WELL NO. 7 AND WATER MAIN CRITICAL AREAS REPORT

Prepared for City of College Place

January 2024

RH2 Project: CPL 0220054

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City of College Place
Well No. 7 and Water Main
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City of College Place

Well No. 7 and Water Main

Critical Areas Report

Responsible Parties

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Preface

This report has been prepared using best available science for use by the City of College Place (City). In preparing this report, RH2 Engineering, Inc., (RH2) used site information from environmental field investigations and subsequent engineering design completed by RH2. Data and mapping used to prepare this report were obtained from the City, Walla Walla County (County), the Washington Department of Fish and Wildlife (WDFW), the Washington State Department of Natural Resources (DNR), the Washington State Department of Ecology (Ecology), and the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), among others. Findings detailed in this report are based on information gathered in the field at the time of investigations by RH2, as well as RH2's understanding of federal, state, and local regulations governing wetlands, waterbodies, and habitat conservation areas. The critical areas boundaries, classifications, and recommended buffers reflect the County Critical Areas Code based on the site conditions at the time of the study and preparation of this report. These recommendations are subject to change pending review by the appropriate jurisdictional agencies.

General Information

1. Project Name: Well No. 7 and Water Main
2. Name of Applicant: City of College Place
3. Name of Organization Providing this Information: RH2 Engineering Inc.
4. Technical Expertise/Qualifications: Refer to **Appendix A**.
5. Date Prepared: January 18, 2024.

6. Location of the Proposal: The proposed well location is on City-owned Parcel No. 350602230040 within the City of College Place. A proposed water main generally will follow the roadway of Teal Lane from the well site north to Mojonnier Road and is planned to be constructed primarily within the County public right-of-way (ROW). The project area is in Section 2 of Township 06 North, Range 35 East.
7. Identification of the Proposal: The project proposes drilling and testing of the well pumping rate at the City's planned Well No. 7 site. Upon determination of the storage and supply capacity provided by Well No. 7, the facility will be designed and constructed to sufficiently accommodate the water supply. A water main will be constructed that will extend from the new well site to the existing City water system.
8. Description of Existing Site: The proposed project site is on the City's existing Lift Station No. 7 site, which is a previously graded, fenced in area that is primarily graveled with some paved access roads and small buildings associated with the utility. Land to the south is an open grassy area that is partially reserved for a future College Place Public Schools development. North of the proposed well site location is a residential neighborhood. Stone Creek flows from east to west through the residential area.
9. Report Accuracy: This report was prepared to reflect the current project site conditions and proposed improvements, as well as to meet critical areas site assessment requirements specified in Chapter 18.08 of the Walla Walla County Code (WWCC). If project conditions and/or design plans change such that the project would have substantially different effects on critical areas, an addendum to this report may be necessary.
10. Site Design: Design plans are included in **Appendix B**. Critical areas near the project area are shown on the design plans in **Appendix B**.
11. Bibliography: Sources cited are listed in the **References** section.

Introduction

Project Description

The City's 2021 *Comprehensive Water System Plan Update* identifies a proposed Well No. 7 on Teal Lane to provide additional storage and supply capacity and operational flexibility to the City's water system.

The proposed project will design, drill, and construct the Well No. 7 improvements at the existing City sanitary sewer Lift Station No. 7 site. It is anticipated that this well will be used to normally fill Reservoir No. 4, which is located approximately 0.75 miles to the north. The well capacity will be dependent on the yield identified during well testing. The project will include construction of approximately 1,850 linear feet (lf) of 16- to 24-inch-diameter water main between the well site and Mojonnier Road to connect to the City's existing water system. Approximately 350 lf of the proposed water main will be constructed at the Well No. 7 site, on City property, while approximately 1,500 lf will be constructed in Teal Lane. The proposed water main will be installed using open-cut trenching, as well as trenchless methods for crossing under a culvert conveying Stone Creek. Additionally, the project will construct approximately 245 lf of sewer main from the new well site to connect to the existing system near the southern terminus of Teal Lane. The project is partially funded by the Washington State Department of Commerce Public Works Board.

Project Location

The proposed Well No. 7 project site is located on City-owned Parcel No. 350602230040, which is the existing site of the City's sanitary sewer Lift Station No. 7. The proposed well site is near the southern terminus of Teal Lane in the City of College Place, Washington. The proposed water main will extend from the well site, along Teal Lane to the north, and up a steep slope to the intersection with Mojonnier Road where it will connect with the existing City water system. The planned well site location is within the City's jurisdiction; however, the proposed water transmission main alignment will be entirely within County ROW.

Regulatory Requirements

This report has been prepared to meet the requirements of Chapter 18.08 WWCC and to facilitate compliance with other applicable local regulations. The following approvals are anticipated for this project.

- State Environmental Policy Act – City
- Site Plan Application – City
- Commercial Building Permit – City
- Grading Permit – City
- Critical Areas Compliance – County
- Construction Plan Review – County
- ROW Permit – County
- Construction Stormwater General Permit – Ecology
- Electrical Permit – Washington State Department of Labor & Industries

Background and Methodology

Prior to environmental field investigations, RH2 reviewed the following data: existing and historical aerial photography (Google Earth); stream and wetland mapping (City, Ecology, WDFW, and U.S. Fish and Wildlife Service (USFWS)); floodplain mapping (City and the Federal Emergency Management Agency (FEMA)); geologic hazards and LiDAR mapping (DNR and City); fish and wildlife occurrence data (City, WDFW, National Marine Fisheries Service, and USFWS); and soils data (NRCS Soil Conservation Service).

Field investigations were completed on November 8, and November 9, 2022, by Ms. Jenny Sandifer and Mr. Noah Bloxton of RH2. During site investigations, wetlands, streams, and fish and wildlife habitat conservation areas (FWHCAs) were assessed on and within 200 feet of the project site. During these field investigations, the following activities were completed:

- Identified, delineated, characterized, and rated wetlands in proximity to the project site.
- Identified and delineated the Ordinary High Water Mark (OHWM) of Stone Creek in proximity to the project site.
- Identified and characterized FWHCAs in proximity to the project site.
- Observed and recorded fish and wildlife usage of the project site and adjacent habitat areas.
- Observed and recorded vegetation communities and habitat conditions in proximity to the proposed water main alignment and well site.
- Collected photographs and environmental data for the project site and surrounding areas.

Two wetlands were observed within 200 feet of the project area. The following methodologies were used to identify, characterize, and rate wetlands, to delineate Stone Creek, and to determine buffer extents per Chapter 18.08 WWCC – Critical Area Protection.

- *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (U.S. Army Corps of Engineers (USACE) Publication ERDC/EL TR-08-28, 2008).
- *Corps of Engineers Wetlands Delineation Manual* (USACE Publication Y-87-1, 1987).
- *Washington State Wetland Rating System for Eastern Washington: 2014 Update* (Hruby, Ecology Publication 14-06-030, 2014).
- *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, USFWS Publication FWS/OBS-79/31, 1979).
- *A Hydrogeomorphic Classification for Wetlands* (Brinson, USACE Publication WRP-DE-4, 1993).
- Water Typing System (Washington Administrative Code (WAC) 222-16-030).
- *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson, et al., Ecology Publication 16-06-029, 2016).

Results

Existing Environmental Data

The City's online Public City Map indicates that there are streams and wetlands in proximity to the project area. Stone Creek, a Type F (fish habitat) stream, flows from east to west through the project area under Teal Lane. Stone Creek is mapped as habitat for steelhead trout (*Oncorhynchus mykiss*), a federally listed threatened species under the Endangered Species Act (ESA). East of the proposed water main alignment is a waterbody that is mapped as a freshwater pond wetland per USFWS National Wetland Inventory (NWI) data.

According to the FEMA National Flood Hazard Layer viewer and City GIS data, the portion of the project area just north of Stone Creek is mapped as being within the 100- and 500-year flood zones. These floodplain areas are anticipated to be regulated as frequently flooded areas by the County. The proposed project will not alter the floodplain elevation in the area.

WDFW Priority Habitats and Species (PHS) data concurs with City GIS data regarding steelhead trout occurrence in Stone Creek. PHS data shows northwest white-tailed deer (*Odocoileus virginianus ochrourus*) and ferruginous hawk (*Buteo regalis*) as occurring within the same region as the project area, and resident rainbow trout (*O. mykiss*) within Stone Creek. Some shrubsteppe habitat areas also are mapped as present in proximity to the Well No. 7 site and proposed water main alignment.

According to the USFWS Information for Planning and Consultation database, yellow-billed cuckoo (*Coccyzus americanus*), bull trout (*Salvelinus confluentus*), and monarch butterfly (*Danaus plexippus*) are listed as potentially present in the project vicinity; however, suitable habitat is not present in the project area for any of these species. No critical habitat is located within the project site or nearby areas.

According to DNR GIS data, no rare plant and nonvascular species of high conservation value occur within or near the project area.

DNR’s Forest Practices Activity Map is consistent with the previously described streams and wetlands mapped in the project area.

The City’s online GIS Public City Map shows that the proposed Well No. 7 site is within an area of high wind erosion. The steep slope at the north end of the project area, near the intersection of Teal Lane and Mojonnier Road, is mapped as a steep slopes geological hazard area. Most of the project area is within areas shown as being moderate to high liquefaction susceptibility, and the entire project area is within a gravel aquifer. Geologically hazardous areas will be addressed in a separate report prepared for the project and are not further addressed herein.

Refer to **Appendix C** for background maps and data.

General Site Conditions

The Well No. 7 project site is on land zoned as Public Use by the City. The proposed water main alignment will follow the County public ROW; therefore, it does not occur on land with designated zoning. The neighborhood surrounding the project area contains a few residential properties, and most of the area is used as open pastures or reserved for future College Place Public Schools development. The area in and around the project vicinity is generally flat with steep slopes along the hillside near the intersection of Teal Lane and Mojonnier Road. Stone Creek flows through the project area from east to west, under Teal Lane. The creek has been historically modified due to historical agricultural and residential development in the area, and the riparian buffer of the creek also has been altered.

The project area is in the Pleistocene Lake Basin ecoregion of the Columbia Plateau that extends from roughly Walla Walla County and parts of northern Oregon to north of the City of Ephrata in Grant County, Washington (U.S. Environmental Protection Agency, 2016). Areas in this ecoregion are characterized as having elevations from 300 to 1,200 feet above sea level, are generally flat, and have very dry climates. Average annual precipitation in College Place, Washington is approximately 14.5 inches, which is greater than other parts of the region that receive an estimated 7 to 10 inches of mean annual precipitation (NRCS, 2022).

Critical areas observed during site investigations include Stone Creek and two wetlands associated with Stone Creek, which are regulated as FWHCAs and wetlands, by the County, respectively.

Seasonally saturated areas due to high groundwater were observed on the north side of Stone Creek, west of Teal Lane. These areas did not contain hydric soil and are anticipated to not be saturated long enough during the growing season to meet the definition of a wetland.

Refer to **Appendix D** and **Appendix E** for additional information.

Vegetation

The Well No. 7 facility site and proposed water main alignment are primarily within previously cleared and graded areas, and vegetation onsite is minimal. Most vegetation that is immediately adjacent to the project area is associated with residential homes and includes maintained grasses and ornamental plant species. Non-native and invasive species are prevalent in parts of the surrounding areas, including poison hemlock (*Conium maculatum*), common teasel (*Dipsacus fullonum*), reed canary grass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus*), Canadian thistle (*Cirsium arvense*), and others.

Riparian areas associated with Stone Creek contain various native and introduced tree species, including peach-leaf willow (*Salix amygdaloides*), weeping willow (*Salix babylonica*), black locust (*Robinia pseudoacacia*), and silver maple (*Acer saccharinum*). The riparian forest understory is regularly mowed, and reed canary grass dominates the wetlands on the east side of Teal Lane. Various shrubs, including roses (*Rosa sp.*) and red osier (*Cornus alba*), line the banks of Stone Creek on the west side of Teal Lane. Wetland areas generally are dominated by non-native plant species.

Soils

According to the NRCS soil survey data, the Well No. 7 project area is primarily within the Pedigo silt loam, 0 to 3 percent slopes, soil map unit, which is comprised of a somewhat poorly drained, silt loam atop a stratified very fine sandy loam to silty clay loam that develops on valley floors from loess alluvium. This soil is classified as a farmland of statewide importance and is not hydric. The Well No. 7 project site also contains the Catherine silt loam, 0 to 3 percent slopes, and Touchet silt loam, 0 to 3 percent slopes, soil map units. The steep slope near the intersection of Teal Lane and Mojonnier Road contains the terrace escarpments soil map unit, which is comprised of a well-drained, silt loam atop a stratified very gravelly sand to clay loam that develops from escarpments on terraces from glaciofluvial deposits.

Soils observed during site investigations generally were silt loams and very dark brown, with some soils that were dark grayish brown. Wetland soils exhibited redoximorphic features, including fine to medium, distinct or prominent redoximorphic concentrations and depletions in pore linings or the matrix. Redoximorphic features included depletions that were olive brown and concentrations that ranged from dark brown to dark yellowish brown.

Hydrology

The project is within Hydrologic Unit Code 170701020704 – Garrison Creek-Walla Walla River sub-basin within the larger Water Resource Inventory Area 32 – Walla Walla watershed. Hydrology in the area generally originates from precipitation that infiltrates soils and occurs as runoff that inundates local depressions and flows into Stone Creek.

The headwaters of Stone Creek are in the City of Walla Walla, approximately 5.5 miles northeast of the project. Stone Creek is a seasonally flowing stream that typically dries out in late summer. A diversion in the creek channel, just prior to the project area, distributes water to the south near the home on Parcel No. 350602230035 (Thiel property) and to the west where it flows into a pond. The south fork flows through a diffuse wetland, under bridges and graveled driveways on the Theil property before entering a 36-inch corrugated metal pipe (CMP) culvert that conveys flows under Teal Road. Water that enters the pond is detained temporarily, filling the depression, and is slowly released via an 8-inch polyvinyl chloride (PVC) pipe on its southwest side where it flows into a confluence with the south fork of Stone Creek. On the west side of Teal Lane, primarily on Parcel No. 350602230039 (Le Blanc property), Stone Creek is a straight, channelized system with a well-defined bed and banks. Hydrology in the project area has been altered from historical agricultural use, residential development, and irrigation practices.

Wetlands

NWI data shows Stone Creek as a seasonally flooded freshwater emergent wetland system that occurs in the project vicinity. Additionally, the pond that is part of the west fork of Stone Creek is classified as a palustrine, unconsolidated bottom, permanently flooded freshwater pond wetland according to NWI data.

A Category II depressional wetland and a Category II riverine wetland were identified, delineated, and characterized during RH2's investigations of the project site (summarized in **Table 1**). Site investigation data, including wetland test pit data forms and ratings, are in **Appendix E**. Wetlands A and B have habitat scores of 6 and 5 points, respectively, which require buffer widths of 75 feet per WWCC 18.08.340 Tables 1 and 2.

Table 1. Summary of Wetlands Identified in Proximity to the Project

Wetland Name	Size sf (ac)	Cowardin Vegetation Class	Hydrogeomorphic Class[1]	Category	Buffer[2] (ft)
Wetland A	12,700 (0.29)	Palustrine Emergent and Forested	Depressional	II	75
Wetland B	3,145 (0.07)	Palustrine Emergent and Forested	Riverine	II	75

[1] Hydrogeomorphic classification based on Brinson (1996) used in the Ecology rating.
[2] Determined per WWCC 18.08.340 Tables 1 and 2.

Wetland A

Wetland A is an approximately 12,700 square foot (sf) depressional wetland that is east of the proposed water main alignment on Parcel No. 350602230035. The wetland's primary source of hydrology is from Stone Creek, a seasonally flowing stream that inundates the depression during the wet season. Wetland A has a constricted outlet that is an 8-inch PVC pipe on its southwest side that slows the flow of water out of the system and contributes to extended durations of ponding. Water levels in the depression fluctuate as waters from Stone Creek flow into and out of the pond. Primary indicators of wetland hydrology observed during site investigations were Surface Water (A1), High Water Table (A2), Saturation (A3), and Inundation Visible on Aerial Imagery (B7).

Wetland A, summarized in **Table 2**, contains palustrine emergent and forested Cowardin vegetation classes but consists primarily of open water areas dominated by duckweed (*Lemna sp.*) and large mosquito fern (*Azolla filiculoides*). The emergent class, which comprises the southern and western edges of the wetland unit, is dominated by reed canary grass, poison hemlock, common teasel, and yellow flag iris (*Iris pseudacorus*). The northeast side of the wetland unit is a densely forested area dominated by peach-leaf willow. Other plant species observed throughout the wetland include Baltic rush (*Juncus balticus*), prickly lettuce (*Lactuca serriola*), Canadian thistle, common burdock (*Arctium minus*), rough cocklebur (*Xanthium strumarium*), and Himalayan blackberry.

Dominance of obligate[1] hydrophytic vegetation and positive indicators of wetland hydrology were present throughout Wetland A; therefore, no soil test pits were excavated within the wetland boundary[2]. The boundary of Wetland A was determined through inference of the hydrologic regime using topography and vegetation, interpretation of the influence of streamflow inputs and retention, and referencing historic aerial imagery showing inundation throughout the growing season.

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[1] The USACE maintains a National Wetland Plant List (NWPL) categorizing common hydrophytic plant species based on their affinity for inundated habitats and probability of occurrence within wetlands. The following categories are used:

Indicator Status	Abbreviation	Definitions – Short Version
Obligate	OBL	Almost always occurs in wetlands
Facultative Wetland	FACW	Usually occurs in wetlands, but may occur in non-wetlands
Facultative	FAC	Occurs in wetlands and non-wetlands
Facultative Upland	FACU	Usually occurs in non-wetlands, but may occur in wetlands
Upland	UPL	Almost never occurs in wetlands

Table obtained from USACE. (2020). National Wetland Plant List, Version 3.5. Retrieved from http://wetland-plants.usace.army.mil/. USACE Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. Hanover, NH.

[2] Per page 58 of the *Corps of Engineers Wetland Delineation Manual* (USACE, 1987), when all dominant plant species have an indicator status of OBL and/or FACW (including at least one OBL dominant species), hydric soils can be presumed present, and hydric soil test pit assessment is not required.

Table 2. Wetland A Summary

Wetland Evaluation Summary		
Wetland Name	Wetland A	
Location	Parcel No. 350602230035	
Local Jurisdiction	Walla Walla County	
Ecology Rating (Hruby, 2014)	Category II	
Buffer Width	75 feet	
Wetland Size	12,700 sf (0.29 ac)	
Cowardin Classification	Palustrine Emergent and Forested	
HGM Classification	Depressional	
Associated Waterbody	Stone Creek	
Data Sheet(s)	TP 2 (in), TP 1 (out)	
Dominant Vegetation	Large mosquito fern, reed canary grass, poison hemlock, peach-leaf willow	
Soil Indicators	Test pit not required per Corps of Engineers Wetlands Delineation Manual (USACE, 1987)	
Hydrology Indicators	Surface Water (A1), High Water Table (A2), Saturation (A3), Inundation Visible on Aerial Imagery (B7)	

Wetland B

Wetland B is a 3,145 sf riverine wetland that is south of Wetland A and due east of the 36-inch CMP culvert conveying Stone Creek under Teal Lane from the Thiel property. The primary source of hydrology for Wetland B is high flows from Stone Creek that seasonally inundate the flat areas and small depressions that parallel the main channel. Stone Creek flows are diffuse through sections of the wetland unit, sheeting across the surface through dense, overgrown vegetation. Stone Creek diverges into two channels upstream of the project site that reunite to form the western part of Wetland B. Primary indicators of wetland hydrology that were observed during site investigations include Surface Water (A1), High Water Table (A2), and Saturation (A3).

Soils within Wetland B were generally silt loams, with a matrix color of very dark brown (10YR 2/2). Redoximorphic features were observed starting at depths of 4 inches below the surface. Many medium sized, distinct, olive brown (2.5Y 4/3) depletions were observed throughout the matrix from 4 to 6 inches below the surface. Fine to medium, distinct and prominent dark brown (7.5YR 3/4) and dark yellowish-brown (10YR 3/6) concentrations were observed along pore linings and in the matrix from 4 to 16 inches deep in the soil profile. Wetland soils within Wetland B exhibited the hydric soil indicator Redox Dark Surface (F6).

Wetland B, summarized in **Table 3**, contains palustrine emergent and forested Cowardin vegetation classes. The emergent class is dominated by reed canary grass, which is overgrown throughout most of the wetland unit. Per Mrs. Thiel, reed canary grass was recently treated with an herbicide for the first time and die-off of the species near the project area is evident. The forested class is composed of peach-leaf willow with several large weeping willow individuals also present straddling the wetland boundary. Other notable plant species observed throughout Wetland B include Canadian thistle, prickly lettuce, yellow flag iris, and greater periwinkle (*Vinca major*), all of which are non-native or considered invasive.

Table 3. Wetland B Summary

Wetland Evaluation Summary		
Wetland Name	Wetland B	
Location	Parcel No. 350602230035	
Local Jurisdiction	Walla Walla County	
Ecology Rating (Hruby, 2014)	Category II	
Buffer Width	75 feet	
Wetland Size	3,145 sf (0.07 ac)	
Cowardin Classification	Palustrine Emergent and Forested	
HGM Classification	Riverine	
Associated Waterbody	Stone Creek	
Data Sheet(s)	TP 3 (in), TP 4 (out)	
Dominant Vegetation	Reed canary grass, peach-leaf willow	
Soil Indicators	Redox Dark Surface (F6)	
Hydrology Indicators	Surface Water (A1), High Water Table (A2), Saturation (A3)	

Functional Assessment

The characterization of wetlands identified on the site is based on wetland ratings completed using Ecology's *Washington State Wetland Rating System for Eastern Washington: 2014 Update* (Hruby, 2014). This system is designed to provide a rapid, qualitative rating of wetland functions. It does not replace a full assessment of wetland functions. For rating purposes, wetland functions are divided into water quality, hydrologic, and habitat functions. Site potential, landscape potential, and value are assessed for each of these functions. **Table 4** provides a summary of the wetland functions based on the Ecology rating.

Table 4. Qualitative Rating of Identified Wetlands

Function	Qualitative Rating of Function	
	Wetland A	Wetland B
Water Quality Functions		
Site Potential to Improve Water Quality	M	M
Landscape Potential to Support Water Quality Functions	M	H
Value Rating for Water Quality Improvement	H	H
Hydrologic Functions		
Site Potential to Perform Hydrologic Functions	M	M
Landscape Potential to Support Hydrologic Functions	M	H
Value Rating for Hydrologic Functions	M	M
Habitat Functions		
Site Potential to Provide Habitat	M	L
Landscape Potential to Support Habitat Functions	L	L
Value Rating for Habitat Functions	H	H
Total Rating Score	**19**	**20**
Wetland Category	**II**	**II**

Water Quality Functions

Both wetlands in proximity to the project area have a moderate to high potential to improve water quality. Each wetland's site potential to improve water quality is moderate due to the moderate level of vegetation cover and relative proportion of seasonal ponding or depressions that help filter out and remove pollutants. Wetland B has a high landscape potential to support water quality function at the site due to the contributing basin, including incorporated areas and high intensity land uses, as well as the contribution of pollutants from local herbicide treatment and a nearby poultry enclosure. Additionally, the value to society of water quality improvements provided by these wetlands are associated with Stone Creek, which is on the 303(d) list. In addition, a Total Maximum Daily Load has been issued for the Walla Walla River, which is downstream of the site.

Hydrologic Functions

Wetlands A and B both receive moderate scores for hydrologic function overall. Site potential of each wetland to reduce flooding and erosion is moderate due to the depth of seasonal ponding and intermittently flowing outlet of Wetland A and the moderate overbank flood storage and flood velocity attenuation that is provided by Wetland B. Per the rating forms, the landscape potential of Wetland B to support the hydrologic functions of the site is slightly greater because the channel is not downcut, flows are not controlled by dams, and the upstream watershed includes incorporated areas. The value of hydrologic functions that these wetlands provide to society is deemed to be moderate due to known flooding problems occurring downgradient in the basin, but not immediately downgradient of the wetlands. The site has not been identified in any flood control plans.

Habitat Functions

Wetlands A and B both receive relatively low to moderate scores for habitat functions. The site potential to provide habitat functions is low due to a lack of diverse vegetation structure, lack of special habitat features, and relatively low plant species richness. Surrounding land uses are primarily high intensity agricultural and residential that contribute to a low landscape potential to support habitat functions of the site. However, both wetlands do provide value to society because steelhead trout, which is a WDFW priority species and ESA-listed species, is mapped as present in Stone Creek.

Fish and Wildlife Habitat Conservation Areas

One stream, Stone Creek, is present in proximity to the project site and is summarized in **Table 5**. Stone Creek and its buffer areas are regulated by the County as FWHCAs.

Table 5. Overview of Watercourses at the Project Site

Watercourse Name	Type	Buffer (ft)
Stone Creek	F	50[1]

[1] WWCC 18.08.650(B) Table 4 indicates that Stone Creek has a designated 50-foot minimum streamside buffer width.

Stone Creek

Stone Creek is a Type F stream that flows from east to west through the project area. Headwaters of Stone Creek are located approximately 5 miles northeast of the project area, in a residential area within the City of Walla Walla. Stone Creek flows into the Walla Walla River, a Type S Shoreline of the State that is a tributary to the Columbia River, approximately 1 mile downstream from the project area.

The contributing basin of Stone Creek is a roughly 4 square mile narrow basin extending to the northeast of the project site that includes incorporated areas of the City of College Place and the City of Walla Walla. Stone Creek flows through developed areas where riparian habitat has been degraded and impervious surfaces are prevalent. The sources of hydrology include groundwater springs at the headwaters, precipitation, and surface water runoff, primarily from stormwater.

During site investigations, the wetted channel of Stone Creek near the project area was approximately 6 feet wide and 6 inches deep on average. The creek on the east side of Teal Lane has no defined streambed or banks, and the OHWM coincides with the boundary of Wetland B. In this area, Stone Creek consists of diffuse flows contained within the riverine wetland. The channel is overgrown with reed canary grass throughout much of the reach, and unvegetated areas of the streambed are comprised of silty substrate material. Accumulation of organic matter, including leaf detritus and fine woody debris, is common on the east side of Teal Lane due to slow, shallow flows through Wetland B.

Stone Creek on the west side of Teal Lane is an incised channel with defined streambed and banks that suggest previous channelization occurred. The bankfull width in this reach of Stone Creek ranges from 8 to 10 feet across. The streambed substrate consists of gravels and cobbles that range from 2 to 6 inches in diameter. The south bank is 2 feet tall on average, whereas the north bank is generally lower and ranges from 1 to 2 feet tall. According to Mr. Le Blanc, the owner of Parcel No. 350602230039, Stone Creek does not overtop its banks during peak flow events and has not flooded during his residence (since 2006). No evidence of overbank flooding such as sediment deposits, wrack, or scouring were observed in the adjacent floodplain areas. Some riparian vegetation, including several overhanging shrubs and trees that provide shade and bank stabilization to the channel.

Indicators used to determine the OHWM of Stone Creek include staining on the inlet culvert walls, exposed roots along streambanks, drainage patterns evidenced by flattened vegetation, top of banks, bank erosion and scour, and vegetative indicators.

According to WWCC 18.08.600 Table 4, the minimum riparian buffer width of Stone Creek is 50-feet.

Fish, Wildlife, and Priority Species Use

During site investigations, the following wildlife species, or evidence thereof, were observed in the vicinity of the project site: California quail (*Callipepla californica*), northern flicker (*Colaptes auratus*), black-capped chickadee (*Poecile atricapillus*), white-crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), Bewick's wren (*Thryomanes bewickii*), mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), black-billed magpie (*Pica hudsonia*), frog vocalizations, coyote (*Canis latrans*), deer, rodents, rabbits, beetles, and spiders.

According to WWCC 18.08.600(A)(1), FWHCAs include areas where state or federal designated endangered, threatened, and sensitive species have a primary association. Stone Creek is designated as critical habitat for the Middle Columbia River steelhead Distinct Population Segment (DPS) (50 Code of Federal Regulations (CFR) 226), which is listed as a threatened species per the ESA. No steelhead were observed during site investigations; however, the Middle Columbia River steelhead DPS may utilize Stone Creek for foraging and migration. WDFW data indicate that rainbow trout also are present within Stone Creek. Ferruginous hawk may utilize areas near the project site.

No state or federal listed or sensitive species have a primary association with the proposed Well No. 7 project site or water main alignment due to these areas being previously disturbed and providing little to no habitat functions.

Listed Species

A summary of ESA- and state-listed species and habitats potentially present in the project area, along with anticipated project impacts, is provided in **Table 6**. Project minimization measures, impacts, and proposed mitigation are discussed later in this report.

Table 6. Summary of Listed Species and Habitats

Common Name	Scientific Name	ESA Status and Critical Habitat (CH)[1]	State Status	Project Impact
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened; no CH present	Endangered	No impact
Bull trout	*Salvelinus confluentus*	Threatened	Candidate	
Monarch butterfly	*Danaus plexippus*	Candidate	–	
Steelhead trout	*Oncorhynchus mykiss*	Threatened	–	
Rainbow trout	*Oncorhynchus mykiss*	–	–	
Northwest white-tailed deer	*Odocoileus virginianus ochrourus*	–	–	
Ferruginous hawk	*Buteo regalis*	–	Threatened	
Shrubsteppe	–	–	–	
Wetlands	–	–	–	

Management Recommendations

WDFW's *Land Use Planning for Salmon, Steelhead, and Trout* (Knight, 2009) emphasizes the importance of riparian areas in providing many habitat functions, including foraging areas, cover, habitat structure, and migration routes for anadromous salmonids. Functional riparian areas stabilize streambanks, provide shade that regulates water temperatures, and contribute organic matter such as large woody debris. Knight (2009) indicates that "…wide terrestrial buffers, a near-continuous corridor, mature, native vegetation, and limits on in-water projects are all necessary to protect salmonid habitat functions in riparian areas." Project impacts will include temporary impacts to grass lawn areas in the riparian corridor. Grass lawn areas that will be impacted by the project do not contain mature, native vegetation and provide minimal benefit to Stone Creek riparian habitat functions. Furthermore, the project will utilize trenchless construction methods for crossing Stone Creek, thus avoiding in-water work. Proposed project activities are consistent with WDFW management recommendations since the project will minimize impacts to the riparian buffer and avoid in-water work.

The *Middle Columbia Steelhead ESA Recovery Plan* (National Marine Fisheries Service, 2009) describes common limiting factors and threats for the DPS. These include degraded tributary habitat, impaired fish passage, hatchery effects, predation, competition, disease, climate change, and others. The proposed project is not anticipated to have any impact on the previously listed factors. Proposed mitigation for this project is consistent with these management recommendations.

Riparian Buffers

Wetlands A and B are in a sparsely developed residential area that is surrounded by open pastures and crop lands. Generally, the buffer habitat of Wetlands A and B has been heavily modified from their natural state due to historic agriculture practices, channelization of Stone Creek for irrigation, ongoing residential development, introduction of non-native species, and frequent mowing and maintenance of vegetation on residential properties. Buffer areas immediately adjacent to the wetlands consist primarily of regularly maintained yards of nearby homes and provide minimal buffer functions.

Some moderately intact riparian corridor that is associated with Stone Creek is present. Riparian areas are dominated by invasive species and contain patches of densely growing vegetation along the banks of the watercourse. Invasive plant species, such as Himalayan blackberry and reed canary grass, were recently treated with herbicide to eradicate the species on the Thiel property.

Vegetation structure is multi-layered along some segments of Stone Creek, with most of the intact vegetation being persistent and ungrazed. Most vegetation is generally non-native aside from a stand of peach-leaf willow in the eastern portion the Wetland B. The presence of persistent and ungrazed vegetation enhances sedimentation and filtration of pollutants that enter Stone Creek and Wetlands A and B. West of Teal Lane, riparian vegetation consists of many ornamental and introduced trees and shrubs, including yellow flag iris, reed canary grass, and black locust (*Robinia pseudoacacia*), as well as some native riparian vegetation, including red osier, native rose, and peach-leaf willow. Evidence of cleared vegetation, including some large tree stumps and logs, are present near the channel. Emergent vegetation on each side of Teal Lane is mowed.

Human-made structures, including utility poles and fences, provide perches for birds that frequent the project area, especially raptors that use them for hunting.

The remnant riparian corridor, despite its degradation, is an important wetland and stream buffer component that provides habitat, shading, filtration of sediments and pollutants, and bank stabilization. Enhancement of buffer areas, especially riparian areas associated with Stone Creek, would help preserve existing functions and improve functions lost from development of the area.

Construction Overview

The project will install approximately 1,850 lf of 16- to 24-inch-diameter water main along Teal Lane between City-owned Parcel No. 350602230040 and Mojonnier Road. Approximately 350 lf of the proposed water main will be constructed at the Well No. 7 site, on City property, while approximately 1,500 lf will be constructed in Teal Lane. The water main infrastructure will be constructed to connect the proposed Well No. 7 to the existing City water system.

The water main will be constructed in graveled surfaces within the County ROW of Teal Lane. Construction impacts will occur in the vegetated roadside shoulder areas within the ROW to install the proposed water main under the culvert conveying Stone Creek.

The water main will be constructed primarily using open-cut excavation and backfilling of trenches, followed by surface restoration to pre-existing or better conditions. Horizontal directional drilling (HDD) will be utilized to cross under the 36-inch CMP culvert that conveys Stone Creek under Teal Lane.

Project Impacts and Mitigation

Mitigation Sequencing

Design and project planning efforts have been conducted to avoid and minimize impacts to regulated critical areas and buffers in compliance with local, state, and federal regulations. Per WWCC 18.08.110, before impacting any critical areas, an applicant must demonstrate that the following actions have been taken in sequential order:

A. *Avoiding the impact altogether by not taking a certain action or parts of an action;*
B. *Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;*
C. *Rectifying the impact to wetlands, critical aquifer recharge areas, frequently flooded areas, and habitat conservation areas by repairing, enhancing, or restoring the affected environment to the historical conditions, or pre-development, or the conditions existing at the time of the initiation of the project;*
D. *Minimizing or eliminating the hazard by restoring or stabilizing the hazard area through approved engineered or other methods;*
E. *Reducing or eliminating the impact or hazard over time by maintenance and preservation operations during the life of the action;*
F. *Compensating for the impact to wetlands, critical aquifer recharge areas, frequently flooded areas, and fish and wildlife habitat, and vegetation conservation areas by replacing, enhancing, or providing substitute resources or environments; and*
G. *Monitoring the hazard or other required mitigation for a reasonable period of time and taking remedial action when necessary.*
H. *Mitigation for individual actions may include a combination of the above measures.*

Impacts to project area wetlands, Stone Creek, and riparian habitat have been avoided by locating the project within previously disturbed areas of the existing City Lift Station No. 7 site and the roadway prism of Teal Lane. The proposed Well No. 7 and water main will completely avoid impacts to functional critical areas in the County, which is consistent with part (A) of the County's mitigation sequencing actions. Indirect impacts to critical areas in the County will be further avoided through implementation of temporary erosion and sediment control measures (TESC) during construction. Therefore, additional mitigation actions are not warranted.

Minimization Measures

Direct and indirect impacts will be minimized by implementing construction best management practices throughout the entire project, including the following measures:

- Utilize trenchless construction methods for water main installation to avoid impacts to Stone Creek and to minimize impacts to the riparian buffer area.
- Install high visibility fencing at the construction limits to prevent unauthorized impacts to critical areas.
- Install silt fencing along downslope construction limits to provide sediment filtration as any sediment-laden runoff leaves the construction area.
- Install straw wattles on the upslope side of streams to protect against erosion and sedimentation from construction activities.
- Prevent all fill, excavation, or other direct placement or removal of material in adjacent waterbodies.
- Limit any clearing or grading within critical areas and adjacent vegetated buffers to the maximum extent practicable.
- Restrict vehicle access, staging, and stockpiling to approved areas only.
- If any inadvertent disturbance to streams, wetlands, or their buffers occurs during construction, restore the area to pre-existing or better conditions, in coordination with the County and/or its authorized representative.
- Following trench restoration after installation of the water main, restore the ground to existing or better conditions using a native herb and shrub seed mix.
- Prevent all fill, excavation, or other direct placement or removal of material in wetlands or Stone Creek.
- Minimize temporary and permanent impacts to Stone Creek banks and buffer areas.

Prior to the start of construction or mitigation activities, TESC measures shall be installed per approved plans. Maintain all TESC measures for the duration of construction and until vegetation is reestablished. TESC measures shall be removed and properly disposed of offsite.

Project Impacts

No work will occur in project area streams, wetlands, or the moderately intact, functional riparian areas adjacent to Stone Creek. The project will require temporary impacts to non-functional buffer areas of Stone Creek and buffer areas of associated wetlands within the graveled roadway prism of Teal Lane for open-cut trenching to install the water main extension that will serve the new Well No. 7 facility.

The project also will require approximately 600 sf of disturbance to gravel roadway and grassy lawn areas west of Teal Lane for trenchless installation of the water main below the 36-inch CMP culvert conveying Stone Creek under Teal Lane. Impacted areas will be located 30 feet north and south of Stone Creek and are due to excavation of the boring and receiving HDD pits.

The impacted grass lawn vegetated roadside shoulder areas are considered non-functional or low functioning buffer areas. No temporary or permanent impacts to functional buffer areas will occur from the project.

Open-cut trenching for installation of the new water main will require excavation of a trench that is a maximum of 8 feet wide and approximately 8 feet deep. The crossing of the 36-inch CMP culvert conveying Stone Creek will require HDD at a depth of 11 feet below ground surface.

