CITY OF ALBUQUERQUE

February 23, 2015

Jeff Wooten, P.E.
Wooten Engineering
3708 Saint Andrews SE
Rio Rancho, NM 87124

Re: 98th Street Inlet Study Drainage Report
Conceptual Grading Plan
Engineer's Stamp Date 2-13-15 (K09D038)

Dear Mr. Wooten,

Based upon the information provided in your submittal received 2-17-15, the above referenced report is approved for Preliminary Plat action by the DRB.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Hydrology
Planning Dept.

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

C: e-mail

98th Street Inlet Study Report
For the
Proposed Commercial Development
Located at

98th Street Plaza

Located at the NWQ of
Albuquerque, New Mexico

PREPARED BY:

WOOTEN ENGINEERING
4700 LINCOLN NE, SUITE 111
ALBUQUERQUE, NM 87109

JEFFREY TODD WOOTEN
NEW MEXICO
16692
REGISTERED PROFESSIONAL ENGINEER

2/13/15

Jeffrey T. Wooten, P.E. Date

RECEIVED
FEB 17 2015
LAND DEVELOPMENT SECTION

February 13, 2015
WE Project No. 2014035

I. INTRODUCTION

The purpose of this report is to provide an analysis of existing curb inlets and the recommendation of proposed curb inlets along 98th Street from north of Volcano Rd to just south of Interstate 40 in Albuquerque, NM and is located on Zone Atlas Page K-9. The report is being prepared for the proposed Preliminary/Final Plat of the 98th Street Plaza Development located at the Northwest Quadrant of 98th St and Volcano Road. The current legal description is 'Portions of Tracts 1 & 2, West of Westland Atrisco Grant, ROW 2, Unit A, containing ± 4 acres. The site is bounded on the north by an existing Jack in the Box Restaurant, 98th St to the east, Leonidas Lane (a Private Access Drive) to the west, and vacant land to the south. The DRB Case Number for the Plat is 15DRB-70019.

II. PURPOSE

This report has been prepared for the purpose of preparing the Infrastructure List and Subdivision Improvements Agreement (SIA) and for the Hydrology Division review of obtaining approval for the Preliminary/Final Plat for the proposed development. No variances are requested with this submittal. A separate On-Site Drainage Management Plan will be submitted for review and approval of the Building Permit for this project.

III. METHODOLOGIES AND REFERENCES

This report is prepared in accordance with City of Albuquerque Development Process Manual (DPM) criteria; specifically, the procedures outlined in DPM Section 22.2. No AHYMO analysis has been done for the site, as it is less than 40 acres and therefore could be analyzed using the method outlined in Part A.6 of Section 22.2 of the DPM. The 98th Street Plaza site falls within Basin 109.10 and is allowed free discharge of developed flows per the Tierra Bayita Drainage Facilities DMP prepared by Greiner on June 1995 in File No L10/D000.

IV. EXISTING CONDITIONS

Per the attached Drainage Basin Map, Basins A and B drain to 98th St and discharge into

