

BOARD *of* ADJUSTMENT



Joe Bazzoli
Commission Chair

~ Meeting Agenda ~

Aimee Hennrich
Staff Liaison

boa@ci.moscow.id.us

208.883.7095

<http://www.ci.moscow.id.us/agendacenter>

Monday
February 10, 2020

7:00 PM

Council Chambers
221 E 2nd Street

1. Call to order

Approval of Minutes from August 20, 2019

ACTION: Approve minutes as presented; approve minutes with amendments; or provide staff further direction.

2. Election of Officers

ACTION: Nominate and elect a Chair and Vice Chair for 2020.

3. Public Hearing: Proposal for a Conditional Use Permit east of the intersection of Harden Road and Farm Road – LUP2019-0036 [ACTION ITEM] Conditional Use Permit application for a proposed Recreational Vehicle (RV) Storage Facility located near the intersection of Harden Road and Farm Road within the Area of City Impact.

ACTION: Conduct the public hearing upon the proposed conditional use permit request and upon consideration of any testimony presented, recommend that the City of Moscow Board of Adjustment put forth a recommendation for approval to the Latah County Zoning Commission and direct Staff to prepare a reasoned statement of relevant criteria and standards; or recommend approval of with conditions and direct Staff to prepare a reasoned statement of relevant criteria and standards; or recommend denial the conditional use permit request and direct Staff to prepare a reasoned statement of relevant criteria and standards; or take other action as deemed appropriate.

4. Board Communications

5. Other Business

Adjournment

NOTICE: Moscow City Council Commission meetings can be televised, videotaped and/or recorded. Individuals attending the meeting who require special assistance to accommodate physical, hearing, or other impairments, please contact the City Clerk, at (208) 883-7015 or TDD 883-7019, as soon as possible so that arrangements may be made.

BOARD of ADJUSTMENT



Joe Bazzoli
Commission Chair

~Meeting Minutes~
August 20, 2019

Leah Carlson
Staff Liaison

boa@ci.moscow.id.us

208.883.7095

<http://www.ci.moscow.id.us/354/Board-of-Adjustment>

The meeting was called to order at 5:35 PM

MEMBERS PRESENT: Mark Monson, Vice Chair; Annette Bieghler, Steve Bush, Marshall Comstock, Tim Thomson

MEMBERS ABSENT: Joe Bazzoli, Laurene Sorensen

STAFF IN ATTENDANCE: Mike Ray

The meeting was called to order at 5:32 PM

1. Approval of Minutes from August 8, 2019

Comstock moved acceptance of the minutes as corrected.

RESULT:	ACCEPTED BY ACCLAMATION [UNANIMOUS]
MOVER:	Comstock
SECONDER:	Bush

2. Approval of Relevant Criteria and Standards for a Property Located at 412 E Third Street—LUP2019-0026

Thomson moved approval of the RCS as presented.

RESULT:	APPROVED BY ACCLAMATION [UNANIMOUS]
MOVER:	Thomson
SECONDER:	Bush

3. Board Communications

None.

Adjournment

The meeting adjourned at 5:38 pm.

Joe Bazzoli, Chair

Date

COMMUNITY DEVELOPMENT DEPARTMENT STAFF REPORT

HEARING DATE: Monday, February 10, 2020.

GENERAL INFORMATION

Hearing Body: Board of Adjustment

Subject: Application for Conditional Use Permit for a proposed Recreational Vehicle (RV) Storage Facility located near the intersection of Harden Road and Farm Road within the Agriculture/Forestry (AF) Zoning District, in the Moscow Area of City Impact.

Attachments:

1. Conditional Use Permit Application from Toehead, LLC.
2. Public Hearing Notice – published in the Moscow-Pullman Daily News on January 18, 2020.
3. Site Plan
4. Relevant Criteria and Standards Worksheet

Prepared by: Aimee Hennrich

STAFF REVIEW

Proposal: The applicant is proposing to construct an RV Storage Facility located east of the intersection of Harden Road and Farm Road. The facility is proposed to be located on a 123,207 square foot (2.83 acre) portion of a 17.79-acre parcel. The property would be developed in phases, with the first phase approximately 1 acre and the additional phases developed based upon market demand. The area will be graveled, partially fenced, and accessible via a gate. The facility will contain various sizes of RV storage spots ranging from 10 feet by 20 feet to 15 feet by 50 feet in size. The subject property is located within the Agriculture/Forestry (AF) Zoning District in the Area of City Impact where RV Storage Facilities are permitted as a Conditional Use.

Site and Area Land Use: The subject property is a 17.79-acre parcel located just outside the City limits located east of the intersection of Harden Road and Farm Road within Moscow Area of City Impact. The subject property is currently

undeveloped with a stormwater detention pond on the southwest portion of the parcel. All parcels directly north of the property are also owned by the applicant. Avista Utilities owns a small parcel to the northwest of the subject property. The portion of the property in which the applicant is proposing to develop is a 2.83-acre area at the western side of the parcel. The site has approximately 100 feet of frontage along Harden Road. The portion of the site that the RV Storage Facility is proposed is relatively flat, but does slope to the northwest of the site, with a grade change of approximately 6 feet.



