI	3.	22.40	3.	3.	2.	1.16
+	ROUTED TO	RTRIRI	3.	22.87	3.	3.	2.	1.16
+	HYDROGRAPH AT	SUBRI	341.	4.00	27.	7.	2.	.23
+	DIVERSION TO	RETRI	341.	4.00	27.	7.	2.	.23
+	HYDROGRAPH AT	RETRI	0.	.00	0.	0.	0.	.23
+	HYDROGRAPH AT	SUBSB	249.	4.00	20.	5.	2.	.17
+	DIVERSION TO	RETSB	249.	4.00	20.	5.	2.	.17
+	HYDROGRAPH AT	RETSB	0.	.00	0.	0.	0.	.17
+	ROUTED TO	RSSB	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	SUBSD	242.	4.00	19.	5.	2.	.17
+	DIVERSION TO	RETSB	242.	4.00	19.	5.	2.	.17
+	HYDROGRAPH AT	RETSB	0.	.00	0.	0.	0.	.17
+	HYDROGRAPH AT	DRSD	0.	.00	0.	0.	0.	.45
+	3 COMBINED AT	@CPSD	0.	.00	0.	0.	0.	.58
+	ROUTED TO	RSSD	0.	.00	0.	0.	0.	.58
+	ROUTED TO	RTSDRI	0.	.00	0.	0.	0.	.58
+	4 COMBINED AT	~@CPRI	3.	22.87	3.	3.	2.	1.81

+	ROUTED TO	MCRIRH	3.	24.43	3.	3.	2.	1.81
+	2 COMBINED AT	~DUMMY	1299.	4.07	417.	176.	69.	12.46
+	HYDROGRAPH AT	SUBPA	1158.	4.20	136.	34.	12.	.48
+	DIVERSION TO	RETPA	1158.	4.20	96.	24.	9.	.48
+	HYDROGRAPH AT	RETPA	854.	4.37	40.	10.	4.	.48
+	HYDROGRAPH AT	DRPA2	0.	.00	0.	0.	0.	1.16
+	ROUTED TO	RTRJPA	0.	.00	0.	0.	0.	1.16
+	2 COMBINED AT	CPPA	856.	4.37	40.	10.	4.	.64
+	DIVERSION TO	DIOE	132.	4.37	7.	2.	1.	.64
+	HYDROGRAPH AT	DIPAOE	600.	4.37	32.	8.	3.	.64
+	ROUTED TO	RTPAMH	328.	4.63	32.	8.	3.	.64
+	HYDROGRAPH AT	SUBMH	516.	4.30	62.	16.	6.	.24
+	DIVERSION TO	RETMH	516.	4.30	40.	10.	4.	.24
+	HYDROGRAPH AT	RETMH	456.	4.40	22.	6.	2.	.24
+	2 COMBINED AT	CPMH	490.	4.60	53.	13.	5.	.77
+	ROUTED TO	RTMHMD	403.	4.83	53.	13.	5.	.77
+	HYDROGRAPH AT	SUBMD	431.	4.50	68.	17.	6.	.25
+	DIVERSION TO	RETMH	431.	4.50	43.	11.	4.	.25
+	HYDROGRAPH AT	RETMH	388.	4.63	26.	6.	2.	.25
+	2 COMBINED AT	CPMD	604.	4.80	76.	19.	7.	1.02
+	DIVERSION TO	DIJB1	123.	4.80	16.	4.	1.	1.02
+	HYDROGRAPH AT	DIMDJB	481.	4.80	61.	15.	5.	1.02
+	DIVERSION TO	DIMFX	481.	4.80	61.	15.	5.	1.02
+	HYDROGRAPH AT	DIMDMF	0.	.00	0.	0.	0.	1.02
+	HYDROGRAPH AT	SUBMI	959.	4.23	109.	27.	10.	.41
+	DIVERSION TO	RETMH	959.	4.23	71.	18.	6.	.41
+	HYDROGRAPH AT	RETMH	857.	4.33	38.	10.	3.	.41
+	HYDROGRAPH AT	SUBMG	198.	4.20	22.	5.	2.	.08
+	DIVERSION TO	RETMG	198.	4.20	15.	4.	1.	.08
+	HYDROGRAPH AT	RETMG	161.	4.33	7.	2.	1.	.08
+	2 COMBINED AT	CPMG	1017.	4.33	45.	11.	4.	.49
+	ROUTED TO	RTMGJB	738.	4.57	45.	11.	4.	.49
+	HYDROGRAPH AT	SBJB1A	293.	4.37	42.	11.	4.	.15
+	DIVERSION TO	RTJB1A	7.	1.17	1.	0.	0.	.15
+	HYDROGRAPH AT	RTJB1A	293.	4.37	42.	10.	4.	.15
+	DIVERSION TO	RTJB1A	291.	4.33	22.	6.	2.	.15

+	HYDROGRAPH AT	RTJB1A	290.	4.40	20.	5.	2.	.15
+	HYDROGRAPH AT	ADMP1	1112.	4.47	72.	18.	6.	1.32
+	ROUTED TO	MCJCJB	853.	4.63	72.	18.	6.	1.32
+	ROUTED TO	MCJCJB	794.	4.77	72.	18.	6.	1.32
+	3 COMBINED AT	CPJB1A	1361.	4.70	136.	34.	12.	.97
+	ROUTED TO	RJB1A	1311.	4.80	136.	34.	12.	.97
+	HYDROGRAPH AT	SBJB1B	235.	4.20	26.	6.	2.	.10
+	DIVERSION TO	RTJB1B	6.	3.10	2.	0.	0.	.10
+	HYDROGRAPH AT	RTJB1B	235.	4.20	24.	6.	2.	.10
+	DIVERSION TO	RTJB1B	194.	4.07	9.	2.	1.	.10
+	HYDROGRAPH AT	RTJB1B	235.	4.20	15.	4.	1.	.10
+	2 COMBINED AT	CPJB1B	1317.	4.80	149.	37.	13.	1.07
+	ROUTED TO	RJB1B	1223.	4.93	149.	37.	13.	1.07
+	HYDROGRAPH AT	SBJB1C	496.	4.30	59.	15.	5.	.25
+	DIVERSION TO	RTJB1C	8.	2.60	2.	1.	0.	.25
+	HYDROGRAPH AT	RTJB1C	496.	4.30	57.	14.	5.	.25
+	DIVERSION TO	RTJB1C	496.	4.27	30.	7.	3.	.25
+	HYDROGRAPH AT	RTJB1	488.	4.33	27.	7.	2.	.25
+	HYDROGRAPH AT	DRJB	123.	4.80	16.	4.	1.	1.02
+	ROUTED TO	RDIJB1	100.	5.20	16.	4.	1.	1.02
+	4 COMBINED AT	~CPJB1	1274.	4.97	182.	46.	16.	1.54
+	DIVERSION TO	DIED	1274.	4.97	182.	46.	16.	1.54
+	HYDROGRAPH AT	DIED	0.	.00	0.	0.	0.	1.54
+	HYDROGRAPH AT	SUBOE	1108.	4.20	128.	32.	12.	.47
+	DIVERSION TO	RETOE	1108.	4.20	95.	24.	9.	.47
+	HYDROGRAPH AT	RETOE	697.	4.40	33.	8.	3.	.47
+	HYDROGRAPH AT	CPOE1	132.	4.37	7.	2.	1.	.64
+	ROUTED TO	RTDIOE	33.	5.67	7.	2.	1.	.64
+	2 COMBINED AT	@CPOE	697.	4.40	41.	10.	4.	.58
+	DIVERSION TO	DIOD	104.	4.40	7.	2.	1.	.58
+	HYDROGRAPH AT	DIOEOD	533.	4.40	33.	8.	3.	.58
+	ROUTED TO	RTOEMF	220.	4.90	33.	8.	3.	.58
+	HYDROGRAPH AT	SUBMF	1382.	4.57	245.	62.	22.	.97
+	DIVERSION TO	RETMF	1382.	4.57	162.	40.	15.	.97
+	HYDROGRAPH AT	RETMF	951.	4.83	84.	21.	8.	.97
+	HYDROGRAPH AT							

+		CPMF	481.	4.80	61.	15.	5.	1.02
+	ROUTED TO	RTMDMF	354.	5.37	61.	15.	5.	1.02
+	3 COMBINED AT	CPMF1	947.	4.87	163.	41.	15.	2.25
+	DIVERSION TO	DIEB	438.	4.87	76.	19.	7.	2.25
+	HYDROGRAPH AT	DIMFEB	510.	4.87	87.	22.	8.	2.25
+	ROUTED TO	RTMFMC	382.	5.40	87.	22.	8.	2.25
+	HYDROGRAPH AT	SUBOD	1264.	4.20	150.	38.	14.	.51
+	DIVERSION TO	RETOD	1264.	4.20	128.	32.	12.	.51
+	HYDROGRAPH AT	RETOD	433.	4.53	22.	5.	2.	.51
+	HYDROGRAPH AT	DROD	104.	4.40	7.	2.	1.	.58
+	ROUTED TO	RTDIOD	35.	5.00	7.	2.	1.	.58
+	2 COMBINED AT	CPOD	427.	4.53	28.	7.	3.	.61
+	DIVERSION TO	DIOC	70.	4.53	5.	1.	0.	.61
+	HYDROGRAPH AT	DIODOC	318.	4.53	23.	6.	2.	.61
+	ROUTED TO	RTODMC	116.	5.17	23.	6.	2.	.61
+	HYDROGRAPH AT	SUBMC	1824.	4.33	291.	73.	26.	1.00
+	DIVERSION TO	RETC	1824.	4.33	192.	48.	17.	1.00
+	HYDROGRAPH AT	RETC	1323.	4.57	100.	25.	9.	1.00
+	3 COMBINED AT	CPMC1	1213.	4.57	198.	50.	18.	2.69
+	DIVERSION TO	DIMB	534.	4.57	87.	22.	8.	2.69
+	HYDROGRAPH AT	DIMCMB	679.	4.57	111.	28.	10.	2.69
+	DIVERSION TO	Sw103	679.	4.57	111.	28.	10.	2.69
+	HYDROGRAPH AT	DIMCMB	0.	.00	0.	0.	0.	2.69
+	ROUTED TO	RTMCIE	0.	.00	0.	0.	0.	2.69
+	HYDROGRAPH AT	DREB	438.	4.87	76.	19.	7.	2.25
+	HYDROGRAPH AT	SUBEB	309.	4.23	32.	8.	3.	.14
+	DIVERSION TO	RETEB	309.	4.23	23.	6.	2.	.14
+	HYDROGRAPH AT	RETEB	233.	4.37	9.	2.	1.	.14
+	2 COMBINED AT	CPEB	513.	4.87	88.	22.	8.	1.20
+	HYDROGRAPH AT	RDIED	1274.	4.97	182.	46.	16.	1.54
+	ROUTED TO	MCJBED	1083.	5.40	181.	46.	16.	1.54
+	HYDROGRAPH AT	SUBED1	546.	4.53	84.	21.	8.	.38
+	DIVERSION TO	RETED1	8.	1.77	1.	0.	0.	.38
+	HYDROGRAPH AT	RETED1	546.	4.53	83.	21.	7.	.38
+	DIVERSION TO	RETED1	546.	4.53	53.	13.	5.	.38
+	HYDROGRAPH AT	RETED1	436.	4.70	30.	7.	3.	.38

+	HYDROGRAPH AT	SUBED2	218.	4.27	22.	5.	2.	.11
+	DIVERSION TO	RETED2	127.	4.03	5.	1.	0.	.11
+	HYDROGRAPH AT	RETED2	218.	4.27	17.	4.	2.	.11
+	3 COMBINED AT	~CPED1	1131.	5.40	211.	53.	19.	2.06
+	DIVERSION TO	89BSN	851.	5.40	112.	28.	10.	2.06
+	HYDROGRAPH AT	89BSN	280.	5.40	99.	25.	9.	2.06
+	2 COMBINED AT	~CPED2	626.	5.37	176.	44.	16.	3.26
+	HYDROGRAPH AT	R89BSN	851.	5.40	112.	28.	10.	2.06
+	ROUTED TO	D89BN	5.	6.73	5.	4.	3.	2.06
+	2 COMBINED AT	CPED2A	626.	5.37	179.	48.	19.	3.26
+	ROUTED TO	MCED95	591.	5.57	177.	48.	19.	3.26
+	ROUTED TO	MC95ID	577.	5.73	176.	48.	19.	3.26
+	HYDROGRAPH AT	SUBID2	563.	4.43	77.	19.	7.	.36
+	DIVERSION TO	RETID2	209.	4.00	11.	3.	1.	.36
+	HYDROGRAPH AT	RETID2	563.	4.43	66.	16.	6.	.36
+	DIVERSION TO	RETID2	547.	4.37	25.	6.	2.	.36
+	HYDROGRAPH AT	RETID2	563.	4.43	41.	10.	4.	.36
+	2 COMBINED AT	~CPID1	586.	5.73	205.	55.	21.	3.62
+	2 COMBINED AT	CPID2	586.	5.73	205.	55.	21.	3.62
+	ROUTED TO	MCIDIB	578.	5.83	203.	55.	21.	3.62
+	HYDROGRAPH AT	SUBIBA	546.	4.23	65.	16.	6.	.24
+	DIVERSION TO	ETIBBA	7.	1.07	1.	0.	0.	.24
+	HYDROGRAPH AT	RETIBA	546.	4.23	64.	16.	6.	.24
+	DIVERSION TO	RETIBA	405.	4.07	20.	5.	2.	.24
+	HYDROGRAPH AT	RETIBA	546.	4.23	44.	11.	4.	.24
+	HYDROGRAPH AT	SUBICA	400.	4.33	48.	12.	4.	.23
+	DIVERSION TO	RETICA	56.	3.80	4.	1.	0.	.23
+	HYDROGRAPH AT	RETICA	400.	4.33	44.	11.	4.	.23
+	DIVERSION TO	RETICA	394.	4.30	20.	5.	2.	.23
+	HYDROGRAPH AT	RETICA	399.	4.37	24.	6.	2.	.23
+	HYDROGRAPH AT	DR103	679.	4.57	111.	28.	10.	2.69
+	HYDROGRAPH AT	SUBIE	571.	4.40	78.	20.	7.	.30
+	DIVERSION TO	RETIE	571.	4.40	50.	13.	5.	.30
+	HYDROGRAPH AT	RETIE	480.	4.53	28.	7.	3.	.30
+	HYDROGRAPH AT	SUBID1	370.	4.43	52.	13.	5.	.20
+	DIVERSION TO	RETID1	5.	2.70	2.	0.	0.	.20

+	HYDROGRAPH AT	RETIDI	370.	4.43	51.	13.	5.	.20
+	DIVERSION TO	RETIDI	295.	4.23	17.	4.	1.	.20
+	HYDROGRAPH AT	RETIDI	370.	4.43	34.	9.	3.	.20
+	3 COMBINED AT	CPIE	1193.	4.63	171.	43.	15.	2.02
+	ROUTED TO	RTDIE	1107.	4.83	170.	43.	15.	2.02
+	4 COMBINED AT	CP103	1475.	4.87	398.	104.	39.	6.10
+	ROUTED TO	MCIBIB	1375.	5.00	396.	104.	39.	6.10
+	HYDROGRAPH AT	SUBIBB	519.	4.27	53.	13.	5.	.24
+	DIVERSION TO	RETIBB	212.	3.93	8.	2.	1.	.24
+	HYDROGRAPH AT	RETIBB	519.	4.27	45.	11.	4.	.24
+	DIVERSION TO	RETIBB	328.	4.03	5.	1.	0.	.24
+	HYDROGRAPH AT	RETIBB	519.	4.27	40.	10.	4.	.24
+	HYDROGRAPH AT	SUBICB	415.	4.33	53.	13.	5.	.23
+	DIVERSION TO	RETICB	8.	2.93	3.	1.	0.	.23
+	HYDROGRAPH AT	RETICB	415.	4.33	50.	13.	5.	.23
+	DIVERSION TO	RETICB	409.	4.30	25.	6.	2.	.23
+	HYDROGRAPH AT	RETICB	414.	4.37	26.	6.	2.	.23
+	3 COMBINED AT	~CPIB1	1473.	5.00	444.	116.	43.	6.57
+	DIVERSION TO	107L	273.	5.00	7.	2.	1.	6.57
+	HYDROGRAPH AT	DV107A	1200.	4.93	438.	115.	42.	6.57
+	HYDROGRAPH AT	SUBOC	861.	4.13	93.	23.	8.	.31
+	DIVERSION TO	RETOC	861.	4.13	63.	16.	6.	.31
+	HYDROGRAPH AT	RETOC	683.	4.27	30.	8.	3.	.31
+	HYDROGRAPH AT	DROC	70.	4.53	5.	1.	0.	.61
+	ROUTED TO	RTDIOC	22.	5.97	5.	1.	0.	.61
+	2 COMBINED AT	CPOC	683.	4.27	35.	9.	3.	.42
+	ROUTED TO	RTOCMB	320.	4.63	35.	9.	3.	.42
+	HYDROGRAPH AT	SUBMB	1651.	4.43	272.	68.	25.	1.00
+	DIVERSION TO	RETMB	1651.	4.43	178.	45.	16.	1.00
+	HYDROGRAPH AT	RETMB	1184.	4.67	95.	24.	9.	1.00
+	HYDROGRAPH AT	DRMB	534.	4.57	87.	22.	8.	2.69
+	ROUTED TO	RTDIMB	322.	5.07	87.	22.	8.	2.69
+	3 COMBINED AT	@CPMB	1299.	4.67	217.	55.	20.	1.42
+	DIVERSION TO	DIIBW	650.	4.67	108.	27.	10.	1.42
+	HYDROGRAPH AT	DIMBIB	650.	4.67	108.	27.	10.	1.42
+	ROUTED TO							

+		RTMBIB	641.	4.90	108.	27.	10.	1.42
+	DIVERSION TO	107U	641.	4.90	108.	27.	10.	1.42
+	HYDROGRAPH AT	DV107B	0.	.00	0.	0.	0.	1.42
+	2 COMBINED AT	@CPIB2	1200.	4.93	438.	115.	42.	6.57
+	ROUTED TO	RRIB	787.	6.17	413.	115.	42.	6.57
+	ROUTED TO	MCIBIA	779.	6.47	410.	115.	42.	6.57
+	HYDROGRAPH AT	SUBME	541.	4.33	60.	15.	5.	.33
+	DIVERSION TO	RETME	541.	4.33	46.	11.	4.	.33
+	HYDROGRAPH AT	RETME	306.	4.57	14.	4.	1.	.33
+	HYDROGRAPH AT	RDIIBW	650.	4.67	108.	27.	10.	1.42
+	2 COMBINED AT	CPME	801.	4.67	121.	30.	11.	1.04
+	ROUTED TO	RTMEIA	634.	4.93	121.	30.	11.	1.04
+	HYDROGRAPH AT	SUBIA	586.	4.30	66.	17.	6.	.31
+	DIVERSION TO	RETIA	127.	3.87	7.	2.	1.	.31
+	HYDROGRAPH AT	RETIA	586.	4.30	59.	15.	5.	.31
+	3 COMBINED AT	~CPIA	849.	6.43	500.	145.	53.	9.81
+	ROUTED TO	MCIAHB	844.	6.77	495.	145.	53.	9.81
+	HYDROGRAPH AT	SUBHB	413.	4.03	28.	7.	2.	.34
+	DIVERSION TO	RETHB	240.	3.90	9.	2.	1.	.34
+	HYDROGRAPH AT	RETHB	413.	4.03	19.	5.	2.	.34
+	2 COMBINED AT	CPHB1	844.	6.77	496.	148.	54.	10.15
+	HYDROGRAPH AT	SUBDA	373.	4.10	29.	7.	3.	.33
+	DIVERSION TO	RETDA	274.	3.97	9.	2.	1.	.33
+	HYDROGRAPH AT	RETDA	373.	4.10	20.	5.	2.	.33
+	2 COMBINED AT	~CPDA	845.	6.77	501.	152.	56.	10.48
+	HYDROGRAPH AT	SUBLD	322.	4.07	24.	6.	2.	.28
+	DIVERSION TO	RETLD	322.	4.07	24.	6.	2.	.28
+	HYDROGRAPH AT	RETLD	0.	.00	0.	0.	0.	.28
+	ROUTED TO	RTLDMA	0.	.00	0.	0.	0.	.28
+	HYDROGRAPH AT	SUBMA	283.	4.03	17.	4.	2.	.25
+	DIVERSION TO	RETMA	283.	4.03	17.	4.	2.	.25
+	HYDROGRAPH AT	RETMA	0.	.00	0.	0.	0.	.25
+	2 COMBINED AT	CPMA	0.	.00	0.	0.	0.	.53
+	ROUTED TO	RTMAHB	0.	.00	0.	0.	0.	.53
+	2 COMBINED AT	CPHB2	845.	6.77	501.	152.	56.	11.00
+	HYDROGRAPH AT	SUBLB	276.	4.07	17.	4.	2.	.25

+	DIVERSION TO	RETLB	276.	4.07	17.	4.	2.	.25
+	HYDROGRAPH AT	RETLB	0.	.00	0.	0.	0.	.25
+	ROUTED TO	RTLBHA	0.	.00	0.	0.	0.	.25
+	HYDROGRAPH AT	SUBHA	186.	4.03	13.	3.	1.	.15
+	DIVERSION TO	RETHA	165.	3.97	6.	2.	1.	.15
+	HYDROGRAPH AT	RETHA	186.	4.03	6.	2.	1.	.15
+	3 COMBINED AT	CPHA	845.	6.77	505.	153.	56.	11.40
+	ROUTED TO	MCHACB	754.	7.40	466.	145.	53.	11.40
+	HYDROGRAPH AT	SUBJB2	513.	4.13	43.	11.	4.	.49
+	DIVERSION TO	RETJB2	513.	4.13	43.	11.	4.	.49
+	HYDROGRAPH AT	RETJB2	0.	.00	0.	0.	0.	.49
+	HYDROGRAPH AT	DRJB2	22.	5.57	10.	3.	2.	1.08
+	ROUTED TO	RTJCJ	18.	7.00	10.	3.	2.	1.08
+	2 COMBINED AT	@CPJB2	19.	7.00	10.	3.	2.	.99
+	DIVERSION TO	DIFA	12.	7.00	6.	2.	1.	.99
+	HYDROGRAPH AT	DIJBEE	7.	6.97	4.	1.	1.	.99
+	ROUTED TO	RTJBEE	6.	9.27	3.	1.	1.	.99
+	HYDROGRAPH AT	SUBEE	700.	4.20	71.	18.	6.	.96
+	DIVERSION TO	RETEE	700.	4.20	71.	18.	6.	.96
+	HYDROGRAPH AT	RETEE	0.	.00	0.	0.	0.	.96
+	2 COMBINED AT	CPEE	6.	9.27	3.	1.	1.	1.31
+	ROUTED TO	RTEEEA	3.	17.30	3.	1.	1.	1.31
+	HYDROGRAPH AT	SUBEA	912.	4.13	93.	23.	8.	1.32
+	DIVERSION TO	RETEA	912.	4.13	93.	23.	8.	1.32
+	HYDROGRAPH AT	RETEA	0.	.00	0.	0.	0.	1.32
+	2 COMBINED AT	CPEA	3.	17.30	3.	1.	1.	2.63
+	ROUTED TO	RTEADC	3.	19.40	3.	1.	1.	2.63
+	HYDROGRAPH AT	SUBDC	774.	4.07	63.	16.	6.	.83
+	DIVERSION TO	RETDC	774.	4.07	52.	13.	5.	.83
+	HYDROGRAPH AT	RETDC	377.	4.23	11.	3.	1.	.83
+	2 COMBINED AT	~CPDC	71.	4.63	4.	2.	1.	3.46
+	ROUTED TO	RTDCCC	13.	5.63	4.	2.	1.	3.46
+	HYDROGRAPH AT	SUBDD	173.	4.00	11.	3.	1.	.13
+	DIVERSION TO	RETDD	173.	4.00	11.	3.	1.	.13
+	HYDROGRAPH AT	RETDD	0.	.00	0.	0.	0.	.13
+	ROUTED TO	RTDDCC	0.	.00	0.	0.	0.	.13

+	HYDROGRAPH AT	SUBCC	845.	4.10	78.	19.	7.	.98
+	DIVERSION TO	RETCC	845.	4.10	69.	17.	6.	.98
+	HYDROGRAPH AT	RETCC	258.	4.33	9.	2.	1.	.98
+	3 COMBINED AT	~CPC	16.	5.87	5.	2.	1.	4.57
+	ROUTED TO	RTCCSC	11.	6.83	5.	2.	1.	4.57
+	ROUTED TO	RTCCSC	8.	7.80	5.	2.	1.	4.57
+	HYDROGRAPH AT	SUBCB	766.	4.10	71.	18.	6.	.74
+	DIVERSION TO	RETCB	713.	4.03	32.	8.	3.	.74
+	HYDROGRAPH AT	RETCB	766.	4.10	39.	10.	4.	.74
+	3 COMBINED AT	~CPCB1	810.	7.20	524.	171.	62.	16.71
+	HYDROGRAPH AT	SUBGD1	670.	4.07	54.	14.	5.	.63
+	DIVERSION TO	RETGD1	629.	4.03	27.	7.	2.	.63
+	HYDROGRAPH AT	RETGD1	643.	4.10	28.	7.	2.	.63
+	HYDROGRAPH AT	SUBGD2	853.	4.10	78.	20.	7.	.21
+	DIVERSION TO	RETGD2	700.	4.00	32.	8.	3.	.21
+	HYDROGRAPH AT	RETGD2	853.	4.10	46.	12.	4.	.21
+	2 COMBINED AT	CPGD	1312.	4.10	72.	18.	6.	.84
+	HYDROGRAPH AT	SUBKC	316.	4.03	22.	5.	2.	.26
+	DIVERSION TO	RETKC	316.	4.03	22.	5.	2.	.26
+	HYDROGRAPH AT	RETKC	0.	.00	0.	0.	0.	.26
+	ROUTED TO	RTKCGD	0.	.00	0.	0.	0.	.26
+	HYDROGRAPH AT	SUBGC	268.	4.03	17.	4.	2.	.22
+	DIVERSION TO	RETGC	261.	4.00	10.	3.	1.	.22
+	HYDROGRAPH AT	RETGC	256.	4.07	7.	2.	1.	.22
+	ROUTED TO	RTGCGD	166.	4.13	7.	2.	1.	.22
+	3 COMBINED AT	CPGD1	1307.	4.13	76.	19.	7.	1.32
+	ROUTED TO	RTGDCB	769.	4.43	75.	19.	7.	1.32
+	2 COMBINED AT	~CPCB2	869.	7.17	568.	195.	71.	18.03
+	ROUTED TO	MCCBCA	560.	7.73	393.	142.	51.	18.03
+	HYDROGRAPH AT	SUBCA1	158.	4.10	14.	4.	1.	.14
+	DIVERSION TO	RETCA1	107.	3.97	5.	1.	0.	.14
+	HYDROGRAPH AT	RETCA1	158.	4.10	9.	2.	1.	.14
+	HYDROGRAPH AT	SUBCA2	771.	4.13	74.	19.	7.	.84
+	DIVERSION TO	RETCA2	755.	4.07	36.	9.	3.	.84
+	HYDROGRAPH AT	RETCA2	771.	4.13	38.	10.	3.	.84
+	3 COMBINED AT							

+		~CPCA1	553.	7.73	393.	149.	54.	19.01
+	HYDROGRAPH AT	SUBGB	251.	4.07	16.	4.	1.	.22
+	DIVERSION TO	RETGB	251.	4.07	16.	4.	1.	.22
+	HYDROGRAPH AT	RETGB	0.	.00	0.	0.	0.	.22
+	ROUTED TO	RTGBCA	0.	.00	0.	0.	0.	.22
+	2 COMBINED AT	~CPCA2	553.	7.73	393.	149.	54.	19.24
+	DIVERSION TO	B-DRCC	509.	7.77	353.	119.	43.	19.24
+	HYDROGRAPH AT	P-DRCC	34.	18.07	33.	27.	10.	19.24
+	ROUTED TO	MCCABC	33.	18.37	33.	27.	10.	19.24
+	HYDROGRAPH AT	SUBBC1	215.	4.00	16.	4.	1.	.14
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+	HYDROGRAPH AT	RETBC2	643.	4.10	33.	8.	3.	.49
+	3 COMBINED AT	~CPBC	382.	4.13	62.	36.	14.	10.25
+	2 COMBINED AT	CPAFBC	382.	4.13	62.	36.	14.	10.25

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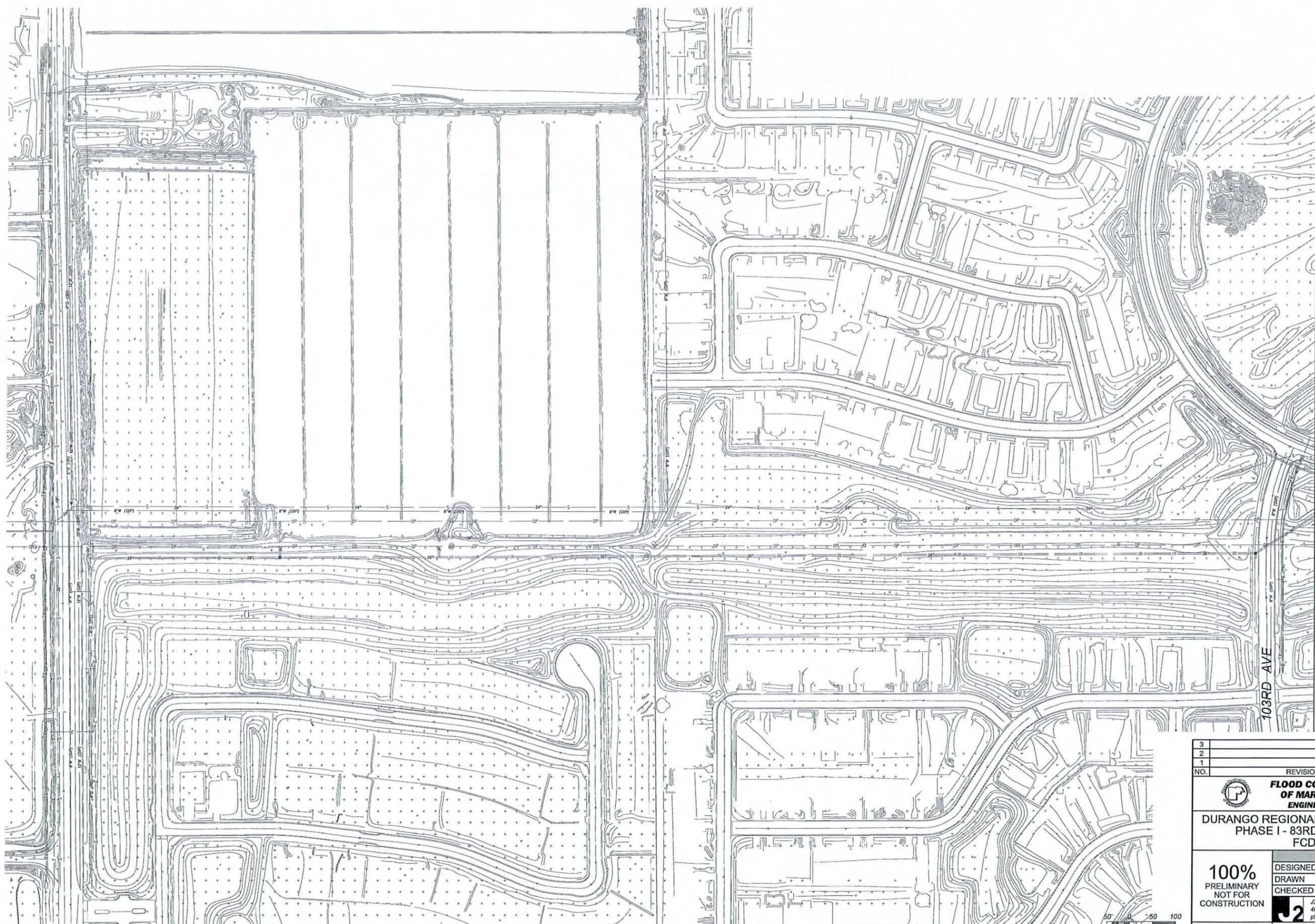


APPENDIX B

UTILITY MAPS

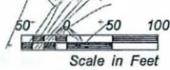


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DURANGO REGIONAL CONVEYANCE CHANNEL PHASE I - 83RD AVE TO 107TH AVE FCD2010C033			
100% PRELIMINARY NOT FOR CONSTRUCTION		BY	DATE
	DESIGNED	M. KAPFER	6/2011
	DRAWN	MRT, JW	6/2011
	CHECKED	J. HOLZMEISTER	6/2011
 J2		<small>J2 engineering and environmental design 4649 east cotton gin loop, suite B2, phoenix, arizona 85040 phone: 602.438.2221 www.j2design.us</small>	
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Matchline - See Sheet 1

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**FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
ENGINEERING DIVISION**

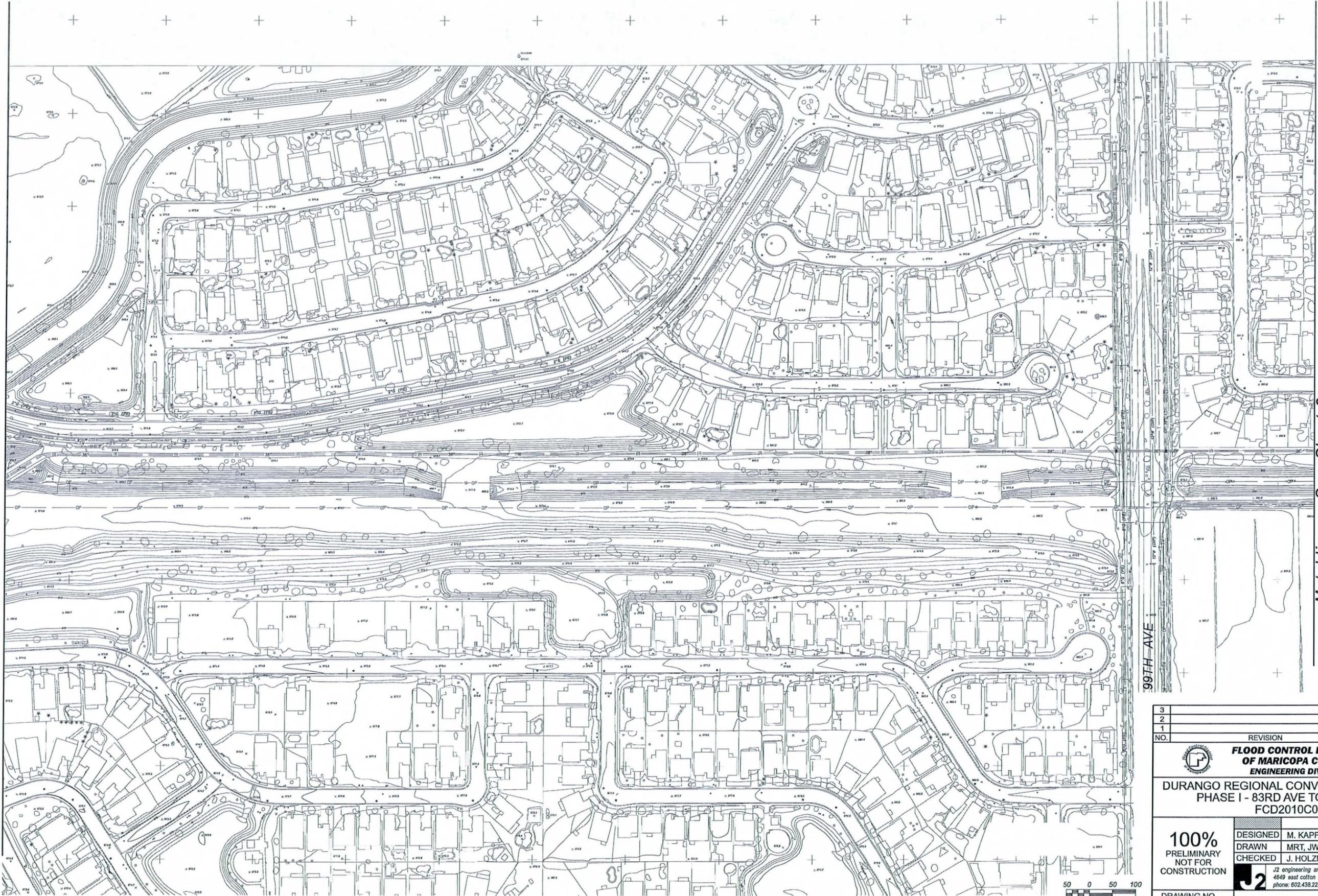
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PHASE I - 83RD AVE TO 107TH AVE
FCD2010C033**

**100%
PRELIMINARY
NOT FOR
CONSTRUCTION**

	BY	DATE
DESIGNED	M. KAPPER	6/2011
DRAWN	MRT, JW	6/2011
CHECKED	J. HOLZMEISTER	6/2011

J2 J2 engineering and environmental design
4649 east cotton gin loop, suite B2, phoenix, arizona 85040
phone: 602.438.2221 www.j2design.us

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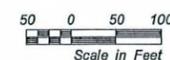
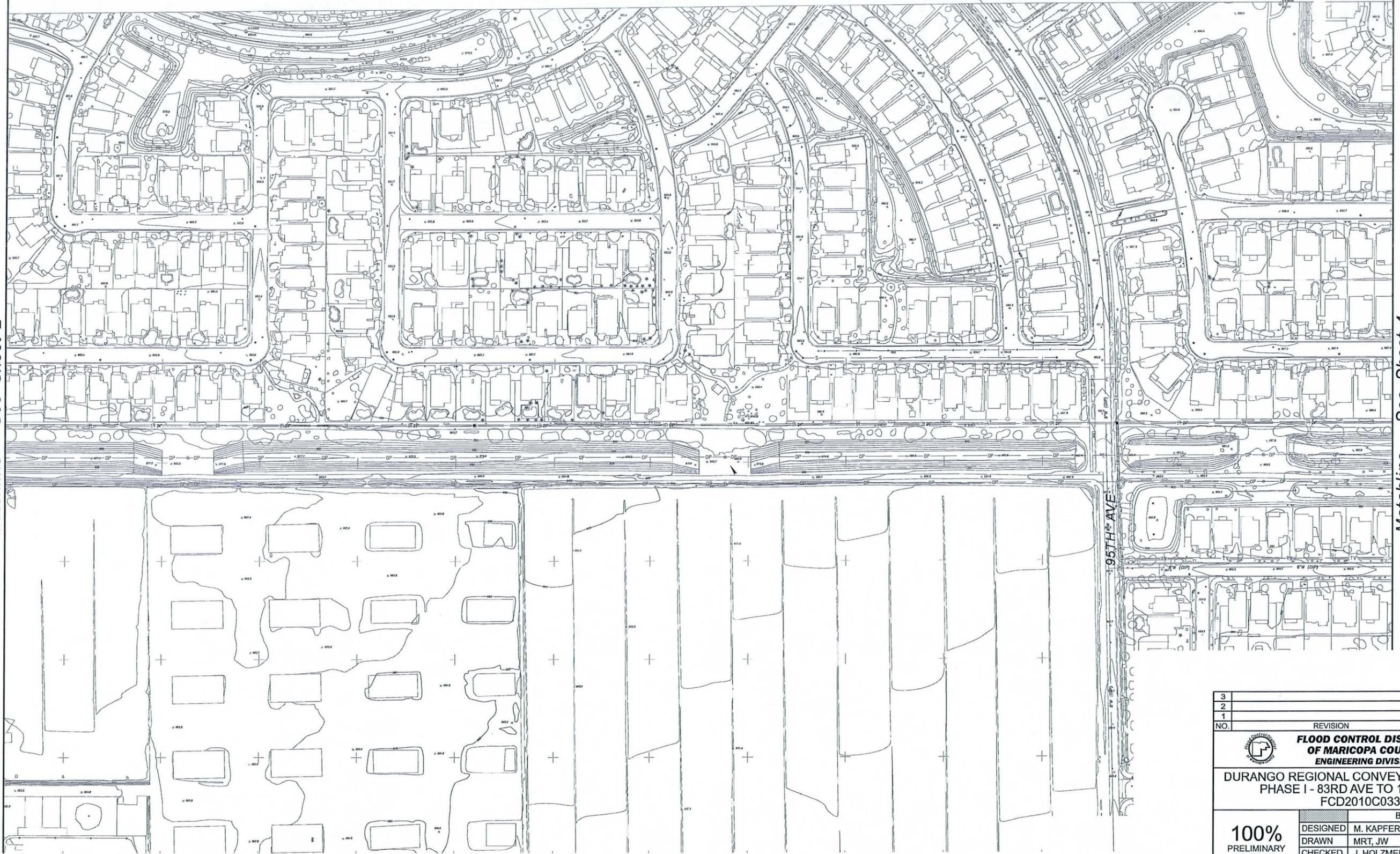


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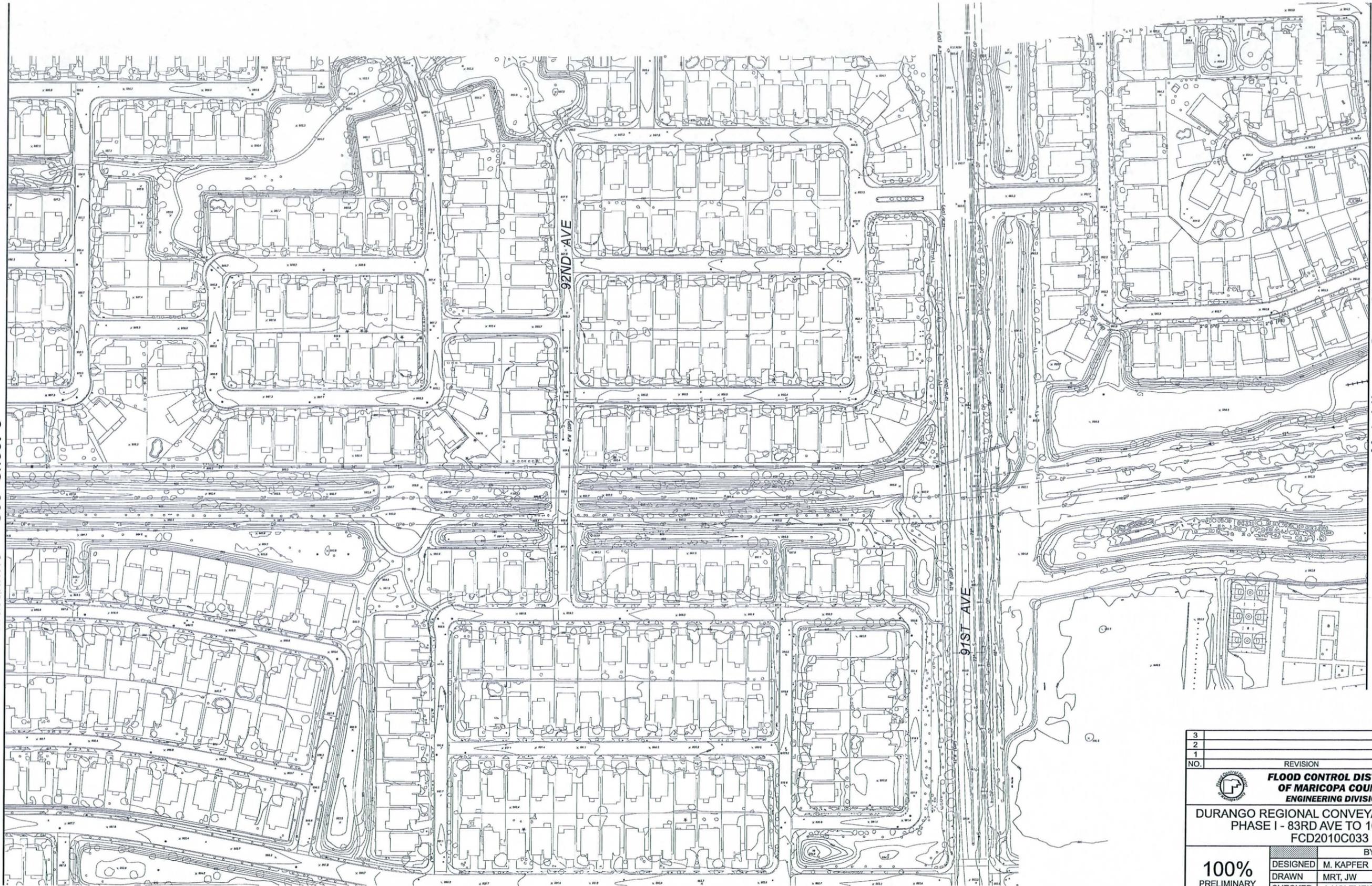
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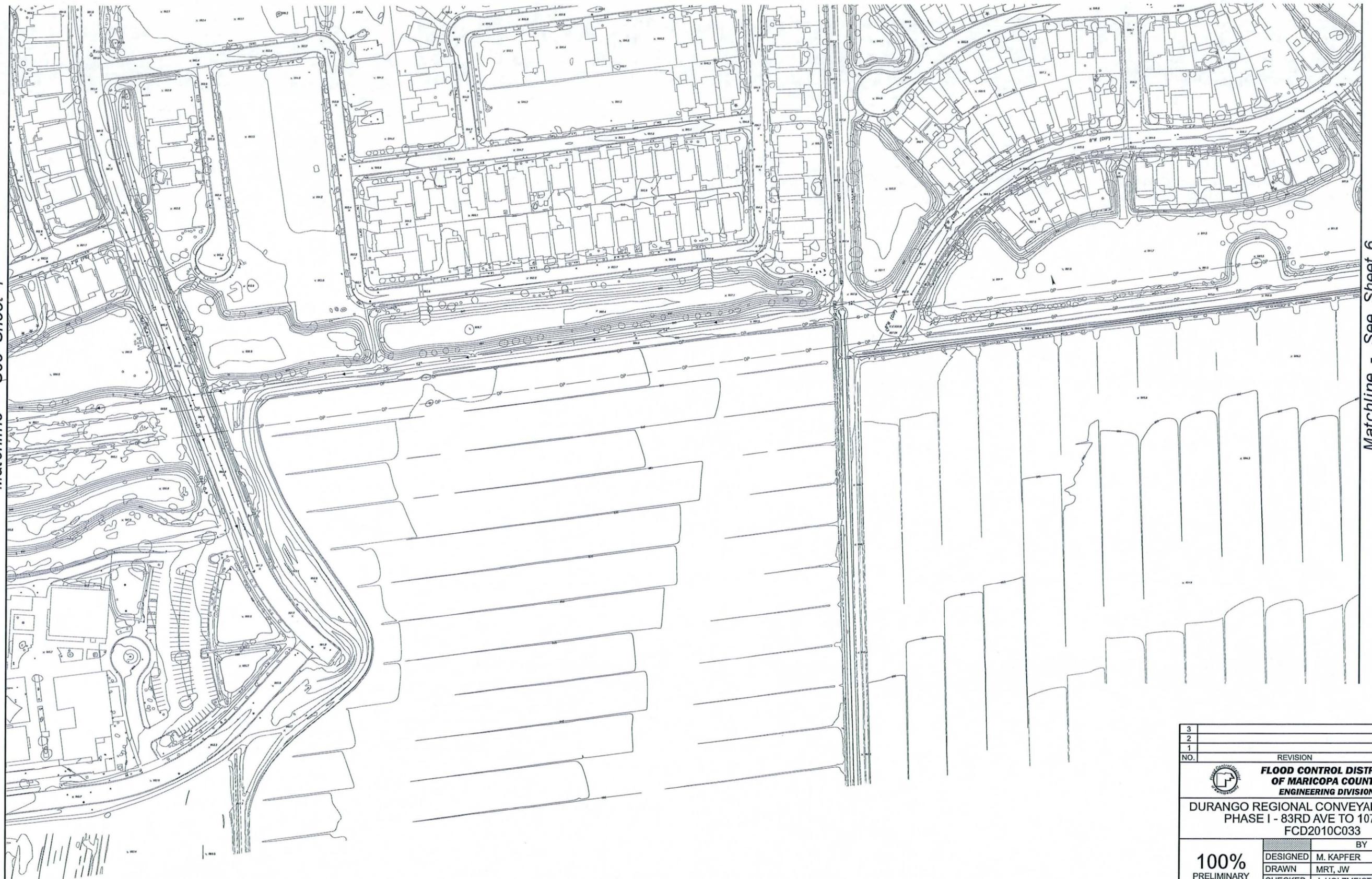


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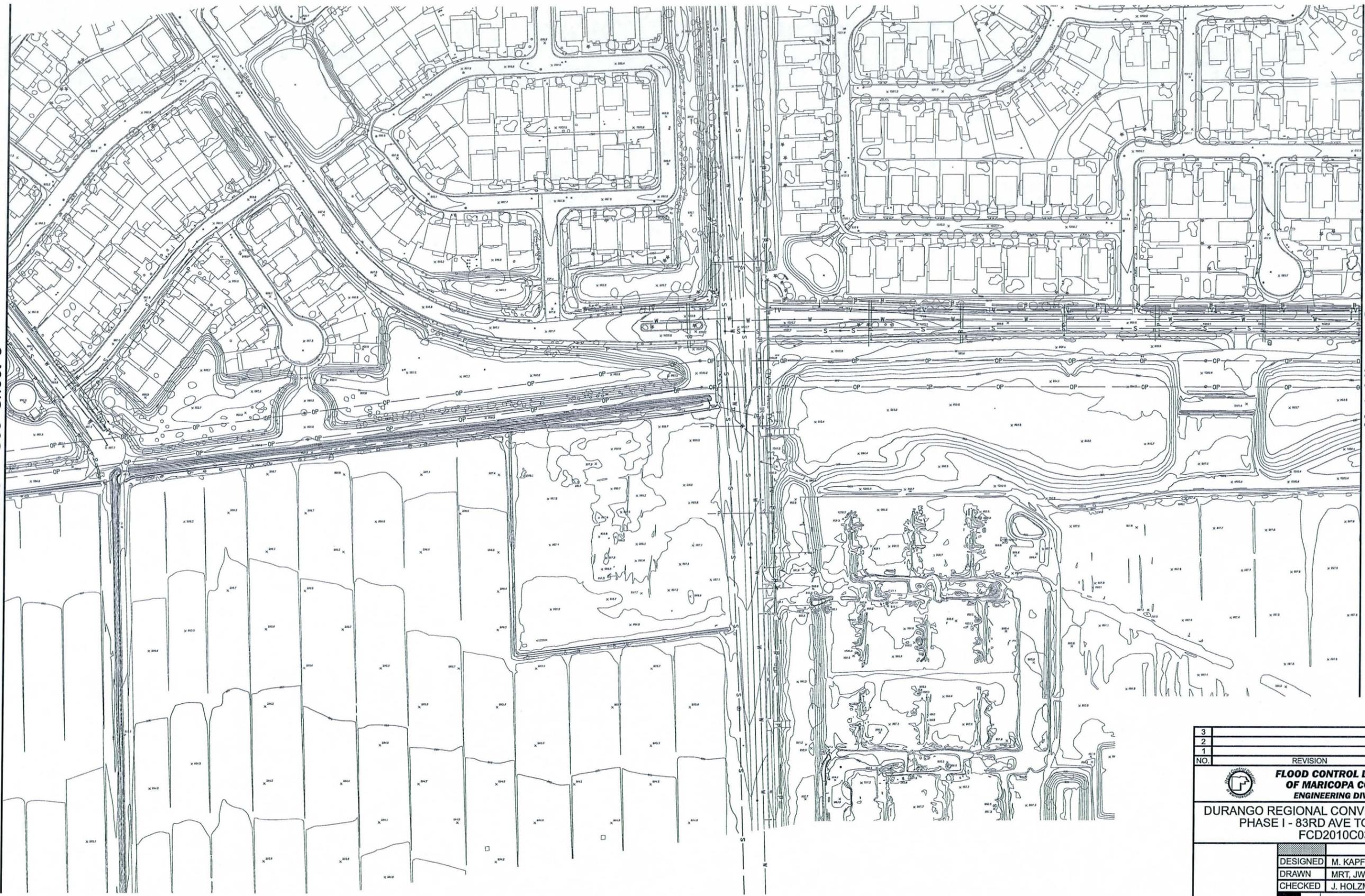
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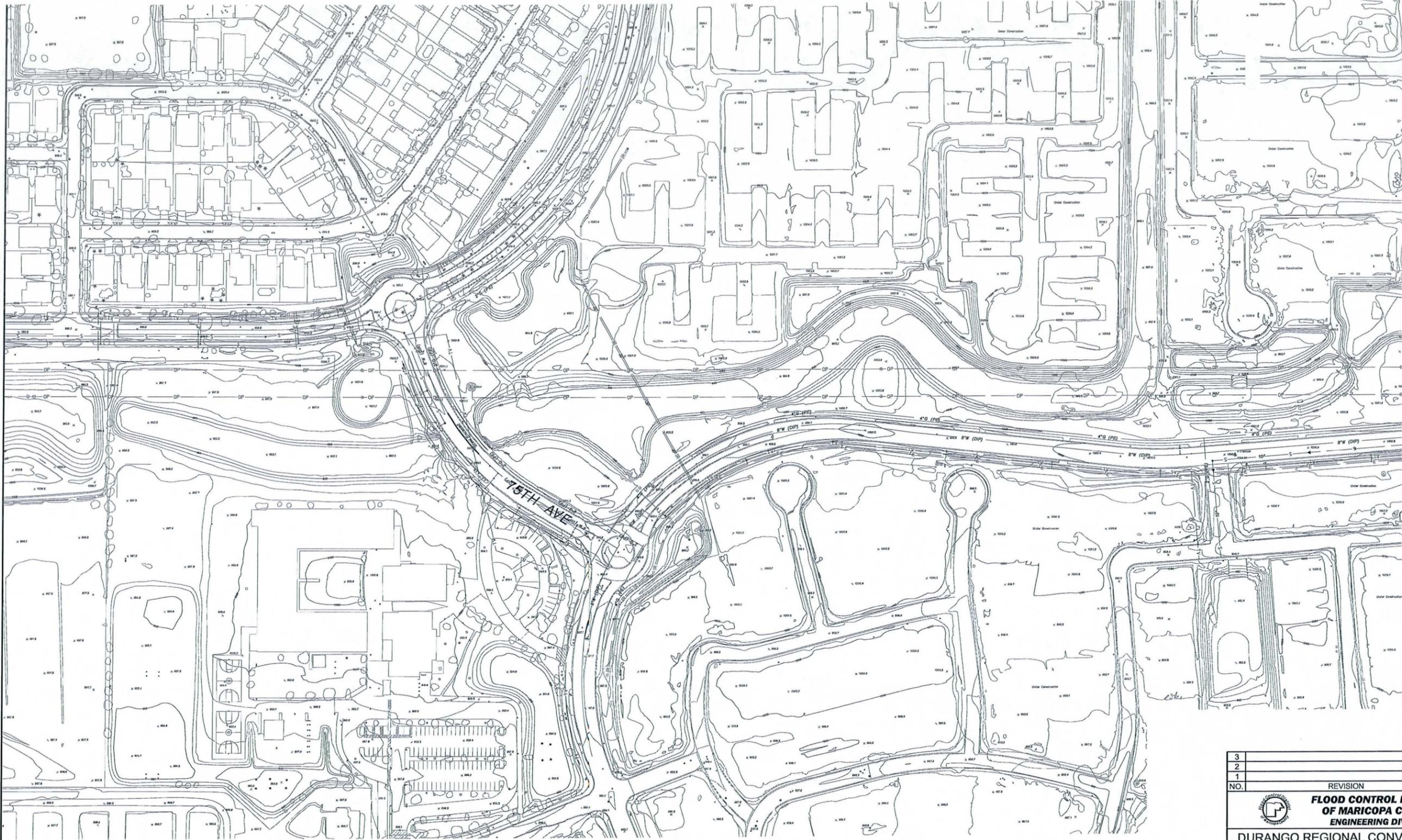
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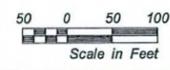


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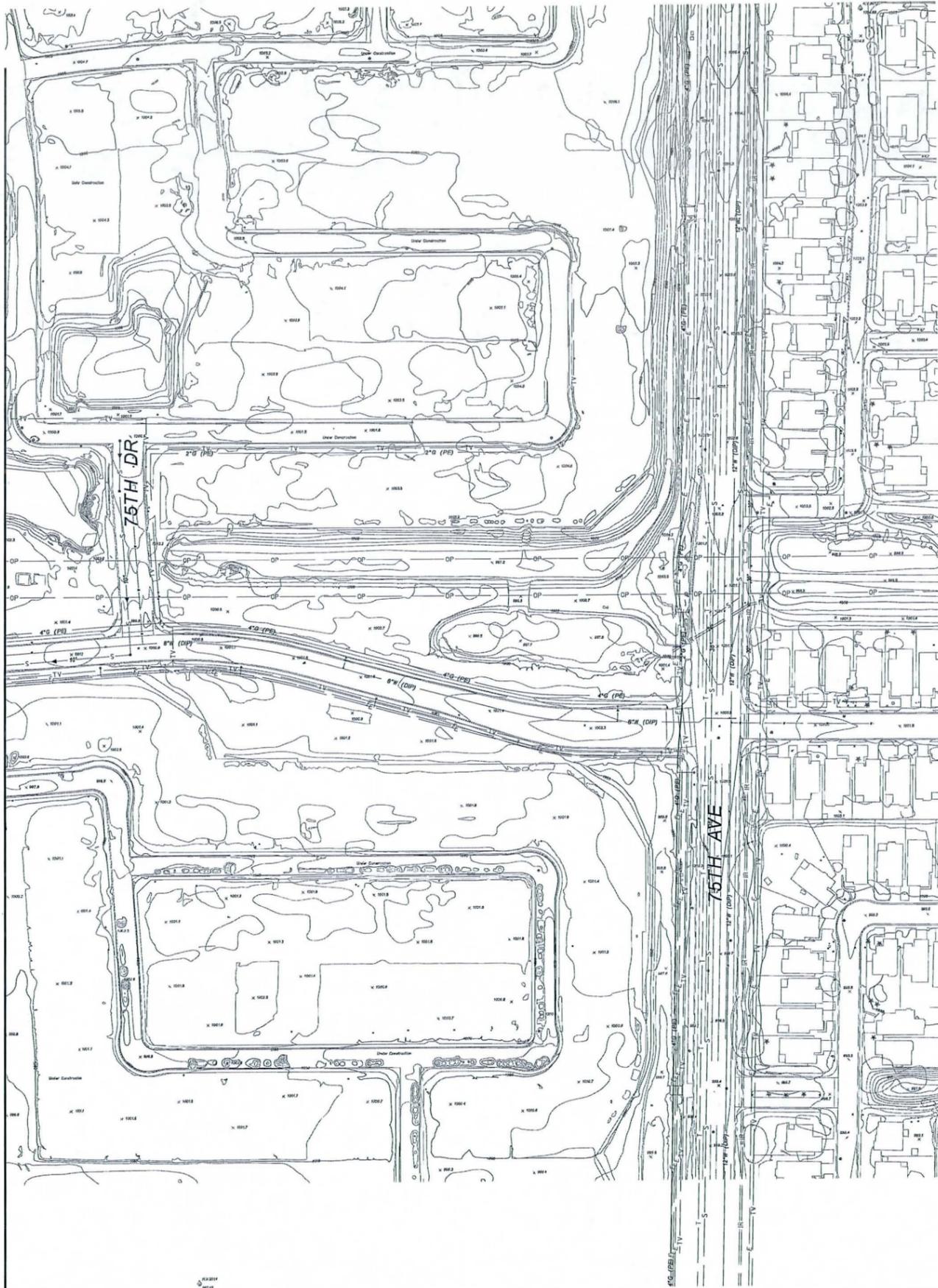
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APPENDIX C

HYDRAULIC ANALYSIS



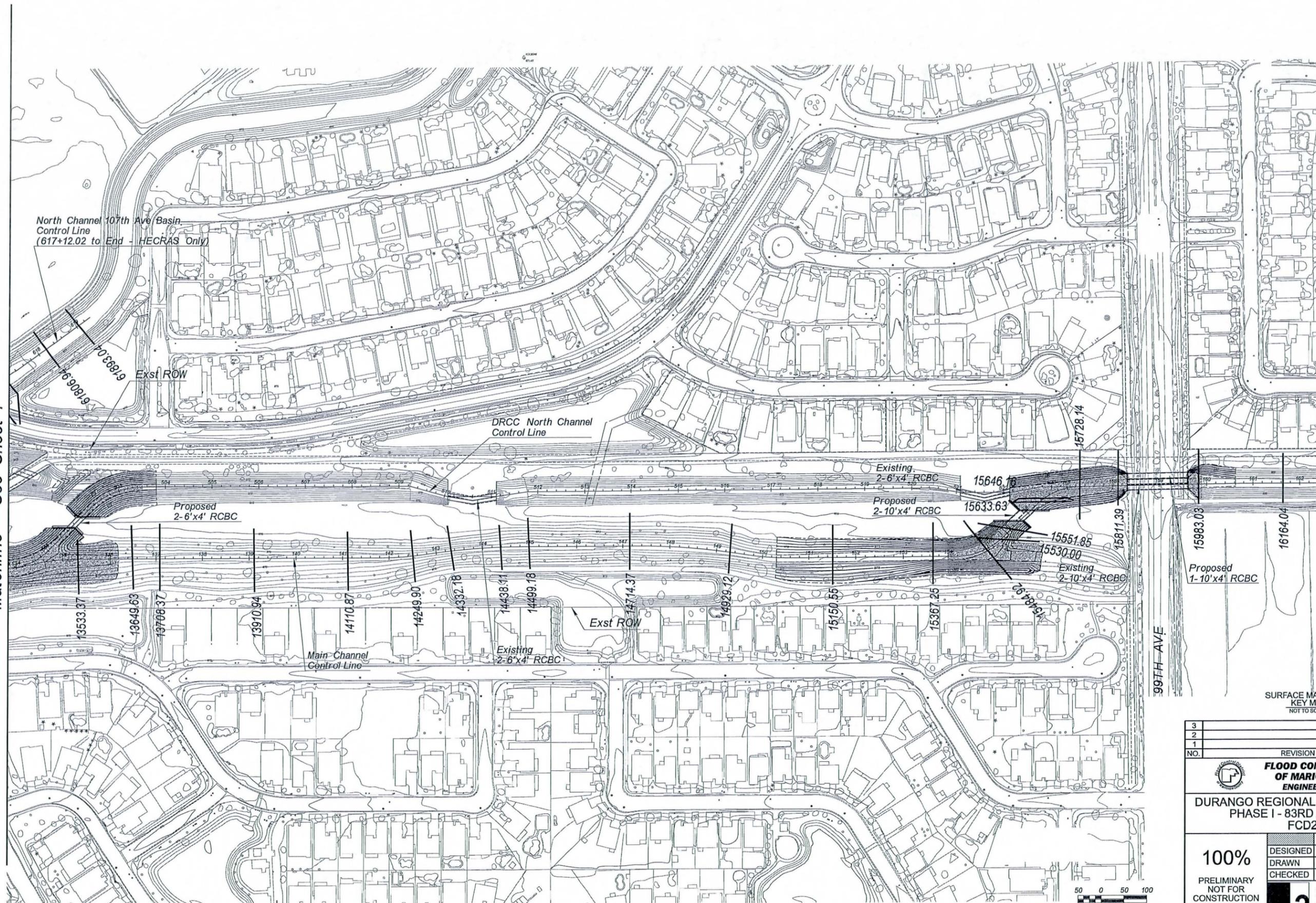
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SURFACE MATERIALS
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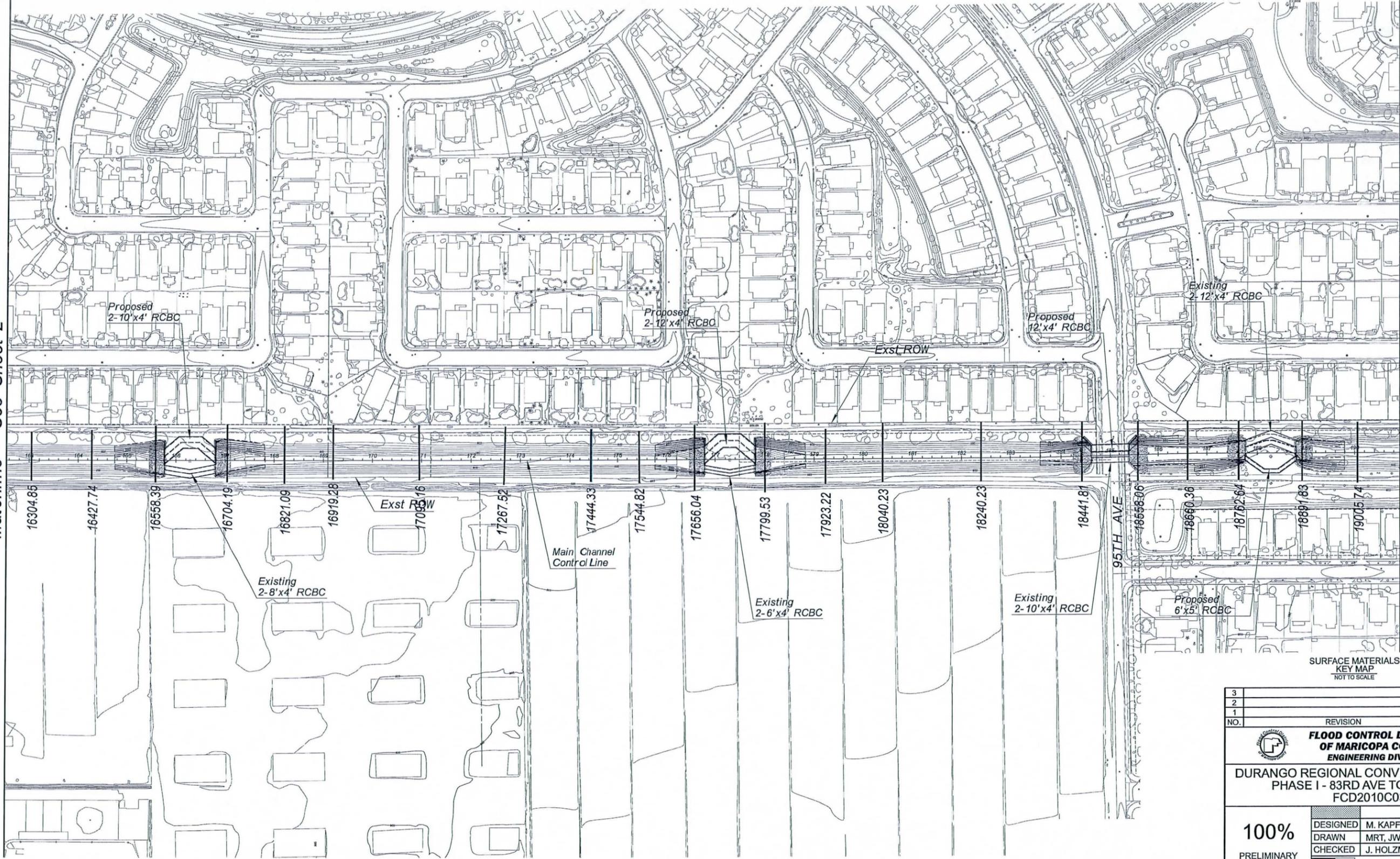
J2 *J2 engineering and environmental design*
 4649 east cotton gin loop, suite B2,
 phoenix, arizona 85040
 phone: 602.438.2221 www.j2design.us

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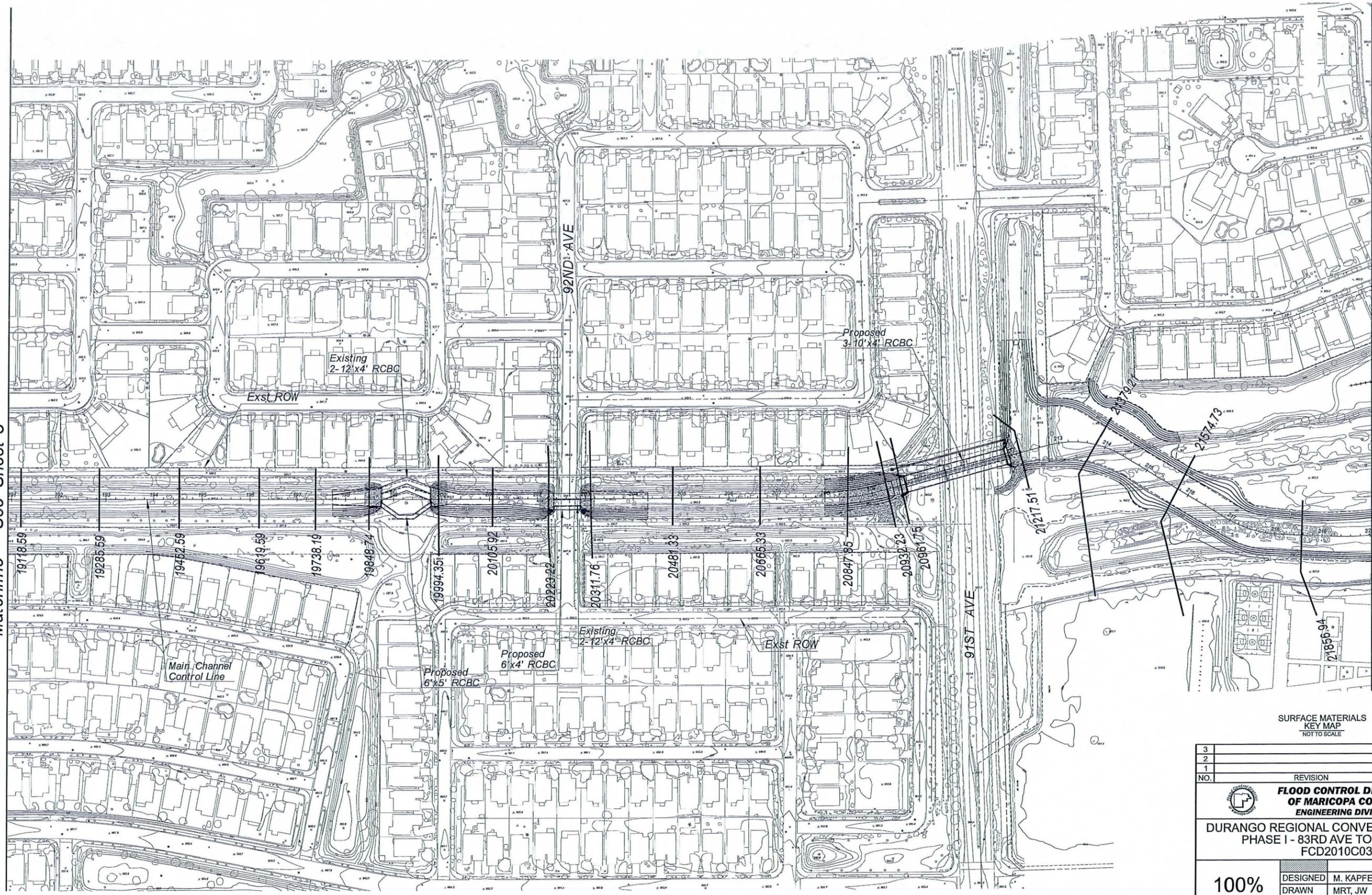
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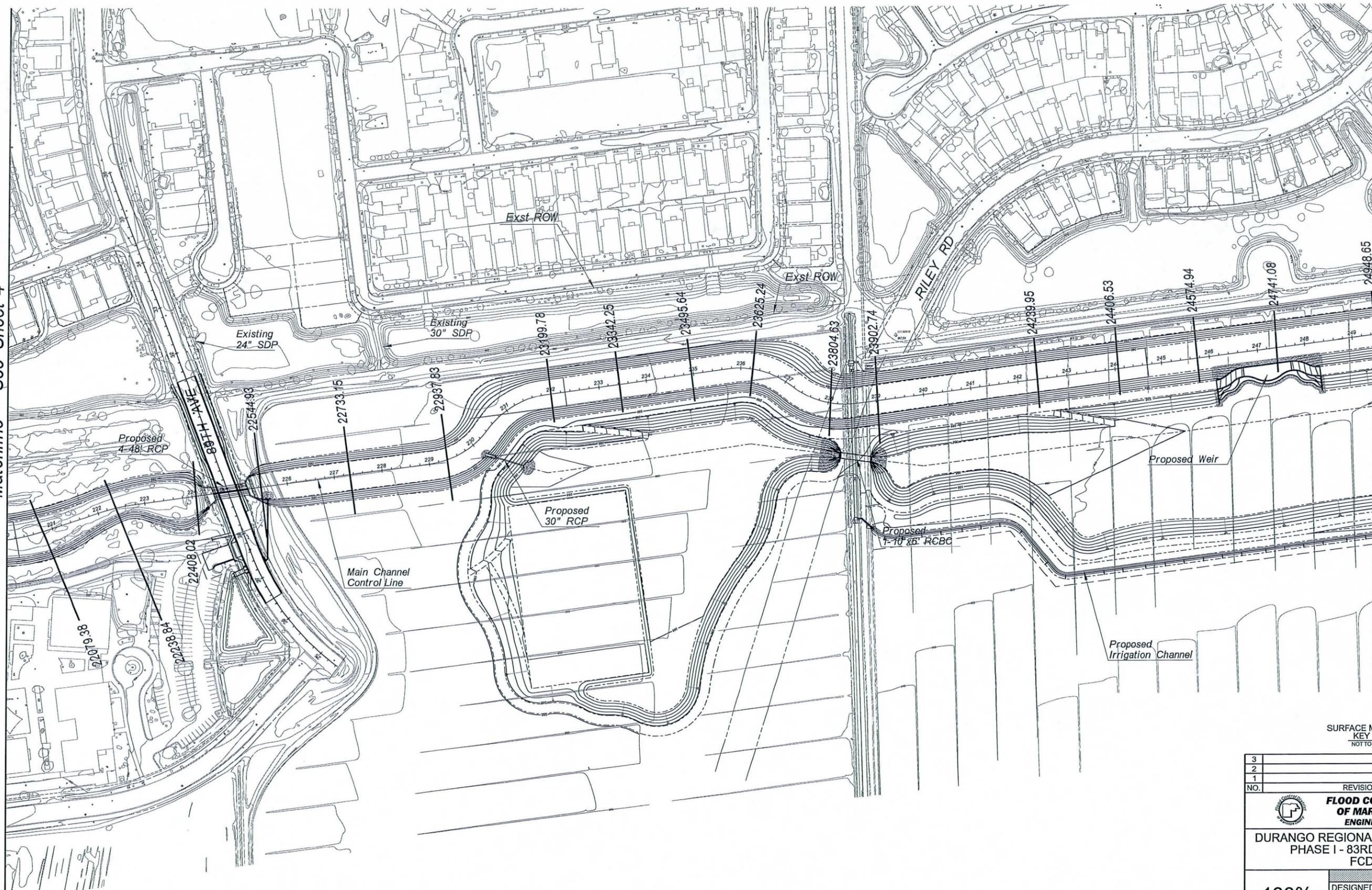


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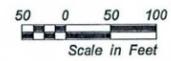
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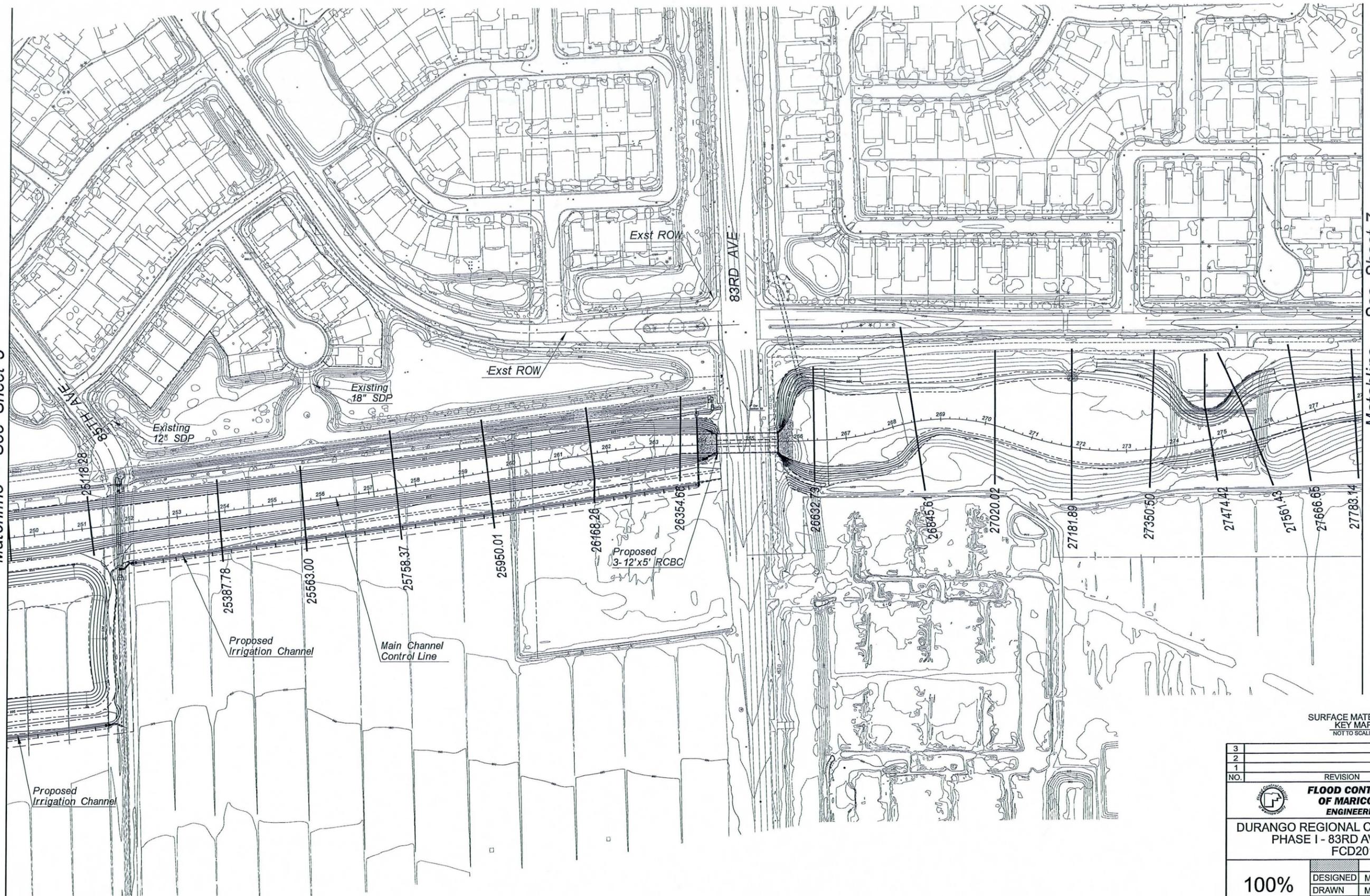
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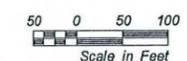
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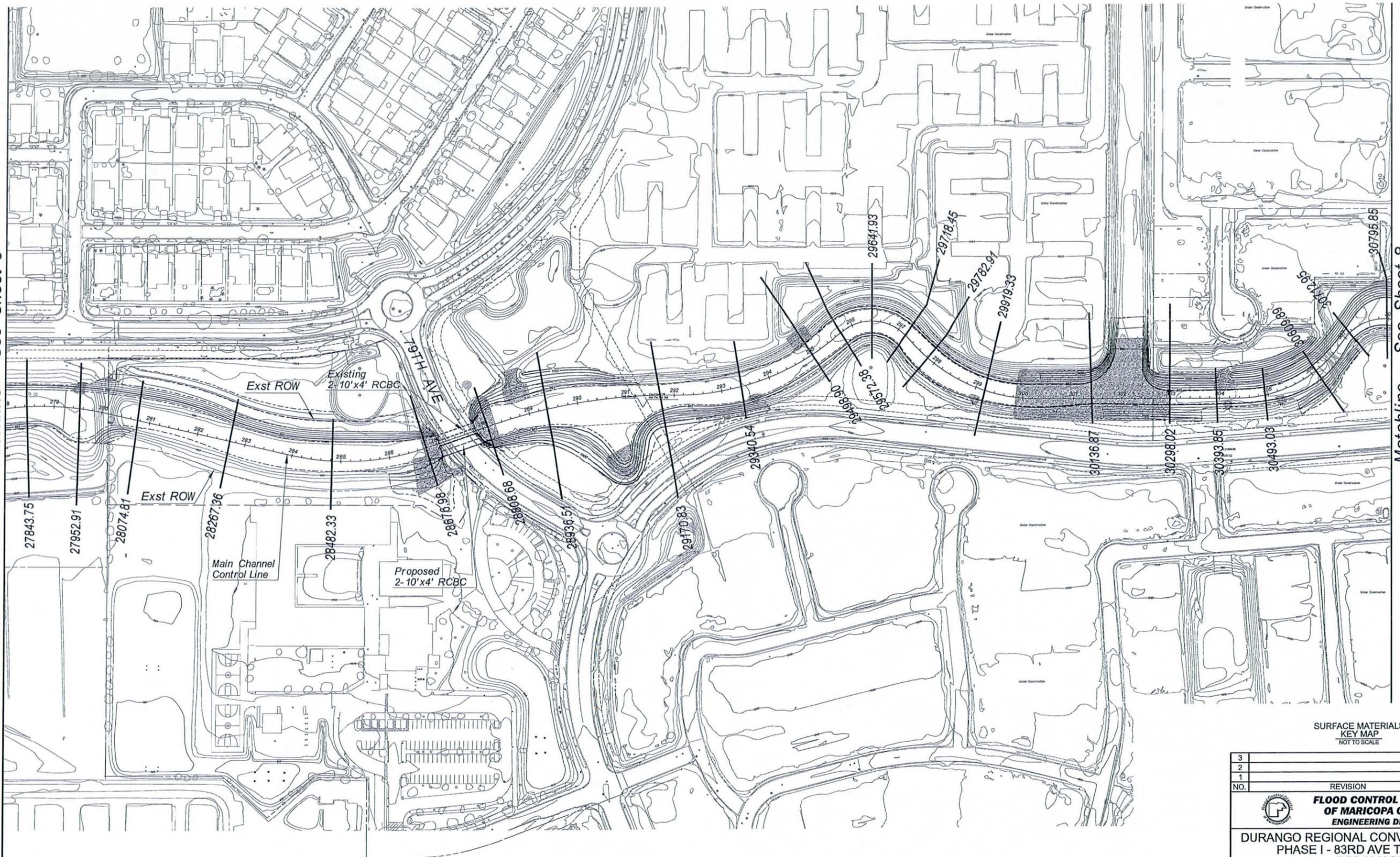
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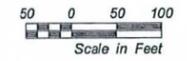
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY ENGINEERING DIVISION

DURANGO REGIONAL CONVEYANCE CHANNEL PHASE I - 83RD AVE TO 107TH AVE
FCD2010C033

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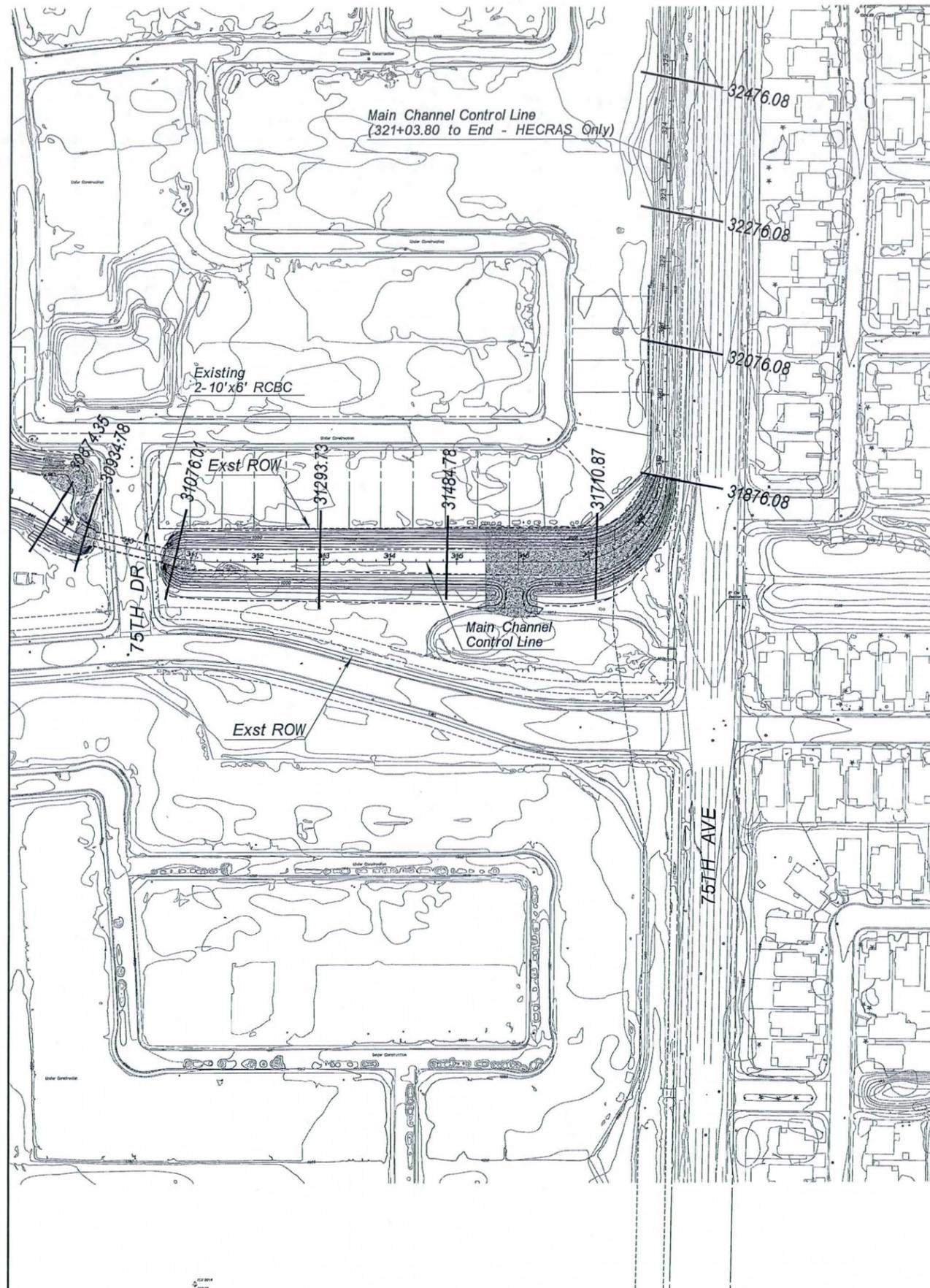
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J2 engineering and environmental design
 4649 east cotton gin loop, suite B2,
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 phone: 602.438.2221 www.j2design.us

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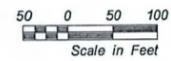
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ENGINEERING DIVISION**

**DURANGO REGIONAL CONVEYANCE CHANNEL
PHASE I - 83RD AVE TO 107TH AVE
FCD2010C033**

100% PRELIMINARY NOT FOR CONSTRUCTION		BY	DATE
	DESIGNED	M. KAPFER	8/2011
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 **J2** engineering and environmental design
4849 east cotton gin loop, suite B2,
phoenix, arizona 85040
phone: 602.438.2221 www.j2design.us

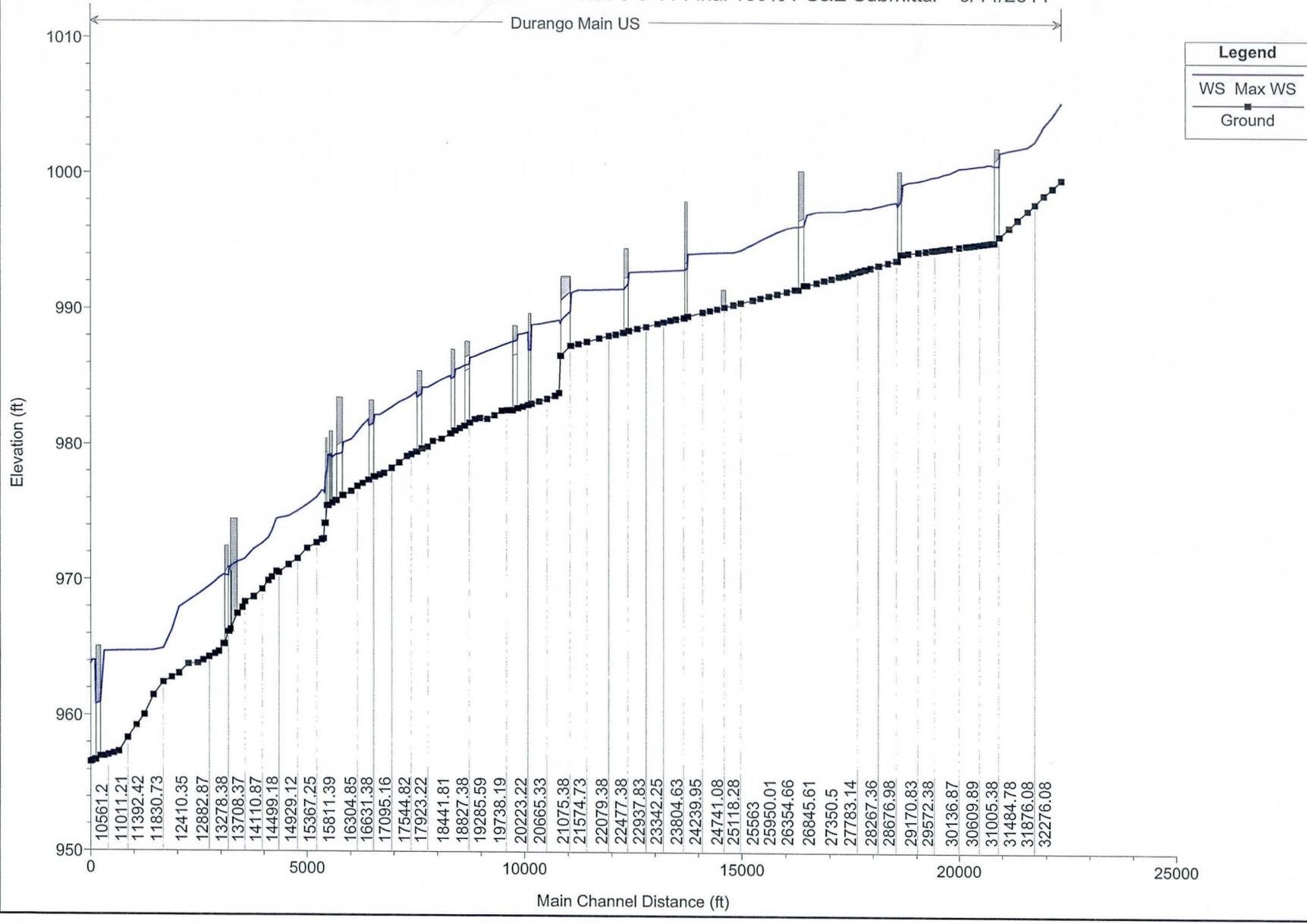
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9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

Durango Main US



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HEC-RAS Plan: 9-9-11 100% PS&E River: Durango Reach: Main US Profile: Max WS

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main US	32476.08	Max WS	1023.80	999.65	1005.32		1006.06	0.003997	7.10	158.20	118.24	0.59
Main US	32276.08	Max WS	982.62	999.05	1004.35		1005.17	0.004781	7.41	143.21	97.92	0.64
Main US	32076.08	Max WS	949.34	998.51	1003.59		1004.24	0.003885	6.67	150.99	111.78	0.58
Main US	31876.08	Max WS	936.91	997.85	1002.49	1002.47	1003.49	0.006480	8.49	140.37	88.09	0.75
Main US	31710.87	Max WS	814.91	997.35	1002.10		1002.23	0.001035	2.87	283.84	81.59	0.27
Main US	31484.78	Max WS	808.75	996.68	1001.94		1002.04	0.000692	2.52	320.69	82.90	0.23
Main US	31293.73	Max WS	806.97	996.10	1001.83		1001.92	0.000605	2.45	328.84	79.05	0.21
Main US	31076.01	Max WS	803.02	995.45	1001.65		1001.78	0.000658	2.92	274.73	71.78	0.23
Main US	31005.38		Culvert									
Main US	30934.78	Max WS	680.57	995.01	1000.68		1000.86	0.000738	3.41	199.84	63.59	0.26
Main US	30874.35	Max WS	712.60	994.99	1000.77		1000.83	0.000385	1.96	363.57	87.95	0.17
Main US	30795.85	Max WS	711.86	994.96	1000.78		1000.81	0.000194	1.48	481.71	108.62	0.12
Main US	30712.95	Max WS	685.64	994.92	1000.69		1000.78	0.000655	2.44	280.50	73.29	0.22
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Main US	29919.33	Max WS	1222.42	994.60	1000.15		1000.30	0.000959	3.07	398.22	98.52	0.27
Main US	29782.91	Max WS	1222.74	994.55	1000.06		1000.18	0.000787	2.86	427.15	102.64	0.25
Main US	29718.45	Max WS	1210.76	994.52	999.98		1000.13	0.000945	3.05	397.14	98.50	0.27
Main US	29641.93	Max WS	1158.53	994.49	999.90		1000.04	0.000970	3.08	375.88	93.52	0.27
Main US	29572.38	Max WS	1157.59	994.46	999.85		999.98	0.000821	2.90	399.43	97.01	0.25
Main US	29498.9	Max WS	1157.45	994.43	999.82		999.93	0.000761	2.64	438.37	113.69	0.24
Main US	29340.54	Max WS	1166.97	994.37	999.68		999.81	0.000754	2.91	401.49	92.30	0.25
Main US	29170.83	Max WS	1162.98	994.30	999.54		999.68	0.000923	3.01	386.62	96.73	0.27
Main US	28936.51	Max WS	1188.98	994.21	999.44		999.51	0.000433	2.26	526.58	135.14	0.20
Main US	28808.68	Max WS	1188.33	994.15	999.29		999.44	0.000781	3.11	381.85	100.02	0.26
Main US	28743.38		Culvert									
Main US	28676.98	Max WS	1115.05	993.67	997.96		998.27	0.001819	4.42	252.54	84.08	0.40
Main US	28482.33	Max WS	1082.09	993.50	997.85		997.99	0.000967	3.03	356.56	111.29	0.30
Main US	28267.36	Max WS	1045.61	993.31	997.67		997.80	0.000838	2.86	365.47	113.65	0.28
Main US	28074.81	Max WS	996.16	993.13	997.52		997.64	0.000773	2.75	361.76	106.03	0.26
Main US	27952.91	Max WS	1001.29	993.02	997.53		997.57	0.000293	1.72	583.48	163.84	0.16
Main US	27843.75	Max WS	953.92	992.93	997.43		997.52	0.000587	2.44	390.75	117.03	0.24
Main US	27783.14	Max WS	953.02	992.87	997.41		997.49	0.000512	2.23	427.37	129.85	0.22
Main US	27666.65	Max WS	951.24	992.77	997.40		997.44	0.000376	1.66	572.58	173.51	0.16
Main US	27561.43	Max WS	887.91	992.61	997.35		997.40	0.000315	1.86	476.25	128.37	0.17
Main US	27474.42	Max WS	870.12	992.54	997.26		997.36	0.000779	2.52	344.65	98.48	0.24
Main US	27350.5	Max WS	876.67	992.49	997.27		997.29	0.000092	1.03	847.40	218.19	0.09
Main US	27181.89	Max WS	872.55	992.33	997.27		997.28	0.000056	0.84	1044.39	252.47	0.07
Main US	27020.02	Max WS	870.04	992.19	997.25		997.27	0.000108	1.14	765.48	193.41	0.10
Main US	26845.61	Max WS	868.65	992.02	997.22		997.25	0.000129	1.29	675.66	168.38	0.11
Main US	26632.73	Max WS	1037.04	991.84	997.03		997.17	0.000564	3.02	343.38	123.57	0.23
Main US	26493.38		Culvert									
Main US	26354.66	Max WS	1036.24	991.52	996.14		996.46	0.001743	4.55	227.70	63.47	0.38
Main US	26168.26	Max WS	1033.94	991.37	996.02		996.18	0.001205	3.27	315.84	86.48	0.30
Main US	25950.01	Max WS	1033.89	991.19	995.73		995.91	0.001328	3.42	302.44	84.78	0.32
Main US	25758.37	Max WS	1033.91	991.04	995.44		995.64	0.001523	3.59	288.16	83.10	0.34
Main US	25563	Max WS	1033.68	990.88	995.13		995.33	0.001588	3.63	284.90	84.05	0.35
Main US	25387.78	Max WS	1033.28	990.74	994.82		995.04	0.001761	3.70	279.03	84.65	0.36
Main US	25118.28	Max WS	1030.85	990.52	994.38		994.58	0.001625	3.52	292.74	91.23	0.35
Main US	24948.65	Max WS	325.14	990.39	994.24		994.26	0.000158	1.09	298.35	93.84	0.11
Main US	24750		Lat Struct									
Main US	24741.08	Max WS	280.89	990.22	994.22		994.24	0.000100	0.93	301.77	83.94	0.09
Main US	24574.94	Max WS	315.45	990.08	994.20		994.22	0.000121	0.99	319.48	95.08	0.09
Main US	24406.53	Max WS	315.22	989.95	994.18		994.20	0.000111	0.96	328.42	95.16	0.09
Main US	24239.95	Max WS	315.08	989.84	994.17		994.18	0.000102	0.94	336.18	95.18	0.09
Main US	23902.74	Max WS	314.91	989.54	994.10		994.13	0.000173	1.54	205.08	96.96	0.13
Main US	23853.38		Culvert									
Main US	23804.63	Max WS	309.24	989.43	992.93		993.03	0.000684	2.55	121.46	88.33	0.24
Main US	23625.24	Max WS	308.05	989.32	992.91		992.93	0.000194	1.16	264.67	88.91	0.12
Main US	23495.64	Max WS	306.89	989.24	992.89		992.91	0.000178	1.13	272.75	89.46	0.11
Main US	23342.25	Max WS	305.26	989.10	992.87		992.88	0.000157	1.08	283.21	90.30	0.11
Main US	23199.78	Max WS	303.58	988.98	992.85		992.86	0.000142	1.04	292.13	91.03	0.10
Main US	22937.83	Max WS	301.85	988.75	992.81		992.83	0.000117	0.96	313.02	93.76	0.09
Main US	22733.15	Max WS	298.26	988.60	992.79		992.81	0.000103	0.93	321.39	93.27	0.09
Main US	22544.93	Max WS	306.84	988.45	992.75		992.77	0.000136	1.23	248.95	73.13	0.11
Main US	22477.38		Culvert									
Main US	22408.02	Max WS	224.62	988.31	991.51		991.60	0.000679	2.40	93.71	92.61	0.24
Main US	22238.84	Max WS	218.96	988.17	991.49		991.51	0.000174	1.04	211.08	76.83	0.11
Main US	22079.38	Max WS	218.65	988.08	991.48		991.49	0.000074	0.72	305.45	103.71	0.07
Main US	21856.94	Max WS	219.50	987.89	991.46		991.47	0.000084	0.77	284.55	94.09	0.08
Main US	21574.73	Max WS	218.99	987.63	991.43		991.44	0.000057	0.70	314.24	98.53	0.07
Main US	21379.21	Max WS	212.59	987.46	991.42		991.43	0.000036	0.55	388.34	115.09	0.05
Main US	21217.51	Max WS	666.11	987.34	991.24		991.33	0.000558	2.38	279.37	113.03	0.22
Main US	21075.38		Culvert									
Main US	20961.75	Max WS	631.92	986.61	989.01		989.47	0.006171	5.48	115.37	57.95	0.65
Main US	20932.23	Max WS	633.73	983.87	989.22		989.31	0.000600	2.34	271.34	79.50	0.21

HEC-RAS Plan: 9-9-11 100% PS&E River: Durango Reach: Main US Profile: Max WS (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main US	20847.85	Max WS	633.32	983.67	989.16		989.25	0.000691	2.43	260.98	69.96	0.22
Main US	20665.33	Max WS	632.85	983.44	989.06		989.14	0.000559	2.24	282.41	72.93	0.20
Main US	20481.33	Max WS	632.45	983.25	988.94		989.03	0.000635	2.36	267.64	69.71	0.21
Main US	20311.76	Max WS	632.39	983.08	988.87		988.94	0.000429	2.14	295.14	70.47	0.18
Main US	20267.38											
Main US	20223.22	Max WS	631.99	982.98	988.31		988.42	0.000626	2.75	229.98	60.70	0.22
Main US	20105.92	Max WS	631.82	982.86	988.20		988.33	0.001004	2.81	224.59	63.45	0.26
Main US	19994.35	Max WS	631.72	982.75	988.15		988.24	0.000596	2.42	260.90	64.99	0.21
Main US	19921.38											
Main US	19848.74	Max WS	631.16	982.60	987.61		987.74	0.000826	2.85	221.16	58.65	0.25
Main US	19738.19	Max WS	631.03	982.59	987.47		987.62	0.001276	3.06	206.33	61.80	0.29
Main US	19619.59	Max WS	630.71	982.56	987.33		987.47	0.001241	3.01	209.48	63.02	0.29
Main US	19452.59	Max WS	630.26	982.22	987.10		987.25	0.001336	3.11	202.47	61.00	0.30
Main US	19285.59	Max WS	630.14	981.95	986.92		987.05	0.001081	2.88	219.15	63.96	0.27
Main US	19118.59	Max WS	629.95	982.01	986.70		986.85	0.001345	3.11	202.46	61.92	0.30
Main US	19005.74	Max WS	629.88	981.93	986.54		986.69	0.001424	3.17	198.93	61.63	0.31
Main US	18891.83	Max WS	629.82	981.67	986.44		986.56	0.000884	2.86	220.23	58.14	0.26
Main US	18827.38											
Main US	18762.64	Max WS	629.81	981.44	985.86		986.05	0.001066	3.44	183.34	54.14	0.30
Main US	18660.36	Max WS	629.74	981.26	985.67		985.88	0.002075	3.68	171.21	56.20	0.37
Main US	18558.06	Max WS	629.74	981.08	985.56		985.71	0.001268	3.13	200.99	59.26	0.30
Main US	18500.38											
Main US	18441.81	Max WS	629.75	980.87	985.12		985.33	0.000978	3.74	168.32	56.21	0.34
Main US	18240.23	Max WS	629.72	980.46	984.83		985.08	0.001576	3.99	157.93	53.62	0.41
Main US	18040.23	Max WS	629.54	980.28	984.45		984.73	0.001899	4.27	147.56	52.09	0.45
Main US	17923.22	Max WS	623.57	979.84	984.25		984.51	0.001713	4.12	151.31	52.02	0.43
Main US	17799.53	Max WS	623.45	979.72	984.23		984.36	0.000616	2.93	212.74	55.45	0.26
Main US	17728.38											
Main US	17656.04	Max WS	622.75	979.48	983.89		984.03	0.000557	3.02	206.33	61.82	0.26
Main US	17544.82	Max WS	621.72	979.29	983.63		983.90	0.001821	4.21	147.57	51.36	0.44
Main US	17444.33	Max WS	620.58	979.15	983.43		983.71	0.001873	4.25	145.97	51.20	0.44
Main US	17267.52	Max WS	618.41	978.67	983.17		983.41	0.001537	3.95	156.47	52.79	0.40
Main US	17095.16	Max WS	668.47	978.26	982.77		983.07	0.001904	4.38	152.72	51.90	0.45
Main US	16919.28	Max WS	668.06	977.90	982.42		982.73	0.001984	4.45	150.09	51.22	0.46
Main US	16821.09	Max WS	668.08	977.78	982.24		982.54	0.001929	4.39	152.15	51.94	0.45
Main US	16704.19	Max WS	667.97	977.64	982.22		982.37	0.000829	3.19	209.53	61.29	0.30
Main US	16631.38											
Main US	16558.39	Max WS	668.04	977.40	981.87		982.02	0.000699	3.08	216.63	57.93	0.28
Main US	16427.74	Max WS	667.77	977.15	981.45		981.82	0.002564	4.90	136.39	48.94	0.52
Main US	16304.85	Max WS	667.72	976.93	980.96		981.44	0.003613	5.57	119.98	45.96	0.61
Main US	16164.04	Max WS	667.38	976.56	980.38		980.90	0.004033	5.77	115.57	45.51	0.64
Main US	15983.03	Max WS	667.57	976.25	980.15		980.38	0.001525	3.92	170.44	58.08	0.40
Main US	15897.38											
Main US	15811.39	Max WS	667.66	975.88	979.26		979.61	0.003378	4.71	141.84	52.23	0.49
Main US	15728.14	Max WS	666.76	975.70	979.06		979.34	0.003010	4.25	157.89	60.74	0.45
Main US	15667.38											
Main US	15646.16	Max WS	413.58	975.52	979.23		979.25	0.000212	1.30	318.64	95.54	0.13
Main US	15633.63	Max WS	412.61	975.50	979.21		979.25	0.000304	1.57	282.83	87.45	0.15
Main US	15592.38											
Main US	15551.85	Max WS	412.57	974.19	976.42		976.99	0.011791	6.03	68.44	40.74	0.82
Main US	15530.00	Max WS	412.51	973.06	976.59		976.75	0.001936	3.20	128.79	50.69	0.35
Main US	15484.92	Max WS	412.46	972.98	976.60		976.68	0.000952	2.35	175.76	65.47	0.25
Main US	15367.25	Max WS	412.35	972.75	976.11		976.42	0.003966	4.47	92.23	37.19	0.50
Main US	15150.55	Max WS	412.32	972.32	975.55		975.73	0.002351	3.42	120.45	56.95	0.41
Main US	14929.12	Max WS	412.27	971.56	975.08		975.24	0.002032	3.28	125.75	54.88	0.38
Main US	14714.37	Max WS	297.38	971.10	974.69		974.78	0.000925	2.35	126.43	55.27	0.27
Main US	14499.18	Max WS	289.06	970.53	974.55		974.61	0.000559	1.89	152.66	61.93	0.21
Main US	14438.11	Max WS	281.46	970.60	974.49		974.56	0.000792	2.04	138.26	61.10	0.24
Main US	14332.18	Max WS	467.40	970.18	973.60		974.01	0.006917	5.11	91.52	44.33	0.63
Main US	14249.9	Max WS	466.94	969.92	973.09		973.48	0.005833	5.00	93.44	48.66	0.64
Main US	14110.87	Max WS	466.29	969.29	972.68		972.88	0.002685	3.63	128.30	63.18	0.45
Main US	13910.94	Max WS	466.12	968.73	972.26		972.41	0.002067	3.06	152.13	73.35	0.37
Main US	13708.37	Max WS	420.77	968.37	971.52		971.75	0.003324	3.82	110.15	60.77	0.50
Main US	13649.63	Max WS	420.73	967.95	971.42		971.58	0.002234	3.22	130.71	67.61	0.41
Main US	13533.37	Max WS	420.69	967.51	971.29		971.38	0.001206	2.38	176.41	73.45	0.27
Main US	13417.38											
Main US	13373.25	Max WS	669.86	966.37	970.96		971.10	0.001101	2.90	230.70	68.54	0.28
Main US	13345.77	Max WS	669.85	966.18	970.90		971.06	0.001369	3.22	207.83	61.36	0.31
Main US	13278.38											
Main US	13210.32	Max WS	669.75	965.28	970.33		970.48	0.000925	3.11	215.35	70.40	0.27
Main US	13103.47	Max WS	669.64	964.71	970.09		970.31	0.002129	3.75	178.58	57.40	0.37
Main US	13014.97	Max WS	669.49	964.55	969.83		970.10	0.002672	4.14	161.77	53.37	0.42
Main US	12882.87	Max WS	669.22	964.32	969.49		969.75	0.002652	4.05	165.22	55.86	0.42
Main US	12745.94	Max WS	668.84	964.07	969.17		969.40	0.002437	3.85	173.72	59.67	0.40
Main US	12619.71	Max WS	668.24	963.84	968.88		969.09	0.002383	3.71	180.35	64.21	0.39
Main US	12410.35	Max WS	666.28	963.79	968.42		968.63	0.001935	3.64	182.82	69.94	0.40
Main US	12195.44	Max WS	661.56	963.08	967.94		968.18	0.002164	3.94	167.96	68.12	0.44
Main US	12026.49	Max WS	664.94	962.78	966.27	966.20	967.28	0.015279	8.07	82.44	38.06	0.97
Main US	11830.73	Max WS	637.33	962.43	964.93		965.07	0.001352	2.99	213.03	100.65	0.36

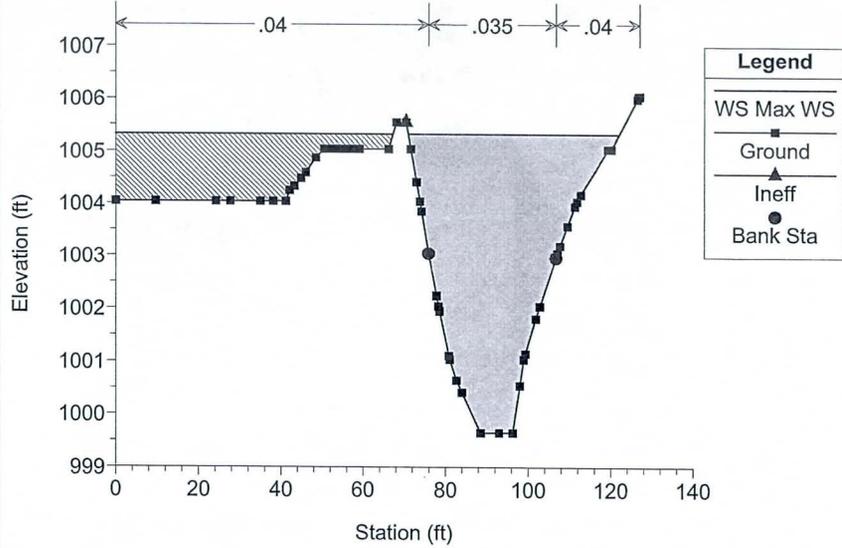
HEC-RAS Plan: 9-9-11 100% PS&E River: Durango Reach: Main US Profile: Max WS (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Main US	11601.37	Max WS	631.77	961.48	964.77		964.85	0.000537	2.24	282.18	108.71	0.24
Main US	11392.42	Max WS	630.99	960.05	964.75		964.78	0.000145	1.38	456.99	129.02	0.13
Main US	11209.57	Max WS	630.88	959.26	964.74		964.76	0.000079	1.12	562.19	133.29	0.10
Main US	11011.21	Max WS	630.52	958.34	964.73		964.75	0.000056	1.01	625.43	136.67	0.08
Main US	10788.03	Max WS	630.73	957.36	964.73		964.74	0.000023	0.70	896.59	173.62	0.05
Main US	10684.54	Max WS	630.56	957.24	964.72		964.73	0.000044	0.96	655.30	130.43	0.08
Main US	10561.2	Max WS	630.47	957.12	964.70		964.72	0.000114	1.25	505.01	101.04	0.10
Main US	10461.87	Max WS	640.31	957.02	964.69		964.71	0.000111	1.23	520.45	103.58	0.10
Main US	10356.38		Culvert									
Main US	10250.61	Max WS	639.10	956.75	964.03		964.07	0.000084	1.56	408.43	72.48	0.10
Main US	10188.73	Max WS	639.07	956.66	964.03		964.06	0.000128	1.58	403.76	66.29	0.11
Main US	10153.57	Max WS	934.07	956.60	963.75	960.17	963.99	0.001099	3.90	239.28	46.19	0.30

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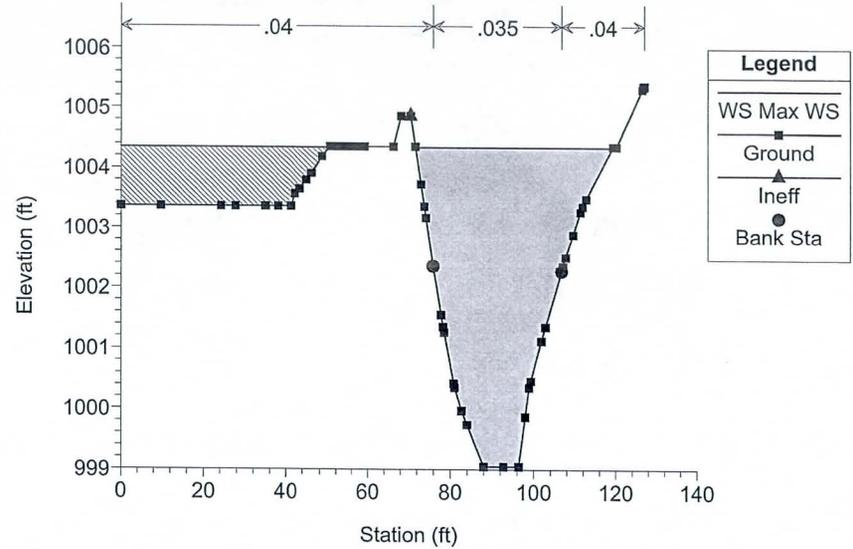
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 32476.08 Copy of d/s xs RS 31876.08. Rasied elev pts 600' x 0.34% = 2.04'



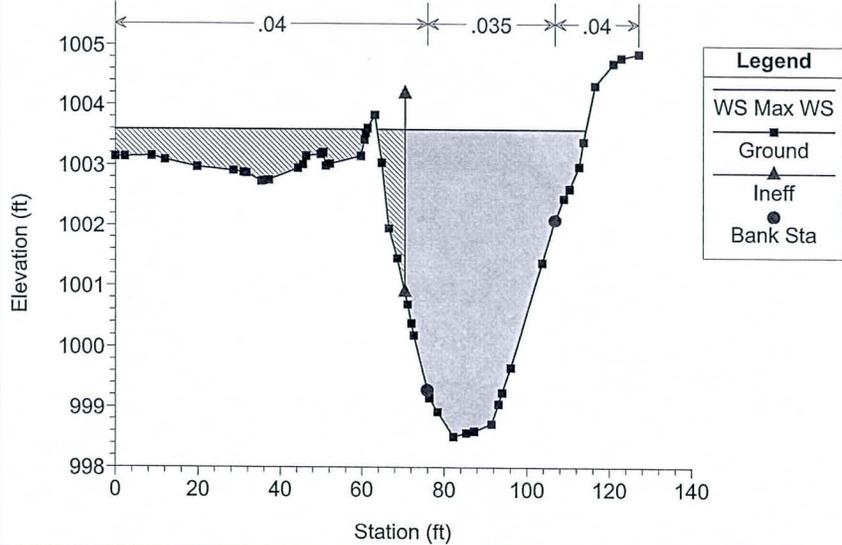
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 32276.08 Copy of d/s xs RS 31876.08. Rasied elev pts 400' x 0.34% = 1.36'



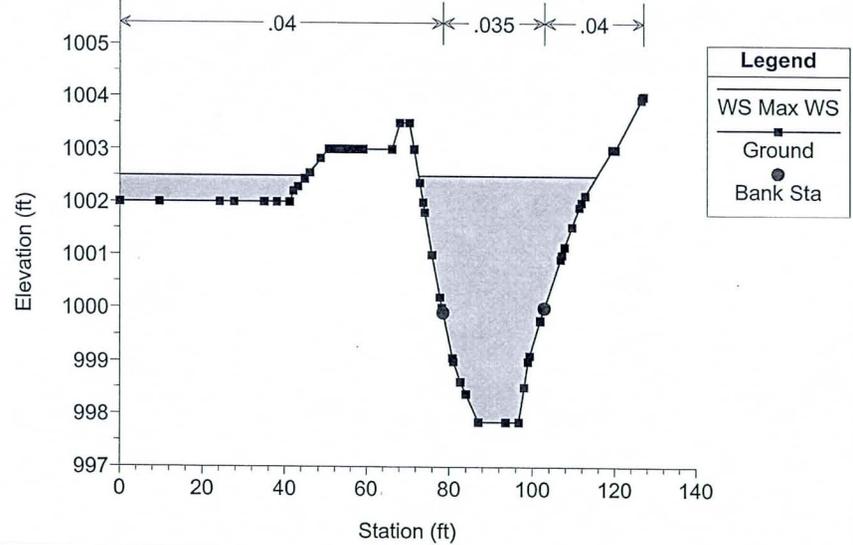
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 32076.08 Copy of d/s xs RS 31876.08. Rasied elev pts 200' x 0.34% = 0.68'



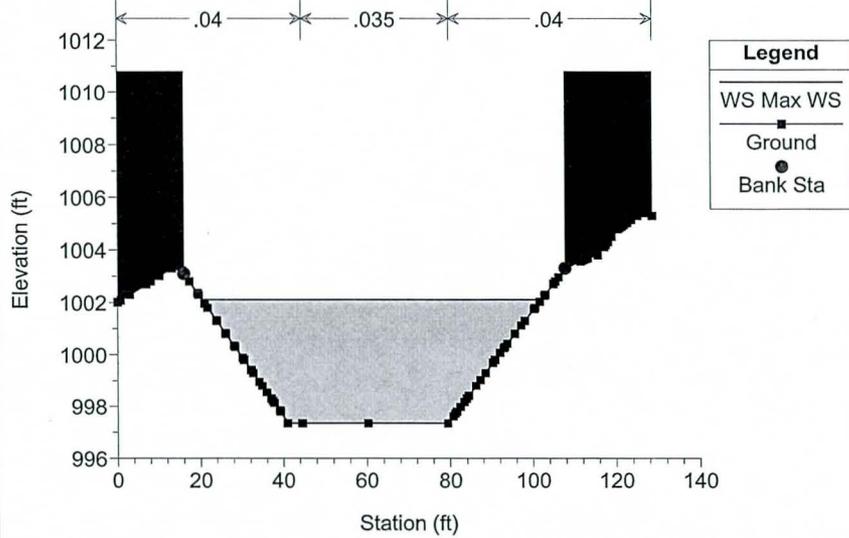
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 31876.08 Adjust bottom per const 0.34% grade from 76th Dr.



