N

0 15' 30' 60'

1"=30'

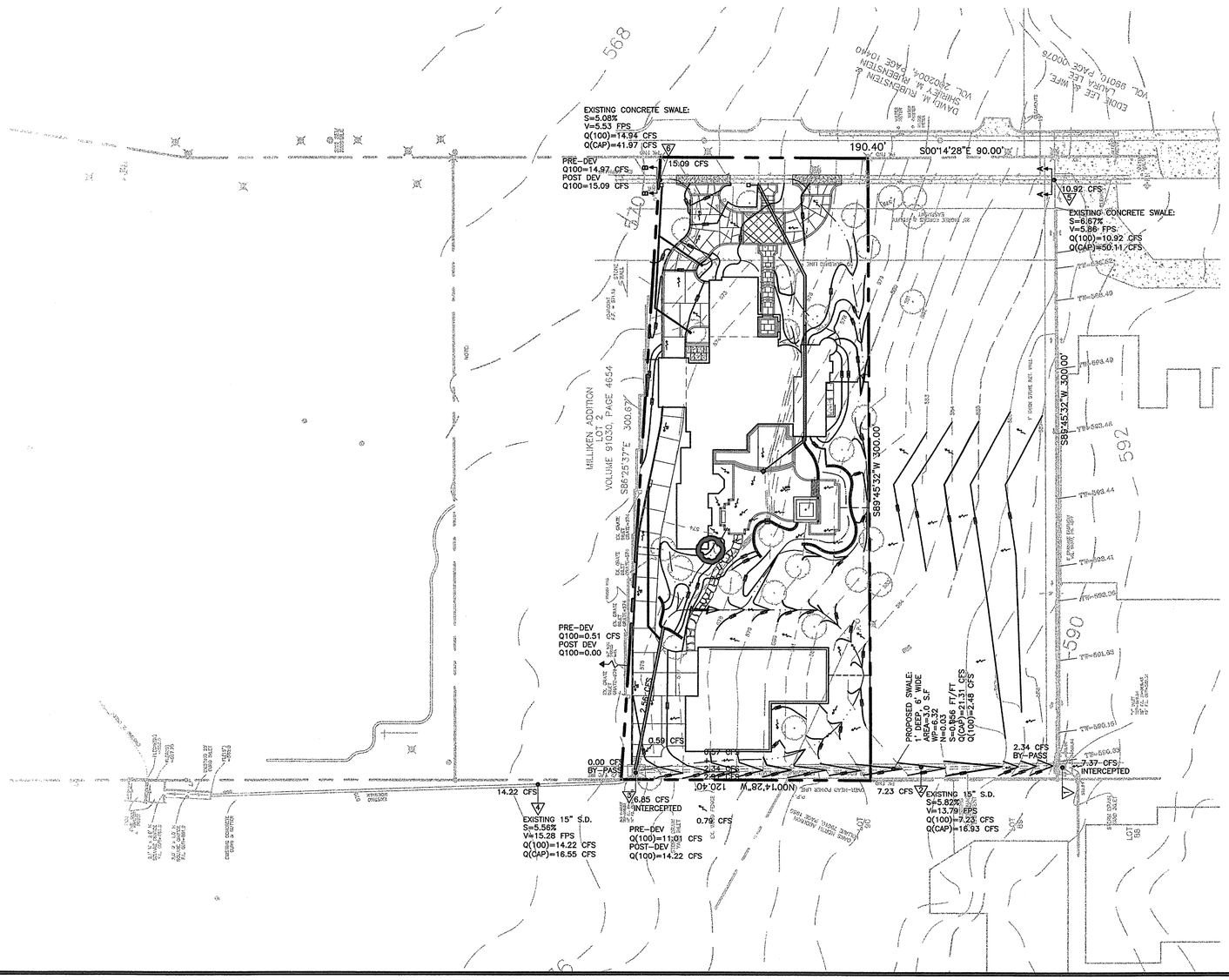
Pipe diameter,d (inch)	Manning Roughness Constant,n	Slope,s	Hydraulic Radius (ft)	Velocity (ft/sec)	Area (ft²)	Discharge (cfs)
6	0.012	0.005	0.125	2.1949773	0.196375	0.431038667
12	0.012	0.0075	0.25	4.267389915	0.7855	3.352034778

