I-40 UNSER TO SIXTH STREET DRAINAGE REPORT IR-040-(88)155

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Prepared for:

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1.0 PURPOSE

The purpose of this report is to identify the drainage infrastructure changes required by the planned widening of Interstate 40 from Unser Boulevard east to Sixth Street.

2.0 PROJECT LOCATION AND DESCRIPTION

The planned widening of I-40 will take place in several phases and over many years. Between Unser and Coors Rd. one additional lane is proposed for westbound traffic. The Coors interchange will be completely reconstructed. From Coors to Sixth Street two additional lanes will generally be constructed in each direction. Various ramps and auxiliary lanes will also be added between Rio Grande Boulevard and Sixth Street.

When I-40 was originally constructed much of the surrounding area was rural or semi-rural and the affect of the roadway on increased runoff was of minimal concern. Since that time substantial development of the lands adjacent to the roadway has occurred. Drainage and flooding has become a significant problem. The expansion of the roadway to ten lanes would compound the problem if runoff is allowed to flow directly to the surrounding land as it does today. Several underpasses will remain essentially unaffected by the proposed changes to the elevated freeway. They are at Gabaldon Road, Rio Grande Blvd., 12th Street, and 6th Street. Except for Gabaldon Rd. the underpasses are drainaed by local City of Albuquerque catch basins and storm drains. Gabaldon Rd. drainage is overland flow. The local drainage systems will remain unchanged with the possible exception of 6th St. This will be discussed in more detail in Section 4.4.

The first phase is the replacement and widening of the Rio Grande bridge and 1000 feet of the bridge approaches in each direction. In addition to a drainage plan for the entire length of the project, the improvements needed for the first phase by itself are addressed in this report.

3.0 HYDROLOGY

3.1 Criteria: Several hydrologic criteria are required by the New Mexico State Highway and Transportation Department:

1) All culverts and bridges on the interstate system shall accommodate floods at least as great as that for a 50-year frequency.

2) Roadway inlets for all systems should be spaced so that not more than the shoulder would be covered during a 10-year frequency storm, and a 50-year frequency storm is limited to the shoulder plus 2 driving lanes. A 50-year storm shall also be used for under-passes or other depressed areas where ponded water can be removed only through storm drain systems. Detention pond volumes are designed for the 50 year storm.

3) The 100-year frequency, 6 hour storm runoff should not exceed the limits of the highway right-of-way.

Accordingly, the 10-, 50- and 100-year frequency storm runoffs were determined, and the drainage facilities were analyzed using the appropriate criteria.

For purposes of the inlet design, the 10-year storm criteria governed. A cross slope of 0.0200 was used for the shoulders except in a few locations where the longitudinal roadway slope was very minimal and 0.0300 was used. By utilizing a slope steeper than 0.0150 for all shoulder cross slopes, a substantial reduction in the number of required inlets was realized. For example, the section between Gabaldon and Rio Grande Blvd. required 20 inlets rather than the 43 that would have been needed at the 0.0150 cross slope.

3.2 Rational Method: The Rational Method was utilized for this report to determine peak flow rates. Section 1.3 of the Highway Department Drainage Manual recommends its use for small urban and developed areas for the design of storm drains. The Rational Method estimates runoff for small urban (less than 640 acres) and developed areas. The Rational Equation relates intensity, a runoff coefficient and drainage area to produce a peak runoff discharge. The design storm provides the basis for a calculated rainfall intensity while land use provides the basis for the runoff coefficient.

The Rational Equation is:

$$Q = CIA$$

where: Q = runoff in cubic feet per second (cfs)

C = runoff coefficient, representing the ratio of runoff to rainfall

I = rainfall intensity, inches per hour

A = drainage area, acres

3.3 Rainfall: The 6-hour storm was selected as appropriate for the 10-, 50- and 100-year events. The precipitation for these storms is presented in the NOAA Precipitation-Frequency Atlas of the Western United States Volume IV-New Mexico. The following rainfalls were found:

10-year	1.47 inches (west of the Rio Grande)
10-year	1.57 inches (east of the Rio Grande)
50-year	1.98 inches (west of the Rio Grande)
50-year	2.12 inches (east of the Rio Grande)
100-year	2.20 inches (west of the Rio Grande)
100-year	2.35 inches (east of the Rio Grande)

3.4 Runoff Coefficient: The runoff coefficient "C" varies with land use and level of development. A greater C value indicates the land has a higher percent of imperviousness and will produce higher runoff rates. Two differing C values were used in this analysis. Basins encompassing only proposed driving lanes are almost totally impervious and therefore a C value of 0.90 was used. Basins that extend from back of curb or edge of pavement to the right-of-way line are generally more pervious and have been assigned a C value of 0.50.

3.5 Flood Routing: The U.S.D.A. Agricultural Research Service's computer program "HYMO" was used to hydrologically route the flows produced from the Rational Method. The HYMO program was adjusted to closely match the Rational Method peak flow rates, then routed downstream. By this manner, varying time to peaks, pipe routing distances and reservoir routing (attenuation) could be accounted for. The program, which has been modified by the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) for use in the Albuquerque area, utilizes

initial abstraction/uniform infiltration losses for computing runoff. It has been widely used in the Albuquerque area where results have been verified by gauged runoff events. The computer generated summaries are included in the Appendix.

4.0 BASIN BOUNDARIES

Basins are presented on Plates 1 through 5 located at the end of this report. In general terms the project can be divided into four sub-areas as follows: Unser Blvd. to Coors Rd., Coors to the Rio Grande, the Rio Grande to Rio Grande Blvd. and Rio Grande Blvd. to Sixth Street.

4.1 Unser Blvd. to Coors Rd.: The area from Unser to Coors does not have curb and gutter and all runoff sheet-flows off the pavement. The additional lane proposed for this area will not change the flow pattern. The City of Albuquerque has proposed a drainage channel for the north side of I-40 from Unser to Coors that will connect to the City's West Bluff outfall project. Flows that now cross under I-40 in culverts would be diverted by this channel. Runoff from the westbound lanes, including the additional lane, would also flow to the channel. If the City's system is unable to accept these flows they could continue to follow the existing flow path and cross under I-40.

The City had originally planned to construct the channel within the next few years, well within the time frame for the construction of the additional lane. Preliminary plans have been completed. Expected funding for the project has not materialized and actual construction is delayed to an indefinite date. The additional lane in this area is not a high priority and its construction date is also indefinite. The City places a fairly high priority on this drainage project, so it is still likely that the channel would be constructed before the additional lane.

The City of Albuquerque must construct an underground box culvert outside of the NMSHTD right-of-way in the northwest quadrant of the Coors/I-40 interchange prior to building the channel discussed above. The box culvert will connect the channel with the West Bluff outfall. Funding is again a problem for the City and they have inquired as to the availability of funds for the project from the NMSHTD. The benefit to the NMSHTD would be the conveyance of runoff that now crosses under I-40 from the westbound lanes between Unser and Coors.

4.2 Coors Rd. to the Rio Grande: From Coors to the Rio Grande runoff from the eastbound lanes sheet-flows to a V-ditch that is south of and parallel to the shoulder. Adjacent to the V-ditch is a retaining wall. The westbound lanes have a series of drop inlets along the outside edge of the shoulder that collect runoff and direct it to the south side V-ditch via culvert pipes that cross under the roadway. Widening the roadway will require relocating and enclosing the V-ditch on the south side and extending the culverts under the new lanes of the roadway and relocating the drop inlets on the north side. The retaining wall on the south side would also have to be relocated. In order to limit the height of the new wall and place it as far north as possible, the V-ditch will be replaced by a 60-inch RCP located under the shoulder of the roadway.

According to the "West Bluff Drainage Plan", January, 1987 the peak developed flow to the V-ditch will be 122 cfs. A recent report by Bohannan-Huston, Inc., "Ladera Dam #15 Hydrology and Sediment Issues", June, 1991, has reevaluated the developed flow using the latest proposed revisions (3/91) to the City of Albuquerque Development Process Manual. The developed 100-year flow from this report is 114 cfs. The City, due to potential diversions that might occur upstream, has requested the design flow for the V-ditch be 240 cfs. In cooperation with the City, and in exchange for the use of City facilities (discussed below), the NMSHTD has agreed to upsize the pipe to 60-inch to accommodate the additional flow. The pipe will discharge

into the West Bluff outfall structure downstream of the enclosed concrete box. The V-ditch currently discharges through a 36-inch pipe and is overland flow to the West Bluff structure.

The first phase of work will include the eastern most 1000 feet of this section. Only those pipes, drop inlets and segment of the V-ditch affected by the work will have to be constructed. A temporary inlet structure in the V-ditch is needed to direct the runoff into the 60-inch pipe. A temporary jog in the pipe is required to get the pipe in its permanent location south of the existing V-ditch. When the total project is completed the entire V-ditch will be replaced by the pipe eliminating the need for the inlet structure and jog.

4.3 The Rio Grande to Rio Grande Blvd.: The Rio Grande bridge currently drains directly to the river. In order to provide for future environmental controls on runoff, all drainage from the bridge will be collected and discharged with the other roadway runoff east of the bridge.

The initial phase of the I-40 widening project which includes the bridge plus 1000 feet on both sides of the bridge is currently in the construction phase. The design did not include any drainage facilities on the bridge, resulting in the 10-year storm exceeding the 12 foot (shoulder only) spread criteria by 2.1 feet at the east end of the bridge. For the design currently proposed, which met an 18 foot spread (shoulder plus one half of a driving lane), the 12 foot criteria continues to be exceeded for approximately 920 feet east of the bridge.

East of the bridge to Rio Grande Blvd., high points on the elevated roadway are located at the bridge, Gabaldon Rd. and Rio Grande Blvd. The surrounding land is generally flat throughout this reach, however; a drainage barrier is effected by the Alameda Drain on the west side of Rio Grande Blvd. for both surface flows and potential underground storm drains. We, therefore, have used Rio Grande Blvd. as a divider between drainage areas east of the river.

While the Alameda Drain appears to be a natural outfall for runoff from I-40, studies done by the City of Albuquerque show the drain to already be taxed beyond its capacity. The Drain is presently under the jurisdiction of the Middle Rio Grande Conservancy District (MRGCD).

In its present state, all runoff from the roadway flows to the surrounding land either directly or through drop inlets and storm drains. The storm drain inverts are set at or above the existing ground elevations to assure positive drainage out of the drains. There are also culverts that act merely as equalizers to send runoff to either side of the roadway and allow local drainage to pass under the roadway from either side to the other. These culverts are basically flat so that water can flow in either direction as conditions dictate. There are additional culverts that carry irrigation water in established irrigation ditches. Superelevation of the roadway just west of Rio Grande Blvd. directs runoff to the median where slotted drains collect the flow and convey it to the equalizer culverts.

During a study of the Alameda Drain by Leedshill-Herkenhoff for the City of Albuquerque, an alternative outfall for relieving some of the Drain's capacity problems was investigated involving the Duranes pump station. This pump station is owned and operated by the City. The pump station was found to have additional capacity available but was not economical due to the long distance required for running a new storm drain to the storm drain system that feeds the pump station. However, this alternative is feasible for this project. By collecting and directing all runoff between the river and Rio Grande Blvd. to a ponding area centrally located just east of Gabaldon Rd. and south of the Interstate it is a relatively short distance to the Duranes storm drain system. Correctly sizing the pond to reduce the outflow to a rate manageable by the Duranes pump station and storm drain system significantly reduces the cost of routing runoff to the river. A pond with a maximum water depth of 6.8 feet must hold 3.4 Acre Feet (AF) of water. The only other apparent option is to construct another booster station to pump the runoff to the

river. In either alternative a storm drain and pond are required. The only significant economic difference in the two alternatives is the infrastructure needed to discharge the water from the pond to the river. Additional operation and maintenance costs would have to be considered in the new pump station alternative.

The City of Albuquerque is willing to cooperate with the NMSHTD and allow the diversion of 9.1/9.9 cfs for the 10-year and 100-year storms to the Duranes pump station. A storm drain system consisting of drop inlets, and pipe designed for the 50-year storm, would be constructed on each side of the roadway with pipes connecting the two sides at strategic locations. The existing equalizer pipes can be used as carrier pipes for the storm drain.

The bridge replacement will take place in the first phase. The adjacent 1000 feet east of the bridge will also be constructed in the first phase of the project. The ultimate outfall solution does not have to be constructed with this phase. The storm drain needed for the total project should be installed in the area affected by phase one but should discharge to temporary ponds, one each north and south of the interstate, constructed within the existing right-of-way between the river and Gabaldon Rd. The ponds would be long narrow retention ponds, located entirely within the existing right-of-way, that would be abandoned upon completion of the entire project. Each of these first phase temporary ponds need to be sized for 1.2 acre-feet.

4.4 Rio Grande Blvd. to Sixth St.: The existing condition east of Rio Grande Blvd. to the end of the project is similar to the reach between the river and Rio Grande Blvd. The elevated roadway has high points located at Rio Grande Blvd., 12th St. and at the eastern limits of the project at 6th Street. Except in the areas outlined below, runoff from the roadway flows to the surrounding land either directly or through drop inlets and storm drains. The storm drain inverts are set at or above the existing ground elevations to assure positive drainage out of the drains.

There are also culverts that act merely as equalizers to send runoff to either side of the roadway and allow local drainage to pass under the roadway from either side to the other. These culverts are basically flat so that water can flow in either direction as conditions dictate. There are additional culverts that carry irrigation water in established irrigation ditches. Superelevation at various places in the roadway direct runoff to the median where it is collected by slotted drains and conveyed to the equalizer culverts.

The exceptions to the above are at Rio Grande Blvd. and the area east of Eighth St. At Rio Grande Blvd. a number of drop inlets have been placed in the frontage roads to collect local runoff and discharge it to the Alameda Drain. Other than the on and off ramps, the I-40 roadway does not contribute any significant flows to these drop inlets. From Eighth St. to Seventh St. the east bound frontage road has drop inlets that drain to a City of Albuquerque storm drain system in Seventh St. East of Seventh St. another City storm drain system in Fourth St. collects runoff from both the east and west frontage roads. Again, little runoff from the roadway other than the ramps gets to these drop inlets.

The westbound frontage road west of Sixth St. is currently designed to drain to the Fourth St. system. Slopes in the area are minimal and ponds form where runoff is unable to flow to the inlets in Sixth St. The storm drain lines could be extended to these ponding areas except that the pipes are extremely shallow and could become exposed if their lengths are increased. The alternative to pipe extensions is to regrade the frontage road to provide positive slope from all areas to the inlets. A high point between Sixth and Seventh Sts. could be raised and moved east to provide sufficient slope. A maximum of 400 feet of frontage road could be affected. Care must be taken to ensure any regrading does not adversely impact adjacent properties.

Again the City of Albuquerque is willing to accept runoff from the NMSHTD in its storm drain facilities. The flow rate that can be accepted is approximately 3 cfs into the Seventh St.

system. In order to reduce the flow rate to 3 cfs a ponding area is needed, preferably in the vicinity of Eighth St. on the south side of I-40. The pond would have to be of sufficient capacity to throttle the flow from the roadway to the 3 cfs maximum. Due to a minimum of available undeveloped land in that area, we have proposed using two ponds which together would provide the required capacity. One pond would be in the location stated above, have a maximum water depth of 2.1 feet and a volume of 1.6 AF. The second, on the west side of 12th street, would have a maximum water depth of 1.1 feet and a volume of 2.52 AF. A single outlet pipe would take flow from both ponds to the 7th street system at the 3 cfs maximum.

A storm drain system consisting of drop inlets and pipe designed for the 50-year storm, would be constructed on each side of the roadway with pipes connecting the two sides at strategic locations. The existing equalizer pipes under the interstate may be used as carrier pipes for the storm drain. A conflict occurs where the Campbell Ditch intersects the gravity flow system. Either the storm drain or the ditch could utilize an inverted siphon at this point to alleviate the problem.

There does not appear to be any other outfall for this area. Discussions with City of Albuquerque personnel confirm the lack of alternative outfalls. The only other alternative drainage solutions appear to be a permanent retention pond or pump station. Local opposition to retention ponds as "mosquito breeders" precludes its use in this area. The construction of a pump station to lift runoff to another area is cost prohibitive.

5.0 COST ESTIMATE

The costs have been broken down by segment as developed in section 4. Costs for the drainage facilities associated with the Phase I construction of the bridge plus 1000 feet east and west are not included here since that project is currently in the construction phase.

5.1 Unser Blvd. to Coors Rd.: No additional costs will be incurred to implement the drainage plan from Unser to Coors.

5.2 Coors Rd. to the Rio Grande:

MEDIAN INLET	6	EA	$2200.00/EA	$13,200.00
CURB INLET	5	EA	$2200.00/EA	$11,000.00
8' DIA MH	8	EA	$4450.00/EA	$35,600.00
18" STORM DRAIN	45	LF	$35.00/LF	$1,575.00
24" STORM DRAIN	360	LF	$40.00/LF	$14,400.00
30" STORM DRAIN	120	LF	$53.00/LF	$6,360.00
60" STORM DRAIN	1470	LF	$150.00/LF	$220,500.00
MISC. CONCRETE	4	CY	$350.00/CY	$1,400.00
TOTAL				$304,035.00

5.3 The Rio Grande to Rio Grande Blvd.:

CURB INLET	18	EA	$2200.00/EA	$39,600.00
MEDIAN INLET	3	EA	$2200.00/EA	$6,600.00
4' DIA. MH	20	EA	$1650.00/ea	$33,000.00
24" STORM DRAIN	2485	LF	$40.00/LF	$99,400.00
27" STORM DRAIN	1505	LF	$45.00/LF	$67,725.00
30" STORM DRAIN	2545	LF	$53.00/LF	$134,885.00
36" STORM DRAIN	650	LF	$63.00/LF	$40,950.00
42" STORM DRAIN	700	LF	$70.00/LF	$49,000.00
POND EARTHWORK	6500	CY	$2.00/CY	$13,000.00
MISC. CONCRETE	5	CY	$350.00/CY	$1,750.00
TOTAL				$485,910.00

5.4 Rio Grande Blvd. to Sixth St.:

CURB INLET	28	EA	$2200.00/EA	$61,600.00
4' DIA. MH	19	EA	$1650.00/EA	$31,350.00
24" STORM DRAIN	7215	LF	$40.00/LF	$288,600.00
27" STORM DRAIN	1170	LF	$45.00/LF	$52,650.00
30" STORM DRAIN	226	LF	$53.00/LF	$11,978.00
42" STORM DRAIN	1000	LF	$70.00/LF	$70,000.00
POND 1 EARTHWORK	9000	CY	$2.00/CY	$18,000.00
POND 2 EARTHWORK	3100	CY	$2.00/CY	$6,200.00
MISC. CONCRETE	10	CY	$350.00/CY	3,500.00
SUBTOTAL				$543,878.00

