



# **LAKE LORRAINE DRAINAGE BASIN STORMWATER SYSTEM ANALYSIS**

**OKALOOSA COUNTY  
SHALIMAR, FLORIDA**

**OCTOBER 2013**

**PREPARED FOR:**

**OKALOOSA COUNTY  
BOARD OF COUNTY COMMISSIONERS  
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OKALOOSA COUNTY, FLORIDA**

**OCTOBER 2013**

**TABLE OF CONTENTS**

|                                                                    |              |
|--------------------------------------------------------------------|--------------|
| <b>EXECUTIVE SUMMARY .....</b>                                     | <b>ES-1</b>  |
| <b>SECTION I:     CONDITION ASSESSMENT</b>                         |              |
| <b>A.     STRUCTURE AND PIPE ASSESSMENT .....</b>                  | <b>I-1</b>   |
| <b>B.     CONDITION ASSESSMENT SUMMARY .....</b>                   | <b>I-20</b>  |
| <b>SECTION II:    HYDRAULIC ASSESSMENT OF THE OUTFALL</b>          |              |
| <b>A.     INTRODUCTION .....</b>                                   | <b>II-1</b>  |
| <b>B.     HYDRAULIC SUMMARY OF DOWNSTREAM SYSTEMS .....</b>        | <b>II-1</b>  |
| 1.    EXISTING CONDITIONS .....                                    | II-1         |
| 2.    MODIFICATION #1 .....                                        | II-3         |
| 3.    MODIFICATION #2 .....                                        | II-3         |
| 4.    MODIFICATION #3 .....                                        | II-4         |
| 5.    FINAL HYDRAULIC ANALYSIS.....                                | II-5         |
| <b>C.     OUTFALL ASSESSMENT SUMMARY.....</b>                      | <b>II-7</b>  |
| <b>SECTION III:   HYDRAULIC ASSESSMENT OF PIPES AND STRUCTURES</b> |              |
| <b>A.     INTRODUCTION .....</b>                                   | <b>III-1</b> |
| <b>B.     EXISTING PIPE CAPACITY .....</b>                         | <b>III-1</b> |
| <b>C.     EXISTING PIPE CONDITION.....</b>                         | <b>III-3</b> |
| <b>D.     PIPE REPLACEMENT RECOMMENDATIONS.....</b>                | <b>III-4</b> |
| <b>E.     STRUCTURE MODIFICATION RECOMMENDATIONS .....</b>         | <b>III-4</b> |
| <b>F.     OVERALL SYSTEM ASSESSMENT SUMMARY .....</b>              | <b>III-8</b> |

**LIST OF APPENDICES**

|                          |                                     |
|--------------------------|-------------------------------------|
| <b>APPENDIX A: .....</b> | <b>SITE LOCATION MAP</b>            |
| <b>APPENDIX B: .....</b> | <b>EXISTING CONDITIONS PLAN SET</b> |
| <b>APPENDIX C: .....</b> | <b>STORMWATER BASIN MAP</b>         |
| <b>APPENDIX D: .....</b> | <b>ICPR MONDEL RESULTS</b>          |
| <b>APPENDIX E: .....</b> | <b>NRCS RUNOFF CURVE NUMBERS</b>    |



## EXECUTIVE SUMMARY

The Lake Lorraine drainage system consists of the Lake Lorraine Phase III subdivision and portions of the Shalimar Pointe Golf Course draining to Lake Lorraine. The system was designed and constructed in the early-to-late 1970's and consists of a primary stormwater piping system that flows from north-to-south through the center of the Lake Lorraine Phase III subdivision, with secondary conveyance pipes connecting to the primary piping system as it flows to the south. The primary piping system outfalls to a wet-detention pond, Pond #1, and then the stormwater flows through a system of weirs and culverts before ultimately discharging to Lake Lorraine. A site location map is included herein as **Appendix A**.

Localized flooding has been reported by residents during storm events and the purpose of the Lake Lorraine Drainage System Analysis is to determine the source of this flooding and identify improvements to the system which will alleviate the flooding.

## SECTION I: CONDITION ASSESSMENT

The Lake Lorraine Drainage System Analysis is comprised of three distinct assessment phases. The first phase presented in **Section I** consists of a condition assessment which analyzes the existing pipes and structures and their physical condition. This assessment is based on a combination of field observations and video-scoping to identify pipe conditions and provide a replacement recommendation for the deteriorated pipes and inlets within the pipe network.

The majority of the piping throughout the stormwater system is corrugated metal pipe (CMP) and the condition of most of the CMP in the north end of the drainage basin have notable rust and bottom corrosion. The CMP pipes in the southern portion of the basin area remain in a submerged condition most of the year and have outlived their service life; therefore, the pipes show significant signs of corrosion, rust, and bottom deterioration. The sediment and debris noted in most of the pipes and structures consists primarily of lawn clippings and sediment build-up associated with pipe damage. Some isolated areas of concrete and timber were also found.

During the inspection process, it was noted that residents throughout the neighborhood place their lawn trimmings and bags of lawn debris on top of the drainage structures. In several cases the lawn debris, including bags and limbs, was stacked over and on top of the inlet openings preventing the stormwater from accessing the structures. The leaves and limbs have also been washing into the structures, adding to the sediment and debris issues noted during the video inspection. It is recommended that the residents place their lawn trimmings away from the storm structures to alleviate some of this concern. Each street averages two curb inlets and the inlets were blocked on several occasions by lawn debris and trimmings which further add to the drainage issues and periodic flooding.

There were also a few non-permitted connections to the CMP from various residences. In most cases, a top penetration was noted in the pipe, but the source was not readily identified. The connections were not made using the proper gaskets or other appropriate measures to ensure the connection was watertight and to protect the pipe from rust and deterioration. Water intrusion at the non-permitted connections has added to the corrosion issues at the entrance points and appears to have further weakened the CMP pipes. It is recommended that all non-permitted connections be removed and pipes repaired until the County can replace the pipes in the future. Roof drains connected into the piping system should be directed to the nearest inlet via gutter extensions and spill pads.

## SECTION II: HYDRAULIC ASSESSMENT OF THE OUTFALL

The second phase presented in **Section II** comprises an outfall assessment model of the drainage system using the Stream Technologies modeling software *Interconnected Channel and Pond Routing Model (ICPR)* to assess the hydraulic capacity of the existing system. The purpose of the ICPR hydraulic modeling is to help determine if the system is flooding due to downstream conditions, a lack of pipe capacity, or other capacity related issues, such as inlet opening sizes.

As outlined in **Section II**, the first step of the outfall assessment is to model the drainage system assuming all the existing pipe sizes are to remain and the system is operating in an ideal state with no sediment or deterioration in the structures, pipes, or ponds. The ICPR analysis performed in **Section II** identified flooding in several nodes throughout the system for the Florida Department of Transportation (FDOT) 10yr-2hr storm. The nodes identified are consistent with the areas that flooding has been reported.

Once the nodes where flooding occurred are identified, the next step is to remove downstream parameters on the system that could possibly be adding additional tailwater to the system to determine the source of the flooding. The modifications started by removing the existing weir (S-34) located south of Pond #1 as shown in **Exhibit 11** in **Section II**. The removal of the weir did not alleviate the flooding north of Pond #1 and did not have any measurable impact on the upstream pipe system.

The downstream systems were further modified removing the existing downstream culverts to allow for the water to flow more freely and effectively lower the pond elevations. Neither Modifications #2 or #3 had an appreciable effect on the upstream systems.

The final analysis outlined in **Section II** is to remove all the ponds (Ponds #1, #2, and #3) and the downstream wetlands from the model to confirm the assumption that the existing restrictions are upstream and related to pipe and structure sizes. This option allows for the system to be modeled so that the water flows freely from the pipe end flowing into Pond #1 with no tailwater. This final analysis confirmed that the downstream pond systems do not cause the upstream flooding, and the lack of upstream pipe capacity and structure opening restrictions are the sources of the flooding.

## SECTION III: HYDRAULIC ASSESSMENT OF PIPES AND STRUCTURES

The third phase presented in **Section III** constitutes an analysis of the existing pipe capacity in the system to determine if there are any constrained conveyance areas which are creating upstream flooding and recommendations as to which pipes may be replaced with larger pipes to improve conveyance volume.

In summary, the localized flooding is a result of the existing pipes within the subdivision not having enough capacity to convey the flow to the pond systems. In addition to the deficient pipe sizes, the structure openings are often inadequate for the contributing flow. By modifying the structures and increasing the pipe sizes, the localized flooding may be eliminated for the 10yr-2hr storm event.

In consideration of the condition of the existing pipes and stormwater structures and the hydraulic analysis, the recommended pipe replacement summary is provided in **Table ES-1** and the recommended structure improvements are provided in **Table ES-2**.

| Table ES-1: Pipe Replacement Summary |                                        |          |                               |                 |          |            |         |                      |                                    |                |           |                  |       | Legend               |                                   |                              |                       |
|--------------------------------------|----------------------------------------|----------|-------------------------------|-----------------|----------|------------|---------|----------------------|------------------------------------|----------------|-----------|------------------|-------|----------------------|-----------------------------------|------------------------------|-----------------------|
|                                      |                                        |          |                               |                 |          |            |         |                      |                                    |                |           |                  |       |                      | Delete Structure                  |                              |                       |
|                                      |                                        |          |                               |                 |          |            |         |                      |                                    |                |           |                  |       |                      | Replace Pipe Due to Capacity      |                              |                       |
|                                      |                                        |          |                               |                 |          |            |         |                      |                                    |                |           |                  |       |                      | Replace Pipe Due to Deterioration |                              |                       |
|                                      |                                        |          |                               |                 |          |            |         |                      |                                    |                |           |                  |       |                      | No Replacement Required           |                              |                       |
| Report Name:                         | Lake Lorraine Drainage System Analysis |          |                               |                 |          |            |         | Owner:               | Okaloosa County Public Works       |                |           |                  |       |                      |                                   |                              |                       |
| Report Date:                         | October 2013                           |          |                               |                 |          |            |         | Project Description: | Lake Lorraine Condition Assessment |                |           |                  |       |                      |                                   |                              |                       |
|                                      |                                        |          |                               |                 |          |            |         | Prepared by:         | Tonia D. Nation, P.E.              |                |           |                  |       |                      |                                   |                              |                       |
| Name                                 | Basin Name                             | Shape    | Recom-<br>mended<br>Size (in) | No. of<br>Pipes | Material | US<br>Node | DS Node | US Invert (ft)       | DS Invert (ft)                     | Length<br>(ft) | Slope (%) | Area<br>(Single) | N     | Velocity<br>(ft/sec) | Q (cfs)<br>Flowing<br>Full        | Q (CFS)<br>10yr-2hr<br>Storm | Available<br>Capacity |
| P-1                                  | Basin S-1                              | Circular | 18                            | 1               | RCP      | S-1        | S-2     | 17.55                | 17.13                              | 31             | 1.38%     | 1.7671           | 0.012 | 7.60                 | 13.42                             | 8.33                         | 5.09                  |
| P-2                                  | Basin S-2                              | Circular | 36                            | 1               | CPP      | S-2        | S-3     | 17.13                | 15.9                               | 204            | 0.60%     | 7.0686           | 0.022 | 4.35                 | 30.72                             | 16.21                        | 14.51                 |
| P-3                                  | Basin SW-1                             | Circular | 36                            | 1               | CPP      | S-4        | S-5     | 15.49                | 15.05                              | 195            | 0.23%     | 7.0686           | 0.022 | 2.66                 | 18.78                             | 16.33                        | 2.45                  |
| P-4                                  | Basin SW-2                             | Circular | 30                            | 1               | CPP      | S-6        | S-7     | 15.56                | 15.37                              | 20             | 0.94%     | 4.9087           | 0.022 | 4.81                 | 23.59                             | 16.46                        | 7.13                  |
| P-5                                  | Basin SW-3                             | Circular | 36                            | 1               | CMP      | S-8        | S-10    | 15.59                | 14.05                              | 307            | 0.50%     | 7.0686           | 0.022 | 3.96                 | 27.99                             | 25.51                        | 2.48                  |
| P-6                                  | Basin SW-4                             | Circular | 30                            | 1               | CPP      | S-13       | S-14    | 14.41                | 14.08                              | 5              | 6.76%     | 4.9087           | 0.022 | 12.87                | 63.20                             | 30.93                        | 32.27                 |
| P-7                                  | Basin S-11                             | Circular | 30                            | 1               | CPP      | S-11       | S-12    | 16.01                | 15.25                              | 608            | 0.13%     | 4.9087           | 0.022 | 1.75                 | 8.59                              | 5.42                         | 3.17                  |
| P-8                                  | Junction                               | Circular | 36                            | 1               | RCP      | S-14       | S-15    | 13.9                 | 13.3                               | 143            | 0.42%     | 7.0686           | 0.012 | 6.64                 | 46.92                             | 30.93                        | 15.99                 |
| P-9                                  | Basin S-15                             | Circular | 36                            | 1               | RCP      | S-15       | S-16    | 13.19                | 13.05                              | 31             | 0.45%     | 7.0686           | 0.012 | 6.88                 | 48.60                             | 37.16                        | 11.44                 |
| P-10                                 | Basin S-16                             | Circular | 42                            | 1               | RCP      | S-16       | S-17    | 12.86                | 12.1                               | 269            | 0.28%     | 9.6211           | 0.012 | 6.04                 | 58.10                             | 43.47                        | 14.63                 |
| P-11                                 | Basin S-17                             | Circular | 48                            | 1               | RCP      | S-17       | S-18    | 12                   | 11.64                              | 50             | 0.72%     | 12.5664          | 0.012 | 10.55                | 132.53                            | 52.07                        | 80.46                 |
| P-12                                 | Basin S-18                             | Circular | 36                            | 2               | RCP      | S-18       | S-19    | 11.55                | 10.82                              | 263            | 0.28%     | 7.0686           | 0.012 | 5.40                 | 76.29                             | 58.48                        | 17.81                 |
| P-13                                 | Basin S-19                             | Circular | 48                            | 1               | RCP      | S-19       | S-20    | 10.72                | 10.6                               | 54             | 0.22%     | 12.5664          | 0.012 | 5.83                 | 73.30                             | 66.48                        | 6.82                  |
| P-14                                 | Basin S-20                             | Circular | 48                            | 1               | RCP      | S-20       | S-21    | 10.6                 | 10.3                               | 131            | 0.23%     | 12.5664          | 0.012 | 5.94                 | 74.60                             | 72.49                        | 2.11                  |
| P-15                                 | Junction                               | Circular | 48                            | 2               | RCP      | S-21       | S-22    | 10.3                 | 10.2                               | 33             | 0.30%     | 12.5664          | 0.012 | 6.85                 | 172.28                            | 72.49                        | 99.79                 |
| P-16                                 | Basin S-30                             | Circular | 24                            | 1               | RCP      | S-30       | S-24    | 13.22                | 12.9                               | 31             | 1.03%     | 3.1416           | 0.012 | 7.95                 | 24.97                             | 3.15                         | 21.82                 |
| P-17                                 | Junction                               | Circular | 48                            | 1               | RCP      | S-22       | S-23    | 10.2                 | 9.66                               | 134            | 0.40%     | 12.5664          | 0.012 | 7.85                 | 98.68                             | 72.49                        | 26.19                 |
| P-18                                 | Delete Junction                        | N/A      | N/A                           | N/A             | N/A      | N/A        | N/A     | N/A                  | N/A                                | N/A            | N/A       | N/A              | N/A   | N/A                  | N/A                               | N/A                          | N/A                   |
| P-19                                 | Basin S-24                             | Circular | 36                            | 2               | RCP      | S-24       | S-25    | 9.66                 | 8.1                                | 189            | 0.83%     | 7.0686           | 0.012 | 9.32                 | 131.70                            | 79.98                        | 51.72                 |
| P-20                                 | Basin S-25                             | Circular | 36                            | 2               | RCP      | S-25       | S-26    | 8.02                 | 6.71                               | 343            | 0.38%     | 7.0686           | 0.012 | 6.34                 | 89.57                             | 92.15                        | (2.58)                |
| P-21                                 | Basin S-26                             | Circular | 36                            | 3               | RCP      | S-26       | S-28    | 6.71                 | 5.13                               | 66             | 1.76%     | 7.0686           | 0.012 | 13.58                | 287.99                            | 107.08                       | 180.91                |
| P-22                                 | Delete Junction                        | N/A      | N/A                           | N/A             | N/A      | N/A        | N/A     | N/A                  | N/A                                | N/A            | N/A       | N/A              | N/A   | N/A                  | N/A                               | N/A                          | N/A                   |
| P-23                                 | Junction                               | Circular | 36                            | 3               | RCP      | S-28       | S-29    | 5.54                 | 5.13                               | 25             | 1.64%     | 15.9043          | 0.012 | 17.18                | 273.17                            | 107.08                       | 166.09                |
| P-24                                 | Basin S-31                             | Circular | 18                            | 1               | RCP      | S-31       | S-26    | 12.26                | 12.16                              | 32             | 0.31%     | 1.7671           | 0.012 | 3.62                 | 6.40                              | 3.05                         | 3.35                  |
| P-25                                 | Basin S-32                             | Circular | 18                            | 1               | RCP      | S-32       | S-33    | 12.78                | 12.92                              | 30             | 0.50%     | 1.7671           | 0.012 | 4.57                 | 8.07                              | 3.91                         | 4.16                  |
| P-26                                 | Basin S-33                             | Circular | 24                            | 1               | RCP      | S-33       | S-26    | 12.46                | 11.18                              | 416            | 0.31%     | 3.1416           | 0.012 | 4.34                 | 13.63                             | 9.21                         | 4.42                  |
| P-27                                 | Pond #2<br>Equalizing Pipe             | Circular | 36                            | 2               | RCP      | S-35       | S-36    | 2.23                 | 2.21                               | 89             | 0.02%     | 7.0686           | 0.012 | 1.54                 | 21.77                             | 21.77                        | 0.00                  |
| P-28                                 | Pond #2                                | Circular | 36                            | 2               | RCP      | S-37       | S-38    | 7.6                  | 7.35                               | 40             | 0.62%     | 7.0686           | 0.012 | 8.66                 | 122.49                            | 41.44                        | 81.05                 |
| P-29                                 | Pond #3                                | Circular | 36                            | 1               | CPP      | S-39       | S-40    | 7.03                 | 5.67                               | 66             | 2.06%     | 7.0686           | 0.022 | 8.03                 | 56.76                             | 22.26                        | 34.50                 |
| P-30                                 | Pond #3                                | Circular | 36                            | 1               | CPP      | S-41       | S-42    | 6.5                  | 5.62                               | 66             | 1.33%     | 7.0686           | 0.022 | 6.46                 | 45.66                             | 22.26                        | 23.40                 |
| P-31                                 | Outfall                                | Circular | 48                            | 1               | RCP      | S-43       | S-44    | 3.66                 | 3.52                               | 39             | 0.36%     | 12.5664          | 0.012 | 3.56                 | 44.78                             | 43.11                        | 1.67                  |

| Report Name: Recommended Structure Improvements |                                    |                                                                                                                                                                                                      |               |              |              |
|-------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|--------------|
| Legend                                          |                                    | <div>Owner: Okaloosa County Public Works</div> <div>Project Description: Lake Lorraine Condition Assessment</div> <div>Prepared by: Tonia D. Nation, P.E.</div> <div>Report Date: October 2013</div> |               |              |              |
| Delete Structure                                |                                    |                                                                                                                                                                                                      |               |              |              |
| Replace Structure Due to Capacity               |                                    |                                                                                                                                                                                                      |               |              |              |
| Replace Pipe Due to Deterioration               |                                    |                                                                                                                                                                                                      |               |              |              |
| No Replacement Required                         |                                    |                                                                                                                                                                                                      |               |              |              |
|                                                 |                                    |                                                                                                                                                                                                      |               |              |              |
| Structure                                       | Existing Type                      | Recommended Modification                                                                                                                                                                             | Northing (ft) | Easting (ft) | Pipes        |
| S-1                                             | Field Formed Inlet                 | Replace with Type F DBI                                                                                                                                                                              | 532356        | 1321107.23   | P-1          |
| S-2                                             | Field Formed Inlet                 | Replace with Type F DBI                                                                                                                                                                              | 532326.58     | 1321099.75   | P-1<br>P-2   |
| S-3                                             | Pipe End- No Structure             | 36" MES                                                                                                                                                                                              | 532123.29     | 1321089.94   | P-2          |
| S-4                                             | Pipe End- No Structure             | 36"" MES                                                                                                                                                                                             | 532083.15     | 1321090.12   | P-3          |
| S-5                                             | Pipe End- No Structure             | 36"" MES                                                                                                                                                                                             | 531893.5      | 1321134.46   | P-3          |
| S-6                                             | Pipe End- No Structure             | 30"" MES                                                                                                                                                                                             | 531783        | 1321257.71   | P-4          |
| S-7                                             | Pipe End- No Structure             | 30"" MES                                                                                                                                                                                             | 531762.92     | 1321259.52   | P-4          |
| S-8                                             | Pipe End- No Structure             | 36" MES                                                                                                                                                                                              | 531625.95     | 1321312.76   | P-5          |
| S-9                                             | Number not used.                   |                                                                                                                                                                                                      |               |              |              |
| S-10                                            | Pipe End- No Structure             | 30" MES                                                                                                                                                                                              | 531405.46     | 1321118.22   | P-6          |
| S-11                                            | FDOT Type C DBI                    | No Change                                                                                                                                                                                            | 531265.96     | 1321716.95   | P-7          |
| S-12                                            | Pipe End- No Structure             | 30" MES                                                                                                                                                                                              | 531403.11     | 1321125      | P-7          |
| S-13                                            | Pipe End- No Structure             | 24" MES                                                                                                                                                                                              | 531406.38     | 1321089.97   | P-16         |
| S-14                                            | FDOT Standard Manhole w/ Solid Top | No Change                                                                                                                                                                                            | 531409.09     | 1321085.91   | P-8<br>P-6   |
| S-15                                            | FDOT Curb Inlet                    | Replace top w/ Type 4 Curb Inlet (Symetrical)                                                                                                                                                        | 531295.91     | 1320998.45   | P-8<br>P-9   |
| S-16                                            | FDOT Curb Inlet                    | Replace Top w/ FDOT Type 4 (symetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                                 | 531271.05     | 1320979.74   | P-9<br>P-10  |
| S-17                                            | FDOT Curb Inlet                    | Replace Top w/ FDOT Type 4 (symetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                                 | 531056.86     | 1320817.08   | P-10<br>P-11 |
| S-18                                            | FDOT Curb Inlet                    | Replace Top w/ FDOT Type 4 (symetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                                 | 531049.04     | 1320767.79   | P-11<br>P-12 |
| S-19                                            | FDOT Curb Inlet                    | Replace Top w/ FDOT Type 4 (symetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                                 | 530839.54     | 1320608.26   | P-12<br>P-13 |
| S-20                                            | FDOT Curb Inlet                    | Replace Top w/ FDOT Type 4 (symetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                                 | 530836.09     | 1320553.99   | P-13<br>P-14 |
| S-21                                            | FDOT Type C                        | Replace with Type G DBI                                                                                                                                                                              | 530730.87     | 1320475.56   | P-14<br>P-15 |
| S-22                                            | FDOT Type C                        | Replace with Type G DBI                                                                                                                                                                              | 530709.69     | 1320500.63   | P-17<br>P-15 |



| Report Name: Recommended Structure Improvements |                        |                                                                                                                                                                                               |               |              |                              |
|-------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------------------|
| Legend                                          |                        | <b>Owner:</b> Okaloosa County Public Works<br><b>Project Description:</b> Lake Lorraine Condition Assessment<br><b>Prepared by:</b> Tonia D. Nation, P.E.<br><b>Report Date:</b> October 2013 |               |              |                              |
| Delete Structure                                |                        |                                                                                                                                                                                               |               |              |                              |
| Replace Structure Due to Capacity               |                        |                                                                                                                                                                                               |               |              |                              |
| Replace Pipe Due to Deterioration               |                        |                                                                                                                                                                                               |               |              |                              |
| No Replacement Required                         |                        |                                                                                                                                                                                               |               |              |                              |
| Structure                                       | Existing Type          | Recommended Modification                                                                                                                                                                      | Northing (ft) | Easting (ft) | Pipes                        |
| S-23                                            | FDOT Curb Inlet        | Remove Structure                                                                                                                                                                              | 530602.51     | 1320420.12   | P-17<br>P-18                 |
| S-24                                            | FDOT Curb Inlet        | Replace Top w/ FDOT Type 4 (symmetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                         | 530598.04     | 1320425.62   | P-18<br>P-19<br>P-24         |
| S-25                                            | FDOT Curb Inlet        | Replace Top w/ FDOT Type 4 (symmetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                         | 530436.32     | 1320523.14   | P-19<br>P-20                 |
| S-26                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                     | 530278.34     | 1320218.84   | P-20<br>P-21<br>P-24<br>P-26 |
| S-27                                            | Structure Type Unknown | Remove Structure                                                                                                                                                                              | 530265.82     | 1320223.1    | P-21<br>P-22                 |
| S-28                                            | Structure Type Unknown | Type F DBI Top Type J AltB Bottom (14'-6" x 4'-0")                                                                                                                                            | 530249.18     | 1320277.84   | P-22<br>P-23                 |
| S-29                                            | Endwall                | (3) 36" Endwall                                                                                                                                                                               | 530225.51     | 1320286.11   | P-23                         |
| S-30                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                     | 530573.75     | 1320406.95   | P-16                         |
| S-31                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                     | 530309.31     | 1320211.61   | P-24                         |
| S-32                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                     | 530336.62     | 1319806.79   | P-25                         |
| S-33                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                     | 530306.47     | 1319803.84   | P-25<br>P-26                 |
| S-34                                            | Weir                   | No Change                                                                                                                                                                                     |               |              | NA                           |
| S-35                                            | Pipe End- No Structure | 36" MES                                                                                                                                                                                       | 529712.09     | 1320105.79   | P-27                         |
| S-36                                            | Pipe End- No Structure | 36" MES                                                                                                                                                                                       | 529647.04     | 1320045.65   | P-27                         |
| S-37                                            | MES                    | 36" MES                                                                                                                                                                                       | 529701.52     | 1320070.89   | P-28                         |
| S-38                                            | MES                    | 36" MES                                                                                                                                                                                       | 529670.39     | 1320045.37   | P-28                         |
| S-39                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                               | 529515.23     | 1319791.15   | P-29                         |
| S-40                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                               | 529522.84     | 1319769.64   | P-29                         |
| S-41                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                               | 529459.93     | 1319749.94   | P-30                         |
| S-42                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                               | 529459.93     | 1319749.94   | P-30                         |
| S-43                                            | Endwall                | Replace w/ 48" Endwall                                                                                                                                                                        | 529095.95     | 1319548.27   | P-31                         |
| S-44                                            | Endwall                | Replace w/ 48" Endwall                                                                                                                                                                        | 529056.71     | 1319550.38   | P-31                         |

**SECTION I**

**CONDITION ASSESSMENT**

## SECTION I: CONDITION ASSESSMENT

This section provides an inventory of the existing stormwater pipes and structures as well as a condition assessment of the stormwater systems associated with Lake Lorraine drainage system as described above. The assessment addresses the existing stormwater conveyance system including stormwater pipes, inlets, and contributing swales. Sizing recommendations are included in the hydraulic analysis in **Section III**.

The initial phase of this assessment involved the verification of the existing site conditions. The land surveyor, Rare Earth, Inc. of Niceville, FL, surveyed the existing stormwater pipes, inlets, ponds and swales associated with the drainage system from May 7 to June 6, 2012. The surveyor was also tasked with preparing an existing condition survey of the primary stormwater infrastructure associated with this basin. Pipe locations, sizes, and a limited condition assessment based on field observations were also prepared.

Mr. Rooter Plumbing of NW Florida was contracted to video-scope the accessible stormwater pipes to help determine the condition of the stormwater pipes; they were onsite from June 2 to June 12, 2012. Mr. Rooter was onsite and completed the video scoping during periods of intense rain. The pipes were in a tailwater condition with higher-than-average water levels for most of the video inspection period.

After receiving both the survey and the video scoping documentation, a comprehensive inventory and condition assessment of the stormwater system was prepared. Below is a summary of the structures and pipes that serve as the primary conveyance system for the drainage basin. The replacement assessment based on the condition of the structures and pipes can be found in **Section III**.

The following is a legend of standard abbreviations that may be used to describe the different pipe materials and stormwater structures throughout this section.

| Standard Abbreviations               |      |
|--------------------------------------|------|
| Corrugated Metal Pipe                | CMP  |
| Corrugated Polyethylene Pipe         | CPP  |
| Reinforced Concrete Pipe             | RCP  |
| Mitered End Section                  | MES  |
| Ditch Bottom Inlet                   | DBI  |
| Florida Department of Transportation | FDOT |

### A. STRUCTURE AND PIPE ASSESSMENT

**Appendix A** depicts the stormwater conveyance system limits evaluated in this assessment. **Appendix C** includes a detailed plan set highlighting the structures and pipes summarized below:

**STRUCTURE:** S-1  
**CONNECTING PIPES:** P-1 (15-in Downstream)

**Structure Top Condition:** S-1 appears to be a field-constructed inlet, comparable in size to an FDOT Type C ditch bottom inlet, with a weir adjacent to the curb to promote positive drainage. The curb and face of the field constructed inlet appear to be in disrepair. The inlet appears to be undersized for the drainage area. An evaluation of sizing will be addressed further in the hydraulic study.



**Structure Bottom Condition:** The video inspection revealed no visible structural concerns inside the structure

**Pipe Condition:** P-1 is a 15-in corrugated metal pipe (CMP) and appears to be in fair condition with limited rust or bottom deterioration.

Figure 1





**STRUCTURE:** S-2  
**CONNECTING PIPES:** P-1 (15-in Upstream), P-2 (36-in Downstream)

**Structure Top Condition:** The inlet is a field-constructed nonstandard structure with grate that does not appear to be original to the structure and does not seat into the structure top as typically found with standard FDOT catch basins. The inlet is approximately 24-in x 18-in but does not meet any standard FDOT ditch bottom inlet sizes. It appears that water intrusion has started to undermine the curb and pavement adjacent to the structure.

**Structure Bottom Condition:** The video inspection noted no visible structural concerns inside the structure. The inlet appears to be undersized for the pipe and only has about a 24-in opening connecting to a 36-in pipe.



**Pipe Condition:** The downstream pipe P-2 is approximately two inches below the top of the structure's rim and only has approximately four to eight inches of cover over the pipe. The video inspection noted that pipe P-2 appears to be in fair condition but has been distorted in size due to the lack of cover. The sizing is addressed further in **Section III** and the structure replacement recommendation is identified in **Appendix B**.

**STRUCTURE:** S-3  
**CONNECTING PIPES:** P-2 (36-in Upstream),  
Golf Course Swale (Downstream)

**End Treatment Condition:** P-2 is a 36-in CMP conveyance pipe flowing to a golf course swale with no terminating structure on the southern-end of the pipe; therefore the pipe end shall be referred to as S-3. Typically conveyance pipes are terminated into ponds or swale through the use of a Mitered End Section (MES) or endwall which protects the end of the pipe from damage. The proximity of the end treatments to the swale would suggest that MES would be appropriate in this application.

**STRUCTURES:** S-4 and S-5 (Pipe Ends for P-3)  
**CONNECTING PIPE:** P-3 (24-in)

**End Treatment Condition:** P-3 is a conveyance pipe with no structures on either end of the pipe. The north and south pipe ends are referred to as S-4 and S-5, respectively. The proximity of the end treatments to the swale would suggest that MES would be appropriate in this application.

**Pipe Condition:** Pipe P-3 is a 24-in CPP and minimal sediment was observed in the accessible ends of the pipe. The pipe appeared to be in good condition but the pipe should be upsized based on the flows from upstream as summarized in **Section III**.

Figure 2



**STRUCTURES:** S-6 and S-7 (Pipe Ends for P-4)  
**CONNECTING PIPE:** P-4 (30-in)

**End Treatment Condition:** Pipe P-4 has no structures on either end of the pipe. The north and south pipe ends are referred to as S-6 and S-7, respectively. The proximity of the end treatments to the swale would suggest that MES would be appropriate in this application.

**Pipe Condition:** Pipe P-4 is a 30-in CMP conveyance pipe and minimal sediment was observed in the accessible ends of the pipe. Rust and bottom corrosion was observed in the ends of the pipe and the pipe should be replaced as summarized in **Section III**.



**STRUCTURES:** S-8 and S-10 (Pipe Ends for P-5)  
**CONNECTING PIPE:** P-5 (24-in – 30-in)

**End Treatment Condition:** Pipe P-5 has no structures on either end of the pipe. The north and south pipe ends are referred to as S-6 and S-7, respectively. The proximity of the end treatments to the swale would suggest that MES would be appropriate in this application.

**Pipe Condition:** Pipe P-5 is a 30-in CMP and has lost its shape over the years and exhibits a slight elliptical shape. P-5 transitions to a 24-in CPP approximately 25 feet from S-8. The 24-in span extends approximately 24 feet before transitioning back to 30-in CMP. This could be a result of cover concerns due to the varied terrain along Hole #4 of the golf course. Rust and bottom deterioration with ground penetrations were observed through the 30-in pipe sections and the pipe should be replaced as summarized in **Section III**.

**STRUCTURE:** S-9  
**CONNECTING PIPE:** P-5 (24-in – 30-in)

**Structure Condition:** The survey identified a change in direction in P-5 yet no structure was located. It is recommended to have a stormwater inlet at junctions where the stormwater pipes change direction to minimize sediment build-up and to allow for a way to effectively clean the pipe.

**STRUCTURES:** S-11 and S-12  
**CONNECTING PIPES:** P-7 (30-in Downstream), (Misc. Small CPP Pipes Upstream)

**Structure Top/Bottom Condition:** S-11 is similar to an FDOT Type C ditch bottom inlet with three 6-in CPP (entering), 12-in CPP (entering), and P-7 a 30-in CMP (exiting) to S-12. The structure appears to be in good condition with no erosion or structural compromises noted on the top or inside the structure.

**End Treatment Condition:** P-7 does not have a structure on the west end of the pipe entering a conveyance swale; therefore the pipe end is referred to S-12 for this assessment. The proximity of the end treatment to the swale would suggest that MES would be appropriate in this application.

**Pipe Condition:** S-11 has 6-in and 12-in CPP pipes draining from small yard drains from the adjacent fairways to relieve localized ponding. The CPP pipes appear to be in good condition. P-7 is a 30-in CMP conveying water from S-11 to S-12, through a visual inspection P-7 had minimal rust and bottom corrosion.

**STRUCTURES:** S-13 and S-14  
**CONNECTING PIPES:** P-6 (30-in Upstream), P-8 (36-in Downstream)

**Structure Top Condition:** S-14 is a standard FDOT Type A Ditch Bottom Inlet (approximately 5 feet diameter manhole structure) with a grate. Structure S-14 serves mostly as a junction between the existing swale and P-8. There appears to be some minor erosion around S-14, P-6, and in the upstream swale. The top of S-14 appears to be in good condition.

**Structure Bottom Condition:** The video inspection noted no visible structural concerns inside structure S-14.

**End Treatment Condition:** P-6 has no end treatment and water is conveyed via swale through the pipe and into S-14; therefore the pipe end is referred to as S-13 for this assessment. The swale has steep side slopes and is partially



stabilized. The steep side slopes of the existing swale would suggest that an endwall may be appropriate end treatment in this application.

**Pipe Condition:** It was also observed that P-8 had discarded concrete inside the pipe three feet north of Structure S-15 which appears to be causing flow restrictions and catching debris during rain events.

Figure 3





**STRUCTURE:** S-15  
**CONNECTING PIPES:** P-8 (36-in Upstream),  
P-9 (36-in Downstream)

**Structure Top Condition:** S-15 is comparable to a FDOT Type 4 (symmetrical) curb inlet with two pipe connections, P-8 (36-in CMP) and P-9 (36-in CMP). It appears that the face of the inlet may have been repaired in the recent past and is in good condition.

**Structure Bottom Condition:** The video inspection revealed evidence of discarded concrete inside the bottom of the inlet and three feet into P-8. Other than the concrete, there appears to be no visible structural concerns with the structure

**Pipe Condition:** P-8 and P-6 are both 36-in CMP pipes. Other than the concrete noted in P-8, there appears to be no visible structural concerns the existing CMP pipes.



**STRUCTURE:** S-16  
**CONNECTING PIPES:** P-9 (36" Upstream),  
P-10 (36" Downstream)

**Structure Top Condition:** S-16 is comparable to a FDOT Type 4 (symmetrical) curb inlet with two pipe connections, P-9 (36-in CMP) and P-10 (36-in CMP). The face of the curb inlet has been compromised over the years and appears to have been repaired in the past. The repairs are in fair condition with some chipping and cracking along the face and the effective opening size has been reduced through the repair process.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside the structure bottom.

**Pipe Condition:** The video inspection revealed that P-10 had root intrusion and bottom deterioration 15 feet from Structure S-16. See **Section III** and **Appendix B** for the replacement recommendations.



**STRUCTURE:** S-17  
**CONNECTING PIPES:** P-10 (36-in Upstream),  
P-11 (42-in Downstream)

**Structure Top Condition:** S-17 is comparable to a FDOT Type 4 (symmetrical) curb inlet with two pipe connections P-10 (36-in CMP) and P-11 (42-in CMP). The face of the curb inlet has been compromised over the years and is in disrepair.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside the structure. Excessive amounts of lawn trimmings around the structure and inside the structure were observed at the time of inspection. Residents are storing their trimmings on top of the stormwater structures throughout the neighborhood for waste disposal pick-up which results in vegetation build up around and into the structures.



S-17 Before Debris was Removed



S-17 After Debris was Removed



**Pipe Condition:** Penetrations were observed in P-11 ten feet and 25 feet downstream of Structure S-17. The penetration sources were not able to be identified. The penetrations have resulted in additional corrosion and sediment build-up within the pipe.

Figure 4





**STRUCTURE:** S-18  
**CONNECTING PIPES:** P-11 (42-in Upstream),  
P-12 (42-in Downstream)

**Structure Top Condition:** S-18 is comparable to a FDOT Type 4 (symmetrical) curb inlet with two pipe connections P-11 and P-12 which are both 42-in CMP. The face of the inlet appears to have been repaired during its lifetime and the center of the face appears to be sagging.

**Structure Bottom Condition:** Lawn trimmings were observed inside and around the structure. The inspection showed no visible structural concerns inside the S-18.

**Pipe Condition:** A non-permitted connection was noted into P-12 approximately 112 feet downstream of S-18. It appears the non-permitted connection is a 6-in pipe from a roof-drain associated with 15 Pebble Beach Drive. Root intrusion was noted in P-12 approximately 57 feet downstream of S-18 and separation at one of the pipe joints was identified approximately 129 feet downstream of S-18.



**STRUCTURE:** S-19  
**CONNECTING PIPES:** P-12 (42-in Upstream),  
P-13 (42-in Downstream)

**Structure Top Condition:** S-19 is comparable to a FDOT Type 4 (symmetrical) curb inlet with two pipe connections P-12 (42-in CMP) and P-13 (42-in CMP). The face of the inlet appears to have minor chipping and cracking along the face of the curb. It was noted that there were bags of lawn trimmings on top of the structure during the field work.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside the structure.

**Pipe Condition:** No concerns were identified for Pipe P-13.



**STRUCTURE:** S-20  
**CONNECTING PIPES:** P-13 (42-in Upstream),  
P-14 (42-in Downstream)

**Structure Top Condition:** S-20 is comparable to a FDOT Type 4 (symmetrical) curb inlet with two pipe connections P-13 (42-in CMP) and P-14 (42-in CMP). The face of the inlet appears to be in disrepair with chips and cracking as large as 12 inches along the face of the structure.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside the structure.

**Pipe Condition:** Video inspection revealed a hole in Pipe P-14 approximately 35 feet downstream of S-20.



**STRUCTURE:** S-21  
**CONNECTING PIPES:** P-14 (42-in Upstream),  
P-15 (42-in Downstream)

**Structure Top Condition:** S-21 is comparable to a FDOT Type C ditch bottom inlet with a Type J bottom with two pipe connections P-14 (42-in CMP) and P-15 (42-in CMP).

**Structure Bottom Condition:** The video inspection equipment could not access this site due to limited access from overgrown vegetation and locked gates. A limited visual inspection of this inlet found no visible signs of structural concerns inside the structure.

**Pipe Condition:** A limited visual inspection of this inlet found no visible signs of structural concerns associated with the piping.



**STRUCTURE:** S-22  
**CONNECTING PIPES:** P-15 (42-in Upstream),  
P-17 (30-in Downstream)

**Structure Top Condition:** S-22 is comparable to a FDOT Type C ditch bottom inlet with a Type J bottom with two pipe connections, P-15 (42-in CMP) and P-17 (30-in CPP).

**Structure Bottom Condition:** The video inspection equipment could not access this site due to limited access from overgrown vegetation and locked gates. A limited visual inspection of S-22 found no visible structural concerns inside the structure.

**Pipe Condition:** It appears that in recent years P-17 (30-in CPP) replaced an old pipe that ran parallel to P-17. The old pipe was abandoned and it is not clear if it was abandoned in place or if it was removed. The ends of pipe were grouted going into S-15 and the other end of the old pipe was not found. P-17 is in good condition; however, the pipe appears to be undersized based on the upstream and downstream pipes' sizes and slopes. The 30-in CPP appears to serve as a 'bottleneck' in the system. The pipe should be replaced as summarized in **Section III**.

**STRUCTURE:** S-23  
**CONNECTING PIPES:** P-17 (30-in Upstream),  
P-18 (36-in Downstream)

**Structure Top/Bottom Condition:** The inlet type is unknown and pipes P-17 (30-in CPP) and P-18 (36-in CMP) connect to the junction box. The video inspection equipment was not able to enter directly into this structure due to the overgrown vegetation over the structure lid. Access was available through S-23 and debris consisting of lawn trimmings, lumber, and small limbs were noted.

**Pipe Condition:** P-18 appeared to be in good condition and but the size of the pipe is a concern. Similar to the size restrictions in P-17 the 36-in CMP appears to be a restricting point.

The hydraulic analysis shows that P-18 is too small for the demands on the stormwater pipe. The pipe should be replaced as summarized in **Section III**.





Figure 5





**STRUCTURE:** S-24  
**CONNECTING PIPES:** P-18 (36-in),  
P-16 (24-in Upstream),  
P-19 (48-in Downstream)

**Structure Top Condition:** S-24 is comparable to a FDOT Type 4 (symmetrical) curb inlet with three pipe connections P-18 (36-in CMP), P-19 (48-in CMP), and P-16 (24-in CMP). The face of the inlet appears to have outlived its service life and has structurally failed with large chips, cracking, and broken curb connections.

**Structure Bottom Condition:** There was a former pipe connection that was removed and the opening was bricked and grouted. The video inspection showed no visible structural concerns inside the structure; however, the top has compromised the performance. S-24 is recommended for replacement.



**Pipe Condition:** No structural concerns were noted for either P-16 or P-19 other than bottom rust in both pipes. See Structure S-23 summary for P-18 condition summary.

**STRUCTURE:** S-25  
**CONNECTING PIPES:** P-19 (48-in Upstream),  
P-20 (48-in Downstream)

**Structure Top Condition:** S-25 appears to be a FDOT Type 4 (symmetrical) curb inlet with two pipe connections P-19 (48-in CMP) and P-20 (48-in CMP). The face of the inlet appears to be in good condition; however, S-25 has been repaired over its life and the repair has restricted the effective opening.

**Structure Bottom Condition:** The pipes extend into the structure approximately two to three feet beyond the inside of the inlet which is restricting the downstream flow inside the inlet. The pipe extensions are significantly reducing the downstream flow abilities and causing sediment to get trapped inside the structure. It also appears that lawn trimmings have accumulated in the structure. The video inspection showed no other visible structural concerns inside the structure.



**Pipe Condition:** It was visually noted that P-19 and P-20 have top deterioration inside the structure and that both pipes were approximately 80% full of water during the time of video inspection. The bottoms of the pipes were not visible due to the high water levels but it is anticipated that the bottoms of both pipes have excessive deterioration due to the deteriorated condition of the visible crown of the pipe visible inside the structure. A hole was identified in the top of P-20 approximately 142 feet from S-25.



**STRUCTURE:** S-26  
**CONNECTING PIPES:** P-20 (48-in Upstream),  
P-26 (24-in Upstream),  
P-24 (15-in Upstream),  
P-21 (48-in Downstream)

**Structure Top Condition:** S-26 is comparable to a FDOT Type 4 (symmetrical) curb inlet with pipe connections P-20 (48-in CMP), P-24 (15-in CMP), P-26 (24-in CMP) and P-21 (48-in CMP). The face of the inlet appears to be in fair condition with minor repairs in the past and appears to have outlived its service life.



**Structure Bottom Condition:** The structure has three pipes feeding into it and one pipe exiting the structure flowing downstream. The video inspection showed no visible structural concerns inside the structure.

**Pipe Condition:** All four pipes remain in a partially submerged condition year-round. Due to the submerged condition, it is difficult to note the true condition of the pipes and the amount of sediment in the structure. The bottoms of the pipes were not visible due to the high water levels but it is anticipated that the bottoms of the pipes have excessive deterioration due to their submerged state, and the poor condition of the visible portions of the crown of the pipe at the structure connection points. P-21 flows to Structure S-27 and the pipe is deteriorated to the point that the video inspection equipment could not safely access the pipe.

**STRUCTURES:** S-27 and S-28  
**CONNECTING PIPES:** P-21 (Upstream),  
P-22(Downstream),  
P-23 (Downstream)

**Structure Top/Bottom Condition:** S-27 and S-28 structure types are unknown. The video inspection equipment could not access structures S-27 or S-28 or P-21, P-22, or P-23 due to the structures being below grade.



**Pipe Condition:** The condition of the pipes entering/exiting the structures is so poor that the video equipment could not safely enter the structures. The pipes and structures remain in a submerged condition year-round. The bottoms of the pipes appear to have excessive deterioration.

**STRUCTURE:** S-29  
**CONNECTING PIPE:** P-23 (48-in Upstream)  
**End Treatment Condition:** S-29 is a 48-in endwall discharging into Pond No. 1 as shown in **Appendix C**. The endwall appears to be in good condition.

**Pipe Condition:** P-23 is in poor condition. It is noted that P-23 does have sediment build-up in the endwall location due to build-up in the pond bottom. The pond has collected years of yard debris, sediment and soil intrusion from the deteriorating pipes upstream.



**Pond Condition:** Okaloosa County maintains Pond #1 and provides annual sediment removal. The sediment will need to be removed to further keep S-29/P-23 from becoming blocked.

Figure 6



**STRUCTURE:** S-30  
**CONNECTING PIPE:** P-16 (24-in Downstream)

**Structure Top Condition:** S-30 is comparable to an FDOT Type 4 (symmetrical) curb inlet with a single pipe connection P-16 (24-in CMP). The face of the inlet is in disrepair with large portions of exposed rebar. It appears that the inlet top has reached its effective service life.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside the aged structure.

**Pipe Condition:** From visual observations, P-16 has bottom deterioration inside the structure and the pipe was approximately 80% full of water during the time of inspection. The bottom of the pipe was not visible due to the high water levels but it is anticipated that it has bottom deterioration due to its submerged state, and based on the deteriorated condition of the crown of the pipe visible at the structure connection point.





**STRUCTURE:** S-31  
**CONNECTING PIPE:** P-24 (15-in Downstream)

**Structure Top Condition:** S-31 is comparable to a FDOT Type 4 (symmetrical) curb inlet with one pipe connection P-24 (15-in CMP). The face of the inlet is in disrepair and is being supported with PVC pipe supports. The face has been repaired in the past, but it appears that the repairs may be close to failing.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside structure S-31, although the structure was 80% full of water during the time of inspection.

**Pipe Condition:** From visual observations, P-24 has bottom deterioration inside the structure. The pipe was approximately 80% full of water during the time of inspection which provided limited visibility of the pipe bottom. It is anticipated that the pipe has bottom deterioration due to its submerged state and the deteriorated condition of the crown of the pipe at the structure connection point.



**STRUCTURE:** S-32  
**CONNECTING PIPE:** P-25 (15-in Downstream)

**Structure Top Condition:** S-32 appears to be a FDOT Type 4 (symmetrical) curb inlet with one pipe connection P-25 (15-in CMP). The face of the inlet is in disrepair and is being supported with PVC pipe supports. A large piece of concrete is missing at the western corner of the structure.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside the structure.

**Pipe Condition:** It was observed that P-25 has minor bottom deterioration inside the structure. The bottom of P-25 was not visible due to the high water levels but it is anticipated that the bottom of the pipe has excessive deterioration due to the submerged state of the corrugated metal pipe.



**STRUCTURE:** S-33  
**CONNECTING PIPES:** P-25 (15-in Upstream),  
P-26 (24-in Downstream)

**Structure Top Condition:** S-33 is comparable to an FDOT Type 4 (Symmetrical) curb inlet with two pipe connections P-25 (15-in CMP) and P-26 (24-in CMP). The face of the inlet has been repaired in the past and the repair appears to remain in fair condition but the effective opening size appears to be compromised.

**Structure Bottom Condition:** The video inspection showed no visible structural concerns inside the structure.





**Pipe Condition:** P-26 has minor bottom deterioration inside the structure and although the bottom of the pipe was not visible due to the high water levels it is anticipated that the bottom of the pipe has excessive deterioration due to the submerged state of the corrugated metal pipe and the condition of the pipe ends. P-25 appears to be in acceptable condition since this pipe primarily is located above the waterline.

**STRUCTURE:** S-34  
**CONNECTING:** Pond #1 and Pond #2

**Structure Condition:** S-34 is a weir installed under a bridge connecting Pond #1 and Pond #2 of the Shalimar Pointe drainage system prior to draining to Lake Lorraine. The weir appears to be in good condition and recommendations pertaining to the bridge/weir are included in the hydraulic analysis presented in Section III.

The weir elevation has been disputed throughout the community, and the community believes that modifying the elevation of the weir will help relieve flooding conditions.



**STRUCTURES:** S-35, S-36  
**CONNECTING PIPE:** P-27 (Dual 36-in)

**End Treatment Condition:** P-27 is a dual 36-in CMP culvert connecting Pond #2 and Pond #3. The pipes remain below the water level annually and serve as an equalizing culvert. No structures are located on either end of the culvert; therefore, the pipe ends are referred to as S-35 and S-36 respectively for this assessment. The pipe ends should be MES based on the pond side slopes.

**Pipe Condition:** Video inspection was not possible for P-27 due to the dual 36-in CMP being in a 100% submerged condition and draining the pipes could further compromise the pipes. The two pipes remain in a submerged condition year-round. Field observations show the dual 36-in pipes have significant amount of deterioration (corrosion, rust, and large holes) on the pipe ends extending into the pond and the pipes appear to be structurally unsound.

**STRUCTURES:** S-37, S-38  
**CONNECTING PIPE:** P-28 (65-in x 40-in)

**End Treatment Condition:** S-37 and S-38 are the MES ends of a 65"x40" CMP culvert (parallel to P-27) connecting Pond #2 and Pond #3. The field inspection showed the MES ends with wood endwall supports on the sides to be in fair condition with is a large amount of sediment and vegetation built-up at both end of the culvert.

The pipe ends each have a small opening with grate to allow for water to flow through a grate and into the pipe instead of flowing over the pavement edge around the MES.

**Pipe Condition:** Video inspection was not necessary for P-28 due to the pipe being directly accessible. The flow line of the pipe remains above the normal water level for both Ponds #2 and #3. P-28 has approximately six inches of sediment throughout the



bottom of the pipe and an asphaltic coating on the bottom and top, likely to serve as a protective coating. P-28 has three pipes crossing through its center and the pipe has less than 12 inches of cover between the crowns of the pipe the roadway, neither of which area an acceptable construction standard.

Figure 7



**STRUCTURES:** S-39, S-40, S-41, S-42  
**CONNECTING PIPES:** P-29 (36-in), P-30 (36-in)

**End Treatment Condition:** S-39, S-40, S-41, and S-42 are the ends of two 36-in CPP culverts connecting Pond #3 and Wetland Area #1.

**Pipe Condition:** The dual 36-in CPP appear to be in good condition but the wooden end wall is in disrepair and appears to be failing.





Figure 8





**STRUCTURES:** S-43, S-44

**CONNECTING PIPE:** P-31 (16-in x 20-in)

**End Treatment Condition:** S-43 and S-44 are the endwalls associated with P-31 (16-in x 20-in CMP culvert) connecting Wetland Area #1 and Wetland Area #2.

**Pipe Condition:** P-31 typically remains 50% submerged depending on the water levels in the adjacent wetland areas. The pipe has some minor bottom deterioration (rust and corrosion) and appears to be significantly undersized for this basin.



## B. CONDITION ASSESSMENT SUMMARY

The majority of the piping throughout the stormwater system is corrugated metal pipe (CMP) and the condition of most of the CMP in the north end of the drainage basin have notable rust and bottom corrosion. The CMP pipes in the southern portion of the basin area remain in a submerged condition most of the year and have outlived their service life; therefore, the pipes show significant signs of corrosion, rust, and bottom deterioration. The sediment and debris noted in most of the pipes and structures consists mostly of lawn clippings and sediment build-up associated with pipe damage. Some isolated areas of concrete and timber were also found.

During the inspection process, it was noted that residents throughout the neighborhood place their lawn trimmings and bags of lawn debris on top of the drainage structures. In several cases the lawn debris, including bags and limbs, was stacked over and on top of the inlet openings preventing the stormwater from accessing the structures. The leaves and limbs have also been washing into the structures, adding to the sediment and debris issues noted during the video inspection. It is recommended that the residents place their lawn trimmings away from the storm structures to alleviate some of this concern. Each street averages two curb inlets and the inlets were blocked on several occasions by lawn debris and trimmings which further add to the drainage issues and periodic flooding.

There were also a few non-permitted connections to the CMP from various residences. In most cases, a top penetration was noted in the pipe, but the source was not readily identified. The connections were not made using the proper gaskets or other appropriate measures to ensure the connections were watertight and to protect the pipe from rust and deterioration. Water intrusion at the non-permitted connections has added to the corrosion issues at the entrance points and appears to have further weakened the CMP pipes. It is recommended that all non-permitted connections be removed and pipes repaired until the County can replace the pipes in the future. Roof drains connected into the piping system should be directed to the nearest inlet via gutter extensions and spill pads.

The removal of sediment and debris in the structures and minimal debris in the pipes will help maintain the system unit it can be repaired.

## **SECTION II**

### **HYDRAULIC ANALYSIS OF THE OUTFALL**

## SECTION II: HYDRAULIC ANALYSIS OF THE OUTFALL

### A. INTRODUCTION

This section provides an assessment of the ponds and associated culverts downstream of the Lake Lorraine Phase III subdivision to determine the downstream pond system impacts on the existing upstream conveyance system. The initial phase of this analysis was to model the entire drainage basin to determine the current capacity of the system and to confirm the areas where periodic flooding occurs. The existing conditions model confirmed that the subdivision does experience flooding during the 10yr-2hr and the 25yr-24hr storm events. Once the flooding areas were defined, then the assessment required modifying the downstream ponds, culverts, and weirs to determine how modifications to the downstream components will affect the existing flood conditions within the subdivision.

### B. HYDRAULIC SUMMARY OF DOWNSTREAM SYSTEMS

The existing conditions analysis consisted of modeling the 10yr-2hr and 25yr-24hr storms to determine where the flooding occurs. The 25yr-24hr storm shows staging at most of the nodes within the hydraulic model; therefore, the FDOT design storm of 10yr-2hr was utilized to better gauge the flooding of the system since this design storm will identify the most critical nodes.

#### 1. Existing Conditions

Nodes S-17, S-18, S-21, and S-23 (as shown in Figures 9 and 10) flood above the top of curb during the FDOT design storm. The results appear to be consistent with the field observations witnessed by the community residents. The nodes are identified and their curb inlet locations are identified below:

- S-17 Located between 12 and 14 Pebble Beach Drive (North Side of Road)
- S-18 Located between 15 and 17 Pebble Beach Drive (South Side of Road)
- S-21 Located in the Southern Property Line of 5 Doral Drive
- S-24 Located between 4 and 6 Pinehurst Drive (North Side of Road)

These four nodes have been defined as key points where flooding occurs during the 10yr-2hr storm events. There are other nodes where flooding frequently occurs, but the identified nodes tend to experience flooding during most storms consistently.

**Table 1**  
**Existing Conditions**  
**Node Flooding Summary**

| Node          | Existing Top of Structure Elev. (ft) | 10yr-2hr Max. Stage (ft) | 10yr-2hr Max. Inflow (cfs) | 10yr-2hr Max. Outflow (cfs) |
|---------------|--------------------------------------|--------------------------|----------------------------|-----------------------------|
| S-17          | 16.88                                | 17.99                    | 15.21                      | 7.05                        |
| S-18          | 16.91                                | 17.90                    | 13.30                      | 7.04                        |
| S-21          | 16.00                                | 17.19                    | 7.94                       | 7.87                        |
| S-24          | 16.96                                | 16.54                    | 7.87                       | 0.16                        |
| Wetland No. 1 | 8.80                                 | 8.54                     | 72.22                      | 16.07                       |

The impacts to the four points were evaluated in the following three alternatives to determine if downstream modifications to Ponds 1, 2, and 3 and their associated culverts will remedy the flooding during the design storm. The fifth node identified as "Wetland No. 1" was also assessed to determine the downstream impacts when Ponds 1, 2, and 3 and their culverts are modified.



Figure 9

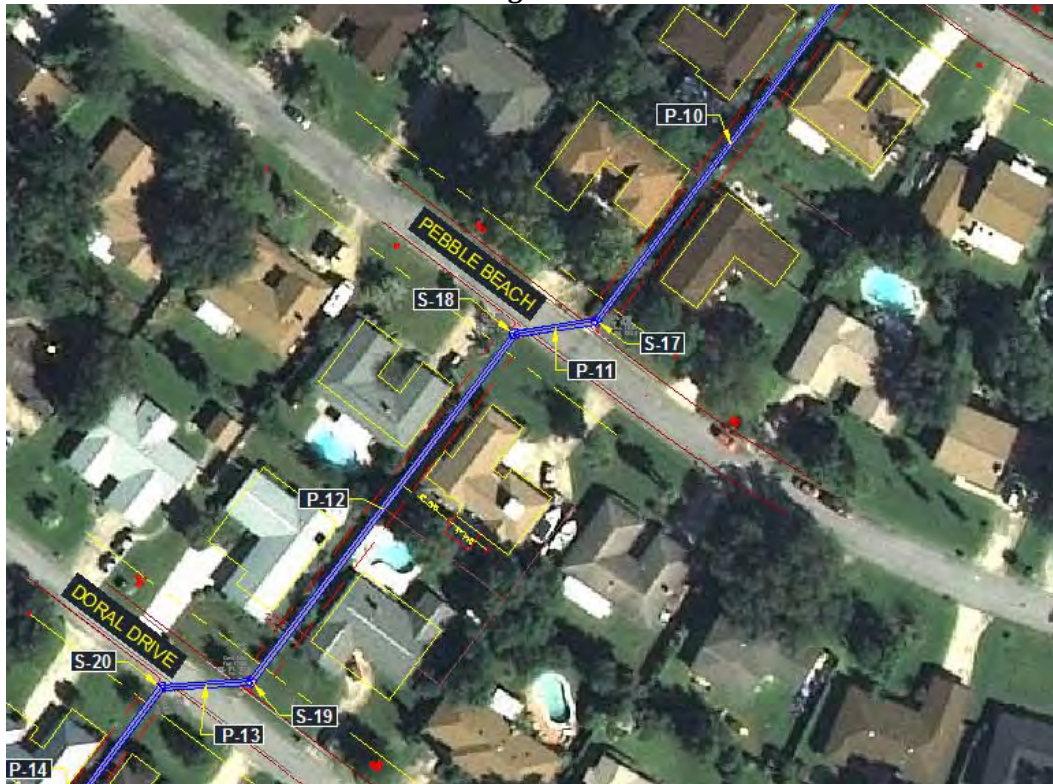
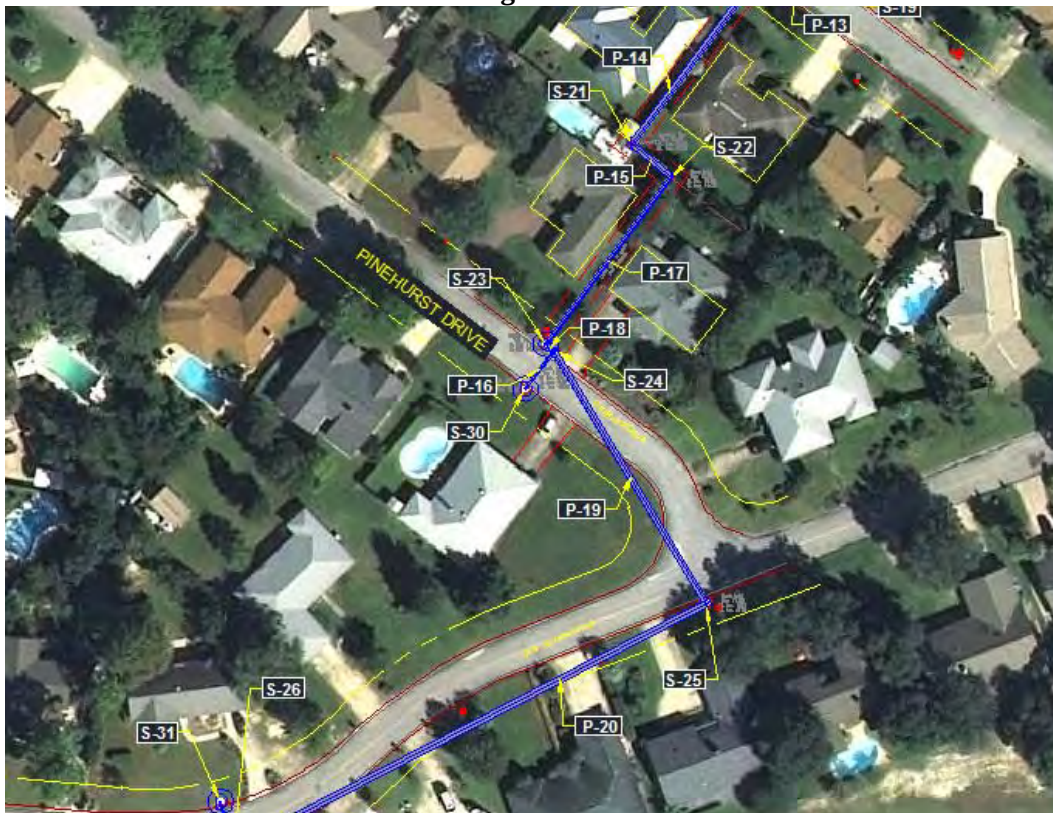


Figure 10



## 2. Modification #1

The first modification considered in the hydraulic assessment was to modify the existing weir (S-34) located south of Pond #1. The current weir top elevation is at an elevation of 8.90 ft with the bottom of the weir at an elevation of 6.89 ft. The revised model removes the weir and places the water elevation at the base of the existing weir (6.89 ft).

The removal of the weir does not impact Nodes S-17, 18, 21, or 24 and slightly increases the flow going into the downstream wetland. This indicates that the conveyance system may be undersized for the contributing flows, but to confirm this further modification to the downstream systems is required. The results of this modification are illustrated in **Table 2**.

**Table 2**  
**Modifying Pond #1 Weir**  
**Node Flooding Summary**

| Node          | Existing Top of Structure Elev. (ft) | 10yr-2hr Max. Stage (ft) | 10yr-2hr Max. Inflow (cfs) | 10yr-2hr Max. Outflow (cfs) |
|---------------|--------------------------------------|--------------------------|----------------------------|-----------------------------|
| S-17          | 16.88                                | 17.92                    | 13.68                      | 6.84                        |
| S-18          | 16.91                                | 17.83                    | 10.60                      | 6.92                        |
| S-21          | 16.00                                | 17.16                    | 7.74                       | 7.50                        |
| S-24          | 16.96                                | 16.77                    | 3.87                       | 0.00                        |
| Wetland No. 1 | 8.80                                 | 6.57                     | 41.36                      | 2.09                        |

## 3. Modification #2

The second modification considered in the hydraulic assessment was removing the culvert and equalizing pipes that connect Pond #2 and Pond #3, essentially creating one larger pond. This modification also assumes the Pond #1 weir removal. This alternative removes both P-27 and P-28 and replaces them with a bridge similar to the modified bridge at Pond #1. The revised model removes the culverts and the new water elevation for all three ponds is an elevation of 6.89 ft.

The hydraulic model for the 10yr-2hr storm (Table 3) shows that removing the culverts associated with Pond #2 and the weir for Pond #1 still does not impact Nodes S-17, 18, 21, or 24. The only change is an increase in the downstream flows to the wetland. This further confirms that the upstream conveyance system flooding may be occurring due to an undersized system rather than restrictions downstream.

**Table 3**  
**Modifying Pond #1 Weir and Pond #2 Culverts**  
**Node Flooding Summary**

| Node          | Existing Top of Structure Elev. (ft) | 10yr-2hr Max. Stage (ft) | 10yr-2hr Max. Inflow (cfs) | 10yr-2hr Max. Outflow (cfs) |
|---------------|--------------------------------------|--------------------------|----------------------------|-----------------------------|
| S-17          | 16.88                                | 17.92                    | 15.21                      | 7.05                        |
| S-18          | 16.91                                | 17.83                    | 13.30                      | 7.04                        |
| S-21          | 16.00                                | 17.16                    | 7.94                       | 7.87                        |
| S-24          | 16.96                                | 16.77                    | 7.87                       | 0.16                        |
| Wetland No. 1 | 8.80                                 | 6.57                     | 73.26                      | 16.23                       |

## 4. Modification #3

The third modification considered in the downstream hydraulic assessment was to lower the Pond #3 culvert flowing into Wetland #1. This option also keeps the Modification #1 and Modification #2 assumptions in place to fully assess the impacts of reducing the flow restrictions on the system. This lowers the inverts of both P-29 and P-30. The water elevation for all three ponds will remain at an



elevation of 6.89 ft but the outfall elevation will be lowered to an elevation of 4.00 ft which is in line with the outfall elevation to the Wetland No. 1. The model results from Modification #3 are depicted in **Table 4**.

**Table 4**  
**Modifying Pond #1 Weir and Pond #2 and #3 Culverts**  
**Node Flooding Summary**

| Node          | Existing Top of Structure Elev. (ft) | 10yr-2hr Max. Stage (ft) | 10yr-2hr Max. Inflow (cfs) | 10yr-2hr Max. Outflow (cfs) |
|---------------|--------------------------------------|--------------------------|----------------------------|-----------------------------|
| S-17          | 16.88                                | 17.92                    | 15.21                      | 7.05                        |
| S-18          | 16.91                                | 17.83                    | 13.30                      | 7.04                        |
| S-21          | 16.00                                | 17.16                    | 7.94                       | 7.87                        |
| S-24          | 16.96                                | 16.77                    | 7.87                       | 0.16                        |
| Wetland No. 1 | 8.80                                 | 6.58                     | 90.38                      | 16.36                       |

The hydraulic model for the 10yr-2hr storm shows even with all three modifications, Nodes S-17, 18, 21, and 24 the flooding is not alleviated. There is an increase in the downstream flows to the wetland which would result in downstream flooding and erosions concerns when compared to the existing conditions. The results further confirm that modifying the downstream elements will not have a direct effect on the subdivision conveyance system.

