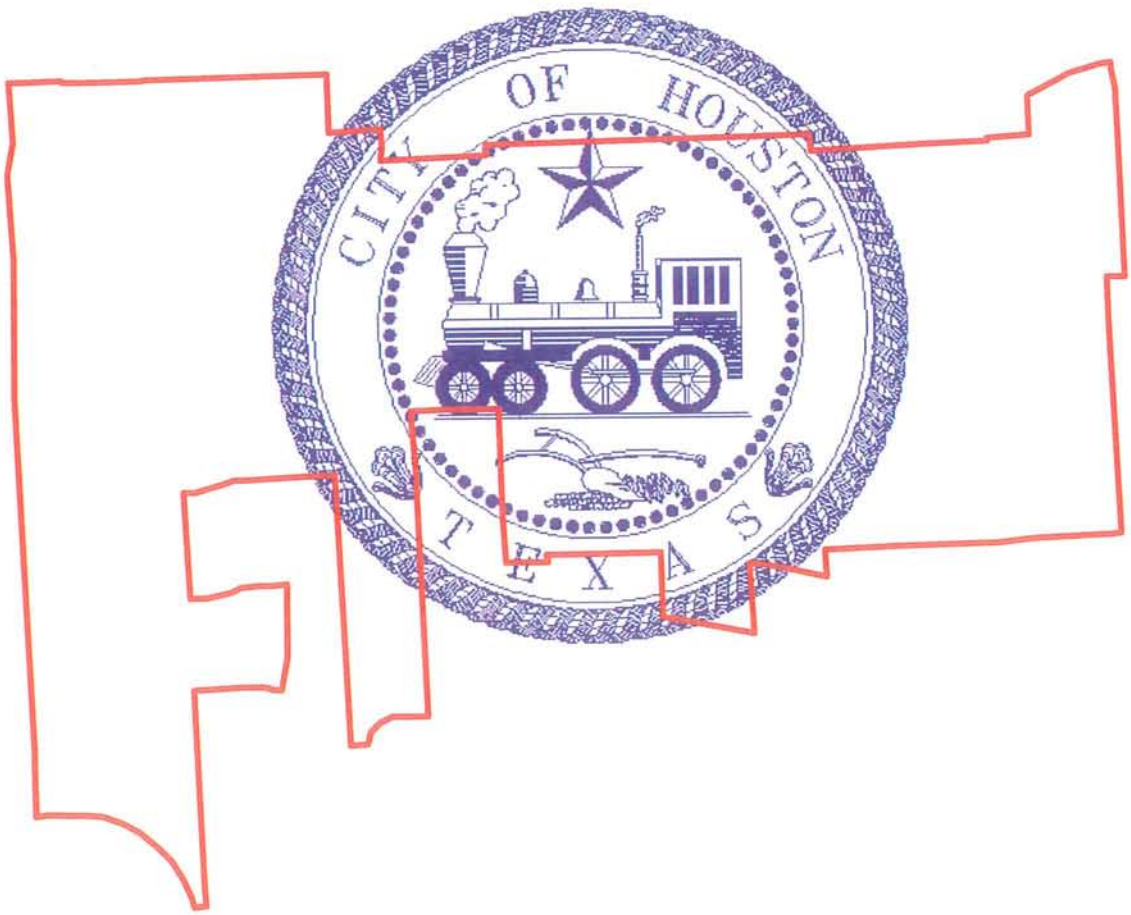
CITY OF HOUSTON

TAX INCREMENT REINVESTMENT ZONE NO.17

DRAINAGE STUDY



Executive Summary

The purpose of this study is to analyze existing storm drainage capacity in the district to determine necessary improvements that would allow for improved drainage in existing and anticipated developed conditions. The study is to be based on existing study information and new modeling where needed to define the drainage needs. The goal of the study is to develop ideas for potential improvements that could be provided by the TIRZ to improve drainage in the district and surrounding areas.

The area has developed under outdated design criteria resulting in undersized storm sewers. The areas downstream of the Tax Increment Reinvestment Zone are residential areas that were developed without consideration of future commercial development upstream. The result is frequent street flooding and some structural flooding in the residential areas. To date, most of the area is developed to its full potential relative to runoff capacity. New anticipated development should not increase the amount of runoff. However, runoff mitigation or storage will be required to provide drainage in the redevelopment areas along the Katy Freeway since an increase in drainage flows to the residential areas would increase the existing drainage capacity deficits.

This report looks at several opportunities to provide the drainage standard while improving the drainage downstream in minor storm events. While these systems will have minimum impact during major storm events, there should be significant improvement in the more frequent rainfall events.

The potential improvements include providing oversized storm systems in the streets that are proposed to be improved by the TIRZ. This option leverages dollars used for paving project to increase the dollars available for drainage improvements. It also allows for the storage to be provided where it will provide the most impact. These systems are expensive, but do not require additional property other than road right-of-way.

New detention ponds are also addressed in the study. Particularly where parks or school playgrounds provide large open areas, shallow detention areas with special drainage systems allow for dual purpose areas that do not impact existing developable property. The cost of this type of system is more cost effective, but there are limited areas within the district that provide this opportunity. Acquiring property in conjunction with a compatible use could also allow for detention ponds over parking structures, tennis courts or similar facilities. A third option is to use the existing right-of-way for W151 to provide a structured pipe system with additional storage that would separate the existing residential drainage systems from the upper system, and providing additional storage.

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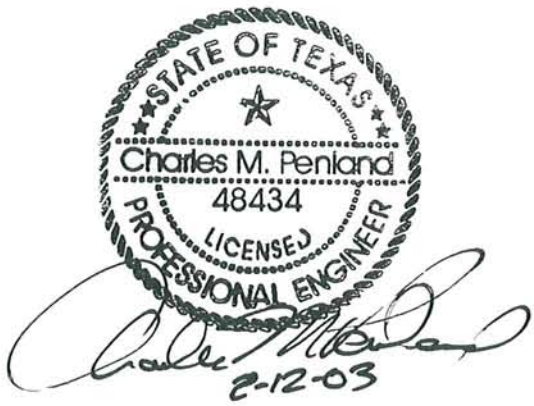

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1.0 INTRODUCTION

1.1 Project Location

Tax Increment Reinvestment Zone #17 (the "TIRZ") is located in Harris County on the west side of Houston. The District includes the area between the Sam Houston Tollroad to the west and Bunker Hill on the east. The northern and southern boundaries extend roughly from Westview on the north to Barryknoll on the south. Exhibit 1 delineates the TIRZ boundaries. The area studied includes some analysis of the contributing watersheds to the north and the trailing watersheds to the south that are outside of the TIRZ boundary. These areas were included to address impact to the TIRZ from the contributing watersheds and impact from the TIRZ on the receiving watersheds.

Exhibit 1. TIRZ #17 Boundary

1.2 Study Purpose

Report Goal:
Identify opportunities for improving drainage in the District and surrounding areas

The purpose of this study is to analyze existing storm drainage capacity in the district to determine necessary improvements that would allow for improved drainage in existing and anticipated developed conditions. The study is to be based on existing study information and new modeling where needed to define the drainage needs. The goal of the study is to develop ideas for potential improvements that could be provided by the TIRZ to improve drainage in the district and surrounding areas.

In particular the objectives are to:

- Determine improvements required to meet the current city design criteria
- Provide detention and infrastructure as necessary to reduce flooding in areas downstream of the TIRZ
- Use existing drainage reports as the basis of the analysis where possible
- Coordinate with other potential TIRZ projects to leverage project costs

1.3 Previous Studies

There have been several studies related to improving drainage in the area. Most of the earlier studies addressed general city drainage needs. There have been other studies prepared for the areas to the east and west of the District, but only a few studies that actually considered systems within the TIRZ.

A report by Turner Collie and Braden (TC&B) was issued in 1972 and updated in 1999, which documented the existing and proposed facility sizes for the Houston area. The studies address existing conditions and proposed improvements in the study areas to meet the needs of the community at the time of the study. The study based its recommendations on the drainage criteria in effect at the time. The existing drainage area divides documented in the 1999 report were assumed to accurately reflect current topographic conditions and was used as the basis of this study for the areas west of Gessner. There are some areas within the TIRZ that were not addressed in this study.

Thompson Professional Group performed a preliminary engineering report and facility design of a new drainage system for the Frostwood area. The improvements created a separate parallel system to W151 ditch and rerouted the drainage from the areas west of W151 to the new system. The new parallel system is restricted at the outflow point in

an attempt to mitigate impact to Buffalo Bayou. The Thompson study included a SWMM analysis of the systems affected by the improvements. This system is under construction at the time of this study.

Klotz Associates, Inc. prepared a study of Rummel Creek for the Harris County Flood Control District. The study addressed improvements to Rummel Creek including potential storm water mitigation facilities and channel improvements. The channel improvements have been constructed. The Flood Control District did not implement the mitigation recommendations.

Interstate Highway 10 is currently under design and a major drainage analysis is being prepared to address the additional needs of the widened freeway. A major detention pond is planned at the western edge of the TIRZ to mitigate the impact to Rummel Creek and Buffalo Bayou. Other significant drainage facilities are planned to handle the freeway drainage to meet federal highway and local criteria. These improvements are not designed provide improved drainage for the adjacent areas. Some efforts have been made to try to work with TxDOT in leveraging their system to reduce costs for both the IH 10 project and any future city improvements in the area.

Other studies have been done in the adjacent areas, but none were found that addressed the TIRZ. There is a pending study of W151 that would address impact to Bunker Hill Village and other areas. This study is waiting on City of Houston approval to move forward.

1.4 Open House Presentation

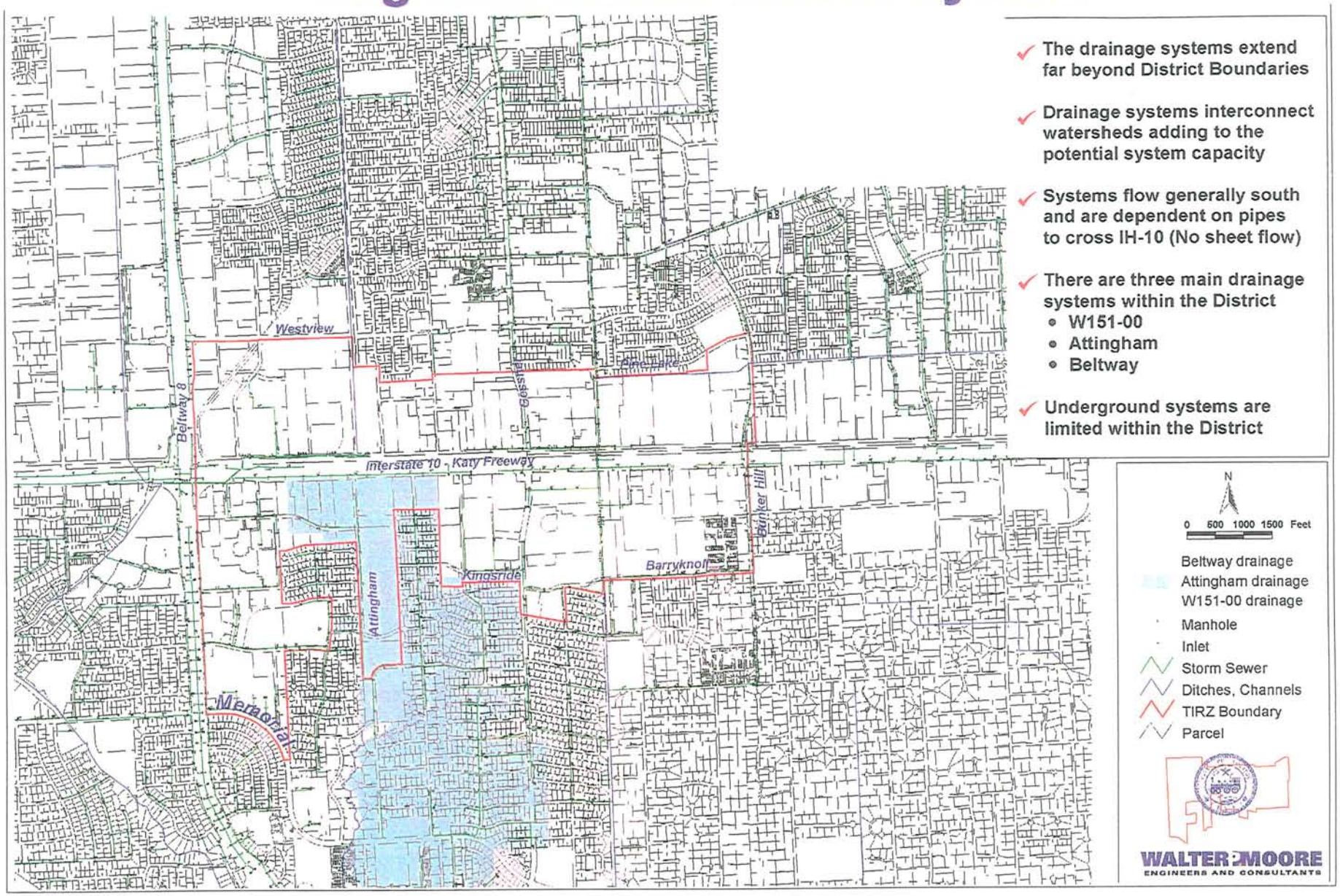
On January 22, 2002, an Open House was held at Memorial Middle School to present the preliminary findings of the study and to obtain input from the residents from the area. A summary of the input is provided in the Appendix. The attendees were asked to comment on what they saw and to provide input on flooding problems experienced in the area. Flooding problems indicated were for the most part to the south of the TIRZ. Several potential storm water mitigation sites were presented and most of the comments were either non-committal or voiced opinions about taking park areas away for detention. The information from the Open House was used to help form the final conclusions for the study.

2.0 Existing Conditions

2.1 Study Database

The base data for this study is the City of Houston Storm Sewer Database records in Global Instrumentation System (GIS) format and information provided by the 1999 TC&B study. Site investigations were done to verify the general locations of trunk lines, drainage ditches and outfall locations. City of Houston record drawings were used to establish missing data in the database and to verify site conditions. The existing drainage area divides (provided by the TC&B study) were imported into base maps obtained from the City of Houston, and changes or deviations in the drainage area divides were noted. Exhibit 2 shows the regional storm sewer system from the City of Houston's GIMS database.

Regional Storm Sewer System



- ✓ The drainage systems extend far beyond District Boundaries
- ✓ Drainage systems interconnect watersheds adding to the potential system capacity
- ✓ Systems flow generally south and are dependent on pipes to cross IH-10 (No sheet flow)
- ✓ There are three main drainage systems within the District
  - W151-00
  - Attingham
  - Beltway
- ✓ Underground systems are limited within the District

Exhibit 2. Regional Storm Sewer System

In general, the horizontal locations of existing facilities shown on the base maps provided by the City of Houston were found to be relatively complete and accurate. The vertical elevations provided on the same existing facilities base maps were found to be incomplete and inaccurate. Record drawings were used to adjust vertical elevations of the storm sewers. Field surveys were not part of this study.

2.2 Existing Conditions

The character of the areas comprising the District is flat prairie sloping gently north to south. The USGS Topographic mapping from 1918 shows poorly drained areas with playa type ponding. The Katy railroad has been a barrier to drainage and Interstate Highway 10 continues to serve in the role of a major influence on drainage in the area. Development of the area has resulted in large piped drainage systems in some corridors such as Gessner, Witte, and Shadowdale, while much of the areas in between remained undrained or served by minor ditch systems. The drainage systems in the area are cross connected with adjacent watersheds and the drainage divide locations often depend on the rainfall patterns. The only historical natural drainage in the area is Rummel Creek that runs from the north central portion of the District south to I-10, then westerly along I-10 out of the District. To the east of the District are Briar Branch and Spring Branch, neither of which serves the District.

There are three watersheds in the district today. The eastern two thirds of the District is served by W151-00-00, which is a concrete lined channel south of the TIRZ. Within the TIRZ, W151 becomes a series of storm sewers branching east and west along Barryknoll and extending north beneath Memorial City Mall. North of I-10, this system splits with one arm continuing north on Witte and the other arm jumping west to Gessner and extending north. The western portion of the District is the Rummel Creek watershed. The area south of I-10 between Gessner and Attingham drains to a ravine known as W153-00-00. Most of the drainage systems north of I-10 are poorly defined, while the systems south of I-10 are more common underground networks. Exhibit 3 shows the storm sewer network and watersheds within the TIRZ.

There are improvements underway at the time of this study in the Memorial Woods and Frostwood areas. These improvements are adding storm sewer capacity and mitigation in the form of oversized pipe and restricted outfall.

Storm Sewer Network

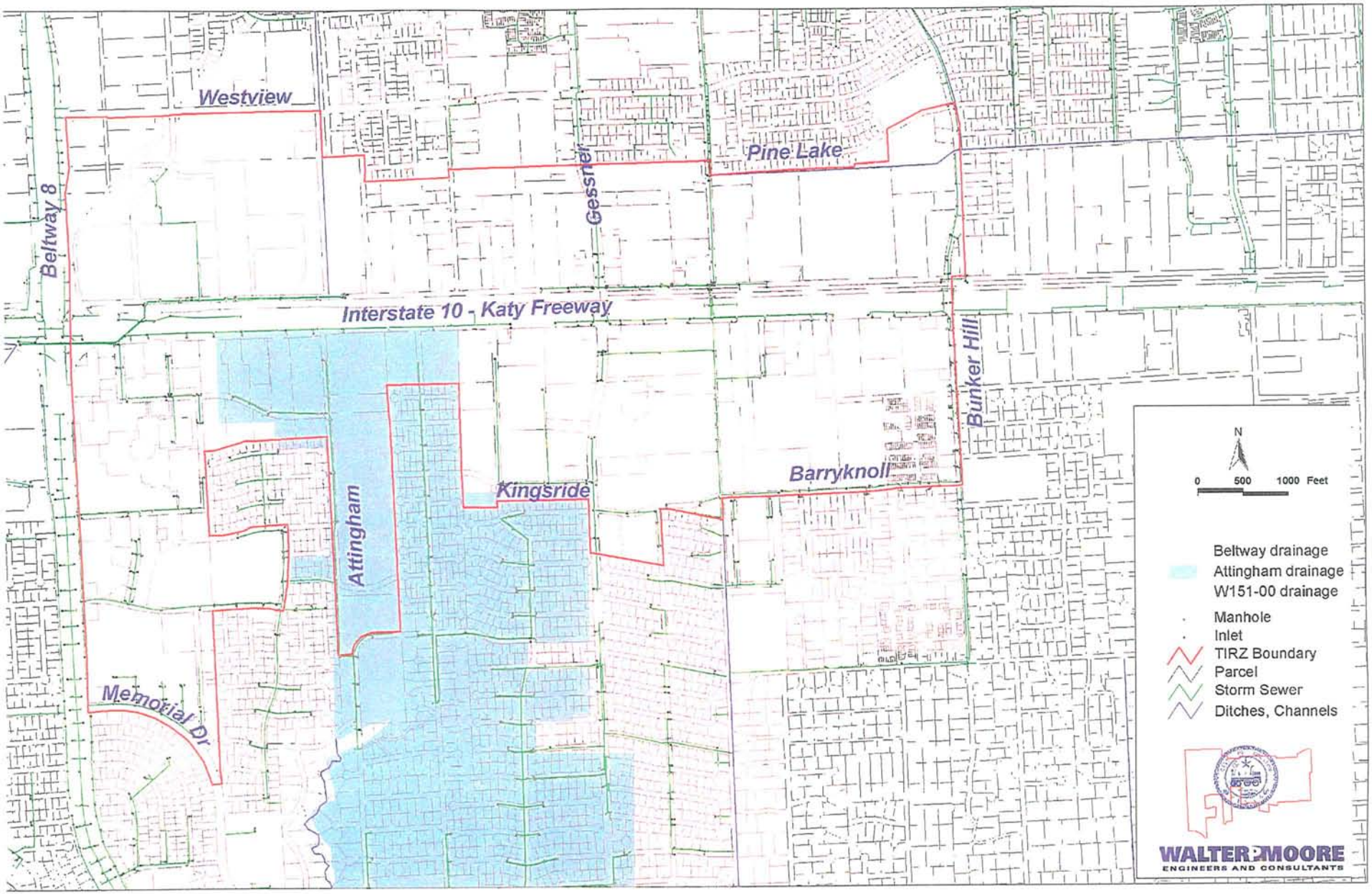


Exhibit 3. Storm Sewer Network and Watersheds

2.3 Flood Problem Areas

Flood Problem:
No natural channels

Flooding in the District and in the surrounding areas is typically street flooding. With no natural channels and with the Shadowdale ditch being the only open channel in the District, there is little opportunity for riverine type flooding. Most flooding in the District is due to intense rainfall in excess of the design capacity of the area storm sewer systems causing street flooding that in extreme events floods residences north and south of the District. The street conveyance of storm water is part of the design intent for extreme event rainfall. However, the lack of channels or sewers with sufficient capacity for extreme event rainfall means that all excess rainfall must use the street system to get to Buffalo Bayou.

Flood Problem:
Rainfall must use street system to get to Buffalo Bayou

The areas most impacted by drainage are the areas south of the District including Memorial Forest, Memorial Woods, Frostwood, and Fonn Villa. In addition, areas outside of the City of Houston in Bunker Hill and Hedwig Village experience similar flooding. Flooding in these areas occurs when the area storm sewer system capacity is exceeded and water travels overland along the streets and roadside ditches south towards Buffalo Bayou. Often the homes are constructed within 1 to 2 feet of the top of curb elevation in front of the house. In other areas the streets are built up higher than the adjacent homes and a roadside ditch is left to carry the storm water. These roads often detain or divert water causing local flooding that can back up into the adjacent homes. Street flooding can get as much as 2 to 3 feet deep in some areas, causing the homes to flood.

Flood Problem:
2 to 3 feet of street flooding has occurred in the past

Most of the District is developed to the potential maximum relative to drainage impact. Anticipated new development in the area should not greatly add to the current conditions rainfall runoff. Only 3% of the District is currently considered undeveloped and therefore, subject to increased runoff if fully developed. This 3% calculation does not include park land and sports fields which are assumed will remain as open spaces. Development of undeveloped property is subject to regulations requiring that development will not increase runoff. Exhibit 4 shows the potential increased runoff in the TIRZ based upon the development potential.

Development in TIRZ Will Not Increase Runoff

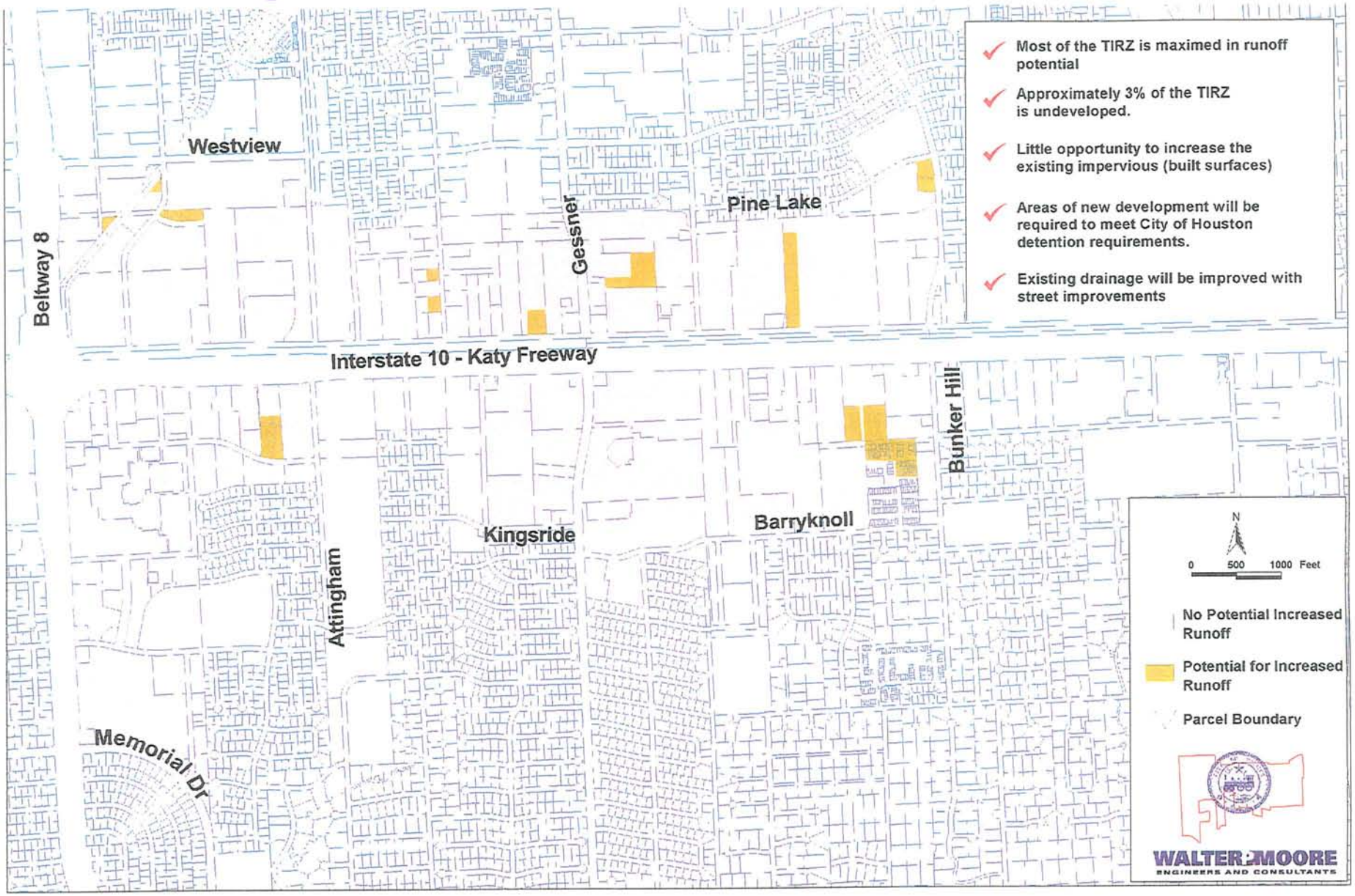


Exhibit 4. Increased Runoff Potential

3.0 HYDROLOGY

3.1 Methodology

The area is very flat and many of the storm sewer systems are cross-connected, leaving the drainage divide subject to interpretation. The 1999 TC&B report delineation of both the major and minor drainage divides was used. Certain assumptions were made as to the direction of nodal subdivides and split flows at intersections. Please refer to Exhibit 3 for descriptions of the storm sewer network and drainage divides.

Runoff modeling was not included in the scope of this study, therefore the City of Houston's Rational Method equations from the city design criteria was used to estimate the peak discharges for each area. The average runoff coefficient (C) was determined for each area based on an estimate of the impervious cover. A minimum time-of-concentration of 25 minutes (City of Houston criteria) was used for all drainage areas. The rainfall intensities were taken from the City of Houston Drainage Manual.

3.2 Results

Peak discharges were computed for the design frequency required by the City of Houston, the 2-year return frequency. Most of the existing system is undersized based on current city criteria. The study shows that improving the storm sewers along Barryknoll, Gessner, Witte, I-10 and Conrad Sauer to a capacity in excess of the required capacity to provide additional linear storage would have a positive impact on flooding downstream. The increased storage would not provide 100 year flood relief, but would allow the systems within the District and downstream to meet current city criteria. Exhibit 5 shows the existing storm sewer lines that are undersized according to current City of Houston criteria.

TIRZ Storm Sewer Capacity

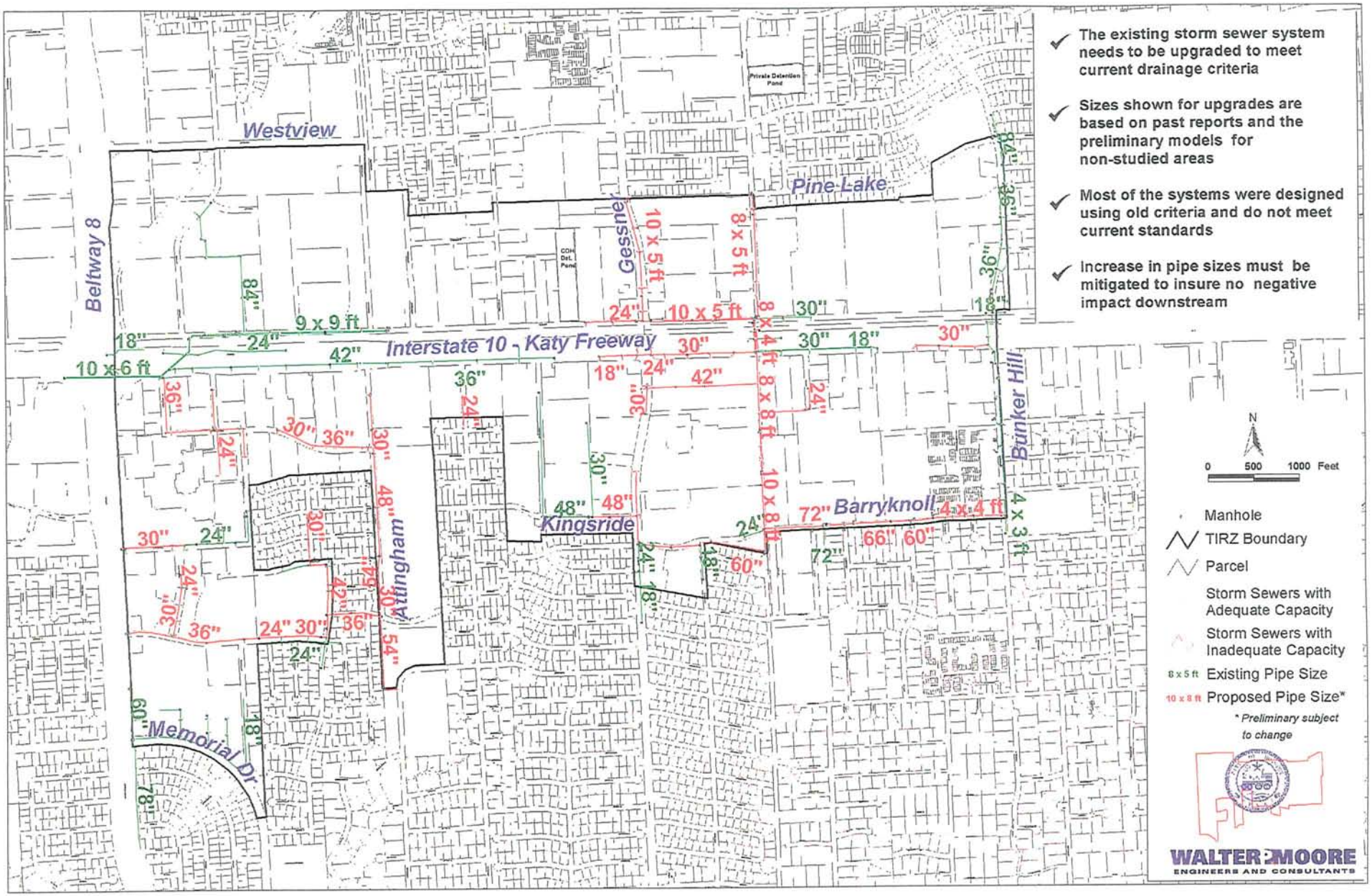
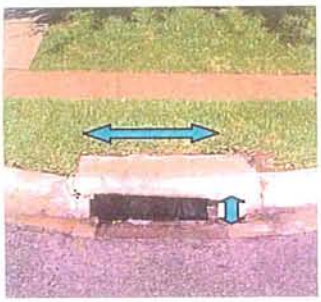


Exhibit 5. Undersized Storm Sewer Lines

This effort in conjunction with the potential improvements in the City of Bunker Hill and Hedwig Village could provide significant drainage relief in the area. In addition, improved drainage can be obtained by increasing the inlet capacity in the area by changing exiting Type B inlets with Type BB inlets. Exhibit 6 shows typical Type B and Type BB inlets.

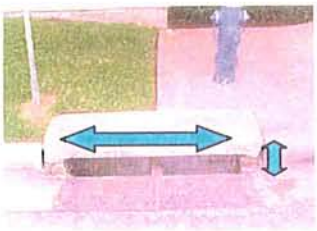


Typical B Inlet

- 24-inches wide
- 4-inches to 6-inches deep
- Solid Plate

Typical B Inlet
Transition from Curb to Ditch Road Section

- 24-inches wide
- 4-inches to 6-inches deep
- Grate



Typical BB Inlet

- 48-inches wide
- 4-inches to 6-inches deep
- Solid Plate

Typical BB Inlet

- 48-inches wide
- 4-inches to 6-inches deep
- Grate

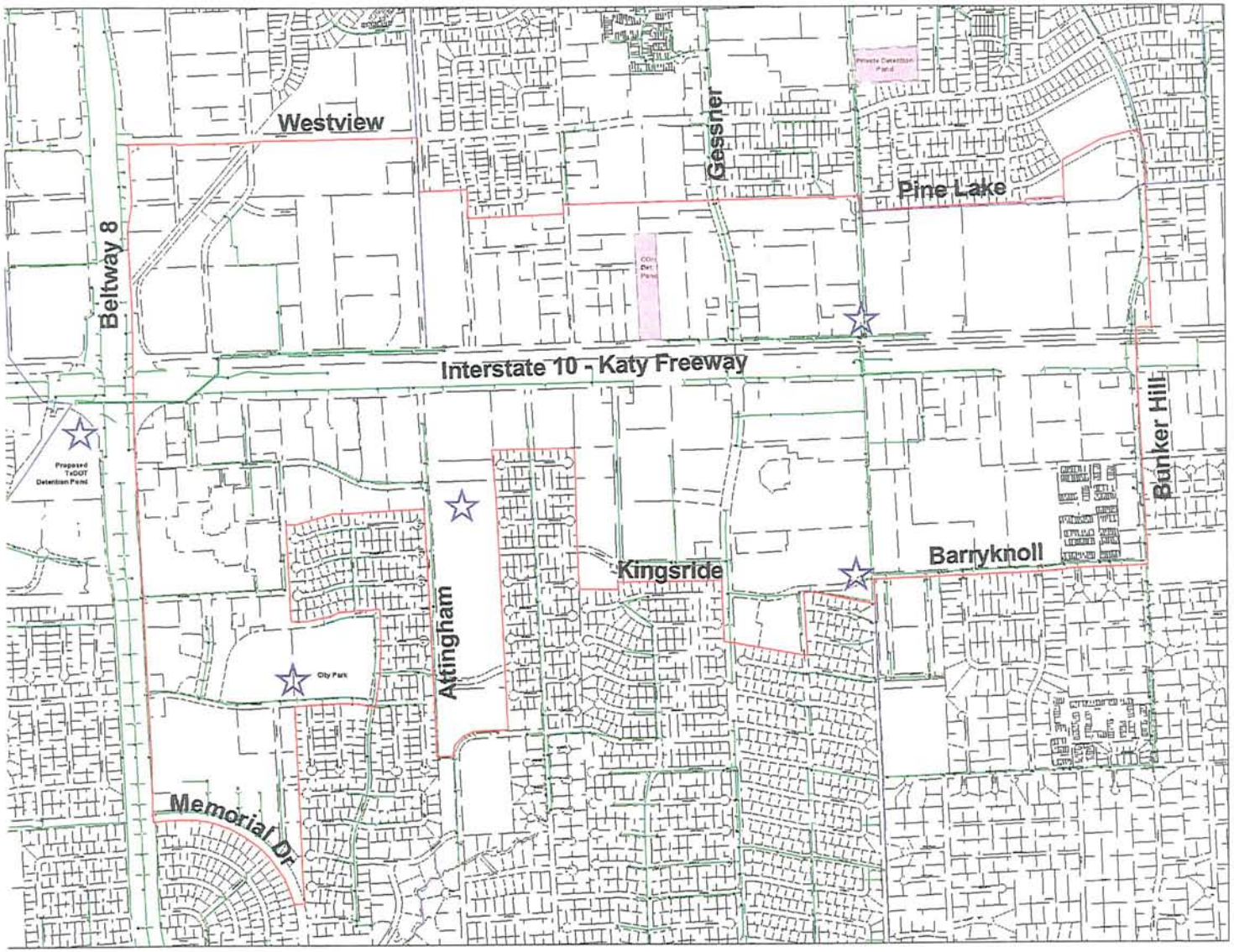
Exhibit 6. Typical Type B and BB inlets

A program to reduce the amount of debris that is purposely placed in the storm sewer system is underway, but an increased awareness on how much impact the debris has during flooding could have a significant benefit. Exhibit 7 shows common inlet blockages.

Exhibit 7. Common Inlet Blockages

Other potential mitigation or detention facilities could also be provided in Bendwood Park by lowering a portion of the playground area and improving the drainage systems in the park to provide extreme event storage to protect the adjacent residences. Exhibit 8 shows potential locations for effective mitigation / detention opportunities. Other relevant detention criteria and potential opportunities are shown in the Appendix.

Potential Effective Mitigation Opportunities



Effective Mitigation Opportunities are not Site Specific, but Identify Locations Within the Drainage System that Could Provide Effective Runoff Control

Exhibit 8. Potential Effective Mitigation Opportunities

4.0 HYDRAULICS

4.1 Methodology

The hydraulic analysis was done in two phases. The first phase computed the capacity of existing storm drainage facilities under existing conditions of development. Table 1 of the output files shows the results of the model. Pipe and channel capacities were estimated using constructed pipe slopes. If flowline elevations indicated that pipes were built on a zero or adverse slope, a gradient of 2/10 of a percent was used to determine capacity.

The second phase of the hydraulic analysis consists of sizing replacement facilities for those determined to be insufficient (i.e. protection level less than the minimum 2-year design frequency). Manning's equation was used to estimate pipe capacity, assuming a hydraulic grade line slope to be 90% of the ground slope with 10% remaining for minor losses through the system. Table 4 of the output files shows the recommended pipe capacities.

4.2 Results

Storm Sewer System:
Most of the system does not meet current City of Houston design criteria

The storm sewer system in the District does not in most cases meet current city design criteria. This is to be expected since the system was designed and constructed before the current criteria were established. It should be noted that the impact of the new city detention pond and the private regional pond were not included in the modeling of the drainage systems since they were not in operation when the study was started. They both have recently come on line and should help the Gessner / Witte system drainage. The existing facility capacities are summarized in Table 2 of the output files. The required level of protection and corresponding improvements are discussed in section 5.0 of this report. The detailed calculations are provided in the Appendix.

5.0 RECOMMENDATIONS

5.1 Recommended Improvements

TIRZ 17 includes multiple watersheds facilities

When discussing drainage systems in TIRZ 17, it is important to note that three primary drainage basins and two small drainage basins serve this area. The Shadowdale Ditch/Rummel Creek system primary drainage basin serves the northeast corner of the TIRZ north of IH-10. The Beltway 8 system is a small drainage basin along the east side of Beltway 8. The Attingham system is a primary basin immediately east of the Beltway 8 system. Ditch 151 is the largest drainage basin in the TIRZ and is located east of the Attingham system. W151 includes significant area both north and south of IH-10. Finally, a very small area at the northeast corner of the TIRZ flows to the east covering the immediate Bunker Hill area. Since roadways in Houston are designed to serve as drainage ways for sheet flow during intense rainfall events, stormwater often flows across drainage basin boundaries. Because of this condition, a drainage improvement in one drainage basin can provide some benefit to adjacent drainage basins.

Recommendation: Address sub-standard facilities

Existing drainage facilities were identified as needing improvement when the existing drainage system capacity was less than the minimum 2-year design frequency for the facility under existing development conditions. Table 1 shows the level of protection based on existing conditions of development. Table 2 shows the level of protection based on proposed conditions of development (fully developed; C=0.8). Table 3 shows the required facility improvement to protect against the 2-year design frequency under proposed conditions of development.

Recommendation: Develop detention ponds to store excess stormwater runoff

Drainage systems in the TIRZ and downstream of the TIRZ do not have adequate capacity to accommodate design flows for a 2-year frequency storm. Additionally, the major downstream bayou does not have capacity to accept significant additional flow. Therefore, in order to improve drainage conditions, detention ponds must be developed to store excess stormwater runoff. Two primary drainage systems were reviewed as options for providing detention in the TIRZ. One option calls for constructing oversized storm sewers in conjunction with roadway improvements to provide detention. This option could begin implementation with the start of the first roadway project. A second option is to construct detention ponds at strategic locations within the TIRZ. Based on this information, several options were studied for implementation. These options were prioritized based on the relative drainage improvement provided to the area considering the cost benefit of storage capacity. The prioritization ranking of the studied projects is included in

Exhibit 9 along with the estimated cost of construction and design for each project. Additionally, a brief description of each project follows.

W151 Drainage Basin Detention Pond North of IH-10

Recommendation:
Construct detention ponds as an option to detention in upsized storm sewers

An alternate to providing detention in larger storm sewers would be to acquire property and construct one or more detention ponds in strategic locations as noted in other sections of this report. On the north side of Interstate 10, the most strategic location for a detention pond would be near the box culverts, which flow to W151. Large box culverts are located along both Gessner and Witte Roads. Both of these box culverts should be connected to the detention pond. If a five-acre tract of land was acquired, a 40 acre-foot detention pond could be constructed. Assuming a friendly acquisition without damages to the remainder, a five-acre site could be acquired for approximately $4,500,000. Construction costs for this pond would be approximately $2,500,000 assuming an open detention pond. To place a top over the pond for use as a parking lot or for court sports would cost approximately $5,500,000. The total cost for development of this facility would be approximately $12,500,000. The estimated design cost for this pond without a top is $375,000 and with a top is $1,200,000. The total estimated cost for this pond without a top is $7,375,000 and with a top is $13,700,000.

A separate detention pond could also be located at the strategic locations indicated south of Interstate 10 and west of Gessner. An alternate to this would be a larger pond along W151 and a diversion storm sewer from the west side of Gessner, eastward to W151. All of these detention pond options would require the acquisition of property or the joint development of a project that could coexist with a detention pond such as a parking lot, a parking garage, or some form of court sports in a new or existing park. In all of the cases, the detention pond would be located under the development. The overall benefit from these improvements is not anticipated to be as great as those from a larger pond north of IH-10.

W151 Channel Improvements for Detention, Barry Knoll to Memorial Drive

Recommendation:
Enclose W151 providing additional stormwater storage capacity and providing an opportunity for development of a linear park or bicycle path.

Another option reviewed was to enclose W151 between Memorial and Barryknoll with 4 ~ 12x12 box culverts as inline detention. This would provide a total of approximately 58 acre-feet of storage, an increase of approximately 36 acre-feet of storage. This option would also provide for separation of Bunker Hill City drainage and Memorial Woods drainage from the upper system. The estimated cost of this option is $17,500,000. The

enclosure would allow for potential park improvements to take place on top of the drainage structure; however, the cost of improvements beyond grass is not included. This project would be a good candidate for a joint project with other agencies as it provides improvements to multiple jurisdictions. It may be possible to secure up to 50% participation from other agencies.

Recommendation:
Coordinate with the W151 study

It is also recommended that the design of the improvements be closely coordinated with the pending study of the W151 system to be done jointly by the City of Houston, Harris County, and the Texas Department of Transportation. This study is to be performed by the drainage engineers of the City of Hedwig Village and the drainage engineers of the City of Bunker Hill and will allow for coordinated improvements in the area to provide relief for the area's drainage problems.

Attingham Drainage Basin Detention Pond

There is an opportunity to improve Bendwood Park by re-grading the open areas to slightly lower the overall elevation of the park, place a concrete lined detention pond beneath tennis courts and improve the overall drainage system within the park so the park can provide some local relief to the drainage systems on the west side of the TIRZ. This project could provide up to seven acre-feet of stormwater storage. It is acknowledged that there are concerns related to constructing drainage improvements within area parks. However, this study was to include multiple options for improving drainage conditions in the area and that is why this option is presented. Drainage improvements similar to those suggested here have been successfully implemented in Houston area parks and have provided added amenities to these facilities. Before any improvement projects are approved in any park area, a detailed analysis of the impacts to the facility must be reviewed and weighted against the potential drainage benefits. This analysis should include review by all departments of the City of Houston and include input from park users. The total estimated cost for this project is $4,300,000 including design costs.

Storm Sewer System Improvements

In order to increase the drainage capacity of the storm sewer system, mitigation efforts must be made to ensure that the improved drainage does not negatively impact the downstream areas. Therefore, some of the pipe recommendations show line sizes in excess of what is needed to meet the drainage capacity criteria in order to provide additional line storage to negate any adverse impact downstream, while still allowing the systems within the TIRZ to provide proper drainage. In addition, several

Recommendation:
Construct improvements in concert with traffic improvements

increased storm water mitigation areas are provided to provide additional relief for the areas downstream to reduce the impact of the system improvements. Many of the improvements can be done in concert with the transportation improvements proposed by the TIRZ in order to leverage the cost of the improvements.

Recommendation:
Provide additional storage where the cost proves to be beneficial in lowering damages downstream.

Specifically, the proposed improvements to Gessner, Barry Knoll, Bunker Hill, Old Katy Lane, Town and Country Way and Interstate Highway 10 should consider upsizing the storm lines to allow for local drainage to meet the current city criteria plus providing additional storage to allow the system to function as designed without causing a negative impact downstream. To the extent that the lines can be upsized enough to improve downstream conditions, it is recommended that that additional storage capacity be provided. The anticipated size of the new storm sewer in these streets is a 12-foot by 12-foot box culvert. The length is to be determined by the impact of the length of proposed improvements. It is anticipated that the cost per foot will be approximately $600/ lineal foot of box. The estimated cost of the storm sewer system improvements based on the conceptual design of the improvements outlined above is $17,500,000. The estimate is based on the work being constructed with road projects and costs for demolition, paving, etc. are not included. This option provides approximately two ac-ft of stormwater storage per roadway for a total of approximately fourteen ac-ft.

Total Mitigation Cost Summary
Roadway Drainage System Enhancements

I-10	$ 1,600,000.00
Gessner	$ 1,900,000.00
Attingham	$ 2,200,000.00
Barryknoll	$ 2,200,000.00
Old Katy Lane	$ 6,000,000.00
Town and Country Way	$ 1,700,000.00
Bunker Hill	$ 1,900,000.00
Total	$17,500,000.00

Although this option of providing additional stormwater storage in oversized storm sewers was noted as the lowest priority, it is possibly the option that provides the most immediate opportunity for improvement. This is true primarily because no land acquisition is required. It should also be noted that in addition to providing additional stormwater storage, this option provides significant drainage improvement for short-term high intensity rainfall events reducing ponding in streets.

TABLE 1.
Existing Facilities Under Existing Conditions of Development

LABEL	SECTION_SIZE	CONSTRUCTED SLOPE FT/FT	FULL CAPACITY CFS	EXCEEDS CAPACITY?	DESIGN CAPACITY CFS	EXCESS DESIGN CAPACITY CFS	EXCESS FULL CAPACITY CFS
G-1249	10 x 5 ft	0.0002	103	TRUE	103	-387	-387
G-1117	10 x 5 ft	0.0003	148	TRUE	148	-339	-339
G-1123	10 x 5 ft	0.0005	179	TRUE	179	-328	-328
G-1103	10 x 5 ft	0.0011	265	TRUE	265	-254	-254
G-1110	10 x 5 ft	0.0000	0	TRUE	0	-519	-519
G-1133	10 x 5 ft	0.0032	457	TRUE	457	-71	-71
G-1134	10 x 5 ft	0.0006	197	TRUE	197	-335	-335
G-2147	10 x 5 ft	0.0005	183	TRUE	183	-347	-347
G-2140	10 x 5 ft	0.0004	160	TRUE	160	-368	-368
W-1141	8 x 5 ft	0.0025	305	TRUE	305	-38	-38
W-1144	8 x 5 ft	0.0021	278	TRUE	278	-64	-64
W-1145	8 x 5 ft	0.0020	270	TRUE	270	-71	-71
W-1139	8 x 5 ft	0.0008	167	TRUE	167	-179	-179
W-1126	8 x 5 ft	0.0020	273	TRUE	273	-103	-103
W-2127	8 x 5 ft	0.0011	205	TRUE	205	-170	-170
W-2131	8 x 5 ft	0.0534	1408	FALSE	1408	943	943
W-2133	8 x 5 ft	0.1027	1952	FALSE	1952	1488	1488
C-2174	8 x 5 ft	0.0147	739	TRUE	739	-234	-234
C-2199	8 x 4 ft	0.0204	634	TRUE	634	-342	-342
C-2239	8 x 8 ft	0.0006	279	TRUE	279	-756	-756
C-2256	8 x 8 ft	0.0006	293	TRUE	293	-781	-781
C-2260	8 x 8 ft	0.0021	530	TRUE	530	-540	-540
C-2270	8 x 8 ft	0.0000	0	TRUE	0	-1069	-1069
C-2279	8 x 8 ft	0.0000	0	TRUE	0	-1067	-1067
C-2294	10 x 8 ft	0.0000	0	TRUE	0	-1232	-1232
C-2299	10 x 8 ft	0.0000	0	TRUE	0	-1230	-1230
C-2345	10 x 8 ft	0.0000	0	TRUE	0	-1228	-1228
C-2351	10 x 8 ft	0.0201	2208	FALSE	2208	814	814
P-2307	30 inch	0.0022	19	FALSE	19	3	3
P-2309	48 inch	0.0014	53	TRUE	53	-59	-59

LABEL	SECTION SIZE	CONSTRUCTED SLOPE FT/FT	FULL CAPACITY CFS	EXCEEDS CAPACITY?	DESIGN CAPACITY CFS	EXCESS DESIGN CAPACITY CFS	EXCESS FULL CAPACITY CFS
P-2370	60 inch	0.0011	85	TRUE	85	-68	-68
P-2377	60 inch	0.0012	92	TRUE	92	-77	-77
P-2375	60 inch	0.0016	104	TRUE	104	-107	-107
P-2371	60 inch	0.0028	138	TRUE	138	-86	-86
P-2368	60 inch	0.0019	113	TRUE	113	-111	-111
P-2374	60 inch	0.0019	115	TRUE	115	-121	-121
P-2384	60 inch	0.0016	103	TRUE	103	-133	-133

LABEL	CRITICAL SLOPE FT/FT	AVERAGE VELOCITY FT/S	HYDRAULIC SLOPE FT/FT	FACILITY CAPACITY CFS	ENERGY SLOPE FT/FT	UPSTREAM GROUND ELEVATION FT
G-1249	0.0034	9.81	0.0037	466	0.0037	91.6
G-1117	0.0034	9.74	0.0037	463	0.0037	91
G-1123	0.0035	10.14	0.0040	482	0.0040	90.45
G-1103	0.0035	10.37	0.0042	493	0.0042	89.5
G-1110	0.0035	10.39	0.0042	494	0.0042	89
G-1133	0.0035	10.57	0.0043	502	0.0043	90.7
G-1134	0.0035	10.63	0.0044	505	0.0044	90.5
G-2147	0.0035	10.60	0.0043	503	0.0043	90.5
G-2140	0.0035	10.90	0.0043	503	0.0039	91.46
W-1141	0.0039	8.56	0.0032	325	0.0032	91
W-1144	0.0039	8.55	0.0032	325	0.0032	91
W-1145	0.0039	8.54	0.0031	324	0.0031	91
W-1139	0.0039	8.66	0.0032	329	0.0032	91
W-1126	0.0039	9.41	0.0038	358	0.0038	91
W-2127	0.0039	9.85	0.0038	356	0.0027	91
W-2131	0.0041	30.89	0.0528	1331	0.0612	91.3
W-2133	0.0041	34.76	0.0814	1651	0.5537	81.89
C-2174	0.0255	24.33	0.0255	925	0.0255	94
C-2199	0.0485	30.50	0.0485	927	0.0485	98
C-2239	0.0079	16.17	0.0079	984	0.0079	90
C-2256	0.0086	16.79	0.0086	1022	0.0086	90
C-2260	0.0085	16.72	0.0085	1018	0.0085	89
C-2270	0.0085	16.70	0.0085	1016	0.0085	76.4
C-2279	0.0084	16.67	0.0084	1015	0.0084	89
C-2294	0.0043	15.40	0.0063	1172	0.0063	89
C-2299	0.0043	15.37	0.0062	1170	0.0062	89
C-2345	0.0043	15.46	0.0062	1168	0.0060	89
C-2351	0.0080	26.17	0.0000	156	0.0802	88.9
P-2307	0.0047	3.32	0.0016	16	0.0016	86.35
P-2309	0.0064	8.95	0.0061	112	0.0061	85.5

LABEL	CRITICAL SLOPE FT/FT	AVERAGE VELOCITY FT/S	HYDRAULIC SLOPE FT/FT	FACILITY CAPACITY CFS	ENERGY SLOPE FT/FT	UPSTREAM GROUND ELEVATION FT
P-2370	0.0048	7.81	0.0035	153	0.0035	86.2
P-2377	0.0051	8.58	0.0042	169	0.0042	84.9
P-2375	0.0065	10.80	0.0066	212	0.0066	84.2
P-2371	0.0070	11.43	0.0074	225	0.0074	85.5
P-2368	0.0070	11.43	0.0074	225	0.0074	85.5
P-2374	0.0075	12.00	0.0082	236	0.0082	85.6
P-2384	0.0075	12.00	0.0082	236	0.0082	85.7

LABEL	DOWNSTREAM GROUND ELEVATION FT	HYDRAULIC GRADE LINE IN FT	ENERGY GRADE LINE IN FT	VELOCITY IN FT/S	HYDRAULIC GRADE LINE OUT FT
G-1249	91	92.13	93.63	9.81	91.00
G-1117	90.45	91.43	92.90	9.74	90.45
G-1123	90	91.46	93.05	10.14	89.86
G-1103	89	89.73	91.40	10.37	89.00
G-1110	90.7	91.13	92.81	10.39	90.70
G-1133	90.5	90.81	92.54	10.57	90.50
G-1134	90.5	91.67	93.42	10.63	89.99
G-2147	91.46	89.99	91.73	10.60	88.56
G-2140	81.89	88.56	90.30	10.58	86.60
W-1141	91	91.07	92.21	8.56	90.93
W-1144	91	90.93	92.07	8.55	90.77
W-1145	92	90.77	91.90	8.54	90.59
W-1139	91	90.36	91.53	8.66	87.96
W-1126	91	87.96	89.34	9.41	87.41
W-2127	91.3	87.41	88.77	9.38	86.43
W-2131	81.89	83.76	98.74	31.05	81.89
W-2133	81.89	83.39	106.76	38.78	81.89
C-2174	98	98.87	108.07	24.33	98.00
C-2199	90	100.92	115.38	30.50	90.00
C-2239	90	91.26	95.32	16.17	88.50
C-2256	89	88.50	92.88	16.79	85.81
C-2260	76.4	85.81	90.16	16.72	85.00
C-2270	89	90.07	94.40	16.70	89.00
C-2279	89	90.26	94.58	16.67	88.99
C-2294	89	88.98	92.67	15.40	88.11
C-2299	89	88.11	91.78	15.37	87.31
C-2345	88.9	87.31	90.97	15.35	84.28
C-2351	76.03	81.55	92.94	27.08	81.55
P-2307	86.2	86.76	86.93	3.32	85.97
P-2309	86.2	86.42	87.66	8.95	85.97