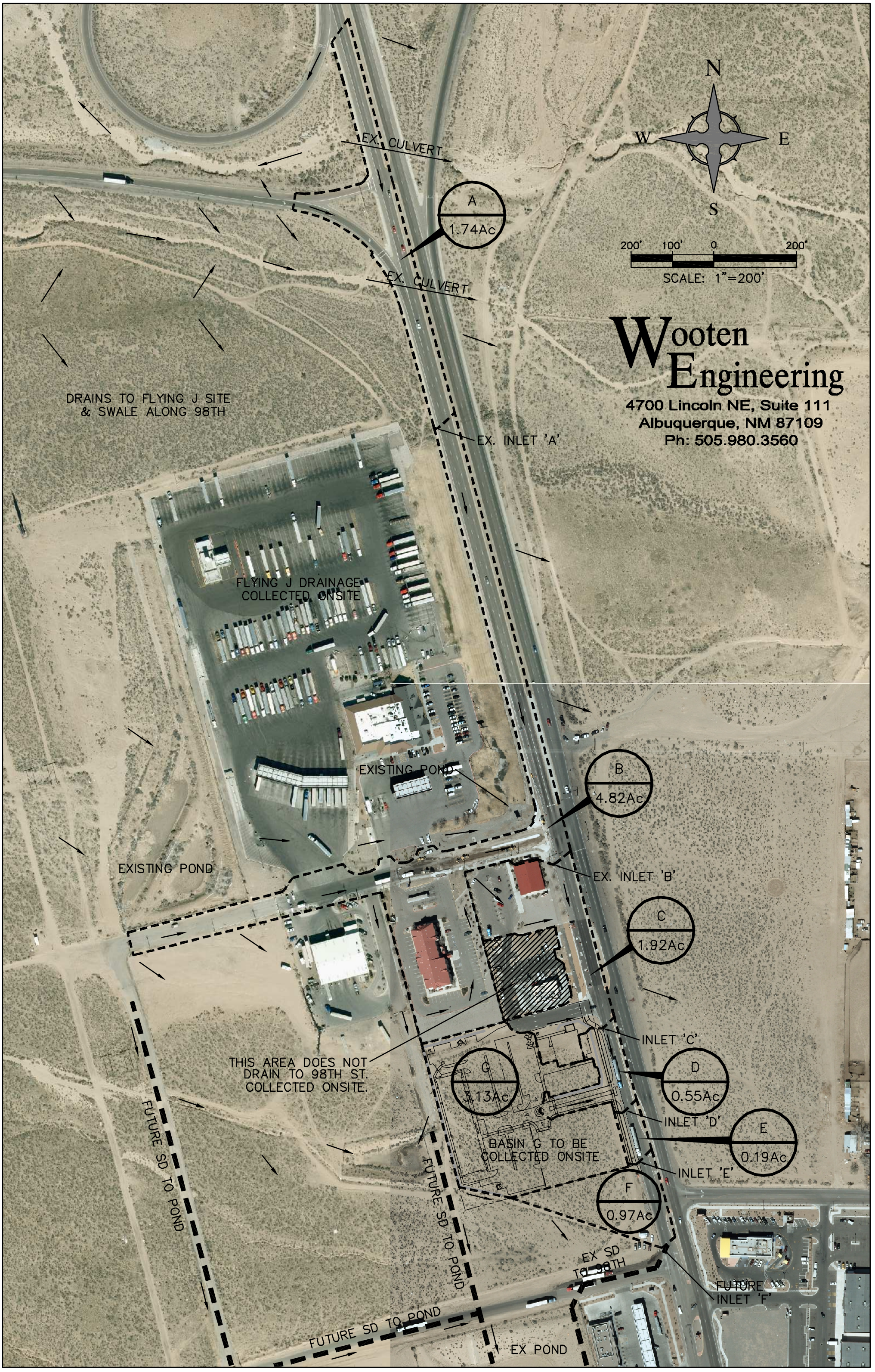
Existing Curb Inlets (A and B). The bypass flows in addition to Basins C through G currently drain to an existing drainage swale along 98th St south and are conveyed to two existing drop inlets located at the NWC of 98th St and Volcano Rd. The drainage flows from the existing Jack in the Box/Godfather's Pizza site are collected onsite and discharge directly into the 36" storm drain located in 98th St. All flows identified on the Basin Map as well as Jack in the Box site are collected into an existing storm drain piping system that discharges into the southernmost of two existing detention ponds as identified in the Tierra Bayita Drainage Facilities DMP described above.

V. PROPOSED CONDITIONS

The proposed development will add new curb/gutter along the west (southbound) side of 98th Street as well as new curb inlets to collect the bypass flows from Basins A and B and the additional flows from Basins C through F in which new curb inlets will be provided as part of the 98th Street Plaza development. Onsite flows from the 98th Street development (Basin G) will be collected on-site and discharge directly into the existing 36" RCP in 98th Street. In addition, we have identified the need for a future curb inlet located at the northwest corner of 98th St/Volcano Rd when that site is developed. Per the attached Basin Calculations Table and the Inlet Calculations spreadsheets, there is a total of 43.63 cfs that drain in 98th Street and are collected by the existing/proposed inlets. The Inlet Calculations sheets identify that 37.2 cfs of this flow will be captured in the inlets and there will be a carryover flow of 6.43 cfs downstream beyond the 98th St/Volcano Rd intersection. Per our discussion with Curtis Cherne, P.E. City Hydrologist, this carryover discharge is acceptable.

