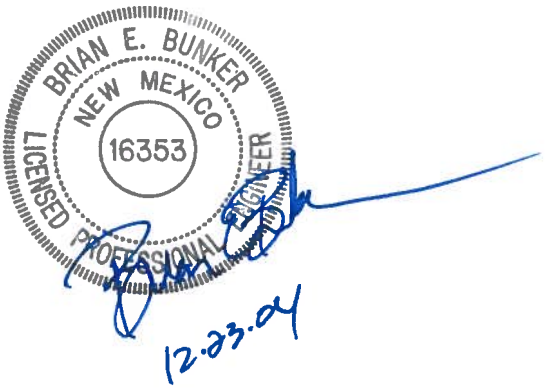
TARGET
OF NE ALBUQUERQUE
DRAINAGE REPORT

NOVEMBER 3, 2004

Revised December 20, 2004



Prepared for:

TARGET CORPORATION, INC.
1000 NICOLLET MALL
MINNEAPOLIS, MN 55403

Recd 1/7/05

I. INTRODUCTION

The purpose of this report is to provide a Drainage Management Plan for development of a Target Corporation Store on the southwest corner of San Pedro and Paseo Del Norte in Northeast Albuquerque. The site is currently legally described as Los Angeles Center, Tract A-2. Tract A-2 is currently occupied by Lowe's and in the process of being platted to create outlots and a parcel for the future Target store. The Target store tract will contain 10.97 acres. The site is bounded by Paseo Del Norte on the north, Lowe's Home Improvement Center the east, The South Arroyo De Domingo Baca on the south and I-25 on the west. The UPC No. for this parcel is 101806317546920804. Current case numbers for this project are: 07EPC-01032, 04DRB-01670, 04DRB-01177, 04DRB-001178, 04DRB-01176. Current Project Number is 1001946.

II. PURPOSE

This report and the final grading plan are submitted for Hydrology Division review for the purpose of obtaining rough grading and building permit approval. No variances are requested with this submittal. Should the Hydrology Division have comments which must be addressed prior to building permit approval, the applicant requests that rough grading approval be granted separately, while the building permit comments are being addressed.

III. METHODOLOGIES AND REFERENCES

This report is prepared in accordance with the City of Albuquerque Development Process Manual (DPM) criteria; specifically, the procedures outlined in DPM Section 22.2. This site is less than 40 acres; therefore, no AHYMO analysis has been done. The site was analyzed using the method outlined in Part A.6 of Section 22.2 of the DPM. The site is allowed free discharge of developed flows.

IV. SITE LOCATION AND CHARACTERISTICS

This site is located on Paseo Del Norte between I-25 and San Pedro Boulevard, within Zone Atlas Map No. D-18. The entire site consists of about 32 acres, approximately 11 acres of which are being utilized by the Target Corporation Store. The remainder of the site is currently occupied by Lowe's Home Improvement Center. With respect to land

treatment percentages, this report assumes fully developed conditions for proposed Target tract. Land treatment percentages for the respective basins are indicated in Table A-2.

V. EXISTING CONDITIONS

Under existing conditions, offsite flows from other portions of the development do impact the proposed Target Tract. However, offsite flows from the adjacent roadways and adjacent parcels do not impact the site. A previous drainage report was prepared for the overall development by Bohannan Houston (BH) and dated December 15, 1999. That report identified basin B1 as a future development parcel. Basin B1, as identified in the BH drainage report, is the proposed Target tract. Portions of other basins identified in the BH drainage report do impact the Target tract. These basins are B2, B3, and B4. The flows from these basins, as identified in the BH drainage report, represent 45.1cfs under design conditions, and have been incorporated into the design of the storm pipes on the Target tract. Currently, the aforementioned basins drain to a temporary swale which crosses the Target tract. The design for the Target tract encloses the swale with a conduit. Hydraulic grade line calculations for the closed conduit consider these offsite flows and the calculations are in the appendix.

VI. PROPOSED CONDITIONS

The proposed development consists of a 124,800 square foot retail store as well as parking and driveways. For analytical purposes, the proposed site was divided into 17 basins, labeled B1 – B17, as shown on the Proposed Drainage Basin Map in the Appendix of this report. It is important to note that the BH drainage report and this report identify basins with a "B#" designator. The 17 basins identified in this report collectively represent basin B1 of the BH drainage report, however with a correct representation of land treatment percentages.

All of the proposed drainage facilities are designed for a 100-year, 6-hour storm under fully developed conditions. Land treatment percentages were calculated for each basin and are shown in Table A-2 in the Appendix.

Basins B1-B5, B11, B16 and B17 drain to a proposed private storm drainage system which will drain to the 60" RCP located at the northwest corner of the project site, which crosses I-25. Storm water flows from Lowe's will also drain to the 60" RCP pipe as mentioned above. In the study prepared by BH, their analysis considered the future development of basin B1. The BH report assumed land treatment percentages for basin B1 with a resultant flow of Q(100)=52.89cfs. This Drainage Report refines the land treatment percentages based on actual proposed conditions (17 sub-basins). Flow to the 60" RCP pipes from the Target tract is Q(100)=27.78cfs (Basins B1-B5, B11, B16, and B17). The remainder of the flow from the Target tract will drain to the South Arroyo De Domingo Baca.

Surface flows drain to catch basins as shown on the plan. Roof drainage from the building (B11 and B16) is directly piped to the proposed storm drain system. Please refer to the Storm Water Drainage Plan for pipe sizes, inlet types, etc. Portions of the proposed private storm drain operate under slight pressure flows. A hydraulic grade line analysis and detailed hydraulic calculations for all of the proposed facilities are provided in the Appendix of this report.

Basins B7 – B9 drain to another proposed private storm drainage system which will drain to the channel. Basin B10 will also drain to the channel, however it is on its own system. Surface flows from these areas are also collected in catch basins as located on the Proposed Drainage Basin Map.

Basins B12 – B15 and B6 drain to a third proposed private storm drainage system which will also drain to the channel. Surface flows in the section will drain to a catch basin. Drainage from the roof of the building (B12 – B15) will be piped directly into the system.