LABEL	DOWNSTREAM GROUND ELEVATION FT	HYDRAULIC GRADE LINE IN FT	ENERGY GRADE LINE IN FT	VELOCITY IN FT/S	HYDRAULIC GRADE LINE OUT FT
P-2370	84.9	85.97	86.92	7.81	84.90
P-2377	84.2	85.75	86.90	8.58	84.20
P-2375	85.5	87.64	89.45	10.80	85.50
P-2371	85.5	85.71	87.74	11.43	85.50
P-2368	85.6	86.46	88.49	11.43	85.60
P-2374	85.7	86.38	88.62	12.00	83.82
P-2384	83	83.82	86.05	12.00	81.55

LABEL	ENERGY GRADE LINE OUT FT	VELOCITY OUT FT/S	TOTAL SYSTEM FLOW CFS
G-1249	92.49	9.81	490
G-1117	91.92	9.74	487
G-1123	91.46	10.14	507
G-1103	90.67	10.37	519
G-1110	92.38	10.39	519
G-1133	92.24	10.57	529
G-1134	91.75	10.63	531
G-2147	90.31	10.60	530
G-2140	88.56	11.22	529
W-1141	92.07	8.56	342
W-1144	91.90	8.55	342
W-1145	91.72	8.54	342
W-1139	89.13	8.66	347
W-1126	88.79	9.41	376
W-2127	88.09	10.32	375
W-2131	96.57	30.74	465
W-2133	96.57	30.73	465
C-2174	107.20	24.33	973
C-2199	104.46	30.50	976
C-2239	92.56	16.17	1035
C-2256	90.19	16.79	1074
C-2260	89.34	16.72	1070
C-2270	93.33	16.70	1069
C-2279	93.31	16.67	1067
C-2294	91.79	15.40	1232
C-2299	90.98	15.37	1230
C-2345	88.05	15.57	1228
C-2351	91.47	25.26	1394
P-2307	86.15	3.32	16
P-2309	87.22	8.95	113

LABEL	ENERGY GRADE LINE OUT FT	VELOCITY OUT FT/S	TOTAL SYSTEM FLOW CFS
P-2370	85.85	7.81	153
P-2377	85.35	8.58	169
P-2375	87.31	10.80	212
P-2371	87.53	11.43	224
P-2368	87.63	11.43	224
P-2374	86.05	12.00	236
P-2384	83.79	12.00	236

TABLE 2.
Existing Facilities Under Proposed Conditions of Development

Table II Existing Facilities Unde[illegible]sed Conditions of Development

LABEL	SECTION SIZE	CONSTRUCTED SLOPE FT/FT	FULL CAPACITY CFS	EXCEEDS CAPACITY?	DESIGN CAPACITY CFS	EXCESS DESIGN CAPACITY CFS	EXCESS FULL CAPACITY CFS
G-1249	10 x 5 ft	0.0002	103	TRUE	103	-387	-387
G-1117	10 x 5 ft	0.0003	148	TRUE	148	-339	-339
G-1123	10 x 5 ft	0.0005	179	TRUE	179	-328	-328
G-1103	10 x 5 ft	0.0011	265	TRUE	265	-255	-255
G-1110	10 x 5 ft	0.0000	0	TRUE	0	-522	-522
G-1133	10 x 5 ft	0.0032	457	TRUE	457	-71	-71
G-1134	10 x 5 ft	0.0006	197	TRUE	197	-334	-334
G-2147	10 x 5 ft	0.0005	183	TRUE	183	-346	-346
G-2140	10 x 5 ft	0.0004	160	TRUE	160	-368	-368
W-1141	8 x 5 ft	0.0025	305	TRUE	305	-38	-38
W-1144	8 x 5 ft	0.0021	278	TRUE	278	-64	-64
W-1145	8 x 5 ft	0.0020	270	TRUE	270	-71	-71
W-1139	8 x 5 ft	0.0008	167	TRUE	167	-179	-179
W-1126	8 x 5 ft	0.0020	273	TRUE	273	-106	-106
W-2127	8 x 5 ft	0.0011	205	TRUE	205	-174	-174
W-2131	8 x 5 ft	0.0534	1408	FALSE	1408	906	906
W-2133	8 x 5 ft	0.1027	1952	FALSE	1952	1451	1451
C-2174	8 x 5 ft	0.0147	739	TRUE	739	-275	-275
C-2199	8 x 4 ft	0.0204	634	TRUE	634	-383	-383
C-2239	8 x 8 ft	0.0006	279	TRUE	279	-827	-827
C-2256	8 x 8 ft	0.0006	293	TRUE	293	-853	-853
C-2260	8 x 8 ft	0.0021	530	TRUE	530	-612	-612
C-2270	8 x 8 ft	0.0000	0	TRUE	0	-1141	-1141
C-2279	8 x 8 ft	0.0000	0	TRUE	0	-1140	-1140
C-2294	10 x 8 ft	0.0000	0	TRUE	0	-1306	-1306
C-2299	10 x 8 ft	0.0000	0	TRUE	0	-1304	-1304
C-2345	10 x 8 ft	0.0000	0	TRUE	0	-1302	-1302
C-2351	10 x 8 ft	0.0201	2208	FALSE	2208	961	961
P-2307	30 inch	0.0022	19	FALSE	19	3	3
P-2309	48 inch	0.0014	53	TRUE	53	-59	-59

Table II Existing Facilities Under Proposed Conditions of Development

LABEL	SECTION SIZE	CONSTRUCTED SLOPE FT/FT	FULL CAPACITY CFS	EXCEEDS CAPACITY?	DESIGN CAPACITY CFS	EXCESS DESIGN CAPACITY CFS	EXCESS FULL CAPACITY CFS
P-2370	60 inch	0.0011	85	TRUE	85	-68	-68
P-2377	60 inch	0.0012	92	TRUE	92	-77	-77
P-2375	60 inch	0.0016	104	TRUE	104	-107	-107
P-2371	60 inch	0.0028	138	TRUE	138	-86	-86
P-2368	60 inch	0.0019	113	TRUE	113	-111	-111
P-2374	60 inch	0.0019	115	TRUE	115	-121	-121
P-2384	60 inch	0.0016	103	TRUE	103	-133	-133

Table II Existing Facilities Under Proposed Conditions of Development

LABEL	CRITICAL SLOPE FT/FT	AVERAGE VELOCITY FT/S	HYDRAULIC SLOPE FT/FT	FACILITY CAPACITY CFS	ENERGY SLOPE FT/FT	UPSTREAM GROUND ELEVATION FT
G-1249	0.0034	9.81	0.0037	466	0.0037	91.6
G-1117	0.0034	9.74	0.0037	463	0.0037	91
G-1123	0.0035	10.14	0.0040	482	0.0040	90.45
G-1103	0.0035	10.40	0.0042	494	0.0042	89.5
G-1110	0.0035	10.44	0.0042	496	0.0042	89
G-1133	0.0035	10.56	0.0043	502	0.0043	90.7
G-1134	0.0035	10.61	0.0044	504	0.0044	90.5
G-2147	0.0035	10.58	0.0043	503	0.0043	90.5
G-2140	0.0035	10.56	0.0043	502	0.0043	91.46
W-1141	0.0039	8.56	0.0032	325	0.0032	91
W-1144	0.0039	8.55	0.0032	325	0.0032	91
W-1145	0.0039	8.54	0.0031	324	0.0031	91
W-1139	0.0039	8.66	0.0032	329	0.0032	91
W-1126	0.0039	9.49	0.0039	361	0.0039	91
W-2127	0.0039	9.46	0.0039	359	0.0039	91
W-2131	0.0042	12.54	0.0068	476	0.0068	91.3
W-2133	0.0042	12.53	0.0068	476	0.0068	81.89
C-2174	0.0277	25.34	0.0277	963	0.0277	94
C-2199	0.0527	31.77	0.0527	966	0.0527	98
C-2239	0.0091	17.27	0.0091	1051	0.0091	90
C-2256	0.0097	17.91	0.0097	1090	0.0097	90
C-2260	0.0097	17.85	0.0097	1087	0.0097	89
C-2270	0.0097	17.84	0.0097	1085	0.0097	76.4
C-2279	0.0096	17.81	0.0096	1084	0.0096	89
C-2294	0.0070	16.32	0.0070	1242	0.0070	89
C-2299	0.0070	16.30	0.0070	1240	0.0070	89
C-2345	0.0070	16.28	0.0070	1239	0.0070	89
C-2351	0.0044	17.15	0.0784	4147	0.0056	88.9
P-2307	0.0047	3.32	0.0016	16	0.0016	86.35
P-2309	0.0064	8.95	0.0061	112	0.0061	85.5

Table II Existing Facilities Under Proposed Conditions of Development

LABEL	CRITICAL SLOPE FT/FT	AVERAGE VELOCITY FT/S	HYDRAULIC SLOPE FT/FT	FACILITY CAPACITY CFS	ENERGY SLOPE FT/FT	UPSTREAM GROUND ELEVATION FT
P-2370	0.0048	7.81	0.0035	153	0.0035	86.2
P-2377	0.0051	8.58	0.0042	169	0.0042	84.9
P-2375	0.0065	10.80	0.0066	212	0.0066	84.2
P-2371	0.0070	11.43	0.0074	225	0.0074	85.5
P-2368	0.0070	11.43	0.0074	225	0.0074	85.5
P-2374	0.0075	12.00	0.0082	236	0.0082	85.6
P-2384	0.0075	12.00	0.0082	236	0.0082	85.7

Table II Existing Facilities Under Proposed Conditions of Development

LABEL	DOWNSTREAM GROUND ELEVATION FT	HYDRAULIC GRADE LINE IN FT	ENERGY GRADE LINE IN FT	VELOCITY IN FT/S	HYDRAULIC GRADE LINE OUT FT	ENERGY GRADE LINE OUT FT
G-1249	91	92.13	93.63	9.81	91.00	92.49
G-1117	90.45	91.43	92.90	9.74	90.45	91.92
G-1123	90	91.46	93.06	10.14	89.86	91.46
G-1103	89	90.86	92.55	10.40	90.13	91.81
G-1110	90.7	91.14	92.83	10.44	90.70	92.39
G-1133	90.5	90.81	92.54	10.56	90.50	92.23
G-1134	90.5	92.17	93.92	10.61	90.50	92.25
G-2147	91.46	92.88	94.62	10.58	91.46	93.20
G-2140	81.89	93.15	94.89	10.56	91.20	92.93
W-1141	91	91.14	92.28	8.56	91.00	92.14
W-1144	91	91.17	92.30	8.55	91.00	92.14
W-1145	92	91.40	92.54	8.54	91.23	92.36
W-1139	91	93.40	94.57	8.66	91.00	92.17
W-1126	91	91.56	92.96	9.49	91.00	92.40
W-2127	91.3	92.29	93.68	9.46	91.30	92.69
W-2131	81.89	91.44	93.88	12.54	91.20	93.64
W-2133	81.89	91.32	93.76	12.53	91.20	93.64
C-2174	98	91.74	101.72	25.34	90.80	100.78
C-2199	90	101.84	117.53	31.77	90.00	105.69
C-2239	90	93.15	97.79	17.27	90.00	94.64
C-2256	90	93.05	98.03	17.91	90.00	94.98
C-2260	89	90.93	95.88	17.85	90.00	94.95
C-2270	8976.4	90.22	95.16	17.84	89.00	93.94
C-2279	89	90.46	95.39	17.81	89.00	93.93
C-2294	89	89.68	93.82	16.32	88.70	92.84
C-2299	89	88.70	92.83	16.30	87.80	91.93
C-2345	88.9	87.80	91.92	16.28	84.40	88.52
C-2351	76.03	84.25	88.18	15.89	82.81	88.07
P-2307	86.2	86.76	86.93	3.32	85.97	86.15
P-2309	86.2	86.42	87.66	8.95	85.97	87.22

Table II Existing Facilities Under ... sed Conditions of Development

LABEL	DOWNSTREAM GROUND ELEVATION FT	HYDRAULIC GRADE LINE IN FT	ENERGY GRADE LINE IN FT	VELOCITY IN FT/S	HYDRAULIC GRADE LINE OUT FT	ENERGY GRADE LINE OUT FT
P-2370	84.9	85.97	86.92	7.81	84.90	85.85
P-2377	84.2	85.75	86.90	8.58	84.20	85.35
P-2375	85.5	87.64	89.45	10.80	85.50	87.31
P-2371	85.5	85.71	87.74	11.43	85.50	87.53
P-2368	85.6	86.46	88.49	11.43	85.60	87.63
P-2374	85.7	86.38	88.62	12.00	83.82	86.05
P-2384	83	83.82	86.05	12.00	81.55	83.79

LABEL	VELOCITY OUT FT/S	TOTAL SYSTEM FLOW CFS
G-1249	9.81	490
G-1117	9.74	487
G-1123	10.14	507
G-1103	10.40	520
G-1110	10.44	522
G-1133	10.56	528
G-1134	10.61	531
G-2147	10.58	529
G-2140	10.56	528
W-1141	8.56	342
W-1144	8.55	342
W-1145	8.54	342
W-1139	8.66	347
W-1126	9.49	380
W-2127	9.46	378
W-2131	12.54	501
W-2133	12.53	501
C-2174	25.34	1014
C-2199	31.77	1017
C-2239	17.27	1105
C-2256	17.91	1146
C-2260	17.85	1143
C-2270	17.84	1141
C-2279	17.81	1140
C-2294	16.32	1306
C-2299	16.30	1304
C-2345	16.28	1302
C-2351	18.41	1248
P-2307	3.32	16
P-2309	8.95	113

Table II Existing Facilities Under Proposed Conditions of Development

LABEL	VELOCITY OUT FT/S	TOTAL SYSTEM FLOW CFS
P-2370	7.81	153
P-2377	8.58	169
P-2375	10.80	212
P-2371	11.43	224
P-2368	11.43	224
P-2374	12.00	236
P-2384	12.00	236

TABLE 3.
Proposed Facilities Under Proposed Conditions of Development

LABEL	SECTION SIZE	CONSTRUCTED SLOPE FT/FT	FULL CAPACITY CFS	EXCEEDS CAPACITY?	DESIGN CAPACITY CFS	EXCESS DESIGN CAPACITY CFS	EXCESS FULL CAPACITY CFS
G-1249	12 x 6 ft	0.0002	168	TRUE	168	-323	-323
G-1117	12 x 6 ft	0.0003	240	TRUE	240	-245	-245
G-1123	12 x 6 ft	0.0005	292	TRUE	292	-212	-212
G-1103	12 x 6 ft	0.0002	171	TRUE	171	-344	-344
G-1110	12 x 6 ft	0.0000	0	TRUE	0	-516	-516
G-1133	12 x 8 ft	0.0032	1120	FALSE	1120	599	599
G-1134	12 x 8 ft	0.0006	482	TRUE	482	-41	-41
G-2147	12 x 8 ft	0.0005	448	TRUE	448	-72	-72
G-2140	12 x 9 ft	0.0004	462	TRUE	462	-55	-55
W-1141	8 x 5 ft	0.0025	305	TRUE	305	-38	-38
W-1144	8 x 5 ft	0.0021	278	TRUE	278	-64	-64
W-1145	8 x 5 ft	0.0020	270	TRUE	270	-71	-71
W-1126	10 x 5 ft	0.0020	360	TRUE	360	-19	-19
W-2127	10 x 6 ft	0.0011	350	TRUE	350	-28	-28
W-2131	10 x 6 ft	0.0534	2409	FALSE	2409	1909	1909
W-2133	10 x 6 ft	0.1027	3341	FALSE	3341	2841	2841
C-2174	10 x 10 ft	0.0147	2552	FALSE	2552	1560	1560
C-2199	10 x 10 ft	0.0151	2589	FALSE	2589	1593	1593
C-2239	12 x 12 ft	0.0006	821	TRUE	821	-261	-261
C-2256	12 x 12 ft	0.0006	865	TRUE	865	-253	-253
C-2260	12 x 12 ft	0.0021	1564	FALSE	1564	453	453
C-2270	12 x 12 ft	0.0000	0	TRUE	0	-1109	-1109
C-2279	12 x 12 ft	0.0000	0	TRUE	0	-1107	-1107
C-2294	12 x 12 ft	0.0000	0	TRUE	0	-1265	-1265
C-2299	12 x 12 ft	0.0000	0	TRUE	0	-1262	-1262
C-2345	12 x 12 ft	0.0000	0	TRUE	0	-1259	-1259
C-2351	12 x 12 ft	0.0201	4855	FALSE	4855	3651	3651
P-2307	30 inch	0.0022	19	FALSE	19	3	3
P-2309	66 inch	0.0014	125	FALSE	125	12	12
P-2370	78 inch	0.0011	171	FALSE	171	18	18

LABEL	SECTION SIZE	CONSTRUCTED SLOPE FT/FT	FULL CAPACITY CFS	EXCEEDS CAPACITY?	DESIGN CAPACITY CFS	EXCESS DESIGN CAPACITY CFS	EXCESS FULL CAPACITY CFS
P-2377	78 inch	0.0012	185	FALSE	185	16	16
P-2375	78 inch	0.0016	210	TRUE	210	-2	-2
P-2371	78 inch	0.0018	220	TRUE	220	-5	-5
P-2368	78 inch	0.0019	228	FALSE	228	4	4
P-2374	78 inch	0.0019	231	TRUE	231	-4	-4
P-2384	78 inch	0	0	TRUE	0	-236	-236

LABEL	CRITICAL SLOPE FT/FT	AVERAGE VELOCITY FT/S	HYDRAULIC SLOPE FT/FT	ENERGY SLOPE FT/FT	UPSTREAM GROUND ELEVATION FT	DOWNSTREAM GROUND ELEVATION FT
G-1249	0.0030	6.81	0.0014	0.0014	91.6	91
G-1117	0.0030	6.74	0.0014	0.0014	91	90.45
G-1123	0.0030	7.00	0.0015	0.0015	90.45	90
G-1103	0.0030	7.15	0.0016	0.0016	89.5	90.13
G-1110	0.0030	7.16	0.0016	0.0016	90.13	90.7
G-1133	0.0030	7.00	0.0001	0.0008	90.7	90.5
G-1134	0.0030	7.27	0.0011	0.0009	90.5	90.5
G-2147	0.0030	7.48	0.0012	0.0010	90.5	91.46
G-2140	0.0030	8.03	0.0017	0.0012	91.46	91.2
W-1141	0.0039	8.56	0.0032	0.0032	91	91
W-1144	0.0039	8.55	0.0032	0.0032	91	91
W-1145	0.0039	8.54	0.0031	0.0031	91	92
W-1126	0.0033	7.67	0.0032	0.0029	91	91
W-2127	0.0033	8.53	0.0024	0.0018	91	91.3
W-2131	0.0035	10.04	0.0000	0.0298	91.3	91.2
W-2133	0.0035	10.03	-0.0448	0.0125	91.2	91.2
C-2174	0.0041	12.39	-0.0150	0.0026	94	90.8
C-2199	0.0041	12.35	-0.0011	0.0070	90.8	90
C-2239	0.0035	8.41	0.0010	0.0009	90.8	90
C-2256	0.0035	8.81	0.0011	0.0010	90	90
C-2260	0.0035	8.76	0.0007	0.0010	90	90
C-2270	0.0035	8.75	0.0013	0.0010	90	89
C-2279	0.0035	8.88	0.0013	0.0010	89	89
C-2294	0.0036	10.40	0.0021	0.0014	89	89
C-2299	0.0036	10.69	0.0024	0.0015	89	89
C-2345	0.0036	12.92	0.0055	0.0021	89	88.9
C-2351	0.0036	16.08	0.0753	0.0047	88.9	83
P-2307	0.0047	3.32	0.0016	0.0016	86.35	86.2
P-2309	0.0036	5.20	0.0010	0.0010	85.5	86.2
P-2370	0.0033	4.93	0.0007	0.0008	86.2	84.9

LABEL	CRITICAL SLOPE FT/FT	AVERAGE VELOCITY FT/S	HYDRAULIC SLOPE FT/FT	ENERGY SLOPE FT/FT	UPSTREAM GROUND ELEVATION FT	DOWNSTREAM GROUND ELEVATION FT
P-2377	0.0034	5.33	0.0009	0.0009	84.9	84.2
P-2375	0.0037	6.62	0.0014	0.0014	84.2	85.5
P-2371	0.0037	6.99	0.0016	0.0016	85.5	85.5
P-2368	0.0037	6.97	0.0015	0.0016	85.5	85.6
P-2374	0.0038	7.27	0.0017	0.0017	85.6	85.7
P-2384	0.0038	7.54	0.0023	0.0018	85.7	83

LABEL	HYDRAULIC GRADE LINE IN FT	ENERGY GRADE LINE IN FT	VELOCITY IN FT/S	HYDRAULIC GRADE LINE OUT FT	ENERGY GRADE LINE OUT FT	VELOCITY OUT FT/S
G-1249	90.52	91.24	6.81	90.10	90.82	6.81
G-1117	90.10	90.80	6.74	89.73	90.43	6.74
G-1123	89.73	90.49	7.00	89.13	89.89	7.00
G-1103	89.00	89.79	7.15	88.73	89.52	7.15
G-1110	88.73	89.52	7.16	88.56	89.36	7.16
G-1133	88.56	89.35	7.12	88.56	89.29	6.87
G-1134	88.56	89.36	7.16	88.15	89.00	7.38
G-2147	88.15	88.99	7.33	87.75	88.66	7.62
G-2140	87.75	88.65	7.59	86.98	88.10	8.47
W-1141	90.35	91.49	8.56	90.21	91.35	8.56
W-1144	90.21	91.35	8.55	90.05	91.18	8.55
W-1145	90.05	91.18	8.54	89.87	91.00	8.54
W-1126	87.24	88.14	7.59	86.79	87.72	7.76
W-2127	86.78	87.83	8.21	86.16	87.38	8.85
W-2131	86.16	88.30	11.72	86.16	87.24	8.35
W-2133	86.16	88.30	11.72	86.98	88.07	8.34
C-2174	87.04	89.74	13.16	87.55	89.65	11.61
C-2199	87.55	90.93	14.74	87.81	89.35	9.96
C-2239	87.79	88.88	8.36	87.45	88.56	8.47
C-2256	87.45	88.64	8.75	87.11	88.33	8.87
C-2260	87.11	88.31	8.81	87.04	88.22	8.70
C-2270	87.04	88.22	8.68	86.88	88.09	8.82
C-2279	86.88	88.09	8.80	86.68	87.93	8.97
C-2294	86.68	88.31	10.25	86.39	88.12	10.55
C-2299	86.39	88.11	10.53	86.08	87.92	10.86
C-2345	86.08	87.91	10.83	83.39	86.89	15.00
C-2351	83.19	86.58	14.78	81.80	86.49	17.38
P-2307	84.72	84.89	3.32	83.94	84.11	3.32
P-2309	84.01	84.43	5.21	83.94	84.36	5.19
P-2370	83.94	84.32	4.96	83.71	84.08	4.89

LABEL	HYDRAULIC GRADE LINE IN FT	ENERGY GRADE LINE IN FT	VELOCITY IN FT/S	HYDRAULIC GRADE LINE OUT FT	ENERGY GRADE LINE OUT FT	VELOCITY OUT FT/S
P-2377	83.71	84.16	5.38	83.39	83.83	5.29
P-2375	83.39	84.08	6.65	82.94	83.62	6.60
P-2371	82.94	83.70	6.99	82.90	83.66	6.98
P-2368	82.90	83.66	6.98	82.72	83.47	6.95
P-2374	82.72	83.55	7.30	82.19	83.00	7.25
P-2384	82.19	83.00	7.25	81.55	82.51	7.84

LABEL	TOTAL SYSTEM FLOW CFS
P-2377	169
P-2375	212
P-2371	224
P-2368	224
P-2374	236
P-2384	236

APPENDIX A.

Extended Pipe Report (Existing Development)

+START_NODE	+STOP_NODE	DESCRIPTION	NOTES	SECTION_SHAPE	MATERIAL
2510	I-36			Box	Concrete
2339	2342	15684	nil	Box	Concrete
2342	2371	15684	nil	Box	Concrete
1272	1271	15278	nil	Circular	Concrete
1273	1274	15278	nil	Circular	Concrete
1277	1279	15684	nil	Circular	Concrete
1276	1279	15684	nil	Box	Concrete
1278	1279	15684	nil	Circular	Concrete
1280	1282	15278	nil	Circular	Concrete
1281	1282	15278	nil	Circular	Concrete
1283	1284	15684	nil	Circular	Concrete
1279	1284	15684	nil	Box	Concrete
1285	1284	15684	nil	Circular	Concrete
1284	1286	15684	nil	Box	Concrete
1282	1287	15278	nil	Box	Concrete
2371	J-561	15684	nil	Box	Concrete
J-561	2372	15684	nil	Box	Concrete
2373	J-561			Circular	PVC
21213	2345			Circular	PVC
1287	2340			Box	Concrete
1271	J-562	15278	nil	Box	Concrete
J-562	1282	15278	nil	Box	Concrete
1274	J-562			Circular	PVC
I-1905	J-563	15278	nil	Box	Concrete
20680	J-563			Circular	PVC
J-563	J-564	15278	nil	Box	Concrete
J-564	1271	15278	nil	Box	Concrete
20681	J-564			Circular	PVC
2361	J-587	15278	nil	Box	Concrete
2382	J-587			Circular	PVC
J-587	J-588	15278	nil	Box	Concrete
J-588	2394	15278	nil	Box	Concrete
2406	2404			Circular	PVC
I-359	1276	15684	nil	Box	Concrete
1286	2339		x 5 box.	Box	Concrete
2341	2342	15684	nil	Circular	Concrete
2343	2342	15684	nil	Circular	Concrete
2345	2346	15278	nil	Circular	Concrete
2344	2349	15278	nil	Circular	Concrete
2349	2351	15278	nil	Circular	Concrete
2347	2351	15278	nil	Circular	Concrete
2351	2357	15278	nil	Circular	Concrete
2346	2357	nil	nil	Circular	Concrete
2357	2358	15278	nil	Circular	Concrete
2340	2358	15278	nil	Box	Concrete
2359	2353	15684	nil	Circular	Concrete
2358	2360	15278	nil	Box	Concrete
2360	2361	15278	nil	Box	Concrete

2353	2361	15684	nil	Circular	Concrete
2362	2359	15684	nil	Circular	Concrete
2352	2362	15684	nil	Circular	Concrete
2363	2362	15684	nil	Circular	Concrete
2365	2363	15684	nil	Circular	Concrete
2350	2365	15684	nil	Circular	Concrete
2366	2361	15684	nil	Box	Concrete
2368	2365	15684	nil	Circular	Concrete
2354	2368	15684	nil	Circular	Concrete
2370	2371	15684	nil	Circular	Concrete
2372	2366	15684	nil	Box	Concrete
2367	2373	15684	nil	Circular	Concrete
2374	2370	15684	nil	Circular	Concrete
2376	2349	15278	nil	Circular	Concrete
2377	2374	15684	nil	Circular	Concrete
2378	2366	15684	nil	Circular	Concrete
2379	2370	15684	nil	Circular	Concrete
2380	2351	15278	nil	Circular	Concrete
2381	2372	15684	nil	Circular	Concrete
2386	2374	15684	nil	Circular	Concrete
2389	2377	15684	nil	Circular	Concrete
2394	2404	311	nil	Box	Concrete
2407	2406	311	nil	Circular	Concrete
2413	2417	311	nil	Circular	Concrete
2415	2417	311	nil	Circular	Concrete
2416	2419	311	nil	Circular	Concrete
2422	2421	311	nil	Circular	Concrete
2421	2425	311	nil	Circular	Concrete
2425	2428	311	nil	Circular	Concrete
2404	2431	15278	nil	Box	Concrete
2428	2432	311	nil	Circular	Concrete
2432	2434	nil	nil	Circular	Concrete
2431	2434	nil	nil	Box	Concrete
2435	2434	311	nil	Circular	Concrete
2436	2435	311	nil	Circular	Concrete
2417	2437	311	nil	Circular	Concrete
2437	2438	311	nil	Circular	Concrete
2439	2436	311	nil	Circular	Concrete
2438	2439	311	nil	Circular	Concrete
2440	2437	311	nil	Circular	Concrete
2419	2440	311	nil	Circular	Concrete
2442	2425	311	nil	Circular	Concrete
2443	2422	311	nil	Circular	Concrete
2444	2440	311	nil	Circular	Concrete
2445	2421	311	nil	Circular	Concrete
2446	2428	311	nil	Circular	Concrete
2447	2444	311	nil	Circular	Concrete
2448	2435	311	nil	Circular	Concrete
2450	2436	311	nil	Circular	Concrete

2451	2439	311	nil	Circular	Concrete
2453	2437	311	nil	Circular	Concrete
2454	2438	311	nil	Circular	Concrete
2456	2440	311	nil	Circular	Concrete
2457	2444	311	nil	Circular	Concrete
2459	2447	311	nil	Circular	Concrete
2434	2467	14131	nil	Box	Concrete
2469	2470	11949	nil	Circular	Concrete
2471	2470	11949	nil	Circular	Concrete
I-1906	2467	11949	nil	Circular	Concrete
2473	I-1906	nil	nil	Circular	Concrete
2474	2473	26607	nil	Circular	Concrete
2470	2474	11949	nil	Circular	Concrete
2467	2487	14131	nil	Box	Concrete
2488	2474	11949	nil	Circular	Concrete
2489	2488	11949	nil	Circular	Concrete
2490	2488	11949	nil	Circular	Concrete
2487	2491	14131	nil	Box	Concrete
2491	2502	14131	nil	Box	Concrete
2502	2510	14131	nil	Box	Concrete
I-36	2524	14131	nil	Box	Concrete
2524	2529	14131	nil	Box	Concrete
2536	2540	11949	nil	Circular	Concrete
I-92	2540	11949	nil	Circular	Concrete
I-91	2540	11949	nil	Circular	Concrete
2529	I-76	14131	nil	Box	Concrete
I-76	O-2	14131	nil	Box	Concrete
2595	2596	18356	UCGS1964	Circular	Concrete
2597	2596	11949	nil	Circular	Concrete
2540	2599	11949	nil	Circular	Concrete
2601	2597	11949	nil	Circular	Concrete
2596	2605	11949	nil	Circular	Concrete
I-85	2601	11949	nil	Circular	Concrete
2599	I-85	11949	nil	Circular	Concrete
2605	O-3	11949	nil	Circular	Concrete
2624	2625	11949	nil	Circular	Concrete
2625	2601	11949	nil	Circular	Concrete
2635	2599	11949	nil	Circular	Concrete
2636	2635	11949	nil	Circular	Concrete
2638	2635	11949	nil	Circular	Concrete
2641	2642	11949	nil	Circular	Concrete
2642	2625	11949	nil	Circular	Concrete
2699	2700	14320	nil	Circular	Concrete
2700	2635	14320	nil	Circular	Concrete
2701	2700	14320	nil	Circular	Concrete

Y_WEISBACH	ZEN_WILLIAMS	KUTTERS_N	MANNINGS_N	SECTION_SIZE	BER_OF_SECT
			0.013	8 x 8 ft	1
			0.013	10 x 5 ft	1
			0.013	10 x 5 ft	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	10 x 5 ft	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	18 inch	1
			0.013	10 x 5 ft	1
			0.013	18 inch	1
			0.013	10 x 5 ft	1
			0.013	8 x 5 ft	1
			0.013	10 x 5 ft	1
			0.013	10 x 5 ft	1
			0.01	12 inch	1
			0.01	12 inch	1
			0.013	8 x 5 ft	1
			0.013	8 x 5 ft	1
			0.013	8 x 5 ft	1
			0.01	12 inch	1
			0.013	8 x 5 ft	1
			0.01	12 inch	1
			0.013	8 x 5 ft	1
			0.013	8 x 5 ft	1
			0.01	12 inch	1
			0.013	8 x 5 ft	1
			0.01	12 inch	1
			0.013	8 x 5 ft	1
			0.013	8 x 5 ft	1
			0.01	12 inch	1
			0.013	10 x 5 ft	1
			0.013	10 x 5 ft	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	24 inch	1
			0.013	18 inch	1
			0.013	30 inch	1
			0.013	18 inch	1
			0.013	30 inch	1
			0.013	12 inch	1
			0.013	30 inch	1
			0.013	8 x 5 ft	1
			0.013	30 inch	1
			0.013	8 x 5 ft	1
			0.013	8 x 5 ft	1

			0.013	12 inch	1
			0.013	30 inch	1
			0.013	12 inch	1
			0.013	30 inch	1
			0.013	24 inch	1
			0.013	12 inch	1
			0.013	10 x 5 ft	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	10 x 5 ft	1
			0.013	18 inch	1
			0.013	#Error	1
			0.013	18 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	8 x 5 ft	1
			0.013	15 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	8 x 4 ft	1
			0.013	30 inch	1
			0.013	60 inch	1
			0.013	8 x 8 ft	1
			0.013	36 inch	1
			0.013	30 inch	1
			0.013	18 inch	1
			0.013	24 inch	1
			0.013	30 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	24 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1

			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	8 x 8 ft	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	42 inch	1
			0.013	42 inch	1
			0.013	42 inch	1
			0.013	24 inch	1
			0.013	8 x 8 ft	1
			0.013	30 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	8 x 8 ft	1
			0.013	8 x 8 ft	1
			0.013	8 x 8 ft	1
			0.013	10 x 8 ft	1
			0.013	10 x 8 ft	1
			0.013	24 inch	1
			0.013	30 inch	1
			0.013	48 inch	1
			0.013	10 x 8 ft	1
			0.013	10 x 8 ft	1
			0.013	24 inch	1
			0.013	60 inch	1
			0.013	60 inch	1
			0.013	60 inch	1
			0.013	60 inch	1
			0.013	60 inch	1
			0.013	60 inch	1
			0.013	60 inch	1
			0.013	60 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	24 inch	1
			0.013	24 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	18 inch	1

M_INVERT_ELEV	AM_INVERT_ELE	DEFINED_LEN	LENGTH_FT	EFINED_BEND	D_ANGLE_DEGR
76.4	76.4	TRUE	1	FALSE	1.505612422
82.66	82.47	TRUE	175	FALSE	0.114330708
82.47	82.47	TRUE	104	FALSE	85.85482772
83	82.74	TRUE	29.417	FALSE	89.82774715
84.3	84.15	TRUE	12.62537	FALSE	69.75351942
82.95	82.86	TRUE	44.41621	FALSE	91.97617775
82.95	82.86	TRUE	265.62801	FALSE	11.50062923
83.8	83.4	TRUE	34.6	FALSE	86.50366377
85.3	84.8	TRUE	15.63202	FALSE	85.6302046
84.6	84.38	TRUE	25.20079	FALSE	89.30700247
86	85.6	TRUE	53.25411	FALSE	104.9834468
82.86	82.66	TRUE	400.96768	FALSE	2.114475887
83.4	83	TRUE	40.67087	FALSE	113.7468439
82.66	82.47	TRUE	84.82595	FALSE	1.368287271
82.18	81.89	TRUE	144.20014	FALSE	4.150169152
82.47	82.24	TRUE	71	FALSE	2.508252118
82.47	82.24	TRUE	383	FALSE	1.222688021
85.4	82.24	TRUE	1	FALSE	163.9234185
85	84.5	TRUE	1	FALSE	31.551556
81	80.9	TRUE	1	FALSE	6.594301369
82.74	82.18	TRUE	70	FALSE	0.038074215
82.74	82.18	TRUE	742	FALSE	2.356366367
84.15	82.18	TRUE	1	FALSE	15.98201803
82.85	82.74	TRUE	44	FALSE	0.414810678
83	82.74	TRUE	1	FALSE	86.89248203
82.85	82.74	TRUE	53	FALSE	0.620082948
82.85	82.74	TRUE	56	FALSE	1.033105201
82.8	82.74	TRUE	1	FALSE	90.38007946
80	79.8	TRUE	39	FALSE	0.912186122
84	79.7	TRUE	1	FALSE	89.42438383
79.7	79.6	TRUE	11	FALSE	0.784339557
79.6	79.5	TRUE	51	FALSE	0.978781055
82.5	79	TRUE	1	FALSE	83.17054087
83	82.95	TRUE	304	FALSE	0.183864651
82.47	82.47	TRUE	1	FALSE	1.365126028
86.5	85.8	TRUE	52.99	FALSE	90.58913959
85	83	TRUE	33.63	FALSE	89.63689355
84.5	84	TRUE	30.02399	FALSE	29.81796799
84.85	84.77	TRUE	17.41034	FALSE	91.47618501
84.77	84.32	TRUE	302.26776	FALSE	0.356058948
84.4	84.32	TRUE	17.82807	FALSE	91.69128031
84.32	83.9	TRUE	272.03559	FALSE	3.053894689
84	83.9	TRUE	23.44184	FALSE	76.19636146
83.9	83.88	TRUE	16.005	FALSE	10.94612514
82.18	81.89	TRUE	257.1818	FALSE	77.49795553
84.4	82.2	TRUE	404.31399	FALSE	40.88177244
81.89	80	TRUE	35.40542	FALSE	11.77864928
81.89	80	TRUE	18.40978	FALSE	87.37319956

0	0	TRUE	15.69841	FALSE	50.07456604
84.7	84.4	TRUE	124.62311	FALSE	0.030201107
85	84.7	TRUE	13.20606	FALSE	94.47239059
84.8	84.7	TRUE	137.83715	FALSE	0.577258259
85.7	85.3	TRUE	147.21956	FALSE	0.135600307
86	85.7	TRUE	21.82292	FALSE	88.88678238
82.07	81.89	TRUE	451.88184	FALSE	90.71945656
85.8	85.7	TRUE	177.04982	FALSE	0.534398209
86	85.8	TRUE	21.40841	FALSE	89.00619447
82.5	82.47	TRUE	60.012	FALSE	3.863914974
82.24	82.07	TRUE	328.05859	FALSE	0.086077811
86.8	85.4	TRUE	7.80256	FALSE	102.2195916
83.04	82.5	TRUE	273.29486	FALSE	0.2893217
84.85	84.77	TRUE	44.4018	FALSE	91.28563488
83.64	83.04	TRUE	299.90145	FALSE	0.09317348
85	84.7	TRUE	18.40109	FALSE	90.89303887
86.95	82.5	TRUE	17.20116	FALSE	89.44192572
84.4	84.32	TRUE	44.60045	FALSE	90.89341876
82.6	82.24	TRUE	17.8	FALSE	88.91487985
83.4	83.04	TRUE	43.20741	FALSE	89.58519557
83.95	83.64	TRUE	42.80187	FALSE	89.50276928
79.5	79	TRUE	34.02117	FALSE	0.076394251
84.65	79.5	TRUE	58.98718	FALSE	6.276092362
81.1	81.03	TRUE	16.00125	FALSE	73.39129147
81.07	81.03	TRUE	17.9254	FALSE	76.58381652
81.3	81.26	TRUE	15.17893	FALSE	76.61241477
79.67	79.22	TRUE	173.00104	FALSE	1.581753525
79.22	78.57	TRUE	513.74967	FALSE	0.338245456
78.57	78.18	TRUE	312.94121	FALSE	0.671771891
82	77.4	TRUE	224.94166	FALSE	4.224351066
78.18	77.8	TRUE	268.23393	FALSE	6.033911038
77.8	77	TRUE	16.37681	FALSE	85.24843934
77.4	77	TRUE	9.47629	FALSE	3.599596602
78.22	78	TRUE	232.60215	FALSE	86.57091764
78.83	78.47	TRUE	274.81863	FALSE	0.420843611
81.03	80.82	TRUE	69.265	FALSE	87.5176333
80.32	80.07	TRUE	154.23562	FALSE	0.228998699
79.15	78.83	TRUE	248.24158	FALSE	2.750794086
80.07	79.65	TRUE	250.202	FALSE	3.646962391
80.54	80.32	TRUE	152.88846	FALSE	1.94910416
81.26	81.05	TRUE	70.57733	FALSE	87.88662317
79.69	79.57	TRUE	49.60161	FALSE	92.18333881
79.79	79.67	TRUE	62.11022	FALSE	95.49374145
80.82	80.54	TRUE	171.55116	FALSE	0.45630553
79.36	79.22	TRUE	66.45088	FALSE	89.49573838
79.3	79.17	TRUE	50	FALSE	92.39305798
81.97	81.32	TRUE	250.0871	FALSE	0.893152373
80.09	79.93	TRUE	59.33296	FALSE	49.38263699
81.7	81.58	TRUE	45.40176	FALSE	89.83762596

81.3	81.2	TRUE	37.00054	FALSE	86.89174021
81	80.86	TRUE	51.05605	FALSE	125.0669423
81.8	81.7	TRUE	41.80431	FALSE	89.40662772
81	80.86	TRUE	50.83188	FALSE	64.22429633
81.8	81.7	TRUE	46.80171	FALSE	88.09277752
82.35	82.25	TRUE	43.20185	FALSE	88.48923724
77	76.8	TRUE	347.60418	FALSE	1.51639823
82.28	81.73	TRUE	30.82337	FALSE	87.78757337
82.28	81.73	TRUE	49.31734	FALSE	93.9531795
79.22	78.05	TRUE	595.63653	FALSE	90.05982773
79.71	79.22	TRUE	312.26559	FALSE	1.092385089
80.12	79.71	TRUE	324.20137	FALSE	1.916071737
81.73	81.62	TRUE	28.8	FALSE	93.04252451
76.8	76.6	TRUE	313.22235	FALSE	0.245874949
81.78	81.12	TRUE	277.38464	FALSE	83.23683254
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82.38	82.28	TRUE	28.62167	FALSE	67.38758881
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76.4	76.4	TRUE	151.30367	FALSE	1.967524038
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81.4	81.22	TRUE	39.47911	FALSE	61.18343666
81.8	80.72	TRUE	494.54959	FALSE	1.740052926
79.32	79.22	TRUE	72.41768	FALSE	88.96946875
76.4	76.4	TRUE	486.65331	FALSE	2.020872885
76.4	76.03	TRUE	18.4	FALSE	0
79.5	78.8	TRUE	18.67619	FALSE	33.29659458
76.86	76.64	TRUE	116.01465	FALSE	14.81336936
78.22	77.89	TRUE	309.44854	FALSE	82.52865213
76.91	76.83	TRUE	28.4007	FALSE	65.82620233
76.64	76.03	TRUE	313.12649	FALSE	5.579169413
77.43	76.91	TRUE	323.12431	FALSE	67.4074525
77.89	77.43	TRUE	370.41015	FALSE	8.439235968
76.03	75.6	TRUE	277.04979	FALSE	0
81.22	80.26	TRUE	13.61323	FALSE	88.91685708
80.26	79.94	TRUE	130.25836	FALSE	22.93738898
78.37	77.89	TRUE	301.53434	FALSE	96.88519862
80.08	79.98	TRUE	32.28002	FALSE	71.79373165
80.48	80.02	TRUE	47.57142	FALSE	72.46637301
80.9	80.8	TRUE	14.22252	FALSE	89.1619109
80.8	80.26	TRUE	248.42423	FALSE	0.453351881
84	83.8	TRUE	30.40592	FALSE	88.34549467
83.8	82.82	TRUE	567.11657	FALSE	0.735287298
84	83.8	TRUE	47.40042	FALSE	92.20391539

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15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	3	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	3	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>
15	2	0.1	0.005	FALSE	<None>

ONAL_UNIT_COS	HMI_ID	ELEMENT_TYPE	AS_MESSAGES	RUCTED_SLOPE	L_CAPACITY_C
0	11439	Pipe	TRUE	0	0
0	11427	Pipe	TRUE	0.001085714	264.7151093
0	11428	Pipe	TRUE	0	0
0	10177	Pipe	TRUE	0.008838427	21.26681613
0	9457	Pipe	TRUE	0.01188084	24.65690517
0	10791	Pipe	TRUE	0.002026287	10.18275978
0	11074	Pipe	TRUE	0.00033882	147.8785811
0	8286	Pipe	FALSE	0.011560694	24.32242869
0	8442	Pipe	TRUE	0.031985629	40.45688525
0	10034	Pipe	TRUE	0.008729885	21.13582747
0	8643	Pipe	TRUE	0.007511157	9.103291683
0	10104	Pipe	TRUE	0.000498793	179.4243032
0	8083	Pipe	FALSE	0.009835049	10.41677522
0	10420	Pipe	TRUE	0.002239881	380.2186266
0	8799	Pipe	TRUE	0.002011094	273.2450869
0	11172	Pipe	TRUE	0.003239437	457.2520887
0	11173	Pipe	TRUE	0.000600522	196.8726945
0	11174	Pipe	TRUE	3.16	82.32945321
0	11175	Pipe	TRUE	0.5	32.7488981
0	11176	Pipe	FALSE	0.1	1926.798075
0	11182	Pipe	FALSE	0.008	544.9807941
0	11183	Pipe	TRUE	0.000754717	167.3895203
0	11184	Pipe	TRUE	1.97	65.00470666
0	11187	Pipe	TRUE	0.0025	304.6535255
0	11189	Pipe	TRUE	0.26	23.61556626
0	11192	Pipe	TRUE	0.002075472	277.5841163
0	11193	Pipe	TRUE	0.001964286	270.0464876
0	11194	Pipe	TRUE	0.06	11.34455108
0	11353	Pipe	TRUE	0.005128205	436.3338421
0	11355	Pipe	TRUE	4.3	96.03862145
0	11358	Pipe	TRUE	0.009090909	580.9514785
0	11359	Pipe	TRUE	0.001960784	269.8056971
0	11361	Pipe	TRUE	3.5	86.64544009
0	11382	Pipe	TRUE	0.000164474	103.0312965
0	11386	Pipe	TRUE	0	0
0	11430	Pipe	TRUE	0.01321004	12.07249651
0	11429	Pipe	TRUE	0.059470711	25.61513166
0	11047	Pipe	FALSE	0.01665335	29.19213047
0	10180	Pipe	TRUE	0.004594971	7.120104957
0	10984	Pipe	TRUE	0.001488746	15.82530311
0	8268	Pipe	TRUE	0.004487306	7.03619483
0	8271	Pipe	TRUE	0.001543916	16.11585964
0	11121	Pipe	TRUE	0.004265877	2.326871974
0	7785	Pipe	TRUE	0.001249609	14.49869295
0	9591	Pipe	TRUE	0.001127607	204.6044556
0	9326	Pipe	TRUE	0.005441316	30.25475566
0	7855	Pipe	TRUE	0.053381657	1407.771701
0	9743	Pipe	TRUE	0.102662824	1952.283153

0	9090	Pipe	TRUE	0	0
0	9721	Pipe	TRUE	0.002407258	20.12347733
0	8465	Pipe	TRUE	0.022716844	5.369604908
0	10204	Pipe	TRUE	0.000725494	11.04736114
0	8314	Pipe	TRUE	0.00271703	11.7913147
0	9086	Pipe	FALSE	0.013747015	4.177077514
0	7858	Pipe	TRUE	0.000398334	160.3410646
0	9611	Pipe	TRUE	0.000564813	5.376098878
0	10428	Pipe	TRUE	0.009342123	21.86441106
0	8838	Pipe	TRUE	0.0004999	5.05774081
0	9125	Pipe	TRUE	0.0005182	182.8814718
0	10332	Pipe	TRUE	0.17942829	44.49287685
0	8492	Pipe	TRUE	0.001975888	10.05532566
0	8491	Pipe	TRUE	0.001801729	4.458509882
0	9989	Pipe	TRUE	0.002000657	10.11815516
0	8466	Pipe	TRUE	0.016303382	28.88376781
0	8239	Pipe	TRUE	0.258703483	53.42520115
0	8866	Pipe	TRUE	0.001793704	4.44856972
0	8397	Pipe	TRUE	0.020224719	14.93778752
0	8333	Pipe	TRUE	0.008331904	20.64843429
0	8981	Pipe	TRUE	0.007242674	19.2514953
0	9776	Pipe	TRUE	0.014696731	738.6634047
0	10858	Pipe	TRUE	0.087307106	19.08621607
0	8082	Pipe	TRUE	0.004374658	6.947316635
0	10781	Pipe	TRUE	0.00223147	4.961815325
0	7654	Pipe	TRUE	0.002635232	5.392056631
0	7768	Pipe	TRUE	0.00260114	5.357065151
0	8882	Pipe	TRUE	0.001265208	8.046293924
0	9254	Pipe	TRUE	0.00124624	7.98575381
0	10386	Pipe	TRUE	0.020449747	633.6336324
0	10059	Pipe	TRUE	0.001416674	15.4374881
0	10043	Pipe	TRUE	0.048849562	575.5972194
0	10551	Pipe	TRUE	0.042210612	2385.773694
0	10045	Pipe	TRUE	0.000945821	20.51144049
0	9196	Pipe	TRUE	0.001309955	14.84464647
0	8153	Pipe	TRUE	0.003031834	5.783593438
0	10548	Pipe	TRUE	0.001620897	9.10736317
0	9550	Pipe	TRUE	0.001289067	14.7258177
0	10324	Pipe	TRUE	0.001678644	9.268175508
0	9781	Pipe	TRUE	0.001438958	8.581021298
0	10656	Pipe	TRUE	0.00297546	5.729570443
0	9190	Pipe	TRUE	0.002419276	5.166396871
0	11099	Pipe	TRUE	0.001932049	4.616938797
0	10846	Pipe	TRUE	0.001632166	9.138968464
0	9388	Pipe	TRUE	0.002106819	4.821239186
0	8743	Pipe	TRUE	0.0026	5.355890659
0	10370	Pipe	TRUE	0.002599994	5.354957906
0	9805	Pipe	TRUE	0.002696646	5.454525948
0	8814	Pipe	TRUE	0.002643069	5.400068973

0	10764	Pipe	TRUE	0.002702663	5.46060795
0	10315	Pipe	TRUE	0.002742084	5.500288125
0	8008	Pipe	TRUE	0.002392098	5.137294922
0	9058	Pipe	TRUE	0.002754177	5.512402995
0	8494	Pipe	TRUE	0.002136674	4.85527874
0	10023	Pipe	TRUE	0.002314716	5.053518453
0	8042	Pipe	TRUE	0.000575367	278.5421504
0	9725	Pipe	TRUE	0.017843604	30.21734322
0	9749	Pipe	TRUE	0.011152264	23.88891995
0	8577	Pipe	TRUE	0.001964285	44.58807512
0	10031	Pipe	TRUE	0.001569177	39.85221189
0	9908	Pipe	TRUE	0.001264646	35.77675618
0	10599	Pipe	TRUE	0.003819444	13.98025494
0	9391	Pipe	TRUE	0.000638524	293.431712
0	9756	Pipe	TRUE	0.002379368	20.00656168
0	9199	Pipe	TRUE	0.002247923	10.72520876
0	8110	Pipe	TRUE	0.003493856	13.37111141
0	9848	Pipe	TRUE	0.002086519	530.4318458
0	11123	Pipe	TRUE	0	0
0	9458	Pipe	TRUE	0	0
0	8143	Pipe	TRUE	0	0
0	8734	Pipe	TRUE	0	0
0	9493	Pipe	TRUE	0.004559373	15.27451989
0	9442	Pipe	TRUE	0.002183805	19.16675752
0	10707	Pipe	TRUE	0.001380878	53.37517893
0	9513	Pipe	TRUE	0	0
0	8435	Pipe	TRUE	0.020108696	2208.133765
0	10186	Pipe	TRUE	0.037480878	43.79453009
0	10280	Pipe	TRUE	0.001896312	113.4078905
0	7977	Pipe	TRUE	0.001066413	85.04545323
0	8259	Pipe	TRUE	0.002816832	138.2193417
0	9584	Pipe	TRUE	0.001948095	114.9458673
0	7908	Pipe	TRUE	0.001609288	104.4732739
0	8131	Pipe	TRUE	0.001241867	91.77530267
0	8425	Pipe	TRUE	0.001552068	102.5991267
0	9039	Pipe	TRUE	0.070519634	27.89331001
0	7996	Pipe	TRUE	0.002456656	5.206156444
0	10090	Pipe	TRUE	0.001591858	9.025415862
0	9107	Pipe	TRUE	0.003097892	12.59064836
0	10581	Pipe	FALSE	0.009669671	10.32882422
0	8715	Pipe	TRUE	0.007031103	8.807583145
0	10479	Pipe	TRUE	0.002173701	4.897167199
0	8576	Pipe	TRUE	0.006577666	8.518849619
0	8676	Pipe	TRUE	0.00172804	4.366383707
0	10998	Pipe	TRUE	0.004219372	6.822898823

CEEDS_CAPACI	IGN_CAPACITY	DESIGN_CAPAC	FULL_CAPACI	AGE_PIPE_COVI	RISE_IN
TRUE	0	-1065.185517	-1065.185517	4.6	96
TRUE	264.7151093	-253.8045226	-253.8045226	1.685	60
TRUE	0	-519.4041835	-519.4041835	2.38	60
FALSE	21.26681613	13.08030393	13.08030393	7.13	24
FALSE	24.65690517	24.65690517	24.65690517	3.965	24
TRUE	10.18275978	-10.17363466	-10.17363466	5.125	24
TRUE	147.8785811	-338.935367	-338.935367	2.82	60
FALSE	24.32242869	12.86680591	12.86680591	4.38	24
FALSE	40.45688525	15.96568405	15.96568405	2.25	24
TRUE	21.13582747	-3.69086964	-3.69086964	2.81	24
TRUE	9.103291683	-6.033514436	-6.033514436	2.505	18
TRUE	179.4243032	-327.6494735	-327.6494735	2.465	60
FALSE	10.41677522	2.132395733	2.132395733	5.105	18
TRUE	380.2186266	-139.2827664	-139.2827664	2.435	60
TRUE	273.2450869	-103.1835441	-103.1835441	3.965	60
TRUE	457.2520887	-71.30670873	-71.30670873	3.245	60
TRUE	196.8726945	-334.6006327	-334.6006327	3.145	60
FALSE	82.32945321	77.16480793	77.16480793	5.63	12
FALSE	32.7488981	16.8480404	16.8480404	5.05	12
FALSE	1926.798075	1551.734596	1551.734596	5.05	60
FALSE	544.9807941	197.7440283	197.7440283	4.04	60
TRUE	167.3895203	-179.1650651	-179.1650651	3.54	60
FALSE	65.00470666	65.00470666	65.00470666	7.335	12
TRUE	304.6535255	-37.80829621	-37.80829621	3.205	60
FALSE	23.61556626	23.61556626	23.61556626	7.13	12
TRUE	277.5841163	-64.44630564	-64.44630564	3.205	60
TRUE	270.0464876	-71.46522783	-71.46522783	3.705	60
FALSE	11.34455108	11.34455108	11.34455108	7.23	12
TRUE	436.3338421	-537.9703721	-537.9703721	5.045	60
FALSE	96.03862145	96.03862145	96.03862145	15.15	12
TRUE	580.9514785	-393.0093536	-393.0093536	11.35	60
TRUE	269.8056971	-704.0582977	-704.0582977	9.45	60
FALSE	86.64544009	82.03022515	82.03022515	16.25	12
TRUE	103.0312965	-387.3352926	-387.3352926	3.325	60
TRUE	0	-518.5310685	-518.5310685	2.28	60
FALSE	12.07249651	9.105572624	9.105572624	1.915	18
FALSE	25.61513166	24.60143266	24.60143266	4.065	18
FALSE	29.19213047	13.29127277	13.29127277	4.55	24
TRUE	7.120104957	-25.70658993	-25.70658993	4.49	18
TRUE	15.82530311	-25.24284701	-25.24284701	3.555	30
TRUE	7.03619483	-56.43125195	-56.43125195	4.54	18
TRUE	16.11585964	-92.04597757	-92.04597757	3.99	30
TRUE	2.326871974	-13.57398573	-13.57398573	5.85	12
TRUE	14.49869295	-109.564002	-109.564002	4.66	30
TRUE	204.6044556	-170.4495608	-170.4495608	4.115	60
FALSE	30.25475566	16.57393996	16.57393996	5.25	30
FALSE	1407.771701	943.0537566	943.0537566	0.65	60
FALSE	1952.283153	1487.812449	1487.812449	-4.055	60