APPENDIX

HYDROLOGY

RATIONAL METHOD - NMSHTD

DRAINAGE BASINS - UNSER INTERCHANGE TO 6TH STREET
10 YEAR STORM

Basin ID	Rational 'C'	Intensity in/hr	Area acres	Q cfs	Perv. 'C'	% Imperv.	Longest Pathway ft.	Elev. Diff. ft.	Slope	Vel. fps	Precip. in.	Tc min. actual	Tc min. used
UNSER1	0.60	4.35	1.97	5.1	0.50	25	700	11	0.0157	3.7	1.47	3.2	5.0
UNSER2	0.70	4.35	1.22	3.7	0.50	51	520	6	0.0115	3.3	1.47	2.6	5.0
UNSER3	0.70	4.35	1.65	5.0	0.50	51	760	10	0.0132	3.4	1.47	3.7	5.0
UNSER4	0.71	3.74	1.29	3.4	0.50	51	600	2	0.0033	1.0	1.47	10.0	10.0
UNSER5	0.70	3.74	2.35	6.2	0.50	51	1090	10	0.0092	2.0	1.47	9.1	10.0
UNSER6	0.70	3.74	1.30	3.4	0.50	51	600	6	0.0092	2.0	1.47	5.0	10.0
UNSER7	0.70	2.96	3.76	7.8	0.50	51	1740	8	0.0043	1.5	1.47	19.3	19.3
1	0.66	3.74	11.65	28.7	0.50	40	1600	34	0.0212	4.3	1.47	6.3	10.0
2	0.75	3.74	4.04	11.3	0.50	62	2340	43	0.0184	4.0	1.47	9.8	10.0
3	0.58	3.74	6.66	14.5	0.50	21	1260	19	0.0151	2.3	1.47	9.1	10.0
4	0.63	3.74	4.76	11.1	0.50	31	1050	16	0.0151	2.3	1.47	7.6	10.0
5	0.90	4.35	0.37	1.4	0.50	100	600	16	0.0267	4.8	1.47	2.1	5.0
6	0.59	4.35	3.24	8.3	0.50	22	900	26	0.0289	3.2	1.47	4.7	5.0
7	0.50	4.35	0.74	1.6	0.50	0	575	12	0.0209	2.7	1.47	3.5	5.0
8	0.90	4.35	0.23	0.9	0.50	100	510	26	0.0510	6.6	1.47	1.3	5.0
9	0.75	3.74	7.02	19.6	0.50	62	1650	49	0.0297	5.0	1.47	5.5	10.0
10	0.81	4.35	2.04	7.2	0.50	77	780	16	0.0209	4.2	1.47	3.1	5.0
11	0.90	4.35	0.69	2.7	0.50	100	420	9	0.0207	4.2	1.47	1.7	5.0
12	0.90	4.35	0.65	2.5	0.50	100	450	10	0.0222	4.4	1.47	1.7	5.0
13	0.90	4.35	0.61	2.4	0.50	100	380	8	0.0211	4.3	1.47	1.5	5.0
14	0.90	4.35	0.54	2.1	0.50	100	390	8	0.0205	4.2	1.47	1.6	5.0
15	0.90	4.35	0.66	2.6	0.50	100	400	9	0.0213	4.3	1.47	1.6	5.0
16	0.90	4.35	0.59	2.3	0.50	100	420	10	0.0233	4.5	1.47	1.6	5.0
17	0.90	4.35	0.66	2.6	0.50	100	380	8	0.0208	4.2	1.47	1.5	5.0
18	0.90	4.35	0.50	2.0	0.50	100	340	7	0.0200	4.1	1.47	1.4	5.0
19	0.90	3.74	2.52	8.5	0.50	100	1270	26	0.0205	4.2	1.47	5.1	10.0
20	0.90	3.74	2.50	8.4	0.50	100	1270	26	0.0205	4.2	1.47	5.1	10.0
21	0.90	3.96	3.47	12.3	0.50	100	1020	16	0.0153	3.6	1.57	4.7	10.0
22	0.90	3.96	3.45	12.3	0.50	100	990	16	0.0158	3.7	1.57	4.5	10.0
23	0.50	3.74	1.04	1.9	0.50	0	1640	47	0.0287	3.2	1.47	8.6	10.0
24	0.50	3.24	1.54	2.5	0.50	0	970	2	0.0023	0.9	1.57	18.0	18.0
25	0.50	3.45	1.52	2.6	0.50	0	1000	3	0.0034	1.1	1.57	15.3	15.3
26	0.90	4.60	1.09	4.5	0.50	100	590	8	0.0136	3.4	1.57	2.9	5.0
27	0.90	4.60	1.15	4.8	0.50	100	620	8	0.0131	3.4	1.57	3.1	5.0
28	0.50	3.96	0.88	1.7	0.50	0	600	6	0.0107	1.9	1.57	5.2	10.0
29	0.50	3.96	0.95	1.9	0.50	0	600	6	0.0107	1.9	1.57	5.2	10.0
30	0.90	3.50	5.50	17.3	0.50	100	1880	10	0.0053	2.1	1.57	14.7	14.7
31	0.90	3.96	4.17	14.8	0.50	100	570	10	0.0175	3.9	1.57	2.5	10.0
32	0.50	3.37	2.05	3.5	0.50	0	1350	7	0.0055	1.4	1.57	16.2	16.2
33	0.50	4.60	2.06	4.7	0.50	0	440	5	0.0109	2.0	1.57	3.8	5.0
34	0.90	4.60	0.89	3.7	0.50	100	420	6	0.0150	3.6	1.57	2.0	5.0
35	0.90	4.60	1.22	5.0	0.50	100	740	14	0.0182	3.9	1.57	3.1	5.0
36	0.90	4.60	1.99	8.2	0.50	100	840	14	0.0167	3.8	1.57	3.7	5.0

RATIONAL METHOD - NMSHTD

DRAINAGE BASINS - UNSER INTERCHANGE TO 6TH STREET
10 YEAR STORM

Basin ID	Rational 'C'	Intensity in/hr	Area acres	Q cfs	Perv. 'C'	% Imperv.	Longest Pathway ft.	Elev. Diff. ft.	Slope	Vel. fps	Precip. in.	Tc min. actual	Tc min. used
37	0.50	4.60	0.15	0.3	0.50	0	250	10	0.0400	3.7	1.57	1.1	5.0
38	0.74	4.60	2.15	7.3	0.50	59	550	19	0.0336	5.4	1.57	1.7	5.0
39	0.74	4.60	2.05	6.9	0.50	59	560	17	0.0304	5.1	1.57	1.8	5.0
40	0.50	4.60	0.38	0.9	0.50	0	320	17	0.0531	4.3	1.57	1.2	5.0
41	0.50	3.17	1.25	2.0	0.50	0	600	1	0.0008	0.5	1.57	18.9	18.9
42	0.90	3.96	2.86	10.2	0.50	100	440	6	0.0143	3.5	1.57	2.1	10.0
43	0.90	3.96	4.21	15.0	0.50	100	630	7	0.0111	3.1	1.57	3.4	10.0
44	0.50	4.60	0.81	1.9	0.50	0	250	1	0.0048	1.3	1.57	3.2	5.0
45	0.50	4.60	1.10	2.5	0.50	0	240	5	0.0196	2.6	1.57	1.5	5.0
46	0.90	3.96	2.07	7.4	0.50	100	700	4	0.0057	2.2	1.57	5.3	10.0
47	0.90	4.60	1.31	5.4	0.50	100	480	3	0.0063	2.3	1.57	3.4	5.0
48	0.50	3.96	1.32	2.6	0.50	0	700	5	0.0076	1.6	1.57	7.2	10.0
49	0.90	4.60	0.65	2.7	0.50	100	350	1	0.0037	1.8	1.57	3.3	5.0
50	0.90	4.60	0.58	2.4	0.50	100	160	3	0.0200	4.1	1.57	0.6	5.0
51	0.90	4.60	1.31	5.4	0.50	100	700	12	0.0169	3.8	1.57	3.1	5.0
52	0.50	4.60	0.70	1.6	0.50	0	220	13	0.0573	4.5	1.57	0.8	5.0
53A	0.90	4.60	1.16	4.8	0.50	100	550	8	0.0145	4.5	1.57	2.1	5.0
53B	0.71	3.96	3.22	9.1	0.50	53	750	2	0.0027	4.5	1.57	2.8	10.0
54	0.90	4.60	1.61	6.7	0.50	100	730	9	0.0123	3.2	1.57	3.8	5.0
55	0.72	4.60	2.06	6.8	0.50	55	630	21	0.0333	5.3	1.57	2.0	5.0
56	0.50	4.60	1.09	2.5	0.50	0	320	3	0.0078	1.7	1.57	3.2	5.0
57A	0.90	3.96	2.56	9.1	0.50	100	1250	17	0.0136	2.9	1.57	7.2	10.0
57B	0.90	3.96	1.56	5.6	0.50	100	1150	2	0.0017	2.9	1.57	6.6	10.0
58	0.71	3.96	3.23	9.0	0.50	52	600	2	0.0025	1.5	1.57	6.8	10.0
59	0.90	4.60	1.73	7.2	0.50	100	960	14	0.0141	3.5	1.57	4.6	5.0
60	0.90	4.60	0.78	3.2	0.50	100	440	9	0.0207	4.2	1.57	1.7	5.0
61	0.85	3.96	4.97	16.7	0.50	88	930	15	0.0166	3.8	1.57	4.1	10.0

RATIONAL METHOD - NMSHTD

DRAINAGE BASINS - UNSER INTERCHANGE TO 6TH STREET
50 YEAR STORM

Basin ID	Rational 'C'	Intensity in/hr	Area acres	Q cfs	Perv. 'C'	% Imperv.	Longest Pathway ft.	Elev. Diff. ft.	Slope	Vel. fps	Precip. in.	Tc min. actual	Tc min. used
UNSER1	0.60	5.58	1.97	6.6	0.50	25	700	11	0.0157	3.7	1.98	3.2	5.0
UNSER2	0.70	5.58	1.22	4.8	0.50	51	520	6	0.0115	3.3	1.98	2.6	5.0
UNSER3	0.70	5.58	1.65	6.5	0.50	51	760	10	0.0132	3.4	1.98	3.7	5.0
UNSER4	0.71	4.82	1.29	4.4	0.50	51	600	2	0.0033	1.0	1.98	10.0	10.0
UNSER5	0.70	4.82	2.35	8.0	0.50	51	1090	10	0.0092	2.0	1.98	9.1	10.0
UNSER6	0.70	4.82	1.30	4.4	0.50	51	600	6	0.0092	2.0	1.98	5.0	10.0
UNSER7	0.70	3.85	3.76	10.2	0.50	51	1740	8	0.0043	1.5	1.98	19.3	19.3
1	0.66	4.82	11.65	37.1	0.50	40	1600	34	0.0212	4.3	1.98	6.3	10.0
2	0.75	4.82	4.04	14.6	0.50	62	2340	43	0.0184	4.0	1.98	9.8	10.0
3	0.58	4.82	6.66	18.8	0.50	21	1260	19	0.0151	2.3	1.98	9.1	10.0
4	0.63	4.82	4.76	14.4	0.50	31	1050	16	0.0151	2.3	1.98	7.6	10.0
5	0.90	5.58	0.37	1.9	0.50	100	600	16	0.0267	4.8	1.98	2.1	5.0
6	0.59	5.58	3.24	10.6	0.50	22	900	26	0.0289	3.2	1.98	4.7	5.0
7	0.50	5.58	0.74	2.1	0.50	0	575	12	0.0209	2.7	1.98	3.5	5.0
8	0.90	5.58	0.23	1.1	0.50	100	510	26	0.0510	6.6	1.98	1.3	5.0
9	0.75	4.82	7.02	25.4	0.50	62	1650	49	0.0297	5.0	1.98	5.5	10.0
10	0.81	5.58	2.04	9.2	0.50	77	780	16	0.0209	4.2	1.98	3.1	5.0
11	0.90	5.58	0.69	3.5	0.50	100	420	9	0.0207	4.2	1.98	1.7	5.0
12	0.90	5.58	0.65	3.3	0.50	100	450	10	0.0222	4.4	1.98	1.7	5.0
13	0.90	5.58	0.61	3.0	0.50	100	380	8	0.0211	4.3	1.98	1.5	5.0
14	0.90	5.58	0.54	2.7	0.50	100	390	8	0.0205	4.2	1.98	1.6	5.0
15	0.90	5.58	0.66	3.3	0.50	100	400	9	0.0213	4.3	1.98	1.6	5.0
16	0.90	5.58	0.59	3.0	0.50	100	420	10	0.0233	4.5	1.98	1.6	5.0
17	0.90	5.58	0.66	3.3	0.50	100	380	8	0.0208	4.2	1.98	1.5	5.0
18	0.90	5.58	0.50	2.5	0.50	100	340	7	0.0200	4.1	1.98	1.4	5.0
19	0.90	4.82	2.52	10.9	0.50	100	1270	26	0.0205	4.2	1.98	5.1	10.0
20	0.90	4.82	2.50	10.8	0.50	100	1270	26	0.0205	4.2	1.98	5.1	10.0
21	0.90	5.11	3.47	15.9	0.50	100	1020	16	0.0153	3.6	2.12	4.7	10.0
22	0.90	5.11	3.45	15.8	0.50	100	990	16	0.0158	3.7	2.12	4.5	10.0
23	0.50	4.82	1.04	2.5	0.50	0	1640	47	0.0287	3.2	1.98	8.6	10.0
24	0.50	4.21	1.54	3.2	0.50	0	970	2	0.0023	0.9	2.12	18.0	18.0
25	0.50	4.47	1.52	3.4	0.50	0	1000	3	0.0034	1.1	2.12	15.3	15.3
26	0.90	5.90	1.09	5.8	0.50	100	590	8	0.0136	3.4	2.12	2.9	5.0
27	0.90	5.90	1.15	6.1	0.50	100	620	8	0.0131	3.4	2.12	3.1	5.0
28	0.50	5.11	0.88	2.2	0.50	0	600	6	0.0107	1.9	2.12	5.2	10.0
29	0.50	5.11	0.95	2.4	0.50	0	600	6	0.0107	1.9	2.12	5.2	10.0
30	0.90	4.54	5.50	22.4	0.50	100	1880	10	0.0053	2.1	2.12	14.7	14.7
31	0.90	5.11	4.17	19.2	0.50	100	570	10	0.0175	3.9	2.12	2.5	10.0
32	0.50	4.38	2.05	4.5	0.50	0	1350	7	0.0055	1.4	2.12	16.2	16.2
33	0.50	5.90	2.06	6.1	0.50	0	440	5	0.0109	2.0	2.12	3.8	5.0
34	0.90	5.90	0.89	4.7	0.50	100	420	6	0.0150	3.6	2.12	2.0	5.0
35	0.90	5.90	1.22	6.4	0.50	100	740	14	0.0182	3.9	2.12	3.1	5.0
36	0.90	5.90	1.99	10.5	0.50	100	840	14	0.0167	3.8	2.12	3.7	5.0

RATIONAL METHOD - NMSHTD

DRAINAGE BASINS - UNSER INTERCHANGE TO 6TH STREET
50 YEAR STORM

Basin ID	Rational 'C'	Intensity in/hr	Area acres	Q cfs	Perv. 'C'	% Imperv.	Longest Pathway ft.	Elev. Diff. ft.	Slope	Vel. fps	Precip. in.	Tc min. actual	Tc min. used
37	0.50	5.90	0.15	0.4	0.50	0	250	10	0.0400	3.7	2.12	1.1	5.0
38	0.74	5.90	2.15	9.4	0.50	59	550	19	0.0336	5.4	2.12	1.7	5.0
39	0.74	5.90	2.05	8.9	0.50	59	560	17	0.0304	5.1	2.12	1.8	5.0
40	0.50	5.90	0.38	1.1	0.50	0	320	17	0.0531	4.3	2.12	1.2	5.0
41	0.50	4.13	1.25	2.6	0.50	0	600	1	0.0008	0.5	2.12	18.9	18.9
42	0.90	5.11	2.86	13.1	0.50	100	440	6	0.0143	3.5	2.12	2.1	10.0
43	0.90	5.11	4.21	19.3	0.50	100	630	7	0.0111	3.1	2.12	3.4	10.0
44	0.50	5.90	0.81	2.4	0.50	0	250	1	0.0048	1.3	2.12	3.2	5.0
45	0.50	5.90	1.10	3.3	0.50	0	240	5	0.0196	2.6	2.12	1.5	5.0
46	0.90	5.11	2.07	9.5	0.50	100	700	4	0.0057	2.2	2.12	5.3	10.0
47	0.90	5.90	1.31	6.9	0.50	100	480	3	0.0063	2.3	2.12	3.4	5.0
48	0.50	5.11	1.32	3.4	0.50	0	700	5	0.0076	1.6	2.12	7.2	10.0
49	0.90	5.90	0.65	3.4	0.50	100	350	1	0.0037	1.8	2.12	3.3	5.0
50	0.90	5.90	0.58	3.1	0.50	100	160	3	0.0200	4.1	2.12	0.6	5.0
51	0.90	5.90	1.31	7.0	0.50	100	700	12	0.0169	3.8	2.12	3.1	5.0
52	0.50	5.90	0.70	2.1	0.50	0	220	13	0.0573	4.5	2.12	0.8	5.0
53A	0.90	5.90	1.16	6.1	0.50	100	550	8	0.0145	4.5	2.12	2.1	5.0
53B	0.71	5.11	3.22	11.7	0.50	53	750	2	0.0027	4.5	2.12	2.8	10.0
54	0.90	5.90	1.61	8.5	0.50	100	730	9	0.0123	3.2	2.12	3.8	5.0
55	0.72	5.90	2.06	8.7	0.50	55	630	21	0.0333	5.3	2.12	2.0	5.0
56	0.50	5.90	1.09	3.2	0.50	0	320	3	0.0078	1.7	2.12	3.2	5.0
57A	0.90	5.11	2.56	11.8	0.50	100	1250	17	0.0136	2.9	2.12	7.2	10.0
57B	0.90	5.11	1.56	7.2	0.50	100	1150	2	0.0017	2.9	2.12	6.6	10.0
58	0.71	5.11	3.23	11.7	0.50	52	600	2	0.0025	1.5	2.12	6.8	10.0
59	0.90	5.90	1.73	9.2	0.50	100	960	14	0.0141	3.5	2.12	4.6	5.0
60	0.90	5.90	0.78	4.1	0.50	100	440	9	0.0207	4.2	2.12	1.7	5.0
61	0.85	5.11	4.97	21.6	0.50	88	930	15	0.0166	3.8	2.12	4.1	10.0

