EXHIBIT LIST FOR SUB 2020-007/EA 2020-023
Preliminary Plat of Country Acres

			DATED
Planning Commission Memo Exhibit List - October 13, 2020			
PCM 1 Includes:	PCM 1.1	Staff Report	October 1, 2020
	PCM 1.2	Site Map	August 12, 2020
	PCM 1.3	Notice of Public Hearing	September 21, 2020
		APPLICATION SUBMITTAL	
	PCM 1.4	Subdivision Application	August 5, 2020
	PCM 1.5	Plat Map for Country Acres	August 5, 2020
	PCM 1.6	Preliminary Stormwater Drainage Report	August 4, 2020
	PCM 1.7	Geotechnical Engineering Report	July 29, 2020
	PCM 1.8	Critical Areas Habitat Review	July 20, 2020
	PCM 1.9	Well Log Information	September 22, 2020
		SEPA INFORMATION	
	PCM 1.10	Environmental Checklist EA 2020-001	August 4, 2020
	PCM 1.11	Notice of Application	August 12, 2020
	PCM 1.12	Mitigated Determination of Non Significance	September 16, 2020
		COMMENTS	
	PCM 1.13	Benton Franklin Health District Letter	August 5, 2020
	PCM 1.14	Benton PUD Comments	August 13, 2020
	PCM 1.15	Dept. of Arch. & Historic Preservation	August 18, 2020
	PCM 1.16	Benton County Public Works	August 21, 2020
	PCM 1.17	Benton County Fire Marshal	August 24, 2020
	PCM 1.18	Dept. of Fish and Wildlife	August 24, 2020
	PCM 1.19	Email from Richard Yarbrough	August 22, 2020
	PCM 1.20	Dept. of Transportation	August 27, 2020
	PCM 1.21	Dept. of Ecology	August 28, 2020
	PCM 1.22	County Assessor's Office	August 27, 2020
	PCM 1.23	Letter from Robert Gilbert	August 29, 2020
	PCM 1.24	Kennewick Irrigation District	September 1, 2020
	PCM 1.25	Benton County Public Works	September 9, 2020
	PCM 1.26	Dept. of Fish and Wildlife	September 11, 2020
	PCM 1.27	Letter from Dept. of Arch & Historic Preservation	October 2, 2020
Planning Commission Hearing Exhibit List - October 13, 2020			
	PCH 1.1	Letter from Robert Gilbert	October 3, 2020
	PCH 1.2	Addendum to the Geotechnical Engineering Report	October 6, 2020
	PCH 1.3		
Board of County Commissioners Memo Exhibit List - Hearing Date			
BCCM 1 Includes:	BCCM 1.1		
	BCCM 1.2		
	BCCM 1.3		
	BCCM 1.4		

The Exhibit Numbers are found in the Top Right Hand Corner of each document.
PCM = Planning Commission Memo Exhibits
PCH = Planning Commission Hearing Exhibits
BCCM = County Commissioner Memo Exhibits

PCH 1.2

SHANNON & WILSON
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

October 6, 2020

Mr. Tyler Tapani
TTAP Construction Services, LLC
1313 Young Street
Kennewick, WA 99336

RE: GEOTECHNICAL REPORT ADDENDUM NO. 1; COUNTRY ACRES RESIDENTIAL DEVELOPMENT, BENTON COUNTY, WASHINGTON

Dear Mr. Tapani:

Shannon & Wilson presents this geotechnical report addendum (No. 1) to provide input for a geologic hazards note to be included in the plat for the Country Acres Residential Development by TTAP Construction Services, LLC (TTAP) in the Badger Canyon area of Benton County, Washington.

Shannon & Wilson completed a Geotechnical Engineering Report (Rev. 0) dated August 13, 2020 (Shannon & Wilson, 2020)[1], which provides a description of the site, proposed development, geologic/geotechnical conditions, and geotechnical design and construction recommendations for the development.

GEOLOGIC HAZARDS NOTE

Based on the ancient (or pre-historic) landslide geology described in our geotechnical report, Shannon & Wilson provides the following statement to be included on the plat documents. The geotechnical design and construction recommendations in our geotechnical report (Shannon & Wilson, August 2020) are applicable.

"The plat is located on ground identified by the state as ancient (or pre-historic) landslide. While the slopes appear to be stable at present, there is some risk of slope instability on any slope that owners must be willing to accept. In addition to natural factors (e.g., heavy precipitation/snowfalls, steep topography, seismic shaking, and soil and groundwater conditions), other risks include soil saturation by water leaks, pipe breaks, excessive irrigation, improper or inappropriately redirected drainage, lack of drainage maintenance;

[1] Shannon & Wilson, 2020, Geotechnical Engineering Report (Rev. 0) for Country Acres Residential Development, August.

2705 Saint Andrews Loop ■ Suite A ■ Pasco, Washington 99301-3378 ■ 509 543-2860 ■ Fax 509 492-5970 ■ www.shannonwilson.com ■

SHANNON & WILSON

and oversteepening slopes (by filling at the top and/or excavation at or near the toes). Property development should consider impacts to stability of the site."

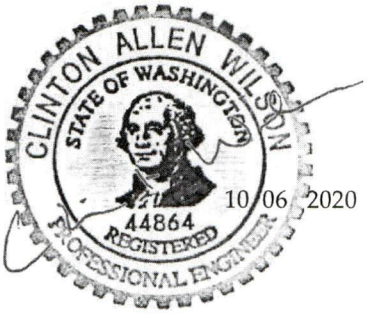
The above statement meets the intentions of the recommendations provided in our geotechnical report. Please refer to that report for our geotechnical recommendations and the limitations of the geotechnical report and this addendum.

CLOSING

We appreciate the opportunity to work with TTAP on this project. Please contact me at (509) 543-2866 if you have comments or questions regarding this letter report, or if we can be of further service to you.

Sincerely,

SHANNON & WILSON



Clinton A. Wilson, P.E.
Associate

CAW:WJP/caw

PCH 1.1

October 3, 2020

To: Benton County Planning Commission in care of the Planning Department

From: Robert Gilbert

Subject: Notice of Public Hearing SUB 2020-007/EA 2020-023 – The Preliminary Plat of Country Acres

Comments were provided by e-mail to Greg Wendt, Planning Manager, Planning Department by e-mail on August 29, 2020. I have not received response to these comments and questions. Response to these comments/questions is requested. I look forward to response to these comments either before or at the public hearing as appropriate. The prior e-mail and supporting information is attached for convenience.

Thank you for the opportunity to comment and ask questions.

Robert Gilbert

75311 Country Heights Dr.

Kennewick WA 99338

509-619-2458

Attachment: Comments and Questions provided on August 29, 2020

From: Robert Gilbert
Sent: Saturday, August 29, 2020 12:30 PM
To: greg.wendt@co.benton.wa.us
Subject: Comments on Country Acres Notice of Application

Greg,

Attached you will find comments provided on the Country Acres Notice of Application. Please let me know if there are questions.

Thanks

Rob Gilbert
509 619-2458

Sent from Mail for Windows 10

August 29, 2020

To: Benton County Planning Department

From: Robert Gilbert

Subject: Comments on Agency File Number: A 2020-023/SUB 2020-007 (Country Acres)

Comments were solicited in the Notice of Application within 14 days from date of publication to the Benton County Planning Department. Date of publication of Notice of Application: August 19, 2020.

1. What is the end state and intended use for Tracts A, B, and C?
2. Type of road construction was not specified. Recommend asphalt consistent with adjacent developments. This facilitates a higher standard development and improves dust control.
3. A drainage easement was shown in the plat for Country Meadow Heights that originates through proposed Country Acres lots 3 and 4. It entered the lot of Robert and Joyce Gilbert and then traveled through the lot of Stephen and Lorena Hiller (See Attachment 1). What is the status and treatment of this drainage path?
4. Given limited water supplies in the area, how will dust control be managed during road, utility and home construction? Soils in the area are very mobile once disturbed.

Thank you for the opportunity to comment and ask questions.

Robert Gilbert

Robert Gilbert

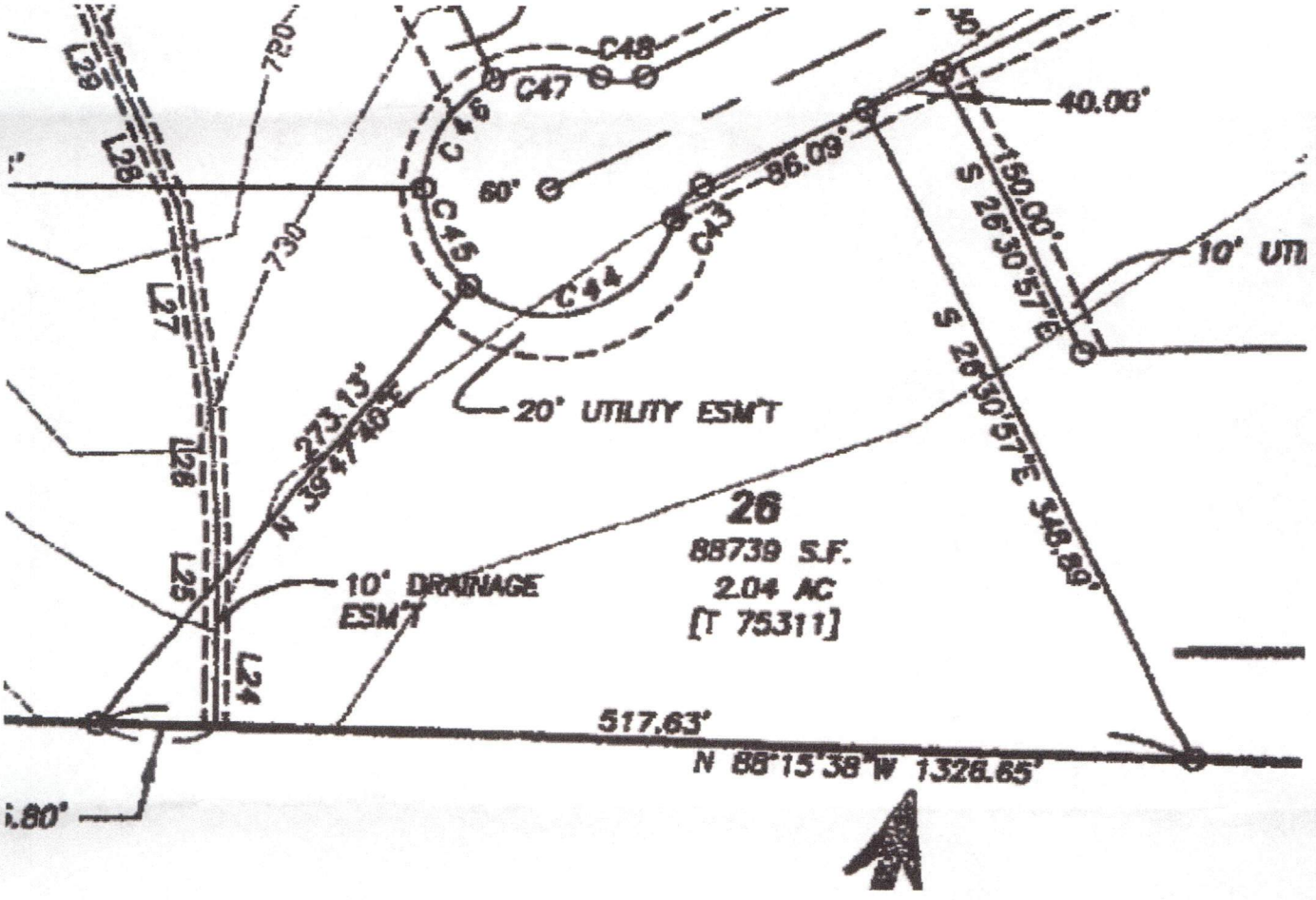
75311 Country Heights Dr.

Kennewick WA 99338

509-619-2458

Attachment: Part of County Meadow Heights Plat

ATTACHMENT


L29
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86.09'
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S 26°30'57"E
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20' UTILITY ESM'T
N 39°47'40"E
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88739 S.F.
2.04 AC
[T 75311]
10' DRAINAGE
ESM'T
517.63'
N 88°15'38"W 1328.85'
1.80'

Planning Department
P.O. Box 910
1002 Dudley Avenue
Prosser, WA 99350

Phone (509) 786-5612
Fax (509) 786-5629
planning.department@co.benton.wa.us
co.benton.wa.us

PCM 1.1

STAFF REPORT TO THE
BENTON COUNTY PLANNING COMMISSION

FILE NO:	SUB 2020-007 Preliminary Plat of Country Acres
MEMO DATE:	October 1, 2020
HEARING DATE:	October 13, 2020
APPLICANT:	TTAP Construction, LLC (Tyler Tapani) 1313 N Young St, Ste C Kennewick, WA 99336
OWNER:	Johanna K Colby Limited Partnership 24407 SE 192ND ST Maple Valley, WA 98038
LOCATION:	The site is located south of the KID canal, at the intersection of Country Heights Drive and Homestead Road, to be accessed at the end of Homestead Road in Section 20, Township 8 North, Range 28 East, W.M. Parcel 120882000004000.
PROPERTY SIZE:	Approximately 160.25 acres
AREA TO BE USED:	Approximately 156.13 acres
LAND USE:	Residential
COMP. PLAN:	Rural Remote
ZONING:	Rural Lands Five Acre District
SUGGESTED STAFF RECOMMENDATION:	Positive recommendation subject to eight (8) findings of fact and nineteen (19) conditions of approval.

APPLICATION DESCRIPTION

The applicant has submitted a preliminary plat application (PCM 1.4) and map (PCM 1.5) to subdivide approximately 160.25 acres into 14 residential lots. The preliminary plat is known as Country Acres. The land is zoned Rural Lands Five Acre District.

The average lot size in the development is approximately 11.17 acres and the lots are proposed to be served by a new public road and individual wells and septic systems.

The property is located south the KID canal and west of the intersection of Country Heights Drive and Homestead Road in unincorporated Kennewick, WA on parcel 120882000004000.

PUBLIC NOTICE

1. A Notice of Application was published in the Prosser Record Bulletin on August 19, 2020 (PCM 1.11).
2. Planning Staff mailed out review packets to technical agencies on August 13, 2020.
3. A Notice of Public Hearing was published in the Prosser Record Bulletin on September 30, 2020. (PCM 1.3)
4. Property owners within 300 feet were mailed notice on August 12, 2020.
5. A SEPA Determination of Mitigated Non-Significance (MDNS) (PCM 1.12) was issued on September 16, 2020.

APPLICABLE STANDARDS/ORDINANCES

1. Comprehensive Plan: Benton County Comprehensive Plan.
2. SEPA: BCC, Title 6, Chapter 6.35 Environmental Policy.
3. Subdivision Code: BCC, Title 9, Subdivision Regulations.
4. Zoning Code: BCC, Title 11, Zoning Regulations.
5. Critical Area Ord.: BCC, Title 15, Critical Areas- BCC 15.02 - 15.14.
6. RCW 58.17: Plats and Subdivisions.
7. Planning Commission/Open Record Hearing:

   Pursuant to BCC 9.05.070, an open record hearing on the proposed subdivision shall be held before the Planning Commission. The Planning Commission shall consider all relevant information, including but not limited to:

   a. The staff report by the Planning Department;
   b. Any written comments or concerns expressed by other reviewing agencies;
   c. Oral and written testimony from persons present at the hearing; and

   If the Planning Commission finds that additional information is needed, the Planning Commission may continue the hearing for up to thirty-five (35) days or such longer period as agreed to by the applicant and direct that the additional information be gathered.

AGENCY COMMENTS

1. Benton County Planning Department: See the suggested findings of fact and conditions of approval for the Planning Department's comments and requirements.

2. Benton County Public Works Department: See comments dated August 21, 2020 (PCM 1.16).
3. Benton Franklin Health District: See comments dated August 4, 2020 (PCM 1.13).
4. Benton PUD: See comments dated August 13, 2020 (PCM 1.14).
5. Benton County Fire Marshal: See comments dated August 24, 2020 (PCM 1.17).
6. Kennewick Irrigation District: See comments dated September 16, 2020 (PCM 1.24).
7. Washington State Department of Archeology & Historic Preservation: See comments dated August 18, 2020 (PCM 1.15).
8. Washington State Department of Fish & Wildlife: See comments dated August 24, 2020 and September 11, 2020(PCM 1.18 and 1.26).
9. Washington State Department of Ecology: See comments dated August 28, 2020 (PCM 1.21).
10. Washington State Department of Transportation: See comments dated August 27, 2020 (PCM 1.20).

CRITERIA FOR FINDINGS OF FACT

1. Pursuant to BCC 9.05.080, Consideration of Preliminary Subdivision, the Benton County Planning Commission, after conducting an open record hearing and considering all information presented, shall forward a recommendation to the Board of County Commissioners regarding whether the preliminary plat be approved, approved with conditions, or denied as proposed. Prior to making any recommendation, the Planning Commission shall make the following written findings:
    a. That the proposed subdivision conforms to the Benton County Comprehensive Plan, any applicable zoning requirements and other applicable land use controls;
    b. That the County Engineer, or designee, has provided a written representation that the proposed subdivision provides adequate means of access and conformance with the road and drainage requirements of Benton County;
    c. That the proposed subdivision meets the requirements of BCC 9.05;
    d. That the public interest will be served by the proposed division and dedication;
    e. That appropriate provisions are made for the public health, safety, and general welfare, for open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water, sanitary wastes, parks and recreation, playgrounds, schools, school grounds, and sidewalks;

f. That the Benton-Franklin Health District has reviewed the proposed subdivision for compliance with its rules and regulations and has not expressed objection to the proposed subdivision; and

g. If any portion of the proposed subdivision is located within an irrigation district, that the applicant has complied with RCW 58.17.310 as it now exists or is hereafter amended.

2. RCW 58.17.110 (1)(2)(3)(4). Approval or disapproval of subdivision - factors to be considered- conditions of approval, including, (4) If water supply is to be provided by a groundwater withdrawal exempt from permitting under RCW 90.44.050, the applicant's compliance with RCW 90.44.050 and with applicable rules adopted pursuant to chapters 90.22 and 90.54 RCW is sufficient in determining appropriate provisions for water supply for a subdivision, dedication, or short subdivision under this chapter.

RECOMMENDATION

Benton County Planning Staff will assist the Planning Commission with the determination of findings and conditions for the preliminary plat of Country Acres - File Number SUB 2020-007.

The Benton County Planning Department recommends that the Planning Commission forward a recommendation of approval to the Benton County Board of Commissioners for application SUB 2020-007, with the following suggested findings of fact, conditions of approval, and motion.

SUGGESTED FINDINGS OF FACT:

1. The proposed subdivision (PCM 1.4, application and PCM 1.5, preliminary plat map) conforms to the Benton County Comprehensive Plan, any applicable zoning requirements and other applicable land use controls;

    a. The proposed use is in conformance with the intent of the Comprehensive Plan based on the following facts:

        i. The 160.25 - acre site is bordered on the north and west by lands zoned RL-5; and on the south and east by lands zoned GMA AG.

        ii. The Benton County Comprehensive Plan designates this area as Rural Remote;

        iii. Rural Remote is the predominant rural land use in the County. This land is located mostly between the agricultural lands (GMA Agriculture), Rural Transition, and the Urban Growth Areas. Rural Remote land use is intended to enhance and preserve the County's rural character, which includes rural open space, low densities, wildlife habitat, public open space for outdoor recreational activities, and rural home sites on which a

limited range of agricultural activities may be conducted. Allowable density in Rural Remote land use is 1Du/5acres.

iv. The site is zoned Rural Lands Five Acre District (RL-5). The preliminary plat complies with the minimum lot size and minimum average lot width required for the RL-5 Zoning District;

v. The smallest lot size is 5.14 acres and the average lot size for this plat is 11.17 acres;

vi. This development is consistent with the required minimum lot size and density standards contained in the Benton County Comprehensive Plan; and

vii. The creation of 14 residential lots in the RL-5 Zoning District furthers the implementation of the Benton County Comprehensive Plan.

b. The proposed plat is consistent with the applicable zoning requirements of the Benton County Code, Title 11, based on the following facts:

i. The property is zoned Rural Lands Five Acre District (RL-5). The preliminary plat complies with the minimum lot size and minimum average lot width required for the RL-5 Zoning District.

c. The proposed subdivision does comply with the requirements of the Benton County Code, Title 9, Subdivision Regulations;

i. The proposed subdivision complies with the purpose and preliminary plat requirements included in BCC 9.05 Subdivision - Preliminary Plat;

ii. An open record hearing for the preliminary plat was held on October 13, 2020. During the hearing, the Planning Commission considered all relevant information including oral and written comments/testimony; and

iii. At the conclusion of the open record hearing, the Planning Commission rendered a recommendation to the Board of County Commissioners.

d. The proposed subdivision complies with the Benton County Critical Area Ordinance BCC Title 15.

i. Upon completion of a review of BCC Title 15 and the Benton County Critical Area Maps, the following critical areas have been identified on this property:

1. Geologically Hazardous Areas (steep slopes of 15% or greater and historic landslide areas) which have been addressed in the Geotechnical Engineering Report prepared by Shannon & Wilson, Inc. (PCM 1.7); and

2. Fish and Wildlife Conservation Areas (Priority Habitat and Species as identified by the Washington State Department of Fish and Wildlife)

which has been addressed in the Critical Areas Habitat Review prepared by Theresa Dusek Consulting (PCM 1.8).

ii. The proposed plat is not located in a special flood hazard area as identified on the Federal Emergency Management Agency Flood Insurance Rate Maps and BCC 3.26.

e. The requirements of the State Environmental Policy Act have been met based on the following:

i. The proposed subdivision has been reviewed under the requirements of BCC Title 6, Chapter 6.35 and the State Environmental Policy Act.

ii. During the SEPA comment period, the Washington State Department of Archeology and Historic Preservation (PCM 1.15) recommended a professional archeological survey of the project area be conducted.

1. A cultural resource report dated September 18, 2020 prepared by RLR Cultural Resources LLC was submitted to the Planning Department.

iii. An MDNS with mitigation/conditions (PCM 1.12) was issued for the project on September 16, 2020.

2. The County Engineer has provided a written representation that the proposed subdivision provides adequate means of access and conformance with the road and drainage requirements of Benton County;

a. Reference the Benton County Public Works Department comments as it relates to stormwater and drainage easements (PCM 1.25); and

b. Reference the Benton County Public Works Department comments as it relates to roads and mitigation requirements (PCM 1.16).

3. The proposed subdivision meets the requirements BCC 9 Subdivision Regulations;

a. The proposed subdivision complies with the purpose and preliminary plat requirements included in BCC 9.05 Subdivision- Preliminary Plat;

4. The public interest will be served by the proposed division and dedication;

a. The creation of 14 residential lots in the RL-5 Zoning District furthers the implementation of the Benton County Comprehensive Plan; and

b. Benton County standards are to be complied with including the construction and dedication of the new public road.

5. Appropriate provisions are made for the public health, safety, and general welfare, for open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water, sanitary wastes, parks and recreation, playgrounds, schools, school grounds, and sidewalks;

a. Appropriate provisions have been made for the public health and safety based on the following facts:

   i. The applicant has proposed that the preliminary plat be served by single family wells for potable domestic water services;

   ii. The Benton Franklin Health District has reviewed the preliminary plat and has no objections provided water and sanitary services are provided to the development and compliance with Health Departments standards is obtained by each lot; and

   iii. Fire hydrants are not required to be installed as a public water supply is not available at the site. West Benton Fire District #1 will provide fire protection.

b. Appropriate provisions have been made for open spaces based on the following facts:

   i. The proposed subdivision does not contain land to be designated for open space.

c. Appropriate provisions have been made for drainage ways based on the following facts:

   i. Knutzen Engineering prepared a preliminary stormwater drainage report for the applicants of Country Acres dated August 4, 2020 (PCM 1.6). The report discusses the provisions made for both offsite and onsite stormwater as it relates to this property and the proposed development;

   ii. Reference the Benton County Public Works Department comments as it relates to stormwater and drainage easements (PCM 1.25).

d. Appropriate provisions have been made for streets or roads, alleys, and other public ways based on the following facts:

   i. The public interest will be served by the proposed division and dedication as the Benton County Road Department standards are to be complied with including the construction and dedication of new public roads; and

   ii. Reference the Benton County Public Works Department comments as it relates to road and mitigation requirements (PCM 1.16).

e. Appropriate provisions have been made for transit stops based on the following facts:

   i. Ben Franklin Transit did not comment on transit service for the proposed development. The proposed plat and surrounding area are not served by public transit.

f. Adequate provisions have been made for potable water supplies based on the following facts:

i. The project is located in the Lower Yakima Watershed, WRIA 37;

ii. Per the Groundwater Permit Exemption (RCW 90.44.050), water for domestic uses does not require a state water right. Landowners are eligible to drill an individual well on each lot to provide domestic water.

iii. The County, in accordance with RCW 58.17.110, is required to ensure that appropriate provisions have been made for potable water supplies prior to the approval of a subdivision. The County has completed its review in accordance with this requirement, and through the submittal of well logs and supplemental written record materials, has determined that potable water supplies are both legally and physically/factually available for this proposed development. The potable water supplies identified from the submitted well logs and supplemental written record materials are from both a shallow unconfined aquifer, and a deeper basalt confined aquifer. The Kennewick Irrigation District , in its letter dated September 16, 2020 (PCM 1.24) has called into question the applicant's ability to withdraw potable water from the shallow unconfined aquifer known as Badger Coulee (Pasco Gravel units). KID has asserted the right to recapture artificially stored groundwater within its boundaries.

iv. The development consists of 14 single family lots and the development is collectively limited to a maximum of 5,000 gallons per day withdrawal. Additionally, all lots that are part of this development are collectively limited to no more than ½ acre of non-commercial lawn or garden for the life of the development if irrigation is to be provided to the lots by the permit exempt well(s) (½ acre total of non-commercial lawn or garden for all lots within the development combined). Based upon an average household use of approximately 350 gallons per day, this development will be less than 5,000 gallons per day.

v. An offsite irrigation source is not proposed for the development's lots.

vi. The Benton Franklin Health District has reviewed the proposal and find that it generally meets their requirements provided all conditions of approval as listed in the letter dated August 4, 2020 (PCM 1.13) are satisfied.

g. Adequate provisions have been made for sanitary waste based on the following facts:

i. All lots in the development are proposed to be served by individual septic systems.

h. Adequate provisions have been made for parks, recreation, and playgrounds based on the following facts:

   i. The proposed subdivision does not contain land to be designated for parks or recreation. The Benton County Code does not require park dedications.

i. Appropriate provisions have been made for schools and school grounds and for sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school based on the following facts:

   i. The proposed plat is within the Kennewick School District. The School District did not provide comments on this proposal as to whether there are adequate provisions to assure safe walking conditions for students who walk to and from school or waiting for school buses.

6. The Benton-Franklin Health District has reviewed the proposed subdivision for compliance with its rules and regulations and has not expressed objection to the proposed subdivision;

   a. Reference the BFHD comments as it relates to this preliminary plat (PCM 1.13).

7. The proposed subdivision is not located within an irrigation district; and

8. RCW 58.17.110 (1)(2)(3)(4). Approval or disapproval of subdivision - factors to be considered- conditions of approval, including, (4) If water supply is to be provided by a groundwater withdrawal exempt from permitting under RCW 90.44.050, the applicant's compliance with RCW 90.44.050 and with applicable rules adopted pursuant to chapters 90.22 and 90.54 RCW is sufficient in determining appropriate provisions for water supply for a subdivision, dedication, or short subdivision under this chapter.

   a. The proposed plat is consistent with RCW 58.17.110 (1)(2)(3)(4). The plat is to be provided potable water from individual groundwater wells.

   b. The development is collectively limited to a maximum withdrawal of 5,000 gallons per day for domestic use from all individual exempt wells within the development for the life of the development. Based upon an average household use of approximately 350 gallons per day according to the Washington State Department of Health, this development's use will be less than 5,000 gallons per day. Additionally, all lots that are part of this development are collectively limited to no more than ½ acre of non-commercial lawn or garden for the life of the development if irrigation is to be provided to the lots by the permit exempt well(s) (½ acre total of non-commercial lawn or garden for all lots within the development combined). However, more restrictive water withdrawal limits may be imposed, above and beyond the 5,000 gallon a day limitation and the ½ acre of non-commercial lawn or garden, as part of the County's Rural Water Supply Program.

SUGGESTED CONDITIONS OF APPROVAL:

1. Applicant shall meet and comply with the requirements of the Benton County Road Department, including the following:

    a. The developer shall provide a complete set of engineered construction drawings for review and approval by the County and associated utilities. The drawings shall contain all appropriate information listed on the attached Minimum Plan Requirements. Grading plan will include grading to shape any drainage easements to route and fully contain all runoff based upon the 100-year storm within the easement limits. All plans and associated reports shall be prepared by a Professional Engineer licensed to practice in the State of Washington;

    b. All construction shall be in accordance with the most current WSDOT Standard Specifications for Road, Bridge and Municipal Construction, applicable Benton County Standard Plans and the requirements of the County Engineer;

    c. All roads within this plat shall have a paved width of 24 feet with a minimum 1-foot gravel shoulder. Roadways shall be designed for a minimum 25 mile per hour design speed;

    d. The pavement return radius at all intersections shall be a minimum of 35 feet;

    e. All stormwater from the roadways shall be contained on the plat and shall utilize surface infiltration (ditches, swales, ponds) for detention. The developer shall have an infiltration test performed at each proposed detention area. Tests shall be done with an infiltrometer using the falling head or constant head method. Other methods of infiltration rate determination shall be approved by the County;

    f. The developer shall provide a complete stormwater runoff report developed in accordance with the Stormwater Management Manual for Eastern Washington accosting for all impervious and pervious surfaces draining to the roadside ditches. Design storm shall be a Modified SCS Type IA with a 25-year return frequency;

    g. All signage including but not limited to stop signs, speed limit signs and street name signs shall be installed by the developer in accordance with Benton County Standard Plans;

    h. All new power, telephone, cable TV and irrigation shall be installed outside of the County right of way in the appropriate easements. Domestic water piping may be installed within the County right of way in accordance with a valid franchise agreement;

    i. Survey monuments, with cases and covers per Benton County Standard R-14B, shall be placed at all road intersections, points of curvature, points of tangency, centers of cul-de-sacs, section corners and quarter corners. All

monuments shall be set by a Professional Land Surveyor licensed to practice in the state of Washington; and

j. Please add the following notes to the face of the final plat:

- Benton County is not responsible for the maintenance or upkeep of any stormwater retention facility or drainage easements. All such maintenance and upkeep are the responsibility of the underlying property owner.
- Prior to the construction of any driveway or the issuance of any building permit for any lot within this subdivision the property owner shall obtain a Road Approach Permit from the Benton County Public Works Department and install the required temporary construction access.
- No trees, shrubs, weeds, fencing or other obstructions more than 24 inches in height are permitted within Benton County right of way.
- Property owners that install grass, curbing, rock mulch or other landscaping within the County right of way do so at their own risk. The County will not repair or replace damaged landscaping due to construction or maintenance operations.

k. For more information please contact Cristina Woods at 509-786-5611 or Cristina.Woods@co.benton.wa.us.

2. Applicant shall meet and comply with the requirements of the Benton Franklin Health District. BFHD provided the following comments:

a. Each lot must be configured to allow a 100-foot radius water supply protection zone to fit within the lot lines or a 100-foot protection zone must be established around each proposed well site;

b. All lots shall have a minimum of 1 acre in size and contain a minimum of 20,000 square feet of usable land area;

c. All wells, irrigation lines, canals, and surface waters within 150 feet of the plat are shown on the plat map;

d. Prior to final approval, this office must be given the opportunity to review the final plat for compliance with Benton-Franklin Health Department Rules and Regulations No. 2, and WAC 246-272A, and issue appropriate comments to the Benton County Planning Department;

e. Prior to the issuance of any onsite sewage disposal permits, additional test holes may be required to verify acceptable area for initial and replacement sewage disposal system and design criteria such as trench depth on each lot;

f. It is recommended that some provision be made to facilitate future connection to a municipal sewer utility at such time as said utility becomes available;

g. The following statement is placed on the plat:

- "This plat appears to have suitable conditions for the use of on-site sewage disposal systems. However, because of the nature of the testing methods used, we have no way of determining whether each lot can comply with Benton-Franklin Board of Health Rules and Regulation at the time of permit issuance. Further be advised this department's approval of any lot within this plat for the use of on-site sewage disposal systems may be contingent upon that lot passing additional soil inspections, percolation tests, and/or other requirements at a later date."

h. All areas with slope greater than 20% must be noted on the plat as well as these areas not being suitable for on onsite sewage disposal system.

i. Contact BFHD for more information." Please contact Rebecca Warrington at (509) 460-4335 for more information.

3. Applicant shall meet and comply with the requirements of the Benton PUD, including the following:

   a. Please show a utility easement in the following locations:

      - The east 10 feet of Lots: 12 and 13; and
      - The north 10 feet of Lots: 12 and 9.

   b. Please contact Shanna Everson with Benton PUD at (509) 585-5367 for more information.

4. Applicant shall meet and comply with the requirements of the Benton County Fire Marshal including the following:

   a. If any individual driveway is 200 feet or more in length, an approved turn around for Emergency Services vehicles is required at the end of the driveway.

   b. If any individual driveway is 300 feet or more in length, a 10′ x 30′ pullout is required every 300′.

   c. The subdivision shall comply with BBC 3.18.045 Minimum Road Requirements and 3.05.046 Special Fire Protection.

   d. Please contact the Benton County Fire Marshal, Clark Posey, at (509) 735-3500 or Clark.Posey@co.benton.wa.us for more information.

5. Applicant shall meet and comply with the requirements of the Department of Archeology and Historic Preservation, including the following:

   a. DAHP recommends a professional archaeological survey of the project area be conducted prior to ground disturbing activities.

   b. For more information please contact Sydney Hanson, Transportation Archaeologist at (360) 586-3082 or Sydney.Hanson@dahp.wa.gov.

6. Applicant shall meet and comply with the requirements of the Department of Ecology, including the following:

a. In Washington State, prospective water users must obtain authorization from the Department of Ecology before diverting surface water or withdrawing ground water, with one exception. Ground water withdrawals of up to 5,000 gallons per day used for single or group domestic supply, industrial purposes, stock watering or for the irrigation of up to one-half acre of lawn and garden per project are exempt from the permitting process. Water use under the RCW 90.44.050 exemption establishes a water right that is subject to the same privileges, restrictions, laws and regulations as a water right permit or certificate obtained directly from Ecology.

b. For more information please contact Christopher Kossik at 509-454-7872 or email at christopher.kossik@ecy.wa.gov.

7. Applicant shall meet and comply with the requirements of the Department of Fish and Wildlife, including the following:

a. The proposed preliminary plat is within the much larger Badger Canyon corridor / connected landscape and its importance for shrub steppe and dependent wildlife is not unique to the WDFW Priority Habitat and Species (PHS) database. This area has also been identified in other multi-stakeholder and state-wide analyses. Both the Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion (2012) and The Arid Lands Initiative – Shared Priorities for Conservation at a Landscape Scale (2012) highlight the importance of this and similar corridors / connected landscapes in the Columbia Basin and state-wide. These habitats are important in maintaining the ecological integrity and viability of native habitats and species statewide.

b. While this SEPA is only for a preliminary plat, we recommend that as an initial aid in habitat conservation strategies that encompass the entire 155-acre site, that the project review the Management recommendations for Washington's priority habitats: managing shrub-steppe in developing landscapes (WDFW 2011), and Site-specific management: how to avoid and minimize impacts of development to shrub-steppe (WDFW 2011). These documents provide useful information and solutions, such as clustering development into least sensitive areas and various incentives, to maintain the ecological integrity and connectivity of shrub-steppe habitat.

c. We agree with the recommendations on page 9 of the Critical Areas Habitat Review, but are concerned that lots 1 and 2, as drawn, impact the Intact Shrub Steppe area identified in the Critical Areas Habitat Review and may need to have the southern boundary redrawn. Additionally, we recommend that any future residential development be as near as possible to the proposed Homestead Road and that site preparation only include what is needed for the home footprint. Since the area will be irrigation water limited and that the future residential development is in a fire-prone landscape, we recommend that the following elements be included with the site permit so that all residences are familiar with creating a "fire-wise" community.

- Xeriscaping – use native vegetation (grasses and shrubs) for landscaping.
- Seasonal grazing
    1. Spring green-up is best time (April-June)
    2. Reduce vegetation (fuels) as an aid in fire protection
    3. Promote native vegetation (mainly grasses)
- Limited fencing
    1. Fences accumulate wind driven weeds (tumble weeds) and can become a significant fire hazard
    2. Fences for livestock should be the minimum to contain/control animals. Temporary single strand electrical fence that is seasonally installed/removed is preferred.

d. For more information please contact Mike Ritter with any questions at Michael.ritter@dfw.wa.gov or at 509-543-3319.

8. Applicant shall meet and comply with the requirements of the Kennewick Irrigation District, including the following:

a. The plat shall include the following irrigation easements consistent with KID requirements:

1. On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or five (5) feet in width if adjacent to a utility easement, located along the road frontage or access easements of each lot. An irrigation easement may be included within the 'sidewalk and utility' easement if one is proposed, denoting the easement as a "Sidewalk, Utility, and Irrigation Easement."

b. In addition, pursuant to RCW 58.17.310 (1), KID would like to inform the County of the following information regarding the proposed preliminary plat upon the structural integrity, including lateral support, of KID's facilities, other risk exposures, and the safety of the public and irrigation district, and related conditions of approval that KID deems to be necessary as a result:

- Conditions Related to Design, Grading and Construction:

1. Pursuant to RCW 58.17.310 (1), the KID would like to inform Benton County that failure to mitigate the introduction of excessive water into the soils above the canal may result in a canal embankment breach or failure. Should an embankment breach occur near this development, there is potential for public safety to be at risk. The USBR holds title to the Main Canal Division III Canal below the proposed subdivision and any slope stability issues could potentially result in a canal embankment breach and subsequent loss of life and property

2. There exists KID/United States Bureau of Reclamation (USBR) Right-of-Way
    a. (ROW) along the northern property line. The Applicant must show this ROW on the preliminary plat. A copy of the ROW maps are available upon request. The proximity of the proposed residential development to the KID ROW increases the risk of harm to KID facilities and exposes residents to risk of injury. In order to mitigate these risks, the KID requires the following:
    b. No permanent structures within the USBR ROW.
    c. A note on the face of the plat that states: "No grading may be performed or any permanent structure built within KID right of way without an approved permit from the Kennewick Irrigation District and/or the United States Bureau of Reclamation, when applicable."
    d. For each phase of the project, include a note on the face of the Final Plat stating as follows: "This property is located within the boundaries of the Kennewick Irrigation District and in the immediate vicinity of irrigation infrastructure. Please refer to www.kid.org for further information."
    e. USBR Right-of-Way signage to be installed by the Applicant along the ROW that have been approved by the KID prior to final plat approval of each phase abutting the ROW.
3. The Project must include the following design feature:
    a. Stormwater systems for the Project shall be designed to retain, at minimum, a 100-year storm event above the Main Canal Division III Canal and to minimize the introduction of water into the soils up-gradient of the canal.
    b. KID review and approval of all stormwater plans are required prior to pre-plat approval.
4. Applicant must submit, for engineering review and approval by KID/USBR, engineering plans detailing construction/grading for each phase of the Project above to KID easements and ROWs.
    - For each phase of the Project, KID/USBR review and approval of grading and construction plans is required to allow KID to assure all reasonable measures to protect any easements and ROWs. Such review and approval will be coordinated as part of the County's review and Preliminary Plat approval process.
    - The Applicant shall include the potential failure of KID system components in its public offering statement for the plat pursuant to RCW 58.19.055(1)(r), which requires a public

offering statement to include "[a] list of any physical hazards known to the developer which particularly affect the development or the immediate vicinity in which the developer is located and which are not readily ascertainable by the purchaser"

- The Applicant shall post signs in appropriate areas with KID's easements and ROW's identifying KID's facilities (with locations and design approved by KID).
- The Applicant shall provide fencing for the protection of KID facilities, which shall include but not be limited to adjacent KID/USBR ROW, with fencing locations and design approved by KID.
- Please include the following irrigation title block:

  I hereby certify that the property described hereon is located within the boundaries of the Kennewick Irrigation District but that this property is not classified as irrigable land and is not entitled to irrigation water under the existing operating rules and regulations of this district. I further certify that the irrigation easements shown on this binding site plan are adequate to serve all lots shown hereon per the requirements of RCW 58.17.310.

- All subdivisions of land are required to be approved by the KID Board of Directors during a KID Board Meeting. KID Board Meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of one week prior to a regularly scheduled Board Meeting in order to be considered at that meeting. This change can potentially extend the approval process by a minimum of one week.

c. For more information please contact Blaine Broberg at 509-586-6012.

9. Applicant shall meet and comply with the requirements of the Benton County Planning Department, including the following:

   a. The applicant shall meet and comply with the SEPA Determination for this application, including the MDNS with mitigation/conditions issued by the Planning Department on September 16, 2020 (PCM 1.12).

      - Including but not limited to the following recommendations as outlined in the Geotechnical Engineering Report prepared by Shannon & Wilson, Inc. (PCM 1.7):

1. Any potential buyer within the development be made aware of the potential for slope instability to exist and typical factors which increase the risk of slope instability.
2. Irrigation practices should be limited to nonexistent in the development.
3. Stormwater discharge, including building downspouts, should be directed away from the steeper areas.

- Including but not limited to the following recommendations as outlined in the Critical Areas Habitat Review prepared by Theresa Dusek Consulting (PCM 1.8):
  1. Steep slopes should be avoided with development.
  2. The intact shrub-steppe habitat should not be impacted.
  3. An onsite habitat corridor that connects contiguous offsite native shrub-steppe and grassland habitats to the northwest and south-southwest with should be defined.
- Including but not limited to the following recommendations as outlined in the Washington State Department of Fish and Wildlife comments (PCM 1.18 and 1.26):
  1. WDFW is concerned that Lots 1 and 2, as drawn, impact the Intact Shrub Steppe area identified in the Critical Areas Habitat Review and may need to have the southern boundary redrawn.
  2. WDFW recommends that any future residential development be as near as possible to the proposed Homestead Road and that site preparation only include what is needed for the home footprint.
  3. Due to the limited irrigation water for the area and that the future residential development is in a fire-prone landscape, WDFW recommends that the following elements be included with the site permit so that all residences are familiar with creating a "fire-wise" community:
     a. Xeriscaping – use native vegetation (grasses and shrubs) for landscaping.
        i. Seasonal grazing
           1. Spring green-up is best time (April-June)
           2. Reduce vegetation (fuels) as an aid in fire protection
           3. Promote native vegetation (mainly grasses)
     b. Limited fencing
        i. Fences accumulate wind driven weeds (tumble weeds) and can become a significant fire hazard

ii. Fences for livestock should be the minimum to contain/control animals. Temporary single strand electrical fence that is seasonally installed/removed is preferred.

b. The applicant shall meet and comply with the recommendation's included in the August 18, 2020 letter from the Washington State Department of Archeology and Historic Preservation.

c. Tracts A-C are not allowed on the final plat. The applicant will need to complete a boundary line adjustment with the adjacent landowners prior to the final plat.

d. Indicate any areas within the plat having a slope of fifteen (15) percent or greater.

e. The following notes shall be placed on the final plat:

- "During construction on each property, all construction debris shall be maintained on-site and properly disposed of. Dust control measures including an adequate water supply shall be provided".
- "Prior to the granting of a building or factory assembled (FAS) permit for each lot by the County, the applicant for a building or FAS permit must comply with RCW 90.44.050, as currently existing and hereafter amended, regarding public ground water. The applicant must demonstrate that potable water is legally available by presenting (A) evidence of a valid water right permit from the Washington State Department of Ecology for the proposed wells for each lot; (B) a water well report filed and received by the Washington State Department of Ecology for an exempted well that complies with the 5,000 gallon per day exemption described in RCW 90.44.050, as currently existing and hereafter amended; or (C) a written approval of the Washington State Department of Health that a group A or group B public water supply system has been installed and is available for providing potable water to the lot."
- "Per BCC 11.16A.080(6) - Setback Requirements - All dwelling units and swimming pools shall have a setback of one hundred fifty (150) feet from any parcel located partially or wholly within the Growth Management Agricultural Act District (GMAAD) and from any adjacent orchard, hop field or vineyard (or combination thereof) of ten (10) acres or more on one parcel or on contiguous parcels under comment ownership. Please contact the Benton County Planning Department for further information."
- "All lots within this development are collectively limited to NO more than 5,000 gallons a day of groundwater withdrawal for domestic use from the individual exempt wells. Additionally, all lots that are part of this development are collectively limited to no more than ½ acre of non-commercial lawn or garden for the life of the development if

irrigation is to be provided to the lots by the permit exempt well(s) (½ acre total of non-commercial lawn or garden for all lots within the development combined)."