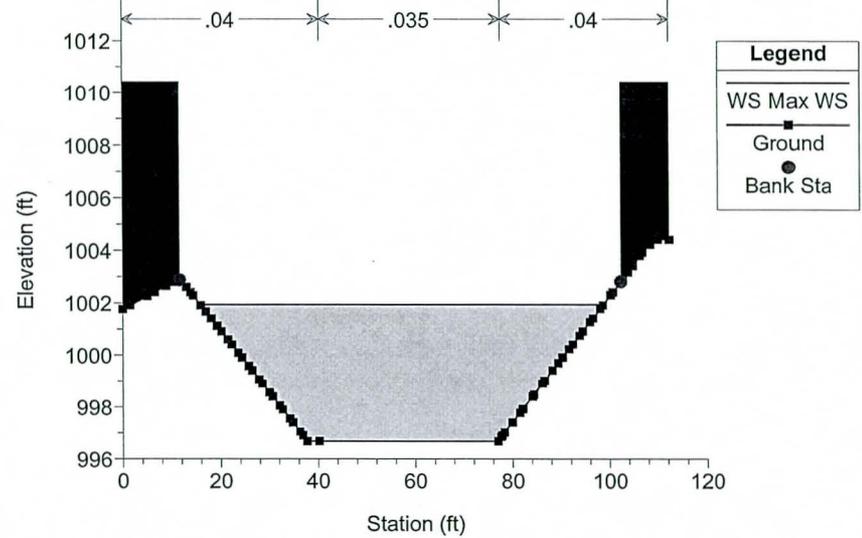
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 31710.87 Adjust bottom per const 0.34% grade from 76th Dr.



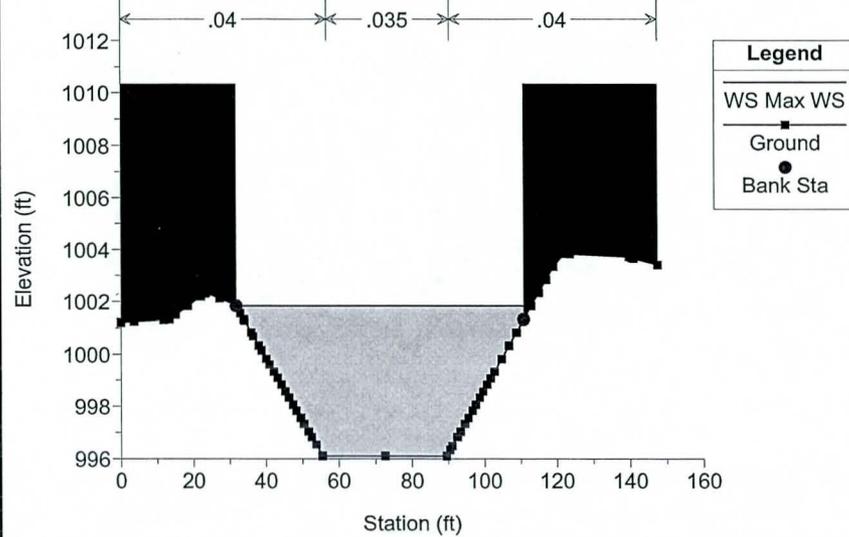
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 31484.78 Adjust bottom per const 0.34% grade from 76th Dr.



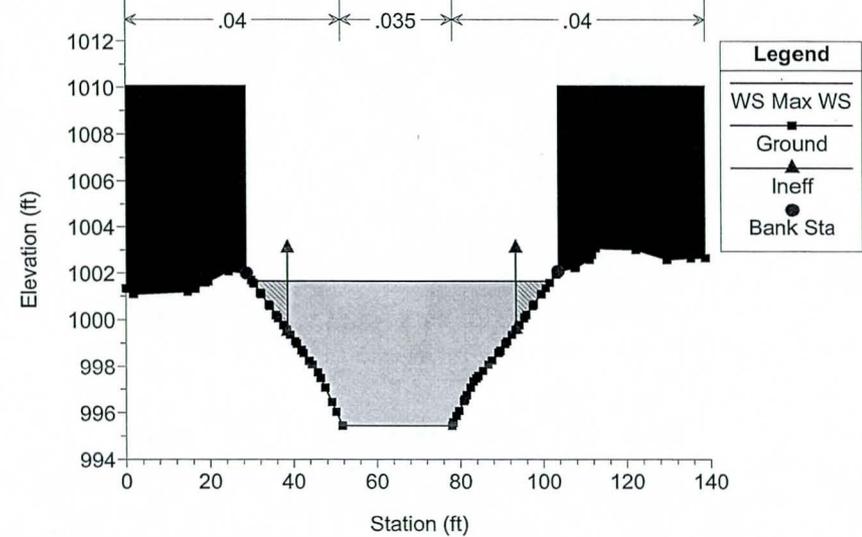
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 31293.73 Adjust bottom per const 0.34% grade from 76th Dr.

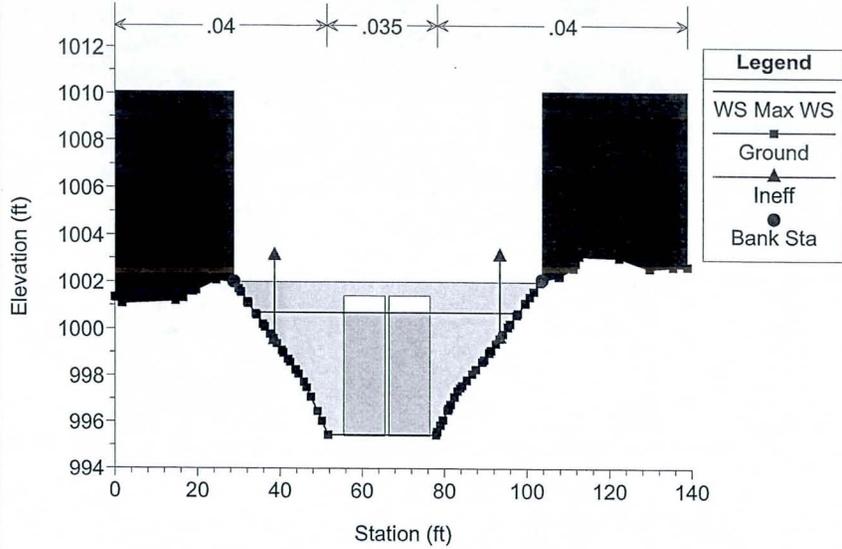


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

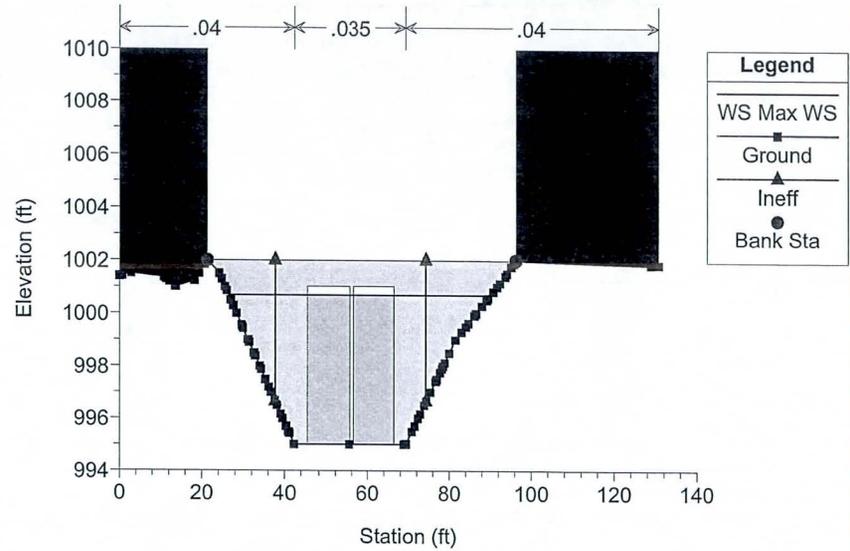
RS = 31076.01 76th Dr. 2-10x6 (No. 25) US...



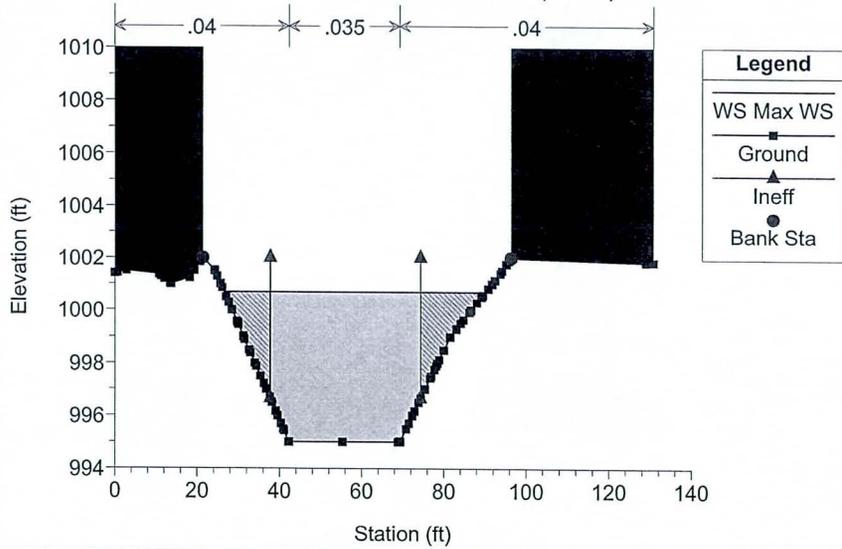
RS = 31005.38 Culv 76th Dr. 2-10x6



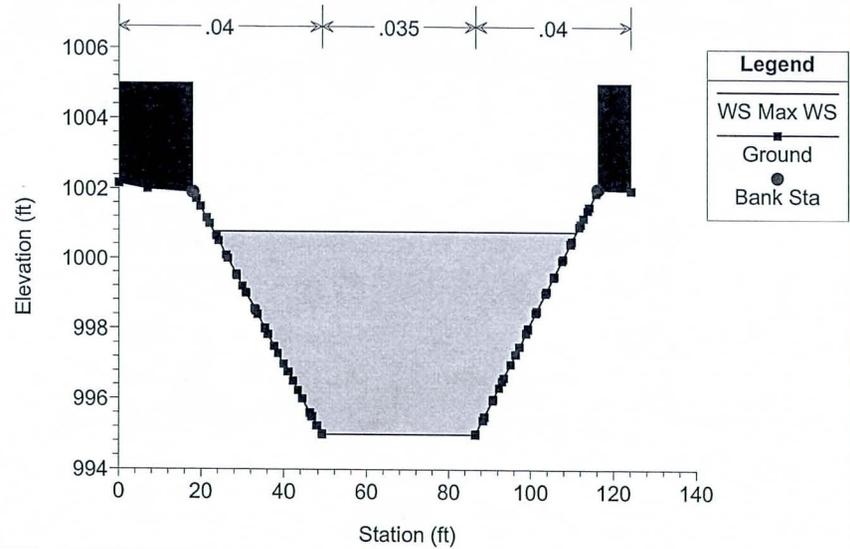
RS = 31005.38 Culv 76th Dr. 2-10x6



RS = 30934.78 76th Dr. 2-10x6 (No. 25) DS

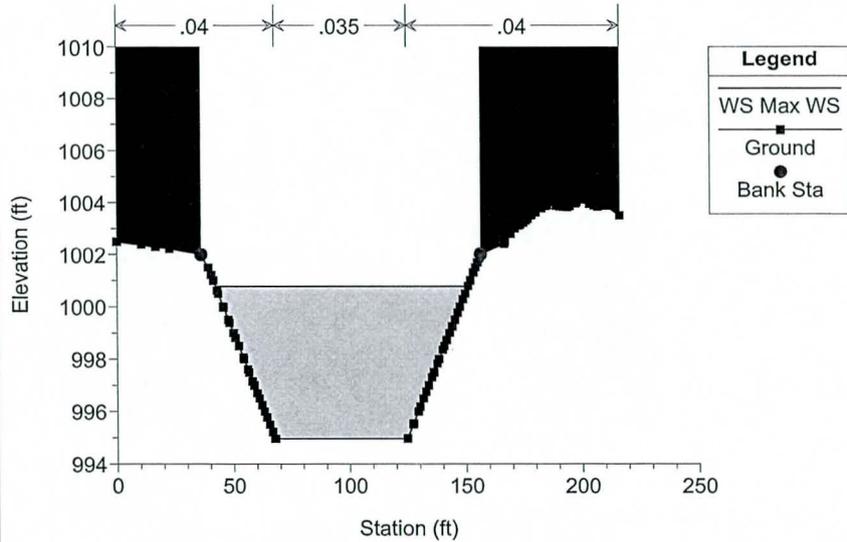


RS = 30874.35



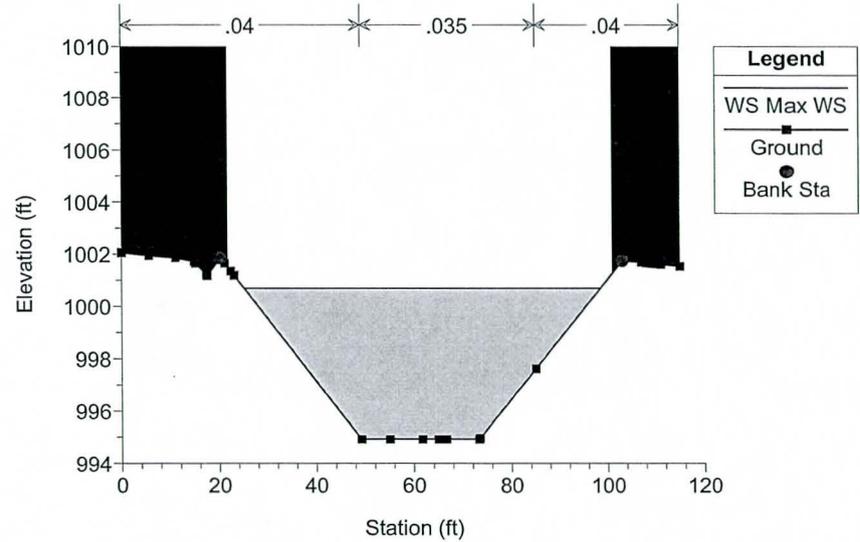
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 30795.85



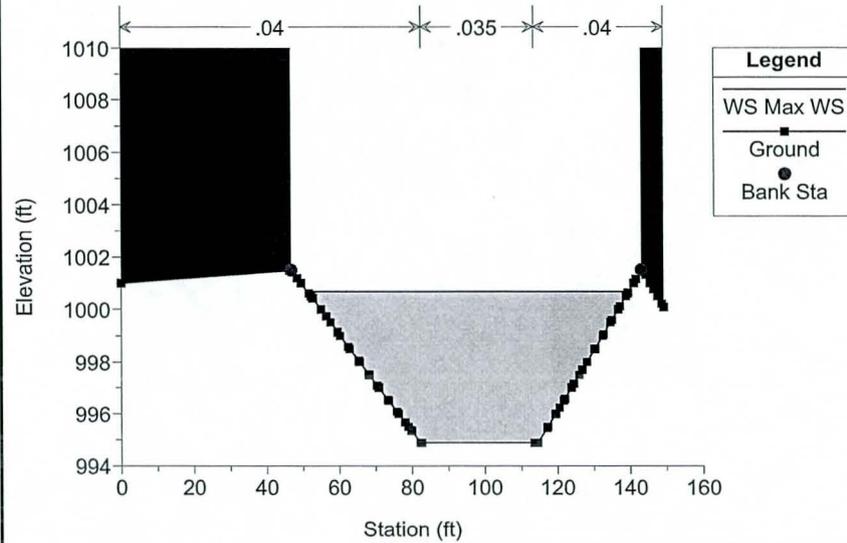
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RS = 30712.95



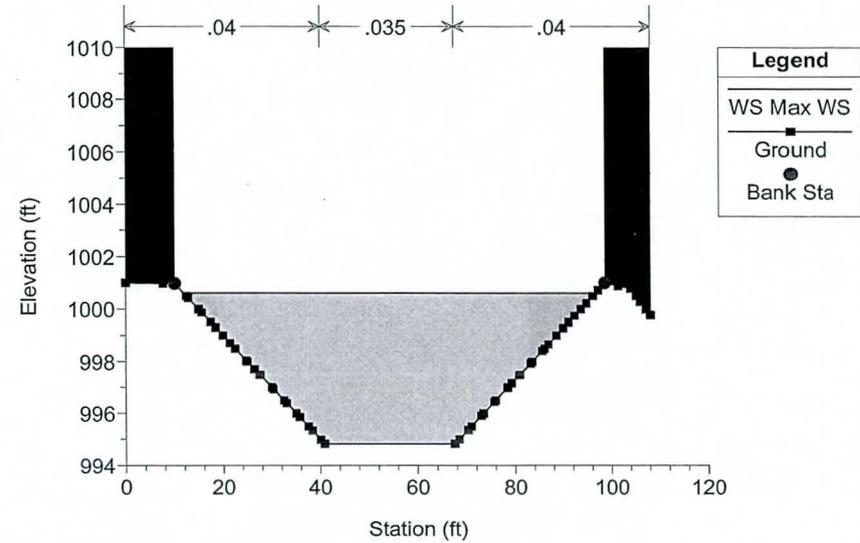
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RS = 30609.89



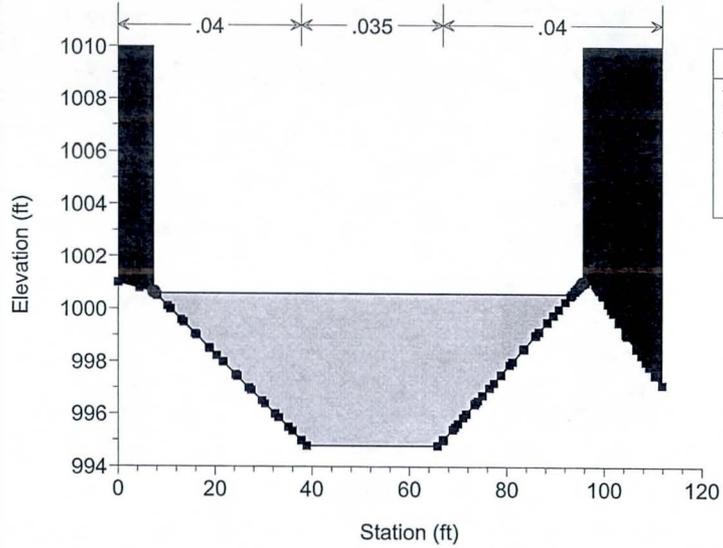
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RS = 30493.03



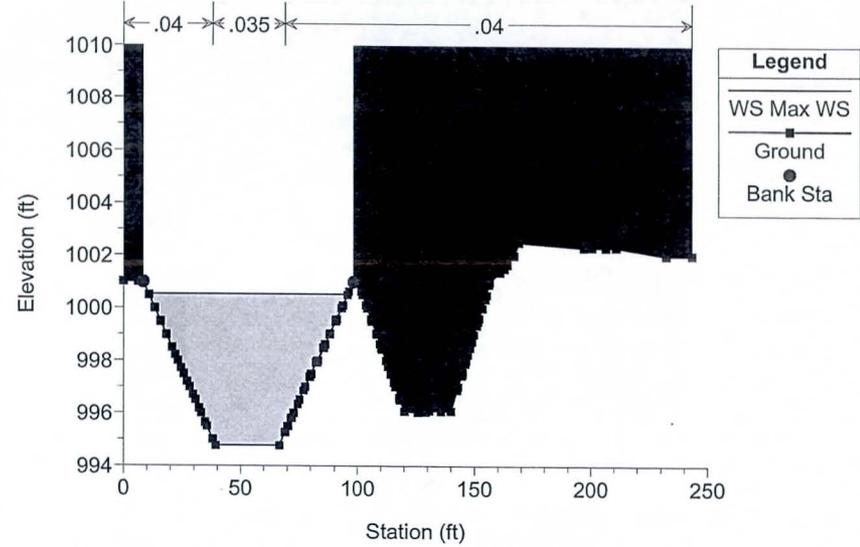
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 30393.85



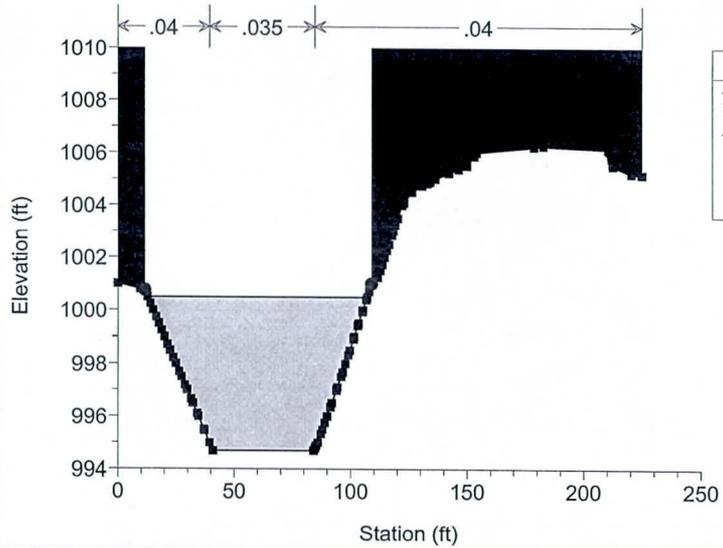
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 30298.02



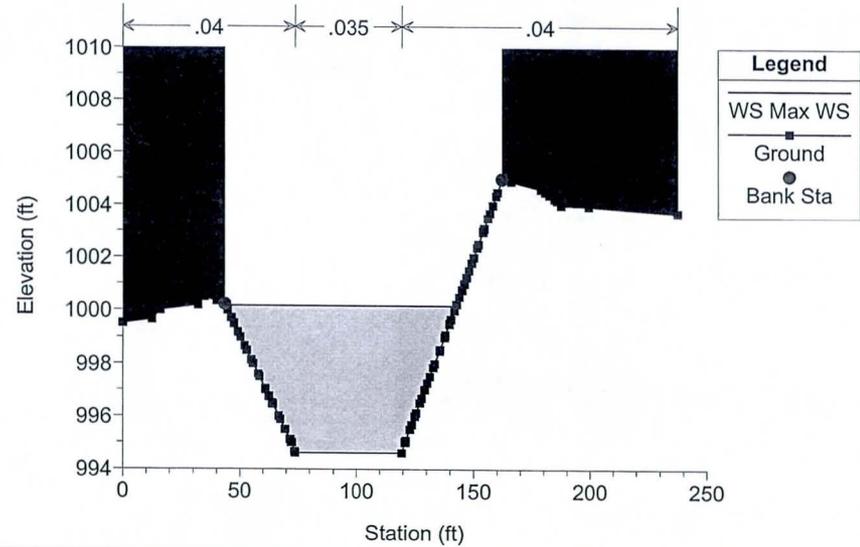
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RS = 30136.87

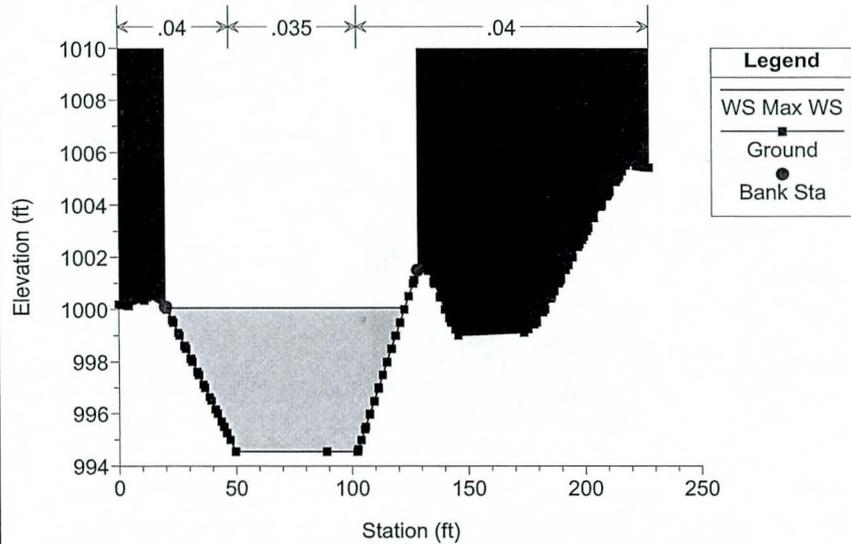


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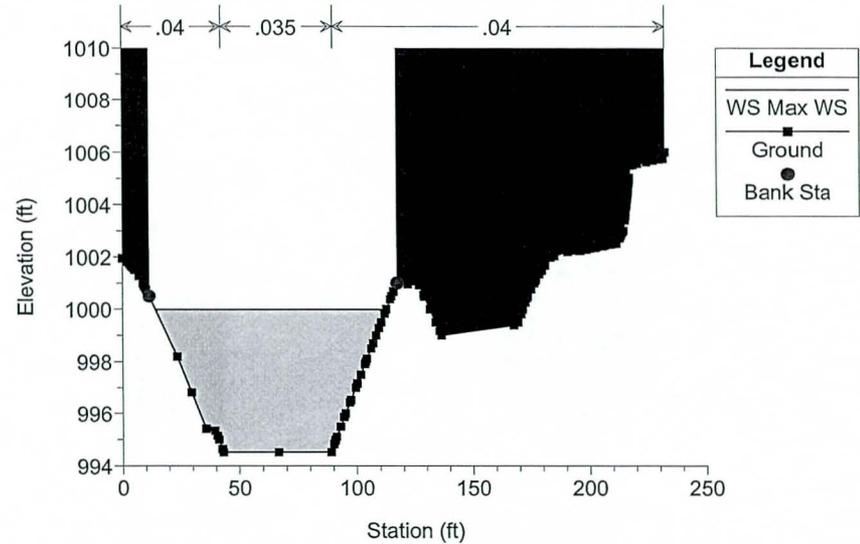
RS = 29919.33



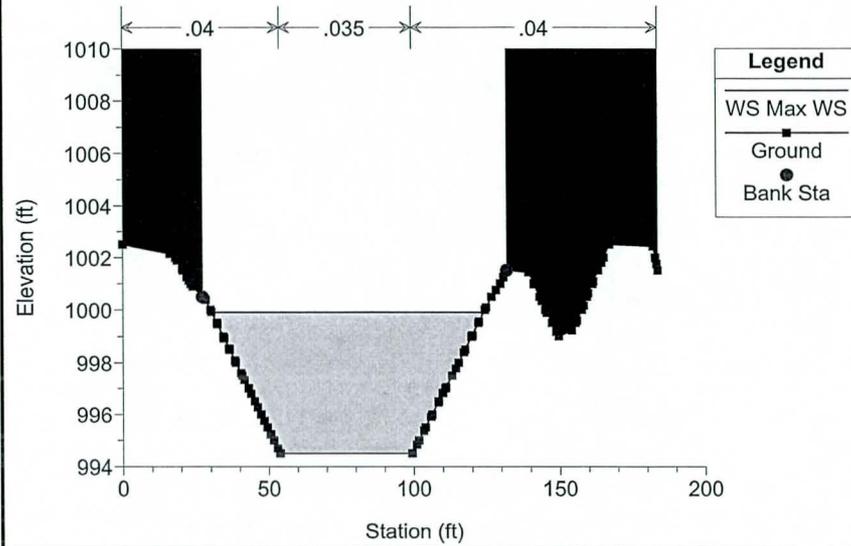
RS = 29782.91



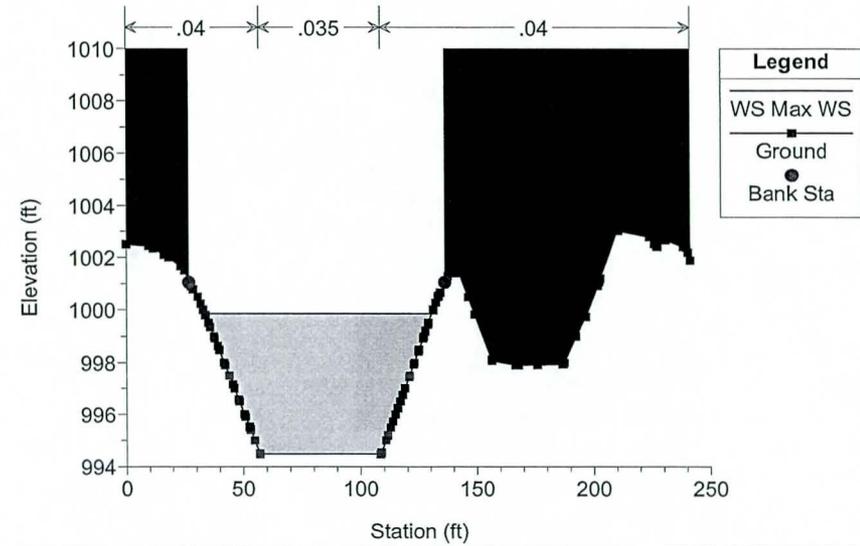
RS = 29718.45



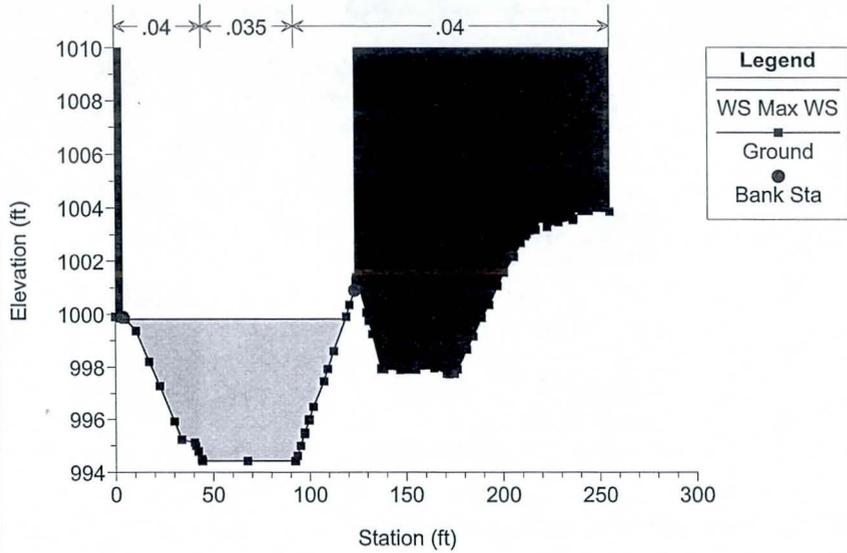
RS = 29641.93



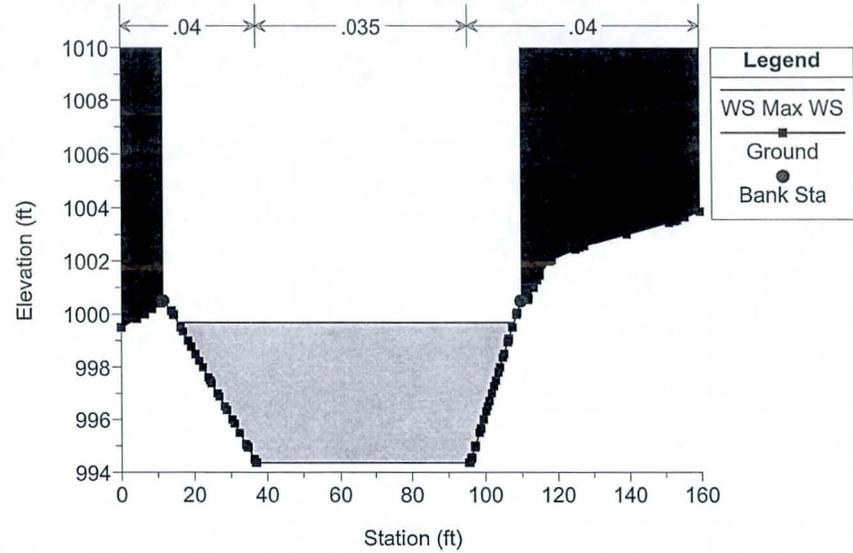
RS = 29572.38



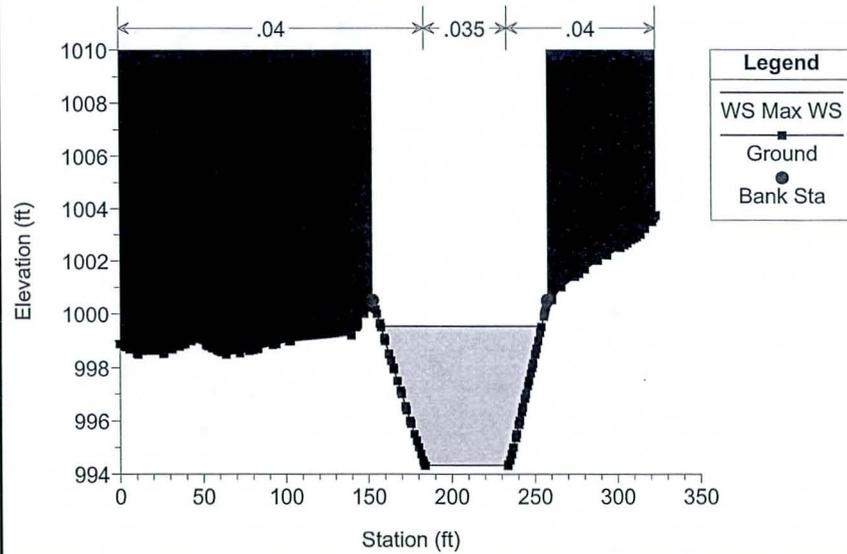
RS = 29498.9



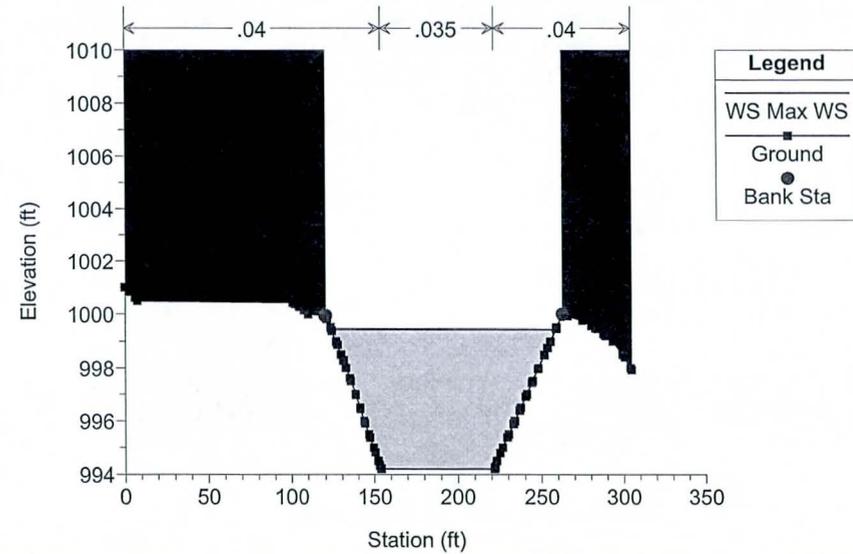
RS = 29340.54



RS = 29170.83

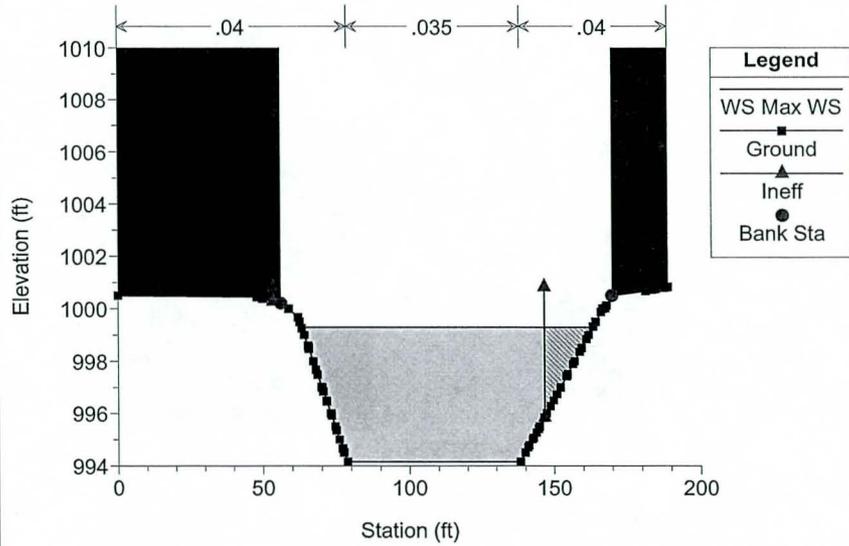


RS = 28936.51



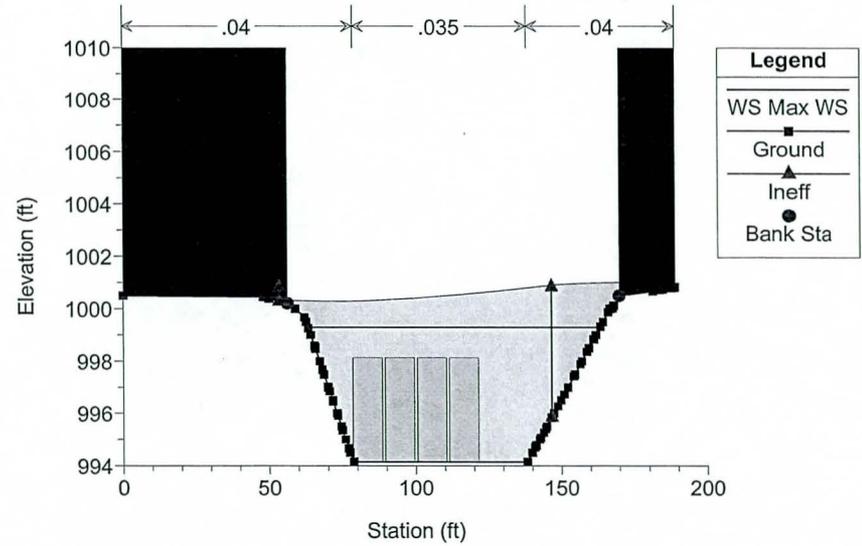
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 28808.68



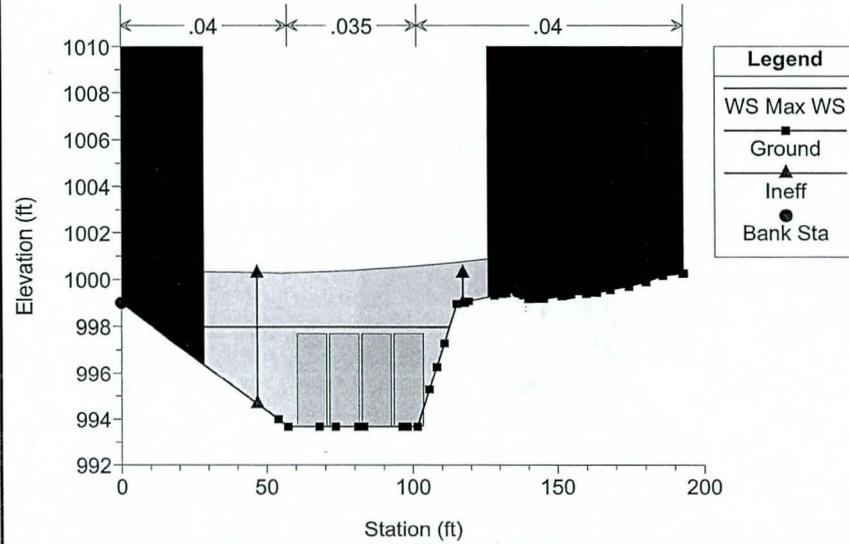
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 28743.38 Culv SD-95 79th Ave. Ex 2-10x4, New 2-10x4



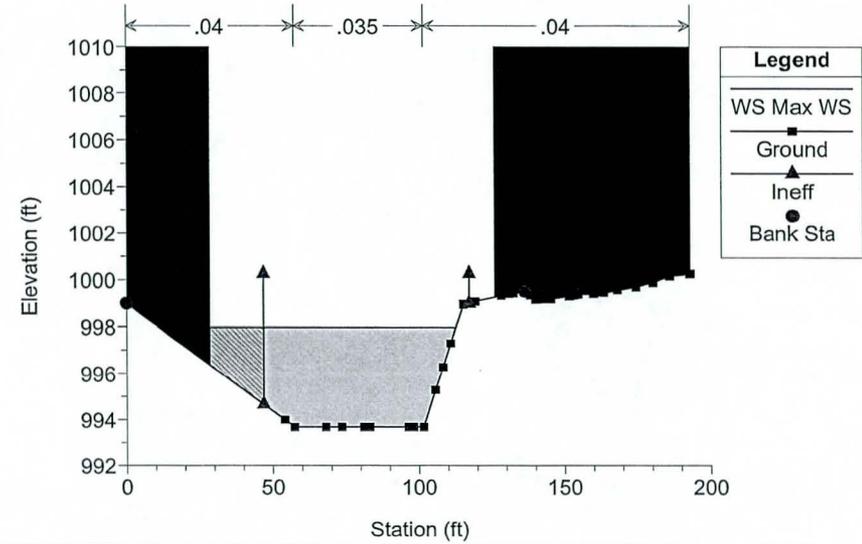
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 28743.38 Culv SD-95 79th Ave. Ex 2-10x4, New 2-10x4



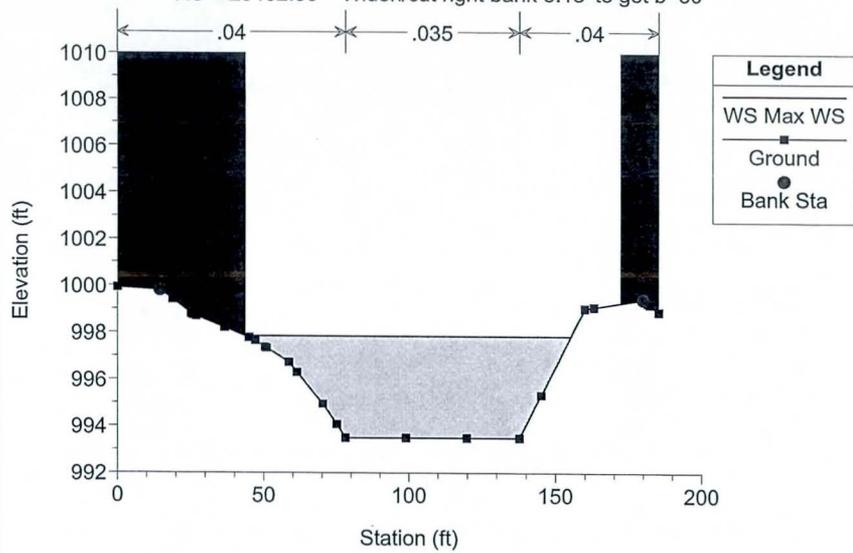
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 28676.98



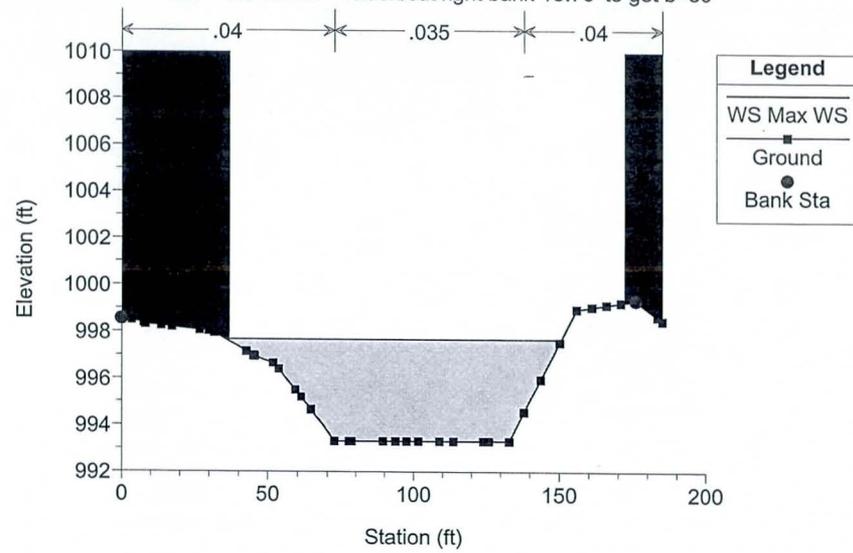
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 28482.33 Widen/cut right bank 8.18' to get b=50'



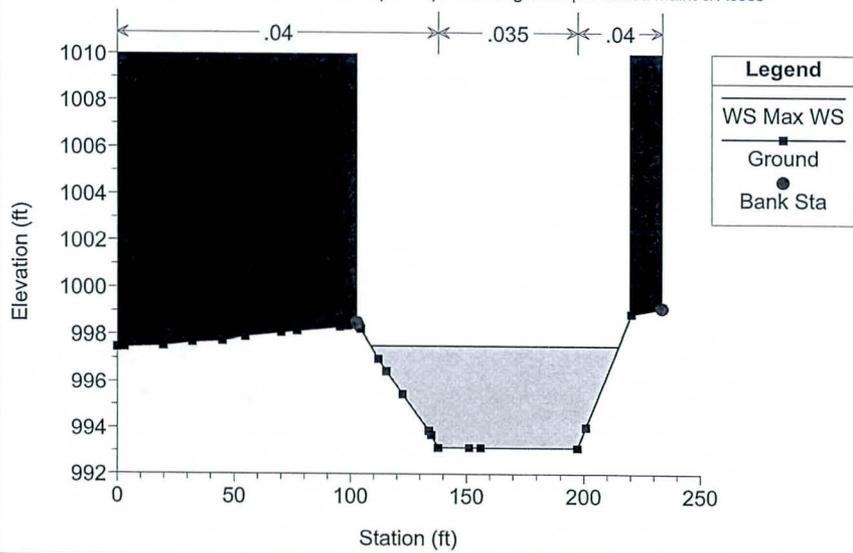
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 28267.36 Widen/cut right bank 13.76' to get b=50'



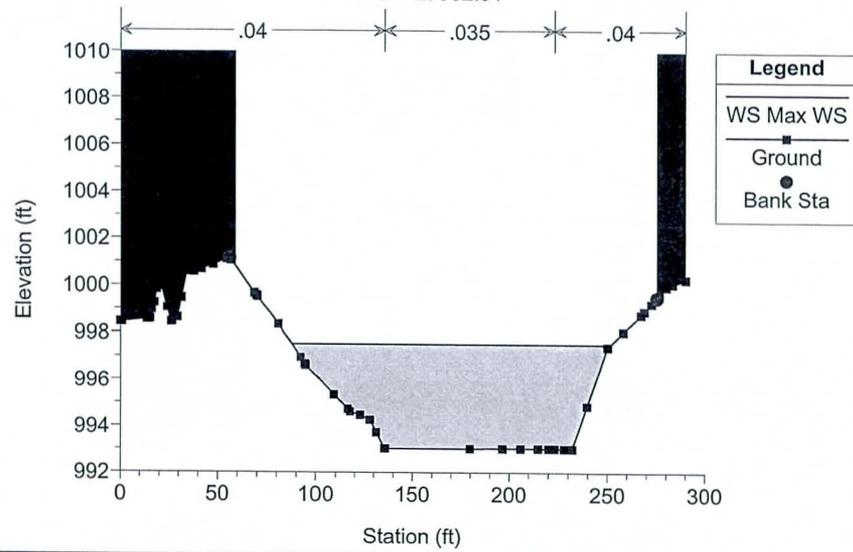
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 28074.81 Corrected ROB top Elev per raised ground per added Maint & Access

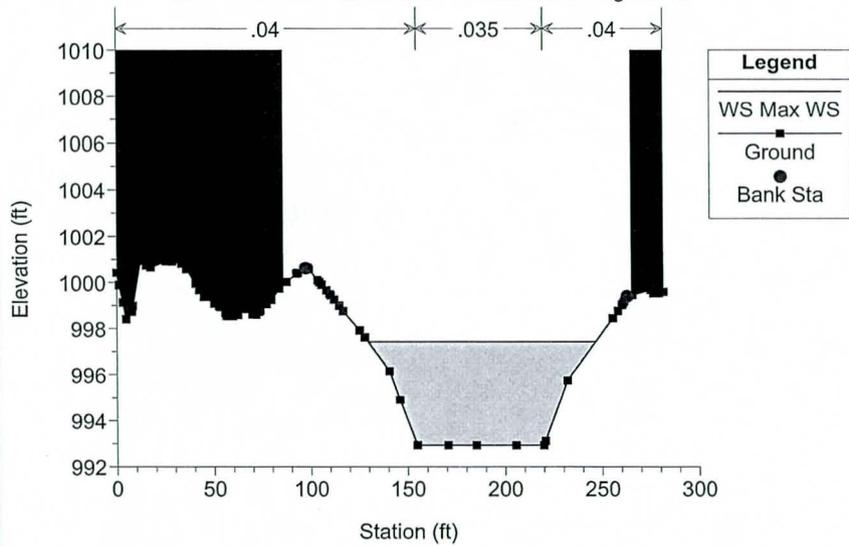


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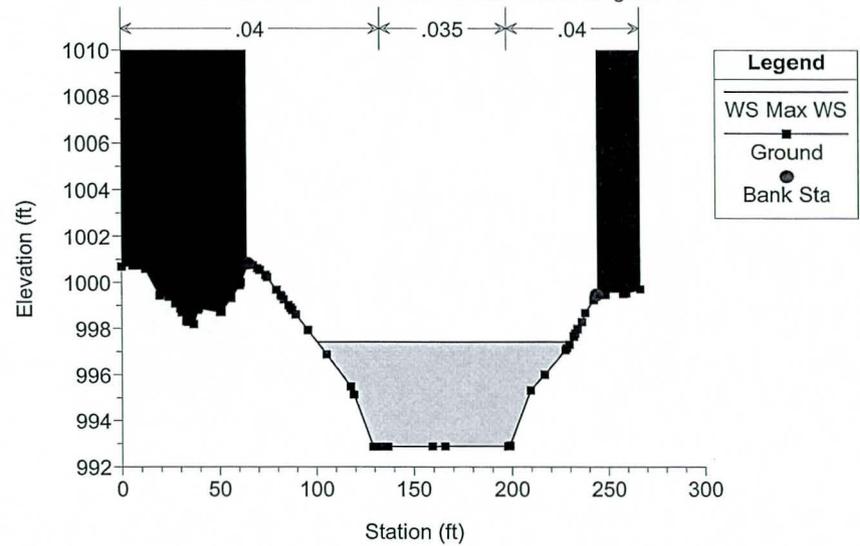
RS = 27952.91



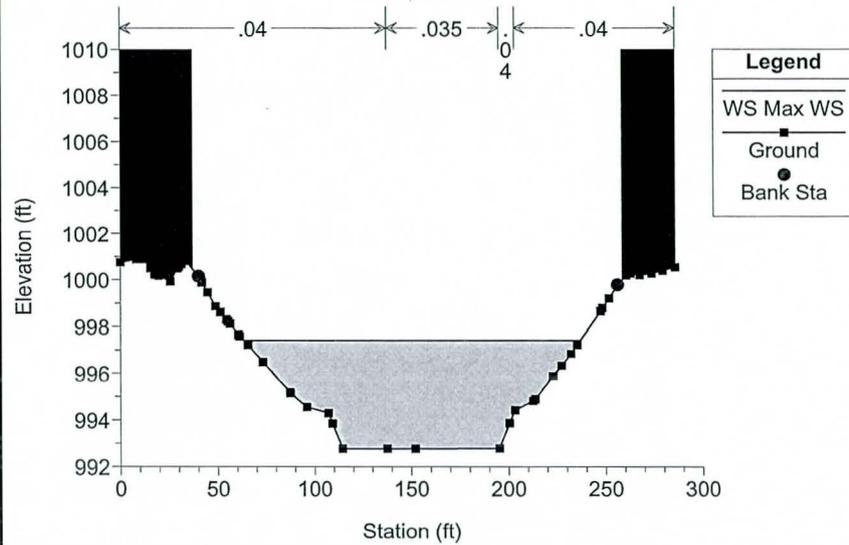
RS = 27843.75 Widen/cut left bank 15.04' to get b=50'



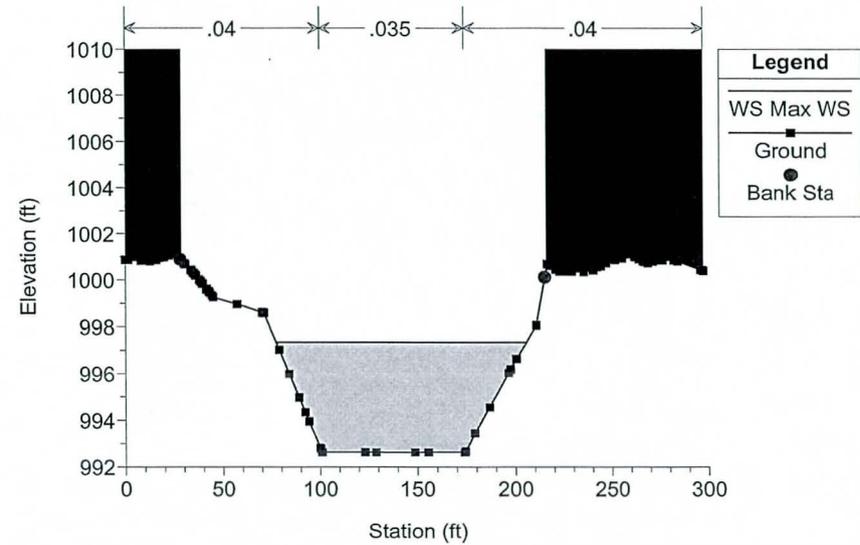
RS = 27783.14 Widen/cut left bank 8.47' to get b=50'



RS = 27666.65

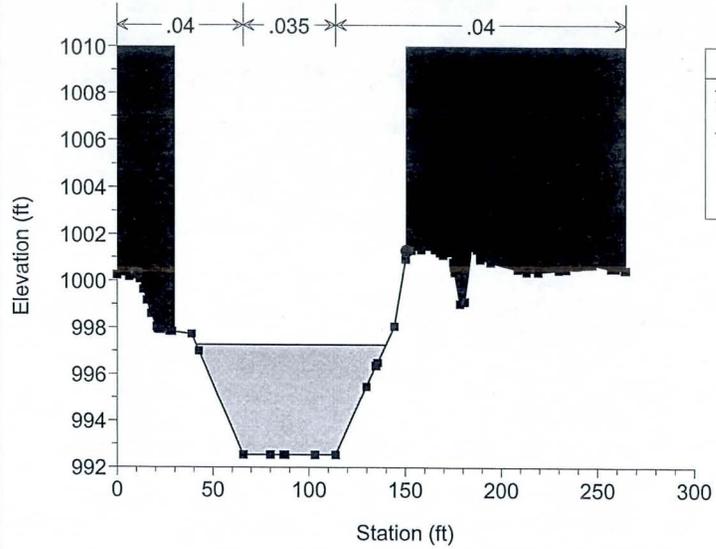


RS = 27561.43



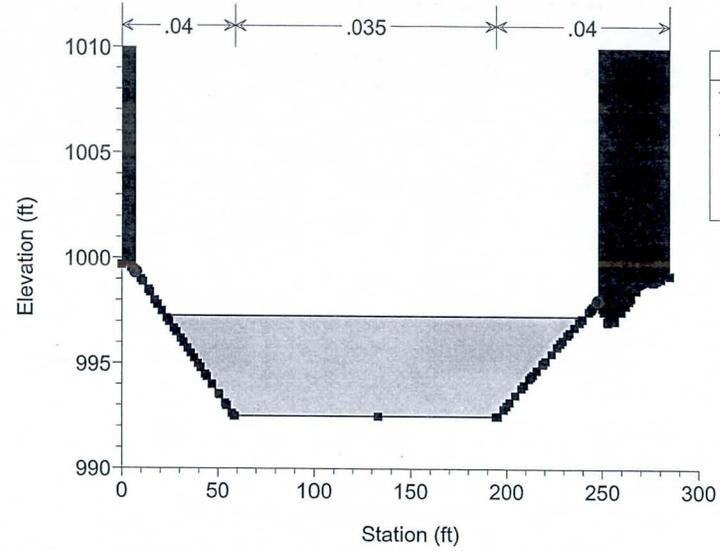
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 27474.42



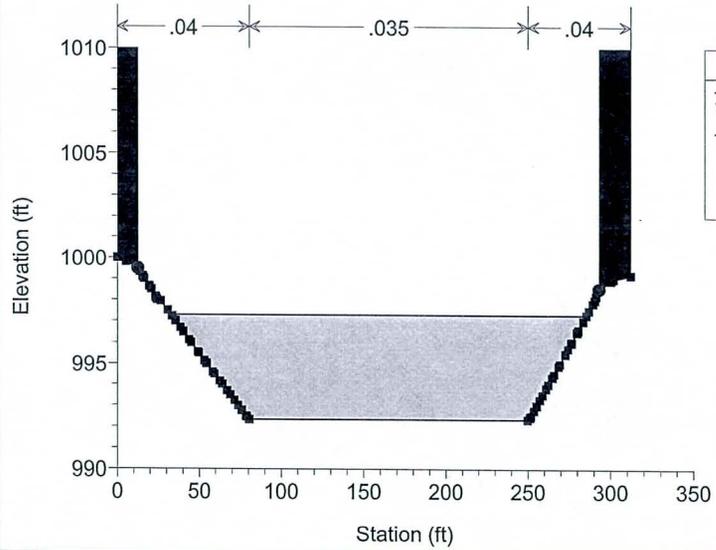
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 27350.5



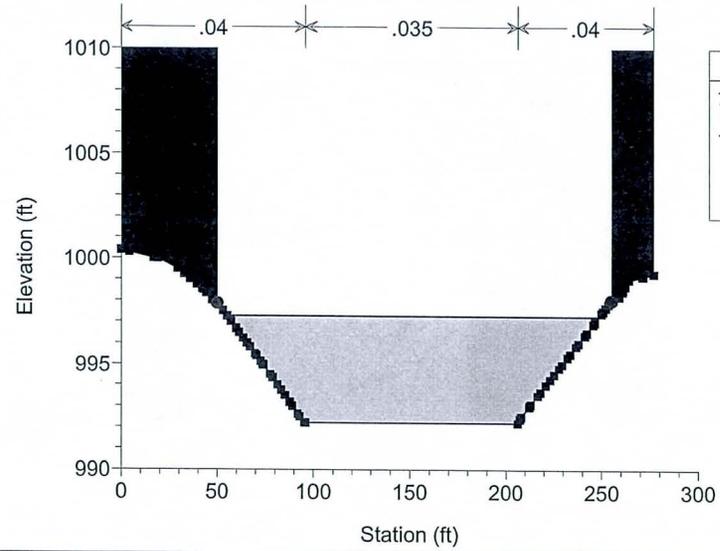
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RS = 27181.89



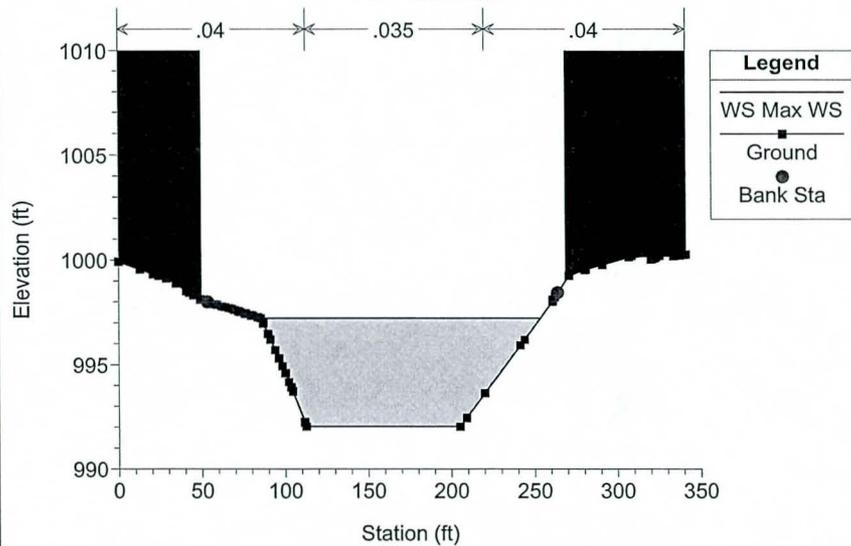
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 27020.02



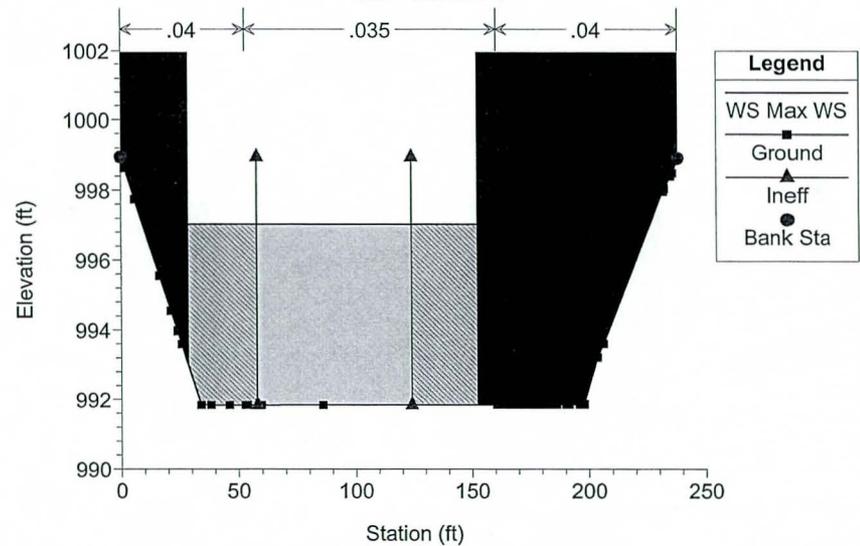
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RS = 26845.61



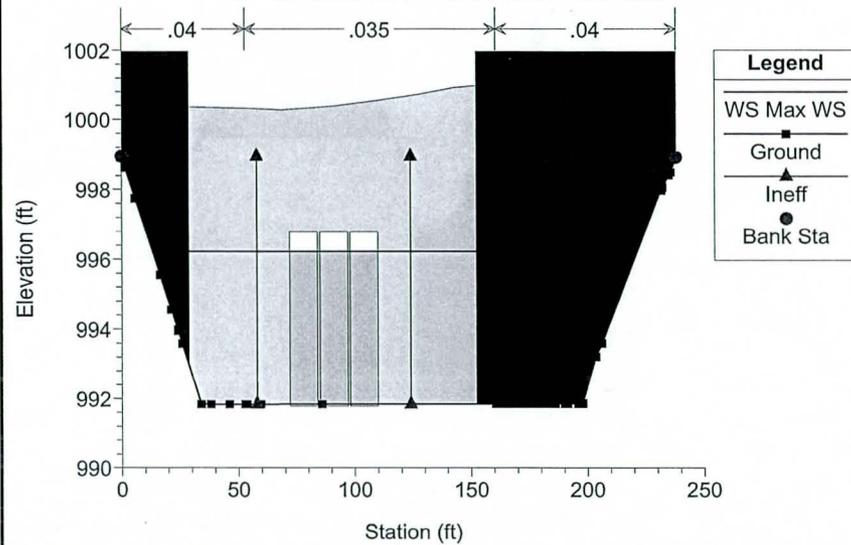
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 26632.73



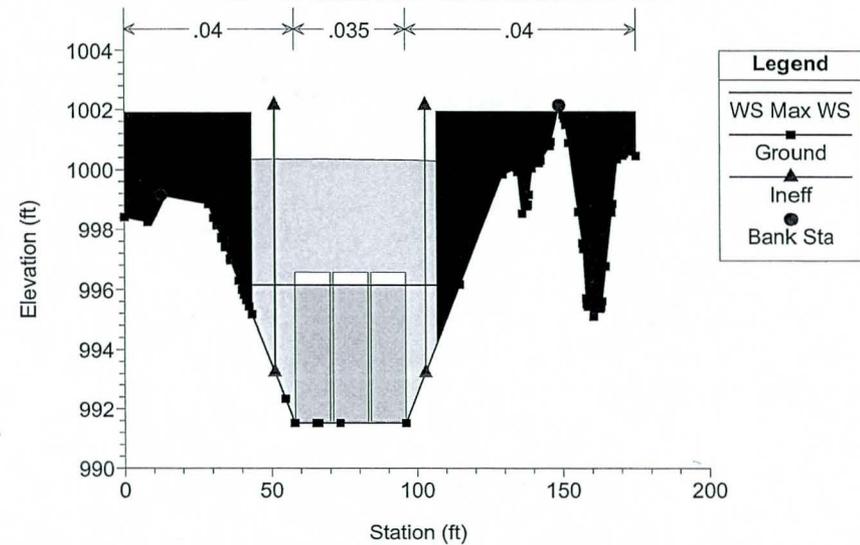
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 26493.38 Culv SD-85 83rd Ave. 3-12x5

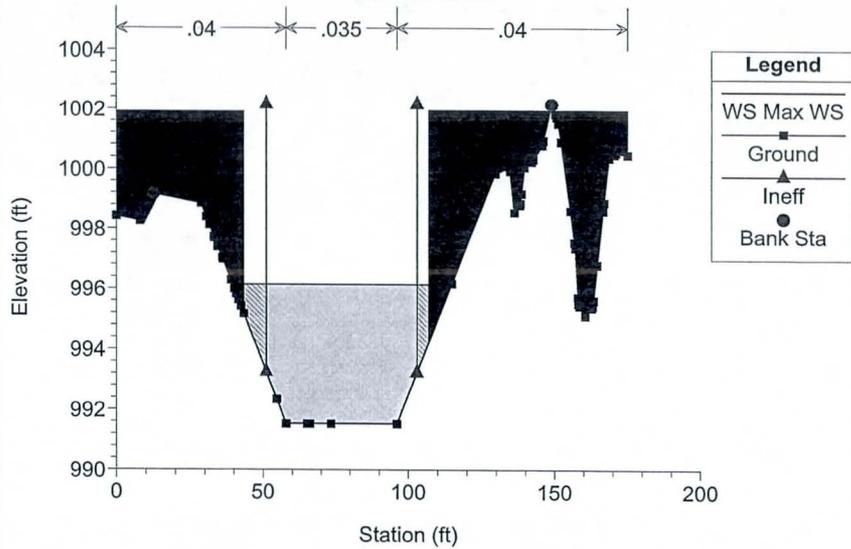


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

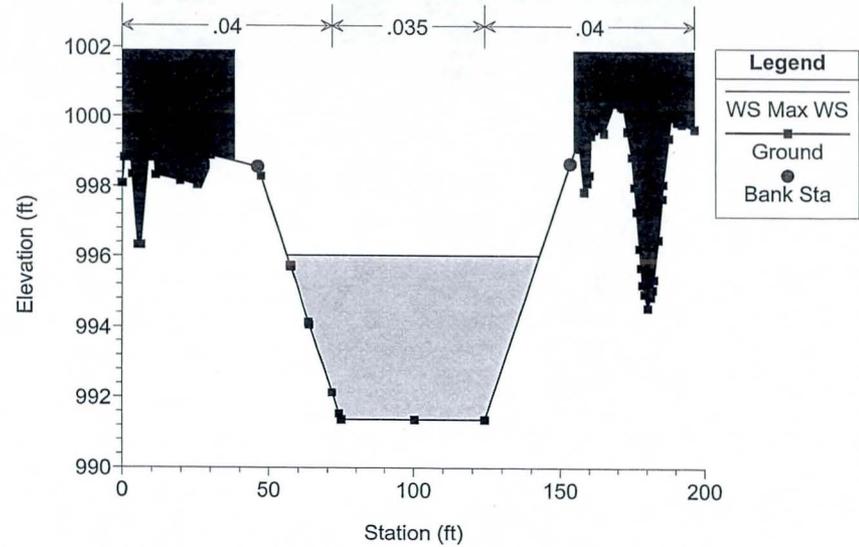
RS = 26493.38 Culv SD-85 83rd Ave. 3-12x5



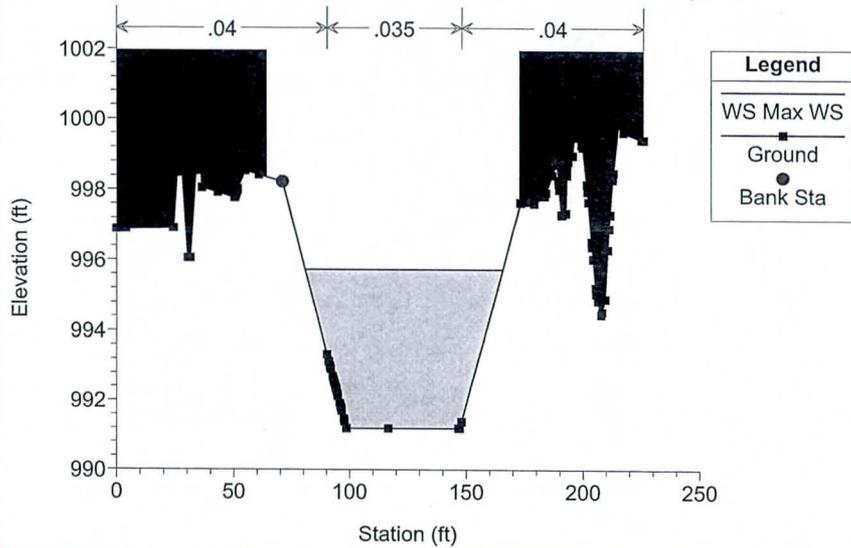
RS = 26354.66



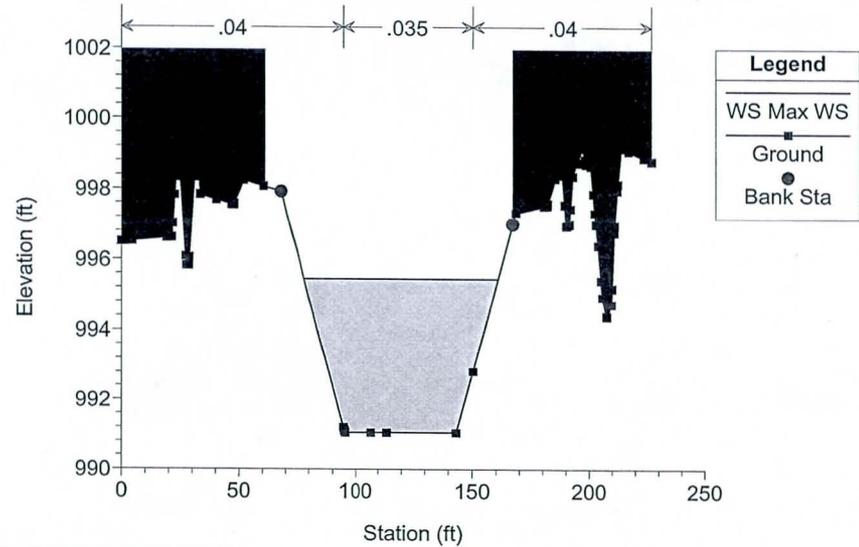
RS = 26168.26 Move left bank in to make room for 20' maint rd



RS = 25950.01 Move left bank in to make room for 20' maint rd, b=45'

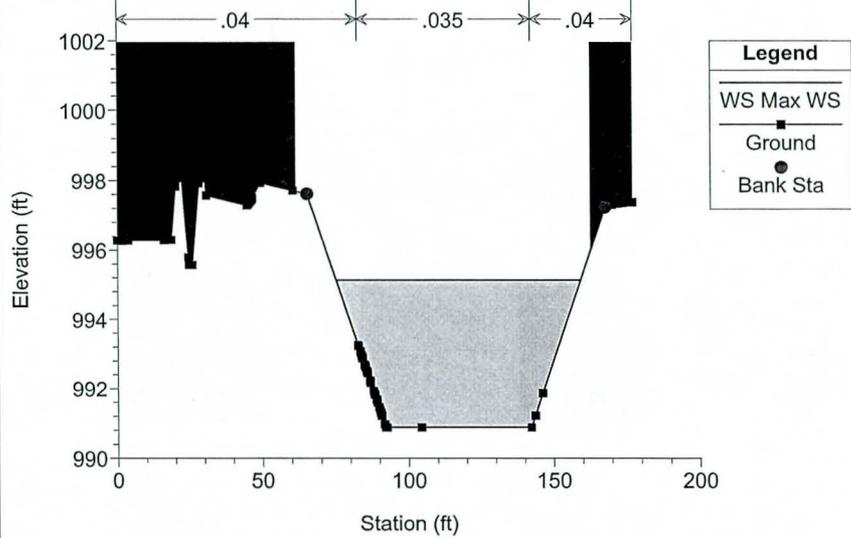


RS = 25758.37 Move left bank in to make room for 20' maint rd, b=45'



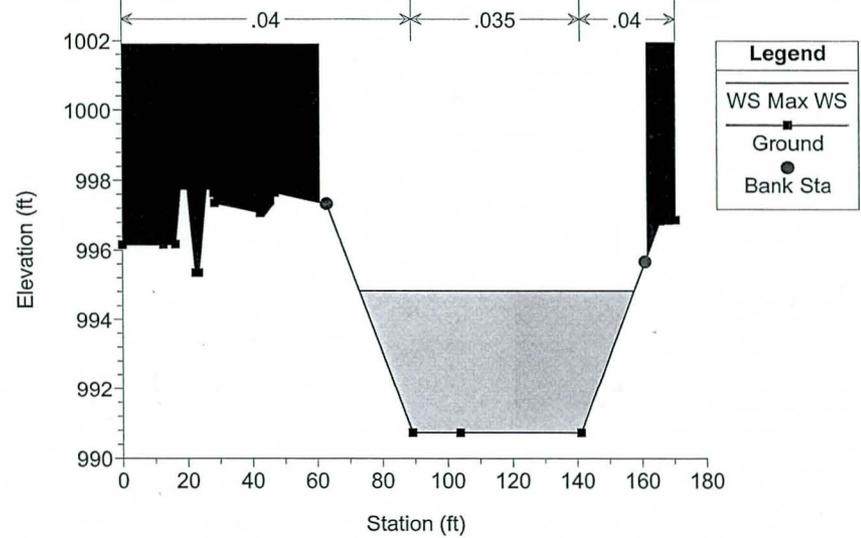
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 25563 Move left bank in to make room for 20' maint rd, b=45'



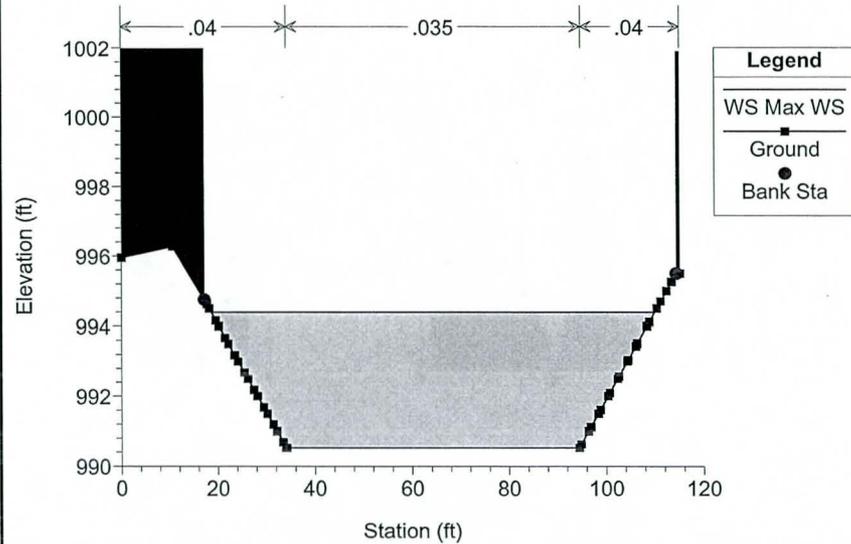
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 25387.78 Move left bank in to make room for 20' maint rd, b=45'



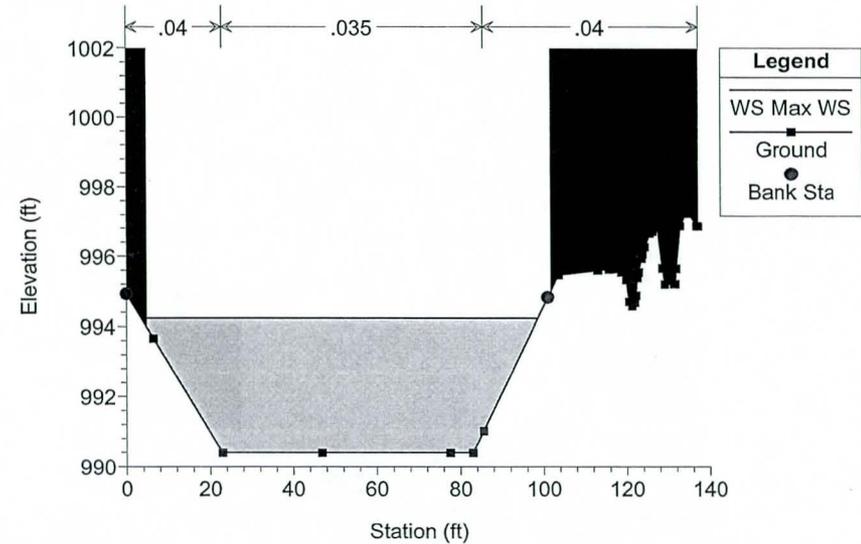
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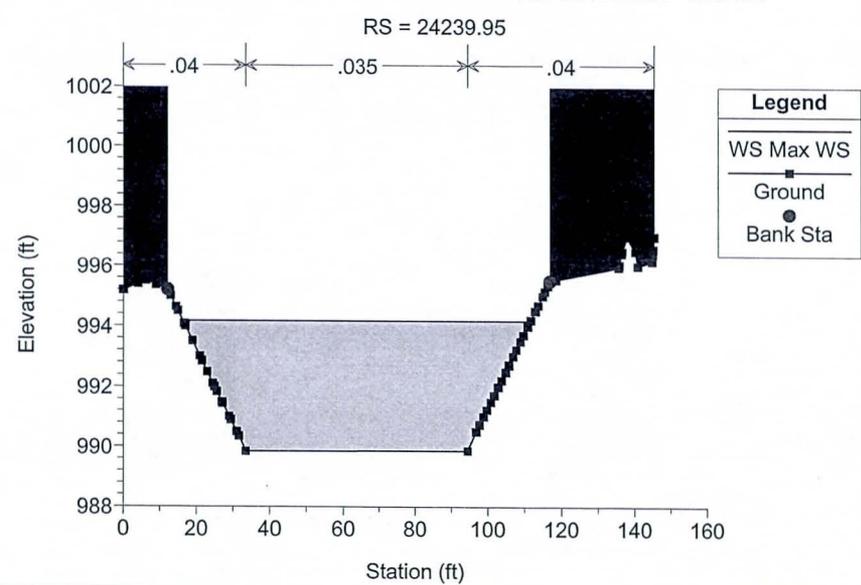
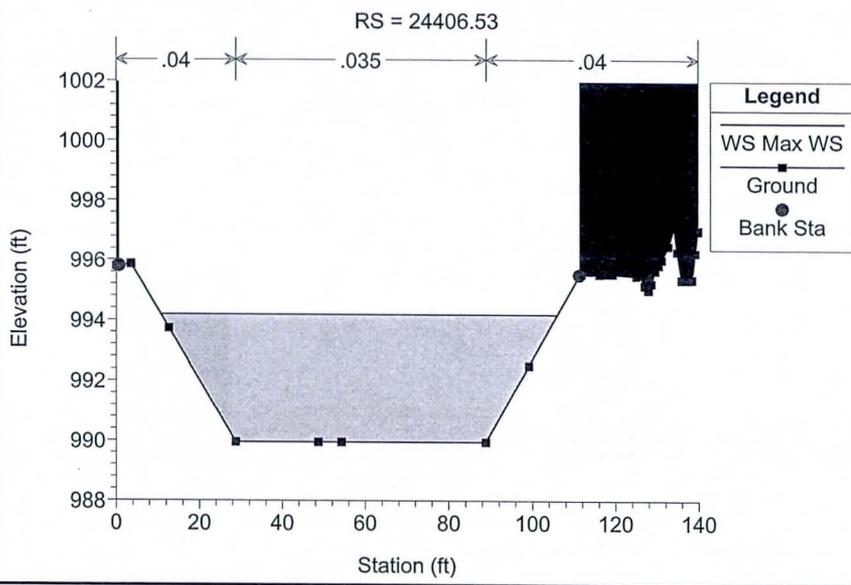
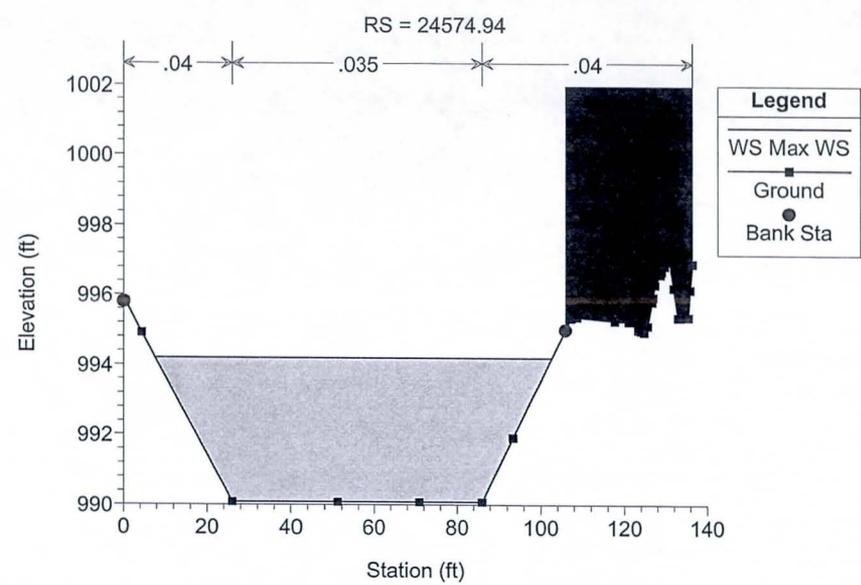
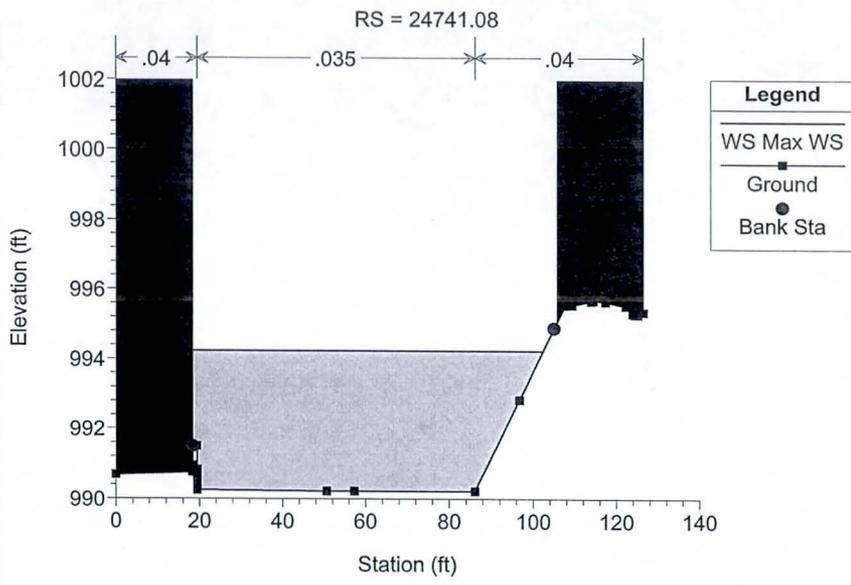
RS = 25118.28



9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

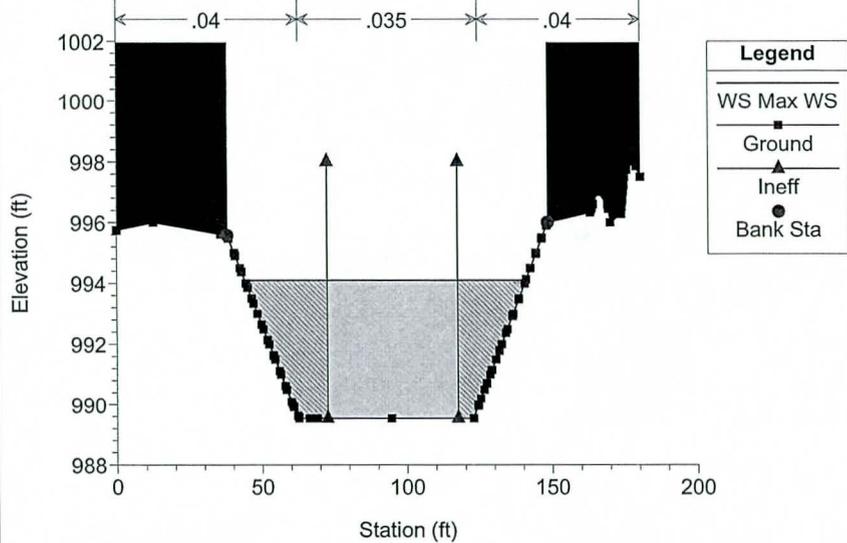
RS = 24948.65





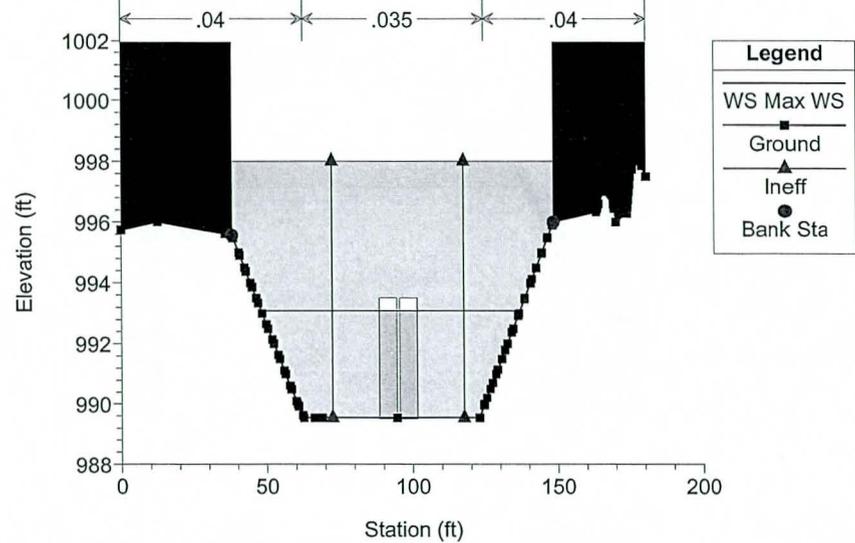
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 23902.74 New culvert between 89th St. storage basins, US Sec



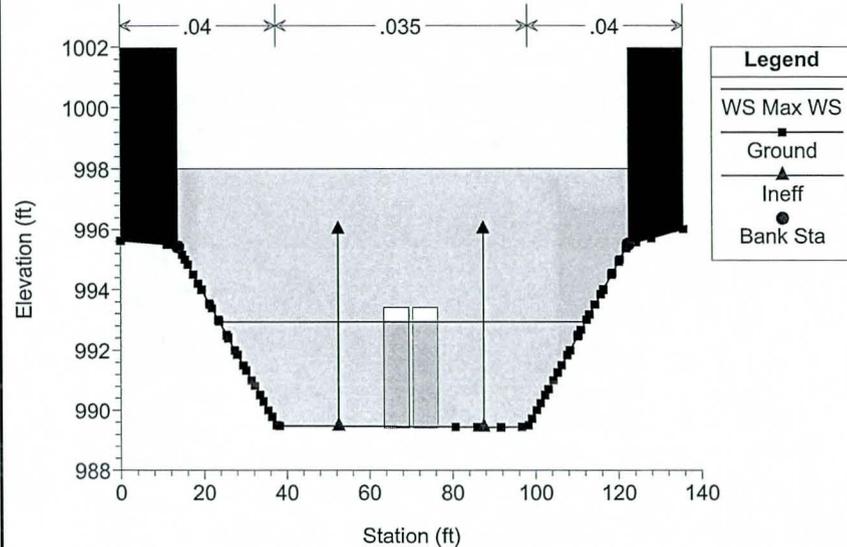
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 23853.38 Culv Future 2-6x4 RCB @ Riley Rd to back water into 87th Ave basin to



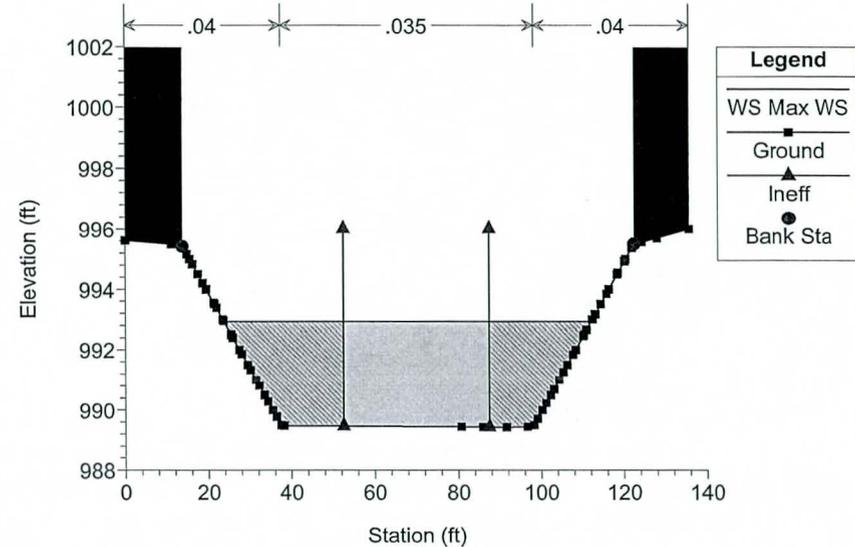
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 23853.38 Culv Future 2-6x4 RCB @ Riley Rd to back water into 87th Ave basin to



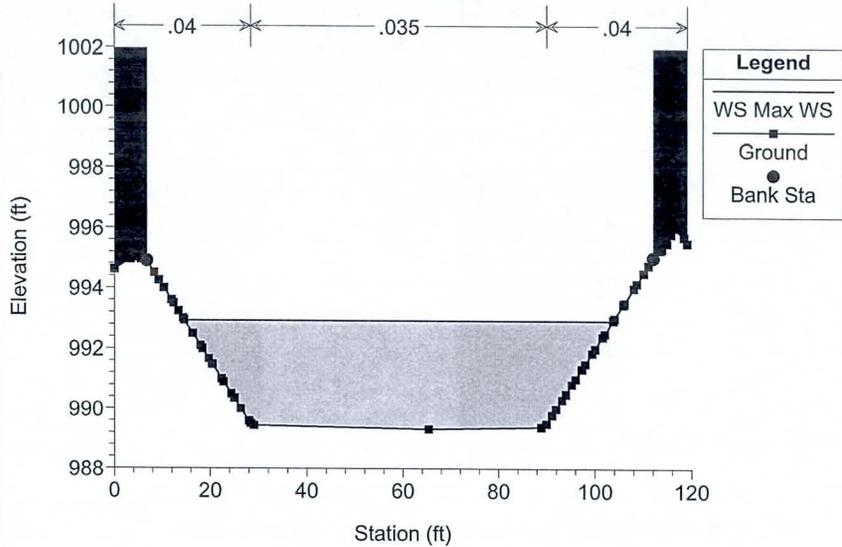
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 23804.63 New culvert between 89th St. storage basins, DS Sec



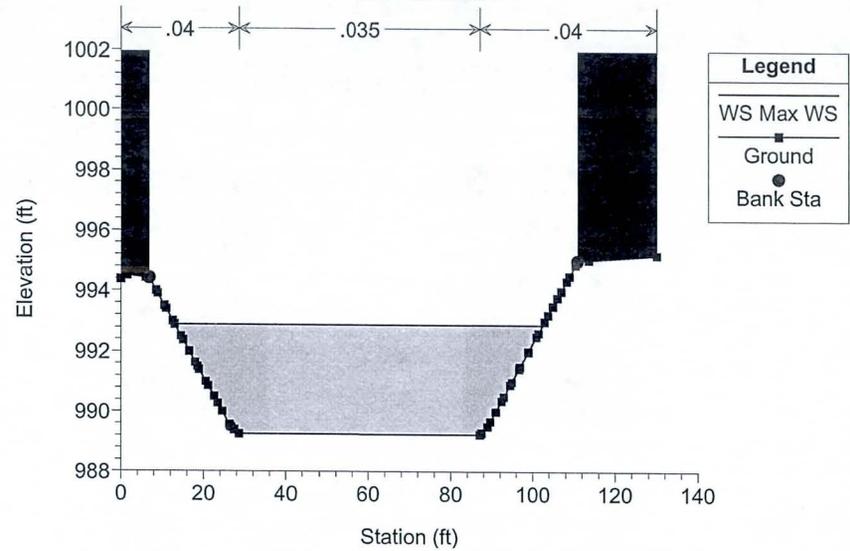
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 23625.24



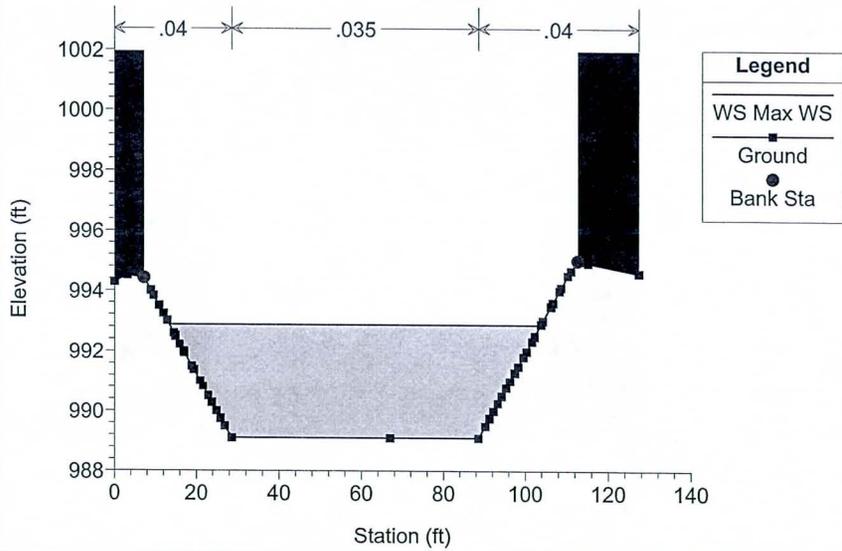
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 23495.64



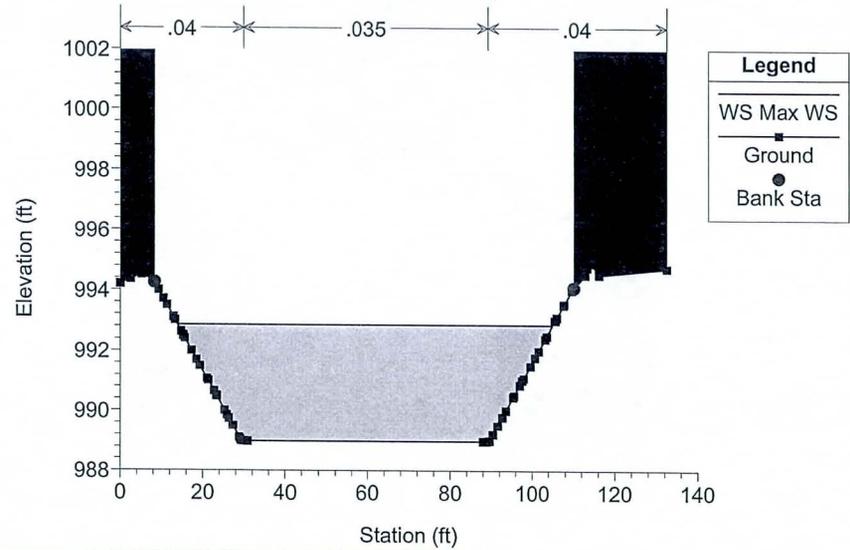
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RS = 23342.25

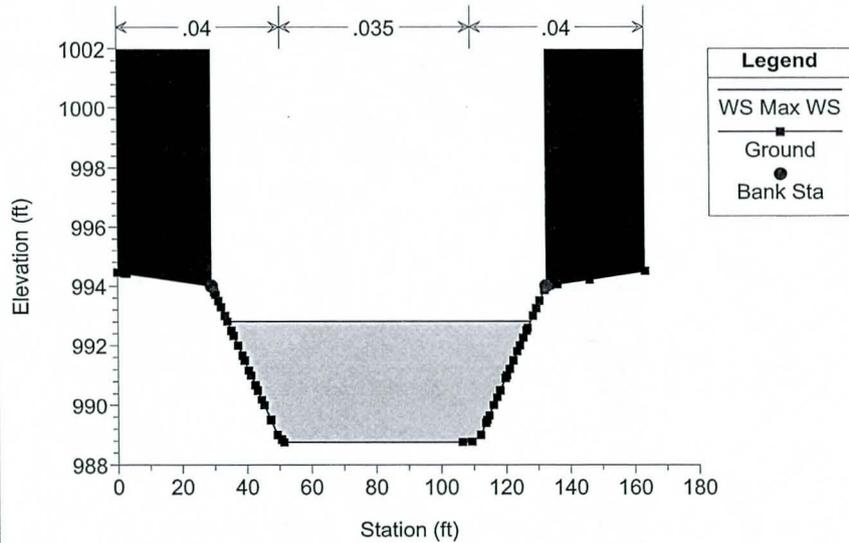


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

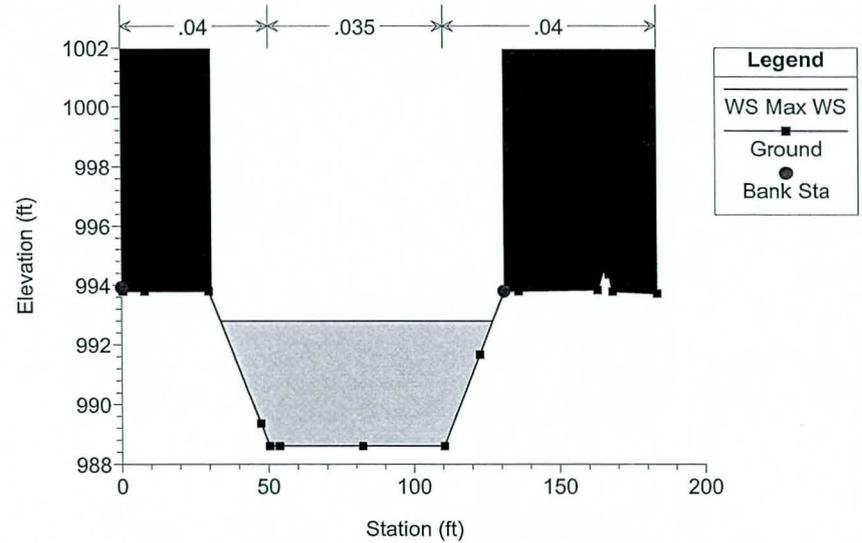
RS = 23199.78



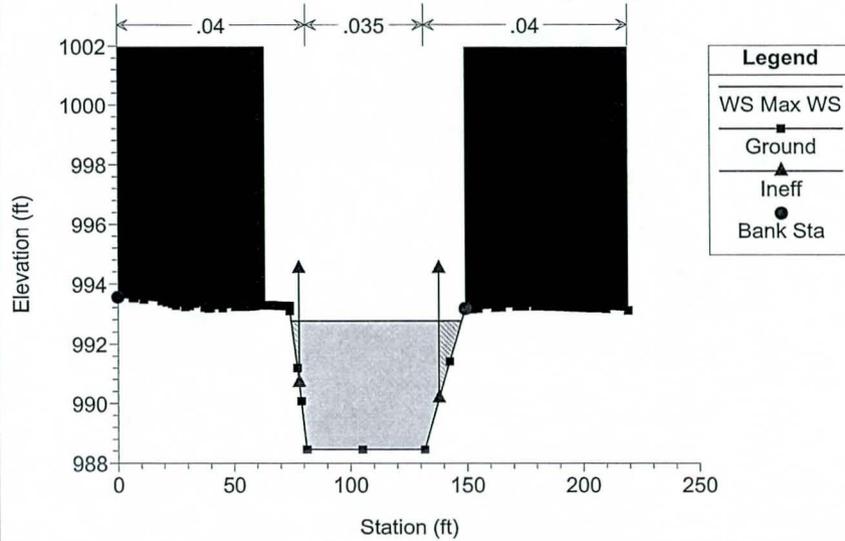
RS = 22937.83



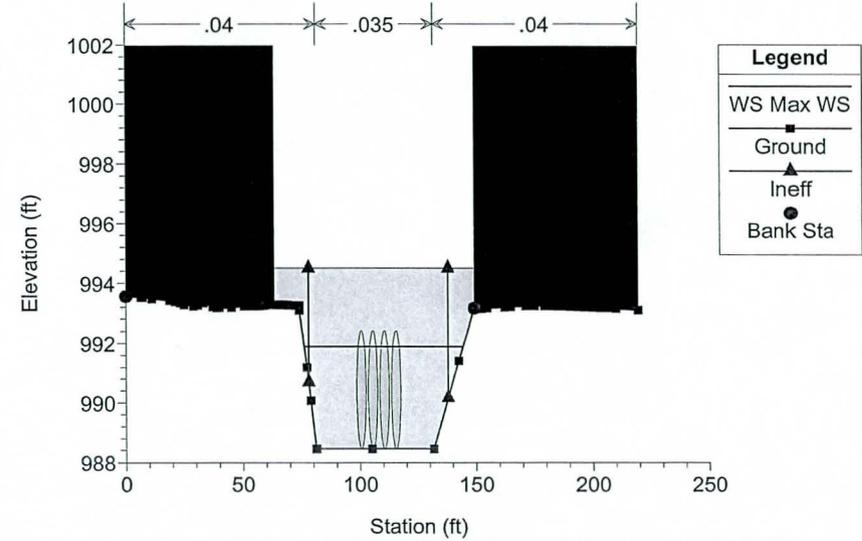
RS = 22733.15



RS = 22544.93 89th Ave. 4-12x1.5 - (No. 18) US

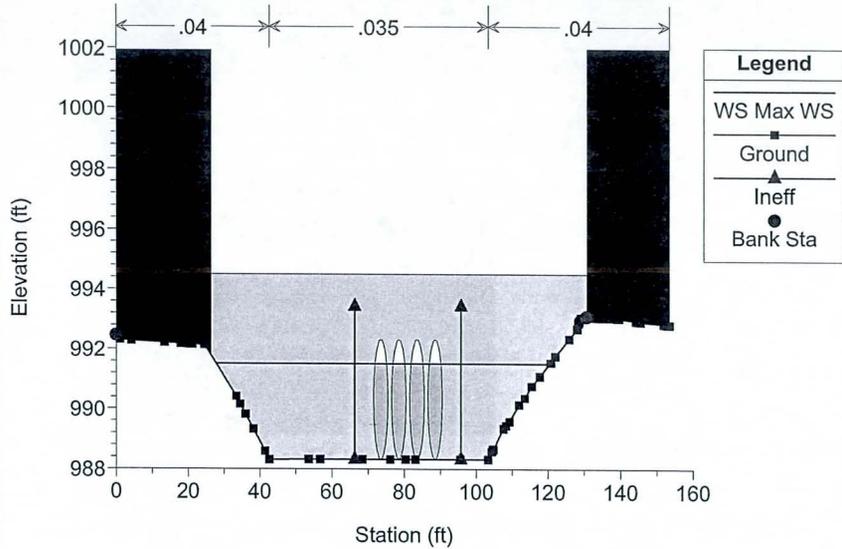


RS = 22477.38 Culv SD-80 89th Ave. 4-48" Adjusted Min Deck Elev per elev rd to 994.



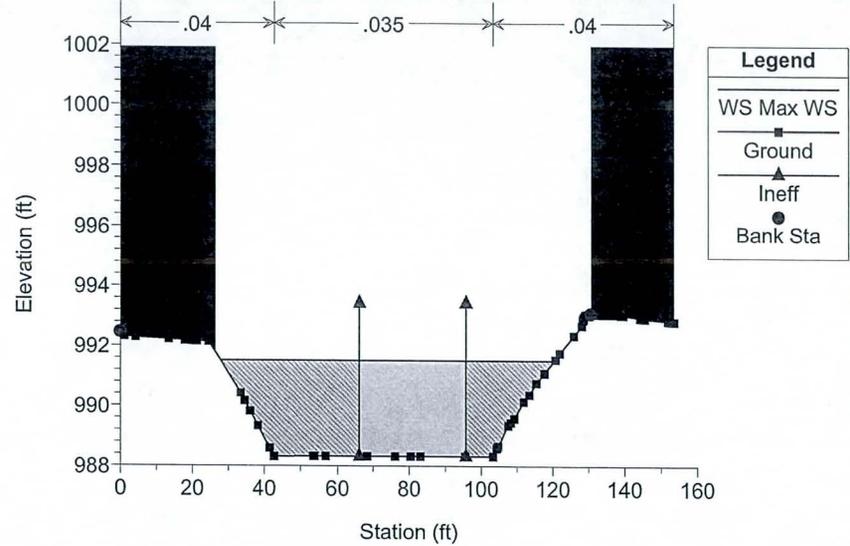
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 22477.38 Culv SD-80 89th Ave. 4-48" Adjusted Min Deck Elev per elev rd to 994.