Vicinity Map



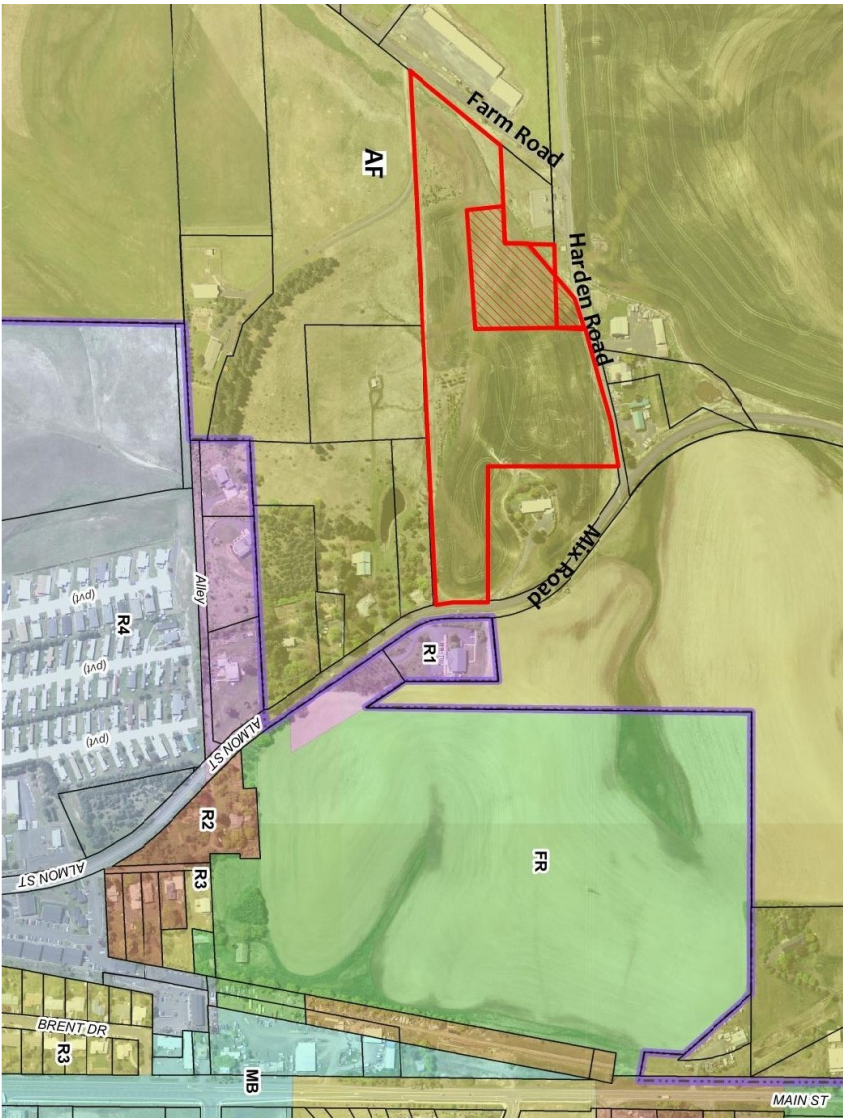
Aerial of Subject Property

Zoning: The subject property and adjacent properties to the north, south, east and west are currently zoned Agriculture/Forestry (AF), and also located in Latah County within the Moscow Area of City Impact.

Within the Area of City Impact, the County's AF has been adopted. According to Latah County Zoning Code, the purpose of the AF Zoning District is

“established to achieve the purposes of this ordinance and the goals and policies of the Latah County Comprehensive Plan by accommodating, providing opportunities for, and the continuation of agricultural and forest land uses. Uses allowed in this zone include those that are integral to agriculture and forestry, uses which will not conflict with accepted farm and forest practices, and uses which will not result in the excessive conversion of productive farm and forest land to uses which can be more appropriately located in other zoning designations, and which are consistent with Idaho’s Agricultural Protection Act.”

RV Storage Facilities require a conditional use permit within the AF Zone. Per Latah County Zoning Code.

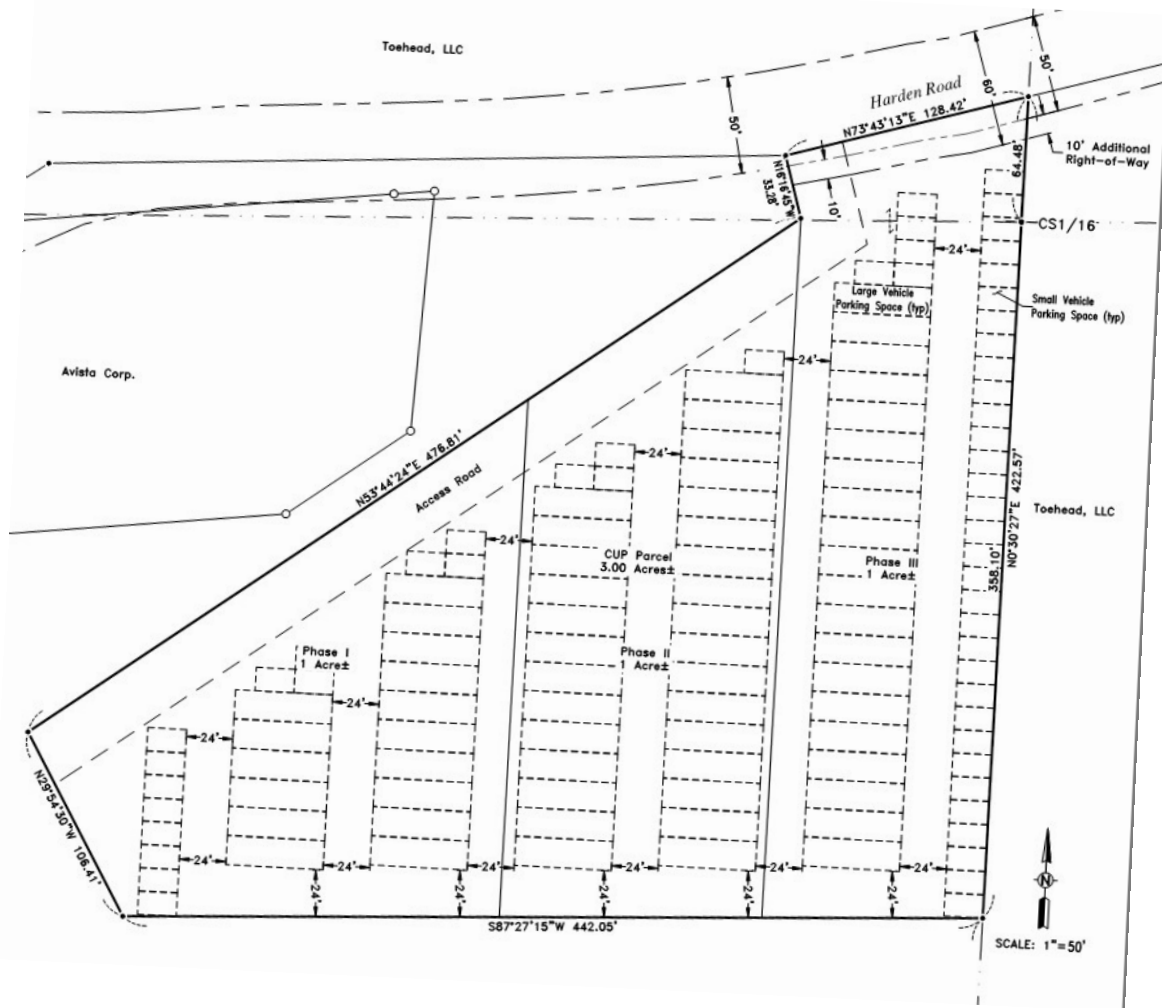


Zoning Map

Comprehensive Plan: The 2019 City of Moscow Comprehensive Plan Land Future Use and Growth Plan Map designates the subject property and surrounding properties as Auto-Urban Residential (AU-R). According to Chapter 2 of the Comprehensive Plan, Community Character and Land Use, AU-R designated areas,

