OUTLET STRUCTURE INPUT DATA

Structure ID = 2
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	598.50 ft
Weir Length	=	1.00 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

Structure ID = 3
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	598.50 ft
Area	=	1.5000 sq.ft
Top of Orifice	=	600.00 ft
Datum Elev.	=	599.25 ft
Orifice Coeff.	=	.600

Structure ID = 5
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	600.00 ft
Area	=	19.3300 sq.ft
Top of Orifice	=	601.00 ft
Datum Elev.	=	600.50 ft
Orifice Coeff.	=	.600

OUTLET STRUCTURE INPUT DATA

Structure ID = 4
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	600.00 ft
Weir Length	=	19.33 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

Structure ID = CV
Structure Type = Culvert-Circular

No. Barrels	=	1
Barrel Diameter	=	2.5000 ft
Upstream Invert	=	591.90 ft
Dnstream Invert	=	577.10 ft
Horiz. Length	=	74.00 ft
Barrel Length	=	75.47 ft
Barrel Slope	=	.20000 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.2000	(forward entrance loss)
Kb	=	.009217	(per ft of full flow)
Kr	=	.2000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0045
Inlet Control M	=	2.0000
Inlet Control c	=	.03170
Inlet Control Y	=	.6900
T1 ratio (HW/D)	=	.995
T2 ratio (HW/D)	=	1.097
Slope Factor	=	-.500
Calc inlet only	=	Yes

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...
At T1 Elev = 594.39 ft ---> Flow = 27.16 cfs
At T2 Elev = 594.64 ft ---> Flow = 31.05 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations=	30	
Min. TW tolerance =	.01	ft
Max. TW tolerance =	.01	ft
Min. HW tolerance =	.01	ft
Max. HW tolerance =	.01	ft
Min. Q tolerance =	.10	cfs
Max. Q tolerance =	.10	cfs

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 613.00 ft
Increment = .30 ft
Max. Elev.= 620.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Weir-Rectangular	2	--->	CV	613.000	615.000
Orifice-Area	3	--->	CV	615.000	620.000
Orifice-Area	5	--->	CV	619.000	620.000
Weir-Rectangular	4	--->	CV	618.000	619.000
Culvert-Circular	CV	--->	TW	611.500	620.000

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = 2
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	613.00 ft
Weir Length	=	1.00 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

Structure ID = 3
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	613.00 ft
Area	=	2.0000 sq.ft
Top of Orifice	=	615.00 ft
Datum Elev.	=	614.00 ft
Orifice Coeff.	=	.600

Structure ID = 5
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	618.00 ft
Area	=	11.6700 sq.ft
Top of Orifice	=	619.00 ft
Datum Elev.	=	618.50 ft
Orifice Coeff.	=	.600

OUTLET STRUCTURE INPUT DATA

Structure ID	=	4
Structure Type	=	Weir-Rectangular
# of Openings	=	1
Crest Elev.	=	618.00 ft
Weir Length	=	11.67 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

```
Structure ID      = CV
Structure Type    = Culvert-Circular
-----------------------------------
No. Barrels       =         1
Barrel Diameter   =    2.0000 ft
Upstream Invert   =    611.50 ft
Dnstream Invert   =    610.10 ft
Horiz. Length     =     56.00 ft
Barrel Length     =     56.02 ft
Barrel Slope      =    .02500 ft/ft

OUTLET CONTROL DATA...
Mannings n        =     .0130
Ke                =     .2000  (forward entrance loss)
Kb                =   .012411  (per ft of full flow)
Kr                =     .2000  (reverse entrance loss)
HW Convergence    =      .001  +/- ft

INLET CONTROL DATA...
Equation form     =         1
Inlet Control K   =     .0045
Inlet Control M   =    2.0000
Inlet Control c   =    .03170
Inlet Control Y   =     .6900
T1 ratio (HW/D)   =     1.082
T2 ratio (HW/D)   =     1.185
Slope Factor      =     -.500
Calc inlet only   = Yes
```

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 613.66 ft ---> Flow = 15.55 cfs
At T2 Elev = 613.87 ft ---> Flow = 17.77 cfs

```
Structure ID      = TW
Structure Type    = TW SETUP, DS Channel
-----------------------------------
FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations=    30
Min. TW tolerance =    .01 ft
Max. TW tolerance =    .01 ft
Min. HW tolerance =    .01 ft
Max. HW tolerance =    .01 ft
Min.  Q tolerance =    .10 cfs
Max.  Q tolerance =    .10 cfs
```

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 582.00 ft
Increment = .30 ft
Max. Elev.= 606.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Weir-Rectangular	2	--->	CV	602.000	603.500
Orifice-Area	3	--->	CV	603.500	606.000
Orifice-Area	5	--->	CV	605.000	606.000
Weir-Rectangular	4	--->	CV	603.500	605.000
Culvert-Circular	CV	--->	TW	595.020	606.000

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = 2
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	602.00 ft
Weir Length	=	10.00 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

Structure ID = 3
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	602.00 ft
Area	=	15.0000 sq.ft
Top of Orifice	=	603.50 ft
Datum Elev.	=	602.75 ft
Orifice Coeff.	=	.600

Structure ID = 5
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	603.50 ft
Area	=	57.9900 sq.ft
Top of Orifice	=	605.00 ft
Datum Elev.	=	604.25 ft
Orifice Coeff.	=	.600

OUTLET STRUCTURE INPUT DATA

Structure ID	=	4
Structure Type	=	Weir-Rectangular
# of Openings	=	1
Crest Elev.	=	603.50 ft
Weir Length	=	38.66 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

Structure ID = CV
Structure Type = Culvert-Circular

No. Barrels	=	1
Barrel Diameter	=	4.5000 ft
Upstream Invert	=	595.02 ft
Dnstream Invert	=	581.02 ft
Horiz. Length	=	80.00 ft
Barrel Length	=	81.22 ft
Barrel Slope	=	.17500 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.2000	(forward entrance loss)
Kb	=	.004209	(per ft of full flow)
Kr	=	.2000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0045
Inlet Control M	=	2.0000
Inlet Control c	=	.03170
Inlet Control Y	=	.6900
T1 ratio (HW/D)	=	1.008
T2 ratio (HW/D)	=	1.110
Slope Factor	=	-.500
Calc inlet only	=	Yes

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...
At T1 Elev = 599.56 ft ---> Flow = 118.08 cfs
At T2 Elev = 600.01 ft ---> Flow = 134.95 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations	=	30
Min. TW tolerance	=	.01 ft
Max. TW tolerance	=	.01 ft
Min. HW tolerance	=	.01 ft
Max. HW tolerance	=	.01 ft
Min. Q tolerance	=	.10 cfs
Max. Q tolerance	=	.10 cfs

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 598.00 ft
Increment = .30 ft
Max. Elev.= 618.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Weir-Rectangular	2	--->	CV	614.000	616.500
Orifice-Area	3	--->	CV	616.500	618.000
Orifice-Area	5	--->	CV	617.500	618.000
Weir-Rectangular	4	--->	CV	616.500	617.500
Culvert-Circular	CV	--->	TW	610.660	618.000

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = 2
Structure Type = Weir-Rectangular

# of Openings = 1
Crest Elev. = 614.00 ft
Weir Length = 6.00 ft
Weir Coeff. = 3.000000

Weir TW effects (Use adjustment equation)

Structure ID = 3
Structure Type = Orifice-Area

# of Openings = 1
Invert Elev. = 614.00 ft
Area = 15.0000 sq.ft
Top of Orifice = 616.50 ft
Datum Elev. = 615.25 ft
Orifice Coeff. = .600

Structure ID = 5
Structure Type = Orifice-Area

# of Openings = 1
Invert Elev. = 616.50 ft
Area = 19.3300 sq.ft
Top of Orifice = 617.50 ft
Datum Elev. = 617.00 ft
Orifice Coeff. = .600

OUTLET STRUCTURE INPUT DATA

Structure ID	=	4
Structure Type	=	Weir-Rectangular
# of Openings	=	1
Crest Elev.	=	616.50 ft
Weir Length	=	19.33 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

Structure ID = CV
Structure Type = Culvert-Circular

No. Barrels	=	1
Barrel Diameter	=	3.0000 ft
Upstream Invert	=	610.66 ft
Dnstream Invert	=	608.11 ft
Horiz. Length	=	102.00 ft
Barrel Length	=	102.03 ft
Barrel Slope	=	.02500 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.2000	(forward entrance loss)
Kb	=	.007228	(per ft of full flow)
Kr	=	.2000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0045
Inlet Control M	=	2.0000
Inlet Control c	=	.03170
Inlet Control Y	=	.6900
T1 ratio (HW/D)	=	1.082
T2 ratio (HW/D)	=	1.185
Slope Factor	=	-.500
Calc inlet only	=	Yes

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...
At T1 Elev = 613.91 ft ---> Flow = 42.85 cfs
At T2 Elev = 614.21 ft ---> Flow = 48.97 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations=	30	
Min. TW tolerance =	.01	ft
Max. TW tolerance =	.01	ft
Min. HW tolerance =	.01	ft
Max. HW tolerance =	.01	ft
Min. Q tolerance =	.10	cfs
Max. Q tolerance =	.10	cfs

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 624.00 ft
Increment = .30 ft
Max. Elev.= 637.50 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Orifice-Circular	1	--->	CV	631.500	637.500
Orifice-Circular	3	--->	CV	632.000	637.500
Orifice-Area	5	--->	CV	636.500	637.500
Weir-Rectangular	4	--->	CV	636.000	636.500
Culvert-Circular	CV	--->	TW	631.150	637.500
Weir-Rectangular	6	--->	TW	636.250	637.500

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = 1
Structure Type = Orifice-Circular

# of Openings	=	1
Invert Elev.	=	631.50 ft
Diameter	=	.2500 ft
Orifice Coeff.	=	.600

Structure ID = 3
Structure Type = Orifice-Circular

# of Openings	=	1
Invert Elev.	=	632.00 ft
Diameter	=	2.0000 ft
Orifice Coeff.	=	.600

Structure ID = 5
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	636.00 ft
Area	=	9.6600 sq.ft
Top of Orifice	=	636.50 ft
Datum Elev.	=	636.25 ft
Orifice Coeff.	=	.600

OUTLET STRUCTURE INPUT DATA

Structure ID	=	4
Structure Type	=	Weir-Rectangular
# of Openings	=	1
Crest Elev.	=	636.00 ft
Weir Length	=	19.33 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

Structure ID = CV
Structure Type = Culvert-Circular

No. Barrels	=	1	
Barrel Diameter	=	3.0000	ft
Upstream Invert	=	631.15	ft
Dnstream Invert	=	630.43	ft
Horiz. Length	=	73.56	ft
Barrel Length	=	73.56	ft
Barrel Slope	=	.00979	ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.2000	(forward entrance loss)
Kb	=	.007228	(per ft of full flow)
Kr	=	.2000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1	
Inlet Control K	=	.0045	
Inlet Control M	=	2.0000	
Inlet Control c	=	.03170	
Inlet Control Y	=	.6900	
T1 ratio (HW/D)	=	.000	
T2 ratio (HW/D)	=	1.192	
Slope Factor	=	-.500	
Calc inlet only	=	Yes	

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...
At T1 Elev = 631.15 ft ---> Flow = 42.85 cfs
At T2 Elev = 634.73 ft ---> Flow = 48.97 cfs

OUTLET STRUCTURE INPUT DATA

Structure ID = 6
Structure Type = Weir-Rectangular

# of Openings = 1
Crest Elev. = 636.25 ft
Weir Length = 10.00 ft
Weir Coeff. = 3.000000

Weir TW effects (Use adjustment equation)

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 30
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .10 cfs
Max. Q tolerance = .10 cfs

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 624.00 ft
Increment = .30 ft
Max. Elev.= 641.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Weir-Rectangular	2	--->	CV	637.000	639.500
Orifice-Area	3	--->	CV	639.500	641.000
Orifice-Area	5	--->	CV	640.500	641.000
Weir-Rectangular	4	--->	CV	639.500	640.500
Culvert-Circular	CV	--->	TW	635.570	641.000

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = 2
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	637.00 ft
Weir Length	=	1.00 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

Structure ID = 3
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	637.00 ft
Area	=	2.5000 sq.ft
Top of Orifice	=	639.50 ft
Datum Elev.	=	638.25 ft
Orifice Coeff.	=	.600

Structure ID = 5
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	639.50 ft
Area	=	19.3300 sq.ft
Top of Orifice	=	640.50 ft
Datum Elev.	=	640.00 ft
Orifice Coeff.	=	.600

OUTLET STRUCTURE INPUT DATA

Structure ID = 4
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	639.50 ft
Weir Length	=	19.33 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

Structure ID = CV
Structure Type = Culvert-Circular

No. Barrels	=	1
Barrel Diameter	=	2.5000 ft
Upstream Invert	=	635.57 ft
Dnstream Invert	=	635.19 ft
Horiz. Length	=	38.00 ft
Barrel Length	=	38.00 ft
Barrel Slope	=	.01000 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.2000	(forward entrance loss)
Kb	=	.009217	(per ft of full flow)
Kr	=	.2000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0045
Inlet Control M	=	2.0000
Inlet Control c	=	.03170
Inlet Control Y	=	.6900
T1 ratio (HW/D)	=	1.090
T2 ratio (HW/D)	=	1.192
Slope Factor	=	-.500
Calc inlet only	=	Yes