**Figure 11**

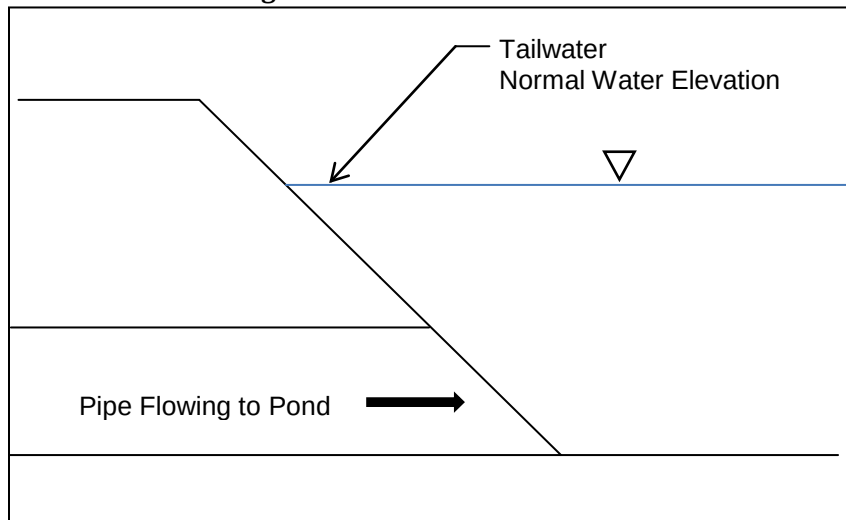




## 5. Final Hydraulic Analysis

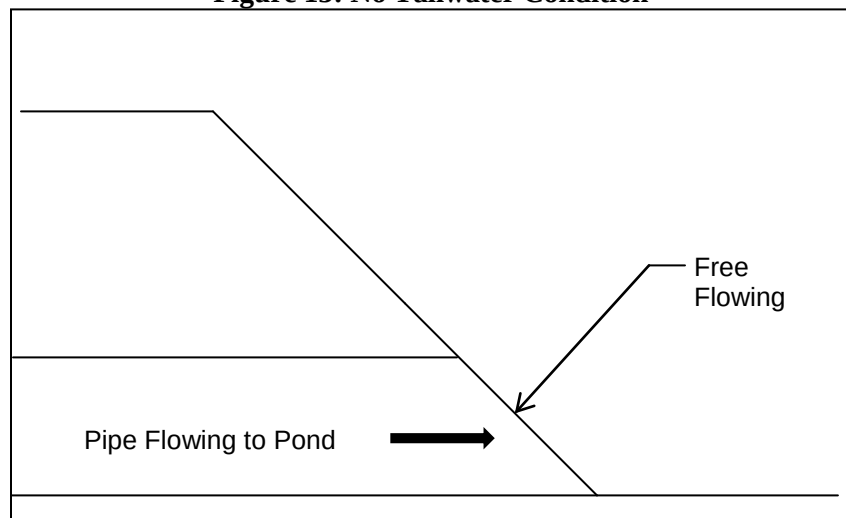
After reviewing Modifications #1, 2, and 3, it is clear that modifying the downstream pond systems will not reduce or alleviate the flooding experienced in the Lake Lorraine Phase III subdivision. In order to confirm the results shown in Modification #1, 2, and 3, the last exercise was to analyze the conveyance system by removing the tailwater condition associated at Pond #1. The subdivision conveyance system was then assessed by removing the tailwater conditions and all the constraining elements downstream. **Figure 12** depicts the current tailwater conditions with the pipe fully submerged during the FDOT 10yr-2hr storm event.

**Figure 12: Tailwater Condition**



**Figure 13** depicts the free flowing tailwater condition modeled in the final hydraulic analysis. The free flowing condition removes any downstream constraints on the system and effectively assesses the system in a free flowing state.

**Figure 13: No Tailwater Condition**



**Table 5**  
**Isolating the Lake Lorraine Subdivision Drainage System (No Tailwater)**  
**Node Flooding Summary**

| <b>Node</b> | <b>Existing Top of<br/>Structure Elevation<br/>(ft)</b> | <b>10yr-2hr<br/>Max. Stage (ft)</b> | <b>10yr-2hr<br/>Max. Inflow<br/>(cfs)</b> | <b>10yr-2hr<br/>Max. Outflow<br/>(cfs)</b> |
|-------------|---------------------------------------------------------|-------------------------------------|-------------------------------------------|--------------------------------------------|
| S-17        | 16.88                                                   | 17.99                               | 15.21                                     | 7.05                                       |
| S-18        | 16.91                                                   | 17.90                               | 13.30                                     | 7.04                                       |
| S-21        | 16.00                                                   | 17.19                               | 7.94                                      | 7.87                                       |
| S-24        | 16.96                                                   | 16.54                               | 7.87                                      | 0.16                                       |

The hydraulic model for the 10yr-2hr storm shows in a free flowing state (no tailwater), Nodes S-17, 18, 21, and 24 the flooding is not alleviated. The results further confirm that modifying the downstream elements will not have a direct effect on the subdivision conveyance system.

### **C. OUTFALL ASSESSMENT SUMMARY**

After analyzing the subdivision independently with no downstream constraints, it is clear that the Lake Lorraine Subdivision conveyance system north of Pond #1 will need to be modified to address the flooding within the subdivision. The ponds and culverts downstream of Pond #1 have no significant impact on the upstream conveyance system and the periodic flooding is a direct result of undersized pipes and undersized catch basin openings within the subdivision.

## **SECTION III**

### **HYDRAULIC ANALYSIS OF THE PIPES AND STRUCTURES**



### SECTION III: HYDRAULIC ASSESSMENT OF PIPES AND STRUCTURES

#### A. INTRODUCTION

The Lake Lorraine Drainage System Analysis was performed in three distinct assessment phases. The first phase (**Section I**) consisted of a condition assessment which analyzed the existing pipes and structures and their physical condition. This assessment is based on a combination of field observations and video-scoping to identify pipe conditions and provides a replacement recommendation for the deteriorated pipes and inlets within the pipe network.

The second phase presented in **Section II** comprised an outfall assessment model of the drainage system using the Stream Technologies modeling software *Interconnected Channel and Pond Routing Model (ICPR)* to assess the hydraulic capacity of the existing system. The purpose of the ICPR hydraulic modeling is to help determine if the system is flooding due to downstream conditions, or if the system flooding is due to lack of pipe structure.

As outlined in **Section II**, the first step of the outfall assessment was to model the drainage system assuming all the existing pipe sizes are to remain and the system is operating in an ideal state with no sediment or deterioration in the structures, pipes, or ponds. The ICPR analysis performed in **Section II** identified flooding in several nodes throughout the system for the Florida Department of Transportation (FDOT) 10yr-2hr storm. The nodes identified are consistent with the areas that flooding has been reported.

Once the nodes where flooding occurred were identified, the next step was to remove downstream parameters on the system that could possibly be adding additional tailwater to the system to determine the source of the flooding. The modifications started by removing the existing weir (S-34) located south of Pond #1 as shown in Exhibit 3. The removal of the weir did not alleviate the flooding north of Pond #1. The removal of the weir did not have any measurable impact on the upstream pipe system.

The downstream systems were further modified (Modifications #2 and #3) removing the existing downstream culverts to allow for the water to flow more freely and effectively lower the pond elevations. Neither Modifications #2 or #3 had an appreciable effect on the upstream systems.

The final analysis outlined in **Section II** was to confirm the assumption that the existing upstream pipes are over capacity and evaluate the system in a free flowing state by removing the downstream parameters. This option allowed for the system to be modeled so that the water would flow freely from the pipe end flowing into Pond #1 with no tailwater. The condition confirmed that the downstream pond systems were not causing the upstream flooding and the lack of upstream pipe capacity was causing the flooding.

The purpose of **Section III** is to analyze the existing pipe capacity in the system to determine if there are any constrained conveyance areas which are creating upstream flooding and provide recommendations as to which pipes may be replaced with larger pipes to improve conveyance volume.

#### B. EXISTING PIPE CAPACITY

This pipe size assessment phase of work further assesses the pipe system to provide an assessment of the pipes and structures within the Lake Lorraine Phase III subdivision to determine the capacity of the existing pipe structures. The existing conditions model confirmed that the subdivision does experience flooding during the 10yr-2hr and the 25yr-24hr storm events.

**Table 6** shows the current pipe sizes, contributing flows, and pipes that are over capacity. The chart also summarizes the flow each pipe can accommodate flowing full and the cumulative flow for the 10yr-2hr storm. The available capacity highlights any remaining capacity or flow deficiencies in the pipes. The flow calculations were calculated using *Manning's Equation* and the associated roughness coefficients for the associated pipe materials.

| Table 6      |                            |                       |           |              |          |                      |         |                                    |                |             |           |               |       |                   |                      |                        |                    |
|--------------|----------------------------|-----------------------|-----------|--------------|----------|----------------------|---------|------------------------------------|----------------|-------------|-----------|---------------|-------|-------------------|----------------------|------------------------|--------------------|
| Report Name: |                            | Existing Pipe Summary |           |              |          | Owner:               |         | Okaloosa County Public Works       |                |             |           |               |       |                   |                      |                        |                    |
| Report Date: |                            | October 2013          |           |              |          | Project Description: |         | Lake Lorraine Condition Assessment |                |             |           |               |       |                   |                      |                        |                    |
|              |                            |                       |           |              |          | Prepared by:         |         | Tonia D. Nation, P.E.              |                |             |           |               |       |                   |                      |                        |                    |
| Name         | Basin Name                 | Shape                 | Size (in) | No. of Pipes | Material | US Node              | DS Node | US Invert (ft)                     | DS Invert (ft) | Length (ft) | Slope (%) | Area (Single) | N     | Velocity (ft/sec) | Q (cfs) Flowing Full | Q (CFS) 10yr-2hr Storm | Available Capacity |
| P-1          | Basin S-1                  | Circular              | 15        | 1            | CMP      | S-1                  | S-2     | 17.55                              | 17.13          | 31          | 1.38%     | 1.2272        | 0.022 | 3.67              | 4.50                 | 8.33                   | (3.83)             |
| P-2          | Basin S-2                  | Circular              | 36        | 1            | CMP      | S-2                  | S-3     | 17.13                              | 15.9           | 204         | 0.60%     | 7.0686        | 0.022 | 4.35              | 30.72                | 16.21                  | 14.51              |
| P-3          | Basin SW-1                 | Circular              | 24        | 1            | CMP      | S-4                  | S-5     | 15.49                              | 15.05          | 195         | 0.23%     | 3.1416        | 0.022 | 2.03              | 6.37                 | 16.33                  | (9.96)             |
| P-4          | Basin SW-2                 | Circular              | 30        | 1            | CMP      | S-6                  | S-7     | 15.56                              | 15.37          | 20          | 0.94%     | 4.9087        | 0.022 | 4.81              | 23.59                | 16.46                  | 7.13               |
| P-5          | Basin SW-3                 | Circular              | 30        | 1            | CMP      | S-8                  | S-10    | 15.59                              | 14.85          | 307         | 0.24%     | 4.9087        | 0.022 | 2.43              | 11.93                | 25.51                  | (13.58)            |
| P-6          | Basin SW-4                 | Circular              | 30        | 1            | CMP      | S-13                 | S-14    | 14.41                              | 14.08          | 5           | 6.76%     | 4.9087        | 0.022 | 12.87             | 63.20                | 30.93                  | 32.27              |
| P-7          | Basin S-11                 | Circular              | 30        | 1            | CMP      | S-11                 | S-12    | 16.01                              | 15.25          | 608         | 0.13%     | 4.9087        | 0.022 | 1.75              | 8.59                 | 5.42                   | 3.17               |
| P-8          | Junction                   | Circular              | 36        | 1            | CMP      | S-14                 | S-15    | 13.9                               | 13.3           | 143         | 0.42%     | 7.0686        | 0.022 | 3.62              | 25.59                | 30.93                  | (5.34)             |
| P-9          | Basin S-15                 | Circular              | 36        | 1            | CMP      | S-15                 | S-16    | 13.19                              | 13.05          | 31          | 0.45%     | 7.0686        | 0.022 | 3.75              | 26.51                | 37.16                  | (10.65)            |
| P-10         | Basin S-16                 | Circular              | 36        | 1            | CMP      | S-16                 | S-17    | 12.86                              | 12.1           | 269         | 0.28%     | 7.0686        | 0.022 | 2.97              | 21.01                | 43.47                  | (22.46)            |
| P-11         | Basin S-17                 | Circular              | 42        | 1            | CMP      | S-17                 | S-18    | 12                                 | 11.64          | 50          | 0.72%     | 9.6211        | 0.022 | 5.26              | 50.63                | 52.07                  | (1.44)             |
| P-12         | Basin S-18                 | Circular              | 42        | 1            | CMP      | S-18                 | S-19    | 11.55                              | 10.82          | 263         | 0.28%     | 9.6211        | 0.022 | 3.26              | 31.39                | 58.48                  | (27.09)            |
| P-13         | Basin S-19                 | Circular              | 42        | 1            | CMP      | S-19                 | S-20    | 10.72                              | 10.58          | 54          | 0.26%     | 9.6211        | 0.022 | 3.14              | 30.25                | 66.48                  | (36.23)            |
| P-14         | Basin S-20                 | Circular              | 42        | 1            | CMP      | S-20                 | S-21    | 10.5                               | 10.4           | 131         | 0.08%     | 9.6211        | 0.022 | 1.71              | 16.46                | 72.49                  | (56.03)            |
| P-15         | Junction                   | Circular              | 42        | 1            | CMP      | S-21                 | S-22    | 10.35                              | 10.35          | 33          | 0.00%     | 9.6211        | 0.022 | 0.00              | 0.00                 | 72.49                  | (72.49)            |
| P-16         | Basin S-30                 | Circular              | 24        | 1            | CMP      | S-30                 | S-24    | 13.22                              | 12.9           | 31          | 1.03%     | 3.1416        | 0.022 | 4.33              | 13.62                | 3.15                   | 10.47              |
| P-17         | Junction                   | Circular              | 30        | 1            | CMP      | S-22                 | S-23    | 10.05                              | 10.15          | 134         | -0.07%    | 4.9087        | 0.022 | 0.00              | 0.00                 | 72.49                  | (72.49)            |
| P-18         | Junction                   | Circular              | 36        | 1            | CPP      | S-23                 | S-24    | 10                                 | 10             | 7           | 0.00%     | 7.0686        | 0.025 | 0.00              | 0.00                 | 72.49                  | (72.49)            |
| P-19         | Basin S-24                 | Circular              | 48        | 1            | CMP      | S-24                 | S-25    | 9.66                               | 8.1            | 189         | 0.83%     | 12.5664       | 0.022 | 6.16              | 77.35                | 79.98                  | (2.63)             |
| P-20         | Basin S-25                 | Circular              | 48        | 1            | CMP      | S-25                 | S-26    | 8.02                               | 6.89           | 343         | 0.33%     | 12.5664       | 0.022 | 3.89              | 48.86                | 92.15                  | (43.29)            |
| P-21         | Basin S-26                 | Circular              | 48        | 1            | CMP      | S-26                 | S-27    | 6.71                               | 6.49           | 13          | 1.66%     | 12.5664       | 0.022 | 8.73              | 109.75               | 107.08                 | 2.67               |
| P-22         | Junction                   | Circular              | 48        | 1            | CMP      | S-27                 | S-28    | 6.49                               | 5.54           | 57          | 1.66%     | 12.5664       | 0.022 | 8.73              | 109.67               | 107.08                 | 2.59               |
| P-23         | Junction                   | Circular              | 48        | 1            | CMP      | S-28                 | S-29    | 5.54                               | 5.13           | 25          | 1.64%     | 12.5664       | 0.022 | 8.66              | 108.84               | 107.08                 | 1.76               |
| P-24         | Basin S-31                 | Circular              | 15        | 1            | CMP      | S-31                 | S-26    | 12.26                              | 12.16          | 32          | 0.31%     | 1.2272        | 0.022 | 1.75              | 2.15                 | 3.05                   | (0.90)             |
| P-25         | Basin S-32                 | Circular              | 15        | 1            | CMP      | S-32                 | S-33    | 12.78                              | 12.92          | 30          | -0.46%    | 1.2272        | 0.022 | 0.00              | 0.00                 | 3.91                   | (3.91)             |
| P-26         | Basin S-33                 | Circular              | 24        | 1            | CMP      | S-33                 | S-26    | 12.46                              | 11.18          | 416         | 0.31%     | 3.1416        | 0.022 | 2.37              | 7.44                 | 9.21                   | (1.77)             |
| P-27         | Pond #2<br>Equalizing Pipe | Circular              | 36        | 2            | CMP      | S-35                 | S-36    | 2.23                               | 2.21           | 89          | 0.02%     | 7.0686        | 0.022 | 0.84              | 11.87                | 14.51                  | (2.64)             |
| P-28         | Pond #2                    | Elliptical            | 65"x40"   | 1            | ECMP     | S-37                 | S-38    | 7.6                                | 7.35           | 40          | 0.62%     | 14.4500       | 0.022 | 4.73              | 68.29                | 19.81                  | 48.48              |
| P-29         | Pond #3                    | Circular              | 36        | 1            | CPP      | S-39                 | S-40    | 7.03                               | 5.67           | 66          | 2.06%     | 7.0686        | 0.022 | 8.03              | 56.76                | 25.11                  | 31.65              |
| P-30         | Pond #3                    | Circular              | 36        | 1            | CPP      | S-41                 | S-42    | 6.5                                | 5.62           | 66          | 1.33%     | 7.0686        | 0.022 | 6.46              | 45.66                | 30.41                  | 15.25              |
| P-31         | Outfall                    | Elliptical            | 16"x20"   | 1            | ECMP     | S-43                 | S-44    | 3.66                               | 3.52           | 39          | 0.36%     | 1.3000        | 0.022 | 1.94              | 2.53                 | 35.71                  | (33.18)            |

The pipes in **Table 7** were found to be over-capacity based on the *Manning's Equation* flow analysis. The pipe segments highlighted in yellow are significantly undersized based on the *Manning's Equation* calculation. Pipe Segments P-15, P-16, P-17, and P-25 are flat or have negative flows (flowing in the wrong direction); therefore, the velocities equal zero. The pipes depend on head pressure within the system to force the water through that particular pipe segment.

The pipes identified in **Table 7** are over-capacity based on the numbers shown below. These pipes will require replacement with pipes of increased flow capacity to increase the capacity of the system. The pipe segments highlighted in yellow below are segments which are considerably over-capacity and these locations are consistent with the nodes where flooding occurred within the ICPR model for the existing conditions.

**Table 7**  
**Existing Pipe Over-Capacity Segments**

| Name | Shape      | Size (in) | No. of Pipes | US Node | DS Node | Q (cfs) Flowing Full | ICPR Q Max Flow (CFS) | Q (CFS) 10yr-2hr Storm | Available Capacity |
|------|------------|-----------|--------------|---------|---------|----------------------|-----------------------|------------------------|--------------------|
| P-1  | Circular   | 15        | 1            | S-1     | S-2     | 4.50                 | 8.33                  | 8.33                   | (3.83)             |
| P-3  | Circular   | 24        | 1            | S-4     | S-5     | 6.37                 | 7.88                  | 16.33                  | (9.96)             |
| P-5  | Circular   | 30        | 1            | S-8     | S-9     | 11.93                | 0.12                  | 25.51                  | (13.58)            |
| P-8  | Circular   | 36        | 1            | S-14    | S-15    | 25.59                | 30.93                 | 30.93                  | (5.34)             |
| P-9  | Circular   | 36        | 1            | S-15    | S-16    | 26.51                | 6.23                  | 37.16                  | (10.65)            |
| P-10 | Circular   | 36        | 1            | S-16    | S-17    | 21.01                | 6.31                  | 43.47                  | (22.46)            |
| P-11 | Circular   | 42        | 1            | S-17    | S-18    | 50.63                | 8.60                  | 52.07                  | (1.44)             |
| P-12 | Circular   | 42        | 1            | S-18    | S-19    | 31.39                | 6.41                  | 58.48                  | (27.09)            |
| P-13 | Circular   | 42        | 1            | S-19    | S-20    | 30.25                | 8.00                  | 66.48                  | (36.23)            |
| P-14 | Circular   | 42        | 1            | S-20    | S-21    | 16.46                | 1.58                  | 72.49                  | (56.03)            |
| P-15 | Circular   | 42        | 1            | S-21    | S-22    | 0.00                 | 72.49                 | 72.49                  | (72.49)            |
| P-17 | Circular   | 30        | 1            | S-22    | S-23    | 0.00                 | 72.49                 | 72.49                  | (72.49)            |
| P-18 | Circular   | 36        | 1            | S-23    | S-24    | 0.00                 | 72.49                 | 72.49                  | (72.49)            |
| P-19 | Circular   | 48        | 1            | S-24    | S-25    | 77.35                | 4.34                  | 79.98                  | (2.63)             |
| P-20 | Circular   | 48        | 1            | S-25    | S-26    | 48.86                | 12.17                 | 92.15                  | (43.29)            |
| P-24 | Circular   | 15        | 1            | S-31    | S-26    | 2.15                 | 2.67                  | 3.05                   | (0.90)             |
| P-25 | Circular   | 15        | 1            | S-32    | S-33    | 0.00                 | 3.05                  | 3.91                   | (3.91)             |
| P-26 | Circular   | 24        | 1            | S-33    | S-26    | 7.44                 | 5.30                  | 9.21                   | (1.77)             |
| P-31 | Elliptical | 16"x20"   | 1            | S-43    | S-44    | 2.53                 | 43.11                 | 43.11                  | (40.58)            |

### C. EXISTING PIPE CONDITION

In addition to the pipes that require replacement based on limited capacity, **Table 8** highlights the pipe runs that require replacement due to deteriorating pipe conditions. The existing pipe network consists of mostly aged corrugated metal pipe so several of the pipe segments within the network are deteriorating.



**Table 8**  
**Existing Deteriorating Pipe Segments**

| Name | Shape      | Size (in) | No. of Pipes | Material | US Node | DS Node | Length (ft) | Slope (%) |
|------|------------|-----------|--------------|----------|---------|---------|-------------|-----------|
| P-2  | Circular   | 36        | 1            | CMP      | S-2     | S-3     | 204         | 0.60%     |
| P-4  | Circular   | 30        | 1            | CMP      | S-6     | S-7     | 20          | 0.94%     |
| P-6  | Circular   | 30        | 1            | CMP      | S-13    | S-14    | 5           | 6.76%     |
| P-7  | Circular   | 30        | 1            | CMP      | S-11    | S-12    | 608         | 0.13%     |
| P-16 | Circular   | 24        | 1            | CMP      | S-30    | S-24    | 31          | 1.03%     |
| P-21 | Circular   | 48        | 1            | CMP      | S-26    | S-27    | 13          | 1.66%     |
| P-22 | Circular   | 48        | 1            | CMP      | S-27    | S-28    | 57          | 1.66%     |
| P-23 | Circular   | 48        | 1            | CMP      | S-28    | S-29    | 25          | 1.64%     |
| P-27 | Circular   | 36        | 2            | CMP      | S-35    | S-36    | 89          | 0.02%     |
| P-28 | Elliptical | 65"x40"   | 1            | ECMP     | S-37    | S-38    | 40          | 0.62%     |

#### D. PIPE REPLACEMENT RECOMMENDATION

After assessing both capacity and condition, **Table 9** summarizes the pipes recommended for replacement and the equivalent pipe size and slope to accommodate the flows necessary to prevent the system from flooding.

|  |                                             |
|--|---------------------------------------------|
|  | No Replacement Required                     |
|  | Replace Pipe Due to Capacity Limitation     |
|  | Replace Pipe Due to Deteriorating Condition |
|  | Remove Pipe Segment                         |

By increasing the pipe sizes throughout the system, the pipe capacity issues are addressed and the staging within the system is minimized for the 10yr-2hr storm. The 25yr-24hr storm still experiences staging within the system, but the average elevation has been reduced. By redesigning the pipe conveyance system, the maximum stage above the warning elevations for the larger storms will be reduced which will result in minimized location flooding. The pipe size recommendations provided below are based on the existing invert elevations and pipe equivalents can be used when redesigning the stormwater system.

#### E. STRUCTURE MODIFICATION RECOMMENDATIONS

In addition to the pipe replacements required to address the pipe capacity due to large contributing areas per inlet and deterioration issues, several structures have reached the end of their service life. In addition to replacing the curb inlets, the structures will also need to have an additional grate added to increase the flow capacity into the structures. Excessive staging at the curb inlets is relieved by adding the additional grates to the structures at the flow line. The recommended structure improvements are detailed in **Table 10**.

The model shows that adding the additional openings at the flow line reduces the maximum stage and reduces the flooding throughout the system. The "Proposed Conditions" ICPR model was completed in two steps. The first was to model the system with the existing weir in place and no modifications to the pond systems with the exception of the deteriorated pipes that needed to be replaced.

| Table 9: Pipe Replacement Summary  |                            |          |                               |                 |          |            |         |                |                |                |           |                  |       | Legend               |                                                                 |                              |                       |
|------------------------------------|----------------------------|----------|-------------------------------|-----------------|----------|------------|---------|----------------|----------------|----------------|-----------|------------------|-------|----------------------|-----------------------------------------------------------------|------------------------------|-----------------------|
|                                    |                            |          |                               |                 |          |            |         |                |                |                |           |                  |       |                      | Delete Structure                                                |                              |                       |
|                                    |                            |          |                               |                 |          |            |         |                |                |                |           |                  |       |                      | Replace Pipe Due to Capacity                                    |                              |                       |
|                                    |                            |          |                               |                 |          |            |         |                |                |                |           |                  |       |                      | Replace Pipe Due to Deterioration                               |                              |                       |
|                                    |                            |          |                               |                 |          |            |         |                |                |                |           |                  |       |                      | Replace Pipe Due to Both Deterioration and Capacity Constraints |                              |                       |
| Prepared by: Tonia D. Nation, P.E. |                            |          |                               |                 |          |            |         |                |                |                |           |                  |       |                      | No Replacement Required                                         |                              |                       |
| Name                               | Basin Name                 | Shape    | Recom-<br>mended<br>Size (in) | No. of<br>Pipes | Material | US<br>Node | DS Node | US Invert (ft) | DS Invert (ft) | Length<br>(ft) | Slope (%) | Area<br>(Single) | N     | Velocity<br>(ft/sec) | Q (cfs)<br>Flowing<br>Full                                      | Q (CFS)<br>10yr-2hr<br>Storm | Available<br>Capacity |
| P-1                                | Basin S-1                  | Circular | 18                            | 1               | RCP      | S-1        | S-2     | 17.55          | 17.13          | 31             | 1.38%     | 1.7671           | 0.012 | 7.60                 | 13.42                                                           | 8.33                         | 5.09                  |
| P-2                                | Basin S-2                  | Circular | 36                            | 1               | CPP      | S-2        | S-3     | 17.13          | 15.9           | 204            | 0.60%     | 7.0686           | 0.022 | 4.35                 | 30.72                                                           | 16.21                        | 14.51                 |
| P-3                                | Basin SW-1                 | Circular | 36                            | 1               | CPP      | S-4        | S-5     | 15.49          | 15.05          | 195            | 0.23%     | 7.0686           | 0.022 | 2.66                 | 18.78                                                           | 16.33                        | 2.45                  |
| P-4                                | Basin SW-2                 | Circular | 30                            | 1               | CPP      | S-6        | S-7     | 15.56          | 15.37          | 20             | 0.94%     | 4.9087           | 0.022 | 4.81                 | 23.59                                                           | 16.46                        | 7.13                  |
| P-5                                | Basin SW-3                 | Circular | 36                            | 1               | CMP      | S-8        | S-10    | 15.59          | 14.05          | 307            | 0.50%     | 7.0686           | 0.022 | 3.96                 | 27.99                                                           | 25.51                        | 2.48                  |
| P-6                                | Basin SW-4                 | Circular | 30                            | 1               | CPP      | S-13       | S-14    | 14.41          | 14.08          | 5              | 6.76%     | 4.9087           | 0.022 | 12.87                | 63.20                                                           | 30.93                        | 32.27                 |
| P-7                                | Basin S-11                 | Circular | 30                            | 1               | CPP      | S-11       | S-12    | 16.01          | 15.25          | 608            | 0.13%     | 4.9087           | 0.022 | 1.75                 | 8.59                                                            | 5.42                         | 3.17                  |
| P-8                                | Junction                   | Circular | 36                            | 1               | RCP      | S-14       | S-15    | 13.9           | 13.3           | 143            | 0.42%     | 7.0686           | 0.012 | 6.64                 | 46.92                                                           | 30.93                        | 15.99                 |
| P-9                                | Basin S-15                 | Circular | 36                            | 1               | RCP      | S-15       | S-16    | 13.19          | 13.05          | 31             | 0.45%     | 7.0686           | 0.012 | 6.88                 | 48.60                                                           | 37.16                        | 11.44                 |
| P-10                               | Basin S-16                 | Circular | 42                            | 1               | RCP      | S-16       | S-17    | 12.86          | 12.1           | 269            | 0.28%     | 9.6211           | 0.012 | 6.04                 | 58.10                                                           | 43.47                        | 14.63                 |
| P-11                               | Basin S-17                 | Circular | 48                            | 1               | RCP      | S-17       | S-18    | 12             | 11.64          | 50             | 0.72%     | 12.5664          | 0.012 | 10.55                | 132.53                                                          | 52.07                        | 80.46                 |
| P-12                               | Basin S-18                 | Circular | 36                            | 2               | RCP      | S-18       | S-19    | 11.55          | 10.82          | 263            | 0.28%     | 7.0686           | 0.012 | 5.40                 | 76.29                                                           | 58.48                        | 17.81                 |
| P-13                               | Basin S-19                 | Circular | 48                            | 1               | RCP      | S-19       | S-20    | 10.72          | 10.6           | 54             | 0.22%     | 12.5664          | 0.012 | 5.83                 | 73.30                                                           | 66.48                        | 6.82                  |
| P-14                               | Basin S-20                 | Circular | 48                            | 1               | RCP      | S-20       | S-21    | 10.6           | 10.3           | 131            | 0.23%     | 12.5664          | 0.012 | 5.94                 | 74.60                                                           | 72.49                        | 2.11                  |
| P-15                               | Junction                   | Circular | 48                            | 2               | RCP      | S-21       | S-22    | 10.3           | 10.2           | 33             | 0.30%     | 12.5664          | 0.012 | 6.85                 | 172.28                                                          | 72.49                        | 99.79                 |
| P-16                               | Basin S-30                 | Circular | 24                            | 1               | RCP      | S-30       | S-24    | 13.22          | 12.9           | 31             | 1.03%     | 3.1416           | 0.012 | 7.95                 | 24.97                                                           | 3.15                         | 21.82                 |
| P-17                               | Junction                   | Circular | 48                            | 1               | RCP      | S-22       | S-23    | 10.2           | 9.66           | 134            | 0.40%     | 12.5664          | 0.012 | 7.85                 | 98.68                                                           | 72.49                        | 26.19                 |
| P-18                               | Delete Junction            | N/A      | N/A                           | N/A             | N/A      | N/A        | N/A     | N/A            | N/A            | N/A            | N/A       | N/A              | N/A   | N/A                  | N/A                                                             | N/A                          | N/A                   |
| P-19                               | Basin S-24                 | Circular | 36                            | 2               | RCP      | S-24       | S-25    | 9.66           | 8.1            | 189            | 0.83%     | 7.0686           | 0.012 | 9.32                 | 131.70                                                          | 79.98                        | 51.72                 |
| P-20                               | Basin S-25                 | Circular | 36                            | 2               | RCP      | S-25       | S-26    | 8.02           | 6.71           | 343            | 0.38%     | 7.0686           | 0.012 | 6.34                 | 89.57                                                           | 92.15                        | (2.58)                |
| P-21                               | Basin S-26                 | Circular | 36                            | 3               | RCP      | S-26       | S-28    | 6.71           | 5.13           | 66             | 1.76%     | 7.0686           | 0.012 | 13.58                | 287.99                                                          | 107.08                       | 180.91                |
| P-22                               | Delete Junction            | N/A      | N/A                           | N/A             | N/A      | N/A        | N/A     | N/A            | N/A            | N/A            | N/A       | N/A              | N/A   | N/A                  | N/A                                                             | N/A                          | N/A                   |
| P-23                               | Junction                   | Circular | 36                            | 3               | RCP      | S-28       | S-29    | 5.54           | 5.13           | 25             | 1.64%     | 15.9043          | 0.012 | 17.18                | 273.17                                                          | 107.08                       | 166.09                |
| P-24                               | Basin S-31                 | Circular | 18                            | 1               | RCP      | S-31       | S-26    | 12.26          | 12.16          | 32             | 0.31%     | 1.7671           | 0.012 | 3.62                 | 6.40                                                            | 3.05                         | 3.35                  |
| P-25                               | Basin S-32                 | Circular | 18                            | 1               | RCP      | S-32       | S-33    | 12.78          | 12.92          | 30             | 0.50%     | 1.7671           | 0.012 | 4.57                 | 8.07                                                            | 3.91                         | 4.16                  |
| P-26                               | Basin S-33                 | Circular | 24                            | 1               | RCP      | S-33       | S-26    | 12.46          | 11.18          | 416            | 0.31%     | 3.1416           | 0.012 | 4.34                 | 13.63                                                           | 9.21                         | 4.42                  |
| P-27                               | Pond #2<br>Equalizing Pipe | Circular | 36                            | 2               | RCP      | S-35       | S-36    | 2.23           | 2.21           | 89             | 0.02%     | 7.0686           | 0.012 | 1.54                 | 21.77                                                           | 21.77                        | 0.00                  |
| P-28                               | Pond #2                    | Circular | 36                            | 2               | RCP      | S-37       | S-38    | 7.6            | 7.35           | 40             | 0.62%     | 7.0686           | 0.012 | 8.66                 | 122.49                                                          | 41.44                        | 81.05                 |
| P-29                               | Pond #3                    | Circular | 36                            | 1               | CPP      | S-39       | S-40    | 7.03           | 5.67           | 66             | 2.06%     | 7.0686           | 0.022 | 8.03                 | 56.76                                                           | 22.26                        | 34.50                 |
| P-30                               | Pond #3                    | Circular | 36                            | 1               | CPP      | S-41       | S-42    | 6.5            | 5.62           | 66             | 1.33%     | 7.0686           | 0.022 | 6.46                 | 45.66                                                           | 22.26                        | 23.40                 |
| P-31                               | Outfall                    | Circular | 48                            | 1               | RCP      | S-43       | S-44    | 3.66           | 3.52           | 39             | 0.36%     | 12.5664          | 0.012 | 3.56                 | 44.78                                                           | 43.11                        | 1.67                  |

Table 10

| Report Name: Recommended Structure Improvements |                                       |                                                                                                                                                                                               |               |              |              |
|-------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|--------------|
| Legend                                          |                                       | <b>Owner:</b> Okaloosa County Public Works<br><b>Project Description:</b> Lake Lorraine Condition Assessment<br><b>Prepared by:</b> Tonia D. Nation, P.E.<br><b>Report Date:</b> October 2013 |               |              |              |
| Delete Structure                                |                                       |                                                                                                                                                                                               |               |              |              |
| Replace Structure Due to Capacity               |                                       |                                                                                                                                                                                               |               |              |              |
| Replace Pipe Due to Deterioration               |                                       |                                                                                                                                                                                               |               |              |              |
| No Replacement Required                         |                                       |                                                                                                                                                                                               |               |              |              |
| Structure                                       | Existing Type                         | Recommended Modification                                                                                                                                                                      | Northing (ft) | Easting (ft) | Pipes        |
| S-1                                             | Field Formed Inlet                    | Replace with Type F DBI                                                                                                                                                                       | 532356        | 1321107.23   | P-1          |
| S-2                                             | Field Formed Inlet                    | Replace with Type F DBI                                                                                                                                                                       | 532326.58     | 1321099.75   | P-1<br>P-2   |
| S-3                                             | Pipe End- No Structure                | 36" MES                                                                                                                                                                                       | 532123.29     | 1321089.94   | P-2          |
| S-4                                             | Pipe End- No Structure                | 36"" MES                                                                                                                                                                                      | 532083.15     | 1321090.12   | P-3          |
| S-5                                             | Pipe End- No Structure                | 36"" MES                                                                                                                                                                                      | 531893.5      | 1321134.46   | P-3          |
| S-6                                             | Pipe End- No Structure                | 30"" MES                                                                                                                                                                                      | 531783        | 1321257.71   | P-4          |
| S-7                                             | Pipe End- No Structure                | 30"" MES                                                                                                                                                                                      | 531762.92     | 1321259.52   | P-4          |
| S-8                                             | Pipe End- No Structure                | 36" MES                                                                                                                                                                                       | 531625.95     | 1321312.76   | P-5          |
| S-9                                             | Number not used.                      |                                                                                                                                                                                               |               |              |              |
| S-10                                            | Pipe End- No Structure                | 30" MES                                                                                                                                                                                       | 531405.46     | 1321118.22   | P-6          |
| S-11                                            | FDOT Type C DBI                       | No Change                                                                                                                                                                                     | 531265.96     | 1321716.95   | P-7          |
| S-12                                            | Pipe End- No Structure                | 30" MES                                                                                                                                                                                       | 531403.11     | 1321125      | P-7          |
| S-13                                            | Pipe End- No Structure                | 24" MES                                                                                                                                                                                       | 531406.38     | 1321089.97   | P-16         |
| S-14                                            | FDOT Standard Manhole<br>w/ Solid Top | No Change                                                                                                                                                                                     | 531409.09     | 1321085.91   | P-8<br>P-6   |
| S-15                                            | FDOT Curb Inlet                       | Replace top w/ Type 4 Curb<br>Inlet (Symetrical)                                                                                                                                              | 531295.91     | 1320998.45   | P-8<br>P-9   |
| S-16                                            | FDOT Curb Inlet                       | Replace Top w/ FDOT Type 4<br>(symetrical) Curb inlet w/ 42" x<br>48" equivalent Grate opening at<br>flowline                                                                                 | 531271.05     | 1320979.74   | P-9<br>P-10  |
| S-17                                            | FDOT Curb Inlet                       | Replace Top w/ FDOT Type 4<br>(symetrical) Curb inlet w/ 42" x<br>48" equivalent Grate opening at<br>flowline                                                                                 | 531056.86     | 1320817.08   | P-10<br>P-11 |
| S-18                                            | FDOT Curb Inlet                       | Replace Top w/ FDOT Type 4<br>(symetrical) Curb inlet w/ 42" x<br>48" equivalent Grate opening at<br>flowline                                                                                 | 531049.04     | 1320767.79   | P-11<br>P-12 |
| S-19                                            | FDOT Curb Inlet                       | Replace Top w/ FDOT Type 4<br>(symetrical) Curb inlet w/ 42" x<br>48" equivalent Grate opening at<br>flowline                                                                                 | 530839.54     | 1320608.26   | P-12<br>P-13 |
| S-20                                            | FDOT Curb Inlet                       | Replace Top w/ FDOT Type 4<br>(symetrical) Curb inlet w/ 42" x<br>48" equivalent Grate opening at<br>flowline                                                                                 | 530836.09     | 1320553.99   | P-13<br>P-14 |
| S-21                                            | FDOT Type C                           | Replace with Type G DBI                                                                                                                                                                       | 530730.87     | 1320475.56   | P-14<br>P-15 |
| S-22                                            | FDOT Type C                           | Replace with Type G DBI                                                                                                                                                                       | 530709.69     | 1320500.63   | P-17<br>P-15 |



Table 10

| Report Name: Recommended Structure Improvements |                        |                                                                                                                                                                                                      |               |              |                              |
|-------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------------------|
| Legend                                          |                        | <div>Owner: Okaloosa County Public Works</div> <div>Project Description: Lake Lorraine Condition Assessment</div> <div>Prepared by: Tonia D. Nation, P.E.</div> <div>Report Date: October 2013</div> |               |              |                              |
| Delete Structure                                |                        |                                                                                                                                                                                                      |               |              |                              |
| Replace Structure Due to Capacity               |                        |                                                                                                                                                                                                      |               |              |                              |
| Replace Pipe Due to Deterioration               |                        |                                                                                                                                                                                                      |               |              |                              |
| No Replacement Required                         |                        |                                                                                                                                                                                                      |               |              |                              |
| Structure                                       | Existing Type          | Recommended Modification                                                                                                                                                                             | Northing (ft) | Easting (ft) | Pipes                        |
| S-23                                            | FDOT Curb Inlet        | Remove Structure                                                                                                                                                                                     | 530602.51     | 1320420.12   | P-17<br>P-18                 |
| S-24                                            | FDOT Curb Inlet        | Replace Top w/ FDOT Type 4 (symmetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                                | 530598.04     | 1320425.62   | P-18<br>P-19<br>P-24         |
| S-25                                            | FDOT Curb Inlet        | Replace Top w/ FDOT Type 4 (symmetrical) Curb inlet w/ 42" x 48" equivalent Grate opening at flowline                                                                                                | 530436.32     | 1320523.14   | P-19<br>P-20                 |
| S-26                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                            | 530278.34     | 1320218.84   | P-20<br>P-21<br>P-24<br>P-26 |
| S-27                                            | Structure Type Unknown | Remove Structure                                                                                                                                                                                     | 530265.82     | 1320223.1    | P-21<br>P-22                 |
| S-28                                            | Structure Type Unknown | Type F DBI Top Type J AltB Bottom (14'-6" x 4'-0")                                                                                                                                                   | 530249.18     | 1320277.84   | P-22<br>P-23                 |
| S-29                                            | Endwall                | (3) 36" Endwall                                                                                                                                                                                      | 530225.51     | 1320286.11   | P-23                         |
| S-30                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                            | 530573.75     | 1320406.95   | P-16                         |
| S-31                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                            | 530309.31     | 1320211.61   | P-24                         |
| S-32                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                            | 530336.62     | 1319806.79   | P-25                         |
| S-33                                            | FDOT Curb Inlet        | No Change                                                                                                                                                                                            | 530306.47     | 1319803.84   | P-25<br>P-26                 |
| S-34                                            | Weir                   | No Change                                                                                                                                                                                            |               |              | NA                           |
| S-35                                            | Pipe End- No Structure | 36" MES                                                                                                                                                                                              | 529712.09     | 1320105.79   | P-27                         |
| S-36                                            | Pipe End- No Structure | 36" MES                                                                                                                                                                                              | 529647.04     | 1320045.65   | P-27                         |
| S-37                                            | MES                    | 36" MES                                                                                                                                                                                              | 529701.52     | 1320070.89   | P-28                         |
| S-38                                            | MES                    | 36" MES                                                                                                                                                                                              | 529670.39     | 1320045.37   | P-28                         |
| S-39                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                                      | 529515.23     | 1319791.15   | P-29                         |
| S-40                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                                      | 529522.84     | 1319769.64   | P-29                         |
| S-41                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                                      | 529459.93     | 1319749.94   | P-30                         |
| S-42                                            | Pipe End- No Structure | Replace Endwall                                                                                                                                                                                      | 529459.93     | 1319749.94   | P-30                         |
| S-43                                            | Endwall                | Replace w/ 48" Endwall                                                                                                                                                                               | 529095.95     | 1319548.27   | P-31                         |
| S-44                                            | Endwall                | Replace w/ 48" Endwall                                                                                                                                                                               | 529056.71     | 1319550.38   | P-31                         |

The second model removed the weir and lowered the water elevation to an elevation of 6.89 ft which is the elevation of the bottom of the existing culvert. The results in the summary show that there is very little change when comparing the models of the system with the weir and without the weir in both the existing (summary provided in Section II) and proposed conditions. Therefore, modifying the weir does not provide any notable benefit. Although the weir does not provide any notable benefit, it is recommended that the weir remain in place to maintain the current water level in the pond system. Several retaining walls in poor condition were identified along the edge of the pond and lowering the pond elevation may compromise the performance of these retaining walls.

During the design phase of this project, the pipe slopes and structure sizes will need to be assessed further to reduce the staging that occurs during the 25yr-24hr storm event. The models of the proposed system resulted in an average staging reduction of two feet in most cases during the larger storm event and this may be further reduced during the design phase of the project.

#### **F. OVERALL SYSTEM ASSESSMENT SUMMARY**

In summary, the localized flooding within the Lake Lorraine subdivision is a result of the existing pipe/structure system not having sufficient capacity to convey stormwater to the pond systems. By increasing the existing pipe sizes and replacing deteriorated pipes and structures comprising the drainage system, this assessment suggests localized flooding will be eliminated for the design 10yr-2hr storm event.

**Section II** Outfall Assessment determined that no downstream modifications to Ponds 1, 2, 3 are required to address the current capacity deficiencies that contribute to the localized flooding. The localized flooding is a product of pipe capacity limitations (i.e. several pipes are too small) and structure opening restrictions; therefore no improvements are proposed to the pond system itself. However, it is recommended several adequately sized pipes throughout the system be replaced due to their deteriorated condition. **Table 9** summarizes the pipe replacement recommendations.

In general, the order for replacing undersized pipes and structures should start downstream and progress upstream. The capacity limitations on the drainage system are the most severe directly upstream of Pond 1.

However, priority should be given to the replacement of pipes and structures deteriorated to a condition that represents a safety concern, such as a road crossing. Pipes P-27 and P-28 serve as equalization pipes between Ponds 2 and 3. These two pipes are severely deteriorated but they have adequate capacity. They have reached their effective service life and should be replaced in a timely manner to prevent the failure of Masters Boulevard.

This report serves as a replacement summary with suggested pipe and structures sizes and is not intended to serve as construction documents. Design documents should be generated detailing the proposed pipe/structure replacement schedule, utility conflicts, property ownership, easements, and roadway repair recommendations.

**APPENDIX A**

**SITE LOCATION MAP**



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## APPENDIX A: SITE LOCATION MAP

## LAKE LORRAINE DRAINAGE BASIN STORMWATER SYSTEM ASSESSMENT



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## **APPENDIX B**

### **EXISTING CONDITIONS PLAN SET**

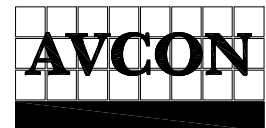
**OKALOOSA COUNTY  
SHALIMAR, FLORIDA**



**PROJECT MANAGER:  
JASON AUTREY (PUBLIC WORKS)**



DISTRICT 5  
DISTRICT 3  
DISTRICT 1  
DISTRICT 2  
DISTRICT 4

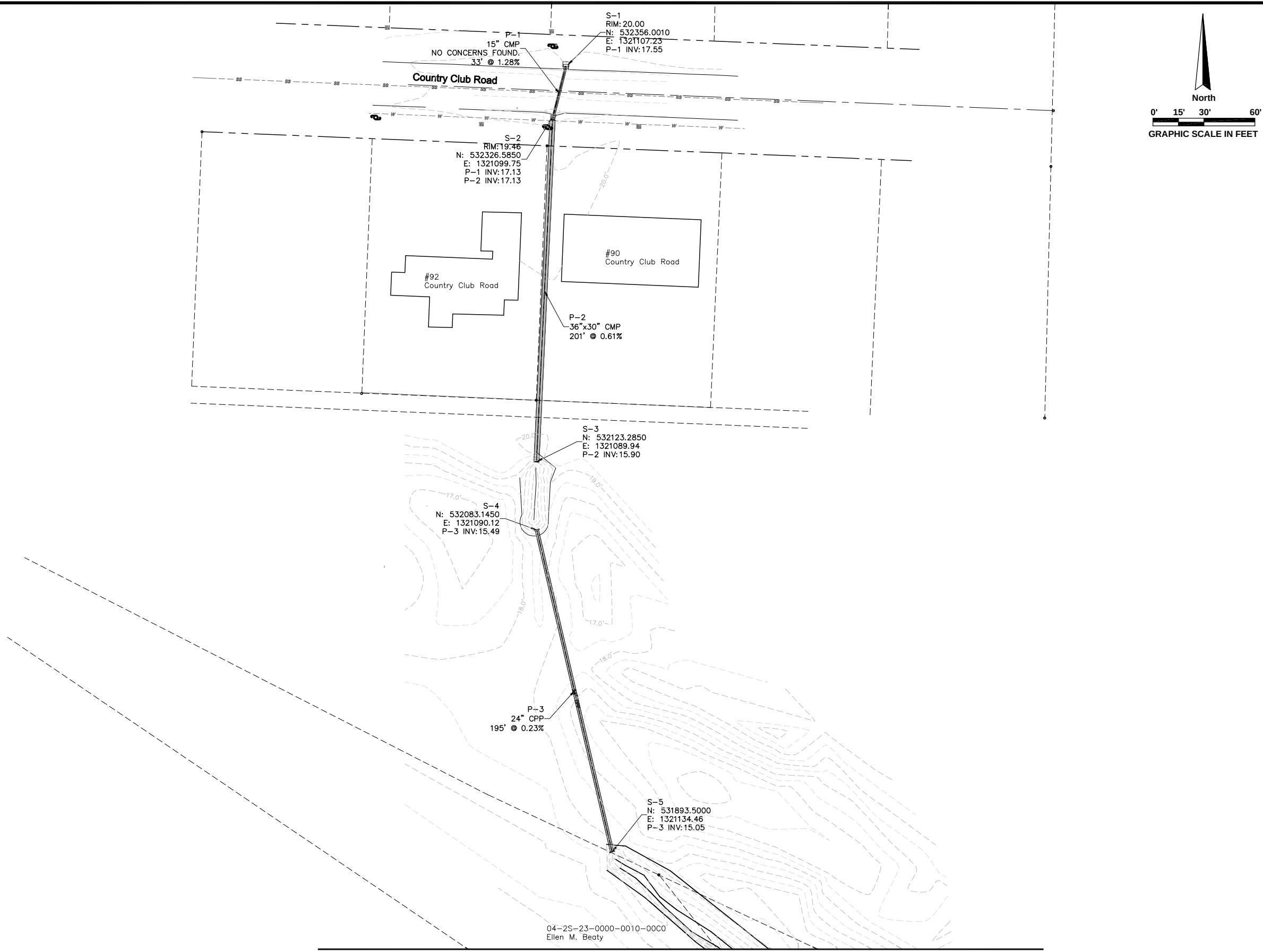


## PROFESSIONAL SEALS

**Civil**

**DRAWN BY:** J.A.W.  
**CHECKED BY:** T.D.N.  
**APPROVED BY:** V.C.L.  
**DATE:** JUNE 2012  
**PROJECT NO.** 2012.125.01

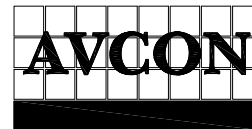
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MATCHLINE - SEE SHEET C2



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LAKE LORRAINE  
DRAINAGE BASIN  
STORMWATER ASSESSMENT

STORMWATER PLAN  
(SHEET 1 OF 8)

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APPROVED BY: V.C.L.  
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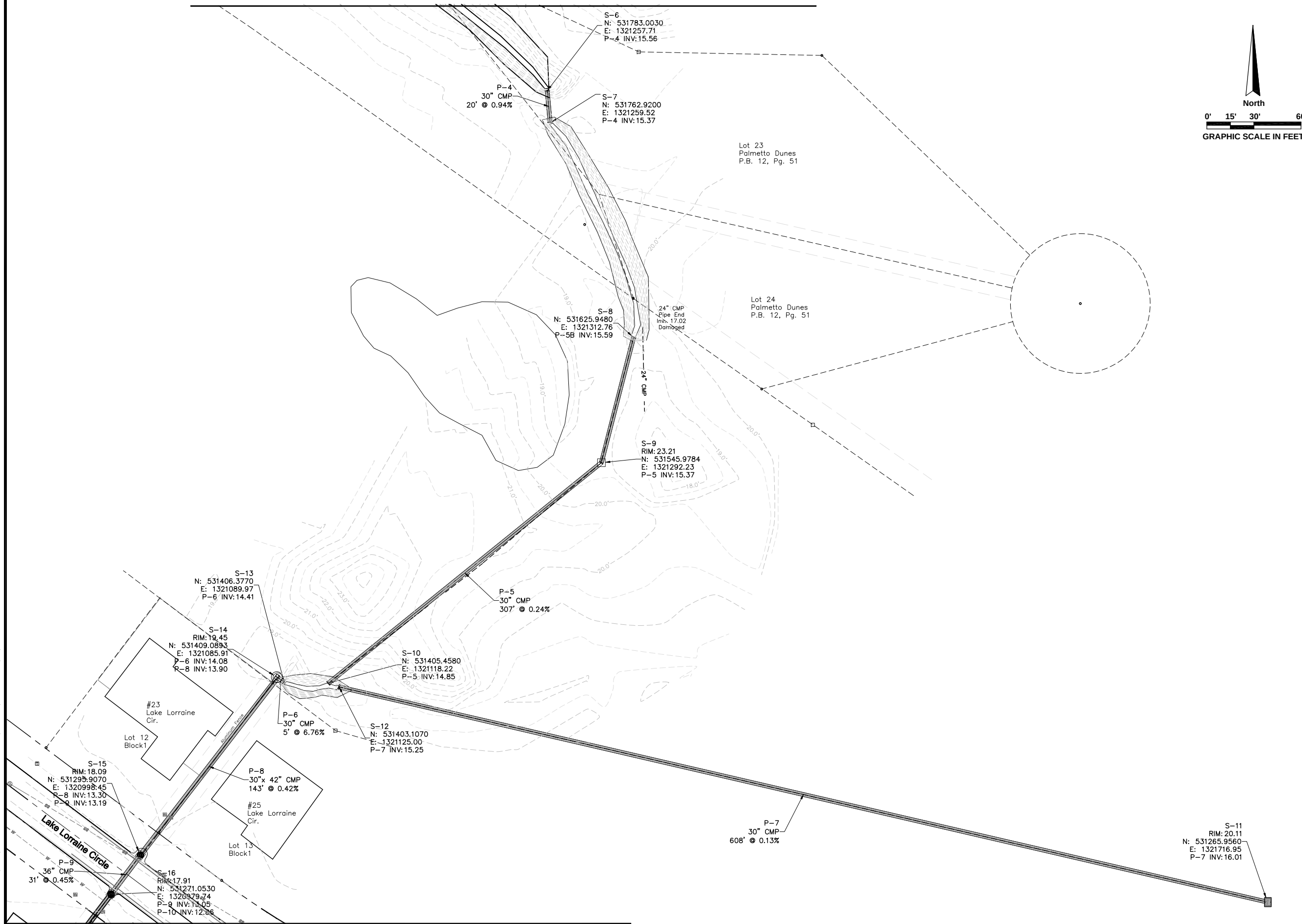
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**C1**

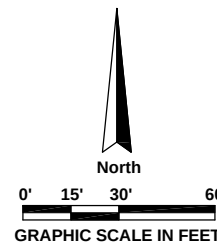


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MATCHLINE - SEE SHEET C1



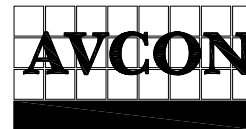
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MATCHLINE SHEET C1



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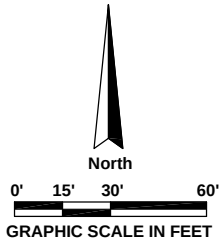
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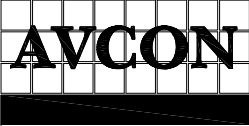
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MATCHLINE - SEE SHEET C4



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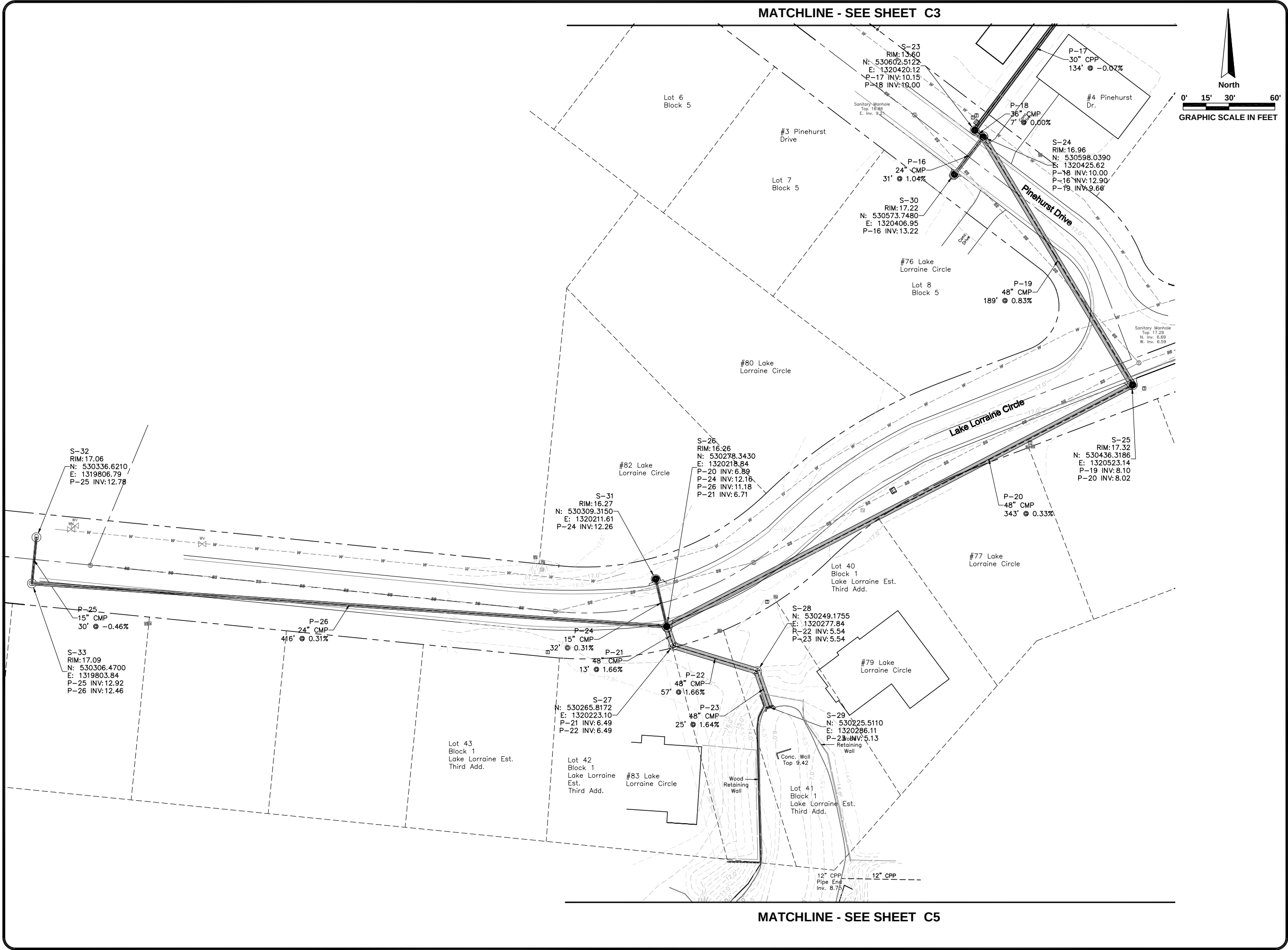
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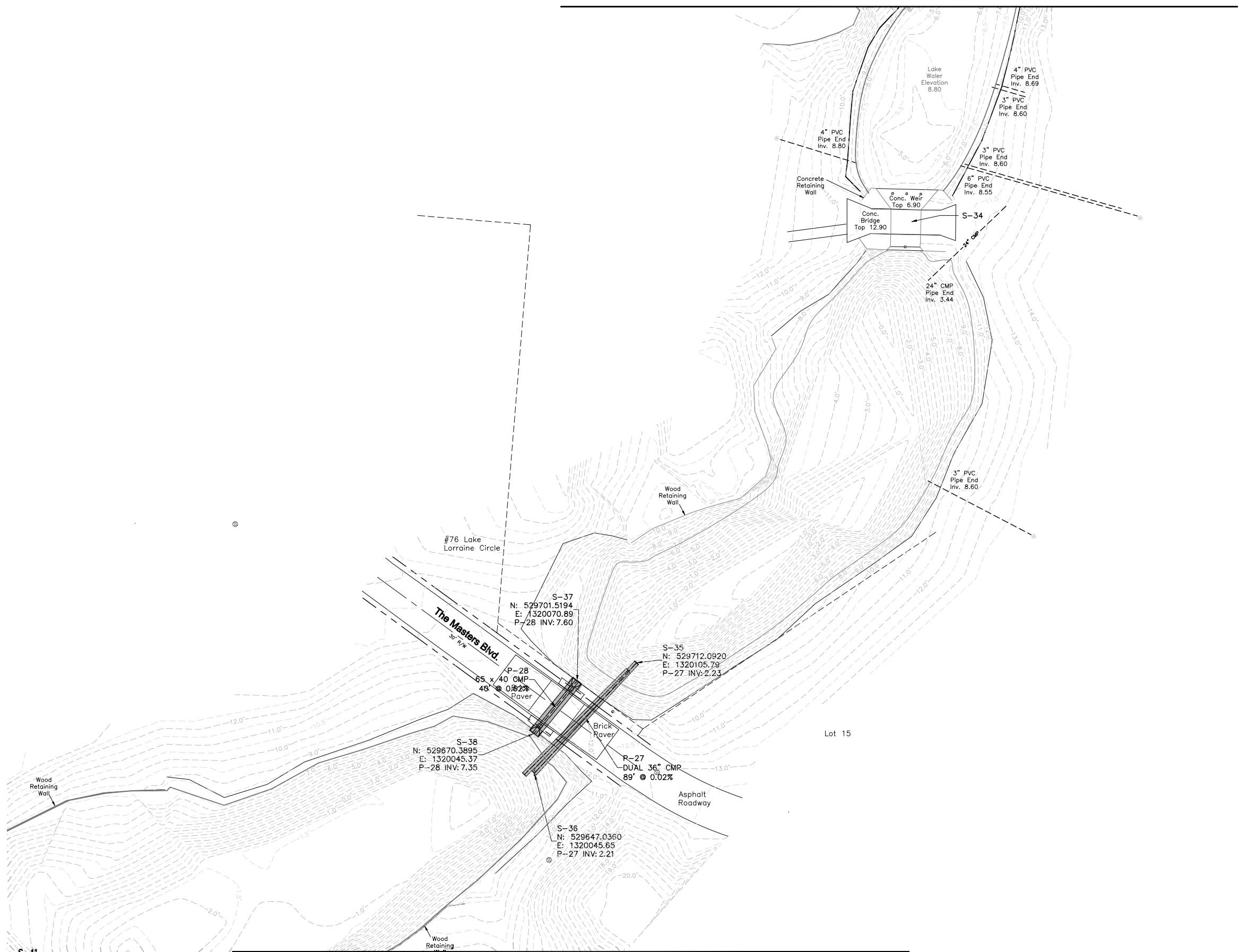
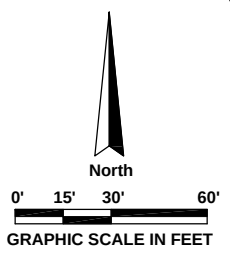
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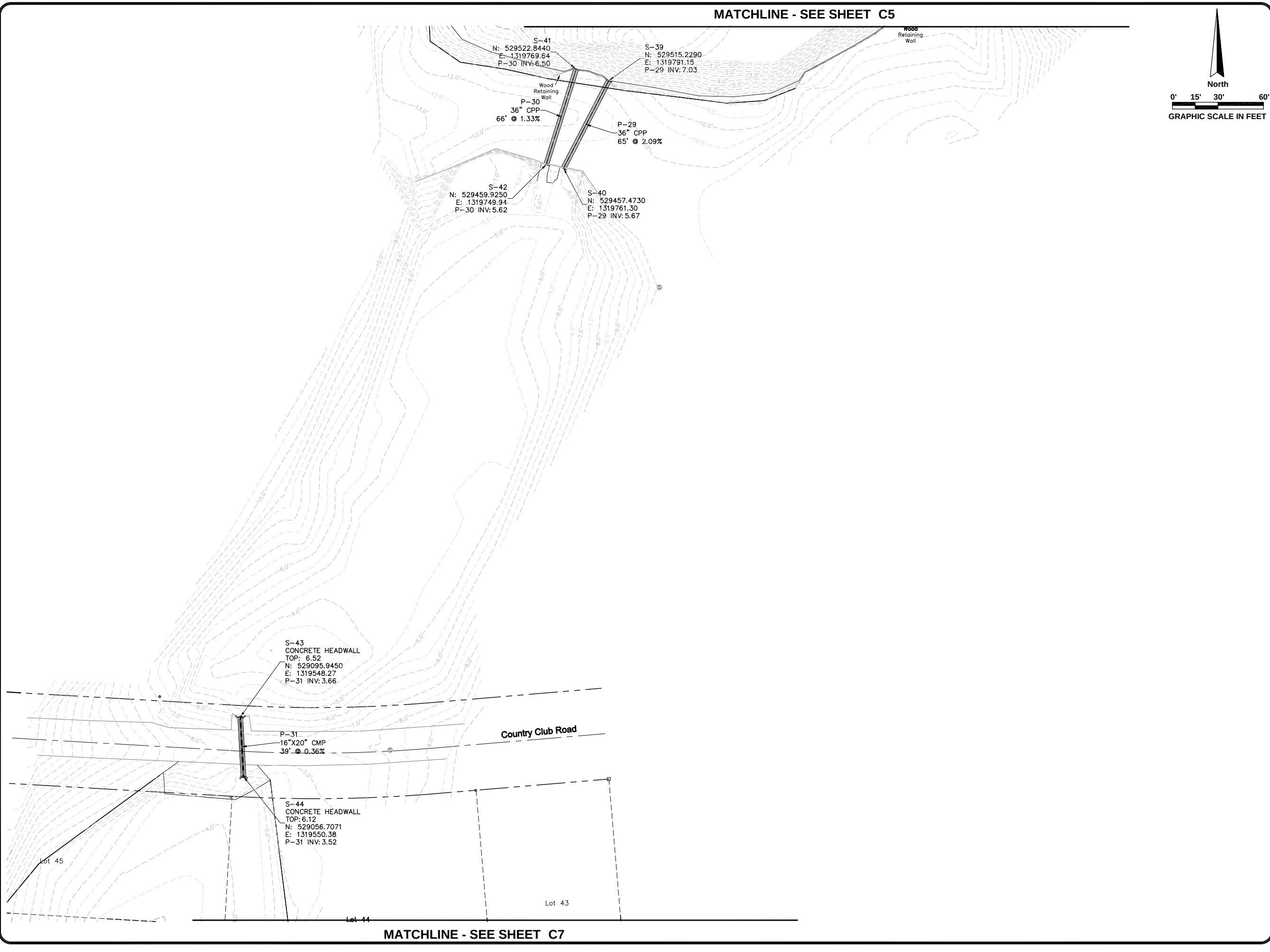
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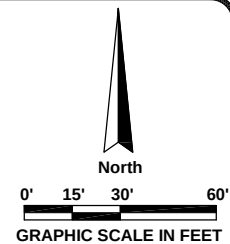
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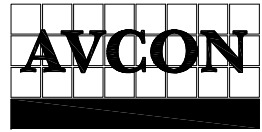
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STORMWATER ASSESSMENT

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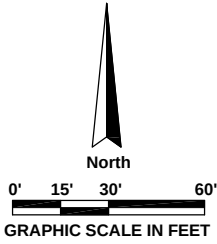
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MATCHLINE - SEE SHEET C6



Fox Valley Road

Arnold Palmer Court

Lot 2  
Lake Pointe  
PB. 11, Pg. 49  
& 50

Lot 47  
Lake Lorraine  
Gardens  
PB. 10, Pg. 85

Lot 1

Lot 49

Lot 48

Lot 46

Lot 44

Lot 42

Lot 41

Lot 40

Lot 39

Lot 38

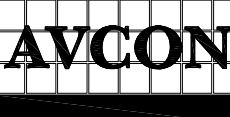
Lot 37

Lot 3

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LAKE LORRAINE  
DRAINAGE BASIN  
STORMWATER ASSESSMENT

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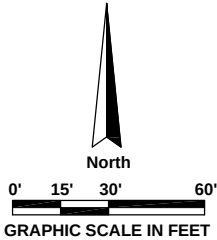
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MATCHLINE - SEE SHEET C7



