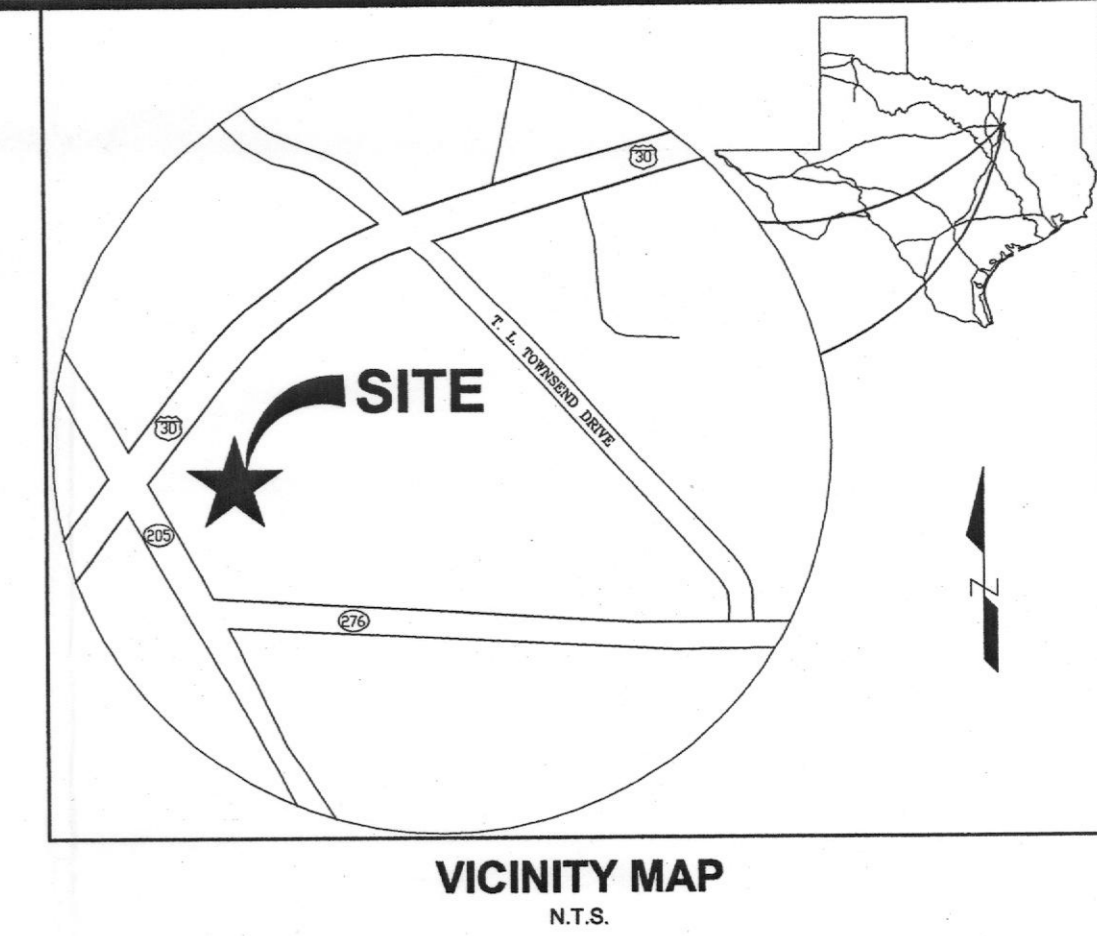
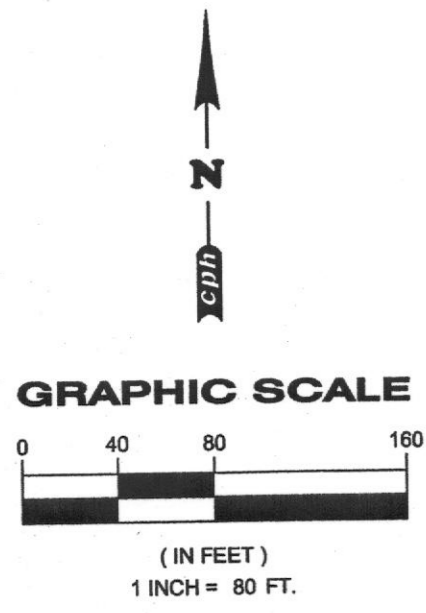


NOTE  
REFER TO SHEET C-9 FOR  
OFF-SITE DRAINAGE AREAS



**cph**  
5728 LBJ Freeway  
Suite 330  
Dallas, Texas 75240  
Phone: 972.490.1515  
Fax: 972.490.1517

Certificate of  
Authorization No. F4830  
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Engineers  
Surveyors  
Architects  
Planners  
Landscape Architects  
Environmental Scientists  
Construction  
Management  
Design/Build

