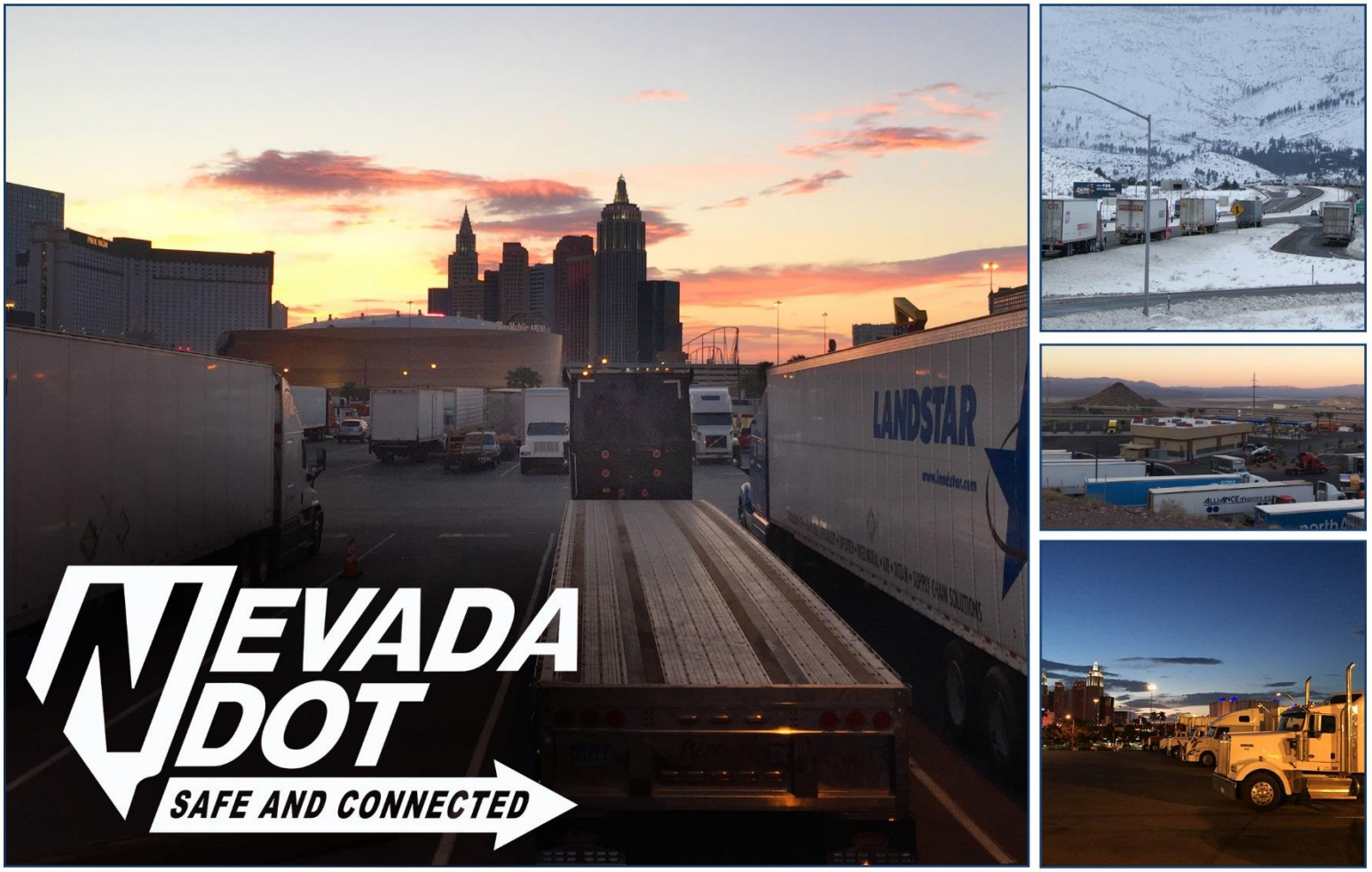
Nevada Truck Parking Implementation Plan

Task 6: Draft Implementation Plan



prepared for

Nevada Department of Transportation

prepared by

Cambridge Systematics, Inc.

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American Transportation Research Institute
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Silver State Traffic Data Collection

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Table of Contents

List of Tables

List of Figures

Acronyms and Abbreviations

AADTT	annual average daily truck traffic
ATRI	American Transportation Research Institute
BLM	U.S. Bureau of Land Management
HOS	hours of service
NB	northbound
NDOT	Nevada Department of Transportation
NHFP	National Highway Freight Program
P3	Public-private partnership
ROW	right of way
SB	southbound

1.0 Introduction

Safe and sufficient truck parking has long been a need in the United States. Whether for a quick stop near an urban area to wait for congestion to clear or a business' delivery window to open, or an overnight break to sleep in the middle of a cross-country trip, truck parking is a key concern for:

- Commercial Motor Vehicle drivers.
- Industries that rely on efficient truck-deliveries.
- Consumers who increasingly order goods online and demand expedited delivery service.
- Residents and communities along truck corridors.
- Government agencies who regulate the industry, enforce statutes, pass zoning ordinances, and build and maintain highways and parking infrastructure.

In response to this need, the Nevada Department of Transportation (NDOT) is conducting The Nevada Truck Parking Implementation Plan which will develop a plan for expanding, improving, and integrating freight truck parking and truck parking communications systems in response to Jason's Law, rising demand, changing technology, and safety standards. When implemented by NDOT or the appropriate local transportation agencies, these improvements will help truck drivers by providing adequate and safe public truck parking where it's most needed and enhanced real-time truck parking availability information.

The Nevada Truck Parking Implementation Plan consists of the following key tasks:

- Stakeholder Outreach and Coordination
- Data Collection
- Needs Assessment
- Recommendations
- Implementation Plan
- Final Report

This technical memorandum is the Implementation task, which provides a prioritized list of actions for NDOT and partner agencies and municipalities to address truck parking needs in the state, along with refined cost and design elements initially presented in the Recommendations Technical Memorandum. The remainder of this document consists of the following sections:

- Section 2— Overview of Goal Areas and Scoring
- Section 3—Implementation Plan including project phasing
- Section 4—Preliminary Site Concepts and Cost Estimates

2.0 Overview of Goal Areas and Scoring

Projects included in this Implementation Plan are drawn from the previously completed Recommendations Technical Memorandum and focus on projects that NDOT can lead. This necessarily limits the projects to those proposed in rural areas where NDOT has right of way (ROW) or access to U.S. Bureau of Land Management (BLM) land. Policy and outreach/coordination recommendations are not included in this prioritization exercise, although they are included in the overall Implementation approach discussed in Section 3.0.

2.1 Summary of Proposed Projects from Recommendations Memorandum

Table 2.1 provides an overview of the projects identified in the Recommendations Memorandum and considered as part of this Implementation Plan. Project locations are shown in Figure 2.1. Planning level concept drawings and cost estimates for all recommended projects are included in Section 4.

Table 2.1 Nevada Truck Parking Implementation Plan – Proposed Projects

Project	Location (Route)	Description
Mustang Check Station Conversion – Regular Parking	• I-80 WB	• Convert and expand Mustang Check Station to include 51 truck parking spaces for regular use • A simple restriping of the existing paved areas could create 10 spaces, as a no/low cost early action item
Mustang Check Station Conversion – Emergency Parking	• I-80 EB	• Add 50 unpaved truck parking spaces on the south side of I-80 from the Mustang Check Station for use during emergencies
Wadsworth Rest Area Expansion – Regular Parking	• I-80 WB	• Expand regular truck parking capacity to include an additional 10 truck parking spaces. Will maintain existing rest area and vehicle parking facilities
Wadsworth Rest Area Expansion – Emergency Parking	• I-80 WB	• Add emergency parking area at Wadsworth Rest Area with 41 truck parking spaces
Trinity/Fallon Rest Area Expansion – Phase 1	• I-80 EB/WB and US 95	• Add 12 (for a total of 24) paved truck parking spaces for regular use, and 24 gravel spaces for regular overflow and/or emergency parking
Trinity/Fallon Rest Area Expansion – Phase 2	• I-80 EB/WB and US 95	• Add 24 (for a total of 48) paved truck parking spaces for regular use, and 24 (for a total of 48) gravel spaces for emergency parking • Secure additional right-of-way east of US 95 for a mirror of west-side parking in case of future demand for additional emergency parking
Golconda Summit Truck Turnout Expansion – Regular Parking	• I-80 EB and WB	• Add 19 truck parking spaces (13 WB, 6 EB) for regular use
Beowawe Rest Area Expansion – Regular Parking	• I-80 EB and WB	• Add 32 truck parking spaces (16 EB, 16 WB) for regular use
SR 306 @ I-80 New Parking – Regular Parking	• SR 306 @ I-80	• Add 14 truck parking spaces for regular use
I-15 MP 110 (Mormon Mesa) Expansion – Regular Parking	• I-15 NB and SB	• Add 41 truck parking spaces (29 SB, 12 NB) for regular use

Project	Location (Route)	Description
I-15 MP 96 Expansion – Regular Parking	• I-15 NB and SB	• Add 276 truck parking spaces (SB and NB) for regular use • Phase 1 adds 20 spaces and extended ramps for future, incremental additions as demand increases
I-15 MP 88 Expansion – Regular Parking	• I-15 NB and SB	• Add 26 truck parking spaces (13 SB, 13 NB) for regular use
I-15 MP 84 New Parking – Regular Parking (paved or gravel)	• I-15 NB and SB	• Construct a new truck parking lot with 54 (paved) or 40 (gravel) spaces for regular use
I-15 South Check Station	• I-15 NB	• Include 20 truck parking spaces when a new weigh station on I-15 NB is built (anticipated location – near Primm)
SR 360 @ US 6 – Regular Parking	• SR 360 and US 6	• Add 14 gravel truck parking spaces for regular use when the brake check site is not being utilized for enforcement purposes • Can be expanded if future demand increases
Luning Rest Area Expansion – Regular Parking	• US 95 NB and SB	• Stripe the existing lot to accommodate an additional 4 truck parking spaces for regular use
Truck Parking Availability System (TPAS) Phase I	• I-80 and I-15 (all public sites)	• Install TPAS at 6 priority locations (3 truck turnouts on I-15, 3 locations on I-80 to be determined) and complete all necessary data integration and system engineering work
Truck Parking Availability System (TPAS) Phase II	• I-80 and I-15 (all public sites)	• Install TPAS at all remaining public rest areas on I-15 and I-80 (15 additional locations, not including MP 84 new truck parking on I-15)
New lot adjacent to Loves	• I-15 / US 93 Interchange	• Relocate Las Vegas Blvd, and construct a new lot with 116 spaces

Figure 2.1 Proposed Project Locations

Source: Analysis by Cambridge Systematics, 2019.

2.2 One Nevada Plan

The project prioritization process described in the following section follows the multi-objective decision making process outlined in the One Nevada Transportation Plan. The seven goals, listed below and identified in the One Nevada Plan, form the basis for the evaluation criteria.

- Optimize Mobility
- Enhance Safety
- Transform Economies
- Connect Communities
- Foster Sustainability
- Preserve Infrastructure
- Other Considerations

By awarding projects points within these categories based on a number of criteria, projects across a wide range of geographies, modes, and costs can all be assessed a "benefit" score. Projects can then be ranked by benefit, cost, or cost/benefit to identify projects that provide the greatest value. However, unlike ranking projects in a statewide plan, all of the proposed projects in the Nevada Truck Parking Implementation Plan address a similar concern—adding capacity or improving efficiency and reliability of truck parking. Differentiating the level of benefit across the project categories in order to rank projects is the critical path for this Implementation Plan.

The scoring criteria related to each goal area are discussed below. The factors used to award points in this Implementation Plan follow the spirit of those used in the One Nevada Plan but are modified to better focus on the goals and potential impacts of truck parking projects.

2.3 Mobility (Parking Demand)

A key objective within the "Mobility" goal of the One Nevada Plan is to maximize transportation system efficiency. Within the truck parking realm, efficiency is the ability of drivers to maximize their hours of service (HOS) and then find safe, sufficient parking near their intended route of travel in a minimal amount of time.

Points were awarded to projects within three sub-areas of the mobility goal, as described in the following sections.

2.3.1 Improves Emergency Parking

The first sub-area within the Mobility goal is the ability for the project to address the need for emergency parking. As discussed in prior technical memoranda, the need to accommodate truck parking during unforeseen events—especially winter weather closures of the Donner Pass on I-80 in California—is a critical concern that directly impacts all drivers in the area. There are few if any authorized locations to park between Reno and Donner Pass, and many truck parking locations in eastern Washoe County and Churchill County

are reaching capacity during normal conditions. Projects that add capacity to I-80 between Reno and the US 95 junction in Fallon allow drivers to get as close to the closure before stopping as possible, reducing the distance they need to drive when the road is clear. The US 95 junction is the critical decision point for drivers heading west during a storm, as they either must continue on I-80 and risk a closure, wait it out, or divert on US 95.

Projects on I-80 west of US 95 (both regular and emergency parking capacity projects) received a score of three (on a scale of 0 – 3) in this category as these projects would do the most to add capacity directly beneficial during closures. The two TPAS projects also received three points as the ability to detect parking availability and present this information to drivers is of critical importance during a closure. Trinity/Fallon Rest Area expansion projects received two points, and truck parking on SR 360 @ US 6 received a single point, as it already functions as a staging area when the nearby passes close, but is used by fewer trucks than on I-80. The remaining projects received zero points.