Fox Valley Road

Lot 4

Lot 5

Lot 6

Lot 7

Lot 8

Lot 36

Lot 35

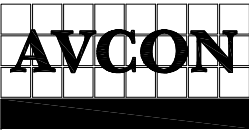
Lot 34

Lot 33

Lot 32



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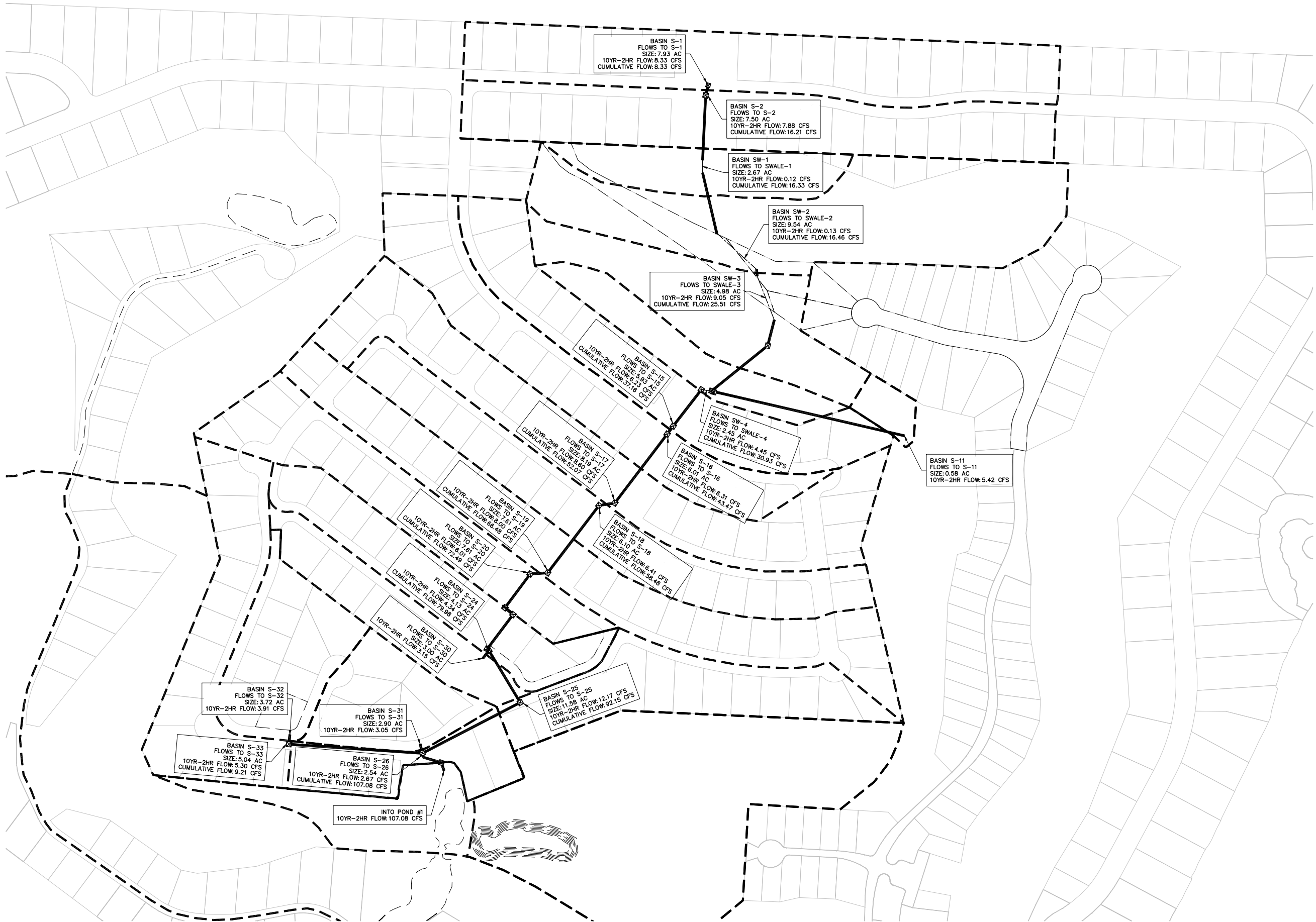
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## **APPENDIX C**

### **BASIN LAYOUT**

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ENGINEER OF RECORD:

NAME: TONIA D. NATION  
FL. LICENSE NO.: 64631

AVCON, INC.  
320 BAYSHORE DRIVE, SUITE A  
NICEVILLE, FL 32578  
PHONE: (850) 678-0050  
FAX: (850) 678-0040

FBPR CERTIFICATE OF  
AUTHORIZATION NO. 5057

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SHALIMAR, FL

LAKE LORRAINE  
PHASE III  
SUBDIVISION

STORMWATER  
BASIN MAP

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AVCON PROJECT NO. 2012.125.01

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1

## **APPENDIX D**

### **ICPR MODELS**

## Existing Conditions



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

=====

Basins

=====

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-1         | Node: POND NO. 1                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 16.590           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

-----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-2         | Node: POND NO. 2                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 23.050           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-3         | Node: POND NO. 3                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 24.500           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-1            | Node: S-1                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-11           | Node: S-11                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.160            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-15           | Node: S-15                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: BASIN S-16                      Node: S-16                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.010                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-17                      Node: S-17                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 8.190                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-18                      Node: S-18                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.100                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-19                      Node: S-19                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.610                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-2                      Node: S-2                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: Basin S-20                      Node: S-20                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 1.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-24                      Node: S-24                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |
|----------------------------|----------------------------------|
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |
| Area(ac): 4.130            | Time Shift(hrs): 0.00            |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |
| DCIA(%): 0.00              |                                  |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-25           | Node: S-25                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 11.580           | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-26           | Node: S-26                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.540            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-30           | Node: S-30                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.000            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-31           | Node: S-31                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.900            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-32           | Node: S-32                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.720            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                              |                |
|----------------------------|------------------------------|----------------|
| Name: BASIN S-33           | Node: S-33                   | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0        |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00    |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00     |                |
| Area(ac): 5.040            | Time Shift(hrs): 0.00        |                |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN SW-1 Node: SWALE-1 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN  
Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 2.670 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN SW-2 Node: SWALE-2 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN  
Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 9.540 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN SW-3 Node: SWALE-3 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN  
Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 4.980 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN SW-4 Node: SWALE-4 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN  
Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 2.450 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN WET-1 Node: WETLAND NO. 1 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN  
Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 14.480 Time Shift(hrs): 0.00  
Curve Number: 89.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

=====  
Nodes =====

Name: OUTFALL Base Flow(cfs): 0.000 Init Stage(ft): 3.520  
Group: LL BASIN Warn Stage(ft): 6.750  
Type: Time/Stage

Time(hrs) Stage(ft)

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

0.00 3.520  
999.00 3.520

Name: POND NO. 1      Base Flow(cfs): 0.000      Init Stage(ft): 8.800  
Group: LL BASIN      Warn Stage(ft): 10.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 5.000     | 0.0173   |
| 5.500     | 0.0491   |
| 6.000     | 0.1429   |
| 6.500     | 0.1976   |
| 7.000     | 0.2452   |
| 7.500     | 0.2756   |
| 8.000     | 0.2988   |
| 8.500     | 0.3146   |
| 9.000     | 0.3304   |
| 9.500     | 0.3424   |
| 10.000    | 0.3589   |
| 10.500    | 0.3670   |
| 11.000    | 0.4235   |

Name: POND NO. 2      Base Flow(cfs): 0.000      Init Stage(ft): 6.000  
Group: LL BASIN      Warn Stage(ft): 11.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 2.000     | 0.2059   |
| 3.000     | 0.2754   |
| 4.000     | 0.3489   |
| 5.000     | 0.4214   |
| 6.000     | 0.4765   |
| 7.000     | 0.5348   |
| 8.000     | 0.5972   |
| 8.500     | 0.6280   |
| 9.000     | 0.6557   |
| 9.500     | 0.6947   |
| 10.000    | 0.7375   |
| 10.500    | 0.7560   |
| 11.000    | 0.7760   |
| 11.500    | 0.8230   |

Name: POND NO. 3      Base Flow(cfs): 0.000      Init Stage(ft): 6.500  
Group: LL BASIN      Warn Stage(ft): 12.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.3676   |
| 1.000     | 0.4178   |
| 2.000     | 0.4795   |
| 3.000     | 0.5478   |
| 4.000     | 0.6112   |
| 5.000     | 0.6785   |
| 6.000     | 0.7522   |
| 7.000     | 0.8299   |
| 8.000     | 0.9066   |
| 8.500     | 0.9450   |
| 9.000     | 0.9806   |
| 9.500     | 1.0426   |
| 10.000    | 1.1231   |
| 10.500    | 1.2129   |
| 11.000    | 1.3300   |
| 12.000    | 1.5200   |
| 12.500    | 1.6500   |
| 13.000    | 1.8300   |

Name: S-1      Base Flow(cfs): 0.000      Init Stage(ft): 17.550  
Group: LL BASIN      Warn Stage(ft): 20.500  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

RIM=20.00'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.130    | 0.0001   |
| 17.550    | 0.0001   |
| 18.000    | 0.0001   |
| 19.150    | 0.0001   |
| 19.500    | 0.1370   |
| 20.100    | 0.1500   |
| 20.500    | 0.2200   |
| 21.000    | 0.3500   |

Name: S-11                      Base Flow(cfs): 0.000                      Init Stage(ft): 16.010  
Group: LL BASIN                      Warn Stage(ft): 21.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 16.010    | 0.0001   |
| 18.000    | 0.0001   |
| 20.110    | 0.0001   |
| 20.500    | 0.2350   |
| 21.000    | 0.5420   |

Name: S-14                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.900  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.900    | 0.0001   |
| 15.000    | 0.0001   |
| 19.450    | 0.0001   |
| 20.000    | 0.4500   |
| 20.500    | 0.5400   |

Name: S-15                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.190  
Group: LL BASIN                      Warn Stage(ft): 18.590  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.190    | 0.0001   |
| 15.000    | 0.0001   |
| 17.650    | 0.0200   |
| 18.090    | 0.1590   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-16                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.060  
Group: LL BASIN                      Warn Stage(ft): 18.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.060    | 0.0001   |
| 15.000    | 0.0001   |
| 17.950    | 0.0200   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-17                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.000  
Group: LL BASIN                      Warn Stage(ft): 17.380  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |
| 16.880    | 0.1377   |
| 17.000    | 0.1720   |
| 17.880    | 0.2750   |

Name: S-18                      Base Flow(cfs): 0.000                      Init Stage(ft): 11.550  
Group: LL BASIN                      Warn Stage(ft): 17.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 11.550    | 0.0001   |
| 15.000    | 0.0001   |
| 16.910    | 0.1377   |
| 17.410    | 0.1720   |
| 17.910    | 0.2750   |

Name: S-19                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.720  
Group: LL BASIN                      Warn Stage(ft): 18.400  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.720    | 0.0001   |
| 14.000    | 0.0001   |
| 17.900    | 0.1377   |
| 18.400    | 0.1720   |
| 18.900    | 0.2750   |

Name: S-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 17.130  
Group: LL BASIN                      Warn Stage(ft): 20.060  
Type: Stage/Area

RIM=19.46'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.0000   |
| 17.130    | 0.0001   |
| 17.760    | 0.0001   |
| 19.460    | 0.0001   |
| 20.060    | 0.1370   |
| 21.000    | 0.2290   |

Name: S-20                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.500  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.500    | 0.0001   |
| 14.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.1720   |
| 18.220    | 0.2750   |

Name: S-21                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.350  
Group: LL BASIN                      Warn Stage(ft): 16.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.350    | 0.0001   |
| 14.000    | 0.0001   |
| 16.000    | 0.0060   |
| 16.500    | 0.0270   |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

17.000      0.0360

Name: S-22      Base Flow(cfs): 0.000      Init Stage(ft): 10.050  
Group: LL BASIN      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.050    | 0.0001   |
| 14.000    | 0.0001   |
| 16.550    | 0.0060   |
| 17.050    | 0.0270   |
| 17.550    | 0.0360   |

Name: S-23      Base Flow(cfs): 0.000      Init Stage(ft): 10.000  
Group: LL BASIN      Warn Stage(ft): 16.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.000    | 0.0001   |
| 12.000    | 0.0001   |
| 13.600    | 0.0001   |
| 14.000    | 0.1000   |
| 15.000    | 0.6000   |
| 16.500    | 0.6500   |

Name: S-24      Base Flow(cfs): 0.000      Init Stage(ft): 9.660  
Group: LL BASIN      Warn Stage(ft): 17.440  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 9.660     | 0.0001   |
| 14.000    | 0.0001   |
| 16.960    | 0.1377   |
| 17.440    | 0.1720   |
| 17.960    | 0.2750   |

Name: S-25      Base Flow(cfs): 0.000      Init Stage(ft): 8.020  
Group: LL BASIN      Warn Stage(ft): 17.820  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 8.020     | 0.0001   |
| 15.000    | 0.0001   |
| 17.320    | 0.1377   |
| 17.820    | 0.1720   |
| 18.320    | 0.2750   |

Name: S-26      Base Flow(cfs): 0.000      Init Stage(ft): 6.900  
Group: LL BASIN      Warn Stage(ft): 16.760  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.710     | 0.0001   |
| 14.000    | 0.0001   |
| 16.260    | 0.1377   |
| 16.760    | 0.1720   |
| 17.260    | 0.3250   |

Name: S-27      Base Flow(cfs): 0.000      Init Stage(ft): 6.900  
Group: LL BASIN      Plunge Factor: 1.00      Warn Stage(ft): 14.900  
Type: Manhole, Flat Floor

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.490     | 0.0001   |
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |

---

|                           |                       |                        |
|---------------------------|-----------------------|------------------------|
| Name: S-28                | Base Flow(cfs): 0.000 | Init Stage(ft): 6.900  |
| Group: LL BASIN           | Plunge Factor: 1.00   | Warn Stage(ft): 14.900 |
| Type: Manhole, Flat Floor |                       |                        |

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| Stage(ft) | Area(ac) |
|-----------|----------|
| 5.540     | 0.0001   |
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-30       | Base Flow(cfs): 0.000 | Init Stage(ft): 13.220 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.720 |
| Type: Stage/Area |                       |                        |

---

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.220    | 0.0001   |
| 15.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.2750   |
| 18.220    | 0.3310   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-31       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.260 |
| Group: LL BASIN  |                       | Warn Stage(ft): 16.770 |
| Type: Stage/Area |                       |                        |

---

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.260    | 0.0001   |
| 14.000    | 0.0001   |
| 16.270    | 0.1377   |
| 16.770    | 0.1720   |
| 17.270    | 0.2750   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-32       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.780 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.470 |
| Type: Stage/Area |                       |                        |

---

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.780    | 0.0001   |
| 14.000    | 0.0001   |
| 16.970    | 0.1377   |
| 17.470    | 0.1720   |
| 17.970    | 0.2750   |

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|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-33       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.460 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.590 |
| Type: Stage/Area |                       |                        |

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| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.460    | 0.0001   |
| 14.000    | 0.0001   |
| 17.090    | 0.1377   |
| 17.590    | 0.1720   |
| 18.090    | 0.2750   |

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INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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Name: SWALE-1                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.490  
Group: LL BASIN                      Warn Stage(ft): 20.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.490    | 0.0003   |
| 16.000    | 0.0004   |
| 16.500    | 0.0004   |
| 17.000    | 0.0029   |
| 17.500    | 0.0063   |
| 18.000    | 0.0100   |
| 19.000    | 0.0230   |
| 19.500    | 0.0551   |

---

Name: SWALE-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.050  
Group: LL BASIN                      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.050    | 0.0010   |
| 15.500    | 0.0100   |
| 16.000    | 0.0124   |
| 16.500    | 0.0288   |
| 17.000    | 0.0484   |
| 17.500    | 0.0650   |
| 18.000    | 0.1890   |
| 18.500    | 0.2290   |
| 19.000    | 0.3130   |

---

Name: SWALE-3                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.370  
Group: LL BASIN                      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.370    | 0.0125   |
| 16.500    | 0.0211   |
| 17.000    | 0.0283   |
| 17.500    | 0.0355   |
| 18.000    | 0.0403   |
| 18.500    | 0.0502   |
| 19.000    | 0.3040   |
| 19.500    | 0.5500   |

---

Name: SWALE-4                      Base Flow(cfs): 0.000                      Init Stage(ft): 14.410  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 14.410    | 0.0010   |
| 15.250    | 0.0032   |
| 15.500    | 0.0038   |
| 16.000    | 0.0051   |
| 16.500    | 0.0064   |
| 17.000    | 0.0077   |
| 17.500    | 0.0096   |
| 18.000    | 0.0118   |
| 18.500    | 0.0230   |
| 19.000    | 0.1580   |
| 20.000    | 0.4500   |

---

Name: WETLAND NO. 1                      Base Flow(cfs): 0.000                      Init Stage(ft): 4.000  
Group: LL BASIN                      Warn Stage(ft): 6.500  
Type: Stage/Area

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INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 3.660     | 0.0835   |
| 4.500     | 0.4620   |
| 5.000     | 0.6607   |
| 5.500     | 0.8112   |
| 6.000     | 0.9548   |
| 6.500     | 1.0644   |
| 7.000     | 1.1702   |
| 7.500     | 1.2500   |

=====  
Pipes

```

Name: P-22          From Node: S-27          Length(ft): 57.21
Group: LL BASIN     To Node: S-28             Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
                                         Entrance Loss Coef: 0.00
                                         Exit Loss Coef: 1.00
                                         Bend Loss Coef: 0.00
                                         Outlet Ctrl Spec: Use dc or tw
                                         Inlet Ctrl Spec: Use dc
                                         Stabilizer Option: None

      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 48.00     48.00
Rise(in): 48.00     48.00
Invert(ft): 6.490   5.540
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000

```

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

```

Name: P-23          From Node: S-28          Length(ft): 25.07
Group: LL BASIN     To Node: Pond No. 1       Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
                                         Entrance Loss Coef: 0.00
                                         Exit Loss Coef: 1.00
                                         Bend Loss Coef: 0.00
                                         Outlet Ctrl Spec: Use dc or tw
                                         Inlet Ctrl Spec: Use dc
                                         Stabilizer Option: None

      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 48.00     48.00
Rise(in): 48.00     48.00
Invert(ft): 5.540   5.130
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000

```

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

```

Name: P-27          From Node: POND NO. 2     Length(ft): 40.00
Group: LL BASIN     To Node: POND NO. 3       Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
                                         Entrance Loss Coef: 0.00
                                         Exit Loss Coef: 1.00
                                         Bend Loss Coef: 0.00
                                         Outlet Ctrl Spec: Use dc or tw
                                         Inlet Ctrl Spec: Use dc
                                         Stabilizer Option: None

      UPSTREAM      DOWNSTREAM
Geometry: Horz Ellipse Horz Ellipse
Span(in): 65.00     65.00
Rise(in): 40.00     40.00
Invert(ft): 7.600   7.350
Manning's N: 0.019000 0.019000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000

```

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                       |                       |                                      |
|-----------------------|-----------------------|--------------------------------------|
| Name: P-28            | From Node: POND NO. 2 | Length(ft): 89.00                    |
| Group: LL BASIN       | To Node: POND NO. 3   | Count: 2                             |
|                       |                       | Friction Equation: Automatic         |
|                       |                       | Solution Algorithm: Most Restrictive |
| UPSTREAM              | DOWNSTREAM            | Flow: Both                           |
| Geometry: Circular    | Circular              | Entrance Loss Coef: 0.00             |
| Span(in): 36.00       | 36.00                 | Exit Loss Coef: 1.00                 |
| Rise(in): 36.00       | 36.00                 | Bend Loss Coef: 0.00                 |
| Invert(ft): 2.230     | 2.210                 | Outlet Ctrl Spec: Use dc or tw       |
| Manning's N: 0.024000 | 0.024000              | Inlet Ctrl Spec: Use dc              |
| Top Clip(in): 0.000   | 0.000                 | Stabilizer Option: None              |
| Bot Clip(in): 0.000   | 0.000                 |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

---

|                       |                        |                                      |
|-----------------------|------------------------|--------------------------------------|
| Name: P-29            | From Node: POND NO. 3  | Length(ft): 65.00                    |
| Group: LL BASIN       | To Node: WETLAND NO. 1 | Count: 1                             |
|                       |                        | Friction Equation: Automatic         |
|                       |                        | Solution Algorithm: Most Restrictive |
| UPSTREAM              | DOWNSTREAM             | Flow: Both                           |
| Geometry: Circular    | Circular               | Entrance Loss Coef: 0.00             |
| Span(in): 30.00       | 30.00                  | Exit Loss Coef: 1.00                 |
| Rise(in): 30.00       | 30.00                  | Bend Loss Coef: 0.00                 |
| Invert(ft): 7.030     | 5.670                  | Outlet Ctrl Spec: Use dc or tw       |
| Manning's N: 0.024000 | 0.024000               | Inlet Ctrl Spec: Use dc              |
| Top Clip(in): 0.000   | 0.000                  | Stabilizer Option: None              |
| Bot Clip(in): 0.000   | 0.000                  |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                    |                                      |
|-----------------------|--------------------|--------------------------------------|
| Name: P-3             | From Node: SWALE-1 | Length(ft): 195.00                   |
| Group: LL BASIN       | To Node: SWALE-2   | Count: 1                             |
|                       |                    | Friction Equation: Automatic         |
|                       |                    | Solution Algorithm: Most Restrictive |
| UPSTREAM              | DOWNSTREAM         | Flow: Both                           |
| Geometry: Circular    | Circular           | Entrance Loss Coef: 0.00             |
| Span(in): 24.00       | 24.00              | Exit Loss Coef: 1.00                 |
| Rise(in): 24.00       | 24.00              | Bend Loss Coef: 0.00                 |
| Invert(ft): 15.490    | 15.050             | Outlet Ctrl Spec: Use dc or tw       |
| Manning's N: 0.024000 | 0.024000           | Inlet Ctrl Spec: Use dc              |
| Top Clip(in): 0.000   | 0.000              | Stabilizer Option: None              |
| Bot Clip(in): 0.000   | 0.000              |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                        |                                      |
|-----------------------|------------------------|--------------------------------------|
| Name: P-30            | From Node: POND NO. 3  | Length(ft): 66.00                    |
| Group: LL BASIN       | To Node: WETLAND NO. 1 | Count: 1                             |
|                       |                        | Friction Equation: Automatic         |
|                       |                        | Solution Algorithm: Most Restrictive |
| UPSTREAM              | DOWNSTREAM             | Flow: Both                           |
| Geometry: Circular    | Circular               | Entrance Loss Coef: 0.00             |
| Span(in): 30.00       | 30.00                  | Exit Loss Coef: 1.00                 |
| Rise(in): 30.00       | 30.00                  | Bend Loss Coef: 0.00                 |
| Invert(ft): 6.500     | 5.620                  | Outlet Ctrl Spec: Use dc or tw       |
| Manning's N: 0.024000 | 0.024000               | Inlet Ctrl Spec: Use dc              |
| Top Clip(in): 0.000   | 0.000                  |                                      |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS





OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |                    |                                      |
|-----------------------|--------------------|--------------------------------------|
| Name: P-6             | From Node: SWALE-4 | Length(ft): 5.00                     |
| Group: LL BASIN       | To Node: S-14      | Count: 1                             |
| UPSTREAM              | DOWNSTREAM         | Friction Equation: Automatic         |
| Geometry: Circular    | Circular           | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00              | Flow: Both                           |
| Rise(in): 30.00       | 30.00              | Entrance Loss Coef: 0.00             |
| Invert(ft): 14.410    | 14.080             | Exit Loss Coef: 1.00                 |
| Manning's N: 0.024000 | 0.024000           | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000              | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000              | Inlet Ctrl Spec: Use dc              |
|                       |                    | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

=====

==== Drop Structures =====

=====

|                       |                |                                      |
|-----------------------|----------------|--------------------------------------|
| Name: P-1             | From Node: S-1 | Length(ft): 33.00                    |
| Group: LL BASIN       | To Node: S-2   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM     | Friction Equation: Automatic         |
| Geometry: Circular    | Circular       | Solution Algorithm: Most Restrictive |
| Span(in): 15.00       | 15.00          | Flow: Both                           |
| Rise(in): 15.00       | 15.00          | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.550    | 17.130         | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000       | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000          | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000          | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

15" CMP  
FIELD FORMED STRUCTURE WITH WEIR.

\*\*\* Weir 1 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 16.00       | Invert(ft): 19.160       |       |
| Rise(in): 10.00       | Control Elev(ft): 19.160 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 20.000       |       |
| Rise(in): 18.00       | Control Elev(ft): 20.000 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-10            | From Node: S-16 | Length(ft): 268.95                   |
| Group: LL BASIN       | To Node: S-17   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.860    | 12.100          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-10 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 80.00       | Invert(ft): 17.440       |       |
| Rise(in): 4.00        | Control Elev(ft): 17.440 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-11            | From Node: S-17 | Length(ft): 49.90                    |
| Group: LL BASIN       | To Node: S-18   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.000    | 11.640          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-11 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 108.00      | Invert(ft): 15.990       |       |
| Rise(in): 6.00        | Control Elev(ft): 15.990 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-12            | From Node: S-18 | Length(ft): 263.32                   |
| Group: LL BASIN       | To Node: S-19   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 11.550    | 10.820          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-12 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 92.00       | Invert(ft): 16.040       |       |
| Rise(in): 5.00        | Control Elev(ft): 16.040 |       |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-13            | From Node: S-19 | Length(ft): 54.38                    |
| Group: LL BASIN       | To Node: S-20   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.720    | 10.580          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-13 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 132.00      | Invert(ft): 16.690       |       |
| Rise(in): 4.00        | Control Elev(ft): 16.690 |       |

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|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-14            | From Node: S-20 | Length(ft): 131.23                   |
| Group: LL BASIN       | To Node: S-21   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.500    | 10.400          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-14 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 84.00       | Invert(ft): 16.590       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.590 |       |

---

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-15            | From Node: S-21 | Length(ft): 32.81                    |
| Group: LL BASIN       | To Node: S-22   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.350    | 10.350          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-15 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.000       |
| Rise(in): 24.00       | Control Elev(ft): 16.000 |

TABLE

---

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-15      | From Node: S-30 | Length(ft): 30.64 |
| Group: LL BASIN | To Node: S-24   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 24.00       | 24.00      | Flow: Both                           |
| Rise(in): 24.00       | 24.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.220    | 12.900     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-16 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 57.00       | Invert(ft): 16.340       |
| Rise(in): 5.40        | Control Elev(ft): 16.340 |

TABLE

---

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-17      | From Node: S-22 | Length(ft): 134.05 |
| Group: LL BASIN | To Node: S-23   | Count: 1           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.050    | 10.150     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe from 30" CPP to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-17 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.550       |
| Rise(in): 24.00       | Control Elev(ft): 16.550 |

TABLE

---

|                 |                 |                  |
|-----------------|-----------------|------------------|
| Name: P-18      | From Node: S-23 | Length(ft): 7.00 |
| Group: LL BASIN | To Node: S-24   | Count: 1         |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.000    | 10.000     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-18 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.500       |
| Rise(in): 24.00       | Control Elev(ft): 16.500 |

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-19      | From Node: S-24 | Length(ft): 188.85 |
| Group: LL BASIN | To Node: S-25   | Count: 1           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 9.660     | 8.100      | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified weir from 60"x7" to a FDOT Type 4 asymmetrical curb inlet with 144"x6" opening. Adjusted weir elevation to account

\*\*\* Weir 1 of 1 for Drop Structure P-19 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 144.00      | Invert(ft): 16.960       |
| Rise(in): 6.00        | Control Elev(ft): 16.960 |

|                 |                  |                    |
|-----------------|------------------|--------------------|
| Name: P-2       | From Node: S-2   | Length(ft): 201.27 |
| Group: LL BASIN | To Node: SWALE-1 | Count: 1           |

|                        |              |                                      |
|------------------------|--------------|--------------------------------------|
| UPSTREAM               | DOWNSTREAM   | Friction Equation: Automatic         |
| Geometry: Horz Ellipse | Horz Ellipse | Solution Algorithm: Most Restrictive |
| Span(in): 36.00        | 36.00        | Flow: Both                           |
| Rise(in): 30.00        | 30.00        | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.130     | 15.900       | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000  | 0.024000     | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000    | 0.000        | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000    | 0.000        | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

36"X30" CMP  
FIELD FORMED STRUCTURE. ILL FITTING TOP AND CONNECTION FROM PIPE TO INLET.

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 20.00       | Invert(ft): 17.790       |
| Rise(in): 8.00        | Control Elev(ft): 17.790 |

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 19.460       |
| Rise(in): 18.00       | Control Elev(ft): 19.460 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-20            | From Node: S-25 | Length(ft): 342.87                   |
| Group: LL BASIN       | To Node: S-26   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 8.020     | 6.890           | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-20 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 54.00       | Invert(ft): 16.520       |
| Rise(in): 5.00        | Control Elev(ft): 16.520 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-21            | From Node: S-26 | Length(ft): 13.23                    |
| Group: LL BASIN       | To Node: S-27   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 6.710     | 6.490           | Exit Loss Coef: 1.000                |
| Manning's N: 0.022000 | 0.022000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-21 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 144.00      | Invert(ft): 15.790       |

TABLE

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Rise(in): 6.00

Control Elev(ft): 15.790

Name: P-24  
Group: LL BASIN

From Node: S-31  
To Node: S-26

Length(ft): 31.80  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 15.00  
Rise(in): 15.00  
Invert(ft): 12.260  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
15.00  
15.00  
12.160  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-24 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 90.00  
Rise(in): 5.00

Invert(ft): 15.840  
Control Elev(ft): 15.840

Name: P-25  
Group: LL BASIN

From Node: S-32  
To Node: S-33

Length(ft): 30.26  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 15.00  
Rise(in): 15.00  
Invert(ft): 12.780  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
15.00  
15.00  
12.920  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-25 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 96.00  
Rise(in): 6.00

Invert(ft): 16.500  
Control Elev(ft): 16.500

Name: P-26  
Group: LL BASIN

From Node: S-33  
To Node: S-26

Length(ft): 415.95  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 24.00  
Rise(in): 24.00  
Invert(ft): 12.460  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
24.00  
24.00  
11.180  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 55.00       | Invert(ft): 16.620       |
| Rise(in): 4.50        | Control Elev(ft): 16.620 |

TABLE

Name: P-7  
Group: LL BASIN

From Node: S-11  
To Node: SWALE-4

Length(ft): 607.63  
Count: 1

|                       |            |
|-----------------------|------------|
| UPSTREAM              | DOWNSTREAM |
| Geometry: Circular    | Circular   |
| Span(in): 30.00       | 30.00      |
| Rise(in): 30.00       | 30.00      |
| Invert(ft): 16.010    | 15.250     |
| Manning's N: 0.024000 | 0.024000   |
| Top Clip(in): 0.000   | 0.000      |
| Bot Clip(in): 0.000   | 0.000      |

|                                      |
|--------------------------------------|
| Friction Equation: Automatic         |
| Solution Algorithm: Most Restrictive |
| Flow: Both                           |
| Entrance Loss Coef: 0.000            |
| Exit Loss Coef: 1.000                |
| Outlet Ctrl Spec: Use dc or tw       |
| Inlet Ctrl Spec: Use dc              |
| Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-7 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 20.110       |
| Rise(in): 18.00       | Control Elev(ft): 20.110 |

TABLE

Name: P-8  
Group: LL BASIN

From Node: S-14  
To Node: S-15

Length(ft): 143.04  
Count: 1

|                        |              |
|------------------------|--------------|
| UPSTREAM               | DOWNSTREAM   |
| Geometry: Horz Ellipse | Horz Ellipse |
| Span(in): 42.00        | 42.00        |
| Rise(in): 30.00        | 30.00        |
| Invert(ft): 13.900     | 13.300       |
| Manning's N: 0.024000  | 0.024000     |
| Top Clip(in): 0.000    | 0.000        |
| Bot Clip(in): 0.000    | 0.000        |

|                                      |
|--------------------------------------|
| Friction Equation: Automatic         |
| Solution Algorithm: Most Restrictive |
| Flow: Both                           |
| Entrance Loss Ccoef: 0.000           |
| Exit Loss Coef: 1.000                |
| Outlet Ctrl Spec: Use dc or tw       |
| Inlet Ctrl Spec: Use dc              |
| Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

\*\*\* Weir 1 of 1 for Drop Structure P-8 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 18.00       | Invert(ft): 19.450       |
| Rise(in): 24.00       | Control Elev(ft): 19.450 |

TABLE

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: P-9                      From Node: S-15                      Length(ft): 31.11  
Group: LL BASIN                      To Node: S-16                      Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.190    | 13.050     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-9 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 90.00       | Invert(ft): 17.610       |
| Rise(in): 5.50        | Control Elev(ft): 17.610 |

=====

Name: WEIR-1                      From Node: POND NO. 1  
Group: LL BASIN                      To Node: POND NO. 2  
Flow: Both                      Count: 1  
Type: Vertical: Mavis                      Geometry: Rectangular

Span(in): 213.60  
Rise(in): 48.00  
Invert(ft): 8.900  
Control Elevation(ft): 8.900

TABLE

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Discharge Coef: 3.200  
Orifice Discharge Coef: 0.600

=====

Name: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING

Override Defaults: Yes  
Storm Duration(hrs): 2.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 4.00

|           |                |
|-----------|----------------|
| Time(hrs) | Print Inc(min) |
| -----     | -----          |
| 2.000     | 15.00          |

Name: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 10.80

|           |                |
|-----------|----------------|
| Time(hrs) | Print Inc(min) |
| -----     | -----          |
| 24.000    | 15.00          |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

==== Routing Simulations =====  
=====

Name: 10yr-2hr                      Hydrology Sim: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING  
Execute: Yes                      Restart: No                      Patch: No  
Alternative: No  
Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 25.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 10.000         |
| Group     | Run            |
| LL BASIN  | Yes            |

Name: 25yr-24hr                      Hydrology Sim: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING  
Execute: Yes                      Restart: No                      Patch: No  
Alternative: No  
Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 25.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 15.000         |
| Group     | Run            |
| LL BASIN  | Yes            |

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Group    | Simulation | Max Stage<br>ft | Warning Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max Outflow<br>cfs |
|------------|----------|------------|-----------------|---------------------|--------------------------|-------------------------|---------------------------|-------------------|----------------------------|--------------------|
| OUTFALL    | LL BASIN | 10yr-2hr   | 3.52            | 6.75                | 0.0000                   | 26                      | 2.30                      | 10.88             | 0.00                       | 0.00               |
| OUTFALL    | LL BASIN | 25yr-24hr  | 3.52            | 6.75                | 0.0000                   | 26                      | 19.86                     | 25.28             | 0.00                       | 0.00               |
| POND NO. 1 | LL BASIN | 10yr-2hr   | 9.36            | 10.50               | -0.0015                  | 14777                   | 1.91                      | 18.01             | 2.00                       | 17.84              |
| POND NO. 1 | LL BASIN | 25yr-24hr  | 14.53           | 10.50               | -0.0032                  | 35817                   | 12.74                     | 71.41             | 13.49                      | 93.51              |
| POND NO. 2 | LL BASIN | 10yr-2hr   | 7.89            | 11.00               | 0.0011                   | 25792                   | 1.92                      | 33.24             | 2.00                       | 17.92              |
| POND NO. 2 | LL BASIN | 25yr-24hr  | 14.53           | 11.00               | 0.0034                   | 48258                   | 13.49                     | 121.22            | 12.65                      | 66.77              |
| POND NO. 3 | LL BASIN | 10yr-2hr   | 7.84            | 12.50               | -0.0007                  | 39208                   | 2.00                      | 34.05             | 2.08                       | 11.96              |
| POND NO. 3 | LL BASIN | 25yr-24hr  | 14.51           | 12.50               | -0.0028                  | 103428                  | 12.72                     | 129.73            | 12.62                      | 59.81              |
| S-1        | LL BASIN | 10yr-2hr   | 20.34           | 20.50               | 0.0056                   | 8373                    | 1.50                      | 6.34              | 1.81                       | 3.65               |
| S-1        | LL BASIN | 25yr-24hr  | 23.04           | 20.50               | 0.0020                   | 38315                   | 12.50                     | 24.77             | 14.55                      | 3.65               |
| S-11       | LL BASIN | 10yr-2hr   | 20.41           | 21.00               | 0.0076                   | 7915                    | 1.50                      | 4.12              | 1.57                       | 3.71               |
| S-11       | LL BASIN | 25yr-24hr  | 21.54           | 21.00               | 0.0012                   | 38138                   | 12.50                     | 16.12             | 12.22                      | 8.72               |
| S-14       | LL BASIN | 10yr-2hr   | 19.19           | 20.50               | 0.0199                   | 113                     | 1.24                      | 4.71              | 0.00                       | 0.00               |
| S-14       | LL BASIN | 25yr-24hr  | 21.52           | 20.50               | 0.0100                   | 31512                   | 25.00                     | 4.99              | 25.00                      | 5.49               |
| S-15       | LL BASIN | 10yr-2hr   | 18.18           | 18.59               | 0.0058                   | 7895                    | 1.50                      | 4.74              | 1.52                       | 3.78               |
| S-15       | LL BASIN | 25yr-24hr  | 21.37           | 18.59               | 0.0021                   | 24859                   | 12.39                     | 19.05             | 25.00                      | 5.97               |
| S-16       | LL BASIN | 10yr-2hr   | 18.14           | 18.41               | 0.0073                   | 4646                    | 1.52                      | 8.46              | 1.58                       | 7.49               |
| S-16       | LL BASIN | 25yr-24hr  | 21.26           | 18.41               | 0.0021                   | 24321                   | 12.40                     | 20.46             | 25.00                      | 6.50               |
| S-17       | LL BASIN | 10yr-2hr   | 17.92           | 17.38               | 0.0081                   | 12173                   | 1.50                      | 13.68             | 1.69                       | 6.84               |
| S-17       | LL BASIN | 25yr-24hr  | 20.91           | 17.38               | 0.0022                   | 27446                   | 12.47                     | 28.93             | 12.60                      | 9.20               |
| S-18       | LL BASIN | 10yr-2hr   | 17.83           | 17.41               | 0.0076                   | 11296                   | 1.62                      | 10.60             | 1.66                       | 6.92               |
| S-18       | LL BASIN | 25yr-24hr  | 20.80           | 17.41               | 0.0021                   | 37885                   | 12.50                     | 28.01             | 13.32                      | 9.18               |
| S-19       | LL BASIN | 10yr-2hr   | 17.62           | 18.40               | 0.0082                   | 5571                    | 1.64                      | 11.71             | 1.63                       | 10.62              |
| S-19       | LL BASIN | 25yr-24hr  | 20.46           | 18.40               | 0.0019                   | 26016                   | 12.50                     | 28.82             | 12.65                      | 16.85              |
| S-2        | LL BASIN | 10yr-2hr   | 19.79           | 20.06               | 0.0031                   | 3305                    | 1.50                      | 8.79              | 1.57                       | 8.16               |
| S-2        | LL BASIN | 25yr-24hr  | 22.55           | 20.06               | 0.0023                   | 16591                   | 12.50                     | 25.62             | 12.53                      | 13.21              |
| S-20       | LL BASIN | 10yr-2hr   | 17.39           | 17.72               | 0.0039                   | 6517                    | 1.63                      | 11.58             | 1.73                       | 7.74               |
| S-20       | LL BASIN | 25yr-24hr  | 20.16           | 17.72               | 0.0013                   | 29397                   | 12.50                     | 21.05             | 12.60                      | 14.30              |
| S-21       | LL BASIN | 10yr-2hr   | 17.16           | 16.50               | 0.0217                   | 1693                    | 1.73                      | 7.74              | 2.05                       | 7.50               |
| S-21       | LL BASIN | 25yr-24hr  | 19.80           | 16.50               | 0.0178                   | 3760                    | 12.60                     | 14.30             | 12.57                      | 13.62              |
| S-22       | LL BASIN | 10yr-2hr   | 16.99           | 17.05               | 0.0291                   | 1068                    | 2.05                      | 7.50              | 2.06                       | 7.49               |
| S-22       | LL BASIN | 25yr-24hr  | 19.53           | 17.05               | 0.0249                   | 3123                    | 12.57                     | 13.62             | 12.53                      | 13.39              |
| S-23       | LL BASIN | 10yr-2hr   | 16.06           | 16.50               | 0.0100                   | 27674                   | 2.06                      | 7.49              | 0.00                       | 0.00               |
| S-23       | LL BASIN | 25yr-24hr  | 19.27           | 16.50               | 0.0190                   | 32334                   | 12.53                     | 13.39             | 25.00                      | 10.49              |
| S-24       | LL BASIN | 10yr-2hr   | 16.77           | 17.44               | 0.0071                   | 5620                    | 1.58                      | 3.87              | 0.00                       | 0.00               |
| S-24       | LL BASIN | 25yr-24hr  | 19.01           | 17.44               | 0.0014                   | 21077                   | 19.00                     | 10.95             | 24.40                      | 11.48              |
| S-25       | LL BASIN | 10yr-2hr   | 17.14           | 17.82               | 0.0148                   | 5542                    | 1.38                      | 8.02              | 1.55                       | 5.81               |

NODE MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name          | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|---------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| S-25          | LL BASIN | 25yr-24hr  | 16.81                    | 18.84              | 17.82                  | 0.0022                   | 16522                   | 12.25                     | 20.17                | 16.90                      | 13.07                 |
| S-26          | LL BASIN | 10yr-2hr   | 2.00                     | 16.11              | 16.76                  | 0.0068                   | 5598                    | 1.50                      | 7.76                 | 2.00                       | 6.92                  |
| S-26          | LL BASIN | 25yr-24hr  | 12.67                    | 16.95              | 16.76                  | 0.0015                   | 10024                   | 12.50                     | 28.72                | 12.67                      | 27.54                 |
| S-27          | LL BASIN | 10yr-2hr   | 2.00                     | 9.38               | 14.90                  | 0.0453                   | 201                     | 2.00                      | 6.92                 | 1.79                       | 11.34                 |
| S-27          | LL BASIN | 25yr-24hr  | 17.98                    | 14.63              | 14.90                  | 0.0453                   | 119                     | 12.67                     | 27.54                | 12.66                      | 27.41                 |
| S-28          | LL BASIN | 10yr-2hr   | 2.00                     | 9.37               | 14.90                  | 0.0765                   | 189                     | 1.79                      | 11.34                | 2.08                       | 10.21                 |
| S-28          | LL BASIN | 25yr-24hr  | 18.74                    | 14.57              | 14.90                  | 0.0765                   | 121                     | 12.66                     | 27.41                | 12.67                      | 27.78                 |
| S-30          | LL BASIN | 10yr-2hr   | 1.90                     | 16.80              | 17.72                  | 0.0038                   | 4863                    | 1.50                      | 2.40                 | 1.97                       | 1.37                  |
| S-30          | LL BASIN | 25yr-24hr  | 17.04                    | 19.02              | 17.72                  | 0.0014                   | 18314                   | 12.50                     | 9.37                 | 13.11                      | 3.20                  |
| S-31          | LL BASIN | 10yr-2hr   | 2.00                     | 16.14              | 16.77                  | 0.0037                   | 5668                    | 1.50                      | 2.32                 | 2.11                       | 1.00                  |
| S-31          | LL BASIN | 25yr-24hr  | 12.88                    | 17.58              | 16.77                  | 0.0013                   | 14802                   | 12.50                     | 9.06                 | 13.06                      | 4.19                  |
| S-32          | LL BASIN | 10yr-2hr   | 2.00                     | 16.79              | 17.47                  | 0.0035                   | 5635                    | 1.50                      | 2.97                 | 2.06                       | 0.41                  |
| S-32          | LL BASIN | 25yr-24hr  | 13.41                    | 19.11              | 17.47                  | 0.0019                   | 22204                   | 12.50                     | 11.62                | 15.13                      | 3.17                  |
| S-33          | LL BASIN | 10yr-2hr   | 2.00                     | 16.79              | 17.59                  | 0.0046                   | 5410                    | 1.50                      | 4.03                 | 2.00                       | 1.00                  |
| S-33          | LL BASIN | 25yr-24hr  | 13.07                    | 18.92              | 17.59                  | 0.0019                   | 19459                   | 12.50                     | 16.19                | 13.28                      | 6.95                  |
| SWALE-1       | LL BASIN | 10yr-2hr   | 2.00                     | 19.50              | 20.00                  | 0.0018                   | 2397                    | 1.57                      | 8.19                 | 1.61                       | 7.19                  |
| SWALE-1       | LL BASIN | 25yr-24hr  | 16.68                    | 22.26              | 20.00                  | 0.0018                   | 10118                   | 12.57                     | 15.36                | 12.81                      | 10.24                 |
| SWALE-2       | LL BASIN | 10yr-2hr   | 4.07                     | 19.19              | 19.00                  | 0.0016                   | 15018                   | 1.62                      | 7.31                 | 1.25                       | 3.88                  |
| SWALE-2       | LL BASIN | 25yr-24hr  | 19.98                    | 21.96              | 19.00                  | 0.0010                   | 35326                   | 12.75                     | 19.83                | 13.12                      | 10.27                 |
| SWALE-3       | LL BASIN | 10yr-2hr   | 4.07                     | 19.19              | 19.00                  | 0.0014                   | 17279                   | 1.25                      | 3.88                 | 1.29                       | 1.47                  |
| SWALE-3       | LL BASIN | 25yr-24hr  | 20.17                    | 21.95              | 19.00                  | 0.0009                   | 76387                   | 13.00                     | 14.66                | 18.27                      | 4.46                  |
| SWALE-4       | LL BASIN | 10yr-2hr   | 19.71                    | 19.19              | 20.50                  | 0.0040                   | 9284                    | 1.29                      | 3.74                 | 1.24                       | 4.71                  |
| SWALE-4       | LL BASIN | 25yr-24hr  | 22.01                    | 21.54              | 20.50                  | -0.0023                  | 39163                   | 13.03                     | 9.03                 | 25.00                      | 4.99                  |
| WETLAND NO. 1 | LL BASIN | 10yr-2hr   | 2.30                     | 6.58               | 6.50                   | 0.0005                   | 47258                   | 2.00                      | 41.24                | 2.30                       | 10.88                 |
| WETLAND NO. 1 | LL BASIN | 25yr-24hr  | 19.86                    | 14.25              | 6.50                   | 0.0031                   | 101373                  | 12.62                     | 117.32               | 19.86                      | 25.28                 |

NODE MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-1  | LL BASIN | 10yr-2hr   | 1.81                    | 3.65               | 0.082                 | 1.82                        | 20.34                 | 1.88                        | 19.79                 |
| P-1  | LL BASIN | 25yr-24hr  | 14.55                   | 3.65               | 0.005                 | 14.04                       | 23.04                 | 13.37                       | 22.55                 |
| P-10 | LL BASIN | 10yr-2hr   | 1.58                    | 7.49               | -0.548                | 1.88                        | 18.14                 | 2.00                        | 17.92                 |
| P-10 | LL BASIN | 25yr-24hr  | 25.00                   | 6.50               | 0.003                 | 19.90                       | 21.26                 | 17.17                       | 20.91                 |
| P-11 | LL BASIN | 10yr-2hr   | 1.69                    | 6.84               | 0.213                 | 2.00                        | 17.92                 | 2.00                        | 17.83                 |
| P-11 | LL BASIN | 25yr-24hr  | 12.60                   | 9.20               | 1.431                 | 17.17                       | 20.91                 | 17.22                       | 20.80                 |
| P-12 | LL BASIN | 10yr-2hr   | 1.66                    | 6.92               | 0.260                 | 2.00                        | 17.83                 | 2.00                        | 17.62                 |
| P-12 | LL BASIN | 25yr-24hr  | 13.32                   | 9.18               | 0.651                 | 17.22                       | 20.80                 | 17.19                       | 20.46                 |
| P-13 | LL BASIN | 10yr-2hr   | 1.63                    | 10.62              | -0.784                | 2.00                        | 17.62                 | 2.03                        | 17.39                 |
| P-13 | LL BASIN | 25yr-24hr  | 12.65                   | 16.85              | 0.006                 | 17.19                       | 20.46                 | 17.75                       | 20.16                 |
| P-14 | LL BASIN | 10yr-2hr   | 1.73                    | 7.74               | 0.014                 | 2.03                        | 17.39                 | 2.06                        | 17.16                 |
| P-14 | LL BASIN | 25yr-24hr  | 12.60                   | 14.30              | 0.009                 | 17.75                       | 20.16                 | 17.66                       | 19.80                 |
| P-15 | LL BASIN | 10yr-2hr   | 2.05                    | 7.50               | -0.179                | 2.06                        | 17.16                 | 2.06                        | 16.99                 |
| P-15 | LL BASIN | 25yr-24hr  | 12.57                   | 13.62              | -0.147                | 17.66                       | 19.80                 | 17.57                       | 19.53                 |
| P-16 | LL BASIN | 10yr-2hr   | 1.97                    | 1.37               | -0.013                | 1.90                        | 16.80                 | 1.86                        | 16.77                 |
| P-16 | LL BASIN | 25yr-24hr  | 13.11                   | 3.20               | -0.648                | 17.04                       | 19.02                 | 17.02                       | 19.01                 |
| P-17 | LL BASIN | 10yr-2hr   | 2.06                    | 7.49               | 0.022                 | 2.06                        | 16.99                 | 25.00                       | 16.06                 |
| P-17 | LL BASIN | 25yr-24hr  | 12.53                   | 13.39              | 0.019                 | 17.57                       | 19.53                 | 17.46                       | 19.27                 |
| P-18 | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | -0.004                | 25.00                       | 16.06                 | 1.86                        | 16.77                 |
| P-18 | LL BASIN | 25yr-24hr  | 25.00                   | 10.49              | 0.087                 | 17.46                       | 19.27                 | 17.02                       | 19.01                 |
| P-19 | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | -0.004                | 1.86                        | 16.77                 | 1.55                        | 17.14                 |
| P-19 | LL BASIN | 25yr-24hr  | 24.40                   | 11.48              | 0.041                 | 17.02                       | 19.01                 | 16.81                       | 18.84                 |
| P-2  | LL BASIN | 10yr-2hr   | 1.57                    | 8.16               | -0.024                | 1.88                        | 19.79                 | 2.00                        | 19.50                 |
| P-2  | LL BASIN | 25yr-24hr  | 12.53                   | 13.21              | -0.005                | 13.37                       | 22.55                 | 16.68                       | 22.26                 |
| P-20 | LL BASIN | 10yr-2hr   | 1.55                    | 5.81               | 0.007                 | 1.55                        | 17.14                 | 2.00                        | 16.11                 |
| P-20 | LL BASIN | 25yr-24hr  | 16.90                   | 13.07              | 0.004                 | 16.81                       | 18.84                 | 12.67                       | 16.95                 |
| P-21 | LL BASIN | 10yr-2hr   | 2.00                    | 6.92               | 0.011                 | 2.00                        | 16.11                 | 2.00                        | 9.38                  |
| P-21 | LL BASIN | 25yr-24hr  | 12.67                   | 27.54              | 0.015                 | 12.67                       | 16.95                 | 17.98                       | 14.63                 |
| P-22 | LL BASIN | 10yr-2hr   | 1.79                    | 11.34              | 3.079                 | 2.00                        | 9.38                  | 2.00                        | 9.37                  |
| P-22 | LL BASIN | 25yr-24hr  | 12.66                   | 27.41              | 3.079                 | 17.98                       | 14.63                 | 18.74                       | 14.57                 |
| P-23 | LL BASIN | 10yr-2hr   | 2.08                    | 10.21              | -39.623               | 2.00                        | 9.37                  | 2.00                        | 9.36                  |
| P-23 | LL BASIN | 25yr-24hr  | 12.67                   | 27.78              | -39.623               | 18.74                       | 14.57                 | 18.98                       | 14.53                 |
| P-24 | LL BASIN | 10yr-2hr   | 2.11                    | 1.00               | 0.006                 | 2.00                        | 16.14                 | 2.00                        | 16.11                 |
| P-24 | LL BASIN | 25yr-24hr  | 13.06                   | 4.19               | 0.171                 | 12.88                       | 17.58                 | 12.67                       | 16.95                 |
| P-25 | LL BASIN | 10yr-2hr   | 2.06                    | 0.41               | 0.004                 | 2.00                        | 16.79                 | 2.00                        | 16.79                 |
| P-25 | LL BASIN | 25yr-24hr  | 15.13                   | 3.17               | -0.157                | 13.41                       | 19.11                 | 13.07                       | 18.92                 |
| P-26 | LL BASIN | 10yr-2hr   | 2.00                    | 1.00               | 0.001                 | 2.00                        | 16.79                 | 2.00                        | 16.11                 |

LINK MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name   | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|--------|----------|------------|-------------------------|--------------------|----------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-26   | LL BASIN | 25yr-24hr  | 13.28                   | 6.95               | 0.008          | 13.07                       | 18.92                 | 12.67                       | 16.95                 |
| P-27   | LL BASIN | 10yr-2hr   | 2.00                    | 0.97               | 0.003          | 2.00                        | 7.89                  | 2.08                        | 7.84                  |
| P-27   | LL BASIN | 25yr-24hr  | 12.68                   | 40.77              | 0.476          | 18.99                       | 14.53                 | 19.28                       | 14.51                 |
| P-28   | LL BASIN | 10yr-2hr   | 2.00                    | 16.96              | -44.878        | 2.00                        | 7.89                  | 2.08                        | 7.84                  |
| P-28   | LL BASIN | 25yr-24hr  | 12.39                   | 29.11              | -44.878        | 18.99                       | 14.53                 | 19.28                       | 14.51                 |
| P-29   | LL BASIN | 10yr-2hr   | 2.08                    | 3.50               | 0.008          | 2.08                        | 7.84                  | 2.08                        | 6.23                  |
| P-29   | LL BASIN | 25yr-24hr  | 12.62                   | 29.98              | 0.037          | 19.28                       | 14.51                 | 19.86                       | 14.25                 |
| P-3    | LL BASIN | 10yr-2hr   | 1.61                    | 7.19               | 0.031          | 2.00                        | 19.50                 | 4.07                        | 19.19                 |
| P-3    | LL BASIN | 25yr-24hr  | 12.81                   | 10.24              | 0.003          | 16.68                       | 22.26                 | 19.98                       | 21.96                 |
| P-30   | LL BASIN | 10yr-2hr   | 2.08                    | 8.45               | 0.006          | 2.08                        | 7.84                  | 2.08                        | 6.61                  |
| P-30   | LL BASIN | 25yr-24hr  | 12.56                   | 30.87              | 0.047          | 19.28                       | 14.51                 | 19.86                       | 14.25                 |
| P-31   | LL BASIN | 10yr-2hr   | 2.30                    | 10.88              | 0.397          | 2.30                        | 6.58                  | 2.28                        | 4.68                  |
| P-31   | LL BASIN | 25yr-24hr  | 19.86                   | 25.28              | 0.397          | 19.86                       | 14.25                 | 18.73                       | 4.84                  |
| P-4    | LL BASIN | 10yr-2hr   | 1.25                    | 3.88               | -0.172         | 4.07                        | 19.19                 | 4.07                        | 19.19                 |
| P-4    | LL BASIN | 25yr-24hr  | 13.12                   | 10.27              | -0.178         | 19.98                       | 21.96                 | 20.17                       | 21.95                 |
| P-5    | LL BASIN | 10yr-2hr   | 1.29                    | 1.47               | -0.157         | 4.07                        | 19.19                 | 19.71                       | 19.19                 |
| P-5    | LL BASIN | 25yr-24hr  | 18.27                   | 4.46               | 0.086          | 20.17                       | 21.95                 | 22.01                       | 21.54                 |
| P-6    | LL BASIN | 10yr-2hr   | 1.24                    | 4.71               | -5.571         | 19.71                       | 19.19                 | 19.71                       | 19.19                 |
| P-6    | LL BASIN | 25yr-24hr  | 25.00                   | 4.99               | -4.379         | 22.01                       | 21.54                 | 21.99                       | 21.52                 |
| P-7    | LL BASIN | 10yr-2hr   | 1.57                    | 3.71               | 0.014          | 1.57                        | 20.41                 | 19.71                       | 19.19                 |
| P-7    | LL BASIN | 25yr-24hr  | 12.22                   | 8.72               | 0.005          | 22.06                       | 21.54                 | 22.01                       | 21.54                 |
| P-8    | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000          | 19.71                       | 19.19                 | 1.77                        | 18.18                 |
| P-8    | LL BASIN | 25yr-24hr  | 25.00                   | 5.49               | -0.062         | 21.99                       | 21.52                 | 20.43                       | 21.37                 |
| P-9    | LL BASIN | 10yr-2hr   | 1.52                    | 3.78               | -1.107         | 1.77                        | 18.18                 | 1.88                        | 18.14                 |
| P-9    | LL BASIN | 25yr-24hr  | 25.00                   | 5.97               | 1.095          | 20.43                       | 21.37                 | 19.90                       | 21.26                 |
| WEIR-1 | LL BASIN | 10yr-2hr   | 2.00                    | 17.84              | -0.026         | 2.00                        | 9.36                  | 2.00                        | 7.89                  |
| WEIR-1 | LL BASIN | 25yr-24hr  | 13.49                   | 93.51              | 63.683         | 18.98                       | 14.53                 | 18.99                       | 14.53                 |

LINK MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS

Link P-11

10yr-2hr  
25yr-24hr

Link P-11  
Existing  
Conditions





Link P-12

10yr-2hr  
25yr-24hr

Link P-12  
Existing  
Conditions

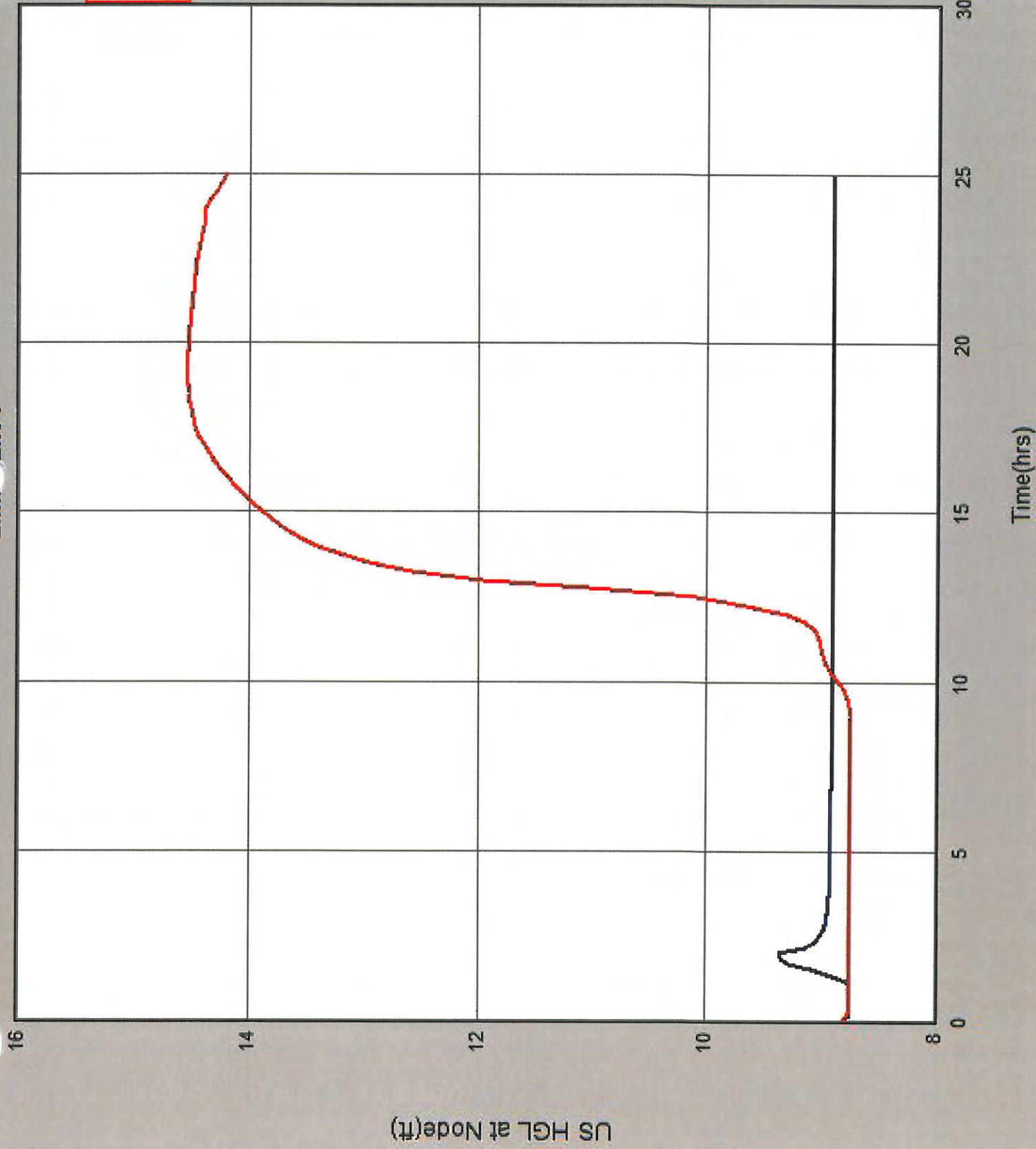




# Link Weir-1

10yr-2hr  
25yr-24hr

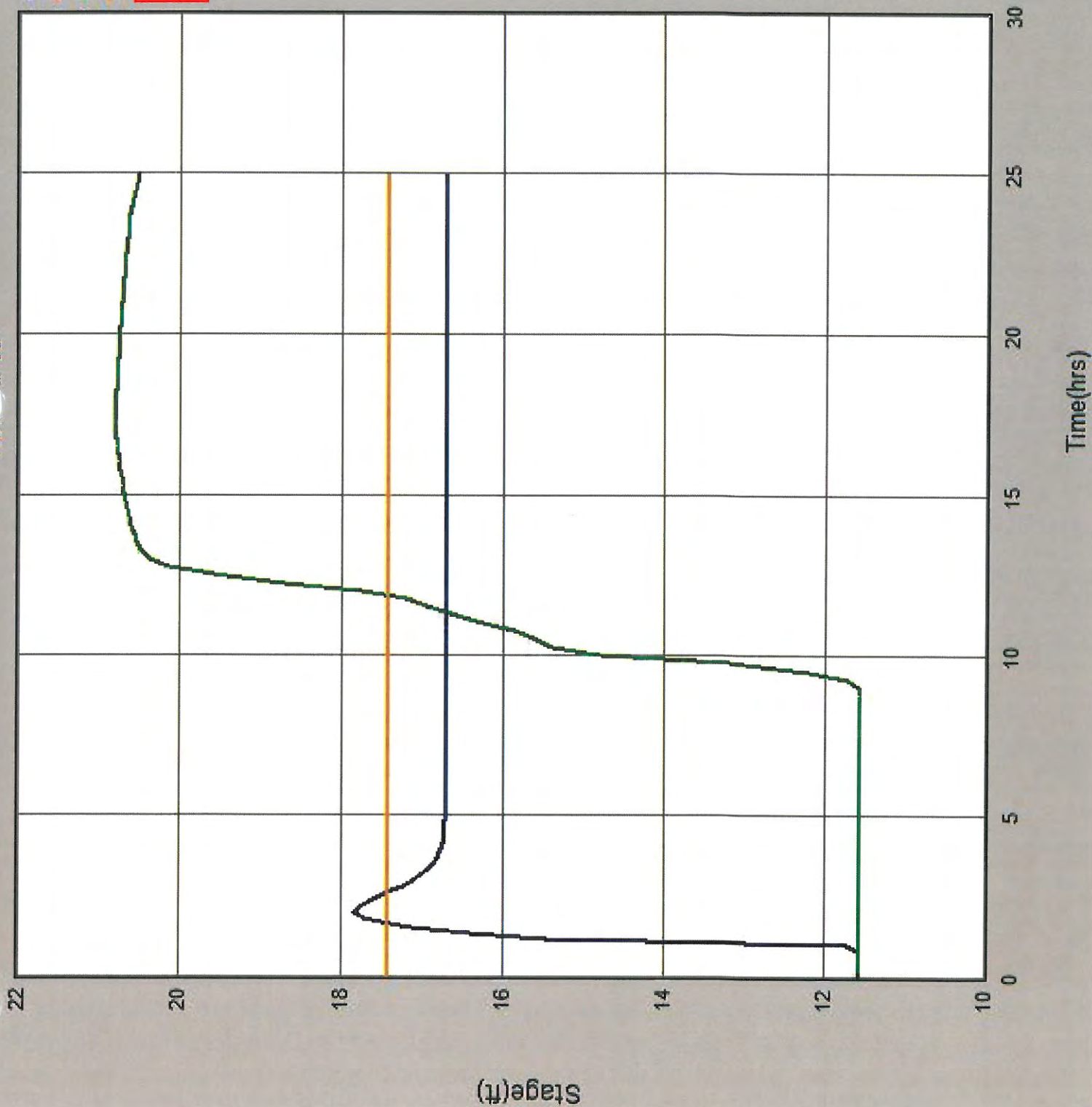
Link Weir-1  
Existing  
Conditions



Node S-18

- 10yr-2hr
- Warning Stage:10yr-2hr
- 25yr-24hr
- Warning Stage:25yr-24hr

Node S-18  
Existing Conditions

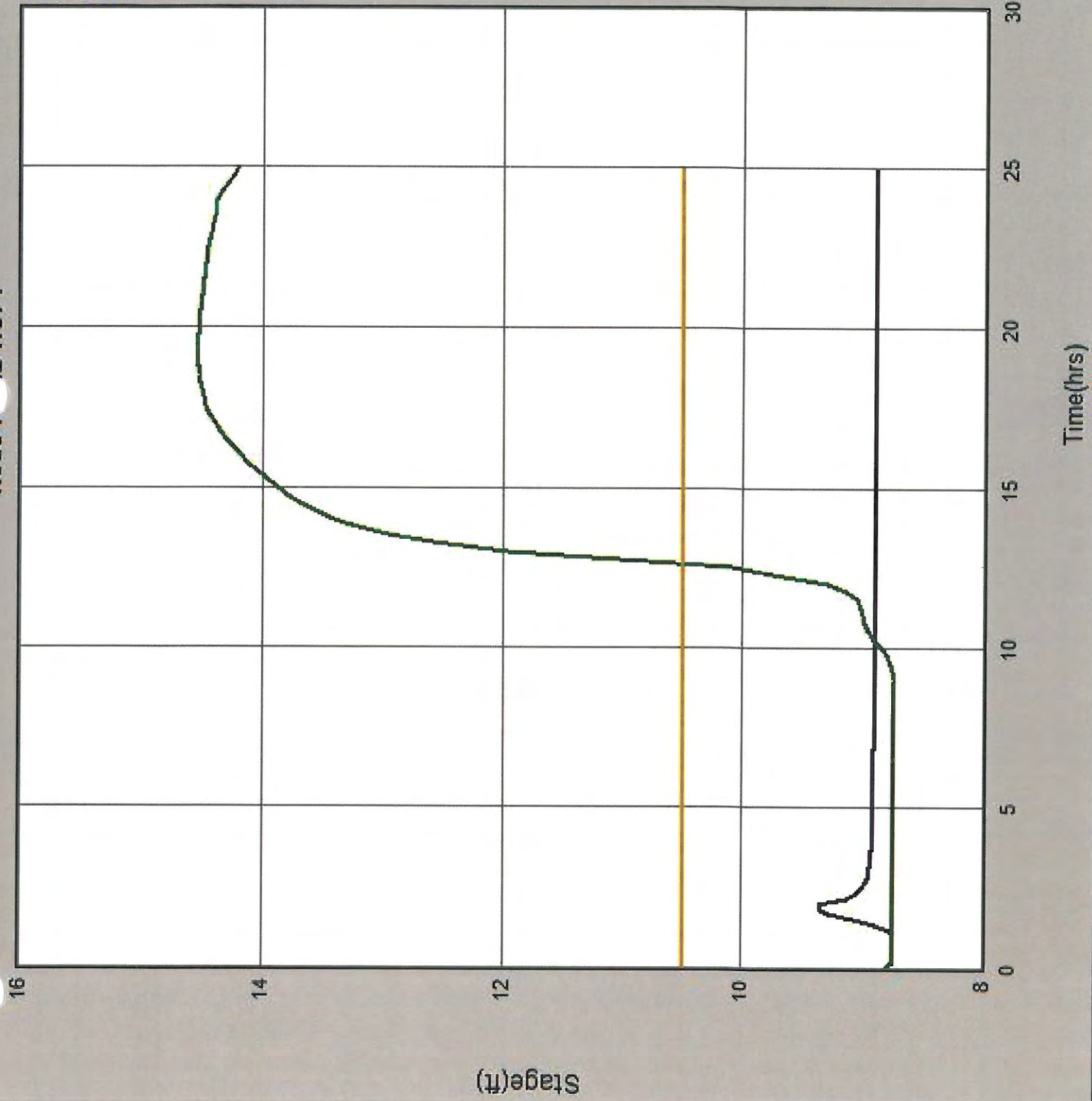




# Node Pond No. 1

- 10yr-2hr
- Warning Stage:10yr-2hr
- 25yr-24hr
- Warning Stage:25yr-24hr

Node Pond No. 1  
Existing Conditions



Existing Conditions

Remove Weir

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

=====

Basins

=====

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-1         | Node: POND NO. 1                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 16.590           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

-----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-2         | Node: POND NO. 2                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 23.050           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

-----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-3         | Node: POND NO. 3                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 24.500           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