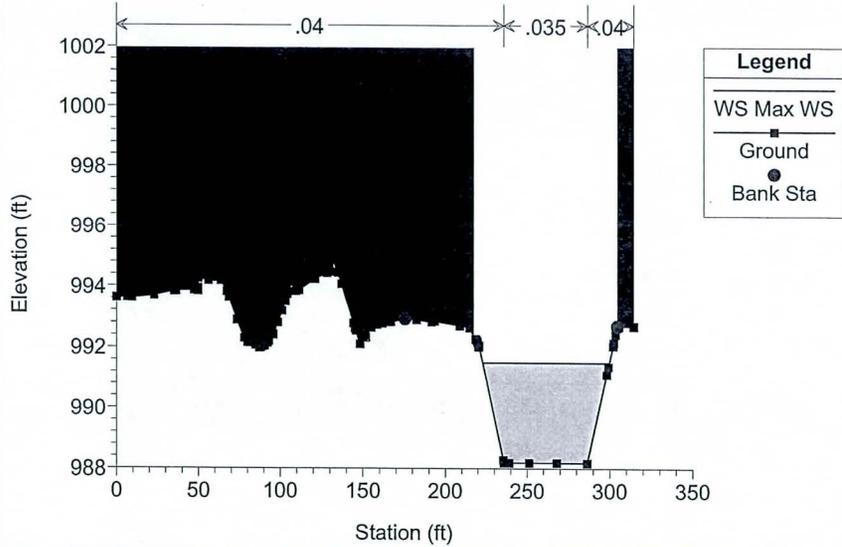
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 22408.02 89th Ave. 4-12x1.5 - (No. 18) DS



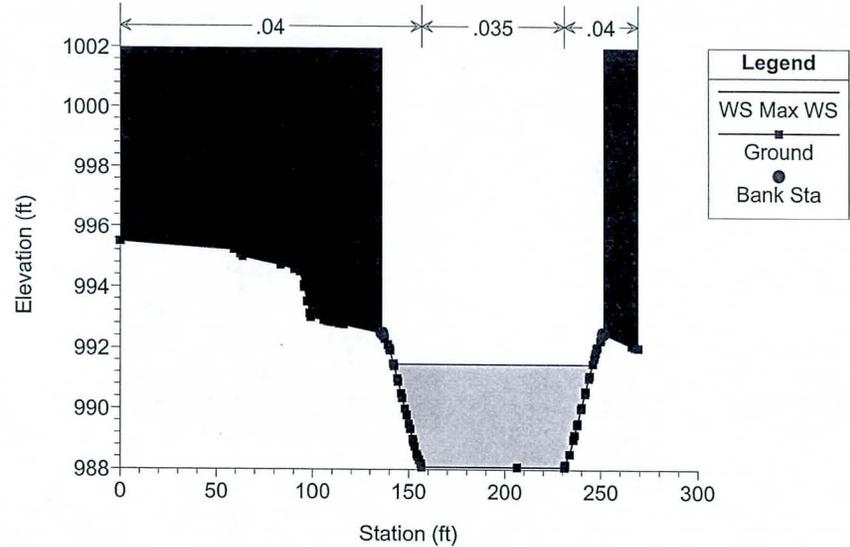
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 22238.84



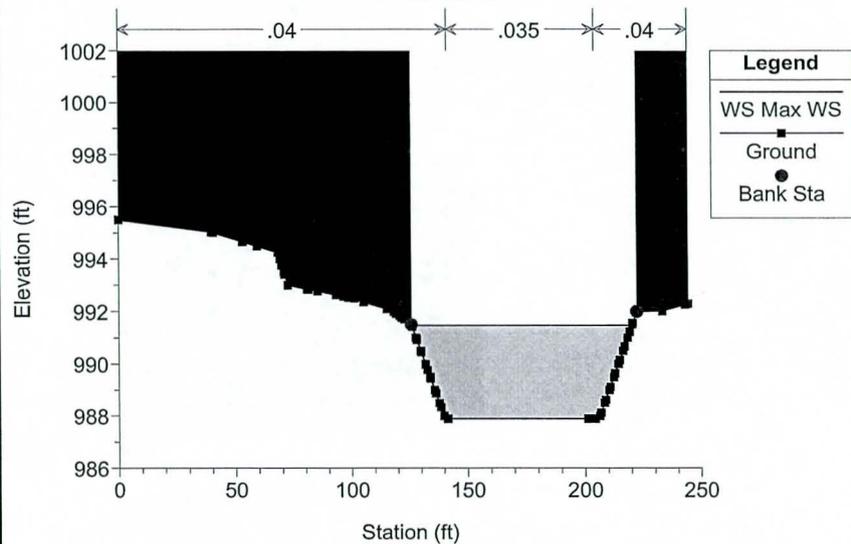
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 22079.38



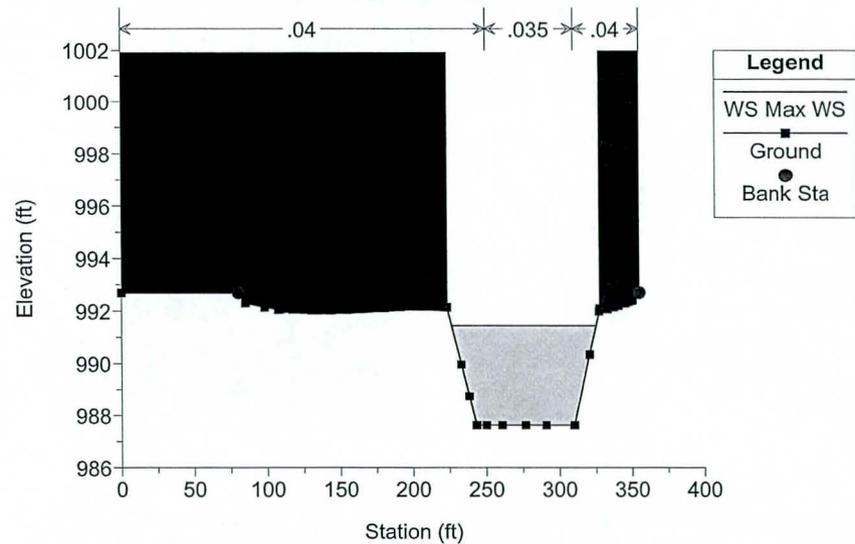
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 21856.94



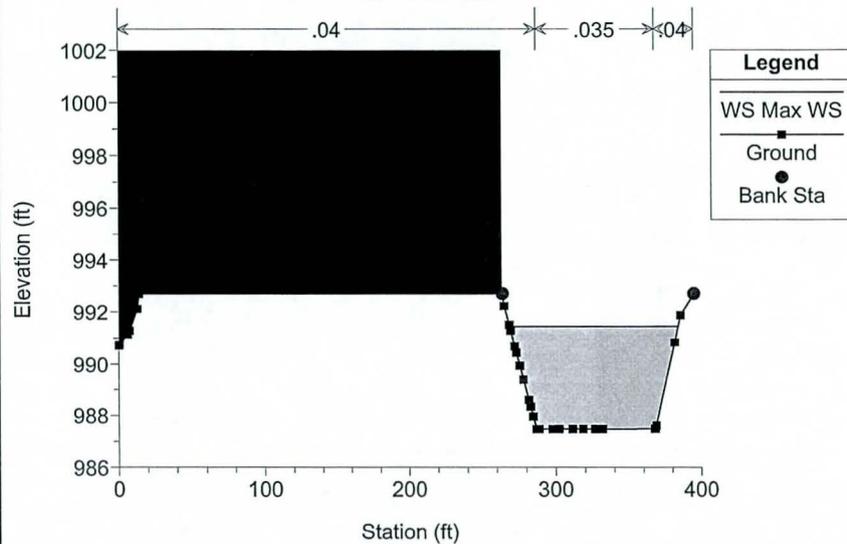
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 21574.73



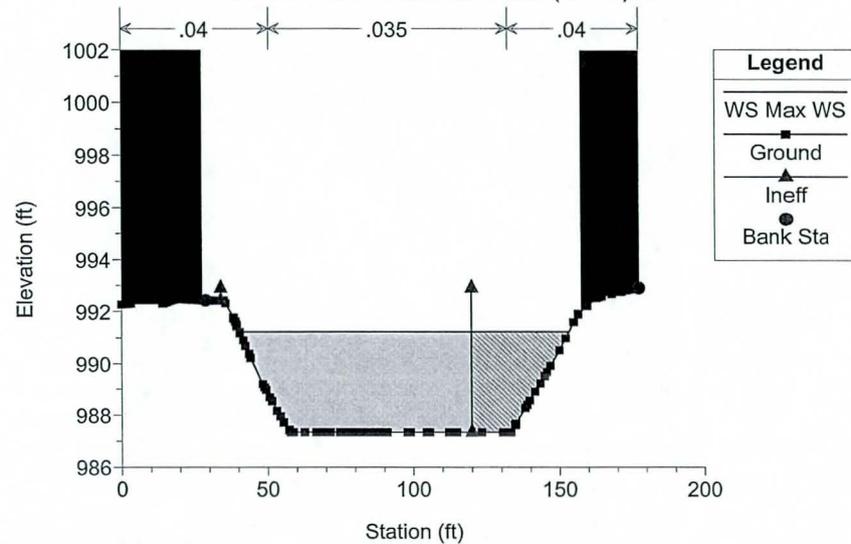
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 21379.21

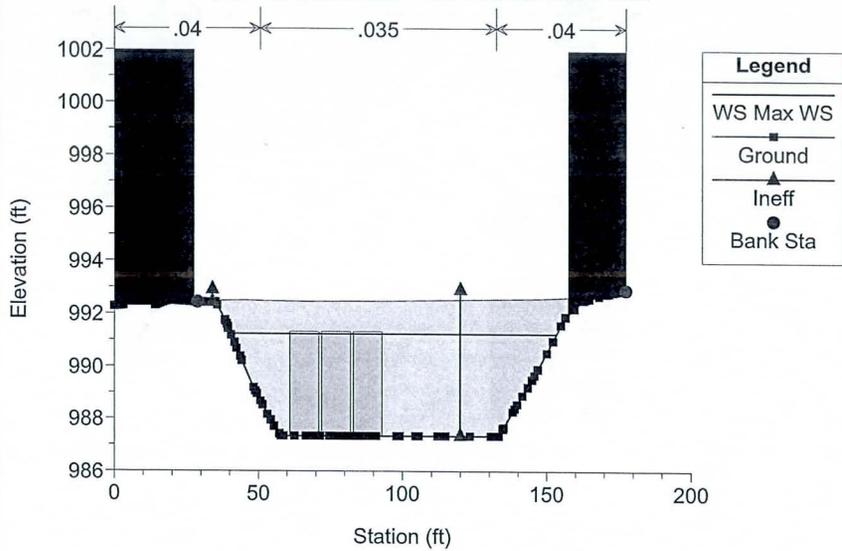


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

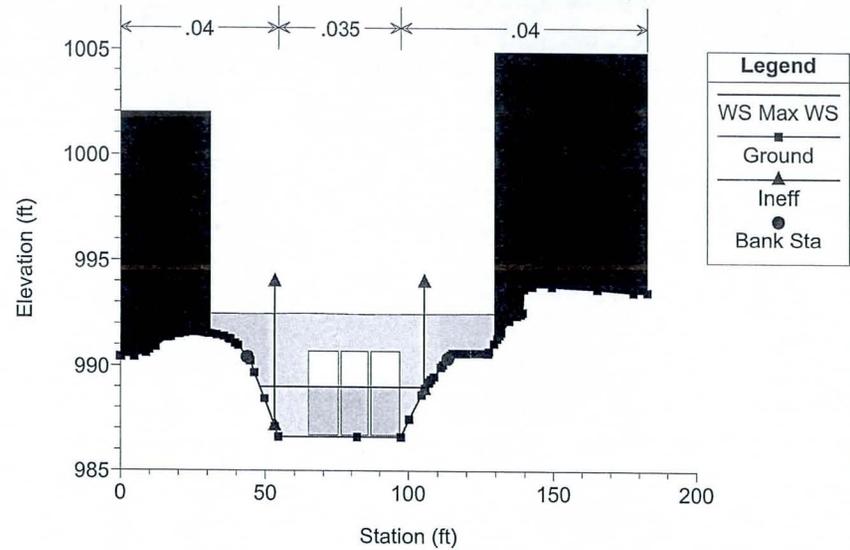
RS = 21217.51 91st Ave. 4-12x4 (No. 17) US



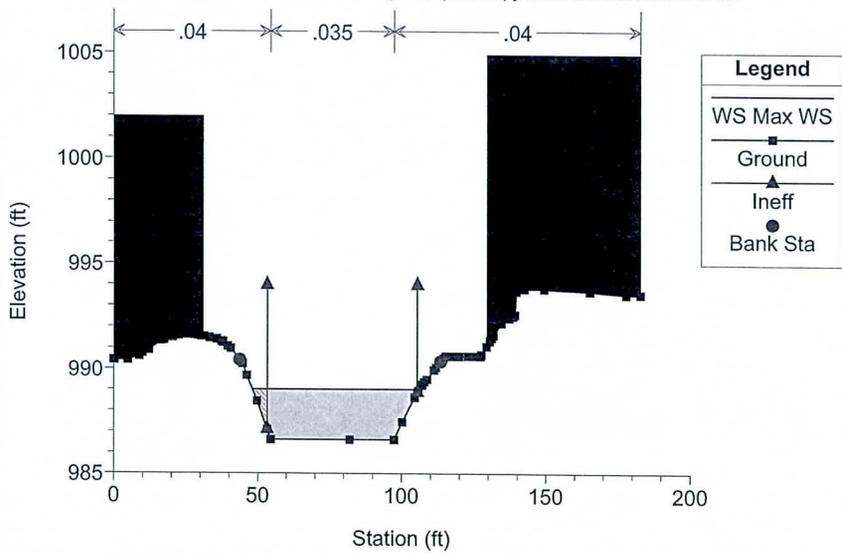
RS = 21075.38 Culv SD-70 91st Ave. 3-10x4



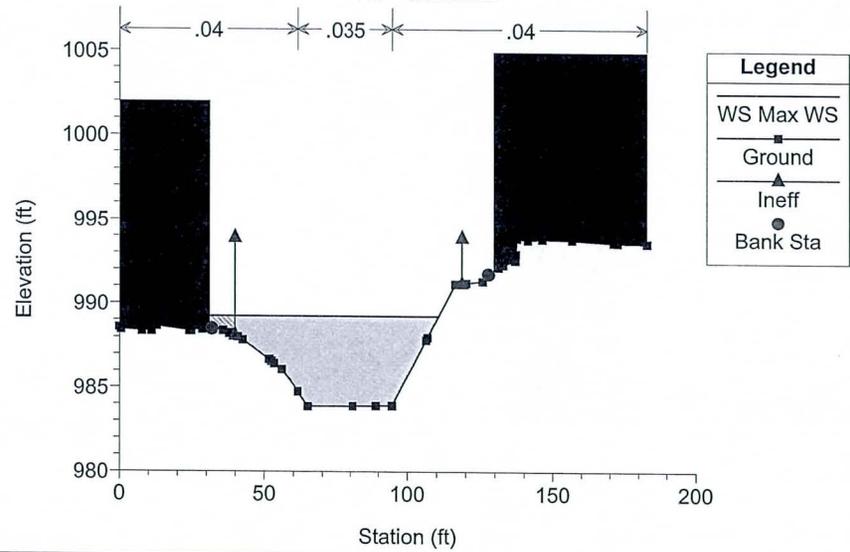
RS = 21075.38 Culv SD-70 91st Ave. 3-10x4



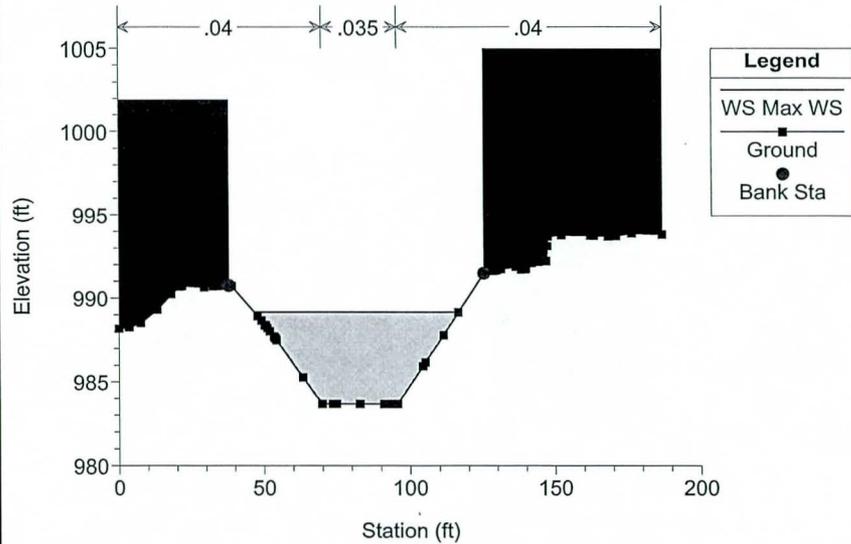
RS = 20961.75 91st Ave. 4-12x4 (No. 17) DS Copy of d/s cross-section to reflect



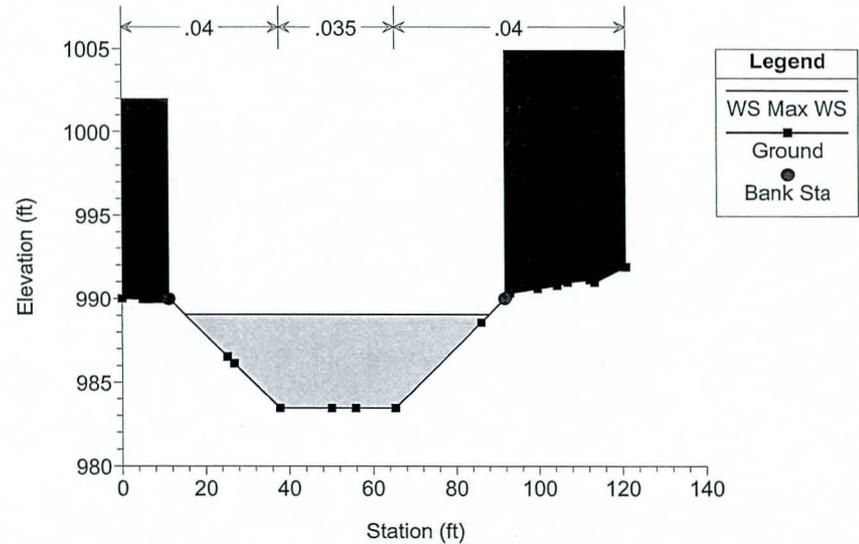
RS = 20932.23



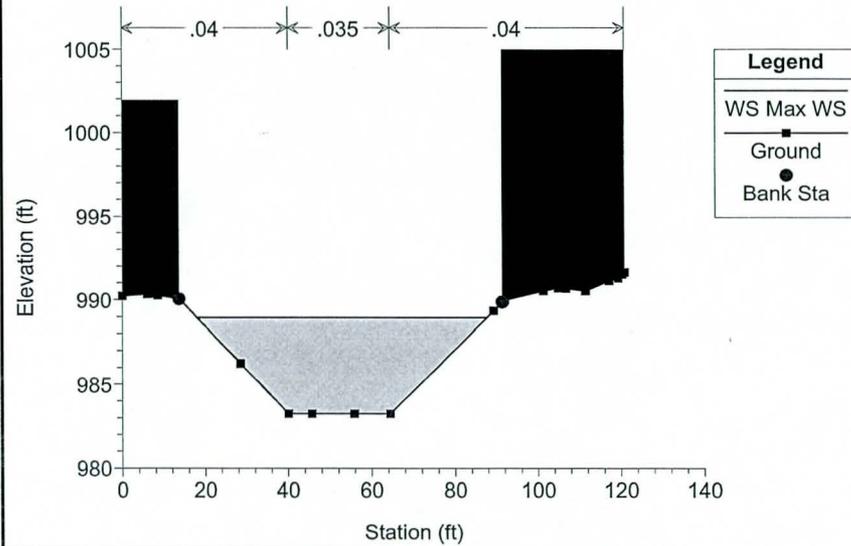
RS = 20847.85



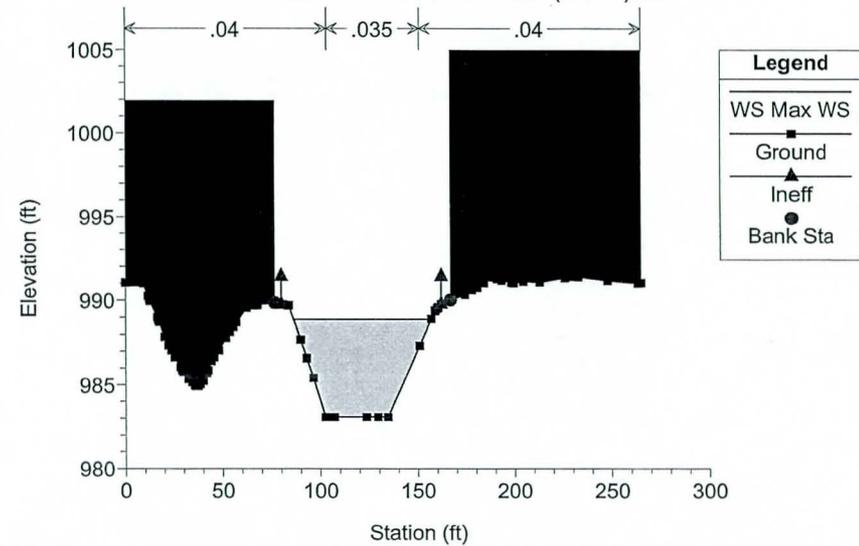
RS = 20665.33

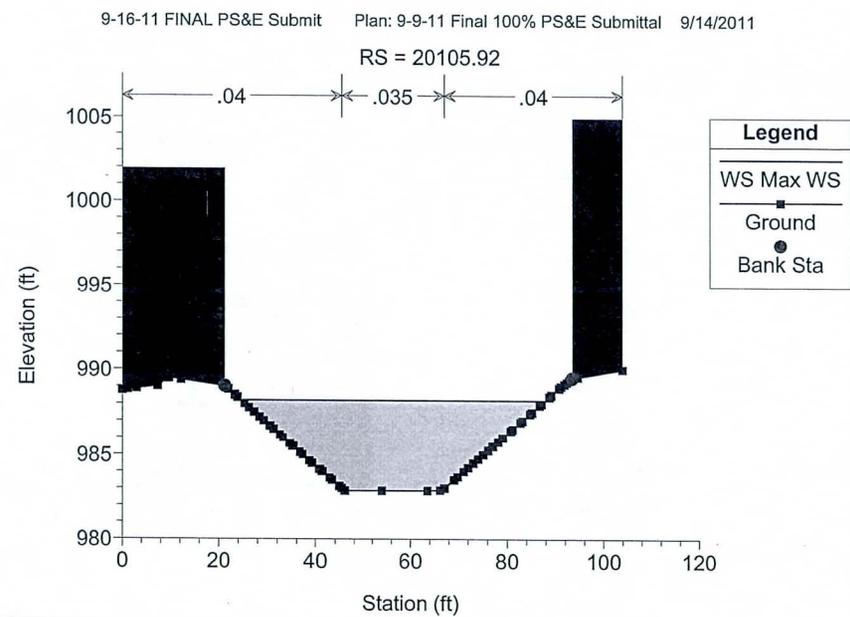
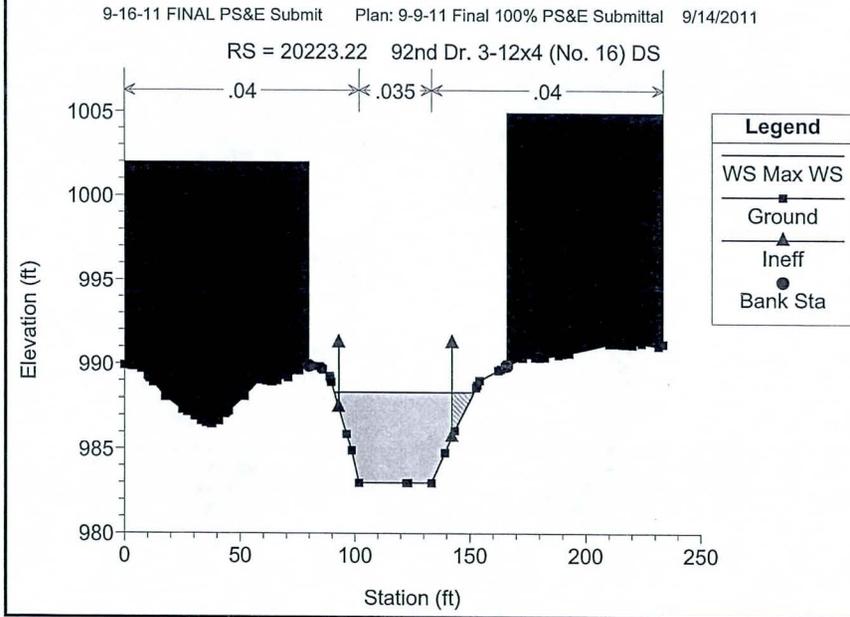
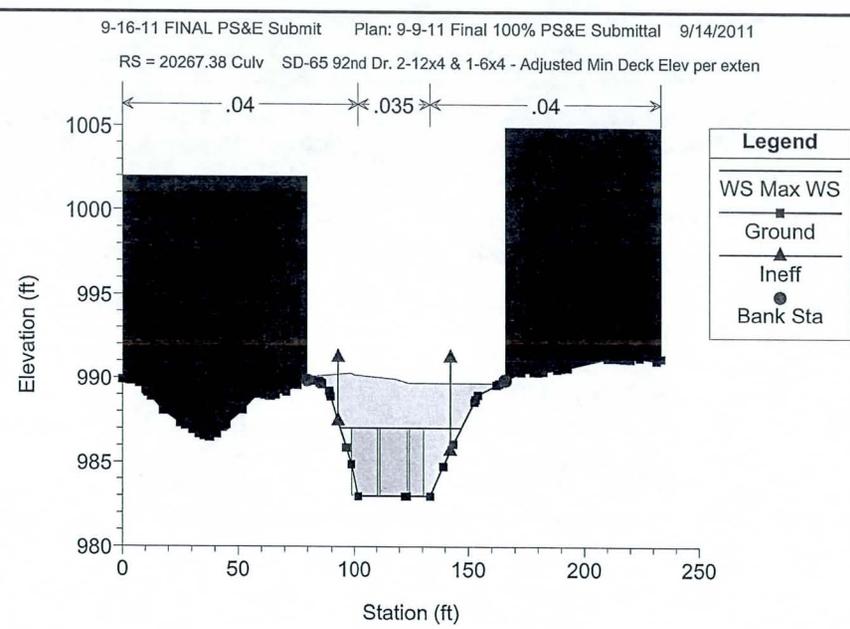
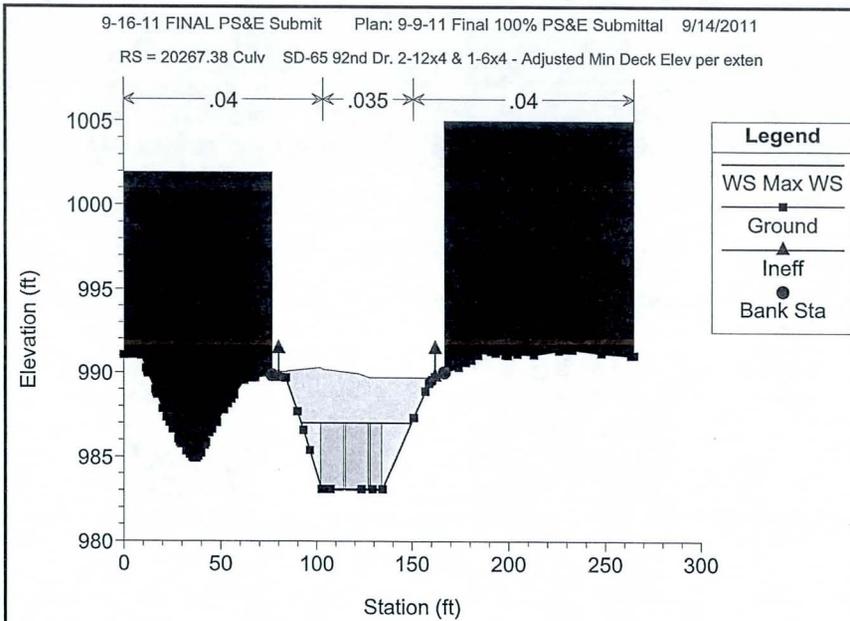


RS = 20481.33



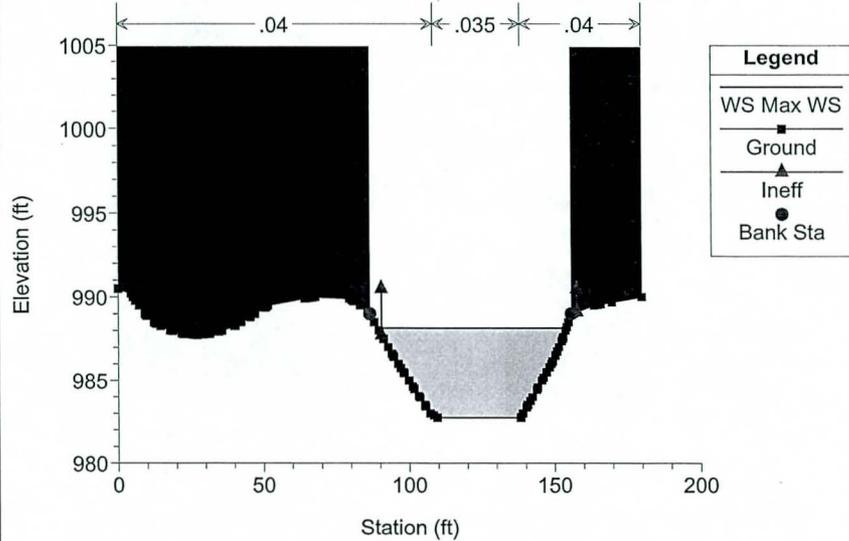
RS = 20311.76 92nd Dr. 3-12x4 (No. 16) US





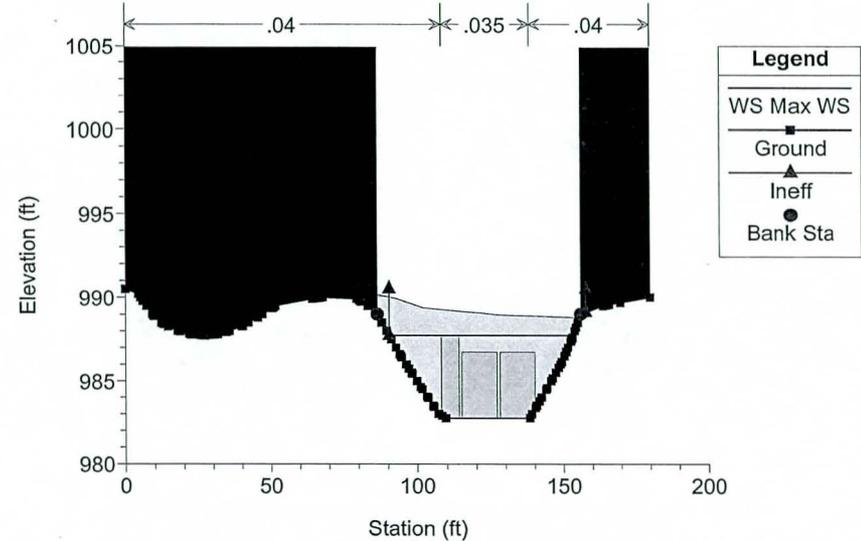
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 19994.35 PP's W of 92nd Dr. 2-12x4 & 1-6x5 (No. 15) US



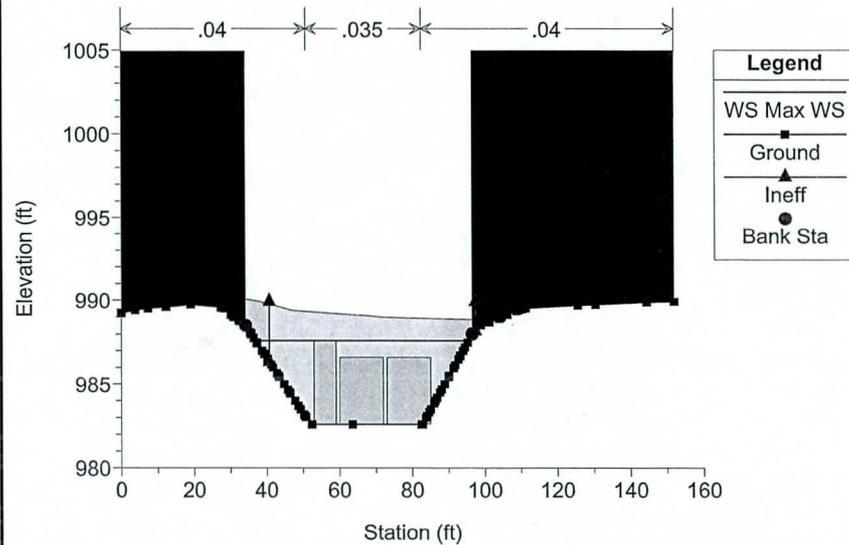
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 19921.38 Culv SD-60 PP's W of 92nd Dr. 2-12x4 & 1-6x5 -----> Increased manni



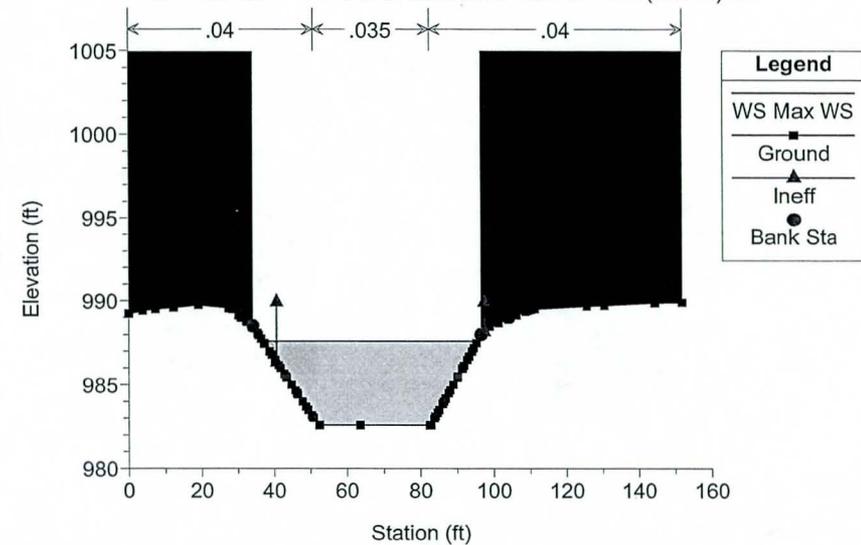
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 19921.38 Culv SD-60 PP's W of 92nd Dr. 2-12x4 & 1-6x5 -----> Increased manni

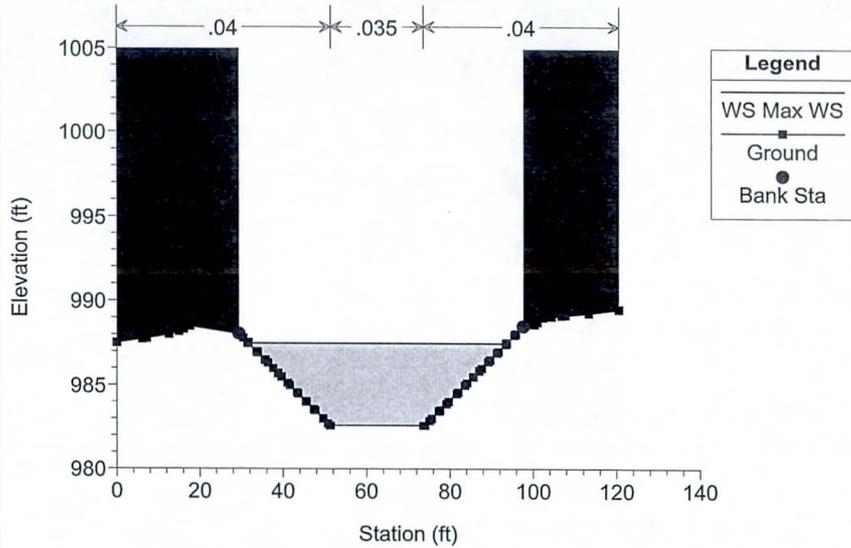


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

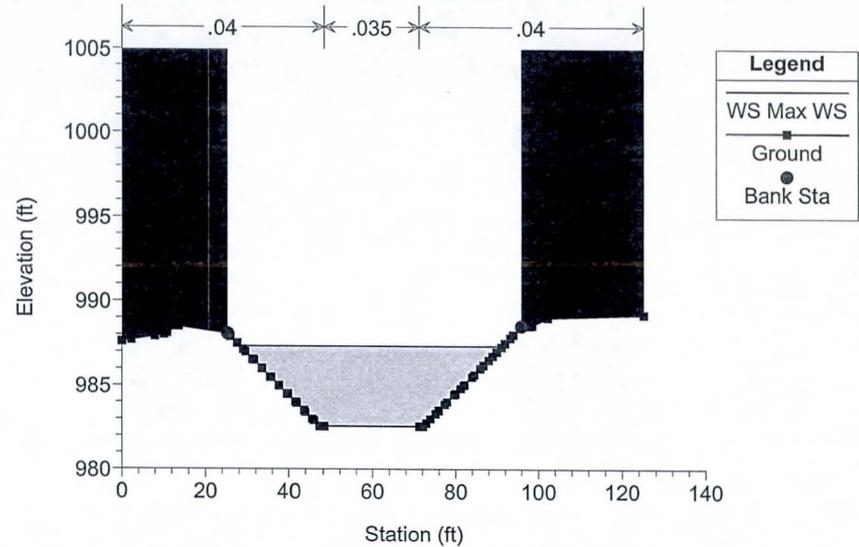
RS = 19848.74 PP's W of 92nd Dr. 2-12x4 & 1-6x5 (No. 15) DS



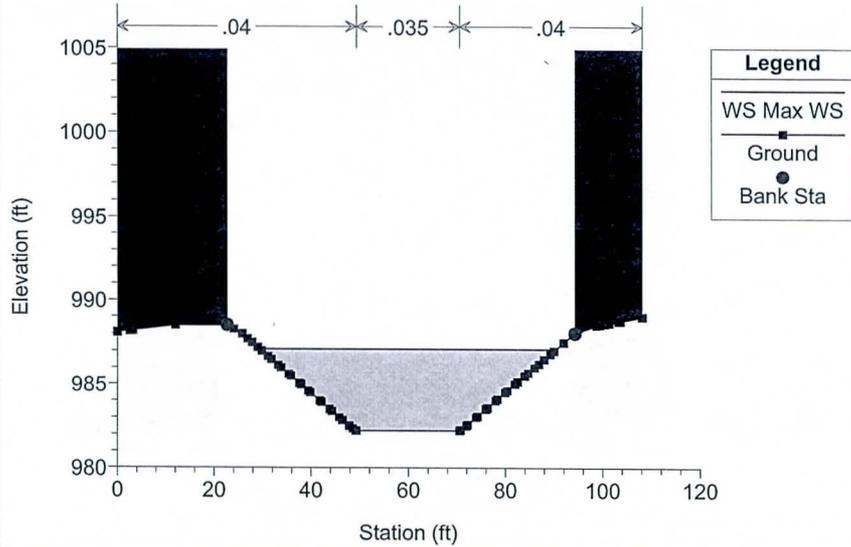
RS = 19738.19



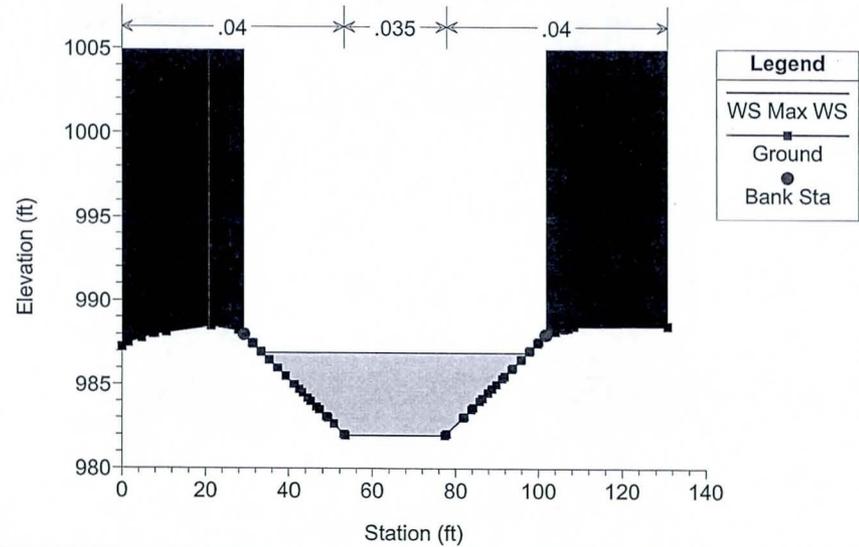
RS = 19619.59



RS = 19452.59

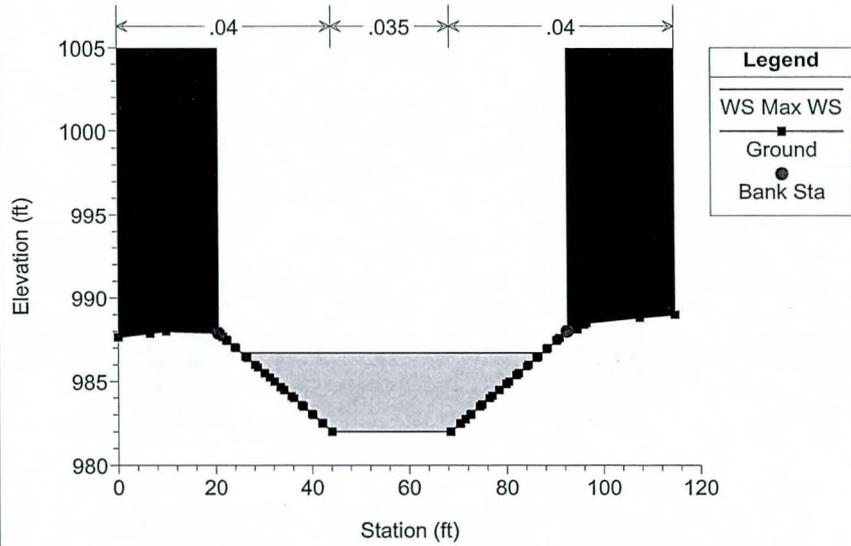


RS = 19285.59



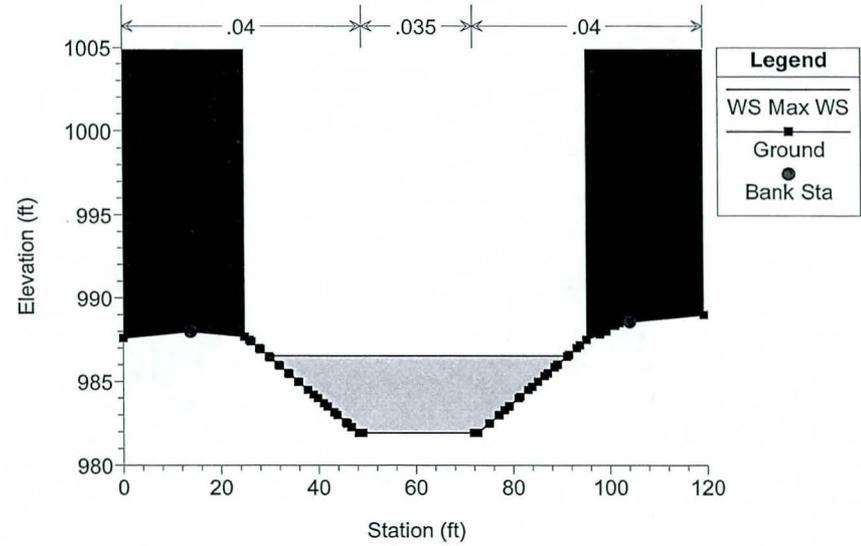
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 19118.59



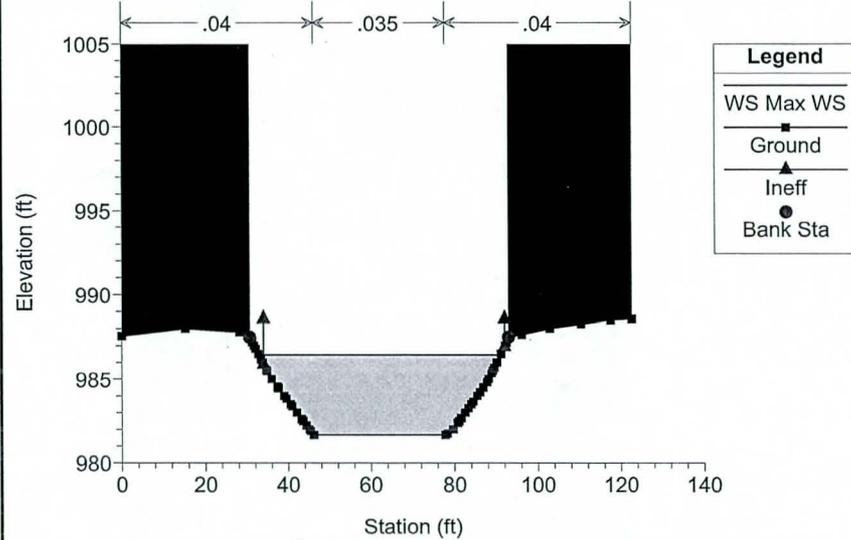
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 19005.74



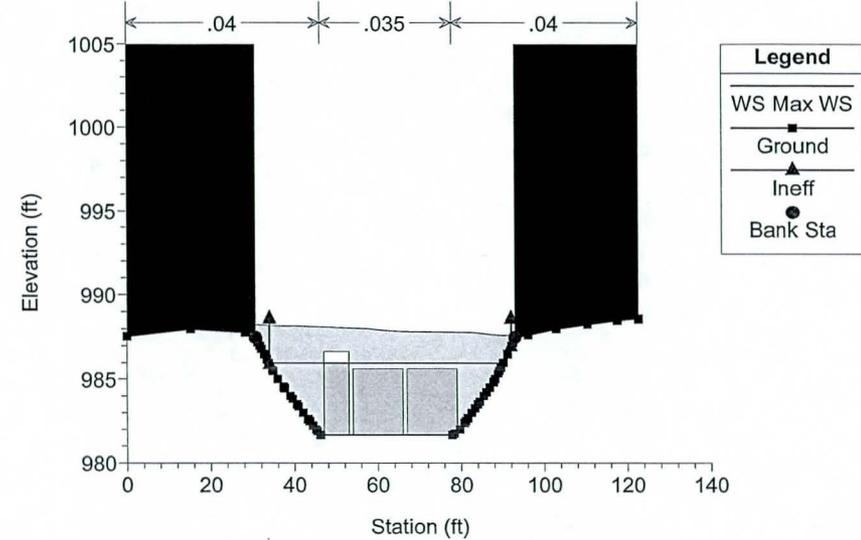
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 18891.83 PP's E of 95th Ave. - 2-12x4 & 1-6x5 (No. 14) US



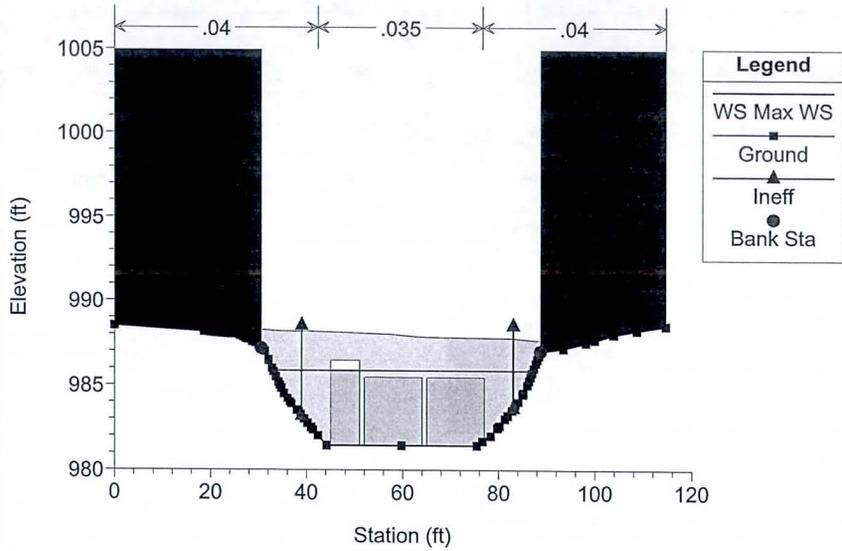
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 18827.38 Culv SD-55 PP's E of 95th Ave. - 2-12x4 & 1-6x5. -----> Increased



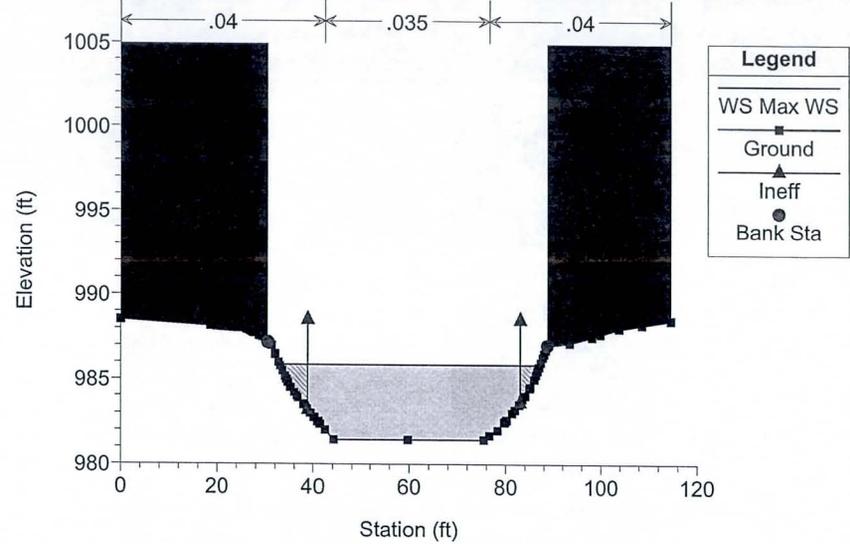
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 18827.38 Culv SD-55 PP's E of 95th Ave. - 2-12x4 & 1-6x5. -----> Increased



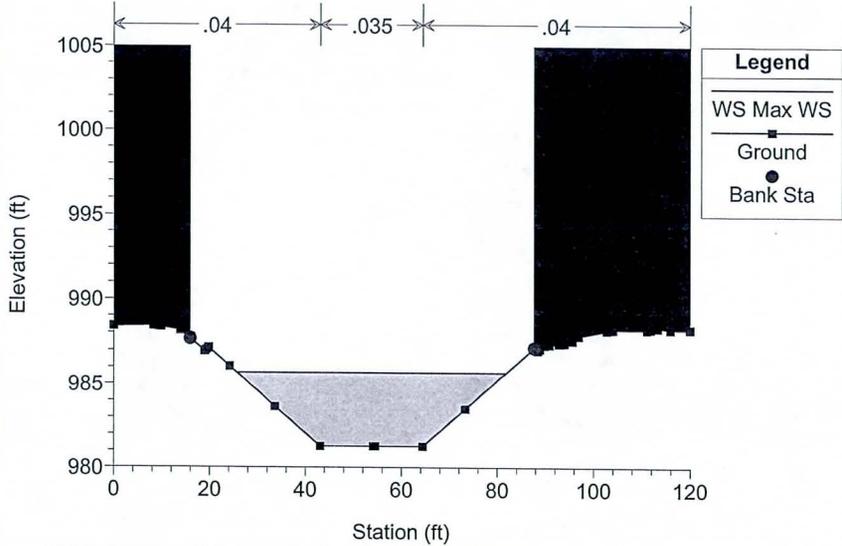
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 18762.64 PP's E of 95th Ave. - 2-12x4 & 1-6x5 (No. 14) DS



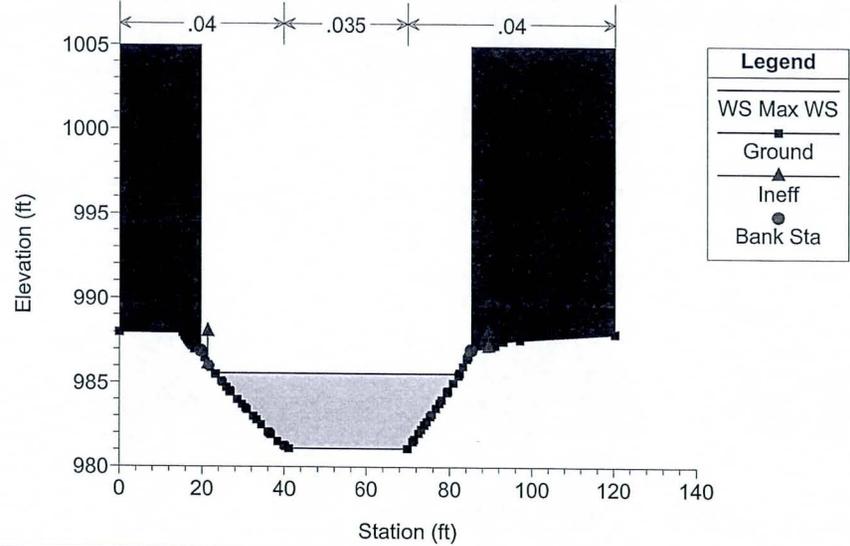
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 18660.36

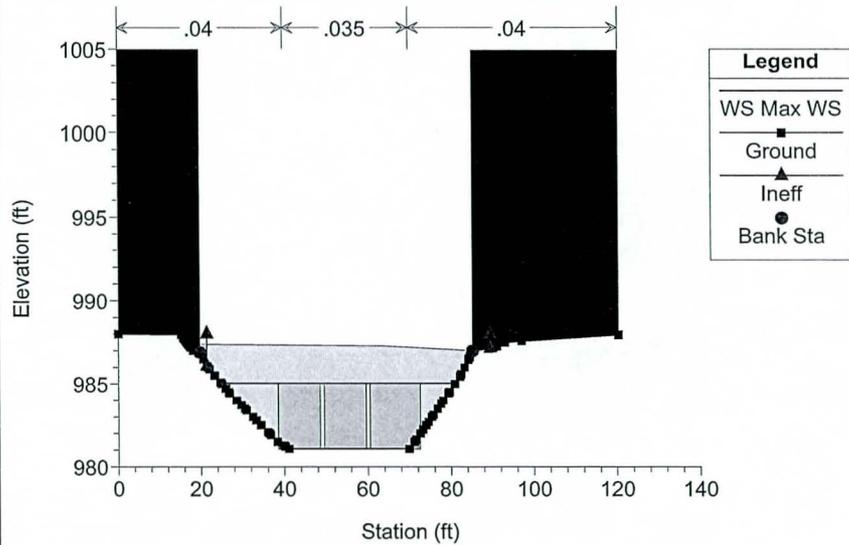


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

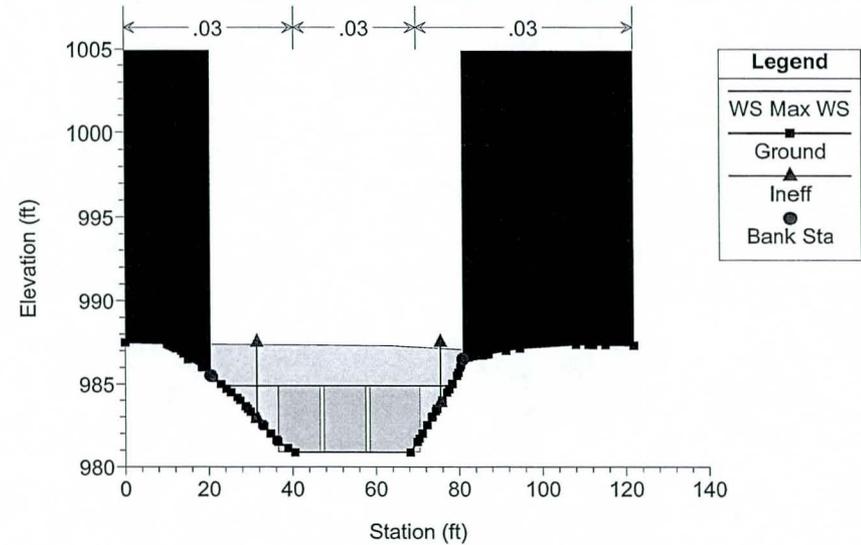
RS = 18558.06 95th Ave. 3-12x4 (No. 13) US



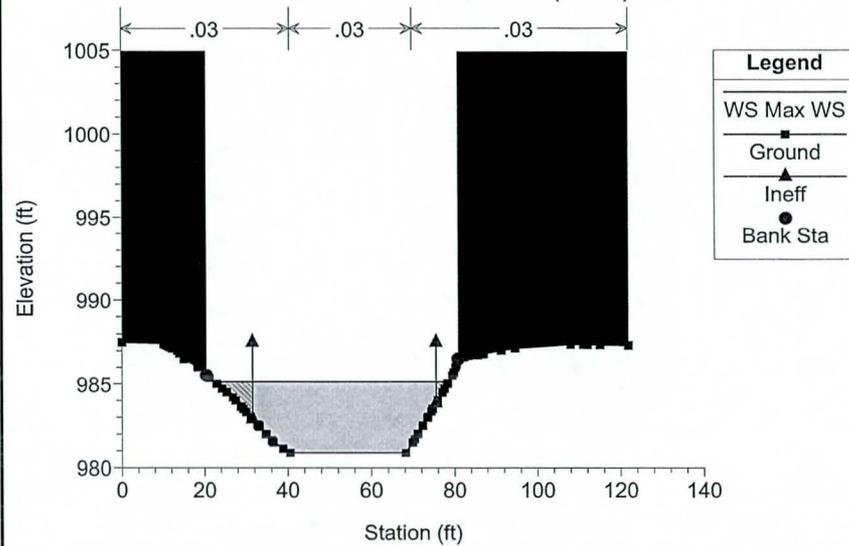
RS = 18500.38 Culv SD-50 95th Ave. 2-10x4 & 1-12x4



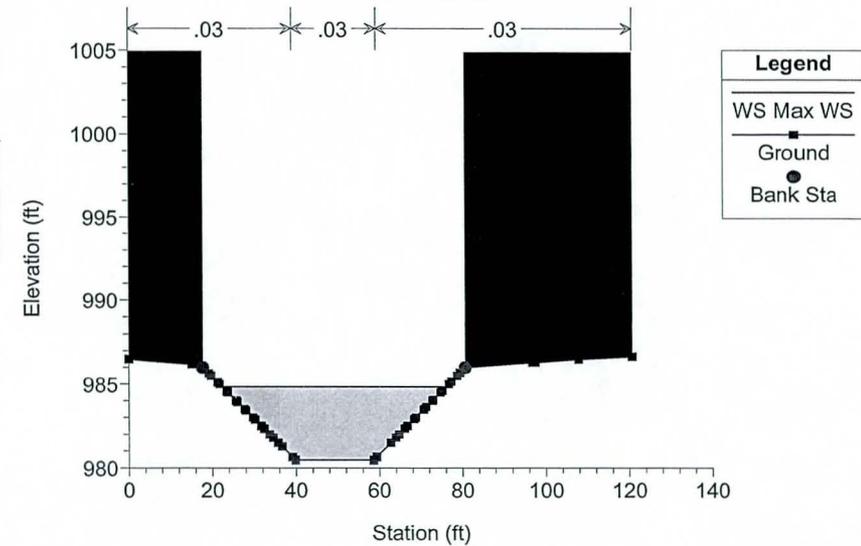
RS = 18500.38 Culv SD-50 95th Ave. 2-10x4 & 1-12x4



RS = 18441.81 95th Ave. 3-12x4 (No. 13) DS

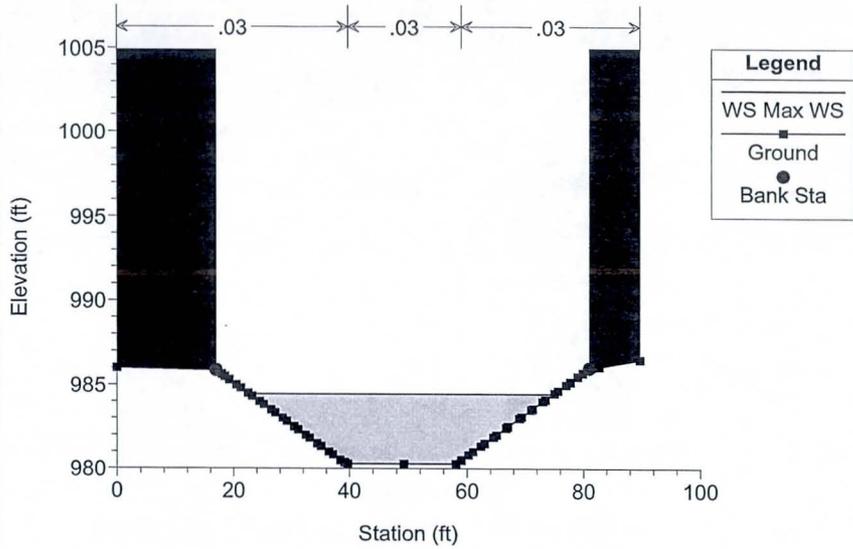


RS = 18240.23



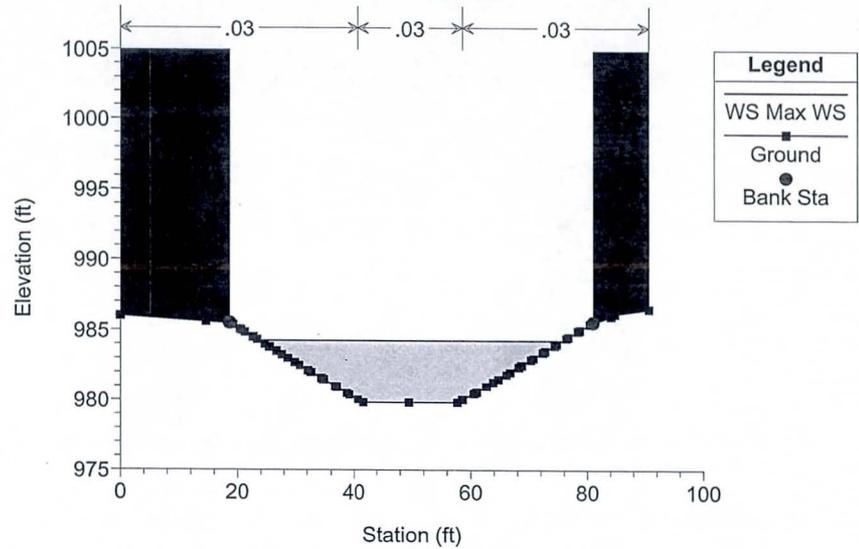
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 18040.23



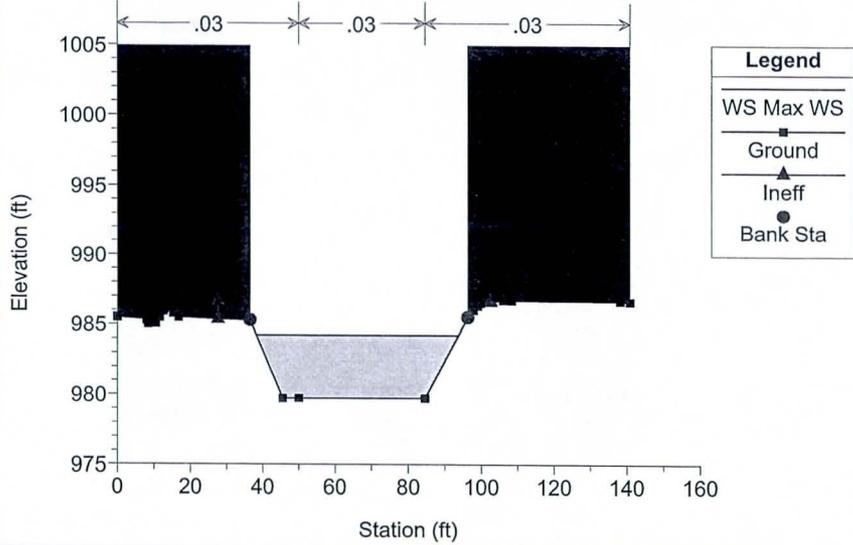
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17923.22



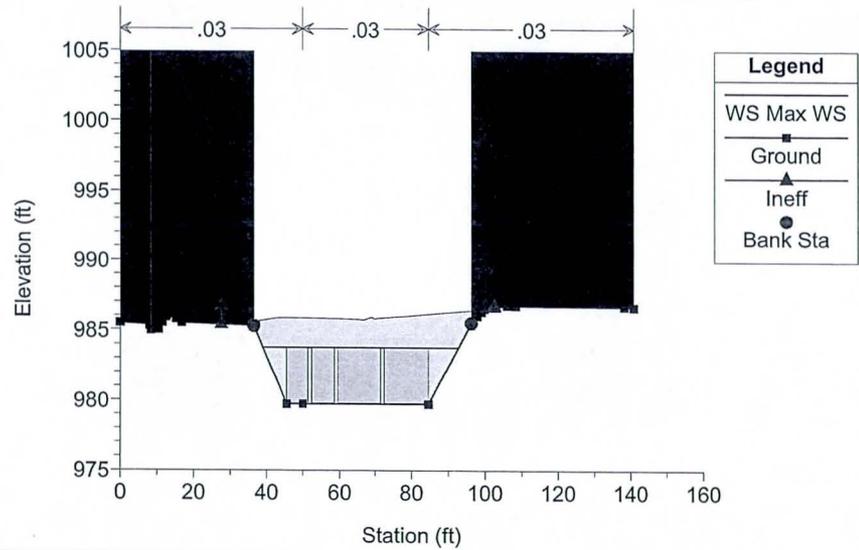
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17799.53 PP's W of 95th, 2-6x4 & 2-12x4 (No. 12) US



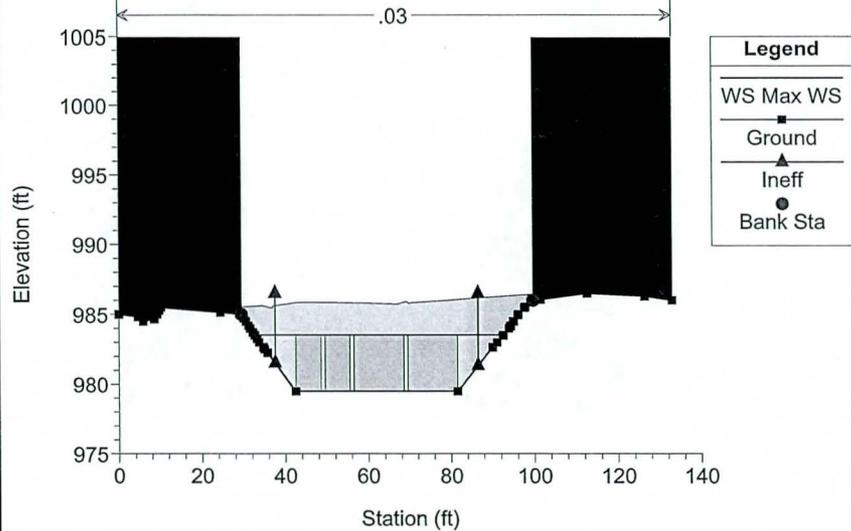
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17728.38 Culv SD-45 PP's W of 95th, 2-6x4 & 2-12x4 -----> Increased man



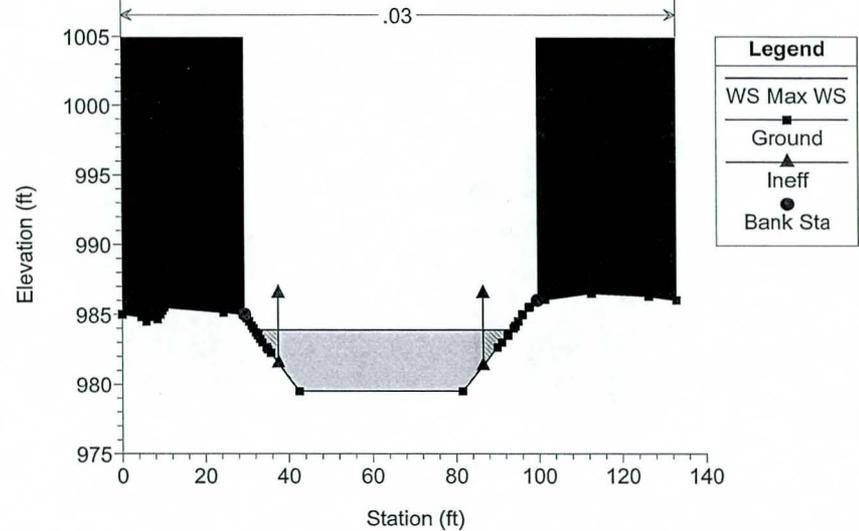
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17728.38 Culv SD-45 PP's W of 95th. 2-6x4 & 2-12x4 -----> Increased man



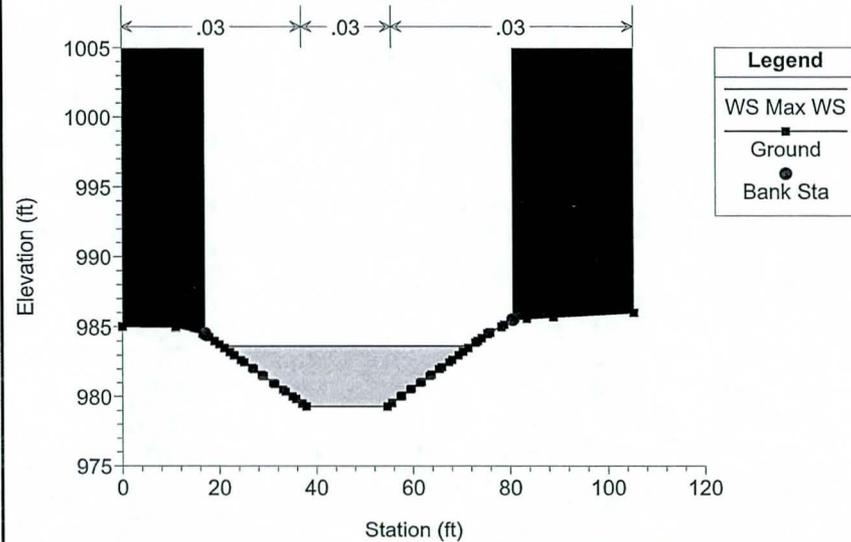
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17656.04 PP's W of 95th. 2-6x4 & 2-12x4 (No. 12) DS



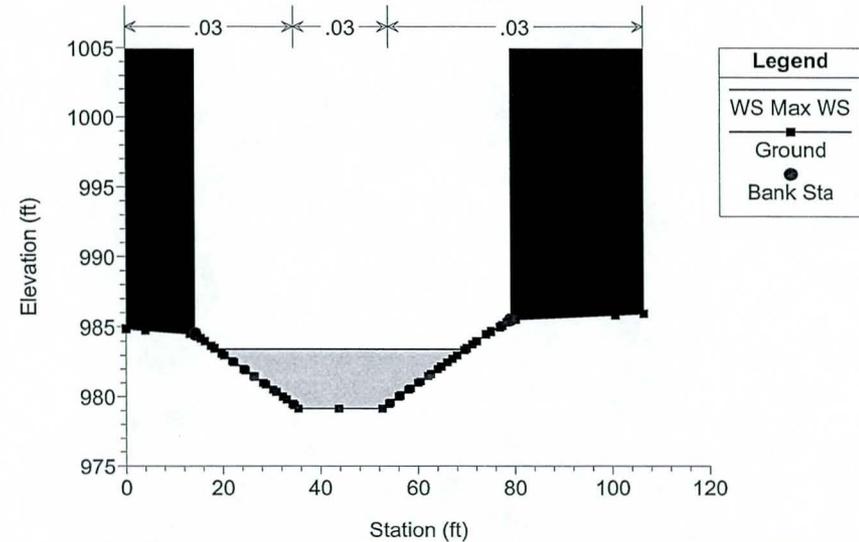
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17544.82



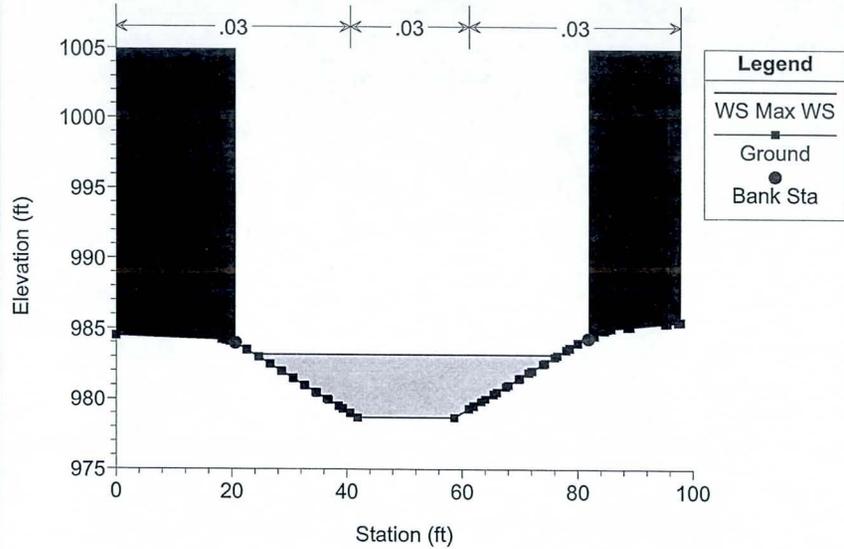
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17444.33



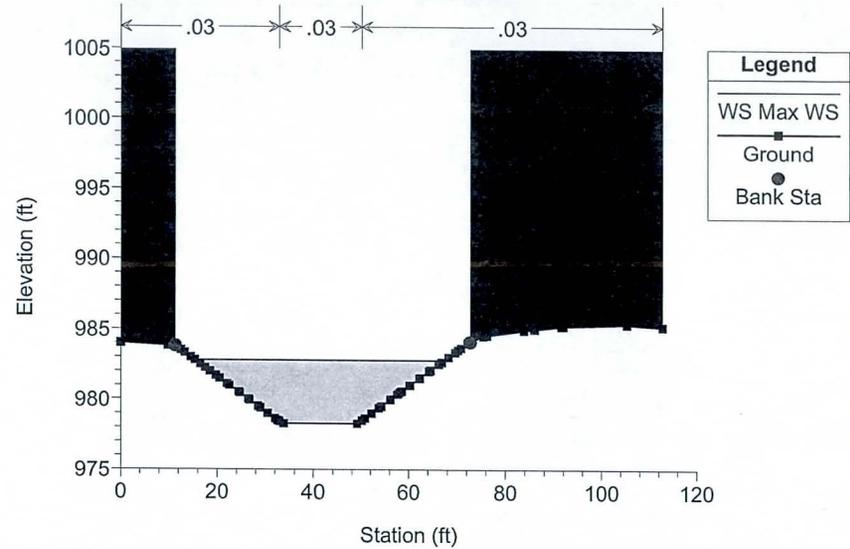
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17267.52



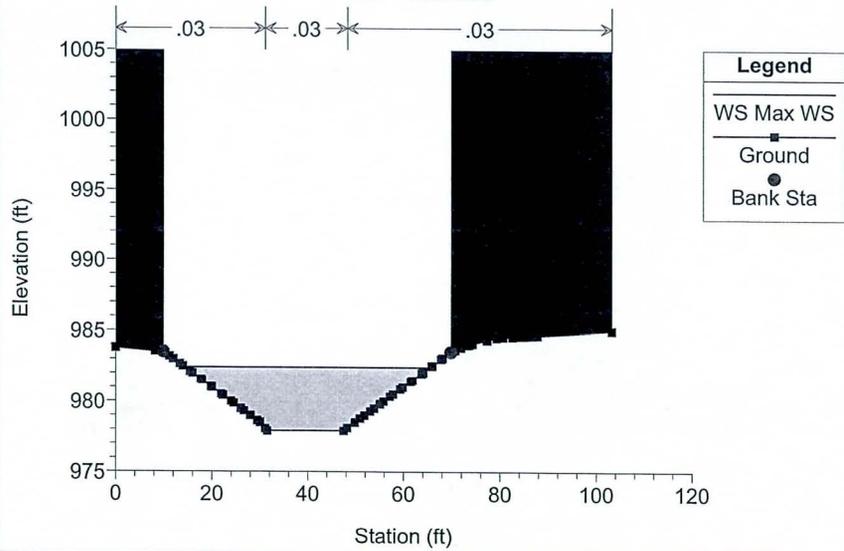
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 17095.16



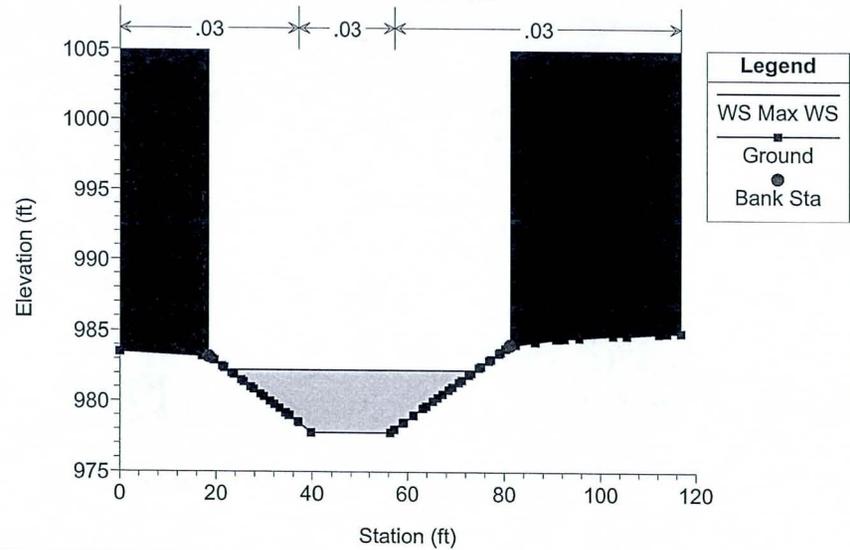
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16919.28



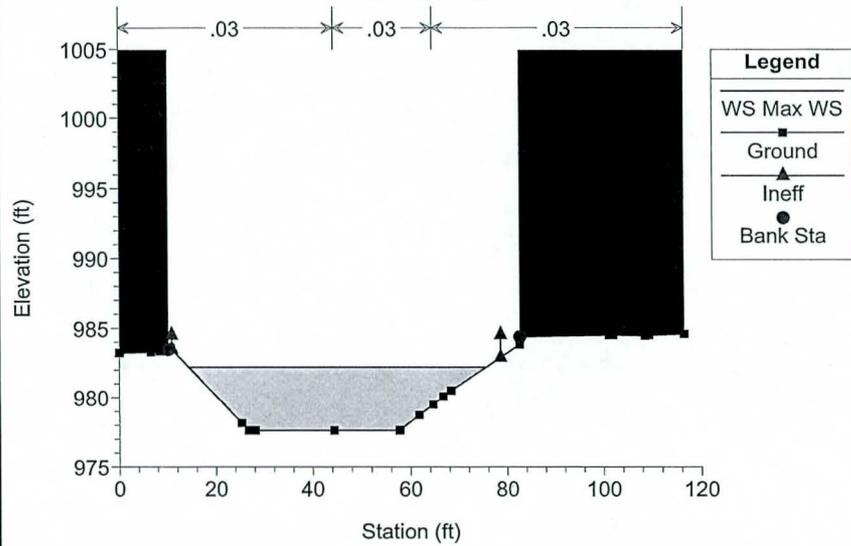
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16821.09



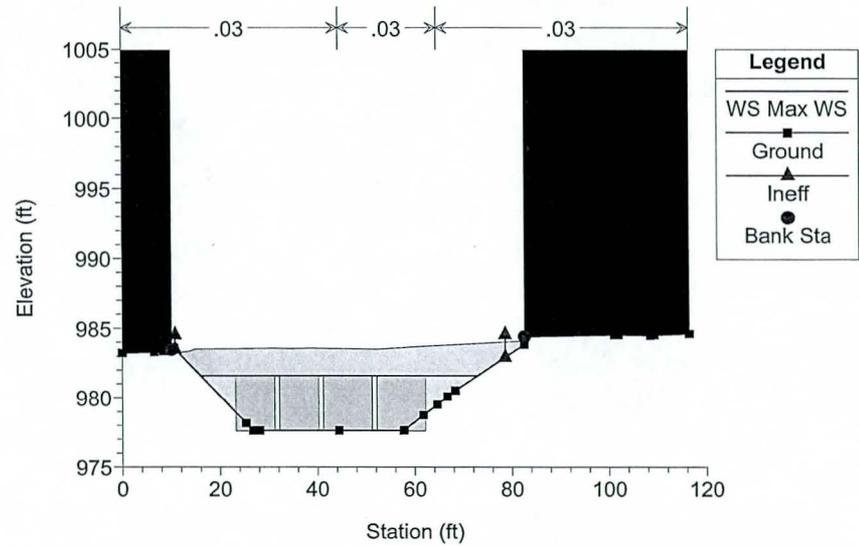
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16704.19



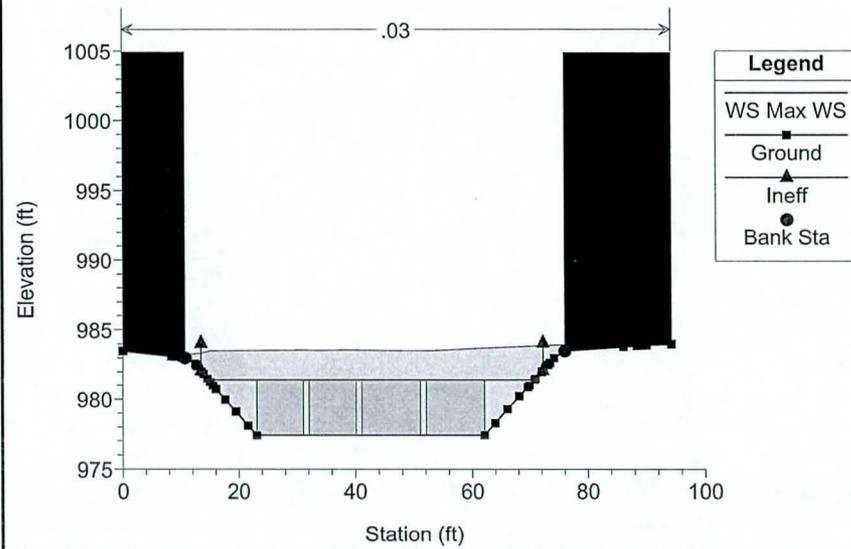
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16631.38 Culv SD-40 PP's E of 99th. 2-8x4 & 2-10x4 -----> Increased m



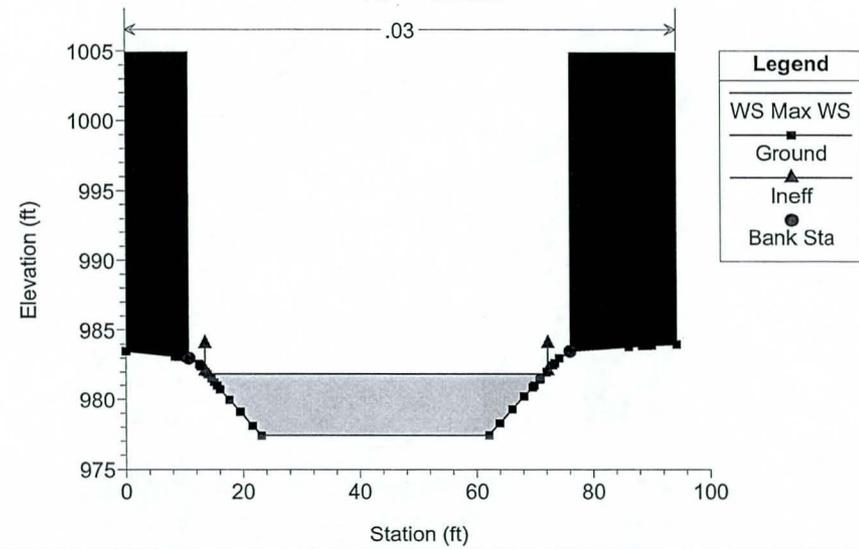
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16631.38 Culv SD-40 PP's E of 99th. 2-8x4 & 2-10x4 -----> Increased m



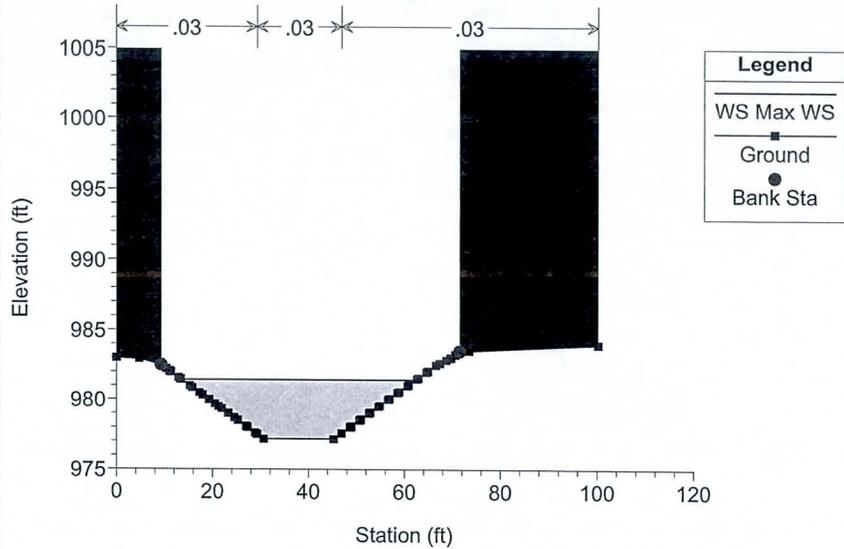
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16558.39



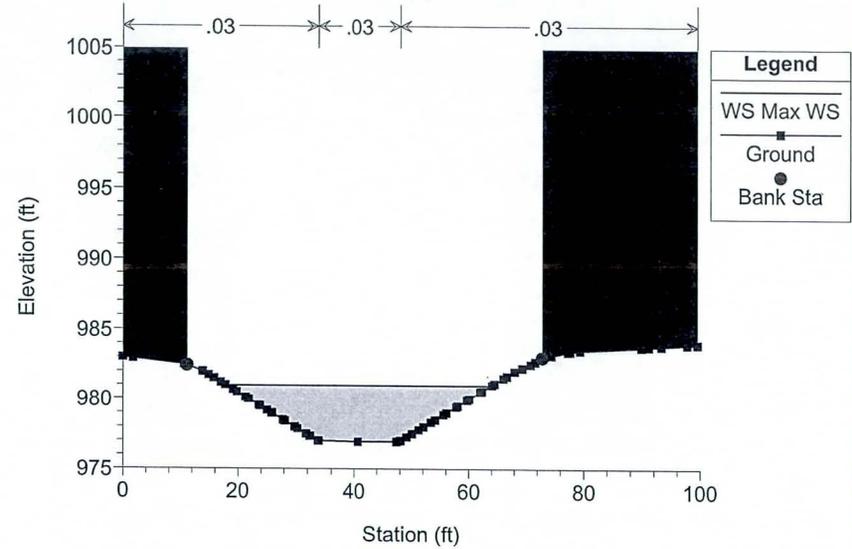
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16427.74



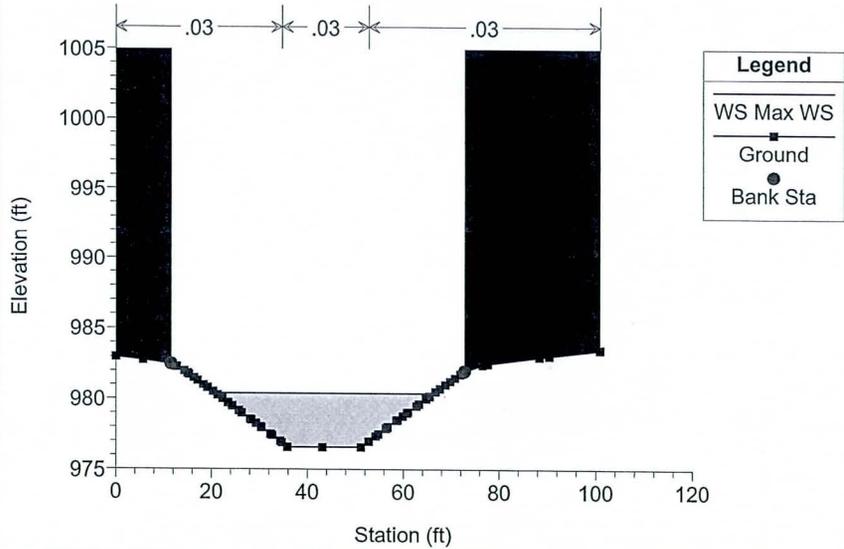
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16304.85



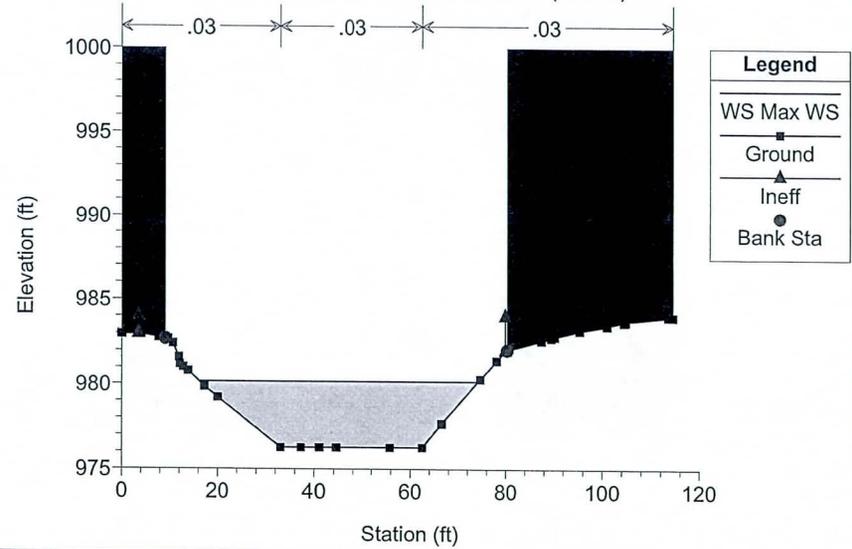
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 16164.04

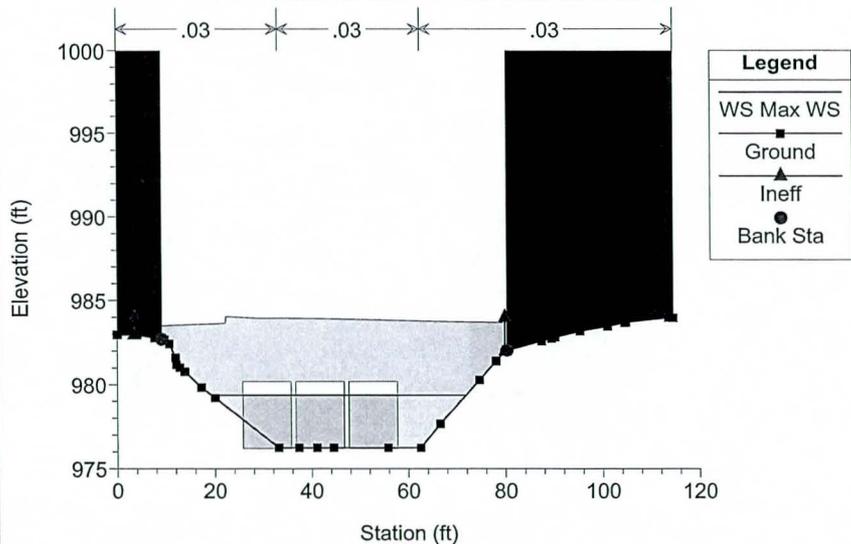


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

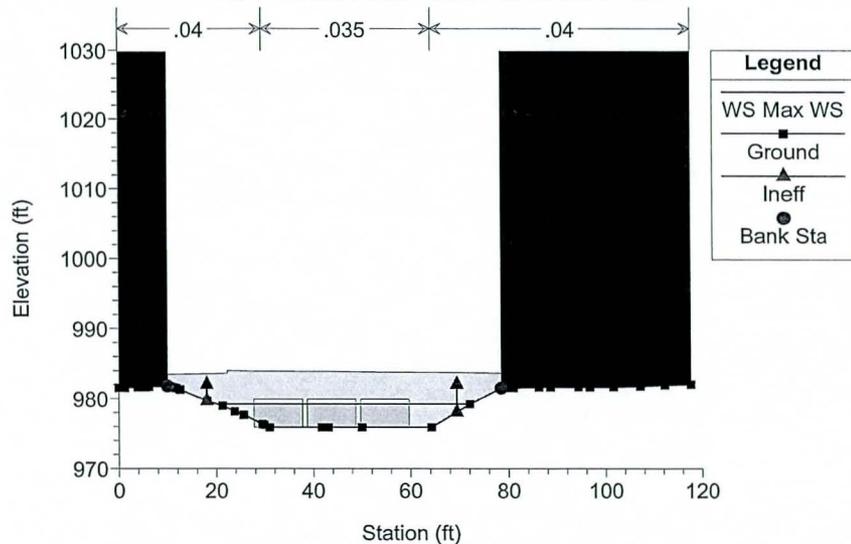
RS = 15983.03 99th Ave. 4-10x4 (No. 10) US



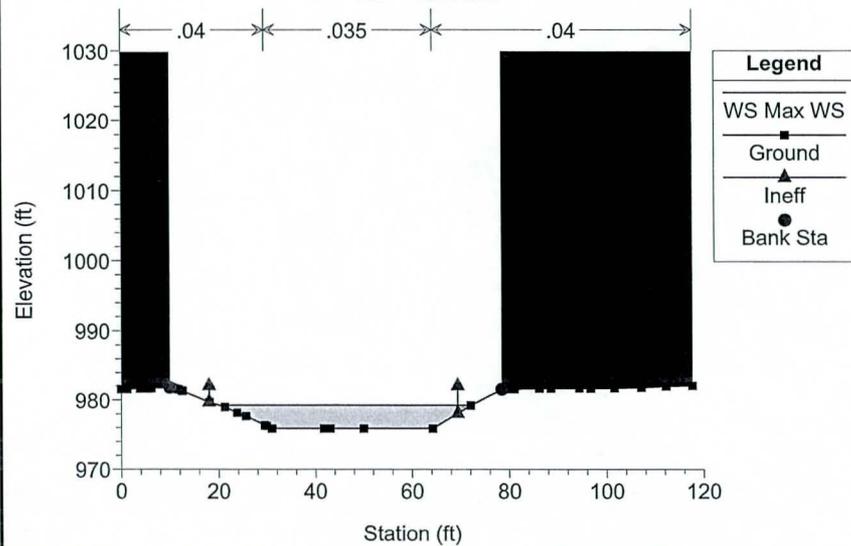
RS = 15897.38 Culv SD-35 99th Ave. 3-10x4



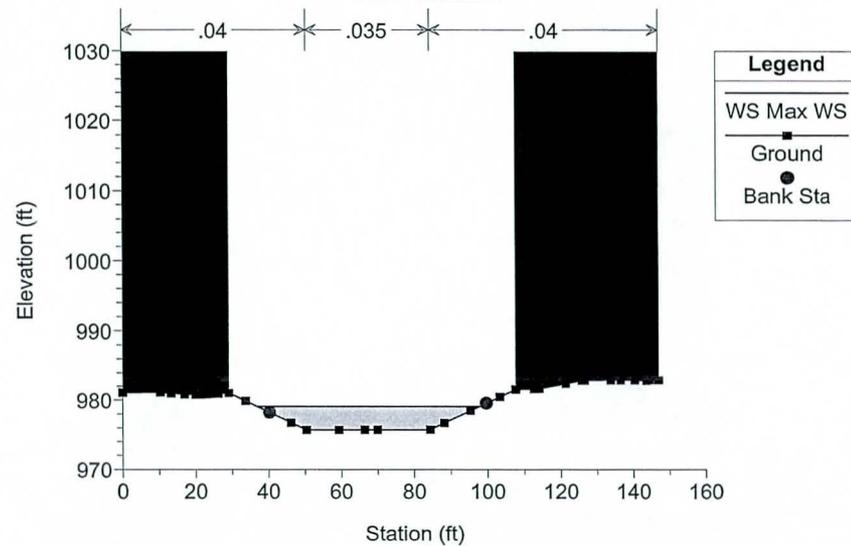
RS = 15897.38 Culv SD-35 99th Ave. 3-10x4



RS = 15811.39

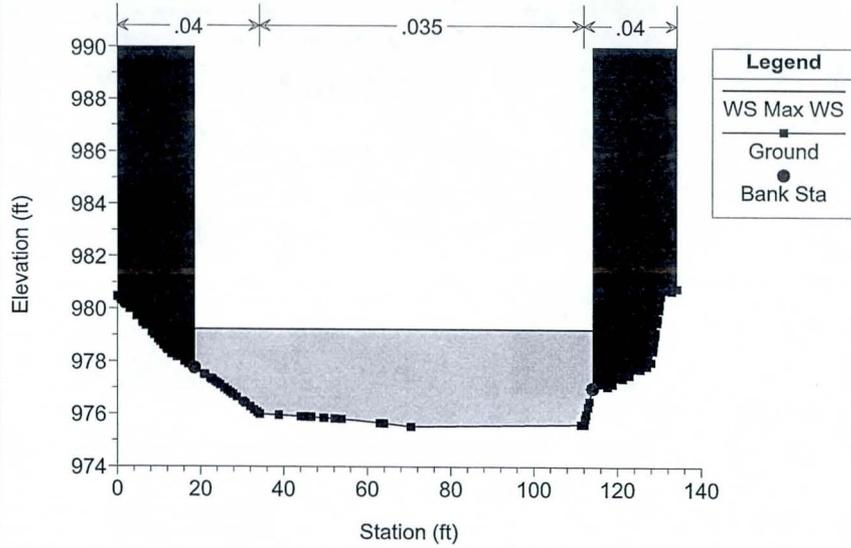


RS = 15728.14



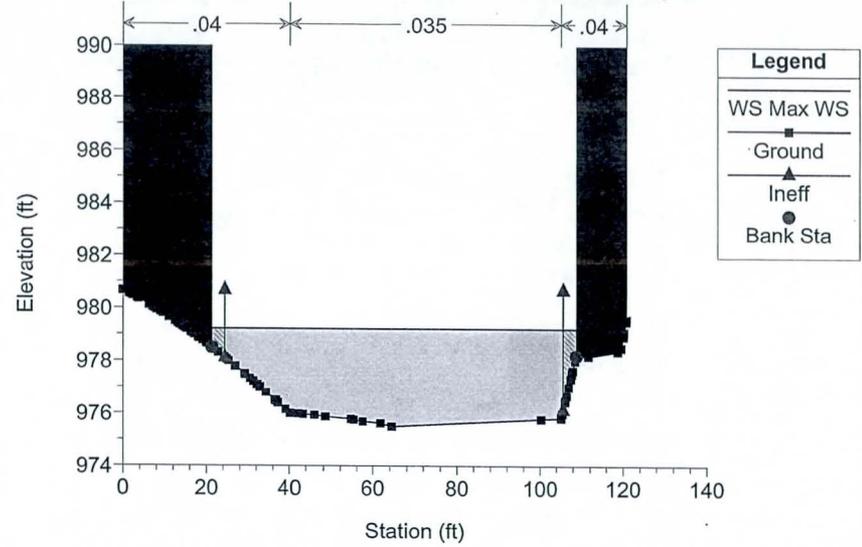
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 15646.16



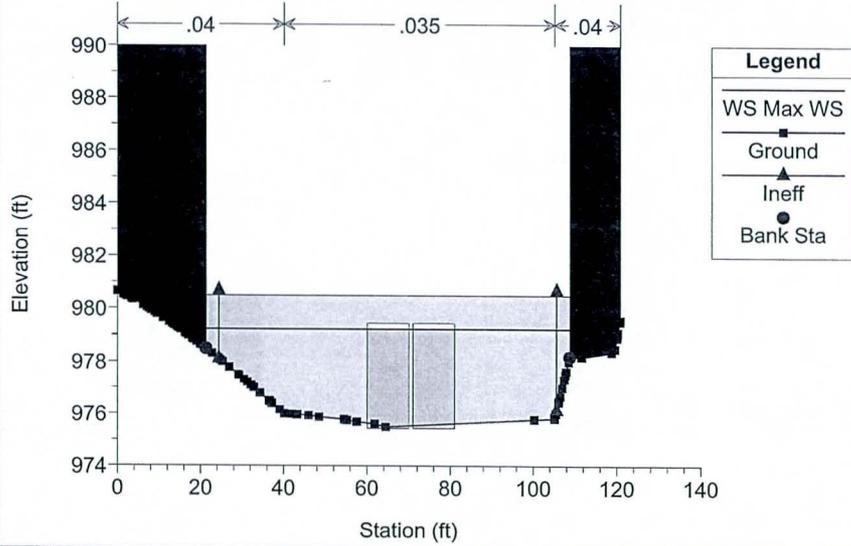
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 15633.63 Crossover W. of 99th Ave (No. 9) US



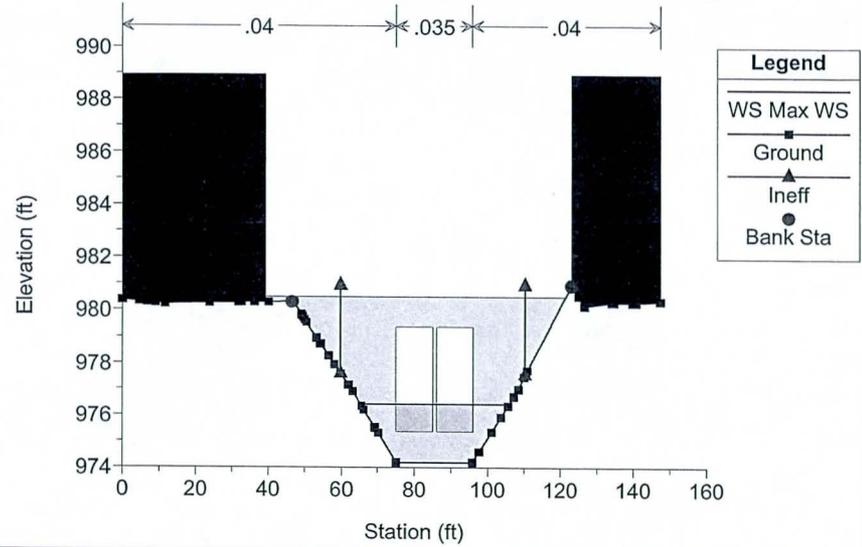
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 15592.38 Culv SD-30 Crossover W. of 99th Ave 2-10x4

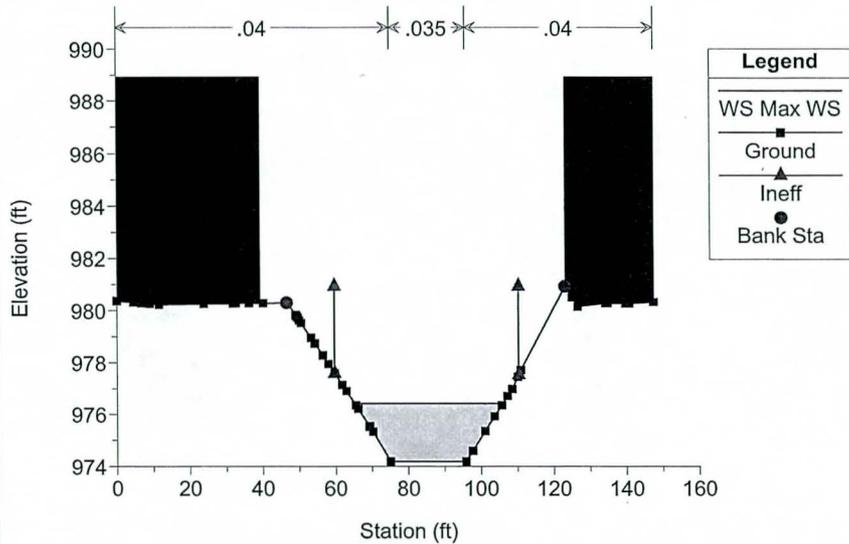


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

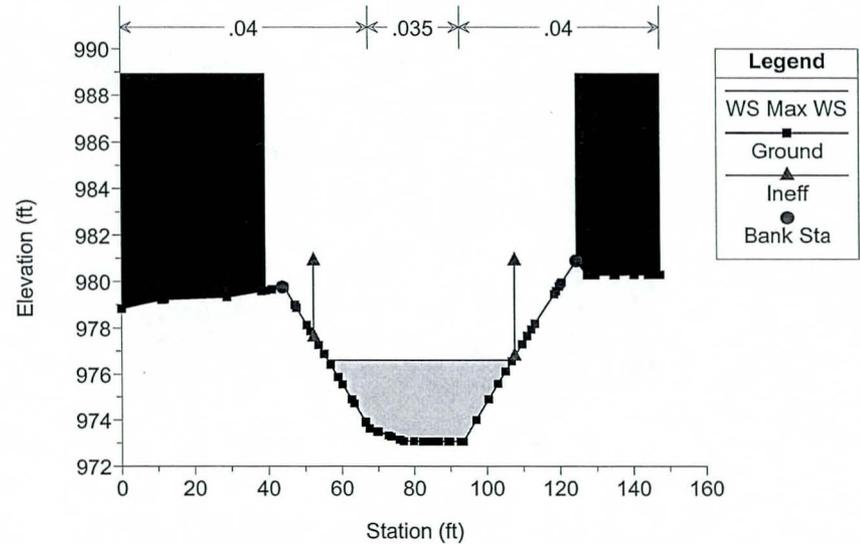
RS = 15592.38 Culv SD-30 Crossover W. of 99th Ave 2-10x4



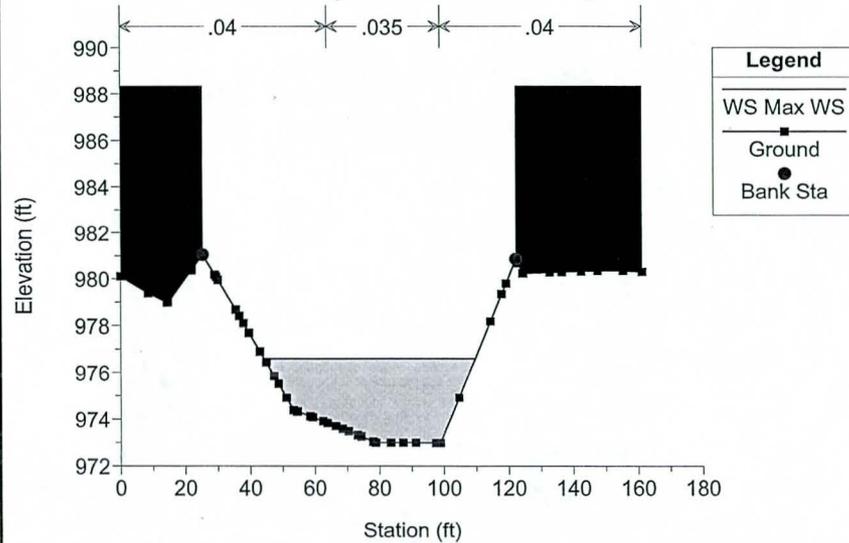
RS = 15551.85



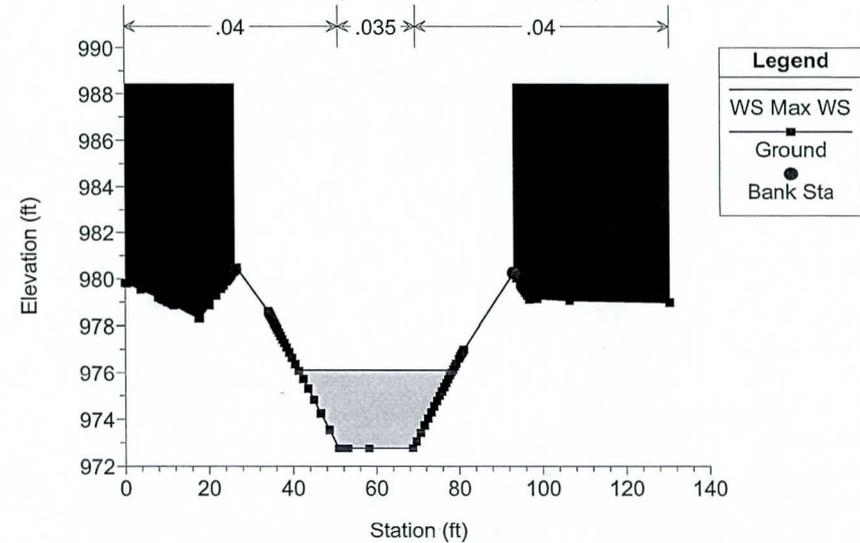
RS = 15530.00 copy of upstream cross-section and modified channel bottom to re



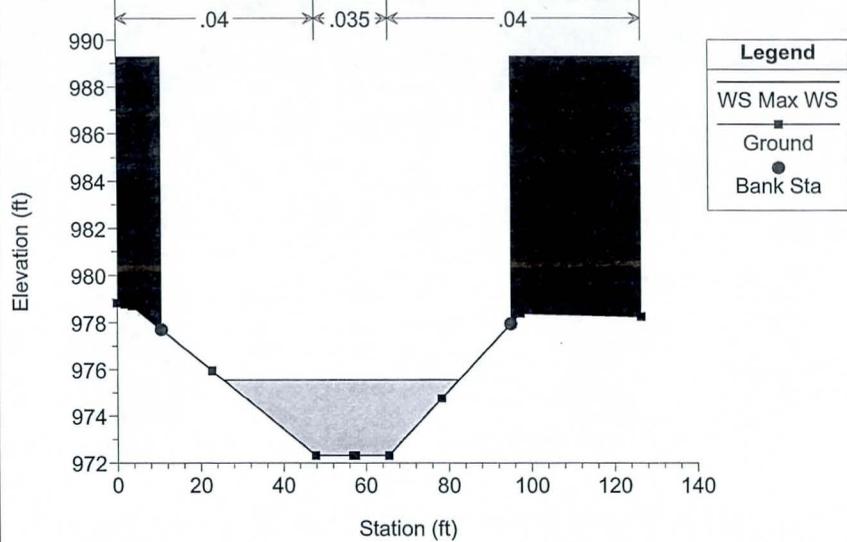
RS = 15484.92 adjusted all elevations -1.66' per JJH Nov 30



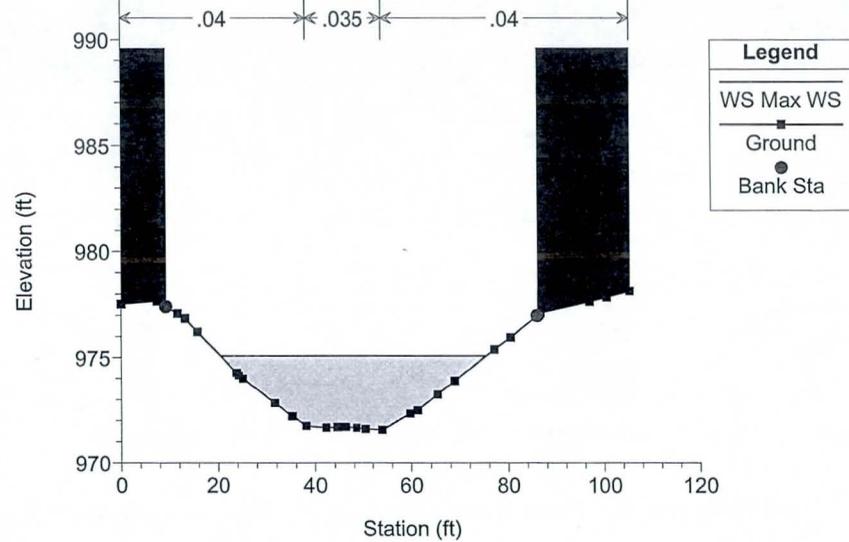
RS = 15367.25 adjusted all elevations -1.56' per JJH Nov 30



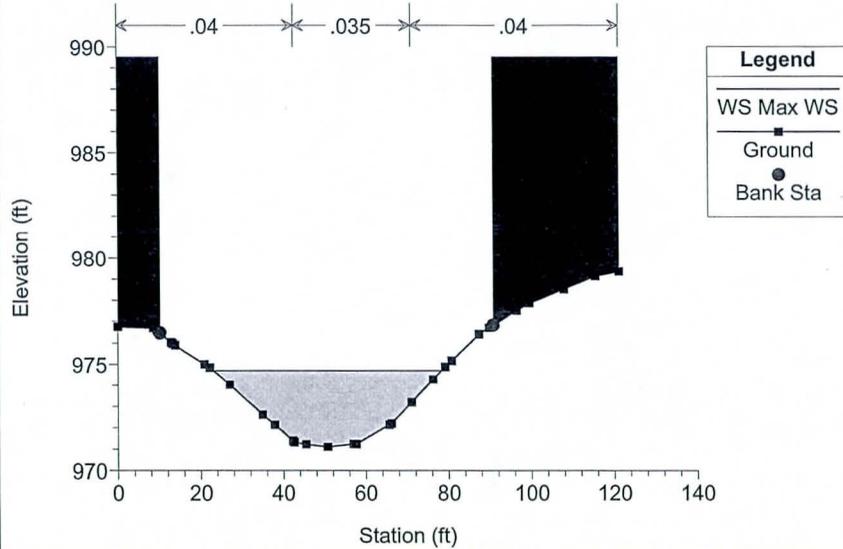
RS = 15150.55 adjusted all elevations -0.70' per JJH Nov 30



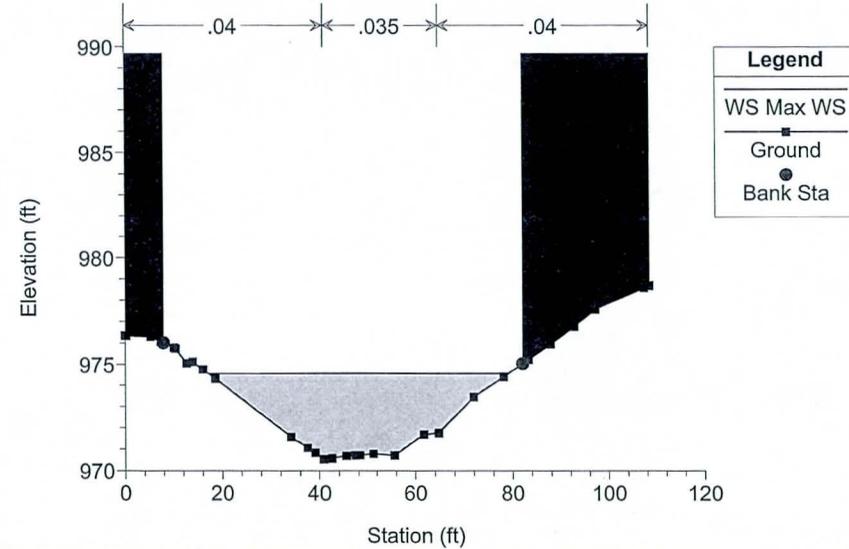
RS = 14929.12 Nov 30, 2010 - adjusted all elevations -0.39' to match existing



RS = 14714.37 Nov 30, 2010 - adjusted all elevations -0.47' to match existing

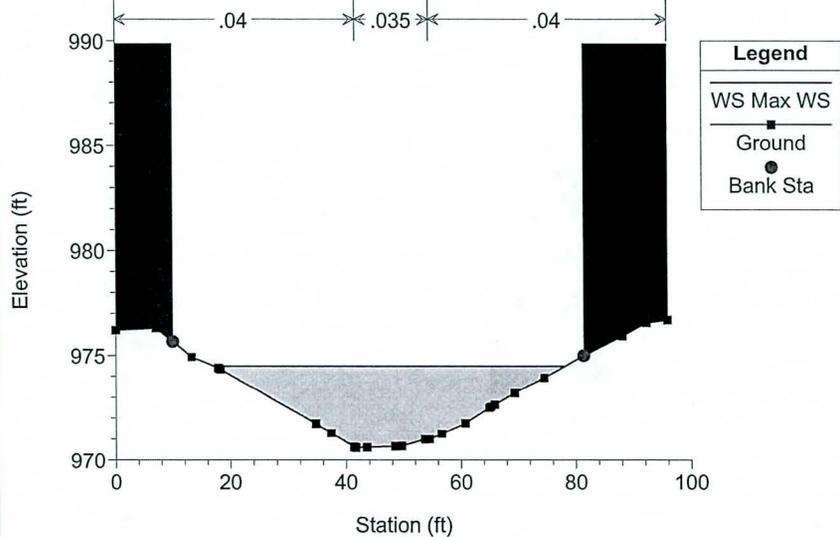


RS = 14499.18 Nov 30, 2010 - adjusted all elevations -0.30' to match existing



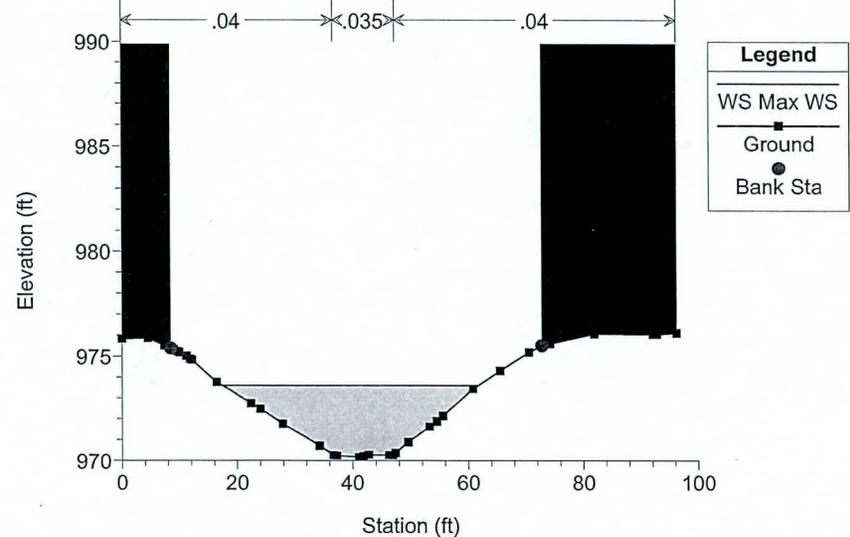
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 14438.11 Nov 30, 2010 - adjusted all elevations -0.12' to match existing



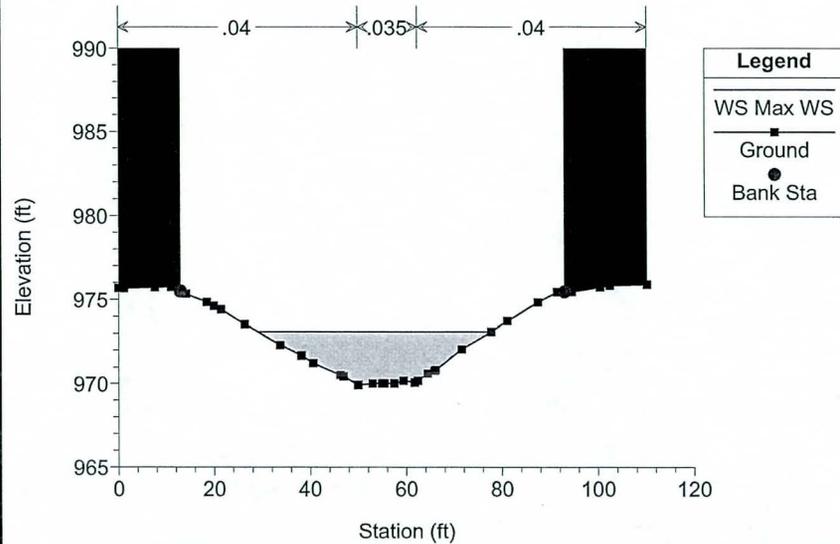
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 14332.18 Nov 30, 2010 - adjusted all elevations -0.11' to match existing



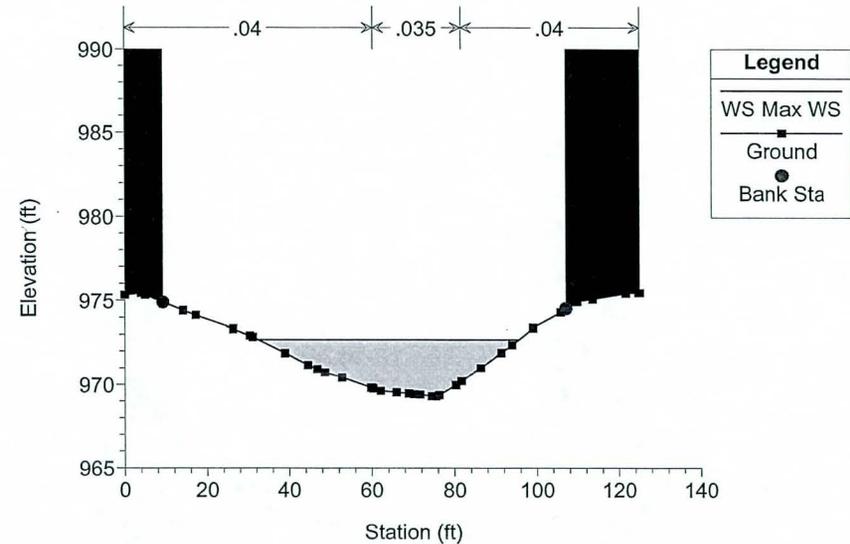
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 14249.9