As indicated on the plat, drainage easements will be given to (or retained by) Lowe's for the closed conduit replacing the temporary swale.

VII. CONCLUSION

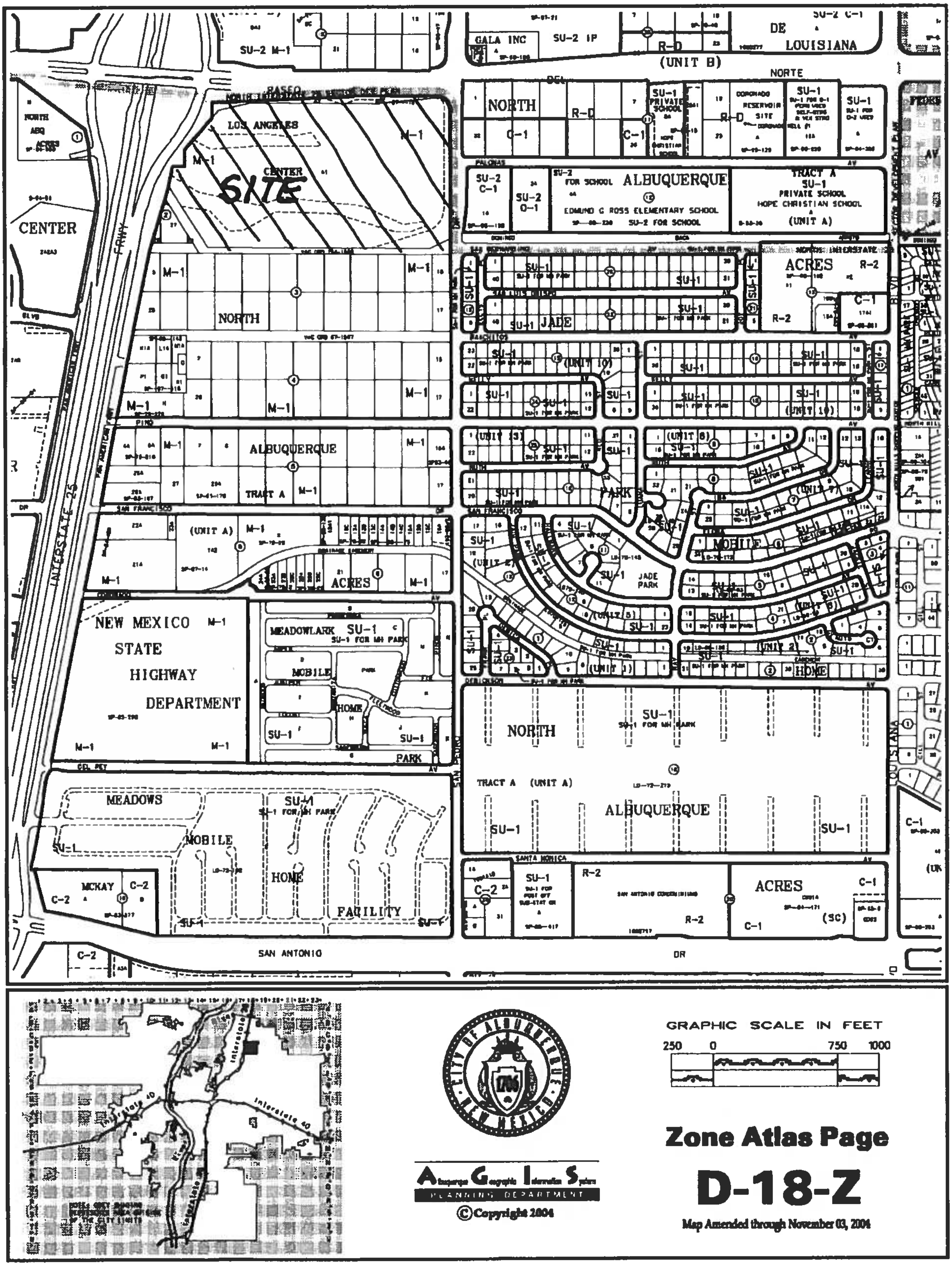
The analysis of the 60" culverts under I-25, as conducted by BH, was conservative and their conclusion that these culverts will have capacity for the developed Tract A-2 remains true.

The temporary swale (across drainage basin B1 of the BH drainage report) will be replaced with a 36" diameter closed conduit.

All other flows from the Target tract will be directed to the South Arroyo De Domingo Baca.