-----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-1            | Node: S-1                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-11           | Node: S-11                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.160            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-15           | Node: S-15                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-16           | Node: S-16                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 6.010            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-17           | Node: S-17                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 8.190            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-18           | Node: S-18                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 6.100            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-19           | Node: S-19                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.610            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-2            | Node: S-2                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.500            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: Basin S-20           | Node: S-20                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 1.500            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                  |                              |                |
|------------------|------------------------------|----------------|
| Name: BASIN S-24 | Node: S-24                   | Status: Onsite |
| Group: LL BASIN  | Type: SCS Unit Hydrograph CN |                |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |
|----------------------------|----------------------------------|
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |
| Area(ac): 4.130            | Time Shift(hrs): 0.00            |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |
| DCIA(%): 0.00              |                                  |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-25           | Node: S-25                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 11.580           | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-26           | Node: S-26                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.540            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-30           | Node: S-30                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.000            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-31           | Node: S-31                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.900            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-32           | Node: S-32                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.720            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                              |                |
|----------------------------|------------------------------|----------------|
| Name: BASIN S-33           | Node: S-33                   | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0        |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00    |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00     |                |
| Area(ac): 5.040            | Time Shift(hrs): 0.00        |                |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Curve Number: 57.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

-----  
Name: BASIN SW-1      Node: SWALE-1      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 2.670      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN SW-2      Node: SWALE-2      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 9.540      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN SW-3      Node: SWALE-3      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 4.980      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN SW-4      Node: SWALE-4      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 2.450      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN WET-1      Node: WETLAND NO. 1      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 14.480      Time Shift(hrs): 0.00  
Curve Number: 89.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

=====  
Nodes  
=====

Name: OUTFALL      Base Flow(cfs): 0.000      Init Stage(ft): 3.520  
Group: LL BASIN      Warn Stage(ft): 6.750  
Type: Time/Stage

Time(hrs)      Stage(ft)  
-----

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|        |       |
|--------|-------|
| 0.00   | 3.520 |
| 999.00 | 3.520 |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: POND NO. 1 | Base Flow(cfs): 0.000 | Init Stage(ft): 6.890  |
| Group: LL BASIN  |                       | Warn Stage(ft): 10.500 |
| Type: Stage/Area |                       |                        |

| Stage (ft) | Area (ac) |
|------------|-----------|
| 5.000      | 0.0173    |
| 5.500      | 0.0491    |
| 6.000      | 0.1429    |
| 6.500      | 0.1976    |
| 7.000      | 0.2452    |
| 7.500      | 0.2756    |
| 8.000      | 0.2988    |
| 8.500      | 0.3146    |
| 9.000      | 0.3304    |
| 9.500      | 0.3424    |
| 10.000     | 0.3589    |
| 10.500     | 0.3670    |
| 11.000     | 0.4235    |

```

Name: POND NO. 2      Base Flow(cfs): 0.000      Init Stage(ft): 6.000
Group: LL BASIN      Warn Stage(ft): 11.000
Type: Stage/Area

```

| Stage (ft) | Area (ac) |
|------------|-----------|
| 2.000      | 0.2059    |
| 3.000      | 0.2754    |
| 4.000      | 0.3489    |
| 5.000      | 0.4214    |
| 6.000      | 0.4765    |
| 7.000      | 0.5348    |
| 8.000      | 0.5972    |
| 8.500      | 0.6280    |
| 9.000      | 0.6557    |
| 9.500      | 0.6947    |
| 10.000     | 0.7375    |
| 10.500     | 0.7560    |
| 11.000     | 0.7760    |
| 11.500     | 0.8230    |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: POND NO. 3 | Base Flow(cfs): 0.000 | Init Stage(ft): 6.500  |
| Group: LL BASIN  |                       | Warn Stage(ft): 12.500 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.3676   |
| 1.000     | 0.4178   |
| 2.000     | 0.4795   |
| 3.000     | 0.5478   |
| 4.000     | 0.6112   |
| 5.000     | 0.6785   |
| 6.000     | 0.7522   |
| 7.000     | 0.8299   |
| 8.000     | 0.9066   |
| 8.500     | 0.9450   |
| 9.000     | 0.9806   |
| 9.500     | 1.0426   |
| 10.000    | 1.1231   |
| 10.500    | 1.2129   |
| 11.000    | 1.3300   |
| 12.000    | 1.5200   |
| 12.500    | 1.6500   |
| 13.000    | 1.8300   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-1        | Base Flow(cfs): 0.000 | Init Stage(ft): 17.550 |
| Group: LL BASIN  |                       | Warn Stage(ft): 20.500 |
| Type: Stage/Area |                       |                        |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

RIM=20.00'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.130    | 0.0001   |
| 17.550    | 0.0001   |
| 18.000    | 0.0001   |
| 19.150    | 0.0001   |
| 19.500    | 0.1370   |
| 20.100    | 0.1500   |
| 20.500    | 0.2200   |
| 21.000    | 0.3500   |

Name: S-11                      Base Flow(cfs): 0.000                      Init Stage(ft): 16.010  
Group: LL BASIN                      Warn Stage(ft): 21.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 16.010    | 0.0001   |
| 18.000    | 0.0001   |
| 20.110    | 0.0001   |
| 20.500    | 0.2350   |
| 21.000    | 0.5420   |

Name: S-14                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.900  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.900    | 0.0001   |
| 15.000    | 0.0001   |
| 19.450    | 0.0001   |
| 20.000    | 0.4500   |
| 20.500    | 0.5400   |

Name: S-15                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.190  
Group: LL BASIN                      Warn Stage(ft): 18.590  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.190    | 0.0001   |
| 15.000    | 0.0001   |
| 17.650    | 0.0200   |
| 18.090    | 0.1590   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-16                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.060  
Group: LL BASIN                      Warn Stage(ft): 18.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.060    | 0.0001   |
| 15.000    | 0.0001   |
| 17.950    | 0.0200   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-17                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.000  
Group: LL BASIN                      Warn Stage(ft): 17.380  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |
| 16.880    | 0.1377   |
| 17.000    | 0.1720   |
| 17.880    | 0.2750   |

Name: S-18                      Base Flow(cfs): 0.000                      Init Stage(ft): 11.550  
Group: LL BASIN                      Warn Stage(ft): 17.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 11.550    | 0.0001   |
| 15.000    | 0.0001   |
| 16.910    | 0.1377   |
| 17.410    | 0.1720   |
| 17.910    | 0.2750   |

Name: S-19                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.720  
Group: LL BASIN                      Warn Stage(ft): 18.400  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.720    | 0.0001   |
| 14.000    | 0.0001   |
| 17.900    | 0.1377   |
| 18.400    | 0.1720   |
| 18.900    | 0.2750   |

Name: S-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 17.130  
Group: LL BASIN                      Warn Stage(ft): 20.060  
Type: Stage/Area

RIM=19.46'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.0000   |
| 17.130    | 0.0001   |
| 17.760    | 0.0001   |
| 19.460    | 0.0001   |
| 20.060    | 0.1370   |
| 21.000    | 0.2290   |

Name: S-20                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.500  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.500    | 0.0001   |
| 14.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.1720   |
| 18.220    | 0.2750   |

Name: S-21                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.350  
Group: LL BASIN                      Warn Stage(ft): 16.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.350    | 0.0001   |
| 14.000    | 0.0001   |
| 16.000    | 0.0060   |
| 16.500    | 0.0270   |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

17.000      0.0360

Name: S-22      Base Flow(cfs): 0.000      Init Stage(ft): 10.050  
Group: LL BASIN      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.050    | 0.0001   |
| 14.000    | 0.0001   |
| 16.550    | 0.0060   |
| 17.050    | 0.0270   |
| 17.550    | 0.0360   |

Name: S-23      Base Flow(cfs): 0.000      Init Stage(ft): 10.000  
Group: LL BASIN      Warn Stage(ft): 16.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.000    | 0.0001   |
| 12.000    | 0.0001   |
| 13.600    | 0.0001   |
| 14.000    | 0.1000   |
| 15.000    | 0.6000   |
| 16.500    | 0.6500   |

Name: S-24      Base Flow(cfs): 0.000      Init Stage(ft): 9.660  
Group: LL BASIN      Warn Stage(ft): 17.440  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 9.660     | 0.0001   |
| 14.000    | 0.0001   |
| 16.960    | 0.1377   |
| 17.440    | 0.1720   |
| 17.960    | 0.2750   |

Name: S-25      Base Flow(cfs): 0.000      Init Stage(ft): 8.020  
Group: LL BASIN      Warn Stage(ft): 17.820  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 8.020     | 0.0001   |
| 15.000    | 0.0001   |
| 17.320    | 0.1377   |
| 17.820    | 0.1720   |
| 18.320    | 0.2750   |

Name: S-26      Base Flow(cfs): 0.000      Init Stage(ft): 6.900  
Group: LL BASIN      Warn Stage(ft): 16.760  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.710     | 0.0001   |
| 14.000    | 0.0001   |
| 16.260    | 0.1377   |
| 16.760    | 0.1720   |
| 17.260    | 0.3250   |

Name: S-27      Base Flow(cfs): 0.000      Init Stage(ft): 6.900  
Group: LL BASIN      Plunge Factor: 1.00      Warn Stage(ft): 14.900  
Type: Manhole, Flat Floor

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.490     | 0.0001   |
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |

Name: S-28                      Base Flow(cfs): 0.000                      Init Stage(ft): 6.900  
Group: LL BASIN              Plunge Factor: 1.00                      Warn Stage(ft): 14.900  
Type: Manhole, Flat Floor

| Stage(ft) | Area(ac) |
|-----------|----------|
| 5.540     | 0.0001   |
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |

Name: S-30                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.220  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.220    | 0.0001   |
| 15.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.2750   |
| 18.220    | 0.3310   |

Name: S-31                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.260  
Group: LL BASIN                      Warn Stage(ft): 16.770  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.260    | 0.0001   |
| 14.000    | 0.0001   |
| 16.270    | 0.1377   |
| 16.770    | 0.1720   |
| 17.270    | 0.2750   |

Name: S-32                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.780  
Group: LL BASIN                      Warn Stage(ft): 17.470  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.780    | 0.0001   |
| 14.000    | 0.0001   |
| 16.970    | 0.1377   |
| 17.470    | 0.1720   |
| 17.970    | 0.2750   |

Name: S-33                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.460  
Group: LL BASIN                      Warn Stage(ft): 17.590  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.460    | 0.0001   |
| 14.000    | 0.0001   |
| 17.090    | 0.1377   |
| 17.590    | 0.1720   |
| 18.090    | 0.2750   |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: SWALE-1                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.490  
Group: LL BASIN                      Warn Stage(ft): 20.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.490    | 0.0003   |
| 16.000    | 0.0004   |
| 16.500    | 0.0004   |
| 17.000    | 0.0029   |
| 17.500    | 0.0063   |
| 18.000    | 0.0100   |
| 19.000    | 0.0230   |
| 19.500    | 0.0551   |

Name: SWALE-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.050  
Group: LL BASIN                      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.050    | 0.0010   |
| 15.500    | 0.0100   |
| 16.000    | 0.0124   |
| 16.500    | 0.0288   |
| 17.000    | 0.0484   |
| 17.500    | 0.0650   |
| 18.000    | 0.1890   |
| 18.500    | 0.2290   |
| 19.000    | 0.3130   |

Name: SWALE-3                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.370  
Group: LL BASIN                      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.370    | 0.0125   |
| 16.500    | 0.0211   |
| 17.000    | 0.0283   |
| 17.500    | 0.0355   |
| 18.000    | 0.0403   |
| 18.500    | 0.0502   |
| 19.000    | 0.3040   |
| 19.500    | 0.5500   |

Name: SWALE-4                      Base Flow(cfs): 0.000                      Init Stage(ft): 14.410  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 14.410    | 0.0010   |
| 15.250    | 0.0032   |
| 15.500    | 0.0038   |
| 16.000    | 0.0051   |
| 16.500    | 0.0064   |
| 17.000    | 0.0077   |
| 17.500    | 0.0096   |
| 18.000    | 0.0118   |
| 18.500    | 0.0230   |
| 19.000    | 0.1580   |
| 20.000    | 0.4500   |

Name: WETLAND NO. 1                      Base Flow(cfs): 0.000                      Init Stage(ft): 4.000  
Group: LL BASIN                      Warn Stage(ft): 6.500  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 3.660     | 0.0835   |
| 4.500     | 0.4620   |
| 5.000     | 0.6607   |
| 5.500     | 0.8112   |
| 6.000     | 0.9548   |
| 6.500     | 1.0644   |
| 7.000     | 1.1702   |
| 7.500     | 1.2500   |

=====

```

=====
Name: P-22          From Node: S-27          Length(ft): 57.21
Group: LL BASIN     To Node: S-28              Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
UPSTREAM            DOWNSTREAM
Geometry: Circular  Circular
Span(in): 48.00     48.00
Rise(in): 48.00     48.00
Invert(ft): 6.490   5.540
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000 0.000
Bot Clip(in): 0.000 0.000
                                     Entrance Loss Coef: 0.00
                                     Exit Loss Coef: 1.00
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None
=====

```

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

```

-----
Name: P-23          From Node: S-28          Length(ft): 25.07
Group: LL BASIN     To Node: Pond No. 1              Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
UPSTREAM            DOWNSTREAM
Geometry: Circular  Circular
Span(in): 48.00     48.00
Rise(in): 48.00     48.00
Invert(ft): 5.540   5.130
Manning's N: 0.024000 0.024000
Top Clip(in): 0.000 0.000
Bot Clip(in): 0.000 0.000
                                     Entrance Loss Coef: 0.00
                                     Exit Loss Coef: 1.00
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None
-----

```

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

```

-----
Name: P-27          From Node: POND NO. 2      Length(ft): 40.00
Group: LL BASIN     To Node: POND NO. 3              Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
UPSTREAM            DOWNSTREAM
Geometry: Horz Ellipse Horz Ellipse
Span(in): 65.00     65.00
Rise(in): 40.00     40.00
Invert(ft): 7.600   7.350
Manning's N: 0.019000 0.019000
Top Clip(in): 0.000 0.000
Bot Clip(in): 0.000 0.000
                                     Entrance Loss Coef: 0.00
                                     Exit Loss Coef: 1.00
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None
-----

```

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: P-28                      From Node: POND NO. 2                      Length(ft): 89.00  
Group: LL BASIN                      To Node: POND NO. 3                      Count: 2  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.00  
Exit Loss Coef: 1.00  
Bend Loss Coef: 0.00  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Stabilizer Option: None

| UPSTREAM              | DOWNSTREAM |
|-----------------------|------------|
| Geometry: Circular    | Circular   |
| Span(in): 36.00       | 36.00      |
| Rise(in): 36.00       | 36.00      |
| Invert(ft): 2.230     | 2.210      |
| Manning's N: 0.024000 | 0.024000   |
| Top Clip(in): 0.000   | 0.000      |
| Bot Clip(in): 0.000   | 0.000      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Name: P-29                      From Node: POND NO. 3                      Length(ft): 65.00  
Group: LL BASIN                      To Node: WETLAND NO. 1                      Count: 1  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.00  
Exit Loss Coef: 1.00  
Bend Loss Coef: 0.00  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Stabilizer Option: None

| UPSTREAM              | DOWNSTREAM |
|-----------------------|------------|
| Geometry: Circular    | Circular   |
| Span(in): 30.00       | 30.00      |
| Rise(in): 30.00       | 30.00      |
| Invert(ft): 7.030     | 5.670      |
| Manning's N: 0.024000 | 0.024000   |
| Top Clip(in): 0.000   | 0.000      |
| Bot Clip(in): 0.000   | 0.000      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Name: P-3                      From Node: SWALE-1                      Length(ft): 195.00  
Group: LL BASIN                      To Node: SWALE-2                      Count: 1  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.00  
Exit Loss Coef: 1.00  
Bend Loss Coef: 0.00  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Stabilizer Option: None

| UPSTREAM              | DOWNSTREAM |
|-----------------------|------------|
| Geometry: Circular    | Circular   |
| Span(in): 24.00       | 24.00      |
| Rise(in): 24.00       | 24.00      |
| Invert(ft): 15.490    | 15.050     |
| Manning's N: 0.024000 | 0.024000   |
| Top Clip(in): 0.000   | 0.000      |
| Bot Clip(in): 0.000   | 0.000      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Name: P-30                      From Node: POND NO. 3                      Length(ft): 66.00  
Group: LL BASIN                      To Node: WETLAND NO. 1                      Count: 1  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.00  
Exit Loss Coef: 1.00  
Bend Loss Coef: 0.00  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc

| UPSTREAM              | DOWNSTREAM |
|-----------------------|------------|
| Geometry: Circular    | Circular   |
| Span(in): 30.00       | 30.00      |
| Rise(in): 30.00       | 30.00      |
| Invert(ft): 6.500     | 5.620      |
| Manning's N: 0.024000 | 0.024000   |
| Top Clip(in): 0.000   | 0.000      |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Bot Clip(in): 0.000                      0.000                      Stabilizer Option: None

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

-----  
Name: P-31                      From Node: WETLAND NO. 1                      Length(ft): 39.00  
Group: LL BASIN                      To Node: OUTFALL                      Count: 1  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
UPSTREAM                      DOWNSTREAM  
Geometry: Horz Ellipse                      Horz Ellipse  
Span(in): 20.00                      20.00  
Rise(in): 16.00                      16.00  
Invert(ft): 3.660                      3.520  
Manning's N: 0.024000                      0.024000  
Top Clip(in): 0.000                      0.000  
Bot Clip(in): 0.000                      0.000  
Entrance Loss Coef: 0.00  
Exit Loss Coef: 1.00  
Bend Loss Coef: 0.00  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

-----  
Name: P-4                      From Node: SWALE-2                      Length(ft): 20.16  
Group: LL BASIN                      To Node: SWALE-3                      Count: 1  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
UPSTREAM                      DOWNSTREAM  
Geometry: Circular                      Circular  
Span(in): 30.00                      30.00  
Rise(in): 30.00                      30.00  
Invert(ft): 15.560                      15.370  
Manning's N: 0.024000                      0.024000  
Top Clip(in): 0.000                      0.000  
Bot Clip(in): 0.000                      0.000  
Entrance Loss Coef: 0.00  
Exit Loss Coef: 1.00  
Bend Loss Coef: 0.00  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

-----  
Name: P-5                      From Node: SWALE-3                      Length(ft): 307.00  
Group: LL BASIN                      To Node: SWALE-4                      Count: 1  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
UPSTREAM                      DOWNSTREAM  
Geometry: Circular                      Circular  
Span(in): 24.00                      24.00  
Rise(in): 24.00                      24.00  
Invert(ft): 15.560                      15.370  
Manning's N: 0.024000                      0.024000  
Top Clip(in): 0.000                      0.000  
Bot Clip(in): 0.000                      0.000  
Entrance Loss Coef: 0.00  
Exit Loss Coef: 1.00  
Bend Loss Coef: 0.00  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

30" CMP WITH 24" CPP THROUGHOUT SECTIONS OF THE PIPE. DUE TO THE CHANGING DIAMETER THE PIPE IS MODELED AS A 24" CPP.

-----  
INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |                    |                                      |
|-----------------------|--------------------|--------------------------------------|
| Name: P-6             | From Node: SWALE-4 | Length(ft): 5.00                     |
| Group: LL BASIN       | To Node: S-14      | Count: 1                             |
| UPSTREAM              | DOWNSTREAM         | Friction Equation: Automatic         |
| Geometry: Circular    | Circular           | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00              | Flow: Both                           |
| Rise(in): 30.00       | 30.00              | Entrance Loss Coef: 0.00             |
| Invert(ft): 14.410    | 14.080             | Exit Loss Coef: 1.00                 |
| Manning's N: 0.024000 | 0.024000           | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000              | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000              | Inlet Ctrl Spec: Use dc              |
|                       |                    | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

=====

==== Drop Structures =====

=====

|                       |                |                                      |
|-----------------------|----------------|--------------------------------------|
| Name: P-1             | From Node: S-1 | Length(ft): 33.00                    |
| Group: LL BASIN       | To Node: S-2   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM     | Friction Equation: Automatic         |
| Geometry: Circular    | Circular       | Solution Algorithm: Most Restrictive |
| Span(in): 15.00       | 15.00          | Flow: Both                           |
| Rise(in): 15.00       | 15.00          | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.550    | 17.130         | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000       | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000          | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000          | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

15" CMP  
FIELD FORMED STRUCTURE WITH WEIR.

\*\*\* Weir 1 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 16.00       | Invert(ft): 19.160       |       |
| Rise(in): 10.00       | Control Elev(ft): 19.160 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 20.000       |       |
| Rise(in): 18.00       | Control Elev(ft): 20.000 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-10            | From Node: S-16 | Length(ft): 268.95                   |
| Group: LL BASIN       | To Node: S-17   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.860    | 12.100          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-10 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 80.00       | Invert(ft): 17.440       |
| Rise(in): 4.00        | Control Elev(ft): 17.440 |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-11            | From Node: S-17 | Length(ft): 49.90                    |
| Group: LL BASIN       | To Node: S-18   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.000    | 11.640          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-11 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 108.00      | Invert(ft): 15.990       |
| Rise(in): 6.00        | Control Elev(ft): 15.990 |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-12            | From Node: S-18 | Length(ft): 263.32                   |
| Group: LL BASIN       | To Node: S-19   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 11.550    | 10.820          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-12 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 92.00       | Invert(ft): 16.040       |
| Rise(in): 5.00        | Control Elev(ft): 16.040 |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-13      | From Node: S-19 | Length(ft): 54.38 |
| Group: LL BASIN | To Node: S-20   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00      | Flow: Both                           |
| Rise(in): 42.00       | 42.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.720    | 10.580     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-13 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 132.00      | Invert(ft): 16.690       |
| Rise(in): 4.00        | Control Elev(ft): 16.690 |

TABLE

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-14      | From Node: S-20 | Length(ft): 131.23 |
| Group: LL BASIN | To Node: S-21   | Count: 1           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00      | Flow: Both                           |
| Rise(in): 42.00       | 42.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.500    | 10.400     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-14 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 84.00       | Invert(ft): 16.590       |
| Rise(in): 6.00        | Control Elev(ft): 16.590 |

TABLE

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-15      | From Node: S-21 | Length(ft): 32.81 |
| Group: LL BASIN | To Node: S-22   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00      | Flow: Both                           |
| Rise(in): 42.00       | 42.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.350    | 10.350     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-15 \*\*\*

TABLE

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 24.00  
Rise(in): 24.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.000  
Control Elev(ft): 16.000

Name: P-16  
Group: LL BASIN  
From Node: S-30  
To Node: S-24  
Length(ft): 30.64  
Count: 1

UPSTREAM DOWNSTREAM Friction Equation: Automatic  
Geometry: Circular Circular Solution Algorithm: Most Restrictive  
Span(in): 24.00 24.00 Flow: Both  
Rise(in): 24.00 24.00 Entrance Loss Coef: 0.000  
Invert(ft): 13.220 12.900 Exit Loss Coef: 1.000  
Manning's N: 0.024000 0.024000 Outlet Ctrl Spec: Use dc or tw  
Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc  
Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-16 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 67.00  
Rise(in): 5.40  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.340  
Control Elev(ft): 16.340

Name: P-17  
Group: LL BASIN  
From Node: S-22  
To Node: S-23  
Length(ft): 134.05  
Count: 1

UPSTREAM DOWNSTREAM Friction Equation: Automatic  
Geometry: Circular Circular Solution Algorithm: Most Restrictive  
Span(in): 48.00 48.00 Flow: Both  
Rise(in): 48.00 48.00 Entrance Loss Coef: 0.000  
Invert(ft): 10.050 10.150 Exit Loss Coef: 1.000  
Manning's N: 0.024000 0.024000 Outlet Ctrl Spec: Use dc or tw  
Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc  
Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe from 30" CPP to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-17 \*\*\*

TABLE

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 24.00  
Rise(in): 24.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.550  
Control Elev(ft): 16.550

Name: P-18  
Group: LL BASIN  
From Node: S-23  
To Node: S-24  
Length(ft): 7.00  
Count: 1

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                                                                                                                                                                   |                                                                                  |                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 10.000<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>10.000<br>0.012000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.000<br>Exit Loss Coef: 1.000<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Solution Incs: 10 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-18 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.500       |
| Rise(in): 24.00       | Control Elev(ft): 16.500 |

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-19      | From Node: S-24 | Length(ft): 188.85 |
| Group: LL BASIN | To Node: S-25   | Count: 1           |

|                                                                                                                                                                  |                                                                                 |                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 48.00<br>Rise(in): 48.00<br>Invert(ft): 9.660<br>Manning's N: 0.024000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>48.00<br>48.00<br>8.100<br>0.024000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.000<br>Exit Loss Coef: 1.000<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Solution Incs: 10 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified weir from 60"x7" to a FDOT Type 4 asymmetrical curb inlet with 144"x6" opening. Adjusted weir elevation to account

\*\*\* Weir 1 of 1 for Drop Structure P-19 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 144.00      | Invert(ft): 16.960       |
| Rise(in): 6.00        | Control Elev(ft): 16.960 |

|                 |                  |                    |
|-----------------|------------------|--------------------|
| Name: P-2       | From Node: S-2   | Length(ft): 201.27 |
| Group: LL BASIN | To Node: SWALE-1 | Count: 1           |

|                                                                                                                                                                       |                                                                                      |                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Horz Ellipse<br>Span(in): 36.00<br>Rise(in): 30.00<br>Invert(ft): 17.130<br>Manning's N: 0.024000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Horz Ellipse<br>36.00<br>30.00<br>15.900<br>0.024000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.000<br>Exit Loss Coef: 1.000<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Solution Incs: 10 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

36"X30" CMP  
FIELD FORMED STRUCTURE. ILL FITTING TOP AND CONNECTION FROM PIPE TO INLET.

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 2 for Drop Structure P-2 \*\*\*

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 20.00  
Rise(in): 8.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 17.790  
Control Elev(ft): 17.790

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-2 \*\*\*

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 24.00  
Rise(in): 18.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 19.460  
Control Elev(ft): 19.460

TABLE

Name: P-20  
Group: LL BASIN  
From Node: S-25  
To Node: S-26  
Length(ft): 342.87  
Count: 1  
UPSTREAM  
Geometry: Circular  
Span(in): 48.00  
Rise(in): 48.00  
Invert(ft): 8.020  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000  
DOWNSTREAM  
Circular  
48.00  
48.00  
6.890  
0.024000  
0.000  
0.000  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-20 \*\*\*

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 54.00  
Rise(in): 5.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.520  
Control Elev(ft): 16.520

TABLE

Name: P-21  
Group: LL BASIN  
From Node: S-26  
To Node: S-27  
Length(ft): 13.23  
Count: 1  
UPSTREAM  
Geometry: Circular  
Span(in): 48.00  
Rise(in): 48.00  
Invert(ft): 6.710  
Manning's N: 0.022000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000  
DOWNSTREAM  
Circular  
48.00  
48.00  
6.490  
0.022000  
0.000  
0.000  
Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-21 \*\*\*

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 144.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 15.790

TABLE

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Rise(in): 6.00

Control Elev(ft): 15.790

Name: P-24  
Group: LL BASIN

From Node: S-31  
To Node: S-26

Length(ft): 31.80  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 15.00  
Rise(in): 15.00  
Invert(ft): 12.260  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
15.00  
15.00  
12.160  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-24 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 90.00  
Rise(in): 5.00

Invert(ft): 15.840  
Control Elev(ft): 15.840

Name: P-25  
Group: LL BASIN

From Node: S-32  
To Node: S-33

Length(ft): 30.26  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 15.00  
Rise(in): 15.00  
Invert(ft): 12.780  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
15.00  
15.00  
12.920  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-25 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 96.00  
Rise(in): 6.00

Invert(ft): 16.500  
Control Elev(ft): 16.500

Name: P-26  
Group: LL BASIN

From Node: S-33  
To Node: S-26

Length(ft): 415.95  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 24.00  
Rise(in): 24.00  
Invert(ft): 12.460  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
24.00  
24.00  
11.180  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT

ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 55.00       | Invert(ft): 16.620       |
| Rise(in): 4.50        | Control Elev(ft): 16.620 |

TABLE

Name: P-7  
Group: LL BASIN

From Node: S-11  
To Node: SWALE-4

Length(ft): 607.63  
Count: 1

| UPSTREAM              | DOWNSTREAM |
|-----------------------|------------|
| Geometry: Circular    | Circular   |
| Span(in): 30.00       | 30.00      |
| Rise(in): 30.00       | 30.00      |
| Invert(ft): 16.010    | 15.250     |
| Manning's N: 0.024000 | 0.024000   |
| Top Clip(in): 0.000   | 0.000      |
| Bot Clip(in): 0.000   | 0.000      |

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-7 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 20.110       |
| Rise(in): 18.00       | Control Elev(ft): 20.110 |

TABLE

Name: P-8  
Group: LL BASIN

From Node: S-14  
To Node: S-15

Length(ft): 143.04  
Count: 1

| UPSTREAM               | DOWNSTREAM   |
|------------------------|--------------|
| Geometry: Horz Ellipse | Horz Ellipse |
| Span(in): 42.00        | 42.00        |
| Rise(in): 30.00        | 30.00        |
| Invert(ft): 13.900     | 13.300       |
| Manning's N: 0.024000  | 0.024000     |
| Top Clip(in): 0.000    | 0.000        |
| Bot Clip(in): 0.000    | 0.000        |

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

\*\*\* Weir 1 of 1 for Drop Structure P-8 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 18.00       | Invert(ft): 19.450       |
| Rise(in): 24.00       | Control Elev(ft): 19.450 |

TABLE

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-9       | From Node: S-15 | Length(ft): 31.11 |
| Group: LL BASIN | To Node: S-16   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.190    | 13.050     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-9 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 90.00       | Invert(ft): 17.610       |       |
| Rise(in): 5.50        | Control Elev(ft): 17.610 |       |

=====

==== Weirs =====

=====

|                       |                       |  |
|-----------------------|-----------------------|--|
| Name: WEIR-1          | From Node: POND NO. 1 |  |
| Group: LL BASIN       | To Node: POND NO. 2   |  |
| Flow: Both            | Count: 1              |  |
| Type: Vertical: Mavis | Geometry: Rectangular |  |

|                              |  |  |
|------------------------------|--|--|
| Span(in): 213.60             |  |  |
| Rise(in): 72.12              |  |  |
| Invert(ft): 6.890            |  |  |
| Control Elevation(ft): 6.890 |  |  |

|                               |  |       |
|-------------------------------|--|-------|
| Bottom Clip(in): 0.000        |  | TABLE |
| Top Clip(in): 0.000           |  |       |
| Weir Discharge Coef: 3.200    |  |       |
| Orifice Discharge Coef: 0.600 |  |       |

=====

==== Hydrology Simulations =====

=====

|                           |                                                                                                                      |
|---------------------------|----------------------------------------------------------------------------------------------------------------------|
| Name: 10yr-2hr            | Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING |
| Override Defaults: Yes    |                                                                                                                      |
| Storm Duration(hrs): 2.00 |                                                                                                                      |
| Rainfall File: Scsiii     |                                                                                                                      |
| Rainfall Amount(in): 4.00 |                                                                                                                      |

|           |                |  |
|-----------|----------------|--|
| Time(hrs) | Print Inc(min) |  |
| 2.000     | 15.00          |  |

|                            |                                                                                                                      |
|----------------------------|----------------------------------------------------------------------------------------------------------------------|
| Name: 25yr-24hr            | Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING |
| Override Defaults: Yes     |                                                                                                                      |
| Storm Duration(hrs): 24.00 |                                                                                                                      |
| Rainfall File: Scsiii      |                                                                                                                      |
| Rainfall Amount(in): 10.80 |                                                                                                                      |

|           |                |  |
|-----------|----------------|--|
| Time(hrs) | Print Inc(min) |  |
| 24.000    | 15.00          |  |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

==== Routing Simulations =====  
=====

Name: 10yr-2hr                      Hydrology Sim: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING

Execute: Yes                      Restart: No                      Patch: No  
Alternative: No

Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 4.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 4.000     | 10.000         |
| Group     | Run            |
| LL BASIN  | Yes            |

Name: 25yr-24hr                      Hydrology Sim: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING

Execute: Yes                      Restart: No                      Patch: No  
Alternative: No

Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 25.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 15.000         |
| Group     | Run            |
| LL BASIN  | Yes            |

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max Outflow<br>cfs |
|------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|-------------------|----------------------------|--------------------|
| OUTFALL    | LL BASIN | 10yr-2hr   | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 26                      | 2.09                      | 10.84             | 0.00                       | 0.00               |
| OUTFALL    | LL BASIN | 25yr-24hr  | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 26                      | 19.91                     | 25.18             | 0.00                       | 0.00               |
| POND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 7.87               | 10.50                  | 0.0004                   | 12791                   | 1.91                      | 17.77             | 1.69                       | 13.26              |
| POND NO. 1 | LL BASIN | 25yr-24hr  | 19.30                    | 14.45              | 10.50                  | 0.0033                   | 35442                   | 12.75                     | 71.51             | 13.57                      | 125.02             |
| POND NO. 2 | LL BASIN | 10yr-2hr   | 2.00                     | 7.83               | 11.00                  | 0.0027                   | 25624                   | 1.74                      | 29.14             | 2.00                       | 13.77              |
| POND NO. 2 | LL BASIN | 25yr-24hr  | 19.30                    | 14.45              | 11.00                  | 0.0033                   | 47952                   | 13.57                     | 150.34            | 12.71                      | 64.42              |
| POND NO. 3 | LL BASIN | 10yr-2hr   | 2.03                     | 7.79               | 12.50                  | -0.0017                  | 39026                   | 2.00                      | 29.90             | 2.03                       | 10.99              |
| POND NO. 3 | LL BASIN | 25yr-24hr  | 19.38                    | 14.44              | 12.50                  | 0.0033                   | 102258                  | 12.75                     | 129.13            | 12.64                      | 57.54              |
| S-1        | LL BASIN | 10yr-2hr   | 1.82                     | 20.34              | 20.50                  | 0.0056                   | 8373                    | 1.50                      | 6.34              | 1.81                       | 3.65               |
| S-1        | LL BASIN | 25yr-24hr  | 14.04                    | 23.04              | 20.50                  | 0.0024                   | 38315                   | 12.50                     | 24.77             | 14.55                      | 3.65               |
| S-11       | LL BASIN | 10yr-2hr   | 1.57                     | 20.41              | 21.00                  | 0.0076                   | 7915                    | 1.50                      | 4.12              | 1.57                       | 3.71               |
| S-11       | LL BASIN | 25yr-24hr  | 22.06                    | 21.54              | 21.00                  | 0.0031                   | 38138                   | 12.50                     | 16.12             | 12.22                      | 8.72               |
| S-14       | LL BASIN | 10yr-2hr   | 4.00                     | 19.19              | 20.50                  | 0.0111                   | 113                     | 1.24                      | 4.70              | 0.00                       | 0.00               |
| S-14       | LL BASIN | 25yr-24hr  | 21.99                    | 21.52              | 20.50                  | 0.0079                   | 31512                   | 25.00                     | 4.99              | 25.00                      | 5.49               |
| S-15       | LL BASIN | 10yr-2hr   | 1.77                     | 18.18              | 18.59                  | 0.0058                   | 7895                    | 1.50                      | 4.74              | 1.52                       | 3.78               |
| S-15       | LL BASIN | 25yr-24hr  | 20.43                    | 21.37              | 18.59                  | 0.0026                   | 24859                   | 12.38                     | 19.05             | 25.00                      | 5.97               |
| S-16       | LL BASIN | 10yr-2hr   | 1.88                     | 18.14              | 18.41                  | 0.0073                   | 4647                    | 1.52                      | 8.47              | 1.58                       | 7.50               |
| S-16       | LL BASIN | 25yr-24hr  | 19.90                    | 21.26              | 18.41                  | 0.0026                   | 24321                   | 12.40                     | 20.46             | 25.00                      | 6.50               |
| S-17       | LL BASIN | 10yr-2hr   | 2.00                     | 17.92              | 17.38                  | 0.0081                   | 12173                   | 1.50                      | 13.68             | 1.69                       | 6.84               |
| S-17       | LL BASIN | 25yr-24hr  | 17.17                    | 20.91              | 17.38                  | 0.0035                   | 27446                   | 12.47                     | 28.93             | 12.60                      | 9.20               |
| S-18       | LL BASIN | 10yr-2hr   | 2.00                     | 17.83              | 17.41                  | 0.0076                   | 11296                   | 1.62                      | 10.60             | 1.66                       | 6.92               |
| S-18       | LL BASIN | 25yr-24hr  | 17.22                    | 20.80              | 17.41                  | 0.0026                   | 37885                   | 12.50                     | 28.01             | 13.32                      | 9.18               |
| S-19       | LL BASIN | 10yr-2hr   | 2.00                     | 17.62              | 18.40                  | 0.0082                   | 5571                    | 1.64                      | 11.71             | 1.63                       | 10.62              |
| S-19       | LL BASIN | 25yr-24hr  | 17.19                    | 20.46              | 18.40                  | 0.0033                   | 26016                   | 12.50                     | 28.82             | 12.65                      | 16.85              |
| S-2        | LL BASIN | 10yr-2hr   | 1.88                     | 19.79              | 20.06                  | 0.0032                   | 3305                    | 1.50                      | 8.79              | 1.57                       | 8.16               |
| S-2        | LL BASIN | 25yr-24hr  | 13.37                    | 22.55              | 20.06                  | 0.0028                   | 16591                   | 12.50                     | 25.62             | 12.53                      | 13.21              |
| S-20       | LL BASIN | 10yr-2hr   | 2.03                     | 17.39              | 17.72                  | 0.0039                   | 6517                    | 1.63                      | 11.58             | 1.73                       | 7.74               |
| S-20       | LL BASIN | 25yr-24hr  | 17.75                    | 20.16              | 17.72                  | 0.0016                   | 29397                   | 12.50                     | 21.05             | 12.60                      | 14.30              |
| S-21       | LL BASIN | 10yr-2hr   | 2.06                     | 17.16              | 16.50                  | 0.0218                   | 1693                    | 1.73                      | 7.74              | 2.05                       | 7.50               |
| S-21       | LL BASIN | 25yr-24hr  | 17.66                    | 19.80              | 16.50                  | 0.0178                   | 3760                    | 12.60                     | 14.30             | 12.57                      | 13.62              |
| S-22       | LL BASIN | 10yr-2hr   | 2.06                     | 16.99              | 17.05                  | 0.0221                   | 1068                    | 2.05                      | 7.50              | 2.06                       | 7.49               |
| S-22       | LL BASIN | 25yr-24hr  | 17.57                    | 19.53              | 17.05                  | 0.0249                   | 3123                    | 12.57                     | 13.62             | 12.53                      | 13.39              |
| S-23       | LL BASIN | 10yr-2hr   | 4.00                     | 15.99              | 16.50                  | 0.0099                   | 27572                   | 2.06                      | 7.49              | 0.00                       | 0.00               |
| S-23       | LL BASIN | 25yr-24hr  | 17.46                    | 19.27              | 16.50                  | 0.0190                   | 32334                   | 12.53                     | 13.39             | 25.00                      | 10.49              |
| S-24       | LL BASIN | 10yr-2hr   | 1.86                     | 16.77              | 17.44                  | 0.0071                   | 5620                    | 1.58                      | 3.87              | 0.00                       | 0.00               |
| S-24       | LL BASIN | 25yr-24hr  | 17.02                    | 19.01              | 17.44                  | 0.0031                   | 21077                   | 19.00                     | 10.95             | 24.40                      | 11.48              |
| S-25       | LL BASIN | 10yr-2hr   | 1.55                     | 17.14              | 17.82                  | 0.0148                   | 5542                    | 1.38                      | 8.02              | 1.55                       | 5.81               |

NODE MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name          | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Inflow<br>hrs | Max Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|---------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|-------------------|-------------------|----------------------------|-----------------------|
| S-25          | LL BASIN | 25yr-24hr  | 16.81                    | 18.84              | 17.82                  | 0.0050                   | 18622                   | 12.25             | 20.17             | 16.90                      | 13.07                 |
| S-26          | LL BASIN | 10yr-2hr   | 2.00                     | 16.11              | 16.76                  | 0.0068                   | 5598                    | 1.50              | 7.76              | 2.00                       | 6.92                  |
| S-26          | LL BASIN | 25yr-24hr  | 12.67                    | 16.95              | 16.76                  | 0.0024                   | 10025                   | 12.50             | 28.72             | 12.67                      | 27.54                 |
| S-27          | LL BASIN | 10yr-2hr   | 2.00                     | 7.92               | 14.90                  | -0.0009                  | 223                     | 2.00              | 6.92              | 2.00                       | 6.95                  |
| S-27          | LL BASIN | 25yr-24hr  | 17.98                    | 14.55              | 14.90                  | 0.0039                   | 119                     | 12.67             | 27.54             | 12.59                      | 27.45                 |
| S-28          | LL BASIN | 10yr-2hr   | 2.00                     | 7.88               | 14.90                  | -0.0065                  | 274                     | 2.00              | 6.95              | 2.00                       | 7.04                  |
| S-28          | LL BASIN | 25yr-24hr  | 19.51                    | 14.50              | 14.90                  | -0.0065                  | 121                     | 12.59             | 27.45             | 12.66                      | 27.74                 |
| S-30          | LL BASIN | 10yr-2hr   | 1.90                     | 16.80              | 17.72                  | 0.0038                   | 4863                    | 1.50              | 2.40              | 1.97                       | 1.37                  |
| S-30          | LL BASIN | 25yr-24hr  | 17.04                    | 19.02              | 17.72                  | 0.0017                   | 18314                   | 12.50             | 9.37              | 13.11                      | 3.20                  |
| S-31          | LL BASIN | 10yr-2hr   | 2.00                     | 16.14              | 16.77                  | 0.0037                   | 5668                    | 1.50              | 2.32              | 2.11                       | 1.00                  |
| S-31          | LL BASIN | 25yr-24hr  | 12.88                    | 17.58              | 16.77                  | 0.0016                   | 14802                   | 12.50             | 9.06              | 13.06                      | 4.19                  |
| S-32          | LL BASIN | 10yr-2hr   | 2.00                     | 16.79              | 17.47                  | 0.0035                   | 5635                    | 1.50              | 2.97              | 2.06                       | 0.41                  |
| S-32          | LL BASIN | 25yr-24hr  | 13.41                    | 19.11              | 17.47                  | 0.0023                   | 22205                   | 12.50             | 11.62             | 15.14                      | 3.17                  |
| S-33          | LL BASIN | 10yr-2hr   | 2.00                     | 16.79              | 17.59                  | 0.0046                   | 5409                    | 1.50              | 4.03              | 2.00                       | 1.00                  |
| S-33          | LL BASIN | 25yr-24hr  | 13.07                    | 18.92              | 17.59                  | 0.0023                   | 19459                   | 12.50             | 16.19             | 13.28                      | 6.95                  |
| SWALE-1       | LL BASIN | 10yr-2hr   | 2.00                     | 19.50              | 20.00                  | 0.0021                   | 2397                    | 1.57              | 8.19              | 1.61                       | 7.19                  |
| SWALE-1       | LL BASIN | 25yr-24hr  | 16.68                    | 22.26              | 20.00                  | 0.0022                   | 10118                   | 12.57             | 15.36             | 12.81                      | 10.24                 |
| SWALE-2       | LL BASIN | 10yr-2hr   | 4.00                     | 19.19              | 19.00                  | 0.0016                   | 15017                   | 1.62              | 7.31              | 1.25                       | 3.88                  |
| SWALE-2       | LL BASIN | 25yr-24hr  | 19.98                    | 21.96              | 19.00                  | 0.0013                   | 35326                   | 12.75             | 19.83             | 13.12                      | 10.27                 |
| SWALE-3       | LL BASIN | 10yr-2hr   | 3.99                     | 19.19              | 19.00                  | 0.0015                   | 17277                   | 1.25              | 3.88              | 1.29                       | 1.47                  |
| SWALE-3       | LL BASIN | 25yr-24hr  | 20.17                    | 21.95              | 19.00                  | 0.0011                   | 76388                   | 13.00             | 14.66             | 18.27                      | 4.46                  |
| SWALE-4       | LL BASIN | 10yr-2hr   | 4.00                     | 19.19              | 20.50                  | 0.0037                   | 9283                    | 1.29              | 3.74              | 1.24                       | 4.70                  |
| SWALE-4       | LL BASIN | 25yr-24hr  | 22.01                    | 21.54              | 20.50                  | 0.0028                   | 39163                   | 13.03             | 9.03              | 25.00                      | 4.99                  |
| WETLAND NO. 1 | LL BASIN | 10yr-2hr   | 2.09                     | 6.57               | 6.50                   | 0.0006                   | 47149                   | 1.75              | 41.36             | 2.09                       | 10.84                 |
| WETLAND NO. 1 | LL BASIN | 25yr-24hr  | 19.91                    | 14.17              | 6.50                   | 0.0035                   | 100868                  | 12.75             | 115.43            | 19.91                      | 25.18                 |

NODE MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-1  | LL BASIN | 10yr-2hr   | 1.81                    | 3.65               | 0.082                 | 1.82                        | 20.34                 | 1.88                        | 19.79                 |
| P-1  | LL BASIN | 25yr-24hr  | 14.55                   | 3.65               | 0.005                 | 14.04                       | 23.04                 | 13.37                       | 22.55                 |
| P-10 | LL BASIN | 10yr-2hr   | 1.58                    | 7.50               | -0.548                | 1.88                        | 18.14                 | 2.00                        | 17.92                 |
| P-10 | LL BASIN | 25yr-24hr  | 25.00                   | 6.50               | 0.003                 | 19.90                       | 21.26                 | 17.17                       | 20.91                 |
| P-11 | LL BASIN | 10yr-2hr   | 1.69                    | 6.84               | 0.207                 | 2.00                        | 17.92                 | 2.00                        | 17.83                 |
| P-11 | LL BASIN | 25yr-24hr  | 12.60                   | 9.20               | 1.433                 | 17.17                       | 20.91                 | 17.22                       | 20.80                 |
| P-12 | LL BASIN | 10yr-2hr   | 1.66                    | 6.92               | 0.259                 | 2.00                        | 17.83                 | 2.00                        | 17.62                 |
| P-12 | LL BASIN | 25yr-24hr  | 13.32                   | 9.18               | 0.663                 | 17.22                       | 20.80                 | 17.19                       | 20.46                 |
| P-13 | LL BASIN | 10yr-2hr   | 1.63                    | 10.62              | -0.784                | 2.00                        | 17.62                 | 2.03                        | 17.39                 |
| P-13 | LL BASIN | 25yr-24hr  | 12.65                   | 16.85              | 0.007                 | 17.19                       | 20.46                 | 17.75                       | 20.16                 |
| P-14 | LL BASIN | 10yr-2hr   | 1.73                    | 7.74               | 0.014                 | 2.03                        | 17.39                 | 2.06                        | 17.16                 |
| P-14 | LL BASIN | 25yr-24hr  | 12.60                   | 14.30              | 0.009                 | 17.75                       | 20.16                 | 17.66                       | 19.80                 |
| P-15 | LL BASIN | 10yr-2hr   | 2.05                    | 7.50               | -0.179                | 2.06                        | 17.16                 | 2.06                        | 16.99                 |
| P-15 | LL BASIN | 25yr-24hr  | 12.57                   | 13.62              | -0.147                | 17.66                       | 19.80                 | 17.57                       | 19.53                 |
| P-16 | LL BASIN | 10yr-2hr   | 1.97                    | 1.37               | -0.013                | 1.90                        | 16.80                 | 1.86                        | 16.77                 |
| P-16 | LL BASIN | 25yr-24hr  | 13.11                   | 3.20               | -0.648                | 17.04                       | 19.02                 | 17.02                       | 19.01                 |
| P-17 | LL BASIN | 10yr-2hr   | 2.06                    | 7.49               | 0.027                 | 2.06                        | 16.99                 | 4.00                        | 15.99                 |
| P-17 | LL BASIN | 25yr-24hr  | 12.53                   | 13.39              | -0.023                | 17.57                       | 19.53                 | 17.46                       | 19.27                 |
| P-18 | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | -0.004                | 4.00                        | 15.99                 | 1.86                        | 16.77                 |
| P-18 | LL BASIN | 25yr-24hr  | 25.00                   | 10.49              | 0.089                 | 17.45                       | 19.27                 | 17.02                       | 19.01                 |
| P-19 | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | -0.005                | 1.86                        | 16.77                 | 1.55                        | 17.14                 |
| P-19 | LL BASIN | 25yr-24hr  | 24.40                   | 11.48              | 0.042                 | 17.02                       | 19.01                 | 16.81                       | 18.84                 |
| P-2  | LL BASIN | 10yr-2hr   | 1.57                    | 8.16               | -0.025                | 1.88                        | 19.79                 | 2.00                        | 19.50                 |
| P-2  | LL BASIN | 25yr-24hr  | 12.53                   | 13.21              | -0.005                | 13.37                       | 22.55                 | 16.68                       | 22.26                 |
| P-20 | LL BASIN | 10yr-2hr   | 1.55                    | 5.81               | 0.008                 | 1.55                        | 17.14                 | 2.00                        | 16.11                 |
| P-20 | LL BASIN | 25yr-24hr  | 16.90                   | 13.07              | 0.005                 | 16.81                       | 18.84                 | 12.67                       | 16.95                 |
| P-21 | LL BASIN | 10yr-2hr   | 2.00                    | 6.92               | 0.014                 | 2.00                        | 16.11                 | 2.00                        | 7.92                  |
| P-21 | LL BASIN | 25yr-24hr  | 12.67                   | 27.54              | 0.018                 | 12.67                       | 16.95                 | 17.98                       | 14.55                 |
| P-22 | LL BASIN | 10yr-2hr   | 2.00                    | 6.95               | -1.041                | 2.00                        | 7.92                  | 2.00                        | 7.88                  |
| P-22 | LL BASIN | 25yr-24hr  | 12.59                   | 27.45              | -1.600                | 17.98                       | 14.55                 | 19.51                       | 14.50                 |
| P-23 | LL BASIN | 10yr-2hr   | 2.00                    | 7.04               | 3.895                 | 2.00                        | 7.88                  | 2.00                        | 7.87                  |
| P-23 | LL BASIN | 25yr-24hr  | 12.66                   | 27.74              | 3.895                 | 19.51                       | 14.50                 | 19.30                       | 14.45                 |
| P-24 | LL BASIN | 10yr-2hr   | 2.11                    | 1.00               | 0.006                 | 2.00                        | 16.14                 | 2.00                        | 16.11                 |
| P-24 | LL BASIN | 25yr-24hr  | 13.06                   | 4.19               | 0.171                 | 12.88                       | 17.58                 | 12.67                       | 16.95                 |
| P-25 | LL BASIN | 10yr-2hr   | 2.06                    | 0.41               | 0.003                 | 2.00                        | 16.79                 | 2.00                        | 16.79                 |
| P-25 | LL BASIN | 25yr-24hr  | 15.14                   | 3.17               | -0.157                | 13.41                       | 19.11                 | 13.07                       | 18.92                 |
| P-26 | LL BASIN | 10yr-2hr   | 2.00                    | 1.00               | 0.001                 | 2.00                        | 16.79                 | 2.00                        | 16.11                 |

LINK MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name   | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|--------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-26   | LL BASIN | 25yr-24hr  | 13.28                   | 6.95               | 0.008                 | 13.07                       | 18.92                 | 12.67                       | 16.95                 |
| P-27   | LL BASIN | 10yr-2hr   | 2.00                    | 0.52               | 0.002                 | 2.00                        | 7.83                  | 2.03                        | 7.79                  |
| P-27   | LL BASIN | 25yr-24hr  | 12.73                   | 39.62              | 0.395                 | 19.30                       | 14.45                 | 19.38                       | 14.44                 |
| P-28   | LL BASIN | 10yr-2hr   | 2.00                    | 13.25              | -44.878               | 2.00                        | 7.83                  | 2.03                        | 7.79                  |
| P-28   | LL BASIN | 25yr-24hr  | 12.56                   | 26.27              | -44.878               | 19.30                       | 14.45                 | 19.38                       | 14.44                 |
| P-29   | LL BASIN | 10yr-2hr   | 2.02                    | 3.10               | 0.003                 | 2.03                        | 7.79                  | 2.02                        | 6.19                  |
| P-29   | LL BASIN | 25yr-24hr  | 12.64                   | 28.85              | 0.042                 | 19.38                       | 14.44                 | 19.91                       | 14.17                 |
| P-3    | LL BASIN | 10yr-2hr   | 1.61                    | 7.19               | 0.034                 | 2.00                        | 19.50                 | 4.00                        | 19.19                 |
| P-3    | LL BASIN | 25yr-24hr  | 12.81                   | 10.24              | 0.004                 | 16.68                       | 22.26                 | 19.98                       | 21.96                 |
| P-30   | LL BASIN | 10yr-2hr   | 2.03                    | 7.89               | 0.005                 | 2.03                        | 7.79                  | 2.03                        | 6.57                  |
| P-30   | LL BASIN | 25yr-24hr  | 12.57                   | 29.74              | -0.054                | 19.38                       | 14.44                 | 19.91                       | 14.17                 |
| P-31   | LL BASIN | 10yr-2hr   | 2.09                    | 10.84              | 0.397                 | 2.09                        | 6.57                  | 2.00                        | 4.67                  |
| P-31   | LL BASIN | 25yr-24hr  | 19.91                   | 25.18              | 0.397                 | 19.91                       | 14.17                 | 17.88                       | 4.84                  |
| P-4    | LL BASIN | 10yr-2hr   | 1.25                    | 3.88               | -0.164                | 4.00                        | 19.19                 | 3.99                        | 19.19                 |
| P-4    | LL BASIN | 25yr-24hr  | 13.12                   | 10.27              | -0.178                | 19.98                       | 21.96                 | 20.17                       | 21.95                 |
| P-5    | LL BASIN | 10yr-2hr   | 1.29                    | 1.47               | -0.165                | 3.99                        | 19.19                 | 4.00                        | 19.19                 |
| P-5    | LL BASIN | 25yr-24hr  | 18.27                   | 4.46               | 0.069                 | 20.17                       | 21.95                 | 22.01                       | 21.54                 |
| P-6    | LL BASIN | 10yr-2hr   | 1.24                    | 4.70               | -5.302                | 4.00                        | 19.19                 | 4.00                        | 19.19                 |
| P-6    | LL BASIN | 25yr-24hr  | 25.00                   | 4.99               | -5.211                | 22.01                       | 21.54                 | 21.99                       | 21.52                 |
| P-7    | LL BASIN | 10yr-2hr   | 1.57                    | 3.71               | 0.015                 | 1.57                        | 20.41                 | 4.00                        | 19.19                 |
| P-7    | LL BASIN | 25yr-24hr  | 12.22                   | 8.72               | 0.006                 | 22.06                       | 21.54                 | 22.01                       | 21.54                 |
| P-8    | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000                 | 4.00                        | 19.19                 | 1.77                        | 18.18                 |
| P-8    | LL BASIN | 25yr-24hr  | 25.00                   | 5.49               | -0.078                | 21.99                       | 21.52                 | 20.43                       | 21.37                 |
| P-9    | LL BASIN | 10yr-2hr   | 1.52                    | 3.78               | -1.095                | 1.77                        | 18.18                 | 1.88                        | 18.14                 |
| P-9    | LL BASIN | 25yr-24hr  | 25.00                   | 5.97               | 1.096                 | 20.43                       | 21.37                 | 19.90                       | 21.26                 |
| WEIR-1 | LL BASIN | 10yr-2hr   | 1.69                    | 13.26              | -0.038                | 2.00                        | 7.87                  | 2.00                        | 7.83                  |
| WEIR-1 | LL BASIN | 25yr-24hr  | 13.57                   | 125.02             | 96.061                | 19.30                       | 14.45                 | 19.30                       | 14.45                 |

LINK MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS REMOVE WEIR ONLY

# Existing Conditions Notch Weir

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

=====  
Basins  
=====

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-1         | Node: POND NO. 1                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 16.590           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-2         | Node: POND NO. 2                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 23.050           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-3         | Node: POND NO. 3                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 24.500           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-1            | Node: S-1                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-11           | Node: S-11                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.160            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-15           | Node: S-15                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-16           | Node: S-16                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 6.010            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-17           | Node: S-17                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 8.190            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-18           | Node: S-18                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 6.100            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-19           | Node: S-19                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.610            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-2            | Node: S-2                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.500            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: Basin S-20           | Node: S-20                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 1.500            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                  |                              |                |
|------------------|------------------------------|----------------|
| Name: BASIN S-24 | Node: S-24                   | Status: Onsite |
| Group: LL BASIN  | Type: SCS Unit Hydrograph CN |                |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |
|----------------------------|----------------------------------|
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |
| Area(ac): 4.130            | Time Shift(hrs): 0.00            |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |
| DCIA(%): 0.00              |                                  |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-25           | Node: S-25                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 11.580           | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-26           | Node: S-26                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.540            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-30           | Node: S-30                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.000            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-31           | Node: S-31                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.900            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-32           | Node: S-32                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.720            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                              |                |
|----------------------------|------------------------------|----------------|
| Name: BASIN S-33           | Node: S-33                   | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0        |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00    |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00     |                |
| Area(ac): 5.040            | Time Shift(hrs): 0.00        |                |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Curve Number: 57.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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-----
Name: BASIN SW-1      Node: SWALE-1      Status: Onsite
Group: LL BASIN      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484      Peaking Factor: 484.0
Rainfall File: Scsiii      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00
Area(ac): 2.670      Time Shift(hrs): 0.00
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

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-----
Name: BASIN SW-2      Node: SWALE-2      Status: Onsite
Group: LL BASIN      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484      Peaking Factor: 484.0
Rainfall File: Scsiii      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00
Area(ac): 9.540      Time Shift(hrs): 0.00
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

```

-----
Name: BASIN SW-3      Node: SWALE-3      Status: Onsite
Group: LL BASIN      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484      Peaking Factor: 484.0
Rainfall File: Scsiii      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00
Area(ac): 4.980      Time Shift(hrs): 0.00
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

```

-----
Name: BASIN SW-4      Node: SWALE-4      Status: Onsite
Group: LL BASIN      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484      Peaking Factor: 484.0
Rainfall File: Scsiii      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00
Area(ac): 2.450      Time Shift(hrs): 0.00
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

```

-----
Name: BASIN WET-1      Node: WETLAND NO. 1      Status: Onsite
Group: LL BASIN      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484      Peaking Factor: 484.0
Rainfall File: Scsiii      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00
Area(ac): 14.480      Time Shift(hrs): 0.00
Curve Number: 89.00      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

=====  
Nodes  
=====