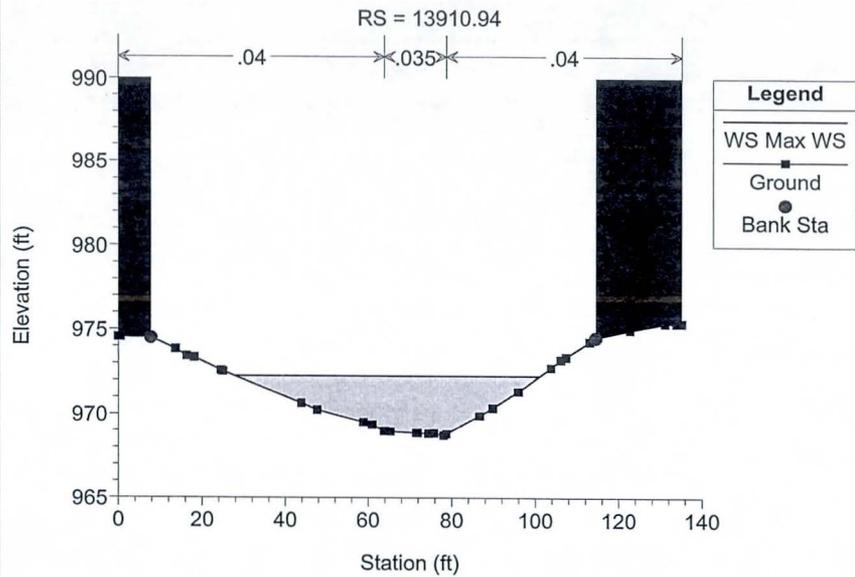


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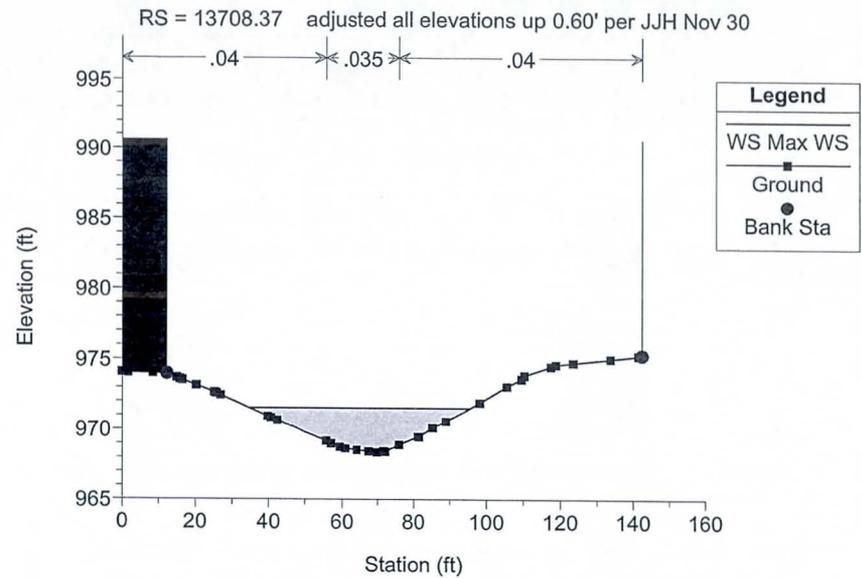
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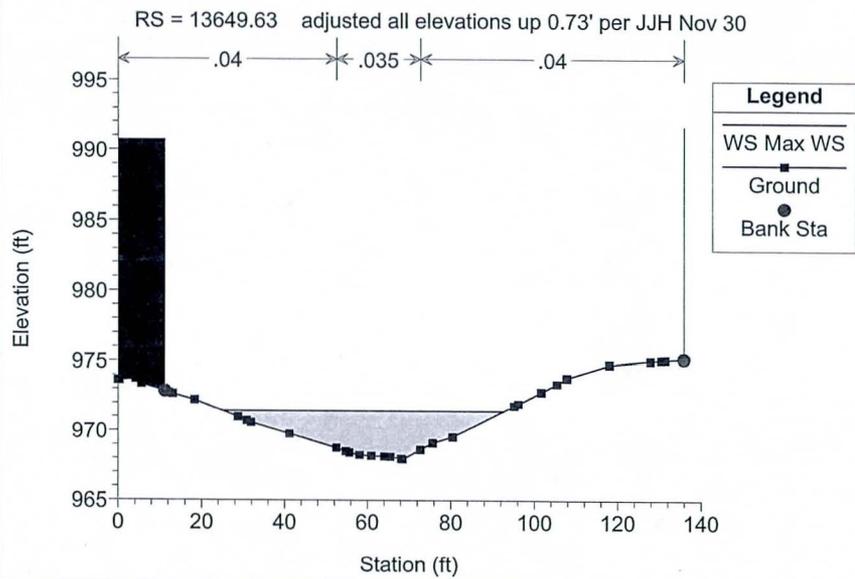
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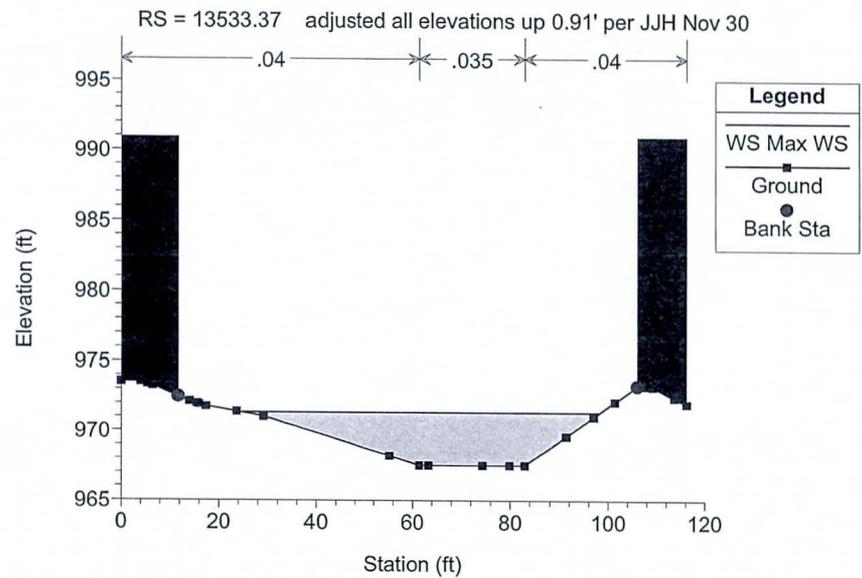
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9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

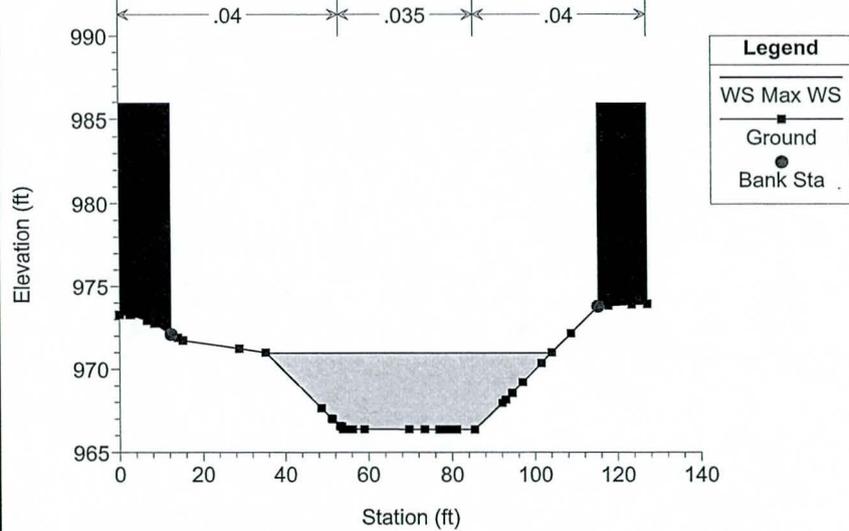


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011



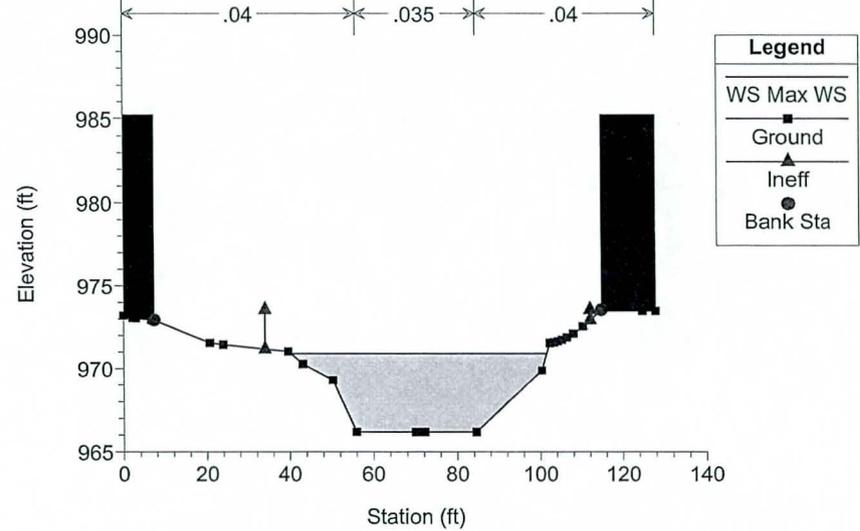
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RS = 13373.25 adjusted all elevations up 0.96' per JJH Nov 30



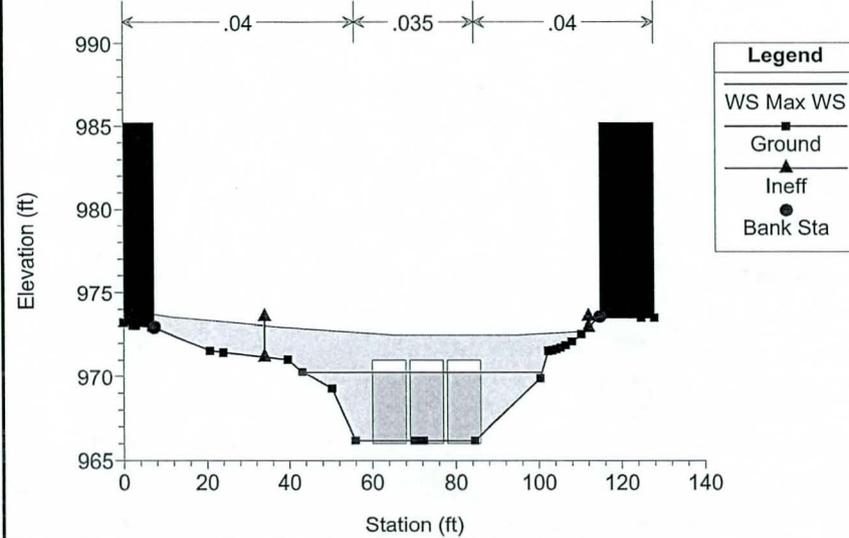
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 13345.77 adjusted all elevations up 0.21' per JJH Nov 30



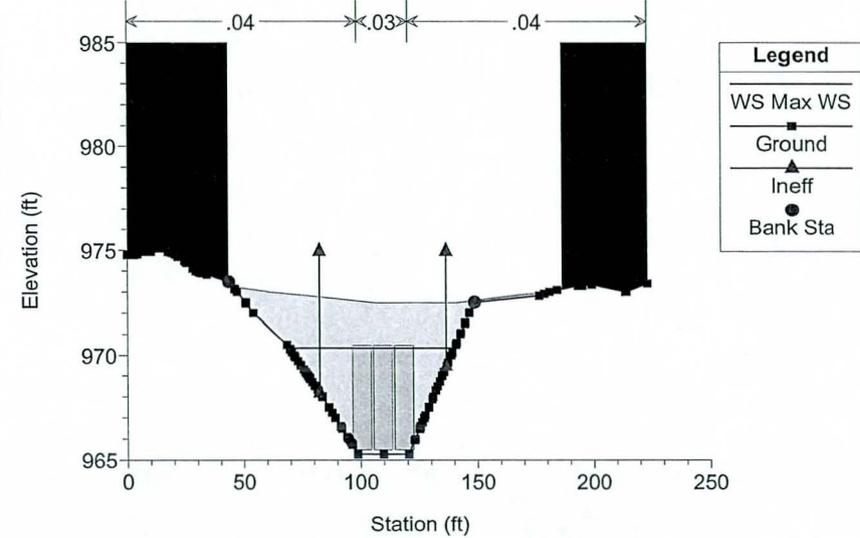
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 13278.38 Culv SD-20 103rd Ave 3-8x5

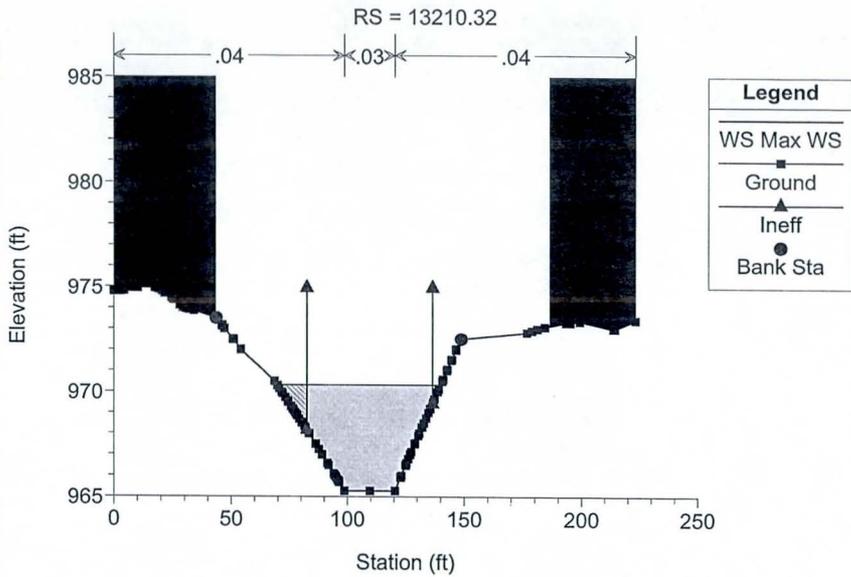


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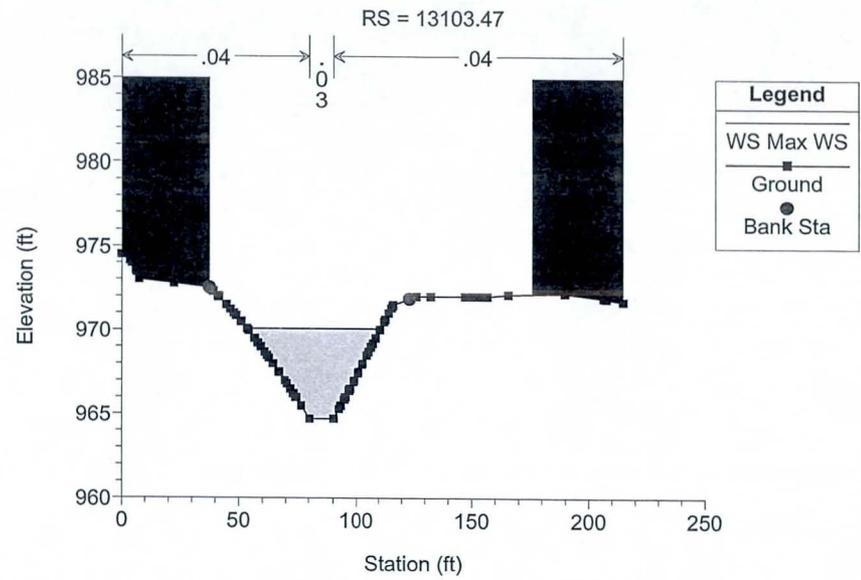
RS = 13278.38 Culv SD-20 103rd Ave 3-8x5



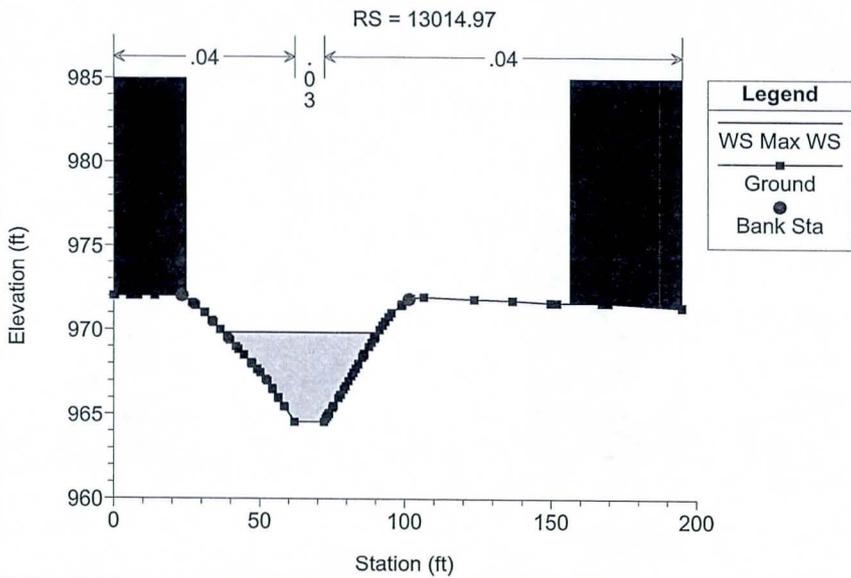
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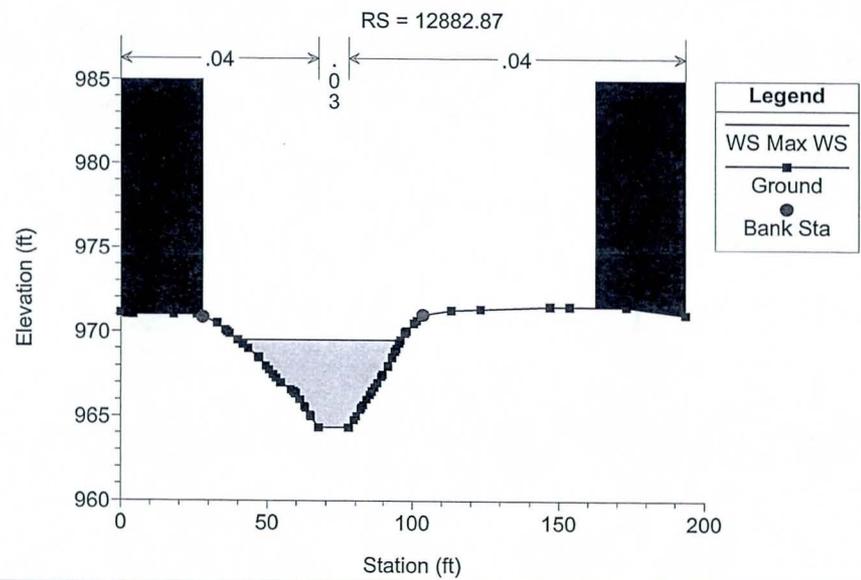
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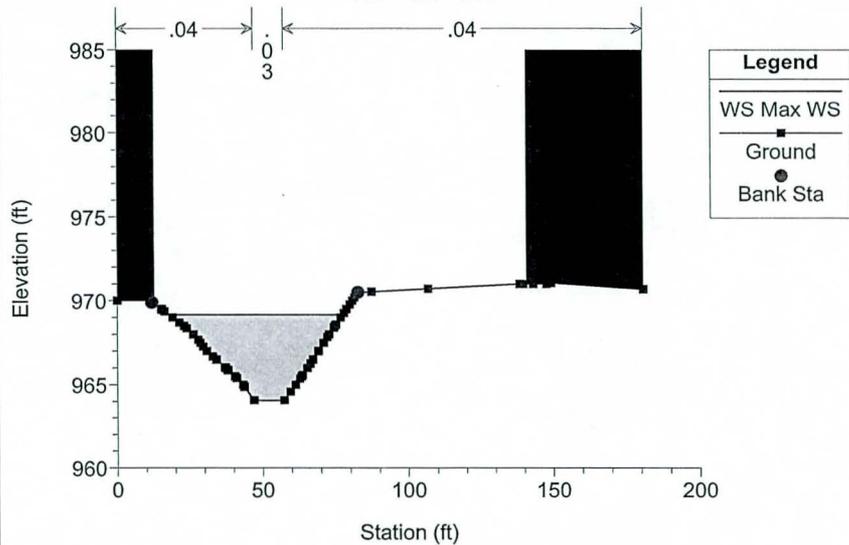
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011



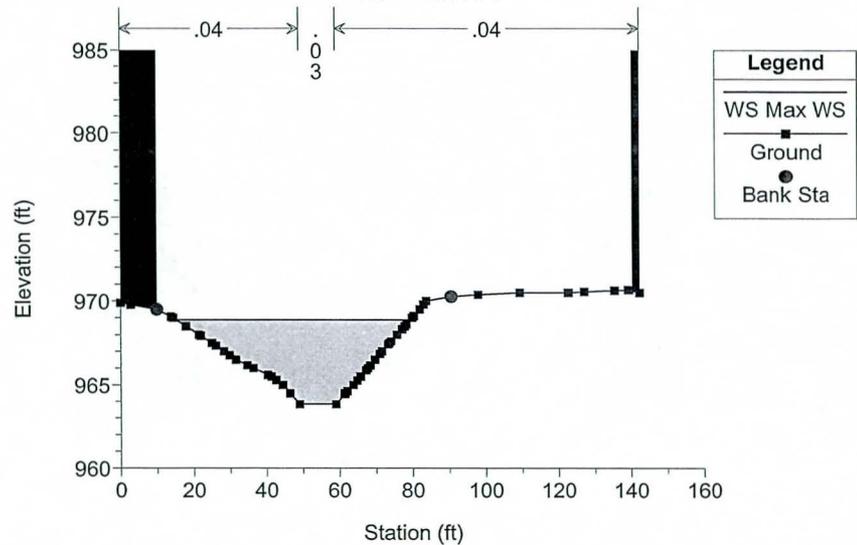
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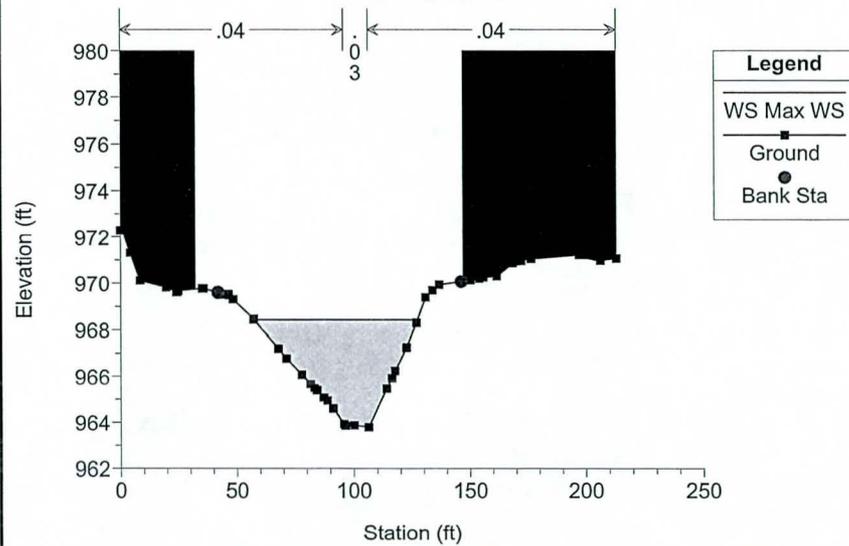
RS = 12745.94



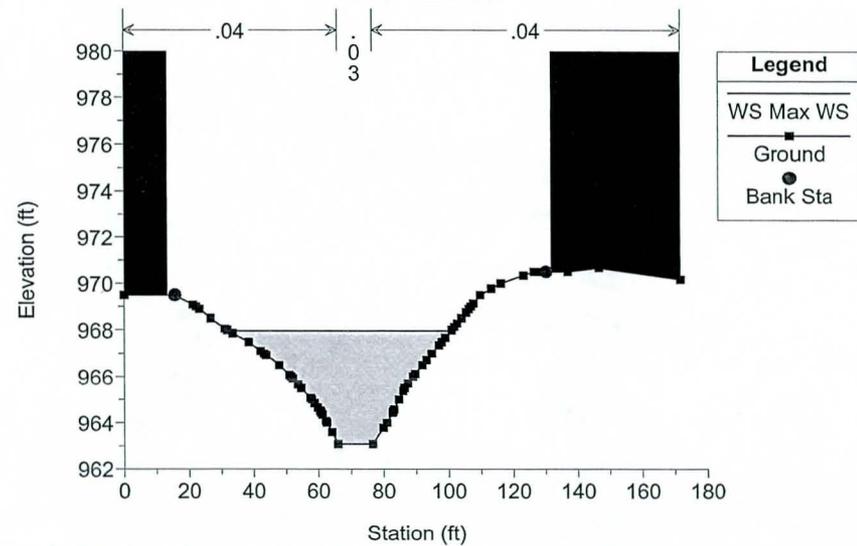
RS = 12619.71



RS = 12410.35

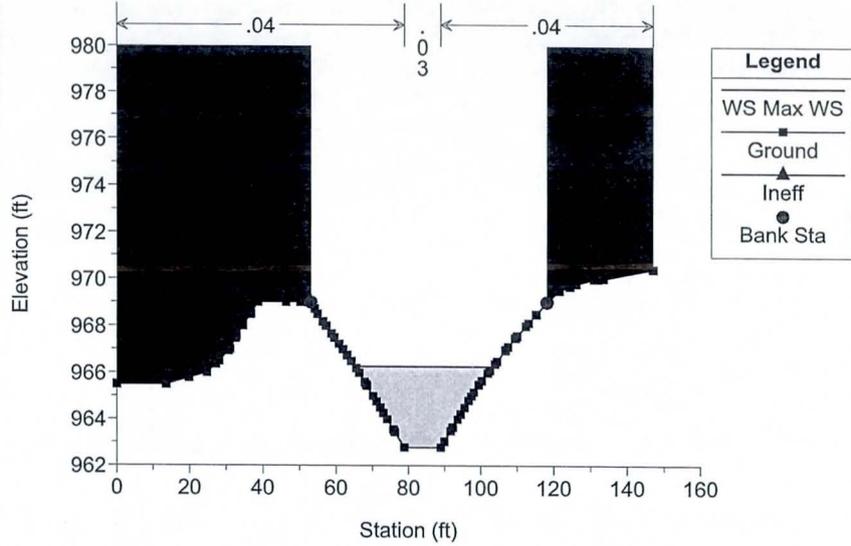


RS = 12195.44



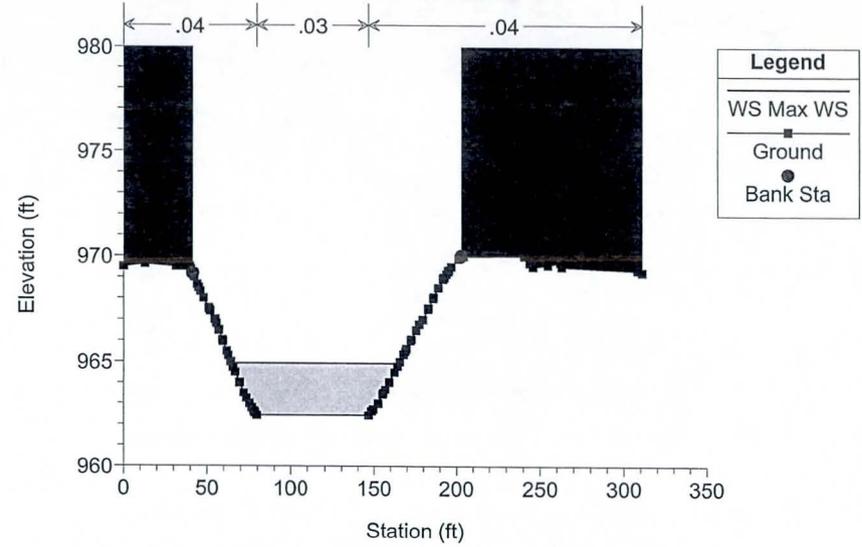
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RS = 12026.49



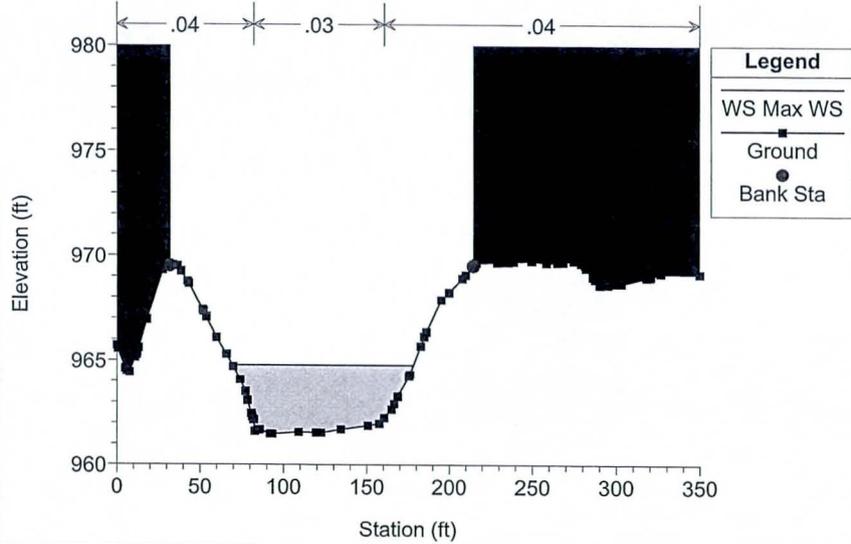
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RS = 11830.73



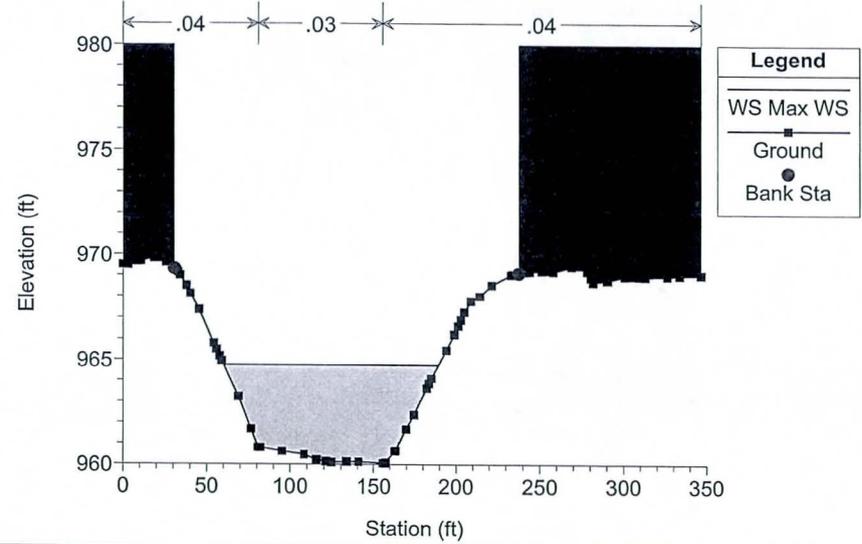
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RS = 11601.37

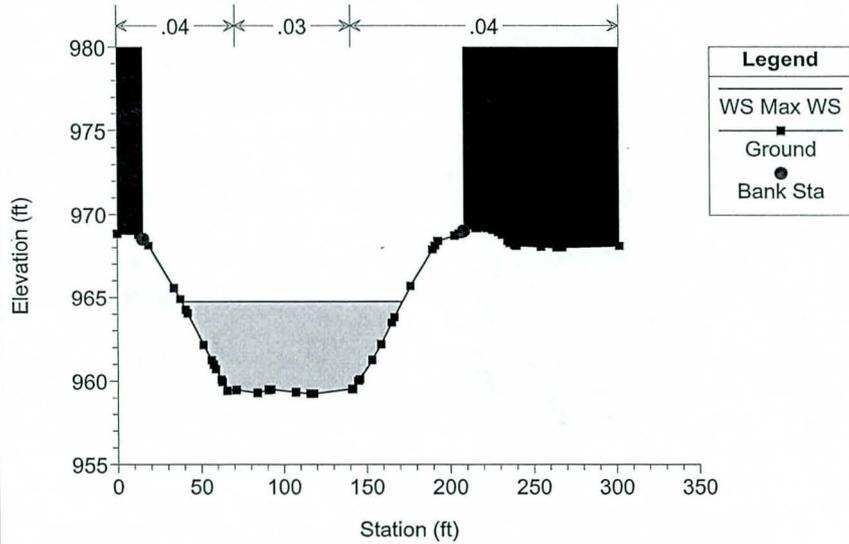


9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

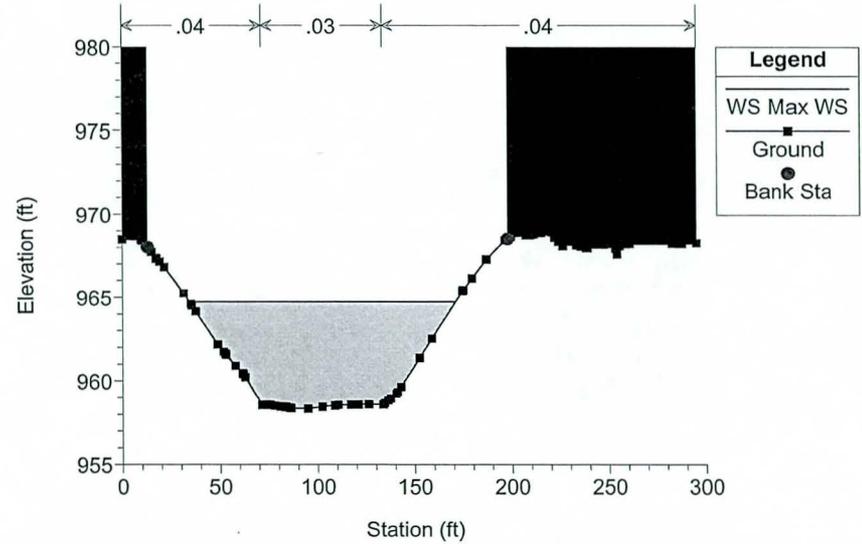
RS = 11392.42



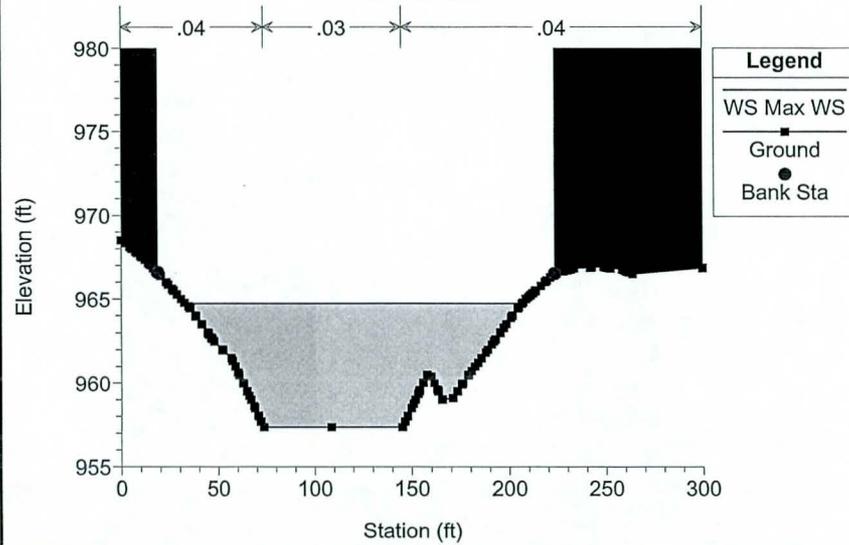
RS = 11209.57



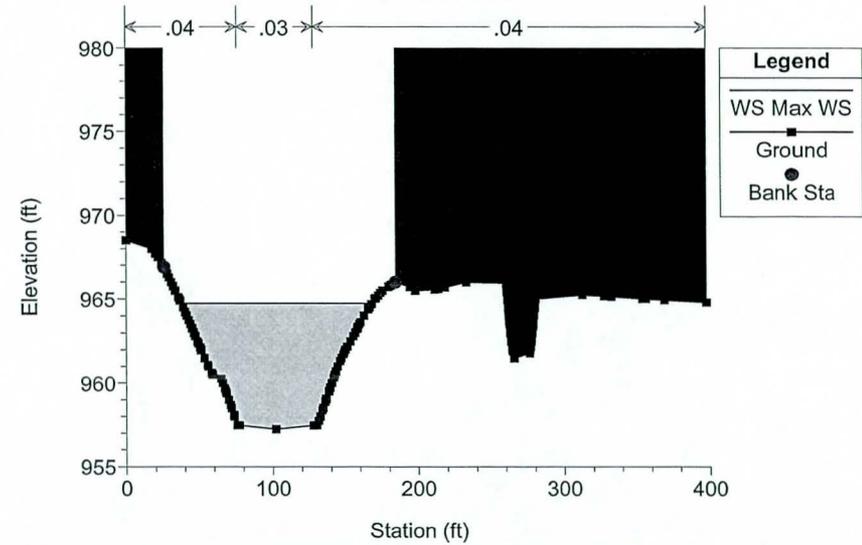
RS = 11011.21



RS = 10788.03

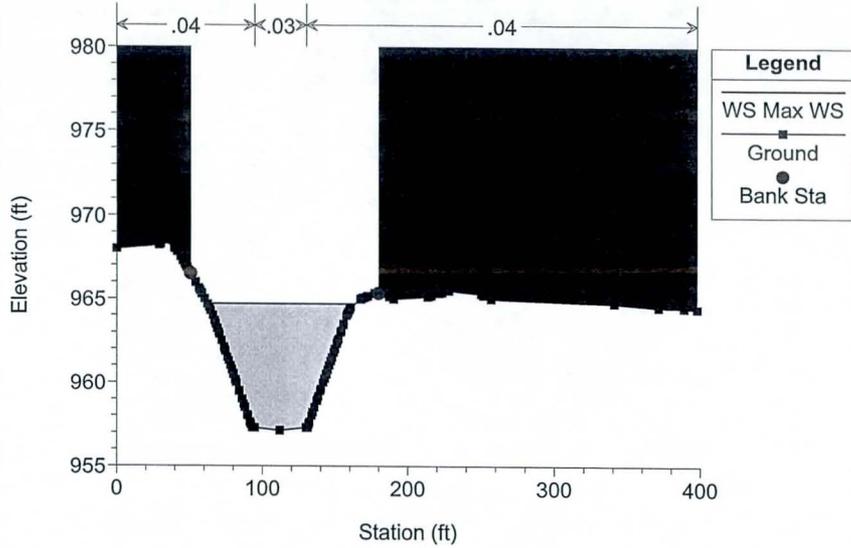


RS = 10684.54



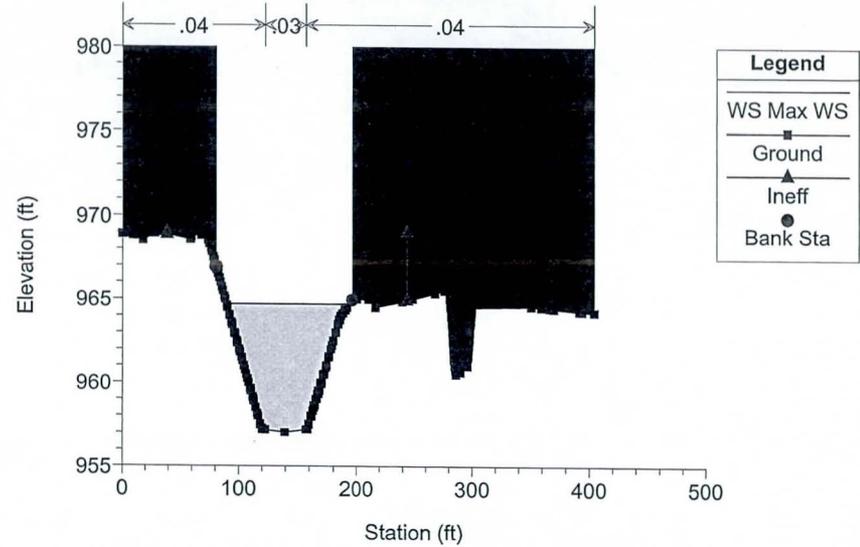
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RS = 10561.2



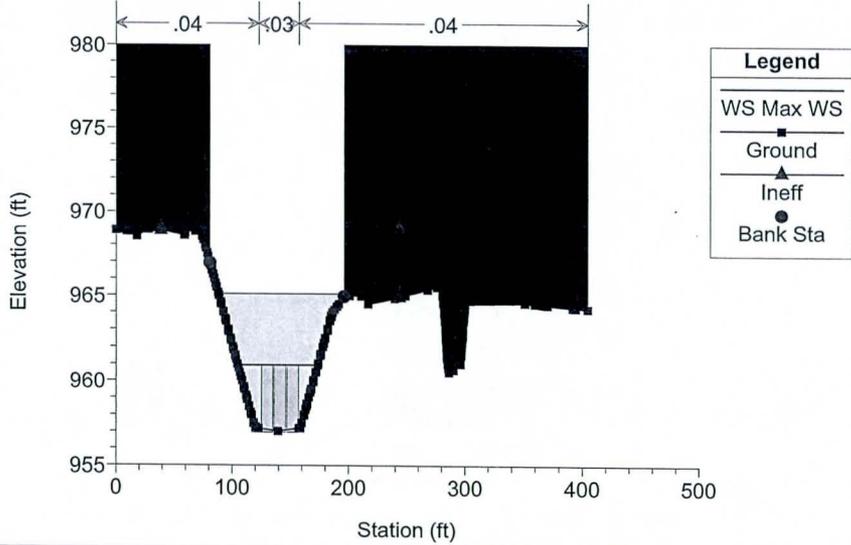
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RS = 10461.87



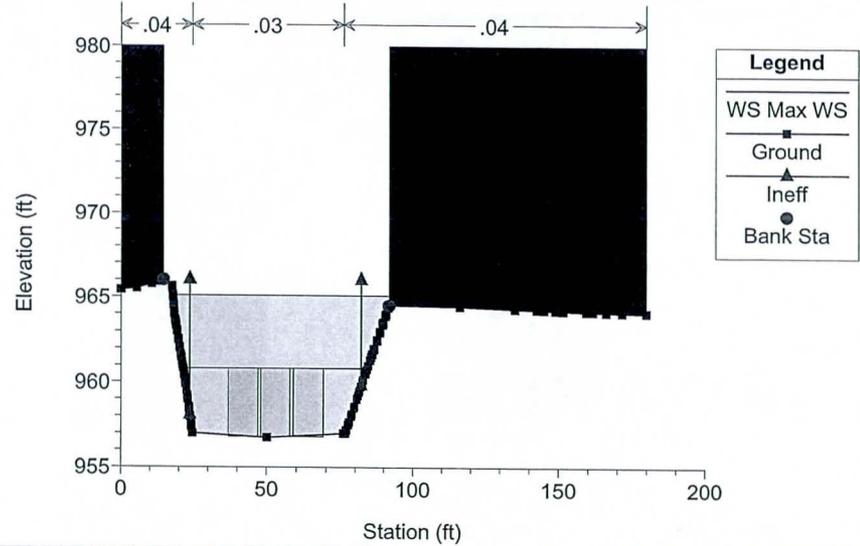
9-16-11 FINAL PS&E Submit Plan: 9-9-11 Final 100% PS&E Submittal 9/14/2011

RS = 10356.38 Culv SD-5 107th Ave- Future 3-10x4



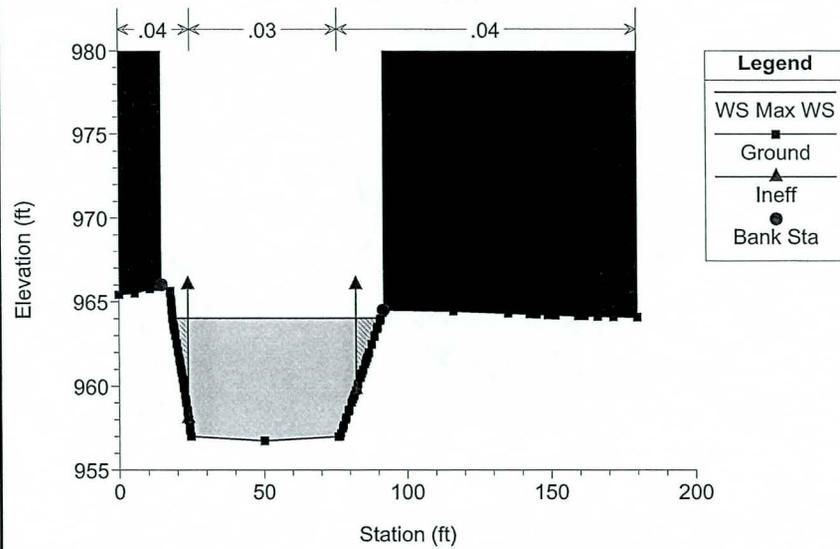
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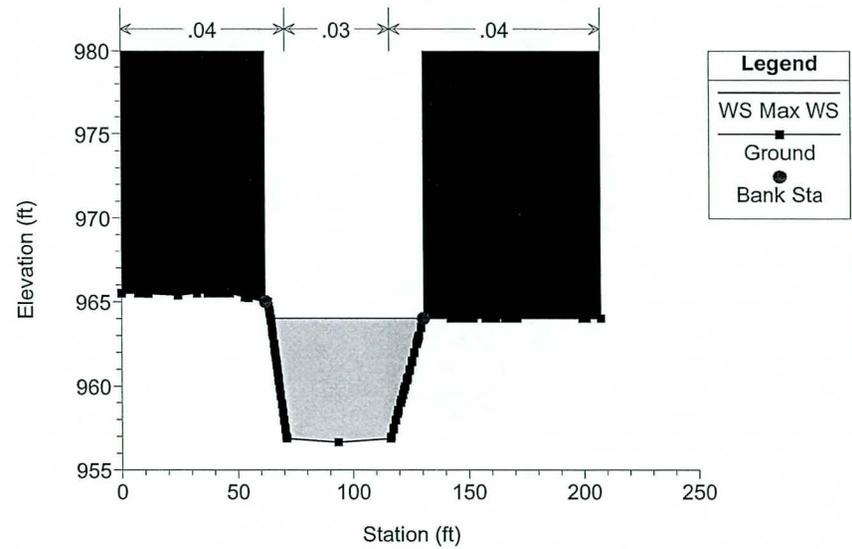
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RS = 10250.61



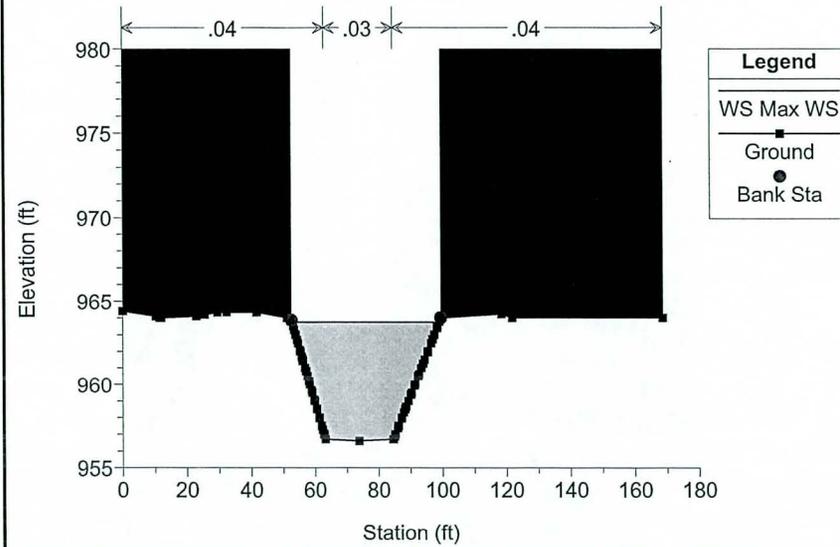
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RS = 10188.73



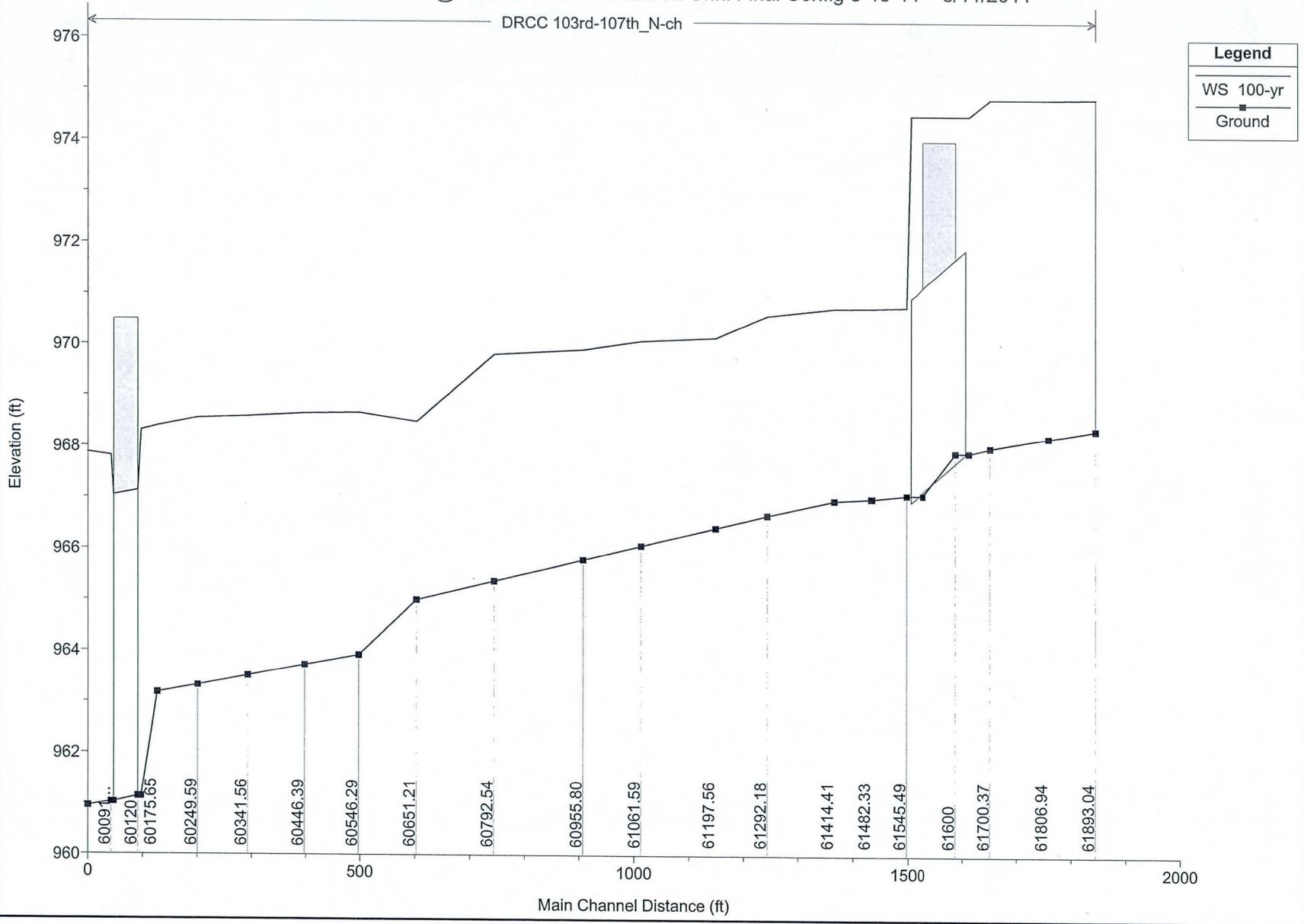
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RS = 10153.57



100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011

DRCC 103rd-107th_N-ch



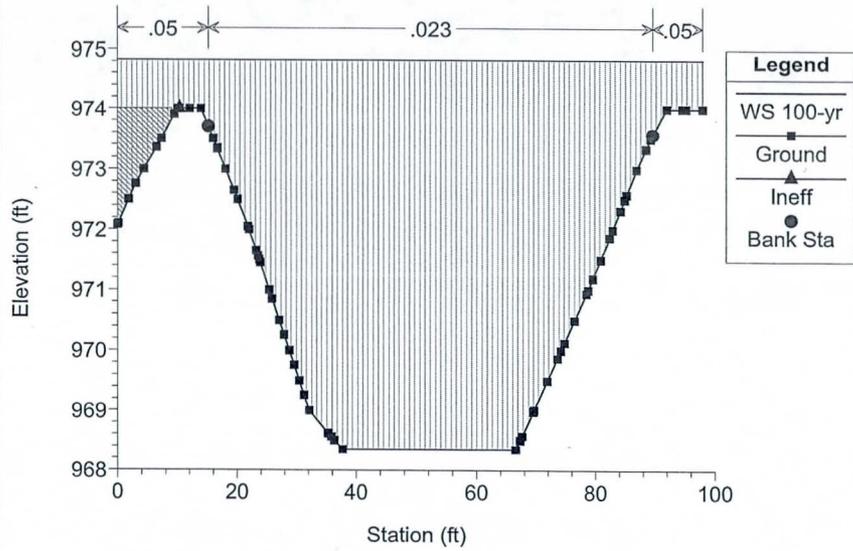
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HEC-RAS Plan: N.Chnl 100% PS&E River: DRCC Reach: 103rd-107th N-ch Profile: 100-yr

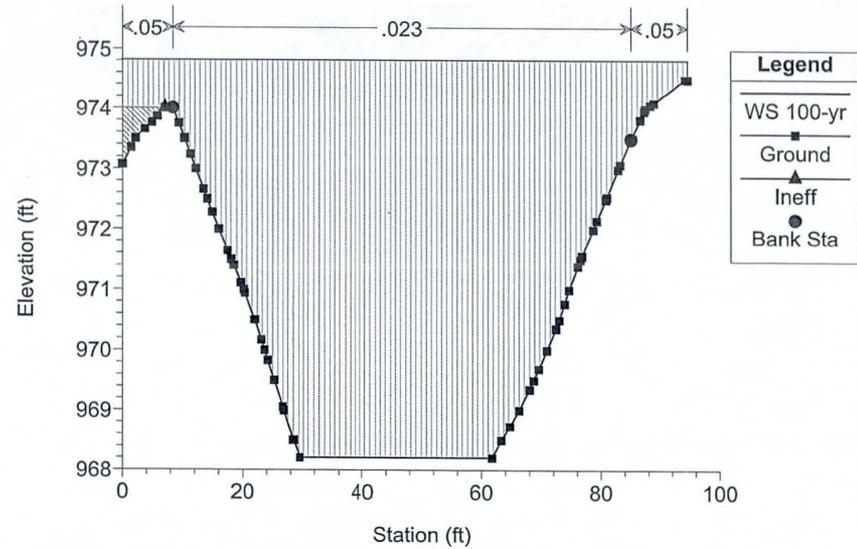
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
103rd-107th_N-ch	61893.04	100-yr	1118.00	968.35	974.83		974.97	0.000264	3.01	388.54	97.91	0.24
103rd-107th_N-ch	61806.94	100-yr	1118.00	968.20	974.81		974.94	0.000239	2.90	397.87	94.59	0.23
103rd-107th_N-ch	61700.37	100-yr	1118.00	968.00	974.81	970.79	974.91	0.000186	2.55	503.55	178.24	0.20
103rd-107th_N-ch	61660.70	100-yr	1118.00	967.90	974.48	971.29	974.82	0.000618	4.86	318.82	160.13	0.34
103rd-107th_N-ch	61600											
103rd-107th_N-ch	61545.49	100-yr	1118.00	967.07	970.76	970.76	972.56	0.006800	10.78	103.75	28.59	1.00
103rd-107th_N-ch	61482.33	100-yr	1118.00	967.00	970.74		970.85	0.000395	2.70	414.58	135.48	0.27
103rd-107th_N-ch	61414.41	100-yr	1118.00	966.96	970.74		970.82	0.000273	2.37	470.96	141.00	0.23
103rd-107th_N-ch	61292.18	100-yr	1118.00	966.67	970.59		970.76	0.000684	3.39	329.93	115.42	0.35
103rd-107th_N-ch	61197.56	100-yr	1118.00	966.42	970.15		970.63	0.001813	5.58	200.23	68.90	0.57
103rd-107th_N-ch	61061.59	100-yr	1118.00	966.07	970.08		970.40	0.001095	4.51	247.96	80.12	0.45
103rd-107th_N-ch	60955.80	100-yr	1118.00	965.79	969.91		970.27	0.001230	4.82	231.72	73.62	0.48
103rd-107th_N-ch	60792.54	100-yr	1118.00	965.37	969.81		970.08	0.000817	4.13	270.53	79.80	0.40
103rd-107th_N-ch	60651.21	100-yr	1118.00	965.00	968.49	968.49	969.73	0.005818	8.97	124.66	49.92	1.00
103rd-107th_N-ch	60546.29	100-yr	1118.00	963.92	968.66	966.86	968.81	0.000561	3.09	361.51	157.76	0.32
103rd-107th_N-ch	60446.39	100-yr	1118.00	963.72	968.65		968.75	0.000444	2.53	441.06	172.72	0.28
103rd-107th_N-ch	60341.56	100-yr	1118.00	963.51	968.59		968.70	0.000503	2.64	423.36	171.18	0.30
103rd-107th_N-ch	60249.59	100-yr	1118.00	963.32	968.55	966.02	968.65	0.000492	2.49	448.29	241.16	0.29
103rd-107th_N-ch	60175.65	100-yr	1118.00	963.18	968.39		968.60	0.000540	3.64	307.12	80.07	0.33
103rd-107th_N-ch	60145.99	100-yr	1118.00	961.14	968.31	964.35	968.58	0.000450	4.15	269.43	47.27	0.30
103rd-107th_N-ch	60120											
103rd-107th_N-ch	60091.50	100-yr	1118.00	961.03	967.81	964.23	968.13	0.000476	4.56	245.01	43.36	0.31
103rd-107th_N-ch	60048.86	100-yr	1118.00	960.95	967.87	963.52	968.05	0.000207	3.37	331.84	192.21	0.23

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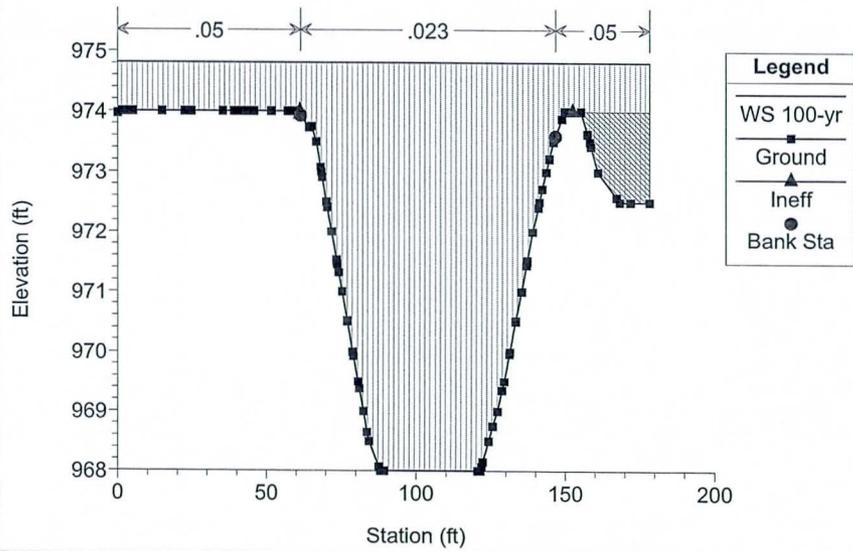
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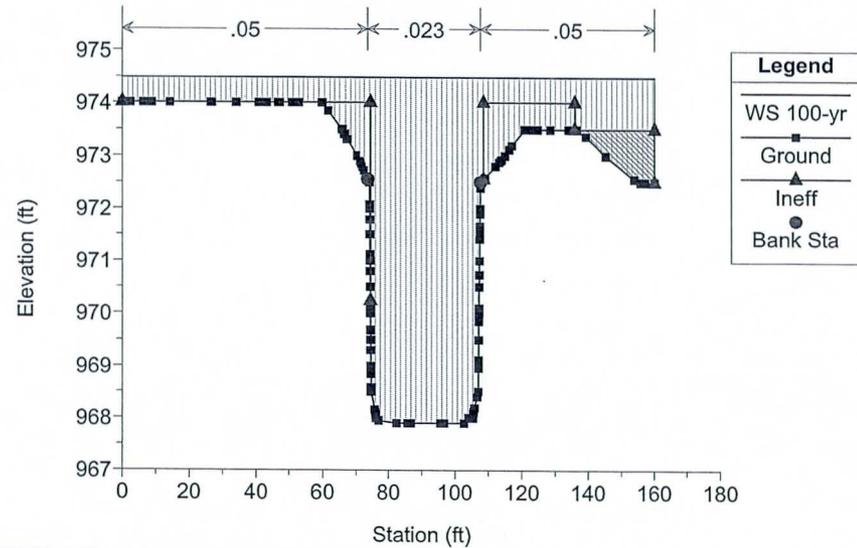
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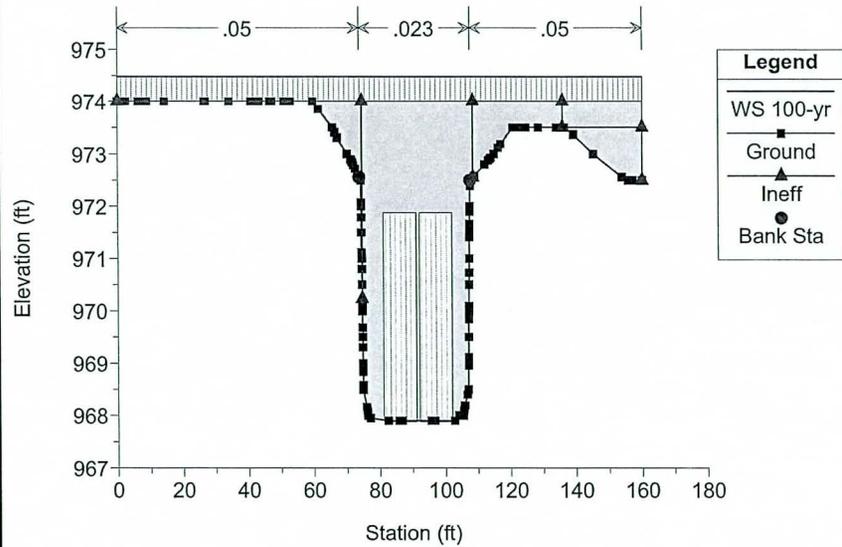
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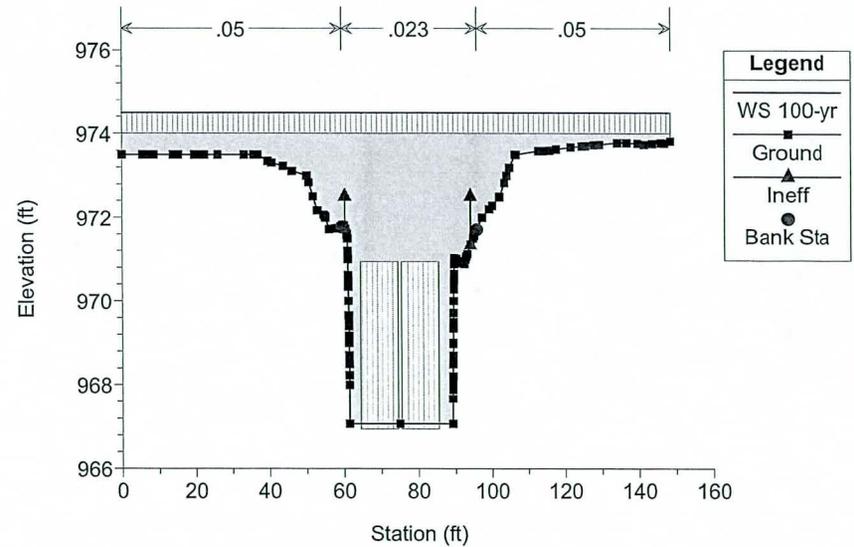
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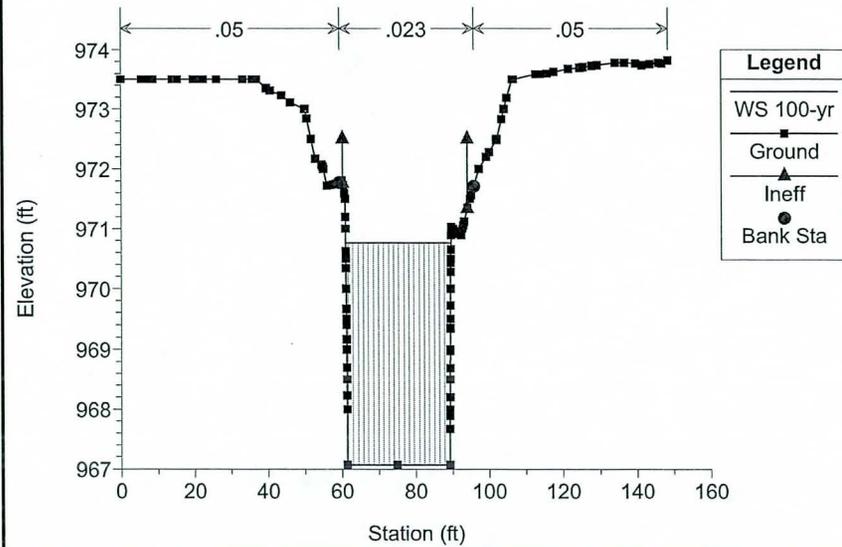
100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011



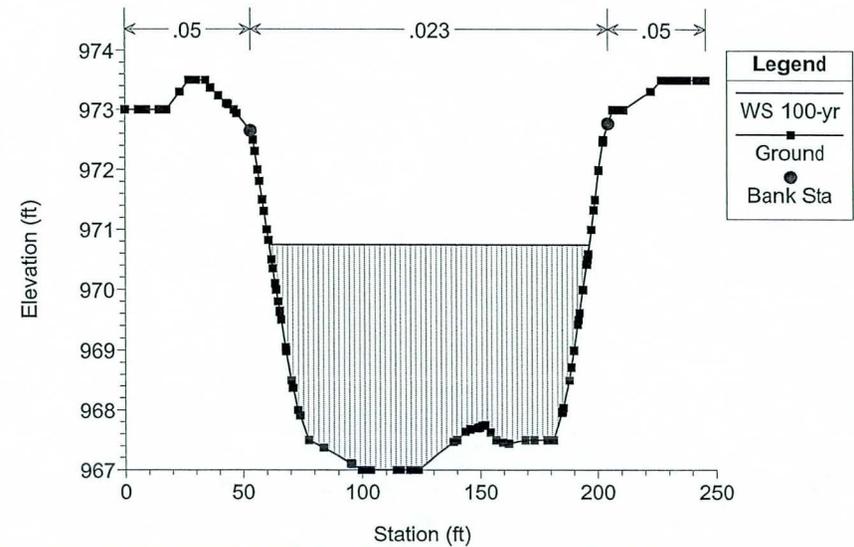
100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011

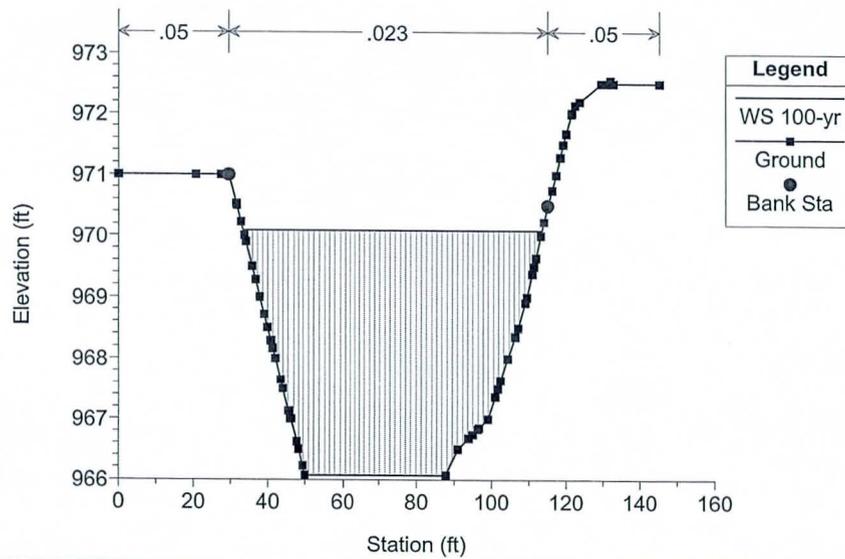
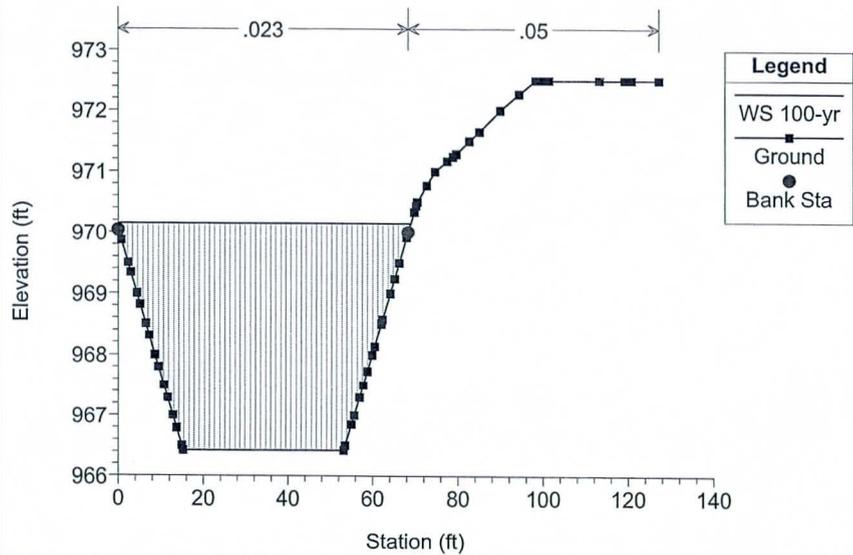
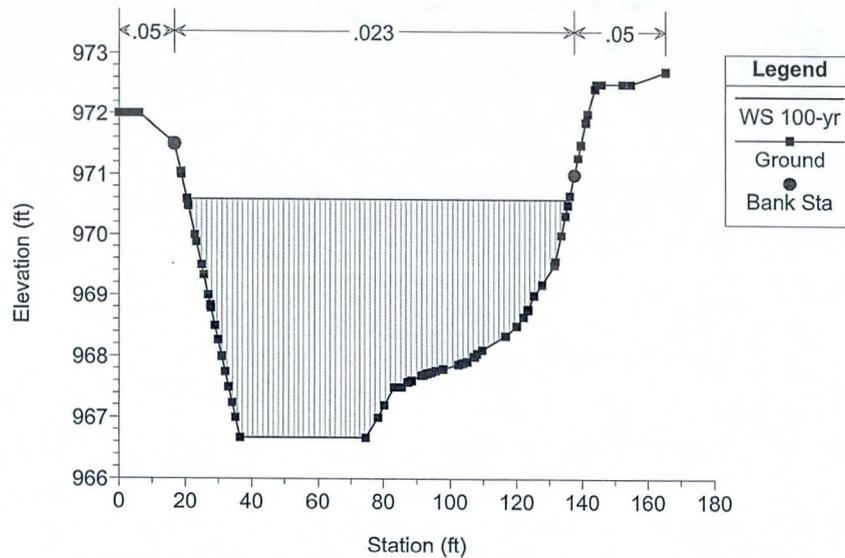
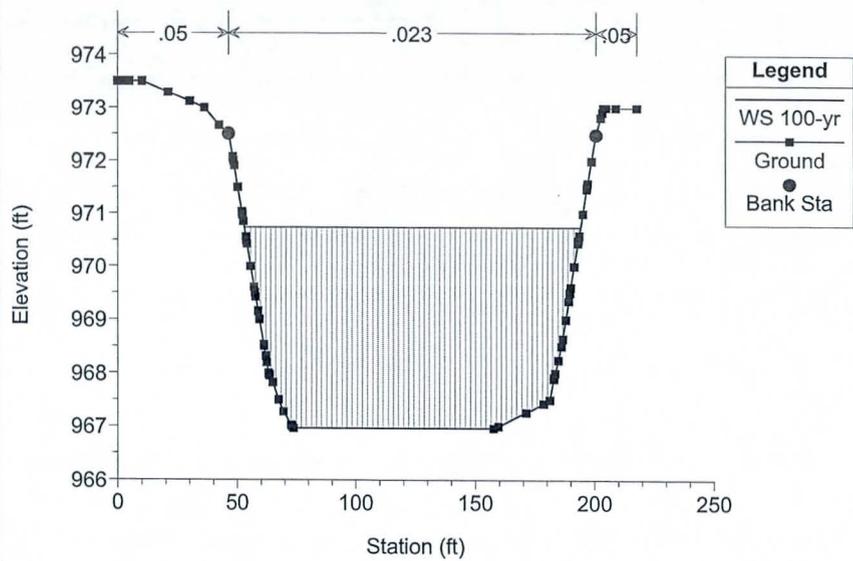


100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011

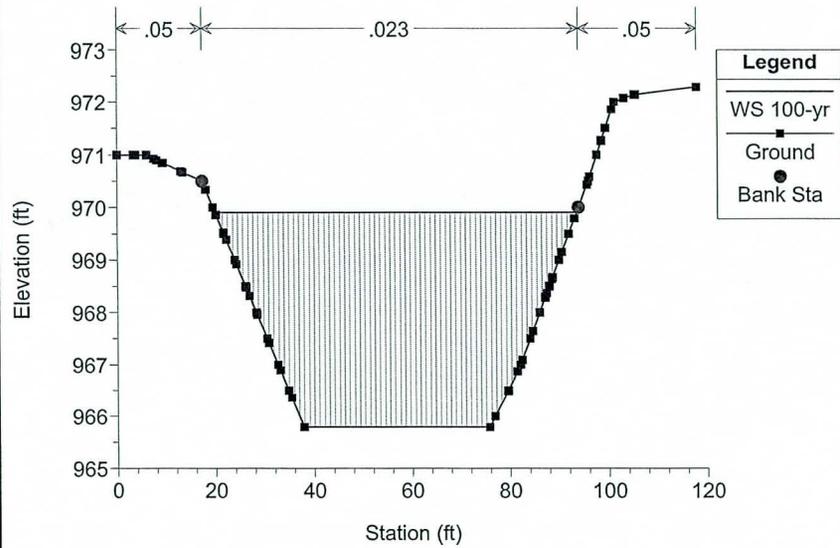


100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011

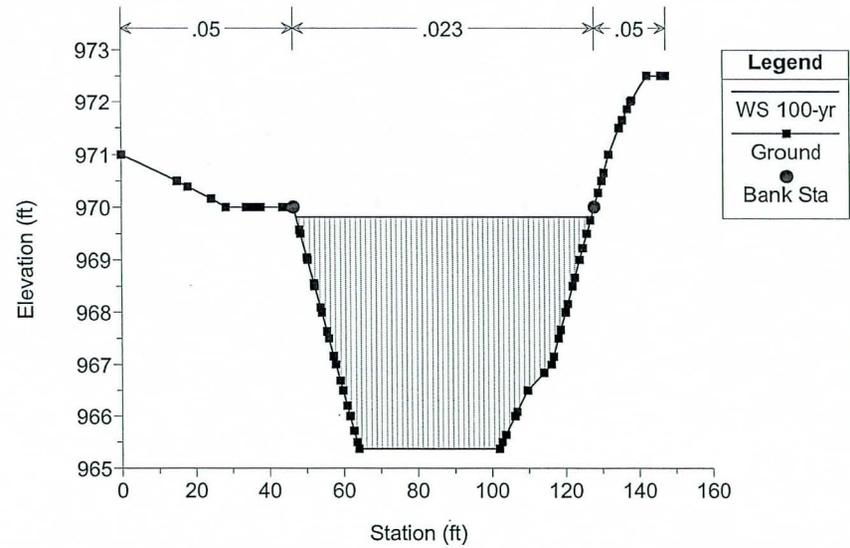




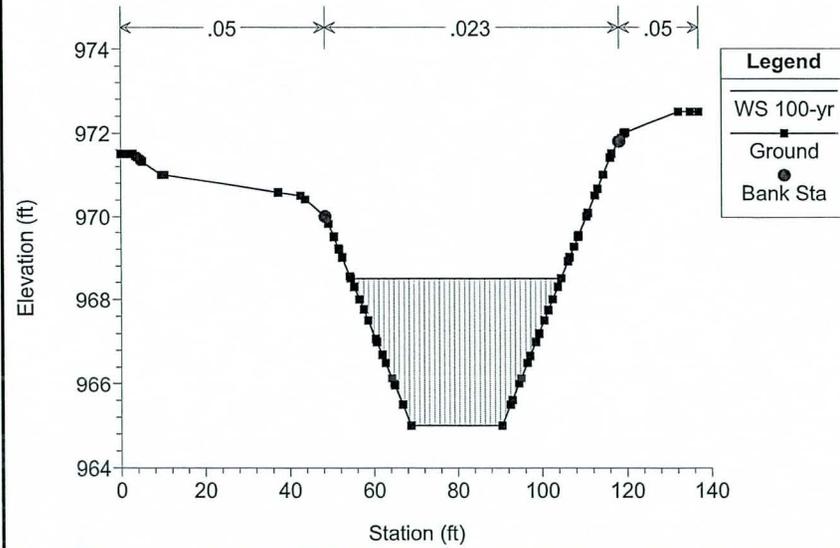
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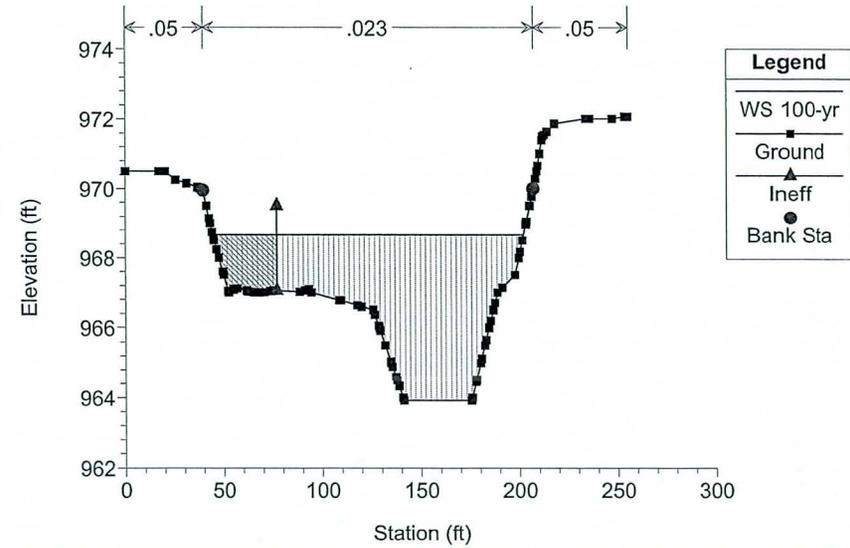
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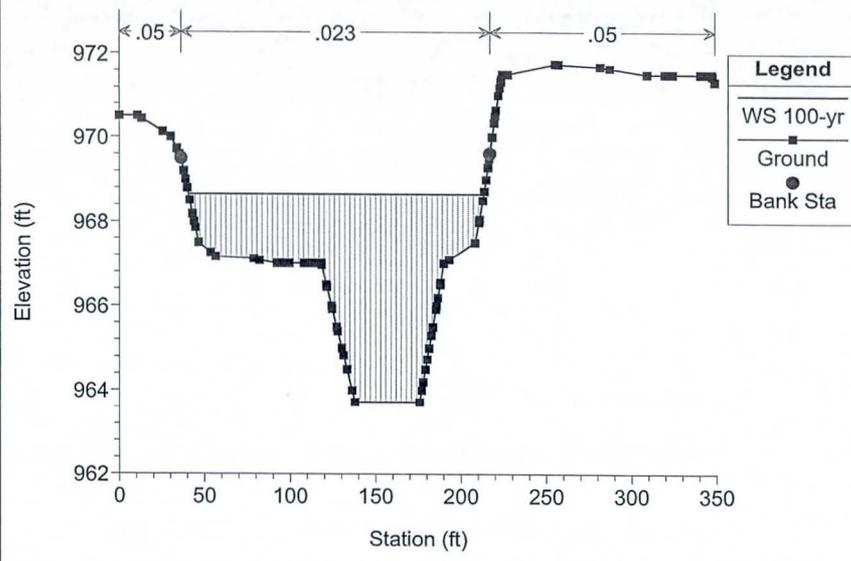
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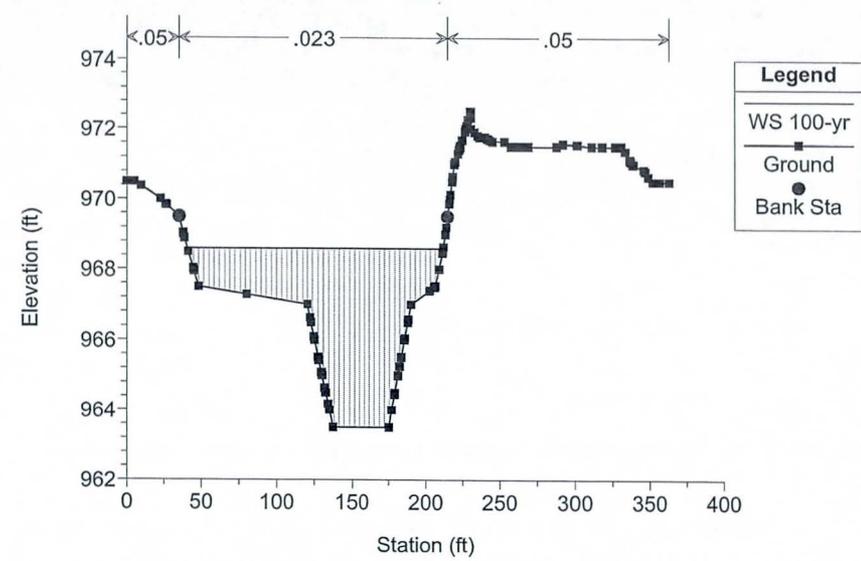
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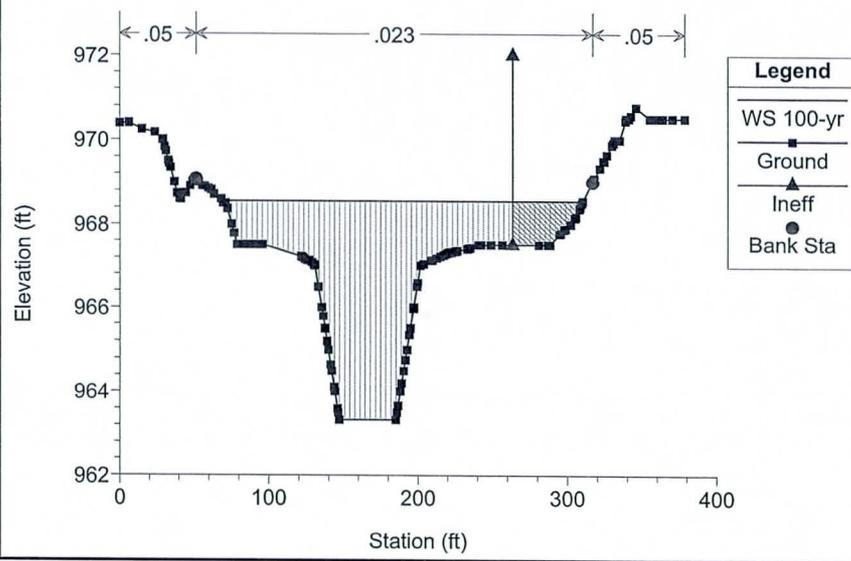
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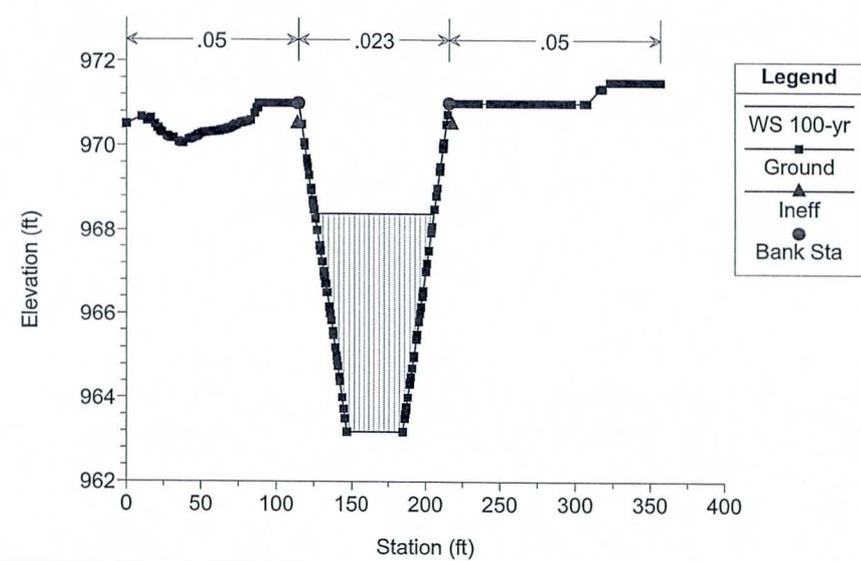
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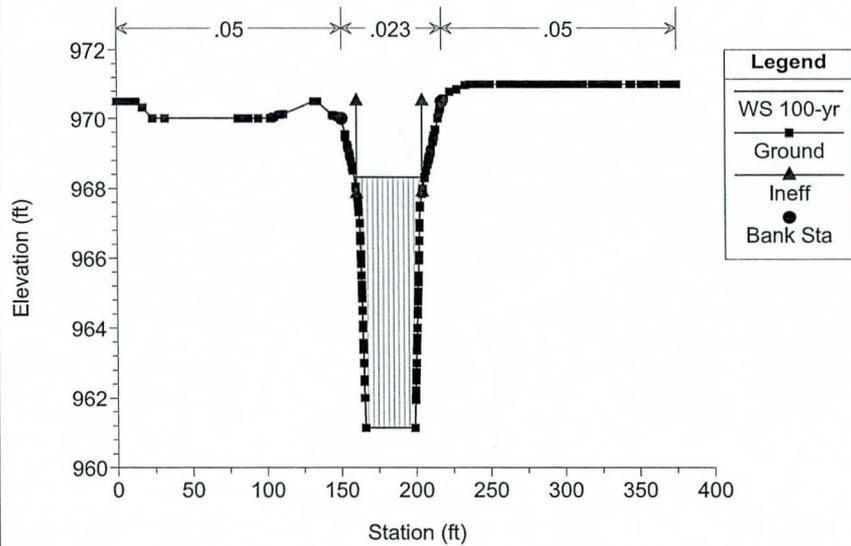
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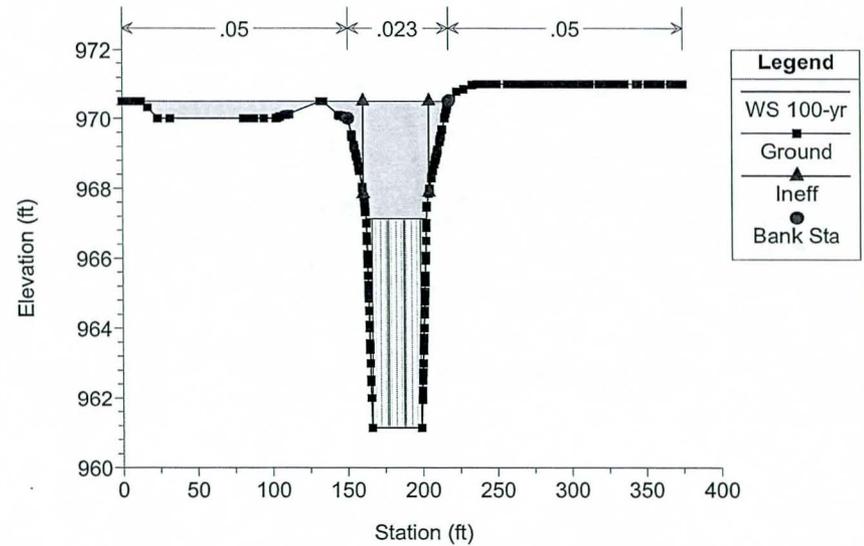
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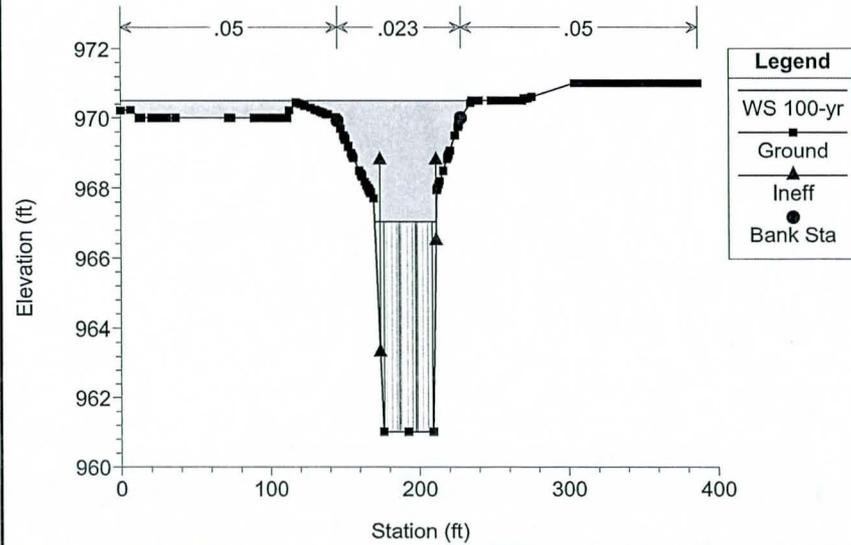
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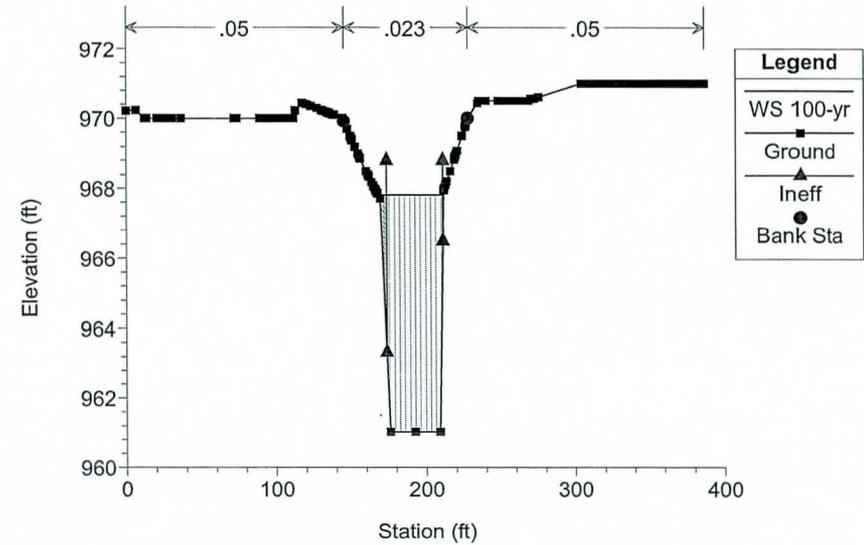
100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011



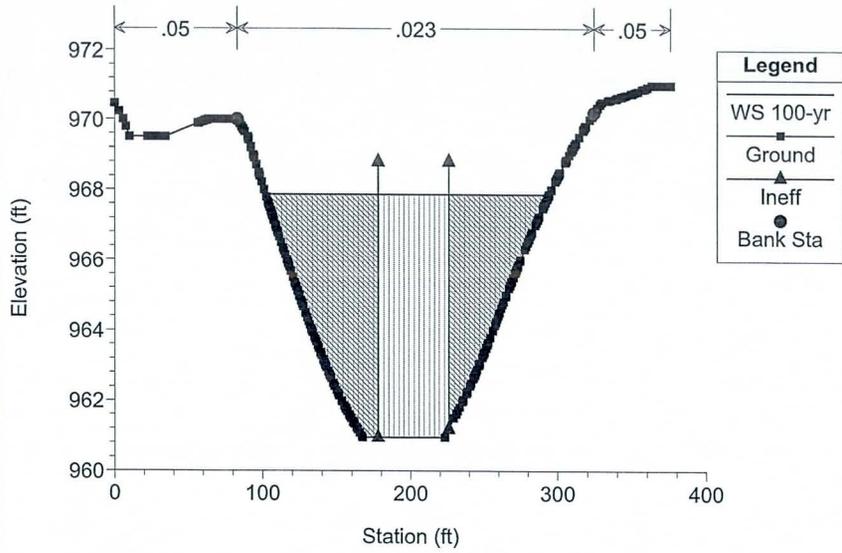
100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011



100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011

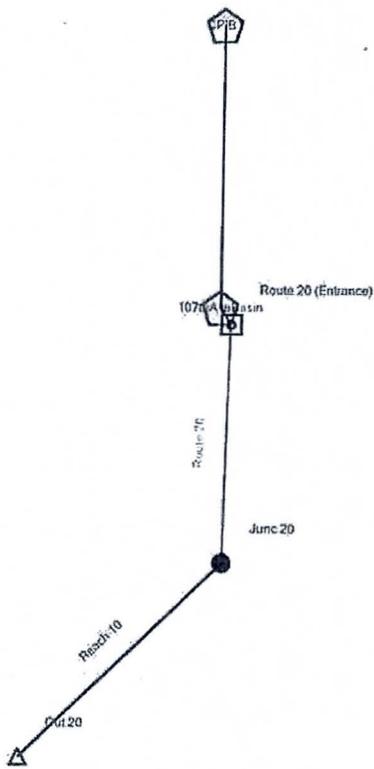


100%-S&S-N.Chnl@103rd-8-9-11 Plan: N. Chnl Final Config 8-15-11 8/11/2011



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Scenario: Watershed - 100yr



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Watershed

Project Summary

Title	DRCC-107th Ave Basin
Engineer	mkapfer
Company	J2 Engineering & Environmental Design
Date	8/15/2011

Notes

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Watershed

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
CPIB1	Watershed - 100yr	0	158.441	4.967	1,599.00

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
Junc 20	Watershed - 100yr	0	156.833	6.600	307.99
Out 20	Watershed - 100yr	0	156.831	6.633	307.94

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
107thAveBas in (IN)	Watershed - 100yr	0	158.441	4.967	1,599.00	(N/A)	(N/A)
107thAveBas in (OUT)	Watershed - 100yr	0	156.833	6.600	307.99	967.83	89.874

Watershed

Subsection: Read Hydrograph
Label: CPIB1

Peak Discharge	1,599.00 ft ³ /s
Time to Peak	4.962 hours
Hydrograph Volume	158.282 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
0.000	0.00	0.00	0.00	0.00	0.00
0.167	0.00	0.00	0.00	0.00	0.00
0.333	0.00	0.00	0.00	0.00	0.00
0.500	0.00	0.00	0.00	0.00	0.00
0.666	0.00	0.00	0.00	0.00	0.00
0.833	0.00	0.00	0.00	0.00	0.00
0.999	0.00	0.00	0.00	0.00	0.00
1.166	0.00	0.00	0.00	0.00	0.00
1.332	0.00	0.00	0.00	0.00	0.00
1.499	0.00	0.00	0.00	0.00	0.00
1.665	0.00	0.00	0.00	0.00	0.00
1.832	0.00	0.00	0.00	0.00	0.00
1.998	0.00	0.00	0.00	0.00	0.00
2.165	0.00	0.00	0.00	0.00	0.00
2.331	0.00	0.00	0.00	0.00	0.00
2.498	0.00	0.00	0.00	0.00	0.00
2.664	0.00	0.00	0.00	0.00	0.00
2.831	0.00	0.00	0.00	0.00	0.00
2.997	0.00	0.00	0.00	0.00	0.00
3.164	0.00	0.00	0.00	0.00	0.00
3.330	0.00	0.00	0.00	0.00	0.00
3.497	0.00	0.00	0.00	0.00	0.00
3.663	0.00	0.00	0.00	0.00	0.00
3.830	0.00	0.00	0.00	0.00	0.00
3.996	0.00	0.00	144.00	299.00	312.00
4.163	321.00	327.00	329.00	328.00	325.00
4.329	318.00	306.00	289.00	273.00	257.00
4.496	242.00	228.00	218.00	229.00	304.00
4.662	433.00	549.00	619.00	651.00	674.00
4.829	728.00	957.00	1,372.00	1,595.00	1,599.00
4.995	1,598.00	1,565.00	1,485.00	1,401.00	1,332.00
5.162	1,274.00	1,221.00	1,165.00	1,105.00	1,037.00
5.328	967.00	903.00	845.00	786.00	728.00
5.495	674.00	629.00	595.00	564.00	538.00
5.661	517.00	502.00	492.00	486.00	480.00
5.828	474.00	468.00	461.00	455.00	449.00
5.994	444.00	440.00	436.00	432.00	426.00

Watershed

Subsection: Read Hydrograph

Label: CPIB1

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
6.161	420.00	413.00	405.00	398.00	390.00
6.327	382.00	373.00	364.00	354.00	344.00
6.494	334.00	325.00	315.00	306.00	298.00
6.660	289.00	280.00	272.00	263.00	254.00
6.827	247.00	239.00	231.00	223.00	215.00
6.993	207.00	201.00	195.00	189.00	183.00
7.160	177.00	170.00	164.00	158.00	152.00
7.326	146.00	141.00	136.00	132.00	128.00
7.493	125.00	121.00	118.00	114.00	111.00
7.659	107.00	104.00	100.00	97.00	93.00
7.826	90.00	87.00	84.00	82.00	79.00
7.992	77.00	75.00	73.00	72.00	70.00
8.159	69.00	67.00	66.00	65.00	64.00
8.325	63.00	61.00	60.00	59.00	57.00
8.492	56.00	55.00	54.00	53.00	52.00
8.658	52.00	51.00	50.00	50.00	49.00
8.825	48.00	48.00	47.00	47.00	46.00
8.991	45.00	45.00	44.00	44.00	43.00
9.158	43.00	42.00	41.00	41.00	40.00
9.324	39.00	39.00	38.00	38.00	37.00
9.491	36.00	36.00	35.00	35.00	34.00
9.657	33.00	33.00	32.00	32.00	31.00
9.824	30.00	30.00	29.00	29.00	28.00
9.990	28.00	27.00	27.00	26.00	25.00
10.157	25.00	24.00	24.00	23.00	23.00
10.323	23.00	22.00	22.00	21.00	21.00
10.490	21.00	20.00	20.00	20.00	19.00
10.656	19.00	19.00	19.00	18.00	18.00
10.823	18.00	18.00	17.00	17.00	17.00
10.989	16.00	16.00	16.00	16.00	15.00
11.156	15.00	15.00	14.00	14.00	14.00
11.322	13.00	13.00	13.00	12.00	12.00
11.489	12.00	11.00	11.00	11.00	10.00
11.655	10.00	10.00	9.00	9.00	9.00
11.822	8.00	8.00	8.00	8.00	7.00
11.988	7.00	7.00	6.00	6.00	6.00
12.155	6.00	5.00	5.00	5.00	5.00
12.321	5.00	4.00	4.00	4.00	4.00
12.488	4.00	3.00	3.00	3.00	3.00
12.654	3.00	3.00	2.00	2.00	2.00
12.821	2.00	2.00	2.00	2.00	2.00
12.987	2.00	1.00	1.00	1.00	1.00

Watershed

Subsection: Read Hydrograph
Label: CPIB1

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
13.154	1.00	1.00	1.00	1.00	1.00
13.320	1.00	1.00	1.00	1.00	1.00
13.487	1.00	1.00	0.00	0.00	0.00
13.653	0.00	0.00	0.00	0.00	0.00
13.820	0.00	0.00	0.00	0.00	0.00
13.986	0.00	0.00	0.00	0.00	0.00
14.153	0.00	0.00	0.00	0.00	0.00
14.319	0.00	0.00	0.00	0.00	0.00
14.486	0.00	0.00	0.00	0.00	0.00
14.652	0.00	0.00	0.00	0.00	0.00
14.819	0.00	0.00	0.00	0.00	0.00
14.985	0.00	0.00	0.00	0.00	0.00
15.152	0.00	0.00	0.00	0.00	0.00
15.318	0.00	0.00	0.00	0.00	0.00
15.485	0.00	0.00	0.00	0.00	0.00
15.651	0.00	0.00	0.00	0.00	0.00
15.818	0.00	0.00	0.00	0.00	0.00
15.984	0.00	0.00	0.00	0.00	0.00
16.151	0.00	0.00	0.00	0.00	0.00
16.317	0.00	0.00	0.00	0.00	0.00
16.484	0.00	0.00	0.00	0.00	0.00
16.650	0.00	0.00	0.00	0.00	0.00
16.817	0.00	0.00	0.00	0.00	0.00
16.983	0.00	0.00	0.00	0.00	0.00
17.150	0.00	0.00	0.00	0.00	0.00
17.316	0.00	0.00	0.00	0.00	0.00
17.483	0.00	0.00	0.00	0.00	0.00
17.649	0.00	0.00	0.00	0.00	0.00
17.816	0.00	0.00	0.00	0.00	0.00
17.982	0.00	0.00	0.00	0.00	0.00
18.149	0.00	0.00	0.00	0.00	0.00
18.315	0.00	0.00	0.00	0.00	0.00
18.482	0.00	0.00	0.00	0.00	0.00
18.648	0.00	0.00	0.00	0.00	0.00
18.815	0.00	0.00	0.00	0.00	0.00
18.981	0.00	0.00	0.00	0.00	0.00
19.148	0.00	0.00	0.00	0.00	0.00
19.314	0.00	0.00	0.00	0.00	0.00
19.481	0.00	0.00	0.00	0.00	0.00
19.647	0.00	0.00	0.00	0.00	0.00
19.814	0.00	0.00	0.00	0.00	0.00
19.980	0.00	0.00	0.00	0.00	0.00

Watershed

Subsection: Read Hydrograph

Label: CPIB1

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
20.147	0.00	0.00	0.00	0.00	0.00
20.313	0.00	0.00	0.00	0.00	0.00
20.480	0.00	0.00	0.00	0.00	0.00
20.646	0.00	0.00	0.00	0.00	0.00
20.813	0.00	0.00	0.00	0.00	0.00
20.979	0.00	0.00	0.00	0.00	0.00
21.146	0.00	0.00	0.00	0.00	0.00
21.312	0.00	0.00	0.00	0.00	0.00
21.479	0.00	0.00	0.00	0.00	0.00
21.645	0.00	0.00	0.00	0.00	0.00
21.812	0.00	0.00	0.00	0.00	0.00
21.978	0.00	0.00	0.00	0.00	0.00
22.145	0.00	0.00	0.00	0.00	0.00
22.311	0.00	0.00	0.00	0.00	0.00
22.478	0.00	0.00	0.00	0.00	0.00
22.644	0.00	0.00	0.00	0.00	0.00
22.811	0.00	0.00	0.00	0.00	0.00
22.977	0.00	0.00	0.00	0.00	0.00
23.144	0.00	0.00	0.00	0.00	0.00
23.310	0.00	0.00	0.00	0.00	0.00
23.477	0.00	0.00	0.00	0.00	0.00
23.643	0.00	0.00	0.00	0.00	0.00
23.810	0.00	0.00	0.00	0.00	0.00
23.976	0.00	0.00	(N/A)	(N/A)	(N/A)

Watershed

Subsection: Addition Summary

Label: Out 20

Summary for Hydrograph Addition at 'Out 20'

	Upstream Link	Upstream Node
Reach 10		Junc 20

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Reach 10	156.831	6.633	307.94
Flow (In)	Out 20	156.831	6.633	307.94

Watershed

Subsection: Time vs. Elevation

Label: 107thAveBasin (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	956.62	956.62	956.62	956.62	956.62
0.167	956.62	956.62	956.62	956.62	956.62
0.333	956.62	956.62	956.62	956.62	956.62
0.500	956.62	956.62	956.62	956.62	956.62
0.667	956.62	956.62	956.62	956.62	956.62
0.833	956.62	956.62	956.62	956.62	956.62
1.000	956.62	956.62	956.62	956.62	956.62
1.167	956.62	956.62	956.62	956.62	956.62
1.333	956.62	956.62	956.62	956.62	956.62
1.500	956.62	956.62	956.62	956.62	956.62
1.667	956.62	956.62	956.62	956.62	956.62
1.833	956.62	956.62	956.62	956.62	956.62
2.000	956.62	956.62	956.62	956.62	956.62
2.167	956.62	956.62	956.62	956.62	956.62
2.333	956.62	956.62	956.62	956.62	956.62
2.500	956.62	956.62	956.62	956.62	956.62
2.667	956.62	956.62	956.62	956.62	956.62
2.833	956.62	956.62	956.62	956.62	956.62
3.000	956.62	956.62	956.62	956.62	956.62
3.167	956.62	956.62	956.62	956.62	956.62
3.333	956.62	956.62	956.62	956.62	956.62
3.500	956.62	956.62	956.62	956.62	956.62
3.667	956.62	956.62	956.62	956.62	956.62
3.833	956.62	956.62	956.62	956.62	956.62
4.000	956.62	956.62	957.89	959.58	960.86
4.167	961.23	961.48	961.74	961.97	962.10
4.333	962.19	962.28	962.37	962.45	962.53
4.500	962.60	962.66	962.72	962.78	962.85
4.667	962.95	963.06	963.17	963.29	963.41
4.833	963.54	963.70	963.92	964.18	964.44
5.000	964.70	964.96	965.19	965.41	965.62
5.167	965.81	965.99	966.15	966.30	966.44
5.333	966.57	966.68	966.79	966.88	966.97
5.500	967.04	967.10	967.16	967.20	967.25
5.667	967.29	967.33	967.36	967.40	967.43
5.833	967.46	967.49	967.52	967.54	967.57
6.000	967.59	967.62	967.64	967.66	967.68
6.167	967.70	967.72	967.74	967.75	967.77
6.333	967.78	967.79	967.80	967.81	967.82
6.500	967.82	967.82	967.83	967.83	967.83
6.667	967.82	967.82	967.81	967.81	967.80

Watershed

Subsection: Time vs. Elevation

Label: 107thAveBasin (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
6.833	967.79	967.78	967.77	967.76	967.75
7.000	967.73	967.72	967.70	967.68	967.66
7.167	967.65	967.63	967.61	967.59	967.56
7.333	967.54	967.52	967.49	967.47	967.45
7.500	967.42	967.40	967.37	967.35	967.32
7.667	967.29	967.27	967.24	967.21	967.19
7.833	967.16	967.13	967.10	967.07	967.05
8.000	967.02	966.99	966.96	966.93	966.90
8.167	966.87	966.84	966.81	966.78	966.75
8.333	966.73	966.70	966.67	966.64	966.61
8.500	966.58	966.55	966.53	966.50	966.47
8.667	966.44	966.41	966.39	966.36	966.33
8.833	966.30	966.28	966.25	966.22	966.20
9.000	966.17	966.14	966.12	966.09	966.07
9.167	966.04	966.01	965.99	965.96	965.94
9.333	965.91	965.89	965.86	965.83	965.81
9.500	965.78	965.76	965.73	965.71	965.68
9.667	965.66	965.64	965.61	965.59	965.56
9.833	965.54	965.52	965.49	965.47	965.45
10.000	965.42	965.40	965.38	965.35	965.33
10.167	965.31	965.29	965.26	965.24	965.22
10.333	965.20	965.17	965.15	965.13	965.11
10.500	965.09	965.07	965.04	965.02	965.00
10.667	964.98	964.96	964.94	964.92	964.90
10.833	964.88	964.85	964.83	964.81	964.79
11.000	964.77	964.75	964.73	964.71	964.69
11.167	964.67	964.65	964.63	964.62	964.60
11.333	964.58	964.56	964.54	964.52	964.50
11.500	964.48	964.47	964.45	964.43	964.41
11.667	964.39	964.37	964.36	964.34	964.32
11.833	964.30	964.29	964.27	964.25	964.23
12.000	964.22	964.20	964.18	964.17	964.15
12.167	964.13	964.12	964.10	964.08	964.07
12.333	964.05	964.03	964.02	964.00	963.98
12.500	963.96	963.95	963.93	963.91	963.89
12.667	963.87	963.86	963.84	963.82	963.80
12.833	963.79	963.77	963.75	963.74	963.72
13.000	963.70	963.69	963.67	963.65	963.64
13.167	963.62	963.61	963.59	963.58	963.56
13.333	963.54	963.53	963.51	963.50	963.48
13.500	963.47	963.46	963.44	963.43	963.41

Watershed

Subsection: Time vs. Elevation
 Label: 107thAveBasin (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
13.667	963.40	963.38	963.37	963.36	963.34
13.833	963.33	963.32	963.30	963.29	963.28
14.000	963.26	963.25	963.24	963.22	963.21
14.167	963.20	963.19	963.17	963.16	963.15
14.333	963.14	963.12	963.11	963.10	963.09
14.500	963.08	963.07	963.05	963.04	963.03
14.667	963.02	963.00	962.99	962.97	962.96
14.833	962.94	962.93	962.91	962.90	962.88
15.000	962.86	962.85	962.83	962.82	962.80
15.167	962.79	962.77	962.76	962.74	962.73
15.333	962.71	962.70	962.69	962.67	962.66
15.500	962.65	962.63	962.62	962.61	962.59
15.667	962.58	962.57	962.56	962.54	962.53
15.833	962.52	962.51	962.50	962.48	962.47
16.000	962.46	962.45	962.44	962.43	962.42
16.167	962.41	962.39	962.38	962.37	962.36
16.333	962.35	962.34	962.33	962.32	962.31
16.500	962.30	962.29	962.28	962.27	962.26
16.667	962.25	962.25	962.24	962.23	962.22
16.833	962.21	962.20	962.19	962.18	962.17
17.000	962.17	962.16	962.15	962.14	962.13
17.167	962.12	962.12	962.11	962.10	962.09
17.333	962.09	962.08	962.07	962.06	962.06
17.500	962.05	962.04	962.03	962.03	962.02
17.667	962.00	961.99	961.98	961.97	961.95
17.833	961.94	961.93	961.92	961.90	961.89
18.000	961.87	961.86	961.84	961.83	961.82
18.167	961.80	961.79	961.78	961.76	961.75
18.333	961.74	961.73	961.72	961.71	961.69
18.500	961.68	961.67	961.66	961.65	961.64
18.667	961.63	961.62	961.61	961.60	961.59
18.833	961.59	961.58	961.57	961.56	961.55
19.000	961.54	961.53	961.53	961.52	961.51
19.167	961.50	961.50	961.49	961.48	961.47
19.333	961.47	961.46	961.45	961.45	961.44
19.500	961.43	961.43	961.42	961.41	961.41
19.667	961.40	961.40	961.39	961.38	961.38
19.833	961.37	961.37	961.36	961.36	961.35
20.000	961.35	961.34	961.34	961.33	961.33
20.167	961.32	961.32	961.31	961.31	961.30
20.333	961.30	961.29	961.29	961.29	961.28

Watershed

Subsection: Time vs. Elevation

Label: 107thAveBasin (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	961.28	961.27	961.27	961.26	961.26
20.667	961.26	961.25	961.25	961.25	961.24
20.833	961.24	961.23	961.23	961.23	961.22
21.000	961.22	961.22	961.21	961.21	961.21
21.167	961.20	961.20	961.20	961.19	961.19
21.333	961.19	961.19	961.18	961.18	961.18
21.500	961.17	961.17	961.17	961.17	961.16
21.667	961.16	961.16	961.15	961.15	961.15
21.833	961.15	961.14	961.14	961.14	961.14
22.000	961.13	961.13	961.13	961.13	961.12
22.167	961.12	961.12	961.12	961.12	961.11
22.333	961.11	961.11	961.11	961.11	961.10
22.500	961.10	961.10	961.10	961.09	961.09
22.667	961.09	961.09	961.09	961.09	961.08
22.833	961.08	961.08	961.08	961.08	961.07
23.000	961.07	961.07	961.07	961.07	961.07
23.167	961.06	961.06	961.06	961.06	961.06
23.333	961.06	961.05	961.05	961.05	961.05
23.500	961.05	961.05	961.04	961.04	961.04
23.667	961.04	961.04	961.04	961.04	961.03
23.833	961.03	961.03	961.03	961.03	961.03
24.000	961.03	961.03	961.02	961.02	961.02
24.167	961.02	961.02	961.01	961.01	961.01
24.333	961.00	961.00	961.00	961.00	960.99
24.500	960.99	960.99	960.98	960.98	960.98
24.667	960.98	960.97	960.97	960.97	960.97
24.833	960.97	960.96	960.96	960.96	960.96
25.000	960.95	960.95	960.95	960.95	960.95
25.167	960.95	960.94	960.94	960.94	960.94
25.333	960.94	960.94	960.93	960.93	960.93
25.500	960.93	960.93	960.93	960.92	960.92
25.667	960.92	960.92	960.92	960.92	960.92
25.833	960.91	960.91	960.91	960.91	960.91
26.000	960.90	960.90	960.90	960.90	960.90
26.167	960.89	960.89	960.89	960.89	960.89
26.333	960.89	960.89	960.88	960.88	960.88
26.500	960.88	960.88	960.88	960.88	960.87
26.667	960.87	960.87	960.87	960.87	960.87
26.833	960.87	960.87	960.87	960.86	960.86
27.000	960.86	960.86	960.86	960.86	960.86
27.167	960.86	960.86	960.86	960.85	960.85

Watershed

Subsection: Time vs. Elevation

Label: 107thAveBasin (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
27.333	960.85	960.85	960.85	960.85	960.85
27.500	960.85	960.85	960.85	960.85	960.85
27.667	960.85	960.85	960.84	960.84	960.84
27.833	960.84	960.84	960.84	960.84	960.84
28.000	960.84	960.84	960.84	960.84	960.84
28.167	960.84	960.84	960.84	960.84	960.84
28.333	960.84	960.83	960.83	960.83	960.83
28.500	960.83	960.83	960.83	960.83	960.83
28.667	960.83	960.83	960.83	960.83	960.83
28.833	960.83	960.83	960.83	960.83	960.83
29.000	960.83	960.83	960.83	960.83	960.83
29.167	960.83	960.83	960.83	960.83	960.83
29.333	960.83	960.82	960.82	960.82	960.82
29.500	960.82	960.82	960.82	960.82	960.82
29.667	960.82	960.82	960.82	960.82	960.82
29.833	960.82	960.82	960.82	960.82	960.82
30.000	960.82	960.82	960.82	960.82	960.82
30.167	960.82	960.82	960.82	960.82	960.82
30.333	960.82	960.82	960.82	960.82	960.82
30.500	960.82	960.82	960.82	960.82	960.82
30.667	960.82	960.82	960.82	960.82	960.82
30.833	960.82	960.82	960.82	960.82	960.82
31.000	960.82	960.82	960.82	960.82	960.82
31.167	960.82	960.82	960.82	960.82	960.82
31.333	960.82	960.82	960.82	960.82	960.82
31.500	960.82	960.82	960.82	960.82	960.82
31.667	960.82	960.82	960.82	960.81	960.81
31.833	960.81	960.81	960.81	960.81	960.81
32.000	960.81	960.81	960.81	960.81	960.81
32.167	960.81	960.81	960.81	960.81	960.81
32.333	960.81	960.81	960.81	960.81	960.81
32.500	960.81	960.81	960.81	960.81	960.81
32.667	960.81	960.81	960.81	960.81	960.81
32.833	960.81	960.81	960.81	960.81	960.81
33.000	960.81	960.81	960.81	960.81	960.81
33.167	960.81	960.81	960.81	960.81	960.81
33.333	960.81	960.81	960.81	960.81	960.81
33.500	960.81	960.81	960.81	960.81	960.81
33.667	960.81	960.81	960.81	960.81	960.81
33.833	960.81	960.81	960.81	960.81	960.81
34.000	960.81	960.81	960.81	960.81	960.81

Watershed

Subsection: Time vs. Elevation

Label: 107thAveBasin (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
34.167	960.81	960.81	960.81	960.81	960.81
34.333	960.81	960.81	960.81	960.81	960.81
34.500	960.81	960.81	960.81	960.81	960.81
34.667	960.81	960.81	960.81	960.81	960.81
34.833	960.81	960.81	960.81	960.81	960.81
35.000	960.81	(N/A)	(N/A)	(N/A)	(N/A)

