DRAINAGE PLAN

Tyler's Landing 2nd Addition

WICHITA, SEDGWICK COUNTY, KANSAS

Prepared By

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NARRATIVE

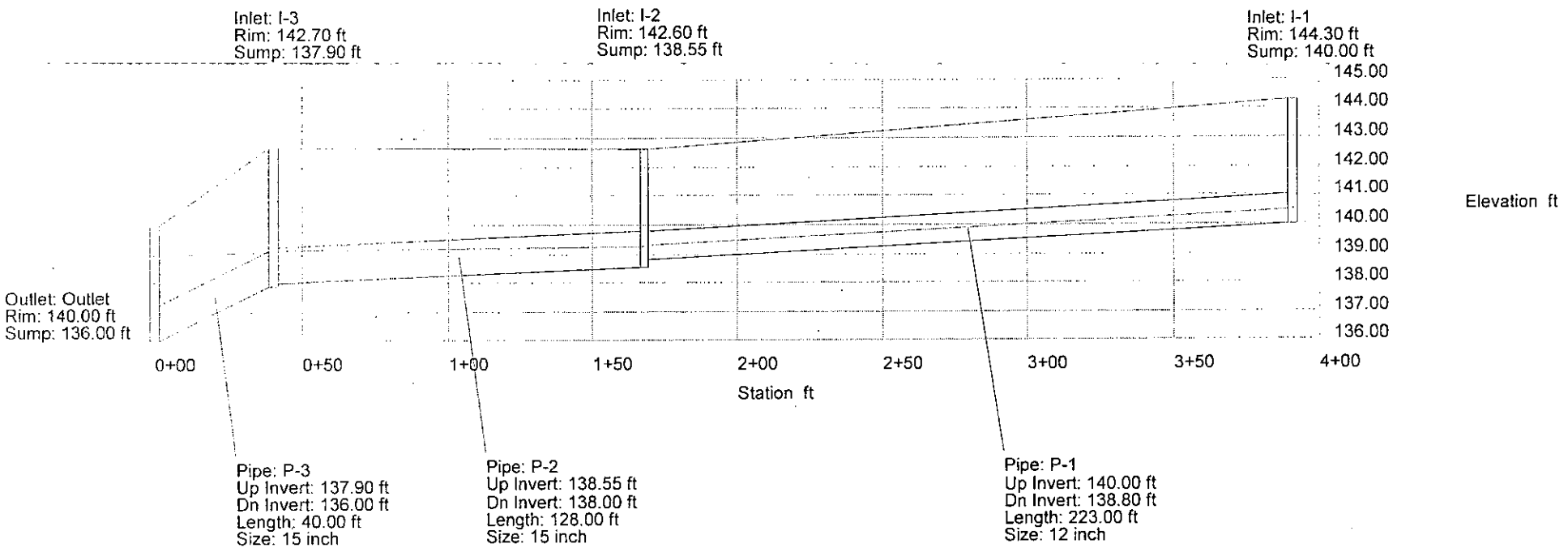
This report provides information and supporting documentation to support the "Drainage Plan" for the property located in the Northwest Quarter of Section 33, T-26-S, R-1-W in Sedgwick County, Kansas.

The "Drainage Plan" being submitted herein in intended to serve as a guide for the design of streets and storm water sewer improvements to the proposed development. Modifications to structures, pipes, etc. may be made as necessary during the final design in order to obtain the most economical design and construction possible.

Storm water sewer systems within this proposed development have been designed to convey the 2-yr rainfall event. Calculations have also been performed to check the design during the 100-yr event. A sub-division grading plan has been prepared in conjunction with the storm water sewer design. This grading plan allows for emergency outflow points during major rainfall events.

A detention facility has been provided on-site to restrict discharge of the development. The proposed discharges are less than the existing calculated discharges.

SITE AERIAL MAP


Inlet: I-3
Rim: 142.70 ft
Sump: 137.90 ft
Inlet: I-2
Rim: 142.60 ft
Sump: 138.55 ft
Inlet: I-1
Rim: 144.30 ft
Sump: 140.00 ft
145.00
144.00
143.00
142.00
141.00
140.00
139.00
138.00
137.00
136.00
Elevation ft
Outlet: Outlet
Rim: 140.00 ft
Sump: 136.00 ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
4+00
Station ft
Pipe: P-3
Up Invert: 137.90 ft
Dn Invert: 136.00 ft
Length: 40.00 ft
Size: 15 inch
Pipe: P-2
Up Invert: 138.55 ft
Dn Invert: 138.00 ft
Length: 128.00 ft
Size: 15 inch
Pipe: P-1
Up Invert: 140.00 ft
Dn Invert: 138.80 ft
Length: 223.00 ft
Size: 12 inch

PondPack Hydrology Routing

Pre-Developed Conditions Run (Total Basin)
Post-Development Run

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MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID SEDGWICK.RNQ WICHITA 24HR

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
Dev..2	3.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
Dev..5	4.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
Dev100	7.9000	Synthetic Curve	SCSTYPES	TypeII 24hr

ICPM CALCULATION TOLERANCES

Target Convergence	=	.000 cfs +/-
Max. Iterations	=	35 loops
ICPM Time Step	=	.0500 hrs
Output Time Step	=	.0500 hrs
ICPM Ending Time	=	35.0000 hrs

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

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

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
*OUT 10	JCT	2	19.316		14.4500	25.99		
*OUT 10	JCT	5	30.312		13.8500	46.91		
*OUT 10	JCT	100	72.687		13.1500	140.62		
P 10	POND	2	3.290		12.0500	47.38		
P 10	POND	5	5.085		12.0500	73.90		
P 10	POND	100	11.920		12.0500	170.94		
P 10 OUT	POND	2	3.290		12.4000	12.19	148.92	1.114
P 10 OUT	POND	5	5.085		12.3000	23.06	149.14	1.718
P 10 OUT	POND	100	11.920		12.2500	64.61	149.89	3.827
P 20	POND	2	15.636		12.0500	184.36		
P 20	POND	5	24.342		12.0500	292.14		
P 20	POND	100	57.735		12.0500	705.60		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

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

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
P 20	OUT POND	2	15.580		12.4000	42.33	139.57	5.035
P 20	OUT POND	5	24.277		12.4000	81.18	140.24	7.832
P 20	OUT POND	100	57.635		12.3000	251.60	142.42	17.893
P 30	POND	2	16.307		12.4000	44.92		
P 30	POND	5	25.422		12.4000	85.11		
P 30	POND	100	60.399		12.2500	264.52		
P 30	OUT POND	2	16.303		12.5500	42.33	139.05	.442
P 30	OUT POND	5	25.417		12.5000	82.02	139.54	.678
P 30	OUT POND	100	60.392		12.4000	252.49	141.32	1.615
P 40	POND	2	19.731		12.1000	62.39		
P 40	POND	5	30.817		12.1000	112.70		
P 40	POND	100	73.431		12.1000	337.75		
P 40	OUT POND	2	19.316		14.4500	25.99	138.31	5.614
P 40	OUT POND	5	30.312		13.8500	46.91	138.95	8.579
P 40	OUT POND	100	72.687		13.1500	140.62	141.06	19.512
SCS UH 10	AREA	2	3.290		12.0500	47.38		
SCS UH 10	AREA	5	5.085		12.0500	73.90		
SCS UH 10	AREA	100	11.920		12.0500	170.94		
SCS UH 20	AREA	2	12.345		12.0500	177.01		
SCS UH 20	AREA	5	19.258		12.0500	279.65		
SCS UH 20	AREA	100	45.815		12.0500	658.73		
SCS UH 30	AREA	2	.727		12.0500	10.37		
SCS UH 30	AREA	5	1.145		12.0500	16.60		
SCS UH 30	AREA	100	2.765		12.0500	39.84		
SCS UH 40	AREA	2	3.428		12.0500	48.90		
SCS UH 40	AREA	5	5.400		12.0500	78.30		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

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

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
SCS UH 40	AREA	100	13.039		12.0500	187.92		

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\POND1.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	Impervious Adjustment %UC	Adjusted CN
Commercail Development	92	3.900			92.00
Residential Development	75	23.700			75.00
COMPOSITE AREA & WEIGHTED CN --->		27.600			77.40 (77)

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\POND1.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Residential	75	97.900			75.00
Commercial	91	1.200			91.00
Church site	85	9.400			85.00
COMPOSITE AREA & WEIGHTED CN --->		108.500			76.04 (76)

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 10 Dev..2
Tc = .2500 hrs
Drainage Area = 27.600 acres Runoff CN= 77

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0667 hrs
Computed Peak Flow = 47.46 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 47.38 cfs
==========

DRAINAGE AREA

ID:SCS UH 10
CN = 77
Area = 27.600 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

1.4305 in
3.290 ac-ft

HYG Volume... 3.290 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 125.09 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 5 year storm
Duration = 24.0000 hrs Rain Depth = 4.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 10 Dev..5
Tc = .2500 hrs
Drainage Area = 27.600 acres Runoff CN= 77

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 74.14 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 73.90 cfs
==========

DRAINAGE AREA

ID:SCS UH 10
CN = 77
Area = 27.600 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

2.2106 in
5.084 ac-ft

HYG Volume... 5.085 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 125.09 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.9000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 10 Dev100
Tc = .2500 hrs
Drainage Area = 27.600 acres Runoff CN= 77

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 172.67 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 170.94 cfs
==========

DRAINAGE AREA

ID:SCS UH 10
CN = 77
Area = 27.600 acres
S = 2.9870 in
0.2S = .5974 in

Cumulative Runoff

5.1827 in
11.920 ac-ft

HYG Volume... 11.920 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 125.09 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 20 Dev..2
Tc = .2500 hrs
Drainage Area = 108.500 acres Runoff CN= 76

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0667 hrs
Computed Peak Flow = 177.53 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 177.01 cfs
==========

DRAINAGE AREA

ID:SCS UH 20
CN = 76
Area = 108.500 acres
S = 3.1579 in
0.2S = .6316 in

Cumulative Runoff

1.3653 in
12.345 ac-ft

HYG Volume... 12.345 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 491.74 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 5 year storm
Duration = 24.0000 hrs Rain Depth = 4.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 20 Dev..5
Tc = .2500 hrs
Drainage Area = 108.500 acres Runoff CN= 76

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 280.28 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 279.65 cfs
==========

DRAINAGE AREA

ID:SCS UH 20
CN = 76
Area = 108.500 acres
S = 3.1579 in
0.2S = .6316 in

Cumulative Runoff

2.1298 in
19.257 ac-ft

HYG Volume... 19.258 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 491.74 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.9000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 20 Dev100
Tc = .2500 hrs
Drainage Area = 108.500 acres Runoff CN= 76

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 665.06 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 658.73 cfs
==========

DRAINAGE AREA

ID:SCS UH 20
CN = 76
Area = 108.500 acres
S = 3.1579 in
0.2S = .6316 in

Cumulative Runoff

5.0670 in
45.814 ac-ft

HYG Volume... 45.815 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 491.74 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 30 Dev..2
Tc = .2500 hrs
Drainage Area = 6.700 acres Runoff CN= 75

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0667 hrs
Computed Peak Flow = 10.41 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 10.37 cfs
==========