```

Name: OUTFALL      Base Flow(cfs): 0.000      Init Stage(ft): 3.520
Group: LL BASIN      Warn Stage(ft): 6.750
Type: Time/Stage
  
```

Time(hrs)      Stage(ft)

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

0.00 3.520  
999.00 3.520

Name: POND NO. 1      Base Flow(cfs): 0.000      Init Stage(ft): 8.800  
Group: LL BASIN      Warn Stage(ft): 10.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 5.000     | 0.0173   |
| 5.500     | 0.0491   |
| 6.000     | 0.1429   |
| 6.500     | 0.1976   |
| 7.000     | 0.2452   |
| 7.500     | 0.2756   |
| 8.000     | 0.2988   |
| 8.500     | 0.3146   |
| 9.000     | 0.3304   |
| 9.500     | 0.3424   |
| 10.000    | 0.3589   |
| 10.500    | 0.3670   |
| 11.000    | 0.4235   |

Name: POND NO. 2      Base Flow(cfs): 0.000      Init Stage(ft): 6.000  
Group: LL BASIN      Warn Stage(ft): 11.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 2.000     | 0.2059   |
| 3.000     | 0.2754   |
| 4.000     | 0.3489   |
| 5.000     | 0.4214   |
| 6.000     | 0.4765   |
| 7.000     | 0.5348   |
| 8.000     | 0.5972   |
| 8.500     | 0.6280   |
| 9.000     | 0.6557   |
| 9.500     | 0.6947   |
| 10.000    | 0.7375   |
| 10.500    | 0.7560   |
| 11.000    | 0.7760   |
| 11.500    | 0.8230   |

Name: POND NO. 3      Base Flow(cfs): 0.000      Init Stage(ft): 6.500  
Group: LL BASIN      Warn Stage(ft): 12.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.3676   |
| 1.000     | 0.4178   |
| 2.000     | 0.4795   |
| 3.000     | 0.5478   |
| 4.000     | 0.6112   |
| 5.000     | 0.6785   |
| 6.000     | 0.7522   |
| 7.000     | 0.8299   |
| 8.000     | 0.9066   |
| 8.500     | 0.9450   |
| 9.000     | 0.9806   |
| 9.500     | 1.0426   |
| 10.000    | 1.1231   |
| 10.500    | 1.2129   |
| 11.000    | 1.3300   |
| 12.000    | 1.5200   |
| 12.500    | 1.6500   |
| 13.000    | 1.8300   |

Name: S-1      Base Flow(cfs): 0.000      Init Stage(ft): 17.550  
Group: LL BASIN      Warn Stage(ft): 20.500  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

RIM=20.00'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.130    | 0.0001   |
| 17.550    | 0.0001   |
| 18.000    | 0.0001   |
| 19.150    | 0.0001   |
| 19.500    | 0.1370   |
| 20.100    | 0.1500   |
| 20.500    | 0.2200   |
| 21.000    | 0.3500   |

Name: S-11                      Base Flow(cfs): 0.000                      Init Stage(ft): 16.010  
Group: LL BASIN                      Warn Stage(ft): 21.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 16.010    | 0.0001   |
| 18.000    | 0.0001   |
| 20.110    | 0.0001   |
| 20.500    | 0.2350   |
| 21.000    | 0.5420   |

Name: S-14                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.900  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.900    | 0.0001   |
| 15.000    | 0.0001   |
| 19.450    | 0.0001   |
| 20.000    | 0.4500   |
| 20.500    | 0.5400   |

Name: S-15                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.190  
Group: LL BASIN                      Warn Stage(ft): 18.590  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.190    | 0.0001   |
| 15.000    | 0.0001   |
| 17.650    | 0.0200   |
| 18.090    | 0.1590   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-16                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.060  
Group: LL BASIN                      Warn Stage(ft): 18.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.060    | 0.0001   |
| 15.000    | 0.0001   |
| 17.950    | 0.0200   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-17                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.000  
Group: LL BASIN                      Warn Stage(ft): 17.380  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |
| 16.880    | 0.1377   |
| 17.000    | 0.1720   |
| 17.880    | 0.2750   |

Name: S-18                      Base Flow(cfs): 0.000                      Init Stage(ft): 11.550  
Group: LL BASIN                      Warn Stage(ft): 17.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 11.550    | 0.0001   |
| 15.000    | 0.0001   |
| 16.910    | 0.1377   |
| 17.410    | 0.1720   |
| 17.910    | 0.2750   |

Name: S-19                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.720  
Group: LL BASIN                      Warn Stage(ft): 18.400  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.720    | 0.0001   |
| 14.000    | 0.0001   |
| 17.900    | 0.1377   |
| 18.400    | 0.1720   |
| 18.900    | 0.2750   |

Name: S-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 17.130  
Group: LL BASIN                      Warn Stage(ft): 20.060  
Type: Stage/Area

RIM=19.46'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.0000   |
| 17.130    | 0.0001   |
| 17.760    | 0.0001   |
| 19.460    | 0.0001   |
| 20.060    | 0.1370   |
| 21.000    | 0.2290   |

Name: S-20                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.500  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.500    | 0.0001   |
| 14.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.1720   |
| 18.220    | 0.2750   |

Name: S-21                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.350  
Group: LL BASIN                      Warn Stage(ft): 16.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.350    | 0.0001   |
| 14.000    | 0.0001   |
| 16.000    | 0.0060   |
| 16.500    | 0.0270   |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

17.000      0.0360

Name: S-22      Base Flow(cfs): 0.000      Init Stage(ft): 10.050  
Group: LL BASIN      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.050    | 0.0001   |
| 14.000    | 0.0001   |
| 16.550    | 0.0060   |
| 17.050    | 0.0270   |
| 17.550    | 0.0360   |

Name: S-23      Base Flow(cfs): 0.000      Init Stage(ft): 10.000  
Group: LL BASIN      Warn Stage(ft): 16.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.000    | 0.0001   |
| 12.000    | 0.0001   |
| 13.600    | 0.0001   |
| 14.000    | 0.1000   |
| 15.000    | 0.6000   |
| 16.500    | 0.6500   |

Name: S-24      Base Flow(cfs): 0.000      Init Stage(ft): 9.660  
Group: LL BASIN      Warn Stage(ft): 17.440  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 9.660     | 0.0001   |
| 14.000    | 0.0001   |
| 16.960    | 0.1377   |
| 17.440    | 0.1720   |
| 17.960    | 0.2750   |

Name: S-25      Base Flow(cfs): 0.000      Init Stage(ft): 8.020  
Group: LL BASIN      Warn Stage(ft): 17.820  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 8.020     | 0.0001   |
| 15.000    | 0.0001   |
| 17.320    | 0.1377   |
| 17.820    | 0.1720   |
| 18.320    | 0.2750   |

Name: S-26      Base Flow(cfs): 0.000      Init Stage(ft): 6.900  
Group: LL BASIN      Warn Stage(ft): 16.760  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.710     | 0.0001   |
| 14.000    | 0.0001   |
| 16.260    | 0.1377   |
| 16.760    | 0.1720   |
| 17.260    | 0.3250   |

Name: S-27      Base Flow(cfs): 0.000      Init Stage(ft): 6.900  
Group: LL BASIN      Plunge Factor: 1.00      Warn Stage(ft): 14.900  
Type: Manhole, Flat Floor

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORPAIN DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.490     | 0.0001   |
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |

|                           |                       |                        |
|---------------------------|-----------------------|------------------------|
| Name: S-28                | Base Flow(cfs): 0.000 | Init Stage(ft): 6.900  |
| Group: LL BASIN           | Plunge Factor: 1.00   | Warn Stage(ft): 14.900 |
| Type: Manhole, Flat Floor |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 5.540     | 0.0001   |
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-30       | Base Flow(cfs): 0.000 | Init Stage(ft): 13.220 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.720 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.220    | 0.0001   |
| 15.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.2750   |
| 18.220    | 0.3310   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-31       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.260 |
| Group: LL BASIN  |                       | Warn Stage(ft): 16.770 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.260    | 0.0001   |
| 14.000    | 0.0001   |
| 16.270    | 0.1377   |
| 16.770    | 0.1720   |
| 17.270    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-32       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.780 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.470 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.780    | 0.0001   |
| 14.000    | 0.0001   |
| 16.970    | 0.1377   |
| 17.470    | 0.1720   |
| 17.970    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-33       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.460 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.590 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.460    | 0.0001   |
| 14.000    | 0.0001   |
| 17.090    | 0.1377   |
| 17.590    | 0.1720   |
| 18.090    | 0.2750   |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: SWALE-1                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.490  
Group: LL BASIN                      Warn Stage(ft): 20.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.490    | 0.0003   |
| 16.000    | 0.0004   |
| 16.500    | 0.0004   |
| 17.000    | 0.0029   |
| 17.500    | 0.0063   |
| 18.000    | 0.0100   |
| 19.000    | 0.0230   |
| 19.500    | 0.0551   |

Name: SWALE-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.050  
Group: LL BASIN                      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.050    | 0.0010   |
| 15.500    | 0.0100   |
| 16.000    | 0.0124   |
| 16.500    | 0.0288   |
| 17.000    | 0.0484   |
| 17.500    | 0.0650   |
| 18.000    | 0.1890   |
| 18.500    | 0.2290   |
| 19.000    | 0.3130   |

Name: SWALE-3                      Base Flow(cfs): 0.000                      Init Stage(ft): 15.370  
Group: LL BASIN                      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.370    | 0.0125   |
| 16.500    | 0.0211   |
| 17.000    | 0.0283   |
| 17.500    | 0.0355   |
| 18.000    | 0.0403   |
| 18.500    | 0.0502   |
| 19.000    | 0.3040   |
| 19.500    | 0.5500   |

Name: SWALE-4                      Base Flow(cfs): 0.000                      Init Stage(ft): 14.410  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 14.410    | 0.0010   |
| 15.250    | 0.0032   |
| 15.500    | 0.0038   |
| 16.000    | 0.0051   |
| 16.500    | 0.0064   |
| 17.000    | 0.0077   |
| 17.500    | 0.0096   |
| 18.000    | 0.0118   |
| 18.500    | 0.0230   |
| 19.000    | 0.1580   |
| 20.000    | 0.4500   |

Name: WETLAND NO. 1                      Base Flow(cfs): 0.000                      Init Stage(ft): 4.000  
Group: LL BASIN                      Warn Stage(ft): 6.500  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 3.660     | 0.0835   |
| 4.500     | 0.4620   |
| 5.000     | 0.6607   |
| 5.500     | 0.8112   |
| 6.000     | 0.9548   |
| 6.500     | 1.0644   |
| 7.000     | 1.1702   |
| 7.500     | 1.2500   |

=====  
=== Pipes =====  
=====

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-22            | From Node: S-27 | Length(ft): 57.21                    |
| Group: LL BASIN       | To Node: S-28   | Count: 1                             |
|                       |                 | Friction Equation: Automatic         |
|                       |                 | Solution Algorithm: Most Restrictive |
|                       |                 | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM      | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular        | Exit Loss Coef: 1.00                 |
| Span(in): 48.00       | 48.00           | Bend Loss Coef: 0.00                 |
| Rise(in): 48.00       | 48.00           | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 6.490     | 5.540           | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.024000 | 0.024000        | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000           |                                      |
| Bot Clip(in): 0.000   | 0.000           |                                      |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

|                       |                     |                                      |
|-----------------------|---------------------|--------------------------------------|
| Name: P-23            | From Node: S-28     | Length(ft): 25.07                    |
| Group: LL BASIN       | To Node: Pond No. 1 | Count: 1                             |
|                       |                     | Friction Equation: Automatic         |
|                       |                     | Solution Algorithm: Most Restrictive |
|                       |                     | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM          | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular            | Exit Loss Coef: 1.00                 |
| Span(in): 48.00       | 48.00               | Bend Loss Coef: 0.00                 |
| Rise(in): 48.00       | 48.00               | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 5.540     | 5.130               | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.024000 | 0.024000            | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000               |                                      |
| Bot Clip(in): 0.000   | 0.000               |                                      |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

|                        |                       |                                      |
|------------------------|-----------------------|--------------------------------------|
| Name: P-27             | From Node: POND NO. 2 | Length(ft): 40.00                    |
| Group: LL BASIN        | To Node: POND NO. 3   | Count: 1                             |
|                        |                       | Friction Equation: Automatic         |
|                        |                       | Solution Algorithm: Most Restrictive |
|                        |                       | Flow: Both                           |
| UPSTREAM               | DOWNSTREAM            | Entrance Loss Coef: 0.00             |
| Geometry: Horz Ellipse | Horz Ellipse          | Exit Loss Coef: 1.00                 |
| Span(in): 65.00        | 65.00                 | Bend Loss Coef: 0.00                 |
| Rise(in): 40.00        | 40.00                 | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 7.600      | 7.350                 | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.019000  | 0.019000              | Stabilizer Option: None              |
| Top Clip(in): 0.000    | 0.000                 |                                      |
| Bot Clip(in): 0.000    | 0.000                 |                                      |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                       |                       |                                      |
|-----------------------|-----------------------|--------------------------------------|
| Name: P-28            | From Node: POND NO. 2 | Length(ft): 89.00                    |
| Group: LL BASIN       | To Node: POND NO. 3   | Count: 2                             |
|                       |                       | Friction Equation: Automatic         |
|                       |                       | Solution Algorithm: Most Restrictive |
|                       |                       | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM            | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular              | Exit Loss Coef: 1.00                 |
| Span(in): 36.00       | 36.00                 | Bend Loss Coef: 0.00                 |
| Rise(in): 36.00       | 36.00                 | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 2.230     | 2.210                 | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.024000 | 0.024000              | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000                 |                                      |
| Bot Clip(in): 0.000   | 0.000                 |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                        |                                      |
|-----------------------|------------------------|--------------------------------------|
| Name: P-29            | From Node: POND NO. 3  | Length(ft): 65.00                    |
| Group: LL BASIN       | To Node: WETLAND NO. 1 | Count: 1                             |
|                       |                        | Friction Equation: Automatic         |
|                       |                        | Solution Algorithm: Most Restrictive |
|                       |                        | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM             | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular               | Exit Loss Coef: 1.00                 |
| Span(in): 30.00       | 30.00                  | Bend Loss Coef: 0.00                 |
| Rise(in): 30.00       | 30.00                  | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 7.030     | 5.670                  | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.024000 | 0.024000               | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000                  |                                      |
| Bot Clip(in): 0.000   | 0.000                  |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                    |                                      |
|-----------------------|--------------------|--------------------------------------|
| Name: P-3             | From Node: SWALE-1 | Length(ft): 195.00                   |
| Group: LL BASIN       | To Node: SWALE-2   | Count: 1                             |
|                       |                    | Friction Equation: Automatic         |
|                       |                    | Solution Algorithm: Most Restrictive |
|                       |                    | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM         | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular           | Exit Loss Coef: 1.00                 |
| Span(in): 24.00       | 24.00              | Bend Loss Coef: 0.00                 |
| Rise(in): 24.00       | 24.00              | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 15.490    | 15.050             | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.024000 | 0.024000           | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000              |                                      |
| Bot Clip(in): 0.000   | 0.000              |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                        |                                      |
|-----------------------|------------------------|--------------------------------------|
| Name: P-30            | From Node: POND NO. 3  | Length(ft): 66.00                    |
| Group: LL BASIN       | To Node: WETLAND NO. 1 | Count: 1                             |
|                       |                        | Friction Equation: Automatic         |
|                       |                        | Solution Algorithm: Most Restrictive |
|                       |                        | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM             | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular               | Exit Loss Coef: 1.00                 |
| Span(in): 30.00       | 30.00                  | Bend Loss Coef: 0.00                 |
| Rise(in): 30.00       | 30.00                  | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 6.500     | 5.620                  | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.024000 | 0.024000               |                                      |
| Top Clip(in): 0.000   | 0.000                  |                                      |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Bot Clip(in): 0.000                      0.000                      Stabilizer Option: None

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                        |                                      |                                |
|------------------------|--------------------------------------|--------------------------------|
| Name: P-31             | From Node: WETLAND NO. 1             | Length(ft): 39.00              |
| Group: LL BASIN        | To Node: OUTFALL                     | Count: 1                       |
|                        | Friction Equation: Automatic         |                                |
|                        | Solution Algorithm: Most Restrictive |                                |
|                        | Flow: Both                           |                                |
| UPSTREAM               |                                      |                                |
| Geometry: Horz Ellipse | DOWNSTREAM Horz Ellipse              |                                |
| Span(in): 20.00        | 20.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 16.00        | 16.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 3.660      | 3.520                                | Bend Loss Coef: 0.00           |
| Manning's N: 0.024000  | 0.024000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000    | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000    | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

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|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-4             | From Node: SWALE-2                   | Length(ft): 20.16              |
| Group: LL BASIN       | To Node: SWALE-3                     | Count: 1                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              |                                      |                                |
| Geometry: Circular    | DOWNSTREAM Circular                  |                                |
| Span(in): 30.00       | 30.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 30.00       | 30.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 15.560    | 15.370                               | Bend Loss Coef: 0.00           |
| Manning's N: 0.024000 | 0.024000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-5             | From Node: SWALE-3                   | Length(ft): 307.00             |
| Group: LL BASIN       | To Node: SWALE-4                     | Count: 1                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              |                                      |                                |
| Geometry: Circular    | DOWNSTREAM Circular                  |                                |
| Span(in): 24.00       | 24.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 24.00       | 24.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 15.560    | 15.370                               | Bend Loss Coef: 0.00           |
| Manning's N: 0.024000 | 0.024000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

30" CMP WITH 24" CPP THROUGHOUT SECTIONS OF THE PIPE. DUE TO THE CHANGING DIAMETER THE PIPE IS MODELED AS A 24" CPP.

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INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |                    |                                      |
|-----------------------|--------------------|--------------------------------------|
| Name: P-6             | From Node: SWALE-4 | Length(ft): 5.00                     |
| Group: LL BASIN       | To Node: S-14      | Count: 1                             |
| UPSTREAM              | DOWNSTREAM         | Friction Equation: Automatic         |
| Geometry: Circular    | Circular           | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00              | Flow: Both                           |
| Rise(in): 30.00       | 30.00              | Entrance Loss Coef: 0.00             |
| Invert(ft): 14.410    | 14.080             | Exit Loss Coef: 1.00                 |
| Manning's N: 0.024000 | 0.024000           | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000              | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000              | Inlet Ctrl Spec: Use dc              |
|                       |                    | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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==== Drop Structures =====

=====

|                       |                |                                      |
|-----------------------|----------------|--------------------------------------|
| Name: P-1             | From Node: S-1 | Length(ft): 33.00                    |
| Group: LL BASIN       | To Node: S-2   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM     | Friction Equation: Automatic         |
| Geometry: Circular    | Circular       | Solution Algorithm: Most Restrictive |
| Span(in): 15.00       | 15.00          | Flow: Both                           |
| Rise(in): 15.00       | 15.00          | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.550    | 17.130         | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000       | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000          | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000          | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

15" CMP  
FIELD FORMED STRUCTURE WITH WEIR.

\*\*\* Weir 1 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 16.00       | Invert(ft): 19.160       |       |
| Rise(in): 10.00       | Control Elev(ft): 19.160 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 20.000       |       |
| Rise(in): 18.00       | Control Elev(ft): 20.000 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-10            | From Node: S-16 | Length(ft): 268.95                   |
| Group: LL BASIN       | To Node: S-17   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.860    | 12.100          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-10 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 80.00       | Invert(ft): 17.440       |       |
| Rise(in): 4.00        | Control Elev(ft): 17.440 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-11            | From Node: S-17 | Length(ft): 49.90                    |
| Group: LL BASIN       | To Node: S-18   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.000    | 11.640          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-11 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 108.00      | Invert(ft): 15.990       |       |
| Rise(in): 6.00        | Control Elev(ft): 15.990 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-12            | From Node: S-18 | Length(ft): 263.32                   |
| Group: LL BASIN       | To Node: S-19   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 11.550    | 10.820          | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-12 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 92.00       | Invert(ft): 16.040       |       |
| Rise(in): 5.00        | Control Elev(ft): 16.040 |       |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-13      | From Node: S-19 | Length(ft): 54.38 |
| Group: LL BASIN | To Node: S-20   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00      | Flow: Both                           |
| Rise(in): 42.00       | 42.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.720    | 10.580     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-13 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 132.00      | Invert(ft): 16.690       |
| Rise(in): 4.00        | Control Elev(ft): 16.690 |

TABLE

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|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-14      | From Node: S-20 | Length(ft): 131.23 |
| Group: LL BASIN | To Node: S-21   | Count: 1           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00      | Flow: Both                           |
| Rise(in): 42.00       | 42.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.500    | 10.400     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-14 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 84.00       | Invert(ft): 16.590       |
| Rise(in): 6.00        | Control Elev(ft): 16.590 |

TABLE

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|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-15      | From Node: S-21 | Length(ft): 32.81 |
| Group: LL BASIN | To Node: S-22   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00      | Flow: Both                           |
| Rise(in): 42.00       | 42.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.350    | 10.350     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-15 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.000       |
| Rise(in): 24.00       | Control Elev(ft): 16.000 |

TABLE

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-16      | From Node: S-30 | Length(ft): 30.64 |
| Group: LL BASIN | To Node: S-24   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 24.00       | 24.00      | Flow: Both                           |
| Rise(in): 24.00       | 24.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.220    | 12.900     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-16 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 67.00       | Invert(ft): 16.340       |
| Rise(in): 5.40        | Control Elev(ft): 16.340 |

TABLE

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-17      | From Node: S-22 | Length(ft): 134.05 |
| Group: LL BASIN | To Node: S-23   | Count: 1           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.050    | 10.150     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe from 30" CPP to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-17 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.550       |
| Rise(in): 24.00       | Control Elev(ft): 16.550 |

TABLE

|                 |                 |                  |
|-----------------|-----------------|------------------|
| Name: P-18      | From Node: S-23 | Length(ft): 7.00 |
| Group: LL BASIN | To Node: S-24   | Count: 1         |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 36.00       | 36.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 36.00       | 36.00      | Flow: Both                           |
| Invert(ft): 10.000    | 10.000     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-18 \*\*\*

| Count: 1              | Bottom Clip(in): 0.000   |
|-----------------------|--------------------------|
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.500       |
| Rise(in): 24.00       | Control Elev(ft): 16.500 |

TABLE

| Name: P-19      | From Node: S-24 | Length(ft): 188.85 |
|-----------------|-----------------|--------------------|
| Group: LL BASIN | To Node: S-25   | Count: 1           |

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 48.00       | 48.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 48.00       | 48.00      | Flow: Both                           |
| Invert(ft): 9.660     | 8.100      | Entrance Loss Coef: 0.000            |
| Manning's N: 0.024000 | 0.024000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified weir from 60"x7" to a FDOT Type 4 asymmetrical curb inlet with 144"x6" opening. Adjusted weir elevation to account

\*\*\* Weir 1 of 1 for Drop Structure P-19 \*\*\*

| Count: 1              | Bottom Clip(in): 0.000   |
|-----------------------|--------------------------|
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 144.00      | Invert(ft): 16.960       |
| Rise(in): 6.00        | Control Elev(ft): 16.960 |

TABLE

| Name: P-2       | From Node: S-2   | Length(ft): 201.27 |
|-----------------|------------------|--------------------|
| Group: LL BASIN | To Node: SWALE-1 | Count: 1           |

| UPSTREAM               | DOWNSTREAM   |                                      |
|------------------------|--------------|--------------------------------------|
| Geometry: Horz Ellipse | Horz Ellipse | Friction Equation: Automatic         |
| Span(in): 36.00        | 36.00        | Solution Algorithm: Most Restrictive |
| Rise(in): 30.00        | 30.00        | Flow: Both                           |
| Invert(ft): 17.130     | 15.900       | Entrance Loss Coef: 0.000            |
| Manning's N: 0.024000  | 0.024000     | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000    | 0.000        | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000    | 0.000        | Inlet Ctrl Spec: Use dc              |
|                        |              | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

36"x30" CMP  
FIELD FORMED STRUCTURE. ILL FITTING TOP AND CONNECTION FROM PIPE TO INLET.

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 20.00       | Invert(ft): 17.790       |
| Rise(in): 8.00        | Control Elev(ft): 17.790 |

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 19.460       |
| Rise(in): 18.00       | Control Elev(ft): 19.460 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-20            | From Node: S-25 | Length(ft): 342.87                   |
| Group: LL BASIN       | To Node: S-26   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      |                                      |
| Geometry: Circular    | Circular        | Friction Equation: Automatic         |
| Span(in): 48.00       | 48.00           | Solution Algorithm: Most Restrictive |
| Rise(in): 48.00       | 48.00           | Flow: Both                           |
| Invert(ft): 8.020     | 6.890           | Entrance Loss Coef: 0.000            |
| Manning's N: 0.024000 | 0.024000        | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000           | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
|                       |                 | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-20 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 54.00       | Invert(ft): 16.520       |
| Rise(in): 5.00        | Control Elev(ft): 16.520 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-21            | From Node: S-26 | Length(ft): 13.23                    |
| Group: LL BASIN       | To Node: S-27   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      |                                      |
| Geometry: Circular    | Circular        | Friction Equation: Automatic         |
| Span(in): 48.00       | 48.00           | Solution Algorithm: Most Restrictive |
| Rise(in): 48.00       | 48.00           | Flow: Both                           |
| Invert(ft): 6.710     | 6.490           | Entrance Loss Coef: 0.000            |
| Manning's N: 0.022000 | 0.022000        | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000           | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
|                       |                 | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-21 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 144.00      | Invert(ft): 15.790       |

TABLE

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Rise(in): 6.00

Control Elev(ft): 15.790

Name: P-24  
Group: LL BASIN

From Node: S-31  
To Node: S-26

Length(ft): 31.80  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 15.00  
Rise(in): 15.00  
Invert(ft): 12.260  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
15.00  
15.00  
12.160  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-24 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 90.00  
Rise(in): 5.00

Invert(ft): 15.840  
Control Elev(ft): 15.840

Name: P-25  
Group: LL BASIN

From Node: S-32  
To Node: S-33

Length(ft): 30.26  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 15.00  
Rise(in): 15.00  
Invert(ft): 12.780  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
15.00  
15.00  
12.920  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-25 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 96.00  
Rise(in): 6.00

Invert(ft): 16.500  
Control Elev(ft): 16.500

Name: P-26  
Group: LL BASIN

From Node: S-33  
To Node: S-26

Length(ft): 415.95  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 24.00  
Rise(in): 24.00  
Invert(ft): 12.460  
Manning's N: 0.024000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTREAM  
Circular  
24.00  
24.00  
11.180  
0.024000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 55.00       | Invert(ft): 16.620       |
| Rise(in): 4.50        | Control Elev(ft): 16.620 |

TABLE

|                 |                  |                    |
|-----------------|------------------|--------------------|
| Name: P-7       | From Node: S-11  | Length(ft): 607.63 |
| Group: LL BASIN | To Node: SWALE-4 | Count: 1           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00      | Flow: Both                           |
| Rise(in): 30.00       | 30.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 16.010    | 15.250     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-7 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 20.110       |
| Rise(in): 18.00       | Control Elev(ft): 20.110 |

TABLE

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-8       | From Node: S-14 | Length(ft): 143.04 |
| Group: LL BASIN | To Node: S-15   | Count: 1           |

|                        |              |                                      |
|------------------------|--------------|--------------------------------------|
| UPSTREAM               | DOWNSTREAM   | Friction Equation: Automatic         |
| Geometry: Horz Ellipse | Horz Ellipse | Solution Algorithm: Most Restrictive |
| Span(in): 42.00        | 42.00        | Flow: Both                           |
| Rise(in): 30.00        | 30.00        | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.900     | 13.300       | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000  | 0.024000     | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000    | 0.000        | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000    | 0.000        | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

\*\*\* Weir 1 of 1 for Drop Structure P-8 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 18.00       | Invert(ft): 19.450       |
| Rise(in): 24.00       | Control Elev(ft): 19.450 |

TABLE

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-9       | From Node: S-15 | Length(ft): 31.11 |
| Group: LL BASIN | To Node: S-16   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.190    | 13.050     | Exit Loss Coef: 1.000                |
| Manning's N: 0.024000 | 0.024000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-9 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 90.00       | Invert(ft): 17.610       |       |
| Rise(in): 5.50        | Control Elev(ft): 17.610 |       |

=====

==== Weirs =====

=====

|                       |                       |  |
|-----------------------|-----------------------|--|
| Name: NOTCH WEIP      | From Node: POND NO. 1 |  |
| Group: LL BASIN       | To Node: POND NO. 2   |  |
| Flow: Both            | Count: 1              |  |
| Type: Vertical: Mavis | Geometry: Rectangular |  |

|                              |  |  |
|------------------------------|--|--|
| Span(in): 18.00              |  |  |
| Rise(in): 24.00              |  |  |
| Invert(ft): 6.900            |  |  |
| Control Elevation(ft): 6.900 |  |  |

|                               |       |  |
|-------------------------------|-------|--|
| Bottom Clip(in): 0.000        | TABLE |  |
| Top Clip(in): 0.000           |       |  |
| Weir Discharge Coef: 3.200    |       |  |
| Orifice Discharge Coef: 0.600 |       |  |

---

|                       |                       |  |
|-----------------------|-----------------------|--|
| Name: WEIR-1          | From Node: POND NO. 1 |  |
| Group: LL BASIN       | To Node: POND NO. 2   |  |
| Flow: Both            | Count: 1              |  |
| Type: Vertical: Mavis | Geometry: Rectangular |  |

|                              |  |  |
|------------------------------|--|--|
| Span(in): 213.60             |  |  |
| Rise(in): 48.00              |  |  |
| Invert(ft): 8.900            |  |  |
| Control Elevation(ft): 8.900 |  |  |

|                               |       |  |
|-------------------------------|-------|--|
| Bottom Clip(in): 0.000        | TABLE |  |
| Top Clip(in): 0.000           |       |  |
| Weir Discharge Coef: 3.200    |       |  |
| Orifice Discharge Coef: 0.600 |       |  |

=====

==== Hydrology Simulations =====

=====

|                                                                                                                      |  |
|----------------------------------------------------------------------------------------------------------------------|--|
| Name: 10yr-2hr                                                                                                       |  |
| Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING |  |

|                           |  |
|---------------------------|--|
| Override Defaults: Yes    |  |
| Storm Duration(hrs): 2.00 |  |
| Rainfall File: Scsiii     |  |
| Rainfall Amount(in): 4.00 |  |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 2.000     | 15.00          |

Name: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING  
Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 10.80

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 24.000    | 15.00          |

=====  
---- Routing Simulations ----  
=====

Name: 10yr-2hr                      Hydrology Sim: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING  
Execute: Yes                      Restart: No                      Patch: No  
Alternative: No  
Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 25.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 10.000         |

| Group    | Run |
|----------|-----|
| LL BASIN | Yes |

Name: 25yr-24hr                      Hydrology Sim: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- EXISTING  
Execute: Yes                      Restart: No                      Patch: No  
Alternative: No  
Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 25.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 15.000         |

| Group    | Run |
|----------|-----|
| LL BASIN | Yes |

INPUT REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| OUTFALL    | LL BASIN | 10yr-2hr   | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 26                      | 2.44                      | 11.20                | 0.00                       | 0.00                  |
| OUTFALL    | LL BASIN | 25yr-24hr  | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 26                      | 19.88                     | 25.25                | 0.00                       | 0.00                  |
| POND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 8.86               | 10.50                  | -0.0020                  | 14223                   | 1.92                      | 17.75                | 0.00                       | 12.57                 |
| POND NO. 1 | LL BASIN | 25yr-24hr  | 19.17                    | 14.50              | 10.50                  | -0.0041                  | 35691                   | 12.75                     | 71.68                | 13.52                      | 93.10                 |
| POND NO. 2 | LL BASIN | 10yr-2hr   | 2.00                     | 7.92               | 11.00                  | 0.0014                   | 25894                   | 2.00                      | 25.96                | 2.00                       | 14.09                 |
| POND NO. 2 | LL BASIN | 25yr-24hr  | 19.20                    | 14.50              | 11.00                  | 0.0042                   | 48154                   | 13.52                     | 119.84               | 12.67                      | 65.59                 |
| POND NO. 3 | LL BASIN | 10yr-2hr   | 2.02                     | 7.88               | 12.50                  | -0.0007                  | 39352                   | 2.00                      | 30.22                | 2.01                       | 12.75                 |
| POND NO. 3 | LL BASIN | 25yr-24hr  | 19.31                    | 14.49              | 12.50                  | 0.0029                   | 103032                  | 12.74                     | 123.30               | 12.62                      | 57.98                 |
| S-1        | LL BASIN | 10yr-2hr   | 1.82                     | 20.34              | 20.50                  | 0.0056                   | 8373                    | 1.50                      | 6.34                 | 1.81                       | 3.65                  |
| S-1        | LL BASIN | 25yr-24hr  | 14.04                    | 23.04              | 20.50                  | 0.0021                   | 38315                   | 12.50                     | 24.77                | 14.55                      | 3.65                  |
| S-11       | LL BASIN | 10yr-2hr   | 1.57                     | 20.41              | 21.00                  | 0.0076                   | 7915                    | 1.50                      | 4.12                 | 1.57                       | 3.71                  |
| S-11       | LL BASIN | 25yr-24hr  | 22.06                    | 21.54              | 21.00                  | 0.0031                   | 38138                   | 12.50                     | 16.12                | 12.22                      | 8.72                  |
| S-14       | LL BASIN | 10yr-2hr   | 25.00                    | 19.19              | 20.50                  | 0.0199                   | 113                     | 1.24                      | 4.71                 | 0.00                       | 0.00                  |
| S-14       | LL BASIN | 25yr-24hr  | 21.99                    | 21.52              | 20.50                  | 0.0079                   | 31512                   | 25.00                     | 4.99                 | 25.00                      | 5.49                  |
| S-15       | LL BASIN | 10yr-2hr   | 1.77                     | 18.18              | 18.59                  | 0.0058                   | 7895                    | 1.50                      | 4.74                 | 1.52                       | 3.78                  |
| S-15       | LL BASIN | 25yr-24hr  | 20.43                    | 21.37              | 18.59                  | 0.0021                   | 24859                   | 12.38                     | 19.05                | 25.00                      | 5.97                  |
| S-16       | LL BASIN | 10yr-2hr   | 1.88                     | 18.14              | 18.41                  | 0.0073                   | 4646                    | 1.52                      | 8.46                 | 1.58                       | 7.49                  |
| S-16       | LL BASIN | 25yr-24hr  | 19.90                    | 21.26              | 18.41                  | 0.0026                   | 24321                   | 12.40                     | 20.46                | 25.00                      | 6.50                  |
| S-17       | LL BASIN | 10yr-2hr   | 2.00                     | 17.92              | 17.38                  | 0.0081                   | 12173                   | 1.50                      | 13.68                | 1.69                       | 6.84                  |
| S-17       | LL BASIN | 25yr-24hr  | 17.17                    | 20.91              | 17.38                  | 0.0029                   | 27446                   | 12.47                     | 28.93                | 12.60                      | 9.20                  |
| S-18       | LL BASIN | 10yr-2hr   | 2.00                     | 17.83              | 17.41                  | 0.0076                   | 11296                   | 1.62                      | 10.60                | 1.66                       | 6.92                  |
| S-18       | LL BASIN | 25yr-24hr  | 17.22                    | 20.80              | 17.41                  | 0.0026                   | 37885                   | 12.50                     | 28.01                | 13.32                      | 9.18                  |
| S-19       | LL BASIN | 10yr-2hr   | 2.00                     | 17.62              | 18.40                  | 0.0082                   | 5571                    | 1.64                      | 11.71                | 1.63                       | 10.62                 |
| S-19       | LL BASIN | 25yr-24hr  | 17.19                    | 20.46              | 18.40                  | 0.0029                   | 26016                   | 12.50                     | 28.82                | 12.65                      | 16.85                 |
| S-2        | LL BASIN | 10yr-2hr   | 1.88                     | 19.79              | 20.06                  | 0.0032                   | 3305                    | 1.50                      | 8.79                 | 1.57                       | 8.16                  |
| S-2        | LL BASIN | 25yr-24hr  | 13.37                    | 22.55              | 20.06                  | 0.0023                   | 16591                   | 12.50                     | 25.62                | 12.53                      | 13.21                 |
| S-20       | LL BASIN | 10yr-2hr   | 2.03                     | 17.39              | 17.72                  | 0.0039                   | 6517                    | 1.63                      | 11.58                | 1.73                       | 7.74                  |
| S-20       | LL BASIN | 25yr-24hr  | 17.75                    | 20.16              | 17.72                  | 0.0013                   | 29397                   | 12.50                     | 21.05                | 12.60                      | 14.30                 |
| S-21       | LL BASIN | 10yr-2hr   | 2.06                     | 17.16              | 16.50                  | 0.0218                   | 1693                    | 1.73                      | 7.74                 | 2.05                       | 7.50                  |
| S-21       | LL BASIN | 25yr-24hr  | 17.66                    | 19.80              | 16.50                  | 0.0178                   | 3760                    | 12.60                     | 14.30                | 12.57                      | 13.62                 |
| S-22       | LL BASIN | 10yr-2hr   | 2.06                     | 16.99              | 17.05                  | 0.0291                   | 1068                    | 2.05                      | 7.50                 | 2.06                       | 7.49                  |
| S-22       | LL BASIN | 25yr-24hr  | 17.57                    | 19.53              | 17.05                  | 0.0249                   | 3123                    | 12.57                     | 13.62                | 12.53                      | 13.39                 |
| S-23       | LL BASIN | 10yr-2hr   | 25.00                    | 16.06              | 16.50                  | 0.0100                   | 27673                   | 2.06                      | 7.49                 | 0.00                       | 0.00                  |
| S-23       | LL BASIN | 25yr-24hr  | 17.46                    | 19.27              | 16.50                  | 0.0190                   | 32334                   | 12.53                     | 13.39                | 25.00                      | 10.49                 |
| S-24       | LL BASIN | 10yr-2hr   | 1.86                     | 16.77              | 17.44                  | 0.0071                   | 5620                    | 1.58                      | 3.87                 | 0.00                       | 0.00                  |
| S-24       | LL BASIN | 25yr-24hr  | 17.02                    | 19.01              | 17.44                  | 0.0028                   | 21077                   | 19.00                     | 10.95                | 24.39                      | 11.48                 |
| S-25       | LL BASIN | 10yr-2hr   | 1.55                     | 17.14              | 17.82                  | 0.0148                   | 5542                    | 1.38                      | 8.02                 | 1.55                       | 5.81                  |

NODE MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name          | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|---------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| S-25          | LL BASIN | 25yr-24hr  | 16.81                    | 18.84              | 17.82                  | 0.0050                   | 16622                   | 12.25                     | 20.17                | 16.90                      | 13.07                 |
| S-26          | LL BASIN | 10yr-2hr   | 2.00                     | 16.11              | 16.76                  | 0.0068                   | 5593                    | 1.50                      | 7.76                 | 2.00                       | 6.92                  |
| S-26          | LL BASIN | 25yr-24hr  | 12.67                    | 16.95              | 16.76                  | 0.0019                   | 10024                   | 12.50                     | 28.72                | 12.67                      | 27.54                 |
| S-27          | LL BASIN | 10yr-2hr   | 2.00                     | 8.88               | 14.90                  | 0.0448                   | 219                     | 2.00                      | 6.92                 | 2.14                       | 7.48                  |
| S-27          | LL BASIN | 25yr-24hr  | 17.99                    | 14.60              | 14.90                  | 0.0448                   | 119                     | 12.67                     | 27.54                | 12.67                      | 27.40                 |
| S-28          | LL BASIN | 10yr-2hr   | 2.00                     | 8.86               | 14.90                  | 0.0765                   | 240                     | 2.14                      | 7.48                 | 2.00                       | 7.02                  |
| S-28          | LL BASIN | 25yr-24hr  | 18.74                    | 14.54              | 14.90                  | 0.0765                   | 121                     | 12.67                     | 27.40                | 12.70                      | 27.81                 |
| S-30          | LL BASIN | 10yr-2hr   | 1.90                     | 16.80              | 17.72                  | 0.0038                   | 4863                    | 1.50                      | 2.40                 | 1.97                       | 1.37                  |
| S-30          | LL BASIN | 25yr-24hr  | 17.04                    | 19.02              | 17.72                  | 0.0014                   | 18314                   | 12.50                     | 9.37                 | 13.11                      | 3.20                  |
| S-31          | LL BASIN | 10yr-2hr   | 2.00                     | 16.14              | 16.77                  | 0.0037                   | 5668                    | 1.50                      | 2.32                 | 2.11                       | 1.00                  |
| S-31          | LL BASIN | 25yr-24hr  | 12.88                    | 17.58              | 16.77                  | 0.0014                   | 14802                   | 12.50                     | 9.06                 | 13.06                      | 4.19                  |
| S-32          | LL BASIN | 10yr-2hr   | 2.00                     | 16.79              | 17.47                  | 0.0035                   | 5635                    | 1.50                      | 2.97                 | 2.06                       | 0.41                  |
| S-32          | LL BASIN | 25yr-24hr  | 13.41                    | 19.11              | 17.47                  | 0.0019                   | 22204                   | 12.50                     | 11.62                | 15.13                      | 3.17                  |
| S-33          | LL BASIN | 10yr-2hr   | 2.00                     | 16.79              | 17.59                  | 0.0046                   | 5410                    | 1.50                      | 4.03                 | 2.00                       | 1.00                  |
| S-33          | LL BASIN | 25yr-24hr  | 13.07                    | 18.92              | 17.59                  | 0.0019                   | 19459                   | 12.50                     | 16.19                | 13.28                      | 6.95                  |
| SWALE-1       | LL BASIN | 10yr-2hr   | 2.00                     | 19.50              | 20.00                  | 0.0018                   | 2397                    | 1.57                      | 8.19                 | 1.61                       | 7.19                  |
| SWALE-1       | LL BASIN | 25yr-24hr  | 16.68                    | 22.26              | 20.00                  | 0.0018                   | 10118                   | 12.57                     | 15.36                | 12.81                      | 10.24                 |
| SWALE-2       | LL BASIN | 10yr-2hr   | 4.08                     | 19.19              | 19.00                  | 0.0016                   | 15018                   | 1.62                      | 7.31                 | 1.25                       | 3.88                  |
| SWALE-2       | LL BASIN | 25yr-24hr  | 19.98                    | 21.96              | 19.00                  | 0.0010                   | 35326                   | 12.75                     | 19.83                | 13.12                      | 10.27                 |
| SWALE-3       | LL BASIN | 10yr-2hr   | 25.00                    | 19.19              | 19.00                  | 0.0014                   | 17278                   | 1.25                      | 3.88                 | 1.29                       | 1.47                  |
| SWALE-3       | LL BASIN | 25yr-24hr  | 20.17                    | 21.95              | 19.00                  | 0.0009                   | 76387                   | 13.00                     | 14.66                | 18.27                      | 4.46                  |
| SWALE-4       | LL BASIN | 10yr-2hr   | 25.00                    | 19.19              | 20.50                  | 0.0040                   | 9284                    | 1.29                      | 3.74                 | 1.24                       | 4.71                  |
| SWALE-4       | LL BASIN | 25yr-24hr  | 22.01                    | 21.54              | 20.50                  | 0.0028                   | 39163                   | 13.03                     | 9.03                 | 25.00                      | 4.99                  |
| WETLAND NO. 1 | LL BASIN | 10yr-2hr   | 2.44                     | 6.67               | 6.50                   | 0.0006                   | 48095                   | 1.75                      | 43.29                | 2.44                       | 11.20                 |
| WETLAND NO. 1 | LL BASIN | 25yr-24hr  | 19.88                    | 14.22              | 6.50                   | 0.0031                   | 101202                  | 12.75                     | 115.71               | 19.88                      | 25.25                 |

NODE MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

OKALOOSA COUNTY  
LATE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|------------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| NOTCH WEIR | LL BASIN | 10yr-2hr   | 0.00                    | 12.57              | 12.571                | 2.00                        | 8.86                  | 2.00                        | 7.92                  |
| NOTCH WEIR | LL BASIN | 25yr-24hr  | 12.23                   | 14.61              | 12.571                | 19.17                       | 14.50                 | 19.20                       | 14.50                 |
| P-1        | LL BASIN | 10yr-2hr   | 1.81                    | 3.65               | 0.082                 | 1.82                        | 20.34                 | 1.88                        | 19.79                 |
| P-1        | LL BASIN | 25yr-24hr  | 14.55                   | 3.65               | 0.005                 | 14.04                       | 23.04                 | 13.37                       | 22.55                 |
| P-10       | LL BASIN | 10yr-2hr   | 1.58                    | 7.49               | -0.541                | 1.88                        | 18.14                 | 2.00                        | 17.92                 |
| P-10       | LL BASIN | 25yr-24hr  | 25.00                   | 6.50               | 0.003                 | 19.90                       | 21.26                 | 17.17                       | 20.91                 |
| P-11       | LL BASIN | 10yr-2hr   | 1.69                    | 6.84               | 0.213                 | 2.00                        | 17.92                 | 2.00                        | 17.83                 |
| P-11       | LL BASIN | 25yr-24hr  | 12.60                   | 9.20               | 1.433                 | 17.17                       | 20.91                 | 17.22                       | 20.80                 |
| P-12       | LL BASIN | 10yr-2hr   | 1.66                    | 6.92               | 0.260                 | 2.00                        | 17.83                 | 2.00                        | 17.62                 |
| P-12       | LL BASIN | 25yr-24hr  | 13.32                   | 9.18               | 0.663                 | 17.22                       | 20.80                 | 17.19                       | 20.46                 |
| P-13       | LL BASIN | 10yr-2hr   | 1.63                    | 10.62              | -0.789                | 2.00                        | 17.62                 | 2.03                        | 17.39                 |
| P-13       | LL BASIN | 25yr-24hr  | 12.65                   | 16.85              | 0.006                 | 17.19                       | 20.46                 | 17.75                       | 20.16                 |
| P-14       | LL BASIN | 10yr-2hr   | 1.73                    | 7.74               | 0.014                 | 2.03                        | 17.39                 | 2.06                        | 17.16                 |
| P-14       | LL BASIN | 25yr-24hr  | 12.60                   | 14.30              | 0.009                 | 17.75                       | 20.16                 | 17.66                       | 19.80                 |
| P-15       | LL BASIN | 10yr-2hr   | 2.05                    | 7.50               | -0.179                | 2.06                        | 17.16                 | 2.06                        | 16.99                 |
| P-15       | LL BASIN | 25yr-24hr  | 12.57                   | 13.62              | -0.147                | 17.66                       | 19.80                 | 17.57                       | 19.53                 |
| P-16       | LL BASIN | 10yr-2hr   | 1.97                    | 1.37               | -0.013                | 1.90                        | 16.80                 | 1.86                        | 16.77                 |
| P-16       | LL BASIN | 25yr-24hr  | 13.11                   | 3.20               | -0.648                | 17.04                       | 19.02                 | 17.02                       | 19.01                 |
| P-17       | LL BASIN | 10yr-2hr   | 2.06                    | 7.49               | 0.027                 | 2.06                        | 16.99                 | 25.00                       | 16.06                 |
| P-17       | LL BASIN | 25yr-24hr  | 12.53                   | 13.39              | 0.022                 | 17.57                       | 19.53                 | 17.46                       | 19.27                 |
| P-18       | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | -0.004                | 25.00                       | 16.06                 | 1.86                        | 16.77                 |
| P-18       | LL BASIN | 25yr-24hr  | 25.00                   | 10.49              | 0.077                 | 17.46                       | 19.27                 | 17.02                       | 19.01                 |
| P-19       | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | -0.004                | 1.86                        | 16.77                 | 1.55                        | 17.14                 |
| P-19       | LL BASIN | 25yr-24hr  | 24.39                   | 11.48              | 0.040                 | 17.02                       | 19.01                 | 16.81                       | 18.84                 |
| P-2        | LL BASIN | 10yr-2hr   | 1.57                    | 8.16               | -0.025                | 1.88                        | 19.79                 | 2.00                        | 19.50                 |
| P-2        | LL BASIN | 25yr-24hr  | 12.53                   | 13.21              | -0.005                | 13.37                       | 22.55                 | 16.68                       | 22.26                 |
| P-20       | LL BASIN | 10yr-2hr   | 1.55                    | 5.81               | 0.007                 | 1.55                        | 17.14                 | 2.00                        | 16.11                 |
| P-20       | LL BASIN | 25yr-24hr  | 16.90                   | 13.07              | 0.004                 | 16.81                       | 18.84                 | 12.67                       | 16.95                 |
| P-21       | LL BASIN | 10yr-2hr   | 2.00                    | 6.92               | 0.011                 | 2.00                        | 16.11                 | 2.00                        | 8.88                  |
| P-21       | LL BASIN | 25yr-24hr  | 12.67                   | 27.54              | 0.015                 | 12.67                       | 16.95                 | 17.99                       | 14.60                 |
| P-22       | LL BASIN | 10yr-2hr   | 2.14                    | 7.48               | -2.221                | 2.00                        | 8.88                  | 2.00                        | 8.86                  |
| P-22       | LL BASIN | 25yr-24hr  | 12.67                   | 27.40              | -2.221                | 17.99                       | 14.60                 | 18.74                       | 14.54                 |
| P-23       | LL BASIN | 10yr-2hr   | 2.00                    | 7.02               | -39.623               | 2.00                        | 8.86                  | 2.00                        | 8.86                  |
| P-23       | LL BASIN | 25yr-24hr  | 12.70                   | 27.81              | -39.623               | 18.74                       | 14.54                 | 19.17                       | 14.50                 |
| P-24       | LL BASIN | 10yr-2hr   | 2.11                    | 1.00               | 0.006                 | 2.00                        | 16.14                 | 2.00                        | 16.11                 |
| P-24       | LL BASIN | 25yr-24hr  | 13.06                   | 4.19               | 0.171                 | 12.88                       | 17.58                 | 12.67                       | 16.95                 |
| P-25       | LL BASIN | 10yr-2hr   | 2.06                    | 0.41               | 0.003                 | 2.00                        | 16.79                 | 2.00                        | 16.79                 |

LINK MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name   | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|--------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-25   | LL BASIN | 25yr-24hr  | 15.13                   | 3.17               | -0.157                | 13.41                       | 19.11                 | 13.07                       | 18.92                 |
| P-26   | LL BASIN | 10yr-2hr   | 2.00                    | 1.00               | 0.001                 | 2.00                        | 16.79                 | 2.00                        | 16.11                 |
| P-26   | LL BASIN | 25yr-24hr  | 13.28                   | 6.95               | 0.008                 | 13.07                       | 18.92                 | 12.67                       | 16.95                 |
| P-27   | LL BASIN | 10yr-2hr   | 2.00                    | 1.08               | 0.002                 | 2.00                        | 7.92                  | 2.02                        | 7.88                  |
| P-27   | LL BASIN | 25yr-24hr  | 12.71                   | 40.14              | 0.608                 | 19.20                       | 14.50                 | 19.31                       | 14.49                 |
| P-28   | LL BASIN | 10yr-2hr   | 2.00                    | 13.01              | -44.878               | 2.00                        | 7.92                  | 2.02                        | 7.88                  |
| P-28   | LL BASIN | 25yr-24hr  | 12.42                   | 28.91              | -44.878               | 19.20                       | 14.50                 | 19.31                       | 14.49                 |
| P-29   | LL BASIN | 10yr-2hr   | 2.01                    | 3.84               | 0.004                 | 2.02                        | 7.88                  | 2.01                        | 6.25                  |
| P-29   | LL BASIN | 25yr-24hr  | 12.62                   | 29.07              | 0.037                 | 19.31                       | 14.49                 | 19.88                       | 14.22                 |
| P-3    | LL BASIN | 10yr-2hr   | 1.61                    | 7.19               | -0.032                | 2.00                        | 19.50                 | 4.08                        | 19.19                 |
| P-3    | LL BASIN | 25yr-24hr  | 12.81                   | 10.24              | 0.003                 | 16.68                       | 22.26                 | 19.98                       | 21.96                 |
| P-30   | LL BASIN | 10yr-2hr   | 2.01                    | 8.91               | 0.005                 | 2.02                        | 7.88                  | 2.01                        | 6.64                  |
| P-30   | LL BASIN | 25yr-24hr  | 12.56                   | 29.87              | -0.043                | 19.31                       | 14.49                 | 19.88                       | 14.22                 |
| P-31   | LL BASIN | 10yr-2hr   | 2.44                    | 11.20              | 0.397                 | 2.44                        | 6.67                  | 2.37                        | 4.69                  |
| P-31   | LL BASIN | 25yr-24hr  | 19.88                   | 25.25              | 0.397                 | 19.88                       | 14.22                 | 18.49                       | 4.84                  |
| P-4    | LL BASIN | 10yr-2hr   | 1.25                    | 3.88               | -0.172                | 4.08                        | 19.19                 | 25.00                       | 19.19                 |
| P-4    | LL BASIN | 25yr-24hr  | 13.12                   | 10.27              | -0.178                | 19.98                       | 21.96                 | 20.17                       | 21.95                 |
| P-5    | LL BASIN | 10yr-2hr   | 1.29                    | 1.47               | -0.155                | 25.00                       | 19.19                 | 25.00                       | 19.19                 |
| P-5    | LL BASIN | 25yr-24hr  | 18.27                   | 4.46               | 0.067                 | 20.17                       | 21.95                 | 22.01                       | 21.54                 |
| P-6    | LL BASIN | 10yr-2hr   | 1.24                    | 4.71               | -5.572                | 25.00                       | 19.19                 | 25.00                       | 19.19                 |
| P-6    | LL BASIN | 25yr-24hr  | 25.00                   | 4.99               | -5.214                | 22.01                       | 21.54                 | 21.99                       | 21.52                 |
| P-7    | LL BASIN | 10yr-2hr   | 1.57                    | 3.71               | 0.013                 | 1.57                        | 20.41                 | 25.00                       | 19.19                 |
| P-7    | LL BASIN | 25yr-24hr  | 12.22                   | 8.72               | 0.006                 | 22.06                       | 21.54                 | 22.01                       | 21.54                 |
| P-8    | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000                 | 25.00                       | 19.19                 | 1.77                        | 18.18                 |
| P-8    | LL BASIN | 25yr-24hr  | 25.00                   | 5.49               | -0.063                | 21.99                       | 21.52                 | 20.43                       | 21.37                 |
| P-9    | LL BASIN | 10yr-2hr   | 1.52                    | 3.78               | -1.107                | 1.77                        | 18.18                 | 1.88                        | 18.14                 |
| P-9    | LL BASIN | 25yr-24hr  | 25.00                   | 5.97               | 1.096                 | 20.43                       | 21.37                 | 19.90                       | 21.26                 |
| WEIR-1 | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000                 | 2.00                        | 8.86                  | 2.00                        | 7.92                  |
| WEIR-1 | LL BASIN | 25yr-24hr  | 13.52                   | 89.34              | 63.296                | 19.17                       | 14.50                 | 19.20                       | 14.50                 |

LINK MIN/MAX REPORT  
ICPR MODEL- EXISTING CONDITIONS NOTCH WEIR

Link P-11

10yr-2hr  
25yr-24hr

Link P-11  
Notched Weir



Link P-12

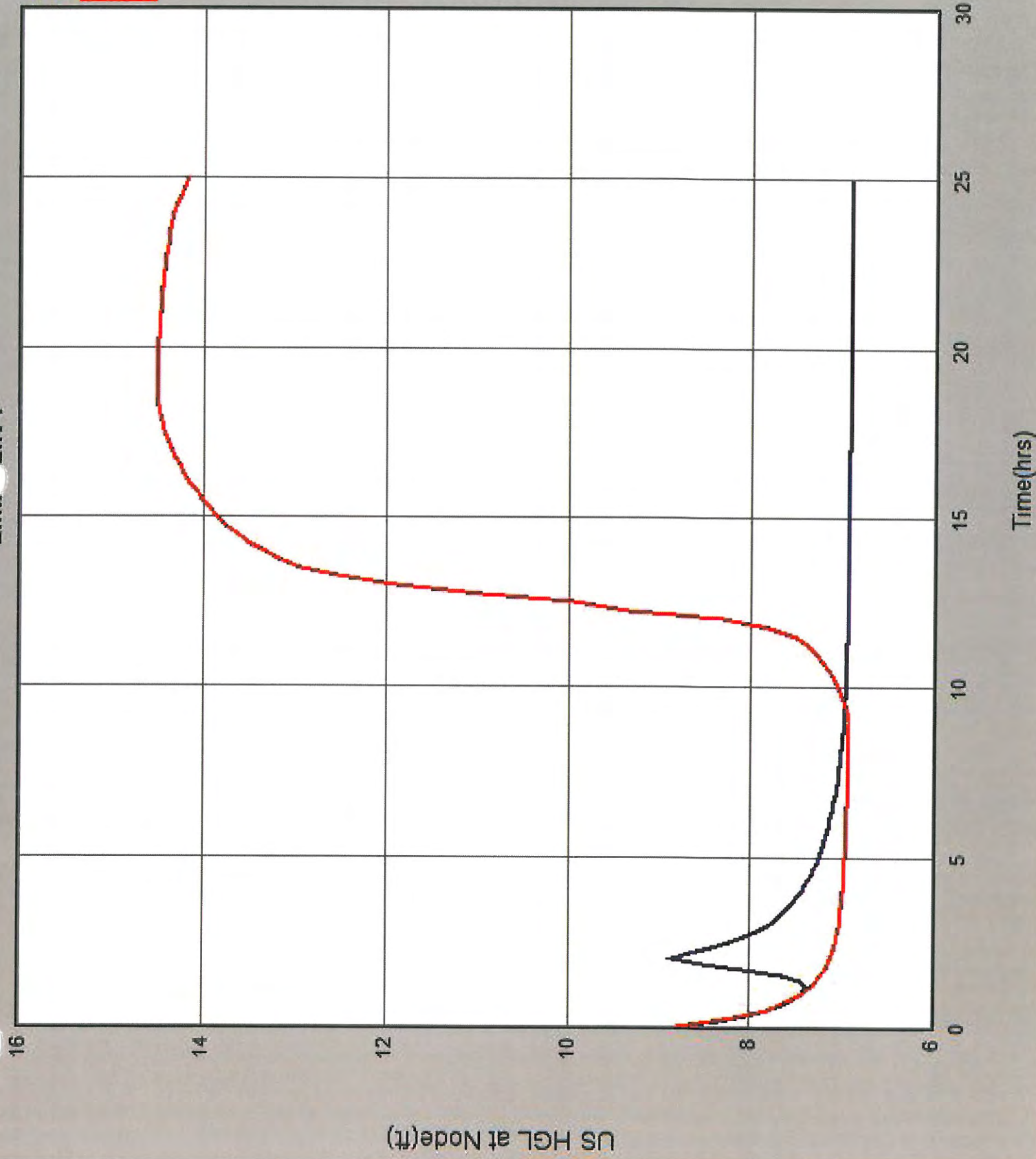
10yr-2hr  
25yr-24hr

Link P-12  
Notched Weir





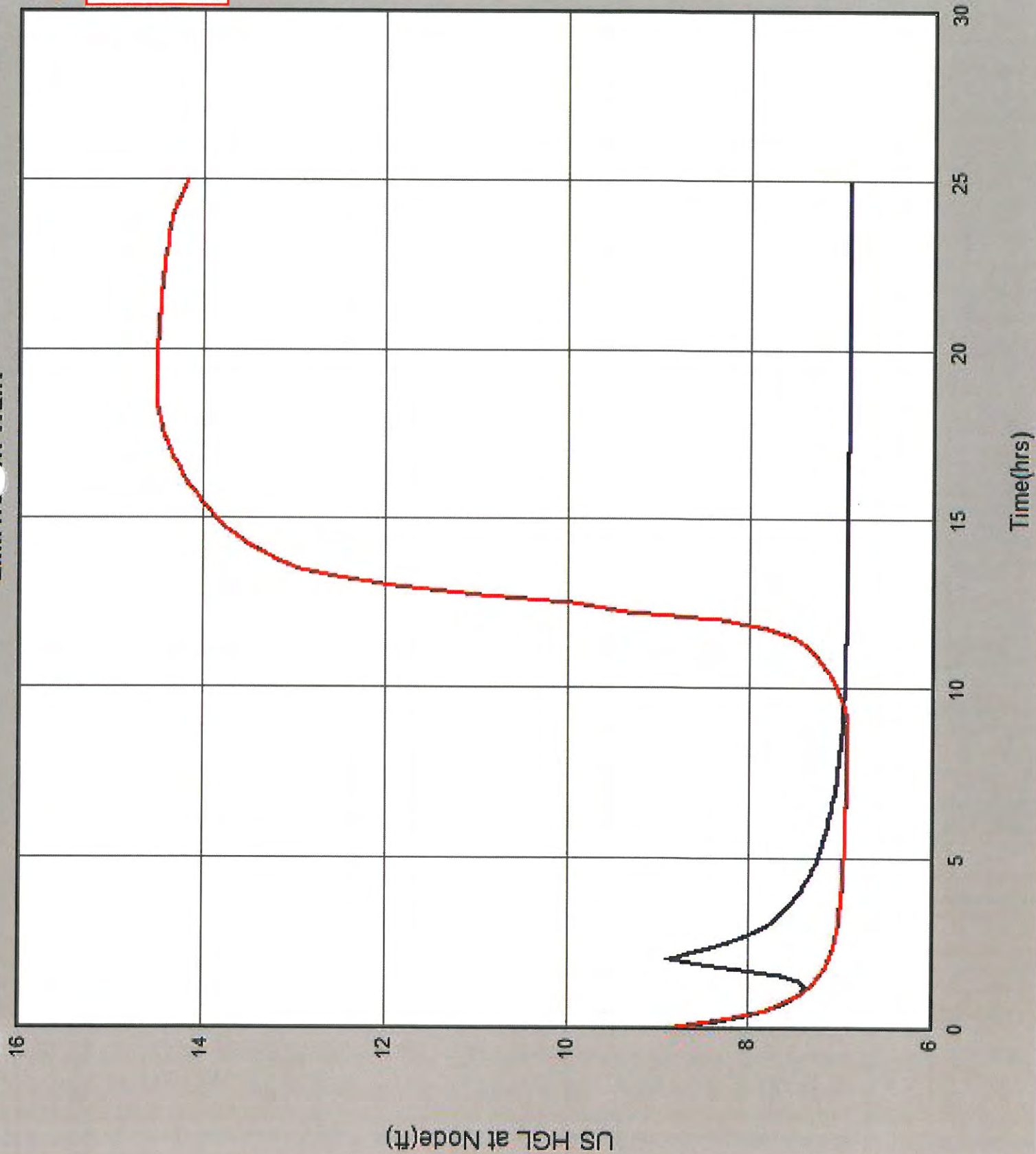
# Link EIR-1



# Link Notched Weir

10yr-2hr  
25yr-24hr

Link Notched  
Weir  
18" Span,  
24" Height

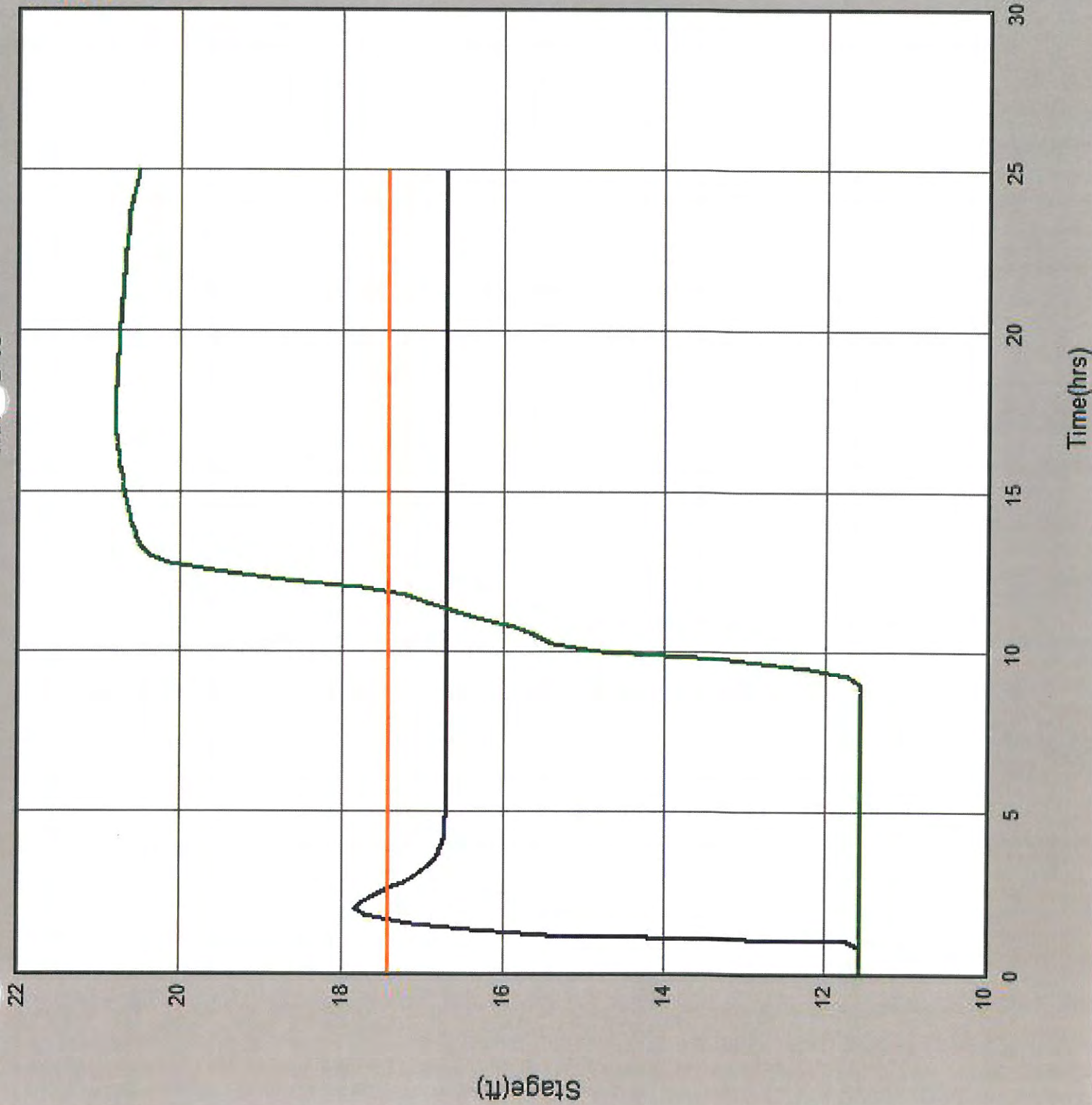




No. S-18

- 10yr-2hr
- Warning Stage:10yr-2hr
- 25yr-24hr
- Warning Stage:25yr-24hr

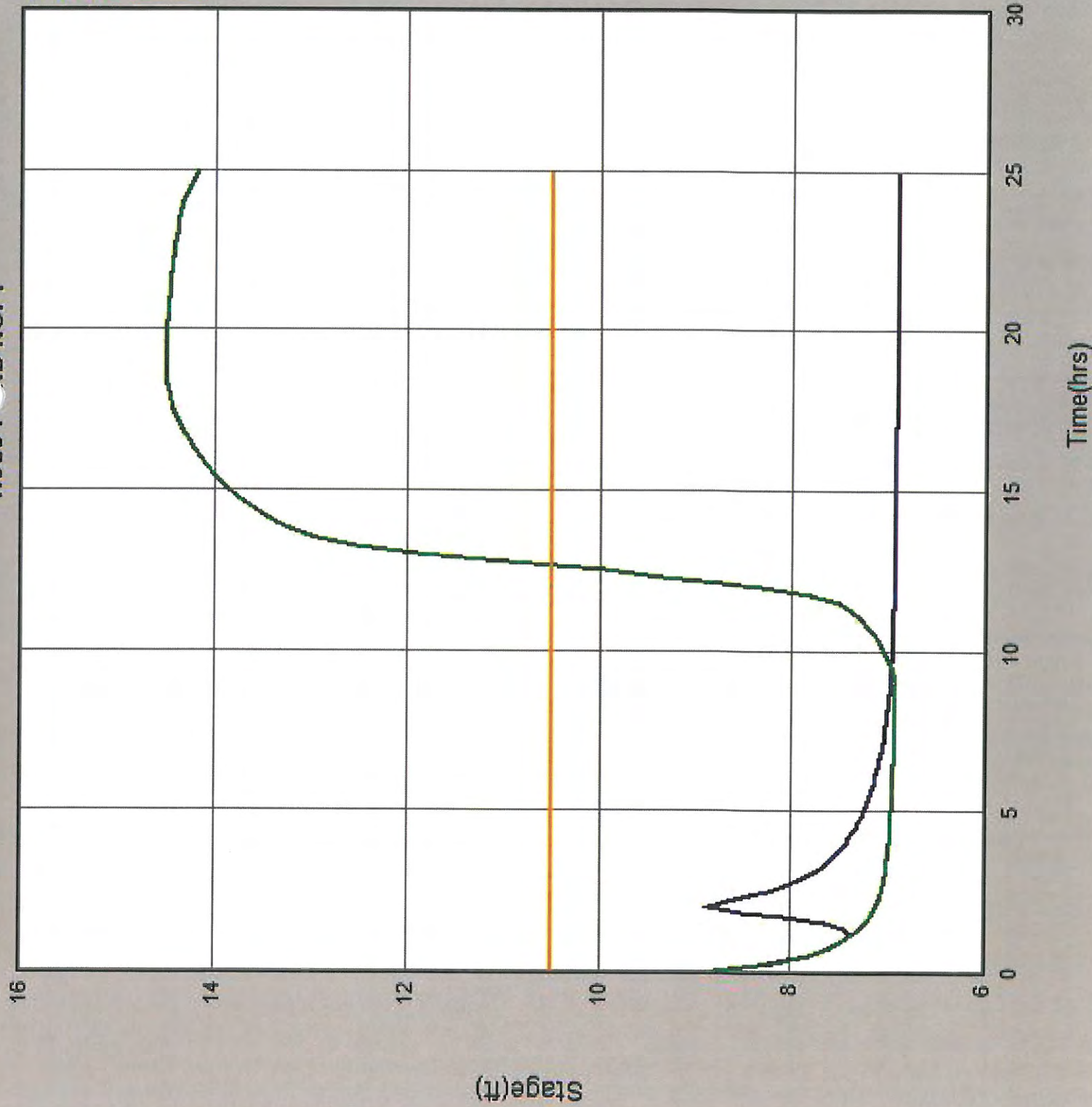
Node S-18  
Notched Weir



# Node Pond NO. 1

- 10yr-2hr
- Warning Stage:10yr-2hr
- 25yr-24hr
- Warning Stage:25yr-24hr

Node Pond No. 1  
Notched Weir



Pipe Modifications Only

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

=====

----- Basins -----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-1         | Node: POND NO. 1                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 16.590           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-2         | Node: POND NO. 2                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 23.050           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-3         | Node: POND NO. 3                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 24.500           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-1            | Node: S-1                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-11           | Node: S-11                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.160            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-15           | Node: S-15                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: BASIN S-16                      Node: S-16                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.010                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-17                      Node: S-17                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 8.190                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-18                      Node: S-18                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.100                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-19                      Node: S-19                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.610                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-2                      Node: S-2                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: Basin S-20                      Node: S-20                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 1.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-24                      Node: S-24                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

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OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |
|----------------------------|----------------------------------|
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |
| Area(ac): 4.130            | Time Shift(hrs): 0.00            |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |
| DCIA(%): 0.00              |                                  |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-25           | Node: S-25                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 11.580           | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-26           | Node: S-26                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.540            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-30           | Node: S-30                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.000            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-31           | Node: S-31                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.900            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-32           | Node: S-32                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.720            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                              |                |
|----------------------------|------------------------------|----------------|
| Name: BASIN S-33           | Node: S-33                   | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0        |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00    |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00     |                |
| Area(ac): 5.040            | Time Shift(hrs): 0.00        |                |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Curve Number: 57.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

-----  
Name: BASIN SW-1      Node: SWALE-1      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 2.670      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN SW-2      Node: SWALE-2      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 9.540      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN SW-3      Node: SWALE-3      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 4.980      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN SW-4      Node: SWALE-4      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 2.450      Time Shift(hrs): 0.00  
Curve Number: 39.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

-----  
Name: BASIN WET-1      Node: WETLAND NO. 1      Status: Onsite  
Group: LL BASIN      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484      Peaking Factor: 484.0  
Rainfall File: Scsiii      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000      Time of Conc(min): 60.00  
Area(ac): 14.480      Time Shift(hrs): 0.00  
Curve Number: 89.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 89 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP D)

=====

==== Nodes =====

=====

Name: OUTFALL      Base Flow(cfs): 0.000      Init Stage(ft): 3.520  
Group: LL BASIN      Warn Stage(ft): 6.750  
Type: Time/Stage

Time(hrs)      Stage(ft)

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

0.00 3.520  
999.00 3.520

Name: POND NO. 1      Base Flow(cfs): 0.000      Init Stage(ft): 6.890  
Group: LL BASIN      Warn Stage(ft): 10.500  
Type: Stage/Area

Modify weir elevation from 8.9 to 6.89'.

| Stage(ft) | Area(ac) |
|-----------|----------|
| 4.000     | 0.0150   |
| 5.000     | 0.0173   |
| 5.500     | 0.0491   |
| 6.000     | 0.1429   |
| 6.500     | 0.1976   |
| 7.000     | 0.2452   |
| 7.500     | 0.2756   |
| 8.000     | 0.2988   |
| 8.500     | 0.3146   |
| 9.000     | 0.3304   |
| 9.500     | 0.3424   |
| 10.000    | 0.3589   |
| 10.500    | 0.3670   |
| 11.000    | 0.4235   |

Name: POND NO. 2      Base Flow(cfs): 0.000      Init Stage(ft): 6.000  
Group: LL BASIN      Warn Stage(ft): 12.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 2.000     | 0.2059   |
| 3.000     | 0.2754   |
| 4.000     | 0.3489   |
| 5.000     | 0.4214   |
| 6.000     | 0.4765   |
| 7.000     | 0.5348   |
| 8.000     | 0.5972   |
| 8.500     | 0.6280   |
| 9.000     | 0.6557   |
| 9.500     | 0.6947   |
| 10.000    | 0.7375   |
| 10.500    | 0.7560   |
| 11.000    | 0.7760   |
| 11.500    | 0.8230   |

Name: POND NO. 3      Base Flow(cfs): 0.000      Init Stage(ft): 6.000  
Group: LL BASIN      Warn Stage(ft): 12.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.3676   |
| 1.000     | 0.4178   |
| 2.000     | 0.4795   |
| 3.000     | 0.5478   |
| 4.000     | 0.6112   |
| 5.000     | 0.6785   |
| 6.000     | 0.7522   |
| 7.000     | 0.8299   |
| 8.000     | 0.9066   |
| 8.500     | 0.9450   |
| 9.000     | 0.9806   |
| 9.500     | 1.0426   |
| 10.000    | 1.1231   |
| 10.500    | 1.2129   |
| 11.000    | 1.3300   |
| 12.000    | 1.5200   |
| 12.500    | 1.6500   |
| 13.000    | 1.8300   |

Name: S-1      Base Flow(cfs): 0.000      Init Stage(ft): 17.550  
Group: LL BASIN      Warn Stage(ft): 20.500

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Type: Stage/Area

RIM=20.00'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.550    | 0.0001   |
| 18.000    | 0.0001   |
| 19.150    | 0.0001   |
| 19.500    | 0.1370   |
| 20.100    | 0.1500   |
| 20.500    | 0.2200   |
| 21.000    | 0.3500   |

Name: S-11                      Base Flow(cfs): 0.000                      Init Stage(ft): 16.010  
Group: LL BASIN                      Warn Stage(ft): 21.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 16.010    | 0.0001   |
| 18.000    | 0.0001   |
| 20.110    | 0.0001   |
| 20.500    | 0.2350   |
| 21.000    | 0.5420   |

Name: S-14                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.900  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.900    | 0.0001   |
| 15.000    | 0.0001   |
| 19.450    | 0.0001   |
| 20.000    | 0.4500   |
| 20.500    | 0.5400   |

Name: S-15                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.190  
Group: LL BASIN                      Warn Stage(ft): 18.590  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.190    | 0.0001   |
| 15.000    | 0.0001   |
| 17.650    | 0.0200   |
| 18.090    | 0.1590   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-16                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.060  
Group: LL BASIN                      Warn Stage(ft): 18.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.060    | 0.0001   |
| 15.000    | 0.0001   |
| 17.950    | 0.0200   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-17                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.000  
Group: LL BASIN                      Warn Stage(ft): 17.380  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |
| 16.880    | 0.1377   |
| 17.000    | 0.1720   |
| 17.880    | 0.2750   |

Name: S-18                      Base Flow(cfs): 0.000                      Init Stage(ft): 11.550  
Group: LL BASIN                      Warn Stage(ft): 17.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 11.550    | 0.0001   |
| 15.000    | 0.0001   |
| 16.910    | 0.1377   |
| 17.410    | 0.1720   |
| 17.910    | 0.2750   |

Name: S-19                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.720  
Group: LL BASIN                      Warn Stage(ft): 18.400  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.720    | 0.0001   |
| 14.000    | 0.0001   |
| 17.900    | 0.1377   |
| 18.400    | 0.1720   |
| 18.900    | 0.2750   |

Name: S-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 17.130  
Group: LL BASIN                      Warn Stage(ft): 19.960  
Type: Stage/Area

RIM=19.46'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.130    | 0.0001   |
| 17.760    | 0.0001   |
| 19.460    | 0.0001   |
| 20.060    | 0.1370   |
| 21.000    | 0.2290   |

Name: S-20                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.500  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.500    | 0.0001   |
| 14.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.1720   |
| 18.220    | 0.2750   |

Name: S-21                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.350  
Group: LL BASIN                      Warn Stage(ft): 16.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.350    | 0.0001   |
| 14.000    | 0.0001   |
| 16.000    | 0.0060   |
| 16.500    | 0.0270   |
| 17.000    | 0.0360   |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: S-22                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.050  
Group: LL BASIN                      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.050    | 0.0001   |
| 14.000    | 0.0001   |
| 16.550    | 0.0060   |
| 17.050    | 0.0270   |
| 17.550    | 0.0360   |

Name: S-24                      Base Flow(cfs): 0.000                      Init Stage(ft): 9.660  
Group: LL BASIN                      Warn Stage(ft): 17.440  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 9.660     | 0.0001   |
| 14.000    | 0.0001   |
| 16.960    | 0.1377   |
| 17.440    | 0.1720   |
| 17.960    | 0.2750   |

Name: S-25                      Base Flow(cfs): 0.000                      Init Stage(ft): 8.020  
Group: LL BASIN                      Warn Stage(ft): 17.820  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 8.020     | 0.0001   |
| 15.000    | 0.0001   |
| 17.320    | 0.1377   |
| 17.820    | 0.1720   |
| 18.320    | 0.2750   |

Name: S-26                      Base Flow(cfs): 0.000                      Init Stage(ft): 6.900  
Group: LL BASIN                      Warn Stage(ft): 17.760  
Type: Stage/Area

Remove Structure S-27, S-28, P-22, and P-23. Straighten pipe run and replace with one 54" RCP.

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.710     | 0.0008   |
| 14.000    | 0.0008   |
| 16.100    | 0.0008   |
| 16.260    | 0.1377   |
| 16.760    | 0.1720   |
| 17.260    | 0.3250   |

Name: S-30                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.220  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.220    | 0.0001   |
| 15.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.2750   |
| 18.220    | 0.3310   |

Name: S-31                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.260  
Group: LL BASIN                      Warn Stage(ft): 16.770  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.260    | 0.0001   |
| 14.000    | 0.0001   |
| 16.270    | 0.1377   |
| 16.770    | 0.1720   |
| 17.270    | 0.2750   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-32       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.780 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.470 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.780    | 0.0001   |
| 14.000    | 0.0001   |
| 16.970    | 0.1377   |
| 17.470    | 0.1720   |
| 17.970    | 0.2750   |

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|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-33       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.460 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.590 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.460    | 0.0001   |
| 14.000    | 0.0001   |
| 17.090    | 0.1377   |
| 17.590    | 0.1720   |
| 18.090    | 0.2750   |

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|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-1    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.900 |
| Group: LL BASIN  |                       | Warn Stage(ft): 20.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.490    | 0.0003   |
| 16.000    | 0.0004   |
| 16.500    | 0.0004   |
| 17.000    | 0.0029   |
| 17.500    | 0.0063   |
| 18.000    | 0.0100   |
| 19.000    | 0.0230   |
| 19.500    | 0.0551   |
| 20.100    | 0.8030   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-2    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.050 |
| Group: LL BASIN  |                       | Warn Stage(ft): 19.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.050    | 0.0010   |
| 15.500    | 0.0100   |
| 16.000    | 0.0124   |
| 16.500    | 0.0288   |
| 17.000    | 0.0484   |
| 17.500    | 0.0650   |
| 18.000    | 0.1890   |
| 18.500    | 0.2290   |
| 19.000    | 0.3130   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-3    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.370 |
| Group: LL BASIN  |                       | Warn Stage(ft): 19.000 |
| Type: Stage/Area |                       |                        |

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INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.370    | 0.0125   |
| 16.500    | 0.0211   |
| 17.000    | 0.0283   |
| 17.500    | 0.0355   |
| 18.000    | 0.0403   |
| 18.500    | 0.0502   |
| 19.000    | 0.3040   |
| 19.500    | 0.5500   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-4    | Base Flow(cfs): 0.000 | Init Stage(ft): 14.410 |
| Group: LL BASIN  |                       | Warn Stage(ft): 20.500 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 14.410    | 0.0010   |
| 15.250    | 0.0032   |
| 15.500    | 0.0038   |
| 16.000    | 0.0051   |
| 16.500    | 0.0064   |
| 17.000    | 0.0077   |
| 17.500    | 0.0096   |
| 18.000    | 0.0118   |
| 18.500    | 0.0230   |
| 19.000    | 0.1580   |
| 20.000    | 0.4500   |

|                     |                       |                       |
|---------------------|-----------------------|-----------------------|
| Name: WETLAND NO. 1 | Base Flow(cfs): 0.000 | Init Stage(ft): 4.000 |
| Group: LL BASIN     |                       | Warn Stage(ft): 6.500 |
| Type: Stage/Area    |                       |                       |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 3.660     | 0.0835   |
| 4.500     | 0.4620   |
| 5.000     | 0.6607   |
| 5.500     | 0.8112   |
| 6.000     | 0.9548   |
| 6.500     | 1.0644   |
| 7.000     | 1.1702   |
| 7.500     | 1.2500   |

==== Pipes =====

|                       |                       |                                      |
|-----------------------|-----------------------|--------------------------------------|
| Name: P-27            | From Node: POND NO. 2 | Length(ft): 40.00                    |
| Group: LL BASIN       | To Node: POND NO. 3   | Count: 2                             |
| UPSTREAM              | DOWNSTREAM            | Friction Equation: Automatic         |
| Geometry: Circular    | Circular              | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00                 | Flow: Both                           |
| Rise(in): 36.00       | 36.00                 | Entrance Loss Coef: 0.00             |
| Invert(ft): 7.600     | 7.350                 | Exit Loss Coef: 1.00                 |
| Manning's N: 0.012000 | 0.012000              | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000                 | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000                 | Inlet Ctrl Spec: Use dc              |
|                       |                       | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

|                 |                       |                   |
|-----------------|-----------------------|-------------------|
| Name: P-28      | From Node: POND NO. 2 | Length(ft): 89.00 |
| Group: LL BASIN | To Node: POND NO. 3   | Count: 2          |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 36.00       | 36.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 36.00       | 36.00      | Flow: Both                           |
| Invert(ft): 2.230     | 2.210      | Entrance Loss Coef: 0.00             |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.00                 |
| Top Clip(in): 0.000   | 0.000      | Bend Loss Coef: 0.00                 |
| Bot Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
|                       |            | Inlet Ctrl Spec: Use dc              |
|                       |            | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

| Name: P-29            | From Node: POND NO. 3  | Length(ft): 65.00                    |
|-----------------------|------------------------|--------------------------------------|
| Group: LL BASIN       | To Node: WETLAND NO. 1 | Count: 1                             |
| UPSTREAM              | DOWNSTREAM             | Friction Equation: Automatic         |
| Geometry: Circular    | Circular               | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00                  | Flow: Both                           |
| Rise(in): 36.00       | 36.00                  | Entrance Loss Coef: 0.00             |
| Invert(ft): 7.030     | 5.670                  | Exit Loss Coef: 1.00                 |
| Manning's N: 0.022000 | 0.022000               | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000                  | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000                  | Inlet Ctrl Spec: Use dc              |
|                       |                        | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

| Name: P-3             | From Node: SWALE-1 | Length(ft): 195.00                   |
|-----------------------|--------------------|--------------------------------------|
| Group: LL BASIN       | To Node: SWALE-2   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM         | Friction Equation: Automatic         |
| Geometry: Circular    | Circular           | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00              | Flow: Both                           |
| Rise(in): 36.00       | 36.00              | Entrance Loss Coef: 0.00             |
| Invert(ft): 15.490    | 15.050             | Exit Loss Coef: 1.00                 |
| Manning's N: 0.012000 | 0.012000           | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000              | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000              | Inlet Ctrl Spec: Use dc              |
|                       |                    | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

| Name: P-30            | From Node: POND NO. 3  | Length(ft): 66.00                    |
|-----------------------|------------------------|--------------------------------------|
| Group: LL BASIN       | To Node: WETLAND NO. 1 | Count: 1                             |
| UPSTREAM              | DOWNSTREAM             | Friction Equation: Automatic         |
| Geometry: Circular    | Circular               | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00                  | Flow: Both                           |
| Rise(in): 36.00       | 36.00                  | Entrance Loss Coef: 0.00             |
| Invert(ft): 6.500     | 5.620                  | Exit Loss Coef: 1.00                 |
| Manning's N: 0.022000 | 0.022000               | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000                  | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000                  | Inlet Ctrl Spec: Use dc              |
|                       |                        | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-31            | From Node: WETLAND NO. 1             | Length(ft): 39.00              |
| Group: LL BASIN       | To Node: OUTFALL                     | Count: 1                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              | DOWNSTREAM                           |                                |
| Geometry: Circular    | Circular                             |                                |
| Span(in): 48.00       | 48.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 48.00       | 48.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 3.660     | 3.520                                | Bend Loss Coef: 0.00           |
| Manning's N: 0.012000 | 0.012000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-4             | From Node: SWALE-2                   | Length(ft): 20.16              |
| Group: LL BASIN       | To Node: SWALE-3                     | Count: 1                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              | DOWNSTREAM                           |                                |
| Geometry: Circular    | Circular                             |                                |
| Span(in): 36.00       | 36.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 36.00       | 36.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 15.560    | 15.370                               | Bend Loss Coef: 0.00           |
| Manning's N: 0.012000 | 0.012000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-5             | From Node: SWALE-3                   | Length(ft): 307.00             |
| Group: LL BASIN       | To Node: SWALE-4                     | Count: 1                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              | DOWNSTREAM                           |                                |
| Geometry: Circular    | Circular                             |                                |
| Span(in): 36.00       | 36.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 36.00       | 36.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 15.590    | 14.050                               | Bend Loss Coef: 0.00           |
| Manning's N: 0.012000 | 0.012000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

|                    |                                      |                  |
|--------------------|--------------------------------------|------------------|
| Name: P-6          | From Node: SWALE-4                   | Length(ft): 5.00 |
| Group: LL BASIN    | To Node: S-14                        | Count: 1         |
|                    | Friction Equation: Automatic         |                  |
|                    | Solution Algorithm: Most Restrictive |                  |
|                    | Flow: Both                           |                  |
| UPSTREAM           | DOWNSTREAM                           |                  |
| Geometry: Circular | Circular                             |                  |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |          |                                |
|-----------------------|----------|--------------------------------|
| Span(in): 30.00       | 30.00    | Entrance Loss Coef: 0.00       |
| Rise(in): 30.00       | 30.00    | Exit Loss Coef: 1.00           |
| Invert(ft): 14.410    | 14.080   | Bend Loss Coef: 0.00           |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000    | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000    | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Smooth-wall CPP

=====  
Drop Structures  
=====

|                       |                |                                      |
|-----------------------|----------------|--------------------------------------|
| Name: P-1             | From Node: S-1 | Length(ft): 33.00                    |
| Group: LL BASIN       | To Node: S-2   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM     | Friction Equation: Automatic         |
| Geometry: Circular    | Circular       | Solution Algorithm: Most Restrictive |
| Span(in): 18.00       | 18.00          | Flow: Both                           |
| Rise(in): 18.00       | 18.00          | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.550    | 17.130         | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000       | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000          | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000          | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 18" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 16.00       | Invert(ft): 19.160       |       |
| Rise(in): 10.00       | Control Elev(ft): 19.160 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 20.000       |       |
| Rise(in): 18.00       | Control Elev(ft): 20.000 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-10            | From Node: S-16 | Length(ft): 268.95                   |
| Group: LL BASIN       | To Node: S-17   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00           | Flow: Both                           |
| Rise(in): 42.00       | 42.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.860    | 12.100          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-10 \*\*\*

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 80.00  
Rise(in): 4.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 17.440  
Control Elev(ft): 17.440

TABLE

Name: P-11  
Group: LL BASIN  
From Node: S-17  
To Node: S-18  
Length(ft): 49.90  
Count: 1

| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.000    | 11.640     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-11 \*\*\*

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 108.00  
Rise(in): 6.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 15.990  
Control Elev(ft): 15.990

TABLE

Name: P-12  
Group: LL BASIN  
From Node: S-18  
To Node: S-19  
Length(ft): 263.32  
Count: 1

| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 11.550    | 10.820     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-12 \*\*\*

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 92.00  
Rise(in): 5.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.040  
Control Elev(ft): 16.040

TABLE

Name: P-13  
Group: LL BASIN  
From Node: S-19  
To Node: S-20  
Length(ft): 54.38  
Count: 1

| UPSTREAM           | DOWNSTREAM | Friction Equation: Automatic         |
|--------------------|------------|--------------------------------------|
| Geometry: Circular | Circular   | Solution Algorithm: Most Restrictive |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |          |                                |
|-----------------------|----------|--------------------------------|
| Span(in): 48.00       | 48.00    | Flow: Both                     |
| Rise(in): 48.00       | 48.00    | Entrance Loss Coef: 0.000      |
| Invert(ft): 10.720    | 10.600   | Exit Loss Coef: 1.000          |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000    | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000    | Solution Incs: 10              |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-13 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 132.00      | Invert(ft): 16.690       |       |
| Rise(in): 4.00        | Control Elev(ft): 16.690 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-14            | From Node: S-20 | Length(ft): 131.23                   |
| Group: LL BASIN       | To Node: S-21   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.600    | 10.300          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-14 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 84.00       | Invert(ft): 16.590       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.590 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-15            | From Node: S-21 | Length(ft): 32.81                    |
| Group: LL BASIN       | To Node: S-22   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.300    | 10.200          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-15 \*\*\*

|          |                        |       |
|----------|------------------------|-------|
| Count: 1 | Bottom Clip(in): 0.000 | TABLE |
|----------|------------------------|-------|

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 24.00  
Rise(in): 24.00  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.000  
Control Elev(ft): 16.000

Name: P-16  
Group: LL BASIN  
From Node: S-30  
To Node: S-24  
Length(ft): 30.64  
Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 24.00       | 24.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 24.00       | 24.00      | Flow: Both                           |
| Invert(ft): 13.220    | 12.900     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-16 \*\*\*

|                       | TABLE                    |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 67.00       | Invert(ft): 16.340       |
| Rise(in): 5.40        | Control Elev(ft): 16.340 |

Name: P-17  
Group: LL BASIN  
From Node: S-22  
To Node: S-24  
Length(ft): 135.00  
Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 48.00       | 48.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 48.00       | 48.00      | Flow: Both                           |
| Invert(ft): 10.200    | 10.150     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe from 30" CPP to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-17 \*\*\*

|                       | TABLE                    |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.550       |
| Rise(in): 24.00       | Control Elev(ft): 16.550 |

Name: P-19  
Group: LL BASIN  
From Node: S-24  
To Node: S-25  
Length(ft): 188.85  
Count: 2

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 48.00       | 48.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 48.00       | 48.00      | Flow: Both                           |
| Invert(ft): 9.660     | 8.100      | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
|                       |            | Outlet Ctrl Spec: Use dc or tw       |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Top Clip(in): 0.000                      0.000                      Inlet Ctrl Spec: Use dc  
Bot Clip(in): 0.000                      0.000                      Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified weir from 60"x7" to a FDOT Type 4 asymmetrical curb inlet with 144"x6" opening. Adjusted weir elevation to account  
Modified pipe size to a 2-48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-19 \*\*\*

|                       |                          | TABLE |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   |       |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 144.00      | Invert(ft): 16.960       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.960 |       |

| Name: P-2              | From Node: S-2   | Length(ft): 201.27                   |
|------------------------|------------------|--------------------------------------|
| Group: LL BASIN        | To Node: SWALE-1 | Count: 1                             |
| UPSTREAM               | DOWNSTREAM       | Friction Equation: Automatic         |
| Geometry: Horz Ellipse | Horz Ellipse     | Solution Algorithm: Most Restrictive |
| Span(in): 36.00        | 36.00            | Flow: Both                           |
| Rise(in): 36.00        | 36.00            | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.130     | 15.900           | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000  | 0.012000         | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000    | 0.000            | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000    | 0.000            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Modify pipe to 36" CPP.

\*\*\* Weir 1 of 2 for Drop Structure P-2 \*\*\*

|                       |                          | TABLE |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   |       |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 20.00       | Invert(ft): 17.790       |       |
| Rise(in): 8.00        | Control Elev(ft): 17.790 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-2 \*\*\*

|                       |                          | TABLE |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   |       |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 19.460       |       |
| Rise(in): 18.00       | Control Elev(ft): 19.460 |       |

| Name: P-20            | From Node: S-25 | Length(ft): 342.87                   |
|-----------------------|-----------------|--------------------------------------|
| Group: LL BASIN       | To Node: S-26   | Count: 2                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 8.020     | 6.710           | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Circular CMP: Headwall

Modified pipe size to a 2-48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-20 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 54.00       | Invert(ft): 16.520       |       |
| Rise(in): 5.00        | Control Elev(ft): 16.520 |       |

|                       |                     |                                      |
|-----------------------|---------------------|--------------------------------------|
| Name: P-21            | From Node: S-26     | Length(ft): 85.00                    |
| Group: LL BASIN       | To Node: POND NO. 1 | Count: 2                             |
| UPSTREAM              | DOWNSTREAM          | Friction Equation: Automatic         |
| Geometry: Circular    | Circular            | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00               | Flow: Both                           |
| Rise(in): 48.00       | 48.00               | Entrance Loss Coef: 0.000            |
| Invert(ft): 6.710     | 5.130               | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000            | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000               | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000               | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

New pipes 2-48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-21 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 144.00      | Invert(ft): 16.260       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.260 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-24            | From Node: S-31 | Length(ft): 31.80                    |
| Group: LL BASIN       | To Node: S-26   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 18.00       | 18.00           | Flow: Both                           |
| Rise(in): 18.00       | 18.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.260    | 12.160          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-24 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 90.00       | Invert(ft): 15.840       |       |
| Rise(in): 5.00        | Control Elev(ft): 15.840 |       |

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-25      | From Node: S-32 | Length(ft): 30.26 |
| Group: LL BASIN | To Node: S-33   | Count: 1          |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 18.00       | 18.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 18.00       | 18.00      | Flow: Both                           |
| Invert(ft): 12.780    | 12.920     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-25 \*\*\*

|                       | TABLE                    |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 96.00       | Invert(ft): 16.500       |
| Rise(in): 6.00        | Control Elev(ft): 16.500 |

| Name: P-26            | From Node: S-33 | Length(ft): 415.95                   |
|-----------------------|-----------------|--------------------------------------|
| Group: LL BASIN       | To Node: S-26   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 24.00       | 24.00           | Flow: Both                           |
| Rise(in): 24.00       | 24.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.460    | 11.180          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-26 \*\*\*

|                       | TABLE                    |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 55.00       | Invert(ft): 16.620       |
| Rise(in): 4.50        | Control Elev(ft): 16.620 |

| Name: P-7             | From Node: S-11  | Length(ft): 607.63                   |
|-----------------------|------------------|--------------------------------------|
| Group: LL BASIN       | To Node: SWALE-4 | Count: 1                             |
| UPSTREAM              | DOWNSTREAM       | Friction Equation: Automatic         |
| Geometry: Circular    | Circular         | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00            | Flow: Both                           |
| Rise(in): 30.00       | 30.00            | Entrance Loss Coef: 0.000            |
| Invert(ft): 16.010    | 15.250           | Exit Loss Coef: 1.000                |
| Manning's N: 0.022000 | 0.022000         | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000            | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 30" CPP.

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-7 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 20.110       |
| Rise(in): 18.00       | Control Elev(ft): 20.110 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-8             | From Node: S-14 | Length(ft): 143.04                   |
| Group: LL BASIN       | To Node: S-15   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.900    | 13.300          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-8 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 18.00       | Invert(ft): 19.450       |
| Rise(in): 24.00       | Control Elev(ft): 19.450 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-9             | From Node: S-15 | Length(ft): 31.11                    |
| Group: LL BASIN       | To Node: S-16   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.190    | 13.050          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-9 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 90.00       | Invert(ft): 17.610       |
| Rise(in): 5.50        | Control Elev(ft): 17.610 |

TABLE

=====

==== Weirs =====

=====

|                 |                       |
|-----------------|-----------------------|
| Name: WEIR-1    | From Node: POND NO. 1 |
| Group: LL BASIN | To Node: POND NO. 2   |
| Flow: Both      | Count: 1              |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Type: Vertical: Mavis      Geometry: Rectangular

Span(in): 213.60  
Rise(in): 48.00  
Invert(ft): 8.800  
Control Elevation(ft): 8.800

TABLE

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Discharge Coef: 3.200  
Orifice Discharge Coef: 0.600

=====  
Hydrology Simulations  
=====

Name: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI  
Override Defaults: Yes  
Storm Duration(hrs): 2.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 4.00

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 2.000     | 15.00          |

Name: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 10.80

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 24.000    | 15.00          |

=====  
Routing Simulations  
=====

Name: 10yr-2hr      Hydrology Sim: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Execute: Yes      Restart: No      Patch: No  
Alternative: No

|                             |                             |
|-----------------------------|-----------------------------|
| Max Delta Z(ft): 1.00       | Delta Z Factor: 0.00500     |
| Time Step Optimizer: 10.000 |                             |
| Start Time(hrs): 0.000      | End Time(hrs): 25.00        |
| Min Calc Time(sec): 0.5000  | Max Calc Time(sec): 60.0000 |
| Boundary Stages:            | Boundary Flows:             |

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 10.000         |

| Group    | Run |
|----------|-----|
| LL BASIN | Yes |

Name: 25yr-24hr      Hydrology Sim: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Execute: Yes      Restart: No      Patch: No  
Alternative: No

|                             |                             |
|-----------------------------|-----------------------------|
| Max Delta Z(ft): 1.00       | Delta Z Factor: 0.00500     |
| Time Step Optimizer: 10.000 |                             |
| Start Time(hrs): 0.000      | End Time(hrs): 25.00        |
| Min Calc Time(sec): 0.5000  | Max Calc Time(sec): 60.0000 |
| Boundary Stages:            | Boundary Flows:             |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|            |                 |
|------------|-----------------|
| Time (hrs) | Print Inc (min) |
| -----      | -----           |
| 25.000     | 15.000          |
| Group      | Run             |
| -----      | -----           |
| LL BASIN   | Yes             |



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| OUTFALL    | LL BASIN | 10yr-2hr   | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 40                      | 2.00                      | 24.57                | 0.00                       | 0.00                  |
| OUTFALL    | LL BASIN | 25yr-24hr  | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 40                      | 13.76                     | 116.07               | 0.00                       | 0.00                  |
| POND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 9.23               | 10.50                  | 0.0008                   | 14635                   | 2.00                      | 19.15                | 2.00                       | 16.15                 |
| POND NO. 1 | LL BASIN | 25yr-24hr  | 13.49                    | 11.78              | 10.50                  | -0.0050                  | 22275                   | 12.75                     | 72.40                | 12.55                      | 55.85                 |
| POND NO. 2 | LL BASIN | 10yr-2hr   | 2.65                     | 7.43               | 12.00                  | 0.0015                   | 24480                   | 2.00                      | 31.33                | 2.00                       | 13.97                 |
| POND NO. 2 | LL BASIN | 25yr-24hr  | 13.50                    | 11.69              | 12.00                  | -0.0050                  | 36655                   | 12.75                     | 116.01               | 12.97                      | 85.18                 |
| POND NO. 3 | LL BASIN | 10yr-2hr   | 2.67                     | 7.42               | 12.00                  | -0.0009                  | 37753                   | 2.00                      | 30.10                | 2.66                       | 5.93                  |
| POND NO. 3 | LL BASIN | 25yr-24hr  | 13.55                    | 11.55              | 12.00                  | -0.0048                  | 62486                   | 12.80                     | 144.20               | 13.12                      | 106.83                |
| S-1        | LL BASIN | 10yr-2hr   | 1.68                     | 20.20              | 20.50                  | 0.0056                   | 7291                    | 1.50                      | 6.34                 | 1.70                       | 4.72                  |
| S-1        | LL BASIN | 25yr-24hr  | 13.00                    | 22.37              | 20.50                  | 0.0034                   | 30757                   | 12.50                     | 24.77                | 13.25                      | 8.89                  |
| S-11       | LL BASIN | 10yr-2hr   | 1.57                     | 20.41              | 21.00                  | 0.0076                   | 7915                    | 1.50                      | 4.12                 | 1.57                       | 3.71                  |
| S-11       | LL BASIN | 25yr-24hr  | 20.24                    | 21.49              | 21.00                  | 0.0032                   | 36760                   | 12.50                     | 16.12                | 12.23                      | 9.20                  |
| S-14       | LL BASIN | 10yr-2hr   | 25.00                    | 19.15              | 20.50                  | 0.0254                   | 113                     | 1.24                      | 6.00                 | 0.00                       | 0.00                  |
| S-14       | LL BASIN | 25yr-24hr  | 20.18                    | 21.48              | 20.50                  | 0.0098                   | 31177                   | 10.37                     | 5.87                 | 25.00                      | 5.13                  |
| S-15       | LL BASIN | 10yr-2hr   | 1.66                     | 18.16              | 18.59                  | 0.0058                   | 7735                    | 1.50                      | 4.74                 | 1.52                       | 3.79                  |
| S-15       | LL BASIN | 25yr-24hr  | 18.49                    | 21.41              | 18.59                  | 0.0026                   | 25036                   | 12.39                     | 19.69                | 25.00                      | 5.64                  |
| S-16       | LL BASIN | 10yr-2hr   | 1.81                     | 18.11              | 18.41                  | 0.0073                   | 4071                    | 1.52                      | 8.48                 | 1.63                       | 7.55                  |
| S-16       | LL BASIN | 25yr-24hr  | 18.25                    | 21.35              | 18.41                  | 0.0026                   | 24761                   | 12.42                     | 20.75                | 11.90                      | 6.79                  |
| S-17       | LL BASIN | 10yr-2hr   | 2.00                     | 17.92              | 17.38                  | 0.0081                   | 12192                   | 1.50                      | 13.69                | 1.69                       | 7.17                  |
| S-17       | LL BASIN | 25yr-24hr  | 17.15                    | 21.17              | 17.38                  | 0.0035                   | 28742                   | 12.49                     | 28.97                | 12.58                      | 9.77                  |
| S-18       | LL BASIN | 10yr-2hr   | 2.00                     | 17.85              | 17.41                  | 0.0076                   | 11427                   | 1.65                      | 10.88                | 1.66                       | 7.19                  |
| S-18       | LL BASIN | 25yr-24hr  | 17.18                    | 21.09              | 17.41                  | 0.0026                   | 40488                   | 12.50                     | 27.63                | 25.00                      | 8.36                  |
| S-19       | LL BASIN | 10yr-2hr   | 2.00                     | 17.70              | 18.40                  | 0.0082                   | 5684                    | 1.64                      | 11.98                | 1.63                       | 10.77                 |
| S-19       | LL BASIN | 25yr-24hr  | 17.04                    | 20.86              | 18.40                  | 0.0033                   | 29589                   | 12.50                     | 27.39                | 12.53                      | 12.66                 |
| S-2        | LL BASIN | 10yr-2hr   | 1.67                     | 19.77              | 19.96                  | 0.0032                   | 3113                    | 1.56                      | 9.70                 | 1.69                       | 9.54                  |
| S-2        | LL BASIN | 25yr-24hr  | 12.74                    | 21.70              | 19.96                  | 0.0032                   | 12970                   | 12.50                     | 29.83                | 12.59                      | 21.95                 |
| S-20       | LL BASIN | 10yr-2hr   | 2.17                     | 17.56              | 17.72                  | 0.0039                   | 7027                    | 1.63                      | 11.74                | 1.71                       | 7.62                  |
| S-20       | LL BASIN | 25yr-24hr  | 17.00                    | 20.61              | 17.72                  | 0.0024                   | 33433                   | 12.50                     | 17.31                | 25.00                      | 10.29                 |
| S-21       | LL BASIN | 10yr-2hr   | 2.19                     | 17.45              | 16.50                  | 0.0221                   | 1920                    | 1.71                      | 7.62                 | 1.70                       | 6.45                  |
| S-21       | LL BASIN | 25yr-24hr  | 16.18                    | 20.32              | 16.50                  | 0.0180                   | 4174                    | 25.00                     | 10.29                | 25.00                      | 10.43                 |
| S-22       | LL BASIN | 10yr-2hr   | 2.19                     | 17.36              | 17.05                  | 0.0338                   | 1420                    | 1.70                      | 6.45                 | 2.20                       | 5.52                  |
| S-22       | LL BASIN | 25yr-24hr  | 15.46                    | 20.12              | 17.05                  | 0.0251                   | 3586                    | 25.00                     | 10.43                | 25.00                      | 10.55                 |
| S-24       | LL BASIN | 10yr-2hr   | 2.18                     | 17.27              | 17.44                  | 0.0071                   | 6972                    | 2.22                      | 5.53                 | 2.26                       | 5.55                  |
| S-24       | LL BASIN | 25yr-24hr  | 14.78                    | 19.94              | 17.44                  | 0.0031                   | 29091                   | 21.24                     | 11.45                | 24.38                      | 12.27                 |
| S-25       | LL BASIN | 10yr-2hr   | 2.00                     | 17.20              | 17.82                  | 0.0148                   | 5689                    | 1.38                      | 8.02                 | 2.00                       | 6.20                  |
| S-25       | LL BASIN | 25yr-24hr  | 14.20                    | 19.82              | 17.82                  | 0.0050                   | 25444                   | 12.50                     | 26.43                | 17.16                      | 14.65                 |
| S-26       | LL BASIN | 10yr-2hr   | 2.00                     | 16.62              | 17.76                  | 0.0109                   | 7069                    | 2.00                      | 8.66                 | 2.00                       | 8.23                  |

NODE MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name          | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max<br>Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|---------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|----------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| S-26          | LL BASIN | 25yr-24hr  | 12.89                    | 17.49              | 17.76                  | 0.0039                   | 17196                      | 12.50                     | 30.67                | 12.89                      | 28.55                 |
| S-30          | LL BASIN | 10yr-2hr   | 2.19                     | 17.27              | 17.72                  | 0.0038                   | 6630                       | 1.50                      | 2.40                 | 1.58                       | 0.94                  |
| S-30          | LL BASIN | 25yr-24hr  | 14.80                    | 19.95              | 17.72                  | -0.0021                  | 22874                      | 12.50                     | 9.37                 | 11.87                      | 1.43                  |
| S-31          | LL BASIN | 10yr-2hr   | 2.00                     | 16.62              | 16.77                  | 0.0037                   | 7051                       | 1.50                      | 2.32                 | 1.86                       | 0.93                  |
| S-31          | LL BASIN | 25yr-24hr  | 12.85                    | 17.71              | 16.77                  | -0.0022                  | 15901                      | 12.50                     | 9.06                 | 12.80                      | 4.31                  |
| S-32          | LL BASIN | 10yr-2hr   | 2.00                     | 16.80              | 17.47                  | 0.0035                   | 5648                       | 1.50                      | 2.97                 | 2.04                       | 0.47                  |
| S-32          | LL BASIN | 25yr-24hr  | 13.19                    | 18.99              | 17.47                  | -0.0031                  | 21117                      | 12.50                     | 11.62                | 14.08                      | 3.63                  |
| S-33          | LL BASIN | 10yr-2hr   | 2.00                     | 16.79              | 17.59                  | 0.0046                   | 5422                       | 1.50                      | 4.03                 | 2.00                       | 1.05                  |
| S-33          | LL BASIN | 25yr-24hr  | 13.08                    | 18.90              | 17.59                  | -0.0031                  | 19204                      | 12.50                     | 16.68                | 13.32                      | 7.88                  |
| SWALE-1       | LL BASIN | 10yr-2hr   | 25.00                    | 19.15              | 20.00                  | -0.0042                  | 1443                       | 1.69                      | 9.59                 | 1.70                       | 8.82                  |
| SWALE-1       | LL BASIN | 25yr-24hr  | 20.37                    | 21.50              | 20.00                  | -0.0042                  | 110872                     | 12.63                     | 24.25                | 12.20                      | 16.64                 |
| SWALE-2       | LL BASIN | 10yr-2hr   | 25.00                    | 19.15              | 19.00                  | 0.0043                   | 14768                      | 1.70                      | 8.99                 | 1.29                       | 4.76                  |
| SWALE-2       | LL BASIN | 25yr-24hr  | 20.35                    | 21.50              | 19.00                  | 0.0043                   | 31910                      | 12.50                     | 19.75                | 12.45                      | 10.73                 |
| SWALE-3       | LL BASIN | 10yr-2hr   | 25.00                    | 19.15              | 19.00                  | 0.0017                   | 16538                      | 1.29                      | 4.77                 | 1.28                       | 3.13                  |
| SWALE-3       | LL BASIN | 25yr-24hr  | 20.35                    | 21.49              | 19.00                  | 0.0027                   | 66693                      | 12.75                     | 15.12                | 14.51                      | 3.85                  |
| SWALE-4       | LL BASIN | 10yr-2hr   | 25.00                    | 19.15              | 20.50                  | 0.0048                   | 8848                       | 1.28                      | 5.30                 | 1.24                       | 6.00                  |
| SWALE-4       | LL BASIN | 25yr-24hr  | 20.27                    | 21.42              | 20.50                  | 0.0029                   | 38516                      | 12.43                     | 11.55                | 10.37                      | 5.87                  |
| WETLAND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 5.93               | 6.50                   | -0.0018                  | 40986                      | 1.75                      | 38.49                | 2.00                       | 24.57                 |
| WETLAND NO. 1 | LL BASIN | 25yr-24hr  | 13.76                    | 9.73               | 6.50                   | -0.0041                  | 69960                      | 12.93                     | 154.87               | 13.76                      | 116.07                |

NODE MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US stage<br>hrs | Max<br>US stage<br>ft | Max Time<br>DS stage<br>hrs | Max<br>DS stage<br>ft |
|------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-1  | LL BASIN | 10yr-2hr   | 1.70                    | 4.72               | 0.003                 | 1.68                        | 20.20                 | 1.67                        | 19.77                 |
| P-1  | LL BASIN | 25yr-24hr  | 13.25                   | 8.89               | -0.049                | 13.00                       | 22.37                 | 12.74                       | 21.70                 |
| P-10 | LL BASIN | 10yr-2hr   | 1.63                    | 7.55               | -0.368                | 1.81                        | 18.11                 | 2.00                        | 17.92                 |
| P-10 | LL BASIN | 25yr-24hr  | 11.90                   | 6.79               | 0.013                 | 18.25                       | 21.35                 | 17.15                       | 21.17                 |
| P-11 | LL BASIN | 10yr-2hr   | 1.69                    | 7.17               | 0.285                 | 2.00                        | 17.92                 | 2.00                        | 17.85                 |
| P-11 | LL BASIN | 25yr-24hr  | 12.58                   | 8.77               | 0.772                 | 17.15                       | 21.17                 | 17.18                       | 21.09                 |
| P-12 | LL BASIN | 10yr-2hr   | 1.66                    | 7.19               | 0.187                 | 2.00                        | 17.85                 | 2.00                        | 17.70                 |
| P-12 | LL BASIN | 25yr-24hr  | 25.00                   | 8.36               | 0.495                 | 17.18                       | 21.09                 | 17.04                       | 20.86                 |
| P-13 | LL BASIN | 10yr-2hr   | 1.63                    | 10.77              | -0.219                | 2.00                        | 17.70                 | 2.17                        | 17.56                 |
| P-13 | LL BASIN | 25yr-24hr  | 12.53                   | 12.66              | -0.013                | 17.04                       | 20.86                 | 17.00                       | 20.61                 |
| P-14 | LL BASIN | 10yr-2hr   | 1.71                    | 7.62               | -0.589                | 2.17                        | 17.56                 | 2.19                        | 17.45                 |
| P-14 | LL BASIN | 25yr-24hr  | 25.00                   | 10.29              | -0.013                | 17.00                       | 20.61                 | 16.18                       | 20.32                 |
| P-15 | LL BASIN | 10yr-2hr   | 1.70                    | 6.45               | -0.317                | 2.19                        | 17.45                 | 2.19                        | 17.36                 |
| P-15 | LL BASIN | 25yr-24hr  | 25.00                   | 10.43              | -0.152                | 16.18                       | 20.32                 | 15.46                       | 20.12                 |
| P-16 | LL BASIN | 10yr-2hr   | 1.58                    | 0.94               | -0.697                | 2.19                        | 17.27                 | 2.18                        | 17.27                 |
| P-16 | LL BASIN | 25yr-24hr  | 11.87                   | 1.43               | -0.045                | 14.80                       | 19.95                 | 14.78                       | 19.94                 |
| P-17 | LL BASIN | 10yr-2hr   | 2.20                    | 5.52               | 0.085                 | 2.19                        | 17.36                 | 2.18                        | 17.27                 |
| P-17 | LL BASIN | 25yr-24hr  | 25.00                   | 10.55              | 0.019                 | 15.46                       | 20.12                 | 14.78                       | 19.94                 |
| P-19 | LL BASIN | 10yr-2hr   | 2.26                    | 5.55               | 0.020                 | 2.18                        | 17.27                 | 2.00                        | 17.20                 |
| P-19 | LL BASIN | 25yr-24hr  | 24.38                   | 12.27              | -2.112                | 14.78                       | 19.94                 | 14.20                       | 19.82                 |
| P-2  | LL BASIN | 10yr-2hr   | 1.69                    | 9.54               | 0.440                 | 1.67                        | 19.77                 | 25.00                       | 19.15                 |
| P-2  | LL BASIN | 25yr-24hr  | 12.59                   | 21.95              | 0.327                 | 12.74                       | 21.70                 | 20.37                       | 21.50                 |
| P-20 | LL BASIN | 10yr-2hr   | 2.00                    | 6.20               | 0.007                 | 2.00                        | 17.20                 | 2.00                        | 16.62                 |
| P-20 | LL BASIN | 25yr-24hr  | 17.16                   | 14.65              | -0.006                | 14.20                       | 19.82                 | 12.89                       | 17.49                 |
| P-21 | LL BASIN | 10yr-2hr   | 2.00                    | 8.23               | 0.004                 | 2.00                        | 16.62                 | 2.00                        | 9.23                  |
| P-21 | LL BASIN | 25yr-24hr  | 12.89                   | 28.55              | -0.051                | 12.89                       | 17.49                 | 13.49                       | 11.78                 |
| P-24 | LL BASIN | 10yr-2hr   | 1.86                    | 0.93               | -0.122                | 2.00                        | 16.62                 | 2.00                        | 16.62                 |
| P-24 | LL BASIN | 25yr-24hr  | 12.80                   | 4.31               | -0.467                | 12.85                       | 17.71                 | 12.89                       | 17.49                 |
| P-25 | LL BASIN | 10yr-2hr   | 2.04                    | 0.47               | 0.004                 | 2.00                        | 16.80                 | 2.00                        | 16.79                 |
| P-25 | LL BASIN | 25yr-24hr  | 14.08                   | 3.63               | -0.388                | 13.19                       | 18.99                 | 13.08                       | 18.90                 |
| P-26 | LL BASIN | 10yr-2hr   | 2.00                    | 1.05               | 0.001                 | 2.00                        | 16.79                 | 2.00                        | 16.62                 |
| P-26 | LL BASIN | 25yr-24hr  | 13.32                   | 7.88               | -0.026                | 13.08                       | 18.90                 | 12.89                       | 17.49                 |
| P-27 | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000                 | 2.65                        | 7.43                  | 2.67                        | 7.42                  |
| P-27 | LL BASIN | 25yr-24hr  | 12.97                   | 44.90              | 1.264                 | 13.50                       | 11.69                 | 13.55                       | 11.55                 |
| P-28 | LL BASIN | 10yr-2hr   | 2.00                    | 13.97              | 4.221                 | 2.65                        | 7.43                  | 2.67                        | 7.42                  |
| P-28 | LL BASIN | 25yr-24hr  | 12.97                   | 40.29              | -5.112                | 13.50                       | 11.69                 | 13.55                       | 11.55                 |
| P-23 | LL BASIN | 10yr-2hr   | 2.64                    | 1.04               | 0.011                 | 2.67                        | 7.42                  | 2.64                        | 5.95                  |

LINK MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES ONLY

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name   | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Delta Q<br>cfs | Max US<br>Stage<br>hrs | Max US<br>Stage<br>ft | Max DS<br>Stage<br>hrs | Max DS<br>Stage<br>ft |
|--------|----------|------------|-------------------------|--------------------|----------------|------------------------|-----------------------|------------------------|-----------------------|
| P-29   | LL BASIN | 25yr-24hr  | 13.12                   | 53.53              | -0.075         | 13.55                  | 11.55                 | 13.76                  | 9.73                  |
| P-3    | LL BASIN | 10yr-2hr   | 1.70                    | 8.82               | 0.996          | 25.00                  | 19.15                 | 25.00                  | 19.15                 |
| P-3    | LL BASIN | 25yr-24hr  | 12.20                   | 16.64              | 0.996          | 20.37                  | 21.50                 | 20.35                  | 21.50                 |
| P-30   | LL BASIN | 10yr-2hr   | 2.66                    | 4.89               | 0.005          | 2.67                   | 7.42                  | 2.66                   | 6.28                  |
| P-30   | LL BASIN | 25yr-24hr  | 12.93                   | 55.38              | -0.066         | 13.55                  | 11.55                 | 13.76                  | 9.73                  |
| P-31   | LL BASIN | 10yr-2hr   | 2.00                    | 24.57              | 0.822          | 2.00                   | 5.93                  | 2.00                   | 4.98                  |
| P-31   | LL BASIN | 25yr-24hr  | 13.76                   | 116.07             | 0.822          | 13.76                  | 9.73                  | 13.00                  | 7.52                  |
| P-4    | LL BASIN | 10yr-2hr   | 1.29                    | 4.76               | 0.222          | 25.00                  | 19.15                 | 25.00                  | 19.15                 |
| P-4    | LL BASIN | 25yr-24hr  | 12.45                   | 10.73              | 0.981          | 20.35                  | 21.50                 | 20.35                  | 21.49                 |
| P-5    | LL BASIN | 10yr-2hr   | 1.28                    | 3.13               | 0.353          | 25.00                  | 19.15                 | 25.00                  | 19.15                 |
| P-5    | LL BASIN | 25yr-24hr  | 14.51                   | 3.85               | 0.135          | 20.35                  | 21.49                 | 20.27                  | 21.49                 |
| P-6    | LL BASIN | 10yr-2hr   | 1.24                    | 6.00               | -7.172         | 25.00                  | 19.15                 | 25.00                  | 19.15                 |
| P-6    | LL BASIN | 25yr-24hr  | 10.37                   | 5.87               | -6.848         | 20.27                  | 21.49                 | 20.18                  | 21.48                 |
| P-7    | LL BASIN | 10yr-2hr   | 1.57                    | 3.71               | 0.015          | 1.57                   | 20.41                 | 25.00                  | 19.15                 |
| P-7    | LL BASIN | 25yr-24hr  | 12.23                   | 9.20               | -0.028         | 20.24                  | 21.49                 | 20.27                  | 21.49                 |
| P-8    | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000          | 25.00                  | 19.15                 | 1.66                   | 18.16                 |
| P-8    | LL BASIN | 25yr-24hr  | 25.00                   | 5.13               | -0.061         | 20.18                  | 21.48                 | 18.49                  | 21.41                 |
| P-9    | LL BASIN | 10yr-2hr   | 1.52                    | 3.79               | -1.055         | 1.66                   | 18.16                 | 1.81                   | 18.11                 |
| P-9    | LL BASIN | 25yr-24hr  | 25.00                   | 5.64               | 1.023          | 18.49                  | 21.41                 | 18.25                  | 21.35                 |
| WEIR-1 | LL BASIN | 10yr-2hr   | 2.00                    | 16.15              | 0.023          | 2.00                   | 9.23                  | 2.65                   | 7.43                  |
| WEIR-1 | LL BASIN | 25yr-24hr  | 12.55                   | 55.85              | -0.243         | 13.49                  | 11.78                 | 13.50                  | 11.69                 |

LINK MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES ONLY

Pipe Modifications  
Removal Tailwater



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Basins

Name: BASIN S-1                      Node: S-1                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.930                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-11                      Node: S-11                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 5.160                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-15                      Node: S-15                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 5.930                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-16                      Node: S-16                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.010                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-17                      Node: S-17                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 8.190                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-18                      Node: S-18                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN  
  
Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.100                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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Name: BASIN S-19                      Node: S-19                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.610                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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Name: BASIN S-2                      Node: S-2                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

---

Name: Basin S-20                      Node: S-20                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 1.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

---

Name: BASIN S-24                      Node: S-24                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 4.130                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

---

Name: BASIN S-25                      Node: S-25                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 11.580                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

---

Name: BASIN S-26                      Node: S-26                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 2.540                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

---

Name: BASIN S-30                      Node: S-30                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

---

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |
|----------------------------|----------------------------------|
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |
| Area(ac): 3.000            | Time Shift(hrs): 0.00            |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |
| DCIA(%): 0.00              |                                  |

---

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-31           | Node: S-31                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.900            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

---

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-32           | Node: S-32                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.720            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

---

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-33           | Node: S-33                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.040            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

---

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN SW-1           | Node: SWALE-1                    | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 45.00         |                |
| Area(ac): 2.670            | Time Shift(hrs): 0.00            |                |
| Curve Number: 39.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

---

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN SW-2           | Node: SWALE-2                    | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 45.00         |                |
| Area(ac): 9.540            | Time Shift(hrs): 0.00            |                |
| Curve Number: 36.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

---

|                            |                              |                |
|----------------------------|------------------------------|----------------|
| Name: BASIN SW-3           | Node: SWALE-3                | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0        |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00    |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 45.00     |                |
| Area(ac): 4.980            | Time Shift(hrs): 0.00        |                |

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Curve Number: 74.00      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 74 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP C)

