



Feasibility & Needs Analysis Report

Archuleta County Mountain Express Transit Harman Park Transit Center

Pagosa Springs, Colorado | April 8, 2022



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Executive Summary

PROJECT BACKGROUND & GOALS

PROJECT BACKGROUND

Southwest Colorado is currently an under served portion of the state when it comes to public transit. Between the lack of inter-regional connections and inter-city/town public transit options, it places a heavy dependence on personal vehicles. With an influx of new residents in this region and increasing tourism, the importance of providing these services has risen in recent years. Connecting this region improves economic opportunity for residents.

Archuleta County's Mountain Express Transit aims to greatly expand services within the Town of Pagosa Springs, Archuleta County and regionally. Currently, Mountain Express operates one main bus route and a cutaway bus with service for seniors and meal delivery service.

PROJECT GOALS

In the September 2021 kickoff meeting, Short Elliott Hendrickson Inc. (SEH™) met with Archuleta County Mountain Express Transit staff, Sheriff's Department, Public Works, and the interim County Administrator to discuss project goals, building program, current/future operations, fleet, and the site. The current maintenance site on Hwy 84 will remain.

1 Expanded Routes:

Mountain Express Transit is looking to partner with CDOT Bustang service to connect Pagosa Springs to Durango, and Alamosa to Pagosa Springs to complete the looped service throughout the state. Other regional routes that could be of benefit is to the Durango La Plata County Airport and to service to Wolf Creek Ski Area in the winter. Within Archuleta County/Town of Pagosa Springs, desired added routes are to West Pagosa, East Pagosa (downtown), and potentially more. Harman Park sits in an ideal location for being in the middle of service to downtown.

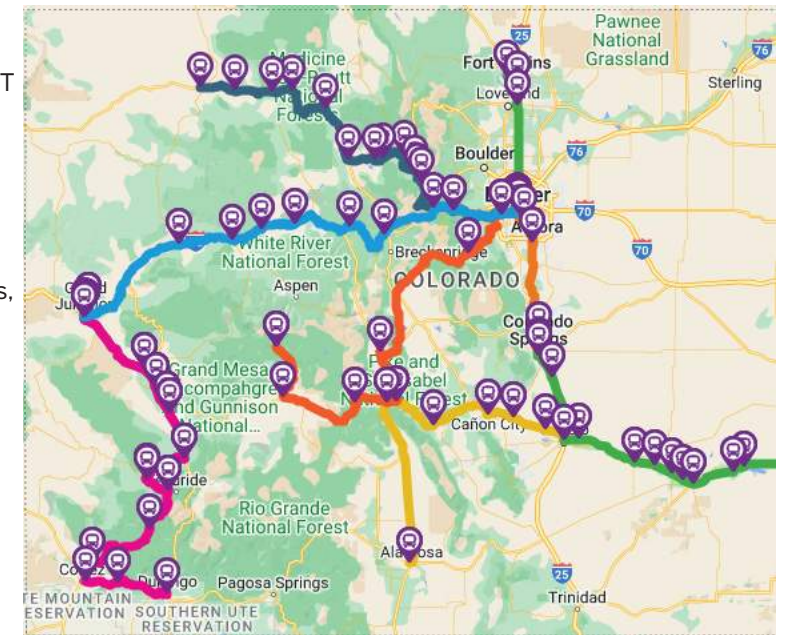
2 Create a Landmark & County Campus:

The new Transit Center will become a hub for these new routes -- a welcoming jumping-off-point for both residents and tourists. Architecturally, it needs to showcase the character of Pagosa Springs and re-energize people to take public transit.

