DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
201 WEST 8TH STREET, SUITE 350
PUEBLO, COLORADO 81003

January 9, 2024

Regulatory Division

SUBJECT: Nationwide Permit Verification (SPA-2021-00201)

D.R. Horton
Attn: Bryan Reid
9555 S. Kingston Court
Englewood, CO 80112
BAReid1@drhorton.com

Dear Mr. Reid:

We are responding to your pre-construction notification (PCN), dated and received by our office on November 27, 2023, for the Grandview Reserved Residential Development Project (Enclosure 1). The project is located on the northwest side of US 24 approximately 4.14 miles southwest of Peyton in El Paso County, Colorado. The center of the project is located at approximately 38.9854°, -104.5547°.

Based on the information provided in your PCN, we have determined that the project involves the discharge of dredged or fill material into waters of the United States, subject to Section 404 of the Clean Water Act. The specific activities requiring Corps authorization are open cut trenching for the construction of five utility line crossings and removal of an existing stock pond for channel restoration, as listed in Table 1. The project will permanently and temporarily impact approximately 0.12 acre and 0.37 acre, respectively, of palustrine emergent (PEM) wetlands, as shown in Table 1.

Table 1. Summary of impacts to waters of the United States.

Site ID	Activity	Impacts (acres)		Location (approx.)	
		Permanent	Temporary	Latitude	Longitude
1	12-inch water line open cut trench and backfill	-	0.030	38.9849°	-104.5691°
2	Stock pond berm removal and channel reshaping	0.063	0.216	38.9836°	-104.5663°
3	Stock pond berm removal and channel reshaping	0.053	0.093	38.9833	-104.5658°
4	Raw water line open cut trench and backfill	-	0.009	38.9829	-104.5656°
5	12-inch water line open cut trench and backfill	-	0.007	38.9829	-104.5655°
6	8-inch sanitary sewer line open cut trench and backfill	-	0.013	38.9803°	-104.5598°
7	8-inch sanitary sewer line open cut trench and backfill	-	0.002	38.9756°	-104.5525°
Total		0.116	0.370		

We have determined that activities associated with the project are authorized by NWP 29 Residential Development. A summary of NWP 29 and the Colorado Regional Conditions are available on our website at www.spa.usace.army.mil/reg/nwp. In addition to the general and regional conditions, the work must comply with the following **special condition(s):**

1. Prior to commencement of construction activities in waters of the United States authorized by this permit, the permittee shall clearly identify the limits of disturbance in the field with highly visible markers (e.g., construction fencing, flagging, silt barriers, etc.). The permittee shall properly maintain such identification until construction is completed and the soils are stabilized. The permittee is prohibited from conducting any activity (e.g., equipment usage or materials storage) that impacts waters of the United States outside of the permit limits as shown in Figures 3, 3A, 3B, and 3C (Site Plan/WOTUS Impact Maps) of the enclosed PCN.

2. To ensure that the adverse environmental effects of the proposed activities are not more than minimal, the permittee shall implement the Onsite Restoration Plan provided in the enclosed PCN.

3. The permittee shall monitor the restoration areas (i.e., the areas identified as wetland restoration-reestablishment in the Onsite Restoration Plan, Figures 4A, 4B, and 4C) for a minimum of five years after completion of construction of the required restoration, or until the Corps determines the following performance standards have met without human intervention for three consecutive years, whichever is greater:

a. Dominance of hydrophytes: the permittee shall ensure that the restoration areas contain at least 75 percent absolute cover (for combined strata) of native, wetland species (OBL/FACW).

b. Dominance of natives: the permittee shall ensure that the restoration areas contain at least 75 percent absolute cover (for combined strata) of native species.

c. Dominance of exotics: the permittee shall ensure that the restoration areas contain no more than 10 percent absolute cover for combined strata of exotic plant species listed on the *Colorado Department of Agriculture Noxious Weed List* (zero tolerance for plants identified as "List A" species).

4. The permittee shall electronically submit annual monitoring reports to spa-rd-co@usace.army.mil in the format identified in the *Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for the South Pacific Division* by December 1st of each year following completion of the restoration.

Our review of this project also addressed its effects on threatened and endangered species and historic properties in accordance with General Conditions 18 and 20. Based on the information provided, we have determined that this project will have no effect on federally listed species or their critical habitat, and the project has no potential to cause effects to historic properties. However, these determinations may be invalidated if the project is not completed as authorized or you did not provide accurate information in your PCN.

General Condition 25 requires the permittee to comply with the conditions of the water quality certification (WQC) that has been granted for this NWP. Pursuant to Section 25-8-302(1)(f) of the Colorado Revised Statutes, CWA Section 404 general permits, including this NWP, are certified without the addition of best management practices or other conditions, and no further action on such permits by the applicant or the Colorado Water Quality Control Division is required. For specific information regarding compliance with WQC requirements, please refer to our website at www.spa.usace.army.mil/reg/wqc.

General Condition 30 requires the permittee to sign and return the enclosed Compliance Certification (Enclosure 2) within 30 days after completion of the authorized work. In accordance with the Albuquerque District's electronic submittal process, please send the Compliance Certification to spa-rd-co@usace.army.mil.

This verification is only valid for the activities in waters of the United States described in your PCN. Failure to comply with all of the terms and conditions of the permit, including returning the Compliance Certification within 30 days after completion of the authorized work, may result in permit suspension, modification, or revocation.

This permit verification is valid until March 14, 2026, unless the NWP is modified, suspended, reissued, or revoked prior to that date. Continued confirmation that an activity complies with the terms and conditions, and any changes to the NWP, is the responsibility of the permittee. Activities that have commenced, or are under contract to commence, in reliance on an NWP will remain authorized provided the activity is completed within 12 months of the date of the NWP's expiration, modification, or revocation.

This letter does not constitute approval of the project design features, nor does it imply that the construction is adequate for its intended purpose. This permit does not authorize any injury to property or invasion of rights or any infringement of federal, state, local, or tribal laws or regulations. The permittee and/or any contractors acting on behalf

of the permittee must possess the authority and any other approvals required by law, including property rights, to undertake the proposed work.

The landowner must allow Corps representatives to inspect the authorized activity at any time deemed necessary to ensure that it is being, or has been, accomplished in accordance with the terms and conditions of the permit.

We would appreciate your feedback on this permit action including your interaction with our staff or suggestions for improving our program. For more information about our program or to complete our Regulatory Program national customer service survey, visit our website at www.spa.usace.army.mil/reg.

Please refer to identification number SPA-2021-00201 in any correspondence concerning this project. If you have any questions, please contact me by email at joshua.g.carpenter@usace.army.mil, or telephone at (719) 543-9459 X 2.

Sincerely,

Joshua G. Carpenter
Senior Project Manager
Southern Colorado Branch

Enclosures

cc:
Grant E. Gurnée, grant@ecologicalbenefits.com

COMPLIANCE CERTIFICATION

Action Number: SPA-2021-00201

Name of Permittee: D.R. Horton

Nationwide Permit: NWP 29 – Residential Development

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification, and return it to spa-rd-co@usace.army.mil.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Date Work Started _____

Date Work Completed _____

_____ _____

Signature of Permittee Date

ecos ecosystem services llc

November 20, 2023

Kara Hellige, Chief
Southern Colorado Branch
U.S. Army Corps of Engineers
Albuquerque District
1970 E. 3rd Avenue, #109
Durango, CO 81301

RE: Clean Water Act, Nationwide Permit 29 Pre-Construction Notification & Mitigation Plan for Phase 1 of the Grandview Reserve Development Project in El Paso County, CO

Dear Ms. Hellige:

1.0 Introduction

On behalf DR Horton (Applicant), Ecosystem Services, LLC (ECOS) is herein submitting a Pre-Construction Notification (PCN) for Clean Water Act (CWA), Section 404, Nationwide Permit 29 (NWP 29), Compensatory Mitigation Plan and Restoration Plan to the U.S. Army Corps of Engineers (USACE) for the Grandview Reserve Residential Development project (Project) in El Paso County, Colorado (Project).

The contact information for the Applicant and their Agent is provided below:

APPLICANT

Bryan Reid, P.E.
D.R. Horton
9555 S. Kingston Court
Englewood, Colorado 80112
Office Phone: (303) 669-5133
BAReid1@drhorton.com

AGENT

Grant E. Gurnée, P.W.S.
Ecosystem Services, LLC
1455 Washburn Street
Erie, Colorado 80516
Mobile Phone: (303) 746-0091
grant@ecologicalbenefits.com

Until further notice, the Applicant herein authorizes Ecosystem Services, LLC to act as their Agent for all submittals and agency correspondence related to the Grandview Reserve Development Project.

Bryan Reid
For DR Horton

11/27/23
Date

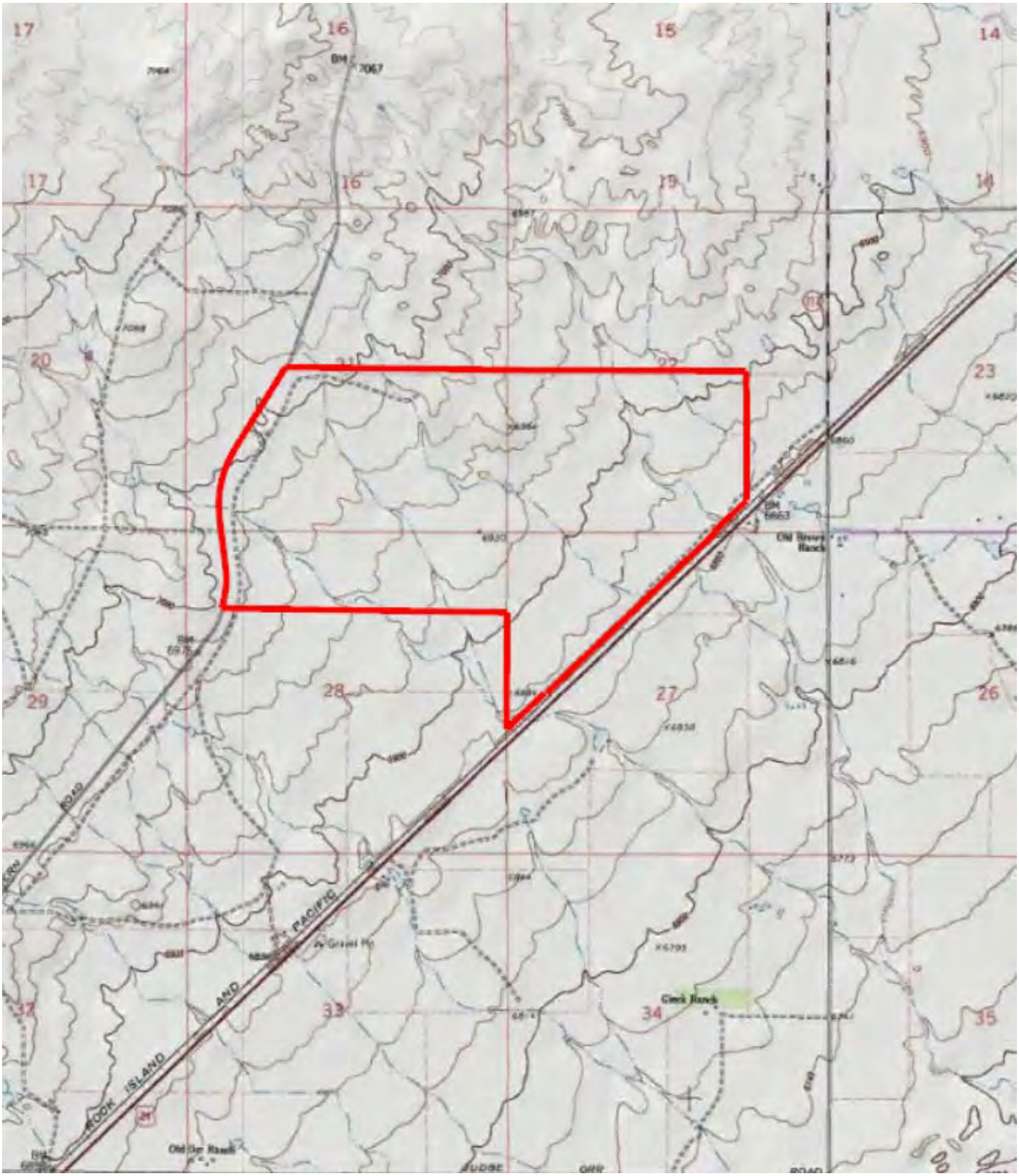
1.1 Background Information

ECOS delineated waters of the U.S. and associated aquatic resources (WOTUS) within the 768.2-acre Project boundaries (Site) initially in 2018 and then reviewed and adjusted the delineation in 2021. The USACE issued an Approved Jurisdictional Determination (AJD) on June 30, 2022 (Action No. SPA-2021-00201) wherein they determined the delineated WOTUS for Channel A and D meet the "Relatively Permanent Standard" and are jurisdictional under the Clean Water Act. The delineated WOTUS and AJD form the basis upon which wetlands are characterized and proposed impacts are calculated in association with this Project for a NWP 29.

2.0 Site Location

The Site is located in the Falcon/Peyton area of El Paso County and is bounded along the north by undeveloped land (Four Way Ranch future development), along the south by the undeveloped Waterbury Residential development project, along the southeast by Highway 24, and along the west by Eastonville Road. There are no existing structures, roads, or other infrastructure on the Site. The Site is located approximately 4.14 miles southwest of Peyton, 4.16 miles northeast of Falcon and 4.66 miles south of Eastonville, in El Paso County, Colorado. The Site is generally located within the south ½ of Section 21, south ½ of Section 22, the north ½ of Section 27, and the north ½ of Section 28, Township 12 South, Range 64 West in El Paso County, Colorado. The center of the Site is situated at approximately Latitude 38.98541389 north, -104.55472222 east. Refer to Figure 1, USGS Site Location Map.

The Site is generally characterized as gently sloping from northwest to southeast with four drainages (prairie sloughs) present, two of which are discontinuous and two are tributary to Black Squirrel Creek offsite. Naturally undulating swales drain toward the sloughs, which contain wetlands in low areas and dry areas where alluvial deposits have formed. Site topography ranges from a high elevation of 7020 feet above mean sea level (AMSL) in the northwestern corner to a low elevation of 6860 feet above AMSL where the northeastern tributary exits the Site on the east boundary along Highway 24 for a total elevation drop of 160 feet. An ill-defined and undulating hill, which is likely an eroded remnant bluff, is present in the north-central portion of the Site. Refer to Figure 1.



USGS 7.5 min. Quad: Falcon
Latitude: 38.985713°N
Longitude: -104.552854°W
Section 21, 22, 27 & 28, Township 12 South, Range 64 West

3.0 Jurisdictional Delineation of Wetland Habitat and Waters of the U.S.

Please refer to AJD Request dated June 17, 2021, Additional Information for the AJD Request dated April 8, 2022, and the subsequent AJD issued by the USACE dated June 30, 2022 in which Drainage A, including wetlands was deemed a jurisdictional WOTUS by the USACE. The Applicant believes the 2022 AJD is accurate under the current definition as Drainage A is a relatively permanent body of water connected to traditional interstate navigable waters. It is tributary to Black Squirrel Creek which flows into Chico Creek, and then into the Arkansas River. Therefore, the Applicant has elected to seek NWP 29 permit authorization for this Project. Refer to Figure 2, Relevant Features Map from the AJD Request that shows the jurisdictional WOTUS A and D; and non-jurisdictional wetlands (B and C).

4.0 Project Purpose and Need

4.1 Purpose

The Applicant proposes to develop the 768.2-acre Site as a residential community. The Project consists of low, medium, medium – high and high density single-family detached rural-residential parcels; a school parcel; a church parcel; two commercial parcels along Highway 24; utilities, streets and cul-de-sacs that provide access; and open space that includes WOTUS described in the AJD. Refer to Figures 3 and 3A, 3B and 3C, Site Plan/WOTUS Impact Maps.

4.2 Need

The Project is a portion of the County's Master Plan and is intended to serve local and regional housing needs due to the County's growing population. The specific zoning that will be associated with this land is high density, but in efforts to preserve some open area, the community will have a minimum of 127.1 acres (over 16.5% of the site area) in open space consisting of the community park, pocket parks, trail corridors, existing drainage ways, detention areas, and buffers. The Project will accommodate the need for growth within the vicinity of the Town of Falcon and wider Colorado Springs area where there is market-drive housing shortage.

5.0 Proposed Impacts to Waters of the U.S.

5.1 Impact Avoidance and Minimization Measures

The Project has been internally scrutinized and designed to avoid and minimize adverse effects to WOTUS, both temporary and permanent, to the maximum extent practicable. The following describes the types of proposed impacts and the measures that will be employed to minimize impacts to WOTUS:

- Utility Crossings (Temporary Impact Areas 1, 4, 5, 6 and 7): Five (5) utility line crossings of Drainage A are required to supply and service the proposed residential development. The width of utility line construction crossings have been minimized to the maximum extent feasible (i.e., 12-feet wide) to allow for reasonable construction access to conduct open trench installation methods. Sidecast for each open trench will be temporarily placed on a geotechnical fabric barrier (i.e., grade marker) to limit incidental fall-back in adjacent wetlands. Once utilities are installed, side cast will be replaced in open trenches in the same order that it was removed thereby restoring the natural soil profile with organic wetland soil on top, including any available wetland seed and roots. Once side cast has been replaced in the trenches and the geotechnical fabric removed, existing grades and wetland vegetation will be re-exposed. The remaining, disturbed, back-filled, wetland soils will be revegetated and

rehabilitated, resulting in a gain in aquatic resource function, but not a gain in aquatic resource area.

- Stock Pond Berm Removal and Channel Re-establishment (Permanent and Temporary Impact Areas 2 and 3): A historic stock pond berm located in the middle reach of Drainage A must be removed and channel grades reformed upstream, under and downstream of the berm to re-establish and stabilize the bed, banks and wetlands to allow natural conveyance of periodic stream flows. The minimum amount of fill and grade manipulation is proposed to re-establish the channel bed and banks. Wetlands in the creek bed of the reformed channel will be restored in-kind similar to existing, upstream and downstream wetlands. This activity will result in a gain in aquatic resource function and area.
- Stormwater Outfalls: Five (5) full spectrum extended release detention basins (Detention Ponds) are proposed periodically along Drainage A to control developed stormwater. These Detention Ponds will be located off-line but will release stormwater into Drainage A via metered orifices and outfall structures with riprap scour protection. Soil-riprap scour aprons/run-downs will be integrated with Channel A as wetland swales that will extend to the WOTUS boundaries as a best practice to avoid wetland impacts while providing water quality benefits via filtration, adsorption and buffering of stormwater.

Refer to the Site Plan/WOTUS Impact Maps (Figures 3, 3A, 3B and 3C) for the location of proposed temporary and permanent impacts to WOTUS.

5.2 Unavoidable Permanent and Temporary Impacts

The proposed permanent and temporary impacts are explained in detail in Section 5.1 above and summarized in Table 1 below.

TABLE 1 – SUMARY OF PROPOSED IMPACTS

Area	Permanent Impacts		Temporary Impacts		Type of Fill	Location
	(SF)	(AC)	(SF)	(AC)		
1	0	0	1318	0.030	12” Water Line Open Cut Trench & Backfill	Upper reach
2	2764	0.063	9433	0.216	Stock Pond Berm Removal and Earthen Fill to Reform Channel Bed and Banks	Middle Reach
3	2294	0.053	4049	0.093	Stock Pond Berm Removal and Earthen Fill to Reform Channel Bed and Banks	Middle Reach
4	0	0	396	0.009	Raw Waterline Open Cut Trench & Backfill	Middle Reach
5	0	0	286	0.007	12” Waterline Open Cut Trench & Backfill	Middle Reach
6	0	0	575	0.013	8” Sanitary Sewer Line Open Cut Trench & Backfill	Lower Reach
7	0	0	105	0.002	8” Sanitary Sewer Line Open Cut Trench & Backfill	Lower Reach
TOTAL	**5058**	**0.116**	**16162**	**0.370**		

Refer to the Site Plan/WOTUS Impact Maps (Figures 3, 3A, 3B and 3C) for the location of proposed temporary and permanent impacts to WOTUS.

5.3 Indirect Adverse Environmental Effects

No indirect adverse environmental effects to WOTUS are anticipated as a result of the implementation of the Project.

