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```
                      MASTER DESIGN STORM SUMMARY


        Default Network Design Storm File, ID SEDGWICK.RNQ  Sedgwick24


                   Total
                   Depth    Rainfall
    Return Event    in        Type       RNF File      RNF ID
    ------------   ------  ----------------  --------   ----------------
        2y24h      3.5000  Synthetic Curve  SCSTYPES   TypeII  24hr
        5y24h      4.5000  Synthetic Curve  SCSTYPES   TypeII  24hr
       100y24      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)
```

| | | | | | | | | Max |
| | | Return | HYG Vol | | Qpeak | Qpeak | Max WSEL | Pond |
Storage Node ID	Type	Event	ac-ft	Trun	hrs	cfs	ft	ac-ft
24" CMP 5' HEAD	AREA	2	.705		12.0500	8.75		
24" CMP 5' HEAD	AREA	5	.913		12.0500	11.26		
24" CMP 5' HEAD	AREA	100	1.621		12.0500	19.80		
*BOX	JCT	2	13.225		12.3000	107.40		
*BOX	JCT	5	19.114		12.2500	158.74		
*BOX	JCT	100	40.463		12.2500	330.61		
EAST OFFSITE	AREA	2	8.568		12.2000	78.62		
EAST OFFSITE	AREA	5	12.362		12.2000	113.61		
EAST OFFSITE	AREA	100	25.993		12.2000	234.87		
NORTH	AREA	2	1.151		12.0500	15.54		
NORTH	AREA	5	1.537		12.0500	20.40		
NORTH	AREA	100	2.860		12.0500	36.71		
POND IN	POND	2	13.225		12.1500	123.59		
POND IN	POND	5	19.114		12.1500	179.87		
POND IN	POND	100	40.463		12.1500	377.90		
POND OUT	POND	2	13.225		12.3000	107.40	1345.40	1.536
POND OUT	POND	5	19.114		12.2500	158.74	1345.94	2.089
POND OUT	POND	100	40.463		12.2500	330.61	1347.43	4.045

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 ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft	Storage
PROPOSED SITE	AREA	2	.655		12.0500	9.50			
PROPOSED SITE	AREA	5	.985		12.0500	14.31			
PROPOSED SITE	AREA	100	2.213		12.0500	31.42			
WEST OFFSITE	AREA	2	2.147		12.1500	24.36			
WEST OFFSITE	AREA	5	3.317		12.1500	38.13			
WEST OFFSITE	AREA	100	7.777		12.1000	89.55			

File.... C:\HAESTAD\PPKW\RAINFALL\SEDGWICK.RNQ
Title...

                          JOB TITLE NOT SPECIFIED
            Click Project Summary on the File Menu to enter title

                          DESIGN STORMS SUMMARY

  Design Storm File,ID = SEDGWICK.RNQ Sedgwick24

  Storm Tag Name   = 2y24h

  Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
  Storm Frequency   = 2 yr
  Total Rainfall Depth= 3.5000 in
  Duration Multiplier = 1
  Resulting Duration = 24.0000 hrs
  Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

  Storm Tag Name   = 5y24h
  Description: Sedgwick County 5-yr 24 hour Duration

  Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
  Storm Frequency   = 5 yr
  Total Rainfall Depth= 4.5000 in
  Duration Multiplier = 1
  Resulting Duration = 24.0000 hrs
  Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

  Storm Tag Name   = 100y24
  Description: Sedgwick County 100-yr 24 hour Duration

  Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
  Storm Frequency   = 100 yr
  Total Rainfall Depth= 7.9000 in
  Duration Multiplier = 1
  Resulting Duration = 24.0000 hrs
  Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

              DESIGN STORMS SUMMARY

  Design Storm File,ID = SEDGWICK.RNQ   Sedgwick24

  Storm Tag Name   = 2y24h

  Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII   24hr
  Storm Frequency   = 2 yr
  Total Rainfall Depth= 3.5000 in
  Duration Multiplier = 1
  Resulting Duration = 24.0000 hrs
  Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

  Storm Tag Name   = 5y24h
  Description: Sedgwick County 5-yr 24 hour Duration

  Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII   24hr
  Storm Frequency   = 5 yr
  Total Rainfall Depth= 4.5000 in
  Duration Multiplier = 1
  Resulting Duration = 24.0000 hrs
  Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

  Storm Tag Name   = 100y24
  Description: Sedgwick County 100-yr 24 hour Duration

  Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII   24hr
  Storm Frequency   = 100 yr
  Total Rainfall Depth= 7.9000 in
  Duration Multiplier = 1
  Resulting Duration = 24.0000 hrs
  Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

File.... F:\HYDRO\PROJECTS\GOLDEN CORRAL ADDITION\PONDPACK\GOLDEN-CORRAL-EXIST.PPW

