Airport Surplus Canal Relocation
Aquatic Resources
Report

Prepared for:

Attn: Patty Nelis
Airport Environmental Manager
P.O. Box 145550
Salt Lake City, UT 84114
(801) 575-2400

Prepared by:

154 East 14075 South
Draper, UT 84020
801-495-2224

February 2023

Executive Summary

The Airport Surplus Canal Relocation Project aquatic resource delineation was conducted according to the Corps of Engineers Wetlands Delineation Manual (ACOE 1987) and the Arid West Supplement (ACOE 2008).

A total of 280 acres were surveyed as part of this delineation. During the delineation, 16 aquatic resources were identified, for a total of 26.92 acres of wetlands, 21.77 acres of excavated and natural ponds, 10,634 linear feet of the canals, and 0.38 acres of upland features of note. The aquatic resource identified in the project area is classified as PEM5C (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded), PEM5E (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded/Saturated), PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated), R2UBGx (Riverine, Lower Perennial, Unconsolidated Bottom, Intermittently Exposed, Excavated), PAB1F (Palustrine, Aquatic Bed, Persistent, Semi-permanently Flooded), PUBGx (Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated), PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated), PUBE (Palustrine, Unconsolidated Bottom, Seasonally Flooded/Saturated), and U (Upland), according to the NWI classification system. The condition of these resources was typical at the time of the delineation.

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

INTRODUCTION

This document presents results of a delineation of aquatic resources delineation conducted for the Salt Lake City International Airport (Airport) by Bowen Collins & Associates (BC&A) at the Airport Surplus Canal Relocation Project Site in Salt Lake County, Utah. The Airport is planning an end around taxiway and expanded employee parking area within the delineation area to accommodate the expanding infrastructure of the Airport. The addition of these facilities will require the re-routing of the Surplus Canal to the south of the project area. The purpose of this delineation is to determine potential wetlands for further impact analysis for this proposed project.

SITE LOCATION AND METHODOLOGY

The project area is located in Salt Lake County County, Utah, Sections 31, 32, and 33 of Township 1N, and Sections 4 and 5 of Township 1S in Range 1W. Directions to the site are as follows: From Bountiful, proceed south on 1-15 for about 3 miles to Exit 313 towards I-215 South. Take a right (west) onto I-215 South and continue for almost 6 miles. Take Exit 22B for 1-80 West toward the Salt Lake International Airport/Reno. Continue for 1 mile and keep right to go north, merging onto Terminal Drive. After three-quarters of a mile, take a slight right (east) to 3700 West Air Cargo. Keep right (east) at the fork and turn right (south) onto 3700 West. Travel south for about a quarter of a mile and take a left (southeast) at the fork to continue on 3700 West for about a quarter of a mile. Take a right (west) onto 100 North and continue through the gate to the west. Parking is available within the gate and the project site and accessible from this location. (See Site Location Figures, Appendix A).

The area delineated is approximately 280 acres of land, which was previously the Wingpointe Golf Course. This golf course was constructed on the remnants of a landfill, with topsoil and fill material brought in from adjacent properties to cover the landfill. The golf course has been closed since 2015 and is currently overgrown with grasses and noxious weeds. The Surplus Canal and North Point Canal Conveyance System, both manmade canals, run through the project area, which discharge into the wetlands surrounding the Great Salt Lake and Farmington Bay. Security fences were installed in the early 2000s, which cross through the delineation area in multiple locations, but do not alter any surface water flows. Both the canals and previous golf course design create a varied landscape, with many hills, depressions, and ponds which used to be heavily irrigated. There is no interstate or foreign commerce taking place on or within the delineated wetlands.

Field work for this delineation was conducted on October 27th, 2022, by Merissa Davis and Cara Glabau of BC&A. The total area delineated was approximately 280 acres and this entire area was observed during the site visit. Field conditions during the survey were clear and the area had not received precipitation for several days prior. The project area has the facilities for irrigation but has not been irrigated for about seven years.

The Custom Soil Resource Report for Salt Lake Area, Utah (NRCS 2022a) was used to determine soil types for the area. National Wetlands Inventory (NWI) data was also examined to obtain the location of possible jurisdictional wetlands on the site (see NWI figure, Appendix B). The wetland delineation was conducted according to the Corps of Engineers Wetlands Delineation Manual (ACOE 1987), Arid West Supplement (ACOE 2008), with a minimum of one sampling point per wetland area. Upland points were also sampled to further confirm wetland boundaries. A total of

19 points were sampled to delineate the wetlands within the delineation area, and these were sufficient to determine the location of the wetland boundaries. Points and boundaries were recorded using ArcGIS Collector connected with a Trimble R1 GPS receiver for sub-meter accuracy.

Based on the Manual, wetlands were identified using three criteria:

- Hydrophytic Vegetation
- Wetlands Hydrology
- Hydric Soils

Two out of the three criteria must be present to qualify as a wetland. An explanation of these wetland criteria follows.

Hydrophytic Vegetation

Hydrophytic plants are plants that are adapted to wet conditions. The National Wetland Plant List for the Arid West Region (ACOE 2012) was used to determine the wetland indicator status of dominant plant species encountered on sample plots. Sight-identification was used to determine most plant species.

Wetland Hydrology

Wetland hydrology is present when an area is inundated either permanently or periodically at mean water depths of two meters, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation. Primary hydrologic indicators also include high water tables, oxidized root channels, and sediment and drift deposits. Common secondary hydrologic indicators include watermarks, drainage patterns, and the FAC neutral test.

Hydric Soils

In Field Indicators of Hydric Soils in the U.S. (NRCS 2010) the Natural Resources Conservation Service (NRCS) defines hydric soils as soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the top 12 to 20 inches of soil, depending on soil texture. Hydric properties of soils were assessed using a spade to excavate the soil pit, and Munsell soil color charts to determine soil color.

RESULTS

Vegetation

Vegetation was identified primarily based on flowering parts and structural characteristics. Vegetation data collected and photos of the general vegetation for each sample point can be found in the Wetland Determination Data Forms (see Appendix C). The delineated area is dominated by native grasses and noxious weeds in the uplands and phragmites in the wetland areas. Plants that occur at the sampling locations are listed in Table 1 on the next page.

Table 1
Plants Observed at the Airport Surplus Canal Relocation Project Site

Latin Binomial	Common Name	Region 8 Indicator Status*
Salicornia utahensis	Utah Swampfire	OBL
Allenrolfea occidentalis	Pickleweed	FACW
Phragmites australis	Common Reed	FACW
Salix exigua	Narrowleaf Willow	FACW
Dipsacus fullonum	Fuller's Teasel	FAC
Distichlis spicata	Saltgrass	FAC
Elaeagnust angustifolia	Russian Olive	FAC
Tamarix chinensis	Five-Stamen Tamarisk	FAC
Cirsium arvense	Canada Thistle	FACU
Lepidium perforatum	Clasping Pepperweed	FACU
Phleum pratense	Timothy	FACU
Rosa woodsia	Woods Rose	FACU
Salsola tragus	Russian Thistle	FACU
Sisymbrium altissimum	Tall Tumblemustard	FACU
Bromus tectorum	Cheatgrass	UPL
Cardaria draba	Whitetop	UPL
Heterotheca spp.	Aster	UPL
Sphaeralcea spp.	Globemallow	UPL
Thinopyrum intermedium	Intermediate Wheatgrass	UPL

*Indicator Status:
OBL = occurs in aquatic resources > 99% of time
FACW = occurs in aquatic resources 67-99% of time
FAC = occurs in aquatic resources 34-66% of time
FACU = occurs in aquatic resources 1-33% of time
UPL = occurs in uplands > 99% of time
(Note: Hydrophytic plant species are shaded gray)

Hydrology

The hydrology of the site is primarily the result of both the Surplus Canal and the North Point Canal Conveyance System, plus some hydrology sourced directly from stormwater runoff. The Surplus Canal diverts water from the Jordan River and flows through the delineation area before it continues north of the airport and discharges into Farmington Bay. The North Point Canal Conveyance System is a controlled diversion of the Surplus Canal, which flows through the middle of the delineation area. This diversion was made to create ponded areas for the now abandoned golf course. After leaving the project area it is carried above the Surplus Canal and then flows in a concrete lined canal, continuing to the east to discharge into wetlands abutting the Great Salt Lake. Both the Surplus Canal and the North Point Canal Conveyance System have additional points of diversion downstream of the project area. The extents of these canals and drains can be seen in Appendix F.

Additional hydrology in some areas had no connection to the canals and rather comes from storm water runoff, seasonally pooling between the roadway and the golf course in roadside depressions.

Primary hydrologic indicators at the site included surface water, soil saturation, and surface soil cracks. Secondary indicators often included the FAC-Neutral test. Hydrologic data collected at the sample points can be found in the Wetland Determination Data Forms (see Appendix C). Overall, the ordinary high water marks of all the channels or ponds were clearly identified by drift deposits, changes in vegetation/soil, and erosion patterns (see Appendix E and Additional Photos, Appendix H).

Soils

The soils at the site are primarily alluvium and/or lacustrine deposits. The Salt Lake Area, Utah Soil Survey (NRCS 2022a) was referenced to determine soil types for the area. In addition to areas with water, the following soil types occur within the delineated area:

- Deckerman fine sandy loam, 0-1% slopes, somewhat poorly drained
- Deckerman loam, strongly saline, sodic, 0-1% slopes, somewhat poorly drained
- Dumps
- Leland fine sandy loam, 0-1% slopes, somewhat poorly drained
- Saltair silty clay loam, 0-1% slopes, poorly drained

Saltair silty clay loam is classified as hydric on the national and Utah hydric soils lists (NRCS 2015). Soil properties such as texture and Munsell soil color generally matched the soil descriptions found in the Custom Soil Resource Report for Salt Lake Area, Utah (NRCS 2022a). Soil data collected, including color and texture, at the sample points along with photos of the soil pits dug at each sample point can be found in the Wetland Determination Data Forms (see Appendix C). Additionally, a custom soil resource report from the NRCS for the site is located in Appendix D.

Sample Points

Of the 19 sample points taken at the site, ten points are located in wetlands. The Delineation Results Figure in Appendix E displays the sample point locations and Table 2 on the next page summarizes the sample point data.

Table 2
Wetland Delineation Sample Point Summary and Determination Matrix

Sample Point	Hydrophytes Dominant?	Hydric Soils Present?	Primary Hydrologic Indicator(s) Present?	Is the Sample Point in a Wetland?
1	Yes	No	Yes	Yes
2	No	No	No	No
3	Yes	Yes	Yes	Yes
4	No	No	No	No
5	Yes	Yes	Yes	Yes
6	No	No	No	No
7	Yes	No	Yes	Yes
8	No	No	No	No
9	Yes	Yes	Yes	Yes
10	No	No	No	No
11	Yes	No	No	No
12	Yes	Yes	Yes	Yes
13	Yes	Yes	No	Yes
14	Yes	Yes	Yes	Yes
15	No	No	No	No
16	Yes	Yes	Yes	Yes
17	No	No	No	No
18	Yes	Yes	No	Yes
19	No	No	No	No

Wetland Boundaries

The delineation area includes the Surplus Canal, the North Point Canal Conveyance System, and a variety of wetlands and ponds, some of which share hydrology with the canals, and others that are supported by stormwater runoff but are isolated. To further verify boundaries, comparisons were made with aerial photography in different seasons and years. Finally, two previous delineations conducted on this property in 2004 and 2009 were also reviewed to corroborate current findings. Although many of the aquatic resources identified were similar to those investigations, some have significantly changed or diminished as a result of impacts from the UTA TRAX rail line constructed in 2010. Additionally, when the golf course closed in 2015, the shutdown of overhead spray heads no longer provided consistent hydrology to majority of the property (See Golf Course Irrigation Plans, Appendix I). Overall, the aquatic resource boundaries are distinct due to changes in vegetation, soils, and hydrology throughout the site and the findings can be seen in the Delineation Results Figures in Appendix E.

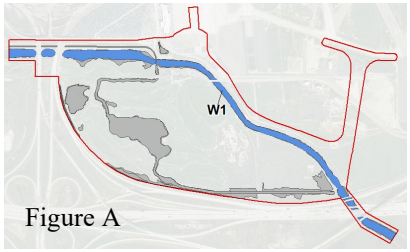


Figure A

The Surplus Canal (W1) is a manmade canal that forks from the Jordan River and continues north before discharging into Farmington Bay. The Surplus Canal was originally constructed in 1885 to divert floodwater from the Jordan River before being updated in the 1950s by USACE and Salt Lake County to increase the carrying capacity of the canal. The alignment near the Airport has been modified numerous times in the history of the Salt Lake valley. Most recently it was relocated for runway expansions in the 1980s and the 1990s (SLCO 2022). A total of 7,760 linear feet (21.13 acres) of the canal are present within the delineation area. The Surplus Canal enters the delineation area in the southeast corner, flowing to the northwest corner along the eastern and northern boundary of the delineation area, where it exits and continues north. The full alignment of the Surplus Canal can be seen in Appendix F. The ordinary high water mark of W1 was observed through drift deposits, erosion patterns, and changes in vegetation. The Surplus Canal is classified as R2UBGx (Riverine, Lower Perennial, Unconsolidated Bottom, Intermittently Exposed, Excavated) according to the NWI classification system. Due to its connection to Waters of the U.S. (the Great Salt Lake) the Surplus Canal is expected to be jurisdictional.

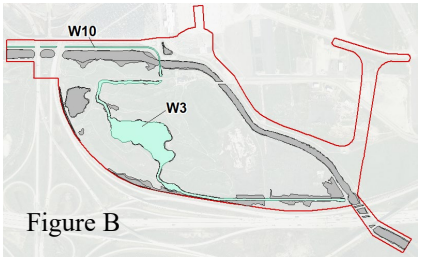


Figure B

The extents of the North Point Canal Conveyance System within the delineation area has been separated into two aquatic resources (W3 and W10) due to the differing habitats that have been created during the construction of the canal. The North Point Canal diverges from the Surplus Canal near to the southeast corner of the delineation area at the control gate of the diversion structure (See Photo Point 22, Appendix H) which can be closed or open to control flows. From the diversion it flows through the abandoned golf course, bisecting the site and expanding into a large, excavated pond area before rechanneling and being culverted under a road and crossing above the Surplus Canal. This lower section of the canal (W3) has an earthen bottom with vegetated edges. After being culverted under the roadway, the canal is concrete lined (W10) and runs adjacent to the Surplus Canal before exiting the delineation area. It continues west, eventually discharging into wetlands surrounding the Great Salt Lake. The earthen lined channel and ponded portion of the North Point Canal Conveyance System (W3) total 17.07 acres within the delineation area. The portion of the North Point Canal Conveyance System that flows in a concrete lined canal (W10) total 2,874 linear feet (1.23 acres) within the delineation area. These resources can be seen in the Delineation Results Figures in Appendix E and the full extents downstream can be seen in Appendix F. The ordinary high water marks of these resources were observed through drift deposits, erosion patterns, and changes in vegetation. W3 is classified as PUBGx (Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated) and the concrete lined channel W10 is classified as R2UBGx (Riverine, Lower Perennial, Unconsolidated Bottom, Intermittently Exposed, Excavated) according to the NWI classification system. Despite their seasonal connection to the lake further downstream because these flows can be turned on or off at the control structure, both portions of the North Point Canal Conveyance System in the delineated area may not be considered jurisdictional.

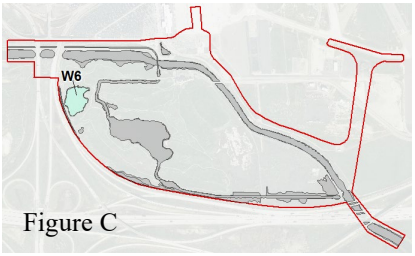


Figure C

An additional manmade pond (W6) within the delineation area was created as part of the golf course which totals 3.48 acres. There are no surface water flows to this pond, but it has piped connections to the both the Surplus Canal and the North Point Canal Conveyance System which are controlled with shut off gates (See Figure 4B, Appendix E). The water level of this pond is relatively consistent, with a clear ordinary high water mark identified through changes in vegetation and soil composition. This pond is classified as PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated) according to the NWI classification system. Due to its ability to be controlled it may not be considered jurisdictional.

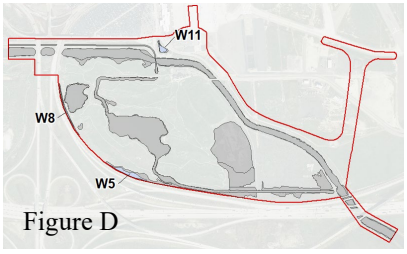


Figure D

There are two ponded areas (W5 and W8) adjacent to the I-80 airport exit ramp where stormwater runoff accumulates. These total 0.93 acres and are surrounded by emergent marsh. Both ponds show seasonal flooding patterns and are classified as PUBE (Palustrine, Unconsolidated Bottom, Seasonally Flooded/Saturated) according to the NWI classification system. As these ponds are isolated and not connected to any Waters of the U.S., W5 and W8 may not be considered jurisdictional.

