



KITTITAS COUNTY COMMUNITY DEVELOPMENT SERVICES

411 NORTH RUBY STREET SUITE #2 ■ ELLENSBURG, WA 98926
PHONE (509) 962-7506 ■ FAX (509) 962-7682

27

ITEM

BRIDGE REVIEW AND INSPECTION POLICY

FOR MORE INFORMATION VISIT THE CDS WEBSITE AT: WWW.CO.KITTITAS.WA.US/CDS

A building permit is required to install, modify, alter or repair bridges in Kittitas County. Additional permits or approvals may include:

- A floodplain development permit for bridges within floodways and floodplains.
- A shoreline permit for bridges within the jurisdiction of the Shoreline Management Program.
- Preliminary Site Analysis (PSA)
- A Hydraulic Project Approval (HPA) for bridges in or near state waters.
- A crossing agreement for bridges crossing canals or laterals.

Following is a list of Kittitas County review and inspection procedures. Other State or Federal agencies may have additional requirements.

Required Building Department review and inspections:

- Structural Engineering.
- Property setbacks and footings.
- Foundations and retaining walls.
- Girder and decking connections.
- Final inspection for armoring and finishing.
- Verification of all special inspections completed (if applicable).

Required Planning Department review and inspections (if applicable):

- Shoreline permit and PSA review prior to application of building permit.

Required Public Works review and inspections (if applicable):

- Review to ensure compliance with KCC 12.07 Bridges.
- Flood permit prior to application of building permit.
- Final inspection to verify the floodplain development permit requirements are met.
- Verification of right of way and access requirements (if applicable).

Required Fire Marshal review and inspections:

- Review to ensure compliance with KCC 20.02.050 Bridges, including bridge width and live load rating.
- Final inspection for compliance to KCC 20 Fire and Life Safety standards, including inspection of required signage indicating load capacity.

Required WDFW or Ecology review and inspections (if applicable):

- HPA required prior to issuance of building permit or floodplain development permit.
- A final approval letter from Washington Department of Fish and Wildlife and/or the Department of Ecology.

Only after the above review and inspections have been successfully completed and all conditions of the permit(s) have been met can the building inspector sign off the final on the permit card.

DATE: 9/8/16

BUILDING OFFICIAL: 



KITTTITAS COUNTY COMMUNITY DEVELOPMENT SERVICES

411 N. Ruby St., Suite 2, Ellensburg, WA 98926
CDS@CO.KITTTITAS.WA.US
Office (509) 962-7506
Fax (509) 962-7682

"Building Partnerships - Building Communities"

PSA-18-00355

PRELIMINARY SITE ANALYSIS

The PSA provides general information about a parcel and must be completed prior to applying for a building permit. Please provide a scaled Site Plan with this application if project specific. This review will be completed within 7-10 business days.

FEE: \$230.00 (\$130.00 Community Development Fee + \$100 Public Works Fee)

1. REQUESTER INFORMATION

Name: MITCH & JULIE WILLIAMS Phone Number: 509 899-0168
Mailing Address: P.O. BOX 1702 : ELLENSBURG, WA 98926
Email: MITCH@MFWILLIAMS.NET Send PSA by: [X] mail [] mail

2. ADDITIONAL CONTACT INFORMATION:

Name: JULIE WILLIAMS Phone Number: 509-899-1505
Mailing Address:
Email: JULIE@MFWILLIAMS.NET Send PSA by: [X] mail [] mail
Name: Phone Number:
Mailing Address:
Email: Send PSA by: [] Email [] Mail

3. PROPERTY ADDRESS: 7501 MANASTASH RD. ELLENSBURG, WA

4. MAP OR PARCEL NUMBER: 17-17-11040-0015 & 17-17-11040-0017

5. PROJECT DESCRIPTION (Site Plan required if proposing a project) : NEW BRIDGE OVER MANASTASH CREEK

6. ARE THERE OTHER BUILDINGS ON THE PROPERTY? [X] Yes [] No
IF YES, PLEASE LIST THE TYPE OF BUILDINGS: RESIDENCE & OUTBUILDINGS
7. DOES THE PROPOSED PROJECT INCLUDE PLUMBING? [] Yes [X] No
IS THERE AN EXISTING POTABLE WATER SOURCE? [X] Yes [] No
IF YES, PLEASE SELECT ONE OF THE FOLLOWING: [X] Individual Well [] Shared Well [] Public Water System

AUTHORIZATION

I hereby acknowledge that I have read this application and certify under penalty of perjury under the laws of the State of Washington that the above answers are true and complete to the best of my knowledge. I agree to comply with all current codes, laws, regulations and permit requirements related to this project. I hereby certify that I will pay all fees as required by law. All permit fees are non-refundable.

Signature of Applicant: [Handwritten Signature]

Date: JULY 14, 2018

Application Received By (CDS Staff Signature): [Handwritten Signature]

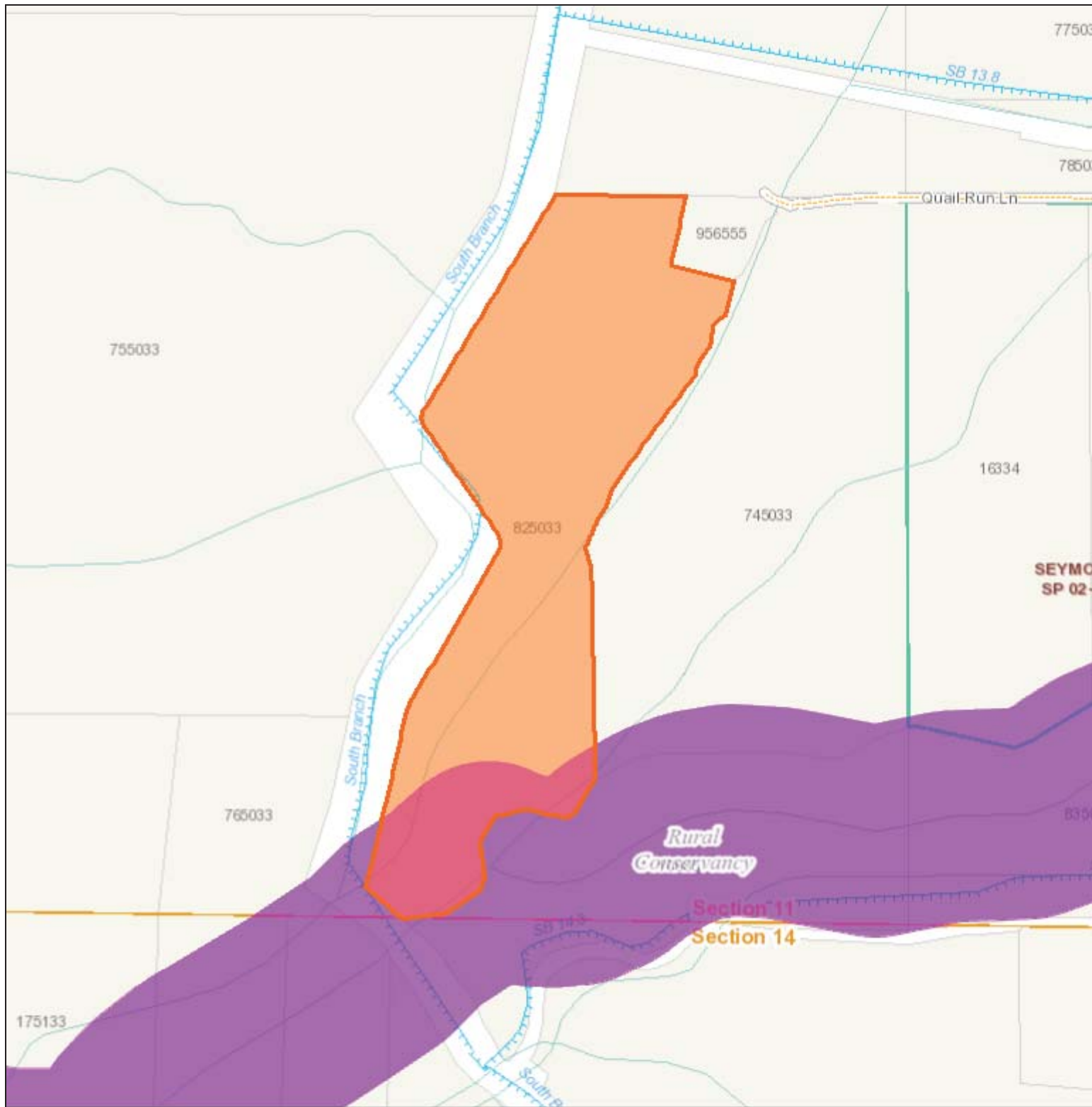
Date: 7-16-18

Receipt #: CD18-01699



NOTE: Kittitas County CDS cannot guarantee eligibility for development until a complete and accurate application is submitted. **PSA applications expire after 365 days from the application date**