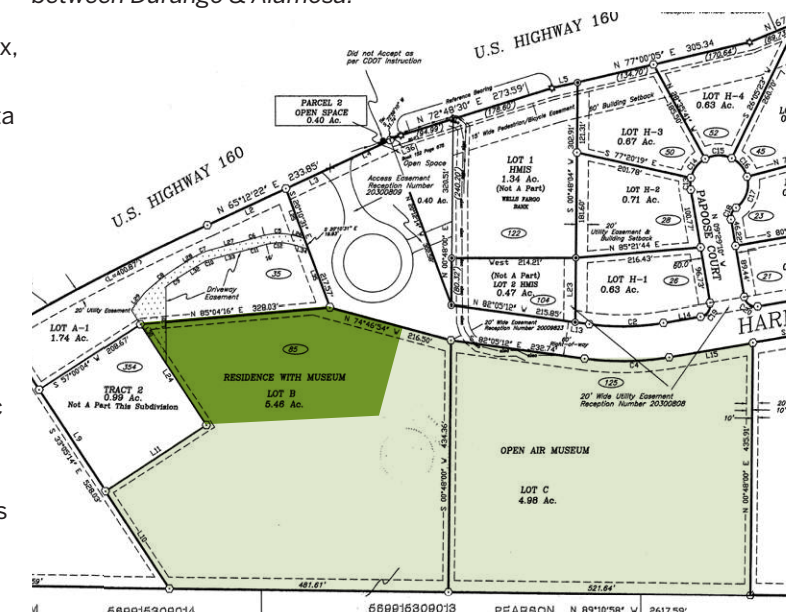
As the gateway into the County's Harman Park Complex, the new Transit Center takes on more architectural importance. The complex already includes the Archuleta County Jail, Courthouse, Sheriff, and future site for the Clerk & Recorder. Projects going forward should be treated as part of a master planned, inter-connected campus of county services. Lot consolidation might be considered as well.

3 Sustainability:

Providing for electric buses, roof-mounted photovoltaic arrays, good solar orientation, and room for future expansion are some of the sustainability measures that Mountain Express Transit would like to see happen. This opens up grant opportunities as well.



Current CDOT Bustang route map: note the missing connection between Durango & Alamosa.



Green indicates County-owned property at the Harman park complex. The dark green indicates the future transit center site.



Program & Site Requirements

NEW TRANSIT CENTER AT HARMAN PARK

Authority Having Jurisdiction: Town of Pagosa Springs, CO
 2015 International Building Code (IBC)
 2015 International Energy Conservation Code (IECC)
 2015 International Mechanical Code (IMC)
 2015 International Plumbing Code (IPC)
 2015 International Mechanical Code (IMC)

Program Analysis

	Space	Width	Length	Area	Quantity	Total Area	Occupancy Class	Occupancy Load	Occupant Total
Public Spaces	Vestibule	8	x 6	= 48	1	48 SF	B	100	1
	Public Lobby	20	x 24	= 480	1	480 SF	A-3	15	32
	Public Restrooms	8	x 8	= 64	2	128 SF	B	100	1
	Ticketing Counter/Office	10	x 6	= 60	1	60 SF	B	100	1
Private Spaces	Training/Break Room	20	x 15	= 300	1	300 SF	A-3	15	20
	Private Office	10	x 10	= 100	3	300 SF	B	100	3
	Employee Workstations	4	x 4	= 16	3	48 SF	B	100	0
	Bus Storage Bay	16	x 64	= 1024	2	2048 SF	S-2	300	7
	Bus Wash bay	18	x 64	= 1152	1	1152 SF	S-2	300	4
	Hotsy & Storage	8	x 50	= 400	1	400 SF	S-2	300	4
	General Storage	10	x 12	= 120	2	240 SF	S-2	300	1
	Driver Lockers	1	x 1.5	= 1.5	16	24 SF	B	100	0
	Staff restroom	8	x 8	= 64	1	64 SF	B	100	1
	Mechanical/Electrical	10	x 10	= 100	1	100 SF	S-2	300	1
Janitorial	8	x 8	= 64	1	64 SF	S-2	300	1	
Subtotal						5,456 SF			
Area w/ Circulation Factor @ 20%						6,547 SF	Total Occupants:		76