RATIONAL METHOD - NMSHTD

DRAINAGE BASINS - UNSER INTERCHANGE TO 6TH STREET
100 YEAR STORM

Basin ID	Rational 'C'	Intensity in/hr	Area acres	Q cfs	Perv. 'C'	% Imperv.	Longest Pathway ft.	Elev. Diff. ft.	Slope	Vel. fps	Precip. in.	Tc min. actual	Tc min. used
UNSER1	0.60	6.07	1.97	7.2	0.50	25	700	11	0.0157	3.7	2.20	3.2	5.0
UNSER2	0.70	6.07	1.22	5.2	0.50	51	520	6	0.0115	3.3	2.20	2.6	5.0
UNSER3	0.70	6.07	1.65	7.0	0.50	51	760	10	0.0132	3.4	2.20	3.7	5.0
UNSER4	0.71	5.27	1.29	4.8	0.50	51	600	2	0.0033	1.0	2.20	10.0	10.0
UNSER5	0.70	5.27	2.35	8.7	0.50	51	1090	10	0.0092	2.0	2.20	9.1	10.0
UNSER6	0.70	5.27	1.30	4.8	0.50	51	600	6	0.0092	2.0	2.20	5.0	10.0
UNSER7	0.70	4.22	3.76	11.2	0.50	51	1740	8	0.0043	1.5	2.20	19.3	19.3
1	0.66	5.27	11.65	40.5	0.50	40	1600	34	0.0212	4.3	2.20	6.3	10.0
2	0.75	5.27	4.04	15.9	0.50	62	2340	43	0.0184	4.0	2.20	9.8	10.0
3	0.58	5.27	6.66	20.5	0.50	21	1260	19	0.0151	2.3	2.20	9.1	10.0
4	0.63	5.27	4.76	15.7	0.50	31	1050	16	0.0151	2.3	2.20	7.6	10.0
5	0.90	6.07	0.37	2.0	0.50	100	600	16	0.0267	4.8	2.20	2.1	5.0
6	0.59	6.07	3.24	11.6	0.50	22	900	26	0.0289	3.2	2.20	4.7	5.0
7	0.50	6.07	0.74	2.3	0.50	0	575	12	0.0209	2.7	2.20	3.5	5.0
8	0.90	6.07	0.23	1.2	0.50	100	510	26	0.0510	6.6	2.20	1.3	5.0
9	0.75	5.27	7.02	27.7	0.50	62	1650	49	0.0297	5.0	2.20	5.5	10.0
10	0.81	6.07	2.04	10.0	0.50	77	780	16	0.0209	4.2	2.20	3.1	5.0
11	0.90	6.07	0.69	3.8	0.50	100	420	9	0.0207	4.2	2.20	1.7	5.0
12	0.90	6.07	0.65	3.5	0.50	100	450	10	0.0222	4.4	2.20	1.7	5.0
13	0.90	6.07	0.61	3.3	0.50	100	380	8	0.0211	4.3	2.20	1.5	5.0
14	0.90	6.07	0.54	3.0	0.50	100	390	8	0.0205	4.2	2.20	1.6	5.0
15	0.90	6.07	0.66	3.6	0.50	100	400	9	0.0213	4.3	2.20	1.6	5.0
16	0.90	6.07	0.59	3.2	0.50	100	420	10	0.0233	4.5	2.20	1.6	5.0
17	0.90	6.07	0.66	3.6	0.50	100	380	8	0.0208	4.2	2.20	1.5	5.0
18	0.90	6.07	0.50	2.7	0.50	100	340	7	0.0200	4.1	2.20	1.4	5.0
19	0.90	5.27	2.52	11.9	0.50	100	1270	26	0.0205	4.2	2.20	5.1	10.0
20	0.90	5.27	2.50	11.8	0.50	100	1270	26	0.0205	4.2	2.20	5.1	10.0
21	0.90	5.56	3.47	17.3	0.50	100	1020	16	0.0153	3.6	2.35	4.7	10.0
22	0.90	5.56	3.45	17.2	0.50	100	990	16	0.0158	3.7	2.35	4.5	10.0
23	0.50	5.27	1.04	2.7	0.50	0	1640	47	0.0287	3.2	2.20	8.6	10.0
24	0.50	4.60	1.54	3.5	0.50	0	970	2	0.0023	0.9	2.35	18.0	18.0
25	0.50	4.88	1.52	3.7	0.50	0	1000	3	0.0034	1.1	2.35	15.3	15.3
26	0.90	6.40	1.09	6.3	0.50	100	590	8	0.0136	3.4	2.35	2.9	5.0
27	0.90	6.40	1.15	6.6	0.50	100	620	8	0.0131	3.4	2.35	3.1	5.0
28	0.50	5.56	0.88	2.4	0.50	0	600	6	0.0107	1.9	2.35	5.2	10.0
29	0.50	5.56	0.95	2.6	0.50	0	600	6	0.0107	1.9	2.35	5.2	10.0
30	0.90	4.95	5.50	24.5	0.50	100	1880	10	0.0053	2.1	2.35	14.7	14.7
31	0.90	5.56	4.17	20.9	0.50	100	570	10	0.0175	3.9	2.35	2.5	10.0
32	0.50	4.78	2.05	4.9	0.50	0	1350	7	0.0055	1.4	2.35	16.2	16.2
33	0.50	6.40	2.06	6.6	0.50	0	440	5	0.0109	2.0	2.35	3.8	5.0
34	0.90	6.40	0.89	5.1	0.50	100	420	6	0.0150	3.6	2.35	2.0	5.0
35	0.90	6.40	1.22	7.0	0.50	100	740	14	0.0182	3.9	2.35	3.1	5.0
36	0.90	6.40	1.99	11.4	0.50	100	840	14	0.0167	3.8	2.35	3.7	5.0

RATIONAL METHOD - NMSHTD

DRAINAGE BASINS - UNSER INTERCHANGE TO 6TH STREET
100 YEAR STORM

Basin ID	Rational 'C'	Intensity in/hr	Area acres	Q cfs	Perv. 'C'	% Imperv.	Longest Pathway ft.	Elev. Diff. ft.	Slope	Vel. fps	Precip. in.	Tc min. actual	Tc min. used
37	0.50	6.40	0.15	0.5	0.50	0	250	10	0.0400	3.7	2.35	1.1	5.0
38	0.74	6.40	2.15	10.2	0.50	59	550	19	0.0336	5.4	2.35	1.7	5.0
39	0.74	6.40	2.05	9.7	0.50	59	560	17	0.0304	5.1	2.35	1.8	5.0
40	0.50	6.40	0.38	1.2	0.50	0	320	17	0.0531	4.3	2.35	1.2	5.0
41	0.50	4.51	1.25	2.8	0.50	0	600	1	0.0008	0.5	2.35	18.9	18.9
42	0.90	5.56	2.86	14.3	0.50	100	440	6	0.0143	3.5	2.35	2.1	10.0
43	0.90	5.56	4.21	21.0	0.50	100	630	7	0.0111	3.1	2.35	3.4	10.0
44	0.50	6.40	0.81	2.6	0.50	0	250	1	0.0048	1.3	2.35	3.2	5.0
45	0.50	6.40	1.10	3.5	0.50	0	240	5	0.0196	2.6	2.35	1.5	5.0
46	0.90	5.56	2.07	10.3	0.50	100	700	4	0.0057	2.2	2.35	5.3	10.0
47	0.90	6.40	1.31	7.5	0.50	100	480	3	0.0063	2.3	2.35	3.4	5.0
48	0.50	5.56	1.32	3.7	0.50	0	700	5	0.0076	1.6	2.35	7.2	10.0
49	0.90	6.40	0.65	3.7	0.50	100	350	1	0.0037	1.8	2.35	3.3	5.0
50	0.90	6.40	0.58	3.3	0.50	100	160	3	0.0200	4.1	2.35	0.6	5.0
51	0.90	6.40	1.31	7.5	0.50	100	700	12	0.0169	3.8	2.35	3.1	5.0
52	0.50	6.40	0.70	2.3	0.50	0	220	13	0.0573	4.5	2.35	0.8	5.0
53A	0.90	6.40	1.16	6.7	0.50	100	550	8	0.0145	4.5	2.35	2.1	5.0
53B	0.71	5.56	3.22	12.8	0.50	53	750	2	0.0027	4.5	2.35	2.8	10.0
54	0.90	6.40	1.61	9.3	0.50	100	730	9	0.0123	3.2	2.35	3.8	5.0
55	0.72	6.40	2.06	9.5	0.50	55	630	21	0.0333	5.3	2.35	2.0	5.0
56	0.50	6.40	1.09	3.5	0.50	0	320	3	0.0078	1.7	2.35	3.2	5.0
57A	0.90	5.56	2.56	12.8	0.50	100	1250	17	0.0136	2.9	2.35	7.2	10.0
57B	0.90	5.56	1.56	7.8	0.50	100	1150	2	0.0017	2.9	2.35	6.6	10.0
58	0.71	5.56	3.23	12.7	0.50	52	600	2	0.0025	1.5	2.35	6.8	10.0
59	0.90	6.40	1.73	10.0	0.50	100	960	14	0.0141	3.5	2.35	4.6	5.0
60	0.90	6.40	0.78	4.5	0.50	100	440	9	0.0207	4.2	2.35	1.7	5.0
61	0.85	5.56	4.97	23.5	0.50	88	930	15	0.0166	3.8	2.35	4.1	10.0

COORS TO THE RIO GRANDE - 10 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	101.1	1	-	0.0182	26.9	NA	1.50	2.3
ROUTED 30"		1	10					
	101.1	1		0.0182	26.9		1.50	
	101.2	10		0.0182	27.0		1.50	
ROUTED 60"		10	20					
	101.2	10		0.0182	27.0		1.50	
	101.4	20		0.0182	26.3		1.50	
HYDROGRAPH AT	102.1	2	-	0.0063	10.6	NA	1.50	2.6
HYDROGRAPH AT	103.1	3	-	0.0104	13.6	NA	1.50	2.0
ROUTED 24"		3	11					
	103.1	3		0.0104	13.6		1.50	
	103.2	11		0.0104	13.5		1.50	
HYDROGRAPH AT	104.1	4	-	0.0074	10.4	NA	1.50	2.1
HYDROGRAPH AT	105.1	5	-	0.0006	1.2	NA	1.50	3.2
HYDROGRAPH AT	106.1	6	-	0.0051	6.7	NA	1.50	2.0
HYDROGRAPH AT	107.1	7	-	0.0012	1.3	NA	1.50	1.7
COMBINED FLOW AT	107.2	5& 7	7	0.0018	2.6		1.50	
ROUTED 18"		7	13					
	107.2	7		0.0018	2.6		1.50	
	107.3	13		0.0018	2.6		1.50	
COMBINED FLOW AT	107.4	4&13	7	0.0092	12.9		1.50	
ROUTED 24"		7	13					
	107.4	7		0.0092	12.9		1.50	
	107.5	13		0.0092	13.0		1.50	
COMBINED FLOW AT	107.6	11&13	7	0.0196	26.5		1.50	
ROUTED 42"		7	13					
	107.6	7		0.0196	26.5		1.50	
	107.7	13		0.0196	26.0		1.55	
COMBINED FLOW AT	107.8	6&13	7	0.0247	32.4		1.50	
HYDROGRAPH AT	108.1	8	-	0.0004	0.7	NA	1.50	3.2
COMBINED FLOW AT	108.2	7& 8	8	0.0251	33.1		1.50	
DIVIDED FLOW AT		8	3& 4					
	108.3	3	-	0.0251	16.6		1.50	
	108.4	4	-	0.0000	16.6		1.50	
ROUTED 30"		3	13					
	108.3	3		0.0251	16.6		1.50	
	108.6	13		0.0251	16.5		1.50	
ROUTED 30"		4	14					
	108.4	4		0.0000	16.6		1.50	
	108.7	14		0.0000	16.5		1.50	
COMBINED FLOW AT	108.7	2&13	13	0.0314	27.2		1.50	
ROUTED 30"		13	15					
	108.7	13		0.0314	27.2		1.50	
	108.8	15		0.0314	27.2		1.50	
ROUTED 30"		14	16					
	108.7	14		0.0000	16.5		1.50	
	108.9	16		0.0000	16.6		1.55	

COORS TO THE RIO GRANDE - 10 YEAR STORM

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
COMBINED FLOW AT	108.10	15&16	16	0.0314	43.6		1.50	
COMBINED FLOW AT	108.11	16&20	20	0.0496	69.9		1.50	
ROUTED 60"		20	8					
	108.11	20		0.0496	69.9		1.50	
	108.12	8		0.0496	71.3		1.55	
HYDROGRAPH AT	109.1	9	-	0.0110	18.6	NA	1.50	2.6
COMBINED FLOW AT	109.2	8& 9	9	0.0606	87.8		1.55	
HYDROGRAPH AT	110.1	10	-	0.0032	5.8	NA	1.50	2.8
ROUTED 60"		10	2					
	110.1	10		0.0032	5.8		1.50	
	110.2	2		0.0032	5.9		1.50	
COMBINED FLOW AT	110.3	2& 9	9	0.0638	93.1		1.55	
ROUTED 60"		9	8					
	110.3	9		0.0638	93.1		1.55	
	110.4	8		0.0638	94.8		1.55	
HYDROGRAPH AT	111.1	11	-	0.0011	2.2	NA	1.50	3.1
ROUTED 18"		11	2					
	111.1	11		0.0011	2.2		1.50	
	111.2	2		0.0011	2.3		1.50	
COMBINED FLOW AT	111.3	2& 8	11	0.0649	96.9		1.55	
HYDROGRAPH AT	112.1	12	-	0.0010	2.0	NA	1.50	3.1
COMBINED FLOW AT	112.2	11&12	12	0.0659	98.7		1.55	
ROUTED 60"		12	8					
	112.2	12		0.0659	98.7		1.55	
	112.3	8		0.0659	100.4		1.55	
HYDROGRAPH AT	113.1	13	-	0.0010	1.9	NA	1.50	3.1
ROUTED 18"		13	2					
	113.1	13		0.0010	1.9		1.50	
	113.2	2		0.0010	1.9		1.50	
COMBINED FLOW AT	113.3	2& 8	13	0.0668	102.1		1.55	
HYDROGRAPH AT	114.1	14	-	0.0008	1.7	NA	1.50	3.2
COMBINED FLOW AT	114.2	13&14	14	0.0676	103.6		1.55	
ROUTED 60"		14	8					
	114.2	14		0.0676	103.6		1.55	
	114.3	8		0.0676	105.3		1.55	
HYDROGRAPH AT	115.1	15	-	0.0010	2.0	NA	1.50	3.1
ROUTED 18"		15	2					
	115.1	15		0.0010	2.0		1.50	
	115.2	2		0.0010	2.1		1.50	
COMBINED FLOW AT	115.3	2& 8	15	0.0686	107.2		1.55	
HYDROGRAPH AT	116.1	16	-	0.0009	1.9	NA	1.50	3.2
COMBINED FLOW AT	116.2	2&15	16	0.0696	109.0		1.55	
ROUTED 60"		16	8					
	116.2	16		0.0696	109.0		1.55	
	116.3	8		0.0696	110.0		1.55	
HYDROGRAPH AT	117.1	17	-	0.0010	2.1	NA	1.50	3.1
HYDROGRAPH AT	118.1	18	-	0.0008	1.6	NA	1.50	3.2
COMBINED FLOW AT	118.2	8&18	18	0.0704	111.4		1.55	
HYDROGRAPH AT	123.1	23	-	0.0016	1.8	NA	1.50	1.7

COORS TO THE RIO GRANDE - 50 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	101.1	1	-	0.0182	36.2	NA	1.50	3.1
ROUTED 30"		1	10					
	101.1	1		0.0182	36.2		1.50	
	101.2	10		0.0182	36.2		1.50	
ROUTED 60"		10	20					
	101.2	10		0.0182	36.2		1.50	
	101.4	20		0.0182	35.8		1.50	
HYDROGRAPH AT	102.1	2	-	0.0063	13.8	NA	1.50	3.4
HYDROGRAPH AT	103.1	3	-	0.0104	18.9	NA	1.50	2.8
ROUTED 24"		3	11					
	103.1	3		0.0104	18.9		1.50	
	103.2	11		0.0104	18.8		1.50	
HYDROGRAPH AT	104.1	4	-	0.0074	14.2	NA	1.50	2.9
HYDROGRAPH AT	105.1	5	-	0.0006	1.5	NA	1.50	3.9
HYDROGRAPH AT	106.1	6	-	0.0051	9.3	NA	1.50	2.8
HYDROGRAPH AT	107.1	7	-	0.0012	2.0	NA	1.50	2.5
COMBINED FLOW AT	107.2	5& 7	7	0.0018	3.5		1.50	
ROUTED 18"		7	13					
	107.2	7		0.0018	3.5		1.50	
	107.3	13		0.0018	3.5		1.50	
COMBINED FLOW AT	107.4	4&13	7	0.0092	17.6		1.50	
ROUTED 24"		7	13					
	107.4	7		0.0092	17.6		1.50	
	107.5	13		0.0092	17.7		1.50	
COMBINED FLOW AT	107.6	11&13	7	0.0196	36.5		1.50	
ROUTED 42"		7	13					
	107.6	7		0.0196	36.5		1.50	
	107.7	13		0.0196	35.9		1.50	
COMBINED FLOW AT	107.8	6&13	7	0.0247	45.3		1.50	
HYDROGRAPH AT	108.1	8	-	0.0004	0.9	NA	1.50	3.9
COMBINED FLOW AT	108.2	7& 8	8	0.0251	46.2		1.50	
DIVIDED FLOW AT		8	3& 4					
	108.3	3	-	0.0251	23.1		1.50	
	108.4	4	-	0.0000	23.1		1.50	
ROUTED 30"		3	13					
	108.3	3		0.0251	23.1		1.50	
	108.6	13		0.0251	23.1		1.50	
ROUTED 30"		4	14					
	108.4	4		0.0000	23.1		1.50	
	108.7	14		0.0000	23.1		1.50	
COMBINED FLOW AT	108.7	2&13	13	0.0314	36.9		1.50	
ROUTED 30"		13	15					
	108.7	13		0.0314	36.9		1.50	
	108.8	15		0.0314	36.8		1.50	
ROUTED 30"		14	16					
	108.7	14		0.0000	23.1		1.50	
	108.9	16		0.0000	23.0		1.50	

COORS TO THE RIO GRANDE - 50 YEAR STORM

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
COMBINED FLOW AT	108.10	15&16	16	0.0314	59.8		1.50	
COMBINED FLOW AT	108.11	16&20	20	0.0496	95.6		1.50	
ROUTED 60"		20	8					
	108.11	20		0.0496	95.6		1.50	
	108.12	8		0.0496	95.1		1.55	
HYDROGRAPH AT	109.1	9	-	0.0110	24.1	NA	1.50	3.4
COMBINED FLOW AT	109.2	8& 9	9	0.0606	117.7		1.50	
HYDROGRAPH AT	110.1	10	-	0.0032	7.4	NA	1.50	3.6
ROUTED 60"		10	2					
	110.1	10		0.0032	7.4		1.50	
	110.2	2		0.0032	7.5		1.50	
COMBINED FLOW AT	110.3	2& 9	9	0.0638	125.3		1.50	
ROUTED 60"		9	8					
	110.3	9		0.0638	125.3		1.50	
	110.4	8		0.0638	125.1		1.55	
HYDROGRAPH AT	111.1	11	-	0.0011	2.8	NA	1.50	3.9
ROUTED 18"		11	2					
	111.1	11		0.0011	2.8		1.50	
	111.2	2		0.0011	2.8		1.50	
COMBINED FLOW AT	111.3	2& 8	11	0.0649	127.7		1.55	
HYDROGRAPH AT	112.1	12	-	0.0010	2.5	NA	1.50	3.9
COMBINED FLOW AT	112.2	11&12	12	0.0659	129.9		1.55	
ROUTED 60"		12	8					
	112.2	12		0.0659	129.9		1.55	
	112.3	8		0.0659	131.5		1.55	
HYDROGRAPH AT	113.1	13	-	0.0010	2.4	NA	1.50	3.9
ROUTED 18"		13	2					
	113.1	13		0.0010	2.4		1.50	
	113.2	2		0.0010	2.4		1.50	
COMBINED FLOW AT	113.3	2& 8	13	0.0668	133.7		1.55	
HYDROGRAPH AT	114.1	14	-	0.0008	2.1	NA	1.50	3.9
COMBINED FLOW AT	114.2	13&14	14	0.0676	135.6		1.55	
ROUTED 60"		14	8					
	114.2	14		0.0676	135.6		1.55	
	114.3	8		0.0676	137.5		1.55	
HYDROGRAPH AT	115.1	15	-	0.0010	2.5	NA	1.50	3.9
ROUTED 18"		15	2					
	115.1	15		0.0010	2.5		1.50	
	115.2	2		0.0010	2.5		1.50	
COMBINED FLOW AT	115.3	2& 8	15	0.0686	139.8		1.55	
HYDROGRAPH AT	116.1	16	-	0.0009	2.3	NA	1.50	3.9
COMBINED FLOW AT	116.2	2&15	16	0.0696	142.1		1.55	
ROUTED 60"		16	8					
	116.2	16		0.0696	142.1		1.55	
	116.3	8		0.0696	143.4		1.55	
HYDROGRAPH AT	117.1	17	-	0.0010	2.6	NA	1.50	3.9
HYDROGRAPH AT	118.1	18	-	0.0008	2.0	NA	1.50	3.9
COMBINED FLOW AT	118.2	8&18	18	0.0704	145.1		1.55	
HYDROGRAPH AT	123.1	23	-	0.0016	2.6	NA	1.50	2.5