TRUE	0	-13.68081569	-13.68081569	85.545	12
FALSE	20.12347733	6.442661634	6.442661634	3.75	30
TRUE	5.369604908	-5.89371725	-5.89371725	4.85	12
FALSE	11.04736114	8.629867606	8.629867606	3.6	30
FALSE	11.7913147	9.373821165	9.373821165	3.35	24
FALSE	4.177077514	1.759583977	1.759583977	3.85	12
TRUE	160.3410646	-368.4571562	-368.4571562	-0.305	60
FALSE	5.376098878	5.376098878	5.376098878	3.6	24
FALSE	21.86441106	21.86441106	21.86441106	4.1	24
TRUE	5.05774081	-8.67957998	-8.67957998	6.215	24
TRUE	182.8814718	-346.9003122	-346.9003122	3.825	60
FALSE	44.49287685	39.32823157	39.32823157	2.8	18
FALSE	10.05532566	0.124569838	0.124569838	6.18	24
TRUE	4.458509882	-3.782945355	-3.782945355	4.49	18
FALSE	10.11815516	8.442392595	8.442392595	4.96	24
FALSE	28.88376781	25.12016992	25.12016992	3.38	24
FALSE	53.42520115	49.16711594	49.16711594	4.45	18
FALSE	4.44856972	0.822329416	0.822329416	4.54	18
FALSE	14.93778752	11.28407569	11.28407569	6.855	18
FALSE	20.64843429	12.25176498	12.25176498	5.98	24
FALSE	19.2514953	17.57573274	17.57573274	4.105	24
TRUE	738.6634047	-234.7518497	-234.7518497	11.75	60
FALSE	19.08621607	14.47100114	14.47100114	11.075	15
FALSE	6.947316635	5.848455936	5.848455936	3.635	18
FALSE	4.961815325	3.862954627	3.862954627	3.6	18
FALSE	5.392056631	3.111920682	3.111920682	3.37	18
FALSE	5.357065151	0.274834421	0.274834421	2.955	18
TRUE	8.046293924	-2.118167536	-2.118167536	3.105	24
TRUE	7.98575381	-14.56836202	-14.56836202	3.775	24
TRUE	633.6336324	-342.7233846	-342.7233846	10.3	48
TRUE	15.4374881	-15.79762725	-15.79762725	3.81	30
FALSE	575.5972194	544.362104	544.362104	4.75	60
FALSE	2385.773694	1410.996574	1410.996574	4.8	96
TRUE	20.51144049	-34.34917987	-34.34917987	6.44	36
TRUE	14.84464647	-29.30208209	-29.30208209	5.65	30
FALSE	5.783593438	3.585872042	3.585872042	3.875	18
TRUE	9.10736317	-17.30650087	-17.30650087	4.915	24
TRUE	14.7258177	-23.15740488	-23.15740488	6.37	30
TRUE	9.268175508	-22.54384171	-22.54384171	5.61	24
TRUE	8.581021298	-13.23136356	-13.23136356	4.07	24
FALSE	5.729570443	3.449434494	3.449434494	3.645	18
TRUE	5.166396871	-7.223257503	-7.223257503	3.47	18
TRUE	4.616938797	-0.465291933	-0.465291933	2.97	18
TRUE	9.138968464	-8.277973605	-8.277973605	4.18	24
TRUE	4.821239186	-0.260991544	-0.260991544	3.76	18
TRUE	5.355890659	-3.325108858	-3.325108858	4.465	18
TRUE	5.354957906	-8.133557166	-8.133557166	4.325	18
TRUE	5.454525948	-5.259365861	-5.259365861	4.31	18
TRUE	5.400068973	-0.863437007	-0.863437007	4.46	18

TRUE	5.46060795	-0.610597408	-0.610597408	4.01	18
FALSE	5.500288125	3.096530347	3.096530347	3.57	18
TRUE	5.137294922	-0.260858258	-0.260858258	4.01	18
FALSE	5.512402995	3.39709615	3.39709615	3.57	18
FALSE	4.85527874	0.926851743	0.926851743	3.51	18
TRUE	5.053518453	-8.434996619	-8.434996619	3.46	18
TRUE	278.5421504	-756.4557868	-756.4557868	5.1	96
FALSE	30.21734322	30.21734322	30.21734322	2.375	24
FALSE	23.88891995	23.88891995	23.88891995	2.375	24
TRUE	44.58807512	-19.28320297	-19.28320297	6.365	42
FALSE	39.85221189	39.85221189	39.85221189	4.035	42
FALSE	35.77675618	35.77675618	35.77675618	3.985	42
FALSE	13.98025494	13.98025494	13.98025494	3.425	24
TRUE	293.431712	-781.2744705	-781.2744705	4.8	96
FALSE	20.00656168	20.00656168	20.00656168	3.35	30
FALSE	10.72520876	10.72520876	10.72520876	2.265	24
FALSE	13.37111141	13.37111141	13.37111141	2.265	24
TRUE	530.4318458	-539.920246	-539.920246	-1.8	96
TRUE	0	-1069.022016	-1069.022016	-1.7	96
TRUE	0	-1067.276111	-1067.276111	4.6	96
TRUE	0	-1232.633614	-1232.633614	4.6	96
TRUE	0	-1230.230115	-1230.230115	4.6	96
TRUE	15.27451989	-9.312488237	-9.312488237	2.685	24
FALSE	19.16675752	2.848676148	2.848676148	2.515	30
TRUE	53.37517893	-59.14815658	-59.14815658	2.58	48
TRUE	0	-1228.035168	-1228.035168	4.55	96
FALSE	2208.133765	813.4119638	813.4119638	-1.75	96
FALSE	43.79453009	32.69603704	32.69603704	2.995	24
TRUE	113.4078905	-111.0618786	-111.0618786	3.8	60
TRUE	85.04545323	-68.38297178	-68.38297178	2.495	60
TRUE	138.2193417	-86.25042742	-86.25042742	3.63	60
TRUE	114.9458673	-120.6223949	-120.6223949	4.315	60
TRUE	104.4732739	-107.4969549	-107.4969549	2.68	60
TRUE	91.77530267	-76.78992845	-76.78992845	1.89	60
TRUE	102.5991267	-132.9691355	-132.9691355	3.535	60
FALSE	27.89331001	18.52552256	18.52552256	2.56	18
TRUE	5.206156444	-7.293384	-7.293384	3.55	18
TRUE	9.025415862	-6.111390257	-6.111390257	4.47	24
FALSE	12.59064836	4.541493749	4.541493749	2.235	24
FALSE	10.32882422	3.241172715	3.241172715	2.515	18
FALSE	8.807583145	5.675830155	5.675830155	2.09	18
FALSE	4.897167199	1.765414209	1.765414209	2.57	18
FALSE	8.518849619	8.518849619	8.518849619	1.955	18
FALSE	4.366383707	4.366383707	4.366383707	1.09	18
FALSE	6.822898823	6.822898823	6.822898823	1.955	18

SPAN_IN	FULL_AREA_FT^2	CROWN_ELEV_AM	CROWN_EL	TICAL_SLOPE_F	RITICAL_DEPTH
96	64	84.4	84.4	0.008414902	8
120	50	87.66	87.47	0.003480618	4.371951432
120	50	87.47	87.47	0.003481762	4.378924481
24	3.141592654	85	84.74	0.004914492	1.019076566
24	3.141592654	86.3	86.15	0	0
24	3.141592654	84.95	84.86	0.008283198	1.619212791
120	50	87.95	87.86	0.00343962	4.191862122
24	3.141592654	85.8	85.4	0.005475343	1.214655313
24	3.141592654	87.3	86.8	0.010627326	1.748591868
24	3.141592654	86.6	86.38	0.010857543	1.757256565
18	1.767145868	87.5	87.1	0.017947146	1.408485733
120	50	87.86	87.66	0.003465826	4.307372343
18	1.767145868	84.9	84.5	0.007636138	1.115191548
120	50	87.66	87.47	0.003481886	4.377467314
96	40	87.18	86.89	0.003941219	4.097888906
120	50	87.47	87.24	0.003493582	4.428206094
120	50	87.47	87.24	0.003497344	4.444471199
12	0.785398163	86.4	83.24	0.010773429	0.924809615
12	0.785398163	86	85.5	0.114817595	0.999049305
96	40	86	85.9	0.003937965	4.08797675
96	40	87.74	87.18	0.00387134	3.883191354
96	40	87.74	87.18	0.0038697	3.878103782
12	0.785398163	85.15	83.18	0	0
96	40	87.85	87.74	0.003859853	3.847510064
12	0.785398163	84	83.74	0	0
96	40	87.85	87.74	0.003858814	3.844278242
96	40	87.85	87.74	0.003857565	3.840390564
12	0.785398163	83.8	83.74	0	0
96	40	85	84.8	0.025569979	5
12	0.785398163	85	80.7	0	0
96	40	84.7	84.6	0.025551979	5
96	40	84.6	84.5	0.025546904	5
12	0.785398163	83.5	80	0.008791821	0.894106963
120	50	88	87.95	0.003444217	4.212231474
120	50	87.47	87.47	0.003480633	4.372015704
18	1.767145868	88	87.3	0.005130163	0.654530503
18	1.767145868	86.5	84.5	0.004935365	0.375541143
24	3.141592654	86.5	86	0.006583157	1.43782316
18	1.767145868	86.35	86.27	0.093221575	1.495459254
30	4.908738521	87.27	86.82	0.009275024	2.151725803
18	1.767145868	85.9	85.82	0.359245466	1.499459998
30	4.908738521	86.82	86.4	0.065824668	2.489381361
12	0.785398163	85	84.9	0.194041735	0.999049305
30	4.908738521	86.4	86.38	0.087727567	2.493866383
96	40	87.18	86.89	0.003937943	4.087908003
30	4.908738521	86.9	84.7	0.004516202	1.24461444
96	40	86.89	85	0.004148424	4.715905304
96	40	86.89	85	0.004147853	4.714232659

12	0.785398163	1	1	0.142619504	0.998459409
30	4.908738521	87.2	86.9	0.004516202	1.24461444
12	0.785398163	86	85.7	0.09488757	0.996212199
30	4.908738521	87.3	87.2	0.004254126	0.507828991
24	3.141592654	87.7	87.3	0.004466407	0.540787083
12	0.785398163	87	86.7	0.007523619	0.665710821
120	50	87.07	86.89	0.003493897	4.429567761
24	3.141592654	87.8	87.7	0	0
24	3.141592654	88	87.8	0	0
24	3.141592654	84.5	84.47	0.005980648	1.335020017
120	50	87.24	87.07	0.003495163	4.435045461
18	1.767145868	88.3	86.9	0.005845014	0.874941868
24	3.141592654	85.04	84.5	0.005190241	1.127411856
18	1.767145868	86.35	86.27	0.007602936	1.112358173
24	3.141592654	85.64	85.04	0.004524591	0.448179631
24	3.141592654	87	86.7	0.004475386	0.679682219
18	1.767145868	88.45	84	0.005499237	0.79097399
18	1.767145868	85.9	85.82	0.00529781	0.727202956
18	1.767145868	84.1	83.74	0.005305926	0.730078907
24	3.141592654	85.4	85.04	0.004944891	1.032684951
24	3.141592654	85.95	85.64	0.004524591	0.448179631
96	40	84.5	84	0.025523394	5
15	1.22718463	85.9	80.75	0.007372124	0.870940971
18	1.767145868	82.6	82.53	0.00492493	0.391386786
18	1.767145868	82.57	82.53	0.00492493	0.391386786
18	1.767145868	82.8	82.76	0.00498464	0.570844229
18	1.767145868	81.17	80.72	0.005810807	0.86762531
24	3.141592654	81.22	80.57	0.005231222	1.141197171
24	3.141592654	80.57	80.18	0.009422278	1.692811198
96	32	86	81.4	0.048556084	4
30	4.908738521	80.68	80.3	0.006730527	1.904472617
60	19.63495408	82.8	82	0.003284645	1.55246388
96	64	85.4	85	0.005227014	7.727649145
36	7.068583471	81.22	81	0.007056723	2.404326821
30	4.908738521	81.33	80.97	0.01037002	2.210666397
18	1.767145868	82.53	82.32	0.004971603	0.560025512
24	3.141592654	82.32	82.07	0.012027186	1.795638063
30	4.908738521	81.65	81.33	0.008303563	2.081278777
24	3.141592654	82.07	81.65	0.017099061	1.887526311
24	3.141592654	82.54	82.32	0.00901214	1.669185155
18	1.767145868	82.76	82.55	0.00498464	0.570844229
18	1.767145868	81.19	81.07	0.012425422	1.329271124
18	1.767145868	81.29	81.17	0.005810807	0.86762531
24	3.141592654	82.82	82.54	0.007081688	1.504335175
18	1.767145868	80.86	80.72	0.005810807	0.86762531
18	1.767145868	80.8	80.67	0.00795559	1.140841508
18	1.767145868	83.47	82.82	0.014387657	1.366992778
18	1.767145868	81.59	81.43	0.010026609	1.256301447
18	1.767145868	83.2	83.08	0.006358014	0.967287094

18	1.767145868	82.8	82.7	0.006260199	0.951785967
18	1.767145868	82.5	82.36	0.005005798	0.586737953
18	1.767145868	83.3	83.2	0.005945036	0.895359276
18	1.767145868	82.5	82.36	0.00495948	0.54991888
18	1.767145868	83.3	83.2	0.005390039	0.758313161
18	1.767145868	83.85	83.75	0.014387657	1.366992778
96	64	85	84.8	0.007944359	8
24	3.141592654	84.28	83.73	0	0
24	3.141592654	84.28	83.73	0	0
42	9.621127502	82.72	81.55	0.005428697	2.50542032
42	9.621127502	83.21	82.72	0	0
42	9.621127502	83.62	83.21	0	0
24	3.141592654	83.73	83.62	0	0
96	64	84.8	84.6	0.008565736	8
30	4.908738521	84.28	83.62	0	0
24	3.141592654	84.38	84.28	0	0
24	3.141592654	84.38	84.28	0	0
96	64	84.6	84.4	0.008496577	8
96	64	84.4	84.4	0.008475511	8
96	64	84.4	84.4	0.008447901	8
120	80	84.4	84.4	0.004345339	7.78752515
120	80	84.4	84.4	0.00434264	7.777419662
24	3.141592654	83.4	83.22	0.010692448	1.7510908
30	4.908738521	84.3	83.22	0.004726136	1.364875472
48	12.56637061	83.32	83.22	0.006405511	3.204533514
120	80	84.4	84.4	0.004340175	7.768186389
120	80	84.4	84.03	0.008023378	8
24	3.141592654	81.5	80.8	0.005404755	1.194775706
60	19.63495408	81.86	81.64	0.007010504	4.244408195
60	19.63495408	83.22	82.89	0.00476732	3.5516675
60	19.63495408	81.91	81.83	0.007010504	4.244408195
60	19.63495408	81.64	81.03	0.007514251	4.32686729
60	19.63495408	82.43	81.91	0.006499697	4.142966183
60	19.63495408	82.89	82.43	0.005126677	3.722262535
60	19.63495408	81.03	80.6	0.007514251	4.32686729
18	1.767145868	82.72	81.76	0.00856674	1.183011209
18	1.767145868	81.76	81.44	0.01260678	1.333439944
24	3.141592654	80.37	79.89	0.006357287	1.402557112
24	3.141592654	82.08	81.98	0.004895052	1.010091278
18	1.767145868	81.98	81.52	0.006817927	1.030963714
18	1.767145868	82.4	82.3	0.005159235	0.67368575
18	1.767145868	82.3	81.76	0.005159235	0.67368575
18	1.767145868	85.5	85.3	0	0
18	1.767145868	85.3	84.32	0	0
18	1.767145868	85.5	85.3	0	0

FILE_DESCRIPT	PROFILE_TYPE	AGE_VELOCITY	ERGED_TAILWA	HYDRAULIC_JU	FLOW_TIME
Pressure	PressureProfile	16.64420218	TRUE	FALSE	0.00100135
Pressure	PressureProfile	10.37040023	TRUE	FALSE	0.28124919
Pressure	PressureProfile	10.38809959	TRUE	FALSE	0.166857597
Pressure	PressureProfile	2.605847767	TRUE	FALSE	0.188147343
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	6.479641596	TRUE	FALSE	0.114245542
Pressure	PressureProfile	9.736278961	TRUE	FALSE	0.454704874
Pressure	PressureProfile	3.646437983	TRUE	FALSE	0.158145201
Pressure	PressureProfile	7.795791469	TRUE	FALSE	0.033419784
Pressure	PressureProfile	7.902583133	TRUE	FALSE	0.053148845
Pressure	PressureProfile	8.565680059	TRUE	FALSE	0.103619152
Pressure	PressureProfile	10.14147553	TRUE	FALSE	0.65895684
Pressure	PressureProfile	4.687999805	TRUE	FALSE	0.144592121
Pressure	PressureProfile	10.39003217	TRUE	FALSE	0.136069437
Pressure	PressureProfile	9.410718771	TRUE	FALSE	0.255382795
Pressure	PressureProfile	10.57119934	TRUE	FALSE	0.111939364
Pressure	PressureProfile	10.6294959	TRUE	FALSE	0.600530203
Pressure	PressureProfile	6.575830608	TRUE	FALSE	0.002534534
Pressure	PressureProfile	20.24560082	TRUE	FALSE	0.000823224
Pressure	PressureProfile	9.376594828	TRUE	FALSE	0.001777475
Pressure	PressureProfile	8.68091917	TRUE	FALSE	0.13439437
Pressure	PressureProfile	8.663864769	TRUE	FALSE	1.427384545
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	8.561545542	TRUE	FALSE	0.085654317
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	8.550760548	TRUE	FALSE	0.103304651
Pressure	PressureProfile	8.537792886	TRUE	FALSE	0.10931787
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	24.35798702	TRUE	FALSE	0.026685292
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	24.34941223	TRUE	FALSE	0.007529271
Pressure	PressureProfile	24.3469941	TRUE	FALSE	0.034911907
Pressure	PressureProfile	5.87627416	TRUE	FALSE	0.002836264
Pressure	PressureProfile	9.807331781	TRUE	FALSE	0.516620298
Pressure	PressureProfile	10.37062891	TRUE	FALSE	0.001607103
Pressure	PressureProfile	1.678935474	TRUE	FALSE	0.52602776
Pressure	PressureProfile	0.573636287	TRUE	FALSE	0.977099972
Pressure	PressureProfile	5.061400204	TRUE	FALSE	0.09886589
Pressure	PressureProfile	18.57610936	TRUE	FALSE	0.015620727
Pressure	PressureProfile	8.366334842	TRUE	FALSE	0.602150893
Pressure	PressureProfile	35.91522802	TRUE	FALSE	0.008273218
Pressure	PressureProfile	22.03454854	TRUE	FALSE	0.205764438
Pressure	PressureProfile	20.24560082	TRUE	FALSE	0.019297888
Pressure	PressureProfile	25.27384467	TRUE	FALSE	0.010554389
M2/Pressure	essureProfile	9.658782724	TRUE	FALSE	0.443778834
S1/S2	CompositeS1,S2	4.423457187	FALSE	TRUE	1.523371023
S2	S2	15.616737	FALSE	FALSE	0.037785764
S2	S2	15.79227298	FALSE	FALSE	0.019429101

Pressure	PressureProfile	17.41895555	TRUE	FALSE	0.015020428
M2	M2	5.06454896	FALSE	FALSE	0.410115856
Pressure	PressureProfile	14.34090718	TRUE	FALSE	0.015347774
M1	M1	0.830975778	FALSE	FALSE	2.764564137
M1	M1	2.315122109	FALSE	FALSE	1.059840137
S2	S2	4.877557311	FALSE	FALSE	0.074569156
M2/Pressure	essureProfile	11.25706022	FALSE	FALSE	0.669034708
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	4.372725017	TRUE	FALSE	0.228736085
Pressure	PressureProfile	10.59569963	TRUE	FALSE	0.516024742
Pressure	PressureProfile	2.922591381	TRUE	FALSE	0.044495672
Pressure	PressureProfile	3.161057755	TRUE	FALSE	1.440946255
Pressure	PressureProfile	4.663709651	TRUE	FALSE	0.158678403
Pressure	PressureProfile	0.533411791	TRUE	FALSE	9.370541824
Pressure	PressureProfile	1.197990417	TRUE	FALSE	0.255999405
Pressure	PressureProfile	2.40958332	TRUE	FALSE	0.118977417
Pressure	PressureProfile	2.052032246	TRUE	FALSE	0.362246176
Pressure	PressureProfile	2.067577945	TRUE	FALSE	0.143485119
Pressure	PressureProfile	2.672742853	TRUE	FALSE	0.269432392
Pressure	PressureProfile	0.533411791	TRUE	FALSE	1.3373617
Pressure	PressureProfile	24.33578861	TRUE	FALSE	0.02329982
Pressure	PressureProfile	3.760815463	TRUE	FALSE	0.261411302
Pressure	PressureProfile	0.621827953	TRUE	FALSE	0.428876667
Pressure	PressureProfile	0.621827953	TRUE	FALSE	0.480449078
Pressure	PressureProfile	1.290293003	TRUE	FALSE	0.196065673
Pressure	PressureProfile	2.875954285	TRUE	FALSE	1.002571801
Pressure	PressureProfile	3.23544857	TRUE	FALSE	2.646462867
Pressure	PressureProfile	7.179198044	TRUE	FALSE	0.726499924
Pressure	PressureProfile	30.51167864	TRUE	FALSE	0.122871891
Pressure	PressureProfile	6.363165448	TRUE	FALSE	0.702569427
Pressure	PressureProfile	1.590791362	TRUE	FALSE	0.171579278
Pressure	PressureProfile	15.23118297	TRUE	FALSE	0.010369396
Pressure	PressureProfile	7.761190144	TRUE	FALSE	0.499498457
Pressure	PressureProfile	8.993497691	TRUE	FALSE	0.509291341
Pressure	PressureProfile	1.243655907	TRUE	FALSE	0.928244429
Pressure	PressureProfile	8.407794055	TRUE	FALSE	0.305739371
Pressure	PressureProfile	7.71750673	TRUE	FALSE	0.536100558
Pressure	PressureProfile	10.12607958	TRUE	FALSE	0.411811235
Pressure	PressureProfile	6.943097743	TRUE	FALSE	0.367003475
Pressure	PressureProfile	1.290293003	TRUE	FALSE	0.911644743
Pressure	PressureProfile	7.011110175	TRUE	FALSE	0.117911925
Pressure	PressureProfile	2.875954285	TRUE	FALSE	0.359939773
Pressure	PressureProfile	5.543984848	TRUE	FALSE	0.5157276
Pressure	PressureProfile	2.875954285	TRUE	FALSE	0.38509467
Pressure	PressureProfile	4.912440832	TRUE	FALSE	0.169637327
Pressure	PressureProfile	7.632938129	TRUE	FALSE	0.546069975
Pressure	PressureProfile	6.062822546	TRUE	FALSE	0.163105989
Pressure	PressureProfile	3.544419335	TRUE	FALSE	0.213489412

Pressure	PressureProfile	3.435599443	TRUE	FALSE	0.179495799
Pressure	PressureProfile	1.360248648	TRUE	FALSE	0.625572514
Pressure	PressureProfile	3.054729821	TRUE	FALSE	0.228085147
Pressure	PressureProfile	1.19701881	TRUE	FALSE	0.707756631
Pressure	PressureProfile	2.223034934	TRUE	FALSE	0.350884499
Pressure	PressureProfile	7.632938129	TRUE	FALSE	0.094332067
Pressure	PressureProfile	16.17215407	TRUE	FALSE	0.358233231
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	6.638647921	TRUE	FALSE	1.495376109
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	16.79271028	TRUE	FALSE	0.310871349
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	16.72478125	TRUE	FALSE	0.095520362
Pressure	PressureProfile	16.70403519	TRUE	FALSE	0.125781464
Pressure	PressureProfile	16.67680511	TRUE	FALSE	0.151211687
Pressure	PressureProfile	15.40854869	TRUE	FALSE	0.150879059
Pressure	PressureProfile	15.37856605	TRUE	FALSE	0.138355639
Pressure	PressureProfile	7.826287758	TRUE	FALSE	0.084073725
Pressure	PressureProfile	3.324292239	TRUE	FALSE	2.479473095
Pressure	PressureProfile	8.95432253	TRUE	FALSE	0.134790916
Pressure	PressureProfile	15.35118827	TRUE	FALSE	0.528355744
S2	S2	18.24321561	FALSE	FALSE	0.016809902
Pressure	PressureProfile	3.532760061	TRUE	FALSE	0.088109531
Pressure	PressureProfile	11.43215147	TRUE	FALSE	0.169135049
Pressure	PressureProfile	7.81404552	TRUE	FALSE	0.660026315
Pressure	PressureProfile	11.43215147	TRUE	FALSE	0.041404717
Pressure	PressureProfile	11.99739308	TRUE	FALSE	0.434992402
Pressure	PressureProfile	10.7955551	TRUE	FALSE	0.498853937
Pressure	PressureProfile	8.584956725	TRUE	FALSE	0.719107003
Pressure	PressureProfile	11.99739308	TRUE	FALSE	0.384874987
Pressure	PressureProfile	5.301083303	TRUE	FALSE	0.042800151
Pressure	PressureProfile	7.073292971	TRUE	FALSE	0.306925314
Pressure	PressureProfile	4.818195033	TRUE	FALSE	1.043040454
Pressure	PressureProfile	2.562125489	TRUE	FALSE	0.209982039
Pressure	PressureProfile	4.0107903	TRUE	FALSE	0.197680991
Pressure	PressureProfile	1.772209667	TRUE	FALSE	0.133755054
Pressure	PressureProfile	1.772209667	TRUE	FALSE	2.336294576
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0

RAULIC_SLOPE	ORMAL_DEPTH	ERGY_SLOPE_FI	GROUND_ELE	M_GROUND_EL	TREAM_COVER
0.008414902		0.008414902	89	89	4.6
0.004165711		0.004165711	89.5	89	1.84
0.004179943		0.004179943	89	90.7	1.53
0.001309688	0.8609887	0.001309688	92	92	7
0	0	0	88.38	92	2.08
0.008097887		0.008097887	89.61	90.45	4.66
0.003671843		0.003671843	91	90.45	3.05
0.002564528	0.965666027	0.002564528	89.51	90.45	3.71
0.011721689	1.122783045	0.011721689	87.6	91	0.3
0.012045031		0.012045031	87.6	91	1
0.020767224		0.020767224	89.61	90	2.11
0.003983826		0.003983826	90.45	90	2.59
0.006220566	1.010514859	0.006220566	89.61	90	4.71
0.004181498		0.004181498	90	90	2.34
0.003816745		0.003816745	91	91	3.82
0.004328592		0.004328592	90.7	90.5	3.23
0.004376465		0.004376465	90.5	90.5	3.03
0.012435339	0.169794682	0.012435339	90.4	90.5	4
0.117873919	0.491466832	0.117873919	90.8	90.8	4.8
0.003789116	1.309065101	0.003789116	91	91	5
0.003247723	2.973926871	0.003247723	92	91	4.26
0.003234975		0.003234975	91	91	3.26
0	0	0	92	91	6.85
0.003159017		0.003159017	91	91	3.15
0	0	0	91	91	7
0.003151063		0.003151063	91	91	3.15
0.003141513		0.003141513	91	92	3.15
0	0	0	91	91	7.2
0.025569979		0.025569979	81.89	98	-3.11
0	0	0	98	98	13
0.025551979		0.025551979	98	94	13.3
0.025546904		0.025546904	94	94	9.4
0.009930257	0.156800771	0.009930257	98	98	14.5
0.003725631		0.003725631	91.6	91	3.6
0.004165895		0.004165895	90	89.5	2.53
0.000797853	0.506576429	0.000797853	90.13	89	2.13
9.31382E-05	0.203721593	9.31382E-05	90.13	89	3.63
0.004940957	1.052341882	0.004940957	90.8	90.8	4.3
0.097670691		0.097670691	90.8	90.8	4.45
0.010025981		0.010025981	90.8	90.4	3.53
0.365100139		0.365100139	90.4	90.4	4.5
0.06954481		0.06954481	90.4	90.8	3.58
0.199206923		0.199206923	90.8	90.8	5.8
0.091495352		0.091495352	90.8	91.3	4.4
0.004102217		0.003442877	91	91.3	3.82
0.003560074	1.178897674	0.003436471	90.9	91.2	4
0.099840845	1.870992331	0.009390059	91.3	81.89	4.41
0.195066905	1.497274237	0.009681256	81.89	81.89	-5

0.147464441		0.147464441	91.2	81.89	90.2
0.004288703	1.511680513	0.002923893	90.7	90.9	3.5
0.099953116		0.099953116	90.7	90.7	4.7
7.72009E-05	0.794479382	8.9007E-05	91	90.7	3.7
0.000963976	0.614411878	0.001477489	90.7	91	3
0.018822661	0.54596441	0.01153886	90.7	90.7	3.7
0.005292758		0.00423822	91.46	81.89	4.39
0	0	0	92	90.7	4.2
0	0	0	92	92	4
0.003687857		0.003687857	90.7	90.7	6.2
0.004348679		0.004348679	90.5	91.46	3.26
0.002417636	0.345081208	0.002417636	90.4	90.4	2.1
0.001927235	1.617235326	0.001927235	91.2	90.7	6.16
0.006156271		0.006156271	90.8	90.8	4.45
5.48776E-05	0.550546569	5.48776E-05	89.4	91.2	3.76
0.000276807	0.48756651	0.000276807	89	91.46	2
0.001643382	0.286398044	0.001643382	90.65	90.7	2.2
0.001191854	1.02902782	0.001191854	90.4	90.4	4.5
0.001209981	0.505311528	0.001209981	91.05	90.5	6.95
0.001377793	0.887881917	0.001377793	91.2	91.2	5.8
5.48776E-05	0.398815626	5.48776E-05	90.4	89.4	4.45
0.025523394		0.025523394	94	98	9.5
0.005104977	0.418561233	0.005104977	90.8	98	4.9
0.000109445	0.403340003	0.000109445	86.3	86.1	3.7
0.000109445	0.47967094	0.000109445	86.2	86.1	3.63
0.000471228	0.680818624	0.000471228	86.2	86.1	3.4
0.002341093	1.165582128	0.002341093	83.8	84	2.63
0.002019011		0.002019011	84	84	2.78
0.009940807		0.009940807	84	84.3	3.43
0.048556084		0.048556084	98	90	12
0.005799664		0.005799664	84.3	84.3	3.62
0.00014385	0.79113402	0.00014385	84.3	90	1.5
0.007046775	3.442754842	0.007046775	90	90	4.6
0.006766095		0.006766095	85.1	90	3.88
0.01158547		0.01158547	88.5	85.1	7.17
0.000437779	0.641098896	0.000437779	86.1	86.5	3.57
0.013634333		0.013634333	86.5	87.72	4.18
0.008531206		0.008531206	87.22	88.5	5.57
0.019776637		0.019776637	87.72	87.22	5.65
0.009297717		0.009297717	86.5	86.5	3.96
0.000471228	0.657871515	0.000471228	86.1	86.5	3.34
0.013913242		0.013913242	85.2	84	4.01
0.002341093		0.002341093	84.6	83.8	3.31
0.005928077		0.005928077	87.22	86.5	4.4
0.002341093	1.319863511	0.002341093	85.1	84	4.24
0.006830451		0.006830451	86.1	84.3	5.3
0.016490667		0.016490667	87.72	87.22	4.25
0.010404099		0.010404099	86.54	85.1	4.95
0.003555862		0.003555862	86.7	88.5	3.5

0.003340872		0.003340872	86.3	87.22	3.5
0.000523711	0.693700973	0.000523711	85.5	86.5	3
0.002641194	1.312596752	0.002641194	86.8	87.72	3.5
0.000405561	0.644611027	0.000405561	85.5	86.5	3
0.001398773	1.023362022	0.001398773	86.3	87.22	3
0.016490667		0.016490667	86.8	87.72	2.95
0.007944359		0.007944359	90	90	5
0	0	0	86.36	86.4	2.08
0	0	0	86.36	86.4	2.08
0.00403068		0.00403068	87	90	4.28
0	0	0	87	87	3.79
0	0	0	87.8	87	4.18
0	0	0	86.4	87.8	2.67
0.008565736		0.008565736	90	89	5.2
0	0	0	86.8	87.8	2.52
0	0	0	86.39	86.8	2.01
0	0	0	86.39	86.8	2.01
0.008496577		0.008496577	89	76.4	4.4
0.008475511		0.008475511	76.4	89	-8
0.008447901		0.008447901	89	89	4.6
0.006266667		0.006266667	89	89	4.6
0.006242302		0.006242302	89	89	4.6
0.011813576		0.011813576	85.79	86.2	2.39
0.001582905	1.772772737	0.001582905	86.35	86.2	2.05
0.006137082		0.006137082	85.5	86.2	2.18
0.006220096		0.006220096	89	88.9	4.6
0.056997904	4.752462193	0.007185996	88.9	76.03	4.5
0.002407122	0.686467524	0.002407122	82.69	85.6	1.19
0.007429148		0.007429148	85.5	85.6	3.64
0.003470843		0.003470843	86.2	84.9	2.98
0.007429148		0.007429148	85.5	85.5	3.59
0.008181951		0.008181951	85.6	85.7	3.96
0.006624804		0.006624804	84.2	85.5	1.77
0.004189472		0.004189472	84.9	84.2	2.01
0.008181951		0.008181951	85.7	83	4.67
0.007953971	0.598885529	0.007953971	84.8	84.8	2.08
0.014161134		0.014161134	84.8	85.5	3.04
0.00447753		0.00447753	84.3	84.9	3.93
0.001266107	1.162129797	0.001266107	84.23	84.3	2.15
0.004553178	0.912586491	0.004553178	84.23	84.3	2.25
0.000888966	0.617943326	0.000888966	84.48	84.4	2.08
0.000888966	0.871777327	0.000888966	84.4	84.8	2.1
0	0	0	87.21	87.5	1.71
0	0	0	87.5	84.3	2.2
0	0	0	87.21	87.5	1.71

NSTREAM_COVE	LIC_GRADE_LIN	DEPTH_IN_FT	Y_GRADE_LINE	LATED_INVERT	IFIC_ENERGY
4.6	89.0084149	12.6084149	93.31359092	76.4	16.91359092
1.53	89.72899942	7.068999421	91.40030546	82.66	8.740305458
3.23	91.13471402	8.664714021	92.81172983	82.47	10.34172983
7.26	90.88130419	7.881304185	90.98683105	83	7.986831049
5.85	90.61543647	6.315436474	90.61543647	84.3	6.315436474
5.59	90.80967746	7.859677464	91.46215703	82.95	8.512157032
2.59	91.42534438	8.47534438	92.89850793	82.95	9.948507928
5.05	90.53873266	6.738732664	90.74536706	83.8	6.945367058
4.2	88.39831883	3.098318831	89.34278276	85.3	4.042782756
4.62	88.51862944	3.918629443	89.48914632	84.6	4.889146323
2.9	90.96480544	4.964805441	92.10502541	86	6.105025414
2.34	91.45625102	8.596251017	93.05458393	82.86	10.19458393
5.5	90.11186126	6.711861265	90.45340012	83.4	7.053400119
2.53	89.85886543	7.198865428	91.53650527	82.66	8.87650527
4.11	88.21508516	6.035085157	89.591377	82.18	7.411377004
3.26	90.80733001	8.337330012	92.54398469	82.47	10.07398469
3.26	91.81407667	9.344076674	93.56993829	82.47	11.09993829
7.26	90.51243534	5.112435339	91.18443056	85.4	5.784430555
5.3	90.91787392	5.917873919	97.2876811	85	12.2876811
5.1	87.66470997	6.664709968	89.03103885	81	8.031038845
3.82	90.84277709	8.102777094	92.01388354	82.74	9.273883541
3.82	90.61543647	7.875436474	91.78194597	82.74	9.041945965
7.82	90.61543647	6.465436474	90.61543647	84.15	6.465436474
3.26	91.13899673	8.288996733	92.27811624	82.85	9.428116241
7.26	91	8	91	83	8
3.26	91.16700633	8.317006331	92.30325774	82.85	9.453257744
4.26	91.0187018	8.168701799	92.15150946	82.85	9.30150946
7.26	91	8.2	91	82.8	8.2
13.2	95.27830093	15.27830093	104.4986579	80	24.49865792
17.3	94.28107177	10.28107177	94.28107177	84	10.28107177
9.4	94.28107177	14.58107177	103.4949382	79.7	23.79493818
9.5	95.3028921	15.7028921	104.5149286	79.6	24.91492856
18	98.00993026	15.50993026	98.54655296	82.5	16.04655296
3.05	92.13259182	9.132591815	93.62733535	83	10.62733535
2.03	89.50416589	7.034165895	91.17554564	82.47	8.705545642
1.7	89.04227822	2.542278218	89.08608415	86.5	2.586084153
4.5	89.00313224	4.003132239	89.00824597	85	4.008245973
4.8	90.94834726	6.448347258	91.34646021	84.5	6.846460207
4.53	92.50047994	7.650479939	97.86306835	84.85	13.01306835
3.58	93.43053094	8.660530935	94.51829681	84.77	9.748296813
4.58	96.90903084	12.50903084	116.9547759	84.4	32.55477591
4.4	106.9889518	22.66895176	114.5341953	84.32	30.21419527
5.9	92.74006523	8.740065231	99.10987241	84	15.10987241
4.92	88.07028842	4.170288417	97.99704953	83.9	14.09704953
4.41	87.66092085	5.480920853	89.027180	82.18	6.847180798
6.5	85.64461444	1.24461444	86.13280237	84.4	1.732802366
-3.11	86.6059053	4.715905304	88.96385796	81.89	7.073857956
-3.11	86.60423266	4.714232659	88.96134899	81.89	7.071348989

80.89	84.20495726	84.20495726	88.92025552	0	88.92025552
4	86.17908596	1.479085965	86.49718698	84.7	1.797186975
5	87.49907281	2.499072811	90.6951569	85	5.695156895
3.5	86.18972712	1.389727121	86.20128724	84.8	1.40128724
3.7	86.33164331	0.631643314	86.45702508	85.7	0.757025084
4	86.66571082	0.665710821	86.96022238	86	0.960222383
-5	88.71126908	6.641269081	90.44952631	82.07	8.379526312
3	86.33164331	0.531643314	86.33164331	85.8	0.531643314
4.2	86.33164331	0.331643314	86.33164331	86	0.331643314
6.23	90.92131569	8.421315686	91.21846127	82.5	8.71846127
4.39	90.13789067	7.897890665	91.88260457	82.24	9.642604574
3.5	90.41886375	3.618863751	90.55160355	86.8	3.751603547
6.2	91.22670336	8.186703356	91.38198846	83.04	8.341988464
4.53	91.07334953	6.223349528	91.41135829	84.85	6.561358288
6.16	91.21645787	7.576457867	91.22087958	83.64	7.580879576
4.76	88.71636262	3.716362624	88.73866605	85	3.738666053
6.7	90.72826808	3.778268084	90.81849764	86.95	3.868497645
4.58	90.45315723	6.05315723	90.51859573	84.4	6.118595726
6.76	90.15942833	7.559428325	90.22586207	82.6	7.62586207
6.16	91.25953089	7.859530886	91.37054528	83.4	7.970545282
3.76	89.40234886	5.452348863	89.40677057	83.95	5.456770572
14	98.86833572	19.36833572	108.0718946	79.5	28.57189461
17.25	98.30112819	13.65112819	98.52092885	84.65	13.87092885
3.57	86.10175125	5.001751254	86.1077603	81.1	5.007760299
3.57	86.10196184	5.031961842	86.10797089	81.07	5.037970887
3.34	86.10715274	4.807152742	86.13302544	81.3	4.833025435
3.28	84.40501155	4.735011554	84.53354877	79.67	4.863548775
3.43	85.03726642	5.817266418	85.19994634	79.22	5.979946338
4.12	87.41088807	8.84088807	88.21185911	78.57	9.641859111
8.6	100.9222861	18.92228613	115.389908	82	33.38990803
4	85.85566669	7.675666692	86.48489953	78.18	8.304899527
8	90.0023558	12.2023558	90.04168285	77.8	12.24168285
5	90.06677728	12.66677728	93.67200098	77.4	16.27200098
9	91.57380814	13.35380814	92.50990673	78.22	14.28990673
4.13	88.28390305	9.453903049	89.5408652	78.83	10.7108652
4.18	86.53032278	5.500322783	86.55435896	81.03	5.524358961
5.65	89.82289977	9.502899775	90.92147317	80.32	10.60147317
7.17	90.40170318	11.25170318	91.32729387	79.15	12.17729387
5.57	92.16815402	12.09815402	93.7616377	80.07	13.6916377
4.18	87.92151362	7.381513619	88.67066831	80.54	8.130668313
3.95	86.53325804	5.27325804	86.55913073	81.26	5.299130733
2.93	84.69011918	5.000119183	85.45402274	79.69	5.764022737
2.63	83.94540581	4.155405812	84.07394303	79.79	4.283943032
3.96	87.51696847	6.696968471	87.99461763	80.82	7.174617628
3.28	84.1555677	4.795567702	84.28410492	79.36	4.924104922
3.63	84.64152257	5.341522572	85.01654705	79.3	5.716547047
4.4	91.34410313	9.374103131	92.24951969	81.97	10.27951969
3.67	85.71730596	5.627305962	86.28854077	80.09	6.198540767
5.42	88.44534546	6.745345457	88.64057932	81.7	6.940579317

4.52	87.34361405	6.043614055	87.5270439	81.3	6.227043898
4.14	86.52673859	5.526738594	86.55549281	81	5.555492811
4.52	87.83041331	6.030413305	87.97542751	81.8	6.175427514
4.14	86.52061545	5.520615452	86.54288272	81	5.542882718
4.02	87.28546498	5.48546498	87.36226433	81.8	5.562264326
3.97	88.43242733	6.08242733	89.33784388	82.35	6.987843885
5.2	91.25889837	14.25889837	95.32333809	77	18.32333809
2.67	86.4	4.12	86.4	82.28	4.12
2.67	86.4	4.12	86.4	82.28	4.12
8.45	90.89822622	11.67822622	91.58312158	79.22	12.36312158
4.28	87	7.29	87	79.71	7.29
3.79	87	6.88	87	80.12	6.88
4.18	87	5.27	87	81.73	5.27
4.4	88.49740607	11.69740607	92.8797508	76.8	16.0797508
4.18	87	5.22	87	81.78	5.22
2.52	86.8	4.42	86.8	82.38	4.42
2.52	86.8	4.42	86.8	82.38	4.42
-8	85.81442605	9.214426049	90.161388	76.6	13.561388
4.6	90.06845243	13.66845243	94.40463679	76.4	18.00463679
4.6	90.27819842	13.87819842	94.60025705	76.4	18.20025705
4.6	89.0980746	12.6980746	92.78775218	76.4	16.38775218
4.6	88.22393954	11.82393954	91.89927201	76.4	15.49927201
2.98	86.44043674	5.040436737	87.3923044	81.4	5.992304395
2.98	86.75687219	4.956872194	86.92860898	81.8	5.128608983
2.98	86.41848048	7.098480479	87.66451597	79.32	8.344515973
4.5	87.42703049	11.02703049	91.08928854	76.4	14.68928854
-8	84.4	8	89.12399129	76.4	12.72399129
4.8	85.64495586	6.144955862	85.8389074	79.5	6.338907401
3.96	86.46189003	9.601890028	88.4929413	76.86	11.6329413
2.01	85.97404727	7.754047266	86.92293934	78.22	8.702939343
3.67	85.71099301	8.800993009	87.74204428	76.91	10.83204428
4.67	86.37879323	9.738793227	88.61565281	76.64	11.97565281
3.59	87.64063525	10.21063525	89.45178726	77.43	12.02178726
1.77	85.75182299	7.86182299	86.89718076	77.89	9.007180763
2.4	83.81680772	7.786807723	86.05366731	76.03	10.02366731
3.04	84.90827924	3.688279236	85.34499031	81.22	4.12499031
4.06	87.3446061	7.084606105	88.12212014	80.26	7.862120145
5.01	86.25012908	7.880129076	86.6109018	78.37	8.240901802
2.32	84.34086997	4.260869973	84.44288537	80.08	4.362885374
2.78	84.51660116	4.036601156	84.76659243	80.48	4.286592435
2.1	84.41264333	3.512643331	84.4614518	80.9	3.561451796
3.04	85.02084059	4.220840589	85.06964905	80.8	4.269649054
2.2	84.3	0.3	84.3	84	0.3
-0.02	84.3	0.5	84.3	83.8	0.5
2.2	84.3	0.3	84.3	84	0.3

ELOCITY_IN_FT	OCITY_HEAD_IN	IC_GRADE_LINE	DEPTH_OUT_FT	GRADE_LINE	ATED_INVERT
16.64420218	4.305176013	89	12.6	93.30517601	76.4
10.37040023	1.671306037	89	6.53	90.67130604	82.47
10.38809959	1.677015806	90.7	8.23	92.37701581	82.47
2.605847767	0.105526863	90.84277709	8.102777094	90.94830396	82.74
0	0	90.61543647	6.465436474	90.61543647	84.15
6.479641596	0.652479568	90.45	7.59	91.10247957	82.86
9.736278961	1.473163548	90.45	7.59	91.92316355	82.86
3.646437983	0.206634394	90.45	7.05	90.65663439	83.4
7.795791469	0.944463925	88.21508516	3.415085157	89.15954908	84.8
7.902583133	0.97051688	88.21508516	3.835085157	89.18560204	84.38
8.565680059	1.140219974	89.85886543	4.258865428	90.9990854	85.6
10.14147553	1.598332908	89.85886543	7.198865428	91.45719834	82.66
4.687999805	0.341538854	89.85886543	6.858865428	90.20040428	83
10.39003217	1.677639842	89.50416589	7.034165895	91.18180574	82.47
9.410718771	1.376291847	87.66470997	5.774709968	89.04100182	81.89
10.57119934	1.736654682	90.5	8.26	92.23665468	82.24
10.6294959	1.755861613	90.13789067	7.897890665	91.89375228	82.24
6.575830608	0.671995216	90.5	8.26	91.17199522	82.24
20.24560082	6.369807181	90.8	6.3	97.16980718	84.5
9.376594828	1.366328877	87.66092085	6.760920853	89.02724973	80.9
8.68091917	1.171106447	90.61543647	8.435436474	91.78654292	82.18
8.663864769	1.166509491	88.21508516	6.035085157	89.38159465	82.18
0	0	90.61543647	8.435436474	90.61543647	82.18
8.561545542	1.139119508	91	8.26	92.13911951	82.74
0	0	91	8.26	91	82.74
8.550760548	1.136251414	91	8.26	92.13625141	82.74
8.537792886	1.132807661	90.84277709	8.102777094	91.97558475	82.74
0	0	91	8.26	91	82.74
24.35798702	9.220356988	94.28107177	14.48107177	103.5014288	79.8
0	0	94.28107177	14.58107177	94.28107177	79.7
24.34941223	9.213866416	94	14.4	103.2138664	79.6
24.3469941	9.212036454	94	14.5	103.2120365	79.5
5.87627416	0.536622708	98	19	98.53662271	79
9.807331781	1.49474353	91	8.05	92.49474353	82.95
10.37062891	1.671379747	89.5	7.03	91.17137975	82.47
1.678935474	0.043805935	89	3.2	89.04380594	85.8
0.573636287	0.005113735	89	6	89.00511373	83
5.061400204	0.398112949	90.8	6.8	91.19811295	84
18.57610936	5.362588406	90.8	6.03	96.16258841	84.77
8.366334842	1.087765878	90.4	6.08	91.48776588	84.32
35.91522802	20.04574507	90.4	6.08	110.4457451	84.32
22.03454854	7.545243509	88.07028842	4.170288417	95.61553193	83.9
20.24560082	6.369807181	88.07028842	4.170288417	94.4400956	83.9
25.27384467	9.926761117	86.6059053	2.725905304	96.53266642	83.88
9.376358301	1.366259946	86.6059053	4.715905304	88.14173547	81.89
5.604811918	0.488187926	84.20495726	2.004957259	84.36830699	82.2
12.31785441	2.357952652	83.07099826	3.070998263	88.63139897	80
12.31566976	2.35711633	83.01309386	3.013093861	88.78311919	80

17.41895555	4.715298258	81.89	81.89	86.60529826	0
4.524286001	0.31810101	85.64461444	1.24461444	86.13280237	84.4
14.34090718	3.196084084	86.17908596	1.479085965	89.37517005	84.7
0.86247933	0.01156012	86.17908596	1.479085965	86.18901877	84.7
2.840434145	0.12538177	86.18972712	0.889727121	86.23950987	85.3
4.353301046	0.294511562	86.25494539	0.554945391	86.70841077	85.7
10.57607566	1.738257231	86.31956776	4.429567761	88.53435164	81.89
0	0	86.33164331	0.631643314	86.33164331	85.7
0	0	86.33164331	0.531643314	86.33164331	85.8
4.372725017	0.297145585	90.7	8.23	90.99714558	82.47
10.59569963	1.744713909	88.71126908	6.641269081	90.45598299	82.07
2.922591381	0.132739796	90.4	5	90.5327398	85.4
3.161057755	0.155285108	90.7	8.2	90.85528511	82.5
4.663709651	0.33800876	90.8	6.03	91.13800876	84.77
0.533411791	0.004421709	91.2	8.16	91.20442171	83.04
1.197990417	0.022303429	88.71126908	4.011269081	88.73357251	84.7
2.40958332	0.090229561	90.7	8.2	90.79022956	82.5
2.052032246	0.065438496	90.4	6.08	90.4654385	84.32
2.067577945	0.066433744	90.13789067	7.897890665	90.20432441	82.24
2.672742853	0.111014396	91.2	8.16	91.3110144	83.04
0.533411791	0.004421709	89.4	5.76	89.40442171	83.64
24.33578861	9.203558886	98	19	107.2035589	79
3.760815463	0.219800661	98	18.5	98.21980066	79.5
0.621827953	0.006009045	86.1	5.07	86.10600904	81.03
0.621827953	0.006009045	86.1	5.07	86.10600904	81.03
1.290293003	0.025872693	86.1	4.84	86.12587269	81.26
2.875954285	0.12853722	84	4.78	84.12853722	79.22
3.23544857	0.162679919	84	5.43	84.16267992	78.57
7.179198044	0.800971041	84.3	6.12	85.10097104	78.18
30.51167864	14.46762189	90	12.6	104.4676219	77.4
6.363165448	0.629232836	84.3	6.5	84.92923284	77.8
1.590791362	0.039327052	90	13	90.03932705	77
15.23118297	3.605223702	90	13	93.6052237	77
7.761190144	0.936098596	90	12	90.9360986	78
8.993497691	1.256962154	85.1	6.63	86.35696215	78.47
1.243655907	0.024036179	86.5	5.68	86.52403618	80.82
8.407794055	1.098573396	87.72	7.65	88.8185734	80.07
7.71750673	0.925590696	88.28390305	9.453903049	89.20949375	78.83
10.12607958	1.593483677	87.22	7.57	88.81348368	79.65
6.943097743	0.749154694	86.5	6.18	87.24915469	80.32
1.290293003	0.025872693	86.5	5.45	86.52587269	81.05
7.011110175	0.763903554	84	4.43	84.76390355	79.57
2.875954285	0.12853722	83.8	4.13	83.92853722	79.67
5.543984848	0.477649158	86.5	5.96	86.97764916	80.54
2.875954285	0.12853722	84	4.78	84.12853722	79.22
4.912440832	0.375024475	84.3	5.13	84.67502448	79.17
7.632938129	0.905416555	87.22	5.9	88.12541655	81.32
6.062822546	0.571234805	85.1	5.17	85.6712348	79.93
3.544419335	0.19523386	88.28390305	6.703903049	88.47913691	81.58

3.435599443	0.183429843	87.22	6.02	87.40342984	81.2
1.360248648	0.028754217	86.5	5.64	86.52875422	80.86
3.054729821	0.145014208	87.72	6.02	87.86501421	81.7
1.19701881	0.022267266	86.5	5.64	86.52226727	80.86
2.223034934	0.076799346	87.22	5.52	87.29679935	81.7
7.632938129	0.905416555	87.72	5.47	88.62541655	82.25
16.17215407	4.064439721	88.49740607	11.69740607	92.5618458	76.8
0	0	86.4	4.67	86.4	81.73
0	0	86.4	4.67	86.4	81.73
6.638647921	0.684895354	88.49740607	10.44740607	89.18230143	78.05
0	0	87	7.78	87	79.22
0	0	87	7.29	87	79.71
0	0	87	5.38	87	81.62
16.79271028	4.382344729	85.81442605	9.214426049	90.19677078	76.6
0	0	87	5.88	87	81.12
0	0	86.8	4.52	86.8	82.28
0	0	86.8	4.52	86.8	82.28
16.72478125	4.346961954	85	8.6	89.34696195	76.4
16.70403519	4.336184368	89	12.6	93.33618437	76.4
16.67680511	4.322058632	89	12.6	93.32205863	76.4
15.40854869	3.689677578	88.22393954	11.82393954	91.91361712	76.4
15.37856605	3.67533247	87.42703049	11.02703049	91.10236296	76.4
7.826287758	0.951867658	85.97404727	4.754047266	86.92591492	81.22
3.324292239	0.171736789	85.97404727	5.254047266	86.14578405	80.72
8.95432253	1.246035494	85.97404727	6.754047266	87.22008276	79.22
15.35118827	3.662258053	84.4	8	88.06225805	76.4
17.43500478	4.72399129	83.35123857	7.321238575	88.99176897	76.03
3.532760061	0.193951539	85.6	6.8	85.79395154	78.8
11.43215147	2.031051271	85.6	8.96	87.63105127	76.64
7.81404552	0.948892077	84.9	7.01	85.84889208	77.89
11.43215147	2.031051271	85.5	8.67	87.53105127	76.83
11.99739308	2.236859586	83.81680772	7.786807723	86.05366731	76.03
10.7955551	1.811152016	85.5	8.59	87.31115202	76.91
8.584956725	1.145357773	84.2	6.77	85.34535777	77.43
11.99739308	2.236859586	81.55	5.95	83.78685959	75.6
5.301083303	0.436711074	84.8	4.54	85.23671107	80.26
7.073292971	0.77751404	85.5	5.56	86.27751404	79.94
4.818195033	0.360772726	84.9	7.01	85.26077273	77.89
2.562125489	0.102015401	84.3	4.32	84.4020154	79.98
4.0107903	0.249991279	84.3	4.28	84.54999128	80.02
1.772209667	0.048808465	84.4	3.6	84.44880846	80.8
1.772209667	0.048808465	84.8	4.54	84.84880846	80.26
0	0	84.3	0.5	84.3	83.8
0	0	84.3	1.48	84.3	82.82
0	0	84.3	0.5	84.3	83.8