Watershed

Subsection: Time vs. Volume

Label: 107thAveBasin

Time vs. Volume (ac-ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.167	0.000	0.000	0.000	0.000	0.000
0.333	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.667	0.000	0.000	0.000	0.000	0.000
0.833	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.167	0.000	0.000	0.000	0.000	0.000
1.333	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.667	0.000	0.000	0.000	0.000	0.000
1.833	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.167	0.000	0.000	0.000	0.000	0.000
2.333	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.667	0.000	0.000	0.000	0.000	0.000
2.833	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.167	0.000	0.000	0.000	0.000	0.000
3.333	0.000	0.000	0.000	0.000	0.000
3.500	0.000	0.000	0.000	0.000	0.000
3.667	0.000	0.000	0.000	0.000	0.000
3.833	0.000	0.000	0.000	0.000	0.000
4.000	0.000	0.000	0.198	0.809	1.650
4.167	2.515	3.390	4.261	5.063	5.956
4.333	6.772	7.554	8.289	8.971	9.603
4.500	10.185	10.721	11.218	11.712	12.317
4.667	13.166	14.400	15.850	17.428	19.069
4.833	20.802	22.909	25.880	29.701	33.802
5.000	37.873	41.858	45.662	49.202	52.501
5.167	55.596	58.501	61.245	63.797	66.148
5.333	68.288	70.223	71.972	73.543	74.933
5.500	76.166	77.246	78.207	79.069	79.845
5.667	80.548	81.195	81.802	82.380	82.936
5.833	83.470	83.983	84.472	84.939	85.384
6.000	85.810	86.219	86.612	86.991	87.353
6.167	87.694	88.014	88.310	88.582	88.831
6.333	89.056	89.255	89.427	89.572	89.687
6.500	89.774	89.834	89.867	89.874	89.858
6.667	89.818	89.755	89.668	89.559	89.427

Watershed

Subsection: Time vs. Volume
 Label: 107thAveBasin

Time vs. Volume (ac-ft)

Output Time increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)				
6.833	89.274	89.102	88.910	88.698	88.466
7.000	88.215	87.947	87.666	87.371	87.062
7.167	86.740	86.404	86.053	85.689	85.313
7.333	84.924	84.524	84.114	83.696	83.272
7.500	82.842	82.407	81.966	81.521	81.070
7.667	80.614	80.153	79.687	79.216	78.741
7.833	78.260	77.776	77.288	76.798	76.307
8.000	75.812	75.310	74.819	74.328	73.836
8.167	73.344	72.853	72.362	71.874	71.388
8.333	70.903	70.420	69.937	69.456	68.976
8.500	68.496	68.018	67.542	67.068	66.596
8.667	66.127	65.661	65.197	64.736	64.278
8.833	63.822	63.369	62.918	62.471	62.026
9.000	61.583	61.142	60.705	60.270	59.838
9.167	59.409	58.979	58.548	58.128	57.711
9.333	57.294	56.878	56.464	56.053	55.644
9.500	55.236	54.831	54.429	54.028	53.630
9.667	53.234	52.839	52.446	52.056	51.668
9.833	51.281	50.896	50.514	50.133	49.754
10.000	49.378	49.003	48.631	48.260	47.890
10.167	47.522	47.156	46.792	46.430	46.070
10.333	45.712	45.357	45.003	44.651	44.301
10.500	43.954	43.609	43.265	42.924	42.576
10.667	42.239	41.907	41.578	41.250	40.922
10.833	40.596	40.273	39.952	39.632	39.315
11.000	38.999	38.685	38.373	38.064	37.757
11.167	37.450	37.147	36.844	36.543	36.244
11.333	35.947	35.651	35.357	35.064	34.773
11.500	34.484	34.196	33.909	33.624	33.340
11.667	33.058	32.777	32.498	32.220	31.943
11.833	31.668	31.394	31.122	30.852	30.582
12.000	30.314	30.048	29.783	29.518	29.256
12.167	28.995	28.736	28.477	28.220	27.965
12.333	27.712	27.460	27.203	26.924	26.684
12.500	26.447	26.211	25.975	25.738	25.498
12.667	25.261	25.026	24.792	24.559	24.327
12.833	24.098	23.870	23.645	23.422	23.200
13.000	22.981	22.762	22.543	22.327	22.112
13.167	21.899	21.688	21.479	21.272	21.066
13.333	20.862	20.660	20.460	20.261	20.064
13.500	19.869	19.675	19.481	19.288	19.096

Watershed

Subsection: Time vs. Volume

Label: 107thAveBasin

Time vs. Volume (ac-ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
13.667	18.905	18.717	18.530	18.344	18.160
13.833	17.977	17.796	17.617	17.439	17.262
14.000	17.087	16.913	16.741	16.569	16.400
14.167	16.231	16.064	15.899	15.734	15.571
14.333	15.409	15.249	15.089	14.931	14.774
14.500	14.619	14.464	14.311	14.159	14.008
14.667	13.858	13.648	13.495	13.365	13.236
14.833	13.109	12.983	12.852	12.714	12.578
15.000	12.443	12.310	12.179	12.049	11.921
15.167	11.794	11.668	11.544	11.422	11.300
15.333	11.181	11.062	10.945	10.829	10.714
15.500	10.601	10.489	10.378	10.268	10.160
15.667	10.052	9.946	9.841	9.737	9.634
15.833	9.532	9.431	9.331	9.233	9.135
16.000	9.038	8.943	8.848	8.755	8.662
16.167	8.570	8.479	8.390	8.301	8.213
16.333	8.126	8.039	7.954	7.869	7.786
16.500	7.703	7.621	7.539	7.459	7.379
16.667	7.300	7.222	7.145	7.068	6.992
16.833	6.917	6.843	6.769	6.696	6.623
17.000	6.552	6.481	6.410	6.341	6.272
17.167	6.203	6.136	6.069	6.002	5.937
17.333	5.871	5.807	5.743	5.679	5.616
17.500	5.554	5.492	5.431	5.370	5.302
17.667	5.189	5.121	5.076	5.033	4.990
17.833	4.948	4.907	4.862	4.810	4.760
18.000	4.710	4.661	4.614	4.567	4.521
18.167	4.477	4.433	4.390	4.347	4.306
18.333	4.265	4.225	4.186	4.148	4.110
18.500	4.073	4.037	4.001	3.966	3.932
18.667	3.899	3.866	3.833	3.801	3.770
18.833	3.739	3.709	3.679	3.650	3.621
19.000	3.593	3.565	3.538	3.511	3.485
19.167	3.459	3.434	3.408	3.384	3.359
19.333	3.336	3.312	3.289	3.266	3.244
19.500	3.222	3.200	3.178	3.157	3.137
19.667	3.116	3.096	3.076	3.057	3.038
19.833	3.019	3.000	2.982	2.963	2.946
20.000	2.928	2.911	2.894	2.877	2.860
20.167	2.844	2.828	2.812	2.796	2.781
20.333	2.766	2.750	2.736	2.721	2.706

Watershed

Subsection: Time vs. Volume

Label: 107thAveBasin

Time vs. Volume (ac-ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.500	2.692	2.678	2.664	2.651	2.637
20.667	2.624	2.610	2.597	2.585	2.572
20.833	2.560	2.547	2.535	2.523	2.511
21.000	2.500	2.488	2.477	2.465	2.454
21.167	2.443	2.432	2.422	2.411	2.400
21.333	2.390	2.380	2.370	2.360	2.350
21.500	2.340	2.330	2.321	2.311	2.302
21.667	2.293	2.283	2.274	2.266	2.257
21.833	2.248	2.239	2.231	2.222	2.214
22.000	2.206	2.198	2.190	2.182	2.174
22.167	2.166	2.159	2.151	2.144	2.136
22.333	2.129	2.121	2.114	2.107	2.100
22.500	2.093	2.086	2.079	2.072	2.066
22.667	2.059	2.052	2.046	2.039	2.033
22.833	2.027	2.020	2.014	2.008	2.002
23.000	1.996	1.990	1.984	1.978	1.972
23.167	1.966	1.961	1.955	1.950	1.944
23.333	1.939	1.933	1.928	1.922	1.917
23.500	1.912	1.907	1.902	1.897	1.892
23.667	1.887	1.882	1.877	1.872	1.867
23.833	1.863	1.858	1.853	1.849	1.844
24.000	1.840	1.835	1.831	1.826	1.822
24.167	1.818	1.806	1.795	1.785	1.774
24.333	1.764	1.753	1.749	1.746	1.744
24.500	1.742	1.740	1.738	1.737	1.735
24.667	1.733	1.731	1.729	1.728	1.726
24.833	1.724	1.723	1.721	1.719	1.718
25.000	1.716	1.715	1.714	1.712	1.711
25.167	1.710	1.708	1.707	1.706	1.704
25.333	1.703	1.702	1.701	1.700	1.699
25.500	1.698	1.696	1.695	1.694	1.693
25.667	1.692	1.691	1.690	1.689	1.687
25.833	1.686	1.684	1.683	1.681	1.680
26.000	1.679	1.677	1.676	1.675	1.673
26.167	1.672	1.671	1.670	1.669	1.667
26.333	1.666	1.665	1.664	1.663	1.662
26.500	1.661	1.660	1.659	1.658	1.657
26.667	1.656	1.655	1.655	1.654	1.653
26.833	1.652	1.651	1.650	1.650	1.649
27.000	1.648	1.647	1.647	1.646	1.645
27.167	1.645	1.644	1.643	1.643	1.642

Watershed

Subsection: Time vs. Volume

Label: 107thAveBasin

Time vs. Volume (ac-ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
27.333	1.641	1.641	1.640	1.640	1.639
27.500	1.639	1.638	1.638	1.637	1.637
27.667	1.636	1.636	1.635	1.635	1.634
27.833	1.634	1.633	1.633	1.632	1.632
28.000	1.632	1.631	1.631	1.630	1.630
28.167	1.630	1.629	1.629	1.629	1.628
28.333	1.628	1.628	1.627	1.627	1.627
28.500	1.626	1.626	1.626	1.626	1.625
28.667	1.625	1.625	1.625	1.624	1.624
28.833	1.624	1.624	1.623	1.623	1.623
29.000	1.623	1.622	1.622	1.622	1.622
29.167	1.622	1.621	1.621	1.621	1.621
29.333	1.621	1.620	1.620	1.620	1.620
29.500	1.620	1.620	1.620	1.619	1.619
29.667	1.619	1.619	1.619	1.619	1.619
29.833	1.618	1.618	1.618	1.618	1.618
30.000	1.618	1.618	1.618	1.617	1.617
30.167	1.617	1.617	1.617	1.617	1.617
30.333	1.617	1.617	1.616	1.616	1.616
30.500	1.616	1.616	1.616	1.616	1.616
30.667	1.616	1.616	1.616	1.615	1.615
30.833	1.615	1.615	1.615	1.615	1.615
31.000	1.615	1.615	1.615	1.615	1.615
31.167	1.614	1.614	1.614	1.614	1.614
31.333	1.614	1.614	1.614	1.614	1.614
31.500	1.614	1.614	1.613	1.613	1.613
31.667	1.613	1.613	1.613	1.613	1.613
31.833	1.613	1.613	1.613	1.613	1.613
32.000	1.613	1.612	1.612	1.612	1.612
32.167	1.612	1.612	1.612	1.612	1.612
32.333	1.612	1.612	1.612	1.612	1.612
32.500	1.612	1.611	1.611	1.611	1.611
32.667	1.611	1.611	1.611	1.611	1.611
32.833	1.611	1.611	1.611	1.611	1.611
33.000	1.611	1.611	1.611	1.610	1.610
33.167	1.610	1.610	1.610	1.610	1.610
33.333	1.610	1.610	1.610	1.610	1.610
33.500	1.610	1.610	1.610	1.610	1.610
33.667	1.610	1.610	1.609	1.609	1.609
33.833	1.609	1.609	1.609	1.609	1.609
34.000	1.609	1.609	1.609	1.609	1.609

Watershed

Subsection: Time vs. Volume

Label: 107thAveBasin

Time vs. Volume (ac-ft)

Output Time increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
34.167	1.609	1.609	1.609	1.609	1.609
34.333	1.609	1.609	1.609	1.608	1.608
34.500	1.608	1.608	1.608	1.608	1.608
34.667	1.608	1.608	1.608	1.608	1.608
34.833	1.608	1.608	1.608	1.608	1.608
35.000	1.608	(N/A)	(N/A)	(N/A)	(N/A)

Watershed

Subsection: Elevation vs. Volume Curve

Label: 107thAveBasin

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
956.62	0.000
957.00	0.030
958.00	0.220
959.00	0.530
960.00	1.010
961.00	1.750
962.00	5.150
963.00	13.590
964.00	26.940
965.00	42.540
966.00	58.730
967.00	75.510
968.00	92.900
969.00	110.920
969.10	112.760

Watershed

Subsection: Outlet Input Data

Label: 1-6x6

Requested Pond Water Surface Elevations

Minimum (Headwater)	956.62 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	969.10 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Box	C0	Forward	TW	960.80	969.10
Tailwater Settings	Tailwater			(N/A)	(N/A)

Watershed

Subsection: Outlet Input Data

Label: 1-6x6

Structure ID: C0
Structure Type: Culvert-Box

Number of Barrels	1
Width	6.00 ft
Height	6.00 ft
Length	100.00 ft
Length (Computed Barrel)	100.00 ft
Slope (Computed)	0.001 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.003
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.0000
C	0.0292
Y	0.7400
T1 ratio (HW/D)	1.108
T2 ratio (HW/D)	1.206
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	967.45 ft	T1 Flow	308.64 ft ³ /s
T2 Elevation	968.04 ft	T2 Flow	352.73 ft ³ /s

Watershed

Subsection: Outlet Input Data

Label: 1-6x6

Structure ID: TW	
Structure Type: TW Setup, DS Channel	

Tailwater Type	Downstream Channel
Catalog Conduit	Chn-Trapz - 1
Channel Slope	0.003 ft/ft
Channel Invert Elevation	960.65 ft

Convergence Tolerances	
Maximum Iterations	40
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Watershed

Subsection: Elevation-Volume-Flow Table (Pond)

Label: 107thAveBasin

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	956.62 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.033 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
956.62	0.00	0.000	0.000	0.00	0.00	0.00
956.72	0.00	0.008	0.000	0.00	0.00	5.73
956.82	0.00	0.016	0.000	0.00	0.00	11.46
956.92	0.00	0.024	0.000	0.00	0.00	17.19
957.02	0.00	0.034	0.000	0.00	0.00	24.54
957.12	0.00	0.053	0.000	0.00	0.00	38.33
957.22	0.00	0.072	0.000	0.00	0.00	52.13
957.32	0.00	0.091	0.000	0.00	0.00	65.92
957.42	0.00	0.110	0.000	0.00	0.00	79.71
957.52	0.00	0.129	0.000	0.00	0.00	93.51
957.62	0.00	0.148	0.000	0.00	0.00	107.30
957.72	0.00	0.167	0.000	0.00	0.00	121.10
957.82	0.00	0.186	0.000	0.00	0.00	134.89
957.92	0.00	0.205	0.000	0.00	0.00	148.68
958.02	0.00	0.226	0.000	0.00	0.00	164.22
958.12	0.00	0.257	0.000	0.00	0.00	186.73
958.22	0.00	0.288	0.000	0.00	0.00	209.23
958.32	0.00	0.319	0.000	0.00	0.00	231.74
958.42	0.00	0.350	0.000	0.00	0.00	254.25
958.52	0.00	0.381	0.000	0.00	0.00	276.75
958.62	0.00	0.412	0.000	0.00	0.00	299.26
958.72	0.00	0.443	0.000	0.00	0.00	321.76
958.82	0.00	0.474	0.000	0.00	0.00	344.27
958.92	0.00	0.505	0.000	0.00	0.00	366.78
959.02	0.00	0.540	0.000	0.00	0.00	391.75
959.12	0.00	0.588	0.000	0.00	0.00	426.60
959.22	0.00	0.636	0.000	0.00	0.00	461.45
959.32	0.00	0.684	0.000	0.00	0.00	496.29
959.42	0.00	0.732	0.000	0.00	0.00	531.14

Watershed

Subsection: Elevation-Volume-Flow Table (Pond)

Label: 107thAveBasin

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
959.52	0.00	0.780	0.000	0.00	0.00	565.99
959.62	0.00	0.828	0.000	0.00	0.00	600.84
959.72	0.00	0.876	0.000	0.00	0.00	635.69
959.82	0.00	0.924	0.000	0.00	0.00	670.53
959.92	0.00	0.972	0.000	0.00	0.00	705.38
960.02	0.00	1.025	0.000	0.00	0.00	744.00
960.12	0.00	1.099	0.000	0.00	0.00	797.73
960.22	0.00	1.173	0.000	0.00	0.00	851.45
960.32	0.00	1.247	0.000	0.00	0.00	905.18
960.42	0.00	1.321	0.000	0.00	0.00	958.90
960.52	0.00	1.395	0.000	0.00	0.00	1,012.62
960.62	0.00	1.469	0.000	0.00	0.00	1,066.35
960.72	0.00	1.543	0.000	0.00	0.00	1,120.07
960.80	0.00	1.602	0.000	0.00	0.00	1,163.05
960.82	0.04	1.617	0.000	0.00	0.04	1,173.83
960.92	0.58	1.691	0.000	0.00	0.58	1,228.10
961.02	1.55	1.818	0.000	0.00	1.55	1,321.41
961.12	2.76	2.158	0.000	0.00	2.76	1,569.47
961.22	4.20	2.498	0.000	0.00	4.20	1,817.75
961.32	5.85	2.838	0.000	0.00	5.85	2,066.24
961.42	7.69	3.178	0.000	0.00	7.69	2,314.92
961.52	9.68	3.518	0.000	0.00	9.68	2,563.75
961.62	11.82	3.858	0.000	0.00	11.82	2,812.72
961.72	14.14	4.198	0.000	0.00	14.14	3,061.89
961.82	16.55	4.538	0.000	0.00	16.55	3,311.14
961.92	19.10	4.878	0.000	0.00	19.10	3,560.53
962.02	21.75	5.319	0.000	0.00	21.75	3,883.20
962.12	24.53	6.163	0.000	0.00	24.53	4,498.73
962.22	27.48	7.007	0.000	0.00	27.48	5,114.41
962.32	30.46	7.851	0.000	0.00	30.46	5,730.14
962.42	33.58	8.695	0.000	0.00	33.58	6,346.00
962.52	36.80	9.539	0.000	0.00	36.80	6,961.97
962.62	40.07	10.383	0.000	0.00	40.07	7,577.98
962.72	43.43	11.227	0.000	0.00	43.43	8,194.09
962.82	46.98	12.071	0.000	0.00	46.98	8,810.38
962.92	50.51	12.915	0.000	0.00	50.51	9,426.66
963.02	54.17	13.857	0.000	0.00	54.17	10,114.35
963.12	57.88	15.192	0.000	0.00	57.88	11,087.28
963.22	61.73	16.527	0.000	0.00	61.73	12,060.33
963.32	65.62	17.862	0.000	0.00	65.62	13,033.43
963.42	69.66	19.197	0.000	0.00	69.66	14,006.69
963.52	73.65	20.532	0.000	0.00	73.65	14,979.88
963.62	77.80	21.867	0.000	0.00	77.80	15,953.24

Watershed

Subsection: Elevation-Volume-Flow Table (Pond)

Label: 107thAveBasin

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
963.72	82.05	23.202	0.000	0.00	82.05	16,926.70
963.82	86.31	24.537	0.000	0.00	86.31	17,900.17
963.92	90.66	25.872	0.000	0.00	90.66	18,873.73
964.02	95.08	27.252	0.000	0.00	95.08	19,880.03
964.12	99.59	28.812	0.000	0.00	99.59	21,017.10
964.22	104.16	30.372	0.000	0.00	104.16	22,154.23
964.32	108.80	31.932	0.000	0.00	108.80	23,291.43
964.42	113.48	33.492	0.000	0.00	113.48	24,428.67
964.52	118.24	35.052	0.000	0.00	118.24	25,565.99
964.62	123.08	36.612	0.000	0.00	123.08	26,703.39
964.72	128.01	38.172	0.000	0.00	128.01	27,840.88
964.82	132.89	39.732	0.000	0.00	132.89	28,978.32
964.92	137.93	41.292	0.000	0.00	137.93	30,115.92
965.02	143.06	42.864	0.000	0.00	143.06	31,262.18
965.12	148.12	44.483	0.000	0.00	148.12	32,442.63
965.22	153.35	46.102	0.000	0.00	153.35	33,623.26
965.32	158.60	47.721	0.000	0.00	158.60	34,803.90
965.42	163.94	49.340	0.000	0.00	163.94	35,984.63
965.52	169.28	50.959	0.000	0.00	169.28	37,165.37
965.62	174.72	52.578	0.000	0.00	174.72	38,346.21
965.72	180.18	54.197	0.000	0.00	180.18	39,527.06
965.82	185.72	55.816	0.000	0.00	185.72	40,707.99
965.92	191.37	57.435	0.000	0.00	191.37	41,889.03
966.02	197.03	59.066	0.000	0.00	197.03	43,078.65
966.12	202.67	60.744	0.000	0.00	202.67	44,302.53
966.22	208.53	62.422	0.000	0.00	208.53	45,526.61
966.32	214.28	64.100	0.000	0.00	214.28	46,750.59
966.42	220.15	65.778	0.000	0.00	220.15	47,974.69
966.52	226.13	67.456	0.000	0.00	226.13	49,198.89
966.62	232.08	69.134	0.000	0.00	232.08	50,423.07
966.72	238.07	70.812	0.000	0.00	238.07	51,647.30
966.82	244.12	72.490	0.000	0.00	244.12	52,871.58
966.92	250.32	74.168	0.000	0.00	250.32	54,095.99
967.02	256.52	75.858	0.000	0.00	256.52	55,329.28
967.12	262.74	77.597	0.000	0.00	262.74	56,598.02
967.22	269.00	79.336	0.000	0.00	269.00	57,866.79
967.32	275.33	81.075	0.000	0.00	275.33	59,135.63
967.42	281.67	82.814	0.000	0.00	281.67	60,404.49
967.52	288.08	84.553	0.000	0.00	288.08	61,673.41
967.62	294.57	86.292	0.000	0.00	294.57	62,942.42
967.72	301.05	88.031	0.000	0.00	301.05	64,211.41
967.82	307.58	89.770	0.000	0.00	307.58	65,480.46
967.92	314.28	91.509	0.000	0.00	314.28	66,749.67

Watershed

Subsection: Elevation-Volume-Flow Table (Pond)

Label: 107thAveBasin

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
968.02	320.96	93.260	0.000	0.00	320.96	68,028.01
968.12	327.59	95.062	0.000	0.00	327.59	69,342.90
968.22	334.42	96.864	0.000	0.00	334.42	70,657.98
968.32	341.12	98.666	0.000	0.00	341.12	71,972.92
968.42	348.04	100.468	0.000	0.00	348.04	73,288.10
968.52	354.91	102.270	0.000	0.00	354.91	74,603.22
968.62	361.84	104.072	0.000	0.00	361.84	75,918.40
968.72	368.81	105.874	0.000	0.00	368.81	77,233.63
968.82	375.85	107.676	0.000	0.00	375.85	78,548.91
968.92	382.15	109.478	0.000	0.00	382.15	79,863.47
969.02	387.37	111.288	0.000	0.00	387.37	81,182.46
969.10	391.53	112.760	0.000	0.00	391.53	82,255.29

Watershed

Subsection: Pond Routed Hydrograph (total out)

Label: 107thAveBasin (OUT)

Peak Discharge	307.99 ft ³ /s
Time to Peak	6.600 hours
Hydrograph Volume	156.833 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
4.100	0.00	0.28	4.29	8.93	14.58
4.267	20.54	23.85	26.66	29.41	32.08
4.433	34.63	37.04	39.30	41.42	43.40
4.600	45.47	48.01	51.60	55.68	59.78
4.767	64.36	69.28	74.49	81.12	90.68
4.933	102.19	114.42	127.06	139.79	151.93
5.100	163.49	174.47	184.96	195.09	204.42
5.267	213.24	221.47	229.08	235.97	242.26
5.433	248.01	253.15	257.62	261.48	264.93
5.600	268.04	270.85	273.41	275.77	277.98
5.767	280.09	282.12	284.09	285.98	287.78
5.933	289.52	291.18	292.77	294.30	295.76
6.100	297.17	298.52	299.79	300.98	302.09
6.267	303.12	304.05	304.90	305.65	306.30
6.433	306.84	307.27	307.60	307.83	307.96
6.600	307.99	307.92	307.77	307.53	307.20
6.767	306.79	306.30	305.72	305.07	304.35
6.933	303.55	302.68	301.74	300.73	299.69
7.100	298.59	297.44	296.24	294.99	293.68
7.267	292.32	290.92	289.46	287.97	286.46
7.433	284.92	283.36	281.77	280.18	278.58
7.600	276.95	275.31	273.65	271.97	270.28
7.767	268.57	266.86	265.13	263.38	261.63
7.933	259.88	258.13	256.36	254.54	252.72
8.100	250.91	249.09	247.28	245.47	243.67
8.267	241.90	240.15	238.40	236.67	234.95
8.433	233.23	231.52	229.82	228.12	226.43
8.600	224.75	223.07	221.40	219.75	218.12
8.767	216.51	214.90	213.33	211.77	210.23
8.933	208.70	207.15	205.60	204.07	202.54
9.100	201.08	199.63	198.18	196.73	195.26
9.267	193.79	192.33	190.87	189.42	187.98
9.433	186.54	185.13	183.73	182.35	180.97
9.600	179.61	178.27	176.93	175.60	174.28
9.767	172.97	171.67	170.37	169.08	167.81
9.933	166.56	165.31	164.06	162.83	161.60
10.100	160.38	159.16	157.96	156.77	155.59

Watershed

Subsection: Pond Routed Hydrograph (total out)

Label: 107thAveBasin (OUT)

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
10.267	154.42	153.25	152.09	150.94	149.80
10.433	148.66	147.55	146.46	145.38	144.31
10.600	143.24	142.14	141.04	139.95	138.87
10.767	137.79	136.73	135.68	134.64	133.60
10.933	132.58	131.59	130.60	129.61	128.64
11.100	127.67	126.70	125.73	124.77	123.81
11.267	122.86	121.94	121.01	120.10	119.19
11.433	118.28	117.39	116.50	115.62	114.75
11.600	113.88	113.02	112.17	111.34	110.50
11.767	109.66	108.84	108.02	107.20	106.39
11.933	105.59	104.79	103.99	103.21	102.43
12.100	101.66	100.89	100.12	99.37	98.62
12.267	97.88	97.14	96.41	95.68	94.94
12.433	94.14	93.35	92.56	91.78	91.00
12.600	90.22	89.44	88.67	87.90	87.14
12.767	86.38	85.64	84.91	84.18	83.46
12.933	82.75	82.04	81.34	80.65	79.95
13.100	79.26	78.58	77.90	77.25	76.59
13.267	75.95	75.31	74.68	74.05	73.43
13.433	72.84	72.25	71.67	71.09	70.51
13.600	69.93	69.36	68.78	68.21	67.64
13.767	67.08	66.52	65.97	65.43	64.91
13.933	64.39	63.87	63.36	62.86	62.35
14.100	61.86	61.36	60.88	60.40	59.92
14.267	59.45	58.98	58.51	58.05	57.60
14.433	57.16	56.72	56.29	55.86	55.43
14.600	55.01	54.59	54.17	53.60	53.03
14.767	52.47	51.91	51.36	50.81	50.25
14.933	49.67	49.10	48.54	47.98	47.43
15.100	46.89	46.35	45.81	45.29	44.77
15.267	44.25	43.74	43.25	42.77	42.31
15.433	41.85	41.39	40.94	40.49	40.05
15.600	39.62	39.20	38.79	38.37	37.97
15.767	37.56	37.16	36.77	36.39	36.01
15.933	35.63	35.26	34.89	34.52	34.16
16.100	33.81	33.46	33.12	32.78	32.45
16.267	32.12	31.80	31.47	31.15	30.84
16.433	30.53	30.23	29.93	29.65	29.36
16.600	29.07	28.79	28.51	28.24	27.96
16.767	27.69	27.42	27.16	26.90	26.65
16.933	26.39	26.14	25.89	25.64	25.40
17.100	25.15	24.91	24.68	24.45	24.22

Watershed

Subsection: Pond Routed Hydrograph (total out)

Label: 107thAveBasin (OUT)

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
17.267	24.01	23.79	23.57	23.36	23.15
17.433	22.94	22.73	22.53	22.32	22.12
17.600	21.92	21.70	21.34	20.99	20.65
17.767	20.31	19.97	19.65	19.32	18.98
17.933	18.60	18.21	17.84	17.48	17.12
18.100	16.77	16.43	16.11	15.80	15.50
18.267	15.20	14.90	14.61	14.33	14.06
18.433	13.79	13.54	13.29	13.04	12.80
18.600	12.56	12.32	12.09	11.87	11.66
18.767	11.46	11.26	11.07	10.88	10.69
18.933	10.51	10.33	10.15	9.98	9.81
19.100	9.64	9.49	9.34	9.19	9.04
19.267	8.90	8.75	8.61	8.47	8.34
19.433	8.21	8.07	7.94	7.82	7.69
19.600	7.58	7.47	7.36	7.25	7.14
19.767	7.03	6.93	6.83	6.73	6.63
19.933	6.53	6.43	6.34	6.24	6.15
20.100	6.06	5.97	5.88	5.80	5.73
20.267	5.65	5.57	5.50	5.43	5.36
20.433	5.29	5.21	5.15	5.08	5.01
20.600	4.94	4.88	4.81	4.75	4.69
20.767	4.62	4.56	4.50	4.44	4.38
20.933	4.33	4.27	4.21	4.16	4.11
21.100	4.07	4.02	3.97	3.93	3.88
21.267	3.84	3.79	3.75	3.70	3.66
21.433	3.62	3.58	3.53	3.49	3.45
21.600	3.41	3.37	3.33	3.29	3.26
21.767	3.22	3.18	3.14	3.11	3.07
21.933	3.04	3.00	2.97	2.93	2.90
22.100	2.86	2.83	2.80	2.77	2.74
22.267	2.71	2.68	2.66	2.63	2.61
22.433	2.58	2.56	2.53	2.51	2.48
22.600	2.46	2.43	2.41	2.38	2.36
22.767	2.34	2.32	2.29	2.27	2.25
22.933	2.23	2.20	2.18	2.16	2.14
23.100	2.12	2.10	2.08	2.06	2.04
23.267	2.02	2.00	1.98	1.96	1.94
23.433	1.92	1.90	1.88	1.86	1.85
23.600	1.83	1.81	1.79	1.77	1.76
23.767	1.74	1.72	1.71	1.69	1.67
23.933	1.66	1.64	1.62	1.61	1.59
24.100	1.58	1.56	1.54	1.51	1.48

Watershed

Subsection: Pond Routed Hydrograph (total out)

Label: 107thAveBasin (OUT)

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.033 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
24.267	1.45	1.42	1.39	1.36	1.33
24.433	1.31	1.28	1.25	1.23	1.20
24.600	1.18	1.15	1.13	1.11	1.08
24.767	1.06	1.04	1.02	1.00	0.98
24.933	0.96	0.94	0.92	0.90	0.88
25.100	0.86	0.84	0.83	0.81	0.79
25.267	0.78	0.76	0.74	0.73	0.71
25.433	0.70	0.68	0.67	0.66	0.64
25.600	0.63	0.62	0.60	0.59	0.58
25.767	0.57	0.56	0.55	0.53	0.52
25.933	0.51	0.50	0.49	0.48	0.47
26.100	0.46	0.45	0.44	0.44	0.43
26.267	0.42	0.41	0.40	0.39	0.39
26.433	0.38	0.37	0.36	0.36	0.35
26.600	0.34	0.33	0.33	0.32	0.31
26.767	0.31	0.30	0.30	0.29	0.28
26.933	0.28	0.27	0.27	0.26	0.26
27.100	0.25	0.25	0.24	0.24	0.23
27.267	0.23	0.22	0.22	0.21	0.21
27.433	0.21	0.20	0.20	0.19	0.19
27.600	0.19	0.18	0.18	0.17	0.17
27.767	0.17	0.16	0.16	0.16	0.15
27.933	0.15	0.15	0.15	0.14	0.14
28.100	0.14	0.13	0.13	0.13	0.13
28.267	0.12	0.12	0.12	0.12	0.11
28.433	0.11	0.11	0.11	0.10	0.10
28.600	0.10	0.10	0.10	0.09	0.09
28.767	0.09	0.09	0.09	0.09	0.08
28.933	0.08	0.08	0.08	0.08	0.08
29.100	0.07	0.07	0.07	0.07	0.07
29.267	0.07	0.07	0.06	0.06	0.06
29.433	0.06	0.06	0.06	0.06	0.06
29.600	0.05	0.05	0.05	0.05	0.05
29.767	0.05	0.05	0.05	0.05	0.05
29.933	0.04	0.04	0.04	0.04	0.04
30.100	0.04	0.04	0.04	0.04	0.04
30.267	0.04	0.04	0.04	0.04	0.04
30.433	0.03	0.03	0.03	0.03	0.03
30.600	0.03	0.03	0.03	0.03	0.03
30.767	0.03	0.03	0.03	0.03	0.03
30.933	0.03	0.03	0.03	0.03	0.03
31.100	0.03	0.03	0.03	0.03	0.03

Watershed

Subsection: Pond Routed Hydrograph (total out)

Label: 107thAveBasin (OUT)

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.033 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)				
31.267	0.03	0.03	0.03	0.03	0.03
31.433	0.03	0.03	0.03	0.03	0.03
31.600	0.03	0.03	0.03	0.03	0.03
31.767	0.03	0.03	0.03	0.03	0.03
31.933	0.03	0.03	0.03	0.03	0.03
32.100	0.02	0.02	0.02	0.02	0.02
32.267	0.02	0.02	0.02	0.02	0.02
32.433	0.02	0.02	0.02	0.02	0.02
32.600	0.02	0.02	0.02	0.02	0.02
32.767	0.02	0.02	0.02	0.02	0.02
32.933	0.02	0.02	0.02	0.02	0.02
33.100	0.02	0.02	0.02	0.02	0.02
33.267	0.02	0.02	0.02	0.02	0.02
33.433	0.02	0.02	0.02	0.02	0.02
33.600	0.02	0.02	0.02	0.02	0.02
33.767	0.02	0.02	0.02	0.02	0.02
33.933	0.02	0.02	0.02	0.02	0.02
34.100	0.02	0.02	0.02	0.02	0.02
34.267	0.02	0.02	0.02	0.02	0.02
34.433	0.02	0.02	0.02	0.02	0.02
34.600	0.02	0.02	0.01	0.01	0.01
34.767	0.01	0.01	0.01	0.01	0.01
34.933	0.01	0.01	0.01	(N/A)	(N/A)

Watershed

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Technical Memorandum
Durango Regional Conveyance Channel
75th Avenue to 107th Avenue

Date: January 10, 2011

To: Bobbie Ohler

From: Jeff Holzmeister

RE: Sediment Transport Comment Response

The purpose of the following technical memorandum is to address the sediment transport comments for the subject project. The Durango Regional Conveyance Channel (DRCC) project is a unique project that will convert numerous existing linear retention basins into a continuous regional drainage facility. The City of Phoenix (COP), Flood Control District of Maricopa County (FCDMC), and private development partnered on the project. The private developments constructed many drainage improvements within designated drainage easements. These improvements included: turf retention basins, gravel mulch lined basins, gravel mulch lined channels, and earthen channels. The existing facilities within the corridor severely limit the design alternatives. Specifically, Buckeye Feeder Channel, existing box culverts, 91st Avenue sanitary sewers, 89th Avenue roadway alignments, etc. establish the longitudinal slope of the channel. The slope of the channel is very flat. It varies from 0.0004 ft/ft to 0.0022 ft/ft (i.e., there are two small areas with slopes in excess of 0.0022 ft/ft). In addition, there are 16 culvert crossings (hardpoints) within the corridor. It is expected that several more crossings will be added as development occurs. The culverts will prevent long term degradation of the channel from occurring (i.e., stop headcuts from developing). Erosion/channel degradation does not appear to be the primary concern for this project. Rather deposition of sediment (long term maintenance) may be the more critical design issue.

Currently, the DRCC contributing watershed is a combination of agricultural land and residential developments. Until the watershed has been fully developed, the agricultural land may contribute sediment into the system. As the watershed becomes more urbanized, the sediment entering the system will decrease. The proposed facility does not have an outlet at the current time (storm water will pond east of 107th Avenue). Therefore, sediment entering the system will be deposited within the corridor. It is likely that maintenance will be required following significant storm events. The level of maintenance will be significantly reduced when the entire drainage corridor has been completed.

The following paragraphs will address the sediment transport questions.

Question 1: For the 60% submittal, please clarify the type of soil (in the channel) and verify that the velocity is below the permissible velocity for that soil. In the current HEC-RAS model, there are locations where velocities are greater than 6 ft/sec, which would require erosion protection.

Response 1: The geotechnical report was completed after the 60% submittal (due to crops in the field). The report was submitted to the FCDMC for your review. The soils within the corridor are sandy clay (CL) and clayey sand (SC). A large portion of the existing channel was lined with approximately 2 inches of gravel mulch.

In general, velocities within the corridor are less than 4 ft/sec. Areas at the inlets and outlets of culvert experience some acceleration (riprap was placed at these locations). In addition, there are several areas that required riprap protection (i.e., chutes, bends, confluence). These include: 103rd Avenue, 99th Avenue, 91st Avenue, and 75th Avenue.

In summary the entire channel will have erosion protection. The majority of the channel will have approximately 2 inches of rock mulch (1 ¼" minus). The remaining portion of the channel (west of 79th Avenue) will have 6" riprap or turf. It is anticipated that the channel east of 79th Avenue will remain earth lined until development occurs.

Question 2: For the 60% submittal, please include calculations for the erosion protection at structures (e.g., culverts, drop structures, etc.)

Response 2: The velocities within the project are relatively low (even at structures). The attached table is a calculation for degradation limited by armoring (incipient motion calculations). The table summarizes the Meyer-Peter Mueller, Competent Bottom Velocity, Lane's Tractive Force, and Yang's Incipient Motion methodology. The calculations show that riprap ($d_{50} = 6''$) is adequate for the riprap throughout this project.

Question 3: To verify the adequacy of the lateral weir, an unsteady state HEC-RAS model should be developed. The model should use the Hager's equation option for lateral weirs.

Response 3: An unsteady state HEC-RAS model utilizing Hager's equation for the lateral weir was developed for the project. The weir was designed based on the future culvert crossing at Riley Road being in place (shortened the weir length).

Question 4: To prevent rills and other erosion, the local drainage (e.g., off streets at culverts) should be examined; and, if necessary, drainage swales should be provided.

Response 4: Riprap, scuppers, and swales were included in the design to minimize local erosion.

Question 5: Please place riprap around the wingwalls of the culverts to reduce the potential for erosion (rilling).

Response 5: Riprap was placed around the culverts to reduce rilling.

Results of the geotechnical investigation were required for the sediment transport analyses. The geotechnical report was not completed prior to the 60% submittal due to crops in the field. In addition, results of the potholing required the channel invert to be modified after the 60% submittal.

In summary, the only erosion that would be expected within the corridor will occur at box culverts, chutes, bends, and/or confluences. These areas have been protected with dumped riprap. Dumped riprap was the media preferred by the FCDMC landscape architects.

The earthen channel section located between 79th Avenue and 75th Avenue has slopes of 0.0004 ft/ft and 0.0016 ft/ft. It is recommended that hydroseed be placed in this section to minimize erosion. The FCDMC and COP will determine the preferred surface treatment prior to the 100% submittal.

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Using FCDMC DDMSW 4.6.0

Assumptions:

Specific Weight of Stone = 150 lb/cu ft

Specific Weight of Water = 62.43 lb/cu ft

Type	Rock Size D50 (in)	Rock Size D50 (ft)	Maximum Avg Velocity (ft/s)
Channel Bed Straight Reach	0.50	0.04	1.80
	1.00	0.08	2.45
	2.00	0.17	3.50
	6.00	0.50	6.05
	9.00	0.75	7.40
	12.00	1.00	8.55
	18.00	1.50	10.50
	24.00	2.00	12.10
	30.00	2.50	13.55
	Channel Bed Curved Reach	0.50	0.04
1.00		0.08	1.75
2.00		0.17	2.55
6.00		0.50	4.35
9.00		0.75	5.30
12.00		1.00	6.15
18.00		1.50	7.50
24.00		2.00	8.65
30.00		2.50	9.70
Channel Banks Straight Reach (4:1) (14.04 degree bank angle)		0.50	0.04
	1.00	0.08	2.45
	2.00	0.17	3.50
	6.00	0.50	5.95
	9.00	0.75	7.30
	12.00	1.00	8.45
	18.00	1.50	10.35
	24.00	2.00	11.95
	30.00	2.50	13.35
	Channel Banks Curved Reach (4:1) (14.04 degree bank angle)	0.50	0.04
1.00		0.08	1.75
2.00		0.17	2.50
6.00		0.50	4.25
9.00		0.75	5.25
12.00		1.00	6.05
18.00		1.50	7.40
24.00		2.00	8.55
30.00		2.50	9.55

Competent Bottom Velocity $D_c = 1.88 * V_m^2$			
Dc (in)	Dc (mm)	Vm	Vm ²
0.30	7.52	2	4
0.37	9.52	2.25	5.0625
0.46	11.75	2.5	6.25
0.56	14.22	2.75	7.5625
0.67	16.92	3	9
0.78	19.86	3.25	10.5625
0.91	23.03	3.5	12.25
1.04	26.44	3.75	14.0625
1.18	30.08	4	16
1.34	33.96	4.25	18.0625
1.50	38.07	4.5	20.25
1.67	42.42	4.75	22.5625
1.85	47.00	5	25
2.04	51.82	5.25	27.5625
2.24	56.87	5.5	30.25
2.45	62.16	5.75	33.0625
2.66	67.68	6	36
2.89	73.44	6.25	39.0625
3.13	79.43	6.5	42.25
3.37	85.66	6.75	45.5625
3.63	92.12	7	49
3.89	98.82	7.25	52.5625
4.16	105.75	7.5	56.25
4.45	112.92	7.75	60.0625
4.74	120.32	8	64
5.04	127.96	8.25	68.0625
5.35	135.83	8.5	72.25
5.67	143.94	8.75	76.5625
6.00	152.28	9	81
6.33	160.86	9.25	85.5625
6.68	169.67	9.5	90.25
7.04	178.72	9.75	95.0625
7.40	188.00	10	100

Dc = diameter of particle
Vm = mean channel velocity

Yang Incipient Motion $D_c = 0.00659 * V_{cr}^2$				
Dc(mm)	Dc(in)	Dc(ft)	Vcr	Vcr ²
8.034528	0.32	0.03	2	4.00
10.1687	0.40	0.03	2.25	5.06
12.55395	0.49	0.04	2.5	6.25
15.19028	0.60	0.05	2.75	7.56
18.07769	0.71	0.06	3	9.00
21.21618	0.84	0.07	3.25	10.56
24.60574	0.97	0.08	3.5	12.25
28.24639	1.11	0.09	3.75	14.06
32.13811	1.27	0.11	4	16.00
36.28092	1.43	0.12	4.25	18.06
40.6748	1.60	0.13	4.5	20.25
45.31976	1.78	0.15	4.75	22.56
50.2158	1.98	0.16	5	25.00
55.36292	2.18	0.18	5.25	27.56
60.76112	2.39	0.20	5.5	30.25
66.4104	2.61	0.22	5.75	33.06
72.31075	2.85	0.24	6	36.00
78.46219	3.09	0.26	6.25	39.06
84.8647	3.34	0.28	6.5	42.25
91.5183	3.60	0.30	6.75	45.56
98.42297	3.87	0.32	7	49.00
105.5787	4.16	0.35	7.25	52.56
112.9856	4.45	0.37	7.5	56.25
120.6435	4.75	0.40	7.75	60.06
128.5524	5.06	0.42	8	64.00
136.7125	5.38	0.45	8.25	68.06
145.1237	5.71	0.48	8.5	72.25
153.7859	6.05	0.50	8.75	76.56
162.6992	6.41	0.53	9	81.00
171.8636	6.77	0.56	9.25	85.56
181.279	7.14	0.59	9.5	90.25
190.9456	7.52	0.63	9.75	95.06
200.8632	7.91	0.66	10	100.00

Dc = diameter of particle
Vcr = critical average water velocity
at incipient motion

Therefore, D50=6" riprap okay for 3 - 8.75 ft/s
Less than 3 ft/s DG okay (assuming D50>=0.71")
Greater than 8.75 ft/s use D50=9" riprap



engineering and environmental design

SHEET NO _____ OF _____

JOB NUMBER _____

TITLE _____

SUBJECT _____

MADE BY _____ DATE _____ CHECKED BY _____ DATE _____

Rip-Rap Extent @ w/s end of project (ADWR, 1966)

$$X = 2.3 \left(\frac{C}{\sqrt{g}} \right) y$$

x = distance from P.T. to protect
 y = depth of flow (max, ft)
 C = Chezy Coeff
 g = 32.2 ft/s²

$$C = 1.49 \frac{1}{n} (r_h)^{1/6}$$

n = 0.035
 r_h = hydraulic radius

$$C = 1.49 \left(\frac{1}{0.035} \right) (3.43)^{1/6} = 52.3$$

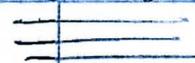
x-sect	max r _h	max depth
32076.08	2.88	5.18
31876.02	2.16	4.62
31710.87	3.43	4.74

$$x = 2.3 \left(\frac{52.3}{\sqrt{32.2}} \right) 5.18$$

$$\approx 109.8'$$

110' = x = distance from P.T. to protect

PT ≈ 316 + 65 00 use D₅₀ = 9"
 to sta 315 + 50



NOAA ATLAS 14: 33.414 N, 112.255 W, 997 feet (91st & DRCC)

100-yr, 10min intensity (in/hr) = 6.01

100-yr, 15min intensity (in/hr) = 4.96

100-yr, 30min intensity (in/hr) = 3.34

100-yr, 60min intensity (in/hr) = 2.07

100-yr, 2hr intensity (in/hr) = 1.13

100-yr, 6hr intensity (in/hr) = 0.43

Runoff Coefficient (C):

C-Turf = 0.2

C-DG = 0.7

C-Single Family = 0.65

C-Street/Concrete = 0.95

C-Gravel Rd/Shoulders = 0.8

Q's into DRCC Summary (from pipes, basin spillways, and channels)

Q, cfs	Station	Side (looking u/s)	Description	Method of Analysis or Reference	C	I (in/hr)	A (ac)	Tc (min)
214	315+86	Right	Spillway, L=30'	Tuscano Master Drainage Plan by CVL, : Q100 street adjacent to basin is 427 cfs, 1/2 max into basin = 214 cfs. With B=30', H=1.43', A=51.1 ft ² , V = 4.2 ft/s (max)				
6.9	311+00	Right	Pipe, 15" RCP	Rational Method	0.95	6.01		10 min
56.0	308+57	Left	Pipe, 2-24" pipes	Rating Curve - CulvertMaster with headwater 6" above top of basin & no tailwater = 56 cfs				
6.8	305+20	Right	Pipe, 15" RCP	Rational Method	0.87	6.01	1.3	10 min
30.3	304+00	Left	Spillway, L=15'	Rational Method (Spillway Rating Table, H = 0.63'; therefore V = 2.7 ft/s)	0.65	4.96	9.4	15 min
3.4	304+17	Right	Pipe, 15" RCP	Rational Method	0.95	6.01	0.6	10 min
644	302+00	Left	Channel From North	Regional Study HEC-1 Model (ultimate velocity once graded to 0.3% = 4.2 ft/s per manning eqn)				
2.9	300+83	Right	Pipe, 15" RCP	Rational Method	0.95	6.01	0.5	10 min
5.7	299+08	Right	Pipe, 15" RCP	Rational Method	0.95	6.01	1	10 min
40.6	294+96	Left	Spillway, L=40'	Rational Method (Spillway Rating Table, H = 0.46', V = 2.1 ft/s)	0.65	4.96	12.6	15 min
3.4	293+60	Right	Pipe, 15" RCP	Rational Method	0.95	6.01	0.6	10 min
3.5	291+04	Right	Pipe, 15" RCP (east) St Drainage	Rational Method	0.83	6.01	0.7	10 min
25.0	291+04	Right	Pipe, 24" RCP (west) Det Basin	Rating Curve - CulvertMaster with headwater 6" above top of basin & no tailwater = 25 cfs				
20.6	288+86	Left	Spillway, L=20'	Rational Method (Spillway Rating Table, H=0.44', V = 2.2 ft/s)	0.65	4.96	6.4	15 min
26.0	279+51	Left	Pipe, 24" RCP	Rating Curve - CulvertMaster with headwater 6" above top of basin & no tailwater = 26 cfs				
25.0	271+50	Left	Pipe, 24" RCP	Rating Curve - CulvertMaster with headwater 6" above top of basin & no tailwater = 25 cfs				
61	266+00	Left	Pipe, 2-24" RCP per survey	Tuscano Master Drainage Plan by CVL, calls out 61 cfs and 2 -30" RGRCP (vs. 2-24" per survey)				
47.0	230+35	Right	Pipe, New 30" RCP	Rating Curve - CulvertMaster with headwater at 100-yr Max WSEL & no tailwater = 47 cfs; with tailwater @ 100-yr max WSEL in Channel Q = 32 cfs				
1.7	225+55	Right	Pipe, New 12" RCP	Rational Method	0.95	6.01	0.3	10 min
68.0	111+82	Left	Pipe, New 2-24" RCP	Rating Curve - CulvertMaster with headwater at interim condition max of 965' per 6" over 107th Ave low point and no tailwater = 68 cfs				
5.3	110+53	Left	Pipe, New 24" RCP	Rational Method	0.80	6.01	1.1	10 min

Spillway Rating Table: $Q = CLH^{3/2}$; $C = 3.0$, Q in table is cfs																				
Head (H), ft Length (L), ft	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00
5	2.6	9.5	21.4	39.0	62.9	93.7	132	178	233	296	369	452	545	648	762	888	1025	1174	1335	1509
10	4.5	14.8	31.2	54.0	83.9	121	167	221	284	356	438	530	633	746	871	1008	1157	1317	1491	1677
15	6.4	20.2	40.9	69.0	105	149	201	263	334	415	506	608	721	845	980	1128	1288	1461	1646	1845
20	8.3	25.5	50.7	84.0	126	176	236	305	385	474	575	686	809	943	1089	1248	1419	1604	1801	2012
25	10.1	30.8	60.4	99.0	147	204	271	348	435	534	643	764	896	1041	1198	1368	1551	1747	1957	2180
30	12.0	36.1	70.1	114	168	231	306	390	486	593	711	842	984	1139	1307	1488	1682	1890	2112	2348
35	13.9	41.4	79.9	129	189	259	340	433	537	652	780	920	1072	1238	1416	1608	1814	2033	2267	2516
40	15.8	46.7	89.6	144	210	287	375	475	587	712	848	998	1160	1336	1525	1728	1945	2176	2422	2683
45	17.6	52.0	99.4	159	231	314	410	518	638	771	917	1076	1248	1434	1634	1848	2076	2320	2578	2851
50	19.5	57.3	109	174	252	342	444	560	689	830	985	1154	1336	1532	1743	1968	2208	2463	2733	3019
55	21.4	62.6	119	189	273	369	479	602	739	889	1053	1231	1424	1630	1852	2088	2339	2606	2888	3186
60	23.3	67.9	129	204	293	397	514	645	790	949	1122	1309	1512	1729	1961	2208	2471	2749	3044	3354
65	25.1	73.2	138	219	314	424	549	687	840	1008	1190	1387	1600	1827	2070	2328	2602	2892	3199	3522
70	27.0	78.5	148	234	335	452	583	730	891	1067	1259	1465	1687	1925	2179	2448	2734	3036	3354	3690
75	28.9	83.8	158	249	356	479	618	772	942	1127	1327	1543	1775	2023	2287	2568	2865	3179	3509	3857
80	30.8	89.1	168	264	377	507	653	815	992	1186	1395	1621	1863	2122	2396	2688	2996	3322	3665	4025
85	32.6	94.4	177	279	398	535	688	857	1043	1245	1464	1699	1951	2220	2505	2808	3128	3465	3820	4193
90	34.5	99.7	187	294	419	562	722	899	1094	1304	1532	1777	2039	2318	2614	2928	3259	3608	3975	4360
95	36.4	105	197	309	440	590	757	942	1144	1364	1601	1855	2127	2416	2723	3048	3391	3752	4131	4528
100	38.3	110	207	324	461	617	792	984	1195	1423	1669	1933	2215	2514	2832	3168	3522	3895	4286	4696

* Length above is bottom width of a trapezoidal channel, weir length calculated based on 4:1 side slopes and respective head or depth of flow

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Culvert Calculator Report 308+57

Solve For: Discharge

Culvert Summary

Allowable HW Elevation	1,002.00 ft	Headwater Depth/Height	2.27
Computed Headwater Elev:	1,002.00 ft	Discharge	55.95 cfs
Inlet Control HW Elev.	1,001.94 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	1,002.00 ft	Control Type	Outlet Control

Grades

Upstream Invert	997.45 ft	Downstream Invert	996.89 ft
Length	87.40 ft	Constructed Slope	0.006407 ft/ft

Hydraulic Profile

Profile	CompositeM2PressureProfile	Depth, Downstream	1.83 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.83 ft
Velocity Downstream	9.29 ft/s	Critical Slope	0.013319 ft/ft

Section

Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	2		

Outlet Control Properties

Outlet Control HW Elev.	1,002.00 ft	Upstream Velocity Head	1.23 ft
Ke	0.50	Entrance Loss	0.62 ft

Inlet Control Properties

Inlet Control HW Elev.	1,001.94 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	6.3 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Rating Table Report 308+57

Range Data:

	Minimum	Maximum	Increment
Allowable HW E	997.50	1,002.00	0.25 ft

HW Elev. (ft)	Discharge (cfs)	Dn. V (ft/s)	Dn. depth (ft)
997.50	0.02	0.87	0.03
997.75	0.67	2.24	0.19
998.00	2.20	3.18	0.33
998.25	4.51	3.93	0.48
998.50	7.50	4.54	0.62
998.75	11.07	5.06	0.76
999.00	15.13	5.50	0.90
999.25	19.54	5.87	1.05
999.50	24.20	6.17	1.20
999.75	28.99	6.40	1.35
1,000.00	34.21	6.81	1.49
1,000.25	38.14	7.20	1.57
1,000.50	41.26	7.53	1.63
1,000.75	44.16	7.85	1.68
1,001.00	46.89	8.16	1.72
1,001.25	49.39	8.46	1.75
1,001.50	51.63	8.73	1.78
1,001.75	53.82	9.01	1.81
1,002.00	55.95	9.29	1.83

Culvert Calculator Report

291+04

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	999.50 ft	Headwater Depth/Height	2.40
Computed Headwater Elev.	999.50 ft	Discharge	25.00 cfs
Inlet Control HW Elev.	998.56 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	999.50 ft	Control Type	Outlet Control

Grades			
Upstream Invert	994.70 ft	Downstream Invert	994.50 ft
Length	144.00 ft	Constructed Slope	0.002288 ft/ft

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	1.76 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.76 ft
Velocity Downstream	8.53 ft/s	Critical Slope	0.010975 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	999.50 ft	Upstream Velocity Head	0.98 ft
Ke	0.50	Entrance Loss	0.49 ft

Inlet Control Properties			
Inlet Control HW Elev.	998.56 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	3.1 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Rating Table Report 291+04

Range Data:

	Minimum	Maximum	Increment
Allowable HW E	994.50	999.50	0.25 ft

HW Elev. (ft)	Discharge (cfs)	Dn. V (ft/s)	Dn. depth (ft)
994.50	0.00	0.00	0.00
994.75	0.01	0.83	0.03
995.00	0.34	2.09	0.20
995.25	1.12	2.86	0.36
995.50	2.30	3.48	0.53
995.75	3.81	4.01	0.68
996.00	5.60	4.50	0.84
996.25	7.59	4.96	0.98
996.50	9.68	5.39	1.11
996.75	11.76	5.80	1.23
997.00	13.75	6.17	1.34
997.25	15.40	6.48	1.42
997.50	16.62	6.72	1.47
997.75	17.80	6.95	1.52
998.00	18.94	7.18	1.57
998.25	20.04	7.40	1.61
998.50	21.10	7.63	1.65
998.75	22.12	7.85	1.68
999.00	23.11	8.08	1.71
999.25	24.06	8.30	1.74
999.50	25.00	8.53	1.76

Culvert Calculator Report 279+51

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	999.50 ft	Headwater Depth/Height	2.45
Computed Headwater Elev:	999.50 ft	Discharge	25.77 cfs
Inlet Control HW Elev.	998.61 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	999.50 ft	Control Type	Outlet Control

Grades			
Upstream Invert	994.60 ft	Downstream Invert	993.90 ft
Length	164.00 ft	Constructed Slope	0.004268 ft/ft

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	1.78 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.78 ft
Velocity Downstream	8.72 ft/s	Critical Slope	0.011536 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	999.50 ft	Upstream Velocity Head	1.05 ft
Ke	0.50	Entrance Loss	0.52 ft

Inlet Control Properties			
Inlet Control HW Elev.	998.61 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	3:1 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Rating Table Report

279+51

Range Data:

	Minimum	Maximum	Increment
Allowable HW E	994.50	999.50	0.25 ft

HW Elev. (ft)	Discharge (cfs)	Dn. V (ft/s)	Dn. depth (ft)
994.50	0.00	0.00	0.00
994.75	0.09	1.47	0.10
995.00	0.60	2.43	0.27
995.25	1.53	3.11	0.43
995.50	2.83	3.69	0.59
995.75	4.47	4.21	0.74
996.00	6.40	4.70	0.90
996.25	8.59	5.17	1.04
996.50	10.95	5.64	1.19
996.75	13.36	6.09	1.32
997.00	15.58	6.52	1.42
997.25	17.35	6.86	1.50
997.50	18.39	7.06	1.54
997.75	19.38	7.27	1.58
998.00	20.36	7.47	1.62
998.25	21.32	7.68	1.65
998.50	22.26	7.89	1.68
998.75	23.17	8.10	1.71
999.00	24.06	8.30	1.74
999.25	24.93	8.51	1.76
999.50	25.77	8.72	1.78

Culvert Calculator Report 271+50

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	999.50 ft	Headwater Depth/Height	2.20
Computed Headwater Elev:	999.50 ft	Discharge	24.82 cfs
Inlet Control HW Elev.	998.92 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	999.50 ft	Control Type	Outlet Control

Grades			
Upstream Invert	995.10 ft	Downstream Invert	994.40 ft
Length	146.00 ft	Constructed Slope	0.004795 ft/ft

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	1.76 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.76 ft
Velocity Downstream	8.49 ft/s	Critical Slope	0.010852 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	999.50 ft	Upstream Velocity Head	0.97 ft
Ke	0.50	Entrance Loss	0.48 ft

Inlet Control Properties			
Inlet Control HW Elev.	998.92 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	3.1 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Rating Table Report 271+50

Range Data:

	Minimum	Maximum	Increment
Allowable HW E	995.00	999.50	0.25 ft

HW Elev. (ft)	Discharge (cfs)	Dn. V (ft/s)	Dn. depth (ft)
995.00	0.00	0.00	0.00
995.25	0.09	1.48	0.10
995.50	0.60	2.42	0.26
995.75	1.52	3.16	0.42
996.00	2.81	3.78	0.57
996.25	4.43	4.29	0.73
996.50	6.32	4.72	0.88
996.75	8.47	5.15	1.04
997.00	10.85	5.62	1.18
997.25	13.35	6.09	1.32
997.50	15.75	6.55	1.43
997.75	17.74	6.93	1.52
998.00	18.97	7.18	1.57
998.25	19.98	7.39	1.61
998.50	20.99	7.61	1.64
998.75	21.98	7.82	1.67
999.00	22.95	8.04	1.70
999.25	23.90	8.26	1.73
999.50	24.82	8.49	1.76

Culvert Calculator Report

230+35
(No Tailwater)

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	994.20 ft	Headwater Depth/Height	2.13
Computed Headwater Elev.	994.20 ft	Discharge	47.05 cfs
Inlet Control HW Elev.	994.20 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	994.19 ft	Control Type	Inlet Control
Grades			
Upstream Invert	988.87 ft	Downstream Invert	988.83 ft
Length	62.00 ft	Constructed Slope	0.000645 ft/ft
Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	2.26 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	2.26 ft
Velocity Downstream	10.08 ft/s	Critical Slope	0.011548 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.50 ft
Section Size	30 inch	Rise	2.50 ft
Number Sections	1		
Outlet Control Properties			
Outlet Control HW Elev.	994.19 ft	Upstream Velocity Head	1.43 ft
Ke	0.50	Entrance Loss	0.71 ft
Inlet Control Properties			
Inlet Control HW Elev.	994.20 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	4.9 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Culvert Calculator Report

230+35

(100-w Max WSEL Tailwater)

Solve For: Discharge

Culvert Summary

Allowable HW Elevation	994.20 ft	Headwater Depth/Height	2.13
Computed Headwater Elev.	994.20 ft	Discharge	32.37 cfs
Inlet Control HW Elev.	992.80 ft	Tailwater Elevation	992.80 ft
Outlet Control HW Elev.	994.20 ft	Control Type	Outlet Control

Grades

Upstream Invert	988.87 ft	Downstream Invert	988.83 ft
Length	62.00 ft	Constructed Slope	0.000645 ft/ft

Hydraulic Profile

Profile	Pressure Profile	Depth, Downstream	3.97 ft
Slope Type	N/A	Normal Depth	N/A ft
Flow Regime	N/A	Critical Depth	1.94 ft
Velocity Downstream	6.59 ft/s	Critical Slope	0.006961 ft/ft

Section

Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.50 ft
Section Size	30 inch	Rise	2.50 ft
Number Sections	1		

Outlet Control Properties

Outlet Control HW Elev.	994.20 ft	Upstream Velocity Head	0.68 ft
Ke	0.50	Entrance Loss	0.34 ft

Inlet Control Properties

Inlet Control HW Elev.	992.80 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	4.9 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Rating Table Report 230+35

Range Data:

	Minimum	Maximum	Increment
Allowable HW E	988.75	994.50	0.25 ft

HW Elev. (ft)	Discharge (cfs)	Dn. V (ft/s)	Dn. depth (ft)
988.75	0.00	0.00	0.00
989.00	0.05	1.24	0.07
989.25	0.52	2.25	0.23
989.50	1.49	2.97	0.40
989.75	2.93	3.56	0.56
990.00	4.79	4.08	0.72
990.25	7.00	4.55	0.88
990.50	9.53	4.99	1.03
990.75	12.29	5.41	1.18
991.00	15.31	5.82	1.32
991.25	18.42	6.22	1.45
991.50	21.61	6.61	1.58
991.75	24.75	6.98	1.70
992.00	27.77	7.35	1.80
992.25	30.54	7.70	1.88
992.50	32.92	8.00	1.95
992.75	35.22	8.31	2.02
993.00	37.44	8.61	2.07
993.25	39.58	8.92	2.12
993.50	41.66	9.23	2.16
993.75	43.67	9.54	2.20
994.00	45.62	9.85	2.24
994.25	47.37	10.14	2.26
994.50	48.94	10.40	2.29

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Culvert Calculator Report 111+82

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	965.00 ft	Headwater Depth/Height	4.01
Computed Headwater Elev:	965.00 ft	Discharge	68.38 cfs
Inlet Control HW Elev.	961.93 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	965.00 ft	Control Type	Outlet Control
Grades			
Upstream Invert	956.99 ft	Downstream Invert	956.62 ft
Length	184.00 ft	Constructed Slope	0.002011 ft/ft
Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	1.91 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.91 ft
Velocity Downstream	11.05 ft/s	Critical Slope	0.019853 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	24 inch	Rise	2.00 ft
Number Sections	2		
Outlet Control Properties			
Outlet Control HW Elev.	965.00 ft	Upstream Velocity Head	1.84 ft
Ke	0.20	Entrance Loss	0.37 ft
Inlet Control Properties			
Inlet Control HW Elev.	961.93 ft	Flow Control	Submerged
Inlet Type	Groove end w/headwall	Area Full	6.3 ft ²
K	0.00180	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	2
C	0.02920	Equation Form	1
Y	0.74000		

Rating Table Report 111+82

Range Data:

	Minimum	Maximum	Increment
Allowable HW E	957.00	965.00	0.25 ft

HW Elev. (ft)	Discharge (cfs)	Dn. V (ft/s)	Dn. depth (ft)
957.00	0.00	0.00	0.01
957.25	0.54	1.97	0.18
957.50	2.06	2.79	0.35
957.75	4.44	3.44	0.52
958.00	7.53	4.00	0.68
958.25	11.19	4.50	0.84
958.50	15.24	4.97	0.98
958.75	19.42	5.40	1.11
959.00	23.50	5.79	1.23
959.25	27.29	6.15	1.33
959.50	29.98	6.40	1.40
959.75	32.40	6.64	1.45
960.00	34.71	6.86	1.50
960.25	36.92	7.08	1.55
960.50	39.04	7.30	1.59
960.75	41.09	7.51	1.63
961.00	43.07	7.72	1.66
961.25	44.98	7.94	1.69
961.50	46.83	8.15	1.72
961.75	48.63	8.37	1.74
962.00	50.38	8.58	1.77
962.25	52.09	8.79	1.79
962.50	53.74	9.00	1.81
962.75	55.36	9.21	1.82
963.00	56.94	9.42	1.84
963.25	58.48	9.63	1.85
963.50	59.98	9.84	1.86
963.75	61.46	10.05	1.87
964.00	62.90	10.25	1.88
964.25	64.31	10.46	1.89
964.50	65.69	10.66	1.90
964.75	67.05	10.85	1.91
965.00	68.38	11.05	1.91



POINT PRECIPITATION FREQUENCY ESTIMATES FROM NOAA ATLAS 14



Arizona 33.414 N 112.255 W 997 feet

from "Precipitation-Frequency Atlas of the United States" NOAA Atlas 14, Volume 1, Version 4

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland, 2006

Extracted: Mon Aug 29 2011

Precipitation Intensity Estimates (in/hr)

ARI* (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	2.36	1.80	1.48	1.00	0.62	0.35	0.25	0.15	0.08	0.05	0.03	0.01	0.01	0.01	0.00	0.00	0.00	0.00
2	3.08	2.35	1.94	1.30	0.81	0.45	0.32	0.19	0.10	0.06	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.00
5	4.19	3.18	2.63	1.77	1.10	0.61	0.42	0.24	0.13	0.08	0.04	0.02	0.01	0.01	0.01	0.01	0.00	0.00
10	5.02	3.82	3.16	2.13	1.32	0.72	0.50	0.28	0.15	0.09	0.05	0.03	0.02	0.01	0.01	0.01	0.01	0.00
25	6.14	4.68	3.87	2.60	1.61	0.88	0.61	0.34	0.18	0.11	0.06	0.03	0.02	0.02	0.01	0.01	0.01	0.00
50	7.01	5.34	4.41	2.97	1.84	1.00	0.70	0.39	0.20	0.13	0.07	0.04	0.02	0.02	0.01	0.01	0.01	0.01
100	7.90	6.01	4.96	3.34	2.07	1.13	0.79	0.43	0.23	0.14	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01
200	8.78	6.69	5.53	3.72	2.30	1.26	0.89	0.48	0.25	0.16	0.09	0.05	0.03	0.02	0.01	0.01	0.01	0.01
500	9.97	7.59	6.27	4.22	2.61	1.43	1.02	0.55	0.28	0.18	0.10	0.06	0.04	0.03	0.02	0.01	0.01	0.01
1000	10.88	8.28	6.84	4.61	2.85	1.56	1.13	0.60	0.31	0.20	0.11	0.07	0.04	0.03	0.02	0.01	0.01	0.01

* These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval. Please refer to NOAA Atlas 14 Document for more information. NOTE: Formatting forces estimates near zero to appear as zero.

* Upper bound of the 90% confidence interval Precipitation Intensity Estimates (in/hr)

ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	2.92	2.22	1.83	1.23	0.76	0.42	0.30	0.18	0.10	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
2	3.80	2.90	2.40	1.61	1.00	0.55	0.39	0.22	0.12	0.07	0.04	0.02	0.01	0.01	0.01	0.00	0.00	0.00
5	5.15	3.92	3.24	2.18	1.35	0.73	0.51	0.29	0.15	0.09	0.05	0.03	0.02	0.01	0.01	0.01	0.00	0.00
10	6.16	4.68	3.87	2.60	1.61	0.87	0.60	0.34	0.18	0.10	0.06	0.03	0.02	0.02	0.01	0.01	0.01	0.00
25	7.50	5.71	4.71	3.17	1.96	1.05	0.73	0.40	0.21	0.12	0.07	0.04	0.02	0.02	0.01	0.01	0.01	0.01
50	8.51	6.47	5.35	3.60	2.23	1.20	0.83	0.45	0.24	0.14	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01
100	9.55	7.27	6.01	4.04	2.50	1.34	0.94	0.51	0.26	0.16	0.09	0.05	0.03	0.02	0.01	0.01	0.01	0.01
200	10.62	8.08	6.68	4.50	2.78	1.49	1.06	0.57	0.29	0.18	0.10	0.06	0.04	0.03	0.02	0.01	0.01	0.01
500	12.07	9.19	7.59	5.11	3.16	1.70	1.22	0.64	0.33	0.20	0.11	0.07	0.04	0.03	0.02	0.01	0.01	0.01
1000	13.19	10.04	8.30	5.59	3.46	1.86	1.35	0.71	0.36	0.22	0.13	0.07	0.05	0.03	0.02	0.01	0.01	0.01

* The upper bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are greater than.

** These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval.

Please refer to NOAA Atlas 14 Document for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

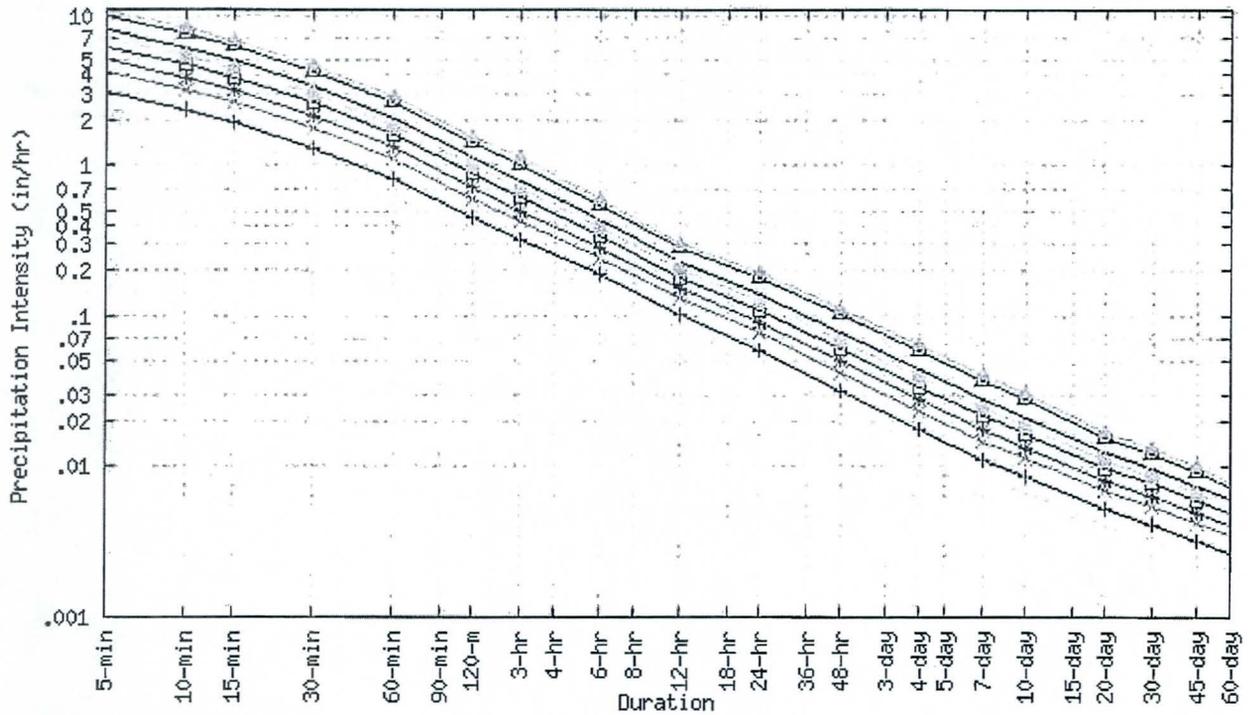
* Lower bound of the 90% confidence interval Precipitation Intensity Estimates (in/hr)

ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	1.94	1.48	1.22	0.82	0.51	0.29	0.21	0.13	0.07	0.04	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00

2	2.54	1.94	1.60	1.08	0.67	0.38	0.27	0.16	0.09	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00
5	3.43	2.62	2.16	1.45	0.90	0.51	0.35	0.21	0.11	0.07	0.04	0.02	0.01	0.01	0.01	0.00	0.00	0.00
10	4.10	3.12	2.58	1.74	1.07	0.60	0.41	0.24	0.13	0.08	0.04	0.02	0.02	0.01	0.01	0.01	0.00	0.00
25	4.94	3.76	3.11	2.09	1.29	0.72	0.50	0.29	0.15	0.10	0.05	0.03	0.02	0.01	0.01	0.01	0.01	0.00
50	5.57	4.24	3.50	2.36	1.46	0.81	0.56	0.32	0.17	0.11	0.06	0.03	0.02	0.02	0.01	0.01	0.01	0.00
100	6.16	4.68	3.87	2.60	1.61	0.90	0.63	0.35	0.19	0.12	0.07	0.04	0.02	0.02	0.01	0.01	0.01	0.01
200	6.74	5.13	4.24	2.86	1.77	0.98	0.69	0.38	0.21	0.14	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01
500	7.46	5.68	4.69	3.16	1.96	1.09	0.77	0.43	0.23	0.16	0.09	0.05	0.03	0.02	0.01	0.01	0.01	0.01
1000	7.97	6.07	5.01	3.38	2.09	1.17	0.83	0.46	0.24	0.17	0.10	0.06	0.04	0.03	0.01	0.01	0.01	0.01

* The lower bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are less than.
 ** These precipitation frequency estimates are based on a partial duration maxima series, ARI is the Average Recurrence Interval.
 Please refer to NOAA Atlas 14 Document for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

Partial duration based Point IDF Curves - Version: 4
 33.414 N 112.255 W 997 ft



Mon Aug 29 14:35:40 2011

Average Recurrence Interval (years)				
1-year	5-year *	25-year -□-	100-year —	500-year -△-
2-year +	10-year *	50-year -■-	200-year	1000-year -▲-

Related Information

Maps & Aerials

[Click here](#) to see topographic maps and aerial photographs available for this location from [Microsoft Research Maps](#)

Watershed/Streamflow Information

[Click here](#) to see watershed and streamflow information available for this location from the U.S. Environmental Protection Agency's site

Climate Data Sources

National Climatic Data Center (NCDC) database

Locate NCDC climate stations within:

+/-30 minutes

or

+/-1 degree

of this location. Digital ASCII data can be obtained directly from [NCDC](#).

Note: Precipitation frequency results are based on analysis of precipitation data from a variety of sources, but largely NCDC. The following links provide general information about observing sites in the area, regardless of if their data was used in this study. For detailed information about the stations used in this study, please refer to the matching documentation available at the [PF Document](#) page

Natural Resources Conservation Service's (NRCS) SNOTEL dataset

At present, there are more than 700 [SNOTEL sites](#) typically located in the mountainous regions of the [Western U.S.](#) that report daily and/or hourly precipitation, air temperature, snow water equivalent and snow depth data.

[US Department of Commerce](#)

[National Oceanic and Atmospheric Administration](#)

[National Weather Service](#)

[Office of Hydrologic Development](#)

1325 East West Highway

Silver Spring, MD 20910

Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Flood Control District of Maricopa County
 Drainage Design Management System
 RIVER MECHANICS - RIPRAP

Project Reference: DRCC PHASE 2 TUSCANO

9/14/2011

Page 1

ID	Type	Section ID	Design Q (cfs)	Slope (ft/ft)	Width (ft)	Average Velocity (ft/s)	Specific Weight Stone (lb/cu ft)	Specific Weight Water (lb/cu ft)	Bank Angle (degrees)	D50 (ft)
ST 289	Sloped Drop Structure/Rock Chute		21	0.14	22.00	-	-	-	-	0.25
ST 304	Sloped Drop Structure/Rock Chute		30	0.21	15.00	-	-	-	-	0.41
ST 316	Sloped Drop Structure/Rock Chute		214	0.21	25.00	-	-	-	-	0.90
ST295	Sloped Drop Structure/Rock Chute		41	0.24	41.00	-	-	-	-	0.30

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APPENDIX D

TESTHOLE DATA



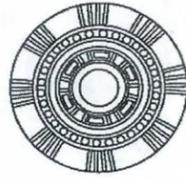
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**ORIGINAL
TESTHOLE DATA**



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Testhole Data Summary

Date: 10/4/2010
 Project Number: AZS0929-009
 Project Name: Durango Regional Conveyance Channel

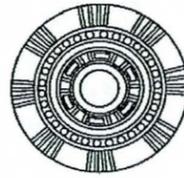


EXPIRES 09/30/2012

TH #	Location	Date of Excavation	Utility Owner	Utility Size	Utility Description	Coordinates		Stationing		Ground Elevation	Top Elevation	Bottom Elevation	Depth of Cover	Comments
						Northing	Easting	Stationing	Offset					
1	103rd Ave south of Country Place Blvd	10/1/2010	City of Phoenix Water	8"	DIP	878217.28	588964.65	None	None	972.68	962.42	961.67	10.26	
2	103rd Ave south of Country Place Blvd	10/1/2010	Salt River Project Electric	Four 2" & Two 3"	PVC	878217.14	588991.06	None	None	972.67	966.13	965.27	6.54	
3	103rd Ave south of Country Place Blvd	10/8/2010	Southwest Gas	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
5	103rd Ave south of Country Place Blvd	10/1/2010	City of Phoenix Water	8"	DIP	878257.71	588964.55	None	None	972.68	968.82	968.07	3.86	
6	103rd Ave south of Country Place Blvd	10/1/2010	Salt River Project Electric	Four 2" & Two 3"	PVC	878259.23	588990.44	None	None	973.24	968.92	967.34	4.32	
7	103rd Ave south of Country Place Blvd	10/8/2010	Southwest Gas	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
9	99th Ave south of Riverside Ave	10/4/2010	Salt River Project Electric	Three 2" & Three 2.5"	PVC	878383.82	591462.19	None	None	982.89	974.53	973.41	8.36	
10	99th Ave south of Riverside Ave	10/6/2010	Southwest Gas	None	None	878382.70	591467.27	None	None	983.25		973.25		Dug to a depth of 10 ft in the requested location and no facility was found. Cleared
11	99th Ave south of Riverside Ave	10/5/2010	City of Phoenix Water	12"	DIP	878385.65	591532.86	None	None	983.62	976.97	975.87	6.65	
12	99th Ave south of Riverside Ave	10/8/2010	Cox Communications	None	None	None	None	None	None					No facility in the requested per bluestake.
13	99th Ave south of Riverside Ave	10/4/2010	Salt River Project Irrigation	24"	RCP	878384.36	591560.78	None	None	983.37	974.17	971.67	9.20	
14	99th Ave south of Riverside Ave	10/4/2010	Cox Communications	Four 2"	PVC	878381.59	591572.05	None	None	983.55	974.57	974.15	8.98	
15	99th Ave south of Riverside Ave	10/6/2010	Salt River Project Electric	Three 2" & Three 2.5"	PVC	878436.46	591462.72	None	None	982.97	975.25	974.37	7.72	
16	99th Ave south of Riverside Ave	10/19/2011	Southwest Gas	10"	PVC	878434.09	591469.92	None	None	982.97	974.55	973.65	8.42	Found 10" PVC sleeve.
17	99th Ave south of Riverside Ave	10/6/2010	City of Phoenix Water	12"	DIP	878434.62	591531.68	None	None	983.36	968.74	967.64	14.62	

AZTEC

www.aztec.us TYPESA group



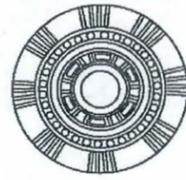
Testhole Data Summary

Date: 10/4/2010
 Project Number: AZS0929-009
 Project Name: Durango Regional Conveyance Channel



EXPIRES 09/30/2012

TH #	Location	Date of Excavation	Utility Owner	Utility Size	Utility Description	Coordinates		Stationing		Ground Elevation	Top Elevation	Bottom Elevation	Depth of Cover	Comments
						Northing	Easting	Stationing	Offset					
18	99th Ave south of Riverside Ave	10/8/2010	Cox Communications	None	None	None	None	None	None					No facility in the requested location per bluestake.
19	99th Ave south of Riverside Ave	10/4/2010	Salt River Project Irrigation	24"	RCP	878437.05	591562.13	None	None	983.25	973.65	971.15	9.60	
20	99th Ave south of Riverside Ave	10/7/2010	Cox Communications	None	None	878435.04	591571.29	None	None	983.52		971.02		Dug to a depth of 12.5 ft in the requested location and no facility was found. Cleared
21	95th Ave / Windrow Blvd south of Heber Rd	9/30/2010	City of Phoenix Water	8"	DIP	878438.27	594130.19	None	None	987.47	982.17	981.42	5.30	
22	95th Ave / Windrow Blvd south of Heber Rd	9/30/2010	Cox Communications	Four 2"	PVC	878444.19	594159.82	None	None	987.83	980.98	980.65	6.85	
23	95th Ave / Windrow Blvd south of Heber Rd	10/8/2010	Salt River Project Irrigation	24"	RCP	878440.25	594156.79	None	None	987.92	979.12	976.62	8.80	
24	95th Ave / Windrow Blvd south of Heber Rd	9/30/2010	Salt River Project Electric	Two 4"	PVC	878444.04	594159.09	None	None	987.89	980.59	980.21	7.30	
25	92nd Dr & Elwood	9/30/2010	City of Phoenix Water	8"	DIP	878386.56	595892.45	None	None	989.35	984.95	984.20	4.40	
27	91st Ave south of Lower Buckeye Rd	10/8/2010	Cox Communications	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
28	91st Ave south of Lower Buckeye Rd	9/29/2010	City of Phoenix Water	12"	DIP	878392.57	596691.79	None	None	992.18	987.82	986.72	4.36	
30	91st Ave south of Lower Buckeye Rd	9/24/2010	Qwest Local Network	12"	Slurry Duct	878406.19	596755.49	None	None	992.19	990.19	986.89	2.00	
30A	91st Ave south of Lower Buckeye Rd	9/24/2010	Qwest Local Network	1"	PE	878405.69	596754.74	None	None	992.22	988.66	988.58	3.56	
31	91st Ave south of Lower Buckeye Rd	9/24/2010	Qwest Local Network	1.5"	PE	878405.38	596759.96	None	None	992.30	989.40	989.27	2.90	
32	99th Ave south of Lower Buckeye Rd	10/8/2010	Qwest Local Network	2"	PE	878404.57	596750.93	None	None	992.25	987.34	987.17	4.91	
34	91st Ave north of Illini St	9/29/2010	Salt River Project Electric	16" Wide	Slurry	878411.00	596789.70	None	None	992.59	987.29	985.79	5.30	



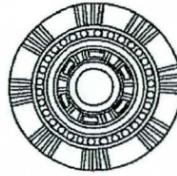
Testhole Data Summary

Date: 10/4/2010
Project Number: AZS0929-009
Project Name: Durango Regional Conveyance Channel



EXPIRES 09/30/2012

TH #	Location	Date of Excavation	Utility Owner	Utility Size	Utility Description	Coordinates		Stationing		Ground Elevation	Top Elevation	Bottom Elevation	Depth of Cover	Comments
						Northing	Easting	Stationing	Offset					
35	91st Ave north of Illini St	9/29/2010	Salt River Project Electric	Two 2"	PVC	878411.02	596790.14	None	None	992.57	987.75	987.55	4.82	
47	91st Ave south of Lower Buckeye Rd	10/8/2010	Salt River Project Irrigation	24"	RCP	878477.58	596582.24	None	None	990.53	982.63	980.13	7.90	
48	91st Ave south of Lower Buckeye Rd	9/29/2010	Salt River Project Electric	2"	PVC	878498.23	596667.15	None	None	992.71	988.69	988.49	4.02	
49	99th Ave south of Lower Buckeye Rd	10/8/2010	Cox Communications	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
50	91st Ave south of Lower Buckeye Rd	9/29/2010	City of Phoenix Water	N/A	Concrete	878504.40	596688.12	None	None	992.34	990.60		1.74	Dug to a depth of 1.74' in the requested location and hit concrete. Exposed 4' of the
51	91st Ave south of Lower Buckeye Rd	10/7/2010	City of Phoenix Sewer	72"	RCP	878516.15	596735.08	None	None	992.60	985.16	977.87	7.44	
52	91st Ave south of Lower Buckeye Rd	9/24/2010	Qwest Local Network	Four 4"	PVC	878518.69	596751.87	None	None	992.27	987.92	987.07	4.35	
53	91st Ave south of Lower Buckeye Rd	10/6/2010	Qwest Local Network	1.5"	PE	878518.37	596756.73	None	None	992.38	989.46	989.33	2.92	
54	91st Ave south of Lower Buckeye Rd	10/8/2010	Qwest Local Network	2"	PE	878520.05	596747.56	None	None	992.34	988.62	988.45	3.72	
55	91st Ave south of Lower Buckeye Rd	10/7/2010	City of Phoenix Sewer	None	None	878519.31	596777.66	None	None	992.77		980.77		Dug to a depth of 12 ft in the requested location and no facility was found. Cleared
55A	91st Ave south of Lower Buckeye Rd	10/7/2010	Unknown	4"	PVC	878516.74	596778.08	None	None	992.81	988.17	987.79	4.64	
56	91st Ave south of Lower Buckeye Rd	9/29/2010	Salt River Project Irrigation	30"	RCP	878500.80	596789.75	None	None	992.42	990.52	987.44	1.90	
56A	91st Ave south of Lower Buckeye Rd	9/29/2010	Salt River Project Electric	Two 2" & One 4"	PVC	878515.24	596788.12	None	None	992.58	987.50	987.12	5.08	Dug in the requested location to find irrigation, but only found electric. Moved to the
57	89th Dr north of Illini St	9/28/2010	Southwest Gas	2"	PE	878384.50	598009.11	None	None	990.89	986.53	986.33	4.36	
59	89th Dr north of Illini St	9/27/2010	City of Phoenix Water	8"	DIP	878380.83	598052.76	None	None	991.13	986.17	985.42	4.96	



Testhole Data Summary

Date: 10/4/2010
 Project Number: AZS0929-009
 Project Name: Durango Regional Conveyance Channel



EXPIRES 09/30/2012

TH #	Location	Date of Excavation	Utility Owner	Utility Size	Utility Description	Coordinates		Stationing		Ground Elevation	Top Elevation	Bottom Elevation	Depth of Cover	Comments
						Northing	Easting	Stationing	Offset					
60	89th Dr north of Illini St	9/28/2010	Cox Communications	Four 2"	PVC	878383.33	598083.80	None	None	992.15	988.25	988.05	3.90	
61	89th Dr north of Illini St	9/28/2010	Salt River Project Electric	Four 3"	PVC	878383.53	598084.29	None	None	992.25	986.65	986.36	5.60	
63	89th Dr north of Illini St	9/28/2010	Southwest Gas	4"	PE	878407.80	598000.23	None	None	990.88	986.52	986.14	4.36	
64	89th Dr & Illini St	9/28/2010	City of Phoenix Sewer	12"	DIP	878409.78	598026.64	None	None	991.10	974.85	973.75	16.25	
65	89th Dr north of Illini St	9/27/2010	City of Phoenix Water	8"	DIP	878412.60	598040.19	None	None	991.18	985.86	985.11	5.32	
66	89th Dr north of Illini St	9/27/2010	Cox Communications	Four 2"	PVC	878415.23	598071.87	None	None	991.14	986.30	986.10	4.84	
67	89th Dr north of Illini St	9/27/2010	Salt River Project Electric	Four 3"	PVC	878415.12	598071.27	None	None	991.08	985.10	984.81	5.98	
68	89th Dr north of Illini St	10/8/2010	Salt River Project Electric	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
69	89th Dr north of Illini St	9/28/2010	Southwest Gas	4"	PE	878464.80	597979.83	None	None	991.49	987.97	987.59	3.52	
70	89th Dr north of Illini St	9/28/2010	City of Phoenix Sewer	12"	DIP	878466.53	598003.59	None	None	990.97	975.03	973.93	15.94	
71	89th Dr north of Illini St	9/27/2010	City of Phoenix Water	8"	DIP	878469.32	598019.22	None	None	991.05	985.69	984.94	5.36	
72	89th Dr north of Illini St	9/27/2010	Cox Communications	Four 2"	PVC	878470.95	598049.71	None	None	991.52	987.36	987.16	4.16	
73	89th Dr north of Illini St	9/27/2010	Salt River Project Electric	Four 3"	PVC	878470.77	598048.84	None	None	991.41	986.23	985.94	5.18	
74	89th Dr north of Illini St	10/8/2010	Salt River Project Electric	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
76	83rd Ave & Elwood St	10/8/2010	City of Phoenix Water	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.



Testhole Data Summary

Date: 10/4/2010
 Project Number: AZS0929-009
 Project Name: Durango Regional Conveyance Channel

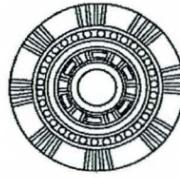


EXPIRES 09/30/2012

TH #	Location	Date of Excavation	Utility Owner	Utility Size	Utility Description	Coordinates		Stationing		Ground Elevation	Top Elevation	Bottom Elevation	Depth of Cover	Comments
						Northing	Easting	Stationing	Offset					
77	83rd Ave & Elwood St	10/8/2010	Salt River Project Electric	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
79	83rd Ave & Elwood St	10/7/2010	Salt River Project Irrigation	30"	RCP	878981.07	601990.98	None	None	1000.26	995.50	992.42	4.76	
80	83rd Ave & Elwood Rd	10/8/2010	Cox Communications	Two 4" & Six 2"	PVC	878976.48	602000.81	None	None	999.60	996.06	995.48	3.54	
81	83rd Ave & Elwood Rd	10/8/2010	Salt River Project Electric	Four 3"	PVC	878976.48	602000.38	None	None	999.63	994.71	994.42	4.92	
83	79th Ave & Elwood St	9/24/2010	Salt River Project Electric	Six 3" & One 2.5"	PVC	878927.97	604124.03	None	None	998.09	994.81	993.93	3.28	
83A	79th Ave & Elwood Rd	9/24/2010	Unknown	0.38"	Unknown	878927.97	604124.03	None	None	998.09	995.19	995.16	2.90	
84	79th Ave & Elwood St	10/8/2010	Cox Communications	None	None	None	None	None	None					Cancelled per Gordon Grandy with Nfra at 602-443-6067.
85	79th Ave & Elwood St	9/24/2010	City of Phoenix Water	8"	DIP	878951.79	604184.54	None	None	1000.44	996.46	995.71	3.98	
86	79th Ave & Elwood St	9/27/2010	Southwest Gas	4"	PE	878958.57	604205.59	None	None	1000.64	993.54	993.16	7.10	
88	79th Ave & Elwood St	9/24/2010	Salt River Project Electric	Six 3" & One 2.5"	PVC	8789703.12	604087.57	None	None	993.84	986.89	986.01	6.95	
88A	79th Ave & Elwood St	9/24/2010	Unknown	0.38"	Unknown	878970.12	604087.57	None	None	993.84	990.34	990.31	3.50	
89	79th Ave south of Elwood St	9/24/2010	City of Phoenix Water	8"	DIP	878993.19	604151.31	None	None	1000.83	991.89	991.14	8.94	
90	79th Ave & Elwood St	10/8/2010	Cox Communications	None	None	None	None	None	None					No facility in the requested location per bluestake.
91	79th Ave south of Elwood St	9/27/2010	Southwest Gas	4"	PE	879000.95	604169.77	None	None	1001.00	991.36	990.98	9.64	
92	Dirt Rd east of 107th Ave	10/7/2010	Salt River Project Irrigation	36"	RCP	878328.56	586782.85	None	None	968.30	964.30	960.63	4.00	

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Testhole Data Summary

Date: 10/4/2010
 Project Number: AZS0929-009
 Project Name: Durango Regional Conveyance Channel



EXPIRES 09/30/2012

TH #	Location	Date of Excavation	Utility Owner	Utility Size	Utility Description	Coordinates		Stationing		Ground Elevation	Top Elevation	Bottom Elevation	Depth of Cover	Comments
						Northing	Easting	Stationing	Offset					
93	Dirt Rd east of 107th Ave	10/8/2010	City of Phoenix Water	8"	DIP	878429.59	586783.67	None	None	969.76	963.66	962.91	6.10	
95	Dirt Rd east of 107th Ave	10/7/2010	Salt River Project Irrigation	36"	RCP	878330.00	587448.91	None	None	969.75	965.75	962.08	4.00	
96	Dirt Rd east of 107th Ave	10/8/2010	City of Phoenix Water	8"	DIP	878430.95	587448.70	None	None	969.45	965.35	964.60	4.10	
98	103rd Ave south of Lower Buckeye	10/1/2010	Salt River Project Irrigation	36"	RCP	878335.01	588766.48	None	None	972.51	969.01	965.34	3.50	

TEST HOLE DATA REPORT

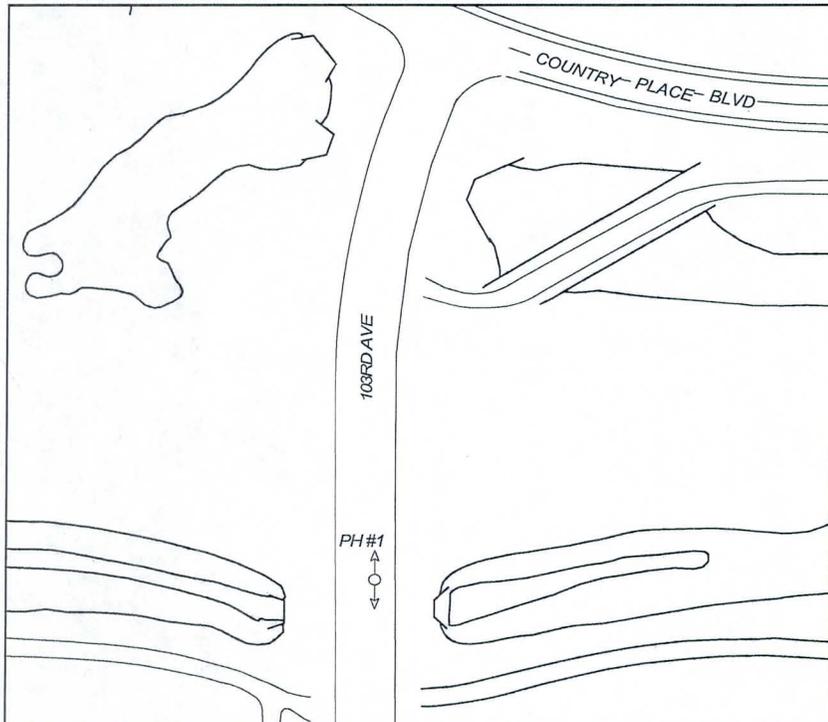
Test Hole # 1
 Date Dug 10/1/2010
 Project # AZS0929
 Phase # 009
 Location 103rd Ave south of Country Place Blvd



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SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black;"><u>972.68</u></td> <td style="border-right: 1px solid black;">← WIDTH/O.D. →</td> <td style="border-right: 1px solid black;"><u>9.05"</u></td> <td></td> </tr> <tr> <td style="border-right: 1px solid black;">TOP ELEVATION</td> <td style="border-right: 1px solid black;"><u>962.42</u></td> <td style="border-right: 1px solid black;">○</td> <td style="border-right: 1px solid black;"><u>10.26</u></td> <td>TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black;"><u>961.67</u></td> <td></td> <td style="border-right: 1px solid black;"><u>11.01</u></td> <td>BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>972.68</u>	← WIDTH/O.D. →	<u>9.05"</u>		TOP ELEVATION	<u>962.42</u>	○	<u>10.26</u>	TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>961.67</u>		<u>11.01</u>	BOTTOM (FEET)
SURFACE ELEVATION	<u>972.68</u>	← WIDTH/O.D. →	<u>9.05"</u>													
TOP ELEVATION	<u>962.42</u>	○	<u>10.26</u>	TOP DEPTH (FEET)												
BOTTOM ELEVATION	<u>961.67</u>		<u>11.01</u>	BOTTOM (FEET)												
RIBBON COLOR <u>Blue</u>																

COORDINATES: NORTHING 878217.28 EASTING 588964.65
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 4" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

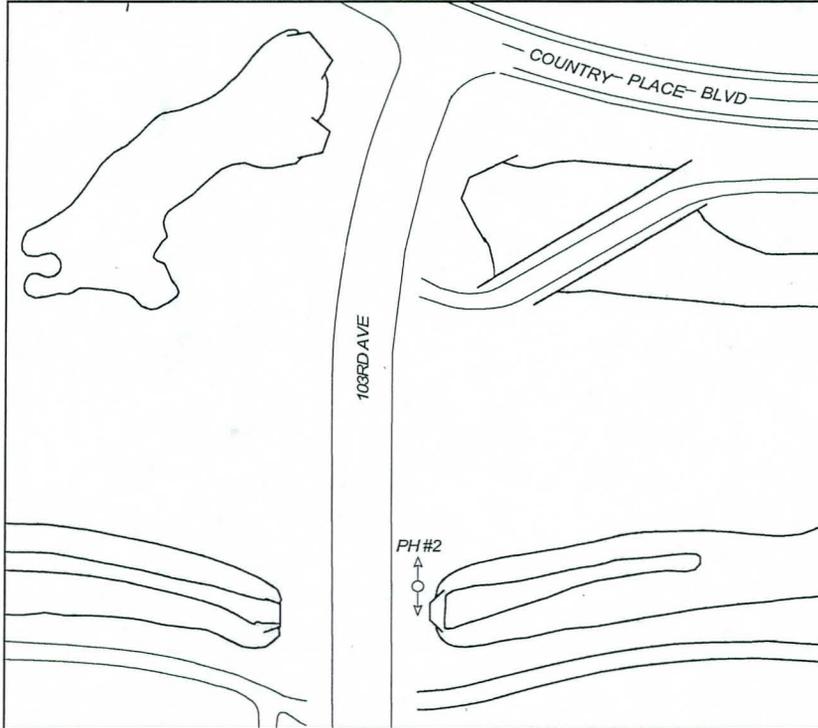
Test Hole # 2
 Date Dug 10/1/2010
 Project # AZS0929
 Phase # 009
 Location 103rd Ave south of Country Place Blvd



4561 East McDowell Road, Phoenix, AZ 85008-4504
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SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 10%; text-align: center;">972.67</td> <td style="width: 30%; text-align: center;">← WIDTH/O.D. → 24"</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;">966.13</td> <td style="text-align: center;">○ ○ ○ ○</td> <td style="text-align: right;">6.54 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;">965.27</td> <td style="text-align: center;">○ ○ ○ ○</td> <td style="text-align: right;">7.40 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	972.67	← WIDTH/O.D. → 24"		TOP ELEVATION	966.13	○ ○ ○ ○	6.54 TOP DEPTH (FEET)	BOTTOM ELEVATION	965.27	○ ○ ○ ○	7.40 BOTTOM (FEET)
SURFACE ELEVATION	972.67	← WIDTH/O.D. → 24"											
TOP ELEVATION	966.13	○ ○ ○ ○	6.54 TOP DEPTH (FEET)										
BOTTOM ELEVATION	965.27	○ ○ ○ ○	7.40 BOTTOM (FEET)										
RIBBON COLOR <u>Red</u>													

COORDINATES: NORTHING 878217.14 EASTING 588991.06
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 2" & Two 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

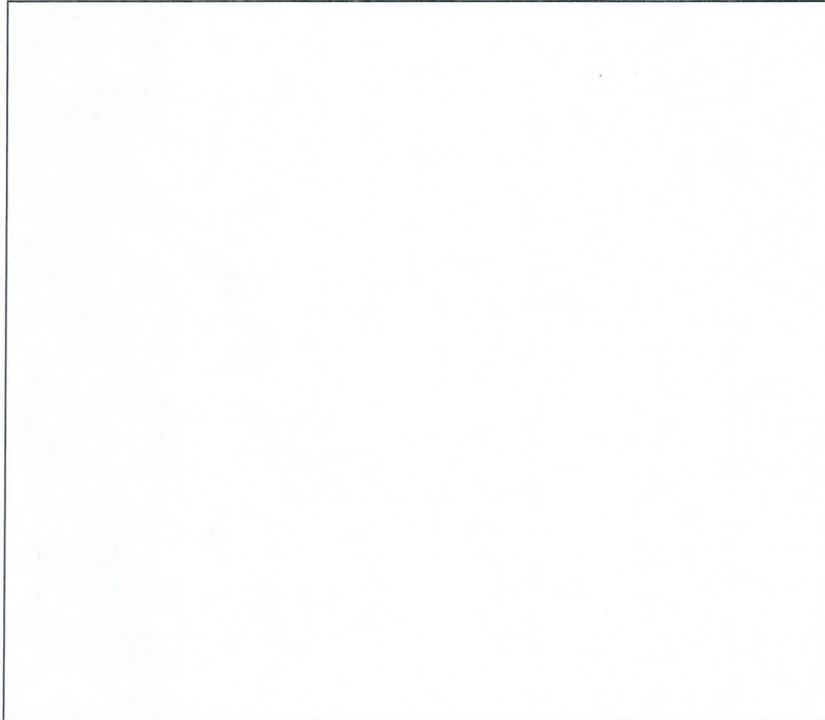
Test Hole # 3
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 103rd Ave south of Country Place Blvd



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SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING _____</p>
<p>RIBBON COLOR <u>None</u></p>	

COORDINATES: NORTHING <u>None</u>	EASTING <u>None</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u>	SOIL CONDITION <u>None</u>
SIZE <u>None</u> TYPE <u>None</u>	FACILITY OWNER <u>Southwest Gas</u>

COMMENTS:

Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

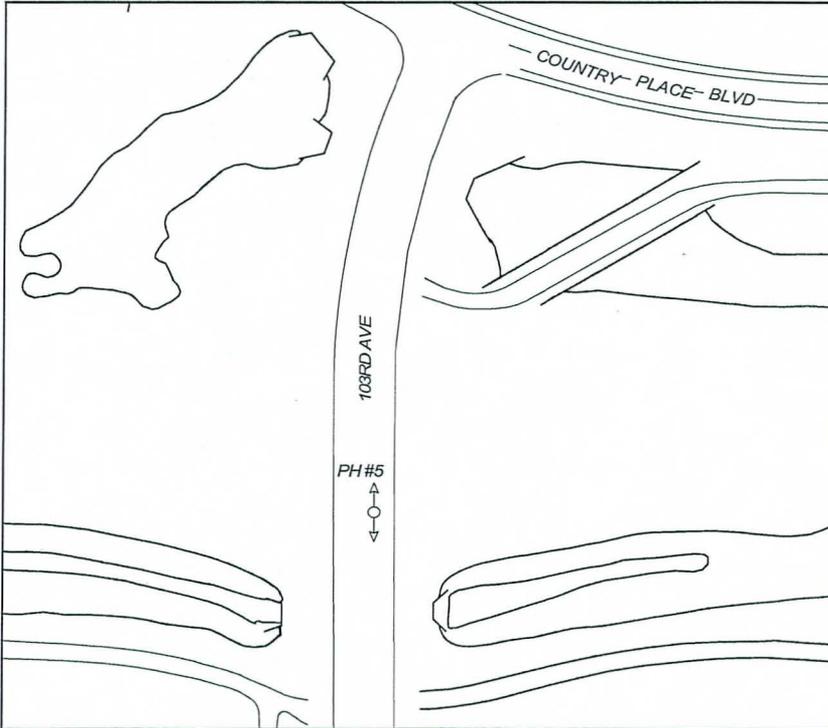
Test Hole # 5
 Date Dug 10/1/2010
 Project # AZS0929
 Phase # 009
 Location 103rd Ave south of Country Place Blvd



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 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>972.68</u>	← WIDTH/O.D. →		
TOP ELEVATION	<u>968.82</u>	<u>9.05"</u>	3.86	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>968.07</u>		4.61	BOTTOM (FEET)

RIBBON COLOR Blue

COORDINATES: NORTHING 878257.71 EASTING 588964.55
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 5" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 7
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 103rd Ave south of Country Place Blvd



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 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK COP BC @ 99TH AVE & LOWER BUCKEYE RD ELEV. = 985.15' RIBBON COLOR <u>None</u>	CROSS SECTION - NOT TO SCALE FACING _____ SURFACE ELEVATION _____ TOP ELEVATION _____ BOTTOM ELEVATION _____ WIDTH/O.D. _____ TOP DEPTH (FEET) _____ BOTTOM (FEET) _____
--	--

COORDINATES: NORTHING None EASTING None
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION None
 SIZE None TYPE None FACILITY OWNER Southwest Gas

COMMENTS:
 Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

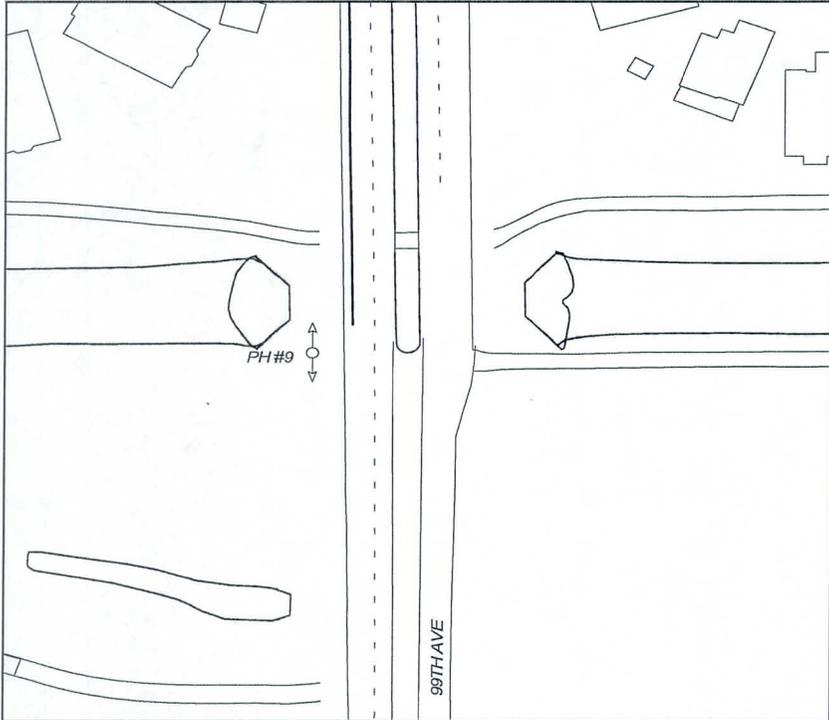
Test Hole # 9
 Date Dug 10/4/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



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 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>982.89</u>	← WIDTH/O.D. →		
		<u>16"</u>	<u>8.36</u>	TOP DEPTH (FEET)
TOP ELEVATION	<u>974.53</u>	○ ○ ○ ○	<u>9.48</u>	BOTTOM (FEET)
BOTTOM ELEVATION	<u>973.41</u>			

RIBBON COLOR Red

COORDINATES: NORTHING 878383.82

EASTING 591462.19

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE Three 2" & Three 2.5" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

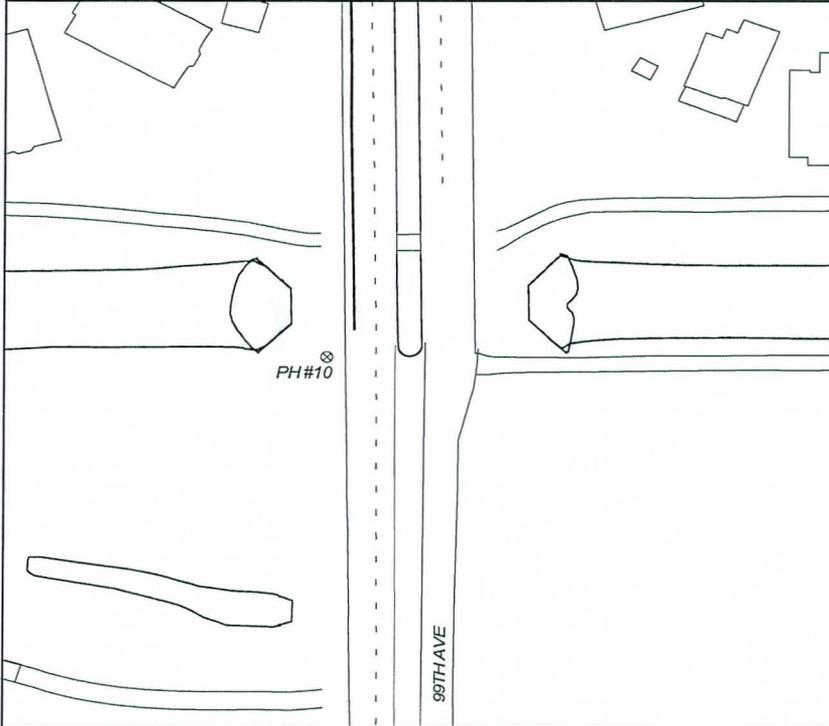
Test Hole # 10
 Date Dug 10/6/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



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 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



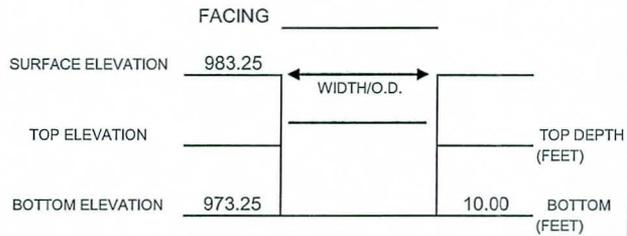
EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

RIBBON COLOR None

CROSS SECTION - NOT TO SCALE



COORDINATES: NORTHING <u>878382.70</u>	EASTING <u>591467.27</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>None</u>	PAVING TYPE <u>None</u>
SOIL CONDITION <u>Dirt</u>	FACILITY OWNER <u>Southwest Gas</u>
SIZE <u>None</u>	TYPE <u>None</u>

COMMENTS:

Dug to a depth of 10 ft in the requested location and no facility was found. Cleared location per Gordon Grady with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

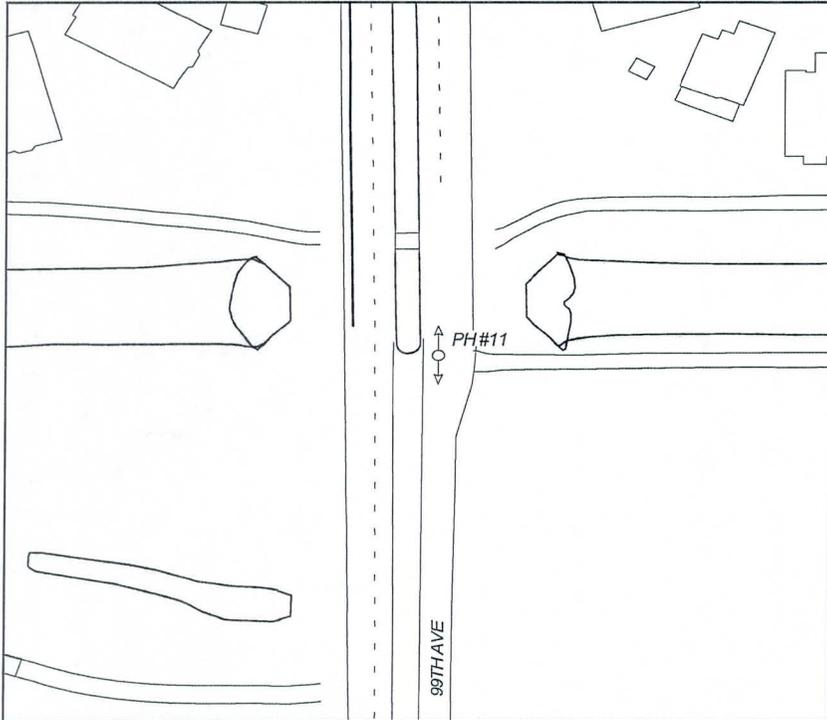
Test Hole # 11
 Date Dug 10/5/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



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SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
 ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>983.62</u>		← WIDTH/O.D. →	
TOP ELEVATION	<u>976.97</u>		<u>13.2"</u>	6.65 TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>975.87</u>			7.75 BOTTOM (FEET)

RIBBON COLOR Blue

COORDINATES: NORTHING 878385.65 EASTING 591532.86

STATIONING: STATION None OFFSET None

PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt

SIZE 12" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 12
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



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SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK COP BC @ 99TH AVE & LOWER BUCKEYE RD ELEV. = 985.15' RIBBON COLOR <u>None</u>	CROSS SECTION - NOT TO SCALE FACING _____ SURFACE ELEVATION _____ TOP ELEVATION _____ BOTTOM ELEVATION _____ WIDTH/O.D. _____ TOP DEPTH (FEET) _____ BOTTOM (FEET) _____
--	--

COORDINATES: NORTHING None EASTING None
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION None
 SIZE None TYPE None FACILITY OWNER Cox Communications

COMMENTS:
 No facility in the requested per bluestake.