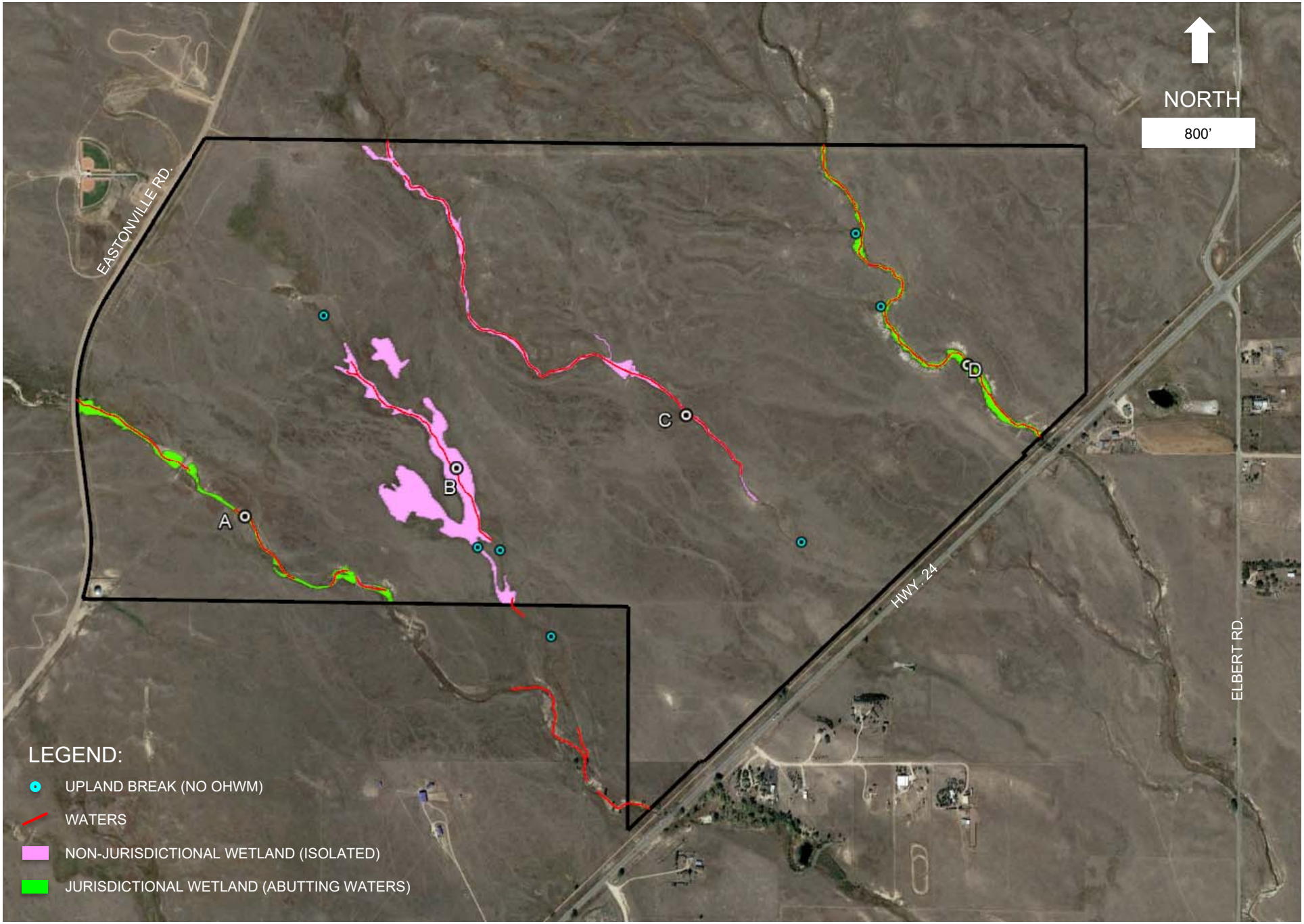
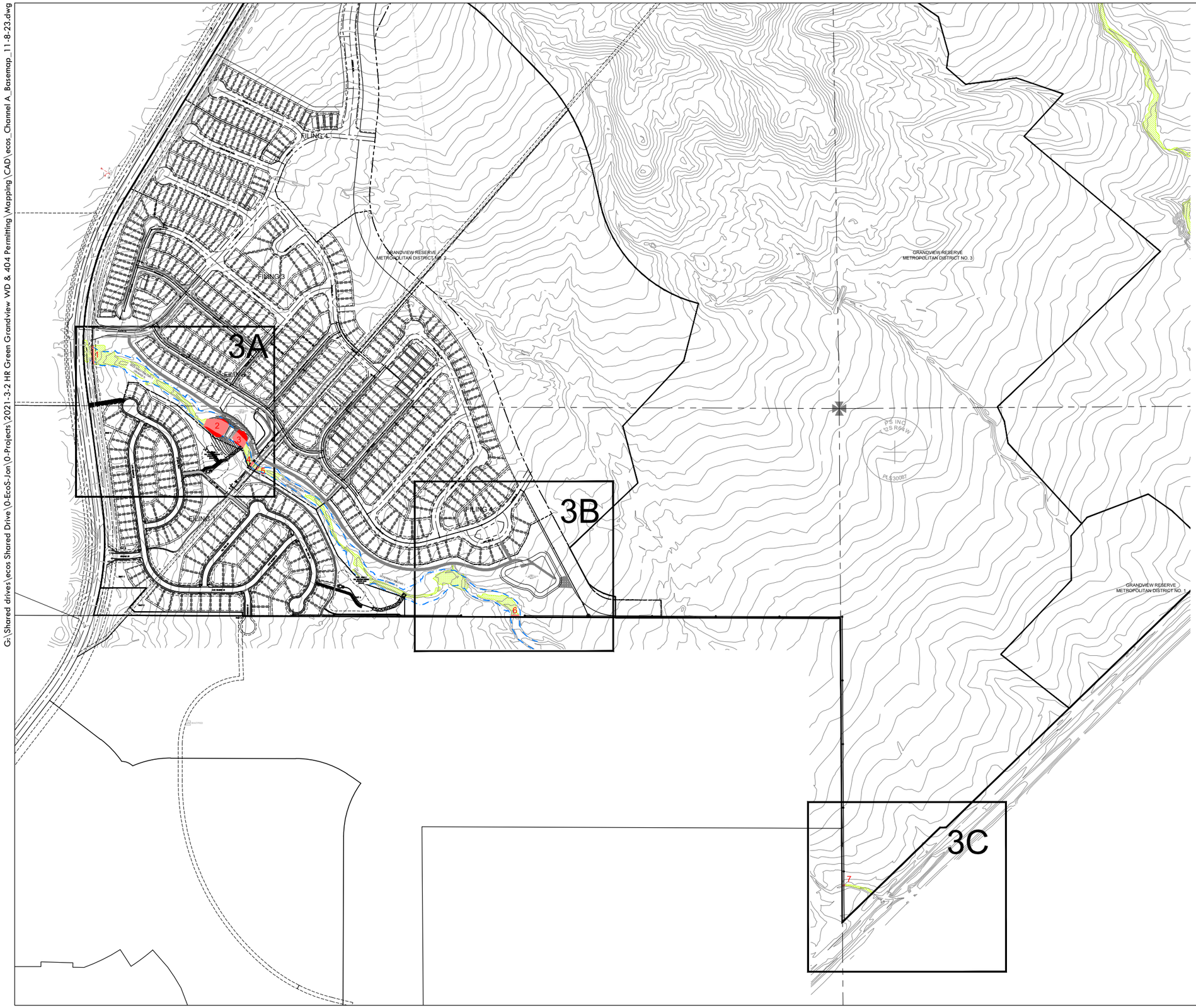


Figure prepared by: Ecosystem Services LLC, 4/8/22 Delineation date: 4/6/21 & 5/15/21 Google Earth aerial image date: 10/6/19

Figure 2 RELEVANT FEATURES MAP

Figures 3, 3A, 3B & 3C
Site Plan/WOTUS Impact Maps



LEGEND:

- EXISTING WETLAND
- TEMPOARY WETLAND IMPACT (0.370 AC)
- PERMANENT WETLAND IMPACT (0.116 AC)

AREA	DESCRIPTION
1	12” Water Line Open Cut Trench
2	Stock Pond Berm Removal & Channel Re-establishment
3	Stock Pond Berm Removal & Channel Re-establishment
4	Raw Waterline Open Cut Trench
5	12” Waterline Open Cut Trench
6	8” Sanitary Sewer Line Open Cut Trench
7	8” Sanitary Sewer Line Open Cut Trench

0 300 600 900

SCALE: 1" = 600'

SHEET LEGEND

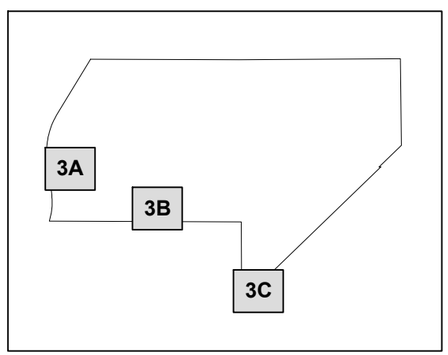


FIGURE 3

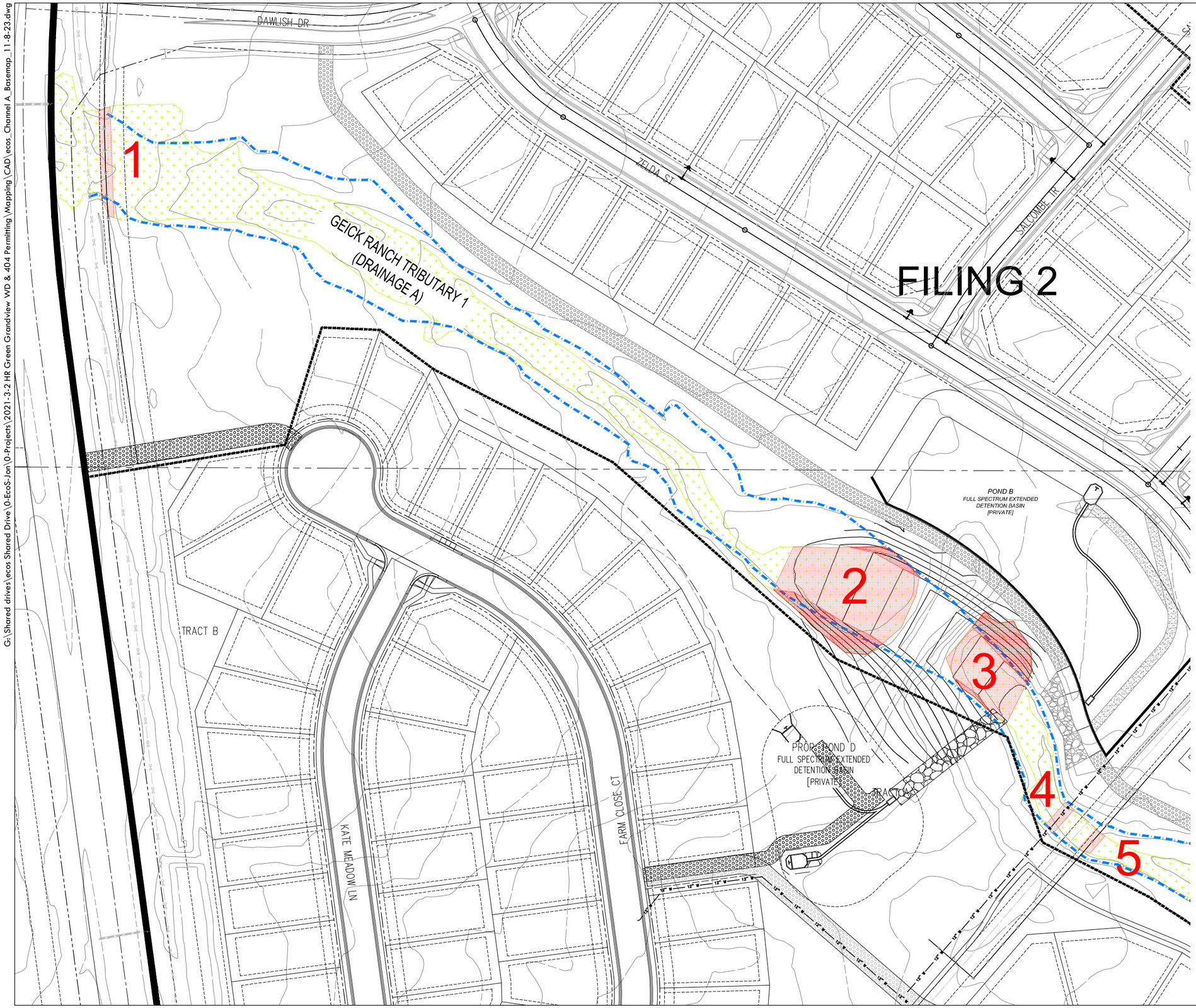
GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
SITE PLAN / WOTUS IMPACT MAP

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

G:\Shared drives\ecos Shared Drive\0-EcoS-Jon\0-Projects\2021-3-2 HR Green Grandview WD & 404 Permitting\Mapping\CAD\ecos_Channel A_Basemap_11-8-23.dwg



LEGEND:

- SITE BOUNDARY
- EXISTING FLOODPLAIN
- EXISTING WATERS/WETLAND
- TEMPOARY WETLAND IMPACT (0.370 AC)
- PERMANENT WETLAND IMPACT (0.116 AC)

NOTE:

1. TEMPORARY WETLAND IMPACTS FOR OPEN TRENCH UTILITIES ASSUME A 12-FOOT WIDE CORRIDOR. REFER TO HABITAT PROTECTION DETAIL.

AREA	DESCRIPTION
1	12" Water Line Open Cut Trench
2	Stock Pond Berm Removal & Channel Re-establishment
3	Stock Pond Berm Removal & Channel Re-establishment
4	Raw Waterline Open Cut Trench
5	12" Waterline Open Cut Trench
6	8" Sanitary Sewer Line Open Cut Trench
7	8" Sanitary Sewer Line Open Cut Trench

0 50 100 150

SCALE: 1" = 100'

SHEET LEGEND

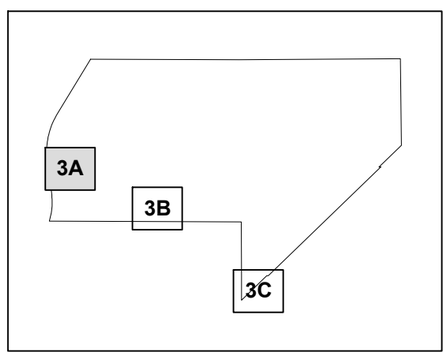


FIGURE 3A

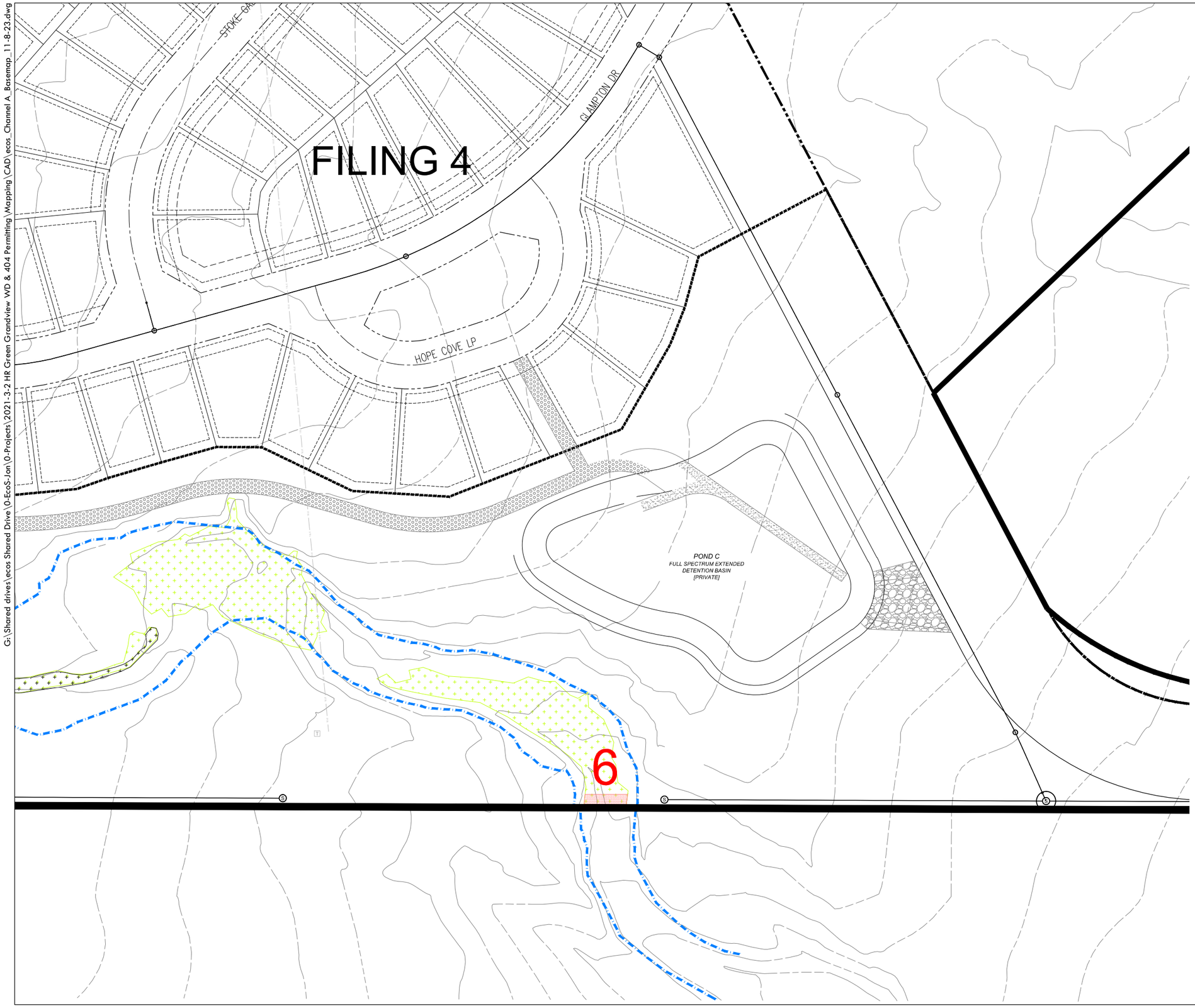
GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
SITE PLAN / WOTUS IMPACT MAP

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

G:\Shared drives\ecos Shared Drive\0-EcoS-Jon\0-Projects\2021-3-2 HR Green Grandview WD & 404 Permitting\Mapping\CAD\ecos_Channel A_Basemap_11-8-23.dwg



LEGEND:

- SITE BOUNDARY
- EXISTING FLOODPLAIN
- EXISTING WATERS/WETLAND
- TEMPOARY WETLAND IMPACT (0.370 AC)
- PERMANENT WETLAND IMPACT (0.116 AC)

NOTE:

1. TEMPORARY WETLAND IMPACTS FOR OPEN TRENCH UTILITIES ASSUME A 12-FOOT WIDE CORRIDOR. REFER TO HABITAT PROTECTION DETAIL.