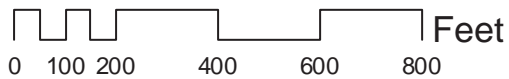
Shoreline map for PSA PSA-18-00355



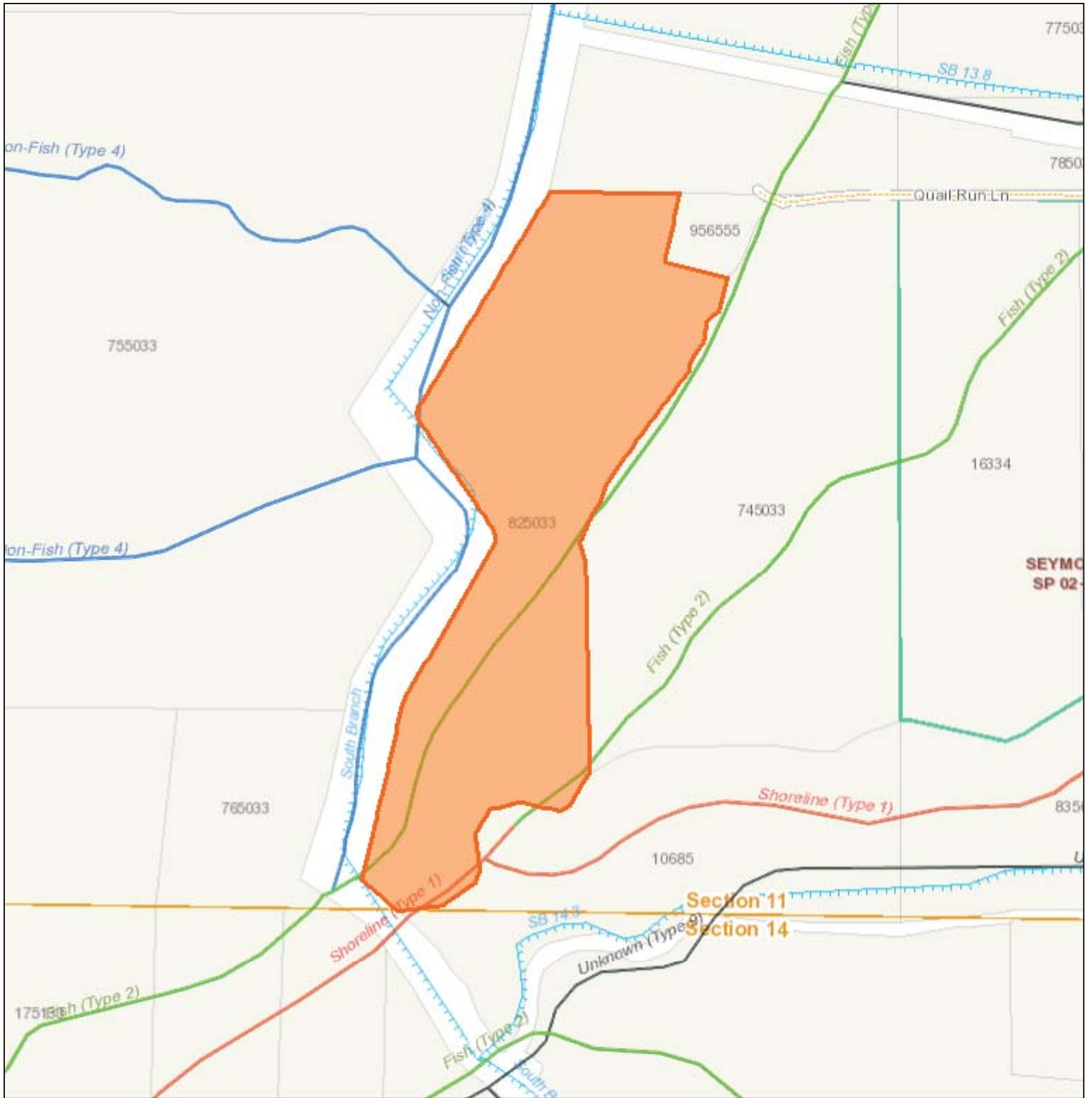
Date: 7/23/2018

1 inch = 376 feet
Relative Scale 1:4,514

Disclaimer:
Kittitas County makes every effort to produce and publish the most current and accurate information possible. No warranties, expressed or implied, are provided for the data, its use, or its interpretation. Kittitas County does not guarantee the accuracy of the material contained herein and is not responsible for any use, misuse or representations by others regarding this information or its derivatives.



Stream map for PSA PSA-18-00355



Date: 7/23/2018

1 inch = 376 feet
Relative Scale 1:4,514

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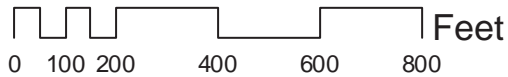
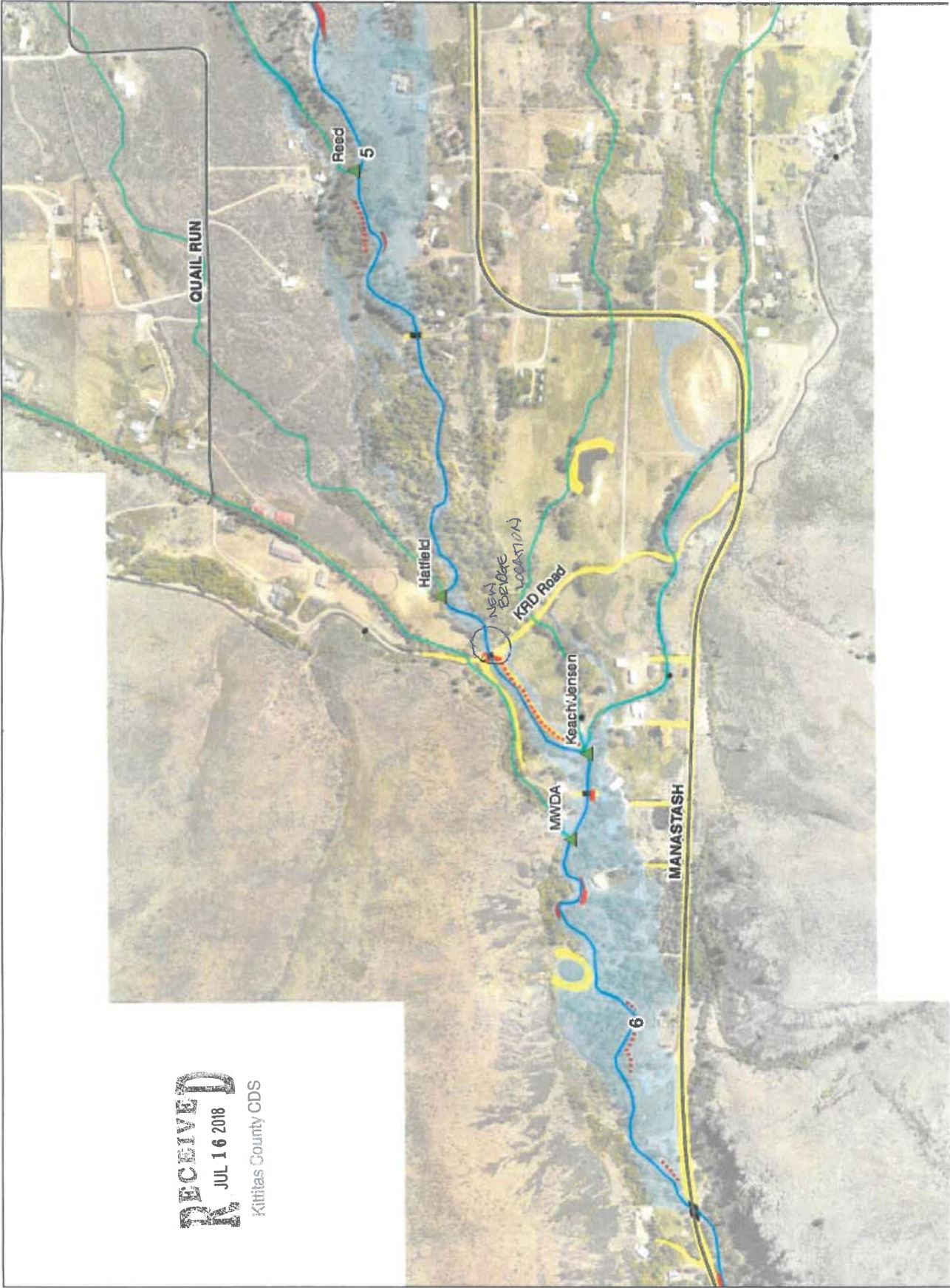
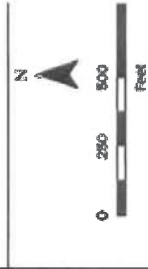


Figure 1-10
Flood and Erosion Overlay
Canyon and Fall
Expansion Reaches

- Legend**
- Diversions
 - County Roads
 - Irrigation
 - Manastash Creek
 - Berm
 - Revetment
 - Fill
 - Bridges
 - May 2011 Erosion
 - May 2011 Sediment
 - May 2011 Flooding
 - River Mile

Note:
 Layers including Berms, Revetment, Sediment, and Flood approximations based on aerial photos and topography and will be accurate or complete in all at River mile stationing included Manastash centerline.



RECEIVED
 JUL 16 2018
 Kittitas County CDS



Preliminary Site Analysis Report

PSA #: PSA-18-00355 **Map #:** 17-17-11040-0015
Issue Date: 7/25/2018 **Expiration Date:** 7/25/2019
Parcel #: 825033 **Site address:** 7501 MANASTASH RD
ELLENSBURG
Owner: WILLIAMS, MITCHELL F
PO BOX 1702
ELLENSBURG, WA, 98926-1929
MITCH@MFWILLIAMS.NET;
JULIE@MFWILLIAMS.NET, 899-
0168
Proposed use: NEW BRIDGE OVER MANASTASH CREEK

Land & Zoning

Lot size: 10.57 a
Land use: Rural Working
Zoning: Agriculture 20
Setback: Front: 25
Setback: Side: 5
Setback: Rear: 25
- 17.29.050 Yard requirements - Front yard. There shall be a minimum front yard of twenty-five (25) feet. 17.29.060 Yard requirements - Side yard. Side yard shall be a minimum of five (5) feet; on corner lots the side yard shall be a minimum of fifteen (15) feet on the side abutting the street. 17.29.070 Yard requirements - Rear yard. There shall be a rear yard with a minimum depth of twenty-five (25) feet to the main building.
In a platted development?: No

Urban Growth Area?: No
Airport overlay: No
BPA: No
Forest Practices Act: No
Mineral lands: No

Districts

Irrigation district: Yes
Irrigation district name: KRD

- GIS data indicates that your parcel is located within the Kittitas Reclamation District boundary. Please contact KRD at 509-925-6158 if you have any question as to whether or not your parcel is served by KRD irrigation water.

School district: Yes
School district name: Ellensburg School District

Critical Areas

Shoreline: Yes
Shoreline environment: Rural Conservancy

- Pursuant to KCC 17B.04.090.1, a Shorelines Substantial Development permit is required for this proposed project. Prior to the shorelines substantial development permit process, pursuant to KCC 15A.03.020, a pre-application conference is required. The pre-application conference form is available on the County Website. Please contact front desk staff to schedule the conference.

DNR water: Yes
DNR water type: Type 2, Type 1, Type 4

- There is a Type 2 and Type 4 stream on the subject property. The Type 2 stream has a 40-100 foot buffer landward from the Ordinary High Water Mark (OHWM). The Type 4 stream has a 15 foot setback landward from the OHWM. The streams and setback/ buffer must be shown on the site plan at the time of building permit submittal. If you are proposing to build within 100 feet of the OHWM of the stream you will need to contact CDS planning for more information.