Pond W11 is a stormwater detention pond created for the surrounding airport infrastructure (See Figure D above). It discharges to the Surplus Canal through an underground pipe. Pond W11 totals 0.29 acres and is classified as PAB1F (Palustrine, Aquatic Bed, Persistent, Semi-permanently Flooded) according to the NWI classification system and due to its connection to the Surplus Canal may be considered jurisdictional.

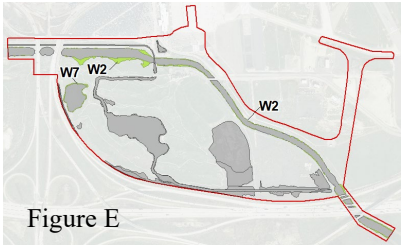


Figure E

Wetland W2 is an emergent marsh fringe wetland along the Surplus Canal. This wetland totals 3.41 acres and is dominated by *Phragmites australis,* which grows along the edges of the canals. As such, it is classified as PEM5C (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded) according to the NWI classification system. Due to the canal's connection to Waters of the U.S. these emergent wetlands are expected to be jurisdictional.

Wetland W7 surrounds the golf course manmade pond (see Figure E above) and is also an emergent march fringe wetland dominated by *Phragmites australis*. It is classified as PEM5C (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded) according to the NWI classification system. As the hydrology for this pond is controlled, the surrounding wetlands may not be considered jurisdictional.

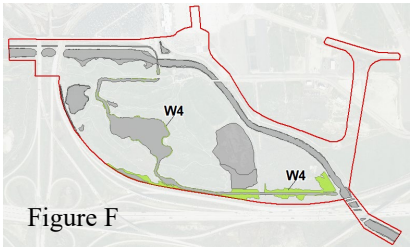


Figure F

Wetland W4 is the emergent marsh fringe wetland along the North Point Canal Conveyance System which has likely developed from seepage of the earthen canal. In reviewing historic aerials and previous delineations of this area, this wetland used to extend further south towards the interstate exit ramp but was impacted when the UTA TRAX rail line was constructed in 2009. It now ends at the rail line berm. This wetland totals 7.80 acres and is dominated by *Phragmites australis* along the edge of the canal. It is classified as PEM5C (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded) according to the NWI classification system. Due to the ability to turn off the North Point Conveyance System, these adjacent wetlands may not be considered jurisdictional.

Emergent marsh wetland W12 surrounds the airport stormwater detention pond and totals 0.11 acres. This wetland is similar to the phragmites dominated wetlands described above and is also classified as PEM5C (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded) according to the NWI classification system. Because of the pond's connection to the Surplus Canal, these adjacent wetlands may be considered jurisdictional.

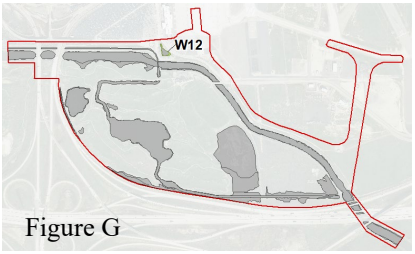


Figure G

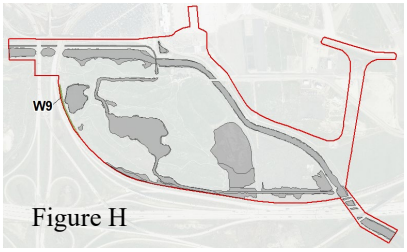


Figure H

Emergent marsh wetland W9 surrounds one of the stormwater ponding areas and totals 0.31 acres within the delineation area. This wetland is comprised fully of *Phragmites australis,* and is classified as PEM5E (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded/Saturated) according to the NWI classification system. Due to the lack of connection to Waters of the U.S. this may not be considered jurisdictional.

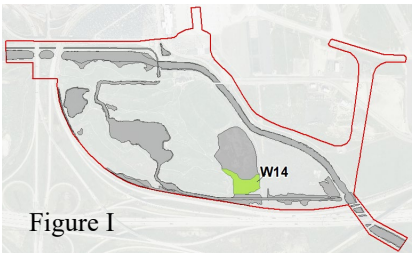


Figure I

The emergent marsh wetland W14 is partially connected to the wetlands located along the North Point Canal Conveyance System. There is a berm separating the two wetlands, but some vegetation has bridged a connection. These wetland boundaries have been separated due to the variation in hydrology identified. This wetland spans from the berm down a gradual slope until the vegetation drastically changes. The clear difference in vegetation provided a notable boundary for this wetland. No surface connection to the canal was identified, but due to the proximity and similar elevation, there may be a groundwater connection between the hydrology of this wetland and the North Point Canal Conveyance System. The depressed topography of this wetland and clay soils also suggests there may be stormwater runoff collecting in this area. This wetland totals 3.36 acres and is classified as PEM5E (Palustrine, Emergent, *Phragmites australis*, Seasonally Flooded/Saturated) according to the NWI classification system. Due to the ability to turn off the North Point Conveyance System and no other connection to Waters of the U.S., this wetland may not be considered jurisdictional.

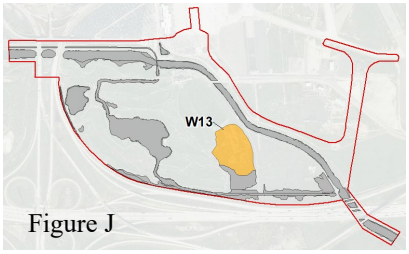


Figure J

Wetland W13 is a wet meadow totaling 11.59 acres. This meadow has vegetation unlike the rest of the wetlands observed within the delineation area and is in a poorly drained depression with clay soils. Due to the soil cracks, salt crust, and areas of bare ground observed, it appears it may get inundated during storm events with extended water detention due to clay soils preventing natural seepage into the ground. There was no surface water or groundwater observed at the time of the delineation field work. This wet meadow is classified as PEM1E (Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated) according to the NWI classification system. As the main source of hydrology for this wetlands appears to be stormwater ponding in clay soils and as the adjacent wetland and canal are regulated at the North Point Canal Conveyance control gates, this wetland may not be considered jurisdictional.

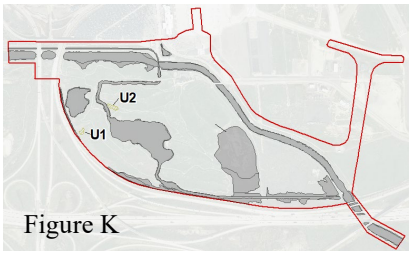


Figure K

Two additional areas (U1 and U2) were investigated due to the dense growth of *Phragmites australis,* but no hydrology or hydric soil characteristics observed at the sample points to qualify these locations as wetlands. These have likely sprung up from periodic stormwater in depressions designed for the golf course, but they do not appear to have consistent enough hydrology to have developed into true wetlands. Additionally, they are isolated from any other aquatic resources identified in the area. These areas are classified as U (Upland) according to the NWI classification system.

A total of 10,634 linear feet of channels or waterway were delineated as part of this project which includes portions of the Surplus Canal and the North Point Canal Conveyance System. Three small ponds were also identified which total 1.22 acres of open water. A total of 26.92 acres of wetlands were identified within the delineation area which includes 15.33 acres of emergent marsh and 11.59 acres of wet meadow. All the wetlands, ponds, and canals described above are shown on the Delineation Results Figure found in Appendix E and are listed in the Aquatic Resources spreadsheet in Appendix G and in Table 3 on the next page. Indicators for vegetation, hydrology, and hydric soils were clear and easily identified but the classification, source, and possible jurisdiction of each resource varies.

Table 3
Aquatic Resources Within the Survey Area

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acres)	Aquatic Resource Size (feet)
	Cowardin*	Location (DD)		
W1**	R2UBGx	40.769964 / -111.975989	(20.13)	7,760
W2	PEM5C	40.770365 / -111.976411	3.41	
W3	PUBGx	40.768327 / -111.97905	17.07	
W4	PEM5C	40.766498 / -111.97393	7.80	
W5	PUBE	40.766548 / -111.980935	0.73	
W6	PUBHx	40.770396 / -111.984537	3.48	
W7	PEM5C	40.770487 / -111.984347	0.34	
W8	PUBE	40.769858 / -111.985209	0.20	
W9	PEM5E	40.769773 / -111.985129	0.31	
W10**	R2UBGx	40.772848 / -111.983115	(1.23)	2,874
W11	PAB1F	40.772863 / -111.978795	0.29	
W12	PEM5C	40.772893 / -111.978759	0.11	
W13	PEM1E	40.767909 / -111.974113	11.59	
W14	PEM5E	40.76642 / -111.973649	3.36	
U1***	U	40.768897 / -111.984188	(0.14)	
U2***	U	40.770117 / -111.982166	(0.24)	
		Totals:	**48.69 ac**	**10,634 ft**

*Cowardin Codes:

R2UBGx – Riverine, Lower Perennial, Unconsolidated Bottom, Intermittently Exposed, Excavated
PEM5C - Palustrine Emergent, *Phragmites australis*, Seasonally Flooded
PEM5E - Palustrine Emergent, *Phragmites australis*, Seasonally Flooded/Saturated
PEM1E - Palustrine Emergent, Persistent, Seasonally Flooded/Saturated
PUBHx – Palustrine Unconsolidated Bottom, Excavated, Permanently Flooded, Excavated
PUBGx – Palustrine Unconsolidated Bottom, Excavated, Intermittently Exposed, Excavated
PUBE – Palustrine Unconsolidated Bottom, Excavated, Seasonally Flooded/Saturated
PAB1F – Palustrine Aquatic Bed, Algal, Semi-permanently Flooded
U – Upland

** Acreages for the Surplus Canal and concrete-lined portion of the North Point Canal Conveyance System are only provided for reference and are not included in the total area acreage.

*** Not wetlands. Phragmites patches with no hydric soils or hydrology. Acreage not included in totals.

REFERENCES

Salt Lake County Public Works-Flood Control (SLCO). 2022. *Surplus Canal Deficiency Rehabilitation Project*. https://slco.org/flood-control/surplus-canal-rehabilitation/

U.S. Army Corps of Engineers (ACOE). 2012. *The National Wetland Plant List for the Arid West*. U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory (CRREL). Hanover, New Hampshire

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

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

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

United States Departments of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2015. *National Hydric Soils List*. Access online http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

United States Departments of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2022a. *Soil Survey for the Salt Lake Area*. National Resources Conservation Services and Forest Service, in Cooperation with the Utah Agricultural Experiment Station.

United States Departments of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2022b. *The PLANTS Database* http://plants.usda.gov/ Natural Plant Data Center, Baton Rouge LA 70874-4490 USA. [Accessed December 14, 2022].

Utah State University Extension. 2011. *Grasses and Grasslike Plants of Utah, A Field Guide*. Donna Falkenborg, editor.

Welsh, S.L., N.D. Atwood, L.C. Higgins, and S.Goodrich. 2003. *A Utah Flora*, Third Edition. Brigham Young University, Provo, Utah.

Whitson, Tom D., Larry C. Burrill, Steven A. Dewey, David W. Cudney, B.E. Nelson, Richard D. Lee, and Robert Parker. Whitson, Tom D. (ed.) 2010. *Weeds of the West. 10th ed.* Laramie: University of Wyoming.

Appendix A

Site Location Figures

Salt Lake City
International Airport

LEGEND

Project Area - 280 Acres

215

80

154

Imagry: Hexagon 2018
Figure Created By
Cara Glabau 2/16/23

SCALE: 1 in. = 1,000 ft.

NORTH: NORTH

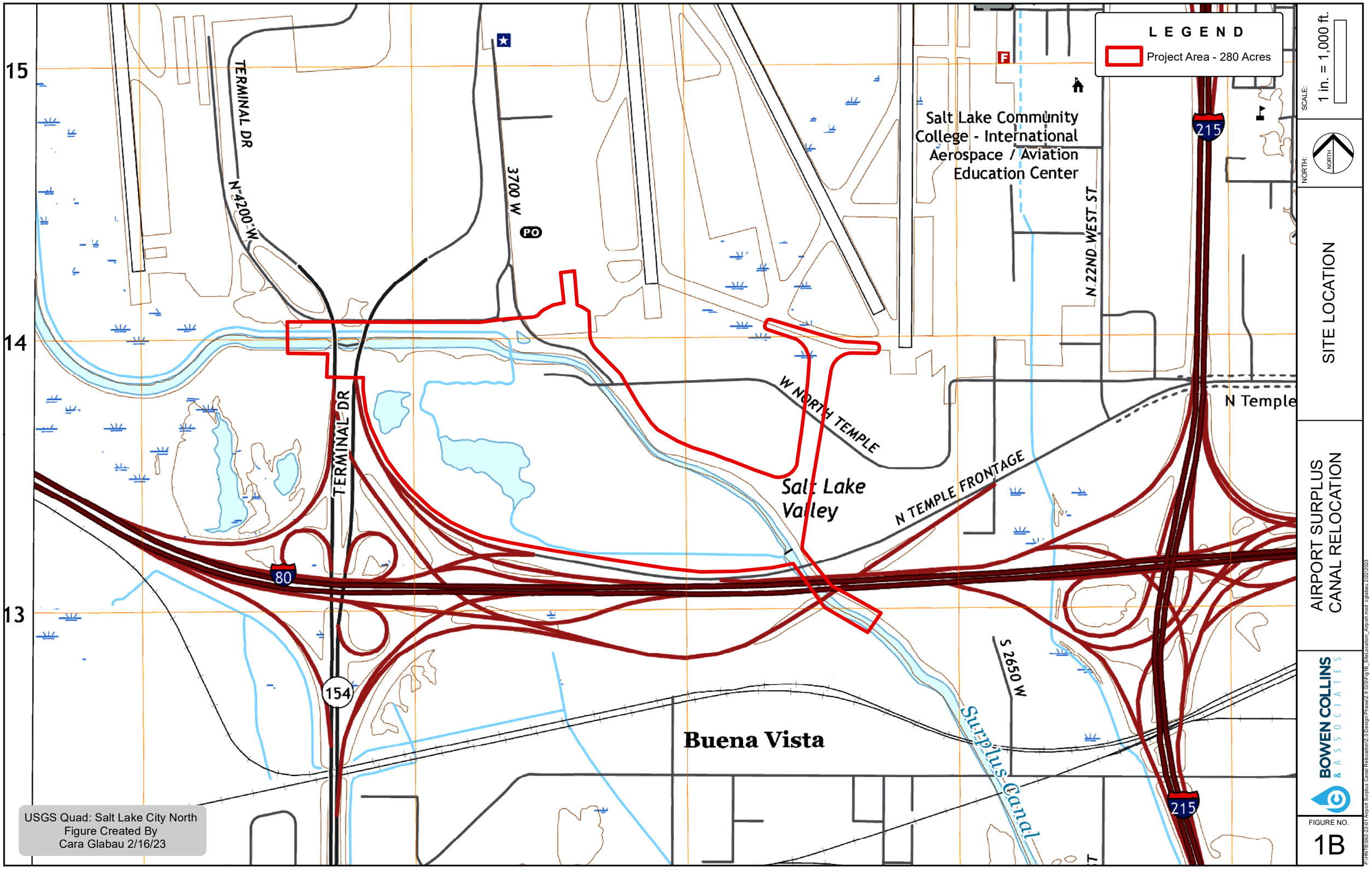
SITE LOCATION

AIRPORT SURPLUS
CANAL RELOCATION

BOWEN COLLINS & ASSOCIATES

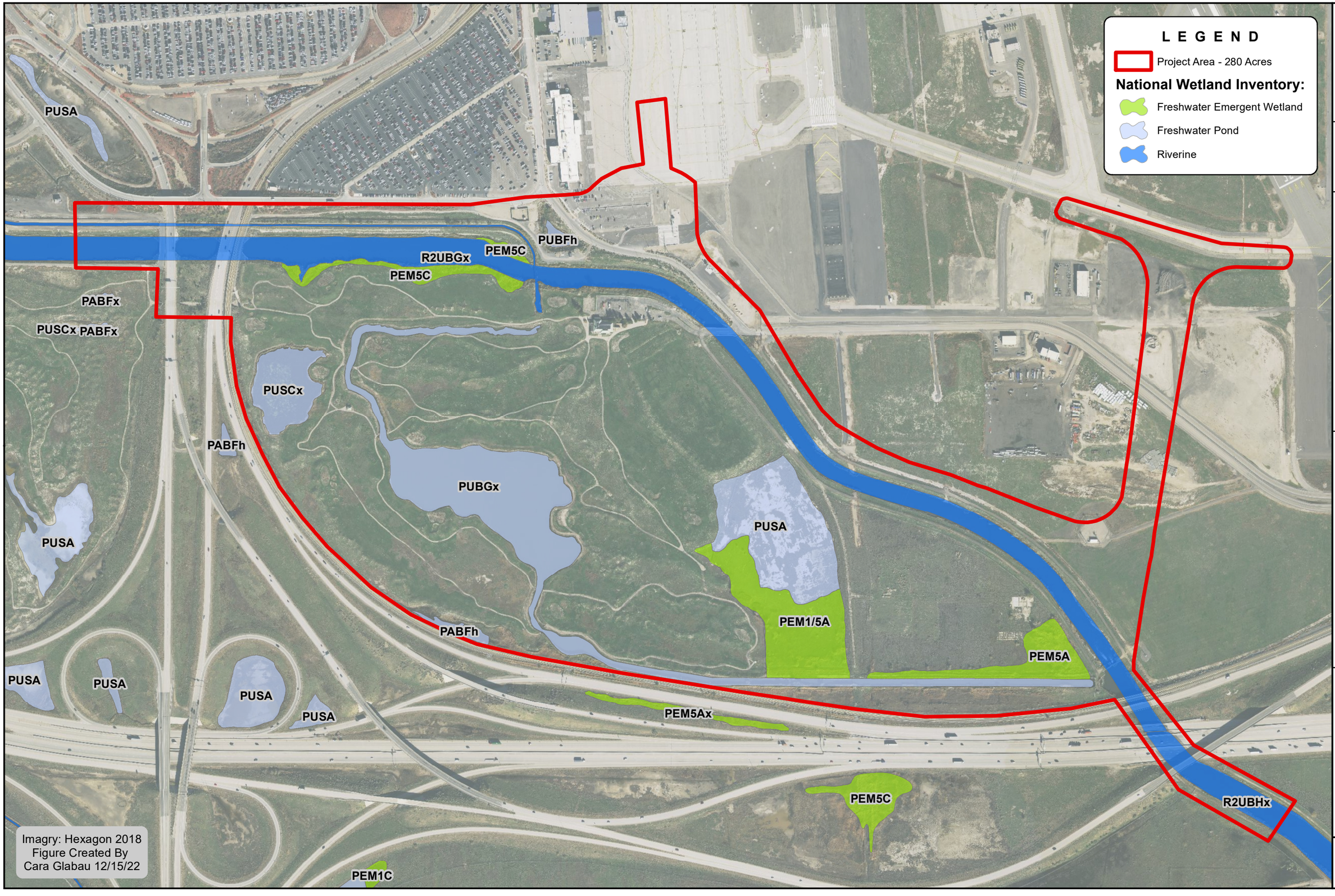
FIGURE NO.
1A

P:\HNTB\5922-22\01 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig1A_SiteLocation_Airport.mxd cglabau 2/22/2023