2.3.2 Fills "Area/County" Gap

As noted in the gap analysis, Clark County and Washoe County have the largest gap in parking between demand and authorized capacity, with smaller gaps in Storey, Churchill, and Eureka counties. This county-level gap is shown in Figure 2.2. Projects in Clark and Washoe counties received three points, projects in Storey, Churchill and Eureka counties received two points, projects in counties with a small surplus received one point, and projects in counties with a substantial surplus received zero points under this criteria.

2.3.3 Fills "Site" Utilization Gap

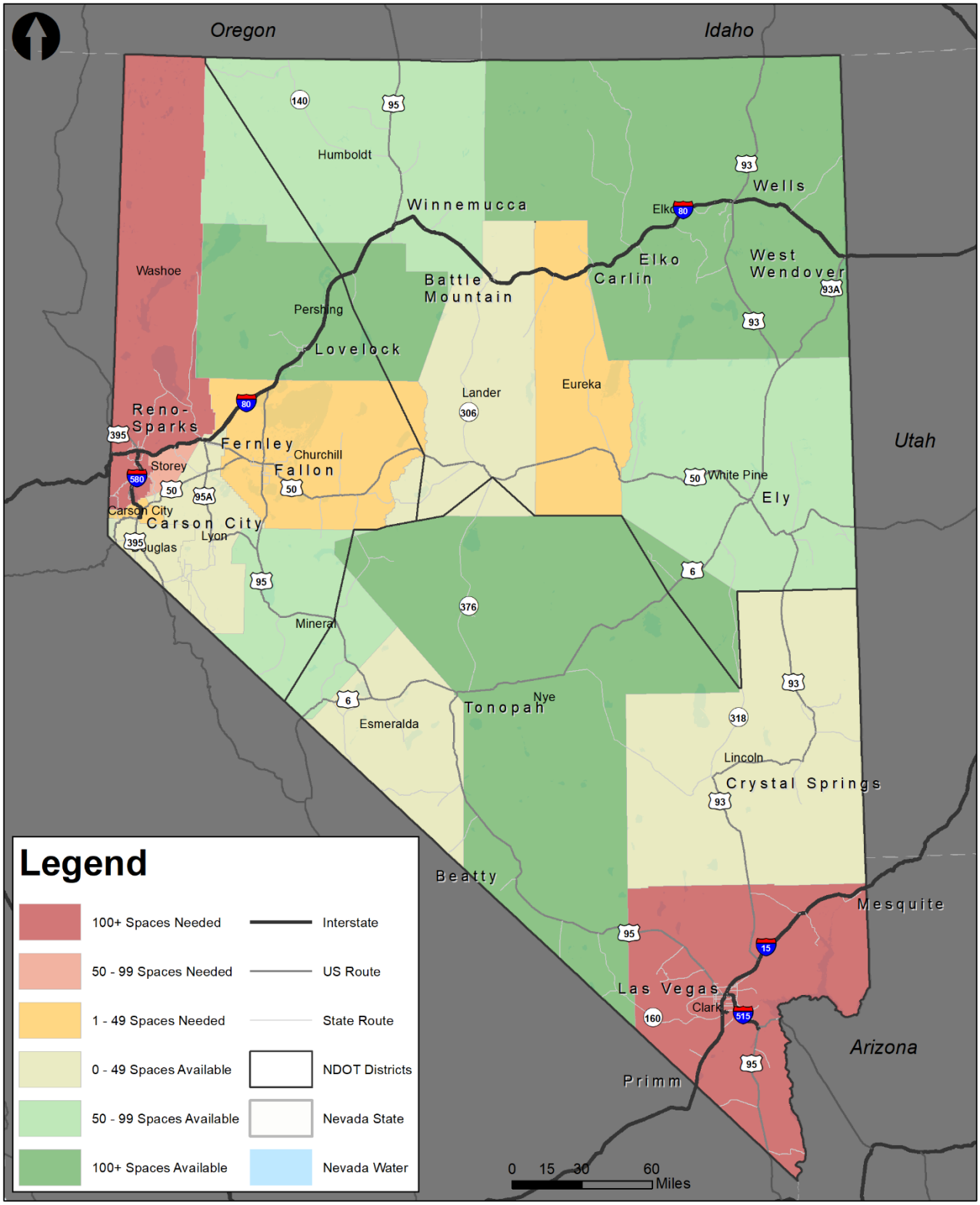
The site utilization gap (or surplus) is based on data from the American Transportation Research Institute (ATRI) with additional input from truck parking applications and websites with utilization data, and stakeholder input or field visits conducted by the project team. Projects located in areas shown in Figure 2.3 as near/over-capacity received three points, locations with some capacity received two points, locations with available parking received one point, and emergency parking areas and proposed new sites or sites with no data received zero points. While emergency parking locations will add to daily capacity at a site, they are not needed to alleviate any existing utilization challenges. Although new sites or sites with no data received zero points, this does not imply that there would not be a demand for parking if new capacity is built. It only means that there is no known site utilization challenge that is being addressed directly by the recommended project.

2.3.4 Total Score and Normalized Score

To develop an overall "mobility" score, points across the three sub-categories were summed. Since lack of emergency parking creates both mobility and safety issues for NDOT and the surrounding communities and was noted by stakeholders as one of the most critical issues facing the state, points in this category were doubled. This produced a range of scores between 3 and 15. To match other goal areas, this score was normalized back to a 0 to 3 scale using the following:

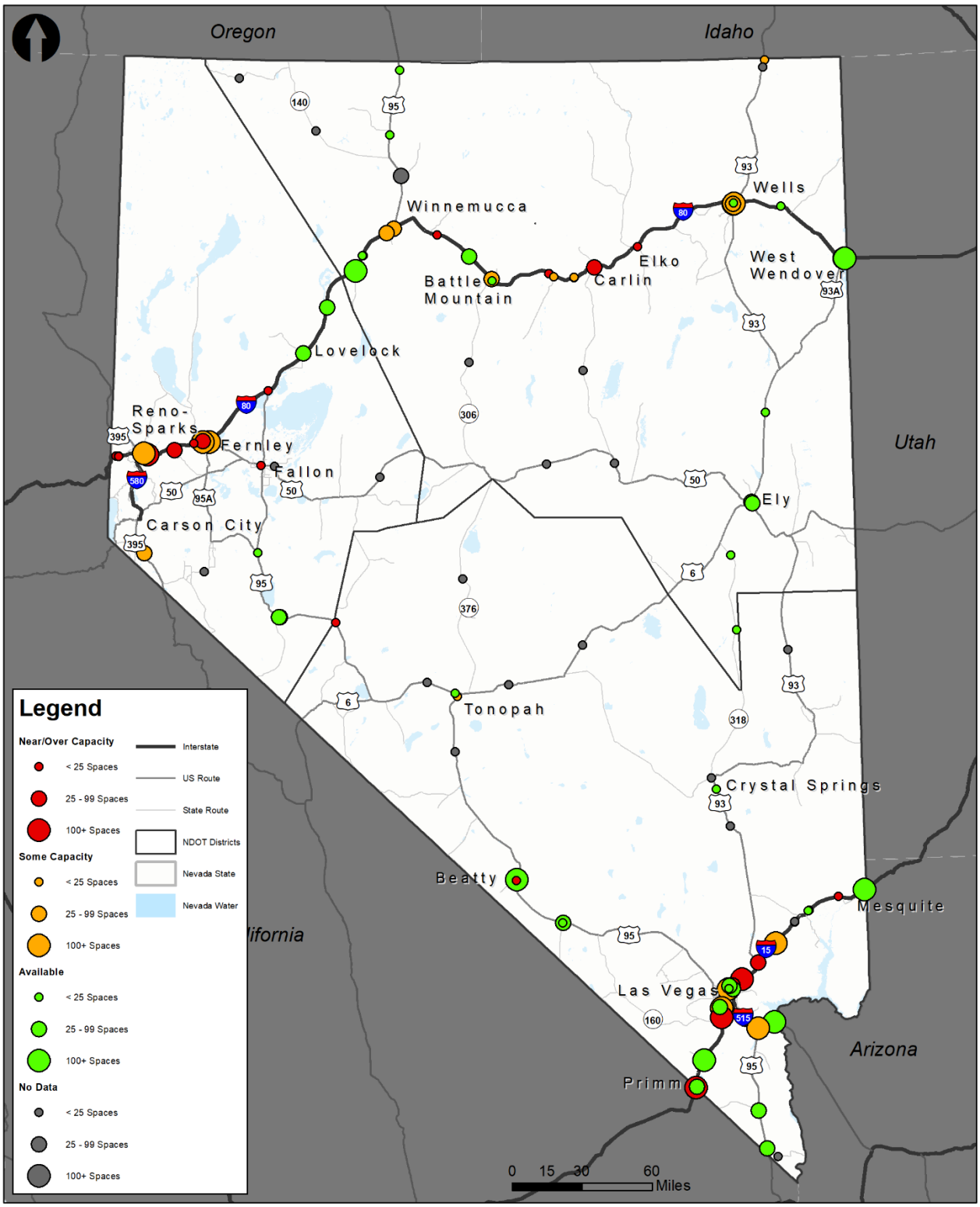
- 0-3 points = 0.
- 4-7 points = 1.
- 8-11 points = 2.
- 12-15 points = 3.

Figure 2.2 Area (County-Level) Truck Parking Needs



Source: NDOT, ATRI, Analysis by Cambridge Systematics, 2018.

Figure 2.3 Authorized Site Utilization Needs



Source: NDOT, ATRI, Analysis by Cambridge Systematics, 2018.

2.4 Safety

Quantifying safety benefits from truck parking is difficult. Although data regarding the number of truck-involved crashes is commonly available, determining the cause of the crash (and if the truck was even at fault), and then tying that cause to fatigue or another issue that can be addressed through truck parking is not possible given existing data sources. Police records do not note the HOS remaining for a driver involved in a crash, so it is difficult to know if they were just beginning a trip or reaching the end of their HOS and beginning a search for parking.

Because of this lack of specificity within the data, this Implementation Plan uses a proxy for safety based on the distance between truck stops with a minimum of services including food and restrooms. Adding parking at regular intervals to fill in the gaps between these locations provides drivers with additional stopping options.

Figure 2.4 shows 15 and 30 minute “drive-shed” from all authorized parking locations along with sites with food and restrooms. Using Google Maps, recommended projects that were 0 to 10 miles from a site with food and restrooms received zero points, projects between 10 and 20 miles from an existing site received one point, projects between 20 and 30 miles from an existing parking site received two points, and sites 30 miles or more from an existing location with food and restrooms received three points.

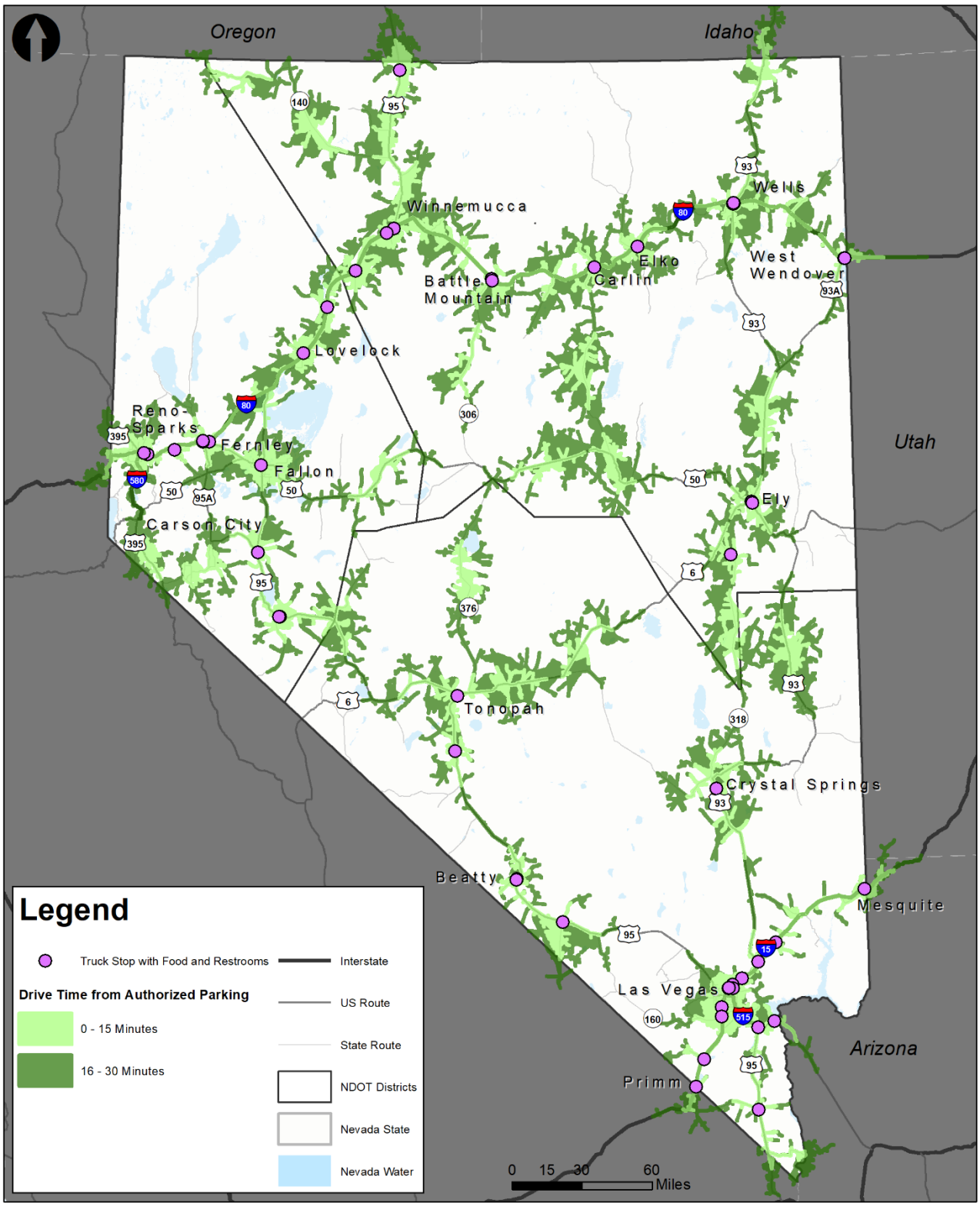
2.5 Economy

The One Nevada Plan “Transform Economies” goal is centered on the idea of projects spurring economic development. However, since public truck parking is intended to fill the gaps in the existing truck parking network (See the Safety goal above), the majority of recommended projects are located in rural areas where the private sector cannot make a business case to operate. In addition, because these locations are mostly within the Interstate right of way (ROW), they cannot be commercialized to provide an economic development boon to local communities.