Wetlands: No

Hazardous slope: None

Landslide area: No

Priority habitat species: No

Coal mine shaft: No

Channel Migration Zone: Yes

Channel Migration Zone Comments: Please be aware that your project sits within a channel migration zone where a stream channel has been known to migrate. No additional permits are required, but mitigation and appropriate design are recommended.

Design Criteria

Ground snow load: 62

- PLEASE SEE THE ATTACHED BRIDGE POLICY #27. DEPENDING ON LOCATION OF THE STRUCTURE ON THIS PARTICULAR SITE, BOTH EXPOSURES MAY BE APPLICABLE. PLEASE PROVIDE AN ACCURATE SITE MAP TO RECEIVE A DEFINITIVE ANSWER. UNTIL THEN, USE EXPOSURE FACTOR 1.2 FOR A CONSERVATIVE ANSWER.

Wind speed: 110 v ULT

Seismic zone: D1

Frost depth: 24"

Access

Existing permit number:	-
Access from:	Private Road
-	Bridge replacements will be permitted through the Building Department and will meet required driveway width of 16' wide.
Permit requirements:	-
Access must be constructed prior to :	N/A
Road Certification:	Not required
Existing Access:	Review of site plan shows existing access is being used and there is no change in use. No further access requirements at this time.

Flood

Floodway:	No
Floodplain:	Yes, 100-Year Floodplain
-	The activity proposed on this property is within the 100-year floodplain. All activities within the floodplain must be permitted through the floodplain development permit process. All construction, including structures that are exempt from a building permit, must follow the guidelines within KCC 14.08. Structures may be subject to mandatory flood insurance purchase requirements.

Environmental Health

Comments:

Codes and regulations are subject to change; project applications shall adhere to current codes and regulations at time of permit submittal. It is your responsibility to know the water resource eligibility for your parcel.

Go to taxsifter.co.kittitas.wa.us and search critical areas under the mapsifter tab or contact Ecology water resources.

NO PLUMBING IN PROPOSED STRUCTURE If there is no plumbing in the proposed project, then no septic or water permits are required through the Kittitas County Public Health Department at this time.

Water Requirements:

All new uses of domestic, commercial or industrial water require mitigation and metering. To determine which water bank(s) serve your parcel go to

<http://gis.co.kittitas.wa.us/compas/default.aspx> and search for your address or parcel number.

Please call the Kittitas County Public Health Departments' Water Resources program at (509)962-7515 to discuss mitigation options.

Proof of mitigation is required prior to applying for a building permit (as part of the Adequate Water Supply Determination process). For more information, please see <http://www.co.kittitas.wa.us/health/services/water-bankingbuilding-permits.aspx>.

WELL LOCATION (County code 13.20.040 and WAC 173-160-171) All individual or shared wells must be placed: 1. **a minimum of fifty feet from all roads and property lines.**

The meaning of road for this Chapter shall include but is not limited to, any county, state or federal right of ways and any private road. Driveways are not considered roads under this Chapter. 2. **a minimum of five feet from any existing building structure or building projection.**

Water wells shall not be located in garages, barns, storage buildings or dwellings. When locating a nonpublic water well adjacent to a building, the well location shall be measured from the building sewer and closest building projection.

Septic Requirements:

To permit an on-site sewage system with Kittitas County Public Health please follow the steps below: 1. Site Evaluation 2. OSS Design 3. Installation 4. Inspection To view a more detailed narrative of this process, please visit our on-site sewage page at:

<http://www.co.kittitas.wa.us/health/services/liquid-waste.aspx>

Location:

1. An OSDS shall be located on the same lot as the premises being served, or if an easement is obtained and recorded, on other property if approved by the health officer.
2. The minimum distance for the location of the various component parts of the OSDS is measured horizontally and shall comply with Table 1.

	Building Sewer	Septic Tank	Disposal area
Domestic Water Supply	50	50	100
Water Supply Pressure Lin	10	10	10
Surface Water	10	50	100
Building Property Lin	-	5	10
Open Ditches, Cuts, Hillside (downhill side)	-	-	15 plus height of cut of bank to a maximum of 100 feet
Trees ¹	50	50	100
Trees ²	10	10	10
Subsurface Interceptor Drain	10	10	50 down-slope, 10 up-slope

¹: Elm, locust, cottonwood, willow, and other trees with spreading choking roots. ²: Conifers and other trees with non-spreading and non-choking roots.

Code Enforcement

Existing Code Enforcement: No

Stormwater & Grading

Stormwater Plans required: No

Grading Permit comments: A grading permit is required for any filling or excavating prior to beginning work unless certain exemptions are met. Grading related to the construction of a private road is not exempt and requires a grading permit. Projects with quantities greater than 500 cubic yards require an engineered grading plan and a SEPA checklist. For more information visit: <http://www.co.kittitas.wa.us/public-works/development/grading-permit.aspx>

Fire

Wildland Urban Interface Code: IR 1

Fire district: Yes

Fire district name: Kittitas Valley Fire and Rescue (Fire District 2)

Required Defensible Space: 100' - with sprinklers

- SEE ATTACHED WUIC AND DEFENSIBLE SPACE REQUIREMENTS. AREA OF DEFENSIBLE SPACE MUST BE OUTLINED ON SITE PLAN SUBMITTED FOR BUILDING PERMIT. IF THIS STRUCTURE CONTAINS HABITABLE SPACE, ADDITIONAL DEFENSIBLE SPACE WILL BE REQUIRED. YOU MAY BE ABLE TO MITIGATE BELOW THE IR RATING BY APPLYING FOR THE WUIC APPLICATION. NON-HABITABLE SPACES MORE THAN 50 FEET FROM HABITABLE SPACES DO NOT REQUIRE SPRINKLERS. PLEASE TELL US IF ANY PORTION OF THIS SHOP WILL BE USED FOR HUMAN HABITATION OR IT WILL BE CLOSER THAN 50 FEET TO HABITABLE SPACES.

Site Plan

Well/Septic:	No
Setbacks? :	Yes
Scale?:	Yes
All Structures? :	N/A
Critical Areas?:	Yes
Access? :	Yes
WUI Defensible Space? :	No
Easements?:	No
Comments:	Final site plan must depict any applicable wells and septic systems to determine that setbacks and protection zones are observed, along with any applicable defensible space and easements.

*NOTE: Kittitas County CDS cannot guarantee eligibility for development until a complete and accurate application is submitted. Codes and regulations are subject to change; project applications shall adhere to current codes and regulations at time of permit submittal. **PSA applications expire after 365 days from the application date***

PROPOSE BRIDGE
MITCH & JULIE WILLIAMS
7501 MANASTASH RD.
ELLENSBURG, WA.

EXHIBIT

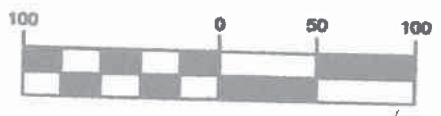
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17-17-11040-0007

TAX PCL.
17-17-11040-0015

TAX PCL.
17-17-11040-0017

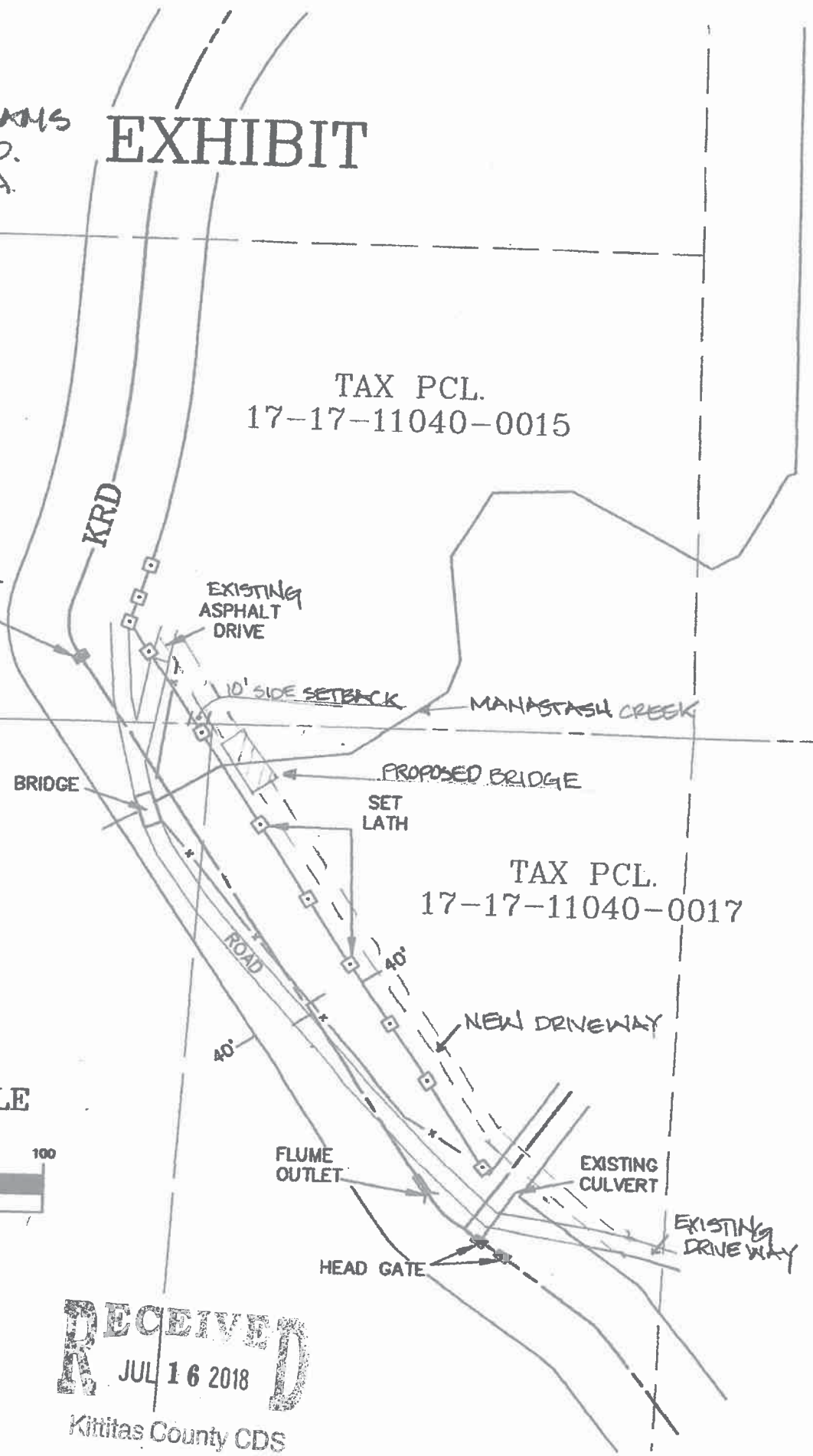


GRAPHIC SCALE



(IN FEET)
1 inch = 100 ft.