LEGEND
Project Area - 280 Acres
SCALE:
1 in. = 1,000 ft.
NORTH:
NORTH
SITE LOCATION
AIRPORT SURPLUS
CANAL RELOCATION
BOWEN COLLINS
& ASSOCIATES
FIGURE NO.
1B
15
14
13
TERMINAL DR
N 4200 W
3700 W
PO
F
Salt Lake Community
College - International
Aerospace / Aviation
Education Center
N 22ND WEST ST
215
N Temple
W NORTH TEMPLE
N TEMPLE FRONTAGE
Salt Lake
Valley
80
154
Buena Vista
S 2650 W
Surplus Canal
215
USGS Quad: Salt Lake City North
Figure Created By
Cara Glabau 2/16/23
P:\INT\BS\22-2201 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig1B_SiteLocation_Airport.mxd cglabau 2/22/2023

Appendix B

NWI Figures



SCALE: 1 in. = 500 ft.

NORTH: NORTH

NATIONAL WETLAND INVENTORY

AIRPORT SURPLUS CANAL RELOCATION

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2

P:\HNTB\592-22\01 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig2_NWI_Airport.mxd cglabau 2/22/2023

Appendix C

Wetland Determination Data Forms & Photographs

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP1

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-3%

Subregion (LRR): D Lat: 40.772048 Long: -111.980059 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Elaeagnus angustifolia (Russian Olive)	8%	Yes	FAC
2.			
3.			
4.			
	8% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa woodsii (Woods Rose)	5%		FACU
2. Tamarix chinensis (Five-stamen Tamarisk)	15%	Yes	FAC
3. Salix exigua (Narrowleaf Willow)	15%	Yes	FACW
4.			
5.			
	35% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Dipsacus fullonum (Fuller's Teasel)	15%		FAC
2. Phragmites australis (Common Reed)	70%	Yes	FACW
3. Cirsium arvense (Canada Thistle)	5%		FACU
4.			
5.			
6.			
7.			
8.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 10% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 85	x 2 = 170
FAC species 38	x 3 = 114
FACU species 10	x 4 = 40
UPL species _____	x 5 = _____
Column Totals: 133 (A)	324 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 4/1	100%					Clay	
4-10	10 YR 4/2	100%					Clay	
10-16	2.5 Y 5/3	100%					Clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0-16 inches

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Soil is moist, borderline saturated, but may have been more so earlier in the season.

Airport Surplus Canal Relocation

Sample Point 1 (Wetland)

Sample Point 1 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP2

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR): D Lat: 40.77201 Long: -111.980117 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: None

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

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

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

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

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

Remarks:

Recent short rain or snow storm.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus tectorum (Cheatgrass)	70%	Yes	UPL
2. Cirseum arvense (Canada Thistle)	10%		UPL
3. Sisymbrium altissimum (Tall Tumblemustard)	10%		FACU
4. Sphaeralcea spp. (Globemallow)	2%		UPL
5.			
6.			
7.			
8.			
	92% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 8% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species 10	x 4 = 40
UPL species 82	x 5 = 410
Column Totals: 92 (A)	450 (B)

Prevalence Index = B/A = 4.46

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10 YR 3/3	100%						Loam
5-16	10 YR 4/3	100%						Sandy-Loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 2 (Upland)

Sample Point 2 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP3

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-3%

Subregion (LRR): D Lat: 40.772139 Long: -111.984034 Datum: NAD 1983

Soil Map Unit Name: Saltair silty clay loam NWI classification: PEM5C

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Tamarix chinensis (Five-stamen Tamarisk)	8%	Yes	FAC
2.			
3.			
4.			
5.			
	8% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Dipsacus fullonum (Fuller's Teasel)	20%	Yes	FAC
2. Phragmites australis (Common Reed)	75%	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0%5' = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 75	x 2 =	150
FAC species 28	x 3 =	84
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 103 (A)		234 (B)

Prevalence Index = B/A = 2.27

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 2/1	100%					Loam	
6-16	GLEY1 7/5GY	100%					Clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0-16

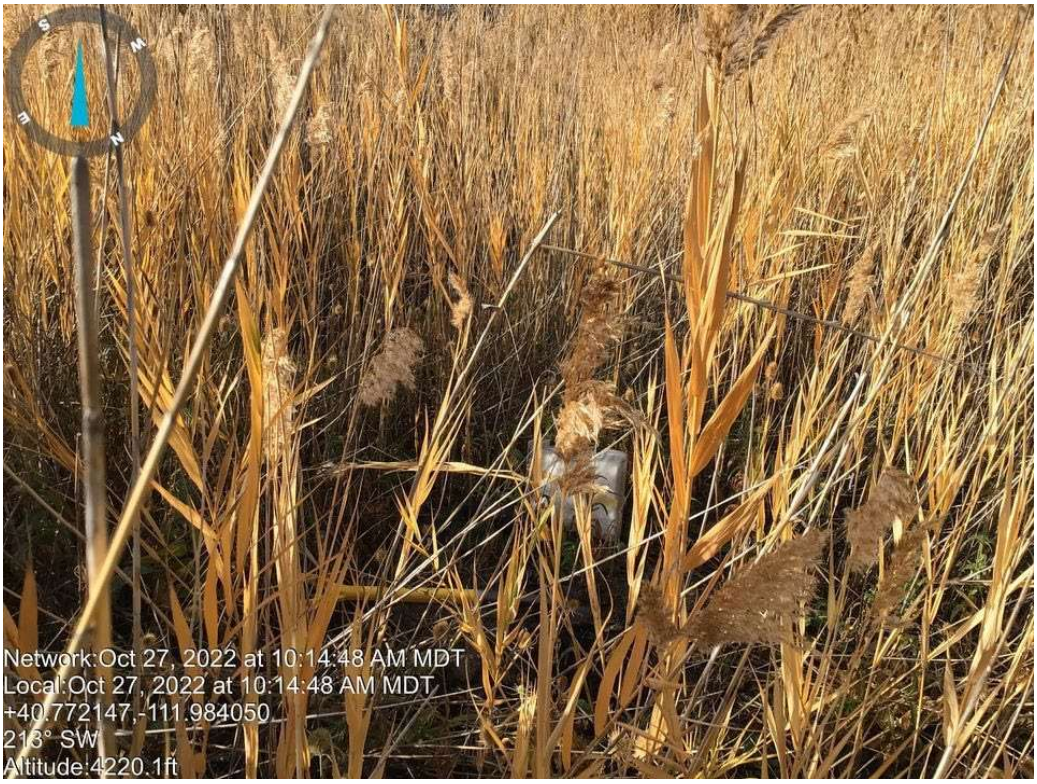
Wetland Hydrology Present? Yes ✓ **No** _____

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 3 (Wetland)



Sample Point 3 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP4

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR): D Lat: 40.772091 Long: -111.983943 Datum: NAD 1983

Soil Map Unit Name: Saltair silty clay loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix exigua (Narrowleaf Willow)	5%	Yes	FACW
2.			
3.			
4.			
5.			
	5% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus tectorum (Cheatgrass)	45%	Yes	UPL
2. Sisymbrium altissimum (Tall Tumblemustard)	12%		FACU
3. Thinopyrum intermedium (Intermediate Whea	20%	Yes	UPL
4. Salsola tragus (Russian Thistle)	2%		FACU
5.			
6.			
7.			
8.			
	78% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 21% % Cover of Biotic Crust 0%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 5	x 2 =	10
FAC species	x 3 =	
FACU species 14	x 4 =	56
UPL species 65	x 5 =	325
Column Totals: 84 (A)		391 (B)

Prevalence Index = B/A = 4.7

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 3/1	100%					Loam	
3-6	10 YR 3/2	100%						Sandy-Loam
6-16	10 YR 3/2	100%						Rocky-Loamy-Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 4 (Upland)

Sample Point 4 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP5

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Bank edge Local relief (concave, convex, none): None Slope (%): 5-6%

Subregion (LRR): D Lat: 40.77102 Long: -111.984215 Datum: NAD 1983

Soil Map Unit Name: Dumps NWI classification: None

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

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

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

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

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

Remarks:

Wetland fringe all the way around the pond, about five to six feet wide.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phragmites australis (Common Reed)	65%	Yes	FACW
2. Dipsacus fullonum (Fuller's Teasel)	15%		FAC
3. Cirsium arvense (Canada Thistle)	5%		FACU
4.			
5.			
6.			
7.			
8.			
	85% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 15% % Cover of Biotic Crust 0%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 65	x 2 =	130
FAC species 15	x 3 =	45
FACU species 5	x 4 =	20
UPL species	x 5 =	
Column Totals: 85 (A)		195 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP5

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

No pit taken due to standing water. Hydric soils are assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): 4-6 inches

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

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

Wetland Hydrology Present? Yes ✓ **No** _____

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 5 (Wetland)

Sample Point 5 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP6

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR): D Lat: 40.771062 Long: -111.984208 Datum: NAD 1983

Soil Map Unit Name: Dumps NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus tectorum (Cheatgrass)	75%	Yes	UPL
2. Dipsacus fullonum (Fuller's Teasel)	5%		FAC
3. Sisymbrium altissimum (Tall Tumblemustard)	5%		FACU
4. Heterotheca spp. (Aster)	5%		UPL
5. Lepidium perforatum (Clasping Pepperweed)	2%		FACU
6.			
7.			
8.			
	92% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 8% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 5	x 3 =	15
FACU species 7	x 4 =	28
UPL species 80	x 5 =	400
Column Totals: 92 (A)		443 (B)

Prevalence Index = B/A = 4.82

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5 YR 4/3							Loamy-Clay
5-10	7.5 YR 5/3							Clay
10-16	10 YR 5/2							Sandy-Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Moist, but likely due to recent precipitation.

Airport Surplus Canal Relocation

Sample Point 6 (Upland)

Sample Point 6 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP7

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Bank edge Local relief (concave, convex, none): None Slope (%): 2-3%

Subregion (LRR): D Lat: 40.769976 Long: -111.982675 Datum: NAD 1983

Soil Map Unit Name: Dumps NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix exigua (Narrowleaf willow)	25%	Yes	FACW
2.			
3.			
4.			
5.			
	25% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phragmites australis (Common Reed)	60%	Yes	FACW
2. Dipsacus fullonum (Fuller's Teasel)	8%		FAC
3. Salsola tragus (Russian Thistle)	5%		FACU
4.			
5.			
6.			
7.			
8.			
	73% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 27% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 85	x 2 =	170
FAC species 8	x 3 =	24
FACU species 5	x 4 =	20
UPL species	x 5 =	
Column Totals: 98 (A)		214 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10 YR 3/2	100%					Loam	
5-16	10 YR 4/2	100%					Clay-loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

About six inches of dead or fallen phragmites

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 5-16 inches

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 7 (Wetland)

Sample Point 7 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP8

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section , Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR): D Lat: 40.76994 Long: -111.982703 Datum: NAD 1983

Soil Map Unit Name: Dumps NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix exigua (Narrowleaf willow)	5%	Yes	FACW
2.			
3.			
4.			
5.			
	5% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus tectorum (Cheatgrass)	45%	Yes	UPL
2. Thinopyrum intermedium (Intermediate Wheat	20%	Yes	UPL
3. Salsola tragus (Russian Thistle)	15%		FACU
4. Dipsacum fullonum (Fuller's Teasel)	5%		FAC
5. Phragmites australis (Common reed)	5%		FACW
6. Cirsium arvense (Canada thistle)	2%		FACU
7.			
8.			
	93% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 7% % Cover of Biotic Crust 0%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 10	x 2 = 20
FAC species 5	x 3 = 15
FACU species 17	x 4 = 68
UPL species 65	x 5 = 325
Column Totals: 97 (A)	428 (B)

Prevalence Index = B/A = 4.4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/2	100%					Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Rock

Depth (inches): 12 inches

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 8 (Upland)

Sample Point 8 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP9

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 5-10%

Subregion (LRR): D Lat: 40.766243 Long: -111.979722 Datum: NAD 1983

Soil Map Unit Name: Dumps NWI classification: PUSCx

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phragmites australis (Common Reed)	100%	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 100	x 2 =	200
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 100 (A)		200 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP9

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

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

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

No pit taken due to dense phragmites, hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

No pit taken due to dense phragmites.