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 638.29 ft ---> Flow = 27.16 cfs
At T2 Elev = 638.55 ft ---> Flow = 31.05 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations	=	30
Min. TW tolerance	=	.01 ft
Max. TW tolerance	=	.01 ft
Min. HW tolerance	=	.01 ft
Max. HW tolerance	=	.01 ft
Min. Q tolerance	=	.10 cfs
Max. Q tolerance	=	.10 cfs

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN C IN Dev 1
Outflow HYG file = work_pad.hyg - BASIN C OUT Dev 1

Pond Node Data = BASIN C
Pond Volume Data = BASIN C
Pond Outlet Data = OS-BASIN C

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	598.50 ft
Starting Volume	=	423919 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	29.03 cfs	at	11.9405 hrs
Peak Outflow	=	2.26 cfs	at	13.4435 hrs
Peak Elevation	=	599.29 ft		
Peak Storage	=	478906 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	423919
+ HYG Vol IN	=	101527
- Infiltration	=	0
- HYG Vol OUT	=	96797
- Retained Vol	=	428611
Unrouted Vol	=	-38 cu.ft (.038% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN C IN Dev 2
Outflow HYG file = work_pad.hyg - BASIN C OUT Dev 2

Pond Node Data = BASIN C
Pond Volume Data = BASIN C
Pond Outlet Data = OS-BASIN C

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	598.50 ft
Starting Volume	=	423919 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	42.13 cfs	at	11.9405 hrs
Peak Outflow	=	3.60 cfs	at	13.2097 hrs
Peak Elevation	=	599.64 ft		
Peak Storage	=	504203 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	423919
+ HYG Vol IN	=	146055
- Infiltration	=	0
- HYG Vol OUT	=	139630
- Retained Vol	=	430298
Unrouted Vol	=	-47 cu.ft (.032% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN C IN Dev 25
Outflow HYG file = work_pad.hyg - BASIN C OUT Dev 25

Pond Node Data = BASIN C
Pond Volume Data = BASIN C
Pond Outlet Data = OS-BASIN C

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	598.50 ft
Starting Volume	=	423919 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	100.75 cfs	at	11.9238 hrs
Peak Outflow	=	24.51 cfs	at	12.4582 hrs
Peak Elevation	=	600.42 ft		
Peak Storage	=	565894 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	423919
+ HYG Vol IN	=	369800
- Infiltration	=	0
- HYG Vol OUT	=	358164
- Retained Vol	=	435502
Unrouted Vol	=	-54 cu.ft (.015% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN C IN Dev100
Outflow HYG file = work_pad.hyg - BASIN C OUT Dev100

Pond Node Data = BASIN C
Pond Volume Data = BASIN C
Pond Outlet Data = OS-BASIN C

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	598.50 ft
Starting Volume	=	423919 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	131.10 cfs	at	11.9238 hrs
Peak Outflow	=	46.29 cfs	at	12.1075 hrs
Peak Elevation	=	600.72 ft		
Peak Storage	=	593654 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	423919
+ HYG Vol IN	=	492881
- Infiltration	=	0
- HYG Vol OUT	=	479216
- Retained Vol	=	437535
Unrouted Vol	=	-50 cu.ft (.010% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN D IN Dev 1
Outflow HYG file = work_pad.hyg - BASIN D OUT Dev 1

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OS-BASIN D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	613.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	17.96 cfs	at	12.0073 hrs
Peak Outflow	=	10.58 cfs	at	12.1242 hrs
Peak Elevation	=	615.21 ft		
Peak Storage	=	8100 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	48297
- Infiltration	=	0
- HYG Vol OUT	=	48297
- Retained Vol	=	0
Unrouted Vol	=	0 cu.ft (.000% of Outflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN D IN Dev 2
Outflow HYG file = work_pad.hyg - BASIN D OUT Dev 2

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OS-BASIN D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	613.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	25.16 cfs	at	11.9906 hrs
Peak Outflow	=	12.25 cfs	at	12.1409 hrs
Peak Elevation	=	615.64 ft		
Peak Storage	=	13642 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	67912
- Infiltration	=	0
- HYG Vol OUT	=	67912
- Retained Vol	=	0
Unrouted Vol	= -	cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN D IN Dev 25
Outflow HYG file = work_pad.hyg - BASIN D OUT Dev 25

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OS-BASIN D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	613.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	59.08 cfs	at	11.9906 hrs
Peak Outflow	=	16.35 cfs	at	12.2077 hrs
Peak Elevation	=	617.27 ft		
Peak Storage	=	47555 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	163894
- Infiltration	=	0
- HYG Vol OUT	=	163894
- Retained Vol	=	0
Unrouted Vol	= -	cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN D IN Dev100
Outflow HYG file = work_pad.hyg - BASIN D OUT Dev100

Pond Node Data = BASIN D
Pond Volume Data = BASIN D
Pond Outlet Data = OS-BASIN D

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	613.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	76.72 cfs	at	11.9906 hrs
Peak Outflow	=	18.44 cfs	at	12.2411 hrs
Peak Elevation	=	618.09 ft		
Peak Storage	=	68014 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	215885
- Infiltration	=	0
- HYG Vol OUT	=	215885
- Retained Vol	=	0
Unrouted Vol	=	0 cu.ft (.000% of Outflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN E IN Dev 1
Outflow HYG file = work_pad.hyg - BASIN E OUT Dev 1

Pond Node Data = BASIN E
Pond Volume Data = BASIN E
Pond Outlet Data = OS-BASIN E

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	602.00 ft
Starting Volume	=	1003259 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	87.02 cfs	at	12.0240 hrs
Peak Outflow	=	27.87 cfs	at	12.4081 hrs
Peak Elevation	=	602.95 ft		
Peak Storage	=	1106315 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	1003259
+ HYG Vol IN	=	342209
- Infiltration	=	0
- HYG Vol OUT	=	331594
- Retained Vol	=	1013875
Unrouted Vol	=	1 cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN E IN Dev 2
Outflow HYG file = work_pad.hyg - BASIN E OUT Dev 2

Pond Node Data = BASIN E
Pond Volume Data = BASIN E
Pond Outlet Data = OS-BASIN E

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	602.00 ft
Starting Volume	=	1003259 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	124.61 cfs	at	12.0240 hrs
Peak Outflow	=	45.34 cfs	at	12.3413 hrs
Peak Elevation	=	603.31 ft		
Peak Storage	=	1146792 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	1003259
+ HYG Vol IN	=	480642
- Infiltration	=	0
- HYG Vol OUT	=	470028
- Retained Vol	=	1013875
Unrouted Vol	=	2 cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN E IN Dev 25
Outflow HYG file = work_pad.hyg - BASIN E OUT Dev 25

Pond Node Data = BASIN E
Pond Volume Data = BASIN E
Pond Outlet Data = OS-BASIN E

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	602.00 ft
Starting Volume	=	1003259 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	307.05 cfs	at	12.0240 hrs
Peak Outflow	=	193.90 cfs	at	12.1743 hrs
Peak Elevation	=	604.43 ft		
Peak Storage	=	1278772 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	1003259
+ HYG Vol IN	=	1157654
- Infiltration	=	0
- HYG Vol OUT	=	1147039
- Retained Vol	=	1013875
Unrouted Vol	=	1 cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN E IN Dev100
Outflow HYG file = work_pad.hyg - BASIN E OUT Dev100

Pond Node Data = BASIN E
Pond Volume Data = BASIN E
Pond Outlet Data = OS-BASIN E

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	602.00 ft
Starting Volume	=	1003259 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	399.38 cfs	at	12.0240 hrs
Peak Outflow	=	230.83 cfs	at	12.1910 hrs
Peak Elevation	=	605.00 ft		
Peak Storage	=	1349695 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	1003259
+ HYG Vol IN	=	1524304
- Infiltration	=	0
- HYG Vol OUT	=	1513690
- Retained Vol	=	1013875
Unrouted Vol	=	2 cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN F IN Dev 1
Outflow HYG file = work_pad.hyg - BASIN F OUT Dev 1

Pond Node Data = BASIN F
Pond Volume Data = BASIN F
Pond Outlet Data = OS-BASIN F

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	614.00 ft
Starting Volume	=	411512 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	42.11 cfs	at	12.0240 hrs
Peak Outflow	=	14.35 cfs	at	12.2411 hrs
Peak Elevation	=	614.85 ft		
Peak Storage	=	453824 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	411512
+ HYG Vol IN	=	118803
- Infiltration	=	0
- HYG Vol OUT	=	118786
- Retained Vol	=	411529
Unrouted Vol	=	1 cu.ft (.001% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN F IN Dev 2
Outflow HYG file = work_pad.hyg - BASIN F OUT Dev 2

Pond Node Data = BASIN F
Pond Volume Data = BASIN F
Pond Outlet Data = OS-BASIN F

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	614.00 ft
Starting Volume	=	411512 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	58.43 cfs	at	12.0240 hrs
Peak Outflow	=	22.32 cfs	at	12.2244 hrs
Peak Elevation	=	615.16 ft		
Peak Storage	=	469329 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	411512
+ HYG Vol IN	=	165618
- Infiltration	=	0
- HYG Vol OUT	=	165601
- Retained Vol	=	411529
Unrouted Vol	=	1 cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN F IN Dev 25
Outflow HYG file = work_pad.hyg - BASIN F OUT Dev 25

Pond Node Data = BASIN F
Pond Volume Data = BASIN F
Pond Outlet Data = OS-BASIN F

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	614.00 ft
Starting Volume	=	411512 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	134.27 cfs	at	12.0073 hrs
Peak Outflow	=	61.91 cfs	at	12.1910 hrs
Peak Elevation	=	616.40 ft		
Peak Storage	=	536209 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	411512
+ HYG Vol IN	=	392702
- Infiltration	=	0
- HYG Vol OUT	=	392686
- Retained Vol	=	411529
Unrouted Vol	=	1 cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN F IN Dev100
Outflow HYG file = work_pad.hyg - BASIN F OUT Dev100

Pond Node Data = BASIN F
Pond Volume Data = BASIN F
Pond Outlet Data = OS-BASIN F

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	614.00 ft
Starting Volume	=	411512 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	173.70 cfs	at	12.0073 hrs
Peak Outflow	=	77.23 cfs	at	12.1910 hrs
Peak Elevation	=	617.02 ft		
Peak Storage	=	571488 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	411512
+ HYG Vol IN	=	515111
- Infiltration	=	0
- HYG Vol OUT	=	515095
- Retained Vol	=	411529
Unrouted Vol	=	1 cu.ft (.000% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev 1
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev 1

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	631.50 ft
Starting Volume	=	79742 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	30.78 cfs	at	12.0240 hrs
Peak Outflow	=	3.75 cfs	at	12.5918 hrs
Peak Elevation	=	632.86 ft		
Peak Storage	=	123298 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	79742
+ HYG Vol IN	=	88777
- Infiltration	=	0
- HYG Vol OUT	=	81164
- Retained Vol	=	87327
Unrouted Vol	=	-28 cu.ft (.031% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev 2
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev 2

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	631.50 ft
Starting Volume	=	79742 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	43.61 cfs	at	12.0240 hrs
Peak Outflow	=	6.59 cfs	at	12.4916 hrs
Peak Elevation	=	633.31 ft		
Peak Storage	=	140587 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	79742
+ HYG Vol IN	=	125737
- Infiltration	=	0
- HYG Vol OUT	=	116785
- Retained Vol	=	88654
Unrouted Vol	=	-40 cu.ft (.031% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev 25
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev 25

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	631.50 ft
Starting Volume	=	79742 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	104.34 cfs	at	12.0240 hrs
Peak Outflow	=	20.82 cfs	at	12.3580 hrs
Peak Elevation	=	635.19 ft		
Peak Storage	=	225759 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	79742
+ HYG Vol IN	=	308647
- Infiltration	=	0
- HYG Vol OUT	=	296781
- Retained Vol	=	91536
Unrouted Vol	=	-71 cu.ft (.023% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev100
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev100

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	631.50 ft
Starting Volume	=	79742 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	136.20 cfs	at	12.0240 hrs
Peak Outflow	=	26.30 cfs	at	12.3747 hrs
Peak Elevation	=	636.11 ft		
Peak Storage	=	273539 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	79742
+ HYG Vol IN	=	408424
- Infiltration	=	0
- HYG Vol OUT	=	395754
- Retained Vol	=	92357
Unrouted Vol	=	-56 cu.ft (.014% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN H IN Dev 1
Outflow HYG file = work_pad.hyg - BASIN H OUT Dev 1

Pond Node Data = BASIN H
Pond Volume Data = BASIN H
Pond Outlet Data = OS-BASIN H

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	637.00 ft
Starting Volume	=	103478 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	14.10 cfs	at	12.0073 hrs
Peak Outflow	=	2.35 cfs	at	12.3747 hrs
Peak Elevation	=	637.86 ft		
Peak Storage	=	120706 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	103478
+ HYG Vol IN	=	38593
- Infiltration	=	0
- HYG Vol OUT	=	38415
- Retained Vol	=	103655
Unrouted Vol	=	-1 cu.ft (.003% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN H IN Dev 2
Outflow HYG file = work_pad.hyg - BASIN H OUT Dev 2

Pond Node Data = BASIN H
Pond Volume Data = BASIN H
Pond Outlet Data = OS-BASIN H

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	637.00 ft
Starting Volume	=	103478 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	19.79 cfs	at	12.0073 hrs
Peak Outflow	=	3.88 cfs	at	12.3246 hrs
Peak Elevation	=	638.19 ft		
Peak Storage	=	127733 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	103478
+ HYG Vol IN	=	54267
- Infiltration	=	0
- HYG Vol OUT	=	54028
- Retained Vol	=	103715
Unrouted Vol	=	-2 cu.ft (.003% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN H IN Dev 25
Outflow HYG file = work_pad.hyg - BASIN H OUT Dev 25