DRAINAGE AREA

ID:None Selected
CN = 75
Area = 6.700 acres
S = 3.3333 in
0.2S = .6667 in

Cumulative Runoff

1.3018 in
.727 ac-ft

HYG Volume... .727 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 30.37 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 5 year storm
Duration = 24.0000 hrs Rain Depth = 4.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 30 Dev..5
Tc = .2500 hrs
Drainage Area = 6.700 acres Runoff CN= 75

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 16.62 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 16.60 cfs
==========

DRAINAGE AREA

ID:None Selected
CN = 75
Area = 6.700 acres
S = 3.3333 in
0.2S = .6667 in

Cumulative Runoff

2.0504 in
1.145 ac-ft

HYG Volume... 1.145 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 30.37 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.9000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 30 Dev100
Tc = .2500 hrs
Drainage Area = 6.700 acres Runoff CN= 75

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 40.21 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 39.84 cfs
==========

DRAINAGE AREA

ID:None Selected
CN = 75
Area = 6.700 acres
S = 3.3333 in
0.2S = .6667 in

Cumulative Runoff

4.9515 in
2.765 ac-ft

HYG Volume... 2.765 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 30.37 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 2 year storm
Duration = 24.0000 hrs Rain Depth = 3.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 40 Dev..2
Tc = .2500 hrs
Drainage Area = 31.600 acres Runoff CN= 75

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0667 hrs
Computed Peak Flow = 49.11 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 48.90 cfs
==========

DRAINAGE AREA

ID:None Selected
CN = 75
Area = 31.600 acres
S = 3.3333 in
0.2S = .6667 in

Cumulative Runoff

1.3018 in
3.428 ac-ft

HYG Volume... 3.428 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 143.22 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 5 year storm
Duration = 24.0000 hrs Rain Depth = 4.5000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 40 Dev..5
Tc = .2500 hrs
Drainage Area = 31.600 acres Runoff CN= 75

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 78.40 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 78.30 cfs
==========

DRAINAGE AREA

ID:None Selected
CN = 75
Area = 31.600 acres
S = 3.3333 in
0.2S = .6667 in

Cumulative Runoff

2.0504 in
5.399 ac-ft

HYG Volume... 5.400 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 143.22 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.9000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\
HYG File - ID = POND1.HYG - SCS UH 40 Dev100
Tc = .2500 hrs
Drainage Area = 31.600 acres Runoff CN= 75

==========
Computational Time Increment = .03333 hrs
Computed Peak Time = 12.0333 hrs
Computed Peak Flow = 189.63 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.0500 hrs
Peak Flow, Interpolated Output = 187.92 cfs
==========

DRAINAGE AREA

ID:None Selected
CN = 75
Area = 31.600 acres
S = 3.3333 in
0.2S = .6667 in

Cumulative Runoff

4.9515 in
13.039 ac-ft

HYG Volume... 13.039 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .25000 hrs (ID: None Selected)
Computational Incr, Tm = .03333 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 143.22 cfs
Unit peak time Tp = .16667 hrs
Unit receding limb, Tr = .66667 hrs
Total unit time, Tb = .83333 hrs

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
148.50	-----	2.6000	.0000	.000	.000
149.00	-----	2.7000	7.9495	1.325	1.325
150.00	-----	2.9000	8.3982	2.799	4.124
151.00	-----	3.2000	9.1463	3.049	7.173

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

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\POND1.PPW

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
138.30	-----	3.7000	.0000	.000	.000
139.00	-----	4.0000	11.5471	2.694	2.694
140.00	-----	4.2000	12.2988	4.100	6.794
141.00	-----	4.5000	13.0474	4.349	11.143
142.00	-----	4.8000	13.9476	4.649	15.792
143.00	-----	5.2000	14.9960	4.999	20.791
144.00	-----	5.5000	16.0479	5.349	26.140
145.00	-----	5.8000	16.9480	5.649	31.790

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

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\POND1.PPW

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
138.00	-----	.3900	.0000	.000	.000
139.00	-----	.4500	1.2589	.420	.420
140.00	-----	.5000	1.4243	.475	.894
141.00	-----	.5600	1.5892	.530	1.424
142.00	-----	.6200	1.7692	.590	2.014
143.00	-----	.6800	1.9493	.650	2.664

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

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\POND1.PPW

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
137.00	-----	4.0000	.0000	.000	.000
138.00	-----	4.4000	12.5952	4.198	4.198
139.00	-----	4.8000	13.7957	4.599	8.797
140.00	-----	5.2000	14.9960	4.999	13.796
141.00	-----	5.5000	16.0479	5.349	19.145
142.00	-----	5.9000	17.0965	5.699	24.844
143.00	-----	6.3000	18.2967	6.099	30.943

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

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P1.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	138.30	138.80	139.30	139.80	140.30
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
148.50	.00	.00	.00	.00	.00
149.00	14.50	14.50	14.50	14.50	14.50
149.50	45.00	45.00	45.00	45.00	45.00
150.00	69.90	69.90	69.90	69.90	69.90
150.50	89.45	89.45	89.45	89.45	89.45
151.00	113.64	113.64	113.64	113.64	113.64

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P1.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft 140.80	TW,ft 141.30	TW,ft 141.80	TW,ft 142.30	TW,ft 142.80
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
148.50	.00	.00	.00	.00	.00
149.00	14.50	14.50	14.50	14.50	14.50
149.50	45.00	45.00	45.00	45.00	45.00
150.00	69.90	69.90	69.90	69.90	69.90
150.50	89.45	89.45	89.45	89.45	89.45
151.00	113.64	113.64	113.64	113.64	113.64

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P1.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	143.30	143.80	144.30	144.80	.00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
148.50	.00	.00	.00	.00	.00
149.00	14.50	14.50	14.50	14.50	.00
149.50	45.00	45.00	45.00	45.00	.00
150.00	69.90	69.90	69.90	69.90	.00
150.50	89.45	89.45	89.45	89.45	.00
151.00	113.64	113.64	113.64	113.64	.00

Type.... E-Q-TW Series
Name.... E-Q-TW 10

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P1.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	.00	.00	.00	.00	.00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
148.50	.00	.00	.00	.00	.00
149.00	.00	.00	.00	.00	.00
149.50	.00	.00	.00	.00	.00
150.00	.00	.00	.00	.00	.00
150.50	.00	.00	.00	.00	.00
151.00	.00	.00	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P1.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
148.50	.00	.00	.00	.00	.00
149.00	.00	.00	.00	.00	.00
149.50	.00	.00	.00	.00	.00
150.00	.00	.00	.00	.00	.00
150.50	.00	.00	.00	.00	.00
151.00	.00	.00	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P1.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
148.50	.00	.00	.00	.00	.00
149.00	.00	.00	.00	.00	.00
149.50	.00	.00	.00	.00	.00
150.00	.00	.00	.00	.00	.00
150.50	.00	.00	.00	.00	.00
151.00	.00	.00	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P1.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
148.50	.00	.00	.00	.00	
149.00	.00	.00	.00	.00	
149.50	.00	.00	.00	.00	
150.00	.00	.00	.00	.00	
150.50	.00	.00	.00	.00	
151.00	.00	.00	.00	.00	

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P2.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	138.00	138.30	138.50	139.00	139.50
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.30	.00	.00	.00	.00	.00
138.50	2.68	2.68	.00	.00	.00
138.80	10.68	10.68	10.68	.00	.00
139.00	17.67	17.67	17.67	.00	.00
139.30	30.27	30.27	30.27	29.35	.00
139.50	39.76	39.76	39.76	39.76	.00
139.80	55.62	55.62	55.62	55.62	49.79
140.00	67.02	67.02	67.02	67.02	65.27
140.30	85.51	85.51	85.51	85.51	85.51
140.50	98.73	98.73	98.73	98.73	98.73
140.80	119.59	119.59	119.59	119.59	119.59
141.00	134.13	134.13	134.13	134.13	134.13
141.30	157.31	157.31	157.31	157.31	157.31
141.50	173.17	173.17	173.17	173.17	173.17
141.80	198.11	198.11	198.11	198.11	198.11
142.00	215.31	215.31	215.31	215.31	215.31
142.30	242.04	242.04	242.04	242.04	242.04
142.50	260.34	260.34	260.34	260.34	260.34
142.80	288.88	288.88	288.88	288.88	288.88
143.00	308.20	308.20	308.20	308.20	308.20
143.30	337.95	337.95	337.95	337.95	337.95
143.80	368.45	368.45	368.45	368.45	368.45
144.30	401.97	401.97	401.97	401.97	401.97
144.80	436.31	436.31	436.31	436.31	436.31
145.00	449.37	449.37	449.37	449.37	449.37

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P2.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	140.00	140.50	141.00	141.50	142.00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.30	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
138.80	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.30	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
139.80	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.30	70.60	.00	.00	.00	.00
140.50	91.72	.00	.00	.00	.00
140.80	117.93	91.24	.00	.00	.00
141.00	133.73	118.24	.00	.00	.00
141.30	157.15	151.23	111.94	.00	.00
141.50	173.17	170.43	145.05	.00	.00
141.80	198.11	197.53	184.61	132.73	.00
142.00	215.31	215.16	207.46	171.57	.00
142.30	242.04	242.04	239.07	218.22	153.42
142.50	260.34	260.47	259.06	244.84	198.23
142.80	288.88	288.88	288.46	281.23	251.74
143.00	308.20	308.20	308.05	303.82	282.36
143.30	337.95	337.95	337.95	336.63	313.19
143.80	368.45	368.45	368.45	368.45	368.45
144.30	401.97	401.97	401.97	401.97	401.97
144.80	436.31	436.31	436.31	436.31	436.31
145.00	449.37	449.37	449.37	449.37	449.37

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P2.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	142.50	143.00	.00	.00	.00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.30	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
138.80	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.30	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
139.80	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.30	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
140.80	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.30	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
141.80	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.30	.00	.00	.00	.00	.00
142.50	.00	.00	.00	.00	.00
142.80	150.54	.00	.00	.00	.00
143.00	194.38	.00	.00	.00	.00
143.30	245.87	150.49	.00	.00	.00
143.80	313.39	245.75	.00	.00	.00
144.30	368.61	313.26	.00	.00	.00
144.80	416.71	368.67	.00	.00	.00
145.00	434.45	388.59	.00	.00	.00