Airport Surplus Canal Relocation

Sample Point 9 (Wetland)

Sample Point 9 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP10

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Top of hillslope Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR): D Lat: 40.766284 Long: -111.979537 Datum: NAD 1983

Soil Map Unit Name: Decker Fine Sandy Loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Elaeagnus angustifolia (Russian Olive)	10%	Yes	FAC
2.			
3.			
4.			
	10% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus tectorum (Cheatgrass)	65%	Yes	UPL
2. Sisymbrium altissimum (Tall Tumblemustard)	15%		FACU
3. Phragmites australis (Common Reed)	10%		FACW
4. Cirsium arvense (Canada Thistle)	5%		FACU
5.			
6.			
7.			
8.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 10	x 2 =	20
FAC species 10	x 3 =	30
FACU species 20	x 4 =	80
UPL species 65	x 5 =	325
Column Totals: 105 (A)		455 (B)

Prevalence Index = B/A = 4.33

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 4/3	100%						Sandy-Loam
2-16	10 YR 4/1	100%						Clay-Loam

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 10 (Upland)

Sample Point 10 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP11

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR): D Lat: 40.76883 Long: -111.984228 Datum: NAD 1983

Soil Map Unit Name: Decker Fine Sandy Loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Elaeagnus angustifolia (Russian Olive)	3%	Yes	FAC
2.			
3.			
4.			
5.			
	3% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phragmites australis (Common reed)	60%	Yes	FACW
2. Bromus tectorum (Cheatgrass)	30%	Yes	UPL
3. Cirsium arvense (Canada Thistle)	2%		FACU
4.			
5.			
6.			
7.			
8.			
	92% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 8% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 60	x 2 =	120
FAC species 3	x 3 =	9
FACU species 2	x 4 =	8
UPL species 30	x 5 =	150
Column Totals: 95 (A)		287 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP11

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 4/2	100%					Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Rock layer

Depth (inches): 12 inches

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 11 (Upland)

Sample Point 11 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP12

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): None Slope (%): 1-2%

Subregion (LRR): D Lat: 40.766542 Long: -111.973755 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: PEM1/4A

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Elaeagnus angustifolia (Russian Olive)	10%	Yes	FAC
2.			
3.			
4.			
	10% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phragmites australis (Common Reed)	80%	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 20% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 80	x 2 =	160
FAC species 10	x 3 =	30
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 90 (A)		190 (B)

Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP12

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 2/2	100%					Loam	
3-16	GLEY1 6/10 Y	92%	7.5 YR 6/8	8%	C	M	Clay	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 3 inches

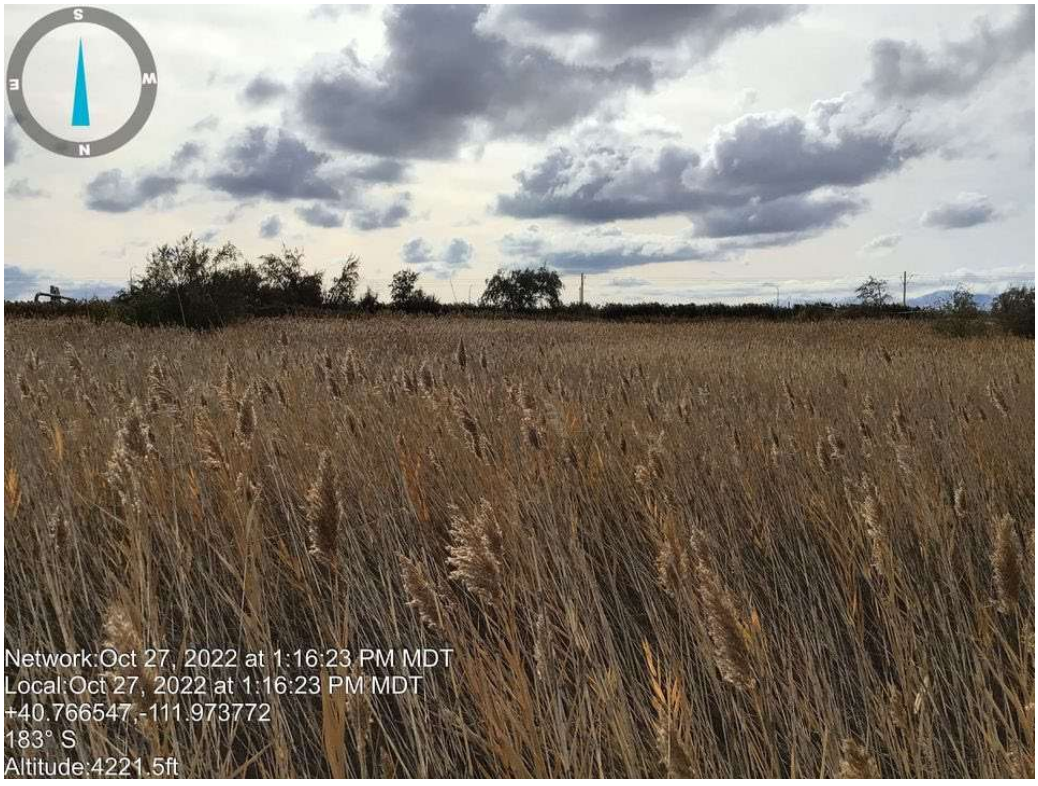
Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 12 (Wetland)



Sample Point 12 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP13

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section , Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Meadow Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR): D Lat: 40.766675 Long: -111.973687 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: PEM1/5A

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Distichlis spicata (Saltgrass)	60%	Yes	FAC
2. Phleum pratense (Timothy)	5%		FACU
3. Salicornia utahensis (Utah swampfire)	15%		OBL
4.			
5.			
6.			
7.			
8.			
	80% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 20% % Cover of Biotic Crust 0%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species		x 2 =	
FAC species	60	x 3 =	180
FACU species	5	x 4 =	20
UPL species		x 5 =	
Column Totals:	80 (A)		215 (B)

Prevalence Index = B/A = 2.69

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP13

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 3/3	100%						Loamy-Clay
4-16	Gley 1 1/10 Y	92%	2.5 YR 4/8	8%		M		Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

Moist on top likely due to recent precipitation. May have more hydrology earlier in the season.

Airport Surplus Canal Relocation

Sample Point 13 (Wetland)

Sample Point 13 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP14

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Meadow Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR): D Lat: 40.76696 Long: -111.973572 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: PUSA

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Tamarix chinensis (Five-stamen Tamarisk)	4%	Yes	FAC
2.			
3.			
4.			
5.			
	4% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Salicornia utahensis (Utah swampfire)	15%	Yes	OBL
2. Distichlis spicata (Saltgrass)	20%	Yes	FAC
3. Allenrolfea occidentalis (Pickleweed)	25%	Yes	FACW
4.			
5.			
6.			
7.			
8.			
	60% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 40% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	25	x 2 =	50
FAC species	24	x 3 =	72
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	64 (A)		137 (B)

Prevalence Index = B/A = 2.14

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP14

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5 Y 5/2	95%	2.5 YR 4/8	5%		M		Clay
4-16	2.5 Y 5/2	85%	2.5 YR 4/8	15%		M		Sandy-Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0-16

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Salt deposits on top of the soil.

Airport Surplus Canal Relocation

Sample Point 14 (Wetland)

Sample Point 14 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP15

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-5%

Subregion (LRR): D Lat: 40.76721 Long: -111.972669 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Thinopyrum intermedium (Intermediate Whea	75%	Yes	UPL
2. Sisymbrium altissimum (Tall Tumblemustard)	5%		FACU
3.			
4.			
5.			
6.			
7.			
8.			
	80% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 20% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species 5	x 4 = 20
UPL species 75	x 5 = 375
Column Totals: 80 (A)	395 (B)

Prevalence Index = B/A = 4.94

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 4/2	100%						Loamy-Clay
10-16	10 YR 3/3	100%						Loamy-Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 15 (Upland)

Sample Point 15 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP16

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): None Slope (%): 1-2%

Subregion (LRR): D Lat: 40.765811 Long: -111.971915 Datum: NAD 1983

Soil Map Unit Name: Decker fine sandy loam NWI classification: PEM5A

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Dipsacum fullonum (Fuller's Teasel)	20%	Yes	FAC
2. Phragmites australis (Common Reed)	65%	Yes	FACW
3. Juncus balticus (Baltic Rush)	8%		FACW
4.			
5.			
6.			
7.			
8.			
	93% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 7% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 73	x 2 = 146
FAC species 20	x 3 = 60
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 93 (A)	206 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 3/3	100%						Loamy-Clay
4-16	10 YR 5/2	96%	5 YR 6/8	4%		M		Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0-16 inches

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 16 (Wetland)

Sample Point 16 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP17

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 5, Township 1S, Range 1W

Landform (hillslope, terrace, etc.): Meadow Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR): D Lat: 40.765894 Long: -111.97187 Datum: NAD 1983

Soil Map Unit Name: Decker Fine Sandy Loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Salsola tragus (Russian Thistle)	3%		FACU
2. Dipsacum fullonum (Fuller's Teasel)	5%		FAC
3. Sisymbrium altissimum (Tall Tumblemustard)	25%	Yes	FACU
4. Pseudoroegneria spicata (Bluebunch Wheatgr	50%	Yes	UPL
5.			
6.			
7.			
8.			
	83% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 17% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 5	x 3 =	15
FACU species 28	x 4 =	112
UPL species 50	x 5 =	250
Column Totals: 83 (A)		377 (B)

Prevalence Index = B/A = 4.54

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP17

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 2/2	100%						Clay-Loam
3-16	10 YR 4/2	100%						Sandy-Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Damp, likely from recent weather conditions more than hydrology.

Airport Surplus Canal Relocation

Sample Point 17 (Upland)

Sample Point 17 (Upland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP18

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Stream Bank Local relief (concave, convex, none): None Slope (%): 1-2%

Subregion (LRR): D Lat: 40.772729 Long: -111.980137 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: PEM5C

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phragmites australis (Common Reed)	75%	Yes	FACW
2. Cardaria draba (Whitetop)	18%	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
	93% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 7% % Cover of Biotic Crust 0%

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 75	x 2 =	150
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 18	x 5 =	90
Column Totals: 93 (A)		240 (B)

Prevalence Index = B/A = 2.58

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: SP18

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 6/3	90	5 YR 6/8	10%		M	Silty-Sand	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

About 3" of dead phragmites on the surface

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

Airport Surplus Canal Relocation

Sample Point 18 (Wetland)

Sample Point 18 (Wetland)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Airport Surplus Canal Relocation City/County: SLC/Salt Lake County Sampling Date: 10/27/22

Applicant/Owner: Salt Lake City International Airport State: UT Sampling Point: SP19

Investigator(s): M. Davis and C. Glabau Section, Township, Range: Section 32, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Top of Bank Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): D Lat: 40.772717 Long: -111.979733 Datum: NAD 1983

Soil Map Unit Name: Leland fine sandy loam NWI classification: None

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Euphorbia myrsinites (Myrtle Spurge)	2%		UPL
2. Rumex crispus (Curly Dock)	2%		FAC
3. Symphyotrichum porteri (Smooth White Aster)	5%		FACU
4. Malvella leprosa (Alkali Mallow)	6%		FACU
5. Ambrosia psilostachya (Cuman ragweed)	15%	Yes	FACU
6. Thinopyrum intermedium (Intermediate Wheat	35%	Yes	UPL
7.			
8.			
	65% = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	0% = Total Cover		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	2	x 3 =	6
FACU species	26	x 4 =	104
UPL species	37	x 5 =	185
Column Totals:	55 (A)		295 (B)

Prevalence Index = B/A = 5.36

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: SP19

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 4/2	100%						Loamy-Clay

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

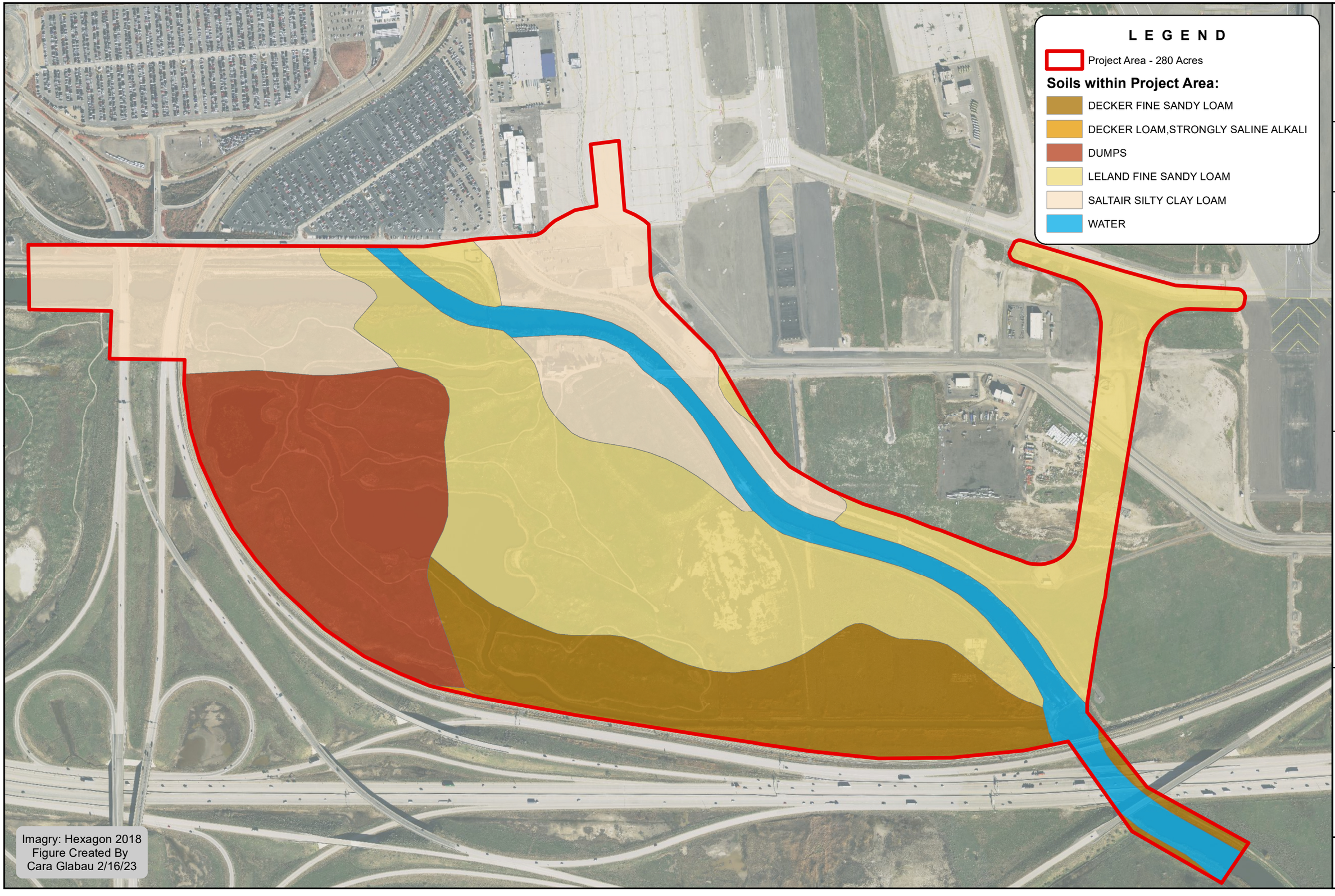
Airport Surplus Canal Relocation

Sample Point 19 (Upland)

Sample Point 19 (Upland)

Appendix D

Soil Figures and NRCS Custom Soils Resource Report



SCALE: 1 in. = 500 ft.

NORTH: NORTH

SOILS

AIRPORT SURPLUS
CANAL RELOCATION

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
3

P:\HHTB\592-22-01 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig3_Soils_Airport.mxd cglabau 2/22/2023

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Salt Lake Area, Utah

Airport Surplus Canal Relocation

February 22, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

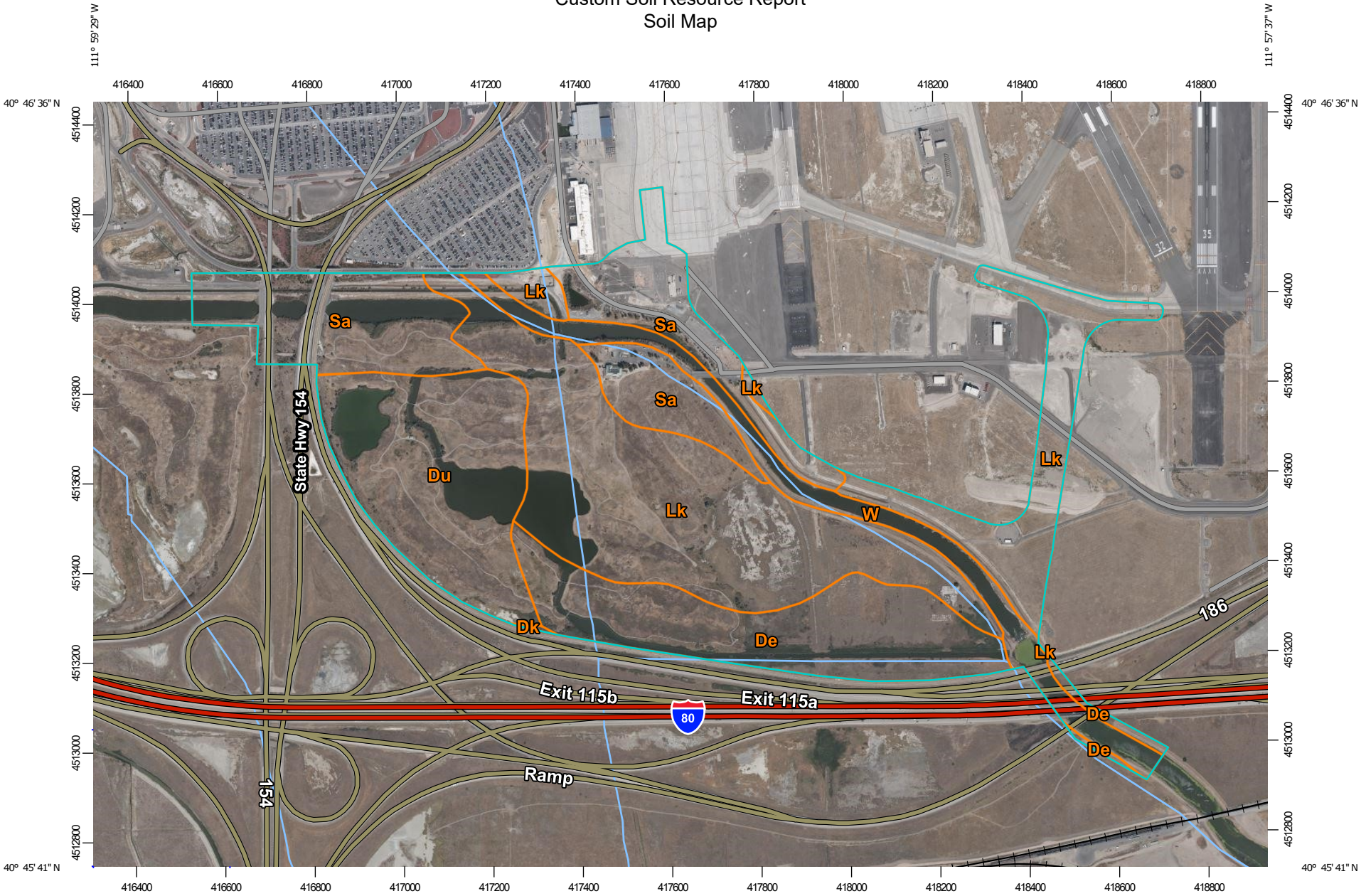
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:12,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