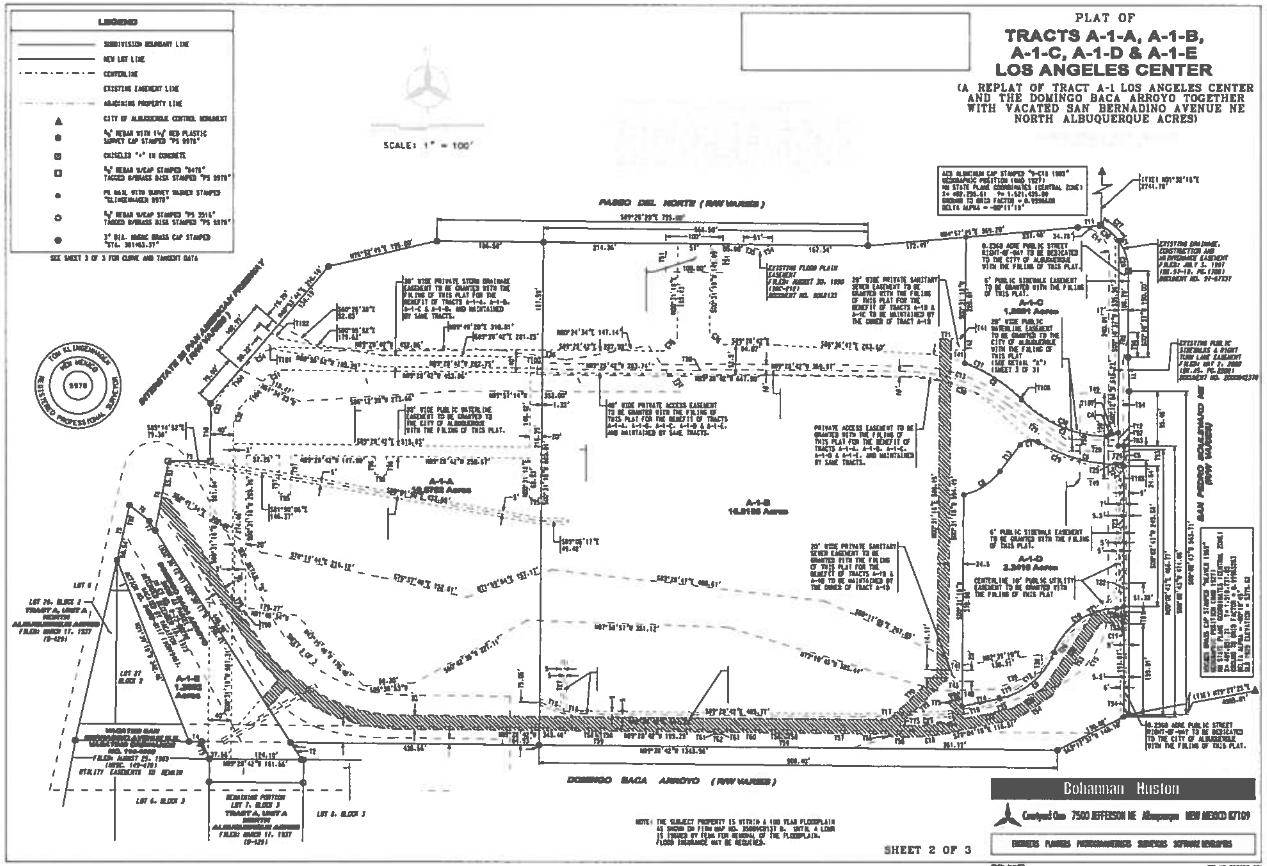
Drainage easements will be granted to (or retained by) Lowe's across the temporary swale (new closed conduit).

This report has given a comprehensive drainage management plan for the proposed development that complies with the DPM and the drainage ordinance. It is recommended that Building Permit approvals be granted with this submittal. However, should the Hydrology Division have comments that must be addressed prior to building permit approval, Target Corporation requests rough grading approval prior to full building permit approval. This would allow rough grading operations to begin without additional delays.



SITE
LOS ANGELES
CENTER
NORTH
ALBUQUERQUE
ACRES
INTERSTATE 25
FRWY
NEW MEXICO STATE HIGHWAY DEPARTMENT
MEADOWLARK
MOBILE
HOME
PARK
MEADOWS
MOBILE HOME FACILITY
JADE PARK
EDMUND G ROSS ELEMENTARY SCHOOL
HOPE CHRISTIAN SCHOOL
DE LOUISIANA
SAN ANTONIO
DR
SAN FRANCISCO
SANTA MONICA
LOUISIANA
GRAPHIC SCALE IN FEET
250 0 750 1000
Zone Atlas Page
D-18-Z
Map Amended through November 03, 2004
PLANNING DEPARTMENT
©Copyright 2004

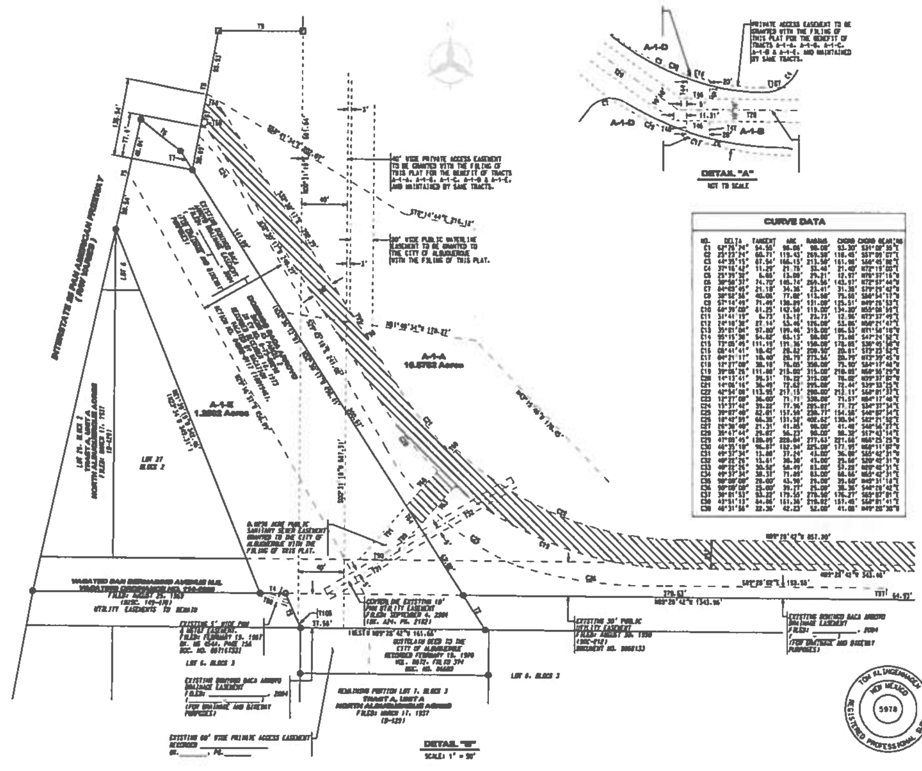
FIGURE 1


PLAT OF
TRACTS A-1-A, A-1-B, A-1-C, A-1-D & A-1-E
LOS ANGELES CENTER
(A REPLAT OF TRACT A-1 LOS ANGELES CENTER AND THE DOMINGO BACA ARROYO TOGETHER WITH VACATED SAN BERNADINO AVENUE NE NORTH ALBUQUERQUE ACRES)
LEGEND
SCALE: 1" = 100'
PASEO DEL NORTE (R/W VARIES)
DOMINGO BACA ARROYO (R/W VARIES)
SAN PEDRO BOULEVARD NE (R/W VARIES)
INTERSTATE 25 PAN AMERICAN FREEWAY (R/W VARIES)
A-1-A
A-1-B
A-1-C
A-1-D
A-1-E
SEE SHEET 3 OF 3 FOR CURVE AND TANGENT DATA
Bohannan Huston
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS
SHEET 2 OF 3