Type.... E-Q-TW Series
Name.... E-Q-TW 20

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P2.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	.00	.00	.00	.00	.00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.30	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
138.80	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.30	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
139.80	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.30	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
140.80	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.30	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
141.80	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.30	.00	.00	.00	.00	.00
142.50	.00	.00	.00	.00	.00
142.80	.00	.00	.00	.00	.00
143.00	.00	.00	.00	.00	.00
143.30	.00	.00	.00	.00	.00
143.80	.00	.00	.00	.00	.00
144.30	.00	.00	.00	.00	.00
144.80	.00	.00	.00	.00	.00
145.00	.00	.00	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P2.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.30	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
138.80	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.30	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
139.80	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.30	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
140.80	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.30	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
141.80	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.30	.00	.00	.00	.00	.00
142.50	.00	.00	.00	.00	.00
142.80	.00	.00	.00	.00	.00
143.00	.00	.00	.00	.00	.00
143.30	.00	.00	.00	.00	.00
143.80	.00	.00	.00	.00	.00
144.30	.00	.00	.00	.00	.00
144.80	.00	.00	.00	.00	.00
145.00	.00	.00	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P2.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.30	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
138.80	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.30	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
139.80	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.30	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
140.80	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.30	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
141.80	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.30	.00	.00	.00	.00	.00
142.50	.00	.00	.00	.00	.00
142.80	.00	.00	.00	.00	.00
143.00	.00	.00	.00	.00	.00
143.30	.00	.00	.00	.00	.00
143.80	.00	.00	.00	.00	.00
144.30	.00	.00	.00	.00	.00
144.80	.00	.00	.00	.00	.00
145.00	.00	.00	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P2.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.30	.00	.00	.00	.00	
138.50	.00	.00	.00	.00	
138.80	.00	.00	.00	.00	
139.00	.00	.00	.00	.00	
139.30	.00	.00	.00	.00	
139.50	.00	.00	.00	.00	
139.80	.00	.00	.00	.00	
140.00	.00	.00	.00	.00	
140.30	.00	.00	.00	.00	
140.50	.00	.00	.00	.00	
140.80	.00	.00	.00	.00	
141.00	.00	.00	.00	.00	
141.30	.00	.00	.00	.00	
141.50	.00	.00	.00	.00	
141.80	.00	.00	.00	.00	
142.00	.00	.00	.00	.00	
142.30	.00	.00	.00	.00	
142.50	.00	.00	.00	.00	
142.80	.00	.00	.00	.00	
143.00	.00	.00	.00	.00	
143.30	.00	.00	.00	.00	
143.80	.00	.00	.00	.00	
144.30	.00	.00	.00	.00	
144.80	.00	.00	.00	.00	
145.00	.00	.00	.00	.00	

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P3.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	137.00	137.50	138.00	138.50	139.00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.00	.00	.00	.00	.00	.00
138.50	12.11	12.11	12.11	.00	.00
139.00	38.49	38.49	38.49	33.85	.00
139.50	78.50	78.50	78.50	74.14	62.26
140.00	132.85	132.85	132.85	128.60	119.73
140.50	202.44	202.44	202.44	198.24	189.84
141.00	288.16	288.16	288.16	283.98	275.84
141.50	401.58	401.58	401.58	397.43	389.44
142.00	533.09	533.09	533.09	528.95	521.06
142.50	683.88	683.88	683.88	679.75	671.94
143.00	854.86	854.86	854.86	850.74	842.98

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P3.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft 139.50	TW,ft 140.00	TW,ft 140.50	TW,ft 141.00	TW,ft 141.50
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.00	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
140.00	97.25	.00	.00	.00	.00
140.50	174.10	139.00	.00	.00	.00
141.00	264.06	237.00	187.62	.00	.00
141.50	378.19	352.94	311.21	244.52	.00
142.00	510.15	485.90	447.48	392.51	308.31
142.50	661.26	637.63	601.06	551.26	483.17
143.00	832.46	809.26	773.86	726.99	666.12

Type.... E-Q-TW Series
Name.... E-Q-TW 30

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P3.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft	TW,ft	TW,ft	TW,ft	TW,ft
	142.00	142.50	143.00	.00	.00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.00	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.50	379.34	.00	.00	.00	.00
143.00	584.84	457.38	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P3.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.00	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.50	.00	.00	.00	.00	.00
143.00	.00	.00	.00	.00	.00

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.00	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.50	.00	.00	.00	.00	.00
143.00	.00	.00	.00	.00	.00

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.00	.00	.00	.00	.00	.00
138.50	.00	.00	.00	.00	.00
139.00	.00	.00	.00	.00	.00
139.50	.00	.00	.00	.00	.00
140.00	.00	.00	.00	.00	.00
140.50	.00	.00	.00	.00	.00
141.00	.00	.00	.00	.00	.00
141.50	.00	.00	.00	.00	.00
142.00	.00	.00	.00	.00	.00
142.50	.00	.00	.00	.00	.00
143.00	.00	.00	.00	.00	.00

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\P3.EQT

Elevation - Outflow - Tailwater (ICPR Rating Table)

TW Elevs. --->	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft .00	TW,ft
HW Elev,ft	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs	Flow, cfs
138.00	.00	.00	.00	.00	
138.50	.00	.00	.00	.00	
139.00	.00	.00	.00	.00	
139.50	.00	.00	.00	.00	
140.00	.00	.00	.00	.00	
140.50	.00	.00	.00	.00	
141.00	.00	.00	.00	.00	
141.50	.00	.00	.00	.00	
142.00	.00	.00	.00	.00	
142.50	.00	.00	.00	.00	
143.00	.00	.00	.00	.00	

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\POND1.PPW

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 137.00 ft
Increment = .50 ft
Max. Elev.= 143.00 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
Culvert-Box	OR --->	TW	137.000	143.000
TW SETUP, DS Channel				

OUTLET STRUCTURE INPUT DATA

Structure ID	=	OR	
Structure Type	=	Culvert-Box	
No. Barrels	=	1	
Barrel Height	=	4.00	ft
Barrel Width	=	7.00	ft
Upstream Invert	=	137.00	ft
Dnstream Invert	=	136.50	ft
Horiz. Length	=	69.00	ft
Barrel Length	=	69.00	ft
Barrel Slope	=	.00725	ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0130	
Ke	=	.5000	(forward entrance loss)
Kb	=	.003571	(per ft of full flow)
Kr	=	.5000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1	
Inlet Control K	=	.0610	
Inlet Control M	=	.7500	
Inlet Control c	=	.04000	
Inlet Control Y	=	.8000	
T1 ratio (HW/D)	=	1.240	
T2 ratio (HW/D)	=	1.436	
Slope Factor	=	-.500	

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 =	141.96 ft	--->	Flow =	196.00	cfs
At T2 Elev =	142.75 ft	--->	Flow =	224.00	cfs

File.... F:\HYDRO\PROJECTS\TYLERSLANDING2ND\PONDPACK\POND1.PPW

OUTLET STRUCTURE INPUT DATA

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

Index of Starting Page Numbers for ID Names

Table of Contents

MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID SEDGWICK.RNQ WICHITA 24HR

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
Pre..2	3.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
Pre..5	4.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
Pre100	7.9000	Synthetic Curve	SCSTYPES	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)

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
J 10	JCT	2	19.718		12.5000	127.66		
J 10	JCT	5	29.727		12.5000	200.44		
J 10	JCT	100	67.180		12.4500	465.28		
J 20	JCT	2	7.615		12.3500	56.57		
J 20	JCT	5	11.994		12.3500	91.98		
J 20	JCT	100	28.965		12.3500	225.86		
*OUT 10	JCT	2	19.718		12.5000	127.66		
*OUT 10	JCT	5	29.727		12.5000	200.44		
*OUT 10	JCT	100	67.180		12.4500	465.28		
SCS UH VI	AREA	2	7.615		12.3500	56.57		
SCS UH VI	AREA	5	11.994		12.3500	91.98		
SCS UH VI	AREA	100	28.965		12.3500	225.86		
SCS UH VII	AREA	2	10.780		12.4000	77.37		
SCS UH VII	AREA	5	15.808		12.4000	114.06		
SCS UH VII	AREA	100	34.115		12.4000	243.14		
SCS UH X	AREA	2	1.323		12.1000	16.87		
SCS UH X	AREA	5	1.925		12.1000	24.41		
SCS UH X	AREA	100	4.100		12.1000	50.52		

TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Sheet

Mannings n	.0200
Hydraulic Length	100.00 ft
2yr, 24hr P	3.5000 in
Slope	.007100 ft/ft
Avg.Velocity	.59 ft/sec

Segment #1 Time: .0471 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	3400.00 ft
Slope	.007100 ft/ft
Unpaved	
Avg.Velocity	1.36 ft/sec

Segment #2 Time: .6947 hrs

Total Tc: .7418 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Shallow

Hydraulic Length 2225.00 ft
Slope .002100 ft/ft
Unpaved

Avg.Velocity .74 ft/sec

Segment #1 Time: .8359 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n .0200
Hydraulic Length 100.00 ft
2yr, 24hr P 3.5000 in
Slope 100.000000 ft/ft

Avg.Velocity 26.90 ft/sec

Segment #2 Time: .0010 hrs

Total Tc: .8369 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

File.... F:\HYDRO\PROJECTS\TYLERSLANDING\SOUTH.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
D Soil Type	84	17.000			84.00
C Soil Type	72	53.200			72.00
COMPOSITE AREA & WEIGHTED CN --->		70.200			74.91 (75)

File.... F:\HYDRO\PROJECTS\TYLERSLANDING\SOUTH.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
C Soil Type	80	20.000			80.00
D Soil Type	84	48.000			84.00
B Soil Type	72	1.600			72.00
COMPOSITE AREA & WEIGHTED CN --->		69.600			82.57 (83)

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.9000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING\
HYG File - ID = - SCS UH VI Pre100
Tc = .7418 hrs
Drainage Area = 70.200 acres Runoff CN= 75

==========
Computational Time Increment = .09891 hrs
Computed Peak Time = 12.3638 hrs
Computed Peak Flow = 226.18 cfs

Time Increment for HYG File = .0500 hrs
Peak Time, Interpolated Output = 12.3500 hrs
Peak Flow, Interpolated Output = 225.86 cfs
==========

DRAINAGE AREA

ID:SCS UH VI
CN = 75
Area = 70.200 acres
S = 3.3333 in
0.2S = .6667 in

Cumulative Runoff

4.9515 in
28.966 ac-ft

HYG Volume... 28.965 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .74183 hrs (ID: SCS UH VI)
Computational Incr, Tm = .09891 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak, qp = 107.22 cfs
Unit peak time Tp = .49455 hrs
Unit receding limb, Tr = 1.97822 hrs
Total unit time, Tb = 2.47277 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.9000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING\
HYG File - ID = - SCS UH VII Pre100
Tc = .8369 hrs
Drainage Area = 69.600 acres Runoff CN= 83

==========

Computational Time Increment	=	.11159 hrs
Computed Peak Time	=	12.3868 hrs
Computed Peak Flow	=	244.80 cfs
Time Increment for HYG File	=	.0500 hrs
Peak Time, Interpolated Output	=	12.4000 hrs
Peak Flow, Interpolated Output	=	243.14 cfs

==========

DRAINAGE AREA

ID:SCS UH VII
CN = 83
Area = 69.600 acres
S = 2.0482 in
0.2S = .4096 in

Cumulative Runoff

5.8820 in
34.115 ac-ft

HYG Volume... 34.115 ac-ft (area under HYG curve)

***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .83695 hrs (ID: SCS UH VII)
Computational Incr, Tm = .11159 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak,	qp =	94.22 cfs
Unit peak time	Tp =	.55797 hrs
Unit receding limb,	Tr =	2.23186 hrs
Total unit time,	Tb =	2.78983 hrs

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 7.9000 in
Rain Dir = C:\HAESTAD\PPKW\RAINFALL\
Rain File -ID = SCSTYPES.RNF - TypeII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = F:\HYDRO\PROJECTS\TYLERSLANDING\
HYG File - ID = - SCS UH X Pre100
Tc = .3333 hrs
Drainage Area = 8.200 acres Runoff CN= 84

==========

Computational Time Increment	=	.04444 hrs
Computed Peak Time	=	12.0877 hrs
Computed Peak Flow	=	51.28 cfs
Time Increment for HYG File	=	.0500 hrs
Peak Time, Interpolated Output	=	12.1000 hrs
Peak Flow, Interpolated Output	=	50.52 cfs