The Teal Lane roadway will be restored in-kind over a total area of approximately 24,000 sf in accordance with City standards. All vegetated areas disturbed during project construction will be reseeded using a native seed mix.

Ground disturbance for construction of the well facility will occur greater than 200 feet away from any streams, wetlands, FWHCAs, or frequently flooded areas.

Implementation of appropriate TESC measures, prior to construction, will prevent turbid or contaminated water from leaving the project vicinity and entering nearby streams, wetlands, and buffers. The proposed project will restore ground surfaces using in-kind material to the existing grade prior to construction; therefore, no impacts to hydrology of the project site or surrounding area are anticipated to occur. Due to the project areas being previously disturbed and modified County roads and the City Lift Station No. 7 site, the project area lacks native vegetation and habitat features. No impacts to fish and/or wildlife habitat are proposed by the project. The proposed project will not include substantial impacts to water quality, hydrology, or habitat of FWHCAs present in the project vicinity or surrounding areas. Due to the previously described factors, no mitigation measures are required or proposed by the project.

Table 7 summarizes the anticipated project impacts.

Table 7. Summary of Project Impacts

Impact Duration	Impact Type	Project Actions	Total Critical Areas Impact (sf)	Wetland Impact (sf)	Wetland Buffer Impact (sf)	HCA Impact (sf)	HCA Buffer Impact (sf)
Temporary	Clearing and Grading	Open-cut and trenchless construction for new utilities	170	0	0	0	170
Permanent	New Structures and Impervious Surface	Well No. 7 site development	0	0	0	0	0
Total Overall Critical Areas Buffer Impact				**170 (0 permanent buffer; 170 temporary buffer)**			

Conclusion

This report has been supplied to the County to document conditions and anticipated project impacts associated with the Well No. 7 and Water Main project. This report uses best available science and documents the investigation, best professional judgement, and conclusions of the investigator(s). The preparation of this report relied upon existing environmental databases, site investigations, data provided by WDFW, DNR, and the City, and data collected by RH2. This report has been prepared to comply with the current laws governing biological critical areas regulated by the County, state, and federal jurisdictional agencies. The report is correct and complete to the best of my knowledge. The work completed in preparing this report has conformed to the standard of care employed by environmental professionals. No other representation or warranty is made or implied. This report shall remain valid for a period of 5 years from the publication date.

RH2 ENGINEERING, INC.

Jenny Sandifer

Jenny Sandifer

Environmental Scientist

References

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Appendix A
Consultant Qualifications

Jenny Sandifer

Environmental Scientist

Jenny is a passionate consulting ecologist specializing in freshwater and wetland ecology and plant identification. She conducted fieldwork for both state and federal agencies prior to joining RH2 bringing a background in wetland mitigation monitoring, soil analysis, and habitat restoration. Jenny's love for botany and ecology means she is always learning and driven to further understand interactions between flora and the landscape. She leads wetland delineations and ratings, OHWM delineations, stream habitat assessments, report preparation, and assists with mitigation design and monitoring, obtaining permit approvals, and agency coordination and regulatory review. Jenny's work regularly involves coordination with local, state, and federal agency staff throughout the state, including SEPA, Critical Areas compliance, Shoreline Management Act compliance, HPA, Section 404, ESA compliance, FEMA Floodplain Compliance, NPDES, and local development permits.

Representative Project Experience

- Critical Areas Report, SEPA, Shoreline Permitting, Floodplain Development Permit for Waterfront Park Force Main, City of Leavenworth
- Wetland and OHWM Delineation, Wetland Rating, and Critical Areas Report and Mitigation Plan, and HPA for Beacon Hill Skyline Water Main, Beacon Hill Water and Sewer District
- Critical Areas Report, SEPA, Shoreline Permitting, FEMA Habitat Assessment, and Special Use Permit for Old Port Lift Station, City of Olympia
- Critical Areas Report, Shoreline Permitting, Section 404 Permitting, and Mitigation Design for Valencia Street Water Main, City of Bellingham
- Wetland and OHWM Delineation, Wetland Rating, and Report and Mitigation Design for Center Parkway Extension, City of Richland
- Wetland and OHWM Delineation, Wetland Rating, and Report and Shoreline Permitting for 10000 Block Avondale Erosion Project, City of Redmond
- Wetland Delineation, Rating, and Report, and SEPA, Biological Assessment, and Local Development Permits for Telegraph Road Multimodal Safety Improvements, City of Bellingham
- Wetland Reconnaissance and Local Permitting for Riverview East Lift Station, City of Pasco
- Wetland and Fish and Wildlife Habitat Conservation Areas Assessment for Panorama Tank, PUD No. 1 of Chelan County
- Wetland Reconnaissance and Technical Memorandum for Hawks Prairie Sister Standpipe, City of Lacey
- Wetland and OHWM Delineation, Wetland Rating, and Report for Clearwater Creek Irrigation Facilities Transfer, Kennewick Irrigation District
- Wetland Buffer Enhancement Mitigation Monitoring, Public Works Yard, City of Bonney Lake
- Wetland Delineation, Rating and Report for Ellensburg Flats Plat, HLA Engineering Inc.
- SEPA, HPA, and Wetland and OHWM Delineation, Wetland Rating, and Report for Donovan Avenue Water Main Repair and Replacement, City of Bellingham
- OHWM Delineation, SEPA, HPA, Section 404, and BA for ESA Compliance for Columbia River Intake Upgrades, City of Richland

Education

BS Environmental Science
Emphasis: Freshwater Ecology
Minor: Geography
Huxley College of the Environment
Western Washington University 2017

Training/Certifications

Biological Assessment Author Training, WSDOT H&LP (03/2022); Certified Junior Author (03/2020)

How to Determine the Ordinary High Water Mark, CTP (07/2021)

Demystifying Wetland and In-Water Permitting in Washington State, WTI (11/2019)

Western Washington Wetland Rating System, Ecology CTP (10/2018) and (03/2023)

Wetland Delineation, WTI (08/2018)

Affiliations

Society of Wetland Scientists

National Association of Wetland Managers

Washington Native Plant Society

Experience

7 years of experience
6 years at RH2

Noah Bloxton

Environmental Scientist

As a dedicated environmental scientist, Noah supports a variety of RH2's projects through conducting field investigations, preparing technical reports, and drafting permit applications. Having completed the University of Washington Wetland Science and Management Certificate, he has a background in wetland ecology and policy that makes him a great asset for projects requiring critical areas compliance. Prior to joining RH2, Noah conducted field work for local, state, and federal agencies, including restoration monitoring and wildlife surveys. His work at RH2 has included facilitating compliance with SEPA, NEPA, FEMA Floodplain Regulations, Critical Areas Ordinance, Shoreline Management Act, Washington Hydraulic Code, and more.

Representative Project Experience

- SEPA, Wetland Delineation, Wetland Rating, Critical Areas Study, Public Participation and Communication Plan, Valley View Sewer District
- SEPA, Shoreline Permitting, FEMA Habitat Assessment, and Special Use Permit for Old Port Lift Station, City of Olympia
- Wetland and OHWM Delineation, Wetland Rating, and Critical Areas Technical Memorandum for Grainger Springs Pump House Replacement, City of Bonney Lake
- SEPA, Shoreline Permitting, OHWM Delineation of the Wenatchee River, and Critical Areas Report for Waterfront Restroom Force Main Relocation, City of Leavenworth
- Wetland Reconnaissance and Critical Areas Compliance assistance for US 2 and Icicle Road Roundabout Scoping, LINK Transit
- SEPA, CUP, Biological Survey, NEPA Support for Process Water Reuse Facility Improvements Winter Storage, City of Pasco
- SEPA, Wetland Delineation, Wetland Rating, HPA, and Sensitive Areas Compliance Assistance for State Route 169 Water Main Improvements, City of Black Diamond
- SEPA, HPA, Wetland Delineation, Wetland Rating, OHWM Delineation, and Critical Areas Report for Beacon Hill to Skyline View Terrace Water Main, Beacon Hill Water and Sewer District
- Wetland Mitigation Monitoring and Report for Hawks Prairie Sister Standpipe, City of Lacey
- SEPA, Critical Areas Report for Advanced Metering Infrastructure Systems, City of Anacortes
- SEPA for West Pasco Water Treatment Plant to Zone 3 Water Main, City of Pasco
- SEPA for Northwest Trek Freezer Building, Metro Parks Tacoma
- SEPA for Biosolids Handling, Washington Fire Training Academy

Education

BS Environmental Science and Natural Resource Management
School of Environmental and Forest Sciences
University of Washington
2021

Training/Certifications

USACE Antecedent Precipitation Tool (APT), Ecobot (08/2022)

How to Determine the Ordinary High Water Mark, CTP (07/2022)

Wetland Science and Management Certificate, UW (06/2022)

Fish Passage Training: Inventory and Assessment, WDFW (05/2022)

Biological Assessment Author Training, WSDOT H&LP (Certified Junior Author 03/2022)

Affiliations

Society of Wetland Scientists

Experience

4 years of experience
2 years at RH2

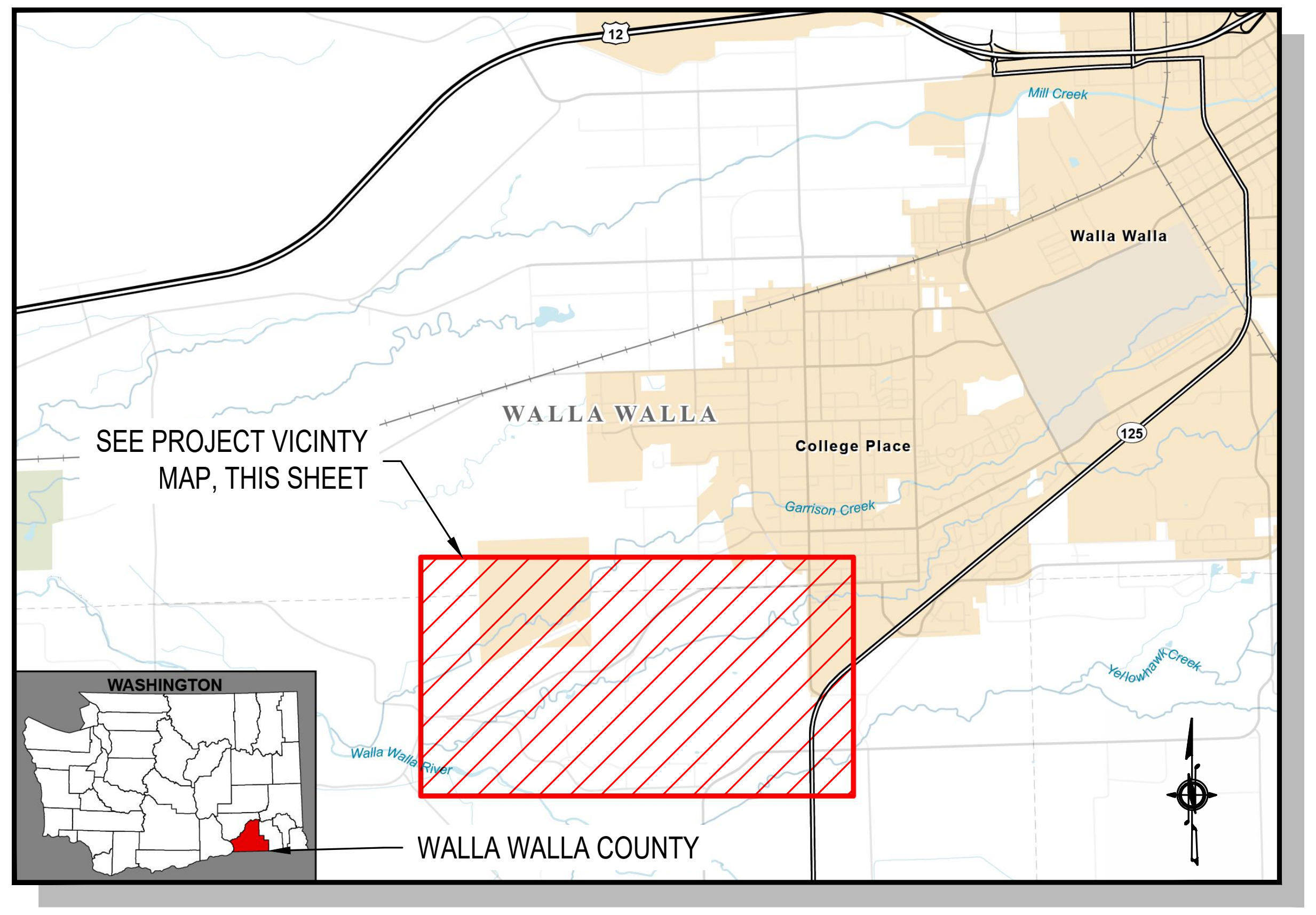
Appendix B
Project Design Plans

CITY OF COLLEGE PLACE
WELL NO. 7

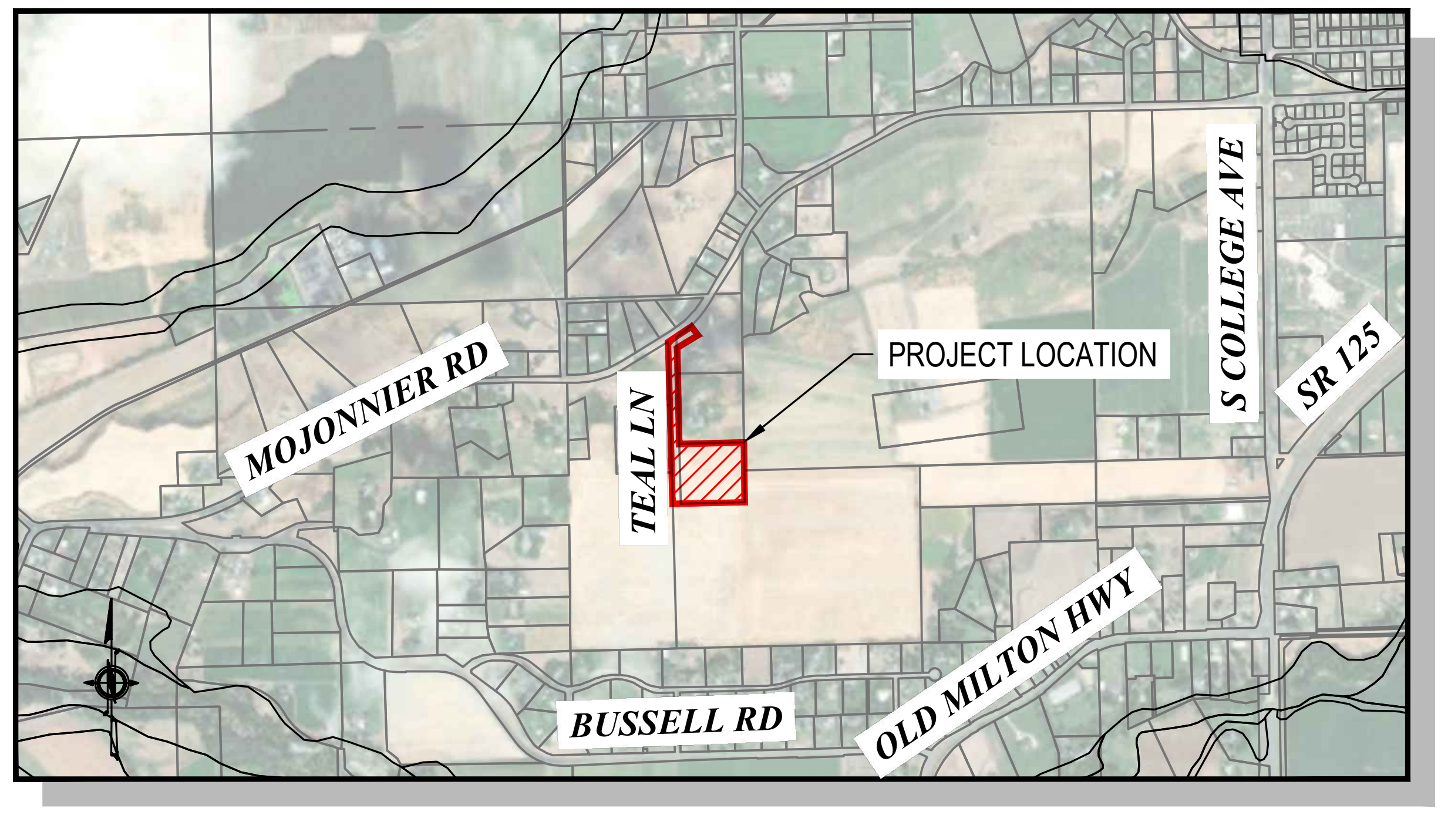
22-0054

90% REVIEW DRAWINGS

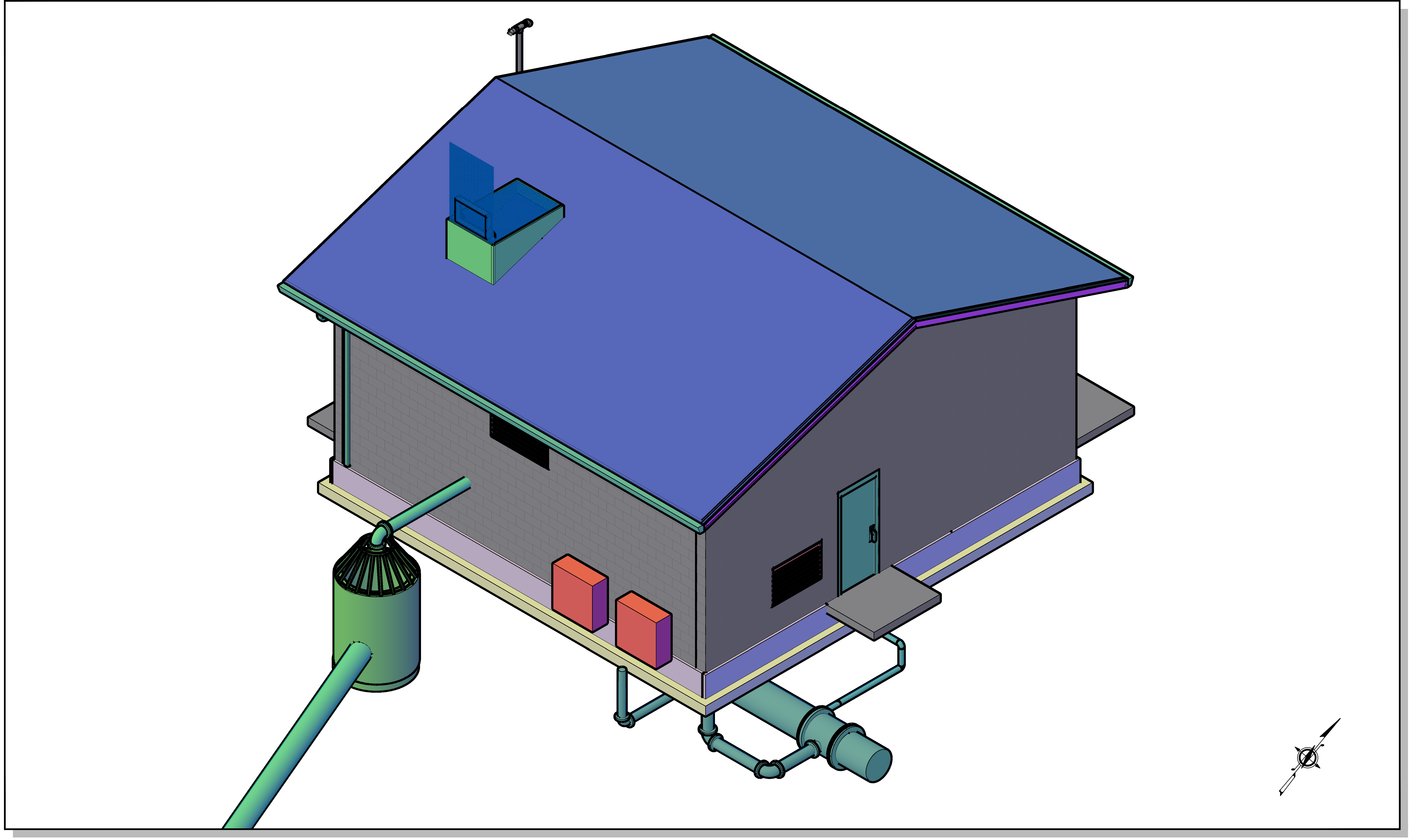
PROJECT VICINITY MAP



PROJECT LOCATION MAP



CONCEPTUAL DRAWING



SURVEY NOTES

HORIZONTAL DATUM

HORIZONTAL DATUM IS GRID, US STATE PLANE, WASHINGTON SOUTH ZONE, NAD83(11), BASED ON GPS OBSERVATIONS. DISTANCES ARE "GROUND" SCALED FROM GRID USING A COMBINED FACTOR OF 1.000070125. US SURVEY FEET.

VERTICAL DATUM

ELEVATION DATUM IS NAVD88 BASED ON OPUS SOLUTION (COMPUTED USING GEOID18). SET ELEV PER OPUS NAVD88 =733.18. CONTOURS ARE DERIVED FROM DIRECT FIELD OBSERVATIONS.

CONTACT PERSONNEL

CONTACT	AGENCY	PHONE (509)
PAUL CROSS, P.E (PRINCIPAL-IN-CHARGE)	RH2 ENGINEERING	392-6502
RYAN WITHERS, P.E. (PROJECT MANAGER)	RH2 ENGINEERING	392-6503
JOE LAWRENCE, P.E. (PROJECT ENGINEER)	RH2 ENGINEERING	392-5023
KYLE PALMER, E.I.T. (STAFF ENGINEER)	RH2 ENGINEERING	392-6497
ROBERT McANDREWS (PUBLIC WORKS DIRECTOR)	CITY OF COLLEGE PLACE	394-8526
MICHAEL RIZZITIELLO (CITY ADMINISTRATOR)	CITY OF COLLEGE PLACE	394-8506

CALL 48 HOURS BEFORE YOU DIG
ONE CALL 811

REPORT ALL SPILLS
DEPT. OF ECOLOGY 1-800-258-5990

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RYAN M. WITHERS
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PRELIMINARY

RH2

Jan. 11, 2024
CPLW7-P-COV.DWG

GENERAL NOTES

ADDRESSES

WELL FACILITY SITE:
PARCEL#: 35060223004
199 TEAL ROAD, COLLEGE PLACE, WA 99362
OWNER: CITY OF COLLEGE PLACE
625 S. COLLEGE AVE, COLLEGE PLACE, WA 99324
ENGINEER: RH2 ENGINEERING
114 COLUMBIA PT DRIVE STE C, RICHLAND, WA 99352

GENERAL CONSTRUCTION

1. A COPY OF THE APPROVED PLANS AND SPECIFICATIONS MUST BE ON-SITE WHENEVER CONSTRUCTION IS IN PROGRESS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY OTHER REQUIRED OR RELATED PERMITS PRIOR TO BEGINNING CONSTRUCTION.
2. IN THE EVENT THAT STANDARD CONSTRUCTION NOTES ARE FOUND TO BE IN CONFLICT WITH PROJECT SPECIFIC NOTES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. WHERE CONFLICTS ARISE, THE CONTRACTOR SHALL ASSUME THAT THE THE MORE RESTRICTIVE CONDITION SHALL APPLY.

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR.
2. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
3. ACCESS TO CONSTRUCTION LIMITS ALLOWED FROM PUBLIC RIGHT OF WAYS.
4. NO WORK IS ALLOWED WITHIN THE PUBLIC RIGHT-OF-WAY UNTIL A RIGHT-OF-WAY PERMIT HAS BEEN ISSUED AND THE CITY AND COUNTY HAVE BEEN NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF STARTING WORK WITHIN THE RIGHT-OF-WAY. ALL RIGHT-OF-WAY WORK TO BE PERFORMED IN ACCORDANCE WITH CITY OF COLLEGE PLACE AND WALLA WALLA COUNTY STANDARDS.
5. OPEN CUTTING OF EXISTING ROADWAYS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF COLLEGE PLACE AND WALLA WALLA COUNTY AND NOTED ON THESE APPROVED PLANS.
6. COMPACTION TESTING IS REQUIRED FOR ALL OPEN CUTS AND/OR CROSSINGS WITHIN PAVED OR TRAVELED AREAS OF PUBLIC RIGHT-OF-WAYS.
7. ALL TRENCH AND PAVEMENT RESTORATION SHALL COMPLY WITH THE CITY'S DEVELOPMENT GUIDELINES AND THE GUIDELINES OF WALLA WALLA COUNTY.
8. ALL PROJECTS ARE REQUIRED TO SUBMIT REQUESTS FOR VARIATIONS TO THE CITY PUBLIC WORKS STANDARDS IN WRITING. DETAILED DRAWINGS SHALL ACCOMPANY REQUESTS IF NECESSARY.
9. THE CONTRACTOR SHALL PROVIDE AT MINIMUM 48 HOUR ADVANCE NOTIFICATION TO THE CITY AND ENGINEER PRIOR TO ANY REQUIRED SPECIAL INSPECTION, DESIGN CRITICAL OBSERVATION, BACKFILLING ANY CONSTRUCTION, OR ANY OTHER EVENTS WHICH MAY REQUIRE ADVANCE SCHEDULING.
10. MATERIALS SAMPLING AND TESTING SHALL BE AT A FREQUENCY AND MAGNITUDE AS SPECIFIED IN THE STANDARD SPECIFICATIONS OR DETERMINED BY THE ENGINEER. A PRIVATE AND INDEPENDENT TESTING LABORATORY SHALL PERFORM TESTING AND SAMPLING. CERTIFIED TEST REPORTS SHALL BE FURNISHED FOR ALL TESTS PERFORMED BY PRIVATE TESTING LABORATORIES. THE CITY WILL BE RESPONSIBLE FOR ACCEPTANCE TESTING.
11. CONSTRUCTION NOISE SHALL BE LIMITED PER THE CITY OF COLLEGE PLACE & WALLA WALLA COUNTY CODE.

SURVEY

1. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY ROGERS SURVEYING INC., MADE ON AUGUST 18, 2022 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
2. EQUIPMENT AND PROCEDURES USED: A 5" [2MM+2PPM] TOTAL STATION USING CLOSED TRAVERSE AND RADIAL SURVEY METHODS
3. THIS IS NOT A BOUNDARY SURVEY. NO BOUNDARY INFORMATION WAS INCLUDED IN THE FIELD WORK OR RESEARCH FOR THIS PROJECT. THE PROPERTY BOUNDARIES SHOWN HEREON HAVE BEEN COMPILED FROM VARIOUS PUBLIC SOURCES AND HAVE NOT BEEN ESTABLISHED BY FIELD SURVEY. THEY ARE SHOWN HEREON TO AID IN THE INTERPRETATION OF THE MAP AND SHOULD NOT BE RELIED UPON AS A BOUNDARY SURVEY.
4. ALL DESIGN CRITICAL TOPOGRAPHIC AND PHYSICAL FEATURES SHOWN ON THESE PLANS ARE TO BE VERIFIED BY THE CONTRACTOR AS NECESSARY PRIOR TO CONSTRUCTION. IN THE EVENT THAT FIELD VERIFIED FEATURES OR EXPOSED UTILITIES ARE FOUND TO BE IN CONFLICT WITH THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. NO DEVIATION FROM THESE PLANS SHALL BE ACCEPTED ABSENT ENGINEER APPROVAL AND CITY CONCURRENCE PRIOR TO ANY IMPLEMENTATION IN THE FIELD.
5. CONTRACTOR SHALL REPLACE ALL EXISTING MONUMENTS AND SURVEY MARKERS DISTURBED ON THIS PROJECT WITH MONUMENTS PER CITY/COUNTY STANDARDS. ALL EXISTING SURVEY MARKERS SHALL BE LOCATED AND RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF WASHINGTON. ALL SURVEY NOTES OF EXISTING SURVEY MARKERS SHALL BE SUBMITTED TO OWNER PRIOR TO CONSTRUCTION.

SITE

1. PARKING FOR CONSTRUCTION PERSONNEL SHALL BE ON-SITE UNLESS OTHERWISE AUTHORIZED BY THE CITY/COUNTY.
2. ALL VEHICLES ARE TO BE CLEANED OF ALL EXCESS CONCRETE AND DIRT PRIOR TO LEAVING SITE.
3. THE CONTRACTOR SHALL CLEANUP ALL AREAS AFFECTED BY THEIR ACTIVITIES TO THE SATISFACTION OF THE CITY/COUNTY BY THE END OF EACH WORKING DAY OR MORE FREQUENTLY IF REQUIRED BY THE CITY/COUNTY. THIS INCLUDES REMOVAL OF ALL DUST, MUD, ROCKS, ASPHALT DEBRIS, AND REFUSE FROM STREETS, SIDEWALKS, DRIVEWAYS, AND ANY OTHER AREAS AFFECTED BY THE CONSTRUCTION ACTIVITIES. FAILURE TO CLEANUP TO THE SATISFACTION OF THE CITY/COUNTY WILL NECESSITATE A SHUTDOWN OF THE PROJECT UNTIL CLEANUP IS PROPERLY PERFORMED.
4. STORAGE OF ALL MATERIALS AND EQUIPMENT IS TO BE CONFINED TO WITHIN THE CONSTRUCTION LIMITS INDICATED ON THE PLANS. IF STORAGE IS NEEDED OUTSIDE THE CONSTRUCTION LIMITS THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE CITY/COUNTY AND ADJACENT PROPERTY OWNERS.
5. DO NOT DISTURB AREAS OUTSIDE OF CONSTRUCTION LIMITS. PROVIDE AND MAINTAIN CONSTRUCTION FENCING AS NEEDED TO PROPERLY SECURE SITE, DISCOURAGE SITE ACCESS BY UNAUTHORIZED PERSONELL, AND PREVENT DISTURBANCE TO ADJACENT PROPERTY.
6. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO EXISTING OR BETTER CONDITION UNLESS OTHERWISE STATED ON THE PLANS. RESTORATION OF DAMAGED ROAD SURFACING SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND GOVERNING CITY, COUNTY, OR STATE ROAD STANDARDS. ALL OTHER AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR AS DIRECTED BY THE CITY OR THEIR REPRESENTATIVE. THIS INCLUDES SOD, GRAVEL, UNFINISHED AREAS, SHOULDERS, LANDSCAPING, WALLS, ROCKERIES, FENCES AND ALL OTHER IMPROVEMENTS. EXISTING VEGETATED AREAS DISTURBED BY CONSTRUCTION SHALL BE RESEEDED WITH A NATIVE SEED MIX AS DIRECTED BY THE OWNER OR ENGINEERS SEE DETAIL 213 AND 214 ON DWG NO. D03 FOR ADDITIONAL INFORMATION.

EXISTING UTILITIES

1. ALL EXISTING UTILITIES INDICATED ON THE PLANS HAVE BEEN DEPICTED BASED ON THE BEST INFORMATION AVAILABLE TO THE ENGINEER AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. THE SOURCE OF INFORMATION GENERALLY CONSISTS OF CONSTRUCTION RECORDS AND OTHER DATA OBTAINED VERBALLY FROM OFFICIALS ASSOCIATED WITH THE PARTICULAR UTILITY. OWNER AND ENGINEER DO NOT GUARANTEE AND DO NOT ASSUME ANY RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION. OTHER UTILITIES OR DEVIATIONS FROM THESE PLANS MAY EXIST. NO SUB-SURFACE EXPLORATION WAS MADE TO VERIFY UTILITY ROUTINGS AND THE ROUTING OF ALL BURIED.
2. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION OF ANY BURIED PROPOSED UTILITIES. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION, AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION OF ANY BURIED PROPOSED UTILITIES. CALL 1-800-424-5555 48 HOURS BEFORE CONSTRUCTION FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND THE UTILITY COMPANY WHEN A CONFLICT OCCURS OR WHEN A CONFLICT IS ANTICIPATED.
3. IT IS UNDERSTOOD THAT OTHER ABOVE GROUND AND UNDERGROUND FACILITIES NOT SHOWN ON THE DRAWINGS MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS AND THE SIZE OF ALL UTILITIES SHOWN TO AVOID DAMAGE AND/OR DISTURBANCE TO SUCH UTILITIES, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. CONTRACTOR SHALL PRESERVE, PROTECT AND SUPPORT ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OR UTILITY OWNER REPRESENTATIVE A MINIMUM OF 72 HOURS IN ADVANCE OF ANY PLANNED DISRUPTION TO UTILITIES INCLUDING, BUT NOT LIMITED TO, WATER, SEWER, NATURAL GAS, IRRIGATION, TELEPHONE, POWER, CABLE AND FIBER OPTICS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES AND STRUCTURES EXPOSED DURING TRENCH EXCAVATION AND SHALL PROVIDE SHORING AND SUPPORT AS NECESSARY.
6. USE ETHOFOAM PAD PER STANDARD SPECIFICATION SECTION 9-05.52 BETWEEN WATER AND SEWER WHERE THERE ARE FEWER THAN 12" OF SEPARATION. A SAND CUSHION PER WSDOT 9-03.13 MAY BE USED AS APPROVED BY THE OWNER.
7. THE CONTRACTOR SHALL MAINTAIN SEWER AND DOMESTIC WATER SERVICE TO ALL EXISTING CUSTOMERS AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE CITY. NOTIFY EACH AFFECTED CUSTOMER A MINIMUM OF 72 HOURS IN ADVANCE OF ANY SERVICE DISRUPTION. NO SHUTDOWNS SHALL BE ALLOWED ON MONDAYS, FRIDAYS OR THE DAYS BEFORE AND AFTER A HOLIDAY.

UTILITIES

1. ALL UTILITY CONSTRUCTION SHALL COMPLY WITH THE CITY OF COLLEGE PLACE, WALLA WALLA COUNTY, UTILITY FRANCHISEES, AND WASHINGTON DEPT. OF TRANSPORTATION STANDARDS.
2. CONTRACTOR'S PROFESSIONAL LAND SURVEYOR SHALL PROVIDE STAKING OF CONSTRUCTION FOR CITY INSPECTION A MINIMUM OF 72 HRS. PRIOR TO CONSTRUCTION. CONTRACTOR TO FURNISH ALL MATERIALS.
3. ALL WATER MAINS SHALL BE LAID "UP HILL" STARTING AT THE LOWEST MAIN ELEVATION. THE MAIN SHALL BE POSITIONED SO THAT THE BELL END IS ON THE HIGHER SIDE OF THE PIPE SEGMENT AND THE PLAIN END INSERTED INTO THE BELL END. PIPE ENDS SHALL NOT BE DRIVEN HOME, BUT SHALL BE POSITIONED WITH ADEQUATE ROOM FOR THERMAL EXPANSION OF THE PIPE NETWORK WITHOUT BUCKLING OR COMPRESSION OF THE JOINTS.
4. IN LOCATIONS WHERE THE EXISTING WATER MAIN IS EXPOSED IN ORDER TO CONSTRUCT THE PROPOSED WATER MAIN, THE AMOUNT OF OPEN TRENCH SHALL BE MINIMIZED TO AVOID EXPOSING MORE THAN ONE EXISTING WATER MAIN PIPE JOINT. THE CONTRACTOR SHALL CONDUCT THE WORK IN A MANNER THAT PREVENTS DAMAGE TO THE EXISTING WATER MAIN DURING THE CONSTRUCTION OF THE NEW WATER MAIN.
5. THE CONTRACTOR SHALL COMPLY WITH THE CITY AND DEPARTMENT OF ECOLOGY STANDARDS REGARDING HORIZONTAL AND VERTICAL SEPARATIONS. DEFLECT THE WATER MAIN ABOVE OR BELOW EXISTING UTILITIES AS REQUIRED TO MAINTAIN MINIMUM VERTICAL CLEARANCE AND MINIMUM COVER, UNLESS OTHERWISE SPECIFIED.
6. CONFLICTS WHICH MAY OCCUR DURING CONSTRUCTION OF THE WATER MAIN SHALL BE RESOLVED IN THE FOLLOWING MANNER:
   - 6.1. IF THE PROPOSED WATER MAIN CONFLICTS WITH A MAJOR UTILITY SUCH AS THE SEWER OR STORM LINES, THE WATER LINE SHALL BE REALIGNED USING VERTICAL OR HORIZONTAL BENDS AS APPROVED BY THE ENGINEER. PAYMENT FOR THESE ALIGNMENT CHANGES SHALL BE BASED ON THE UNIT PRICES FOR BENDS AND FITTINGS AS ESTABLISHED PRIOR TO THE CHANGES BEING CONSTRUCTED AND AS APPROVED BY THE ENGINEER.
   - 6.2. IF THE PROPOSED WATER MAIN CONFLICTS WITH A MINOR UTILITY SUCH AS POWER, CABLE, GAS AND TELEPHONE LINES, THE UTILITY COMPANY SHALL BE CONTACTED AND THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY TO REALIGN THE CONFLICT UTILITY, UNLESS OTHERWISE APPROVED BY THE ENGINEER. PAYMENT FOR THESE ALIGNMENT CHANGES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
7. ALL WATER MAINS SHALL BE RESTRAINED FROM UNRESOLVED HYDROSTATIC THRUST FORCES BY CONCRETE BLOCKING UNLESS SPECIFIED OTHERWISE. INSTALL BLOCKING ONLY IN AREAS WHERE THE BLOCKING DOES NOT BEAR UPON OTHER UTILITIES AND WHERE EXCAVATION OF THE OTHER UTILITIES WOULD NOT COMPROMISE THE THRUST RESTRAINT SYSTEM.
8. AT POINTS WHERE EXISTING THRUST BLOCKING IS FOUND, MINIMUM CLEARANCE BETWEEN THE CONCRETE BLOCKING AND OTHER BURIED UTILITIES OR STRUCTURES SHALL BE 5 FEET.
9. CONTRACTOR SHALL CONNECT THE NEW WATER MAIN TO THE EXISTING SYSTEM ONLY AFTER THE NEW MAIN IS PRESSURE TESTED, FLUSHED, DISINFECTED AND SATISFACTORY BACTERIOLOGICAL SAMPLE RESULTS ARE OBTAINED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE CITY AND THE WASHINGTON STATE HEALTH DEPARTMENT. ALL TESTING SHALL BE DONE IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY.