AREA	DESCRIPTION
1	12” Water Line Open Cut Trench
2	Stock Pond Berm Removal & Channel Re-establishment
3	Stock Pond Berm Removal & Channel Re-establishment
4	Raw Waterline Open Cut Trench
5	12” Waterline Open Cut Trench
6	8” Sanitary Sewer Line Open Cut Trench
7	8” Sanitary Sewer Line Open Cut Trench

0 50 100 150

SCALE: 1" = 100'

SHEET LEGEND

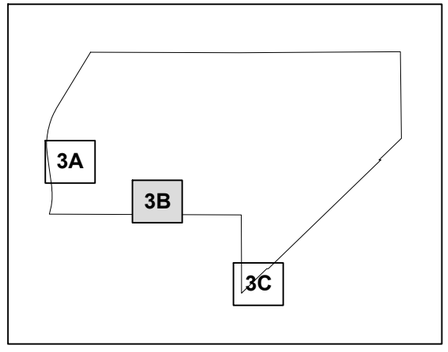


FIGURE 3B

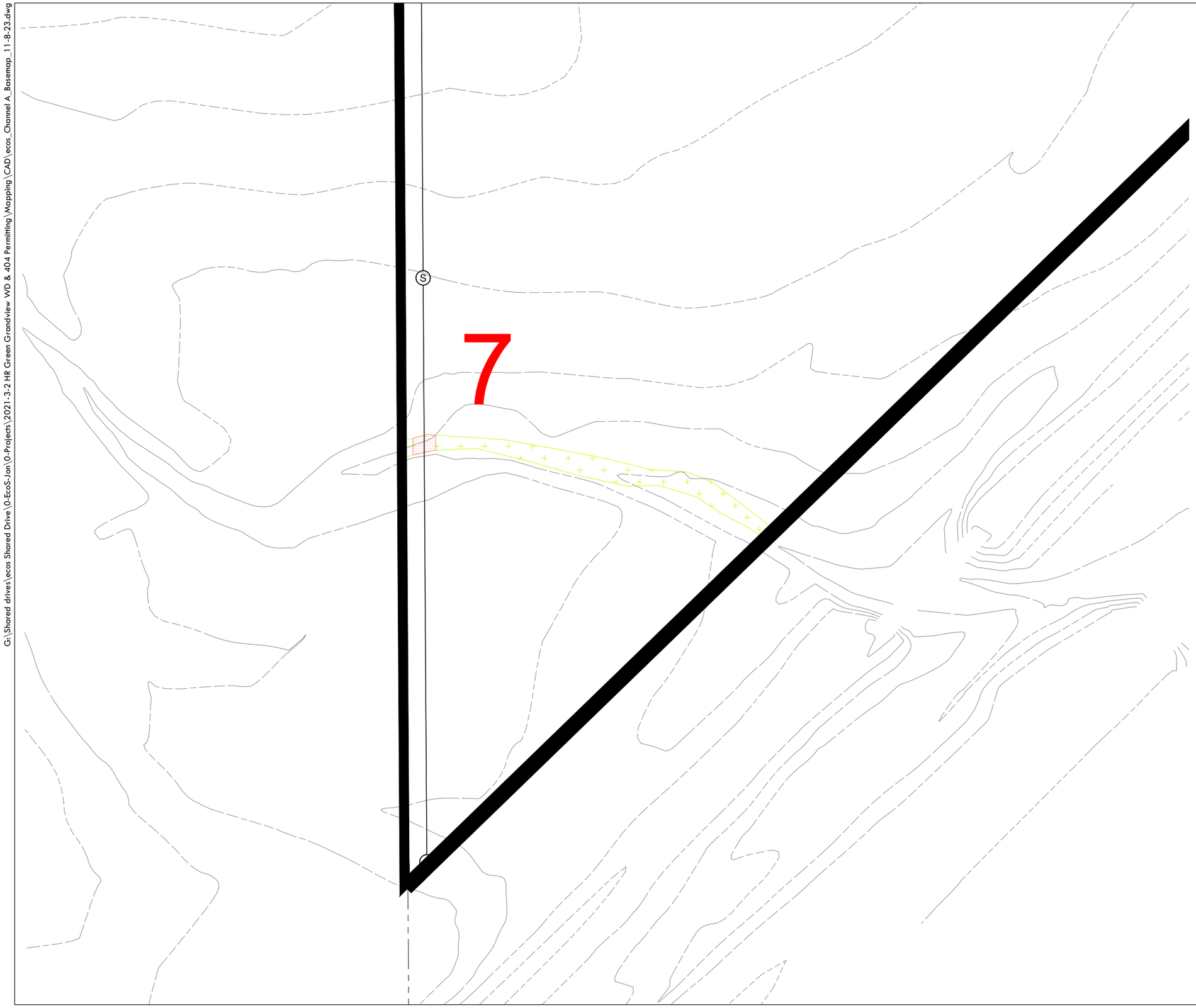
GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
SITE PLAN / WOTUS IMPACT MAP

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

G:\Shared drives\ecos Shared Drive\0-EcoS-Jon\0-Projects\2021-3-2 HR Green Grandview WD & 404 Permitting\Mapping\CAD\ecos_Channel A_Basemap_11-8-23.dwg



LEGEND:

- SITE BOUNDARY
- EXISTING FLOODPLAIN
- EXISTING WATERS/WETLAND
- TEMPOARY WETLAND IMPACT (0.370 AC)
- PERMANENT WETLAND IMPACT (0.116 AC)

NOTE:

1. TEMPORARY WETLAND IMPACTS FOR OPEN TRENCH UTILITIES ASSUME A 12-FOOT WIDE CORRIDOR. REFER TO HABITAT PROTECTION DETAIL.

AREA	DESCRIPTION
1	12” Water Line Open Cut Trench
2	Stock Pond Berm Removal & Channel Re-establishment
3	Stock Pond Berm Removal & Channel Re-establishment
4	Raw Waterline Open Cut Trench
5	12” Waterline Open Cut Trench
6	8” Sanitary Sewer Line Open Cut Trench
7	8” Sanitary Sewer Line Open Cut Trench

N

0 25 50 75

SCALE: 1" = 50'

SHEET LEGEND

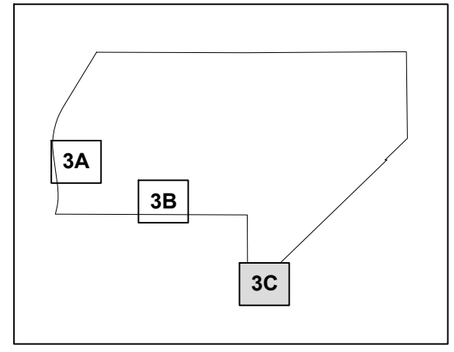


FIGURE 3C

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
SITE PLAN / WOTUS IMPACT MAP

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

6.0 Evaluation of Potential Impacts to Federally Listed Species

A number of species that occur in El Paso County are listed as candidate, threatened or endangered by the USFWS (USFWS, 2023) under the Endangered Species Act (ESA). ECOS compiled the Federally-listed species for the Site in Table 2 based on the Site-specific, USFWS IPaC Trust Resources Report we ran for the Project (Appendix A); and our onsite assessment. ECOS has provided our professional opinion regarding the probability that these species may occur within the Site and their probability of being impacted by the Project.

TABLE 2 - FEDERAL LISTED SPECIES ASSESSED FOR THE PROJECT

Species	Status	Habitat Requirements and Presence	Probability of Impact by Project
FISH			
Greenback cutthroat trout (*Oncorhynchus clarki stomias*)	Threatened	Cold, clear, gravely headwater streams and mountain lakes that provide an abundant food supply of insects.	None. Suitable habitat does not exist on the Site.
Pallid sturgeon (*Scaphirhynchus albus*)	Endangered	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.	None. The proposed project is not in the watershed for any of the listed river basins.
BIRDS			
Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*)	Threatened	Habitat includes tidally or non-tidally influenced marshes which range in salinity from salt to brackish to fresh. It requires dense overhead perennial herbaceous cover with underlying soils that are moist to saturated (occasionally dry) interspersed with or adjacent to very shallow water (typically ≤ 3 cm). Eastern black rails depend on this dense cover throughout their life cycle and it is their primary strategy to avoid predation.	Insignificant. Suitable, dense, overhead, perennial, herbaceous cover is sporadic and shallow water is only available seasonally
Piping plover (*Charadrius melodus*)	Threatened	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.	None. The proposed project is not in the watershed for any of the listed river basins.

TABLE 2 - FEDERAL LISTED SPECIES ASSESSED FOR THE PROJECT			
Species	**Status**	**Habitat Requirements and Presence**	**Probability of Impact by Project**
MAMMALS			
Gray Wolf (*Canus lupis*)	Endangered	Inhabits a wide range of habitats including temperate forests, mountains, tundra, taiga, and grasslands. Lone, dispersing gray wolves may be present throughout the state of Colorado.	None. This species only needs to be considered if the Project activity includes a predator management program, which it does not.

TABLE 2 - FEDERAL LISTED SPECIES ASSESSED FOR THE PROJECT			
Species	**Status**	**Habitat Requirements and Presence**	**Probability of Impact by Project**
Preble's meadow jumping mouse (*Zapus hudsonius preblei*)	Threatened	Inhabits well-developed riparian habitat with adjacent, relatively undisturbed grassland communities, and a nearby water source. Well-developed riparian habitat includes a dense combination of grasses, forbs and shrubs; a taller shrub and tree canopy may be present. Has been found to regularly use uplands at least as far out as 100 meters beyond the 100-year floodplain.	Very Low. Unlikely to occur on Site due to: 1) the absence of habitat required to support the life requisites of the species; 2) negative trapping results reported by USFWS adjacent to the Site; 3) 10.22-mile distance from closest CPW "Potential" Occupied Habitat (west/northwest of the Site in Colorado Springs); 4) 6.5-mile distance from closest USFWS Critical Habitat (southwest of the Site along Black Squirrel Creek in Colorado Springs); and 5) lack of habitat connection corridor from known habitat to the Site.
PLANTS			

TABLE 2 - FEDERAL LISTED SPECIES ASSESSED FOR THE PROJECT			
Species	**Status**	**Habitat Requirements and Presence**	**Probability of Impact by Project**
Ute ladies'-tresses orchid (*Spiranthes diluvialis*)	Threatened	Primarily occurs along seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels or valleys, and lakeshores. May also occur along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside borrow pits, reservoirs, and other human-modified wetlands.	None. The Site elevation ranges from 6,860 to 7,020 feet AMSL, which is higher than the 6,500-foot upper elevation limit documented for the species. Therefore, no survey of the Site would be recommended by the USFWS.
INSECTS			
Monarch butterfly (*Danaus plexippus*)	Candidate	Multigenerational migrant that breeds throughout North America and overwinters in dense congregations in Mexican montane fir forests. The larval hostplant is milkweed (*Asclepias* spp.). Habitat includes areas with nectar for feeding and/or milkweed for laying eggs, especially grasslands and wetlands. Breeding habitat threats are widespread native grassland loss and herbicide use. In Colorado, they are present in low numbers from May to September.	None. Milkweed is not present. Project impacts are undetectable relative to threats across this species' huge range. Potential impacts could be mitigated by limiting herbicide use and planting native flowering species, especially milkweed.

6.1 Preliminary Effects Determination

The USFWS IPaC Trust Resources Report (USFWS, 2023) data indicate there is no Critical Habitat for T&E species on the Site. Based on the review of USFWS IPaC Trust Resources Report ran for the Project (Appendix A) and our onsite assessment, it is ECOS' professional opinion that the likelihood that the Project would impact any of the species listed above is very low to none. Most are not expected to occur in the Project area or on the Site; nor will they be affected by the indirect effects of the project as no offsite, downstream impacts to drainage basins supporting these T&E species are expected to occur as a result of the implementation of the Project.

6.2 ESA Clearance Requests and USFWS Concurrence

As part of the El Paso County planning process for this Project, ECOS drafted ESA Clearance Requests in 2019 and 2020 that were submitted to the U.S. Fish and Wildlife Service for review. The USFWS concurred with ECOS findings on both occasions as summarized in Table 2 above. The latest 2020 USFWS concurrence in Appendix B includes the USFWS remarks, " Ute ladies'-tresses orchid and Preble's mouse are not likely to occupy the Project site. Project is still consistent with the Section 7 conclusions from 2019."

Certain species were removed and others were added to the IPaC database results for this Site since 2020. However, none of the added species occur within the region or on the Site. Please note, according to the USFWS (email to ECOS December 5, 2022), "If you (the project proponent) have determined that your project will have no effect to listed species or their habitat, or if suitable habitat for a listed species does not occur within your project area, you may not receive any further response or notification from us, as neither Section 7 of the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C 1531 et seq.), nor implementing regulations under Section 7 of the ESA, require us to review or concur with projects where "no effect" determinations have been made". This means that the since the USFWS has reviewed this site on two occasions, they are not likely to comment or provide any further effects determinations for this Site.

7.0 Evaluation of Potential Impacts to Migratory Birds and Bald and Golden Eagles

Raptors and most birds are protected by the federal Migratory Bird Treaty Act (MBTA), and eagles are further protected by the Bald and Golden Eagle Protection Act (BGEPA). No raptor nests have been mapped within one mile of the Site (COGCC 2023). The closest raptor nests mapped by COGCC are a Golden Eagle nest and Ferruginous Hawk nest, both located 4.67 miles to the southeast. The Site provides foraging habitat for birds and raptors. However, during ECOS' Site assessments no existing nest sites for birds or raptors were observed. Therefore, no impacts to birds and raptors protected by the MBTA or eagles protected by the BGEPA will occur as a result of this Project.

8.0 Evaluation of Potential Impacts to Historic Properties and Cultural Resources

No potential historic or cultural features were observed by ECOS during the Site assessment. No historic properties or cultural resources are known or believed to occur within the Site. However, the Applicant submitted a request to OAHP for a database search. The OAHP provided results of their database search and stated that there is "one site and 1 survey located within the search area". The one site (Site ID 5EP.4118.11) is a segment of State Highway 25) that "supports eligibility of entire linear resource. The OAHP results are provided in Appendix C – OAHP Database Search Results. The Applicant will coordinate with the USACE to disclose information on any district, site, building, structure, or object that may be found during Site construction to ensure Project compliance with Section 106 of the National Historic Preservation Act.

9.0 Compensatory Mitigation for Permanent Impacts

Baseline characteristics and delineation of WOTUS where permanent impacts are proposed are described in detail in the AJD Request and Additional Information for the Grandview Reserve. A total of 5058 SF (0.116-acre) of permanent impacts to Palustrine Emergent (PEM) wetlands are proposed. The Applicant intends to restore/re-establish 0.100-acre of the channel bed, banks and wetlands by removing the existing stock pond berm and purchasing 0.016-acre of wetland credits for permanent

impacts from the Maria Lake Mitigation Bank. The Bank Credit acreage is calculated by taking the total permanent impact (0.116-acre) minus the amount of net gain in WOTUS the Project will produce by removing the stock pond berm and restoring/re-establishing the channel bed, banks and wetlands (0.100-acre).

10.0 Mitigation of Temporary Impacts – Onsite Restoration Plan

Baseline characteristics and delineation of WOTUS where temporary impacts are proposed are described in detail in the AJD Request and Additional Information for the Grandview Reserve. A total of 16,162 SF (0.370-acre) of temporary impacts to Palustrine Emergent (PEM) and Palustrine Shrub Scrub (PSS) wetlands are proposed. The Applicant proposes onsite, in-kind permittee responsible mitigation for the restoration rehabilitation and re-establishment of temporary wetland impacts, as described below.

10.1 Mitigation Goals and Objectives

The mitigation goals are the restoration rehabilitation and re-establishment of 16,162 SF (0.370-acre) of wetlands temporarily impacted by the Project which is summarized as follows:

TABLE 3 – SUMARY OF PROPOSED TEMPORARY IMPACTS

Area	Temporary Impacts		Type of Fill	Wetland Type
	(SF)	(AC)		
1	1318	0.030	12” Water Line Open Cut Trench & Backfill	PEM/PSS
2	9433	0.216	Stock Pond Berm Removal and Earthen Fill to Reform Channel Bed and Banks	PEM
3	4049	0.093	Stock Pond Berm Removal and Earthen Fill to Reform Channel Bed and Banks	PEM
4	396	0.009	Raw Waterline Open Cut Trench & Backfill	PEM
5	286	0.007	12” Waterline Open Cut Trench & Backfill	PEM
6	575	0.013	8” Sanitary Sewer Line Open Cut Trench & Backfill	PEM
7	105	0.002	8” Sanitary Sewer Line Open Cut Trench & Backfill	PSS
TOTAL	**16162**	**0.370**		

Wetland Restoration Plans are attached herein that describe how temporary wetland impacts will be restored/reestablished to meet the mitigation goals. Refer to Figures 4A – 4G.

10.1.1 Mitigation for Temporary Impact

The 0.0370-acre of temporary PEM/PSS impacts along Drainage A will be restored/reestablished in-place and in-kind at a minimum 1:1 ratio by reestablishing the original/pre-impact grades, seeding with native herbaceous wetland species, planting native willows and stabilizing adjacent upland areas with upland seed. Although there are only 2 existing PEM/PSS areas along Channel/Wetland A, all temporary impact areas will be restored with PEM and PSS vegetation to increase soil and channel stability. Following completion of the permitted work, the condition and functionality of the affected aquatic resources will be completely restored. Please refer to Figures 4A – 4G for the detailed Wetland Restoration Seeding and Planting Plans, Seeding and Planting Schedules, Typical Details and Notes (including Special Notes regarding Performance Criteria).

10.1.2 Proposed Mitigation Ratios

ECOS has referenced the Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division USACE (USACE, 2015), the Colorado Mitigation Procedures, Version 2.0

(COMP v2) (USACE, 2020) and 12501-SPD Regulatory Program Standard Operating Procedure for Determination of Mitigation Ratios (USACE, 2021). Based on the references cited above, the Applicant proposes a 1:1 ratio for Compensatory Mitigation for permanent impacts and a 1:1 ratio for the restoration rehabilitation and re-establishment for temporary impacts. The rationale for the mitigation ratio follows:

- Compensatory mitigation site location: In order to offset cumulative and temporal loss of ecological functions within a watershed, compensatory mitigation should be located within the same watershed as the proposed impacts whenever practicable. The Applicant proposes compensatory mitigation for permanent impacts within the same watershed via purchase of mitigation bank credits.
- Comparison of the functional loss at the proposed impact site and the functional gain at the proposed compensatory mitigation site: This comparison may be made qualitatively, and ECOS has chosen to do so. The existing temporary impact areas are comprised primarily of PEM wetland habitat with occurrences of PSS wetland habitat that will be restored (rehabilitated and re-established) in-kind with native herbaceous seed and/or willows.
- Aquatic resource area: No Net Loss of aquatic resource area will result from temporary impacts (i.e., 0.370-acre of reestablishment for 0.370-acre of temporary impact). The Project will actually result in a net gain of 0.100-acres aquatic resource area as result of the removal of a historic stock pond berm and establishment of channel bed, banks and wetland.
- Type conversion: No Type Conversion will result from the temporary impact of PEM and PSS habitat and reestablishment of PEM and PSS habitat.
- Risk and uncertainty of compensatory mitigation success: Mitigation ratios for permanent impacts should reflect the inherent uncertainty of the likelihood of success of the proposed compensatory mitigation. The Applicant's mitigation proposal to purchase mitigation bank credits reduces risk and uncertainty as the mitigation site is within the service area (i.e., same watershed) as the mitigation bank. Mitigation ratios for temporary impacts should also reflect the inherent uncertainty of the likelihood of success of the proposed restoration rehabilitation and reestablishment. The Applicant's mitigation proposal to rehabilitate and re-establish wetland habitat onsite in the same footprint as the temporary impacts is low risk and more certain for the following reasons:
    - PEM and PSS habitat types are not difficult to replace resources;
    - Sustaining, relatively permanent hydrology of Drainage A in which the temporary impacts are proposed is well-established and will not be changed (unless climate change and prolonged drought have a permanent effect);
    - no artificial hydrology is required as the rehabilitation and reestablishment areas are supported naturally by the watershed via surface and sub-surface flows along Channel/Wetland A;
    - no structures requiring maintenance are proposed;
    - planned vegetation maintenance is minimal to non-existent, with the exception of weed control (as necessary); and
    - no shallow, buried structures are proposed.

10.2 Site Selection

In order to offset cumulative loss of ecological functions within the affected wetland areas, Drainage A within the Grandview Site was selected as the Mitigation Site such that restoration rehabilitation and reestablishment will be located within the same watershed, sub-watershed and drainage as the temporary impacts. Onsite mitigation was also selected such that temporary impacts could be mitigated within the same footprint as each of the temporary impact areas.

10.3 Mitigation Work Plan

10.3.1 Geographic Boundaries of the Mitigation Areas

The onsite restoration rehabilitation and reestablishment for temporary impacts outlined herein will take place within the Site boundaries and within the same footprint as each of the temporary impact areas.

10.3.2 Mitigation Methods Overview

The 0.370-acre restoration rehabilitation and reestablishment areas will be returned to original/pre-impact grades, seeded with native wetland seed, planted with native willows and adjacent uplands will be stabilized with upland seed. No irrigation is anticipated to be required to reestablish wetlands. Temporary irrigation for upland habitat will be required to establish mesic/xeric plants in well-drained soil (refer to Section 10.3.4 below).

10.3.3 Timing and Sequence of Mitigation

Timing: The timing for implementation of this Mitigation Plan is dependent upon the USACE review and approval process, but the most preferable timing to initiate mitigation is Spring 2024 (as feasible). Optimal timing for plant and seed installation is generally referenced in the Mitigation Plan Notes (refer to Figure 4F and 4G) but is also subject to variation based upon weather/climatic conditions.

Sequence: Temporary Fills (if applicable) will be removed in their entirety and the affected areas returned to original/preconstruction elevations. Restoration rehabilitation of temporary impacts to wetland habitat will occur immediately following the temporary fill removal to the extent feasible, based on the timing referenced above.