- "The County, in accordance with RCW 58.17.110, is required to ensure that appropriate provisions have been made for potable water supplies prior to the approval of a subdivision. The County has completed its review in accordance with this requirement, and through the submittal of well logs and supplemental written record materials, has determined that potable water supplies are both legally and physically/factually available for this proposed development. The potable water supplies identified from the submitted well logs and supplemental written record materials are from both a shallow unconfined aquifer, and a deeper basalt confined aquifer."
- "The Kennewick Irrigation District has asserted the right to recapture artificially stored groundwater within its boundaries and within the shallow unconfined aquifer known as Badger Coulee (Pasco Gravel Units). The lots/wells within this development utilizing the shallow unconfined aquifer known as Badger Coulee (Pasco Gravel Units) for potable water supplies, could be effected should the Kennewick Irrigation District choose to recapture the artificially stored groundwater from said aquifer."
- "Addresses [noted in brackets] are subject to change until the exact location of the dwelling and access onto the plat is determined."
- "A geotechnical risk assessment report is required prior to any grading or the issuance of a building permit within this development."
- "Geologically Hazardous Areas are located within this development and there is potential for slope instability to exist and typical factors such as excess water and soil disturbance can increase the risk of slope instability."
- "Irrigation practices should be limited to nonexistent in this development."
- "Stormwater discharge, including building downspouts, should be directed away from the steeper areas within this development."

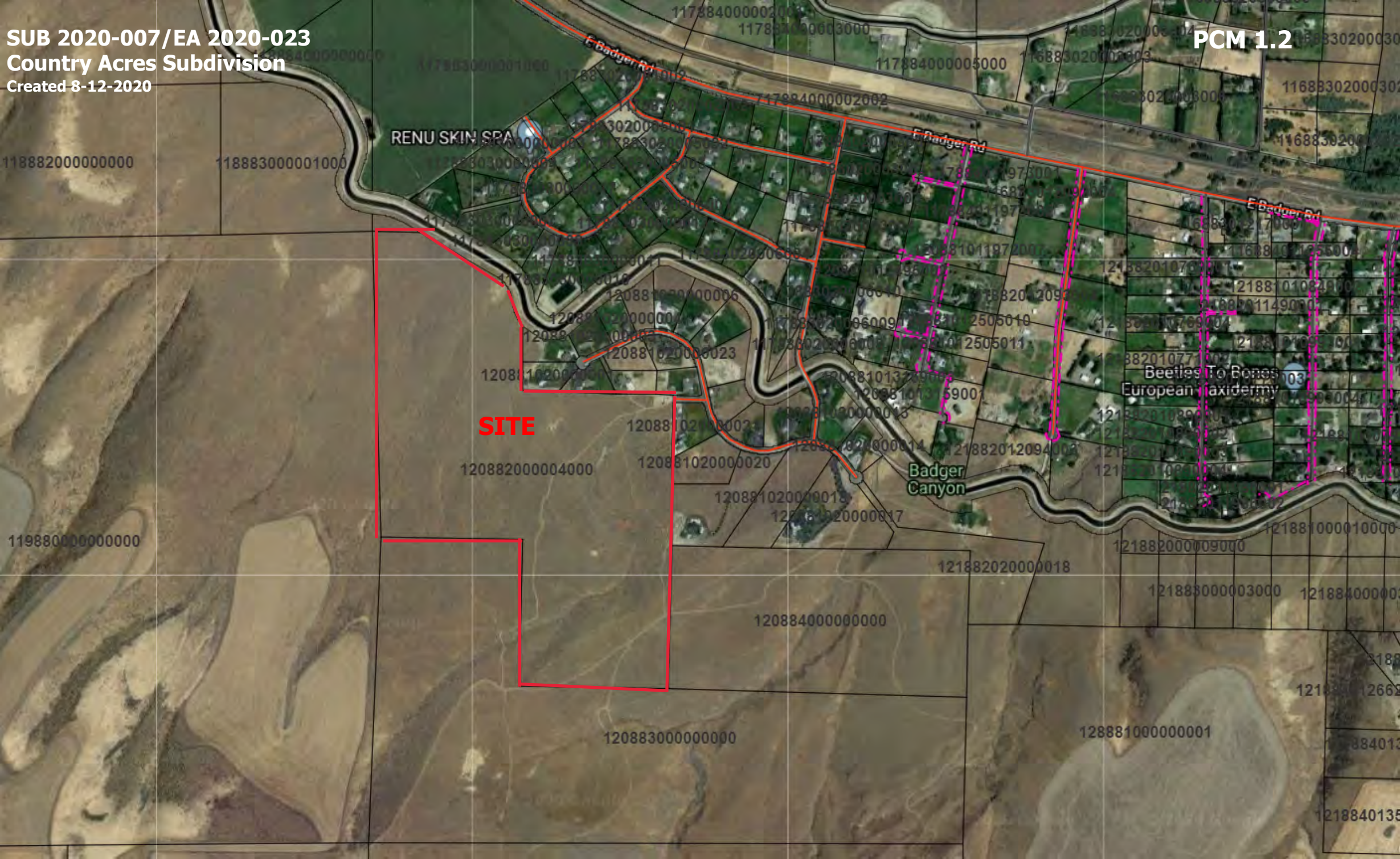
10. Preliminary plat approval shall be effective for 5 (five) years from the date of Board of County Commissioner approval. Exceptions shall comply and approved subject to the provisions of BCC 9.05.110 (e) as currently existing or hereafter amended.
11. Any amendments to an approved preliminary plat must be completed in accordance with BCC 9.05.140 as currently existing or hereafter amended.
12. Prior to the final plat being reviewed for final approval, the requirements of the Benton County Planning Department, Benton County Fire Marshal, Benton County

Engineer, Benton Franklin Health District, and other commenting agencies and conditions shall be met and complied with.

13. Final Plat applications shall be submitted to the Planning Department. An applicant shall submit a final plat application that follows BCC 9.07 - Final Plat standards and requirements, as currently existing or hereafter amended:
14. All lots in the final plat shall meet the design standards for final plat approval as specified in Benton County Code 9.09 - Design and Improvements, as currently existing or hereafter amended, and meet all of the zoning requirements as specified in Benton County Code, Title 11 - Zoning, as currently existing or hereafter amended.
15. The location and size of all irrigation and utility easements necessary for electric power, telephone service, water, sewer and cable TV are to be coordinated with the proper utilities and/or reviewing agencies and shown on the final plat. The developer will need to open the utility trenches, including road crossings, based on individual utility requirements and specifications.
16. Address numbers shall be coordinated with the Planning Department and placed on the final plat. Addresses [noted in brackets] are subject to change until the exact location of the dwelling and access onto the plat is determined.
17. The applicant shall coordinate with the Post Office regarding centralized box unit (CBU) locations for the development, if necessary.
18. All of the statements that are required to be on the notes of the plat shall be either: 1) recorded as a restrictive covenant on each applicable parcel with the County Auditor, or 2) described in detail in the developer's covenants that are recorded and provided to each lot owner, prospective landowner, and the Planning Department at the time of final plat approval and recording.
19. That the preliminary plat is modified in all necessary respects so that the final plat will reflect the requirements of approval. If the final plat will be in conflict with any of the conditions of approval as adopted by the Planning Commission as a result of the modifications, then the final plat must be reviewed by the Planning Commission at a public meeting for approval prior to sending the final plat to the Board of County Commissioners.

SUGGESTED MOTION:

The Planning Commission forwards a recommendation of approval to the Benton County Board of Commissioners for Application SUB 2020-007/EA 2020-023, subject to the eight (8) findings of fact and nineteen (19) conditions of approval as stated in the staff memo (PCM 1.1) dated October 1, 2020, which includes the preliminary plat approval for 14 residential lots and that the Chairman, in conjunction with the Secretary of the Planning Commission, prepare and adopt written findings and conclusions reflecting the commission's recommendation for approval that articulate and are consistent with the findings, conclusions and recommendations made by the Planning Commission tonight.


SUB 2020-007/EA 2020-023
Country Acres Subdivision
Created 8-12-2020
PCM 1.2
E Badger Rd
RENU SKIN SPA
SITE
Badger Canyon
Beetles To Bones European Taxidermy
118882000000000
118883000001000
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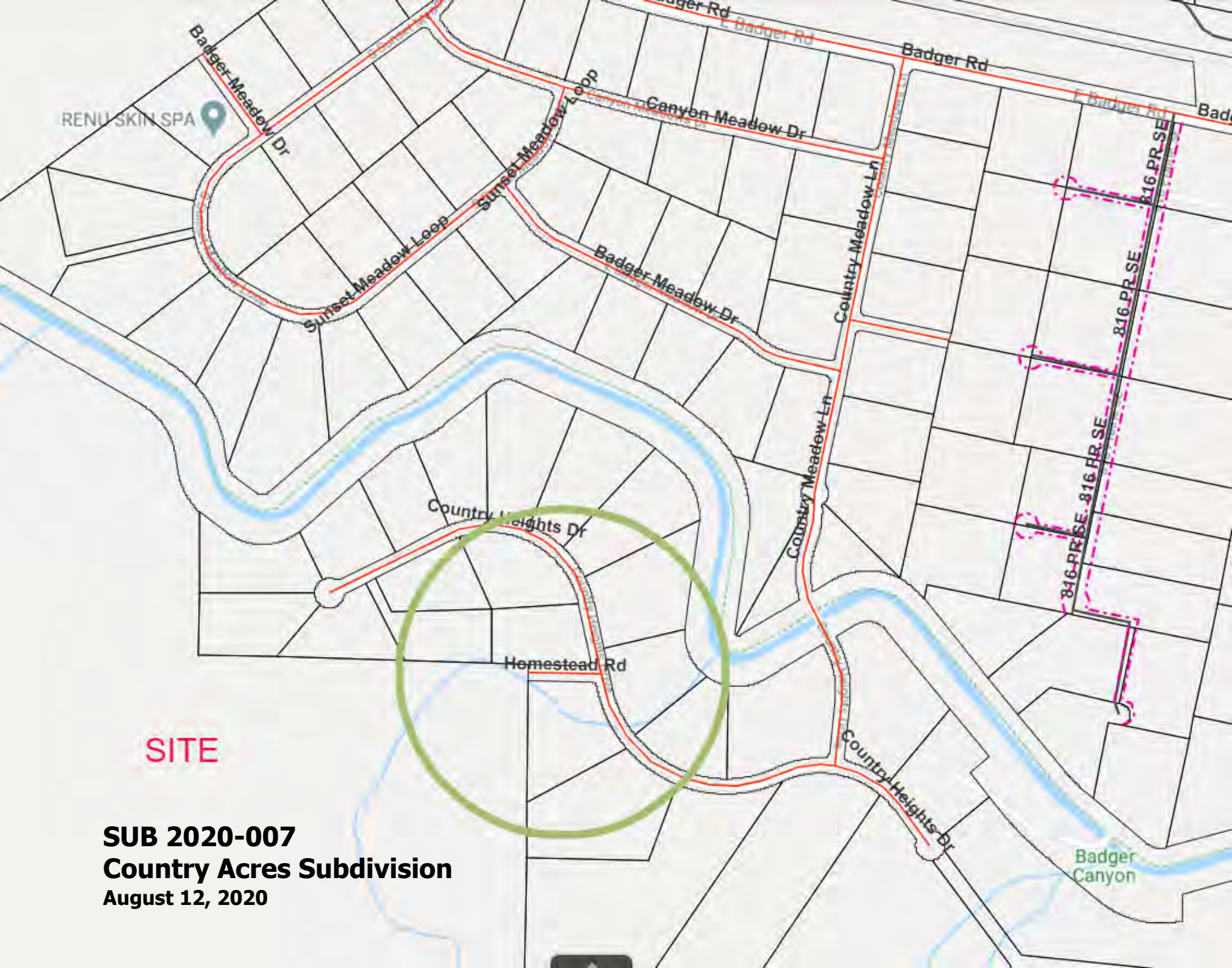


SUB 2020-007
Country Acres Subdivision
August 12, 2020

Planning Department
P.O. Box 910
1002 Dudley Avenue
Prosser, WA 99350

Phone (509) 786-5612
Fax (509) 786-5629
planning.department@co.benton.wa.us
co.benton.wa.us

PCM 1.3

NOTICE OF OPEN RECORD HEARING

NOTICE IS GIVEN that the following application will be considered by the Benton County Planning Commission at public hearings on Tuesday, October 13, 2020, at 6 p.m.

SUB 2020-007/EA 2020-023 - The preliminary plat of Country Acres, a subdivision of 160.25 acres into fourteen (14) lots, with an average lot size of 11.17 acres and smallest lot size of 5.14 acres. The zoning designation for the property is Rural Lands Five Acre (RL-5) Zone. The site is located south the KID canal, at the intersection of Country Heights Drive and Homestead Road, to be accessed at the end of Homestead Road in Section 20, Township 8 North, Range 28 East, W.M. Parcel 120882000004000. Project Applicant is Tyler Tapani, 1313 N Young Street, Suite C, Kennewick, WA 99336.

NOTICE IS FURTHER GIVEN that said subdivision application has been reviewed under the requirements of the State Environmental Policy Act and a Determination of Mitigated Non-Significance (MDNS) was issued on September 16, 2020 and accordingly an Environmental Impact Statement is not required. Any comments regarding this determination and the environmental impacts of the proposal can be made at the Planning Commission Hearing as using the method noted below or in writing to the Benton County Planning Department by 5 p.m. on Monday October 12, 2020.

Due to the ongoing and unprecedented COVID-19 emergency, participation in this meeting will only be offered virtually. All concerned persons may virtually appear and present any support for or objection to an application or provide written testimony to the Planning Commission in care of the Planning Department on or before the date of the hearing. Written testimony may be submitted to the Benton County Planning Department PO Box 910 Prosser, WA 99350. Any information submitted to Benton County is subject to the public records disclosure laws for the State of Washington (RCW Chapter 42.56) and all other laws that may require the release of the documents to the public.

To find information on virtual attendance options, including streaming video, Webex video conferencing and telephone, please visit www.tinyurl.com/BCPublicNotice

If you wish to provide comments on the action before the Planning Commission, we ask that you please fill out our online form (found at https://tinyurl.com/testifyform) and submit your request to our office. You must submit a request form to participate in the hearing. If you prefer to make the request by phone, please call our office at (509) 786-5612 and we can add you to the list for providing testimony. At the meeting the names of those wishing to testify will be called out and at that time you will be able to present your comments/concerns regarding the specific agenda item. We do ask that participants please limit background noise or mute their line when not presenting testimony to prevent any unnecessary interruption to the meeting.

If you have questions about submitting comments or attending the virtual hearing, please contact the Planning Department at 509-786-5612.

At this hearing, the Planning Commission may recommend approval, conditional approval, or disapproval of the applications to the Benton County Board of Commissioners. All parties concerned may present any support or objections for the application per the phone in instructions above. Information concerning the applications can be obtained at the Benton County Planning Department, by calling 736-3086 (Tri-Cities) or 786-5612 (Prosser).

Dated at Prosser, Washington on this 21st day of September 2020.

Martin Sheeran, Chairman
BENTON COUNTY PLANNING COMMISSION

Greg Wendt, Planning Manager
PLANNING DEPARTMENT

PUBLISH ON: September 30, 2020

BENTON COUNTY PRELIMINARY PLAT APPLICATION

File No. SUB 2020-007
See also EA 2020-023

RECEIVED
AUG 05 2020
Benton Co. Planning Dept.

Subdivision Name: Country Heights Acres

1. Applicant Name: Tyler Tapani, TTAP Construction, LLC
   Applicant Address: 1313 N. Young St, Suite C, Kennewick, WA 99336
   Telephone number: Home (509) 440-3273 Work

2. If you wish to be contacted via email, please list your email address:
   tyler@ttapconstruction.com

3. Legal Owners Name: Same as applicant
   Legal Owners Address: Same as applicant
   Telephone number: Home Work

4. Name and address of land surveyor Rogers Surveying Inc PS, David Baalman
   1455 Columbia Park Trail, Richland, WA 99352
   Telephone (509) 783-4141

5. Name and address of engineer Knutzen Engineering, Nathan Machiela
   5401 Ridgeline Drive, Suite 160, Kennewick, WA 99338
   Telephone (509) 222-0959

6. Parcel number and Legal description of property included in the preliminary plat:
   Parcel #120882000004000
   The west half of the northwest quarter and the southeast quarter of the northwest quarter and the northeast quarter of the southwest quarter, all in Section 20, Township 8 north, Range 28 east, W.M., Benton County, Washington.

7. **Land Use Information:**
   a. Total area involved 160.25 AC
   b. Total number of lots 14
   c. Smallest lot area 5.14 AC
   d. Average lot area 11.17 AC

e. Acreage in parks N/A

f. Length of public streets 2860 ft

g. Total acreage of public streets 4.12

8. Proposed annexation plans N/A

9. Plat will be served by:
Water: Individual Wells ✓ City Water _____
Name of City Provider N/A
Private Water System N/A Name & Address of Private System N/A
_____
Sewer: Septic Tank ✓ City Sewer _____ Private System _____
Power: P.U.D. ✓ R.E.A. _____
Telephone: Frontier Telephone ✓ Sprint Telephone _____
Natural Gas: Yes _____ No ✓ Name of Utility _____
Cable T.V. Yes _____ No ✓ Name of Utility _____
Irrigation: Yes _____ No ✓ Name of Utility _____
Private Irrigation Lines: Yes _____ No ✓

10. School District Kennewick School District

11. Fire District Benton County Fire Protection District 1

12. Any other comments or information that is significant _____
_____
_____

13. Will this plat be finalized in phases? Yes _____ No ✓ If so, how many? _____

14. Comprehensive Plan Designation Agriculture - Rangelands

15. Zoning Designation Rural Residential Lands 5 Acre District

IF YOU HAVE ANY ADDITIONAL COMMENTS PLEASE ATTACH THEM ON A SEPARATE SHEET OF PAPER.

I also certify that the information given in this application is true and complete to the best of my knowledge.

Signature Block for individuals only.

DocuSigned by: TYLER TAPAM 0F67EE6A2B4749B...	TYLER TAPANI	8/5/2020
Applicant's Signature	Print Name	Date
Signature of Legal Owners	Print Name	Date
Signature of Person with additional ownership interest	Print Name	Date

ALL persons with an ownership interest in the property on which the land use action is proposed must sign the application other than interests exclusively limited to ownership of the parcel's mineral rights.

If the applicant or owner is a corporation/partnership/LLC etc. please use the following signature block. Please copy this page if more than one corporation/partnership/LLC signature is required.

Applicant or legal owner:_____

By:_____,_____
(print name) (Title)

Signature:_____,_____
(Signature) (Title)

The above signed officer of _____ (name of entity) warrants and represents that all necessary legal and corporate actions have been duly undertaken to permit _____to submit this application and that the above signed officer has been duly authorized and instructed to execute this application.

Any information submitted to the Benton County Planning Department is subject to public records disclosure law for the State of Washington (RCW Chapter 42.17) and all other applicable law that may require the release of the documents to the public.

FEE: $1,000.00, plus $50.00 per lot submitted with the application. Checks are to be **made payable to the Benton County Treasurer. THIS FEE IS NON-REFUNDABLE. THE RECORDING FEE IS TO BE PAID AT THE TIME OF RECORDING.**

FOR OFFICIAL USE ONLY:

Critical Area Review Completed by _____ on _____.

Application approved for processing by _____ on _____

Zoning _____Comp Plan Designation_____

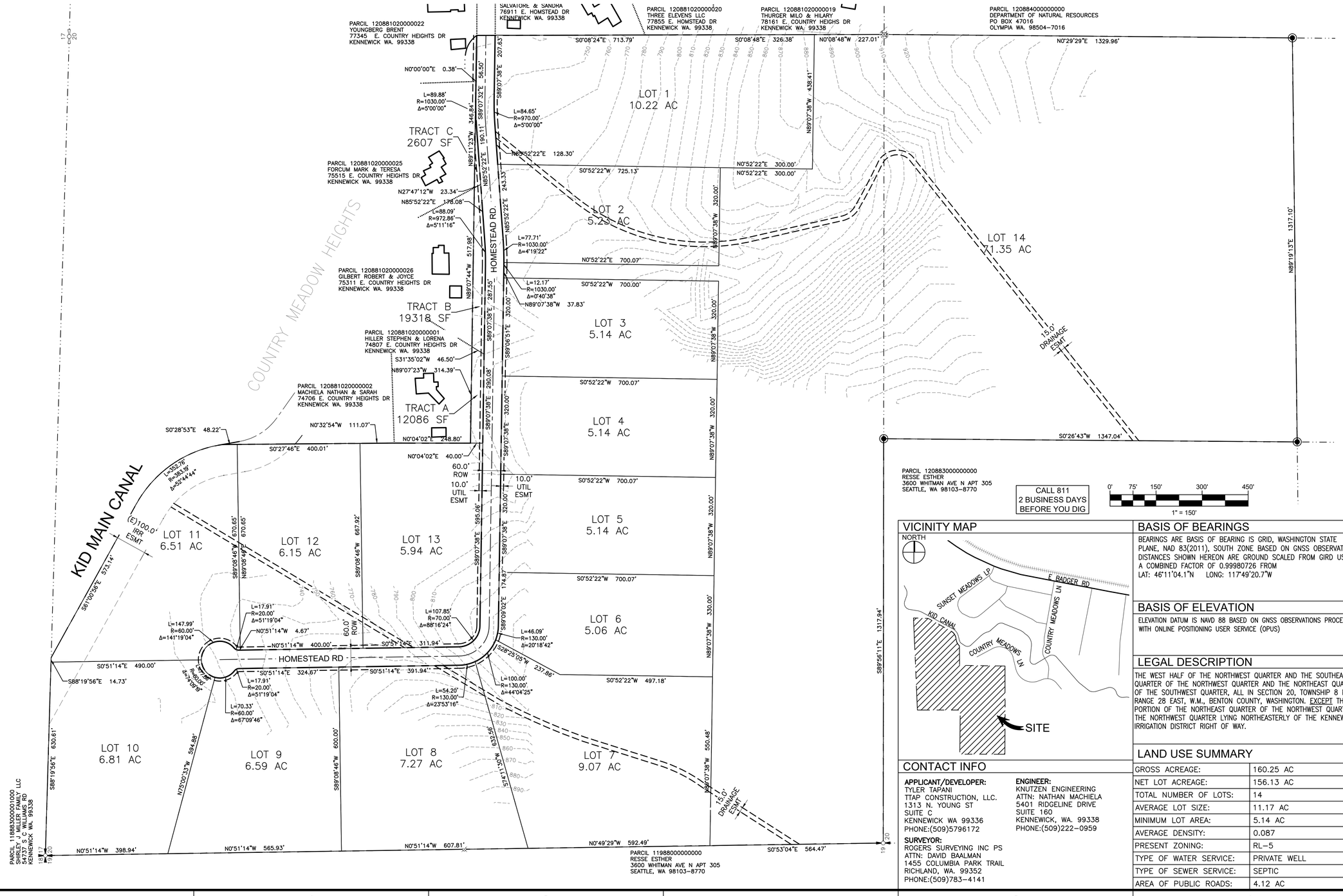
COUNTRY ACRES

PRELIMINARY PLAT

LOCATED IN A PORTION OF THE W1/2 OF SECTION 20, TOWNSHIP 8 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON

PCM 1.5

NORTH



CALL 811
2 BUSINESS DAYS
BEFORE YOU DIG

VICINITY MAP

BASIS OF BEARINGS

BEARINGS ARE BASIS OF BEARING IS GRID, WASHINGTON STATE PLANE, NAD 83(2011), SOUTH ZONE BASED ON GNSS OBSERVATIONS. DISTANCES SHOWN HEREON ARE GROUND SCALED FROM GIRD USING A COMBINED FACTOR OF 0.99980726 FROM
LAT: 46°11'04.1"N LONG: 117°49'20.7"W

BASIS OF ELEVATION

ELEVATION DATUM IS NAVD 88 BASED ON GNSS OBSERVATIONS PROCESSED WITH ONLINE POSITIONING USER SERVICE (OPUS)

LEGAL DESCRIPTION

THE WEST HALF OF THE NORTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER, ALL IN SECTION 20, TOWNSHIP 8 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON. EXCEPT THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER LYING NORTHEASTERLY OF THE KENNEWICK IRRIGATION DISTRICT RIGHT OF WAY.

LAND USE SUMMARY

GROSS ACREAGE:	160.25 AC
NET LOT ACREAGE:	156.13 AC
TOTAL NUMBER OF LOTS:	14
AVERAGE LOT SIZE:	11.17 AC
MINIMUM LOT AREA:	5.14 AC
AVERAGE DENSITY:	0.087
PRESENT ZONING:	RL-5
TYPE OF WATER SERVICE:	PRIVATE WELL
TYPE OF SEWER SERVICE:	SEPTIC
AREA OF PUBLIC ROADS:	4.12 AC

CONTACT INFO

APPLICANT/DEVELOPER:
TYLER TAPANI
TTAP CONSTRUCTION, LLC.
1313 N. YOUNG ST
SUITE C
KENNEWICK WA 99336
PHONE:(509)5796172

SURVEYOR:
ROGERS SURVEYING INC PS
ATTN: DAVID BAALMAN
1455 COLUMBIA PARK TRAIL
RICHLAND, WA. 99352
PHONE:(509)783-4141

ENGINEER:
KNUTZEN ENGINEERING
ATTN: NATHAN MACHIELA
5401 RIDGELINE DRIVE
SUITE 160
KENNEWICK, WA. 99338
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No.	REVISIONS	DATE	DESIGN	CHKD	APPD

NOT FOR CONSTRUCTION
PRELIMINARY PLAT
TTAP CONSTRUCTION
COUNTRY ACRES
BENTON COUNTY, WASHINGTON

APPROVAL		
DESIGN	JAW	07/31/20
CHECKED	NJM	07/31/20
APPROVED	NJM	07/31/20

SCALE: AS NOTED
CADFILE: 20118PP01
JOB No. 20118
REV. 0
DWG. No. PP01

\2020\20118-Country Acres\DWG\20118PP01.dwg - Jul 31, 2020 - 08:49am - jwa

PCM 1.6

Preliminary Stormwater Drainage Report

Country Acres
Benton County, WA
Parcel #120882000004000

Prepared For:

Tyler Tappani
1407 N Young St
Kennewick, WA 99336

Prepared By:

Nathan Machiela, PE
Robert Mcleod
Project No. 20118

Preparation Date:

August 4, 2020

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1.0 PROJECT AND SITE INFORMATION

The Country Acres project site is located south of Country Heights Drive and the Kennewick Main Irrigation Canal in Benton County WA, as shown in Figure 1 below. The 160-acre property is located on parcel 120882000004000. The parcel is zoned RL-5 and is surrounding by similarly zoned properties and GMA AG to the south. Overall, the site slopes downwards to the northeast. The site's vegetation is comprised mostly of Sagebrush shrub-steppe.

The project proposes subdividing the property into 14 single-family residential lots with a minimum lot size of 5 acres and an average lot size of 11. 17 Acres. The lots shall be served by private wells and septic systems. Public roads accessing the lots would cover approximately 4.12 acres of the property.

Figure 1. Parcel Image

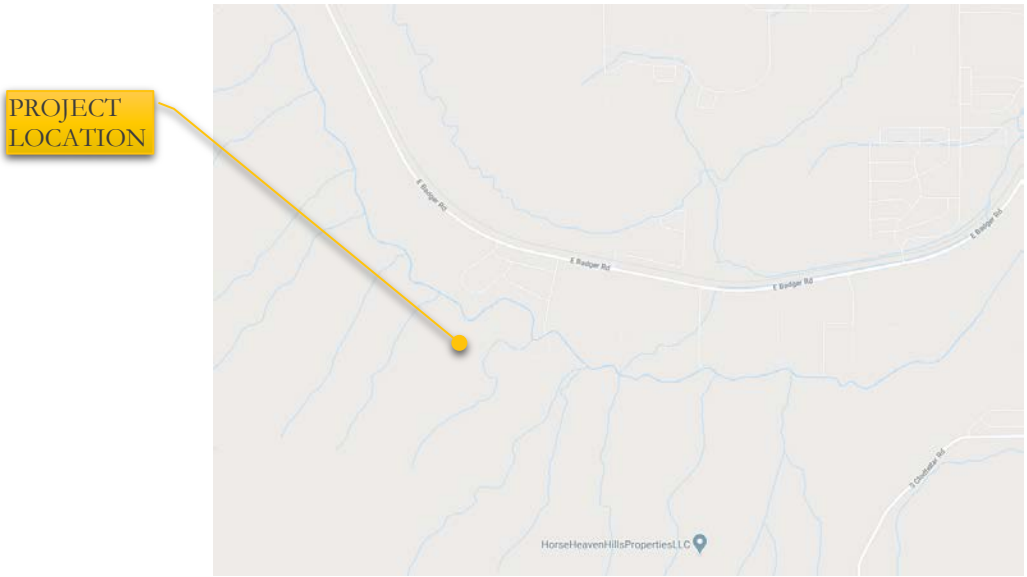

Figure 2. Google Maps Image

The NRCS Web Soil Survey Identifies the Site's soils as Ellisforde Silt Loam(EfB), Kiona Very Stony Silt Loam(KnF), Ritzville Silt Loam(ReB), and Warden Silt Loam(WdD). The survey reports an infiltration rate of 1.28 in/hr for all soil types.

Theresa Dusek Consulting performed a Habitat Assessment of the site on July 20, 2020 and found the soils to be well drained and none were hydric (wetland) soils. They also found a layer of basalt close to the surface in several locations.

2.0 METHODOLOGY

The Preliminary Hydrology Report was developed in accordance with the Stormwater Management Manual for Eastern Washington (SMMEW) and the Benton County Department of Public Works hydrology manual of 1979.

The stormwater modeling was performed using HydroCAD 10.0 and all stormwater calculations were completed utilizing the SCS TR-20 method. The design storm event was the 25-year, Type 1A Design Storm having a 24-hour rainfall total of 1.6 inches per the 25-Year 24-Hour Isopluvials by NOAA Atlas 2 as referenced in the SMMEW.

The design was based on the following assumptions:

1. Sheet flow would occur from any exterior ridge or isolated high point within the watershed and would remain as sheet flow for a maximum of 300-feet. These sheet flow areas were assumed to be passing over range type ground cover.

2. The sheet flow transitions to shallow concentrated flow until the stormwater runoff reached a defined open channel. These shallow concentrated flows were assumed to be passing over short grass pastures.

3. Open channels were assumed to be clean and winding earth channels. Channels were located using Google Earth's visual and elevation features. *See Figure 3 for a summary of the subcatchments and Figure 4 for a map of the subcatchments.*

The subcatchments were defined by using Google Earth to identify the ridgelines and highpoints for each basin. To compare the runoff caused by the existing surfaces versus a completed project, each subcatchment was modeled twice, once in the existing state and once with the proposed impervious surfaces, namely roads, buildings and driveways. 3,000 sf of impervious surface was added per lot as an estimate of roof/driveway square footage for a single residence home. 11 lots were added to subcatchment 1 and 2 were added to subcatchment 2. 87,471 square feet of road was also added to subcatchment 1.

	Flow Type	Time of Concentration (min)	Average Slope (ft/ft)	Flow Length (ft)
Existing 1S	Sheet	9.7	0.33	300
	Shallow Concentrated Flow	5.4	0.33	1,300
	Open Channel	3.3	0.15	3110
Existing 2S	Sheet	10.7	0.26	300
	Shallow Concentrated Flow	6.1	0.26	1,300
	Open Channel	5.9	0.11	4,750

Figure 3. Subcatchments Summary

Figure 4. Subcatchments Map

3.0 PRELIMINARY DRAINAGE INVESTIGATION

The site was examined in respect to the Development Preliminary Drainage System Design Review questions located in the Benton County Department of Public Works hydrology manual of 1979.

Question 1: Are all the natural channels and ponding areas shown?

Response: There are two natural channels and no ponding areas present on-site. Water collects in natural valleys between ridges as it flows down to the north from the Horse Heaven Hills. Both channels fade away upon reaching a flatter area near the base of the Horse Heaven Hills. It is assumed that all naturally occurring stormwater runoff infiltrates into existing soils before or upon reaching the channels' termination.

Question 2: What is the “Natural State” highwater zone in or along the channels and ponding areas for the 100 year return period precipitation runoff using pre-development state runoff coefficients?

Response: Channel 1’s natural state subcatchment area generates approximately 2.02 cfs during a Type 1A 25yr storm event. The storm event produces a runoff depth of approximately 0.18 in. See Appendix A for Hydrocad calculations. All stormwater infiltrates on-site into pervious surfaces. There are no ponding areas on-site.

Channel 2’s natural state subcatchment area generates approximately 1.94 cfs during a Type 1A 25yr storm event. The storm event produces a runoff depth of approximately 0.18 in. See Appendix A for Hyrdocad calculations. All stormwater infiltrates on-site into previous surfaces. There are no ponding areas on-site.

Question 3: What is the “Ultimate State” highwater zone in or along the channels and ponding areas for the 100 year return period precipitation runoff using runoff co-efficients representative of the condition when development is 100% complete.

Response: Channel 1’s and channel 2’s post-development subcatchment areas produce the same amount of runoff as their “natural states”. The runoff depths also remained the same at 0.18 in. It is therefore assumed that proposed impervious surfaces will not have a significant effect on the natural channels and their abilities to contain and infiltrate the site’s stormwater runoff. The preliminary plat for the project proposes drainage easements along the natural channels to preserve the natural conveyance and infiltration system.

Question 4: What is the increase in “outflow” caused by the improvements or modifications within the development and can it be safely conveyed through downhill or downstream areas?

Response: There will not be an increase in “outflow” caused by the improvements to this property. All runoff is to be retained on site and will seek to dispose of stormwater runoff through a series of roadside ditches and culverts under roadways to convey the upstream flow in compliance with Benton County Public Works standards. All surface disposal will comply with the requirements of the Stormwater Management Manual for Eastern Washington and will be designed by a licensed engineer registered in the State of Washington.

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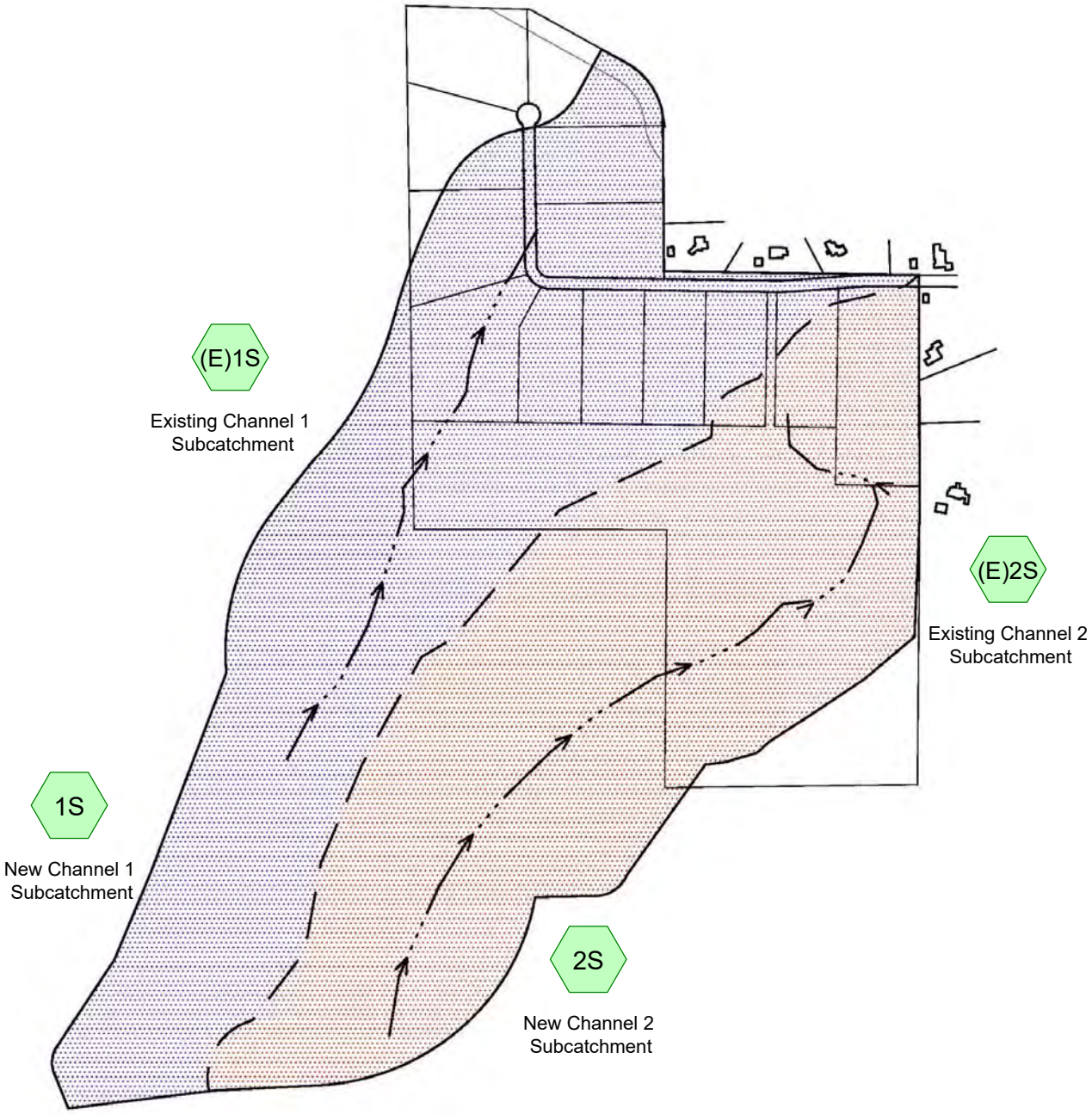
APPENDIX A

Hydrocad Report



Subcat Reach Pond Link

Routing Diagram for 20118 Storm
Prepared by {enter your company name here}, Printed 8/3/2020

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Type 1A 25yr	Type IA 24-hr		Default	24.00	1	1.60	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
25,726,536	74	>75% Grass cover, Good, HSG C ((E)1S, (E)2S, 1S, 2S)
126,324	98	Roof / Pavement (1S, 2S)
25,852,860	**74**	**TOTAL AREA**

Time span=0.00-40.00 hrs, dt=0.05 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment (E)1S: Existing Channel 1 Runoff Area=151.500 ac 0.00% Impervious Runoff Depth=0.18"
Flow Length=4,710' Tc=18.4 min CN=74 Runoff=2.02 cfs 100,386 cf

Subcatchment (E)2S: Existing Channel 2 Runoff Area=145.250 ac 0.00% Impervious Runoff Depth=0.18"
Flow Length=6,350' Tc=22.7 min CN=74 Runoff=1.94 cfs 96,245 cf

Subcatchment 1S: New Channel 1 Runoff Area=151.500 ac 1.82% Impervious Runoff Depth=0.18"
Flow Length=4,710' Tc=18.4 min CN=74 Runoff=2.02 cfs 100,386 cf

Subcatchment 2S: New Channel 2 Runoff Area=145.250 ac 0.10% Impervious Runoff Depth=0.18"
Flow Length=6,350' Tc=22.7 min CN=74 Runoff=1.94 cfs 96,245 cf

Total Runoff Area = 25,852,860 sf Runoff Volume = 393,262 cf Average Runoff Depth = 0.18"
99.51% Pervious = 25,726,536 sf 0.49% Impervious = 126,324 sf

Summary for Subcatchment (E)1S: Existing Channel 1 Subcatchment

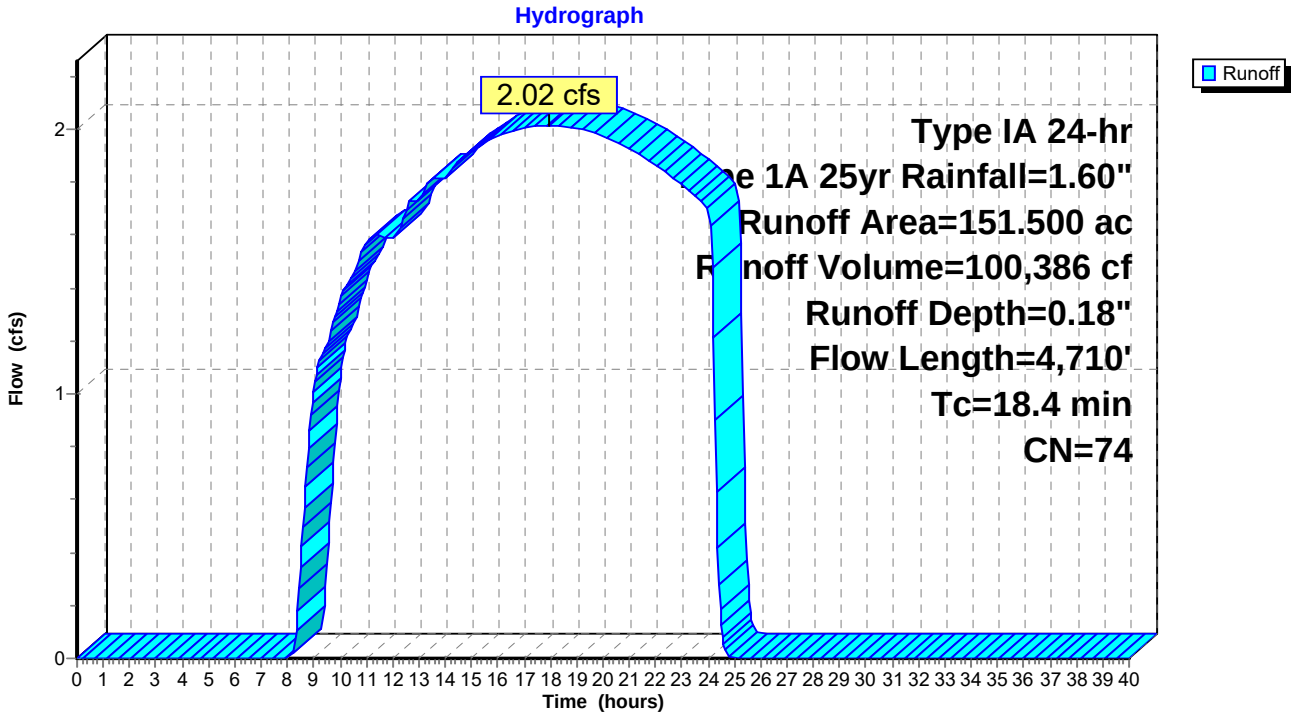
Runoff = 2.02 cfs @ 17.95 hrs, Volume= 100,386 cf, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

Area (ac)	CN	Description
151.500	74	>75% Grass cover, Good, HSG C
151.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	300	0.3300	0.52		**Sheet Flow, Sheet Flow** Range n= 0.130 P2= 1.60"
5.4	1,300	0.3300	4.02		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
3.3	3,110	0.1500	15.56	38.89	**Channel Flow, Channel Flow** Area= 2.5 sf Perim= 4.5' r= 0.56' n= 0.025
18.4	4,710	Total			