```

-----
Name: BASIN SW-4      Node: SWALE-4      Status: Onsite
Group: LL BASIN      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484      Peaking Factor: 484.0
Rainfall File: Scsiii      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000      Time of Conc(min): 45.00
Area(ac): 2.450      Time Shift(hrs): 0.00
Curve Number: 74.00      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 74 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP C)

```

=====
---- Nodes -----
=====
Name: POND NO. 1      Base Flow(cfs): 0.000      Init Stage(ft): 5.130
Group: LL BASIN      Warn Stage(ft): 10.500
Type: Time/Stage
  
```

Modify weir elevation from 8.9 to 6.89'.

| Time(hrs) | Stage(ft) |
|-----------|-----------|
| 0.00      | 5.130     |
| 999.00    | 10.500    |

```

-----
Name: S-1      Base Flow(cfs): 0.000      Init Stage(ft): 17.550
Group: LL BASIN      Warn Stage(ft): 20.500
Type: Stage/Area
  
```

RIM=20.00'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.550    | 0.0001   |
| 18.000    | 0.0001   |
| 19.150    | 0.0001   |
| 19.500    | 0.1370   |
| 20.100    | 0.1500   |
| 20.500    | 0.2200   |
| 21.000    | 0.3500   |

```

-----
Name: S-11      Base Flow(cfs): 0.000      Init Stage(ft): 16.010
Group: LL BASIN      Warn Stage(ft): 21.000
Type: Stage/Area
  
```

| Stage(ft) | Area(ac) |
|-----------|----------|
| 16.010    | 0.0001   |
| 18.000    | 0.0001   |
| 20.110    | 0.0001   |
| 20.500    | 0.2350   |
| 21.000    | 0.5420   |

```

-----
Name: S-14      Base Flow(cfs): 0.000      Init Stage(ft): 13.900
Group: LL BASIN      Plunge Factor: 1.00      Warn Stage(ft): 20.500
Type: Manhole, Flat Floor
  
```

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.900    | 0.0001   |
| 15.000    | 0.0001   |
| 19.450    | 0.0001   |
| 20.000    | 0.4500   |
| 20.500    | 0.5400   |

```

-----
Name: S-15      Base Flow(cfs): 0.000      Init Stage(ft): 13.190
  
```

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Group: LL BASIN  
Type: Stage/Area

Warn Stage(ft): 18.590

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.190    | 0.0001   |
| 15.000    | 0.0001   |
| 17.650    | 0.0200   |
| 18.090    | 0.1590   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-16  
Group: LL BASIN  
Type: Stage/Area

Base Flow(cfs): 0.000

Init Stage(ft): 12.860  
Warn Stage(ft): 18.410

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.860    | 0.0001   |
| 15.000    | 0.0001   |
| 17.950    | 0.0200   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-17  
Group: LL BASIN  
Type: Stage/Area

Base Flow(cfs): 0.000

Init Stage(ft): 12.000  
Warn Stage(ft): 17.380

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |
| 16.880    | 0.1377   |
| 17.000    | 0.1720   |
| 17.880    | 0.2750   |

Name: S-18  
Group: LL BASIN  
Type: Stage/Area

Base Flow(cfs): 0.000

Init Stage(ft): 11.550  
Warn Stage(ft): 17.410

| Stage(ft) | Area(ac) |
|-----------|----------|
| 11.550    | 0.0001   |
| 15.000    | 0.0001   |
| 16.910    | 0.1377   |
| 17.410    | 0.1720   |
| 17.910    | 0.2750   |

Name: S-19  
Group: LL BASIN  
Type: Stage/Area

Base Flow(cfs): 0.000

Init Stage(ft): 10.720  
Warn Stage(ft): 18.400

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.720    | 0.0001   |
| 14.000    | 0.0001   |
| 17.900    | 0.1377   |
| 18.400    | 0.1720   |
| 18.900    | 0.2750   |

Name: S-2  
Group: LL BASIN  
Type: Stage/Area

Base Flow(cfs): 0.000

Init Stage(ft): 17.130  
Warn Stage(ft): 19.960

RIM=19.46'

| Stage(ft) | Area(ac) |
|-----------|----------|
|-----------|----------|

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|        |        |
|--------|--------|
| 17.130 | 0.0001 |
| 17.760 | 0.0001 |
| 19.460 | 0.0001 |
| 20.060 | 0.1370 |
| 21.000 | 0.2290 |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-20       | Base Flow(cfs): 0.000 | Init Stage(ft): 10.500 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.720 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.500    | 0.0001   |
| 14.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.1720   |
| 18.220    | 0.2750   |

|                           |                       |                        |
|---------------------------|-----------------------|------------------------|
| Name: S-21                | Base Flow(cfs): 0.000 | Init Stage(ft): 10.350 |
| Group: LL BASIN           | Plunge Factor: 1.00   | Warn Stage(ft): 16.500 |
| Type: Manhole, Flat Floor |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.350    | 0.0001   |
| 14.000    | 0.0001   |
| 16.000    | 0.0060   |
| 16.500    | 0.0270   |
| 17.000    | 0.0360   |

|                           |                       |                        |
|---------------------------|-----------------------|------------------------|
| Name: S-22                | Base Flow(cfs): 0.000 | Init Stage(ft): 10.050 |
| Group: LL BASIN           | Plunge Factor: 1.00   | Warn Stage(ft): 17.050 |
| Type: Manhole, Flat Floor |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.050    | 0.0001   |
| 14.000    | 0.0001   |
| 16.550    | 0.0060   |
| 17.050    | 0.0270   |
| 17.550    | 0.0360   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-24       | Base Flow(cfs): 0.000 | Init Stage(ft): 9.660  |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.440 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 9.660     | 0.0001   |
| 14.000    | 0.0001   |
| 16.960    | 0.1377   |
| 17.440    | 0.1720   |
| 17.960    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-25       | Base Flow(cfs): 0.000 | Init Stage(ft): 8.020  |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.820 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 8.020     | 0.0001   |
| 15.000    | 0.0001   |
| 17.320    | 0.1377   |
| 17.820    | 0.1720   |
| 18.320    | 0.2750   |

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-26       | Base Flow(cfs): 0.000 | Init Stage(ft): 6.710  |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.760 |
| Type: Stage/Area |                       |                        |

Remove Structure S-27, S-28, P-22, and P-23. Straighten pipe run and replace with two 48" RCP.

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.710     | 0.0001   |
| 14.000    | 0.0001   |
| 16.260    | 0.1377   |
| 16.760    | 0.1720   |
| 17.260    | 0.3250   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-30       | Base Flow(cfs): 0.000 | Init Stage(ft): 13.220 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.720 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.220    | 0.0001   |
| 15.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.2750   |
| 18.220    | 0.3310   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-31       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.260 |
| Group: LL BASIN  |                       | Warn Stage(ft): 16.770 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.260    | 0.0001   |
| 14.000    | 0.0001   |
| 16.270    | 0.1377   |
| 16.770    | 0.1720   |
| 17.270    | 0.2750   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-32       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.920 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.470 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.780    | 0.0001   |
| 14.000    | 0.0001   |
| 16.970    | 0.1377   |
| 17.470    | 0.1720   |
| 17.970    | 0.2750   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-33       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.460 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.590 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.460    | 0.0001   |
| 14.000    | 0.0001   |
| 17.090    | 0.1377   |
| 17.590    | 0.1720   |
| 18.090    | 0.2750   |

---

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-1    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.900 |
| Group: LL BASIN  |                       | Warn Stage(ft): 20.000 |
| Type: Stage/Area |                       |                        |

---

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.490    | 0.0003   |
| 16.000    | 0.0004   |
| 16.500    | 0.0004   |
| 17.000    | 0.0029   |
| 17.500    | 0.0063   |
| 18.000    | 0.0100   |
| 19.000    | 0.0230   |
| 19.500    | 0.0551   |
| 20.100    | 0.8030   |

Name: SWALE-2      Base Flow(cfs): 0.000      Init Stage(ft): 15.050  
Group: LL BASIN      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.050    | 0.0010   |
| 15.500    | 0.0100   |
| 16.000    | 0.0124   |
| 16.500    | 0.0288   |
| 17.000    | 0.0484   |
| 17.500    | 0.0650   |
| 18.000    | 0.1890   |
| 18.500    | 0.2290   |
| 19.000    | 0.3130   |

Name: SWALE-3      Base Flow(cfs): 0.000      Init Stage(ft): 15.370  
Group: LL BASIN      Warn Stage(ft): 19.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.370    | 0.0125   |
| 16.500    | 0.0211   |
| 17.000    | 0.0283   |
| 17.500    | 0.0355   |
| 18.000    | 0.0403   |
| 18.500    | 0.0502   |
| 19.000    | 0.3040   |
| 19.500    | 0.5500   |

Name: SWALE-4      Base Flow(cfs): 0.000      Init Stage(ft): 14.410  
Group: LL BASIN      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 14.410    | 0.0010   |
| 15.250    | 0.0032   |
| 15.500    | 0.0038   |
| 16.000    | 0.0051   |
| 16.500    | 0.0064   |
| 17.000    | 0.0077   |
| 17.500    | 0.0096   |
| 18.000    | 0.0118   |
| 18.500    | 0.0230   |
| 19.000    | 0.1580   |
| 20.000    | 0.4500   |

==== Pipes =====

|                    |                 |                                      |
|--------------------|-----------------|--------------------------------------|
| Name: P-15         | From Node: S-21 | Length(ft): 33.00                    |
| Group: LL BASIN    | To Node: S-22   | Count: 2                             |
| UPSTREAM           | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00    | 36.00           | Flow: Both                           |
| Rise(in): 36.00    | 36.00           | Entrance Loss Coef: 0.00             |
| Invert(ft): 10.300 | 10.200          | Exit Loss Coef: 1.00                 |
|                    |                 | Bend Loss Coef: 0.00                 |

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |          |                                |
|-----------------------|----------|--------------------------------|
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000    | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000    | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-17            | From Node: S-22 | Length(ft): 135.00                   |
| Group: LL BASIN       | To Node: S-24   | Count: 2                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.00             |
| Invert(ft): 10.200    | 9.660           | Exit Loss Coef: 1.00                 |
| Manning's N: 0.012000 | 0.012000        | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000           | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
|                       |                 | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

|                       |                    |                                      |
|-----------------------|--------------------|--------------------------------------|
| Name: P-3             | From Node: SWALE-1 | Length(ft): 195.00                   |
| Group: LL BASIN       | To Node: SWALE-2   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM         | Friction Equation: Automatic         |
| Geometry: Circular    | Circular           | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00              | Flow: Both                           |
| Rise(in): 36.00       | 36.00              | Entrance Loss Coef: 0.00             |
| Invert(ft): 15.490    | 15.050             | Exit Loss Coef: 1.00                 |
| Manning's N: 0.012000 | 0.012000           | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000              | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000              | Inlet Ctrl Spec: Use dc              |
|                       |                    | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

|                       |                    |                                      |
|-----------------------|--------------------|--------------------------------------|
| Name: P-4             | From Node: SWALE-2 | Length(ft): 20.16                    |
| Group: LL BASIN       | To Node: SWALE-3   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM         | Friction Equation: Automatic         |
| Geometry: Circular    | Circular           | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00              | Flow: Both                           |
| Rise(in): 36.00       | 36.00              | Entrance Loss Coef: 0.00             |
| Invert(ft): 15.560    | 15.370             | Exit Loss Coef: 1.00                 |
| Manning's N: 0.012000 | 0.012000           | Bend Loss Coef: 0.00                 |
| Top Clip(in): 0.000   | 0.000              | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000              | Inlet Ctrl Spec: Use dc              |
|                       |                    | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: P-5                      From Node: SWALE-3                      Length(ft): 307.00  
Group: LL BASIN                      To Node: SWALE-4                      Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 36.00       | 36.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 36.00       | 36.00      | Flow: Both                           |
| Invert(ft): 15.590    | 14.050     | Entrance Loss Coef: 0.00             |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.00                 |
| Top Clip(in): 0.000   | 0.000      | Bend Loss Coef: 0.00                 |
| Bot Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
|                       |            | Inlet Ctrl Spec: Use dc              |
|                       |            | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Name: P-6                      From Node: SWALE-4                      Length(ft): 5.00  
Group: LL BASIN                      To Node: S-14                      Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 30.00       | 30.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 30.00       | 30.00      | Flow: Both                           |
| Invert(ft): 14.410    | 14.080     | Entrance Loss Coef: 0.00             |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.00                 |
| Top Clip(in): 0.000   | 0.000      | Bend Loss Coef: 0.00                 |
| Bot Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
|                       |            | Inlet Ctrl Spec: Use dc              |
|                       |            | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Name: P-8                      From Node: S-14                      Length(ft): 143.00  
Group: LL BASIN                      To Node: S-15                      Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 36.00       | 36.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 36.00       | 36.00      | Flow: Both                           |
| Invert(ft): 13.900    | 13.300     | Entrance Loss Coef: 0.00             |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.00                 |
| Top Clip(in): 0.000   | 0.000      | Bend Loss Coef: 0.00                 |
| Bot Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
|                       |            | Inlet Ctrl Spec: Use dc              |
|                       |            | Stabilizer Option: None              |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

=====  
Drop Structures  
=====

Name: P-1                      From Node: S-1                      Length(ft): 33.00  
Group: LL BASIN                      To Node: S-2                      Count: 1

| UPSTREAM           | DOWNSTREAM |                                      |
|--------------------|------------|--------------------------------------|
| Geometry: Circular | Circular   | Friction Equation: Automatic         |
| Span(in): 18.00    | 18.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 18.00    | 18.00      | Flow: Both                           |
| Invert(ft): 17.550 | 17.130     | Entrance Loss Coef: 0.000            |
|                    |            | Exit Loss Coef: 1.000                |

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Manning's N: 0.012000      0.012000      Outlet Ctrl Spec: Use dc or tw  
Top Clip(in): 0.000      0.000      Inlet Ctrl Spec: Use dc  
Bot Clip(in): 0.000      0.000      Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 18" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-1 \*\*\*

|                       |                          | TABLE |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   |       |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 16.00       | Invert(ft): 19.160       |       |
| Rise(in): 10.00       | Control Elev(ft): 19.160 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-1 \*\*\*

|                       |                          | TABLE |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   |       |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 20.000       |       |
| Rise(in): 18.00       | Control Elev(ft): 20.000 |       |

| Name: P-10            | From Node: S-16 | Length(ft): 268.95                   |
|-----------------------|-----------------|--------------------------------------|
| Group: LL BASIN       | To Node: S-17   | Count: 2                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.860    | 12.100          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-10 \*\*\*

|                       |                          | TABLE |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   |       |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 80.00       | Invert(ft): 17.440       |       |
| Rise(in): 4.00        | Control Elev(ft): 17.440 |       |

| Name: P-11            | From Node: S-17 | Length(ft): 49.90                    |
|-----------------------|-----------------|--------------------------------------|
| Group: LL BASIN       | To Node: S-18   | Count: 2                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.000    | 11.640          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-11 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 108.00      | Invert(ft): 15.990       |
| Rise(in): 6.00        | Control Elev(ft): 15.990 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-12            | From Node: S-18 | Length(ft): 263.32                   |
| Group: LL BASIN       | To Node: S-19   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 11.550    | 10.820          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-12 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 92.00       | Invert(ft): 16.040       |
| Rise(in): 5.00        | Control Elev(ft): 16.040 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-13            | From Node: S-19 | Length(ft): 54.38                    |
| Group: LL BASIN       | To Node: S-20   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.720    | 10.600          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-13 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 132.00      | Invert(ft): 16.690       |
| Rise(in): 4.00        | Control Elev(ft): 16.690 |

TABLE

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-14      | From Node: S-20 | Length(ft): 131.23 |
| Group: LL BASIN | To Node: S-21   | Count: 2           |

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.600    | 10.300     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-14 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 84.00       | Invert(ft): 16.590       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.590 |       |

---

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-16      | From Node: S-30 | Length(ft): 30.64 |
| Group: LL BASIN | To Node: S-24   | Count: 1          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 24.00       | 24.00      | Flow: Both                           |
| Rise(in): 24.00       | 24.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.220    | 12.900     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-16 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 67.00       | Invert(ft): 16.340       |       |
| Rise(in): 5.40        | Control Elev(ft): 16.340 |       |

---

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-19      | From Node: S-24 | Length(ft): 188.85 |
| Group: LL BASIN | To Node: S-25   | Count: 3           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 9.660     | 8.100      | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified weir from 60"x7" to a FDOT Type 4 asymmetrical curb inlet with 144"x6" opening. Adjusted weir elevation to account  
Modified pipe size to 3-36" RCP.

---

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-19 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 144.00      | Invert(ft): 16.960       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.960 |       |

|                 |                  |                    |
|-----------------|------------------|--------------------|
| Name: P-2       | From Node: S-2   | Length(ft): 201.27 |
| Group: LL BASIN | To Node: SWALE-1 | Count: 1           |

|                        |              |                                      |
|------------------------|--------------|--------------------------------------|
| UPSTREAM               | DOWNSTREAM   | Friction Equation: Automatic         |
| Geometry: Horz Ellipse | Horz Ellipse | Solution Algorithm: Most Restrictive |
| Span(in): 36.00        | 36.00        | Flow: Both                           |
| Rise(in): 36.00        | 36.00        | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.130     | 15.900       | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000  | 0.012000     | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000    | 0.000        | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000    | 0.000        | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Modify pipe to 36" CPP.

\*\*\* Weir 1 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 20.00       | Invert(ft): 17.790       |       |
| Rise(in): 8.00        | Control Elev(ft): 17.790 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 19.460       |       |
| Rise(in): 18.00       | Control Elev(ft): 19.460 |       |

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-20      | From Node: S-25 | Length(ft): 342.87 |
| Group: LL BASIN | To Node: S-26   | Count: 2           |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 8.020     | 6.710      | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to 2-48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-20 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Span(in): 54.00                      Invert(ft): 17.320  
Rise(in): 5.00                      Control Elev(ft): 17.320

|                       |                     |                                      |
|-----------------------|---------------------|--------------------------------------|
| Name: P-21            | From Node: S-26     | Length(ft): 85.00                    |
| Group: LL BASIN       | To Node: POND NO. 1 | Count: 2                             |
| UPSTREAM              | DOWNSTREAM          | Friction Equation: Automatic         |
| Geometry: Circular    | Circular            | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00               | Flow: Both                           |
| Rise(in): 48.00       | 48.00               | Entrance Loss Coef: 0.000            |
| Invert(ft): 6.710     | 5.130               | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000            | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000               | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000               | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-21 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 60.00       | Invert(ft): 16.260       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.260 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-24            | From Node: S-31 | Length(ft): 31.80                    |
| Group: LL BASIN       | To Node: S-26   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 18.00       | 18.00           | Flow: Both                           |
| Rise(in): 18.00       | 18.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.260    | 12.160          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-24 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 90.00       | Invert(ft): 15.840       |       |
| Rise(in): 5.00        | Control Elev(ft): 15.840 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-25            | From Node: S-32 | Length(ft): 30.26                    |
| Group: LL BASIN       | To Node: S-33   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 18.00       | 18.00           | Flow: Both                           |
| Rise(in): 18.00       | 18.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.920    | 12.780          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-25 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 96.00       | Invert(ft): 16.500       |
| Rise(in): 6.00        | Control Elev(ft): 16.500 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-26            | From Node: S-33 | Length(ft): 415.95                   |
| Group: LL BASIN       | To Node: S-26   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 24.00       | 24.00           | Flow: Both                           |
| Rise(in): 24.00       | 24.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.460    | 11.180          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 55.00       | Invert(ft): 16.620       |
| Rise(in): 4.50        | Control Elev(ft): 16.620 |

TABLE

|                       |                  |                                      |
|-----------------------|------------------|--------------------------------------|
| Name: P-7             | From Node: S-11  | Length(ft): 607.63                   |
| Group: LL BASIN       | To Node: SWALE-4 | Count: 1                             |
| UPSTREAM              | DOWNSTREAM       | Friction Equation: Automatic         |
| Geometry: Circular    | Circular         | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00            | Flow: Both                           |
| Rise(in): 30.00       | 30.00            | Entrance Loss Coef: 0.000            |
| Invert(ft): 16.010    | 15.250           | Exit Loss Coef: 1.000                |
| Manning's N: 0.022000 | 0.022000         | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000            | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 30" CPP.