PLAT OF

TRACTS A-1-A, A-1-B, A-1-C, A-1-D & A-1-E LOS ANGELES CENTER

(A REPLAT OF TRACT A-1 LOS ANGELES CENTER AND THE DOMINGO BACA ARROYO TOGETHER WITH VACATED SAN BERNADINO AVENUE NE NORTH ALBUQUERQUE ACRES)



CURVE DATA

NO.	DELTA	TANGENT	ARC	RADIUS	CHORD	CHORD BEARING
C1	62°26'24"	54.55'	96.06'	90.00'	93.30'	S31°08'35"E
C2	25°23'24"	60.71'	119.43'	269.50'	118.45'	S51°09'07"E
C3	44°35'15"	87.54'	166.15'	213.50'	161.98'	S66°45'08"E
C4	37°16'42"	11.29'	21.78'	33.46'	21.40'	N72°19'03"W
C5	25°39'30"	6.65'	13.00'	29.21'	12.97'	N76°37'16"W
C6	30°50'37"	74.70'	145.74'	269.50'	143.97'	N72°37'44"W
C7	84°03'05"	21.10'	34.36'	23.41'	31.35'	S79°29'42"W
C8	38°52'58"	40.06'	77.02'	113.50'	75.55'	S86°54'17"W
C9	57°14'49"	71.49'	130.89'	131.00'	125.51'	N49°26'53"E
C10	60°39'00"	61.25'	142.54'	119.00'	134.20'	N55°08'50"E
C11	31°41'19"	6.73'	13.18'	23.73'	12.96'	N73°37'49"E
C12	24°18'30"	27.14'	53.46'	125.00'	53.06'	N50°21'47"E
C13	35°03'04"	97.00'	190.44'	313.00'	186.53'	N71°58'16"W
C14	95°15'30"	54.62'	83.13'	50.00'	73.88'	S47°24'52"E
C15	73°05'45"	111.19'	191.36'	150.00'	178.65'	S38°45'56"E
C16	05°41'41"	10.42'	20.82'	209.50'	20.81'	S79°23'52"E
C17	04°21'17"	10.40'	20.79'	273.56'	20.79'	N73°39'45"E
C18	12°27'08"	38.10'	76.05'	350.00'	75.90'	S84°17'40"E
C19	39°06'26"	111.40'	215.00'	315.00'	210.85'	N58°56'29"E
C20	14°13'41"	39.31'	78.22'	313.00'	78.02'	N39°37'07"E
C21	14°06'16"	36.49'	72.62'	295.00'	72.44'	S39°33'25"E
C22	42°54'00"	112.35'	217.15'	290.00'	212.11'	S68°01'37"E
C23	12°27'08"	36.60'	71.71'	330.00'	71.57'	N84°17'40"E
C24	15°31'42"	39.22'	77.96'	285.07'	77.72'	S34°37'34"E
C25	39°07'40"	42.01'	157.50'	230.71'	154.56'	S40°07'34"E
C26	18°42'39"	66.35'	131.52'	402.62'	130.94'	S62°21'50"E
C27	26°30'40"	21.31'	41.65'	90.00'	41.40'	S46°56'27"E
C28	35°41'44"	29.67'	56.23'	90.00'	55.32'	S17°43'14"E
C29	47°03'45"	120.05'	228.04'	277.63'	221.68'	N66°25'25"E
C30	46°35'18"	96.87'	182.94'	225.00'	177.95'	N68°11'07"W
C31	49°37'34"	11.40'	37.24'	43.00'	36.08'	S65°42'31"W
C32	46°22'25"	18.61'	34.50'	43.00'	33.56'	S20°42'31"W
C33	46°22'25"	30.56'	56.49'	83.00'	55.23'	N20°42'31"E
C34	49°37'34"	38.31'	71.89'	83.00'	69.66'	N65°42'31"E
C35	90°00'00"	20.00'	43.90'	28.00'	39.60'	N45°31'18"E
C36	90°00'00"	25.00'	39.27'	25.00'	35.36'	S44°28'42"E
C37	36°01'53"	93.27'	179.35'	278.50'	176.27'	S65°07'01"E
C38	43°51'13"	84.06'	161.36'	210.82'	157.45'	S68°01'41"E
C39	46°31'56"	22.36'	42.23'	52.00'	41.08'	N49°28'30"E