COORS TO THE RIO GRANDE - 100 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
RECALL HYD	404.4	22	-	0.0590	111.0		0.24	
RECALL HYD	404.5	24	-	0.0540	107.0		0.22	
DIVIDED FLOW AT		22	22&23					
	404.6	22	-	0.0000	47.0		0.14	
	404.7	23	-	0.0000	64.0		0.00	
ROUTED 48"		22	2					
	404.6	22		0.0000	47.0		0.44	
	404.8	2		0.0000	50.3		0.20	
COMBINED FLOW AT	404.9	2&23	23	0.0000	108.4		0.24	
COMBINED FLOW AT	404.10	23&24	24	0.0540	215.4		0.22	
ROUTED 60"		24	20					
	404.10	24		0.0540	215.4		0.22	
	404.11	20		0.0540	212.2		0.20	
HYDROGRAPH AT	101.1	1	-	0.0182	39.9	NA	1.50	3.4
ROUTED 30"		1	10					
	101.1	1		0.0182	39.9		1.50	
	101.2	10		0.0182	40.0		1.50	
COMBINED FLOW AT	101.3	10&20	10	0.0722	212.2		0.20	
ROUTED 60"		10	20					
	101.3	10		0.0722	212.2		0.20	
	101.4	20		0.0722	221.3		0.25	
HYDROGRAPH AT	102.1	2	-	0.0063	15.1	NA	1.50	3.7
HYDROGRAPH AT	103.1	3	-	0.0104	21.0	NA	1.50	3.1
ROUTED 24"		3	11					
	103.1	3		0.0104	21.0		1.50	
	103.2	11		0.0104	20.8		1.50	
HYDROGRAPH AT	104.1	4	-	0.0074	15.7	NA	1.50	3.3
HYDROGRAPH AT	105.1	5	-	0.0006	1.7	NA	1.50	4.3
HYDROGRAPH AT	106.1	6	-	0.0051	10.4	NA	1.50	3.1
HYDROGRAPH AT	107.1	7	-	0.0012	2.2	NA	1.50	2.8
COMBINED FLOW AT	107.2	5& 7	7	0.0018	3.8		1.50	
ROUTED 18"		7	13					
	107.2	7		0.0018	3.8		1.50	
	107.3	13		0.0018	3.9		1.50	
COMBINED FLOW AT	107.4	4&13	7	0.0092	19.5		1.50	
ROUTED 24"		7	13					
	107.4	7		0.0092	19.5		1.50	
	107.5	13		0.0092	19.5		1.50	
COMBINED FLOW AT	107.6	11&13	7	0.0196	40.4		1.50	
ROUTED 42"		7	13					
	107.6	7		0.0196	40.4		1.50	
	107.7	13		0.0196	39.8		1.50	
COMBINED FLOW AT	107.8	6&13	7	0.0247	50.2		1.50	
HYDROGRAPH AT	108.1	8	-	0.0004	1.0	NA	1.50	4.3
COMBINED FLOW AT	108.2	7& 8	8	0.0251	51.1		1.50	
DIVIDED FLOW AT		8	3& 4					
	108.3	3	-	0.0251	25.6		1.50	

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	108.4	4	-	0.0000	25.6		1.50	
ROUTED 30"		3	13					
	108.3	3		0.0251	25.6		1.50	
	108.6	13		0.0251	25.6		1.50	
ROUTED 30"		4	14					
	108.4	4		0.0000	25.6		1.50	
	108.7	14		0.0000	25.6		1.50	
COMBINED FLOW AT	108.7	2&13	13	0.0314	40.7		1.50	
ROUTED 30"		13	15					
	108.7	13		0.0314	40.7		1.50	
	108.8	15		0.0314	40.7		1.50	
ROUTED 30"		14	16					
	108.7	14		0.0000	25.6		1.50	
	108.9	16		0.0000	25.5		1.50	
COMBINED FLOW AT	108.10	15&16	16	0.0314	66.2		1.50	
COMBINED FLOW AT	108.11	16&20	20	0.1036	221.3		0.25	
ROUTED 60"		20	8					
	108.11	20		0.1036	221.3		0.25	
	108.12	8		0.1036	239.7		0.25	
HYDROGRAPH AT	109.1	9	-	0.0110	26.4	NA	1.50	3.7
COMBINED FLOW AT	109.2	8& 9	9	0.1146	239.7		0.25	
HYDROGRAPH AT	110.1	10	-	0.0032	8.1	NA	1.50	3.9
ROUTED 60"		10	2					
	110.1	10		0.0032	8.1		1.50	
	110.2	2		0.0032	8.2		1.50	
COMBINED FLOW AT	110.3	2& 9	9	0.1178	239.7		0.25	
ROUTED 60"		9	8					
	110.3	9		0.1178	239.7		0.25	
	110.4	8		0.1178	251.2		0.25	
HYDROGRAPH AT	111.1	11	-	0.0011	3.0	NA	1.50	4.3
ROUTED 18"		11	2					
	111.1	11		0.0011	3.0		1.50	
	111.2	2		0.0011	3.0		1.50	
COMBINED FLOW AT	111.3	2& 8	11	0.1189	251.2		0.25	
HYDROGRAPH AT	112.1	12	-	0.0010	2.8	NA	1.50	4.3
COMBINED FLOW AT	112.2	11&12	12	0.1199	251.2		0.25	
ROUTED 60"		12	8					
	112.2	12		0.1199	251.2		0.25	
	112.3	8		0.1199	260.7		0.25	
HYDROGRAPH AT	113.1	13	-	0.0010	2.6	NA	1.50	4.3
ROUTED 18"		13	2					
	113.1	13		0.0010	2.6		1.50	
	113.2	2		0.0010	2.6		1.50	
COMBINED FLOW AT	113.3	2& 8	13	0.1208	260.7		0.25	
HYDROGRAPH AT	114.1	14	-	0.0008	2.3	NA	1.50	4.3
COMBINED FLOW AT	114.2	13&14	14	0.1216	260.7		0.25	
ROUTED 60"		14	8					
	114.2	14		0.1216	260.7		0.25	
	114.3	8		0.1216	267.1		0.25	
HYDROGRAPH AT	115.1	15	-	0.0010	2.8	NA	1.50	4.3

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
ROUTED 18"		15	2					
	115.1	15		0.0010	2.8		1.50	
	115.2	2		0.0010	2.8		1.50	
COMBINED FLOW AT	115.3	2& 8	15	0.1226	267.1		0.25	
HYDROGRAPH AT	116.1	16	-	0.0009	2.5	NA	1.50	4.3
COMBINED FLOW AT	116.2	2&15	16	0.1236	267.1		0.25	
ROUTED 60"		16	8					
	116.2	16		0.1236	267.1		0.25	
	116.3	8		0.1236	269.1		0.25	
HYDROGRAPH AT	117.1	17	-	0.0010	2.9	NA	1.50	4.3
HYDROGRAPH AT	118.1	18	-	0.0008	2.2	NA	1.50	4.3
COMBINED FLOW AT	118.2	8&18	18	0.1244	269.1		0.25	
HYDROGRAPH AT	123.1	23	-	0.0016	2.9	NA	1.50	2.8

THE RIO GRANDE TO RIO GRANDE BLVD. - 10 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	119.1	19	-	0.0039	8.7	NA	1.50	3.4
HYDROGRAPH AT	120.1	20	-	0.0039	8.7	NA	1.50	3.4
ROUTED		19	2					
	119.1	19		0.0039	8.7		1.50	
	119.2	2		0.0039	7.0		1.58	
ROUTED		20	3					
	120.1	20		0.0039	8.7		1.50	
	120.2	3		0.0039	7.0		1.58	
HYDROGRAPH AT	121.1	21	-	0.0054	12.0	NA	1.50	3.4
COMBINED FLOW AT	121.2	2&21	21	0.0093	18.3		1.52	
HYDROGRAPH AT	122.1	22	-	0.0054	12.0	NA	1.50	3.4
COMBINED FLOW AT	122.2	3&22	22	0.0093	18.3		1.52	
ROUTED 24"		21	2					
	121.2	21		0.0093	18.3		1.52	
	121.3	2		0.0093	17.9		1.54	
ROUTED 24"		22	3					
	122.2	22		0.0093	18.3		1.52	
	122.3	3		0.0093	18.1		1.54	
COMBINED FLOW AT	122.4	2& 3	22	0.0186	36.0		1.54	
ROUTED 42"		22	2					
	122.4	22		0.0186	36.0		1.54	
	122.5	2		0.0186	34.7		1.56	
HYDROGRAPH AT	124.1	24	-	0.0024	2.4	NA	1.58	1.5
HYDROGRAPH AT	125.1	25	-	0.0024	2.7	NA	1.56	1.7
HYDROGRAPH AT	126.1	26	-	0.0017	3.8	NA	1.50	3.4
HYDROGRAPH AT	127.1	27	-	0.0018	4.0	NA	1.50	3.4
COMBINED FLOW AT	126.2	2&26	26	0.0203	38.0		1.56	
COMBINED FLOW AT	127.2	26&27	27	0.0221	41.5		1.56	
HYDROGRAPH AT	128.1	28	-	0.0014	1.8	NA	1.52	2.0
HYDROGRAPH AT	129.1	29	-	0.0015	1.9	NA	1.52	2.0
COMBINED FLOW AT	129.2	27&29	29	0.0236	43.3		1.56	
HYDROGRAPH AT	130.1	30	-	0.0086	17.7	NA	1.54	3.2
ROUTED 36"		30	3					
	130.1	30		0.0086	17.7		1.54	
	130.2	3		0.0086	17.1		1.54	
HYDROGRAPH AT	131.1	31	-	0.0065	14.5	NA	1.50	3.4
HYDROGRAPH AT	132.1	32	-	0.0032	3.5	NA	1.56	1.7
HYDROGRAPH AT	133.1	33	-	0.0032	4.1	NA	1.52	2.0
HYDROGRAPH AT	134.1	34	-	0.0014	3.1	NA	1.50	3.4
ROUTED 24"		34	4					
	134.1	34		0.0014	3.1		1.50	
	134.2	4		0.0014	3.1		1.52	
HYDROGRAPH AT	135.1	35	-	0.0019	4.2	NA	1.50	3.4
ROUTED 24"		35	2					
	135.1	35		0.0019	4.2		1.50	
	135.2	2		0.0019	4.3		1.52	
HYDROGRAPH AT	136.1	36	-	0.0031	6.9	NA	1.50	3.4

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
COMBINED FLOW AT	136.2	2&36	36	0.0050	11.2		1.52	
ROUTED 30"		36	2					
	136.2	36		0.0050	11.2		1.52	
	136.4	2		0.0050	9.4		1.54	
COMBINED FLOW AT	136.5	2& 4	36	0.0064	12.5		1.54	
ROUTED 30"		36	2					
	136.5	36		0.0064	12.5		1.54	
	136.6	2		0.0064	11.3		1.58	
COMBINED FLOW AT	136.7	3&36	36	0.0150	29.6		1.54	
ROUTED 42"		36	2					
	136.7	36		0.0150	29.6		1.54	
	136.8	2		0.0150	29.2		1.56	
COMBINED FLOW AT	136.9	31&36	36	0.0215	43.4		1.54	
ROUTED 48"		36	2					
	136.9	36		0.0215	43.4		1.54	
	136.10	2		0.0215	41.6		1.54	
COMBINED FLOW AT	136.11	2&29	36	0.0451	84.4		1.54	
RESERVOIR HYD	DETPOND	36	10	0.0451	9.1		2.26	
ROUTED 24"		10	36					
	DETPOND	10		0.0451	9.1		2.26	
	DURANES	36		0.0451	9.1		2.16	

THE RIO GRANDE TO RIO GRANDE BLVD. - 50 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	119.1	19	-	0.0039	10.8	NA	1.50	4.3
HYDROGRAPH AT	120.1	20	-	0.0039	10.8	NA	1.50	4.3
ROUTED		19	2					
	119.1	19		0.0039	10.8		1.50	
	119.2	2		0.0039	8.9		1.56	
ROUTED		20	3					
	120.1	20		0.0039	10.8		1.50	
	120.2	3		0.0039	9.0		1.56	
HYDROGRAPH AT	121.1	21	-	0.0054	15.0	NA	1.50	4.3
COMBINED FLOW AT	121.2	2&21	21	0.0093	23.2		1.52	
HYDROGRAPH AT	122.1	22	-	0.0054	15.0	NA	1.50	4.3
COMBINED FLOW AT	122.2	3&22	22	0.0093	23.3		1.52	
ROUTED 24"		21	2					
	121.2	21		0.0093	23.2		1.52	
	121.3	2		0.0093	22.8		1.54	
ROUTED 24"		22	3					
	122.2	22		0.0093	23.3		1.52	
	122.3	3		0.0093	22.9		1.54	
COMBINED FLOW AT	122.4	2& 3	22	0.0186	45.7		1.54	
ROUTED 42"		22	2					
	122.4	22		0.0186	45.7		1.54	
	122.5	2		0.0186	44.4		1.56	
HYDROGRAPH AT	124.1	24	-	0.0024	3.5	NA	1.58	2.2
HYDROGRAPH AT	125.1	25	-	0.0024	3.9	NA	1.54	2.5
HYDROGRAPH AT	126.1	26	-	0.0017	4.7	NA	1.50	4.3
HYDROGRAPH AT	127.1	27	-	0.0018	5.0	NA	1.50	4.3
COMBINED FLOW AT	126.2	2&26	26	0.0203	48.6		1.56	
COMBINED FLOW AT	127.2	26&27	27	0.0221	52.9		1.56	
HYDROGRAPH AT	128.1	28	-	0.0014	2.6	NA	1.52	2.8
HYDROGRAPH AT	129.1	29	-	0.0015	2.7	NA	1.52	2.8
COMBINED FLOW AT	129.2	27&29	29	0.0236	55.4		1.56	
HYDROGRAPH AT	130.1	30	-	0.0086	22.2	NA	1.54	4.0
ROUTED 36"		30	3					
	130.1	30		0.0086	22.2		1.54	
	130.2	3		0.0086	21.3		1.54	
HYDROGRAPH AT	131.1	31	-	0.0065	18.1	NA	1.50	4.3
HYDROGRAPH AT	132.1	32	-	0.0032	5.0	NA	1.56	2.4
HYDROGRAPH AT	133.1	33	-	0.0032	5.8	NA	1.52	2.8
HYDROGRAPH AT	134.1	34	-	0.0014	3.9	NA	1.50	4.3
ROUTED 24"		34	4					
	134.1	34		0.0014	3.9		1.50	
	134.2	4		0.0014	3.8		1.52	
HYDROGRAPH AT	135.1	35	-	0.0019	5.3	NA	1.50	4.3
ROUTED 24"		35	2					
	135.1	35		0.0019	5.3		1.50	
	135.2	2		0.0019	5.3		1.52	
HYDROGRAPH AT	136.1	36	-	0.0031	8.6	NA	1.50	4.3

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
COMBINED FLOW AT	136.2	2&36	36	0.0050	13.9		1.52	
ROUTED 30"		36	2					
	136.2	36		0.0050	13.9		1.52	
	136.4	2		0.0050	12.0		1.54	
COMBINED FLOW AT	136.5	2& 4	36	0.0064	15.8		1.54	
ROUTED 30"		36	2					
	136.5	36		0.0064	15.8		1.54	
	136.6	2		0.0064	14.3		1.56	
COMBINED FLOW AT	136.7	3&36	36	0.0150	37.2		1.54	
ROUTED 42"		36	2					
	136.7	36		0.0150	37.2		1.54	
	136.8	2		0.0150	36.5		1.54	
COMBINED FLOW AT	136.9	31&36	36	0.0215	54.8		1.52	
ROUTED 48"		36	2					
	136.9	36		0.0215	54.8		1.52	
	136.10	2		0.0215	52.9		1.52	
COMBINED FLOW AT	136.11	2&29	36	0.0451	106.3		1.54	
RESERVOIR HYD	DETPOND	36	10	0.0451	9.9		2.32	
ROUTED 24"		10	36					
	DETPOND	10		0.0451	9.9		2.32	
	DURANES	36		0.0451	9.9		2.36	

THE RIO GRANDE TO RIO GRANDE BLVD. - 100 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	119.1	19	-	0.0039	10.9	NA	1.50	4.3
HYDROGRAPH AT	120.1	20	-	0.0039	10.9	NA	1.50	4.3
ROUTED		19	2					
	119.1	19		0.0039	10.9		1.50	
	119.2	2		0.0039	9.1		1.56	
ROUTED		20	3					
	120.1	20		0.0039	10.9		1.50	
	120.2	3		0.0039	9.1		1.56	
HYDROGRAPH AT	121.1	21	-	0.0054	15.1	NA	1.50	4.3
COMBINED FLOW AT	121.2	2&21	21	0.0093	23.5		1.52	
HYDROGRAPH AT	122.1	22	-	0.0054	15.1	NA	1.50	4.3
COMBINED FLOW AT	122.2	3&22	22	0.0093	23.6		1.52	
ROUTED 24"		21	2					
	121.2	21		0.0093	23.5		1.52	
	121.3	2		0.0093	23.0		1.54	
ROUTED 24"		22	3					
	122.2	22		0.0093	23.6		1.52	
	122.3	3		0.0093	23.2		1.54	
COMBINED FLOW AT	122.4	2& 3	22	0.0186	46.2		1.54	
ROUTED 42"		22	2					
	122.4	22		0.0186	46.2		1.54	
	122.5	2		0.0186	45.0		1.56	
HYDROGRAPH AT	124.1	24	-	0.0024	3.5	NA	1.58	2.3
HYDROGRAPH AT	125.1	25	-	0.0024	4.0	NA	1.54	2.6
HYDROGRAPH AT	126.1	26	-	0.0017	4.8	NA	1.50	4.3
HYDROGRAPH AT	127.1	27	-	0.0018	5.1	NA	1.50	4.3
COMBINED FLOW AT	126.2	2&26	26	0.0203	49.1		1.56	
COMBINED FLOW AT	127.2	26&27	27	0.0221	53.5		1.56	
HYDROGRAPH AT	128.1	28	-	0.0014	2.6	NA	1.52	2.9
HYDROGRAPH AT	129.1	29	-	0.0015	2.8	NA	1.52	2.9
COMBINED FLOW AT	129.2	27&29	29	0.0236	56.1		1.56	
HYDROGRAPH AT	130.1	30	-	0.0086	22.4	NA	1.54	4.0
ROUTED 36"		30	3					
	130.1	30		0.0086	22.4		1.54	
	130.2	3		0.0086	21.5		1.54	
HYDROGRAPH AT	131.1	31	-	0.0065	18.2	NA	1.50	4.3
HYDROGRAPH AT	132.1	32	-	0.0032	5.1	NA	1.56	2.4
HYDROGRAPH AT	133.1	33	-	0.0032	5.9	NA	1.52	2.9
HYDROGRAPH AT	134.1	34	-	0.0014	3.9	NA	1.50	4.3
ROUTED 24"		34	4					
	134.1	34		0.0014	3.9		1.50	
	134.2	4		0.0014	3.9		1.52	
HYDROGRAPH AT	135.1	35	-	0.0019	5.3	NA	1.50	4.3
ROUTED 24"		35	2					
	135.1	35		0.0019	5.3		1.50	
	135.2	2		0.0019	5.3		1.52	
HYDROGRAPH AT	136.1	36	-	0.0031	8.7	NA	1.50	4.3

