RAYMOND COUNTY PARK IMPROVEMENT PROJECT

This project is funded by Coconino County taxpayers through COCONINO PARKS & OPEN SPACE PROGRAM Sales Tax

Park area closed during construction
Anticipated dates:
May—October 2019

COCONINO COUNTY PARKS & RECREATION

928-679-8000 www.coconino.az.gov/parks Project Info (toll free) 1-866-593-2877

Controlled Detonation Planned at Camp Navajo

Small controlled detonations of unexploded munitions are scheduled within the boundaries of the Camp Navajo Open Burn/Open Detonation Area between the hours of 10 a.m. and 4 p.m. beginning Monday, May 3 through Friday, May 21. This area is at least two miles away from the nearest home.

In case of inclement weather, the event will be rescheduled for the next good weather day. Inclement weather includes snow, lightning or high winds.

Safety controls established prior to the detonation will assure the maximum public safety. When necessary, engineering controls will be used to minimize the blast and fragmentation. With these controls in place, there is no risk to nearby residents. Specific procedures also will be followed to minimize impacts to bald eagles and Mexican spotted owls. A biologist from the U.S. Fish and Wildlife Service will monitor the detonation.

For more information, visit the project website at www.CampNavajoEnvironmental.org.
# Pond Report

Hydrology - Hydrographs by Injeilsyde v9.23  

**Pond No. 2 - West**

**Pond Data**

Contours - User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 6710.00 ft

## Stage / Storage Table

<table>
<thead>
<tr>
<th>Stage (ft)</th>
<th>Elevation (ft)</th>
<th>Contour area (sqft)</th>
<th>Incr. Storage (cuft)</th>
<th>Total storage (cuft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>6710.00</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.00</td>
<td>6711.00</td>
<td>1.00</td>
<td>4,858</td>
<td>4,858</td>
</tr>
<tr>
<td>2.00</td>
<td>6712.00</td>
<td>7.83</td>
<td>6,831</td>
<td>11,658</td>
</tr>
</tbody>
</table>

## Culvert / Orifice Structures

<table>
<thead>
<tr>
<th>[A]</th>
<th>[B]</th>
<th>[C]</th>
<th>[PrfRsr]</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.00</td>
<td>6.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

## Weir Structures

<table>
<thead>
<tr>
<th>[A]</th>
<th>[B]</th>
<th>[C]</th>
<th>[D]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

## Riser (in)

<table>
<thead>
<tr>
<th>Riser (in)</th>
<th>Span (in)</th>
<th>No. Barrels</th>
<th>Invert El. (ft)</th>
<th>Length (ft)</th>
<th>Slope (%)</th>
<th>N-Value</th>
<th>Orifice Coeff.</th>
<th>Multi-Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.00</td>
<td>4.00</td>
<td>2</td>
<td>6710.00</td>
<td>35.00</td>
<td>0.75</td>
<td>0.010</td>
<td>0.60</td>
<td>No</td>
</tr>
</tbody>
</table>

## Elevation (ft)

<table>
<thead>
<tr>
<th>[Exfl.(ft/hr)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000 (by Wet area)</td>
</tr>
</tbody>
</table>

## TW Elev. (ft) = 0.00 |

## Stage / Storage / Discharge Table

<table>
<thead>
<tr>
<th>Stage / Storage / Discharge Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage ft</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>0.00</td>
</tr>
<tr>
<td>1.00</td>
</tr>
<tr>
<td>2.00</td>
</tr>
</tbody>
</table>

**Note:** Culvert/Orifice settings are adjusted under inlet (C) and outlet (D) flow. Exfiltration checked for orifice conditions (B) and submerge (S).
Hydrograph Report

Hyd. No. 6
West-R V & OS 5-25-10

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Time interval = 1 min
Inflow hyd. No. = 5 - Subarea B - Proposed
Reservoir name = West

Peak discharge = 0.350 cfs
Time to peak = 43 min
Hyd. volume = 4,279 cuft
Max. Elevation = 6710.79 ft
Max. Storage = 3,849 cuft

Storage Indication method used.