FIC_ENERGY_O	LOCITY_OUT_F	CITY_HEAD_OU	ELEMENT_HEA	EAM_INLET_CA	CULATED_SYS
16.90517601	16.64420218	4.305176013	0.008414902		448.555185
8.201306037	10.37040023	1.671306037	0.728999421		208.0845
9.907015806	10.38809959	1.677015806	0.434714021		209.2437
8.208303957	2.605847767	0.105526863	0.038527091	2.384	2.384
6.465436474	0	0	0	0	0
8.242479568	6.479641596	0.652479568	0.359677464	5.928	5.928
9.063163548	9.736278961	1.473163548	0.97534438		192
7.256634394	3.646437983	0.206634394	0.088732664	3.336	3.336
4.359549082	7.795791469	0.944463925	0.183233674	7.1321	7.1321
4.805602037	7.902583133	0.97051688	0.303544286	7.2298	7.2298
5.399085402	8.565680059	1.140219974	1.105940013	4.408	4.408
8.797198336	10.14147553	1.598332908	1.597385589		201.264
7.200404282	4.687999805	0.341538854	0.252995837	2.4125	2.4125
8.711805737	10.39003217	1.677639842	0.354699533		208.0845
7.151001815	9.410718771	1.376291847	0.550375189		146.3459
9.996654682	10.57119934	1.736654682	0.307330012		213.4169
9.653752278	10.6294959	1.755861613	1.676186009		214.9209
8.931995216	6.575830608	0.671995216	0.012435339		1.504
12.66980718	20.24560082	6.369807181	0.117873919	4.6305	4.6305
8.127249729	9.376594828	1.366328877	0.003789116		146.3459
9.606542921	8.68091917	1.171106447	0.22734062		131.984
7.201594648	8.663864769	1.166509491	2.400351317		131.984
8.435436474	0	0	0		0
9.399119508	8.561545542	1.139119508	0.138996733	0	129.6
8.26	0	0	0	0	0
9.396251414	8.550760548	1.136251414	0.167006331		129.6
9.235584755	8.537792886	1.132807661	0.175924705		129.6
8.26	0	0	0	0	0
23.70142876	24.35798702	9.220356988	0.997229165		403.539185
14.58107177	0	0	0		0
23.61386642	24.34941223	9.213866416	0.281071768		403.539185
23.71203645	24.3469941	9.212036454	1.302892104		403.539185
19.53662271	5.87627416	0.536622708	0.009930257		1.344
9.54474353	9.807331781	1.49474353	1.132591815	0	192
8.701379747	10.37062891	1.671379747	0.004165895		208.0845
3.243805935	1.678935474	0.043805935	0.042278218	0.864	0.864
6.005113735	0.573636287	0.005113735	0.003132239	0.2952	0.2952
7.198112949	5.061400204	0.398112949	0.148347258		4.6305
11.39258841	18.57610936	5.362588406	1.700479939	9.559485	9.559485
7.167765878	8.366334842	1.087765878	3.030530935		11.959485
26.12574507	35.91522802	20.04574507	6.509030839	18.4824	18.4824
11.71553193	22.03454854	7.545243509	18.91866334		31.497885
10.5400956	20.24560082	6.369807181	4.669776813		4.6305
12.65266642	25.27384467	9.926761117	1.464383113		36.128385
6.25173547	9.941207146	1.535830166	1.055015549		146.3459
2.168306987	3.242102457	0.163349729	1.439657182		3.984
8.631398973	18.9156196	5.56040071	3.534907041		182.474285
8.783119193	19.2688762	5.770025332	3.591138798		182.474285

86.60529826	17.41895555	4.715298258	2.314957259		3.984
1.732802366	5.604811918	0.488187926	0.534471524		3.984
4.675170049	14.34090718	3.196084084	1.319986846	3.28	3.28
1.488018765	0.799472225	0.0099328	0.010641156		0.704
0.939509866	1.789810073	0.049782745	0.141916193		0.704
1.008410766	5.401813577	0.453465375	0.410765429	0.704	0.704
6.644351642	11.93804478	2.214783881	2.39170132		217.0809
0.631643314	0	0	0		0
0.531643314	0	0	0		0
8.527145585	4.372725017	0.297145585	0.221315686		4.1732
8.38598299	10.59569963	1.744713909	1.426621584		215.9849
5.132739796	2.922591381	0.132739796	0.018863751	1.504	1.504
8.355285108	3.161057755	0.155285108	0.526703356		2.9332
6.36800876	4.663709651	0.33800876	0.273349528	2.4	2.4
8.164421709	0.533411791	0.004421709	0.016457867		0.488
4.03357251	1.197990417	0.022303429	0.005093543	1.096	1.096
8.290229561	2.40958332	0.090229561	0.028268084	1.24	1.24
6.145438496	2.052032246	0.065438496	0.05315723	1.056	1.056
7.964324409	2.067577945	0.066433744	0.02153766	1.064	1.064
8.271014396	2.672742853	0.111014396	0.059530886	2.4452	2.4452
5.764421709	0.533411791	0.004421709	0.002348863	0.488	0.488
28.20355889	24.33578861	9.203558886	0.868335724		403.539185
18.71980066	3.760815463	0.219800661	0.301128194	1.344	1.344
5.076009045	0.621827953	0.006009045	0.001751254	0.32	0.32
5.076009045	0.621827953	0.006009045	0.001961842	0.32	0.32
4.865872693	1.290293003	0.025872693	0.007152742	0.664	0.664
4.90853722	2.875954285	0.12853722	0.405011554		1.48
5.592679919	3.23544857	0.162679919	1.037266418		2.96
6.920971041	7.179198044	0.800971041	3.11088807		6.568
27.06762189	30.51167864	14.46762189	10.92228613		404.883185
7.129232836	6.363165448	0.629232836	1.555666692		9.096
13.03932705	1.590791362	0.039327052	0.002355802		9.096
16.6052237	15.23118297	3.605223702	0.066777279		404.883185
12.9360986	7.761190144	0.936098596	1.573808138		15.976
7.886962154	8.993497691	1.256962154	3.183903049		12.856
5.704036179	1.243655907	0.024036179	0.030322783		0.64
8.748573396	8.407794055	1.098573396	2.102899775		7.692
10.37949375	7.71750673	0.925590696	2.117800128		11.032
9.163483677	10.12607958	1.593483677	4.948154022		9.264
6.929154694	6.943097743	0.749154694	1.421513619		6.352
5.475872693	1.290293003	0.025872693	0.03325804		0.664
5.193903554	7.011110175	0.763903554	0.690119183	3.608	3.608
4.25853722	2.875954285	0.12853722	0.145405812	1.48	1.48
6.437649158	5.543984848	0.477649158	1.016968471		5.072
4.90853722	2.875954285	0.12853722	0.155567702	1.48	1.48
5.505024475	4.912440832	0.375024475	0.341522572	2.528	2.528
8.805416555	7.632938129	0.905416555	4.124103131		3.928
5.741234805	6.062822546	0.571234805	0.617305962	3.12	3.12
6.899136909	3.544419335	0.19523386	0.161442407	1.824	1.824

6.203429843	3.435599443	0.183429843	0.123614055	1.768	1.768
5.668754217	1.360248648	0.028754217	0.026738594	0.7	0.7
6.165014208	3.054729821	0.145014208	0.110413305	1.572	1.572
5.662267266	1.19701881	0.022267266	0.020615452	0.816	0.816
5.596799346	2.223034934	0.076799346	0.06546498	1.144	1.144
6.375416555	7.632938129	0.905416555	0.71242733	3.928	3.928
15.7618458	16.17215407	4.064439721	2.761492294		429.955185
4.67	0	0	0	0	0
4.67	0	0	0	0	0
11.13230143	6.638647921	0.684895354	2.400820146	0	18.6
7.78	0	0	0		0
7.29	0	0	0		0
5.38	0	0	0		0
13.59677078	16.79271028	4.382344729	2.682980026		448.555185
5.88	0	0	0		0
4.52	0	0	0	0	0
4.52	0	0	0	0	0
12.94696195	16.72478125	4.346961954	0.814426049		448.555185
16.93618437	16.70403519	4.336184368	1.068452426		448.555185
16.92205863	16.67680511	4.322058632	1.278198415		448.555185
15.51361712	15.40854869	3.689677578	0.874135064	0	519.075185
14.70236296	15.37856605	3.67533247	0.796909051		519.075185
5.705914924	7.826287758	0.951867658	0.466389472	7.16	7.16
5.425784054	3.324292239	0.171736789	0.782824929	4.752	4.752
8.00008276	8.95432253	1.246035494	0.444433213	32.768	32.768
11.66225805	15.35118827	3.662258053	3.027030488		519.075185
12.96176897	19.05142645	5.640530392	1.048761425	0	519.075185
6.993951539	3.532760061	0.193951539	0.044955862	3.232	3.232
10.99105127	11.43215147	2.031051271	0.861890028		65.368
7.958892077	7.81404552	0.948892077	1.074047266		44.68
10.70105127	11.43215147	2.031051271	0.210993009		65.368
10.02366731	11.99739308	2.236859586	2.561985504		68.6
10.40115202	10.7955551	1.811152016	2.140635246	12.64	61.728
7.915357773	8.584956725	1.145357773	1.55182299		49.088
8.186859586	11.99739308	2.236859586	2.266807723		68.6
4.976711074	5.301083303	0.436711074	0.108279236	2.728	2.728
6.33751404	7.073292971	0.77751404	1.844606105		3.64
7.370772726	4.818195033	0.360772726	1.350129076		4.408
4.422015401	2.562125489	0.102015401	0.040869973	2.344	2.344
4.529991279	4.0107903	0.249991279	0.216601156	2.064	2.064
3.648808465	1.772209667	0.048808465	0.012643331	0.912	0.912
4.588808465	1.772209667	0.048808465	0.220840589		0.912
0.5	0	0	0	0	0
1.48	0	0	0		0
0.5	0	0	0	0	0

LET_RATIONAL	NLET_RATIONA	SYSTEM_FLOW	REAM_EASTIN	AM_INLET_ARE	REAM_NORTHIN
		48.00088003	3097478.235		724220.6609
		44.38795855	3096168.698		726000
		44.66920774	3096172.893		725826.4762
0.8	8.186512203	15	3097384.6	2.98	726955
0	0	0	3097430.284	0	726894.2
0.8	20.35639444	15	3096186.2	7.41	726486.2
		43.1366203	3096070.43		726748.3578
0.8	11.45562278	15	3096107.2	4.17	726485
0.73	24.49120121	15	3097461.028	9.77	726145.2
0.74	24.82669712	15	3097420	9.77	726144.4
0.8	15.13680612	15	3096219.23	5.51	726087.2
		43.59132517	3096140.982		726485
0.625	8.284379484	15	3096126	3.86	726082.4
		44.25028201	3096164.477		726100.4476
		42.12005575	3097445.661		726144.0497
		44.83606534	3096175.6		725723.0667
		44.9480047	3096246.647		725719.7835
		15.04449567	3096260.627		725715.7182
0.749271845	15.9008577	15	3097457.512	6.18	725775.9286
		42.37543855	3097445.438		726000.5385
		40.55827684	3097413.464		726956.0751
		40.69267121	3097416.279		726886.1349
		0	3097417.902		726892.7822
0	0	40.26	3097405.95	0	727108.2
0	0	0	3097435.8	0	727067.2
		40.34565432	3097407.715		727064.3343
		40.44895897	3097410.194		727012.1216
0	0	0	3097438.8	0	727013.6
		46.73359436	3097410.206		725734.3355
		0	3097404.604		725696.0043
		46.76027965	3097410.508		725696.0856
		46.76780892	3097410.763		725685.3639
		15.2614113	3097401.095		725520.4341
0	0	42.62	3095992.848	0	727041.7216
		44.38635145	3096165.087		726075.164
0.8	2.966923886	15	3096225.685	1.08	725827.3149
0.36	1.013698994	15	3096138.8	0.82	725825.8
		15.00082322	3097469.4		725766.4645
0.6285	32.82669488	15	3098044.172	15.21	725771.8281
		15.1586784	3098045		725754.2
0.755	63.46744678	15	3097742.028	24.48	725765.1439
		15.7608293	3097742.8		725747.8
		15.09968911	3097473.248		725755.8492
		15.96659373	3097471.135		725743.7355
		42.37721602	3097445.07		725995.5631
		15.30908929	3096993.465		725734.7291
		42.82099486	3097455.471		725742.6645
		42.85878062	3097427.6		725735.2709

		20.83246031	3097397.665		725744.6645
		18.89897343	3096868.233		725731.7168
0.8	11.26332216	15	3096869.028	4.1	725746.4281
		16.13440929	3096731.055		725729.8
		15.07456916	3096584.2		725727.4
0.8	2.417493536	15	3096583.428	0.88	725748.9719
		46.06455965	3096956.729		725725.0645
		0	3096407.535		725722.8645
		0	3096406.6		725744.6
		27.14884978	3096115.6		725721.7909
		45.54853491	3096629.4		725718.8645
0.8	5.164645282	15	3096262.081	1.88	725736.5347
		25.70790352	3095842.4		725714.6015
0.8	8.241455238	15	3098044.944	3	725709.8
		16.3373617	3095542.6		725707.2
0.8	3.763597892	15	3096957.372	1.37	725707.2281
0.527659574	4.258085206	15	3096115.8	2.35	725704.4299
0.8	3.626240305	0	3097742.772	1.32	725703.4553
0.8	3.653711822	15	3096629.4	1.33	725701.6281
0.786237942	8.396669311	15	3095843.2	3.11	725672.6552
0.8	1.675762565	15	3095543.285	0.61	725664.4
		46.80272083	3097412.6		725636.4
0.8	4.615214933	15	3097354.455	1.68	725518.4
0.8	1.098860698	15	3096280.599	0.4	725427.5989
0.8	1.098860698	15	3096247.4	0.4	725425.6
0.8	2.280135949	15	3096124.201	0.83	725422.6011
		15.35993977	3098711.2		725405.8
		16.36251157	3098538.2		725406.4
		19.00897444	3098024.6		725394
		46.82602065	3097419		725519.2516
		19.73547437	3097711.8		725384.6
		20.43804379	3097443.8		725373.4
		46.94889254	3097426.4		725380.4
		18.28607562	3097195		725370
		17.77678428	3096920.2		725366.8
		15.48044908	3096265		725422.2
		16.52313312	3096268		725353
		17.24068372	3096672.4		725352
		16.82887249	3096422.2		725353
		16.15612964	3096115.2		725347.8
		15.19606567	3096110.2		725418.2
0.8	12.38965437	15	3098024.2	4.51	725344.4
0.8	5.08223073	15	3098705	1.85	725343.6011
		15.64040204	3095943.8		725340.6
0.8	5.08223073	15	3098540.401	1.85	725339.6011
0.8	8.680999517	15	3097711.8	3.16	725334.6
		15.09483207	3095693.8		725334
0.8	10.71389181	15	3097156.401	3.9	725324.6
0.8	6.263505981	15	3096920.6	2.28	725321.4

0.8	6.071205358	15	3096672.6	2.21	725315
0.8	2.403757778	15	3096297.201	0.875	725311.4
0.8	5.398153181	15	3096421.6	1.965	725311.2
0.8	2.115306844	15	3096094.798	0.77	725301.6
0.8	3.928426997	15	3095944.2	1.43	725294.5977
0.8	13.48851507	15	3095693.801	4.91	725290.8
		46.95926194	3097427.6		725371
0	0	0	3096249.861	0	725009
0	0	0	3096169.6	0	725004.4
0	0	15	3096854.6	0	725002.3387
		0	3096542.4		724996.2
		0	3096218.8		724979
		0	3096218.8		725007.8
		47.31749517	3097449.8		725025.4
		0	3096200.8		724702.2
0	0	0	3096157.539	0	724690.8
0	0	0	3096226.661	0	724689.4
		47.62836652	3097461.6		724712.4
		47.72388688	3097464.8		724616.6
		47.84966834	3097466.385		724480.9848
0	0	48.00188138	3097478.8	0	724213.6
		48.15276044	3097485.175		724094.6651
0.8	24.58700813	0	3096130.8	8.95	723594.4
0.8	16.31808137	0	3096092.2	5.94	724068.2
0.8	112.5233355	0	3096024.6	40.96	723572.4
		48.29111608	3097484.2		724042.8
0	0	48.81947182	3097514	0	723414.76
0.8	11.09849305	0	3096912.2	4.04	723299.2
		17.5000871	3096810.2		723276.6
		2.479473095	3096097		723574
		17.45868238	3096800.8		723249.8
		17.66922215	3096925.8		723286.4
0.8	43.40499758	16.95982845	3096478.2	15.8	723231.4
		16.24072144	3096109.4		723264.8
		18.10421455	3097234.2		723232.2
0.8	9.367787453	0	3096822.6	3.41	723120.4
		2.47004963	3096809		723119.8
		15.19768099	3096118.4		722963.4
0.8	8.049154615	0	3096149.4	2.93	722954.2198
0.8	7.087651504	15	3096073.6	2.58	722947.7604
0.8	3.13175299	0	3096840.8	1.14	722872.8
		0.133755054	3096826.6		722872
0	0	0	3096173	0	722397.2198
		0	3096142.6		722396.8
0	0	0	3096095.2	0	722396.6

UCTURE_HYDRAM	SUMP_ELEV	PSTREAM_NOD	UPSTREAM_X_F	UPSTREAM_Y_E	STREAM_EASTI
89	76.4	2510	3097478.235	724220.6609	3097478.8
89.5	82.47	2339	3096168.698	726000	3096172.893
89	82.47	2342	3096172.893	725826.4762	3096175.6
90.88130419	83	1272	3097384.6	726955	3097413.464
88.38	84.3	1273	3097430.284	726894.2	3097417.902
89.61	82.95	1277	3096186.2	726486.2	3096140.982
91	82.95	1276	3096070.43	726748.3578	3096140.982
89.61	83.8	1278	3096107.2	726485	3096140.982
87.6	83	1280	3097461.028	726145.2	3097445.661
87.6	84.6	1281	3097420	726144.4	3097445.661
89.61	86	1283	3096219.23	726087.2	3096164.477
90.45	82.86	1279	3096140.982	726485	3096164.477
89.61	83.4	1285	3096126	726082.4	3096164.477
89.85886543	82.66	1284	3096164.477	726100.4476	3096165.087
88.21508516	82.18	1282	3097445.661	726144.0497	3097445.438
90.7	82.47	2371	3096175.6	725723.0667	3096246.647
90.5	82.24	J-561	3096246.647	725719.7835	3096629.4
90.4	85.4	2373	3096260.627	725715.7182	3096246.647
90.8	85	21213	3097457.512	725775.9286	3097469.4
87.66470997	81	1287	3097445.438	726000.5385	3097445.07
90.84277709	82.74	1271	3097413.464	726956.0751	3097416.279
90.61543647	82.18	J-562	3097416.279	726886.1349	3097445.661
90.61543647	84.15	1274	3097417.902	726892.7822	3097416.279
91	82.85	I-1905	3097405.95	727108.2	3097407.715
91	83	20680	3097435.8	727067.2	3097407.715
91	82.74	J-563	3097407.715	727064.3343	3097410.194
91	82.74	J-564	3097410.194	727012.1216	3097413.464
91	82.8	20681	3097438.8	727013.6	3097410.194
81.89	80	2361	3097410.206	725734.3355	3097410.508
94.28107177	84	2382	3097404.604	725696.0043	3097410.508
94.28107177	79.7	J-587	3097410.508	725696.0856	3097410.763
94	79.6	J-588	3097410.763	725685.3639	3097412.6
98	79.5	2406	3097401.095	725520.4341	3097419
91.6	83	I-359	3095992.848	727041.7216	3096070.43
89.50416589	82.47	1286	3096165.087	726075.164	3096168.698
89.04227822	86.5	2341	3096225.685	725827.3149	3096172.893
89.00313224	85	2343	3096138.8	725825.8	3096172.893
90.8	84.5	2345	3097469.4	725766.4645	3097473.248
90.8	84.85	2344	3098044.172	725771.8281	3098045
90.8	84.77	2349	3098045	725754.2	3097742.8
90.4	84.4	2347	3097742.028	725765.1439	3097742.8
90.4	84.32	2351	3097742.8	725747.8	3097471.135
90.8	84	2346	3097473.248	725755.8492	3097471.135
88.07028842	83.9	2357	3097471.135	725743.7355	3097455.471
87.66092085	80.9	2340	3097445.07	725995.5631	3097455.471
85.64461444	84.4	2359	3096993.465	725734.7291	3097397.665
86.6059053	81.89	2358	3097455.471	725742.6645	3097427.6
81.89	80	2360	3097427.6	725735.2709	3097410.206

84.20495726	82.2	2353	3097397.665	725744.6645	3097410.206
86.17908596	84.7	2362	3096868.233	725731.7168	3096993.465
87.49907281	85	2352	3096869.028	725746.4281	3096868.233
86.18972712	84.8	2363	3096731.065	725729.8	3096868.233
86.33164331	85.7	2365	3096584.2	725727.4	3096731.065
86.66571082	86	2350	3096583.428	725748.9719	3096584.2
88.71126908	82.07	2366	3096956.729	725725.0645	3097410.206
86.33164331	85.8	2368	3096407.535	725722.8645	3096584.2
86.33164331	86	2354	3096406.6	725744.6	3096407.535
90.7	82.5	2370	3096115.6	725721.7909	3096175.6
90.13789067	82.24	2372	3096629.4	725718.8645	3096956.729
90.4	89	2367	3096262.081	725736.5347	3096260.627
91.2	83.04	2374	3095842.4	725714.6015	3096115.6
90.8	84.85	2376	3098044.944	725709.8	3098045
89.4	83.64	2377	3095542.6	725707.2	3095842.4
88.71636262	85	2378	3096957.372	725707.2281	3096956.729
90.65	86.95	2379	3096115.8	725704.4299	3096115.6
90.4	84.4	2380	3097742.772	725703.4553	3097742.8
90.15942833	82.6	2381	3096629.4	725701.6281	3096629.4
91.2	83.4	2386	3095843.2	725672.6552	3095842.4
89.40234886	83.95	2389	3095543.285	725664.4	3095542.6
94	79.5	2394	3097412.6	725636.4	3097419
90.8	79.5	2407	3097354.455	725518.4	3097401.095
86.10175125	81.1	2413	3096280.599	725427.5989	3096265
86.10196184	81.07	2415	3096247.4	725425.6	3096265
86.10715274	81.3	2416	3096124.201	725422.6011	3096110.2
83.8	79.67	2422	3098711.2	725405.8	3098538.2
84	79.22	2421	3098538.2	725406.4	3098024.6
84	78.57	2425	3098024.6	725394	3097711.8
98	79	2404	3097419	725519.2516	3097426.4
84.3	78.18	2428	3097711.8	725384.6	3097443.8
84.3	77.8	2432	3097443.8	725373.4	3097427.6
90	77.4	2431	3097426.4	725380.4	3097427.6
85.1	78.22	2435	3097195	725370	3097427.6
88.28390305	78.83	2436	3096920.2	725366.8	3097195
86.1	81.03	2417	3096265	725422.2	3096268
86.5	80.32	2437	3096268	725353	3096422.2
87.22	79.15	2439	3096672.4	725352	3096920.2
87.72	80.07	2438	3096422.2	725353	3096672.4
86.5	80.55	2440	3096115.2	725347.8	3096268
86.1	81.26	2419	3096110.2	725418.2	3096115.2
84.69011918	79.69	2442	3098024.2	725344.4	3098024.6
83.94540581	79.79	2443	3098705	725343.6011	3098711.2
87.22	80.82	2444	3095943.8	725340.6	3096115.2
84.1555677	79.36	2445	3098540.401	725339.6011	3098538.2
84.64152257	79.3	2446	3097711.8	725334.6	3097711.8
87.72	81.97	2447	3095693.8	725334	3095943.8
85.71730596	80.09	2448	3097156.401	725324.6	3097195
86.7	81.7	2450	3096920.6	725321.4	3096920.2

86.3	81.3	2451	3096672.6	725315	3096672.4
85.5	81	2453	3096297.201	725311.4	3096268
86.8	81.8	2454	3096421.6	725311.2	3096422.2
85.5	81	2456	3096094.798	725301.6	3096115.2
86.3	81.8	2457	3095944.2	725294.5977	3095943.8
86.8	82.35	2459	3095693.801	725290.8	3095693.8
90	77	2434	3097427.6	725371	3097449.8
86.36	82.28	2469	3096249.861	725009	3096218.8
86.36	82.28	2471	3096169.6	725004.4	3096218.8
87	79.22	I-1906	3096854.6	725002.3387	3097449.8
87	79.71	2473	3096542.4	724996.2	3096854.6
87	80.12	2474	3096218.8	724979	3096542.4
86.4	81.73	2470	3096218.8	725007.8	3096218.8
88.49740607	76.8	2467	3097449.8	725025.4	3097461.6
86.8	81.78	2488	3096200.8	724702.2	3096218.8
86.39	82.38	2489	3096157.539	724690.8	3096200.8
86.39	82.38	2490	3096226.661	724689.4	3096200.8
85.81442605	76.6	2487	3097461.6	724712.4	3097464.8
85	76.4	2491	3097464.8	724616.6	3097466.385
89	76.4	2502	3097466.385	724480.9848	3097478.235
89	76.4	I-36	3097478.8	724213.6	3097485.175
88.22393954	76.4	2524	3097485.175	724094.6651	3097484.2
85.79	81.4	2536	3096130.8	723594.4	3096097
86.35	81.8	I-92	3096092.2	724068.2	3096097
85.5	79.32	I-91	3096024.6	723572.4	3096097
87.42703049	76.4	2529	3097484.2	724042.8	3097514
84.4	76.4	I-76	3097514	723414.76	3097517.125
82.69	79	2595	3096912.2	723299.2	3096925.8
85.5	76.86	2597	3096810.2	723276.6	3096925.8
85.97404727	78.22	2540	3096097	723574	3096109.4
85.5	76.91	2601	3096800.8	723249.8	3096810.2
85.6	76.64	2596	3096925.8	723286.4	3097234.2
84.2	77.43	I-85	3096478.2	723231.4	3096800.8
84.9	77.89	2599	3096109.4	723264.8	3096478.2
83.81680772	76.03	2605	3097234.2	723232.2	3097516.913
84.8	81.22	2624	3096822.6	723120.4	3096809
84.8	80.26	2625	3096809	723119.8	3096800.8
84.3	79.87	2635	3096118.4	722963.4	3096109.4
84.23	79.98	2636	3096149.4	722954.2198	3096118.4
84.23	80.48	2638	3096073.6	722947.7604	3096118.4
84.41264333	80.9	2641	3096840.8	722872.8	3096826.6
84.4	80.8	2642	3096826.6	722872	3096809
84.3	84	2699	3096173	722397.2198	3096142.6
84.3	83.8	2700	3096142.6	722396.8	3096118.4
84.3	84	2701	3096095.2	722396.6	3096142.6

STREAM_NORTH	STREAM_PIPE	RUCTURE_HYD	EAM_SUMP_EL	EW_NSTREAM_NO	WNSTREAM_X
724213.6	P-2294	89	76.4	I-36	3097478.8
725826.4762	P-1110	89	82.47	2342	3096172.893
725723.0667	P-1133	90.7	82.47	2371	3096175.6
726956.0751	P-1138	90.84277709	82.74	1271	3097413.464
726892.7822	P-1140	90.61543647	84.15	1274	3097417.902
726485	P-1123	90.45	82.86	1279	3096140.982
726485	P-1123	90.45	82.86	1279	3096140.982
726485	P-1123	90.45	82.86	1279	3096140.982
726144.0497	P-1126	88.21508516	82.18	1282	3097445.661
726144.0497	P-1126	88.21508516	82.18	1282	3097445.661
726100.4476	P-1125	89.85886543	82.66	1284	3096164.477
726100.4476	P-1125	89.85886543	82.66	1284	3096164.477
726100.4476	P-1125	89.85886543	82.66	1284	3096164.477
726075.164	P-1252	89.50416589	82.47	1286	3096165.087
726000.5385	P-1137	87.66470997	81	1287	3097445.438
725719.7835	P-1134	90.5	82.24	J-561	3096246.647
725718.8645	P-2147	90.13789067	82.24	2372	3096629.4
725719.7835	P-1134	90.5	82.24	J-561	3096246.647
725766.4645	P-2120	90.8	84.5	2345	3097469.4
725995.5631	P-2127	87.66092085	80.9	2340	3097445.07
726886.1349	P-1139	90.61543647	82.18	J-562	3097416.279
726144.0497	P-1126	88.21508516	82.18	1282	3097445.661
726886.1349	P-1139	90.61543647	82.18	J-562	3097416.279
727064.3343	P-1144	91	82.74	J-563	3097407.715
727064.3343	P-1144	91	82.74	J-563	3097407.715
727012.1216	P-1145	91	82.74	J-564	3097410.194
726956.0751	P-1138	90.84277709	82.74	1271	3097413.464
727012.1216	P-1145	91	82.74	J-564	3097410.194
725696.0856	P-1235	94.28107177	79.7	J-587	3097410.508
725696.0856	P-1235	94.28107177	79.7	J-587	3097410.508
725685.3639	P-1236	94	79.6	J-588	3097410.763
725636.4	P-2174	94	79.5	2394	3097412.6
725519.2516	P-2199	98	79	2404	3097419
726748.3578	P-1117	91	82.95	1276	3096070.43
726000	P-1103	89.5	82.47	2339	3096168.698
725826.4762	P-1110	89	82.47	2342	3096172.893
725826.4762	P-1110	89	82.47	2342	3096172.893
725755.8492	P-2125	90.8	84	2346	3097473.248
725754.2	P-2122	90.8	84.77	2349	3098045
725747.8	P-2124	90.4	84.32	2351	3097742.8
725747.8	P-2124	90.4	84.32	2351	3097742.8
725743.7355	P-2126	88.07028842	83.9	2357	3097471.135
725743.7355	P-2126	88.07028842	83.9	2357	3097471.135
725742.6645	P-2131	86.6059053	81.89	2358	3097455.471
725742.6645	P-2131	86.6059053	81.89	2358	3097455.471
725744.6645	P-2134	84.20495726	82.2	2353	3097397.665
725735.2709	P-2133	81.89	80	2360	3097427.6
725734.3355	P-1232	81.89	80	2361	3097410.206

725734.3355	P-1232	81.89	80	2361	3097410.206
725734.7291	P-2128	85.64461444	84.4	2359	3096993.465
725731.7168	P-2135	86.17908596	84.7	2362	3096868.233
725731.7168	P-2135	86.17908596	84.7	2362	3096868.233
725729.8	P-2137	86.18972712	84.8	2363	3096731.065
725727.4	P-2138	86.33164331	85.7	2365	3096584.2
725734.3355	P-1232	81.89	80	2361	3097410.206
725727.4	P-2138	86.33164331	85.7	2365	3096584.2
725722.8645	P-2142	86.33164331	85.8	2368	3096407.535
725723.0667	P-1133	90.7	82.47	2371	3096175.6
725725.0645	P-2140	88.71126908	82.07	2366	3096956.729
725715.7182	P-1135	90.4	85.4	2373	3096260.627
725721.7909	P-2146	90.7	82.5	2370	3096115.6
725754.2	P-2122	90.8	84.77	2349	3098045
725714.6015	P-2149	91.2	83.04	2374	3095842.4
725725.0645	P-2140	88.71126908	82.07	2366	3096956.729
725721.7909	P-2146	90.7	82.5	2370	3096115.6
725747.8	P-2124	90.4	84.32	2351	3097742.8
725718.8645	P-2147	90.13789067	82.24	2372	3096629.4
725714.6015	P-2149	91.2	83.04	2374	3095842.4
725707.2	P-2153	89.4	83.64	2377	3095542.6
725519.2516	P-2199	98	79	2404	3097419
725520.4341	P-1238	98	79.5	2406	3097401.095
725422.2	P-2207	86.1	81.03	2417	3096265
725422.2	P-2207	86.1	81.03	2417	3096265
725418.2	P-2212	86.1	81.26	2419	3096110.2
725406.4	P-2189	84	79.22	2421	3098538.2
725394	P-2193	84	78.57	2425	3098024.6
725384.6	P-2200	84.3	78.18	2428	3097711.8
725380.4	P-2204	90	77.4	2431	3097426.4
725373.4	P-2203	84.3	77.8	2432	3097443.8
725371	P-2239	90	77	2434	3097427.6
725371	P-2239	90	77	2434	3097427.6
725371	P-2239	90	77	2434	3097427.6
725370	P-2205	85.1	78.22	2435	3097195
725353	P-2208	86.5	80.32	2437	3096268
725353	P-2210	87.72	80.07	2438	3096422.2
725366.8	P-2206	88.28390305	78.83	2436	3096920.2
725352	P-2209	87.22	79.15	2439	3096672.4
725353	P-2208	86.5	80.32	2437	3096268
725347.8	P-2211	86.5	80.55	2440	3096115.2
725394	P-2193	84	78.57	2425	3098024.6
725405.8	P-2186	83.8	79.67	2422	3098711.2
725347.8	P-2211	86.5	80.55	2440	3096115.2
725406.4	P-2189	84	79.22	2421	3098538.2
725384.6	P-2200	84.3	78.18	2428	3097711.8
725340.6	P-2216	87.22	80.82	2444	3095943.8
725370	P-2205	85.1	78.22	2435	3097195
725366.8	P-2206	88.28390305	78.83	2436	3096920.2

725352	P-2209	87.22	79.15	2439	3096672.4
725353	P-2208	86.5	80.32	2437	3096268
725353	P-2210	87.72	80.07	2438	3096422.2
725347.8	P-2211	86.5	80.55	2440	3096115.2
725340.6	P-2216	87.22	80.82	2444	3095943.8
725334	P-2219	87.72	81.97	2447	3095693.8
725025.4	P-2256	88.49740607	76.8	2467	3097449.8
725007.8	P-2246	86.4	81.73	2470	3096218.8
725007.8	P-2246	86.4	81.73	2470	3096218.8
725025.4	P-2256	88.49740607	76.8	2467	3097449.8
725002.3387	P-2243	87	79.22	I-1906	3096854.6
724996.2	P-2244	87	79.71	2473	3096542.4
724979	P-2245	87	80.12	2474	3096218.8
724712.4	P-2260	85.81442605	76.6	2487	3097461.6
724979	P-2245	87	80.12	2474	3096218.8
724702.2	P-2257	86.8	81.78	2488	3096200.8
724702.2	P-2257	86.8	81.78	2488	3096200.8
724616.6	P-2270	85	76.4	2491	3097464.8
724480.9848	P-2279	89	76.4	2502	3097466.385
724220.6609	P-1011	89	76.4	2510	3097478.235
724094.6651	P-2299	88.22393954	76.4	2524	3097485.175
724042.8	P-2345	87.42703049	76.4	2529	3097484.2
723574	P-2370	85.97404727	78.22	2540	3096097
723574	P-2370	85.97404727	78.22	2540	3096097
723574	P-2370	85.97404727	78.22	2540	3096097
723414.76	P-2351	84.4	76.4	I-76	3097514
723157.4113	None	81.55	76.03	O-2	3097517.125
723286.4	P-2374	85.6	76.64	2596	3096925.8
723286.4	P-2374	85.6	76.64	2596	3096925.8
723264.8	P-2377	84.9	77.89	2599	3096109.4
723276.6	P-2368	85.5	76.86	2597	3096810.2
723232.2	P-2384	83.81680772	76.03	2605	3097234.2
723249.8	P-2371	85.5	76.91	2601	3096800.8
723231.4	P-2375	84.2	77.43	I-85	3096478.2
723153.5476	None	81.55	76.03	O-3	3097516.913
723119.8	P-2396	84.8	80.26	2625	3096809
723249.8	P-2371	85.5	76.91	2601	3096800.8
723264.8	P-2377	84.9	77.89	2599	3096109.4
722963.4	P-2404	84.3	79.87	2635	3096118.4
722963.4	P-2404	84.3	79.87	2635	3096118.4
722872	P-2411	84.4	80.8	2642	3096826.6
723119.8	P-2396	84.8	80.26	2625	3096809
722396.8	P-2463	84.3	83.8	2700	3096142.6
722963.4	P-2404	84.3	79.87	2635	3096118.4
722396.8	P-2463	84.3	83.8	2700	3096142.6

WNSTREAM_Y	EM_FLOW_TIME	STEM_CA_ACR	EM_INTENSITY	RATIONAL_FL	ADDITIONAL_FL
724213.6	48.00088003	448.555185	2.355856535	1065.185517	0
725826.4762	44.38795855	208.0845	2.472093773	518.5196319	0
725723.8867	44.66920774	209.2437	2.462592317	519.4041835	0
726956.0751	15	2.384	3.406686193	8.186512203	0
726892.7822	0	0	0	0	0
726485	15	5.928	3.406686193	20.35639444	0
726485	43.1366203	192	2.515366382	486.813948	0
726485	15	3.336	3.406686193	11.45562278	0
726144.0497	15	7.1321	3.406686193	24.49120121	0
726144.0497	15	7.2298	3.406686193	24.82669712	0
726100.4476	15	4.408	3.406686193	15.13680612	0
726100.4476	43.59132517	201.264	2.499450382	507.0737767	0
726100.4476	15	2.4125	3.406686193	8.284379484	0
726075.164	44.25028201	208.0845	2.476774416	519.501393	0
726000.5385	42.12005575	146.3459	2.55177017	376.4286309	0
725719.7835	44.83606534	213.4169	2.456993267	528.5587975	0
725718.8645	44.9480047	214.9209	2.453252732	531.4733273	0
725719.7835	15.04449567	1.504	3.406686193	5.164645282	0
725766.4645	15	4.6305	3.406686193	15.9008577	0
725995.5631	42.37543855	146.3459	2.542515953	375.0634797	0
726886.1349	40.55827684	131.984	2.610020293	347.2367657	0
726144.0497	40.69267121	131.984	2.604892655	346.5545854	0
726886.1349	0	0	0	0	0
727064.3343	40.26	129.6	2.621480484	342.4618217	0
727064.3343	0	0	0	0	0
727012.1216	40.34565432	129.6	2.6181782	342.0304219	0
726956.0751	40.44895897	129.6	2.6142076	341.5117154	0
727012.1216	0	0	0	0	0
725696.0856	46.73359436	403.539185	2.395236143	974.3042141	0
725696.0856	0	0	0	0	0
725685.3639	46.76027965	403.539185	2.39439197	973.960832	0
725636.4	46.76780892	403.539185	2.394153905	973.8639948	0
725519.2516	15.2614113	1.344	3.406686193	4.615214933	0
726748.3578	42.62	192	2.533722868	490.366589	0
726000	44.38635145	208.0845	2.472148298	518.5310685	0
725826.4762	15	0.864	3.406686193	2.966923886	0
725826.4762	15	0.2952	3.406686193	1.013698994	0
725755.8492	15.00082322	4.6305	3.406686193	15.9008577	0
725754.2	15	9.559485	3.406686193	32.82669488	0
725747.8	15.1586784	11.959485	3.406686193	41.06815012	0
725747.8	15	18.4824	3.406686193	63.46744678	0
725743.7355	15.7608293	31.497885	3.406686193	108.1618372	0
725743.7355	15.09968911	4.6305	3.406686193	15.9008577	0
725742.6645	15.96659373	36.128385	3.406686193	124.0626949	0
725742.6645	42.37721602	146.3459	2.542451803	375.0540164	0
725744.6645	19.30908929	3.984	3.406686193	13.68081569	0
725735.2709	42.82099486	182.474285	2.526546172	464.717944	0
725734.3355	42.85878062	182.474285	2.525201995	464.4707039	0

725734.3355	20.83246031	3.984	3.406686193	13.68081569	0
725734.7291	18.89897343	3.984	3.406686193	13.68081569	0
725731.7168	15	3.28	3.406686193	11.26332216	0
725731.7168	16.13440929	0.704	3.406686193	2.417493536	0
725729.8	15.07456916	0.704	3.406686193	2.417493536	0
725727.4	15	0.704	3.406686193	2.417493536	0
725734.3355	46.06455965	217.0809	2.416617075	528.7982208	0
725727.4	0	0	0	0	0
725722.8645	0	0	0	0	0
725723.0667	27.14884978	4.1732	3.265670093	13.73732079	0
725725.0645	45.54853491	215.9849	2.433397736	529.781784	0
725715.7182	15	1.504	3.406686193	5.164645282	0
725721.7909	25.70790352	2.9332	3.358768683	9.930755822	0
725754.2	15	2.4	3.406686193	8.241455238	0
725714.6015	16.3373617	0.488	3.406686193	1.675762565	0
725725.0645	15	1.096	3.406686193	3.763597892	0
725721.7909	15	1.24	3.406686193	4.258085206	0
725747.8	0	1.056	3.406686193	3.626240305	0
725718.8645	15	1.064	3.406686193	3.653711822	0
725714.6015	15	2.4452	3.406686193	8.396669311	0
725707.2	15	0.488	3.406686193	1.675762565	0
725519.2516	46.80272083	403.539185	2.393050718	973.4152544	0
725520.4341	15	1.344	3.406686193	4.615214933	0
725422.2	15	0.32	3.406686193	1.098860698	0
725422.2	15	0.32	3.406686193	1.098860698	0
725418.2	15	0.664	3.406686193	2.280135949	0
725406.4	15.35993977	1.48	3.406686193	5.08223073	0
725394	16.36251157	2.96	3.406686193	10.16446146	0
725384.6	19.00897444	6.568	3.406686193	22.55411583	0
725380.4	46.82602065	404.883185	2.392315087	976.3570171	0
725373.4	19.73547437	9.096	3.406686193	31.23511535	0
725371	20.43804379	9.096	3.406686193	31.23511535	0
725371	46.94889254	404.883185	2.388443949	974.7771194	0
725371	18.28607562	15.976	3.406686193	54.86062036	0
725370	17.77678428	12.856	3.406686193	44.14672856	0
725353	15.48044908	0.64	3.406686193	2.197721397	0
725353	16.52313312	7.692	3.406686193	26.41386404	0
725366.8	17.24068372	11.032	3.406686193	37.88322258	0
725352	16.82887249	9.264	3.406686193	31.81201722	0
725353	16.15612964	6.352	3.406686193	21.81238486	0
725347.8	15.19606567	0.664	3.406686193	2.280135949	0
725394	15	3.608	3.406686193	12.38965437	0
725405.8	15	1.48	3.406686193	5.08223073	0
725347.8	15.64040204	5.072	3.406686193	17.41694207	0
725406.4	15	1.48	3.406686193	5.08223073	0
725384.6	15	2.528	3.406686193	8.680000517	0
725340.6	15.09433207	3.928	3.406686193	13.48851507	0
725370	15	3.12	3.406686193	10.71389181	0
725366.8	15	1.824	3.406686193	6.263505981	0

725352	15	1.768	3.406686193	6.071205358	0
725353	15	0.7	3.406686193	2.403757778	0
725353	15	1.572	3.406686193	5.398153181	0
725347.8	15	0.616	3.406686193	2.115306844	0
725340.6	15	1.144	3.406686193	3.928426997	0
725334	15	3.928	3.406686193	13.48851507	0
725025.4	46.95926194	429.955185	2.388117887	1034.997937	0
725007.8	0	0	0	0	0
725007.8	0	0	0	0	0
725025.4	15	18.6	3.406686193	63.87127809	0
725002.3387	0	0	0	0	0
724996.2	0	0	0	0	0
724979	0	0	0	0	0
724712.4	47.31749517	448.555185	2.376913263	1074.706182	0
724979	0	0	0	0	0
724702.2	0	0	0	0	0
724702.2	0	0	0	0	0
724616.6	47.62836652	448.555185	2.367283379	1070.352092	0
724480.9848	47.72388688	448.555185	2.364341668	1069.022016	0
724220.6609	47.84966834	448.555185	2.360480273	1067.276111	0
724094.6651	48.00188138	519.075185	2.355825982	1232.633614	0
724042.8	48.15276044	519.075185	2.351232383	1230.230115	0
723574	0	7.16	3.406686193	24.58700813	0
723574	0	4.752	3.406686193	16.31808137	0
723574	0	32.768	3.406686193	112.5233355	0
723414.76	48.29111608	519.075185	2.34703737	1228.035168	0
723157.4113	48.81947182	519.075185	2.331167863	1219.731801	0
723286.4	0	3.232	3.406686193	11.09849305	0
723286.4	17.5000871	65.368	3.406686193	224.4697692	0
723264.8	2.479473095	44.68	3.406686193	153.428425	0
723276.6	17.45868238	65.368	3.406686193	224.4697692	0
723232.2	17.66922215	68.6	3.406686193	235.5682622	0
723249.8	16.95982845	61.728	3.406686193	211.9702287	0
723231.4	16.24072144	49.088	3.406686193	168.5652311	0
723153.5476	18.10421455	68.6	3.406686193	235.5682622	0
723119.8	0	2.728	3.406686193	9.367787453	0
723249.8	2.47004963	3.64	3.406686193	12.49954044	0
723264.8	15.19768099	4.408	3.406686193	15.13680612	0
722963.4	0	2.344	3.406686193	8.049154615	0
722963.4	15	2.064	3.406686193	7.087651504	0
722872	0	0.912	3.406686193	3.13175299	0
723119.8	0.133755054	0.912	3.406686193	3.13175299	0
722396.8	0	0	0	0	0
722963.4	0	0	0	0	0
722396.8	0	0	0	0	0

M_KNOWN_FLO	SYSTEM_FLOW	EM_FIXED_FLOW	ULATION_UNRE	TES_CONSTRA	TENDED_COST
0	1065.185517	0	FALSE	TRUE	0
0	518.5196319	0	FALSE	TRUE	0
0	519.4041835	0	FALSE	TRUE	0
0	8.186512203	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	20.35639444	0	FALSE	TRUE	0
0	486.813948	0	FALSE	TRUE	0
0	11.45562278	0	FALSE	FALSE	0
0	24.49120121	0	FALSE	TRUE	0
0	24.82669712	0	FALSE	TRUE	0
0	15.13680612	0	FALSE	FALSE	0
0	507.0737767	0	FALSE	TRUE	0
0	8.284379484	0	FALSE	FALSE	0
0	519.501393	0	FALSE	TRUE	0
0	376.4286309	0	FALSE	TRUE	0
0	528.5587975	0	FALSE	TRUE	0
0	531.4733273	0	FALSE	TRUE	0
0	5.164645282	0	FALSE	TRUE	0
0	15.9008577	0	FALSE	TRUE	0
0	375.0634797	0	FALSE	FALSE	0
0	347.2367657	0	FALSE	FALSE	0
0	346.5545854	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	342.4618217	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	342.0304219	0	FALSE	TRUE	0
0	341.5117154	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	974.3042141	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	973.960832	0	FALSE	TRUE	0
0	973.8639948	0	FALSE	TRUE	0
0	4.615214933	0	FALSE	TRUE	0
0	490.366589	0	FALSE	TRUE	0
0	518.5310685	0	FALSE	TRUE	0
0	2.966923886	0	FALSE	TRUE	0
0	1.013698994	0	FALSE	TRUE	0
0	15.9008577	0	FALSE	FALSE	0
0	32.82669488	0	FALSE	TRUE	0
0	41.06815012	0	FALSE	TRUE	0
0	63.46744678	0	FALSE	TRUE	0
0	108.1618372	0	FALSE	TRUE	0
0	15.9008577	0	FALSE	TRUE	0
0	124.0626949	0	FALSE	TRUE	0
0	375.0540164	0	FALSE	TRUE	0
0	13.68081569	0	FALSE	FALSE	0
0	464.717944	0	FALSE	TRUE	0
0	464.4707039	0	FALSE	TRUE	0

0	13.68081569	0	FALSE	TRUE	0
0	13.68081569	0	FALSE	TRUE	0
0	11.26332216	0	FALSE	TRUE	0
0	2.417493536	0	FALSE	TRUE	0
0	2.417493536	0	FALSE	TRUE	0
0	2.417493536	0	FALSE	TRUE	0
0	528.7982208	0	FALSE	FALSE	0
0	0	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	13.73732079	0	FALSE	TRUE	0
0	529.781784	0	FALSE	TRUE	0
0	5.164645282	0	FALSE	TRUE	0
0	9.930755822	0	FALSE	TRUE	0
0	8.241455238	0	FALSE	TRUE	0
0	1.675762565	0	FALSE	TRUE	0
0	3.763597892	0	FALSE	TRUE	0
0	4.258085206	0	FALSE	TRUE	0
0	3.626240305	0	FALSE	TRUE	0
0	3.653711822	0	FALSE	TRUE	0
0	8.396669311	0	FALSE	TRUE	0
0	1.675762565	0	FALSE	TRUE	0
0	973.4152544	0	FALSE	TRUE	0
0	4.615214933	0	FALSE	TRUE	0
0	1.098860698	0	FALSE	TRUE	0
0	1.098860698	0	FALSE	TRUE	0
0	2.280135949	0	FALSE	TRUE	0
0	5.08223073	0	FALSE	TRUE	0
0	10.16446146	0	FALSE	TRUE	0
0	22.55411583	0	FALSE	TRUE	0
0	976.3570171	0	FALSE	TRUE	0
0	31.23511535	0	FALSE	TRUE	0
0	31.23511535	0	FALSE	TRUE	0
0	974.7771194	0	FALSE	TRUE	0
0	54.86062036	0	FALSE	TRUE	0
0	44.14672856	0	FALSE	TRUE	0
0	2.197721397	0	FALSE	TRUE	0
0	26.41386404	0	FALSE	TRUE	0
0	37.88322258	0	FALSE	TRUE	0
0	31.81201722	0	FALSE	TRUE	0
0	21.81238486	0	FALSE	TRUE	0
0	2.280135949	0	FALSE	TRUE	0
0	12.38965437	0	FALSE	TRUE	0
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0	17.41694207	0	FALSE	TRUE	0
0	5.08223073	0	FALSE	TRUE	0
0	8.680999517	0	FALSE	TRUE	0
0	13.48851507	0	FALSE	TRUE	0
0	10.71389181	0	FALSE	TRUE	0
0	6.263505981	0	FALSE	TRUE	0

0	6.071205358	0	FALSE	TRUE	0
0	2.403757778	0	FALSE	TRUE	0
0	5.398153181	0	FALSE	TRUE	0
0	2.115306844	0	FALSE	TRUE	0
0	3.928426997	0	FALSE	TRUE	0
0	13.48851507	0	FALSE	TRUE	0
0	1034.997937	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	63.87127809	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
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0	0	0	FALSE	TRUE	0
0	1074.706182	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	1070.352092	0	FALSE	TRUE	0
0	1069.022016	0	FALSE	TRUE	0
0	1067.276111	0	FALSE	TRUE	0
0	1232.633614	0	FALSE	TRUE	0
0	1230.230115	0	FALSE	TRUE	0
0	24.58700813	0	FALSE	TRUE	0
0	16.31808137	0	FALSE	TRUE	0
0	112.5233355	0	FALSE	TRUE	0
0	1228.035168	0	FALSE	TRUE	0
174.99	1394.721801	174.99	FALSE	TRUE	0
0	11.09849305	0	FALSE	TRUE	0
0	224.4697692	0	FALSE	TRUE	0
0	153.428425	0	FALSE	TRUE	0
0	224.4697692	0	FALSE	TRUE	0
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0	211.9702287	0	FALSE	TRUE	0
0	168.5652311	0	FALSE	TRUE	0
0	235.5682622	0	FALSE	TRUE	0
0	9.367787453	0	FALSE	TRUE	0
0	12.49954044	0	FALSE	TRUE	0
0	15.13680612	0	FALSE	TRUE	0
0	8.049154615	0	FALSE	TRUE	0
0	7.087651504	0	FALSE	FALSE	0
0	3.13175299	0	FALSE	TRUE	0
0	3.13175299	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0

COST_DESCR	DITIONAL_COST	TOTAL_COST	TAL_FIXED_COS	UNIT_COST_$/F	LABEL
None	0	0	0	0	P-1011
None	0	0	0	0	P-1103
None	0	0	0	0	P-1110
None	0	0	0	0	P-1111
None	0	0	0	0	P-1113
None	0	0	0	0	P-1116
None	0	0	0	0	P-1117
None	0	0	0	0	P-1118
None	0	0	0	0	P-1119
None	0	0	0	0	P-1121
None	0	0	0	0	P-1122
None	0	0	0	0	P-1123
None	0	0	0	0	P-1124
None	0	0	0	0	P-1125
None	0	0	0	0	P-1126
None	0	0	0	0	P-1133
None	0	0	0	0	P-1134
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None	0	0	0	0	P-1139
None	0	0	0	0	P-1140
None	0	0	0	0	P-1141
None	0	0	0	0	P-1143
None	0	0	0	0	P-1144
None	0	0	0	0	P-1145
None	0	0	0	0	P-1146
None	0	0	0	0	P-1232
None	0	0	0	0	P-1234
None	0	0	0	0	P-1235
None	0	0	0	0	P-1236
None	0	0	0	0	P-1238
None	0	0	0	0	P-1249
None	0	0	0	0	P-1252
None	0	0	0	0	P-2118
None	0	0	0	0	P-2119
None	0	0	0	0	P-2120
None	0	0	0	0	P-2121
None	0	0	0	0	P-2122
None	0	0	0	0	P-2123
None	0	0	0	0	P-2124
None	0	0	0	0	P-2125
None	0	0	0	0	P-2126
None	0	0	0	0	P-2127
None	0	0	0	0	P-2128
None	0	0	0	0	P-2131
None	0	0	0	0	P-2133

None	0	0	0	0	P-2134
None	0	0	0	0	P-2135
None	0	0	0	0	P-2136
None	0	0	0	0	P-2137
None	0	0	0	0	P-2138
None	0	0	0	0	P-2139
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None	0	0	0	0	P-2154
None	0	0	0	0	P-2155
None	0	0	0	0	P-2156
None	0	0	0	0	P-2157
None	0	0	0	0	P-2160
None	0	0	0	0	P-2161
None	0	0	0	0	P-2174
None	0	0	0	0	P-2175
None	0	0	0	0	P-2182
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None	0	0	0	0	P-2185
None	0	0	0	0	P-2186
None	0	0	0	0	P-2189
None	0	0	0	0	P-2193
None	0	0	0	0	P-2199
None	0	0	0	0	P-2200
None	0	0	0	0	P-2203
None	0	0	0	0	P-2204
None	0	0	0	0	P-2205
None	0	0	0	0	P-2206
None	0	0	0	0	P-2207
None	0	0	0	0	P-2208
None	0	0	0	0	P-2209
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None	0	0	0	0	P-2217
None	0	0	0	0	P-2218
None	0	0	0	0	P-2219
None	0	0	0	0	P-2220
None	0	0	0	0	P-2221

None	0	0	0	0	P-2222
None	0	0	0	0	P-2225
None	0	0	0	0	P-2226
None	0	0	0	0	P-2228
None	0	0	0	0	P-2229
None	0	0	0	0	P-2231
None	0	0	0	0	P-2239
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None	0	0	0	0	P-2244
None	0	0	0	0	P-2245
None	0	0	0	0	P-2246
None	0	0	0	0	P-2256
None	0	0	0	0	P-2257
None	0	0	0	0	P-2258
None	0	0	0	0	P-2259
None	0	0	0	0	P-2260
None	0	0	0	0	P-2270
None	0	0	0	0	P-2279
None	0	0	0	0	P-2294
None	0	0	0	0	P-2299
None	0	0	0	0	P-2306
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None	0	0	0	0	P-2309
None	0	0	0	0	P-2345
None	0	0	0	0	P-2351
None	0	0	0	0	P-2367
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None	0	0	0	0	P-2374
None	0	0	0	0	P-2375
None	0	0	0	0	P-2377
None	0	0	0	0	P-2384
None	0	0	0	0	P-2395
None	0	0	0	0	P-2396
None	0	0	0	0	P-2404
None	0	0	0	0	P-2405
None	0	0	0	0	P-2407
None	0	0	0	0	P-2410
None	0	0	0	0	P-2411
None	0	0	0	0	P-2462
None	0	0	0	0	P-2463
None	0	0	0	0	P-2464

APPENDIX B.