Soil Survey Area: Salt Lake Area, Utah
Survey Area Data: Version 15, Aug 29, 2022

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

Date(s) aerial images were photographed: Aug 5, 2018—Sep 14, 2018

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
De	Deckerman fine sandy loam, 0 to 1 percent slopes	45.1	16.1%
Dk	Deckerman loam, strongly saline, sodic, 0 to 1 percent slopes	0.2	0.1%
Du	Dumps	46.8	16.7%
Lk	Leland fine sandy loam, 0 to 1 percent slopes	105.3	37.6%
Sa	Saltair silty clay loam, 0 to 1 percent slopes	60.9	21.8%
W	Water	21.5	7.7%
Totals for Area of Interest		**279.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Salt Lake Area, Utah

De—Deckerman fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: j6hb
Elevation: 4,200 to 4,300 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Deckerman and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deckerman

Setting

Landform: Flood plains, lake plains
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium and/or lacustrine deposits

Typical profile

A11&A12 - 0 to 6 inches: fine sandy loam
C1 - 6 to 12 inches: loam
C2ca - 12 to 20 inches: loam
C3 - 20 to 35 inches: sandy loam
C4 - 35 to 43 inches: loam
IIC5 - 43 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 60.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Ecological site: R028AY001UT - Alkali Bottom (Alkali Sacaton)
Hydric soil rating: No

Minor Components

Saltair

Percent of map unit: 5 percent
Landform: Lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R028AY132UT - Desert Salty Silt (Iodinebush)
Hydric soil rating: Yes

Lasil

Percent of map unit: 5 percent
Ecological site: R028AY001UT - Alkali Bottom (Alkali Sacaton)

Dk—Deckerman loam, strongly saline, sodic, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: j6hd
Elevation: 4,200 to 4,300 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Deckerman and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deckerman

Setting

Landform: Lake plains
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium and/or lacustrine deposits

Typical profile

A11&A12 - 0 to 6 inches: loam
C1 - 6 to 12 inches: loam
C2ca - 12 to 20 inches: loam
C3 - 20 to 35 inches: sandy loam
C4 - 35 to 43 inches: loam
IIC5 - 43 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Strongly saline (16.0 to 60.0 mmhos/cm)
Sodium adsorption ratio, maximum: 60.0
Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Ecological site: R028AY001UT - Alkali Bottom (Alkali Sacaton)
Hydric soil rating: No

Minor Components

Saltair

Percent of map unit: 5 percent
Landform: Lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R028AY132UT - Desert Salty Silt (Iodinebush)
Hydric soil rating: Yes

Lasil

Percent of map unit: 5 percent
Ecological site: R028AY001UT - Alkali Bottom (Alkali Sacaton)

Du—Dumps

Map Unit Setting

National map unit symbol: j6hg
Elevation: 4,200 to 9,000 feet
Farmland classification: Not prime farmland

Map Unit Composition

Dumps: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Lk—Leland fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: j6k0
Elevation: 4,200 to 4,250 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Leland and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Leland

Setting

Landform: Lake plains
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

A2 - 0 to 8 inches: fine sandy loam
B21t - 8 to 15 inches: sandy clay loam
B22tca - 15 to 19 inches: clay loam
B3ca - 19 to 28 inches: clay loam
C1 - 28 to 35 inches: silty clay loam
IIC2 - 35 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 60.0
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Ecological site: R028AY001UT - Alkali Bottom (Alkali Sacaton)

Hydric soil rating: No

Minor Components

Lasil

Percent of map unit: 4 percent
Ecological site: R028AY001UT - Alkali Bottom (Alkali Sacaton)

Deckerman

Percent of map unit: 4 percent

Saltair

Percent of map unit: 4 percent
Landform: Lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R028AY132UT - Desert Salty Silt (Iodinebush)
Hydric soil rating: Yes

Terminal

Percent of map unit: 3 percent

Sa—Saltair silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: j6kn
Elevation: 4,200 to 4,250 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Saltair and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saltair

Setting

Landform: Lake terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits

Typical profile

H1 - 0 to 1 inches: silty clay loam
H2 - 1 to 4 inches: silty clay loam
H3 - 4 to 8 inches: silty clay loam
H4 - 8 to 12 inches: silty clay loam

H5 - 12 to 40 inches: silty clay loam
H6 - 40 to 57 inches: fine sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Strongly saline (100.0 to 250.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1,000.0
Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Ecological site: R028AY132UT - Desert Salty Silt (Iodinebush)
Hydric soil rating: Yes

Minor Components

Jordan

Percent of map unit: 5 percent
Ecological site: R028AY004UT - Alkali Flat (Black Greasewood)

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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

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

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

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

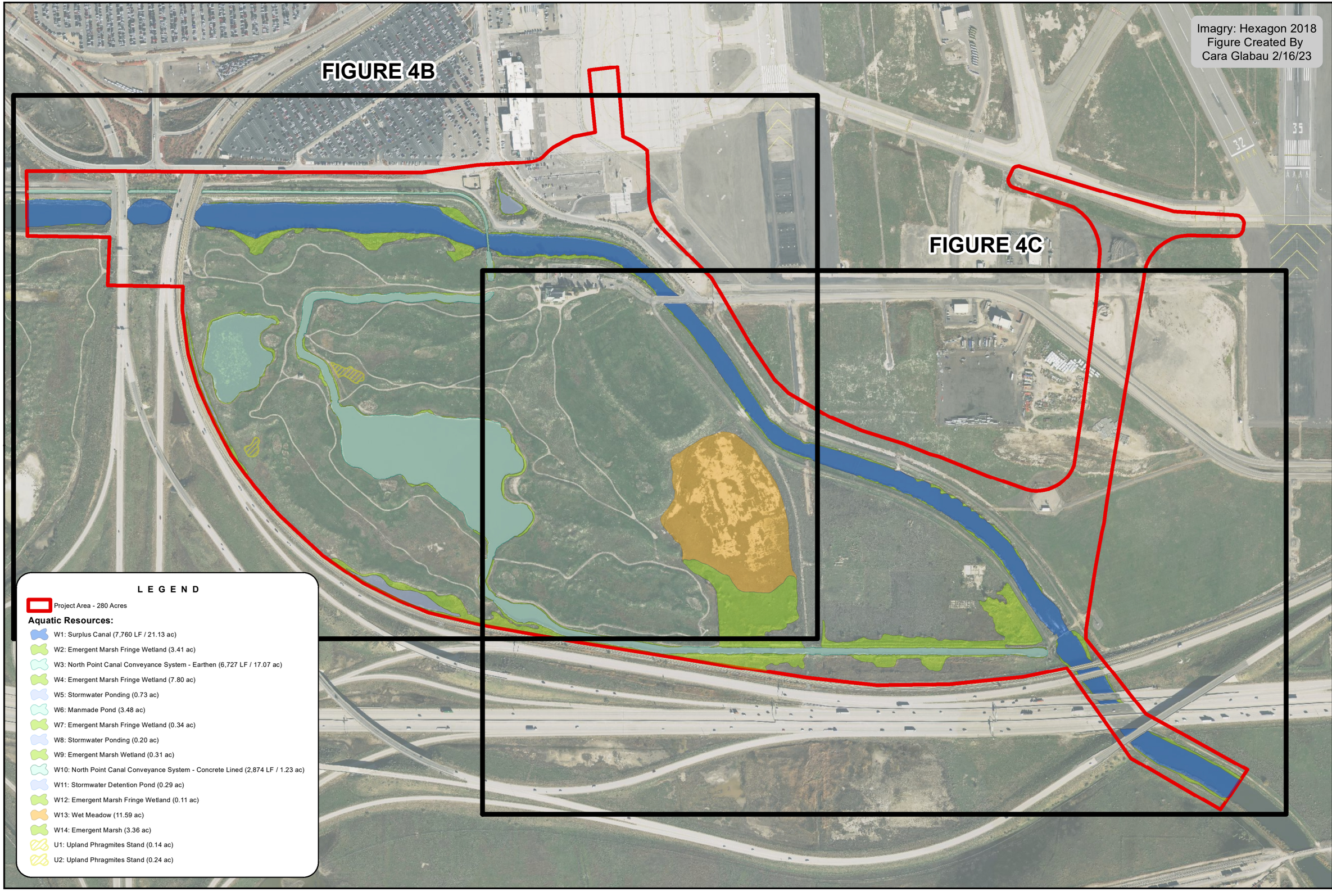
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix E

Delineation Results Figures



SCALE: 1 in. = 500 ft.

NORTH: NORTH

DELINEATION RESULTS

AIRPORT SURPLUS
CANAL RELOCATION

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
4A

P:\HNTB\502-22241 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig4_DelineationResults_Airport.mxd cglabau 2/22/2023

Imagry: Hexagon 2018
Figure Created By
Cara Glabau 2/16/23

OHWM: 4,227 FT

OHWM: 4,218 FT

OHWM: 4,221 FT

OHWM: 4,222 FT

OHWM: 4,211 FT

OHWM: 4,227 FT

OHWM: 4,227 FT

OHWM: 4,223 FT

LEGEND

- Project Area - 280 Acres
- Sample Points
- Photo Points
- Control Gates
- Pipes
- Major Contour (5-ft)
- Minor Contour (1-ft)
- Existing Fence
- Ordinary High Water Mark (OHWM)

Aquatic Resources:

- W1: Surplus Canal (7,760 LF / 21.13 ac)
- W2: Emergent Marsh Fringe Wetland (3.41 ac)
- W3: North Point Canal Conveyance System - Earthen (6,727 LF / 17.07 ac)
- W4: Emergent Marsh Fringe Wetland (7.80 ac)
- W5: Stormwater Ponding (0.73 ac)
- W6: Manmade Pond (3.48 ac)
- W7: Emergent Marsh Fringe Wetland (0.34 ac)
- W8: Stormwater Ponding (0.20 ac)
- W9: Emergent Marsh Wetland (0.31 ac)
- W10: North Point Canal Conveyance System - Concrete Lined (2,874 LF / 1.23 ac)
- W11: Stormwater Detention Pond (0.29 ac)
- W12: Emergent Marsh Fringe Wetland (0.11 ac)
- U1: Upland Phragmites Stand (0.14 ac)
- U2: Upland Phragmites Stand (0.24 ac)

SCALE: 1 in. = 300 ft.

NORTH: NORTH

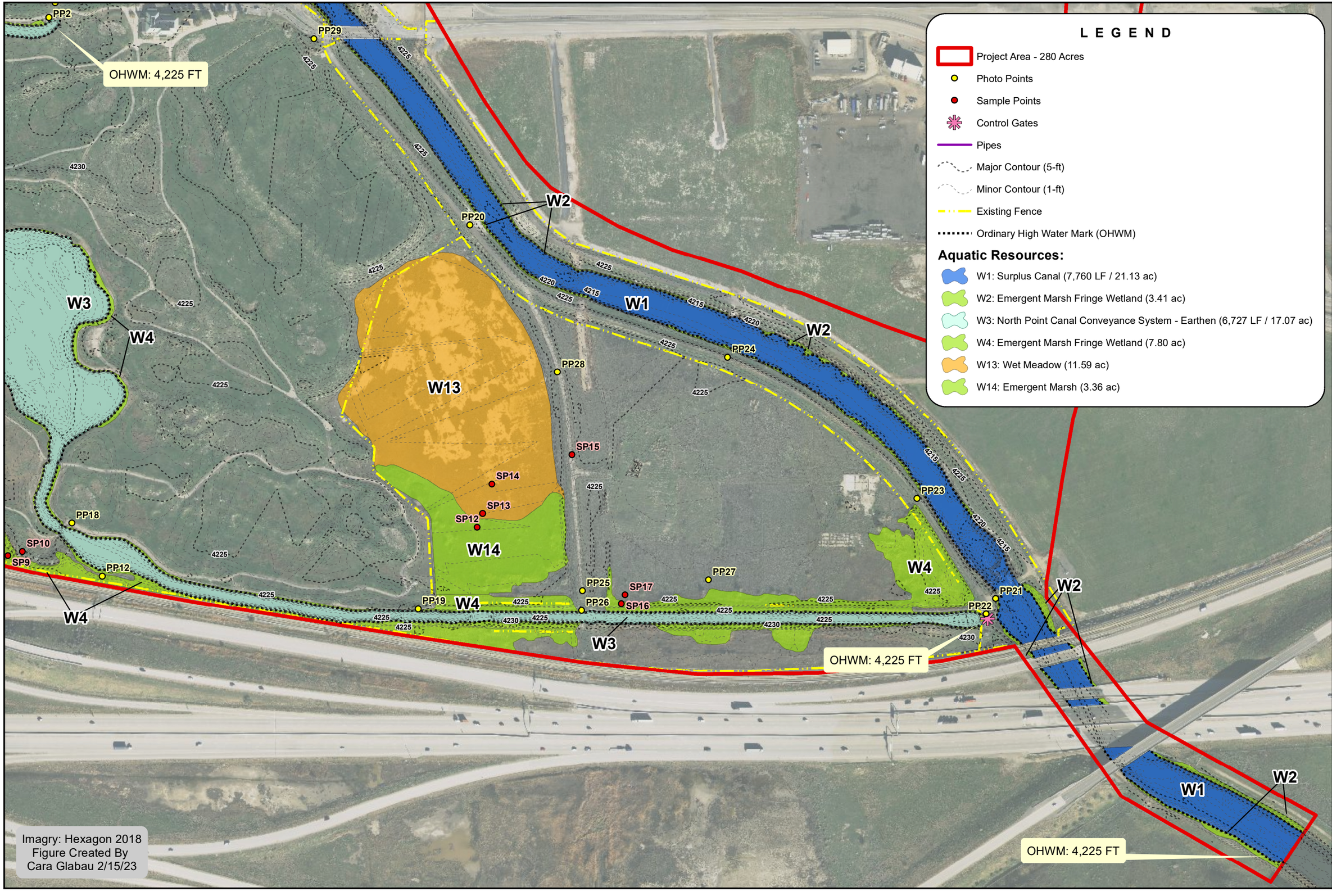
DELINEATION RESULTS

AIRPORT SURPLUS CANAL RELOCATION

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 4B

P:\HNTB\502-22\01 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig4B_DelineationResults_Airport.mxd cglabau 2/22/2023



LEGEND

- Project Area - 280 Acres
- Photo Points
- Sample Points
- Control Gates
- Pipes
- Major Contour (5-ft)
- Minor Contour (1-ft)
- Existing Fence
- Ordinary High Water Mark (OHWM)

Aquatic Resources:

- W1: Surplus Canal (7,760 LF / 21.13 ac)
- W2: Emergent Marsh Fringe Wetland (3.41 ac)
- W3: North Point Canal Conveyance System - Earthen (6,727 LF / 17.07 ac)
- W4: Emergent Marsh Fringe Wetland (7.80 ac)
- W13: Wet Meadow (11.59 ac)
- W14: Emergent Marsh (3.36 ac)

SCALE: 1 in. = 300 ft.

NORTH: NORTH

DELINEATION RESULTS

AIRPORT SURPLUS CANAL RELOCATION

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
4C

P:\HNTB\592-22\01 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig4C_DelineationResults_Airport.mxd cglabau 2/22/2023

Appendix F

Canal Extents Figure

GREAT SALT LAKE

FARMINGTON BAY

The Surplus Canal ends in Farmington Bay.

The Reclamation Ditch has a diversion into the Rudy Drain, which ends in Farmington Bay.

The North Point Canal channel ends in the wetlands surroundings the Great Salt Lake.

The North Point Canal continues west, with a diversion for the Reclamation Ditch, which continues northeast.

Goggin Drain is a diversion from the Surplus Canal, which ends in the Great Salt Lake.

The North Point Canal Conveyance System is diverted from the Surplus Canal for the golf course. Control gates located at this diversion point can turn this water on and off.

Surplus Canal branches from the Jordan River and flows north.

Imagry: Hexagon 2018
Figure Created By
Cara Glabau 2/16/23

L E G E N D

- Project Area - 280 Acres
- Goggin Drain
- Jordan River
- North Point Consolidated
- Reclamation Ditch
- Rudy Drain
- Surplus Canal

SCALE: 1 in. = 5,000 ft.