TANGENT DATA

NO.	BEARING	DISTANCE	NO.	BEARING	DISTANCE
T1	S01°26'47"E	50.00'	T52	N89°28'42"W	50.27'
T2	S32°30'11"E (S32°36'12"E)	35.77'	T53	S23°45'07"W	153.07'
T3	N23°25'08"W (N23°49' E)	32.06' (32.06')	T54	S86°15'07"W	73.30'
T4	N89°28'42"W (WEST)	22.37'	T55	N89°28'42"W	29.51'
T5	N12°37'31"E (N10°34' E)	56.96' (53.34')	T56	N00°31'18"E	9.03'
T6	S51°34'50"E (S49°29' E)	44.26' (41.26')	T57	N89°28'42"W	182.39'
T7	S32°30'11"E (S32°36'12"E)	19.56'	T58	S00°31'18"W	10.00'
T8	S10°33'05"E	123.70'	T59	N89°28'42"W	10.00'
T9	S05°42'36"E	74.06'	T60	N89°28'42"W	108.15'
T10	N20°14'12"E	131.44'	T61	S00°31'18"W	4.36'
T11	N04°51'49"E	40.09'	T62	N89°28'41"W	10.00'
T12	S89°10'31"W	22.09'	T63	S41°26'53"W	47.00'
T13	S31°31'50"W	52.44'	T64	N22°30'17"W	29.81'
T14	S78°04'10"W	67.38'	T65	N41°26'53"E	41.27'
T15	S86°52'42"E	44.56'	T66	S76°14'24"W	9.10'
T16	S86°29'49"E	32.05'	T67	N19°33'06"E	20.03'
T17	N89°10'49"E	156.92'	T68	S76°14'24"E	10.32'
T18	S73°01'13"E	53.35'	T69	N41°26'53"E	9.00'
T19	N62°31'03"W	36.26'	T70	N49°46'56"E	117.66'
T20	N39°12'31"E	61.55'	T71	S89°28'42"E	29.00'
T21	S49°42'24"E	114.17'	T72	S49°46'56"W	139.00'
T22	S49°42'24"E	23.96'	T73	S89°28'42"E	13.36'
T23	N89°08'43"E	206.23'	T74	N78°04'10"E	9.34'
T24	N31°01'40"W	11.77'	T75	N11°55'42"W	47.00'
T25	N09°34'15"W	14.06'	T76	N78°04'10"E	20.00'
T26	S89°56'27"E	34.56'	T77	N78°04'10"E	85.42'
T27	N00°31'18"E	66.00'	T78	N56°13'07"E	66.46'
T28	N89°28'42"W	113.06'	T79	N33°45'07"W	133.00'
T29	N04°31'36"W	122.62'	T80	S89°28'42"E	60.00'
T30	S49°31'10"W	2.63'	T81	S00°02'43"W	20.00'
T31	N15°02'11"E	108.15'	T82	S57°17'37"W	6.15'
T32	N15°05'13"E	90.56'	T83	N89°51'17"W	9.00'
T33	S73°19'39"W	337.17'	T84	N00°02'43"E	136.78'
T34	S64°25'14"W	24.16'	T85	N10°26'04"E	56.16'
T35	N64°33'41"W	31.23'	T86	S00°10'37"W	41.21'
T36	S21°44'36"E	114.13'	T87	S00°31'36"W	9.62'
T37	S34°19'09"E	17.06'	T88	N50°49'13"W	23.00'
T38	S00°32'55"W	30.00'	T89	S41°26'53"W	33.76'
T39	S64°50'32"W	87.66'	T90	N89°28'42"W	26.47'
T40	S66°14'06"W	99.06'	T91	N41°26'53"E	67.05'
T41	S89°28'42"W	74.56'	T92	S89°28'42"E	9.52'
T42	S00°31'18"W	70.00'	T93	S00°00'43"W	36.41'
T43	N89°28'42"W	30.36'	T94	S57°17'37"W	19.00'
T44	N00°31'18"E	21.33'	T95	N89°28'42"W	20.00'
T45	S00°31'18"W	15.36'	T96	S00°31'18"E	30.16'
T46	N89°28'42"W	20.00'	T97	S00°31'18"W	67.66'
T47	S00°31'18"W	14.01'	T98	S31°26'27"E	8.43'
T48	N00°31'18"E	13.14'	T99	N22°30'17"W	23.73'
T49	N89°41'08"W	30.00'	T100	S59°28'42"E	12.33'
T50	N00°12'50"E	150.00'	T101	N51°33'18"W	26.53'
T51	S00°33'40"W	30.00'	T102	S31°33'18"E	19.43'
			T103	N89°51'17"W	9.67'
			T104	S49°52'44"W	6.49'
			T105	N27°33'08"W	9.36'
			T106	S44°28'04"E	15.15'
			T107	S89°37'17"E	20.64'