==========

DRAINAGE AREA

ID:None Selected
CN = 84
Area = 8.200 acres
S = 1.9048 in
0.2S = .3810 in

Cumulative Runoff

5.9993 in
4.100 ac-ft

HYG Volume... 4.100 ac-ft (area under HYG curve)

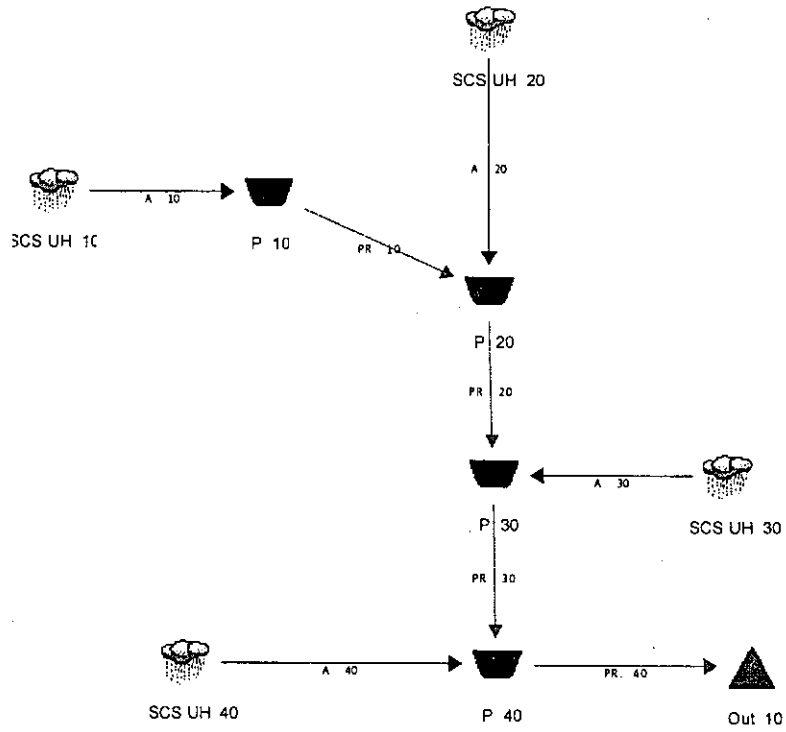
***** UNIT HYDROGRAPH PARAMETERS *****

Time Concentration, Tc = .33330 hrs (ID: None Selected)
Computational Incr, Tm = .04444 hrs = 0.20000 Tp

Unit Hyd. Shape Factor = 483.432 (37.46% under rising limb)
K = 483.43/645.333, K = .7491 (also, K = 2/(1+(Tr/Tp))
Receding/Rising, Tr/Tp = 1.6698 (solved from K = .7491)

Unit peak,	qp =	27.88 cfs
Unit peak time	Tp =	.22220 hrs
Unit receding limb,	Tr =	.88880 hrs
Total unit time,	Tb =	1.11100 hrs

Index of Starting Page Numbers for ID Names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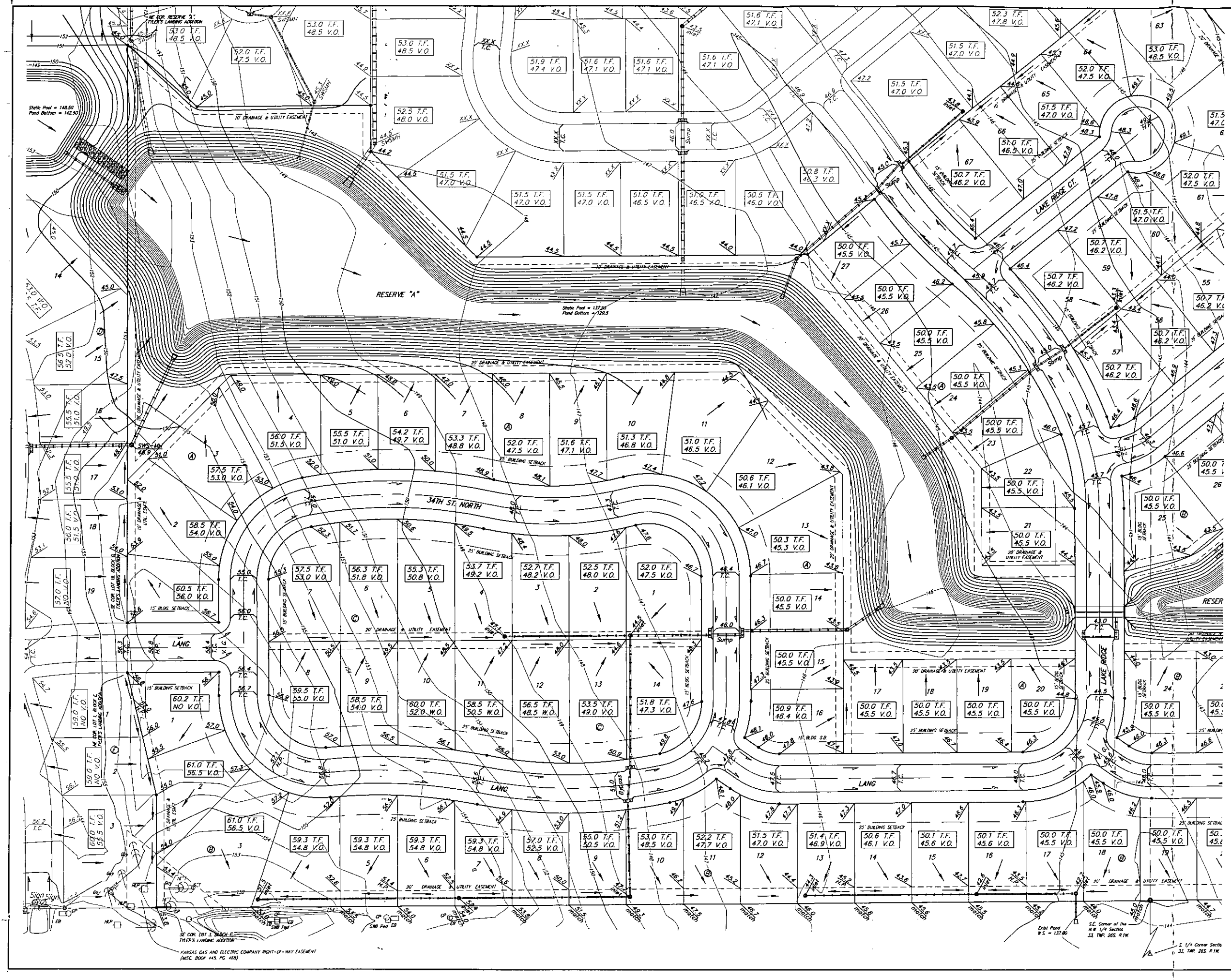
A 10
P 10
PR 10
P 20
PR 20
A 30
P 30
SCS UH 30
PR 30
A 40
PR. 40
SCS UH 40
P 40
Out 10

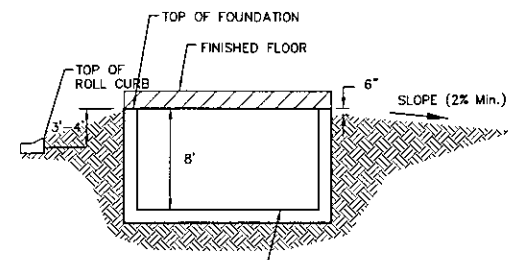
DRAINAGE PLAN

LOT GRADING PLAN

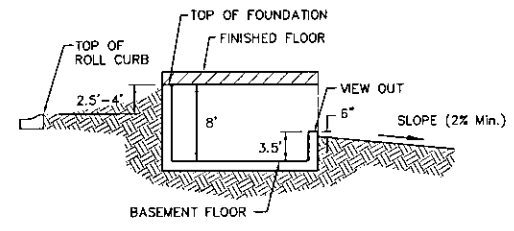


BENCHMARK:
CITY OF WICHITA BENCHMARK DISC -
SE. COR. OF THE INTERSECTION OF
TYLER RD. & 29TH STREET NORTH.
32.30' S. OF ℄
30.00' E. OF ℄
55.50' E. OF P.P.
9.20' SE. OF P.P.
43.20' SE. OF SEC. COR. IRON
ELEV. = 1178.04 CITY DATUM
1385.44 NGVD29

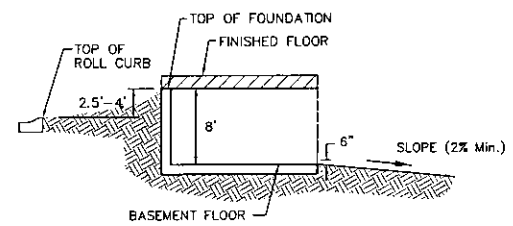
SCALE: 1" = 60'
• = Iron



TYPICAL NON-VIEW OUT
NO SCALE



TYPICAL VIEW OUT
NO SCALE



TYPICAL WALK OUT
NO SCALE

Notes:
Proposed Top of Foundation Elevations Are Shown On Plans.

Contractor to Set Finished Floor Elevations.

All Street Elevations Shown on Plans Are for Top of Curb.

This Grading Plan is Designed with View-Outs.

Elevations Shown at Rear of House (XX.X V.O.)

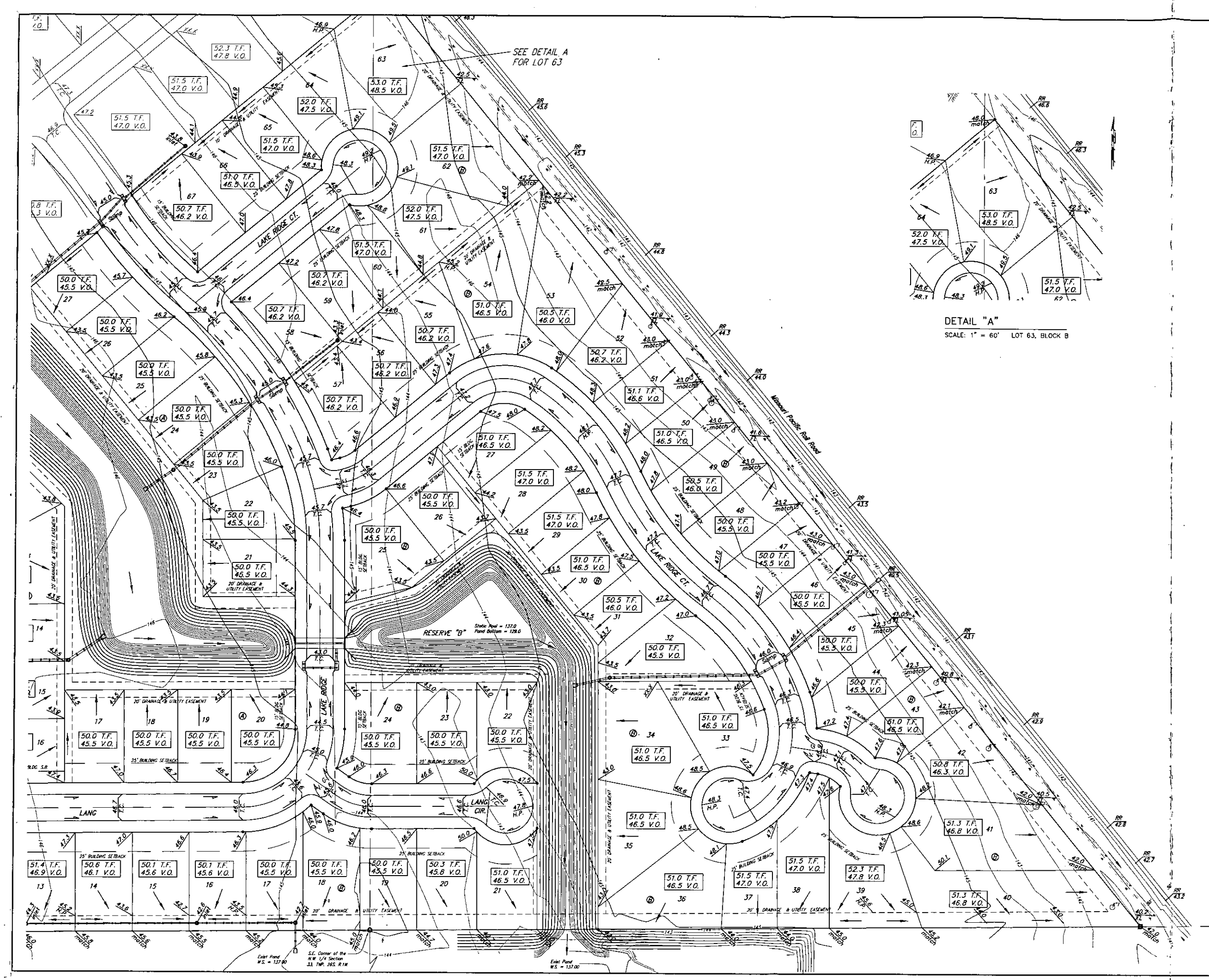
Lot dimensions have been ommited on this plan, refer to the recorded plat for this information.