Pond Node Data = BASIN H
Pond Volume Data = BASIN H
Pond Outlet Data = OS-BASIN H

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	637.00 ft
Starting Volume	=	103478 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	46.34 cfs	at	11.9906 hrs
Peak Outflow	=	15.13 cfs	at	12.2077 hrs
Peak Elevation	=	639.55 ft		
Peak Storage	=	158900 cu.ft		

MASS BALANCE (cu.ft)

+	Initial Vol =	103478
+	HYG Vol IN =	130964
-	Infiltration =	0
-	HYG Vol OUT =	130470
-	Retained Vol =	103968
	Unrouted Vol =	-4 cu.ft (.003% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN H IN Dev100
Outflow HYG file = work_pad.hyg - BASIN H OUT Dev100

Pond Node Data = BASIN H
Pond Volume Data = BASIN H
Pond Outlet Data = OS-BASIN H

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	637.00 ft
Starting Volume	=	103478 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	60.23 cfs	at	11.9906 hrs
Peak Outflow	=	30.43 cfs	at	12.1576 hrs
Peak Elevation	=	639.96 ft		
Peak Storage	=	169159 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	103478
+ HYG Vol IN	=	172508
- Infiltration	=	0
- HYG Vol OUT	=	171898
- Retained Vol	=	104084
Unrouted Vol	=	-5 cu.ft (.003% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

Index of Starting Page Numbers for ID Names

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JOB TITLE
==========

Project Date: 2/19/2015
Project Engineer:
Project Title: THE VILLAGES AT SHADY CREEK
Project Comments:
THE VILLAGES AT SHADY CREEK
DETENTION ANALYSIS
14-03-087
PROPOSED CONDITIONS
BLOCKED LOW FLOW
2/19/15

Table of Contents

Table of Contents (continued)

MASTER DESIGN STORM SUMMARY

Network Storm Collection: MSD NEW

Return Event	Total Depth in	Rainfall Type	RNF ID
Dev 1	2.5000	Synthetic Curve	TypeII 24hr
Dev 2	3.1000	Synthetic Curve	TypeII 24hr
Dev100	7.2000	Synthetic Curve	TypeII 24hr
Dev 25	5.8000	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN C	IN POND	1	101527		11.9405	29.03		
BASIN C	IN POND	2	146055		11.9405	42.13		
BASIN C	IN POND	100	492881		11.9238	131.10		
BASIN C	IN POND	25	369800		11.9238	100.75		
BASIN C	OUT POND	1	96797	R	13.4435	2.26	599.29	478906
BASIN C	OUT POND	2	139630	R	13.2097	3.60	599.64	504203
BASIN C	OUT POND	100	479216	R	12.1075	46.29	600.72	593654
BASIN C	OUT POND	25	358164	R	12.4582	24.51	600.42	565894
BASIN D	IN POND	1	48297		12.0073	17.96		
BASIN D	IN POND	2	67912		11.9906	25.16		
BASIN D	IN POND	100	215885		11.9906	76.72		
BASIN D	IN POND	25	163894		11.9906	59.08		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN D	OUT POND	1	48297		12.1242	10.58	615.21	8100
BASIN D	OUT POND	2	67912		12.1409	12.25	615.64	13642
BASIN D	OUT POND	100	215885		12.2411	18.44	618.09	68014
BASIN D	OUT POND	25	163894		12.2077	16.34	617.27	47555
BASIN E	IN POND	1	342209		12.0240	87.02		
BASIN E	IN POND	2	480642		12.0240	124.61		
BASIN E	IN POND	100	1524304		12.0240	399.38		
BASIN E	IN POND	25	1157654		12.0240	307.05		
BASIN E	OUT POND	1	331594		12.4081	27.87	602.95	1106315
BASIN E	OUT POND	2	470028		12.3413	45.34	603.31	1146792
BASIN E	OUT POND	100	1513690		12.1910	230.83	605.00	1349695
BASIN E	OUT POND	25	1147039		12.1743	193.90	604.43	1278772
BASIN F	IN POND	1	118803		12.0240	42.11		
BASIN F	IN POND	2	165618		12.0240	58.43		
BASIN F	IN POND	100	515111		12.0073	173.70		
BASIN F	IN POND	25	392702		12.0073	134.27		
BASIN F	OUT POND	1	118786		12.2411	14.35	614.85	453824
BASIN F	OUT POND	2	165601		12.2244	22.32	615.16	469329
BASIN F	OUT POND	100	515095		12.1910	77.23	617.02	571488
BASIN F	OUT POND	25	392686		12.1910	61.91	616.40	536209
BASIN G	IN POND	1	88777		12.0240	30.78		
BASIN G	IN POND	2	125737		12.0240	43.61		
BASIN G	IN POND	100	408424		12.0240	136.20		
BASIN G	IN POND	25	308647		12.0240	104.34		
BASIN G	OUT POND	1	86268	R	12.4415	5.26	633.12	133438
BASIN G	OUT POND	2	123039	R	12.3747	8.63	633.54	150065
BASIN G	OUT POND	100	405115	R	12.3580	27.77	636.18	277263
BASIN G	OUT POND	25	305489	R	12.3580	21.26	635.32	232252

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN H IN	POND	1	38593		12.0073	14.10		
BASIN H IN	POND	2	54267		12.0073	19.79		
BASIN H IN	POND	100	172508		11.9906	60.23		
BASIN H IN	POND	25	130964		11.9906	46.34		
BASIN H OUT	POND	1	38415		12.3747	2.35	637.86	120706
BASIN H OUT	POND	2	54028	R	12.3246	3.88	638.19	127733
BASIN H OUT	POND	100	171898	R	12.1576	30.43	639.96	169159
BASIN H OUT	POND	25	130470	R	12.2077	15.13	639.55	158900
OS-BASIN C	JCT	1	96796	R	13.4435	2.26		
OS-BASIN C	JCT	2	139629	R	13.2097	3.60		
OS-BASIN C	JCT	100	479215	R	12.1075	46.29		
OS-BASIN C	JCT	25	358163	R	12.4582	24.51		
OS-BASIN D	JCT	1	48297		12.1242	10.58		
OS-BASIN D	JCT	2	67912		12.1409	12.25		
OS-BASIN D	JCT	100	215885		12.2411	18.44		
OS-BASIN D	JCT	25	163894		12.2077	16.34		
OS-BASIN E	JCT	1	331594		12.4081	27.87		
OS-BASIN E	JCT	2	470028		12.3413	45.34		
OS-BASIN E	JCT	100	1513690		12.1910	230.83		
OS-BASIN E	JCT	25	1147039		12.1743	193.90		
OS-BASIN F	JCT	1	118786		12.2411	14.35		
OS-BASIN F	JCT	2	165601		12.2244	22.32		
OS-BASIN F	JCT	100	515095		12.1910	77.23		
OS-BASIN F	JCT	25	392686		12.1910	61.91		
OS-BASIN G	JCT	1	86267	R	12.4415	5.26		
OS-BASIN G	JCT	2	123038	R	12.3747	8.63		
OS-BASIN G	JCT	100	405114	R	12.3580	27.77		
OS-BASIN G	JCT	25	305489	R	12.3580	21.26		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
OS-BASIN H	JCT	1	38414		12.3747	2.35		
OS-BASIN H	JCT	2	54028	R	12.3246	3.88		
OS-BASIN H	JCT	100	171898	R	12.1576	30.43		
OS-BASIN H	JCT	25	130470	R	12.2077	15.13		
*P.O.I. #1	JCT	1	87622		12.4248	5.33		
*P.O.I. #1	JCT	2	125058		12.3914	8.74		
*P.O.I. #1	JCT	100	412553		12.3580	28.11		
*P.O.I. #1	JCT	25	310978		12.3580	21.53		
*P.O.I. #2	JCT	1	42434		12.0407	2.72		
*P.O.I. #2	JCT	2	59901		12.0407	4.34		
*P.O.I. #2	JCT	100	194114	R	12.0908	47.73		
*P.O.I. #2	JCT	25	145791		12.2077	16.16		
*P.O.I. #3	JCT	1	333404		12.4248	27.98		
*P.O.I. #3	JCT	2	472921		12.3580	45.52		
*P.O.I. #3	JCT	100	1526242		12.1910	231.88		
*P.O.I. #3	JCT	25	1156020		12.1743	194.58		
*P.O.I. #4	JCT	1	96796		13.3934	2.26		
*P.O.I. #4	JCT	2	139629		13.1930	3.60		
*P.O.I. #4	JCT	100	479216		12.1075	46.22		
*P.O.I. #4	JCT	25	358163		12.4582	24.51		
*P.O.I. #5	JCT	1	1127		11.9238	.49		
*P.O.I. #5	JCT	2	1585		11.9238	.69		
*P.O.I. #5	JCT	100	5043		11.9238	2.09		
*P.O.I. #5	JCT	25	3829		11.9238	1.61		
*P.O.I. #6A	JCT	1	36006		12.0073	12.40		
*P.O.I. #6A	JCT	2	53167		11.9405	18.62		
*P.O.I. #6A	JCT	100	191376		11.9405	66.82		
*P.O.I. #6A	JCT	25	141825		11.9405	49.93		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
*P.O.I. #6B	JCT	1	42525		11.9238	17.94		
*P.O.I. #6B	JCT	2	63111		11.9238	27.11		
*P.O.I. #6B	JCT	100	229774		11.9238	97.51		
*P.O.I. #6B	JCT	25	169932		11.9238	72.88		
PR0-6B	AREA	1	37151		11.9238	15.75		
PR0-6B	AREA	2	54828		11.9238	23.61		
PR0-6B	AREA	100	196771		11.9238	83.36		
PR0-6B	AREA	25	145938		11.9238	62.52		
PRO-1A	AREA	1	67868		12.0240	24.33		
PRO-1A	AREA	2	94558		12.0240	33.70		
PRO-1A	AREA	100	293650		12.0073	99.97		
PRO-1A	AREA	25	223936		12.0073	77.34		
PRO-1B	AREA	1	20909		12.0741	6.70		
PRO-1B	AREA	2	31179		12.0574	10.16		
PRO-1B	AREA	100	114774		12.0407	37.30		
PRO-1B	AREA	25	84711		12.0407	27.76		
PRO-1C	AREA	1	1355		11.9238	.57		
PRO-1C	AREA	2	2020		11.9238	.87		
PRO-1C	AREA	100	7439		11.9238	3.16		
PRO-1C	AREA	25	5490		11.9238	2.36		
PRO-2A	AREA	1	38593		12.0073	14.10		
PRO-2A	AREA	2	54267		12.0073	19.79		
PRO-2A	AREA	100	172508		11.9906	60.23		
PRO-2A	AREA	25	130964		11.9906	46.34		
PRO-2B	AREA	1	4020		11.9405	1.62		
PRO-2B	AREA	2	5873		11.9405	2.40		
PRO-2B	AREA	100	20560		11.9405	8.26		
PRO-2B	AREA	25	15322		11.9405	6.22		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
PRO-3A	AREA	1	116413		12.0240	41.34		
PRO-3A	AREA	2	162194		12.0240	57.33		
PRO-3A	AREA	100	503694		12.0073	170.13		
PRO-3A	AREA	25	384114		12.0073	131.56		
PRO-3B	AREA	1	213099		12.0240	76.44		
PRO-3B	AREA	2	299645		12.0240	107.11		
PRO-3B	AREA	100	952533		12.0073	325.66		
PRO-3B	AREA	25	723137		12.0073	250.67		
PRO-3C	AREA	1	10325		12.1075	2.84		
PRO-3C	AREA	2	15396		12.1075	4.33		
PRO-3C	AREA	100	56677		12.0908	16.04		
PRO-3C	AREA	25	41832		12.0908	11.92		
PRO-3D	AREA	1	1810		11.9906	.67		
PRO-3D	AREA	2	2894		11.9739	1.12		
PRO-3D	AREA	100	12552		11.9572	5.01		
PRO-3D	AREA	25	8981		11.9572	3.60		
PRO-3E	AREA	1	2389		12.0407	.78		
PRO-3E	AREA	2	3424		12.0407	1.13		
PRO-3E	AREA	100	11417		12.0407	3.66		
PRO-3E	AREA	25	8588		12.0407	2.79		
PRO-4A	AREA	1	48297		12.0073	17.96		
PRO-4A	AREA	2	67912		11.9906	25.16		
PRO-4A	AREA	100	215885		11.9906	76.72		
PRO-4A	AREA	25	163894		11.9906	59.08		
PRO-4B	AREA	1	48581		11.9238	20.73		
PRO-4B	AREA	2	70979		11.9238	30.64		
PRO-4B	AREA	100	248449		11.9238	104.83		
PRO-4B	AREA	25	185152		11.9238	79.07		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
PRO-4C	AREA	1	4649		11.9405	1.84		
PRO-4C	AREA	2	7164		11.9405	2.95		
PRO-4C	AREA	100	28548		11.9238	11.85		
PRO-4C	AREA	25	20755		11.9405	8.68		
PRO-5A	AREA	1	1127		11.9238	.49		
PRO-5A	AREA	2	1585		11.9238	.69		
PRO-5A	AREA	100	5043		11.9238	2.09		
PRO-5A	AREA	25	3829		11.9238	1.61		
PRO-6A	AREA	1	17822		11.9238	7.64		
PRO-6A	AREA	2	25783		11.9238	11.15		
PRO-6A	AREA	100	88057		11.9238	36.99		
PRO-6A	AREA	25	65934		11.9238	28.06		
PRO-6C	AREA	1	12809		12.0574	4.04		
PRO-6C	AREA	2	19101		12.0574	6.15		
PRO-6C	AREA	100	70316		12.0574	22.47		
PRO-6C	AREA	25	51898		12.0574	16.75		
PRO-6D	AREA	1	5374		11.9572	2.12		
PRO-6D	AREA	2	8282		11.9405	3.38		
PRO-6D	AREA	100	33002		11.9405	13.61		
PRO-6D	AREA	25	23994		11.9405	9.97		
PRO-6E	AREA	1	5375		11.9405	2.20		
PRO-6E	AREA	2	8283		11.9238	3.50		
PRO-6E	AREA	100	33004		11.9238	14.15		
PRO-6E	AREA	25	23995		11.9238	10.36		