\*\*\* Weir 1 of 1 for Drop Structure P-7 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 20.110       |
| Rise(in): 18.00       | Control Elev(ft): 20.110 |

TABLE

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

```

-----
Name: P-9          From Node: S-15      Length(ft): 31.11
Group: LL BASIN    To Node: S-16        Count: 1

      UPSTREAM      DOWNSTREAM      Friction Equation: Automatic
Geometry: Circular  Circular
Span(in): 36.00     36.00     Solution Algorithm: Most Restrictive
Rise(in): 36.00     36.00     Flow: Both
Invert(ft): 13.190  13.050    Entrance Loss Coef: 0.000
Manning's N: 0.012000 0.012000  Exit Loss Coef: 1.000
Top Clip(in): 0.000  0.000    Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000  0.000    Inlet Ctrl Spec: Use dc
                               Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:
Circular CMP: Headwall

```

\*\*\* Weir 1 of 1 for Drop Structure P-9 \*\*\*

```

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Rectangular
Span(in): 90.00
Rise(in): 5.50

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600

Invert(ft): 17.610
Control Elev(ft): 17.610

```

==== Hydrology Simulations =====

```

Name: 10yr-2hr
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: Scsiii
Rainfall Amount(in): 4.00

```

```

Time(hrs)      Print Inc(min)
-----
2.000          15.00

```

```

Name: 25yr-24hr
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 10.80

```

```

Time(hrs)      Print Inc(min)
-----
24.000         15.00

```

==== Routing Simulations =====

```

Name: 10yr-2hr      Hydrology Sim: 10yr-2hr
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

```

```

Execute: Yes      Restart: No      Patch: No

Alternative: No

Max Delta Z(ft): 1.00      Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000      End Time(hrs): 4.00
Min Calc Time(sec): 0.5000   Max Calc Time(sec): 60.0000
Boundary Stages:      Boundary Flows:

```

```

Time(hrs)      Print Inc(min)
-----
4.000          10.00

```

INPUT REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

---

| Group    | Run |
|----------|-----|
| LL BASIN | Yes |

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|                                                                                                                       |                             |           |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------|
| Name: 25yr-24hr                                                                                                       | Hydrology Sim: 25yr-24hr    |           |
| Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI |                             |           |
| Execute: Yes                                                                                                          | Restart: No                 | Patch: No |
| Alternative: No                                                                                                       |                             |           |
| Max Delta Z(ft): 1.00                                                                                                 | Delta Z Factor: 0.00500     |           |
| Time Step Optimizer: 10.000                                                                                           |                             |           |
| Start Time(hrs): 0.000                                                                                                | End Time(hrs): 25.00        |           |
| Min Calc Time(sec): 0.5000                                                                                            | Max Calc Time(sec): 60.0000 |           |
| Boundary Stages:                                                                                                      | Boundary Flows:             |           |

---

| Time (hrs) | Print Inc (min) |
|------------|-----------------|
| 25.000     | 15.000          |

---

| Group    | Run |
|----------|-----|
| LL BASIN | Yes |

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OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Simulation | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max<br>Delta<br>Stage<br>ft | Max<br>Surf<br>Area<br>ft2 | Max<br>Inflow<br>cfs | Max<br>Outflow<br>cfs |
|------------|------------|--------------------|------------------------|-----------------------------|----------------------------|----------------------|-----------------------|
| POND NO. 1 | 10yr-2hr   | 5.15               | 10.50                  | 0.0001                      | 0                          | 4.69                 | 0.00                  |
| POND NO. 1 | 25yr-24hr  | 5.26               | 10.50                  | 0.0001                      | 0                          | 17.27                | 0.00                  |
| S-1        | 10yr-2hr   | 20.21              | 20.50                  | 0.0056                      | 7339                       | 6.34                 | 4.69                  |
| S-1        | 25yr-24hr  | 22.41              | 20.50                  | 0.0026                      | 31235                      | 24.77                | 8.22                  |
| S-11       | 10yr-2hr   | 20.41              | 21.00                  | 0.0076                      | 7915                       | 4.12                 | 3.71                  |
| S-11       | 25yr-24hr  | 21.68              | 21.00                  | 0.0012                      | 41898                      | 16.12                | 8.70                  |
| S-14       | 10yr-2hr   | 19.15              | 20.50                  | 0.0095                      | 124                        | 10.56                | 10.51                 |
| S-14       | 25yr-24hr  | 21.67              | 20.50                  | -0.0105                     | 32685                      | 7.76                 | 7.69                  |
| S-15       | 10yr-2hr   | 19.07              | 18.59                  | 0.0071                      | 14230                      | 14.60                | 9.09                  |
| S-15       | 25yr-24hr  | 21.67              | 18.59                  | 0.0050                      | 26218                      | 21.61                | 6.99                  |
| S-16       | 10yr-2hr   | 18.77              | 18.41                  | 0.0063                      | 12839                      | 12.17                | 9.21                  |
| S-16       | 25yr-24hr  | 21.58              | 18.41                  | 0.0026                      | 25819                      | 23.54                | 7.90                  |
| S-17       | 10yr-2hr   | 18.28              | 17.38                  | 0.0081                      | 13996                      | 14.84                | 8.10                  |
| S-17       | 25yr-24hr  | 21.35              | 17.38                  | 0.0031                      | 29675                      | 30.55                | 9.61                  |
| S-18       | 10yr-2hr   | 18.20              | 17.41                  | 0.0076                      | 14556                      | 11.63                | 7.46                  |
| S-18       | 25yr-24hr  | 21.26              | 17.41                  | 0.0029                      | 42063                      | 28.61                | 7.94                  |
| S-19       | 10yr-2hr   | 18.06              | 18.40                  | 0.0082                      | 6469                       | 12.19                | 10.87                 |
| S-19       | 25yr-24hr  | 21.03              | 18.40                  | 0.0027                      | 31067                      | 27.83                | 12.51                 |
| S-2        | 10yr-2hr   | 19.80              | 19.96                  | 0.0032                      | 3400                       | 9.67                 | 9.33                  |
| S-2        | 25yr-24hr  | 21.80              | 19.96                  | 0.0034                      | 13405                      | 29.49                | 20.91                 |
| S-20       | 10yr-2hr   | 17.96              | 17.72                  | 0.0039                      | 9663                       | 11.84                | 5.40                  |
| S-20       | 25yr-24hr  | 20.78              | 17.72                  | 0.0024                      | 34983                      | 17.13                | 9.74                  |
| S-21       | 10yr-2hr   | 17.86              | 16.50                  | 0.0122                      | 2251                       | 5.40                 | 25.07                 |
| S-21       | 25yr-24hr  | 20.51              | 16.50                  | -0.0150                     | 4323                       | 9.74                 | 26.89                 |
| S-22       | 10yr-2hr   | 17.86              | 17.05                  | 0.0137                      | 1838                       | 25.07                | 18.58                 |
| S-22       | 25yr-24hr  | 20.50              | 17.05                  | 0.0198                      | 3903                       | 26.89                | 15.68                 |
| S-24       | 10yr-2hr   | 17.86              | 17.44                  | 0.0141                      | 11111                      | 17.50                | 4.95                  |
| S-24       | 25yr-24hr  | 20.48              | 17.44                  | 0.0053                      | 33760                      | 17.07                | 11.66                 |
| S-25       | 10yr-2hr   | 17.83              | 17.82                  | 0.0148                      | 7541                       | 7.76                 | 4.92                  |
| S-25       | 25yr-24hr  | 20.36              | 17.82                  | 0.0026                      | 30276                      | 26.17                | 12.58                 |
| S-26       | 10yr-2hr   | 16.70              | 17.76                  | 0.0068                      | 7317                       | 4.74                 | 4.69                  |
| S-26       | 25yr-24hr  | 18.57              | 17.76                  | 0.0031                      | 31630                      | 24.76                | 17.27                 |
| S-30       | 10yr-2hr   | 17.86              | 17.72                  | 0.0038                      | 12648                      | 2.40                 | 1.11                  |
| S-30       | 25yr-24hr  | 20.48              | 17.72                  | 0.0030                      | 25466                      | 9.37                 | 0.78                  |
| S-31       | 10yr-2hr   | 16.70              | 16.77                  | 0.0037                      | 7287                       | 2.32                 | 0.57                  |
| S-31       | 25yr-24hr  | 18.58              | 16.77                  | 0.0028                      | 23734                      | 9.06                 | 0.95                  |
| S-32       | 10yr-2hr   | 16.80              | 17.47                  | 0.0033                      | 5650                       | 2.97                 | 0.48                  |

NODE MIN/MAX REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name    | Simulation | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max<br>Inflow<br>cfs | Max<br>Outflow<br>cfs |
|---------|------------|--------------------|------------------------|--------------------------|-------------------------|----------------------|-----------------------|
| S-32    | 25yr-24hr  | 19.11              | 17.47                  | 0.0029                   | 22213                   | 11.62                | 2.19                  |
| S-33    | 10yr-2hr   | 16.79              | 17.59                  | 0.0046                   | 5424                    | 4.03                 | 1.06                  |
| S-33    | 25yr-24hr  | 19.06              | 17.59                  | 0.0029                   | 20703                   | 16.13                | 5.80                  |
| SWALE-1 | 10yr-2hr   | 19.28              | 20.00                  | -0.0042                  | 1788                    | 9.39                 | 8.87                  |
| SWALE-1 | 25yr-24hr  | 21.69              | 20.00                  | -0.0042                  | 121360                  | 23.97                | 15.71                 |
| SWALE-2 | 10yr-2hr   | 19.25              | 19.00                  | 0.0043                   | 15495                   | 8.89                 | 5.81                  |
| SWALE-2 | 25yr-24hr  | 21.69              | 19.00                  | 0.0043                   | 33323                   | 18.25                | 5.79                  |
| SWALE-3 | 10yr-2hr   | 19.24              | 19.00                  | 0.0025                   | 18492                   | 11.00                | 6.87                  |
| SWALE-3 | 25yr-24hr  | 21.69              | 19.00                  | 0.0022                   | 70834                   | 20.84                | 4.01                  |
| SWALE-4 | 10yr-2hr   | 19.21              | 20.50                  | 0.0034                   | 9534                    | 13.04                | 10.56                 |
| SWALE-4 | 25yr-24hr  | 21.68              | 20.50                  | -0.0033                  | 40961                   | 16.82                | 7.76                  |

NODE MIN/MAX REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max US Stage<br>hrs | Max US Stage<br>ft | Max DS Stage<br>hrs | Max DS Stage<br>ft |
|------|----------|------------|-------------------------|--------------------|-----------------------|---------------------|--------------------|---------------------|--------------------|
| P-1  | LL BASIN | 10yr-2hr   | 1.68                    | 4.69               | -0.012                | 1.68                | 20.21              | 1.67                | 19.80              |
| P-1  | LL BASIN | 25yr-24hr  | 13.25                   | 8.22               | 0.014                 | 13.05               | 22.41              | 12.82               | 21.80              |
| P-10 | LL BASIN | 10yr-2hr   | 1.64                    | 9.21               | 0.016                 | 2.27                | 18.77              | 3.11                | 18.28              |
| P-10 | LL BASIN | 25yr-24hr  | 11.72                   | 7.90               | -0.009                | 19.25               | 21.58              | 17.32               | 21.35              |
| P-11 | LL BASIN | 10yr-2hr   | 1.73                    | 8.10               | 0.604                 | 3.11                | 18.28              | 3.30                | 18.20              |
| P-11 | LL BASIN | 25yr-24hr  | 12.54                   | 9.61               | 0.863                 | 17.32               | 21.35              | 17.41               | 21.26              |
| P-12 | LL BASIN | 10yr-2hr   | 1.66                    | 7.46               | 0.460                 | 3.30                | 18.20              | 3.56                | 18.06              |
| P-12 | LL BASIN | 25yr-24hr  | 25.00                   | 7.94               | 0.519                 | 17.41               | 21.26              | 17.35               | 21.03              |
| P-13 | LL BASIN | 10yr-2hr   | 1.64                    | 10.87              | -0.018                | 3.56                | 18.06              | 3.76                | 17.96              |
| P-13 | LL BASIN | 25yr-24hr  | 12.55                   | 12.51              | -0.009                | 17.35               | 21.03              | 17.57               | 20.78              |
| P-14 | LL BASIN | 10yr-2hr   | 3.11                    | 5.40               | 0.264                 | 3.76                | 17.96              | 4.00                | 17.86              |
| P-14 | LL BASIN | 25yr-24hr  | 24.99                   | 9.74               | 0.181                 | 17.57               | 20.78              | 17.21               | 20.51              |
| P-15 | LL BASIN | 10yr-2hr   | 1.46                    | 25.07              | 23.117                | 4.00                | 17.86              | 4.00                | 17.86              |
| P-15 | LL BASIN | 25yr-24hr  | 11.42                   | 26.89              | -23.173               | 17.21               | 20.51              | 17.22               | 20.50              |
| P-16 | LL BASIN | 10yr-2hr   | 1.59                    | 1.11               | -0.030                | 4.00                | 17.86              | 4.00                | 17.86              |
| P-16 | LL BASIN | 25yr-24hr  | 24.75                   | 0.78               | 0.271                 | 17.21               | 20.48              | 17.21               | 20.48              |
| P-17 | LL BASIN | 10yr-2hr   | 1.85                    | 18.58              | -23.657               | 4.00                | 17.86              | 4.00                | 17.86              |
| P-17 | LL BASIN | 25yr-24hr  | 11.63                   | 15.68              | -19.715               | 17.22               | 20.50              | 17.21               | 20.48              |
| P-19 | LL BASIN | 10yr-2hr   | 3.03                    | 4.95               | -1.788                | 4.00                | 17.86              | 4.00                | 17.83              |
| P-19 | LL BASIN | 25yr-24hr  | 24.98                   | 11.66              | -1.897                | 17.21               | 20.48              | 17.02               | 20.36              |
| P-2  | LL BASIN | 10yr-2hr   | 1.62                    | 9.33               | 0.392                 | 1.67                | 19.80              | 2.00                | 19.28              |
| P-2  | LL BASIN | 25yr-24hr  | 12.56                   | 20.91              | 0.237                 | 12.82               | 21.80              | 20.30               | 21.69              |
| P-20 | LL BASIN | 10yr-2hr   | 4.00                    | 4.92               | 0.010                 | 4.00                | 17.83              | 4.00                | 16.70              |
| P-20 | LL BASIN | 25yr-24hr  | 22.95                   | 12.53              | 0.018                 | 17.02               | 20.36              | 15.34               | 18.57              |
| P-21 | LL BASIN | 10yr-2hr   | 4.00                    | 4.69               | 0.005                 | 4.00                | 16.70              | 4.00                | 5.15               |
| P-21 | LL BASIN | 25yr-24hr  | 15.34                   | 17.27              | 0.041                 | 15.34               | 18.57              | 25.00               | 5.26               |
| P-24 | LL BASIN | 10yr-2hr   | 1.95                    | 0.57               | -0.461                | 4.00                | 16.70              | 4.00                | 16.70              |
| P-24 | LL BASIN | 25yr-24hr  | 16.78                   | 0.95               | -0.236                | 15.38               | 18.58              | 15.34               | 18.57              |
| P-25 | LL BASIN | 10yr-2hr   | 2.04                    | 0.48               | 0.017                 | 2.00                | 16.80              | 2.00                | 16.79              |
| P-25 | LL BASIN | 25yr-24hr  | 13.59                   | 2.19               | 0.263                 | 13.54               | 19.11              | 13.53               | 19.06              |
| P-26 | LL BASIN | 10yr-2hr   | 2.00                    | 1.06               | 0.005                 | 2.00                | 16.79              | 4.00                | 16.70              |
| P-26 | LL BASIN | 25yr-24hr  | 12.69                   | 5.80               | 0.020                 | 13.53               | 19.06              | 15.34               | 18.57              |
| P-3  | LL BASIN | 10yr-2hr   | 1.63                    | 8.87               | 0.996                 | 2.00                | 19.28              | 2.01                | 19.25              |
| P-3  | LL BASIN | 25yr-24hr  | 12.16                   | 15.71              | 0.996                 | 20.30               | 21.69              | 20.28               | 21.69              |
| P-4  | LL BASIN | 10yr-2hr   | 2.02                    | 5.81               | 1.046                 | 2.01                | 19.25              | 2.00                | 19.24              |
| P-4  | LL BASIN | 25yr-24hr  | 12.13                   | 5.79               | 0.951                 | 20.28               | 21.69              | 20.27               | 21.69              |
| P-5  | LL BASIN | 10yr-2hr   | 2.05                    | 6.87               | 0.454                 | 2.00                | 19.24              | 2.00                | 19.21              |

LINK MIN/MAX REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-5  | LL BASIN | 25yr-24hr  | 11.75                   | 4.01               | 1.707                 | 20.27                       | 21.69                 | 20.19                       | 21.68                 |
| P-6  | LL BASIN | 10yr-2hr   | 1.69                    | 10.56              | 4.875                 | 2.00                        | 19.21                 | 2.00                        | 19.15                 |
| P-6  | LL BASIN | 25yr-24hr  | 11.96                   | 7.76               | -5.201                | 20.19                       | 21.68                 | 20.32                       | 21.67                 |
| P-7  | LL BASIN | 10yr-2hr   | 1.57                    | 3.71               | -0.016                | 1.57                        | 20.41                 | 2.00                        | 19.21                 |
| P-7  | LL BASIN | 25yr-24hr  | 12.22                   | 8.70               | 0.014                 | 20.20                       | 21.68                 | 20.19                       | 21.68                 |
| P-8  | LL BASIN | 10yr-2hr   | 1.70                    | 10.51              | 3.815                 | 2.00                        | 19.15                 | 2.05                        | 19.07                 |
| P-8  | LL BASIN | 25yr-24hr  | 11.95                   | 7.69               | 5.936                 | 20.32                       | 21.67                 | 20.10                       | 21.67                 |
| P-9  | LL BASIN | 10yr-2hr   | 1.87                    | 9.09               | 0.137                 | 2.05                        | 19.07                 | 2.27                        | 18.77                 |
| P-9  | LL BASIN | 25yr-24hr  | 12.00                   | 6.99               | -0.208                | 20.10                       | 21.67                 | 19.23                       | 21.58                 |

LINK MIN/MAX REPORT  
ICPR MODEL- PIPE MODIFICATION REMOVING TAILWATER CONDITION

Modify Pipes & Gutters

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

=====

==== Basins =====

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-1         | Node: POND NO. 1                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 16.590           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

-----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-2         | Node: POND NO. 2                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 23.050           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

-----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-3         | Node: POND NO. 3                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 24.500           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

-----

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-1            | Node: S-1                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-11           | Node: S-11                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.160            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-15           | Node: S-15                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: BASIN S-16 Node: S-16 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 30.00  
Area(ac): 6.010 Time Shift(hrs): 0.00  
Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-17 Node: S-17 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 30.00  
Area(ac): 8.190 Time Shift(hrs): 0.00  
Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-18 Node: S-18 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 30.00  
Area(ac): 6.100 Time Shift(hrs): 0.00  
Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-19 Node: S-19 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 30.00  
Area(ac): 7.610 Time Shift(hrs): 0.00  
Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-2 Node: S-2 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 30.00  
Area(ac): 7.500 Time Shift(hrs): 0.00  
Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: Basin S-20 Node: S-20 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 30.00  
Area(ac): 1.500 Time Shift(hrs): 0.00  
Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-24 Node: S-24 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |
|----------------------------|----------------------------------|
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |
| Area(ac): 4.130            | Time Shift(hrs): 0.00            |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |
| DCIA(%): 0.00              |                                  |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-25           | Node: S-25                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 11.580           | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-26           | Node: S-26                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.540            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-30           | Node: S-30                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.000            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-31           | Node: S-31                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.900            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-32           | Node: S-32                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.720            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                              |                |
|----------------------------|------------------------------|----------------|
| Name: BASIN S-33           | Node: S-33                   | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0        |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00    |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00     |                |
| Area(ac): 5.040            | Time Shift(hrs): 0.00        |                |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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-----
Name: BASIN SW-1                      Node: SWALE-1                      Status: Onsite
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                      Time of Conc(min): 60.00
Area(ac): 2.670                      Time Shift(hrs): 0.00
Curve Number: 39.00                      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

```

-----
Name: BASIN SW-2                      Node: SWALE-2                      Status: Onsite
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                      Time of Conc(min): 60.00
Area(ac): 9.540                      Time Shift(hrs): 0.00
Curve Number: 39.00                      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

```

-----
Name: BASIN SW-3                      Node: SWALE-3                      Status: Onsite
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                      Time of Conc(min): 60.00
Area(ac): 4.980                      Time Shift(hrs): 0.00
Curve Number: 39.00                      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

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-----
Name: BASIN SW-4                      Node: SWALE-4                      Status: Onsite
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                      Time of Conc(min): 60.00
Area(ac): 2.450                      Time Shift(hrs): 0.00
Curve Number: 39.00                      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

```

-----
Name: BASIN WET-1                      Node: WETLAND NO. 1                      Status: Onsite
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                      Time of Conc(min): 60.00
Area(ac): 14.480                      Time Shift(hrs): 0.00
Curve Number: 89.00                      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

PER NRCS- CN 89 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP D)

=====  
Nodes =====  
=====

```

Name: OUTFALL                      Base Flow(cfs): 0.000                      Init Stage(ft): 3.520
Group: LL BASIN                      Warn Stage(ft): 6.750
Type: Time/Stage
  
```

Time(hrs)                      Stage(ft)

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LOPRAINE DRAINAGE SYSTEM ANALYSIS

|        |       |
|--------|-------|
| 0.00   | 3.520 |
| 999.00 | 3.520 |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: POND NO. 1 | Base Flow(cfs): 0.000 | Init Stage(ft): 8.800  |
| Group: LL BASIN  |                       | Warn Stage(ft): 10.500 |
| Type: Stage/Area |                       |                        |

Modify weir elevation from 8.9 to 6.89'.

| Stage(ft) | Area(ac) |
|-----------|----------|
| 4.000     | 0.0150   |
| 5.000     | 0.0173   |
| 5.500     | 0.0491   |
| 6.000     | 0.1429   |
| 6.500     | 0.1976   |
| 7.000     | 0.2452   |
| 7.500     | 0.2756   |
| 8.000     | 0.2988   |
| 8.500     | 0.3146   |
| 9.000     | 0.3304   |
| 9.500     | 0.3424   |
| 10.000    | 0.3589   |
| 10.500    | 0.3670   |
| 11.000    | 0.4235   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: POND NO. 2 | Base Flow(cfs): 0.000 | Init Stage(ft): 6.000  |
| Group: LL BASIN  |                       | Warn Stage(ft): 12.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 2.000     | 0.2059   |
| 3.000     | 0.2754   |
| 4.000     | 0.3489   |
| 5.000     | 0.4214   |
| 6.000     | 0.4765   |
| 7.000     | 0.5348   |
| 8.000     | 0.5972   |
| 8.500     | 0.6280   |
| 9.000     | 0.6557   |
| 9.500     | 0.6947   |
| 10.000    | 0.7375   |
| 10.500    | 0.7560   |
| 11.000    | 0.7760   |
| 11.500    | 0.8230   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: POND NO. 3 | Base Flow(cfs): 0.000 | Init Stage(ft): 6.000  |
| Group: LL BASIN  |                       | Warn Stage(ft): 12.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.3676   |
| 1.000     | 0.4178   |
| 2.000     | 0.4795   |
| 3.000     | 0.5473   |
| 4.000     | 0.6112   |
| 5.000     | 0.6785   |
| 6.000     | 0.7522   |
| 7.000     | 0.8299   |
| 8.000     | 0.9066   |
| 8.500     | 0.9450   |
| 9.000     | 0.9806   |
| 9.500     | 1.0426   |
| 10.000    | 1.1231   |
| 10.500    | 1.2129   |
| 11.000    | 1.3300   |
| 12.000    | 1.5200   |
| 12.500    | 1.6500   |
| 13.000    | 1.8300   |

|                 |                       |                        |
|-----------------|-----------------------|------------------------|
| Name: S-1       | Base Flow(cfs): 0.000 | Init Stage(ft): 17.550 |
| Group: LL BASIN |                       | Warn Stage(ft): 20.500 |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Type: Stage/Area

RIM=20.00'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.550    | 0.0001   |
| 18.000    | 0.0001   |
| 19.150    | 0.0001   |
| 19.500    | 0.1370   |
| 20.100    | 0.1500   |
| 20.500    | 0.2200   |
| 21.000    | 0.3500   |

Name: S-11                      Base Flow(cfs): 0.000                      Init Stage(ft): 16.010  
Group: LL BASIN                      Warn Stage(ft): 21.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 16.010    | 0.0001   |
| 18.000    | 0.0001   |
| 20.110    | 0.0001   |
| 20.500    | 0.2350   |
| 21.000    | 0.5420   |

Name: S-14                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.900  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.900    | 0.0001   |
| 15.000    | 0.0001   |
| 19.450    | 0.0001   |
| 20.000    | 0.4500   |
| 20.500    | 0.5400   |

Name: S-15                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.190  
Group: LL BASIN                      Warn Stage(ft): 18.590  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.190    | 0.0001   |
| 15.000    | 0.0001   |
| 17.650    | 0.0200   |
| 18.090    | 0.1590   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-16                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.060  
Group: LL BASIN                      Warn Stage(ft): 18.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.060    | 0.0001   |
| 15.000    | 0.0001   |
| 17.950    | 0.0200   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-17                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.000  
Group: LL BASIN                      Warn Stage(ft): 17.380  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |
| 16.880    | 0.1377   |
| 17.000    | 0.1720   |
| 17.880    | 0.2750   |

Name: S-18                      Base Flow(cfs): 0.000                      Init Stage(ft): 11.550  
Group: LL BASIN                      Warn Stage(ft): 17.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 11.550    | 0.0001   |
| 15.000    | 0.0001   |
| 16.910    | 0.1377   |
| 17.410    | 0.1720   |
| 17.910    | 0.2750   |

Name: S-19                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.720  
Group: LL BASIN                      Warn Stage(ft): 18.400  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.720    | 0.0001   |
| 14.000    | 0.0001   |
| 17.900    | 0.1377   |
| 18.400    | 0.1720   |
| 18.900    | 0.2750   |

Name: S-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 17.130  
Group: LL BASIN                      Warn Stage(ft): 19.960  
Type: Stage/Area

RIM=19.46'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.130    | 0.0001   |
| 17.760    | 0.0001   |
| 19.460    | 0.0001   |
| 20.060    | 0.1370   |
| 21.000    | 0.2290   |

Name: S-20                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.500  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.500    | 0.0001   |
| 14.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.1720   |
| 18.220    | 0.2750   |

Name: S-21                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.350  
Group: LL BASIN                      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.350    | 0.0001   |
| 14.000    | 0.0001   |
| 16.000    | 0.0060   |
| 16.500    | 0.0270   |
| 17.050    | 0.0360   |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: S-22                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.050  
Group: LL BASIN                      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.050    | 0.0001   |
| 14.000    | 0.0001   |
| 16.550    | 0.0060   |
| 17.050    | 0.0270   |
| 17.550    | 0.0360   |

Name: S-24                      Base Flow(cfs): 0.000                      Init Stage(ft): 9.660  
Group: LL BASIN                      Warn Stage(ft): 17.440  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 9.660     | 0.0001   |
| 14.000    | 0.0001   |
| 16.960    | 0.1377   |
| 17.440    | 0.1720   |
| 17.960    | 0.2750   |

Name: S-25                      Base Flow(cfs): 0.000                      Init Stage(ft): 8.020  
Group: LL BASIN                      Warn Stage(ft): 17.820  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 8.020     | 0.0001   |
| 15.000    | 0.0001   |
| 17.320    | 0.1377   |
| 17.820    | 0.1720   |
| 18.320    | 0.2750   |

Name: S-26                      Base Flow(cfs): 0.000                      Init Stage(ft): 6.900  
Group: LL BASIN                      Warn Stage(ft): 16.760  
Type: Stage/Area

Remove Structure S-27, S-28, P-22, and P-23. Straighten pipe run and replace with one 54" RCP.

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.710     | 0.0008   |
| 14.000    | 0.0008   |
| 16.100    | 0.0008   |
| 16.260    | 0.1377   |
| 16.760    | 0.1720   |
| 17.260    | 0.3250   |

Name: S-27                      Base Flow(cfs): 0.000                      Init Stage(ft): 5.960  
Group: LL BASIN                      Plunge Factor: 1.00                      Warn Stage(ft): 16.500  
Type: Manhole, Flat Floor

| Stage(ft) | Area(ac) |
|-----------|----------|
| 5.960     | 0.0080   |
| 16.500    | 0.0080   |

Name: S-30                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.220  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
|-----------|----------|

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|        |        |
|--------|--------|
| 13.220 | 0.0001 |
| 15.000 | 0.0001 |
| 17.220 | 0.1377 |
| 17.720 | 0.2750 |
| 18.220 | 0.3310 |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-31       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.260 |
| Group: LL BASIN  |                       | Warn Stage(ft): 16.770 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.260    | 0.0001   |
| 14.000    | 0.0001   |
| 16.270    | 0.1377   |
| 16.770    | 0.1720   |
| 17.270    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-32       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.780 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.470 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.780    | 0.0001   |
| 14.000    | 0.0001   |
| 16.970    | 0.1377   |
| 17.470    | 0.1720   |
| 17.970    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-33       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.460 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.590 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.460    | 0.0001   |
| 14.000    | 0.0001   |
| 17.090    | 0.1377   |
| 17.590    | 0.1720   |
| 18.090    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-1    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.900 |
| Group: LL BASIN  |                       | Warn Stage(ft): 20.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.490    | 0.0003   |
| 16.000    | 0.0004   |
| 16.500    | 0.0004   |
| 17.000    | 0.0029   |
| 17.500    | 0.0063   |
| 18.000    | 0.0100   |
| 19.000    | 0.0230   |
| 19.500    | 0.0551   |
| 20.100    | 0.8030   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-2    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.050 |
| Group: LL BASIN  |                       | Warn Stage(ft): 19.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.050    | 0.0010   |
| 15.500    | 0.0100   |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|        |        |
|--------|--------|
| 16.000 | 0.0124 |
| 16.500 | 0.0288 |
| 17.000 | 0.0484 |
| 17.500 | 0.0650 |
| 18.000 | 0.1890 |
| 18.500 | 0.2290 |
| 19.000 | 0.3130 |

```

Name: SWALE-3          Base Flow(cfs): 0.000      Init Stage(ft): 15.370
Group: LL BASIN                               Warn Stage(ft): 19.000
Type: Stage/Area
  
```

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.370    | 0.0125   |
| 16.500    | 0.0211   |
| 17.000    | 0.0283   |
| 17.500    | 0.0355   |
| 18.000    | 0.0403   |
| 18.500    | 0.0502   |
| 19.000    | 0.3040   |
| 19.500    | 0.5500   |

```

Name: SWALE-4          Base Flow(cfs): 0.000      Init Stage(ft): 14.410
Group: LL BASIN                               Warn Stage(ft): 20.500
Type: Stage/Area
  
```

| Stage(ft) | Area(ac) |
|-----------|----------|
| 14.410    | 0.0010   |
| 15.250    | 0.0032   |
| 15.500    | 0.0038   |
| 16.000    | 0.0051   |
| 16.500    | 0.0064   |
| 17.000    | 0.0077   |
| 17.500    | 0.0096   |
| 18.000    | 0.0118   |
| 18.500    | 0.0230   |
| 19.000    | 0.1580   |
| 20.000    | 0.4500   |

```

Name: WETLAND NO. 1    Base Flow(cfs): 0.000      Init Stage(ft): 4.000
Group: LL BASIN                               Warn Stage(ft): 6.500
Type: Stage/Area
  
```

| Stage(ft) | Area(ac) |
|-----------|----------|
| 3.660     | 0.0835   |
| 4.500     | 0.4620   |
| 5.000     | 0.6607   |
| 5.500     | 0.8112   |
| 6.000     | 0.9548   |
| 6.500     | 1.0644   |
| 7.000     | 1.1702   |
| 7.500     | 1.2500   |

=====  
Pipes  
=====

```

Name: P-22              From Node: S-27          Length(ft): 45.00
Group: LL BASIN          To Node: POND NO. 1        Count: 3
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.00
                                Exit Loss Coef: 1.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None

      UPSTREAM      DOWNSTREAM
Geometry: Circular  Circular
Span(in): 36.00     36.00
Rise(in): 36.00     36.00
Invert(ft): 5.960   5.130
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000  0.000
Bot Clip(in): 0.000  0.000
  
```

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

---

|                       |                       |                                      |
|-----------------------|-----------------------|--------------------------------------|
| Name: P-27            | From Node: POND NO. 2 | Length(ft): 40.00                    |
| Group: LL BASIN       | To Node: POND NO. 3   | Count: 2                             |
|                       |                       | Friction Equation: Automatic         |
|                       |                       | Solution Algorithm: Most Restrictive |
|                       |                       | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM            | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular              | Exit Loss Coef: 1.00                 |
| Span(in): 36.00       | 36.00                 | Bend Loss Coef: 0.00                 |
| Rise(in): 36.00       | 36.00                 | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 7.600     | 7.350                 | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.012000 | 0.012000              | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000                 |                                      |
| Bot Clip(in): 0.000   | 0.000                 |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

---

|                       |                       |                                      |
|-----------------------|-----------------------|--------------------------------------|
| Name: P-28            | From Node: POND NO. 2 | Length(ft): 89.00                    |
| Group: LL BASIN       | To Node: POND NO. 3   | Count: 2                             |
|                       |                       | Friction Equation: Automatic         |
|                       |                       | Solution Algorithm: Most Restrictive |
|                       |                       | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM            | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular              | Exit Loss Coef: 1.00                 |
| Span(in): 36.00       | 36.00                 | Bend Loss Coef: 0.00                 |
| Rise(in): 36.00       | 36.00                 | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 2.230     | 2.210                 | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.012000 | 0.012000              | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000                 |                                      |
| Bot Clip(in): 0.000   | 0.000                 |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

---

|                       |                        |                                      |
|-----------------------|------------------------|--------------------------------------|
| Name: P-29            | From Node: POND NO. 3  | Length(ft): 65.00                    |
| Group: LL BASIN       | To Node: WETLAND NO. 1 | Count: 1                             |
|                       |                        | Friction Equation: Automatic         |
|                       |                        | Solution Algorithm: Most Restrictive |
|                       |                        | Flow: Both                           |
| UPSTREAM              | DOWNSTREAM             | Entrance Loss Coef: 0.00             |
| Geometry: Circular    | Circular               | Exit Loss Coef: 1.00                 |
| Span(in): 36.00       | 36.00                  | Bend Loss Coef: 0.00                 |
| Rise(in): 36.00       | 36.00                  | Outlet Ctrl Spec: Use dc or tw       |
| Invert(ft): 7.030     | 5.670                  | Inlet Ctrl Spec: Use dc              |
| Manning's N: 0.022000 | 0.022000               | Stabilizer Option: None              |
| Top Clip(in): 0.000   | 0.000                  |                                      |
| Bot Clip(in): 0.000   | 0.000                  |                                      |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

---

|                 |                    |                              |
|-----------------|--------------------|------------------------------|
| Name: P-3       | From Node: SWALE-1 | Length(ft): 195.00           |
| Group: LL BASIN | To Node: SWALE-2   | Count: 1                     |
|                 |                    | Friction Equation: Automatic |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                                                                                                                                                                   |                                                                                  |                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 15.490<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>15.050<br>0.012000<br>0.000<br>0.000 | Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

---

|                               |                                                 |                                                                                                                                                                                                                                                                                         |
|-------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: P-30<br>Group: LL BASIN | From Node: POND NO. 3<br>To Node: WETLAND NO. 1 | Length(ft): 66.00<br>Count: 1<br>Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                  |                                                                                 |                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 6.500<br>Manning's N: 0.022000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>5.620<br>0.022000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                               |                                              |                                                                                                                                                                                                                                                                                         |
|-------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: P-31<br>Group: LL BASIN | From Node: WETLAND NO. 1<br>To Node: OUTFALL | Length(ft): 39.00<br>Count: 1<br>Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                  |                                                                                 |                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 48.00<br>Rise(in): 48.00<br>Invert(ft): 3.660<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>48.00<br>48.00<br>3.520<br>0.012000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                              |                                        |                                                                                                                                                                                                                                                                                         |
|------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: P-4<br>Group: LL BASIN | From Node: SWALE-2<br>To Node: SWALE-3 | Length(ft): 20.16<br>Count: 1<br>Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                   |                                                                                  |                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 15.560<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>15.370<br>0.012000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

```

-----
Name: P-5                      From Node: SWALE-3      Length(ft): 307.00
Group: LL BASIN                To Node: SWALE-4      Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.00
                                Exit Loss Coef: 1.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None

                                UPSTREAM    DOWNSTREAM
Geometry: Circular              Circular
Span(in): 36.00                 36.00
Rise(in): 36.00                 36.00
Invert(ft): 15.590             14.050
Manning's N: 0.012000          0.012000
Top Clip(in): 0.000             0.000
Bot Clip(in): 0.000             0.000

```

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

```

-----
Name: P-6                      From Node: SWALE-4      Length(ft): 5.00
Group: LL BASIN                To Node: S-14          Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.00
                                Exit Loss Coef: 1.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None

                                UPSTREAM    DOWNSTREAM
Geometry: Circular              Circular
Span(in): 30.00                 30.00
Rise(in): 30.00                 30.00
Invert(ft): 14.410             14.080
Manning's N: 0.012000          0.012000
Top Clip(in): 0.000             0.000
Bot Clip(in): 0.000             0.000

```

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Smooth-wall CPP

==== Drop Structures =====

```

-----
Name: P-1                      From Node: S-1          Length(ft): 33.00
Group: LL BASIN                To Node: S-2          Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.000
                                Exit Loss Coef: 1.000
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Solution Incs: 10

                                UPSTREAM    DOWNSTREAM
Geometry: Circular              Circular
Span(in): 18.00                 18.00
Rise(in): 18.00                 18.00
Invert(ft): 17.550             17.130
Manning's N: 0.012000          0.012000
Top Clip(in): 0.000             0.000
Bot Clip(in): 0.000             0.000

```

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 18" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-1 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Span(in): 16.00                      Invert(ft): 19.160  
Rise(in): 10.00                      Control Elev(ft): 19.160

\*\*\* Weir 2 of 2 for Drop Structure P-1 \*\*\*

Count: 1                      Bottom Clip(in): 0.000  
Type: Horizontal                      Top Clip(in): 0.000  
Flow: Both                      Weir Disc Coef: 3.200  
Geometry: Rectangular                      Orifice Disc Coef: 0.600  
  
Span(in): 24.00                      Invert(ft): 20.000  
Rise(in): 18.00                      Control Elev(ft): 20.000

TABLE

Name: P-10                      From Node: S-16                      Length(ft): 268.95  
Group: LL BASIN                      To Node: S-17                      Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 42.00       | 42.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 42.00       | 42.00      | Flow: Both                           |
| Invert(ft): 12.860    | 12.100     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 2 for Drop Structure P-10 \*\*\*

Count: 1                      Bottom Clip(in): 0.000  
Type: Vertical: Mavis                      Top Clip(in): 0.000  
Flow: Both                      Weir Disc Coef: 3.200  
Geometry: Rectangular                      Orifice Disc Coef: 0.600  
  
Span(in): 80.00                      Invert(ft): 17.580  
Rise(in): 4.00                      Control Elev(ft): 17.580

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-10 \*\*\*

Count: 1                      Bottom Clip(in): 0.000  
Type: Horizontal                      Top Clip(in): 0.000  
Flow: Both                      Weir Disc Coef: 3.200  
Geometry: Rectangular                      Orifice Disc Coef: 0.600  
  
Span(in): 42.00                      Invert(ft): 17.580  
Rise(in): 48.00                      Control Elev(ft): 17.580

TABLE

Name: P-11                      From Node: S-17                      Length(ft): 49.90  
Group: LL BASIN                      To Node: S-18                      Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 48.00       | 48.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 48.00       | 48.00      | Flow: Both                           |
| Invert(ft): 12.000    | 11.640     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 2 for Drop Structure P-11 \*\*\*

Count: 1                      Bottom Clip(in): 0.000  
Type: Vertical: Mavis                      Top Clip(in): 0.000

TABLE

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
  
Span(in): 144.00 Invert(ft): 15.990  
Rise(in): 6.00 Control Elev(ft): 15.990

\*\*\* Weir 2 of 2 for Drop Structure P-11 \*\*\*

Count: 1 Bottom Clip(in): 0.000  
Type: Horizontal Top Clip(in): 0.000  
Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
  
Span(in): 42.00 Invert(ft): 15.990  
Rise(in): 48.00 Control Elev(ft): 15.990

TABLE

Name: P-12 From Node: S-18 Length(ft): 263.32  
Group: LL BASIN To Node: S-19 Count: 2

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 11.550    | 10.820     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 2 for Drop Structure P-12 \*\*\*

Count: 1 Bottom Clip(in): 0.000  
Type: Vertical: Mavis Top Clip(in): 0.000  
Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
  
Span(in): 72.00 Invert(ft): 16.040  
Rise(in): 6.00 Control Elev(ft): 16.040

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-12 \*\*\*

Count: 1 Bottom Clip(in): 0.000  
Type: Horizontal Top Clip(in): 0.000  
Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
  
Span(in): 42.00 Invert(ft): 16.040  
Rise(in): 48.00 Control Elev(ft): 16.040

TABLE

Name: P-13 From Node: S-19 Length(ft): 54.38  
Group: LL BASIN To Node: S-20 Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.720    | 10.600     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-13 \*\*\*

TABLE

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 132.00  
Rise(in): 4.00

Invert(ft): 16.690  
Control Elev(ft): 16.690

\*\*\* Weir 2 of 2 for Drop Structure P-13 \*\*\*

TABLE

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 42.00  
Rise(in): 48.00

Invert(ft): 16.690  
Control Elev(ft): 16.690

Name: P-14  
Group: LL BASIN

From Node: S-20  
To Node: S-21

Length(ft): 131.23  
Count: 1

UPSTREAM  
Geometry: Circular  
Span(in): 48.00  
Rise(in): 48.00  
Invert(ft): 10.600  
Manning's N: 0.012000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTEAM  
Circular  
48.00  
48.00  
10.300  
0.012000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-14 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 84.00  
Rise(in): 6.00

Invert(ft): 16.590  
Control Elev(ft): 16.590

\*\*\* Weir 2 of 2 for Drop Structure P-14 \*\*\*

TABLE

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600

Span(in): 42.00  
Rise(in): 48.00

Invert(ft): 16.590  
Control Elev(ft): 16.590

Name: P-15  
Group: LL BASIN

From Node: S-21  
To Node: S-22

Length(ft): 32.81  
Count: 2

UPSTREAM  
Geometry: Circular  
Span(in): 48.00  
Rise(in): 48.00  
Invert(ft): 10.300  
Manning's N: 0.012000  
Top Clip(in): 0.000  
Bot Clip(in): 0.000

DOWNSTEAM  
Circular  
48.00  
48.00  
10.200  
0.012000  
0.000  
0.000

Friction Equation: Automatic  
Solution Algorithm: Most Restrictive  
Flow: Both  
Entrance Loss Coef: 0.000  
Exit Loss Coef: 1.000  
Outlet Ctrl Spec: Use dc or tw  
Inlet Ctrl Spec: Use dc  
Solution Incs: 10

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-15 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 42.00       | Invert(ft): 16.000       |       |
| Rise(in): 48.00       | Control Elev(ft): 16.000 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-16            | From Node: S-30 | Length(ft): 30.64                    |
| Group: LL BASIN       | To Node: S-24   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 24.00       | 24.00           | Flow: Both                           |
| Rise(in): 24.00       | 24.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.220    | 12.900          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-16 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 67.00       | Invert(ft): 16.340       |       |
| Rise(in): 5.40        | Control Elev(ft): 16.340 |       |

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-17            | From Node: S-22 | Length(ft): 135.00                   |
| Group: LL BASIN       | To Node: S-24   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00           | Flow: Both                           |
| Rise(in): 48.00       | 48.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.200    | 10.150          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe from 30" CPP to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-17 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 36.00       | Invert(ft): 16.550       |       |
| Rise(in): 42.00       | Control Elev(ft): 16.550 |       |

|                    |                 |                                      |
|--------------------|-----------------|--------------------------------------|
| Name: P-19         | From Node: S-24 | Length(ft): 188.85                   |
| Group: LL BASIN    | To Node: S-25   | Count: 2                             |
| UPSTREAM           | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00    | 36.00           | Flow: Both                           |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |          |                                |
|-----------------------|----------|--------------------------------|
| Rise(in): 36.00       | 36.00    | Entrance Loss Coef: 0.000      |
| Invert(ft): 9.660     | 8.100    | Exit Loss Coef: 1.000          |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000    | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000    | Solution Incs: 10              |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified weir from 60"x7" to a FDOT Type 4 asymmetrical curb inlet with 144"x6" opening. Adjusted weir elevation to account Modified pipe size to a 2-48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-19 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 144.00      | Invert(ft): 16.960       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.960 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-19 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 48.00       | Invert(ft): 16.960       |       |
| Rise(in): 54.00       | Control Elev(ft): 16.960 |       |

|                        |                  |                                      |
|------------------------|------------------|--------------------------------------|
| Name: P-2              | From Node: S-2   | Length(ft): 201.27                   |
| Group: LL BASIN        | To Node: SWALE-1 | Count: 1                             |
| UPSTREAM               | DOWNSTREAM       | Friction Equation: Automatic         |
| Geometry: Horz Ellipse | Horz Ellipse     | Solution Algorithm: Most Restrictive |
| Span(in): 36.00        | 36.00            | Flow: Both                           |
| Rise(in): 36.00        | 36.00            | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.130     | 15.900           | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000  | 0.012000         | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000    | 0.000            | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000    | 0.000            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Modify pipe to 36" CPP.

\*\*\* Weir 1 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 20.00       | Invert(ft): 17.790       |       |
| Rise(in): 8.00        | Control Elev(ft): 17.790 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 19.460       |       |
| Rise(in): 18.00       | Control Elev(ft): 19.460 |       |

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-20      | From Node: S-25 | Length(ft): 342.87 |
| Group: LL BASIN | To Node: S-26   | Count: 2           |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 8.020     | 6.710      | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 2-48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-20 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 54.00       | Invert(ft): 16.520       |       |
| Rise(in): 5.00        | Control Elev(ft): 16.520 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-20 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 42.00       | Invert(ft): 16.520       |       |
| Rise(in): 48.00       | Control Elev(ft): 16.520 |       |

---

|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-21      | From Node: S-26 | Length(ft): 40.00 |
| Group: LL BASIN | To Node: S-27   | Count: 3          |

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 6.710     | 5.960      | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 2 for Drop Structure P-21 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 144.00      | Invert(ft): 15.790       |       |
| Rise(in): 6.00        | Control Elev(ft): 15.790 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-21 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 42.00       | Invert(ft): 15.790       |       |
| Rise(in): 48.00       | Control Elev(ft): 15.790 |       |

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|            |                 |                   |
|------------|-----------------|-------------------|
| Name: P-24 | From Node: S-31 | Length(ft): 31.80 |
|------------|-----------------|-------------------|

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Group: LL BASIN

To Node: S-26

Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 18.00       | 18.00      | Flow: Both                           |
| Rise(in): 18.00       | 18.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.260    | 12.160     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-24 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 90.00       | Invert(ft): 15.840       |
| Rise(in): 5.00        | Control Elev(ft): 15.840 |

Name: P-25  
Group: LL BASIN

From Node: S-32  
To Node: S-33

Length(ft): 30.26  
Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 18.00       | 18.00      | Flow: Both                           |
| Rise(in): 18.00       | 18.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.780    | 12.920     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-25 \*\*\*

TABLE

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 96.00       | Invert(ft): 16.500       |
| Rise(in): 6.00        | Control Elev(ft): 16.500 |

Name: P-26  
Group: LL BASIN

From Node: S-33  
To Node: S-26

Length(ft): 415.95  
Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 24.00       | 24.00      | Flow: Both                           |
| Rise(in): 24.00       | 24.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.460    | 11.180     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 2 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 55.00       | Invert(ft): 16.620       |
| Rise(in): 4.50        | Control Elev(ft): 16.620 |

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.620       |
| Rise(in): 36.00       | Control Elev(ft): 16.620 |

TABLE

|                       |                  |                                      |
|-----------------------|------------------|--------------------------------------|
| Name: P-7             | From Node: S-11  | Length(ft): 607.63                   |
| Group: LL BASIN       | To Node: SWALE-4 | Count: 1                             |
| UPSTREAM              | DOWNSTREAM       | Friction Equation: Automatic         |
| Geometry: Circular    | Circular         | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00            | Flow: Both                           |
| Rise(in): 30.00       | 30.00            | Entrance Loss Coef: 0.000            |
| Invert(ft): 16.010    | 15.250           | Exit Loss Coef: 1.000                |
| Manning's N: 0.022000 | 0.022000         | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000            | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 30" CPP.

\*\*\* Weir 1 of 1 for Drop Structure P-7 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 20.110       |
| Rise(in): 18.00       | Control Elev(ft): 20.110 |

TABLE

|                       |                 |                                      |
|-----------------------|-----------------|--------------------------------------|
| Name: P-8             | From Node: S-14 | Length(ft): 143.04                   |
| Group: LL BASIN       | To Node: S-15   | Count: 1                             |
| UPSTREAM              | DOWNSTREAM      | Friction Equation: Automatic         |
| Geometry: Circular    | Circular        | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00           | Flow: Both                           |
| Rise(in): 36.00       | 36.00           | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.900    | 13.300          | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000        | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000           | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000           | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-8 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |

TABLE

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Span(in): 18.00                      Invert(ft): 19.450  
Rise(in): 24.00                      Control Elev(ft): 19.450

Name: P-9                      From Node: S-15                      Length(ft): 31.11  
Group: LL BASIN                      To Node: S-16                      Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.190    | 13.050     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-9 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 90.00       | Invert(ft): 17.610       |
| Rise(in): 5.50        | Control Elev(ft): 17.610 |

TABLE

=====

Name: WEIR-1                      From Node: POND NO. 1  
Group: LL BASIN                      To Node: POND NO. 2  
Flow: Both                      Count: 1  
Type: Vertical: Mavis                      Geometry: Rectangular

Span(in): 213.60  
Rise(in): 48.00  
Invert(ft): 8.800  
Control Elevation(ft): 8.800

TABLE

Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Discharge Coef: 3.200  
Orifice Discharge Coef: 0.600

=====

Name: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Override Defaults: Yes  
Storm Duration(hrs): 2.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 4.00

|           |                |
|-----------|----------------|
| Time(hrs) | Print Inc(min) |
| 2.000     | 15.00          |

Name: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 10.80

INPUT REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 24.000    | 15.00          |

==== Routing Simulations =====

Name: 10yr-2hr                      Hydrology Sim: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI  
Execute: Yes                      Restart: No                      Patch: No  
Alternative: No  
Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 4.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 4.000     | 10.000         |

| Group    | Run |
|----------|-----|
| LL BASIN | Yes |

Name: 25yr-24hr                      Hydrology Sim: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI  
Execute: Yes                      Restart: No                      Patch: No  
Alternative: No  
Max Delta Z(ft): 1.00                      Delta Z Factor: 0.00500  
Time Step Optimizer: 10.000  
Start Time(hrs): 0.000                      End Time(hrs): 25.00  
Min Calc Time(sec): 0.5000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 15.000         |

| Group    | Run |
|----------|-----|
| LL BASIN | Yes |

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| OUTFALL    | LL BASIN | 10yr-2hr   | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 40                      | 2.00                      | 26.51                | 0.00                       | 0.00                  |
| OUTFALL    | LL BASIN | 25yr-24hr  | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 40                      | 14.10                     | 128.63               | 0.00                       | 0.00                  |
| POND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 9.46               | 10.50                  | -0.0029                  | 14885                   | 2.00                      | 31.78                | 2.00                       | 30.66                 |
| POND NO. 1 | LL BASIN | 25yr-24hr  | 13.08                    | 13.30              | 10.50                  | 0.0040                   | 29772                   | 12.75                     | 126.02               | 13.18                      | 159.47                |
| POND NO. 2 | LL BASIN | 10yr-2hr   | 2.14                     | 7.94               | 12.00                  | 0.0006                   | 25942                   | 2.00                      | 45.83                | 2.00                       | 25.92                 |
| POND NO. 2 | LL BASIN | 25yr-24hr  | 13.80                    | 13.25              | 12.00                  | 0.0050                   | 43020                   | 13.18                     | 200.17               | 12.88                      | 118.85                |
| POND NO. 3 | LL BASIN | 10yr-2hr   | 2.18                     | 7.91               | 12.00                  | 0.0005                   | 39480                   | 2.00                      | 42.05                | 2.18                       | 15.21                 |
| POND NO. 3 | LL BASIN | 25yr-24hr  | 13.87                    | 12.99              | 12.00                  | 0.0030                   | 79590                   | 12.75                     | 181.22               | 12.95                      | 120.85                |
| S-1        | LL BASIN | 10yr-2hr   | 1.68                     | 20.20              | 20.50                  | 0.0056                   | 7291                    | 1.50                      | 6.34                 | 1.70                       | 4.72                  |
| S-1        | LL BASIN | 25yr-24hr  | 13.00                    | 22.37              | 20.50                  | -0.0017                  | 30742                   | 12.50                     | 24.77                | 13.27                      | 9.02                  |
| S-11       | LL BASIN | 10yr-2hr   | 1.57                     | 20.41              | 21.00                  | 0.0076                   | 7915                    | 1.50                      | 4.12                 | 1.57                       | 3.71                  |
| S-11       | LL BASIN | 25yr-24hr  | 12.86                    | 21.18              | 21.00                  | 0.0012                   | 28362                   | 12.50                     | 16.12                | 12.23                      | 9.20                  |
| S-14       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 20.50                  | 0.0254                   | 113                     | 1.24                      | 6.01                 | 0.00                       | 0.00                  |
| S-14       | LL BASIN | 25yr-24hr  | 15.42                    | 20.91              | 20.50                  | 0.0098                   | 26774                   | 19.91                     | 13.27                | 19.96                      | 14.34                 |
| S-15       | LL BASIN | 10yr-2hr   | 1.55                     | 17.99              | 18.59                  | 0.0058                   | 5603                    | 1.50                      | 4.74                 | 1.56                       | 4.40                  |
| S-15       | LL BASIN | 25yr-24hr  | 13.93                    | 20.49              | 18.59                  | 0.0017                   | 20790                   | 12.50                     | 21.77                | 18.83                      | 15.85                 |
| S-16       | LL BASIN | 10yr-2hr   | 1.51                     | 17.84              | 18.41                  | 0.0073                   | 838                     | 1.50                      | 9.01                 | 1.51                       | 9.00                  |
| S-16       | LL BASIN | 25yr-24hr  | 13.25                    | 20.17              | 18.41                  | 0.0016                   | 19306                   | 12.50                     | 24.51                | 17.37                      | 17.72                 |
| S-17       | LL BASIN | 10yr-2hr   | 2.00                     | 17.53              | 17.38                  | 0.0081                   | 10213                   | 1.50                      | 15.50                | 1.55                       | 11.99                 |
| S-17       | LL BASIN | 25yr-24hr  | 13.21                    | 20.09              | 17.38                  | 0.0016                   | 23237                   | 12.50                     | 36.24                | 15.43                      | 21.54                 |
| S-18       | LL BASIN | 10yr-2hr   | 2.00                     | 17.52              | 17.41                  | 0.0076                   | 8455                    | 1.54                      | 16.55                | 1.54                       | 14.16                 |
| S-18       | LL BASIN | 25yr-24hr  | 13.21                    | 20.01              | 17.41                  | 0.0016                   | 30804                   | 12.50                     | 38.81                | 14.67                      | 26.38                 |
| S-19       | LL BASIN | 10yr-2hr   | 2.00                     | 17.48              | 18.40                  | 0.0082                   | 5356                    | 1.54                      | 19.89                | 1.53                       | 18.56                 |
| S-19       | LL BASIN | 25yr-24hr  | 13.17                    | 19.81              | 18.40                  | 0.0015                   | 20141                   | 12.50                     | 42.95                | 12.54                      | 32.28                 |
| S-2        | LL BASIN | 10yr-2hr   | 1.67                     | 19.77              | 19.96                  | 0.0031                   | 3113                    | 1.56                      | 9.70                 | 1.69                       | 9.55                  |
| S-2        | LL BASIN | 25yr-24hr  | 12.73                    | 21.70              | 19.96                  | 0.0016                   | 12958                   | 12.50                     | 29.83                | 12.59                      | 21.99                 |
| S-20       | LL BASIN | 10yr-2hr   | 2.00                     | 17.43              | 17.72                  | 0.0039                   | 6628                    | 1.53                      | 19.71                | 1.58                       | 15.78                 |
| S-20       | LL BASIN | 25yr-24hr  | 13.17                    | 19.57              | 17.72                  | 0.0014                   | 24122                   | 12.51                     | 36.79                | 14.02                      | 34.20                 |
| S-21       | LL BASIN | 10yr-2hr   | 2.00                     | 17.37              | 17.05                  | 0.0461                   | 1799                    | 1.58                      | 15.78                | 1.58                       | 14.11                 |
| S-21       | LL BASIN | 25yr-24hr  | 13.05                    | 19.29              | 17.05                  | 0.0275                   | 3165                    | 14.02                     | 34.20                | 14.00                      | 34.51                 |
| S-22       | LL BASIN | 10yr-2hr   | 2.00                     | 17.33              | 17.05                  | 0.0597                   | 1399                    | 1.58                      | 14.11                | 2.01                       | 11.68                 |
| S-22       | LL BASIN | 25yr-24hr  | 12.97                    | 19.07              | 17.05                  | 0.0360                   | 2757                    | 14.00                     | 34.51                | 13.97                      | 34.77                 |
| S-24       | LL BASIN | 10yr-2hr   | 2.00                     | 17.24              | 17.44                  | 0.0071                   | 6370                    | 1.63                      | 14.50                | 2.00                       | 13.61                 |
| S-24       | LL BASIN | 25yr-24hr  | 12.76                    | 18.64              | 17.44                  | -0.0019                  | 17829                   | 13.58                     | 41.09                | 13.46                      | 43.35                 |
| S-25       | LL BASIN | 10yr-2hr   | 1.99                     | 16.95              | 17.82                  | 0.0148                   | 5037                    | 1.96                      | 17.49                | 1.99                       | 17.45                 |
| S-25       | LL BASIN | 25yr-24hr  | 12.65                    | 18.35              | 17.82                  | 0.0026                   | 12242                   | 12.50                     | 62.64                | 12.66                      | 59.06                 |
| S-26       | LL BASIN | 10yr-2hr   | 2.00                     | 16.18              | 16.76                  | 0.0166                   | 2945                    | 2.00                      | 20.96                | 2.00                       | 20.89                 |

NODE MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name          | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft <sup>2</sup> | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|---------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| S-26          | LL BASIN | 25yr-24hr  | 12.63                    | 16.91              | 16.76                  | 0.0059                   | 9445                                | 12.60                     | 83.58                | 12.63                      | 83.50                 |
| S-27          | LL BASIN | 10yr-2hr   | 2.00                     | 9.49               | 16.50                  | 0.0830                   | 359                                 | 2.00                      | 20.89                | 2.00                       | 21.08                 |
| S-27          | LL BASIN | 25yr-24hr  | 13.70                    | 13.56              | 16.50                  | 0.0830                   | 359                                 | 12.63                     | 83.50                | 12.63                      | 83.07                 |
| S-30          | LL BASIN | 10yr-2hr   | 2.00                     | 17.25              | 17.72                  | 0.0038                   | 6316                                | 1.50                      | 2.40                 | 1.62                       | 1.30                  |
| S-30          | LL BASIN | 25yr-24hr  | 12.90                    | 18.76              | 17.72                  | -0.0021                  | 17045                               | 12.50                     | 9.37                 | 13.30                      | 4.86                  |
| S-31          | LL BASIN | 10yr-2hr   | 2.00                     | 16.19              | 16.77                  | 0.0037                   | 5788                                | 1.50                      | 2.32                 | 2.04                       | 1.38                  |
| S-31          | LL BASIN | 25yr-24hr  | 12.69                    | 17.34              | 16.77                  | -0.0018                  | 12563                               | 12.50                     | 9.06                 | 12.73                      | 6.04                  |
| S-32          | LL BASIN | 10yr-2hr   | 2.00                     | 16.76              | 17.47                  | 0.0035                   | 5565                                | 1.50                      | 2.97                 | 2.02                       | 0.81                  |
| S-32          | LL BASIN | 25yr-24hr  | 12.92                    | 18.61              | 17.47                  | -0.0034                  | 17765                               | 12.50                     | 11.62                | 13.53                      | 5.84                  |
| S-33          | LL BASIN | 10yr-2hr   | 2.00                     | 16.74              | 17.59                  | 0.0046                   | 5323                                | 1.50                      | 4.03                 | 2.00                       | 1.98                  |
| S-33          | LL BASIN | 25yr-24hr  | 12.78                    | 18.40              | 17.59                  | -0.0029                  | 14782                               | 12.50                     | 18.67                | 12.86                      | 12.77                 |
| SWALE-1       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 20.00                  | -0.0016                  | 1443                                | 1.69                      | 9.59                 | 1.70                       | 8.82                  |
| SWALE-1       | LL BASIN | 25yr-24hr  | 15.60                    | 21.11              | 20.00                  | -0.0016                  | 90042                               | 12.63                     | 24.31                | 12.20                      | 16.64                 |
| SWALE-2       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 19.00                  | 0.0016                   | 14768                               | 1.70                      | 8.99                 | 1.29                       | 4.76                  |
| SWALE-2       | LL BASIN | 25yr-24hr  | 15.68                    | 21.09              | 19.00                  | 0.0016                   | 28928                               | 12.63                     | 20.22                | 12.63                      | 12.20                 |
| SWALE-3       | LL BASIN | 10yr-2hr   | 3.99                     | 19.15              | 19.00                  | 0.0017                   | 16539                               | 1.29                      | 4.77                 | 1.28                       | 3.13                  |
| SWALE-3       | LL BASIN | 25yr-24hr  | 15.72                    | 21.07              | 19.00                  | 0.0014                   | 57524                               | 12.75                     | 17.13                | 20.05                      | 10.67                 |
| SWALE-4       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 20.50                  | 0.0048                   | 8848                                | 1.28                      | 5.30                 | 1.24                       | 6.01                  |
| SWALE-4       | LL BASIN | 25yr-24hr  | 15.63                    | 20.99              | 20.50                  | 0.0036                   | 32249                               | 12.58                     | 14.39                | 19.91                      | 13.27                 |
| WETLAND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 6.04               | 6.50                   | 0.0004                   | 42186                               | 2.00                      | 43.11                | 2.00                       | 26.51                 |
| WETLAND NO. 1 | LL BASIN | 25yr-24hr  | 14.10                    | 10.50              | 6.50                   | 0.0031                   | 75347                               | 12.81                     | 173.06               | 14.10                      | 128.63                |

NODE MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Delta Q<br>cfs | Max US Stage<br>hrs | Max US Stage<br>ft | Max DS Stage<br>hrs | Max DS Stage<br>ft |
|------|----------|------------|-------------------------|--------------------|----------------|---------------------|--------------------|---------------------|--------------------|
| P-1  | LL BASIN | 10yr-2hr   | 1.70                    | 4.72               | 0.003          | 1.68                | 20.20              | 1.57                | 19.77              |
| P-1  | LL BASIN | 25yr-24hr  | 13.27                   | 9.02               | -0.425         | 13.00               | 22.37              | 12.73               | 21.70              |
| P-10 | LL BASIN | 10yr-2hr   | 1.51                    | 9.00               | -0.050         | 1.51                | 17.84              | 2.00                | 17.53              |
| P-10 | LL BASIN | 25yr-24hr  | 17.37                   | 17.72              | -0.073         | 13.25               | 20.17              | 13.21               | 20.09              |
| P-11 | LL BASIN | 10yr-2hr   | 1.55                    | 11.99              | 1.531          | 2.00                | 17.53              | 2.00                | 17.52              |
| P-11 | LL BASIN | 25yr-24hr  | 15.43                   | 21.54              | 1.238          | 13.21               | 20.09              | 13.21               | 20.01              |
| P-12 | LL BASIN | 10yr-2hr   | 1.54                    | 14.16              | 0.639          | 2.00                | 17.52              | 2.00                | 17.48              |
| P-12 | LL BASIN | 25yr-24hr  | 14.67                   | 26.38              | 0.404          | 13.21               | 20.01              | 13.17               | 19.81              |
| P-13 | LL BASIN | 10yr-2hr   | 1.53                    | 18.56              | -0.221         | 2.00                | 17.48              | 2.00                | 17.43              |
| P-13 | LL BASIN | 25yr-24hr  | 12.54                   | 32.28              | 0.139          | 13.17               | 19.81              | 13.17               | 19.57              |
| P-14 | LL BASIN | 10yr-2hr   | 1.58                    | 15.78              | -0.791         | 2.00                | 17.43              | 2.00                | 17.37              |
| P-14 | LL BASIN | 25yr-24hr  | 14.02                   | 34.20              | 0.542          | 13.17               | 19.57              | 13.05               | 19.29              |
| P-15 | LL BASIN | 10yr-2hr   | 1.58                    | 14.11              | -0.742         | 2.00                | 17.37              | 2.00                | 17.33              |
| P-15 | LL BASIN | 25yr-24hr  | 14.00                   | 34.51              | -0.377         | 13.05               | 19.29              | 12.97               | 19.07              |
| P-16 | LL BASIN | 10yr-2hr   | 1.62                    | 1.30               | -0.054         | 2.00                | 17.25              | 2.00                | 17.24              |
| P-16 | LL BASIN | 25yr-24hr  | 13.30                   | 4.86               | -0.036         | 12.90               | 18.76              | 12.76               | 18.64              |
| P-17 | LL BASIN | 10yr-2hr   | 2.01                    | 11.68              | 0.073          | 2.00                | 17.33              | 2.00                | 17.24              |
| P-17 | LL BASIN | 25yr-24hr  | 13.97                   | 34.77              | 0.039          | 12.97               | 19.07              | 12.76               | 18.64              |
| P-19 | LL BASIN | 10yr-2hr   | 2.00                    | 13.61              | 0.022          | 2.00                | 17.24              | 1.99                | 16.95              |
| P-19 | LL BASIN | 25yr-24hr  | 13.46                   | 43.35              | 0.277          | 12.76               | 18.64              | 12.65               | 18.35              |
| P-2  | LL BASIN | 10yr-2hr   | 1.69                    | 9.55               | 0.441          | 1.67                | 19.77              | 4.00                | 19.15              |
| P-2  | LL BASIN | 25yr-24hr  | 12.59                   | 21.99              | 0.327          | 12.73               | 21.70              | 15.60               | 21.11              |
| P-20 | LL BASIN | 10yr-2hr   | 1.99                    | 17.45              | -0.027         | 1.99                | 16.95              | 2.00                | 16.18              |
| P-20 | LL BASIN | 25yr-24hr  | 12.66                   | 59.06              | -0.036         | 12.65               | 18.35              | 12.63               | 16.91              |
| P-21 | LL BASIN | 10yr-2hr   | 2.00                    | 20.89              | 0.373          | 2.00                | 16.18              | 2.00                | 9.49               |
| P-21 | LL BASIN | 25yr-24hr  | 12.63                   | 83.50              | 0.092          | 12.63               | 16.91              | 13.70               | 13.56              |
| P-22 | LL BASIN | 10yr-2hr   | 2.00                    | 21.08              | -77.279        | 2.00                | 9.49               | 2.00                | 9.46               |
| P-22 | LL BASIN | 25yr-24hr  | 12.63                   | 83.07              | -77.279        | 13.70               | 13.56              | 13.78               | 13.30              |
| P-24 | LL BASIN | 10yr-2hr   | 2.04                    | 1.38               | -0.049         | 2.00                | 16.19              | 2.00                | 16.18              |
| P-24 | LL BASIN | 25yr-24hr  | 12.73                   | 6.04               | -0.310         | 12.69               | 17.34              | 12.63               | 16.91              |
| P-25 | LL BASIN | 10yr-2hr   | 2.02                    | 0.81               | 0.005          | 2.00                | 16.76              | 2.00                | 16.74              |
| P-25 | LL BASIN | 25yr-24hr  | 13.53                   | 5.84               | 0.479          | 12.92               | 18.61              | 12.78               | 18.40              |
| P-26 | LL BASIN | 10yr-2hr   | 2.00                    | 1.98               | -0.004         | 2.00                | 16.74              | 2.00                | 16.18              |
| P-26 | LL BASIN | 25yr-24hr  | 12.86                   | 12.77              | -0.029         | 12.78               | 18.40              | 12.63               | 16.91              |
| P-27 | LL BASIN | 10yr-2hr   | 2.24                    | 1.34               | 0.876          | 2.14                | 7.94               | 2.18                | 7.91               |
| P-27 | LL BASIN | 25yr-24hr  | 12.88                   | 62.64              | 0.911          | 13.80               | 13.25              | 13.87               | 12.99              |
| P-28 | LL BASIN | 10yr-2hr   | 2.00                    | 25.17              | 0.344          | 2.14                | 7.94               | 2.18                | 7.91               |

LINK MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name   | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Delta Q<br>cfs | Max US<br>Stage<br>hrs | Max US<br>Stage<br>ft | Max DS<br>Stage<br>hrs | Max DS<br>Stage<br>ft |
|--------|----------|------------|-------------------------|--------------------|----------------|------------------------|-----------------------|------------------------|-----------------------|
| P-28   | LL BASIN | 25yr-24hr  | 12.88                   | 56.21              | -0.385         | 13.80                  | 13.25                 | 13.87                  | 12.99                 |
| P-29   | LL BASIN | 10yr-2hr   | 2.18                    | 4.61               | 0.008          | 2.18                   | 7.91                  | 2.18                   | 6.25                  |
| P-29   | LL BASIN | 25yr-24hr  | 12.95                   | 60.56              | 0.051          | 13.87                  | 12.99                 | 14.10                  | 10.50                 |
| P-3    | LL BASIN | 10yr-2hr   | 1.70                    | 8.82               | 0.996          | 4.00                   | 19.15                 | 4.00                   | 19.15                 |
| P-3    | LL BASIN | 25yr-24hr  | 12.20                   | 16.64              | 0.996          | 15.60                  | 21.11                 | 15.68                  | 21.09                 |
| P-30   | LL BASIN | 10yr-2hr   | 2.17                    | 10.60              | 0.008          | 2.18                   | 7.91                  | 2.17                   | 6.61                  |
| P-30   | LL BASIN | 25yr-24hr  | 12.81                   | 61.07              | 0.068          | 13.87                  | 12.99                 | 14.10                  | 10.50                 |
| P-31   | LL BASIN | 10yr-2hr   | 2.00                    | 26.51              | 0.822          | 2.00                   | 6.04                  | 2.00                   | 5.04                  |
| P-31   | LL BASIN | 25yr-24hr  | 14.10                   | 128.63             | 0.822          | 14.10                  | 10.50                 | 12.84                  | 7.52                  |
| P-4    | LL BASIN | 10yr-2hr   | 1.29                    | 4.76               | 0.246          | 4.00                   | 19.15                 | 3.99                   | 19.15                 |
| P-4    | LL BASIN | 25yr-24hr  | 12.63                   | 12.20              | 0.983          | 15.63                  | 21.09                 | 15.72                  | 21.07                 |
| P-5    | LL BASIN | 10yr-2hr   | 1.28                    | 3.13               | 0.335          | 3.99                   | 19.15                 | 4.00                   | 19.15                 |
| P-5    | LL BASIN | 25yr-24hr  | 20.05                   | 10.67              | 0.133          | 15.72                  | 21.07                 | 15.63                  | 20.99                 |
| P-6    | LL BASIN | 10yr-2hr   | 1.24                    | 6.01               | -7.177         | 4.00                   | 19.15                 | 4.00                   | 19.15                 |
| P-6    | LL BASIN | 25yr-24hr  | 19.91                   | 13.27              | -6.841         | 15.63                  | 20.99                 | 15.42                  | 20.91                 |
| P-7    | LL BASIN | 10yr-2hr   | 1.57                    | 3.71               | 0.015          | 1.57                   | 20.41                 | 4.00                   | 19.15                 |
| P-7    | LL BASIN | 25yr-24hr  | 12.23                   | 9.20               | -0.014         | 12.86                  | 21.18                 | 15.63                  | 20.99                 |
| P-8    | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000          | 4.00                   | 19.15                 | 1.55                   | 17.99                 |
| P-8    | LL BASIN | 25yr-24hr  | 19.96                   | 14.34              | -0.025         | 15.42                  | 20.91                 | 13.93                  | 20.49                 |
| P-9    | LL BASIN | 10yr-2hr   | 1.56                    | 4.40               | 0.008          | 1.55                   | 17.99                 | 1.51                   | 17.84                 |
| P-9    | LL BASIN | 25yr-24hr  | 18.83                   | 15.85              | 0.012          | 13.93                  | 20.49                 | 13.25                  | 20.17                 |
| WEIR-1 | LL BASIN | 10yr-2hr   | 2.00                    | 30.66              | -0.027         | 2.00                   | 9.46                  | 2.14                   | 7.94                  |
| WEIR-1 | LL BASIN | 25yr-24hr  | 13.18                   | 159.47             | 73.385         | 13.78                  | 13.30                 | 13.80                  | 13.25                 |

LINK MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES AND GUTTERS

Modify Pipes & Gutters

Remove Weir



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

=====

Basins

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-1         | Node: POND NO. 1                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 16.590           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-2         | Node: POND NO. 2                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 23.050           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN POND-3         | Node: POND NO. 3                 | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 60.00         |                |
| Area(ac): 24.500           | Time Shift(hrs): 0.00            |                |
| Curve Number: 61.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- CN 61 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP B)

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-1            | Node: S-1                        | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 7.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-11           | Node: S-11                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.160            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-15           | Node: S-15                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 5.930            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: BASIN S-16                      Node: S-16                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.010                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-17                      Node: S-17                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 8.190                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-18                      Node: S-18                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 6.100                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-19                      Node: S-19                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.610                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-2                      Node: S-2                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 7.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: Basin S-20                      Node: S-20                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484                      Peaking Factor: 484.0  
Rainfall File: Scsiii                      Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000                      Time of Conc(min): 30.00  
Area(ac): 1.500                      Time Shift(hrs): 0.00  
Curve Number: 57.00                      Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN S-24                      Node: S-24                      Status: Onsite  
Group: LL BASIN                      Type: SCS Unit Hydrograph CN

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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|                            |                                  |
|----------------------------|----------------------------------|
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |
| Area(ac): 4.130            | Time Shift(hrs): 0.00            |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |
| DCIA(%): 0.00              |                                  |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-25           | Node: S-25                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 11.580           | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-26           | Node: S-26                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.540            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-30           | Node: S-30                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.000            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-31           | Node: S-31                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 2.900            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                                  |                |
|----------------------------|----------------------------------|----------------|
| Name: BASIN S-32           | Node: S-32                       | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN     |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0            |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00        |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00         |                |
| Area(ac): 3.720            | Time Shift(hrs): 0.00            |                |
| Curve Number: 57.00        | Max Allowable Q(cfs): 999999.000 |                |
| DCIA(%): 0.00              |                                  |                |

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

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|                            |                              |                |
|----------------------------|------------------------------|----------------|
| Name: BASIN S-33           | Node: S-33                   | Status: Onsite |
| Group: LL BASIN            | Type: SCS Unit Hydrograph CN |                |
| Unit Hydrograph: Uh484     | Peaking Factor: 484.0        |                |
| Rainfall File: Scsiii      | Storm Duration(hrs): 0.00    |                |
| Rainfall Amount(in): 0.000 | Time of Conc(min): 30.00     |                |
| Area(ac): 5.040            | Time Shift(hrs): 0.00        |                |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Curve Number: 57.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- 1/3 ACRE LOTS AVERAGE 30% IMPERVIOUS CURVE NUMBER OF 57 (HYDRAULIC GP A)

Name: BASIN SW-1 Node: SWALE-1 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 2.670 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN SW-2 Node: SWALE-2 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 9.540 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN SW-3 Node: SWALE-3 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 4.980 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN SW-4 Node: SWALE-4 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 2.450 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 39 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP A)

Name: BASIN WET-1 Node: WETLAND NO. 1 Status: Onsite  
Group: LL BASIN Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh484 Peaking Factor: 484.0  
Rainfall File: Scsiii Storm Duration(hrs): 0.00  
Rainfall Amount(in): 0.000 Time of Conc(min): 60.00  
Area(ac): 14.480 Time Shift(hrs): 0.00  
Curve Number: 39.00 Max Allowable Q(cfs): 999999.000  
DCIA(%): 0.00

PER NRCS- CN 89 GOLF COURSE IN GOOD CONDITION (HYDRAULIC GP D)

=====

Name: OUTFALL Base Flow(cfs): 0.000 Init Stage(ft): 3.520  
Group: LL BASIN Warn Stage(ft): 6.750  
Type: Time/Stage

Time(hrs) Stage(ft)

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

0.00 3.520  
999.00 3.520

Name: POND NO. 1 Base Flow(cfs): 0.000 Init Stage(ft): 6.890  
Group: LL BASIN Warn Stage(ft): 10.500  
Type: Stage/Area

Modify weir elevation from 8.9 to 6.89'.

| Stage(ft) | Area(ac) |
|-----------|----------|
| 4.000     | 0.0150   |
| 5.000     | 0.0173   |
| 5.500     | 0.0491   |
| 6.000     | 0.1429   |
| 6.500     | 0.1976   |
| 7.000     | 0.2452   |
| 7.500     | 0.2756   |
| 8.000     | 0.2988   |
| 8.500     | 0.3146   |
| 9.000     | 0.3304   |
| 9.500     | 0.3424   |
| 10.000    | 0.3589   |
| 10.500    | 0.3670   |
| 11.000    | 0.4235   |

Name: POND NO. 2 Base Flow(cfs): 0.000 Init Stage(ft): 6.000  
Group: LL BASIN Warn Stage(ft): 12.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 2.000     | 0.2059   |
| 3.000     | 0.2754   |
| 4.000     | 0.3489   |
| 5.000     | 0.4214   |
| 6.000     | 0.4765   |
| 7.000     | 0.5348   |
| 8.000     | 0.5972   |
| 8.500     | 0.6280   |
| 9.000     | 0.6557   |
| 9.500     | 0.6947   |
| 10.000    | 0.7375   |
| 10.500    | 0.7560   |
| 11.000    | 0.7760   |
| 11.500    | 0.8230   |

Name: POND NO. 3 Base Flow(cfs): 0.000 Init Stage(ft): 6.000  
Group: LL BASIN Warn Stage(ft): 12.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 0.000     | 0.3676   |
| 1.000     | 0.4178   |
| 2.000     | 0.4795   |
| 3.000     | 0.5478   |
| 4.000     | 0.6112   |
| 5.000     | 0.6785   |
| 6.000     | 0.7522   |
| 7.000     | 0.8299   |
| 8.000     | 0.9066   |
| 8.500     | 0.9450   |
| 9.000     | 0.9806   |
| 9.500     | 1.0426   |
| 10.000    | 1.1231   |
| 10.500    | 1.2129   |
| 11.000    | 1.3300   |
| 12.000    | 1.5200   |
| 12.500    | 1.6500   |
| 13.000    | 1.8300   |

Name: S-1 Base Flow(cfs): 0.000 Init Stage(ft): 17.550  
Group: LL BASIN Warn Stage(ft): 20.500

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Type: Stage/Area

RIM=20.00'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.550    | 0.0001   |
| 18.000    | 0.0001   |
| 19.150    | 0.0001   |
| 19.500    | 0.1370   |
| 20.100    | 0.1500   |
| 20.500    | 0.2200   |
| 21.000    | 0.3500   |

Name: S-11                      Base Flow(cfs): 0.000                      Init Stage(ft): 16.010  
Group: LL BASIN                      Warn Stage(ft): 21.000  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 16.010    | 0.0001   |
| 18.000    | 0.0001   |
| 20.110    | 0.0001   |
| 20.500    | 0.2350   |
| 21.000    | 0.5420   |

Name: S-14                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.900  
Group: LL BASIN                      Warn Stage(ft): 20.500  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.900    | 0.0001   |
| 15.000    | 0.0001   |
| 19.450    | 0.0001   |
| 20.000    | 0.4500   |
| 20.500    | 0.5400   |

Name: S-15                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.190  
Group: LL BASIN                      Warn Stage(ft): 18.590  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 13.190    | 0.0001   |
| 15.000    | 0.0001   |
| 17.650    | 0.0200   |
| 18.090    | 0.1590   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-16                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.060  
Group: LL BASIN                      Warn Stage(ft): 18.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.060    | 0.0001   |
| 15.000    | 0.0001   |
| 17.950    | 0.0200   |
| 18.500    | 0.2660   |
| 19.000    | 0.3190   |

Name: S-17                      Base Flow(cfs): 0.000                      Init Stage(ft): 12.000  
Group: LL BASIN                      Warn Stage(ft): 17.380  
Type: Stage/Area

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.000    | 0.0001   |
| 15.000    | 0.0001   |
| 16.880    | 0.1377   |
| 17.000    | 0.1720   |
| 17.880    | 0.2750   |

Name: S-18                      Base Flow(cfs): 0.000                      Init Stage(ft): 11.550  
Group: LL BASIN                      Warn Stage(ft): 17.410  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 11.550    | 0.0001   |
| 15.000    | 0.0001   |
| 16.910    | 0.1377   |
| 17.410    | 0.1720   |
| 17.910    | 0.2750   |

Name: S-19                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.720  
Group: LL BASIN                      Warn Stage(ft): 18.400  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.720    | 0.0001   |
| 14.000    | 0.0001   |
| 17.900    | 0.1377   |
| 18.400    | 0.1720   |
| 18.900    | 0.2750   |

Name: S-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 17.130  
Group: LL BASIN                      Warn Stage(ft): 19.960  
Type: Stage/Area

RIM=19.46'

| Stage(ft) | Area(ac) |
|-----------|----------|
| 17.130    | 0.0001   |
| 17.760    | 0.0001   |
| 19.460    | 0.0001   |
| 20.060    | 0.1370   |
| 21.000    | 0.2290   |

Name: S-20                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.500  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.500    | 0.0001   |
| 14.000    | 0.0001   |
| 17.220    | 0.1377   |
| 17.720    | 0.1720   |
| 18.220    | 0.2750   |

Name: S-21                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.350  
Group: LL BASIN                      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.350    | 0.0001   |
| 14.000    | 0.0001   |
| 16.000    | 0.0060   |
| 16.500    | 0.0270   |
| 17.050    | 0.0360   |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Name: S-22                      Base Flow(cfs): 0.000                      Init Stage(ft): 10.050  
Group: LL BASIN                      Warn Stage(ft): 17.050  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 10.050    | 0.0001   |
| 14.000    | 0.0001   |
| 16.550    | 0.0060   |
| 17.050    | 0.0270   |
| 17.550    | 0.0360   |

Name: S-24                      Base Flow(cfs): 0.000                      Init Stage(ft): 9.660  
Group: LL BASIN                      Warn Stage(ft): 17.440  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 9.660     | 0.0001   |
| 14.000    | 0.0001   |
| 16.960    | 0.1377   |
| 17.440    | 0.1720   |
| 17.960    | 0.2750   |

Name: S-25                      Base Flow(cfs): 0.000                      Init Stage(ft): 8.020  
Group: LL BASIN                      Warn Stage(ft): 17.820  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
| 8.020     | 0.0001   |
| 15.000    | 0.0001   |
| 17.320    | 0.1377   |
| 17.820    | 0.1720   |
| 18.320    | 0.2750   |

Name: S-26                      Base Flow(cfs): 0.000                      Init Stage(ft): 6.900  
Group: LL BASIN                      Warn Stage(ft): 16.760  
Type: Stage/Area

Remove Structure S-27, S-28, P-22, and P-23. Straighten pipe run and replace with one 54" RCP.

| Stage(ft) | Area(ac) |
|-----------|----------|
| 6.710     | 0.0008   |
| 14.000    | 0.0008   |
| 16.100    | 0.0008   |
| 16.260    | 0.1377   |
| 16.760    | 0.1720   |
| 17.260    | 0.3250   |

Name: S-27                      Base Flow(cfs): 0.000                      Init Stage(ft): 5.960  
Group: LL BASIN                      Plunge Factor: 1.00                      Warn Stage(ft): 16.500  
Type: Manhole, Flat Floor

| Stage(ft) | Area(ac) |
|-----------|----------|
| 5.960     | 0.0080   |
| 16.500    | 0.0080   |

Name: S-30                      Base Flow(cfs): 0.000                      Init Stage(ft): 13.220  
Group: LL BASIN                      Warn Stage(ft): 17.720  
Type: Stage/Area

| Stage(ft) | Area(ac) |
|-----------|----------|
|-----------|----------|

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|        |        |
|--------|--------|
| 13.220 | 0.0001 |
| 15.000 | 0.0001 |
| 17.220 | 0.1377 |
| 17.720 | 0.2750 |
| 18.220 | 0.3310 |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-31       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.260 |
| Group: LL BASIN  |                       | Warn Stage(ft): 16.770 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.260    | 0.0001   |
| 14.000    | 0.0001   |
| 16.270    | 0.1377   |
| 16.770    | 0.1720   |
| 17.270    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-32       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.780 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.470 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.780    | 0.0001   |
| 14.000    | 0.0001   |
| 16.970    | 0.1377   |
| 17.470    | 0.1720   |
| 17.970    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: S-33       | Base Flow(cfs): 0.000 | Init Stage(ft): 12.460 |
| Group: LL BASIN  |                       | Warn Stage(ft): 17.590 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 12.460    | 0.0001   |
| 14.000    | 0.0001   |
| 17.090    | 0.1377   |
| 17.590    | 0.1720   |
| 18.090    | 0.2750   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-1    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.900 |
| Group: LL BASIN  |                       | Warn Stage(ft): 20.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.490    | 0.0003   |
| 16.000    | 0.0004   |
| 16.500    | 0.0004   |
| 17.000    | 0.0029   |
| 17.500    | 0.0063   |
| 18.000    | 0.0100   |
| 19.000    | 0.0230   |
| 19.500    | 0.0551   |
| 20.100    | 0.8030   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-2    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.050 |
| Group: LL BASIN  |                       | Warn Stage(ft): 19.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.050    | 0.0010   |
| 15.500    | 0.0100   |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|        |        |
|--------|--------|
| 16.000 | 0.0124 |
| 16.500 | 0.0288 |
| 17.000 | 0.0484 |
| 17.500 | 0.0650 |
| 18.000 | 0.1890 |
| 18.500 | 0.2290 |
| 19.000 | 0.3130 |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-3    | Base Flow(cfs): 0.000 | Init Stage(ft): 15.370 |
| Group: LL BASIN  |                       | Warn Stage(ft): 19.000 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 15.370    | 0.0125   |
| 16.500    | 0.0211   |
| 17.000    | 0.0283   |
| 17.500    | 0.0355   |
| 18.000    | 0.0403   |
| 18.500    | 0.0502   |
| 19.000    | 0.3040   |
| 19.500    | 0.5500   |

|                  |                       |                        |
|------------------|-----------------------|------------------------|
| Name: SWALE-4    | Base Flow(cfs): 0.000 | Init Stage(ft): 14.410 |
| Group: LL BASIN  |                       | Warn Stage(ft): 20.500 |
| Type: Stage/Area |                       |                        |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 14.410    | 0.0010   |
| 15.250    | 0.0032   |
| 15.500    | 0.0038   |
| 16.000    | 0.0051   |
| 16.500    | 0.0064   |
| 17.000    | 0.0077   |
| 17.500    | 0.0096   |
| 18.000    | 0.0118   |
| 18.500    | 0.0230   |
| 19.000    | 0.1580   |
| 20.000    | 0.4500   |

|                     |                       |                       |
|---------------------|-----------------------|-----------------------|
| Name: WETLAND NO. 1 | Base Flow(cfs): 0.000 | Init Stage(ft): 4.000 |
| Group: LL BASIN     |                       | Warn Stage(ft): 6.500 |
| Type: Stage/Area    |                       |                       |

| Stage(ft) | Area(ac) |
|-----------|----------|
| 3.660     | 0.0835   |
| 4.500     | 0.4620   |
| 5.000     | 0.6607   |
| 5.500     | 0.8112   |
| 6.000     | 0.9548   |
| 6.500     | 1.0644   |
| 7.000     | 1.1702   |
| 7.500     | 1.2500   |

=====  
Pipes =====  
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|                       |                     |                                      |
|-----------------------|---------------------|--------------------------------------|
| Name: P-22            | From Node: S-27     | Length(ft): 45.00                    |
| Group: LL BASIN       | To Node: POND NO. 1 | Count: 3                             |
|                       |                     | Friction Equation: Automatic         |
|                       |                     | Solution Algorithm: Most Restrictive |
| UPSTREAM              | DOWNSTREAM          | Flow: Both                           |
| Geometry: Circular    | Circular            | Entrance Loss Coef: 0.00             |
| Span(in): 36.00       | 36.00               | Exit Loss Coef: 1.00                 |
| Rise(in): 36.00       | 36.00               | Bend Loss Coef: 0.00                 |
| Invert(ft): 5.960     | 5.130               | Outlet Ctrl Spec: Use dc or tw       |
| Manning's N: 0.012000 | 0.012000            | Inlet Ctrl Spec: Use dc              |
| Top Clip(in): 0.000   | 0.000               | Stabilizer Option: None              |
| Bot Clip(in): 0.000   | 0.000               |                                      |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-27            | From Node: POND NO. 2                | Length(ft): 40.00              |
| Group: LL BASIN       | To Node: POND NO. 3                  | Count: 2                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              | DOWNSTREAM                           |                                |
| Geometry: Circular    | Circular                             |                                |
| Span(in): 36.00       | 36.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 36.00       | 36.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 7.600     | 7.350                                | Bend Loss Coef: 0.00           |
| Manning's N: 0.012000 | 0.012000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-28            | From Node: POND NO. 2                | Length(ft): 89.00              |
| Group: LL BASIN       | To Node: POND NO. 3                  | Count: 2                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              | DOWNSTREAM                           |                                |
| Geometry: Circular    | Circular                             |                                |
| Span(in): 36.00       | 36.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 36.00       | 36.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 2.230     | 2.210                                | Bend Loss Coef: 0.00           |
| Manning's N: 0.012000 | 0.012000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                       |                                      |                                |
|-----------------------|--------------------------------------|--------------------------------|
| Name: P-29            | From Node: POND NO. 3                | Length(ft): 65.00              |
| Group: LL BASIN       | To Node: WETLAND NO. 1               | Count: 1                       |
|                       | Friction Equation: Automatic         |                                |
|                       | Solution Algorithm: Most Restrictive |                                |
|                       | Flow: Both                           |                                |
| UPSTREAM              | DOWNSTREAM                           |                                |
| Geometry: Circular    | Circular                             |                                |
| Span(in): 36.00       | 36.00                                | Entrance Loss Coef: 0.00       |
| Rise(in): 36.00       | 36.00                                | Exit Loss Coef: 1.00           |
| Invert(ft): 7.030     | 5.670                                | Bend Loss Coef: 0.00           |
| Manning's N: 0.022000 | 0.022000                             | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000                                | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000                                | Stabilizer Option: None        |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                 |                              |                    |
|-----------------|------------------------------|--------------------|
| Name: P-3       | From Node: SWALE-1           | Length(ft): 195.00 |
| Group: LL BASIN | To Node: SWALE-2             | Count: 1           |
|                 | Friction Equation: Automatic |                    |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                                                                                                                                                                   |                                                                                  |                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 15.490<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>15.050<br>0.012000<br>0.000<br>0.000 | Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                               |                                                 |                                                                                                                                                                                                                                                                                         |
|-------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: P-30<br>Group: LL BASIN | From Node: POND NO. 3<br>To Node: WETLAND NO. 1 | Length(ft): 66.00<br>Count: 1<br>Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                  |                                                                                 |                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 6.500<br>Manning's N: 0.022000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>5.620<br>0.022000<br>0.000<br>0.000 | Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                               |                                              |                                                                                                                                                                                                                                                                                         |
|-------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: P-31<br>Group: LL BASIN | From Node: WETLAND NO. 1<br>To Node: OUTFALL | Length(ft): 39.00<br>Count: 1<br>Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                  |                                                                                 |                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 48.00<br>Rise(in): 48.00<br>Invert(ft): 3.660<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>48.00<br>48.00<br>3.520<br>0.012000<br>0.000<br>0.000 | Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

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|                              |                                        |                                                                                                                                                                                                                                                                                         |
|------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: P-4<br>Group: LL BASIN | From Node: SWALE-2<br>To Node: SWALE-3 | Length(ft): 20.16<br>Count: 1<br>Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                   |                                                                                  |                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 15.560<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>15.370<br>0.012000<br>0.000<br>0.000 | Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.00<br>Exit Loss Coef: 1.00<br>Bend Loss Coef: 0.00<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Stabilizer Option: None |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