TESC

1. ONSITE EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND BE IN PLACE PRIOR TO CONSTRUCTION. ANY PROBLEMS OCCURRING BEFORE FINAL ACCEPTANCE BY THE CITY SHALL BE CORRECTED BY THE CONTRACTOR. UPON FINAL ACCEPTANCE BY THE CITY, OR AS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY, NON-DEGRADABLE EROSION CONTROL MEASURES.
2. OWNER MAY DIRECT MAINTENANCE AND REPAIR OF TESC MEASURES AND/OR FACILITIES AS THE HIGHEST PRIORITY WORK AT ANY TIME THE TESC MEASURES AND/OR FACILITIES DO NOT MEET THE CURRENT CITY/COUNTY PLAN REQUIREMENTS. ALL TESC MEASURES AND/OR FACILITIES MAY NOT BE SHOWN ON THE PLANS, BUT SHALL BE PROVIDED BASED ON WEATHER CONDITIONS AND CONSTRUCTION PRACTICES AT THE DISCRETION OF THE OWNER.
3. THE TESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.) AS DIRECTED BY THE CITY.
4. THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE TESC FACILITIES.
5. NO CONSTRUCTION RELATED ACTIVITY SHALL CONTRIBUTE TO THE DEGRADATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUND WATERS, OR ALLOW PARTICULATE EMISSIONS TO THE ATMOSPHERE, WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTIONS THAT POTENTIALLY ALLOW DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL OF THE WASHINGTON STATE DEPARTMENT OF ECOLOGY OR BE IN CONFORMANCE WITH PERMIT CONDITIONS. IN ACCORDANCE WITH THE DEPARTMENT OF ECOLOGY AIR QUALITY STANDARDS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ALL FUGITIVE DUST THAT MAY BE GENERATED BY THE CONSTRUCTION PROJECT.
6. PROPER EROSION AND SEDIMENT CONTROL PRACTICES MUST BE USED ON THE CONSTRUCTION SITE AND ADJACENT AREAS TO PREVENT UPLAND SEDIMENTS FROM ENTERING THE NATURAL DRAINAGE SYSTEM. ALL SURFACE AREAS DISTURBED AND ANY EMBANKMENTS OR EXCAVATIONS CREATED BY CONSTRUCTION ACTIVITIES MUST BE REVEGETATED OR PROVIDED AN EQUIVALENT TYPE OF PROTECTION AGAINST EROSION.
7. ANY DISCHARGE OF SEDIMENT-LADEN RUN-OFF OR OTHER POLLUTANTS TO WATERS OF THE STATE IS IN VIOLATION OF CHAPTER 90.48, WATER POLLUTION CONTROL AND WAC 173-201A, WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE STATE OF WASHINGTON, AND IS SUBJECT TO ENFORCEMENT ACTION.
8. DURING CONSTRUCTION, ALL RELEASES OF OILS, HYDRAULIC FLUIDS, FUELS, OTHER PETROLEUM PRODUCTS, PAINTS, SOLVENTS, AND OTHER DELETERIOUS MATERIALS MUST BE CONTAINED AND REMOVED IN A MANNER THAT WILL PREVENT THEIR DISCHARGE TO WATERS AND SOILS. THE CLEANUP OF SPILLS SHALL TAKE PRECEDENCE OVER OTHER WORK ON THE PROJECT. BARRELS, PETROPHILIC PADS, TARPS, AND OTHER EQUIPMENT NECESSARY FOR CAPTURING, CONTROLLING, AND DISPOSING OF HAZARDOUS FLUIDS SHALL BE AVAILABLE ON-SITE AT ALL TIMES.
9. LINEAR CONSTRUCTION ACTIVITIES SUCH AS RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL BE CONDUCTED TO MEET THE SOIL STABILIZATION REQUIREMENT.
10. TEMPORARY SLOPES SHALL CONFORM TO ALL APPLICABLE SAFETY REGULATIONS AND SHALL BE COVERED WITH PLASTIC DURING WET WEATHER AND THROUGHOUT THE WET SEASON TO REDUCE EROSION AND SLOPE FAILURE POTENTIAL.
11. IF STRAW MULCH FOR TESC IS USED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF FOUR INCHES.
12. ALL STORMWATER WITHIN THE WELL SITE SHALL BE RETAINED ON-SITE. NO STORMWATER SHALL BE ALLOWED TO RUN OFFSITE.
13. ALL DRIVEWAYS, ROADS, AND HAUL ROUTES SHALL BE KEPT CLEAN OF ALL DEBRIS AND MATERIAL RESULTING FROM THE CONTRACTOR'S OPERATION, AS DIRECTED BY THE CITY. DUST CONTROL MUST BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL USE A VACUUM STREET SWEEPER TO REMOVE DUST AND DEBRIS FROM PAVEMENT AREAS AS DIRECTED BY THE OWNER. FLUSHING OF STREETS SHALL NOT BE PERMITTED WITHOUT PRIOR OWNER APPROVAL. POWER BROOMS SHALL NOT BE USED, NOR PERMITTED ON SITE.
14. ANY AREAS OF EXPOSED SOILS THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
15. ANY AREA NEEDING TESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) CALENDAR DAYS.
16. THE TESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A WEEK DURING THE DRY SEASON, TWICE A WEEK DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.
17. ALL LOADS MUST BE SECURED PER RCW 46.61.655.

TRAFFIC CONTROL

1. THE CONTRACTOR SHALL PREPARE TRAFFIC CONTROL PLAN(S) SHOWING SIGNAGE AND FLAGGERS AS NEEDED TO COMPLETE THESE IMPROVEMENTS AND SUBMIT TO THE OWNER FOR APPROVAL, IF DIFFERENT FROM THE TRAFFIC CONTROL PLAN SHOWN IN THESE PLANS. TRAFFIC CONTROL PLANS SHALL ADDRESS DETOURS FOR PEDESTRIANS AND BICYCLISTS AS NECESSARY.
2. NO WORK SHALL COMMENCE UNTIL ALL APPROVED TRAFFIC CONTROL IS IN PLACE.
3. ALL TRAFFIC CONTROL DEVICES AND PROCEDURES SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), WSDOT AND THE CITY OF COLLEGE PLACE STANDARDS. SEE TRAFFIC PLANS FOR DETAILS.

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05	EXISTING SITE PLAN	C01
06	SITE PREPARATION PLAN	C02
07	PROPOSED SITE OVERVIEW	C03
08	PROPOSED SITE PLAN	C04
09	PROPOSED LANDSCAPE PLAN	L01
10	PROPOSED SITE SECTIONS	C05
11	SEWER PLAN I	C06
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RED HIGHLIGHTED SHEETS ARE NOT INCLUDED IN THIS PLAN SHEET SELECTION.

G=GENERAL	DWG NO. G##
C=CIVIL	DWG NO. C##
A=ARCHITECTURAL	DWG NO. A##
S=STRUCTURAL	DWG NO. S##
M=MECHANICAL	DWG NO. M##
E=ELECTRICAL	DWG NO. E##

RYAN M. WITHERS
49550
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7

GENERAL NOTES I

ENGINEER: JZL
REVIEWED: RMW
SAVE DATE: Jan 11, 2024
PLOT DATE: Jan 11, 2024
CLIENT: CPL
FILENAME: CPLW7-P-COV.DWG
JOB NO.: 22-0054

REVISIONS

90% REVIEW DRAWINGS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: G01
SHEET NO.: 02
53

EXISTING LEGEND

SURVEY CONTROL LEGEND

○	REBAR CAP

SURVEY UTILITY LEGEND

⋈	WATER GATE VALVE
◎	SANITARY SEWER MANHOLE
○	SANITARY SEWER STRUCTURE
Ⓦ	MONITORING WETWELL

SURVEY DRY UTILITY LEGEND

⌽	POWER POLE
⚠	POWER PAD MOUNT TRANSFORMER
☒	POWER JUNCTION BOX

SURVEY SIGNAL LEGEND

⌽—☒	STREET LIGHT ASSEMBLY

SURVEY UTILITY LINETYPES

—— G ——	NATURAL GAS
—— P ——	UNDERGROUND POWER
—— OHP ——	OVERHEAD POWER
—— SS ——	SANITARY SEWER
—— ST ——	STORM DRAIN LINE
—— W ——	WATER LINE

SURVEY CONTROL LINETYPES

—— ——	WETLAND BUFFER
— — — —	STREAM BUFFER
—·—·—	STREAM CENTERLINE
———	100 YEAR FLOODZONE
▭	WETLAND
—— ——	EASEMENT
—— — — ——	PROPERTY LINE
———	RIGHT OF WAY CENTERLINE
———	RIGHT OF WAY LINE

SURVEY SITE LINETYPES

—— 1170 ——	MAJOR CONTOUR
—— 1172 ——	MINOR CONTOUR
— — — — —	BUILDING EDGE
— — — — —	DIRT ROAD EDGELINE
— — — — —	GRAVEL ROAD EDGELINE
——□——	GUARDRAIL
—— x —— x ——	FENCE

SURVEY AREA HATCHING

▭	PARKING LOT ASPHALT AREA
▭	ROADWAY ASPHALT AREA
▨	ROADWAY CONCRETE AREA
▨	DIRT ROADWAY
▨	GRAVEL ROADWAY
▭	LANDSCAPING (SOD, PLANTINGS)

PROPOSED LEGEND

DEMOLITION LEGEND

— — — — — —	SAWCUT LINE
▭	ASPHALT REMOVAL AREA
▨	VEGETATION REMOVAL AREA
▨	STABILIZED CONSTR. ENTRANCE
- - - - - - - -	STRAW WATTLES
—∘—∘—∘—∘—	SILT FENCE
[/// ///]	UTILITY REMOVAL LIMITS

SITEWORK LEGEND

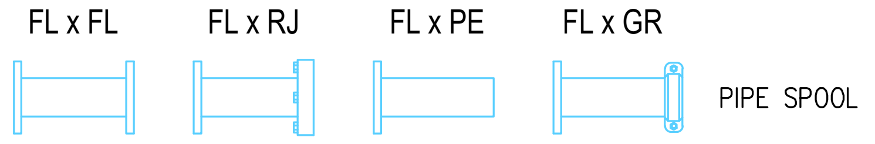
▬ ▬ ▬	CONSTRUCTION LIMITS
—— 1170 ——	MAJOR CONTOUR
—— 1172 ——	MINOR CONTOUR
—— P ——	ELECTRICAL CONDUIT
▪	JUNCTION BOX
⌽—☒	LUMINAIRE
▭	HYDROSEED
▨	GRAVEL SURFACE
▭	ASPHALT
▨	CONCRETE
▨	CONTROL DENSITY FILL
▭	ELECTRICAL EQUIPMENT PAD
[- - - - - -]	BUILDING FOOTPRINT
▭	DOORWAY
▭	WINDOW
▣ ▣ ▪ ▯	CMU BLOCK
—•—•—	REBAR
———	STORMWATER PIPE
□	TYPE 1 CATCH BASIN
⊙	BOLLARD
—x—x—x—x—	FENCE

WATERMAIN LEGEND

———	WATERMAIN
═══	RESTRAINED JOINT PIPE
═══	CASING SLEEVE
▨	CDF ENCASEMENT
⚲	FIRE HYDRANT
▣	WATER METER
◂ ◁	THRUST BLOCK
⋈	WATER VALVE
⊣	FLANGED FITTING
⊏	MECHANICAL JOINT FITTING
⊏	RESTRAINED JOINT FITTING
]	CAP
●	AIR/COMBINATION VALVE
⋈	TAPPING TEE ASSEMBLY
⌗	CONNECTION TO EXISTING

MAJOR MECHANICAL LEGEND

PIPE AND PIPE JOINING (PLAN VIEW)



- ADAPTER, FLxMJ SHOWN. OTHER END CONFIGURATIONS WHERE REQUIRED
- LONG BODY SLEEVE
- FCA WITH SHACKLE RODS, SHACKLE RODS NOT SHOWN
- COUPLING, TRANSITION OR RESTRAINED WHERE REQUIRED
- EXPANSION JOINT WITH LIMIT RODS, LIMIT RODS NOT SHOWN
- DISMANTLING JOINT
- FOSTER ADAPTER
- AWWA M11 RESTRAINT HARNESS

PIPE SUPPORTS (PLAN VIEW)

▲	STAND-ON/CONCRETE
●	CEILING HUNG
▬	WALL SUPPORTED
⌀	BASE BEND/RISER

OTHER PIPING SYMBOLS

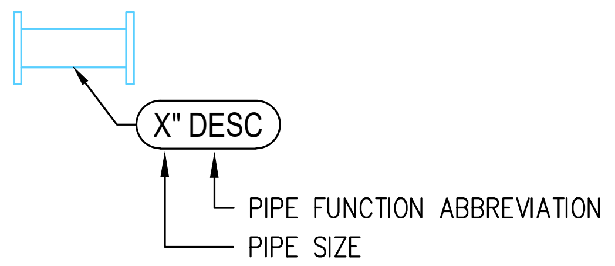
⇦	PIPE FLOW ARROW (COLOR BY PIPE FUNCTION)
STL/DI	PIPE MATERIAL TRANSITION

NOTE: ALWAYS PROVIDE A DIELECTRIC ISOLATION KIT WHERE DISSIMILAR METALS JOIN

SHACKLE/CONTROL RODS

PROCESS PIPING LEGEND AND ABBREVIATIONS

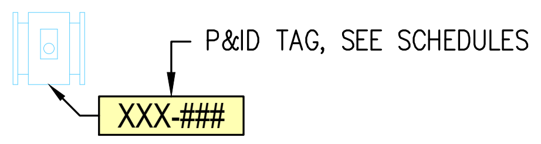
PIPE ANNOTATION



PROCESS PIPING ABBREVIATIONS

SEE PIPE SCHEDULE.

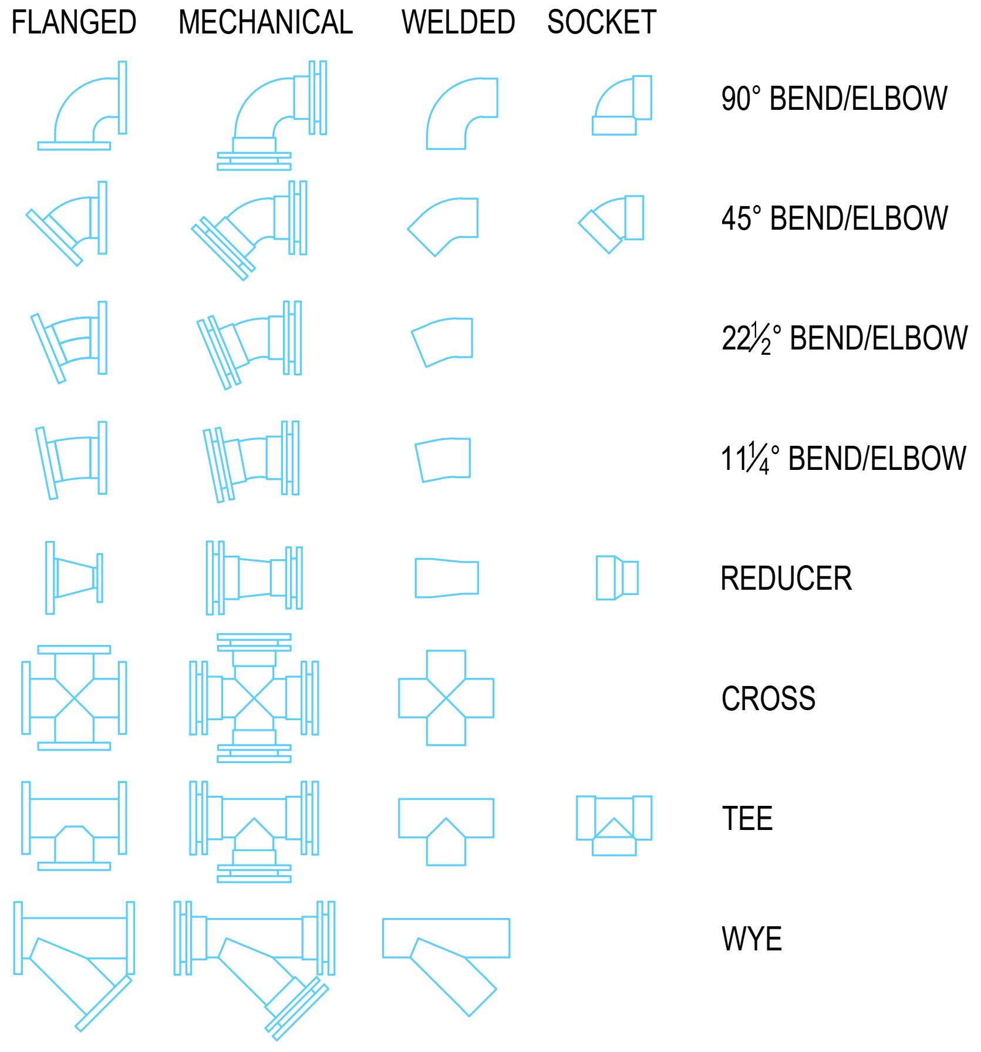
VALVE, EQUIPMENT, OR INSTRUMENTATION ANNOTATION



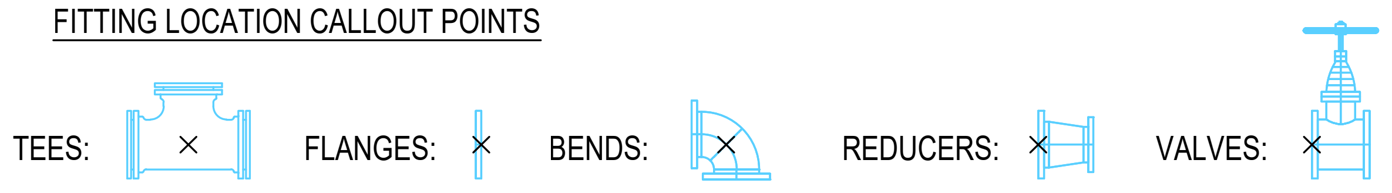
VALVES, METERS, AND APPURTENANCES (PLAN VIEW)

- HINGED CHECK VALVE (FLANGED)
- GATE VALVE (FLANGED)
- BUTTERFLY VALVE (FLANGED W/ HANDWHEEL SHOWN)
- BUTTERFLY VALVE (LUG WO/ HANDWHEEL SHOWN)
- ELECTROMAGNETIC FLOWMETER (FLANGED)
- PRESSURE RELIEF VALVE (FLANGED)
- PRESSURE GAUGE AND PRESSURE SWITCH ASSEMBLY
- ELECTRIC VALVE ACTUATOR W/ BACKUP HANDWHEEL

FITTINGS (PLAN VIEW)



FITTING LOCATION CALLOUT POINTS



ABBREVIATIONS

AGS	ABOVE GROUND SURFACE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BFV	BUTTERFLY VALVE
BGS	BELOW GROUND SURFACE
BPS	BOOSTER PUMP STATION
BV	BALL VALVE
CB	CATCH BASIN
CDF	CONTROLLED DENSITY FILL
CF	CUBIC FEET
CITY	CITY OF COLLEGE PLACE
CY	CUBIC YARDS
CL	CENTERLINE
CSBC	CRUSHED SURFACING BASE COURSE
CSTC	CRUSHED SURFACING TOP COURSE
COP	COPPER
COUNTY	WALLA WALLA COUNTY
CV	CHECK VALVE
DIAM	DIAMETER
DI	DUCTILE IRON
DISC	DISCHARGE
DND	DO NOT DISTURB
DMJ	DISMANTLING JOINT
DWG	DRAWING NUMBER
E	EASTING
EL	ELEVATION
EX	EXISTING
EOC	EDGE OF CONCRETE
FCA	FLANGED COUPLING ADAPTER
FF	FINISHED FLOOR
FL	FLANGE
FW	FUSION WELDING
GAL	GALLON
GPM	GALLONS PER MINUTE
GR	GROOVE
GV	GATE VALVE
HP	HORSEPOWER
IBC	INTERNATIONAL BUILDING CODE
IFC	INTERNATIONAL FIRE CODE
IE	INVERT ELEVATION
L	LEFT
LF	LINEAR FEET
LTF	LENGTH TO FIT
MAX	MAXIMUM
MGD	MILLION GALLONS PER DAY
MIN	MINIMUM
MJ	MECHANICAL JOINT
MW	MEGAWATT
N	NORTHING
NTC	NOTE TO CLIENT (REMOVE FOR BID SET)
NTE	NOTE TO ENGINEER (REMOVE FOR BID SET)
QTY	QUANTITY
P	POWER
P&ID	PIPING AND INSTRUMENTATION DIAGRAM
PE	POLYETHYLENE
PEX	CROSS-LINKED POLYETHYLENE
PSI	POUNDS PER SQUARE INCH
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE
PV	PLUG (ECCENTRIC) VALVE
PVC	POLYVINYL CHLORIDE
OHWL	ORDINARY HIGH WATER LEVEL
R	RIGHT
RE	RIM ELEVATION
RFCA	RESTRAINED FCA
RJ	RESTRAINED JOINT
ROW	RIGHT-OF-WAY
SF	SQUARE FEET
SPEC	SPECIFICATIONS
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SST	STAINLESS STEEL
ST	STORM
STA	STATION LINE
STD	STANDARD
STL	STEEL
SUCT	SUCTION
TBR	TO BE REMOVED
TDH	TOTAL DYNAMIC HEAD
TELM	TELEMETRY
TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
THD	THREADED
TYP	TYPICAL
VFD	VARIABLE FREQUENCY DRIVE
W	WATER
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

PIPELINE LENGTH MEASUREMENTS

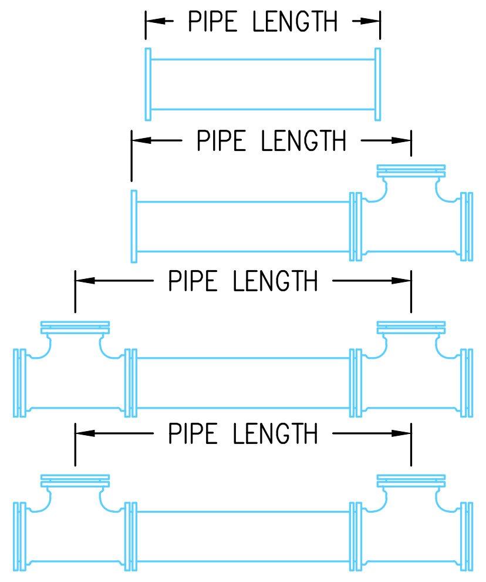
THE FOLLOWING NON-FACILITY PIPELINE (EX: WATER MAIN, SEWER MAIN, & IRRIGATION MAIN) LENGTHS CALLED OUT ON PLANS ARE MEASURED AS FOLLOWS:

FLANGE x FLANGE (FLxFL) PIPE MEASURED FROM FACE OF FLANGE TO FACE OF FLANGE.

FLANGE x PLAIN END (FLxPE) PIPE MEASURED FROM FACE OF FLANGE TO CENTER OF FITTING.

PLAIN END x PLAIN END (PExPE) PIPE MEASURED FROM CENTER OF FITTING TO CENTER OF FITTING.

RESTRAINED JOINT x RESTRAINED JOINT (RJxRJ) PIPE MEASURED FROM CENTER OF FITTING TO CENTER OF FITTING.

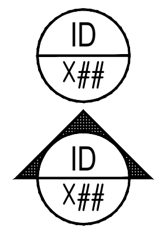


FITTINGS ARE ASSUMED TO BE STANDARD LENGTH 125#, 250# FLANGED OR COMPACT CLASS 350 MECHANICAL JOINTS. CONTRACTOR RESPONSIBLE FOR VERIFYING LENGTHS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE INTO ACCOUNT ANY VARIATIONS IN FITTING DIMENSIONS.

SECTION AND DETAIL REFERENCES

THE FOLLOWING CONVENTIONS HAVE BEEN USED WITHIN THESE DRAWINGS TO REFER THE READER BETWEEN THE SECTION/DETAIL AND THE PLAN FROM WHICH IT IS REFERENCED.

REFERENCE BUBBLES



PLAN REFERENCE BUBBLE - REFERS READER BACK TO THE PLAN FROM WHICH THE DETAIL OR SECTION ORIGINATED.

DETAIL/SECTION REFERENCE BUBBLE - REFERS READER TO THE DRAWING ON WHICH THE DETAIL OR SECTION IS LOCATED.

WHERE,
ID = SECTION/DETAIL REFERENCE NUMBER
X## = DRAWING NUMBER ON WHICH DETAIL ORIGINATED OR RESIDES.

SECTION/DETAIL REFERENCE NUMBER CONVENTIONS:

SECTIONS OR ELEVATIONS SHOULD HAVE A LETTER REFERENCE NUMBER (A THROUGH ZZ).

DETAILS SHOULD HAVE AN ALPHANUMERIC REFERENCE NUMBER (A-Z OR 1-1799). DISCIPLINE SPECIFIC STANDARD DETAILS FOLLOW THE DIVISION NUMBER.

EXAMPLES:
2## = SITE WORK OR CIVIL STANDARD DETAILS
3## = CONCRETE STANDARD DETAILS
4## = MASONRY STANDARD DETAILS
6## = STRUCTURAL STANDARD DETAILS
11## = EQUIPMENT STANDARD DETAILS
15## = MECHANICAL STANDARD DETAILS
16## = ELECTRICAL STANDARD DETAILS

SUBSURFACE UTILITY LEGEND

THE CLASSIFICATIONS FOR SUBSURFACE UTILITIES ARE OUTLINED AND EXPLAINED IN THE FOLLOWING LIST:

UTILITY QUALITY LEVEL A. POTHOLE LOCATION —⊕ W —— W —— W ——	- PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE OF (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. UNLESS OTHERWISE NOTED, QUALITY LEVEL A IS ONLY APPLICABLE AT POTHOLED LOCATIONS ON THE PLANS. AT ALL OTHER AREAS, THE UTILITY SHOULD BE ASSUMED TO BE QUALITY LEVEL B.
UTILITY QUALITY LEVEL B. —— W —— W —— W ——	- INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.
UTILITY QUALITY LEVEL C. ——— — — — W — — — — W ———	- INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES
UTILITY QUALITY LEVEL D. —• • • • W • • • • W • • • • W ——	- INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS

NOTES:

- THE USE OF THE LINE TYPES PROVIDED ABOVE WAS A PRIMARY METHOD FOR INDICATING THE ACCURACY OF THE UTILITIES SHOWN WITHIN THESE PLANS. WHEN THE SOURCE OF THE INFORMATION WAS UNKNOWN OR THE METHOD FOR LOCATING THE UTILITIES WAS UNAVAILABLE, QUALITY LEVEL D WAS USED AS THE DEFAULT.
- THESE CLASSIFICATIONS ARE BASED ON CI/ASCE 38-02, STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.

RH2

RYAN M. WITHERS
49550
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7

GENERAL NOTES II

COLLEGE PLACE
WALLA WALLA VALLEY

JOB NO.: 22-0054
CLIENT: CPL
FILENAME: CPLW7-P-COV.DWG
SAVE DATE: Jan 11, 2024
PLOT DATE: Jan 11, 2024
ENGINEER: JZL
REVIEWED: RMW

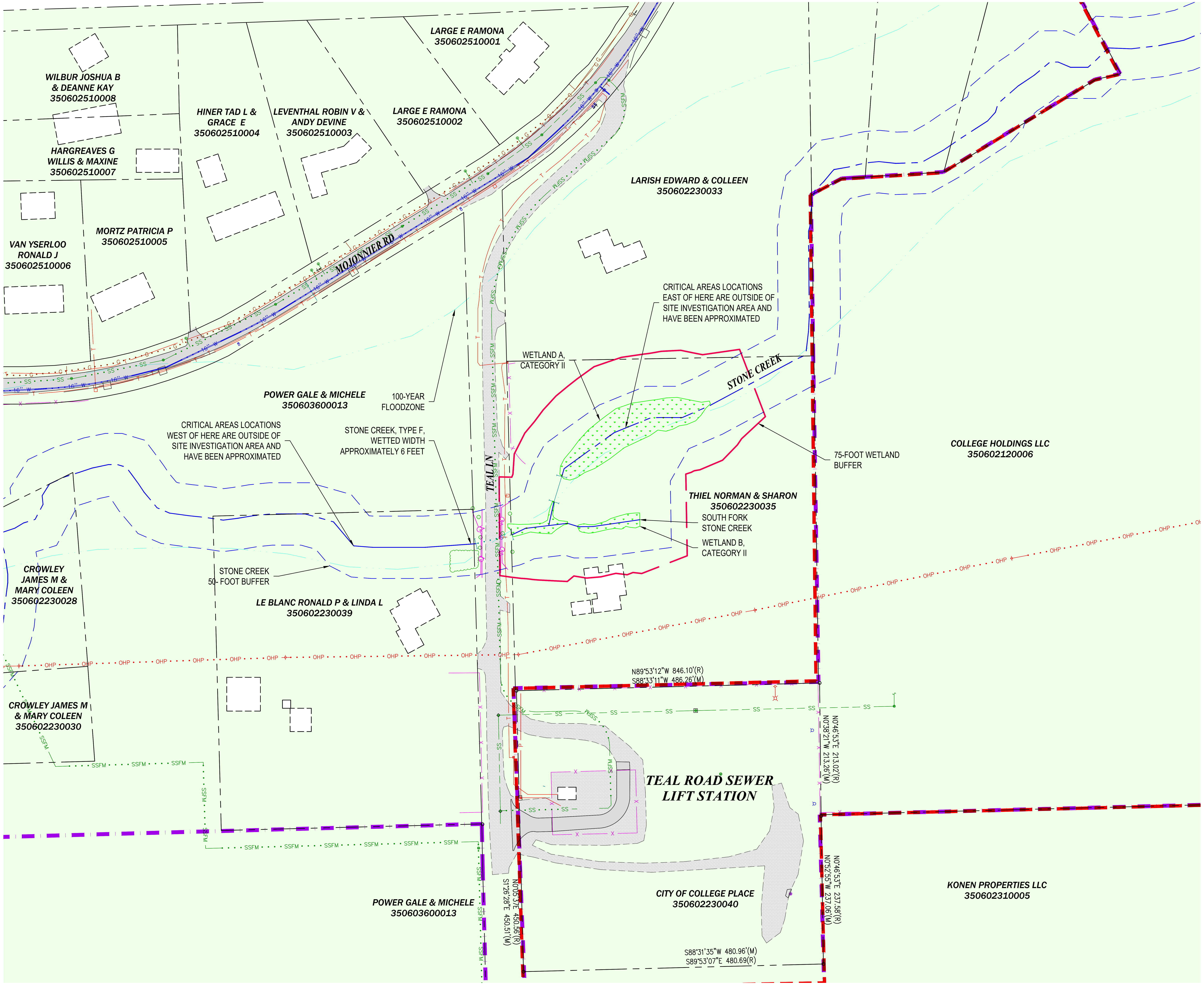
REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

90% REVIEW DRAWINGS

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: G02
SHEET NO.: 03
53

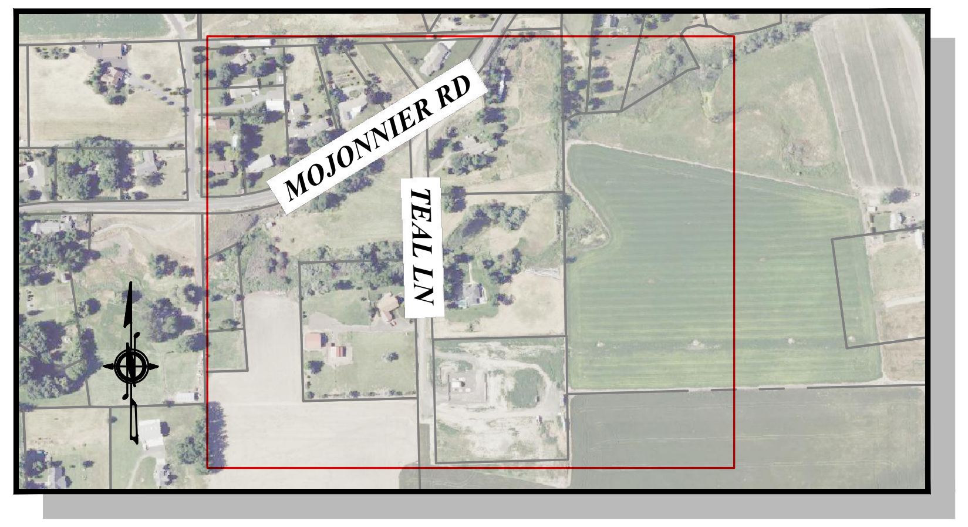


🟥 CITY OF COLLEGE PLACE CITY LMIITS	🟪 CITY OF COLLEGE PLACE URBAN GROWTH AREA

EXISTING SITE OVERVIEW

1" = 80'

VICINITY MAP



RH2

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STATE OF WASHINGTON
49550
REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7
EXISTING SITE OVERVIEW

COLLEGE PLACE
WALLA WALLA VALLEY

ENGINEER: JZL
REVIEWED: RMW
SAVE DATE: Jan 11, 2024
PLOT DATE: Jan 11, 2024
CLIENT: CPL
FILENAME: CPLW7-P-COV.DWG
JOB NO.: 22-0054

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW
		90% REVIEW DRAWINGS		

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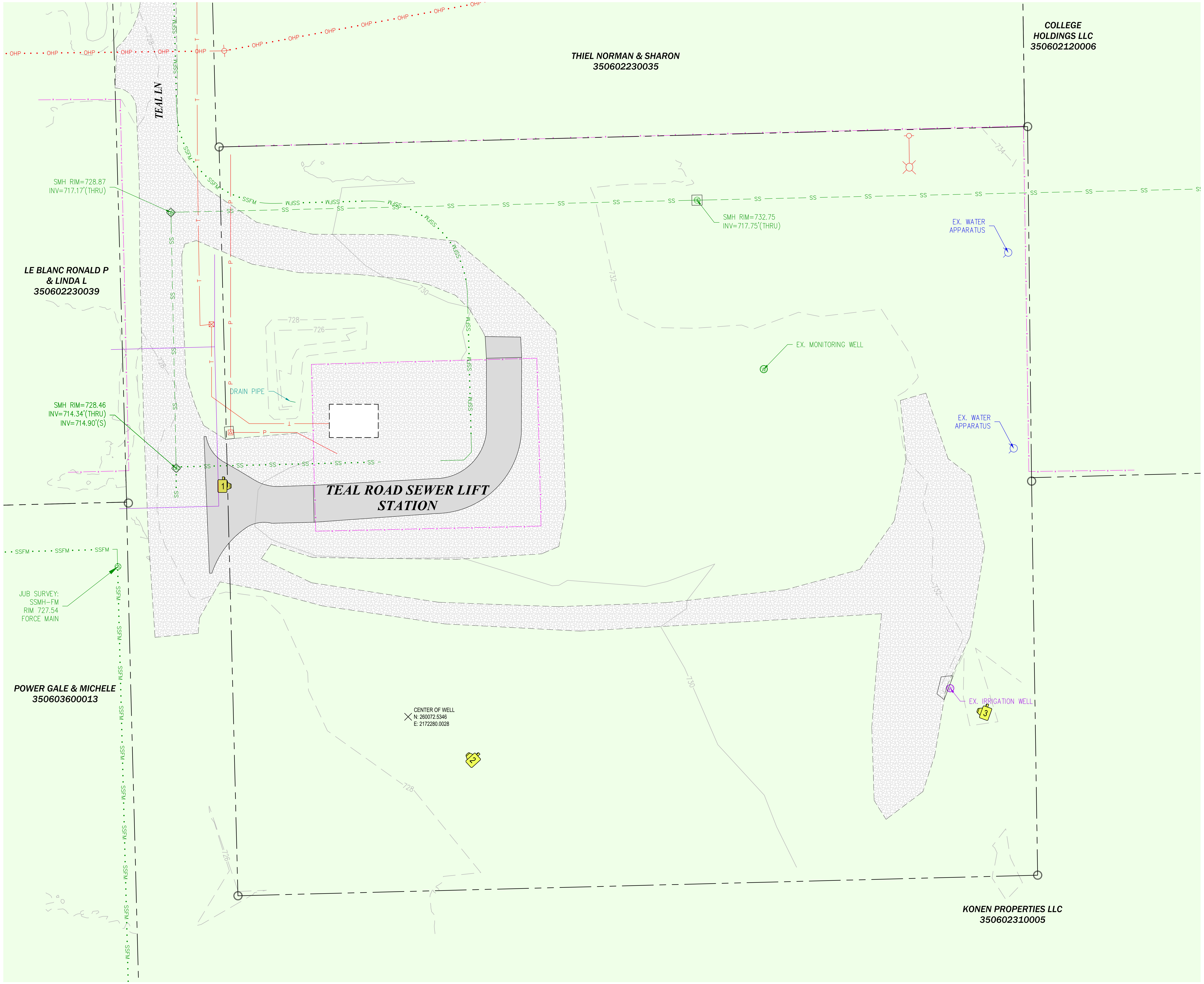
0" 1" 2"
DRAWING IS FULL SCALE WHEN
BAR MEASURES 2"