TYLER'S LANDING 2ND ADDITION
MASTER GRADING PLAN
CITY OF WICHITA, KANSAS

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-3271 • 313 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER				SHEET
				1 OF 2
DESIGN: SCL	DRAWN: SCL	APPROVED: NBW	DATE: 07/03	SCALE: 1"=60'

GRADE.DWG

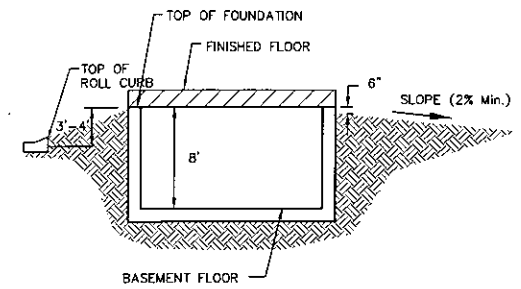


DETAIL "A"

SCALE: 1" = 60' LOT 63, BLOCK B

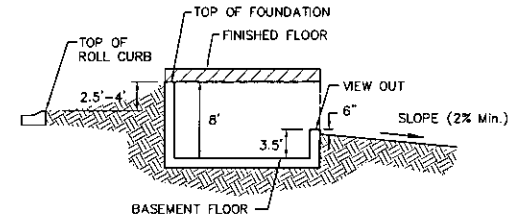
BENCHMARK:
CITY OF WICHITA BENCHMARK DISC - SE. COR. OF THE INTERSECTION OF TYLER RD. & 29TH STREET NORTH.
32.30' S. OF ℄
30.00' E. OF ℄
55.50' E. OF P.R.
9.20' SE. OF P.P.
43.20' SE. OF SEC. COR. IRON
ELEV. = 1178.04 CITY DATUM
1,365.44 NGVD29

SCALE: 1" = 60'
• = Iron



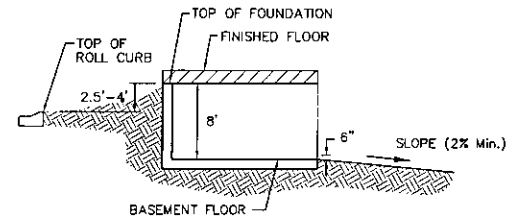
TYPICAL NON-VIEW OUT

NO SCALE



TYPICAL VIEW OUT

NO SCALE



TYPICAL WALK OUT

NO SCALE

Notes:
Proposed Top of Foundation Elevations Are Shown On Plans.

Contractor to Set Finished Floor Elevations.

All Street Elevations Shown on Plans Are for Top of Curb.

This Grading Plan is Designed with View-Outs.

Elevations Shown at Rear of House (XX.X V.O.)

Lot dimensions have been ommited on this plan, refer to the recorded plat for this information.

TYLER'S LANDING 2ND ADDITION

MASTER GRADING PLAN

CITY OF WICHITA, KANSAS

BAUGHMAN COMPANY P.A.

ENGINEERING, SURVEYING, & PLANNING

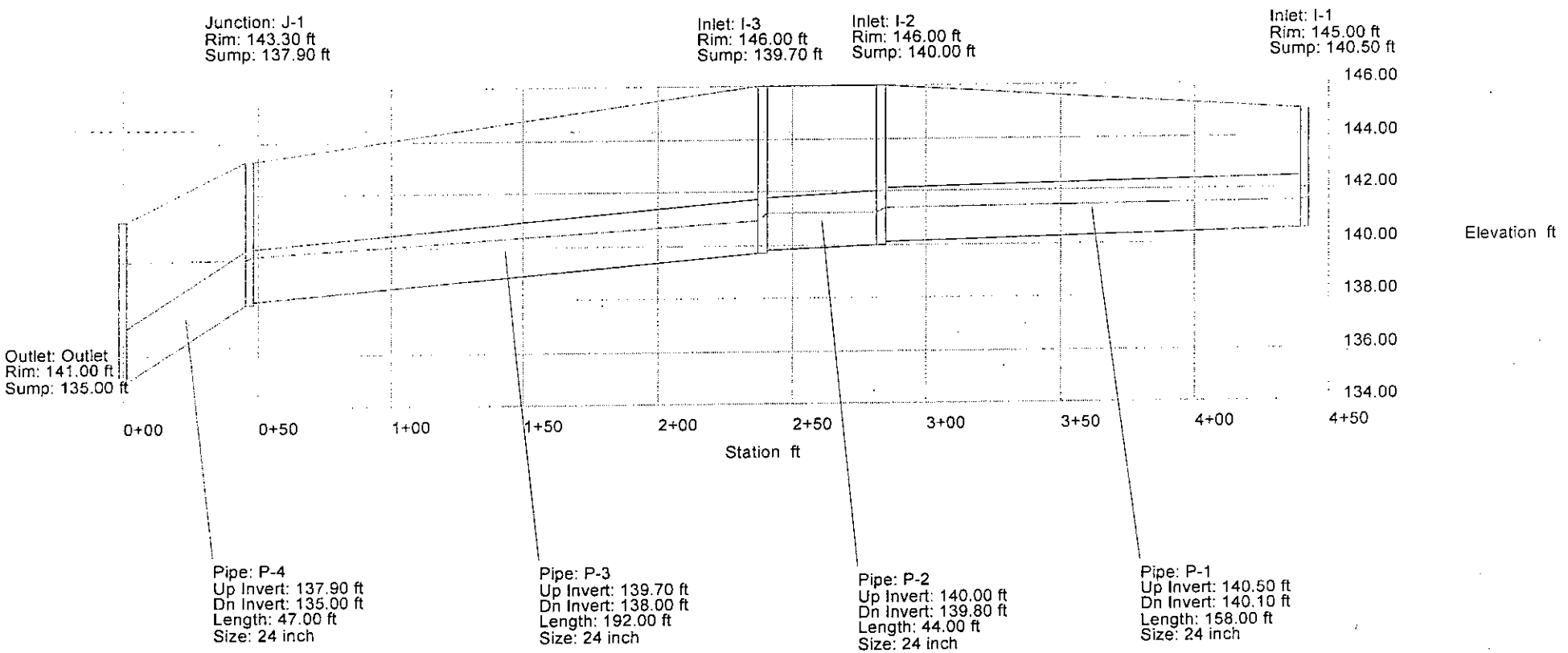
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER					SHEET
					2 OF 2
DESIGN	DRAWN	APPROVED	DATE	SCALE	
SCL	SCL	HBW	07/03	1"=60'	

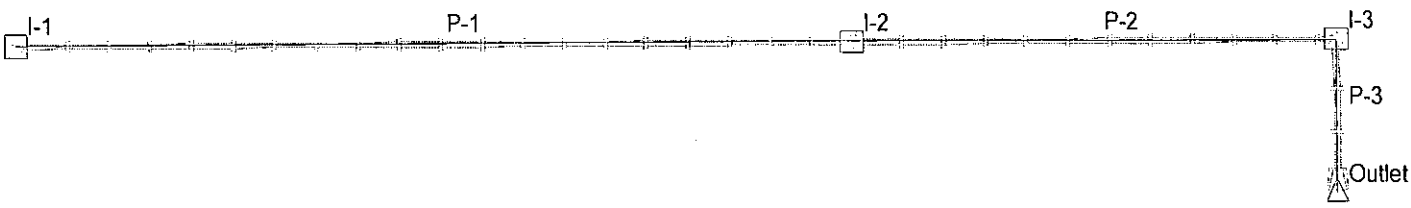
GRADE.DWG

Combined Pipe & Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet TC (min)	Weighted Roughness Coefficient	Discharge (cfs)	Section Size	Roughness	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Upstream HGL (ft)	Downstream HGL (ft)
P-1	I-1	I-2	158.00	2.38	15.00	0.46	5.00	24 inch	0.013	140.50	140.10	0.002532	145.00	146.00	141.52	141.38
P-2	I-2	I-3	44.00	1.89	15.00	0.46	9.00	24 inch	0.013	140.00	139.80	0.004545	146.00	146.00	141.23	141.17
P-3	I-3	J-1	192.00	1.19	15.00	0.46	11.50	24 inch	0.013	139.70	138.00	0.008854	146.00	143.30	140.92	139.70
P-4	J-1	Outlet	47.00	N/A	N/A	N/A	11.50	24 inch	0.013	137.90	135.00	0.061702	143.30	141.00	139.57	139.50


Junction: J-1
Rim: 143.30 ft
Sump: 137.90 ft
Inlet: I-3
Rim: 146.00 ft
Sump: 139.70 ft
Inlet: I-2
Rim: 146.00 ft
Sump: 140.00 ft
Inlet: I-1
Rim: 145.00 ft
Sump: 140.50 ft
146.00
144.00
142.00
140.00
138.00
136.00
134.00
Elevation ft
Outlet: Outlet
Rim: 141.00 ft
Sump: 135.00 ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
4+00
4+50
Station ft
Pipe: P-4
Up Invert: 137.90 ft
Dn Invert: 135.00 ft
Length: 47.00 ft
Size: 24 inch
Pipe: P-3
Up Invert: 139.70 ft
Dn Invert: 138.00 ft
Length: 192.00 ft
Size: 24 inch
Pipe: P-2
Up Invert: 140.00 ft
Dn Invert: 139.80 ft
Length: 44.00 ft
Size: 24 inch
Pipe: P-1
Up Invert: 140.50 ft
Dn Invert: 140.10 ft
Length: 158.00 ft
Size: 24 inch