Extended Pipe Report (Proposed Development)

LABEL	SECTION_SIZE	RUCTED_SLOPE	L_CAPACITY	CEEDS_CAPACI	IGN_CAPACITY
P-1011	8 x 8 ft	0	0	TRUE	0
P-1013	10 x 5 ft	0.001085714	264.7151093	TRUE	264.7151093
P-1110	10 x 5 ft	0	0	TRUE	0
P-1111	24 inch	0.008838427	21.26681613	FALSE	21.26681613
P-1113	24 inch	0.01188084	24.65690517	FALSE	24.65690517
P-1116	24 inch	0.002026287	10.18275978	TRUE	10.18275978
P-1117	10 x 5 ft	0.00033882	147.8785811	TRUE	147.8785811
P-1118	24 inch	0.011560694	24.32242869	FALSE	24.32242869
P-1119	24 inch	0.031985629	40.45688525	FALSE	40.45688525
P-1121	24 inch	0.008729885	21.13582747	TRUE	21.13582747
P-1122	18 inch	0.007511157	9.103291683	TRUE	9.103291683
P-1123	10 x 5 ft	0.000498793	179.4243032	TRUE	179.4243032
P-1124	18 inch	0.009835049	10.41677522	TRUE	10.41677522
P-1125	10 x 5 ft	0.002239881	380.2186266	TRUE	380.2186266
P-1126	8 x 5 ft	0.002011094	273.2450869	TRUE	273.2450869
P-1133	10 x 5 ft	0.003239437	457.2520887	TRUE	457.2520887
P-1134	10 x 5 ft	0.000600522	196.8726945	TRUE	196.8726945
P-1135	12 inch	3.16	82.32945321	FALSE	82.32945321
P-1137	8 x 5 ft	0.1	1926.798075	FALSE	1926.798075
P-1138	8 x 5 ft	0.008	544.9807941	FALSE	544.9807941
P-1139	8 x 5 ft	0.000754717	167.3895203	TRUE	167.3895203
P-1140	12 inch	1.97	65.00470666	FALSE	65.00470666
P-1141	8 x 5 ft	0.0025	304.6535255	TRUE	304.6535255
P-1143	12 inch	0.26	23.61556626	FALSE	23.61556626
P-1144	8 x 5 ft	0.002075472	277.5841163	TRUE	277.5841163
P-1145	8 x 5 ft	0.001964286	270.0464876	TRUE	270.0464876
P-1146	12 inch	0.06	11.34455108	FALSE	11.34455108
P-1232	8 x 5 ft	0.005128205	436.3338421	TRUE	436.3338421
P-1234	12 inch	4.3	96.03862145	FALSE	96.03862145
P-1235	8 x 5 ft	0.009090909	580.9514785	TRUE	580.9514785
P-1236	8 x 5 ft	0.001960784	269.8056971	TRUE	269.8056971
P-1237	12 inch	3.9	91.46269485	FALSE	91.46269485
P-1238	12 inch	3.5	86.64544009	FALSE	86.64544009
P-1249	10 x 5 ft	0.000164474	103.0312965	TRUE	103.0312965
P-1252	10 x 5 ft	0	0	TRUE	0
P-2118	18 inch	0.01321004	12.07249651	FALSE	12.07249651
P-2119	18 inch	0.059470711	25.61513166	FALSE	25.61513166
P-2126	30 inch	0.001249609	14.49869295	TRUE	14.49869295
P-2127	8 x 5 ft	0.001127607	204.6044556	TRUE	204.6044556
P-2128	30 inch	0.005441316	30.25475566	FALSE	30.25475566
P-2131	8 x 5 ft	0.053381657	1407.771701	FALSE	1407.771701
P-2133	8 x 5 ft	0.102662824	1952.283153	FALSE	1952.283153
P-2134	12 inch	0	0	TRUE	0
P-2135	30 inch	0.002407258	20.12347733	FALSE	20.12347733
P-2136	12 inch	0.022716844	5.369604908	TRUE	5.369604908
P-2137	30 inch	0.000725494	11.04736114	FALSE	11.04736114
P-2138	24 inch	0.00271703	11.7913147	FALSE	11.7913147
P-2139	12 inch	0.013747015	4.177077514	FALSE	4.177077514

P-2140	10 x 5 ft	0.000398334	160.3410646	TRUE	160.3410646
P-2142	24 inch	0.000564813	5.376098878	FALSE	5.376098878
P-2143	24 inch	0.009342123	21.86441106	FALSE	21.86441106
P-2146	24 inch	0.0004999	5.05774081	TRUE	5.05774081
P-2147	10 x 5 ft	0.0005182	182.8814718	TRUE	182.8814718
P-2148	18 inch	0.17942829	44.49287685	FALSE	44.49287685
P-2154	24 inch	0.016303382	28.88376781	FALSE	28.88376781
P-2157	18 inch	0.020224719	14.93778752	FALSE	14.93778752
P-2158	24 inch	0.039190501	44.78219721	FALSE	44.78219721
P-2159	24 inch	0.008808182	21.23039837	FALSE	21.23039837
P-2174	8 x 5 ft	0.014696731	738.6634047	TRUE	738.6634047
P-2175	15 inch	0.087307106	19.08621607	FALSE	19.08621607
P-2199	8 x 4 ft	0.020449747	633.6336324	TRUE	633.6336324
P-2200	30 inch	0.001416674	15.4374881	TRUE	15.4374881
P-2203	60 inch	0.048849562	575.5972194	FALSE	575.5972194
P-2204	8 x 8 ft	0.042210612	2385.773694	FALSE	2385.773694
P-2205	36 inch	0.000945821	20.51144049	TRUE	20.51144049
P-2239	8 x 8 ft	0.000575367	278.5421504	TRUE	278.5421504
P-2240	24 inch	0.017843604	30.21734322	FALSE	30.21734322
P-2242	24 inch	0.011152264	23.88891995	FALSE	23.88891995
P-2243	42 inch	0.001964285	44.58807512	TRUE	44.58807512
P-2244	42 inch	0.001569177	39.85221189	FALSE	39.85221189
P-2245	42 inch	0.001264646	35.77675618	FALSE	35.77675618
P-2246	24 inch	0.003819444	13.98025494	FALSE	13.98025494
P-2256	8 x 8 ft	0.000638524	293.431712	TRUE	293.431712
P-2257	30 inch	0.002379368	20.00656168	FALSE	20.00656168
P-2258	24 inch	0.002247923	10.72520876	FALSE	10.72520876
P-2259	24 inch	0.003493856	13.37111141	FALSE	13.37111141
P-2260	8 x 8 ft	0.002086519	530.4318458	TRUE	530.4318458
P-2270	8 x 8 ft	0	0	TRUE	0
P-2279	8 x 8 ft	0	0	TRUE	0
P-2288	24 inch	0.003164494	12.72527341	FALSE	12.72527341
P-2291	24 inch	0.00256965	11.46705658	FALSE	11.46705658
P-2294	10 x 8 ft	0	0	TRUE	0
P-2299	10 x 8 ft	0	0	TRUE	0
P-2307	30 inch	0.002183805	19.16675752	FALSE	19.16675752
P-2309	48 inch	0.001380878	53.37517893	TRUE	53.37517893
P-2345	10 x 8 ft	0	0	TRUE	0
P-2351	10 x 8 ft	0.020108696	2208.133765	FALSE	2208.133765
P-2367	24 inch	0.037480878	43.79453009	FALSE	43.79453009
P-2368	60 inch	0.001896312	113.4078905	TRUE	113.4078905
P-2370	60 inch	0.001066413	85.04545323	TRUE	85.04545323
P-2371	60 inch	0.002816832	138.2193417	TRUE	138.2193417
P-2374	60 inch	0.001948095	114.9458673	TRUE	114.9458673
P-2375	60 inch	0.001609288	104.4732739	TRUE	104.4732739
P-2376	24 inch	0.000877762	21.31408748	TRUE	21.31408748
P-2377	60 inch	0.001241867	91.77530267	TRUE	91.77530267
P-2379	24 inch	0.003644881	13.65704226	FALSE	13.65704226
P-2384	60 inch	0.001552068	102.5991267	TRUE	102.5991267

P-2395	18 inch	0.070519634	27.89331001	FALSE	27.89331001
P-2396	18 inch	0.002456656	5.206156444	TRUE	5.206156444
P-2404	24 inch	0.001591858	9.025415862	TRUE	9.025415862
P-2405	24 inch	0.003097892	12.59064836	FALSE	12.59064836
P-2407	18 inch	0.009669671	10.32882422	FALSE	10.32882422
P-2410	18 inch	0.007031103	8.807583145	FALSE	8.807583145
P-2411	18 inch	0.002173701	4.897167199	FALSE	4.897167199
P-2462	18 inch	0.006577666	8.518849619	FALSE	8.518849619
P-2463	18 inch	0.00172804	4.366383707	FALSE	4.366383707
P-2464	18 inch	0.004219372	6.822898823	FALSE	6.822898823

DESIGN_CAPAC	FULL_CAPACI	TICAL_SLOPE_F	AGE_VELOCITY	AULIC_SLOPE_FT/FT	ENE
-1138.390057	-1138.390057	0.009611085	17.78789883	0.009611085	
-255.4909617	-255.4909617	0.003482797	10.40412902	0.004192852	
-521.9862619	-521.9862619	0.003485096	10.43974119	0.004221605	
13.08030393	13.08030393	0.004914492	2.605847767	0.001309688	
24.65690517	24.65690517	0	0	0	
-10.17363466	-10.17363466	0.008283198	6.479641596	0.008097887	
-338.935367	-338.935367	0.00343962	9.736278961	0.003671843	
12.86680591	12.86680591	0.005475343	3.646437983	0.002564528	
13.6172127	13.6172127	0.012366032	8.543333117	0.014077465	
-5.703845082	-5.703845082	0.012366032	8.543333117	0.014077465	
-6.033514436	-6.033514436	0.017947146	8.565680059	0.020767224	
-327.6494735	-327.6494735	0.003465826	10.14147553	0.003983826	
-0.187230523	-0.187230523	0.009893022	6.000639751	0.010191776	
-140.969212	-140.969212	0.003484065	10.4237611	0.004208691	
-106.4504754	-106.4504754	0.003948999	9.49239208	0.003883282	
-70.51319376	-70.51319376	0.003492558	10.55532861	0.004315604	
-333.8178051	-333.8178051	0.003496334	10.61383875	0.004363581	
77.16480793	77.16480793	0.010773429	6.575830608	0.012435339	
1548.467711	1548.467711	0.003945749	9.458266965	0.003855411	
197.7440283	197.7440283	0.00387134	8.68091917	0.003247723	
-179.1650651	-179.1650651	0.0038697	8.663864769	0.003234975	
65.00470666	65.00470666	0	0	0	
-37.80829621	-37.80829621	0.003859853	8.561545542	0.003159017	
23.61556626	23.61556626	0	0	0	
-64.44630564	-64.44630564	0.003858814	8.550760548	0.003151063	
-71.46522783	-71.46522783	0.003857565	8.537792886	0.003141513	
11.34455108	11.34455108	0	0	0	
-578.1970898	-578.1970898	0.027725049	25.36368647	0.027725049	
96.03862145	96.03862145	0	0	0	
-433.2811097	-433.2811097	0.027708764	25.35623616	0.027708764	
-744.3427583	-744.3427583	0.027704172	25.3541352	0.027704172	
91.46269485	91.46269485	0	0	0	
82.03022515	82.03022515	0.008791821	5.87627416	0.009930257	
-387.3352926	-387.3352926	0.003444217	9.807331781	0.003725631	
-520.2175076	-520.2175076	0.003482812	10.40435771	0.004193037	
9.105572624	9.105572624	0.005130163	1.678935474	0.000797853	
23.36246723	23.36246723	0.004980197	1.274747305	0.000459942	
-111.0113071	-111.0113071	0.089851969	25.56868724	0.093642559	
-173.7164449	-173.7164449	0.003945727	9.458030429	0.003855218	
16.57393996	16.57393996	0.004516202	2.787032887	0.001112604	
906.3575571	906.3575571	0.004232601	12.53537568	0.006772083	
1451.118092	1451.118092	0.004232034	12.52915057	0.006765359	
-13.3752728	-13.3752728	0.135523981	17.02992625	0.14095115	
6.442661634	6.442661634	0.004516202	2.787032887	0.001112604	
-5.89371725	-5.89371725	0.09488757	14.34090718	0.099953116	
8.629867606	8.629867606	0.004254126	0.492487739	3.47414E-05	
9.373821165	9.373821165	0.004466407	0.769512092	0.000114209	
1.759583977	1.759583977	0.007523619	3.07804837	0.004604622	

-367.7787465	-367.7787465	0.003493021	10.56250431	0.004321474	
5.376098878	5.376098878	0	0	0	
21.86441106	21.86441106	๖	๖	๖	
-1.90225919	-1.90225919	0.004751744	2.215436808	0.000946648	
-346.1738539	-346.1738539	0.003494226	10.58116886	0.00433676	
39.32823157	39.32823157	0.005845014	2.922591381	0.002417636	
25.12016992	25.12016992	0.004475386	1.197990417	0.000276807	
11.28407569	11.28407569	0.005305926	2.067577945	0.001209981	
44.78219721	44.78219721	0	0	0	
21.23039837	21.23039837	0	0	0	
-275.0951793	-275.0951793	0.0276829	25.34439938	0.0276829	
14.47100114	14.47100114	0.007372124	3.760815463	0.005104977	
-383.1042752	-383.1042752	0.052655615	31.77361441	0.052655615	
-15.5725119	-15.5725119	0.006686335	6.317305325	0.005716368	
544.5872194	544.5872194	0.003284423	1.579326331	0.000141784	
1370.409069	1370.409069	0.005305685	15.86537438	0.007645814	
-38.60855951	-38.60855951	0.007708061	8.363769098	0.00785752	
-826.8368263	-826.8368263	0.009061516	17.27185082	0.009061516	
30.21734322	30.21734322	0	0	0	
23.88891995	23.88891995	0	0	0	
-19.28320297	-19.28320297	0.005428697	6.638647921	0.00403068	
39.85221189	39.85221189	0	0	0	
35.77675618	35.77675618	0	0	0	
13.98025494	13.98025494	0	0	0	
-852.6273608	-852.6273608	0.009740833	17.90756336	0.009740833	
20.00656168	20.00656168	0	0	0	
10.72520876	10.72520876	0	0	0	
13.37111141	13.37111141	0	0	0	
-612.1184968	-612.1184968	0.009681356	17.85280874	0.009681356	
-1141.479176	-1141.479176	0.009663238	17.83609521	0.009663238	
-1140.073272	-1140.073272	0.009639484	17.81415965	0.009639484	
3.93438782	3.93438782	0.005004022	2.798225791	0.001510203	
3.939860796	3.939860796	0.004824279	2.395980833	0.001107226	
-1305.908747	-1305.908747	0.007033747	16.32438405	0.007033747	
-1303.913711	-1303.913711	0.007012308	16.29948651	0.007012308	
2.848676148	2.848676148	0.004726136	3.324292239	0.001582905	
-59.14815658	-59.14815658	0.006405511	8.95432253	0.006137082	
-1302.092134	-1302.092134	0.006992763	16.27675542	0.006992763	
960.5435336	960.5435336	0.00436215	17.14947765	0.078369866	
32.69603704	32.69603704	0.005404755	3.532760061	0.002407122	
-111.0618786	-111.0618786	0.007010504	11.43215147	0.007429148	
-68.38297178	-68.38297178	0.00476732	7.81404552	0.003470843	
-86.25042742	-86.25042742	0.007010504	11.43215147	0.007429148	
-120.6223949	-120.6223949	0.007514251	11.99739308	0.008181951	
-107.4969549	-107.4969549	0.006499697	10.7955551	0.006624804	
-14.04175549	-14.04175549	0.024131996	11.25411435	0.024428253	
-76.78992845	-76.78992845	0.005126677	8.584956725	0.004189472	
5.607887645	5.607887645	0.004895052	2.562125489	0.001266107	
-132.9691355	-132.9691355	0.007514251	11.99739308	0.008181951	

18.52552256	18.52552256	0.00856674	5.301083303	0.007953971	
-7.293384	-7.293384	0.01260678	7.073292971	0.014161134	
-6.111390257	-6.111390257	0.006357287	4.818195033	0.00447753	
4.541493749	4.541493749	0.004895052	2.562125489	0.001266107	
3.241172715	3.241172715	0.006817927	4.0107903	0.004553178	
5.675830155	5.675830155	0.005159235	1.772209667	0.000888966	
1.765414209	1.765414209	0.005159235	1.772209667	0.000888966	
8.518849619	8.518849619	0	0	0	
4.366383707	4.366383707	0	0	0	
6.822898823	6.822898823	0	0	0	

RGY SLOPE F	GROUND ELEM	GROUND EL	LIC GRADE LIN	Y GRADE LINE	LOCITY IN FT
0.009611085	89	89	89.00961108	93.92677005	17.78789883
0.004192852	89.5	90.13	90.86374914	92.5459444	10.40412902
0.004221605	90.13	90.7	91.13904689	92.83277779	10.43974119
0.001309688	92	92	91.26586771	91.37139457	2.605847767
0	88.38	92	91	91	0
0.008097887	89.61	90.45	90.80967746	91.46215703	6.479641596
0.003671843	91	90.45	91.42534438	92.89850793	9.736278961
0.002564528	89.51	90.45	90.53873266	90.74536706	3.646437983
0.014077465	87.6	91	91.22005921	92.35433752	8.543333117
0.014077465	87.6	91	91.35476323	92.48904154	8.543333117
0.020767224	89.61	90	90.96713923	92.1073592	8.565680059
0.003983826	90.45	90	91.4585848	93.05691771	10.14147553
0.010191776	89.61	90	90.27570759	90.83528485	6.000639751
0.004208691	90	90	89.86119921	91.5497489	10.4237611
0.003883282	91	91	91.55996978	92.96025429	9.49239208
0.004315604	90.7	90.5	90.8064079	92.53785196	10.55532861
0.004363581	90.5	90.5	92.17125163	93.92194432	10.61383875
0.012435339	90.4	90.5	90.51243534	91.18443056	6.575830608
0.003855411	91	91	91.00385541	92.39408998	9.458266965
0.003247723	92	91	91.22734062	92.39844707	8.68091917
0.003234975	91	91	93.40035132	94.56686081	8.663864769
0	92	91	91	91	0
0.003159017	91	91	91.13899673	92.27811624	8.561545542
0	91	91	91	91	0
0.003151063	91	91	91.16700633	92.30325774	8.550760548
0.003141513	91	92	91.40326533	92.53607299	8.537792886
0	91	91	91	91	0
0.027725049	91.2	98	94.54079075	104.5382513	25.36368647
0	98	98	93.45951383	93.45951383	0
0.027708764	98	94	93.45951383	103.4511019	25.35623616
0.027704172	94	94	93.15471743	103.1446499	25.3541352
0	90.8	94	93.15471743	93.15471743	0
0.009930257	98	90.8	90.80993026	91.34655296	5.87627416
0.003725631	91.6	91	92.13259182	93.62733535	9.807331781
0.004193037	90	89.5	89.50419304	91.18646225	10.40435771
0.000797853	90.13	90.13	90.17227822	90.21608415	1.678935474
0.000459942	90.13	90.13	90.14546785	90.17072086	1.274747305
0.093642559	90.8	91.3	92.79874915	102.9584708	25.56868724
0.003855218	91	91.3	92.29149201	93.68165705	9.458030429
0.001112604	90.9	91.2	91.64984134	91.77055298	2.787032887
0.006772083	91.3	91.2	91.43976845	93.88173469	12.53537568
0.006765359	91.2	91.2	91.32454877	93.76409023	12.52915057
0.14095115	91.2	91.2	93.41270894	97.91973927	17.02992625
0.001112604	90.7	90.9	91.03865616	91.15936978	2.787032887
0.099953116	90.7	90.7	92.01998685	95.21607093	14.34090718
3.47414E-05	91	90.7	90.70478865	90.70855791	0.492487739
0.000114209	90.7	91	90.72160247	90.73080475	0.769512092
0.004604622	90.7	90.7	90.80048629	90.94772291	3.07804837

0.004321474	91.46	91.2	93.1527956	94.88659458	10.56250431
0	92	90.7	90.7	90.7	0
0	92	92	90.7	90.7	0
0.000946648	90.7	90.7	90.75681024	90.83308549	2.215436808
0.00433676	90.5	91.46	92.88271137	94.62264322	10.58116886
0.002417636	90.4	90.4	90.41886375	90.55160355	2.922591381
0.000276807	89	91.46	91.46509354	91.48739697	1.197990417
0.001209981	91.05	90.5	90.52153766	90.5879714	2.067577945
0	90.8	98	93.45951383	93.45951383	0
0	90.8	90.8	90.8	90.8	0
0.0276829	94	90.8	91.74180464	101.7240664	25.34439938
0.005104977	90.8	98	91.11105845	91.33085911	3.760815463
0.052655615	90.8	90	101.8444415	117.5335472	31.77361441
0.005716368	84.3	90.8	92.33332373	92.95351933	6.317305325
0.000141784	90.8	90.8	90.80232197	90.84108419	1.579326331
0.007645814	90	90.8	90.87245396	94.78415446	15.86537438
0.00785752	85.1	90.8	92.627676	93.7147748	8.363769098
0.009061516	90.8	90	93.14982084	97.78581311	17.27185082
0	86.36	86.4	86.4	86.4	0
0	86.36	86.4	86.4	86.4	0
0.00403068	87	90	92.40082015	93.0857155	6.638647921
0	87	87	87	87	0
0	87.8	87	87	87	0
0	86.4	87.8	87	87	0
0.009740833	90	90	93.0510466	98.0345865	17.90756336
0	86.8	87.8	87	87	0
0	86.39	86.8	86.8	86.8	0
0	86.39	86.8	86.8	86.8	0
0.009681356	90	90	90.92799122	95.88110212	17.85280874
0.009663238	90	89	90.21818139	95.16202257	17.83609521
0.009639484	89	89	90.4584893	95.39017768	17.81415965
0.001510203	86.35	86.35	86.39772336	86.51940651	2.798225791
0.001107226	86.35	86.35	86.39308861	86.48230233	2.395980833
0.007033747	89	89	89.67939592	93.82071367	16.32438405
0.007012308	89	89	88.69826112	92.82695604	16.29948651
0.001582905	86.35	86.2	86.75687219	86.92860898	3.324292239
0.006137082	85.5	86.2	86.41848048	87.66451597	8.95432253
0.006992763	89	88.9	87.80305113	91.92023841	16.27675542
0.005559133	88.9	83	84.25043359	88.17565038	15.89276094
0.002407122	82.69	85.6	85.64495586	85.8389074	3.532760061
0.007429148	85.5	85.6	86.46189003	88.4929413	11.43215147
0.003470843	86.2	84.9	85.97404727	86.92293934	7.81404552
0.007429148	85.5	85.5	85.71099301	87.74204428	11.43215147
0.008181951	85.6	85.7	86.37879323	88.61565281	11.99739308
0.006624804	84.2	85.5	87.64063525	89.45178726	10.7955551
0.004429253	82.32	84.2	84.47516228	86.44344552	11.25411435
0.004189472	84.9	84.2	85.75182299	86.89718076	8.584956725
0.001266107	82.27	84.2	84.23473659	84.336752	2.562125489
0.008181951	85.7	83	83.81680772	86.05366731	11.99739308

0.007953971	84.8	84.8	84.90827924	85.34499031	5.301083303
0.014161134	84.8	85.5	87.34460611	88.12212014	7.073292971
0.00447753	84.3	84.9	86.25012908	86.6109018	4.818195033
0.001266107	84.23	84.3	84.34086997	84.44288537	2.562125489
0.004553178	84.23	84.3	84.51660116	84.76659243	4.0107903
0.000888966	84.48	84.4	84.41264333	84.4614518	1.772209667
0.000888966	84.4	84.8	85.02084059	85.06964905	1.772209667
0	87.21	87.5	84.3	84.3	0
0	87.5	84.3	84.3	84.3	0
0	87.21	87.5	84.3	84.3	0

IC_GRADE_LINE	GRADE_LINE	LOCITY_OUT_F	SYSTEM_FLOW_CFS
89	93.91715896	17.78789883	1138.390057
90.13	91.81219526	10.40412902	520.206071
90.7	92.3937309	10.43974119	521.9862619
91.22734062	91.33286748	2.605847767	8.186512203
91	91	0	0
90.45	91.10247957	6.479641596	20.35639444
90.45	91.92316355	9.736278961	486.813948
90.45	90.65663439	3.646437983	11.45562278
91	92.13427831	8.543333117	26.83967256
91	92.13427831	8.543333117	26.83967256
89.86119921	91.00141919	8.565680059	15.13680612
89.86119921	91.45953212	10.14147553	507.0737767
89.86119921	90.42077647	6.000639751	10.60400574
89.50419304	91.19274273	10.4237611	521.1878386
91	92.40028451	9.49239208	379.6955623
90.5	92.23144405	10.55532861	527.7652825
90.5	92.25069269	10.61383875	530.6904996
90.5	91.17199522	6.575830608	5.164645282
91	92.39023457	9.458266965	378.3303642
91	92.17110645	8.68091917	347.2367657
91	92.16650949	8.663864769	346.5545854
91	91	0	0
91	92.13911951	8.561545542	342.4618217
91	91	0	0
91	92.13625141	8.550760548	342.0304219
91.22734062	92.36014828	8.537792886	341.5117154
91	91	0	0
93.45951383	103.4569744	25.36368647	1014.530932
93.45951383	93.45951383	0	0
93.15471743	103.1463055	25.35623616	1014.232588
91.74180464	101.7317371	25.3541352	1014.148455
93.15471743	93.15471743	0	0
90.8	91.33662271	5.87627416	4.615214933
91	92.49474353	9.807331781	490.366589
89.5	91.18226921	10.40435771	520.2175076
90.13	90.17380594	1.678935474	2.966923886
90.13	90.15525301	1.274747305	2.252664432
91.3	101.4597216	25.56868724	125.51
91.3	92.69016503	9.458030429	378.3209005
91.2	91.32071164	2.787032887	13.68081569
91.2	93.64196624	12.53537568	501.4141435
91.2	93.63954146	12.52915057	501.1650606
91.2	95.70703033	17.02992625	13.3752728
90.9	91.02071164	2.787032887	13.68081569
90.7	93.89608408	14.34099718	11.26332216
90.7	90.70376926	0.492487739	2.417493536
90.70478865	90.71399094	0.769512092	2.417493536
90.7	90.84723662	3.07804837	2.417493536

91.2	92.93379899	10.56250431	528.1198111
90.7	90.7	0	0
90.7	90.7	0	0
90.7	90.77627526	2.215436808	6.96
91.46	93.19993184	10.58116886	529.0553257
90.4	90.5327398	2.922591381	5.164645282
91.46	91.48230343	1.197990417	3.763597892
90.5	90.56643374	2.067577945	3.653711822
93.45951383	93.45951383	0	0
90.8	90.8	0	0
90.8	100.7822618	25.34439938	1013.758584
90.80993026	91.02973092	3.760815463	4.615214933
90	105.6891057	31.77361441	1016.737908
90.8	91.4201956	6.317305325	31.01
90.8	90.83876223	1.579326331	31.01
90.8	94.71170051	15.86537438	1015.364625
90.8	91.8870988	8.363769098	59.12
90	94.63599227	17.27185082	1105.378977
86.4	86.4	0	0
86.4	86.4	0	0
90	90.68489535	6.638647921	63.87127809
87	87	0	0
87	87	0	0
87	87	0	0
90	94.9835399	17.90756336	1146.059073
87	87	0	0
86.8	86.8	0	0
86.8	86.8	0	0
90	94.9531109	17.85280874	1142.550343
89	93.94384118	17.83609521	1141.479176
89	93.93168838	17.81415965	1140.073272
86.35	86.47168315	2.798225791	8.790885587
86.35	86.43921372	2.395980833	7.527195784
88.69826112	92.83957887	16.32438405	1305.908747
87.80305113	91.93174605	16.29948651	1303.913711
85.97404727	86.14578405	3.324292239	16.31808137
85.97404727	87.22008276	8.95432253	112.5233355
84.4	88.51718728	16.27675542	1302.092134
82.80842806	88.07336233	18.40619436	1247.590231
85.6	85.79395154	3.532760061	11.09849305
85.6	87.63105127	11.43215147	224.4697692
84.9	85.84889208	7.81404552	153.428425
85.5	87.53105127	11.43215147	224.4697692
83.81680772	86.05366731	11.99739308	235.5682622
85.5	87.31115202	10.7955551	211.9702287
84.2	86.16828324	11.25411435	35.35584297
84.2	85.34535777	8.584956725	168.5652311
84.2	84.3020154	2.562125489	8.049154615
81.55	83.78685959	11.99739308	235.5682622

84.8	85.23671107	5.301083303	9.367787453
85.5	86.27751404	7.073292971	12.49954044
84.9	85.26077273	4.818195033	15.13888512
84.3	84.4020154	2.562125489	8.049154615
84.3	84.54999128	4.0107903	7.087651504
84.4	84.44880846	1.772209667	3.13175299
84.8	84.84880846	1.772209667	3.13175299
84.3	84.3	0	0
84.3	84.3	0	0
84.3	84.3	0	0

APPENDIX C.
Extended Pipe Report (Proposed Facilities)

+START_NODE	+STOP_NODE	DESCRIPTION	NOTES	SECTION_SHAPE	MATERIAL
2510	I-19			Box.	Concrete
2339	2342	15684	nil	Box	Concrete
2342	2371	15684	nil	Box	Concrete
1272	1271	15278	nil	Circular	Concrete
1273	1274	15278	nil	Circular	Concrete
1277	1279	15684	nil	Circular	Concrete
1276	1279	15684	nil	Box	Concrete
1278	1279	15684	nil	Circular	Concrete
1280	1282	15278	nil	Circular	Concrete
1281	1282	15278	nil	Circular	Concrete
1283	1284	15684	nil	Circular	Concrete
1279	1284	15684	nil	Box	Concrete
1285	1284	15684	nil	Circular	Concrete
1284	1286	15684	nil	Box	Concrete
1282	1287	15278	nil	Box	Concrete
2371	J-561	15684	nil	Box	Concrete
J-561	2372	15684	nil	Box	Concrete
2373	J-561			Circular	PVC
1287	2340			Box	Concrete
1271	J-562	15278	nil	Box	Concrete
J-562	1282	15278	nil	Box	Concrete
1274	J-562			Circular	PVC
I-1905	J-563	15278	nil	Box	Concrete
20680	J-563			Circular	PVC
J-563	J-564	15278	nil	Box	Concrete
J-564	1271	15278	nil	Box	Concrete
20681	J-564			Circular	PVC
2361	J-587	15278	nil	Box	Concrete
2382	J-587			Circular	PVC
J-587	J-588	15278	nil	Box	Concrete
J-588	2394	15278	nil	Box	Concrete
2384	J-588			Circular	PVC
2406	2404			Circular	PVC
I-359	1276	15684	nil	Box	Concrete
1286	2339		x 5 box.	Box	Concrete
2341	2342	15684	nil	Circular	Concrete
2343	2342	15684	nil	Circular	Concrete
I-34	2358	15278	nil	Circular	Concrete
2340	2358	15278	nil	Box	Concrete
2359	2353	15684	nil	Circular	Concrete
2358	2360	15278	nil	Box	Concrete
2360	2361	15278	nil	Box	Concrete
2353	2361	15684	nil	Circular	Concrete
2362	2359	15684	nil	Circular	Concrete
2352	2362	15684	nil	Circular	Concrete
2363	2362	15684	nil	Circular	Concrete
2365	2363	15684	nil	Circular	Concrete
2350	2365	15684	nil	Circular	Concrete

2366	2361	15684	nil	Box	Concrete
2368	2365	15684	nil	Circular	Concrete
2354	2368	15684	nil	Circular	Concrete
I-39	2371	15684	nil	Circular	Concrete
2372	2366	15684	nil	Box	Concrete
2367	2373	15684	nil	Circular	Concrete
2378	2366	15684	nil	Circular	Concrete
2381	2372	15684	nil	Circular	Concrete
2383	2382	15278	nil	Circular	Concrete
2385	2384	15278	nil	Circular	Concrete
2394	2404	311	nil	Box	Concrete
2407	2406	311	nil	Circular	Concrete
2404	2431	15278	nil	Box	Concrete
I-37	2432	311	nil	Circular	Concrete
2432	2434	nil	nil	Circular	Concrete
2431	2434	nil	nil	Box	Concrete
I-49	2434	311	nil	Circular	Concrete
2434	2467	14131	nil	Box	Concrete
I-1906	2467	11949	nil	Circular	Concrete
2467	2487	14131	nil	Box	Concrete
2487	2491	14131	nil	Box	Concrete
2491	2502	14131	nil	Box	Concrete
2502	2510	14131	nil	Box	Concrete
2518	2519	11949	nil	Circular	Concrete
2522	2519	11949	nil	Circular	Concrete
I-19	2524	14131	nil	Box	Concrete
2524	2529	14131	nil	Box	Concrete
2519	I-21	11949	nil	Circular	Concrete
I-22	I-21	11949	nil	Circular	Concrete
2529	I-48	14131	nil	Box	Concrete
I-48	O-2	14131	nil	Box	Concrete
2595	2596	18356	UCGS1964	Circular	Concrete
2597	2596	11949	nil	Circular	Concrete
I-21	2599	11949	nil	Circular	Concrete
2601	2597	11949	nil	Circular	Concrete
2596	2605	11949	nil	Circular	Concrete
2606	2601	11949	nil	Circular	Concrete
2602	2606	11949	nil	Circular	Concrete
2599	2606	11949	nil	Circular	Concrete
2608	2606	11949	nil	Circular	Concrete
2605	O-3	11949	nil	Circular	Concrete
2624	2625	11949	nil	Circular	Concrete
2625	2601	11949	nil	Circular	Concrete
2635	2599	11949	nil	Circular	Concrete
2636	2635	11949	nil	Circular	Concrete
2638	2635	11949	nil	Circular	Concrete
2641	2642	11949	nil	Circular	Concrete
2642	2625	11949	nil	Circular	Concrete
2699	I-23	14320	nil	Circular	Concrete

I-23	2635	14320	nil	Circular	Concrete
2701	I-23	14320	nil	Circular	Concrete

CY_WEISBACH	ZEN_WILLIAMS	KUTTERS_N	MANNINGS_N	SECTION_SIZE	BER_OF_SECTI
			0.013	12 x 12 ft	1
			0.013	12 x 6 ft	1
			0.013	12 x 6 ft	1
			0.013	18 inch	1
			0.013	8 inch	1
			0.013	36 inch	1
			0.013	12 x 6 ft	1
			0.013	21 inch	1
			0.013	21 inch	1
			0.013	30 inch	1
			0.013	24 inch	1
			0.013	12 x 6 ft	1
			0.013	21 inch	1
			0.013	12 x 6 ft	1
			0.013	10 x 5 ft	1
			0.013	12 x 8 ft	1
			0.013	12 x 8 ft	1
			0.01	8 inch	1
			0.013	10 x 5 ft	1
			0.013	8 x 5 ft	1
			0.013	8 x 5 ft	1
			0.01	8 inch	1
			0.013	8 x 5 ft	1
			0.01	4 inch	1
			0.013	8 x 5 ft	1
			0.013	8 x 5 ft	1
			0.01	4 inch	1
			0.013	12 x 9 ft	1
			0.01	8 inch	1
			0.013	12 x 9 ft	1
			0.013	12 x 10 ft	1
			0.01	8 inch	1
			0.01	10 inch	1
			0.013	12 x 6 ft	1
			0.013	12 x 6 ft	1
			0.013	12 inch	1
			0.013	8 inch	1
			0.013	72 inch	1
			0.013	10 x 6 ft	1
			0.013	30 inch	1
			0.013	10 x 6 ft	1
			0.013	10 x 6 ft	1
			0.013	30 inch	1
			0.013	30 inch	1
			0.013	18 inch	1
			0.013	18 inch	1
			0.013	15 inch	1
			0.013	10 inch	1

			0.013	12 x 9 ft	1
			0.013	8 inch	1
			0.013	8 inch	1
			0.013	30 inch	1
			0.013	12 x 8 ft	1
			0.013	8 inch	1
			0.013	12 inch	1
			0.013	12 inch	1
			0.013	8 inch	1
			0.013	8 inch	1
			0.013	10 x 10 ft	1
			0.013	10 inch	1
			0.013	10 x 10 ft	1
			0.013	42 inch	1
			0.013	42 inch	1
			0.013	10 x 10 ft	1
			0.013	54 inch	1
			0.013	12 x 12 ft	1
			0.013	54 inch	1
			0.013	12 x 12 ft	1
			0.013	12 x 12 ft	1
			0.013	12 x 12 ft	1
			0.013	12 x 12 ft	1
			0.013	21 inch	1
			0.013	21 inch	1
			0.013	12 x 12 ft	1
			0.013	12 x 12 ft	1
			0.013	30 inch	1
			0.013	66 inch	1
			0.013	12 x 12 ft	1
			0.013	12 x 12 ft	1
			0.013	15 inch	1
			0.013	78 inch	1
			0.013	78 inch	1
			0.013	78 inch	1
			0.013	78 inch	1
			0.013	78 inch	1
			0.013	8 inch	1
			0.013	78 inch	1
			0.013	8 inch	1
			0.013	78 inch	1
			0.013	12 inch	1
			0.013	30 inch	1
			0.013	24 inch	1
			0.013	21 inch	1
			0.013	18 inch	1
			0.013	15 inch	1
			0.013	18 inch	1
			0.013	8 inch	1

			0.013	8 inch	1
			0.013	8 inch	1

M_INVERT_ELE	AM_INVERT_ELE	DEFINED_LEN	LENGTH_FT	EFINED_BEND	D_ANGLE_DEGF
76.4	76.4	TRUE	1	FALSE	1.505612422
82.5	82.47	TRUE	175	FALSE	0.114330708
82.47	82.47	TRUE	104	FALSE	85.85482772
83	82.74	TRUE	29.417	FALSE	89.82774715
84.3	84.15	TRUE	12.62537	FALSE	69.75351942
82.95	82.86	TRUE	44.41621	FALSE	91.97617775
82.95	82.86	TRUE	265.62801	FALSE	11.50062923
83.8	83.4	TRUE	34.6	FALSE	86.50366377
85.3	84.8	TRUE	15.63202	FALSE	85.6302046
84.6	84.38	TRUE	25.20079	FALSE	89.30700247
86	85.6	TRUE	53.25411	FALSE	104.9834468
82.86	82.66	TRUE	400.96768	FALSE	2.114475887
83.4	83	TRUE	40.67087	FALSE	113.7468439
82.66	82.47	TRUE	84.82595	FALSE	1.368287271
82.18	81.89	TRUE	144.20014	FALSE	4.150169152
82.47	82.24	TRUE	71	FALSE	2.508252118
82.47	82.24	TRUE	383	FALSE	1.222688021
85.4	82.24	TRUE	1	FALSE	163.9234185
81	80.9	TRUE	1	FALSE	6.594301369
82.74	82.18	TRUE	70	FALSE	0.038074215
82.74	82.18	TRUE	742	FALSE	2.356366367
84.15	82.18	TRUE	1	FALSE	15.98201803
82.85	82.74	TRUE	44	FALSE	0.414810678
83	82.74	TRUE	1	FALSE	86.89248203
82.85	82.74	TRUE	53	FALSE	0.620082948
82.85	82.74	TRUE	56	FALSE	1.033105201
82.8	82.74	TRUE	1	FALSE	90.38007946
80	79.8	TRUE	39	FALSE	0.912186122
84	79.7	TRUE	1	FALSE	89.42438383
79.7	79.6	TRUE	11	FALSE	0.784339557
79.6	79.5	TRUE	51	FALSE	0.978781055
83.5	79.6	TRUE	1	FALSE	99.31981129
82.5	79	TRUE	1	FALSE	83.17054087
83	82.95	TRUE	304	FALSE	0.183864651
82.47	82.47	TRUE	1	FALSE	1.365126028
86.5	85.8	TRUE	52.99	FALSE	90.58913959
85	83	TRUE	33.63	FALSE	89.63689355
83.9	83.88	TRUE	16.005	FALSE	10.94612514
82.18	81.89	TRUE	257.1818	FALSE	77.49795553
84.4	82.2	TRUE	404.31399	FALSE	40.88177244
81.89	80	TRUE	35.40542	FALSE	11.77864928
81.89	80	TRUE	18.40978	FALSE	87.37319956
82.2	80	TRUE	15.69841	FALSE	50.07456604
84.7	84.4	TRUE	124.62311	FALSE	0.030201107
85	84.7	TRUE	13.20806	FALSE	94.47239059
84.8	84.7	TRUE	137.83715	FALSE	0.577258259
85.7	85.3	TRUE	147.21956	FALSE	0.135600307
86	85.7	TRUE	21.82292	FALSE	88.88678238

82.07	81.89	TRUE	451.88184	FALSE	90.71945656
85.8	85.7	TRUE	177.04982	FALSE	0.534888888
86	85.8	TRUE	21.40841	FALSE	89.00619447
82.5	82.47	TRUE	60.012	FALSE	3.863914974
82.24	82.07	TRUE	328.05859	FALSE	0.086077811
89	85.4	TRUE	7.80256	FALSE	102.2195916
85	84.7	TRUE	18.40109	FALSE	90.89303887
82.6	82.24	TRUE	17.8	FALSE	88.91487985
84.8	84	TRUE	20.41311	FALSE	0.908216661
83.5	83.5	TRUE	11.35308	FALSE	4.160187604
79.5	79	TRUE	34.02117	FALSE	0.076394251
84.65	79.5	TRUE	58.98718	FALSE	6.276092362
80.8	77.4	TRUE	224.94166	FALSE	4.224351066
78.18	77.8	TRUE	268.23393	FALSE	6.033911038
77.8	77	TRUE	16.37681	FALSE	85.24843934
77.4	77	TRUE	9.47629	FALSE	3.599596602
78.22	78	TRUE	232.60215	FALSE	86.57091764
77	76.8	TRUE	347.60418	FALSE	1.51639823
79.22	78.05	TRUE	595.63653	FALSE	90.05982773
76.8	76.6	TRUE	313.22235	FALSE	0.245874949
76.6	76.4	TRUE	95.85343	FALSE	1.243621956
76.4	76.4	TRUE	126.06348	FALSE	1.936883998
76.4	76.4	TRUE	151.30367	FALSE	1.967524038
82.27	82.17	TRUE	31.60063	FALSE	90.19598732
82.27	82.17	TRUE	38.91581	FALSE	93.8648121
76.4	76.4	TRUE	139.48964	FALSE	4.145610408
76.4	76.4	TRUE	127.66268	FALSE	3.793903356
81.8	80.72	TRUE	494.54959	FALSE	1.740052926
79.32	79.22	TRUE	72.41768	FALSE	88.96946875
76.4	76.4	TRUE	486.65331	FALSE	2.020872885
76.4	76.03	TRUE	18.4	FALSE	0
79.5	78.8	TRUE	18.67619	FALSE	33.29659458
76.86	76.64	TRUE	116.01465	FALSE	14.81336936
78.22	77.89	TRUE	309.44854	FALSE	82.52865213
76.91	76.86	TRUE	28.4007	FALSE	65.82620233
76.64	76.03	TRUE	313.12649	FALSE	5.579169413
77.43	76.91	TRUE	323.12431	FALSE	67.4074525
80.11	80.01	TRUE	11.2641	FALSE	99.37992191
77.89	77.43	TRUE	370.41015	FALSE	8.439235968
80.11	80.01	TRUE	27.43574	FALSE	89.6605596
76.03	76.03	TRUE	277.04979	FALSE	0
81.22	80.26	TRUE	13.61323	FALSE	88.91685708
80.26	79.94	TRUE	130.25836	FALSE	22.93738898
79.87	77.89	TRUE	301.53434	FALSE	96.88519862
80.08	79.98	TRUE	32.28002	FALSE	71.79373165
80.48	80.02	TRUE	47.57142	FALSE	72.46637301
80.9	80.8	TRUE	14.22252	FALSE	89.1619109
80.8	80.26	TRUE	248.42423	FALSE	0.453351881
84	83.8	TRUE	30.40592	FALSE	88.34549467

83.8	82.8	TRUE	567.11657	FALSE	0.735287298
84	83.8	TRUE	47.40042	FALSE	92.20391539

DESIGN_PIPE?	I_UPSTREAM_I	DOWNSTREAM_	OCAL_PIPE_CON	RT_FULL_DESIG	N_PERCENT_FI
TRUE	FALSE	FALSE	TRUE	FALSE	
TRUE	FALSE	FALSE	TRUE	FALSE	
TRUE	FALSE	FALSE	TRUE	FALSE	
TRUE	FALSE	FALSE	TRUE	FALSE	
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TRUE	FALSE	FALSE	TRUE	FALSE
TRUE	FALSE	FALSE	TRUE	FALSE

TRUE	FALSE	FALSE	TRUE	FALSE	
TRUE	FALSE	FALSE	TRUE	FALSE	

MULTIPLE_SEC	M_NUMBER_SE	IT_SECTION_SI	UM_SECTION_R	MUM_VELOCITY	IUM_VELOCITY
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XIMUM_COVER	NIMUM_COVER	IMUM_SLOPE_F	MUM_SLOPE_F	IN_COST_CALC	T_COST_FUNCT
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ONAL_UNIT_COS	HMI_ID	ELEMENT_TYPE	AS_MESSAGES	RUCTED_SLOPE	LL_CAPACITY_C
0	11439	Pipe	TRUE	0	0
0	11427	Pipe	TRUE	0.000171429	171.0458521
0	11428	Pipe	TRUE	0	0
0	10177	Pipe	FALSE	0.008838427	9.874895581
0	9457	Pipe	TRUE	0.01188084	1.317089292
0	10791	Pipe	TRUE	0.002026287	30.02217756
0	11074	Pipe	TRUE	0.00033882	240.4668776
0	8286	Pipe	FALSE	0.011560694	17.03576917
0	8442	Pipe	TRUE	0.031985629	28.33656816
0	10034	Pipe	TRUE	0.008729885	38.321805
0	8643	Pipe	TRUE	0.007511157	19.60507115
0	10104	Pipe	TRUE	0.000498793	291.7637
0	8083	Pipe	FALSE	0.009835049	15.71296217
0	10420	Pipe	TRUE	0.002239881	618.2774089
0	8799	Pipe	TRUE	0.002011094	360.2774766
0	11172	Pipe	TRUE	0.003239437	1119.520167
0	11173	Pipe	TRUE	0.000600522	482.0162824
0	11174	Pipe	TRUE	3.16	27.92405857
0	11176	Pipe	FALSE	0.1	2540.510267
0	11182	Pipe	FALSE	0.008	544.9807941
0	11183	Pipe	TRUE	0.000754717	167.3895203
0	11184	Pipe	TRUE	1.97	22.04794475
0	11187	Pipe	TRUE	0.0025	304.6535255
0	11189	Pipe	TRUE	0.26	1.261464455
0	11192	Pipe	TRUE	0.002075472	277.5841163
0	11193	Pipe	TRUE	0.001964286	270.0464876
0	11194	Pipe	TRUE	0.06	0.605987923
0	11353	Pipe	FALSE	0.005128205	1659.234911
0	11355	Pipe	TRUE	4.3	32.57386009
0	11358	Pipe	FALSE	0.009090909	2209.168489
0	11359	Pipe	TRUE	0.001960784	1185.587617
0	11360	Pipe	TRUE	3.9	31.02182206
0	11361	Pipe	TRUE	3.5	53.28386539
0	11382	Pipe	TRUE	0.000164474	167.5402481
0	11386	Pipe	TRUE	0	0
0	11430	Pipe	FALSE	0.01321004	4.094684059
0	11429	Pipe	FALSE	0.059470711	2.946749448
0	7785	Pipe	TRUE	0.001249609	149.7012743
0	9591	Pipe	TRUE	0.001127607	350.1730873
0	9326	Pipe	TRUE	0.005441316	30.25475566
0	7855	Pipe	TRUE	0.053381657	2409.350086
0	9743	Pipe	TRUE	0.102662824	3341.261641
0	9090	Pipe	TRUE	0.140141581	153.5412955
0	9721	Pipe	TRUE	0.002407258	20.12347733
0	9455	Pipe	FALSE	0.022716844	15.83138908
0	10204	Pipe	TRUE	0.000725494	2.829188511
0	8314	Pipe	TRUE	0.00271703	3.36699349
0	9086	Pipe	FALSE	0.013747015	2.568754175

0	7858	Pipe	TRUE	0.000398334	462.4331835
0	9611	Pipe	TRUE	0.000564813	0.287173196
0	10428	Pipe	TRUE	0.000342123	1.167923609
0	8838	Pipe	TRUE	0.0004999	9.170294244
0	9125	Pipe	TRUE	0.0005182	447.7606574
0	10332	Pipe	TRUE	0.461387032	8.207754134
0	8466	Pipe	FALSE	0.016303382	4.548908383
0	8397	Pipe	FALSE	0.020224719	5.066517962
0	10529	Pipe	TRUE	0.039190501	2.392114988
0	8529	Pipe	TRUE	0	0
0	9776	Pipe	TRUE	0.014696731	2552.439767
0	10858	Pipe	TRUE	0.087307106	6.473559519
0	10386	Pipe	TRUE	0.01511503	2588.508726
0	10059	Pipe	TRUE	0.001416674	37.86617151
0	10043	Pipe	FALSE	0.048849562	222.3549459
0	10551	Pipe	TRUE	0.042210612	4325.695522
0	10045	Pipe	TRUE	0.000945821	60.4745788
0	8042	Pipe	TRUE	0.000575367	821.2353115
0	8577	Pipe	TRUE	0.001964285	87.15065241
0	9391	Pipe	TRUE	0.000638524	865.1347131
0	9848	Pipe	TRUE	0.002086519	1563.890282
0	11123	Pipe	TRUE	0	0
0	9458	Pipe	TRUE	0	0
0	9277	Pipe	TRUE	0.003164494	8.912959439
0	8934	Pipe	TRUE	0.00256965	8.031686779
0	8143	Pipe	TRUE	0	0
0	8734	Pipe	TRUE	0	0
0	9442	Pipe	TRUE	0.002183805	19.16675752
0	10707	Pipe	TRUE	0.001380878	124.7804476
0	9513	Pipe	TRUE	0	0
0	8435	Pipe	TRUE	0.020108696	4854.975725
0	10186	Pipe	TRUE	0.037480878	12.50546707
0	10280	Pipe	TRUE	0.001896312	228.2927985
0	7977	Pipe	TRUE	0.001066413	171.1985332
0	8259	Pipe	TRUE	0.00176052	219.9671199
0	9584	Pipe	TRUE	0.001948095	231.3887826
0	7908	Pipe	TRUE	0.001609288	210.3072012
0	10562	Pipe	TRUE	0.008877762	1.138527167
0	8131	Pipe	TRUE	0.001241867	184.7458813
0	9295	Pipe	TRUE	0.003644881	0.729513457
0	8425	Pipe	TRUE	0	0
0	9039	Pipe	TRUE	0.070519634	9.460701998
0	7996	Pipe	TRUE	0.002456656	20.32890003
0	10090	Pipe	FALSE	0.006566416	18.33070627
0	9107	Pipe	TRUE	0.003097892	8.818666176
0	10581	Pipe	FALSE	0.009669671	10.32882422
0	8715	Pipe	TRUE	0.007031103	5.416350522
0	10479	Pipe	TRUE	0.002173701	4.897167199
0	8576	Pipe	TRUE	0.006577666	0.980003372

0	8676	Pipe	TRUE	0.001763306	0.50740586
0	10998	Pipe	TRUE	0.000421937	0.784902206

CEEDS_CAPACI	IGN_CAPACITY	DESIGN_CAPAC	FULL_CAPACI	AGE_PIPE_COVI	RISE_IN
TRUE	0	-1103.431748	-1103.431748	0.6	144
TRUE	171.0458521	-343.6046634	-343.6046634	1.33	72
TRUE	0	-515.5493073	-515.5493073	1.945	72
FALSE	9.874895581	1.688383378	1.688383378	7.63	18
FALSE	1.317089292	1.317089292	1.317089292	5.298333333	8
FALSE	30.02217756	9.665783124	9.665783124	4.125	36
TRUE	240.4668776	-244.8017952	-244.8017952	1.82	72
FALSE	17.03576917	5.58014639	5.58014639	4.63	21
FALSE	28.33656816	1.496895606	1.496895606	2.5	21
FALSE	38.321805	11.48213244	11.48213244	2.31	30
FALSE	19.60507115	4.468265028	4.468265028	2.005	24
TRUE	291.7637	-212.3013728	-212.3013728	1.465	72
FALSE	15.71296217	5.108956433	5.108956433	4.855	21
FALSE	618.2774089	102.2311577	102.2311577	1.435	72
TRUE	360.2774766	-19.41808563	-19.41808563	3.965	60
FALSE	1119.520167	598.6844564	598.6844564	0.245	96
TRUE	482.0162824	-41.32408647	-41.32408647	0.145	96
FALSE	27.92405857	22.75941329	22.75941329	5.963333333	8
FALSE	2540.510267	2162.501685	2162.501685	5.05	60
FALSE	544.9807941	197.7440283	197.7440283	4.04	60
TRUE	167.3895203	-179.1650651	-179.1650651	3.54	60
FALSE	22.04794475	22.04794475	22.04794475	7.668333333	8
TRUE	304.6535255	-37.80829621	-37.80829621	3.205	60
FALSE	1.261464455	1.261464455	1.261464455	7.796666667	4
TRUE	277.5841163	-64.44630564	-64.44630564	3.205	60
TRUE	270.0464876	-71.46522783	-71.46522783	3.705	60
FALSE	0.605987923	0.605987923	0.605987923	7.896666667	4
FALSE	1659.234911	664.7400006	664.7400006	5.7	108
FALSE	32.57386009	32.57386009	32.57386009	15.48333333	8
FALSE	2209.168489	1215.291639	1215.291639	7.35	108
FALSE	1185.587617	191.8929833	191.8929833	4.45	120
FALSE	31.02182206	31.02182206	31.02182206	10.18333333	8
FALSE	53.28386539	48.66865045	48.66865045	12.81666667	10
TRUE	167.5402481	-322.8263409	-322.8263409	2.325	72
TRUE	0	-514.6667729	-514.6667729	1.28	72
FALSE	4.094684059	1.127760173	1.127760173	2.98	12
FALSE	2.946749448	0.694085016	0.694085016	5.463333333	8
FALSE	149.7012743	24.19127425	24.19127425	1.16	72
TRUE	350.1730873	-27.82367699	-27.82367699	3.115	72
FALSE	30.25475566	16.57393996	16.57393996	5.25	30
FALSE	2409.350086	1908.516106	1908.516106	4.305	72
FALSE	3341.261641	2840.737679	2840.737679	4.255	72
FALSE	153.5412955	139.8604798	139.8604798	7.6	30
FALSE	20.12347733	6.442661634	6.442661634	3.75	30
FALSE	15.83138908	4.568066926	4.568066926	4.35	18
FALSE	2.829188511	0.411694975	0.411694975	4.6	18
FALSE	3.36699349	0.949499954	0.949499954	4.1	15
FALSE	2.568754175	0.151260638	0.151260638	4.016666667	10