Instead, points in this Implementation Plan within the Economy goal were awarded based on annual average daily truck traffic (AADTT) passing each site.[1] This is a proxy for the amount of “commercial activity” each site is supporting. Sites with more than 3,000 AADTT received three points, sites with between 1,000 and 2,999 AADTT received two points, and sites with less than 1,000 AADTT received one point. All sites had measurable truck traffic so no locations received a zero. Truck volumes are shown in Figure 2.5.

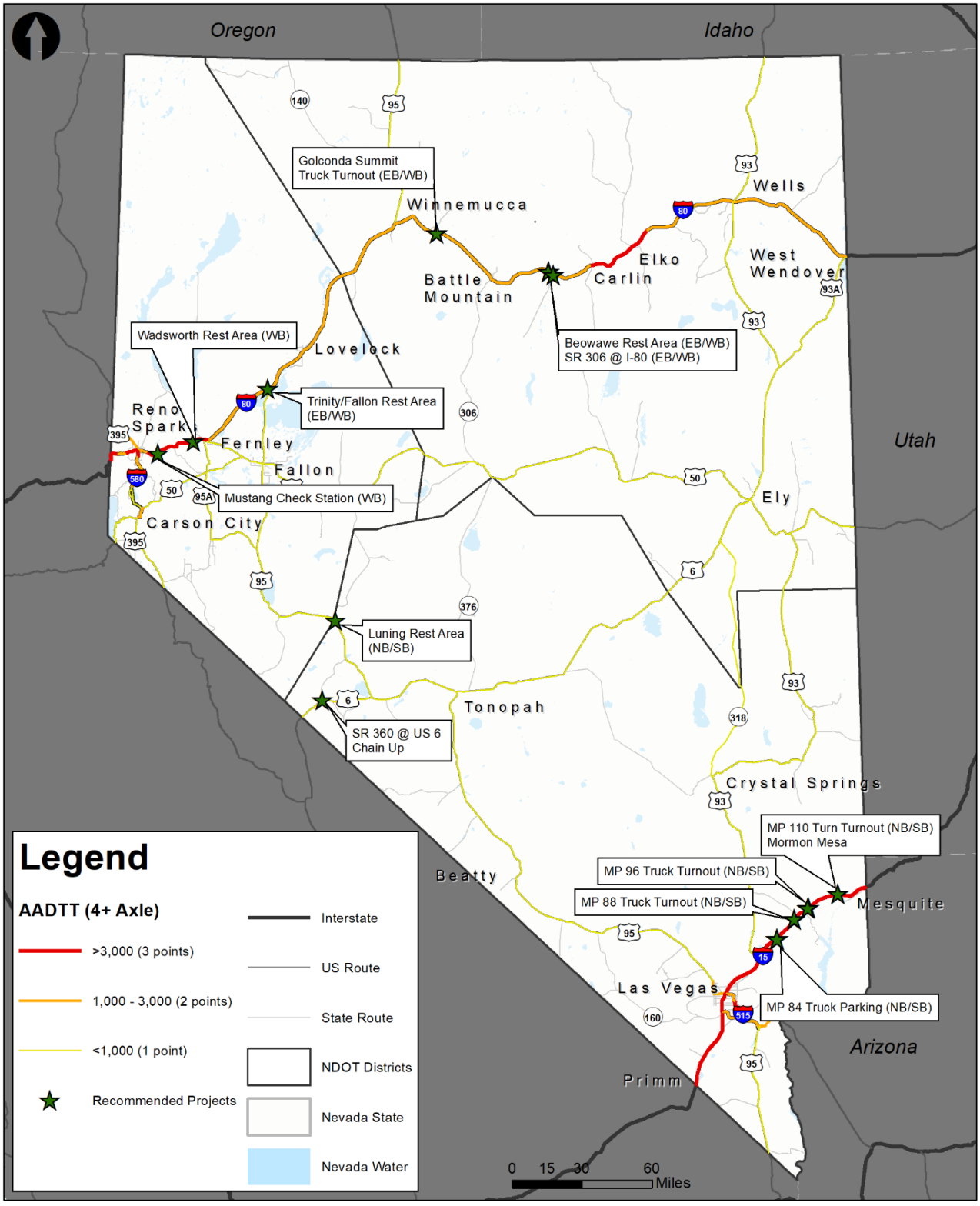
[1] Based on 2017 NDOT vehicle classification counts, 4+ axle trucks. Note that sites located at the intersection of multiple routes (Trinity/Fallon for example) received points based on the sum of truck volumes on all applicable routes.

Figure 2.4 Drive Time From Authorized Truck Parking



Source: NDOT, Analysis by Cambridge Systematics, 2018.

Figure 2.5 Key Route Truck Volumes (4+ Axle)



Source: NDOT, Analysis by Cambridge Systematics, 2018.

2.6 Connect Communities

The One Nevada Plan identifies intermodal integration as a key component of the Connect Communities goal which has little bearing on truck parking needs. However, one of the sub-categories within this goal area is aesthetics potential, ensuring that projects fit well in their environment and add to the aesthetic quality of an area. Truck parking areas can span a wide range of aesthetics from well-designed and buffered from the highway by landscaping to a simple gravel lot with no landscaping or other design elements.

While necessarily subjective, rest areas in Nevada are designed to provide landscaping and some aesthetic qualities. Therefore projects which expand parking at these facilities received a score of three. Project which will add paved parking areas received one point. No projects received two points, though the score could be applied in the future if projects include elements specifically designed to improve aesthetics but don't rise to the level of a rest area. Gravel lot expansions received no points.

Figure 2.6 shows a concept design for a proposed Trinity Rest Area enhancement project which would include landscaping and other aesthetic projects. This image does not include the recommended truck parking expansion (regular and emergency parking) proposed in this Implementation Plan, but instead illustrates the higher level of aesthetics incorporated into rest area design underlying a higher score within this goal area.

2.7 Foster Sustainability

The One Nevada Plan's "Foster Sustainability" goal has two aspects: environmental and fiscal sustainability. For environmental sustainability the Implementation Plan awarded one point for projects that are located outside of existing or recent non-attainment areas, shown in Figure 2.7.[2] This will limit the negative impacts of truck parking (noise, light, air pollution) on existing sensitive areas.

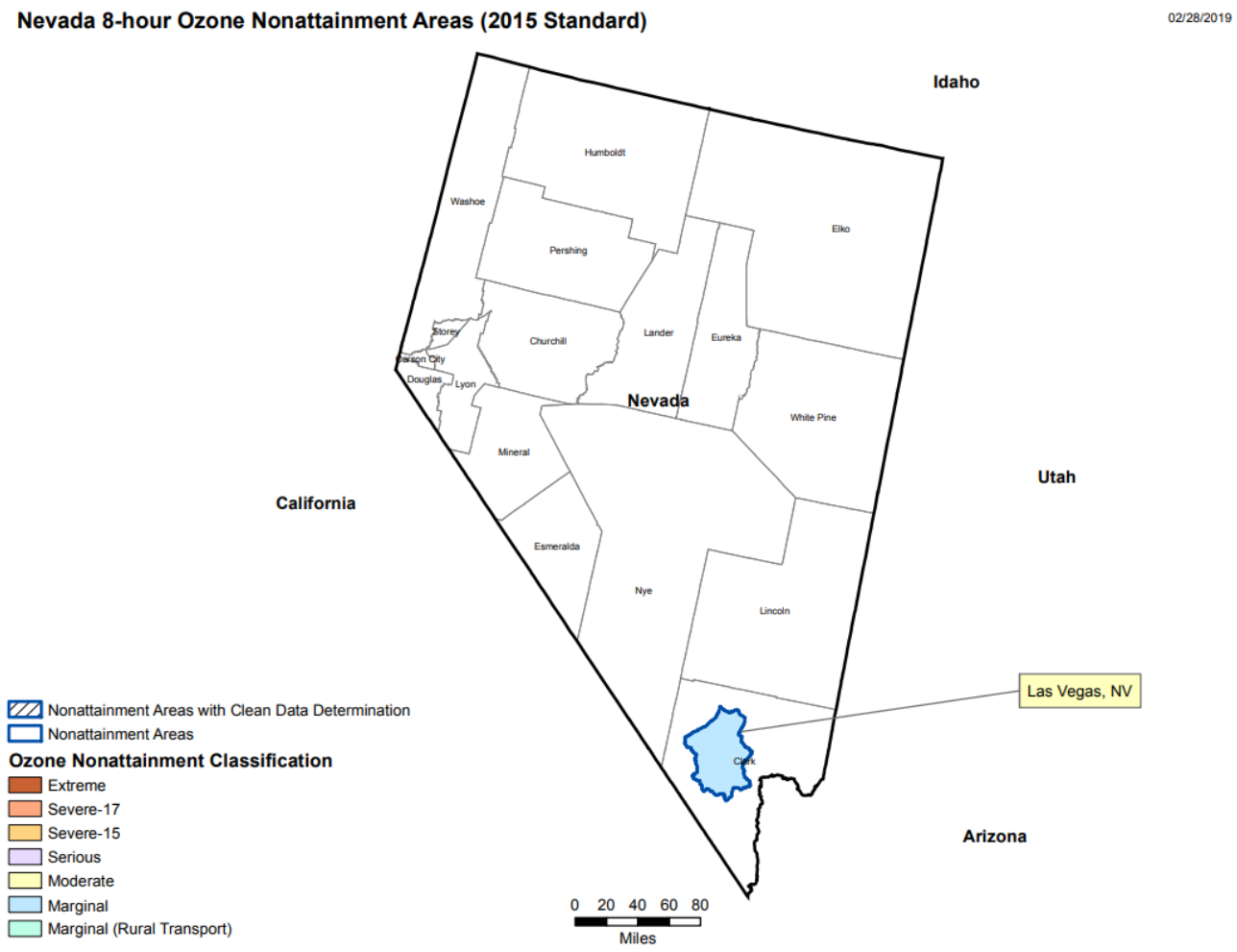
Fiscal sustainability was divided into two pieces. First, one point was awarded to projects that are listed on the current Statewide Transportation Improvement Plan. Second, one point was awarded to projects that NDOT has the capability of building in-house (reducing cost). Paired with the environmental criteria, a total of three points are available within this goal.

[2] These include the Las Vegas metro area (for 8-hour Ozone) shown in Figure 2.7 and Washoe County (removed from PM-10 in 2016). Projects located in the Truckee River gorge east of Sparks did not receive a point as emissions from that region impact the recently removed non-attainment area in Washoe County. For further information, see: https://www3.epa.gov/airquality/greenbook/anayo_nv.html

Figure 2.6 Concept Design – Trinity Rest Area

Source: Nevada DOT. Rest Area Reconstruction at Trinity. 2020-2021 Biennium.

Figure 2.7 Nevada Non-Attainment Areas



Source: U.S. Environmental Protection Agency. https://www3.epa.gov/airquality/greenbook/map/nv8_2015.pdf

2.8 Preservation

Within the preservation goal, the One Nevada Plan gives points to projects that:

- Preserve or improve pavement conditions.
- Improve bridge conditions.
- Address maintenance issues in high maintenance/problem areas.

Truck parking projects do not address bridge or pavement condition. In addition, conversations with NDOT maintenance staff indicate that the O&M costs for servicing additional parking at an existing facility and for servicing parking at a new facility are roughly the same making differentiation based on O&M issues difficult. Instead, projects received points based on the amount of new construction each project will require—the more new construction, the fewer points awarded. Projects that preserve existing facilities by re-arranging

parking configurations without adding new pavement received three points. Projects that included minor expansion of existing paved areas received two points. Major expansion work at existing sites received one point, and the construction of a new truck parking facility received zero points.

2.9 Project Readiness

Finally, the One Nevada Plan includes two sub-categories under the Other Considerations goal—project readiness and funding. Project readiness measures the complexity of a project, considers ROW and utility needs, and attempts to project environmental complexities. The funding measure gives points to projects which have a local or other funding source available.

For this Implementation Plan, one point was awarded for each of the following criteria met:

- Project is entirely within NDOT ROW.
- Project can be obligated within two years.[3]
- Project is not inconsistent with other existing plans in the area.

The first criteria is objective and easily verified with NDOT ROW records. Professional judgement was used to score the second criteria, and took into consideration environmental documentation and permitting as well as engineering and construction complexities.

For the third criteria recommended projects received a point in one of two ways: 1) the project is *explicitly consistent* with other studies, or 2) the other studies *would not preclude* the recommended truck parking project. If recommendations from those studies or plans would create challenges for the proposed projects within this Implementation Plan, then the project did not receive a point.