WILLIAM A. STUEBER, P.E.  
REG. # 00488

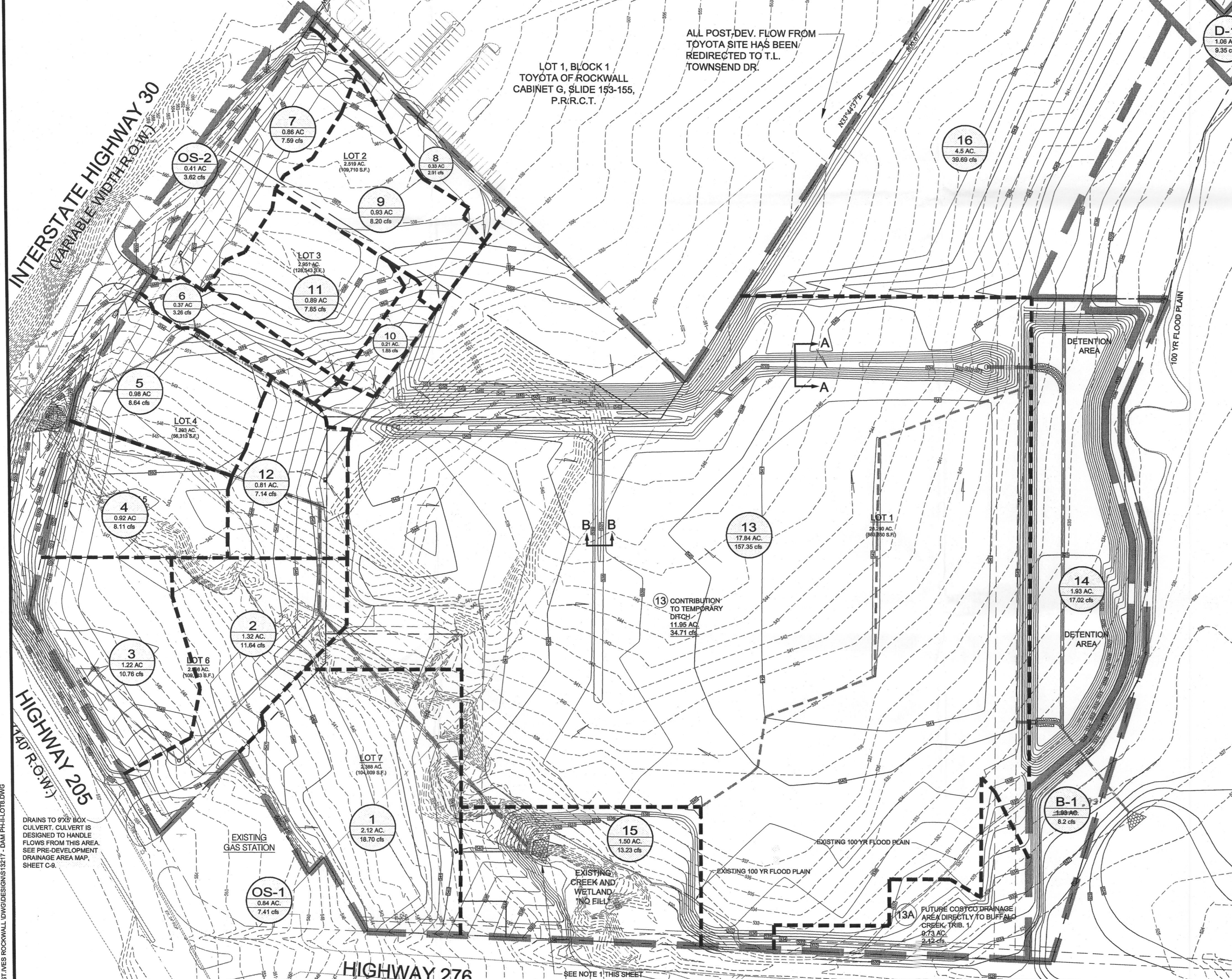
INTERSTATE HIGHWAY 30  
(VARIABLE WIDTH R.O.W.)

HIGHWAY 205  
(1240' R.O.W.)