Subcatchment (E)1S: Existing Channel 1 Subcatchment



Summary for Subcatchment (E)2S: Existing Channel 2 Subcatchment

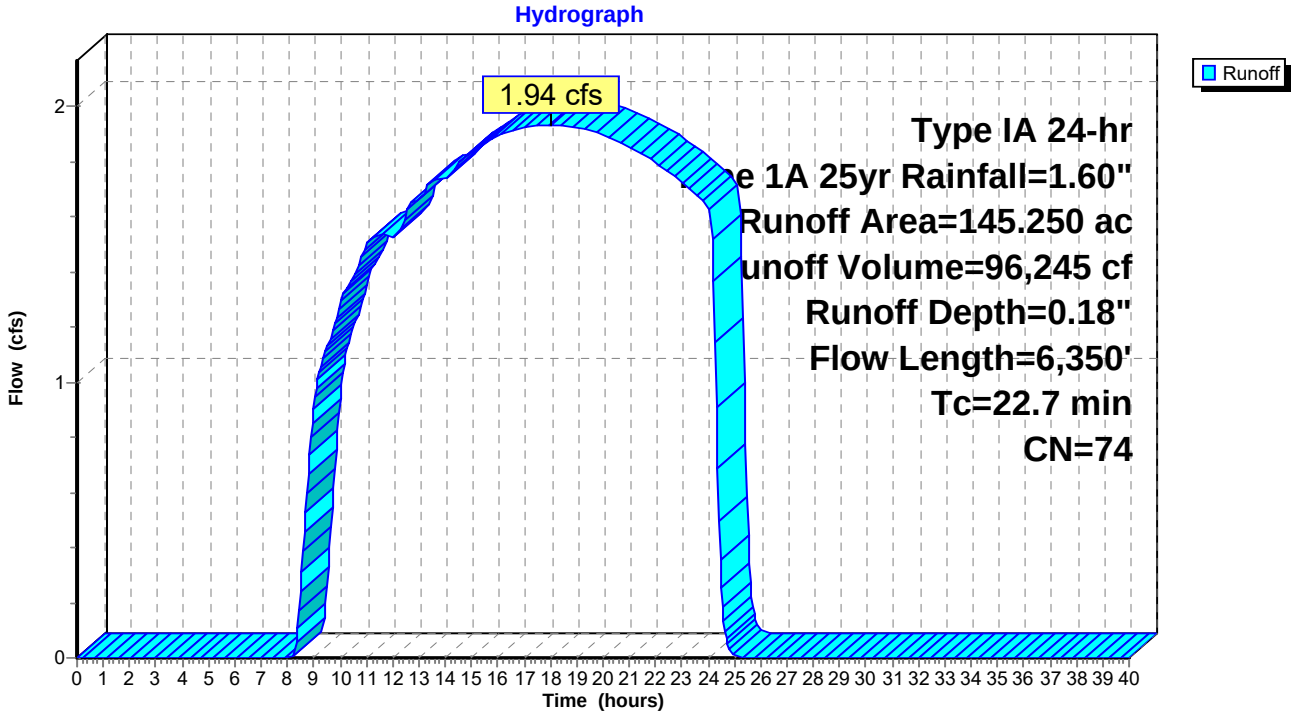
Runoff = 1.94 cfs @ 18.00 hrs, Volume= 96,245 cf, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

Area (ac)	CN	Description
145.250	74	>75% Grass cover, Good, HSG C
145.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	300	0.2600	0.47		**Sheet Flow, Sheet Flow** Range n= 0.130 P2= 1.60"
6.1	1,300	0.2600	3.57		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
5.9	4,750	0.1100	13.32	33.31	**Channel Flow, Channel Flow** Area= 2.5 sf Perim= 4.5' r= 0.56' n= 0.025 Earth, clean & winding
22.7	6,350	Total			

Subcatchment (E)2S: Existing Channel 2 Subcatchment



Summary for Subcatchment 1S: New Channel 1 Subcatchment

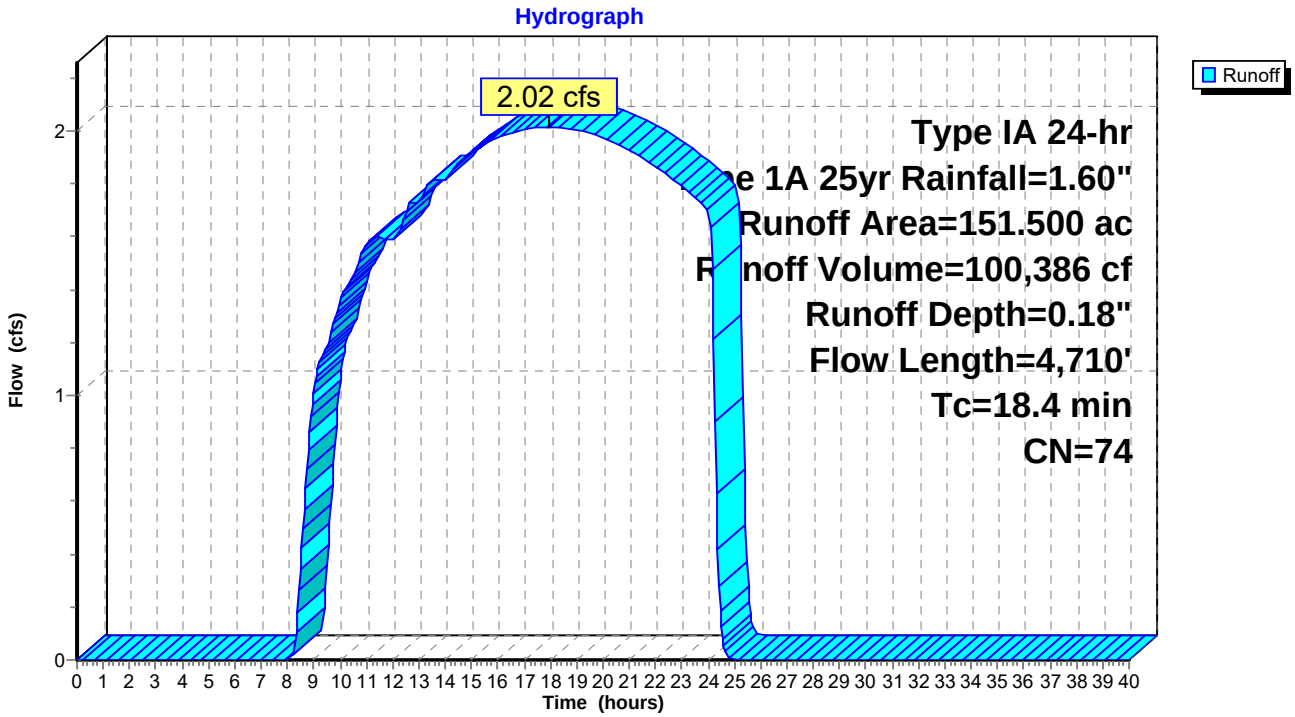
Runoff = 2.02 cfs @ 17.95 hrs, Volume= 100,386 cf, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (ac)	CN	Description
	148.750	74	>75% Grass cover, Good, HSG C
*	2.750	98	Roof / Pavement
	151.500	74	Weighted Average
	148.750		98.18% Pervious Area
	2.750		1.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	300	0.3300	0.52		**Sheet Flow, Sheet Flow** Range n= 0.130 P2= 1.60"
5.4	1,300	0.3300	4.02		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
3.3	3,110	0.1500	15.56	38.89	**Channel Flow, Channel Flow** Area= 2.5 sf Perim= 4.5' r= 0.56' n= 0.025
18.4	4,710	Total			

Subcatchment 1S: New Channel 1 Subcatchment



Summary for Subcatchment 2S: New Channel 2 Subcatchment

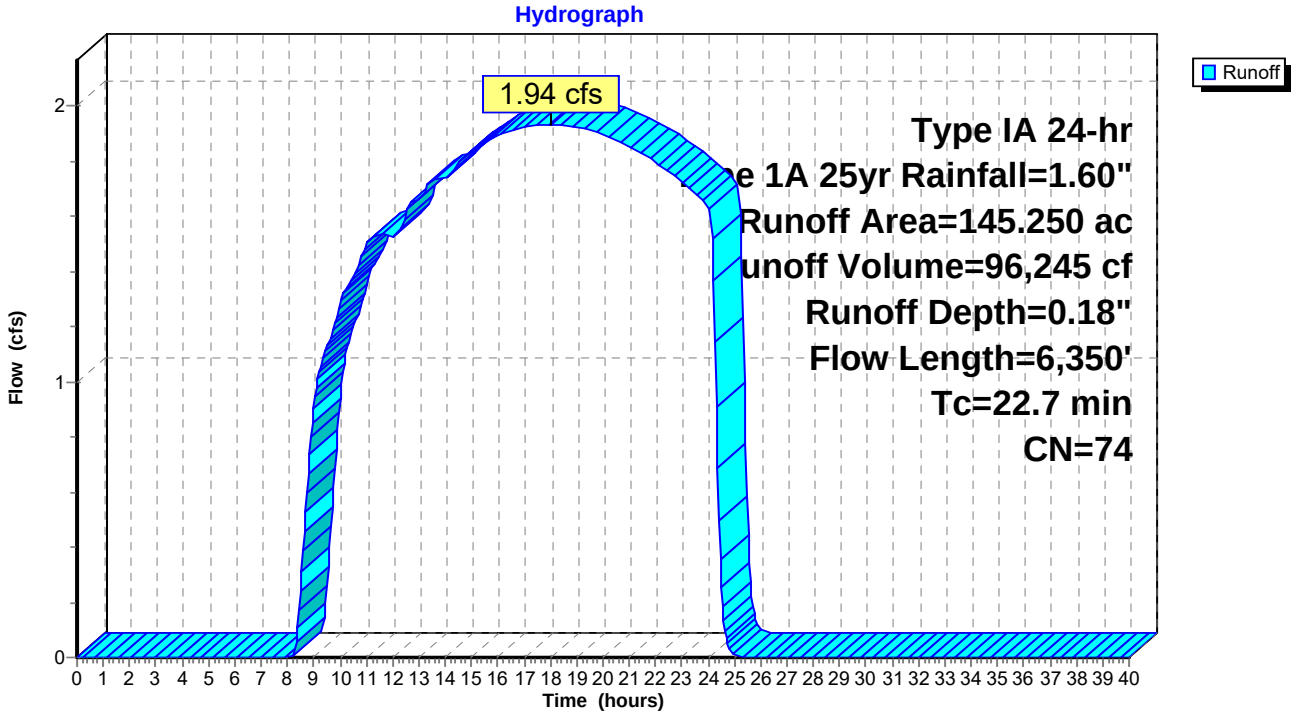
Runoff = 1.94 cfs @ 18.00 hrs, Volume= 96,245 cf, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-40.00 hrs, dt= 0.05 hrs
Type IA 24-hr Type 1A 25yr Rainfall=1.60"

	Area (ac)	CN	Description
	145.100	74	>75% Grass cover, Good, HSG C
*	0.150	98	Roof / Pavement
	145.250	74	Weighted Average
	145.100		99.90% Pervious Area
	0.150		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	300	0.2600	0.47		**Sheet Flow, Sheet Flow** Range n= 0.130 P2= 1.60"
6.1	1,300	0.2600	3.57		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
5.9	4,750	0.1100	13.32	33.31	**Channel Flow, Channel Flow** Area= 2.5 sf Perim= 4.5' r= 0.56' n= 0.025 Earth, clean & winding
22.7	6,350	Total			

Subcatchment 2S: New Channel 2 Subcatchment



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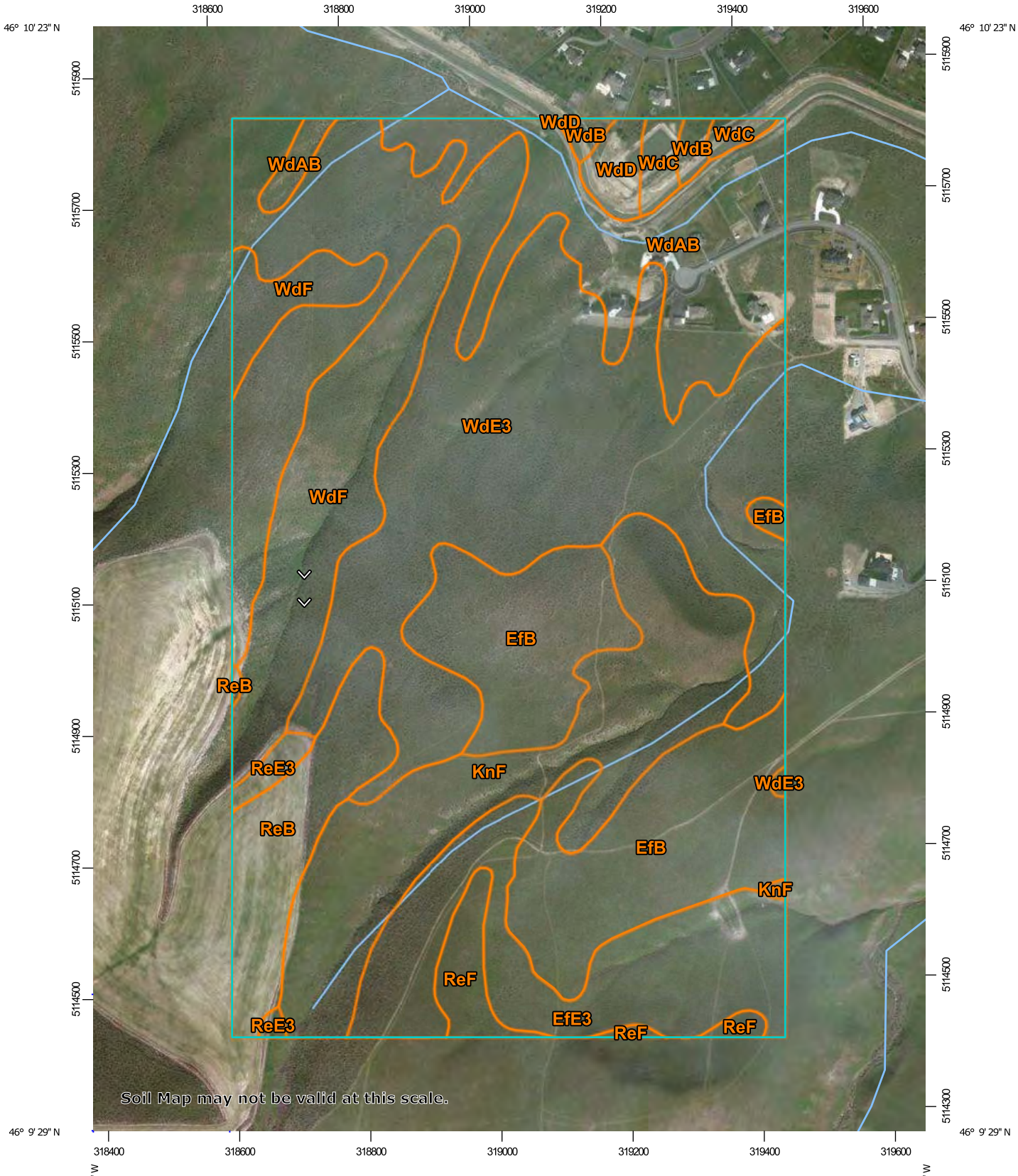
APPENDIX B

NRCS Web Soil Survey



Map Scale: 1:8,180 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

Report—Physical Soil Properties

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties–Benton County Area, Washington														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
EfB—Ellisforde silt loam, 0 to 5 percent slopes														
Ellisforde	0-13	-14-	-72-	10-14- 18	1.10-1.20 -1.30	4.00-9.00-14.00	0.15-0.17-0. 19	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.43	.43	5	5	56
	13-29	-14-	-72-	10-14- 18	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.55	.55			
	29-60	-14-	-72-	10-14- 18	1.50-1.63 -1.75	1.40-3.00-4.00	0.18-0.21-0. 23	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.64	.64			
EfE3—Ellisforde silt loam, 15 to 30 percent slopes, severely eroded														
Ellisforde	0-4	-14-	-72-	10-14- 18	1.10-1.20 -1.30	4.00-9.00-14.00	0.15-0.17-0. 19	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.43	.43	5	5	56
	4-20	-14-	-72-	10-14- 18	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.55	.55			
	20-60	-14-	-72-	10-14- 18	1.50-1.63 -1.75	1.40-3.00-4.00	0.18-0.21-0. 23	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.64	.64			

Physical Soil Properties–Benton County Area, Washington														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
KnF—Kiona very stony silt loam, 30 to 65 percent slopes														
Kiona	0-4	-33-	-56-	7-11- 15	1.15-1.25 -1.35	4.00-9.00-14.00	0.14-0.16-0. 17	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.20	.49	5	7	38
	4-20	-33-	-56-	7-11- 15	1.30-1.40 -1.50	4.00-9.00-14.00	0.08-0.10-0. 11	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.24	.55			
	20-60	-47-	-44-	3- 9- 15	1.30-1.40 -1.50	4.00-9.00-14.00	0.07-0.08-0. 09	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.15	.49			
ReB—Ritzville silt loam, 0 to 5 percent slopes														
Ritzville	0-6	-22-	-71-	5- 8- 10	1.10-1.20 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.55	.55	5	5	56
	6-36	-22-	-71-	5- 8- 10	1.20-1.30 -1.40	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.64	.64			
	36-60	-22-	-71-	5- 8- 10	1.30-1.38 -1.45	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.64	.64			

Physical Soil Properties–Benton County Area, Washington														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
ReE3—Ritzville silt loam, 15 to 30 percent slopes, severely eroded														
Ritzville	0-2	-22-	-71-	5- 8- 10	1.10-1.20 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.55	.55	5	5	56
	2-36	-22-	-71-	5- 8- 10	1.20-1.30 -1.40	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.64	.64			
	36-60	-22-	-71-	5- 8- 10	1.30-1.38 -1.45	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.64	.64			
ReF—Ritzville silt loam, 30 to 65 percent slopes														
Ritzville	0-6	-22-	-71-	5- 8- 10	1.10-1.20 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.55	.55	5	5	56
	6-36	-22-	-71-	5- 8- 10	1.20-1.30 -1.40	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.64	.64			
	36-60	-22-	-71-	5- 8- 10	1.30-1.38 -1.45	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.64	.64			

Physical Soil Properties–Benton County Area, Washington														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
WdAB—Warden silt loam, 0 to 5 percent slopes														
Warden	0-9	-21-	-68-	8-12- 15	1.15-1.23 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	5	56
	9-19	-21-	-68-	8-12- 15	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
	19-60	-21-	-68-	8-12- 15	1.35-1.43 -1.50	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
WdB—Warden silt loam, 2 to 5 percent slopes														
Warden	0-9	-21-	-68-	8-12- 15	1.15-1.23 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	5	56
	9-19	-21-	-68-	8-12- 15	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
	19-60	-21-	-68-	8-12- 15	1.35-1.43 -1.50	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
WdC—Warden silt loam, 5 to 8 percent slopes														
Warden	0-9	-21-	-68-	8-12- 15	1.15-1.23 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	5	56
	9-19	-21-	-68-	8-12- 15	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
	19-60	-21-	-68-	8-12- 15	1.35-1.43 -1.50	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			

Physical Soil Properties–Benton County Area, Washington														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
WdD—Warden silt loam, 8 to 15 percent slopes														
Warden	0-9	-21-	-68-	8-12- 15	1.15-1.23 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	5	56
	9-19	-21-	-68-	8-12- 15	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
	19-60	-21-	-68-	8-12- 15	1.35-1.43 -1.50	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
WdE3—Warden silt loam, 15 to 30 percent slopes, severely eroded														
Warden	0-2	-21-	-68-	8-12- 15	1.15-1.23 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	5	56
	2-12	-21-	-68-	8-12- 15	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
	12-60	-21-	-68-	8-12- 15	1.35-1.43 -1.50	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			

Physical Soil Properties–Benton County Area, Washington														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
WdF—Warden silt loam, 30 to 65 percent slopes														
Warden	0-9	-21-	-68-	8-12- 15	1.15-1.23 -1.30	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	5	56
	9-19	-21-	-68-	8-12- 15	1.30-1.38 -1.45	4.00-9.00-14.00	0.16-0.18-0. 20	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			
	19-60	-21-	-68-	8-12- 15	1.35-1.43 -1.50	4.00-9.00-14.00	0.19-0.20-0. 21	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.55	.55			

Data Source Information

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 16, Jun 4, 2020

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Benton County Area, Washington														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
EfB—Ellisforde silt loam, 0 to 5 percent slopes														
Ellisforde	100	C	0-13	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	60-75- 90	20-25 -30	NP-3 -5
			13-29	Silt loam, very fine sandy loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	85-90- 95	20-25 -30	NP-3 -5
			29-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	85-90- 95	20-25 -30	NP-3 -5
EfE3—Ellisforde silt loam, 15 to 30 percent slopes, severely eroded														
Ellisforde	100	C	0-4	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	60-75- 90	20-25 -30	NP-3 -5
			4-20	Silt loam, very fine sandy loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	85-90- 95	20-25 -30	NP-3 -5
			20-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	85-90- 95	20-25 -30	NP-3 -5

Engineering Properties–Benton County Area, Washington														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
KnF—Kiona very stony silt loam, 30 to 65 percent slopes														
Kiona	100	B	0-4	Very stony silt loam	ML	A-4	25-30-35	0- 5- 10	70-78-85	60-70-80	55-65-75	50-60-70	20-25-30	NP-3 -5
			4-20	Very stony silt loam, very cobbly loam, cobbly very fine sandy loam	GM, ML, SM	A-4	0- 0- 0	30-35-40	60-73-85	60-68-75	45-58-70	35-50-65	20-25-30	NP-3 -5
			20-60	Very gravelly loam, very cobbly silt loam, very cobbly sandy loam	GM	A-1, A-2, A-4	0- 0- 0	35-45-55	45-58-70	35-48-60	35-43-50	15-30-45	15-20-25	NP-3 -5
ReB—Ritzville silt loam, 0 to 5 percent slopes														
Ritzville	100	B	0-6	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	95-98-100	95-98-100	70-80-90	15-20-25	NP-3 -5
			6-36	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	80-85-90	15-20-25	NP-3 -5
			36-60	Silt loam, fine sandy loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-83-90	15-20-25	NP-3 -5
ReE3—Ritzville silt loam, 15 to 30 percent slopes, severely eroded														
Ritzville	100	B	0-2	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	95-98-100	95-98-100	70-80-90	15-20-25	NP-3 -5
			2-36	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	80-85-90	15-20-25	NP-3 -5
			36-60	Silt loam, fine sandy loam	ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-83-90	15-20-25	NP-3 -5

Engineering Properties–Benton County Area, Washington														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
ReF—Ritzville silt loam, 30 to 65 percent slopes														
Ritzville	100	B	0-6	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	95-98-100	95-98-100	70-80-90	15-20 -25	NP-3 -5
			6-36	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-100	80-85-90	15-20 -25	NP-3 -5
			36-60	Silt loam, fine sandy loam	ML	A-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-100	75-83-90	15-20 -25	NP-3 -5
WdAB—Warden silt loam, 0 to 5 percent slopes														
Warden	100	B	0-9	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	85-93-100	70-75-80	25-28 -30	NP-3 -5
			9-19	Very fine sandy loam, silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28 -30	NP-3 -5
			19-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28 -30	NP-3 -5
WdB—Warden silt loam, 2 to 5 percent slopes														
Warden	90	B	0-9	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	85-93-100	70-75-80	25-28 -30	NP-3 -5
			9-19	Very fine sandy loam, silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28 -30	NP-3 -5
			19-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28 -30	NP-3 -5

Engineering Properties–Benton County Area, Washington														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
WdC—Warden silt loam, 5 to 8 percent slopes														
Warden	100	B	0-9	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	85-93-100	70-75-80	25-28-30	NP-3 -5
			9-19	Very fine sandy loam, silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5
			19-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5
WdD—Warden silt loam, 8 to 15 percent slopes														
Warden	100	B	0-9	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	85-93-100	70-75-80	25-28-30	NP-3 -5
			9-19	Very fine sandy loam, silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5
			19-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5
WdE3—Warden silt loam, 15 to 30 percent slopes, severely eroded														
Warden	100	B	0-2	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	85-93-100	70-75-80	25-28-30	NP-3 -5
			2-12	Very fine sandy loam, silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5
			12-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5

Engineering Properties–Benton County Area, Washington														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
WdF—Warden silt loam, 30 to 65 percent slopes														
Warden	100	B	0-9	Silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	85-93-100	70-75-80	25-28-30	NP-3 -5
			9-19	Very fine sandy loam, silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5
			19-60	Stratified very fine sandy loam to silt loam	ML	A-4	0- 0- 0	0- 0- 0	95-98-100	95-98-100	95-98-100	75-83-90	25-28-30	NP-3 -5

Data Source Information

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 16, Jun 4, 2020

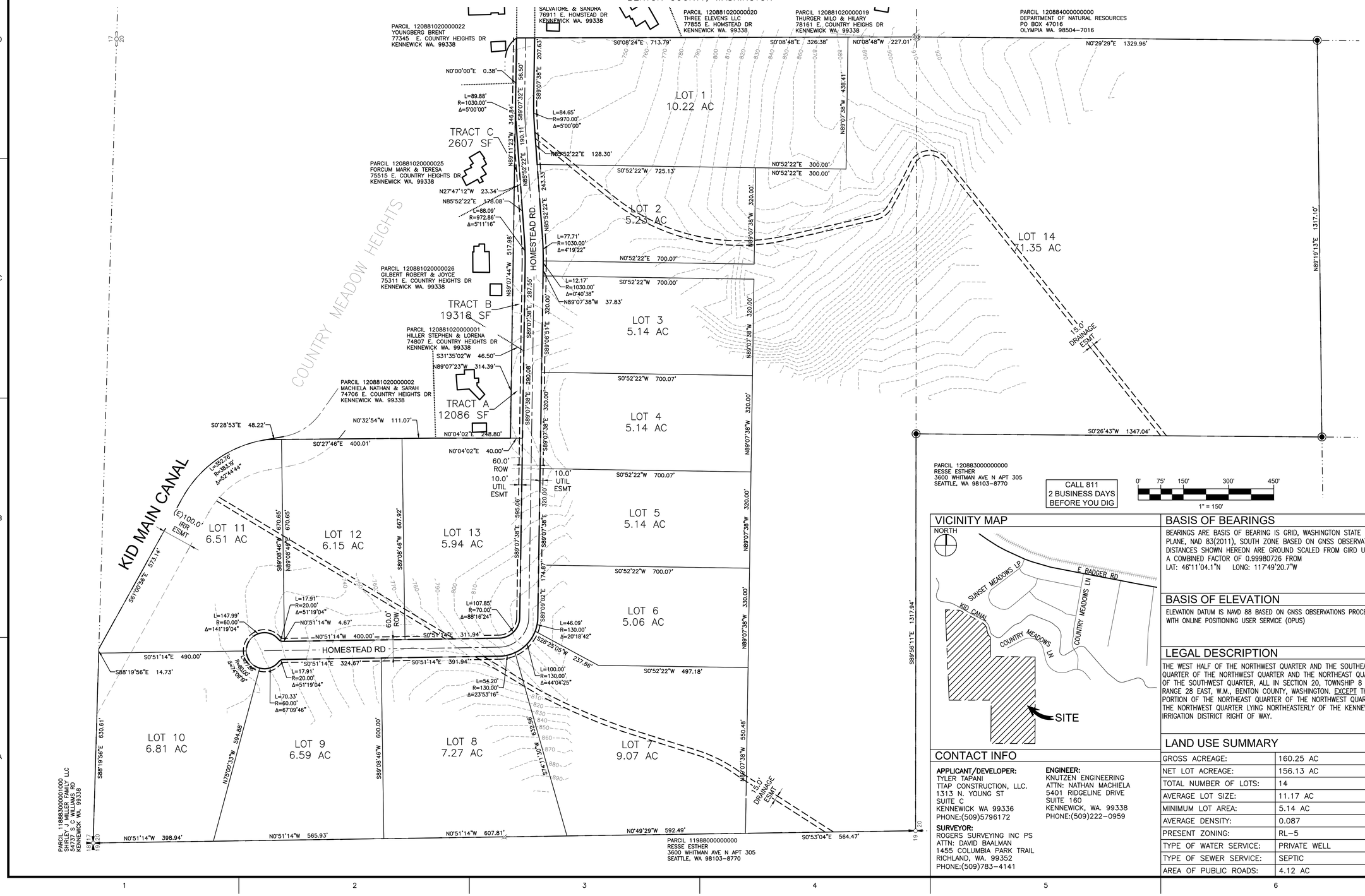
APPENDIX C

Pre-Plat Map

COUNTRY ACRES

PRELIMINARY PLAT

LOCATED IN A PORTION OF THE W1/2 OF SECTION 20, TOWNSHIP 8 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON



VICINITY MAP

CONTACT INFO

APPLICANT/DEVELOPER:
TYLER TAPANI
TTAP CONSTRUCTION, LLC.
1313 N. YOUNG ST
SUITE C
KENNEWICK WA 99336
PHONE:(509)5796172

SURVEYOR:
ROGERS SURVEYING INC PS
ATTN: DAVID BAALMAN
1455 COLUMBIA PARK TRAIL
RICHLAND, WA. 99352
PHONE:(509)783-4141

ENGINEER:
KNUTZEN ENGINEERING
ATTN: NATHAN MACHIELA
5401 RIDGELINE DRIVE
SUITE 160
KENNEWICK, WA. 99338
PHONE:(509)222-0959

BASIS OF BEARINGS

BEARINGS ARE BASIS OF BEARING IS GRID, WASHINGTON STATE PLANE, NAD 83(2011), SOUTH ZONE BASED ON GNSS OBSERVATIONS. DISTANCES SHOWN HEREON ARE GROUND SCALED FROM GIRD USING A COMBINED FACTOR OF 0.99980726 FROM
LAT: 46°11'04.1"N LONG: 117°49'20.7"W

BASIS OF ELEVATION

ELEVATION DATUM IS NAVD 88 BASED ON GNSS OBSERVATIONS PROCESSED WITH ONLINE POSITIONING USER SERVICE (OPUS)

LEGAL DESCRIPTION

THE WEST HALF OF THE NORTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER, ALL IN SECTION 20, TOWNSHIP 8 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON. EXCEPT THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER LYING NORTHEASTERLY OF THE KENNEWICK IRRIGATION DISTRICT RIGHT OF WAY.

LAND USE SUMMARY

GROSS ACREAGE:	160.25 AC
NET LOT ACREAGE:	156.13 AC
TOTAL NUMBER OF LOTS:	14
AVERAGE LOT SIZE:	11.17 AC
MINIMUM LOT AREA:	5.14 AC
AVERAGE DENSITY:	0.087
PRESENT ZONING:	RL-5
TYPE OF WATER SERVICE:	PRIVATE WELL
TYPE OF SEWER SERVICE:	SEPTIC
AREA OF PUBLIC ROADS:	4.12 AC

KNUTZEN ENGINEERING
5401 RIDGELINE DR.
SUITE 160
KENNEWICK, WA 99338
1-509-222-0959
www.knutzenengineering.com

No.	REVISIONS	DATE	DESIGN	CHKD	APPD

NOT FOR CONSTRUCTION
PRELIMINARY PLAT
TTAP CONSTRUCTION
COUNTRY ACRES
BENTON COUNTY, WASHINGTON

APPROVAL		
DESIGN	JAW	07/31/20
CHECKED	NJM	07/31/20
APPROVED	NJM	07/31/20

SCALE: AS NOTED
CADFILE: 20118PP01
JOB No. 20118
REV. 0
DWG. No. PP01

\2020\20118-Country Acres\DWG\20118PP01.dwg - Jul 31, 2020 - 08:49am - jwa

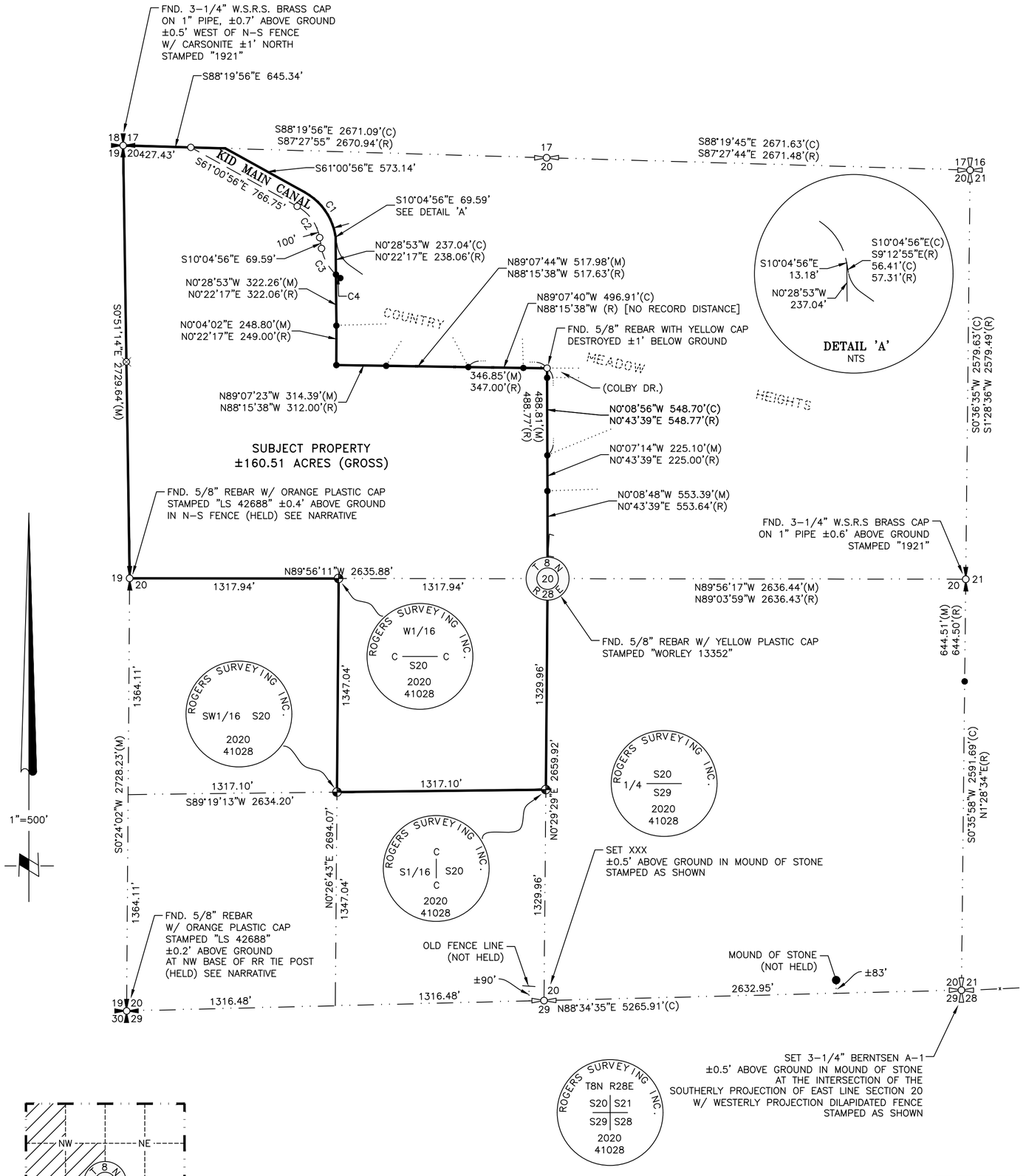
KNUTZEN ENGINEERING

APPENDIX D

Preliminary Survey

RECORD OF SURVEY

LOCATED IN A PORTION OF THE W1/2 OF SECTION 20,
TOWNSHIP 8 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON



SURVEYED LEGAL DESCRIPTION:

THE WEST HALF OF THE NORTHWEST QUARTER AND THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER, ALL IN SECTION 20, TOWNSHIP 8 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON. EXCEPT THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER LYING NORTHEASTERLY OF THE KENNEWICK IRRIGATION DISTRICT RIGHT OF WAY.

NOTES:

1. BASIS OF BEARING IS GRID, WASHINGTON STATE PLANE, NAD 83(2011), SOUTH ZONE BASED ON GNSS OBSERVATIONS. DISTANCES SHOWN HEREON ARE GROUND SCALED FROM GIRD USING A COMBINED FACTOR OF 0.99980726 FROM LAT: 46°11'04.1"N LONG: 117°49'20.7"W

2. ○ = DENOTES SET 5/8"x24" REBAR WITH ORANGE PLASTIC CAP STAMPED "DPB WA 41028"

3. ● = DENOTES FOUND 5/8" REBAR W/ YELLOW PLASTIC CAP STAMPED "WORLEY 13352" OR MONUMENT AS NOTED

4. ⊠ = DENOTES MONUMENT NOT FOUND.

5. ◕ = DENOTES SET 3-1/4" BERNTSEN A-1 MONUMENT ±0.5' UP IN MOUND OF STONE.

6. (M) = MEASURED PER THIS SURVEY (C) = COMPUTED
(R1) = RECORD PER PLAT OF COUNTRY MEADOW HEIGHTS V.15, PG.376 (A.F. NO. 2009-013677)

7. THIS SURVEY WAS PERFORMED TO ESTABLISH SOME OR ALL OF THE BOUNDARIES AND CORNERS OF THE PARCEL DESCRIBED HEREON. ANY EASEMENTS RESTRICTIONS OR RESERVATIONS WHICH WOULD BE DISCLOSED BY A CURRENT TITLE REPORT MAY EXIST BUT ARE NOT SHOWN ON THIS SURVEY

8. EQUIPMENT AND PROCEDURES: THIS SURVEY WAS PERFORMED WITH DUAL FREQUENCY GNSS RECEIVERS CONFIGURED FOR REAL TIME KINEMATIC SURVEYING.

9. MONUMENTS WERE VISITED JULY 6, 2020

NARRATIVE:

THE USBR RETRACEMENT FOR THE YAKIMA PROJECT MAIN CANAL – DIVISION 3 RIGHT-OF-WAY MAP FOR SECTION 20 SHOWS A "CORNER FOUND AND ACCEPTED" AT THE NORTH SIXTEENTH BETWEEN SECTIONS 19 AND 20. NO MONUMENT WAS FOUND AT THIS POSITION.

THE MONUMENTS FOUND AT THE WEST QUARTER CORNER AND SOUTHWEST SECTION CORNER OF SECTION 20 WERE SET BY WESTWOOD AND PENDING RECORD SURVEY. DISCUSSION WITH WESTWOOD STATES THAT MONUMENT CAPS ARE TO BE REPLACED AT A FUTURE DATE. A THE TIME OF THIS SURVEY WE FOUND ORANGE PLASTIC CAPS ATOP 5/8" DIAMETER REBAR FOR THE CORNER MONUMENTS. THESE MONUMENTS WERE HELD FROM CONTROLLING CORNERS OF SECTION 20.

THE SOUTHEAST CORNER OF SECTION 20 WAS ESTABLISHED BY INTERSECTION THE SOUTHERLY PROJECTION OF THE MONUMENTED SECTION LINE WITH THE WESTERLY PROJECTION OF AN OLD DILAPIDATED FENCE LINE. THIS POSITION IS ±45' NORTH OF THE PROJECTION OF THE CALCULATED SW CORNER OF SECTION 21 FROM FOUND TIES ON SHORT PLAT 3536 PERFORMED BY STRATTON IN 2017. I HOLD THE FENCE AND MONUMENT SET BY CHRISTENSEN ALONG THE EAST LINE OF THE SOUTHEAST QUARTER AS THE BEST AVAILABLE EVIDENCE.

SURVEYOR'S CERTIFICATE:

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF TYLER TAPANI IN JULY 2020.

DAVID P. BAALMAN LS#41028

DATE

DAVID P. BAALMAN STATE OF WASHINGTON 41028 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS _____ DAY OF _____, 20___, AT _____

AND RECORDED IN VOLUME _____ OF SURVEYS, PAGE _____. AT THE REQUEST OF ROGERS SURVEYING

BENTON COUNTY AUDITOR

AUDITOR'S FILE NUMBER

REV: NONE

RSI ROGERS SURVEYING INC., P.S.
1455 COLUMBIA PARK TRAIL
RICHLAND, WA. 99352
PHONE (509) 783-4141
FAX: (509) 783-8994
www.rogerssurveying.com

CLIENT: TYLER TAPANI			JOB 18520
PROJECT: RECORD OF SURVEY PTN W1/2 SEC 20, T.8N., R.28E.			
DRN. BY BAG	SCALE 1"= 500'	F. B. NO. BG10	SHEET 1
APPROVED DPB	DATE 7/19/2020	ACAD VER -C3D19 FILE: 85420.dwg	OF 1

PCM 1.7

SUBMITTED TO:
TTAP Construction Services, LLC
1313 Young Street
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GEOTECHNICAL ENGINEERING REPORT (REV. 0)

Country Acres Residential Development

BENTON COUNTY, WASHINGTON

SHANNON & WILSON

July 29, 2020

Shannon & Wilson No: 105668-001

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Submitted To: TTAP Construction Services, LLC
1313 Young Street
Kennewick, WA 99336
Attn: Tyler Tapani

Subject: GEOTECHNICAL ENGINEERING REPORT (REV. 0), COUNTRY ACRES RESIDENTIAL DEVELOPMENT, BENTON COUNTY, WASHINGTON

Shannon & Wilson prepared this Geotechnical Engineering Report for the Country Acres Residential Development in Benton County, Washington. Our services were provided in accordance with our proposal (Rev. 0) dated June 29, 2020.

We appreciate the opportunity to be of service to you on this project. Please contact me at (509) 543-2866 if you have questions concerning this report, or if we may be of additional service.

Sincerely,

SHANNON & WILSON, INC.

Clinton A. Wilson, PE
Associate

HKJ:CAW:WJP/caw

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1 INTRODUCTION

Shannon & Wilson prepared this Geotechnical Engineering Report (GER) for the proposed Country Acres Residential Development in the Badger Canyon area of Benton County, Washington (Figure 1). In this report, we present the results of our field exploration and laboratory testing and provide geotechnical engineering conclusions and recommendations for design and construction of the proposed development.

To prepare this report, Shannon & Wilson:

- Observed, logged, and sampled eight exploratory test pit excavations;
- Completed laboratory testing of selected soil samples;
- Prepared test pit exploration logs and plan;
- Completed a review of published geologic hazards; and
- Performed geotechnical engineering analyses and developed recommendations for design and construction of the development mass grading, utilities, and pavement surfaces.

Shannon & Wilson prepared this GER for the exclusive use of TTAP Construction Services, LLC (TTAP) and their design team, in the design and construction of the proposed residential development. We conducted our work in accordance with our proposal (Rev. 0) dated June 29, 2020. We obtained authorization to proceed through a signed proposal dated June 29, 2020.

2 PROJECT AND SITE DESCRIPTION

TTAP is planning the Country Acres Residential Development at Benton County parcel number 120882000004000 in the Badger Canyon area. The development is approximately 4 miles southwest of the Interstate 82 (I-82) / E. Badger Road interchange and approximately 3¼ miles south of the I-82 / Dallas Road interchange. The parcel is bounded by a Kennewick Irrigation District (KID) canal to the north, a residential development to the northeast, and undeveloped properties to the west, south, and southeast (Figure 2).

The development is located at the north-northeast foothills of the Horse Heaven Hills, a northwest-southeast oriented series of ridges extending through southeast Washington. Based on the Preliminary Layout (dated June 18, 2020) by Knutzen Engineering, Inc., the development consists of 14 lots, ranging from approximately 5 to 70 acres, for single-family residential properties; development grading plans were not provided.

3 FIELDWORK AND LABORATORY TESTING

Shannon & Wilson completed the following exploration and testing tasks:

- Observed, logged, and sampled eight exploratory test pit excavations (logs provided in Appendix A); and
- Laboratory testing of selected soil samples (results provided in Appendix B).

The approximate test pit locations are shown in Figure 2. We recorded the test pit locations in the field with a hand-held Global Positioning System unit.