---

West-R V & OS 5-25-10
Hyd. No. 6 - 2 Year

Q (cfs)

0.00 1.00 2.00 3.00

0.00 2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00

Time (hrs)

---

Hyd No. 6  Hyd No. 5  Total storage used = 3,849 cuft
# Hydrograph Report

**Hyd. No. 6**

**West-R V & OS 5-25-10**

- **Hydrograph type** = Reservoir
- **Storm frequency** = 10 yrs
- **Time interval** = 1 min
- **Inflow hyd. No.** = 5 - Subarea B - Proposed
- **Reservoir name** = West

- **Peak discharge** = 1.073 cfs
- **Time to peak** = 41 min
- **Hyd. volume** = 7,029 cuft
- **Max. Elevation** = 6711.15 ft
- **Max. Storage** = 5,848 cuft

*Storage Indication method used.*

---

**West-R V & OS 5-25-10**

**Hyd. No. 6 -- 10 Year**

![Graph](image-url)
Hydrograph Report

Hyd. No. 6
West-R V & OS 5-25-10

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyd. No. = 5 - Subarea B - Proposed
Reservoir name = West

Peak discharge = 1.826 cfs
Time to peak = 41 min
Hyd. volume = 11,863 cuft
Max. Elevation = 6711.70 ft
Max. Storage = 9,593 cuft

Storage Indication method used.

---

West-R V & OS 5-25-10

Hyd. No. 6 -- 100 Year

---

Hyd No. 6

---

Hyd No. 5

Warning: Total storage used = 9,593 cuft

---

Time (hrs)
<table>
<thead>
<tr>
<th>Area</th>
<th>N/A</th>
<th>0.14</th>
<th>0.35</th>
<th>0.36</th>
<th>1.83</th>
<th>1.47</th>
<th>0.92</th>
<th>0.72</th>
<th>3.75</th>
<th>4.6</th>
<th>100</th>
<th>100</th>
<th>100</th>
<th>100</th>
<th>100</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-Basin</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bio-Basin-Final</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.36</td>
<td></td>
<td>1.47</td>
<td>0.92</td>
<td>0.72</td>
<td>3.75</td>
<td>4.6</td>
<td>10</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Smith, Ted

From: Jon Hansen [JonH@plateng.com]
Sent: Monday, May 24, 2010 2:17 PM
To: Smith, Ted
Cc: Adam Miele
Subject: Raymond County Park
Attachments: info_plateng_com_20100524_142704.pdf

Info_plateng_com_20100524_142704.pdf

Ted,

As you are probably aware Raymond County Park is under construction. During site grading a pair of electric lines were found running east-west clipping the north west corner of our west detention basin. We have reshaped the basin and have the volume required to hold the 100-year runoff with the current outlet configuration. Attached is a cross section of our original outlet structure, the red circle (line) below the 4" low flow pipe is the electric line. There is approximately 4" of separation. Per APS, we need a minimum of 12" vertical separation. We are proposing moving the invert of the 4" low flow pipe to the bottom of the basin and eliminating the gravel and geotech fabric, similar to the outlet structure provided for the Mountaineer Fire Station No. 23. The design and performance of the basin/outlet combination will still be within the County Design Requirements and meet expectations of those involved with the design of the park.

We are currently revising our plans to accommodate the electric line, we are hoping to finalize by Wednesday for the Owner. Wes Carnahan is CCPWDs inspector and will be bring the finalized redesign for you and Randy Ryan to approve. Before finalizing the design and performing the hydraulic computation I want to verify that this is an acceptable modification.

Please call with any questions.