THE RIO GRANDE TO RIO GRANDE BLVD. - 100 YEAR STORM

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
COMBINED FLOW AT	136.2	2&36	36	0.0050	14.0		1.52	
ROUTED 30"		36	2					
	136.2	36		0.0050	14.0		1.52	
	136.4	2		0.0050	12.2		1.54	
COMBINED FLOW AT	136.5	2& 4	36	0.0064	16.0		1.54	
ROUTED 30"		36	2					
	136.5	36		0.0064	16.0		1.54	
	136.6	2		0.0064	14.5		1.56	
COMBINED FLOW AT	136.7	3&36	36	0.0150	37.5		1.54	
ROUTED 42"		36	2					
	136.7	36		0.0150	37.5		1.54	
	136.8	2		0.0150	36.9		1.54	
COMBINED FLOW AT	136.9	31&36	36	0.0215	55.4		1.52	
ROUTED 48"		36	2					
	136.9	36		0.0215	55.4		1.52	
	136.10	2		0.0215	53.5		1.52	
COMBINED FLOW AT	136.11	2&29	36	0.0451	107.2		1.54	
RESERVOIR HYD	DETPOND	36	10	0.0451	9.9		2.32	
ROUTED 24"		10	36					
	DETPOND	10		0.0451	9.9		2.32	
	DURANES	36		0.0451	9.9		2.38	

RIO GRANDE BLVD. TO 6TH - 10 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	137.1	7	-	0.0002	0.3	NA	1.52	2.0
HYDROGRAPH AT	138.1	8	-	0.0034	6.3	NA	1.52	2.8
HYDROGRAPH AT	139.1	9	-	0.0032	5.9	NA	1.52	2.8
COMBINED FLOW AT	138.2	7& 8	8	0.0036	6.6		1.52	
COMBINED FLOW AT	139.2	8& 9	9	0.0068	12.5		1.52	
HYDROGRAPH AT	140.1	10	-	0.0006	0.8	NA	1.52	2.0
HYDROGRAPH AT	141.1	11	-	0.0020	2.0	NA	1.58	1.5
HYDROGRAPH AT	142.1	12	-	0.0045	10.0	NA	1.50	3.4
ROUTED 24"		12	2					
	142.1	12		0.0045	10.0		1.50	
	142.2	2		0.0045	9.9		1.52	
ROUTED 36"		2	12					
	142.2	2		0.0045	9.9		1.52	
	142.3	12		0.0045	9.8		1.54	
HYDROGRAPH AT	143.1	13	-	0.0066	14.7	NA	1.50	3.4
ROUTED 24"		13	2					
	143.1	13		0.0066	14.7		1.50	
	143.2	2		0.0066	14.5		1.52	
COMBINED FLOW AT	143.3	2&13	13	0.0132	29.2		1.52	
HYDROGRAPH AT	144.1	14	-	0.0013	1.7	NA	1.52	2.0
HYDROGRAPH AT	145.1	15	-	0.0017	2.2	NA	1.52	2.0
HYDROGRAPH AT	146.1	16	-	0.0032	7.1	NA	1.50	3.4
ROUTED 24"		16	2					
	146.1	16		0.0032	7.1		1.50	
	146.2	2		0.0032	7.1		1.52	
COMBINED FLOW AT	146.3	2&13	16	0.0164	36.3		1.52	
ROUTED 42"		16	2					
	146.3	16		0.0164	36.3		1.52	
	146.4	2		0.0164	35.0		1.54	
HYDROGRAPH AT	147.1	17	-	0.0020	4.5	NA	1.50	3.4
COMBINED FLOW AT	147.2	2&17	17	0.0184	39.3		1.54	
ROUTED 42"		17	2					
	147.2	17		0.0184	39.3		1.54	
	147.3	2		0.0184	36.9		1.54	
HYDROGRAPH AT	148.1	18	-	0.0021	2.7	NA	1.52	2.0
DIVIDED FLOW AT		18	3& 4					
	148.4	3	-	0.0021	1.8		1.52	
	148.3	4	-	0.0000	0.9		1.52	
COMBINED FLOW AT	148.4	2& 3	18	0.0205	38.6		1.54	
HYDROGRAPH AT	149.1	19	-	0.0010	2.2	NA	1.50	3.4
COMBINED FLOW AT	149.2	18&19	19	0.0215	40.8		1.54	
HYDROGRAPH AT	150.1	20	-	0.0009	2.0	NA	1.50	3.4
HYDROGRAPH AT	151.1	21	-	0.0020	4.5	NA	1.50	3.4
COMBINED FLOW AT	151.2	19&21	21	0.0235	45.0		1.54	
HYDROGRAPH AT	152.1	22	-	0.0011	1.4	NA	1.52	2.0
HYDROGRAPH AT	153.1A	23	-	0.0018	4.0	NA	1.50	3.4
ROUTED 24"		23	2					

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	153.1A	23		0.0018	4.0		1.50	
	153.2A	2		0.0018	4.0		1.52	
COMBINED FLOW AT	153.3A	2&20	20	0.0027	6.0		1.52	
ROUTED 36"		20	2					
	153.3A	20		0.0027	6.0		1.52	
	142.3	2		0.0027	6.0		1.52	
HYDROGRAPH AT	153.1B	3	-	0.0050	9.0	NA	1.52	2.8
HYDROGRAPH AT	154.1	24	-	0.0025	5.6	NA	1.50	3.4
COMBINED FLOW AT	154.2	2&24	24	0.0052	11.6		1.52	
ROUTED 36"		24	2					
	154.2	24		0.0052	11.6		1.52	
	154.3	2		0.0052	11.6		1.52	
ROUTED 24"		2	24					
	154.3	2		0.0052	11.6		1.52	
	154.4	24		0.0052	11.5		1.52	
COMBINED FLOW AT	154.5	21&24	24	0.0287	56.2		1.54	
RESERVOIR HYD	DETPOND	24	10	0.0287	0.7		2.58	
ROUTED 24"		10	40					
	DETPOND	10		0.0287	1.0		1.52	
	OUTFALL	40		0.0287	1.0		1.52	
HYDROGRAPH AT	155.1	25	-	0.0032	5.8	NA	1.52	2.8
HYDROGRAPH AT	156.1	26	-	0.0017	2.2	NA	1.52	2.0
HYDROGRAPH AT	157.1A	27	-	0.0040	8.9	NA	1.50	3.4
ROUTED 24"		27	2					
	157.1A	27		0.0040	8.9		1.50	
	157.2A	2		0.0040	7.6		1.54	
ROUTED 36"		2	27					
	157.2A	2		0.0040	7.6		1.54	
	157.3A	27		0.0040	7.6		1.56	
HYDROGRAPH AT	157.1B	7	-	0.0024	5.4	NA	1.50	3.4
HYDROGRAPH AT	158.1	28	-	0.0050	8.9	NA	1.52	2.7
DIVIDED FLOW AT		28	5&33					
	158.2	5	-	0.0050	4.4		1.52	
	158.3	33	-	0.0000	4.4		1.52	
COMBINED FLOW AT	158.2	27& 5	28	0.0090	11.7		1.54	
ROUTED 24"		28	8					
	158.2	28		0.0090	11.7		1.54	
	158.3	8		0.0090	10.5		1.58	
HYDROGRAPH AT	159.1	29	-	0.0027	6.0	NA	1.50	3.4
ROUTED 36"		29	9					
	159.1	29		0.0027	6.0		1.50	
	159.2	9		0.0027	6.0		1.52	
HYDROGRAPH AT	160.1	30	-	0.0012	2.7	NA	1.50	3.4
ROUTED 24"		30	10					
	160.1	30		0.0012	2.7		1.50	
	160.2	10		0.0012	2.5		1.54	
COMBINED FLOW AT	160.3	9&10	30	0.0039	8.5		1.52	
HYDROGRAPH AT	161.1	31	-	0.0078	16.5	NA	1.52	3.3
DIVIDED FLOW AT		31	5& 6					
	161.2	5	-	0.0078	8.2		1.52	
	161.3	6	-	0.0000	8.2		1.52	
COMBINED FLOW AT	161.3	5&30	30	0.0117	16.8		1.52	
ROUTED 24"		30	31					

RIO GRANDE BLVD. TO 6TH - 10 YEAR STORM 3 of 3

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	161.3	30		0.0117	16.8		1.52	
	161.4	31		0.0117	16.4		1.54	
COMBINED FLOW AT	161.5	6& 8	28	0.0090	17.8		1.56	
COMBINED FLOW AT	JNCTBOX	28&31	31	0.0207	34.1		1.54	
DIVIDED FLOW AT		31	5& 6					
	161.2	5	-	0.0207	17.1		1.54	
	161.3	6	-	0.0000	17.1		1.54	
COMBINED FLOW AT	FRNTROAD	33&31	31	0.0207	38.4		1.54	
RESERVOIR HYD	DETPOND	31	32	0.0207	1.9		2.32	
COMBINED FLOW AT	OUTFALL	32&40	40	0.0494	2.4		2.60	
ROUTED 24"		40	41					
	OUTFALL	40		0.0494	2.4		2.60	
	TOCITY	41		0.0494	2.4		2.62	

RIO GRANDE BLVD. TO 6TH - 50 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	137.1	7	-	0.0002	0.4	NA	1.52	2.9
HYDROGRAPH AT	138.1	8	-	0.0034	8.1	NA	1.52	3.7
HYDROGRAPH AT	139.1	9	-	0.0032	7.6	NA	1.52	3.7
COMBINED FLOW AT	138.2	7& 8	8	0.0036	8.5		1.52	
COMBINED FLOW AT	139.2	8& 9	9	0.0068	16.1		1.52	
HYDROGRAPH AT	140.1	10	-	0.0006	1.1	NA	1.52	2.8
HYDROGRAPH AT	141.1	11	-	0.0020	2.8	NA	1.58	2.2
HYDROGRAPH AT	142.1	12	-	0.0045	12.5	NA	1.50	4.3
ROUTED 24"		12	2					
	142.1	12		0.0045	12.5		1.50	
	142.2	2		0.0045	12.3		1.52	
ROUTED 36"		2	12					
	142.2	2		0.0045	12.3		1.52	
	142.3	12		0.0045	12.2		1.54	
HYDROGRAPH AT	143.1	13	-	0.0066	18.3	NA	1.50	4.3
ROUTED 27"		13	2					
	143.1	13		0.0066	18.3		1.50	
	143.2	2		0.0066	18.2		1.52	
COMBINED FLOW AT	143.3	2&13	13	0.0132	36.5		1.52	
HYDROGRAPH AT	144.1	14	-	0.0013	2.4	NA	1.52	2.8
HYDROGRAPH AT	145.1	15	-	0.0017	3.1	NA	1.52	2.8
HYDROGRAPH AT	146.1	16	-	0.0032	8.9	NA	1.50	4.3
ROUTED 24"		16	2					
	146.1	16		0.0032	8.9		1.50	
	146.2	2		0.0032	8.9		1.52	
COMBINED FLOW AT	146.3	2&13	16	0.0164	45.3		1.52	
ROUTED 48"		16	2					
	146.3	16		0.0164	45.3		1.52	
	146.4	2		0.0164	43.8		1.54	
HYDROGRAPH AT	147.1	17	-	0.0020	5.6	NA	1.50	4.3
COMBINED FLOW AT	147.2	2&17	17	0.0184	49.0		1.54	
ROUTED 48"		17	2					
	147.2	17		0.0184	49.0		1.54	
	147.3	2		0.0184	45.8		1.54	
HYDROGRAPH AT	148.1	18	-	0.0021	3.8	NA	1.52	2.8
DIVIDED FLOW AT		18	3& 4					
	148.4	3	-	0.0021	2.6		1.52	
	148.3	4	-	0.0000	1.3		1.52	
COMBINED FLOW AT	148.4	2& 3	18	0.0205	48.3		1.54	
HYDROGRAPH AT	149.1	19	-	0.0010	2.8	NA	1.50	4.3
COMBINED FLOW AT	149.2	18&19	19	0.0215	50.9		1.54	
HYDROGRAPH AT	150.1	20	-	0.0009	2.5	NA	1.50	4.3
HYDROGRAPH AT	151.1	21	-	0.0020	5.6	NA	1.50	4.3
COMBINED FLOW AT	151.2	19&21	21	0.0235	56.2		1.54	
HYDROGRAPH AT	152.1	22	-	0.0011	2.0	NA	1.52	2.8
HYDROGRAPH AT	153.1A	23	-	0.0018	5.0	NA	1.50	4.3
ROUTED 24"		23	2					

RIO GRANDE BLVD. TO 6TH - 50 YEAR STORM

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	153.1A	23		0.0018	5.0		1.50	
	153.2A	2		0.0018	5.0		1.52	
COMBINED FLOW AT	153.3A	2&20	20	0.0027	7.5		1.52	
ROUTED 36"		20	2					
	153.3A	20		0.0027	7.5		1.52	
	142.3	2		0.0027	7.6		1.52	
HYDROGRAPH AT	153.1B	3	-	0.0050	11.7	NA	1.52	3.6
HYDROGRAPH AT	154.1	24	-	0.0025	7.0	NA	1.50	4.3
COMBINED FLOW AT	154.2	2&24	24	0.0052	14.6		1.52	
ROUTED 36"		24	2					
	154.2	24		0.0052	14.6		1.52	
	154.3	2		0.0052	14.5		1.52	
ROUTED 24"		2	24					
	154.3	2		0.0052	14.5		1.52	
	154.4	24		0.0052	14.4		1.52	
COMBINED FLOW AT	154.5	21&24	24	0.0287	70.1		1.52	
RESERVOIR HYD	DETPOND	24	10	0.0287	0.9		2.78	
ROUTED 24"		10	40					
	DETPOND	10		0.0287	1.0		1.52	
	OUTFALL	40		0.0287	1.0		1.52	
HYDROGRAPH AT	155.1	25	-	0.0032	7.5	NA	1.52	3.6
HYDROGRAPH AT	156.1	26	-	0.0017	3.1	NA	1.52	2.8
HYDROGRAPH AT	157.1A	27	-	0.0040	11.1	NA	1.50	4.3
ROUTED 27"		27	2					
	157.1A	27		0.0040	11.1		1.50	
	157.2A	2		0.0040	9.7		1.54	
ROUTED 36"		2	27					
	157.2A	2		0.0040	9.7		1.54	
	157.3A	27		0.0040	9.3		1.54	
HYDROGRAPH AT	157.1B	7	-	0.0024	6.7	NA	1.50	4.3
HYDROGRAPH AT	158.1	28	-	0.0050	11.6	NA	1.52	3.6
DIVIDED FLOW AT		28	5&33					
	158.2	5	-	0.0050	5.8		1.52	
	158.3	33	-	0.0000	5.8		1.52	
COMBINED FLOW AT	158.2	27& 5	28	0.0090	14.9		1.52	
ROUTED 33"		28	8					
	158.2	28		0.0090	14.9		1.52	
	158.3	8		0.0090	13.9		1.56	
HYDROGRAPH AT	159.1	29	-	0.0027	7.5	NA	1.50	4.3
ROUTED 36"		29	9					
	159.1	29		0.0027	7.5		1.50	
	159.2	9		0.0027	7.5		1.52	
HYDROGRAPH AT	160.1	30	-	0.0012	3.3	NA	1.50	4.3
ROUTED 24"		30	10					
	160.1	30		0.0012	3.3		1.50	
	160.2	10		0.0012	3.2		1.54	
COMBINED FLOW AT	160.3	9&10	30	0.0039	10.7		1.52	
HYDROGRAPH AT	161.1	31	-	0.0078	20.7	NA	1.50	4.1
DIVIDED FLOW AT		31	5& 6					
	161.2	5	-	0.0078	10.4		1.50	
	161.3	6	-	0.0000	10.4		1.50	

RIO GRANDE BLVD. TO 6TH - 50 YEAR STORM

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
COMBINED FLOW AT	161.3	5&30	30	0.0117	21.0		1.52	
ROUTED 30"		30	31					
	161.3	30		0.0117	21.0		1.52	
	161.4	31		0.0117	20.5		1.52	
COMBINED FLOW AT	161.5	6& 8	28	0.0090	23.5		1.54	
COMBINED FLOW AT	JNCTBOX	28&31	31	0.0207	43.7		1.54	
DIVIDED FLOW AT		31	5& 6					
	161.2	5	-	0.0207	21.9		1.54	
	161.3	6	-	0.0000	21.9		1.54	
COMBINED FLOW AT	FRNTROAD	33&31	31	0.0207	49.3		1.54	
RESERVOIR HYD	DETPOND	31	32	0.0207	2.2		2.40	
COMBINED FLOW AT	OUTFALL	32&40	40	0.0494	2.9		2.80	
ROUTED 24"		40	41					
	OUTFALL	40		0.0494	2.9		2.80	
	TOCITY	41		0.0494	2.9		2.82	

RIO GRANDE BLVD. TO 6TH - 100 YEAR STORM
HYMO SUMMARY TABLE

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
HYDROGRAPH AT	137.1	7	-	0.0002	0.4	NA	1.52	3.2
HYDROGRAPH AT	138.1	8	-	0.0034	8.9	NA	1.52	4.0
HYDROGRAPH AT	139.1	9	-	0.0032	8.3	NA	1.52	4.0
COMBINED FLOW AT	138.2	7& 8	8	0.0036	9.3		1.52	
COMBINED FLOW AT	139.2	8& 9	9	0.0068	17.6		1.52	
HYDROGRAPH AT	140.1	10	-	0.0006	1.2	NA	1.52	3.1
HYDROGRAPH AT	141.1	11	-	0.0020	3.2	NA	1.58	2.4
HYDROGRAPH AT	142.1	12	-	0.0045	13.6	NA	1.50	4.7
ROUTED 24"		12	2					
	142.1	12		0.0045	13.6		1.50	
	142.2	2		0.0045	13.3		1.52	
ROUTED 36"		2	12					
	142.2	2		0.0045	13.3		1.52	
	142.3	12		0.0045	13.2		1.54	
HYDROGRAPH AT	143.1	13	-	0.0066	19.9	NA	1.50	4.7
ROUTED 27"		13	2					
	143.1	13		0.0066	19.9		1.50	
	143.2	2		0.0066	19.7		1.52	
COMBINED FLOW AT	143.3	2&13	13	0.0132	39.5		1.52	
HYDROGRAPH AT	144.1	14	-	0.0013	2.6	NA	1.52	3.1
HYDROGRAPH AT	145.1	15	-	0.0017	3.5	NA	1.52	3.1
HYDROGRAPH AT	146.1	16	-	0.0032	9.7	NA	1.50	4.7
ROUTED 24"		16	2					
	146.1	16		0.0032	9.7		1.50	
	146.2	2		0.0032	9.6		1.52	
COMBINED FLOW AT	146.3	2&13	16	0.0164	49.1		1.52	
ROUTED 48"		16	2					
	146.3	16		0.0164	49.1		1.52	
	146.4	2		0.0164	46.3		1.54	
HYDROGRAPH AT	147.1	17	-	0.0020	6.0	NA	1.50	4.7
COMBINED FLOW AT	147.2	2&17	17	0.0184	52.1		1.52	
ROUTED 48"		17	2					
	147.2	17		0.0184	52.1		1.52	
	147.3	2		0.0184	48.9		1.52	
HYDROGRAPH AT	148.1	18	-	0.0021	4.3	NA	1.52	3.1
DIVIDED FLOW AT		18	3& 4					
	148.4	3	-	0.0021	2.9		1.52	
	148.3	4	-	0.0000	1.4		1.52	
COMBINED FLOW AT	148.4	2& 3	18	0.0205	51.7		1.52	
HYDROGRAPH AT	149.1	19	-	0.0010	3.0	NA	1.50	4.7
COMBINED FLOW AT	149.2	18&19	19	0.0215	54.8		1.52	
HYDROGRAPH AT	150.1	20	-	0.0009	2.7	NA	1.50	4.7
HYDROGRAPH AT	151.1	21	-	0.0020	6.0	NA	1.50	4.7
COMBINED FLOW AT	151.2	19&21	21	0.0235	60.8		1.52	
HYDROGRAPH AT	152.1	22	-	0.0011	2.2	NA	1.52	3.1
HYDROGRAPH AT	153.1A	23	-	0.0018	5.4	NA	1.50	4.7
ROUTED 24"		23	2					