DWG NO.: G03
SHEET NO.: 04
53



EXISTING SITE

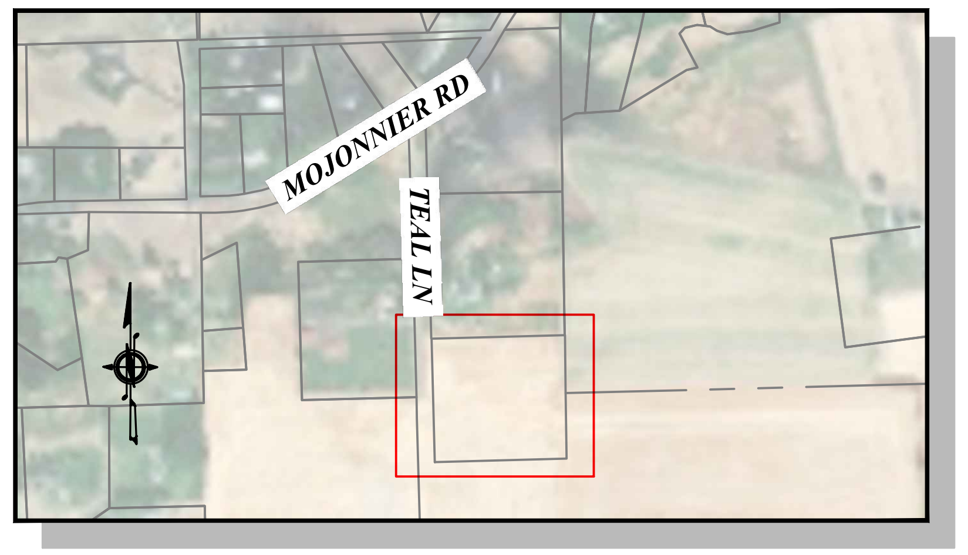
1" = 30'

1 EXISTING CITY LIFT STATION WEST ENTRANCE

2 PROPOSED WELL HOUSE SITE

3 EXISTING IRRIGATION WELL

VICINITY MAP



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CITY OF COLLEGE PLACE
WELL NO. 7

EXISTING SITE PLAN

ENGINEER: JZL
REVIEWED: RMW
SAVE DATE: Jan 8, 2024
PLOT DATE: Jan 11, 2024
CLIENT: CPL
FILENAME: CPLW7-P-SITEX.DWG
JOB NO.: 22-0054

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW
		90% REVIEW DRAWINGS		

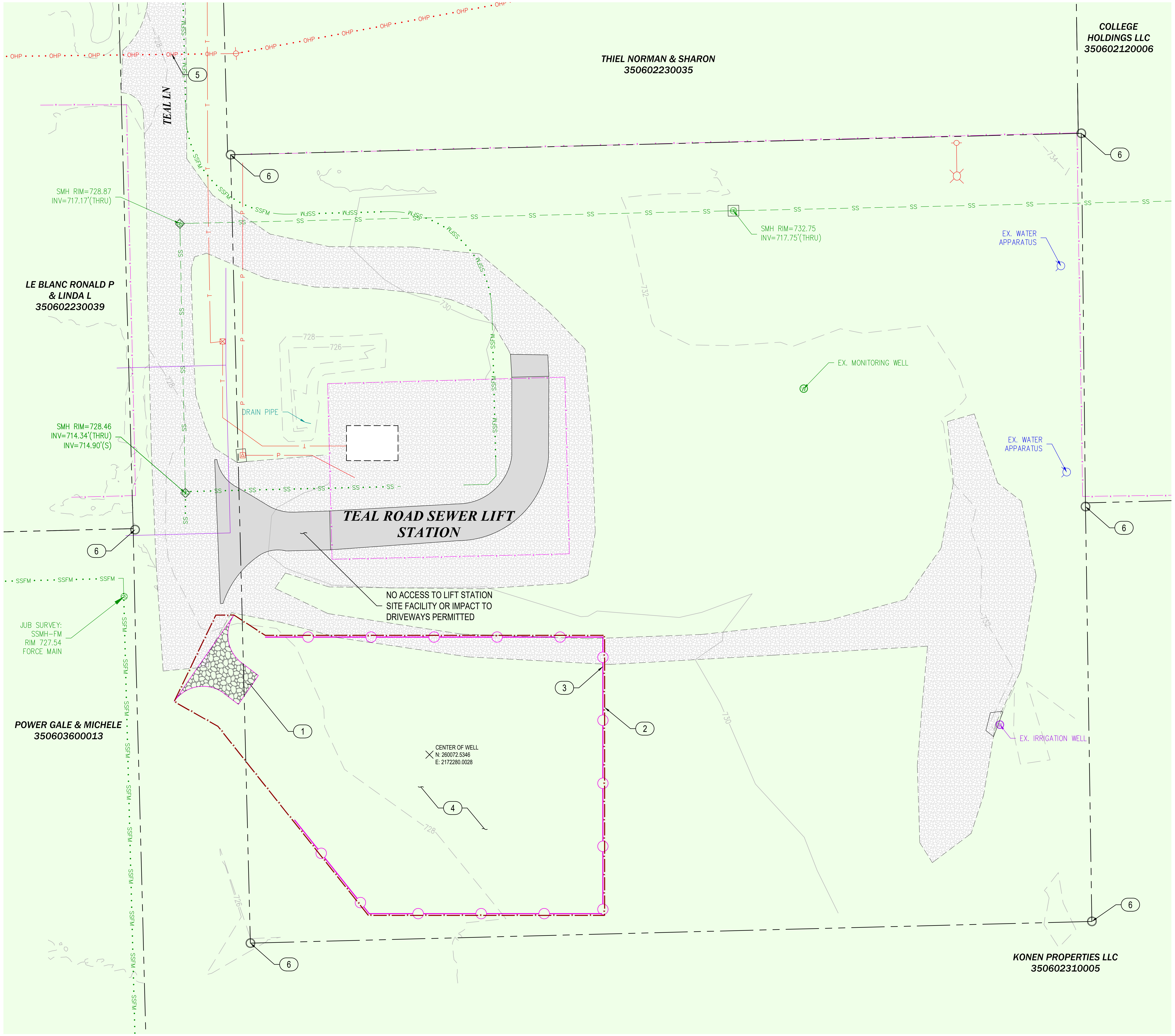
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C01

SHEET NO.: 05



WELLHOUSE FACILITY SITE PREPARATION PLAN

1" = 30'

SITE PREPARATION NOTES

1. INSTALL ALL NECESSARY TESC MEASURES PRIOR TO BEGINNING CONSTRUCTION.
2. DO NOT DISTURB EXISTING UTILITIES, PAVEMENT, OR OTHER SURFACE FEATURES UNLESS OTHERWISE NOTED ON THE PLAN.
3. CONTRACTOR SHALL NOT DISTURB NEIGHBORING PROPERTIES DURING CONSTRUCTION.
4. EXISTING IRRIGATION LINES, VALVES, SPRINKLER HEADS, AND OTHER APPURTENANCES NOT SHOWN. CONTRACTOR TO LOCATE AND REMOVE IRRIGATION SYSTEM AS NEEDED TO CONSTRUCT THE IMPROVEMENTS.
5. OFFSITE STORMWATER DISCHARGES MUST MEET ECOLOGY REQUIREMENTS FOR TURBIDITY AND OTHER PARAMETERS (WAC 173-220-020).
6. COMPLY WITH WALLA WALLA COUNTY AND CITY OF COLLEGE PLACE STORMWATER STANDARDS. ADDITIONAL BMPS BEYOND THOSE SHOWN MAY BE REQUIRED.
7. CLEAN TRACKED SEDIMENT OFF OF PAVED SURFACES DAILY AND AS OTHERWISE DIRECTED BY THE CITY.

SITE PREPARATION LEGEND

1	MIN. 20' WIDE STABILIZED CONSTRUCTION ENTRANCE.
2	PROVIDE TEMPORARY CHAINLINK SITE SECURITY FENCING DURING NON-WORKING HOURS. MAINTAIN SITE SECURITY AT ALL TIMES.
3	PROVIDE SILT FENCING.
4	REMOVE EXISTING SOD AS REQUIRED TO CONSTRUCT PROPOSED IMPROVEMENTS
5	PROTECT AND DO NOT DISTURB OVERHEAD POWER
6	PRESERVE AND PROTECT EXISTING SURVEY MONUMENT

RH2

49550
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7

SITE PREPARATION PLAN

ENGINEER: JZL
REVIEWED: RMW
SAVE DATE: Jan 10, 2024
PLOT DATE: Jan 11, 2024
CLIENT: CPL
FILENAME: CPLW7-P-PREP.DWG
JOB NO.: 22-0054

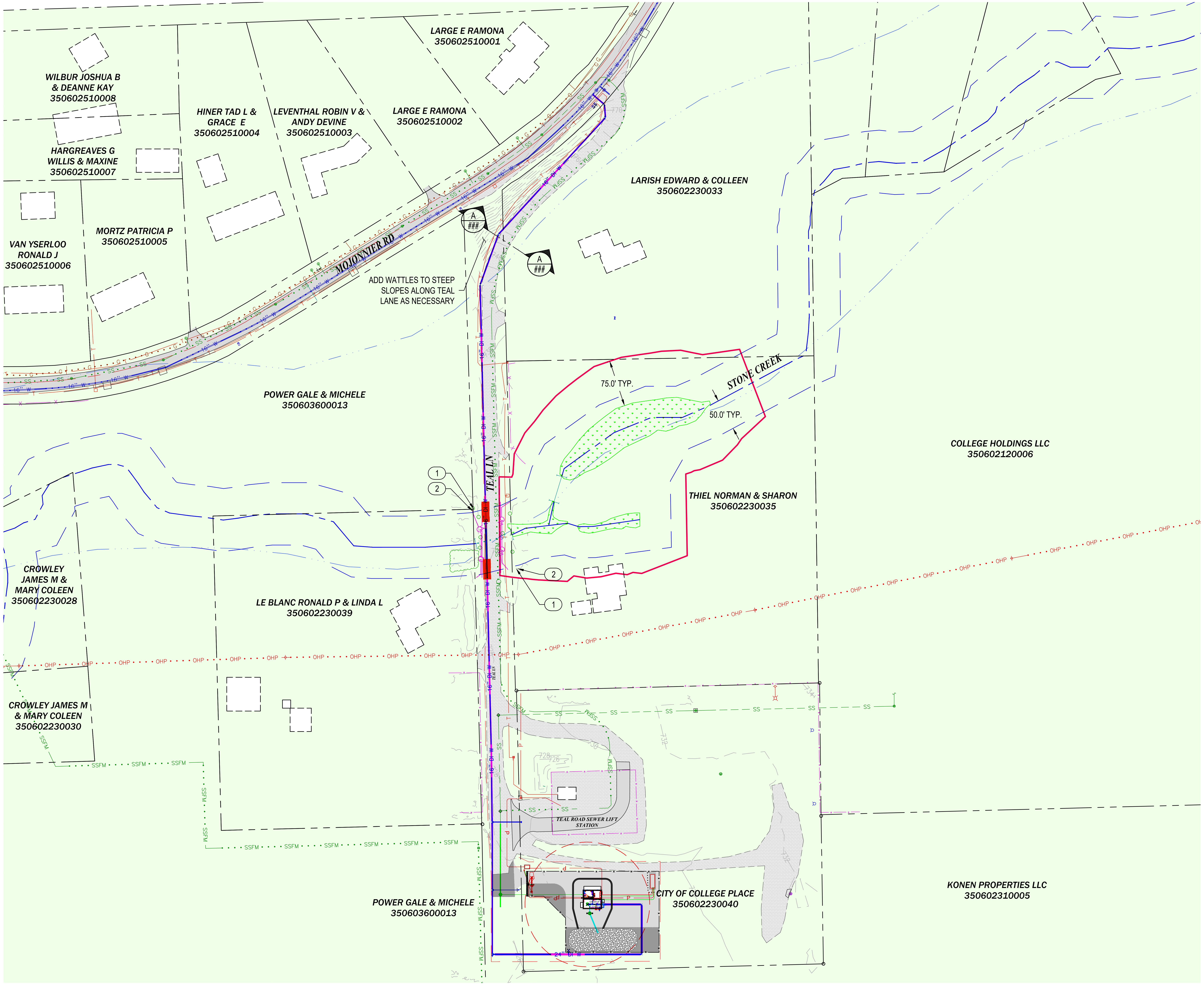
REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

90% REVIEW DRAWINGS

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C02
SHEET NO.: 06
53



PROPOSED SITE

1" = 80'

SITE PROTECTION

① PROVIDE SILT FENCING AND EXTEND 5 FEET BEYOND STREAM BUFFER.

② PROVIDE STRAW WATTLE AND EXTEND 5 FEET BEYOND STREAM BUFFER.

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PRELIMINARY
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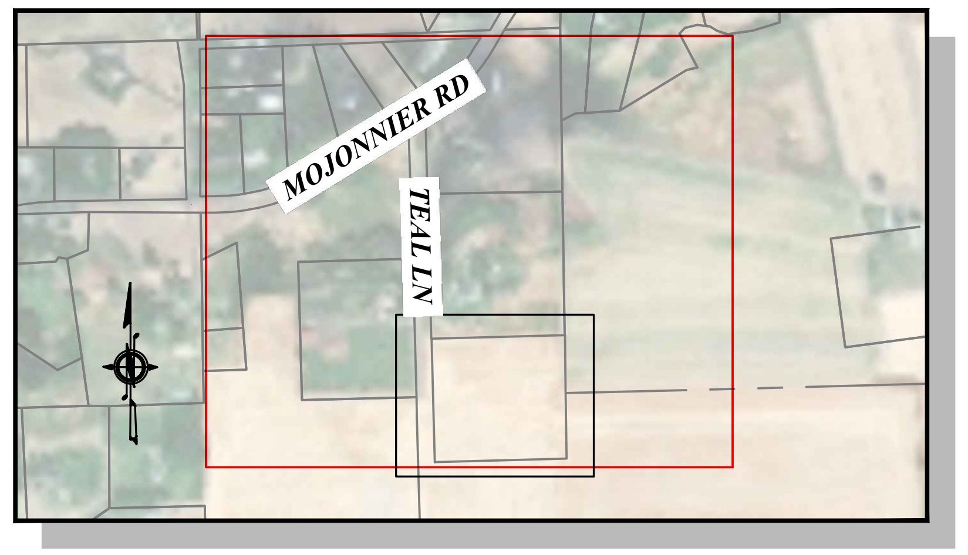
VICINITY MAP



CITY OF COLLEGE PLACE
WELL NO. 7

PROPOSED SITE OVERVIEW

ENGINEER: JZL	REVIEWED: RMW
SAVE DATE: Jan 10, 2024	PLOT DATE: Jan 11, 2024
CLIENT: CPL	FILENAME: CPLW7-P-SITEP.DWG
JOB NO.: 22-0054	

REVISIONS

90% REVIEW
DRAWINGS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

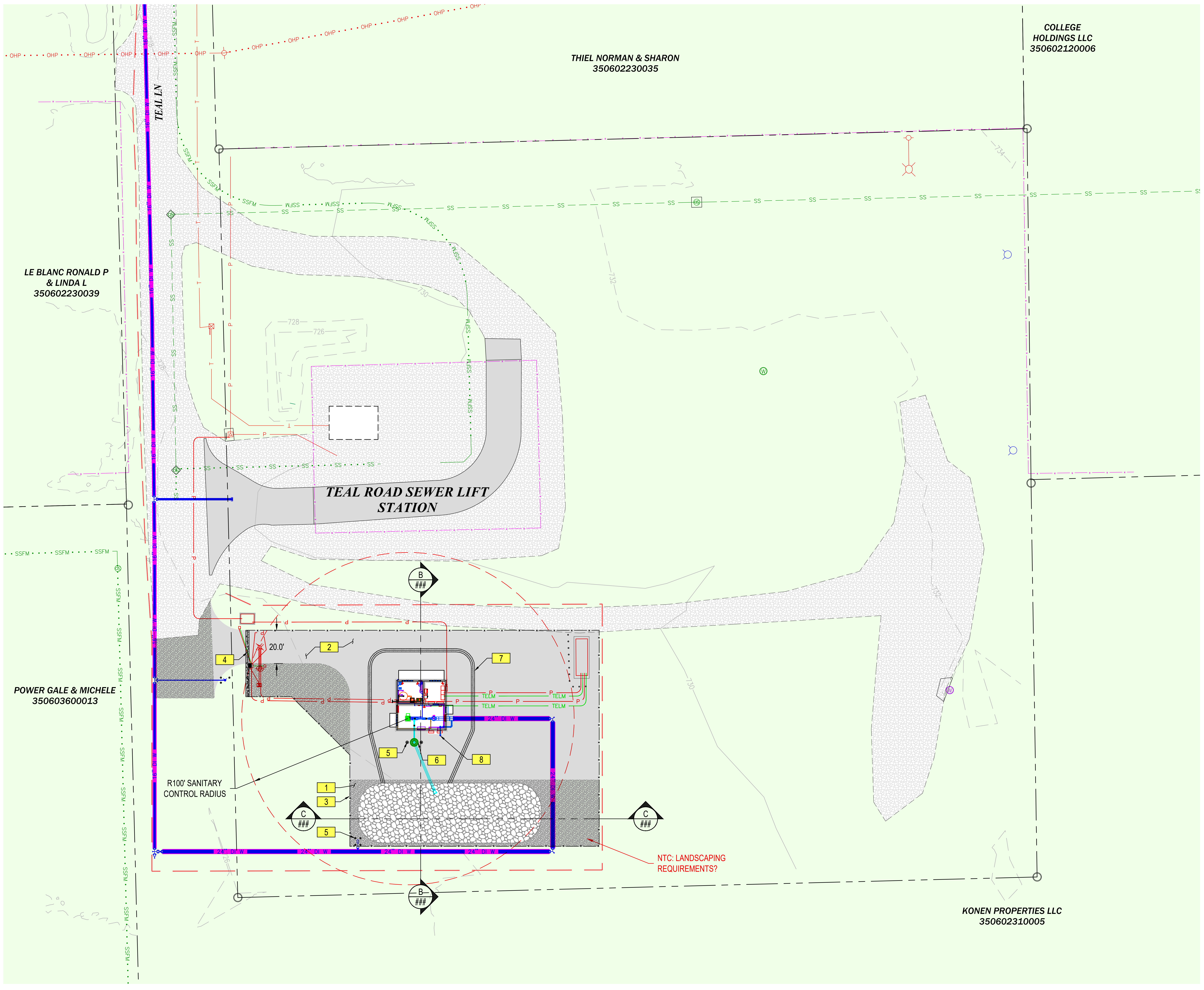
0" 1" 2"

DRAWING IS FULL SCALE WHEN
BAR MEASURES 2"

DWG NO.: C03

SHEET NO.: 07

53



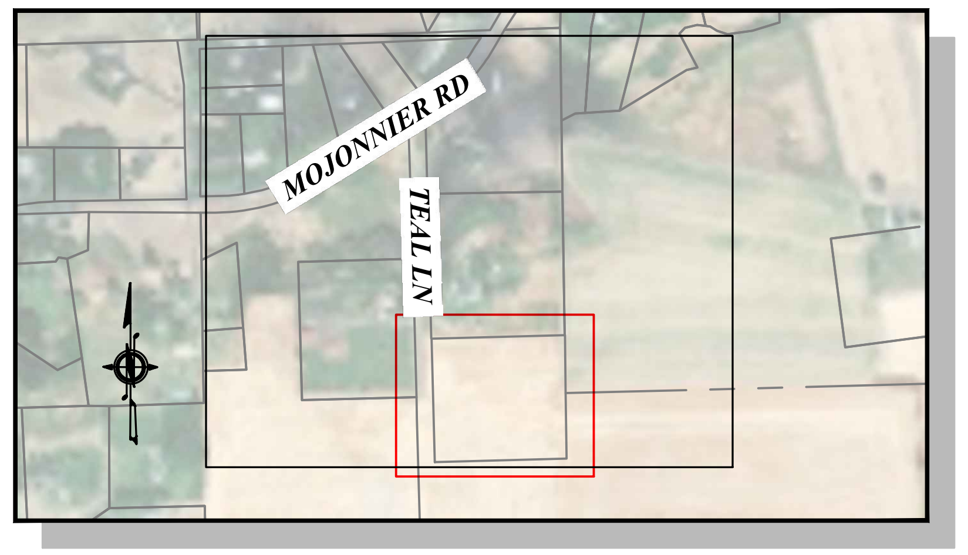
PROPOSED SITE

1" = 30'

SITE PLAN LEGEND

1	PROPOSED GRAVEL SURFACING	214 D03
2	PROPOSED ASPHALT SURFACING	213 D03
3	PROPOSED CHAINLINK FENCE	201 D02
4	PROPOSED AUTOMATED VEHICULAR GATE	202 D02
5	PROPOSED BOLLARD TYPE 2 PER WSDOT STANDARD PLAN H-60.20.01, TYP.	
6	PROPOSED OVERFLOW MANHOLE	209 D03
7	PROPOSED VALLEY GUTTER PER CITY OF COLLEGE PLACE STD. 110.21.	
8	FDC PER FIRE DEPARTMENT APPROVAL	

VICINITY MAP



RYAN M. WITHERS
STATE OF WASHINGTON
49550
REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7

PROPOSED SITE PLAN

ENGINEER: JZL
REVIEWED: RMW
SAVE DATE: Jan 10, 2024
PLOT DATE: Jan 11, 2024
CLIENT: CPL
FILENAME: CPLW7-P-SITEP.DWG
JOB NO.: 22-0054

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

90% REVIEW DRAWINGS

SCALE: SHOWN

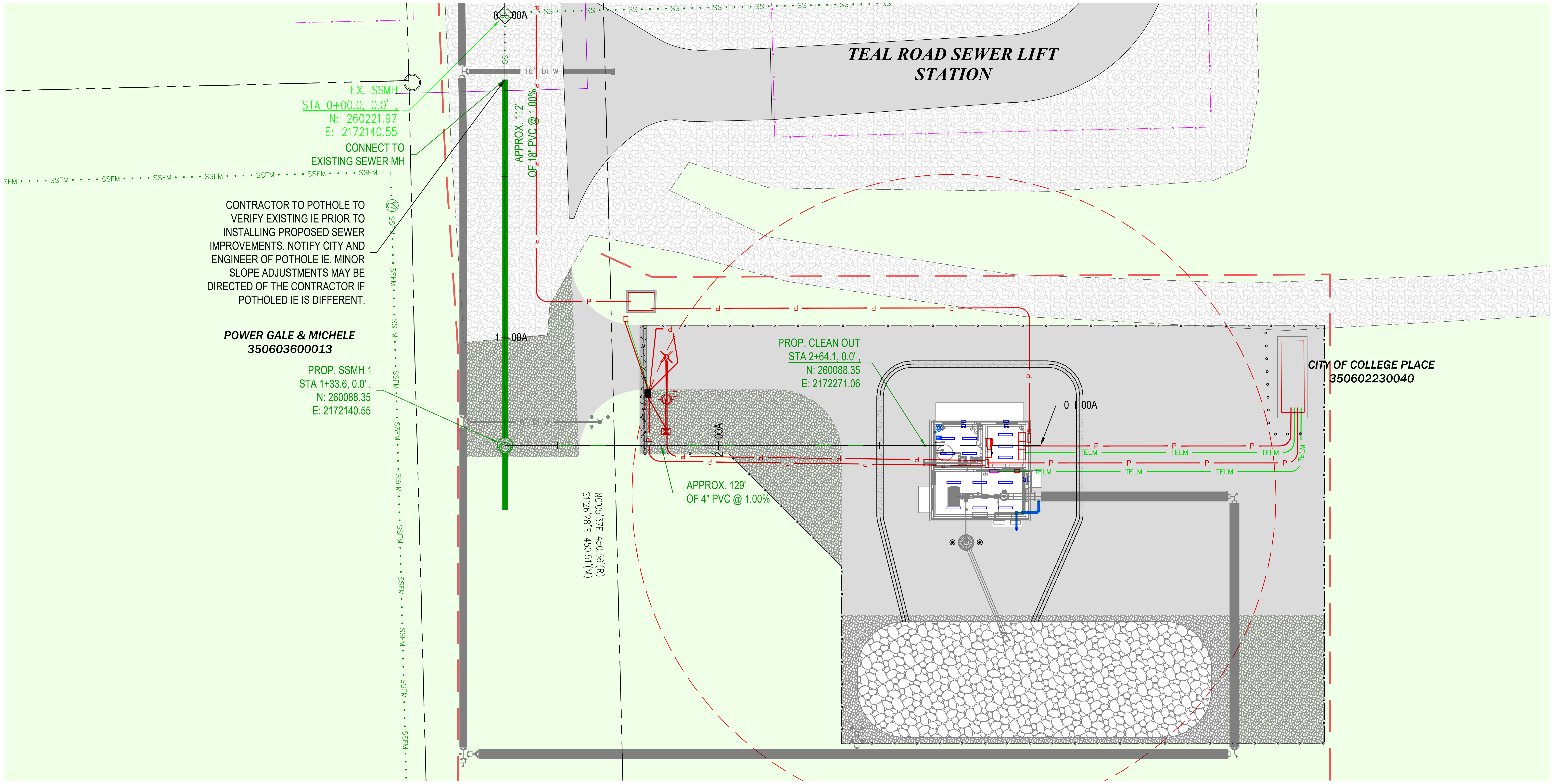
0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C04

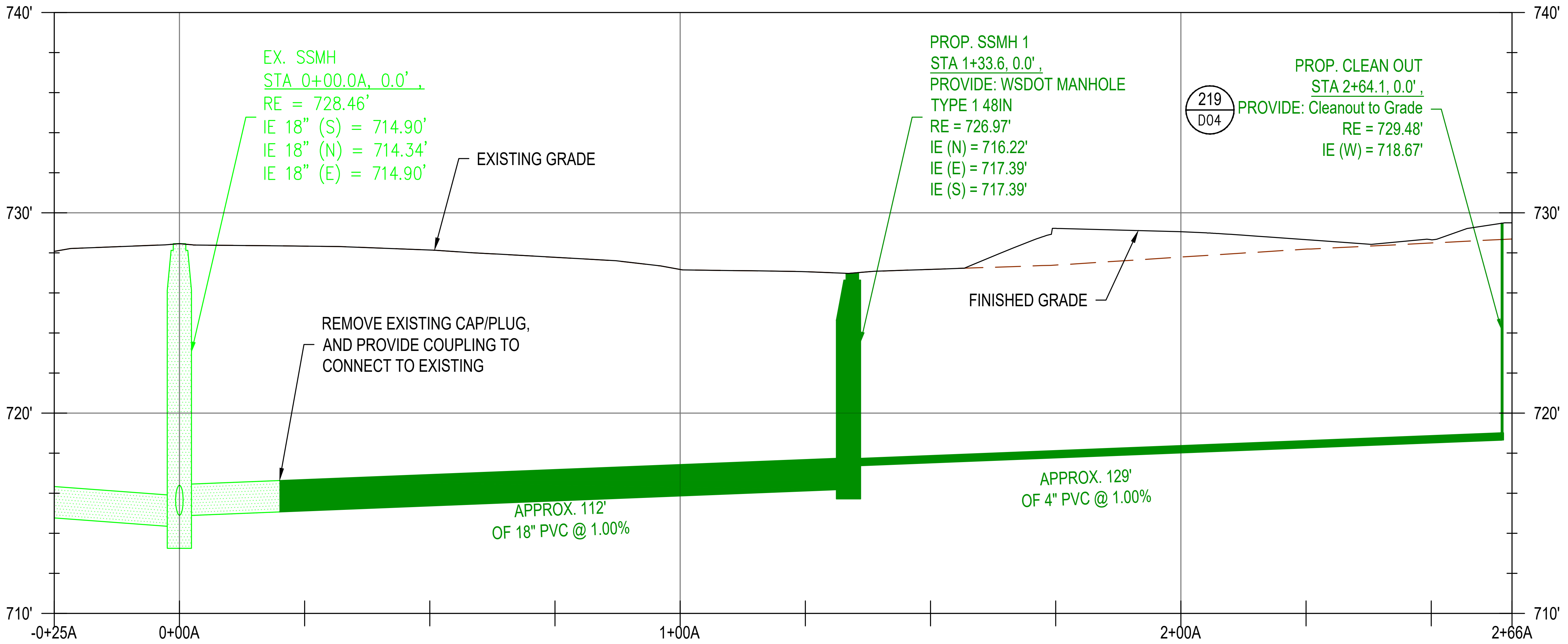
SHEET NO.: 08

53



PLAN VIEW

1" = 20'



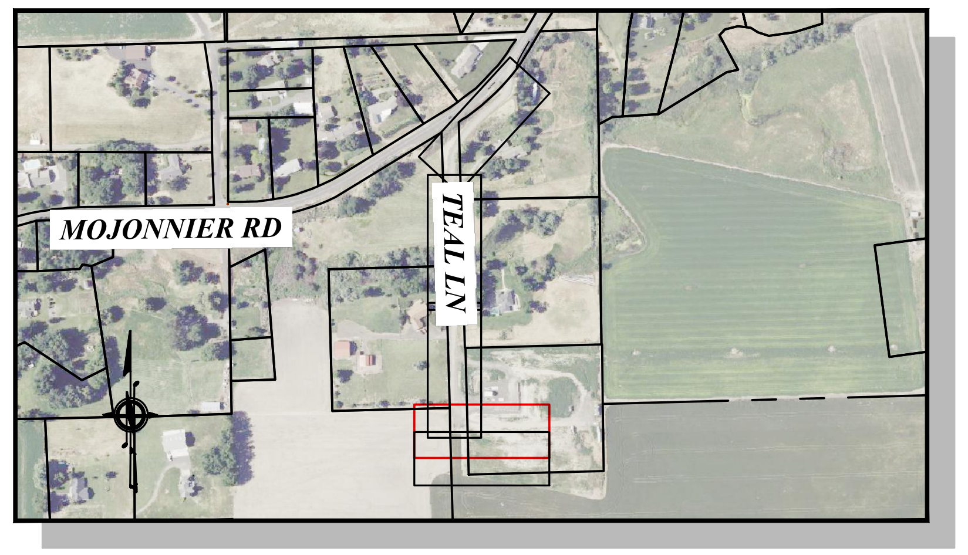
SEWER PROFILE

H: 1" = 20', V: 1" = 5'

GENERAL NOTES

1) EXISTING UTILITIES HAVE NOT BEEN POTHOLED TO IDENTIFY LOCATION, MATERIAL, SIZE OR GEOMETRY. CONTRACTOR TO POTHOLE EXISTING UTILITIES AS NECESSARY FOR PROPOSED UTILITY INSTALLATION.
2) INSTALL ALL SITE UTILITIES IN ACCORDANCE WITH THE TRENCH DETAILS ON DWG NO D01.
3) DO NOT TRACK HEAVY MACHINERY OVER THE LOCATION OF THE PROPOSED STORMWATER POND PRIOR TO FINAL GRADING.
4) DO NOT COMPACT POND SUBGRADE.
5) WATERMAIN SHALL BE DISINFECTED, PRESSURE TESTED, FLUSHED, AND PASS BACTERIOLOGICAL TESTING PRIOR TO BEING PUT INTO SERVICE. SEE DWG NO. D04 FOR TESTING DETAILS.
6) INSTALL WEED FABRIC LINER ON SLOPES OF INFILTRATION POND. 6" OF PERMEABLE BALLAST FOR POND BOTTOM TO ALLOW FOR INFILTRATION.

VICINITY MAP



RH2

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PRELIMINARY
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CITY OF COLLEGE PLACE
WELL NO. 7

SEWER PLAN I

COLLEGE PLACE WALLA WALLA VALLEY

ENGINEER: JZL
REVIEWED: RMW
SAVE DATE: Jan 10, 2024
PLOT DATE: Jan 11, 2024
CLIENT: CPL
FILENAME: CPLW7-P-UTILP.DWG
JOB NO.: 22-0054

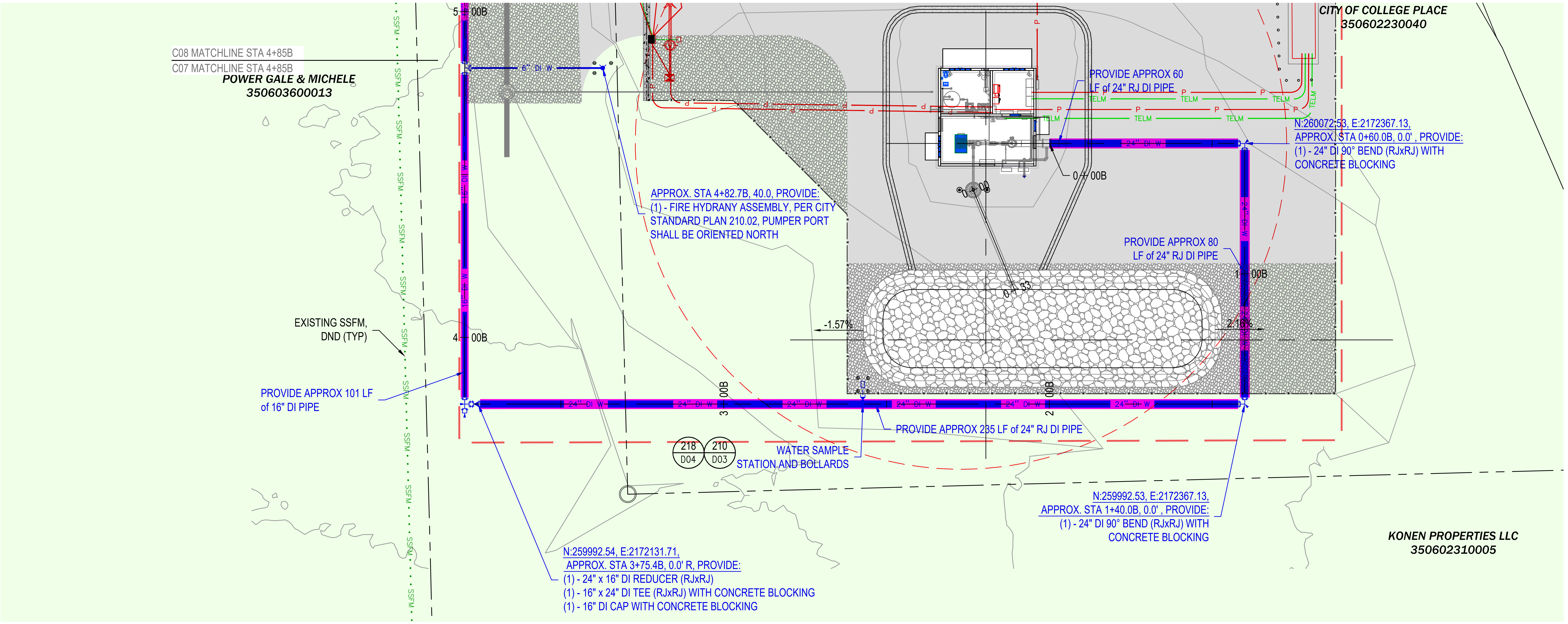
REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

90% REVIEW DRAWINGS

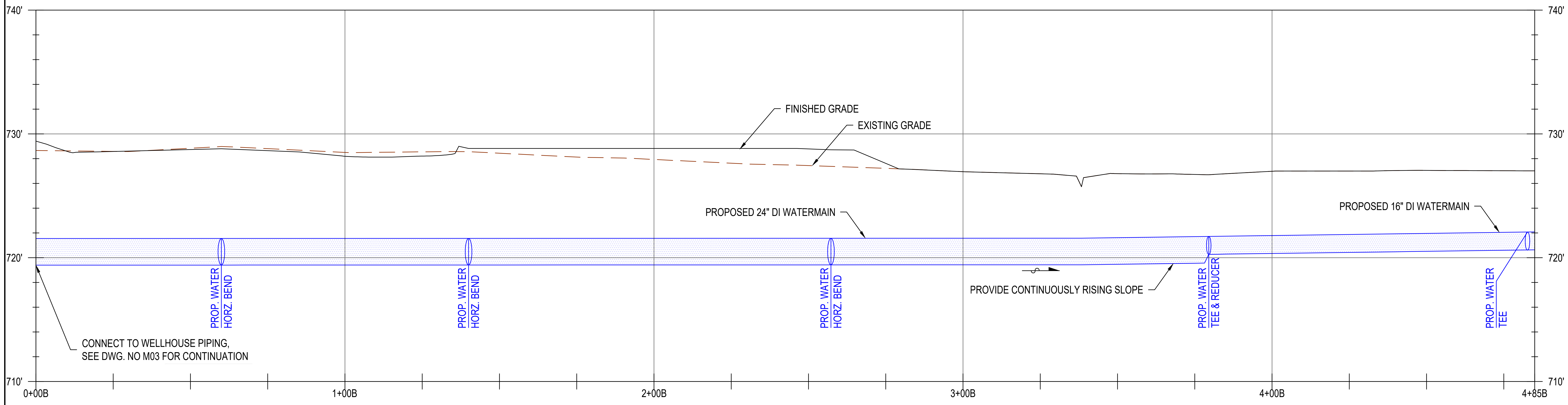
SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C06
SHEET NO.: 11
53



PLAN VIEW

1" = 20'



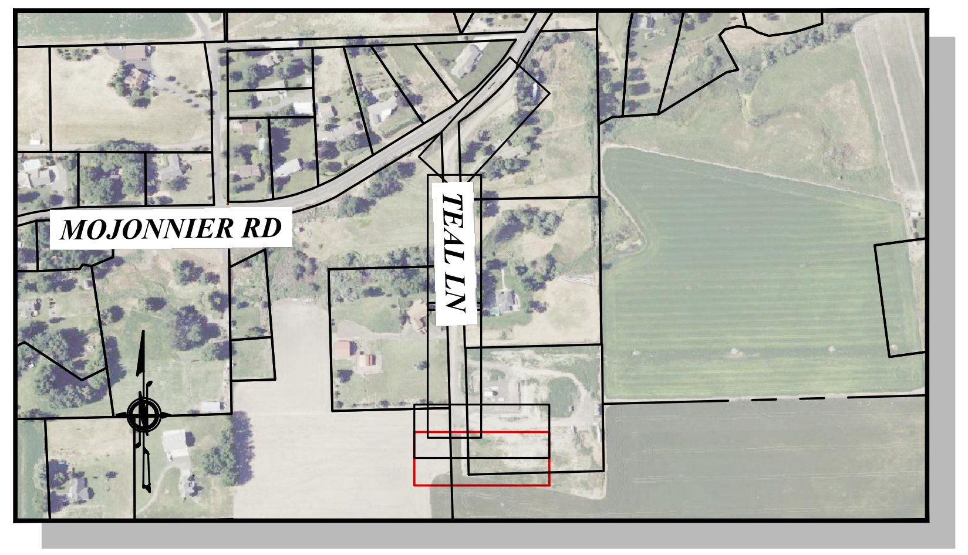
WATERMAIN PROFILE

H: 1" = 20', V: 1" = 5'

GENERAL NOTES

1) EXISTING UTILITIES HAVE NOT BEEN POTHOLED TO IDENTIFY LOCATION, MATERIAL, SIZE OR GEOMETRY. CONTRACTOR TO POTHOLE EXISTING UTILITIES AS NECESSARY FOR PROPOSED UTILITY INSTALLATION.
2) INSTALL ALL SITE UTILITIES IN ACCORDANCE WITH THE TRENCH DETAILS ON DWG NO D01.
3) DO NOT TRACK HEAVY MACHINERY OVER THE LOCATION OF THE PROPOSED STORMWATER POND PRIOR TO FINAL GRADING.
4) DO NOT COMPACT POND SUBGRADE.
5) WATERMAIN SHALL BE DISINFECTED, PRESSURE TESTED, FLUSHED, AND PASS BACTERIOLOGICAL TESTING PRIOR TO BEING PUT INTO SERVICE. SEE DWG NO. D04 FOR TESTING DETAILS.
6) INSTALL WEED FABRIC LINER ON SLOPES OF INFILTRATION POND. 6" OF PERMEABLE BALLAST FOR POND BOTTOM TO ALLOW FOR INFILTRATION.