3.1 Test Pit Explorations

Shannon & Wilson observed eight test pit excavations (designated TP-1 through TP-8) at the site on July 9, 2020. TTAP excavated the test pits using a John Deere 85G tracked-backhoe to depths ranging from approximately 3¾ and 12¼ feet below the existing ground surface (bgs). Three test pits (TP-2, TP-5, and TP-6) were terminated upon encountering practical refusal in bedrock. We define practical refusal as the inability to advance the excavation further with the given equipment.

At the termination depth, the test pits were subsequently checked for the presence of groundwater, measured, photographed, and backfilled with the excavated materials. A Shannon & Wilson engineer observed the test pit excavations, classified the soils based on manual-visual procedures, obtained representative soil samples, and compiled exploration field logs. We sealed the samples in labeled plastic bags for transport to the laboratory.

During the excavation process, our field engineer measured the relative soil consistency using Dynamic Cone Penetrometer (DCP) testing in accordance with ASTM STP-399. DCP testing involves using a 15-pound slide hammer to drive a conical steel tip into the soil. The conical tip is driven three increments of 1¾ inches and the number of hammer blows per increment is recorded on the logs. Where it is not possible to drive the cone a full increment, driving is stopped at 30 hammer blows and the penetration of the cone is measured in inches. These values are reported as "30/x" where 'x' is the cone penetration in inches.

Soil strata boundaries were estimated in the field based on our observations and disturbed samples (i.e., excavation spoils). Approximate strata boundaries were measured using a tape measure lowered down the side of the test pit. The subsurface conditions encountered only represent the conditions at the exploration locations on the date explored and should be considered approximate. Actual subsurface conditions may vary between explorations, within the vicinity of the proposed improvements.

3.2 Laboratory Testing

Shannon & Wilson performed the following geotechnical laboratory testing on representative soil samples retrieved from the test pits.

- Water (Moisture) Content per ASTM D2216 (ASTM International 2019); and
- Particle Size Analysis per ASTM D422 (ASTM International 2014) and ASTM D1140 (ASTM International 2017).

Laboratory test results are presented in Appendix B and the index test results are also incorporated on the test pit logs presented in Appendix A.

4 SUBSURFACE CONDITIONS

4.1 Site Geology

The *Geologic Map of the Richland 1:100,000 Quadrangle* (Reidel and Fecht, 1994) maps the site as straddling three geologic units, including Mass-Wasting Deposits (Qls), Youngest Outburst Flood Deposits – silt and sand (Qfs$_3$), and members of the Saddle Mountains Basalt (~~M~~vs). A brief description of the mapped geologic units follows.

- **Mass-Wasting Deposits (Qls)**: Holocene- and Pleistocene-aged Qls deposits consisting of "Landslide deposits associated with steep flanks of anticlinal ridges and high bluffs along rivers and abandoned channels."
- **Youngest Outburst Flood Deposits – silt and sand (Qfs$_3$)**: Pleistocene-aged Qfs$_3$, or the fine-grained outburst deposits, consisting of "Lacustrine silt and fine sand and fluvial coarse to fine sand…deposited by outburst floods from glacial Lake Missoula…."
- **Saddle Mountains Basalt (~~M~~v$_s$) - Elephant Member (~~M~~v$_{sem}$) and Pomona Member (~~M~~v$_{sp}$)**: both members are part of the Miocene-aged ~~M~~v$_s$ formation of the Columbia River Basalt Group (CRBG).

We show the mapped site geology in Figure 3. In our opinion, the native soils and bedrock encountered within the test pit excavations are consistent with the mapped geology.

4.2 Geologic Unit and Distribution

Geologic units are interpretive and based on our opinion of the grouping of complex sediments and soil types into units. The encountered geologic unit descriptions and distribution are described below from youngest to oldest.

- **Mass-Wasting Deposits (Qls)** – At test pits TP-1 through TP-8, we encountered very loose to loose, light brown to light gray-brown, *Silt (ML)* to *Silt with Sand (ML)* extending

below topsoil (approximately 2 to 5 inches) to depths ranging from approximately 1¼ to 7 feet bgs.

- **Youngest Outburst Flood Deposits – silt and sand (Qfs$_3$)** – Beneath the Qls unit, we encountered loose to medium dense, *Silt (ML)* to *Slit with Sand (ML)* extending to the maximum exploration depths at test pits TP-1, TP-3, TP-4, TP-7, and TP-8 (approximately 11 ¼ to 12 feet bgs) and to ~~Mv$_s$~~ at test pits TP-2, TP-5, and TP-6.
- **Saddle Mountains Basalt (~~Mv$_s$~~)** – At test pits TP-2, TP-5, and TP-6, we encountered ~~Mv$_s$~~ at depths ranging from approximately 1¼ to 9¾ feet bgs. The ~~Mv$_s$~~ excavated as dark brown to black, angular gravel and cobbles. The excavation equipment extended the test pits approximately ½-foot to 2½ feet into the ~~Mv$_s$~~ at practical refusal.

4.3 Groundwater

We did not observe groundwater in the test pit excavations. Based on our review of well logs provided by the Washington State Department of Ecology, we estimate the local groundwater levels are greater than approximately 10 feet bgs. Groundwater levels may fluctuate due to seasonal or irrigation-related variations. Additionally, our experience indicates the shallow bedrock typically results in perched groundwater conditions arising due to irrigation practices.

4.4 Potential Variation

The explorations and field and laboratory testing were performed to evaluate the subsurface conditions at the site. Our observations are specific to the locations, depths, and times noted on the provided boring logs and may not be applicable to all areas of the site. No amount of subsurface explorations or laboratory testing can precisely predict the characteristics, quality, or distribution of the subsurface and site conditions. Potential variation includes, but is not limited to:

- The conditions between and below the explorations may be different.
- The passage of time or intervening causes (both natural and manmade) may result in changes to the site and subsurface conditions.
- Potential perched groundwater levels may fluctuate due to seasonal or irrigation-related variations and the underlying bedrock topography.
- Contaminated soils were not encountered in our explorations; however, this does not preclude the presence of contaminated soils on the site.

5 CONCLUSIONS AND RECOMMENDATIONS

For the purposes of our analyses and recommendations, we assumed that the results of the explorations are representative of the conditions across the project site. However, as stated in Section 4.4, subsurface conditions should be expected to vary. During construction, we may need to revise our recommendations if different conditions are encountered.

The following sections present our findings and recommendations for geologic hazards, shallow foundations, asphaltic concrete pavement structural sections, and estimated infiltration rates.

5.1 Geologic Hazards

Geologic hazards that could impact a site include slope instability and earthquake-induced hazards, such as ground motions, fault rupture and slope instability. We provide a discussion of the potential geologic hazards below.

5.1.1 Slope Instability

The site is located within Qls (historic landslide) deposits on north-northeast facing foothills of the Horse Heaven Hills; the site slopes range from relatively gentle to steep. Based on our experience, historic landslides are typically re-activated by excess water. Potential slope instability could result from natural (e.g., heavy precipitation, erosion) or other activities (e.g., oversteepening the slope, excavation of the toe, loading the top of the slope, watering/irrigation practices, etc.) on or near the slopes. In our opinion, the hazard posed by slope instability ranges from low to high.

Shannon & Wilson recommends:

- Any potential buyer within the development be made aware of the potential for slope instability to exist and typical factors which increase the risk of slope instability.
- Irrigation practices should be limited to nonexistent in the development.
- Stormwater discharge, including building downspouts, should be directed away from the steeper areas.

Based on our experience, regional slope movements within similar loess soils and slopes typically does not result in material runouts which may devastate nearly all things in the runout path; rather, structures, roadways, and utilities may experience damage due to slight to moderate movements.

5.1.2 Earthquake-induced Geologic Hazards

Earthquake-induced geologic hazards that may affect a site include ground motions, slope instability, fault rupture, liquefaction, and liquefaction-associated effects (such as settlement, loss of shear strength, bearing capacity failures, loss of lateral support, ground oscillation, and lateral spreading).

5.1.2.1 Seismic Design Ground Motions

Seismic design forces in the 2015 International Building Code (IBC) (International Code Council, 2015) are based on seismological input and site soil response factors. The seismological inputs are short period spectral acceleration, S_S, and spectral acceleration at the 1-second period, S_1, shown in Figure 1613.5 in the code.

The site soil response factors are based on determination of the Seismic Site Class. Based on the subsurface conditions encountered in the explorations and our local experience, the site may be classified as Seismic Site Class D (stiff soil profile). The site class coefficients, F_a and F_v, corresponding to Seismic Site Class D and the mapped S_S and S_1 values are provided in Exhibit 5-1. The corresponding risk-targeted Maximum Considered Earthquake (MCE_R) spectral accelerations (S_{MS} and S_{M1}) and the Design Earthquake spectral accelerations (S_{DS} and S_{D1}) are provided in Exhibit 5-1.

Exhibit 5-1: IBC Parameters for Seismic Design of Structures

Symbol	Description	Value
S_S	Spectral Response Acceleration for Short Periods	0.44g
S_1	Spectral Response Acceleration at 1-Second Period	0.17g
F_a	Site Coefficient for Short Periods	1.45
F_V	Site Coefficient at 1-Second Period	2.13
S_{MS}	MCER Spectral Response Acceleration for Short Periods	0.64
S_{M1}	MCER Spectral Response Acceleration at 1-Second Period	0.36
S_{DS}	Design Spectral Response Acceleration for Short Periods	0.43
S_{D1}	Design Spectral Response Acceleration at 1-Second Period	0.24

NOTES:
IBC = International Building Code; MCER = (Risk-Targeted) Maximum Considered Earthquake
Reference = (Applied Technology Council, 2020)

5.1.2.2 Fault-Related Ground Rupture

Based on the United States Geological Survey (USGS) Faults Database, the closest Quaternary (active within the last 1.6 million years) fault is the Horse Heaven Hills fault zone mapped approximately ¾-mile southwest and oriented northwest-southeast. The

database indicates the fault structure typically experiences a slip rate of less than 0.2-millimeter per year, which suggests a relatively long recurrence interval between earthquakes on this fault. Based on the relatively long recurrence interval, the potential for fault-related ground rupture to cause ground movement at the project site is low.

5.1.2.3 Liquefaction Potential

Liquefaction of loose, saturated, and cohesionless soils occurs when excess pore pressures are generated as a result of earthquake shaking. Liquefaction potential studies provide assessment methods based on both laboratory and field procedures. The research indicates that liquefaction potential decreases as the fines content increases. The most widely used methods are empirical and based on correlations between SPT resistance (N-value), peak ground acceleration, and earthquake magnitude.

Based on the high fines content of on-site soils, the absence of encountered groundwater in our test pits, and the encountered shallow bedrock, it is our qualitative assessment that the potential for liquefaction and, therefore, the associated effects (e.g., loss of shear strength, bearing capacity failures, loss of lateral support, ground oscillation, and lateral spreading), is low. This assessment is consistent with the Washington State Department of Natural Resources liquefaction hazard map that indicates the site susceptibility to liquefaction is low (lower elevations) or not applicable (higher elevations).

5.2 Shallow Foundations

Conceptually, 1- to 2-story, lightly loaded structures could be supported on spread footing foundations bearing in Qfs$_3$ or bedrock; we do not recommend placement of foundations within the Qls deposit. We recommend a minimum of 24 inches of embedment for frost protection and bearing considerations. As previously described, the Qfs$_3$ deposit is typically loose to medium dense and is composed predominantly of *Silt (ML)* to *Sandy Silt (ML)*. Consequently, overexcavation of 1 to 3 feet, compaction of the Qfs$_3$ subgrade exposed in the bottom of the overexcavation, and filling the overexcavation with imported compacted structural fill may be required to provide adequate bearing and a stable foundation subgrade. In addition, the Qfs$_3$ is moisture-sensitive and may become muddy and unstable if exposed to wet weather or wet conditions. Therefore, earthwork during wet winter months should be avoided or additional costs for earthwork should be budgeted if earthwork will occur during periods of prolonged wet weather.

Given the variable depths to ~~M~~v$_s$, it is likely that competent bedrock may be encountered at or above planned footing subgrade elevations.

Given the slopes across the site, future development may require construction of level building pads. Cut/fill building pads are commonly constructed on slopes by cutting into the hillside and side-casting the fill down the adjacent slope to create a level cut/fill pad. If the fill is not carefully placed and compacted, differential settlement of buildings or other infrastructure that is located on the cut/fill pad may occur. To mitigate this potential settlement issue, building foundations could be founded on native soils below any fills, or site development could consider constructing buildings entirely in cuts and placing less settlement sensitive site features (e.g., roadways, parks) on the fills.

5.3 Pavements

We based our pavement section design on Asphalt Institute (AI) design methods and our local experience. We anticipate the pavement area(s) will mainly consist of Level II to III traffic, residential to rural minor collector streets as defined by the AI, with occasional heavy vehicles (e.g., delivery and garbage trucks). We assume the native *Silt (ML)* to *Silt with Sand (ML)* as the design subgrade and estimated a California Bearing Ratio (CBR) value of approximately 5 to 8 based on correlations with the soil classification. Fill placed in pavement areas, if necessary, should be similar or better than native subgrade soils and have a minimum CBR value of 5.

We present minimum structural flexible pavement sections in Exhibit 5-2 below. Pavement subbase and base course should be compacted to at least 95 percent of the Modified Proctor maximum dry density as determined by ASTM D1557, and to a dense and unyielding condition, as described in Section 6.2.

Exhibit 5-2: Minimum Flexible Pavement Structural Sections

Pavement Area	Material Type and Section Thickness (inches)		
	Asphalt Concrete	Base Course	Total Section Thickness
Development Main Roadways	4	12	16

The base course materials should conform to the Washington State Department of Transportation (WSDOT) Standard Specifications 9-03.9(3) for crushed surfacing. The base course may consist of Top Course and/or Base Course under the WSDOT specification.

The asphalt pavement materials should consist of a Hot Mix Asphalt (HMA) such as Class ½-inch aggregate with a PG 64-28 asphalt binder, and should be compacted to a minimum 91 percent of the maximum theoretical specific gravity (Rice's density).

The pavement should be designed and constructed to allow for positive surface drainage. Adequate surface slope, subgrade crown, surface drainage management, and uniform compaction contribute to long-term pavement performance.

5.4 Infiltration

We have not been provided stormwater management plans or depths beyond target infiltration test locations provided by Knutzen. Therefore, we have reviewed potential infiltration rates based on grain size correlations for onsite soils at the target infiltration locations (TP-4 and TP-8). Grain size correlations to infiltration are typically based on the sieve size (in millimeters [mm]) in which 10% of the sample passes, or D_{10}. Based on the laboratory test results provided in Appendix B, the on-site *Silt (ML)* to *Silt with Sand (ML)* samples tested exhibit D_{10} values between 0.0041 and 0.011mm.

The 2019 Stormwater Management Manual for Eastern Washington (SMMEW) presents a Soil Grain Size Analysis Method to determine the hydraulic conductivity based on the Massmann equation (Eq. 6.16). Based on the grain size analyses provided in Appendix B, we estimate the average hydraulic conductivity, K_{sat}, for the on-site *Silt (ML)* to *Silt with Sand (ML)* is approximately ¼-inch per hour (iph).

The infiltration rate is a function of the K_{sat}, hydraulic gradient, pond size, and water depths. The SMMEW recommends multiplying the calculated K_{sat} value with a 0.5 correction factor (CF) to estimate long-term rates when using grain size correlation methods. The designer should also apply the appropriate siltation/biofouling and aspect ratio factors when determining the design infiltration rate.

The K_{sat} estimates assume infiltration into on-site soils at test pits TP-4 and TP-6 above 10 feet bgs. If swales are used, any surfaces such as topsoil or lawn may reduce the infiltration rate and may control the design. Compacting or densifying the soil may also result in a lower infiltration rate. The project geotechnical engineer should observe and document the soil types at the proposed infiltration elevation during construction. Stormwater infiltrations systems should not be placed adjacent to building foundations.

The project geotechnical engineer should observe and document the infiltration field soil types at the proposed infiltration elevation(s).

5.5 Additional Geotechnical Explorations

Due to the identified geologic hazards and the unknown mass grading plan for the Country Acres development, Shannon & Wilson recommends evaluating the soil conditions at the individual lots with geotechnical explorations (drilled borings and/or test pits) for proposed

structures, potential slope instabilities following development mass grading, and overall property planning. Detailed grading plans and proposed elevations are recommended to assist in preparing a geotechnical investigation.

6 CONSTRUCTION CONSIDERATIONS

The applicability of our recommendations is contingent upon good construction practices. Poor construction techniques may alter conditions from those on which our recommendations are based and, therefore, result in reduced foundation capacity or additional settlement and movement. The following sections present construction considerations.

6.1 Test Pit Backfill

At completion, the backhoe operator backfilled five of the exploratory test pits with the excavated materials. Test pits TP-2, TP-3, and TP-5 were not backfilled, per our Client's request. Test pits located within structure and pavement footprints, and areas to receive fill should be overexcavated and backfilled with compacted, granular structural fill.

6.2 Earthwork

Surface vegetation, roots, topsoil, and existing fill, if encountered, should be stripped from within and approximately 5 feet beyond structure footprints, pavement areas, and areas to receive structural fill. Topsoil may be stockpiled and used in future landscape areas or outside of structural fill areas, if desired, but should not be used for structural fill.

Once the stripping/excavation is complete, we recommend compacting the exposed subgrade beneath development fills and residential pads. The exposed subgrade should be moisture conditioned to approximately 12 inches below subgrade elevation to within 2% of optimum moisture and compacted to firm, unyielding condition with a minimum in-place dry density of 95% of the maximum laboratory dry density as determined by the ASTM International (ASTM) Designation: D 1557, Laboratory Compaction Characteristics of Soil Using Modified Effort.

The prepared subgrade should be proofrolled using heavy/loaded construction equipment to observe for yielding conditions. Areas of inadequate performance, as observed by the geotechnical engineer or their representative, should be excavated and replaced with structural fill prior to placing additional fill.

Utility trenching and backfilling should be accomplished in accordance with Washington State Department of Transportation Standard Specifications (2019). Based on our explorations, we anticipate that conventional excavation equipment can accomplish the proposed excavations. Utility trenches should be backfilled using structural fill compacted as specified below. Sufficient backfill should be placed over the utility before compacting with heavy compactors to prevent damage.

Fill soil placed beneath settlement-sensitive structures or areas should be compacted structural fill. Structural fill should not consist of the native, on-site soils, due the high fines content.

If imported material (other than crushed rock) is used as structural fill, we recommend a well-graded mixture of sand and gravel, free of organics, debris, and rubbish. It should contain less than 15% fines (material passing the No. 200 mesh sieve, based on the minus ¾-inch fraction); the fines should be nonplastic; and the soil moisture content should be within 2% of optimum. The gravel content should range between 25 and 50% retained on a No. 4 sieve. Crushed rock should consist of Top Course or Base Course, approximately ¾- or ⅝-inch minus, in accordance with WSDOT Standard Specification Section 9-03.9(3), or similar.

If wet conditions exist, then the recommendations for fill material in Section 6.3 should supersede the recommendations above.

Fill materials should be placed in maximum 6- to 8-inch loose lifts, depending on compaction equipment size and energy. Structural fill should be uniformly moisture-condition to within 2% of optimum and compacted in lifts to a minimum 95% of ASTM D1557 and a dense, unyielding condition.

6.3 Wet Condition Considerations

Most of the on-site soils are moisture sensitive due to their high silt content. Therefore, we present the following wet weather/wet conditions grading recommendations for the near-surface site soils.

- The ground surface in and surrounding the construction area should be sloped and sealed with a smooth-drum roller to promote runoff of precipitation away from work areas and to prevent ponding of water.
- Work areas or slopes should be covered with plastic. The use of sloping, ditching, sumps, dewatering, and other measures should be employed as necessary to permit proper completion of the work.
- If construction traffic occurs over the exposed subgrade, the subgrade should be protected from disturbance. A 4- to 6-inch-thick working surface layer of crushed rock

could be placed immediately following excavation on the undisturbed soils. This can be done as needed to protect the exposed soils and act as a working surface. Over excavation may be needed to accommodate this crushed rock working surface.

- Earthwork should be accomplished in small sections to minimize exposure to wet conditions. That is, each section should be small enough so that the removal of unsuitable soils and placement and compaction of clean structural fill could be accomplished on the same day. The size of construction equipment may have to be limited to prevent soil disturbance. It may be necessary to excavate soils with a backhoe, or equivalent, and locate them so that equipment does not pass over the excavated area. Thus, subgrade disturbance caused by equipment traffic would be minimized.
- Fill material should consist of clean material with not more than 5% fines by dry weight passes the No. 200 mesh sieve, based on wet sieving the fraction passing the ¾-inch mesh sieve. The fines should be non-plastic. For wet conditions, these recommendations supersede our fill material recommendations provided in Section 6.1 of this report.
- No soil should be left uncompacted and exposed to moisture. A smooth-drum vibratory roller, or equivalent, should roll the surface to seal out as much water as possible.
- In-place soil or fill soil that becomes wet and unstable and/or too wet to suitably compact should be removed and replaced with clean, granular soil (see gradation requirements above).
- Excavation and placement of structural fill material should be observed on a full-time basis by Shannon & Wilson to determine that all work is being accomplished in accordance with the project specifications and our recommendations.
- Grading and earthwork should not be accomplished during periods of heavy, continuous rainfall.

The above recommendations should be incorporated into the contract specifications for foundation, pavement, and earthwork construction.

6.4 Temporary Excavations/Slopes

Based on test pit observations the cohesionless site soils have a tendency to cave and correspond to Occupational Safety and Health Administration (OSHA) Soil Type C. OSHA indicates Type C soils may have maximum temporary slopes of 1½ Horizontal to 1 Vertical (1½ H:1V) for excavations. Flatter slopes may be required within the Outburst Flood Deposit for excavations which exhibit raveling or running sands.

The OSHA slope inclinations do not consider surcharge loads placed along excavation benches or perimeter, such as equipment or material stockpiling. Surcharged slopes should

be evaluated by the geotechnical engineer based on the Contractor's proposed construction site layout.

In all cases, the construction Contractor is responsible for temporary excavation slopes and the safety of all temporary excavations based on exposed ground conditions. The Contractor can observe the nature and conditions of the subsurface materials encountered and has the responsibility for methods, sequence, and construction schedule. If instability is detected, slopes should be flattened or shored. All temporary excavation slopes should be accomplished in accordance with all local, state, and federal safety regulations.

6.5 Plan Review and Construction Observation

We recommend retaining Shannon & Wilson to review the construction plans for the proposed development structures, and to provide construction observations during site grading and foundation installation. We can provide construction observation services on a time and-expense basis.

Variations in soil conditions are possible at the site and may be encountered during construction. Geotechnical design recommendations were developed from a limited number of explorations and tests. Therefore, recommendations may need to be adjusted in the field. Shannon & Wilson should be retained to provide construction observation services during the project earthwork, excavation, and foundation, and pavement preparation. Construction observation allows the geotechnical engineer to observe the actual soil conditions exposed during construction, determine if the proposed design is compatible with the design recommendations, and if the conditions encountered at the site are consistent with those observed during the geotechnical study. Construction observation is conducted to reduce the potential for problems arising during and after construction. However, in all cases, the Contractor is responsible for the quality and completeness of their work and for adhering to the plans, specifications, and recommendations on which their work is based.

7 LIMITATIONS

The analyses, conclusions, and recommendations contained in this report are based upon site conditions as they presently exist. We further assume that the site explorations are representative of the subsurface conditions throughout the site; i.e., site conditions are not significantly different from those disclosed by the field explorations and observations.

If subsurface conditions different from those encountered in the field explorations are observed or appear to be present during construction, we should be advised at once so that we can review these conditions and reconsider our recommendations, where necessary.

If there is a substantial lapse of time between the submission of this report and the start of construction at the site, or if conditions have changed because of natural forces or construction at the site, we recommend that we review this report to determine the applicability of the conclusions and recommendations contained in this report concerning the time lapse or changed conditions.

The scope of services did not include any environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below the site, or for the evaluation or disposal of contaminated soils or groundwater, should any be encountered. We would be pleased to provide you a scope for these services at your request, should these services become necessary.

This report was prepared for the use of TTAP Construction Services and their design team in the design and construction of the proposed development in Benton County, Washington. This report was made for a specific development planning and mass grading considerations. Variations from the anticipated development discussed in this report should be analyzed by Shannon & Wilson to assess the potential geotechnical impacts of those variations on the recommendations included in this report.

As an integral part of this report, we have prepared the attached "Important Information About Your Geotechnical/Environmental Report" to help you more clearly understand its use and limitations.

8 REFERENCES

Applied Technology Council (ATC), 2020, Seismic Hazards by Location Map: accessed July 23, 2020 at: https://hazards.atcouncil.org/

ASTM International, 2014, Standard Test Method for Particle-Size Analysis of Soil, D422-63 (reapproved 2007): West Conshohocken, Pa., ASTM International, Annual Book of Standards, V. 04.02, Concrete and Aggregates, available: www.astm.org.

ASTM International, 2015, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort, D1557-12 (corrected 2015): West Conshohocken, Pa., ASTM International, Annual Book of Standards, V. 04.08, Soil and Rock (I): D420 - D5876, available: www.astm.org.

ASTM International, 2017, Standard Test Methods for Determining the Amount of Material Finer than 75-μm (No. 200) Sieve in Soils by Washing, D1140-17: West Conshohocken, Pa., ASTM International, Annual Book of Standards, V. 04.08, Soil and Rock (I): D420 - D5876, available: www.astm.org.

ASTM International, 2019, Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass, D2216-19: West Conshohocken, Pa., ASTM International, Annual Book of Standards, V. 04.08, Soil and Rock (I): D420 - D5876, 7 p., available: www.astm.org.

International Code Council, Inc., 2015, International Building Code: Country Club Hills, Ill., International Code Council, Inc., 691 p.

Reidel, S.P., and Fecht, K.R., 1994, Geologic Map of the Richland 1:100,000 Quadrangle, Washington: Washington Division of Geology and Earth Resources, Open File Report 94-8, available: https://ngmdb.usgs.gov

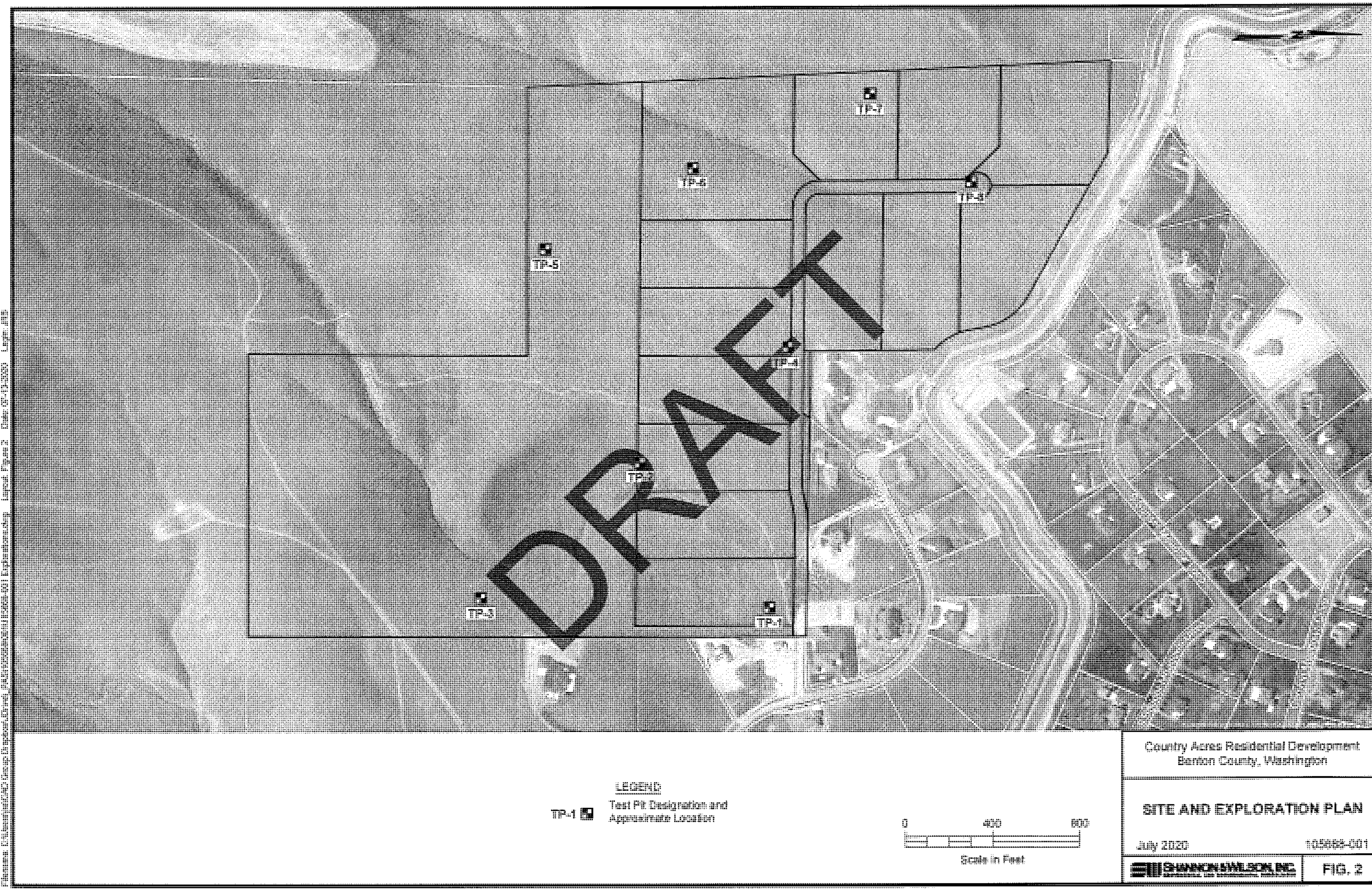
Sowers, G.F., and Hedges, C.S., 1966, Dynamic Cone for Shallow In-Situ Penetration Testing, ASTM STP 399: West Conshohocken, Pa., ASTM International, Special Technical Publication

U.S. Geological Society (USGS), 2020, U.S. Quaternary Faults Database, USGS Earthquakes Hazard Program: accessed July 28, 2020 at: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a168456 1a9b0aadf88412fcf

Washington State Department of Ecology, 2019, Stormwater Management Manual for Eastern Washington; Olympia, Wash, Washington State Department of Ecology Water Quality Program.

Washington Department of Natural Resources, 2020, Washington Geologic Information Portal – Natural Hazards Map: accessed July 28, 2020 at: https://geologyportal.dnr.wa.gov/#natural_hazards

Washington Department of Transportation (WSDOT), 2019, Standard Specifications for Road, Bridge, and Municipal Construction: Olympia, Wash., WSDOT, Manual M 41-10, 1 v., September, available: http://www.wsdot.wa.gov/Publications/Manuals/M41-10.htm.



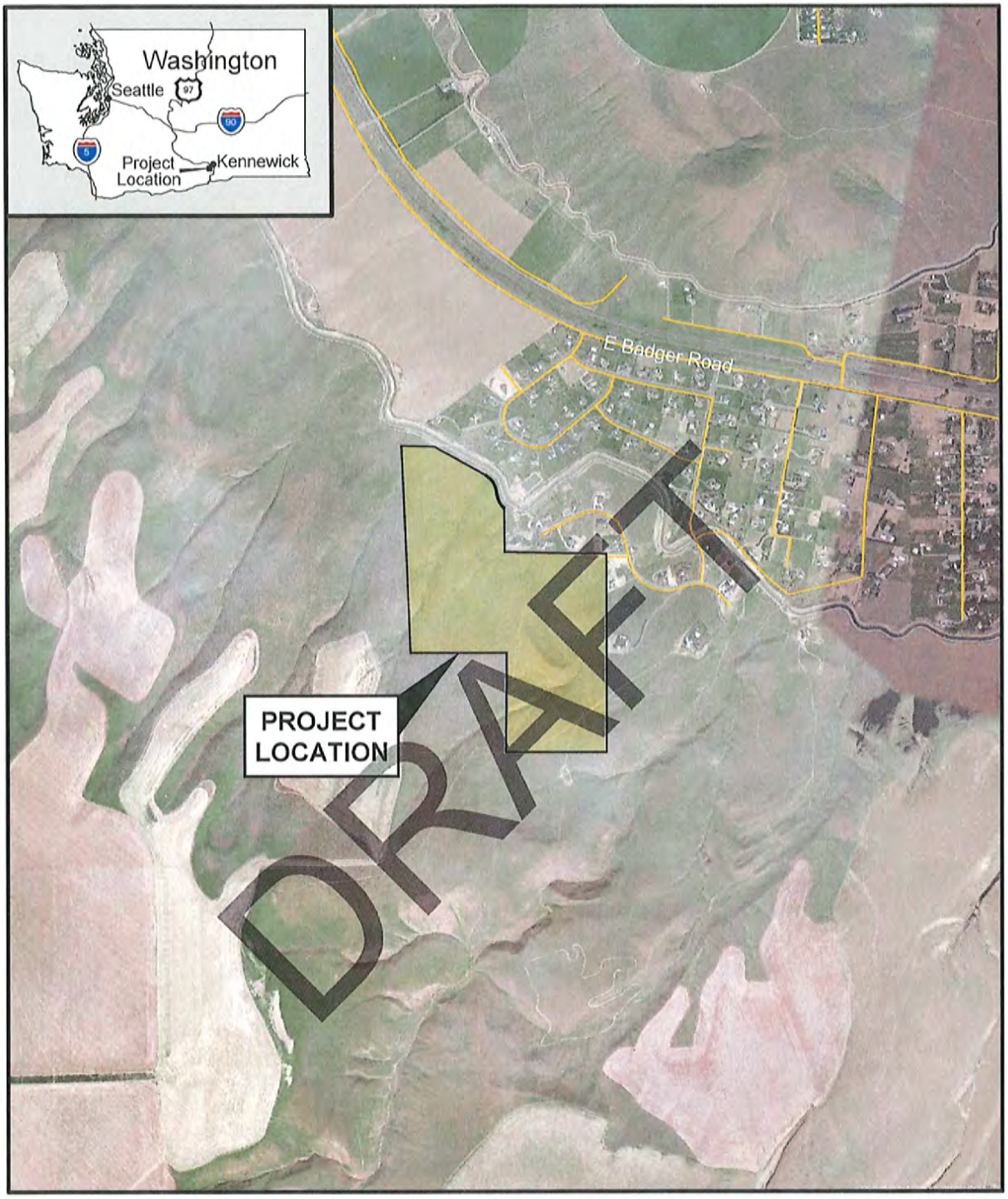
Country Acres Residential Development
Benton County, Washington

SITE AND EXPLORATION PLAN

July 2020 105668-001

SHANNON & WILSON, INC.

FIG. 2



0 2,000 4,000

Approximate Scale in Feet

Country Acres Residential Development
Benton County, Washington

VICINITY MAP

July 2020 105668-001

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FIG. 1

Filename: C:\Users\jrs\CAD Group Dropbox\JDrive_PAS\105668\001\105668-001 Vicinity Map.dwg Date: 07-13-2020 Login: JRS

APPENDIX A: EXPLORATION LOGS

Appendix A

Test Pit Logs

CONTENTS

Shannon & Wilson, Inc. (S&W), uses a soil identification system modified from the Unified Soil Classification System (USCS). Elements of the USCS and other definitions are provided on this and the following pages. Soil descriptions are based on visual-manual procedures (ASTM D2488) and laboratory testing procedures (ASTM D2487), if performed.

S&W INORGANIC SOIL CONSTITUENT DEFINITIONS

CONSTITUENT[2]	FINE-GRAINED SOILS (50% or more fines)[1]	COARSE-GRAINED SOILS (less than 50% fines)[1]
Major	***Silt, Lean Clay, Elastic Silt,*** or ***Fat Clay***[3]	***Sand*** or ***Gravel***[4]
Modifying (Secondary) Precedes major constituent	30% or more coarse-grained: ***Sandy*** or ***Gravelly***[4]	More than 12% fine-grained: ***Silty*** or ***Clayey***[3]
Minor Follows major constituent	15% to 30% coarse-grained: ***with Sand*** or ***with Gravel***[4]	5% to 12% fine-grained: ***with Silt*** or ***with Clay***[3]
	30% or more total coarse-grained *and* lesser coarse-grained constituent is 15% or more: ***with Sand*** or ***with Gravel***[5]	15% or more of a second coarse-grained constituent: ***with Sand*** or ***with Gravel***[5]

[1]All percentages are by weight of total specimen passing a 3-inch sieve.
[2]The order of terms is: *Modifying Major with Minor.*
[3]Determined based on behavior.
[4]Determined based on which constituent comprises a larger percentage.
[5]Whichever is the lesser constituent.

MOISTURE CONTENT TERMS

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, from below water table

STANDARD PENETRATION TEST (SPT) SPECIFICATIONS

Hammer:	140 pounds with a 30-inch free fall. Rope on 6- to 10-inch-diam. cathead 2-1/4 rope turns, > 100 rpm NOTE: If automatic hammers are used, blow counts shown on boring logs should be adjusted to account for efficiency of hammer.
Sampler:	10 to 30 inches long Shoe I.D. = 1.375 inches Barrel I.D. = 1.5 inches Barrel O.D. = 2 inches
N-Value:	Sum blow counts for second and third 6-inch increments. Refusal: 50 blows for 6 inches or less; 10 blows for 0 inches.

NOTE: Penetration resistances (N-values) shown on boring logs are as recorded in the field and have not been corrected for hammer efficiency, overburden, or other factors.

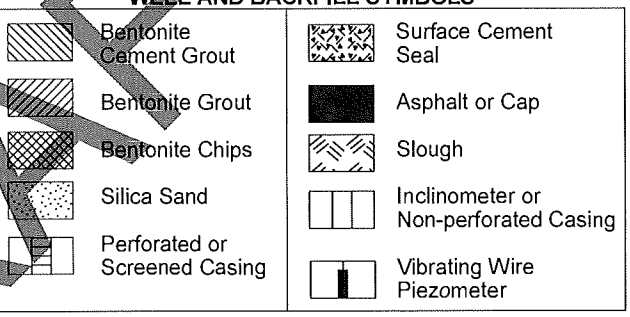
PARTICLE SIZE DEFINITIONS

DESCRIPTION	SIEVE NUMBER AND/OR APPROXIMATE SIZE
FINES	< #200 (0.075 mm = 0.003 in.)
SAND	
Fine	#200 to #40 (0.075 to 0.4 mm; 0.003 to 0.02 in.)
Medium	#40 to #10 (0.4 to 2 mm; 0.02 to 0.08 in.)
Coarse	#10 to #4 (2 to 4.75 mm; 0.08 to 0.187 in.)
GRAVEL	
Fine	#4 to 3/4 in. (4.75 to 19 mm; 0.187 to 0.75 in.)
Coarse	3/4 to 3 in. (19 to 76 mm)
COBBLES	3 to 12 in. (76 to 305 mm)
BOULDERS	> 12 in. (305 mm)

RELATIVE DENSITY / CONSISTENCY

COHESIONLESS SOILS		COHESIVE SOILS	
N, SPT, BLOWS/FT.	RELATIVE DENSITY	N, SPT, BLOWS/FT.	RELATIVE CONSISTENCY
< 4	Very loose	< 2	Very soft
4 - 10	Loose	2 - 4	Soft
10 - 30	Medium dense	4 - 8	Medium stiff
30 - 50	Dense	8 - 15	Stiff
> 50	Very dense	15 - 30	Very stiff
		> 30	Hard

WELL AND BACKFILL SYMBOLS



PERCENTAGES TERMS [1, 2]

Trace	< 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

[1]Gravel, sand, and fines estimated by mass. Other constituents, such as organics, cobbles, and boulders, estimated by volume.

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SOIL DESCRIPTION AND LOG KEY

July 2020 105668-001

SHANNON & WILSON, INC.
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FIG. A-1
Sheet 1 of 3

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
(Modified From USACE Tech Memo 3-357, ASTM D2487, and ASTM D2488)

MAJOR DIVISIONS			GROUP/GRAPHIC SYMBOL		TYPICAL IDENTIFICATIONS
COARSE-GRAINED SOILS *(more than 50% retained on No. 200 sieve)*	Gravels *(more than 50% of coarse fraction retained on No. 4 sieve)*	Gravel *(less than 5% fines)*	GW		Well-Graded Gravel; Well-Graded Gravel with Sand
			GP		Poorly Graded Gravel; Poorly Graded Gravel with Sand
		Silty or Clayey Gravel *(more than 12% fines)*	GM		Silty Gravel; Silty Gravel with Sand
			GC		Clayey Gravel; Clayey Gravel with Sand
	Sands *(50% or more of coarse fraction passes the No. 4 sieve)*	Sand *(less than 5% fines)*	SW		Well-Graded Sand; Well-Graded Sand with Gravel
			SP		Poorly Graded Sand; Poorly Graded Sand with Gravel
		Silty or Clayey Sand *(more than 12% fines)*	SM		Silty Sand; Silty Sand with Gravel
			SC		Clayey Sand; Clayey Sand with Gravel
FINE-GRAINED SOILS *(50% or more passes the No. 200 sieve)*	Silts and Clays *(liquid limit less than 50)*	Inorganic	ML		Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
			CL		Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay
		Organic	OL		Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
	Silts and Clays *(liquid limit 50 or more)*	Inorganic	MH		Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt
			CH		Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay
		Organic	OH		Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
HIGHLY-ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor		PT		Peat or other highly organic soils (see ASTM D4427)

NOTE: No. 4 size = 4.75 mm = 0.187 in.; No. 200 size = 0.075 mm = 0.003 in.

NOTES

1. Dual symbols *(symbols separated by a hyphen, i.e., SP-SM, Sand with Silt)* are used for soils with between 5% and 12% fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart. Graphics shown on the logs for these soil types are a combination of the two graphic symbols (e.g., SP and SM).

2. Borderline symbols *(symbols separated by a slash, i.e., CL/ML, Lean Clay to Silt; SP-SM/SM, Sand with Silt to Silty Sand)* indicate that the soil properties are close to the defining boundary between two groups.

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Benton County, Washington

SOIL DESCRIPTION AND LOG KEY

July 2020 105668-001

SHANNON & WILSON, INC.
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FIG. A-1
Sheet 2 of 3

SOIL_CLASS_KEY PG2 105668-001 COUNTRY ACRES DEVELOPMENT.GPJ SHAN_WIL.GDT 7/29/20

GRADATION TERMS

Poorly Graded	Narrow range of grain sizes present or, within the range of grain sizes present, one or more sizes are missing (Gap Graded). Meets criteria in ASTM D2487, if tested.
Well-Graded	Full range and even distribution of grain sizes present. Meets criteria in ASTM D2487, if tested.

CEMENTATION TERMS[1]

Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

PLASTICITY[2]

DESCRIPTION	VISUAL-MANUAL CRITERIA	APPROX. PLASITICITY INDEX RANGE
Nonplastic	A 1/8-in. thread cannot be rolled at any water content.	< 4
Low	A thread can barely be rolled and a lump cannot be formed when drier than the plastic limit.	4 to 10
Medium	A thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. A lump crumbles when drier than the plastic limit.	10 to 20
High	It takes considerable time rolling and kneading to reach the plastic limit. A thread can be rerolled several times after reaching the plastic limit. A lump can be formed without crumbling when drier than the plastic limit.	> 20

ADDITIONAL TERMS

Mottled	Irregular patches of different colors.
Bioturbated	Soil disturbance or mixing by plants or animals.
Diamict	Nonsorted sediment; sand and gravel in silt and/or clay matrix.
Cuttings	Material brought to surface by drilling.
Slough	Material that caved from sides of borehole.
Sheared	Disturbed texture, mix of strengths.

PARTICLE ANGULARITY AND SHAPE TERMS[1]

Angular	Sharp edges and unpolished planar surfaces.
Subangular	Similar to angular, but with rounded edges.
Subrounded	Nearly planar sides with well-rounded edges.
Rounded	Smoothly curved sides with no edges.
Flat	Width/thickness ratio > 3.
Elongated	Length/width ratio > 3.