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
	153.1A	23		0.0018	5.4		1.50	
	153.2A	2		0.0018	5.4		1.52	
COMBINED FLOW AT	153.3A	2&20	20	0.0027	8.2		1.52	
ROUTED 36"		20	2					
	153.3A	20		0.0027	8.2		1.52	
	142.3	2		0.0027	8.3		1.52	
HYDROGRAPH AT	153.1B	3	-	0.0050	12.8	NA	1.52	3.9
HYDROGRAPH AT	154.1	24	-	0.0025	7.5	NA	1.50	4.7
COMBINED FLOW AT	154.2	2&24	24	0.0052	15.8		1.52	
ROUTED 36"		24	2					
	154.2	24		0.0052	15.8		1.52	
	154.3	2		0.0052	15.7		1.52	
ROUTED 27"		2	24					
	154.3	2		0.0052	15.7		1.52	
	154.4	24		0.0052	15.7		1.52	
COMBINED FLOW AT	154.5	21&24	24	0.0287	76.5		1.52	
RESERVOIR HYD	DETPOND	24	10	0.0287	0.9		2.84	
ROUTED 24"		10	40					
	DETPOND	10		0.0287	1.0		1.52	
	OUTFALL	40		0.0287	1.0		1.52	
HYDROGRAPH AT	155.1	25	-	0.0032	8.2	NA	1.52	4.0
HYDROGRAPH AT	156.1	26	-	0.0017	3.5	NA	1.52	3.1
HYDROGRAPH AT	157.1A	27	-	0.0040	12.1	NA	1.50	4.7
ROUTED 27"		27	2					
	157.1A	27		0.0040	12.1		1.50	
	157.2A	2		0.0040	10.7		1.54	
ROUTED 36"		2	27					
	157.2A	2		0.0040	10.7		1.54	
	157.3A	27		0.0040	10.2		1.54	
HYDROGRAPH AT	157.1B	7	-	0.0024	7.2	NA	1.50	4.7
HYDROGRAPH AT	158.1	28	-	0.0050	12.7	NA	1.52	3.9
DIVIDED FLOW AT		28	5&33					
	158.2	5	-	0.0050	6.3		1.52	
	158.3	33	-	0.0000	6.3		1.52	
COMBINED FLOW AT	158.2	27& 5	28	0.0090	16.4		1.52	
ROUTED 33"		28	8					
	158.2	28		0.0090	16.4		1.52	
	158.3	8		0.0090	15.3		1.56	
HYDROGRAPH AT	159.1	29	-	0.0027	8.1	NA	1.50	4.7
ROUTED 36"		29	9					
	159.1	29		0.0027	8.1		1.50	
	159.2	9		0.0027	8.2		1.52	
HYDROGRAPH AT	160.1	30	-	0.0012	3.6	NA	1.50	4.7
ROUTED 24"		30	10					
	160.1	30		0.0012	3.6		1.50	
	160.2	10		0.0012	3.4		1.54	
COMBINED FLOW AT	160.3	9&10	30	0.0039	11.6		1.52	
HYDROGRAPH AT	161.1	31	-	0.0078	22.6	NA	1.50	4.5
DIVIDED FLOW AT		31	5& 6					
	161.2	5	-	0.0078	11.3		1.50	
	161.3	6	-	0.0000	11.3		1.50	

DESCRIPTION	HYDROGRAPH LABEL	FROM ID NO	TO ID NO	AREA SQ MI	DISCHARGE CFS	CURVE NO	TIME TO PEAK HR	CFS PER ACRE
COMBINED FLOW AT	161.3	5&30	30	0.0117	22.8		1.52	
ROUTED 30"		30	31					
	161.3	30		0.0117	22.8		1.52	
	161.4	31		0.0117	22.3		1.52	
COMBINED FLOW AT	161.5	6& 8	28	0.0090	25.8		1.54	
COMBINED FLOW AT	JNCTBOX	28&31	31	0.0207	47.7		1.54	
DIVIDED FLOW AT		31	5& 6					
	161.2	5	-	0.0207	23.8		1.54	
	161.3	6	-	0.0000	23.8		1.54	
COMBINED FLOW AT	FRNTROAD	33&31	31	0.0207	53.9		1.52	
RESERVOIR HYD	DETPOND	31	32	0.0207	2.4		2.44	
COMBINED FLOW AT	OUTFALL	32&40	40	0.0494	3.1		2.86	
ROUTED 24"		40	41					
	OUTFALL	40		0.0494	3.1		2.86	
	TOCITY	41		0.0494	3.1		2.86	

CATCH BASIN HYDRAULICS

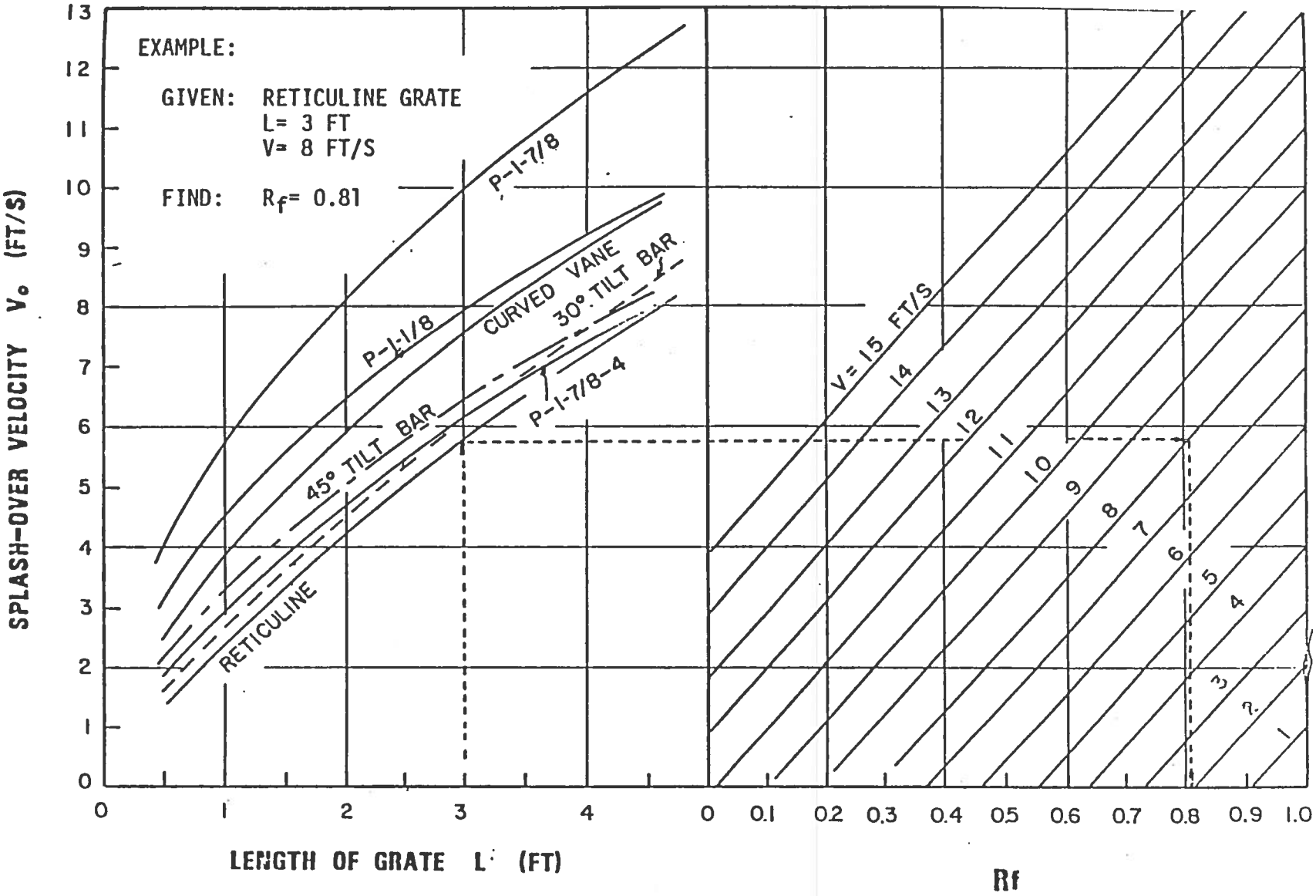

CHART 7. Grate inlet frontal flow interception efficiency.

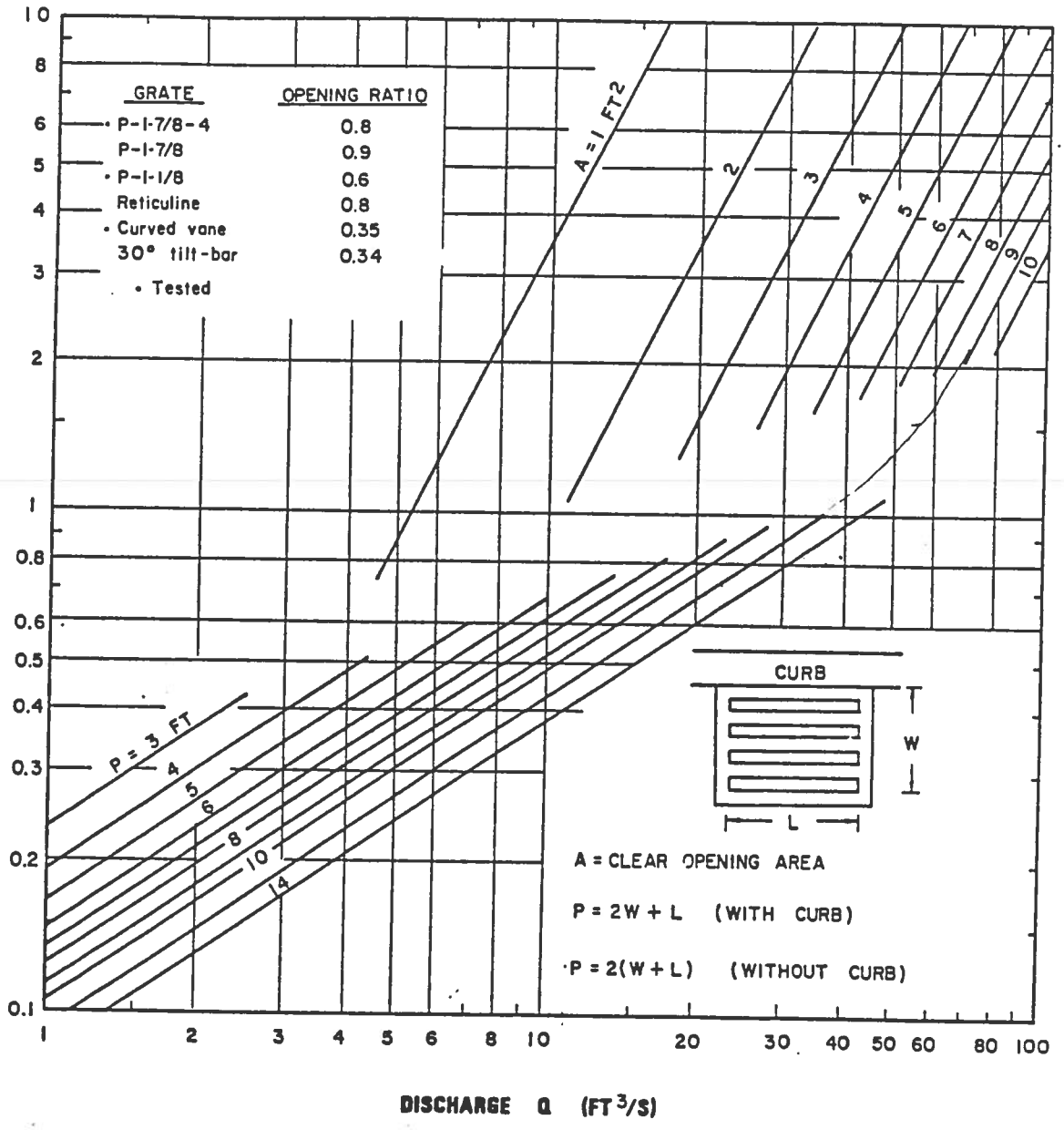

CHART 11. Grate inlet capacity in sump conditions.

HYDRAULIC PERFORMANCE OF NEW BASINS
10-YEAR STORM - COORS TO GABALDON
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
SOUTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 22																
12	2.5	2.5	3.5	4.0	10.7	0.161	1.9	0.6	0.0200	0.0150	7.2	2.9	0.65	1.0	0.3	0.74
14	2.1	2.6	3.5	4.0	10.9	0.164	1.9	0.7	0.0200	0.0150	7.2	2.9	0.64	1.0	0.3	0.73
16	2.3	2.9	3.5	4.0	11.3	0.170	2.1	0.8	0.0200	0.0150	7.2	3.0	0.63	1.0	0.2	0.72
18	2.0	2.7	3.5	4.0	11.0	0.165	2.0	0.7	0.0200	0.0150	7.2	3.0	0.64	1.0	0.3	0.73
20W	0.0	0.6	3.5	4.0	5.3	0.106	0.6	0.0	0.0200	0.0200	7.2	2.2	0.95	1.0	0.4	0.97
20E	8.4	8.4	3.5	4.0	14.1	0.282	5.2	3.2	0.0200	0.0200	7.2	4.2	0.53	1.0	0.2	0.62
22a	2.8	5.5	3.5	4.0	14.4	0.216	3.4	2.1	0.0200	0.0150	7.2	3.5	0.53	1.0	0.2	0.62
22b	2.8	4.6	3.5	4.0	13.4	0.201	3.0	1.6	0.0200	0.0150	7.2	3.4	0.55	1.0	0.2	0.65
22-LP	1.4	2.8	3.5	4.0	11.1	0.167	2.0	0.8	0.0200	0.0150	7.2	3.0	0.64	1.0	0.3	0.73
EAST OF LOW POINT IN BASIN 22																
22E-1	3.2	3.2	3.5	4.0	10.0	0.200	2.5	0.7	0.0181	0.0200	7.2	3.2	0.68	1.0	0.3	0.77
22-LP	2.1	2.7	3.5	4.0	9.4	0.188	2.2	0.5	0.0181	0.0200	7.2	3.1	0.71	1.0	0.3	0.80
NORTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 21																
11	2.7	2.7	3.5	4.0	9.2	0.184	2.2	0.5	0.0200	0.0200	7.2	3.2	0.72	1.0	0.3	0.80
13	2.4	2.9	3.5	4.0	9.4	0.188	2.3	0.6	0.0200	0.0200	7.2	3.2	0.71	1.0	0.3	0.79
15	2.6	3.1	3.5	4.0	9.7	0.194	2.4	0.7	0.0200	0.0200	7.2	3.3	0.70	1.0	0.3	0.78
17	2.6	3.2	3.5	4.0	9.8	0.196	2.5	0.7	0.0200	0.0200	7.2	3.3	0.69	1.0	0.3	0.78
19W	0.0	0.6	3.5	4.0	5.3	0.105	0.6	0.0	0.0200	0.0200	7.2	2.2	0.95	1.0	0.4	0.97
19E	8.4	8.4	3.5	4.0	14.1	0.282	5.2	3.2	0.0200	0.0200	7.2	4.2	0.53	1.0	0.2	0.62
21a	2.8	5.5	3.5	4.0	14.4	0.216	3.4	2.1	0.0200	0.0150	7.2	3.5	0.53	1.0	0.2	0.62
21b	2.8	4.6	3.5	4.0	13.4	0.201	3.0	1.6	0.0200	0.0150	7.2	3.4	0.55	1.0	0.2	0.65
21-LP	1.4	2.8	3.5	4.0	11.1	0.167	2.0	0.8	0.0200	0.0150	7.2	3.0	0.64	1.0	0.3	0.73
EAST OF LOW POINT IN BASIN 21																
21E-1	3.2	3.2	3.5	4.0	10.0	0.200	2.5	0.7	0.0181	0.0200	7.2	3.2	0.68	1.0	0.3	0.77
21-LP	2.1	2.7	3.5	4.0	9.4	0.188	2.2	0.5	0.0181	0.0200	7.2	3.1	0.71	1.0	0.3	0.80

HYDRAULIC PERFORMANCE OF NEW BASINS
10-YEAR STORM - GABALDON TO RIO GRANDE BLVD.
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
SOUTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 31																
27W-1	4.7	4.7	3.5	4	11.2	0.225	3.4	1.3	0.0208	0.0200	7.2	3.7	0.63	1.0	0.2	0.72
31W-1	2.6	3.7	3.5	4	10.7	0.214	2.8	0.9	0.0171	0.0200	7.2	3.3	0.65	1.0	0.3	0.75
31W-2	1.7	2.5	3.5	4	10.3	0.205	2.0	0.5	0.0096	0.0200	7.2	2.4	0.67	1.0	0.4	0.81
31-LP	1.3	1.7	3.5	4	9.8	0.195	1.5	0.2	0.0059	0.0200	7.2	1.8	0.69	1.0	0.5	0.86
EAST OF LOW POINT IN BASIN 31																
36E-1	5.2	5.2	3.5	4	12.0	0.241	3.6	1.6	0.0178	0.0200	7.2	3.6	0.60	1.0	0.2	0.70
36E-2	2.5	3.8	3.5	4	12.0	0.240	2.9	1.0	0.0097	0.0200	7.2	2.7	0.60	1.0	0.4	0.74
34E-1	2.2	3.0	3.5	4	12.0	0.359	2.7	0.3	0.0016	0.0300	7.2	1.4	0.60	1.0	0.7	0.89
34E-2	2	2.3	3.5	4	10.8	0.323	2.1	0.2	0.0016	0.0300	7.2	1.3	0.65	1.0	0.7	0.91
31E-1	2.5	2.7	3.5	4	11.4	0.343	2.4	0.3	0.0016	0.0300	7.2	1.4	0.62	1.0	0.7	0.90
31E-2	2.3	2.5	3.5	4	11.2	0.335	2.3	0.2	0.0016	0.0300	7.2	1.3	0.63	1.0	0.7	0.90
31E-3	2.3	2.5	3.5	4	11.1	0.334	2.3	0.2	0.0016	0.0300	7.2	1.3	0.63	1.0	0.7	0.90
31-LP	2.2	2.4	3.5	4	11.0	0.329	2.2	0.2	0.0016	0.0300	7.2	1.3	0.64	1.0	0.7	0.91
NORTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 30																
30W-1	5.6	5.6	3.5	4	12.0	0.240	3.9	1.7	0.0208	0.0200	7.2	3.9	0.60	1.0	0.2	0.69
30W-2	1.9	3.4	3.5	4	11.5	0.230	2.6	0.8	0.0096	0.0200	7.2	2.6	0.62	1.0	0.4	0.76
30-LP	1.8	2.5	3.5	4	11.2	0.224	2.0	0.5	0.0059	0.0200	7.2	2.0	0.63	1.0	0.5	0.81
EAST OF LOW POINT IN BASIN 30																
35E-1	5	5.0	3.5	4	11.9	0.237	3.5	1.5	0.0178	0.0200	7.2	3.6	0.61	1.0	0.2	0.70
30E-1	1.8	3.1	3.5	4	11.0	0.221	2.4	0.7	0.0097	0.0200	7.2	2.5	0.64	1.0	0.4	0.78
30E-2	2.5	3.1	3.5	4	12.0	0.361	2.7	0.3	0.0016	0.0300	7.2	1.4	0.60	1.0	0.7	0.89
30E-3	2.5	2.8	3.5	4	11.6	0.348	2.5	0.3	0.0016	0.0300	7.2	1.4	0.62	1.0	0.7	0.90
30E-4	2.8	3.0	3.5	4	12.0	0.360	2.7	0.3	0.0016	0.0300	7.2	1.4	0.60	1.0	0.7	0.89
30E-5	1.5	1.8	3.5	4	9.8	0.295	1.7	0.1	0.0016	0.0300	7.2	1.2	0.69	1.0	0.8	0.93
30-LP	1.4	1.5	3.5	4	9.2	0.277	1.4	0.1	0.0016	0.0300	7.2	1.2	0.72	1.0	0.8	0.94