2.10 Goal Area Weighting and Final Scores

Projects received between zero and three points in each of the goal categories above. However, some goal areas are of higher importance and more accurately reflect the desired impacts of expanding truck parking opportunities. To reflect this, each goal area received a "weight" indicating the relative importance of the goal. The mobility, safety, and economy goal areas were weighted double, with the remaining goal areas weighted once. The scores within each goal area were multiplied by the "weight" and then summed to produce a "Benefit Score" for each recommended project.

Planning level capital costs for each project were estimated as part of the Recommendations Memorandum and refined for the subset of recommended projects discussed in this Implementation Plan. The estimated number of added truck parking spaces for each project was determined and used to calculate a cost-per-space value.[4]

Finally, by dividing the benefit score by the cost-per-space score, a benefit per cost-per-space was derived.

[3] Note that this means within two years of the decision to conduct the project, not necessarily within two years of the end of this study.

[4] O&M costs were not considered as part of the cost-per-space calculation.

3.0 Implementation Plan

This section identifies priority projects and policies that NDOT should pursue to address truck parking issues in the state.

Projects identified in the Recommendations Technical Memorandum received points based on criteria developed and modified from the One Nevada Plan, as discussed in Section 2.0. These projects can be ranked in two different ways. The first, shown in Figure 3.1, is strictly by benefit score. The second, shown in Figure 3.2, is by the benefit score divided by the cost-per-space.[5]

3.1 Project Prioritization and Constraints

Ranking projects by benefit score or benefit score divided by cost-per-space provides a starting point to identify priority projects. However, a strict ranking by these methods does not produce a short-list of projects for immediate implementation. Some projects, such as the I-15 South Check Station, could not be ready for implementation within a short period of time, regardless of where it was ranked. As the goal of this Implementation Plan is to identify projects that are highly beneficial and that can be deployed in the near-term, two factors are of critical importance:

- Ability to obligate project by September 2020.
- Ability to integrate work with adjacent projects.

The initial pool of money to fund truck parking projects comes from the National Highway Freight Program (NHFP) formula funds. These funds must be obligated by September of 2020. Only projects that can meet this deadline are considered for immediate implementation.

Projects that can be integrated with adjacent projects can typically be completed with fewer resources—staff and financial—and therefore should be considered for joint implementation. In other cases, adjacent projects might conflict, therefore delaying one project until both can be constructed concurrently can save costly rework.

Figure 3.3 breaks out the timing for project implementation based on its priority score (benefit score or benefit score divided by cost-per-space), ability to be obligated by September 2020, and the timing of adjacent projects. Eight projects with a combined capital cost of $10,727,000 are proposed for immediate action utilizing NHFP formula funds. Six projects with a combined capital cost of $4,825,000 are proposed for implementation by 2024. Two projects valued at $2,860,000 are proposed for implementation by 2030, and four projects valued at $8,800,000 are proposed for implementation by 2040. The total cost of all projects in present day value is $27,212,000. Changes in demand for parking could advance or slow the timing of these projects.

[5] Note, this value is multiplied by 10,000 to more easily compare scores.

Figure 3.1 Recommended Projects – Ranked by Benefit Score

ID	Route	Project	# Spaces add	Capital Cost	Mobility (Parking Demand) Emerg	Area	Site	Total	Norm	Safety (Distance)	Economy (AADTT)	Connect Communities (Aesthetics)	Foster Sustainability	Preservation	NDOT ROW	2 Years	Not Inconsistent	Project Readiness	Benefit Score	Benefit Score / Cost per Space (*10,000)
3.1	I-80 & US95	Trinity Expansion - Phase 1 (Reg + emergency)	36	$ 765,000	2	2	3	11	2	2	3	3	1	1	1	1	1	3	22	10.35
15.1	all	TPAS - Phase I (6 sites + Backbone)	125	$ 2,260,000	3	3	3	15	3	3	3		1		1	1	1	3	22	12.17
15.2	all	TPAS - Phase II (all NDOT sites on Interstates)	175	$ 2,220,000	3	3	3	15	3	3	3		1		1	1	1	3	22	17.34
2.1	I-80	Wadsworth Expansion - Reg	10	$ 646,000	3	3	3	12	3	0	3	3		2	1	1	1	3	20	3.10
5	I-80	Beowawe RE Expansion	32	$ 1,200,000		2	3	7	1	2	2	3	1	1	1	1	1	3	18	4.80
8.1	I-15	I-15, MP 96 (NB and SB), Phase 1	20	$ 2,740,000		3	1	6	1	2	3	1	1	1	1	1	1	3	18	1.31
8.2	I-15	I-15, MP 96 (NB and SB), Phase 2	256	$ 4,730,000		3	1	6	1	2	3	1	1	1	1	1	1	3	18	9.74
3.2	I-80 & US95	Trinity Expansion - Phase 2 (Reg + emergency)	48	$ 1,860,000	2	2		8	2	2	3		1		0	1	1	2	17	4.39
13	US6	SR 360 @ US6 Expansion (gravel)	14	$ 226,000	1		1	6	1	3	1		2	2	1	1	1	3	17	10.53
14	US95	Luning RE Expansion (in-house striping)	4	$ -			3	5	1	2	1	3	1	2	1	1	1	3	17	Max
4	I-80	Golconda Summit Expansion	19	$ 1,600,000			3	5	1	2	2	1	1	1	1	1	1	3	16	1.90
6	I-80	SR 306 @ I-80	14	$ 414,000		2		4	1	2	2	1	1	1	1	1	1	3	16	5.41
9	I-15	I-15, MP 88	26	$ 1,150,000		3	1	5	1	1	3	1	1	1	1	1	1	3	16	3.62
11	I-15 & US 93	Relocate Las Vegas Blvd. and add parking @ Loves	116	$ -	0	3	3	6	1	0	3	3	1	3	0	0	1	1	16	Max
1.1	I-80	Mustang Check Station - WB, Regular Parking	51	$ 1,400,000	3	3		9	2	0	3	1		1	1	1	1	3	15	5.46
7	I-15	I-15, MP 110 (NB and SB)	41	$ 1,600,000		3	3	6	1	0	3	1	1	1	1	1	1	3	14	3.59
1.2	I-80	Mustang Check Station - EB, Emergency	51	$ 1,500,000	3	3		9	2	0	3				1	1	1	3	13	4.42
2.2	I-80	Wadsworth Expansion - Emergency	41	$ 581,000	3	3		9	2	0	3				1	1	1	3	13	9.17
10	I-15	I-15, MP 84	54	$ 1,320,000		3		3	0	0	3	1	1		1	1	1	3	11	4.50
12	I-15	I-15 South Check Station	20	$ 1,000,000		3		3	0	0	3	1	1		1	0	1	2	10	2.00

Figure 3.2 Recommended Projects – Ranked by Benefit Score/Cost-per-space

ID	Route	Project	# Spaces add	Capital Cost	Mobility (Parking Demand)					Safety (Distance)	Economy (AADTT)	Connect Communities (Aesthetics)	Foster Sustainability	Preservation	NDOT ROW	2 Years	Not Inconsistent	Project Readiness	Benefit Score	Benefit Score / Cost per Space (*10,000)
					Emerg	Area	Site	Total	Norm											
11	I-15 & US 93	Relocate Las Vegas Blvd. and add parking @ Loves	116	$ -	0	3	3	6	1	0	3	3	1	3	0	0	1	1	16	Max
14	US95	Luning RE Expansion (in-house striping)	4	$ -			3	5	1	2	1	3	1	2	1	1	1	3	17	Max
15.2	all	TPAS - Phase II (all NDOT sites on Interstates)	175	$ 2,220,000	3	3	3	15	3	3	3		1		1	1	1	3	22	17.34
15.1	all	TPAS - Phase I (6 sites + Backbone)	125	$ 2,260,000	3	3	3	15	3	3	3		1		1	1	1	3	22	12.17
13	US6	SR 360 @ US6 Expansion (gravel)	14	$ 226,000	1		1	6	1	3	1		2	2	1	1	1	3	17	10.53
3.1	I-80 & US95	Trinity Expansion - Phase 1 (Reg + emergency)	36	$ 765,000	2	2	3	11	2	2	3	3	1	1	1	1	1	3	22	10.35
8.2	I-15	I-15, MP 96 (NB and SB), Phase 2	256	$ 4,730,000		3	1	6	1	2	3	1	1	1	1	1	1	3	18	9.74
2.2	I-80	Wadsworth Expansion - Emergency	41	$ 581,000	3	3		9	2	0	3				1	1	1	3	13	9.17
1.1	I-80	Mustang Check Station - WB, Regular Parking	51	$ 1,400,000	3	3		9	2	0	3	1		1	1	1	1	3	15	5.46
6	I-80	SR 306 @ I-80	14	$ 414,000		2		4	1	2	2	1	1	1	1	1	1	3	16	5.41
5	I-80	Beowawe RE Expansion	32	$ 1,200,000		2	3	7	1	2	2	3	1	1	1	1	1	3	18	4.80
10	I-15	I-15, MP 84	54	$ 1,320,000		3		3	0	0	3	1	1		1	1	1	3	11	4.50
1.2	I-80	Mustang Check Station - EB, Emergency	51	$ 1,500,000	3	3		9	2	0	3				1	1	1	3	13	4.42
3.2	I-80 & US95	Trinity Expansion - Phase 2 (Reg + emergency)	48	$ 1,860,000	2	2		8	2	2	3		1		0	1	1	2	17	4.39
9	I-15	I-15, MP 88	26	$ 1,150,000		3	1	5	1	1	3	1	1	1	1	1	1	3	16	3.62
7	I-15	I-15, MP 110 (NB and SB)	41	$ 1,600,000		3	3	6	1	0	3	1	1	1	1	1	1	3	14	3.59
2.1	I-80	Wadsworth Expansion - Reg	10	$ 646,000	3	3	3	12	3	0	3	3		2	1	1	1	3	20	3.10
12	I-15	I-15 South Check Station	20	$ 1,000,000		3		3	0	0	3	1	1		1	0	1	2	10	2.00
4	I-80	Golconda Summit Expansion	19	$ 1,600,000			3	5	1	2	2	1	1	1	1	1	1	3	16	1.90
8.1	I-15	I-15, MP 96 (NB and SB), Phase 1	20	$ 2,740,000		3	1	6	1	2	3	1	1	1	1	1	1	3	18	1.31

Figure 3.3 Implementation Schedule for Recommended Projects

ID	Route	Project	# Spaces add	Capital Cost	Benefit Score	Benefit Score / Cost per Space (*10,000)	Packaged with other projects		Can Obligate by Sept 2020	Proposed Timing
							Adjacent Projects	Date		
1.1	I-80	Mustang Check Station - WB, Regular Parking	51	$ 1,400,000	15	5.46	I-80 Widening	2030	Yes	By 9/2020
1.2	I-80	Mustang Check Station - EB, Emergency	51	$ 1,500,000	13	4.42	I-80 Widening	2030	Yes	By 9/2020
2.1	I-80	Wadsworth Expansion - Reg	10	$ 646,000	20	3.10		2021	Yes	By 9/2020
2.2	I-80	Wadsworth Expansion - Emergency	41	$ 581,000	13	9.17		2021	No	By 9/2020
7	I-15	I-15, MP 110 (NB and SB)	41	$ 1,600,000	14	3.59	SB Site expansion	2021	Yes	By 9/2020
8.1	I-15	I-15, MP 96 (NB and SB), Phase 1	20	$ 2,740,000	18	1.31			Yes	By 9/2020
14	US95	Luning RE Expansion (in-house striping)	4	$ -	17	Max			Yes	By 9/2020
15.1	all	TPAS - Phase I (6 sites + Backbone)	125	$ 2,260,000	22	12.17			Yes	By 9/2020
3.1	I-80 & US95	Trinity Expansion - Phase 1 (Reg + emergency)	36	$ 765,000	22	10.35	RE Upgrade and 3R on US95	2022	Yes	2020 - 2024
5	I-80	Beowawe RE Expansion	32	$ 1,200,000	18	4.80	RE Upgrade	2023	No	2020 - 2024
6	I-80	SR 306 @ I-80	14	$ 414,000	16	5.41	Interchange upgrade	2021	Yes	2020 - 2024
11	I-15 & US 93	Relocate Las Vegas Blvd. and add parking @ Loves	116	$ -	16	Max	City of North LV relocate LVB		No	2020 - 2024
13	US6	SR 360 @ US6 Expansion (gravel)	14	$ 226,000	17	10.53	3R	2021 or 2022	Yes	2020 - 2024
15.2	all	TPAS - Phase II (all NDOT sites on Interstates)	175	$ 2,220,000	22	17.34			Yes	2020 - 2024
3.2	I-80 & US95	Trinity Expansion - Phase 2 (Reg + emergency)	48	$ 1,860,000	17	4.39	RE Upgrade and 3R on US95	2022	Yes	2025 - 2030
12	I-15	I-15 South Check Station	20	$ 1,000,000	10	2.00	New Check Station	TBD	No	2025 - 2030
4	I-80	Golconda Summit Expansion	19	$ 1,600,000	16	1.90			Yes	2031 - 2040
8.2	I-15	I-15, MP 96 (NB and SB), Phase 2	256	$ 4,730,000	18	9.74			Yes	2031 - 2040
9	I-15	I-15, MP 88	26	$ 1,150,000	16	3.62			Yes	2031 - 2040
10	I-15	I-15, MP 84	54	$ 1,320,000	11	4.50			Yes	2031 - 2040

3.2 Policies and Other Actions

Policy, outreach, and communication/cooperation recommendations were also included as part of the Recommendations Memorandum. The actions, timeframe, lead agency, and partnerships recommended to implement these policies are described in Table 3.1.