VICINITY MAP



RH2

RYAN M. WITHERS
49550
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7
UTILITY PLAN I

ENGINEER: JZL
REVIEWED: RMW
SAVE DATE: Jan 10, 2024
PLOT DATE: Jan 11, 2024
CLIENT: CPL
FILENAME: CPLW7-P-UTILP.DWG
JOB NO.: 22-0054

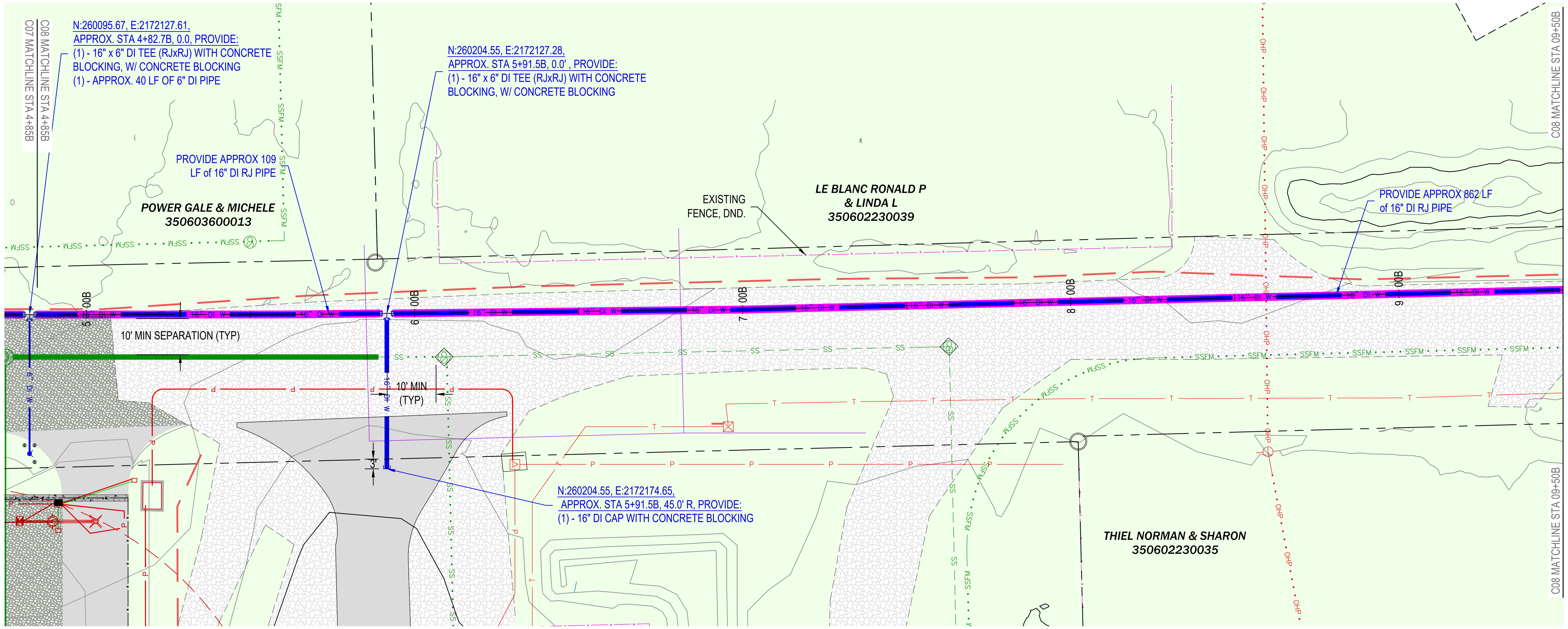
REVISIONS

90% REVIEW DRAWINGS

NO.	DATE	DESCRIPTION	BY	REVIEW

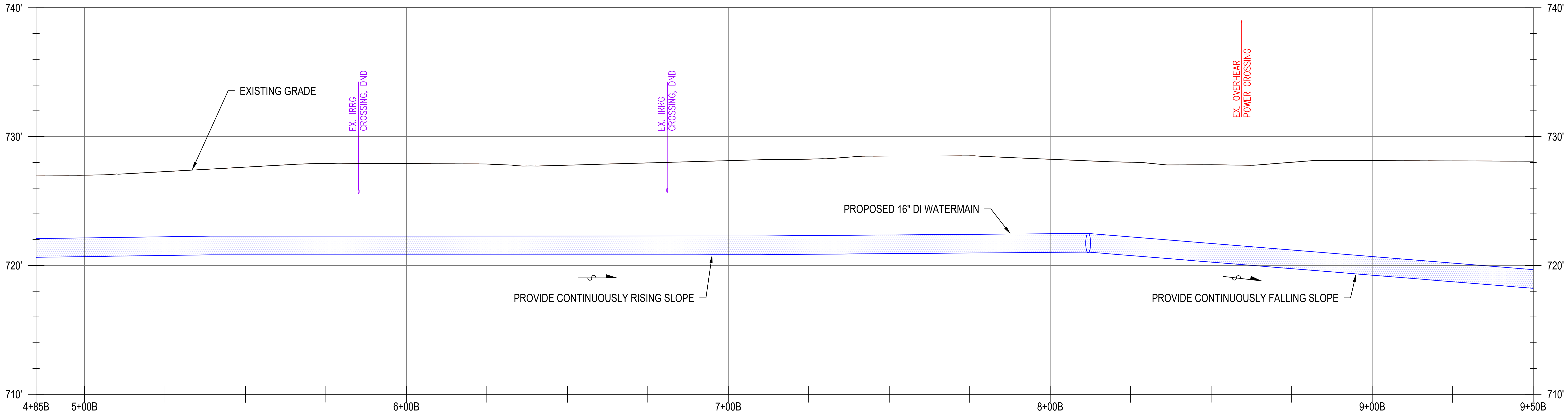
SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C07
SHEET NO.: 12
53



PLAN VIEW

1" = 20'



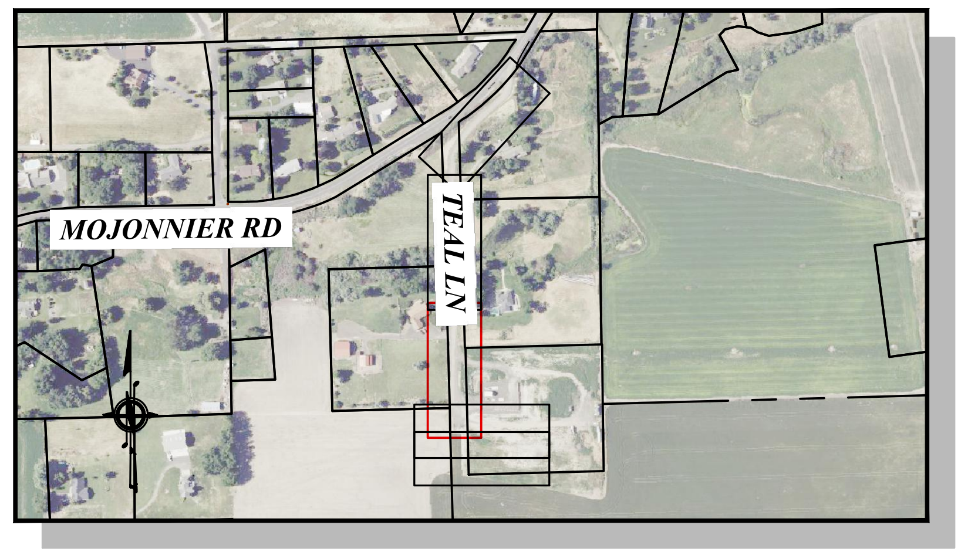
WATERMAIN PROFILE

H: 1" = 20', V: 1" = 5'

GENERAL NOTES

1) EXISTING UTILITIES HAVE NOT BEEN POTHOLED TO IDENTIFY LOCATION, MATERIAL, SIZE OR GEOMETRY. CONTRACTOR TO POTHOLE EXISTING UTILITIES AS NECESSARY FOR PROPOSED UTILITY INSTALLATION.
2) INSTALL ALL SITE UTILITIES IN ACCORDANCE WITH THE TRENCH DETAILS ON DWG NO D01.
3) WATERMAIN SHALL BE DISINFECTED, PRESSURE TESTED, FLUSHED, AND PASS BACTERIOLOGICAL TESTING PRIOR TO BEING PUT INTO SERVICE. SEE DWG NO. D04 FOR TESTING DETAILS.
4) MAINTAIN 12 FT MINIMUM CLEAR DISTANCE BETWEEN TEAL LANE CONSTRUCTION ACTIVITIES AND EDGE OF EXISTING GRAVEL ROAD FOR LOCAL ACCESS. PROVIDE FLAGGERS TO ALLOW ALTERNATING TRAFFIC DURING ALL CONSTRUCTION ACTIVITIES THAT IMPACT TWO-WAY TRAFFIC IN TEAL LANE.
5) RESTORE ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITIES TO EXISTING GRADES, SLOPES, AND CONDITIONS FOLLOWING CONSTRUCTION OF PROPOSED IMPROVEMENTS.
6) MAINTAIN LOCAL ACCESS TO ALL DRIVEWAY ALONG TEAL ROAD AT ALL TIMES.

VICINITY MAP



RH2

RYAN M. WITHERS
STATE OF WASHINGTON
49550
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7
UTILITY PLAN II

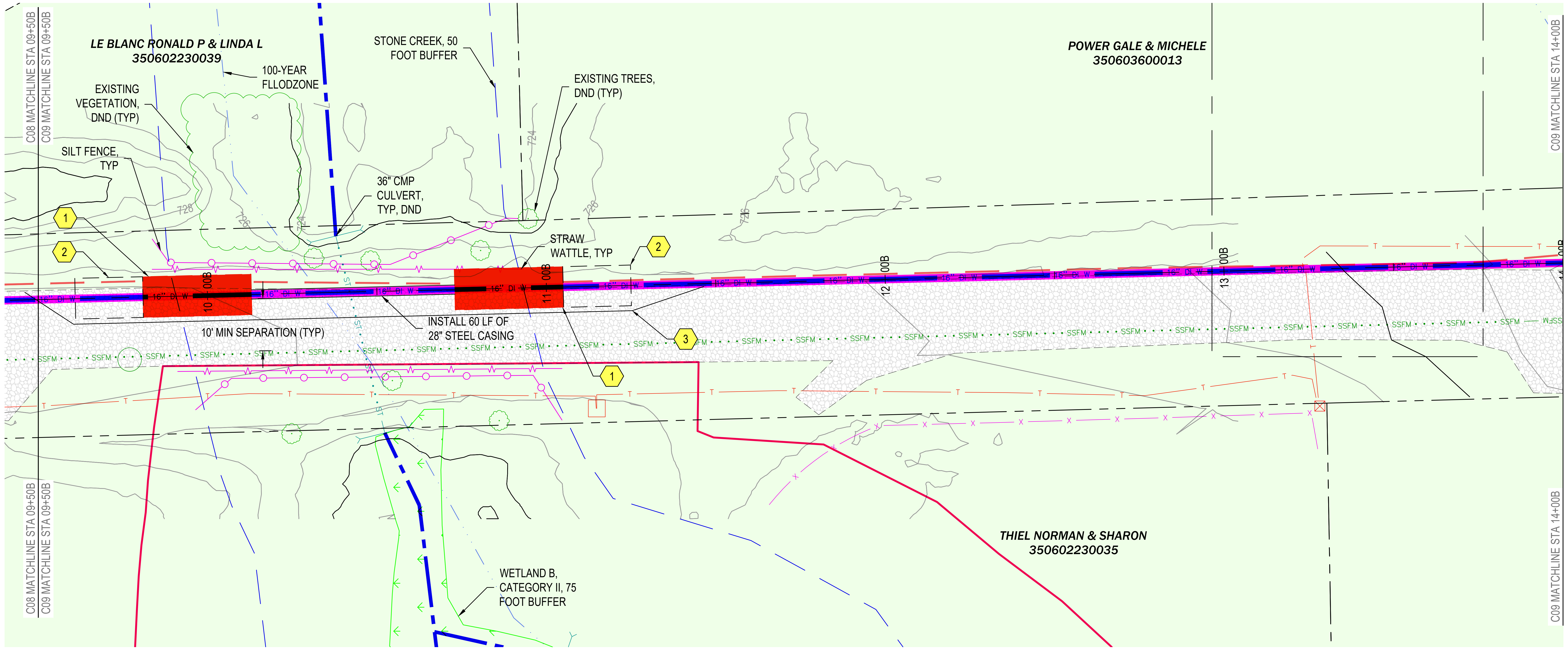
JOB NO.: 22-0054
CLIENT: CPL
FILENAME: CPLW7-P-UTILP.DWG
SAVE DATE: Jan 10, 2024
PLOT DATE: Jan 11, 2024
ENGINEER: JZL
REVIEWED: RMW

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW
		90% REVIEW DRAWINGS		

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

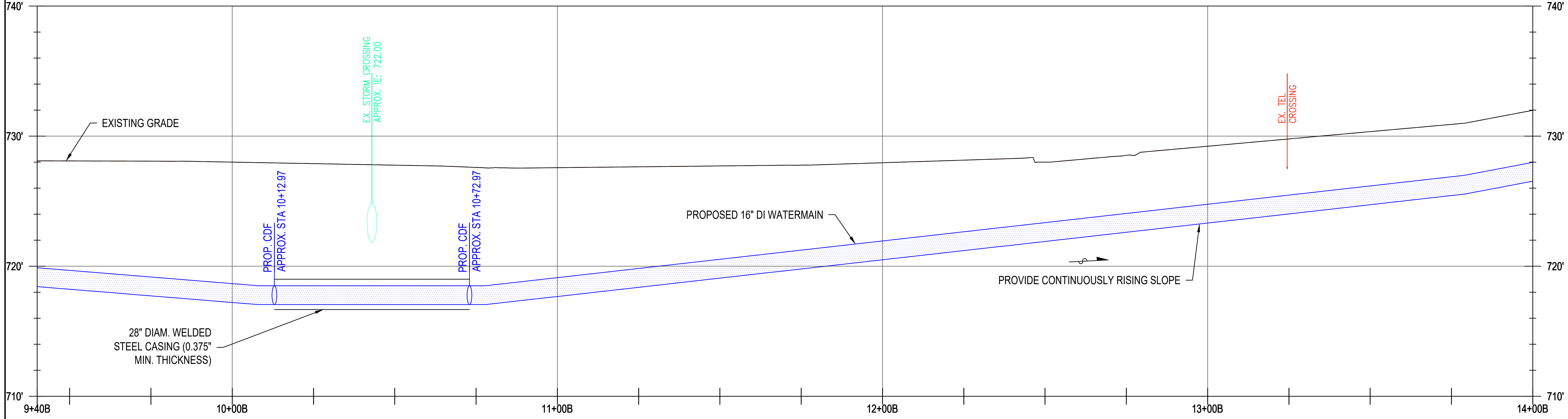
DWG NO.: C08
SHEET NO.: 13
53



NOTE: DEWATERING MAY BE NECESSARY DURING WORK WITHIN BORE AND RECEIVING PITS. CONTRACTOR SHALL INCLUDE ALL DEWATERING EQUIPMENT, MATERIALS, AND LABOR IN ORIGINAL BID.

PLAN VIEW

1" = 20'



WATERMAIN PROFILE

H: 1" = 20', V: 1" = 5'

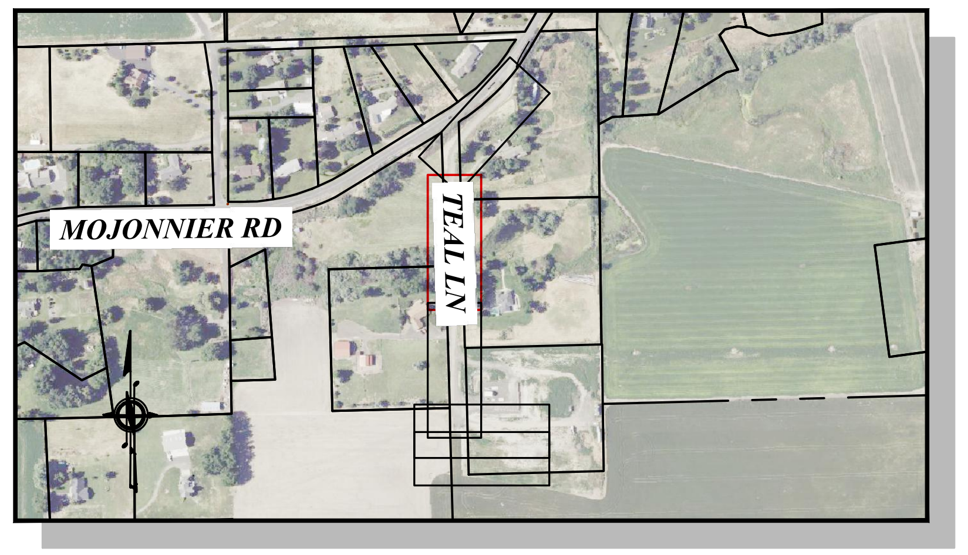
GENERAL NOTES

1) EXISTING UTILITIES HAVE NOT BEEN POTHOLED TO IDENTIFY LOCATION, MATERIAL, SIZE OR GEOMETRY. CONTRACTOR TO POTHOLE EXISTING UTILITIES AS NECESSARY FOR PROPOSED UTILITY INSTALLATION.
2) INSTALL ALL SITE UTILITIES IN ACCORDANCE WITH THE TRENCH DETAILS ON DWG NO D01.
3) WATERMAIN SHALL BE DISINFECTED, PRESSURE TESTED, FLUSHED, AND PASS BACTERIOLOGICAL TESTING PRIOR TO BEING PUT INTO SERVICE. SEE DWG NO. D04 FOR TESTING DETAILS.
4) MAINTAIN 12 FT MINIMUM CLEAR DISTANCE BETWEEN TEAL LANE CONSTRUCTION ACTIVITIES AND EDGE OF EXISTING GRAVEL ROAD FOR LOCAL ACCESS. PROVIDE FLAGGERS TO ALLOW ALTERNATING TRAFFIC DURING ALL CONSTRUCTION ACTIVITIES THAT IMPACT TWO-WAY TRAFFIC IN TEAL LANE.
5) RESTORE ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITIES TO EXISTING GRADES, SLOPES, AND CONDITIONS FOLLOWING CONSTRUCTION OF PROPOSED IMPROVEMENTS.
6) MAINTAIN LOCAL ACCESS TO ALL DRIVEWAY ALONG TEAL ROAD AT ALL TIMES.

KEYNOTES

1	32' X 12' BORE/RECEIVING PIT
2	SPOILS LOCATION FOR BORING/RECEIVING PIT EXCAVATION
3	INSTALL BARREL CONES AND BARRICADE LIGHTING FOR 24 HR TRAFFIC CONTROL.

VICINITY MAP



RH2

RYAN M. WITHERS
PRELIMINARY
49550

CITY OF COLLEGE PLACE
WELL NO. 7
UTILITY PLAN III

ENGINEER: JZL	REVIEWED: RMW
SAVE DATE: Jan 10, 2024	PLOT DATE: Jan 11, 2024
CLIENT: CPL	FILENAME: CPLW7-P-UTILP.DWG
JOB NO.: 22-0054	

REVISIONS

90% REVIEW DRAWINGS

NO.	DATE	DESCRIPTION	BY	REVIEW

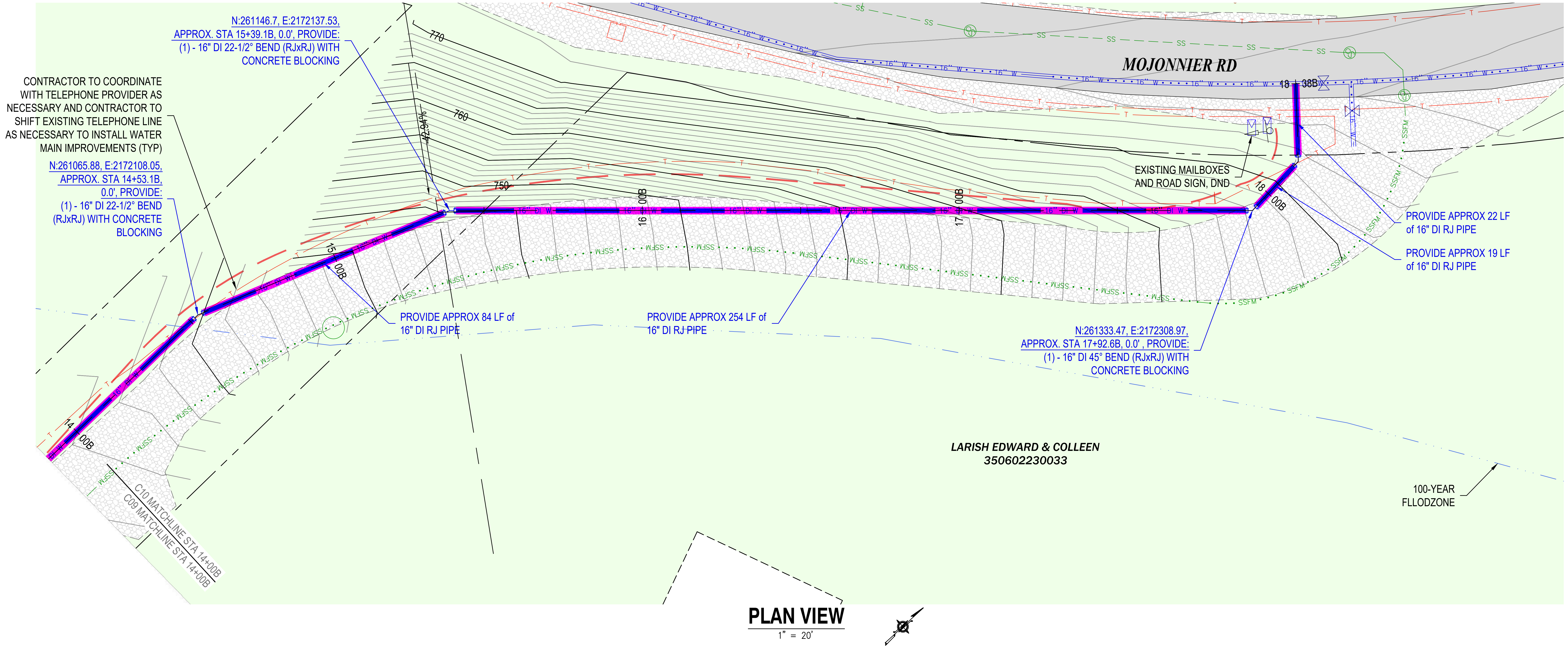
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

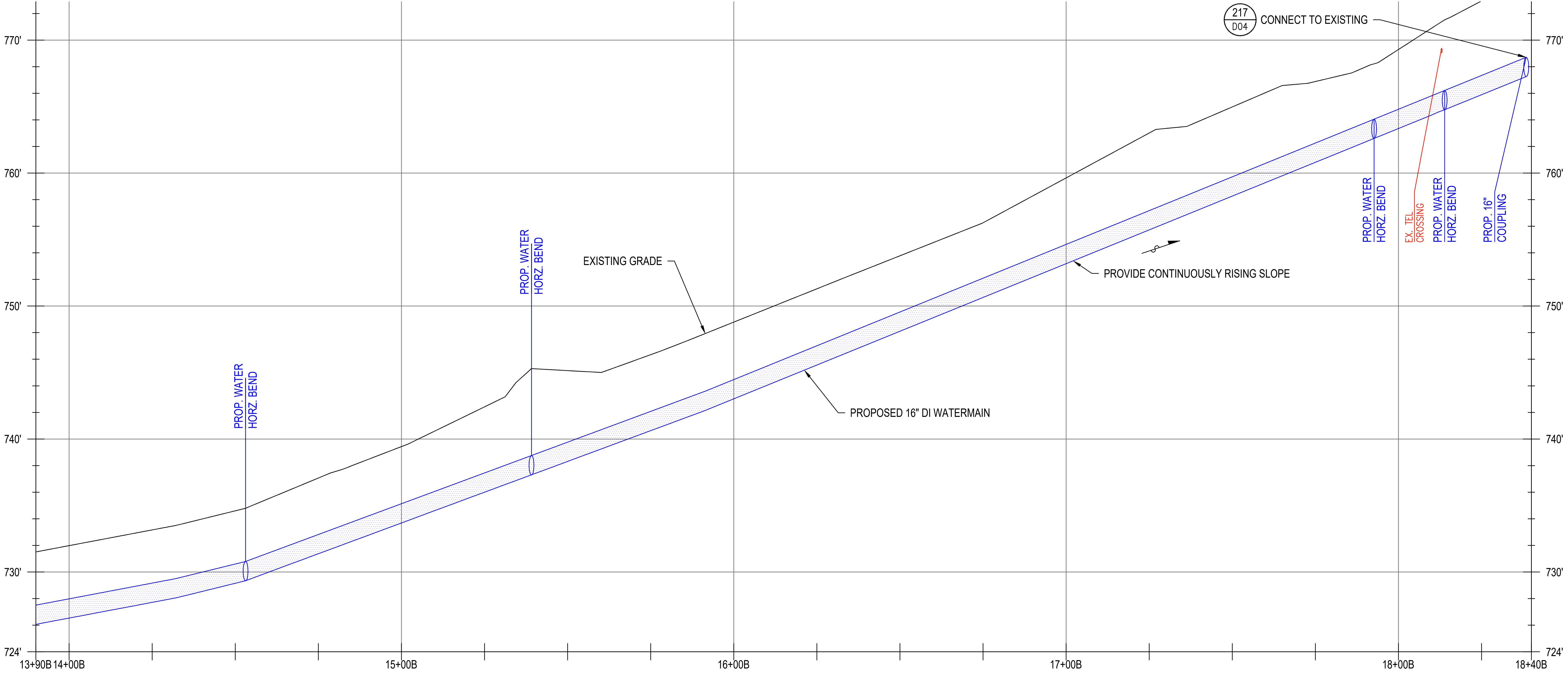
DWG NO.: C09

SHEET NO.: 14 53



PLAN VIEW

1" = 20'



WATERMAIN PROFILE

H: 1" = 20', V: 1" = 5'

GENERAL NOTES

1) EXISTING UTILITIES HAVE NOT BEEN POTHOLED TO IDENTIFY LOCATION, MATERIAL, SIZE OR GEOMETRY. CONTRACTOR TO POTHOLE EXISTING UTILITIES AS NECESSARY FOR PROPOSED UTILITY INSTALLATION.

2) INSTALL ALL SITE UTILITIES IN ACCORDANCE WITH THE TRENCH DETAILS ON DWG NO D01.

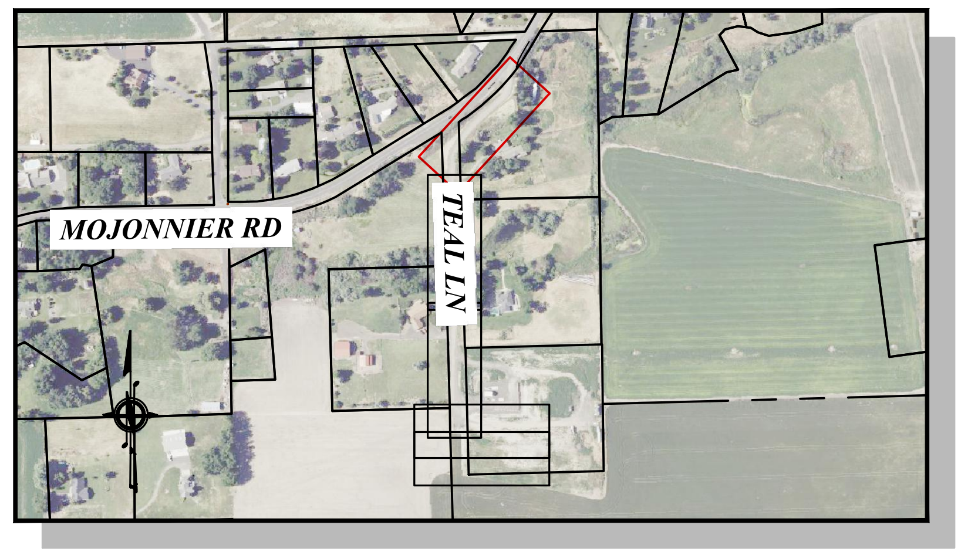
3) WATERMAIN SHALL BE DISINFECTED, PRESSURE TESTED, FLUSHED, AND PASS BACTERIOLOGICAL TESTING PRIOR TO BEING PUT INTO SERVICE. SEE DWG NO. D04 FOR TESTING DETAILS.

4) MAINTAIN 12 FT MINIMUM CLEAR DISTANCE BETWEEN TEAL LANE CONSTRUCTION ACTIVITIES AND EDGE OF EXISTING GRAVEL ROAD FOR LOCAL ACCESS. PROVIDE FLAGGERS TO ALLOW ALTERNATING TRAFFIC DURING ALL CONSTRUCTION ACTIVITIES THAT IMPACT TWO-WAY TRAFFIC IN TEAL LANE.

5) RESTORE ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITIES TO EXISTING GRADES, SLOPES, AND CONDITIONS FOLLOWING CONSTRUCTION OF PROPOSED IMPROVEMENTS.

6) MAINTAIN LOCAL ACCESS TO ALL DRIVEWAY ALONG TEAL ROAD AT ALL TIMES.

VICINITY MAP



RH2

RYAN M. WITHERS
49550
PRELIMINARY

CITY OF COLLEGE PLACE
WELL NO. 7

UTILITY PLAN IV

ENGINEER: JZL
SAVE DATE: Jan 10, 2024
CLIENT: CPL
JOB NO.: 22-0054
REVIEWED: RMW
PLOT DATE: Jan 11, 2024
FILENAME: CPLW7-P-UTILP.DWG

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

90% REVIEW DRAWINGS

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

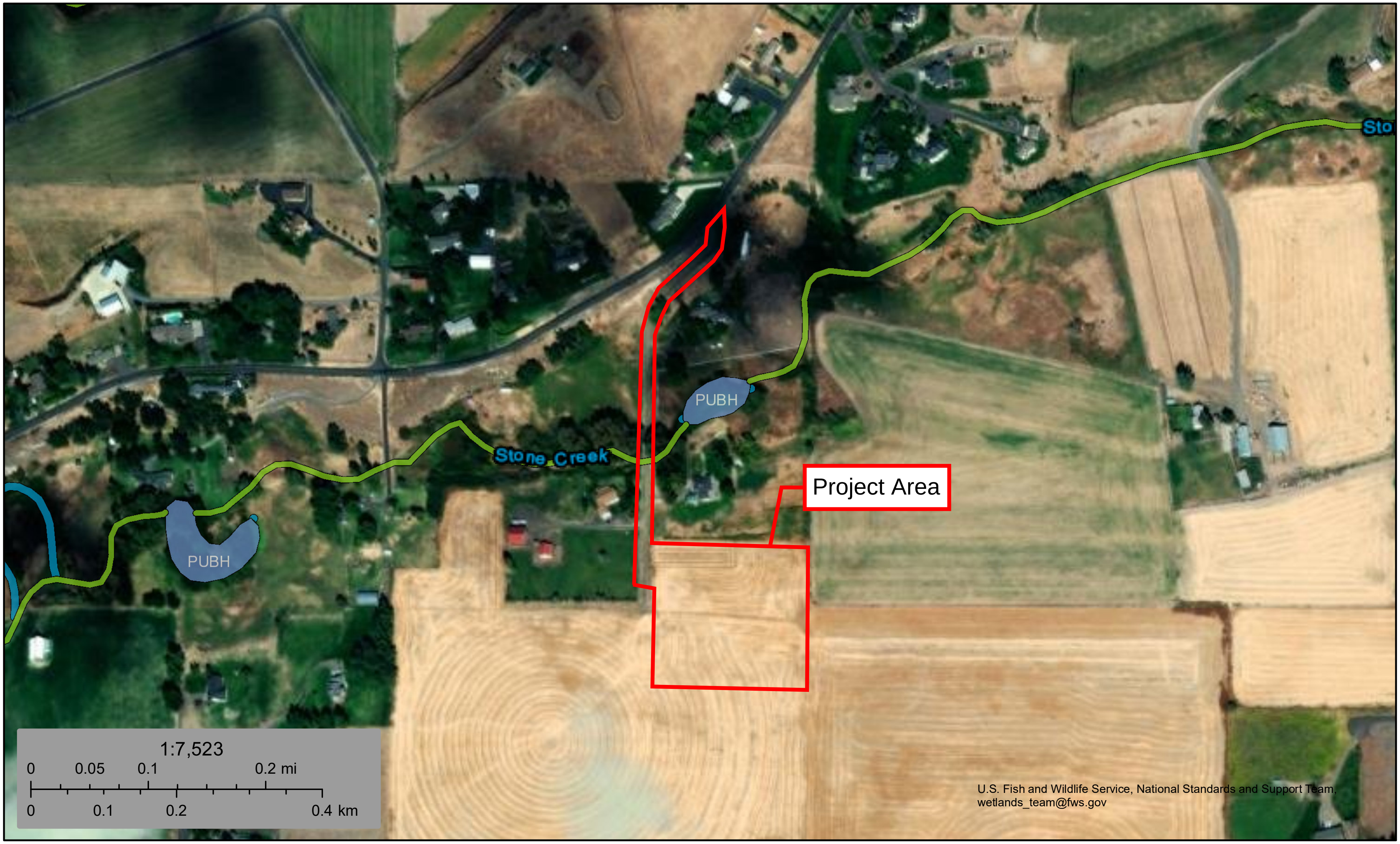
DWG NO.: C10
SHEET NO.: 15
53

Appendix C
Background Maps and Data

U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands



U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov

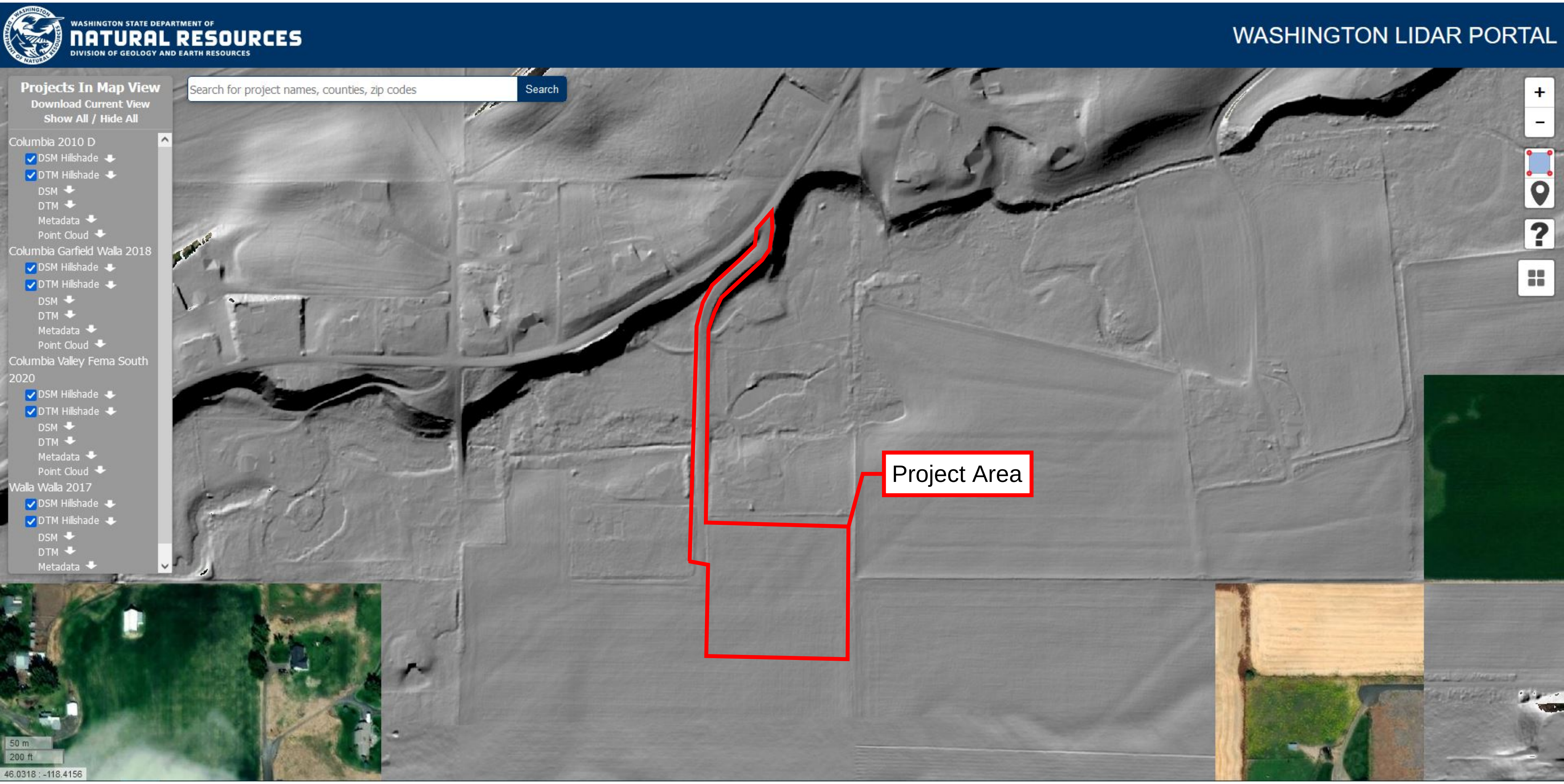
December 27, 2023

Wetlands

- 🟦 Estuarine and Marine Deepwater
- 🟩 Estuarine and Marine Wetland
- 🟩 Freshwater Emergent Wetland
- 🟩 Freshwater Forested/Shrub Wetland
- 🟦 Freshwater Pond
- 🟪 Lake
- 🟫 Other
- 🟦 Riverine