TOM KLINGENHAGEN NEW MEXICO 5978 REGISTERED PROFESSIONAL SURVEYOR

Bohannan Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

SHEET 3 OF 3

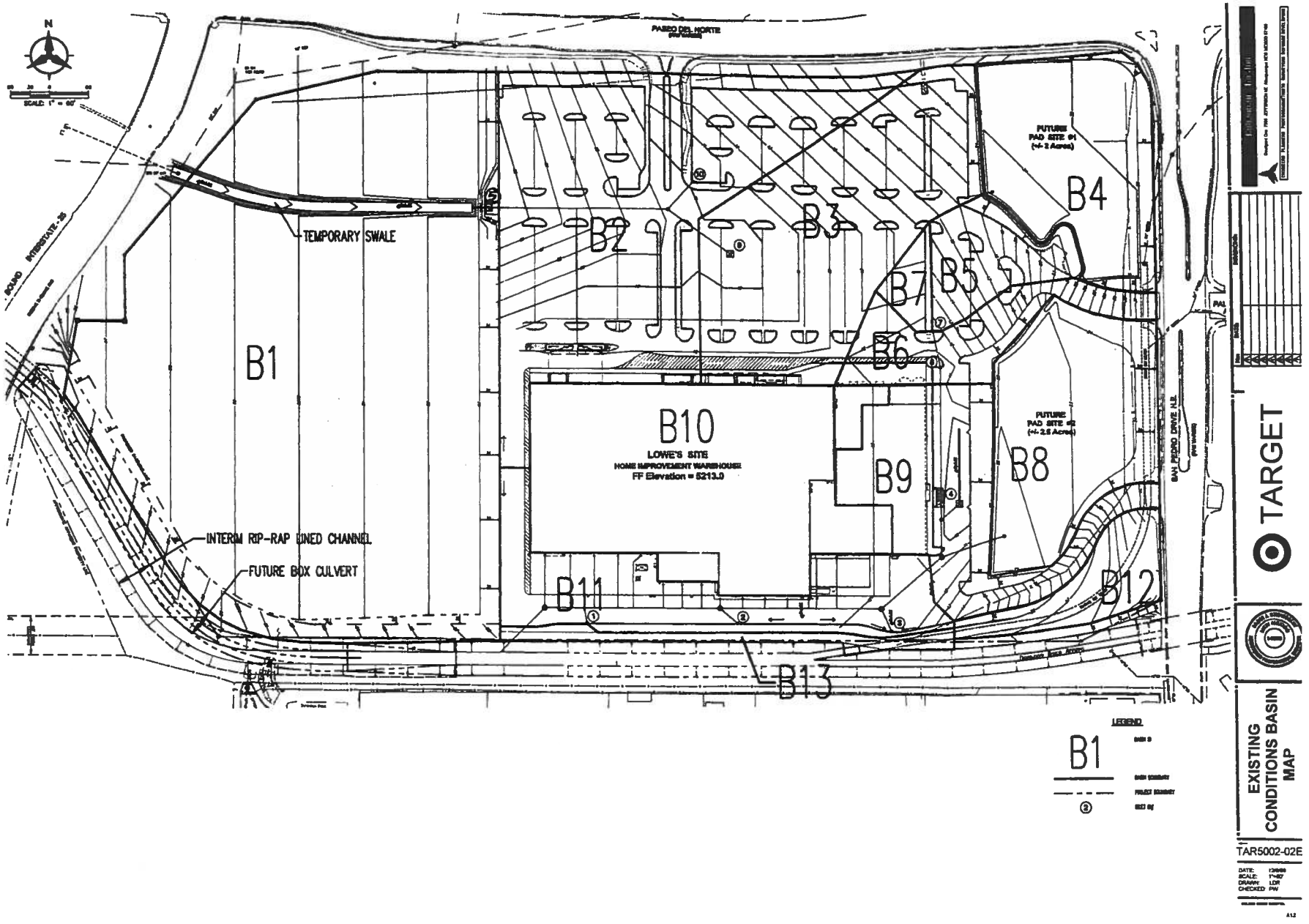
TARGET

Table A-1
Existing Conditions Basin Data Table

This table is based on the DPM Chapter 22.2, Zone 3

Basin	Area (sq. ft)	Area (acres)	Land Treatment Percentages				Q_{100} (cfs/ac)	Q_{100} (cfs)	V_{100} (inches)	V_{100} (cft)
			A	B	C	D				
B1[1]	477853	10.97	0.00%	5.00%	5.00%	90.00%	4.82	52.88	2.23	88980
							Sub-Total	52.88		
Lowe's Site[2]										
'B2'	194278	4.46	0.00%	5.00%	7.00%	88.00%	4.79	21.36	2.21	35830
'B3'	128502	2.95	0.00%	5.00%	5.00%	90.00%	4.82	14.22	2.23	23928
'B4'	86249	1.98	0.00%	5.00%	5.00%	90.00%	4.82	9.54	2.23	16060
							Sub-Total	45.12		
TOTALS		**20.36**						**98.01**		

[1] As present in BH drainage report
[2] Represents flows from the Lowe's site that will impact the proposed Target tract, as presented in BH draiage report


N
SCALE: 1" = 60'
PASEO DEL NORTE
TEMPORARY SWALE
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
LOWE'S SITE
HOME IMPROVEMENT WAREHOUSE
FF Elevation = 5213.0
B11
B12
B13
FUTURE PAD SITE #1 (+/- 2 Acres)
FUTURE PAD SITE #2 (+/- 2.5 Acres)
INTERIM RIP-RAP LINED CHANNEL
FUTURE BOX CULVERT
LEGEND
B1
TARGET
EXISTING CONDITIONS BASIN MAP
TAR5002-02E