Table 3.1 Policy Actions

Policy	Action	Time-frame	Lead Agency	Partner(s)
Expand existing public truck stops and rest areas	Consider expansion with any rest area upgrade	Ongoing	NDOT	
Sponsorship of public truck stops and rest areas	Monitor FDOT's efforts and consider for future inclusion in any truck parking system designs	1-5 years	NDOT	FAC, FHWA
Add truck parking to weigh stations	Consider adding truck parking to any new or renovated weigh station	Ongoing	NDOT	NHP
Repurpose NDOT or NHP facilities for truck parking	All rest areas and weigh stations that are planned to be closed should be considered for conversion to truck parking	Ongoing	NDOT	NHP, FHWA
Allow parking at chain-up, brake check, inspection sites during off season	Conduct a safety assessment of all subject locations to determine if allowing overnight parking would be safe and operationally feasible.	1-5 years	NDOT	NHP
Add truck parking to rural highways	Adding simple truck parking areas, such as a truck pull-off/turnout, should be considered with highway expansion or improvement projects. These sites should be added in locations where NDOT has sufficient ROW along critical corridors to help close gaps between existing truck parking facilities. Ideally, small truck parking facilities should be located every 20-30 miles to provide drivers with authorized parking options. Key corridors that should be targeted include: • US 95 between Las Vegas and Amargosa Valley • US 95 between Beatty and Tonopah • US 95 between Tonopah and Luning • US 93 between I-15 and Alamo/Crystal Springs • SR 318 between Crystal Springs and Sunny Side Rest Area • US 93 between US 93/93A junction and Wells • US 93A between US 93/93A junction and West Wendover • US 93 between Wells and Jackpot	Ongoing	NDOT	
Enforcement	As NDOT, its partner agencies and municipalities, and the private sector continue to add parking capacity and information systems in Nevada, law enforcement agencies should become more active in enforcing HOS regulations in areas with viable, authorized, alternatives. Reevaluate in future after immediate and short-term projects have been implemented.	2025	NHP	Local law enforcement, NDOT, FAC

Policy	Action	Time-frame	Lead Agency	Partner(s)
Modify freight performance measures	Consider modifying freight performance measures during the next update of the Nevada State Freight Plan.	1-5 years	NDOT	FAC
Multistate coordination	Continue multi-state coordination, in particular with the Western States Freight Coalition, the I-15 Mobility Alliance, and the recent National Economic Partnerships grant award for the I-15 Freight Mobility Enhancement Plan.	Ongoing	NDOT	
Public-private partnerships (P3)	By providing funding, land, access, or other benefits, public investment may be able to induce private-sector investment in truck parking in areas where high costs would otherwise discourage private investment. This is particularly applicable in urban areas where the demand for parking and values are the highest. Identify a P3 pilot project, secure funding commitments from public and private partners, and request USDOT funding support via BUILD or INFRA grants. Such a project would be highly competitive for USDOT funding under the current criteria for these grants.	1-5 years	NDOT	Applicable local jurisdiction
Truck parking ordinance	Require facilities that receive and dispatch large numbers of trucks to provide onsite and/or contribute to the construction, operations, and maintenance of common staging/parking areas. A common staging/parking facility would likely be developed as a P3 as described above.	1-5 years	Urban cities and counties	NDOT
Public urban truck parking facility	No action required at this time. It is recommended that a P3 urban truck parking facility, described above, be investigated first.	N/A		
Competitive loan/grant program	No action recommended at this time. Reevaluate in future.	2025	NDOT	FAC
Statewide TPAS deployment	Implement phased approach as identified in the implementation schedule for recommended projects. Phase 2 would be a good candidate project for a multi-state BUILD or INFRA grant.	2019 – 2025	NDOT	FAST

4.0 Preliminary Site Concepts and Cost Estimates

Figure 4.1 through Figure 4.15 below are draft site drawings associated with projects included in this Implementation Plan.

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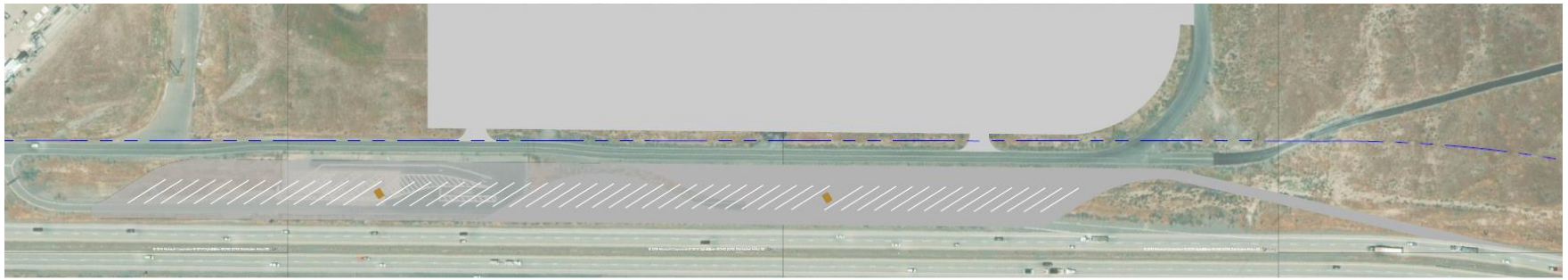
Figure 4.1 Mustang Check Station Conversion, I-80



I-80 WESTBOUND

CHARACTERISTICS:
51 - 15' X 90' PARKING STALLS
THREE CXT CASCADIAN DOUBLE VAULT RESTROOM W/ TWO STALLS
THREE TRASH ENCLOUSURES
WITHIN NDOT ROW

ESTIMATED CONSTRUCTION COSTS:
$ 1.4 M

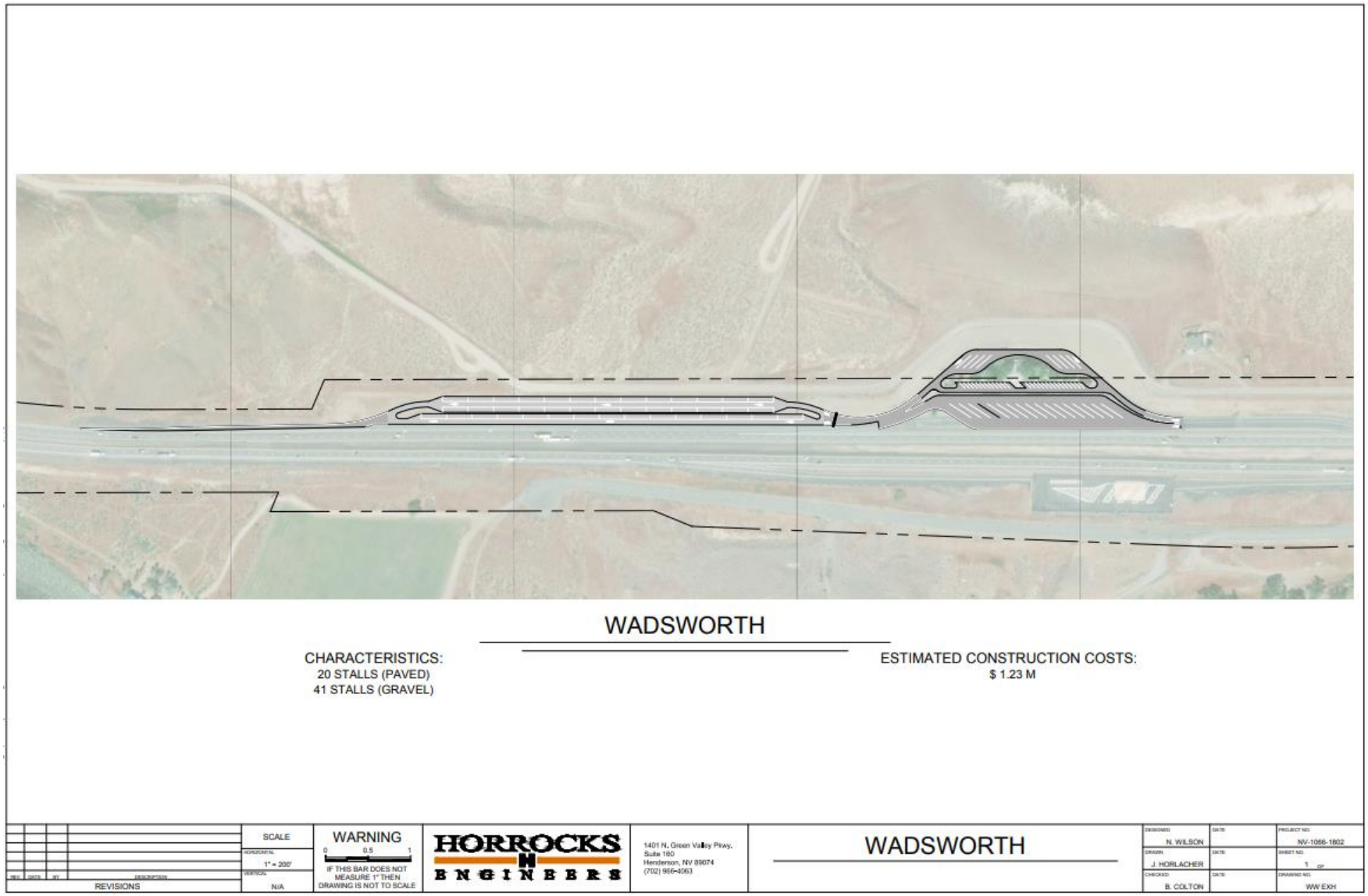
I-80 EASTBOUND

CHARACTERISTICS:
51 15' X 90' PARKING STALLS
TWO CXT CASCADIAN DOUBLE VAULT RESTROOM W/ TWO STALLS
FOUR TRASH ENCLOSURES
REQUIRES BLM EASEMENT