Site	Width	Length	Area	Quantity	Total Area
Bicycle parking lockers	3	x 6	= 18	6	108 SF
Bicycle parking rack	6	x 6	= 36	6	216 SF
Employee + Patron Parking	9	x 18	= 162	60	9720 SF
Bus terminal	60	x 14	= 840	2	1680 SF
Subtotal					11,724 SF
Landscaping					2,931 SF
Area w/ Circulation Factor @ 25%					18,319 SF

ALTERNATIVE FUEL CONSIDERATIONS

- EV charging for buses is desired
- Provide EV charging stations for park and ride
- No plan for fueling onsite for non-EV buses
- Need extra head height for maintenance on electric buses

SITE / ENVIRONMENTAL CONSIDERATIONS

Lot consolidation should be explored in an effort to create a more cohesive, holistically conceived master plan. Stormwater detention as a complex needs to be addressed, and can be more cost effective if it includes the entire development.

For the wash bay, a new sand oil interceptor will be needed, and wash bay water recycling is recommended as a sustainability measure. At the time of initial site planning, no RV dump was known to be needed for Bustang at this time.

Shallow bedrock is known from previous construction projects at the Harman Park site. A geotechnical report is underway currently.

FUTURE TOWN OF PAGOSA FRONTAGE ROAD

Because of increased traffic on Highway 160, the Town of Pagosa Springs, Archuleta County, and CDOT have been working together to develop the US Highway 160 Pagosa Springs West Access Control Plan. This document serves as a shared long range vision plan for managing access to US 160 from Vista Blvd. to 8th Street.

As part of SEH's site planning process, conversations were held with the Town of Pagosa Springs planning department to determine how to accommodate a potential future frontage road along US 160, which potentially would pass through this portion of the site occupied by the new Transit Center. Therefore, we have planned for a portion of the site that could be dedicated for future right-of-way use.

MEP SYSTEMS SUSTAINABILITY

There are various MEP sustainability opportunities that can be included in the facility. Energy recovery ventilators can be installed on exhaust and outside air intakes to precondition ventilation air. High efficiency HVAC equipment with economizers and variable speed fans will allow greater control of heating and cooling and allow for energy savings when demands are lower. A building automation system can monitor and control all HVAC and electrical systems to ensure systems work together in real time to meet the exact needs of each space.

WASH BAY WATER RECYCLING

Recycling wash bay water reduces fresh water usage and therefore operational costs. These closed loop recycling systems pull the used wash water through the gravity separation system to initially remove some solids, free oils, greases, and waxes. The water is then pumped through multiple solids and polishing filters. The water's flow is injected with ozone gas for constant bacteria destruction and odor elimination. The treated water is constantly recirculated in a storage tank and re-pressurized for reuse upon demand.

ELECTRIC BUS CHARGING

Electric Bus Charging Stations will be required in the bus storage bays to service new electric buses. In order to ensure each bus can fully charge when not in operation, it is recommended to provide a dedicated charging station for each electric bus. Buses may share charging stations, but the authority will have to develop procedures to ensure that if buses are not fully charged, they are designated for shorter routes so they can return to the bus garage before the battery is depleted.

It is assumed that in order to allow the electric buses to be available for longer, full day routes and to provide the flexibility of a fully available fleet of electric buses, a rapid bus charging station (125kW) is required for each electric bus.

VENTILATION & SUSTAINABILITY

In the storage and maintenance bays, industrial ceiling fans, such as Big Ass Fans, help improve airflow coverage and efficiency than just A/C. They reduce heater runtime in winter with better air circulation, and improve indoor air quality and more uniform temperatures. They help reduce operational costs. There is the option to have integrated LED lights, an occupancy sensor, and automated controls.

Passive ventilation should be considered for the office spaces. Some of the windows should be operable to reduce reliance on the mechanical systems where possible.