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Kittitas County CDS



Manastash Creek Bridge at Williams Property

Mitch and Julie Williams
 7501 Manastash Road (site address)
 P.O. Box 1702 (mailing address)
 Ellensburg, WA 98926
 509-899-0168 (cell)
 mitch@mfwilliams.net



Drawing List:

1. Project Location & Drawing List
2. Basis of Design
3. Site Preparation & Water Control
4. Final Project Site Plan
5. Section at Upstream Edge Bridge
6. Stream Centerline Profile
7. Steel Bridge Requirements
8. Pre-cast Concrete Footings
9. Pre-cast Concrete Backwalls

Certification and Statement (KCC title 12.08.020):

These construction plans for Manastash Creek Bridge at Williams Property were prepared by Paul Tappel, PE (Washington PE No. 23801) in accordance with the requirements of the Kittitas County Road Standards.

Paul Tappel, Professional Engineer, who has prepared these plans, by execution and/or seal hereof does hereby affirm responsibility to the County, as a beneficiary of said engineer's work, for any errors and omissions contained in these plans, and approval of these plans by the Department of Public Works shall not relieve the engineer who has prepared these plans of any such responsibility.

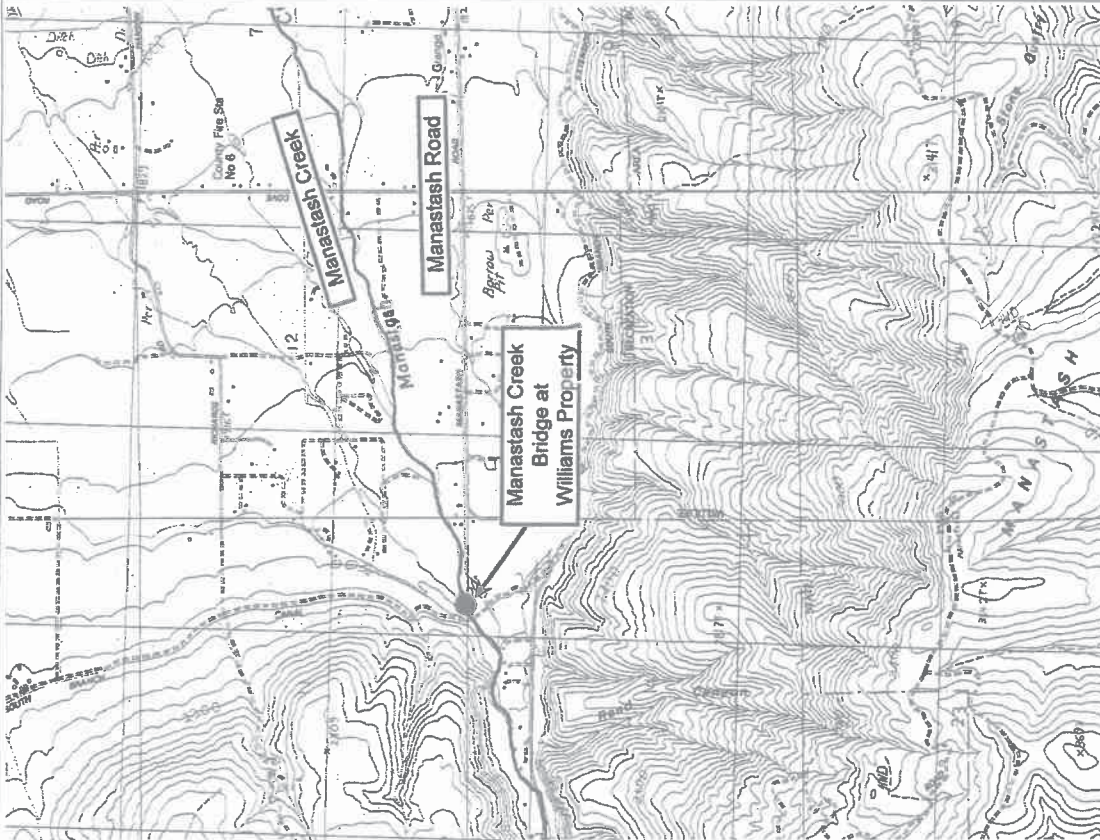
JULY 2018

MITCH AND JULIE WILLIAMS (OWNER) 7501 MANASTASH ROAD ELLENSBURG, WA 98926 509-899-0168	MANASTASH CREEK BRIDGE AT WILLIAMS PROPERTY
PAUL TAPPEL (ENGINEER) 3100 - 243rd STREET SW BRIER, WA 98036 425-482-6420	PROJECT LOCATION & DRAWING LIST DRAWING 1

These plans have been reviewed by Kittitas County Department of Public Works and have been accepted for complying with the requirements of Kittitas County Road Standards.

County Engineer _____ Date _____

PROJECT LOCATION
IS ABOUT 6 MILES
SOUTHWEST OF
ELLENSBURG, WA



MANASTASH CREEK BRIDGE LOCATION IN NW ¼ SECTION 14, T17N, R17E, KITTITAS COUNTY. ACCESS TO THE SITE VIA DRIVEWAY AT 7501 MANASTASH ROAD. PROPOSED BRIDGE WILL BE ABOUT 70' DOWNSTREAM FROM A WOOD BRIDGE OWNED BY KITTITAS RECLAMATION DISTRICT ALONG SOUTH BRANCH CANAL. MAP SCALE: 1" = 2,000', USGS QUAD MAP 1:24,000 SCALE.

Manastash Creek Bridge

Basis of Design

Project Objectives

Provide a functional and cost-effective bridge crossing of Manastash Creek for vehicle access to one existing residence owned by Mitch and Julie Williams. Meet all requirements for flood flow conveyance, Emergency Vehicle Access (EVA), Kittitas County Code, fish passage and fisheries resources, floodplain development, etc.

Site Survey

A total station survey instrument (Leica TC800) was used to survey 0.4 acres surrounding the proposed bridge location. A 240'-long reach of Manastash Creek was surveyed to determine creek profile, cross-section dimensions, and other variables.

Geotechnical

On-site soils were observed to be coarse mixtures of cobble, gravel & sand, which are a mixture of native alluvial materials and imported rock. Allowable bearing pressure for these types of soils are 3,000 pounds per square foot (International Building Code, Table 1804.2). Total bearing capacity under proposed bridge footing slabs will be almost 250,000 pounds, which will substantially exceed any possible combination of dead load (e.g. structures and road surfacing) and live load (e.g. vehicles and snow).

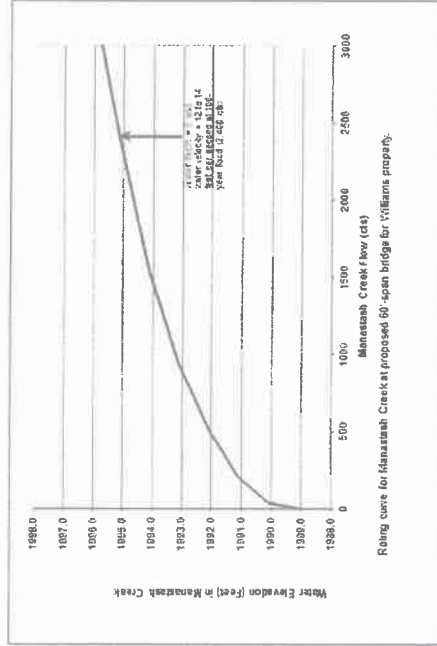
Hydrology and Hydraulic Design

The 100-year flood flow for Manastash Creek at the project site was estimated to be 2,600 cubic feet per second (cfs) using the USGS' most recent method for calculation of flood flows for ungaged streams and rivers in Washington (Mastin et al. 2017). It was assumed that 200 cfs would overtop from the mainstem creek upstream of the KRD canal. A peak flow rate = 2,400 cfs was used for bridge design.



A flow rating curve was developed to show the relationship between Manastash Creek flow and water surface elevation at the proposed bridge site (see below). Hydraulic conditions during a 100-year flood are estimated to be:

- Water depth 6' at the bridge location, with "standing waves" at least 1' high.
- Water velocity averaging 12 to 14 feet per second with high turbulence and whitewater.
- Substantial transport of large wood and bedload, turbid water conditions.



Bridge Structure

Superstructure to be a pre-fabricated modular weathering steel bridge 60'-span x 14'-wide deck for single-lane travel. Reinforced pre-cast concrete (WSDOT Class 4000) footings and backwalls to support each end of bridge. All bridge design to support HL-93 live load with deflection < L/300. HL-93 is a nominal (conceptual) 57-ton truck about 56'-long. The bridge structure will easily support fire apparatus as specified in KCC 20.02.050, for which the live load requirement is 75,000 pounds (37½ tons).

Structure Protection from Hydraulic Forces

Tractive force calculations and hydraulic conditions during the estimated 100-year flood were combined with the engineer's experience with design of stable stream channels, to select armor rocks 36" to 48"-size to wrap around concrete footings. Rock slopes will extend from above footing slabs to about 2' below the creek's lowest channel elevation (thalweg) to minimize the chances for footing scour and/or undermining.

Channel Characteristics, Open Area for Floods, etc.

Stream simulation design considerations (for culverts) were adapted to the proposed bridge location. Measured Ordinary High Water (analogous to Channel Bed Width or Bankfull Width) was 42', which would suggest a drainage structure with span at least 52'-wide for stream simulation (per WDFW method). The selected 60'-span bridge will allow all construction work to be completed outside the existing low-flow channel, which will remain undisturbed.

The 100-year flood flow was routed under the proposed bridge using Manning's equation, and the bridge was designed for 3' freeboard (minimum) between the bottom of bridge beams and the flood water level. Total open area under the bridge will be 2.8 times an existing KRD bridge immediately upstream. The proposed bridge will have essentially zero effects on the 100-year flood flow, transport of large wood, bedload passage, fish passage, and other aquatic resource considerations.