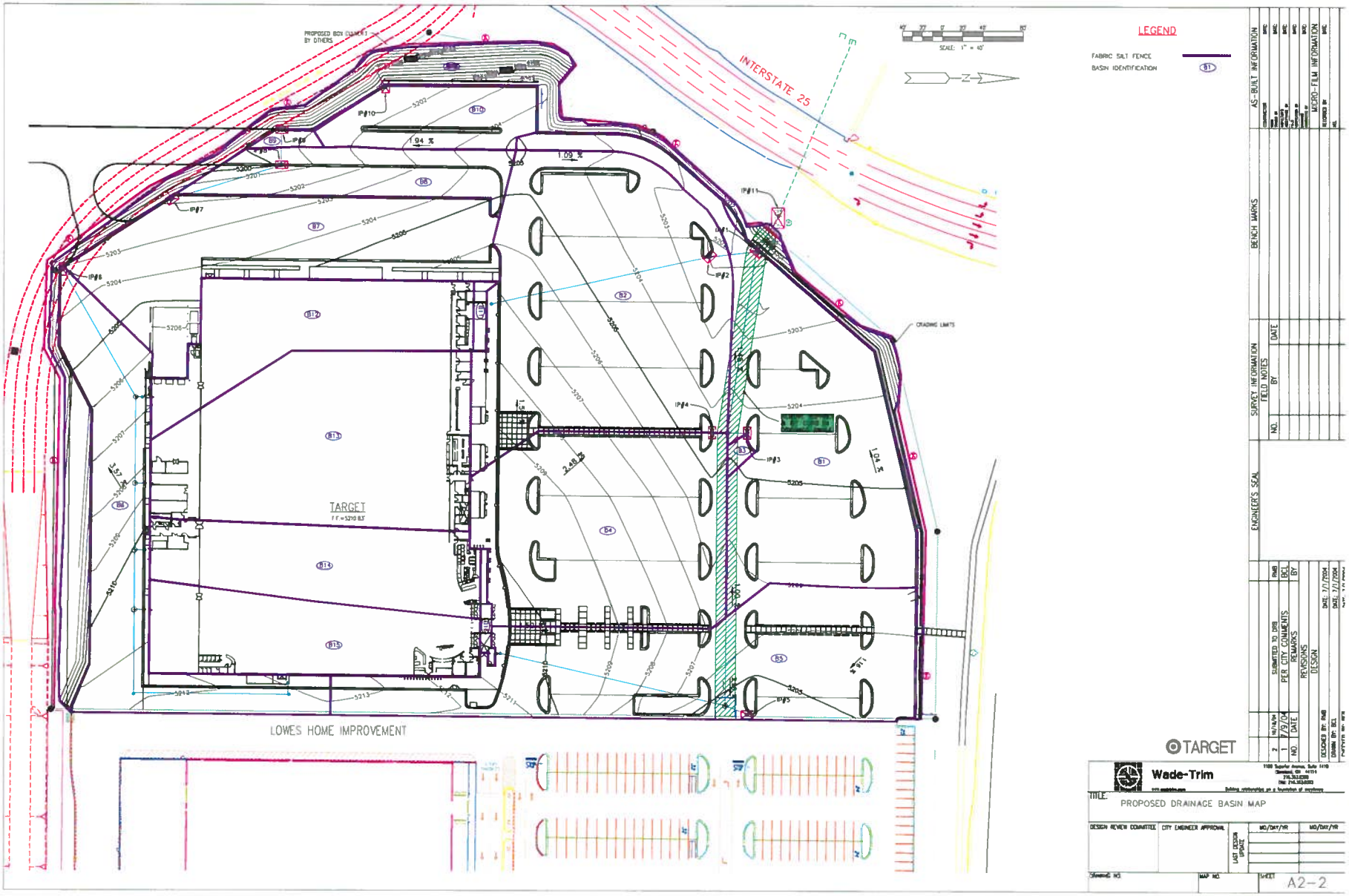
TARGET

Table A-2

Fully Developed Conditions Basin Data Table - Modified Existing B1 Basin

This table is based on the DPM Chapter 22.2, Zone 3

Basin	Area (sq.ft)	Area (acres)	Land Treatment Percentages				Q_{100} (cfs/ac)	Q_{100} (cfs)	V_{100} (inches)	V_{100} (cft)
			A	B	C	D				
1	53745.76	1.23	0.00%	0.00%	3.97%	96.03%	4.96	6.12	2.32	10379.57
2	64348.12	1.48	0.00%	0.00%	3.95%	96.05%	4.96	7.32	2.32	12428.35
3	644.33	0.01	0.00%	0.00%	0.00%	100.00%	5.02	0.07	2.36	126.72
4	46572.28	1.07	0.00%	0.00%	3.89%	96.11%	4.96	5.30	2.32	8997.48
5	52068.25	1.20	0.00%	0.00%	5.40%	94.60%	4.94	5.90	2.30	9989.38
6	33831.75	0.78	0.00%	0.00%	0.00%	100.00%	5.02	3.90	2.36	6653.58
7	38810.32	0.89	0.00%	0.00%	0.00%	100.00%	5.02	4.47	2.36	7632.70
8	14446.34	0.33	0.00%	0.00%	61.60%	38.40%	4.05	1.34	1.70	2047.63
9	999.90	0.02	0.00%	0.00%	0.00%	100.00%	5.02	0.12	2.36	196.65
10	12167.30	0.28	0.00%	0.00%	1.51%	98.49%	5.00	1.40	2.34	2376.55
11	980.31	0.02	0.00%	0.00%	0.00%	100.00%	5.02	0.11	2.36	192.79
12	24447.37	0.56	0.00%	0.00%	0.00%	100.00%	5.02	2.82	2.36	4807.98
13	48844.95	1.12	0.00%	0.00%	0.00%	100.00%	5.02	5.63	2.36	9606.17
14	24487.85	0.56	0.00%	0.00%	0.00%	100.00%	5.02	2.82	2.36	4815.94
15	24448.56	0.56	0.00%	0.00%	0.00%	100.00%	5.02	2.82	2.36	4808.22
16	1099.39	0.03	0.00%	0.00%	0.00%	100.00%	5.02	0.13	2.36	216.21
17	35719.20	0.82	0.00%	0.00%	100.00%	0.00%	3.45	2.83	1.29	3839.81
TOTALS		**10.97**						**50.27**		



AS-BUILT INFORMATION

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES BY DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS
2	11/14/04	SUBMITTED TO DRB
1	9/9/04	PER CITY COMMENTS

DESIGNED BY: RMB
DRAWN BY: BCL
CHECKED BY:

DATE: 7/7/2004
DATE: 7/7/2004

MICRO-FILM INFORMATION
RECORDED BY
NO.

TARGET

Wade-Trim

TITLE: PROPOSED DRAINAGE BASIN MAP

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO/DAY/YR	MO/DAY/YR

DRAWING NO.
MAP NO.
SHEET A2-2

ALBUQUERQUE STANDARD INLETS

Type Single "C" Inlet - NEENAH R-3578

Open Area (sft) =	**2.3**
Length of Weir (ft) =	**10.85**
Weir Coefficient =	**2.68**
Orifice Coefficient =	**0.60**

Head (feet)	Head (inches)	Weir Q (cfs)	Orifice Q (cfs)	Control Q (cfs)
0.05	0.6	0.33	2.48	0.33
0.10	1.2	0.92	3.50	0.92
0.15	1.8	1.69	4.29	1.69
0.20	2.4	2.60	4.95	2.60
0.25	3.0	3.64	5.54	3.64
0.30	3.6	4.78	6.07	4.78
0.35	4.2	6.02	6.55	6.02
0.40	4.8	7.36	7.00	7.00
0.45	5.4	8.78	7.43	7.43
0.50	6.0	10.28	7.83	7.83
0.55	6.6	11.87	8.21	8.21
0.60	7.2	13.52	8.58	8.58
0.65	7.8	15.24	8.93	8.93
0.70	8.4	17.04	9.27	9.27
0.75	9.0	18.89	9.59	9.59
0.80	9.6	20.81	9.91	9.91
0.85	10.2	22.80	10.21	10.21
0.90	10.8	24.84	10.51	10.51
0.95	11.4	26.93	10.79	10.79
1.00	12.0	29.09	11.07	11.07

Inlet Capacity Table

Inlet ID#	Contributing Basins	Residual to Inlet	Total Q_{100}	Head Available	Capacity	Overflow
Single "C"						
SD7	B3	-	0.07	0.20	2.60	-
SD9	B2	1.10	8.42	0.30	4.78	3.64
SD12	B10	-	1.40	0.50	7.83	-
SD13	B9	-	0.12	0.50	7.83	-
SD14	B8	-	4.05	0.50	7.83	-
SD21	B6	-	3.90	0.50	7.83	-