Conceptual Design

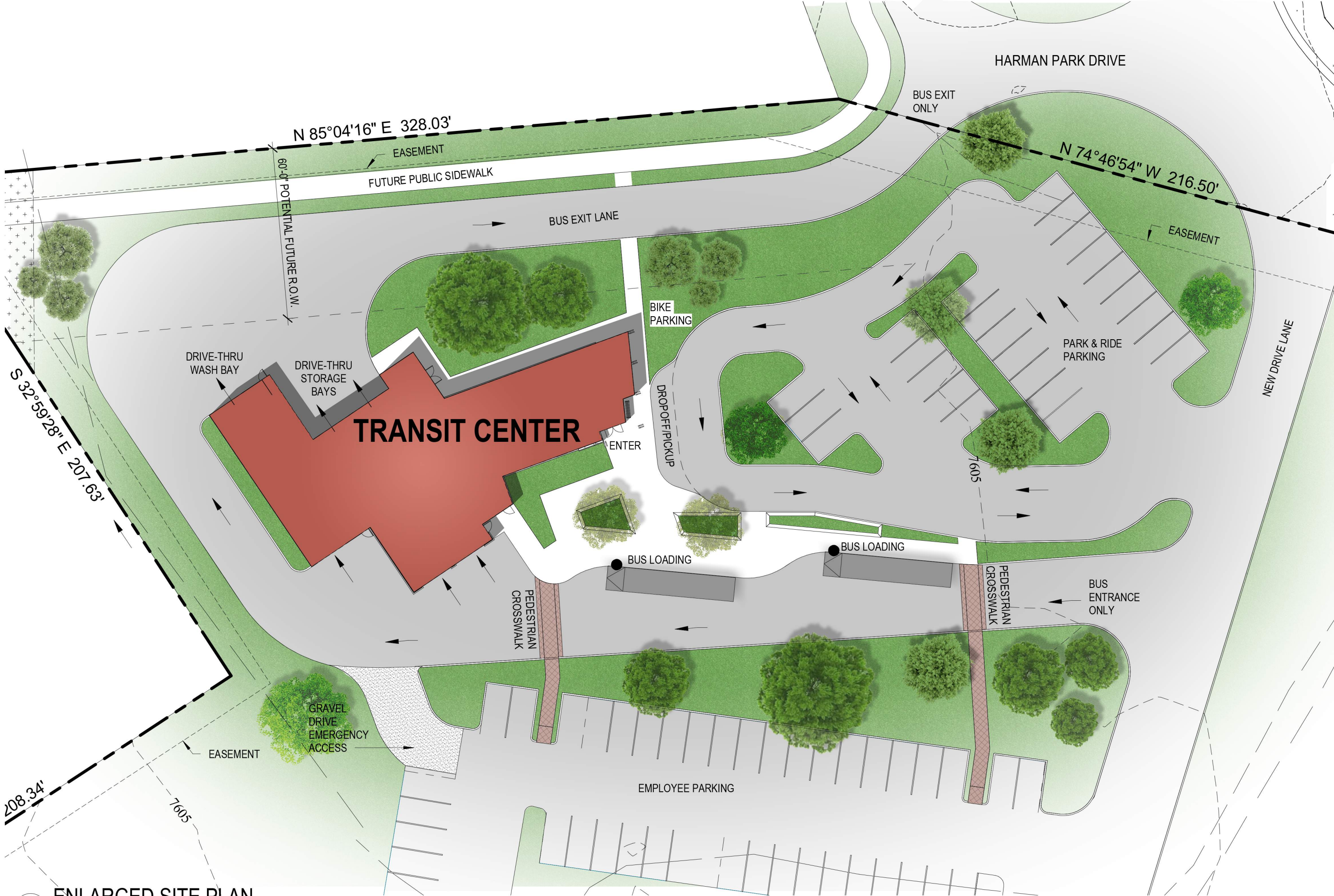
MOUNTAIN EXPRESS TRANSIT CENTER





ARCHITECTURAL SITE PLAN

1/64" = 1'-0"