Site Preparation and Water Control

Clearing within the wooded riparian area will be limited to an area about 5' outside the perimeter of excavation and fill for bridge and driveway construction. Four cottonwood trees 12" to 18"-trunk diameter will be placed over Manastash Creek downstream of the bridge, for in-stream large wood habitat similar to natural windthrow.

All excavation and fill work will be separated from flowing water. Trashpump(s) will be used to remove turbid water from excavated trenches (for rock slope placement), to prevent turbid water from splashing into Manastash Creek.

JULY 2018

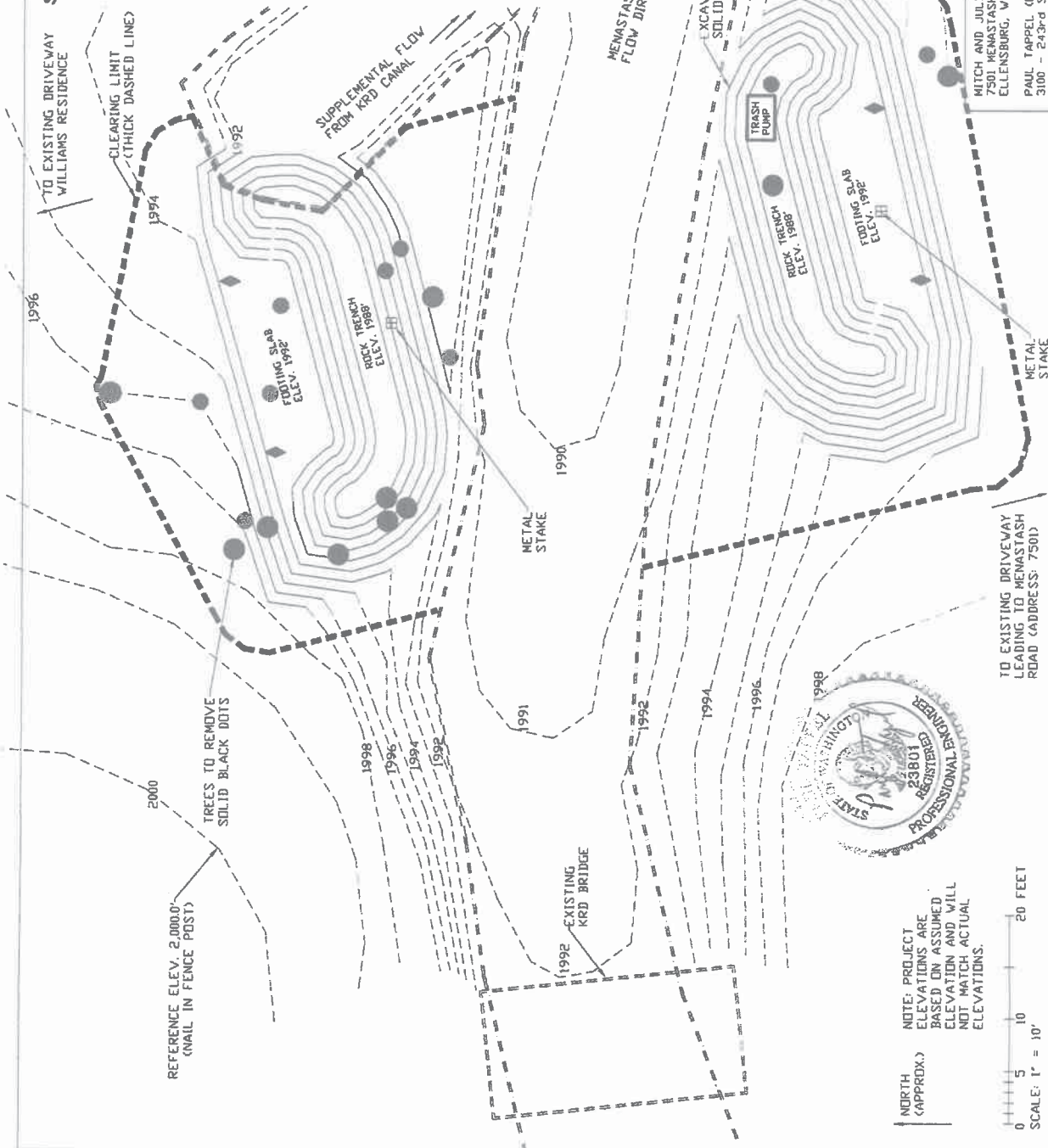
MITCH AND JULIE WILLIAMS (OWNER)
7501 MANASTASH ROAD
ELLENSBURG, WA 98926 509-899-0168

PAUL TAPPEL (ENGINEER)
3100 - 243rd STREET SW
BRIER, WA 98036 425-482-6420

MANASTASH CREEK BRIDGE AT
WILLIAMS PROPERTY
BASIS OF DESIGN
DRAWING 2

Site Preparation & Water Control Notes:

1. Clearing shall be completed prior to other work. All plants within clearing limits to be entirely removed, including 19 cottonwood trees 8" to 24" trunk diameter (pull out stumps). Four cottonwood trees 12" to 18" trunk diameters to be removed in largest pieces practical, then carried downstream of new bridge location (within 80') to be cast across creek to resemble windthrow. All other clearing debris to be disposed on-site within 400' of bridge location, at an upland spot selected by landowner. Pile debris and smash down.
2. Engineer will set stakes at four outside footing corners for new bridge, shown as black diamonds this drawing, plus offset stakes to retain these locations during excavation.
3. There are no buried utilities at the project site.
4. Manastash Creek to remain within existing channel during entire bridge construction project (i.e. no creek bypass, no fish salvage needed). Approximate excavation contours shown this drawing would maintain separation of earthwork from flowing water. However, if minor site differences result in extension of excavation into shallow water areas, Contractor to place sandbag dam along creek bank to isolate excavation from flowing water.
5. Excavation to proceed from both sides of creek for placement of large rocks and footings. Separately stockpile cobble, gravel & sand materials from surface excavations, for streambed and bank backfill over rock slopes and underneath bridge (engineer will advise).
6. Engineer to lay out trenches for large rock placements, and will survey bottom elevations. Contractor to place several rows of large rocks (place largest rocks in bottom rows) to get above water level, then finish excavations for footing subgrades. Place pre-cast concrete footings, then backfill behind footings for equipment pads to finish placement of large rock slopes (see other drawings). Contractor to supply and operate gas-powered trashpump(s) to remove muddy water from rock trenches, with discharge to flat ground (within 100') for infiltration into ground. Large rocks may be placed in shallow standing water, with trashpump(s) operated to prevent muddy water from splashing into creek.
- 7.



NOTE: PROJECT ELEVATIONS ARE BASED ON ASSUMED ELEVATION AND WILL NOT MATCH ACTUAL ELEVATIONS.

SCALE: 1" = 10'

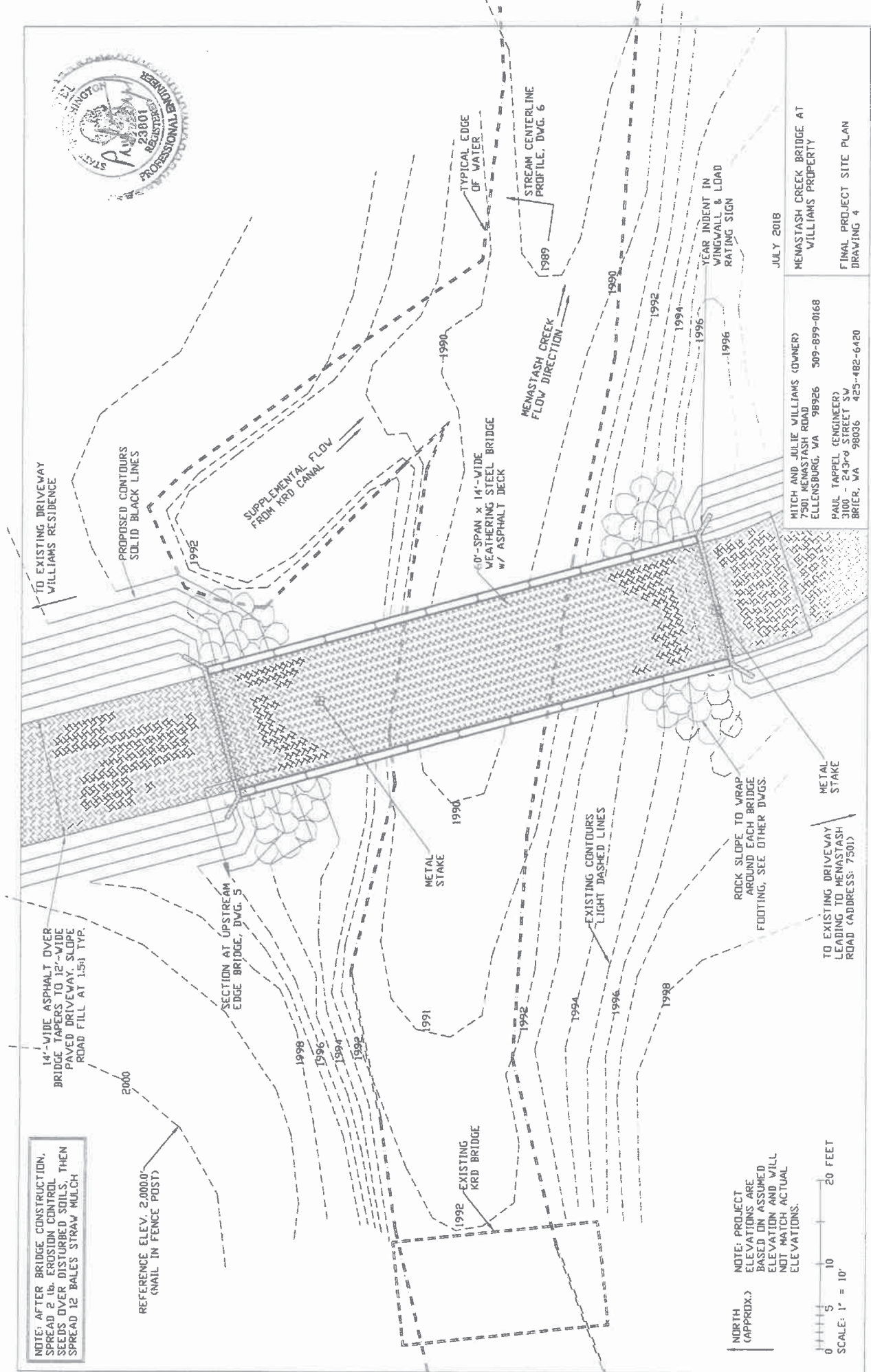
JULY 2018

MENASTASH CREEK BRIDGE AT WILLIAMS PROPERTY

MITCH AND JULIE WILLIAMS (OWNER)
7501 MENASTASH ROAD
ELLENSBURG, WA 98926 509-899-0168

PAUL TAPPEL (ENGINEER)
3100 - 243RD STREET SW
BRIER, WA 98036 425-482-6420

SITE PREPARATION & WATER CONTROL DRAWING 3



NOTE: AFTER BRIDGE CONSTRUCTION, SPREAD 2 LB. EROSION CONTROL SEEDS OVER DISTURBED SOILS. THEN SPREAD 12 BALES STRAW MULCH

14'-WIDE ASPHALT OVER BRIDGE TAPERS TO 12'-WIDE PAVED DRIVEWAY. SLOPE ROAD FILL AT 1.5:1 TYP.