“designated areas contain predominantly single family detached homes on lots ranging from 7,000 to 11,000 square feet in size and are more isolated from surrounding uses which may require residents to rely more on automobile transportation. This designation includes those areas generally anticipated to be developed for low- to moderate-density residential uses at densities between three to six units per acre which could include a mix of detached single-family, twin home, and townhome residential dwellings. Appropriate current zoning for AutoUrban Residential designated areas include Low Density Residential (R-1), Moderate Density Single Family Residential (R-2) and Medium Density Residential (R-3) in order to include a mixture of attached and detached dwellings where appropriate.”

Chapter 3 of the Comprehensive Plan, Community Mobility, identifies Harden Road as a proposed minor arterial.



Proposed Site and Phasing Plan

Proposed Development: The conceptual site plan shows three phases of development, each roughly 1 acre in size. Phases would be developed based on market demand. Phase one would consist of three rows of RV parking of various sizes. These spaces would be accessible via the access road on the north and northwest portion of the proposed facility. All travel aisles within the proposed facility will be 24 feet wide.

Streets and Access: The subject property is accessed via Harden Road which is a 25-foot-wide paved road with no sidewalks, curbs, or gutters. The City of Moscow Engineering Department recommended that additional street right-of-way (ROW) be dedicated along with the south side of Harden Road adjacent to the subject property. This dedication would help facilitate the construction of a minor arterial street standard in the future and would extend the ROW south an additional 10

feet to allow 35 feet from the centerline of the street on the south side of the ROW. The applicant has accommodated this recommendation on the proposed site plan.

Utilities: The applicant will provide limited electricity for security lighting and no water or sanitary sewer is needed for the proposed development. Since the stormwater that is generated from the proposed development is conveyed along Farm Road to the southwest and eventually is captured in the City of Moscow's stormwater system near the 'A' Street intersection, the City of Moscow Engineering Department is recommending that the applicant be required to detain the stormwater generated upon the subject property to City stormwater detention standards. City stormwater detention standards require that the stormwater be detained and conveyed at the predevelopment rate. The applicant has submitted a stormwater report from Hodge and Associates which demonstrates compliance with City of Moscow stormwater detention standards.

Input from Other Departments/Entities: No comments were received from other departments/agencies upon review of the request for the Conditional Use Permit.

RELEVANT CRITERIA AND STANDARDS

The following are Staff's comments relating to the criteria required for approval of a Conditional Use Permit. See the attached worksheet for each of the criteria. The following statements may be used for the Relevant Criteria and Standards or changed to include or remove any statement deemed necessary or appropriate by the Board.

- 1. The proposed use (is/is not) a conditionally permitted use within the Zoning District.**
- 2. The character of the proposed use (will/will not) be in harmony with the neighborhood and surrounding land uses.**
- 3. The proposed use as approved, or as approved with conditions, (will/will not) generate nuisances that would be injurious or detrimental to the adjoining properties or the neighborhood (including, but not limited to, noise, dust, glare, vibrations, odors, and the like).**
- 4. The location, design, and size of the proposed use (will/will not) be adequately served by existing streets, public facilities and services.**
- 5. The proposed use (will/will not) endanger the public health or safety if located where proposed?**
- 6. Proposed use (meets/does not meet) all applicable development standards of the Zoning Code.**

7. The propose use (will/will not) be in conflict with the Comprehensive Plan.

RECOMMENDATION

The Board has the option to approve, approve with conditions, or deny the application subject to the Relevant Criteria and Standards and any public testimony provided at the public hearing. The board may also table the decision for the application in order to request more information, including studies of social, economic, fiscal and environmental affects of the proposed Conditional Use Permit.

The Board of Adjustment may impose conditions including, but not limited to those 1) minimizing adverse impact on other development; 2) controlling the sequence and timing of development; 3) controlling the duration of development; 4) assuring that development is maintained properly; 5) designating the exact location and nature of development; 6) requiring the provision for on- or off-site public facilities or services; 7) requiring more restrictive standards than those generally required in an ordinance; and/or 8) requiring mitigation of effects of the proposed development upon service delivery by any political subdivision, including school districts, providing services within the planning jurisdiction.

Staff recommends that the City of Moscow Board of Adjustment put forth a recommendation of approval of the proposed conditional use permit for a RV Storage Facility located near the intersection of Harden Road and Farm Road to the Latah County Zoning Commission with no conditions.

NOTICE OF PUBLIC HEARING

Proposal for Conditional Use Permit of a 2.83 acre area generally located east of the intersection of Harden Road and Farm Road within the Area of City Impact: LUP2019-0036

A public hearing at which you may be present and speak will be conducted by the Moscow Board of Adjustment at which time the following proposition will be discussed for land generally shown on the vicinity map below:

- Conditional Use Permit application for a proposed Recreational Vehicle (RV) Storage Facility located near the intersection of Harden Road and Farm Road within the Area of City Impact.

The subject property is within the Moscow Area of City Impact. The City of Moscow Board of Adjustment will make a recommendation to the Latah County Board of County Commissioners regarding this matter.