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

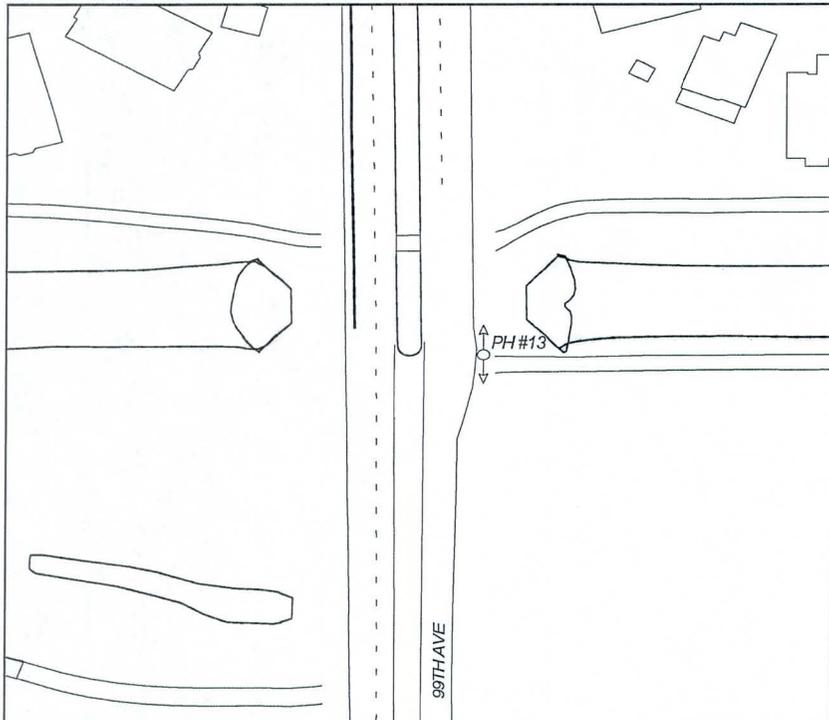
Test Hole # 13
 Date Dug 10/4/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
 ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>		
SURFACE ELEVATION	<u>983.37</u>	
	← WIDTH/O.D. → <u>30"</u>	
TOP ELEVATION	<u>974.17</u>	<u>9.20</u> TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>971.67</u>	<u>11.70</u> BOTTOM (FEET)

RIBBON COLOR Blue

COORDINATES: NORTHING 878384.36 EASTING 591560.78

STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE 24" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

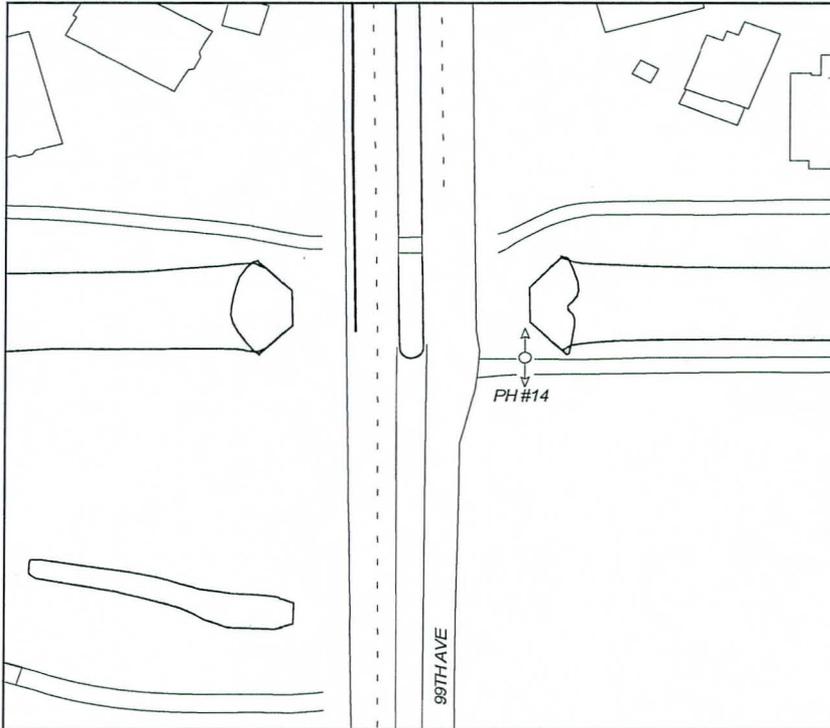
Test Hole # 14
 Date Dug 10/4/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; text-align: center;">983.55</td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">6"</td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;">974.57</td> <td style="text-align: center;">○○</td> <td style="text-align: center;">8.98 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;">974.15</td> <td style="text-align: center;">○○</td> <td style="text-align: center;">9.40 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	983.55	← WIDTH/O.D. →				6"		TOP ELEVATION	974.57	○○	8.98 TOP DEPTH (FEET)	BOTTOM ELEVATION	974.15	○○	9.40 BOTTOM (FEET)
SURFACE ELEVATION	983.55	← WIDTH/O.D. →															
		6"															
TOP ELEVATION	974.57	○○	8.98 TOP DEPTH (FEET)														
BOTTOM ELEVATION	974.15	○○	9.40 BOTTOM (FEET)														
RIBBON COLOR <u>Orange</u>																	

COORDINATES: NORTHING 878381.59 EASTING 591572.05
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

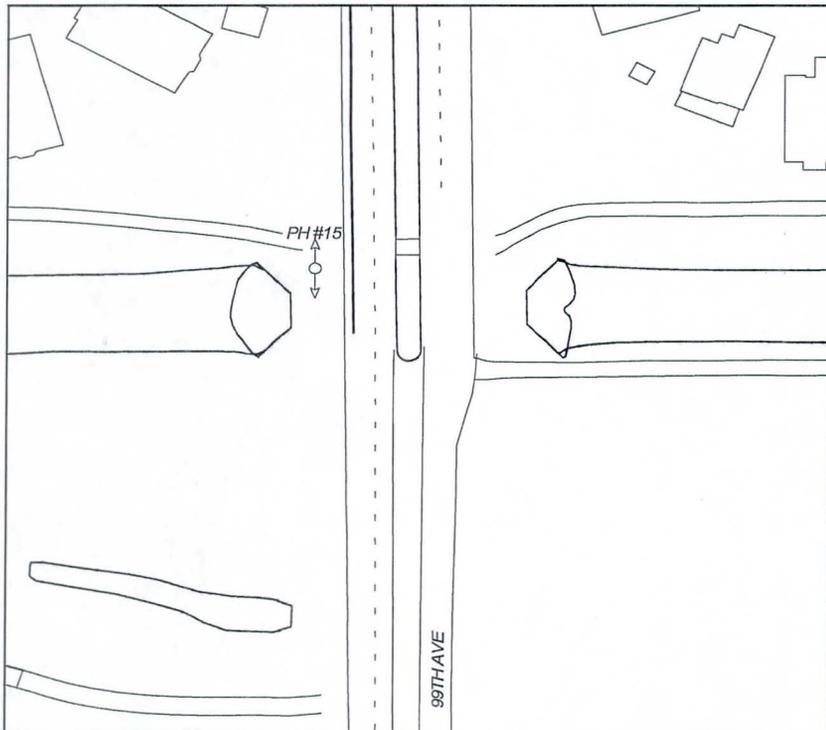
Test Hole # 15
 Date Dug 10/6/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>982.97</u>	← WIDTH/O.D. →
TOP ELEVATION <u>975.25</u>	<u>16"</u>
BOTTOM ELEVATION <u>974.37</u>	
	<u>7.72</u> TOP DEPTH (FEET) <u>8.60</u> BOTTOM (FEET)

RIBBON COLOR Red

COORDINATES: NORTHING 878436.46

EASTING 591462.72

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None

PAVING TYPE None

SOIL CONDITION Dirt

SIZE Three 2" & Three 2.5"

TYPE PVC

FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

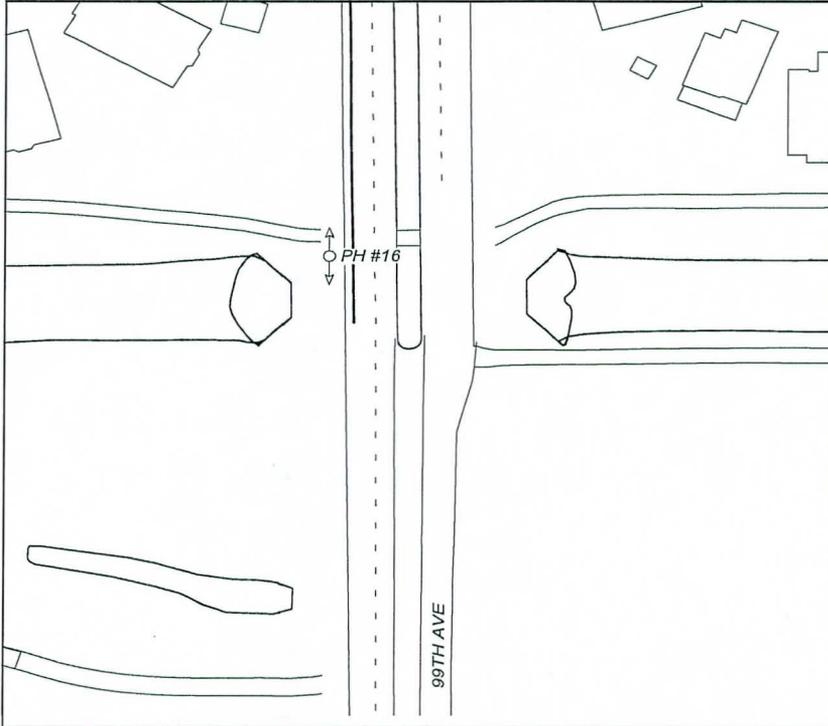
Test Hole # 16
 Date Dug 10/19/2011
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
 ELEV. = 991.42'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	982.97	← WIDTH/O.D. →		
TOP ELEVATION	974.55	10.75"	8.42	TOP DEPTH (FEET)
BOTTOM ELEVATION	973.65		9.32	BOTTOM (FEET)

RIBBON COLOR <u>None</u>	
COORDINATES: NORTHING <u>878434.09</u>	EASTING <u>591469.92</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>None</u>	PAVING TYPE <u>None</u>
SIZE <u>10"</u>	TYPE <u>PVC</u>
FACILITY OWNER <u>Southwest Gas</u>	
SOIL CONDITION <u>Dirt</u>	

COMMENTS:
 Found 10" PVC sleeve.

PREPARED BY: J. Cherry

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

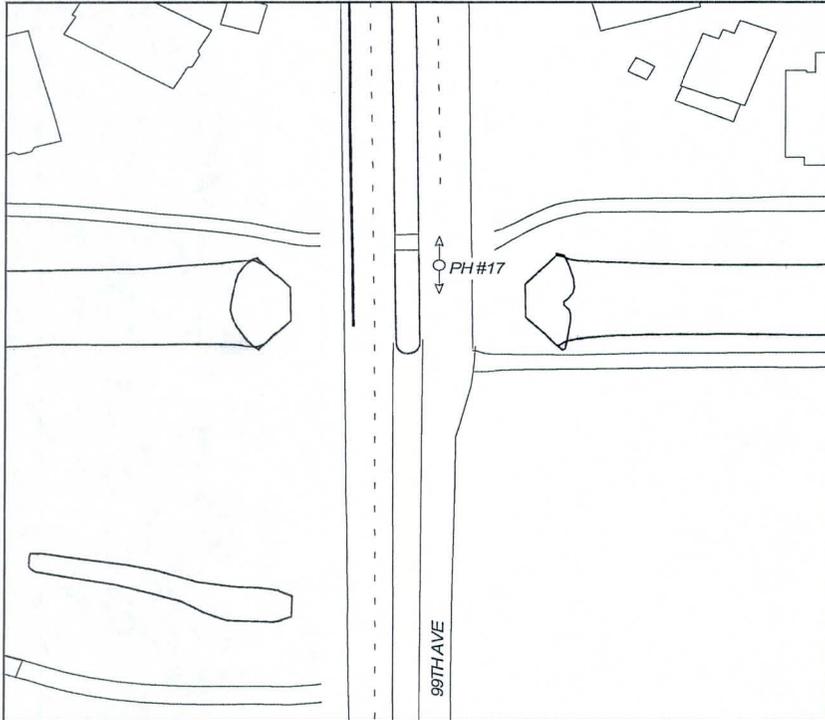
Test Hole # 17
 Date Dug 10/6/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



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SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
 ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>983.36</u>	← WIDTH/O.D. →		
		<u>13.2"</u>		
TOP ELEVATION	<u>968.74</u>	○	<u>14.62</u>	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>967.64</u>		<u>15.72</u>	BOTTOM (FEET)

RIBBON COLOR Blue

COORDINATES: NORTHING 878434.62

EASTING 591531.68

STATIONING: STATION None

OFFSET None

PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt

SIZE 12" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 18
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING _____</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 40%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="border: 1px solid black; height: 20px;"></td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="border: 1px solid black; height: 20px;"></td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	← WIDTH/O.D. →		TOP ELEVATION		TOP DEPTH (FEET)	BOTTOM ELEVATION		BOTTOM (FEET)
SURFACE ELEVATION	← WIDTH/O.D. →									
TOP ELEVATION		TOP DEPTH (FEET)								
BOTTOM ELEVATION		BOTTOM (FEET)								
<p>RIBBON COLOR <u>None</u></p>	<p>COORDINATES: NORTHING <u>None</u> EASTING <u>None</u></p> <p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p> <p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u> SOIL CONDITION <u>None</u></p> <p>SIZE <u>None</u> TYPE <u>None</u> FACILITY OWNER <u>Cox Communications</u></p>									

COMMENTS:

No facility in the requested location per bluestake.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

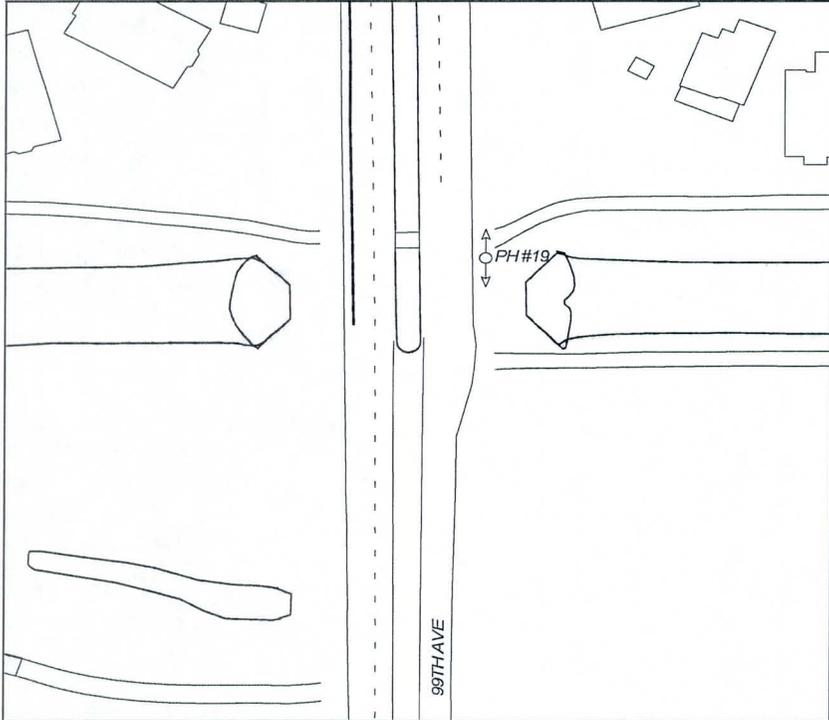
Test Hole # 19
 Date Dug 10/4/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>983.25</u>	← WIDTH/O.D. →
TOP ELEVATION <u>973.65</u>	30"
BOTTOM ELEVATION <u>971.15</u>	9.60 TOP DEPTH (FEET)
	12.10 BOTTOM (FEET)

RIBBON COLOR Blue

COORDINATES: NORTHING 878437.05 EASTING 591562.13

STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE 24" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

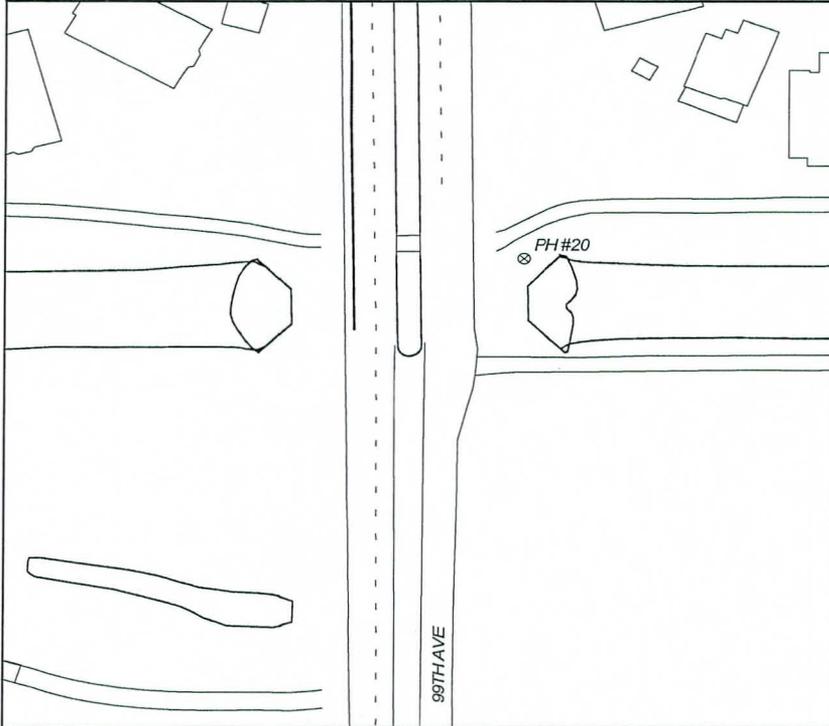
Test Hole # 20
 Date Dug 10/7/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Riverside Ave



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SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">FACING _____</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 10%; text-align: center;">983.52</td> <td style="width: 30%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td></td> <td></td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;">971.02</td> <td></td> <td style="text-align: right;">12.50 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	983.52	← WIDTH/O.D. →		TOP ELEVATION			TOP DEPTH (FEET)	BOTTOM ELEVATION	971.02		12.50 BOTTOM (FEET)
SURFACE ELEVATION	983.52	← WIDTH/O.D. →											
TOP ELEVATION			TOP DEPTH (FEET)										
BOTTOM ELEVATION	971.02		12.50 BOTTOM (FEET)										
RIBBON COLOR <u>None</u>													

COORDINATES: NORTHING 878435.04 EASTING 591571.29
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE None TYPE None FACILITY OWNER Cox Communications

COMMENTS:

Dug to a depth of 12.5 ft in the requested location and no facility was found. Cleared location per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

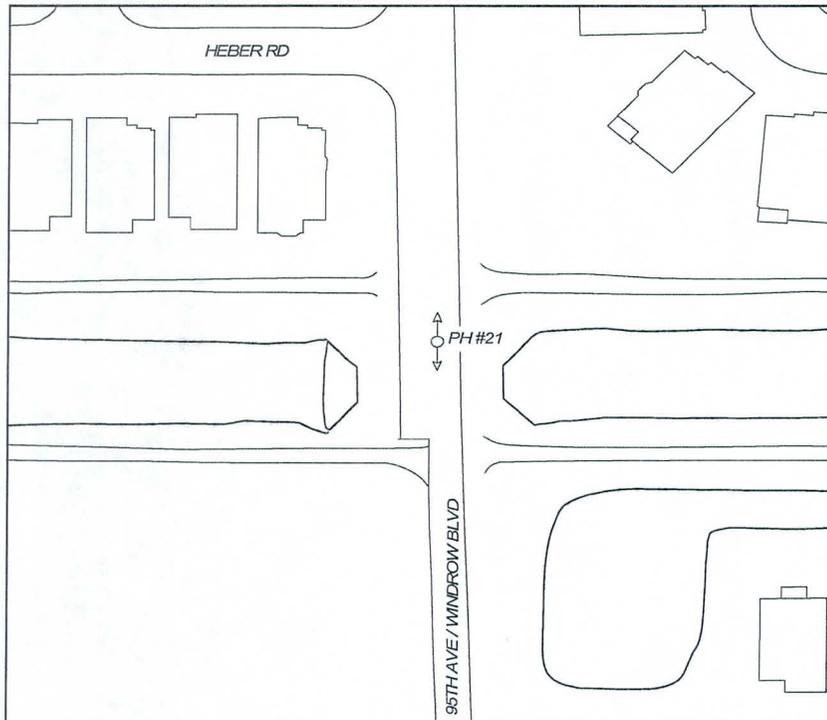
Test Hole # 21
 Date Dug 9/30/2010
 Project # AZS0929
 Phase # 009
 Location 95th Ave / Windrow Blvd south of Heber Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">987.47</td> <td style="padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;">5.30</td> <td style="padding: 5px;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">982.17</td> <td style="padding: 5px;">9.05"</td> <td style="padding: 5px;">6.05</td> <td style="padding: 5px;">BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">981.42</td> <td style="padding: 5px;">○</td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION	987.47	← WIDTH/O.D. →	5.30	TOP DEPTH (FEET)	TOP ELEVATION	982.17	9.05"	6.05	BOTTOM (FEET)	BOTTOM ELEVATION	981.42	○		
SURFACE ELEVATION	987.47	← WIDTH/O.D. →	5.30	TOP DEPTH (FEET)												
TOP ELEVATION	982.17	9.05"	6.05	BOTTOM (FEET)												
BOTTOM ELEVATION	981.42	○														
<p>RIBBON COLOR <u>Blue</u></p>																

COORDINATES: NORTHING 878438.27 EASTING 594130.19
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 3" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

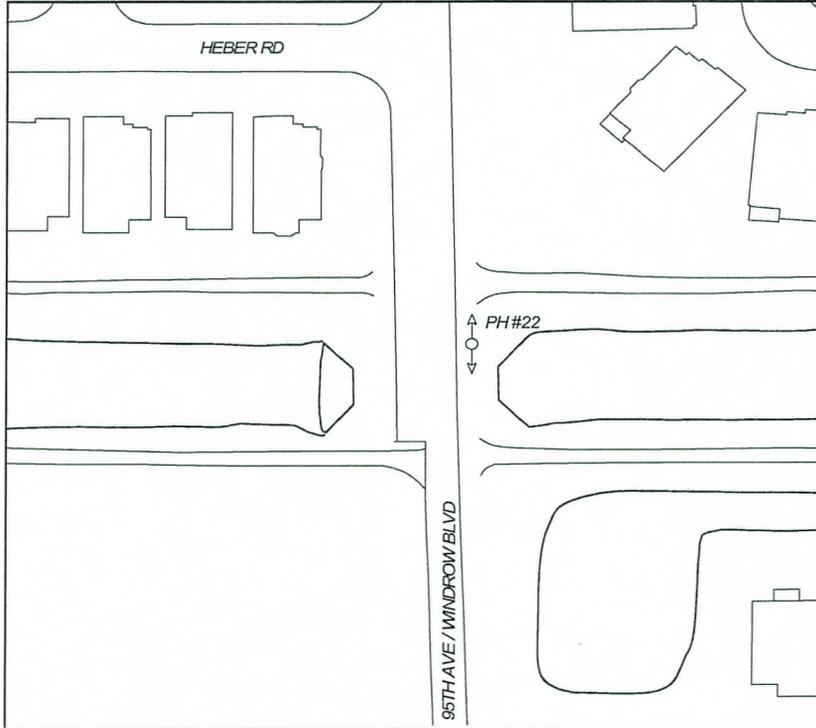
Test Hole # 22
 Date Dug 9/30/2010
 Project # AZS0929
 Phase # 009
 Location 95th Ave / Windrow Blvd south of Heber Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; border-bottom: 1px solid black;">987.83</td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">10"</td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="border-bottom: 1px solid black;">980.98</td> <td style="text-align: center;">○ ○ ○ ○</td> <td style="text-align: right;">6.85 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="border-bottom: 1px solid black;">980.65</td> <td></td> <td style="text-align: right;">7.18 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	987.83	← WIDTH/O.D. →				10"		TOP ELEVATION	980.98	○ ○ ○ ○	6.85 TOP DEPTH (FEET)	BOTTOM ELEVATION	980.65		7.18 BOTTOM (FEET)
SURFACE ELEVATION	987.83	← WIDTH/O.D. →															
		10"															
TOP ELEVATION	980.98	○ ○ ○ ○	6.85 TOP DEPTH (FEET)														
BOTTOM ELEVATION	980.65		7.18 BOTTOM (FEET)														
RIBBON COLOR <u>Orange</u>																	

COORDINATES: NORTHING 878444.19 EASTING 594159.82
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

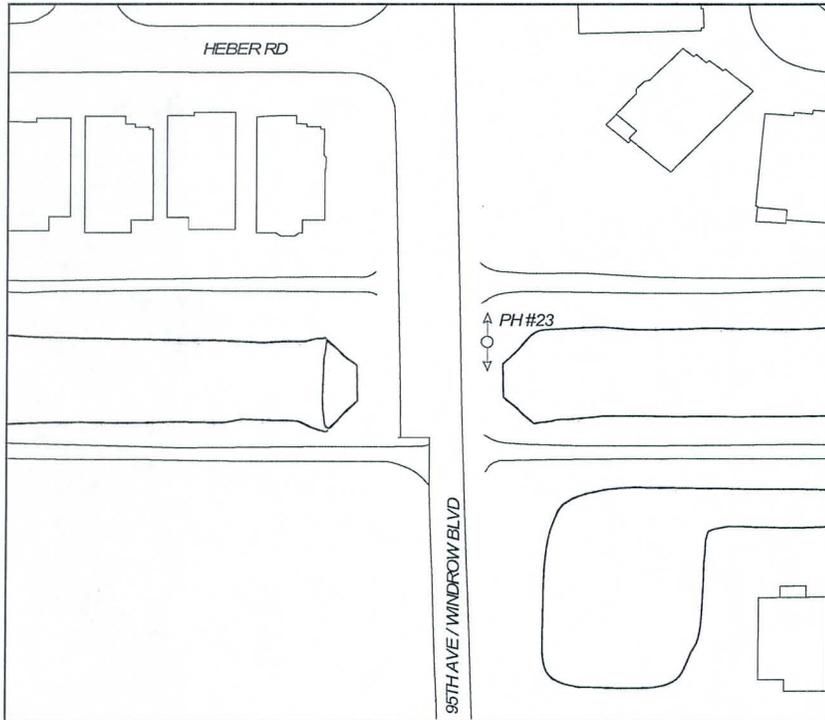
Test Hole # 23
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 95th Ave / Windrow Blvd south of Heber Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black;">987.92</td> <td style="border-right: 1px solid black;">← WIDTH/O.D. →</td> <td style="border-right: 1px solid black;">8.80</td> <td>TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black;">TOP ELEVATION</td> <td style="border-right: 1px solid black;">979.12</td> <td style="border-right: 1px solid black;">30"</td> <td style="border-right: 1px solid black;">11.30</td> <td>BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black;">976.62</td> <td></td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION	987.92	← WIDTH/O.D. →	8.80	TOP DEPTH (FEET)	TOP ELEVATION	979.12	30"	11.30	BOTTOM (FEET)	BOTTOM ELEVATION	976.62			
SURFACE ELEVATION	987.92	← WIDTH/O.D. →	8.80	TOP DEPTH (FEET)												
TOP ELEVATION	979.12	30"	11.30	BOTTOM (FEET)												
BOTTOM ELEVATION	976.62															
RIBBON COLOR <u>Blue</u>																

COORDINATES: NORTHING 878440.25 EASTING 594156.79
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 24" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

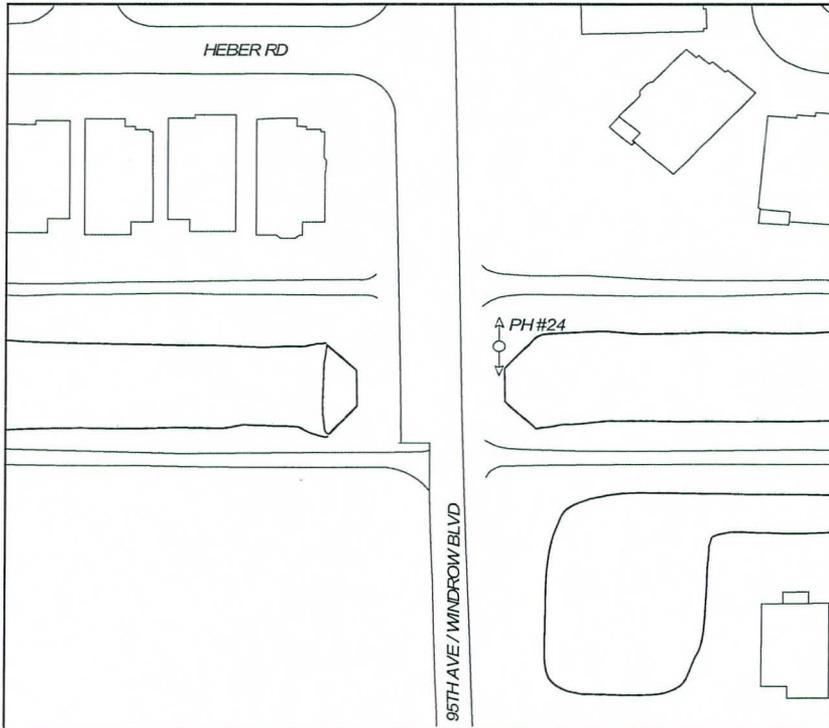
Test Hole # 24
 Date Dug 9/30/2010
 Project # AZS0929
 Phase # 009
 Location 95th Ave / Windrow Blvd south of Heber Rd



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SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																				
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; border-bottom: 1px solid black;">987.89</td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="border-bottom: 1px solid black;">980.59</td> <td style="text-align: center;">10"</td> <td style="border-left: 1px solid black; text-align: center;">7.30</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="border-bottom: 1px solid black;">980.21</td> <td style="text-align: center;">○ ○</td> <td style="border-left: 1px solid black; text-align: center;">7.68</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right; font-size: small;">TOP DEPTH (FEET)</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right; font-size: small;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	987.89	← WIDTH/O.D. →		TOP ELEVATION	980.59	10"	7.30	BOTTOM ELEVATION	980.21	○ ○	7.68				TOP DEPTH (FEET)				BOTTOM (FEET)
SURFACE ELEVATION	987.89	← WIDTH/O.D. →																			
TOP ELEVATION	980.59	10"	7.30																		
BOTTOM ELEVATION	980.21	○ ○	7.68																		
			TOP DEPTH (FEET)																		
			BOTTOM (FEET)																		
RIBBON COLOR <u>Red</u>																					

COORDINATES: NORTHING 878444.04 EASTING 594159.09
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Two 4" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

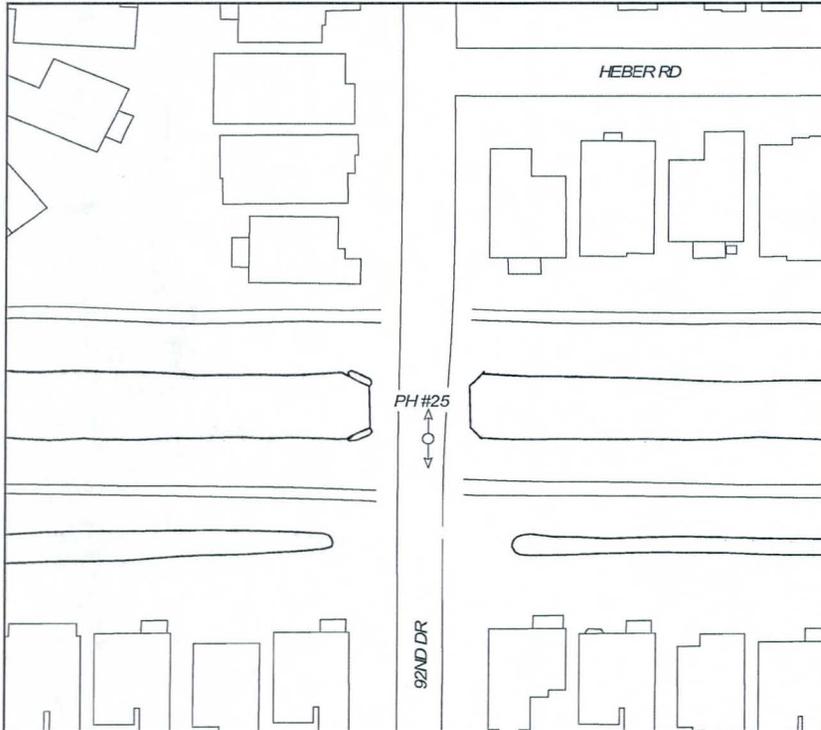
Test Hole # 25
 Date Dug 9/30/2010
 Project # AZS0929
 Phase # 009
 Location 92nd Dr & Elwood



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>989.35</u>	← WIDTH/O.D. →		
		<u>9.05"</u>	4.40	TOP DEPTH (FEET)
TOP ELEVATION	<u>984.95</u>	○		
BOTTOM ELEVATION	<u>984.20</u>	5.15	BOTTOM (FEET)	

RIBBON COLOR Blue

COORDINATES: NORTHING 878386.56 EASTING 595892.45

STATIONING: STATION None OFFSET None

PAVING THICKNESS 3" PAVING TYPE Asphalt SOIL CONDITION Dirt

SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

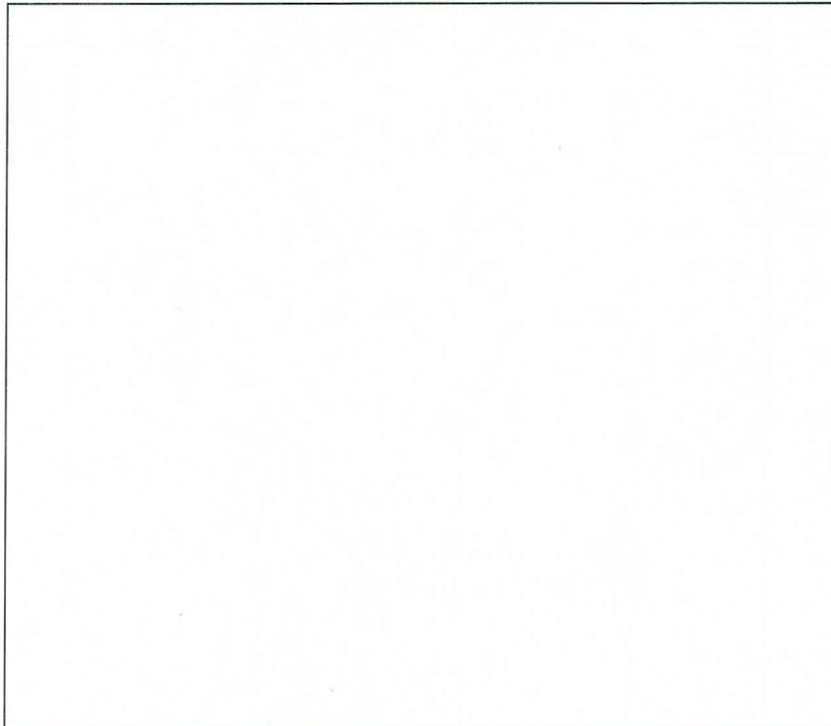
Test Hole # 27
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING _____</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>SURFACE ELEVATION _____</p> <p>TOP ELEVATION _____</p> <p>BOTTOM ELEVATION _____</p> </div> <div style="width: 10%; text-align: center;"> <p>← WIDTH/O.D. →</p> </div> <div style="width: 45%;"> <p>TOP DEPTH (FEET) _____</p> <p>BOTTOM (FEET) _____</p> </div> </div>
<p>RIBBON COLOR <u>None</u></p>	

COORDINATES: NORTHING None EASTING None

STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION None

SIZE None TYPE None FACILITY OWNER Cox Communications

COMMENTS:

Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

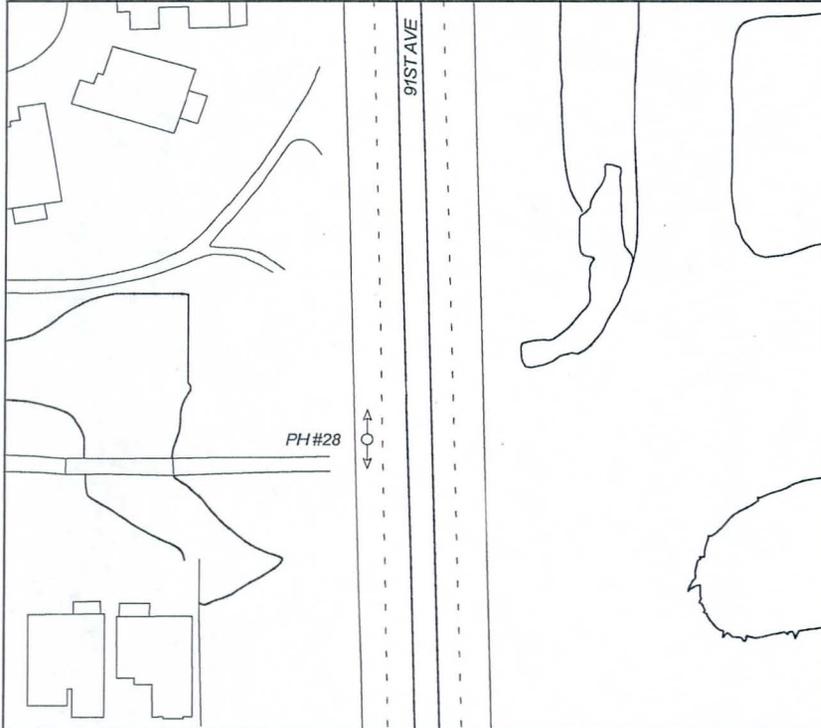
Test Hole # 28
 Date Dug 9/29/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 8565
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																		
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="text-align: center;">992.18</td> <td style="text-align: center;">← WIDTH/O.D. →</td> <td style="text-align: center;">13.2"</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="text-align: center;">987.82</td> <td style="text-align: center;">○</td> <td></td> <td style="text-align: center;">4.36</td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="text-align: center;">986.72</td> <td></td> <td></td> <td style="text-align: center;">5.46</td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.18	← WIDTH/O.D. →	13.2"	→		TOP ELEVATION	987.82	○		4.36	TOP DEPTH (FEET)	BOTTOM ELEVATION	986.72			5.46	BOTTOM (FEET)
SURFACE ELEVATION	992.18	← WIDTH/O.D. →	13.2"	→															
TOP ELEVATION	987.82	○		4.36	TOP DEPTH (FEET)														
BOTTOM ELEVATION	986.72			5.46	BOTTOM (FEET)														
RIBBON COLOR <u>Blue</u>																			

COORDINATES: NORTHING 878392.57 EASTING 596691.79
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 7" PAVING TYPE Asphalt SOIL CONDITION Slurry
 SIZE 12" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

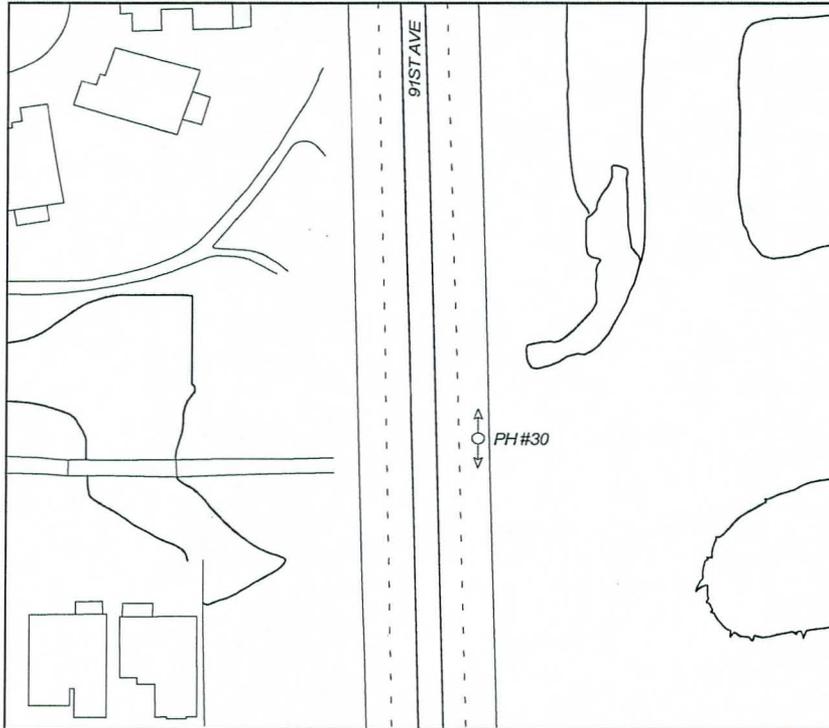
Test Hole # 30
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																									
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="text-align: center;">992.19</td> <td style="text-align: center;">←</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td></td> <td></td> <td colspan="2" style="text-align: center;">WIDTH/O.D.</td> <td></td> </tr> <tr> <td></td> <td></td> <td colspan="2" style="text-align: center;">12"</td> <td></td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="text-align: center;">990.19</td> <td></td> <td></td> <td style="text-align: right;">2.00 TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="text-align: center;">986.89</td> <td></td> <td></td> <td style="text-align: right;">5.30 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.19	←	→				WIDTH/O.D.					12"			TOP ELEVATION	990.19			2.00 TOP DEPTH (FEET)	BOTTOM ELEVATION	986.89			5.30 BOTTOM (FEET)
SURFACE ELEVATION	992.19	←	→																							
		WIDTH/O.D.																								
		12"																								
TOP ELEVATION	990.19			2.00 TOP DEPTH (FEET)																						
BOTTOM ELEVATION	986.89			5.30 BOTTOM (FEET)																						
<p>RIBBON COLOR <u>Orange</u></p>																										

COORDINATES: NORTHING 878406.19 EASTING 596755.49
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 12" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 12" TYPE Slurry Duct FACILITY OWNER Qwest Local Network

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 30A
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>992.22</u>	← WIDTH/O.D. →		
		<u>1"</u>	3.56	TOP DEPTH (FEET)
TOP ELEVATION	<u>988.66</u>	○		
BOTTOM ELEVATION	<u>988.58</u>		3.64	BOTTOM (FEET)

RIBBON COLOR Orange

COORDINATES: NORTHING 878405.69

EASTING 596754.74

STATIONING: STATION None

OFFSET None

PAVING THICKNESS 12" PAVING TYPE Asphalt SOIL CONDITION Dirt

SIZE 1" TYPE PE FACILITY OWNER Qwest Local Network

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

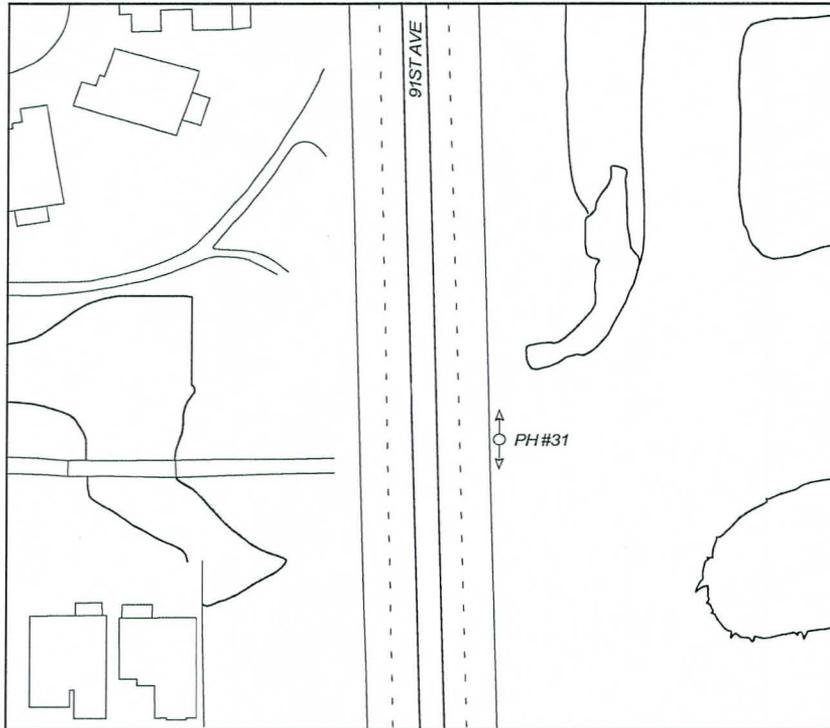
Test Hole # 31
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="padding: 5px;">992.30</td> <td style="border-right: 1px solid black; padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="padding: 5px;">989.40</td> <td style="border-right: 1px solid black; padding: 5px;">1.5"</td> <td style="padding: 5px;">2.90 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="padding: 5px;">989.27</td> <td style="border-right: 1px solid black; padding: 5px;">○</td> <td style="padding: 5px;">3.03 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.30	← WIDTH/O.D. →		TOP ELEVATION	989.40	1.5"	2.90 TOP DEPTH (FEET)	BOTTOM ELEVATION	989.27	○	3.03 BOTTOM (FEET)
SURFACE ELEVATION	992.30	← WIDTH/O.D. →											
TOP ELEVATION	989.40	1.5"	2.90 TOP DEPTH (FEET)										
BOTTOM ELEVATION	989.27	○	3.03 BOTTOM (FEET)										
<p>RIBBON COLOR <u>Orange</u></p>													

COORDINATES: NORTHING 878405.38 EASTING 596759.96
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 1.5" TYPE PE FACILITY OWNER Qwest Local Network

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

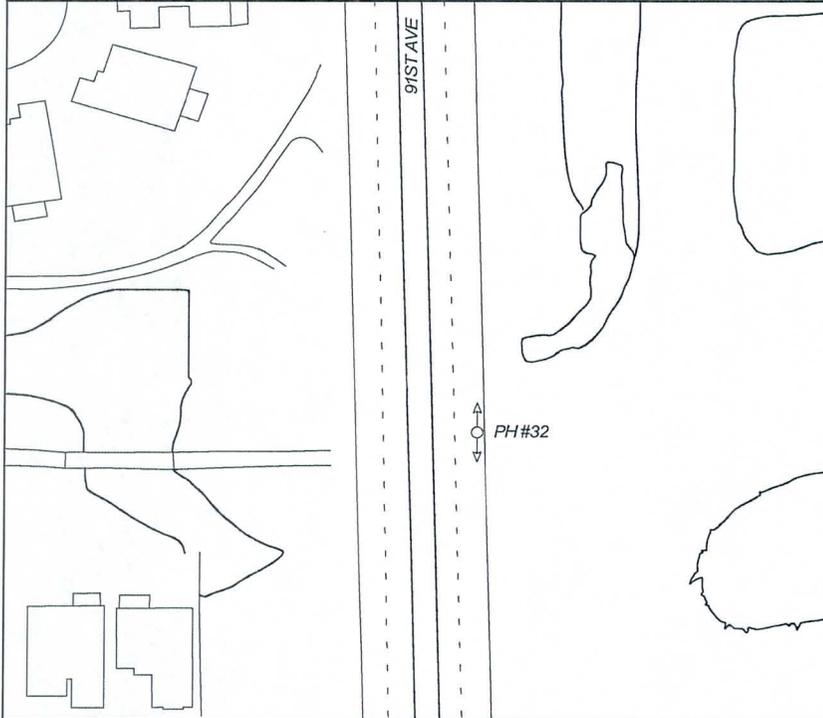
Test Hole # 32
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; text-align: center;"><u>992.25</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td style="text-align: center;"><u>2"</u></td> <td></td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>987.34</u></td> <td style="text-align: center;">○</td> <td style="text-align: center;"><u>4.91</u> TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>987.17</u></td> <td></td> <td style="text-align: center;"><u>5.08</u> BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>992.25</u>	← WIDTH/O.D. →			<u>2"</u>			TOP ELEVATION	<u>987.34</u>	○	<u>4.91</u> TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>987.17</u>		<u>5.08</u> BOTTOM (FEET)
SURFACE ELEVATION	<u>992.25</u>	← WIDTH/O.D. →															
	<u>2"</u>																
TOP ELEVATION	<u>987.34</u>	○	<u>4.91</u> TOP DEPTH (FEET)														
BOTTOM ELEVATION	<u>987.17</u>		<u>5.08</u> BOTTOM (FEET)														
RIBBON COLOR <u>Orange</u>																	
COORDINATES: NORTHING <u>878404.57</u>	EASTING <u>596750.93</u>																
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>																
PAVING THICKNESS <u>8"</u> PAVING TYPE <u>Asphalt</u>	SOIL CONDITION <u>Dirt</u>																
SIZE <u>2"</u> TYPE <u>PE</u>	FACILITY OWNER <u>Qwest Local Network</u>																
COMMENTS:																	

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

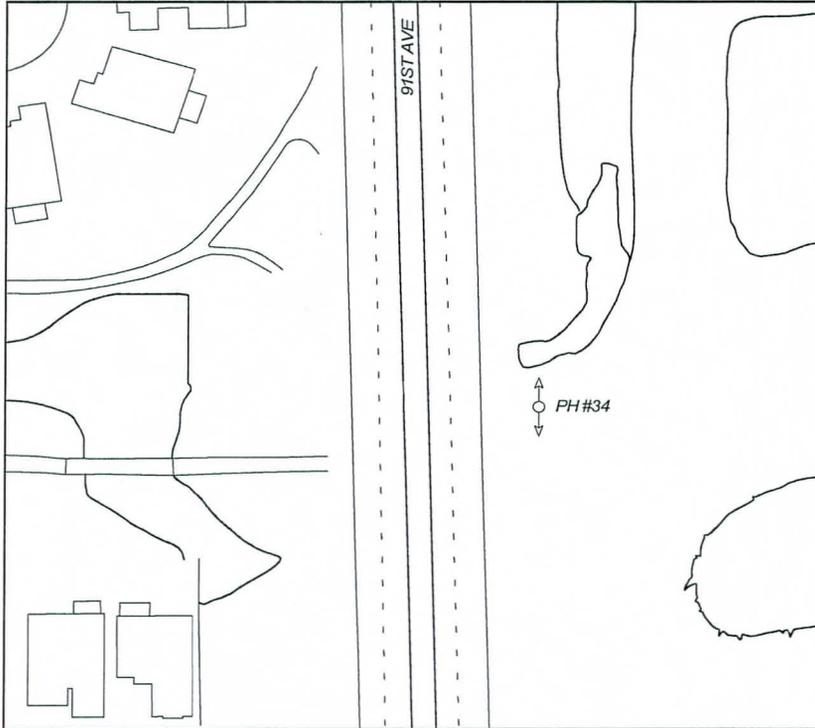
Test Hole # 34
 Date Dug 9/29/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;"><u>992.59</u></td> <td style="padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;"><u>987.29</u></td> <td style="border: 1px solid black; text-align: center; padding: 5px;">16"</td> <td style="padding: 5px;">5.30 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;"><u>985.79</u></td> <td style="border: 1px solid black; text-align: center; padding: 5px;"></td> <td style="padding: 5px;">6.80 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>992.59</u>	← WIDTH/O.D. →		TOP ELEVATION	<u>987.29</u>	16"	5.30 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>985.79</u>		6.80 BOTTOM (FEET)
SURFACE ELEVATION	<u>992.59</u>	← WIDTH/O.D. →											
TOP ELEVATION	<u>987.29</u>	16"	5.30 TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>985.79</u>		6.80 BOTTOM (FEET)										
<p>RIBBON COLOR <u>Red</u></p>													

COORDINATES: NORTHING 878411.00 EASTING 596789.70
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 16" Wide TYPE Slurry FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

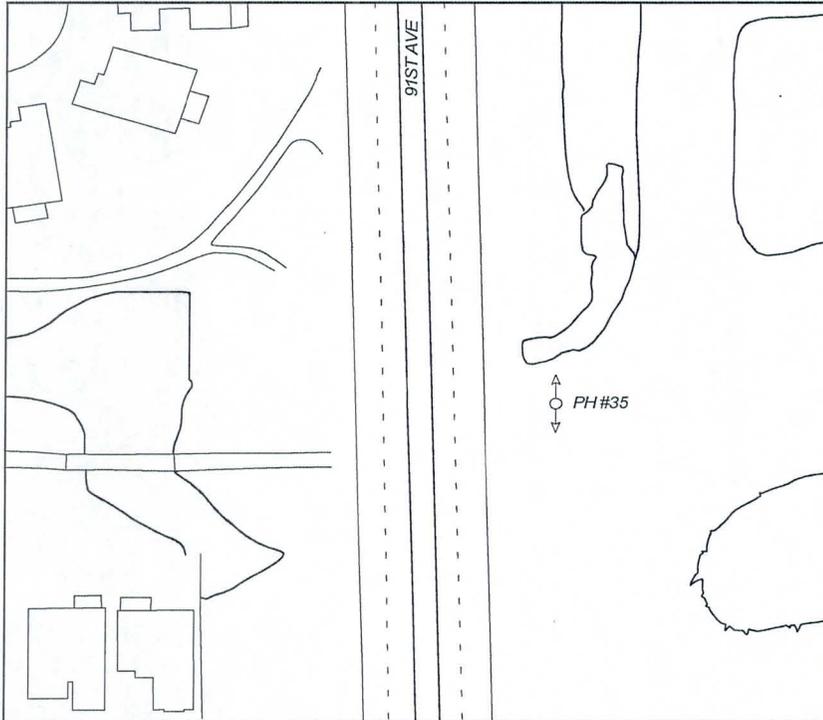
Test Hole # 35
 Date Dug 9/29/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 20%;"><u>992.57</u></td> <td style="width: 30%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><u>8"</u></td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td><u>987.75</u></td> <td style="text-align: center;">○ ○</td> <td style="text-align: right;"><u>4.82</u> TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td><u>987.55</u></td> <td></td> <td style="text-align: right;"><u>5.02</u> BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>992.57</u>	← WIDTH/O.D. →				<u>8"</u>		TOP ELEVATION	<u>987.75</u>	○ ○	<u>4.82</u> TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>987.55</u>		<u>5.02</u> BOTTOM (FEET)
SURFACE ELEVATION	<u>992.57</u>	← WIDTH/O.D. →															
		<u>8"</u>															
TOP ELEVATION	<u>987.75</u>	○ ○	<u>4.82</u> TOP DEPTH (FEET)														
BOTTOM ELEVATION	<u>987.55</u>		<u>5.02</u> BOTTOM (FEET)														
<p>RIBBON COLOR <u>Red</u></p>																	
<p>COORDINATES: NORTHING <u>878411.02</u> EASTING <u>596790.14</u></p>																	
<p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p>																	
<p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u> SOIL CONDITION <u>Dirt</u></p>																	
<p>SIZE <u>Two 2"</u> TYPE <u>PVC</u> FACILITY OWNER <u>Salt River Project Electric</u></p>																	
<p>COMMENTS:</p> <div style="border: 1px solid black; height: 150px; width: 100%;"></div>																	

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

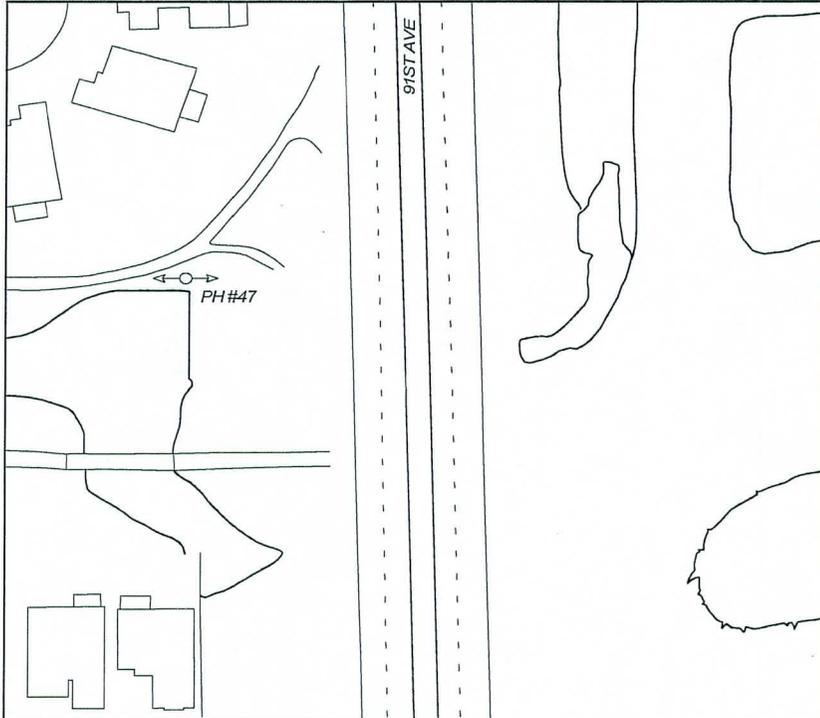
Test Hole # 47
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>East</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">990.53</td> <td style="padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;">7.90</td> <td style="padding: 5px;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">982.63</td> <td style="padding: 5px;">30"</td> <td style="padding: 5px;">10.40</td> <td style="padding: 5px;">BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">980.13</td> <td style="padding: 5px;">○</td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION	990.53	← WIDTH/O.D. →	7.90	TOP DEPTH (FEET)	TOP ELEVATION	982.63	30"	10.40	BOTTOM (FEET)	BOTTOM ELEVATION	980.13	○		
SURFACE ELEVATION	990.53	← WIDTH/O.D. →	7.90	TOP DEPTH (FEET)												
TOP ELEVATION	982.63	30"	10.40	BOTTOM (FEET)												
BOTTOM ELEVATION	980.13	○														
<p>RIBBON COLOR <u>Blue</u></p>																

COORDINATES: NORTHING 878477.58 EASTING 596582.24
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 24" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

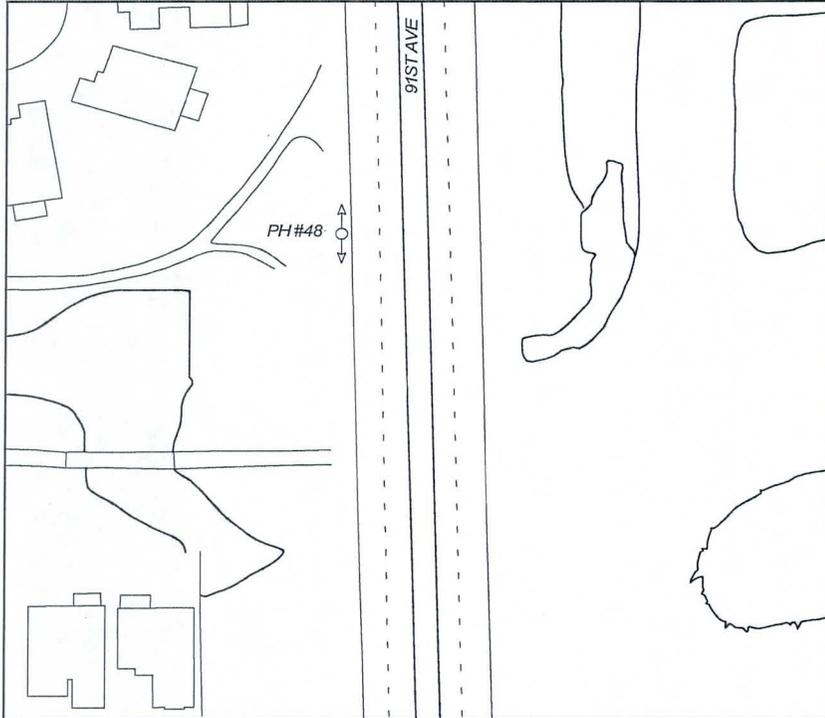
Test Hole # 48
 Date Dug 9/29/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 8565
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE									
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black;">SURFACE ELEVATION <u>992.71</u></td> <td style="border: 1px solid black; text-align: center;">← WIDTH/O.D. → <u>2.38"</u></td> <td style="border-left: 1px solid black;">TOP DEPTH (FEET) <u>4.02</u></td> </tr> <tr> <td style="border-right: 1px solid black;">TOP ELEVATION <u>988.69</u></td> <td style="border: 1px solid black; text-align: center;">○</td> <td style="border-left: 1px solid black;">BOTTOM (FEET) <u>4.22</u></td> </tr> <tr> <td style="border-right: 1px solid black;">BOTTOM ELEVATION <u>988.49</u></td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION <u>992.71</u>	← WIDTH/O.D. → <u>2.38"</u>	TOP DEPTH (FEET) <u>4.02</u>	TOP ELEVATION <u>988.69</u>	○	BOTTOM (FEET) <u>4.22</u>	BOTTOM ELEVATION <u>988.49</u>		
SURFACE ELEVATION <u>992.71</u>	← WIDTH/O.D. → <u>2.38"</u>	TOP DEPTH (FEET) <u>4.02</u>								
TOP ELEVATION <u>988.69</u>	○	BOTTOM (FEET) <u>4.22</u>								
BOTTOM ELEVATION <u>988.49</u>										
RIBBON COLOR <u>Red</u>										

COORDINATES: NORTHING 878498.23 EASTING 596667.15
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 2" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

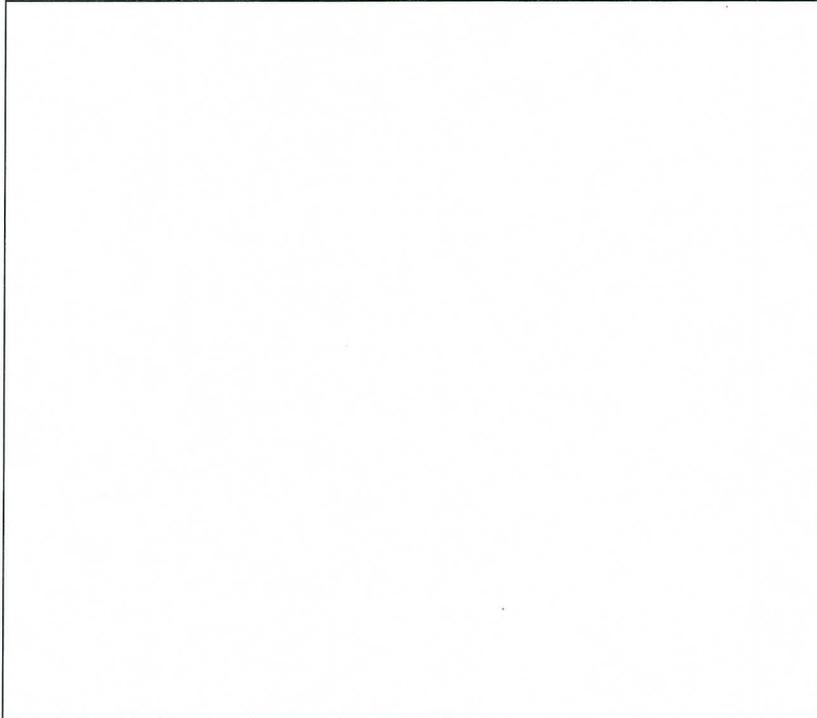
Test Hole # 49
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 99th Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center; margin: 0;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center; margin: 0;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center; margin: 0;">FACING _____</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">SURFACE ELEVATION _____</div> <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"> <div style="position: absolute; top: -10px; left: 50%; transform: translate(-50%, -50%);">← WIDTH/O.D. →</div> </div> <div style="margin-left: 10px;">TOP DEPTH (FEET) _____</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="margin-right: 10px;">TOP ELEVATION _____</div> <div style="margin-right: 10px;">BOTTOM ELEVATION _____</div> <div style="margin-left: 10px;">BOTTOM (FEET) _____</div> </div>
<p>RIBBON COLOR <u>None</u></p>	<p>COORDINATES: NORTHING <u>None</u> EASTING <u>None</u></p> <p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p> <p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u> SOIL CONDITION <u>None</u></p> <p>SIZE <u>None</u> TYPE <u>None</u> FACILITY OWNER <u>Cox Communications</u></p>

COMMENTS:

Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

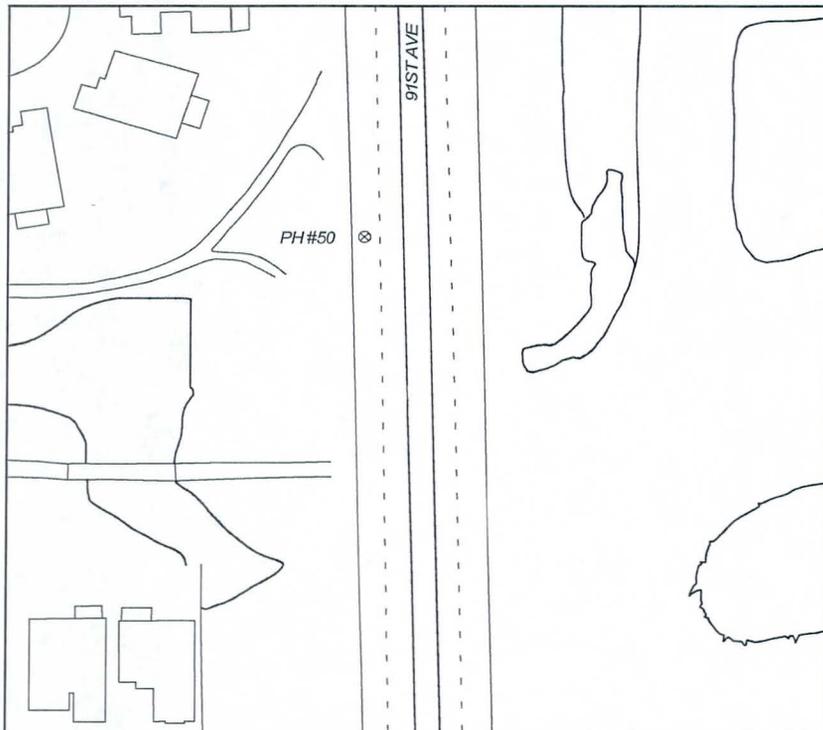
Test Hole # 50
 Date Dug 9/29/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 8565
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE

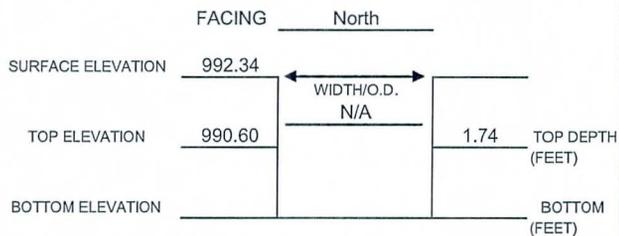


EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE



RIBBON COLOR Blue

COORDINATES: NORTHING <u>878504.40</u>	EASTING <u>596688.12</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>7"</u>	PAVING TYPE <u>Asphalt</u>
SOIL CONDITION <u>Dirt</u>	
SIZE <u>N/A</u>	TYPE <u>Concrete</u>
FACILITY OWNER <u>City of Phoenix Water</u>	

COMMENTS:

Dug to a depth of 1.74' in the requested location and hit concrete. Exposed 4' of the concrete, but unable to verify edges.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

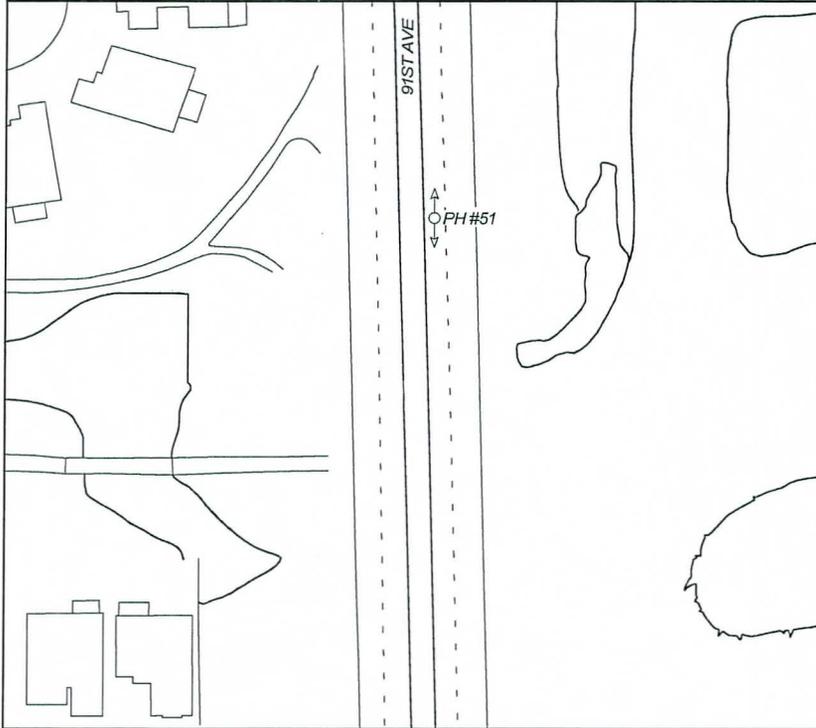
Test Hole # 51
 Date Dug 10/7/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																								
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black;">992.60</td> <td style="border-right: 1px solid black;">←</td> <td style="border-right: 1px solid black;">WIDTH/O.D.</td> <td style="border-right: 1px solid black;">→</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">87.5"</td> <td></td> <td></td> </tr> <tr> <td style="border-right: 1px solid black;">TOP ELEVATION</td> <td style="border-right: 1px solid black;">985.16</td> <td style="border-right: 1px solid black;"> </td> <td style="border-right: 1px solid black;">(Circle)</td> <td style="border-right: 1px solid black;"> </td> <td style="border-right: 1px solid black;">7.44 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black;">977.87</td> <td style="border-right: 1px solid black;"> </td> <td style="border-right: 1px solid black;">(Circle)</td> <td style="border-right: 1px solid black;"> </td> <td style="border-right: 1px solid black;">14.73 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.60	←	WIDTH/O.D.	→					87.5"			TOP ELEVATION	985.16		(Circle)		7.44 TOP DEPTH (FEET)	BOTTOM ELEVATION	977.87		(Circle)		14.73 BOTTOM (FEET)
SURFACE ELEVATION	992.60	←	WIDTH/O.D.	→																					
			87.5"																						
TOP ELEVATION	985.16		(Circle)		7.44 TOP DEPTH (FEET)																				
BOTTOM ELEVATION	977.87		(Circle)		14.73 BOTTOM (FEET)																				
RIBBON COLOR <u>Green</u>																									

COORDINATES: NORTHING 878516.15 EASTING 596735.08
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 12" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 72" TYPE RCP FACILITY OWNER City of Phoenix Sewer

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 52
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew B. Weikert
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; text-align: center;"><u>992.27</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">9.5"</td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>987.92</u></td> <td style="text-align: center;">○ ○ ○ ○</td> <td style="text-align: center;">4.35 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>987.07</u></td> <td style="text-align: center;">○ ○ ○ ○</td> <td style="text-align: center;">5.20 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>992.27</u>	← WIDTH/O.D. →				9.5"		TOP ELEVATION	<u>987.92</u>	○ ○ ○ ○	4.35 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>987.07</u>	○ ○ ○ ○	5.20 BOTTOM (FEET)
SURFACE ELEVATION	<u>992.27</u>	← WIDTH/O.D. →															
		9.5"															
TOP ELEVATION	<u>987.92</u>	○ ○ ○ ○	4.35 TOP DEPTH (FEET)														
BOTTOM ELEVATION	<u>987.07</u>	○ ○ ○ ○	5.20 BOTTOM (FEET)														
<p>RIBBON COLOR <u>Orange</u></p>																	
<p>COORDINATES: NORTHING <u>878518.69</u> EASTING <u>596751.87</u></p>																	
<p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p>																	
<p>PAVING THICKNESS <u>12"</u> PAVING TYPE <u>Asphalt</u> SOIL CONDITION <u>Dirt</u></p>																	
<p>SIZE <u>Four 4"</u> TYPE <u>PVC</u> FACILITY OWNER <u>Qwest Local Network</u></p>																	
<p>COMMENTS:</p> <div style="border: 1px solid black; height: 150px; width: 100%;"></div>																	

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

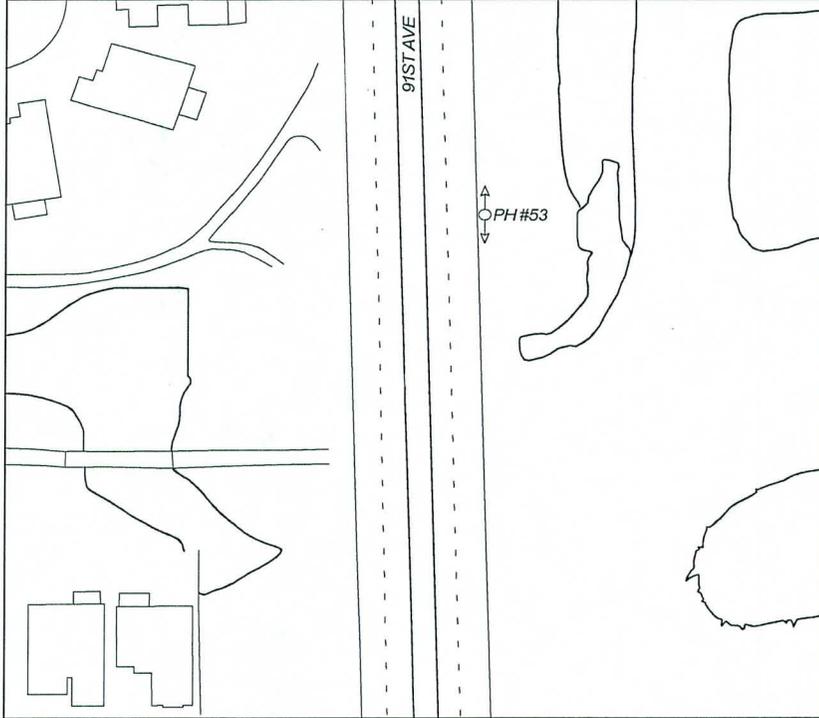
Test Hole # 53
 Date Dug 10/6/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black;">992.38</td> <td style="border-right: 1px solid black;">← WIDTH/O.D. →</td> <td style="border-right: 1px solid black;">1.5"</td> <td></td> </tr> <tr> <td style="border-right: 1px solid black;">TOP ELEVATION</td> <td style="border-right: 1px solid black;">989.46</td> <td style="border-right: 1px solid black;">○</td> <td style="border-right: 1px solid black;">2.92</td> <td>TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black;">989.33</td> <td></td> <td style="border-right: 1px solid black;">3.05</td> <td>BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.38	← WIDTH/O.D. →	1.5"		TOP ELEVATION	989.46	○	2.92	TOP DEPTH (FEET)	BOTTOM ELEVATION	989.33		3.05	BOTTOM (FEET)
SURFACE ELEVATION	992.38	← WIDTH/O.D. →	1.5"													
TOP ELEVATION	989.46	○	2.92	TOP DEPTH (FEET)												
BOTTOM ELEVATION	989.33		3.05	BOTTOM (FEET)												
RIBBON COLOR <u>Orange</u>																

COORDINATES: NORTHING 878518.37 EASTING 596756.73
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 1.5" TYPE PE FACILITY OWNER Qwest Local Network

COMMENTS:

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

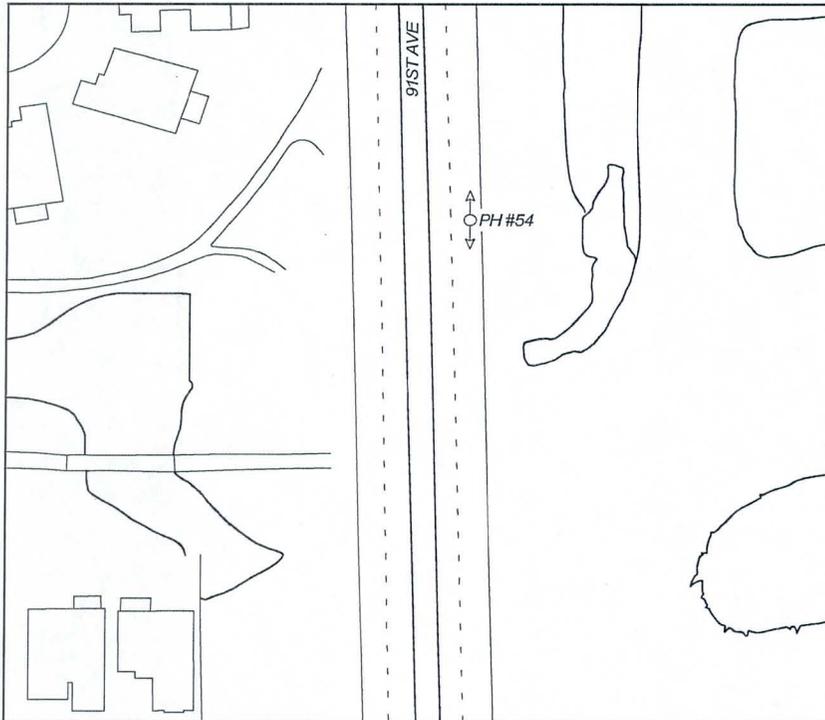
Test Hole # 54
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE									
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION <u>992.34</u></td> <td style="padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION <u>988.62</u></td> <td style="padding: 5px; text-align: center;">2"</td> <td style="padding: 5px; text-align: right;">3.72 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION <u>988.45</u></td> <td style="padding: 5px; text-align: center;">○</td> <td style="padding: 5px; text-align: right;">3.89 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION <u>992.34</u>	← WIDTH/O.D. →		TOP ELEVATION <u>988.62</u>	2"	3.72 TOP DEPTH (FEET)	BOTTOM ELEVATION <u>988.45</u>	○	3.89 BOTTOM (FEET)
SURFACE ELEVATION <u>992.34</u>	← WIDTH/O.D. →									
TOP ELEVATION <u>988.62</u>	2"	3.72 TOP DEPTH (FEET)								
BOTTOM ELEVATION <u>988.45</u>	○	3.89 BOTTOM (FEET)								
RIBBON COLOR <u>Orange</u>										

COORDINATES: NORTHING 878520.05 EASTING 596747.56
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 8" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 2" TYPE PE FACILITY OWNER Qwest Local Network

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

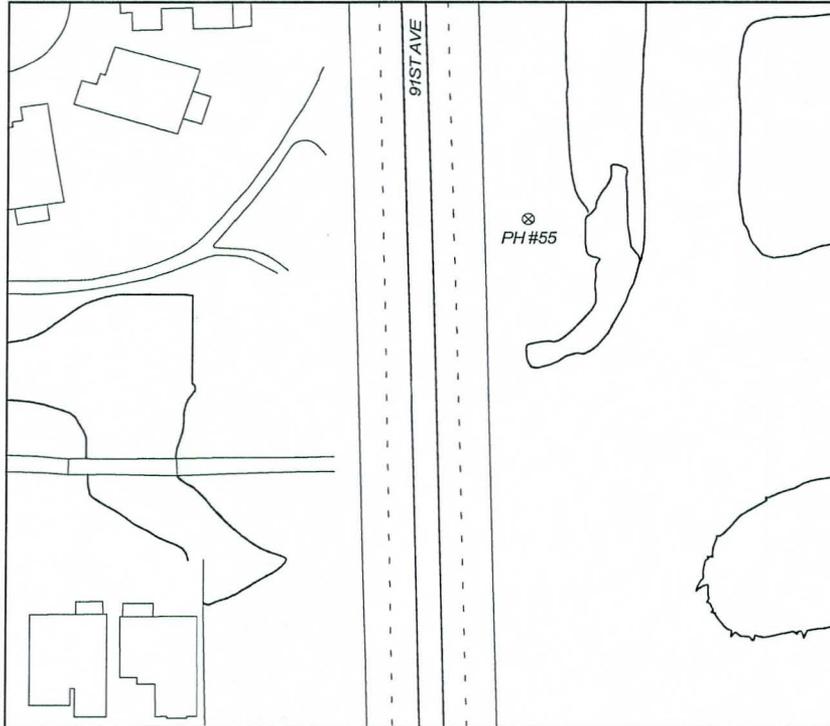
Test Hole # 55
 Date Dug 10/7/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING _____</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="padding: 5px;">992.77</td> <td style="border-right: 1px solid black; padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="padding: 5px;">980.77</td> <td style="border-right: 1px solid black; padding: 5px;">12.00</td> <td style="padding: 5px;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.77	← WIDTH/O.D. →		TOP ELEVATION			TOP DEPTH (FEET)	BOTTOM ELEVATION	980.77	12.00	BOTTOM (FEET)
SURFACE ELEVATION	992.77	← WIDTH/O.D. →											
TOP ELEVATION			TOP DEPTH (FEET)										
BOTTOM ELEVATION	980.77	12.00	BOTTOM (FEET)										
RIBBON COLOR None													

COORDINATES: NORTHING 878519.31 EASTING 596777.66
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE None TYPE None FACILITY OWNER City of Phoenix Sewer

COMMENTS:
 Dug to a depth of 12 ft in the requested location and no facility was found. Cleared location per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 55A
 Date Dug 10/7/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING <u>Northwest</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 20%; border-bottom: 1px solid black;">992.81</td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">4.5"</td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="border-bottom: 1px solid black;">988.17</td> <td style="text-align: center;">○</td> <td style="text-align: right;">4.64 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="border-bottom: 1px solid black;">987.79</td> <td></td> <td style="text-align: right;">5.02 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.81	← WIDTH/O.D. →				4.5"		TOP ELEVATION	988.17	○	4.64 TOP DEPTH (FEET)	BOTTOM ELEVATION	987.79		5.02 BOTTOM (FEET)
SURFACE ELEVATION	992.81	← WIDTH/O.D. →															
		4.5"															
TOP ELEVATION	988.17	○	4.64 TOP DEPTH (FEET)														
BOTTOM ELEVATION	987.79		5.02 BOTTOM (FEET)														
<p>RIBBON COLOR <u>White</u></p>																	
<p>COORDINATES: NORTHING <u>878516.74</u> EASTING <u>596778.08</u></p> <p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p> <p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u> SOIL CONDITION <u>Dirt</u></p> <p>SIZE <u>4"</u> TYPE <u>PVC</u> FACILITY OWNER <u>Unknown</u></p>																	
<p>COMMENTS:</p> <div style="border: 1px solid black; height: 150px; width: 100%;"></div>																	

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

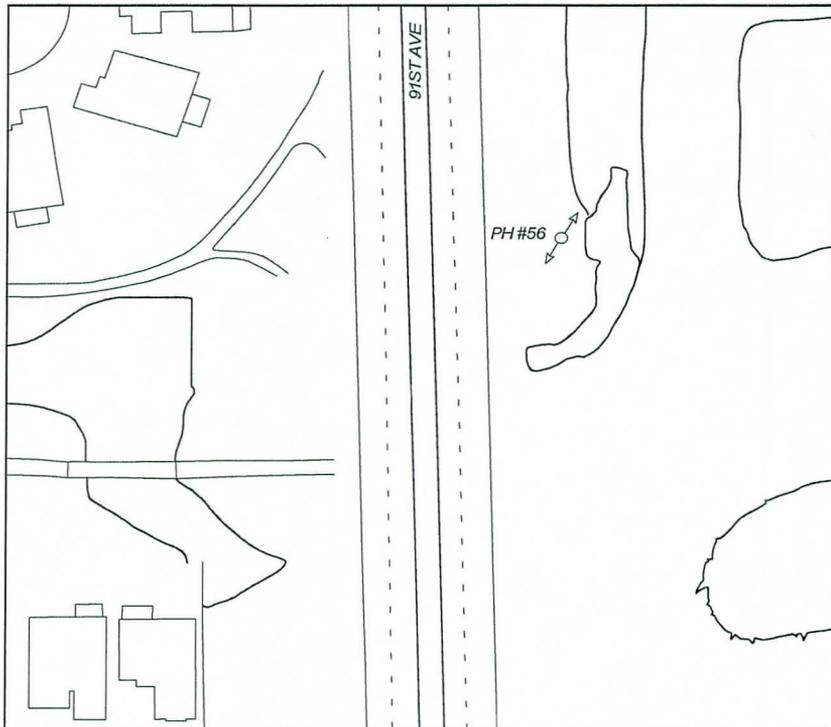
Test Hole # 56
 Date Dug 9/29/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>Southwest</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">992.42</td> <td style="text-align: center;">← WIDTH/O.D. →</td> <td style="border-left: 1px solid black;"></td> <td></td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">990.52</td> <td style="text-align: center;">37"</td> <td style="border-left: 1px solid black; text-align: center;">1.90</td> <td style="text-align: left;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">987.44</td> <td style="text-align: center;"></td> <td style="border-left: 1px solid black; text-align: center;">4.98</td> <td style="text-align: left;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.42	← WIDTH/O.D. →			TOP ELEVATION	990.52	37"	1.90	TOP DEPTH (FEET)	BOTTOM ELEVATION	987.44		4.98	BOTTOM (FEET)
SURFACE ELEVATION	992.42	← WIDTH/O.D. →														
TOP ELEVATION	990.52	37"	1.90	TOP DEPTH (FEET)												
BOTTOM ELEVATION	987.44		4.98	BOTTOM (FEET)												
<p>RIBBON COLOR <u>Blue</u></p>																

COORDINATES: NORTHING 878500.80 EASTING 596789.75
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 30" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

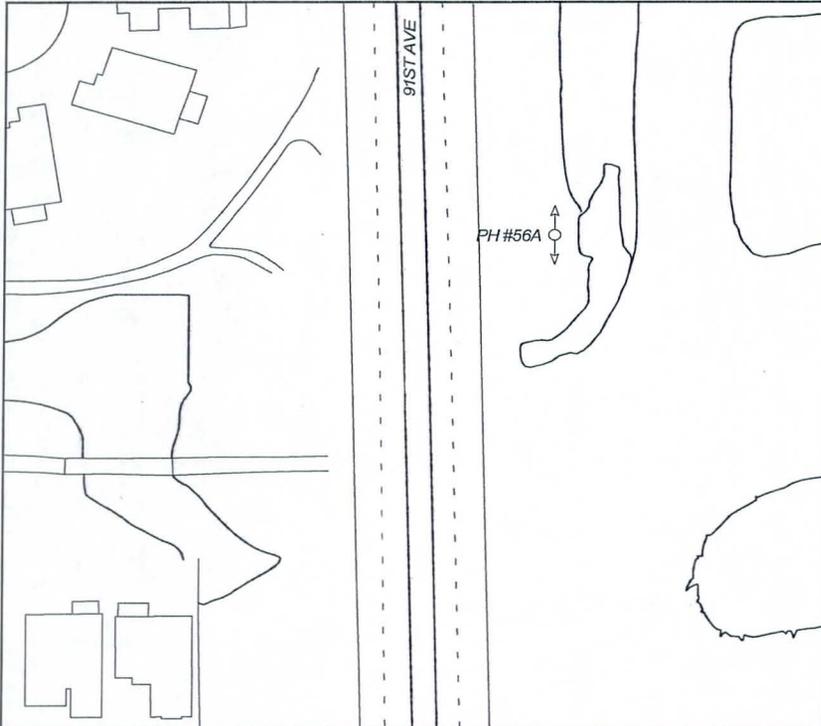
Test Hole # 56A
 Date Dug 9/29/2010
 Project # AZS0929
 Phase # 009
 Location 91st Ave south of Lower Buckeye Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 8565
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

RIBBON COLOR Red

COORDINATES: NORTHING 878515.24

STATIONING: STATION None

PAVING THICKNESS None PAVING TYPE None

SIZE Two 2" & One 4" TYPE PVC

CROSS SECTION - NOT TO SCALE

FACING North

SURFACE ELEVATION	992.58	← WIDTH/O.D. → 10"	
TOP ELEVATION	987.50	○ ○ ○	5.08 TOP DEPTH (FEET)
BOTTOM ELEVATION	987.12		5.46 BOTTOM (FEET)

EASTING 596788.12

OFFSET None

SOIL CONDITION Dirt

FACILITY OWNER Salt River Project Electric

COMMENTS:

Dug in the requested location to find irrigation, but only found electric. Moved to the south to dig 2nd hole to find the irrigation pipe.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 57
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="border: 1px solid black; padding: 2px;">990.89</td> <td style="border: 1px solid black; padding: 2px;">← WIDTH/O.D. →</td> <td style="border: 1px solid black; padding: 2px;"></td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="border: 1px solid black; padding: 2px;">986.53</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">2.38"</td> <td style="border: 1px solid black; padding: 2px; text-align: right;">4.36 TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="border: 1px solid black; padding: 2px;">986.33</td> <td style="border: 1px solid black; padding: 2px; text-align: center;">○</td> <td style="border: 1px solid black; padding: 2px; text-align: right;">4.56 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	990.89	← WIDTH/O.D. →		TOP ELEVATION	986.53	2.38"	4.36 TOP DEPTH (FEET)	BOTTOM ELEVATION	986.33	○	4.56 BOTTOM (FEET)
SURFACE ELEVATION	990.89	← WIDTH/O.D. →											
TOP ELEVATION	986.53	2.38"	4.36 TOP DEPTH (FEET)										
BOTTOM ELEVATION	986.33	○	4.56 BOTTOM (FEET)										
<p>RIBBON COLOR <u>Yellow</u></p>													

COORDINATES: NORTHING 878384.50 EASTING 598009.11
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 2" TYPE PE FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 59
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																		
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;">991.13</td> <td style="text-align: left;">← WIDTH/O.D. →</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;">9.05"</td> <td style="text-align: right;">4.96</td> <td style="text-align: left;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;">986.17</td> <td style="text-align: center;">○</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;">5.71</td> <td style="text-align: right;">5.71</td> <td style="text-align: left;">BOTTOM (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;">985.42</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION	991.13	← WIDTH/O.D. →	9.05"	4.96	TOP DEPTH (FEET)	TOP ELEVATION	986.17	○	5.71	5.71	BOTTOM (FEET)	BOTTOM ELEVATION	985.42				
SURFACE ELEVATION	991.13	← WIDTH/O.D. →	9.05"	4.96	TOP DEPTH (FEET)														
TOP ELEVATION	986.17	○	5.71	5.71	BOTTOM (FEET)														
BOTTOM ELEVATION	985.42																		
<p>RIBBON COLOR <u>Blue</u></p>																			

COORDINATES: NORthing 878380.83 EASTING 598052.76
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 4" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

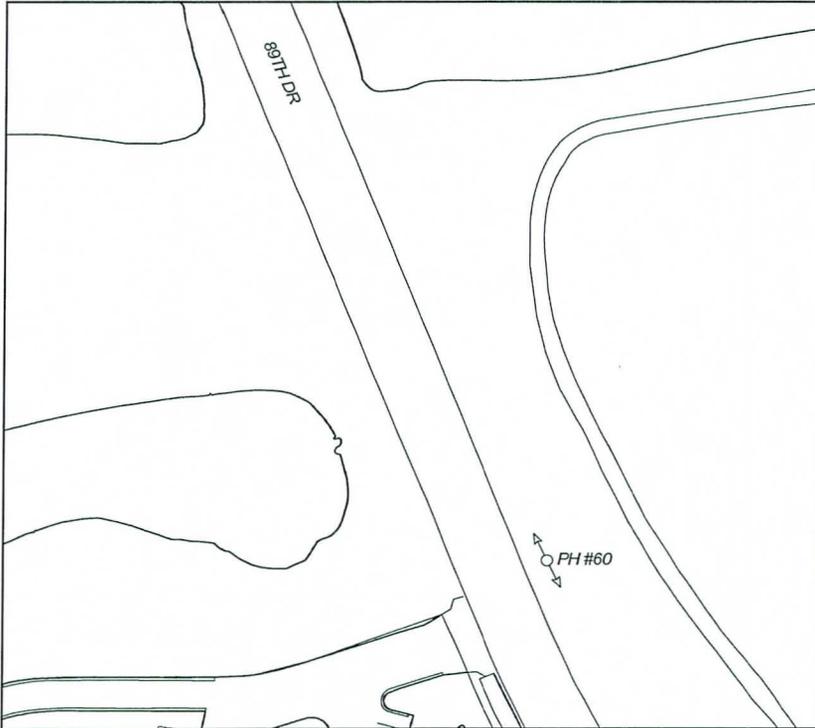
Test Hole # 60
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>992.15</u>	← WIDTH/O.D. →		
		<u>12"</u>		
TOP ELEVATION	<u>988.25</u>	○○○○	<u>3.90</u>	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>988.05</u>		<u>4.10</u>	BOTTOM (FEET)

RIBBON COLOR Orange

COORDINATES: NORTHING 878383.33 EASTING 598083.80

STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 61
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; border-bottom: 1px solid black;">992.25</td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">16"</td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="border-bottom: 1px solid black;">986.65</td> <td style="text-align: center;">○○○○</td> <td style="border-left: 1px solid black;">5.60 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="border-bottom: 1px solid black;">986.36</td> <td></td> <td style="border-left: 1px solid black;">5.89 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	992.25	← WIDTH/O.D. →				16"		TOP ELEVATION	986.65	○○○○	5.60 TOP DEPTH (FEET)	BOTTOM ELEVATION	986.36		5.89 BOTTOM (FEET)
SURFACE ELEVATION	992.25	← WIDTH/O.D. →															
		16"															
TOP ELEVATION	986.65	○○○○	5.60 TOP DEPTH (FEET)														
BOTTOM ELEVATION	986.36		5.89 BOTTOM (FEET)														
RIBBON COLOR <u>Red</u>																	

COORDINATES: NORthing 878383.53 EASTING 598084.29
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

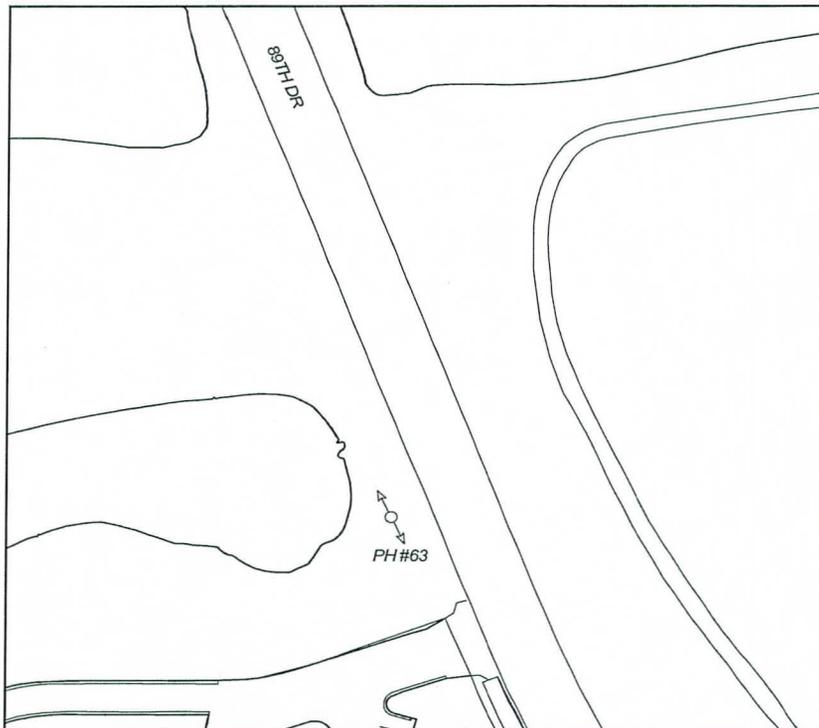
Test Hole # 63
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	990.88	← WIDTH/O.D. →		
TOP ELEVATION	986.52	4.5"	4.36	TOP DEPTH (FEET)
BOTTOM ELEVATION	986.14	○	4.74	BOTTOM (FEET)

RIBBON COLOR Yellow

COORDINATES: NORTHING 878407.80 EASTING 598000.23
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 4" TYPE PE FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 64
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr & Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>991.10</u>	← WIDTH/O.D. →
TOP ELEVATION <u>974.85</u>	<u>13.2"</u>
BOTTOM ELEVATION <u>973.75</u>	16.25 TOP DEPTH (FEET)
	17.35 BOTTOM (FEET)

RIBBON COLOR Green

COORDINATES: NORTHING 878409.78 EASTING 598026.64

STATIONING: STATION None OFFSET None

PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt

SIZE 12" TYPE DIP FACILITY OWNER City of Phoenix Sewer

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 65
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE									
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION <u>991.18</u></td> <td style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 5px;">←</div> <div style="text-align: center;"> <p>WIDTH/O.D. 9.05"</p> </div> <div style="margin-left: 5px;">→</div> </div> </td> <td style="padding: 5px;">5.32 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION <u>985.86</u></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">6.07 BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION <u>985.11</u></td> <td style="padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table>	SURFACE ELEVATION <u>991.18</u>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 5px;">←</div> <div style="text-align: center;"> <p>WIDTH/O.D. 9.05"</p> </div> <div style="margin-left: 5px;">→</div> </div>	5.32 TOP DEPTH (FEET)	TOP ELEVATION <u>985.86</u>		6.07 BOTTOM (FEET)	BOTTOM ELEVATION <u>985.11</u>		
SURFACE ELEVATION <u>991.18</u>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 5px;">←</div> <div style="text-align: center;"> <p>WIDTH/O.D. 9.05"</p> </div> <div style="margin-left: 5px;">→</div> </div>	5.32 TOP DEPTH (FEET)								
TOP ELEVATION <u>985.86</u>		6.07 BOTTOM (FEET)								
BOTTOM ELEVATION <u>985.11</u>										
RIBBON COLOR <u>Blue</u>										

COORDINATES: NORTHING 878412.60 EASTING 598040.19
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 4" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

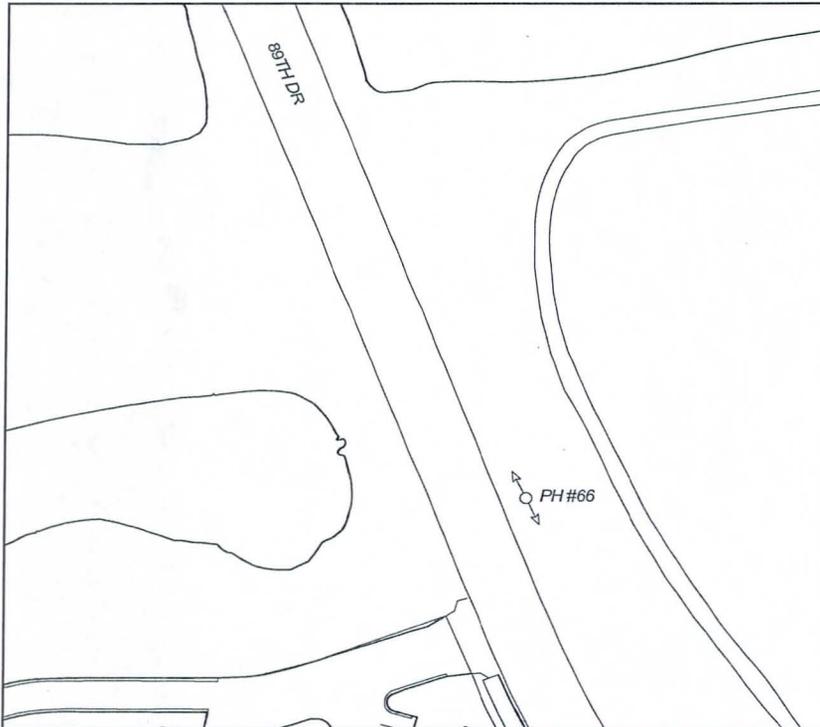
Test Hole # 66
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; text-align: center;"><u>991.14</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><u>16"</u></td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>986.30</u></td> <td style="text-align: center;">○○○○</td> <td style="text-align: right;"><u>4.84</u> TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>986.10</u></td> <td></td> <td style="text-align: right;"><u>5.04</u> BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.14</u>	← WIDTH/O.D. →				<u>16"</u>		TOP ELEVATION	<u>986.30</u>	○○○○	<u>4.84</u> TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>986.10</u>		<u>5.04</u> BOTTOM (FEET)
SURFACE ELEVATION	<u>991.14</u>	← WIDTH/O.D. →															
		<u>16"</u>															
TOP ELEVATION	<u>986.30</u>	○○○○	<u>4.84</u> TOP DEPTH (FEET)														
BOTTOM ELEVATION	<u>986.10</u>		<u>5.04</u> BOTTOM (FEET)														
RIBBON COLOR <u>Orange</u>																	

COORDINATES: NORTHING 878415.23 EASTING 598071.87
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 67
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; border-bottom: 1px solid black;">991.08</td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">16"</td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="border-bottom: 1px solid black;">985.10</td> <td style="text-align: center;">○○○○</td> <td style="text-align: right;">5.98 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="border-bottom: 1px solid black;">984.81</td> <td></td> <td style="text-align: right;">6.27 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	991.08	← WIDTH/O.D. →				16"		TOP ELEVATION	985.10	○○○○	5.98 TOP DEPTH (FEET)	BOTTOM ELEVATION	984.81		6.27 BOTTOM (FEET)
SURFACE ELEVATION	991.08	← WIDTH/O.D. →															
		16"															
TOP ELEVATION	985.10	○○○○	5.98 TOP DEPTH (FEET)														
BOTTOM ELEVATION	984.81		6.27 BOTTOM (FEET)														
RIBBON COLOR <u>Red</u>																	

COORDINATES: NORTHING 878415.12 EASTING 598071.27
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

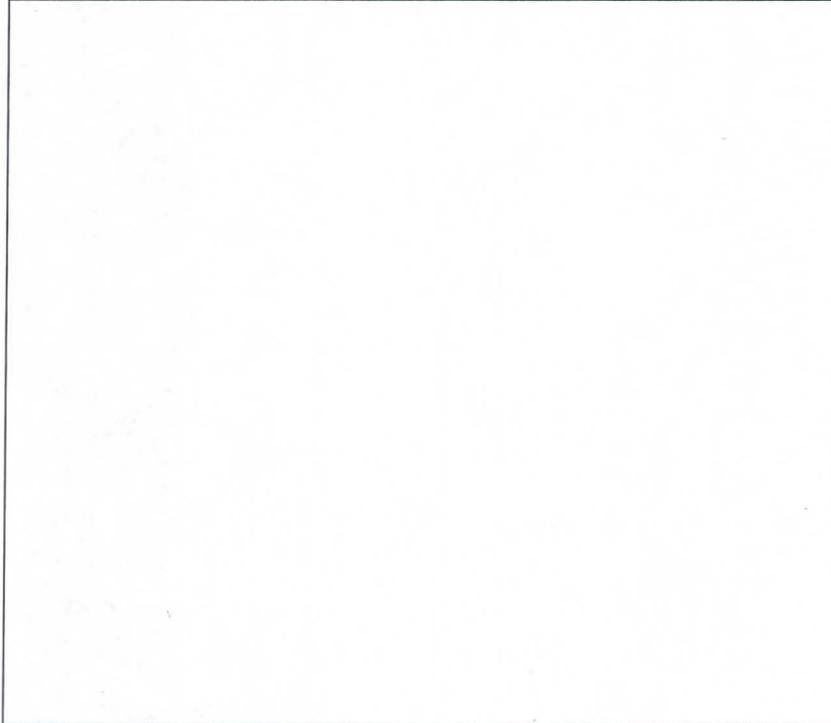
Test Hole # 68
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE

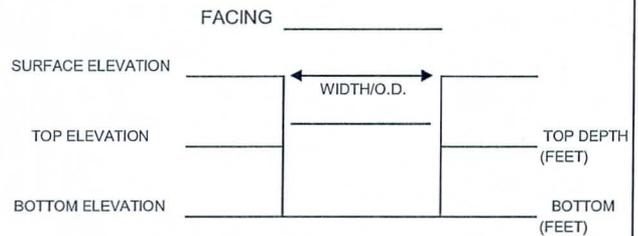


EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE



RIBBON COLOR None

COORDINATES: NORTHING None EASTING None
 STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION None
 SIZE None TYPE None FACILITY OWNER Salt River Project Electric

COMMENTS:

Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

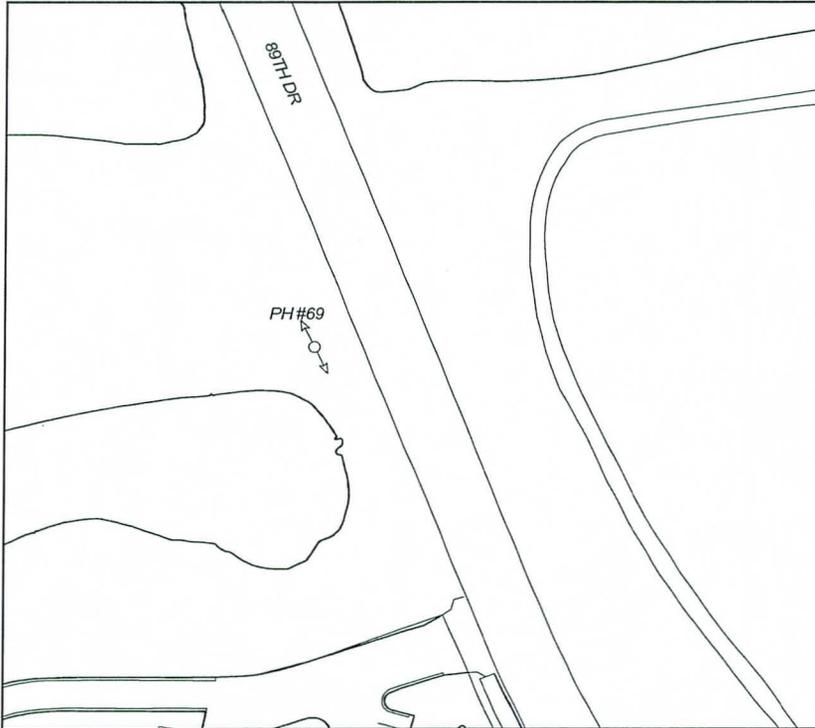
Test Hole # 69
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">991.49</td> <td style="padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;">3.52</td> <td style="padding: 5px;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">987.97</td> <td style="padding: 5px;">4.5"</td> <td style="padding: 5px;">3.90</td> <td style="padding: 5px;">BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">987.59</td> <td style="padding: 5px;">○</td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION	991.49	← WIDTH/O.D. →	3.52	TOP DEPTH (FEET)	TOP ELEVATION	987.97	4.5"	3.90	BOTTOM (FEET)	BOTTOM ELEVATION	987.59	○		
SURFACE ELEVATION	991.49	← WIDTH/O.D. →	3.52	TOP DEPTH (FEET)												
TOP ELEVATION	987.97	4.5"	3.90	BOTTOM (FEET)												
BOTTOM ELEVATION	987.59	○														
<p>RIBBON COLOR <u>Yellow</u></p>																

COORDINATES: NORTHING 878464.80 EASTING 597979.83
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 4" TYPE PE FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 70
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE									
<p>COP BC @ 99TH AVE & LOWER BUCKEY RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION <u>990.97</u></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">← WIDTH/O.D. → <u>13.2"</u></td> <td style="padding: 5px;">15.94 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION <u>975.03</u></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">○</td> <td style="padding: 5px;">17.04 BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION <u>973.93</u></td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION <u>990.97</u>	← WIDTH/O.D. → <u>13.2"</u>	15.94 TOP DEPTH (FEET)	TOP ELEVATION <u>975.03</u>	○	17.04 BOTTOM (FEET)	BOTTOM ELEVATION <u>973.93</u>		
SURFACE ELEVATION <u>990.97</u>	← WIDTH/O.D. → <u>13.2"</u>	15.94 TOP DEPTH (FEET)								
TOP ELEVATION <u>975.03</u>	○	17.04 BOTTOM (FEET)								
BOTTOM ELEVATION <u>973.93</u>										
<p>RIBBON COLOR <u>Green</u></p>										

COORDINATES: NORTHING 878466.53 EASTING 598003.59
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 12" TYPE DIP FACILITY OWNER City of Phoenix Sewer

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

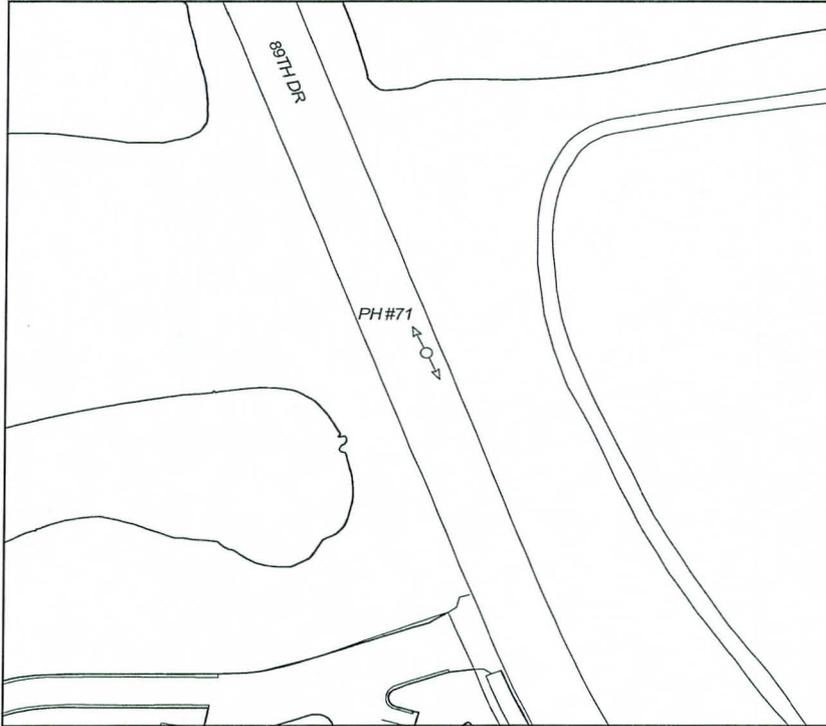
Test Hole # 71
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black;">SURFACE ELEVATION</td> <td style="border: 1px solid black;">991.05</td> <td style="border: 1px solid black; text-align: center;">← WIDTH/O.D. →</td> <td style="border: 1px solid black;"></td> </tr> <tr> <td style="border: 1px solid black;">TOP ELEVATION</td> <td style="border: 1px solid black;">985.69</td> <td style="border: 1px solid black; text-align: center;">9.05"</td> <td style="border: 1px solid black; text-align: right;">5.36 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border: 1px solid black;">BOTTOM ELEVATION</td> <td style="border: 1px solid black;">984.94</td> <td style="border: 1px solid black; text-align: center;">○</td> <td style="border: 1px solid black; text-align: right;">6.11 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	991.05	← WIDTH/O.D. →		TOP ELEVATION	985.69	9.05"	5.36 TOP DEPTH (FEET)	BOTTOM ELEVATION	984.94	○	6.11 BOTTOM (FEET)
SURFACE ELEVATION	991.05	← WIDTH/O.D. →											
TOP ELEVATION	985.69	9.05"	5.36 TOP DEPTH (FEET)										
BOTTOM ELEVATION	984.94	○	6.11 BOTTOM (FEET)										
<p>RIBBON COLOR <u>Blue</u></p>													

COORDINATES: NORTHING 878469.32 EASTING 598019.22
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 72
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEY RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>991.52</u>	← WIDTH/O.D. →		
		<u>12"</u>		
TOP ELEVATION	<u>987.36</u>	○○○○	4.16	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>987.16</u>		4.36	BOTTOM (FEET)

RIBBON COLOR Orange

COORDINATES: NORTHING 878470.95

EASTING 598049.71

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 73
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

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 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																		
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">SURFACE ELEVATION <u>991.41</u></td> <td style="width: 10%; text-align: center;">←</td> <td style="width: 20%; text-align: center;">WIDTH/O.D. <u>16"</u></td> <td style="width: 10%; text-align: center;">→</td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> </tr> <tr> <td>TOP ELEVATION <u>986.23</u></td> <td></td> <td style="text-align: center;">○○○○</td> <td></td> <td style="text-align: center;">5.18</td> <td style="text-align: center;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION <u>985.94</u></td> <td></td> <td></td> <td></td> <td style="text-align: center;">5.47</td> <td style="text-align: center;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION <u>991.41</u>	←	WIDTH/O.D. <u>16"</u>	→			TOP ELEVATION <u>986.23</u>		○○○○		5.18	TOP DEPTH (FEET)	BOTTOM ELEVATION <u>985.94</u>				5.47	BOTTOM (FEET)
SURFACE ELEVATION <u>991.41</u>	←	WIDTH/O.D. <u>16"</u>	→																
TOP ELEVATION <u>986.23</u>		○○○○		5.18	TOP DEPTH (FEET)														
BOTTOM ELEVATION <u>985.94</u>				5.47	BOTTOM (FEET)														
RIBBON COLOR <u>Red</u>																			

COORDINATES: NORTHING 878470.77 EASTING 598048.84
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 74
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p>SITE BENCHMARK</p> <p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>CROSS SECTION - NOT TO SCALE</p> <p>FACING _____</p> <p>SURFACE ELEVATION _____</p> <p>TOP ELEVATION _____</p> <p>BOTTOM ELEVATION _____</p> <p style="text-align: center;">← WIDTH/O.D. →</p> <p style="text-align: right;">TOP DEPTH (FEET)</p> <p style="text-align: right;">BOTTOM (FEET)</p>
<p>RIBBON COLOR <u>None</u></p>	

COORDINATES: NORTHING None EASTING None

STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION None

SIZE None TYPE None FACILITY OWNER Salt River Project Electric

COMMENTS:
 Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

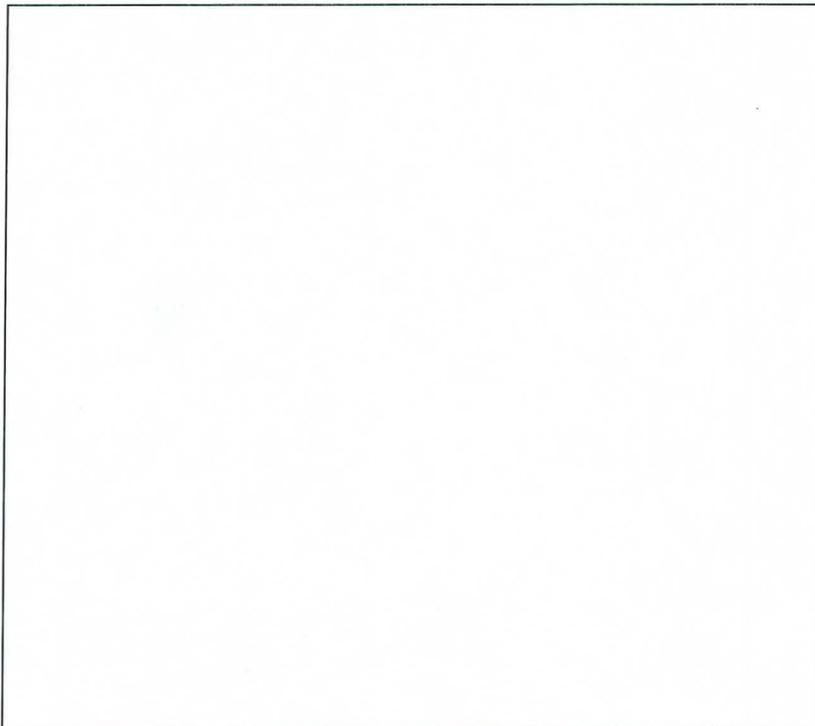
Test Hole # 76
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 83rd Ave & Elwood St



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK COP BC @ 99TH AVE & LOWER BUCKEYE RD ELEV. = 985.15' RIBBON COLOR <u>None</u>	CROSS SECTION - NOT TO SCALE FACING _____ <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION _____</td> <td style="width: 40%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION _____</td> <td></td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION _____</td> <td></td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION _____	← WIDTH/O.D. →		TOP ELEVATION _____		TOP DEPTH (FEET)	BOTTOM ELEVATION _____		BOTTOM (FEET)
SURFACE ELEVATION _____	← WIDTH/O.D. →									
TOP ELEVATION _____		TOP DEPTH (FEET)								
BOTTOM ELEVATION _____		BOTTOM (FEET)								

COORDINATES: NORTHING <u>None</u>	EASTING <u>None</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u>	SOIL CONDITION <u>None</u>
SIZE <u>None</u> TYPE <u>None</u>	FACILITY OWNER <u>City of Phoenix Water</u>

COMMENTS:
 Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

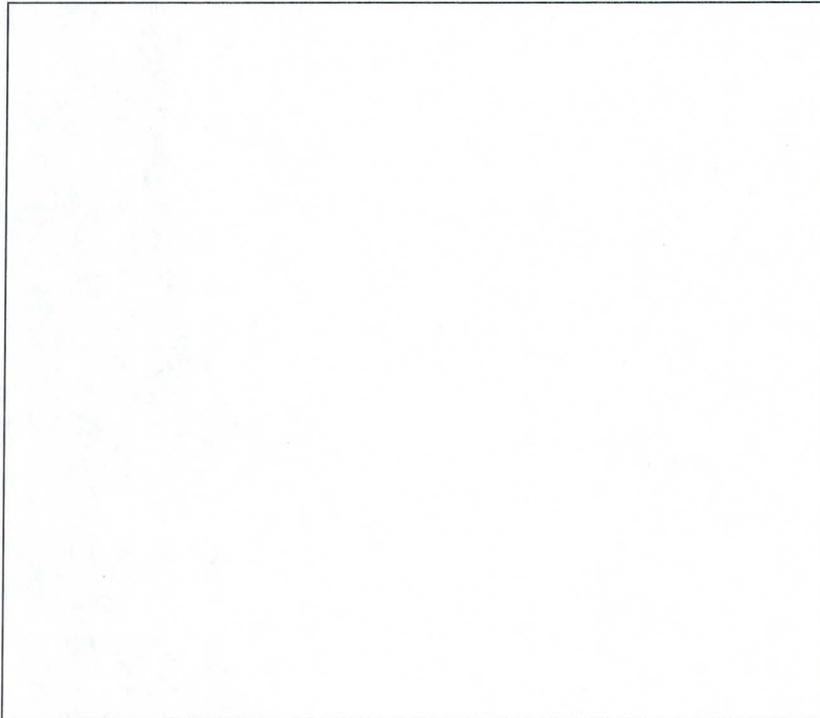
Test Hole # 77
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 83rd Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK COP BC @ 99TH AVE & LOWER BUCKEYE RD ELEV. = 985.15' RIBBON COLOR <u>None</u>	CROSS SECTION - NOT TO SCALE FACING _____ <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION _____</td> <td style="width: 40%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION _____</td> <td></td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION _____</td> <td></td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION _____	← WIDTH/O.D. →		TOP ELEVATION _____		TOP DEPTH (FEET)	BOTTOM ELEVATION _____		BOTTOM (FEET)
SURFACE ELEVATION _____	← WIDTH/O.D. →									
TOP ELEVATION _____		TOP DEPTH (FEET)								
BOTTOM ELEVATION _____		BOTTOM (FEET)								

COORDINATES: NORTHING <u>None</u>	EASTING <u>None</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>None</u>	PAVING TYPE <u>None</u>
SIZE <u>None</u>	TYPE <u>None</u>
FACILITY OWNER <u>Salt River Project Electric</u>	SOIL CONDITION <u>None</u>

COMMENTS:
 Cancelled per Gordon Grandy with Nfra at 602-443-6067.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

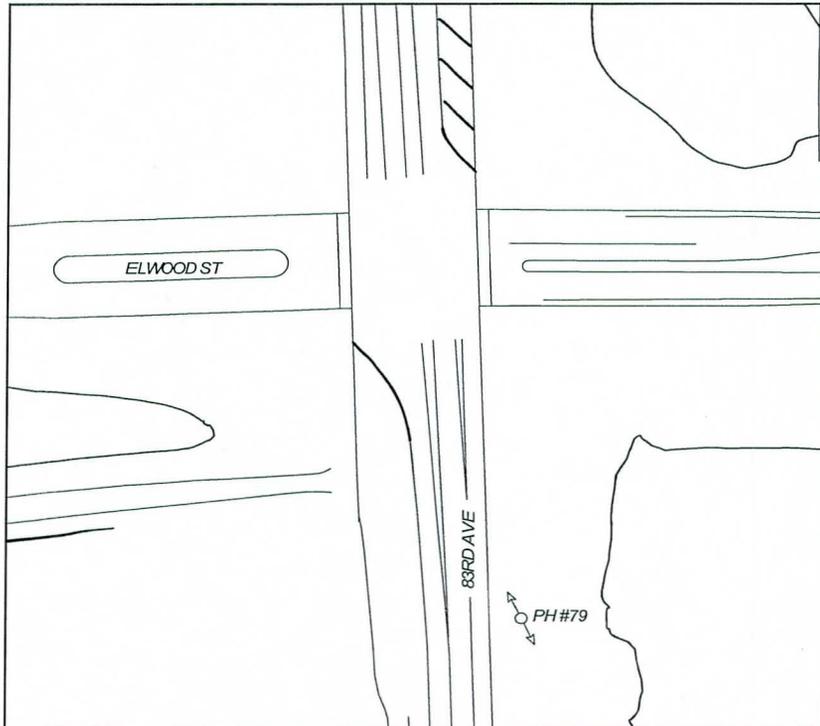
Test Hole # 79
 Date Dug 10/7/2010
 Project # AZS0929
 Phase # 009
 Location 83rd Ave & Elwood St



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
 ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>Northwest</u>		
SURFACE ELEVATION	1000.26	← WIDTH/O.D. →		
TOP ELEVATION	995.50	37"	4.76	TOP DEPTH (FEET)
BOTTOM ELEVATION	992.42		7.84	BOTTOM (FEET)

RIBBON COLOR Blue

COORDINATES: NORTHING 878981.07 EASTING 601990.98

STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE 30" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

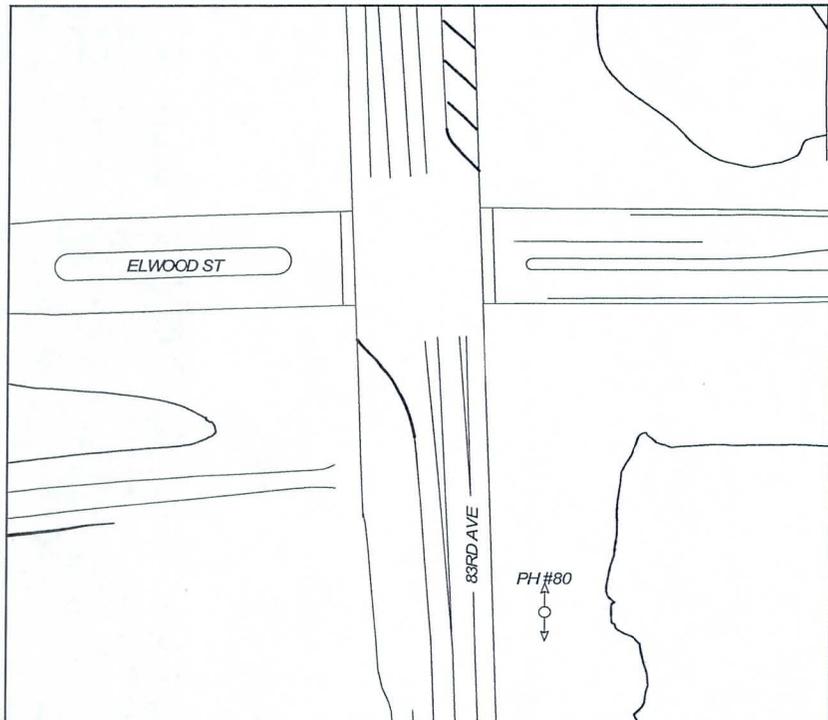
Test Hole # 80
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 83rd Ave & Elwood Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>999.60</u>	← WIDTH/O.D. →		
		<u>14"</u>		
TOP ELEVATION	<u>996.06</u>	○ ○ ○ ○ ○	<u>3.54</u>	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>995.48</u>		<u>4.12</u>	BOTTOM (FEET)

RIBBON COLOR Orange

COORDINATES: NORTHING 878976.48

EASTING 602000.81

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE Two 4" & Six 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

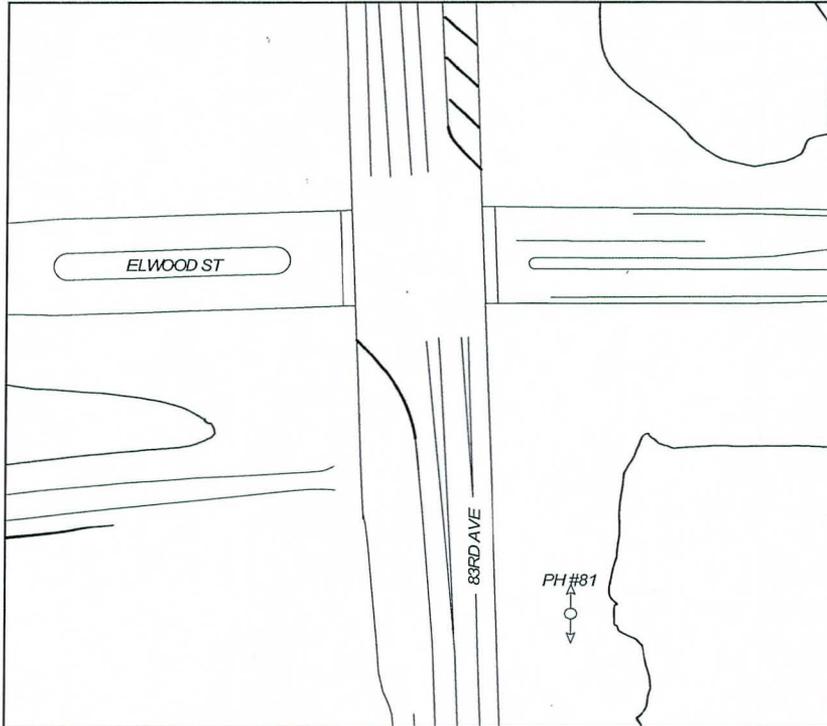
Test Hole # 81
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 83rd Ave & Elwood Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 20%;"><u>999.63</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td><u>994.71</u></td> <td style="text-align: center;">16"</td> <td style="text-align: right;">4.92 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td><u>994.42</u></td> <td style="text-align: center;">○○○○</td> <td style="text-align: right;">5.21 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>999.63</u>	← WIDTH/O.D. →		TOP ELEVATION	<u>994.71</u>	16"	4.92 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>994.42</u>	○○○○	5.21 BOTTOM (FEET)
SURFACE ELEVATION	<u>999.63</u>	← WIDTH/O.D. →											
TOP ELEVATION	<u>994.71</u>	16"	4.92 TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>994.42</u>	○○○○	5.21 BOTTOM (FEET)										
RIBBON COLOR <u>Red</u>													

COORDINATES: NORTHING 878976.48 EASTING 602000.38
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

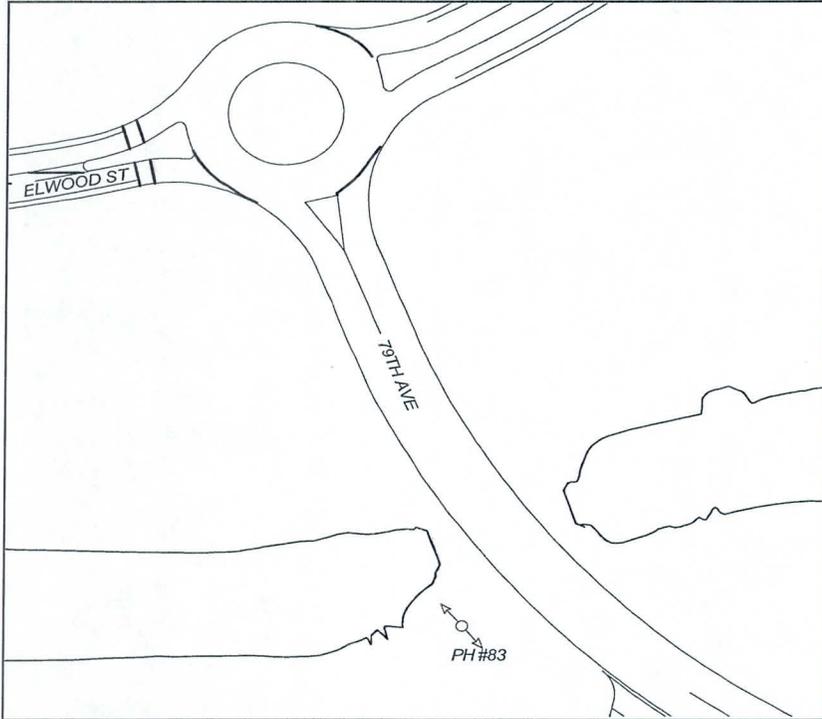
Test Hole # 83
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew B. Weikert
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

RIBBON COLOR Red

CROSS SECTION - NOT TO SCALE

		FACING <u>Northwest</u>		
SURFACE ELEVATION	<u>998.09</u>	← WIDTH/O.D. →		
		<u>16"</u>		
TOP ELEVATION	<u>994.81</u>	○ ○ ○	<u>3.28</u>	TOP DEPTH (FEET)
		○ ○ ○		
BOTTOM ELEVATION	<u>993.93</u>	○ ○ ○	<u>4.16</u>	BOTTOM (FEET)

COORDINATES: NORTHING 878927.97 EASTING 604124.03
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Six 3" & One 2.5" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

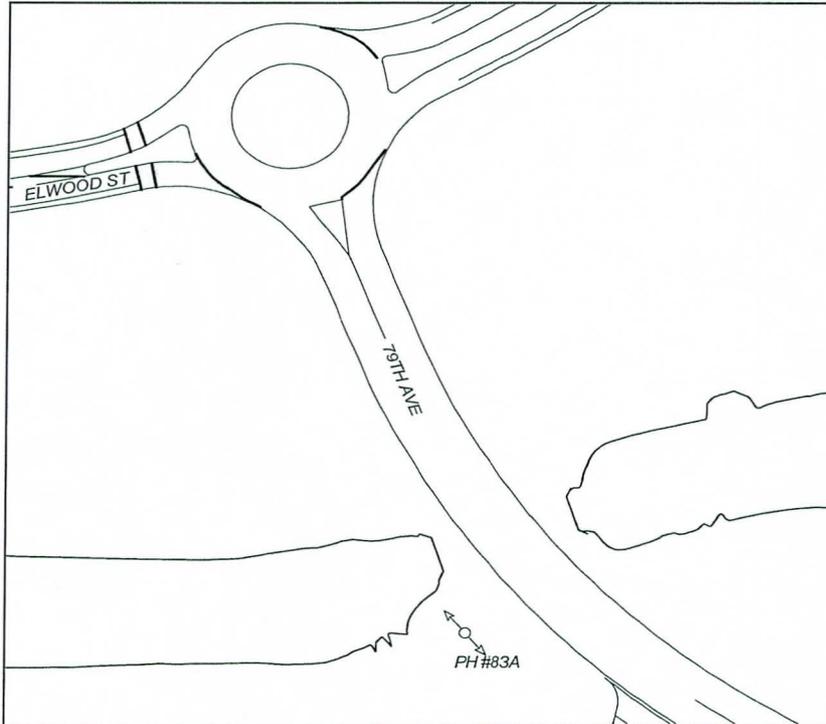
Test Hole # 83A
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood Rd



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew B. Weikert
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
 ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>Northwest</u>		
SURFACE ELEVATION	<u>998.09</u>	← WIDTH/O.D. →		
		<u>0.38"</u>		
TOP ELEVATION	<u>995.19</u>	○	<u>2.90</u>	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>995.16</u>		<u>2.93</u>	BOTTOM (FEET)

RIBBON COLOR White

COORDINATES: NORTHING 878927.97

EASTING 604124.03

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE 0.38" TYPE Unknown FACILITY OWNER Unknown

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

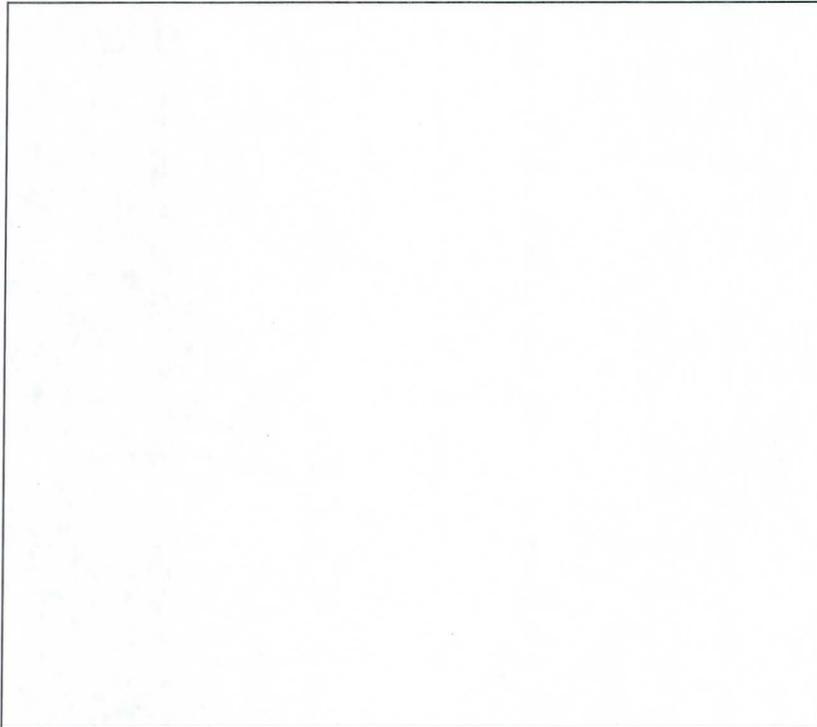
Test Hole # 84
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center; border-bottom: 1px solid black;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center; border-bottom: 1px solid black;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING _____</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p>SURFACE ELEVATION _____</p> <p>TOP ELEVATION _____</p> <p>BOTTOM ELEVATION _____</p> </div> <div style="text-align: center; flex-grow: 1;"> <p>← WIDTH/O.D. →</p> </div> <div style="text-align: center;"> <p>TOP DEPTH (FEET) _____</p> <p>BOTTOM (FEET) _____</p> </div> </div>
<p>RIBBON COLOR <u>None</u></p>	<p>COORDINATES: NORTHING <u>None</u> EASTING <u>None</u></p> <p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p> <p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u> SOIL CONDITION <u>None</u></p> <p>SIZE <u>None</u> TYPE <u>None</u> FACILITY OWNER <u>Cox Communications</u></p>

COMMENTS:

Cancelled per Gordon Grandy with Nfra at 602-443-6067.