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = MSD NEW

Storm Tag Name = Dev 1

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN C IN	POND	101527		11.9405	29.03	
BASIN C OUT	POND	96797	R	13.4435	2.26	599.29
BASIN D IN	POND	48297		12.0073	17.96	
BASIN D OUT	POND	48297		12.1242	10.58	615.21
BASIN E IN	POND	342209		12.0240	87.02	
BASIN E OUT	POND	331594		12.4081	27.87	602.95
BASIN F IN	POND	118803		12.0240	42.11	
BASIN F OUT	POND	118786		12.2411	14.35	614.85
BASIN G IN	POND	88777		12.0240	30.78	
BASIN G OUT	POND	86268	R	12.4415	5.26	633.12
BASIN H IN	POND	38593		12.0073	14.10	
BASIN H OUT	POND	38415		12.3747	2.35	637.86
OS-BASIN C	JCT	96796	R	13.4435	2.26	
OS-BASIN D	JCT	48297		12.1242	10.58	
OS-BASIN E	JCT	331594		12.4081	27.87	
OS-BASIN F	JCT	118786		12.2411	14.35	
OS-BASIN G	JCT	86267	R	12.4415	5.26	
OS-BASIN H	JCT	38414		12.3747	2.35	
Outfall P.O.I. #1	JCT	87622		12.4248	5.33	
Outfall P.O.I. #2	JCT	42434		12.0407	2.72	
Outfall P.O.I. #3	JCT	333404		12.4248	27.98	
Outfall P.O.I. #4	JCT	96796		13.3934	2.26	
Outfall P.O.I. #5	JCT	1127		11.9238	.49	
Outfall P.O.I. #6A	JCT	36006		12.0073	12.40	
Outfall P.O.I. #6B	JCT	42525		11.9238	17.94	
PRO-6B	AREA	37151		11.9238	15.75	
PRO-1A	AREA	67868		12.0240	24.33	
PRO-1B	AREA	20909		12.0741	6.70	
PRO-1C	AREA	1355		11.9238	.57	
PRO-2A	AREA	38593		12.0073	14.10	
PRO-2B	AREA	4020		11.9405	1.62	
PRO-3A	AREA	116413		12.0240	41.34	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
PRO-3B	AREA	213099		12.0240	76.44	
PRO-3C	AREA	10325		12.1075	2.84	
PRO-3D	AREA	1810		11.9906	.67	
PRO-3E	AREA	2389		12.0407	.78	
PRO-4A	AREA	48297		12.0073	17.96	
PRO-4B	AREA	48581		11.9238	20.73	
PRO-4C	AREA	4649		11.9405	1.84	
PRO-5A	AREA	1127		11.9238	.49	
PRO-6A	AREA	17822		11.9238	7.64	
PRO-6C	AREA	12809		12.0574	4.04	
PRO-6D	AREA	5374		11.9572	2.12	
PRO-6E	AREA	5375		11.9405	2.20	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = MSD NEW

Storm Tag Name = Dev 2

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.1000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN C IN	POND	146055		11.9405	42.13	
BASIN C OUT	POND	139630	R	13.2097	3.60	599.64
BASIN D IN	POND	67912		11.9906	25.16	
BASIN D OUT	POND	67912		12.1409	12.25	615.64
BASIN E IN	POND	480642		12.0240	124.61	
BASIN E OUT	POND	470028		12.3413	45.34	603.31
BASIN F IN	POND	165618		12.0240	58.43	
BASIN F OUT	POND	165601		12.2244	22.32	615.16
BASIN G IN	POND	125737		12.0240	43.61	
BASIN G OUT	POND	123039	R	12.3747	8.63	633.54
BASIN H IN	POND	54267		12.0073	19.79	
BASIN H OUT	POND	54028	R	12.3246	3.88	638.19
OS-BASIN C	JCT	139629	R	13.2097	3.60	
OS-BASIN D	JCT	67912		12.1409	12.25	
OS-BASIN E	JCT	470028		12.3413	45.34	
OS-BASIN F	JCT	165601		12.2244	22.32	
OS-BASIN G	JCT	123038	R	12.3747	8.63	
OS-BASIN H	JCT	54028	R	12.3246	3.88	
Outfall P.O.I. #1	JCT	125058		12.3914	8.74	
Outfall P.O.I. #2	JCT	59901		12.0407	4.34	
Outfall P.O.I. #3	JCT	472921		12.3580	45.52	
Outfall P.O.I. #4	JCT	139629		13.1930	3.60	
Outfall P.O.I. #5	JCT	1585		11.9238	.69	
Outfall P.O.I. #6A	JCT	53167		11.9405	18.62	
Outfall P.O.I. #6B	JCT	63111		11.9238	27.11	
PRO-6B	AREA	54828		11.9238	23.61	
PRO-1A	AREA	94558		12.0240	33.70	
PRO-1B	AREA	31179		12.0574	10.16	
PRO-1C	AREA	2020		11.9238	.87	
PRO-2A	AREA	54267		12.0073	19.79	
PRO-2B	AREA	5873		11.9405	2.40	
PRO-3A	AREA	162194		12.0240	57.33	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
PRO-3B	AREA	299645		12.0240	107.11	
PRO-3C	AREA	15396		12.1075	4.33	
PRO-3D	AREA	2894		11.9739	1.12	
PRO-3E	AREA	3424		12.0407	1.13	
PRO-4A	AREA	67912		11.9906	25.16	
PRO-4B	AREA	70979		11.9238	30.64	
PRO-4C	AREA	7164		11.9405	2.95	
PRO-5A	AREA	1585		11.9238	.69	
PRO-6A	AREA	25783		11.9238	11.15	
PRO-6C	AREA	19101		12.0574	6.15	
PRO-6D	AREA	8282		11.9405	3.38	
PRO-6E	AREA	8283		11.9238	3.50	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = MSD NEW

Storm Tag Name = Dev 25

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 5.8000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN C IN	POND	369800		11.9238	100.75	
BASIN C OUT	POND	358164	R	12.4582	24.51	600.42
BASIN D IN	POND	163894		11.9906	59.08	
BASIN D OUT	POND	163894		12.2077	16.34	617.27
BASIN E IN	POND	1157654		12.0240	307.05	
BASIN E OUT	POND	1147039		12.1743	193.90	604.43
BASIN F IN	POND	392702		12.0073	134.27	
BASIN F OUT	POND	392686		12.1910	61.91	616.40
BASIN G IN	POND	308647		12.0240	104.34	
BASIN G OUT	POND	305489	R	12.3580	21.26	635.32
BASIN H IN	POND	130964		11.9906	46.34	
BASIN H OUT	POND	130470	R	12.2077	15.13	639.55
OS-BASIN C	JCT	358163	R	12.4582	24.51	
OS-BASIN D	JCT	163894		12.2077	16.34	
OS-BASIN E	JCT	1147039		12.1743	193.90	
OS-BASIN F	JCT	392686		12.1910	61.91	
OS-BASIN G	JCT	305489	R	12.3580	21.26	
OS-BASIN H	JCT	130470	R	12.2077	15.13	
Outfall P.O.I. #1	JCT	310978		12.3580	21.53	
Outfall P.O.I. #2	JCT	145791		12.2077	16.16	
Outfall P.O.I. #3	JCT	1156020		12.1743	194.58	
Outfall P.O.I. #4	JCT	358163		12.4582	24.51	
Outfall P.O.I. #5	JCT	3829		11.9238	1.61	
Outfall P.O.I. #6A	JCT	141825		11.9405	49.93	
Outfall P.O.I. #6B	JCT	169932		11.9238	72.88	
PRO-6B	AREA	145938		11.9238	62.52	
PRO-1A	AREA	223936		12.0073	77.34	
PRO-1B	AREA	84711		12.0407	27.76	
PRO-1C	AREA	5490		11.9238	2.36	
PRO-2A	AREA	130964		11.9906	46.34	
PRO-2B	AREA	15322		11.9405	6.22	
PRO-3A	AREA	384114		12.0073	131.56	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
PRO-3B	AREA	723137		12.0073	250.67	
PRO-3C	AREA	41832		12.0908	11.92	
PRO-3D	AREA	8981		11.9572	3.60	
PRO-3E	AREA	8588		12.0407	2.79	
PRO-4A	AREA	163894		11.9906	59.08	
PRO-4B	AREA	185152		11.9238	79.07	
PRO-4C	AREA	20755		11.9405	8.68	
PRO-5A	AREA	3829		11.9238	1.61	
PRO-6A	AREA	65934		11.9238	28.06	
PRO-6C	AREA	51898		12.0574	16.75	
PRO-6D	AREA	23994		11.9405	9.97	
PRO-6E	AREA	23995		11.9238	10.36	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

DEFAULT Design Storm File,ID = MSD NEW

Storm Tag Name = Dev100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.2000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
BASIN C	IN POND	492881		11.9238	131.10	
BASIN C	OUT POND	479216	R	12.1075	46.29	600.72
BASIN D	IN POND	215885		11.9906	76.72	
BASIN D	OUT POND	215885		12.2411	18.44	618.09
BASIN E	IN POND	1524304		12.0240	399.38	
BASIN E	OUT POND	1513690		12.1910	230.83	605.00
BASIN F	IN POND	515111		12.0073	173.70	
BASIN F	OUT POND	515095		12.1910	77.23	617.02
BASIN G	IN POND	408424		12.0240	136.20	
BASIN G	OUT POND	405115	R	12.3580	27.77	636.18
BASIN H	IN POND	172508		11.9906	60.23	
BASIN H	OUT POND	171898	R	12.1576	30.43	639.96
OS-BASIN C	JCT	479215	R	12.1075	46.29	
OS-BASIN D	JCT	215885		12.2411	18.44	
OS-BASIN E	JCT	1513690		12.1910	230.83	
OS-BASIN F	JCT	515095		12.1910	77.23	
OS-BASIN G	JCT	405114	R	12.3580	27.77	
OS-BASIN H	JCT	171898	R	12.1576	30.43	
Outfall P.O.I. #1	JCT	412553		12.3580	28.11	
Outfall P.O.I. #2	JCT	194114	R	12.0908	47.73	
Outfall P.O.I. #3	JCT	1526242		12.1910	231.88	
Outfall P.O.I. #4	JCT	479216		12.1075	46.22	
Outfall P.O.I. #5	JCT	5043		11.9238	2.09	
Outfall P.O.I. #6A	JCT	191376		11.9405	66.82	
Outfall P.O.I. #6B	JCT	229774		11.9238	97.51	
PR0-6B	AREA	196771		11.9238	83.36	
PRO-1A	AREA	293650		12.0073	99.97	
PRO-1B	AREA	114774		12.0407	37.30	
PRO-1C	AREA	7439		11.9238	3.16	
PRO-2A	AREA	172508		11.9906	60.23	
PRO-2B	AREA	20560		11.9405	8.26	
PRO-3A	AREA	503694		12.0073	170.13	

NETWORK SUMMARY -- NODES
(Trun.= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left & Rt)

Node ID	Type	HYG Vol cu.ft	Trun.	Qpeak hrs	Qpeak cfs	Max WSEL ft
PRO-3B	AREA	952533		12.0073	325.66	
PRO-3C	AREA	56677		12.0908	16.04	
PRO-3D	AREA	12552		11.9572	5.01	
PRO-3E	AREA	11417		12.0407	3.66	
PRO-4A	AREA	215885		11.9906	76.72	
PRO-4B	AREA	248449		11.9238	104.83	
PRO-4C	AREA	28548		11.9238	11.85	
PRO-5A	AREA	5043		11.9238	2.09	
PRO-6A	AREA	88057		11.9238	36.99	
PRO-6C	AREA	70316		12.0574	22.47	
PRO-6D	AREA	33002		11.9405	13.61	
PRO-6E	AREA	33004		11.9238	14.15	

Title... Project Date: 2/19/2015
Project Engineer:
Project Title: THE VILLAGES AT SHADY CREEK
Project Comments:
THE VILLAGES AT SHADY CREEK
DETENTION ANALYSIS
14-03-087
PROPOSED CONDITIONS
BLOCKED LOW FLOW
2/19/15

DESIGN STORMS SUMMARY

Design Storm File,ID = MSD NEW

Storm Tag Name = Dev 1

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = Dev 2

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.1000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = Dev100

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.2000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = Dev 25

Data Type, File, ID = Synthetic Storm TypeII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 5.8000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

POND VOLUME CALCULATIONS

Planimeter scale: 1.00 ft/in

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (cu.ft)	Volume Sum (cu.ft)
624.00	3849.000	.0884	.0000	0	0
626.00	6449.000	.1480	.3508	10187	10187
628.00	10135.000	.2327	.5663	16446	26633
630.00	14332.000	.3290	.8384	24346	50979
631.50	24468.000	.5617	1.3206	28763	79742
632.00	31997.000	.7346	1.9386	14074	93816
634.00	44164.000	1.0139	2.6114	75835	169651
636.00	54025.000	1.2402	3.3755	98024	267675
637.50	61589.000	1.4139	3.9784	86649	354323