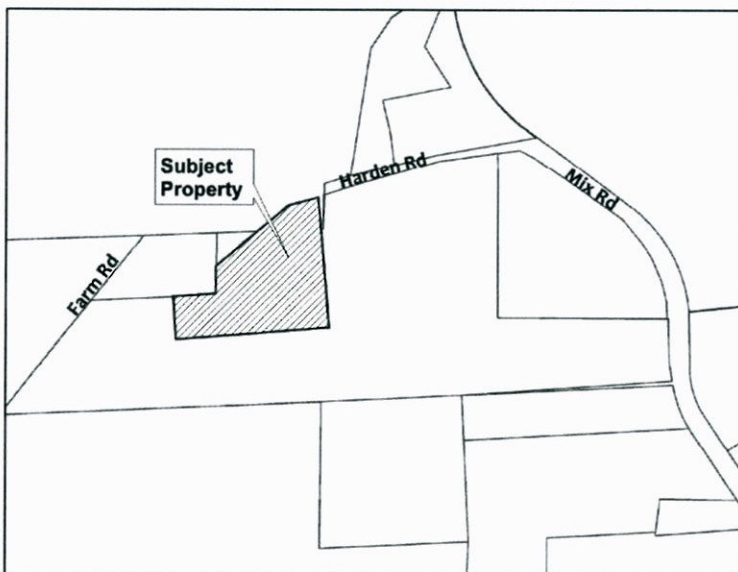
MEETING DATE: Monday, February 10, 2020

HEARING LOCATION: Council Chambers, Second Floor, Moscow City Hall
206 East Third Street, Moscow, Idaho

MEETING TIME: 7:00 p.m.

Note: Meeting start time is not necessarily indicative of the start time for review of the application advertised in this notice. Multiple hearings and/or agenda items may make it difficult to determine start time for review of application advertised in this notice, which could occur late in the meeting.

The file containing information on this matter is available for public review (an appointment may be necessary) at the Community Development Department located in the Paul Mann Building, 221 East Second Street, Moscow, Idaho. You may also call 883-7035 to get a meeting agenda, further information about the application, the public meeting process and/or to request a meeting with City Staff. Public participants desiring to submit textual materials (excluding petitions) to the decision-making board shall do so at least five (5) calendar working days in advance of the scheduled meeting to the Community Development Department. Additionally, you may obtain further information about the public hearing process and procedures on the City's Website at: <http://id-moscow.civicplus.com/593/Public-Hearing-Notices>



Laurie M. Hopkins, Moscow City Clerk


Anne Peterson, Deputy Clerk

Publish: Saturday, January 18, 2020



LATAH COUNTY
PLANNING and BUILDING
 Ph: 208-883-7022
 Fax: 208-883-7225
 pb@latah.id.us



CITY OF MOSCOW
COMMUNITY DEVELOPMENT
 Ph: 208-883-7035
 Fax: 208-883-7033
 apeterson@ci.moscow.id.us

For Office Use Only			
Date Received			
Dept	Fee Type	Fees	Paid
LC	Application Fee	\$300	12/12/19
	Receipt Number	2515	
	Forwarded to City	12/17/19	
CD	Hearing Date		

APPLICATION FOR CONDITIONAL USE PERMIT

(Please type or print plainly with blue ink.)

GENERAL INFORMATION

1. Applicant

Name: Toehead, LLC Telephone: 208-596-2206
1400 Harden Rd., Moscow, ID 83843
 (home address)

Relationship to affected property (please check one):

Owner ☒ Purchaser ☐ Lessee ☐ Other ☐ (explain below)

2. Owner of Affected Property (if other than applicant)

Name: _____ Telephone: _____

 (mailing address)

3. Location of Affected Property: TBD Harden Rd., Moscow, ID 83843

Acres: 17.79 Legal Description: See Attached

If described by Metes and Bounds, please attach deed on a separate sheet.

4. Proposal: The applicant proposes the following use and/or construction for the above-described property:

Applicant proposes to use approximately 3 acres of the 17.79 acre parcel as an RV storage facility. The property would be developed in phases, with the first phase approximately 1 acre and the additional phases developed based upon market demand. The area would be graveled, partially fenced, and accessible via a gate. The topography provides a natural buffer to the north and east. Access would be off Harden Road. See attached for more information.

The proposed activities and use shall be shown on an attached site plan drawn to a standard engineer's or architect's scale. The site plan shall show, label and dimension all property lines and easements, existing and proposed buildings, parking lot and driveway(s), fencing and landscaping. A site topography map shall be provided when appropriate.

5. Authorization: Section 3.0.03(8) of the Moscow Zoning Ordinance authorizes the proposed use, subject to a Conditional Use Permit.

6. **Operating Characteristics:** Detail the operating characteristics of the proposed use. In other words, provide specific information which describes and defines how the proposed use will be conducted and what will be involved in the day to day operations of the proposed use. Applicable information may include hours of operation, number of people (employees, customers, students, etc.) involved, traffic and/or delivery information, services provided, equipment or machinery which may be involved, or any other information which helps describe and define the proposed use and impacts which it may have.

The outdoor storage facility would accommodate recreational vehicles such as campers, boats, RVs, etc. ~~There would be no electricity provided. The area would be accessed via a gate with a fence around a portion~~ of the property and the topography providing a natural buffer around the remainder. There would be rules and regulations regarding access and use of the facility. The facility would be accessible 24 hours a day.

7. *Before the City of Moscow and Latah County may issue a Conditional Use Permit, they must first make findings of compliance with the following seven relevant criteria and standards. Please indicate in the spaces provided below what you believe to be justification showing compliance with each of the relevant criteria and standards.*

Criteria #1. THE PROPOSED USE IS A CONDITIONALLY PERMITTED USE WITHIN THE ZONING DISTRICT.

Justification and compliance with criteria #1: _____

The City zoning code under Ag/Forest Section 3-4 lists self-storage facilities as a conditional use.

Criteria #2. THE CHARACTER OF THE PROPOSED USE WILL BE IN HARMONY WITH THE NEIGHBORHOOD AND SURROUNDING LAND USES.

Justification and compliance with criteria #2: _____

the proposed storage facility is in harmony with the neighborhood. It is surrounded by agricultural land owned by the applicant. Avista has indicated it has no objection to the use and agreed to a property exchange to facilitate a more orderly development. There are also self-storage units to the west.

Criteria #3. THE PROPOSED USE AS APPROVED, OR AS APPROVED WITH CONDITIONS, WILL NOT GENERATE NUISANCES THAT WOULD BE INJURIOUS OR DETRIMENTAL TO ADJOINING PROPERTIES OR THE NEIGHBORHOOD (INCLUDING BUT NOT LIMITED TO NOISE, DUST, GLARE, VIBRATIONS, ODORS AND THE LIKE).

Justification and compliance with criteria #3: _____

The storage facility will not create a nuisance that would be injurious or detrimental to adjoining properties. As indicated the surrounding property is agricultural land owned by the applicant and Avista has no objection to the use.