TEST HOLE DATA REPORT

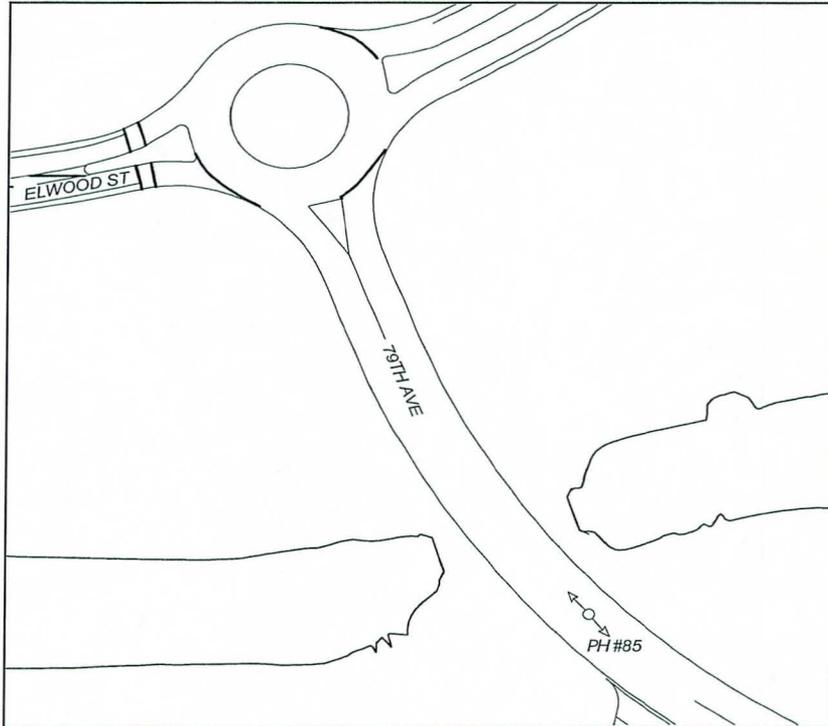
Test Hole # 85
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew B. Weikert
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>Northwest</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">1000.44</td> <td style="border-right: 1px solid black; padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">996.46</td> <td style="border-right: 1px solid black; padding: 5px;">9.05"</td> <td style="padding: 5px;">3.98 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">995.71</td> <td style="border-right: 1px solid black; padding: 5px;">○</td> <td style="padding: 5px;">4.73 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	1000.44	← WIDTH/O.D. →		TOP ELEVATION	996.46	9.05"	3.98 TOP DEPTH (FEET)	BOTTOM ELEVATION	995.71	○	4.73 BOTTOM (FEET)
SURFACE ELEVATION	1000.44	← WIDTH/O.D. →											
TOP ELEVATION	996.46	9.05"	3.98 TOP DEPTH (FEET)										
BOTTOM ELEVATION	995.71	○	4.73 BOTTOM (FEET)										
RIBBON COLOR <u>Blue</u>													

COORDINATES: NORTHING 878951.79 EASTING 604184.54
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 4" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

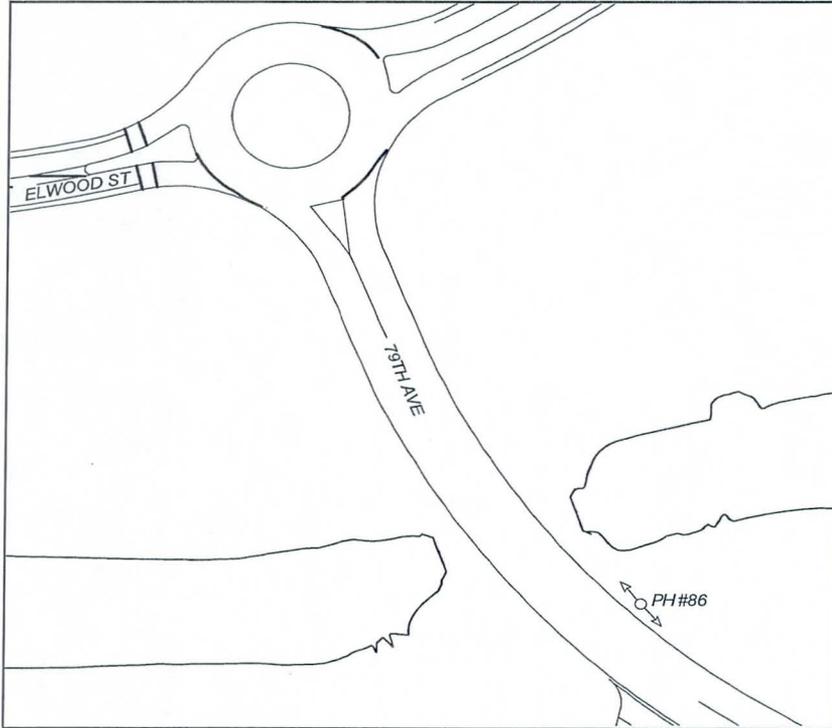
Test Hole # 86
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">1000.64</td> <td style="border-right: 1px solid black; padding: 5px;">← WIDTH/O.D. →</td> <td style="padding: 5px;">7.10</td> <td style="padding: 5px;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">993.54</td> <td style="border-right: 1px solid black; padding: 5px; text-align: center;">○</td> <td style="padding: 5px;">7.48</td> <td style="padding: 5px;">BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; padding: 5px;">993.16</td> <td colspan="3"></td> </tr> </table>	SURFACE ELEVATION	1000.64	← WIDTH/O.D. →	7.10	TOP DEPTH (FEET)	TOP ELEVATION	993.54	○	7.48	BOTTOM (FEET)	BOTTOM ELEVATION	993.16			
SURFACE ELEVATION	1000.64	← WIDTH/O.D. →	7.10	TOP DEPTH (FEET)												
TOP ELEVATION	993.54	○	7.48	BOTTOM (FEET)												
BOTTOM ELEVATION	993.16															
<p>RIBBON COLOR <u>Yellow</u></p>																

COORDINATES: NORTHING 878958.57 EASTING 604205.59
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 4" PAVING TYPE Concrete SOIL CONDITION Dirt
 SIZE 4" TYPE PE FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

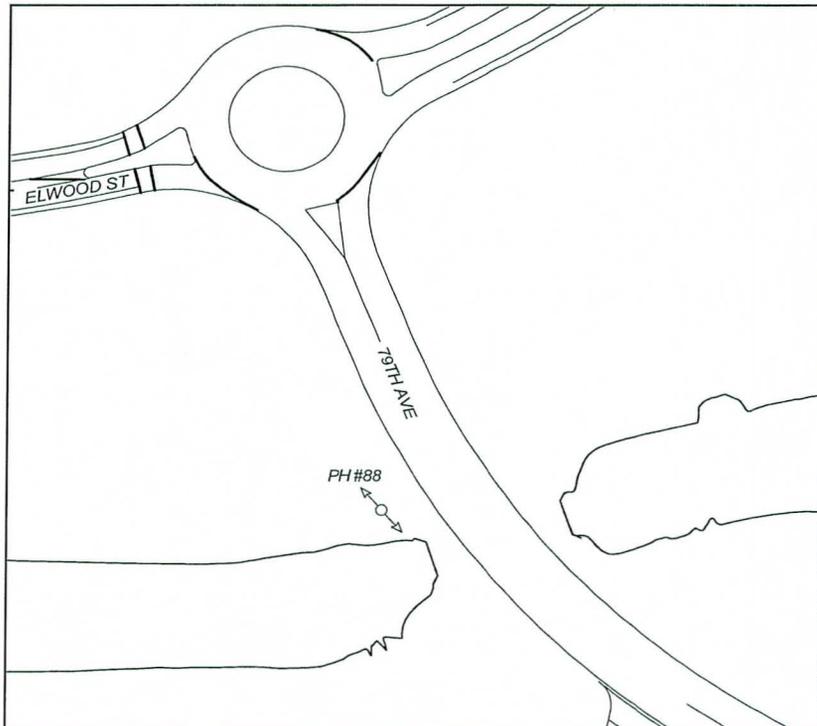
Test Hole # 88
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew B. Weikert
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p style="text-align: center;">FACING <u>Northwest</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; text-align: center;">993.84</td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">16"</td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;">986.89</td> <td style="text-align: center;">○ ○ ○</td> <td style="text-align: right;">6.95 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;">986.01</td> <td style="text-align: center;">○ ○ ○</td> <td style="text-align: right;">7.83 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	993.84	← WIDTH/O.D. →				16"		TOP ELEVATION	986.89	○ ○ ○	6.95 TOP DEPTH (FEET)	BOTTOM ELEVATION	986.01	○ ○ ○	7.83 BOTTOM (FEET)
SURFACE ELEVATION	993.84	← WIDTH/O.D. →															
		16"															
TOP ELEVATION	986.89	○ ○ ○	6.95 TOP DEPTH (FEET)														
BOTTOM ELEVATION	986.01	○ ○ ○	7.83 BOTTOM (FEET)														
RIBBON COLOR <u>Red</u>																	

COORDINATES: NORTHING 8789703.12 EASTING 604087.57
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Six 3" & One 2.5" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

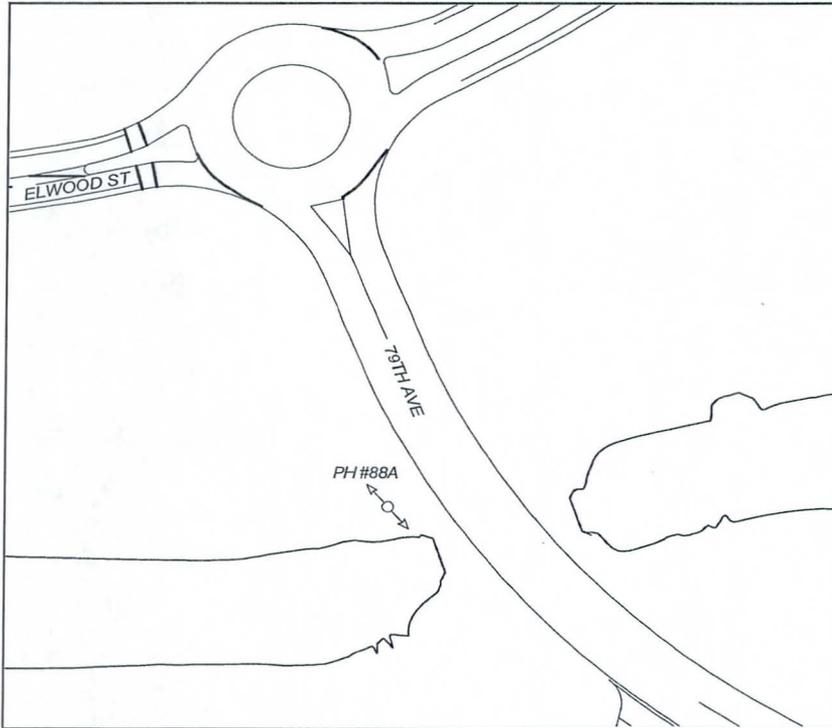
Test Hole # 88A
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew B. Weikert
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>Northwest</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">993.84</td> <td style="text-align: center;">← WIDTH/O.D. →</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">3.50</td> <td style="text-align: left;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">990.34</td> <td style="text-align: center;">0.38"</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">3.53</td> <td style="text-align: left;">BOTTOM (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">990.31</td> <td style="text-align: center;">○</td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION	993.84	← WIDTH/O.D. →	3.50	TOP DEPTH (FEET)	TOP ELEVATION	990.34	0.38"	3.53	BOTTOM (FEET)	BOTTOM ELEVATION	990.31	○		
SURFACE ELEVATION	993.84	← WIDTH/O.D. →	3.50	TOP DEPTH (FEET)												
TOP ELEVATION	990.34	0.38"	3.53	BOTTOM (FEET)												
BOTTOM ELEVATION	990.31	○														
<p>RIBBON COLOR <u>White</u></p>																

COORDINATES: NORTHING 878970.12 EASTING 604087.57
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 0.38" TYPE Unknown FACILITY OWNER Unknown

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

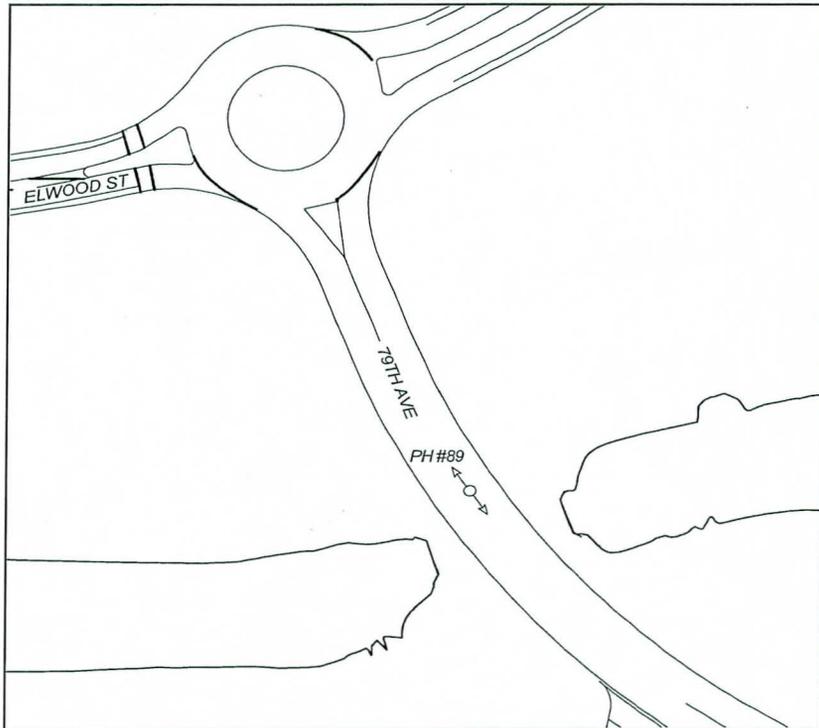
Test Hole # 89
 Date Dug 9/24/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave south of Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 985.15'</p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black;">1000.83</td> <td style="border-right: 1px solid black;">← WIDTH/O.D. →</td> <td style="border-right: 1px solid black;"></td> <td></td> </tr> <tr> <td style="border-right: 1px solid black;">TOP ELEVATION</td> <td style="border-right: 1px solid black;">991.89</td> <td style="border-right: 1px solid black;">9.05"</td> <td style="border-right: 1px solid black;"></td> <td>8.94 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black;">991.14</td> <td style="border-right: 1px solid black;"></td> <td style="border-right: 1px solid black;"></td> <td>9.69 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	1000.83	← WIDTH/O.D. →			TOP ELEVATION	991.89	9.05"		8.94 TOP DEPTH (FEET)	BOTTOM ELEVATION	991.14			9.69 BOTTOM (FEET)
SURFACE ELEVATION	1000.83	← WIDTH/O.D. →														
TOP ELEVATION	991.89	9.05"		8.94 TOP DEPTH (FEET)												
BOTTOM ELEVATION	991.14			9.69 BOTTOM (FEET)												
RIBBON COLOR <u>Blue</u>																

COORDINATES: NORTHING 878993.19 EASTING 604151.31
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 3" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

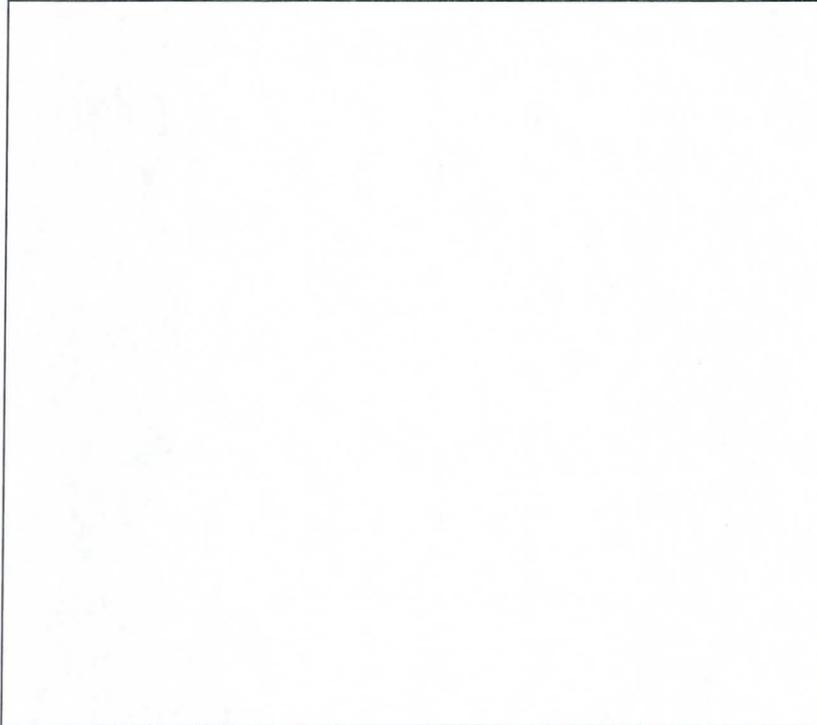
Test Hole # 90
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave & Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Brandt
 Truck # 543
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center; margin: 0;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center; margin: 0;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center; margin: 0;">FACING _____</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">SURFACE ELEVATION _____</div> <div style="margin-right: 10px;">← WIDTH/O.D. →</div> <div style="margin-left: 10px;">TOP DEPTH (FEET) _____</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="margin-right: 10px;">TOP ELEVATION _____</div> <div style="margin-right: 10px;">BOTTOM ELEVATION _____</div> <div style="margin-left: 10px;">BOTTOM (FEET) _____</div> </div>
<p>RIBBON COLOR <u>None</u></p>	<p>COORDINATES: NORTHING <u>None</u> EASTING <u>None</u></p> <p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p> <p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u> SOIL CONDITION <u>None</u></p> <p>SIZE <u>None</u> TYPE <u>None</u> FACILITY OWNER <u>Cox Communications</u></p>

COMMENTS:

No facility in the requested location per bluestake.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

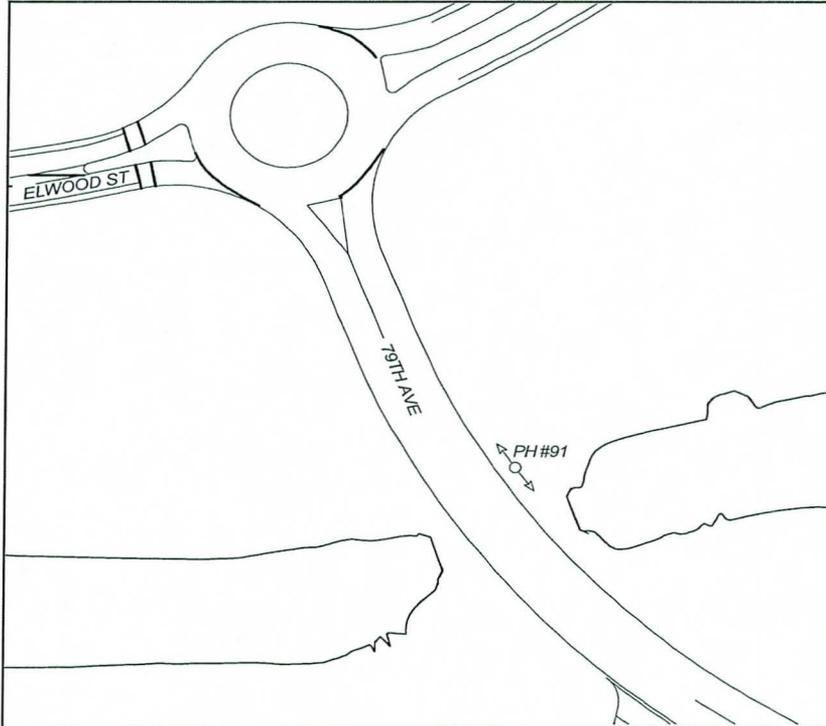
Test Hole # 91
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 79th Ave south of Elwood St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE									
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION <u>1001.00</u></td> <td style="padding: 5px;">← WIDTH/O.D. → <u>4.5"</u></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION <u>991.36</u></td> <td style="text-align: center; padding: 5px;">○</td> <td style="padding: 5px;">9.64 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION <u>990.98</u></td> <td style="padding: 5px;"></td> <td style="padding: 5px;">10.02 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION <u>1001.00</u>	← WIDTH/O.D. → <u>4.5"</u>		TOP ELEVATION <u>991.36</u>	○	9.64 TOP DEPTH (FEET)	BOTTOM ELEVATION <u>990.98</u>		10.02 BOTTOM (FEET)
SURFACE ELEVATION <u>1001.00</u>	← WIDTH/O.D. → <u>4.5"</u>									
TOP ELEVATION <u>991.36</u>	○	9.64 TOP DEPTH (FEET)								
BOTTOM ELEVATION <u>990.98</u>		10.02 BOTTOM (FEET)								
RIBBON COLOR <u>Yellow</u>										

COORDINATES: NORTHING 879000.95 EASTING 604169.77
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 6" PAVING TYPE Concrete SOIL CONDITION Dirt
 SIZE 4" TYPE PE FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

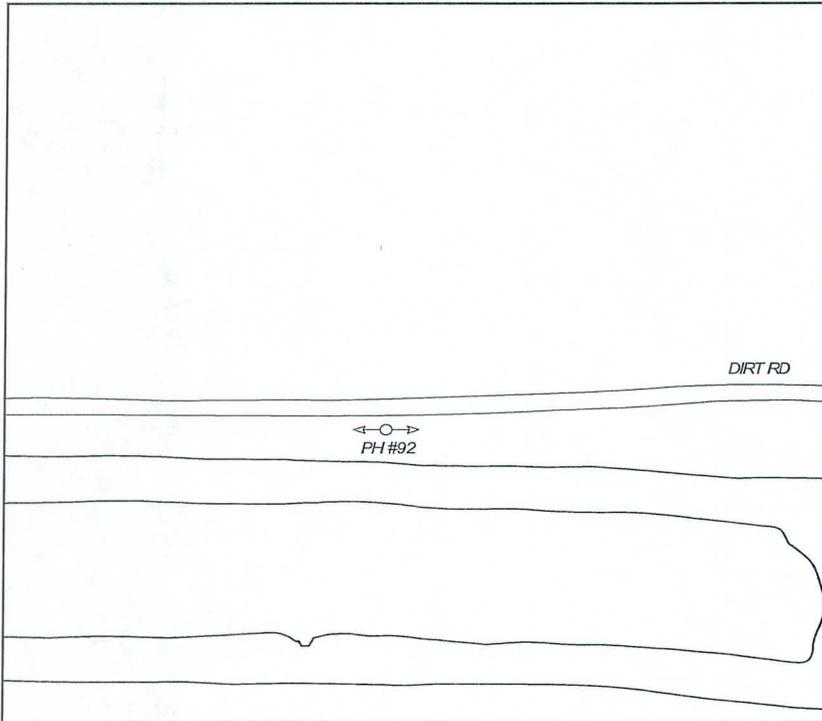
Test Hole # 92
 Date Dug 10/7/2010
 Project # AZS0929
 Phase # 009
 Location Dirt Rd east of 107th Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING <u>West</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 10%; text-align: center;"><u>968.30</u></td> <td style="width: 30%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><u>44"</u></td> <td></td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>964.30</u></td> <td style="text-align: center;"></td> <td style="text-align: center;"><u>4.00</u></td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>960.63</u></td> <td></td> <td style="text-align: center;"><u>7.67</u></td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>968.30</u>	← WIDTH/O.D. →					<u>44"</u>			TOP ELEVATION	<u>964.30</u>		<u>4.00</u>	TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>960.63</u>		<u>7.67</u>	BOTTOM (FEET)
SURFACE ELEVATION	<u>968.30</u>	← WIDTH/O.D. →																			
		<u>44"</u>																			
TOP ELEVATION	<u>964.30</u>		<u>4.00</u>	TOP DEPTH (FEET)																	
BOTTOM ELEVATION	<u>960.63</u>		<u>7.67</u>	BOTTOM (FEET)																	
RIBBON COLOR <u>Blue</u>																					

COORDINATES: NORTHING 878328.56 EASTING 586782.85
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 36" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

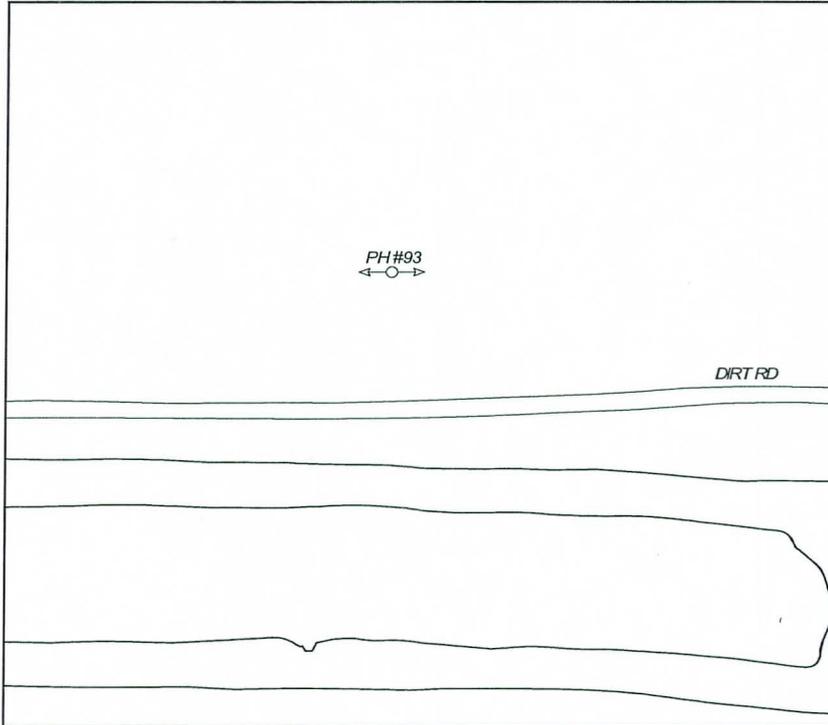
Test Hole # 93
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location Dirt Rd east of 107th Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew d. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>West</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">969.76</td> <td style="text-align: center;">← WIDTH/O.D. →</td> <td style="border-left: 1px solid black; text-align: center;">6.10</td> <td style="text-align: left;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">963.66</td> <td style="text-align: center;">9.05"</td> <td style="border-left: 1px solid black; text-align: center;">6.85</td> <td style="text-align: left;">BOTTOM (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">962.91</td> <td style="text-align: center;"></td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION	969.76	← WIDTH/O.D. →	6.10	TOP DEPTH (FEET)	TOP ELEVATION	963.66	9.05"	6.85	BOTTOM (FEET)	BOTTOM ELEVATION	962.91			
SURFACE ELEVATION	969.76	← WIDTH/O.D. →	6.10	TOP DEPTH (FEET)												
TOP ELEVATION	963.66	9.05"	6.85	BOTTOM (FEET)												
BOTTOM ELEVATION	962.91															
<p>RIBBON COLOR <u>Blue</u></p>																

COORDINATES: NORTHING 878429.59 EASTING 586783.67
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

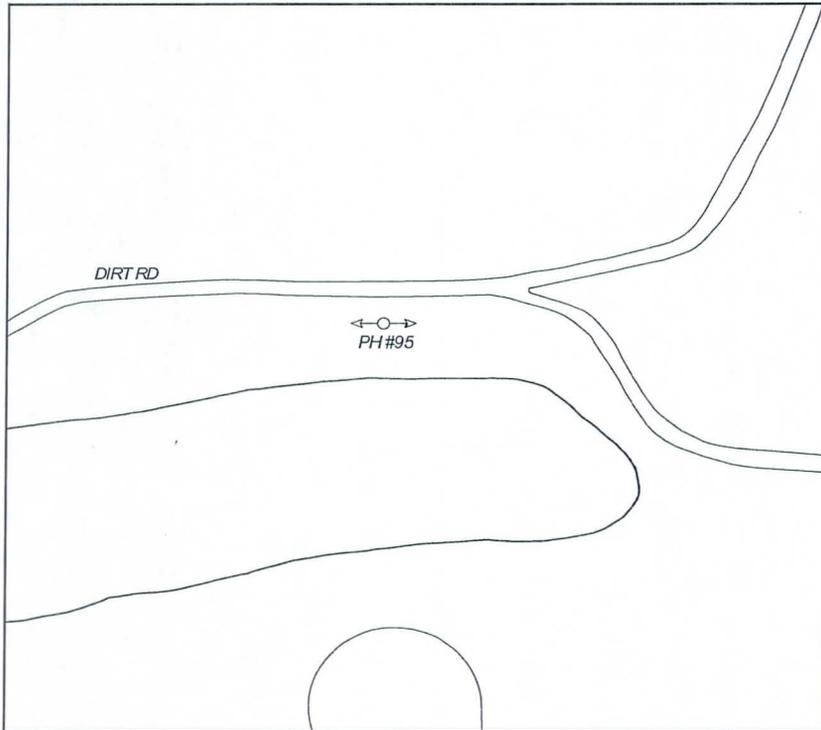
Test Hole # 95
 Date Dug 10/7/2010
 Project # AZS0929
 Phase # 009
 Location Dirt Rd east of 107th Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE

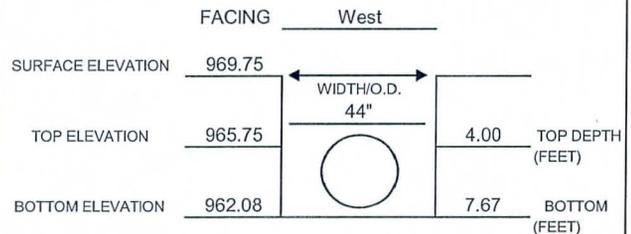


EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE



RIBBON COLOR <u>Blue</u>	
COORDINATES: NORTHING <u>878330.00</u>	EASTING <u>587448.91</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>None</u>	PAVING TYPE <u>None</u>
SOIL CONDITION <u>Dirt</u>	FACILITY OWNER <u>Salt River Project Irrigation</u>
SIZE <u>36"</u>	TYPE <u>RCP</u>

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

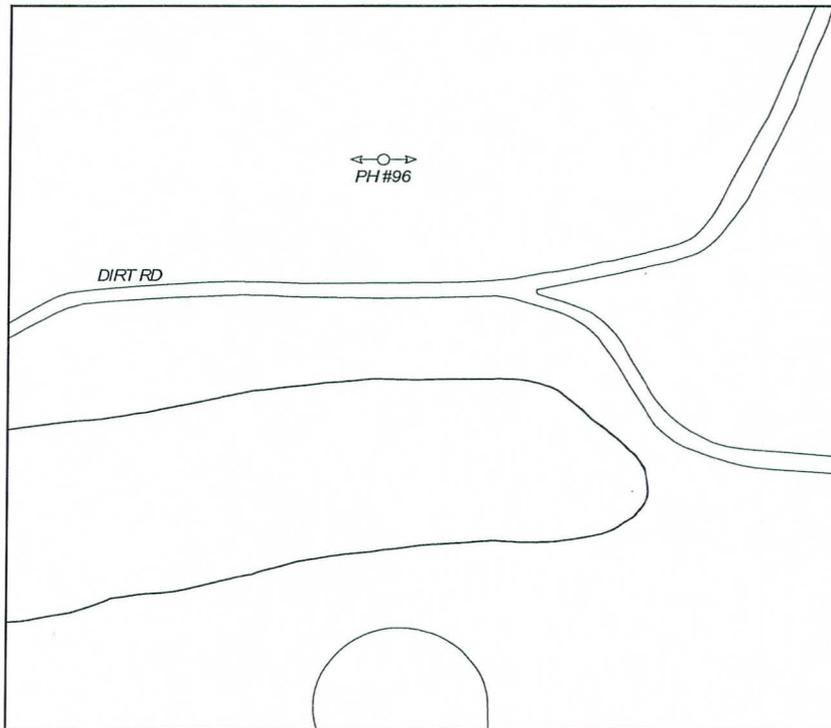
Test Hole # 96
 Date Dug 10/8/2010
 Project # AZS0929
 Phase # 009
 Location Dirt Rd east of 107th Ave



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 985.15'</u></p>	<p>FACING <u>West</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">969.45</td> <td style="text-align: center;">← WIDTH/O.D. →</td> <td style="border-left: 1px solid black;"></td> <td></td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">965.35</td> <td style="text-align: center;">9.05"</td> <td style="border-left: 1px solid black; text-align: center;">4.10</td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="border-right: 1px solid black; text-align: center;">964.60</td> <td style="text-align: center;"></td> <td style="border-left: 1px solid black; text-align: center;">4.85</td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	969.45	← WIDTH/O.D. →			TOP ELEVATION	965.35	9.05"	4.10	TOP DEPTH (FEET)	BOTTOM ELEVATION	964.60		4.85	BOTTOM (FEET)
SURFACE ELEVATION	969.45	← WIDTH/O.D. →														
TOP ELEVATION	965.35	9.05"	4.10	TOP DEPTH (FEET)												
BOTTOM ELEVATION	964.60		4.85	BOTTOM (FEET)												
<p>RIBBON COLOR <u>Blue</u></p>																

COORDINATES: NORTHING 878430.95 EASTING 587448.70
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

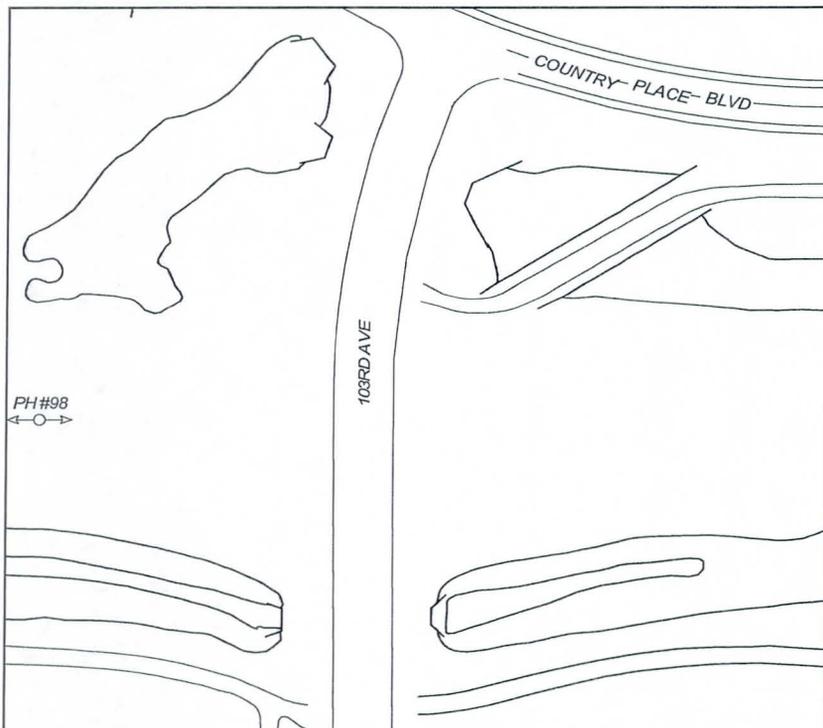
Test Hole # 98
 Date Dug 10/1/2010
 Project # AZS0929
 Phase # 009
 Location 103rd Ave south of Lower Buckeye



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 985.15'

CROSS SECTION - NOT TO SCALE

		FACING <u>West</u>		
SURFACE ELEVATION	<u>972.51</u>	← WIDTH/O.D. →		
TOP ELEVATION	<u>969.01</u>	<u>44"</u>	<u>3.50</u>	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>965.34</u>		<u>7.17</u>	BOTTOM (FEET)

RIBBON COLOR Blue

COORDINATES: NORTHING 878335.01

EASTING 588766.48

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

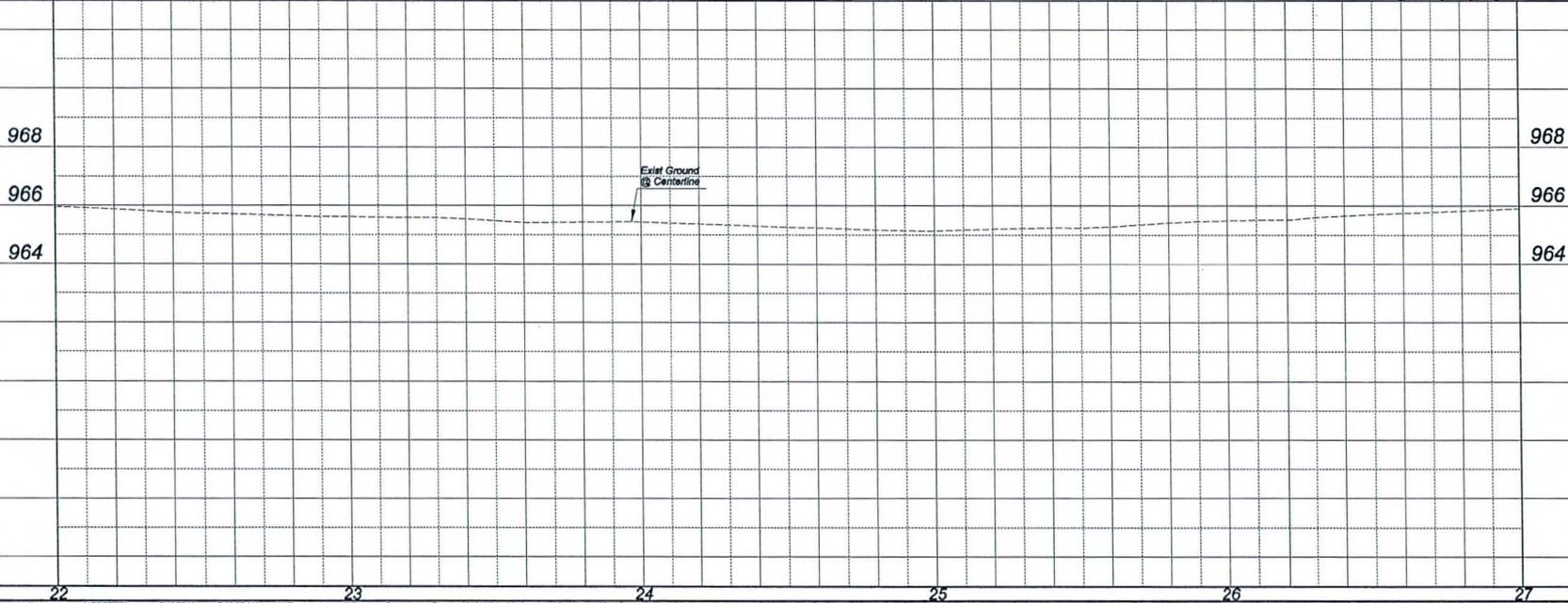
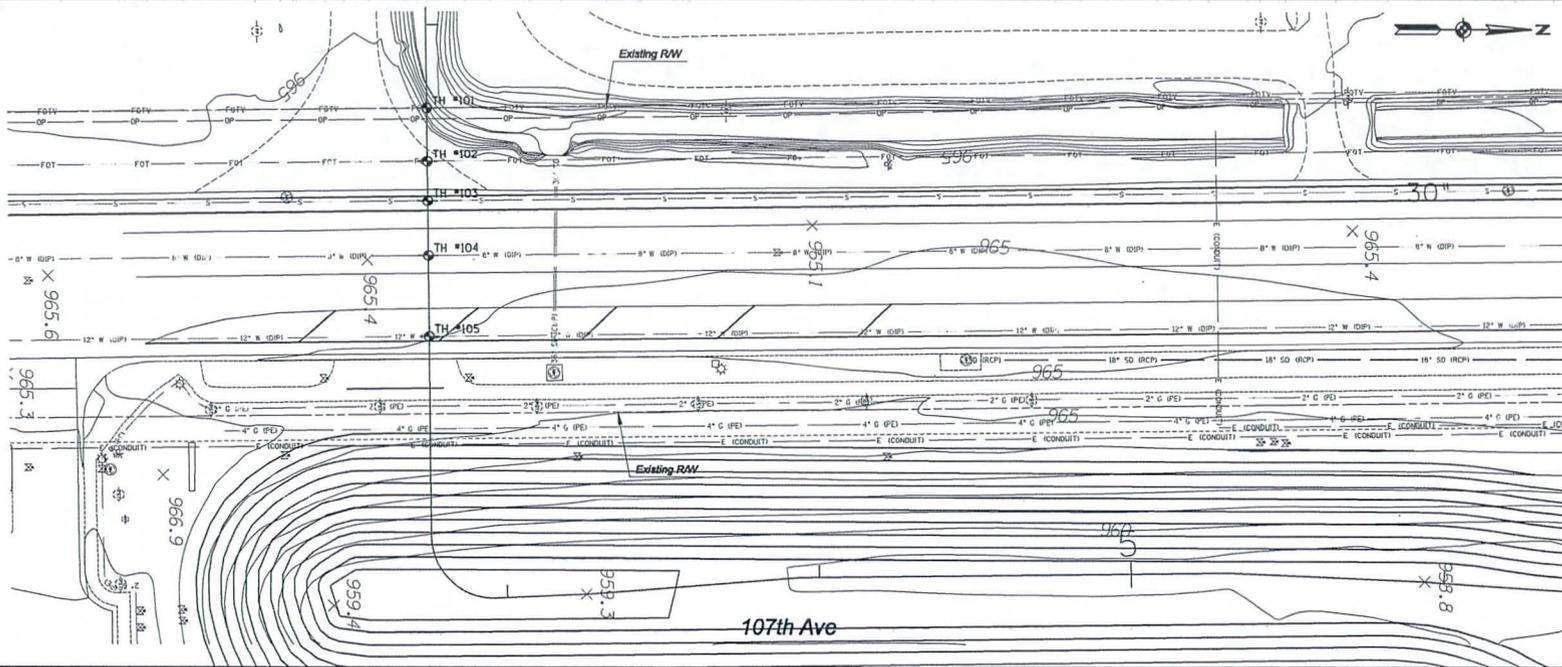
SIZE 36" TYPE RCP FACILITY OWNER Salt River Project Irrigation

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

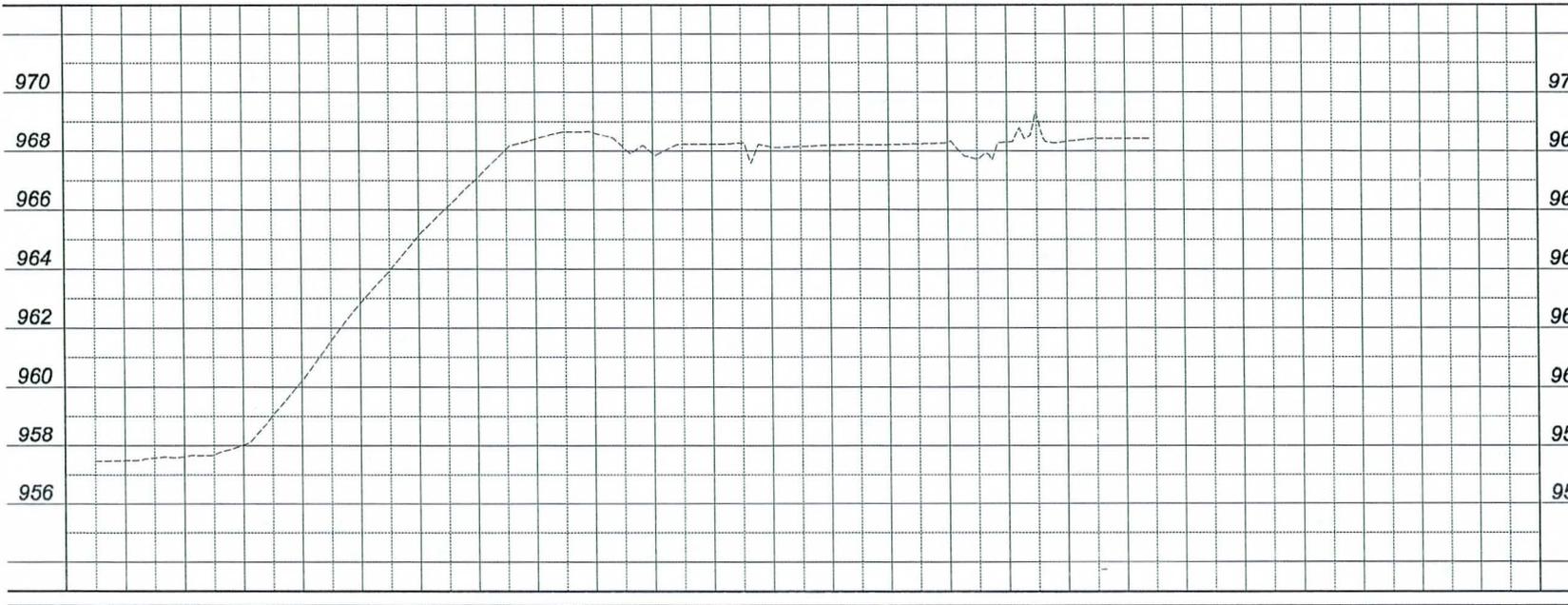
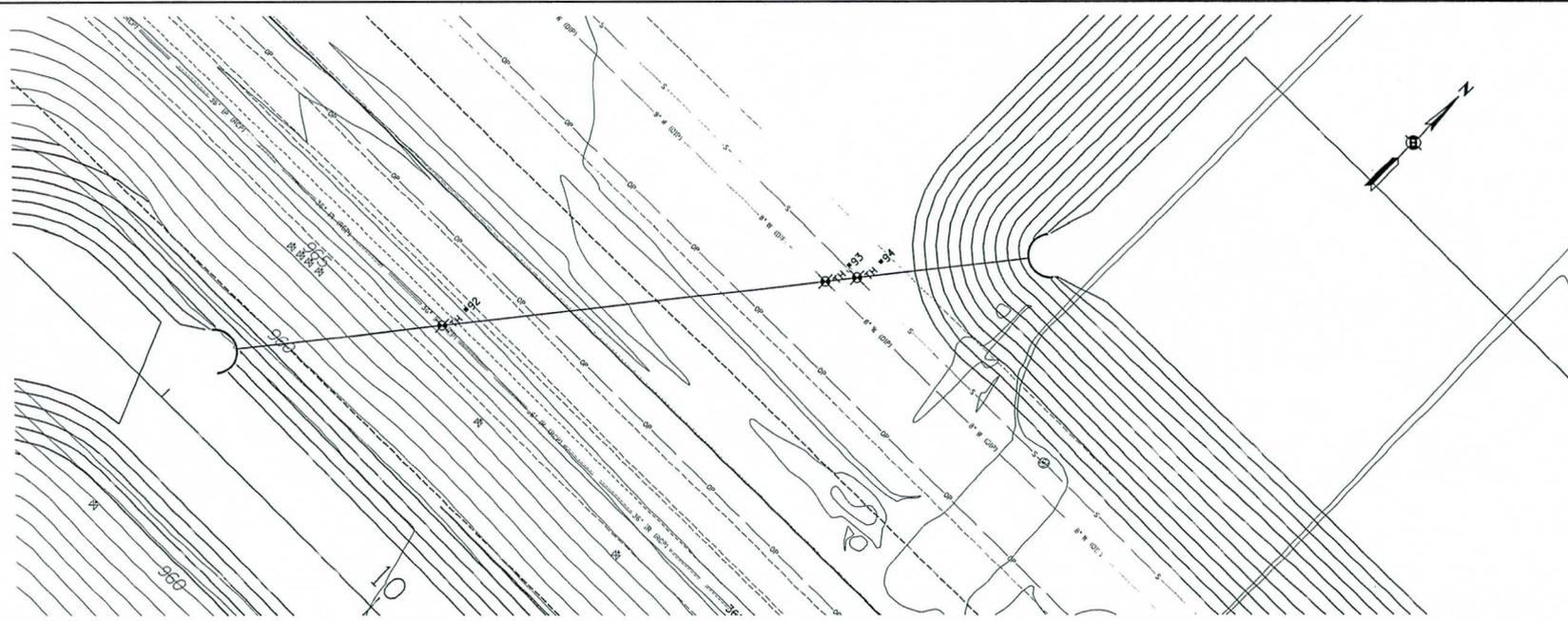
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REMOVE			
No.	Description	Unit	Quantity

CONSTRUCT			
No.	Description	Unit	Quantity

3			
2			
1			
NO.	REVISION	BY	DATE
 FLOOD CONTROL DISTRICT OF MARICOPA COUNTY ENGINEERING DIVISION DURANGO REGIONAL CONVEYANCE CHANNEL ELWOOD STREET 75th AVE to 107th AVE FCD2009C008			
PRELIMINARY NOT FOR CONSTRUCTION 30% SUBMITTAL	DESIGNED DRAWN CHECKED	BY	DATE
DRAWING NO.	PLAN AND PROFILE	SHEET OF PH01	



<input type="checkbox"/> REMOVE <input type="checkbox"/>			
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No.	Description	Unit	Quantity

NO.	REVISION	BY	DATE
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2			
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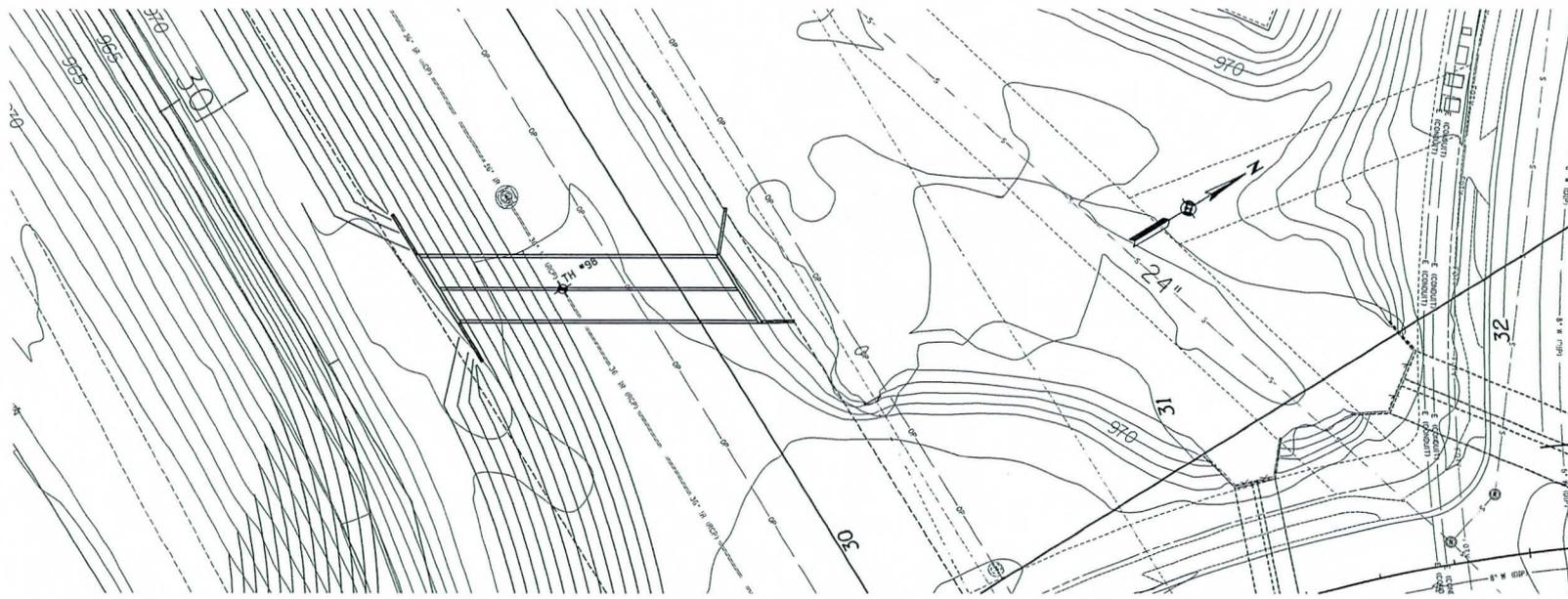

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 ENGINEERING DIVISION
DURANGO REGIONAL CONVEYANCE CHANNEL
 ELWOOD STREET 75th AVE to 107th AVE
 FCD2009C008

PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED	AM	BY	DATE
	DRAWN	LR		JULY, 2010
	CHECKED	ML		JULY, 2010

30% SUBMITTAL

 NFPA, INC.
 17 East Thomson Road, Suite 200
 Phoenix, Arizona 85022

DRAWING NO.	PLAN AND PROFILE	SHEET OF PH02
-------------	------------------	---------------

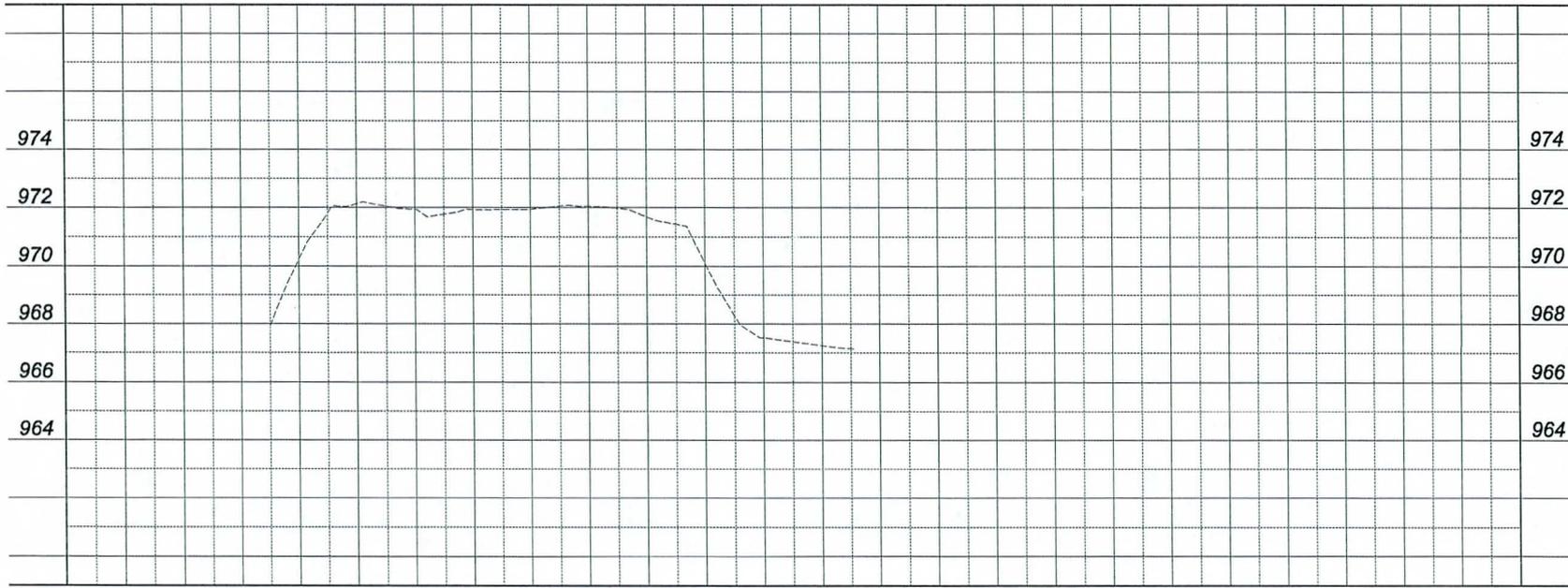


REMOVE

No.	Description	Unit	Quantity

CONSTRUCT

No.	Description	Unit	Quantity



NO.	REVISION	BY	DATE
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2			
1			

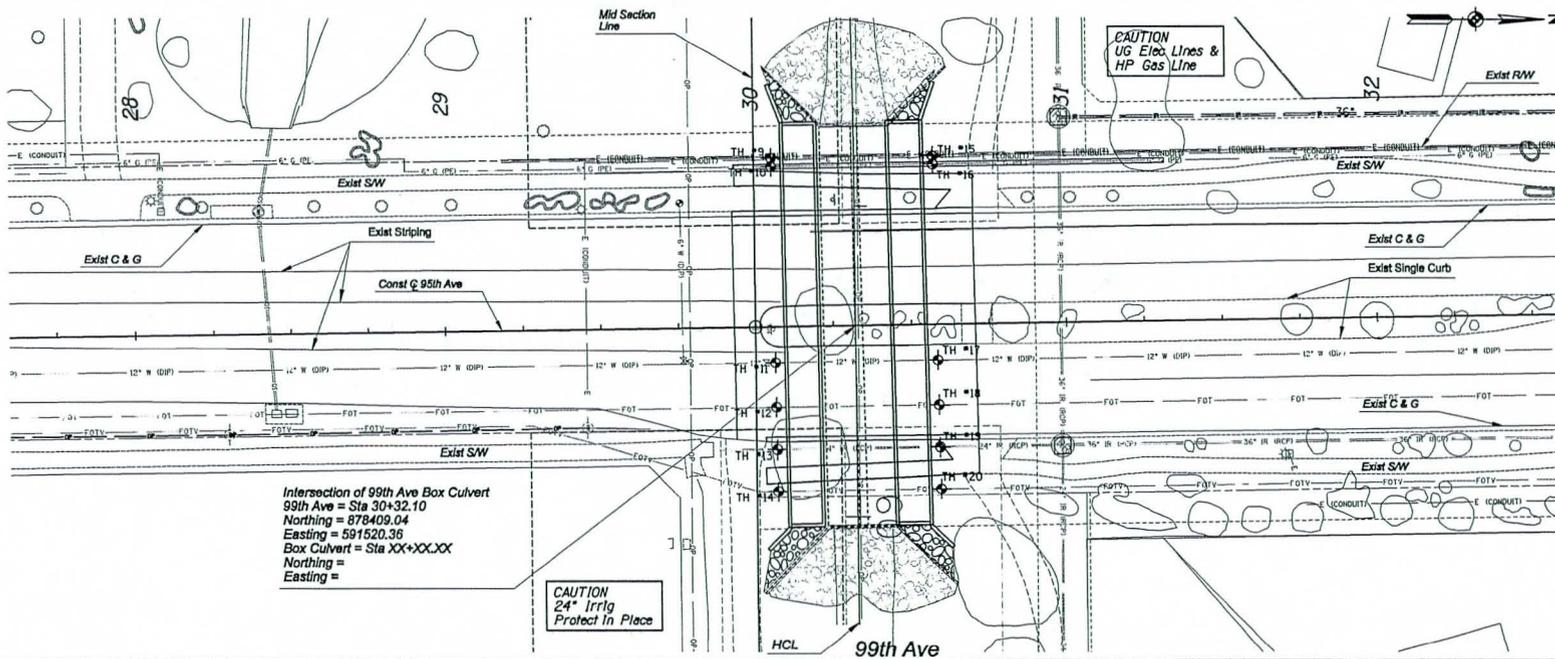

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 ENGINEERING DIVISION
DURANGO REGIONAL CONVEYANCE CHANNEL
 ELWOOD STREET 75th AVE to 107th AVE
 FCD2009C008

DESIGNED	BY	DATE
AM		JULY, 2010
DRAWN	LR	JULY, 2010
CHECKED	ML	JULY, 2010

PRELIMINARY NOT FOR CONSTRUCTION
 30% SUBMITTAL

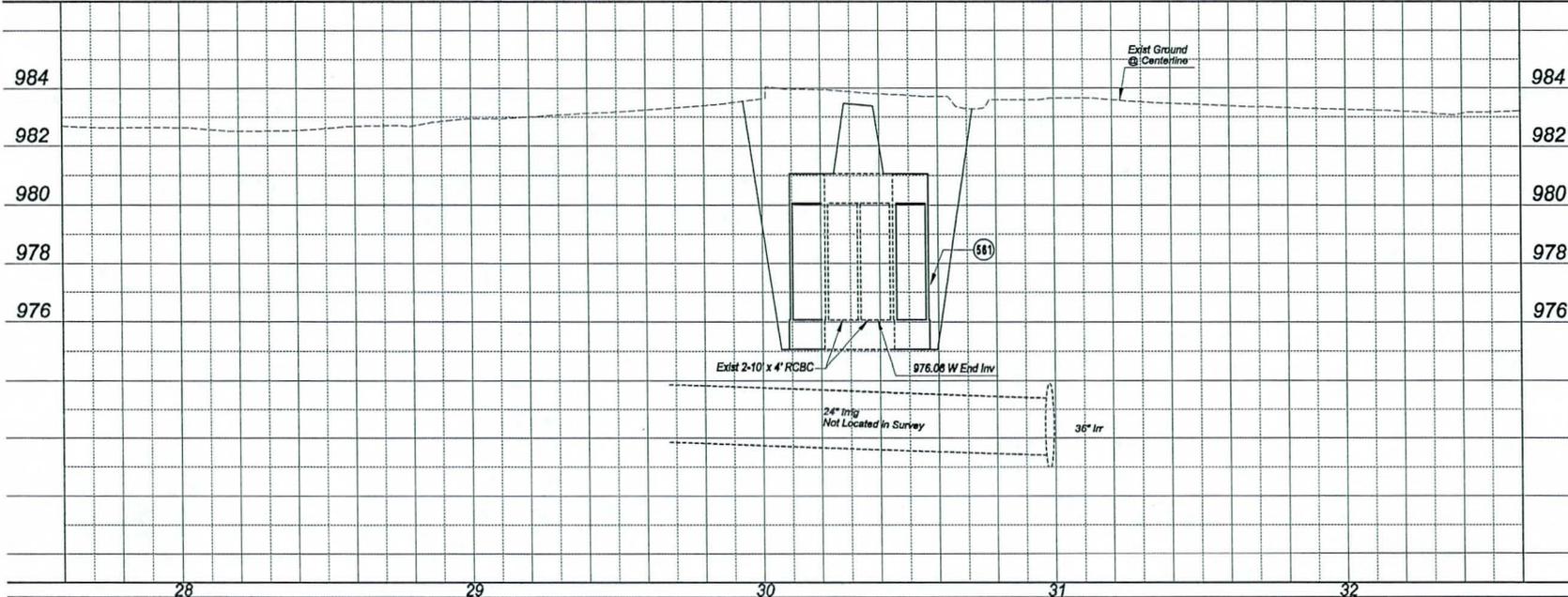
NF&K Inc.
Professional Engineers & Surveyors Inc.
 17 East Thomas Street, Suite 200
 Phoenix, Arizona 85011

DRAWING NO.	PLAN AND PROFILE	SHEET OF PH04
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Intersection of 99th Ave Box Culvert
 99th Ave = Sta 30+32.10
 Northing = 878409.04
 Easting = 591520.36
 Box Culvert = Sta XX+XX.XX
 Northing =
 Easting =

CAUTION
 24" Irrig
 Protect In Place



REMOVE

No.	Description	Unit	Quantity

CONSTRUCT

No.	Description	Unit	Quantity

NO.	REVISION	BY	DATE

FLOOD CONTROL DISTRICT
 OF MARICOPA COUNTY
 ENGINEERING DIVISION

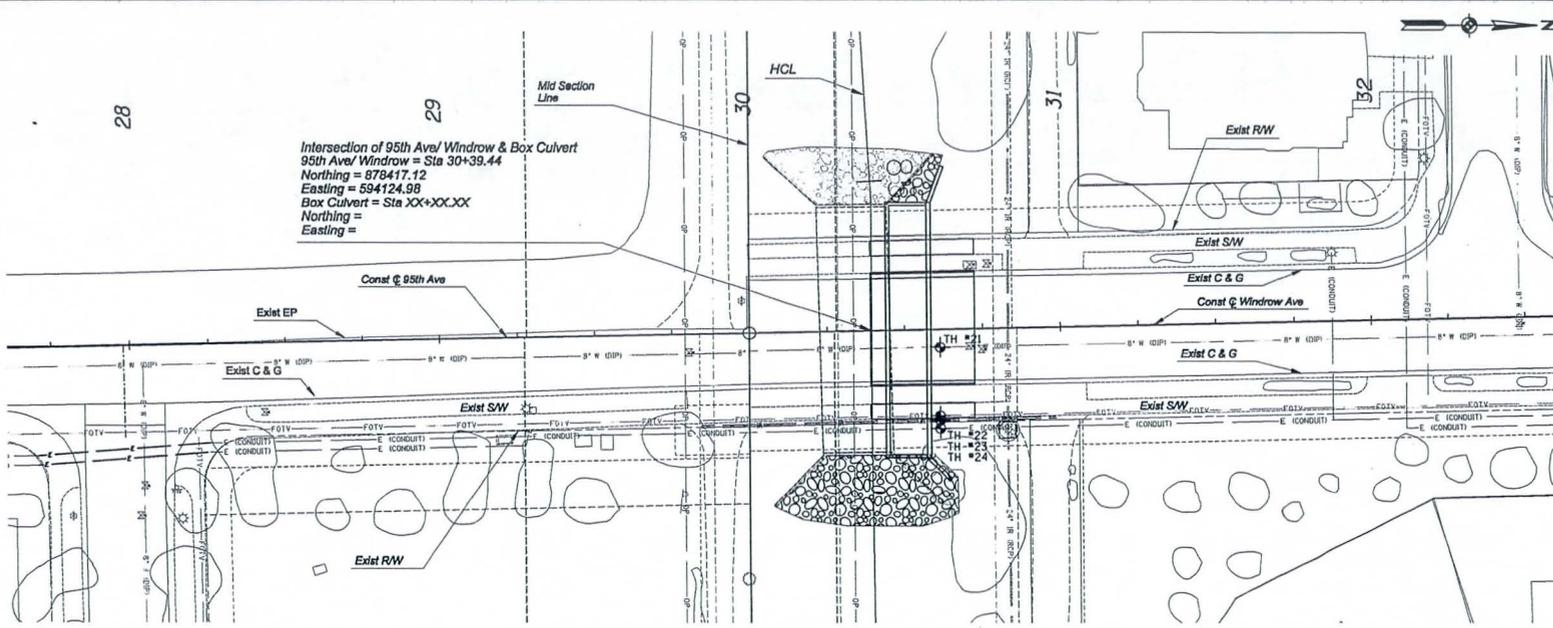
DURANGO REGIONAL CONVEYANCE CHANNEL
 ELWOOD STREET 75th AVE TO 107th AVE
 FCD2009C008

DESIGNED	BY	DATE
GLG		JULY, 2010
DRAWN	HM	JULY, 2010
CHECKED	GLG	JULY, 2010

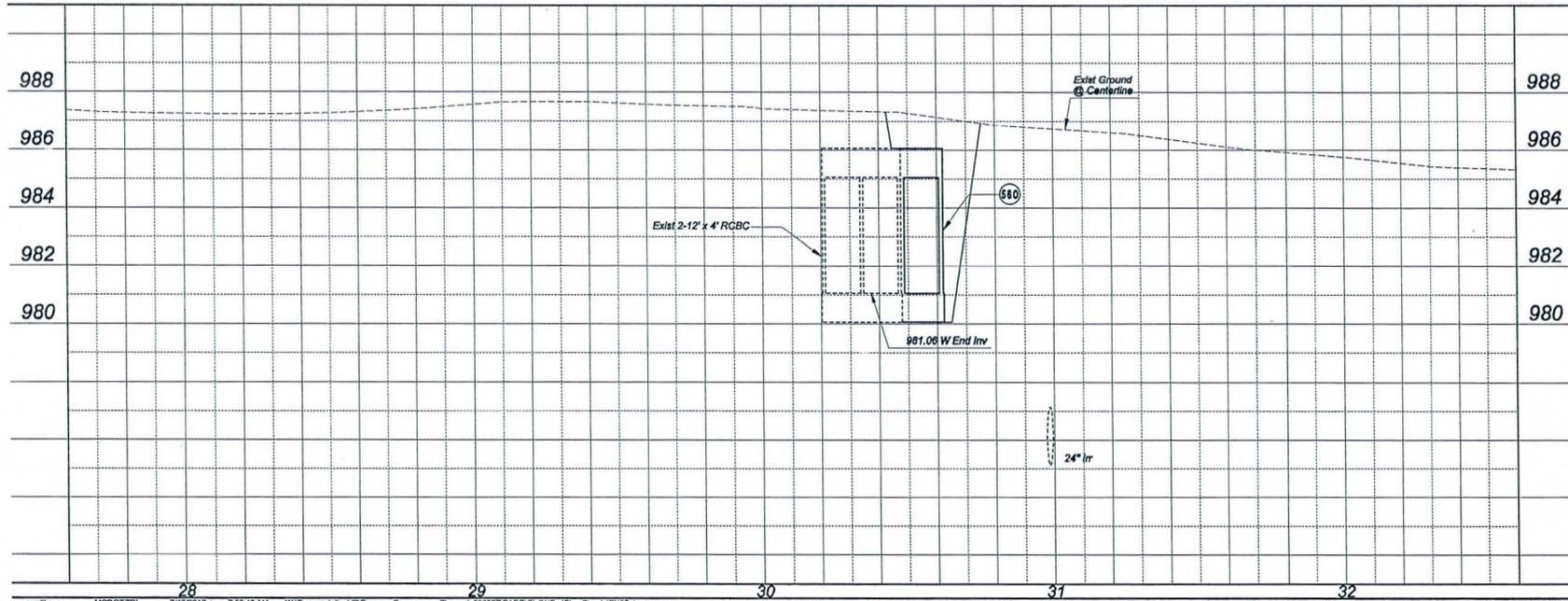
30%
 SUBMITTAL

NFRS Inc.
 77 East Thomas Road, Suite 205
 Phoenix, Arizona 85012

DRAWING NO. PLAN AND PROFILE SHEET OF PH06



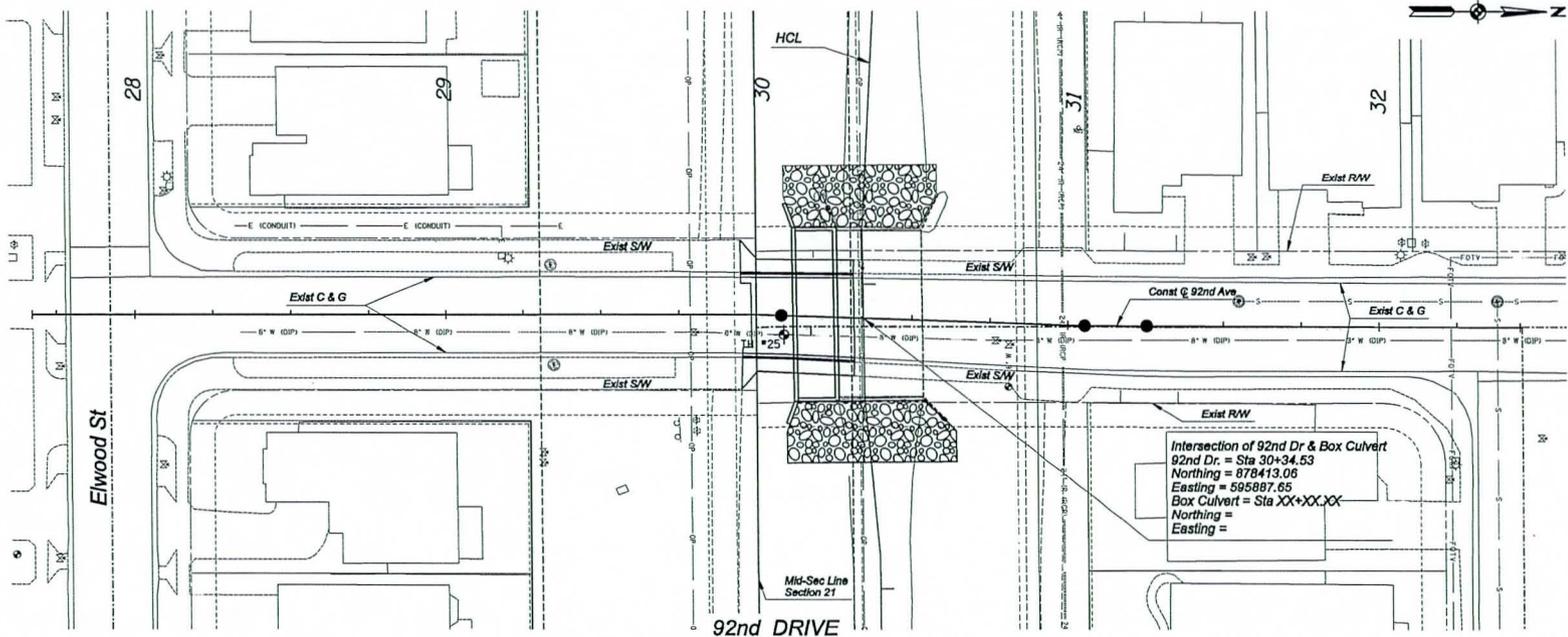
95th Ave / Windrow Blvd



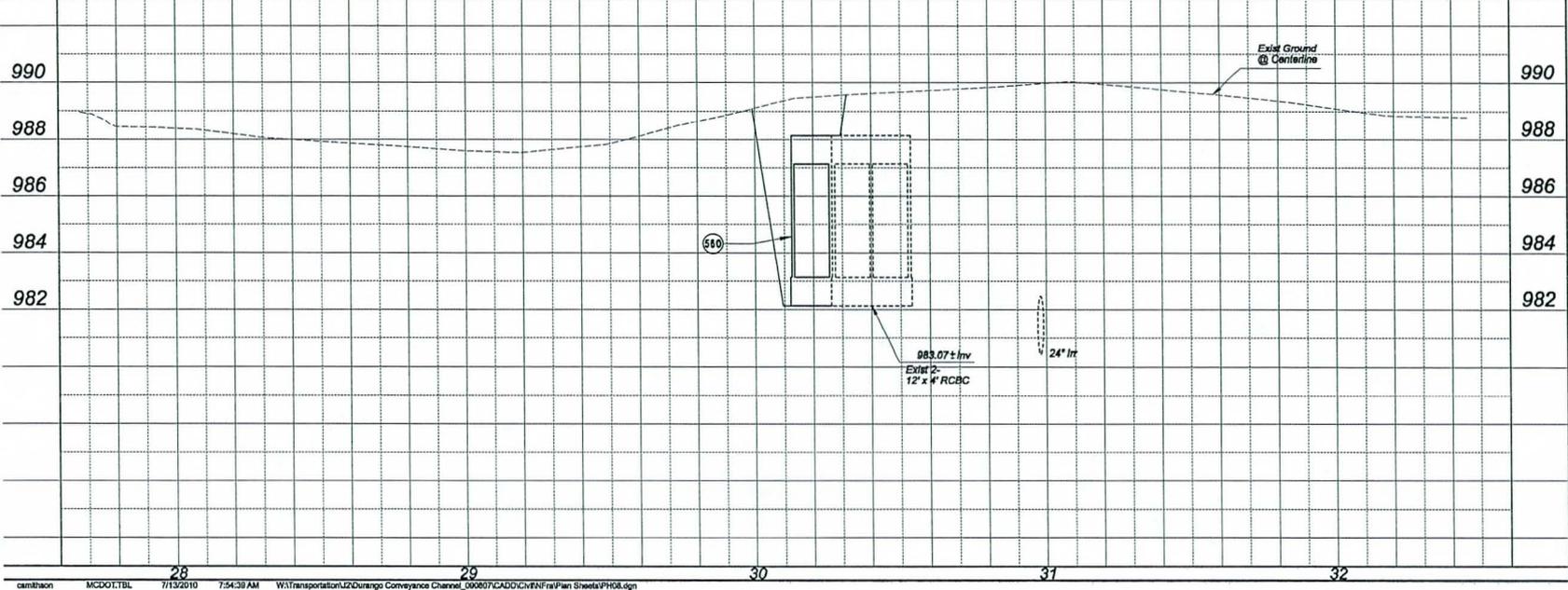
REMOVE			
No.	Description	Unit	Quantity

CONSTRUCT			
No.	Description	Unit	Quantity

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2			
1			
NO.	REVISION	BY	DATE
 FLOOD CONTROL DISTRICT OF MARICOPA COUNTY ENGINEERING DIVISION			
DURANGO REGIONAL CONVEYANCE CHANNEL ELWOOD STREET 75th AVE to 107th AVE FCD2009C008			
PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED DRAWN CHECKED	GLG HW GLG	BY DATE JULY, 2010 JULY, 2010 JULY, 2010
30% SUBMITTAL	 NFR INC. <small>Professional engineering firm 11 East Thomas Street, Suite 200 Phoenix, Arizona 85013</small>		DATE
DRAWING NO.	PLAN AND PROFILE	SHEET OF PH07	



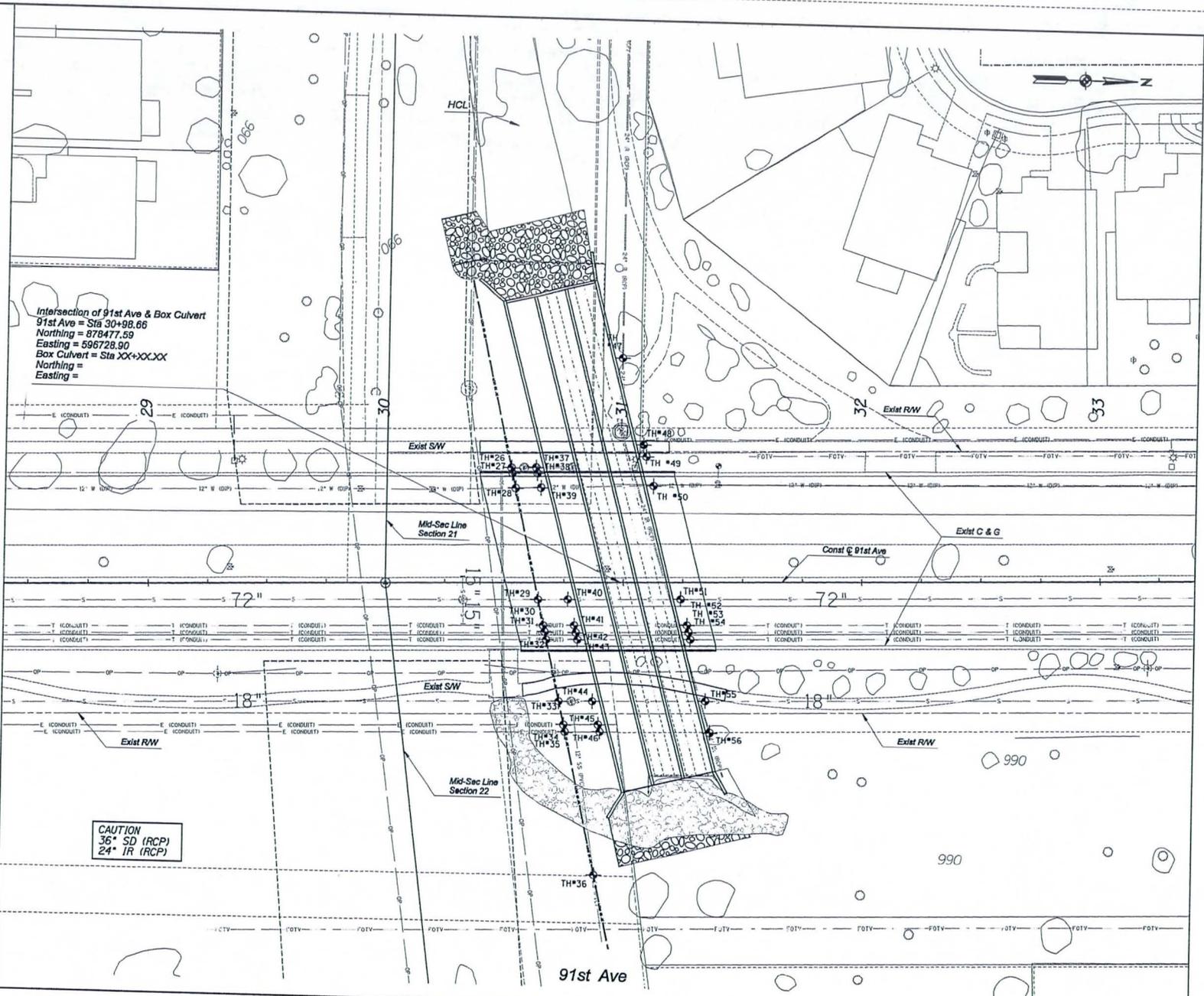
Intersection of 92nd Dr & Box Culvert
 92nd Dr. = Sta 30+34.53
 Northing = 878413.06
 Easting = 595887.65
 Box Culvert = Sta XX+XX.XX
 Northing =
 Easting =



REMOVE			
No.	Description	Unit	Quantity

CONSTRUCT			
No.	Description	Unit	Quantity

3			
2			
1			
NO.	REVISION	BY	DATE
DURANGO REGIONAL CONVEYANCE CHANNEL ELWOOD STREET 75th AVE to 107th AVE FCD2009C008			
PRELIMINARY NOT FOR CONSTRUCTION		DESIGNED	GLG
		DRAWN	HM
30% SUBMITTAL		CHECKED	GLG
		BY	DATE
			JULY, 2010
			JULY, 2010
			JULY, 2010
DRAWING NO.		PLAN AND PROFILE	SHEET OF PH08



Intersection of 91st Ave & Box Culvert
 91st Ave = Sta 30+98.66
 Northing = 597477.59
 Easting = 596728.90
 Box Culvert = Sta XX+XX.XX
 Northing =
 Easting =

CAUTION
 36" SD (RCP)
 24" IR (RCP)

No.	Description	Unit	Quantity
<input type="checkbox"/> REMOVE <input type="checkbox"/>			

No.	Description	Unit	Quantity
<input type="checkbox"/> CONSTRUCT <input type="checkbox"/>			

NO.	REVISION	BY	DATE
3			
2			
1			


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
 ENGINEERING DIVISION

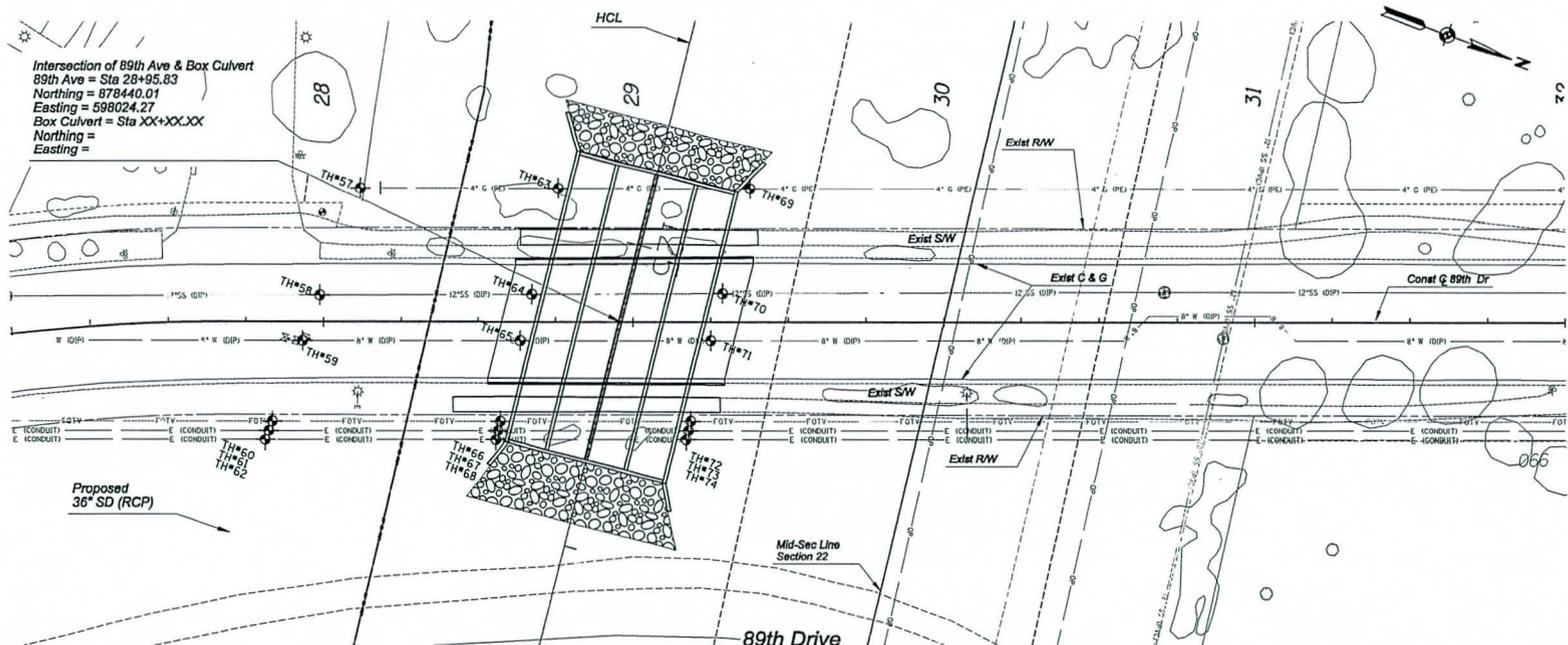
DURANGO REGIONAL CONVEYANCE CHANNEL
 ELWOOD STREET 75th AVE to 107th AVE
 FCD2009C008

	BY	DATE
DESIGNED	GLG	JULY, 2010
DRAWN	JHM	JULY, 2010
CHECKED	GLG	JULY, 2010

PRELIMINARY NOT FOR CONSTRUCTION
 30% SUBMITTAL

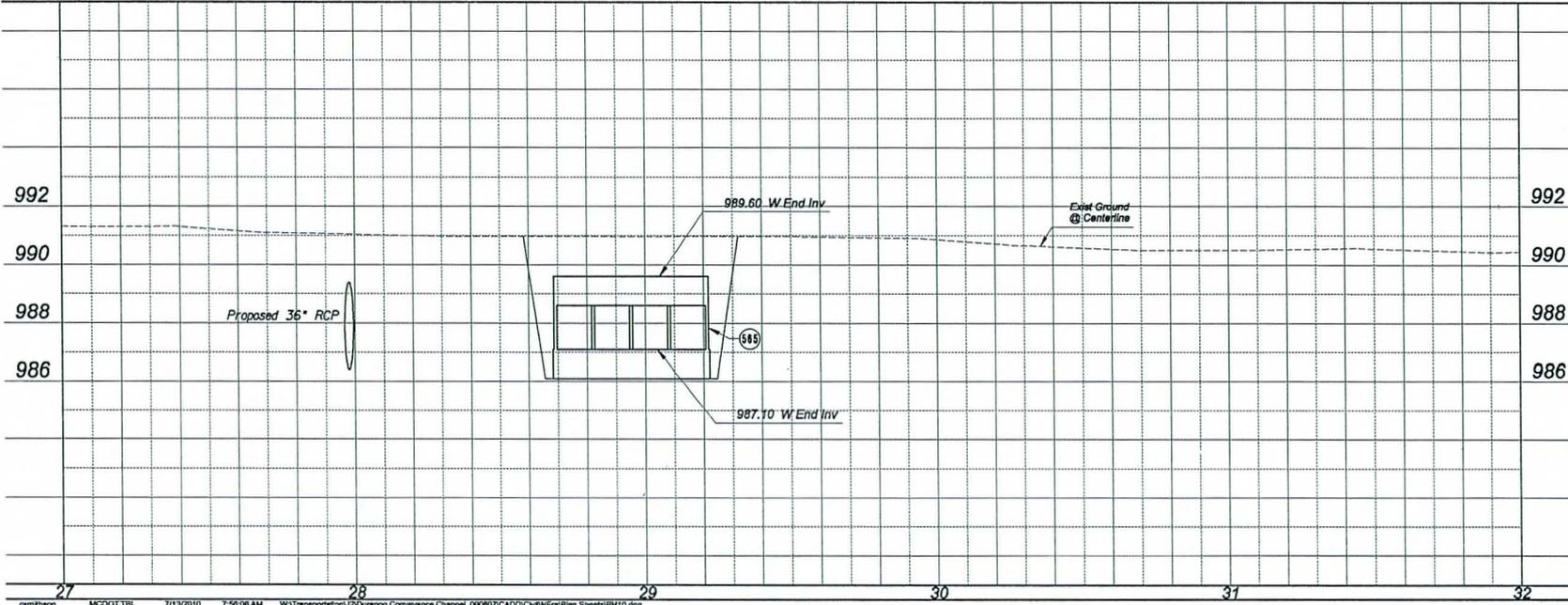
DRAWING NO. **PLAN AND PROFILE** SHEET OF PHOS

NFRK Inc.
 77 East Thomas Street, Suite 200
 Phoenix, Arizona 85012



Intersection of 89th Ave & Box Culvert
 89th Ave = Sta 28+95.83
 Northing = 878440.01
 Easting = 598024.27
 Box Culvert = Sta XX+XX.XX
 Northing =
 Easting =

Proposed
 36" SD (RCP)



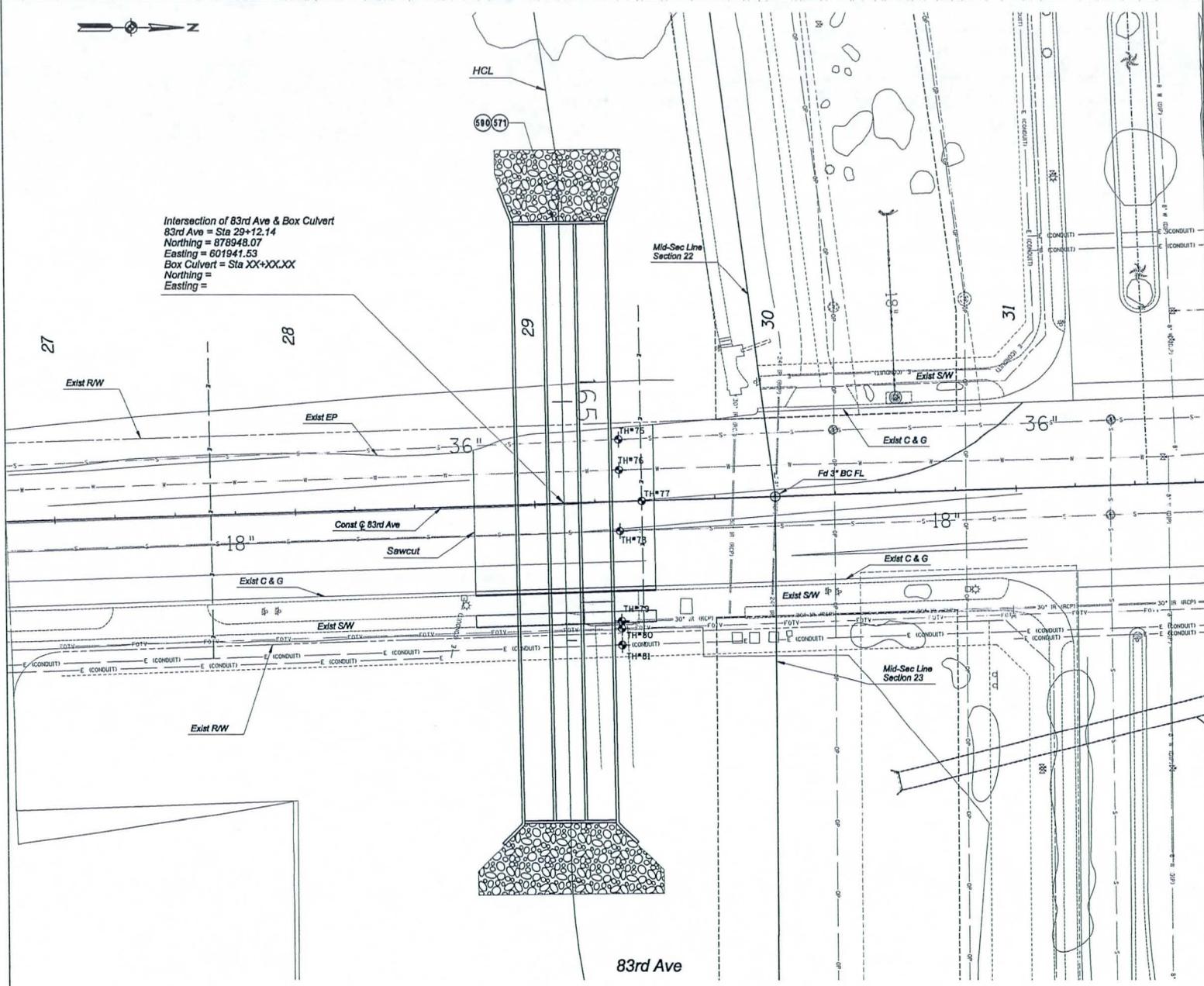
REMOVE			
No.	Description	Unit	Quantity

CONSTRUCT			
No.	Description	Unit	Quantity

3			
2			
1			
NO.	REVISION	BY	DATE
	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY ENGINEERING DIVISION		
DURANGO REGIONAL CONVEYANCE CHANNEL ELWOOD STREET 75th AVE to 107th AVE FCD2009C008			
PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED	GLG	BY JULY, 2010
	DRAWN	HM	JULY, 2010
	CHECKED	GLG	JULY, 2010
30% SUBMITTAL	NFRM Inc. 77 East Thomas Road, Suite 200 Phoenix, Arizona 85012		
DRAWING NO.	PLAN AND PROFILE		SHEET OF PHIO



Intersection of 83rd Ave & Box Culvert
 83rd Ave = Sta 29+12.14
 Northing = 878948.07
 Easting = 801941.53
 Box Culvert = Sta XX+XX.XX
 Northing =
 Easting =



83rd Ave

REMOVE			
No.	Description	Unit	Quantity

CONSTRUCT			
No.	Description	Unit	Quantity

NO.	REVISION	BY	DATE

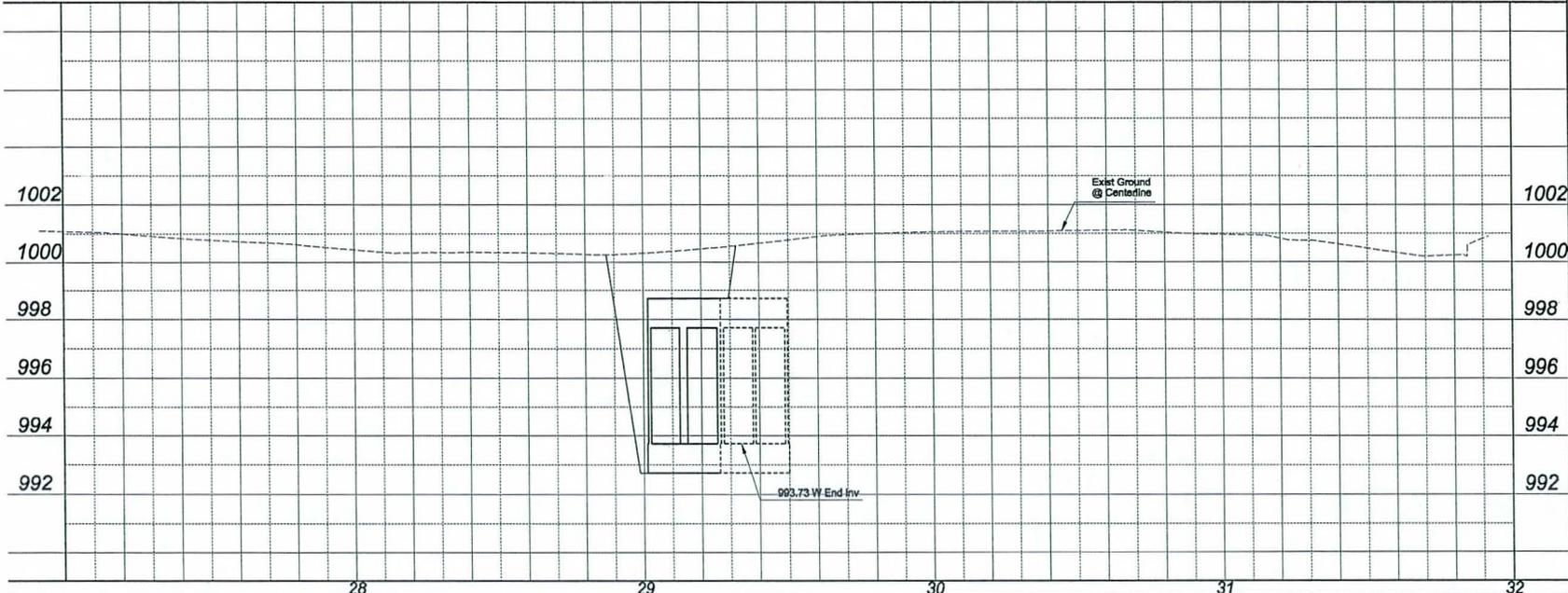
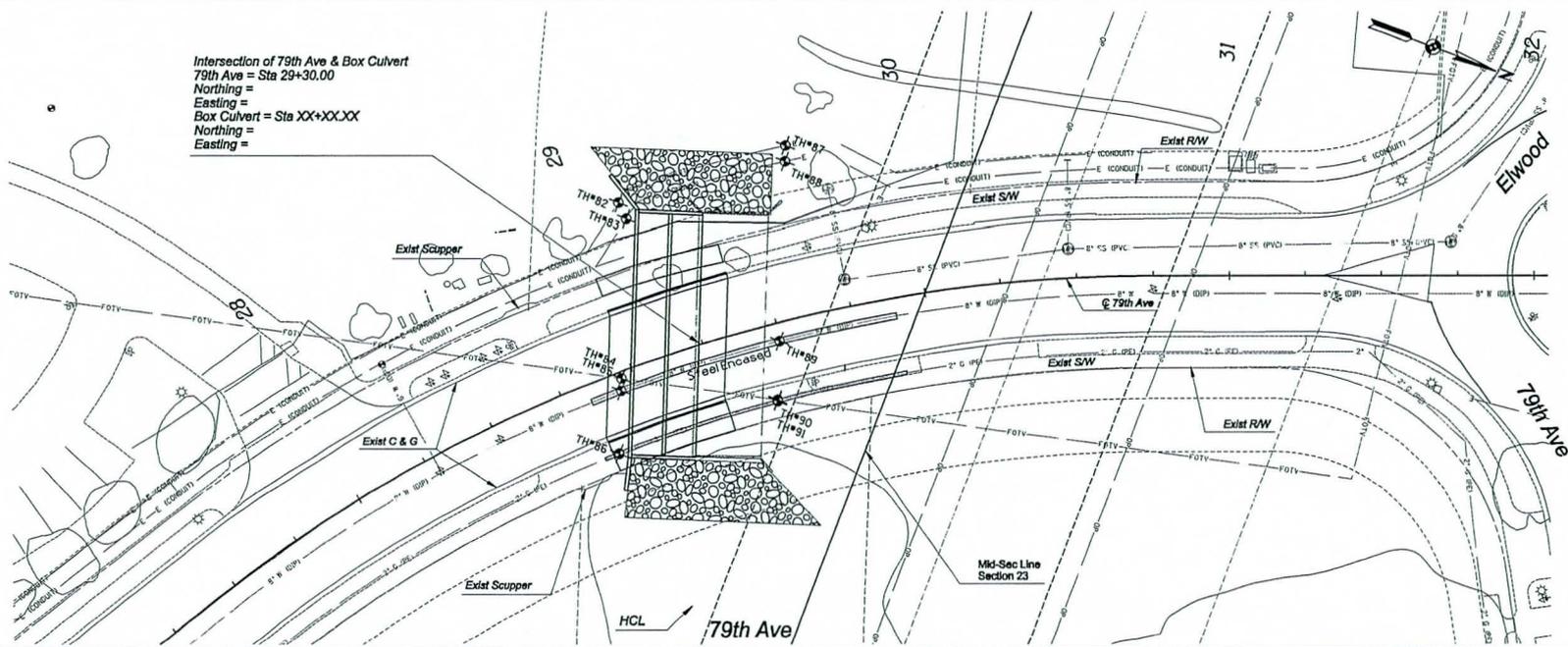