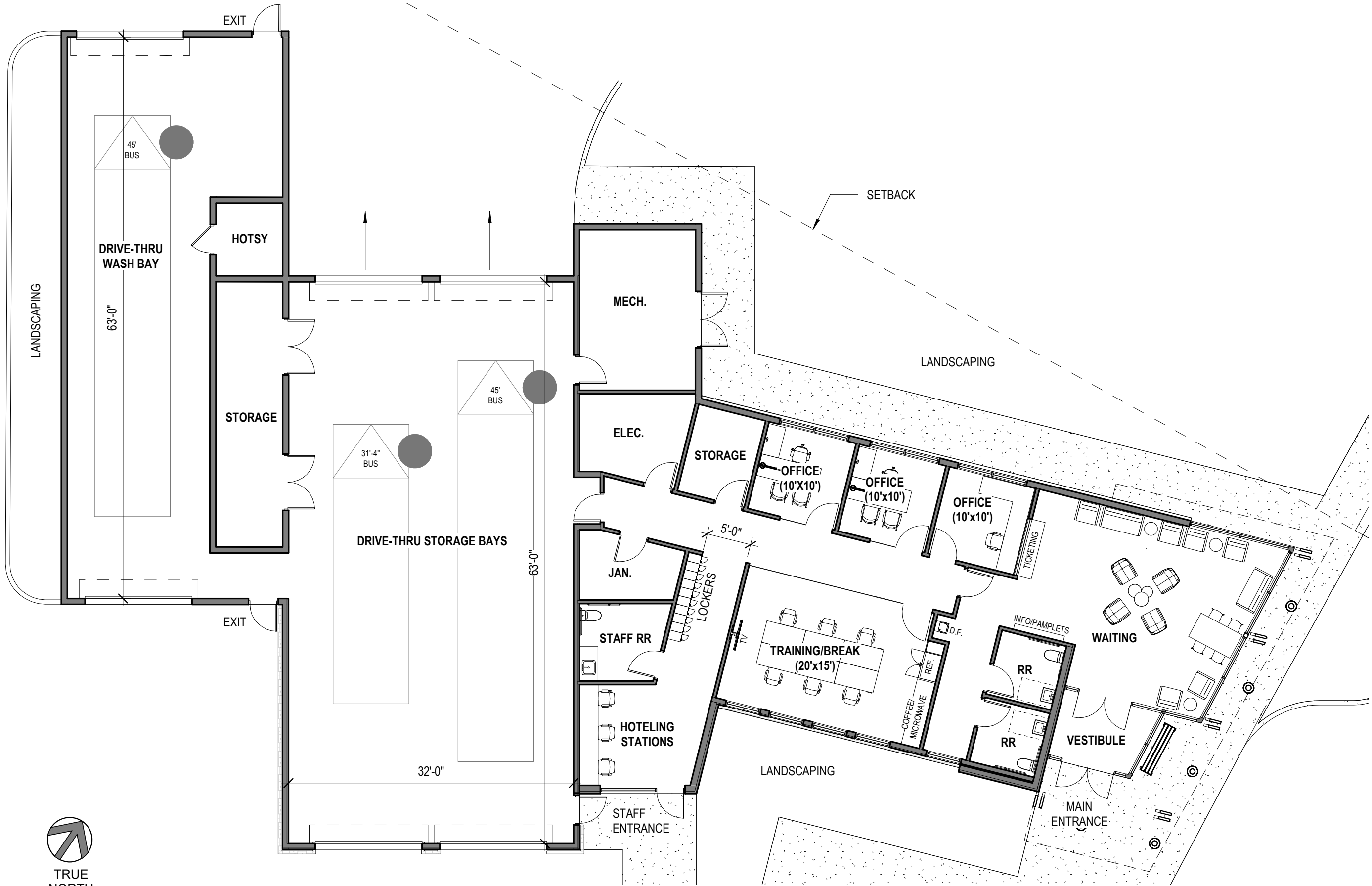
1 ENLARGED SITE PLAN
1" = 30'-0"

ARCHULETA COUNTY TRANSIT CENTER



TRUE NORTH

1 AUTOTURN ANALYSIS
1" = 40'-0"



TRUE NORTH

TRANSIT CENTER FLOOR PLAN

3/32" = 1'-0"







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