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 624.00 ft
Increment = .30 ft
Max. Elev.= 637.50 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Orifice-Circular	3	--->	CV	632.000	637.500
Orifice-Area	5	--->	CV	636.500	637.500
Weir-Rectangular	4	--->	CV	636.000	636.500
Culvert-Circular	CV	--->	TW	631.150	637.500
Weir-Rectangular	6	--->	TW	636.250	637.500

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = 3
Structure Type = Orifice-Circular

# of Openings	=	1
Invert Elev.	=	632.00 ft
Diameter	=	2.0000 ft
Orifice Coeff.	=	.600

Structure ID = 5
Structure Type = Orifice-Area

# of Openings	=	1
Invert Elev.	=	636.00 ft
Area	=	9.6600 sq.ft
Top of Orifice	=	636.50 ft
Datum Elev.	=	636.25 ft
Orifice Coeff.	=	.600

Structure ID = 4
Structure Type = Weir-Rectangular

# of Openings	=	1
Crest Elev.	=	636.00 ft
Weir Length	=	19.33 ft
Weir Coeff.	=	3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

Structure ID	= CV		
Structure Type	= Culvert-Circular		
No. Barrels	=	1	
Barrel Diameter	=	3.0000	ft
Upstream Invert	=	631.15	ft
Dnstream Invert	=	630.43	ft
Horiz. Length	=	73.56	ft
Barrel Length	=	73.56	ft
Barrel Slope	=	.00979	ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.2000	(forward entrance loss)
Kb	=	.007228	(per ft of full flow)
Kr	=	.2000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0045
Inlet Control M	=	2.0000
Inlet Control c	=	.03170
Inlet Control Y	=	.6900
T1 ratio (HW/D)	=	1.090
T2 ratio (HW/D)	=	1.192
Slope Factor	=	-.500
Calc inlet only	= Yes	

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 634.42 ft ---> Flow = 42.85 cfs
At T2 Elev = 634.73 ft ---> Flow = 48.97 cfs

OUTLET STRUCTURE INPUT DATA

Structure ID = 6
Structure Type = Weir-Rectangular

# of Openings = 1
Crest Elev. = 636.25 ft
Weir Length = 10.00 ft
Weir Coeff. = 3.000000

Weir TW effects (Use adjustment equation)

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 30
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .10 cfs
Max. Q tolerance = .10 cfs

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev 1
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev 1

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	632.00 ft
Starting Volume	=	93816 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	30.78 cfs	at	12.0240 hrs
Peak Outflow	=	5.27 cfs	at	12.4415 hrs
Peak Elevation	=	633.12 ft		
Peak Storage	=	133438 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	93816
+ HYG Vol IN	=	88777
- Infiltration	=	0
- HYG Vol OUT	=	86268
- Retained Vol	=	96319
Unrouted Vol	=	-6 cu.ft (.006% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev 2
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev 2

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	632.00 ft
Starting Volume	=	93816 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	43.61 cfs	at	12.0240 hrs
Peak Outflow	=	8.64 cfs	at	12.3747 hrs
Peak Elevation	=	633.54 ft		
Peak Storage	=	150065 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	93816
+ HYG Vol IN	=	125737
- Infiltration	=	0
- HYG Vol OUT	=	123039
- Retained Vol	=	96509
Unrouted Vol	=	-5 cu.ft (.004% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev 25
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev 25

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	632.00 ft
Starting Volume	=	93816 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	104.34 cfs	at	12.0240 hrs
Peak Outflow	=	21.26 cfs	at	12.3580 hrs
Peak Elevation	=	635.32 ft		
Peak Storage	=	232252 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	93816
+ HYG Vol IN	=	308647
- Infiltration	=	0
- HYG Vol OUT	=	305489
- Retained Vol	=	96973
Unrouted Vol	=	0 cu.ft (.000% of Inflow Volume)

WARNING: Outflow hydrograph truncated on right side.

LEVEL POOL ROUTING SUMMARY

HYG Dir = V:\1403087 GRIFFITH\Documents\Engineering\Detention\
Inflow HYG file = work_pad.hyg - BASIN G IN Dev100
Outflow HYG file = work_pad.hyg - BASIN G OUT Dev100

Pond Node Data = BASIN G
Pond Volume Data = BASIN G
Pond Outlet Data = OS-BASIN G3

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	632.00 ft
Starting Volume	=	93816 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	136.20 cfs	at	12.0240 hrs
Peak Outflow	=	27.77 cfs	at	12.3580 hrs
Peak Elevation	=	636.18 ft		
Peak Storage	=	277263 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	93816
+ HYG Vol IN	=	408424
- Infiltration	=	0
- HYG Vol OUT	=	405115
- Retained Vol	=	97124
Unrouted Vol	=	-2 cu.ft (.000% of Inflow Volume)

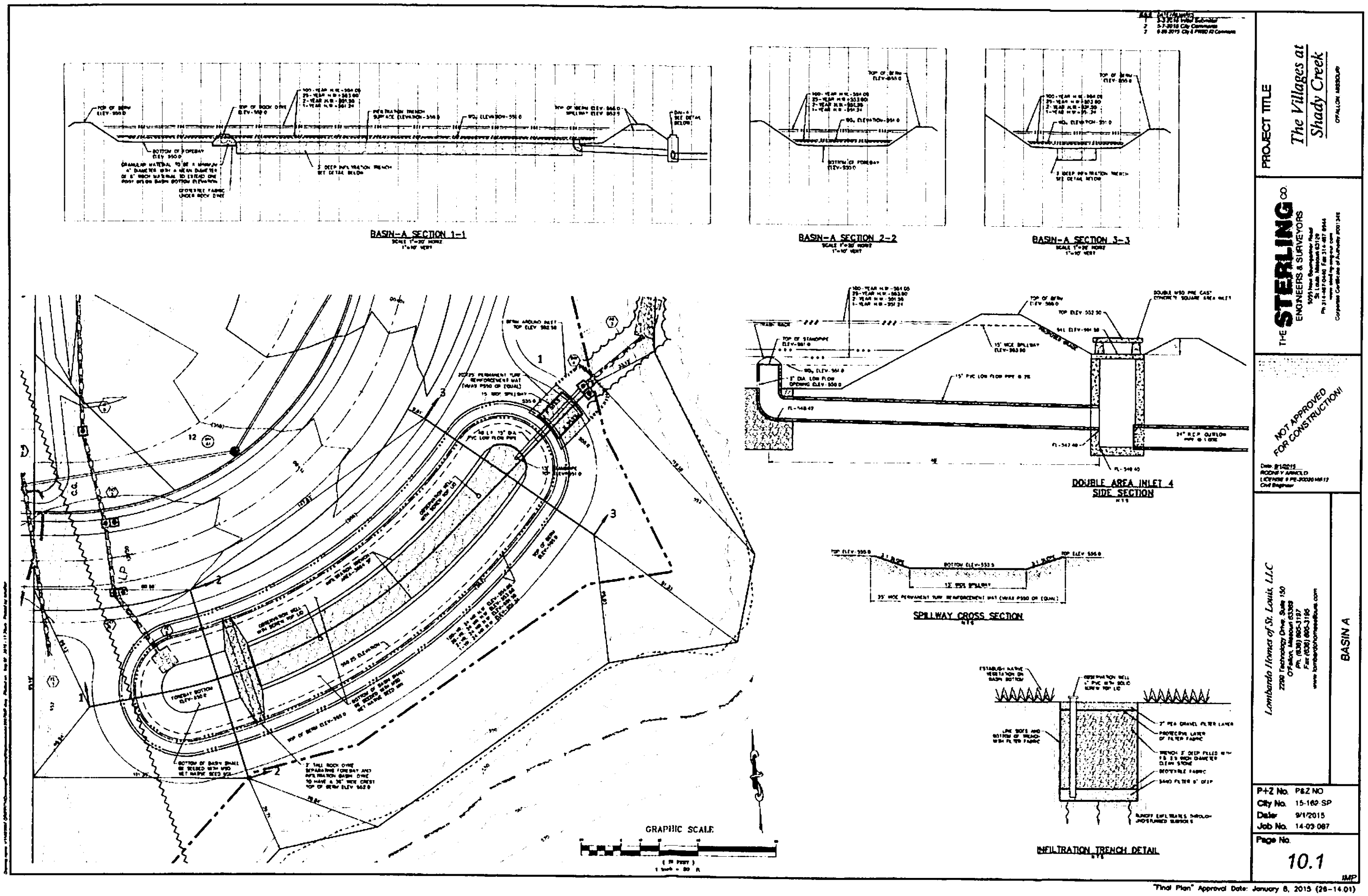
WARNING: Outflow hydrograph truncated on right side.

Index of Starting Page Numbers for ID Names

Appendix

C

Water Quality Basin details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BASIN-A SECTION 2-2
BASIN-A SECTION 3-3
DOUBLE AREA INLET 4
SIDE SECTION
SPILLWAY CROSS SECTION
INFILTRATION TRENCH DETAIL
GRAPHIC SCALE
PROJECT TITLE
The Villages at
Shady Creek
O'FALLON MISSOURI
THE STERLING CO.
ENGINEERS & SURVEYORS
NOT APPROVED
FOR CONSTRUCTION!
Lombardo Homes of St. Louis, LLC
BASIN A
P+Z No. P&Z NO
City No. 15-160 SP
Date 9/1/2015
Job No. 14-03 087
Page No.
10.1
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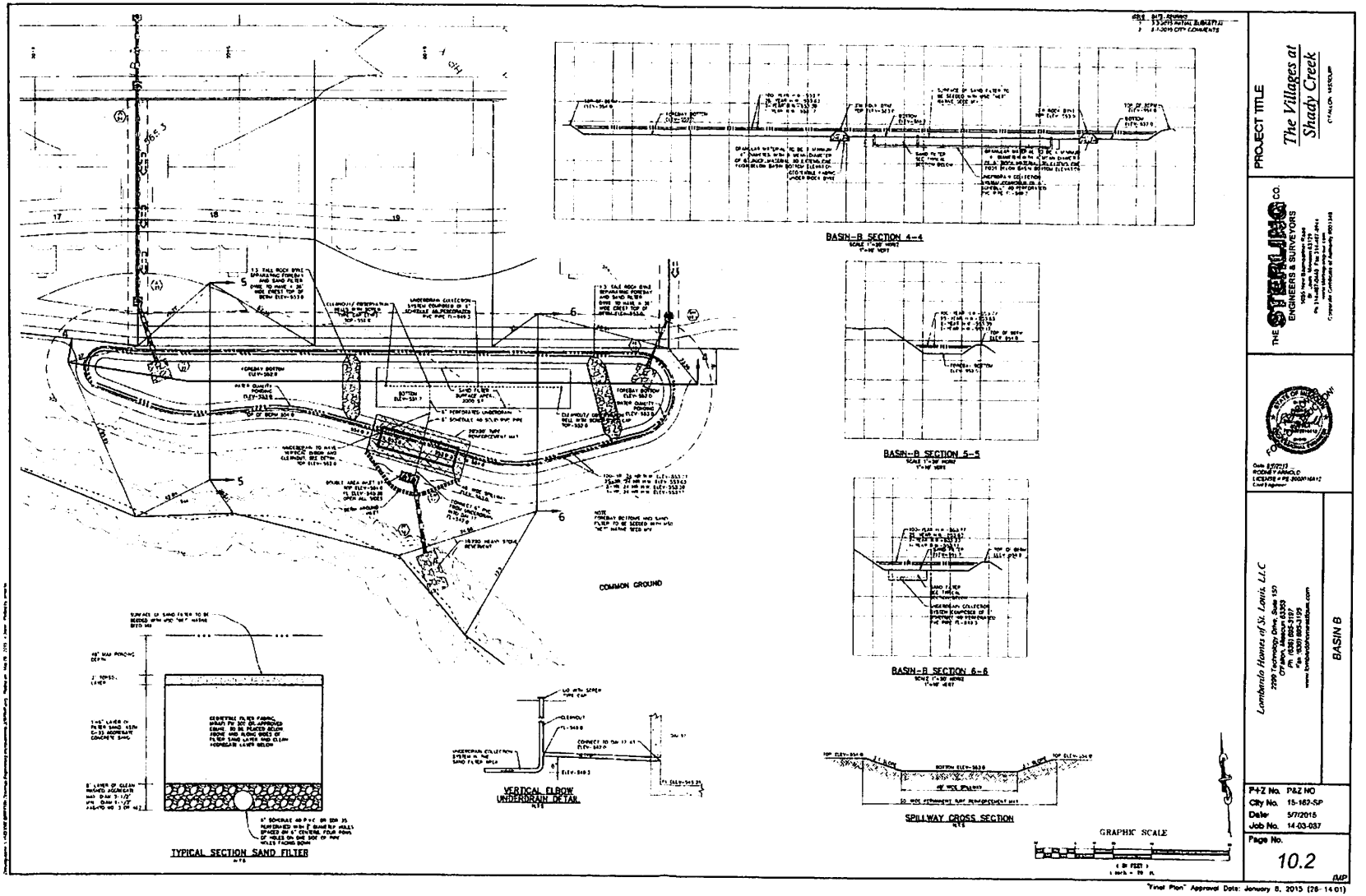
"Final Plan" Approval Date: January 8, 2015 (26-14.01)