SWS LINE #6



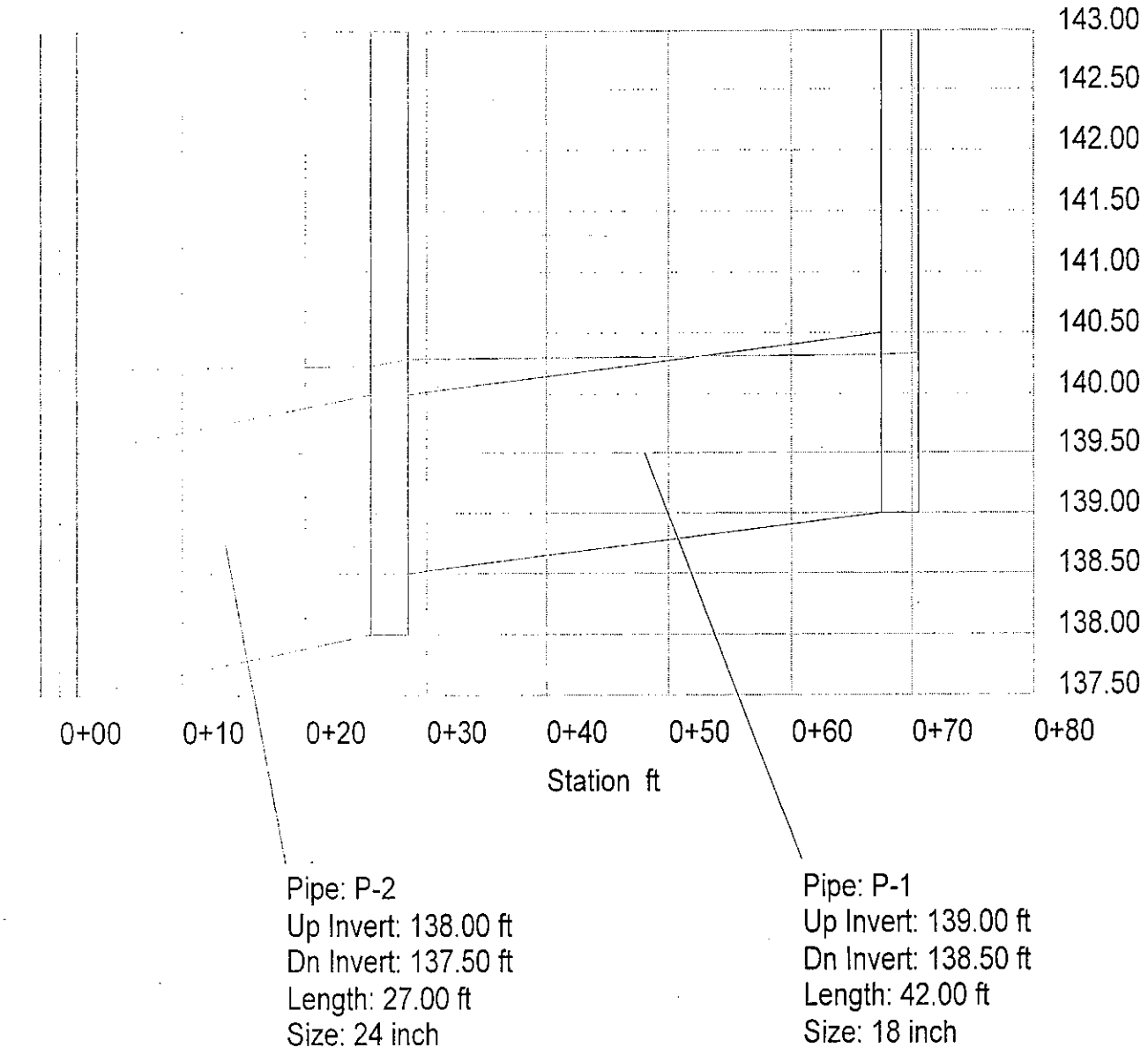
Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Combined Pipe & Node Report

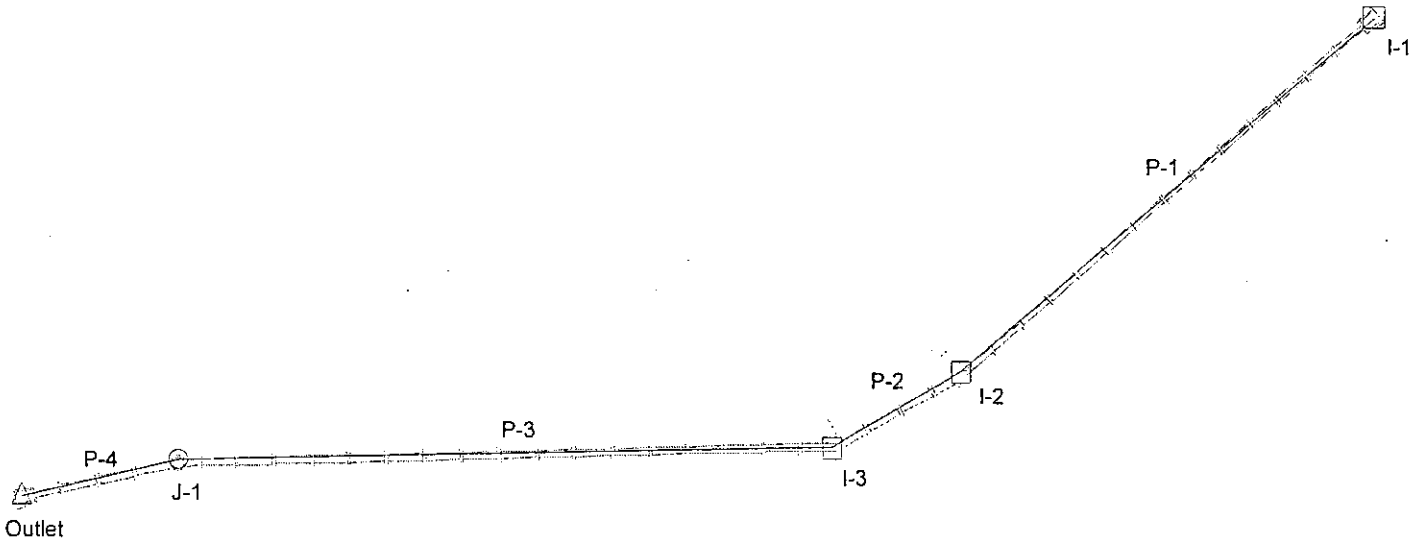
Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet TC (min)	Weighted Roughness Coefficient	Discharge (cfs)	Section Size	Roughness	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Upstream HGL (ft)	Downstream HGL (ft)
P-1	I-1	I-2	223.00	0.56	15.00	0.46	1.20	12 inch	0.013	140.00	138.80	0.005381	144.30	142.60	140.48	139.31
P-2	I-2	I-3	128.00	0.42	15.00	0.46	2.10	15 inch	0.013	138.55	138.00	0.004297	142.60	142.70	139.23	139.11
P-3	I-3	Outlet	40.00	0.31	15.00	0.46	2.80	15 inch	0.013	137.90	136.00	0.047500	142.70	140.00	139.07	139.00

Combined Pipe & Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet TC (min)	Weighted Roughness Coefficient	Discharge (cfs)	Section Size	Roughness	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Upstream HGL (ft)	Downstream HGL (ft)
P-1	I-1	I-2	42.00	1.13	15.00	0.46	2.40	18 inch	0.013	139.00	138.50	0.011905	143.00	143.00	140.31	140.29
P-2	I-2	Outlet	27.00	2.88	15.00	0.46	8.40	24 inch	0.013	138.00	137.50	0.018519	143.00	143.00	140.24	140.20


Outlet: Outlet
Rim: 143.00 ft
Sump: 137.50 ft
Inlet: I-2
Rim: 143.00 ft
Sump: 138.00 ft
Inlet: I-1
Rim: 143.00 ft
Sump: 139.00 ft
143.00
142.50
142.00
141.50
141.00
140.50
140.00
139.50
139.00
138.50
138.00
137.50
Elevation ft
0+00
0+10
0+20
0+30
0+40
0+50
0+60
0+70
0+80
Station ft
Pipe: P-2
Up Invert: 138.00 ft
Dn Invert: 137.50 ft
Length: 27.00 ft
Size: 24 inch
Pipe: P-1
Up Invert: 139.00 ft
Dn Invert: 138.50 ft
Length: 42.00 ft
Size: 18 inch

SWS LINE #5

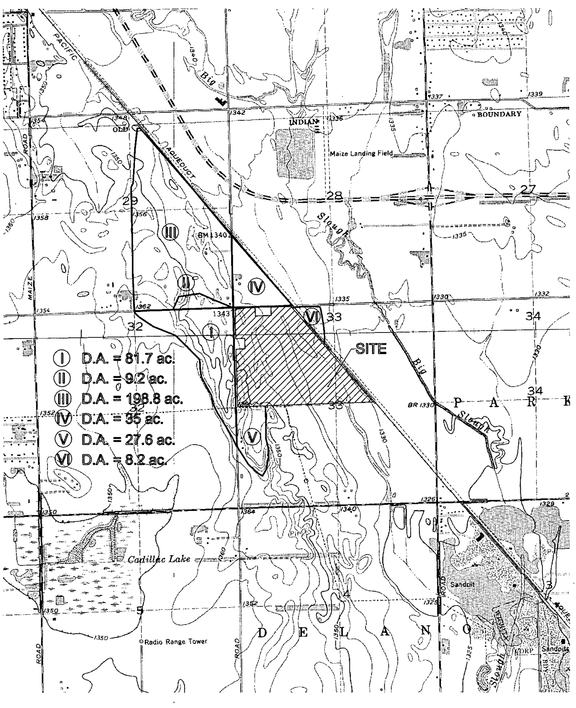

I-1
P-1
P-2
I-2
P-3
P-4
J-1
I-3
Outlet

TYLER'S LANDING ADDITION & 2ND ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS

1" = 250'

BAUGHMAN COMPANY P. A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

USGS QUADRANGLE MAP



LOCATION MAP:

Tyler's Landing Addition &
Tyler's Landing 2nd Addition
WICHITA, SEDGWICK COUNTY, KANSAS