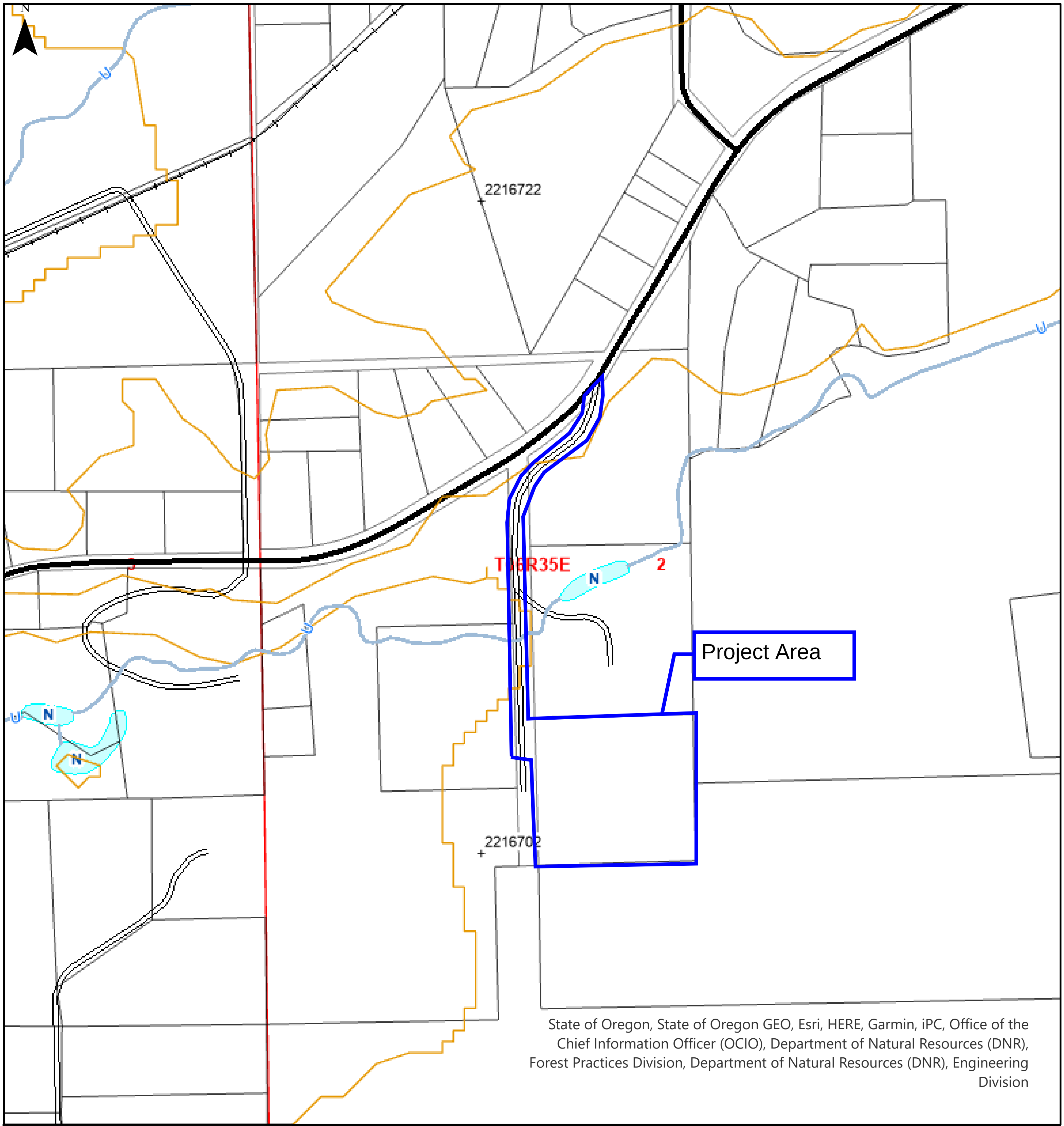
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper



Project Area

Forest Practices Activity Map - Application #______________



State of Oregon, State of Oregon GEO, Esri, HERE, Garmin, iPC, Office of the Chief Information Officer (OCIO), Department of Natural Resources (DNR), Forest Practices Division, Department of Natural Resources (DNR), Engineering Division

Map Symbols

~ ~ ~ Harvest Boundary
- - - Road Construction
∼ Stream
▨ RMZ / WMZ Buffers
✕ Rock Pit
◐ Landing
▽ Waste Area
🌲 Clumped WRTS/GRTS
⌂ Existing Structure

Additional Information

Legal Description

S03 T06.0N R35.0E, S02 T06.0N R35.0E

WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

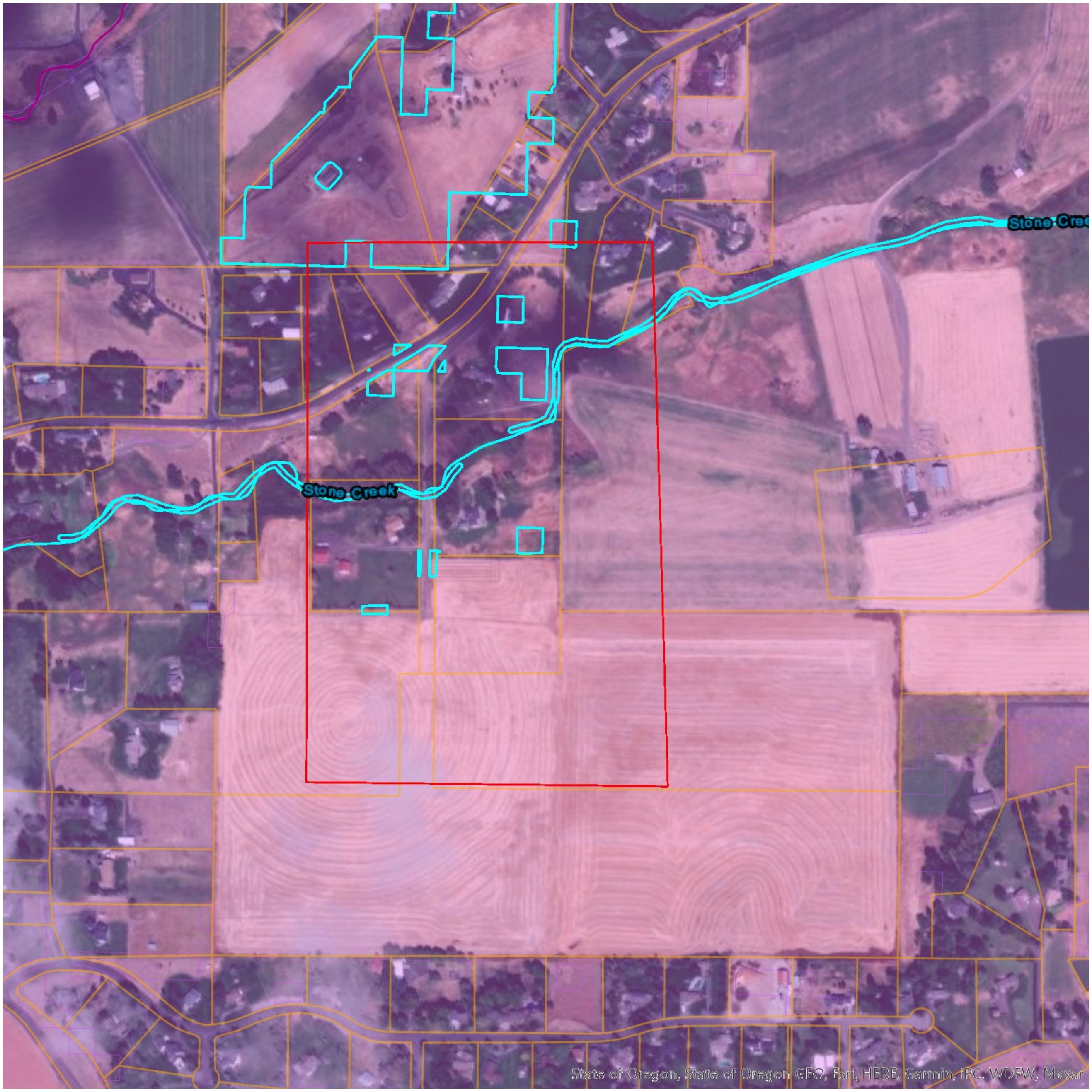
Extreme care was used during the compilation of this map to ensure its accuracy. However, due to changes in data and the need to rely on outside information, the Department of Natural Resources cannot accept responsibility for errors or omissions, and therefore, there are no warranties that accompany this material.

Approximate Scale : 1:4,800

0 200 400 800 Feet

Date: 12/27/2023 Time: 11:09 AM

Priority Habitats and Species on the Web



Report Date: 12/27/2023

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Rainbow Trout	N/A	N/A	No
Summer Steelhead	N/A	N/A	No
Northwest white-tailed deer	N/A	N/A	No
Freshwater Emergent Wetland	N/A	N/A	No
Shrubsteppe	N/A	N/A	No
Ferruginous hawk	N/A	Threatened	Yes

PHS Species/Habitats Details:

Rainbow Trout	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Site Name	Stone Creek
Accuracy	NA
Notes	LLID: 1184255460236, Fish Name: Rainbow Trout, Run Time: Unknown or not Applicable, Life History: Resident
Source Record	2158
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Summer Steelhead	
Scientific Name	*Oncorhynchus mykiss*
Priority Area	Occurrence/Migration
Site Name	Stone Creek
Accuracy	NA
Notes	LLID: 1184255460236, Fish Name: Steelhead Trout, Run Time: Summer, Life History: Anadromous
Source Record	2159
Source Dataset	SWIFD
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
More Info	http://wdfw.wa.gov/wlm/diversty/soc/soc.htm
Geometry Type	Lines

Northwest white-tailed deer	
Scientific Name	*Odocoileus virginianus ochrourus*
Priority Area	Regular Concentration
Site Name	BLUE MOUNTAIN FOOTHILLS
Notes	WHITE-TAILED DEER WINTER RANGE AND YEAR-ROUND CONCENTRATIONS.
Source Record	914407
Source Dataset	PHSREGION
Source Name	WIK, PAUL
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00612
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Emergent Wetland - NWI Code: PEM1C
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Shrubsteppe	
Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
Accuracy	NA
Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
Source Record	920850
Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Shrubsteppe	
Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
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Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

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Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

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Federal Status	N/A
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PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

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Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
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Source Record	920850
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Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

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Federal Status	N/A
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PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Shrubsteppe	
Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
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Source Record	920850
Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

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Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
Accuracy	NA
Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
Source Record	920850
Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

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Site Name	Walla Walla County Presumptive Shrubsteppe
Accuracy	NA
Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
Source Record	920850
Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Shrubsteppe	
Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
Accuracy	NA
Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
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Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Shrubsteppe	
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Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
Source Record	920850
Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Shrubsteppe	
Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
Accuracy	NA
Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
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Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Shrubsteppe	
Priority Area	Habitat Feature
Site Name	Walla Walla County Presumptive Shrubsteppe
Accuracy	NA
Notes	General location of Shrubsteppe. Confirm or refute with site-scale info. WDFW recommends using site-scale info to inform site-scale land use decisions. Expect that on-the-ground conditions (e.g., boundaries) will vary from the map.
Source Record	920850
Source Name	Keith Folkerts, WDFW
Source Entity	WA Dept. of Fish and Wildlife
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS LISTED OCCURRENCE
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
Geometry Type	Polygons

Ferruginous hawk	
Scientific Name	*Buteo regalis*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
State Status	Threatened
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00026

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necesssary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Walla Walla County, Washington

Local office

Washington Fish And Wildlife Office

☎ (360) 753-9440

📠 (360) 753-9405

510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout *Salvelinus confluentus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8212	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (🟩)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (🟨)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

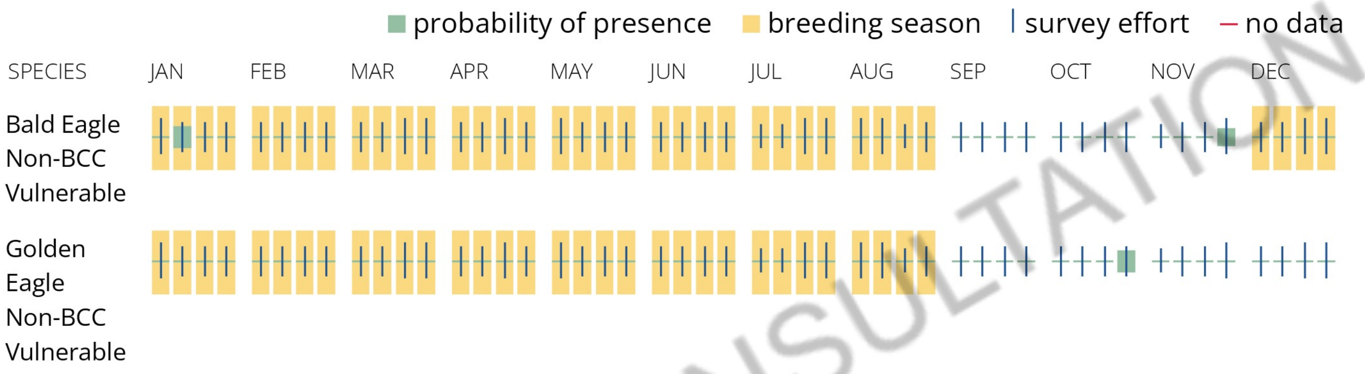
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American White Pelican pelecanus erythrorhynchos This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6886	Breeds Apr 1 to Aug 31
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Cassin's Finch Carpodacus cassinii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Lewis's Woodpecker Melanerpes lewis Breeds Apr 20 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Long-eared Owl asio otus Breeds Mar 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Olive-sided Flycatcher Contopus cooperi Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Rufous Hummingbird selasphorus rufus Breeds Apr 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Western Grebe aechmophorus occidentalis Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (🟩)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (🟨)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

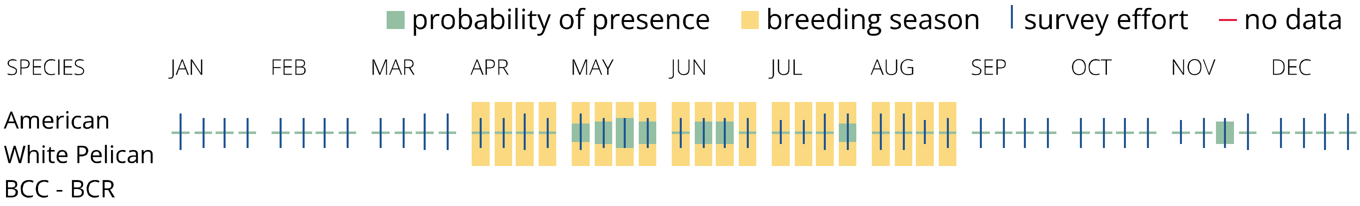
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

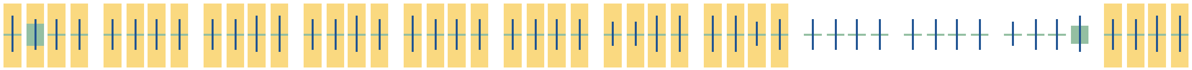
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

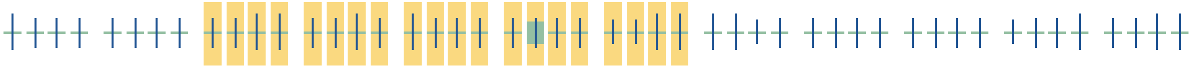
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



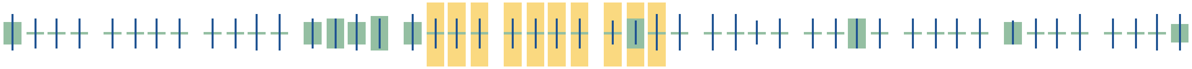
Bald Eagle
Non-BCC
Vulnerable



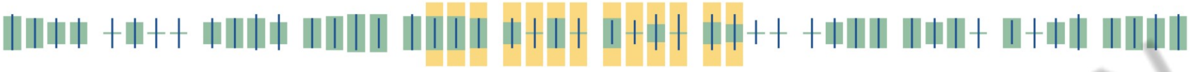
California
Gull
BCC
Rangewide
(CON)



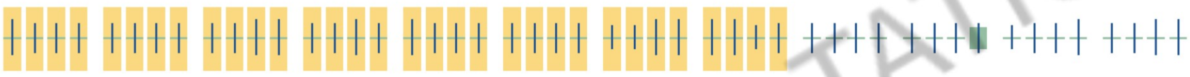
Cassin's Finch
BCC
Rangewide
(CON)



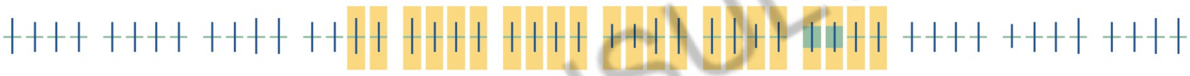
Evening
Grosbeak
BCC
Rangewide
(CON)



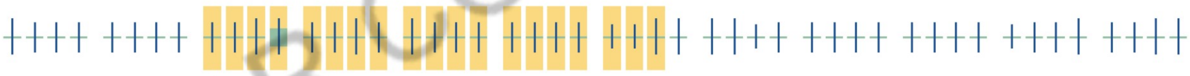
Golden Eagle
Non-BCC
Vulnerable



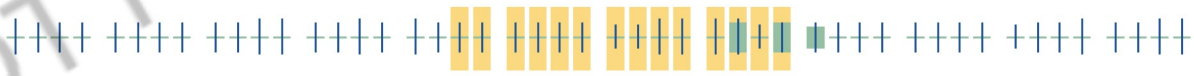
Lewis's
Woodpecker
BCC
Rangewide
(CON)



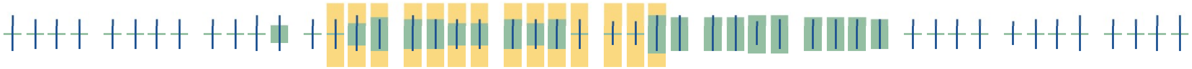
Long-eared
Owl
BCC
Rangewide
(CON)



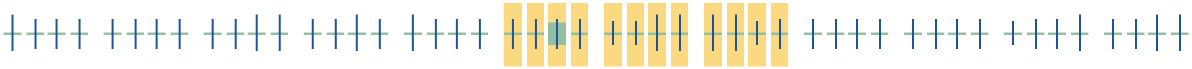
Olive-sided
Flycatcher
BCC
Rangewide
(CON)



Rufous
Hummingbird
BCC
Rangewide
(CON)



Western
Grebe
BCC
Rangewide
(CON)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
PEM1C

FRESHWATER POND
PUBH

RIVERINE
R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

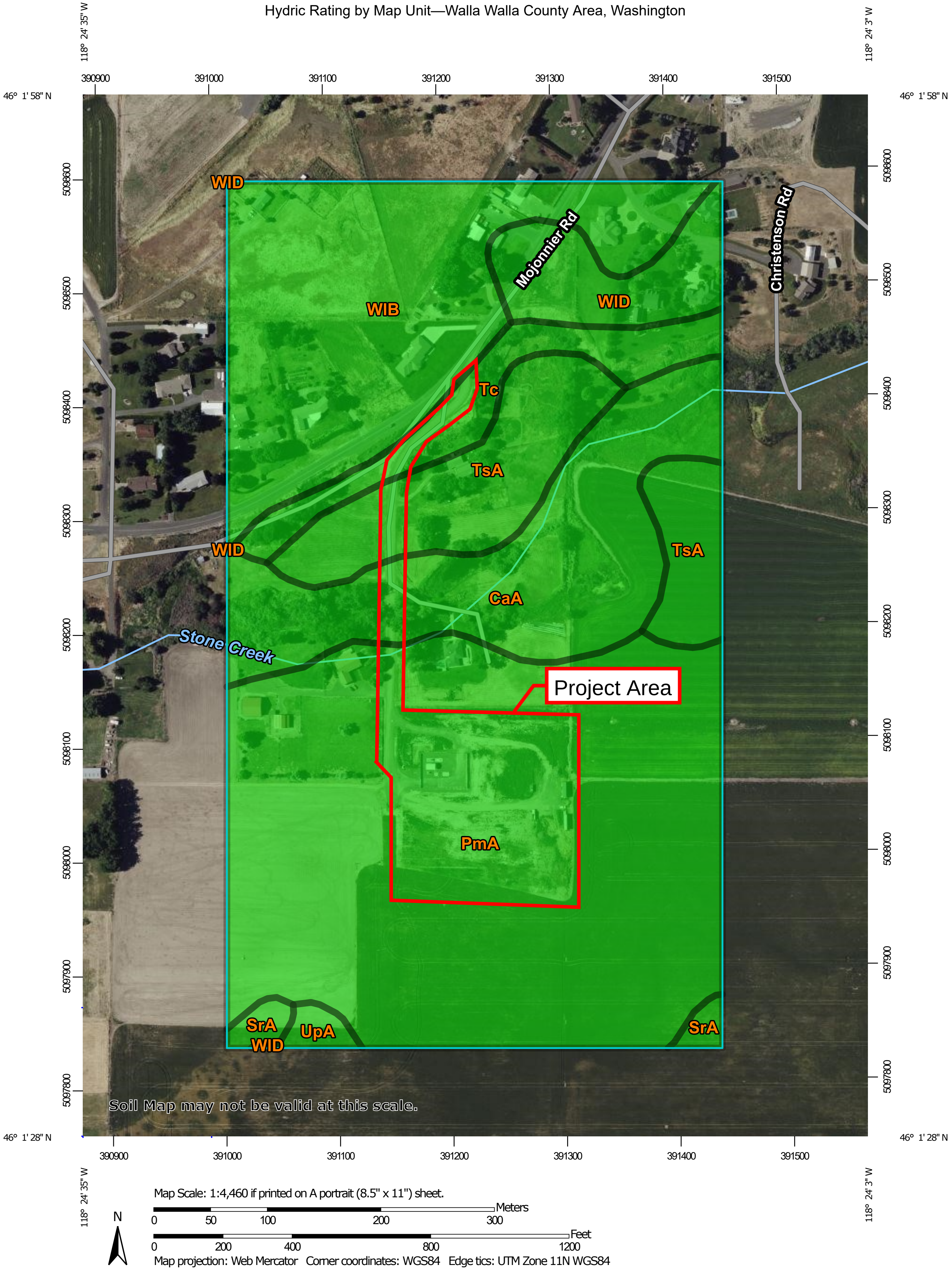
Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Hydric Rating by Map Unit—Walla Walla County Area, Washington



Map Scale: 1:4,460 if printed on A portrait (8.5" x 11") sheet.

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

MAP LEGEND

Area of Interest (AOI)

- ▢ Area of Interest (AOI)

Soils

Soil Rating Polygons

- 🟥 Hydric (100%)
- 🟧 Hydric (66 to 99%)
- 🟨 Hydric (33 to 65%)
- 🟩 Hydric (1 to 32%)
- 🟩 Not Hydric (0%)
- ⬜ Not rated or not available

Soil Rating Lines

- 〰 Hydric (100%)
- 〰 Hydric (66 to 99%)
- 〰 Hydric (33 to 65%)
- 〰 Hydric (1 to 32%)
- 〰 Not Hydric (0%)
- 〰 Not rated or not available

Soil Rating Points

- ■ Hydric (100%)
- ■ Hydric (66 to 99%)
- ■ Hydric (33 to 65%)
- ■ Hydric (1 to 32%)
- ■ Not Hydric (0%)
- ■ Not rated or not available

Water Features

- 〰 Streams and Canals

Transportation

- ┼┼┼ Rails
- 〰 Interstate Highways
- 〰 US Routes
- 〰 Major Roads
- 〰 Local Roads

Background

- ▨ Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Walla Walla County Area, Washington
Survey Area Data: Version 8, Aug 29, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 25, 2022—Jul 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CaA	Catherine silt loam, 0 to 3 percent slopes	0	11.8	14.4%
PmA	Pedigo silt loam, 0 to 3 percent slopes	0	36.4	44.2%
SrA	Stanfield silt loam, 0 to 3 percent slopes	0	0.8	1.0%
Tc	Terrace escarpments	0	4.0	4.9%
TsA	Touchet silt loam, 0 to 3 percent slopes	0	8.5	10.3%
UpA	Umapine silt loam, leached surface, 0 to 3 percent slopes	0	0.5	0.6%
WlB	Walla Walla silt loam, lacustrine substratum, 0 to 8 percent slopes	0	16.6	20.1%
WlD	Walla Walla silt loam, lacustrine substratum, 8 to 30 percent slopes	0	3.8	4.6%
Totals for Area of Interest			**82.4**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

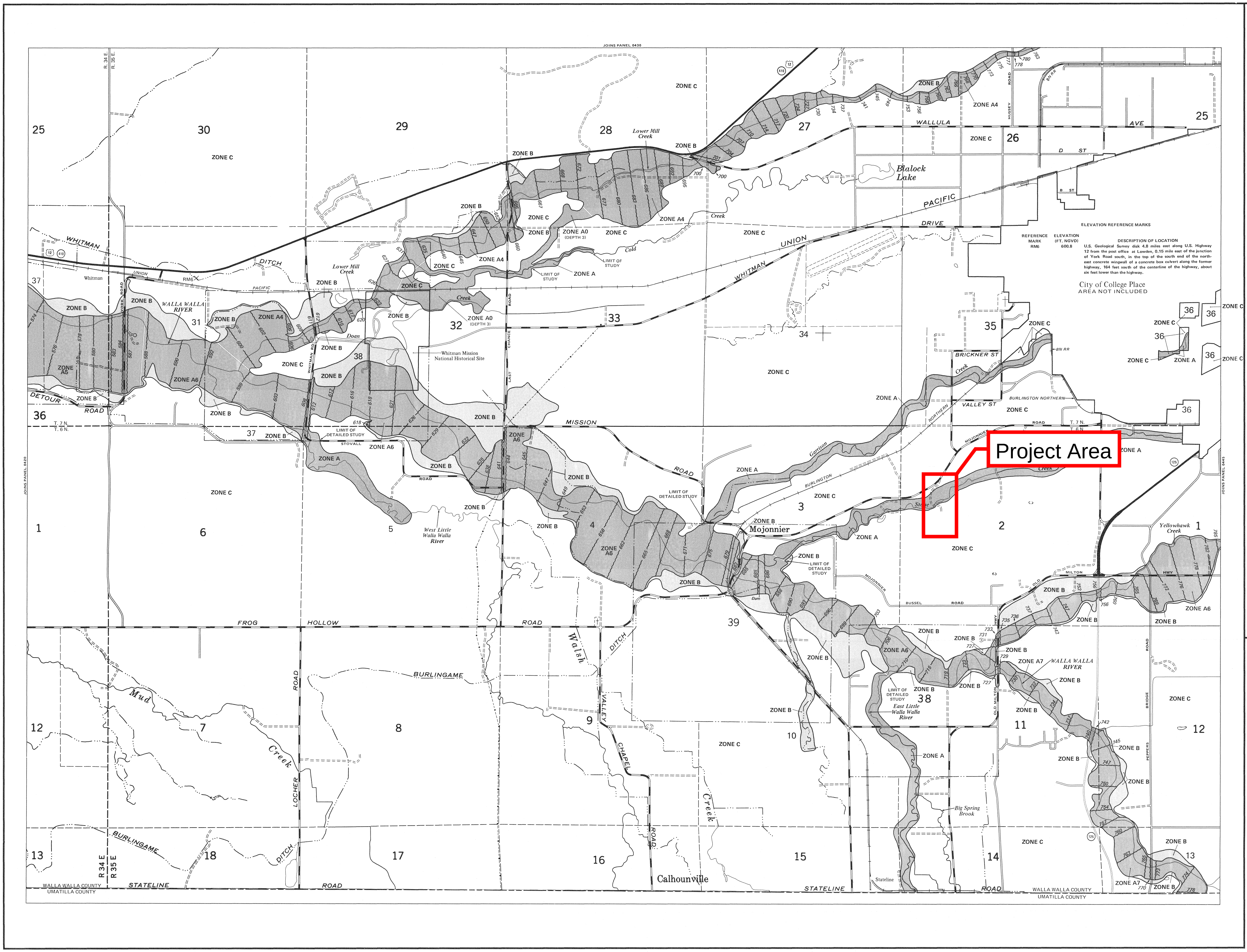
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM6	600.8	U.S. Geological Survey disk 4.8 miles east along U.S. Highway 12 from the post office at Lowden, 0.15 mile east of the junction of York Road south, in the top of the south end of the northeast concrete wingwall of a concrete box culvert along the former highway, 164 feet south of the centerline of the highway, about six feet lower than the highway.

City of College Place
AREA NOT INCLUDED

KEY TO MAP

500-Year Flood Boundary → ZONE B
100-Year Flood Boundary → ZONE A1 / ZONE A5
Zone Designations*
100-Year Flood Boundary → ZONE B
500-Year Flood Boundary
Base Flood Elevation Line With Elevation In Feet** ~~513~~
Base Flood Elevation in Feet Where Uniform Within Zone** (EL 987)
Elevation Reference Mark RM7×
Zone D Boundary
River Mile •M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
DECEMBER 27, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
SEPTEMBER 13, 1977

FLOOD INSURANCE RATE MAP EFFECTIVE:
DECEMBER 1, 1983

FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

N

APPROXIMATE SCALE
1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

WALLA WALLA COUNTY, WASHINGTON
(UNINCORPORATED AREAS)

PANEL 440 OF 500
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
530194 0440 B

EFFECTIVE DATE:
DECEMBER 1, 1983

Federal Emergency Management Agency

Appendix D
Site Photographs

Site Photographs — Well No. 7 Drilling and Design — City of College Place

Environmental Site Investigation


View of City's parcel no. 350602230040. Facing east. Existing site of the City Lift Station No. 7 and proposed Well No. 7 site.


Lift Station No. 7 gravel access road. Facing parcel no. 350602310005 to the south.


Location of the proposed water main alignment on Teal Lane. Facing south towards the existing Lift Station No. 7.


Location of the proposed water main alignment on Teal Lane. Facing north towards the steep slope up to Mojonnier Road.


Parcel no. 350603600011, west of Teal Lane road adjacent to the proposed water main alignment. Facing west.


The steep slopes adjacent to the water main alignment on Teal Lane, near the intersection with Mojonnier Road. Facing north-east.

Site Photographs — Well No. 7 Drilling and Design — City of College Place

Environmental Site Investigation

View of Wetland A from the southern boundary. Open water areas dominated by *Lemna spp.* and *Azola filiculoides*.

View of Wetland A from the southern boundary, facing east. Dominant vegetation classes are emergent and forested.

Typical forest conditions on the east side of Wetland A. View from the south side of the wetland, facing east.

Buffer conditions on the north side of Wetland A. Facing west.

Buffer conditions on the south side of Wetland A. Facing east.

The west fork channel of Stone Creek that drains into Wetland A on its northeast side. Facing north.

Site Photographs — Well No. 7 Drilling and Design — City of College Place

Environmental Site Investigation

View of Wetland B and Stone Creek from Teal Lane, facing east. Culvert under Teal Lane is in the foreground.

Test Pit #3 dug in shallow area of Wetland B dominated by reed canarygrass. Facing west.

Delineated boundary of Wetland B. Facing west towards Teal Lane.

Delineated boundary of Wetland B. Facing east toward the confluence of the west and south fork Stone Creek channels.

Delineated boundary of Wetland B and south fork channel of Stone Creek. Facing east.

Eastern portion of Wetland B composed of emergent and forested vegetation. Facing northwest.

Site Photographs — Well No. 7 Drilling and Design — City of College Place

Environmental Site Investigation

Stone Creek on the west side of Teal Lane. Facing west.

36-inch CMP culvert that conveys flows of Stone Creek under Teal Lane. Facing southeast.

Stone Creek conditions immediately downstream (west) of the Teal Lane crossing. Facing east.

Typical streambed and bank morphology of Stone Creek west of Teal Lane. Facing east.

View of Stone Creek flowing downstream from the project area (west). Black locust trees and peach-leaf willow are present in the riparian buffer.

High groundwater area north of Stone Creek. View of Test Pit #5, facing east.