10.3.4 Sources of Water and Connections to Existing Waters and Uplands

The proposed mitigation areas where temporary impacts are proposed within wetland areas are supported by natural precipitation, surface runoff, watershed base flows, groundwater and/or subsurface interflow. Based on ECOS' field data and empirical data from numerous successful wetland mitigation efforts, and that artificial dams on the Site will be removed to allow for reestablishment of connected/continuous surface flows, supplemental water will not be required for restoration rehabilitation and reestablishment along Drainage A at this Site.

10.3.5 Soil Characteristics

Based on the fact that the onsite drainages already support PSS/PEM wetland habitat, the soils within the temporary impact areas are suitable for the reestablishment of PEM/PSS wetland habitat.

10.3.6 Methods for Establishing Plant Communities

Following completion of the permitted work, the affected aquatic resources will be completely restored to original/pre-impact elevations and contours, conditions and functionality except where historic stock pond berms must be removed and grades modified to reform a natural channel. The PEM/PSS plant communities within the temporary impact areas will be seeded with native herbaceous species and/or planted with native willows and adjacent uplands will be stabilized with a broad-spectrum mix of upland seed. Please refer to Figures 4A – 4G for the detailed information.

Figures 4A - G
Wetland Restoration Plan

G:\Shared drives\ecos Shared Drive\0-EcoS-Jon\0-Projects\2021-3-2 HR Green Grandview WD & 404 Permitting\Mapping\CAD\ecos_Channel A_Basemap_11-8-23.dwg

DAWLISH DR

ZELDA ST

SALCOMBE TR

FILING 2

GEICK RANCH TRIBUTARY 1
(DRAINAGE A)

POND B
FULL SPECTRUM EXTENDED
DETENTION BASIN
[PRIVATE]

TRACT B

KATE MEADOW LN

FARM CLOSE CT

PROP. POND D
FULL SPECTRUM EXTENDED
DETENTION BASIN
[PRIVATE]

TRACT A

1

2

3

4

5

LEGEND:

- SITE BOUNDARY
- EXISTING FLOODPLAIN
- EXISTING WATERS/WETLAND
- WETLAND RESTORATION - REHABILITATION (0.370 AC)
- WETLAND RESTORATION - RE-ESTABLISHMENT (0.10 AC)
- UPLAND RESTORATION - REHABILITATION (1.359 AC)

0 50 100 150

SCALE: 1" = 100'

SHEET LEGEND

4A
4B
4C

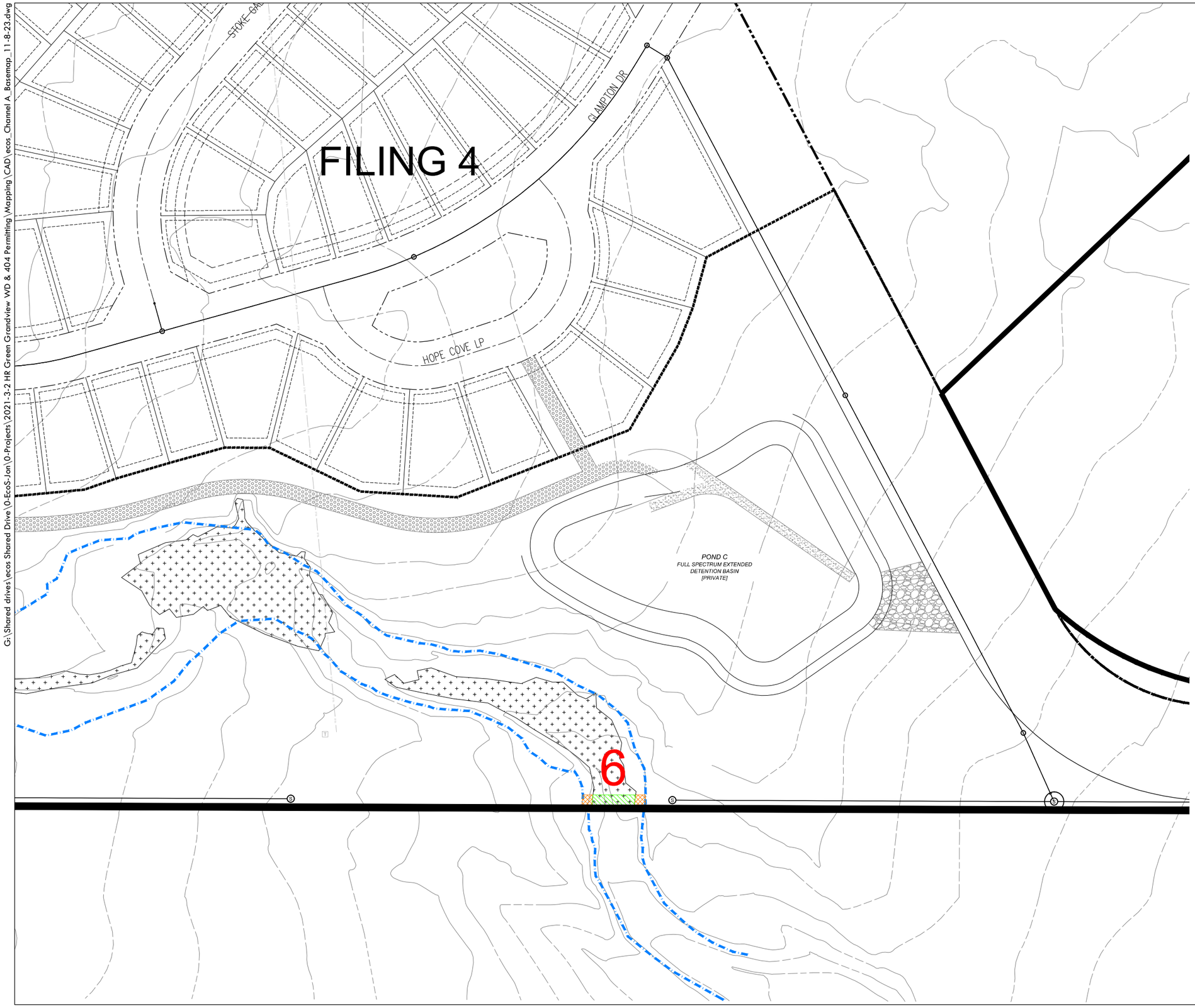
FIGURE 4A

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
WETLAND RESTORATION PLAN

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267



LEGEND:

- SITE BOUNDARY
- EXISTING FLOODPLAIN
- EXISTING WATERS/WETLAND
- WETLAND RESTORATION - REHABILITATION (0.370 AC)
- WETLAND RESTORATION - RE-ESTABLISHMENT (0.10 AC)
- UPLAND RESTORATION - REHABILITATION (1.359 AC)

0 50 100 150

SCALE: 1" = 100'

SHEET LEGEND

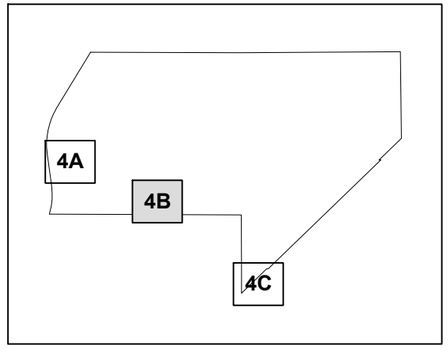


FIGURE 4B

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
WETLAND RESTORATION PLAN

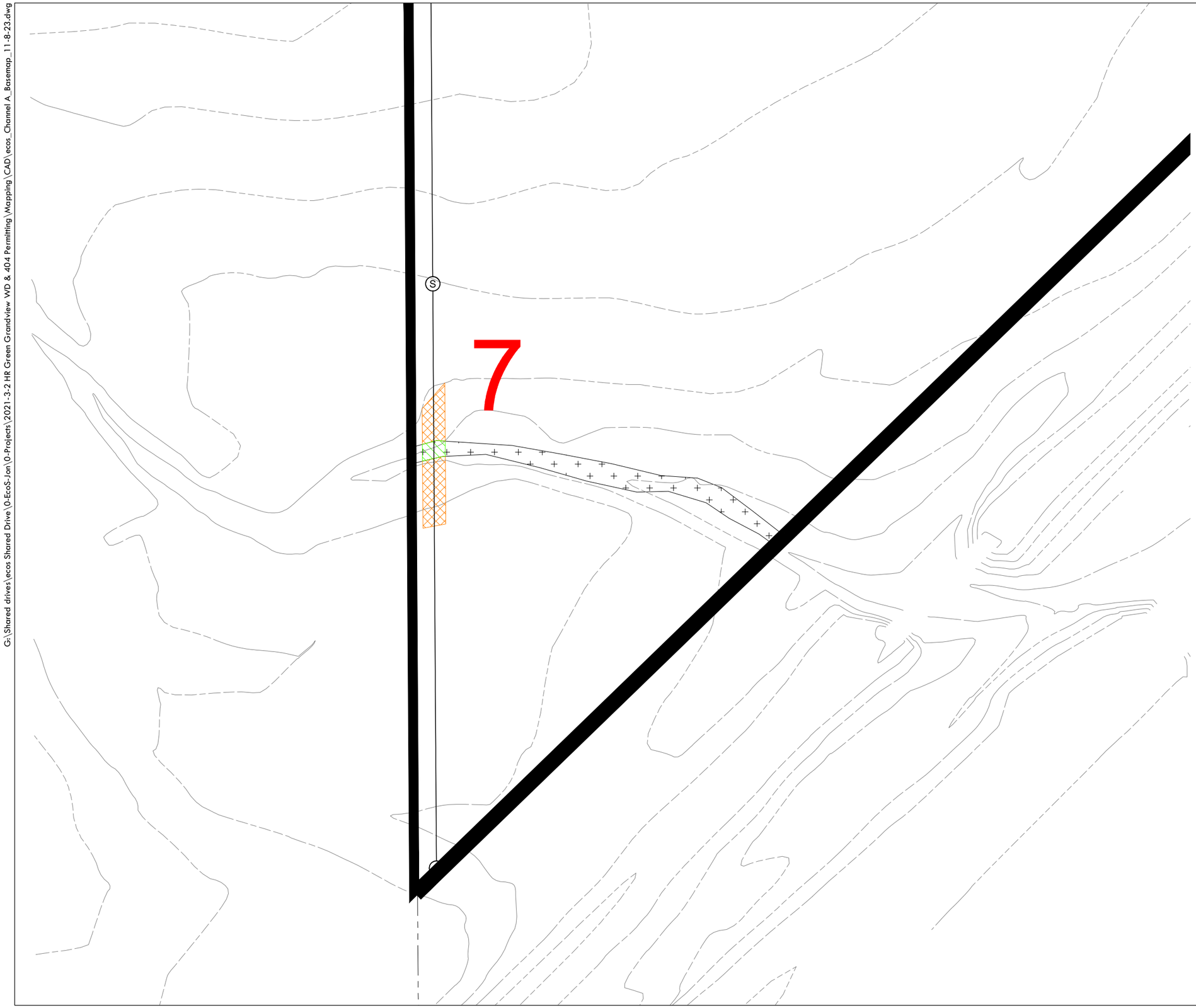
NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

G:\Shared drives\ecos Shared Drive\0-EcoS-Jon\0-Projects\2021-3-2 HR Green Grandview WD & 404 Permitting\Mapping\CAD\ecos_Channel A_Basemap_11-8-23.dwg

G:\Shared drives\ecos Shared Drive\0-EcoS-Jon\0-Projects\2021-3-2 HR Green Grandview WD & 404 Permitting\Mapping\CAD\ecos_Channel A_Basemap_11-8-23.dwg



LEGEND:

- SITE BOUNDARY
- EXISTING FLOODPLAIN
- EXISTING WATERS/WETLAND
- WETLAND RESTORATION - REHABILITATION (0.370 AC)
- WETLAND RESTORATION - RE-ESTABLISHMENT (0.10 AC)
- UPLAND RESTORATION - REHABILITATION (1.359 AC)

0 25 50 75

SCALE: 1" = 50'

SHEET LEGEND

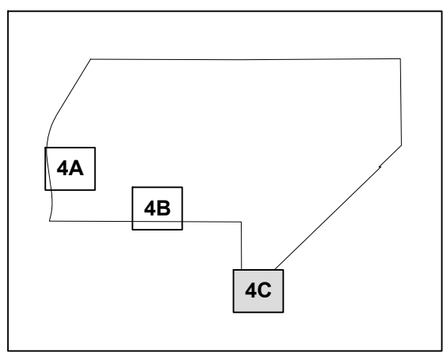


FIGURE 4C

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29

WETLAND RESTORATION PLAN

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

GRANDVIEW RESERVE UPLAND SEED SCHEDULE

11/14/2023

Seeds per SF:	**50**
Seeding Acres:	**1.36**

UPLAND SEED MIX

Scientific Name	Common Name	Indicator	Seasonality	* Percent of Mix	Seeds per AC	* Seeds per LB	* LBS/PLS per AC	Drill Seeding Total LBS	Hydro- or Broadcast Seeding Total LBS
Aristida purpurea	purple threeawn	NI	W	5.0%	108900	250,000	0.44	0.59	1.18
Bouteloua curtipendula	side-oats grama	UPL	W	10.0%	217800	191,000	1.14	1.55	3.10
Bouteloua gracilis	blue grama	UPL	W	20.0%	435600	825,000	0.53	0.72	1.44
Elymus elymoides	bottlebrush squirreltail	UPL	C	5.0%	108900	192,000	0.57	0.77	1.54
Koeleria macrantha	prairie Junegrass	UPL	C	5.0%	108900	2,315,400	0.05	0.06	0.13
Nassella viridua	green needlegrass	NI	C	10.0%	217800	181,000	1.20	1.64	3.27
Panicum virgatum	switchgrass	FAC	W	5.0%	108900	110,000	0.99	1.35	2.69
Pascopyrum smithii	western wheatgrass	FACU	C	10.0%	217800	110,000	1.98	2.69	5.38
Schizachryrium scoparium	little bluestem	FACU	W	10.0%	217800	260,000	0.84	1.14	2.28
Sporobolus cryptandrus	sand dropseed	FACU	W	10.0%	217800	5,298,000	0.04	0.06	0.11
Stipa comata	needle and thread	NI	C	10.0%	217800	115,000	1.89	2.57	5.15
*** Seed mix variables.**				**100.0%**			**9.66**	**13.13**	**26.27**

NOTES:
1. The above seed mix is to be applied to all temporary wetand impact /restoration - rehabilitation and reestablishment areas shown on the Wetland Restoration Plans.
2. Upland Seed Mix composed of short- and midgrass species characteristic of the region.
3. Double the Drill Seeding Rate if Hydro or Broadcast Seeding.
4. Refer to Soil Prep and Seeding Notes in the Wetland Restoration Plans.

GRANDVIEW RESERVE WETLAND SEED SCHEDULE

11/14/2023

Seeds per SF:	**50**
Seeding Acres:	**0.37**

WETLAND SEED MIX

Scientific Name	Common Name	Indicator	* Percent of Mix	Seeds per SF	* Seeds per LB	* LBS/PLS per AC	Drill Seeding Total LBS	Broadcast Seeding Total LBS
Carex nebrascensis	Nebraska sedge	OBL	20.0%	10.0	534,100	0.82	0.30	0.60
Carex praegracilis	meadow sedge	FACW	10.0%	5.0	1,816,000	0.12	0.04	0.09
Juncus balticus	baltic rush	OBL	20.0%	10.0	8,000,000	0.05	0.02	0.04
Juncus ensifolius	swordleaf rush	FACW	5.0%	2.5	2,914,000	0.04	0.01	0.03
Juncus tenuis	slender rush	FAC	5.0%	2.5	16,000,000	0.01	0.01	0.02
Panicum virgatum	switchgrass	FAC	10.0%	5.0	389,000	0.56	0.21	0.41
Pascopyrum smithii	western wheatgrass	FACU	15.0%	7.5	110,000	2.97	1.10	2.20
Spartina pectinata	prairie cordgrass	FACW	5.0%	2.5	197,000	0.55	0.20	0.41
Sporobolus airoides	Alkali Sacaton	FAC	10.0%	5.0	1,758,000	0.12	0.05	0.09
*** Seed mix variables.**			**100.0%**	**50.0**		**5.24**	**1.95**	**3.89**

NOTES:
1. The above seed mix is to be applied to all temporary wetand impact /restoration - rehabilitation and reestablishment areas shown on the Wetland Restoration Plans.
2. Refer to Soil Prep and Seeding Notes in the Wetland Restoration Plans.

GRANDVIEW RESERVE WETLAND PLANT SCHEDULE

11/14/2023

Scientific Name	Common Name	Indicator Status	Size / Form	Plant Spacing	Percent of Mix	Quantity
Wetland Shrubs	Target Cover =	100%				
Salix exigua	coyote willow	FACW	1 qt. tublings or 36" cuttings	2.5	100.0%	2580
				SUBTOTAL	**100.0%**	**2580**

TOTAL QUANTITY OF PLANTS: 2580

NOTES:
1. Dormant willow cuttings (minimum 36" long x 3/4" diameter), harvested in early spring prior budding, may be substituted for rooted willows (tublings).
2. Wetland plants shown on this schedule are to be instaled in all temporary wetand impact /restoration - rehabilitation and reestablishment areas shown on the Wetland Restoration Plans.
3. Install plants using on center diagonal spacing.

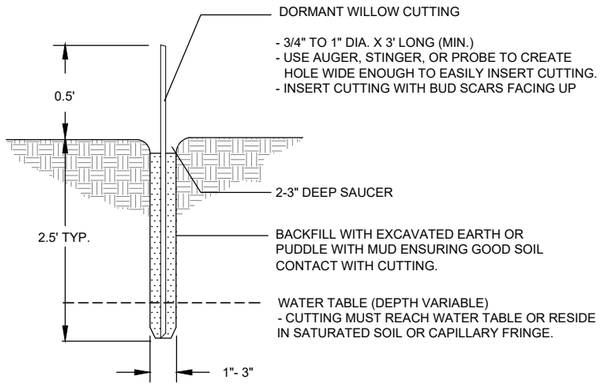
FIGURE 4D

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
SEED & PLANT SCHEDULES

NO: REVISIONS: DATE: BY:
#1
#2
#3
#4

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267



NOTES:

1. UNDERSIZED CUTTINGS, LACK OF COMPLETE SOIL CONTACT, PENETRATION INTO PERSISTENTLY SATURATED SOIL, DRY-OUT, AND INADEQUATE COLD STORAGE ARE MAJOR CAUSES OF CUTTINGS FAILURE.

2. CUTTINGS MUST BE PLANTED IN CAPILLARY FRINGE (SATURATED SOIL) OR LOCATED ON BANK IN ORDER TO REACH WATER TABLE.

3. HARVESTING: HARVEST CUTTINGS IN EARLY SPRING (APPROX. MARCH 1 TO APRIL 15) PRIOR TO LEAFING OUT. CUT STEMS 6 TO 8 INCHES FROM THE GROUND SURFACE AT A 45-DEGREE ANGLE USING LOPPERS, BRUSH CUTTERS OR PRUNERS. CUTTINGS SHALL BE CUT CLEAN, AVOIDING BARK STRIPPING AND STEM SPLITTING. STRIP ALL SIDE BRANCHES AND DEAD WOOD. NO MORE THAN 50% OF AVAILABLE STEMS SHOULD BE HARVESTED AT THE HARVEST SITE TO PRESERVE EXISTING HABITAT. THE HARVESTING SITE MUST BE LEFT CLEAN. EXCESS WOODY DEBRIS SHOULD BE PILED NEATLY IN HABITAT BRUSH PILES AT THE HARVEST SITE.

4. BINDING, STORAGE AND TRANSPORTATION: CUTTINGS SHOULD BE BOUND TOGETHER SECURELY WITH TWINE AT THE COLLECTION SITE IN GROUPS OF 10, 25, OR 50 FOR EASE OF HANDLING, COUNTING, AND PROTECTION DURING TRANSPORT. WRAP CUTTINGS IN MOIST/SATURATED FABRIC, BURLAP OR SIMILAR MATERIAL. IF NOT PLANTED IMMEDIATELY, STORE AND MAINTAIN MOIST IN A DARK CELLAR OR REFRIGERATOR BETWEEN 32 AND 40 DEGREES (F) FOR NO LONGER THAN 8 MONTHS UNTIL TIME OF PLANTING. CUTTINGS SHALL BE PROTECTED FROM SUN, FREEZING AND DRYING AT ALL TIMES. SPRAY/WET CUTTINGS WITH CLEAN WATER PERIODICALLY IN THE STORAGE FACILITY TO MAINTAIN MOISTURE.