Type Double "C" Inlet - NEENAH R-3578

Open Area (sft) =	**4.6**
Length of Weir (ft) =	**17.52**
Weir Coefficient =	**2.68**
Orifice Coefficient =	**0.60**

Head (feet)	Head (inches)	Weir Q (cfs)	Orifice Q (cfs)	Control Q (cfs)
0.05	0.6	0.52	4.95	0.52
0.10	1.2	1.48	7.00	1.48
0.15	1.8	2.73	8.58	2.73
0.20	2.4	4.20	9.91	4.20
0.25	3.0	5.87	11.07	5.87
0.30	3.6	7.72	12.13	7.72
0.35	4.2	9.72	13.10	9.72
0.40	4.8	11.88	14.01	11.88
0.45	5.4	14.17	14.86	14.17
0.50	6.0	16.60	15.66	15.66
0.55	6.6	19.15	16.43	16.43
0.60	7.2	21.82	17.16	17.16
0.65	7.8	24.61	17.86	17.86
0.70	8.4	27.50	18.53	18.53
0.75	9.0	30.50	19.18	19.18
0.80	9.6	33.60	19.81	19.81
0.85	10.2	36.80	20.42	20.42
0.90	10.8	40.09	21.01	21.01
0.95	11.4	43.48	21.59	21.59
1.00	12.0	46.96	22.15	22.15

Inlet Capacity Table

Inlet ID#	Contributing Basins	Residual to Inlet	Total Q_{100}	Head Available	Capacity	Overflow
Double "C"						
SD6	B4	-	5.30	0.20	4.20	1.10
SD10	B1	3.64	9.76	0.50	15.66	-
SD15	B7	-	4.47	0.50	15.66	-

Type Double "D" Inlet

Open Area (sft) =	**9.12**
Length of Weir (ft) =	**17.00**
Weir Coefficient =	**2.68**
Orifice Coefficient =	**0.60**

Head (feet)	Head (inches)	Weir Q (cfs)	Orifice Q (cfs)	Control Q (cfs)
0.05	0.6	0.51	9.82	0.51
0.10	1.2	1.44	13.89	1.44
0.15	1.8	2.65	17.01	2.65
0.20	2.4	4.08	19.64	4.08
0.25	3.0	5.70	21.96	5.70
0.30	3.6	7.49	24.06	7.49
0.35	4.2	9.43	25.98	9.43
0.40	4.8	11.53	27.78	11.53
0.45	5.4	13.75	29.46	13.75
0.50	6.0	16.11	31.06	16.11
0.55	6.6	18.58	32.57	18.58
0.60	7.2	21.17	34.02	21.17
0.65	7.8	23.88	35.41	23.88
0.70	8.4	26.68	36.75	26.68
0.75	9.0	29.59	38.04	29.59
0.80	9.6	32.60	39.28	32.60
0.85	10.2	35.70	40.49	35.70
0.90	10.8	38.90	41.67	38.90
0.95	11.4	42.19	42.81	42.19
1.00	12.0	45.56	43.92	43.92

Inlet Capacity Table

Inlet ID#	Contributing Basins	Residual to Inlet	Total Q_{100}	Head Available	Capacity	Overflow
Double "D"						
SD4	B5	-	5.90	>1.00	>43.92	-

Wade-Trim

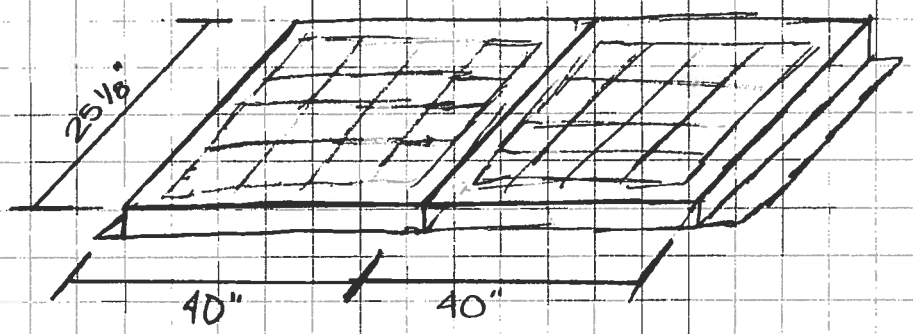
WORK SHEET

Sample Inlet Calcs. (Inlet #SD6)

Open Area (from NEENAH catalog "R" 11th edition) = 4.6 sft

Head Available = 0.20 ft

Wier Length (Double 'C' Inlet - NEENAH R-3578)



$$\text{Wier length} = \frac{(40+40+25\frac{1}{8}+40+40+26\frac{1}{8})\text{in}}{12\ \text{in/ft}} = 17.52\text{ ft} = L$$

Wier Coefficient = 2.68 = C

Orifice Coefficient = 0.60 = C

$$\text{Wier } Q = CLH^{3/2}$$
$$= (2.68)(17.52)(0.20)^{3/2}$$
$$= 4.20\text{ cfs}$$

$$\text{Orifice } Q = CA\sqrt{2gh}$$
$$= (0.60)(4.6\text{ ft})\sqrt{(2)(32.2\text{ ft/s}^2)(0.20\text{ ft})}$$
$$= 9.91\text{ cfs}$$

Wier Q Controls

SUBJECT	BY	CHK.	SHEET NO.	JOB NUMBER
Sample Inlet Calculations	JJH		1 OF 2	TAR •5002•02E
	DATE 11/8/04	DATE		

Form 25-1092

Sample Calcs. Continued

Q_{100} to the inlet = 5.30 cfs > 4.20 cfs

Overflow = 5.30 − 4.20 = 1.10 cfs to B2, SD9

SUBJECT	BY	CHK.	SHEET NO.	JOB NUMBER
Sample Inlet Calculations	JJH		2 OF 2	TAR •5002 •026
	DATE 11/8/04	DATE		