Appendix E
Site Investigation Data

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: CPL Well No. 7 City/County: Walla Walla County Sampling Date: 11/8/22

Applicant/Owner: City of College Place State: WA Sampling Point: TP1

Investigator(s): J. Sandifer, N. Bloxton Section, Township, Range: S02 T06N R35E

Landform (hillslope, terrace, etc.): hillslope/bank Local relief (concave, convex, none): Convex Slope (%): 8

Subregion (LRR): LRR B - Arid West Lat: 46.029231°N Long: 118.405844°W Datum: WGS 84

Soil Map Unit Name: Catherine silt loam, 0 to 3% slopes NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
Near boundary of Wetland A

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: r=30')			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: r=15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: r=5')			
1. Conium maculatum	55	Y	FACW
2. Phalaris arundinacea	60	Y	FACW
3. Dipsaucus fullonum	5	N	FAC
4. Iris pseudachorus	5	N	OBL
5. Cirsum arvense	10	N	FACU
6.			
7.			
8.			
	135	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	135	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: TP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR2/2	100	—	—	—	—	Silt Lo	Gravels and cobbles approx. 15%, 5% roots, soil has crumb structure.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ☑	Depth (inches): 0
Water Table Present?	Yes ☑	No ☐	Depth (inches): 7
Saturation Present? (includes capillary fringe)	Yes ☑	No ☐	Depth (inches): 6

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface water present as pond within 1 ft. of pit.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: CPL Well No. 7 City/County: Walla Walla County Sampling Date: 11/8/2022
Applicant/Owner: City of College Place State: WA Sampling Point: TP 2
Investigator(s): J. Sandifer, N. Bloxton Section, Township, Range: S02 T06N R35E
Landform (hillslope, terrace, etc.): Ponded depression Local relief (concave, convex, none): Concave Slope (%): 3
Subregion (LRR): LRR B - Arid West Lat: 46.029185° N Long: 118.405832° W Datum: WGS84
Soil Map Unit Name: Catherine silt loam, 0 to 3% slopes NWI classification: PUBH
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Within Wetland A

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: r=5 (not full circle))			
1. Iris pseudacorus	40	yes	OBL
2. Phalaris arundinacea	50	yes	FACW
3. Conium maculatum	5	No	FACW
4.			
5.			
6.			
7.			
8.			
= Total Cover	95		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: TP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ______ No ✓

Remarks:

Soil analysis not required per USACE Manual pg 54

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ______ Depth (inches): 0

Water Table Present? Yes ✓ No ______ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ______ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water ~4-5"

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: CPL Well No. 7 City/County: Walla Walla County Sampling Date: 11/9/2022
Applicant/Owner: City of College Place State: WA Sampling Point: TP3
Investigator(s): J. Sandifer, N. Bloxton Section, Township, Range: S02 T06N R35E
Landform (hillslope, terrace, etc.): Stream bank Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR): LRR B-Arid West Lat: 46.02880°N Long: 118.40603°W Datum: WGS 84
Soil Map Unit Name: Catherine silt loam, 0 to 3% slopes NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Within Wetland B.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft²)			
1. Salix babylonica	20	Y	FAC
2.			
3.			
4.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft²)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5 ft²)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 15 ft²)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: TP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/2	100	————				Silt lo	5% medium roots.
4-6	10YR2/2	66	2.5Y 4/3	30	D	M	Silt lo	Large rock (cobble) in layer. Medium,
			7.5YR3/4	4	C	M		
6-16	10YR2/2	95	7.5 YR3/4	3	C	PL, M	Silt lo	distinct, many depletions in the matrix.
			10 YR 3/6	2	C	PL, M		Fine to medium, distinct and prominent, common redox concentrations.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) **(LRR C)**
☐ 1 cm Muck (A9) **(LRR D)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☑ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

☐ 1 cm Muck (A9) **(LRR C)**
☐ 2 cm Muck (A10) **(LRR B)**
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ✓ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☑ Surface Water (A1)
☑ High Water Table (A2)
☑ Saturation (A3)
☐ Water Marks (B1) **(Nonriverine)**
☐ Sediment Deposits (B2) **(Nonriverine)**
☐ Drift Deposits (B3) **(Nonriverine)**
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)
☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) **(Riverine)**
☐ Sediment Deposits (B2) **(Riverine)**
☐ Drift Deposits (B3) **(Riverine)**
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1
Water Table Present? Yes ✓ No ___ Depth (inches): 3
Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Test pit is within 10-15 ft. of flowing stream (Stone Creek) and adjacent to diffuse flow of secondary channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: CPL Well No. 7 City/County: Walla Walla County Sampling Date: 11/9/22

Applicant/Owner: City of College Place State: WA Sampling Point: TP4

Investigator(s): J. Sandifer, N. Bloxton Section, Township, Range: S02 T06N R35E

Landform (hillslope, terrace, etc.): hillslope/toe Local relief (concave, convex, none): convex Slope (%): 8

Subregion (LRR): LRR B - Arid West Lat: 46.028783°N Long: 118.406064°W Datum: WGS 84

Soil Map Unit Name: Catherine Silt loam, 0 to 3% slopes NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
Upland near wetland B.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: r= 30')			
1. Robinia pseudoacacia	30	yes	FACU
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: r= 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: r= 5')			
1. Poa pratensis	70	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: —)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	70	x 3 = 210
FACU species	30	x 4 = 120
UPL species		x 5 =
Column Totals:	100 (A)	330 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: mowed lawn area

SOIL

Sampling Point: TP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/2	100	—				Silt Loam	2% fine roots
4-12	10 YR 3/2	100	—				" "	
12-17	2.5Y4/2	95	7.5 YR 3/4	10	C	M,PL	" "	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (**LRR C**)
☐ 1 cm Muck (A9) (**LRR D**)
☑ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

☐ 1 cm Muck (A9) (**LRR C**)
☐ 2 cm Muck (A10) (**LRR B**)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ______
Depth (inches): ______

Hydric Soil Present? Yes ✓ No ______

Remarks:
Indicator barely met. Assumed depleted layer continues below 17" to meet thickness requirements.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

☐ Surface Water (A1)
☑ High Water Table (A2)
☑ Saturation (A3)
☐ Water Marks (B1) (**Nonriverine**)
☐ Sediment Deposits (B2) (**Nonriverine**)
☐ Drift Deposits (B3) (**Nonriverine**)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)
☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

☐ Water Marks (B1) (**Riverine**)
☐ Sediment Deposits (B2) (**Riverine**)
☐ Drift Deposits (B3) (**Riverine**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ______
Water Table Present? Yes ✓ No ______ Depth (inches): 11
Saturation Present? (includes capillary fringe) Yes ✓ No ______ Depth (inches): 9

Wetland Hydrology Present? Yes ✓ No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: CPL Well No. 7 City/County: Walla Walla County Sampling Date: 11/9/22
Applicant/Owner: City of College Place State: WA Sampling Point: TP5
Investigator(s): J. Sandifer, N. Bloxton Section, Township, Range: T06N T06N R35E
Landform (hillslope, terrace, etc.): Floodplain depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): LRR B – Arid West Lat: 46.02992°N Long: 118.40685°W Datum: WGS84
Soil Map Unit Name: Catherine silt loam, 0 to 3% slopes NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ___
Hydric Soil Present? Yes ___ No ✓
Wetland Hydrology Present? Yes ✓ No ___

Is the Sampled Area within a Wetland? Yes ___ No ✓

Remarks:
In high groundwater area near Stone Creek (West of Teal Ln). Seasonally wet but not saturated long enough to develop hydric soils and/or meet technical definition of a wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft²)			
1. Salix amygdaloides	60	Y	FACW
2.			
3.			
4.			
= Total Cover	60		
Sapling/Shrub Stratum (Plot size: 15 ft²)			
1. Rubus armeniacus	15	Y	FAC
2.			
3.			
4.			
5.			
= Total Cover	15		
Herb Stratum (Plot size: 5 ft²)			
1. Iris pseudacorus	95	Y	OBL
2. Epilobium ciliatum	5	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 15 ft²)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: TP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR2/2	100	—	—	—	—	SiClLo	2% medium
13-16	10YR3/2	92	10YR 3/6	8	C	M	SiClLo	roots.
								Fine to medium
								concentrations in
								the matrix and
								pore linings.
								Prominent.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

Concentrations too deep in profile to meet indicator(s).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
✓ High Water Table (A2)
✓ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
✓ FAC-Neutral Test (D5)

Field Observations:

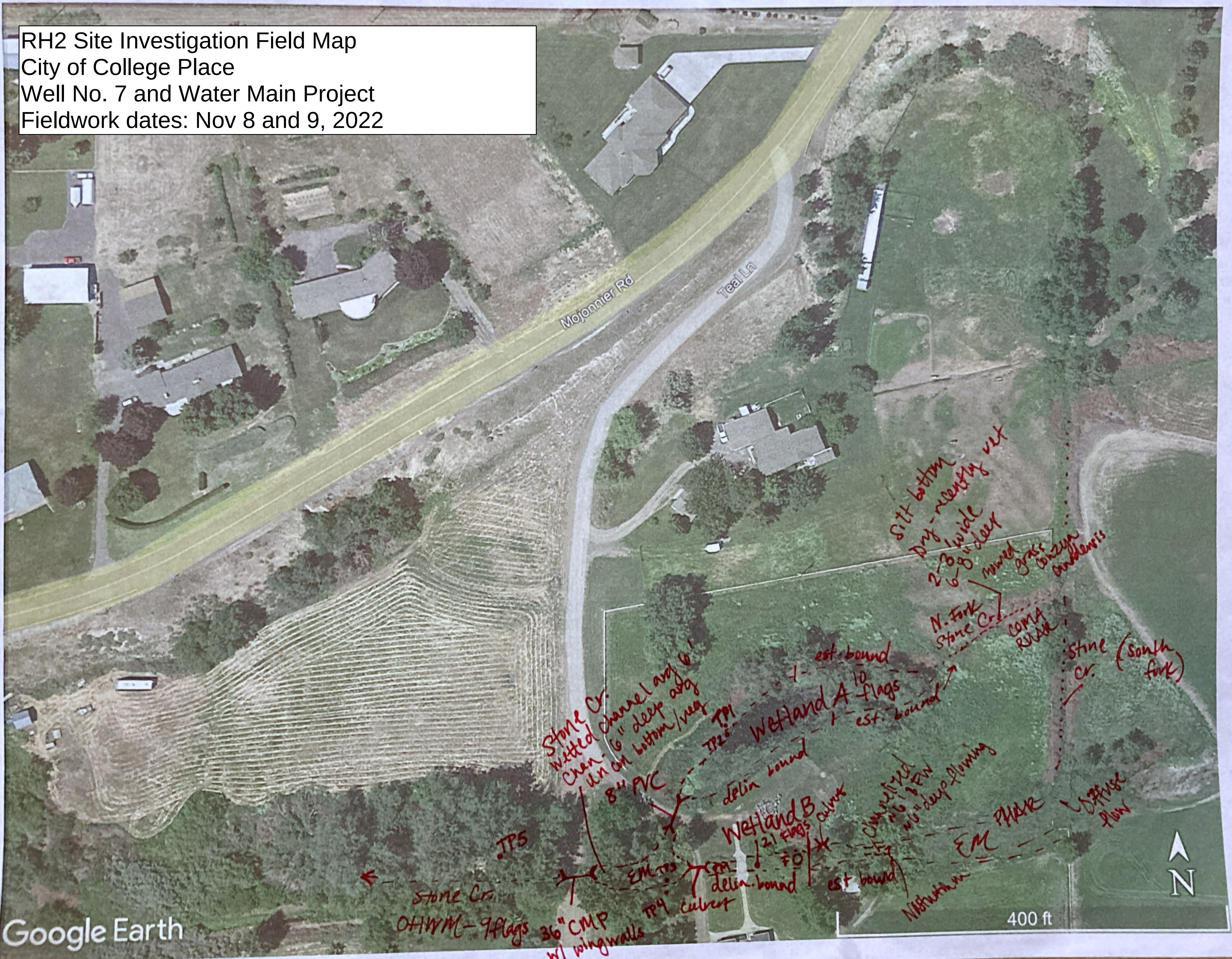
Surface Water Present? Yes ___ No ✓ Depth (inches): -
Water Table Present? Yes ✓ No ___ Depth (inches): 5
Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 3

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

RH2 Site Investigation Field Map
City of College Place
Well No. 7 and Water Main Project
Fieldwork dates: Nov 8 and 9, 2022



CPL Well No. 7

Wetland name or number WL A

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland A Date of site visit: 11/8 & 9/22

Rated by J. Sandifer & N. Bloxton Trained by Ecology? ✓ Yes ___ No Date of training 10/2018

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Y ✓ N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map ArcGIS Pro - Aerial Basemap

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics ___)

1. Category of wetland based on FUNCTIONS

___ **Category I** – Total score = 22-27

✓ **Category II** – Total score = 19-21

___ **Category III** – Total score = 16-18

___ **Category IV** – Total score = 9-15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
Circle the appropriate ratings				
Site Potential	H [✓ M] L	H [✓ M] L	H [✓ M] L	
Landscape Potential	H [✓ M] L	H [✓ M] L	H M [✓ L]	
Value	[✓ H] M L	H [✓ M] L	[✓ H] M L	**TOTAL**
Score Based on Ratings	7	6	6	19

Score for each function based on three ratings
(order of ratings is not important)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY** *Circle the appropriate category*	
Vernal Pools	**II**	**III**
Alkali	**I**	
Wetland of High Conservation Value	**I**	
Bog and Calcareous Fens	**I**	
Old Growth or Mature Forest – slow growing	**I**	
Aspen Forest	**I**	
Old Growth or Mature Forest – fast growing	**II**	
Floodplain forest	**II**	
None of the above	✓	

Wetland name or number WL A

Maps and figures required to answer questions correctly for Eastern Washington

✓ Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	1
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	2
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 5.3	3
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	6

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream *(can be added to another figure)*	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

Wetland name or number WL A

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
   ___At least 30% of the open water area is deeper than 10 ft (3 m)

   [✓ NO] – go to 2 **YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
   ___The water leaves the wetland **without being impounded.**

   [✓ NO] - go to 3 YES – The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?
   ___ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
   ___ The overbank flooding occurs at least once every 10 years.

   [✓ NO]- go to 4 YES – The wetland class is **Riverine**

   NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

   NO – go to 5 [✓ YES] – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number WL A

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number WL A

DEPRESSIONAL WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality	Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet points = 5 Wetland has an intermittently flowing outlet [✓ points = 3] Wetland has a highly constricted permanently flowing outlet points = 3 Wetland has a permanently flowing, unconstricted, surface outlet points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)* YES = 3 [✓ NO = 0]	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area points = 5 Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area points = 3 Wetland has persistent, ungrazed vegetation from $^1/_{10}$ to < $^1/_3$ of area [✓ points = 1] Wetland has persistent, ungrazed vegetation < $^1/_{10}$ of area points = 0	1
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland [✓ points = 3] Area seasonally ponded is ¼ - ½ total area of wetland points = 1 Area seasonally ponded is < ¼ total area of wetland points = 0	3
Total for D 1 Add the points in the boxes above	7

Rating of Site Potential If score is: ___12- 16 = H ✓ 6- 11 = M ___0- 5 = L *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland receive stormwater discharges? Yes = 1 [✓ No = 0]	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? [✓ Yes = 1] No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? [✓ Yes = 1] No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source___________ Yes = 1 [✓ No = 0]	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___3 or 4 = H ✓ 1 or 2 = M ___0 = L *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list? [✓ Yes = 1] No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]? [✓ Yes = 1] No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality *(answer YES if there is a TMDL for the drainage or basin in which the wetland is found)*? [✓ Yes = 2] No = 0	2
Total for D 3 Add the points in the boxes above	4

Rating of Value If score is: ✓ 2-4 = H ___1 = M ___0 = L *Record the rating on the first page*

Walla Walla River Basin Bacteria, pH, & D.O. TMDL (2021)

Wetland name or number WL A

DEPRESSIONAL WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.	Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet points = 8 Wetland has an intermittently flowing outlet [✓ points = 4] Wetland has a highly constricted permanently flowing outlet points = 4 Wetland has a permanently flowing unconstricted surface outlet points = 0 *(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*	4
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).* Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding points = 8 Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding points = 6 The wetland is a headwater wetland points = 4 Seasonal ponding: 1 ft - < 2 ft [✓ points = 4] Seasonal ponding: 6 in - < 1 ft points = 2 Seasonal ponding: < 6 in or wetland has only saturated soils points = 0	4
Total for D 4 Add the points in the boxes above	8

Rating of Site Potential If score is: ____**12-16 = H** ✓**6-11 = M** ____**0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 [✓ No = 0]	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff? Yes = 1 [✓ No = 0]	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? [✓ Yes = 1] No = 0	1
Total for D 5 Add the points in the boxes above	1

Rating of Landscape Potential If score is: ____**3 = H** ✓**1 or 2 = M** ____**0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND — Flooding occurs in sub-basin that is immediately down-gradient of wetland points = 2 — Surface flooding problems are in a sub-basin farther down-gradient [✓ points = 1] The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* ____________________ points = 0 There are no problems with flooding downstream of the wetland points = 0	1
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [✓ No = 0]	0
Total for D 6 Add the points in the boxes above	1

Rating of Value If score is: ____**2-4 = H** ✓**1 = M** ____**0 = L** *Record the rating on the first page*

Wetland name or number WL A

These questions apply to wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

(only 1 score per box)

H 1.0. Does the wetland have the potential to provide habitat for many species?

H 1.1. Structure of the plant community:

Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.

____Aquatic bed
____Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover
_✓_Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover
____Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover
____Scrub-shrub (areas where shrubs have >30% cover)
_✓_Forested (areas where trees have >30% cover)

4 or more checks: points = 3
3 checks: points = 2
[✓ 2 checks: points = 1]
1 check: points = 0

1

H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 [✓ No = 0]

Aquatic bed must be rooted. Lemna doesn't qualify as AB.

0

H 1.3. Surface water

H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* [✓ Yes = 3 points & go to H 1.4] No = go to H 1.3.2

H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0

3

H 1.4. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.*
Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)

\# of species 7 Poison hemlock, Fuller's teasel, Cocklebur, Juncus (sp.), unidentified herb, prickly lettuce, willow

Scoring: > 9 species: points = 2
[✓ 4-9 species: points = 1]
< 4 species: points = 0

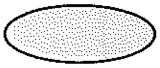
1

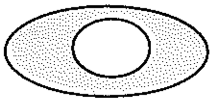
H 1.5. Interspersion of habitats

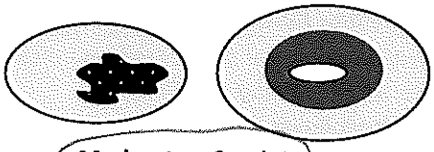
Figure 1

Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.

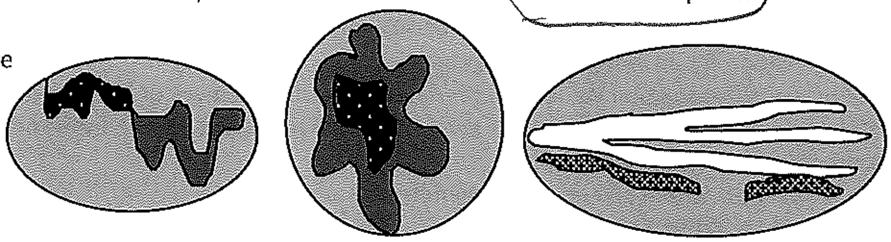
Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.


None = 0 points


Low = 1 point


[✓ **Moderate** = 2 points]

All three diagrams in this row are **High** = 3 points


Riparian braided channels with 2 classes

2

Wetland name or number WL A

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ____Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	0
Total for H 1 Add the points in the boxes above	7

Rating of Site Potential If score is: ____15-18 = H ✓7-14 = M ____0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 5 = 5 % > $^1/_3$ (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon [✓ points = 0]	0
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat 10 + [(% moderate and low intensity land uses)/2] 15 = 25 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches [✓ points = 1] Undisturbed habitat < 10% of Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use [✓ points = (- 2)] Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* Yes = 3 [✓ No = 0]	0
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is: ____4-9 = H ____1-3 = M ✓< 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: [✓ points = 2] — It has 3 or more priority habitats within 100 m (see Appendix B) ✓ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ✓ It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ✓2 = H ____1 = M ____0 = L *Record the rating on the first page*

Wetland name or number WL A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* — The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the wet season. Yes – Go to **SC 1.1** [✓ No = **Not a vernal pool**] SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to **SC 1.2** No = **Not a vernal pool with special characteristics**	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = **Category II** No = **Category III**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meet two of the following three sub-criteria? — Salt encrustations around more than 75% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 4 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. Yes = **Category I** [✓ No= **Not an alkali wetland**]	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 3.2** [✓ No – Go to **SC 3.3**] SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = **Category I** [✓ No = **Not a WHCV**] SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – **Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = **Category I** No =**Not a WHCV**	**Cat. I**

Wetland name or number WL A

SC 4.0 Bogs and Calcareous Fens

Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? *Use the key below to identify if the wetland is a bog or calcareous fen.* ***If you answer yes you will still need to rate the wetland based on its functions.***

SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? *See Appendix C for a field key to identify organic soils.* Yes – Go to **SC 4.3** [✓ No – Go to **SC 4.2**]

SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 4.3** No = **Is not a bog for rating**

SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = **Category I bog** No – Go to **SC 4.4**

NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.

SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No – Go to **SC 4.5**

Cat. I

SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = **Is a Calcareous Fen for purpose of rating** No – Go to **SC 4.6**

SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:

- Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems
- The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = **Is a Category I calcareous fen** No = **Is not a calcareous fen**

Cat. I

SC 5.0. Forested Wetlands

Does the wetland have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? (*Continue only if you have identified that a forested class is present in question H 1.1*)

- The wetland is within the 100 year floodplain of a river or stream
- Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species
- There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)*

Yes – Go to **SC 5.1** [✓ No = **Not a forested wetland with special characteristics**]

SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (*see Table 7*)? Yes = **Category I** No – Go to **SC 5.2**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (*see Table 7*)? Yes = **Category II** No – Go to **SC 5.4**	**Cat. II**
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = **Category II** No = **Not a forested wetland with special characteristics**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	NA

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: ***NOTE:*** *This question is independent of the land use between the wetland and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

✓ **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

✓ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

— **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

— **Juniper Savannah:** All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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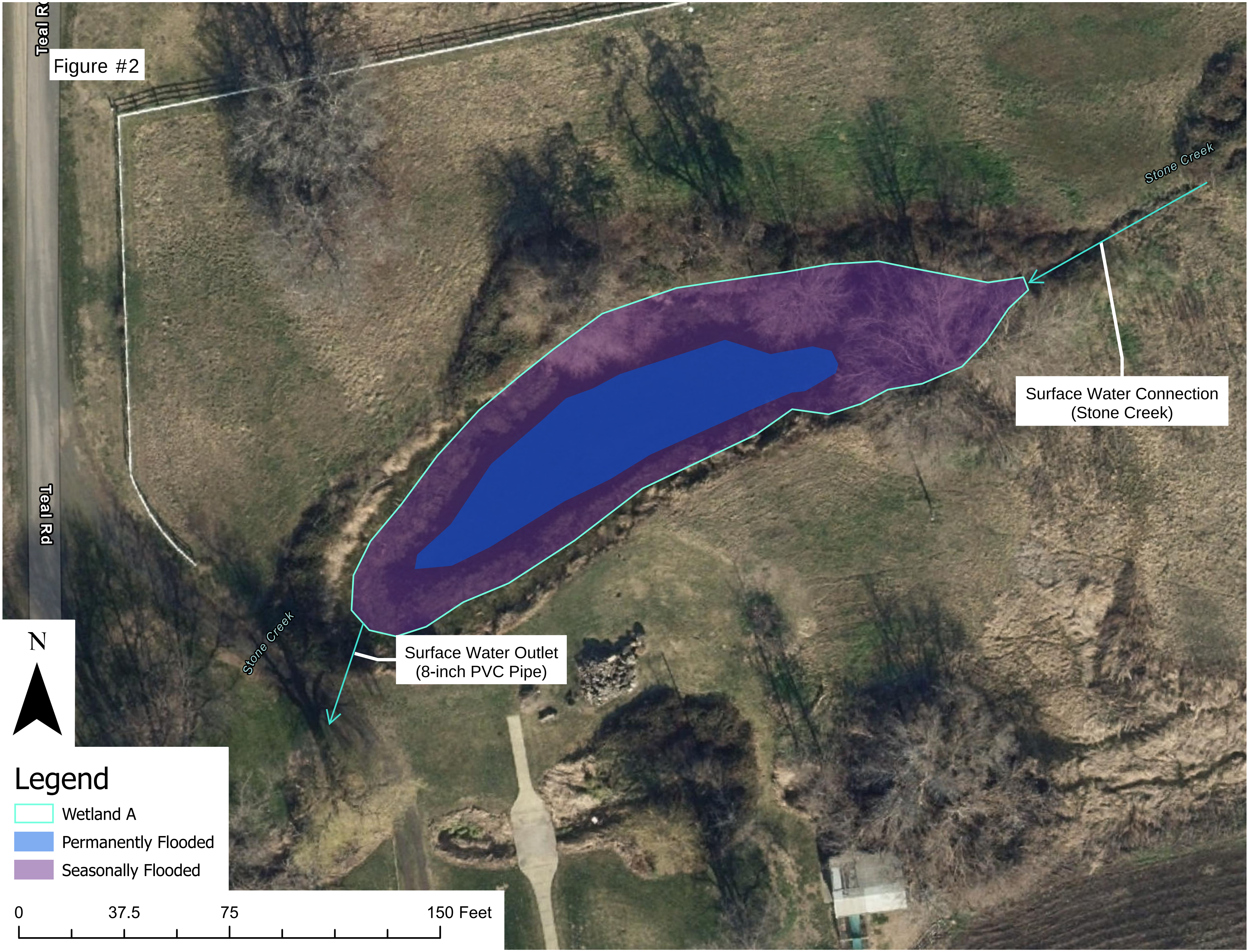
Figure #1


Teal Rd
Teal Rd
Stone Creek
N
Legend
Wetland A
Wetland A 150 ft Radius
Open Water
Emergent (>12-40 in high)
Forested
0
50
100
200 Feet

Figure #2


Teal Rd
Teal Rd
Stone Creek
Surface Water Connection
(Stone Creek)
Surface Water Outlet
(8-inch PVC Pipe)
Stone Creek
N
Legend
Wetland A
Permanently Flooded
Seasonally Flooded
0
37.5
75
150 Feet

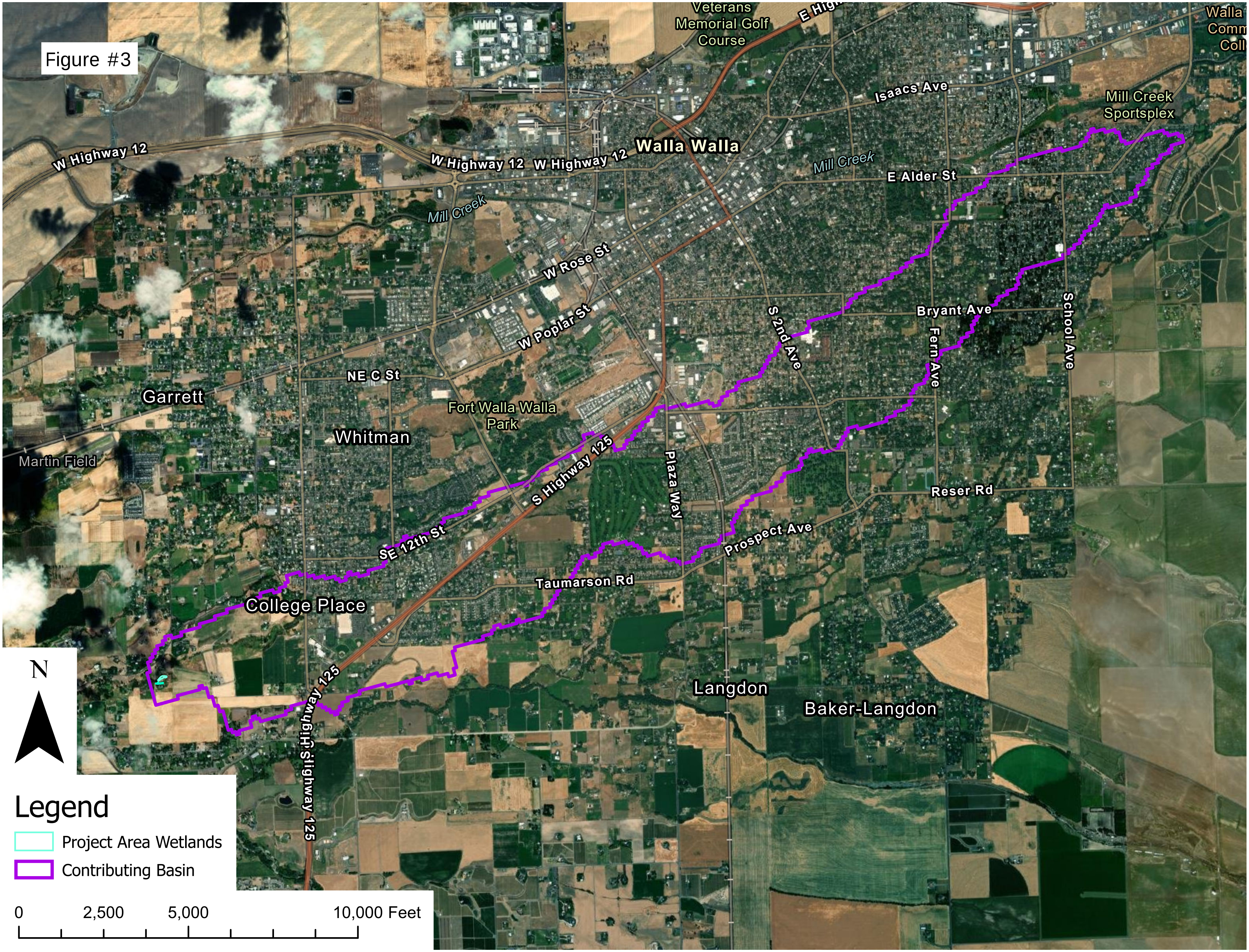
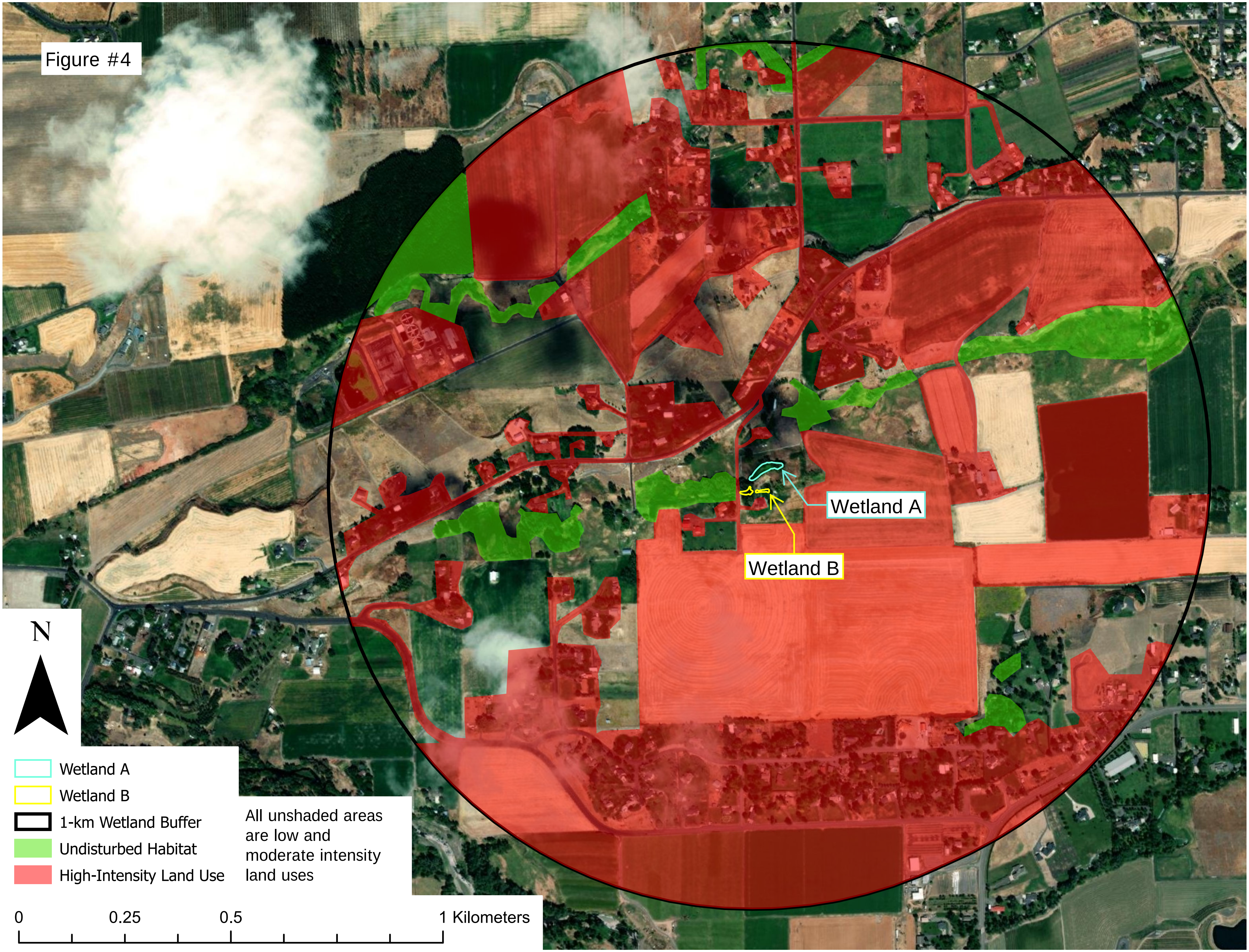


Figure #3

Veterans Memorial Golf Course
E High
Walla Comm Coll
Isaacs Ave
Mill Creek Sportsplex
W Highway 12
W Highway 12
W Highway 12
Walla Walla
Mill Creek
E Alder St
Mill Creek
W Rose St
W Poplar St
S 2nd Ave
Bryant Ave
Fern Ave
School Ave
NE C St
Garrett
Fort Walla Walla Park
Whitman
Martin Field
S Highway 125
Plaza Way
Reser Rd
SE 12th St
Prospect Ave
Taumarson Rd
College Place
Highway 125
Langdon
Baker-Langdon
S Highway 125
N
Legend
Project Area Wetlands
Contributing Basin
0
2,500
5,000
10,000 Feet

Figure #4

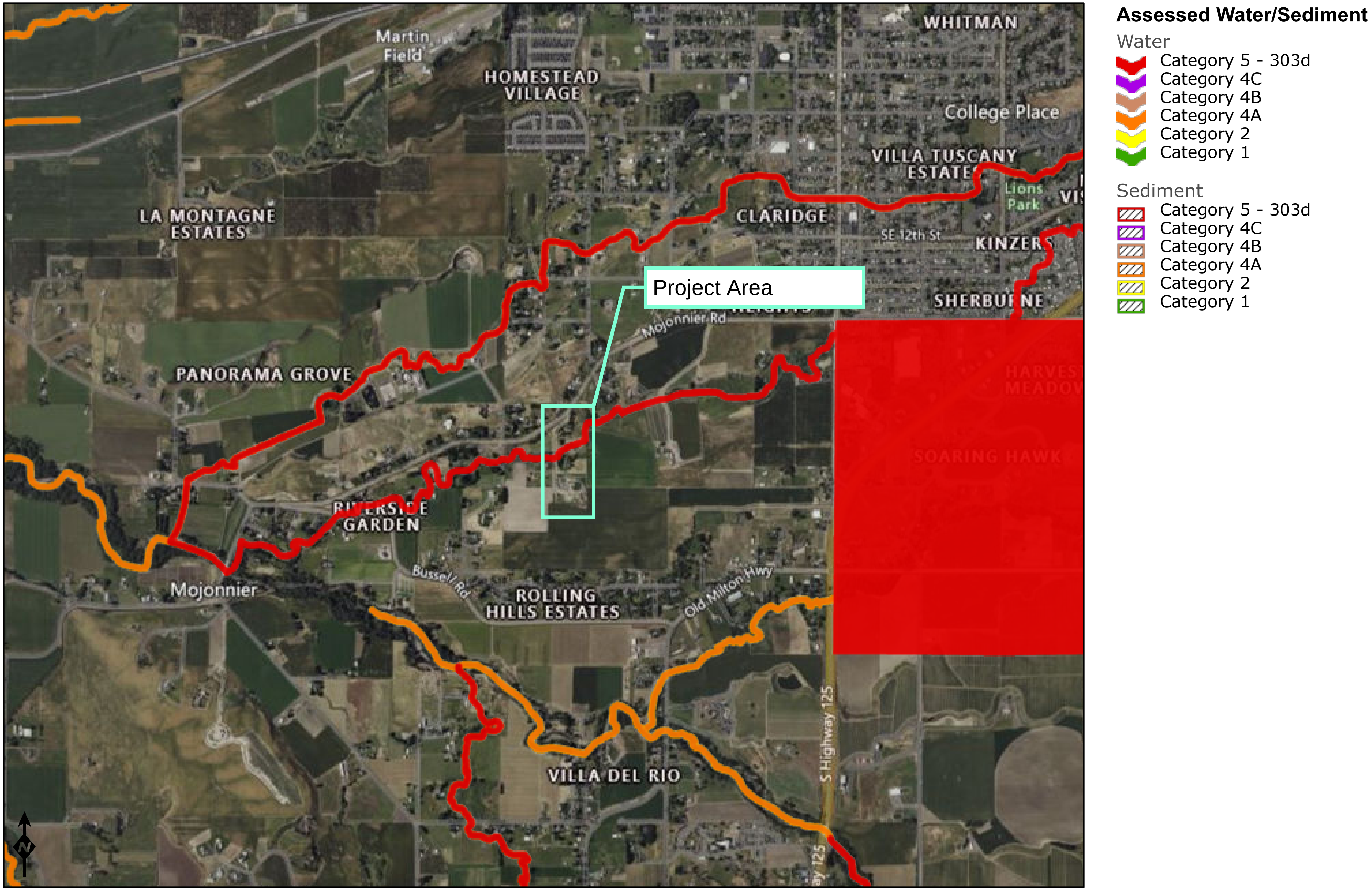


All unshaded areas are low and moderate intensity land uses

November 15, 2022

Figure #5

Water Quality Atlas



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Airbus DS © 2022 TomTom
Esri, NASA, NGA, USGS, FEMA

DEPARTMENT OF
ECOLOGY
State of Washington

Figure #6

DEPARTMENT OF ECOLOGY
State of Washington

Walla Walla County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Walla Walla County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	**Pollutant(s)**	**Status**	**Project Lead(s)**
Mill Creek	Ammonia-N	EPA approved	Chad Atkins 509-329-3590
Mill Creek	Chlorine	EPA approved	Chad Atkins 509-329-3590
Walla Walla	Chlorine Pesticide PCBs	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590
Walla Walla	Fecal Coliform	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590
Walla Walla	pH Dissolved Oxygen	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590
Walla Walla	Temperature	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

CPL Well No. 7

Wetland name or number WL B

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland B Date of site visit: 11/9/22

Rated by J. Sandifer, N. Bloxton Trained by Ecology? ✓ Yes ___ No Date of training 10/2018

HGM Class used for rating Riverine Wetland has multiple HGM classes? ___ Y ✓ N

NOTE: Form is not complete without the figures requested (*figures can be combined*).
Source of base aerial photo/map ArcGIS Pro - Aerial Basemap

OVERALL WETLAND CATEGORY II (based on functions ✓ or special characteristics ___)

1. Category of wetland based on FUNCTIONS

___ **Category I** – Total score = 22-27

✓ **Category II** – Total score = 19-21

___ **Category III** – Total score = 16-18

___ **Category IV** – Total score = 9-15

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
	Circle the appropriate ratings			
Site Potential	H [✓ M] L	H M [✓ L]	H M [✓ L]	
Landscape Potential	[✓ H] M L	[✓ H] M L	H M [✓ L]	
Value	[✓ H] M L	H [✓ M] L	[✓ H] M L	**TOTAL**
Score Based on Ratings	8	6	5	19

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**CATEGORY** *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	✓

Wetland name or number WL B

Maps and figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

✓ Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1
Hydroperiods	H 1.2, H 1.3	2
Ponded depressions	R 1.1	2
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	3
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	2
Width of wetland vs. width of stream *(can be added to another figure)*	R 4.1	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	4
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	5
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	6

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland (*can be added to another figure*)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

Wetland name or number WL 13

HGM Classification of Wetland in Eastern Washington

> For questions 1-4, the criteria described must apply to the entire unit being rated.
>
> If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
   ___At least 30% of the open water area is deeper than 10 ft (3 m)

   [✓ NO] - go to 2 **YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
   ___The water leaves the wetland **without being impounded**.