TRUE	462.4331835	-55.20841531	-55.20841531	0.35	108
FALSE	0.287173196	0.287173196	0.287173196	4.933333333	8
FALSE	1.167923609	1.167923609	1.167923609	5.433333333	8
FALSE	2.210294244	2.210294244	2.210294244	5.715	30
TRUE	447.7606574	-72.15858623	-72.15858623	0.825	96
FALSE	8.207754134	3.043108852	3.043108852	2.533333333	8
FALSE	4.548908383	0.785310491	0.785310491	4.38	12
FALSE	5.066517962	1.41280614	1.41280614	7.355	12
FALSE	2.392114988	2.392114988	2.392114988	9.333333333	8
FALSE	0	0	0	6.633333333	8
FALSE	2552.439767	1559.598965	1559.598965	3.15	120
FALSE	6.473559519	1.858344586	1.858344586	11.49166667	10
FALSE	2588.508726	1593.01083	1593.01083	1.3	120
FALSE	37.86617151	6.856171513	6.856171513	6.06	42
FALSE	222.3549459	191.3449459	191.3449459	9.9	42
FALSE	4325.695522	3333.538537	3333.538537	3.2	120
FALSE	60.4745788	1.354578801	1.354578801	5.34	54
TRUE	821.2353115	-260.8772974	-260.8772974	1.5	144
FALSE	87.15065241	23.27937432	23.27937432	5.365	54
TRUE	865.1347131	-252.7032113	-252.7032113	1.3	144
FALSE	1563.890282	452.6890113	452.6890113	1.5	144
TRUE	0	-1109.180515	-1109.180515	1.1	144
TRUE	0	-1106.536264	-1106.536264	0.6	144
FALSE	8.912959439	0.122073852	0.122073852	2.38	21
FALSE	8.031686779	0.504490995	0.504490995	2.38	21
TRUE	0	-1264.544412	-1264.544412	0.6	144
TRUE	0	-1261.673323	-1261.673323	0.6	144
FALSE	19.16675752	2.848676148	2.848676148	2.515	30
FALSE	124.7804476	12.25711205	12.25711205	1.08	66
TRUE	0	-1259.131949	-1259.131949	0.55	144
FALSE	4854.975725	3651.383336	3651.383336	-2.265	144
FALSE	12.50546707	1.406974019	1.406974019	3.745	15
FALSE	228.2927985	3.823029313	3.823029313	2.3	78
FALSE	171.1985332	17.77010821	17.77010821	0.995	78
TRUE	219.9671199	-4.50264926	-4.50264926	2.115	78
TRUE	231.3887826	-4.179479632	-4.179479632	2.815	78
TRUE	210.3072012	-1.663027502	-1.663027502	1.18	78
TRUE	1.138527167	-6.910627449	-6.910627449	2.533333333	8
FALSE	184.7458813	16.18065013	16.18065013	0.39	78
TRUE	0.729513457	-34.62632951	-34.62632951	2.508333333	8
TRUE	0	-235.5682622	-235.5682622	1.82	78
FALSE	9.460701998	0.092914545	0.092914545	3.06	12
FALSE	20.32890003	7.829359582	7.829359582	2.55	30
FALSE	18.33070627	3.193900151	3.193900151	3.72	24
FALSE	8.818666176	0.769511561	0.769511561	2.485	21
FALSE	10.32882422	3.241172715	3.241172715	2.515	18
FALSE	5.416350522	2.284597532	2.284597532	2.34	15
FALSE	4.897167199	1.765414209	1.765414209	2.57	18
FALSE	0.980003372	0.980003372	0.980003372	2.788333333	8

FALSE	0.50740586	0.50740586	0.50740586	1.933333333	8
FALSE	0.784902206	0.784902206	0.784902206	2.788333333	8

SPAN_IN	FULL_AREA_FT	M_CROWN_ELE	AM_CROWN_EL	TICAL_SLOPE_F	RITICAL_DEPTH
144	144	88.4	88.4	0.003492731	6.405389361
144	72	88.5	88.47	0.003043289	3.852296569
144	72	88.47	88.47	0.003043956	3.856786402
18	1.767145868	84.5	84.24	0.007560816	1.108714973
8	0.34906585	84.96666667	84.81666667	0	0
36	7.068583471	85.95	85.86	0.004198414	1.448585912
144	72	88.95	88.86	0.003021682	3.704238892
21	2.405281875	85.55	85.15	0.00691327	1.261844607
21	2.405281875	87.05	86.55	0.025235653	1.695981592
30	4.908738521	87.1	86.88	0.005962326	1.766459377
24	3.141592654	88	87.6	0.006357287	1.402557112
144	72	88.86	88.66	0.003035464	3.799285125
21	2.405281875	85.15	84.75	0.006549724	1.213562442
144	72	88.66	88.47	0.003044324	3.859256011
120	50	87.18	86.89	0.003301441	3.551856576
144	96	90.47	90.24	0.003047882	3.883111232
144	96	90.47	90.24	0.003049745	3.895551362
8	0.34906585	86.06666667	82.90666667	0.105037625	0.66590962
120	50	86	85.9	0.003299286	3.541328626
96	40	87.74	87.18	0.00387134	3.883191354
96	40	87.74	87.18	0.0038697	3.878103782
8	0.34906585	84.81666667	82.84666667	0	0
96	40	87.85	87.74	0.003859853	3.847510064
4	0.087266463	83.33333333	83.07333333	0	0
96	40	87.85	87.74	0.003858814	3.844278242
96	40	87.85	87.74	0.003857565	3.840390564
4	0.087266463	83.13333333	83.07333333	0	0
144	108	89	88.8	0.003410552	5.976524909
8	0.34906585	84.66666667	80.36666667	0	0
144	108	88.7	88.6	0.003410083	5.97404918
144	120	89.6	89.5	0.003409945	5.973319217
8	0.34906585	84.16666667	80.26666667	0	0
10	0.545415391	83.33333333	79.83333333	0.023437602	0.815315685
144	72	89	88.95	0.003025405	3.730136559
144	72	88.47	88.47	0.003043301	3.852377662
12	0.785398163	87.5	86.8	0.008645701	0.73867192
8	0.34906585	85.66666667	83.66666667	0.030296579	0.6405
72	28.27433388	89.9	89.88	0.003394265	3.030730093
120	60	88.18	87.89	0.003299271	3.541254835
30	4.908738521	86.9	84.7	0.004516202	1.24461444
120	60	87.89	86	0.003457758	4.271964827
120	60	87.89	86	0.003457357	4.270201969
30	4.908738521	84.7	82.5	0.004516202	1.24461444
30	4.908738521	87.2	86.9	0.004516202	1.24461444
18	1.767145868	86.5	86.2	0.010736356	1.282527554
18	1.767145868	86.3	86.2	0.005008262	0.588480289
15	1.22718463	86.95	86.55	0.005692374	0.622088182
10	0.545415391	86.83333333	86.53333333	0.01189591	0.692194409

144	108	91.07	90.89	0.003045511	3.867227989
8	0.34906585	86.46666667	86.36666667	0	0
8	0.34906585	86.66666667	86.46666667	0	0
30	4.908738521	85	84.97	0.004164116	0.875053189
144	96	90.24	90.07	0.003047202	3.878560459
8	0.34906585	89.66666667	86.06666667	0.177513586	0.66590962
12	0.785398163	86	85.7	0.011010937	0.825902502
12	0.785398163	83.6	83.24	0.010622796	0.815161476
8	0.34906585	85.46666667	84.66666667	0	0
8	0.34906585	84.16666667	84.16666667	0	0
120	100	89.5	89	0.004068989	6.741467159
10	0.545415391	85.48333333	80.33333333	0.039609548	0.815315685
120	100	90.8	87.4	0.004072126	6.753490623
42	9.621127502	81.68	81.3	0.004015342	1.721969689
42	9.621127502	81.3	80.5	0.004015342	1.721969689
120	100	87.4	87	0.004068184	6.738380173
54	15.90431281	82.72	82.5	0.003707867	2.233407092
144	144	89	88.8	0.003476731	6.322601386
54	15.90431281	83.72	82.55	0.003775265	2.325620255
144	144	88.8	88.6	0.003503515	6.461007895
144	144	88.6	88.4	0.003498549	6.435413413
144	144	88.4	88.4	0.003497036	6.427610917
144	144	88.4	88.4	0.003495057	6.417394246
21	2.405281875	84.02	83.92	0.005903541	1.101683635
21	2.405281875	84.02	83.92	0.005534576	1.016145403
144	144	88.4	88.4	0.003612218	7.014629743
144	144	88.4	88.4	0.003610112	7.004012639
30	4.908738521	84.3	83.22	0.004726136	1.364875472
66	23.75829444	84.82	84.72	0.003591792	2.940162693
144	144	88.4	88.4	0.003608247	6.994608613
144	144	88.4	88.03	0.003567316	6.787398564
15	1.22718463	80.75	80.05	0.02580875	1.204876609
78	33.1830724	83.36	83.14	0.003740005	4.007696581
78	33.1830724	84.72	84.39	0.003305466	3.284566241
78	33.1830724	83.41	83.36	0.003740005	4.007696581
78	33.1830724	83.14	82.53	0.00382383	4.109474353
78	33.1830724	83.93	83.41	0.003651093	3.889815413
8	0.34906585	80.77666667	80.67666667	0.433317079	0.666149141
78	33.1830724	84.39	83.93	0.003384639	3.450332816
8	0.34906585	80.77666667	80.67666667	8.561287853	0.666666667
78	33.1830724	82.53	82.53	0.00382383	4.109474353
12	0.785398163	82.22	81.26	0.064222254	0.992100263
30	4.908738521	82.76	82.44	0.004433873	1.187204415
24	3.141592654	81.87	79.89	0.006357287	1.402557112
21	2.405281875	81.83	81.73	0.005679508	1.052309262
18	1.767145868	81.98	81.52	0.006817927	1.030963714
15	1.22718463	82.15	82.05	0.006113644	0.712393466
18	1.767145868	82.3	81.76	0.005159235	0.67368575
8	0.34906585	84.66666667	84.46666667	0	0

8	0.34906585	84.46666667	83.46666667	0	0
8	0.34906585	84.66666667	84.46666667	0	0

FILE_DESCRIP	PROFILE_TYPE	AGE_VELOCITY	ERGED_TAILWA	HYDRAULIC_JU	E_FLOW_TIME
H2	H2	8.943048328	FALSE	FALSE	0.001863645
Pressure	PressureProfile	7.147939491	TRUE	FALSE	0.408043016
Pressure	PressureProfile	7.160439164	TRUE	FALSE	0.242070813
Pressure	PressureProfile	4.632618253	TRUE	FALSE	0.10583288
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	2.879840709	TRUE	FALSE	0.25705247
Pressure	PressureProfile	6.739842677	TRUE	FALSE	0.656860065
Pressure	PressureProfile	4.762694509	TRUE	FALSE	0.121079919
Pressure	PressureProfile	11.15863917	TRUE	FALSE	0.023348158
Pressure	PressureProfile	5.467733195	TRUE	FALSE	0.07681669
Pressure	PressureProfile	4.818195033	TRUE	FALSE	0.184211825
Pressure	PressureProfile	7.000903788	TRUE	FALSE	0.954561706
Pressure	PressureProfile	4.408633286	TRUE	FALSE	0.153754642
Pressure	PressureProfile	7.167317812	TRUE	FALSE	0.197251729
M2/Pressure	essureProfile	7.674573359	FALSE	FALSE	0.313155605
S1	S1	6.995206456	FALSE	FALSE	0.169163461
M2	M2	7.268805428	FALSE	FALSE	0.878181896
Pressure	PressureProfile	14.79561887	TRUE	FALSE	0.00112646
Pressure	PressureProfile	7.560175363	TRUE	FALSE	0.002204534
Pressure	PressureProfile	8.68091917	TRUE	FALSE	0.13439437
Pressure	PressureProfile	8.663864769	TRUE	FALSE	1.427384545
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	8.561545542	TRUE	FALSE	0.085654317
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	8.550760548	TRUE	FALSE	0.103304651
Pressure	PressureProfile	8.537792886	TRUE	FALSE	0.10931787
Dry	Dry	0	FALSE	FALSE	0
S1	S1	11.63423115	FALSE	FALSE	0.055869614
Dry	Dry	0	FALSE	FALSE	0
S1	S1	11.11897903	FALSE	FALSE	0.016488324
M1	M1	10.9870728	FALSE	FALSE	0.077363645
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	8.461834791	TRUE	FALSE	0.001969628
Pressure	PressureProfile	6.81064707	TRUE	FALSE	0.743933229
Pressure	PressureProfile	7.148164894	TRUE	FALSE	0.002331601
Pressure	PressureProfile	3.777604817	TRUE	FALSE	0.233790116
Pressure	PressureProfile	6.453408229	TRUE	FALSE	0.086853331
M2	M2	8.397991193	FALSE	FALSE	0.031763548
M2	M2	8.529447769	FALSE	FALSE	0.502537028
Pressure	PressureProfile	2.787032887	TRUE	FALSE	2.417828125
Pressure/S1/S2	ureProfileS1S2	10.03549134	FALSE	TRUE	0.058800343
Pressure/S1/S2	ureProfileS1S2	10.0316986	FALSE	TRUE	0.030586013
Pressure	PressureProfile	2.787032887	TRUE	FALSE	0.093877675
Pressure	PressureProfile	2.787032887	TRUE	FALSE	0.745255588
Pressure	PressureProfile	6.373736523	TRUE	FALSE	0.034532491
Pressure	PressureProfile	1.368021498	TRUE	FALSE	1.679276121
Pressure	PressureProfile	1.969950957	TRUE	FALSE	1.24554336
Pressure	PressureProfile	4.432389652	TRUE	FALSE	0.08205852

M2	M2	8.029627519	FALSE	FALSE	0.93794687
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
Pressure	PressureProfile	1.417879557	TRUE	FALSE	0.705419579
M2	M2	7.476106613	FALSE	FALSE	0.731349009
Pressure	PressureProfile	14.79561887	TRUE	FALSE	0.008789268
Pressure	PressureProfile	4.791961666	TRUE	FALSE	0.063999851
Pressure	PressureProfile	4.652050377	TRUE	FALSE	0.063771164
Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0
S1	S1	12.38551249	FALSE	FALSE	0.045780867
Pressure	PressureProfile	8.461834791	TRUE	FALSE	0.116182801
Pressure/S1/S2	ureProfileS1S2	12.34786835	FALSE	TRUE	0.303617399
Pressure	PressureProfile	3.223114962	TRUE	FALSE	1.387032592
Pressure	PressureProfile	3.223114962	TRUE	FALSE	0.084684176
Pressure	PressureProfile	9.921693197	TRUE	FALSE	0.015918469
Pressure	PressureProfile	3.71723071	TRUE	FALSE	1.042900697
M2	M2	8.412089382	FALSE	FALSE	0.688699648
Pressure	PressureProfile	4.015972199	TRUE	FALSE	2.471948262
M2	M2	8.806613242	FALSE	FALSE	0.592778672
M1	M1	8.756925279	FALSE	FALSE	0.182433573
H2	H2	8.750378614	FALSE	FALSE	0.240110525
H2	H2	8.881457894	FALSE	FALSE	0.283931744
Pressure	PressureProfile	3.654825522	TRUE	FALSE	0.144104599
Pressure	PressureProfile	3.129444354	TRUE	FALSE	0.207256228
H2	H2	10.40066126	FALSE	FALSE	0.223526877
H2	H2	10.69227297	FALSE	FALSE	0.198995231
Pressure	PressureProfile	3.324292239	TRUE	FALSE	2.479473095
M1	M1	5.200416105	FALSE	FALSE	0.232089377
H2	H2	12.91815538	FALSE	FALSE	0.62786739
S2	S2	16.07644318	FALSE	FALSE	0.01907553
Pressure	PressureProfile	9.043865755	TRUE	FALSE	0.034417786
M1	M1	6.968159832	FALSE	FALSE	0.277487536
M1	M1	4.928235905	FALSE	FALSE	1.046515582
M1	M1	6.985229227	FALSE	FALSE	0.067763703
M1	M1	7.271265856	FALSE	FALSE	0.717725763
M1	M1	6.624262735	FALSE	FALSE	0.812981819
Pressure	PressureProfile	23.05912941	TRUE	FALSE	0.008141461
M1	M1	5.332957043	FALSE	FALSE	1.157613393
Pressure	PressureProfile	101.2870292	TRUE	FALSE	0.00451452
H2	H2	7.543896827	FALSE	FALSE	0.612083729
Pressure	PressureProfile	11.92743743	TRUE	FALSE	0.019022289
Pressure	PressureProfile	2.546385469	TRUE	FALSE	0.852570317
Pressure	PressureProfile	4.818195033	TRUE	FALSE	1.043040454
Pressure	PressureProfile	3.346449619	TRUE	FALSE	0.160767498
Pressure	PressureProfile	4.0107903	TRUE	FALSE	0.197680991
Pressure	PressureProfile	2.551981921	TRUE	FALSE	0.092885454
Pressure	PressureProfile	1.772209667	TRUE	FALSE	2.336294576
Dry	Dry	0	FALSE	FALSE	0

Dry	Dry	0	FALSE	FALSE	0
Dry	Dry	0	FALSE	FALSE	0

AULIC_SLOPE	ORMAL_DEPTH	ERGY_SLOPE_F	GROUND_ELE	M_GROUND_EL	STREAM_COVER
0.001366134		0.00103586	89	89	0.6
0.001551975		0.001551975	89.5	90.13	1
0.001557408		0.001557408	90.13	90.7	1.66
0.006074461	1.042150159	0.006074461	92	92	7.5
0	0	0	88.38	92	3.413333333
0.000931576	1.81086411	0.000931576	89.61	90.45	3.66
0.001379821		0.001379821	91	90.45	2.05
0.005227545	1.050615575	0.005227545	89.51	90.45	3.96
0.028695568	1.35780958	0.028695568	87.6	91	0.55
0.00428224	1.54176265	0.00428224	87.6	91	0.5
0.00447753	1.318954018	0.00447753	89.61	90	1.61
0.001488783		0.001488783	90.45	90	1.59
0.004479198	1.053079117	0.004479198	89.61	90	4.46
0.001560402	4.307285086	0.001560402	90	90	1.34
0.003162981		0.002896129	91	91	3.82
7.03617E-05	3.799873475	0.000846902	90.7	90.5	0.23
0.001060458		0.0009346	90.5	90.5	0.03
0.108096342	0.194194679	0.108096342	90.4	90.5	4.333333333
0.00221392	1.113244993	0.00221392	91	91	5
0.003247723	2.973926871	0.003247723	92	91	4.26
0.003234975		0.003234975	91	91	3.26
0	0	0	92	91	7.183333333
0.003159017		0.003159017	91	91	3.15
0	0	0	91	91	7.666666667
0.003151063		0.003151063	91	91	3.15
0.003141513		0.003141513	91	92	3.15
0	0	0	91	91	7.866666667
-0.002149949	5.13659263	0.002146714	91.2	98	2.2
0	0	0	98	98	13.33333333
-0.005747379	4.170137747	0.001906219	98	94	9.3
0.001743295	7.37022178	0.001851563	94	94	4.4
0	0	0	90.8	94	6.633333333
0.026257929	0.165767292	0.026257929	98	90.8	14.66666667
0.001408964		0.001408964	91.6	91	2.6
0.001552073		0.001552073	90	89.5	1.53
0.006935474	0.630989129	0.006935474	90.13	90.13	2.63
0.034754393	0.436563229	0.034754393	90.13	90.13	4.463333333
0.014848389	4.204475164	0.002919404	90.8	91.3	0.9
0.002417801		0.00176042	91	91.3	2.82
0.001112604	1.17897674	0.001112604	90.9	91.2	4
4.97906E-05	1.645049683	0.029795993	91.3	91.2	3.41
-0.044764823	1.325067854	0.012467544	91.2	91.2	3.31
0.001112604	0.504300364	0.001112604	91.2	91.2	6.5
0.001112604	1.511680513	0.001112604	90.7	90.9	3.5
0.011498547	0.934842667	0.011498547	90.7	90.7	4.2
0.000529713	1.066696883	0.000529713	91	90.7	4.7
0.001400685	0.783865552	0.001400685	90.7	91	3.75
0.0121757	0.642752512	0.0121757	90.7	90.7	3.866666667

0.00169949		0.001215581	91.46	91.2	0.39
0	0	0	92	90.7	5.533333333
0	0	0	92	92	5.333333333
0.000287962	1.628860288	0.000287962	90.7	90.7	5.7
0.001221788		0.001010969	90.5	91.46	0.26
0.182682819	0.383486659	0.182682819	90.4	90.4	0.733333333
0.011160143	0.693714445	0.011160143	89	91.46	3
0.010517969	0.628956622	0.010517969	91.05	90.5	7.45
0	0	0	90.8	98	5.333333333
0		0	90.8	90.8	6.633333333
-0.015020558	4.150765156	0.00258481	94	90.8	4.5
0.044375899	0.520083801	0.044375899	90.8	98	5.316666667
-0.001149189	4.116365175	0.007015702	90.8	90	0
0.000950103	2.409389245	0.000950103	84.3	90.8	2.62
0.000950103	0.882960726	0.000950103	90.8	90.8	9.5
0.002220656	2.842402385	0.002220656	90	90.8	2.6
0.000903924	3.600503214	0.000903924	85.1	90.8	2.38
0.00098125		0.00089798	90.8	90	1.8
0.001055053	2.861665958	0.001055053	87	90	3.28
0.001095762		0.000991569	90	90	1.2
0.000658532	7.844446272	0.000980371	90	90	1.4
0.001263019		0.000978485	90	89	1.6
0.001331336		0.001016993	89	89	0.6
0.003078404	1.413104245	0.003078404	86.35	86.35	2.33
0.002256975	1.344636592	0.002256975	86.35	86.35	2.33
0.002111636		0.001411076	89	89	0.6
0.002369371		0.001513393	89	89	0.6
0.001582905	1.772772737	0.001582905	86.35	86.2	2.05
0.000990844	4.08599707	0.001049474	85.5	86.2	0.68
0.005527257		0.002089591	89	88.9	0.6
0.075257632	3.602768706	0.004715202	88.9	83	0.5
0.029521468	0.916360345	0.029521468	82.69	85.6	1.94
0.001529114	5.231693996	0.001585229	85.5	85.6	2.14
0.000730503	4.803841245	0.000763917	86.2	84.9	1.48
0.001562914	5.456029702	0.0015941	85.5	85.5	2.09
0.00170873	5.440100779	0.001745754	85.6	85.7	2.46
0.0013846	5.375482828	0.001417833	84.2	85.5	0.27
0.443728421		0.443728421	82.32	84.2	1.543333333
0.000866238	4.877480289	0.000905977	84.9	84.2	0.51
8.561287853		8.561287853	82.27	84.2	1.493333333
0.002300109		0.00179523	85.7	83	3.17
0.069141275	0.810841854	0.069141275	84.8	84.8	2.58
0.000928763	1.417242058	0.000928763	84.8	85.5	2.04
0.00447753	1.385402421	0.00447753	84.3	84.9	2.43
0.002580839	1.313569473	0.002580839	84.23	84.3	2.4
0.004553178	0.912586491	0.004553178	84.23	84.3	2.25
0.002350634	0.682057528	0.002350634	84.48	84.4	2.33
0.000888966	0.871777327	0.000888966	84.4	84.8	2.1
0	0	0	87.21	87.5	2.543333333

0	0	0	87.5	84.3	3.033333333
0	0	0	87.21	87.5	2.543333333

NSTREAM_COVE	LIC_GRADE_LIN	DEPTH_IN_FT	Y_GRADE_LINE	LATED_INVERT	IFIC_ENERGY
0.6	86.68286429	10.28286429	87.92559892	76.4	11.52559892
1.66	88.99781673	6.497816726	89.79182796	82.5	7.291827957
2.23	88.72622105	6.25622105	89.52301177	82.47	7.053011766
7.76	90.0484799	7.048479902	90.3819969	83	7.381996902
7.183333333	89.64244685	5.342446854	89.64244685	84.3	5.342446854
4.59	89.7700622	6.820062201	89.89894705	82.95	6.948947053
1.59	90.09520412	7.145204119	90.80113871	82.95	7.851138714
5.3	89.90955819	6.109558188	90.26206734	83.8	6.462067342
4.45	87.69066523	2.390665229	89.62569395	85.3	4.325693951
4.12	87.35001138	2.750011376	87.81461177	84.6	3.214611772
2.4	89.37017824	3.37017824	89.73095097	86	3.730950966
1.34	89.72868512	6.86868512	90.4903662	82.86	7.630366195
5.25	89.31390426	5.91390426	89.61595013	83.4	6.215950127
1.53	89.13173136	6.471731361	89.93005368	82.66	7.27005368
4.11	87.24209554	5.062095537	88.13827762	82.18	5.958277621
0.26	88.56425061	6.094250609	89.3525095	82.47	6.882509502
0.26	88.55925493	6.089254928	89.35642043	82.47	6.88642043
7.593333333	88.66735127	3.26735127	92.06932705	85.4	6.669327053
5.1	86.7859932	5.785993203	87.67422985	81	6.674229846
3.82	89.86978747	7.129787474	91.04089392	82.74	8.300893921
3.82	89.64244685	6.902446854	90.80895635	82.74	8.068956345
8.153333333	89.64244685	5.492446854	89.64244685	84.15	5.492446854
3.26	90.35171524	7.501715243	91.49083475	82.85	8.640834751
7.926666667	90.21271851	7.21271851	90.21271851	83	7.21271851
3.26	90.21271851	7.36271851	91.34896992	82.85	8.498969924
4.26	90.04571218	7.195712179	91.17851984	82.85	8.32851984
7.926666667	90.04571218	7.245712179	90.04571218	82.8	7.245712179
9.2	86.98431251	6.984312507	89.17242114	80	9.17242114
17.63333333	87.06816052	3.068160525	87.06816052	84	3.068160525
5.4	87.06816052	7.368160525	89.03178405	79.7	9.331784052
4.5	87.13138169	7.531381691	89.01012679	79.6	9.410126791
13.73333333	87.13138169	3.631381691	87.13138169	83.5	3.631381691
10.96666667	87.57974855	5.079748551	88.6924894	82.5	6.192489398
2.05	90.52352914	7.523529136	91.24437382	83	8.244373816
1.03	88.9993688	6.5293688	89.79343017	82.47	7.323430174
3.33	89.09373181	2.593731806	89.31549935	86.5	2.815499353
6.463333333	89.89501129	4.895011293	90.54221832	85	5.54221832
1.42	87.14837856	3.248378565	88.15100869	83.9	4.251008693
3.41	86.78377928	4.603779283	87.83142045	82.18	5.651420454
6.5	87.45161996	3.051619961	87.5723316	84.4	3.172331597
5.2	86.16196483	4.271964827	88.29794724	81.89	6.40794724
5.2	86.16020197	4.270201969	88.29530295	81.89	6.405302954
8.7	87.00177862	4.80177862	87.12249026	82.2	4.922490255
4	87.59027613	2.890276126	87.71098776	84.7	3.010987761
4.5	87.74212662	2.742126624	88.37345188	85	3.373451875
4.5	87.66329025	2.863290248	87.69237402	84.8	2.892374024
4.45	87.86949852	2.169498519	87.92980664	85.7	2.229806637
4.166666667	88.13520785	2.135207852	88.4405177	86	2.440517698

0.31	87.75228127	5.682281273	88.64790147	82.07	6.577901468
4.333333333	87.86949852	2.069498519	87.86949852	85.8	2.069498519
5.333333333	87.86949852	1.869498519	87.86949852	86	1.869498519
5.73	88.58153178	6.081531781	88.61277413	82.5	6.112774127
1.39	88.15309938	5.913099381	88.98745529	82.24	6.747455288
4.333333333	90.09274492	1.092744925	93.49472071	89	4.494720708
5.76	87.95764007	2.957640068	88.31449493	85	3.314494929
7.26	88.34031924	5.740319238	88.67664007	82.6	6.076640067
13.33333333	87.06816052	2.268160525	87.06816052	84.8	2.268160525
6.633333333	87.13138169	3.631381691	87.13138169	83.5	3.631381691
1.8	87.04247367	7.542473669	89.7352834	79.5	10.2352834
17.66666667	90.1973577	5.547357705	91.31009855	84.65	6.660098552
2.6	87.55349062	6.753490623	90.93023593	80.8	10.13023593
9.5	88.06135702	9.881357019	88.22279902	78.18	10.04279902
10.3	87.8065072	10.0065072	87.9679492	77.8	10.1679492
3.8	87.81199113	10.41199113	89.34179774	77.4	11.94179774
8.3	88.0012023	9.781202299	88.21593786	78.22	9.995937864
1.2	87.79094754	10.79094754	88.87621867	77	11.87621867
7.45	88.07828917	8.85828917	88.32892684	79.22	9.108926839
1.4	87.44986079	10.64986079	88.63886381	76.8	11.83886381
1.6	87.10664349	10.50664349	88.31382164	76.6	11.71382164
0.6	87.04352091	10.64352091	88.21557622	76.4	11.81557622
0.6	86.88430038	10.48430038	88.08647417	76.4	11.68647417
2.43	84.81849932	2.548499315	85.0260854	82.27	2.756085403
2.43	84.80905183	2.539051826	84.96124649	82.27	2.691246486
0.6	86.68149816	10.28149816	88.31406683	76.4	11.91406683
0.6	86.38694684	9.986946842	88.10939156	76.4	11.70939156
2.98	84.7212198	2.921219801	84.89295659	81.8	3.092956589
1.48	84.01014952	4.690149517	84.43255744	79.32	5.112557443
0.5	86.08446658	9.684466583	87.90881947	76.4	11.50881947
-5.03	83.18739856	6.787398564	86.58109785	76.4	10.18109785
5.55	83.27364168	3.773641683	84.54472249	79.5	5.044722491
2.46	82.89969279	6.039692789	83.65752419	76.86	6.797524189
0.51	83.93839487	5.718394872	84.32102259	78.22	6.101022595
2.14	82.94408064	6.034080644	83.70279775	76.91	6.792797745
3.17	82.72229314	6.082293136	83.54974647	76.64	6.909746466
2.09	83.39147853	5.961478533	84.07878865	77.43	6.648788655
3.523333333	88.38967984	8.27967984	96.65292732	80.11	16.54292732
0.27	83.71234186	5.822341864	84.16171077	77.89	6.27171077
3.523333333	318.2767461	238.1667461	477.7076885	80.11	397.5976885
0.47	82.18724466	6.157244658	83.00310472	76.03	6.973104718
3.54	84.00629581	2.786295808	86.21714562	81.22	4.99714562
3.06	83.06505973	2.805059733	83.16582555	80.26	2.905825552
5.01	85.06247094	5.192470939	85.42324367	79.87	5.553243665
2.57	84.38330954	4.303309539	84.55734331	80.08	4.47734331
2.78	84.51659116	4.093591156	84.76659243	80.48	4.286592435
2.35	83.31933225	2.419332254	83.42054149	80.9	2.520541487
3.04	83.28590032	2.485900322	83.33470879	80.8	2.534708787
3.033333333	84.3	0.3	84.3	84	0.3

0.833333333	84.3	0.5	84.3	83.8	0.5
3.033333333	84.3	0.3	84.3	84	0.3

ELOCITY_IN_FT	OCITY_HEAD_IN	C_GRADE_LINE	DEPTH_OUT_FT	GRADE_LINE	ATED_INVERT
8.942454222	1.242734623	86.68149816	10.28149816	87.92456306	76.4
7.147939191	0.794011231	88.72622105	6.25622105	89.52023228	82.47
7.160439164	0.796790716	88.56425061	6.094250609	89.36104133	82.47
4.632618253	0.333516999	89.86978747	7.129787474	90.20330447	82.74
0	0	89.64244685	5.492446854	89.64244685	84.15
2.879840709	0.128884853	89.72868512	6.86868512	89.85756997	82.86
6.739842677	0.705934595	89.72868512	6.86868512	90.43461971	82.86
4.762694509	0.352509153	89.72868512	6.32868512	90.08119427	83.4
11.15863917	1.935028722	87.24209554	2.442095537	89.17712426	84.8
5.467733195	0.464600396	87.24209554	2.862095537	87.70669593	84.38
4.818195033	0.360772726	89.13173136	3.531731361	89.49250409	85.6
7.000903788	0.761681076	89.13173136	6.471731361	89.89341244	82.66
4.408633286	0.302045867	89.13173136	6.131731361	89.43377723	83
7.167317812	0.79832232	88.9993688	6.5293688	89.79769112	82.47
7.593913664	0.896182084	86.7859932	4.895993203	87.72065535	81.89
7.121999944	0.788258892	88.55925493	6.319254928	89.29237945	82.24
7.162122992	0.797165502	88.15309938	5.913099381	88.99846864	82.24
14.79561887	3.401975783	88.55925493	6.319254928	91.96123071	82.24
7.560175363	0.888236643	86.78377928	5.883779283	87.67201593	80.9
8.68091917	1.171106447	89.64244685	7.462446854	90.8135533	82.18
8.663864769	1.166509491	87.24209554	5.062095537	88.40860503	82.18
0	0	89.64244685	7.462446854	89.64244685	82.18
8.561545542	1.139119508	90.21271851	7.47271851	91.35183802	82.74
0	0	90.21271851	7.47271851	90.21271851	82.74
8.550760548	1.136251414	90.04571218	7.305712179	91.18196359	82.74
8.537792886	1.132807661	89.86978747	7.129787474	91.00259513	82.74
0	0	90.04571218	7.305712179	90.04571218	82.74
11.86593504	2.188108633	87.06816052	7.268160525	89.08869928	79.8
0	0	87.06816052	7.368160525	87.06816052	79.7
11.24078497	1.963623528	87.13138169	7.531381691	89.01081564	79.6
10.99515755	1.878745099	87.04247367	7.542473669	88.91569706	79.5
0	0	87.13138169	7.531381691	87.13138169	79.6
8.461834791	1.112740847	87.55349062	8.553490623	88.66623147	79
6.81064707	0.720844681	90.09520412	7.145204119	90.8160488	82.95
7.148164894	0.794061375	88.99781673	6.527816726	89.7918781	82.47
3.777604817	0.221767548	88.72622105	2.92622105	88.9479886	85.8
6.453408229	0.647207027	88.72622105	5.72622105	89.37342808	83
8.032262664	1.002630128	86.91073009	3.030730093	88.10428364	83.88
8.210579397	1.04764117	86.16196483	4.271964827	87.37867239	81.89
2.787032887	0.120711635	87.00177862	4.80177862	87.12249026	82.2
11.72374498	2.135982413	86.16020197	6.160201969	87.24300761	80
11.72132579	2.135100985	86.98431251	6.984312507	88.06577822	80
2.787032887	0.120711635	86.98431251	6.984312507	87.10502414	80
2.787032887	0.120711635	87.45161996	3.051619961	87.5723316	84.4
6.373736523	0.631325251	87.59027613	2.890276126	88.22160138	84.7
1.969950957	0.060308118	87.66329025	2.363290248	87.72359837	85.3
4.432389652	0.305309847	87.86949852	2.169498519	88.17480837	85.7

7.591532674	0.895620196	86.98431251	5.094312507	88.09860234	81.89
0	0	87.86949852	2.169498519	87.86949852	85.7
0	0	87.86949852	2.069498519	87.86949852	85.8
1.417879557	0.031242345	88.56425061	6.094250609	88.59549295	82.47
7.327286938	0.834355906	87.75228127	5.682281273	88.6557981	82.07
14.79561887	3.401975783	88.66735127	3.26735127	92.06932705	85.4
4.791961666	0.356854861	87.75228127	3.052281273	88.10913613	84.7
4.652050377	0.336320829	88.15309938	5.913099381	88.48942021	82.24
0	0	87.06816052	3.068160525	87.06816052	84
0	0	87.13138169	3.631381691	87.13138169	83.5
13.16346918	2.692809734	87.55349062	8.553490623	89.64734516	79
8.461834791	1.112740847	87.57974855	8.079748551	88.6924894	79.5
14.74065152	3.376745311	87.81199113	10.41199113	89.35211236	77.4
3.223114962	0.161442004	87.8065072	10.0065072	87.9679492	77.8
3.223114962	0.161442004	87.79094754	10.79094754	87.95238955	77
9.921693197	1.529806612	87.79094754	10.79094754	89.32075416	77
3.71723071	0.214735565	87.79094754	9.790947544	88.00568311	78
8.356735388	1.085271125	87.44986079	10.64986079	88.5640772	76.8
4.015972199	0.250637669	87.44986079	9.39986079	87.70049846	78.05
8.746997561	1.18900302	87.10664349	10.50664349	88.32828231	76.6
8.813597431	1.207178151	87.04352091	10.64352091	88.21984969	76.4
8.684435234	1.172055314	86.88430038	10.48430038	88.092225	76.4
8.795310068	1.202173792	86.68286429	10.28286429	87.93259936	76.4
3.654825522	0.207586088	84.7212198	2.551219801	84.92880589	82.17
3.129444354	0.15219466	84.7212198	2.551219801	84.87341446	82.17
10.24951358	1.632568668	86.38694684	9.986946842	88.11723639	76.4
10.52786172	1.722444715	86.08446658	9.684466583	87.91618772	76.4
3.324292239	0.171736789	83.93839487	3.218394872	84.11013166	80.72
5.213550152	0.422407925	83.93839487	4.718394872	84.35655698	79.22
10.83482625	1.824352892	83.39460861	6.994608613	86.89191292	76.4
14.77761014	3.393699282	81.80265814	5.772658144	86.49433814	76.03
9.043865755	1.271080807	82.72229314	3.922293136	83.99337394	78.8
6.983189454	0.7578314	82.72229314	6.082293136	83.47361438	76.64
4.961988385	0.382627723	83.71234186	5.822341864	84.08462955	77.89
6.987268999	0.758717102	82.89969279	6.039692789	83.65752419	76.86
7.296914887	0.82745333	82.18724466	6.157244658	83.00310472	76.03
6.65034072	0.687310121	82.94408064	6.034080644	83.62065244	76.91
23.05912941	8.263247481	83.39147853	3.381478533	91.65472601	80.01
5.377359051	0.449368906	83.39147853	5.961478533	83.82612785	77.43
101.2870292	159.4309423	83.39147853	3.381478533	242.8224209	80.01
7.245616825	0.81586006	81.55	5.52	82.50573658	76.03
11.92743743	2.210849812	83.06505973	2.805059733	85.27590954	80.26
2.546385469	0.10076582	82.94408064	3.004080644	83.04484646	79.94
4.818195033	0.360772726	83.71234186	5.822341864	84.07311459	77.89
3.346449619	0.17403377	84.3	4.32	84.47403377	79.98
4.0107903	0.249991279	84.3	4.28	84.54999128	80.02
2.551981921	0.101209233	83.28590032	2.485900322	83.38710956	80.8
1.772209667	0.048808465	83.06505973	2.805059733	83.1138682	80.26
0	0	84.3	0.5	84.3	83.8

0	0	84.3	1.5	84.3	82.8
0	0	84.3	0.5	84.3	83.8

FIC ENERGY O	LOCITY OUT F	CITY HEAD OU	ELEMENT HEA	EAM INLET CA	CULATED SYS
11.52456306	8.943642433	1.243064897	0.001366134		385.488
7.05023228	7.147939191	0.794011231	0.271595677		208.76
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
7.463304473	4.632618253	0.333516999	0.178692428	2.384	2.384
5.492446854	0	0	0	0	0
6.997569973	2.879840709	0.128884853	0.041377081	5.928	5.928
7.574619715	6.739842677	0.705934595	0.366519		192
6.681194273	4.762694509	0.352509153	0.180873068	3.336	3.336
4.377124259	11.15863917	1.935028722	0.448569692	7.816	7.816
3.326695933	5.467733195	0.464600396	0.10791584	7.816	7.816
3.892504087	4.818195033	0.360772726	0.238446879	4.408	4.408
7.233412436	7.000903788	0.761681076	0.596953759		201.264
6.433777228	4.408633286	0.302045867	0.182172899	3.088	3.088
7.327691119	7.167317812	0.79832232	0.132362561		208.76
5.830655348	7.755233054	0.934662145	0.456102334		147.616
7.052379449	6.868412968	0.733124521	0.004995681		210.28
6.758468643	7.375487864	0.845369261	0.406155547		211.784
9.721230711	14.79561887	3.401975783	0.108096342		1.504
6.772015926	7.560175363	0.888236643	0.00221392		147.616
8.633553301	8.68091917	1.171106447	0.22734062		131.984
6.228605028	8.663864769	1.166509491	2.400351317		131.984
7.462446854	0	0	0		0
8.611838018	8.561545542	1.139119508	0.138996733	0	129.6
7.47271851	0	0	0	0	0
8.441963593	8.550760548	1.136251414	0.167006331		129.6
8.262595135	8.537792886	1.132807661	0.175924705		129.6
7.305712179	0	0	0	0	0
9.28869928	11.40252726	2.020538755	-0.083848018		365.544
7.368160525	0	0	0		0
9.410815645	10.99717309	1.879433953	-0.063221166		365.544
9.415697058	10.97898805	1.873223389	0.088908022		365.544
7.531381691	0	0	0		0
9.66623147	8.461834791	1.112740847	0.026257929		1.344
7.8660488	6.81064707	0.720844681	0.428325016	0	192
7.321878101	7.148164894	0.794061375	0.001552073		208.76
3.147988597	3.777604817	0.221767548	0.367510756	0.864	0.864
6.373428077	6.453408229	0.647207027	1.168790244	0.656	0.656
4.224283636	8.763719721	1.193553542	0.237648471	0	0
5.488672394	8.848316141	1.216707567	0.621814456		147.616
4.922490255	2.787032887	0.120711635	0.449841341		3.984
7.243007607	8.347237698	1.082805638	0.001762857		147.616
8.065778215	8.342071408	1.081465708	-0.824110538		147.616
7.105024142	2.787032887	0.120711635	0.017466113		3.984
3.172331597	2.787032887	0.120711635	0.138656164		3.984
3.521601377	6.373736523	0.631325251	0.151850498	3.28	3.28
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
2.423598366	1.969950957	0.060308118	0.206208271		0.704
2.474808366	4.432389652	0.305309847	0.265709332	0.704	0.704

6.208602338	8.467722364	1.114289831	0.767968766		213.944
2.169498519	0	0	0		0
2.069498519	0	0	0		0
6.125492955	1.417879557	0.031242345	0.017281172	0	0
6.585798102	7.624926289	0.903516829	0.400818108		212.848
6.669327053	14.79561887	3.401975783	1.425393655	1.504	1.504
3.409136134	4.791961666	0.356854861	0.205358795	1.096	1.096
6.24942021	4.652050377	0.336320829	0.187219857	1.064	1.064
3.068160525	0	0	0	0	0
3.631381691	0	0	0	0	0
10.64734516	11.6075558	2.093854534	-0.511016954		365.544
9.192489398	8.461834791	1.112740847	2.617609154	1.344	1.344
11.95211236	9.955085182	1.540121231	-0.258500504		366.888
10.1679492	3.223114962	0.161442004	0.254849821	0	0
10.95238955	3.223114962	0.161442004	0.015559654		0
12.32075416	9.921693197	1.529806612	0.021043583		366.888
10.00568311	3.71723071	0.214735565	0.210254755	0	0
11.7640772	8.467443377	1.114216407	0.341086754		366.888
9.650498458	4.015972199	0.250637669	0.62842838	0	18.6
11.72828231	8.866228922	1.221638828	0.343217303		385.488
11.81984969	8.700253126	1.176328782	0.063122579		385.488
11.692225	8.816321994	1.207924621	0.159220532		385.488
11.53259936	8.96760572	1.249735071	0.201436083		385.488
2.758805889	3.654825522	0.207586088	0.097279515	2.56	2.56
2.70341446	3.129444354	0.15219466	0.087832025	2.192	2.192
11.71723639	10.55180894	1.730289551	0.294551317	0	456.008
11.51618772	10.85668421	1.831721141	0.302480259		456.008
3.390131661	3.324292239	0.171736789	0.782824929		4.752
5.136556977	5.187282059	0.418162105	0.071754645	32.768	32.768
10.49191292	15.00148451	3.497304306	2.68985797		456.008
10.46433814	17.37527623	4.691679991	1.38474042	0	456.008
5.193373943	9.043865755	1.271080807	0.551348548	3.232	3.232
6.833614384	6.953130209	0.751321249	0.177399653		65.368
6.194629549	4.894483425	0.372287686	0.226053008	7.16	44.68
6.797524189	6.983189454	0.7578314	0.044387855		65.368
6.973104718	7.245616825	0.81586006	0.535048478		68.6
6.710652441	6.59818475	0.676571797	0.44739789		61.728
11.64472601	23.05912941	8.263247481	4.998201307	2.344	2.344
6.396127852	5.288555036	0.434649319	0.32086333		49.088
162.8124209	101.2870292	159.4309423	234.8852676	10.296	10.296
6.475736579	7.842176829	0.955736579	0.637244658		68.6
5.015909545	11.92743743	2.210849812	0.941236075	2.728	2.728
3.104846463	2.546385469	0.10076582	0.120979089		3.64
6.18311459	4.818195033	0.360772726	1.350129076		4.408
4.49403377	3.346449619	0.17403377	0.083309539	2.344	2.344
4.529991279	4.0107903	0.249991279	0.216601156	2.064	2.064
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2.853868198	1.772209667	0.048808465	0.220840589		0.912
0.5	0	0	0	0	0

1.5	0	0	0	0	0
0.5	0	0	0	0	0

LET RATIONAL	NLET RATIONA	SYSTEM FLOW	TREAM EASTIN	AM INLET ARE	REAM NORTHIN
		51.04468588	3097478.235		724220.6609
		45.17493833	3096168.698		726000
		45.58298135	3096172.893		725826.4762
0.8	8.186512203	15	3097384.6	2.98	726955
0	0	0	3097430.284	0	726894.2
0.8	20.35639444	15	3096186.2	7.41	726486.2
		43.36393323	3096070.43		726748.3578
0.8	11.45562278	15	3096107.2	4.17	726485
0.8	26.83967256	15	3097461.028	9.77	726145.2
0.8	26.83967256	15	3097420	9.77	726144.4
0.8	15.13680612	15	3096219.23	5.51	726087.2
		44.02079329	3096140.982		726485
0.8	10.60400574	15	3096126	3.86	726082.4
		44.975355	3096164.477		726100.4476
		42.12005575	3097445.661		726144.0497
		45.82505216	3096175.6		725723.0667
		45.99421562	3096246.647		725719.7835
		15.00878927	3096260.627		725715.7182
		42.43321136	3097445.438		726000.5385
		40.55827684	3097413.464		726956.0751
		40.69267121	3097416.279		726886.1349
		0	3097417.902		726892.7822
0	0	40.26	3097405.95	0	727108.2
0	0	0	3097435.8	0	727067.2
		40.34565432	3097407.715		727064.3343
		40.44895897	3097410.194		727012.1216
0	0	0	3097438.8	0	727013.6
		48.5416934	3097410.206		725734.3355
		0	3097404.604		725696.0043
		48.59756301	3097410.508		725696.0856
		48.61405134	3097410.763		725685.3639
		0	3097416.863		725684.5964
		15.1161828	3097401.095		725520.4341
0	0	42.62	3095992.848	0	727041.7216
		45.17260673	3096165.087		726075.164
0.8	2.966923886	15	3096225.685	1.08	725827.3149
0.8	2.252664432	15	3096138.8	0.82	725825.8
0	0	0	3097471.135	0	725743.7355
		42.43541589	3097445.07		725995.5631
		18.75213359	3096993.465		725734.7291
		42.93795292	3097455.471		725742.6645
		42.99675326	3097427.6		725735.2709
		21.16996171	3097397.665		725744.6645
		18.006878	3096868.233		725731.7168
0.8	11.26332216	15	3096869.028	4.1	725746.4281
		16.32760188	3096731.065		725729.8
		15.08205852	3096584.2		725727.4
0.8	2.417493536	15	3096583.428	0.88	725748.9719

		47.60374653	3096956.729		725725.0645
		0	3096407.535		725722.8645
		0	3096406.6		725744.6
0	0	0	3096115.6	0	725721.7909
		46.87239752	3096629.4		725718.8645
0.8	5.164645282	15	3096262.081	1.88	725736.5347
0.8	3.763597892	15	3096957.372	1.37	725707.2281
0.8	3.653711822	15	3096629.4	1.33	725701.6281
0	0	0	3097384.2	0	725695.4
0	0	0	3097428.2	0	725684
		48.69141498	3097412.6		725636.4
0.8	4.615214933	15	3097354.455	1.68	725518.4
		48.73719585	3097419		725519.2516
0	0	0	3097711.8	0	725384.6
		1.387032592	3097443.8		725373.4
		49.04081325	3097426.4		725380.4
0	0	0	3097195	0	725370
		49.05673171	3097427.6		725371
0	0	15	3096854.6	0	725002.3387
		49.74543136	3097449.8		725025.4
		50.33821003	3097461.6		724712.4
		50.52064361	3097464.8		724616.6
		50.76075413	3097466.385		724480.9848
0.8	8.790885587	0	3096123.987	3.2	724068.4
0.8	7.527195784	0	3096053.4	2.74	724065.2
0	0	51.04654952	3097478.8	0	724213.6
		51.2700764	3097485.175		724094.6651
		0.207256228	3096092.2		724068.2
0.8	112.5233355	0	3096024.6	40.96	723572.4
		51.46907163	3097484.2		724042.8
0	0	52.09693902	3097514	0	723414.76
0.8	11.09849305	0	3096912.2	4.04	723299.2
		15.88888698	3096810.2		723276.6
0.8	24.58700813	2.686729323	3096097	8.95	723574
		15.82112328	3096800.8		723249.8
		16.16637452	3096925.8		723286.4
		15.00814146	3096478.2		723231.4
0.8	8.049154615	15	3096479.4	2.93	723242.6
		3.733244905	3096109.4		723264.8
0.8	35.35584297	15	3096479.6	12.87	723204
		16.88410028	3097234.2		723232.2
0.8	9.367787453	0	3096822.6	3.41	723120.4
		2.42918003	3096809		723119.8
		0.197680991	3096118.4		722963.4
0.8	8.049154615	0	3096149.4	2.93	722954.2198
0.8	7.087651504	0	3096073.6	2.58	722947.7604
0.8	3.13175299	0	3096840.8	1.14	722872.8
		0.092885454	3096826.6		722872
0	0	0	3096173	0	722397.2198

0	0	0	3096142.6	0	722396.8
0	0	0	3096095.2	0	722396.6

JCTURE_HYDRAM_SUMP_ELEV	PSTREAM_NOD	JPSTREAM_X_F	JPSTREAM_Y_F	STREAM_EAST
86.68286429	76.4 2510	3097478.235	724220.6609	3097478.8
88.99781673	82.47 2339	3096168.698	726000	3096172.893
88.72622105	82.47 2342	3096172.893	725826.4762	3096175.6
90.0484799	83 1272	3097384.6	726955	3097413.464
88.38	84.3 1273	3097430.284	726894.2	3097417.902
89.61	82.95 1277	3096186.2	726486.2	3096140.982
90.09520412	82.95 1276	3096070.43	726748.3578	3096140.982
89.61	83.8 1278	3096107.2	726485	3096140.982
87.6	83 1280	3097461.028	726145.2	3097445.661
87.35001138	84.6 1281	3097420	726144.4	3097445.661
89.37017824	86 1283	3096219.23	726087.2	3096164.477
89.72868512	82.86 1279	3096140.982	726485	3096164.477
89.31390426	83.4 1285	3096126	726082.4	3096164.477
89.13173136	82.66 1284	3096164.477	726100.4476	3096165.087
87.24209554	82.18 1282	3097445.661	726144.0497	3097445.438
88.56425061	82.47 2371	3096175.6	725723.0667	3096246.647
88.55925493	82.24 J-561	3096246.647	725719.7835	3096629.4
88.66735127	85.4 2373	3096260.627	725715.7182	3096246.647
86.7859932	81 1287	3097445.438	726000.5385	3097445.07
89.86978747	82.74 1271	3097413.464	726956.0751	3097416.279
89.64244685	82.18 J-562	3097416.279	726886.1349	3097445.661
89.64244685	84.15 1274	3097417.902	726892.7822	3097416.279
90.35171524	82.85 I-1905	3097405.95	727108.2	3097407.715
90.21271851	83 20680	3097435.8	727067.2	3097407.715
90.21271851	82.74 J-563	3097407.715	727064.3343	3097410.194
90.04571218	82.74 J-564	3097410.194	727012.1216	3097413.464
90.04571218	82.8 20681	3097438.8	727013.6	3097410.194
86.98431251	80 2361	3097410.206	725734.3355	3097410.508
87.06816052	84 2382	3097404.604	725696.0043	3097410.508
87.06816052	79.7 J-587	3097410.508	725696.0856	3097410.763
87.13138169	79.6 J-588	3097410.763	725685.3639	3097412.6
87.13138169	83.5 2384	3097416.863	725684.5964	3097410.763
87.57974855	79.5 2406	3097401.095	725520.4341	3097419
90.52352914	83 I-359	3095992.848	727041.7216	3096070.43
88.9993688	82.47 1286	3096165.087	726075.164	3096168.698
89.09373181	86.5 2341	3096225.685	725827.3149	3096172.893
89.89501129	85 2343	3096138.8	725825.8	3096172.893
87.14837856	83.9 I-34	3097471.135	725743.7355	3097455.471
86.78377928	80.9 2340	3097445.07	725995.5631	3097455.471
87.45161996	84.4 2359	3096993.465	725734.7291	3097397.665
86.16196483	81.89 2358	3097455.471	725742.6645	3097427.6
86.16020197	80 2360	3097427.6	725735.2709	3097410.206
87.00177862	82.2 2353	3097397.665	725744.6645	3097410.206
87.59027613	84.7 2362	3096868.233	725731.7168	3096993.465
87.74212662	85 2352	3096869.028	725746.4281	3096868.233
87.86329025	84.8 2363	3096731.065	725729.8	3096868.233
87.86949852	85.7 2365	3096584.2	725727.4	3096731.065
88.13520785	86 2350	3096583.428	725748.9719	3096584.2