5. DELIVERY AND PLANTING: CUTTINGS SHALL BE PLANTED ON THE SAME DAY AS DELIVERY TO THE SITE. CUTTINGS THAT CAN NOT BE PLANTED ON THE SAME DAY SHALL BE PLACED IN DARK/COLD STORAGE UNTIL THEY CAN BE PLANTED. CUTTINGS SHALL BE INSPECTED AND APPROVED UPON DELIVERY, AT THE STORAGE FACILITY, OR THEIR SOURCE. COMPLETELY SUBMERGE AND SOAK CUTTINGS BETWEEN 3 AND 7 DAYS TO FULLY HYDRATE THEM IMMEDIATELY PRIOR TO PLANTING.

6. PLANTING OF CUTTINGS SHOULD OCCUR IN EARLY SPRING BEFORE OR AFTER HIGH WATER WHEN WATER IS AT NORMAL LOW FLOW LEVELS (APPROX. APRIL 15 TO MAY 15 OR JUNE 15 - JULY 15). RUN-OFF CONDITIONS WILL VARY FROM YEAR TO YEAR, MONTH TO MONTH AND MUST BE MONITORED BY THE CONTRACTOR.

7. CUTTINGS SHOULD BE PLANTED IN ROWS STARTING APPROX. 0.5 FEET ABOVE THE NORMAL WATER SURFACE ELEVATION IN THE CAPILLARY FRINGE (MOIST SOIL) OR UP TO AN ELEVATION IN WHICH THE BOTTOM OF THE CUTTINGS WILL REACH THE LOCAL WATER TABLE ONCE INSTALLED. MECHANICAL OR HAND DRIVEN STINGERS SHALL BE USED TO CREATE A HOLE WIDE AND DEEP ENOUGH TO EASILY INSERT CUTTINGS TO AT LEAST 30" (MIN.) OF THEIR LENGTH INTO THE WATER TABLE OR CAPILLARY FRINGE. INSERT CUTTINGS SO THAT BUDS POINT SKYWARD. BACK FILL PLANTING PIT WITH MUD OR IN SOIL LIFTS. WATER BETWEEN EACH LIFT, AND TAMP TO ELIMINATE VOIDS TO ENSURE SOIL IS IN CONTACT WITH CUTTINGS. TAMPING SHOULD CREATE A SLIGHT SAUCER AROUND EACH CUTTING TO CAPTURE AND HOLD PRECIPITATION.

8. CUTTINGS SHALL BE INSERTED SO THAT NO GREATER THAN 6 INCHES ARE ABOVE THE GROUND. THIS DOES NOT ELIMINATE THE NEED TO PLANT CUTTINGS TO THE SPECIFIED DEPTH SHOWN ON THE DETAIL. IF THE CUTTING HITS REFUSAL BEFORE HITTING THE SPECIFIED DEPTH, ADJUST/SHIFT THE LOCATION.

9. TIE BIRD REPELLENT "SCARE RIBBON" AROUND THE TOP OF EACH CUTTING TO IDENTIFY & PROTECT FROM BEING MOWED BY MAINTENANCE CREWS.

10. THE ABOVE DETAIL SHOWS A TYPICAL INSTALLATION IN BARE GROUND. EXPECT EASY PLANTING IN SOIL/SAND AND DIFFICULT PLANTING IN COBBLE OR RIPRAP.

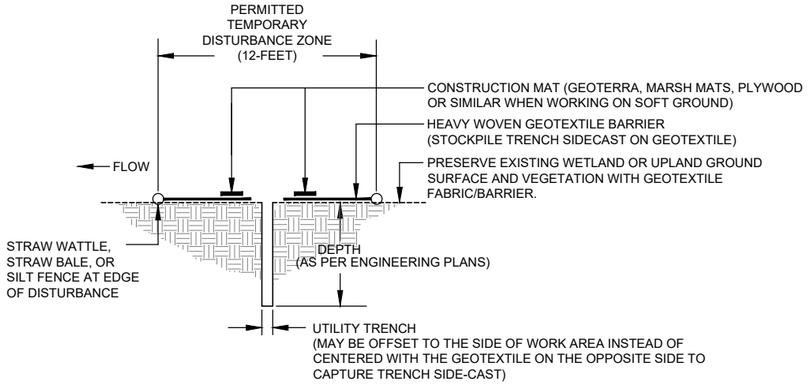
11. REFER TO PLANTING SCHEDULES FOR SPECIES, QUANTITIES AND PLANT SPACING.

12. REFER TO PLANTING PLANS OR A PROJECT PROPONENT FOR LOCATIONS.

WC

WILLOW CUTTING DETAIL

CROSS-SECTION NTS

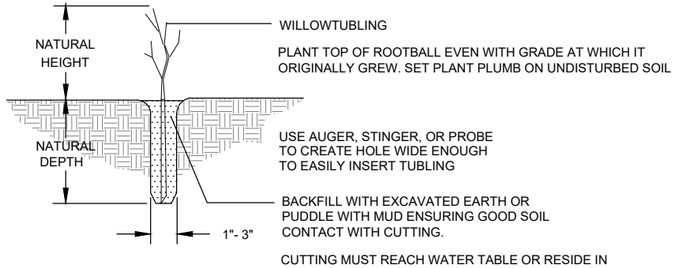


NOTES:
1. USE THIS DETAIL FOR ALL OPEN TRENCH WORK TO BE PERFORMED IN WETLANDS OR UPLAND HABITAT WHERE TEMPORARY IMPACTS ARE AUTHORIZED AND/OR WHERE TEMPORARY ACCESS IS NEEDED TO PERFORM WORK IN RESTRICTED HABITAT.
2. USE GEOTEXTILE FABRIC UNDER CONSTRUCTION MATS TO PRESERVE EXISTING GROUND SURFACE AND VEGETATION & TO STABILIZE WORK SURFACE.
3. CLEANLY REMOVE, DIRECT LOAD, AND HAUL AWAY ALL EXCESS TRENCH MATERIAL.
4. AVOID SIDE CAST OF EXCAVATED SOIL OR SPILLAGE OUTSIDE OF THE PERMITTED WORK AREA.
5. PREPARE AND CONDITION SOIL PRIOR TO SEEDING ACCORDING TO THE NOTES IN THE RESTORATION PLANS.
6. SEED ANY EXPOSED SOIL/DISTURBED SURFACES WITH SPECIFIED WETLAND OR UPLAND SEED MIX AFTER REMOVAL OF GEOTEXTILE FABRIC.
7. ALL SIDECAST FROM TRENCHING OPERATIONS TO BE REPLACED IN TRENCH WILL BE PLACED ON GEOTEXTILE FABRIC TO AVOID INCIDENTAL FILL AND DAMAGE TO EXISTING HABITAT. USE AS MUCH GEOTEXTILE AS NECESSARY TO CONTAIN SIDECAST.
8. SOIL REMOVED FROM THE TRENCH SHALL BE REPLACED BACK IN THE TRENCH IN REVERSE ORDER ENSURING THAT SUBSOIL IS ON THE BOTTOM AND TOPSOIL IS ON THE SURFACE (INCUDING ANY ROOTS, SEEDS OR ORGANIC MATTER).
9. TRENCH BACKFILL MATERIALS SHALL NOT FUNCTION AS A DRAIN TILE THAT WILL DEWATER OR IMPACT UPSTREAM OR DOWNSTREAM HYDROLOGY.

TPD

HABITAT PROTECTION DETAIL

CROSS-SECTION NTS

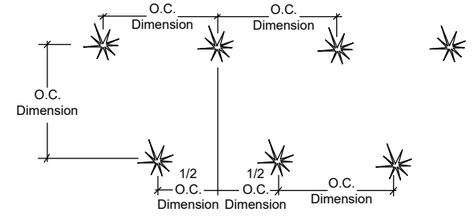


NOTES:
1. REFER TO PLANT SCHEDULES FOR SPECIES SIZE AND QUANTITY.

T

TUBLING PLANTING DETAIL

CROSS-SECTION NTS



NOTES:
1. REFER TO PLANT SCHEDULES FOR SPACING REQUIREMENTS.

PS

PLANT SPACING DETAIL

PLAN: NTS

FIGURE 4E

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
TYPICAL DETAILS

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

G:\Shared drives\ecos Shared Drive\0-EcoS-Jon\0-Projects\2021-3-2 HR Green Grandview WD & 404 Permitting\Mapping\CAD\ecos_Channel A_Basemap_11-8-23.dwg

GENERAL NOTES:

1. CONSTRUCTION OBSERVATION OF WETLAND MITIGATION/RESTORATION IS TO BE PERFORMED BY AN (ECOLOGIST) ON BEHALF OF THE PROJECT OWNER (CLIENT). HEREAFTER, THE GENERAL CONTRACTOR WILL BE REFERRED TO AS THE CONTRACTOR, THE LANDSCAPE SUBCONTRACTOR AS (SUBCONTRACTOR). THE PROJECT ENGINEER WILL BE REFERRED TO AS THE (ENGINEER).

2. ECOLOGIST WILL GUIDE AND INSPECT WETLAND RESTORATION WORK WITH THE CONTRACTOR AND/OR SUBCONTRACTOR AS NEEDED WITHIN THE PROJECT. THE FOLLOWING ARE THE MAJOR MILESTONES:

- ROUGH GRADING
- FINISH GRADING & SOIL PREPARATION
- SEEDING AND EROSION CONTROL BLANKET INSTALLATION (IF SPECIFIED)
- PLANTING (IF SPECIFIED)
- PUNCH LIST, SUBSTANTIAL COMPLETION & FINAL INSPECTIONS

SITE CHECKS SHALL BE COORDINATED BETWEEN THE ECOLOGIST & THE CONTRACTOR/SUBCONTRACTOR PRIOR TO INITIATING SUBSEQUENT TASKS.

3. RESTORATION AREAS ARE TO BE SEEDED AND PLANTED (IF SPECIFIED) WITH THE SPECIES PROVIDED ON THE PLANT & SEED SCHEDULES.

4. SEEDING SHALL OCCUR AS SOON AS PRACTICABLE UPON COMPLETION OF EARTHWORK OPERATIONS WITHIN THE TIME FRAMES INDICATED IN THE SEEDING NOTES.

5. TO ENSURE AVAILABILITY, SEED AND PLANT MATERIALS MAY BE ACQUIRED FOR THE PROJECT, IN ADVANCE OF CONSTRUCTION, BY THE CLIENT (REFER TO SEED & PLANT SCHEDULES). THE CONTRACTOR SHALL HAVE THE RIGHT TO INSPECT THE PLANT MATERIAL AT ITS SOURCE **PRIOR TO DELIVERY** TO REJECT ANY NON-STANDARD MATERIALS THAT EXHIBIT DEFECTS THAT WOULD PROHIBIT ESTABLISHMENT & GROWTH UNDER NORMAL CONDITIONS. REJECTED MATERIAL SHALL BE WARRANTED & REPLACED IN KIND BY THE SUPPLIER AT NO COST TO THE CLIENT. THE ECOLOGIST SHALL HAVE THE RIGHT TO INSPECT THE PLANT MATERIAL PRIOR TO OR UPON DELIVERY AND REJECT ANY NON-STANDARD OR DEFECTIVE MATERIAL. THEREAFTER, ALL MATERIALS SHALL BE CONSIDERED ACCEPTED. AFTER ACCEPTANCE IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE NURSERY OR STORAGE FACILITY MAINTAINS THE SEED OR PLANTS IN GOOD HEALTH UNTIL TIME OF DELIVERY; AND THAT MATERIAL IS PROPERLY MAINTAINED AND CARED FOR ONCE DELIVERED.

6. CONSTRUCTION SURVEYING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY GRADES, SEEDING OR PLANTING AREA BOUNDARIES OR EXTENTS. AS-BUILT DRAWINGS SHOWING ANY DEVIATIONS OR CHANGES TO THE PLANS THAT WERE MADE IN THE FIELD BY THE CONTRACTOR OR SUBCONTRACTOR SHALL BE PROVIDED AT THE END OF THE PROJECT. AS-BULT PLANS, NOTES & PHOTOS SHALL BE PROVIDED IN DIGITAL AND HARD COPY FORM. FAILURE TO PROVIDE COMPLETE AND ACCURATE AS-BUILT INFORMATION MAY RESULT IN REDUCTION OF PAYMENT/RETAINAGE EQUAL TO THE AMOUNT NECESSARY FOR THE ECOLOGIST TO PRODUCE ACCURATE AS-BUILT DATA.

7. CONTRACTOR SHALL NOT EXPAND OR WORK OUTSIDE OF THE PERMITTED LIMITS OF DISTURBANCE (LOD), WATERS OR WETLAND (WOTUS) IMPACT BOUNDARIES UNLESS OTHERWISE APPROVED BY THE ECOLOGIST. ALL AREAS DISTURBED DURING THE COURSE OF WORK SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION BY THE CONTRACTOR IN ACCORDANCE WITH THESE PLANS & PERFORMANCE CRITERIA. ANY UNAPPROVED IMPACTS BEYOND THE LOD OR PERMITTED WOTUS IMPACT BOUNDARIES SHALL BE RESTORED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

8. SITE WORK SHALL NOT BEGIN UNTIL ALL APPLICABLE LICENSES AND CONSTRUCTION PERMITS HAVE BEEN OBTAINED BY THE CONTRACTOR, INCLUDING, BUT NOT LIMITED TO:

- GENERAL LAND DEVELOPMENT PERMIT (STATE)
- STORMWATER DISCHARGE PERMIT (STATE)
- CONSTRUCTION DEWATERING PERMIT (STATE)
- GRADING PERMIT (CITY AND/ORCOUNTY)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING THE REQUIREMENTS OF ANY APPLICABLE PERMITS PERTAINING TO WETLANDS, WATERS, THREATENED OR ENDANGERED SPECIES, MIGRATORY BIRDS & RAPTORS, WATER QUALITY, WATER AND EROSION CONTROL DURING CONSTRUCTION ACTIVITIES. ANY FINES FOR VIOLATIONS THAT MAY BE LEVIED AGAINST THE CLIENT OR PROJECT WILL BE BORN BY THE CONTRACTOR.

THE CLIENT SHALL HAVE OBTAINED A CLEAN WATER ACT (CWA) SECTION 404 PERMIT & OTHER FEDERAL OR STATE PERMITS/CLEARNACES (EXCLUDING CONSTRUCTION PERMITS) FOR THE PROJECT PRIOR TO CONSTRUCTION. THE CONTRACTOR AND THIER SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH SAID PERMITS.

THE CONTRACTOR SHALL NOT GO AROUND THE CLIENT, ENGINEER OR ECOLOGIST TO MODIFY PERMITS THAT WERE ALREADY IN PLACE PRIOR TO CONSTRUCTION. IF NECESSARY, THE CONTRACTOR WILL SUBMIT DRAFT CONSTRUCTION RELATED PERMITS TO THE CLIENT & ENGINEER FOR REVIEW & APPROVAL PRIOR TO SUBMITTING TO ANY AGENCY AND THEN COPY THE CLIENT AND ENGINEER ON ANY FINAL PERMIT APPLICATIONS, RESULTS OR CORRESPONDENCE WITH AGENCIES RELATED TO SAID PERMITS.

9. THE CONTRACTOR SHALL GENERATE A STORM WATER MANAGEMENT PLAN & WILL BE RESPONSIBLE FOR DEVELOPING, INSTALLING AND ENSURING ALL APPLICABLE BMPS ARE INSTALLED AND PROPERLY MAINTAINED.

10. ANY WORK THAT WILL TAKE PLACE IN AND AROUND A WATER BODY MAY BE SUBJECT TO PERIODIC FLOODING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF SURFACE AND SUBSURFACE WATER AND EROSION DURING THE COURSE OF THE WORK. ANY DAMAGE TO THE WORK, PROPERTY OR OTHER PROPERTIES RESULTING FROM SURFACE FLOWS, BASE FLOWS, OR FLOOD FLOWS, INCLUDING BUOYANCY FORCES, AS A RESULT OF THE CONTRACTOR NOT EFFECTIVELY PROTECTING THE SITE AND WORK, SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR EXPENSE.

11. EROSION CONTROL MEASURES SHALL REMAIN IN FULL FORCE DURING CONSTRUCTION ACTIVITIES AND AS REQUIRED BY THE GOVERNING JURISDICTION(S).

EARTHWORK NOTES:

1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN BMP's (AS NEEDED) TO PROTECT EXISTING AQUATIC, WETLAND, RIPARIAN, AND UPLAND HABITAT TO REMAIN, INCLUDING INDIVIDUAL OR PATCHES OF EXISTING TREES AND SHRUBS. TREES & SHRUBS TO REMAIN THAT MAY BE AFFECTED BY GRADING SHALL BE PROTECTED TO AVOID EXCAVATION, COMPACTION OR DISTURBANCE WITHIN THEIR DRIP LINE. IF ANY EXCAVATION IS REQUIRED WITHIN THE DRIP LINE OF TREES AND SHRUBS TO REMAIN, IT WILL BE DONE IN A MANNER, WHICH WILL CAUSE MINIMUM DAMAGE TO THE ROOT SYSTEMS. INJURED TREE BRANCHES & ROOTS WILL BE PRUNED CLEANLY AND BACKFILLED AS SOON AS POSSIBLE. **EARTHWORK (EXCAVATION, SIDE-CASTING, PLACEMENT OF FILL, ACCESS OR TRACKING IN PROTECTED HABITAT SHALL BE LIMITED TO THE AREAS DESIGNATED IN CLEAN WATER ACT (CWA) SECTION 404 AND/OR ENDANGERED SPECIES ACT (ESA) PERMIT APPLICATIONS. APPROVED TEMPORARY HABITAT IMPACTS (WETLANDS, WATERS OR T&E HABITAT) SHALL BE AVOIDED & MINIMIZED TO THE MAXIMUM EXTENT POSSIBLE. WHERE NOT FEASIBLE, THE CONTRACTOR SHALL FOLLOW THE HABITAT PROTECTION DETAIL PROVIDED IN THE PLANS (IF APPLICABLE) FOR OPEN TRENCHING OR EXCAVATION WORK IN PROTECTED HABITAT.**

2. THE PROJECT SITE SHALL BE CLEARED AND GRUBBED (WHERE APPLICABLE), PRESERVING AS MUCH TOPSOIL AS POSSIBLE. THEREAFTER, ALL EXCESS TOPSOIL SHALL BE STRIPPED FOR REUSE ON THE SITE FROM WHICH IT ORIGINATED. FOR THE PURPOSES OF THIS PROJECT, STRIPPED TOPSOIL SHALL CONSIST OF ALL ORGANIC SOIL, DUFF, AND OTHER SURFACE MATERIALS CAPABLE OF SUPPORTING VEGETATION AND MAY INCLUDE GRASS, PLANT BRANCHES AND ROOTS LESS THAN ½ INCH DIAMETER AND SIX INCHES IN LENGTH. STOCKPILED TOPSOIL SHALL BE PLACED IN THE DESIGNATED STORAGE/STAGING AREA. APPROXIMATELY 6" MIN. OF EXISTING &/OR IMPORTED TOPSOIL SHALL BE PLACED TO FINAL GRADE OR AS DIRECTED BY THE ECOLOGIST. IMPORTED TOPSOIL AND/OR FINAL GRADED SEEDING SURFACE SHALL BE AMENDED (SEE SEEDING NOTES). IMPORTED TOPSOIL SHALL CONSIST OF ROUGHLY EQUAL PARTS SAND, CLAY & LOAM (I.E., A SANDY CLAY LOAM) AND CAPABLE OF SUPPORTING PLANT LIFE. TOPSOIL SHALL NOT BE TOXIC TO PLANTS AND HAVE A pH BETWEEN 6.0 AND 7.5. IDEALLY SOILS SHOULD HAVE NO SALT OR SODIUM (SALTS). HOWEVER SALTS MAY BE NATURALLY PRESENT IN THE BACKGROUND THEREFORE, SALTS SHALL BE LESS THAN 2.0 MMHOS/CM OR EC AND SODIUM LESS THAN 10 ESP OR MEQ/100G SOIL. SOILS SHALL HAVE A CEC NO LESS THAN 15.0, ORGANIC MATTER BETWEEN 3 - 5%, NITRATE NITROGEN BETWEEN 20 - 30 PPM, PHOSPHORUS BETWEEN 20 - 40 PPM, & POTASSIUM BETWEEN 150 - 300 PPM, MAGNESIUM BETWEEN 150 - 300 PPM, SULPHUR BETWEEN 10 - 20 PPM, BORON BETWEEN 0.5 - 1.0 PPM, ZINC ABOVE 1.5 PPM, IRON GREATER THAN 5.0 PPM, MANGANESE BETWEEN 1 - 5 PPM, & COPPER ABOVE 0.6 PPM.