ESTIMATED CONSTRUCTION COSTS:
$ 1.5 M

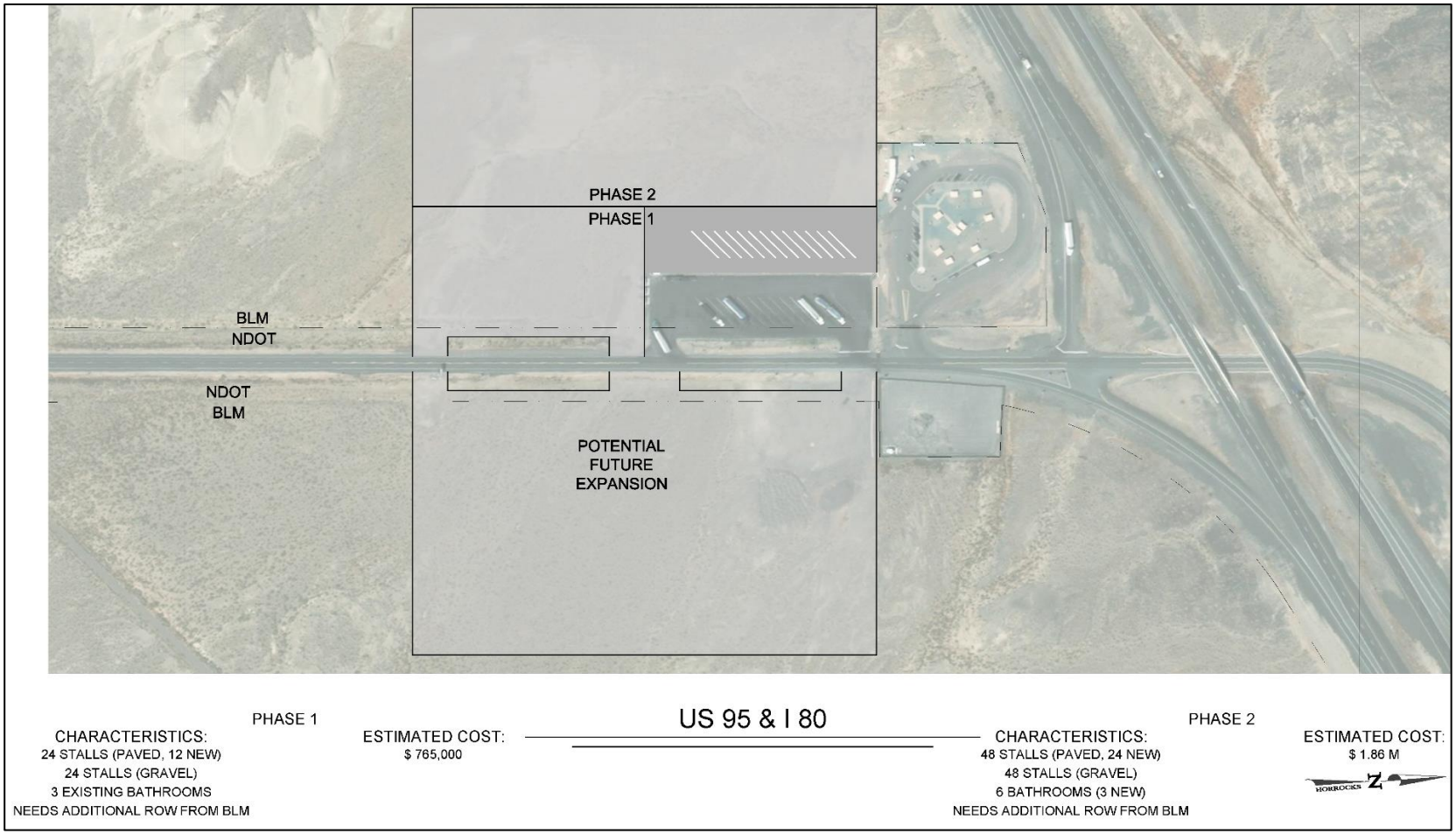
Source: Horrocks Engineers, 2019

Figure 4.2 Wadsworth Rest Area Expansion, I-80



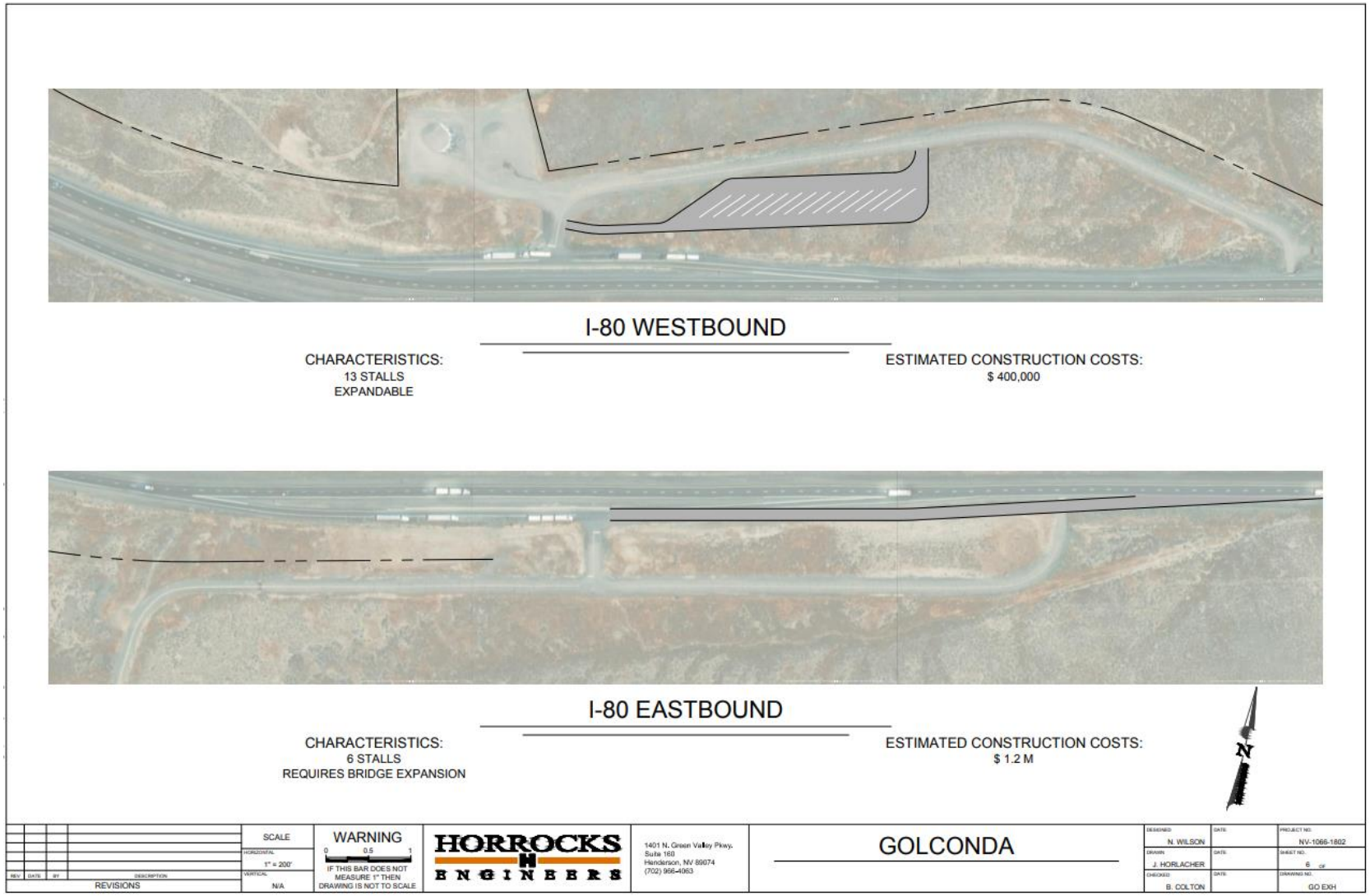
Source: Horrocks Engineers, 2019

Figure 4.3 Trinity/Fallon Rest Area Expansion, I-80/US 95



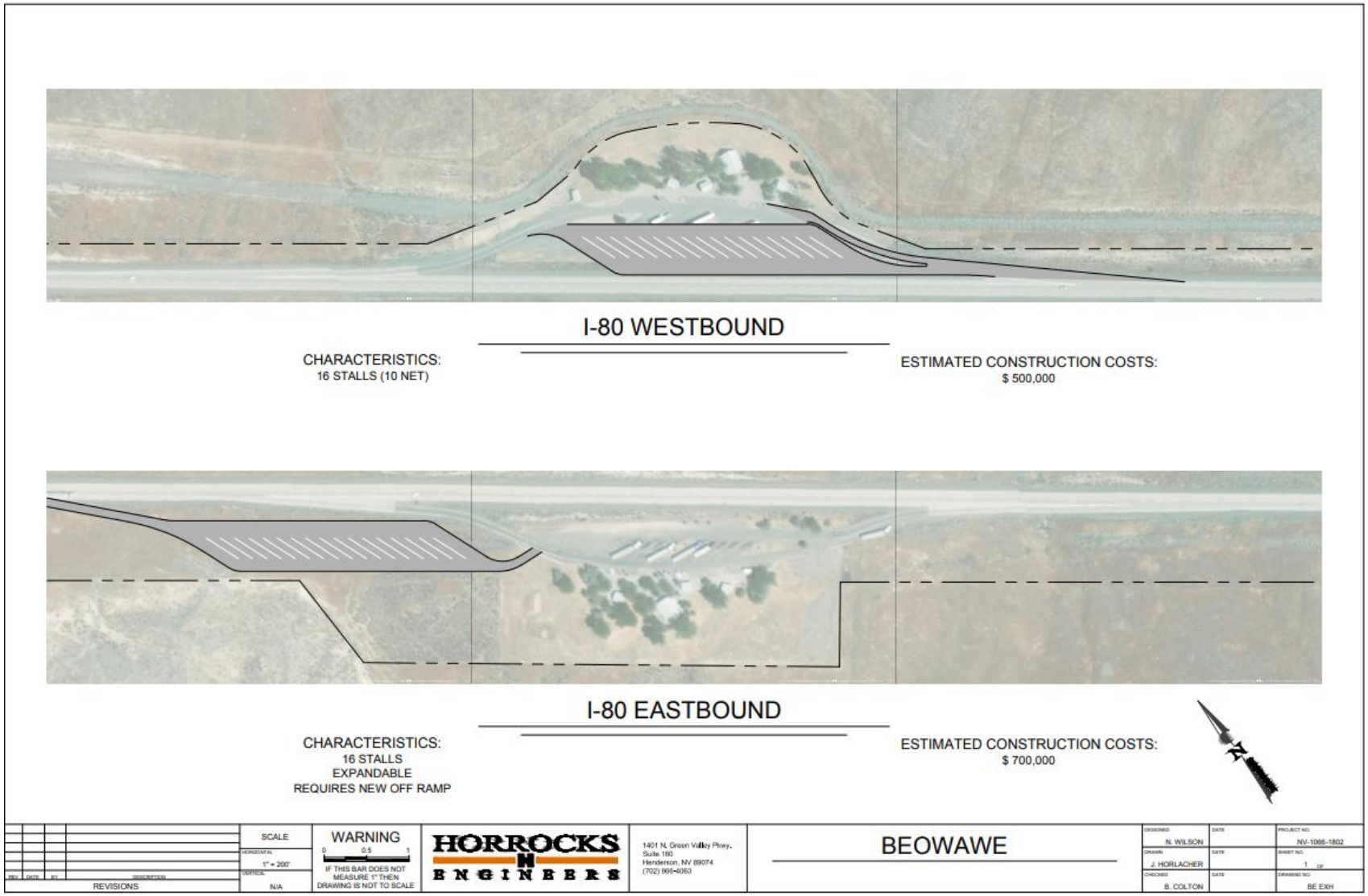
Source: Horrocks Engineers, 2019.

Figure 4.4 Golconda Truck Turnout Expansion, I-80



Source: Horrocks Engineers, 2019.

Figure 4.5 Beowawe Rest Area Expansion, I-80



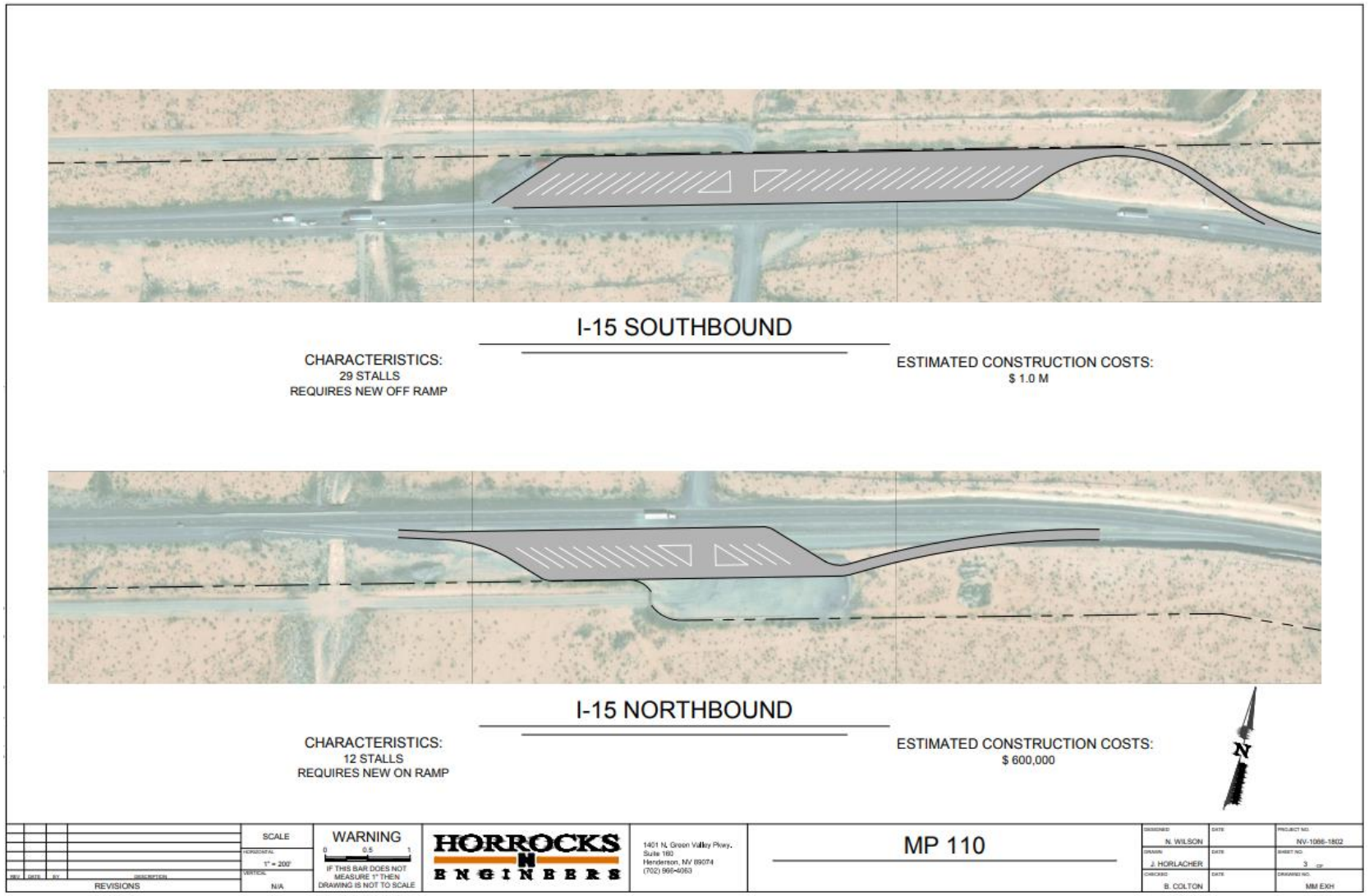
Source: Horrocks Engineers, 2019.