87.75228127	82.07	2366	3096956.729	725725.0645	3097410.206
87.86949852	85.8	2368	3096407.535	725722.8645	3096584.2
87.86949852	86	2354	3096406.6	725744.6	3096407.535
88.58153178	82.5	I-39	3096115.6	725721.7909	3096175.6
88.15309938	82.24	2372	3096629.4	725718.8645	3096956.729
90.09274492	89	2367	3096262.081	725736.5347	3096260.627
87.95764007	85	2378	3096957.372	725707.2281	3096956.729
88.34031924	82.6	2381	3096629.4	725701.6281	3096629.4
87.06816052	84.8	2383	3097384.2	725695.4	3097404.604
87.13138169	83.5	2385	3097428.2	725684	3097416.863
87.04247367	79.5	2394	3097412.6	725636.4	3097419
90.1973577	79.5	2407	3097354.455	725518.4	3097401.095
87.55349062	79	2404	3097419	725519.2516	3097426.4
84.3	78.18	I-37	3097711.8	725384.6	3097443.8
87.8065072	77.8	2432	3097443.8	725373.4	3097427.6
87.81199113	77.4	2431	3097426.4	725380.4	3097427.6
85.1	78.22	I-49	3097195	725370	3097427.6
87.79094754	77	2434	3097427.6	725371	3097449.8
87	79.22	I-1906	3096854.6	725002.3387	3097449.8
87.44986079	76.8	2467	3097449.8	725025.4	3097461.6
87.10664349	76.6	2487	3097461.6	724712.4	3097464.8
87.04352091	76.4	2491	3097464.8	724616.6	3097466.385
86.88430038	76.4	2502	3097466.385	724480.9848	3097478.235
84.81849932	82.27	2518	3096123.987	724068.4	3096092.2
84.80905183	82.27	2522	3096053.4	724065.2	3096092.2
86.68149816	76.4	I-19	3097478.8	724213.6	3097485.175
86.38694684	76.4	2524	3097485.175	724094.6651	3097484.2
84.7212198	81.8	2519	3096092.2	724068.2	3096097
84.01014952	79.32	I-22	3096024.6	723572.4	3096097
86.08446658	76.4	2529	3097484.2	724042.8	3097514
83.18739856	76.4	I-48	3097514	723414.76	3097517.125
82.69	79	2595	3096912.2	723299.2	3096925.8
82.89969279	76.86	2597	3096810.2	723276.6	3096925.8
83.93839487	78.22	I-21	3096097	723574	3096109.4
82.94408064	76.91	2601	3096800.8	723249.8	3096810.2
82.72229314	76.64	2596	3096925.8	723286.4	3097234.2
83.39147853	77.43	2606	3096478.2	723231.4	3096800.8
82.32	80.11	2602	3096479.4	723242.6	3096478.2
83.71234186	77.89	2599	3096109.4	723264.8	3096478.2
82.27	80.11	2608	3096479.6	723204	3096478.2
82.18724466	76.03	2605	3097234.2	723232.2	3097516.913
84.00629581	81.22	2624	3096822.6	723120.4	3096809
83.06505973	80.26	2625	3096809	723119.8	3096800.8
84.3	79.87	2635	3096118.4	722963.4	3096109.4
84.23	79.98	2636	3096149.4	722954.2198	3096118.4
84.23	80.48	2638	3096073.6	722947.7604	3096118.4
83.31933225	80.9	2641	3096840.8	722872.8	3096826.6
83.28590032	80.8	2642	3096826.6	722872	3096809
84.3	84	2699	3096173	722397.2198	3096142.6

84.3	83.8	I-23	3096142.6	722396.8	3096118.4
84.3	84	2701	3096095.2	722396.6	3096142.6

STREAM_NORTH	STREAM_PIPE	RUCTURE_HYD	EAM_SUMP_EL	WNSTREAM_NO	WNSTREAM_X
724213.6	P-2294	86.68149816	76.4	I-19	3097478.8
725826.4762	P-1110	88.72622105	82.47	2342	3096172.893
725723.0667	P-1133	88.56425061	82.47	2371	3096175.6
726956.0751	P-1138	89.86978747	82.74	1271	3097413.464
726892.7822	P-1140	89.64244685	84.15	1274	3097417.902
726485	P-1123	89.72868512	82.86	1279	3096140.982
726485	P-1123	89.72868512	82.86	1279	3096140.982
726485	P-1123	89.72868512	82.86	1279	3096140.982
726144.0497	P-1126	87.24209554	82.18	1282	3097445.661
726144.0497	P-1126	87.24209554	82.18	1282	3097445.661
726100.4476	P-1125	89.13173136	82.66	1284	3096164.477
726100.4476	P-1125	89.13173136	82.66	1284	3096164.477
726100.4476	P-1125	89.13173136	82.66	1284	3096164.477
726075.164	P-1252	88.9993688	82.47	1286	3096165.087
726000.5385	P-1137	86.7859932	81	1287	3097445.438
725719.7835	P-1134	88.55925493	82.24	J-561	3096246.647
725718.8645	P-2147	88.15309938	82.24	2372	3096629.4
725719.7835	P-1134	88.55925493	82.24	J-561	3096246.647
725995.5631	P-2127	86.78377928	80.9	2340	3097445.07
726886.1349	P-1139	89.64244685	82.18	J-562	3097416.279
726144.0497	P-1126	87.24209554	82.18	1282	3097445.661
726886.1349	P-1139	89.64244685	82.18	J-562	3097416.279
727064.3343	P-1144	90.21271851	82.74	J-563	3097407.715
727064.3343	P-1144	90.21271851	82.74	J-563	3097407.715
727012.1216	P-1145	90.04571218	82.74	J-564	3097410.194
726956.0751	P-1138	89.86978747	82.74	1271	3097413.464
727012.1216	P-1145	90.04571218	82.74	J-564	3097410.194
725696.0856	P-1235	87.06816052	79.7	J-587	3097410.508
725696.0856	P-1235	87.06816052	79.7	J-587	3097410.508
725685.3639	P-1236	87.13138169	79.6	J-588	3097410.763
725636.4	P-2174	87.04247367	79.5	2394	3097412.6
725685.3639	P-1236	87.13138169	79.6	J-588	3097410.763
725519.2516	P-2199	87.55349062	79	2404	3097419
726748.3578	P-1117	90.09520412	82.95	1276	3096070.43
726000	P-1103	88.99781673	82.47	2339	3096168.698
725826.4762	P-1110	88.72622105	82.47	2342	3096172.893
725826.4762	P-1110	88.72622105	82.47	2342	3096172.893
725742.6645	P-2131	86.16196483	81.89	2358	3097455.471
725742.6645	P-2131	86.16196483	81.89	2358	3097455.471
725744.6645	P-2134	87.00177862	82.2	2353	3097397.665
725735.2709	P-2133	86.16020197	80	2360	3097427.6
725734.3355	P-1232	86.98431251	80	2361	3097410.206
725734.3355	P-1232	86.98431251	80	2361	3097410.206
725734.7291	P-2128	87.45161996	84.4	2359	3096993.465
725731.7168	P-2135	87.59027613	84.7	2362	3096868.233
725731.7168	P-2135	87.59027613	84.7	2362	3096868.233
725729.8	P-2137	87.66329025	84.8	2363	3096731.065
725727.4	P-2138	87.86949852	85.7	2365	3096584.2

725734.3355	P-1232	86.98431251	80	2361	3097410.206
725727.4	P-2138	87.86949852	85.7	2365	3096584.2
725722.8645	P-2142	87.86949852	85.8	2368	3096407.535
725723.0667	P-1133	88.56425061	82.47	2371	3096175.6
725725.0645	P-2140	87.75228127	82.07	2366	3096956.729
725715.7182	P-1135	88.66735127	85.4	2373	3096260.627
725725.0645	P-2140	87.75228127	82.07	2366	3096956.729
725718.8645	P-2147	88.15309938	82.24	2372	3096629.4
725696.0043	P-1234	87.06816052	84	2382	3097404.604
725684.5964	P-1237	87.13138169	83.5	2384	3097416.863
725519.2516	P-2199	87.55349062	79	2404	3097419
725520.4341	P-1238	87.57974855	79.5	2406	3097401.095
725380.4	P-2204	87.81199113	77.4	2431	3097426.4
725373.4	P-2203	87.8065072	77.8	2432	3097443.8
725371	P-2239	87.79094754	77	2434	3097427.6
725371	P-2239	87.79094754	77	2434	3097427.6
725371	P-2239	87.79094754	77	2434	3097427.6
725025.4	P-2256	87.44986079	76.8	2467	3097449.8
725025.4	P-2256	87.44986079	76.8	2467	3097449.8
724712.4	P-2260	87.10664349	76.6	2487	3097461.6
724616.6	P-2270	87.04352091	76.4	2491	3097464.8
724480.9848	P-2279	86.88430038	76.4	2502	3097466.385
724220.6609	P-1011	86.68286429	76.4	2510	3097478.235
724068.2	P-2307	84.7212198	81.8	2519	3096092.2
724068.2	P-2307	84.7212198	81.8	2519	3096092.2
724094.6651	P-2299	86.38694684	76.4	2524	3097485.175
724042.8	P-2345	86.08446658	76.4	2529	3097484.2
723574	P-2370	83.93839487	78.22	I-21	3096097
723574	P-2370	83.93839487	78.22	I-21	3096097
723414.76	P-2351	83.18739856	76.4	I-48	3097514
723157.4113	None	81.55	76.03	O-2	3097517.125
723286.4	P-2374	82.72229314	76.64	2596	3096925.8
723286.4	P-2374	82.72229314	76.64	2596	3096925.8
723264.8	P-2377	83.71234186	77.89	2599	3096109.4
723276.6	P-2368	82.89969279	76.86	2597	3096810.2
723232.2	P-2384	82.18724466	76.03	2605	3097234.2
723249.8	P-2371	82.94408064	76.91	2601	3096800.8
723231.4	P-2375	83.39147853	77.43	2606	3096478.2
723231.4	P-2375	83.39147853	77.43	2606	3096478.2
723231.4	P-2375	83.39147853	77.43	2606	3096478.2
723153.5476	None	81.55	76.03	O-3	3097516.913
723119.8	P-2396	83.06505973	80.26	2625	3096809
723249.8	P-2371	82.94408064	76.91	2601	3096800.8
723264.8	P-2377	83.71234186	77.89	2599	3096109.4
722963.4	P-2404	84.3	79.87	2635	3096118.4
722963.4	P-2404	84.3	79.87	2635	3096118.4
722872	P-2411	83.28599032	80.8	2642	3096826.6
723119.8	P-2396	83.06505973	80.26	2625	3096809
722396.8	P-2463	84.3	83.8	I-23	3096142.6

722963.4	P-2404	84.3	79.87	2635	3096118.4
722396.8	P-2463	84.3	83.8	I-23	3096142.6

WNSTREAM_Y	EM_FLOW_TIME	STEM_CA_ACRE	M_INTENSITY_	RATIONAL_FL	ADDITIONAL_FL
724213.6	51.04468588	385.488	2.266843636	880.8317477	0
725826.4762	45.17493833	208.76	2.44570793	514.6505155	0
725723.0667	45.58298135	210.28	2.432269574	515.5493073	0
726956.0751	15	2.384	3.406686193	8.186512203	0
726892.7822	0	0	0	0	0
726485	15	5.928	3.406686193	20.35639444	0
726485	43.36393323	192	2.507381948	485.2686728	0
726485	15	3.336	3.406686193	11.45562278	0
726144.0497	15	7.816	3.406686193	26.83967256	0
726144.0497	15	7.816	3.406686193	26.83967256	0
726100.4476	15	4.408	3.406686193	15.13680612	0
726100.4476	44.02079329	201.264	2.484619983	504.0650727	0
726100.4476	15	3.088	3.406686193	10.60400574	0
726075.164	44.975355	208.76	2.452340707	516.0462512	0
726000.5385	42.12005575	147.616	2.55177017	379.6955623	0
725719.7835	45.82505216	210.28	2.424373845	513.8757108	0
725718.8645	45.99421562	211.784	2.418889585	516.3803688	0
725719.7835	15.00878927	1.504	3.406686193	5.164645282	0
725995.5631	42.43321136	147.616	2.540432701	378.0085817	0
726886.1349	40.55827684	131.984	2.610020293	347.2367657	0
726144.0497	40.69267121	131.984	2.604892655	346.5545854	0
726886.1349	0	0	0	0	0
727064.3343	40.26	129.6	2.621480484	342.4618217	0
727064.3343	0	0	0	0	0
727012.1216	40.34565432	129.6	2.6181782	342.0304219	0
726956.0751	40.44895897	129.6	2.6142076	341.5117154	0
727012.1216	0	0	0	0	0
725696.0856	48.5416934	365.544	2.339481547	862.0249101	0
725696.0856	0	0	0	0	0
725685.3639	48.59756301	365.544	2.337804171	861.4068502	0
725636.4	48.61405134	365.544	2.337309647	861.2246339	0
725685.3639	0	0	0	0	0
725519.2516	15.1161828	1.344	3.406686193	4.615214933	0
726748.3578	42.62	192	2.533722868	490.366589	0
726000	45.17260673	208.76	2.445785189	514.6667729	0
725826.4762	15	0.864	3.406686193	2.966923886	0
725826.4762	15	0.656	3.406686193	2.252664432	0
725742.6645	0	0	0	0	0
725742.6645	42.43541589	147.616	2.540353282	377.9967643	0
725744.6645	18.75213359	3.984	3.406686193	13.68081569	0
725735.2709	42.93795292	147.616	2.522390649	375.3239797	0
725734.3355	42.99675326	147.616	2.520307151	375.0139617	0
725734.3355	21.16996171	3.984	3.406686193	13.68081569	0
725734.7291	18.006878	3.984	3.406686193	13.68081569	0
725731.7168	15	3.28	3.406686193	11.26332216	0
725731.7168	16.32760188	0.704	3.406686193	2.417493536	0
725729.8	15.08205852	0.704	3.406686193	2.417493536	0
725727.4	15	0.704	3.406686193	2.417493536	0

725734.3355	47.60374653	213.944	2.3680429	510.6815988	0
725727.4	0	0	0	0	0
725722.8645	0	0	0	0	0
725723.0667	0	0	0	0	0
725725.0645	46.87239752	212.848	2.390852338	512.9592436	0
725715.7182	15	1.504	3.406686193	5.164645282	0
725725.0645	15	1.096	3.406686193	3.763597892	0
725718.8645	15	1.064	3.406686193	3.653711822	0
725696.0043	0	0	0	0	0
725684.5964	0	0	0	0	0
725519.2516	48.69141498	365.544	2.334992403	860.3708027	0
725520.4341	15	1.344	3.406686193	4.615214933	0
725380.4	48.73719585	366.888	2.333623527	863.0278964	0
725373.4	0	0	0	0	0
725371	1.387032592	0	0	0	0
725371	49.04081325	366.888	2.324589719	859.6869852	0
725371	0	0	0	0	0
725025.4	49.05673171	366.888	2.324118206	859.5126089	0
725025.4	15	18.6	3.406686193	63.87127809	0
724712.4	49.74543136	385.488	2.30391831	895.2379244	0
724616.6	50.33821003	385.488	2.286838707	888.6012706	0
724480.9848	50.52064361	385.488	2.281638239	886.5805147	0
724220.6609	50.76075413	385.488	2.27483319	883.9362638	0
724068.2	0	2.56	3.406686193	8.790885587	0
724068.2	0	2.192	3.406686193	7.527195784	0
724094.6651	51.04654952	456.008	2.266791399	1041.944412	0
724042.8	51.2700764	456.008	2.26054523	1039.073323	0
723574	0.207256228	4.752	3.406686193	16.31808137	0
723574	0	32.768	3.406686193	112.5233355	0
723414.76	51.46907163	456.008	2.25501637	1036.531949	0
723157.4113	52.09693902	456.008	2.237765298	1028.602389	0
723286.4	0	3.232	3.406686193	11.09849305	0
723286.4	15.88888698	65.368	3.406686193	224.4697692	0
723264.8	2.686729323	44.68	3.406686193	153.428425	0
723276.6	15.82112328	65.368	3.406686193	224.4697692	0
723232.2	16.16637452	68.6	3.406686193	235.5682622	0
723249.8	15.00814146	61.728	3.406686193	211.9702287	0
723231.4	15	2.344	3.406686193	8.049154615	0
723231.4	3.733244905	49.088	3.406686193	168.5652311	0
723231.4	15	10.296	3.406686193	35.35584297	0
723153.5476	16.88410028	68.6	3.406686193	235.5682622	0
723119.8	0	2.728	3.406686193	9.367787453	0
723249.8	2.42918003	3.64	3.406686193	12.49954044	0
723264.8	0.197680991	4.408	3.406686193	15.13680612	0
722963.4	0	2.344	3.406686193	8.049154615	0
722963.4	0	2.064	3.406686193	7.087651504	0
722872	0	0.912	3.406686193	3.13175299	0
723119.8	0.092885454	0.912	3.406686193	3.13175299	0
722396.8	0	0	0	0	0

722963.4	0	0	0	0	0
722396.8	0	0	0	0	0

M_KNOWN_FLO	SYSTEM_FLOW	M_FIXED_FLOW	ULATION_UNRE	TES_CONSTRA	TENDED_COST
222.6	1103.431748	222.6	FALSE	TRUE	0
0	514.6505155	0	FALSE	TRUE	0
0	515.5493073	0	FALSE	TRUE	0
0	8.186512203	0	FALSE	FALSE	0
0	0	0	FALSE	TRUE	0
0	20.35639444	0	FALSE	TRUE	0
0	485.2686728	0	FALSE	TRUE	0
0	11.45562278	0	FALSE	FALSE	0
0	26.83967256	0	FALSE	TRUE	0
0	26.83967256	0	FALSE	TRUE	0
0	15.13680612	0	FALSE	TRUE	0
0	504.0650727	0	FALSE	TRUE	0
0	10.60400574	0	FALSE	FALSE	0
0	516.0462512	0	FALSE	TRUE	0
0	379.6955623	0	FALSE	TRUE	0
6.96	520.8357108	6.96	FALSE	TRUE	0
6.96	523.3403688	6.96	FALSE	TRUE	0
0	5.164645282	0	FALSE	TRUE	0
0	378.0085817	0	FALSE	FALSE	0
0	347.2367657	0	FALSE	FALSE	0
0	346.5545854	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	342.4618217	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	342.0304219	0	FALSE	TRUE	0
0	341.5117154	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
132.47	994.4949101	132.47	FALSE	FALSE	0
0	0	0	FALSE	TRUE	0
132.47	993.8768502	132.47	FALSE	FALSE	0
132.47	993.6946339	132.47	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0
0	4.615214933	0	FALSE	TRUE	0
0	490.366589	0	FALSE	TRUE	0
0	514.6667729	0	FALSE	TRUE	0
0	2.966923886	0	FALSE	FALSE	0
0	2.252664432	0	FALSE	FALSE	0
125.51	125.51	125.51	FALSE	TRUE	0
0	377.9967643	0	FALSE	TRUE	0
0	13.68081569	0	FALSE	TRUE	0
125.51	500.8339797	125.51	FALSE	FALSE	0
125.51	500.5239617	125.51	FALSE	TRUE	0
0	13.68081569	0	FALSE	TRUE	0
0	13.68081569	0	FALSE	TRUE	0
0	11.26332216	0	FALSE	FALSE	0
0	2.417493536	0	FALSE	TRUE	0
0	2.417493536	0	FALSE	TRUE	0
0	2.417493536	0	FALSE	FALSE	0

0	0	0	FALSE	TRUE	0
0	0	0	FALSE	TRUE	0

COST_DESCRI	DITIONAL_COS	TOTAL_COST_$	AL_FIXED_COS	UNIT_COST_$/E	LABEL
None	0	0	0	0	P-1011
None	0	0	0	0	P-1103
None	0	0	0	0	P-1110
None	0	0	0	0	P-1111
None	0	0	0	0	P-1113
None	0	0	0	0	P-1116
None	0	0	0	0	P-1117
None	0	0	0	0	P-1118
None	0	0	0	0	P-1119
None	0	0	0	0	P-1121
None	0	0	0	0	P-1122
None	0	0	0	0	P-1123
None	0	0	0	0	P-1124
None	0	0	0	0	P-1125
None	0	0	0	0	P-1126
None	0	0	0	0	P-1133
None	0	0	0	0	P-1134
None	0	0	0	0	P-1135
None	0	0	0	0	P-1137
None	0	0	0	0	P-1138
None	0	0	0	0	P-1139
None	0	0	0	0	P-1140
None	0	0	0	0	P-1141
None	0	0	0	0	P-1143
None	0	0	0	0	P-1144
None	0	0	0	0	P-1145
None	0	0	0	0	P-1146
None	0	0	0	0	P-1232
None	0	0	0	0	P-1234
None	0	0	0	0	P-1235
None	0	0	0	0	P-1236
None	0	0	0	0	P-1237
None	0	0	0	0	P-1238
None	0	0	0	0	P-1249
None	0	0	0	0	P-1252
None	0	0	0	0	P-2118
None	0	0	0	0	P-2119
None	0	0	0	0	P-2126
None	0	0	0	0	P-2127
None	0	0	0	0	P-2128
None	0	0	0	0	P-2131
None	0	0	0	0	P-2133
None	0	0	0	0	P-2134
None	0	0	0	0	P-2135
None	0	0	0	0	P-2136
None	0	0	0	0	P-2137
None	0	0	0	0	P-2138
None	0	0	0	0	P-2139

None	0	0	0	0	P-2140
None	0	0	0	0	P-2142
None	0	0	0	0	P-2143
None	0	0	0	0	P-2146
None	0	0	0	0	P-2147
None	0	0	0	0	P-2148
None	0	0	0	0	P-2154
None	0	0	0	0	P-2157
None	0	0	0	0	P-2158
None	0	0	0	0	P-2159
None	0	0	0	0	P-2174
None	0	0	0	0	P-2175
None	0	0	0	0	P-2199
None	0	0	0	0	P-2200
None	0	0	0	0	P-2203
None	0	0	0	0	P-2204
None	0	0	0	0	P-2205
None	0	0	0	0	P-2239
None	0	0	0	0	P-2243
None	0	0	0	0	P-2256
None	0	0	0	0	P-2260
None	0	0	0	0	P-2270
None	0	0	0	0	P-2279
None	0	0	0	0	P-2288
None	0	0	0	0	P-2291
None	0	0	0	0	P-2294
None	0	0	0	0	P-2299
None	0	0	0	0	P-2307
None	0	0	0	0	P-2309
None	0	0	0	0	P-2345
None	0	0	0	0	P-2351
None	0	0	0	0	P-2367
None	0	0	0	0	P-2368
None	0	0	0	0	P-2370
None	0	0	0	0	P-2371
None	0	0	0	0	P-2374
None	0	0	0	0	P-2375
None	0	0	0	0	P-2376
None	0	0	0	0	P-2377
None	0	0	0	0	P-2379
None	0	0	0	0	P-2384
None	0	0	0	0	P-2395
None	0	0	0	0	P-2396
None	0	0	0	0	P-2404
None	0	0	0	0	P-2405
None	0	0	0	0	P-2407
None	0	0	0	0	P-2410
None	0	0	0	0	P-2411
None	0	0	0	0	P-2462

None	0	0	0	0	P-2463
None	0	0	0	0	P-2464

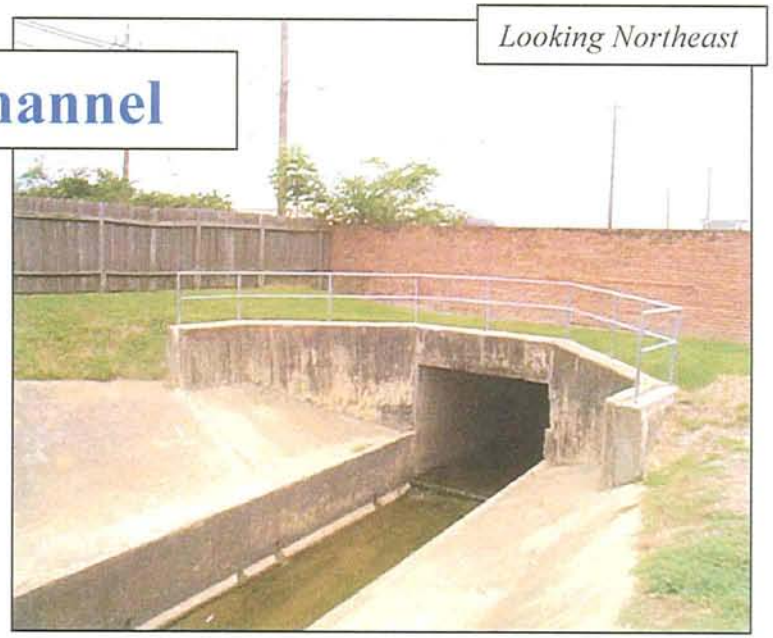
Appendix

Photographs of W151-00 Channel and Shadowdale Channel
Photographs of Conrad Sauer Detention Facility
Typical Local Street Types
Storm Sewer – Channel Interaction
City of Houston Detention Requirements
Detention Pond Systems
Mitigation Cost Estimates
Open House Questionnaires

W151-00 Channel

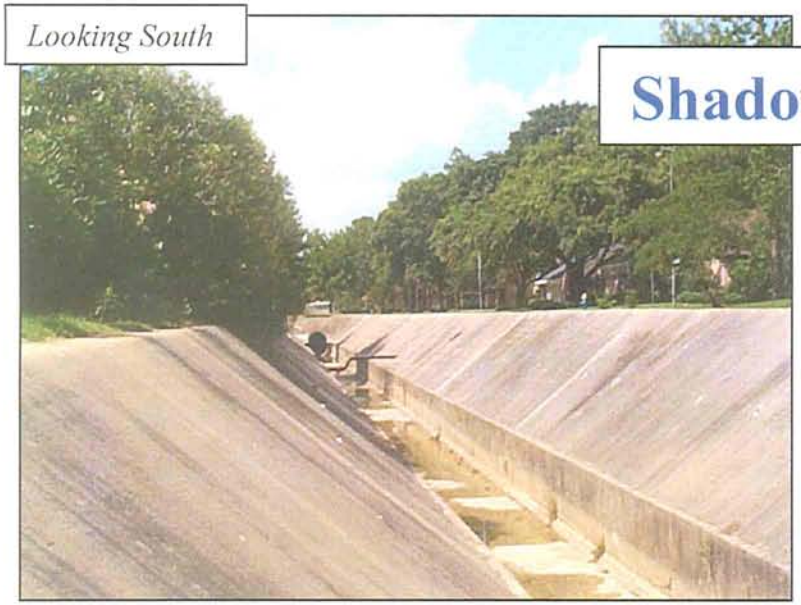
Looking Southeast

Looking Northeast



Shadowdale Channel

Looking South

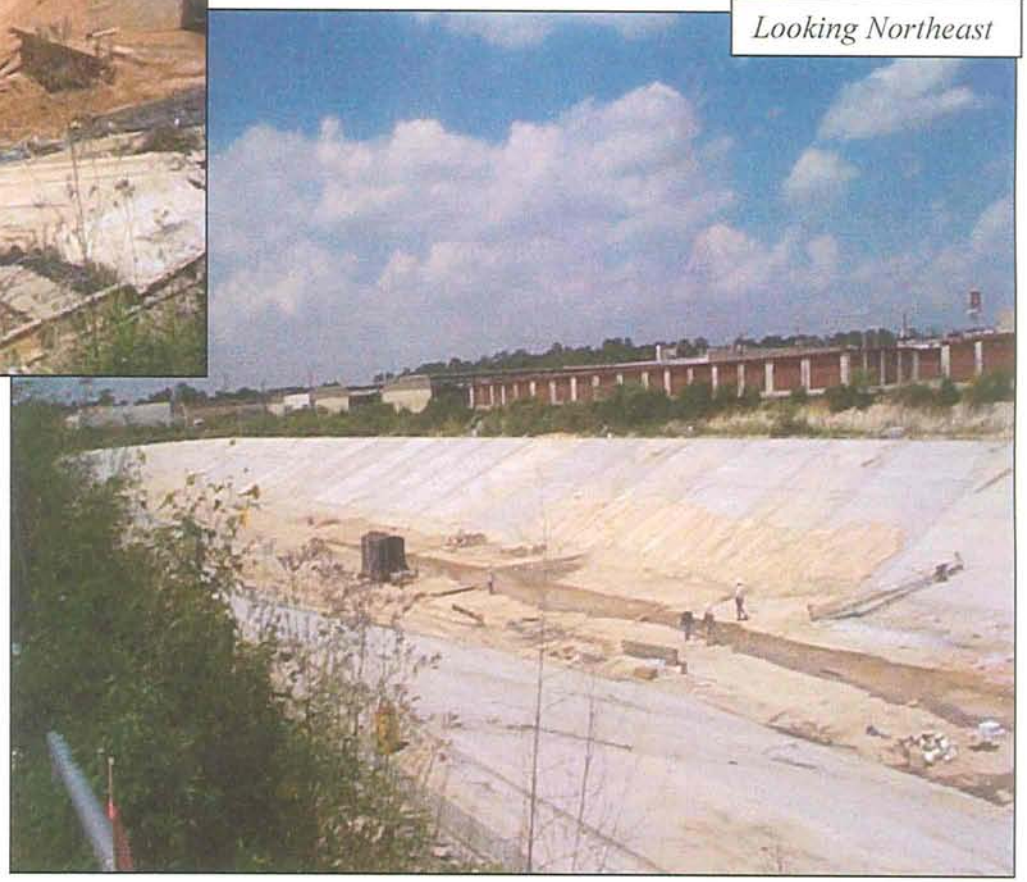


Looking North

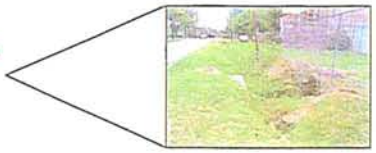
Conrad Sauer Detention Facility

Looking Northeast

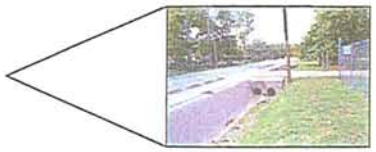
Looking Northeast



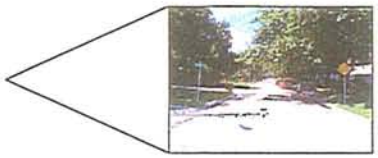
Typical Local Street Types



- There are significant design differences between roadside ditch and curb and gutter streets

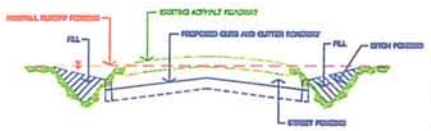


- The street centerline is typically higher than the adjacent yards. Excess runoff will pond in the ditch and potentially in the yards



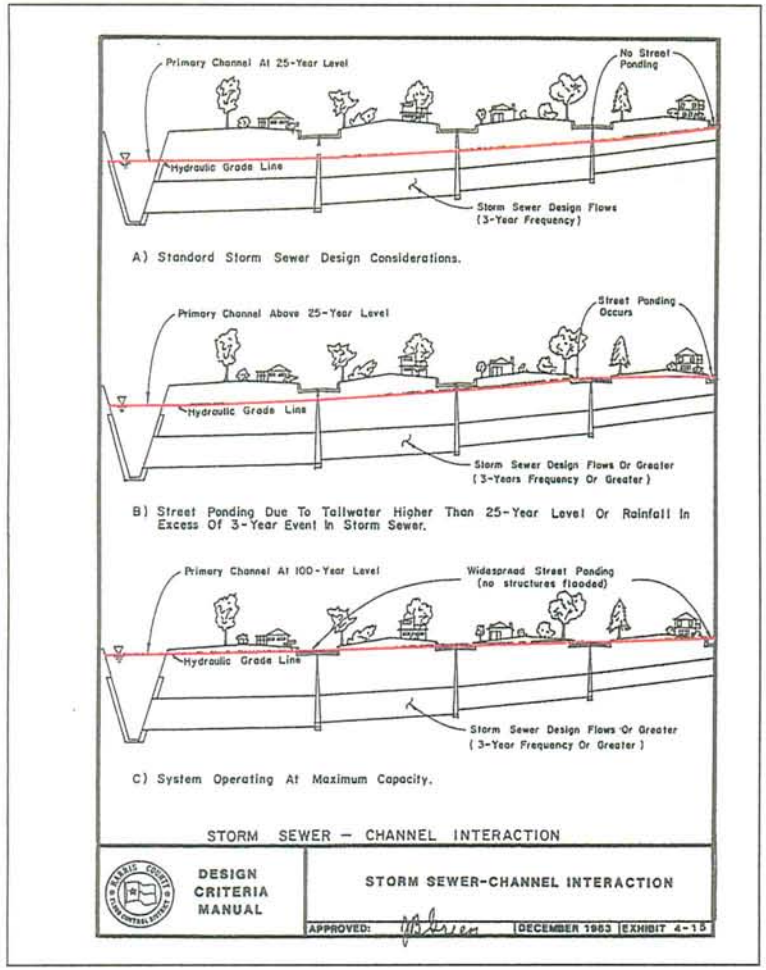
- When an existing roadside ditch street is repaved to become a curb and gutter street, the centerline is lowered for excess runoff to pond in the street and hopefully not in the yards

EFFECT OF CHANGING FROM ROADSIDE DITCH SYSTEM TO CURB AND GUTTER



ROADSIDE OPEN DITCH SECTION	CURB AND GUTTER SECTION
• STREET MORE LIKELY TO BE PASSABLE DURING HIGH WATER	• STREET MORE LIKELY TO BE IMPASSABLE DURING HIGH WATER
• STREET FORCES EXCESS DRAINAGE ONTO ADJACENT PROPERTY	• STREET PROVIDES EXTRA DRAINAGE CAPACITY WITHIN RIGHT-OF-WAY
• STREET MAY IMPEDE OVERLAND FLOW PATTERN	• STREET DOES NOT IMPEDE OVERLAND FLOW PATTERN

Storm Sewer - Channel Interaction



- The receiving channels are typically designed to convey the 25-yr storm event
- The street drainage systems are typically designed to convey the 2-yr storm event
- Street ponding occurs because the streets are designed to carry rainfall in excess of the storm sewer capacity
- The water level in the receiving channel can significantly affect the level of ponding throughout the system (i.e. the capacity of the storm sewer system)

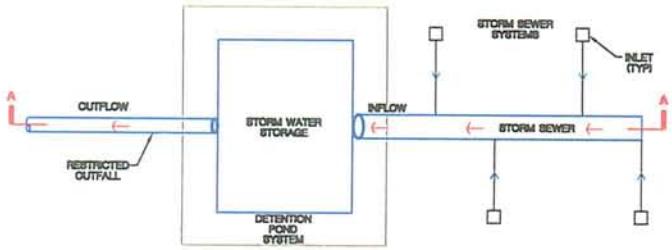
City of Houston Detention Requirements

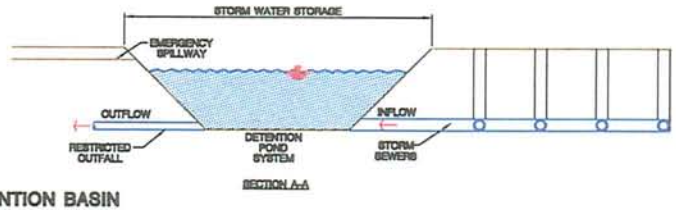
Parcel Size	< 5 acres	< 20 acres	20 - 50 acres*
	Detention Volume Requirements Based on Increase in Impervious Area		
Before Sept. 1996	City of Houston had no specific criteria. Harris County Flood Control District was referenced. (0.45 to 0.55 AC-FT / AC)		
Sept. 1996 - Oct. 1999	0.20 AC-FT / AC	0.32 AC-FT / AC	0.32 AC-FT / AC
Oct. 1999 - present	0.20 AC-FT / AC	0.20 AC-FT / AC	Uses Harris County Flood Control District Criteria (0.45 to 0.55 AC-FT / AC)

1. All sites within HCFCD Program Watersheds are referred to HCFCD
2. Sites in excess of 50 acres require detention system to be determined using reservoir routing.

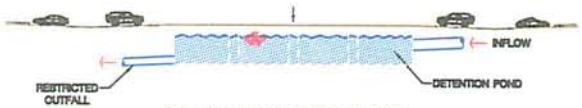
WALTER P MOORE
ENGINEERS AND CONSULTANTS

Detention Pond Systems



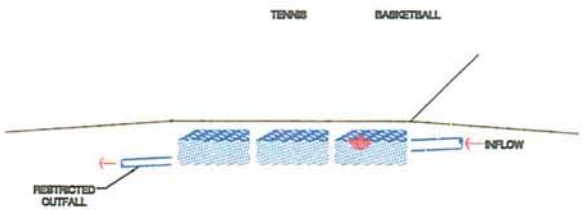


CONCEPTUAL DETENTION BASIN

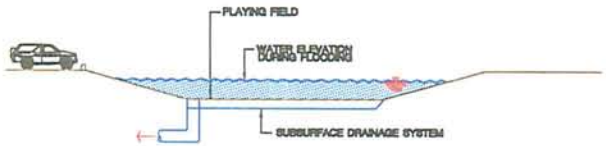


DETENTION POND UNDER BUILDING OR GARAGE

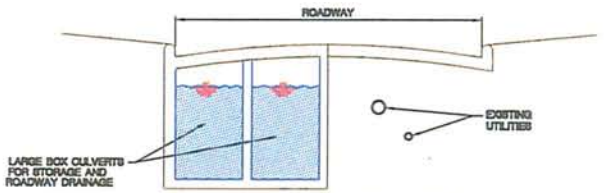
- Detention ponds come in all shapes and sizes
- Land dedicated to detention can be multi-use
- Detention areas do not have to look like detention areas



DETENTION POND UNDER SPORT COURTS



PLAYING FIELD THAT STORES WATER DURING FLOODING



OVERSIZED DRAINAGE SYSTEM FOR STORMWATER DETENTION

Memorial City TIRZ 17

Walter P. Moore - Engineers and Consultants

Preliminary Cost Estimate and Project Ranking
Drainage Improvements
TIRZ No. 17 - City of Houston

Project Ranking	Project ID	Improvement Project Description	Stormwater Storage (Ac-Ft)	Land Acquistion	Construction Cost	Design Cost	Total Cost
1	A	Detention Pond on W151 Box Culverts North of Interstate 10	40	$ 4,500,000	$ 2,500,000	$ 375,000	$ 7,375,000
1	A.1	Detention Pond on W151 Box Culverts North of Interstate 10 with Enclosed Top for Landscaping or Other Improvements	40	$ 4,500,000	$ 8,000,000	$ 1,200,000	$ 13,700,000
2	B	W151 Channel Improvements for Detention with Enclosed Top Assuming 50% Participation by Other Agencies	36	$ -	$ 8,750,000	$ 1,312,500	$ 10,062,500
2	B.1	W151 Channel Improvements for Detention with Enclosed Top for Landscaping or Other Improvements	36	$ -	$ 17,500,000	$ 2,625,000	$ 20,125,000
3	C	Attingham Drainage Basin Detention Pond With Enclosed top for Landscaping or Other Improvements	7	$ -	$ 3,740,000	$ 561,000	$ 4,301,000
3	D	Oversize Storm Sewers with Proposed Roadway Projects	14	$ -	$ 17,500,000	$ 2,625,000	$ 20,125,000

Exhibit 9

Total Mitigation Cost Summary
Storm Sewer Detention Storage

I-10	$ 1,600,000.00
Gessner	$ 1,900,000.00
Attingham	$ 2,200,000.00
Barryknoll	$ 2,200,000.00
Old Katy Trail	$ 6,000,000.00
Town and Country Way	$ 1,700,000.00
Bunker Hill	$ 1,900,000.00
Total	$ 17,500,000.00

I-10
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity	Subtotal
		02081		STANDARD 48 INCH MANHOLE				
1		and/or	02721					
		02082			EACH	$ 1,300.00	4	$ 5,200
		02081		EXTRA COSTS FOR EXTRA DEPTH				
2		and/or	02721	(48"M.H.)				
		02082			FOOT	100.00	16	1,600
		02632		STANDARD TYPE "C" INLET				
3		and/or	02721					
		02633			EACH	1,200.00	4	4,800
4		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	400	14,000
5		02611	02721	30 INCH RCP CLASS III	L.F.	45.00	100	4,500
6		02611	02721	36 INCH RCP CLASS III	L.F.	60.00	100	6,000
7		02611	02721	42 INCH RCP CLASS III	L.F.	94.00	100	9,400
		02081		MANHOLE FOR BOX SEWERS				
8		and/or	02721					
		02082			EACH	900.00	4	3,600
9		02612	02721	12X12 REINFORCED CONCRETE BOX	L.F.	600.00	1942	1,165,200
10			02721	CONVERT "B" INLET TO "B-B" INLET	EACH	500.00	8	4,000
11		02086	02721	ADJUST EX M.H. FRAME & COVER	EACH	250.00	8	2,000
12		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	50	5,000
13		02921	02931	HYDOMULCH SEEDING	S.Y.	0.20	10789	2,158
14		02922	02935	BLOCK SOD	S.Y.	2.00	647	1,295
15			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	16	8,000
16		02407		TRENCH SAFETY	L.F.	1.00	2642	2,642
17		02318		EXTRA EXCAVATION	C.Y.	10.00	1000	10,000
18		02318		SPECIAL EXCAVATION	C.Y.	15.00	1000	15,000
19				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	500	12,500
20		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	500	12,500
21				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100	7,500
				SubTotal				$ 1,296,894
				20% Contengencies				$ 259,379
				Total				$ 1,556,273
							Say	$ 1,600,000

Gessner
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity	Subtotal
1	02081 and/or 0		02721	STANDARD 48 INCH MANHOLE	EACH	$ 1,300.00	8	$ 10,400.00
2	02081 and/or 0		02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	32.00	3,200
3	02081 and/or 0		02721	STD. 48-72 INCH MANHOLE 6	EACH	1,500.00	4.00	6,000
4	02081 and/or 0		02721	EXTRA COSTS FOR EXTRA DEPTH (48-72"M.H.)	FOOT	150.00	16.00	2,400
5	02632 and/or 0		02721	STANDARD TYPE "C" INLET	EACH	1,200.00	16.00	19,200
6		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	960.00	33,600
7		02611	02721	30 INCH RCP CLASS III	L.F.	45.00	240.00	10,800
8		02611	02721	36 INCH RCP CLASS III	L.F.	60.00	240.00	14,400
9		02611	02721	42 INCH RCP CLASS III	L.F.	94.00	240.00	22,560
10		02611	02721	48 INCH RCP CLASS III	L.F.	106.00	240.00	25,440
11	02081 and/or 0		02721	MANHOLE FOR BOX SEWERS	EACH	900.00	8.00	7,200
12		02612	02721	12X12 REINFORCED CONCRETE BOX	L.F.	600.00	2,207.00	1,324,200
13		02922	02935	BLOCK SOD	S.Y.	2.00	1,226.11	2,452
14			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	8.00	4,000
15		02407		TRENCH SAFETY	LF	1.00	4,127.00	4,127
16		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000.00	10,000
17		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000.00	15,000
18				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	500.00	12,500
19		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	500.00	12,500
20				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100.00	7,500
				Subtotal				$ 1,547,479
				20% Contengencies				$ 309,496
				Total				$ 1,856,975
							Say	$ 1,900,000

Bunker Hill
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity	Subtotal
1		02081 and/or 02082	02721	STANDARD 48 INCH MANHOLE	EACH	$ 1,300.00	8	$ 10,400
2		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	32	3,200
3		02081 and/or 02082	02721	STD. 48-72 INCH MANHOLE 6	EACH	1,500.00	4	6,000
4		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48-72"M.H.)	FOOT	150.00	16	2,400
5		02632 and/or 02633	02721	STANDARD TYPE "C" INLET	EACH	1,200.00	16	19,200
6		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	960	33,600
7		02611	02721	30 INCH RCP CLASS III	L.F.	45.00	240	10,800
8		02611	02721	36 INCH RCP CLASS III	L.F.	60.00	240	14,400
9		02611	02721	42 INCH RCP CLASS III	L.F.	94.00	240	22,560
10		02611	02721	48 INCH RCP CLASS III	L.F.	106.00	240	25,440
11		02081 and/or 02082	02721	MANHOLE FOR BOX SEWERS	EACH	900.00	8	7,200
12		02612	02721	12X12 REINFORCED CONCRETE BOX	L.F.	600.00	2,207	1,324,200
13		02922	02935	BLOCK SOD	S.Y.	2.00	1,226	2,452
14			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	8	4,000
15		02407		TRENCH SAFETY	LF	1.00	4,127	4,127
16		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000	10,000
17		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000	15,000
18				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	500	12,500
19		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	500	12,500
20				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100	7,500
				Subtotal				$ 1,547,479
				20% Contengencies				$ 309,496
				Total				$ 1,856,975
							Say	$ 1,900,000

Barryknoll
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity		Subtotal
		02081		STANDARD 48 INCH MANHOLE					
1		and/or	02721						
		02082			EACH	$ 1,300.00	10	$	13,000.00
		02081		EXTRA COSTS FOR EXTRA DEPTH					
2		and/or	02721	(48"M.H.)					
		02082			FOOT	100.00	40		4,000
		02632		STANDARD TYPE "C" INLET					
3		and/or	02721						
		02633			EACH	1,200.00	20		24,000
4		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	100		3,500
5		02611	02721	30 INCH RCP CLASS III	L.F.	45.00	1,000		45,000
6		02611	02721	36 INCH RCP CLASS III	L.F.	60.00	100		6,000
		02081		MANHOLE FOR BOX SEWERS					
7		and/or	02721						
		02082			EACH	900.00	10		9,000
8		02612	02721	12X12 REINFORCED CONCRETE BOX	L.F.	600.00	2,585		1,551,000
9		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	670		67,019
10		02922	02935	BLOCK SOD	S.Y.	2.00	2,872		5,744
11			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	10		5,000
12			02721	SPECIAL STRUCTURE (SEE REMARKS)	EACH				-
13		02407		TRENCH SAFETY	LF	1.00	3,785		3,785
14		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000		10,000
15		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000		15,000
16				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	500		12,500
17		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	500		12,500
18				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100		7,500
				Subtotal				$	1,794,548
				20% Contengencies				$	358,910
				Total				$	2,153,458
							Say	$	2,200,000

Attingham
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity		Subtotal
		02081		STANDARD 48 INCH MANHOLE					
1		and/or	02721						
		02082			EACH	$ 1,300.00	10	$	13,000.00
		02081		EXTRA COSTS FOR EXTRA DEPTH					
2		and/or	02721	(48"M.H.)					
		02082			FOOT	100.00	40		4,000
		02632		STANDARD TYPE "C" INLET					
3		and/or	02721						
		02633			EACH	1,200.00	20		24,000
4		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	100		3,500
5		02611	02721	30 INCH RCP CLASS III	L.F.	45.00	1,000		45,000
6		02611	02721	36 INCH RCP CLASS III	L.F.	60.00	100		6,000
		02081		MANHOLE FOR BOX SEWERS					
7		and/or	02721						
		02082			EACH	900.00	10		9,000
8		02612	02721	12X12 REINFORCED CONCRETE BOX	L.F.	600.00	2,695		1,617,000
9		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	670		67,019
10		02922	02935	BLOCK SOD	S.Y.	2.00	2,872		5,744
11			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	10		5,000
12			02721	SPECIAL STRUCTURE (SEE REMARKS)	EACH				-
13		02407		TRENCH SAFETY	LF	1.00	3,895		3,895
14		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000		10,000
15		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000		15,000
16				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	500		12,500
17		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	500		12,500
18				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100		7,500
				Subtotal				$	1,860,658
				20% Contengencies				$	372,132
				Total				$	2,232,790
							Say	$	2,200,000

Old Katy Ln.
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity		Subtotal
1		02081 and/or 02082	02721	STANDARD 48 INCH MANHOLE	EACH	$ 1,300.00	23	$	29,900
2		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	92		9,200
3		02632 and/or 02633	02721	STANDARD TYPE "C" INLET	EACH	1,200.00	46		55,200
4		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	4,600		161,000
5		02611	02721	30 INCH RCP CLASS III	L.F.	45.00	1,000		45,000
6		02611	02721	36 INCH RCP CLASS III	L.F.	60.00	1,000		60,000
7		02081 and/or 02082	02721	MANHOLE FOR BOX SEWERS	EACH	900.00	23		20,700
8		02612	02721	12X12 REINFORCED CONCRETE BOX	L.F.	600.00	7,000		4,200,000
9		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	1,815		181,481
10		02922	02935	BLOCK SOD	S.Y.	2.00	7,778		15,556
11			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	5		2,500
12		02407		TRENCH SAFETY	LF	1.00	13,600		13,600
14		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000		10,000
15		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000		15,000
16				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	500		12,500
17		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	500		12,500
18				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100		7,500
				Subtotal				$	4,851,637
				20% Contengencies				$	970,327
				Total				$	5,821,964
							Say	$	6,000,000

Town & Country Way
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity		Subtotal
1		02081 and/or 02082	02721	STANDARD 48 INCH MANHOLE	EACH	$ 1,300.00	7	$	9,100
2		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	28		2,800
3		02632 and/or 02633	02721	STANDARD TYPE "C" INLET	EACH	1,200.00	14		16,800
4		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	1,400		49,000
5		02611	02721	30 INCH RCP CLASS III	L.F.	45.00	100		4,500
6		02611	02721	36 INCH RCP CLASS III	L.F.	60.00	100		6,000
7		02081 and/or 02082	02721	MANHOLE FOR BOX SEWERS	EACH	900.00	7		6,300
8		02612	02721	12X12 REINFORCED CONCRETE BOX	L.F.	600.00	2,000		1,200,000
9		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	519		51,852
10		02922	02935	BLOCK SOD	S.Y.	2.00	2,222		4,444
11			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	3		1,500
12			02721	SPECIAL STRUCTURE (SEE REMARKS)	EACH				-
13		02407		TRENCH SAFETY	LF	1.00	3,600		3,600
14		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000		10,000
15		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000		15,000
16				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	500		12,500
17		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	500		12,500
18				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100		7,500
				Subtotal				$	1,413,396
				20% Contengencies				$	282,679
				Total				$	1,696,076
							Say	$	1,700,000

W151 Pond North of I-10 w-Top
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity	Subtotal
1	02102	02233	01010	CLEARING (BRUSH AND GRASS ACREAGE)	ACRE	$ 3,000.00	5	$ 15,000
2				MOBILIZATION, INSURANCE AND BONDS	EACH	$ 50,000.00	1	$ 50,000
3	02210	02317	02200	EXCAVATION (STORM SEWER)	C.Y.	5.00	3,437	17,185
4		02221		REMOVE EXISTING CONC. PAVEMENT	S.Y.	7.00	24,200	169,400
5				SITE PAVEMENT	SY	50.00	1,000	50,000
6		02081 and/or 02082	02721	STANDARD 48 INCH MANHOLE	EACH	1,300.00	8	10,400
7		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	5	500
8		02632 and/or 02633	02721	STANDARD TYPE "A" INLET	EACH	500.00	8	4,000
9		02632 and/or 02633	02721	STANDARD TYPE "E" INLET	EACH	1,000.00	4	4,000
10		02506	02721	12 INCH PVC PIPE (SDR-35)	L.F.	18.00	100	1,800
11		02611	02721	18 INCH RCP CLASS III	L.F.	25.00	500	12,500
12		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	2,000	70,000
13		02446	02750	BORE & JACK 12 IN. PIPE	L.F.	40.00	100	4,000
14		02446	02750	BORE & JACK 18 IN. PIPE	L.F.	55.00	100	5,500
15		02446	02750	BORE & JACK 24 IN. PIPE	L.F.	75.00	100	7,500
16				10' X 10' BOX CULVERT	L.F.	700.00	400	280,000
17				FLOW CONTROL STRUCTURE	EACH	10,000.00	1	10,000
18		02086	02721	ADJUST EX M.H. FRAME & COVER	EACH	250.00	2	500
19		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	3,000	300,000
20		02921	02931	HYDOMULCH SEEDING	S.Y.	0.20	53,240	10,648
21		02922	02935	BLOCK SOD	S.Y.	2.00	5,000	10,000
22		02751	02720	4" SLOPE CONCRETE PAVEMENT	S.Y.	25.00	15,000	375,000
23				PAVEMENT HEADER TOP AND BOTTOM	LF	20.00	3,750	75,000
				CONCRETE TOP FOR HARD COURT SPORTS	S.F.	26.00	176,250	4,582,500
24			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	2	1,000
25		02316	02721	EXCAVATION FOR DETENTION POND	C.Y.	7.00	64,500	451,500
26				FENCING	LF	2,000.00	15	30,000
27				GATES	EACH	2,500.00	2	5,000
28				WEEP HOLES	EACH	50.00	60	3,000
29				TRAFFIC CONTROL	LS	25,000.00	1	25,000
30				STORM WATER RUNOFF	LS	25,000.00	1	25,000
31		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000	10,000
32		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000	15,000
33				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	100	2,500
34		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	1,000	25,000
35				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100	7,500
				Subtotal				$ 6,665,933
				20% Contenegencies				$ 1,333,187
				Total				$ 7,999,120

W151 Pond North of I-10
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity	Subtotal
1	02102	02233	01010	CLEARING (BRUSH AND GRASS ACREAGE)	ACRE	$ 3,000.00	5	$ 15,000
2				MOBILIZATION, INSURANCE AND BONDS	EACH	$ 50,000.00	1	$ 50,000
3	02210	02317	02200	EXCAVATION (STORM SEWER)	C.Y.	5.00	3,437	17,185
4		02221		REMOVE EXISTING CONC. PAVEMENT	S.Y.	7.00	24,200	169,400
5				SITE PAVEMENT	SY	50.00	1,000	50,000
6		02081 and/or 02082	02721	STANDARD 48 INCH MANHOLE	EACH	1,300.00	8	10,400
7		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	5	500
8		02632 and/or 02633	02721	STANDARD TYPE "A" INLET	EACH	500.00	8	4,000
9		02632 and/or 02633	02721	STANDARD TYPE "E" INLET	EACH	1,000.00	4	4,000
10		02506	02721	12 INCH PVC PIPE (SDR-35)	L.F.	18.00	100	1,800
11		02611	02721	18 INCH RCP CLASS III	L.F.	25.00	500	12,500
12		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	2,000	70,000
13		02446	02750	BORE & JACK 12 IN. PIPE	L.F.	40.00	100	4,000
14		02446	02750	BORE & JACK 18 IN. PIPE	L.F.	55.00	100	5,500
15		02446	02750	BORE & JACK 24 IN. PIPE	L.F.	75.00	100	7,500
16				10' X 10' BOX CULVERT	L.F.	700.00	400	280,000
17				FLOW CONTROL STRUCTURE	EACH	10,000.00	1	10,000
18		02086	02721	ADJUST EX M.H. FRAME & COVER	EACH	250.00	2	500
19		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	3,000	300,000
20		02921	02931	HYDOMULCH SEEDING	S.Y.	0.20	53,240	10,648
21		02922	02935	BLOCK SOD	S.Y.	2.00	5,000	10,000
22		02751	02720	4" SLOPE CONCRETE PAVEMENT	S.Y.	25.00	15,000	375,000
23				PAVEMENT HEADER TOP AND BOTTOM	LF	20.00	3,750	75,000
24			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	2	1,000
25		02316	02721	EXCAVATION FOR DETENTION POND	C.Y.	7.00	64,500	451,500
26				FENCING	LF	2,000.00	15	30,000
27				GATES	EACH	2,500.00	2	5,000
28				WEEP HOLES	EACH	50.00	60	3,000
29				TRAFFIC CONTROL	LS	25,000.00	1	25,000
30				STORM WATER RUNOFF	LS	25,000.00	1	25,000
31		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000	10,000
32		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000	15,000
33				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	100	2,500
34		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	1,000	25,000
35				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100	7,500
				Subtotal				$ 2,083,433
				20% Contenegencies				$ 416,687
				Total				$ 2,500,120

Bendwood Park
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity	Subtotal
1	02102	02233	01010	CLEARING (BRUSH AND GRASS ACREAGE)	ACRE	$ 3,000.00	4	$ 12,900
2	02210	02315	02210	EXCAVATION (DRAINAGE CHANNEL)	C.Y.	6.00	6,453	38,720
3	02210	02317	02200	EXCAVATION (STORM SEWER)	C.Y.	2.00	1,778	3,556
4		02221		REMOVE EXISTING CONC. PAVEMENT	S.Y.	7.00	10,000	70,000
5		02081 and/or 02082	02721	STANDARD 48 INCH MANHOLE	EACH	1,300.00	5	6,500
6		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	5	500
7		02632 and/or 02633	02721	STANDARD TYPE "A" INLET	EACH	500.00	4	2,000
8		02632 and/or 02633	02721	STANDARD TYPE "E" INLET	EACH	1,000.00	4	4,000
9		02506	02721	12 INCH PVC PIPE (SDR-35)	L.F.	18.00	500	9,000
10		02611	02721	18 INCH RCP CLASS III	L.F.	25.00	200	5,000
11		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	500	17,500
12		02446	02750	BORE & JACK 12 IN. PIPE	L.F.	40.00	100	4,000
13		02446	02750	BORE & JACK 18 IN. PIPE	L.F.	55.00	100	5,500
14		02446	02750	BORE & JACK 24 IN. PIPE	L.F.	75.00	100	7,500
				60 INCH INLET PIPE	L.F.	125.00	200	25,000
15		02086	02721	ADJUST EX M.H. FRAME & COVER	EACH	250.00	2	500
16		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	3,000	300,000
17		02921	02931	HYDOMULCH SEEDING	S.Y.	0.20	53,240	10,648
18		02922	02935	BLOCK SOD	S.Y.	2.00	5,000	10,000
19		02751	02720	4" SLOPE CONCRETE PAVEMENT	S.Y.	25.00	17,778	444,444
				PAVEMENT HEADER TOP AND BOTTOM	L.F.	20.00	1,500	30,000
20			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	2	1,000
21		02316	02721	EXCAVATION FOR DETENTION POND	C.Y.	7.00	11,607	81,249
22			02721	SPECIAL STRUCTURE (Tennis Court Vault)	EACH	250,000.00	1	250,000
23			02721	6 INCH CLEAN OUT	EACH	150.00	4	600
24		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000	10,000
25		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000	15,000
26				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	100	2,500
27		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	1,000	25,000
28				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100	7,500
29				DETENTION POND TOP	S.F.	30.00	57,600	1,728,000
				Subtotal				$ 3,128,117
				20% Contenegencies				$ 625,623
				Total				$ 3,753,740

W151 Enclosure
Mitigation Cost Estimate

ITEM NO.	WPMA SPEC ITEM NO.	C.O.H. SPEC ITEM NO.	METRO SPEC ITEM NO.	ITEM DESCRIPTION	UNIT	UNIT COST	Quantity	Subtotal
1	02102	02233	01010	CLEARING (BRUSH AND GRASS ACREAGE)	ACRE	$ 3,000.00	4	$ 12,900
2	02210	02315	02210	EXCAVATION (DRAINAGE CHANNEL)	C.Y.	6.00	325,926	1,955,556
3	02210	02317	02200	EXCAVATION (STORM SEWER)	C.Y.	2.00	1,778	3,556
4		02221		REMOVE EXISTING CONC. PAVEMENT	S.Y.	7.00	48,889	342,222
5		02081 and/or 02082	02721	STANDARD 48 INCH MANHOLE	EACH	1,300.00	6	7,800
6		02081 and/or 02082	02721	EXTRA COSTS FOR EXTRA DEPTH (48"M.H.)	FOOT	100.00	12	1,200
7		02632 and/or 02633	02721	STANDARD TYPE "A" INLET	EACH	500.00	15	7,500
8		02632 and/or 02633	02721	STANDARD TYPE "E" INLET	EACH	1,000.00	4	4,000
9		02506	02721	12 INCH PVC PIPE (SDR-35)	L.F.	18.00	500	9,000
10		02611	02721	18 INCH RCP CLASS III	L.F.	25.00	200	5,000
11		02611	02721	24 INCH RCP CLASS III	L.F.	35.00	500	17,500
12		02446	02750	BORE & JACK 12 IN. PIPE	L.F.	40.00	100	4,000
13		02446	02750	BORE & JACK 18 IN. PIPE	L.F.	55.00	100	5,500
14		02446	02750	BORE & JACK 24 IN. PIPE	L.F.	75.00	100	7,500
15		02086	02721	ADJUST EX M.H. FRAME & COVER	EACH	250.00	2	500
16		03316	02721	CLASS "C" CONCRETE SEAL SLAB	C.Y.	100.00	6,519	651,852
17		02921	02931	HYDOMULCH SEEDING	S.Y.	0.20	53,240	10,648
18		02922	02935	BLOCK SOD	S.Y.	2.00	4,889	9,778
19		02751	02720	4" SLOPE CONCRETE PAVEMENT	S.Y.	15.00	17,778	266,667
20			02721	CONNECT TO EXIST. STORM SEWER	EACH	500.00	5	2,500
21			02721	SPECIAL STRUCTURE (Enclosed Ditch)	EACH	10,560,000.00	1	10,560,000
22			02721	6 INCH CLEAN OUT	EACH	150.00	4	600
23		02318		EXTRA EXCAVATION	C.Y.	10.00	1,000	10,000
24		02318		SPECIAL EXCAVATION	C.Y.	15.00	1,000	15,000
25				WASHED SHELL IN TRENCH BOTTOM	C.Y.	25.00	100	2,500
26		02321		EXTRA CEMENT-STABILIZED SAND	C.Y.	25.00	1,000	25,000
27				EXTRA CLASS "A" CONCRETE	C.Y.	75.00	100	7,500
29				Tennis Courts	EACH	4.00	100,000	400,000
				Subtotal				$ 14,345,778
				20% Contenegencies				$ 2,869,156
				Total				$ 17,214,933
							Say	$ 17,500,000

PUBLIC COMMENTS FROM 1/22/02 OPEN HOUSE

DRAINAGE STUDY COMMENTS – SHEET ONE:

1. Thank you for a very comprehensive presentation. (Beryl McCleary, 232 Warrenton Drive, 713-464-4374)

2. Thanks for sharing your plans with us. (A.K.)

3. Define "Mitigation Opportunity"!

DRAINAGE STUDY COMMENTS – SHEET TWO:

1. The Community Meeting Summary, hosted by MetroNational on 7/24/99, said Tallowood Baptist Church (on plat as Memorial Baptist Temple) would be taken out of the TIRZ and its still there. Why?