ACRONYMS AND ABBREVIATIONS

ATD	At Time of Drilling
Diam.	Diameter
Elev.	Elevation
ft.	Feet
FeO	Iron Oxide
gal.	Gallons
Horiz.	Horizontal
HSA	Hollow Stem Auger
I.D.	Inside Diameter
in.	Inches
lbs.	Pounds
MgO	Magnesium Oxide
mm	Millimeter
MnO	Manganese Oxide
NA	Not Applicable or Not Available
NP	Nonplastic
O.D.	Outside Diameter
OW	Observation Well
pcf	Pounds per Cubic Foot
PID	Photo-Ionization Detector
PMT	Pressuremeter Test
ppm	Parts per Million
psi	Pounds per Square Inch
PVC	Polyvinyl Chloride
rpm	Rotations per Minute
SPT	Standard Penetration Test
USCS	Unified Soil Classification System
q_u	Unconfined Compressive Strength
VWP	Vibrating Wire Piezometer
Vert.	Vertical
WOH	Weight of Hammer
WOR	Weight of Rods
Wt.	Weight

STRUCTURE TERMS[1]

Interbedded	Alternating layers of varying material or color with layers at least 1/4-inch thick; singular: bed.
Laminated	Alternating layers of varying material or color with layers less than 1/4-inch thick; singular: lamination.
Fissured	Breaks along definite planes or fractures with little resistance.
Slickensided	Fracture planes appear polished or glossy; sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps that resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay.
Homogeneous	Same color and appearance throughout.

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[2]Adapted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

Country Acres Residential Development
Benton County, Washington

SOIL DESCRIPTION AND LOG KEY

July 2020 105668-001

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FIG. A-1
Sheet 3 of 3

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

LOG OF TEST PIT TP-1

JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.16846, -119.33802

PROJECT: County Acres Development

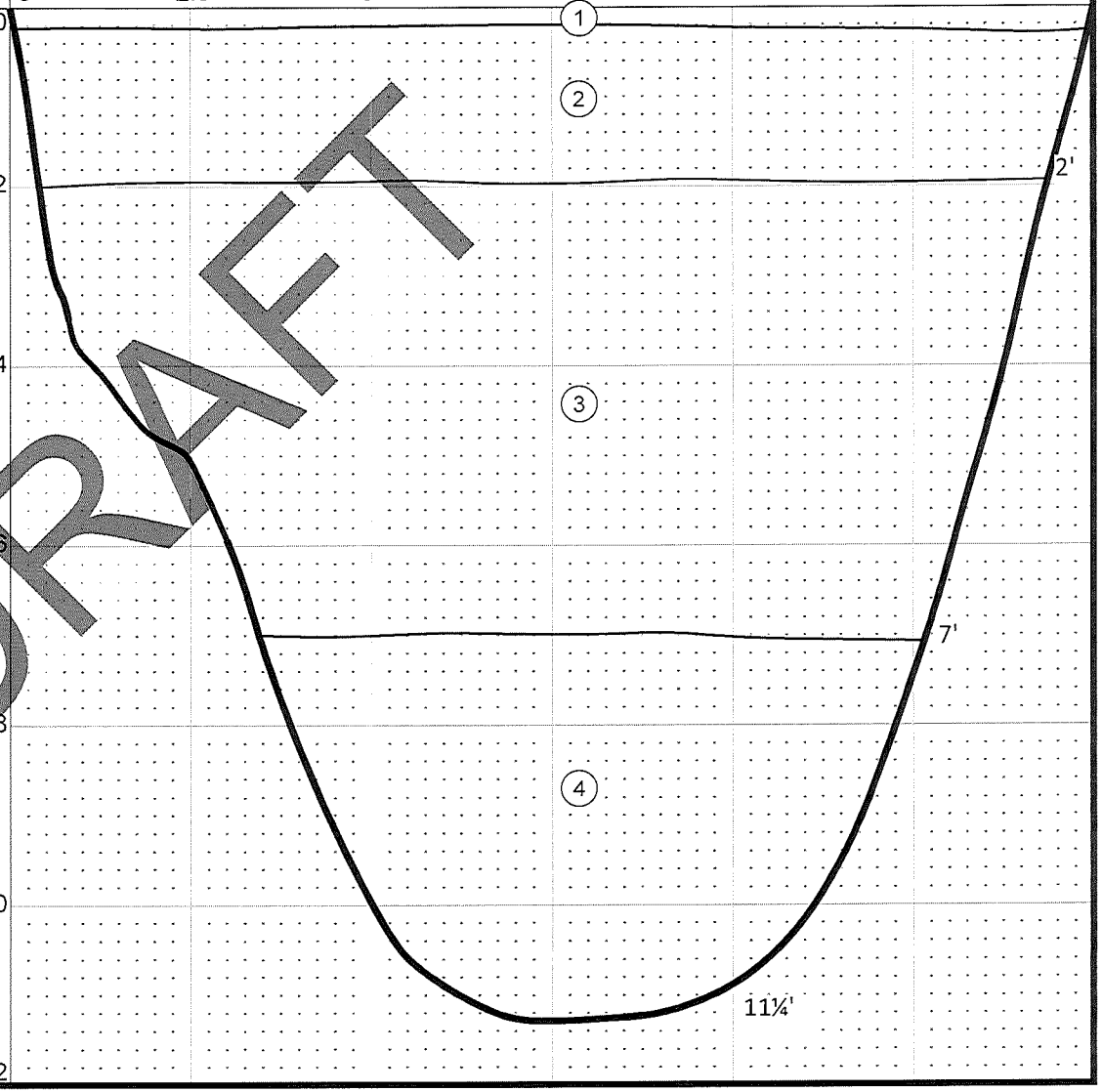
SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (3 inches)	None Observed			0
(2) Loose, light brown, *Silt (ML)*; dry; trace fine sand; nonplastic fines; trace to few rootlets.		6 2,5,7	S-1	2
(3) Very loose to loose, light gray-brown, *Silt with Sand (ML)*; dry; fine sand; few ash clasts; nonplastic fines.		3.5 3,3,4	S-2	4
(4) Dense, light brown, *Silty Sand (SM)*; moist; trace rounded gravel; fine to medium sand; lightly cemented; nonplastic fines.		6 3,5,7	S-3	6
			S-4	8
				10
				12

Sketch of North Pit Side

Surface Elevation: Approx. ___ Ft.

Horizontal Distance in Feet

0 2.5 5 7.5 10 12.5 14



NOTE

Terminated at 11.3 feet and backfilled.

FIG. A-2

SHANNON & WILSON, INC.
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LOG OF TEST PIT TP-2

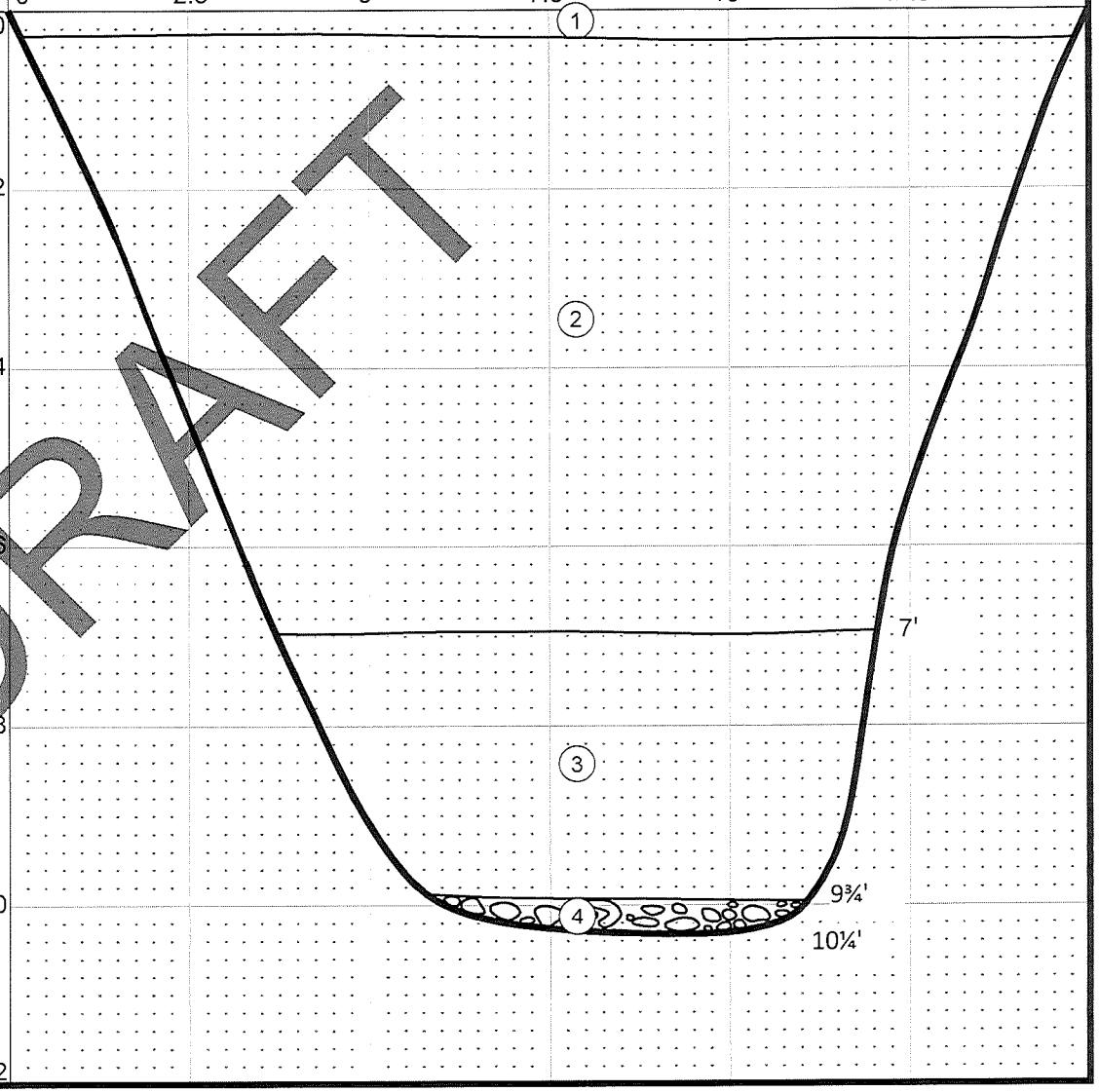
JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.16685, -119.34073

PROJECT: County Acres Development

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (3 inches)	None Observed			0
(2) Loose to medium dense, light brown, *Silt with Sand (ML)*; dry; fine sand; nonplastic fines; trace to little rootlets.		4,6,8	S-1	2
(3) Light gray-brown, *Sandy Silt (ML)*; dry; fine to medium sand; lightly cemented; nonplastic fines.		6,8,10	S-2	4
(4) Weathered Basalt; excavated as dark brown, angular gravel and cobbles.		4,10,11	S-3	6
			S-4	8
				10
				12

Sketch of Northwest Pit Side

Surface Elevation: Approx. ___ Ft.



NOTE

Terminated at 10.2 feet. Not backfilled per client request.

FIG. A-3

SHANNON & WILSON, INC.
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LOG OF TEST PIT TP-3

JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.16481, -119.33828

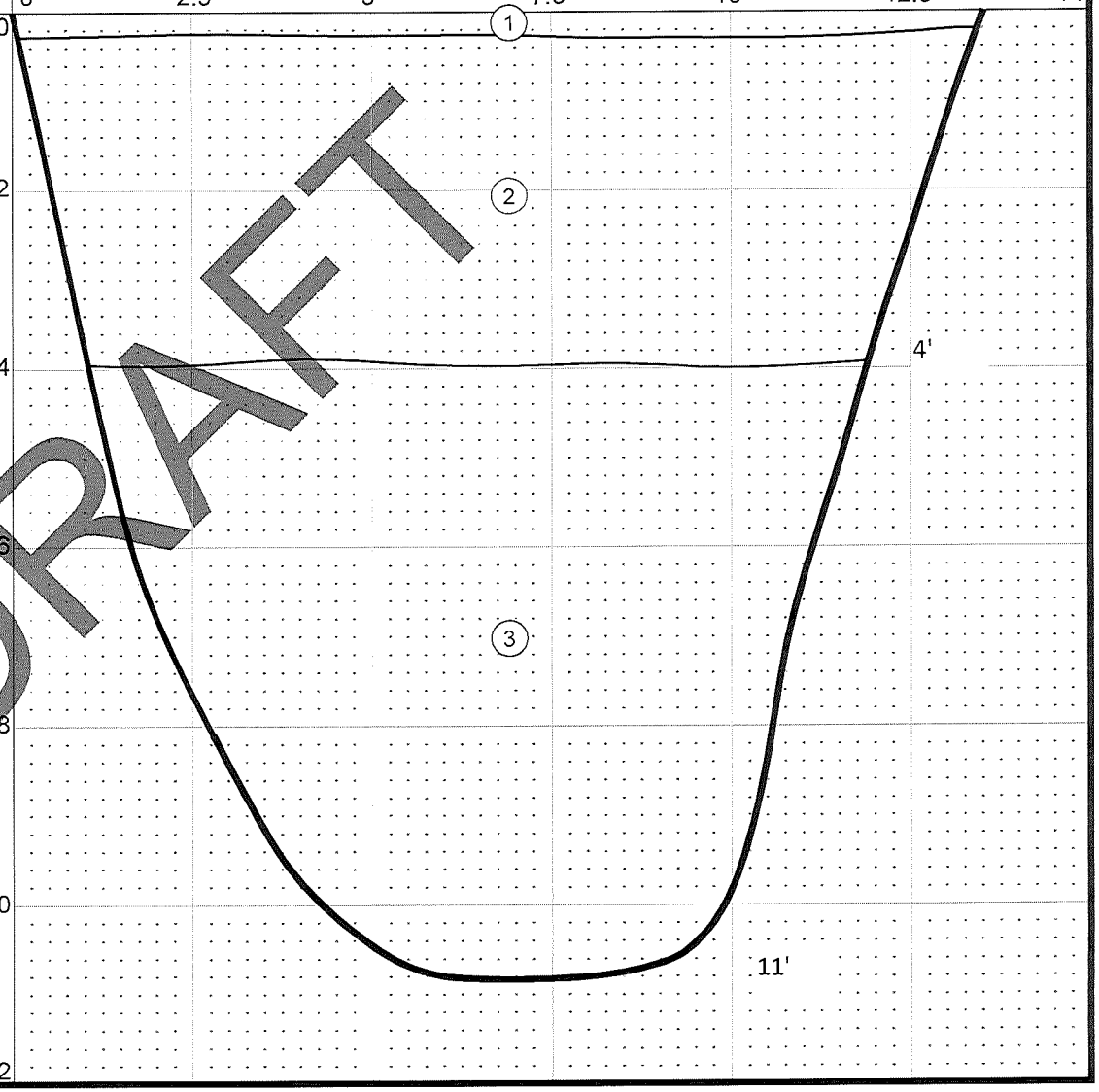
PROJECT: County Acres Development

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (2-3 inches)	None Observed			0
(2) Loose, light brown, *Silt (ML)*; dry; trace fine sand; nonplastic fines; trace to little rootlets.		3,4,6	S-1	2
(3) Loose to medium dense, light gray-brown, *Sandy Silt (ML)*; dry; fine sand; no cementation to lightly cemented; nonplastic fines; trace clasts of fine to medium sand.		5,7,11	S-2	4
		6,6,12	S-3	6
			S-4	8
			S-5	10
				12

Sketch of Southeast Pit Side

Surface Elevation: Approx. ___ Ft.

Horizontal Distance in Feet



NOTE

Terminated at 11.0 feet. Not backfilled per client request.

FIG. A-4

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LOG OF TEST PIT TP-4

JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.16875, -119.34280

PROJECT: County Acres Development

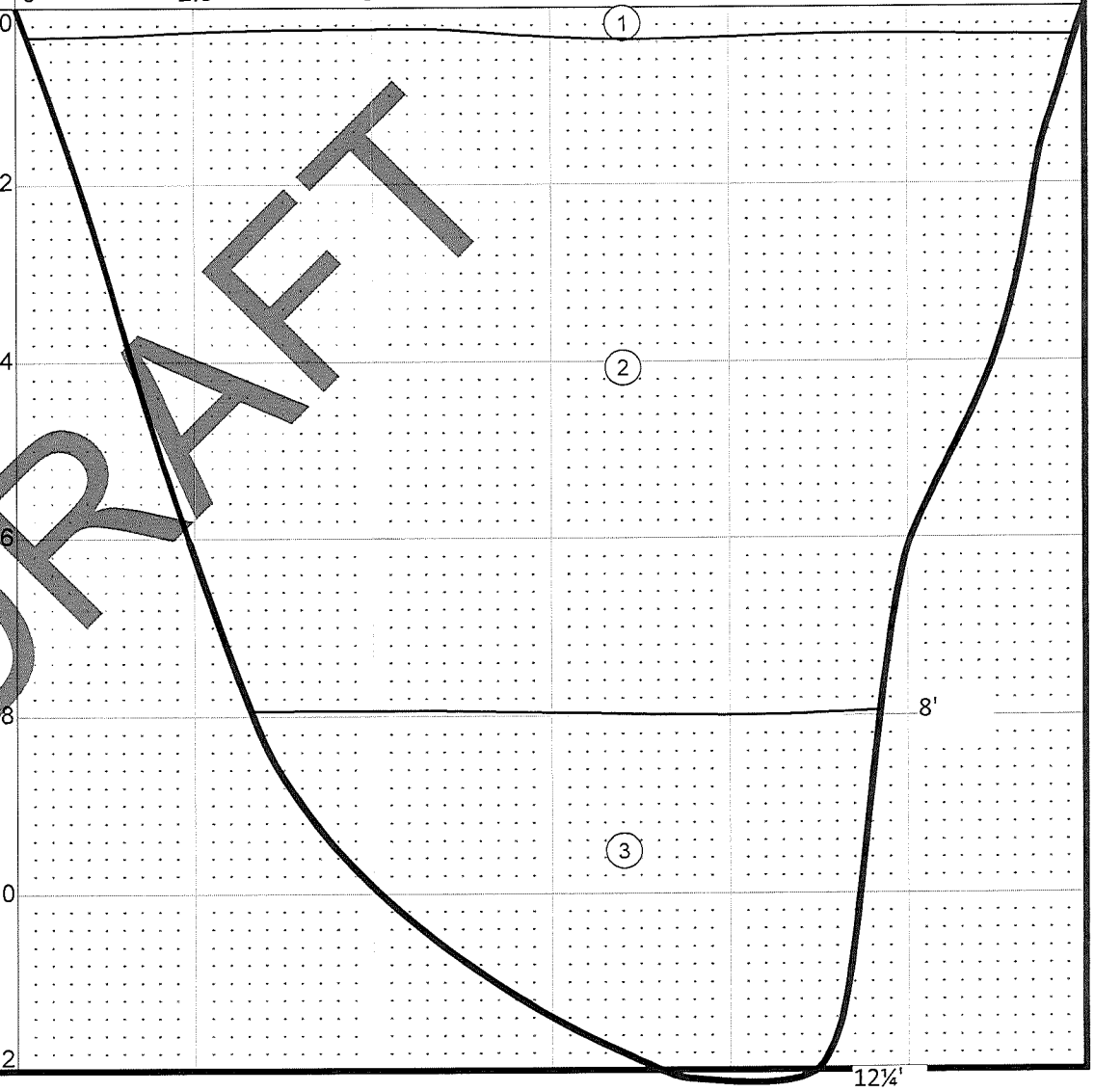
SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (3-5 inches)	None Observed			0
(2) Loose, light brown, *Silt (ML)*; dry; trace to little fine sand; nonplastic fines; trace rootlets; trace ash clasts.		5,5,7	S-1	2
		6,10,6	S-2	
(3) Medium dense to dense, light brown, *Silt with Sand (ML)*; dry; fine sand; lightly to strongly cemented; nonplastic fines.		4,5,5	S-3	4
			S-4	6
			S-5	8
			S-6	10
				12

Sketch of East Pit Side

Surface Elevation: Approx. ___ Ft.

Horizontal Distance in Feet

0 2.5 5 7.5 10 12.5 14



NOTE

Terminated at 12.2 feet and backfilled.

FIG. A-5

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

LOG OF TEST PIT TP-5

JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.16570, -119.34467

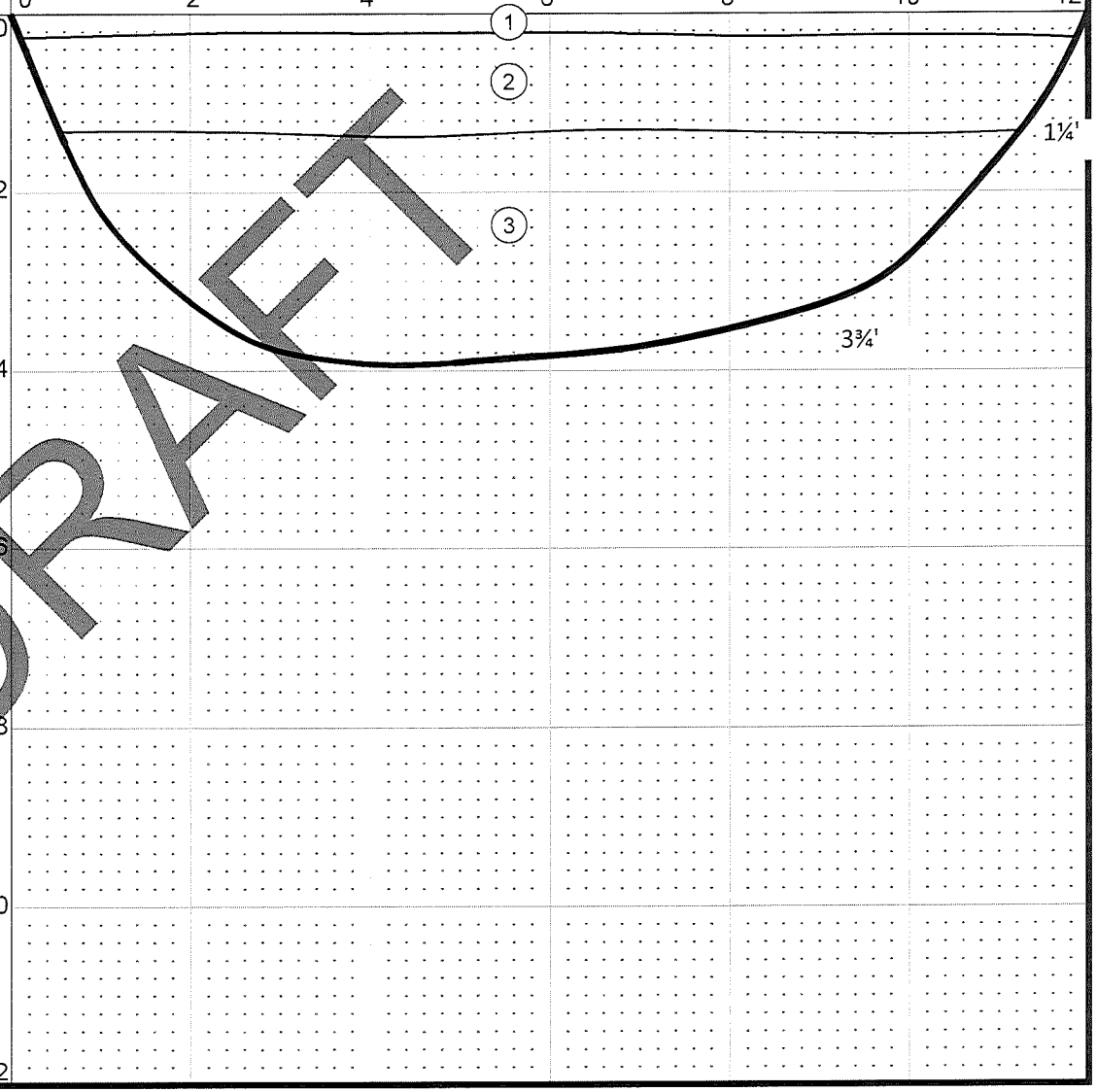
PROJECT: County Acres Development

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (3 inches) (2) Loose, light brown, *Silt (ML)*; dry; trace fine sand; nonplastic fines. (3) Weathered Basalt; excavated as dark brown gravel and cobbles.	None Observed	3,8,7	S-1	0 2 4 6 8 10 12

Sketch of South Pit Side

Surface Elevation: Approx. ___ Ft.

Horizontal Distance in Feet



NOTE

Terminated at 3.7 feet. Not backfilled per client request.

FIG. A-6

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

LOG OF TEST PIT TP-6

JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.16758, -119.34612

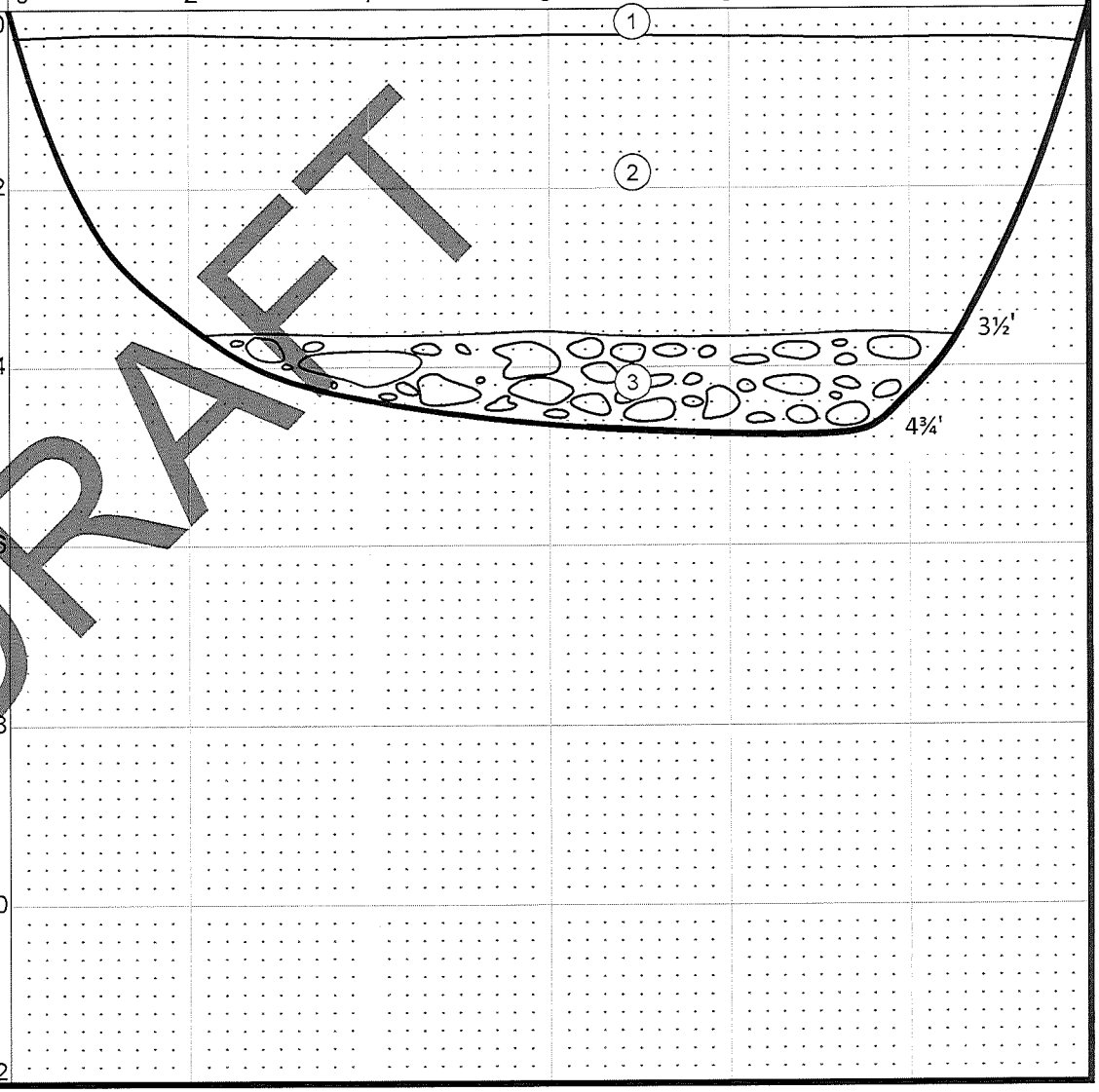
PROJECT: County Acres Development

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (3-4 inches)	None Observed	6,11,17	S-1	0
(2) Loose to medium dense, light brown, *Silt with Sand (ML)*; dry; fine sand; nonplastic fines; trace to little rootlets.				2
(3) Weathered Basalt; excavated as dark brown gravel and cobbles.		3,4,5	S-2	
			S-3	4
				6
				8
				10
				12

Sketch of South Pit Side

Surface Elevation: Approx. ___ Ft.

Horizontal Distance in Feet



NOTE

Terminated at 4.7 feet and backfilled.

FIG. A-7

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

LOG OF TEST PIT TP-7

JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.16984, -119.34744

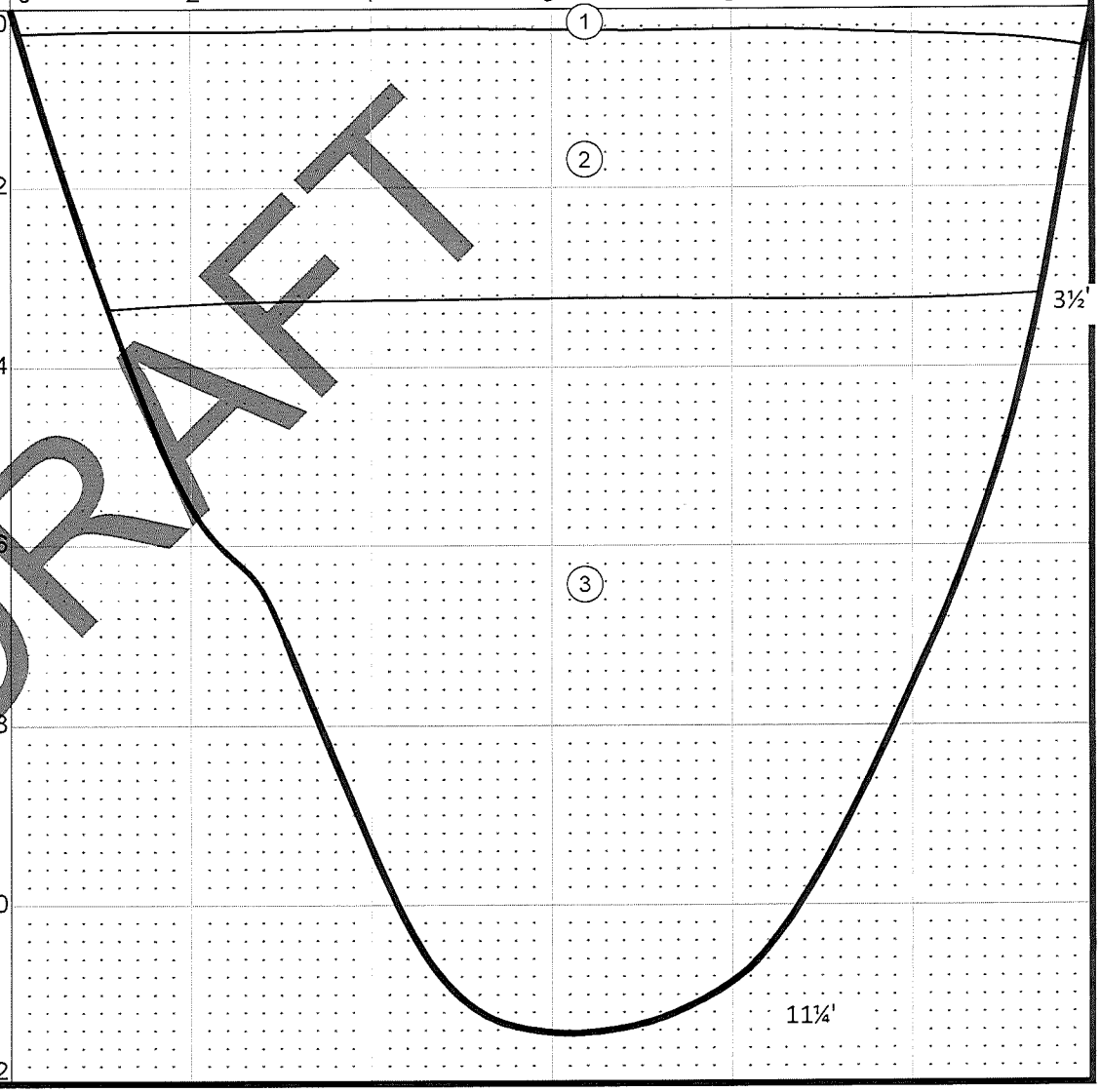
PROJECT: County Acres Development

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (3 inches)	None Observed			0
(2) Loose to medium dense, light brown, *Silt (ML)*; dry; trace fine sand; nonplastic fines; trace to little rootlets to 3½'.		4,6,8	S-1	2
(3) Medium dense to dense, light gray-brown, *Silt (ML)*; dry; fine sand; lightly to strongly cemented; nonplastic fines.		4,10,18	S-2	4
		4,15,16	S-3	6
			S-4	8
			NS	10
			NS	12

Sketch of West Pit Side

Surface Elevation: Approx. ___ Ft.

Horizontal Distance in Feet



NOTE

Terminated at 11.2 feet and backfilled.

FIG. A-8

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

LOG OF TEST PIT TP-8

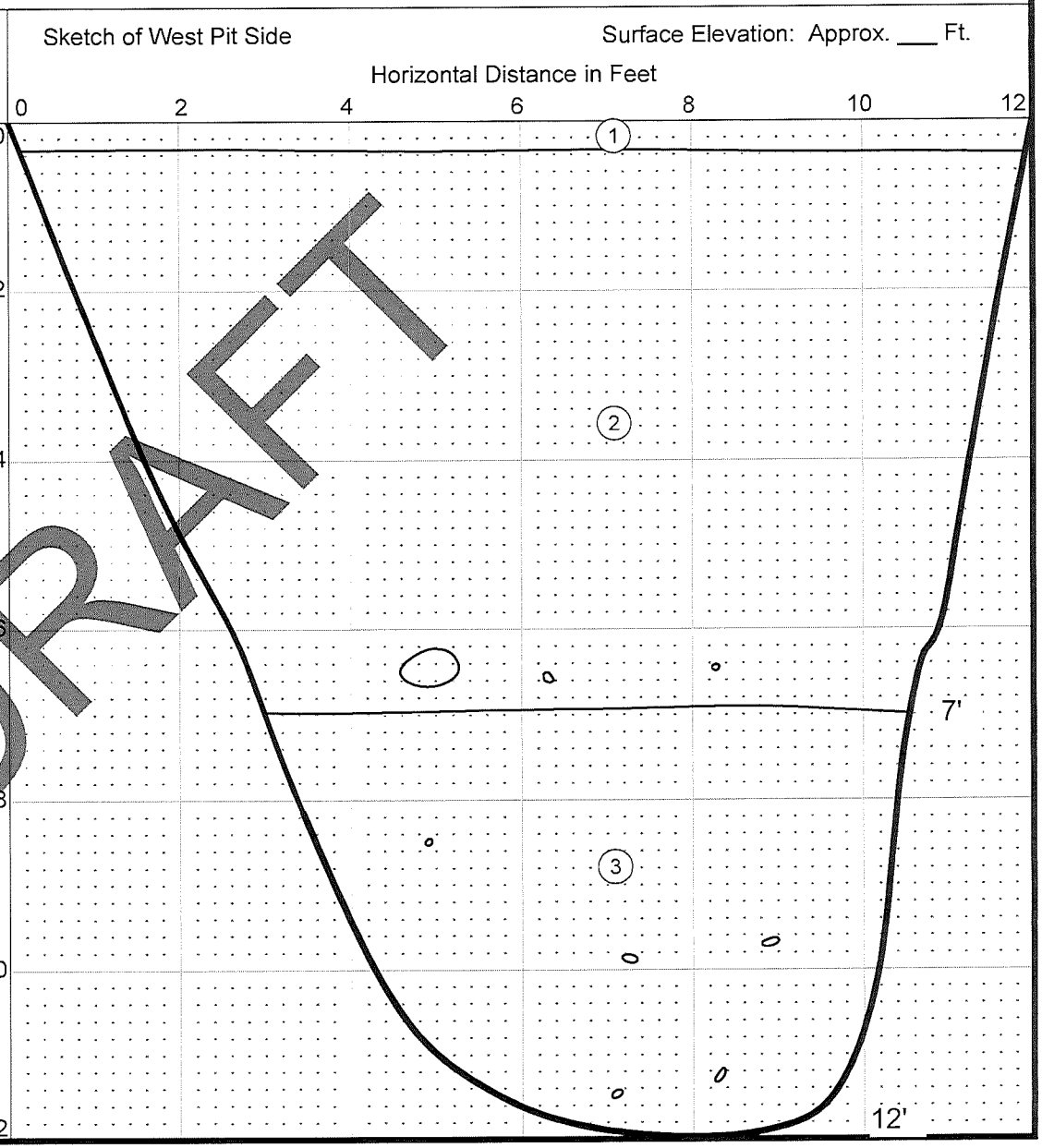
JOB NO: 105668-001 DATE: 7-9-2020 LOCATION: 46.17110, -119.34578

PROJECT: County Acres Development

SOIL DESCRIPTION	Ground Water	Blow Counts ASTM STP 399	Samples	Depth, Ft.
(1) Topsoil (3 inches)	None Observed			0
(2) Loose to medium dense, light brown, *Silt (with Sand?) (ML)*; dry; trace to little fine sand; nonplastic fines; trace to little rootlets to 3'; trace ash clasts below 5 feet; an 11-inch cobble at 6 feet and trace gravel below 6 feet.		3,4,6	S-1	2
		8,10,11	S-2	4
(3) Dense to very dense, light gray-brown, *Silt (ML)*; dry; fine sand; strongly cemented; nonplastic fines.		4,6,9	S-3	6
			S-4	8
			S-5	10
			NS	12

Sketch of West Pit Side

Surface Elevation: Approx. ___ Ft.



NOTE

Terminated at 12.0 feet and backfilled.

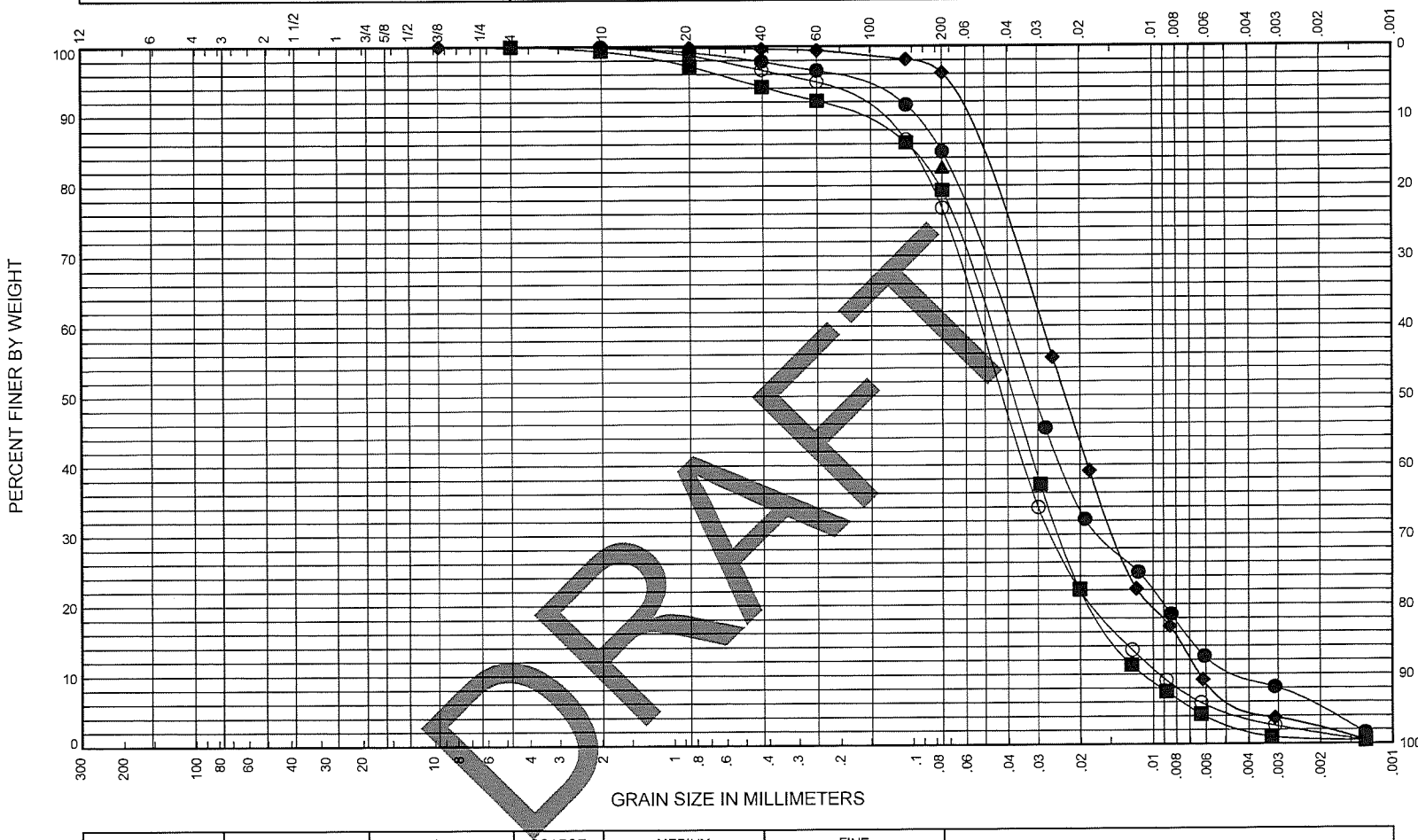
FIG. A-9

APPENDIX B: LABORATORY RESULTS

Appendix B

Laboratory Results

CONTENTS



BORING AND SAMPLE NO.	DEPTH (feet)	U.S.C.S. SYMBOL	SOIL CLASSIFICATION	COBBLE %	GRAVEL %	SAND %	FINES %	NAT. W.C. %	TEST BY	REVIEW BY	ASTM STD
● TP-4, S-3	5.0	ML	Light gray-brown, Silt with Sand.				84.8	5.6	LNL	CMB	D422
■ TP-4, S-4	8.5	ML	Light gray-brown, Silt with Sand.				79.3	4.7	LNL	CMB	D422
▲ TP-7, S-4	8.0	ML	Yellow-brown, Silt with Sand.				82.6	5.0	LNL	CMB	D1140
◆ TP-8, S-3	5.0	ML	Light gray-brown, Silt.		0		96.1	4.9	LNL	CMB	D422
○ TP-8, S-5	10.0	ML	Light gray-brown, Silt with Sand.				76.7	4.8	LNL	CMB	D422

Country Acres Residential Development
Benton County, Washington

GRAIN SIZE DISTRIBUTION

July 2020 105668-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. B-1
Sheet 1 of 1

FIG. B-1

TTAP Construction Services, LLC

IMPORTANT INFORMATION

Important Information

About Your Geotechnical Report

IMPORTANT INFORMATION

IMPORTANT INFORMATION ABOUT YOUR GEOECHNICAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors that were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas

not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

EXPLORATION LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final exploration logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final exploration logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of exploration log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

IMPORTANT INFORMATION

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland

THERESA DUSEK CONSULTING
Assessment, Management and Regulatory Permitting

Critical Areas Habitat Review

PREPARED FOR:

Ttap Construction
1313 North Young Street, Suite C
Kennewick, WA 99336

PROJECT:

Parcel 120882000004000
Benton County, Washington
H-2020-03

PREPARED BY:

Theresa R. Dusek
Natural Resources Ecologist

DATE: July 20, 2020

Table of Contents

1.0 INTRODUCTION

The purpose of this study is to review the 155-acre parcel and the surrounding area for critical areas including wetland, waters of the state, and fish and wildlife conservation areas specifically shrub-steppe habitat. We did not We review the site for evidence of current and past use of protected species including burrowing owls (*Athene cunicularia),* Townsend's Ground Squirrels (*Urocitellus townsendii*), and raptors by looking for species presence, burrows, and nest sites. The 155-acre parcel is considered the study areas (site). We understand that you are proposing to purchase and subdivide the property into lots for development with single family residences.