NORTH: NORTH

CANAL EXTENTS

AIRPORT SURPLUS CANAL RELOCATION

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
5

P:\INT\B\B92-22-01 Airport Surplus Canal Relocation\2.0 Design Phase\2.9 GIS\Fig5_CanalExtents_Airport.mxd cglabau 2/22/2023

Appendix G

Aquatic Resources Spreadsheet

Airport Surplus Project
Aquatic Resources

Waters Name	State	Cowadin Code	HGM Code	Measurement Type	Amount	Units	Waters Type	Latitude	Longitude	Local Waterway
W1	Utah	R2UBGx	RIVERINE	Length	7760	Feet	TNW	40.769964	-111.975989	Surplus Canal
W2	Utah	PEM5C	RIVERINE	Area	3.41	Acres	TNWW	40.770365	-111.976411	Emergent Marsh Fringe Wetland
W3	Utah	PUBGx	RIVERINE	Area	17.07	Acres	RPW	40.768327	-111.97905	North Point Canal Conveyance System - Earthen
W4	Utah	PEM5C	RIVERINE	Area	7.80	Acres	RPWWD	40.766498	-111.97393	Emergent Marsh Fringe Wetland
W5	Utah	PUBE	DEPRESS	Area	0.73	Acres	RPWWD	40.766548	-111.980935	Seasonal Pond
W6	Utah	PUBHx	DEPRESS	Area	3.48	Acres	RPW	40.770396	-111.984537	Pond
W7	Utah	PEM5C	DEPRESS	Area	0.34	Acres	RPWWD	40.770487	-111.984347	Emergent Marsh Fringe Wetland
W8	Utah	PUBE	DEPRESS	Area	0.20	Acres	RPWWD	40.769858	-111.985209	Seasonal Pond
W9	Utah	PEM5E	DEPRESS	Area	0.31	Acres	RPWWD	40.769773	-111.985129	Emergent Marsh Wetland
W10	Utah	R2UBGx	RIVERINE	Length	2874	Feet	RPW	40.772848	-111.983115	North Point Canal Conveyance System - Concrete Lined
W11	Utah	PAB1F	DEPRESS	Area	0.29	Acres	NRPW	40.772863	-111.978795	Stormwater Detention Pond
W12	Utah	PEM5C	DEPRESS	Area	0.11	Acres	NRPWW	40.772893	-111.978759	Emergent Marsh Fringe Wetland
W13	Utah	PEM1E	RIVERINE	Area	11.59	Acres	RPWWN	40.767909	-111.974113	Wet Meadow
W14	Utah	PEM5E	DEPRESS	Area	3.36	Acres	RPWWN	40.76642	-111.973649	Emergent Marsh Wetland
U1	Utah	U	DEPRESS	Area	0.14	Acres	UPLAND	40.768897	-111.984188	Phragmites Stand (No Hydrology)
U2	Utah	U	DEPRESS	Area	0.24	Acres	UPLAND	40.770117	-111.982166	Phragmites Stand (No Hydrology)

Appendix H

Additional Photos

Airport Surplus Canal Relocation

Photo Point 1

Photo Point 2

Airport Surplus Canal Relocation

Photo Point 3

Photo Point 3

Airport Surplus Canal Relocation

Photo Point 4

Photo Point 4

Airport Surplus Canal Relocation

Photo Point 5

Photo Point 5

Airport Surplus Canal Relocation

Photo Point 6

Photo Point 7

Photo Point 7

Photo Point 8

Airport Surplus Canal Relocation

Photo Point 8

Photo Point 9

Photo Point 9

Photo Point 10

Airport Surplus Canal Relocation

Photo Point 10

Photo Point 11

Airport Surplus Canal Relocation

Photo Point 11

Photo Point 12 –

Airport Surplus Canal Relocation

Photo Point 12

Photo Point 12

Airport Surplus Canal Relocation

Photo Point 13

Photo Point 13

Airport Surplus Canal Relocation

Photo Point 14

Photo Point 14

Airport Surplus Canal Relocation

Photo Point 15

Photo Point 16

Photo Point 17

Photo Point 17

Airport Surplus Canal Relocation

Photo Point 17

Photo Point 18

Airport Surplus Canal Relocation

Photo Point 18

Photo Point 19

Airport Surplus Canal Relocation

Photo Point 19

Photo Point 19

Photo Point 19

Photo Point 20

Photo Point 20

Photo Point 21

Airport Surplus Canal Relocation

Photo Point 21

Photo Point 21

Airport Surplus Canal Relocation

Photo Point 22

Photo Point 22

Photo Point 22

Photo Point 23

Airport Surplus Canal Relocation

Photo Point 23

Photo Point 23

Airport Surplus Canal Relocation

Photo Point 24

Photo Point 24

Photo Point 25

Photo Point 25

Airport Surplus Canal Relocation

Photo Point 25

Photo Point 25

Airport Surplus Canal Relocation

Photo Point 26

Photo Point 26

Photo Point 27

Photo Point 27

Photo Point 27

Photo Point 27

Photo Point 28

Photo Point 28

Photo Point 29

Photo Point 30

Airport Surplus Canal Relocation

Photo Point 31

Photo Point 31

Photo Point 32

Photo Point 33

Photo Point 33

Photo Point 34

Photo Point 34

Photo Point 35

Airport Surplus Canal Relocation

Photo Point 36

Photo Point 36

Photo Point 37

Photo Point 37

Appendix I

Golf Course Irrigation Plans

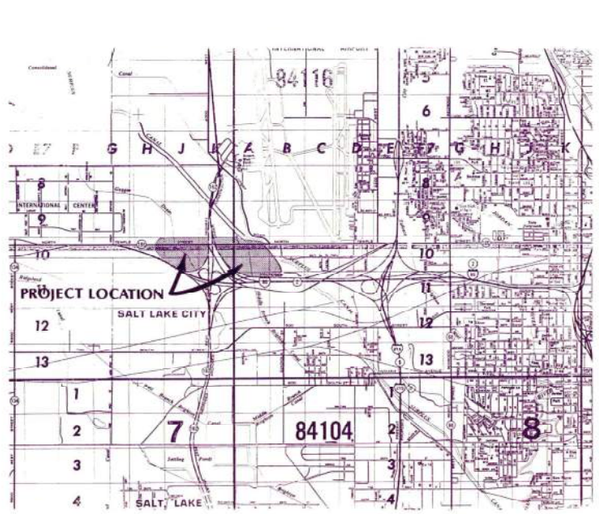
SALT · LAKE · CITY · PARKS · AND · RECREATION

SALT LAKE CITY AIRPORT GOLF COURSE

DRAINAGE, IRRIGATION & FINISH WORK

JANUARY, 1989

S.L.C. PROJECT NO. 19-Y-116-4



PROJECT MAP

INDEX

MAYOR		PALMER A. DePAULIS
CITY COUNCIL	DIST. 1	FLORENCE BITTNER
	DIST. 2	L. WAYNE HORROCKS
	DIST. 3	SIDNEY FONNESBECK
	DIST. 4	ALAN HARDMAN
	DIST. 5	THOMAS M. GODFREY
	DIST. 6	ROSELYN N. KIRK
	DIST. 7	W.M. STOLER

SALT LAKE CITY UTAH PUBLIC WORKS

Your Salt Lake City Parks & Recreation

DESIGN ENGINEER	PLAN REVIEW	DEPT OF PUBLIC UTILITIES	PLANNING & ZONING	DIRECTOR OF PARKS & RECREATION	CITY
EARL S. KEMP DATE	JOHN NASER DATE	LEROY HOOTON, JR. DATE	REGGIE JOHNSON 2-3-89 DATE	JOHN GUST DATE	MAX M. PETERSON

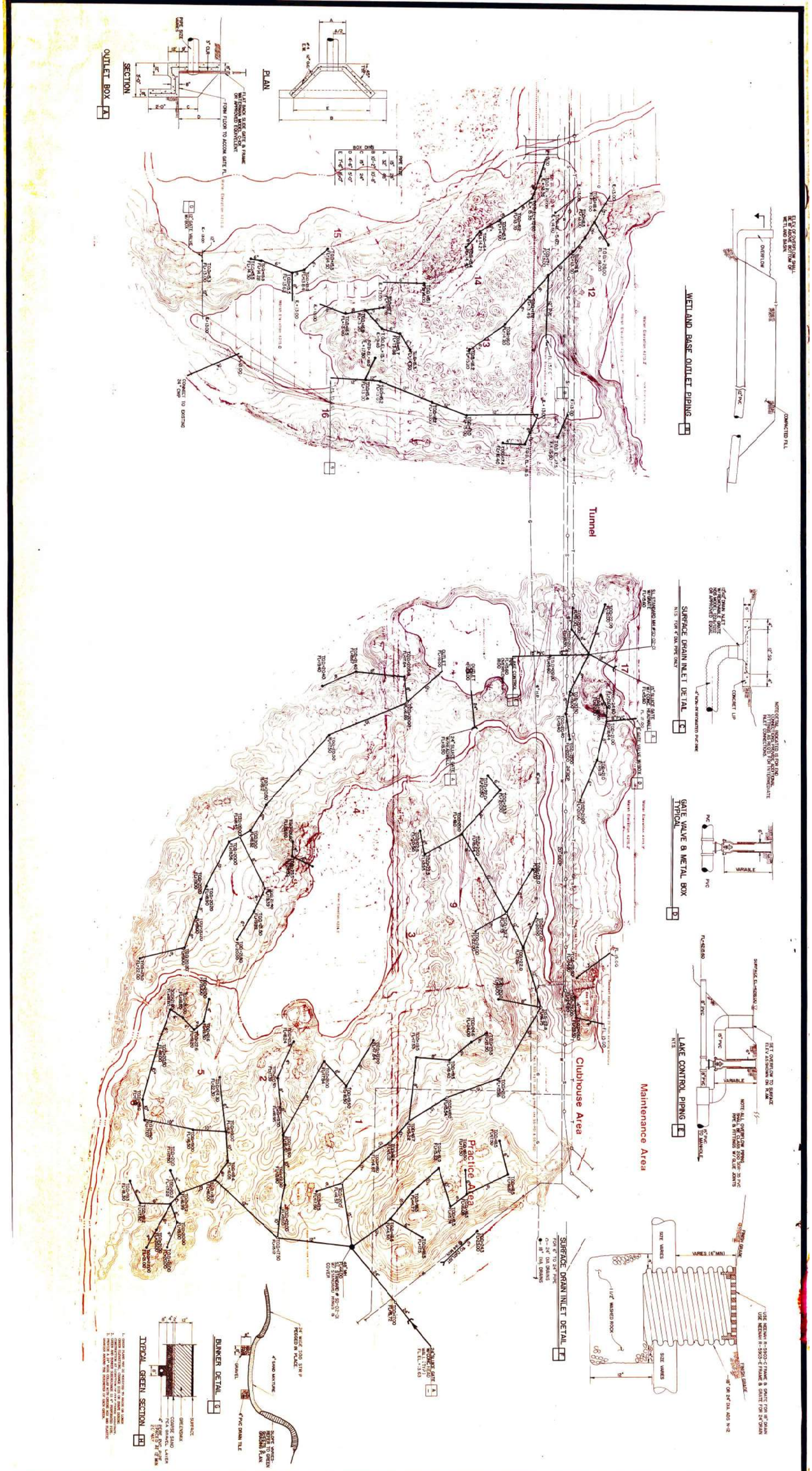
SALT LAKE CITY AIRPORT G.C.

Salt Lake City, Utah

ARTHUR HILLS & ASSOCIATES
Golf Course Architects
7351 W. Bancroft Toledo Ohio

Finish Grading

Sheet No. 1



SALT LAKE CITY AIRPORT G.C.

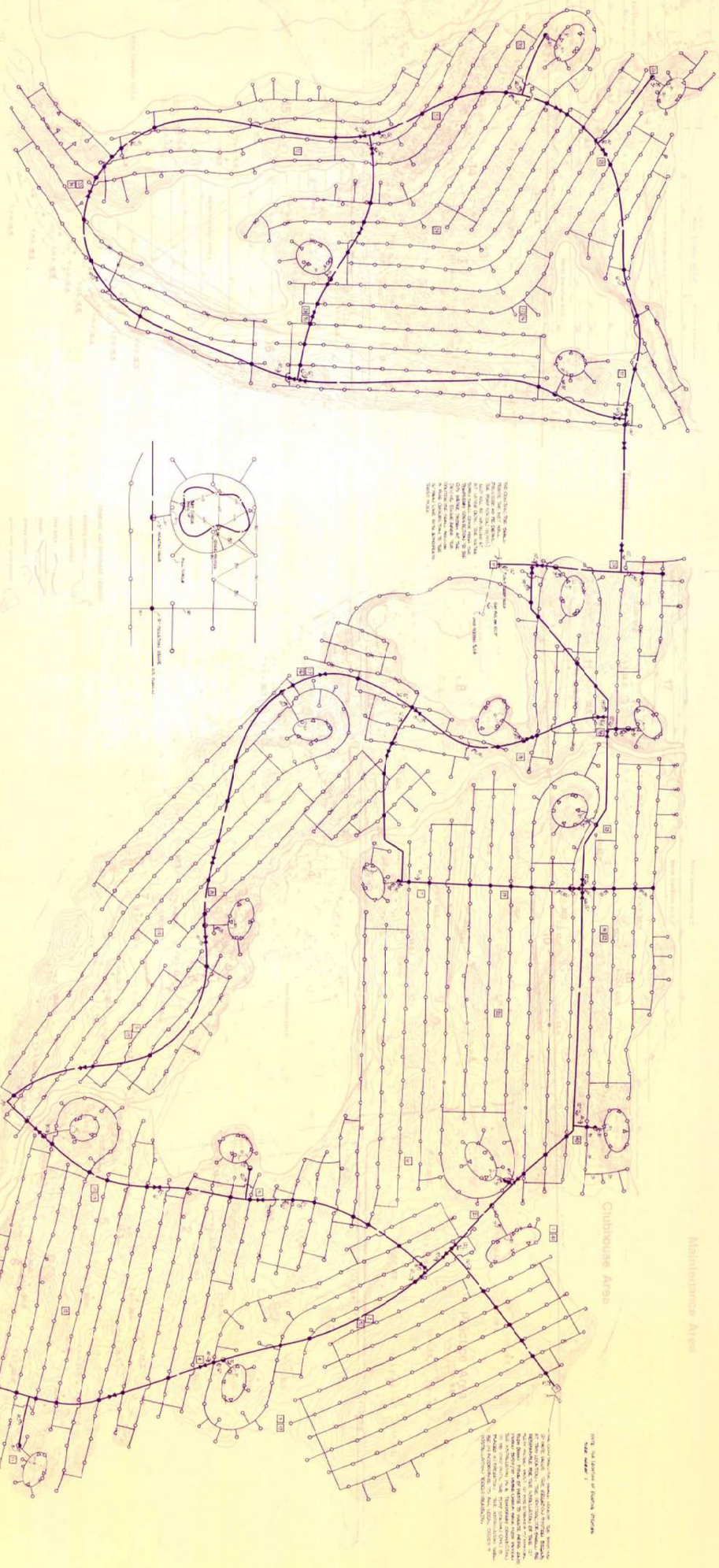
Salt Lake City, Utah

FORSGREN - PERKINS ENGINEERING, p.a.

ARTHUR HILLS & ASSOCIATES
Golf Course Architects
7151 W. Bancroft Toledo Ohio

Drainage

Sheet No. 2



SALT LAKE CITY AIRPORT G.C.

Salt Lake City, Utah

FORSGREN - PERKINS ENGINEERING, p.a.

ARTHUR HILLS & ASSOCIATES
Golf Course Architects
7351 W. Bancroft Toledo, Ohio

Sheet Title: Irrigation Routing

Scale: 1" = 100'-0"

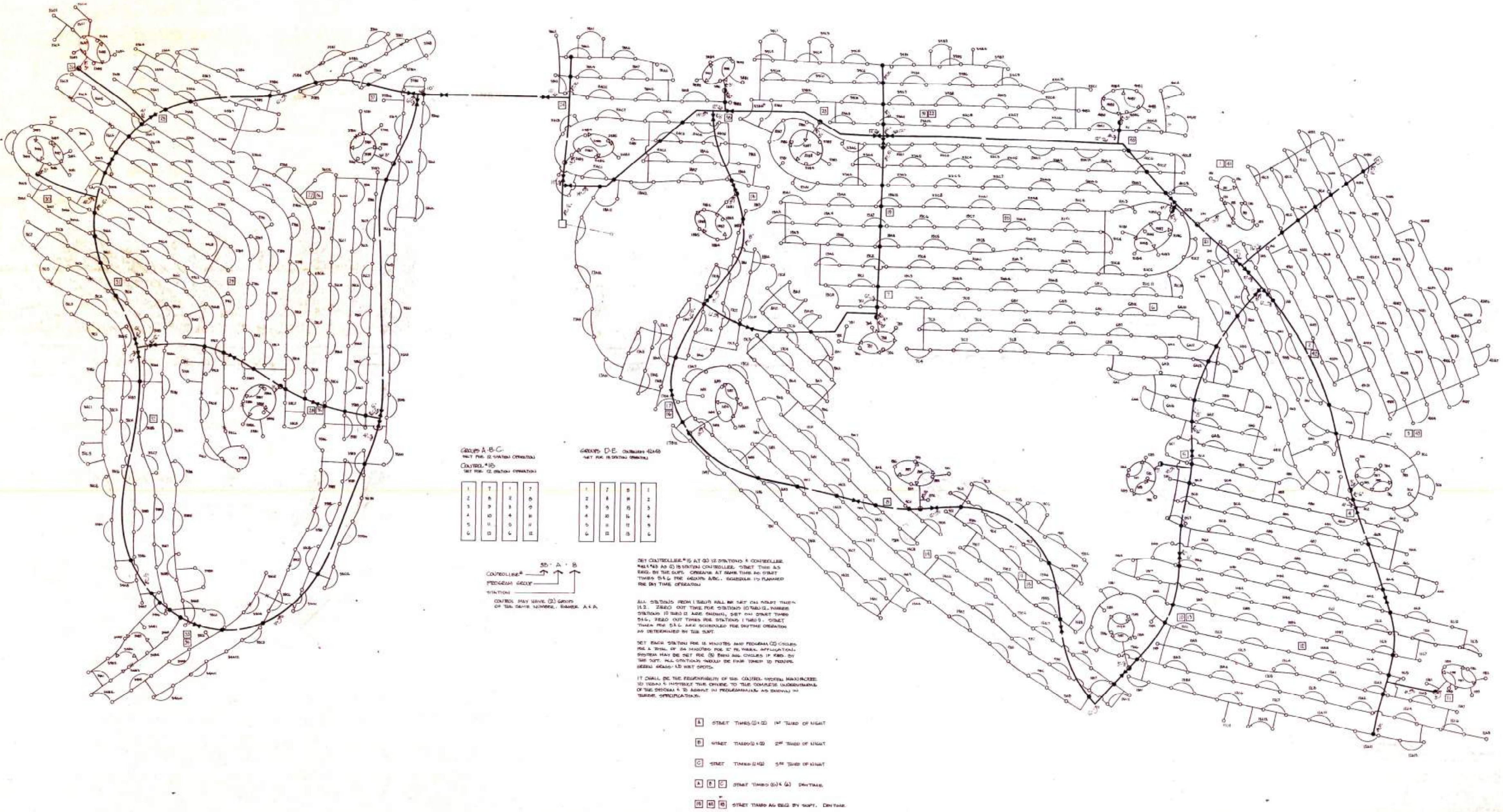
Date: 27 July 1988

Revisions: 15 SEPT 1988

Project No.