2. Why are "tax-exempt" properties included in the TIRZ?

3. Before any work is done on drainage, a master study should be made to cover the area from Hammerly to the Bayou – we should not do any more small area studies.

4. Don't just maintain existing drainage flows; we need to significantly reduce flows out of the commercial areas into the surrounding neighborhoods.

5. What effort has been made to coordinate with prior drainage studies by Turner, Collie & Braden and Thompson Engineers?

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   (*Less than **6** inches*) *More than **12** inches*

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Benignus* *and* *Queens Bury*

4. How often does this occur?

   (*a. Every time it rains*) *b. When it rains for one hour*

   c. When it rains for one hour or more *d. Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* (*More than **24** inches*)

3. Did water enter a building or residence at this location? (Circle one)

   (*Yes*) *No*

   Nearest Intersection: *Hallie* *and* *Trail Hollow*

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   (*c. When it rains for one hour or more*) *d. Other (please state)*_____

   (garage area (2) twice water has entered the house through the weep holes.)

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

   (12722 Trail Hollow – Elizabeth & Chet Miller)

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* (*More than **12** inches*)

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   (*Yes*) *No*

   Nearest Intersection: *South of Park* *and* _____

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   (*c. When it rains for one hour or more*) *d. Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

   South of Bend Wood Park

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* (*More than **24** inches*)

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Between Gessner* *and* *Frostwood on 12339 Barryknoll*

4. How often does this occur?

   (*a. Every time it rains*) *b. When it rains for one hour*

   c. When it rains for one hour or more *d. Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* (*More than **12** inches*)

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Bunker Hill Road* *and* *Taylorcrest*

4. How often does this occur?

   a. Every time it rains

   b. When it rains for one hour

   c. When it rains for one hour or more ***(tropical storm variety)***

   (*d.*) *Other (please state)* ***Very heavy rain***

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   (*Less than **18** inches*) *More than **24** inches*

   @ Plantation & Overcup

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: _____ *and* _____

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   c. When it rains for one hour or more (*d. Other (please state)* ***Big Rains***)

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   {Blue Sticker = ponding over the curb }

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* (*More than **12** inches*)

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Frostwood* *and* *Broken Bough*

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   (*c. When it rains for one hour or more*) *d. Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

   Every street in Frostwood has had flooding over curb, it happens often.

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   Yes *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes *No*

   Nearest Intersection: _____ *and* _____

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   c. When it rains for one hour or more *d. Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

John Tomfohrde – Frostwood President, Based upon my expericence and observations, I am able to supply some answers to the above questions for memorial Forest, Woods, Hollow and Frostwood as well as High storm dated levels in W-151, W-153, and Rommel creek.

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   (*Less than **18** inches*) *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: _____ *and* _____

4. How often does this occur?

   a. *Every time it rains*
   b. *When it rains for one hour*
   c. *When it rains for one hour or more*
   d. *Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

Plantation & overcup on heavy rains.

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* (*More than **24** inches*)

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Barryknoll* *and* *Plantation*

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   c. When it rains for one hour or more (*d. Other (please state)* ***Bad rain***)

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* *More than **24** inches*

   Between 6" to 12"

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Frostwood* *and* *Boheme*

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   c. When it rains for one hour or more (*d. Other (please state)* ***2-3 times per year***)

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   Yes *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes *No*

   Nearest Intersection: _____ *and* _____

   Has happened frequently on Bendwood Loznmead & pebblebrook in Fonu Villas

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   c. When it rains for one hour or more *d. Other (please state)*_____

   Generally w/rainfall exceeding 3" in 8 hours.

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

   Contact Dan Breaux 713-973-9707 for details.

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   (*Less than **6** inches*) *More than **12** inches*

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Pinerock* *and* *Benignus*

4. How often does this occur?

   a. Every time it rains (*b. When it rains for one hour*)

   c. When it rains for one hour or more *d. Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

   The end of the cul de sac has settled down maybe. The water no longer flows out to Benignus.

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* (*More than **12** inches*)

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Kimberle* *and* *(1 block east of Plantation near bridge)*

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   c. When it rains for one hour or more (*d. Other (please state)*) ***Heavy rains (2x in 2 years)***

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

   Memorial Forest has 2 intersections (southern part) along Plantation that habit vally flood setegast ditch (151) is near capacity (hitting bridge) during heavy rains. (Canoing has occurred on Kimberley & Plantation.)

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   (*Yes*) *No*

   ½ way up the yard

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* *More than **24** inches*

   ???

3. Did water enter a building or residence at this location? (Circle one)

   Yes (*No*)

   Nearest Intersection: *Plantation* *and* _____

4. How often does this occur?

   a. Every time it rains *b. When it rains for one hour*

   (*c. When it rains for one hour or more*) *d. Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

   Question: after Frostwood East storm sewer system has been completed and the pipes blocked off, will there be less water in ditch W-151 than when the same amount of rain falls today or will there be more since the Memorial Forest drains and streets will no longer serve as safety valves for backflow into the subdivision?
   Wm. G. Lowerre / 12111 Boheme / 713-654-4111 (0)

DRAINAGE QUESTIONAIRE

TIRZ 17

1. Have you ever seen excess rainfall build up in the street such that the water is over the curb? (Circle one)

   Yes *No*

2. If yes, how high was the water over the curb? (Circle one)

   *Less than **6** inches* *More than **12** inches*

   *Less than **18** inches* *More than **24** inches*

3. Did water enter a building or residence at this location? (Circle one)

   Yes *No*

   Nearest Intersection: _____ *and* _____

4. How often does this occur?

   a. *Every time it rains*
   b. *When it rains for one hour*
   c. *When it rains for one hour or more*
   d. *Other (please state)*_____

5. Using the provided stickers, please place one sticker at each location where you have observed flooding over the curb. Use the following color scheme

   Red Sticker = damage to structures caused by flooding

   Blue Sticker = ponding over the curb

A neighbor who could not come states that the ditch by their house flows upstream during certain wind/heavy rains. (Map on back of questionnaire: appears to be on Tallow Wood street near the school and flows toward a Block Buster & Memorial.

Table 1
Existing Development / Existing Facilties

LABEL	SECTION_SIZE	CONSTRUCTED_ SLOPE_FT/FT	FULL_CAPACITY_ CFS	TOTAL_SYSTEM _FLOW_CFS	EXCESS_FULL_ CAPACITY_CFS	HYDRAULIC_ SLOPE_FT/FT	LABEL
P-1011	8 x 8 ft	0.0000	0.00	1064.87	-1064.87	0.0084	P-1011
P-1103	10 x 5 ft	0.0011	264.72	518.52	-253.80	0.0042	P-1103
P-1110	10 x 5 ft	0.0000	0.00	519.40	-519.40	0.0042	P-1110
P-1111	24 inch	0.0088	21.27	8.19	13.08	0.0013	P-1111
P-1113	24 inch	0.0119	24.66	0.00	24.66	0.0000	P-1113
P-1116	24 inch	0.0020	10.18	20.36	-10.17	0.0081	P-1116
P-1117	10 x 5 ft	0.0003	147.88	486.81	-338.94	0.0037	P-1117
P-1118	24 inch	0.0116	24.32	11.46	12.87	0.0026	P-1118
P-1119	24 inch	0.0320	40.46	24.49	15.97	0.0117	P-1119
P-1121	24 inch	0.0087	21.14	24.83	-3.69	0.0120	P-1121
P-1122	18 inch	0.0075	9.10	15.14	-6.03	0.0208	P-1122
P-1123	10 x 5 ft	0.0005	179.42	507.07	-327.65	0.0040	P-1123
P-1124	18 inch	0.0098	10.42	8.28	2.13	0.0062	P-1124
P-1125	10 x 5 ft	0.0022	380.22	519.50	-139.28	0.0042	P-1125
P-1126	8 x 5 ft	0.0020	273.25	363.89	-90.65	0.0036	P-1126
P-1133	10 x 5 ft	0.0032	457.25	528.56	-71.30	0.0043	P-1133
P-1134	10 x 5 ft	0.0006	196.87	531.47	-334.60	0.0044	P-1134
P-1135	12 inch	3.1600	82.33	5.16	77.17	0.0124	P-1135
P-1136	12 inch	0.5000	32.75	15.90	16.85	0.1179	P-1136
P-1137	8 x 5 ft	0.1000	1926.80	362.58	1564.21	0.0035	P-1137
P-1138	8 x 5 ft	0.0080	544.98	335.62	209.36	0.0030	P-1138
P-1139	8 x 5 ft	0.0008	167.39	334.97	-167.58	0.0030	P-1139
P-1140	12 inch	1.9700	65.00	0.00	65.00	0.0000	P-1140
P-1141	8 x 5 ft	0.0025	304.65	331.00	-26.34	0.0030	P-1141
P-1143	12 inch	0.2600	23.62	0.00	23.62	0.0000	P-1143
P-1144	8 x 5 ft	0.0021	277.58	330.58	-53.00	0.0029	P-1144
P-1145	8 x 5 ft	0.0020	270.05	330.09	-60.04	0.0029	P-1145
P-1146	12 inch	0.0600	11.34	0.00	11.34	0.0000	P-1146
P-1232	8 x 5 ft	0.0051	436.33	974.01	-537.68	0.0256	P-1232
P-1234	12 inch	4.3000	96.04	0.00	96.04	0.0000	P-1234
P-1235	8 x 5 ft	0.0091	580.95	973.67	-392.72	0.0255	P-1235
P-1236	8 x 5 ft	0.0020	269.81	973.57	-703.77	0.0255	P-1236

Table 1
Existing Development / Existing Facilties

LABEL	SECTION_SIZE	CONSTRUCTED_ SLOPE_FT/FT	FULL_CAPACITY_ CFS	TOTAL_SYSTEM _FLOW_CFS	EXCESS_FULL_ CAPACITY_CFS	HYDRAULIC_ SLOPE_FT/FT	LABEL
P-1238	12 inch	3.5000	86.65	4.59	82.05	0.0098	P-1238
P-1249	10 x 5 ft	0.0002	103.03	490.37	-387.34	0.0037	P-1249
P-1252	120 inch	0.0000	0.00	518.53	-518.53	0.0006	P-1252
P-2118	18 inch	0.0132	12.07	2.97	9.11	0.0008	P-2118
P-2119	18 inch	0.0595	25.62	1.01	24.60	0.0001	P-2119
P-2120	24 inch	0.0167	29.19	15.90	13.29	0.0049	P-2120
P-2121	18 inch	0.0046	7.12	32.83	-25.71	0.0977	P-2121
P-2122	30 inch	0.0015	15.83	40.94	-25.11	0.0100	P-2122
P-2123	18 inch	0.0045	7.04	63.47	-56.43	0.3651	P-2123
P-2124	30 inch	0.0015	16.12	106.52	-90.41	0.0675	P-2124
P-2125	12 inch	0.0043	2.33	15.87	-13.54	0.1984	P-2125
P-2126	30 inch	0.0012	14.50	121.68	-107.18	0.0880	P-2126
P-2127	8 x 5 ft	0.0011	204.60	362.57	-157.97	0.0035	P-2127
P-2128	30 inch	0.0054	30.25	12.60	17.65	0.0044	P-2128
P-2131	8 x 5 ft	0.0534	1407.77	449.34	958.43	0.0516	P-2131
P-2133	8 x 5 ft	0.1027	1952.28	449.22	1503.06	0.0795	P-2133
P-2134	12 inch	0.0000	0.00	12.29	-12.29	0.1191	P-2134
P-2135	30 inch	0.0024	20.12	12.71	7.41	0.0024	P-2135
P-2136	12 inch	0.0227	5.37	11.26	-5.89	0.1000	P-2136
P-2137	30 inch	0.0007	11.05	2.37	8.68	0.0000	P-2137
P-2138	24 inch	0.0027	11.79	2.41	9.38	0.0012	P-2138
P-2139	12 inch	0.0137	4.18	2.42	1.76	0.0106	P-2139
P-2140	10 x 5 ft	0.0004	160.34	528.79	-368.45	0.0043	P-2140
P-2142	24 inch	0.0006	5.38	0.00	5.38	0.0000	P-2142
P-2143	24 inch	0.0093	21.86	0.00	21.86	0.0000	P-2143
P-2146	24 inch	0.0005	5.06	11.46	-6.41	0.0026	P-2146
P-2147	10 x 5 ft	0.0005	182.88	529.78	-346.90	0.0043	P-2147
P-2148	18 inch	0.1794	44.49	5.16	39.33	0.0024	P-2148
P-2149	24 inch	0.0020	10.06	8.28	1.78	0.0013	P-2149
P-2152	18 inch	0.0018	4.46	8.24	-3.78	0.0062	P-2152
P-2153	24 inch	0.0020	10.12	1.63	8.49	0.0001	P-2153
P-2154	24 inch	0.0163	28.88	3.76	25.12	0.0003	P-2154

Table 1
Existing Development / Existing Facilties

LABEL	SECTION_SIZE	CONSTRUCTED_ SLOPE_FT/FT	FULL_CAPACITY_ CFS	TOTAL_SYSTEM _FLOW_CFS	EXCESS_FULL_ CAPACITY_CFS	HYDRAULIC_ SLOPE_FT/FT	LABEL
P-2155	18 inch	0.2587	53.43	4.26	49.17	0.0016	P-2155
P-2156	18 inch	0.0018	4.45	3.63	0.82	0.0012	P-2156
P-2157	18 inch	0.0202	14.94	3.65	11.28	0.0012	P-2157
P-2160	24 inch	0.0083	20.65	8.40	12.25	0.0014	P-2160
P-2161	24 inch	0.0072	19.25	1.68	17.58	0.0001	P-2161
P-2174	8 x 5 ft	0.0147	738.66	973.12	-234.46	0.0255	P-2174
P-2175	15 inch	0.0873	19.09	4.62	14.47	0.0051	P-2175
P-2182	18 inch	0.0044	6.95	1.10	5.85	0.0001	P-2182
P-2183	18 inch	0.0022	4.96	1.10	3.86	0.0001	P-2183
P-2185	18 inch	0.0026	5.39	2.28	3.11	0.0005	P-2185
P-2186	18 inch	0.0026	5.36	5.05	0.31	0.0023	P-2186
P-2189	24 inch	0.0013	8.05	9.89	-1.85	0.0019	P-2189
P-2193	24 inch	0.0012	7.99	20.85	-12.86	0.0085	P-2193
P-2199	8 x 4 ft	0.0204	633.63	976.06	-342.43	0.0485	P-2199
P-2200	30 inch	0.0014	15.44	28.46	-13.02	0.0048	P-2200
P-2203	60 inch	0.0488	575.60	28.07	547.53	0.0001	P-2203
P-2204	8 x 8 ft	0.0422	2385.77	974.49	1411.29	0.0070	P-2204
P-2205	36 inch	0.0009	20.51	51.38	-30.87	0.0059	P-2205
P-2206	30 inch	0.0013	14.84	41.76	-26.92	0.0104	P-2206
P-2207	18 inch	0.0030	5.78	2.18	3.61	0.0004	P-2207
P-2208	24 inch	0.0016	9.11	25.62	-16.51	0.0128	P-2208
P-2209	30 inch	0.0013	14.73	36.22	-21.50	0.0078	P-2209
P-2210	24 inch	0.0017	9.27	30.67	-21.40	0.0184	P-2210
P-2211	24 inch	0.0014	8.58	21.31	-12.73	0.0089	P-2211
P-2212	18 inch	0.0030	5.73	2.27	3.46	0.0005	P-2212
P-2214	18 inch	0.0024	5.17	12.39	-7.22	0.0139	P-2214
P-2215	18 inch	0.0019	4.62	5.08	-0.47	0.0023	P-2215
P-2216	24 inch	0.0016	9.14	17.19	-8.06	0.0058	P-2216
P-2217	18 inch	0.0021	4.82	5.08	-0.26	0.0023	P-2217
P-2218	18 inch	0.0026	5.36	8.68	-3.33	0.0068	P-2218
P-2219	18 inch	0.0026	5.35	13.46	-8.11	0.0164	P-2219
P-2220	18 inch	0.0027	5.45	10.71	-5.26	0.0104	P-2220

Table 1
Existing Development / Existing Facilties

LABEL	SECTION_SIZE	CONSTRUCTED_ SLOPE_FT/FT	FULL_CAPACITY_ CFS	TOTAL_SYSTEM _FLOW_CFS	EXCESS_FULL_ CAPACITY_CFS	HYDRAULIC_ SLOPE_FT/FT	LABEL
P-2221	18 inch	0.0026	5.40	6.26	-0.86	0.0036	P-2221
P-2222	18 inch	0.0027	5.46	6.07	-0.61	0.0033	P-2222
P-2225	18 inch	0.0027	5.50	2.40	3.10	0.0005	P-2225
P-2226	18 inch	0.0024	5.14	5.40	-0.26	0.0026	P-2226
P-2228	18 inch	0.0028	5.51	2.12	3.40	0.0004	P-2228
P-2229	18 inch	0.0021	4.86	3.93	0.93	0.0014	P-2229
P-2231	18 inch	0.0023	5.05	13.49	-8.43	0.0165	P-2231
P-2239	8 x 8 ft	0.0006	278.54	1034.69	-756.15	0.0079	P-2239
P-2240	24 inch	0.0178	30.22	0.00	30.22	0.0000	P-2240
P-2242	24 inch	0.0112	23.89	0.00	23.89	0.0000	P-2242
P-2243	42 inch	0.0020	44.59	63.87	-19.28	0.0040	P-2243
P-2244	42 inch	0.0016	39.85	0.00	39.85	0.0000	P-2244
P-2245	42 inch	0.0013	35.78	0.00	35.78	0.0000	P-2245
P-2246	24 inch	0.0038	13.98	0.00	13.98	0.0000	P-2246
P-2256	8 x 8 ft	0.0006	293.43	1074.38	-780.95	0.0086	P-2256
P-2257	30 inch	0.0024	20.01	0.00	20.01	0.0000	P-2257
P-2258	24 inch	0.0022	10.73	0.00	10.73	0.0000	P-2258
P-2259	24 inch	0.0035	13.37	0.00	13.37	0.0000	P-2259
P-2260	8 x 8 ft	0.0021	530.43	1070.03	-539.60	0.0085	P-2260
P-2270	8 x 8 ft	0.0000	0.00	1068.70	-1068.70	0.0085	P-2270
P-2279	8 x 8 ft	0.0000	0.00	1066.96	-1066.96	0.0084	P-2279
P-2286	24 inch	0.0000	0.00	240.62	-240.62	1.1315	P-2286
P-2290	8 x 5 ft	0.0008	170.39	242.16	-71.77	0.0016	P-2290
P-2294	10 x 8 ft	0.0000	0.00	1232.27	-1232.27	0.0063	P-2294
P-2299	10 x 8 ft	0.0000	0.00	1229.86	-1229.86	0.0062	P-2299
P-2306	24 inch	0.0046	15.27	24.59	-9.31	0.0118	P-2306
P-2307	30 inch	0.0022	19.17	16.32	2.85	0.0016	P-2307
P-2309	48 inch	0.0014	53.38	112.52	-59.15	0.0061	P-2309
P-2345	10 x 8 ft	0.0000	0.00	1227.67	-1227.67	0.0062	P-2345
P-2351	10 x 8 ft	0.0201	2208.13	1460.11	748.02	0.0201	P-2351
P-2363	24 inch	0.0100	22.60	0.00	22.60	0.0100	P-2363
P-2365	24 inch	0.0201	32.10	0.00	32.10	0.0201	P-2365

Table 1
Existing Development / Existing Facilties

LABEL	SECTION_SIZE	CONSTRUCTED_ SLOPE_FT/FT	FULL_CAPACITY_ CFS	TOTAL_SYSTEM _FLOW_CFS	EXCESS_FULL_ CAPACITY_CFS	HYDRAULIC_ SLOPE_FT/FT	LABEL
P-2367	24 inch	0.0375	43.79	11.10	32.70	0.0024	P-2367
P-2368	60 inch	0.0019	113.41	216.42	-103.01	0.0069	P-2368
P-2370	60 inch	0.0011	85.05	153.43	-68.38	0.0035	P-2370
P-2371	60 inch	0.0028	138.22	216.42	-78.20	0.0069	P-2371
P-2374	60 inch	0.0019	114.95	227.52	-112.57	0.0076	P-2374
P-2375	60 inch	0.0016	104.47	203.92	-99.45	0.0061	P-2375
P-2377	60 inch	0.0012	91.78	160.52	-68.74	0.0038	P-2377
P-2384	60 inch	0.0016	102.60	227.52	-124.92	0.0076	P-2384
P-2395	18 inch	0.0705	27.89	9.37	18.53	0.0080	P-2395
P-2396	18 inch	0.0025	5.21	12.50	-7.29	0.0142	P-2396
P-2404	24 inch	0.0016	9.03	7.09	1.94	0.0010	P-2404
P-2405	24 inch	0.0031	12.59	7.09	5.50	0.0010	P-2405
P-2407	18 inch	0.0097	10.33	0.00	10.33	0.0000	P-2407
P-2410	18 inch	0.0070	8.81	3.13	5.68	0.0009	P-2410
P-2411	18 inch	0.0022	4.90	3.13	1.77	0.0009	P-2411
P-2462	18 inch	0.0066	8.52	0.00	8.52	0.0000	P-2462
P-2463	18 inch	0.0017	4.37	0.00	4.37	0.0000	P-2463
P-2464	18 inch	0.0042	6.82	0.00	6.82	0.0000	P-2464

Table 2
Existing Facilities Under Proposed Development

LABEL	SECTION SIZE	LENGTH FT	CONSTR SLOPE FT/FT	FULL_CAP CFS	TOTAL_SYSTEM FLOW CFS	EXCESS_FULL CAPACITY CFS	EXCEEDS CAPACITY	HYDRAULIC SLOPE FT/FT	LABEL
P-1011	8 x 8 ft	1.0	0.0000	0	1138	-1138	TRUE	0.0096	P-1011
P-1103	10 x 5 ft	175.0	0.0011	265	520	-255	TRUE	0.0042	P-1103
P-1110	10 x 5 ft	104.0	0.0000	0	522	-522	TRUE	0.0042	P-1110
P-1117	10 x 5 ft	265.6	0.0003	148	487	-339	TRUE	0.0037	P-1117
P-1123	10 x 5 ft	401.0	0.0005	179	507	-328	TRUE	0.0040	P-1123
P-1124	18 inch	40.7	0.0098	10	11	0	TRUE	0.0102	P-1124
P-1125	10 x 5 ft	84.8	0.0022	380	521	-141	TRUE	0.0042	P-1125
P-1126	8 x 5 ft	144.2	0.0020	273	367	-94	TRUE	0.0036	P-1126
P-1133	10 x 5 ft	71.0	0.0032	457	528	-71	TRUE	0.0043	P-1133
P-1134	10 x 5 ft	383.0	0.0006	197	531	-334	TRUE	0.0044	P-1134
P-1138	8 x 5 ft	70.0	0.0080	545	336	209	FALSE	0.0030	P-1138
P-1139	8 x 5 ft	742.0	0.0008	167	335	-168	TRUE	0.0030	P-1139
P-1141	8 x 5 ft	44.0	0.0025	305	331	-26	TRUE	0.0030	P-1141
P-1144	8 x 5 ft	53.0	0.0021	278	331	-53	TRUE	0.0029	P-1144
P-1145	8 x 5 ft	56.0	0.0020	270	330	-60	TRUE	0.0029	P-1145
P-1249	10 x 5 ft	304.0	0.0002	103	490	-387	TRUE	0.0037	P-1249
P-1252	120 inch	1.0	0.0000	0	520	-520	TRUE	0.0013	P-1252
P-2127	8 x 5 ft	257.2	0.0011	205	366	-161	TRUE	0.0036	P-2127
P-2131	8 x 5 ft	35.4	0.0534	1408	489	919	FALSE	0.0064	P-2131
P-2133	8 x 5 ft	18.4	0.1027	1952	489	1464	FALSE	0.0064	P-2133
P-2140	10 x 5 ft	451.9	0.0004	160	528	-368	TRUE	0.0043	P-2140
P-2147	10 x 5 ft	328.1	0.0005	183	529	-346	TRUE	0.0043	P-2147
P-2199	8 x 4 ft	224.9	0.0204	634	1017	-383	TRUE	0.0527	P-2199
P-2204	8 x 8 ft	9.5	0.0422	2386	1015	1370	FALSE	0.1681	P-2204
P-2239	8 x 8 ft	347.6	0.0006	279	1105	-827	TRUE	0.0091	P-2239
P-2256	8 x 8 ft	313.2	0.0006	293	1146	-853	TRUE	0.0097	P-2256
P-2260	8 x 8 ft	95.9	0.0021	530	1143	-612	TRUE	0.0097	P-2260
P-2270	8 x 8 ft	126.1	0.0000	0	1141	-1141	TRUE	0.0097	P-2270
P-2279	8 x 8 ft	151.3	0.0000	0	1140	-1140	TRUE	0.0096	P-2279
P-2290	8 x 5 ft	115.1	0.0008	170	242	-72	TRUE	0.0016	P-2290
P-2294	10 x 8 ft	139.5	0.0000	0	1306	-1306	TRUE	0.0070	P-2294
P-2299	10 x 8 ft	127.7	0.0000	0	1304	-1304	TRUE	0.0070	P-2299
P-2307	30 inch	494.5	0.0022	19	16	3	FALSE	0.0016	P-2307
P-2309	48 inch	72.4	0.0014	53	113	-59	TRUE	0.0061	P-2309
P-2345	10 x 8 ft	486.7	0.0000	0	1302	-1302	TRUE	0.0070	P-2345

Table 2
Existing Facilities Under Proposed Development

LABEL	SECTION SIZE	LENGTH FT	CONSTR SLOPE FT/FT	FULL_CAP CFS	TOTAL_SYSTEM FLOW CFS	EXCESS_FULL CAPACITY CFS	EXCEEDS CAPACITY	HYDRAULIC SLOPE FT/FT	LABEL
P-2351	10 x 8 ft	18.4	0.0201	2208	1313	895	FALSE	0.0071	P-2351
P-2368	60 inch	116.0	0.0019	113	181	-68	TRUE	0.0048	P-2368
P-2370	60 inch	309.4	0.0011	85	153	-68	TRUE	0.0035	P-2370
P-2371	60 inch	28.4	0.0028	138	181	-43	TRUE	0.0048	P-2371
P-2374	60 inch	313.1	0.0019	115	192	-77	TRUE	0.0054	P-2374
P-2375	60 inch	323.1	0.0016	104	169	-64	TRUE	0.0042	P-2375
P-2377	60 inch	370.4	0.0012	92	169	-77	TRUE	0.0042	P-2377
P-2384	60 inch	277.0	0.0016	103	192	-90	TRUE	0.0054	P-2384

Table 3
Existing Facilities Under Existing Development

LABEL	SECTION SIZE	CONSTRD SLOPE FT/FT	FULL CAPACITY CFS	TOTAL_SYSTEM FLOW CFS	EXCESS_FULL CAP CFS	EXCEEDS CAPACITY?	HYDRAULIC SLOPE FT/FT	LABEL
P-1011	8 x 8 ft	0.0000	0	1065	-1065	TRUE	0.0084	P-1011
P-1103	10 x 5 ft	0.0011	265	519	-254	TRUE	0.0042	P-1103
P-1110	10 x 5 ft	0.0000	0	519	-519	TRUE	0.0042	P-1110
P-1117	10 x 5 ft	0.0003	148	487	-339	TRUE	0.0037	P-1117
P-1123	10 x 5 ft	0.0005	179	507	-328	TRUE	0.0040	P-1123
P-1124	18 inch	0.0098	10	8	2	FALSE	0.0062	P-1124
P-1125	10 x 5 ft	0.0022	380	520	-139	TRUE	0.0042	P-1125
P-1126	8 x 5 ft	0.0020	273	364	-91	TRUE	0.0036	P-1126
P-1133	10 x 5 ft	0.0032	457	529	-71	TRUE	0.0043	P-1133
P-1134	10 x 5 ft	0.0006	197	531	-335	TRUE	0.0044	P-1134
P-1138	8 x 5 ft	0.0080	545	336	209	FALSE	0.0030	P-1138
P-1139	8 x 5 ft	0.0008	167	335	-168	TRUE	0.0030	P-1139
P-1141	8 x 5 ft	0.0025	305	331	-26	TRUE	0.0030	P-1141
P-1144	8 x 5 ft	0.0021	278	331	-53	TRUE	0.0029	P-1144
P-1145	8 x 5 ft	0.0020	270	330	-60	TRUE	0.0029	P-1145
P-1249	10 x 5 ft	0.0002	103	54	-387	TRUE	0.0037	P-1249
P-1252	120 inch	0.0000	0	519	-519	TRUE	0.0006	P-1252
P-2127	8 x 5 ft	0.0011	205	363	-158	TRUE	0.0035	P-2127
P-2131	8 x 5 ft	0.0534	1408	449	958	FALSE	0.0516	P-2131
P-2133	8 x 5 ft	0.1027	1952	449	1503	FALSE	0.0795	P-2133
P-2140	10 x 5 ft	0.0004	160	529	-368	TRUE	0.0043	P-2140
P-2147	10 x 5 ft	0.0005	183	530	-347	TRUE	0.0043	P-2147
P-2174	8 x 5 ft	0.0147	739	973	-234	TRUE	0.0255	P-2174
P-2199	8 x 4 ft	0.0204	634	976	-342	TRUE	0.0485	P-2199
P-2204	8 x 8 ft	0.0422	2386	974	1411	FALSE	0.0070	P-2204
P-2239	8 x 8 ft	0.0006	279	1035	-756	TRUE	0.0079	P-2239
P-2256	8 x 8 ft	0.0006	293	1074	-781	TRUE	0.0086	P-2256
P-2260	8 x 8 ft	0.0021	530	1070	-540	TRUE	0.0085	P-2260
P-2270	8 x 8 ft	0.0000	0	1069	-1069	TRUE	0.0085	P-2270
P-2279	8 x 8 ft	0.0000	0	1067	-1067	TRUE	0.0084	P-2279
P-2290	8 x 5 ft	0.0008	170	242	-72	TRUE	0.0016	P-2290
P-2294	10 x 8 ft	0.0000	0	1232	-1232	TRUE	0.0063	P-2294
P-2299	10 x 8 ft	0.0000	0	1230	-1230	TRUE	0.0062	P-2299

Table 3
Existing Facilities Under Existing Development

LABEL	SECTION SIZE	CONSTRD SLOPE FT/FT	FULL CAPACITY CFS	TOTAL_SYSTEM FLOW CFS	EXCESS_FULL CAP CFS	EXCEEDS CAPACITY?	HYDRAULIC SLOPE FT/FT	LABEL
P-2307	30 inch	0.0022	19	16	3	FALSE	0.0016	P-2307
P-2309	48 inch	0.0014	53	113	-59	TRUE	0.0061	P-2309
P-2345	10 x 8 ft	0.0000	0	1228	-1228	TRUE	0.0062	P-2345
P-2351	10 x 8 ft	0.0201	2208	1460	748	FALSE	0.0201	P-2351
P-2368	60 inch	0.0019	113	216	-103	TRUE	0.0069	P-2368
P-2370	60 inch	0.0011	85	153	-68	TRUE	0.0035	P-2370
P-2371	60 inch	0.0028	138	216	-78	TRUE	0.0069	P-2371
P-2374	60 inch	0.0019	115	228	-113	TRUE	0.0076	P-2374
P-2375	60 inch	0.0016	104	204	-99	TRUE	0.0061	P-2375
P-2377	60 inch	0.0012	92	161	-69	TRUE	0.0038	P-2377
P-2384	60 inch	0.0016	103	228	-125	TRUE	0.0076	P-2384

TABLE 4
PROPOSED PIPE SIZES

LABEL	SECTION SIZE	FULL CAP CFS	TOTAL CFS	EXCESS_FULL CAPACITY CFS	UP GROUND ELV FT	DS GROUND ELEV FT	HYDRAULIC SLOPE FT/FT	HGL IN FT	HGL OUT FT	LABEL	TOTAL CFS	DESIGN HGL FT/FT	RECOMMENDED SIZE
P-2351	10 x 8 ft	2208	1313	895	88.9	83	0.0071	84.61089	84.48	P-2351	1313	0.2597	10 x 8
P-2377	60 inch	92	169	-77	84.9	84.2	0.0042	85.75182	84.2	P-2377	169	0.0015	72
P-1145	8 x 5 ft	270	330	-60	91	92	0.0029	91.37674	91.21239	P-1145	330	0.0020	8 x 6
P-2128	30 inch	30	12	19	90.9	91.2	0.0008	91.52224	91.2	P-2128	12	0.0020	30
P-2200	30 inch	15	31	-16	84.3	90.8	0.0057	85.83565	84.30232	P-2200	31	0.0020	36
P-1218	12 inch	14	0	14	90.8	90.8	0.0000	90.8	90.8	P-1218	0	0.0020	12
P-1141	8 x 5 ft	305	331	-26	91	91	0.0030	91.12985	91	P-1141	331	0.0020	8 x 6
P-2139	12 inch	4	2	2	90.7	90.7	0.0046	90.80049	90.7	P-2139	2	0.0020	12
P-1119	24 inch	40	27	14	87.6	91	0.0141	91.22006	91	P-1119	27	0.0020	36
P-1126	8 x 5 ft	273	367	-94	91	91	0.0036	91.5233	91	P-1126	367	0.0020	10 x 5
P-2259	24 inch	13	0	13	86.39	86.8	0.0000	86.8	86.8	P-2259	0	0.0020	24
P-2134	12 inch	0	11	-11	91.2	91.2	0.0964	92.71388	91.2	P-2134	11	0.0020	24
P-1235	8 x 5 ft	581	1014	-433	98	94	0.0277	93.4595	93.1547	P-1235	1014	0.2945	8 x 5
P-1110	10 x 5 ft	0	522	-522	90.13	90.7	0.0042	91.13904	90.7	P-1110	522	0.0020	10 x 7
P-2291	24 inch	11	8	4	86.35	86.35	0.0011	86.39309	86.35	P-2291	8	0.0020	24
P-2368	60 inch	113	181	-68	85.5	85.6	0.0048	86.16079	85.6	P-2368	181	0.0020	72
P-1121	24 inch	21	27	-6	87.6	91	0.0141	91.35476	91	P-1121	27	0.0020	36
P-2379	24 inch	14	0	14	82.27	84.2	0.0000	84.2	84.2	P-2379	0	0.0020	24
P-2119	18 inch	26	2	23	90.13	90.13	0.0005	90.14547	90.13	P-2119	2	0.0020	18
P-2178	24 inch	9	0	9	90.8	90.8	0.0000	90.8	90.8	P-2178	0	0.0020	24
P-2462	18 inch	9	0	9	87.21	87.5	0.0000	84.3	84.3	P-2462	0	0.0020	18
P-1143	12 inch	24	0	24	91	91	0.0000	91	91	P-1143	0	0.0020	24
P-2374	60 inch	115	192	-77	85.6	85.7	0.0054	87.40484	85.7	P-2374	192	0.0020	78
P-2239	8 x 8 ft	279	1105	-827	84.3	90	0.0091	93.14986	90	P-2239	1105	0.0020	12 x 10
P-1117	10 x 5 ft	148	487	-339	91	90.45	0.0037	91.42534	90.45	P-1117	487	0.0017	10 x 7
P-1252	120 inch	0	520	-520	90	89.5	0.0013	89.50132	89.5	P-1252	520	0.4050	120
P-2370	60 inch	85	153	-68	86.2	84.9	0.0035	85.97405	84.9	P-2370	153	0.0034	60
P-2396	18 inch	5	12	-7	84.8	85.5	0.0142	87.34461	85.5	P-2396	12	0.0020	30
P-2136	12 inch	5	11	-6	90.7	90.7	0.1000	92.01999	90.7	P-2136	11	0.0020	30
P-2147	10 x 5 ft	183	529	-346	90.5	91.46	0.0043	92.8827	91.46	P-2147	529	0.0020	10 x 7
P-1237	12 inch	91	0	91	90.8	94	0.0000	93.1547	93.1547	P-1237	0	0.0020	12
P-2158	24 inch	45	0	45	90.8	98	0.0000	93.4595	93.4595	P-2158	0	0.0020	24
P-2245	42 inch	36	0	36	87.8	87	0.0000	87	87	P-2245	0	0.0020	42
P-2307	30 inch	19	16	3	86.35	86.2	0.0016	86.75687	85.97405	P-2307	16	0.0002	42
P-1138	8 x 5 ft	545	336	209	92	91	0.0030	91.21239	91	P-1138	336	0.0116	8 x 5
P-1123	10 x 5 ft	179	507	-328	90.45	90	0.0040	91.45571	89.85832	P-1123	507	0.0009	10 x 9
P-2256	8 x 8 ft	293	1146	-853	90	90	0.0097	93.05108	90	P-2256	1146	0.0020	12 x 10
P-1134	10 x 5 ft	197	531	-334	90.5	90.5	0.0044	92.17124	90.5	P-1134	531	0.0020	10 x 7
P-2405	24 inch	13	8	5	84.23	84.3	0.0013	84.34087	84.3	P-2405	8	0.0020	24
P-2142	24 inch	5	0	5	92	90.7	0.0000	90.7	90.7	P-2142	0	0.0059	24
P-2464	18 inch	7	0	7	87.21	87.5	0.0000	84.3	84.3	P-2464	0	0.0020	18
P-2204	8 x 8 ft	2386	1015	1370	90	84.3	0.1681	85.34068	83.74756	P-2204	1015	0.4872	8 x 8
P-1232	8 x 5 ft	436	1015	-578	91.2	98	0.0277	94.54077	93.4595	P-1232	1015	0.0020	12 x 9

TABLE 4
PROPOSED PIPE SIZES

LABEL	SECTION SIZE	FULL CAP CFS	TOTAL CFS	EXCESS_FULL CAPACITY CFS	UP GROUND ELV FT	DS GROUND ELEV FT	HYDRAULIC SLOPE FT/FT	HGL IN FT	HGL OUT FT	LABEL	TOTAL CFS	DESIGN HGL FT/FT	RECOMMENDED SIZE
P-2376	24 inch	21	0	21	82.32	84.2	0.0000	84.2	84.2	P-2376	0	0.0020	24
P-2175	15 inch	19	5	14	90.8	98	0.0051	91.11095	90.80983	P-2175	5	0.0020	18
P-2127	8 x 5 ft	205	366	-161	91	91.3	0.0036	92.22661	91.3	P-2127	366	0.0020	8 x 7
P-1140	12 inch	65	0	65	92	91	0.0000	91	91	P-1140	0	0.8100	12
P-2411	18 inch	5	3	2	84.4	84.8	0.0009	85.02084	84.8	P-2411	3	0.0020	18
P-2138	24 inch	12	2	9	90.7	91	0.0001	90.72094	90.70421	P-2138	2	0.0020	24
P-1103	10 x 5 ft	265	520	-255	89.5	90.13	0.0042	90.86374	90.13	P-1103	520	0.0020	10 x 7
P-2309	48 inch	53	113	-59	85.5	86.2	0.0061	86.41848	85.97405	P-2309	113	0.0020	60
P-1125	10 x 5 ft	380	521	-141	90	90	0.0042	89.85832	89.50132	P-1125	521	0.0020	10 x 7
P-2258	24 inch	11	0	11	86.39	86.8	0.0000	86.8	86.8	P-2258	0	0.0020	24
P-2243	42 inch	45	64	-19	87	90	0.0040	92.40082	90	P-2243	64	0.0020	48
P-2133	8 x 5 ft	1952	489	1464	91.2	91.2	0.0064	91.31842	91.2	P-2133	489	0.0020	8 x 8
P-2407	18 inch	10	7	3	84.23	84.3	0.0046	84.5166	84.3	P-2407	7	0.0020	24
P-1011	8 x 8 ft	0	1138	-1138	89	89	0.0096	89.00961	89	P-1011	1138	0.0020	12 x 10
P-1249	10 x 5 ft	103	490	-387	91.6	91	0.0037	92.13259	91	P-1249	490	0.0016	10 x 7
P-1234	12 inch	96	0	96	98	98	0.0000	93.4595	93.4595	P-1234	0	0.0020	12
P-2290	8 x 5 ft	170	242	-72	89	89	0.0016	89.18178	89	P-2290	242	0.0020	8 x 5
P-2367	24 inch	44	11	33	82.69	85.6	0.0024	85.64496	85.6	P-2367	11	0.0020	24
P-2140	10 x 5 ft	160	528	-368	91.46	91.2	0.0043	93.15278	91.2	P-2140	528	0.0005	12 x 10
P-2118	18 inch	12	3	9	90.13	90.13	0.0008	90.17228	90.13	P-2118	3	0.0020	18
P-1146	12 inch	11	0	11	91	91	0.0000	91	91	P-1146	0	0.0020	12
P-2260	8 x 8 ft	530	1143	-612	90	90	0.0097	90.928	90	P-2260	1143	0.0020	12 x 10
P-2199	8 x 4 ft	634	1017	-383	90.8	90	0.0527	97.18504	85.34068	P-2199	1017	0.0029	10 x 10
P-2286	24 inch	0	241	-241	89	89	1.1315	97.61116	89	P-2286	241	0.0020	84
P-1116	24 inch	10	20	-10	89.61	90.45	0.0081	90.80968	90.45	P-1116	20	0.0020	36
P-2384	60 inch	103	192	-90	85.7	83	0.0054	85.98842	84.48	P-2384	192	0.0079	60
P-2395	18 inch	28	9	19	84.8	84.8	0.0080	84.90828	84.8	P-2395	9	0.0020	24
P-2270	8 x 8 ft	0	1141	-1141	90	89	0.0097	90.2182	89	P-2270	1141	0.0064	10 x 8
P-2135	30 inch	20	12	8	90.7	90.9	0.0008	91.00222	90.9	P-2135	12	0.0020	30
P-2146	24 inch	5	7	-2	90.7	90.7	0.0009	90.75681	90.7	P-2146	7	0.0020	24
P-2131	8 x 5 ft	1408	489	919	91.3	91.2	0.0064	91.42797	91.2	P-2131	489	0.0023	8 x 8
P-1236	8 x 5 ft	270	1014	-744	94	94	0.0277	93.1547	91.7418	P-1236	1014	0.0020	12 x 10
P-1111	24 inch	21	8	13	92	92	0.0013	91.25091	91.21239	P-1111	8	0.0020	24
P-2157	18 inch	15	4	11	91.05	90.5	0.0012	90.52154	90.5	P-2157	4	0.0250	18
P-2244	42 inch	40	0	40	87	87	0.0000	87	87	P-2244	0	0.0020	42
P-1137	8 x 5 ft	1927	366	1561	91	91	0.0036	91.0036	91	P-1137	366	0.0020	8 x 7
P-1122	18 inch	9	15	-6	89.61	90	0.0208	90.96426	89.85832	P-1122	15	0.0020	30
P-2240	24 inch	30	0	30	86.36	86.4	0.0000	86.4	86.4	P-2240	0	0.0020	24
P-1133	10 x 5 ft	457	528	-71	90.7	90.5	0.0043	90.80641	90.5	P-1133	528	0.0023	10 x 7
P-2404	24 inch	9	15	-6	84.3	84.9	0.0045	86.25013	84.9	P-2404	15	0.0020	30
P-2179	8 x 4 ft	4345	0	4345	90.8	90.8	0.0000	90.8	90.8	P-2179	0	0.0020	8 x 4
P-2463	18 inch	4	0	4	87.5	84.3	0.0000	84.3	84.3	P-2463	0	0.0046	18
P-2203	60 inch	576	31	545	90.8	84.3	0.0001	84.30232	84.3	P-2203	31	0.3215	60
P-1144	8 x 5 ft	278	331	-53	91	91	0.0029	91.15601	91	P-1144	331	0.0020	8 x 6
P-2288	24 inch	13	9	4	86.35	86.35	0.0015	86.39772	86.35	P-2288	9	0.0020	24
P-2375	60 inch	104	169	-64	84.2	85.5	0.0042	86.85372	85.5	P-2375	169	0.0020	72
P-1118	24 inch	24	11	13	89.51	90.45	0.0026	90.53873	90.45	P-1118	11	0.0020	30

TABLE 4
PROPOSED PIPE SIZES

LABEL	SECTION SIZE	FULL CAP CFS	TOTAL CFS	EXCESS_FULL CAPACITY CFS	UP GROUND ELV FT	DS GROUND ELEV FT	HYDRAULIC SLOPE FT/FT	HGL IN FT	HGL OUT FT	LABEL	TOTAL CFS	DESIGN HGL FT/FT	RECOMMENDED SIZE
P-2299	10 x 8 ft	0	1304	-1304	89	89	0.0070	88.90921	88.01398	P-2299	1304	0.0020	12 x 12
P-2174	8 x 5 ft	739	1014	-275	94	90.8	0.0277	91.7418	90.8	P-2174	1014	0.0762	8 x 5
P-2371	60 inch	138	181	-43	85.5	85.5	0.0048	85.63728	85.5	P-2371	181	0.0020	72
P-2126	30 inch	14	126	-111	90.8	91.3	0.0936	92.79875	91.3	P-2126	126	0.0020	66
P-2410	18 inch	9	3	6	84.48	84.4	0.0009	84.41264	84.4	P-2410	3	0.0046	18
P-2137	30 inch	11	2	9	91	90.7	0.0000	90.70421	90.7	P-2137	2	0.0018	30
P-2148	18 inch	44	5	39	90.4	90.4	0.0024	90.41886	90.4	P-2148	5	0.0020	18
P-2345	10 x 8 ft	0	1302	-1302	89	88.9	0.0070	88.01398	84.61089	P-2345	1302	0.0002	3 ~ 12 x 12
P-1238	12 inch	87	5	82	98	90.8	0.0098	90.80983	90.8	P-1238	5	5.8320	12
P-1113	24 inch	25	0	25	88.38	92	0.0000	91	91	P-1113	0	0.0020	24
P-2294	10 x 8 ft	0	1306	-1306	89	89	0.0070	89.89035	88.90921	P-2294	1306	0.0020	12 x 12
P-2159	24 inch	21	0	21	90.8	90.8	0.0000	90.8	90.8	P-2159	0	0.0020	24
P-2246	24 inch	14	0	14	86.4	87.8	0.0000	87	87	P-2246	0	0.0020	24
P-1139	8 x 5 ft	167	335	-168	91	91	0.0030	93.24253	91	P-1139	335	0.0020	8 x 6
P-1124	18 inch	10	11	0	89.61	90	0.0102	90.27283	89.85832	P-1124	11	0.0020	30
P-2257	30 inch	20	0	20	86.8	87.8	0.0000	87	87	P-2257	0	0.0020	30
P-2242	24 inch	24	0	24	86.36	86.4	0.0000	86.4	86.4	P-2242	0	0.0020	24
P-1135	12 inch	82	5	77	90.4	90.5	0.0124	90.51241	90.5	P-1135	5	0.0020	24
P-2143	24 inch	22	0	22	92	92	0.0000	90.7	90.7	P-2143	0	0.0020	24
P-2205	36 inch	21	59	-39	85.1	84.3	0.0079	86.12768	84.3	P-2205	59	0.0028	48
P-2279	8 x 8 ft	0	1140	-1140	89	89	0.0096	90.45851	89	P-2279	1140	0.0020	12 x 10
P-2154	24 inch	29	4	25	89	91.46	0.0003	91.46509	91.46	P-2154	4	0.0020	24