1.1 Site Location and Description

The site which includes the 155-acre property is located on parcel 120882000004000 in Benton County, Washington (Section 20, T8N, R28E., W.M.) (Figure 1).

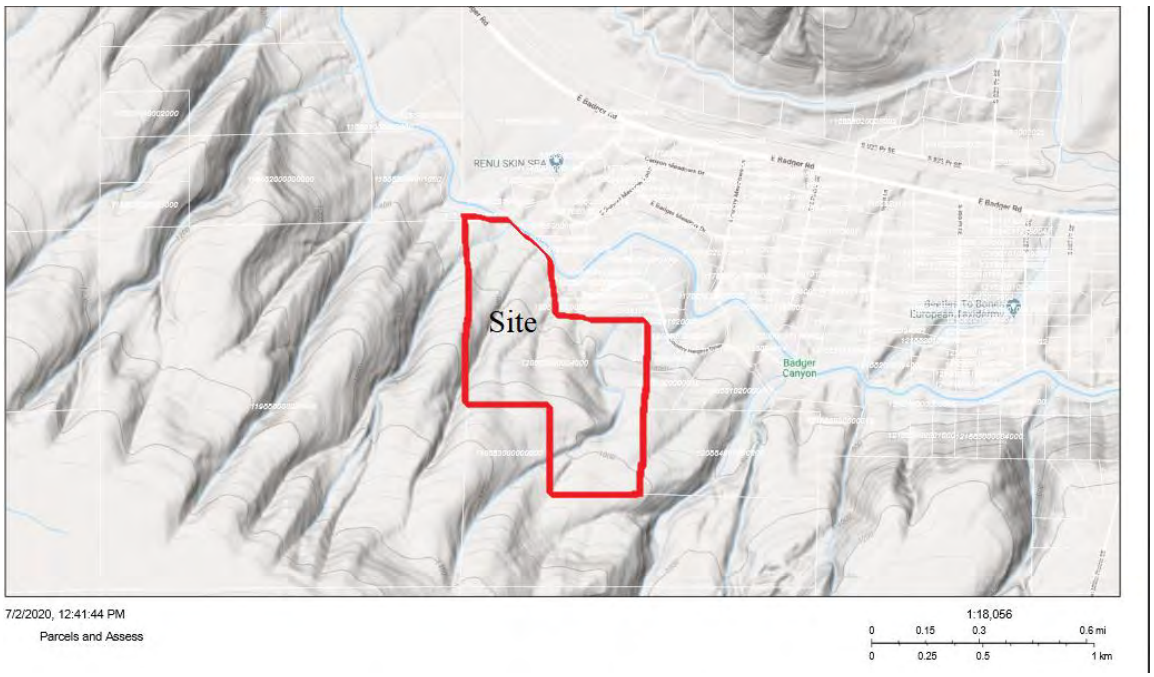


Figure 1: Vicinity and Site Map

Overall, the site and surrounding area contain northeast trending downslopes in the Horse Heaven Hills north of South Badger Canyon. Most of the site is dominated with highly impacted sagebrush shrub-steppe on silt loam soils without a cryptobiotic crust. Wetland, riparian areas, and streams are not located on or within 300 feet of the site. The Kennewick Main Irrigation Canal is located north of the western north property boundary. The remainder of the area north of the site contains single family residences. West of the site is undeveloped land like the site. East of the site are single family residences and undeveloped land. The southeast corner of the site and offsite area to the south had a fire in 2017. Figure 3 depicts the fire impact area. Badger Creek is located approximately 500 feet south of the site.

2.0 DOCUMENT REVIEW

A review of readily available documents was conducted to characterize the site and prior to the site visit.

2.1 Soil Survey Benton County Map

The Web *Soil Survey of Benton County Area, Washington* was reviewed to determine the general nature of soils on the subject site. The site is mapped as containing Ellisforde silt loam (EfB) (0-5% slope), Kiona very stoney silt loam (KnF) (30-65% slope), and Warden silt loam (WdAB, WdE3, and WdF) (0-5%, 15-30%, and 30-65% slopes). The site soils are well drained and none are hydric (wetland) soils.

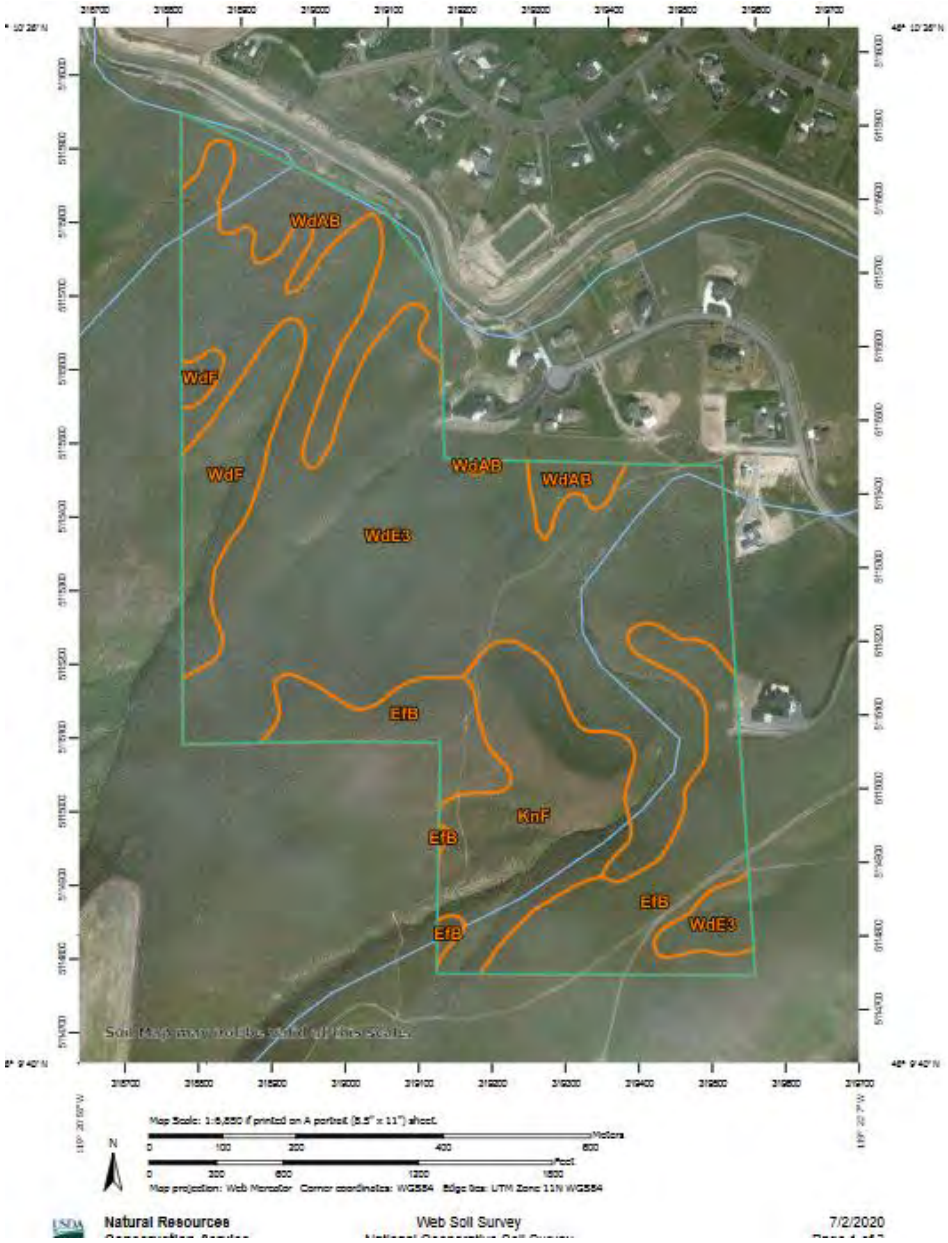


Figure 2: Soil Survey Map

2.2 DNR and Fish and Wildlife Database Reviews

According to the Washington State DNR, Natural Heritage Information System website, there are no known rare plant or rare nonvascular species occurrences on or near the site. Per the database request it was determined that *Artemisia tridentata* ssp. *wyomingensis* / *Pseudoroegneria spicata* Shrub Herbaceous Vegetation ecosystems is mapped in the specific township range and sections of the proposed project site (Section 20, Township 8 North, Range 28 East, W.M.). This plant association ecosystem is listed as S-3 vulnerable. S-3 systems are not rare or threatened systems.

According to the Washington State Department of Fish and Wildlife (WDFW) Priority Habitat and Species Database, the site is within a large polygon mapped as shrub-steppe habitat with mixed cliffs and talus, and Townsend's ground squirrel habitat, a state Candidate species. The larger polygon is documented breeding habitat used by raptors including Ferruginous hawk (*Buteo regalis*) a state Threatened species, prairie falcon (Falco mexicanus), and burrowing owls a state Candidate species. The nearest mapped burrowing owl habitat point is across the irrigation canal to the northeast approximately a half mile. Shrub-steppe, cliffs and talus are priority habitat per WDFW.

Review of the WDFW Forest Practices Application Review System (FPARS) Mapping Tool identified three unknown channel types on the site (Figure 3). Badger Creek that is approximately 500 feet south of the site has a spring approximately one-mile upstream per WDFW websites.

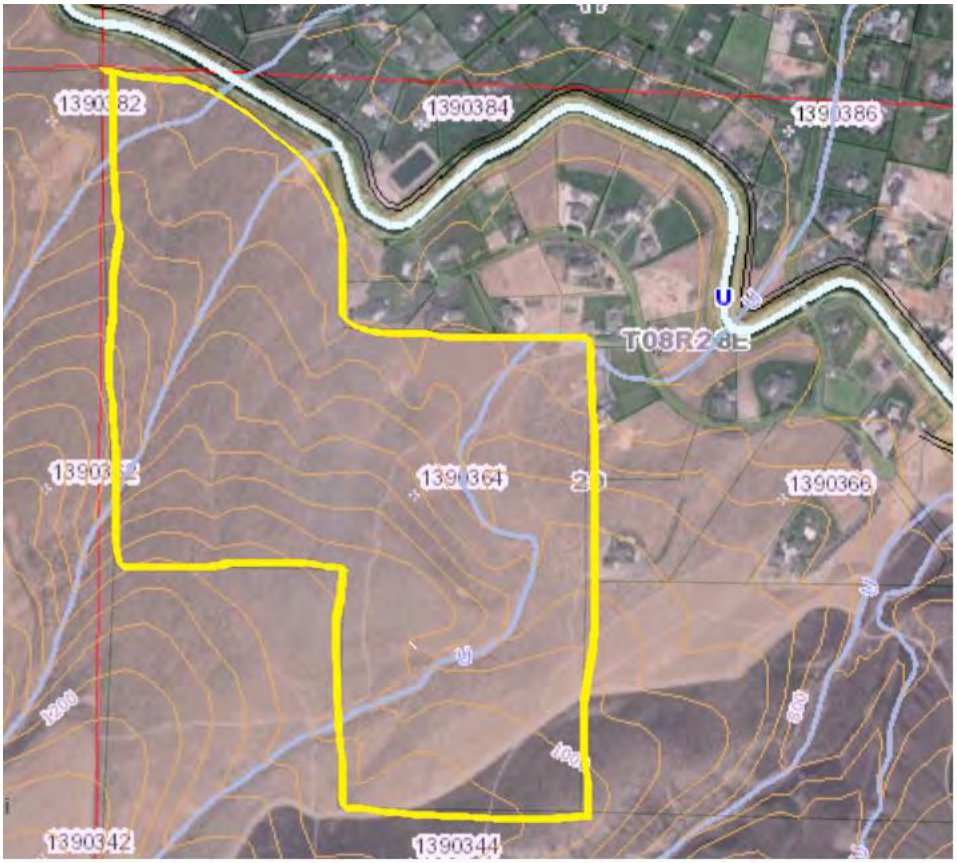


Figure 3: WDFW FPAR Map (https://fpamt.dnr.wa.gov/default.aspx#)

2.3 Benton County Map Review

The sites existing land cover is mapped as Agricultural Rangeland, comprehensive plan designation is Rural Remote, and zoning designation is RL-5. The Wetland Rivers and Streams Map indicates that there are three minor drainages on the site in the same locations as the WDFW FPAR Map and no wetlands on or within 500 feet of the site.

3.0 METHODS AND EXISTING CONDITIONS

3.1 Methods

We completed a site visits between July 7th and 12th, 2020 to evaluate the site and surrounding area. Weather was between the 60 and 80s during the site visits. A rain squall that lasted about 20 minutes occurred during one of our site visits. The site visits started at dawn three of the days, and late afternoon to until dusk on the remaining days. The visits included two trained biologists walking northwest to southeast trending transects parallel to topography across the site roughly 100 to 200 feet apart, and three north-south transects perpendicular to topography in the dry canyons. The steep vegetated slope near the center of the site was too steep to walk; therefore, we used binoculars to review this area over several days. Three 10- by 50-meter plots were used to measure species and areal cover of vegetation in each of the vegetation habitat types presented in Section 3.3 of this report. Visual, binocular, and auditory review occurred while walking the transects. Dominant vegetation, wildlife species and evidence of species including scat and burrows were noted during the site review. This survey was conducted in middle of summer and many vegetation species were completely desiccated and not identifiable; therefore, additional vegetation species are present.

Species that are mapped by Washington Department of Fish and Wildlife that may use the site include Townsend's ground squirrels, and potentially Ferruginous hawk, prairie falcon and burrowing owls. Species specific survey for ground squirrels did not occur since they are underground 8 months of the year or more and would not be active outside of spring and early summer. Review of the site did occur for potential burrows showing evidence of current and past use of the site by burrowing species. Any burrows documented would need further evaluation to determine species occupation during the appropriate time of the year or set the area aside as a conservation habitat.

The site was reviewed for wetlands and waters of the state in accordance with *U.S. Army Corps of Engineers Wetland Delineation Manual* (1987) and the *Arid West Regional Supplement to the 1987 Wetland Delineation Manual* and state and local requirements for streams.

Photographs of the existing conditions during my site visit are in Appendix B.

3.2 Topography

The topography on the site generally slopes down from the southwest to the northeast from 1040 to 720 feet in elevation (Figure 4). Dirt roads, off road vehicle trails and cattle trails crisscross the site and the steepest slope on the site is in the south-central portion of the site.

Figure 4: Benton County Topography Map (https://bentonco.maps.arcgis.com/apps/webappviewer/index.html?id=428dcedbce17467b841844e8908bf3e7)

3.3 Vegetation

Vegetation at the site is shrub-steppe of varying quality (see Figure 5).

1. Highly Impacted Shrub-steppe (HISS): Sagebrush (*Artemisia tridentata)* 40% to 60% aerial cover with an understory dominated by cheatgrass (*Bromus tectorum*) 60% aerial cover and bluebunch wheatgrass (*Pseudoroegneria spicata*) 20% aerial cover (see Appendix, Photographs 1 and 2). No intact cryobiotic crust and less than 5% aerial cover of forbs.

2. Highly impacted Grassland (HIGL): Bluebunch wheatgrass 30 to 60% aerial cover, cheatgrass 40 to 60% aerial cover and sagebrush 0% to 5% aerial cover (see Appendix, Photograph 1). No intact cryobiotic crust and 5% to 10% aerial cover of forbs. The fire burned areas on the site and south of the site contained the higher bluebunch wheatgrass cover, lower cheat grass cover and higher cover of forbs.

3. Intact Shrub-steppe (ISS): Sagebrush 40% aerial cover, bluebunch wheatgrass 50% aerial cover and cheatgrass 20% areal cover. Intact cryobiotic crust and 5% to 10% aerial cover of forbs (see Appendix, Photograph 3). Seven wildlife burrows were observed in this habitat (see Appendix, Photograph 4). Roughly 0.6 acres.

The HISS and ISS plant communities were documented to contain Big sagebrush and some Big Wyoming sagebrush. A list of species observed on the site is in Table 1. The southern 6.5 acres of the site burned in a 2017 fire. Vegetation in the fire areas was impacted by creation of firebreaks and burning. Roughly 10 acres of the site is currently dirt roads and cleared areas, the site has been grazed by cattle and has been impacted by off road vehicles on a regular basis. and cut off from other habitat by the irrigation canal, roads, development, and agricultural uses upslope from the site (see Figure 6).

Offsite the shrub-steppe continues to the northwest and is then significantly narrowed by active agricultural land and development. Directly north of the site is the Kennewick Main Canal with dense residential development across the canal and residential development directly adjacent to the site near Homestead Road. South of the site is grasslands without a shrub component. Southwest of the site the shrub-steppe continues up the dry canyons and then has active agricultural land.

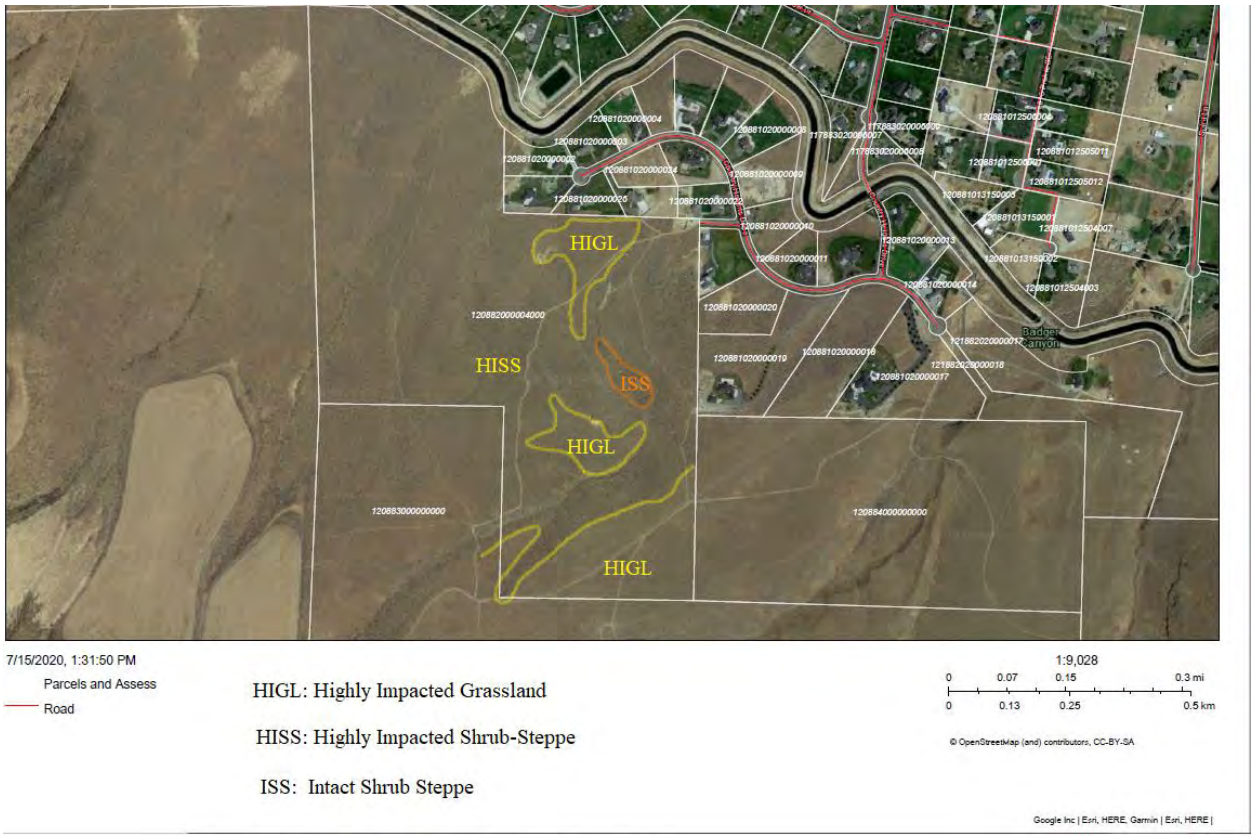


Figure 5: Shrub-steppe areas onsite.

Figure 6: Site and Surrounding Area.

Table 1: Vegetation Identified Onsite During the Habitat Assessment	
Big Sagebrush	*Artemisia tridentate spp.*
Bluebunch Wheatgrass	*Pseudoroegneria spicata*
Buckwheat Milkvetch	*Astragalus caricinus*
Balsamroot	*Balsamorhiza sp.*
Common Yarrow	*Achillea millefolium*
Cusick's Bluegrass	*Poa cusickii*
Needle-and-thread	*Hesperostipa comate*
Sagebrush False Dandelion	Nothocalais troximoides
Silky Lupine	*Lupinus servicea*
Threadleaf Fleabane	*Erigeron filifolius*
Note: This survey was conducted in middle of summer and many vegetation species were completely desiccated and not identifiable.	

3.4 Wildlife

During review of the site common crow (*Corvus brachyrhynchos*), California quail (*Callipepla califonica*), mourning dove (*Zenaida macroura*), eleven mule deer (*Odocoileus hemionus*), and several passerine birds were observed on the site. Raptors were noted flying high over the site but none were observed with hunting or nesting behaviors on the site. In addition, a coyote (*Canis latrans*) was observed with binoculars walking across the western portion of the site near dawn. Coyote and rabbit scat were also observed onsite. The site has been used as rangeland

for cattle as cow dung was observed in nearly all areas of the site. We observed people riding motor bikes and other off-road vehicles as well as horses on the site. The area near the Homestead Road access to the site and areas south of that location are used for skeet shooting. Small burrows approximately one inch in size, likely used by snakes, voles, or mice, were observed on the site. Seven burrows were observed onsite in the Intact Scrub-steppe area, as marked on Figure 6, that could be used by burrowing owl or Townsend's ground squirrels (see Appendix, Photograph 4). Four of the burrows were inactive based on grasses growing out of the burrows, cobwebs, and debris in the burrow entrances. The remaining three appeared to be active although animals were not observed in or near the burrows. An owl feather was observed onsite in the active burrow area but it could have blown onto the site.

4.0 REGULATORY REQUIREMENTS

According to Benton County Code (BCC) 15.14 Fish and Wildlife Conservation Areas stream do not include ponds deliberately designed and created from dry sites such as canals, detention facilities, wastewater treatment facilities, farm ponds, temporary construction ponds (of less than three years duration) and landscape amenities. Per BCC 15.14.10(c) fish and wildlife habitat conservation areas do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of, and are maintained by, a port district or an irrigation district or company. Therefore, the Kennewick Main Canal is not a stream or a fish and wildlife conservation areas. The three areas mapped on the site by WDFW as unknown channels were determined to be dry canyons. Evidence of recent water was not observed and vegetation in the dry canyons was the same as vegetation outside the dry canyons. Wetlands, streams, and springs were not observed on the site.

The Priority Habitat and Species Database mapped the site within a larger polygon as shrub-steppe habitat with mixed cliffs and talus, and Townsend's ground squirrel habitat, a state Candidate species. The larger polygon is documented breeding habitat used by raptors including Ferruginous hawk (*Buteo regalis*) a state Threatened species, prairie falcon (Falco mexicanus), and burrowing owls a state Candidate species. In addition, a burrowing owl habitat point is mapped within a half mile of the site across the irrigation canal. Cliffs are defined as near vertical areas over 25 feet tall. The geotechnical report and topographic survey of the site will define steeper slopes on the site which will be avoided during subdivision and development of the parcel. Talus associated with steep slopes was not observed on the site although the western portion of the southern onsite dry canyon did have rock rubble in the base of the canyon.

The site contains a mosaic of native and nonnative vegetation associated with upland grassland and sagebrush shrub-steppe vegetation communities. Shrub-steppe habitat is located onsite is highly degraded and cut off from other habitats to the north and east. The exception is the shrub-steppe habitat mapped as Intact Shrub-steppe on Figure 5. Burrows of appropriate size for use by burrowing owl or Townsend's ground squirrels were observed in the Intact Shrub-steppe habitat. Use of the site by coyote and humans on off road vehicles and horses along with cattle grazing may be the reason burrow of appropriate size for Townsend's ground squirrels and burrowing owls were not observed on the remainder of the site. State or federal endangered, threatened, or sensitive wildlife species were not observed on or adjacent to the site. Shrub-steppe habitat located on the site is classified by WDFW as a priority habitat and regulated by Benton County Code 15.14.

BCC 15.14 regulates fish and wildlife conservation areas and defines and regulates land use activities that can impact fish and wildlife habitats. We have not seen a site layout for subdivision of the 155-acre parcel; however, it is zoned as RL-5. Given the RL-5 designation we anticipate that the smallest lots on the site would be 5 acres. Water availability will also limit

development of the entire site. In addition, steep slopes would be avoided with development. The most intact shrub-steppe habitat associated with the burrows should be avoided and a corridor across the site connecting with contiguous offsite native shrub-steppe and grassland habitats should be defined. The cumulative effects of development of this parcel are expected to be negligible from a habitat and functions perspective if the following occur.

1. The site development is managed in associated with the Benton County code for geologic hazard areas where steep slopes remain.
2. The intact shrub-steppe habitat is not impacted.
3. An onsite habitat corridor that connects to offsite habitats to the northwest and south-southwest is proposed.
4. The site is sub-divide with 5-acre lots outside of the geologic hazard areas and intact shrub-steppe habitat.

The Highly Impacted Grasslands have native vegetation but are lacking shrub cover due to past fire and grazing. Planting sagebrush into these areas to restore the shrub layer may be an appropriate mitigation for unavoidable impacts associated with removal of shrub-steppe habitat if required by the regulating agencies.

5.0 CLOSURE

The findings and conclusions documented in this report have been prepared for specific application to this site. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. Our work was also performed in accordance with the terms and conditions set forth in our proposal. The conclusions and recommendations presented in this report are professional opinions based on an interpretation of information currently available to us, and are made within the operation scope, budget, and schedule of this project. No warranty, expressed or implied, is made.

Theresa R Dusek

Theresa R. Dusek
Natural Resource Ecologist

6.0 REFERENCES

Anchor QAE, Oneza & Associates. 2018. Benton County Comprehensive Plan as amended by Resolution # 2020-062, Ordinance #620 Effective Date: January 14, 2020.

Azerrad, J. M., K. A. Davens, M. F. Livingston, M. S. Teske, H. L. Ferguson, and J. L. Davis. 2011. Management recommendations for Washington's priority habitats: managing shrub-steppe in developing landscapes. Washington Department of Fish and Wildlife, Olympia, Washington.

Benson, J. E., R.T. Tveten, M. G. Asher and P.W. Dunwiddie. 2011. Shrub-Steppe and Grassland Restoration Manual for the Columbia River Basin.

Benton County. 2020. Benton County Code up to date through Ordinance 622 as of March 20, 2020.

Benton County. 2020. GIS maps. https://bentonco.maps.arcgis.com/apps/MapSeries/index.html?appid=85029c8fdb784e1eb0bf08479d0cd595

DNR Washington Natural Heritage Program Environmental Laboratory. 2020. Data Base Request and email response July 9. http://www.dnr.wa.gov/natural-heritage-program.

1987. U.S. Army Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Waterways Experiment Station. Vicksburg, Mississippi.

Hitchcock, C. and Cronquist, Arthur. 1973. Flora of the Pacific Northwest. University of Washington Press. Seattle, Washington.

United States Department of Agriculture, NRCS. 2020. Websoilsurvey.nrcs.usda.gov/app/websoilsurvey.aspx.

U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0),ed . J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Washington State Department of Fish and Wildlife. 2020. Forest Practices Application Review System (FPARS) Mapping Tool. https://fpamt.dnr.wa.gov/default.aspx#.

Washington State Department of Fish and Wildlife. 2020. http://apps.wdfw.wa.gov/phsontheweb/.

Washington State Department of Fish and Wildlife. 2008. Priority Habitat and Species List Updated February 2020.

Washington State Department of Natural Resources. 2020. Washington Natural Heritage Information, Sections that Contain All-Natural Heritage Features. Database request and response http://www.dnr.wa.gov/Publications/amp_nh_trs.pdf.

Appendix

Photographs

Photograph 1: View east from Homestead Road access. Highly impacted grassland in the foreground and Highly impacted shrub-steep in background. High composition of cheatgrass in the understory, low cover of forbs and no intact cryobiotic crust.

Photograph 2: View north from dirt road west of Homestead Road access across shallow canyon depicting typical shrub-steppe habitat onsite.

Photograph 3: View south in intact shrub-steppe habitat. Higher sagebrush and bunchgrass cover, and intact cryobiotic crust. Note that the basalt layer closer to the surface where a depression was observed. Intact shrub-steppe habitat where burrows were observed was a deeper loamy soil.

Photograph 4: Active wildlife burrow.

PCM 1.9

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Construction/Decommission ("x" in circle) 318247

- ○ Construction
- ○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT Notice of Intent No. W 241173

Unique Ecology Well ID Tag No. BAF 460

Water Right Permit No. _____

Property Owner Name Scott Weide

Well Street Address 4833 W 24th Pl

City Kennewick County Benton

Location SW 1/4-1/4 NW 1/4 Sec 20 Twn 8 R 28 (EWM or WWM) circle one

Lat/Long (s, t, r Still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 120881020000017

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

☒ New well ☐ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 8 inches, drilled 345 ft. Depth of completed well 345 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 8 " Diam. from +1 ft to 139 ft.
☐ Liner installed _____ " Diam. from _____ ft. to _____ ft.
☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam _____ Slot size _____ from _____ ft. to _____ ft.

Diam _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____

Materials placed from Cement ft. to 205 ft.
Bentonite 0-40

Surface Seal: ☒ Yes ☐ No To what depth? _____ ft.

Material used in seal Cement & Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 201 ft. below top of well Date 6-25-10

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest 30 gal./min. with stem set at 345 ft. for 2 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water 58 Was a chemical analysis made? ☐ Yes ☒ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Fractured Basalt	0	74
Brown Clay & Red Cinders	74	81
Fractured Basalt	81	127
Black Basalt med	127	230
Fractured Basalt hard	230	308
Brown Vesicular	308	317 ~~6~~ 5
Black Basalt med	317	345

RECEIVED
JUN 30 2010
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Start Date 6-17-10 Completed Date 6-25-10

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Brandon Brown

Driller/Engineer/Trainee Signature Brandon Brown

Driller or trainee License No. 2859

Drilling Company Water well Developing & Services

Address PO 156

City, State, Zip Umatilla, OR 97882

Contractor's Registration No. WATERDS120RMB Date 6-25-10

If TRAINEE,
Driller's Licensed No. _____
Driller's Signature _____

Ecology is an Equal Opportunity Employer.

ECY 050-1-20 (Rev 3/05) **The Department of Ecology does NOT warranty the Data and/or Information on this Well Report.**

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original with Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's Copy

82293

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W 14944
UNIQUE WELL I D # AFH-811
Water Right Permit No

(1) OWNER Name Clint Roberts Address 248 Riverwood

(2) LOCATION OF WELL County Benton NW 1/4 SW 1/4 Sec 20 T 8 N R 28 WM

(2a) STREET ADDRESS OF WELL (or nearest address)

TAX PARCEL NO

AUG 3 1 2000

(3) PROPOSED USE ☒ Domestic ☐ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐ DeWater

(4) TYPE OF WORK. Owner's number of well (if more than one)
☒ New Well ☐ Deepened ☐ Reconditioned ☐ Decommission
Method: ☐ Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted

(5) DIMENSIONS Diameter of well 6 inches
Drilled 465 feet Depth of completed well 465 ft

(6) CONSTRUCTION DETAILS
Casing Installed
☒ Welded 6" Diam from +1 ft to 215 ft
☒ Liner installed 4" Diam from -10 ft to 465 ft
☐ Threaded " Diam from ft to ft

Perforations ☒ Yes ☐ No
Type of perforator used Saw
SIZE of perforations 1/8 in by 6 in
80 perforations from 445 ft to 465 ft

Screens ☐ Yes ☐ No ☒ K-Pac Location 360
Manufacturer's Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed ☐ Yes ☒ No ☐ Size of gravel/sand
Material placed from ft to ft

Surface seal ☒ Yes ☐ No To what depth? 40 ft
Material used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP Manufacturer's Name
Type H P

(8) WATER LEVELS Land surface elevation above mean sea level ft
Static level 326 ft below top of well Date
Artesian pressure lbs per square inch Date
Artesian water is controlled by (Cap, valve etc)

(9) WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield gal./min with ft drawdown after hrs
Yield gal./min with ft drawdown after hrs
Yield gal./min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min with ft drawdown after hrs
Airtest 25 gal./min with 465 ft drawdown after hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION
Formation Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information Indicate all water encountered

MATERIAL	FROM	TO
Ash	0	60
Ash + Brown clay	60	180
Gray clay	180	210
Brown Basalt	210	235
Hard Gray Basalt	235	317
Brown Silt	317	331
Gray Basalt	331	336
Brown + Gray clay	336	340
Brown Sand + Silt	340	351
Gray clay	351	360
Gray clay + Gray Basalt	360	362
Gray Basalt	362	447
Gray Basalt Broken	447	465
Honeycomb Water		
Bearing Apx 25 Gpm		

Work Started 5/?/04 Completed 5/?/04

WELL CONSTRUCTION CERTIFICATION

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

Type or Print Name Peter E S K Gregg License No 0483
(Licensed Driller/Engineer)

Trainee Name License No
Drilling Company S K Gregg Drilling
(Signed) P E K Gregg License No 0483
(Licensed Driller/Engineer)
Address 201 South 45 AVE W. Richland

Contractor's Registration No 661-OW-115 Date ?/?/04

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1 20 (11/98) 82293

6040

Start Card No. 082264

e Original and First Copy with
partment of Ecology
cond Copy—Owner's Copy
rd Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Water Right Permit No. M

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

OWNER: Name Jeff Kill   Address Dallas Rd

LOCATION OF WELL: County Benton   1/4 1/4 S1/4 Sec 20 T 8 N., R 26 E W.M.

STREET ADDDRESS OF WELL (or nearest address)

PROPOSED USE: ☒ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☐ Other ☐

TYPE OF WORK: Owner's number of well (if more than one)

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☒ Bored ☐ Driven ☐ Jetted ☐

DIMENSIONS: Diameter of well 8 inches.
Drilled 485 feet. Depth of completed well 485 ft.

CONSTRUCTION DETAILS:

Casing installed: 8 " Diam. from +1 ft. to 175 ft.
Welded ☒ 6 " Diam. from 162 ft. to 485 ft.
Liner installed ☒
Threaded ☐ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used Torch
SIZE of perforations 6 in. by 1/8 in.
250 perforations from 460 ft. to 485 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 175 ft.
Material used in seal Bentonite & cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

PUMP: Manufacturer's Name
Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 300 ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 70 gal./min. with stem set at 460 ft. for 4 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Ash	0	160
Gray clay	160	165
Hard Black Basalt	165	185
Redish Brocken Basalt	185	196
Hard Black Basalt	196	275
Brocken Black Basalt	275	289
Blue Shale	289	306
Hard Black Basalt + Blue shale	306	345
Hard Black Basalt	345	460
Brocken Black and Brown Basalt	460	465
Brocken Black Basalt + Blue shale Bearing water	465	485

Work started 10/2/91, 19. Completed , 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME 57 Degree Drilling Co (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 701 S 45th Ave
(Signed) Peter E. [signature] (WELL DRILLER) License No. 0483
Contractor's Registration No. 601-048-115 Date , 19

(USE ADDITIONAL SHEETS IF NECESSARY)

050-1-20 (10/87) -1329-

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission ("x" in circle) 378238

○ Construction

○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT

Notice of Intent No. W 241172

Unique Ecology Well ID Tag No. BAF 459

Water Right Permit No. _____

Property Owner Name Brad Bell

Well Street Address Lot 19 Country Heights Dr

City Kennewick County Benton

Location SE1/4-1/4 SW1/4 Sec 20 Twn 8 R 28 EWM or WWM (circle one)

Lat/Long (s, t, r Still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 120881020000019

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☒ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

☒ New well ☐ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 8" to 226' inches, drilled 623 ft. Depth of completed well 623 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 8" Diam. from 0 ft. to 23 ft.

☐ Liner installed 6" Diam. from -6 ft. to 226 ft.

☐ Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☒ No

Type of perforator used. _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 23 ft.

Material used in seal Bentine To 20 cement To 226

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 470 ft. below top of well Date 6-12-10

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest 35 gal./min. with stem set at 626 ft. for 2 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water 58° Was a chemical analysis made? ☐ Yes ☒ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Silt	0	13
Black Basalt	13	40
Fractured Basalt med	40	206
Black Basalt med	206	287
Soft Black Basalt	287	300
Black Basalt med	300	487
Vesicular Basalt	487	505
Black Basalt	505	585
Black & Red Vesicular	585	608 608
Fractured Basalt med	608	623

RECEIVED JG JUN 21 2010 DEPARTMENT OF ECOLOGY - CENTRAL REGION

Start Date 6-10-10 Completed Date 6-18-10

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☐ Trainee Name (Print) Brandon Brown

Driller/Engineer/Trainee Signature Brandon Brown

Driller or trainee License No. 2859

Drilling Company Waterwell Developing & Surveys

Address PO 156

City, State, Zip Umatilla, OR 97882

Contractor's Registration No. WATERDS100MB Date 6-18-10

If TRAINEE, Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

Planning Department
P.O. Box 910
1002 Dudley Avenue
Prosser, WA 99350

Phone (509) 786-5612
Fax (509) 786-5629
planning.department@co.benton.wa.us
co.benton.wa.us

SEPA ENVIRONMENTAL CHECKLIST

File No. EA 2020-023
See also SUB 2020-007

A. BACKGROUND

1. Name of proposed project, if applicable: Country Heights Acres

2. Name of applicant: TTAP Construction, LLC

3. Address and phone number of applicant and contact person: Tyler Tapani, (509) 579-6172
1313 N. Young St, Suite C, Kennewick, WA 99336

4. Date checklist prepared: 8/4/2020

5. Agency requesting checklist: Benton County

6. Proposed timing or schedule (including phasing, if applicable): One phase. Begin construction 11/2020.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
The proposed lots will be sold to home builders to construct home in the future.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. A preliminary hydrology report has been prepared. A geotechnical report and Critical areas Habitat Review report have been prepared.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. Yes, a subdivision application for the Benton Franklin Health District is in for review.

10. List any government approvals or permits that will be needed for your proposal, if known.
A Construction Stormwater General Permit through the Department of Ecology will be required.

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.
The proposal is to create a 14 lot residential subdivision. The site currently contains one parcel, approximately 155 acres in size. Homestead Road will be extended with associated improvements to serve the subdivision. Public roads accessing the lots would cover approximately 4.12 acres. The project is compliant with the current County zoning of RL-5. Lots will be served with septic and well.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. The site is located just south of Country Meadow Acres and the KID Main Canal.

The Benton County parcel number is APN 120882000004000.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one):

Flat Rolling Hilly **Steep Slopes** Mountainous

Other _____

b. What is the steepest slope on the site (approximate percent slope)? 40% slope.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Warden silt loam, Kiona very stony silt loam, and Ellisforde silt loam.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

The steep slopes appear stable and minimal sluffing has taken place on-site.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. Grading will occur to extend Homestead Rd.

Approximately 17,600 CY of soil will be excavated with a net cut of 6300 CY. No export or import.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Wind and stormwater erosion could occur as a result of clearing and construction activity but will be minimalized with the use of BMPs, such as silt fencing, construction entrance and watering.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? Approximately 2% (4.12 AC) will be impervious surfaces.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Standard erosion control and BMP methods will be used, such as catch basin protection, silt fencing, and stabilized construction entrances. Dust during construction will be controlled by the use of a water truck as necessary.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. During construction, dust and exhaust may occur. The final project will have vehicular traffic which will contribute to vehicle emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
None known.

c. Proposed measures to reduce or control emissions or other impacts to air, if any: Dust control measures will be implemented in accordance with recommendations by the Department of Ecology and the Benton County Clean Air Authority. Measures include but are not limited to watering, lowering speed limit of construction vehicles, dust control with a watering truck and reducing the amount of dust-generating activities on windy days.

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. No natural surface water bodies are adjacent or in the immediate vicinity of the site. There is an irrigation canal north of the property.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. The project construction will be further than 200 feet from the canal at the north of the property.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.
None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.
Groundwater will be withdrawn from future wells that will be installed to serve the proposed residential lots.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.
waster material from septic systems and collected storm water will be discharged into the ground. There will be 14 residential lots created, and most likely 14 homes discharging from septic systems.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. New impervious surface from the access road will generate increased stormwater runoff. The stormwater will be infiltrated on-site

2) Could waste materials enter ground or surface waters? If so, generally describe. _____

No, there is approximately 40' of separation from the surface to the ground water and local domestic wells are approximately 140' to the first aquifer.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposal will include CMP culverts to maintain the natural drainage channels and minimize the alteration of drainage patterns on-site. Drainage easements will be granted along the path of the drainage channels.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any: Generated runoff will be infiltrated into underlying soils or flow to on-site infiltration facilities.

4. Plants

a. Check the types of vegetation found on the site:

- ____ Deciduous tree *(alder, maple, aspen, other)*
- ____ Evergreen tree *(fir, cedar, pine, other)*
- ✓ Shrubs
- ✓ Grass
- ____ Pasture
- ____ Crop or grain
- ____ Orchards, vineyards or other permanent crops
- ____ Wet soil plants *(cattail, buttercup, bullrush, skunk cabbage, other)*
- ____ Water plants *(water lily, eelgrass, milfoil, other)*
- ____ Other types of vegetation

b. What kind and amount of vegetation will be removed or altered? Shrubs and grass will be removed with grading/construction of the public road. Grading will be completed according to the geotech report and intact shrub steppe will be preserved according to the habitat study.

c. List threatened and endangered species known to be on or near the site. _____

None known per the Washington Department of Natural Resources. (DNR)

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: No landscaping is proposed for this project. The project grading will preserve on-site intact native vegatation according to the habitat report. The individual homes will have landscaping with each building permit.

e. List all noxious weeds and invasive species known to be on or near the site. _____

None known.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include: birds: hawk, heron, eagle, songbirds, other; mammals: deer, bear, elk, beaver, other; fish: bass, salmon, trout, herring, shellfish, other.

Common crow, California quail, mourning dove, eleven mule deer, and several passerine birds were observed on the site.

b. List any threatened and endangered species known to be on or near the site.

According to WDFW mapping, the Ferruginous hawk can be found in the same township as this project site (WA T8N) and is considered threatened.

c. Is the site part of a migration route? If so, explain.

Yes, the Columbia Basin is part of a migration route for a number of fowl.

d. Proposed measures to preserve or enhance wildlife, if any:

None proposed.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity will be used for lighting and heating residential lots.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Project will be in compliance with the current State of Washington energy codes.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No.

1) Describe any known or possible contamination at the site from present or past uses.

None known.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project

area and in the vicinity. None known.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Fuel for construction vehicles will be used on-site during construction of the access road.

4) Describe special emergency services that might be required.

Typical emergency services provided by the County will be used for this site when proposed lots are developed.

5) Proposed measures to reduce or control environmental health hazards, if any:

None at this time.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Any existing noises at this site are not expected to affect the project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. Construction noises during working hours only while construction is taking place. Traffic noise will be generated by residents when proposed lots are developed.

3) Proposed measures to reduce or control noise impacts, if any: Noise impacts from construction activies and ongoing operations are expected to be minimal. All operations will be conducted in a manner compliant with Washington State Maximum Environmental Noise Levels (Chapter 173-60-040 WAC).