Criteria #4. THE LOCATION, DESIGN, AND SIZE OF THE PROPOSED USE WILL BE ADEQUATELY SERVED BY EXISTING STREETS, PUBLIC FACILITIES AND SERVICES.

Justification and compliance with criteria #4: _____

Harden Road adequately serves the property just as it serves the existing storage facility to the west. The applicant will provide limited electricity for security lighting but no electricity to the individual storage spaces.

Criteria #5. THE PROPOSED USE WILL NOT ENDANGER THE PUBLIC HEALTH OR SAFETY IF LOCATED WHERE PROPOSED.

Justification and compliance with criteria #5: _____

The proposed use will not endanger the public health or safety. Again, it is consistent with what is being used in the area now and will have an agricultural buffer so as to not adversely impact any of the neighbors.

Criteria #6. THE PROPOSED USE MEETS ALL APPLICABLE DEVELOPMENT STANDARDS OF THE ZONING CODE.

Justification and compliance with criteria #6: _____

Applicant will comply with all required development standards.

Criteria #7. THE PROPOSED USE WILL NOT BE IN CONFLICT WITH THE COMPREHENSIVE PLAN.

Justification and compliance with criteria #7: _____

The Comprehensive Plan encourages economic development, private property rights, and general and orderly development near the city limits. There is a need for additional storage facilities located closer to Moscow and this facility will serve that need. Especially with the growth in the residential market.

CONDITIONS OF APPROVAL

The City of Moscow or Latah County may impose conditions including, but not limited to, those (1) minimizing adverse impact on other development; (2) controlling the sequence and timing of development; (3) controlling the duration of development; (4) assuring that development is maintained properly; (5) designating the exact location and nature of development; (6) requiring the provision for onsite or offsite public facilities or services; (7) requiring more restrictive standards than those generally required in an ordinance; and/or (8) requiring mitigation of effects of the proposed development upon service delivery by any political subdivision, including school districts, providing services within the planning jurisdiction.

COMPLIANCE

1. In the event of failure to comply with the plans proof by the Board of Adjustment, or with any conditions imposed upon the Conditional Use Permit, the permit shall be immediately revoked and shall be automatically null and void.
2. Where plans are submitted and approved as part of the application for a Conditional Use Permit, modifications of the original plans may be required by the Board as a condition of approval.
3. Where plans approved by the Board of Adjustment are modified following such approval, such plan modifications must be submitted to and determined by City staff to be in substantial conformance with the plans approved by the Board. If plan modifications are not in substantial conformance, the plan modifications must be resubmitted to the Board for an additional public hearing as an amendment to the Conditional Use Permit application.

REVOCATIONS

If a Building Permit and/or Certificate of Occupancy pertaining to the Conditional Use Permit is not obtained for the subject property within one year from the date of the Board of Adjustment's final decision, the Conditional Use Permit shall be immediately revoked and shall be automatically null and void. If the use and/or occupancy for which the Conditional Use Permit is approved ceases for a period of twelve consecutive months, unless otherwise provided for in the Conditional Use Permit, then the Conditional Use Permit shall be immediately revoked and shall be automatically null and void.

Application Submittal:

This application must be completed and submitted with the below described items to the Moscow Community Development Director at least twenty-one days prior to the hearing at which the application is to be considered by the Board or the application will not be processed.

The following items must be submitted with this application before it will be processed:

1. Application Fee
2. Site Plan, drawn to scale
3. Floor Plans, drawn to scale
4. Elevation Drawings, drawn to scale (for new construction only)

I understand this information is a public record and may be posted to a public website.



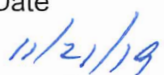
Applicant's Signature



Date



Owner's Signature



Date

Harden Storage

Prepared by Hodge & Associates, Inc.

HydroCAD® 10.00-25 s/n 09036 © 2019 HydroCAD Software Solutions LLC

Type II 24-hr 2-yr Rainfall=1.80"

Printed 1/24/2020

Page 1

Summary for Subcatchment 1S: Pre-Development

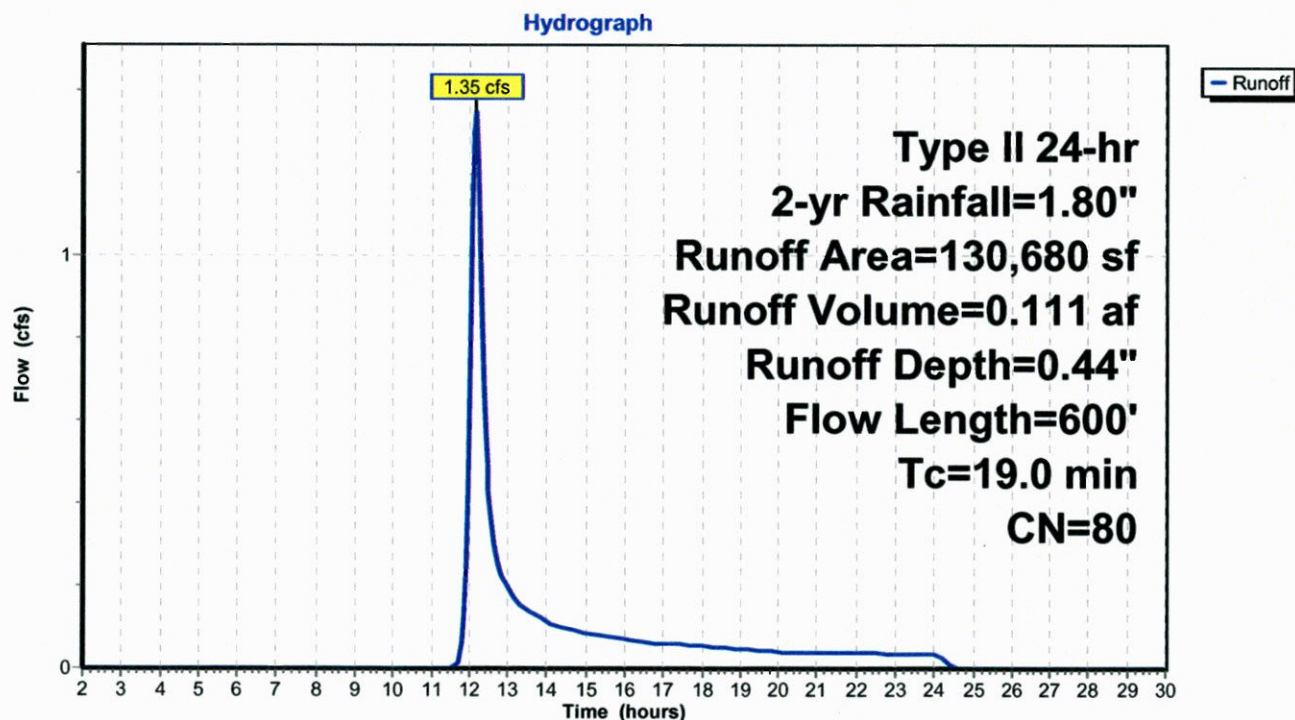
Runoff = 1.35 cfs @ 12.14 hrs, Volume= 0.111 af, Depth= 0.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=1.80"