HYDRAULIC PERFORMANCE OF NEW BASINS
10-YEAR STORM - RIO GRANDE BLVD. TO 12TH STREET
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
SOUTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 43																
43W-1	4.5	4.5	3.5	4.0	12.0	0.240	3.2	1.3	0.0136	0.0200	7.2	3.1	0.60	1.0	0.3	0.72
43W-2	1.8	2.9	3.5	4.0	11.1	0.223	2.3	0.6	0.0082	0.0200	7.2	2.3	0.63	1.0	0.4	0.79
43-LP	1.6	2.1	3.5	4.0	10.9	0.217	1.8	0.4	0.0051	0.0200	7.2	1.8	0.65	1.0	0.5	0.83
EAST OF LOW POINT IN BASIN 43																
54E-1	4.4	4.4	3.5	4.0	12.0	0.241	3.2	1.2	0.0127	0.0200	7.2	3.0	0.60	1.0	0.3	0.72
54E-2	2.3	3.3	3.5	4.0	10.9	0.217	2.5	0.8	0.0127	0.0200	7.2	2.8	0.65	1.0	0.3	0.76
51E-1	2.0	2.7	3.5	4.0	12.0	0.241	2.2	0.5	0.0047	0.0200	7.2	1.8	0.60	1.0	0.5	0.81
51E-2	2.2	2.6	3.5	4.0	12.0	0.239	2.1	0.5	0.0047	0.0200	7.2	1.8	0.60	1.0	0.5	0.81
47E-1	3.5	3.9	3.5	4.0	12.0	0.359	3.3	0.6	0.0027	0.0300	7.2	1.8	0.60	1.0	0.6	0.85
43E-1	3.4	3.9	3.5	4.0	11.9	0.358	3.3	0.6	0.0027	0.0300	7.2	1.8	0.60	1.0	0.6	0.85
43E-2	3.4	3.9	3.5	4.0	11.9	0.358	3.3	0.6	0.0027	0.0300	7.2	1.8	0.60	1.0	0.6	0.85
43-LP	3.4	3.9	3.5	4.0	11.9	0.358	3.3	0.6	0.0027	0.0300	7.2	1.8	0.60	1.0	0.6	0.85
NORTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 42																
42W-1	4.5	4.5	3.5	4.0	12.0	0.240	3.2	1.3	0.0136	0.0200	7.2	3.1	0.60	1.0	0.3	0.72
42W-2	1.2	2.3	3.5	4.0	10.2	0.204	1.9	0.4	0.0082	0.0200	7.2	2.2	0.67	1.0	0.4	0.82
42-LP	1.2	1.6	3.5	4.0	9.5	0.190	1.3	0.2	0.0056	0.0200	7.2	1.7	0.71	1.0	0.5	0.87
EAST OF LOW POINT IN BASIN 42																
53E-1	3.9	3.9	3.5	4.0	11.5	0.230	2.9	1.0	0.0127	0.0200	7.2	2.9	0.62	1.0	0.3	0.74
50E-1	1.7	1.7	3.5	4.0	8.4	0.169	1.5	0.2	0.0127	0.0200	7.2	2.4	0.76	1.0	0.4	0.86
49E-1	4.3	4.5	3.5	4.0	11.4	0.341	3.7	0.8	0.0047	0.0300	7.2	2.3	0.63	1.0	0.5	0.82
46E-1	2.3	3.0	3.5	4.0	11.0	0.331	2.6	0.4	0.0024	0.0300	7.2	1.6	0.64	1.0	0.7	0.88
46E-2	2.6	2.9	3.5	4.0	10.9	0.328	2.6	0.3	0.0024	0.0300	7.2	1.6	0.64	1.0	0.7	0.88
46E-3	2.5	2.8	3.5	4.0	10.8	0.323	2.5	0.3	0.0024	0.0300	7.2	1.6	0.65	1.0	0.7	0.89
42-LP	3.3	3.6	3.5	4.0	11.8	0.354	3.1	0.5	0.0024	0.0300	7.2	1.7	0.61	1.0	0.6	0.86

HYDRAULIC PERFORMANCE OF NEW BASINS
10-YEAR STORM - 12TH STREET TO 6TH STREET
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
			SOUTH SIDE SHOULDER GUTTER													
			WEST OF LOW POINT IN BASIN 61													
61W-1	6	6.0	3.5	4	11.9	0.238	4.1	1.9	0.0250	0.0200	7.2	4.2	0.61	1.0	0.2	0.68
61W-2	2	3.6	3.5	4	11.6	0.232	2.7	0.9	0.0105	0.0200	7.2	2.7	0.62	1.0	0.4	0.75
61-LP	1.3	2.1	3.5	4	10.5	0.211	1.7	0.3	0.0057	0.0200	7.2	1.9	0.66	1.0	0.5	0.83
			EAST OF LOW POINT IN BASIN 61													
61E-1	3.9	3.9	3.5	4	12.0	0.239	2.9	1.0	0.0103	0.0200	7.2	2.7	0.60	1.0	0.3	0.74
61E-2	3.9	4.8	3.5	4	11.9	0.237	3.4	1.4	0.0161	0.0200	7.2	3.4	0.61	1.0	0.3	0.71
61E-3	2.6	3.8	3.5	4	11.6	0.232	2.8	1.0	0.0113	0.0200	7.2	2.8	0.62	1.0	0.3	0.75
61-LP	1.8	2.6	3.5	4	11.3	0.225	2.1	0.5	0.0064	0.0200	7.2	2.1	0.63	1.0	0.5	0.80
			NORTH SIDE SHOULDER GUTTER													
			WEST OF LOW POINT IN BASIN 57													
57W-1	3.7	3.7	3.5	4	10.3	0.207	2.8	0.9	0.0201	0.0200	7.2	3.5	0.67	1.0	0.3	0.75
57W-2	2.2	3.0	3.5	4	10.8	0.215	2.3	0.7	0.0105	0.0200	7.2	2.6	0.65	1.0	0.4	0.78
57-LP	1.4	2.0	3.5	4	10.3	0.206	1.6	0.3	0.0057	0.0200	7.2	1.8	0.67	1.0	0.5	0.84
			EAST OF LOW POINT IN BASIN 57													
59E-1	5.3	5.3	3.5	4	12.0	0.241	3.7	1.6	0.0185	0.0200	7.2	3.7	0.60	1.0	0.2	0.70
59E-2	1.9	3.3	3.5	4	10.0	0.201	2.5	0.7	0.0185	0.0200	7.2	3.2	0.68	1.0	0.3	0.77
57-LP	1.8	2.4	3.5	4	12.0	0.240	2.0	0.4	0.0040	0.0200	7.2	1.7	0.60	1.0	0.6	0.82

HYDRAULIC PERFORMANCE OF NEW BASINS
50-YEAR STORM - COORS TO GABALDON
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
					SOUTH SIDE SHOULDER GUTTER											
					WEST OF LOW POINT IN BASIN 22											
12	3.3	3.3	3.5	4.0	11.9	0.178	2.3	1.0	0.0200	0.0150	7.2	3.1	0.61	1.0	0.2	0.70
14	2.7	3.5	3.5	4.0	12.2	0.183	2.4	1.1	0.0200	0.0150	7.2	3.2	0.59	1.0	0.2	0.69
16	3.0	3.9	3.5	4.0	12.7	0.190	2.6	1.3	0.0200	0.0150	7.2	3.3	0.58	1.0	0.2	0.67
18	2.5	3.6	3.5	4.0	12.3	0.184	2.5	1.1	0.0200	0.0150	7.2	3.2	0.59	1.0	0.2	0.69
20W	0.0	1.0	3.5	4.0	6.2	0.125	0.9	0.1	0.0200	0.0200	7.2	2.5	0.89	1.0	0.4	0.93
20E	10.8	10.9	3.5	4.0	15.5	0.310	6.3	4.5	0.0200	0.0200	7.2	4.5	0.50	1.0	0.2	0.58
22a	3.6	7.4	3.5	4.0	16.1	0.242	4.3	3.2	0.0200	0.0150	7.2	3.8	0.48	1.0	0.2	0.57
22b	3.6	6.3	3.5	4.0	15.1	0.227	3.8	2.5	0.0200	0.0150	7.2	3.7	0.50	1.0	0.2	0.60
22-LP	1.8	4.0	3.5	4.0	12.7	0.191	2.7	1.3	0.0200	0.0150	7.2	3.3	0.58	1.0	0.2	0.67
					EAST OF LOW POINT IN BASIN 22											
22E-1	4.1	4.1	3.5	4.0	11.0	0.219	3.0	1.1	0.0181	0.0200	7.2	3.4	0.64	1.0	0.3	0.74
22-LP	2.7	3.6	3.5	4.0	10.5	0.209	2.7	0.9	0.0181	0.0200	7.2	3.3	0.66	1.0	0.3	0.75
					NORTH SIDE SHOULDER GUTTER											
					WEST OF LOW POINT IN BASIN 21											
11	3.5	3.5	3.5	4.0	10.1	0.203	2.7	0.8	0.0200	0.0200	7.2	3.4	0.68	1.0	0.3	0.76
13	3	3.7	3.5	4.0	10.4	0.207	2.8	0.9	0.0200	0.0200	7.2	3.4	0.67	1.0	0.3	0.75
15	3.3	4.1	3.5	4.0	10.7	0.215	3.0	1.1	0.0200	0.0200	7.2	3.5	0.65	1.0	0.3	0.74
17	3.3	4.2	3.5	4.0	10.9	0.217	3.1	1.1	0.0200	0.0200	7.2	3.6	0.65	1.0	0.2	0.73
19W	0.0	1.0	3.5	4.0	6.2	0.125	0.9	0.1	0.0200	0.0200	7.2	2.5	0.89	1.0	0.4	0.93
19E	10.9	11.0	3.5	4.0	15.6	0.311	6.4	4.6	0.0200	0.0200	7.2	4.5	0.49	1.0	0.2	0.58
21a	3.6	7.5	3.5	4.0	16.1	0.242	4.3	3.2	0.0200	0.0150	7.2	3.8	0.48	1.0	0.2	0.57
21b	3.6	6.3	3.5	4.0	15.2	0.227	3.8	2.5	0.0200	0.0150	7.2	3.7	0.50	1.0	0.2	0.60
21-LP	1.8	4.0	3.5	4.0	12.7	0.191	2.7	1.3	0.0200	0.0150	7.2	3.3	0.58	1.0	0.2	0.67
					EAST OF LOW POINT IN BASIN 21											
21E-1	4.2	4.2	3.5	4.0	11.1	0.221	3.1	1.1	0.0181	0.0200	7.2	3.4	0.64	1.0	0.3	0.73
21-LP	2.7	3.6	3.5	4.0	10.5	0.209	2.7	0.9	0.0181	0.0200	7.2	3.3	0.66	1.0	0.3	0.75

HYDRAULIC PERFORMANCE OF NEW BASINS
50-YEAR STORM - GABALDON TO RIO GRANDE BLVD.
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
SOUTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 31																
27W-1	6	6.0	3.5	4	12.3	0.246	4.1	1.9	0.0208	0.0200	7.2	4.0	0.59	1.0	0.2	0.68
31W-1	3.3	4.9	3.5	4	11.9	0.238	3.5	1.5	0.0171	0.0200	7.2	3.5	0.61	1.0	0.3	0.71
31W-2	2.2	3.4	3.5	4	11.6	0.231	2.6	0.8	0.0096	0.0200	7.2	2.6	0.62	1.0	0.4	0.76
31-LP	1.7	2.4	3.5	4	11.1	0.221	2.0	0.4	0.0059	0.0200	7.2	2.0	0.64	1.0	0.5	0.82
EAST OF LOW POINT IN BASIN 31																
36E-1	6.7	6.7	3.5	4	13.2	0.264	4.4	2.3	0.0178	0.0200	7.2	3.8	0.56	1.0	0.2	0.66
36E-2	3.2	5.1	3.5	4	13.4	0.268	3.6	1.5	0.0097	0.0200	7.2	2.9	0.55	1.0	0.3	0.70
34E-1	2.8	4.1	3.5	4	13.4	0.403	3.6	0.6	0.0016	0.0300	7.2	1.5	0.55	1.0	0.7	0.86
34E-2	2.6	3.1	3.5	4	12.0	0.361	2.7	0.3	0.0016	0.0300	7.2	1.4	0.60	1.0	0.7	0.89
31E-1	3.2	3.5	3.5	4	12.6	0.379	3.1	0.4	0.0016	0.0300	7.2	1.5	0.58	1.0	0.7	0.88
31E-2	3	3.4	3.5	4	12.4	0.373	3.0	0.4	0.0016	0.0300	7.2	1.4	0.59	1.0	0.7	0.88
31E-3	3	3.3	3.5	4	12.4	0.372	2.9	0.4	0.0016	0.0300	7.2	1.4	0.59	1.0	0.7	0.88
31-LP	2.8	3.1	3.5	4	12.1	0.364	2.8	0.4	0.0016	0.0300	7.2	1.4	0.60	1.0	0.7	0.89
NORTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 30																
30W-1	7.2	7.2	3.5	4	13.2	0.264	4.7	2.5	0.0208	0.0200	7.2	4.1	0.56	1.0	0.2	0.65
30W-2	2.5	4.6	3.5	4	12.9	0.259	3.3	1.3	0.0096	0.0200	7.2	2.8	0.57	1.0	0.3	0.72
30-LP	2.3	3.4	3.5	4	12.6	0.253	2.6	0.8	0.0059	0.0200	7.2	2.1	0.58	1.0	0.5	0.77
EAST OF LOW POINT IN BASIN 30																
35E-1	6.5	6.5	3.5	4	13.1	0.262	4.3	2.2	0.0178	0.0200	7.2	3.8	0.56	1.0	0.2	0.66
30E-1	2.3	4.2	3.5	4	12.4	0.248	3.0	1.1	0.0097	0.0200	7.2	2.7	0.59	1.0	0.3	0.73
30E-2	3.2	4.1	3.5	4	13.5	0.404	3.6	0.6	0.0016	0.0300	7.2	1.5	0.55	1.0	0.7	0.86
30E-3	3.2	3.7	3.5	4	12.9	0.386	3.2	0.5	0.0016	0.0300	7.2	1.5	0.57	1.0	0.7	0.87
30E-4	3.6	4.0	3.5	4	13.3	0.398	3.5	0.5	0.0016	0.0300	7.2	1.5	0.56	1.0	0.7	0.87
30E-5	2	2.5	3.5	4	11.1	0.332	2.2	0.2	0.0016	0.0300	7.2	1.3	0.64	1.0	0.7	0.91
30-LP	1.8	2.0	3.5	4	10.2	0.307	1.8	0.2	0.0016	0.0300	7.2	1.3	0.67	1.0	0.8	0.92

HYDRAULIC PERFORMANCE OF NEW BASINS
50-YEAR STORM - RIO GRANDE BLVD. TO 12TH STREET
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
			SOUTH SIDE SHOULDER GUTTER													
			WEST OF LOW POINT IN BASIN 43													
43W-1	5.8	5.8	3.5	4.0	13.2	0.264	3.9	1.9	0.0136	0.0200	7.2	3.3	0.56	1.0	0.3	0.68
43W-2	2.3	3.9	3.5	4.0	12.5	0.249	2.9	1.0	0.0082	0.0200	7.2	2.5	0.59	1.0	0.4	0.74
43-LP	2.1	2.9	3.5	4.0	12.3	0.246	2.3	0.6	0.0051	0.0200	7.2	2.0	0.59	1.0	0.5	0.79
			EAST OF LOW POINT IN BASIN 43													
54E-1	5.6	5.6	3.5	4.0	13.2	0.263	3.8	1.8	0.0127	0.0200	7.2	3.2	0.56	1.0	0.3	0.69
54E-2	2.9	4.4	3.5	4.0	12.0	0.241	3.2	1.2	0.0127	0.0200	7.2	3.0	0.60	1.0	0.3	0.72
51E-1	2.6	3.6	3.5	4.0	13.5	0.270	2.8	0.8	0.0047	0.0200	7.2	2.0	0.55	1.0	0.5	0.77
51E-2	2.8	3.5	3.5	4.0	13.3	0.267	2.7	0.8	0.0047	0.0200	7.2	2.0	0.56	1.0	0.5	0.77
47E-1	4.5	5.2	3.5	4.0	13.3	0.398	4.2	0.9	0.0027	0.0300	7.2	2.0	0.56	1.0	0.6	0.82
43E-1	4.4	5.2	3.5	4.0	13.3	0.398	4.3	0.9	0.0027	0.0300	7.2	2.0	0.56	1.0	0.6	0.82
43E-2	4.4	5.2	3.5	4.0	13.3	0.399	4.3	0.9	0.0027	0.0300	7.2	2.0	0.56	1.0	0.6	0.82
43-LP	4.3	5.1	3.5	4.0	13.2	0.396	4.2	0.9	0.0027	0.0300	7.2	2.0	0.56	1.0	0.6	0.82
			NORTH SIDE SHOULDER GUTTER													
			WEST OF LOW POINT IN BASIN 42													
42W-1	5.8	5.8	3.5	4.0	13.2	0.264	3.9	1.9	0.0136	0.0200	7.2	3.3	0.56	1.0	0.3	0.68
42W-2	1.6	3.2	3.5	4.0	11.6	0.231	2.5	0.7	0.0082	0.0200	7.2	2.4	0.62	1.0	0.4	0.77
42-LP	1.5	2.1	3.5	4.0	10.7	0.213	1.8	0.4	0.0056	0.0200	7.2	1.9	0.65	1.0	0.5	0.83
			EAST OF LOW POINT IN BASIN 42													
53E-1	5.0	5.0	3.5	4.0	12.6	0.252	3.5	1.5	0.0127	0.0200	7.2	3.1	0.58	1.0	0.3	0.70
50E-1	2.2	1.7	3.5	4.0	8.4	0.169	1.5	0.2	0.0127	0.0200	7.2	2.4	0.76	1.0	0.4	0.86
49E-1	5.5	5.7	3.5	4.0	12.4	0.372	4.5	1.2	0.0047	0.0300	7.2	2.5	0.59	1.0	0.5	0.79
46E-1	2.9	3.9	3.5	4.0	12.2	0.367	3.4	0.6	0.0024	0.0300	7.2	1.8	0.59	1.0	0.6	0.85
46E-2	3.3	3.8	3.5	4.0	12.1	0.362	3.2	0.5	0.0024	0.0300	7.2	1.7	0.60	1.0	0.6	0.86
46E-3	3.2	3.7	3.5	4.0	11.9	0.357	3.1	0.5	0.0024	0.0300	7.2	1.7	0.61	1.0	0.6	0.86
42-LP	4.2	4.6	3.5	4.0	13.0	0.390	3.9	0.8	0.0024	0.0300	7.2	1.8	0.57	1.0	0.6	0.84