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. Currently the site is undeveloped land. Future development will not affect current land uses on nearby or adjacent properties.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? No.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: No.

c. Describe any structures on the site. None.

d. Will any structures be demolished? If so, what? N/A

e. What is the current zoning classification of the site? Rural Residential Lands 5 Acre District

f. What is the current comprehensive plan designation of the site? Agriculture - Rangelands

g. If applicable, what is the current shoreline master program designation of the site? N/A

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
Yes, the property is located in a critical area for Shrub Step and Wildlife Conservation as well as steep slopes. A habitat study has been performed by a licensed biologist. A geotechnical engineer has prepared a Steep Slope critical area report.

i. Approximately how many people would reside or work in the completed project?
42 will reside in the developed lots assuming a family size of 3 on each of the 14 lots.

j. Approximately how many people would the completed project displace? None.

k. Proposed measures to avoid or reduce displacement impacts, if any: N/A

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: The project will be permitted through the local jurisdictions with all applicable zoning ordinances.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any: N/A

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low income housing. None are provided with this project. Lots will be devloped in the future.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low income housing. None.

c. Proposed measures to reduce or control housing impacts, if any: None.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? No structures are proposed with this project.

b. What views in the immediate vicinity would be altered or obstructed? None.

c. Proposed measures to reduce or control aesthetic impacts, if any: All materials will be in accordance with local ordinances. A majority of the site will be retained as natural and undeveloped.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Any proposed street lighting for the proposed extension of Homestead Rd during dark hours of the day.

b. Could light or glare from the finished project be a safety hazard or interfere with views? No.

c. What existing off-site sources of light or glare may affect your proposal? None known.

d. Proposed measures to reduce or control light and glare impacts, if any: All lighting will be in accordance with local codes.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Off-road vehicles are often used in the surrounding open spaces as reported in the completed habitat study.

b. Would the proposed project displace any existing recreational uses? If so, describe. No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: N/A

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe. No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. Per the WISAARD system of the Department of Archaeology and Historic Preservation, the site is located in the bounds of the Confederated Tribes of the Warm Springs. There were however, no artifacts or evidence of native use or occupation found in the site walk of the habitat study that was performed.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. The WISAARD system of the DAHP and a site walk for a habitat study were methods that were used.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required. Upon any discovery of potential or known archaeological resources at the subject property prior to or during future on-site construction, the developer, contractor, and/or any other parties involved in construction shall immediately cease all on-site construction, and shall act to protect the potential or known historical and cultural resources area from outside intrusion, and shall notify Benton County.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. The proposed lots will be accessed through extension of Homestead Rd, south of E Badger Rd.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? The site is not served by public transit. The nearest transit stop is located approximately 5 miles north east.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? The project will not add or eliminate any parking stalls.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). The proposal includes extension/improvements of a public road, Homestead Road, to serve the proposed lots.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as

commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? Approximately 14 AM trips and 134 ADT according to ITE Trip Generator Manual, land use code 210.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe. No.

h. Proposed measures to reduce or control transportation impacts, if any: The project will pay impact fees as determined by Benton County and provide street improvements as required by WSDOT.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. Yes, the lots will need public services such as fire and police protection. The future residents will need public services such as health care and schools.

b. Proposed measures to reduce or control direct impacts on public services, if any. The project will pay impact fees if required and future residents will provide additional tax revenue for the County.

16. Utilities

a. Circle utilities currently available at the site:

(electricity) natural gas water (refuse service) (telephone) sanitary sewer system other Private well for water service and septic for sewer service.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
Electricity - Benton PUD
Internet - Ziply

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

DocuSigned by:
Signature: TYLER TAPANI
0F67EE6A2B4749B...

Name of Signee TYLER TAPANI

Position and Agency/Organization TTap Construction

Date Submitted: 8/5/2020

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(**IT IS NOT NECESSARY** to use this sheet for project actions)

- Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.
- When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise? The project will increase discharge of stormwater to the ground through the increase in impervious area and higher stormwater run-off volume and flow. Future residents will add traffic and therefore vehicle emissions to the air. No toxic or hazardous substances or production of noise will be produced on-site.

a. Proposed measures to avoid or reduce such increases are: The stormwater will be controlled through infiltration facilities that are sized to accommodate the increased stormwater run off volumes and flow. No measures are proposed to reduce vehicle emissions.

2. How would the proposal be likely to affect plants, animals, fish, or marine life? Effects of development of this parcel are expected to be negligible if recommendations outlined in the performed habitat study are followed. There will be no effect to marine life.

a. Proposed measures to protect or conserve plants, animals, fish, or marine life are: The shrub-steppe habitat will not be removed and an on-site habitat corridor is proposed to connect to offsite habitats to the northwest and southwest.

3. How would the proposal be likely to deplete energy or natural resources? The homes will require power and water.

a. Proposed measures to protect or conserve energy and natural resources are: Future residents will be limited in irrigation use and homes will be built to the current energy codes to conserve energy and natural resources.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands? The proposal is not likely to affect environmentally sensitive areas.

a. Proposed measures to protect such resources or to avoid or reduce impacts are: proposed measures include limiting irriation practices to prevent soil instability. As mentioned above, the shrub-steppe habitat will not be removed.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans? The proposal is compliant with existing land use designations.

a. Proposed measures to avoid or reduce shoreline and land use impacts are: N/A

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The proposal will increase demand on County public services such as schools, libraries, pools, streets, police, fire, etc. by increasing the population.

a. Proposed measures to reduce or respond to such demand(s) are: The development will increase tax revenue for the County.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment. No known conflict exists.

ESA LISTED SALMONIDS CHECKLIST

The Listed Salmonids Checklist is provided in order that the City can identify a project's potential impacts (if any) on salmonids that have been listed as "threat ened" or "endangered" under the Federal Endangered Species Act (ESA). A salmonid is any fish species that spends part of its life cycle in the ocean and returns to fresh water. Potential project impacts that may result in a "taking" of listed salmonids must be avoided, or mitigated to insignificant levels. Generally, under ESA, a "taking" is broadly defined as any action that causes the death of, or harm to, the listed species. Such actions include those that affect the environmental in ways that interfere with or reduce the level of reproduction of the species.

If ESA listed species are present or ever were present in the watershed where your project will be located, your project has the potential for affecting them, and you need to comply with the ESA. The questions in this section will help determine if the ESA listing will impact your project. The Fish Program Manager at the appropriate Department of Fish and Wildlife (DFW) regional office can provide additional information. Please contact the Dept. of Fish and Wildlife at 1701 S. 24th, Yakima WA 98902-5720, Phone No. 509-575-2740.

1. Are ESA listed salmonids currently present in the watershed in which your project will be?
   Yes _X_ No___
Please Describe.

2. Has there ever been an ESA listed salmonid stock present in this watershed?
   Yes _X_ No___
Please Describe.

NOTE: Kennewick is located in the upper Mid-Columbia watershed. Salmonids are present in the watershed - questions no. 1 and no. 2 already answered "yes". Questions A-1 and A-2 are also answered.

PROJECT SPECIFIC: The questions in this section are specific to the project and vicinity.

A1. Name of watershed: Upper Mid-Columbia

A2. Name of nearest waterbody: Columbia River

A3. What is the distance from this project to the nearest body of water?

The Columbia River is 7.5 miles north east of the site.

Often a buffer between the project and a stream can reduce the chance of a negative impact to fish.

A4. What is the current land use between the project and the potentially affected water body (parking lots, farmland, etc.)

There is county, residential, commercial, and open space between the Columbia River and the site.

A5. What percentage of the project will be impervious surface (including pavement & roof area)?

Approximately 2% of the site will be covered in impervious surfaces.

FISH MIGRATION: The following questions will help determine if this project could interfere with migration of adult and juvenile fish. Both increases and decreases in water flows can affect fish migration.

B1. Does the project require the withdrawal of

a. Surface water? Yes____ No__✓__
Amount
Name of surface water body

b. Ground water? Yes__✓__ No_____
Amount
From Where Pasco Gravel Unit
Depth of well 500 ft

B2. Will any water be rerouted? Yes_____ No__✓__
If yes, will this require a channel change?

B3. Will there be retention ponds? Yes__✓__ No_____
If yes, will this be an infiltration pond or a surface discharge to either a municipal storm water system or a surface water body?
This will be an infiltration pond with all runoff infiltrating on-site.

If to a surface water discharge, please give the name of the waterbody.

B4. Will this project require the building of new roads? (Increased road mileage may affect the timing of water reaching a stream and may, thus, impact fish habitat.)
Yes, Homestead Rd will be extended from the existing road stub off Country Heights Drive.

B5. Are culverts proposed as part of this project? Yes __✓__ No _____

B6. Are stormwater drywells proposed as part of this project? Yes ____ No__✓__

B7. Will topography changes affect the duration/direction of runoff flows? Yes ____ No ✓

If yes describe the changes.

B8. Will the project involve any reduction of a floodway or floodplain by filling or other partial blockage of flows? Yes_____ No ✓

If yes, how will the loss of flood storage be mitigated by your project?

WATER QUALITY: The following questions will help determine if this project could adversely impact water quality. Degraded water quality can affect listed species. Water quality can be made worse by runoff from impervious surfaces, altering water temperature, discharging contaminants, etc.

C1. Will your project either reduce or increase shade along or over a waterbody?
Yes ____ No ✓ (Removal of shading vegetation or the building of structures such as docks or floats often result in a change in shade.)

C2. Will the project increase nutrient loading or have the potential to increase nutrient loading or contaminants (fertilizers, other waste discharges, or runoff) to the waterbody?
Yes ____ No ✓

C3. Will turbidity (dissolved or partially dissolved sediment load) be increased because of construction of the project or during operation of the project? (In-water or near water work will often increase turbidity.)
Yes ____ No ✓

C4. Will your project require long term maintenance, i.e., bridge cleaning, highway salting, chemical sprays for vegetation management, clearing of parking lots?
Yes ✓ No____
Please Describe.
Homestead Road may be salted/plowed during the winter for snow removal.

Vegetation: The following questions are designed to determine if the project will affect riparian vegetation, which can impact listed species.

D1. Will the project involve the removal of any vegetation from the stream banks?
YES ____ NO ✓

If yes, please describe the existing conditions and the amount and type of vegetation to be removed.

D2. If any vegetation is removed, do you plan to re-plant? YES ___ NO ✓

If yes, what types of plants will you use?

E. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand the City is relying on them to make its decision.

Signature DocuSigned by: TYLER TAPIA 0F67EE0A2B4749D... Date 8/5/2020

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Please Describe.

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Please Describe.

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Name of surface water body

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Amount
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C2. Will the project increase nutrient loading or have the potential to increase nutrient loading or contaminants (fertilizers, other waste discharges, or runoff) to the waterbody?
Yes ____ No ✓

C3. Will turbidity (dissolved or partially dissolved sediment load) be increased because of construction of the project or during operation of the project? (In-water or near water work will often increase turbidity.)
Yes ____ No ✓

C4. Will your project require long term maintenance, i.e., bridge cleaning, highway salting, chemical sprays for vegetation management, clearing of parking lots?
Yes ✓ No____
Please Describe.
Homestead Road may be salted/plowed during the winter for snow removal.

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D1. Will the project involve the removal of any vegetation from the stream banks?
YES ____ NO ✓

If yes, please describe the existing conditions and the amount and type of vegetation to be removed.

D2. If any vegetation is removed, do you plan to re-plant? YES ___ NO ✓

If yes, what types of plants will you use?

E. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand the City is relying on them to make its decision.

Signature DocuSigned by: TYLER TAPAM 0F07EE0A2B4749B... Date 8/5/2020

Planning Department
P.O. Box 910
1002 Dudley Avenue
Prosser, WA 99350

Phone (509) 786-5612
Fax (509) 786-5629
planning.department@co.benton.wa.us
co.benton.wa.us

PCM 1.11

Notice of Application - Optional DNS Process

Benton County has received a permit application for the following project:

Date of permit application: **August 5, 2020**
Date of determination of completeness: **August 12, 2020**
Date of Notice of Application: **August 12, 2020**
Comment due date: **14 days from publication of this notice**
Date of Publication of Notice of Application: **August 19, 2020**

Agency Contact: Greg Wendt, Benton County Planning Manager,
greg.wendt@co.benton.wa.us (509) 786-5612

Agency File Number: EA 2020-023/SUB 2020-007

Project Description: An application for the preliminary plat of Country Acres, a subdivision of 160.25 acres into fourteen (14) lots, with an average lot size of 11.17 acres and smallest lot size of 5.14 acres. The zoning designation for the property is Rural Lands Five Acre (RL-5) Zone.

Project Location: The site is located south the KID canal, at the intersection of Country Heights Drive and Homestead Road, to be accessed at the end of Homestead Road in Section 20, Township 8 North, Range 28 East, W.M. Parcel 120882000004000.

Project Applicant: Tyler Tapani, 1313 N Young Street, Suite C, Kennewick, WA 99336

SEPA Environmental Review: The Benton County Planning Department has reviewed the proposed project for probable adverse environmental impacts and expects to issue a Determination of Non-Significance (DNS) or Mitigated Determination of Non-Significance (MDNS). The proposal may include mitigation measures under applicable codes, and the project review process may incorporate or require mitigation measures regardless of whether an EIS is prepared. The optional DNS process in WAC 197-11-355 is being used. This may be your only opportunity to comment on the environmental impacts of the proposed project.

Agencies, tribes, and the public are encouraged to review and comment on the proposed project and its probable environmental impacts. Comments must be submitted 14 days from date of publication to the Benton County Planning Department, P.O. Box 910 Prosser, WA 99350. Any information submitted to Benton County is subject to the public records disclosure law for the State of Washington (RCW Chapter 42.17) and all other applicable law that may require the release of the documents to the public.

Preliminary Development Regulations and Existing Environmental Documents: To evaluate the impacts of the proposed project, the following may be used for mitigation, consistency, and the development of findings and conclusions:

Benton County, including BCC Title 15 CAO, BCC Title 6.35 SEPA, Benton County Comprehensive Plan, Benton County Subdivision Code, Benton County Zoning Code, Benton County Fire Code, Benton County Public Works Road Requirements and Department of Ecology, Department of Fish and Wildlife, SEPA Environmental Checklist, dated August 5, 2020; and other required agency evaluations, approvals, permits, and mitigation as necessary.

Required Permits:
Preliminary Plat approval, Final Plat approval and recording.

Required Studies:
SEPA Checklist, Dated August 5, 2020
Preliminary Stormwater Drainage Report, Dated August 4, 2020
Critical Area Habitat Review, Dated July 20, 2020
Geotechnical Engineering Report, Dated July 29, 2020

The Benton County Planning Department will review said application and a public hearing will be scheduled at a later date. When the public hearing is scheduled, property owners within 300 feet of the boundaries of the project site will receive a public hearing notice.

Dated at Prosser, Washington on this 12th day of August 2020.

Greg Wendt, Planning Manager
Benton County Planning Department

Planning Department
P.O. Box 910
Prosser, WA 99350

Phone (509) 786-5612
planning.department@co.benton.wa.us
co.benton.wa.us

PCM 1.12

MITIGATED DETERMINATION OF NON-SIGNIFICANCE

Proponent:
Tyler Tapani
1313 N Young Street, Suite C
Kennewick, WA 99336

File No. EA 2020-023

Project Description: An application for the preliminary plat of Country Acres, a subdivision of 160.25 acres into fourteen (14) lots, with an average lot size of 11.17 acres and smallest lot size of 5.14 acres. The zoning designation for the property is Rural Lands Five Acre (RL-5) Zone.

Project Location: The site is located south of Badger Road, south of the KID canal, near the south end of Country Meadow Lane, to be accessed at the end of Homestead Road in Section 20, Township 8 North, Range 28 East, W.M. Parcel 120882000004000.

Jurisdiction: Benton County, Washington.

Lead Agency: Benton County Planning Department.

Threshold Determination: The lead agency for this proposal has determined that it will not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(3), provided that the following measures are taken to mitigate potential adverse impacts. Substantive authority to require mitigation is derived from WAC 197-11-660 and Benton County Code, Chapter 6.35.120. The decision was made after review of a completed environmental checklist, comments received from various agencies and other information on file with the lead agency. This information is available to the public on request.

This MDNS is issued under WAC 197-11-355; no additional comments are being requested.

Conditions/Mitigating Measures: See Attached.

Appeals: You may appeal this determination to the Benton County Planning Department at Post Office Box 910, Prosser, WA 99350. Appeals of mitigated determinations of non-significance must be made to the local authority that will hold an open record hearing on the related project permit applications, if such an open record hearing is required. This appeal must be made by filing a written notice of appeal with the responsible official within fourteen (14) days from the date of the threshold determination. You should be prepared to make specific factual objections. Contact the Planning Department to read or ask about the procedures for SEPA appeals.

SEPA Responsible Official: Greg Wendt
Position/Title: Planning Manager
Address: P.O. Box 910, Prosser WA 99350

Date**: September 16, 2020**

Greg Wendt, Planning Manager

DISTRIBUTION:

Applicant
Ben Franklin Transit
Benton Clean Air
Benton County Emergency Services
Benton County Fire Marshal
Benton County Parks
Benton County Public Works
Benton Franklin Health Department
Washington State Department of Ecology
Washington State Department of Health
Washington State Department of Transportation
Fire District #1
News Media
Wash. St. Department of Natural Resources
Wash. St. Department of Fish and Wildlif e
Bureau of Reclamation
Bureau of Land Management
Yakama Nation
Futurewise
Dept. of Archaeology & Historic Preservation
Tom Price-Environmentasl Review Inc.

CONDITIONS/MITIGATION MEASURES
File No.: EA 2020-023
Applicant: Tapani - Country Acres

Tyler Tapani
1313 N Young Street, Suite C
Kennewick, WA 99336

Documents and Regulations:

The environment threshold determination and conditions are based on an analysis of information contained in the following documents or the applicable regulations and restrictions of various agencies:

1. Benton County, BCC Title 6.35 Environmental Policy (SEPA);
2. Benton County, BCC Title 11, Zoning;
3. Benton County, BCC Title 9, Subdivisions;
4. Benton County Comprehensive Plan;
5. Benton County, BCC Title 15 Critical Area Ordinance;
6. Benton County, BCC Title 3 Building Code, Fire Code, and Road Standards;
7. Regulations of the Benton Clean Air Agency;
8. Regulations of the Washington State Department of Fish and Wildlife, Department of Transportation, Department of Ecology, Department of Natural Resources and Department of Archaeology and Historic Preservation; and
9. SEPA Environmental Checklist-dated August 5, 2020.

Findings:

1. Location:
   a. The site is located south of Badger Road, south of the KID canal, near the south end of Country Meadow Lane, to be accessed at the end of Homestead Road in Section 20, Township 8 North, Range 28 East, W.M. Parcel 120882000004000.

2. Benton County, BCC Title 11, Zoning:
   a. The zoning designation for the project area is Rural Lands Five Acre (RL-5) Zone. This zoning district has a minimum lot size of 5 acres; and

   b. A single-family home is an allowed use in the RL-5 Zoning District;

3. Benton County, BCC Title 9, Subdivisions:
   a. Applicant has applied for preliminary plat consideration in accordance with BCC 9.05 Preliminary Plats.

4. Benton County Comprehensive Plan:
   a. The property is designated Rural Remote in the Benton County Comprehensive Plan.

5. Benton County, BCC Title 15, Critical Area Ordinance:
   a. Upon completion of a review of BCC Title 15 and the Benton County Critical Area Maps, the site consists of both geologically hazardous areas and is a priority habitat and species area.

   b. Wetlands: None identified.

   c. Critical Aquifer Recharge Area: None identified.

   d. Fish and Wildlife Habitat Conservation Area: Yes. Property is identified in the southern portion of the Badger Canyon corridor which is a priority habitat and species area as designated by Washington State Department of Fish and Wildlife.

   e. Frequently Flooded Areas: None identified.

   f. Geologically Hazardous Areas: Yes. Property is located in an area of 15 percent or greater slope and includes erosion hazard soil types.

6. The applicant is proposing a preliminary plat with 14 residential lots;

7. The applicant submitted the following materials for the SEPA review process:

   a. SEPA Checklist, Dated August 5, 2020;
   b. Preliminary Stormwater Drainage Report, Dated August 4, 2020;
   c. Critical Area Habitat Review, Dated July 20, 2020; and
   d. Geotechnical Engineering Report, Dated July 29, 2020.

8. During the SEPA comment period, the State of Washington Department of Archaeology & Historic Preservation commented (see letter dated August 18, 2020) that the project site has the potential to contain archaeological resources and they requested that the applicant conduct a professional archaeological survey of the project area prior to ground disturbing activities.

9. During the SEPA comment period, the State of Washington Department of Fish and Wildlife commented (see letter dated August 24, 2020) that the project site is located within the Badger Canyon corridor area and recommended that any future residential development on Lots 1 and 2 shall be sited as near as possible to Homestead Road and that site preparation only include the area needed for the home footprint. Additionally, WDFW recommends that fire-wise elements are incorporated including xeriscaping, seasonal grazing, and limited fencing due to the fire prone landscape of the project area.

10. During the SEPA comment period, the Kennewick Irrigation District commented (see letter dated September 1, 2020) that that the property is identified as being partially within the KID boundaries.

11. During the SEPA comment period, Benton County Public Works commented (see comments dated September 9, 2020 and August 21, 2020) on requirements for road construction, stormwater, signage, survey monuments and drainage easements.

Conditions:

The applicant must complete and comply with the following mitigating conditions for this Mitigated Determination of Non-Significance (MDNS).

1. Benton County Planning Department. Meet and comply with Planning Department requirements for all activities at the site, including:

   (a) Meet and comply with BCC Title 9, Subdivisions, including preliminary and final plat requirements, if approved.

   (b) All development at the site shall meet and comply with:
      (i) SEPA Checklist, Dated August 5, 2020;

      (ii) Preliminary Stormwater Drainage Report, Dated August 4, 2020;

      (iii) Critical Area Habitat Review, Dated July 20, 2020;

      (iv) Geotechnical Engineering Report, Dated July 29, 2020; and

      (v) Critical Area Habitat Review, Dated July 20, 2020.

   (c) The Planning Department requires the following notes to be placed on the final plat for orchard setbacks, water supply determinations, and dust control:
      (i) "Per BCC 11.11A.090(6) - Setback Requirements - All dwelling units and swimming pools shall have a setback of one hundred fifty (150) feet from any parcel located partially or wholly within the Growth Management Agricultural Act District (GMAAD) and from any adjacent orchard, hop field or vineyard (or combination thereof) of ten (10) acres or more on one parcel or on contiguous parcels under comment ownership. Please contact the Benton County Planning Department for further information."

      (ii) "All lots within this development are collectively limited to NO more than 5,000 gallons a day of groundwater withdrawal for domestic use from the individual exempt wells; and

      (iii) "The County, in accordance with RCW 58.17.110, is required to ensure that appropriate provisions have been made for potable water supplies prior to the approval of a subdivision. The County has completed its review in accordance with this requirement, and through the submittal of well logs and supplemental written record materials, has determined that potable water supplies are both legally and physically/factually available for this proposed development. The potable water supplies identified from the submitted well logs and supplemental written record materials are from both a shallow unconfined aquifer, and a deeper basalt confined aquifer."

      (iv) "During construction on each property, all construction debris shall be maintained on-site and properly disposed of. Dust control measures including an adequate water supply shall be provided".

If you have questions, please contact the Benton County Planning Department at 509-786-5612

2. **Benton Clean Air Agency**. Prior to any excavations or construction at the site, the applicant shall meet and comply with the permitting requirements and standards of the Benton Clean Air Agency.

3. **Washington State Department of Ecology**. Meet and comply with Ecology requirements for all activities at the site;

4. **Benton Franklin Health District.** Meet and comply with Health District requirements for all activities at the site;

5. **State of Washington Department of Archaeology & Historic Preservation.** DAHP commented (see letter dated August 18, 2020) that the project site has the potential to contain archaeological resources and with this they have requested that the applicant conduct a professional archaeological survey of the project area prior to ground disturbing activities. If you have questions, please email DAHP at sydney.hanson@dahp.wa.gov;

6. **State of Washington Department of Fish and Wildlife.** WDFW commented (see letter dated August 24, 2020) that the project site is located within a fire prone and priority habitat and species area which will need to be addressed by the applicant. If you have questions, please email WDFW at michael.ritter@dfw.wa.gov;

7. **Kennewick Irrigation District.** KID commented (see letter dated August 24, 2020) that the property is identified as being partially within the KID boundaries. If you have questions, please email KID at BBroberg@kid.org;

8. **Benton County Public Works.** Benton County Public Works commented (see comments dated September 9, 2020 and August 21, 2020) on requirements for road construction, stormwater, signage, survey monuments and drainage easements which will need to be addressed by the applicant. If you have questions, please email Public Works at Cristina.Woods@co.benton.wa.us.

PUBLIC HEALTH
Prevent • Promote • Protect
BENTON-FRANKLIN HEALTH DISTRICT

August 4, 2020

Tyler Tapani
TTap Construction
1313 N Young St
Kennewick, WA 99336

RE: Preliminary Review of Country Acres Parcel # 1-2088-200-0004-000, Benton County.

Dear Mr. Tapani:

This department completed a preliminary plat review on July 28th 2020 of the above referenced plat proposal. This department has reviewed the above referenced plat in accordance with our current land development policies and requirements for new subdivisions. Our findings are listed below:

1. There 14 lots ranging from 5.06 acre to 70.13 acres.
2. The proposed land use is for single-family dwellings.
3. Soils encountered throughout the proposed plat area are Type 5 (silt loam).
4. Slopes are variable throughout the plat.
5. Proposed domestic water supply is single-family wells.

Findings indicate the above referenced plat generally meets our requirements for plats utilizing onsite sewage disposal systems and single-family wells, provided:

1. Each lot must be configured to allow a 100 foot radius water supply protection zone to fit within the lot lines

   Or

   A 100 foot protection zone must be established around each proposed well site.

2. All lots shall have a minimum of 1 acre in size and contain a minimum of 20,000 square feet of usable land area.

3. All wells, irrigation lines, canals, and surface waters within 150ft of the plat are shown on the plat map.

7102 W. Okanogan Place
Kennewick, WA 99336
Office: (509) 460-4200

412 W. Clark
Pasco, WA 99301
Office: (509) 547-9737

4. Prior to final approval, this office must be given the opportunity to review the final plat for compliance with Benton-Franklin Health Department Rules and Regulations No. 2, and WAC 246-272A, and issue appropriate comments to the Benton County Planning Department.

5. Prior to the issuance of any onsite sewage disposal permits, additional test holes may be required to verify acceptable area for initial and replacement sewage disposal system and design criteria such as trench depth on each lot.

6. It is recommended that some provision be made to facilitate future connection to a municipal sewer utility at such time as said utility becomes available.

7. The following statement is placed on the plat:
   "This plat appears to have suitable conditions for the use of on-site sewage disposal systems. However, because of the nature of the testing methods used, we have no way of determining whether each lot can comply with Benton-Franklin Board of Health Rules and Regulation at the time of permit issuance. Further be advised this department's approval of any lot within this plat for the use of on-site sewage disposal systems may be contingent upon that lot passing additional soil inspections, percolation tests, and/or other requirements at a later date."

8. All areas with slope greater than 20% must be noted on the plat as well as these areas not being suitable for on onsite sewage disposal system.

This recommendation is based on present known site conditions and does not guarantee the granting of an on-site sewage disposal permit. Our approval of any lot within this plat may be contingent upon that lot passing additional soil inspections/percolation tests, and/or other requirements at a later date. Should adverse site conditions be revealed at a later date, the Health Department reserves the right to impose restrictions or deny the issuance of any on-site sewage disposal permit.

Your application will be held in an active state until June 22nd, 2020, at which time the submittal will be deemed null and void should this proposal not be developed by that time.

If you have any questions, please contact me at the Health Department at (509)460-4335.

Sincerely,

Rebecca Warrington
Environmental Health Specialist I

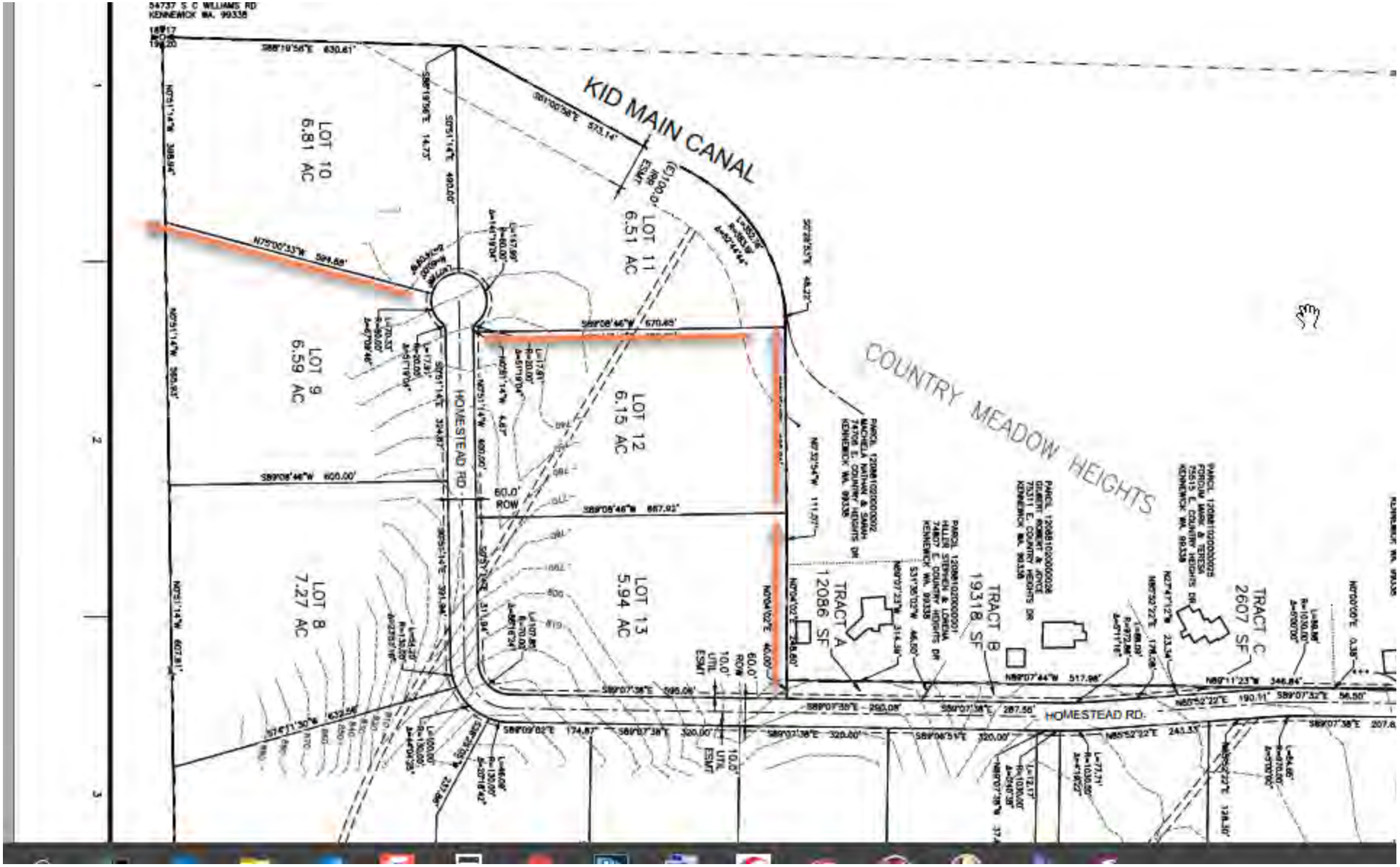
CC: Rogers Surveying Inc.; Benton County Planning Department

PCM 1.14

Donna Hutchinson

From: Shanna Everson <eversons@bentonpud.org>
Sent: Thursday, August 13, 2020 4:29 PM
To: Planning Department
Subject: [EXTERNAL] RE: [E] Agency Review for Country Acres Subdivision - SUB 2020-007

WE need an additional 10’ utility easement in the marked area please if possible.



Thanks,

Shanna Everson
Distribution Design Tech 1
509-585-5367

From: Planning Department <Planning.Department@co.benton.wa.us>
Sent: Thursday, August 13, 2020 9:22 AM
To: john.lyle@bentoncleanair.org; Benton Clean Air-Priddy <robin.priddy@bentoncleanair.org>; Benton Clean Air-Rodger <rob.rodger@bentoncleanair.org>; Benton Clean Air-Tyler Thompson <tyler.thompson@bentoncleanair.org>; Ben Franklin Transit K. McMullen <KmcMullen@bft.org>; Ben Franklin Transit - B. Windler <bwindler@bft.org>; Tina Archey <archeyt@bentonpud.org>; Benton-Franklin Dist. Health Dept. <rickd@bfhd.wa.gov>; Cascade Natural Gas (Walter.Nelson@cngc.com) <Walter.Nelson@cngc.com>; Dept. of Ecology - Lori White (lori.white@ecy.wa.gov) <lori.white@ecy.wa.gov>; Dept. of Transportation (scplanning@wsdot.wa.gov) <scplanning@wsdot.wa.gov>; Fire District #1-Billie <billie@bentonone.org>; Fire District #1-Staff <staff@bentonone.org>; Frontier Telephone <north.central.dbmc.control.desk@ncnetwork.net>; Cristina Woods <Cristina.Woods@co.benton.wa.us>; School District # 17-Ryan Jones <Ryan.Jones@ksd.org>; Southeast Communication Center (k.lettrick@bces.wa.gov) <k.lettrick@bces.wa.gov>; US Postal Service (ina.n.beutler@usps.gov) <ina.n.beutler@usps.gov>; US Postal Service - Address Management System <Tina.C.Fisher@usps.gov>; WA Dept of Health - Kelly Cooper - WA Dept of Health - Kelly Cooper (SEPA.reviewteam@doh.wa.gov) <SEPA.reviewteam@doh.wa.gov>; admin@mosquitocontrol.org; Clark Posey <Clark.Posey@co.benton.wa.us>; PARKS <PARKS@co.benton.wa.us>; Kathy Mann <Kathy.Mann@co.benton.wa.us>; Segregations <segregations@co.benton.wa.us>; Natural Resources Conservation Service (seth.hulett@or.nacdnet.net) <seth.hulett@or.nacdnet.net>; Natural Rsources Conservation Service (claire.tachella@wa.usda.gov) <claire.tachella@wa.usda.gov>; Chad Brooks <brooksc@bentonpud.org>; Mike Irving <irvingm@bentonpud.org>; Shanna Everson <eversons@bentonpud.org>; Tina Glines <glinest@bentonpud.org>
Subject: [E] Agency Review for Country Acres Subdivision - SUB 2020-007

Please see the attached file for Agency review and comment for the preliminary plat of Country Acres File No. SUB 2020-007. Please send your comments to this email address by August 27, 2020. Within the document is a form you can use for your comments. If you have any questions please let our office know.

Donna Hutchinson
Office Assistant IV
Benton County Planning Dept.
P.O. Box 910
Prosser WA 99350
509-786-5612

****Please Note**** As of December 10th our office which was located at 1002 Dudley Ave, Prosser has closed. Our **two new locations** are below:
- **Prosser:** We are now located within the Road Department/Public Works Office on the first floor of the Benton County Courthouse at 620 Market St, Prosser WA 99350.
- **Kennewick:** The County has opened a new Public Services Office at 102206 E Wiser Parkway, Kennewick, which houses the Planning, Building and Road Departments.

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

August 18, 2020

Greg Wendt
Planning Manager
Benton County
1002 Dudley Avenue, PO Box 910
Prosser, WA 99350

In future correspondence please refer to:
Project Tracking Code: 2020-08-05226
Property: Benton County_Country Acres Subdivision Project (SUB 2020-007)
Re: Survey Requested

Dear Greg Wendt:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) and providing documentation regarding the above referenced project. Our professional opinion is that the proposed project area has the potential to contain archaeological resources such as rock cairns. Further, the scale of the proposed ground disturbing actions would destroy any archaeological resources present. Identification during construction is not a recommended detection method because inadvertent discoveries often result in costly construction delays and damage to the resource. Therefore, we recommend a professional archaeological survey of the project area be conducted prior to ground disturbing activities. We also recommend consultation with the concerned Tribes' cultural committees and staff regarding cultural resource issues.

If any federal funds or permits are associated with this proposal, Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations, 36 CFR 800, must be followed. This is a separate process from both the NEPA and SEPA environmental review processes and requires formal government-to-government consultation with the affected Tribes and the SHPO. Also, we appreciate receiving any correspondence or comments from concerned tribes or other parties concerning cultural resource issues that you receive.

These comments are based on the information available at the time of this review and on behalf of the SHPO in conformance with Washington State law. Should additional information become available, our assessment may be revised.

Thank you for the opportunity to comment on this project and we look forward to receiving the survey report. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. Should you have any questions, please feel free to contact me.

Sincerely,

Sydney Hanson
Transportation Archaeologist
(360) 586-3082
Sydney.Hanson@dahp.wa.gov

BENTON COUNTY WA

PUBLIC WORKS DEPARTMENT

TO: PLANNING DEPARTMENT

FROM: CRISTINA WOODS

DATE:8/21/2020

SUBJECT: PRELIMINARY PLAT – SUB 2020-007 COUNTRY ACRES

Please add the following as conditions of final approval for the above reference plat:

1. The developer shall provide a complete set of engineered construction drawings for review and approval by the County and associated utilities. The drawings shall contain all appropriate information listed on the attached Minimum Plan Requirements. Grading plan will include grading to shape any drainage easements to route and fully contain all runoff based upon the 100-year storm within the easement limits. All plans and associated reports shall be prepared by a Professional Engineer licensed to practice in the State of Washington

2. All construction shall be in accordance with the most current WSDOT Standard Specifications for Road, Bridge and Municipal Construction, applicable Benton County Standard Plans and the requirements of the County Engineer

3. All roads within this plat shall have a paved width of 24 feet with a minimum 1-foot gravel shoulder. Roadways shall be designed for a minimum 25 mile per hour design speed

4. The pavement return radius at all intersections shall be a minimum of 35 feet

5. All stormwater from the roadways shall be contained on the plat and shall utilize surface infiltration (ditches, swales, ponds) for detention. The developer shall have an infiltration test performed at each proposed detention area. Tests shall be done with an infiltrometer using the falling head or constant head method. Other methods of infiltration rate determination shall be approved by the County.

6. The developer shall provide a complete stormwater runoff report developed in accordance with the Stormwater Management Manual for Eastern Washington accosting for all impervious and pervious surfaces draining to the roadside ditches. Design storm shall be a Modified SCS Type IA with a 25-year return frequency.

7. All signage including but not limited to stop signs, speed limit signs and street name signs shall be installed by the developer in accordance with Benton County Standard Plans

8. All new power, telephone, cable TV and irrigation shall be installed outside of the County right of way in the appropriate easements. Domestic water piping may be installed within the County right of way in accordance with a valid franchise agreement

9. Survey monuments, with cases and covers per Benton County Standard R-14B, shall be placed at all road intersections, points of curvature, points of tangency, centers of cul-de-sacs, section corners and quarter corners. All monuments shall be set by a Professional Land Surveyor licensed to practice in the state of Washington

Add the following notes to the face of the final plat

1. Benton County is not responsible for the maintenance or upkeep of any stormwater retention facility or drainage easements. All such maintenance and upkeep are the responsibility of the underlying property owner.

2. Prior to the construction of any driveway or the issuance of any building permit for any lot within this subdivision the property owner shall obtain a Road Approach Permit from the Benton County Public Works Department and install the required temporary construction access

3. No trees, shrubs, weeds, fencing or other obstructions more than 24 inches in height are permitted within Benton County right of way

4. Property owners that install grass, curbing, rock mulch or other landscaping within the County right of way do so at their own risk. The County will not repair or replace damaged landscaping due to construction or maintenance operations

Building Department
Office of Fire Marshal
102206 E. Wiser Parkway
Kennewick, WA 99338

Phone (509) 735-3500
Prosser 509-786-5622
Clark.posey@co.benton.wa.us
co.benton.wa.us

August 24, 2020

PCM 1.17

Fire Marshal Comments for: Country Acres Subdivision, # SUB 2020-007

The following information and requirements are from the Benton County Fire Marshal and are to be used regarding your proposed driveway's and or private road accessing off of a new County Road, named Homestead RD, consisting of a 14-lot subdivision with a total acreage of 160.25 acres.

Access will be individual driveways, and a road approach permit from the Public Works Department would be required for all lots accessing off a new County Road (Homestead RD). And additionally, for any private driveways constructed that are over 200' (feet) or more m length, an approved turn-a-round for Emergency Services Vehicles is required at the end of every driveway that's exceeds 200' (feet). (See below). Access to lots will be individual driveways off Homestead RD. Per Benton County Code a road approach permit may also be required by the Public Works Department (509) 786-5611, ask for Christina Woods for details. If the driveway exceeds 300' (Feet) in length, a 10' X 30' (foot) pullout is required, every 300' (feet)

Benton County Code 3.18.045 MINIMUM ROAD REQUIREMENTS. ("Private Road" means a road, driveway or any form of access easement in excess of two hundred (200) feet in length that is not dedicated to and maintained by Benton County.)

(a) Except as otherwise provided in this chapter, the minimum acceptable improved surface for a private road shall be twenty feet in width that is graded and with two inches of compacted recycled concrete asphalt or two inches of base course crushed surfacing in accordance with the specifications set forth in Standard Specifications for Road, Bridges and Municipal Construction published by the Washington State Department of Transportation, as now in effect or hereafter amended.

(b) The minimum improved surface of a private road may be twelve feet in width surfaced with the materials set forth in subsection (a) above, but only if the private road serves six or fewer dwelling units (a duplex constitutes two dwelling units) and turnouts ten feet wide and thirty feet in length, surfaced in the same manner as the remainder of the private road, are placed every three hundred feet from a public road.

(c) If a private road has any curves or turns, the required improved width of any such private road shall be as determined and set forth in writing by the Fire Marshal to a width deemed necessary to allow the appropriate firefighting equipment to safely navigate such curves or turns. If no such written determination is requested of and made by the Fire Marshal, then a private road with curves or turns must be improved to a width of twenty feet in accordance with the standards set forth in subsection (a) above.

(d) All private roads must terminate in a turnaround that shall not require more than one backing up motion for a fire truck of at least thirty-seven feet in length from bumper to bumper to completely turn around.

(e) All private roads shall be constructed to applicable standards set forth above and all conditions of approval of an encroachment permit shall be satisfied prior to any certificate of occupancy being issued for that parcel.

(f) Bridges and Culverts. All private roads over any drainage, river, creek, etc. shall be traversed by a private bridge or culvert capable of supporting at least sixty thousand (60,000) pounds or such higher weight as deemed necessary and designated in writing by the Fire Marshal. Private bridges over twenty (20) feet long are not allowed. Private bridges and culverts shall be designed to handle a 25-year storm event; provided, if located in an area designated as a 100-year flood plain, then the design must meet the 100-year flood event. A letter stating that the private bridge or culvert design meets the requirements of this section must be submitted by a licensed Washington State Civil Engineer prior to construction and, for private bridges, every two (2) years thereafter.

(g) Access - Gradients.

(1) For all developments accessed by private road, access shall be by at least one private road with a maximum gradient of twelve (12) percent or less; provided, such maximum gradient may be exceeded under either of the following circumstances:

(i) A maximum gradient of no more than fifteen (15) percent shall be permissible if the private road is surfaced with two (2) inches or more of asphalt or concrete; or

(ii) Subject to the written approval of the Fire Marshal, a maximum gradient of fifteen (15) percent may be allowed for less than two hundred (200) feet if such gradient is followed by a gradient of zero (0) percent for a period of six hundred (600) feet and adequately satisfies the vertical curve alignment necessary for the appropriate firefighting equipment. This design may be repeated as needed.

(2) Notwithstanding subsection (1) above, the maximum gradient of a private road providing access to a dwelling unit shall not exceed twelve (12) percent at any point within two hundred (200) feet of an intersection of such private road with another private road or with a public road.

(3) If requested, as-built drawings of each completed private road shall be submitted. The as-built drawing shall bear the stamp of a Washington State Registered Civil Engineer.

3.04.046 SPECIAL FIRE PROTECTION.

I. The use of cedar shakes or shingles or materials with similar flame spread characteristics for roof construction is prohibited. Class C rated shakes or shingles may be used for existing roof repairs that do not exceed 50% of the existing roof within a twelve-month period, and additions to structures with existing wood shingle or shake roofs.