MAIZE & WEST WICHITA USGS QUADRANGLES

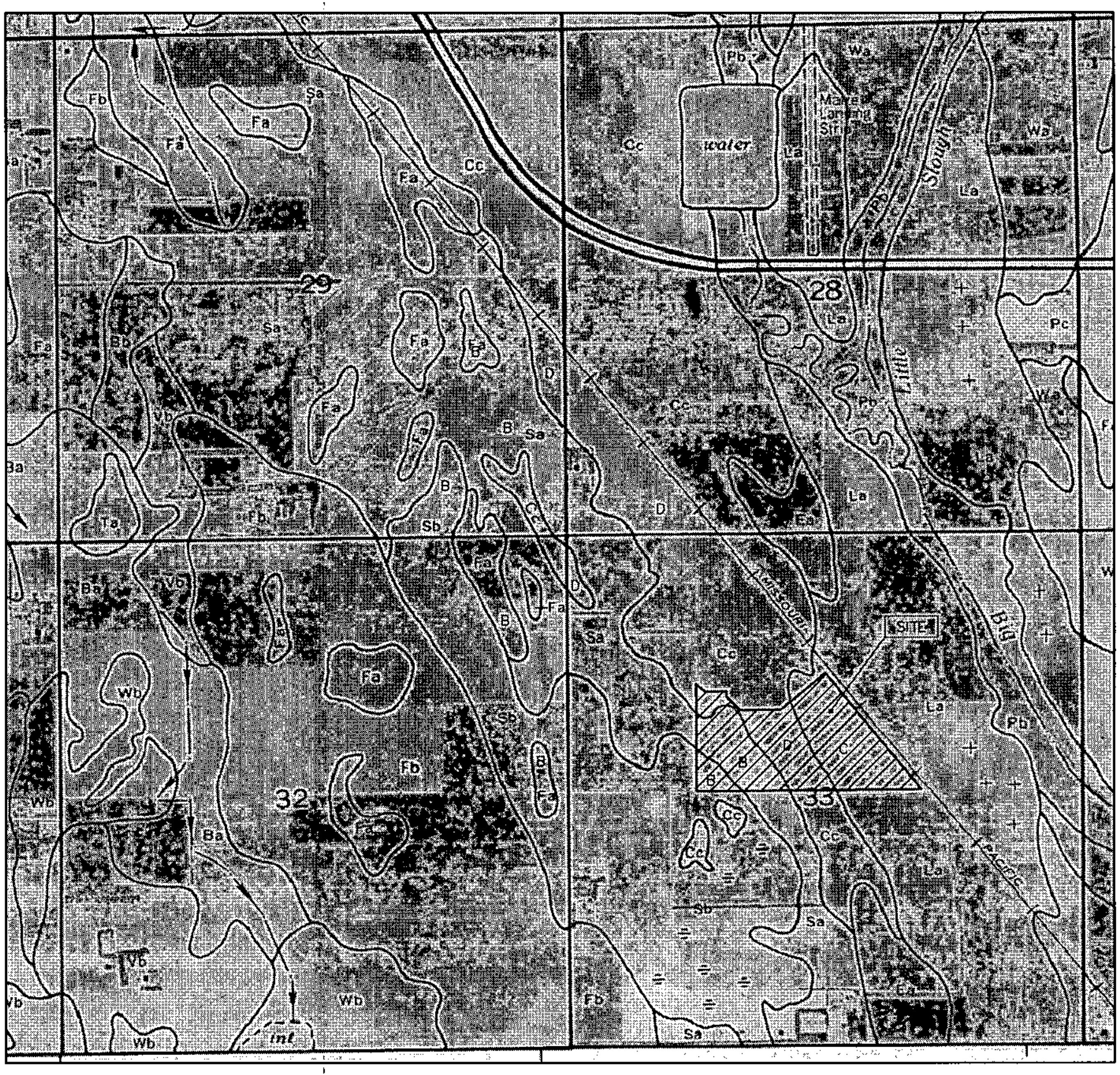
1"=2000'

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING

SCS AERIAL PHOTOGRAPH

SEDGWICK COUNTY SOIL SURVEY
FOR
TYLER'S LANDING 2ND ADDITION

Scale – 1:20000



Fa : Farnum loam – Hydrologic Group B
Sa & Sb : Shellabarger sandy loam – Hydrologic Group B
Cc : Carwile Fine Sandy Loam – Hydrologic Group D
La : Lesho Loam – Hydrologic Group C

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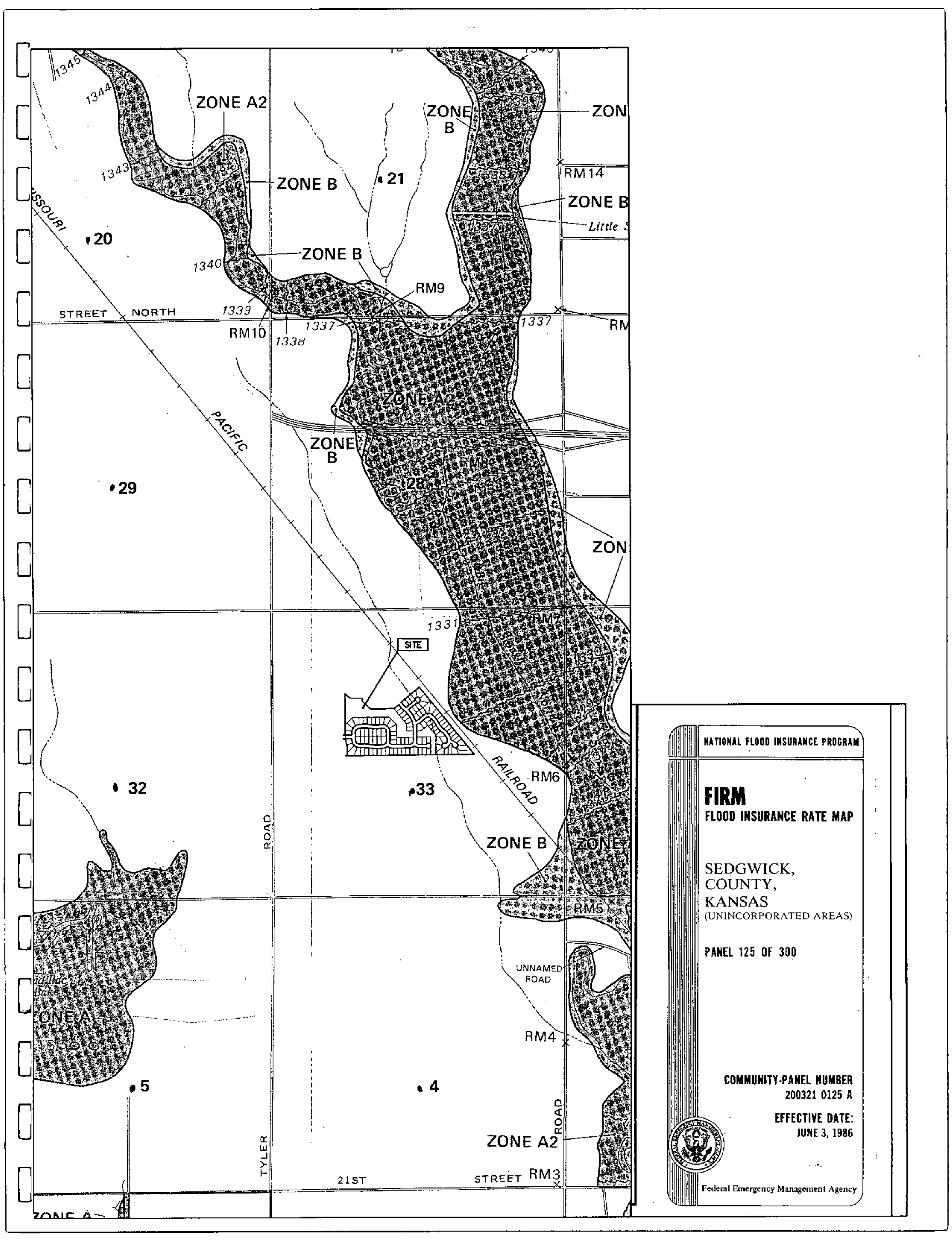
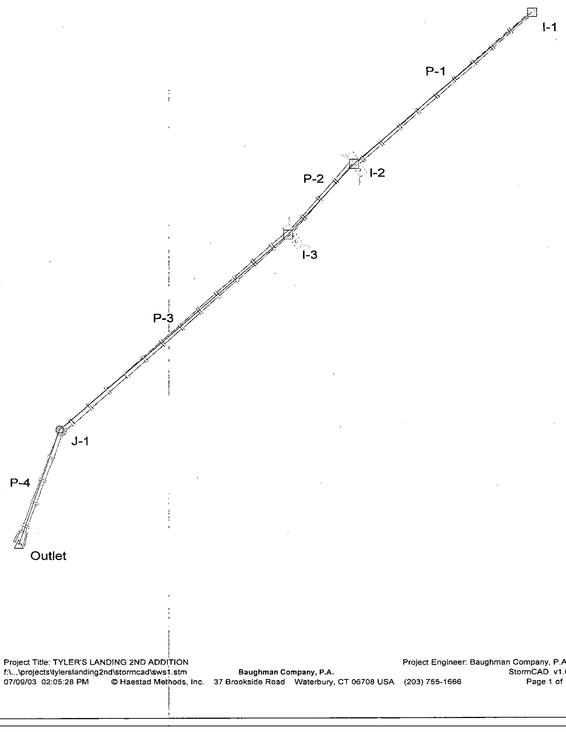
F.E.M.A. LOCATION MAP


ZONE A2
ZONE B
21
20
ZONE B
RM9
STREET NORTH
1339
RM10
1337
ZONE B
RM14
ZONE A
PACIFIC
ZONE B
29
SITE
RAILROAD
RM6
32
33
ZONE B
ROAD
RM5
UNNAMED ROAD
RM4
5
4
TYLER
ZONE A2
21ST STREET
RM3
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
SEDGWICK, COUNTY, KANSAS
(UNINCORPORATED AREAS)
PANEL 125 OF 300
COMMUNITY-PANEL NUMBER
200321 0125 A
EFFECTIVE DATE:
JUNE 3, 1986
Federal Emergency Management Agency

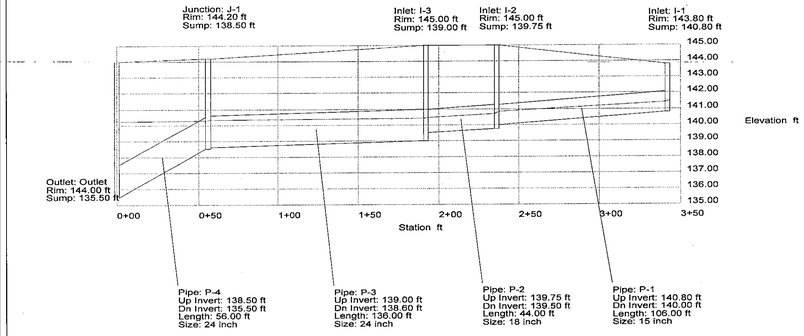
StormCad Hydraulic Calculations

SWS LINE #1


I-1
P-1
P-2
I-2
I-3
P-3
J-1
P-4
Outlet

Combined Pipe & Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet TC (min)	Weighted Roughness Coefficient	Discharge (cfs)	Section Size	Roughness	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Upstream HGL (ft)	Downstream HGL (ft)
P-1	I-1	I-2	106.00	1.04	5.00	0.46	2.20	15 inch	0.013	140.80	140.00	0.007547	143.80	145.00	141.39	140.85
P-2	I-2	I-3	44.00	1.55	5.00	0.46	5.50	18 inch	0.013	139.75	139.50	0.005682	145.00	145.00	140.67	140.46
P-3	I-3	J-1	136.00	0.46	5.00	0.46	6.50	24 inch	0.013	139.00	138.60	0.002941	145.00	144.20	140.40	140.31
P-4	J-1	Outlet	56.00	N/A	N/A	N/A	6.50	24 inch	0.013	138.50	135.50	0.053571	144.20	144.00	140.28	140.24