Area (sf)	CN	Description
130,680	80	Small grain, C + CR, Good, HSG C
130,680	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	300	0.0270	0.37		Sheet Flow, Cultivated: Residue<=20% n= 0.060 P2= 1.80"
5.6	300	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
19.0	600	Total			

Subcatchment 1S: Pre-Development



Harden Storage

Prepared by Hodge & Associates, Inc.

HydroCAD® 10.00-25 s/n 09036 © 2019 HydroCAD Software Solutions LLC

Type II 24-hr 10-yr Rainfall=2.40"

Printed 1/24/2020

Page 2

Summary for Subcatchment 1S: Pre-Development

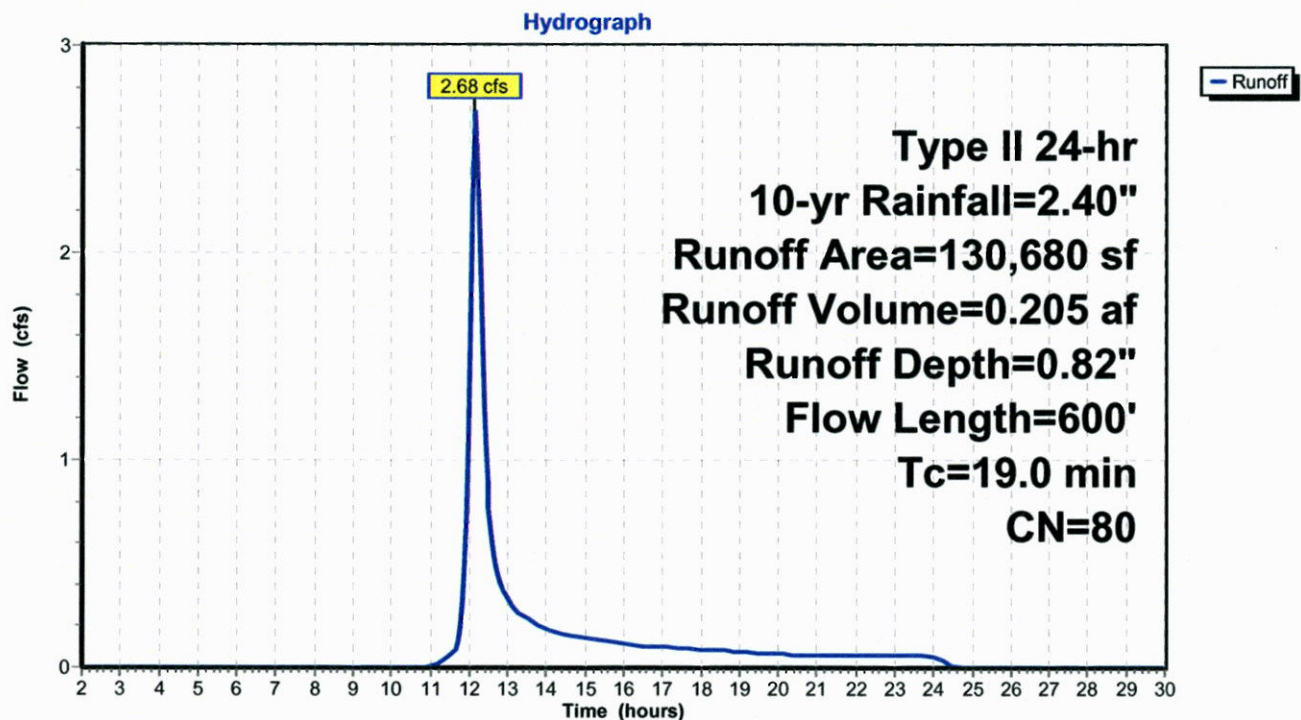
Runoff = 2.68 cfs @ 12.13 hrs, Volume= 0.205 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=2.40"

Area (sf)	CN	Description
130,680	80	Small grain, C + CR, Good, HSG C
130,680	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	300	0.0270	0.37		Sheet Flow, Cultivated: Residue<=20% n= 0.060 P2= 1.80"
5.6	300	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
19.0	600	Total			

Subcatchment 1S: Pre-Development



Harden Storage

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HydroCAD® 10.00-25 s/n 09036 © 2019 HydroCAD Software Solutions LLC

Type II 24-hr 25-yr Rainfall=2.80"