3. WHERE FEASIBLE, STOCKPILES SHALL BE PLACED NO CLOSER THAN 50' FROM ANY EXISTING WATER BODY, DRAINAGE OR WETLAND THAT COULD POTENTIALLY ERODE THE STOCKPILED MATERIALS INTO EXISTING WATERS OR WETLANDS DURING HIGH WATER. IF WITHIN 50', DOUBLE SILT FENCE (OR EFFECTIVE EQUIVALENT) SHALL BE INSTALLED BETWEEN THE STOCKPILE AND WATER/WETLAND.

4. EXCAVATION, GRADING AND DRAINAGE SHALL BE PERFORMED AS PER THE PLANS AND DIRECTIONS OF THE ENGINEER AND FIELD FIT AS NECESSARY TO ACHIEVE OPTIMAL GRADES AS INDICATED ON THE PLANS. TRENCH EXCAVATION AND REPLACEMENT IN WETLANDS SHALL BE PERFORMED IN ACCORDANCE WITH THE **HABITAT PROTECTION DETAIL (IF APPLICABLE).**

5. GRADED AREAS THAT WILL RECEIVE TOPOSOIL WILL BE OVER-EXCAVATED AND GRADED TO ACCOMMODATE PLACEMENT OF SPECIFIED TOPSOIL THICKNESS TO FINAL GRADE. THE CONTRACTOR SHALL CHECK AND THE ENGINEER SHALL VERIFY GRADES PRIOR TO AND AFTER PLACEMENT OF TOPSOIL IN PREPARATION FOR SEEDING AND PLANTING.

6. GRADED AREAS SHALL TIE IN SMOOTH & NATURALLY WITH ADJACENT GRADES (I.E., NO ANGULAR TRANSITIONS). LARGE CLODS, COBBLE AND OTHER DEBRIS SHALL BE REMOVED FROM THE WORK AREA AND DISPOSED OF IN AN APPROPRIATE LOCATION. NO MATERIAL SHALL BE DISPOSED OF OR DUMPED ILLEGALLY.

SUBMITTALS & SUBSTITUTIONS:

SUBMITTALS:

THE CONTRACTOR WILL PROVIDE THE ECOLOGIST WITH COPIES OF THE FOLLOWING SUBMITTALS A MINIMUM OF 10 WORKING DAYS PRIOR TO INSTALLATION UNLESS NOTED OTHERWISE BELOW:

1. A LIST OF ALL KEY EMPLOYEES (PROJECT MANAGERS, SUPERVISORS, EQUIPMENT OPERATORS) WHO WILL BE WORKING ON THE PROJECT, INCLUDING THEIR POSITIONS, ROLES AND RESPONSIBILITIES. THE CONTRACTOR SHALL PROVIDE THE KEY EMPLOYEES LISTED AND SHALL NOT MAKE SUBSTITUTIONS WITHOUT PRIOR APPROVAL (WRITTEN OR VERBAL) OF THE CLIENT. **THE ENGINEER OR ECOLOGIST RESERVES THE RIGHT TO WAIVE THIS REQUIREMENT.**

2. A LISTING OF EQUIPMENT TO BE USED FOR ALL OPERATIONS, INCLUDING PLANTING AND SEEDING.

3. AGRONOMIC SOIL TEST OF EXISTING OR IMPORTED TOPSOIL, INCLUDING SOIL TEXTURE, MACRO- AND MICRO-NUTRIENTS, SALTS, ORGANIC MATTER, ANY METALS AND AMENDMENT RECOMMENDATIONS (FOR NATIVE GRASSES ONLY, NOT TURF OR CROPS).

4. LITERATURE ON THE TYPE AND COMPOSITION OF ANY RECOMMENDED SOIL AMENDMENT MATERIALS.

5. SEED CERTIFICATES THAT INCLUDE SUPPLIER, SOURCE, ORIGIN OF STOCK, BOTANICAL NAME, COMMON NAME, POUNDS AND PERCENTAGE OF PURE LIVE SEED FOR EACH SPECIES. COPIES OF SEED TAGS ATTESTING TO THE SAME UPON DELIVERY TO THE SITE.

6. TYPES OF FABRIC AND/OR BLANKET SPECIFIED BY THE ENGINEER OR ECOLOGIST. MANUFACTURER'S LITERATURE/MATERIAL DATA SHEETS THAT INCLUDE THE TYPE, PHYSICAL CHARACTERISTICS, APPLICATION AND RECOMMENDED INSTALLATION INSTRUCTIONS OF ALL EROSION CONTROL FABRIC, BLANKET, INCLUDING ANY HARDWARE SPECIFIED. COPIES OF EROSION CONTROL MATERIAL SHIPPING MANIFESTS ATTESTING TO THE SAME UPON DELIVERY TO THE SITE.

7. PRE- AND POST-CONSTRUCTION DIGITAL PHOTOS OF ANY STRUCTURE OR WORK AREA THAT IS TO BE REMOVED AND REPLACED OR DISTURBED AND RESTORED DURING THE COURSE OF THE PROJECT.

8. PROPOSED MEANS, METHODS & MATERIALS FOR WATERING PLANTS AND SEEDED AREAS IN UPLANDS.

9. MAINTENANCE REPORTS & PHOTOS IF NECESSARY FOLLOWING EACH MAINTENANCE SITE VISIT THAT DOCUMENTS CONDITIONS, ACTIVITIES PERFORMED, AND ANY ISSUES OR INFORMATION THAT IS RELEVANT TO THE SUCCESS OF THE PROJECT.

SUBSTITUTIONS:

1. EROSION CONTROL FABRIC, BLANKET,OR ASSOCIATED HARDWARE OR FASTENERS SUBSTITUTIONS SHALL BE EQUIVALENT OR BETTER THAN THOSE SPECIFIED. ANY SUBSTITUTIONS SHALL BE APPROVED BY THE ECOLOGIST PRIOR TO ORDERING AND DELIVERY TO THE SITE.

2. IF A SINGLE PLANT OR SEED SUPPLIER IS UNABLE TO PROVIDE THE PLANTS OR SEED FOR THE PROJECT, THE CONTRACTOR SHALL CONTACT A MINIMUM OF THREE (3) SEED OR PLANT SUPPLIERS AND MAKE EVERY EFFORT TO OBTAIN THE SPECIFIED SPECIES AND QUANTITIES. THEREAFTER, ANY SUBSTITUTIONS WILL BE BROUGHT TO THE ATTENTION OF THE ECOLOGIST FOR APPROVAL PRIOR TO ACQUISITION. PLANT & SEED SUPPLIERS SHALL BE ESTABLISHED, QUALIFIED COMMERCIAL SUPPLIERS.

3. CONTRACTOR SHALL SUBMIT REQUESTS FOR SUBSTITUTIONS SUFFICIENTLY IN ADVANCE TO AVOID DELAY OF ANY WORK.

4. IN MAKING A REQUEST FOR SUBSTITUTIONS, OR IN USING AN APPROVED SUBSTITUTE ITEM, CONTRACTOR REPRESENTS:

A. CONTRACTOR HAS PERSONALLY INVESTIGATED PROPOSED PRODUCT OR METHOD, AND HAS DETERMINED THAT IT IS EQUAL OR SUPERIOR IN ALL RESPECTS TO THAT SPECIFIED AND THAT IT WILL PERFORM THE FUNCTION FOR WHICH IT IS INTENDED.

B. CONTRACTOR SHALL PROVIDE THE SAME GUARANTEE FOR THE SUBSTITUTE ITEM AS FOR THE PRODUCT OR METHOD SPECIFIED.

C. CONTRACTOR SHALL COORDINATE INSTALLATION OF THE APPROVED SUBSTITUTION INTO THE WORK.

D. CONTRACTOR WAIVES ALL CLAIMS FOR ADDITIONAL REIMBURSEMENT RELATED TO ANY EQUIVALENT SUBSTITUTIONS OR QUANTITIES, UNLESS OTHERWISE WAIVED BY THE CLIENT.

E. CONTRACTOR SHALL REIMBURSE THE CLIENT IF SMALLER OR FEWER PLANTS ARE PROVIDED THAT DIFFER FROM THOSE SPECIFIED IN THE PLANT SCHEDULES.

SEEDING NOTES:

1. SUBSOIL SHALL BE RIPPED TO MINIMUM DEPTH OF 12 INCHES PRIOR TO TOPSOIL PLACEMENT AND/OR SOIL AMENDMENT TO DECOMPACT AND ENSURE TOPSOIL IS KEYED-IN AND ATTACHED TO SUBSOIL.

2. THE FINAL GRADED SURFACE/SEED BED SHALL BE PREPARED PRIOR TO SEEDING, CREATING A UNIFORM AND LIGHTLY COMPACTED SURFACE CONDUCIVE FOR SEED IMPREGNATION. ANY AREAS OVERLY LOOSE OR COMPACTED OR DISTURBED PRIOR TO SEEDING SHALL BE PREPARED AGAIN UNTIL CORRECT. ANY OVERLY COMPACTED SEEDING SURFACE SHALL BE DECOMPACTED PRIOR TO SEEDING. IF UPON INSPECTION, THE ECOLOGIST FINDS DEEPLY COMPACTED SOIL THAT MAY ULTIMATELY IMPACT SUSTAINED PLANT GROWTH AND ESTABLISHMENT, THE ECOLOGIST MAY REQUIRE DEEPER RIPPING.

3. ANY LARGE CLODS, COBBLE, ROCK, BRANCHES OR OTHER MATERIAL THAT WOULD PREVENT FLUSH INSTALLATION OF EROSION CONTROL BLANKET/FABRIC OR EFFECTIVE USE OF A DRILL SEEDER OR MOWERS SHALL BE REMOVED FROM THE AREA OR REDUCED IN SIZE TO LESS THAN 2" PRIOR TO SEEDING AND/OR FABRIC INSTALLATION. FAILURE TO PROPERLY PREPARE THE GROUND COULD RESULT IN COMPLETE REINSTALLATION OF SEED AND/OR EROSION CONTROL FABRIC.

4. NUTRIENT DEFICIENT OR EXCESSIVELY RICH TOPSOIL OR SURFACE MATERIAL SHALL BE AMENDED WITH MACRO- OR MICRO-NUTRIENTS AS DIRECTED BY THE ECOLOGIST UPON RECEIPT OF A SOIL TEST.

5. THE FOLLOWING MATERIALS SHALL BE ADDED/AMENDED TO TOPSOIL:

A. CERTIFIED WEED FREE **CLASS 1 COMPOST SHALL BE APPLIED TO ALL UPLAND SEEDING AREAS (IF WITHIN THE SCOPE OF THE PROJECT) AT A MINIMUM RATE OF 130 CUBIC YARDS PER ACRE (~3 CY/1000 SF).** 130 CY IS EQUIVALENT TO 1" THICK LAYER OF COMPOST SPREAD OVER A 1-ACRE AREA. COMPOST SHALL BE APPLIED EVENLY & THOROUGHLY TILLED IN TO THE TOP 3-6" OF THE SEEDING SURFACE. **PROGANICS BIOTIC SOIL MEDIA MAY BE SUBSTITUTED AS AN ALTERNATIVE TO COMPOST AND APPLIED AT A MINIMUM RATE OF 3500 POUNDS PER ACRE.**

B. **HUMATE AT A RATE OF MINIMUM 250 POUNDS PER ACRE**. HUMATES SHALL BE APPLIED TOPICALLY AND THEN TILLED IN TO THE TOPSOIL PRIOR TO SEEDING. **QUANTUM GROWTH VSC SOIL ACTIVATOR MAY BE SUBSTITUTED FOR HUMATE & APPLIED TOPICALLY AT A RATE OF 2 GALLONS/ACRE.**

C. GRANULAR **ENDO MYCHORRIZAL INOCULUM SHALL BE APPLIED TO ALL SEEDING AREAS AT A MINIMUM RATE OF TWENTY (20) POUNDS PER ACRE.** ALTERNATIVELY, MYCHORRIZAL INOCULUM MAY BE POURED INTO SEED BAGS AT A RATE OF ONE (1) POUND PER ACRE AND SHAKEN TO THOROUGHLY COAT SEEDS. SAID MYCHORRIZAL INOCULUM SHALL BE IN THE FORM OF MICRONIZED POWDER, SHALL CONTAIN THREE SPECIES OF ENDOMYCORRIZE, SHALL BE CERTIFIED WITH A MINIMUM COUNT OF 100,000 PROPAGULES PER POUND, AND SHALL MEET THE SPECIFICATIONS OF MYCOAPPLY MICRONIZED ENDO MYCHORRIZAL INOCULUM.

7. ALL SEED SHALL CONFORM TO CURRENT STATE AND FEDERAL REGULATIONS AND SHALL BE SUBJECT TO THE TESTING PROVISIONS OF THE ASSOCIATION OF OFFICIAL SEED ANALYSIS.

8. IF A DRILL SEEDER IS INCAPABLE OF EVEN DRILLING OF SMALL AND LARGE AND HEAVY AND LIGHT SEED, THE SEED WILL BE DELIVERED UNMIXED, IN INDIVIDUAL BAGS IN THE QUANTITIES SHOWN ON THE SEED SCHEDULES. THE SEED WILL BE MIXED ON SITE AND PLACED IN THE APPROPRIATE DRILL SEEDER HOPPERS OR BROADCASTER BY A QUALIFIED SEEDING CONTRACTOR PURSUANT TO THE SEED SCHEDULES.

9. DRILL SEEDING IS THE PREFERRED METHOD OF APPLICATION, FOLLOWED BY HYDRO-SEEDING, FOLLOWED BY HAND BROADCAST SEEDING AS FEASIBLE AND WHERE NECESSARY.

10. A DRILL SEEDER SHALL BE EQUIPPED WITH: DISCS TO CUT FURROWS FOR THE SEED; DEPTH BANDS SET AT 1/2"; ROWS OR FURROWS A MAXIMUM OF 6" APART; TWO DIFFERENT TYPES OF SEED BOXES TO HANDLE SMALL AND LARGE AND HEAVY AND LIGHTSEED, WITH INDEPENDENT ADJUSTMENTS FOR EACH TYPE OF BOX; AGITATORS IN THE SEED BOXES TO MIX SEEDS; ABILITY TO METER SEED FLOW WITH PRECISION; AND REAR PACKER WHEELS TO COMPACT SOIL OVER PLANTED SEED. PRIOR TO COMMENCEMENT OF SEEDING, CALIBRATION TESTS SHALL BE CONDUCTED ON THE EQUIPMENT TO DETERMINE THAT THE SPECIFIED SEEDING RATE WILL BE MET.

11. SEED SHALL BE DRILLED 1/4 TO 1/2 INCH INTO THE PREPARED SOIL SURFACE ON SLOPES WHERE MACHINERY CAN SAFELY OPERATE USING THE SEED RATES INDICATED ON THE SEED SCHEDULES. AREAS INACCESSIBLE BY DRILL SHALL BE HYDRO-SEEDED OR HAND SEEDED, DOUBLING THE DRILL SEEDING RATES INDICATED ON THE SEED SCHEDULES. HYRDO-SEEDING SHALL BE APPLIED WITH A GREEN TRACER (MIXED WITH A LIGHT HYDROMULCH) TO ENSURE FULL COVERAGE. HAND SEEDED AREAS SHALL BE COMBINED WITH SAND OR VERMICULITE FOR EASE OF EVEN SPREADING AND SEEDED IN TWO PERPENDICULAR PASSES TO ENSURE FULL COVERAGE. **EVERY SQUARE FOOT OF DISTURBED SOIL, INCLUDING EXCAVATION FROM FABRIC & SILT FENCE KEY TRENCHES WILL BE SEEDED TO AVOID AND MINIMIZE WEED INVASION.**

12. ALL SMALL/FINE SEED SHALL BE DRILLED SIMULTANEOUSLY VIA THE DRILL SEEDER. FILLERS (E.G., FINE SAND, VERMICULITE) SHALL BE USED FOR ALL SMALL/FINE SEED TO ENSURE ADEQUATE AND EVEN DISTRIBUTION WITH LARGE SEED.

13. THE DRILL SEEDER SHALL MAKE TWO PASSES; THE SECOND IN A DIRECTION THAT IS PERPENDICULAR TO THE FIRST, AS TOPOGRAPHY ALLOWS.

14. SHORTAGES OF SEED AND FAILURE TO COVER THE DESIGNATED AREA DUE TO INADEQUATE CALIBRATION WILL BE CORRECTED AND COMPENSATED AT THE CONTRACTOR'S EXPENSE.

15. **ALL SEED SOWN BY HYDRO-SEEDING OR HAND BROADCASTING IN UPLANDS SHALL BE RAKED IN AND/OR HARROWED 1/4 TO 1/2 INCH INTO THE SOIL SURFACE AFTER SEEDING**, AND COMPACTED GENTLY TO ENSURE GOOD SEED-TO-SOIL CONTACT. **ALL SEED SOWN BY HYDRO-SEEDING OR HAND BROADCASTING IN WETLANDS SHALL BE HYDROMULCHED AFTER SEEDING.**

16. IF NECESSARY, BROADCAST SEEDING SHALL BE ACCOMPLISHED USING HAND-OPERATED "CYCLONE"-TYPE SEEDERS CONTAINING AGITATORS AND PICKER WHEELS TO DISTRIBUTE FLUFFY SEED. THE LARGER SEED SPECIES SHALL BE COMBINED AND SEEDED FIRST. SMALLER SEED SPECIES SHALL BE MIXED WITH A FILLER AND THEN APPLIED OVER THE LARGER SEED. SEED SHALL BE FREQUENTLY MIXED WITHIN THE HOPPER TO ENSURE EVEN DISTRIBUTION OF SPECIES. **SEEDING SHALL NOT BE "SPLASHED" BY HAND.**

17. SEEDING UNDER EROSION CONTROL FABRIC/BLANKET (IF SPECIFIED) SHALL BE PERFORMED CONCURRENTLY WITH THE INSTALLATION OF THE FABRIC/BLANKET.

18. SEED SHALL BE INSTALLED PRIOR TO CONSISTENT GROUND FREEZE FROM APPROX. **SEPT. 1 TO NOV. 31 (FOR DORMANT SEEDING**) OR AFTER SPRING THAW FROM APPROX. **APRIL 1 TO MAY 31 (FOR ACTIVE SEEDING)**, UNLESS OTHERWISE APPROVED BY THE ECOLOGIST, SEEDING SHALL BE PERFORMED ONLY DURING SPECIFIED PERIODS OR WHEN SITE AND WEATHER CONDITIONS WILL PRODUCE BENEFICIAL RESULTS. IF THE CONTRACTOR PERFORMS SEEDING OUTSIDE OF THE SPECIFIED SEASONS OR WHEN UNSATISFACTORY SITE CONDITIONS SUCH AS EXCESSIVE MOISTURE, HIGH WIND VELOCITIES, OR WHEN THE SOIL IS IN A FROZEN OR CRUSTED STATE PREVENTING PROPER DISTRIBUTION AND IMPREGNATION OF SEED, THEN THE CONTRACTOR WILL INSURE ADEQUATE GERMINATION AND GROWTH CONDITIONS, RESEED, REMULCH, AND REPAIR ANY AREAS THAT FAIL TO PRODUCE.

18. ANY STRAW MULCH USED SHALL CONSIST OF CERTIFIED WEED-FREE FIELD STRAW FROM OATS, BARLEY, WHEAT, RYE, OR TRITICALE CERTIFIED UNDER THE COLORADO DEPT. OF AGRICULTURE WEED FREE FORAGE CERTIFICATION PROGRAM. STRAW IN AN ADVANCED STAGE OF DECOMPOSITION OR STRAW THAT BREAKS IN THE CRIMPING PROCESS WILL NOT BE ACCEPTED.

19.**CERTIFIED WEED FREE STRAW MULCH SHALL BE UNIFORMLY APPLIED AT A RATE OF 2 TONS PER ACRE (4000#)** AND ANCHORED INTO THE SOIL WITH EQUIPMENT HAVING FLAT, SERRATED DISKS WITH DULL EDGES AND DISKS SPACED NO MORE THAN 6 INCHES APART. MULCH SHALL BE ANCHORED TO A DEPTH OF AT LEAST 4 INCHES AND SHALL NOT BE COVERED WITH AN EXCESSIVE AMOUNT OF SOIL. ANCHORING OPERATIONS SHALL BE ACROSS THE SLOPES WHERE PRACTICAL WITH NO MORE THAN TWO PASSES OF THE ANCHORING EQUIPMENT. CRIMPING BY HAND SHOVEL OR OTHER MECHANICAL MEANS SHALL BE PERFORMED ON AREAS INACCESSIBLE TO LARGE CRIMPING EQUIPMENT. MULCH SHALL BE APPLIED TO SEEDING AREAS IN ADDITION TO EROSION CONTROL BLANKET WHERE DESIGNATED.