Checked

Sheet No. 3



SALT LAKE CITY AIRPORT G.C.

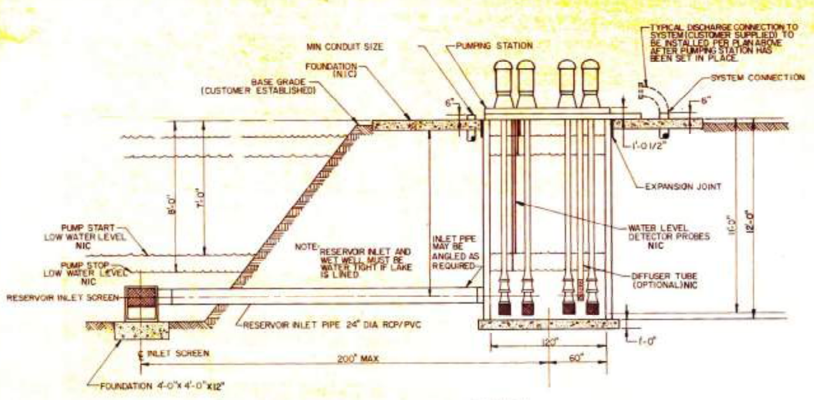
Salt Lake City, Utah

FORSGREN - PERKINS ENGINEERING, p.a.

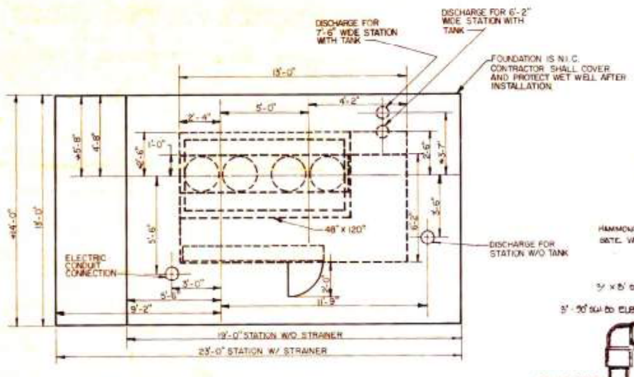
ARTHUR HILLS & ASSOCIATES
Golf Course Architects
7351 W Bancroft Toledo, Ohio

Sheet Title: Irrigation Control

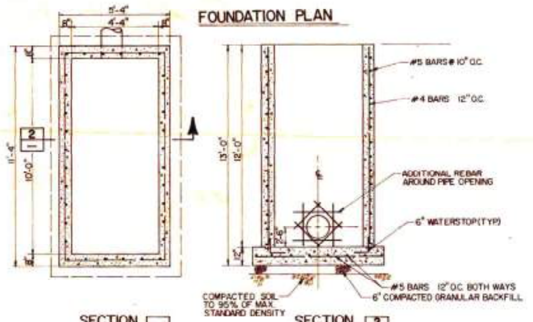
Sheet No. 5



GENERAL INSTALATION ELEVATION

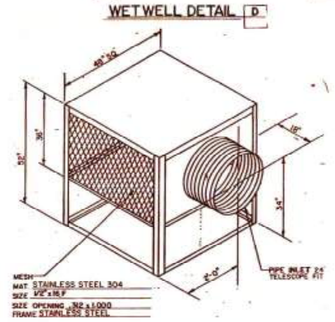


FOUNDATION PLAN

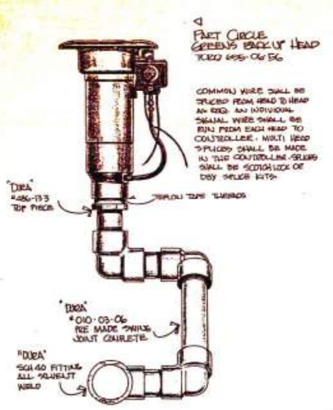


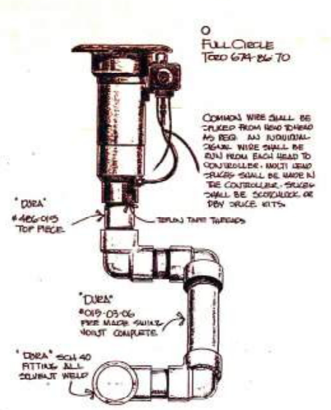
SECTION 1 — SECTION 2

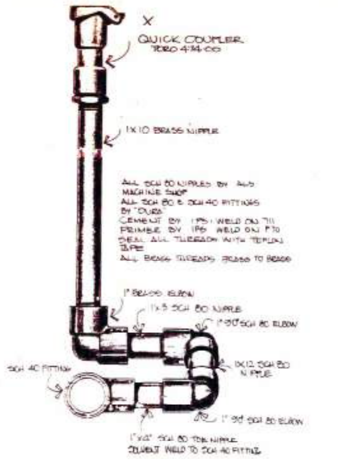
WETWELL DETAIL D

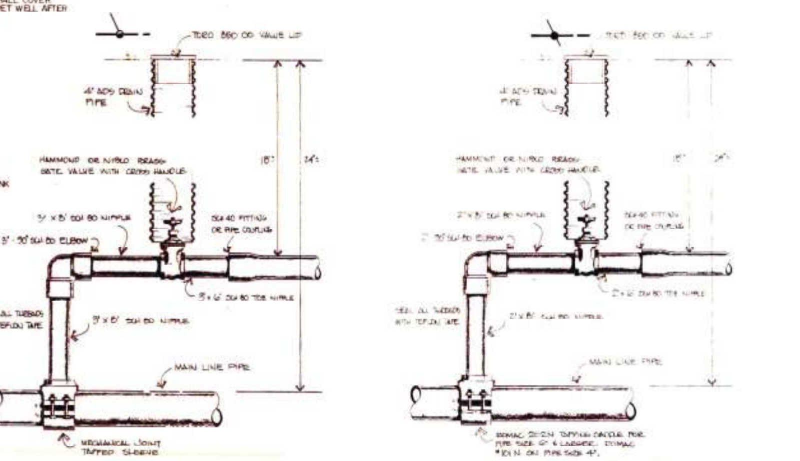


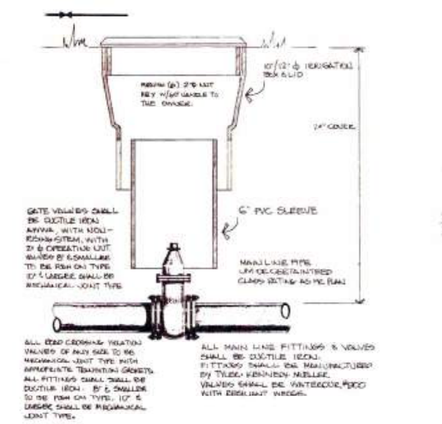
RESERVOIR INLET SCREEN











GENERAL NOTE:

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIMSELF FAMILAR WITH THIS PROJECT & TO DETERMINE BEFORE THE BID ALL REQUIRED DATA FOR PROVIDING A COMPLETE BID.

☆ CENTRAL CONTROL
A CENTRAL CONTROL WILL BE INSTALLED AT THE CLUBHOUSE. THE CONTROL WILL BE COMPATIBLE WITH THE SATELLITES IT IS CONTROLLING. THE CENTRAL CONTROL SHALL BE THE COMPUTER ORIENTED PROGRAMING SYSTEM (COPS) AS MANUFACTURED BY BUCKNER, OR APPROVED EQUAL. THE CENTRAL CONTROL MUST INCLUDE ALL REQUIRED SURGE & LIGHTNING PROTECTION EQUIPMENT. (1) WEATHER STATION SHALL BE PROVIDED AND SHALL BE LOCATED AS SPECIFIED BY THE ENGINEER. THE WEATHER STATION SHALL BE BY THE SAME MANUFACTURER AS THE CENTRAL. THE POWER (120VOLT) FOR THE CENTRAL SHALL COME FROM THE POWER SUPPLY OF THE CLUBHOUSE. THE POWER MUST PASS THRU A POWER CONDITIONER (1KVA) GE #9T51L1173 OR APPROVED EQUAL. THE MANUFACTURER SHALL INCLUDE WITH HIS BID, OWNER OPERATOR TRAINING TO INSURE A COMPLETE UNDERSTANDING OF THE CONTROLLER & FIELD SATELLITES AND ASSISTANCE IN PROVIDING THE BASIC CONTROL PROGRAM.

□ FIELD SATELLITE CONTROLLERS
FIELD SATELLITES SHALL BE INSTALLED AS SHOWN ON THE PLAN. THE SATELLITE SHALL HAVE THE ABILITY TO PROVIDE (2) 12 STATION MODULE UNITS OR GROUPINGS. THE SATELLITE SHALL BE CAPABLE OF OPERATING AS A STAND ALONE & THRU A SIGNAL FROM A COMPATIBLE CENTRAL CONTROL. THE SATELLITE MUST BE EQUIPPED WITH A BATTERY BACK-UP. THE SATELLITE CASE SHALL BE STAINLESS STEEL. THE SATELLITE SHALL BE MOUNTED ON A CONCRETE PAD (ACCORDING TO MANUFACTURERS REC.) (1) 3" Ø CONDUIT SHALL BE SUPPLIED FOR THE 24 VOLT SIGNAL WIRES (1) 1" Ø CONDUIT SHALL BE SUPPLIED FOR THE 120 VOLT POWER SUPPLY. (1) 1" Ø OPENING SHALL BE PROVIDED FOR THE GROUND ROD INSTALLATION. THE 120 VOLT POWER SUPPLY WILL BE AS SHOWN ON THE PLAN. THE (2) LOCATIONS SHALL BE (1) THE FUTURE PUMP LOCATION (2) THE CLUBHOUSE. THE OWNER WILL SUPPLY A METER AT EACH LOCATION. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED BREAKERS (20AMP) AS SHOWN ON PLAN & BEGIN THE WIRE ROUTING FROM THOSE CONNECTION POINTS. THE MANUFACTURER SHALL SUPPLY WITH HIS BID ALL SURGE & LIGHTNING PROTECTION. THE POWER SUPPLY & COMMUNICATION CABLE SHALL BE INSTALLED WHERE POSSIBLE IN THE MAIN LINE TRENCH. THE POWER SHALL BE SEPERATED FROM THE COMMUNICATION CABLE AT A DISTANCE OF (6") OR MORE. A BARE COPPER GROUND WIRE (SIZE AS SHOWN ON PLAN) SHALL BE INSTALLED FROM THE SOURCE TO EACH SATELLITE ALONG WITH THE POWER SOURCE. A YELLOW WARNING TAPE SHALL BE INSTALLED 6"+ ABOVE THE 120VOLT WIRING. EACH SATELLITE WILL BE CONNECTED TO A 5/8"x 56" Ø COPPER CLAD GROUNDING ROD. THE ROD WILL BE DRIVEN THRU THE 1" OPG. IN THE CONCRETE PAD BEFORE INSTALLATION OF THE SATELLITE. THE GROUNDING DEVICES MUST HAVE A RESISTANCE OF 10 (TEN) OHMS OR LESS TO THE GROUND IN WHICH IT IS INSTALLED WITH THE BARE EQUIPMENT GROUND DISCONNECTED. THE MATERIALS SUPPLIER OR MANUFACTURERS REP. MUST TEST, INSPECT & APPROVE ALL GROUNDING PRIOR TO OPERATING THE SYSTEM. ALL SPLICES FOR THE POWER SUPPLY & COMMUNICATION CABLE WILL BE MADE IN THE SATELLITE CONTROL BOX. FIELD SPLICES OF THE POWER & COMMUNICATION CABLE WILL NOT BE ALLOWED. ALL COMMON WIRE TO THE GREENS HEADS SHALL BE UF #12. ALL OTHER COMMON WIRES SHALL BE UF #14 COPPER. ALL SIGNAL WIRE SHALL BE UF #14 COPPER. ALL COMMON & SIGNAL WIRE WILL BE SPLICED AT EACH HEAD BY A SCOTCHLOCK #3570 OR DBY SPLICE KIT. THE COMMON WIRE WILL BE SPLICED FROM HEAD TO HEAD OF ALL HEADS IN ITS GROUP & RUN TO THE SATELLITE. THE SIGNAL WIRE WILL BE SPLICED TO A SINGLE HEAD & RUN TO THE SATELLITE. ALL MULTI HEAD STATIONS WILL BE SPLICED TOGETHER IN THE SATELLITE.

○ FULL CIRCLE HEAD
THE IRRIGATION HEAD SHALL BE VALVE IN HEAD, ROTARY POPUP, GEAR DRIVEN. THE HEAD SHALL PRODUCE 41.2 GPM - 84' RADIUS 80PSI. THE HEAD SHALL BE PRESSURE REGULATED AND SET AT 80PSI AT THE FACTORY. THE HEAD SHALL BE MOUNTED ON A SWING JOINT (AS PER DETAIL) & SPACED AT 80' TRIANGULAR SPACING. HEADS WILL BE SET 2"± ABOVE GRADE & SET TO GRADE BY THE OWNER AFTER GROW IN.

◁ PART CIRCLE GREENS BACKUP HEAD
THE IRRIGATION HEAD SHALL BE VALVE IN HEAD, ROTARY POPUP, GEAR DRIVEN, ADJUSTABLE PART CIRCLE. THE HEAD SHALL PRODUCE 28.4 G.P.M - 65' RADIUS 80PSI. THE HEAD SHALL BE PRESSURE REGULATED AND SET AT 80PSI AT THE FACTORY. THE HEAD SHALL BE MOUNTED ON A SWING JOINT (AS PER DETAIL) & SPACED AT 65' TRIANGULAR SPACING. HEADS WILL BE SET 2"± ABOVE GRADE & SET TO GRADE BY THE OWNER AFTER GROW IN.

× QUICK COUPLER VALVE
THE QUICK COUPLING VALVES SHALL BE MOUNTED ON A SWING JOINT (AS PER DETAIL) AND INSTALLED (2") ABOVE GRADE. THE VALVE SHALL BE SET NEXT TO THE CLOSEST IRRIGATION HEAD. THE HEAD SHALL HAVE AN X MARKED ON THE TOP TO DESIGNATE THE Q.C. LOCATION. THE VALVE SHALL BE SET TO GRADE AFTER GROW IN BY THE OWNER.

Ⓟ PUMP STATION WET WELL
A PUMP STATION WET WELL SHALL BE INSTALLED AS SHOWN ON THE DETAIL SHEET. THE PUMPSTATION WILL BE INSTALLED AT A LATER DATE. THE 16" MAIN LINE SHALL BE PLUGGED AT THE PUMP STATION AREA AND AN APPROPRIATE THRUST BLOCK SHALL BE INSTALLED. THE PIPING FROM THIS POINT TO THE FUTURE PUMP STATION SHALL BE AT A LATER DATE. THE INLET PIPE TO THE WET WELL SHALL BE 24" PVC OR RCP. THE INLET SCREEN SHALL BE SIZED BY FENNER INTERNATIONAL AND SHALL BE 36" Ø ALL STAINLESS STEEL.