Printed 1/24/2020

Page 3

Summary for Subcatchment 1S: Pre-Development

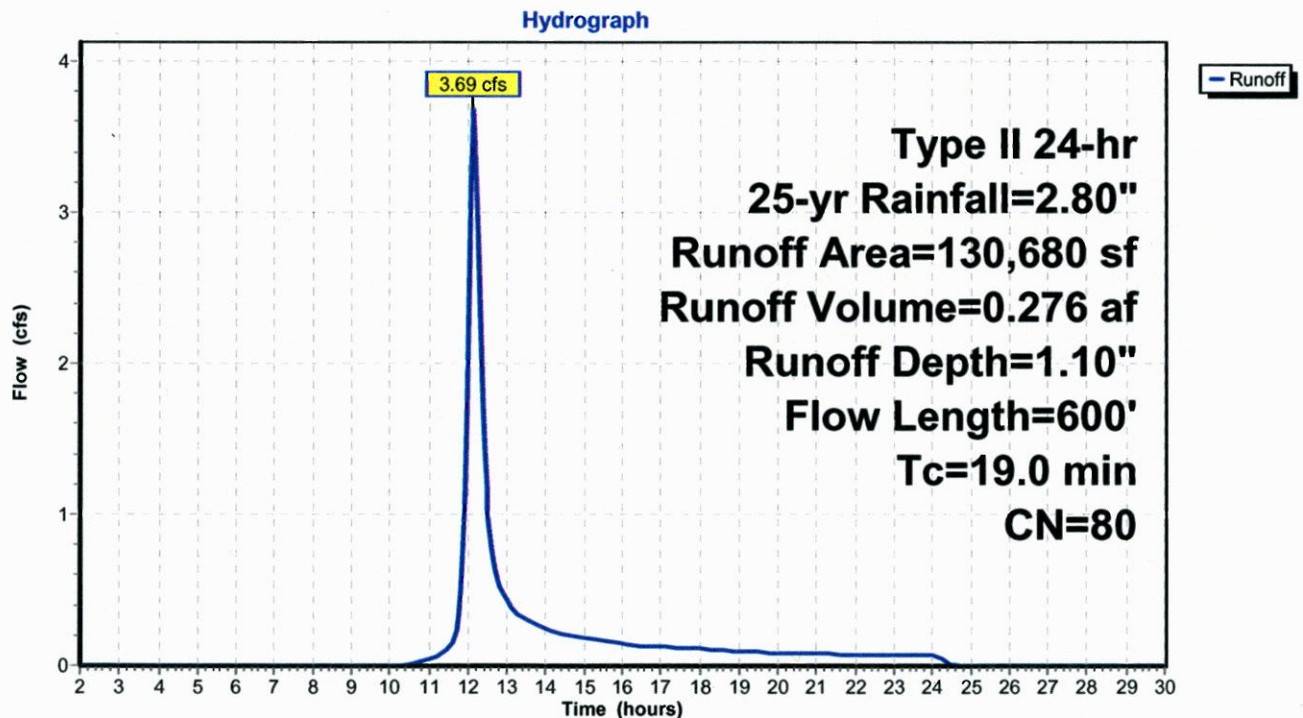
Runoff = 3.69 cfs @ 12.12 hrs, Volume= 0.276 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=2.80"

Area (sf)	CN	Description
130,680	80	Small grain, C + CR, Good, HSG C
130,680	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	300	0.0270	0.37		Sheet Flow, Cultivated: Residue<=20% n= 0.060 P2= 1.80"
5.6	300	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
19.0	600	Total			

Subcatchment 1S: Pre-Development



Harden Storage

Prepared by Hodge & Associates, Inc.

HydroCAD® 10.00-25 s/n 09036 © 2019 HydroCAD Software Solutions LLC

Type II 24-hr 2-yr Rainfall=1.80"

Printed 1/24/2020

Page 1

Summary for Pond 3P: Storage

Inflow Area = 3.000 ac, 0.00% Impervious, Inflow Depth = 1.38" for 2-yr event
Inflow = 6.35 cfs @ 11.99 hrs, Volume= 0.345 af
Outflow = 0.06 cfs @ 22.82 hrs, Volume= 0.032 af, Atten= 99%, Lag= 650.0 min
Primary = 0.06 cfs @ 22.82 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 2.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 2,613.05' @ 22.82 hrs Surf.Area= 8,132 sf Storage= 14,057 cf

Plug-Flow detention time= 834.1 min calculated for 0.032 af (9% of inflow)
Center-of-Mass det. time= 584.3 min (1,375.3 - 790.9)

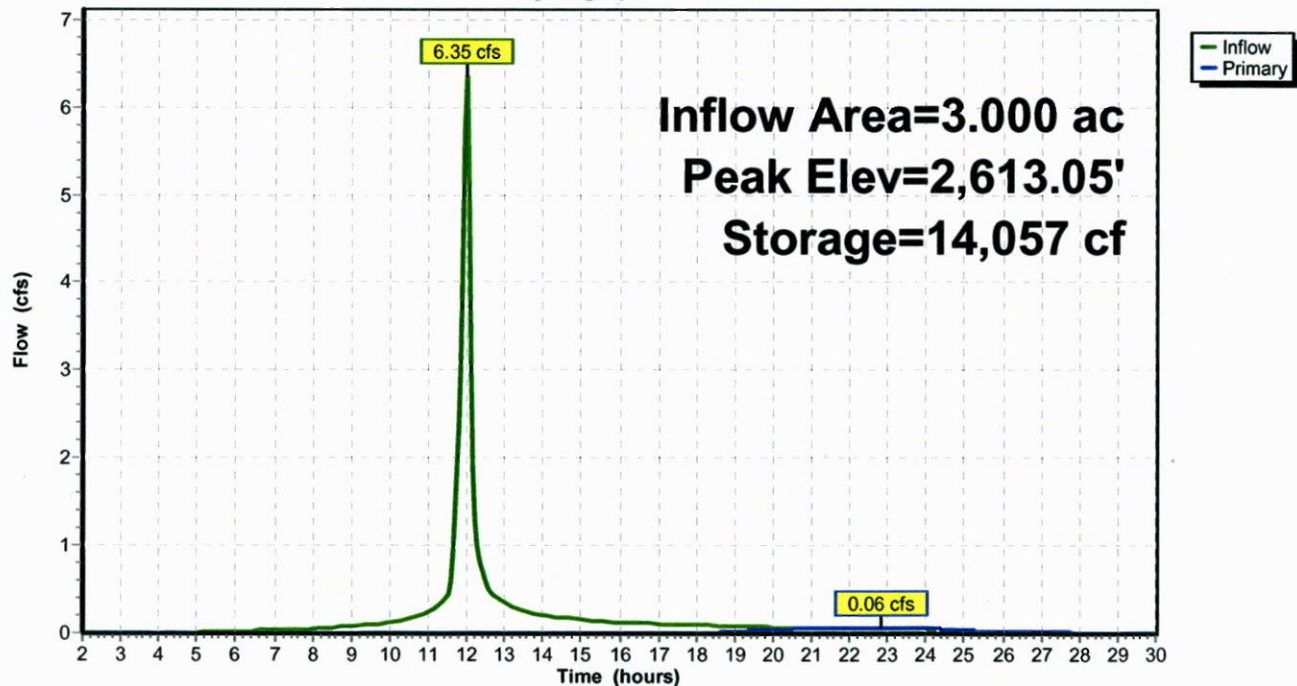
Volume	Invert	Avail.Storage	Storage Description
#1	2,611.00'	32,448 cf	36.00'W x 156.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	2,613.00'	2.0' long x 8.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64			
2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74			

Primary OutFlow Max=0.06 cfs @ 22.82 hrs HW=2,613.05' (Free Discharge)
↑1=Broad-Crested Rectangular Weir (Weir Controls 0.06 cfs @ 0.56 fps)

Pond 3P: Storage

Hydrograph



Harden Storage

Prepared by Hodge & Associates, Inc.