CALL BEFORE YOU DIG 1-800-245-4545 TEXAS ONE CALL SYSTEM

TEXAS EXCAVATION
SAFETY SERVICES
1-800-344-8377

PIPE A:
Q(100)=2.56 CFS
Q(CAP)=3.35 CFS

PIPE B:
Q(100)=0.26 CFS
Q(CAP)=0.43 CFS



1

3'X3' WYE INLET WITH 15" OUTFLOW PIPE 3 SIDES EFFECTIVE OPENING.
TOTAL Q = 9.71 CFS
INTERCEPTED Q=7.37 CFS
BY-PASS Q=2.34 CFS

WEIR CALCULATIONS:

$Q=(2/3)*b*(2*g)^{\frac{1}{2}}*(H)^{\frac{3}{2}}$

FRONT FACE OF WEIR:
L=3'
b=0.5'
g=32.2
Q(CAP)=5.67 CFS

2 SIDES AT 15% EFFICIENCY:
Q=(CAP)=1.70 CFS

TOTAL CAPACITY = 7.37

2

EXISITNG 15" RCP:

SLOPE = 0.0574 FT/FT
MANNING'S n=0.012
Q(100)=7.23 CFS
Q(CAP)=16.93 CFS
DEPTH=6.6 INCHES
VELOCITY=13.79 FPS
WETTED PERIMETER=1.70 FT
FLOW AREA=0.614 S.F.
HYDRAULIC RAD=0.313 FT

3

3'X3' WYE INLET
3 SIDES EFFECTIVE OPENING.
TOTAL Q = 6.85 CFS
INTERCEPTED Q=6.85 CFS
BY-PASS Q=0.00 CFS

WEIR CALCULATIONS:

$Q=(2/3)*b*(2*g)^{\frac{1}{2}}*(H)^{\frac{3}{2}}$

FRONT FACE OF WEIR:
L=3'
b=0.5'
g=32.2
Q(CAP)=5.67 CFS

2 SIDES AT 15% EFFICIENCY:
Q=(CAP)=1.70 CFS

TOTAL CAPACITY = 7.37

4

EXISITNG 15" RCP:

SLOPE = 0.0556 FT/FT
MANNING'S n=0.012
Q(100)=14.22 CFS
Q(CAP)=16.55 CFS
DEPTH=10.8 INCHES
VELOCITY=15.28 FPS
WETTED PERIMETER=2.618 FT
FLOW AREA=0.987 S.F.
HYDRAULIC RAD=0.377 FT

5

EXISTING CHANNEL:

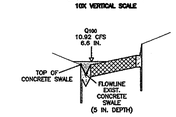
SLOPE = 0.06667 FT/FT
MANNING'S n=0.022
Q(100)=10.92 CFS
DEPTH=6.6 INCHES
VELOCITY=4.96 FPS
FLOW AREA=2.20 S.F.
HYDRAULIC RAD=0.15 FT

6

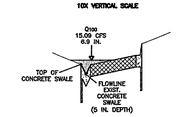
EXISTING CHANNEL:

SLOPE = 0.0510 FT/FT
MANNING'S n=0.022
Q(100)=15.09 CFS
DEPTH=7.2 INCHES
VELOCITY=4.67 FPS
FLOW AREA=3.20 S.F.
HYDRAULIC RAD=0.17 FT

SECTION A–A
10X VERTICAL SCALE



SECTION B–B
10X VERTICAL SCALE



Engineer Information:

The Bousquet Group, Inc.
PO Box 545
Argyle, TX. 76226
940.455.2177
940.455.2254 fax

Texas Firm No. F-8942

Professional of Record:

STATE OF TEXAS
TRAVIS J. BOUSQUET
86084
REGISTERED
PROFESSIONAL ENGINEER

08/07/09

LOT 1B, MILLIKEN ADDITION

VICTOR MEYER CUSTOM HOMES, LLC
MICHAEL AND RACHEL HARDIN

14905 LAKE FOREST DRIVE
ADDISON, TEXAS

Revisions:

#	Date Issued:	Description:
-	-	-

Sheet Title:

DRAINAGE CALCULATIONS

Date: August 7, 2009

Project Number: 09015.0

Drawn By: TJB

Sheet Number:

C-3.3