```
-----
Name: P-5                      From Node: SWALE-3      Length(ft): 307.00
Group: LL BASIN                To Node: SWALE-4      Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.00
                                Exit Loss Coef: 1.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None

                                UPSTREAM    DOWNSTREAM
Geometry: Circular              Circular
Span(in): 36.00                36.00
Rise(in): 36.00                36.00
Invert(ft): 15.590             14.050
Manning's N: 0.012000          0.012000
Top Clip(in): 0.000            0.000
Bot Clip(in): 0.000            0.000
```

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

```
-----
Name: P-6                      From Node: SWALE-4      Length(ft): 5.00
Group: LL BASIN                To Node: S-14         Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.00
                                Exit Loss Coef: 1.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None

                                UPSTREAM    DOWNSTREAM
Geometry: Circular              Circular
Span(in): 30.00                30.00
Rise(in): 30.00                30.00
Invert(ft): 14.410             14.080
Manning's N: 0.012000          0.012000
Top Clip(in): 0.000            0.000
Bot Clip(in): 0.000            0.000
```

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Smooth-wall CPP

==== Drop Structures =====

```
-----
Name: P-1                      From Node: S-1         Length(ft): 33.00
Group: LL BASIN                To Node: S-2         Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
                                Entrance Loss Coef: 0.000
                                Exit Loss Coef: 1.000
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Solution Incs: 10

                                UPSTREAM    DOWNSTREAM
Geometry: Circular              Circular
Span(in): 18.00                18.00
Rise(in): 18.00                18.00
Invert(ft): 17.550             17.130
Manning's N: 0.012000          0.012000
Top Clip(in): 0.000            0.000
Bot Clip(in): 0.000            0.000
```

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 18" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-1 \*\*\*

```
Count: 1                                TABLE
Type: Vertical: Mavis                   Bottom Clip(in): 0.000
Flow: Both                               Top Clip(in): 0.000
Geometry: Rectangular                   Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
```

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Span(in): 16.00                      Invert(ft): 19.160  
Rise(in): 10.00                     Control Elev(ft): 19.160

\*\*\* Weir 2 of 2 for Drop Structure P-1 \*\*\*

Count: 1                              Bottom Clip(in): 0.000  
Type: Horizontal                    Top Clip(in): 0.000  
Flow: Both                           Weir Disc Coef: 3.200  
Geometry: Rectangular              Orifice Disc Coef: 0.600  
  
Span(in): 24.00                      Invert(ft): 20.000  
Rise(in): 18.00                     Control Elev(ft): 20.000

TABLE

Name: P-10                              From Node: S-16                      Length(ft): 268.95  
Group: LL BASIN                        To Node: S-17                        Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 42.00       | 42.00      | Flow: Both                           |
| Rise(in): 42.00       | 42.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.860    | 12.100     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 2 for Drop Structure P-10 \*\*\*

Count: 1                              Bottom Clip(in): 0.000  
Type: Vertical: Mavis                Top Clip(in): 0.000  
Flow: Both                           Weir Disc Coef: 3.200  
Geometry: Rectangular              Orifice Disc Coef: 0.600  
  
Span(in): 80.00                      Invert(ft): 17.580  
Rise(in): 4.00                       Control Elev(ft): 17.580

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-10 \*\*\*

Count: 1                              Bottom Clip(in): 0.000  
Type: Horizontal                    Top Clip(in): 0.000  
Flow: Both                           Weir Disc Coef: 3.200  
Geometry: Rectangular              Orifice Disc Coef: 0.600  
  
Span(in): 42.00                      Invert(ft): 17.580  
Rise(in): 48.00                     Control Elev(ft): 17.580

TABLE

Name: P-11                              From Node: S-17                      Length(ft): 49.90  
Group: LL BASIN                        To Node: S-18                        Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 12.000    | 11.640     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 2 for Drop Structure P-11 \*\*\*

Count: 1                              Bottom Clip(in): 0.000  
Type: Vertical: Mavis                Top Clip(in): 0.000

TABLE

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
Span(in): 144.00 Invert(ft): 15.990  
Rise(in): 6.00 Control Elev(ft): 15.990

\*\*\* Weir 2 of 2 for Drop Structure P-11 \*\*\*

Count: 1 Bottom Clip(in): 0.000  
Type: Horizontal Top Clip(in): 0.000  
Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
Span(in): 42.00 Invert(ft): 15.990  
Rise(in): 48.00 Control Elev(ft): 15.990

TABLE

Name: P-12  
Group: LL BASIN

From Node: S-18  
To Node: S-19

Length(ft): 263.32  
Count: 2

| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 11.550    | 10.820     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 2 for Drop Structure P-12 \*\*\*

Count: 1 Bottom Clip(in): 0.000  
Type: Vertical: Mavis Top Clip(in): 0.000  
Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
Span(in): 72.00 Invert(ft): 16.040  
Rise(in): 6.00 Control Elev(ft): 16.040

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-12 \*\*\*

Count: 1 Bottom Clip(in): 0.000  
Type: Horizontal Top Clip(in): 0.000  
Flow: Both Weir Disc Coef: 3.200  
Geometry: Rectangular Orifice Disc Coef: 0.600  
Span(in): 42.00 Invert(ft): 16.040  
Rise(in): 48.00 Control Elev(ft): 16.040

TABLE

Name: P-13  
Group: LL BASIN

From Node: S-19  
To Node: S-20

Length(ft): 54.38  
Count: 1

| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.720    | 10.600     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-13 \*\*\*

TABLE

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 132.00  
Rise(in): 4.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.690  
Control Elev(ft): 16.690

\*\*\* Weir 2 of 2 for Drop Structure P-13 \*\*\*

TABLE

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 42.00  
Rise(in): 48.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.690  
Control Elev(ft): 16.690

Name: P-14      From Node: S-20      Length(ft): 131.23  
Group: LL BASIN      To Node: S-21      Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.600    | 10.300     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-14 \*\*\*

TABLE

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 84.00  
Rise(in): 6.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.590  
Control Elev(ft): 16.590

\*\*\* Weir 2 of 2 for Drop Structure P-14 \*\*\*

TABLE

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 42.00  
Rise(in): 48.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.590  
Control Elev(ft): 16.590

Name: P-15      From Node: S-21      Length(ft): 32.81  
Group: LL BASIN      To Node: S-22      Count: 2

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 48.00       | 48.00      | Flow: Both                           |
| Rise(in): 48.00       | 48.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 10.300    | 10.200     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 48" RCP.

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 1 for Drop Structure P-15 \*\*\*

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 42.00  
Rise(in): 48.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.000  
Control Elev(ft): 16.000

TABLE

Name: P-16  
Group: LL BASIN  
From Node: S-30  
To Node: S-24  
Length(ft): 30.64  
Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 24.00       | 24.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 24.00       | 24.00      | Flow: Both                           |
| Invert(ft): 13.220    | 12.900     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-16 \*\*\*

Count: 1  
Type: Vertical: Mavis  
Flow: Both  
Geometry: Rectangular  
Span(in): 67.00  
Rise(in): 5.40  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.340  
Control Elev(ft): 16.340

TABLE

Name: P-17  
Group: LL BASIN  
From Node: S-22  
To Node: S-24  
Length(ft): 135.00  
Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 48.00       | 48.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 48.00       | 48.00      | Flow: Both                           |
| Invert(ft): 10.200    | 10.150     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe from 30" CPP to a 48" RCP.

\*\*\* Weir 1 of 1 for Drop Structure P-17 \*\*\*

Count: 1  
Type: Horizontal  
Flow: Both  
Geometry: Rectangular  
Span(in): 36.00  
Rise(in): 42.00  
Bottom Clip(in): 0.000  
Top Clip(in): 0.000  
Weir Disc Coef: 3.200  
Orifice Disc Coef: 0.600  
Invert(ft): 16.550  
Control Elev(ft): 16.550

TABLE

Name: P-19  
Group: LL BASIN  
From Node: S-24  
To Node: S-25  
Length(ft): 188.85  
Count: 2

| UPSTREAM           | DOWNSTREAM |                                      |
|--------------------|------------|--------------------------------------|
| Geometry: Circular | Circular   | Friction Equation: Automatic         |
| Span(in): 36.00    | 36.00      | Solution Algorithm: Most Restrictive |
|                    |            | Flow: Both                           |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                       |          |                                |
|-----------------------|----------|--------------------------------|
| Rise(in): 36.00       | 36.00    | Entrance Loss Coef: 0.000      |
| Invert(ft): 9.660     | 8.100    | Exit Loss Coef: 1.000          |
| Manning's N: 0.012000 | 0.012000 | Outlet Ctrl Spec: Use dc or tw |
| Top Clip(in): 0.000   | 0.000    | Inlet Ctrl Spec: Use dc        |
| Bot Clip(in): 0.000   | 0.000    | Solution Incs: 10              |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified weir from 60"x7" to a FDOT Type 4 asymmetrical curb inlet with 144"x6" opening. Adjusted weir elevation to account Modified pipe size to a 2-48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-19 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 144.00      | Invert(ft): 16.960       |       |
| Rise(in): 6.00        | Control Elev(ft): 16.960 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-19 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 48.00       | Invert(ft): 16.960       |       |
| Rise(in): 54.00       | Control Elev(ft): 16.960 |       |

|                        |                  |                                      |
|------------------------|------------------|--------------------------------------|
| Name: P-2              | From Node: S-2   | Length(ft): 201.27                   |
| Group: LL BASIN        | To Node: SWALE-1 | Count: 1                             |
| UPSTREAM               | DOWNSTREAM       | Friction Equation: Automatic         |
| Geometry: Horz Ellipse | Horz Ellipse     | Solution Algorithm: Most Restrictive |
| Span(in): 36.00        | 36.00            | Flow: Both                           |
| Rise(in): 36.00        | 36.00            | Entrance Loss Coef: 0.000            |
| Invert(ft): 17.130     | 15.900           | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000  | 0.012000         | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000    | 0.000            | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000    | 0.000            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:  
Horizontal Ellipse Concrete: Square edge with headwall

Modify pipe to 36" CPP.

\*\*\* Weir 1 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 20.00       | Invert(ft): 17.790       |       |
| Rise(in): 8.00        | Control Elev(ft): 17.790 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-2 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 24.00       | Invert(ft): 19.460       |       |
| Rise(in): 18.00       | Control Elev(ft): 19.460 |       |

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Name: P-20      | From Node: S-25 | Length(ft): 342.87 |
| Group: LL BASIN | To Node: S-26   | Count: 2           |

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

|                                                                                                                                                                  |                                                                                 |                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 8.020<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>6.710<br>0.012000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.000<br>Exit Loss Coef: 1.000<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Solution Incs: 10 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modified pipe size to a 2-48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-20 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical; Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 54.00       | Invert(ft): 16.520       |       |
| Rise(in): 5.00        | Control Elev(ft): 16.520 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-20 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 42.00       | Invert(ft): 16.520       |       |
| Rise(in): 48.00       | Control Elev(ft): 16.520 |       |

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|                 |                 |                   |
|-----------------|-----------------|-------------------|
| Name: P-21      | From Node: S-26 | Length(ft): 40.00 |
| Group: LL BASIN | To Node: S-27   | Count: 3          |

|                                                                                                                                                                  |                                                                                 |                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM<br>Geometry: Circular<br>Span(in): 36.00<br>Rise(in): 36.00<br>Invert(ft): 6.710<br>Manning's N: 0.012000<br>Top Clip(in): 0.000<br>Bot Clip(in): 0.000 | DOWNSTREAM<br>Circular<br>36.00<br>36.00<br>5.960<br>0.012000<br>0.000<br>0.000 | Friction Equation: Automatic<br>Solution Algorithm: Most Restrictive<br>Flow: Both<br>Entrance Loss Coef: 0.000<br>Exit Loss Coef: 1.000<br>Outlet Ctrl Spec: Use dc or tw<br>Inlet Ctrl Spec: Use dc<br>Solution Incs: 10 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

New pipes 2-48" RCP.

\*\*\* Weir 1 of 2 for Drop Structure P-21 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Vertical; Mavis | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 144.00      | Invert(ft): 15.790       |       |
| Rise(in): 6.00        | Control Elev(ft): 15.790 |       |

\*\*\* Weir 2 of 2 for Drop Structure P-21 \*\*\*

|                       |                          |       |
|-----------------------|--------------------------|-------|
| Count: 1              | Bottom Clip(in): 0.000   | TABLE |
| Type: Horizontal      | Top Clip(in): 0.000      |       |
| Flow: Both            | Weir Disc Coef: 3.200    |       |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |       |
| Span(in): 42.00       | Invert(ft): 15.790       |       |
| Rise(in): 48.00       | Control Elev(ft): 15.790 |       |

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|            |                 |                   |
|------------|-----------------|-------------------|
| Name: P-24 | From Node: S-31 | Length(ft): 31.80 |
|------------|-----------------|-------------------|

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Group: LL BASIN To Node: S-26 Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 18.00       | 18.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 18.00       | 18.00      | Flow: Both                           |
| Invert(ft): 12.260    | 12.160     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-24 \*\*\*

|                       | TABLE                    |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 90.00       | Invert(ft): 15.840       |
| Rise(in): 5.00        | Control Elev(ft): 15.840 |

Name: P-25 From Node: S-32 Length(ft): 30.26  
Group: LL BASIN To Node: S-33 Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 18.00       | 18.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 18.00       | 18.00      | Flow: Both                           |
| Invert(ft): 12.780    | 12.920     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-25 \*\*\*

|                       | TABLE                    |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Navis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 96.00       | Invert(ft): 16.500       |
| Rise(in): 6.00        | Control Elev(ft): 16.500 |

Name: P-26 From Node: S-33 Length(ft): 415.95  
Group: LL BASIN To Node: S-26 Count: 1

| UPSTREAM              | DOWNSTREAM |                                      |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Friction Equation: Automatic         |
| Span(in): 24.00       | 24.00      | Solution Algorithm: Most Restrictive |
| Rise(in): 24.00       | 24.00      | Flow: Both                           |
| Invert(ft): 12.460    | 11.180     | Entrance Loss Coef: 0.000            |
| Manning's N: 0.012000 | 0.012000   | Exit Loss Coef: 1.000                |
| Top Clip(in): 0.000   | 0.000      | Outlet Ctrl Spec: Use dc or tw       |
| Bot Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
|                       |            | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

\*\*\* Weir 1 of 2 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 55.00       | Invert(ft): 16.620       |
| Rise(in): 4.50        | Control Elev(ft): 16.620 |

TABLE

\*\*\* Weir 2 of 2 for Drop Structure P-26 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 16.620       |
| Rise(in): 36.00       | Control Elev(ft): 16.620 |

TABLE

Name: P-7      From Node: S-11      Length(ft): 607.63  
Group: LL BASIN      To Node: SWALE-4      Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 30.00       | 30.00      | Flow: Both                           |
| Rise(in): 30.00       | 30.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 16.010    | 15.250     | Exit Loss Coef: 1.000                |
| Manning's N: 0.022000 | 0.022000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Modify pipe to 30" CPP.

\*\*\* Weir 1 of 1 for Drop Structure P-7 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 24.00       | Invert(ft): 20.110       |
| Rise(in): 18.00       | Control Elev(ft): 20.110 |

TABLE

Name: P-8      From Node: S-14      Length(ft): 143.04  
Group: LL BASIN      To Node: S-15      Count: 1

|                       |            |                                      |
|-----------------------|------------|--------------------------------------|
| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.900    | 13.300     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:  
Circular Concrete: Square edge w/ headwall

\*\*\* Weir 1 of 1 for Drop Structure P-8 \*\*\*

|                       |                          |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Horizontal      | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |

TABLE

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

Span(in): 18.00                      Invert(ft): 19.450  
Rise(in): 24.00                      Control Elev(ft): 19.450

Name: P-9                      From Node: S-15                      Length(ft): 31.11  
Group: LL BASIN                      To Node: S-16                      Count: 1

| UPSTREAM              | DOWNSTREAM | Friction Equation: Automatic         |
|-----------------------|------------|--------------------------------------|
| Geometry: Circular    | Circular   | Solution Algorithm: Most Restrictive |
| Span(in): 36.00       | 36.00      | Flow: Both                           |
| Rise(in): 36.00       | 36.00      | Entrance Loss Coef: 0.000            |
| Invert(ft): 13.190    | 13.050     | Exit Loss Coef: 1.000                |
| Manning's N: 0.012000 | 0.012000   | Outlet Ctrl Spec: Use dc or tw       |
| Top Clip(in): 0.000   | 0.000      | Inlet Ctrl Spec: Use dc              |
| Bot Clip(in): 0.000   | 0.000      | Solution Incs: 10                    |

Upstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

Downstream FHWA Inlet Edge Description:  
Circular CMP: Headwall

\*\*\* Weir 1 of 1 for Drop Structure P-9 \*\*\*

|                       | TABLE                    |
|-----------------------|--------------------------|
| Count: 1              | Bottom Clip(in): 0.000   |
| Type: Vertical: Mavis | Top Clip(in): 0.000      |
| Flow: Both            | Weir Disc Coef: 3.200    |
| Geometry: Rectangular | Orifice Disc Coef: 0.600 |
| Span(in): 90.00       | Invert(ft): 17.610       |
| Rise(in): 5.50        | Control Elev(ft): 17.610 |

=====

==== Weirs =====

=====

Name: WEIR-1                      From Node: POND NO. 1  
Group: LL BASIN                      To Node: POND NO. 2  
Flow: Both                      Count: 1  
Type: Vertical: Mavis                      Geometry: Rectangular

Span(in): 213.60  
Rise(in): 72.12  
Invert(ft): 6.890  
Control Elevation(ft): 6.890

|                               | TABLE |
|-------------------------------|-------|
| Bottom Clip(in): 0.000        |       |
| Top Clip(in): 0.000           |       |
| Weir Discharge Coef: 3.200    |       |
| Orifice Discharge Coef: 0.600 |       |

=====

==== Hydrology Simulations =====

=====

Name: 10yr-2hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Override Defaults: Yes  
Storm Duration(hrs): 2.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 4.00

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 2.000     | 15.00          |

Name: 25yr-24hr  
Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Scsiii  
Rainfall Amount(in): 10.80

INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

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| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 24.000    | 15.00          |

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=====

==== Routing Simulations =====

=====

|                                                                                                                       |                             |           |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------|
| Name: 10yr-2hr                                                                                                        | Hydrology Sim: 10yr-2hr     |           |
| Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI |                             |           |
| Execute: Yes                                                                                                          | Restart: No                 | Patch: No |
| Alternative: No                                                                                                       |                             |           |
| Max Delta Z(ft): 1.00                                                                                                 | Delta Z Factor: 0.00500     |           |
| Time Step Optimizer: 10.000                                                                                           |                             |           |
| Start Time(hrs): 0.000                                                                                                | End Time(hrs): 4.00         |           |
| Min Calc Time(sec): 0.5000                                                                                            | Max Calc Time(sec): 60.0000 |           |
| Boundary Stages:                                                                                                      | Boundary Flows:             |           |

---

| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 4.000     | 10.000         |

---

|          |     |
|----------|-----|
| Group    | Run |
| LL BASIN | Yes |

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|                                                                                                                       |                             |           |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------|
| Name: 25yr-24hr                                                                                                       | Hydrology Sim: 25yr-24hr    |           |
| Filename: N:\NICEVILLE AIRPORTS\2012\2012.125.01-Lake Lorraine Drainage\250 Design Civil\Final Report\ICPR- PIPE MODI |                             |           |
| Execute: Yes                                                                                                          | Restart: No                 | Patch: No |
| Alternative: No                                                                                                       |                             |           |
| Max Delta Z(ft): 1.00                                                                                                 | Delta Z Factor: 0.00500     |           |
| Time Step Optimizer: 10.000                                                                                           |                             |           |
| Start Time(hrs): 0.000                                                                                                | End Time(hrs): 25.00        |           |
| Min Calc Time(sec): 0.5000                                                                                            | Max Calc Time(sec): 60.0000 |           |
| Boundary Stages:                                                                                                      | Boundary Flows:             |           |

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| Time(hrs) | Print Inc(min) |
|-----------|----------------|
| 25.000    | 15.000         |

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|          |     |
|----------|-----|
| Group    | Run |
| LL BASIN | Yes |

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INPUT REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

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OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name       | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| OUTFALL    | LL BASIN | 10yr-2hr   | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 40                      | 2.00                      | 26.53                | 0.00                       | 0.00                  |
| OUTFALL    | LL BASIN | 25yr-24hr  | 0.00                     | 3.52               | 6.75                   | 0.0000                   | 40                      | 14.11                     | 127.84               | 0.00                       | 0.00                  |
| POND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 7.95               | 10.50                  | 0.0014                   | 13026                   | 1.86                      | 55.36                | 2.00                       | 23.48                 |
| POND NO. 1 | LL BASIN | 25yr-24hr  | 13.80                    | 13.19              | 10.50                  | -0.0048                  | 29216                   | 12.75                     | 125.98               | 13.32                      | 210.56                |
| POND NO. 2 | LL BASIN | 10yr-2hr   | 2.07                     | 7.86               | 12.00                  | 0.0005                   | 25717                   | 2.00                      | 38.66                | 2.00                       | 11.59                 |
| POND NO. 2 | LL BASIN | 25yr-24hr  | 13.81                    | 13.16              | 12.00                  | 0.0045                   | 42678                   | 13.32                     | 244.43               | 12.90                      | 117.58                |
| POND NO. 3 | LL BASIN | 10yr-2hr   | 2.14                     | 7.84               | 12.00                  | 0.0005                   | 39211                   | 2.00                      | 37.71                | 2.13                       | 13.63                 |
| POND NO. 3 | LL BASIN | 25yr-24hr  | 13.88                    | 12.91              | 12.00                  | 0.0029                   | 78324                   | 12.77                     | 179.09               | 12.97                      | 119.85                |
| S-1        | LL BASIN | 10yr-2hr   | 1.68                     | 20.20              | 20.50                  | 0.0056                   | 7291                    | 1.50                      | 6.34                 | 1.70                       | 4.72                  |
| S-1        | LL BASIN | 25yr-24hr  | 13.00                    | 22.37              | 20.50                  | 0.0034                   | 30742                   | 12.50                     | 24.77                | 13.28                      | 9.02                  |
| S-11       | LL BASIN | 10yr-2hr   | 1.57                     | 20.41              | 21.00                  | 0.0076                   | 7915                    | 1.50                      | 4.12                 | 1.57                       | 3.71                  |
| S-11       | LL BASIN | 25yr-24hr  | 12.86                    | 21.18              | 21.00                  | 0.0032                   | 28362                   | 12.50                     | 16.12                | 12.23                      | 9.20                  |
| S-14       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 20.50                  | 0.0254                   | 113                     | 1.24                      | 6.00                 | 0.00                       | 0.00                  |
| S-14       | LL BASIN | 25yr-24hr  | 15.42                    | 20.91              | 20.50                  | 0.0098                   | 26774                   | 19.91                     | 13.27                | 19.96                      | 14.34                 |
| S-15       | LL BASIN | 10yr-2hr   | 1.55                     | 17.99              | 18.59                  | 0.0058                   | 5603                    | 1.50                      | 4.74                 | 1.56                       | 4.40                  |
| S-15       | LL BASIN | 25yr-24hr  | 13.93                    | 20.49              | 18.59                  | 0.0026                   | 20790                   | 12.50                     | 21.77                | 18.83                      | 15.85                 |
| S-16       | LL BASIN | 10yr-2hr   | 1.51                     | 17.84              | 18.41                  | 0.0073                   | 838                     | 1.50                      | 9.01                 | 1.51                       | 9.00                  |
| S-16       | LL BASIN | 25yr-24hr  | 13.25                    | 20.17              | 18.41                  | 0.0026                   | 19306                   | 12.50                     | 24.51                | 17.37                      | 17.72                 |
| S-17       | LL BASIN | 10yr-2hr   | 2.00                     | 17.53              | 17.38                  | 0.0081                   | 10213                   | 1.50                      | 15.50                | 1.55                       | 11.99                 |
| S-17       | LL BASIN | 25yr-24hr  | 13.21                    | 20.09              | 17.38                  | 0.0035                   | 23237                   | 12.50                     | 36.24                | 15.43                      | 21.54                 |
| S-18       | LL BASIN | 10yr-2hr   | 2.00                     | 17.52              | 17.41                  | 0.0076                   | 8455                    | 1.54                      | 16.55                | 1.54                       | 14.16                 |
| S-18       | LL BASIN | 25yr-24hr  | 13.21                    | 20.01              | 17.41                  | 0.0026                   | 30804                   | 12.50                     | 38.81                | 14.68                      | 26.38                 |
| S-19       | LL BASIN | 10yr-2hr   | 2.00                     | 17.48              | 18.40                  | 0.0082                   | 5355                    | 1.54                      | 19.89                | 1.53                       | 18.56                 |
| S-19       | LL BASIN | 25yr-24hr  | 13.17                    | 19.81              | 18.40                  | 0.0033                   | 20141                   | 12.50                     | 42.94                | 12.54                      | 32.28                 |
| S-2        | LL BASIN | 10yr-2hr   | 1.67                     | 19.77              | 19.96                  | 0.0032                   | 3113                    | 1.56                      | 9.70                 | 1.69                       | 9.55                  |
| S-2        | LL BASIN | 25yr-24hr  | 12.73                    | 21.70              | 19.96                  | 0.0032                   | 12958                   | 12.50                     | 29.83                | 12.59                      | 21.99                 |
| S-20       | LL BASIN | 10yr-2hr   | 2.00                     | 17.43              | 17.72                  | 0.0039                   | 6628                    | 1.53                      | 19.71                | 1.58                       | 15.78                 |
| S-20       | LL BASIN | 25yr-24hr  | 13.17                    | 19.57              | 17.72                  | 0.0015                   | 24122                   | 12.51                     | 36.79                | 14.02                      | 34.20                 |
| S-21       | LL BASIN | 10yr-2hr   | 2.00                     | 17.37              | 17.05                  | 0.0461                   | 1799                    | 1.58                      | 15.78                | 1.58                       | 14.11                 |
| S-21       | LL BASIN | 25yr-24hr  | 13.05                    | 19.29              | 17.05                  | 0.0275                   | 3165                    | 14.02                     | 34.20                | 14.00                      | 34.51                 |
| S-22       | LL BASIN | 10yr-2hr   | 2.00                     | 17.33              | 17.05                  | 0.0596                   | 1399                    | 1.58                      | 14.11                | 2.01                       | 11.68                 |
| S-22       | LL BASIN | 25yr-24hr  | 12.97                    | 19.07              | 17.05                  | 0.0360                   | 2757                    | 14.00                     | 34.51                | 13.97                      | 34.77                 |
| S-24       | LL BASIN | 10yr-2hr   | 2.00                     | 17.24              | 17.44                  | 0.0071                   | 6870                    | 1.63                      | 14.50                | 2.00                       | 13.61                 |
| S-24       | LL BASIN | 25yr-24hr  | 12.76                    | 18.64              | 17.44                  | 0.0031                   | 17829                   | 13.58                     | 41.09                | 13.46                      | 43.35                 |
| S-25       | LL BASIN | 10yr-2hr   | 1.99                     | 16.95              | 17.82                  | 0.0148                   | 5037                    | 1.96                      | 17.49                | 1.99                       | 17.45                 |
| S-25       | LL BASIN | 25yr-24hr  | 12.65                    | 18.35              | 17.82                  | 0.0050                   | 12242                   | 12.50                     | 62.63                | 12.66                      | 59.06                 |
| S-26       | LL BASIN | 10yr-2hr   | 2.00                     | 16.18              | 16.75                  | 0.0166                   | 2945                    | 2.00                      | 20.96                | 2.00                       | 20.89                 |

NODE MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR



OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name          | Group    | Simulation | Max Time<br>Stage<br>hrs | Max<br>Stage<br>ft | Warning<br>Stage<br>ft | Max Delta<br>Stage<br>ft | Max Surf<br>Area<br>ft2 | Max Time<br>Inflow<br>hrs | Max<br>Inflow<br>cfs | Max Time<br>Outflow<br>hrs | Max<br>Outflow<br>cfs |
|---------------|----------|------------|--------------------------|--------------------|------------------------|--------------------------|-------------------------|---------------------------|----------------------|----------------------------|-----------------------|
| S-26          | LL BASIN | 25yr-24hr  | 12.63                    | 16.91              | 16.76                  | 0.0059                   | 9445                    | 12.60                     | 83.58                | 12.63                      | 83.50                 |
| S-27          | LL BASIN | 10yr-2hr   | 2.00                     | 7.97               | 16.50                  | -0.0242                  | 516                     | 2.00                      | 20.89                | 1.86                       | 43.92                 |
| S-27          | LL BASIN | 25yr-24hr  | 13.72                    | 13.45              | 16.50                  | -0.0206                  | 359                     | 12.63                     | 83.50                | 12.64                      | 82.99                 |
| S-30          | LL BASIN | 10yr-2hr   | 2.00                     | 17.25              | 17.72                  | 0.0038                   | 6318                    | 1.50                      | 2.40                 | 1.62                       | 1.30                  |
| S-30          | LL BASIN | 25yr-24hr  | 12.90                    | 18.76              | 17.72                  | -0.0021                  | 17045                   | 12.50                     | 9.37                 | 13.30                      | 4.86                  |
| S-31          | LL BASIN | 10yr-2hr   | 2.00                     | 16.19              | 16.77                  | 0.0037                   | 5788                    | 1.50                      | 2.32                 | 2.04                       | 1.38                  |
| S-31          | LL BASIN | 25yr-24hr  | 12.69                    | 17.34              | 16.77                  | -0.0018                  | 12563                   | 12.50                     | 9.06                 | 12.73                      | 6.04                  |
| S-32          | LL BASIN | 10yr-2hr   | 2.00                     | 16.76              | 17.47                  | 0.0035                   | 5565                    | 1.50                      | 2.97                 | 2.02                       | 0.81                  |
| S-32          | LL BASIN | 25yr-24hr  | 12.92                    | 18.61              | 17.47                  | -0.0033                  | 17765                   | 12.50                     | 11.62                | 13.54                      | 5.84                  |
| S-33          | LL BASIN | 10yr-2hr   | 2.00                     | 16.74              | 17.59                  | 0.0046                   | 5323                    | 1.50                      | 4.03                 | 2.00                       | 1.98                  |
| S-33          | LL BASIN | 25yr-24hr  | 12.78                    | 18.40              | 17.59                  | -0.0029                  | 14782                   | 12.50                     | 18.67                | 12.86                      | 12.77                 |
| SWALE-1       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 20.00                  | -0.0020                  | 1443                    | 1.69                      | 9.59                 | 1.70                       | 8.82                  |
| SWALE-1       | LL BASIN | 25yr-24hr  | 15.60                    | 21.11              | 20.00                  | -0.0020                  | 90042                   | 12.63                     | 24.31                | 12.20                      | 16.64                 |
| SWALE-2       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 19.00                  | 0.0016                   | 14767                   | 1.70                      | 8.99                 | 1.29                       | 4.76                  |
| SWALE-2       | LL BASIN | 25yr-24hr  | 15.68                    | 21.09              | 19.00                  | 0.0016                   | 28928                   | 12.63                     | 20.22                | 12.63                      | 12.20                 |
| SWALE-3       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 19.00                  | 0.0017                   | 16538                   | 1.29                      | 4.77                 | 1.28                       | 3.13                  |
| SWALE-3       | LL BASIN | 25yr-24hr  | 15.72                    | 21.07              | 19.00                  | 0.0014                   | 57524                   | 12.75                     | 17.13                | 20.05                      | 10.67                 |
| SWALE-4       | LL BASIN | 10yr-2hr   | 4.00                     | 19.15              | 20.50                  | 0.0048                   | 8848                    | 1.28                      | 5.30                 | 1.24                       | 6.00                  |
| SWALE-4       | LL BASIN | 25yr-24hr  | 15.63                    | 20.99              | 20.50                  | 0.0030                   | 32249                   | 12.58                     | 14.39                | 19.91                      | 13.27                 |
| WETLAND NO. 1 | LL BASIN | 10yr-2hr   | 2.00                     | 6.04               | 6.50                   | -0.0018                  | 42197                   | 2.00                      | 42.48                | 2.00                       | 26.53                 |
| WETLAND NO. 1 | LL BASIN | 25yr-24hr  | 14.11                    | 10.45              | 6.50                   | 0.0031                   | 74989                   | 12.82                     | 171.01               | 14.11                      | 127.84                |

NODE MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Max<br>Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|------|----------|------------|-------------------------|--------------------|-----------------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-1  | LL BASIN | 10yr-2hr   | 1.70                    | 4.72               | 0.003                 | 1.68                        | 20.20                 | 1.67                        | 19.77                 |
| P-1  | LL BASIN | 25yr-24hr  | 13.28                   | 9.02               | -0.426                | 13.00                       | 22.37                 | 12.73                       | 21.70                 |
| P-10 | LL BASIN | 10yr-2hr   | 1.51                    | 9.00               | -0.050                | 1.51                        | 17.84                 | 2.00                        | 17.53                 |
| P-10 | LL BASIN | 25yr-24hr  | 17.37                   | 17.72              | -0.036                | 13.25                       | 20.17                 | 13.21                       | 20.09                 |
| P-11 | LL BASIN | 10yr-2hr   | 1.55                    | 11.99              | 1.531                 | 2.00                        | 17.53                 | 2.00                        | 17.52                 |
| P-11 | LL BASIN | 25yr-24hr  | 15.43                   | 21.54              | 1.244                 | 13.21                       | 20.09                 | 13.21                       | 20.01                 |
| P-12 | LL BASIN | 10yr-2hr   | 1.54                    | 14.16              | 0.639                 | 2.00                        | 17.52                 | 2.00                        | 17.48                 |
| P-12 | LL BASIN | 25yr-24hr  | 14.68                   | 26.38              | 0.353                 | 13.21                       | 20.01                 | 13.17                       | 19.81                 |
| P-13 | LL BASIN | 10yr-2hr   | 1.53                    | 18.56              | -0.211                | 2.00                        | 17.48                 | 2.00                        | 17.43                 |
| P-13 | LL BASIN | 25yr-24hr  | 12.54                   | 32.28              | 0.136                 | 13.17                       | 19.81                 | 13.17                       | 19.57                 |
| P-14 | LL BASIN | 10yr-2hr   | 1.58                    | 15.78              | -0.834                | 2.00                        | 17.43                 | 2.00                        | 17.37                 |
| P-14 | LL BASIN | 25yr-24hr  | 14.02                   | 34.20              | 0.543                 | 13.17                       | 19.57                 | 13.05                       | 19.29                 |
| P-15 | LL BASIN | 10yr-2hr   | 1.58                    | 14.11              | -0.742                | 2.00                        | 17.37                 | 2.00                        | 17.33                 |
| P-15 | LL BASIN | 25yr-24hr  | 14.00                   | 34.51              | -0.377                | 13.05                       | 19.29                 | 12.97                       | 19.07                 |
| P-16 | LL BASIN | 10yr-2hr   | 1.62                    | 1.30               | -0.054                | 2.00                        | 17.25                 | 2.00                        | 17.24                 |
| P-16 | LL BASIN | 25yr-24hr  | 13.30                   | 4.86               | -0.034                | 12.90                       | 18.76                 | 12.76                       | 18.64                 |
| P-17 | LL BASIN | 10yr-2hr   | 2.01                    | 11.68              | 0.073                 | 2.00                        | 17.33                 | 2.00                        | 17.24                 |
| P-17 | LL BASIN | 25yr-24hr  | 13.97                   | 34.77              | 0.039                 | 12.97                       | 19.07                 | 12.76                       | 18.64                 |
| P-19 | LL BASIN | 10yr-2hr   | 2.00                    | 13.61              | 0.022                 | 2.00                        | 17.24                 | 1.99                        | 16.95                 |
| P-19 | LL BASIN | 25yr-24hr  | 13.46                   | 43.35              | 0.276                 | 12.76                       | 18.64                 | 12.65                       | 18.35                 |
| P-2  | LL BASIN | 10yr-2hr   | 1.69                    | 9.55               | 0.441                 | 1.67                        | 19.77                 | 4.00                        | 19.15                 |
| P-2  | LL BASIN | 25yr-24hr  | 12.59                   | 21.99              | 0.327                 | 12.73                       | 21.70                 | 15.60                       | 21.11                 |
| P-20 | LL BASIN | 10yr-2hr   | 1.99                    | 17.45              | -0.027                | 1.99                        | 16.95                 | 2.00                        | 16.18                 |
| P-20 | LL BASIN | 25yr-24hr  | 12.66                   | 59.06              | -0.036                | 12.65                       | 18.35                 | 12.63                       | 16.91                 |
| P-21 | LL BASIN | 10yr-2hr   | 2.00                    | 20.89              | 0.374                 | 2.00                        | 16.18                 | 2.00                        | 7.97                  |
| P-21 | LL BASIN | 25yr-24hr  | 12.63                   | 83.50              | 0.092                 | 12.63                       | 16.91                 | 13.72                       | 13.45                 |
| P-22 | LL BASIN | 10yr-2hr   | 1.86                    | 43.92              | 29.839                | 2.00                        | 7.97                  | 2.00                        | 7.95                  |
| P-22 | LL BASIN | 25yr-24hr  | 12.64                   | 82.99              | -28.604               | 13.72                       | 13.45                 | 13.80                       | 13.19                 |
| P-24 | LL BASIN | 10yr-2hr   | 2.04                    | 1.38               | -0.049                | 2.00                        | 16.19                 | 2.00                        | 16.18                 |
| P-24 | LL BASIN | 25yr-24hr  | 12.73                   | 6.04               | -0.305                | 12.69                       | 17.34                 | 12.63                       | 16.91                 |
| P-25 | LL BASIN | 10yr-2hr   | 2.02                    | 0.81               | 0.005                 | 2.00                        | 16.76                 | 2.00                        | 16.74                 |
| P-25 | LL BASIN | 25yr-24hr  | 13.54                   | 5.84               | 0.480                 | 12.92                       | 18.61                 | 12.78                       | 18.40                 |
| P-26 | LL BASIN | 10yr-2hr   | 2.00                    | 1.98               | -0.004                | 2.00                        | 16.74                 | 2.00                        | 16.18                 |
| P-26 | LL BASIN | 25yr-24hr  | 12.86                   | 12.77              | -0.030                | 12.78                       | 18.40                 | 12.63                       | 16.91                 |
| P-27 | LL BASIN | 10yr-2hr   | 2.07                    | 0.87               | 0.495                 | 2.07                        | 7.86                  | 2.07                        | 7.83                  |
| P-27 | LL BASIN | 25yr-24hr  | 12.90                   | 61.97              | 1.018                 | 13.81                       | 13.16                 | 13.88                       | 12.91                 |
| P-28 | LL BASIN | 10yr-2hr   | 2.00                    | 21.12              | -0.773                | 2.07                        | 7.86                  | 2.14                        | 7.84                  |

LINK MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

OKALOOSA COUNTY  
LAKE LORRAINE DRAINAGE SYSTEM ANALYSIS

| Name   | Group    | Simulation | Max Time<br>Flow<br>hrs | Max<br>Flow<br>cfs | Delta Q<br>cfs | Max Time<br>US Stage<br>hrs | Max<br>US Stage<br>ft | Max Time<br>DS Stage<br>hrs | Max<br>DS Stage<br>ft |
|--------|----------|------------|-------------------------|--------------------|----------------|-----------------------------|-----------------------|-----------------------------|-----------------------|
| P-28   | LL BASIN | 25yr-24hr  | 12.90                   | 55.61              | 2.313          | 13.81                       | 13.16                 | 13.88                       | 12.91                 |
| P-29   | LL BASIN | 10yr-2hr   | 2.13                    | 3.95               | 0.008          | 2.14                        | 7.84                  | 2.13                        | 6.20                  |
| P-29   | LL BASIN | 25yr-24hr  | 12.97                   | 60.05              | 0.050          | 13.88                       | 12.91                 | 14.11                       | 10.45                 |
| P-3    | LL BASIN | 10yr-2hr   | 1.70                    | 8.82               | 0.996          | 4.00                        | 19.15                 | 4.00                        | 19.15                 |
| P-3    | LL BASIN | 25yr-24hr  | 12.20                   | 16.64              | 0.996          | 15.60                       | 21.11                 | 15.68                       | 21.09                 |
| P-30   | LL BASIN | 10yr-2hr   | 2.13                    | 9.68               | 0.007          | 2.14                        | 7.84                  | 2.13                        | 6.56                  |
| P-30   | LL BASIN | 25yr-24hr  | 12.82                   | 60.49              | 0.063          | 13.88                       | 12.91                 | 14.11                       | 10.45                 |
| P-31   | LL BASIN | 10yr-2hr   | 2.00                    | 26.53              | 0.822          | 2.00                        | 6.04                  | 2.00                        | 5.04                  |
| P-31   | LL BASIN | 25yr-24hr  | 14.11                   | 127.84             | 0.822          | 14.11                       | 10.45                 | 12.86                       | 7.52                  |
| P-4    | LL BASIN | 10yr-2hr   | 1.29                    | 4.76               | 0.246          | 4.00                        | 19.15                 | 4.00                        | 19.15                 |
| P-4    | LL BASIN | 25yr-24hr  | 12.63                   | 12.20              | 0.982          | 15.68                       | 21.09                 | 15.72                       | 21.07                 |
| P-5    | LL BASIN | 10yr-2hr   | 1.28                    | 3.13               | 0.355          | 4.00                        | 19.15                 | 4.00                        | 19.15                 |
| P-5    | LL BASIN | 25yr-24hr  | 20.05                   | 10.67              | 0.117          | 15.72                       | 21.07                 | 15.63                       | 20.99                 |
| P-6    | LL BASIN | 10yr-2hr   | 1.24                    | 6.00               | -7.174         | 4.00                        | 19.15                 | 4.00                        | 19.15                 |
| P-6    | LL BASIN | 25yr-24hr  | 19.91                   | 13.27              | -6.851         | 15.63                       | 20.99                 | 15.42                       | 20.91                 |
| P-7    | LL BASIN | 10yr-2hr   | 1.57                    | 3.71               | 0.015          | 1.57                        | 20.41                 | 4.00                        | 19.15                 |
| P-7    | LL BASIN | 25yr-24hr  | 12.23                   | 9.20               | -0.014         | 12.86                       | 21.18                 | 15.63                       | 20.99                 |
| P-8    | LL BASIN | 10yr-2hr   | 0.00                    | 0.00               | 0.000          | 4.00                        | 19.15                 | 1.55                        | 17.99                 |
| P-8    | LL BASIN | 25yr-24hr  | 19.96                   | 14.34              | -0.025         | 15.42                       | 20.91                 | 13.93                       | 20.49                 |
| P-9    | LL BASIN | 10yr-2hr   | 1.56                    | 4.40               | 0.008          | 1.55                        | 17.99                 | 1.51                        | 17.84                 |
| P-9    | LL BASIN | 25yr-24hr  | 18.83                   | 15.85              | 0.012          | 13.93                       | 20.49                 | 13.25                       | 20.17                 |
| WEIR-1 | LL BASIN | 10yr-2hr   | 2.00                    | 23.48              | 0.106          | 2.00                        | 7.95                  | 2.07                        | 7.86                  |
| WEIR-1 | LL BASIN | 25yr-24hr  | 13.32                   | 210.56             | 127.698        | 13.80                       | 13.19                 | 13.81                       | 13.16                 |

LINK MIN/MAX REPORT  
ICPR MODEL- MODIFY PIPES, GUTTERS, REMOVE WEIR

**APPENDIX E**

**NRCS RUNOFF CURVE NUMBERS**

**Table 2:** NRCS runoff curve numbers (CN) for selected urban land use<sup>1</sup>

| <i>Cover description</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                            | <i>Curve numbers for hydrologic soil group</i> |          |          |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------|----------|----------|----------|
| <b>Cover type and hydrologic condition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Average impervious area<sup>2</sup></b> | <b>A</b>                                       | <b>B</b> | <b>C</b> | <b>D</b> |
| <i>Fully developed urban areas (vegetation established)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                                                |          |          |          |
| Open space (lawns, parks, golf courses, cemeteries, etc) <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                            |                                                |          |          |          |
| Poor condition (grass cover <50%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            | 68                                             | 79       | 86       | 89       |
| Fair condition (grass cover 50% to 75%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                            | 49                                             | 69       | 79       | 84       |
| Good condition (grass cover >75%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            | 39                                             | 61       | 74       | 80       |
| Impervious areas:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            |                                                |          |          |          |
| Paved parking lots, roofs, driveways, etc (excluding ROW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                            | 98                                             | 98       | 98       | 98       |
| Streets and roads:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |                                                |          |          |          |
| Paved: curbs and storm sewers (excluding ROW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            | 98                                             | 98       | 98       | 98       |
| Paved: open ditches (including ROW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            | 83                                             | 89       | 92       | 93       |
| Gravel (including ROW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                            | 76                                             | 85       | 89       | 91       |
| Dirt (including ROW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                            | 72                                             | 82       | 87       | 89       |
| Western desert urban areas:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                            |                                                |          |          |          |
| Natural desert landscaping (pervious areas only) <sup>4</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            | 63                                             | 77       | 85       | 88       |
| Artificial desert landscaping (impervious weed barrier, desert shrub with 1-2 inch sand or gravel mulch and basin borders)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                            | 96                                             | 96       | 96       | 96       |
| Urban districts:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                            |                                                |          |          |          |
| Commercial and business                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 85                                         | 89                                             | 92       | 94       | 95       |
| Industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 72                                         | 81                                             | 88       | 91       | 93       |
| Residential districts by average lot size:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                                                |          |          |          |
| 1/8 acre or less (town houses)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 65                                         | 77                                             | 85       | 90       | 92       |
| 1/4 acre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 38                                         | 61                                             | 75       | 83       | 87       |
| 1/3 acre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 30                                         | 57                                             | 72       | 81       | 86       |
| 1/2 acre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 25                                         | 54                                             | 70       | 80       | 85       |
| 1 acre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20                                         | 51                                             | 68       | 79       | 84       |
| 2 acres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12                                         | 46                                             | 65       | 77       | 82       |
| <i>Developing urban areas</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |                                                |          |          |          |
| Newly graded areas (pervious areas only, no vegetation) <sup>5</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 77                                         | 86                                             | 91       | 94       |          |
| Idle lands (CN's are determined using cover types similar to those in Table 3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            |                                                |          |          |          |
| <p>1 Average runoff condition and <math>I_a=0.2S</math>.</p> <p>2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows:<br/> impervious areas<br/> are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space<br/> in good hydrologic condition. CN's for other combinations of conditions may be computed using Figures 3 or 4.</p> <p>3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.</p> <p>4 Composite CN's for natural desert landscaping should be computed using Figures 3 or 4, based on the impervious area percentage (CN=98)<br/> and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.</p> <p>5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using Figures 3 or 4 based<br/> on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.</p> |                                            |                                                |          |          |          |



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