HydroCAD® 10.00-25 s/n 09036 © 2019 HydroCAD Software Solutions LLC

Type II 24-hr 10-yr Rainfall=2.40"

Printed 1/24/2020

Page 2

Summary for Pond 3P: Storage

Inflow Area = 3.000 ac, 0.00% Impervious, Inflow Depth = 1.96" for 10-yr event
Inflow = 8.83 cfs @ 11.99 hrs, Volume= 0.491 af
Outflow = 0.35 cfs @ 13.50 hrs, Volume= 0.177 af, Atten= 96%, Lag= 90.7 min
Primary = 0.35 cfs @ 13.50 hrs, Volume= 0.177 af

Routing by Stor-Ind method, Time Span= 2.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 2,613.17' @ 13.50 hrs Surf.Area= 8,291 sf Storage= 15,054 cf

Plug-Flow detention time= 395.0 min calculated for 0.177 af (36% of inflow)
Center-of-Mass det. time= 260.3 min (1,041.6 - 781.4)

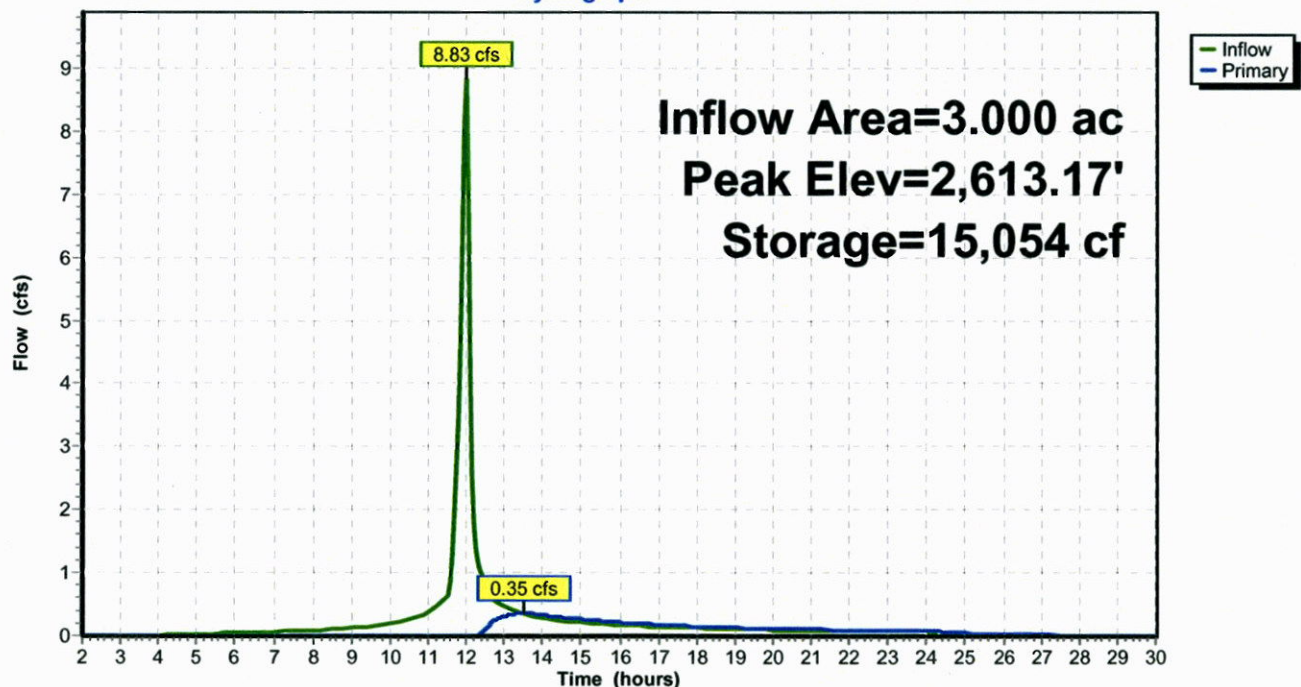
Volume	Invert	Avail.Storage	Storage Description
#1	2,611.00'	32,448 cf	36.00'W x 156.00'L x 4.00'H Prismaoid Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	2,613.00'	2.0' long x 8.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64			
2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74			

Primary OutFlow Max=0.35 cfs @ 13.50 hrs HW=2,613.17' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.35 cfs @ 1.01 fps)

Pond 3P: Storage

Hydrograph



Harden Storage

Prepared by Hodge & Associates, Inc.

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Type II 24-hr 25-yr Rainfall=2.80"

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Page 3

Summary for Pond 3P: Storage

Inflow Area = 3.000 ac, 0.00% Impervious, Inflow Depth = 2.36" for 25-yr event
Inflow = 10.48 cfs @ 11.99 hrs, Volume= 0.589 af
Outflow = 0.91 cfs @ 12.52 hrs, Volume= 0.275 af, Atten= 91%, Lag= 32.0 min
Primary = 0.91 cfs @ 12.52 hrs, Volume= 0.275 af

Routing by Stor-Ind method, Time Span= 2.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 2,613.32' @ 12.52 hrs Surf.Area= 8,484 sf Storage= 16,290 cf

Plug-Flow detention time= 314.9 min calculated for 0.274 af (47% of inflow)
Center-of-Mass det. time= 196.4 min (972.9 - 776.5)

Volume	Invert	Avail.Storage	Storage Description
#1	2,611.00'	32,448 cf	36.00'W x 156.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	2,613.00'	2.0' long x 8.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64			
2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74			

Primary OutFlow Max=0.91 cfs @ 12.52 hrs HW=2,613.32' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.91 cfs @ 1.41 fps)

Pond 3P: Storage

Hydrograph