VI. CONCLUSION

This report has given a comprehensive drainage management plan for the existing and proposed development that drains into 98th Street and complies with the City of Albuquerque DPM as well as the Drainage Ordinance. With this request, we are asking that the Preliminary/Final Plat for the propcsed 98th Street Plaza Development be approved.



Wooten Engineering
4700 Lincoln NE, Suite 111
Albuquerque, NM 87109
Ph: 505.980.3560

BASIN CALCULATIONS FOR 98TH ST INLETS FOR 98TH ST PLAZA

This table is based on the COA DPM Section 22.2, Zone: 1

BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)	WT E (inches)	$V(100)_{360}$ (CF)	Comments
A	75914	1.74	0.0%	0.0%	5.0%	95.0%	4.30	7.49	1.92	12153	Carryover to B
B	209034	4.82	0.0%	0.0%	5.0%	95.0%	4.30	20.70	1.92	33607	Carryover to C
C	83643	1.92	0.0%	0.0%	5.0%	95.0%	4.30	8.25	1.92	13390	Carryover to D
D	24048	0.55	0.0%	0.0%	5.0%	95.0%	4.30	2.37	1.92	3850	Carryover to E
E	8070	0.19	0.0%	0.0%	5.0%	95.0%	4.30	0.80	1.92	1292	Carryover to Volcano St
F	42200	0.97	0.0%	0.0%	15.0%	85.0%	4.15	4.02	1.82	6411	To Future Inlet by Others
G	136536	3.13	0.0%	0.0%	15.0%	85.0%	4.15	12.99	1.82	20742	Captured Onsite
Total											

Capacity of Existing Inlet 'A'
Type 'A' Inlet

Depth of Flow in the Roadway:

Known:
Q = 7.49 cfs
S = +/-2.5%
Cross Slope of Roadway = 2.0%
Width of Flow with One Lane Clear = 28'
Depth of Flow at 2% Cross Slope = 0.56'
n = 0.017

Step Calculations for Depth of Flow
If D = 0.3' (Spread=15.0',A=2.25 SF, Wp=15', R=0.15, S=2.5%), Q=8.80 cfs
If D = 0.25' (Spread=12.5',A=1.56 SF, Wp=12.5', R=0.12, S=2.5%), Q=5.26 cfs
If D = 0.28' (Spread=14.0', A=1.96 SF, Wp=14.0', R=0.14, S=2.5%), Q=7.32 cfs
Depth (H) = +/-0.285'

Capacity of the grate:

Using Plate 22.3 D-5 from the DPM, Qcaptured = 2.9 cfs

Carry Over Flow

Qreq = 7.49 cfs

Qcap = 2.9 cfs

Qcarryover = 4.59 cfs

Capacity of Existing Inlet 'B'
Double Type 'C' Inlet

Depth of Flow in the Roadway:

Known:
Q = 20.70 cfs + 4.59 cfs Carryover = 25.29 cfs
S = +/-2.5%
Cross Slope of Roadway = 2.0%
Width of Flow with One Lane Clear = 28'
Depth of Flow at 2% Cross Slope = 0.56'
n = 0.017

Step Calculations for Depth of Flow
If D = 0.50' (Spread=25.0',A=6.25 SF, Wp=25.0', R=0.25, S=2.5%), Q=30.74 cfs
If D = 0.45' (Spread=22.5', A=5.06 SF, Wp=22.5', R=0.23, S=2.5%), Q=23.54 cfs
If D = 0.47' (Spread=23.5', A=5.52 SF, Wp=23.5', R=0.23, S=2.5%), Q=25.68 cfs
Depth (H) = +/-0.47'

Capacity of the grate:

Using Plate 22.3 D-6 from the DPM, Qcaptured = 10.0 cfs

Carry Over Flow

Qreq = 25.29 cfs

Qcap = 10.0 cfs

Qcarryover = 15.29 cfs

Capacity of Proposed Inlet 'C'
Double Type 'C' Inlet

Depth of Flow in the Roadway:

Known:
Q = 8.25 cfs + 15.29 cfs Carryover = 23.54 cfs
S = +/-2.7%
Cross Slope of Roadway = 2.0%
Width of Flow with One Lane Clear = 18'
Depth of Flow at 2% Cross Slope = 0.36'
n = 0.017