Figure 4.6 New Truck Parking Lot on SR 306 at I-80

$414,000 for new lot with 14 spaces

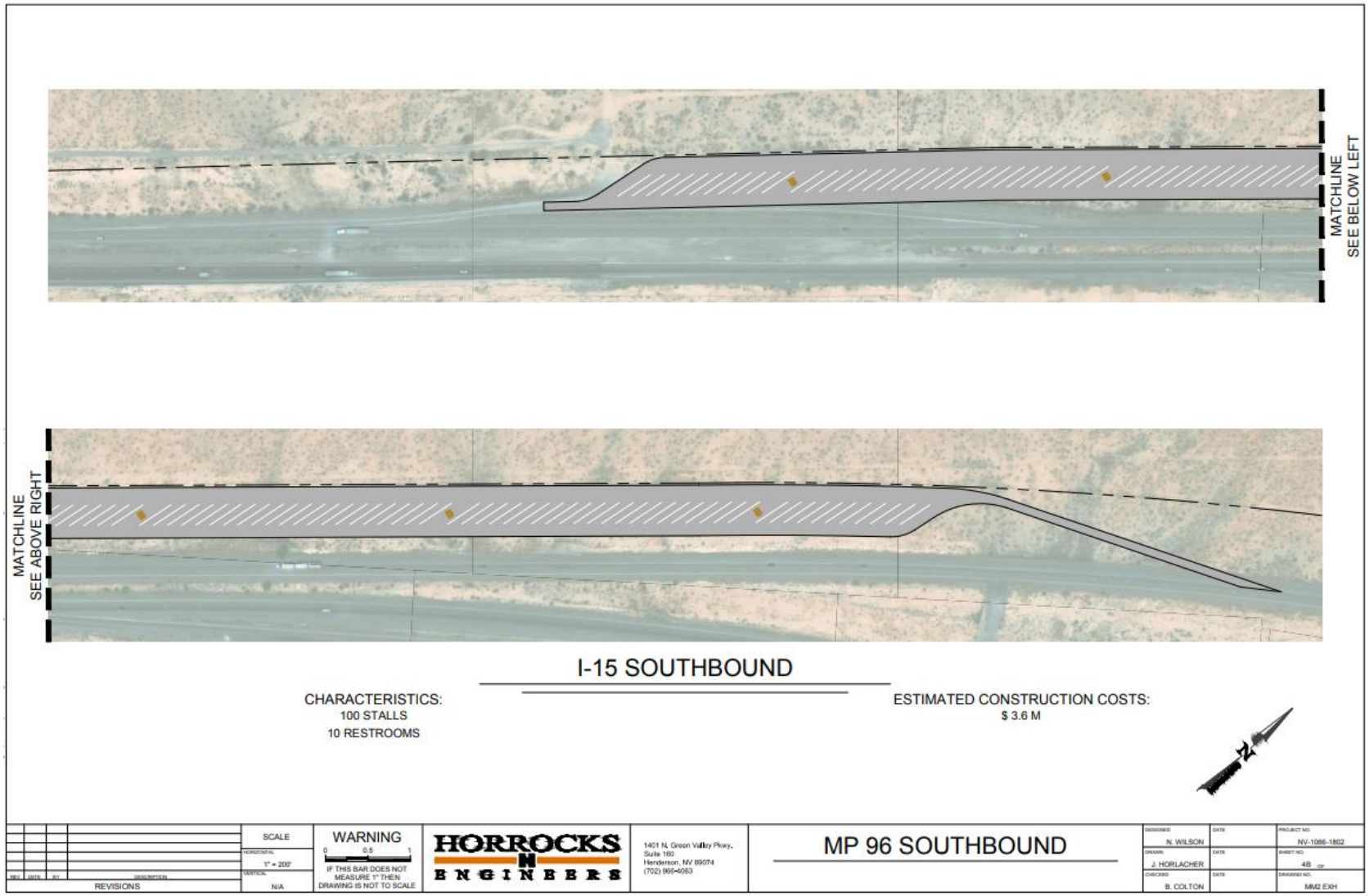
Source: NDOT—Beowawe Interchange DRAFT Scoping Report, January 2019.

Figure 4.7 MP 110 (Mormon Mesa)Truck Turnout Expansion, I-15



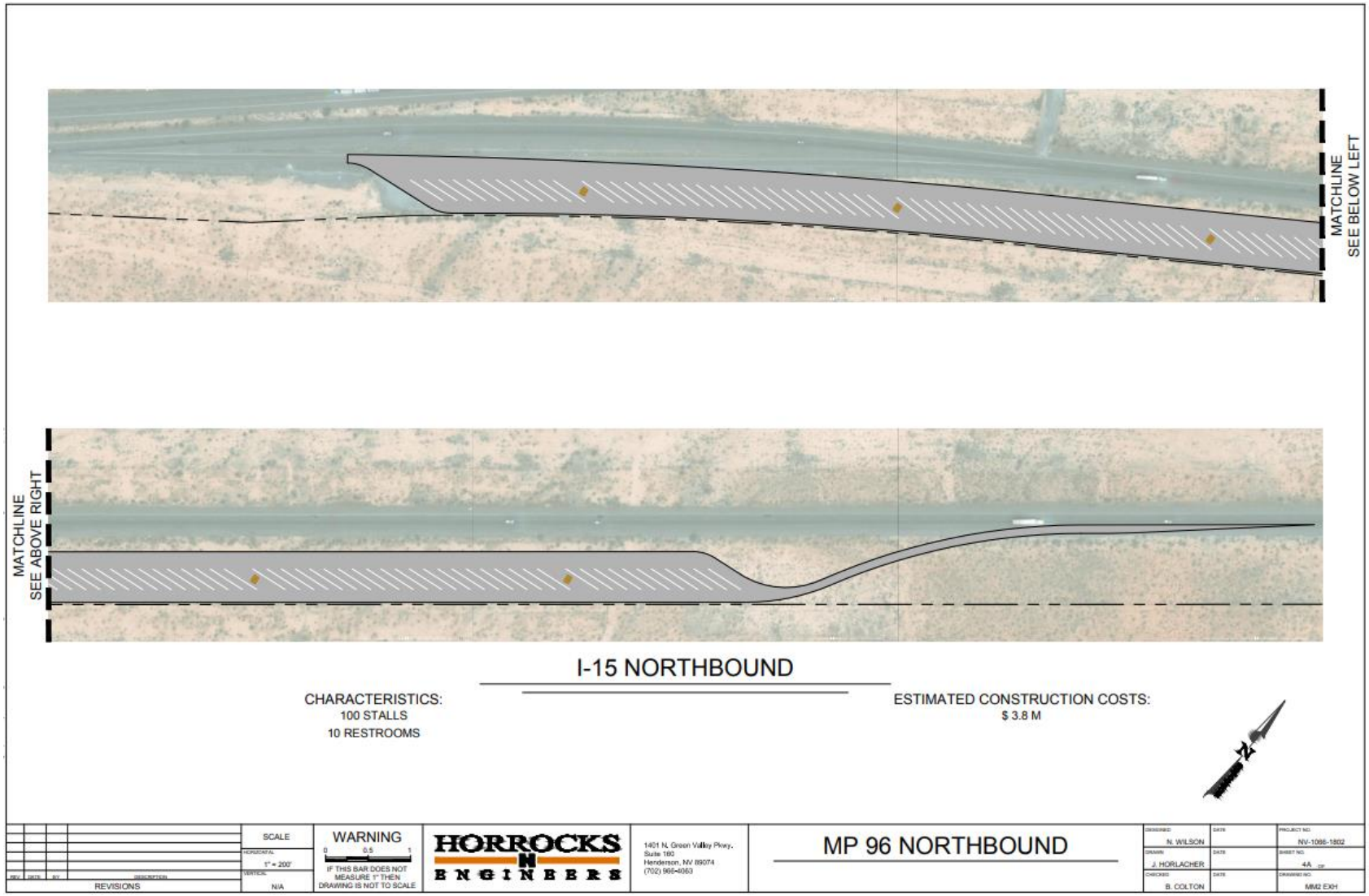
Source: Horrocks Engineers, 2019.