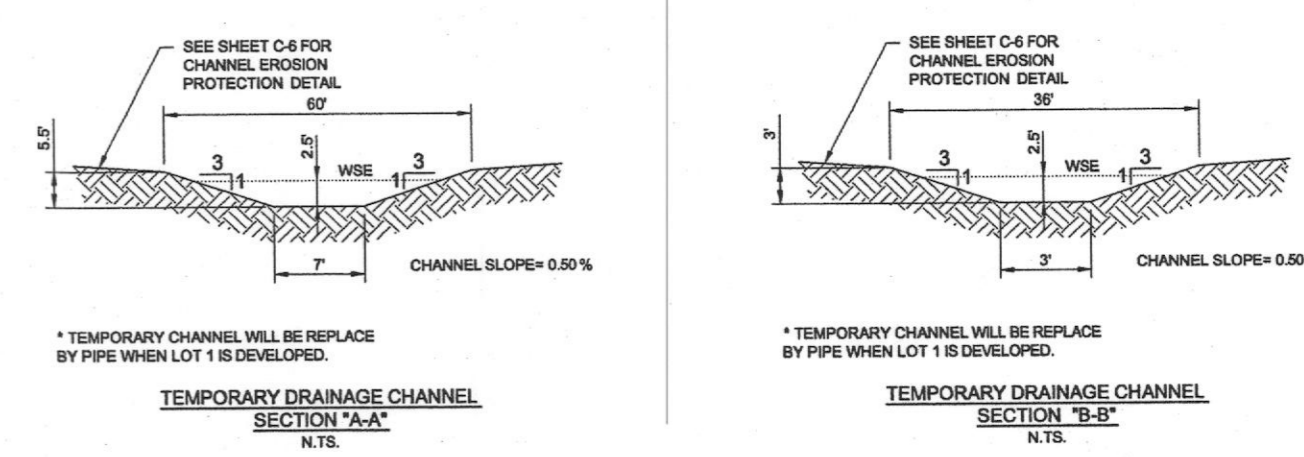
HIGHWAY 276

LOT 1, BLOCK 1  
TOYOTA OF ROCKWALL  
CABINET G, SLIDE 153-155,  
P.R.R.C.T.

ALL POST-DEV. FLOW FROM  
TOYOTA SITE HAS BEEN  
REDIRECTED TO T.L.  
TOWNSEND DR.



AREA DESIGNATION	TIME OF CONCENTRATION (MINUTES)	INTENSITY IN/HR.	FULLY DEVELOPED RUN-OFF COEFFICIENT	ACRES (AC.)	FULLY DEVELOPED Q100 (CFS)	DRAINS TO
1	10	9.8	0.9	2.12	18.70	WYE INLET
2	10	9.8	0.9	1.32	11.64	WYE INLET
3	10	9.8	0.9	1.22	10.76	WYE INLET
4	10	9.8	0.9	0.92	8.11	WYE INLET
5	10	9.8	0.9	0.99	8.64	WYE INLET
6	10	9.8	0.9	0.37	3.25	WYE INLET
7	10	9.8	0.9	0.86	7.59	WYE INLET
8	10	9.8	0.9	0.33	2.91	WYE INLET
9	10	9.8	0.9	0.93	8.20	WYE INLET
10	10	9.8	0.9	0.21	1.85	WYE INLET
11	10	9.8	0.9	0.99	7.55	WYE INLET
12	10	9.8	0.9	0.81	7.14	WYE INLET
13	10	9.8	0.9	17.84	157.35	TEMP. SWALE*
14	10	9.8	0.9	1.93	17.02	DETENTION BASIN
B-1	10	9.8	0.9	0.93	8.20	BUFFALO CREEK TRIB.
15	10	9.8	0.9	1.5	13.23	BUFFALO CREEK TRIB.
16	10	9.8	0.9	4.5	39.69	BUFFALO CREEK TRIB.
D-1	10	9.8	0.9	1.06	9.35	BUFFALO CREEK TRIB.
OS-1	10	9.8	0.9	0.84	7.41	WYE INLET
OS-2	10	9.8	0.9	0.41	3.62	CONC. CULVERT



NOTE 1  
TOTAL PRE-DEVELOPED FLOW TO THIS POINT =  
67.83 CFS (Sheet C-9)

TOTAL DEVELOPED FLOW  
DRAINAGE AREA #1 = 18.70  
DRAINAGE AREA #2 = 11.64  
DRAINAGE AREA #3 = 10.76  
DRAINAGE AREA #15 = 13.23  
OFFSITE AREA OS-1 = 7.41  
OFFSITE AREA OS-2 = 3.62  
65.36 cfs

SINCE THE PREDEVELOPED FLOW IS GREATER  
THAN THE DEVELOPED FLOW, NO DETENTION IS  
REQUIRED FOR THIS OUTFALL.