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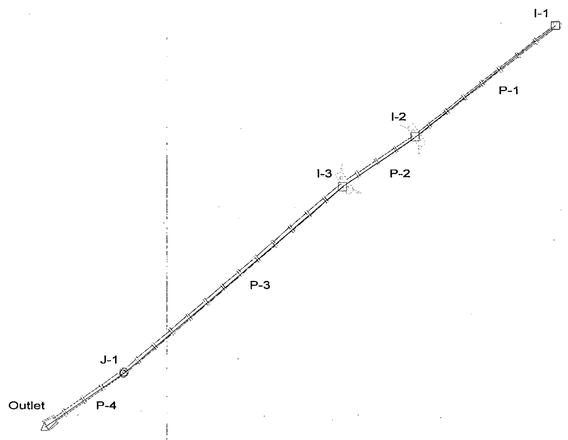
07/09/03 02:22:13 PM

Baughman Company, P.A.
 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Baughman Company, P.A.
StormCAD v1.0

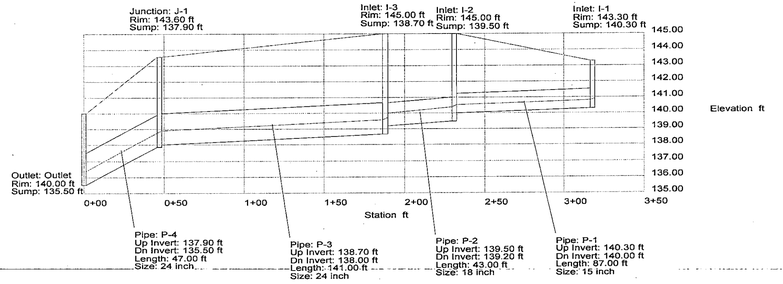
SWS LINE #2



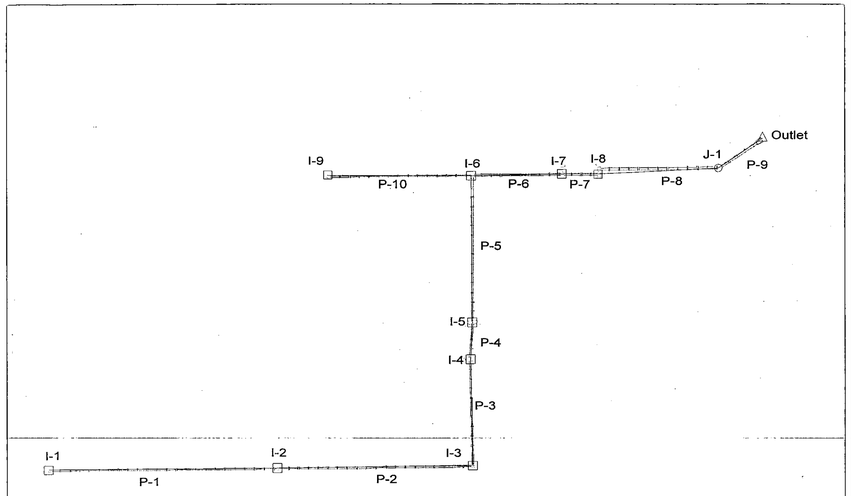
Project Title: TYLER'S LANDING 2ND ADDITION
I:\...\projects\tylerslanding2nd\stormcad\sews2.stm
07/09/03 02:31:41 PM © Haestad Methods, Inc.
Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666
Project Engineer: Baughman Company, P.A.
StormCAD v1.0
Page 1 of 1

Combined Pipe & Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet TC (min)	Weighted Roughness Coefficient	Discharge (cfs)	Section Size	Roughness	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Upstream HGL (ft)	Downstream HGL (ft)
P-1	I-1	I-2	87.00	0.73	15.00	0.46	1.50	15 inch	0.013	140.30	140.00	0.003448	143.30	145.00	140.85	140.56
P-2	I-2	I-3	43.00	1.77	15.00	0.46	5.20	18 inch	0.013	139.50	139.20	0.006977	145.00	145.00	140.38	140.03
P-3	I-3	J-1	141.00	0.46	15.00	0.46	6.20	24 inch	0.013	138.70	138.00	0.004965	145.00	143.60	139.58	138.95
P-4	J-1	Outlet	47.00	N/A	N/A	N/A	6.20	24 inch	0.013	137.90	135.50	0.051064	143.60	140.00	138.78	136.38



SWS LINE #3



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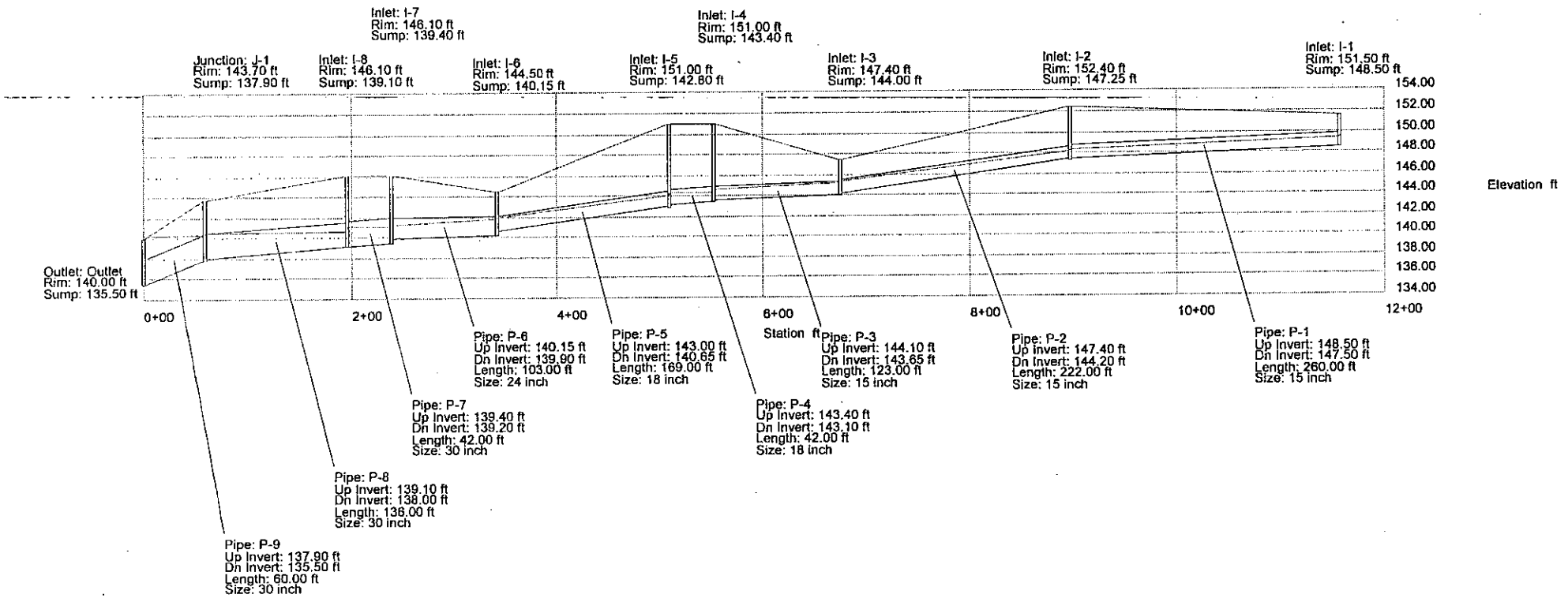
Baughman Company, P.A.

 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Baughman Company, P.A.
StormCAD v1.0

Combined Pipe & Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet TC (min)	Weighted Roughness Coefficient	Discharge (cfs)	Section Size	Roughness	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Upstream HGL (ft)	Downstream HGL (ft)
P-10	I-9	I-6	162.00	1.30	15.00	0.46	2.70	15 inch	0.013	144.10	141.00	0.019136	147.10	144.50	144.76	141.95
P-1	I-1	I-2	260.00	1.47	15.00	0.46	3.10	15 inch	0.013	148.50	147.50	0.003846	151.50	152.40	149.33	148.34
P-2	I-2	I-3	222.00	0.30	15.00	0.46	3.70	15 inch	0.013	147.40	144.20	0.014414	152.40	147.40	148.18	145.31
P-3	I-3	I-4	123.00	0.28	15.00	0.46	4.30	15 inch	0.013	144.10	143.65	0.003659	147.40	151.00	145.20	144.56
P-4	I-4	I-5	42.00	0.88	15.00	0.46	6.10	18 inch	0.013	143.40	143.10	0.007143	151.00	151.00	144.35	144.34
P-5	I-5	I-6	169.00	0.80	15.00	0.46	7.80	18 inch	0.013	143.00	140.65	0.013905	151.00	144.50	144.08	141.95
P-6	I-6	I-7	103.00	1.01	15.00	0.46	12.60	24 inch	0.013	140.15	139.90	0.002427	144.50	146.10	141.78	141.24
P-7	I-7	I-8	42.00	1.78	15.00	0.46	16.30	30 inch	0.013	139.40	139.20	0.004762	146.10	146.10	141.07	141.04
P-8	I-8	J-1	136.00	2.73	15.00	0.46	22.00	30 inch	0.013	139.10	138.00	0.008088	146.10	143.70	140.70	140.57
P-9	J-1	Outlet	60.00	N/A	N/A	N/A	22.00	30 inch	0.013	137.90	135.50	0.040000	143.70	140.00	140.41	140.24


Inlet: I-7
Rim: 146.10 ft
Sump: 139.40 ft
Inlet: I-4
Rim: 151.00 ft
Sump: 143.40 ft
Junction: J-1
Rim: 143.70 ft
Sump: 137.90 ft
Inlet: I-8
Rim: 146.10 ft
Sump: 139.10 ft
Inlet: I-6
Rim: 144.50 ft
Sump: 140.15 ft
Inlet: I-5
Rim: 151.00 ft
Sump: 142.80 ft
Inlet: I-3
Rim: 147.40 ft
Sump: 144.00 ft
Inlet: I-2
Rim: 152.40 ft
Sump: 147.25 ft
Inlet: I-1
Rim: 151.50 ft
Sump: 148.50 ft
154.00
152.00
150.00
148.00
146.00
144.00
142.00
140.00
138.00
136.00
134.00
Elevation ft
Outlet: Outlet
Rim: 140.00 ft
Sump: 135.50 ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
Station ft
Pipe: P-6
Up Invert: 140.15 ft
Dn Invert: 139.90 ft
Length: 103.00 ft
Size: 24 inch
Pipe: P-5
Up Invert: 143.00 ft
Dn Invert: 140.65 ft
Length: 169.00 ft
Size: 18 inch
Pipe: P-3
Up Invert: 144.10 ft
Dn Invert: 143.65 ft
Length: 123.00 ft
Size: 15 inch
Pipe: P-2
Up Invert: 147.40 ft
Dn Invert: 144.20 ft
Length: 222.00 ft
Size: 15 inch
Pipe: P-1
Up Invert: 148.50 ft
Dn Invert: 147.50 ft
Length: 260.00 ft
Size: 15 inch
Pipe: P-7
Up Invert: 139.40 ft
Dn Invert: 139.20 ft
Length: 42.00 ft
Size: 30 inch
Pipe: P-4
Up Invert: 143.40 ft
Dn Invert: 143.10 ft
Length: 42.00 ft
Size: 18 inch
Pipe: P-8
Up Invert: 139.10 ft
Dn Invert: 138.00 ft
Length: 136.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 137.90 ft
Dn Invert: 135.50 ft
Length: 60.00 ft
Size: 30 inch

SWS LINE #4