20. **STRAW MULCH SHALL BE TACKIFIED TO THE GROUND SURFACE AT A RATE OF 200# PER ACRE**. SEEDED AREAS SHALL BE MULCHED ON THE SAME DAY AS THEY ARE SEEDED. **WOOD STRAW MAY BE SUBSTITUTED AS AN ALTERNATIVE TO STRAW MULCH & DOES NOT REQUIRE CRIMPING OR TACKIFIER.**

21. SPRAY-ON **HYDROMULCH**, IF NECESSARY, **SHALL BE RAINIER FIBER SMM** (OR APPROVED EQUIVALENT), **A HYDRAULICALLY APPLIED** MATRIX CONTAINING ORGANIC FIBERS, WATER SOLUBLE CROSS-LINKED TACKIFIER, AND REINFORCING NATURAL INTERLOCKING FIBERS AT **A RATE OF 3000 LBS/ACRE**. HYDROMULCHING SHALL BE A SECOND, SEPARATE OPERATION PERFORMED AFTER HYDROSEEDING, RAKING/HARROWING.

22. **EROSION CONTROL BLANKET (ECB) FOR UPLAND SEEDING AREAS, IF CALLED FOR ON THE PLANS, SHALL BE NEDIA S400B** (OR APPROVED EQUIVALENT) WITH TOP AND BOTTOM BIODEGRADABLE NETTING WHERE DIRECTED BY THE ECOLOGIST. PHOTODEGRADABLE PLASTIC NETTING IS PROHIBITED. **EROSION CONTROL FABRIC (ECB) FOR WETLAND SEEDING AREAS, IF CALLED FOR ON THE PLANS, SHALL BE NEDIA KOIR 700** (OR APPROVED EQUIVALENT).

FIGURE 4F

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
NOTES

NO: REVISIONS: DATE: BY:
#1
#2
#3
#4

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

MAINTENANCE :

1. ALL PLANTED & SEEDED AREAS SHALL BE WARRANTED AND MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE AND THEREAFTER UNTIL PERFORMANCE CRITERIA ARE MET OR A MINIMUM **PERIOD OF 2 FULL GROWING SEASONS** FOLLOWING INSTALLATION **(I.E., THE MAINTENANCE PERIOD)**. THE MAINTAINACE PERIOD MAY BE EXTENDED BY THE CLIENT. REFER TO PERFORMANCE CRITERIA (WARRANTY) NOTES.

MAINTENANCE TASKS WILL INCLUDE WEED CONTROL, RESEEDING AND REPLANTING.

WEED CONTROL:

1. NOXIOUS & RESTRICTED WEEDS SHALL BE MONITORED & CONTROLLED BY A QUALIFIED WEED MANAGEMENT SPECIALIST WHERE WEEDS PREVENT THE ESTABLISHMENT OF NATIVE STANDS OF VEGETATION. THE AREA WHERE WEEDS SHALL BE MANAGED INCLUDES:

- THE ACTIVE FOOTPRINT OF THE PROJECT AS DEFINED BY THE LIMITS OF DISTURBANCE (LOD);
- WETLAND MITIGATION/RESTORATION AREAS;
- ANY AREAS DISTURBED BY THE CONTRACTOR OUTSIDE OF THE LOD;
- ADJACENT, WEED INFESTED AREAS WITHIN 100 FEET OF THE LOD; AND
- ANY AREAS SPECIFICALLY INDICATED ON THE PLANS.

POTENTIAL CONTROLS SHALL INCLUDE:

A. MOWING ENTIRE SEEDED AREAS (TO CONTROL ANNUAL WEEDS PRIOR TO SEED SET).
B. MOWING LOCALIZED INFESTATIONS WITH A STRING TRIMMER.
C. HAND-DIGGING OR PULLING OF THE ROOTS.
D. HERBICIDE APPLICATION OF WATER SAFE OR OTHER APPROVED PRE- OR POST-EMERGENT HERBICIDES (DEPENDING ON WEED TYPE). A LICENSED HERBICIDE/PESTICIDE APPLICATOR MAY BE REQUIRED.
E. THE WEED MANAGEMENT SPECIALIST SHALL BE RESPONSIBLE FOR MONITORING, MANAGING AND ERADICATING PROBLEMATIC WEEDS WHEN AND WHERE THEY ARE OBSERVED THROUGH OUT THE YEAR.

SEEDING MAINTENANCE:

1. BARREN AREAS THAT FAIL TO PRODUCE A SATISFACTORY STAND OF NATIVE GRASSES OR GRASS-LIKE SPECIES SHALL BE RESEEDED AND MULCHED ACCORDING TO THESE SPECIFICATIONS.

2. GULLY, RILL AND EROSIONAL AREAS WILL BE REPAIRED AS NECESSARY UNTIL PLANTS HAVE ESTABLISHED AND EROSION PROBLEMS CEASE. EROSION CONTROL BLANKET AND/OR FABRIC MAY NEED TO BE INSTALLED, REINSTALLED OR REPAIRED.

PLANT MAINTENANCE:

1. SUBCONTRACTOR SHALL REPLACE ANY DEAD OR DYING PLANTS UP TO THE AMOUNT THAT MEETS THE PERFORMANCE CRITERIA.

2. SUPPLEMENTAL WATERING MAY BE REQUIRED TO MAINTAIN PLANT VIABILITY.

WATERING/IRRIGATION:

1. WATERING IS NOT REQUIRED IN WETLAND AREAS.

2. TEMPORARY IRRIGATION MAY BE REQUIRED TO ESTABLISH UPLAND SEED AND PLANTS (IF SPECIFIED) IF INITIAL WATERING DURING PLANT AND NATURAL PRECIPITATION ARE INSUFFICIENT TO SUSTAIN PLANTS THROUGHOUT THE MAINTENANCE PERIOD.

3. TEMPORARY IRRIGATION SYSTEM MEANS AND METHODS SHALL BE DEVELOPED BY THE CONSTRACTOR/SUBCONTRACTOR, INCLUDING THE PROVISION OF A WATER SUPPLY.

SPECIAL NOTES:

PERFORMANCE CRITERIA (WARRANTY):

THE CONTRACTOR/SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ACHIEVING THE FOLLOWING PERFORMANCE CRITERIA:.

1. ALL VEGETATION INSTALLED IN THE WETLAND MITIGATION / RESTORATION AREAS WILL BE NATIVE TO THE SITE, WATERSHED (I.E., ECOTYPIC), COLORADO AND/OR THE ECO-REGION.

2. WOODY PLANT MATERIAL (2" CAL. TREES OR GREATER), IF SPECIFIED, SHALL BE MAINTAINED AND REPLACED AT A 1:1 RATIO UP TO A 100% MINIMUM SURVIVAL RATE.

3. WOODY PLANT MATERIAL (POTTED TREES AND SHRUBS), IF SPECIFIED, SHALL BE MAINTAINED AND REPLACED UP TO A 80% MINIMUM SURVIVAL RATE.

4. WOODY PLANT MATERIAL (WILLOW CLUMPS, CUTTINGS, OR TUBLINGS) SHALL BE MAINTAINED AND REPLACED UP TO A 80% MINIMUM SURVIVAL RATE.

5. HARVESTED/SALVAGED PLANT MATERIAL, IF SPECIFIED, SHALL BE MAINTAINED AND REPLACED UP TO A 80% MINIMUM SURVIVAL RATE. REPLACEMENTS CAN BE MADE WITH NURSERY GROWN STOCK. EQUIVALENCY SHALL BE MEASURED BY ROOT MASS (E.G. 1- 5 GALLON PLANT IS EQUIVALENT TO 5 - 1 GALLON PLANTS).

6. SEEDED AREAS SHALL PRODUCE A MINIMUM OF 2 MATURE, VIABLE NATIVE PLANTS PER SQUARE FOOT.

7. 80% OF THE WETLAND SEEDED AREAS (WHERE VEGETATION IS EVIDENTLY EFFECTED BY GREATER MOISTURE LEVELS) SHALL BE COMPRISED OF THE DESIGNED SEED MIX OR OTHER DESIRABLE SPECIES (I.E., NATIVE OR NATURALIZED COLONIZERS, BUT NOT NOXIOUS WEEDS).

8. 80% OF UPLAND AND/OR RIPARIAN SEEDED AREAS (IF SPECIFIED HEREIN) SHALL BE COMPRISED OF THE OF SPECIES PRESENT PRIOR TO DISTURBANCE OR OTHER DESIRABLE SPECIES (I.E., NATIVE OR NATURALIZED COLONIZERS, BUT NOT NOXIOUS WEEDS).

9. NOXIOUS & RESTRICTED WEEDS (AS PER STATE STATUTE) SHALL NOT EXCEED A MEAN FOLIAR COVER OF 0% FOR THOSE ON THE A LIST 10% ON THE B AND C LISTS. OTHER COMMON WEEDS (NOT LISTED) SHALL NOT EXCEED A MEAN FOLIAR COVER OF 10%

10. PERFORMANCE CRITERIA WILL BE ASSESSED BY THE ECOLOGIST ACCORDING TO STANDARD MONITORING METHODOLOGIES AND PROTOCOLS ESTABLISHED IN FEDERAL GUIDANCE DOCUMENTS.

11. PERFORMANCE CRITERIA FOR U.S. ARMY CORP OF ENGINEERS (USACE) PERMIT/MITIGATION COMPLIANCE ONLY APPLIES TO WETLAND SEEDING AND WILLOW PLANTING DIRECTLY ASSOCIATED WITH RESTORATION OF TEMPORARY IMPACTS TO WATERS OR WETLANDS OUTLINED IN THE PERMIT. PERFORMANCE CRITERIA FOR TREES OR SHRUBS VOLUNTARILY PLANTED IN RIPARIAN OR UPLAND AREAS (I.E., NOT REQUIRED BY A FEDERAL OR STATE PERMIT) ARE FOR THE BENEFIT OF THE CLIENT.

MIGRATOARY BIRDS, RAPTORS & TREE REMOVAL:

1. NO TREES, SHRUBS, OR GROUND BURROWS SHALL BE REMOVED OR BURRIED THAT CONTAIN ACTIVE NESTS OR NEST CAVITIES OF BIRDS WHILE THEY ARE NESTING, BREEDING, LAYING EGGS OR FLEDGING. TREES, ARTIFICIAL NEST SITES OR GROUND BURROW THAT ARE ACTIVELY BEING USED BY MIGRATORY BIRDS OR RAPTORS SHALL NOT BE HARMED UNTIL FLEDGLINGS AND ADULTS HAVE LEFT THE NEST/BURROW FOR THE SEASON. NO BIRD SHALL BE HARASSED (INTENTIONAL OR UNINTENTIONAL) TO LEAVE OR ABANDON A NEST SITE OR BURROW AS SUCH ACTIONS ARE SUBJECT TO VIOLATION AND POSSIBLE FINES UNDER THE MIGRATORY BIRD TREATY ACT (MBTA) OR BALD AND GOLDEN EAGLE PROTECTION ACT (BGEPA).

ANY CIVIL, CRIMINAL PENALTIES OR FINES ASSESSED AS A RESULT OF CONTRACTOR NEGLIGENCE FOR FAILURE TO ABIDE BY THE MBTA OR BGEPA SHALL BE BORN BY THE CONTRACTOR OR SUBCONTRACTOR RESPONSIBLE FOR THE VIOLATION.

NUISANCE AND INVASIVE SPECIES:

1.THE CONTRACTOR SHALL PREVENT THE SPREAD OF AQUATIC NUISANCE SPECIES AND NOXIOUS AND RESTRICTED WEEDS. THE CONTRACTOR SHALL CLEAN ALL EQUIPMENT PRIOR TO MOBILIZATION TO THE SITE TO REMOVE ALL AQUATIC NUISANCE SPECIES AND WEED SEED IN ACCORDANCE WITH STATE OF COLORADO AQUATIC NUISANCE SPECIES (ANS) REGULATIONS.

2. CONTRACTOR SHALL AVOID TRANSPORTING WEED SEEDS ON TO THE SITE WHICH MAY ADHERE TO EQUIPMENT, VEHICLES, CLOTHING, OR GEAR. IF WEED SEED IS DISCOVER ON ANY OF THE ABOVE, THE CONTRACTOR SHALL PLACE THE SEEDS IN A PLASTIC BAG OR SIMILAR CONTAINER AND DISPOSE OF PROPERLY.

3. CONTRACTOR SHALL AVOID DRIVING IN NOXIOUS WEED INFESTED AREAS PRIOR TO ENTERING THE SITE. INSPECT VEHICLES FOR WEED SEEDS STUCK IN TIRE TREADS OR MUD ON THE VEHICLE AND PREVENT THEM FROM BEING CARRIED TO UNAFFECTED AREAS. DON'T CLEAN INFESTED VEHICLES IN WEED FREE AREA.

4. CONTRACTOR SHALL USE HAY, STRAW, OR MULCH THAT HAS BEEN CERTIFIED WEED FREE.

5. ANY WEED FLOWERS OR SEEDS THAT ARE FOUND ON CONTRACTOR EQUIPMENT WHILE ON SITE SHALL BE PLACED IN A DISPOSABLE BAG OR SIMILAR CONTAINER AND DISPOSED OF PROPERLY.

6. CONTRACTOR SHALL RESTRICT TRAVEL TO ESTABLISHED ROADS AND TRAILS WHENEVER POSSIBLE AND NOT DRIVE THROUGH SENSITIVE AREAS.

7. CONTRACTOR SHALL AVOID LEAVING PILES OF EXPOSED SOIL IN CONSTRUCTION AREAS.

8. REFER TO PLANTING NOTES ON THE HANDLING, DISPOSAL, AND TREATMENT OF PLANT PIT SPOILS.

WILDLIFE DEPREDATION:

1. PROACTIVELY OR UPON SIGNS OF DAMAGE OR LOSS, THE SUBCONTRACTOR SHALL BE PREPARED TO INSTALL CAGING OR FENCING AROUND PLANTED MATERIAL OR SEEDING AREAS, IMPLEMENT DETERRENTS, OR TAKE ALTERNATIVE MEASURES TO PREVENT FURTHER DAMAGE OR LOSS OF INSTALLED SEED OR PLANTS DUE TO WILDLIFE DEPREDATION, INCLUDING, BUT NOT LIMITED TO BEAVER, PORCUPINE, DEER, ELK, GEESE AND WATERFOWL.

A. WATERFOWL PROTECTION: WATERFOWL ARE KNOWN TO PULL OUT NEWLY SEEDED OR PLANTED HERBACEOUS WETLAND PLUGS BEFORE THEY HAVE HAD TIME TO ROOT. WATERFOWL DETERRENT SHALL CONSIST OF INSTALLING A GRID OF 4' TO 6' T-POSTS (OR EQUIVALENT) APPROXIMATELY 10 FEET ON CENTER WITH 2 LEVELS OF TAUGHT MASON TWINE SECURELY STRUNG TO EACH POST. REFLECTIVE BIRD "REPELLER" RIBBON SHALL THEN BE HUNG EVERY 10 FEET ON THE DOUBLE LAYER OF TWINE. ALTERNATIVELY, RANDOMLY TIMED "SHOTGUN" BLASTS OR TRAINED DOGS MAY ALSO BE USED.

UTILITY LOCATIONS:

1. UTILITY LOCATIONS AND MARKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COLORADO LAW REQUIRES CONTRACTORS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:**1-800-922-1987**

2. ANY UTILITIES THAT ARE STRUCK AND DAMAGED BY THE GENERAL CONTRACTOR OR CONTRACTOR AS A RESULT OF FAILING TO GET PROPER LOCATES SHALL BE REPLACED AT NO EXPENSE TO THE CLIENT.

CLEAN-UP:

1. ANY TRASH OR DEBRIS PRODUCED BY CONSTRUCTION CREWS SHALL BE CONTAINED, REMOVED FROM THE SITE AND DISPOSED OF PROPERLY ON A DAILY BASIS AND UPON COMPLETION OF THE PROJECT. WIND BLOWN TRASH OR ANY OTHER CONSTRUCTION DEBRIS LEFT BY THE CONTRACTOR OR THEIR SUBCONTRACTORS TRASH WILL NOT BE TOLERATED.

ADDITIONAL GENERAL NOTES:

1. PLANS, PERMITS AND CLARIFICATIONS - THE CONTRACTOR SHALL ENSURE ONE COPY OF THE FOLLOWING PLANS ARE ON SITE AT ALL TIMES:

A. CONSTRUCTION/RESTORATION PLANS

B. STORMWATER MANAGEMENT PLAN (SWMP)/GRADING, EROSION & SEDIMENT CONTROL (GESC) PLAN

C. CLEAN WATER ACT (CWA), SECTION 404 PERMIT & APPLICATION, INCLUDING PERMITTED WETLAND IMPACT MAPS.

D. ALL OTHER PERMITS REQUIRED FOR THE PROJECT

THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL SUBCONTRACTORS WITH THE APPROVED PLANS AND PERMITS AND VERIFYING THAT ALL CONSTRUCTION IS DONE IN ACCORDANCE WITH THE APPROVED PLANS AND PERMITS. **ANY VIOLATION OF ANY LAW OR PERMIT CONDITIONS BY THE CONTRACTOR OR THEIR SUBCONTRACTORS AND SUBSEQUENT FINES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, NOT THE CLIENT. THE CONTRACTOR SHALL ENFORCE ALL PERMIT CONDITIONS.** THE CONTRACTOR SHALL CONTACT THE ECOLOGIST IN WRITING FOR CLARIFICATION OR DISCREPANCIES ON ANY INFORMATION SHOWN IN THE PLANS OR PERMITS.

2. EL PASO COUNTY STANDARDS SHALL APPLY EXCEPT WHERE OTHERWISE PROVIDED FOR IN THESE PLANS AND NOTES, .

3. ANY ESTIMATE OF QUANTITIES OR COSTS PROVIDED IN THE PLANS OR BID SCHEDULES SHALL BE VERIFIED BY THE CONTRACTOR/SUBCONTRACTOR, WHO SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES AND COSTS FOR PROVIDING WORK AND MATERIALS AS SHOWN ON THE PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ON-SITE CONDITIONS AND PERFORM AN INDEPENDENT TAKE-OFF OF ALL QUANTITIES, TO NOTIFY THE CLIENT AND ECOLOGIST OF ANY DISCREPANCIES (INCLUDING UNLISTED ITEMS), AND TO SUBMIT AN ADD-ALTERNATE BID IDENTIFYING THE DISCREPANCIES PRIOR TO FINAL EXECUTION OF THE CONSTRUCTION CONTRACT. AFTER CONTRACT AWARD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING ANY DISCREPANCIES OR CHANGES THAT MAY BE REQUIRED AND SUBMIT CHANGE ORDERS TO THE ECOLOGIST AND/OR CLIENT FOR REVIEW, APPROVAL OR REASONABLE DENIAL.

4. ALL PROPERTY PINS, INTERSECTION MONUMENTS, AND SECTION CORNERS DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION MUST BE REFERENCED AND REPLACED UNDER SUPERVISION OF A LICENSED SURVEYOR AT THE CONTRACTOR'S COST.

FIGURE 4G

GRANDVIEW RESERVE
NATIONWIDE PERMIT 29
NOTES

NO:	REVISIONS:	DATE:	BY:
#1			
#2			
#3			
#4			

DRAWN BY: JBD
CHECKED BY:
DATE: 11/13/23
PROJECT NO: 2021-3-2

1455 Washburn Street
Erie, Colorado 80516
(p): 970-812-3267

11.0 Compliance with NWP 29 & NWP General Conditions

11.1 NWP 29 Compliance

NWP 29 authorizes "Discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of a single residence, a multiple unit residential development, or a residential subdivision. This NWP authorizes the construction of building foundations and building pads and attendant features that are necessary for the use of the residence or residential development. Attendant features may include but are not limited to roads, parking lots, garages, yards, utility lines, storm water management facilities, septic fields, and recreation facilities such as playgrounds, playing fields, and golf courses (provided the golf course is an integral part of the residential development)."

The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters.

Subdivisions: For residential subdivisions, the aggregate total loss of waters of United States authorized by this NWP cannot exceed 1/2-acre. This includes any loss of waters of the United States associated with development of individual subdivision lots.

The Project will not cause the loss of greater than 1/2-acre of non-tidal waters of the United States; and it does not propose discharges of dredged or fill material into non-tidal wetlands adjacent to tidal waters.