II. Non-combustible siding and soffit material is required on the downhill side of structures within thirty feet of a 15% or greater grade.

III. All structures within thirty feet of the property line shall have non-combustible siding, soffits, or skirting on the side adjacent to an undeveloped area of natural vegetation that is in excess of five contiguous acres:

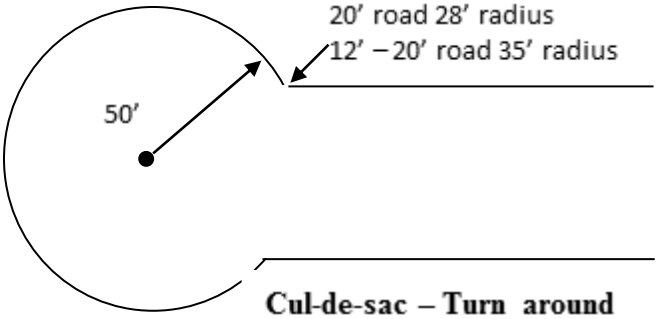
EXCEPTION: Interior lots of platted parcels and development phases whose streets are accessible, and the water system is operational.

- Gravel surfaces shall meet the Base Course Standard
- Professionals recommend gravel to be three inches thick.
- At three inches, a cubic yard will cover 108 sq. ft. (20' x 5.4') At two inches, a cubic yard will cover 162 sq. ft. (20'x 8') A truck and trailer carries 21.5 cubic yards.

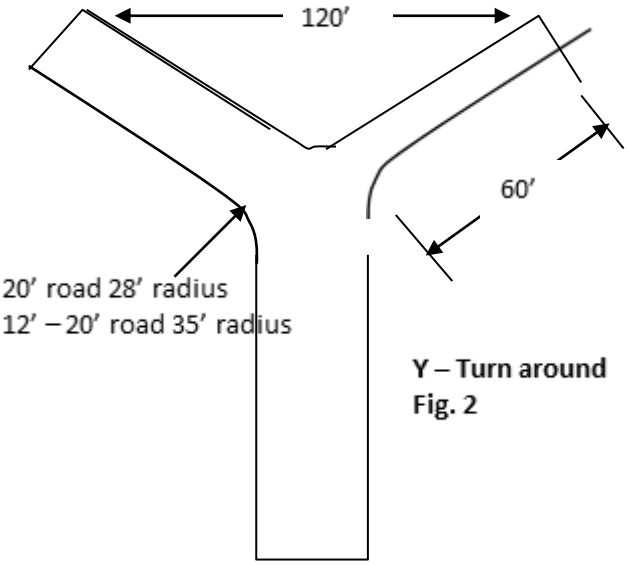
If you should have additional questions, please feel free to contact me.

Thank you,

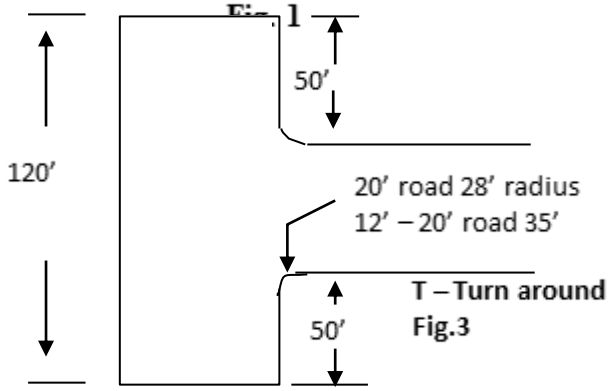
Clark A. Posey
Benton County Fire Marshal



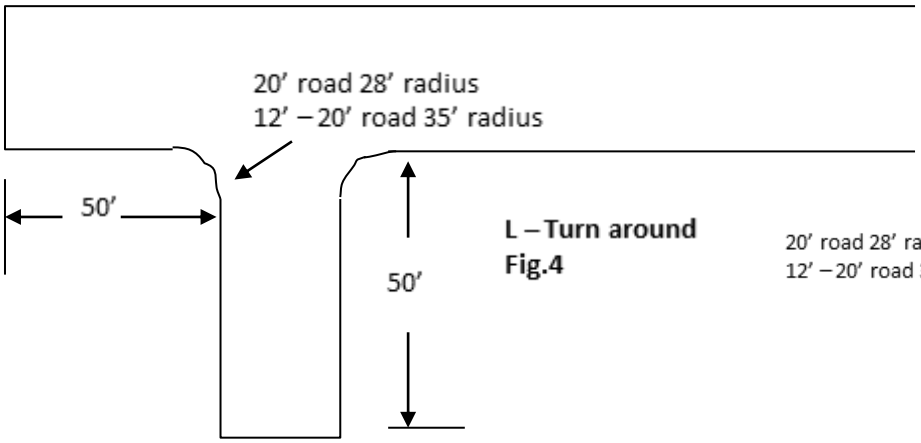
Cul-de-sac – Turn around
Fig. 1



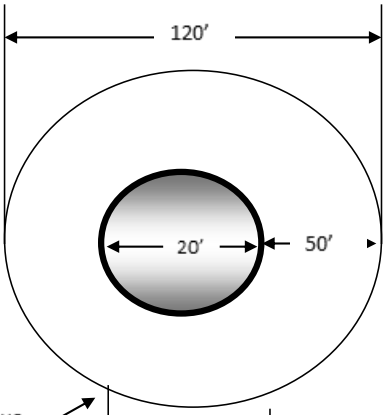
Y – Turn around
Fig. 2



T – Turn around
Fig.3



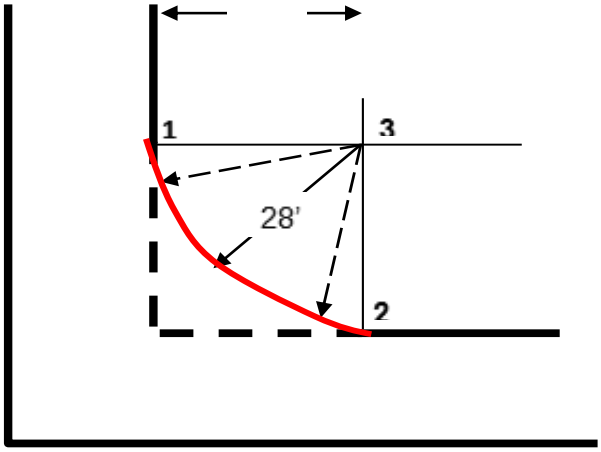
L – Turn around
Fig.4



20′ road 28′ radius
12′ – 20′ road 35′

Cul-de-sac with planter
Fig. 5

One of the problems that confront most of us, is how to construct a radius. Perhaps the following may be of assistance. From the corner, measure 28′ in both directions. From points 1 and 2, measure 28′. Drive a large nail into the ground (point 3) and hook a string.



Policy: Pullouts if your driveway exceeds 300 feet.

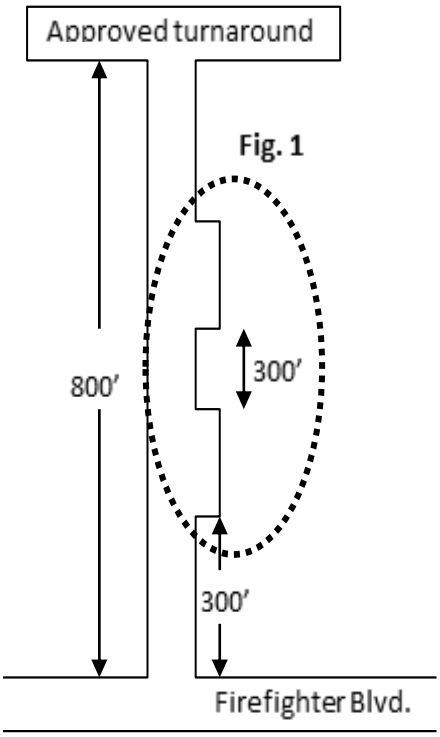
Purpose:
Provide for a uniform method for meeting the requirements of Benton County Code 3.18.045 (b) _

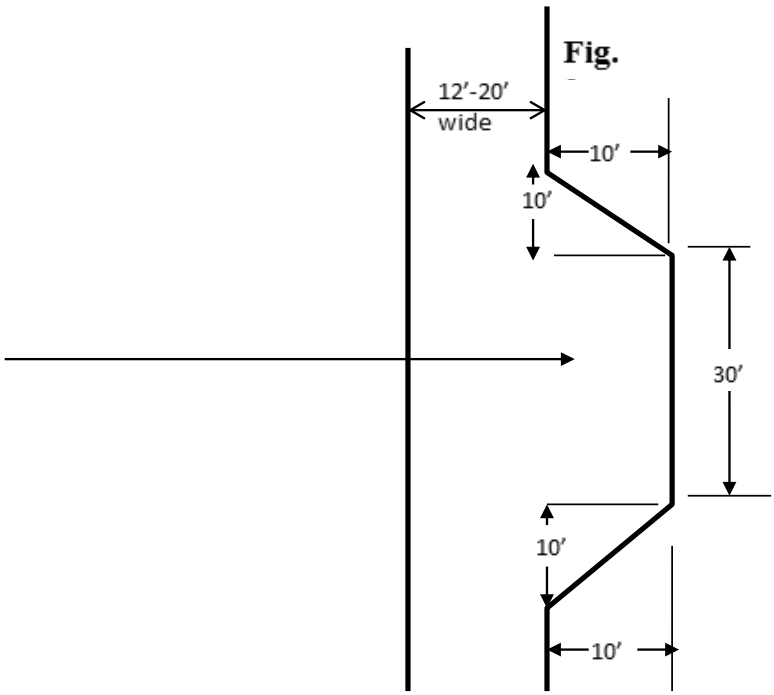
Scope:
This policy is applicable only to private roads as defined in Benton County Code 3.18.015 that are between 12 feet and 20 feet wide and whose length exceeds 300'. Private Road" means a road, driveway or any form of access easement in excess of two hundred (200) feet in length that is not dedicated to and maintained by Benton County."

Procedure:
Upon the Benton County Fire Marshal's office receiving a submittal from the Benton County Planning Department or the Benton County Building Department, a review will be conducted to determine if the proposed private road meets the requirements of 3.18.045 (b).

- The private road must comply with all sections of Benton County Code 3.18.045.
- The pullout shall be required every 300 feet. Fig. 1
- Turnout surface shall be the same as the private road.
- Turnouts at a minimum shall be 10' x 30'.

Fig. 2





PCM 1.18

State of Washington
Department of Fish and Wildlife
Habitat Program
2620 North Commercial Avenue, Pasco, WA 99301
Phone: (509) 543-3319, E-mail, Michael.Ritter@dfw.wa.gov

MWR-04-20

August 24, 2020

Greg Wendt
Planning Manager
Benton County Planning Department
P.O. Box 910
1002 Dudley Avenue
Prosser, WA 99350

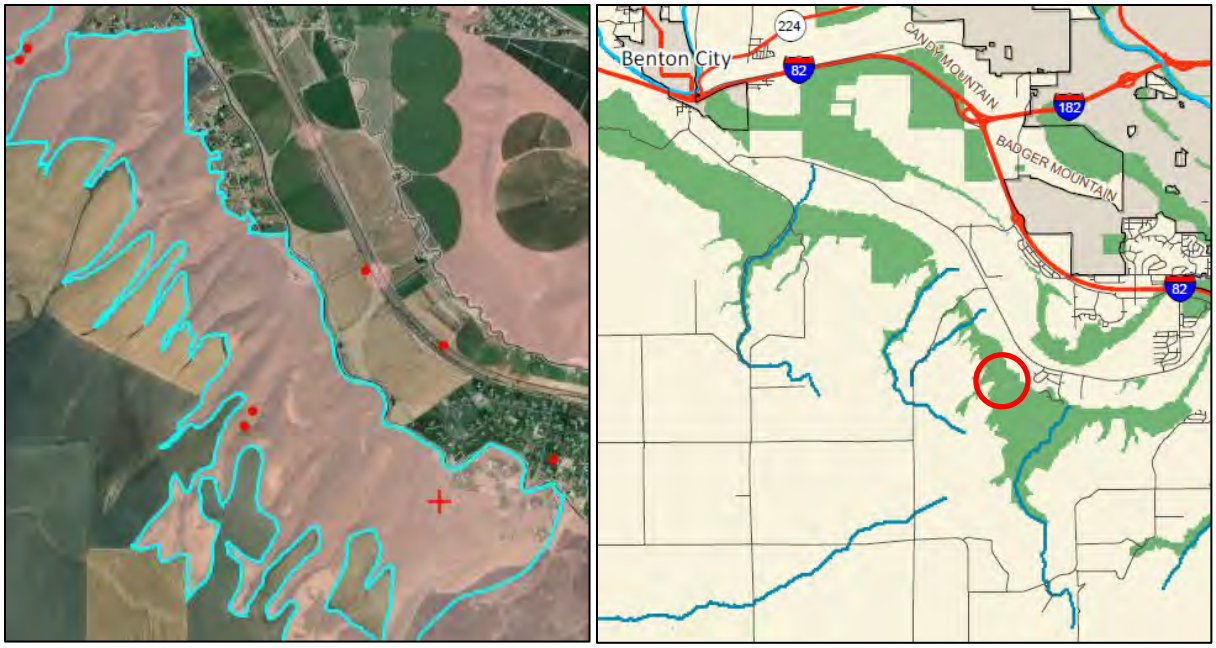
Subject: **Agency File Number: EA 2020-023/SUB 2020-007. Preliminary Plat of Country Acres, Benton County Parcel 120882000004000.**

Dear Mr. MacPherson,

The Washington Department of Fish & Wildlife (WDFW) has reviewed the SEPA documents and the Critical Areas Habitat Review for the preliminary plat of the 155-acre Benton County Parcel 120882000004000 into 14 lots. Thirteen of the lots, ranging in size from 5.15 – 10.22 acres, are located in the northern half of the parcel, and the fourteenth lot covers 71.35 acres and comprises the entire southern half. The SEPA clearly identifies that a road will be developed to access the thirteen lots and that the lots are for residential development. A such, we consider this a single action (i.e. the conversion and loss or WDFW Priority Habitat and Benton County Critical Areas) that should be evaluated under one SEPA. We offer the following comments and recommendations for your consideration.

The proposed preliminary plat is within the much larger Badger Canyon corridor / connected landscape and its importance for shrub steppe and dependent wildlife is not unique to the WDFW Priority Habitat and Species (PHS) database. This area has also been identified in other multi-stakeholder and state-wide analyses. Both the *Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion* (2012) and *The Arid Lands Initiative – Shared Priorities for Conservation at a Landscape Scale* (2012) highlight the importance of this and similar corridors / connected landscapes in the Columbia Basin and state-wide. These habitats are important in maintaining the ecological integrity and viability of native habitats and species statewide.

The subject parcel is part of a larger WDFW Priority Habitat (left, red cross) and within a Benton County Critical Area (right, red circle).



While this SEPA is only for a preliminary plat, we recommend that as an initial aid in habitat conservation strategies that encompass the entire 155-acre site, that the project review the *Management recommendations for Washington's priority habitats: managing shrub-steppe in developing landscapes* (WDFW 2011), and *Site-specific management: how to avoid and minimize impacts of development to shrub-steppe* (WDFW 2011). These documents provide useful information and solutions, such as clustering development into least sensitive areas and various incentives, to maintain the ecological integrity and connectivity of shrub-steppe habitat.

We agree with the recommendations on page 9 of the Critical Areas Habitat Review, but are concerned that lots 1 and 2, as drawn, impact the Intact Shrub Steppe area identified in the Critical Areas Habitat Review and may need to have the southern boundary redrawn. Additionally, we recommend that any future residential development be as near as possible to the proposed Homestead Road and that site preparation only include what is needed for the home footprint. Since the area will be irrigation water limited and that the future residential development is in a fire-prone landscape, we recommend that the following elements be included with the site permit so that all residences are familiar with creating a "fire-wise" community.

- Xeriscaping – use native vegetation (grasses and shrubs) for landscaping.
- Seasonal grazing
    - Spring green-up is best time (April-June)
        - Reduce vegetation (fuels) as an aid in fire protection
        - Promote native vegetation (mainly grasses)
- Limited fencing
    - Fences accumulate wind driven weeds (tumble weeds) and can become a significant fire hazard
    - Fences for livestock should be the minimum to contain/control animals. Temporary single strand electrical fence that is seasonally installed/removed is preferred.

Finally, we look forward to discussions with the developer regarding mitigation for the loss of PHS and Critical Area habitat functions and values and wildlife that are likely to occur on this parcel.

Thank you for the opportunity to provide these comments. Please contact me with any questions at Michael.ritter@dfw.wa.gov or at 509-543-3319.

Sincerely,

Michael Ritter
Habitat Biologist

References

Azerrad, J. M., K. A. Divens, M. F. Livingston, M. S. Teske, H. L. Ferguson, and J. L. Davis. 2011. Management recommendations for Washington's priority habitats: managing shrub-steppe in developing landscapes. Washington Department of Fish and Wildlife, Olympia, Washington. https://wdfw.wa.gov/publications/01333/

Azerrad, J. M., K. A. Divens, M. F. Livingston, M. S. Teske, H. L. Ferguson, and J. L. Davis. 2011. Management recommendations for Washington's priority habitats: managing shrub-steppe in developing landscapes. Washington Department of Fish and Wildlife, Olympia, Washington. https://wdfw.wa.gov/publications/01333/

Washington Wildlife Habitat Connectivity Working Group (WHCWG). 2012. Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion. Washington's Department of Fish and Wildlife, and Department of Transportation, Olympia, WA.
http://www.waconnected.org/wp content/themes/whcwg/docs/WHCWG_ColumbiaPlateauEcoregion_2012.pdf

Washington Wildlife Habitat Connectivity Working Group (WHCWG). 2012. Washington Connected Landscapes Project: Analysis of the Columbia Plateau Ecoregion. Washington's Department of Fish and Wildlife, and Department of Transportation, Olympia, WA.
https://waconnected.org/wpcontent/themes/whcwg/docs/WHCWG_ColumbiaPlateauEcoregion_ExecSummary_2012.pdf

Donna Hutchinson

From: Greg Wendt
Sent: Saturday, August 22, 2020 8:46 AM
To: Michelle Cooke; Donna Hutchinson
Subject: Fwd: [EXTERNAL] Comments on proposed Country Acres Developmnt

Sent from my iPhone

Begin forwarded message:

From: Rob Yarbrough <robyarbrough@msn.com>
Date: August 22, 2020 at 8:32:53 AM PDT
To: Greg Wendt <Greg.Wendt@co.benton.wa.us>
Subject: [EXTERNAL] Comments on proposed Country Acres Developmnt

I have two primary concerns

1. The adverse effect of 14 additional wells on the groundwater level. In the past several years several nearby homeowners had to drill deeper wells to get an adequate water supply. The development will only make matters worse.
2. Increased fire danger during development. The entire site is dried grass and sagebrush. After the developer punched in a dirt road into the area, we have noted increased ATV and dirt bike riders in the area. They constitute a nuisance and increased danger of fire. The developer should secure or at least post (and enforce) no trespassing signs during construction.

Washington State Department of Transportation

South Central Region
2809 Rudkin Road
Union Gap, WA 98903-1648
509-577-1600 / FAX: 509-577-1603
TTY: 1-800-833-6388
www.wsdot.wa.gov

August 27, 2020

Benton County Planning Department
P.O. Box 910
Prosser, WA 99350

Attn: Michelle Cooke, Principal Planner

Re: SUB 2020-007/EA 2020-023 – Country Acres Preliminary Plat
I-82 Exit 109 (Badger Rd) vicinity

We have reviewed the proposed subdivision and have the following comment.

The subject property is not adjacent to Interstate 82 (I-82); however, we anticipate that majority of vehicle trips generated by the development of the newly created parcels will primarily utilize the I-82 Exit 109 interchange. Consistent with other projects in the area, we recommend the county require the proponent to contribute towards the planned interchange improvements in proportion to their impact.

Thank you for the opportunity to review and comment on this proposal. If you have any questions regarding this letter, please contact Jacob Prilucik at (360) 480-0866.

Sincerely,

Paul Gonseth

Paul Gonseth, P.E.
Planning Engineer

PG:jjp

cc: SR 82, File #7
Kara Shute, Area 3 Maintenance Superintendent

PCM 1.21

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1250 West Alder Street • Union Gap, Washington 98903-0009 • (509) 575-2490

August 28, 2020

Greg Wendt
Benton County Planning
PO Box 910
Prosser, WA 99350

Re: EA 2020-023, SUB 2020-007

Dear Greg Wendt:

Thank you for the opportunity to comment during the optional determination of nonsignificance process for the Country Acres 14 lot subdivision, proposed by TTAP Construction, LLC. We have reviewed the documents and have the following comments.

WATER RESOURCES

In Washington State, prospective water users must obtain authorization from the Department of Ecology before diverting surface water or withdrawing ground water, with one exception. Ground water withdrawals of up to 5,000 gallons per day used for single or group domestic supply, industrial purposes, stock watering or for the irrigation of up to one-half acre of lawn and garden per project are exempt from the permitting process. Water use under the RCW 90.44.050 exemption establishes a water right that is subject to the same privileges, restrictions, laws and regulations as a water right permit or certificate obtained directly from Ecology.

If you have any questions or would like to respond to these Water Resources comments, please contact **Christopher Kossik** at 509-454-7872 or email at christopher.kossik@ecy.wa.gov .

Sincerely,

Gwen Clear

Gwen Clear
Environmental Review Coordinator
Central Regional Office
509-575-2012
crosepa@ecy.wa.gov

202004187

Donna Hutchinson

From: Segregations
Sent: Thursday, August 27, 2020 4:58 PM
To: Planning Department
Subject: RE: Agency Review for Country Acres Subdivision - SUB 2020-007

Donna,

This one looks good.

Judy

From: Planning Department <Planning.Department@co.benton.wa.us>
Sent: Thursday, August 13, 2020 9:22 AM
To: john.lyle@bentoncleanair.org; Benton Clean Air-Priddy <robin.priddy@bentoncleanair.org>; Benton Clean Air-Rodger <rob.rodger@bentoncleanair.org>; Benton Clean Air-Tyler Thompson <tyler.thompson@bentoncleanair.org>; Ben Franklin Transit K. McMullen <KmcMullen@bft.org>; Ben Franklin Transit - B. Windler <bwindler@bft.org>; Tina Archey <archeyt@bentonpud.org>; Benton-Franklin Dist. Health Dept. <rickd@bfhd.wa.gov>; Cascade Natural Gas (Walter.Nelson@cngc.com) <Walter.Nelson@cngc.com>; Dept. of Ecology - Lori White (lori.white@ecy.wa.gov) <lori.white@ecy.wa.gov>; Dept. of Transportation (scplanning@wsdot.wa.gov) <scplanning@wsdot.wa.gov>; Fire District #1-Billie <billie@bentonone.org>; Fire District #1-Staff <staff@bentonone.org>; Frontier Telephone <north.central.dbmc.control.desk@ncnetwork.net>; Cristina Woods <Cristina.Woods@co.benton.wa.us>; School District # 17-Ryan Jones <Ryan.Jones@ksd.org>; Southeast Communication Center (k.lettrick@bces.wa.gov) <k.lettrick@bces.wa.gov>; US Postal Service (ina.n.beutler@usps.gov) <ina.n.beutler@usps.gov>; US Postal Service - Address Management System <Tina.C.Fisher@usps.gov>; WA Dept of Health - Kelly Cooper - WA Dept of Health - Kelly Cooper (SEPA.reviewteam@doh.wa.gov) <SEPA.reviewteam@doh.wa.gov>; admin@mosquitocontrol.org; Clark Posey <Clark.Posey@co.benton.wa.us>; PARKS <PARKS@co.benton.wa.us>; Kathy Mann <Kathy.Mann@co.benton.wa.us>; Segregations <segregations@co.benton.wa.us>; Natural Resources Conservation Service (seth.hulett@or.nacdnet.net) <seth.hulett@or.nacdnet.net>; Natural Rsources Conservation Service (claire.tachella@wa.usda.gov) <claire.tachella@wa.usda.gov>; Benton PUD-Chad Brooks <Brooksc@bentonpud.org>; Benton PUD-Mike Irving <irvingm@bentonpud.org>; Benton PUD-Shanna Everson <eversons@bentonpud.org>; Benton PUD-tina Glines (glinest@bentonpud.org) <glinest@bentonpud.org>
Subject: Agency Review for Country Acres Subdivision - SUB 2020-007

Please see the attached file for Agency review and comment for the preliminary plat of Country Acres File No. SUB 2020-007. Please send your comments to this email address by August 27, 2020. Within the document is a form you can use for your comments. If you have any questions please let our office know.

Donna Hutchinson
Office Assistant IV
Benton County Planning Dept.
P.O. Box 910
Prosser WA 99350
509-786-5612

Please Note As of December 10th our office which was located at 1002 Dudley Ave, Prosser has closed. Our **two new locations** are below:
- **Prosser:** We are now located within the Road Department/Public Works Office on the first floor of the Benton County Courthouse at 620 Market St, Prosser WA 99350.
- **Kennewick:** The County has opened a new Public Services Office at 102206 E Wiser Parkway, Kennewick, which houses the Planning, Building and Road Departments.

PCM 1.23

August 29, 20120

To: Benton County Planning Department

From: Robert Gilbert

Subject: Comments on Agency File Number: A 2020-023/SUB 2020-007 (Country Acres)

Comments were solicited in the Notice of Application within 14 days from date of publication to the Benton County Planning Department. Date of publication of Notice of Application: August 19, 2020.

1. What is the end state and intended use for Tracts A, B, and C?
2. Type of road construction was not specified. Recommend asphalt consistent with adjacent developments. This facilitates a higher standard development and improves dust control.
3. A drainage easement was shown in the plat for Country Meadow Heights that originates through proposed Country Acres lots 3 and 4. It entered the lot of Robert and Joyce Gilbert and then traveled through the lot of Stephen and Lorena Hiller (See Attachment 1). What is the status and treatment of this drainage path?
4. Given limited water supplies in the area, how will dust control be managed during road, utility and home construction? Soils in the area are very mobile once disturbed.

Thank you for the opportunity to comment and ask questions.

Robert Gilbert

Robert Gilbert

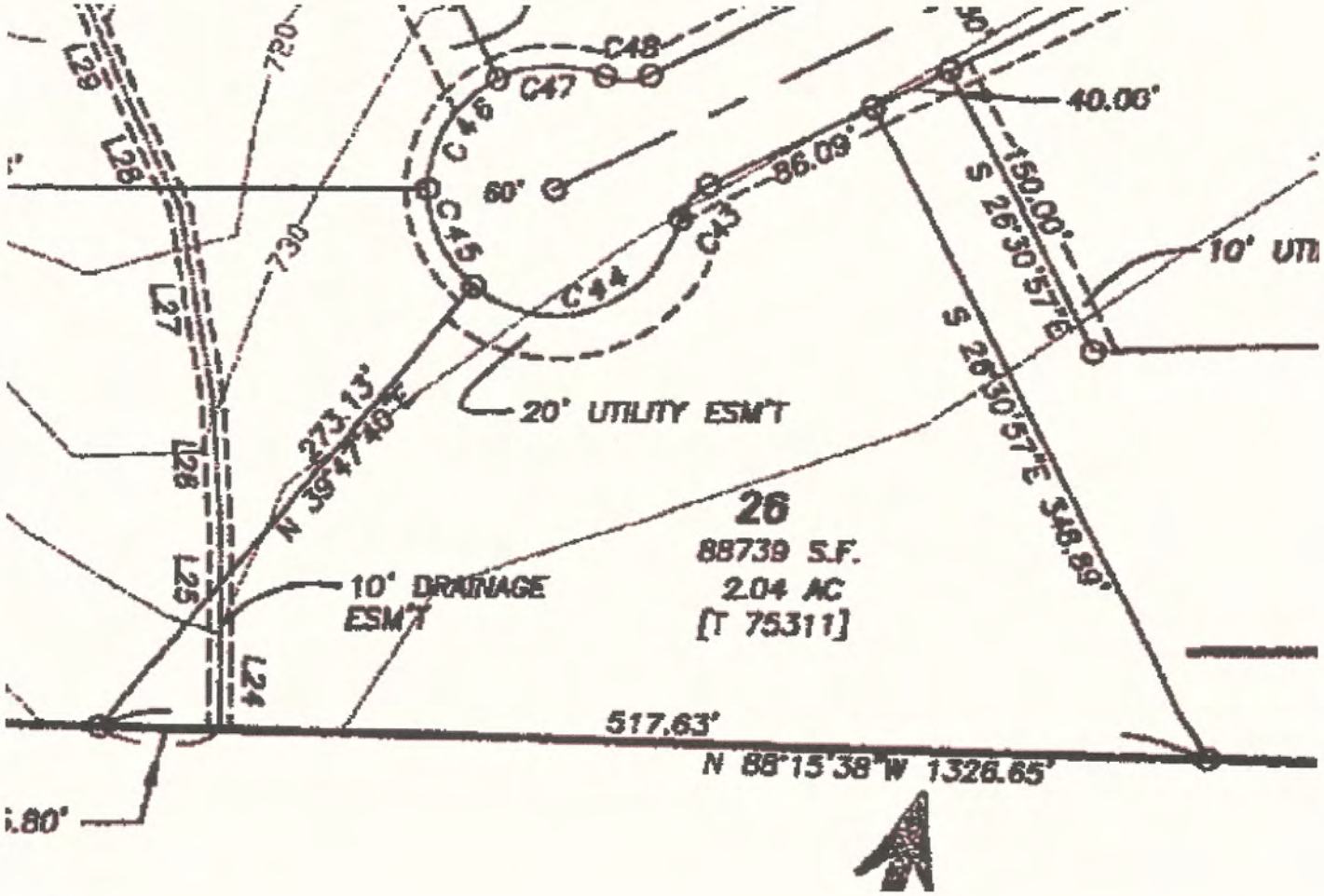
75311 Country Heights Dr.

Kennewick WA 99338

509-619-2458

Attachment: Part of County Meadow Heights Plat

ATTACHMENT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720'
730'
C48
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C46
C45
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60'
86.09'
40.00'
150.00'
S 26°30'57"E
S 26°30'57"E 348.89'
10' UTI
20' UTILITY ESM'T
N 39°47'48"E
273.13'
10' DRAINAGE ESM'T
26
88739 S.F.
2.04 AC
[T 75311]
517.63'
N 88°15'38"W 1326.65'
.80'

2015 South Ely Street
Kennewick, WA 99337
Customer Service 509-586-9111
Business 509-586-6012
FAX 509-586-7663
www.kid.org

September 1, 2020

Greg Wendt
Benton County Planning Department
P.O. Box 910
Prosser, WA 99350

Subject: Review Comments for EA 2020-023

Dear Mr. Wendt:

This letter provides Kennewick Irrigation District (KID) review comments for EA 2020-023 submitted by Tyler Tapani ("Applicant")[1] to divide 160.25 acres into 14 lots. The property is generally located at Homestead Rd, Kennewick, WA 99338 in the West Half of Section 20, Township 08 North, Range 28 East, W.M.

- Parcel: 1-0489-200-0003-000

The property identified on the proposed plat is partially located within the KID boundaries. The property within this plat is not classified as irrigable land. Accordingly, KID provides the following comments to be included as required condition of approval by the legislative authority under RCW 58.17.310(2):

1) *KID asserts rights to recapture artificially stored groundwater within KID Boundaries, particularly within the Pasco Gravel units' groundwater aquifer.* ***KID opposes the use of domestic wells drilled within the Badger Coulee shallow aquifer****. KID is confident that its position regarding the artificially stored groundwater in the perched aquifer is supported by the facts and the law. A RH2 Engineering report titled, "Badger Coulee Recapture of Artificially-stored Project Water Report", clearly states that the Pasco Gravels is artificially stored water which KID asserts rights to recapture.*

2) *The plat shall include the following irrigation easements consistent with KID requirements:*
    a. *On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or five (5) feet in width if adjacent to a utility easement, located along the road frontage or access easements of each lot. An irrigation easement may*

[1] Reference to the "Applicant" throughout this comment letter shall refer to the property owner and/or developer of the proposed plat.

be included within the 'sidewalk and utility' easement if one is proposed, denoting the easement as a "Sidewalk, Utility, and Irrigation Easement."

In addition, pursuant to RCW 58.17.310 (1), KID would like to inform the County of the following information regarding the proposed preliminary plat upon the structural integrity, including lateral support, of KID's facilities, other risk exposures, and the safety of the public and irrigation district, and related conditions of approval that KID deems to be necessary as a result:

3) *Conditions Related to Design, Grading and Construction:*
   a. *Pursuant to RCW 58.17.310 (1), the KID would like to inform Benton County that failure to mitigate the introduction of excessive water into the soils above the canal may result in a canal embankment breach or failure. Should an embankment breach occur near this development, there is potential for public safety to be at risk. The USBR holds title to the Main Canal Division III Canal below the proposed subdivision and any slope stability issues could potentially result in a canal embankment breach and subsequent loss of life and property*
   b. *There exists KID/United States Bureau of Reclamation (USBR) Right-of-Way (ROW) along the northern property line. The Applicant must show this ROW on the preliminary plat. A copy of the ROW maps are available upon request. The proximity of the proposed residential development to the KID ROW increases the risk of harm to KID facilities and exposes residents to risk of injury. In order to mitigate these risks, the KID requires the following:*
      i. *No permanent structures within the USBR ROW.*
      ii. *A note on the face of the plat that states: "No grading may be performed or any permanent structure built within KID right of way without an approved permit from the Kennewick Irrigation District and/or the United States Bureau of Reclamation, when applicable."*
      iii. *For each phase of the project, include a note on the face of the Final Plat stating as follows: "This property is located within the boundaries of the Kennewick Irrigation District and in the immediate vicinity of irrigation infrastructure. Please refer to www.kid.org for further information."*
      iv. *USBR Right-of-Way signage to be installed by the Applicant along the ROW that have been approved by the KID prior to final plat approval of each phase abutting the ROW.*
   c. *The Project must include the following design feature:*
      i. *Stormwater systems for the Project shall be designed to retain, at minimum, a 100-year storm event above the Main Canal Division III Canal and to minimize the introduction of water into the soils up-gradient of the canal.*
      ii. *KID review and approval of all stormwater plans are required prior to pre-plat approval.*

d. *Applicant must submit, for engineering review and approval by KID/USBR, engineering plans detailing construction/grading for each phase of the Project above to KID easements and ROWs.*

4) *For each phase of the Project, KID/USBR review and approval of grading and construction plans is required to allow KID to assure all reasonable measures to protect any easements and ROWs. Such review and approval will be coordinated as part of the County's review and Preliminary Plat approval process.*

5) *The Applicant shall include the potential failure of KID system components in its public offering statement for the plat pursuant to RCW 58.19.055(1)(r), which requires a public offering statement to include "[a] list of any physical hazards known to the developer which particularly affect the development or the immediate vicinity in which the developer is located and which are not readily ascertainable by the purchaser"*

6) *The Applicant shall post signs in appropriate areas with KID's easements and ROW's identifying KID's facilities (with locations and design approved by KID).*

7) *The Applicant shall provide fencing for the protection of KID facilities, which shall include but not be limited to adjacent KID/USBR ROW, with fencing locations and design approved by KID.*

8) *Please include the following irrigation title block:*
   a. *I HEREBY CERTIFY THAT THE PROPERTY DESCRIBED HEREON IS LOCATED WITHIN THE BOUNDARIES OF THE KENNEWICK IRRIGATION DISTRICT BUT THAT THIS PROPERTY IS NOT CLASSIFIED AS IRRIGABLE LAND AND IS NOT ENTITLED TO IRRIGATION WATER UNDER THE EXISTING OPERATING RULES AND REGULATIONS OF THIS DISTRICT. I FURTHER CERTIFY THAT THE IRRIGATION EASEMENTS SHOWN ON THIS BINDING SITE PLAN ARE ADEQUATE TO SERVE ALL LOTS SHOWN HEREON PER THE REQUIREMENT-S OF RCW 58.17.310.*

9) *All subdivisions of land are required to be approved by the KID Board of Directors during a KID Board Meeting. KID Board Meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of one week prior to a regularly scheduled Board Meeting in order to be considered at that meeting. This change can potentially extend the approval process by a minimum of one week.*

If you have any questions regarding these comments, please contact me at the address/phone number listed above.

Sincerely,

Blaine Broberg

Blaine Broberg, EIT
Staff Engineer

C: LB\correspondence\File: [Country Acres, 20-08-28]

Donna Hutchinson

From: Greg Wendt
Sent: Wednesday, September 9, 2020 3:06 PM
To: Michelle Cooke; Donna Hutchinson
Subject: FW: Country Acres Hydrology report

From: Cristina Woods <Cristina.Woods@co.benton.wa.us>
Sent: Wednesday, September 9, 2020 2:58 PM
To: Nathan Machiela <nathan@knutzenengineering.com>
Cc: Paul Knutzen <paul@knutzenengineering.com>; Greg Wendt <Greg.Wendt@co.benton.wa.us>; Douglas D'Hondt <Douglas.DHondt@co.benton.wa.us>
Subject: Country Acres Hydrology report

Good afternoon Nathan

We have reviewed the submitted hydrology report for County Acres and have a few concerns.

After a site visit there are some concerns that the current reconfiguring of the land may cause issues with drainage.

We would like to see the historic drainage denoted in the plans. The drainage easements on the neighboring plats also need to be shown.
One of the sheets in the construction plans should to be an overall view of the subdivision showing all drainage easements and how they tie into existing easements.
If rerouting of existing natural drainage easements is going to be required, we would also like to see plans for this.

Why is it assumed that all water will evaporate or infiltrate completely for this subdivision? What is that decision based on?

Thank you

Cristina I. Woods

Engineering Tech III
Benton County Public Works
102206 Wiser Parkway
Kennewick WA99338
509-786-5611

Donna Hutchinson

From: Ritter, Michael W (DFW) <Michael.Ritter@dfw.wa.gov>
Sent: Friday, September 11, 2020 10:34 AM
To: Donna Hutchinson
Cc: Nathan Machiela; Michelle Cooke; Greg Wendt; Tyler Tapani
Subject: RE: EA 2020-023/SUB 2020-007. Preliminary Plat of Country Acres, Benton County Parcel 120882000004000.

Thank you for the opportunity to provide additional comments. Our understanding is that the SEPA action is only for the preliminary plat and that mitigation will be required. However, we have not formalized that process yet with the developer and the county. We have provided our recommendations for lots 1 and 2 inorder to avoid the intact shrub steppe, building residences closer to the proposed Homestead road to reduce fragmentation of the landscape with minimal disturbance of existing habitat, and offered fire-wise considerations.

Michael Ritter

From: Donna Hutchinson <Donna.Hutchinson@co.benton.wa.us>
Sent: Friday, September 11, 2020 9:41 AM
To: Ritter, Michael W (DFW) <Michael.Ritter@dfw.wa.gov>
Cc: Nathan Machiela <nathan@knutzenengineering.com>; Michelle Cooke <Michelle.Cooke@co.benton.wa.us>; Greg Wendt <Greg.Wendt@co.benton.wa.us>; Tyler Tapani <tyler.tapani@gmail.com>
Subject: EA 2020-023/SUB 2020-007. Preliminary Plat of Country Acres, Benton County Parcel 120882000004000.

Michael,

We are needed to make a determination on the SEPA Checklist for this subdivision early next week and we're wondering if you have any revised comments based on your meeting with Tyler Tapani on Sept. 2nd. Could you please send us any revised comments or let us know that you have no further comments by Sept. 15th. Thank You.

Donna Hutchinson
Office Assistant IV
Benton County Planning Dept.
P.O. Box 910
Prosser WA 99350
509-786-5612

****Please Note**** As of December 10th our office which was located at 1002 Dudley Ave, Prosser has closed. Our **two new locations** are below:
- **Prosser:** We are now located within the Road Department/Public Works Office on the first floor of the Benton County Courthouse at 620 Market St, Prosser WA 99350.
- **Kennewick:** The County has opened a new Public Services Office at 102206 E Wiser Parkway, Kennewick, which houses the Planning, Building and Road Departments.

From: Donna Hutchinson
Sent: Friday, September 4, 2020 8:54 AM
To: Dept. of Fish and Wildlife, Michael W. Ritter <rittemwr@dfw.wa.gov>
Cc: Nathan Machiela <nathan@knutzenengineering.com>; Michelle Cooke <Michelle.Cooke@co.benton.wa.us>; Greg Wendt <Greg.Wendt@co.benton.wa.us>; Tyler Tapani <tyler.tapani@gmail.com>
Subject: Agency File Number: EA 2020-023/SUB 2020-007. Preliminary Plat of Country Acres, Benton County Parcel 120882000004000.

Dear Michael,

I have been asked by Greg Wendt to email you regarding your meeting with Tyler Tapani on the preliminary plat of Country Acres. We are wanting to know if based on that meeting you were planning on revising your comments regarding the Environmental Checklist for the subdivision. The comment period for the Notice of Application ended on September 2nd and we are in the process of reviewing all comments in order to make a determination on the SEPA Checklist. Please let our office know as soon as possible if you have any revised or further comments on this application so that we may move forward with our determination. Thank You.

Donna Hutchinson
Office Assistant IV
Benton County Planning Dept.
P.O. Box 910
Prosser WA 99350
509-786-5612

****Please Note**** As of December 10th our office which was located at 1002 Dudley Ave, Prosser has closed. Our **two new locations** are below:
- **Prosser:** We are now located within the Road Department/Public Works Office on the first floor of the Benton County Courthouse at 620 Market St, Prosser WA 99350.
- **Kennewick:** The County has opened a new Public Services Office at 102206 E Wiser Parkway, Kennewick, which houses the Planning, Building and Road Departments.

From: Tyler Tapani <tyler.tapani@gmail.com>
Sent: Monday, August 24, 2020 5:49 PM
To: Greg Wendt <Greg.Wendt@co.benton.wa.us>
Cc: Nathan Machiela <nathan@knutzenengineering.com>; Michelle Cooke <Michelle.Cooke@co.benton.wa.us>; Donna Hutchinson <Donna.Hutchinson@co.benton.wa.us>
Subject: Re: [EXTERNAL] Agency File Number: EA 2020-023/SUB 2020-007. Preliminary Plat of Country Acres, Benton County Parcel 120882000004000.

Thanks Greg. Mike and I are meeting onsite Wednesday morning at 9. Thank you Tyler

Sent from my iPhone

On Aug 24, 2020, at 5:19 PM, Greg Wendt <Greg.Wendt@co.benton.wa.us> wrote:

Tyler- will want to meet and discuss this with Mike Ritter.
Thanks!
Greg

Sent from my iPhone

Begin forwarded message:

> **From:** Greg Wendt <Greg.Wendt@co.benton.wa.us>
> **Date:** August 24, 2020 at 5:15:59 PM PDT
> **To:** Michelle Cooke <Michelle.Cooke@co.benton.wa.us>, Donna Hutchinson <Donna.Hutchinson@co.benton.wa.us>
> **Subject: Fwd: [EXTERNAL] Agency File Number: EA 2020-023/SUB 2020-007. Preliminary Plat of Country Acres, Benton County Parcel 120882000004000.**
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** "Ritter, Michael W (DFW)" <Michael.Ritter@dfw.wa.gov>
> > **Date:** August 24, 2020 at 4:50:42 PM PDT
> > **To:** Greg Wendt <Greg.Wendt@co.benton.wa.us>
> > **Subject: [EXTERNAL] Agency File Number: EA 2020-023/SUB 2020-007. Preliminary Plat of Country Acres, Benton County Parcel 120882000004000.**
> >
> >
> >
> > Greg,
> > Hope all is going well.
> >
> > WDFW comments are attached.
> >
> > Thank you,
> > Mike
> >
> > Michael Ritter
> > Fish and Wildlife Area Habitat Biologist
> > Statewide Technical Lead: Wind and Solar
> > Washington Department of Fish and Wildlife
> > 2620 N. Commercial Ave
> > Pasco, WA 99301
> > 509-543-3319 (office)
> > 509-380-3028 (cell)

<MWR-04-20 Homestead Road.pdf>