MAIN LINE GATE VALVES & MAIN LINE FITTINGS
ALL GATE VALVES SHALL BE DUCTILE IRON, AWWA, WITH RESILIANT WEDGE. VALVES SHALL HAVE A 2" Ø OPERATING NUT. VALVES 8" AND SMALLER MAY BE PUSH ON TYPE. VALVES 10" AND LARGER SHALL BE MECHANICAL JOINT TYPE. EACH VALVE SHALL BE ENCLOSED IN A VALVE BOX AS PER DETAIL. SUPPLY (6) KEYS TO THE OWNER. ALL MAIN LINE FITTINGS SHALL BE DUCTILE IRON. FITTINGS 8" & SMALLER MAY BE PUSH ON TYPE. FITTINGS 10" & LARGER SHALL BE MECHANICAL JOINT TYPE. APPROPRIATE THRUST BLOCKS SHALL BE INSTALLED AT EACH VALVE & FITTING.

LATERAL LINE ISOLATION VALVES
ISOLATION VALVES SHALL BE INSTALLED ON THE MAIN LINE TO ISOLATE THE LATERAL SYSTEM FROM THE MAIN LINE. THE VALVES SHALL BE BRASS GLOBE PATTERN. ALL VALVES MARKED ● SHALL BE (2"), ALL VALVES MARKED ◉ SHALL BE (3") HAMMOND OR NIBCO. THE CONNECTION TO THE MAIN LINE SHALL BE FOR ALL (2") VALVES WITH A ROMAC TAPPING SADDLE (SEE INSTALLATION DETAIL) FOR ALL (3") VALVES WITH A MECHANICAL JOINT TAP SLEEVE. OUTLET SHALL BE AT 18"± BELOW GRADE. ALL THREADS SHALL BE SEALED WITH TEFLON TAPE. VALVES SHALL BE INSTALLED IN A VALVE BOX (AS PER DETAIL). VALVES SHALL HAVE CROSS HANDLE OPERATOR. FURNISH (6) CROSS HANDLE KEYS TO THE OWNER.

ELECTRICAL ROUTING
ALL ELECTRICAL POWER SUPPLY SHALL BE UF COPPER (AS SHOWN ON PLAN) OR DIRECT BURIAL WITH GREEN INSULATION. THE COMMUNICATION CABLE SHALL BE AS RECOMMENDED BY BUCKNER AND MANUFACTURED BY PAIGE ELECTRIC. WIRE SHALL BE INSTALLED IN ACCORDANCE TO LOCAL CODES. WHERE POSSIBLE THE WIRE SHALL FOLLOW THE MAIN LINE TRENCH. THE POWER SOURCE (120VOLT) SHALL COME FROM (2) SOURCES. A THE CLUB HOUSE B THE PUMP STATION LOCATION. THE CONTRACTOR SHALL SUPPLY (20AMP) BREAKERS AS SHOWN ON THE ELECTRICAL PLAN. THE 120 VOLT POWER IS IDENTIFIED ▬▬▬ AND SHALL BE (3) WIRES. (1) BLACK (1) WHITE (1) GREEN. THE COMMUNICATION CABLE IS IDENTIFIED ------- AND WILL BE THE CABLE AS SPECIFIED BY THE IRRIGATION EQUIPMENT SUPPLIER & MUST BE SUPPLIED BY THE IRRIGATION EQUIPMENT SUPPLIER. FIELD SPLICES WILL NOT BE PERMITTED. THE ONLY FIELD SPLICES ALLOWED SHALL BE AT THE CONNECTIONS TO THE VALVE SOLENOIDS (24VOLT) BY SCOTCHLOCK #3570 OR DBY SPLICE KIT. ALL OTHER SPLICES SHALL BE MADE IN THE SATELLITE CONTROL BOXES. ALL COMMON & SIGNAL WIRE SHALL BE #14 UF EXCEPT FOR ALL HEADS AT EACH GREEN WHERE THE COMMON WIRE SHALL BE #12 UF. THE COMMON WIRE MAY BE SPLICED FROM HEAD TO HEAD AS REQ TO FILL THE SATELLITES REQUIREMENTS. A SEPERATE SIGNAL WIRE SHALL BE RUN FROM EACH HEAD TO THE SATELLITE & WHERE REQ. FOR MULTI-HEAD CONTROL, SPLICES WILL BE MADE IN THE CONTROL BOX.

▷ AIR RELIEF VALVES
AIR RELIEF VALVES ARE NOT SHOWN ON THE PLAN. 1" AIR RELIEF VALVES SHALL BE INSTALLED AT FIELD CHOSEN MAIN LINE HIGH SPOTS. THE VALVES SHALL BE MANUFACTURED BY VALMATIC AND SHALL BE ISOLATED FROM THE SYSTEM WITH A 1" MANUAL BALL VALVE (300PSI). CONNECTION TO THE MAIN LINE SHALL BE WITH A ROMAC TAPPING SADDLE 202N SERIES. THE PIPE SHALL BE 1" BRASS NIPPLES. ALL THREADS SHALL BE SEALED WITH TEFLON TAPE. THE AIR VALVE SHALL BE ENCLOSED IN A 14"x 20" JUMBO VALVE BOX WITH LID & (2) 6" BOX EXTENSIONS. BID (10) ITEMS

DRAIN VALVES
DRAIN VALVES ARE NOT SHOWN ON THE PLAN BUT SHALL BE INSTALLED AT FIELD CHOSEN LOW SPOTS. THE VALVES SHALL BE A (1") STOP VALVE (ORISEAL). THE VALVE SHALL DISCHARGE TO DRAINAGE AREAS, PONDS, OR GRAVEL SUMP AS CONDITIONS ALLOW. THE CONNECTION TO THE MAIN LINE SHALL BE WITH A ROMAC 202N TAPPING SADDLE WITH THE OUTLET POINTED DOWN. ALL PIPING SHALL BE BRASS TO THE VALVE. ALL PIPING FROM THE VALVE SHALL BE PVC. THE VALVE SHALL BE ENCLOSED IN AN APPROPRIATE VALVE BOX. TYPICAL TO LATERAL ISOLATION VALVE. FURNISH (20) ITEMS WITH (2) KEYS. IT IS THE INTENT TO PROVIDE DRAINAGE TO A MAJOR PORTION OF THE SYSTEM AND TO COMPLETE THE DRAINAGE FOR WINTER BY USE OF AN AIR BLOWER BY THE SUPT.

PIPE SCHEDULE
ALL PIPE SHALL BE J.M., CERTAINTEED OR APPROVED EQUAL.
MAIN LINE PIPE ——— SHALL BE CLASS 200 PVC, SDR 21, RING TITE ON PIPE 12" OR LESS. PIPE SHALL BE DR21 TYPE, RING TITE ON PIPE 14" & 16". AVERAGE BURIAL 4' COVER, SIZE AS SHOWN ON THE PLAN. ALL FITTINGS SHALL BE DUCTILE IRON & TAPPING SADDLES SHALL BE ROMAC OR M.J. TAPPED SLEEVE.
LATERAL LINE PIPE ——— SHALL BE CLASS 200 PVC, SDR 21, SOLVENT WELD. SIZE SHALL BE (2") UNLESS OTHERWISE SHOWN. ON ALL LONG RUNS A RUBBER GASKET COUPLING SHALL BE INSTALLED EVERY 200'±. SECTIONS OF RING TITE PIPE MAY BE USED IN PLACE OF THE COUPLING. ALL STUB ENDS SHALL BE SOLVENT WELD. ALL FITTINGS SHALL BE SCH 40 SOLVENT WELD BY "DURA". ALL SOLVENT WELD JOINTS SHALL BE WITH IPS PRIMER #P70 & IPS CEMENT #711 GRAY, APPLIED ACCORDING TO MANUFACTURERS RECOMMENDATIONS. ANY FITTINGS WITH THREADS SHALL BE SCH 80. AVERAGE BURIAL (18") COVER.
BRIDGE CROSSINGS SHALL BE DUCTILE IRON STEEL MECHANICAL JOINT & HANGING METHOD MUST BE APPROVED BY THE ARCHITECT. TRANSITION FROM STEEL TO PVC SHALL BE WITH "DRESSER COUPLINGS".
TUNNEL PIPING SHALL BE DR TYPE 18, RING TITE BETWEEN EACH ISOLATION VALVE. VALVES SHALL BE MECHANICAL JOINT WITH APPROPRIATE THRUST BLOCKS. BURIAL WITH 60" MIN COVER.
PUMP WET WELL INTAKE PIPE SHALL BE PVC DR25 OR RCP 24" AND GROUTED TO THE WET WELL. THE LAKE SCREEN SHALL TELESCOPE FIT INTO THE PIPE END.

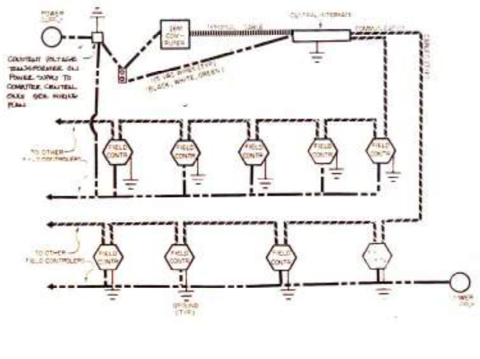
THRUST BLOCKS
APPROPRIATE THRUST BLOCKS SHALL BE INSTALLED ON ALL MAIN LINE FITTINGS & VALVES.

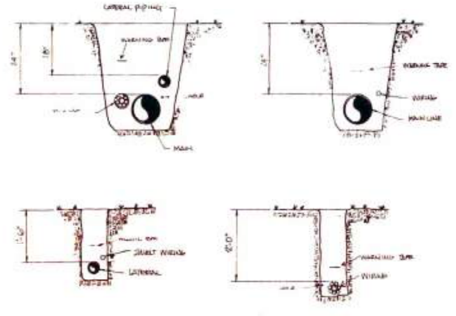
TRENCHES
ALL TRENCHES SHALL BE BACFILLED W/CLEAN MATERIALS & WATER SETTLED.

STAKING
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR STAKING. ALL STAKING OF HEADS, CONTROLS, PIPE ROUTING, ARV & DRAINS MUST BE APPROVED BY THE ARCHITECT OR ENGINEER BEFORE CONSTRUCTION.

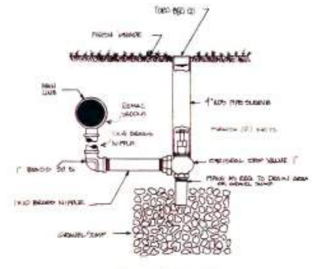
AS BUILT PLAN
THE CONTRACTOR SHALL KEEP ACCURATE RECORDS OF THE INSTALLATION & AFTER COMPLETION PROVIDE TO THE OWNER AN AS BUILT RECORD ON A MYLAR REPRODUCABLE PLAN. JOB RETENTION FUNDS WILL NOT BE RELEASED UNTIL AS BUILT IS COMPLETE.

208/120 3Ø SUPPLY FROM CLUBHOUSE TO FUTURE PUMP STATION SHALL BE SIZE AND TYPE SHOWN ON WIRING PLAN.

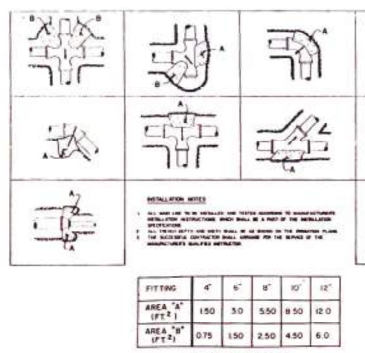




TYPICAL TRENCHING DETAIL



DRAIN VALVE DETAIL



FITTING	4"	6"	8"	10"	12"
AREA "A" (FT²)	1.50	3.0	5.50	8.50	12.0
AREA "B" (FT²)	0.75	1.50	2.50	4.50	6.0

THRUST BLOCK SIZING

Min. Radii of Curvature

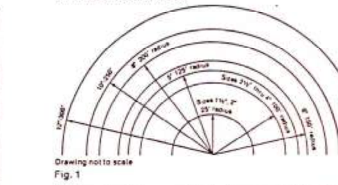


Fig. 1

The lina should be assembled above ground, in a straight line, then curved and laid in the trench. All curvature results from the bending of the pipe lengths. There is no deflection at the joint.

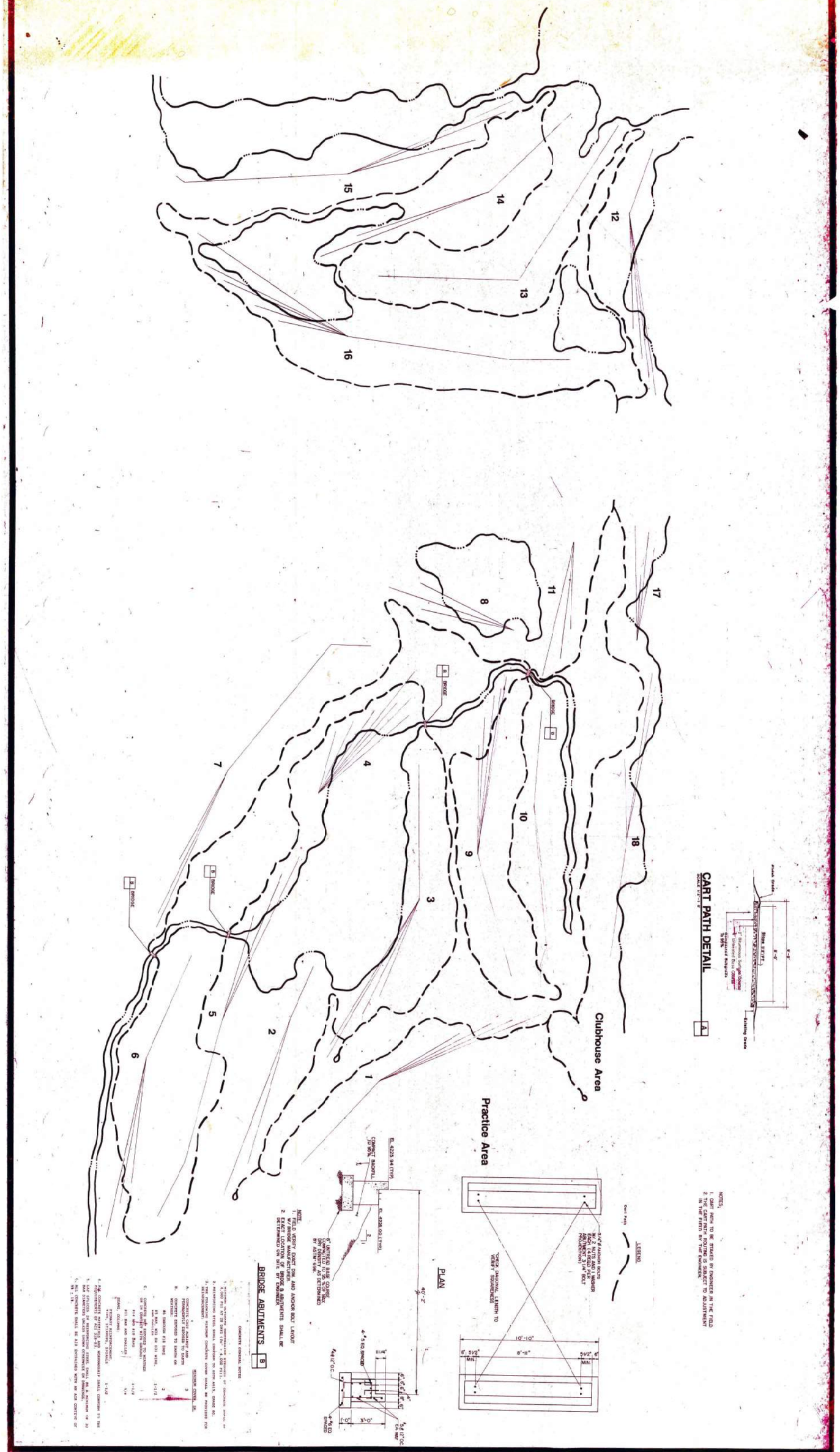
Sheet No. 6

Sheet Title: Detail Sheet

ARTHUR HILLS & ASSOCIATES
Golf Course Architects
7351 W Bancroft Toledo Ohio

FORSGREN-PERKINS ENGINEERING, p.a.

SALT LAKE CITY AIRPORT G.C.
Salt Lake City, Utah



SALT LAKE CITY AIRPORT G.C.

Salt Lake City, Utah

ARTHUR HILLS & ASSOCIATES
Golf Course Architects
7351 W. Bancroft Toledo, Ohio

Sheet Title: Cart Path Routing

Scale: 1" = 100'-0"
Date: 24 June 1988
Revisions:
Project No.:
Checked:

Sheet No. 7

Appendix J

Signed Access Waiver

Official Property Access Waiver

The Salt Lake City International Airport hereby allows U.S. Army Corps of Engineers personnel to enter the property described in the attached delineation report for the Airport Surplus Canal Relocation Project to collect samples as needed. Due to the existing fence around a majority of the project area, coordination with Airport personnel for property access through locked gates may be required.

Name: Patty Nelis

Title: Airport Environmental Manager

Signature:

Date:

Phone Number: (801) 575-2400