11.2 NWP General Conditions

1) The activity will not affect Navigation.
2) The activity will not affect Aquatic Life Movements.
3) The activity will not affect Spawning Areas.
4) The activity will not affect Migratory Bird Breeding Areas (refer to Section 7 of this PCN).
5) The activity will not affect Shellfish Beds.
6) Suitable Material free from toxic pollutants in toxic amounts will be used as backfill.
7) The activity will not affect Water Supply Intakes.
8) The activity will not cause Adverse Effects from Impoundments of water nor any adverse effects to the aquatic system from said impoundments.
9) Water Flows will be managed to the maximum extent practicable to maintain the preconstruction course, condition, capacity, and location of open waters.
10) The activity will comply with applicable FEMA-approved state or local floodplain management requirements for any fill material placed within the 100-Year Floodplain.
11) Heavy Equipment working in wetlands or mudflats will be placed on mats, or other measures will be taken to minimize soil disturbance.
12) Appropriate Soil Erosion and Sediment Controls will be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark, will be permanently stabilized at the earliest practicable date.
13) Temporary Structures will be removed, to the maximum extent practicable, after their use has been discontinued. Temporary Fills will be removed in their entirety and the affected areas returned to original/preconstruction elevations. The affected areas will be revegetated, as appropriate.
14) Any authorized structure or fill will be Properly Maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions.

15) The proposed activity is the first phase of a Single and Complete Project. Subsequent phases, which may or may not be under the same site or project ownership will take place over the next 5, 10 or 15 years beyond what can be reasonably planned, designed, assessed or permitted at this time.
16) The activity will not affect Wild and Scenic Rivers or any river officially designated by Congress as a ‘‘study river’’.
17) The activity or its operation will not impair any Reserved Tribal Rights.
18) The activity will not directly or indirectly jeopardize the continued existence of a Threatened or Endangered Species or a species proposed for such designation, as identified under the Federal Endangered Species Act (refer to Section 6 of this PCN).
19) The activity will comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (refer to Section 7 of this PCN).
20) The activity is not known to have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places and will comply with the requirements of Section 106 of the National Historic Preservation Act (refer to Section 8 of this PCN).
21) If the Applicant Discovers Previously Unknown Historic, Cultural or Archeological Remains and/or Artifacts while accomplishing the activity authorized by the NWP, they will immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed.
22) The activity will not affect Designated Critical Resource Waters.
23) Mitigation: The activity has been designed and will be constructed in a manner that avoids and minimizes adverse effects, both temporary and permanent, to WOTUS to the maximum extent practicable at the Project site. The Applicant intends to purchase credit for permanent impacts from the Maria Lake Mitigation Bank. Onsite restoration rehabilitation and reestablishment of temporarily impacted waters and wetland is proposed in this PCN.
24) The activity proposes the construction of an Impoundment Structures for stormwater management. Therefore, the Applicant will ensure that all stormwater management facilities are safely designed by a Colorado-licensed, Professional Engineer in compliance with established dam safety criteria.
25) The state of Colorado has previously certified compliance of NWP 29 with CWA Section 401.
26) The activity will not occur within a Coastal Zone.
27) The NWP 29 activity does not have any regional conditions that have been added by the Division Engineer.
28) The activity does not propose the Use of Multiple Nationwide Permits.
29) The activity does not propose the Transfer of Nationwide Permit Verifications.
30) The Applicant will provide a signed Compliance Certification of the NWP verification letter received from the USACE and document completion of the authorized activity.
31) The Activity will not Affect Structures or Works Built by the United States.
32) The Applicant has striven to provide a complete PCN for review by the USACE and will provide additional information as deemed necessary.

11.0 Conclusions

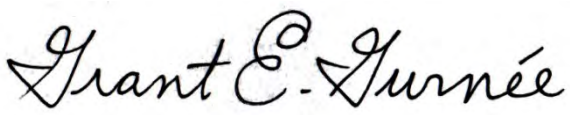
The activity has been designed and will be constructed in a manner that avoids and minimizes adverse effects to WOTUS, both temporary and permanent, to the maximum extent practicable. The Project proposes a permanent loss of 0.116-acre of WOTUS; and a temporary disturbance of 0.370-acre of WOTUS. No indirect adverse environmental effects to WOTUS are proposed.

The Project proposes establishment of 62 linear feet of waters and 0.100-acre of wetland resulting in a net gain of WOTUS and overall reduction of permanent impacts to 0.016-acre. As such, the Applicant intends to purchase 0.016-acre of credit for permanent impacts from the Maria Lake Mitigation Bank. Mitigation for 0.370-acre of temporary impacts will be conducted via restoration rehabilitation and reestablishment as proposed in this PCN. The proposed Project meets all of the conditions of NWP 29 and the NWP General Conditions. Therefore, the Applicant is requesting authorization of this Project under NWP 29.

Please let us know if we need to provide additional information to assist the USACE with the review of this PCN.

Respectfully submitted by:

Ecosystem Services, LLC



Grant E. Gurnée, P.W.S.
Owner - Restoration Ecologist

Jon Dauzvardis, P.W.S.
Owner - Restoration Ecologist

REFERENCES

Chapman, S.S, G.E. Griffith, J.M. Omernik, A.B. Price, J. Freeouf, and D.L. Schrupp. 2006. Ecoregions of Colorado (color poster with map, descriptive text, summary tables and photographs): Reston, Virginia, U.S. Geological Survey.

CNHP (Colorado Natural Heritage Program). 2001. Survey of Critical Biological Resources, El Paso County, Colorado. Available at: https://cnhp.colostate.edu/wp-content/uploads/download/documents/2001/elpaso_final.pdf

CNHP. 2016. CNHP Conservation Status Handbook (Tracking Lists). El Paso County Tracking List sorted by the Monument Quadrangle. Available at: http://www.cnhp.colostate.edu/download/list.asp. Last accessed: August 3, 2022.

CNHP. 2023. Colorado Wetland Inventory Mapping Tool. Available at: http://www.cnhp.colostate.edu/cwic/location/viewSpatialData.asp.

Colorado Oil and Gas Conservation Commission. 2023. Web GIS Data. Accessed at: https://cogccmap.state.co.us/cogcc_gis_online/

El Paso County. 2000. El Paso County 2000 Tri-Lakes Comprehensive Plan. Accessed at: http://dev.adm2.elpasoco.com/Planning/comp_plan/default.asp

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

Lemly, J., B. Johnson, and L. Gilligan. 2013. Setting Mitigation in the Watershed Context: Demonstration and Description of Colorado's Watershed Approach to Compensatory Wetland Mitigation.

Lemly, J., L. Gilligan, G. Smith, and C. Wiechmann. 2015. Lower Arkansas River Basin Wetland Mapping and Reference Network. Colorado Natural Heritage Program, Colorado State University, Fort Collins, Colorado

NTCHS (National Technical Committee for Hydric Soils). 1994. *Changes in Hydric Soils of the United States* (including the NTCHS definition of Hydric Soil). Federal Register Volume 59, Number 133. Wednesday, July 13, 1994.

USACE (U.S. Army Corps of Engineers). 2010. Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Western Mountains, Valleys and Coasts Region (Version 2) (USACE, 2010).

USACE. 2015. Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division USACE referenced at: https://www.spd.usace.army.mil/Portals/13/docs/regulatory/mitigation/MitMon.pdf

USACE. 2020. Colorado Mitigation Procedures, Version 2.0. United States Army Corps of Engineers Albuquerque, Omaha, and Sacramento Districts. June 2020. Referenced at: https://www.spa.usace.army.mil/Portals/16/docs/civilworks/regulatory/Mitigation/2020.06.23.COMP.v2.pdf?ver=2020-06-25-122321-737

USACE. 2021. 12501-SPD REGULATORY PROGRAM STANDARD OPERATING PROCEDURE FOR DETERMINATION OF MITIGATION RATIOS. United States Army Corps of Engineers, South Pacific Division. March 5, 2021. Referenced at: https://www.spd.usace.army.mil/Portals/13/docs/regulatory/qmsref/ratio/12501-SPD.pdf

USDA (U.S. Department of Agriculture). 2021. USDA PLANTS Database. Available at: http://plants.usda.gov/.

USDA, Natural Resources Conservation Service (NRCS). 2010. Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 7.0. L.M. Vasilas, G.W. Hurt and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

USDA, NRCS. 2015. National Hydric Soils List 2015 Colorado. Available at: https://www.codot.gov/programs/environmental/wetlands/tools.html and click on 2015 National Hydric Soils List, Colorado. Last accessed on August 3, 2022.

USDA, NRCS. 2023. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

U.S. Fish and Wildlife Service (USFWS). 2023. Information, Planning, and Conservation System. Available at: https://ecos.fws.gov/ipac/location/A2XIY6UBGFAZBLUQSOUCM5SYUU/resources

Weber, William A. and R.C. Wittmann. 2012. Colorado Flora: Eastern Slope, Fourth Edition. University Press of Colorado, Boulder, Colorado.

Wohl, Ellen. 2021. Legacy effects of the loss of beavers in the Continental Unites States. Environmental Research Letters, Volume 16, Number 2 (2021) 025010. Accessed at: https://iopscience.iop.org/article/10.1088/1748-9326/abd34e

Appendix A
USFWS IPaC Trust Resources Report

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

El Paso County, Colorado

Local office

Colorado Ecological Services Field Office

(303) 236-4773
(303) 236-4005

MAILING ADDRESS
Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486

PHYSICAL ADDRESS
134 Union Boulevard, Suite 670
Lakewood, CO 80228-1807

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:

Mammals

NAME	STATUS
Gray Wolf *Canis lupus* This species only needs to be considered if the following condition applies: • Lone, dispersing gray wolves may be present throughout the state of Colorado. If your activity includes a predator management program, please consider this species in your environmental review. There is **final** critical habitat for this species. https://ecos.fws.gov/ecp/species/4488	Endangered
Preble's Meadow Jumping Mouse *Zapus hudsonius preblei* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4090	Threatened

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover *Charadrius melodus* This species only needs to be considered if the following condition applies: • Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened

Fishes

NAME	STATUS
Greenback Cutthroat Trout *Oncorhynchus clarkii stomias* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2775	Threatened

NAME	STATUS
Pallid Sturgeon Scaphirhynchus albus Wherever found	Endangered

This species only needs to be considered if the following condition applies:

- Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7162

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found	Candidate

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Ute Ladies'-tresses Spiranthes diluvialis Wherever found	Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2159

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 below.

Additional information can be found using the following links:

- Eagle Managment 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, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list 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 Oct 15 to Jul 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 Dec 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 and understand the FAQ "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.

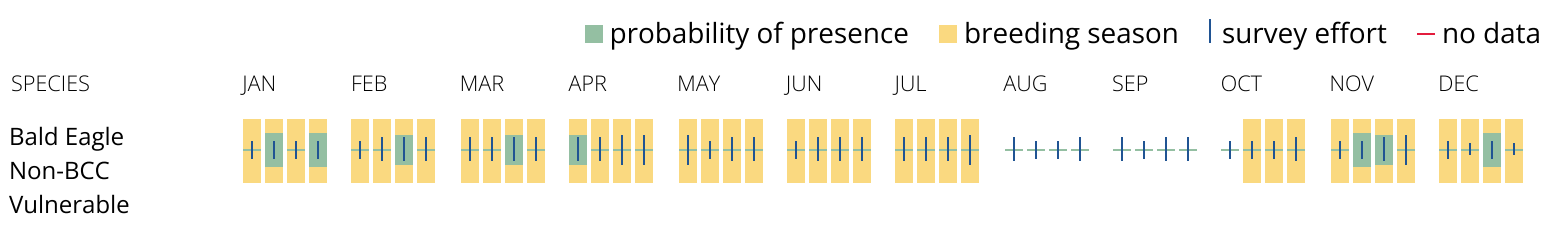
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.

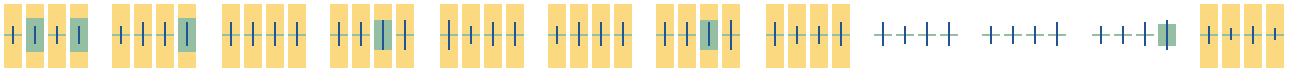
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Golden Eagle
Non-BCC
Vulnerable



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 below.

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, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list 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 Oct 15 to Jul 31
Ferruginous Hawk Buteo regalis 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/6038	Breeds Mar 15 to Aug 15
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 Dec 1 to Aug 31
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere

Pinyon Jay Gymnorhinus cyanocephalus — Breeds Feb 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/9420

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 and understand the FAQ "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.

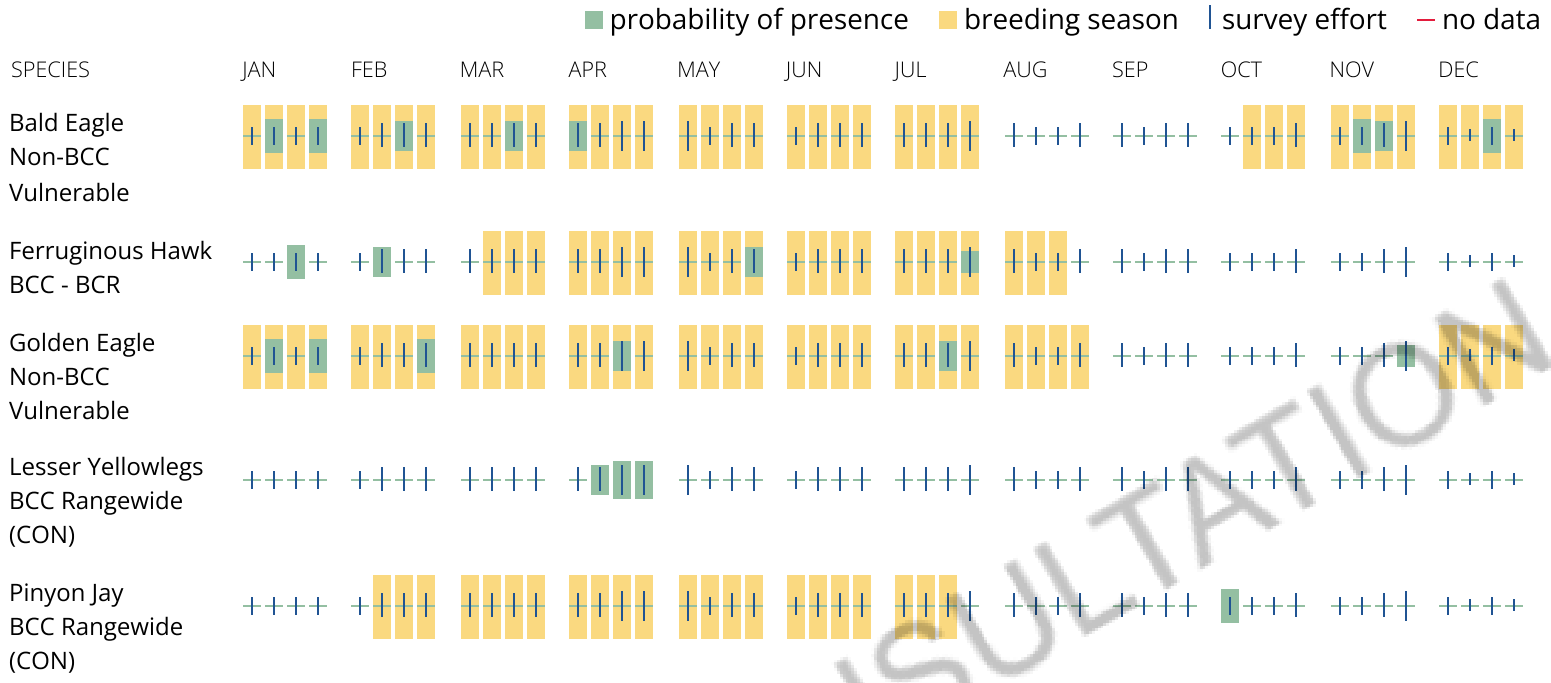
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



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 POND

PUSC

RIVERINE

R4SBA
R4SBC
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.

Appendix B
ESA Clearance Request and USFWS Concurrence

ecos ecosystem services LLC

Informal Consultation Request

April 10, 2020

Mr. Drue DeBerry
Acting Colorado Field Supervisor
U.S. Fish and Wildlife Service
Colorado Ecological Services Field Office
134 Union Blvd., Suite 670
Lakewood, Colorado 80228

RE: Request for Technical Assistance Regarding the Likelihood of Take of Federally-listed Threatened and Endangered Species resulting from the proposed development of the Grandview Reserve Project in El Paso County, Colorado

Dear Mr. DeBerry:

Ecosystem Services, LLC (ecos) has prepared the enclosed habitat evaluation on behalf of 4 Site Investments to describe the physical/ecological characteristics of the Grandview Reserve site (Site) and evaluate the potential effects of the proposed development project (Project) on the Federally-listed threatened and endangered (T&E) species protected under the Endangered Species Act (ESA).

The El Paso County Environmental Division has completed its review of the Project and has requested that 4 Site Investments provide a "Clearance Letter" obtained from the U.S. Fish and Wildlife Service (USFWS) to the Planning and Community Development Department prior to project commencement "where the project will result in ground disturbing activity in habitat occupied or potentially occupied by threatened or endangered species and/or where development will occur within 300 feet of the centerline of a stream or within 300 feet of the 100 year floodplain, whichever is greater."

At this time there is no Federal action and no Federal agency is making a formal effects determination under Section 7 (a)(2) of the ESA. Therefore, ecos is requesting technical assistance from USFWS regarding 4 Site Investments' (i.e., the non-federal party) responsibilities under the ESA, and specifically the likelihood of the Project (described herein) resulting in take of listed species. If the USFWS concurs with the findings presented herein we request that you issue an informal letter of concurrence for use in the El Paso County Project review process.

1.0 SITE LOCATION and PROJECT DESCRIPTION

The Site is located in the Falcon/Peyton area of El Paso County and is bounded along the north by 4 Way Ranch Phase I, along the south by Waterbury, along the southeast by Highway 24, and along the west by Eastonville Road. There are no existing structures, roads, or other infrastructure on the Site. The Site is located approximately 4.14 miles southwest of Peyton, 4.16 miles northeast of Falcon and 4.66 miles south of Eastonville, in El Paso County, Colorado. The Site is generally located within the south ½ of Section 21, south ½ of Section 22, the north ½ of Section 27, and the north ½ of Section 28, Township 12 South, Range 64 West in El Paso County, Colorado. The center of the Site is situated at approximately Latitude 38.98541389 north, -104.55472222 east (refer to Figure 1).

Technical Assistance
Tracking Number: 2019-TA-0460

U.S. FISH AND WILDLIFE SERVICE

(•) NO CONCERNS

( ) CONCUR NOT LIKELY TO ADVERSELY AFFECT

( ) NO COMMENT

04/29/2020

Liisa Schmoele DATE

Colorado Assistant Field Supervisor

Remarks: Ute ladies'-tresses orchid and Preble's mouse are not likely to occupy the project site. Project is still consistent with the section 7 conclusions from 2019.

Appendix C
OAHP Database Search Results

History Colorado

Grant E. Gurnee
Ecosystem Services
11712 Montgomery Circle Longmont CO 80504

November 17, 2023

Re: Grandview Development project /2021-3-2
File Search No. 25853

At your request, the Office of Archaeology and Historic Preservation has conducted a search of the Colorado Inventory of Cultural Resources based on your specified search criteria (the area shown in the provided shapefiles), located in the following areas:

PM	T	R	S
6th	12S	64W	22, 28, 21, 27

1 sites and 1 surveys were located in the search area(s).

If any site, district, building, structure, object, or survey area was identified within the search area, a spreadsheet of detailed information* accompanies this letter. Our records may not represent all cultural resources in Colorado, nor can they be considered comprehensive, as most of the state has not been surveyed for cultural resources. There is the possibility that as yet unidentified cultural resources exist within the proposed impact area.

This letter is not considered formal consultation under Section 106 of the National Historic Preservation Act (36 CFR 800) or the Colorado Register of Historic Places (CRS 24-80.1). In the event that there is federal or state agency involvement, please note that it is the responsibility of the agencies to meet the requirements of these regulations.

We look forward to consulting with you regarding the effect of the proposed project on significant cultural resources in accordance with the Advisory Council on Historic Preservation regulations titled “Protection of Historic Properties” or the Colorado Register of Historic Places, as applicable (http://www.historycolorado.org/consultation-guidance).

If you have any questions, please contact the Office of Archaeology and Historic Preservation at (303) 866-3392. Thank you for your interest in Colorado's cultural heritage.

Dawn DiPrince
State Historic Preservation Officer

*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. As such, legal locations of these resources must not be included in documents for public distribution.