   [✓ NO] - go to 3 YES – The wetland class is **Slope**
   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?
   _✓_The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
   _✓_The overbank flooding occurs at least once every 10 years.

   NO - go to 4 [✓ YES] - The wetland class is **Riverine**
   NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

   NO – go to 5 YES – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number WL B

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number WB

RIVERINE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	Points (only 1 score per box)
R 1.0. Does the site have the potential to improve water quality?	
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a flooding event: Depressions cover $>^{1}/_{3}$ area of wetland — points = 6 Depressions cover $>^{1}/_{10}$ area of wetland — [✓ points = 3] Depressions present but cover $<^{1}/_{10}$ area of wetland — points = 1 No depressions present — points = 0	3
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height; **not** Cowardin classes): Forest or shrub $>^{2}/_{3}$ the area of the wetland — points = 10 Forest or shrub $^{1}/_{3}-^{2}/_{3}$ area of the wetland — points = 5 Ungrazed, herbaceous plants $>^{2}/_{3}$ area of wetland — [✓ points = 5] Ungrazed herbaceous plants $^{1}/_{3}-^{2}/_{3}$ area of wetland — points = 2 Forest, shrub, and ungrazed herbaceous $<^{1}/_{3}$ area of wetland — points = 0	5
Total for R 1 — Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** ✓**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

R 2.0. Does the landscape have the potential to support the water quality function of the site?	
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 [✓ No = 0]	0
R 2.2. Does the contributing basin include a UGA or incorporated area? [✓ Yes = 1] No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? [✓ Yes = 1] No = 0	1
R 2.4. Is > 10% of the area within 150 ft of wetland in land uses that generate pollutants [✓ Yes = 1] No = 0	1
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4? Source Herbicide & poultry housed nearby [✓ Yes = 1] No = 0	1
Total for R 2 — Add the points in the boxes above	4

Rating of Landscape Potential If score is: ✓**3-6 = H** ___**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? [✓ Yes = 1] No = 0	1
R 3.2. Does the river or stream have TMDL limits for nutrients, toxics, or pathogens? Yes = 1 [✓ No = 0]	0
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? *Answer YES if there is a TMDL for the drainage in which wetland is found.* [✓ Yes = 2] No = 0	2
Total for R 3 — Add the points in the boxes above	3

Rating of Value If score is: ✓**2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Walla Walla R

Wetland name or number WL B

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion	Points (only 1 score per box)
R 4.0. Does the site have the potential to reduce flooding and erosion?	
R 4.1. Characteristics of the overbank storage the wetland provides: *Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks).* If the ratio is more than 2 points = 10 If the ratio is 1-2 points = 8 If the ratio is ½-<1 points = 4 If the ratio is ¼-< ½ points = 2 If the ratio is < ¼ [✓ points = 1]	1
R 4.2. Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as forest or shrub. Choose the points appropriate for the best description (polygons need to have > 90% cover at person height. These are NOT Cowardin classes).* Forest or shrub for more than $^2/_3$ the area of the wetland points = 6 Forest or shrub for >$^1/_3$ area OR emergent plants > $^2/_3$ area [✓ points = 4] Forest or shrub for > $^1/_{10}$ area OR emergent plants > $^1/_3$ area points = 2 Plants do not meet above criteria points = 0	4
Total for R 5 Add the points in the boxes above	5

Rating of Site Potential If score is: ___**12-16 = H** ___**6-11 = M** [✓ **0-5 = L**] *Record the rating on the first page*

R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
R 5.1. Is the stream or river adjacent to the wetland downcut? Yes = 0 [✓ No = 1]	1
R 5.2. Does the up-gradient watershed include a UGA or incorporated area? [✓ Yes = 1] No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams? Yes = 0 [✓ No = 1]	1
Total for R 5 Add the points in the boxes above	3

Rating of Landscape Potential If score is: [✓ **3 = H**] ___**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.* The sub-basin immediately down-gradient of site has surface flooding problems that result in damage to human or natural resources points = 2 Surface flooding problems are in a basin farther down-gradient [✓ points = 1] No flooding problems anywhere downstream points = 0	1
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [✓ No = 0]	0
Total for R 6 Add the points in the boxes above	1

Rating of Value If score is: ___**2-4 = H** [✓ **1 = M**] ___**0 = L** *Record the rating on the first page*

Wetland name or number WLB

These questions apply to wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat (only 1 score per box)

H 1.0. Does the wetland have the potential to provide habitat for many species?

H 1.1. Structure of the plant community:
Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.

- ____Aquatic bed
- ____Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover
- ✓ Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover
- ____Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover
- ____Scrub-shrub (areas where shrubs have >30% cover)
- ✓ Forested (areas where trees have >30% cover)

4 or more checks: points = 3
3 checks: points = 2
[✓ 2 checks: points = 1]
1 check: points = 0

1

H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 [✓ No = 0]

0

H 1.3. Surface water
H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 [✓ No = go to H 1.3.2]
H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 [✓ No = 0]

Stone Cr. is vegetated within wetland.

0

H 1.4. Richness of plant species
Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.*
Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)
\# of species 3

Scoring: > 9 species: points = 2
4-9 species: points = 1
[✓ < 4 species: points = 0]

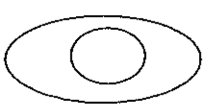
Vinca, Salix, Juncus,

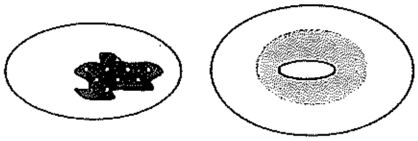
0

H 1.5. Interspersion of habitats
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none.
Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.

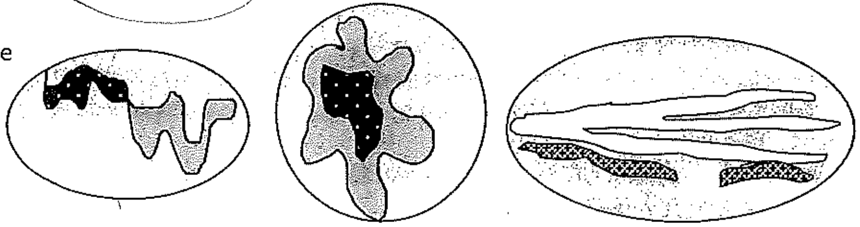
Figure 1


None = 0 points


[✓ **Low** = 1 point]


Moderate = 2 points

All three diagrams in this row are **High** = 3 points


Riparian braided channels with 2 classes

1

Wetland name or number WL B

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ✓ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ____Cattails or bulrushes are present within the wetland. ____Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ____Emergent or shrub vegetation in areas that are permanently inundated/ponded. ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ____ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	1
Total for H 1 Add the points in the boxes above	3

Rating of Site Potential If score is:___15-18 = H ___7-14 = M ✓0-6 = L *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* % undisturbed habitat 0 + [(% moderate and low intensity land uses)/2] 5 = 5 % > $^1/_3$ (33.3%) of 1 km Polygon points = 3 20-33% of 1km Polygon points = 2 10-19% of 1km Polygon points = 1 <10% of 1km Polygon [✓ points = 0]	0
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* % undisturbed habitat 10 + [(% moderate and low intensity land uses)/2] 15 = 25 % Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches [✓ points = 1] Undisturbed habitat < 10% of Polygon points = 0	1
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use [✓ points = (- 2)] Does not meet criterion above points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* Yes = 3 [✓ No = 0]	0
Total for H 2 Add the points in the boxes above	-1

Rating of Landscape Potential If score is:___4-9 = H ___1-3 = M ✓< 1 = L *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) ✓ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ✓ It is mapped as a location for an individual WDFW species * — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: ✓2 = H ___1 = M ___0 = L *Record the rating on the first page*

Wetland name or number WL B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft^2**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* — The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the wet season. Yes – Go to **SC 1.1** [✓ No = **Not a vernal pool**] SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to **SC 1.2** No = **Not a vernal pool with special characteristics**	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = **Category II** No = **Category III**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meet two of the following three sub-criteria? — Salt encrustations around more than 75% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 4 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. Yes = **Category I** [✓ No= **Not an alkali wetland**]	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 3.2** [✓ No – Go to **SC 3.3**] SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = **Category I** [✓ No = **Not a WHCV**] SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – **Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = **Category I** No =**Not a WHCV**	**Cat. I**

Wetland name or number WL B

SC 4.0 Bogs and Calcareous Fens

Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? *Use the key below to identify if the wetland is a bog or calcareous fen.* ***If you answer yes you will still need to rate the wetland based on its functions.***

SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? *See Appendix C for a field key to identify organic soils.* Yes – Go to **SC 4.3** [✓ No – Go to **SC 4.2**]

SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 4.3** [✓ No = **Is not a bog for rating**]

SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = **Category I bog** No – Go to **SC 4.4**

NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.

SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No – Go to **SC 4.5**

Cat. I

SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = **Is a Calcareous Fen for purpose of rating** No – Go to **SC 4.6**

SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met:

- Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems
- The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = **Is a Category I calcareous fen** No = **Is not a calcareous fen**

Cat. I

SC 5.0. Forested Wetlands

Does the wetland have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? (*Continue only if you have identified that a forested class is present in question H 1.1*)

- The wetland is within the 100 year floodplain of a river or stream
- Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species
- There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)*

Yes – Go to **SC 5.1** [✓ No = **Not a forested wetland with special characteristics**]

SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (*see Table 7*)? Yes = **Category I** No – Go to **SC 5.2** — **Cat. I**

SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3** — **Cat. I**

SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (*see Table 7*)? Yes = **Category II** No – Go to **SC 5.4** — **Cat. II**

SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = **Category II** No = **Not a forested wetland with special characteristics** — **Cat. II**

Category of wetland based on Special Characteristics
Choose the highest rating if wetland falls into several categories
If you answered No for all types, enter "Not Applicable" on Summary Form — NA

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: ***NOTE:*** *This question is independent of the land use between the wetland and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

✓ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

✓ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

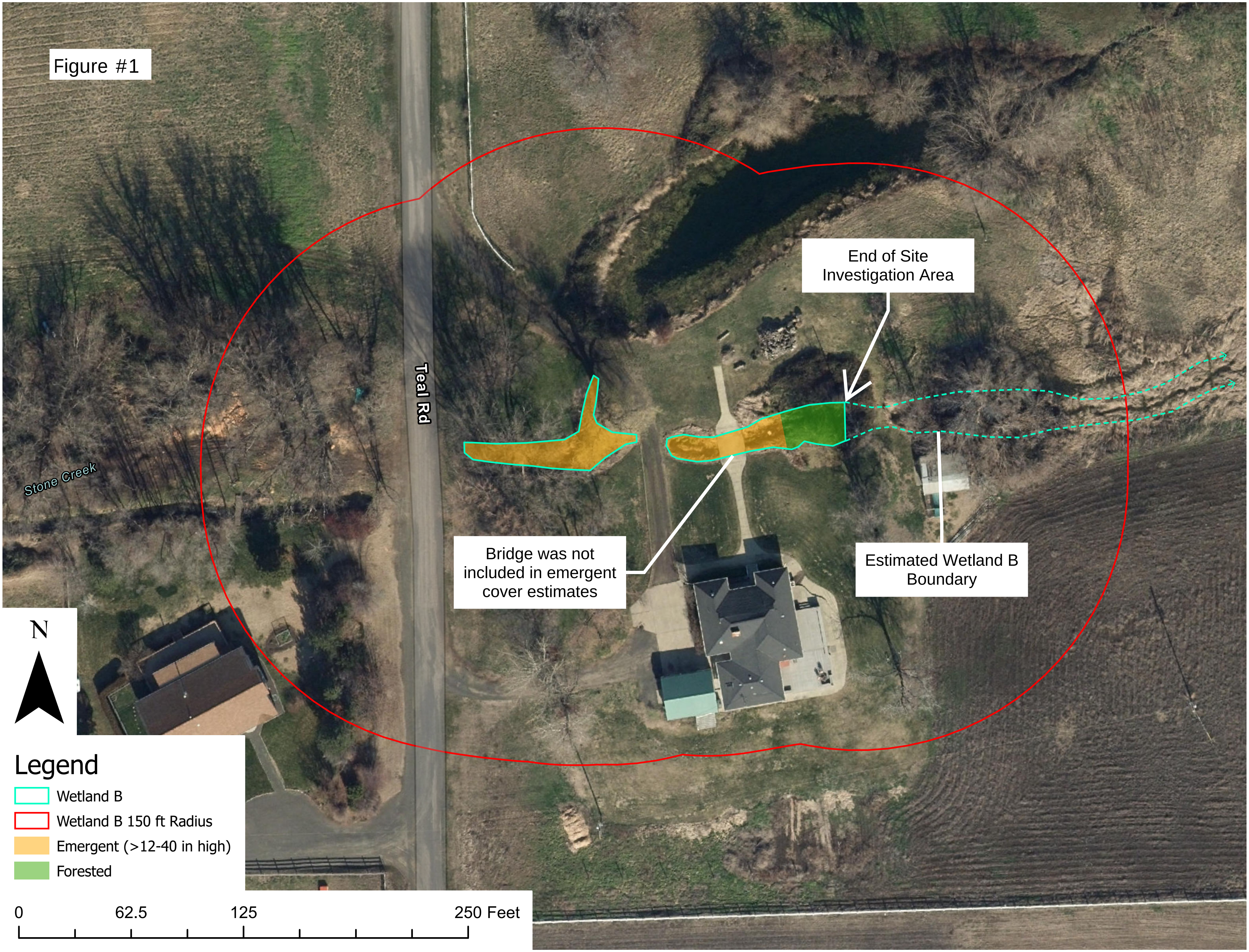
— **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

— **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

— **Juniper Savannah:** All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Figure #1



Teal Rd
Stone Creek
End of Site Investigation Area
Bridge was not included in emergent cover estimates
Estimated Wetland B Boundary
N
Legend
Wetland B
Wetland B 150 ft Radius
Emergent (>12-40 in high)
Forested
0
62.5
125
250 Feet

Figure #2

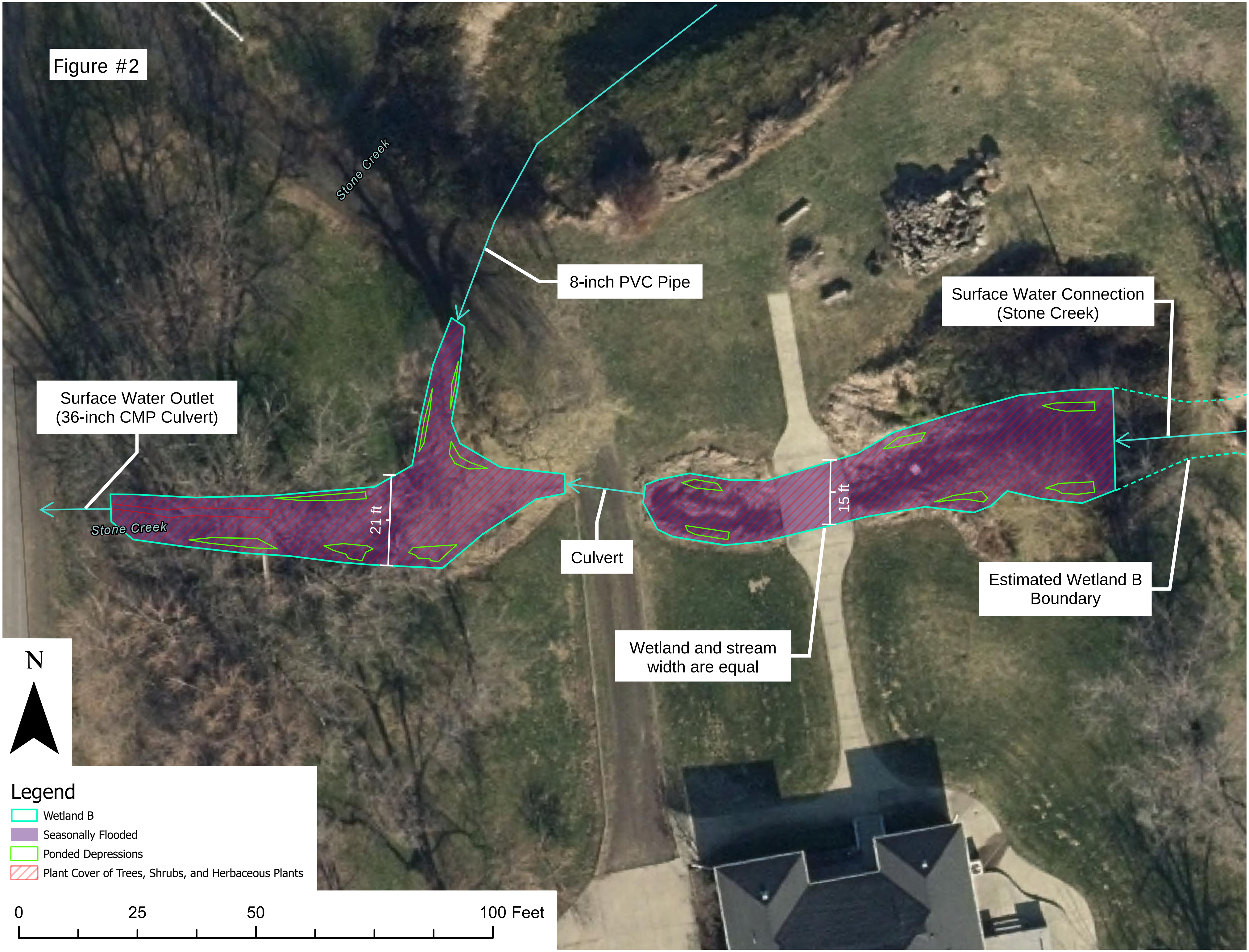

Stone Creek
8-inch PVC Pipe
Surface Water Connection
(Stone Creek)
Surface Water Outlet
(36-inch CMP Culvert)
21 ft
15 ft
Stone Creek
Culvert
Estimated Wetland B
Boundary
Wetland and stream
width are equal
N
Legend
Wetland B
Seasonally Flooded
Ponded Depressions
Plant Cover of Trees, Shrubs, and Herbaceous Plants
0
25
50
100 Feet

Figure #3

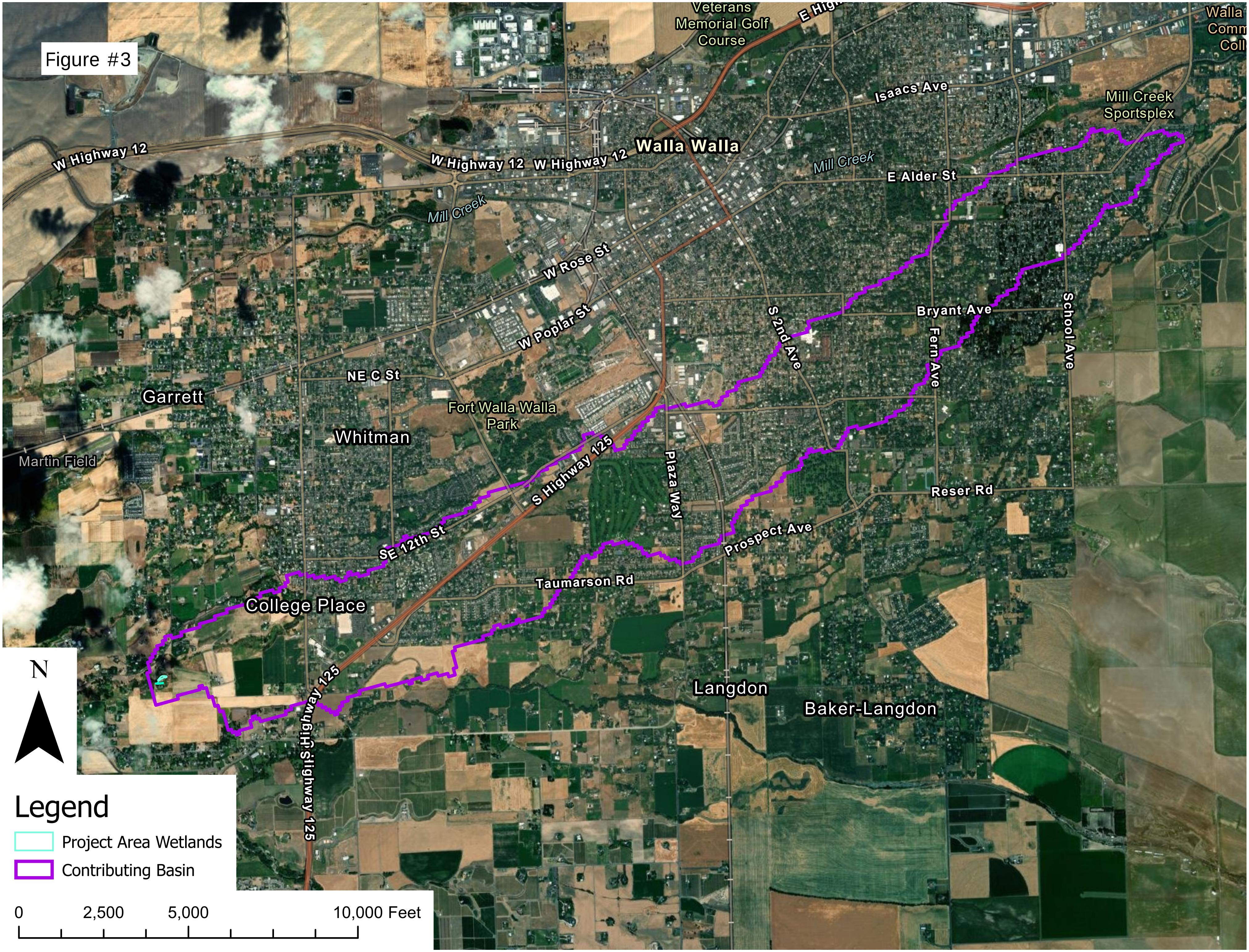
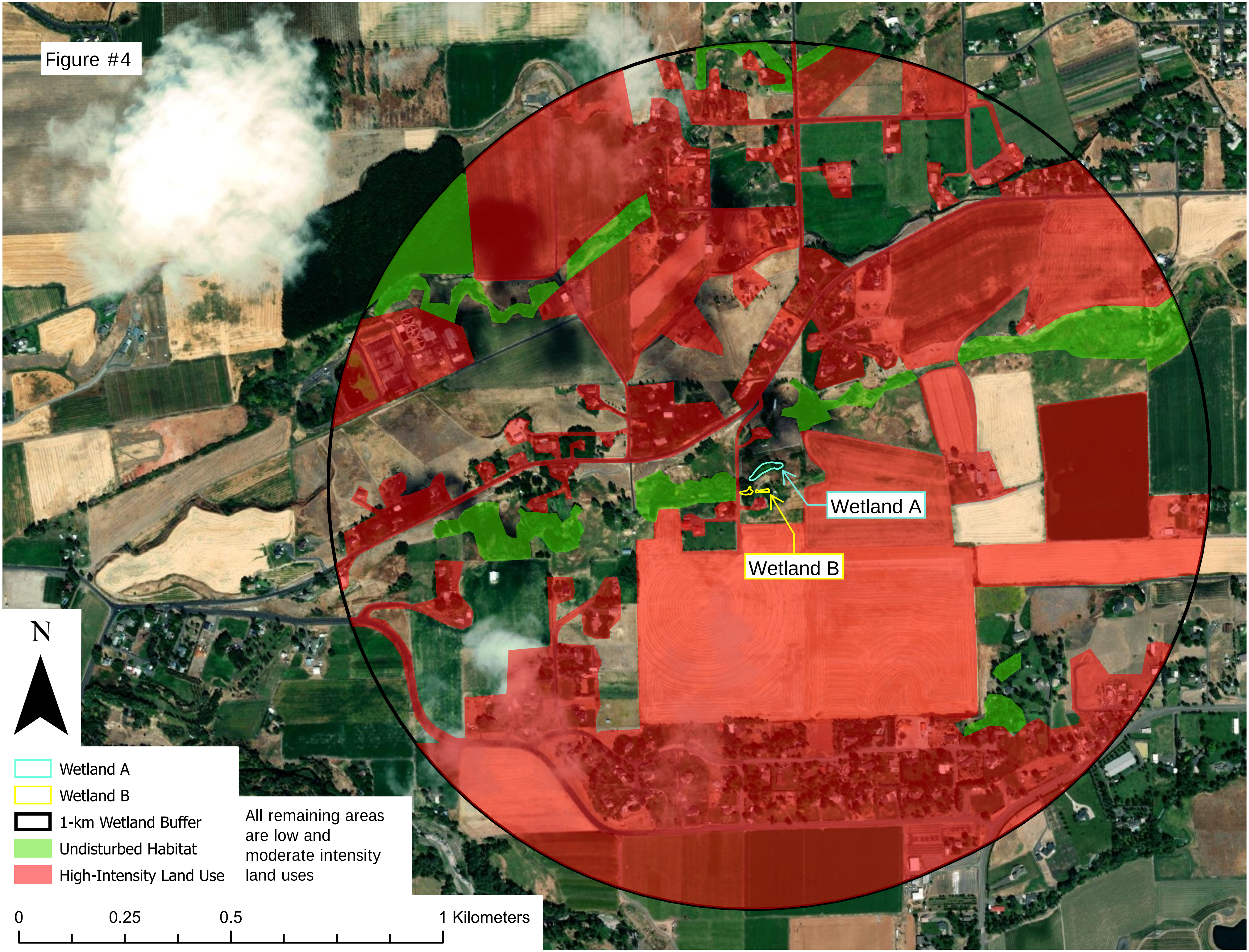

Veterans Memorial Golf Course
E High
Walla Comm Coll
Isaacs Ave
Mill Creek Sportsplex
W Highway 12
W Highway 12
W Highway 12
Walla Walla
Mill Creek
E Alder St
Mill Creek
W Rose St
W Poplar St
S 2nd Ave
Bryant Ave
Fern Ave
School Ave
NE C St
Garrett
Fort Walla Walla Park
Whitman
Martin Field
S Highway 125
Plaza Way
Reser Rd
SE 12th St
Prospect Ave
Taumarson Rd
College Place
Highway 125
Langdon
Baker-Langdon
Highway 125
N
Legend
Project Area Wetlands
Contributing Basin
0
2,500
5,000
10,000 Feet

Figure #4

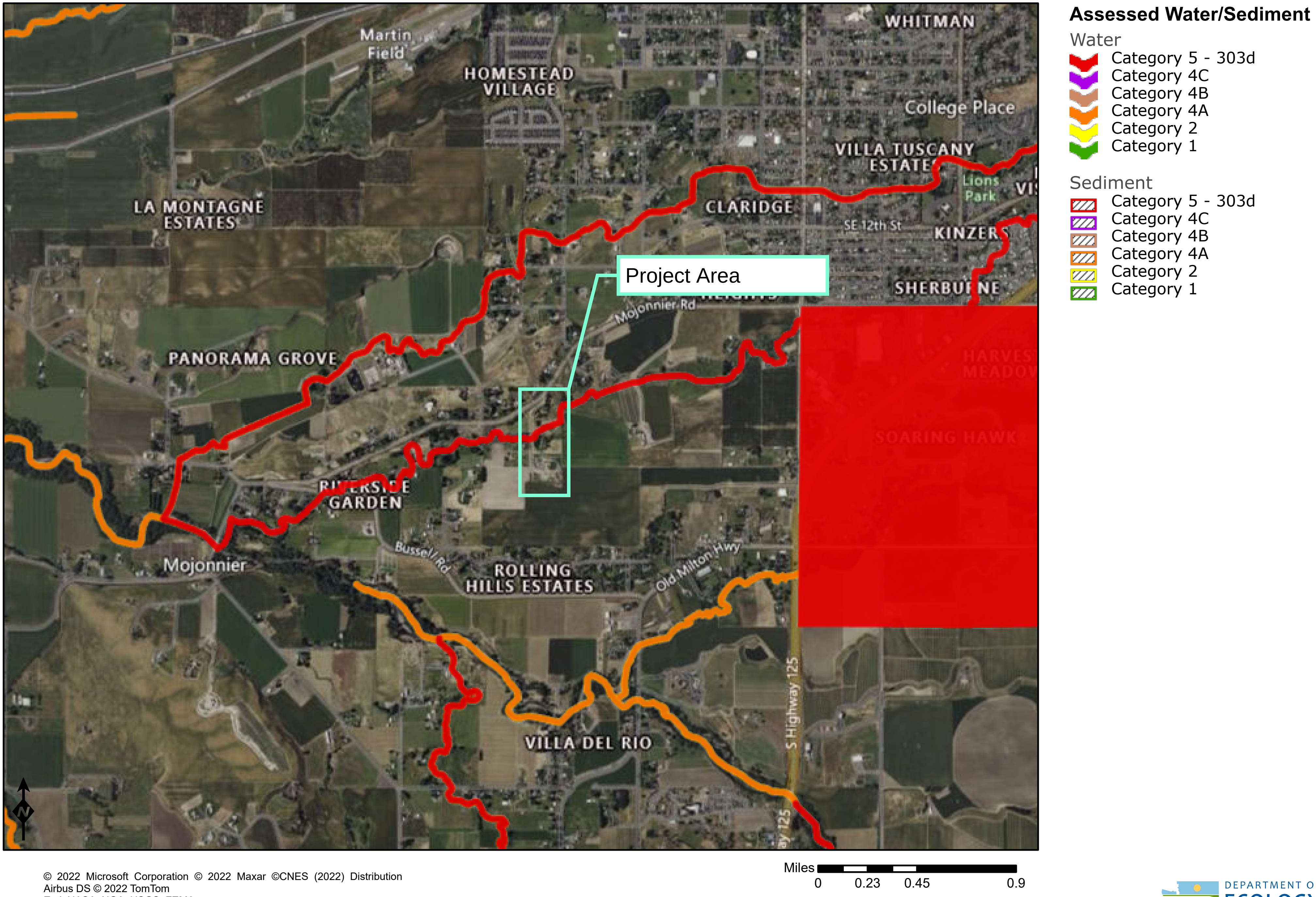


All remaining areas are low and moderate intensity land uses

November 15, 2022

Figure #5

Water Quality Atlas



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Esri, NASA, NGA, USGS, FEMA

DEPARTMENT OF ECOLOGY
State of Washington

Figure #6

DEPARTMENT OF
ECOLOGY
State of Washington

Walla Walla County

Ecology homepage > Water & Shorelines > Water improvement > Total Maximum Daily Load process > Directory of projects > Walla Walla County

Water quality improvement projects

Select the waterbody or pollutant name to find more information about the specific project.

Waterbody Name(s)	**Pollutant(s)**	**Status**	**Project Lead(s)**
Mill Creek	Ammonia-N	EPA approved	Chad Atkins 509-329-3590
Mill Creek	Chlorine	EPA approved	Chad Atkins 509-329-3590
Walla Walla	Chlorine Pesticide PCBs	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590
Walla Walla	Fecal Coliform	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590
Walla Walla	pH Dissolved Oxygen	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590
Walla Walla	Temperature	EPA approved and Has a multi-parameter implementation plan	Chad Atkins 509-329-3590

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessibility services.

Appendix A: Field data form

General Information

Site/Project: CPL Well No. 7 & Water Main
Name/Owner: [Le Blanc] City of College Place
Location: Stone Cr - west of Teal Ln
Description: Stream conveyed under Teal Ln via 36" CMP

The following field form is for use in the field to help in making ordinary high water mark delineations on streams. The form should be used as a guide. A team consisting of a hydrologist/ geomorphologist and a biologist may be needed to accurately determine the ordinary high water mark.

General Observations: Day of Site Visit

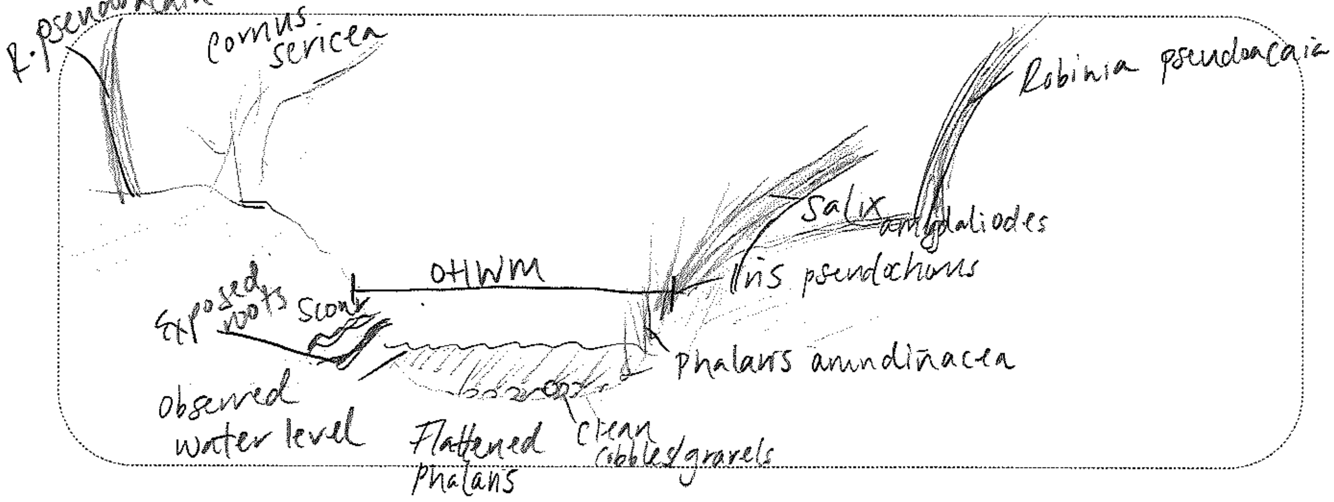
Date of site visit:	11/9/22		
Time of site visit:	2 PM		
Weather conditions:	sunny - breeze, 35-45 °F		
Watershed development:	Highly developed ○	Mod. Developed ☑	Undeveloped ○
Reach development:	Highly developed ○	Mod. Developed ☑	Undeveloped ○
Recent site disturbance?	No ☑	Yes ○	Describe: History of mowing in riparian area
Upstream flow control devices?	No ☑	Yes ○	Describe:
Bank armoring at the site?	No ☑	Yes ○	Describe:
Bank armoring up or downstream?	No ☑	Yes ○	Describe: None known, possibly
Observable tidal backwater?	No ☑	Yes ○	
In-water structures? (i.e. bridge pilings, railroad embankments)	No ☑	Yes ○	Describe: Culverts immed upstream
Animals grazing in riparian zone?	No ○	Yes ☑	Describe: Not onsite but in other reaches
Observable beaver activity?	No ☑	Yes ○	Describe:

Complete Vegetation Transects

- Use guidelines in Chapter 4 to complete vegetation transects.
- Determine upper and lower bounds of the OHWM from vegetation transects.
- After completing vegetation transects, look for more field indicators near the upper and lower bounds of the OHWM. Use the checklist as guidance.

Sketch

If a simple site, sketch a cross-sectional diagram of the site below. Include location of the waterway and upper and lower bounds of the OHWM defined by the vegetation communities or other OHWM indicators. Page 3 of the data form can be used for more complex sketches



Additional Indicators

Check the indicators that are observable at the site that provide rationale for establishing the OHWM at this location. The rationale should be described in detail in the report and should be supported with photographs taken during the site visit.

	Soil and geomorphic indicators [24]	**Vegetative indicators** [25]	**Other indicators**
Below OHWM	○ Sediment bars ○ Scour line ☑ Clean cobbles/boulders. ☑ Bank erosion/scour ○ Lack of soil horizons	Vegetation tolerant of inundation or high flow disturbances such as: ○ Willows ○ Black cottonwood ○ Japanese knotweed ○ Skunk cabbage ☑ Aquatic plants	☑ Exposed roots/root scour ☑ Drainage patterns, as shown by flattened vegetation ○ Aquatic animals ☑ Algal mats ○ Iron staining

Iris pseudachorus
Phalaris arundinacea
cattails

---

[24] Refer to Chapter 4 for a more complete description of indicators.

[25] Species are provided as examples. Refer to Appendix B for a more complete listing of plant species and their distribution across the OHWM gradient. Some species occur in more than one category depending on site conditions. For example Indian plum and red alder may straddle the OHWM where soil drainage is high. They may occur above OHWM were soil drainage is low to moderate.

	Soil and geomorphic indicators [24]	**Vegetative indicators** [25]	**Other indicators**
At or straddling OHWM	☑ Top of bank ○ Toe of lowest terrace (if terrace has developed horizons which may include a duff layer and A and B horizons versus freshly deposited alluvium) ○ Benches	○ Willows ○ Western red cedar ○ Vine maple (streams) ○ Black cottonwood ○ Red alder ○ Salmonberry ○ Nootka rose ○ Maidenhair and lady fern ○ Blackberries Iris ○ Dunegrasses Phalaris cornus	☑ Sediment lines on vegetation or other fixed objects – culvert ○ Change from channel deposits to older alluvium. ○ Darker stain lines on fixed objects ☑ Exposed roots/root scour. ☑ Drainage patterns, as evidenced by flattened vegetation ○ Weathered and buried driftwood
Above OHWM	○ Hillslope toe ☑ Terraces or alluvium with an organic horizon or other developed soil horizons ○ Relic floodplain surface ○ Well developed soil A andB horizons/duff layer	○ Indian plum ○ Red alder ○ Western red cedar ○ Douglas fir ○ Western hemlock ○ Ponderosa pine ○ Oregon white oak ○ Coast pine ○ Quaking aspen ○ Vine maple (lakes) ○ Blackberries	☑ Lighter or no staining on fixed objects ○ Overbank deposits

☑ Black locust
☑ Dandelion
☑ Setaria

Notes