Thank You,
Jon Hansen
From: Jon Hansen [JonH@plateng.com]
Sent: Tuesday, May 25, 2010 12:41 PM
To: Godwin, Ken
Cc: Adam Miele; Smith, Ted; Ryan, Randal
Subject: Raymond County Park


Ken,

This is a follow-up on our phone conversation and requested information. During site grading a pair of electric lines were found running east-west clipping the north west corner of our west detention basin. We have reshaped the basin and have the volume required to hold the 100-year runoff with the current outlet configuration (see attachment with preliminary grading). Resulting from pre-design meetings it was decided to use the top of berm for the emergency overflow which would eliminate (or significantly reduce) the freeboard requirement. Approved design had freeboard in the west basin at 0.56 ft and 0.14 ft in the east basin. This redesign will result in the freeboard in the west basin reduced to 0.30 ft. Pond volume will be reduced from 14,815 cu ft to 11,658 cu ft.

Attached is a cross section of our original outlet structure, the red circle (line) below the 4" low flow pipe is the electric line. I apologize for providing you a drawing that is 'marked-up' but wanted input prior to finalizing. There is approximately 4" of separation. Per APS, we need a minimum of 12" vertical separation. We are proposing moving the invert of the 4" low flow pipe to the bottom of the basin and eliminating the gravel and geotech fabric, similar to the outlet structure provided for the Mountainsaire Fire Station No. 23. The design and performance of the basin/outlet combination will still be within the County Design Requirements and meet expectations of those involved with the design of the park.

We are currently revising our plans to accommodate the electric line, we are hoping to finalize by Wednesday for the Owner. Wes Carnahan is CCWDDs inspector and will be bringing the finalized redesign for you and Randy Ryan to approve. Before finalizing the design and hydraulic computations I want to verify that this is an acceptable modification. I spoke with Ted Smith this morning, he said he is agreeable to setting the 4" outflow pipe at the bottom of the basin but wanted to defer to you/County PWD regarding the change in freeboard. Attached is a quick summary of changes in the pond hydraulics and characteristics. Also attached is a prelim schematic showing pond re-grading.

Please call with any questions.

Thanks again for all of your help.

Jon Hansen
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>West/ B</td>
<td>2</td>
<td>2.27</td>
<td>0.24</td>
<td>0.35</td>
<td>0.56</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>3.71</td>
<td>0.78</td>
<td>1.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>6.26</td>
<td>1.52</td>
<td>1.83</td>
<td>0.56</td>
<td>0.3</td>
</tr>
<tr>
<td>East/ A</td>
<td>2</td>
<td>2.8</td>
<td>0.92</td>
<td>N/A</td>
<td>0.14</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>4.6</td>
<td>1.71</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>7.75</td>
<td>3.56</td>
<td>N/A</td>
<td>0.14</td>
<td>0.14</td>
</tr>
</tbody>
</table>
April 21, 2008

On April 10, 2008 a meeting was held to discuss the drainage plan for the Raymond County Park Improvements. The meeting began at 8:00 AM and lasted approximately one hour. Attendees were:

Randy Ryan, Coconino County
Ted Smith, Coconino County
Jim Hall, Plateau Engineering
Adam Miele, Plateau Engineering
Jon Hansen, Plateau Engineering

The following notes were taken by Jon Hansen:

1. Mr. Ryan conceded that specifying MAG will be acceptable for this project.
2. The outlet structure should not be large and should minimize the amount of concrete. Either an orifice or a triangular weir would be acceptable. The top of the bio-basin will serve as emergency overflow (i.e. broad crested weir).
3. The area immediately downstream of the site is classified as an SM4. Mr. Ryan and Mr. Smith identified because of this downstream area they would like the bottom 8”-12” of the bio basin to be retention. To help drain the water being retained it was suggested placing a small perforated pipe 1-2’ below the bottom of the basin. The 1-2’ space between the bottom of the basin and the pipe will be filled with gravel to act as a filter.
4. Keeping with the bio-basin theme, Mr. Ryan recommended providing appropriate plants in the basins and also providing a plan to water those plants.
5. Hydro seed the two bio-basins.
6. A SWPPP will be required at final plan review.

In closing the meeting Mr. Ryan recommended that Plateau Engineering participate in a second pre-CUP meeting.