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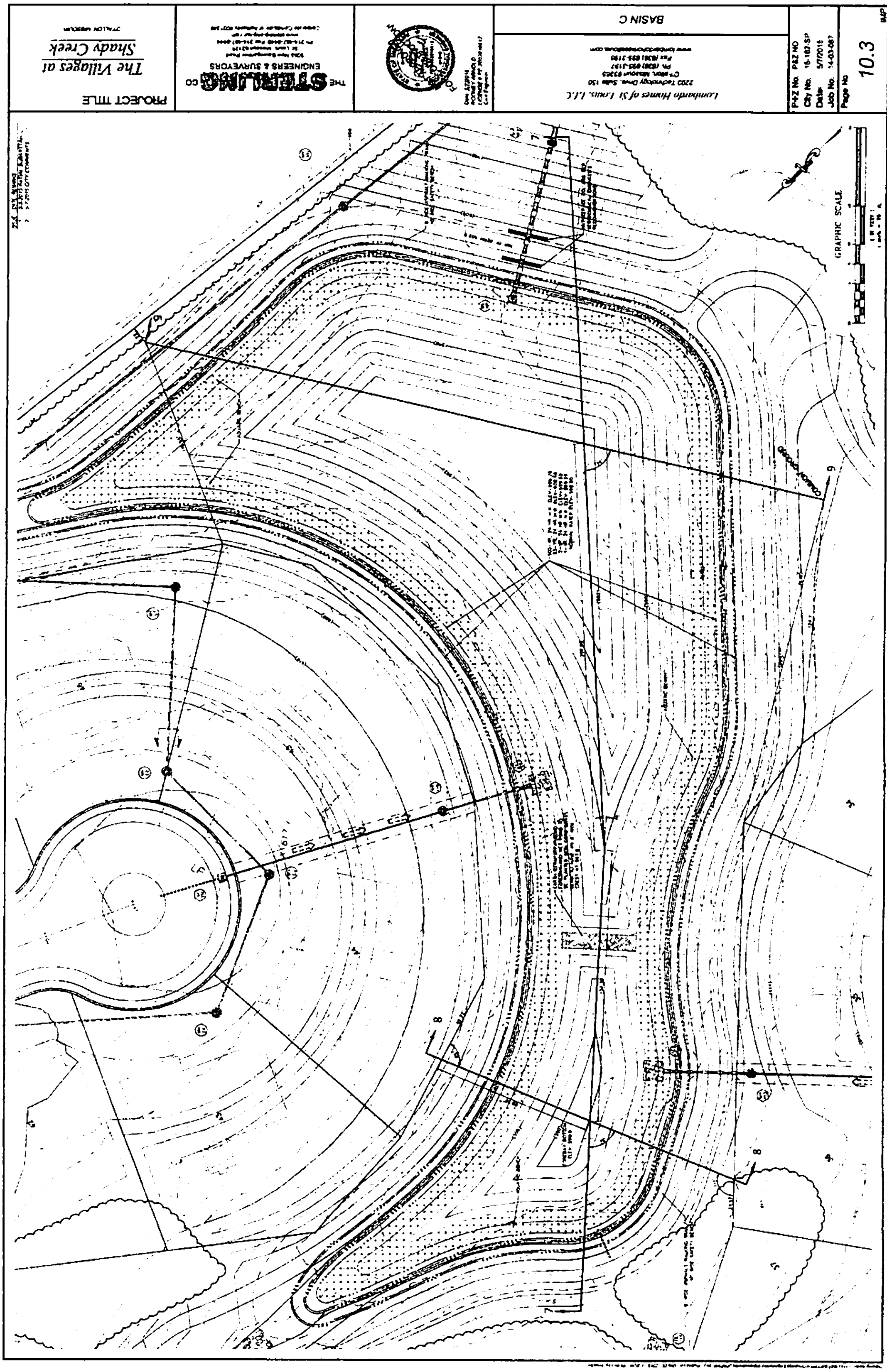
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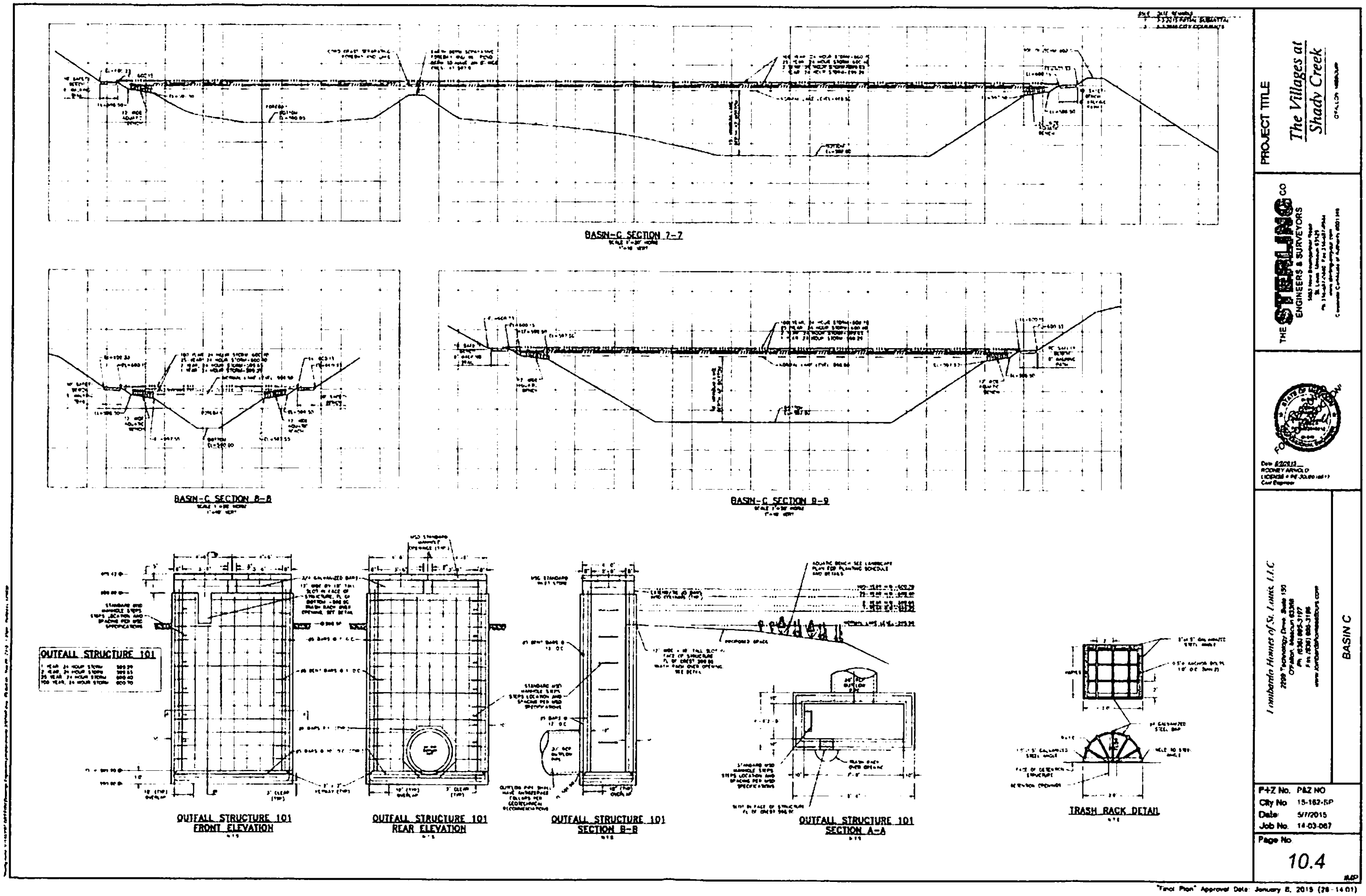
The Villages at
Shady Creek
THE STERLING CO
ENGINEERS & SURVEYORS
Lombardo Homes of St. Louis, LLC
BASIN C
P+Z No. P&Z NO
City No. 16-183-SP
Date 5/7/2015
Page No
10.3
GRAPHIC SCALE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BASIN-C SECTION 8-8
BASIN-C SECTION 9-9
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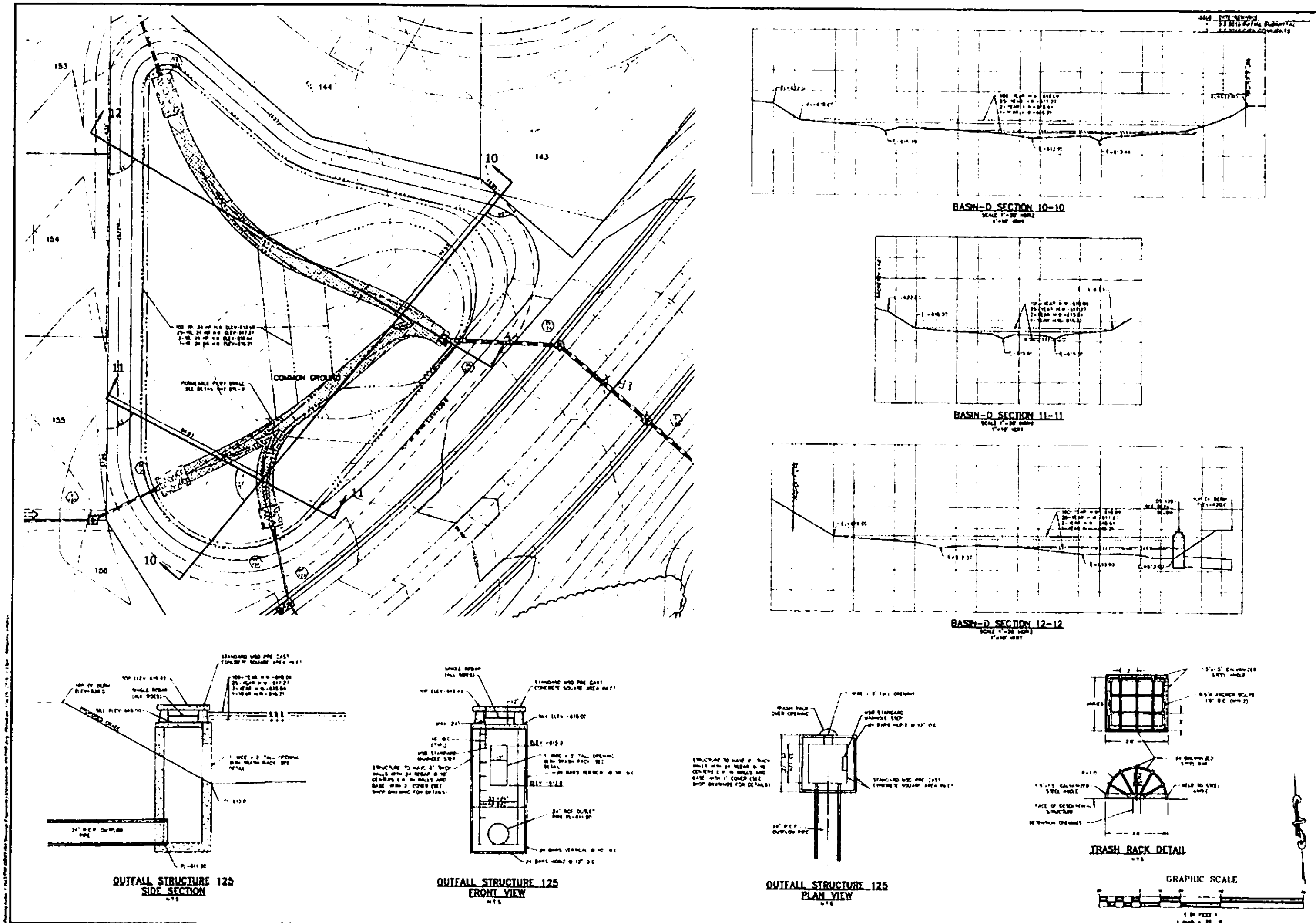
OUTFALL STRUCTURE 101
FRONT ELEVATION
OUTFALL STRUCTURE 101
REAR ELEVATION
OUTFALL STRUCTURE 101
SECTION B-B
OUTFALL STRUCTURE 101
SECTION A-A
TRASH RACK DETAIL
PROJECT TITLE
The Villages at
Shady Creek
THE STERLING CO
ENGINEERS & SURVEYORS
Lombardo Homes of St. Louis, LLC
BASIN C
P+Z No. P&Z NO
City No 15-182-SP
Date 5/7/2015
Job No. 14-03-067
Page No
10.4
"Final Plan" Approval Date: January 8, 2015 (28-14.01)



PROJECT TITLE

The Villages at Shady Creek

THE STERLING CO
ENGINEERS & SURVEYORS

Lombardo Homes of St. Louis, LLC

BASIN D

P+Z No P&Z NO
City No 15-182-SP
Date 5/7/2015
Job No 14-03-087

Page No.

