THE STERLING CO.

ENGINEERS & SURVEYORS

January 20, 2016

Mr. Roger Cox
Consort Homes
16141 Swingley Ridge Road, Suite 109
Chesterfield, MO 63017

Re: Countryshire -Detention Basin #3

Dear Mr. Cox,

During the month of January 2016, The Sterling Company verified the as-built detention basin #3 is providing the stormwater detention required by the approved plans of the Countryshire development. The results of that verification are detailed on the attached summary. The freeboard for the 25 year and 100 year storms with a blocked low flow outlet results in 0.91 feet and 0.45 feet of additional ponding before the storm would weir over the dam.

Sincerely,
The Sterling Company

STATE OF MISSOURI
MICHAEL
BOERDING
NUMBER
E-28643
1/20/2016
REGISTERED PROFESSIONAL ENGINEER

Michael G. Boerding, PE
Vice President

THE STERLING CO.

COUNTRYSHIRE

As-Built Basin #3

Return Frequency					Total Required	Total Provided
2	Year	=	10.77 Ac. (0.69)	=	7.43 cfs	12.87 cfs
15	Year	=	10.77 Ac. (1.13)	=	12.17 cfs	24.02 cfs
25	Year	=	10.77 Ac. (1.39)	=	14.97 cfs	20.83 cfs

As-built Detention Provided for Basin #3:

Return Frequency			(Inflow – Outflow)		As-built Detention Provided
2	Year	=	(19.60 cfs – 6.73 cfs)	=	12.87 cfs
15	Year	=	(31.95 cfs – 7.93 cfs)	=	24.02 cfs
25	Year	=	(39.41 cfs – 18.58 cfs)	=	20.83 cfs

Freeboard (Top of Dam elev. – 100 yr. 20 min. blocked low flow elev.)

Basin #3 = 614.1 – 613.65 = 0.45 ft.

Freeboard (Top of Dam elev. – 25 yr. 20 min. blocked low flow elev.)

Basin #3 = 614.1 – 613.19 = 0.91 ft.

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\Document\0212311 Countryshire\Detention as-builts\
Inflow HYG file = NONE STORED - BASIN #3 IN 2
Outflow HYG file = NONE STORED - BASIN #3 OUT 2

Pond Node Data = BASIN #3
Pond Volume Data = BASIN #3
Pond Outlet Data = OS-92

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	606.01 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	19.60 cfs	at	3.01 min
Peak Outflow	=	6.73 cfs	at	22.04 min
Peak Elevation	=	610.30 ft		
Peak Storage	=	16376 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	23518
- Infiltration	=	0
- HYG Vol OUT	=	23365
- Retained Vol	=	153
Unrouted Vol	= -	cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\Document\0212311 Countryshire\Detention as-builts\
Inflow HYG file = NONE STORED - BASIN #3 IN 15
Outflow HYG file = NONE STORED - BASIN #3 OUT 15

Pond Node Data = BASIN #3
Pond Volume Data = BASIN #3
Pond Outlet Data = OS-92

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	606.01 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	31.95 cfs	at	3.01 min
Peak Outflow	=	7.93 cfs	at	22.04 min
Peak Elevation	=	611.91 ft		
Peak Storage	=	29989 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	38336
- Infiltration	=	0
- HYG Vol OUT	=	38183
- Retained Vol	=	153
Unrouted Vol	= -	cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\Document\0212311 Countryshire\Detention as-builts\
Inflow HYG file = NONE STORED - BASIN #3 IN 25
Outflow HYG file = NONE STORED - BASIN #3 OUT 25

Pond Node Data = BASIN #3
Pond Volume Data = BASIN #3
Pond Outlet Data = OS-92

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	606.01 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	39.41 cfs	at	3.01 min
Peak Outflow	=	18.58 cfs	at	22.04 min
Peak Elevation	=	612.59 ft		
Peak Storage	=	36773 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	47287
- Infiltration	=	0
- HYG Vol OUT	=	47134
- Retained Vol	=	153
Unrouted Vol	= -	cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\Document\0212311 Countryshire\Detention as-builts\
Inflow HYG file = NONE STORED - BASIN #3 BLK IN 25
Outflow HYG file = NONE STORED - BASIN #3 BLK OUT 25

Pond Node Data = BASIN #3 BLK
Pond Volume Data = BASIN #3 BLK
Pond Outlet Data = OS-92 BLK

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	612.13 ft
Starting Volume	=	32135 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	39.41 cfs	at	3.01 min
Peak Outflow	=	38.84 cfs	at	20.04 min
Peak Elevation	=	613.19 ft		
Peak Storage	=	43141 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	32135
+ HYG Vol IN	=	47287
- Infiltration	=	0
- HYG Vol OUT	=	47285
- Retained Vol	=	32137
Unrouted Vol	=	0 cu.ft (.001% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = H:\Document\0212311 Countryshire\Detention as-builts\
Inflow HYG file = NONE STORED - BASIN #3 BLK IN 100
Outflow HYG file = NONE STORED - BASIN #3 BLK OUT 100

Pond Node Data = BASIN #3 BLK
Pond Volume Data = BASIN #3 BLK
Pond Outlet Data = OS-92 BLK

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	612.13 ft
Starting Volume	=	32135 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	1.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	50.59 cfs	at	3.01 min
Peak Outflow	=	47.11 cfs	at	20.04 min
Peak Elevation	=	613.65 ft		
Peak Storage	=	48362 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	32135
+ HYG Vol IN	=	60702
- Infiltration	=	0
- HYG Vol OUT	=	60700
- Retained Vol	=	32137
Unrouted Vol	=	0 cu.ft (.000% of Inflow Volume)