TRAPEZOIDAL CHANNEL CAPACITY CALCULATIONS

TOTAL FLOW IN CHANNEL:  
Q (cfs)  
DA 4 8.11  
DA 5 8.64  
DA 6 3.25  
DA 7 7.59  
DA 8 2.91  
DA 9 8.20  
DA 10 1.85  
DA 11 7.55  
DA 12 7.14  
DA 13 34.71

TOTAL Q actual = 90.28 cfs  
Q (actual) 90.26 cfs < Q (capacity) 173.36 cfs

\* TEMPORARY DRAINAGE CHANNEL WILL BE  
REPLACE WITH AN ENCLOSED PIPE SYSTEM  
UPON THE DEVELOPMENT OF LOT 1. CHANNEL  
IS SIZED TO CARRY PRE-DEVELOPED FLOWS  
FROM LOT 1.

SEE SHEET C-6 FOR CHANNEL EROSION  
PROTECTION DETAIL.

Q = VA R = AP  
V =  $knR^{2/3} S^{1/2}$  A = y(2B+T)  
Q = FLOW IN cfs  
V = VELOCITY  
K = CONSTANT = 1.49  
n = MANNINGS COEFFICIENT = 0.030  
A = CROSS SECTION AREA = 36.25 ft<sup>2</sup>  
P = WETTED PERIMETER = 22.81 feet  
b = BOTTOM WIDTH = 7 feet  
T = TOP WIDTH = 22 feet  
S = CHANNEL SLOPE = 0.5% = 0.005  
R = HYDRAULIC RADIUS = 1.589  
V =  $(1.49 / 0.030)(1.589)^{2/3} (0.005)^{1/2}$   
V = 4.78 ft/s  
Q<sub>cap</sub> = VA = 4.27 x 34.71  
Q<sub>cap</sub> = 173.36 cfs

POST - DRAINAGE AREA MAP LEGEND

- PROPERTY LINE
- STORM SEWER PIPE CENTERLINE
- [540] PROPOSED CONTOUR
- [540] EXISTING CONTOUR
- MAJOR DRAINAGE AREA
- MINOR DRAINAGE AREA
- 1 NODE I.D.
- X.X AC AREA IN ACRES
- X.X cfs CFS
- PROPOSED FLOW ARROW



THE SEAL APPEARING ON THIS DOCUMENT WAS  
AUTHORIZED BY WILLIAM A. STUEBER, P.E. 90436  
ON 06/23/2008. ALTERATION OF A SEALED  
DOCUMENT TO THE RESPONSIBLE ENGINEER IS  
AN OFFENSE UNDER THE TEXAS ENGINEERING  
PRACTICE ACT.

SEE SHEET 3 OF 3 FOR DETENTION VOLUME  
& OUTLET STRUCTURE CALCULATIONS

FOR REVIEW  
FOR PERMITTING PURPOSES  
NOT FOR CONSTRUCTION

\*NOTICE\*  
THE SIZE OF THIS PLAN MAY BE SLIGHTLY  
ALTERED BY REPRODUCTION PROCESSES. THIS MUST  
BE CONSIDERED WHEN SCALING ANY REPRODUCED  
PLAN FOR THE PURPOSE OF COLLECTING DATA.

REVISION	DATE	BY	REVISION
1	06/10/08	W.A.S.	REVISED PER COSTCO ENGINEERING PLANS
2	06/03/08	W.A.S.	REVISED PER CITY COMMENTS 05/29/08
3	05/23/08	W.A.S.	NO CHANGES TO THIS SHEET
4	05/19/08	W.A.S.	NO CHANGES TO THIS SHEET
5	05/06/08	W.A.S.	REVISED PER COSTCO PLANS
6	03/07/08	W.A.S.	REVISED PER CITY COMMENTS 02/01/08
7	01/29/08	W.A.S.	REVISED PER CITY COMMENTS 12/06/07
8	12/05/07	W.A.S.	REVISED PER CITY COMMENTS 11/26/07
9	11/15/07	W.A.S.	REVISED PER CITY COMMENTS 11/05/07
10	10/19/2007	W.A.S.	REVISED PER CITY COMMENTS 10/22/07
11	10/31/07	W.A.S.	NO CHANGES TO THIS SHEET
12	10/19/07	W.A.S.	NO CHANGES TO THIS SHEET

Designed by: HMH  
Drawn by: HMH  
Checked by: WAS  
Approved by: WAS  
Date: 10/19/2007  
Job No.: S13217  
File: DAM II

POST - DRAINAGE AREA MAP (INC. LOT 8)  
**ROCKWALL CENTRE CORNERS**  
INTERSTATE HIGHWAY 30 AND S.H. 205  
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

PHOSSENY - 06/23/2008 - 8:58AM - DRAWING SCALE: AS SHOWN - 1/8" = 10' - 0" - 1/4" = 20' - 0" - 1/2" = 40' - 0" - 1" = 80' - 0"