REFERENCE ELEV. 2,000.0' (NAIL IN FENCE POST)

NORTH (APPRX.)

NOTE: PROJECT ELEVATIONS ARE BASED ON ASSUMED ELEVATION AND WILL NOT MATCH ACTUAL ELEVATIONS.



JULY 2018
MEMASTASH CREEK BRIDGE AT WILLIAMS PROPERTY
FINAL PROJECT SITE PLAN DRAWING 4

MITCH AND JULIE WILLIAMS (OWNER)
7501 MEMASTASH ROAD
ELLENSBURG, WA 98926 509-899-0168
PAUL TAPPEL (ENGINEER)
300 - 2439D STREET SW
BRIEF, WA 98006 425-482-6420

TO EXISTING DRIVEWAY WILLIAMS RESIDENCE

PROPOSED CONTOURS SOLID BLACK LINES

SUPPLEMENTAL FLOW FROM KR D CANAL

0'-SPAN x 14'-WIDE WEATHERING STEEL BRIDGE W/ ASPHALT DECK

MEMASTASH CREEK FLOW DIRECTION

STREAM CENTERLINE PROFILE, DWG. 6

YEAR INDENT IN WINGWALL & LOAD RATING SIGN

EXISTING CONTOURS LIGHT DASHED LINES

ROCK SLOPE TO WRAP AROUND EACH BRIDGE FOOTING, SEE OTHER DWGS.

TO EXISTING DRIVEWAY LEADING TO MEMASTASH ROAD (ADDRESS: 7501)

METAL STAKE



NOTE:
 1. NORTH BRIDGE FOOTINGS SHOWN THIS VIEW. SOUTH END WOULD BE 0.5' LOWER ELEVATION.

SECTION AT UPSTREAM
 EDGE BRIDGE (DRAWING 5)

60'-SPAN x 14'-WIDE
 STEEL BEAM BRIDGE

WOOD GUARDRAIL
 & BENCH BOTH SIDES

PRE-CAST CONCRETE
 BACKWALL, WINGWALL,
 AND FOOTINGS

ASPHALT, CROWN
 AT CENTERLINE

ELEV.
 2001.6'

1.5:1 FILL SLOPES
 TO GROUND

100-YEAR FLOOD
 2,400 cfs

100-YEAR FLOOD
 2,400 cfs

MEMASTASH CREEK
 FLOW DIRECTION

ROCK SLOPE WRAPS AROUND
 WATERWARD SIDE OF FOOTINGS.
 SEE OTHER DRAWINGS.

EXISTING STREAM BOTTOM

EXISTING STREAM BOTTOM

STREAM CENTERLINE PROFILE

30'-WIDE +/- CENTER OF
 CHANNEL REMAINS AS-IS

EXISTING STREAM BOTTOM



SCALE: 1" = 5'

JULY 2018

MITCH AND JULIE WILLIAMS (OWNER)
 7501 MENASTASH ROAD
 ELLENSBURG, WA 98026 509-899-0168

MENASTASH CREEK BRIDGE AT
 WILLIAMS PROPERTY

PAUL TAPPEL (ENGINEER)
 3100 243RD STREET SW
 BRIER, WA 98036 425-482-6420

STREAM CENTERLINE PROFILE
 DRAWING 6



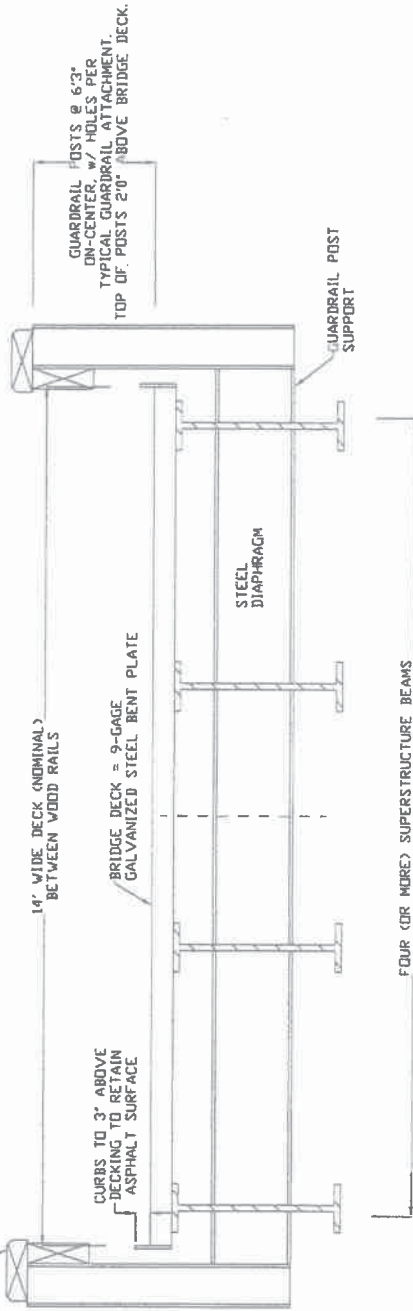
STEEL BRIDGE REQUIREMENTS:

1. 60'-SPAN (BEAM END-TO-END) BY 14'-WIDE (DECK WIDTH) MODULAR WEATHERING STEEL BEAM BRIDGE TO BE PRE-FABRICATED AND SHIPPED TO THE PROJECT SITE (6 MILES SOUTHWEST OF ELLENSBURG, WASHINGTON, ACCESSIBLE BY ROAD).
2. ALL ON-SITE WORK INCLUDING LIFTING THE BRIDGE OFF TRANSPORT TRUCK(S), PLACING BRIDGE ON BEARING PLATES, WELDING BEAMS TO PLATES, BOLT INSTALLATION ALONG BRIDGE CENTERLINE, AT BEARING PLATES, AND RAIL ASSEMBLY WILL BE ACCOMPLISHED BY ON-SITE CONTRACTOR.
3. WOOD RAIL MATERIALS (4x12's) AND RAIL HARDWARE TO BE SUPPLIED BY ON-SITE CONTRACTOR, AND ALL RAIL ASSEMBLY BY CONTRACTOR. METAL GUARDRAILS NOT NEEDED FROM BRIDGE SUPPLIER.
4. CONTRACT SPECIFICATION 6-03 INCLUDES DETAILED REQUIREMENTS FOR BRIDGE DESIGN AND SUPPLY. THIS DRAWING SUPPLEMENTS THIS SPECIFICATION.
5. BRIDGE SUPPLIER TO PROVIDE BRIDGE SUPERSTRUCTURE PRE-FABRICATED IN HALVES WITH DECK MATERIAL ATTACHED, BEARING PLATES, ELASTOMERIC (OR SIMILAR) BEARING PADS, RAIL POSTS, AND ALL ASSEMBLY HARDWARE (NUTS AND BOLTS).

LOADS AND DEFLECTION:

1. LIVE LOAD = HL-93 (114,000 POUNDS = 57 TONS OVER 55.5'-LONG VEHICLE AXLES).
2. INCLUDE ASPHALT DECK 3"-THICK AT CURBS (TO TOP OF CURBS) AND CROWNED 3" TO BRIDGE CENTERLINE FOR DEAD LOAD.
3. LIVE LOAD DEFLECTION < L/300.

WOOD RAILS & BENCHES, SEE DETAILS IN SPECIFICATION. TOP BENCH TO OVERHANG INSIDE EDGE RAIL BY 1/2".



FOUR (OR MORE) SUPERSTRUCTURE BEAMS FOR NON-FRACTURE CRITICAL DESIGN

STEEL BRIDGE SCHEMATIC CROSS-SECTION

THIS CROSS-SECTION SHOWS FOUR 423x BEAMS @ 4'-3" ON-CENTER; THESE BRIDGE ELEMENTS MAY VARY WITH FINAL DESIGN.