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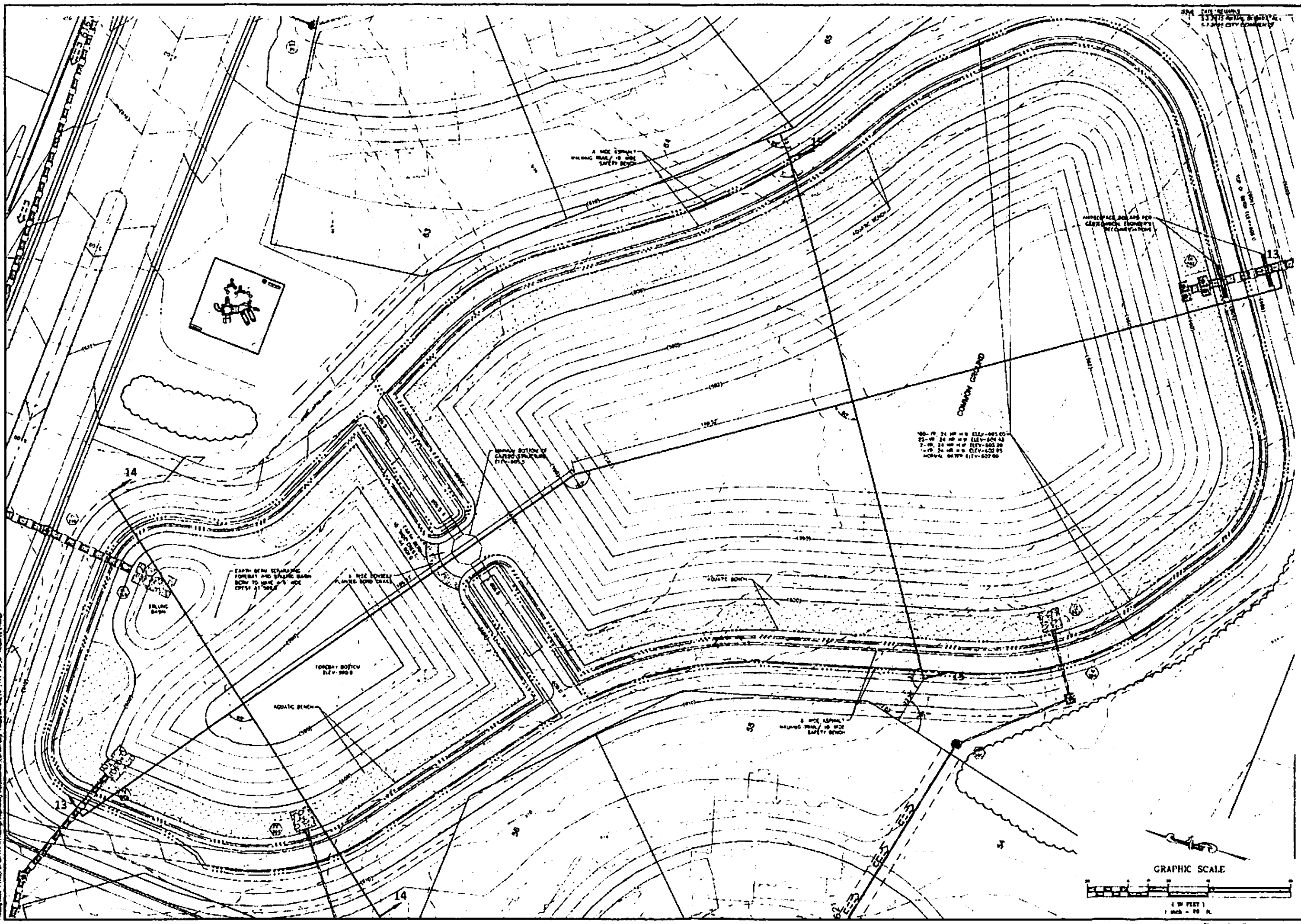
"Final Plan" Approval Date: January 8, 2015 (26-14 01)



PROJECT TITLE

The Villages at Shady Creek

O'FALLON, MISSOURI

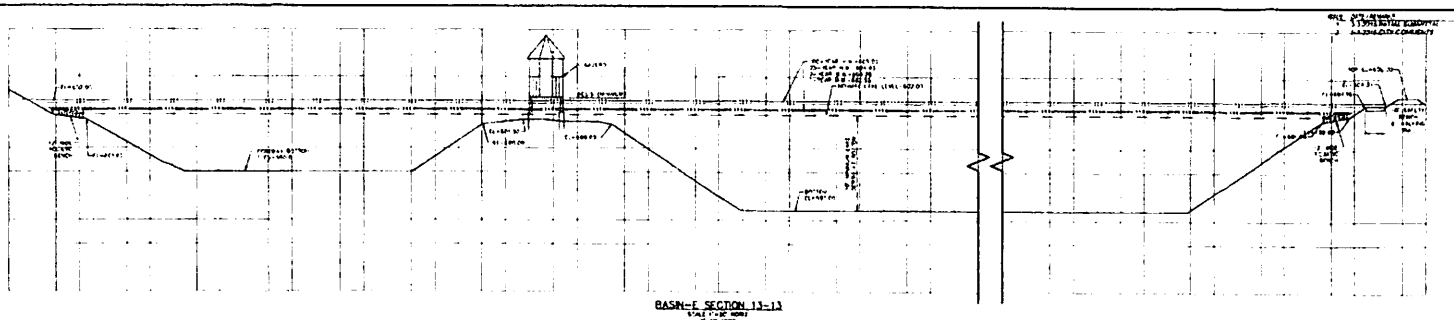
THE STERLING CO.
ENGINEERS & SURVEYORS

Lombardo Homes of St. Louis, LLC
2200 Technology Drive, Suite 150
O'Fallon, Missouri 63368
Ph. (636) 685-3197
Fax (636) 685-3195
www.lombardohomesstlouis.com

BASIN E

P+Z No.	P&Z NO
City No.	15-182-BP
Date	5/7/2015
Job No.	14-03-037
Page No.	10.6

"Final Plan" Approval Date: January 8, 2015 (26-14 01)



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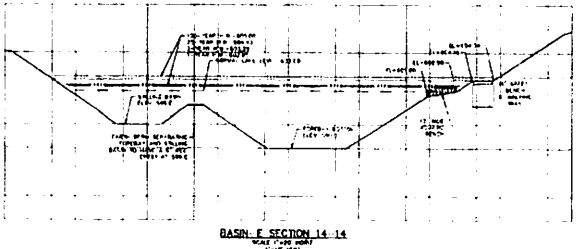

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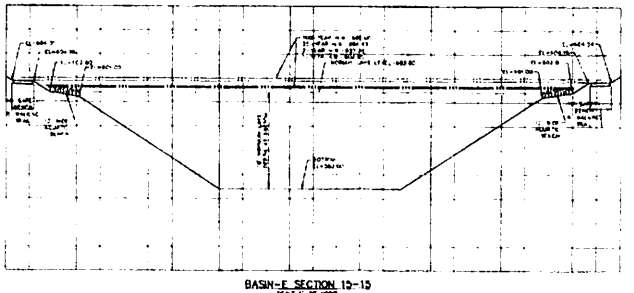


BASIN-E SECTION 15-15

PROJECT TITLE

The Villages at Shady Creek

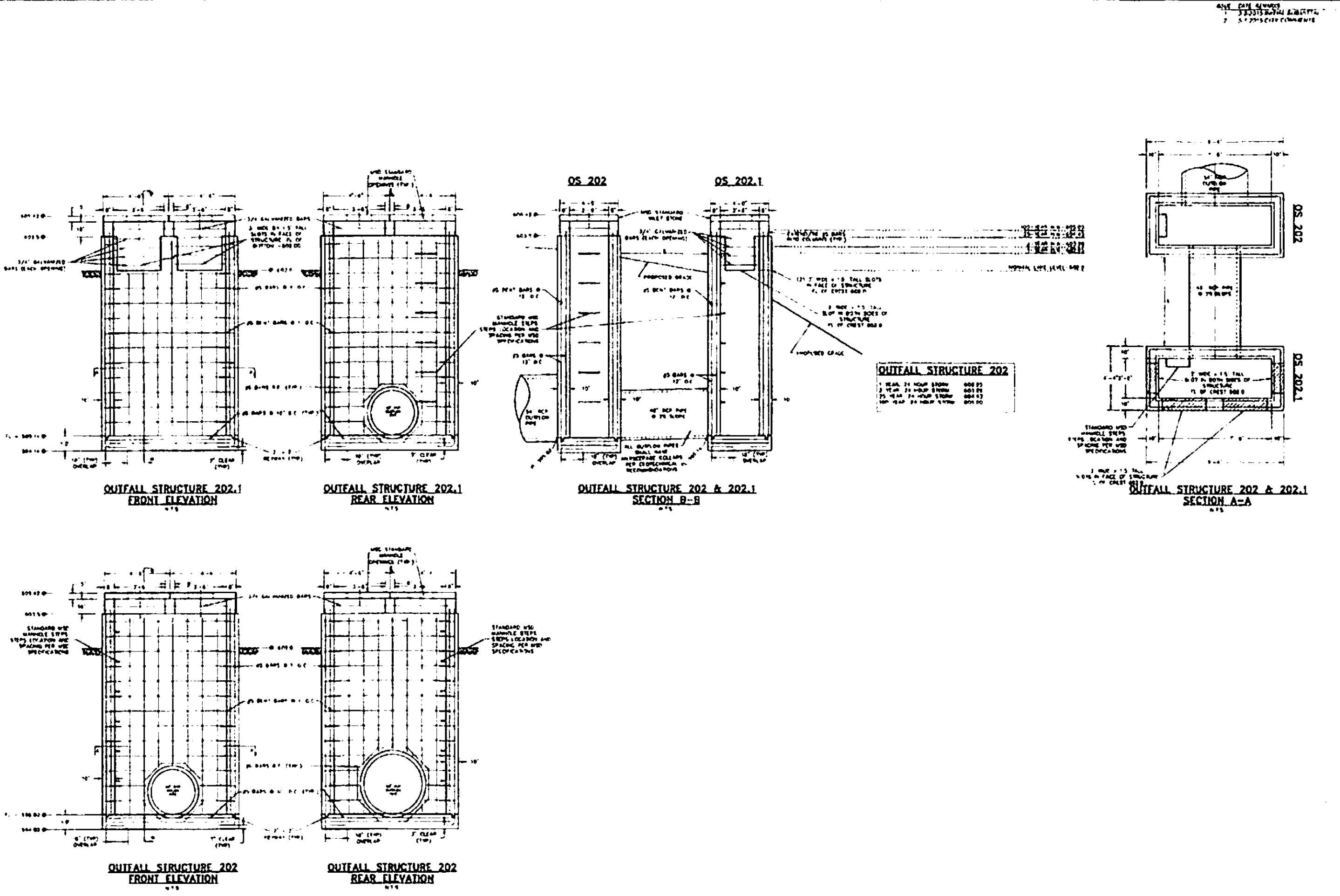
THE STERLING CO
ENGINEERS & SURVEYORS

Lombardo Homes of St. Louis, LLC

BASIN E

P+Z No.	P&Z NO
City No.	15-162-SP
Date	5/7/2015
Job No.	14-03-067
Page No.	10.7

"Final Plan" Approval Date: January 8, 2015 (26-14.01)



PROJECT TITLE

The Villages at Shady Creek

THE STERLING CO
ENGINEERS & SURVEYORS

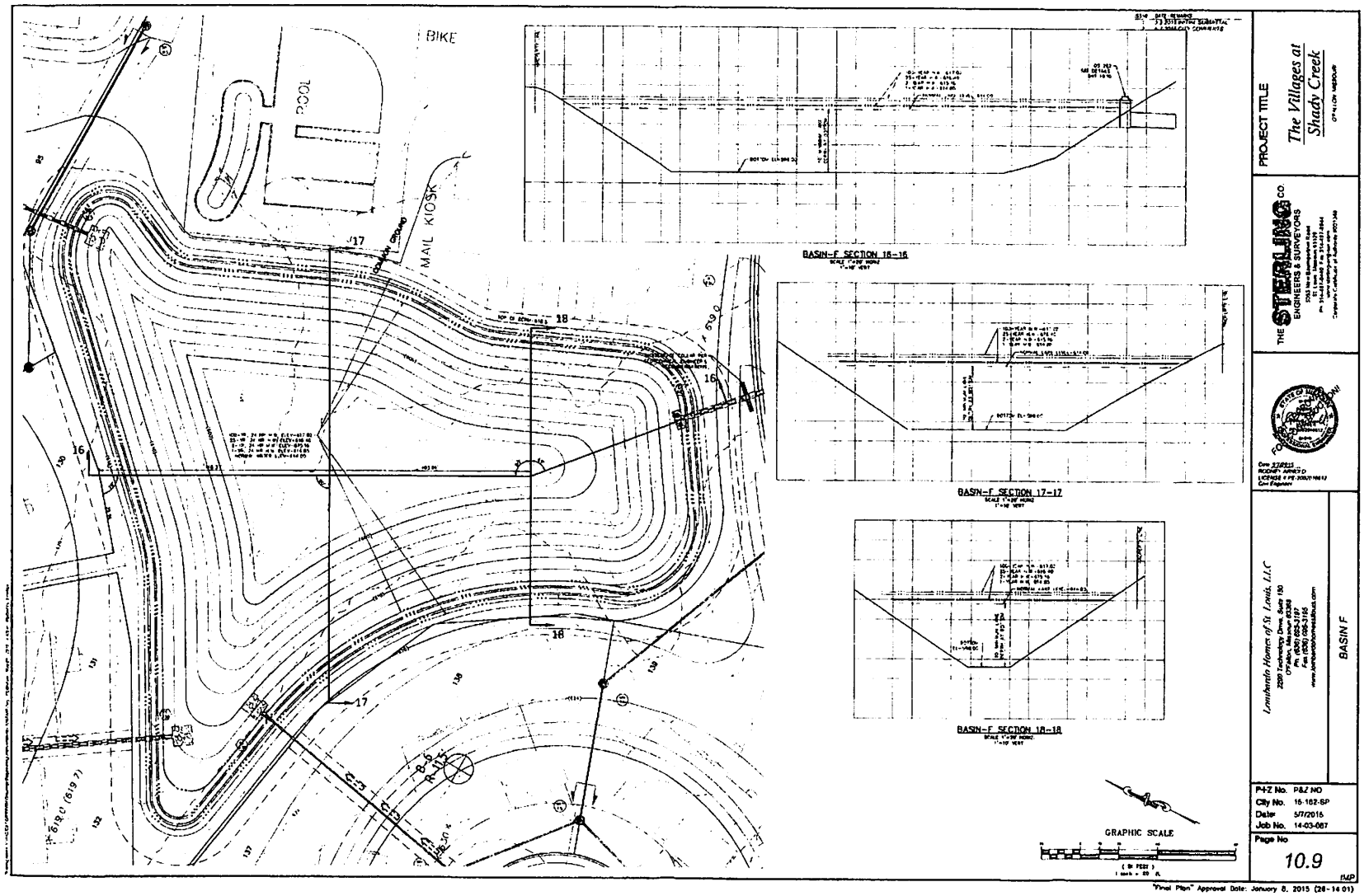
Lombardo Homes of St. Louis, LLC
2293 Technology Drive Suite 150
O'Fallon, Missouri 63368