FLOOD CONTROL DISTRICT
 OF MARICOPA COUNTY
 ENGINEERING DIVISION
 DURANGO REGIONAL CONVEYANCE CHANNEL
 ELWOOD STREET 75th AVE to 107th AVE
 FCD2009C008

PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED	GLG	BY	DATE
	DRAWN	HM		JULY, 2010
	CHECKED	GLG		JULY, 2010

DRAWING NO.	PLAN AND PROFILE	SHEET OF PH11

Intersection of 79th Ave & Box Culvert
 79th Ave = Sta 29+30.00
 Northing =
 Easting =
 Box Culvert = Sta XX+XX.XX
 Northing =
 Easting =



REMOVE			
No.	Description	Unit	Quantity

CONSTRUCT			
No.	Description	Unit	Quantity

3			
2			
1			
NO.	REVISION	BY	DATE
994	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY ENGINEERING DIVISION		
994	DURANGO REGIONAL CONVEYANCE CHANNEL ELWOOD STREET 75th AVE to 107th AVE FCD2009C008		
992			
PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED GLG	BY	DATE
	DRAWN HM		JULY, 2010
	CHECKED GLG		JULY, 2010
30% SUBMITTAL	NFX Inc. 77 East Thomas Road, Suite 200 Phoenix, Arizona 85012		
DRAWING NO.	PLAN AND PROFILE	SHEET OF PH12	



Contract FCD 2010C033 Durango Regional Conveyance Channel
75th Avenue to 107th Avenue

89TH DRIVE
TESTHOLE DATA



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TEST HOLE DATA REPORT

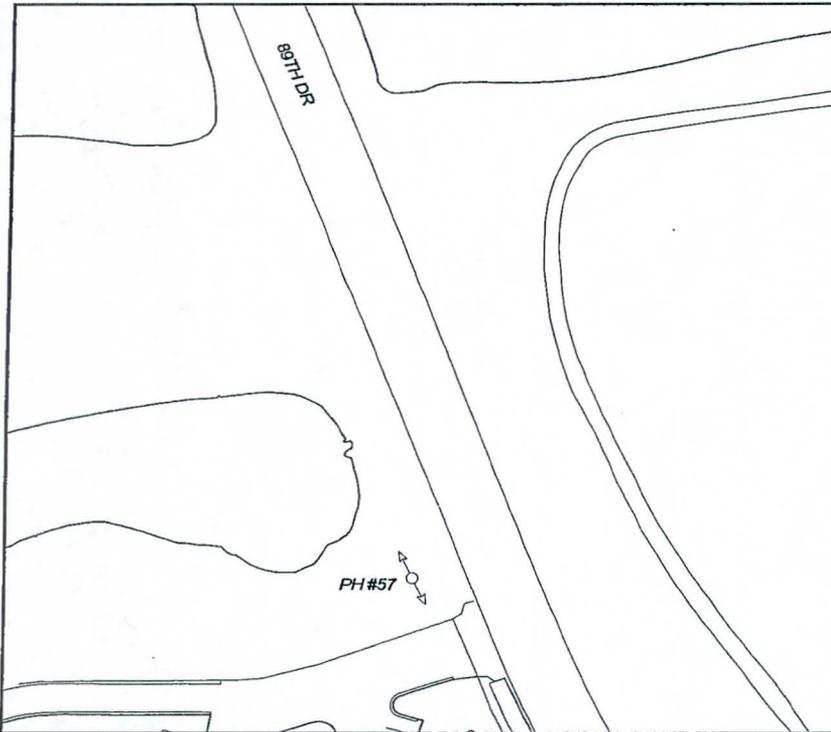
Test Hole # 57
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 20%; text-align: center;"><u>990.89</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>986.53</u></td> <td style="text-align: center;"><u>2.38"</u></td> <td style="text-align: center;"><u>4.36</u> TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>986.33</u></td> <td style="text-align: center;">○</td> <td style="text-align: center;"><u>4.56</u> BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>990.89</u>	← WIDTH/O.D. →		TOP ELEVATION	<u>986.53</u>	<u>2.38"</u>	<u>4.36</u> TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>986.33</u>	○	<u>4.56</u> BOTTOM (FEET)
SURFACE ELEVATION	<u>990.89</u>	← WIDTH/O.D. →											
TOP ELEVATION	<u>986.53</u>	<u>2.38"</u>	<u>4.36</u> TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>986.33</u>	○	<u>4.56</u> BOTTOM (FEET)										
<p>RIBBON COLOR <u>Yellow</u></p>													
<p>COORDINATES: NORTHING <u>878384.50</u></p> <p>STATIONING: STATION <u>None</u></p> <p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u> SOIL CONDITION <u>Dirt</u></p> <p>SIZE <u>2"</u> TYPE <u>PE</u> FACILITY OWNER <u>Southwest Gas</u></p>	<p>EASTING <u>598009.11</u></p> <p>OFFSET <u>None</u></p>												
<p>COMMENTS:</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div>													

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 59
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border: none;">SURFACE ELEVATION</td> <td style="border: none;"><u>991.13</u></td> <td style="border: none;">← WIDTH/O.D. →</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;">TOP ELEVATION</td> <td style="border: none;"><u>986.17</u></td> <td style="border: none; text-align: center;">9.05"</td> <td style="border: none;">4.96 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border: none;">BOTTOM ELEVATION</td> <td style="border: none;"><u>985.42</u></td> <td style="border: none; text-align: center;">○</td> <td style="border: none;">5.71 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.13</u>	← WIDTH/O.D. →		TOP ELEVATION	<u>986.17</u>	9.05"	4.96 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>985.42</u>	○	5.71 BOTTOM (FEET)
SURFACE ELEVATION	<u>991.13</u>	← WIDTH/O.D. →											
TOP ELEVATION	<u>986.17</u>	9.05"	4.96 TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>985.42</u>	○	5.71 BOTTOM (FEET)										
<p>RIBBON COLOR <u>Blue</u></p>													

COORDINATES: NORTHING 878380.83 EASTING 598052.76
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 4" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 60
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE															
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 10%; text-align: center;"><u>992.15</u></td> <td style="width: 30%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>988.25</u></td> <td style="text-align: center;">12"</td> <td style="text-align: center;">○○○○</td> <td style="text-align: right;">3.90 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>988.05</u></td> <td></td> <td></td> <td style="text-align: right;">4.10 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>992.15</u>	← WIDTH/O.D. →			TOP ELEVATION	<u>988.25</u>	12"	○○○○	3.90 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>988.05</u>			4.10 BOTTOM (FEET)
SURFACE ELEVATION	<u>992.15</u>	← WIDTH/O.D. →														
TOP ELEVATION	<u>988.25</u>	12"	○○○○	3.90 TOP DEPTH (FEET)												
BOTTOM ELEVATION	<u>988.05</u>			4.10 BOTTOM (FEET)												
RIBBON COLOR <u>Orange</u>																

COORDINATES: NORTHING 878383.33 EASTING 598083.80
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

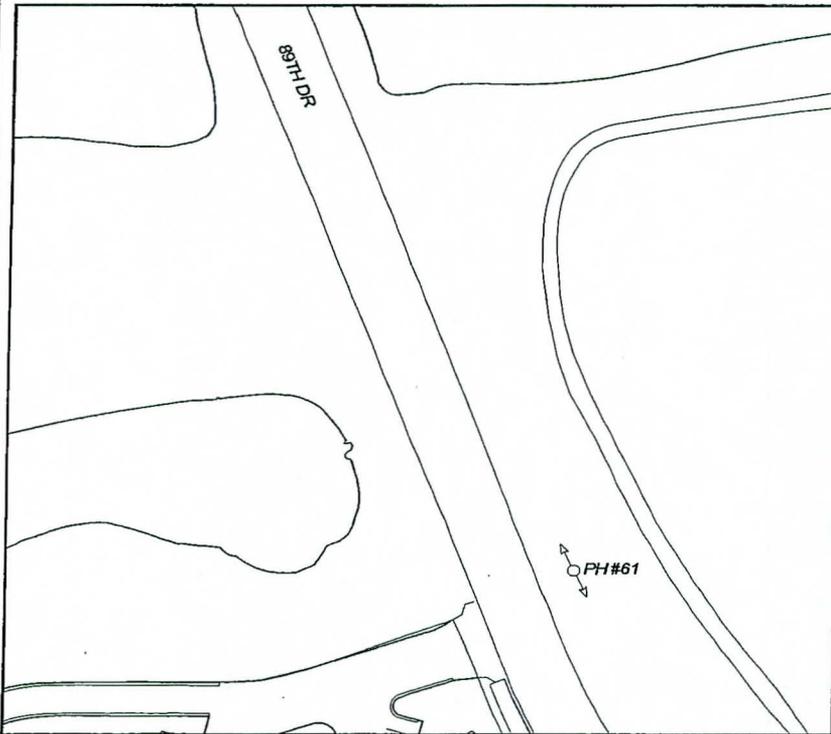
Test Hole # 61
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



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SUE Crew J. Garcia
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 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																				
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 10%; text-align: center;"><u>992.25</u></td> <td style="width: 30%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 10%;"></td> <td style="width: 15%;"></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><u>16"</u></td> <td></td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>986.65</u></td> <td style="text-align: center;">○○○○</td> <td style="text-align: center;"><u>5.60</u></td> <td>TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>986.36</u></td> <td></td> <td style="text-align: center;"><u>5.89</u></td> <td>BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>992.25</u>	← WIDTH/O.D. →					<u>16"</u>			TOP ELEVATION	<u>986.65</u>	○○○○	<u>5.60</u>	TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>986.36</u>		<u>5.89</u>	BOTTOM (FEET)
SURFACE ELEVATION	<u>992.25</u>	← WIDTH/O.D. →																			
		<u>16"</u>																			
TOP ELEVATION	<u>986.65</u>	○○○○	<u>5.60</u>	TOP DEPTH (FEET)																	
BOTTOM ELEVATION	<u>986.36</u>		<u>5.89</u>	BOTTOM (FEET)																	
RIBBON COLOR <u>Red</u>																					

COORDINATES: NORTHING 878383.53 EASTING 598084.29
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 63
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 991.42'

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>990.88</u>	← WIDTH/O.D. →
TOP ELEVATION <u>986.52</u>	4.5"
BOTTOM ELEVATION <u>986.14</u>	○
	4.36 TOP DEPTH (FEET)
	4.74 BOTTOM (FEET)

RIBBON COLOR Yellow

COORDINATES: NORTHING 878407.80

EASTING 598000.23

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE 4" TYPE PE FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A Mehler

TEST HOLE DATA REPORT

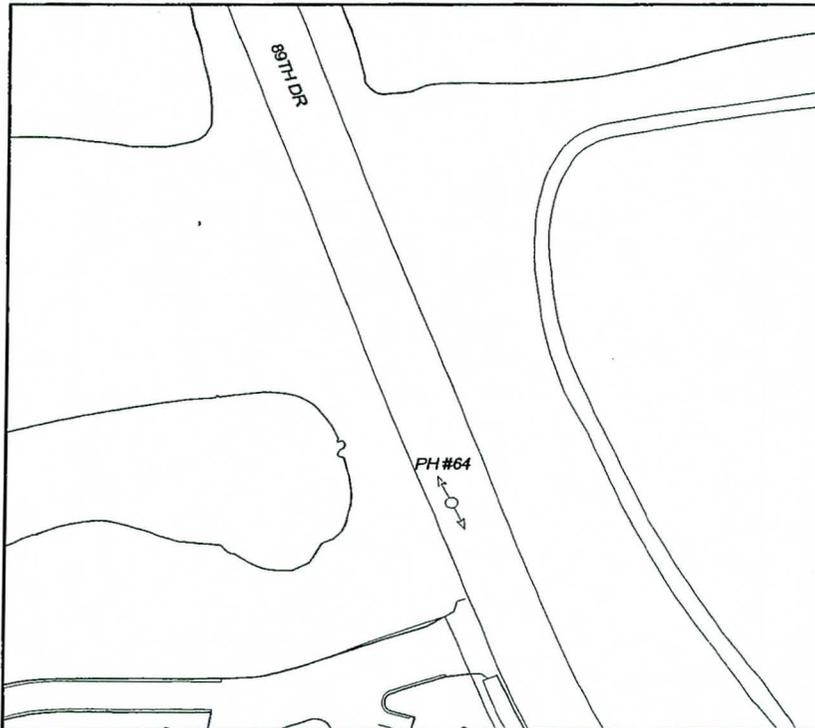
Test Hole # 64
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr & Illini St



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Garcia
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="text-align: right;">SURFACE ELEVATION</td> <td style="text-align: center;"><u>991.10</u></td> <td style="text-align: center;">← WIDTH/O.D. →</td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;"><u>13.2"</u></td> <td></td> </tr> <tr> <td style="text-align: right;">TOP ELEVATION</td> <td style="text-align: center;"><u>974.85</u></td> <td style="text-align: center;">○</td> <td style="text-align: right;">16.25 TOP DEPTH (FEET)</td> </tr> <tr> <td style="text-align: right;">BOTTOM ELEVATION</td> <td style="text-align: center;"><u>973.75</u></td> <td></td> <td style="text-align: right;">17.35 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.10</u>	← WIDTH/O.D. →				<u>13.2"</u>		TOP ELEVATION	<u>974.85</u>	○	16.25 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>973.75</u>		17.35 BOTTOM (FEET)
SURFACE ELEVATION	<u>991.10</u>	← WIDTH/O.D. →															
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TOP ELEVATION	<u>974.85</u>	○	16.25 TOP DEPTH (FEET)														
BOTTOM ELEVATION	<u>973.75</u>		17.35 BOTTOM (FEET)														
<p>RIBBON COLOR <u>Green</u></p>																	

COORDINATES: NORthing 878409.78 EASTING 598026.64
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 12" TYPE DIP FACILITY OWNER City of Phoenix Sewer

COMMENTS:

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

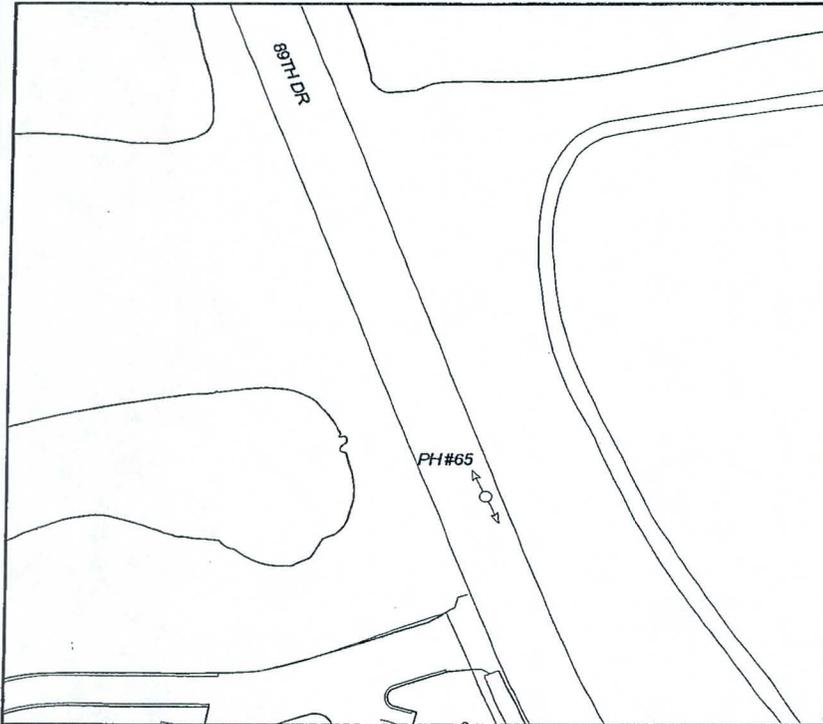
Test Hole # 65
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p style="text-align: center;">FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; text-align: center;"><u>991.18</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>985.86</u></td> <td style="text-align: center;">9.05"</td> <td style="text-align: center;">5.32 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>985.11</u></td> <td style="text-align: center;">○</td> <td style="text-align: center;">6.07 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.18</u>	← WIDTH/O.D. →		TOP ELEVATION	<u>985.86</u>	9.05"	5.32 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>985.11</u>	○	6.07 BOTTOM (FEET)
SURFACE ELEVATION	<u>991.18</u>	← WIDTH/O.D. →											
TOP ELEVATION	<u>985.86</u>	9.05"	5.32 TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>985.11</u>	○	6.07 BOTTOM (FEET)										
RIBBON COLOR <u>Blue</u>													

COORDINATES: NORTHING 878412.60 EASTING 598040.19
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 4" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

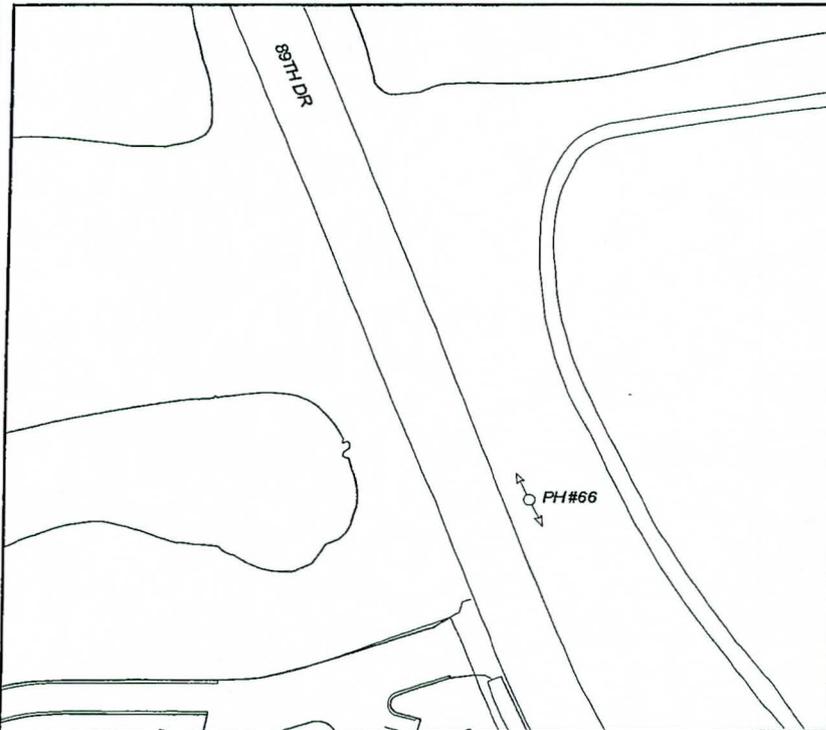
Test Hole # 66
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%;"><u>991.14</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td><u>986.30</u></td> <td style="text-align: center;">16"</td> <td>4.84 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td><u>986.10</u></td> <td style="text-align: center;">○○○○</td> <td>5.04 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.14</u>	← WIDTH/O.D. →		TOP ELEVATION	<u>986.30</u>	16"	4.84 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>986.10</u>	○○○○	5.04 BOTTOM (FEET)
SURFACE ELEVATION	<u>991.14</u>	← WIDTH/O.D. →											
TOP ELEVATION	<u>986.30</u>	16"	4.84 TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>986.10</u>	○○○○	5.04 BOTTOM (FEET)										
RIBBON COLOR <u>Orange</u>													

COORDINATES: NORTHING 878415.23 EASTING 598071.87
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

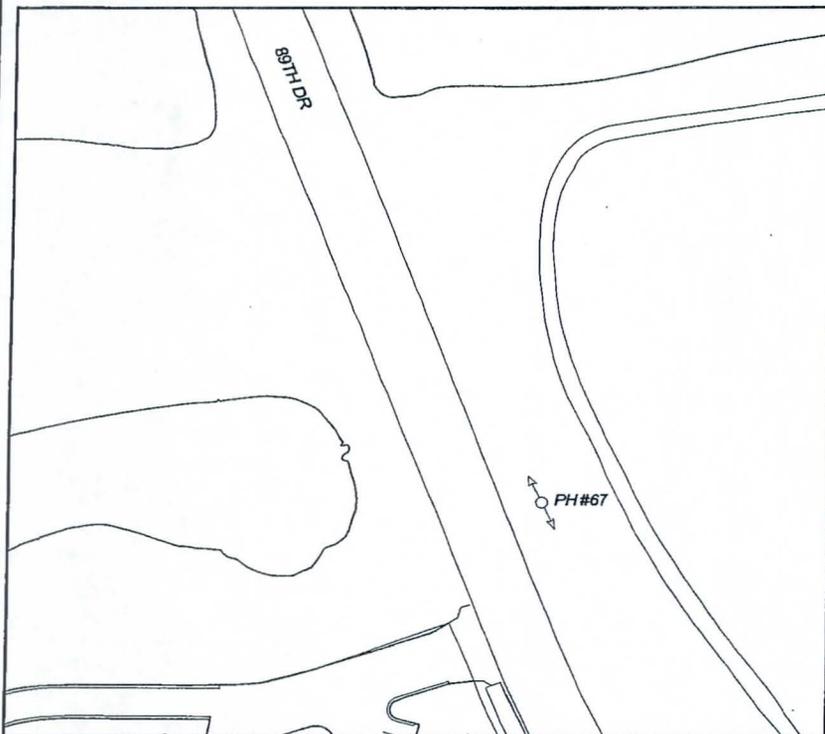
Test Hole # 67
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew A. Pablo-Bello
 Truck # 320
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE																														
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">SURFACE ELEVATION</td> <td style="width: 10%; text-align: center;"><u>991.08</u></td> <td style="width: 10%; text-align: center;">←</td> <td style="width: 10%; text-align: center;">→</td> <td style="width: 10%;"></td> </tr> <tr> <td></td> <td></td> <td colspan="2" style="text-align: center;">WIDTH/O.D.</td> <td></td> </tr> <tr> <td></td> <td></td> <td colspan="2" style="text-align: center;"><u>16"</u></td> <td></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>985.10</u></td> <td></td> <td style="text-align: center;">5.98</td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td></td> <td></td> <td colspan="2" style="text-align: center;">○○○○</td> <td></td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>984.81</u></td> <td></td> <td style="text-align: center;">6.27</td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.08</u>	←	→				WIDTH/O.D.					<u>16"</u>			TOP ELEVATION	<u>985.10</u>		5.98	TOP DEPTH (FEET)			○○○○			BOTTOM ELEVATION	<u>984.81</u>		6.27	BOTTOM (FEET)
SURFACE ELEVATION	<u>991.08</u>	←	→																												
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TOP ELEVATION	<u>985.10</u>		5.98	TOP DEPTH (FEET)																											
		○○○○																													
BOTTOM ELEVATION	<u>984.81</u>		6.27	BOTTOM (FEET)																											
RIBBON COLOR <u>Red</u>																															

COORDINATES: NORTHING 878415.12 EASTING 598071.27
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

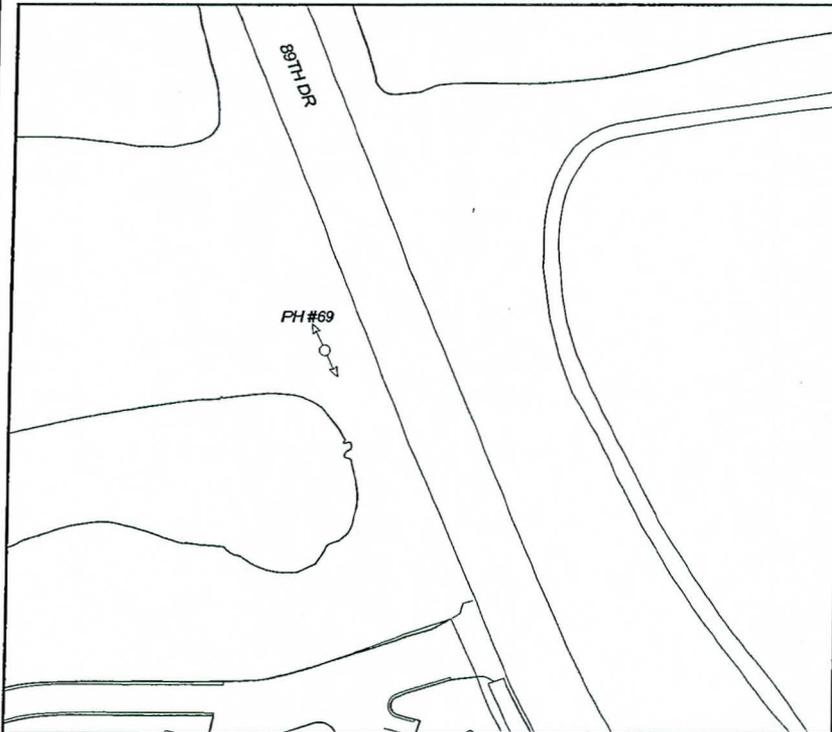
Test Hole # 69
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p>ELEV. = <u>991.42'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 30%; text-align: center;"><u>991.49</u></td> <td style="width: 20%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 20%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td style="text-align: center;"><u>987.97</u></td> <td style="text-align: center;"><u>4.5"</u></td> <td style="text-align: center;">3.52 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td style="text-align: center;"><u>987.59</u></td> <td style="text-align: center;">○</td> <td style="text-align: center;">3.90 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.49</u>	← WIDTH/O.D. →		TOP ELEVATION	<u>987.97</u>	<u>4.5"</u>	3.52 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>987.59</u>	○	3.90 BOTTOM (FEET)
SURFACE ELEVATION	<u>991.49</u>	← WIDTH/O.D. →											
TOP ELEVATION	<u>987.97</u>	<u>4.5"</u>	3.52 TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>987.59</u>	○	3.90 BOTTOM (FEET)										
RIBBON COLOR <u>Yellow</u>													

COORDINATES: NORTHING 878464.80 EASTING 597979.83
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE 4" TYPE PE FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 70
 Date Dug 9/28/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE									
<p>COP BC @ 99TH AVE & LOWER BUCKEYE RD</p> <p>ELEV. = 991.42'</p>	<p>FACING <u>North</u></p> <table style="margin: auto;"> <tr> <td style="border-right: 1px solid black;">SURFACE ELEVATION <u>990.97</u></td> <td style="border: 1px solid black; text-align: center;">← WIDTH/O.D. → <u>13.2"</u></td> <td style="border-right: 1px solid black;">TOP DEPTH (FEET) <u>15.94</u></td> </tr> <tr> <td style="border-right: 1px solid black;">TOP ELEVATION <u>975.03</u></td> <td style="border: 1px solid black; text-align: center;">○</td> <td style="border-right: 1px solid black;">BOTTOM (FEET) <u>17.04</u></td> </tr> <tr> <td style="border-right: 1px solid black;">BOTTOM ELEVATION <u>973.93</u></td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION <u>990.97</u>	← WIDTH/O.D. → <u>13.2"</u>	TOP DEPTH (FEET) <u>15.94</u>	TOP ELEVATION <u>975.03</u>	○	BOTTOM (FEET) <u>17.04</u>	BOTTOM ELEVATION <u>973.93</u>		
SURFACE ELEVATION <u>990.97</u>	← WIDTH/O.D. → <u>13.2"</u>	TOP DEPTH (FEET) <u>15.94</u>								
TOP ELEVATION <u>975.03</u>	○	BOTTOM (FEET) <u>17.04</u>								
BOTTOM ELEVATION <u>973.93</u>										
<p>RIBBON COLOR <u>Green</u></p> <p>COORDINATES: NORTHING <u>878466.53</u> EASTING <u>598003.59</u></p> <p>STATIONING: STATION <u>None</u> OFFSET <u>None</u></p> <p>PAVING THICKNESS <u>6"</u> PAVING TYPE <u>Asphalt</u> SOIL CONDITION <u>Dirt</u></p> <p>SIZE <u>12"</u> TYPE <u>DIP</u> FACILITY OWNER <u>City of Phoenix Sewer</u></p>										

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

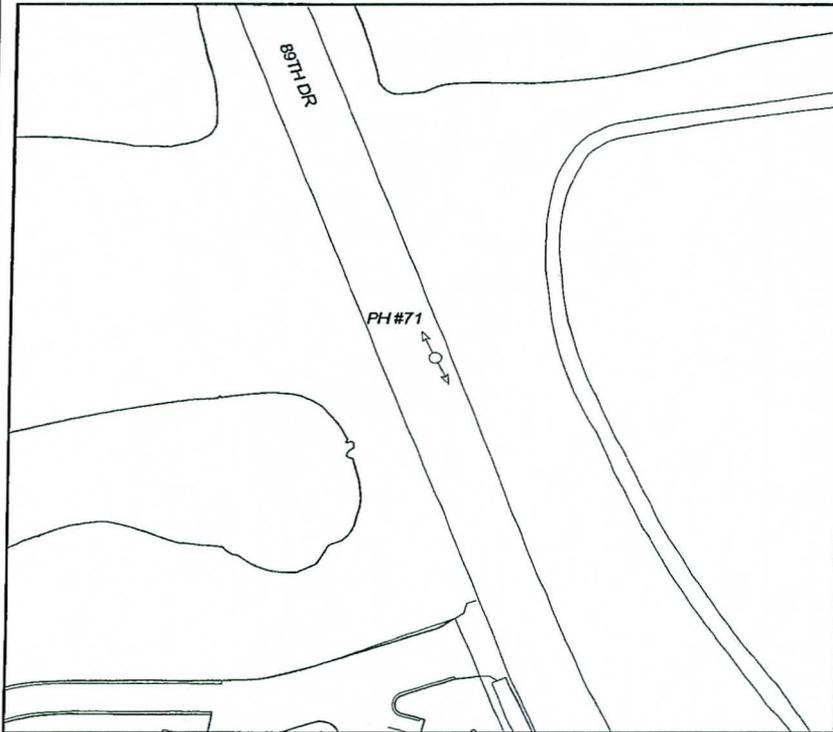
Test Hole # 71
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew D. Black
 Truck # 558
 City Phoenix
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE									
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p><u>ELEV. = 991.42'</u></p>	<p>FACING <u>North</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">SURFACE ELEVATION <u>991.05</u></td> <td style="padding: 5px;">← WIDTH/O.D. → <u>9.05"</u></td> <td style="padding: 5px;">5.36 TOP DEPTH (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">TOP ELEVATION <u>985.69</u></td> <td style="text-align: center; padding: 5px;">○</td> <td style="padding: 5px;">6.11 BOTTOM (FEET)</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">BOTTOM ELEVATION <u>984.94</u></td> <td></td> <td></td> </tr> </table>	SURFACE ELEVATION <u>991.05</u>	← WIDTH/O.D. → <u>9.05"</u>	5.36 TOP DEPTH (FEET)	TOP ELEVATION <u>985.69</u>	○	6.11 BOTTOM (FEET)	BOTTOM ELEVATION <u>984.94</u>		
SURFACE ELEVATION <u>991.05</u>	← WIDTH/O.D. → <u>9.05"</u>	5.36 TOP DEPTH (FEET)								
TOP ELEVATION <u>985.69</u>	○	6.11 BOTTOM (FEET)								
BOTTOM ELEVATION <u>984.94</u>										
<p>RIBBON COLOR <u>Blue</u></p>										

COORDINATES: NORTHING 878469.32 EASTING 598019.22
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt
 SIZE 8" TYPE DIP FACILITY OWNER City of Phoenix Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

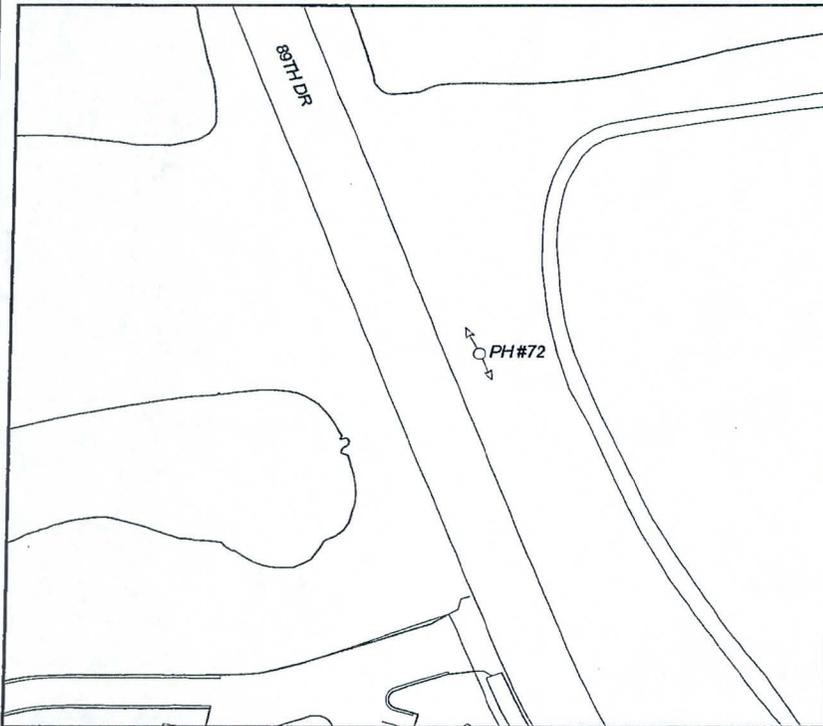
Test Hole # 72
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



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LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE												
<p><u>COP BC @ 99TH AVE & LOWER BUCKEYE RD</u></p> <p>ELEV. = <u>991.42'</u></p>	<p>FACING <u>North</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION</td> <td style="width: 10%;"><u>991.52</u></td> <td style="width: 30%; border: 1px solid black; text-align: center;"> WIDTH/O.D. 12" </td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION</td> <td><u>987.36</u></td> <td style="border: 1px solid black; text-align: center;"> ○○○○ </td> <td style="text-align: right;">4.16 TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION</td> <td><u>987.16</u></td> <td></td> <td style="text-align: right;">4.36 BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION	<u>991.52</u>	WIDTH/O.D. 12"		TOP ELEVATION	<u>987.36</u>	○○○○	4.16 TOP DEPTH (FEET)	BOTTOM ELEVATION	<u>987.16</u>		4.36 BOTTOM (FEET)
SURFACE ELEVATION	<u>991.52</u>	WIDTH/O.D. 12"											
TOP ELEVATION	<u>987.36</u>	○○○○	4.16 TOP DEPTH (FEET)										
BOTTOM ELEVATION	<u>987.16</u>		4.36 BOTTOM (FEET)										
RIBBON COLOR <u>Orange</u>													

COORDINATES: NORTHING 878470.95 EASTING 598049.71
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Four 2" TYPE PVC FACILITY OWNER Cox Communications

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

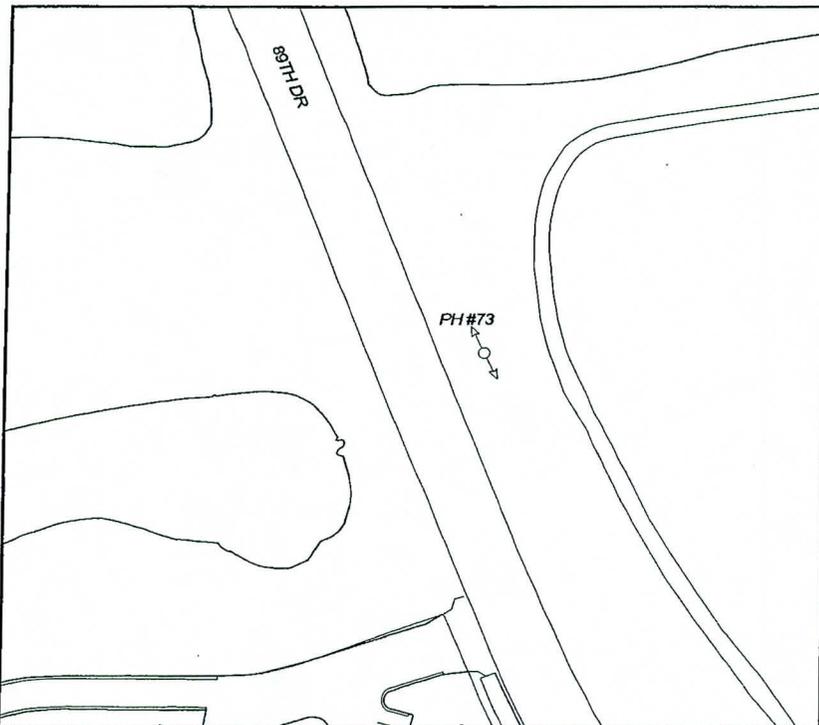
Test Hole # 73
 Date Dug 9/27/2010
 Project # AZS0929
 Phase # 009
 Location 89th Dr north of Illini St



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 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

COP BC @ 99TH AVE & LOWER BUCKEYE RD
ELEV. = 991.42'

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>			
SURFACE ELEVATION	991.41	← WIDTH/O.D. →	
		16"	
TOP ELEVATION	986.23	○○○○	5.18 TOP DEPTH (FEET)
BOTTOM ELEVATION	985.94		5.47 BOTTOM (FEET)

RIBBON COLOR Red

COORDINATES: NORTHING 878470.77 EASTING 598048.84

STATIONING: STATION None OFFSET None

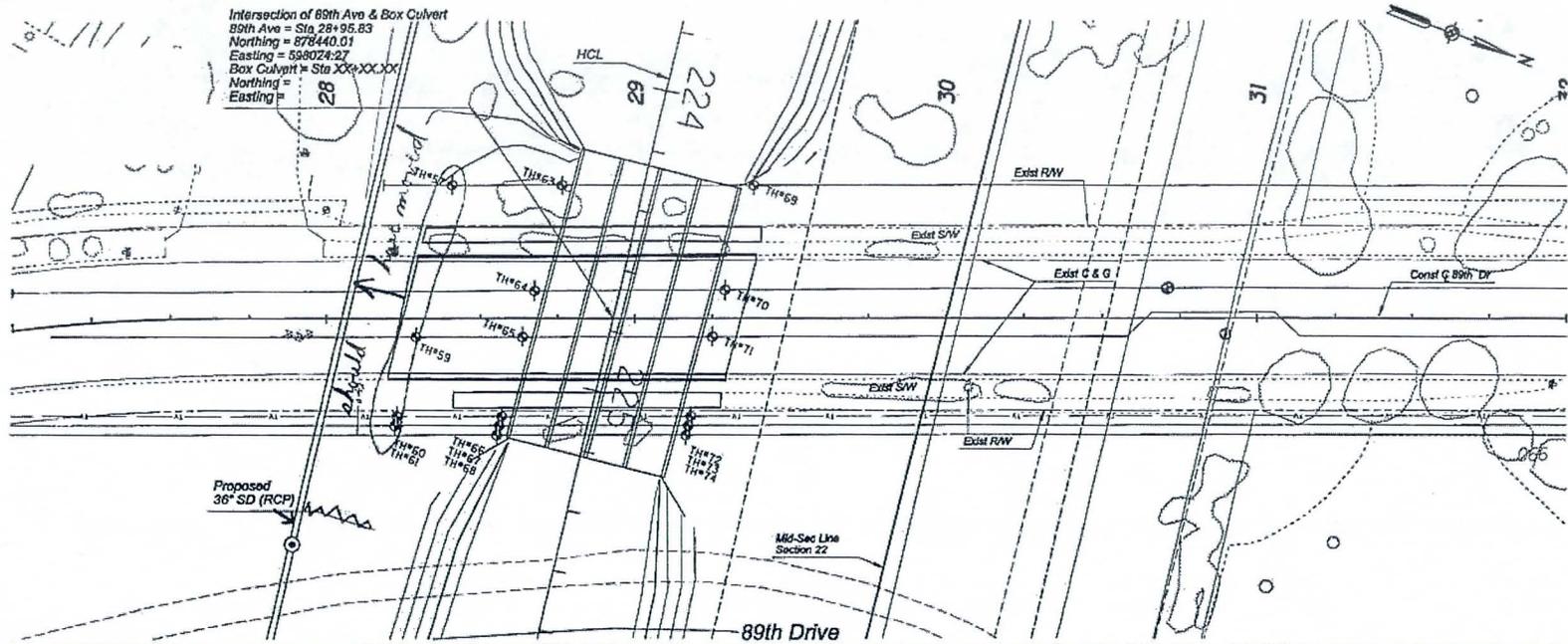
PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE Four 3" TYPE PVC FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber CHECKED BY: A. Mehler

Intersection of 89th Ave & Box Culvert
 89th Ave = Sta 28+95.83
 Northing = 878440.01
 Easting = 598024.27
 Box Culvert = Sta XX+XX.XXX
 Northing =
 Easting =



REMOVE

No. Description Unit Quant

CONSTRUCT

No. Description Unit Quant

CALL THE STATE CENTER FOR
 STAKE-IT INFORMATION AND
 802-263-7100
 WITH SURVEY PLANS
 OR
 1-800-STAKE-IT
 1-800-547-2747

WARNING

BUSINESS PAVED LINES WITH
 HOLESY CONSTRUCTION (LMI)

3			
2			
1	Reduced Number of & Relocated Profiles	JW	8-13-2010
NO.	REVISION	BY	DATE

**FLOOD CONTROL DISTRICT
 OF MARICOPA COUNTY
 ENGINEERING DIVISION**

DURANGO REGIONAL CONVEYANCE CHANNEL
 75th AVE to 107th AVE-FCD Contract No. 2010C035

PRELIMINARY NOT FOR CONSTRUCTION	DESIGNED DRAWN CHECKED	JW JW CIB	BY	DATE
				Sept. 2010 Sept. 2010 Sept. 2010

80%
SUBMITTAL

NFB Inc.
 10000 North Central Expressway
 77 East Phoenix Road, Suite 200
 Phoenix, Arizona 85027

DRAWING NO. PLAN AND PROFILE SHEET PH10

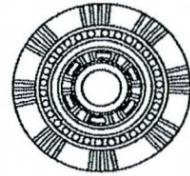
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**ADDITIONAL
TESTHOLE DATA**



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Testhole Data Summary

Date: 1/17/2011
 Project Number: AZS0929
 Project Name: Durango Regional Channel



EXPIRES 09/30/2012

TH #	Location	Date of Excavation	Utility Owner	Utility Size	Utility Description	Coordinates		Stationing		Ground Elevation	Top Elevation	Bottom Elevation	Depth of Cover	Comments
						Northing	Easting	Stationing	Offset					
101	107th Avenue south of Lower Buckeye Road	1/17/2011	Cox Communications	None	None	None	None	None	None					No facility in the requested location per ELM bluestake locator, 623-869-0820.
102	107th Avenue south of Lower Buckeye Road	1/17/2011	None	None	None	None	None	None	None					No facility in the requested location per ELM bluestake locator, 623-869-0820.
103	107th Avenue south of Lower Buckeye Road	1/14/2011	City of Phoenix Sewer	30"	DIP	877779.89	586328.43	None	None	965.44	950.67	948.00	14.77	
104	107th Avenue south of Lower Buckeye Road	1/13/2011	City of Avondale Water	12"	DIP	877791.54	586341.45	None	None	965.23	960.47	959.37	4.76	
106	107th Avenue south of Lower Buckeye Road	1/14/2011	Salt River Project Irrigation	None	None	None	None	None	None					Dug to a depth of 7ft by 5ft wide in the requested location and no facility was
107	107th Avenue south of Lower Buckeye Road	1/13/2011	Southwest Gas	4"	PE	877823.51	586398.48	None	None	964.88	960.78	960.40	4.10	
108	107th Avenue south of Lower Buckeye Road	1/14/2011	Salt River Project Electric	Three 3" & One 2.5"	PVC	877825.96	586403.66	None	None	964.59	958.37	958.08	6.22	
108A	107th Avenue south of Lower Buckeye Road	1/13/2011	Unknown	0.5"	PE	877822.80	586402.56	None	None	964.58	961.04	961.00	3.54	
108B	107th Avenue south of Lower Buckeye Road	1/14/2011	Qwest Local Network	4"	PVC	877825.98	586404.08	None	None	964.57	959.75	959.37	4.82	
108C	107th Avenue south of Lower Buckeye Road	1/14/2011	Unknown	Two 2"	PVC	877825.90	586404.59	None	None	964.51	959.61	959.41	4.90	
109	107th Avenue south of Lower Buckeye Road	1/14/2011	City of Avondale Water	8"	DIP	878015.73	586454.64	None	None	958.92	954.22	953.47	4.70	
110	91st Avenue south of Lower Buckeye Road	1/13/2011	City of Tolleson Reclaimed Water	48"	RGRCP	878509.92	596701.73	None	None	992.55	985.83	981.00	6.72	
111	91st Avenue south of Lower Buckeye Road	1/13/2011	City of Tolleson Reclaimed Water	36"	RGRCP	878513.48	596712.91	None	None	993.03	985.75	982.08	7.28	

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TEST HOLE DATA REPORT

Test Hole # 101
 Date Dug 1/17/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. McCarty
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

<p>SITE BENCHMARK</p> <p>AZTEC CONTROL POINT # 106</p> <p>ELEV. = 991.42</p>	<p>CROSS SECTION - NOT TO SCALE</p> <p>FACING _____</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION _____</td> <td style="width: 40%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION _____</td> <td></td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION _____</td> <td></td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION _____	← WIDTH/O.D. →		TOP ELEVATION _____		TOP DEPTH (FEET)	BOTTOM ELEVATION _____		BOTTOM (FEET)
SURFACE ELEVATION _____	← WIDTH/O.D. →									
TOP ELEVATION _____		TOP DEPTH (FEET)								
BOTTOM ELEVATION _____		BOTTOM (FEET)								
<p>RIBBON COLOR <u>None</u></p>										

COORDINATES: NORTHING <u>None</u>	EASTING <u>None</u>
STATIONING: STATION <u>None</u>	OFFSET <u>None</u>
PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u>	SOIL CONDITION <u>None</u>
SIZE <u>None</u> TYPE <u>None</u>	FACILITY OWNER <u>Cox Communications</u>

COMMENTS:

No facility in the requested location per ELM bluestake locator, 623-869-0820.

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

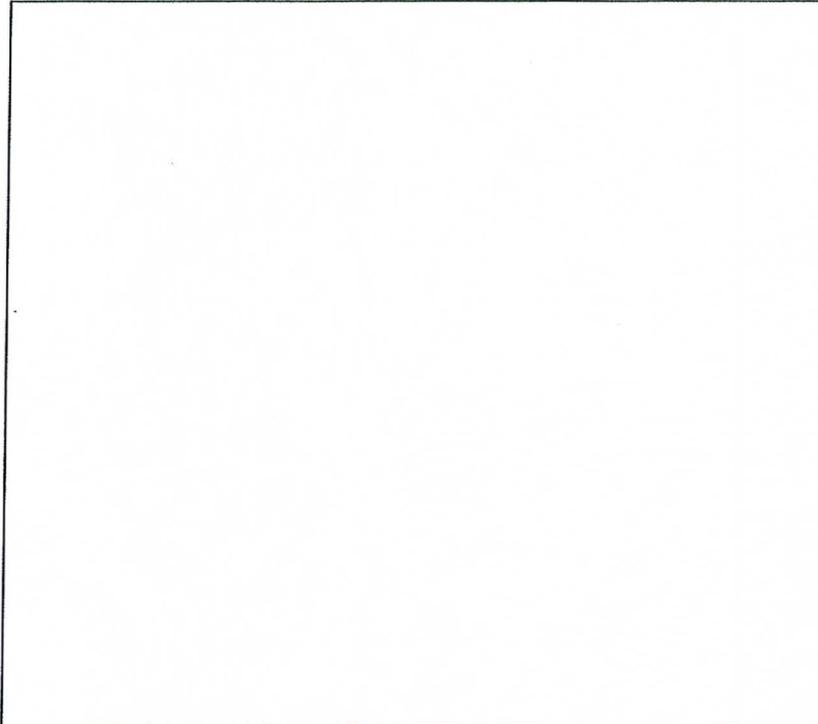
Test Hole # 102
 Date Dug 1/17/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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SUE Crew J. McCarty
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

<p style="text-align: center;">SITE BENCHMARK</p> <p>AZTEC CONTROL POINT # 106</p> <p>ELEV. = 991.42</p>	<p style="text-align: center;">CROSS SECTION - NOT TO SCALE</p> <p style="text-align: center;">FACING _____</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SURFACE ELEVATION _____</td> <td style="width: 40%; text-align: center;">← WIDTH/O.D. →</td> <td style="width: 30%;"></td> </tr> <tr> <td>TOP ELEVATION _____</td> <td></td> <td style="text-align: right;">TOP DEPTH (FEET)</td> </tr> <tr> <td>BOTTOM ELEVATION _____</td> <td></td> <td style="text-align: right;">BOTTOM (FEET)</td> </tr> </table>	SURFACE ELEVATION _____	← WIDTH/O.D. →		TOP ELEVATION _____		TOP DEPTH (FEET)	BOTTOM ELEVATION _____		BOTTOM (FEET)
SURFACE ELEVATION _____	← WIDTH/O.D. →									
TOP ELEVATION _____		TOP DEPTH (FEET)								
BOTTOM ELEVATION _____		BOTTOM (FEET)								
<p>RIBBON COLOR <u>None</u></p>										

COORDINATES: NORTHING None EASTING None
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION None
 SIZE None TYPE None FACILITY OWNER None

COMMENTS:
 No facility in the requested location per ELM bluestake locator, 623-869-0820.

PREPARED BY: M. Huber CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

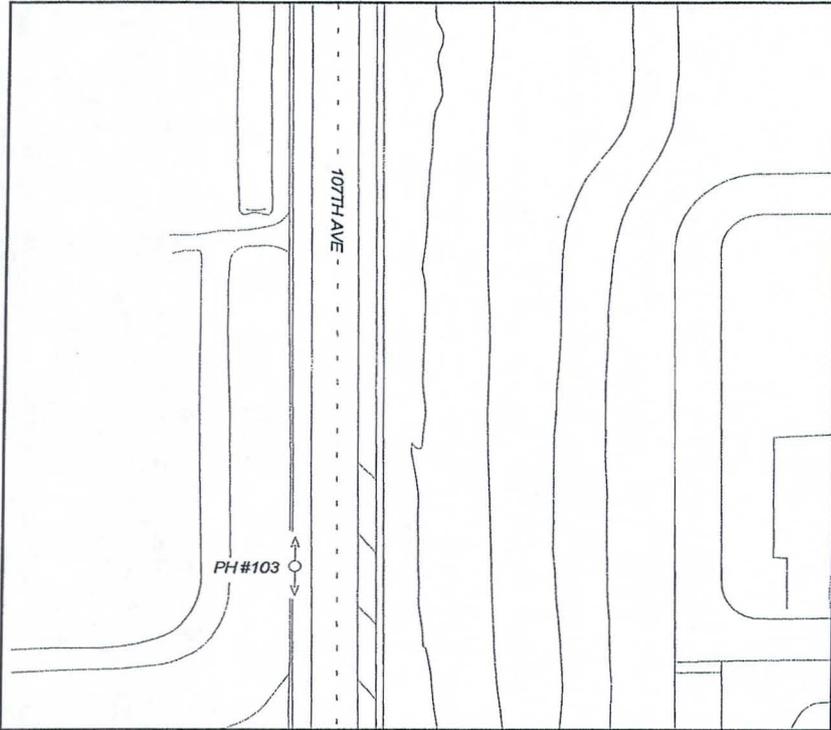
Test Hole # 103
 Date Dug 1/14/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Cherry
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>965.44</u>	← WIDTH/O.D. →
TOP ELEVATION <u>950.67</u>	32"
BOTTOM ELEVATION <u>948.00</u>	14.77 TOP DEPTH (FEET)
	17.44 BOTTOM (FEET)

RIBBON COLOR Green

COORDINATES: NORTHING 877779.89

EASTING 586328.43

STATIONING: STATION None

OFFSET None

PAVING THICKNESS 6" PAVING TYPE Asphalt SOIL CONDITION Dirt

SIZE 30" TYPE DIP FACILITY OWNER City of Phoenix Sewer

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

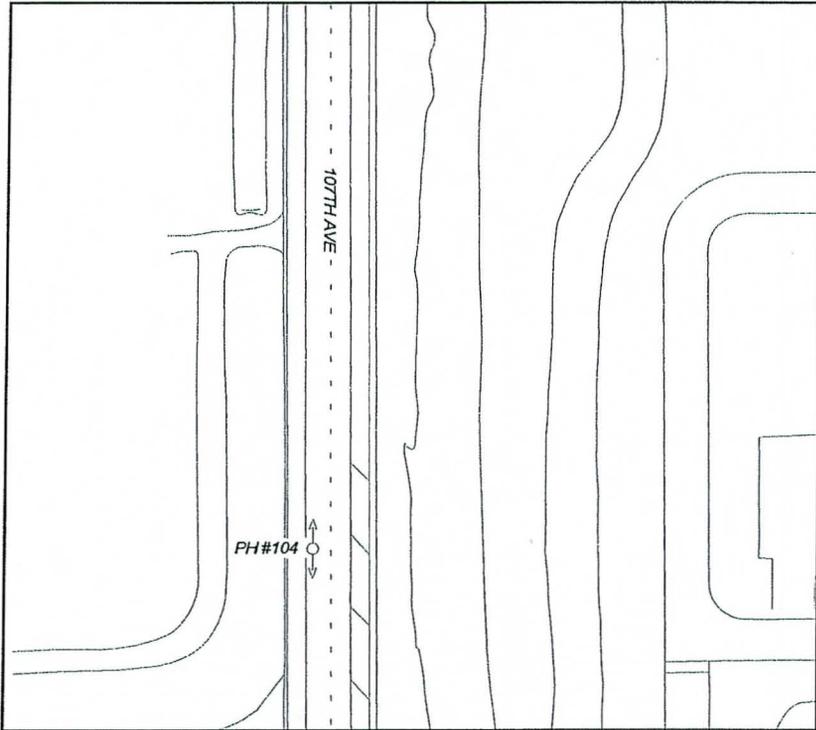
Test Hole # 104
 Date Dug 1/13/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
ELEV. = 991.42

RIBBON COLOR Blue

CROSS SECTION - NOT TO SCALE

		FACING <u>North</u>		
SURFACE ELEVATION	<u>965.23</u>	← WIDTH/O.D. →		
TOP ELEVATION	<u>960.47</u>	<u>13.2"</u>	<u>4.76</u>	TOP DEPTH (FEET)
BOTTOM ELEVATION	<u>959.37</u>		<u>5.86</u>	BOTTOM (FEET)

COORDINATES: NORTHING 877791.54 EASTING 586341.45
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS 5" PAVING TYPE Asphalt SOIL CONDITION Cement / Dirt
 SIZE 12" TYPE DIP FACILITY OWNER City of Avondale Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

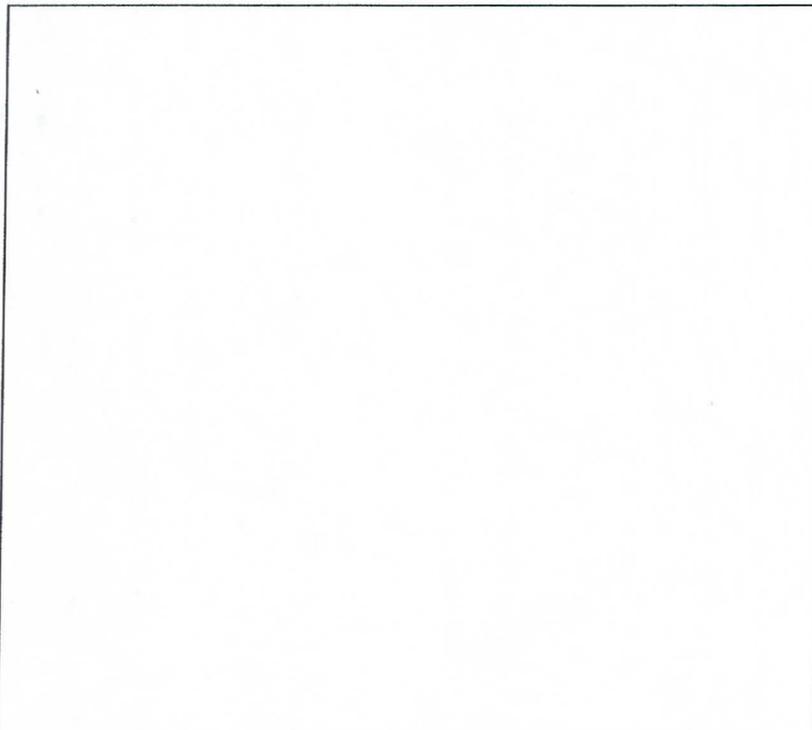
Test Hole # 106
 Date Dug 1/14/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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EXPIRES 09/30/2012

SITE BENCHMARK	CROSS SECTION - NOT TO SCALE
<p>AZTEC CONTROL POINT # 106</p> <p>ELEV. = 991.42</p>	<p>FACING _____</p> <p>SURFACE ELEVATION _____</p> <p>TOP ELEVATION _____</p> <p>BOTTOM ELEVATION _____</p> <p>← WIDTH/O.D. →</p> <p>TOP DEPTH (FEET)</p> <p>7.00 BOTTOM (FEET)</p>
<p>RIBBON COLOR <u>None</u></p>	
<p>COORDINATES: NORTHING <u>None</u></p>	<p>EASTING <u>None</u></p>
<p>STATIONING: STATION <u>None</u></p>	<p>OFFSET <u>None</u></p>
<p>PAVING THICKNESS <u>None</u> PAVING TYPE <u>None</u></p>	<p>SOIL CONDITION <u>None</u></p>
<p>SIZE <u>None</u> TYPE <u>None</u></p>	<p>FACILITY OWNER <u>Salt River Project Irrigation</u></p>
<p>COMMENTS:</p> <p>Dug to a depth of 7ft by 5ft wide in the requested location and no facility was found.</p>	

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

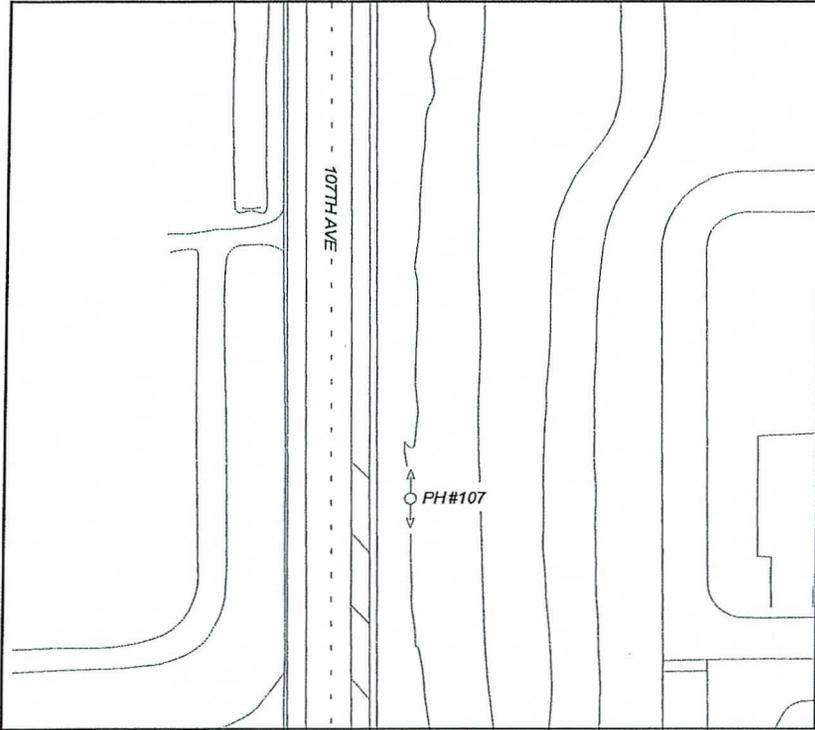
Test Hole # 107
 Date Dug 1/13/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. McCarty
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>964.88</u>	← WIDTH/O.D. →
TOP ELEVATION <u>960.78</u>	4.5"
BOTTOM ELEVATION <u>960.40</u>	4.10 TOP DEPTH (FEET)
	4.48 BOTTOM (FEET)

RIBBON COLOR Yellow

COORDINATES: NORTHING 877823.51

EASTING 586398.48

STATIONING: STATION None

OFFSET None

PAVING THICKNESS None PAVING TYPE None

SOIL CONDITION Sand / Rock

SIZE 4" TYPE PE

FACILITY OWNER Southwest Gas

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

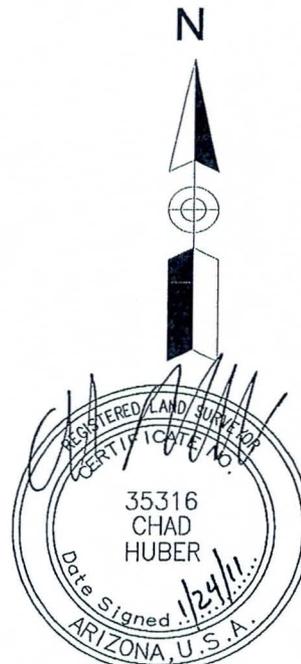
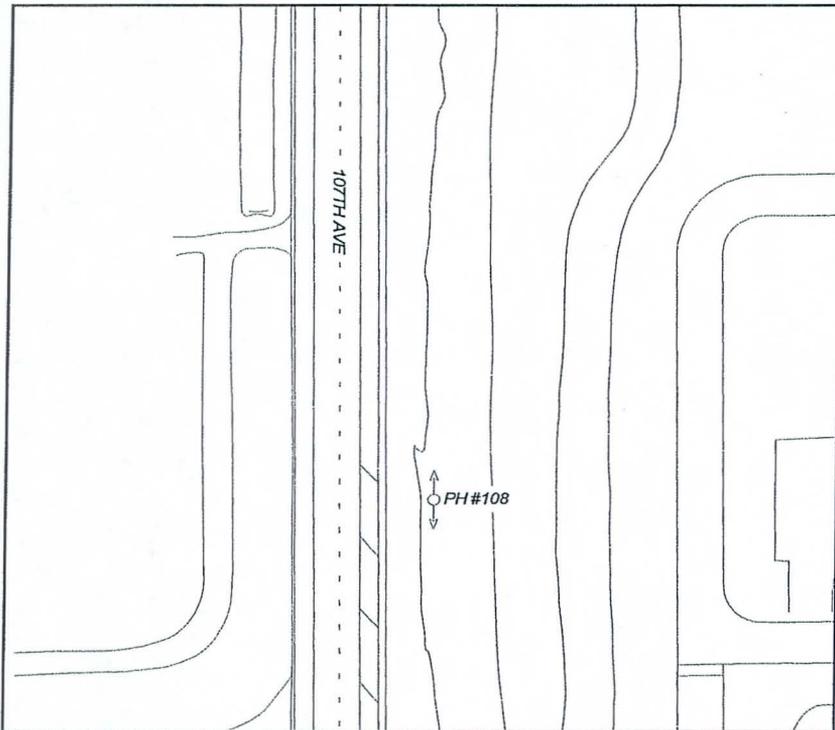
Test Hole # 108
 Date Dug 1/14/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Cherry
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

RIBBON COLOR Red

COORDINATES: NORTHING 877825.96

STATIONING: STATION None

PAVING THICKNESS None PAVING TYPE None

SIZE Three 3" & One 2.5" TYPE PVC

CROSS SECTION - NOT TO SCALE

FACING North

SURFACE ELEVATION	964.59	← WIDTH/O.D. → 18"	
TOP ELEVATION	958.37	○○○ ○	6.22 TOP DEPTH (FEET)
BOTTOM ELEVATION	958.08		6.51 BOTTOM (FEET)

EASTING 586403.66

OFFSET None

SOIL CONDITION Dirt

FACILITY OWNER Salt River Project Electric

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

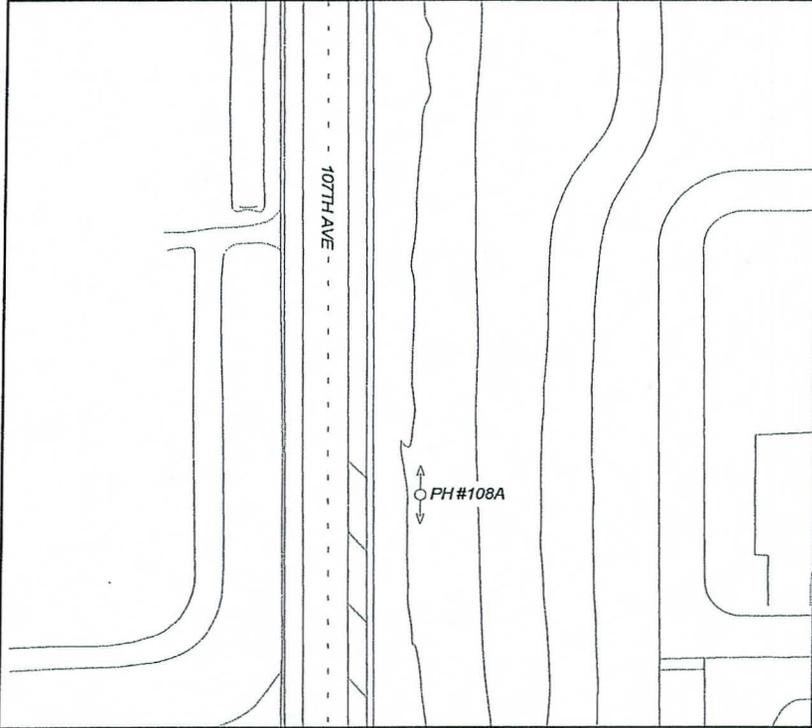
Test Hole # 108A
 Date Dug 1/13/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. McCarty
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>964.58</u>	← WIDTH/O.D. → 0.5"
TOP ELEVATION <u>961.04</u>	○
BOTTOM ELEVATION <u>961.00</u>	3.54 TOP DEPTH (FEET) 3.58 BOTTOM (FEET)

RIBBON COLOR White

COORDINATES: NORTHING 877822.80 EASTING 586402.56
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt / Rock
 SIZE 0.5" TYPE PE FACILITY OWNER Unknown

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

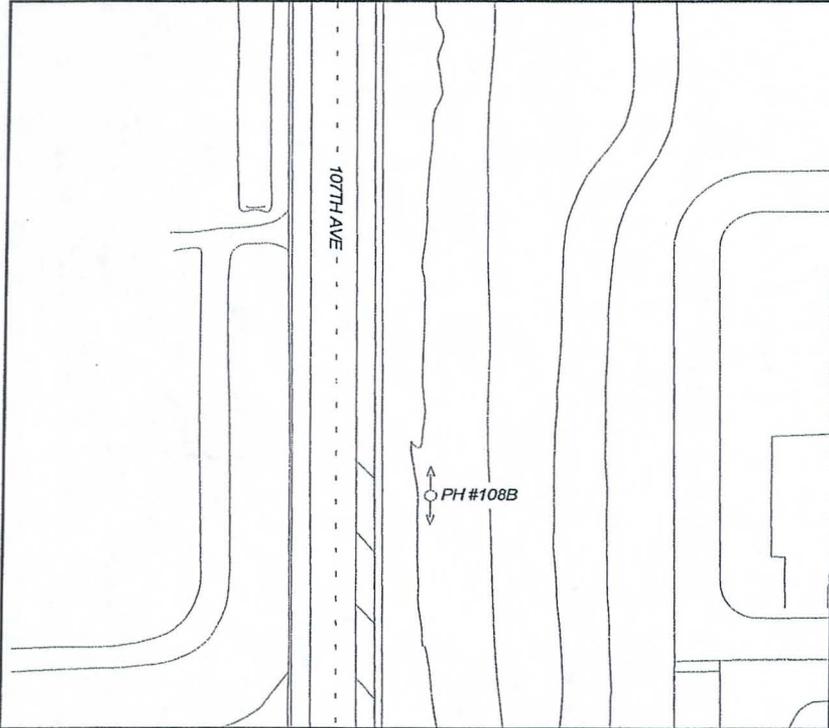
Test Hole # 108B
 Date Dug 1/14/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Cherry
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>			
SURFACE ELEVATION	964.57	← WIDTH/O.D. → 4.5"	
TOP ELEVATION	959.75	○	4.82 TOP DEPTH (FEET)
BOTTOM ELEVATION	959.37		5.20 BOTTOM (FEET)

RIBBON COLOR Orange

COORDINATES: NORTHING 877825.98 EASTING 586404.08

STATIONING: STATION None OFFSET None

PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt

SIZE 4" TYPE PVC FACILITY OWNER Qwest Local Network

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

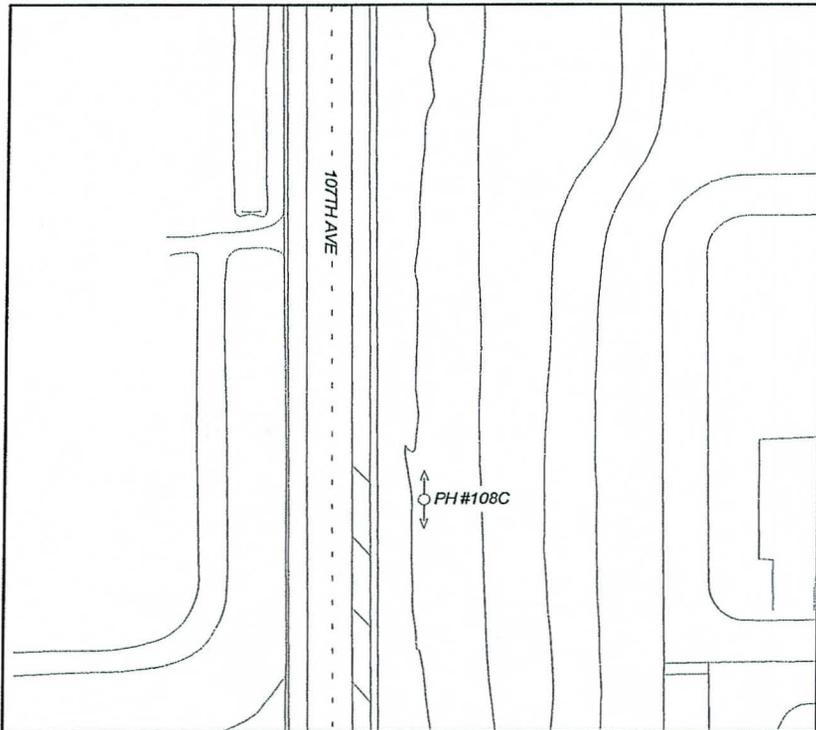
Test Hole # 108C
 Date Dug 1/14/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Cherry
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

RIBBON COLOR White

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>		
SURFACE ELEVATION	964.51	
TOP ELEVATION	959.61	← WIDTH/O.D. → 7"
BOTTOM ELEVATION	959.41	4.90 TOP DEPTH (FEET)
	○○	5.10 BOTTOM (FEET)

COORDINATES: NORTHING 877825.90 EASTING 586404.59
 STATIONING: STATION None OFFSET None
 PAVING THICKNESS None PAVING TYPE None SOIL CONDITION Dirt
 SIZE Two 2" TYPE PVC FACILITY OWNER Unknown

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

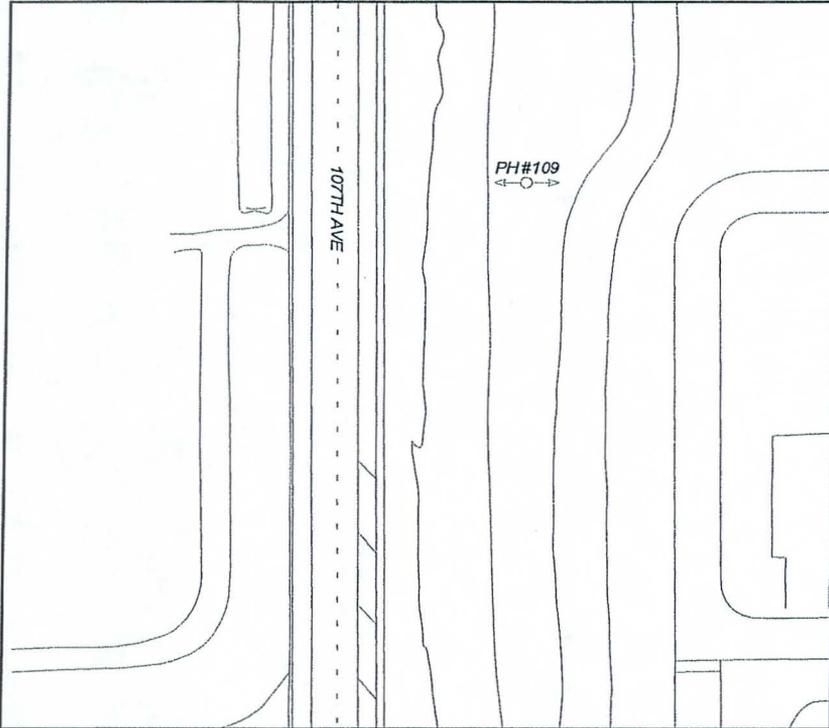
Test Hole # 109
 Date Dug 1/14/2011
 Project # AZS0929
 Phase # 009
 Location 107th Avenue south of Lower Buckeye Road



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. Cherry
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

RIBBON COLOR Blue

COORDINATES: NORTHING 878015.73

STATIONING: STATION None

PAVING THICKNESS None PAVING TYPE None

SIZE 8" TYPE DIP

CROSS SECTION - NOT TO SCALE

FACING <u>West</u>		
SURFACE ELEVATION	958.92	
TOP ELEVATION	954.22	4.70 TOP DEPTH (FEET)
BOTTOM ELEVATION	953.47	5.45 BOTTOM (FEET)

WIDTH/O.D. 9.05"

EASTING 586454.64

OFFSET None

SOIL CONDITION Dirt

FACILITY OWNER City of Avondale Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

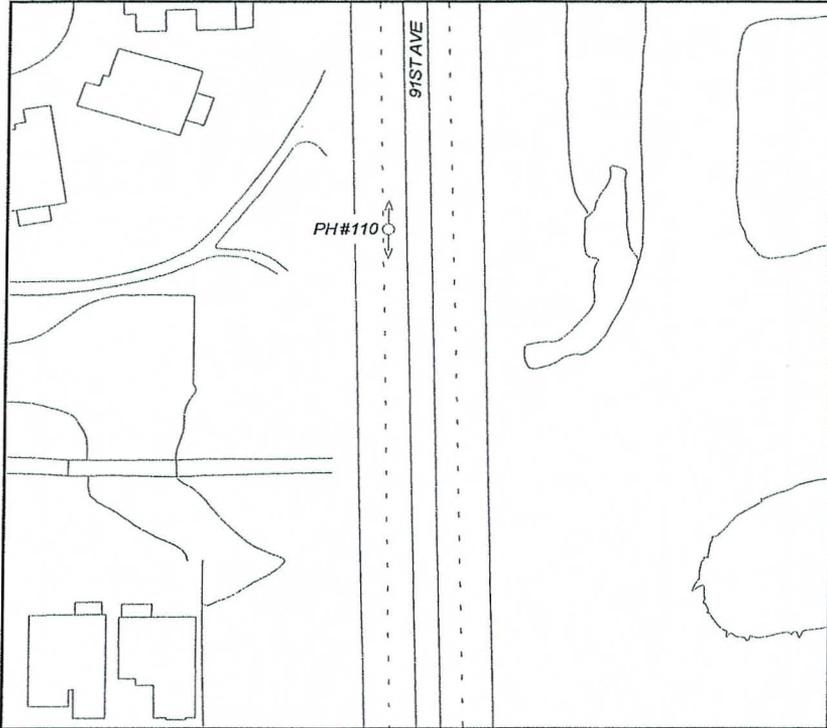
Test Hole # 110
 Date Dug 1/13/2011
 Project # AZS0929
 Phase # 009
 Location 91st Avenue south of Lower Buckeye Road



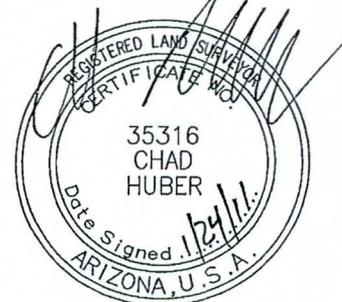
4561 East McDowell Road, Phoenix, AZ 85008-4504
 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. McCarty
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

CROSS SECTION - NOT TO SCALE

FACING <u>North</u>	
SURFACE ELEVATION <u>992.55</u>	← WIDTH/O.D. →
TOP ELEVATION <u>985.83</u>	58"
BOTTOM ELEVATION <u>981.00</u>	6.72 TOP DEPTH (FEET)
	11.55 BOTTOM (FEET)

RIBBON COLOR Purple

COORDINATES: NORTHING 878509.92

EASTING 596701.73

STATIONING: STATION None

OFFSET None

PAVING THICKNESS 5" PAVING TYPE Asphalt SOIL CONDITION Sand / Dirt

SIZE 48" TYPE RGRCP FACILITY OWNER City of Tolleson Reclaimed Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

TEST HOLE DATA REPORT

Test Hole # 111
 Date Dug 1/13/2011
 Project # AZS0929
 Phase # 009
 Location 91st Avenue south of Lower Buckeye Road



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 Tel. (602) 454-0402 Fax. (602) 458-9359

SUE Crew J. McCarty
 Truck # 558
 City Avondale
 County Maricopa

LOCATION PLAN - NOT TO SCALE



N



EXPIRES 09/30/2012

SITE BENCHMARK

AZTEC CONTROL POINT # 106
 ELEV. = 991.42

RIBBON COLOR Purple

COORDINATES: NORTHING 878513.48

STATIONING: STATION None

PAVING THICKNESS None PAVING TYPE None

SIZE 36" TYPE RGRCP

CROSS SECTION - NOT TO SCALE

FACING North

SURFACE ELEVATION	993.03	← WIDTH/O.D. →	
TOP ELEVATION	985.75	44"	7.28 TOP DEPTH (FEET)
BOTTOM ELEVATION	982.08		10.95 BOTTOM (FEET)

EASTING 596712.91

OFFSET None

SOIL CONDITION Sand / Dirt

FACILITY OWNER City of Tolleson Reclaimed Water

COMMENTS:

PREPARED BY: M. Huber

CHECKED BY: A. Mehler

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APPENDIX E

QUANTITIES AND COSTS



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Durango Regional Conveyance Channel

83rd Ave. to 107th Ave. (PHASE I)

PS & E Opinion of Probable Cost

Prepared by: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
105-01	Partnering Allowance	LS	1	\$ 7,500.00	\$ 7,500.00
105-02	Unforeseen Utility Service Line Relocation Allowance	LS	1	\$ 20,000.00	\$ 20,000.00
107-01	AZPDES/SWPPP Permits	LS	1	\$ 2,625.00	\$ 2,625.00
107-02	Public Information and Notification Allowance	LS	1	\$ 20,000.00	\$ 20,000.00
107-03	Project Signs Allowance	LS	1	\$ 3,750.00	\$ 3,750.00
107-04	Restricted Area Delineation	LS	1	\$ 5,000.00	\$ 5,000.00
107-05	Vandalism Allowance	LS	1	\$ 7,500.00	\$ 7,500.00
201-01	Clearing and Grubbing	LS	1	\$ 250,000.00	\$ 250,000.00
202-01	Mobilization	LS	1	\$ 299,600.99	\$ 299,600.99
211-01	Fill Construction	CY	257	\$ 6.00	\$ 1,542.00
215-01	Channel Excavation	CY	90,837	\$ 6.00	\$ 545,022.00
215-02	Basin Excavation	CY	314,832	\$ 6.00	\$ 1,888,992.00
215-03	Unsuitable Subgrade Allowance	CY	5,000	\$ 6.00	\$ 30,000.00
220-01	Riprap, D ₅₀ =6"	CY	613	\$ 80.00	\$ 49,040.00
220-02	Riprap, D ₅₀ =9"	CY	8,741	\$ 90.00	\$ 786,690.00
220-03	Riprap, D ₅₀ =12"	CY	1,771	\$ 105.00	\$ 185,955.00
230-01	Dust Palliative Application	SY	7,797	\$ 10.00	\$ 77,970.00
336-01	Roadway Pavement Section PSS No.1	SY	1,036	\$ 34.20	\$ 35,431.20
336-02	Roadway Pavement Section PSS No.2	SY	2,665	\$ 28.65	\$ 76,352.25
336-03	COP Type "A" Trench Repair, Dwg No. G-10	SY	231	\$ 35.00	\$ 8,085.00
336-04	Pavement Replacement Allowance PSS No.1	SY	500	\$ 10.00	\$ 5,000.00
336-05	Pavement Replacement Allowance PSS No.2	SY	500	\$ 10.00	\$ 5,000.00
336-06	Maintenance Access Road 2" Gravel Mulch/4" Aggregate Base Course	SY	18,584	\$ 13.00	\$ 241,592.00
336-07	Maintenance Access Road 4" Aggregate Base Course	SY	8,687	\$ 9.00	\$ 78,183.00
340-01	Vertical Curb & Gutter, MAG Det 220, Type "A", H=6"	LF	1,602	\$ 15.00	\$ 24,030.00
340-02	Single Curb, MAG Det 222 Type "A"	LF	288	\$ 10.00	\$ 2,880.00
340-03	Concrete Header	LF	1,915	\$ 6.00	\$ 11,490.00
340-04	Concrete Sidewalk, MAG Det 230	SF	6,796	\$ 4.00	\$ 27,184.00
340-05	Concrete Driveway Entrance, 5" Thick, MAG Det 250	SF	1,097	\$ 18.00	\$ 19,746.00
340-06	Concrete Driveway Entrance, Det Dwg D-4	SF	490	\$ 21.00	\$ 10,290.00
345-01	Adjust Frame & Cover to Grade, COP Det P1391, Type "A"	EA	7	\$ 275.00	\$ 1,925.00
345-02	Adjust Manhole Frame & Cover to Grade, COP Det P1422	EA	4	\$ 500.00	\$ 2,000.00
345-03	Adjust Drywell to 4" Above Grade	EA	1	\$ 375.00	\$ 375.00

Durango Regional Conveyance Channel**83rd Ave. to 107th Ave. (PHASE I)**

PS & E Opinion of Probable Cost

Prepared by: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
350-01	Remove Concrete Ditch Lining	LF	4,076	\$ 8.00	\$ 32,608.00
350-02	Remove Irrigation Pipe	LF	267	\$ 25.00	\$ 6,675.00
350-03	Remove Pipe (8" to 36")	LF	2,130	\$ 20.00	\$ 42,600.00
350-04	Remove Concrete Curb and Gutter	LF	1,571	\$ 2.70	\$ 4,241.70
350-05	Remove Concrete Single Curb	LF	266	\$ 2.45	\$ 651.70
350-06	Remove Concrete Header	LF	1,465	\$ 2.00	\$ 2,930.00
350-07	Remove, Salvage and Reinstall Tubular Steel Fence	LF	8	\$ 18.00	\$ 144.00
350-08	Remove Fence	LF	228	\$ 8.00	\$ 1,824.00
350-09	Remove Headwall with Handrail	EA	18	\$ 550.00	\$ 9,900.00
350-10	Remove Catch Basin	EA	1	\$ 400.00	\$ 400.00
350-11	Remove Manhole	EA	1	\$ 1,000.00	\$ 1,000.00
350-12	Remove & Salvage Traffic Sign	EA	2	\$ 200.00	\$ 400.00
350-13	Remove Water Valve	EA	2	\$ 200.00	\$ 400.00
350-14	Remove Valve Box & Cover	EA	2	\$ 150.00	\$ 300.00
350-15	Remove, Salvage and Relocate Street Light with Pull Box	EA	1	\$ 1,250.00	\$ 1,250.00
350-16	Remove Fire Hydrant & Salvage	EA	1	\$ 2,400.00	\$ 2,400.00
350-17	Remove Concrete Sidewalk or Driveway	SF	7,222	\$ 2.00	\$ 14,444.00
350-18	Remove Scupper and Spillway	SF	1,123	\$ 2.50	\$ 2,807.50
350-19	Remove Shotcrete & Grouted Riprap	SY	3,145	\$ 3.00	\$ 9,435.00
350-20	Remove Asphalt Concrete Pavement	SY	4,207	\$ 3.10	\$ 13,041.70
350-21	Remove, Salvage and Relocate Riprap	SY	790	\$ 20.00	\$ 15,800.00
350-22	Remove Inert Materials Allowance	TON	1,000	\$ 6.00	\$ 6,000.00
350-23	Remove Non-Inert Materials Allowance	TON	1,000	\$ 6.00	\$ 6,000.00
401-01	Traffic Control	LS	1	\$ 25,000.00	\$ 25,000.00
405-01	Survey Marker, MAG Det 120-1 Type "B"	EA	3	\$ 100.00	\$ 300.00
420-01	6' Tall Chain Link Fence	LF	779	\$ 10.00	\$ 7,790.00
421-01	4' Wide Gate	EA	1	\$ 450.00	\$ 450.00
421-02	12' Wide Gate	EA	1	\$ 1,350.00	\$ 1,350.00
422-01	Four Strand Wire Fence, Det Dwg D-4	LF	4,213	\$ 11.50	\$ 48,449.50
422-02	4" x 4" Wire Mesh Fence, Det Dwg D-4	LF	93	\$ 25.00	\$ 2,325.00
423-01	Tubular Steel 4' Pedestrian Gate, Det Dwg P-7.3	EA	1	\$ 1,000.00	\$ 1,000.00
430-01	Trees (36" Box)	EA	14	\$ 360.00	\$ 5,040.00
430-02	Trees (24" Box)	EA	34	\$ 250.00	\$ 8,500.00

Durango Regional Conveyance Channel
83rd Ave. to 107th Ave. (PHASE I)

PS & E Opinion of Probable Cost

Prepared by: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
430-03	Shrubs (5 Gallon)	EA	283	\$ 30.00	\$ 8,490.00
430-04	Turf Grass Sod	SF	44,581	\$ 1.00	\$ 44,581.00
430-05	Turf Grass Seed	SF	2,677	\$ 0.10	\$ 267.70
430-06	Native Seed	SY	268,980	\$ 0.45	\$ 121,041.00
430-07	Stabilized Decomposed Granite Trail 1/4 Inch Minus	SY	1,312	\$ 13.50	\$ 17,712.00
430-08	Gravel Mulch 1 1/4 Inch Minus	SY	77,387	\$ 3.15	\$ 243,769.05
430-09	Gravel Mulch 3 Inch Minus	SY	28,738	\$ 3.60	\$ 103,456.80
430-10	Landscape Allowance	LS	1	\$ 10,000.00	\$ 10,000.00
431-01	Restoration Area "A"	LS	1	\$ 4,446.00	\$ 4,446.00
431-02	Restoration Area "B"	LS	1	\$ 73,767.00	\$ 73,767.00
431-03	Restoration Area "C"	LS	1	\$ 138,652.00	\$ 138,652.00
431-04	Restoration Area "D"	LS	1	\$ 49,893.00	\$ 49,893.00
431-05	Restoration Area "E"	LS	1	\$ 47,046.00	\$ 47,046.00
431-06	Restoration Area "F"	LS	1	\$ 90,928.00	\$ 90,928.00
431-07	Restoration Area "G"	LS	1	\$ 91,371.00	\$ 91,371.00
431-08	Restoration Area "H"	LS	1	\$ 39,294.00	\$ 39,294.00
431-09	Restoration Area "I"	LS	1	\$ 3,222.00	\$ 3,222.00
431-10	Restoration Area "J"	LS	1	\$ 32,067.00	\$ 32,067.00
440-01	Emitter (Assembly)(Single-Outlet)	EA	197	\$ 15.00	\$ 2,955.00
440-02	Emitter (Assembly)(Multi-Outlet)	EA	127	\$ 22.00	\$ 2,794.00
440-03	Turf Rotor Assembly	EA	59	\$ 125.00	\$ 7,375.00
440-04	Turf Remote Control Valve Assembly (2 Inch)	EA	1	\$ 325.00	\$ 325.00
440-05	Air Vacuum Relief Assembly (1 Inch)	EA	0	\$ 350.00	\$ -
440-06	Gate Valve (4 Inch)	EA	0	\$ 600.00	\$ -
440-07	Pipe (PVC)(3/4 Inch)(SDR 21)(Class 200)	LF	5,994	\$ 2.00	\$ 11,988.00
440-08	Pipe (PVC)(1 Inch)(Schedule 40)	LF	770	\$ 2.50	\$ 1,925.00
440-09	Pipe (PVC)(1 1/4 Inch)(Schedule 40)	LF	467	\$ 2.75	\$ 1,284.25
440-10	Pipe (PVC)(1 1/2 Inch)(Schedule 40)	LF	369	\$ 3.00	\$ 1,107.00
440-11	Pipe (PVC)(2 Inch)(Schedule 40)	LF	608	\$ 3.50	\$ 2,128.00
440-12	Pipe (PVC)(2 1/2 Inch)(Schedule 40)	LF	328	\$ 4.00	\$ 1,312.00
440-13	Pipe (PVC)(4 Inch)(Schedule 40)(Ring Tite)	LF	0	\$ 7.00	\$ -
464-01	Install New Sign Post with Foundation, COP Det P1023	EA	1	\$ 100.00	\$ 100.00
464-02	Install New Sign	SF	9	\$ 25.00	\$ 225.00

Durango Regional Conveyance Channel

83rd Ave. to 107th Ave. (PHASE I)

PS & E Opinion of Probable Cost

Prepared by: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
464-03	Relocate Salvaged Sign	EA	2	\$ 125.00	\$ 250.00
505-01	Concrete Box Culvert (3-10'X6') (SD-15)	EA	1	\$ 136,530.60	\$ 136,530.60
505-02	Concrete Box Culvert (3-8'X5') (SD-20)	EA	1	\$ 174,880.87	\$ 174,880.87
505-03	Concrete Box Culvert (2-6'X4') (SD-25)	EA	1	\$ 78,660.04	\$ 78,660.04
505-04	Concrete Box Culvert (2-10'X4') (SD-30)	EA	1	\$ 76,871.70	\$ 76,871.70
505-05	Concrete Box Culvert (1-10'X4') (SD-35)	EA	1	\$ 113,037.27	\$ 113,037.27
505-06	Concrete Box Culvert (2-10'X4') (SD-40)	EA	1	\$ 308,998.50	\$ 308,998.50
505-07	Concrete Box Culvert (2-12'X4') (SD-45)	EA	1	\$ 372,240.18	\$ 372,240.18
505-08	Concrete Box Culvert (1-12'X4') (SD-50)	EA	1	\$ 96,676.10	\$ 96,676.10
505-09	Concrete Box Culvert (1-6'X5') (SD-55)	EA	1	\$ 129,765.52	\$ 129,765.52
505-10	Concrete Box Culvert (1-6'X5') (SD-60)	EA	1	\$ 130,341.58	\$ 130,341.58
505-11	Concrete Box Culvert (1-6'X4') (SD-65)	EA	1	\$ 43,133.46	\$ 43,133.46
505-12	Concrete Box Culvert (3-10'X4') (SD-70)	EA	1	\$ 516,431.29	\$ 516,431.29
505-13	Reinforced Concrete Pipe (4-48" RGRCP) (SD-80)	EA	1	\$ 95,250.00	\$ 95,250.00
505-14	Concrete Box Culvert (1-10'X6') (SD-82)	EA	1	\$ 176,948.74	\$ 176,948.74
505-15	Weir (SD-83)	EA	1	\$ 317,006.30	\$ 317,006.30
505-16	Concrete Box Culvert (3-12'X5') (SD-85)	EA	1	\$ 377,058.40	\$ 377,058.40
505-17	Catch Basin COP Std P-1570, Type "N" Triple T=6"	EA	1	\$ 4,500.00	\$ 4,500.00
505-18	Catch Basin COP Std P-1569, Type "M" L=17', V=3.3'	EA	1	\$ 5,500.00	\$ 5,500.00
505-19	Catch Basin COP Std P-1569, Type "M" L=3', V=2.5'	EA	1	\$ 5,000.00	\$ 5,000.00
505-20	Catch Basin, MAG Det 535, Type "F"	EA	1	\$ 2,800.00	\$ 2,800.00
505-21	Concrete Scupper and Spillway, MAG Det 206-1	SF	325	\$ 21.00	\$ 6,825.00
505-22	Headwall With Trash Rack, Det Dwg D-6	EA	4	\$ 5,000.00	\$ 20,000.00
505-23	Headwall With Flap Gate, Det Dwg D-5	EA	2	\$ 5,500.00	\$ 11,000.00
505-24	Headwall, Dwg PI-4	EA	4	\$ 3,200.00	\$ 12,800.00
505-25	Concrete Lined (Irrigation) Ditch with 1' Bottom, Dwg PI-2	LF	3,744	\$ 20.00	\$ 74,880.00
516-01	Distributing Port w/12" Pipe, Det 4, Dwg PI-2	EA	29	\$ 450.00	\$ 13,050.00
516-02	Distributing Port w/18" Pipe, Det 4, Dwg PI-2	EA	12	\$ 475.00	\$ 5,700.00
516-03	Canal Gate with Crank Fullerform Model CG-12-30	EA	5	\$ 1,500.00	\$ 7,500.00
530-01	Paint Existing Structures At Sta 107+48, Rt 29'	EA	1	\$ 164.15	\$ 164.15
530-02	Paint Existing Structures At Sta 110+44, Rt 46'	EA	1	\$ 107.20	\$ 107.20
530-03	Paint Existing Structures At Sta 115+96, Rt 41'	EA	1	\$ 60.30	\$ 60.30
530-04	Paint Existing Structures At Sta 131+72, Lt 165'	EA	1	\$ 60.30	\$ 60.30

Durango Regional Conveyance Channel
83rd Ave. to 107th Ave. (PHASE I)

PS & E Opinion of Probable Cost

Prepared by: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
530-05	Paint Existing Structures At Sta 615+65	EA	1	\$ 1,212.70	\$ 1,212.70
530-06	Paint Existing Structures At Sta 615+70, Rt 47'	EA	1	\$ 1,427.10	\$ 1,427.10
530-07	Paint Existing Structures At Sta 501+75, Lt 165'	EA	1	\$ 5,849.10	\$ 5,849.10
530-08	Paint Existing Structures At Sta 143+37, Lt 116'	EA	1	\$ 1,721.90	\$ 1,721.90
530-09	Paint Existing Structures At Sta 155+30, Lt 132'	EA	1	\$ 2,298.10	\$ 2,298.10
530-10	Paint Existing Structures At Sta 158+30, Rt 186'	EA	1	\$ 261.30	\$ 261.30
530-11	Paint Existing Structures At Sta 158+31	EA	1	\$ 1,252.90	\$ 1,252.90
530-12	Paint Existing Structures At Sta 165+76	EA	1	\$ 857.60	\$ 857.60
530-13	Paint Existing Structures At Sta 176+75	EA	1	\$ 726.95	\$ 726.95
530-14	Paint Existing Structures At Sta 184+60	EA	1	\$ 1,132.30	\$ 1,132.30
530-15	Paint Existing Structures At Sta 187+74	EA	1	\$ 1,574.50	\$ 1,574.50
530-16	Paint Existing Structures At Sta 198+73	EA	1	\$ 1,360.10	\$ 1,360.10
530-17	Paint Existing Structures At Sta 202+34	EA	1	\$ 1,400.30	\$ 1,400.30
530-18	Paint Existing Structures At Sta 266+60, Lt 135'	EA	1	\$ 201.00	\$ 201.00
602-01	8"SWG PVC Pipe Sleeve	LF	124	\$ 25.00	\$ 3,100.00
610-01	Install 8" Restrained Water Line, Dwg No. D-1	LF	221	\$ 150.00	\$ 33,150.00
610-02	Install 12" Restrained Water Line, Dwg No. D-1	LF	386	\$ 185.00	\$ 71,410.00
610-03	18" Steel Casing Pipe	LF	61	\$ 700.00	\$ 42,700.00
610-04	24" Steel Casing Pipe	LF	86	\$ 800.00	\$ 68,800.00
610-05	Install Fire Hydrant, COP Det P1360 & P1362	EA	1	\$ 2,400.00	\$ 2,400.00
610-06	Vertical Realign 8" Waterline, COP Det P1370	EA	1	\$ 9,000.00	\$ 9,000.00
618-01	12" RGRCP, Class III	LF	123	\$ 55.00	\$ 6,765.00
618-02	24" RGRCP, Class III	LF	833	\$ 70.00	\$ 58,310.00
618-03	30" RGRCP, Class III	LF	92	\$ 80.00	\$ 7,360.00
618-04	36" RGRCP, Class III	LF	20	\$ 120.00	\$ 2,400.00
625-01	Irrigation Manhole, Dwg PI-3	EA	1	\$ 3,000.00	\$ 3,000.00
630-01	Install 6" Gate Valve with VB&C, COP P1391	EA	1	\$ 375.00	\$ 375.00
630-02	Install 8" Gate Valve with VB&C, COP P1391	EA	2	\$ 425.00	\$ 850.00
640-01	Portable Pump	EA	1	\$ 13,000.00	\$ 13,000.00
702-01	Base Material Allowance	SY	11,110	\$ 9.00	\$ 99,990.00
Total Phase 1					\$ 9,917,642.69

Durango Regional Conveyance Channel

83rd Ave. to 107th Ave. (PHASE I)

PS & E Opinion of Probable Cost

Prepared by: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
APPENDIX A-SRP PLANS IRRIGATION RELOCATION					
350-01	Remove Concrete Ditch Lining	LF	546	\$ 8.00	\$ 4,368.00
350-02	Remove Irrigation Pipe	LF	282	\$ 25.00	\$ 7,050.00
350-24	Remove Irrigation Headwall	EA	6	\$ 550.00	\$ 3,300.00
350-25	Remove Irrigation Manhole	EA	1	\$ 1,500.00	\$ 1,500.00
350-26	Remove Irrigation Gates	EA	2	\$ 350.00	\$ 700.00
505-25	Concrete Lined (Irrigation) Ditch with 1' Bottom, Dwg PI-2	LF	42	\$ 20.00	\$ 840.00
618-02	24" RGRCP, Class III	LF	330	\$ 80.00	\$ 26,400.00
618-03	30" RGRCP, Class III	LF	88	\$ 90.00	\$ 7,920.00
618-05	48" RGRCP, Class III	LF	118	\$ 160.00	\$ 18,880.00
618-06	54" RGRCP, Class III	LF	138	\$ 190.00	\$ 26,220.00
618-07	30"RGRCP, Class IV	LF	312	\$ 110.00	\$ 34,320.00
618-08	54" RGRCP, Class IV	LF	224	\$ 215.00	\$ 48,160.00
625-02	Irrigation Manhole per SRP Dwg A-910-G104	EA	1	\$ 20,000.00	\$ 20,000.00
625-03	Irrigation Manhole per SRP Dwg 02920MH1 (Sht 8)	EA	5	\$ 15,000.00	\$ 75,000.00
625-04	Irrigation Headwall per SRP Dwg 02920HW1 (Sht 9)	EA	4	\$ 5,000.00	\$ 20,000.00
625-05	Irrigation Headwall per SRP Dwg 02920HT1 (Sht 10)	EA	1	\$ 4,000.00	\$ 4,000.00
625-06	Irrigation Standpipe per SRP Dwg 02920PSP (Sht 25)	EA	2	\$ 35,000.00	\$ 70,000.00
Total Phase 1 Appendix A- SRP PLANS IRRIGATION RELOCATIONS					\$ 368,658.00
Grand Total Phase 1					\$ 10,286,300.69
** GRAND TOTAL COST DOES NOT INCLUDE SRP PLTO IRRIGATION STRUCTURES AND HURLEY & BOSCHMA RIGHT OF WAY					
*** NPI (NON PAY ITEM) THE COST OF THESE ITEMS IS INCLUDED OR INCIDENTAL TO OTHER WORK AND HAS BEEN IDENTIFIED IN THE SPECIFCATIONS					

Durango Regional Conveyance Channel
83rd Ave. to 107th Ave. (PHASE I - Tuscano School)

PS & E Opinion of Probable Cost
 Prepared by: J2 Engineering & Environmental Design
 Date: 03-09-2012

Description	Unit	Unit Cost	Quantity	Extended Amount
6' Tall Chain Link Fence	LF	\$ 10.00	779	\$ 7,790.00
4' Wide Gate	EA	\$ 450.00	1	\$ 450.00
12' Wide Gate	EA	\$ 1,350.00	1	\$ 1,350.00
Turf Grass Seed	SF	\$ 0.10	2677	\$ 267.70
Gravel Mulch 1 1/4 Inch Minus	SY	\$ 3.15	1780	\$ 5,607.00
Fill Construction	CY	\$ 6.00	257	\$ 1,542.00
Riprap, D50=9"	CY	\$ 90.00	83	\$ 7,470.00
Remove Concrete Header	LF	\$ 2.00	229	\$ 458.00
Concrete Header	LF	\$ 6.00	578	\$ 3,468.00
Subtotal				\$ 28,402.70
Irrigation Phase 1				
Turf Rotor Assembly	EA	\$125.00	6	\$ 750.00
Pipe (PVC)(1 1/2 Inch)(Schedule 40)	LF	\$3.00	77	\$ 231.00
Pipe (PVC)(2 Inch)(Schedule 40)	LF	\$3.50	70	\$ 245.00
Phase 1 Grand Total				\$ 29,628.70

*Note: These Items for Phase I - Tuscano School are included in the Phase I Cost Estimate on the previous pages. These are just the items associated with the Tuscano School site

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Durango Regional Conveyance Channel

75th Ave. to 83rd Ave. (PHASE 2)

PS & E Opinion of Probable Cost

Prepared By: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
105-01	Partnering Allowance	LS	1	\$2,500.00	\$2,500
105-02	Unforeseen Utility Service Line Relocate Allowance	LS	1	\$10,000.00	\$10,000
107-01	AZPDES/SWPPP Permits	LS	1	\$875.00	\$875
107-02	Public Information and Notification Allowance	LS	1	\$3,000.00	\$3,000
107-03	Project Signs Allowance	LS	1	\$1,250.00	\$1,250
107-04	Restricted Area Delineation	LS	1	\$10,000.00	\$10,000
107-05	Vandalism Allowance	LS	1	\$2,500.00	\$2,500
201-01	Clearing and Grubbing	LS	1	\$57,985.50	\$57,986
202-01	Mobilization	LS	1	\$39,219.41	\$39,219
215-01	Channel Excavation	CY	21,161	\$6.00	\$126,966
215-02	Unsuitable Subgrade Allowance	CY	1,000	\$6.00	\$6,000
220-01	Riprap, D ₅₀ =6"	CY	525	\$80.00	\$42,000
220-02	Riprap, D ₅₀ =9"	CY	4,794	\$90.00	\$431,460
220-03	Riprap, D ₅₀ =12"	CY	2,225	\$105.00	\$233,625
336-01	Roadway Pavement Section PSS No.2	SY	177	\$28.65	\$5,071
336-02	COP Type "A" Trench Repair, Dwg No. G-8	SY	14	\$35.00	\$490
336-03	Pavement Replacement Allowance PSS No.2	SY	100	\$10.00	\$1,000
336-04	Maintenance Access Road 2" Gravel Mulch/4" Aggregate Base Course	SY	934	\$13.00	\$12,142
340-01	Vertical Curb & Gutter, MAG Det 220, Type "A", H=6"	LF	99	\$15.00	\$1,485
340-02	Concrete Sidewalk, MAG Det 230	SF	695	\$4.00	\$2,780
340-03	Sidewalk Allowance	SF	200	\$4.00	\$800
345-01	Adjust Frame & Cover to Grade, COP Det P1391 Type "A"	EA	1	\$275.00	\$275
350-01	Remove Concrete Header	LF	657	\$2.00	\$1,314
350-02	Remove Pipe (8" to 36" Dia)	LF	75	\$20.00	\$1,500
350-03	Remove Concrete Curb & Gutter	LF	99	\$2.70	\$267
350-04	Remove, Salvage and Reinstall Tubular Steel Fence	LF	49	\$18.00	\$882
350-05	Remove Water Valve	EA	1	\$200.00	\$200
350-06	Remove Valve Box & Cover	EA	1	\$150.00	\$150
350-07	Remove Headwall with Handrail	EA	2	\$550.00	\$1,100
350-08	Remove Concrete Sidewalk or Driveway	SF	695	\$2.00	\$1,390
350-09	Remove Scupper and Spillway	SF	94	\$2.50	\$235
350-10	Remove Asphalt Concrete Pavement	SY	191	\$3.10	\$592
401-01	Traffic Control	LS	1	\$10,000.00	\$10,000
430-01	Gravel Mulch 1 - 1/4" Minus	SY	24,521	\$3.15	\$77,241
430-02	Gravel Mulch 3" Minus	SY	14,000	\$3.60	\$50,400
430-03	Native Seed	SY	46,051	\$0.45	\$20,723
430-04	Landscape Allowance	SY	500	\$3.00	\$1,500
431-01	Restoration Area "A"	LS	1	\$21,790.00	\$21,790

Durango Regional Conveyance Channel

75th Ave. to 83rd Ave. (PHASE 2)

PS & E Opinion of Probable Cost

Prepared By: J2 Engineering & Environmental Design

Date: 03-09-2012

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
440-01	Air Vacuum Relief Assembly (1 Inch)	EA	1	\$350.00	\$350
440-02	Gate Valve (4 Inch)	EA	1	\$600.00	\$600
440-03	Pipe (PVC)(4 Inch)(Schedule 40)(Ring Tite)	LF	843	\$7.00	\$5,901
505-01	Concrete Box Culvert (2-10'X4') (SD-95)	EA	1	\$122,853.87	\$122,854
505-02	Concrete Scupper and Spillway, MAG Det 206-1	SF	240	\$21.00	\$5,040
530-01	Paint Existing Structures At Sta 271+50, Lt 148'	EA	1	\$120.60	\$121
530-02	Paint Existing Structures At Sta 279+51, Lt 50'	EA	1	\$120.60	\$121
530-03	Paint Existing Structures At Sta 287+05, Lt 0'	EA	1	\$1,333.30	\$1,333
530-04	Paint Existing Structures At Sta 291+04, Rt 154'	EA	1	\$67.00	\$67
530-05	Paint Existing Structures At Sta 293+59, Rt 37'	EA	1	\$67.00	\$67
530-06	Paint Existing Structures At Sta 299+08, Rt 32'	EA	1	\$67.00	\$67
530-07	Paint Existing Structures At Sta 300+63, Rt 26'	EA	1	\$67.00	\$67
530-08	Paint Existing Structures At Sta 304+16, Rt 21'	EA	1	\$67.00	\$67
530-09	Paint Existing Structures At Sta 305+20, Rt 27'	EA	1	\$67.00	\$67
530-10	Paint Existing Structures At Sta 308+48, Lt 78'	EA	1	\$177.55	\$178
530-11	Paint Existing Structures At Sta 309+51, Lt 0'	EA	1	\$696.80	\$697
530-12	Paint Existing Structures At Sta 310+99, Rt 28'	EA	1	\$67.00	\$67
610-01	Install 8" Restrained Water Line, Dwg No. D-1	LF	75	\$150.00	\$11,250
610-02	18" Steel Casing	LF	24	\$700.00	\$16,800
630-01	Install 8" Gate Valve with VB&C, COP P1391	EA	1	\$425.00	\$425
702-01	Base Material Allowance	SY	100	\$9.00	\$900
Total Phase 2				\$	1,347,746.18



APPENDIX F

PROJECT PHOTOS



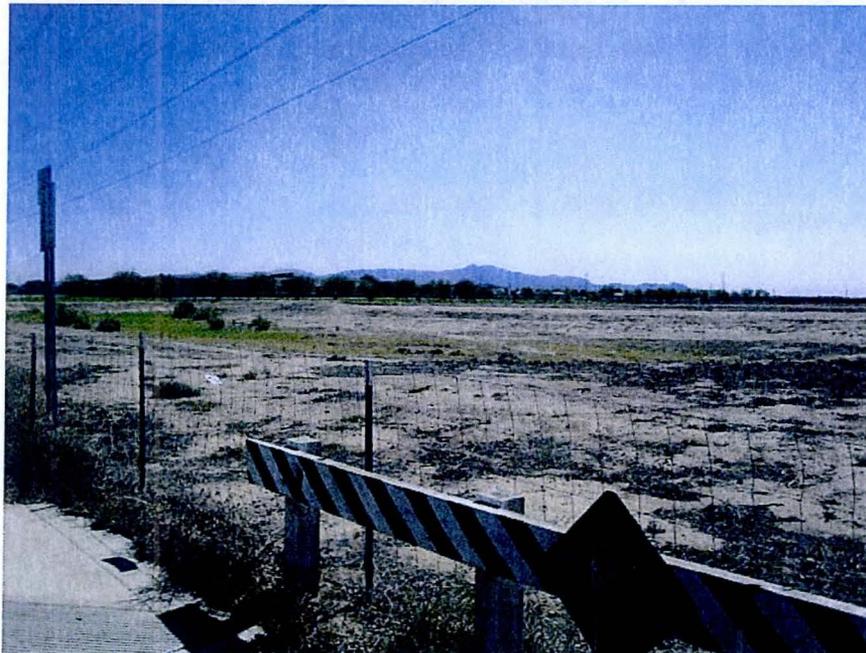
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Reach 1 - 75th Avenue to 83rd Avenue



On Elwood Street, next to power pole – Looking Northwest



On 81st Drive – Looking Southeast



On 83rd Ave, South of Elwood Street – Looking East



Reach 2 - 83rd Avenue to 91st Avenue



On 83rd Ave and Elwood Street – Looking Southwest



In Channel, East side of 91st Ave – Looking West



On Riley Rd and 87th Ave – Looking Northwest



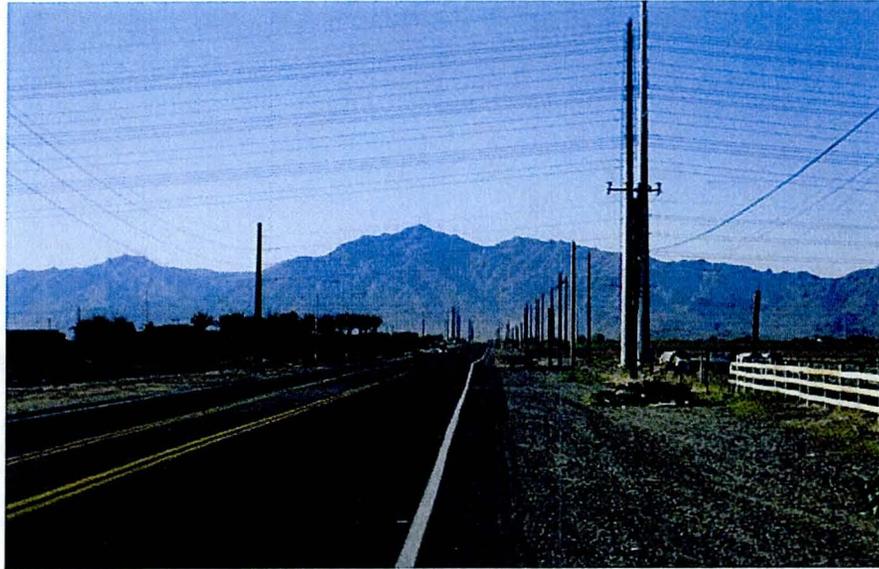
Reach 3 - 91st Avenue to 99th Avenue



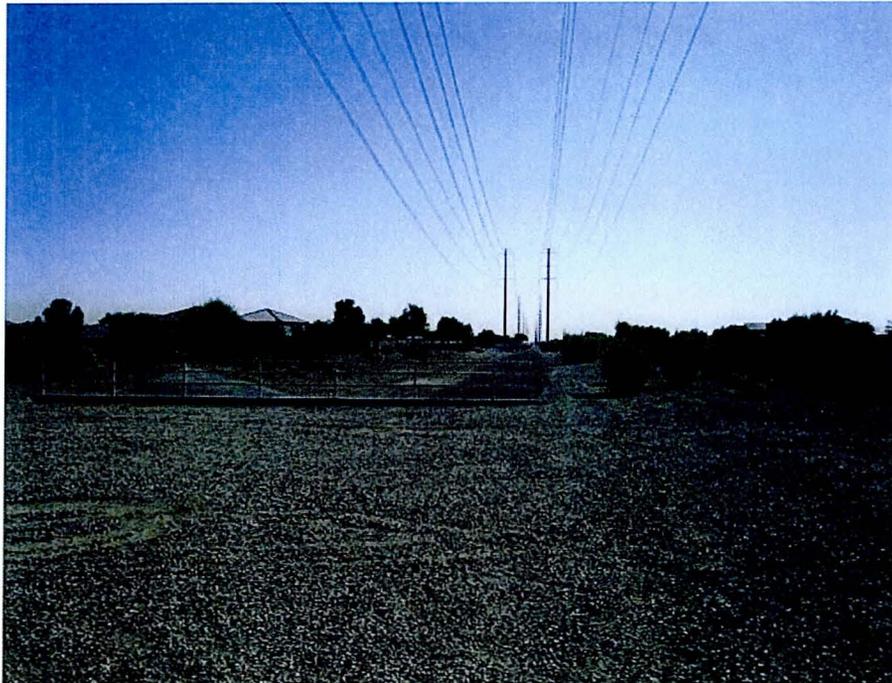
At 96th Ave and Elwood St – Looking East



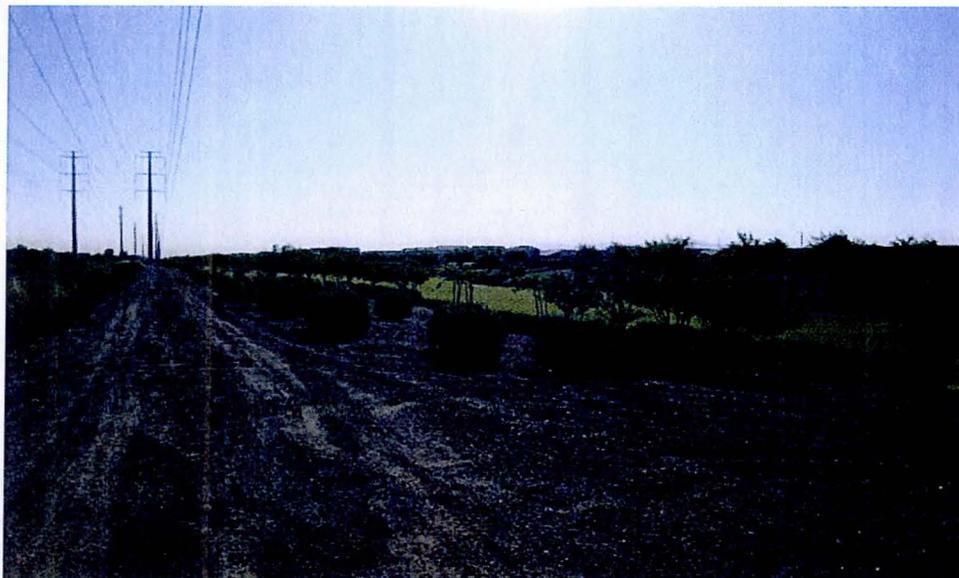
Reach 4 - 99th Avenue to 107th Avenue



At 107th Ave and Elwood St – Looking South



East side of 107th Ave and Elwood St – Looking East



East of 107th Ave and Elwood St – Looking Southeast



At 103rd Ave and Elwood St – Looking East

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