Figure 4.8 MP 96 Truck Turnout Expansion, I-15 Southbound



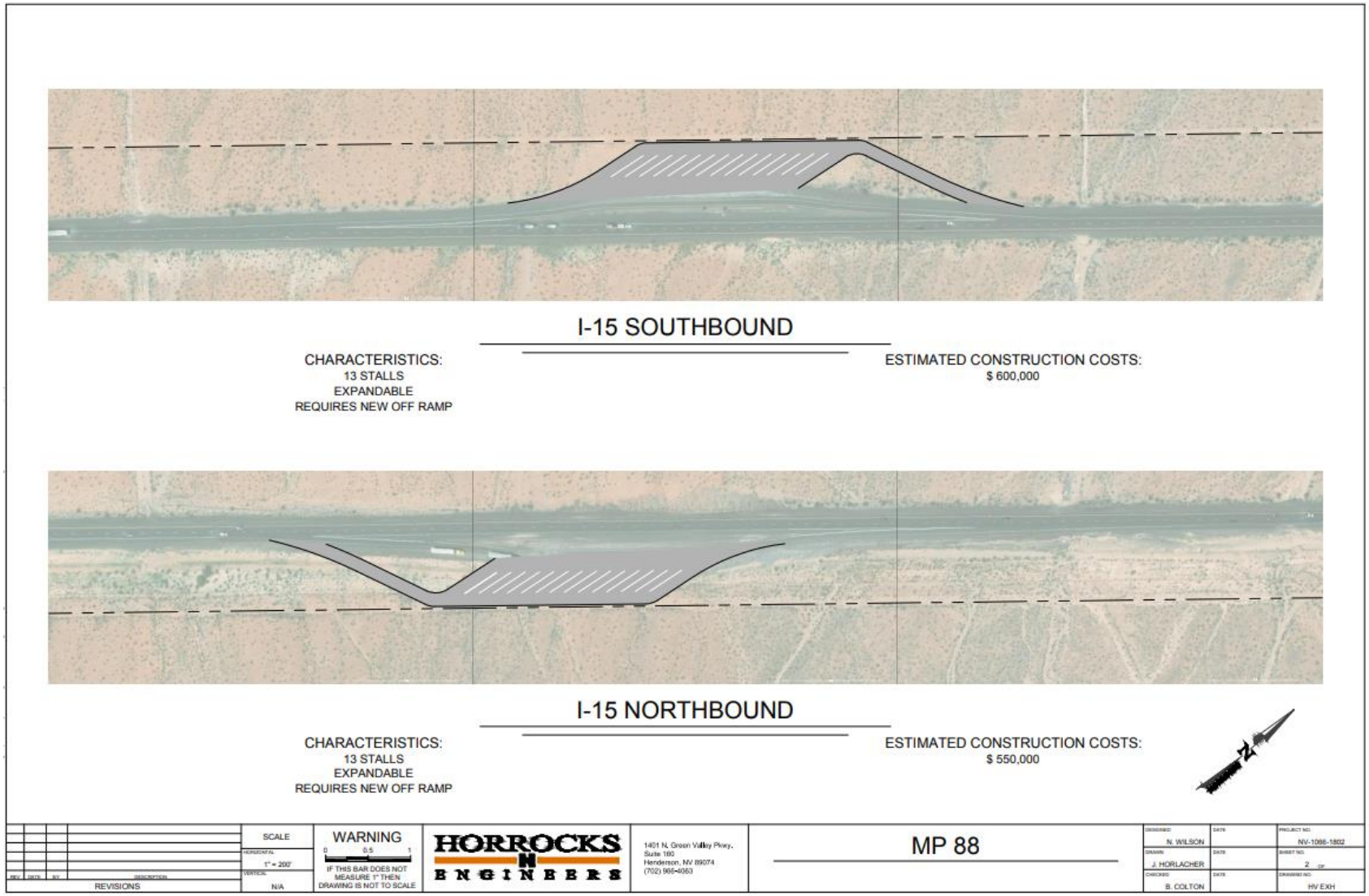
Source: Horrocks Engineers, 2019

Figure 4.9 MP 96 Truck Turnout Expansion, I-15 Northbound



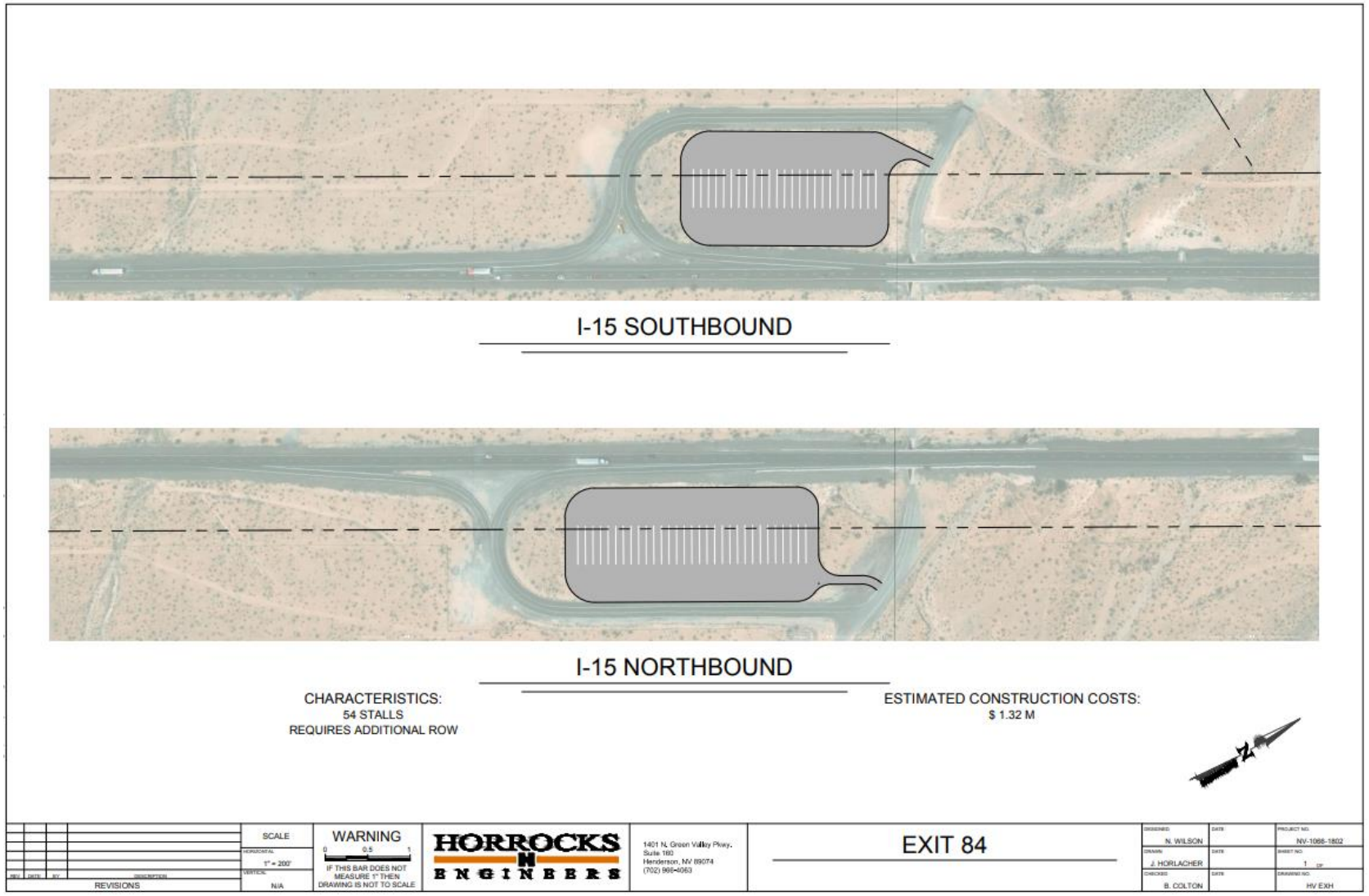
Source: Horrocks Engineers, 2019

Figure 4.10 MP 88 Truck Turnout Expansion, I-15



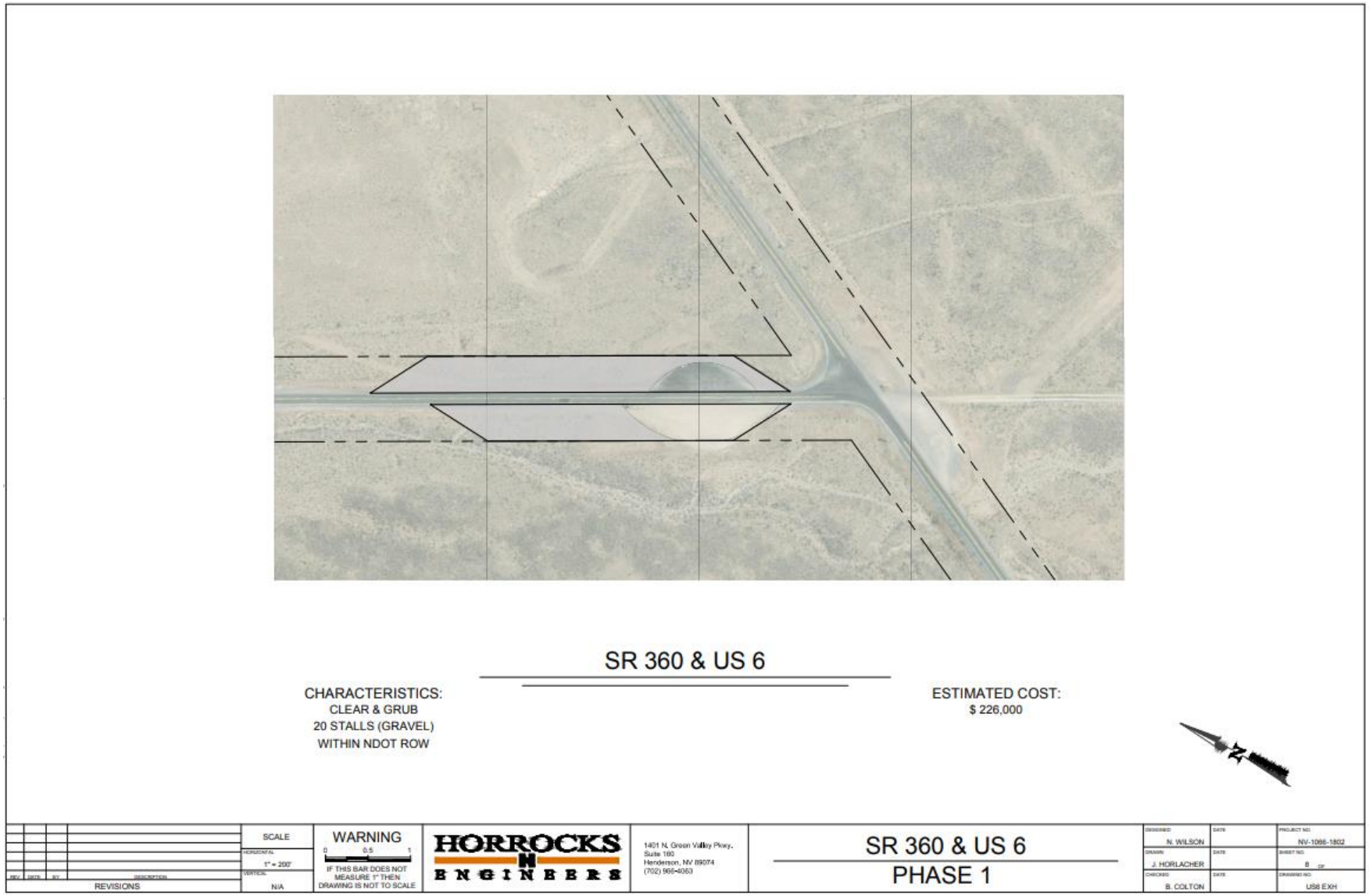
Source: Horrocks Engineers, 2019

Figure 4.11 Exit 84 New Truck Parking, I-15



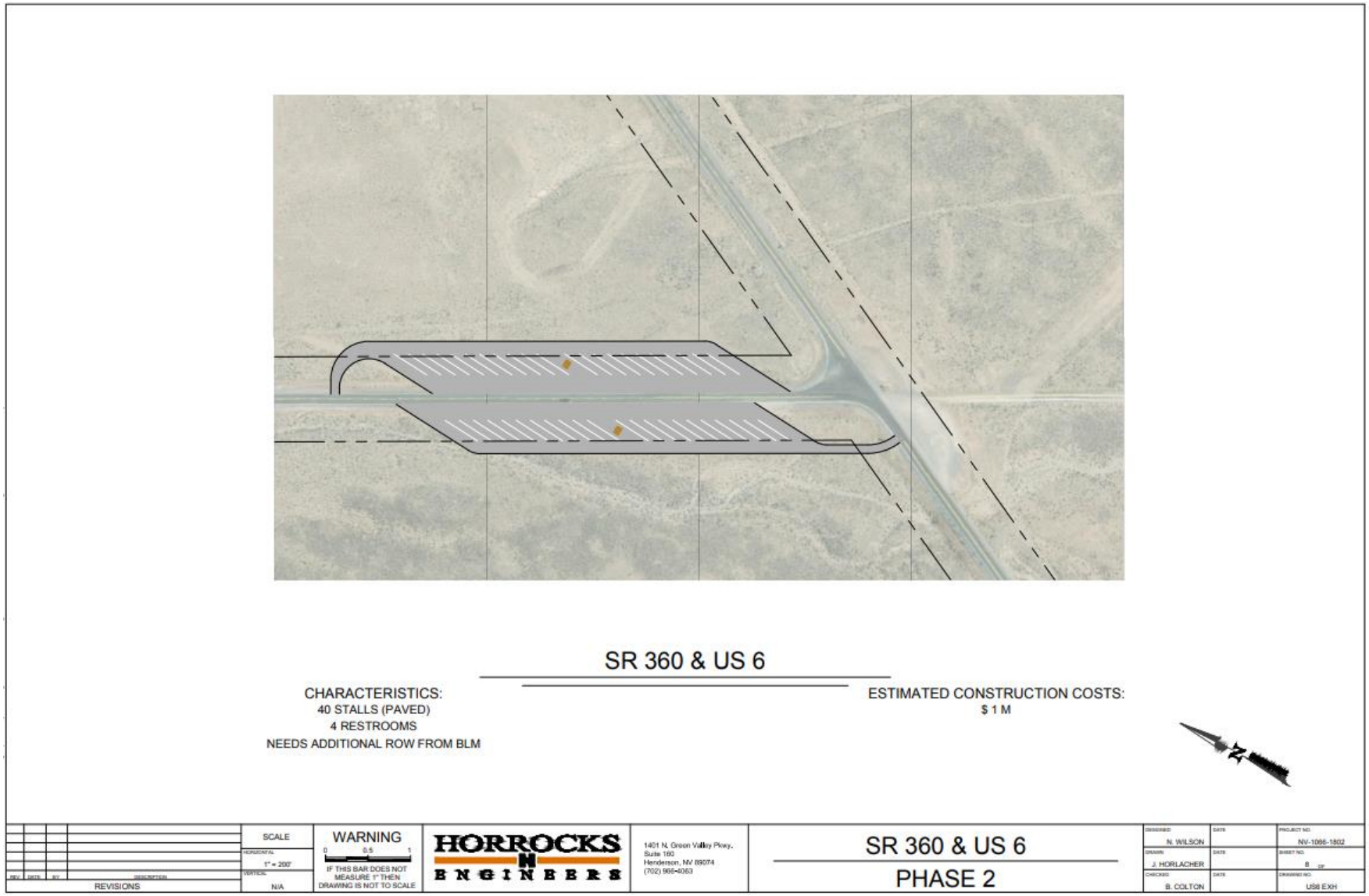
Source: Horrocks Engineers, 2019.

Figure 4.12 SR 360 at US 6 Truck Parking Expansion, Phase 1



Source: Horrocks Engineers, 2019

Figure 4.13 SR 360 at US 6 Truck Parking Expansion, Phase 2 (optional, if needed)



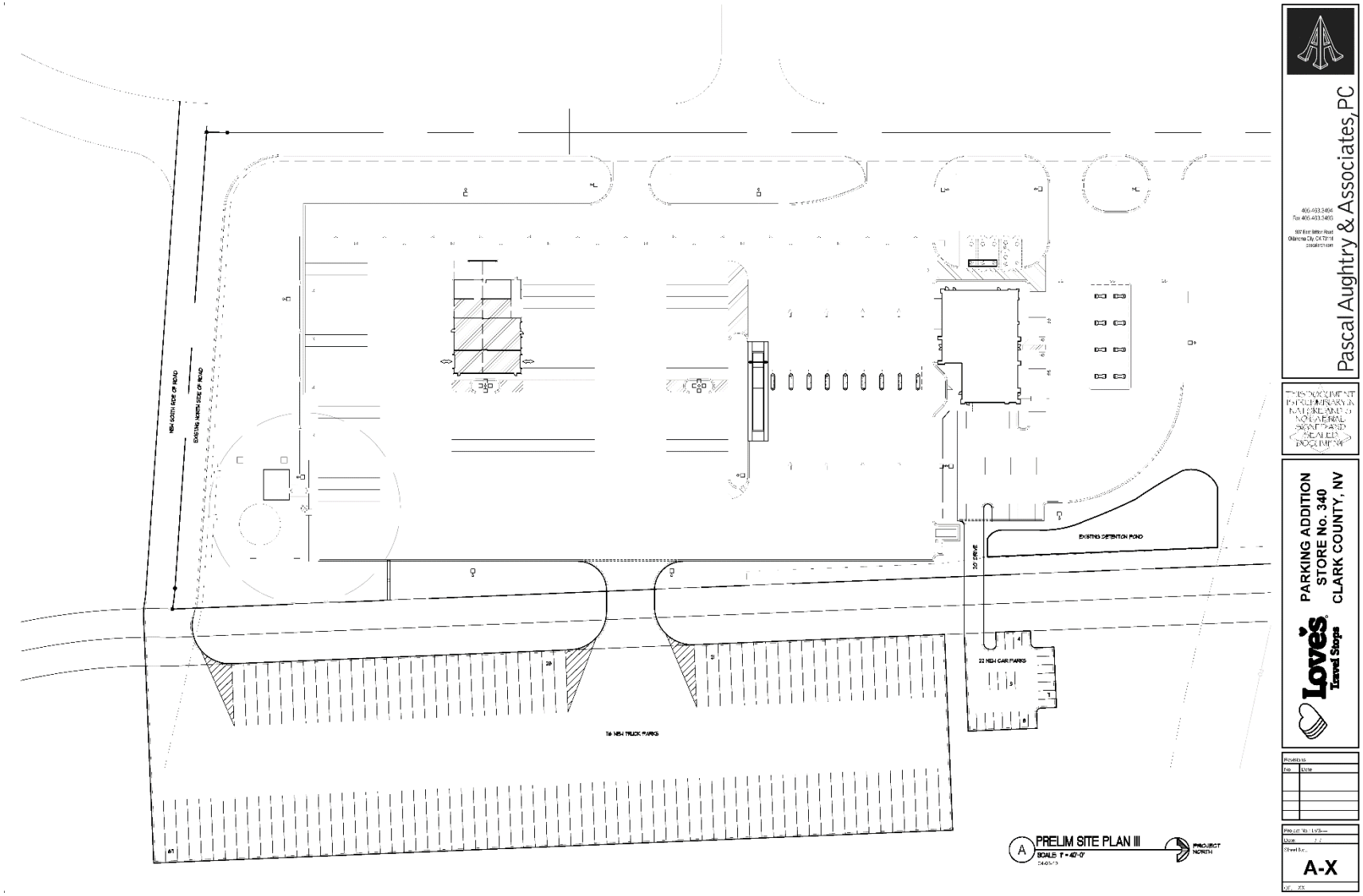
Source: Horrocks Engineers, 2019

Figure 4.14 Luning Rest Area Restriping

Source: Horrocks Engineers, 2019

Figure 4.15 New Lot Adjacent to Loves, Las Vegas Blvd at US 93

$2,250,000 for new lot with 116 paved spaces



Source: Pascal Aughtry & Assoc