BASIN E

P+Z No. P&Z NO
City No. 16-182-BP
Date 5/7/2015
Job No. 14-03-087

Page No
10.8

"Final Plan" Approval Date: January 8, 2015 (26-14 01)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POOL
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BASIN-F SECTION 15-15
BASIN-F SECTION 17-17
BASIN-F SECTION 18-18
GRAPHIC SCALE
PROJECT TITLE
The Villages at Shady Creek
THE STERLING CO.
ENGINEERS & SURVEYORS
Lombardo Homes of St. Louis, LLC
BASIN F
P&Z No. P&Z NO
City No. 15-182-SP
Date 5/7/2015
Job No. 14-03-087
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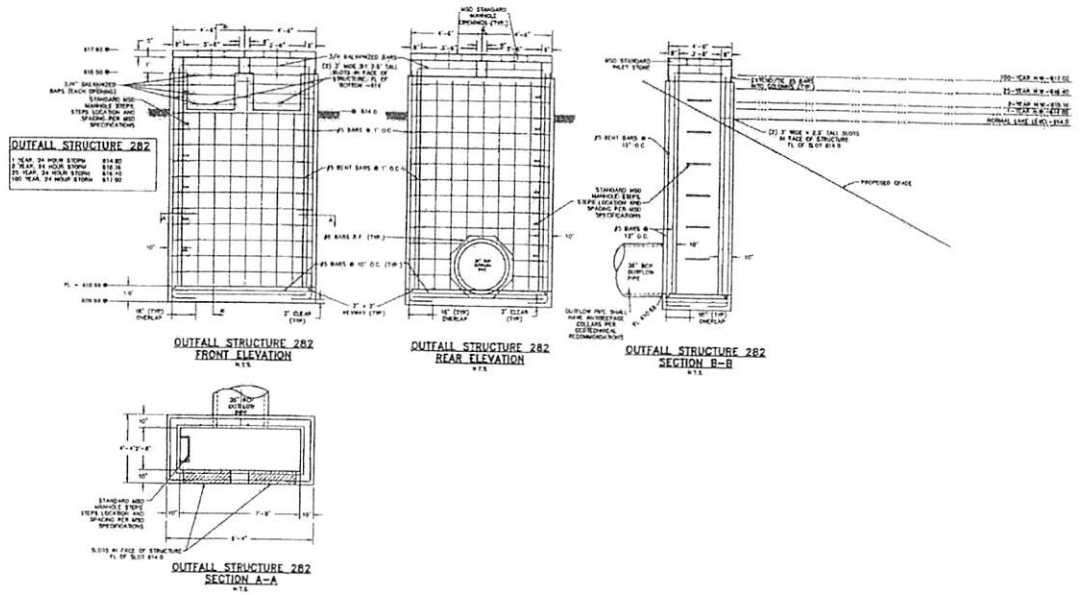
"Final Plan" Approval Date: January 8, 2015 (28-14.01)



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1	3-3-2015 INITIAL SUBMITTAL
2	5-7-2015 CITY COMMENTS

PROJECT TITLE
The Villages at Shady Creek
O'FALLON, MISSOURI

THE STERLING CO.
ENGINEERS & SURVEYORS

Date 5/7/2015
RODNEY ARNOLD
LICENSED PROFESSIONAL ENGINEER
Civil Engineer

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BASIN F

P+Z No. P&Z NO
City No. 15-162-SP
Date 5/7/2015
Job No. 14-03-067

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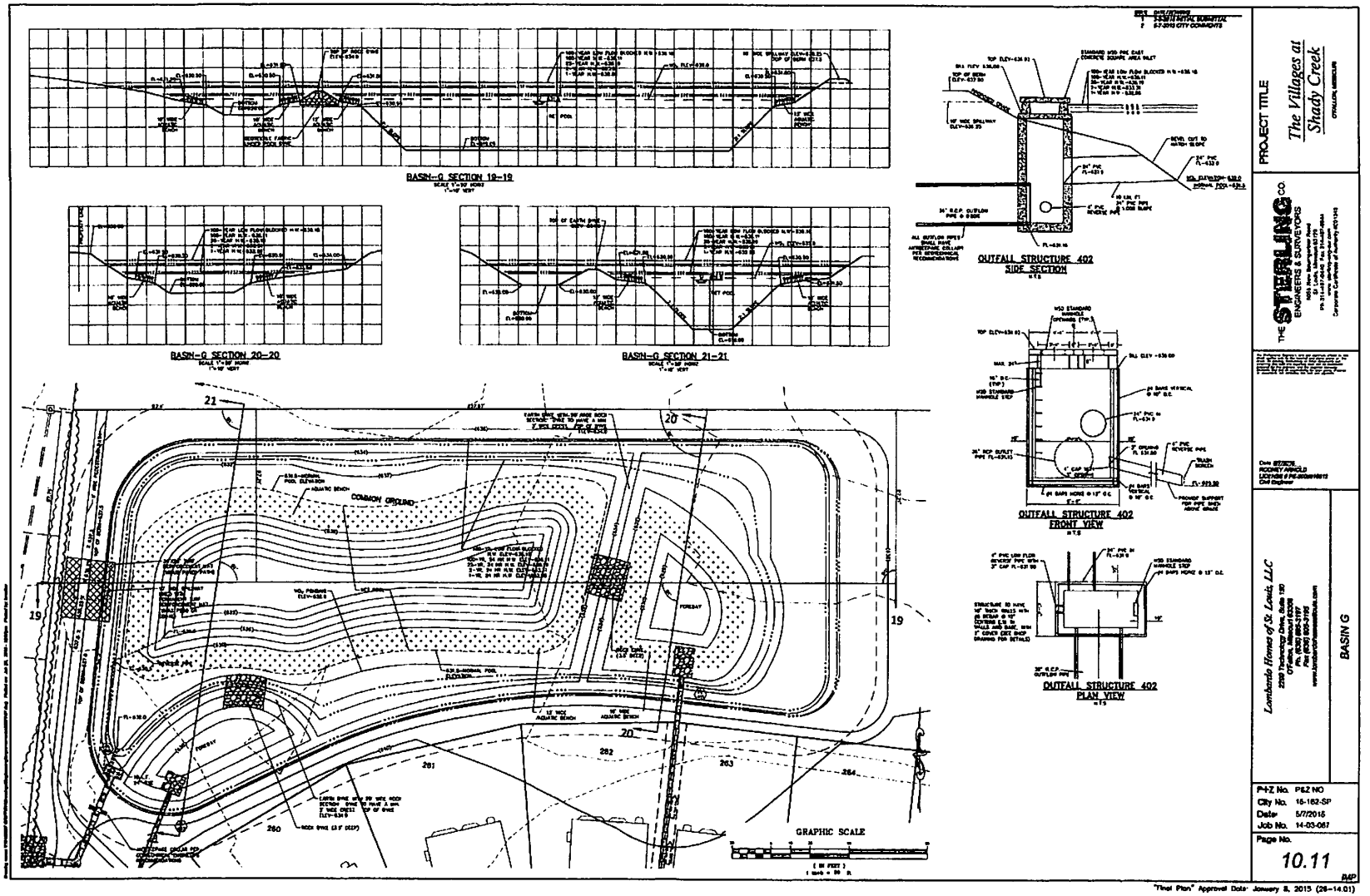
"Final Plan" Approval Date: January 8, 2015 (25-14.01)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SIDE SECTION
OUTFALL STRUCTURE 402
FRONT VIEW
OUTFALL STRUCTURE 402
PLAN VIEW
COMMON GROUND
GRAPHIC SCALE
PROJECT TITLE
The Villages at Shady Creek
THE STERLING CO.
ENGINEERS & SURVEYORS
Lombardo Homes of St. Louis, LLC
BASIN G
P+Z No. P&Z NO
City No. 15-162-SP
Date 5/7/2015
Job No. 14-03-067
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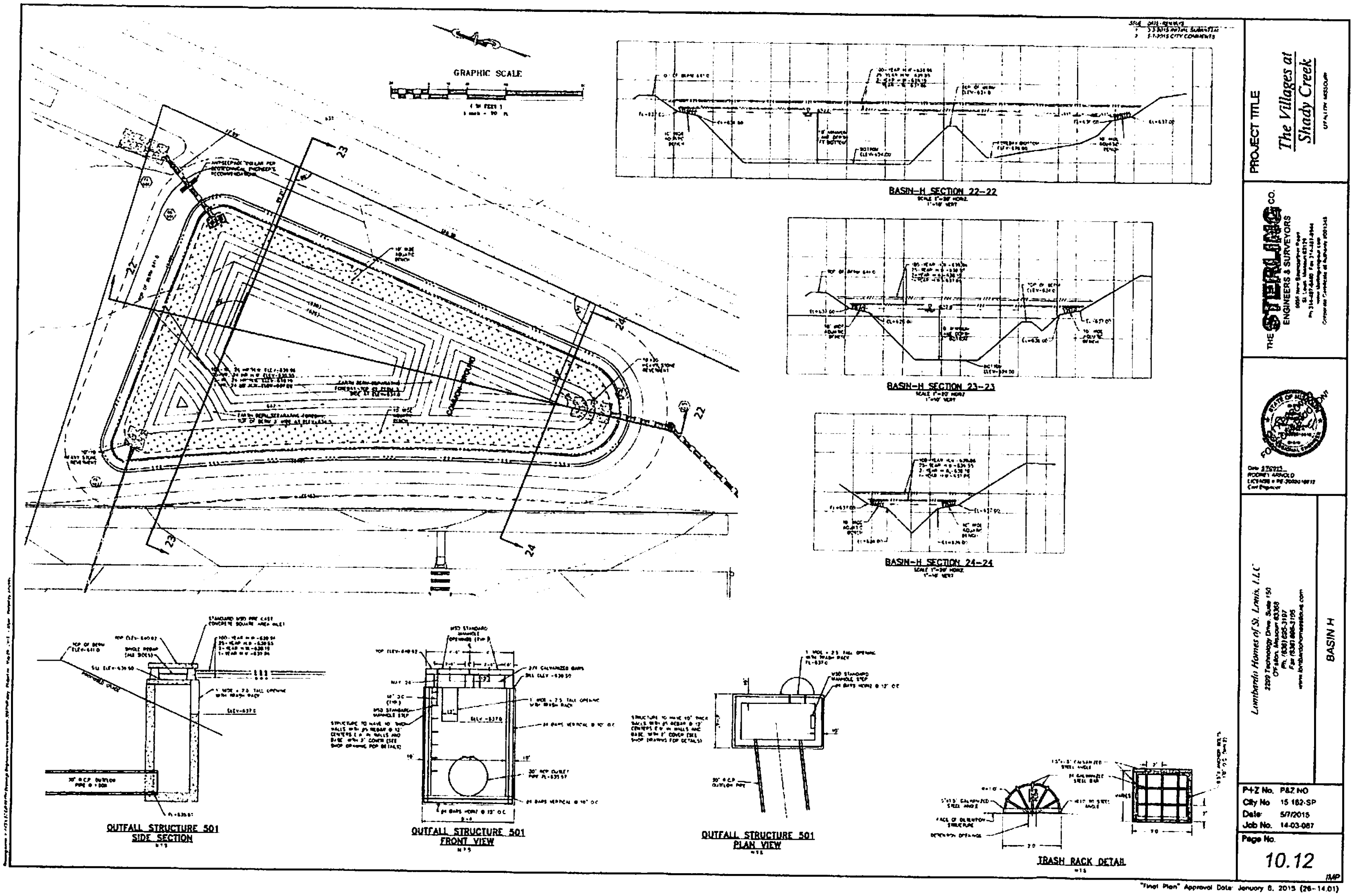
"Final Plan" Approval Date: January 8, 2015 (26-14.01)


GRAPHIC SCALE
BASIN-H SECTION 22-22
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BASIN-H SECTION 24-24
OUTFALL STRUCTURE 501
SIDE SECTION
OUTFALL STRUCTURE 501
FRONT VIEW
OUTFALL STRUCTURE 501
PLAN VIEW
TRASH RACK DETAIL
PROJECT TITLE
The Villages at
Shady Creek
THE STERLING CO.
ENGINEERS & SURVEYORS
Lombardo Homes of St. Louis, LLC
2299 Technology Drive, Suite 150
O'Fallon, Missouri 63368
BASIN H
P+Z No. P&Z NO
City No 15 182-SP
Date 5/7/2015
Job No. 14-03-087
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"Final Plan" Approval Date: January 6, 2015 (26-14.01)