Step Calculations for Depth of Flow
If D = 0.36' (Spread=18.0',A=3.45 SF, Wp=18', R=0.19, S=2.7%), Q=16.4 cfs
FLOW EXCEEDS ONE LANE CLEAR CRITERIA

If D = 0.45' (Spread=22.5', A=5.06 SF, Wp=22.5', R=0.23, S=2.7%), Q=27.36 cfs
If D = 0.42' (Spread=21.0', A=4.41 SF, Wp=21.0', R=0.21, S=2.7%), Q=22.43 cfs
ACTUAL DEPTH = 0.43'; SPREAD = 21.5'
SPREAD ENCROACHES INTO INSIDE LANE BY 3.5'

Capacity of the grate:

Using Plate 22.3 D-5 from the DPM, Qcaptured = 8.0 cfs

Carry Over Flow

Qreq = 23.54 cfs

Qcap = 8.0 cfs

Qcarryover = 15.54 cfs

Capacity of Proposed Inlet 'D'
Type 'A' Inlet

Depth of Flow in the Roadway:

Known:
Q = 2.37 cfs + 15.54 cfs Carryover = 17.91 cfs
S = +/-2.0%
Cross Slope of Roadway = 2.0%
Width of Flow with One Lane Clear = 21'
Depth of Flow at 2% Cross Slope = 0.42'
n = 0.017

Step Calculations for Depth of Flow
If D = 0.42' (Spread=21.0', A=4.41 SF, Wp=21.0', R=0.21, S=2.0%), Q=19.31 cfs
If D = 0.40' (Spread=20.0',A=4.00 SF, Wp=20', R=0.20, S=2.0%), Q=16.96 cfs
If D = 0.41' (Spread=20.5',A=4.20 SF, Wp=20.5', R=0.20, S=2.0%), Q=17.80 cfs
Depth (H) = +/-0.41'

Capacity of the grate:

Using Plate 22.3 D-5 from the DPM, Qcaptured = 5.7 cfs

Carry Over Flow

Qreq = 17.91 cfs

Qcap = 5.7 cfs

Qcarryover = 12.21 cfs

Capacity of Proposed Inlet 'E'
Type 'A' Inlet

Depth of Flow in the Roadway:

Known:
Q = 0.80 cfs + 12.21 cfs Carryover = 13.01 cfs
S = +/-1.2%
Cross Slope of Roadway = 2.0%
Width of Flow with One Lane Clear = 21'
Depth of Flow at 2% Cross Slope = 0.42'
n = 0.017

Step Calculations for Depth of Flow
If D = 0.42' (Spread=21.0',A=4.41 SF, Wp=21', R=0.21, S=1.2%), Q=14.96 cfs
If D = 0.40' (Spread=20.0',A=4.00 SF, Wp=20.0', R=0.20, S=1.2%), Q=13.13 cfs
Depth (H) = +/-0.40'

Capacity of the grate:

Using Plate 22.3 D-5 from the DPM, Qcaptured = 5.7 cfs

Carry Over Flow

Qreq = 13.01 cfs

Qcap = 5.7 cfs

Qcarryover = 7.31 cfs

Capacity of Future Inlet 'F'
Type 'A' Inlet

Depth of Flow in the Roadway:

Known:
Q = 4.02 cfs + 7.31 cfs Carryover = 11.33 cfs
S = +/-1.2%
Cross Slope of Roadway = 2.0%
Width of Flow with One Lane Clear = 21'
Depth of Flow at 2% Cross Slope = 0.42'
n = 0.017

Step Calculations for Depth of Flow
If D = 0.42' (Spread=21.0',A=4.41 SF, Wp=21', R=0.21, S=1.2%), Q=14.96 cfs
If D = 0.40' (Spread=20.0',A=4.00 SF, Wp=20.0', R=0.20, S=1.2%), Q=13.13 cfs
If D = 0.38' (Spread=19.0',A=3.61 SF, Wp=19.0', R=0.19, S=1.2%), Q=11.45 cfs
Depth (H) = +/-0.38'

Capacity of the grate:

Using Plate 22.3 D-5 from the DPM, Qcaptured = 4.9 cfs

Carry Over Flow

Qreq = 11.33 cfs

Qcap = 4.9 cfs

Qcarryover = 6.43 cfs

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BASIN CALCULATIONS FOR 98TH ST INLETS FOR 98TH ST PLAZA

	This table is based on the COA DPM Section 22.2, Zone: 1										
BASIN	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (CFS)	WT E (inches)	$V(100)_{360}$ (CF)	Comments
A	75914	**1.74**	**0.0%**	**0.0%**	**5.0%**	**95.0%**	**4.30**	***7.49***	***1.92***	***12153***	***Carryover to B***
B	209934	**4.82**	**0.0%**	**0.0%**	**5.0%**	**95.0%**	**4.30**	***20.70***	***1.92***	***33607***	***Carryover to C***
C	83643	**1.92**	**0.0%**	**0.0%**	**5.0%**	**95.0%**	**4.30**	***8.25***	***1.92***	***13390***	***Carryover to D***
D	24048	**0.55**	**0.0%**	**0.0%**	**5.0%**	**95.0%**	**4.30**	***2.37***	***1.92***	***3850***	***Carryover to E***
E	8070	**0.19**	**0.0%**	**0.0%**	**5.0%**	**95.0%**	**4.30**	***0.80***	***1.92***	***1292***	***Carryover to Volcano St***
F	136536	**3.13**	**0.0%**	**0.0%**	**15.0%**	**85.0%**	**4.15**	***12.99***	***1.82***	***20742***	***Bypass To Onsite Storm Drain***
G	3292	**0.08**	**0.0%**	**0.0%**	**100.0%**	**0.0%**	**2.87**	***0.22***	***0.99***	***272***	***Existing Bypass Flow***
Total											

Capacity of a Single 'C' Storm Drop Inlet
Inlet 'A'

Capacity of the Roadway:

S = +/-3.0%
Width of Flow with One Lane Clear = 28'
Depth of Flow at 2% Cross Slope = 0.56'
n = 0.017
A = 28' * 0.56' * 0.5 = 7.84 SF
Wp = +/-28'
R = 0.28
Qcap = 7.84 * (1.49/0.017) * ((0.28)^0.67) * (0.03^0.5)
= 50.93 cfs

Qact = 7.49 cfs
Assume flow depth = 0.3' (Spread=15.0',A=2.25 SF, Wp=15', R=0.15, S=3.0%), Q=9.64 cfs
Assume flow depth = 0.25' (Spread=12.5',A=1.56 SF, Wp=12.5', R=0.12, S=3.0%), Q=5.76 cfs
Assume flow depth = 0.27' (Spread=13.5', A=1.82 SF, Wp=13.5', R=0.13, S=3.0%), Q=7.08 cfs
Depth (H) = +/-0.275' (3.3")

Capacity of the grate:

L = 40" - 2(2"$_{ends}$) - 7(½" $_{middle\ bars}$)
= 32 1/2"
= 2.7083'

W = 25" – 13"(½" $_{middle\ bars}$)
= 18.5"
= 1.54'

Area = 2.7083' x 1.54'
= 4.18 ft^2

Effective Area = 4.18- 4.18 * 0.5 ($_{clogging\ factor}$)
= 2.09 ft^2 at the grate

Orifice Equation

Q = CA sqrt(2gH)
Q = 0.6*2.09*sqrt(2*32.2*0.275)
Q = 5.28 cfs

Capacity of the Throat:

L = 4.0'

H = 2.75" + 3.3"
= 6.05"
= 0.50'

Area = 4.0' x 0.50'
= 2.0 ft^2 at the throat

Weir Equation

Q = CLH^(3/2)
Q = 2.95 * 4.0 * 0.50^(3/2)
Q = 4.17 cfs

Total Capacity:

$Q_{cap} = 5.28_{grate} + 4.17_{throat}$
$Q_{cap} = 9.45$ cfs

$Q_{req} = 7.49$ cfs

Inlet Checks OK – No Carry Over

Capacity of a Double 'C' Storm Drop Inlet
Inlet 'B'

Capacity of the Roadway:

S = +/-3.0%
Width of Flow with One Lane Clear = 28'
Depth of Flow at 2% Cross Slope = 0.56'
n = 0.017
A = 28' * 0.56' * 0.5 = 7.84 SF
Wp = +/-28'
R = 0.28
Qcap = 7.84 * (1.49/0.017) * ((0.28)^0.67) * (0.03^0.5)
= 50.93 cfs