HYDRAULIC PERFORMANCE OF NEW BASINS
50-YEAR STORM - 12TH STREET TO 6TH STREET
15% REDUCTION IN ROUTED Q'S FOR ATTENUATION

Inlet ID	Basin Q (cfs)	Rtd Q (cfs)	Inlet Width (ft)	Inlet Length (ft)	Flow Top Wid. (ft)	Flow Depth (ft)	Qi (cfs)	Qb (cfs)	S	Sx	Vo (fps)	V (fps)	Eo	Rf	Rs	E
SOUTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 61																
61W-1	7.8	7.8	3.5	4	13.1	0.263	5.0	2.8	0.0250	0.0200	7.2	4.5	0.56	1.0	0.2	0.64
61W-2	2.6	5.0	3.5	4	13.1	0.261	3.5	1.5	0.0105	0.0200	7.2	2.9	0.56	1.0	0.3	0.70
61-LP	1.7	3.0	3.5	4	12.0	0.241	2.3	0.6	0.0057	0.0200	7.2	2.0	0.60	1.0	0.5	0.79
EAST OF LOW POINT IN BASIN 61																
61E-1	5	5.0	3.5	4	13.1	0.263	3.5	1.5	0.0103	0.0200	7.2	2.9	0.56	1.0	0.3	0.70
61E-2	5	6.3	3.5	4	13.1	0.263	4.2	2.1	0.0161	0.0200	7.2	3.6	0.56	1.0	0.2	0.67
61E-3	3.4	5.2	3.5	4	13.1	0.261	3.6	1.6	0.0113	0.0200	7.2	3.0	0.57	1.0	0.3	0.70
61-LP	2.3	3.6	3.5	4	12.7	0.255	2.8	0.9	0.0064	0.0200	7.2	2.2	0.58	1.0	0.4	0.76
NORTH SIDE SHOULDER GUTTER																
WEST OF LOW POINT IN BASIN 57																
57W-1	4.8	4.8	3.5	4	11.4	0.228	3.4	1.4	0.0201	0.0200	7.2	3.7	0.62	1.0	0.2	0.71
57W-2	2.8	4.0	3.5	4	12.0	0.240	2.9	1.0	0.0105	0.0200	7.2	2.8	0.60	1.0	0.3	0.74
57-LP	1.9	2.8	3.5	4	11.8	0.236	2.2	0.6	0.0057	0.0200	7.2	2.0	0.61	1.0	0.5	0.80
EAST OF LOW POINT IN BASIN 57																
59E-1	6.8	6.8	3.5	4	13.2	0.264	4.5	2.3	0.0185	0.0200	7.2	3.9	0.56	1.0	0.2	0.66
59E-2	2.4	4.4	3.5	4	11.2	0.224	3.2	1.2	0.0185	0.0200	7.2	3.5	0.63	1.0	0.3	0.73
57-LP	2.3	3.3	3.5	4	13.5	0.269	2.6	0.7	0.0040	0.0200	7.2	1.8	0.55	1.0	0.5	0.79

REQUIRED DRAINAGE INFRASTRUCTURE

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*                    INTERSTATE 40 DRAINAGE ANALYSIS
*                         DRAINAGE IMPROVEMENTS

*************************************************************************
*              INPUT FILE HYDRO:[H9018320.HYMO]IMPROVE.MENTS
*************************************************************************

*      IMPROVEMENTS ARE BASED ON THE 50-YEAR, 24-HOUR STORM, WITH THE
* EXCEPTION OF THE 60" RCP THAT REPLACES THE EXISTING "VEE" DITCH FROM
* COORS ROAD TO THE RIO GRANDE. THIS PIPE WAS SIZED BASED ON THE 100-
* YEAR STORM SINCE THE CITY OF ALBUQUERQUE STORM DRAINAGE FACILITIES
* ENTERING THIS REACH ARE ALSO FOR THE 100-YEAR STORM.

*                    ORIGINATED 01/21/91 BY D. GREGG
*                    REVISIONS: 01/25/91, 04/15/92 BY DJG

*************************************************************************
*                         UNSER BLVD. TO COORS ROAD
*************************************************************************


*      THE ANALYSIS OF THIS REACH INCLUDES ONLY THE AREAS WITHIN THE
* WESTBOUND DRIVING LANES, THE AUXILARY LANE EXITING TO UNSER BLVD, AND
* THE NORTH PORTION OF THE INTERSTATE RIGHT-OF-WAY. THE EASTBOUND LANES
* AND AUXILARY LANE EXITING TO COORS ROAD WERE WIDENED UNDER A PREVIOUS
* PROJECT.

*      ASSUMED THAT THE PROPOSED FUTURE CHANNEL ALONG THE NORTH R.O.W.
* WILL BE CONSTRUCTED UNDER A SEPARATE CONTRACT.  USED A CONCRETE LINED
* CHANNEL, WITH A 10 FOOT BOTTOM WIDTH, AND 3:1 SIDESLOPES FOR ANALYSIS.
* CHANNEL SLOPE VARIES (SEE HYMO MODEL)

*************************************************************************
*           COORS ROAD TO WEST SIDE OF BRIDGE OVER THE RIO GRANDE
*************************************************************************

*      EXISTING INLETS AND PIPES WILL BE UTILIZED WHERE POSSIBLE. PAYMENT
* FOR ABANDONING INLETS AND PIPES THAT DO NOT DIRECTLY AFFECT THE FINAL
* DRAINAGE LAYOUT ARE ASSUMED TO BE PART OF THE GENERAL CONSTRUCTION AND
* GRADING COSTS.

* BASIN 1 IMPROVEMENTS:
************************

****   CONSTRUCT "MEDIAN" DROP INLET
****   CONSTRUCT 120 LF OF 30" RCP (TO 60" OUTFALL)

* BASIN 2 IMPROVEMENTS:
************************

* BASIN 3 IMPROVEMENTS:
************************

****   CONSTRUCT "MEDIAN" DROP INLET (OVER EXISTING 24" CMP)
****   CONSTRUCT "MEDIAN" DROP INLET
****   CONSTRUCT 160 LF OF 24" RCP (UNDER COORS)
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* BASIN 4 IMPROVEMENTS:
************************

****   CONSTRUCT "MEDIAN" DROP INLET
****   CONSTRUCT 140 LF OF 24" RCP (UNDER WESTBOUND OFF-RAMP)
****   TIE 24" RCP TO EXISTING DROP INLET

* BASIN 5 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET
****   CONSTRUCT 25 LF OF 18" RCP (EXTENSION OF EXISTING 18" PIPE)

* BASIN 6 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET
****   CONSTRUCT 20 LF OF 18" RCP (EXTENSION OF EXISTING 18" PIPE)

* BASIN 7 IMPROVEMENTS:
************************

****   CONSTRUCT "MEDIAN" DROP INLET
****   CONSTRUCT 20 LF OF 18" RCP (EXTENSION OF EXISTING 18" PIPE)

* BASIN 8 IMPROVEMENTS:
************************

****   CONSTRUCT "MEDIAN" DROP INLET
****   CONSTRUCT 10 LF OF 18" RCP (EXTENSION OF EXISTING 18" PIPE)

* BASIN 9 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET OVER EXISTING 24" RCP
****   CONSTRUCT 1470 LF OF 60" RCP (OUTFALL)
*                    670 LF (BASIN 1 OUTLET TO BASIN 6 OUTLET)
*                    800 LF (BASIN 6 OUTLET TO BASIN 10 OUTLET)
****   CONSTRUCT 8 8-FOOT DIAMETER MANHOLES ALONG 60" OUTFALL
****   CONSTRUCT CURB INLET AT 60" OUTFALL

* BASIN 10 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET
****   CONSTRUCT 30 LF OF 24" RCP (EXTENSION OF EXISTING 24" PIPE)

* BASIN 11 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET
****   CONSTRUCT 30 LF OF 18" RCP (EXTENSION OF EXISTING 18" PIPE)
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* BASIN 12 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET AT 60" OUTFALL
**** CONSTRUCT 325 LF OF 60" RCP (OUTFALL)

* BASIN 13 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET
**** CONSTRUCT 30 LF OF 18" RCP (EXTENSION OF EXISTING 18" PIPE)

* BASIN 14 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET AT 60" OUTFALL
**** CONSTRUCT 275 LF OF 60" RCP (OUTFALL)
**** CONSTRUCT 1 8-FOOT DIAMETER MANHOLE ALONG 60" OUTFALL

* BASIN 15 IMPROVEMENTS:
****

**** CONSTRUCT 3 CURB INLETS
**** CONSTRUCT 70 LF OF 18" RCP (BETWEEN 3 INLETS)
**** CONSTRUCT 30 LF OF 18" RCP (EXTENSION OF EXISTING 18" PIPE)

* BASIN 16 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET AT 60" OUTFALL
**** CONSTRUCT 305 LF OF 60" RCP (OUTFALL)
**** CONSTRUCT 1 8-FOOT DIAMETER MANHOLE ALONG 60" OUTFALL

* BASIN 17 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET
**** CONSTRUCT 30 LF OF 24" RCP (EXTENSION OF EXISTING 24" PIPE)

* BASIN 18 IMPROVEMENTS:
****

**** CONSTRUCT 185 LF OF 60" RCP (OUTFALL)
**** CONSTRUCT CURB INLET AT 60" OUTFALL
**** CONSTRUCT 1 8-FOOT DIAMETER MANHOLE ALONG 60" OUTFALL
**** CONSTRUCT 130 LF OF 60" RCP (TO DISSIPATOR)
**** TIE TO EXISTING DISSIPATOR WALL

* BASIN 23 IMPROVEMENTS:
****

**** CONSTRUCT "MEDIAN" DROP INLET (AT TOP OF RETAINING WALL)
**** CONSTRUCT 15 LF OF 24" RCP (TO 60" OUTFALL)

****
* WEST SIDE OF BRIDGE OVER THE RIO GRANDE TO RIO GRANDE BLVD
****

* BASIN 19 IMPROVEMENTS:
****

* BASIN 20 IMPROVEMENTS:
****

* BASIN 21 IMPROVEMENTS:
****

**** CONSTRUCT 5 CURB INLETS
**** CONSTRUCT 400 LF OF 24" RCP
**** CONSTRUCT 375 LF OF 27" RCP
**** CONSTRUCT 1125 LF OF 30" RCP (TO SW SIDE OF GABALDON ROAD)
**** CONSTRUCT 2 4-FOOT DIAMETER MANHOLES

* BASIN 22 IMPROVEMENTS:
****

**** CONSTRUCT 5 CURB INLETS
**** CONSTRUCT 400 LF OF 24" RCP
**** CONSTRUCT 375 LF OF 24" RCP
**** CONSTRUCT 925 LF OF 24" RCP (TO SW SIDE OF GABALDON ROAD)
**** CONSTRUCT 2 4-FOOT DIAMETER MANHOLES

* BASIN 29 IMPROVEMENTS:
****

**** CONSTRUCT 650 LF OF 36" RCP (GABALDON ROAD TO DETENTION)
**** CONSTRUCT 2 4-FOOT DIAMETER MANHOLE
**** CONSTRUCT ENDWALL FOR 36" RCP
**** PURCHASE LAND FOR DETENTION FACILITY (2 ACRES +/-)
**** DETENTION FACILITY EARTHWORK
**** DETENTION FACILITY OUTFLOW STRUCTURE

* BASIN 26 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET (OVER EXISTING 36" RCP CULVERT)
**** CONSTRUCT 10 LF OF 24" RCP (VERTICAL TO CULVERT)

* BASIN 27 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET (OVER EXISTING 36" RCP CULVERT)
**** CONSTRUCT 10 LF OF 24" RCP (VERTICAL TO CULVERT)

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* BASIN 30 IMPROVEMENTS:
************************

****   CONSTRUCT 3 CURB INLETS
****   CONSTRUCT CURB INLET (AT EXISTING RUNDOWN)
****   CONSTRUCT 3 4-FOOT DIAMETER MANHOLES
****   CONSTRUCT 285 LF OF 24" RCP (TO EXISTING CULVERT)
****   CONSTRUCT 300 LF OF 30" RCP (TO EXISTING CULVERT)
****   CONSTRUCT 2 CURB INLETS (OVER EXISTING 36" RCP CULVERT)
****   CONSTRUCT CURB INLET
****   CONSTRUCT 290 LF OF 24" RCP (TO EXISTING CULVERTS)
****   CONSTRUCT 20 LF OF 24" RCP (VERTICAL TO CULVERTS)

* BASIN 31 IMPROVEMENTS:
************************

****   CONSTRUCT 4 CURB INLETS
****   CONSTRUCT CURB INLET (AT LOW POINT OF BASIN)
****   CONSTRUCT 30 LF OF 24" RCP (TO COLLECTOR LINE)
****   CONSTRUCT CURB INLET (OVER EXISTING 36" RCP CULVERT)
****   CONSTRUCT 10 LF OF 24" RCP (VERTICAL TO CULVERT)

* BASIN 33 IMPROVEMENTS:
************************

****   CONSTRUCT 7 4-FOOT DIAMETER MANHOLES
****   CONSTRUCT 830 LF OF 27" RCP (BETWEEN EXISTING CULVERTS)
****   CONSTRUCT 625 LF OF 30" RCP (BETWEEN EXISTING CULVERTS)
****   CONSTRUCT 300 LF OF 42" RCP (TO LOW POINT OF BASIN 31)
****   CONSTRUCT 400 LF OF 42" RCP (TO DETENTION)
****   CONSTRUCT ENDWALL FOR 24" RCP

* BASIN 34 IMPROVEMENTS:
************************

****   CONSTRUCT MEDIAN INLET

* BASIN 35 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET (AT EXISTING RUNDOWN)
****   CONSTRUCT 255 LF OF 24" RCP (TO 36" RCP CULVERT)

* BASIN 36 IMPROVEMENTS:
************************

****   CONSTRUCT 2 MEDIAN INLETS
****   CONSTRUCT 360 LF 24" RCP (TO EXISTING CULVERT)

* DETENTION FACILITY OUTFALL LINE:
**********************************

****   CONSTRUCT 1500 LF OF 24" RCP (FROM DETENTION TO DURANES ROAD)
****   CONSTRUCT 4 4-FOOT DIAMETER MANHOLES
****   TIE TO EXISTING MANHOLE AT DURANES ROAD
```

****
* RIO GRANDE BLVD TO 6TH STREET
****

* BASIN 42 IMPROVEMENTS:
****

**** CONSTRUCT 2 CURB INLETS
**** CONSTRUCT 1 4-FOOT DIAMETER MANHOLE
**** CONSTRUCT CURB INLET (AT LOW POINT OF BASIN)
**** CONSTRUCT 385 LF OF 24" RCP (TO 36" RCP CULVERT)

* BASIN 43 IMPROVEMENTS:
****

**** CONSTRUCT 4 CURB INLETS
**** CONSTRUCT CURB INLET (AT LOW POINT OF BASIN)
**** CONSTRUCT 900 LF OF 24" RCP (TO 36" RCP CULVERT)
**** CONSTRUCT 3 4-FOOT DIAMETER MANHOLES
**** CONSTRUCT 425 LF OF 42" RCP (TO BASIN 47)

* BASIN 46 IMPROVEMENTS:
****

**** CONSTRUCT 3 CURB INLETS (AT MEDIAN)
**** CONSTRUCT 730 LF OF 24" RCP (TO 36" RCP CULVERT)
**** CONSTRUCT 2 4-FOOT DIAMETER MANHOLES

* BASIN 47 IMPROVEMENTS:
****

**** CONSTRUCT 2 CURB INLETS
**** CONSTRUCT 585 LF OF 42" RCP (TO DETENTION POND 1)
**** CONSTRUCT ENDWALL FOR 42" RCP

* BASIN 49 IMPROVEMENTS:
****

* BASIN 50 IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET
**** CONSTRUCT 10 LF OF 24" RCP
**** CONSTRUCT 1 4-FOOT DIAMETER MANHOLE

* BASIN 51 IMPROVEMENTS:
****

**** CONSTRUCT 2 CURB INLETS
**** CONSTRUCT 20 LF OF 24" RCP

* BASIN 53A IMPROVEMENTS:
****

**** CONSTRUCT CURB INLET (AT TOP OF ON-RAMP)
**** CONSTRUCT 200 LF OF 24" RCP (TO EXISTING 36" CULVERT)

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* BASIN 54 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET (AT MEDIAN)
****   CONSTRUCT 250 LF OF 24" RCP (TO EXISTING 36" CULVERT)
****   CONSTRUCT 200 LF OF 24" RCP (TO DETENTION POND 1)
****   CONSTRUCT ENDWALL FOR 24" RCP

* DETENTION FACILITY NO. 1:
***************************

****   PURCHASE LAND FOR DETENTION FACILITY (3 ACRES +/-)
****   DETENTION FACILITY EARTHWORK
****   DETENTION FACILITY OUTFLOW STRUCTURE

* DETENTION FACILITY NO. 1 OUTFALL LINE:
****************************************

****   CONSTRUCT 2370 LF OF 24" RCP (FROM DETENTION POND 1 TO POND 2)
****   CONSTRUCT 5 4-FOOT DIAMETER MANHOLES

* BASIN 57 IMPROVEMENTS:
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****   CONSTRUCT 3 CURB INLETS
****   CONSTRUCT 800 LF OF 24" RCP (TO EXISTING 36" CULVERT)
****   CONSTRUCT 1 4-FOOT DIAMETER MANHOLE
****   CONSTRUCT 1 4-FOOT DIAMETER MANHOLE (AT EXISTING 36" CULVERT)

* BASIN 58 IMPROVEMENTS:
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****   CONSTRUCT 1 4-FOOT DIAMETER MANHOLE (AT EXISTING 36" CULVERT)
****   CONSTRUCT 810 LF OF 27" RCP (TO JUNCTION BOX)
****   CONSTRUCT 1 4-FOOT DIAMETER MANHOLE (ON COLLECTOR LINE)

* BASIN 59 IMPROVEMENTS:
************************
****   CONSTRUCT CURB INLET (AT MEDIAN)
****   CONSTRUCT 260 LF OF 24" RCP (TO EXISTING 36" CULVERT)

* BASIN 60 IMPROVEMENTS:
************************

****   CONSTRUCT CURB INLET
****   CONSTRUCT 640 LF OF 24" RCP (TO EXISTING 36" CULVERT)
****   CONSTRUCT 2 4-FOOT DIAMETER MANHOLES (ON COLLECTOR LINE)

* BASIN 61 IMPROVEMENTS:
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****   CONSTRUCT 5 CURB INLETS
****   CONSTRUCT 360 LF OF 27" RCP (TO JUNCTION BOX)
****   CONSTRUCT 113 LF OF DUAL 30" RCP (TO DETENTION POND 2)
                (226 LF TOTAL)
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* DETENTION FACILITY NO. 2:
****

**** PURCHASE LAND FOR DETENTION FACILITY (1 ACRE +/-)
**** DETENTION FACILITY EARTHWORK
**** DETENTION FACILITY OUTFLOW STRUCTURE

* DETENTION FACILITY NO. 2 OUTFALL LINE:
****

**** CONSTRUCT 460 LF OF 24" RCP (FROM DETENTION POND 2 TO 7TH ST SD)
**** CONSTRUCT 1 4-FOOT DIAMETER MANHOLE
**** TIE TO EXISTING MANHOLE

PLATES