JULY 2018

MINASTASH CREEK BRIDGE AT WILLIAMS' PROPERTY

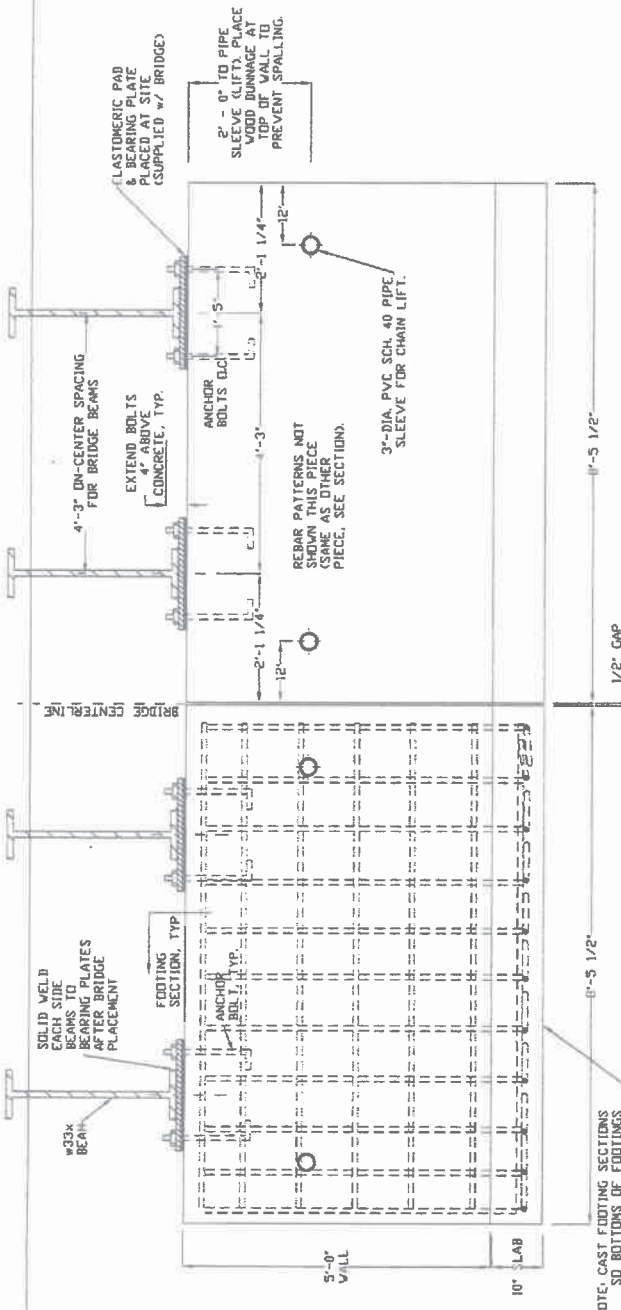
MITCH AND JULIE WILLIAMS (OWNER)
7501 MENASTASH ROAD
ELLENSBURG, WA 98926 509-899-0168

PAUL TAPPEL (ENGINEER)
3100 - 243rd STREET SW
BRIER, WA 98036 425-482-6420

STEEL BRIDGE REQUIREMENTS DRAWING 7



NOTE: THIS DRAWING BASED ON ASSUMED BRIDGE BEAM SPACING AND BEARING PLATE SIZE. THE ENGINEER WILL REVIEW BRIDGE DESIGN SHOP DRAWINGS, AND WILL MAKE CHANGES TO PRE-CAST CONCRETE DRAWINGS (INCLUDING BACKWALLS), DEPENDING ON FINAL BRIDGE SUPERSTRUCTURE DESIGN.



NOTE: CAST FOOTING SECTIONS SD BOTTOMS OF FOOTINGS ARE FLAT (i.e. DO NOT CAST ON SAND SURFACE).

FOOTING FRONT VIEW

NOTE: FOUR PRE-CAST CONCRETE FOOTING PIECES REQUIRED (TWO SHOWN THIS VIEW).

PRE-CAST CONCRETE NOTES & SPECIFICATIONS:
 1. PRE-CAST CONCRETE SUPPLIER MAY DESIGN AND INSTALL ALTERNATE LIFT SYSTEM FOR FOOTING PIECES INSTEAD OF 3\"/>

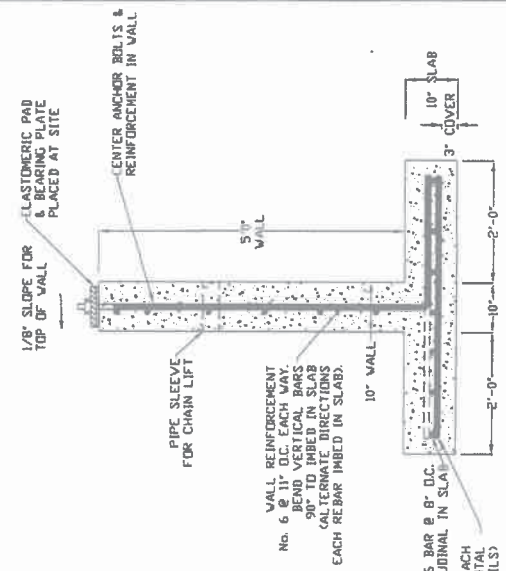
2. CONCRETE - CLASS 4000, WSDOT SPEC. 6-02. REINFORCEMENT - GRADE 60 REFORMED STEEL BARS, WSDOT SPEC. 9-07. THESE CONCRETE REQUIREMENTS APPLY TO FOOTINGS AND BACKWALLS.

3. ANCHOR BOLTS - 1/2\"/>

4. PRE-CAST CONCRETE SUPPLIER TO SUPPLY FOUR PRE-CAST CONCRETE FOOTING PIECES ON-SITE. #7 ANCHOR BEARING PLATES AND ELASTOMERIC PADS. PRE-CAST CONCRETE SUPPLIER ALSO TO SUPPLY FOUR BACKWALL PIECES ON-SITE.

5. ON-SITE GENERAL CONTRACTOR TO LIFT PRE-CAST SUBGRADE. PIECES OF ROCK AND PLACE ON PEA GRAVEL PLATE. PRE-CAST CONCRETE BACKWALLS REST ON TOP OF PEA GRAVEL BEDDING.

6. FOOTING PIECES = 11,500 L.B. EACH (APPROX.).



FOOTING SECTION, TYP.

NOTE: TIGHTEN NUTS TO BEARING PLATES AFTER BRIDGE PLACEMENT

BEARING PLATE FOR SOUTH END BRIDGE (4 REQUIRED)

BEARING PLATE FOR NORTH END BRIDGE (4 REQUIRED)

NOTE: TIGHTEN NUTS TO BEARING PLATES AFTER BRIDGE PLACEMENT

BEARING PLATE FOR SOUTH END BRIDGE (4 REQUIRED)

BEARING PLATE FOR NORTH END BRIDGE (4 REQUIRED)

NOTE: TIGHTEN NUTS TO BEARING PLATES AFTER BRIDGE PLACEMENT



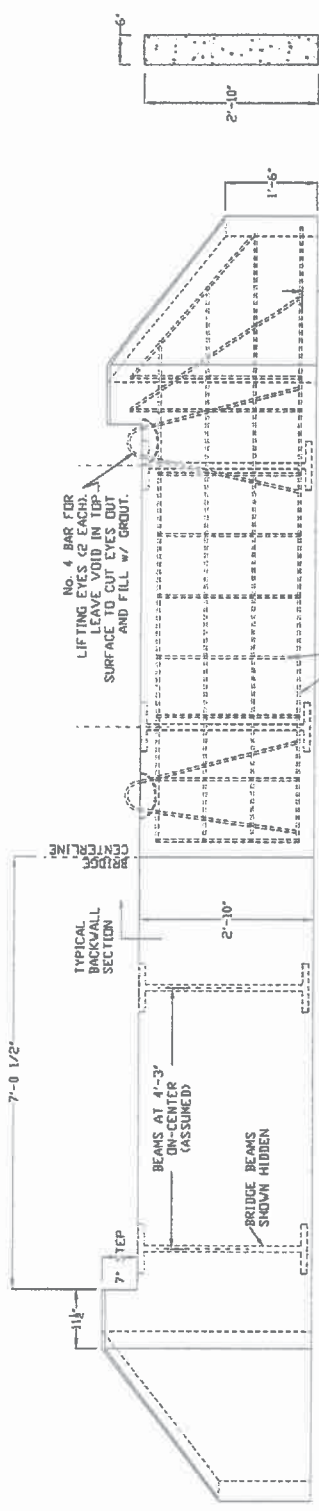
JULY 2018

MANASTASH CREEK BRIDGE AT WILLIAMS PROPERTY

PRE-CAST CONCRETE FOOTINGS DRAWING 8

MITCH AND JULIE WILLIAMS (OWNER)
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 ELLENSBURG, VA 98926 509-899-0168

PAUL TAPPEL (ENGINEER)
 3100 - 243rd STREET SW
 BRIER, VA 98036 425-482-6420

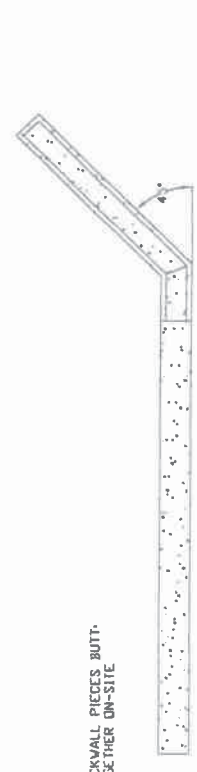


TYPICAL BACKWALL SECTION

No. 4 BAR FOR LIFTING EYES (2 EACH). LEAVE VOID IN TOP SURFACE TO CUT EYES OUT AND FILL W/ GROUT.

No. 4 REBAR @ 9\"/>

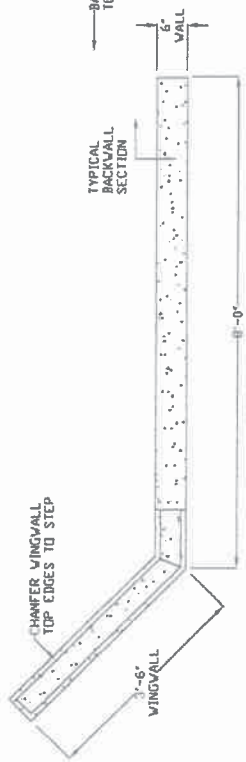
BACKWALL ELEVATION VIEW (LOOKING LANDWARD)



BACKWALL PIECES BUTT TOGETHER ON-SITE

TYPICAL BACKWALL SECTION

BACKWALL TOP VIEW



CHAMFER WINGWALL TOP EDGES TO STEP

WINGWALL

ATTACH POST TO BACKWALL W/ THREE GALV. STEEL BOLTS. 1/2\"/>

NOTE: LOAD RATING SIGN WOULD FACE OPPOSITE DIRECTION FROM DATE (TOWARDS VEHICLE INGRESS)

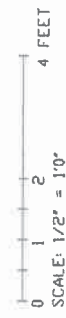
BRIDGE LOAD RATING SIGN 57 TONS

HL-93

PRESSURE-TREATED 4x4 WOOD POST

2018

SCHEMATIC WINGWALL ELEVATION FOR SOUTHEAST BRIDGE CORNER TO SHOW HOW WINGWALL IS ATTACHED TO BACKWALL. WINGWALL SURFACE & LOAD RATING SIGN INGRESS RIGHT SHOULDER



PRE-CAST CONCRETE BACKWALL NOTES:

1. TWO PAIRS REQ'D AS SHOWN.
2. CHAMFER TOP AND END EDGES 1\"/>



JULY 2018

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MANASTASH CREEK BRIDGE AT
 WILLIAMS PROPERTY
 PRE-CAST CONCRETE BACKWALLS
 DRAWING 9



KITTITAS COUNTY FIRE MARSHAL'S OFFICE

411 N. Ruby St., Suite 2, Ellensburg, WA 98926

Office (509) 962-7000 Fax (509) 962-7682

WILDLAND URBAN INTERFACE (WUI) PLAN REVIEW SPRINKLERS REQUIRED – MITIGATION ALLOWED

PERMIT #:		PLANS EXAMINER:	
OWNER:		CONTRACTOR:	
SITE ADDRESS:		TAX PARCEL NO:	
STRUCTURE TYPE:		ROOF CLASS:	Choose an item.
CONSTRUCTION CLASS:	IR1	FIRE SPRINKLERS:	YES
DEFENSIBLE SPACE		SQ FOOTAGE:	
DISTANCE REQ'D:	100' Or To Property Line		

The following codes shall govern all aspects of construction: 2015 International Building Code, 2015 International Residential Code, 2015 International Fire Code, 2015 International Mechanical Code, 2015 International Fuel Gas Code, 2015 Uniform Plumbing Code, 2015 Washington State Energy Code, 2015 National Fuel Gas Code NFPA 54, 2014 Liquefied Petroleum Gas Code NFPA 58, 2015 International Wildland Urban Interface Code. **THE ISSUANCE OR GRANTING OF A PERMIT SHALL NOT BE CONSTRUED TO BE A PERMIT FOR, OR AN APPROVAL OF, ANY VIOLATION OF THE PROVISIONS OF ANY APPLICABLE CODE OR ORDINANCE OF THE JURISDICTION, NOR SHALL IT BE IMPLIED ACCEPTANCE OF ANY CHANGES THAT OCCUR ON SITE.**

504.1 CLASS I IGNITION-RESISTANT CONSTRUCTION shall be in accordance with Sections 504.2 through 504.11

602.1 General.

APPROVED AUTOMATIC SPRINKLER SYSTEM shall be installed in all occupancies in new buildings required to comply with Class I Ignition-Resistant Construction. The installation of the automatic sprinkler system shall be in accordance with nationally recognized standards.

1. Submit a fire sprinkler system plan and permit application to the Fire Marshal's Office.
2. A framing inspection will not be performed until the sprinkler system is inspected and approved by the Fire Marshal.

Exception: Extending to 1.5 times the required defensible space with a *conforming water system* or 2.5 times the required defensible space per Table 503.1 KCC 20.10 Wildland Urban Interface Code will mitigate the sprinkler requirement.

<p>NOTE F1:</p>	<p>504.2 Roof Covering Roofs shall have a roof assembly that complies with a Class A rating when tested in accordance with ASTM E 108 or UL 790. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be fire-stopped to preclude entry of flames or embers, or have one layer of 72-pound (32.4 kg) mineral-surfaced, non-perforated cap sheet complying with ASTM D 3909 installed over the combustible decking.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Class A roof assemblies include those with coverings of brick, masonry or an exposed concrete roof deck. 2. Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile or slate installed on non-combustible decks or ferrous, copper or metal sheets installed without a roof deck on non-combustible framing. 3. Class A roof assemblies include minimum 16 oz/sq. ft. (0.0416 kg/m²) copper sheets installed over combustible decks. <p>504.2.1 Roof Valleys Where provided, valley flashings shall be not less than 0.019 inch (0.48 mm) (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide (914 mm) underlayment consisting of one layer of 72-pound (32.4 kg) mineral-surfaced, non-perforated cap sheet complying with ASTM D 3909 running the full length of the valley.</p>
<p>NOTE F2:</p>	<p>504.3 Protection of Eaves Eaves and soffits shall be protected on the exposed underside by ignition-resistant materials or by materials <i>approved</i> for not less than 1-hour fire-resistance-rated construction, 2-inch (51 mm) nominal dimension lumber, or 1-inch (25 mm) nominal fire-retardant-treated lumber or 3/4 inch (19.1 mm) nominal fire-retardant-treated plywood, identified for exterior use and meeting the requirements of Section 2303.2 of the <i>International Building Code</i>. Fascias are required and shall be protected on the back-side by ignition-resistant materials or by materials <i>approved</i> for not less than 1-hour fire-resistance-rated construction or 2-inch (51 mm) nominal dimension lumber.</p>
<p>NOTE F3:</p>	<p>504.4 Gutters and Downspouts Gutters and downspouts shall be constructed of non-combustible material. Gutters shall be provided with an approved means to prevent the accumulation of leaves and debris in the gutter.</p>
<p>NOTE F4:</p>	<p>504.5 Exterior Walls Exterior walls of buildings or structures shall be constructed with one of the following methods:</p> <ol style="list-style-type: none"> 1. Materials approved for a minimum of 1-hour fire-resistance-rated construction on the exterior side. 2. Approved noncombustible materials. 3. Heavy timber or log wall construction. 4. Fire-retardant treated wood on the exterior side. The fire-retardant treated

	<p>wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the <i>International Building Code</i>.</p> <p>5. Ignition-resistant materials on the exterior side.</p> <p><i>Such material shall extend from the top of the foundation to the underside of the roof sheathing.</i></p>
NOTE F5:	<p>504.6 Underfloor Enclosure Buildings or structures shall have all under-floor areas enclosed to the ground, with exterior walls in accordance with Section 505.5.</p> <p>Exception: Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy timber construction.</p>
NOTE F6:	<p>504.7 Appendages and Projections Unenclosed accessory structures attached to buildings with habitable spaces and projections, such as decks, shall be a minimum of 1-hour fire-resistance-rated construction, heavy timber construction or constructed of one of the following:</p> <ol style="list-style-type: none"> 1. Approved noncombustible materials. 2. Fire retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the <i>International Building Code</i>, or 3. Ignition-resistant building materials in accordance with 503.2. <p>504.7.1 Underfloor Areas Where the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 504.5.</p>
NOTE F7:	<p>504.8 Exterior Glazing Exterior windows, window walls and glazed doors, windows within exterior doors, and sky-lights shall be tempered glass, multilayered glazed panels, glass block or have a fire protection rating of not less than 20 minutes.</p>
NOTE F8:	<p>504.9 Exterior Doors Exterior doors shall be approved non-combustible construction, solid core wood not less than 1-3/4" thick or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 504.8.</p> <p>Exception: Vehicle access doors.</p>
NOTE F9:	<p>504.10 Vents Attic ventilation openings, foundation or under-floor vents or other ventilation openings in vertical exterior walls and vents through roofs shall not exceed 144 square inches each. Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed 1/4" (suggested 1/8" max.) or shall be designed and approved to prevent flame or ember penetration into the structure.</p>

	<p>504.10.1 Vent Locations</p> <p>Attic ventilation openings shall not be located in soffits, in eave overhangs, between rafters at eaves, or in other overhang areas. Gable end and dormer vents shall be located not less than 10 feet (3048 mm) from lot lines. Underfloor ventilation openings shall be located as close to grade as practical.</p> <p>EXCEPTION: Cal-Fire approved soffit vents only and as first approved by the Fire Marshal.</p>
NOTE F10:	<p>504.11 Detached Accessory Structures</p> <p>Detached accessory structures located less than 50 feet (15 240 mm) from a building containing habitable space shall have exterior walls constructed with materials <i>approved</i> for not less than 1-hour fire- resistance-rated construction, heavy timber, log wall construction, or constructed with <i>approved noncombustible</i> materials or fire-retardant-treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the <i>International Building Code</i>.</p> <p>504.11.1 Underfloor Areas</p> <p>Where the detached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have underfloor areas enclosed to within 6 inches (152 mm) of the ground, with exterior wall construction in accordance with Section 504.5 or underfloor protection in accordance with Section 504.6.</p> <p>Exception: The enclosure shall not be required where the underside of exposed floors and exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour fire-resistance-rated construction or heavy-timber construction or fire retardant- treated wood on the exterior side. The fire-retardant-treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the <i>International Building Code</i>.</p>

NOTE F11:	<p>DEFENSIBLE SPACE</p> <p>603.1 Objective</p> <p>Provisions of this section are intended to modify the fuel load in areas adjacent to structures to create a <i>defensible space</i>.</p> <p>603.2 Fuel Modification</p> <p>Buildings or structures, constructed in compliance with the conforming <i>defensible space</i> category of Table 503.1 (The defensible space requirement is determined in the heading on the first page of this document), shall comply with the <i>fuel modification</i> distances contained in Table 603.2. For all other purposes the <i>fuel modification</i> distance shall not be less than 30 feet (9144 mm) or to the lot line, whichever is less. Distances specified in</p>
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Table 603.2 shall be measured on a horizontal plane from the perimeter or projection of the building or structure. Distances specified in Table 603.2 are allowed to be increased by the code official because of a site-specific analysis based on local conditions and the fire protection plan.

Please also see Kittitas County Code: KCC 20.10 Wildland Urban Interface Code

603.2.2 Trees

Trees are allowed within the *defensible space*, provided the horizontal distance between crowns of adjacent trees and crowns of trees and structures, overhead electrical facilities or unmodified fuel is not less than 10 feet (3048 mm). (See 603.2 above for where to measure from).

603.2.3 Groundcover

Deadwood and litter shall be regularly removed from trees. Where ornamental vegetative fuels or cultivated ground cover, such as green grass, ivy, succulents or similar plants are used as ground cover, they are allowed to be within the designated *defensible space*, provided they do not form a means of transmitting fire from the native growth to any structure.

THIS IS NOT THE ENTIRE WUIC CODE AND ALL OTHER CODE REQUIREMENTS ARE ALSO APPLICABLE.

A FINAL WUIC SITE INSPECTION SHALL BE COMPLETED AND APPROVED PRIOR TO SCHEDULING FINAL INSPECTION FOR CERTIFICATE OF OCCUPANCY.

I, _____ have read and fully understand all above plan review notes and will abide by all applicable codes and regulations. All required inspections will be performed and no work will be covered without being inspected and approved. **No changes will be made to the approved permit without prior written approval from the Kittitas County Department of Community Development Services or the Fire Marshal.**

Signed: _____ Dated: _____