Qact = 20.70 cfs
Assume flow depth = 0.50' (Spread=25.0',A=6.25 SF, Wp=25.0', R=0.25, S=3.0%), Q=37.65 cfs
Assume flow depth = 0.40' (Spread=20.0',A=4.00 SF, Wp=20.0', R=0.20, S=3.0%), Q=20.77 cfs
Depth (H) = +/-0.40' (4.8")

Capacity of the grate:

L = 80" - 2(2"$_{ends}$) - 14(½" $_{middle\ bars}$) – 6" $_{center\ piece}$
= 66 1/2"
= 5.25'

W = 25" - 13(½" $_{middle\ bars}$)
= 18.5"
= 1.54'

Area = 5.25' x 1.54'
= 8.09 ft^2

Effective Area = 8.09- 8.09 * 0.5 ($_{clogging\ factor}$)
= 4.04 ft^2 at the grate

Orifice Equation

Q = CA sqrt(2gH)
Q = 0.6*4.04*sqrt(2*32.2*0.40)
Q = 12.30 cfs

Capacity of the Throat:

L = 6.50'

H = 10 ¾" - 4 ½"
= 6 ¼"
= 0.5208'

Area = 6.50' x 0.5208'
= 3.39 ft^2 at the throat

Weir Equation

Q = CLH^(3/2)
Q = 2.95 * 3.39 * 0.37^(3/2)
Q = 2.25 cfs

Total Capacity:

$Q_{cap} = 12.30_{grate} + 2.25_{throat}$
$Q_{cap} = 14.08$ cfs

$Q_{req} = 20.70$ cfs

$Q_{carry\ over} = 20.70$ cfs – 14.08 cfs = 6.62 cfs

Capacity of a Double 'C' Storm Drop Inlet
Inlet 'C'

Capacity of the Roadway:

S = +/-3.0%
Width of Flow with One Lane Clear = 28'
Depth of Flow at 2% Cross Slope = 0.56'
n = 0.017
A = 28' * 0.56' * 0.5 = 7.84 SF
Wp = +/-28'
R = 0.28
Qcap = 7.84 * (1.49/0.017) * ((0.28)^0.67) * (0.03^0.5)
= 50.93 cfs

Qact = 8.25 cfs + 6.62 cfs carry over = 14.87 cfs
Assume flow depth = 0.40' (Spread=20.0',A=4.00 SF, Wp=20.0', R=0.20, S=3.0%), Q=20.77 cfs
Assume flow depth = 0.30' (Spread=15.0',A=2.25 SF, Wp=15.0', R=0.15, S=3.0%), Q=9.64 cfs
Depth (H) = +/-0.35' (4.2")

Capacity of the grate:

L = 80" - 2(2"$_{ends}$) - 14(½" $_{middle\ bars}$) – 6" $_{center\ piece}$
= 66 1/2"
= 5.25'

W = 25" - 13(½" $_{middle\ bars}$)
= 18.5"
= 1.54'

Area = 5.25' x 1.54'
= 8.09 ft^2

Effective Area = 8.09- 8.09 * 0.5 ($_{clogging\ factor}$)
= 4.04 ft^2 at the grate

Orifice Equation

Q = CA sqrt(2gH)
Q = 0.6*4.04*sqrt(2*32.2*0.35)
Q = 11.50 cfs

Capacity of the Throat:

L = 6.50'

H = 10 ¾" - 4 ½"
= 6 ¼"
= 0.5208'

Area = 6.50' x 0.5208'
= 3.39 ft^2 at the throat

Weir Equation

Q = CLH^(3/2)
Q = 2.95 * 3.39 * 0.35^(3/2)
Q = 2.07 cfs

Total Capacity:

$Q_{cap} = 11.50_{grate} + 2.07_{throat}$
$Q_{cap} = 13.57$ cfs

$Q_{req} = 14.87$ cfs

$Q_{carry\ over} = 14.87$ cfs – 13.57 cfs = 1.30 cfs

Capacity of a Double 'C' Storm Drop Inlet
Inlet 'D'

Capacity of the Roadway:

S = +/-3.0%
Width of Flow with One Lane Clear = 28'
Depth of Flow at 2% Cross Slope = 0.56'
n = 0.017
A = 28' * 0.56' * 0.5 = 7.84 SF
Wp = +/-28'
R = 0.28
Qcap = 7.84 * (1.49/0.017) * ((0.28)^0.67) * (0.03^0.5)
= 50.93 cfs

Qact = 2.37 cfs + 1.30 cfs carry over = 3.67 cfs
Assume flow depth = 0.30' (Spread=15.0',A=2.25 SF, Wp=15.0', R=0.15, S=3.0%), Q=9.64 cfs
Assume flow depth = 0.20' (Spread=10.0',A=1.00 SF, Wp=10.0', R=0.10, S=3.0%), Q=3.27 cfs
Depth (H) = +/-0.22' (2.64")

Capacity of the grate:

L = 80" - 2(2"$_{ends}$) - 14(½" $_{middle\ bars}$) – 6" $_{center\ piece}$
= 66 1/2"
= 5.25'

W = 25" - 13(½" $_{middle\ bars}$)
= 18.5"
= 1.54'

Area = 5.25' x 1.54'
= 8.09 ft^2

Effective Area = 8.09- 8.09 * 0.5 ($_{clogging\ factor}$)
= 4.04 ft^2 at the grate

Orifice Equation

Q = CA sqrt(2gH)
Q = 0.6*1.00*sqrt(2*32.2*0.22)
Q = 2.26 cfs

Capacity of the Throat:

L = 6.50'

H = 10 ¾" - 4 ½"
= 6 ¼"
= 0.5208'

Area = 6.50' x 0.5208'
= 3.39 ft^2 at the throat

Weir Equation

Q = CLH^(3/2)
Q = 2.95 * 3.39 * 0.22^(3/2)
Q = 1.03 cfs

Total Capacity:

$Q_{cap} = 2.26_{grate} + 1.03_{throat}$
$Q_{cap} = 3.29$ cfs

$Q_{req} = 3.67$ cfs

$Q_{carry\ over} = 3.67$ cfs – 3.29 cfs = 0.38 cfs

Capacity of a Double 'C' Storm Drop Inlet
Inlet 'E'

Capacity of the Roadway:

S = +/-3.0%
Width of Flow with One Lane Clear = 28'
Depth of Flow at 2% Cross Slope = 0.56'
n = 0.017
A = 28' * 0.56' * 0.5 = 7.84 SF
Wp = +/-28'
R = 0.28
Qcap = 7.84 * (1.49/0.017) * ((0.28)^0.67) * (0.03^0.5)
= 50.93 cfs

Qact = 0.80 cfs + 0.38 cfs carry over = 1.18 cfs
Assume flow depth = 0.20' (Spread=10.0',A=1.00 SF, Wp=10.0', R=0.10, S=3.0%), Q=3.27 cfs
Assume flow depth = 0.10' (Spread=5.0',A=0.25 SF, Wp=5.0', R=0.05, S=3.0%), Q=0.52 cfs
Depth (H) = +/-0.15' (1.80")

Capacity of the grate:

L = 80" - 2(2"$_{ends}$) - 14(½" $_{middle\ bars}$) – 6" $_{center\ piece}$
= 66 1/2"
= 5.25'

W = 25" - 13(½" $_{middle\ bars}$)
= 18.5"
= 1.54'

Area = 5.25' x 1.54'
= 8.09 ft^2

Effective Area = 8.09- 8.09 * 0.5 ($_{clogging\ factor}$)
= 4.04 ft^2 at the grate

Orifice Equation

Q = CA sqrt(2gH)
Q = 0.6*0.56*sqrt(2*32.2*0.15)
Q = 1.04 cfs

Capacity of the Throat:

L = 6.50'

H = 10 ¾" - 4 ½"
= 6 ¼"
= 0.5208'

Area = 6.50' x 0.5208'
= 3.39 ft^2 at the throat

Weir Equation

Q = CLH^(3/2)
Q = 2.95 * 3.39 * 0.0.15^(3/2)
Q = 0.58 cfs

Total Capacity:

$Q_{cap} = 1.04_{grate} + 0.58_{throat}$
$Q_{cap} = 1.62$ cfs

$Q_{req} = 1.18$ cfs

Inlet Checks OK… No Carry Over