```
::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
TIME OF CONCENTRATION CALCULATOR
::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
```

Segment #1:   Tc: TR-55 Shallow

Hydraulic Length   3000.00 ft
Slope   .005000 ft/ft
Paved

Avg.Velocity   1.44 ft/sec

                                      Segment #1 Time: .5797 hrs
----

                                      =========================
                                       Total Tc: .5797 hrs
                                      =========================

```
 ------------------------------------------------------------------------
 Tc Equations used...
 ------------------------------------------------------------------------


 ==== 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\GOLDEN CORRAL ADDITION\PONDPACK\GOLDEN-CORRAL-EXIST.PPW

```
:::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
TIME OF CONCENTRATION CALCULATOR
:::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
```

Segment #1: Tc: TR-55 Shallow

Hydraulic Length 2300.00 ft
Slope   .010000 ft/ft
Unpaved

Avg.Velocity   1.61 ft/sec

                                        Segment #1 Time: .3960 hrs
----

                                        =========================
                                         Total Tc: .3960 hrs
                                        =========================

File.... F:\HYDRO\PROJECTS\GOLDEN CORRAL ADDITION\PONDPACK\GOLDEN-CORRAL-EXIST.PPW

```
 -------------------------------------------------------------------------
 Tc Equations used...
 -------------------------------------------------------------------------


 ==== 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\GOLDEN CORRAL ADDITION\PONDPACK\GOLDEN-CORRAL-EXIST.PPW


  Elevation   Planimeter   Area   A1+A2+sqr(A1*A2)  Volume    Volume Sum
    (ft)       (sq.in)    (acres)      (acres)      (ac-ft)    (ac-ft)
  ------------------------------------------------------------------------
   1343.60      -----      .7400       .0000          .000       .000
   1344.00      -----      .7700      2.2649          .302       .302
   1345.00      -----      .9300      2.5462          .849      1.151
   1346.00      -----     1.0700      2.9975          .999      2.150
   1347.00      -----     1.3900      3.6795         1.227      3.376
   1348.00      -----     2.3000      5.4780         1.826      5.202
```

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\GOLDEN CORRAL ADDITION\PONDPACK\GOLDEN-CORRAL-EXIST.PPW

REQUESTED POND WS ELEVATIONS:

          Min. Elev. =   1343.60 ft
          Increment =   .50 ft
          Max. Elev. =   1348.00 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   BX   --->   TW   1343.600   1348.000
    TW SETUP, DS Channel

File.... F:\HYDRO\PROJECTS\GOLDEN CORRAL ADDITION\PONDPACK\GOLDEN-CORRAL-EXIST.PPW

OUTLET STRUCTURE INPUT DATA

Structure ID   = BX
Structure Type   = Culvert-Box

No. Barrels   =   3
Barrel Height   =   3.00 ft
Barrel Width   =   6.00 ft
Upstream Invert   = 1343.60 ft
Dnstream Invert   = 1340.00 ft
Horiz. Length   =   160.00 ft
Barrel Length   =   160.04 ft
Barrel Slope   =   .02250 ft/ft

OUTLET CONTROL DATA...
Mannings n   =   .0130
Ke   =   .5000 (forward entrance loss)
Kb   =   .004925 (per ft of full flow)
Kr   =   .5000 (reverse entrance loss)
HW Convergence   =   .001   +/- ft

INLET CONTROL DATA...
Equation form   =   1
Inlet Control K   =   .0260
Inlet Control M   =   1.0000
Inlet Control c   =   .03850
Inlet Control Y   =   .8100
T1 ratio (HW/D)   =   1.167
T2 ratio (HW/D)   =   1.415
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 =   1347.10 ft ---> Flow =   109.12 cfs
 At T2 Elev =   1347.84 ft ---> Flow =   124.71 cfs

File.... F:\HYDRO\PROJECTS\GOLDEN CORRAL ADDITION\PONDPACK\GOLDEN-CORRAL-EXIST.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