

PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District 1

PD&E Study - SR 72 from CR 661 to SR 70 & SR 70 from CR 661 to the Peace River Bridge

Limits of Project: SR 72 from CR 661 northeast approximately 0.85 miles to SR 70 and extends on SR 70 from CR 661 southeast approximately 1.06 miles to the Peace River Bridge

Desoto County, Florida

Financial Management Number: 443123-2-22-01

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Date: September 29, 2023

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

Authorized Signature

Albert R. Smidebush, P.E.

Print/Type Name

Engineer of Record

Title

165 Lincoln Avenue

Address

Winter Park, FL 32789

Address

Seal

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1.0 PROJECT SUMMARY

1.1 Project Description

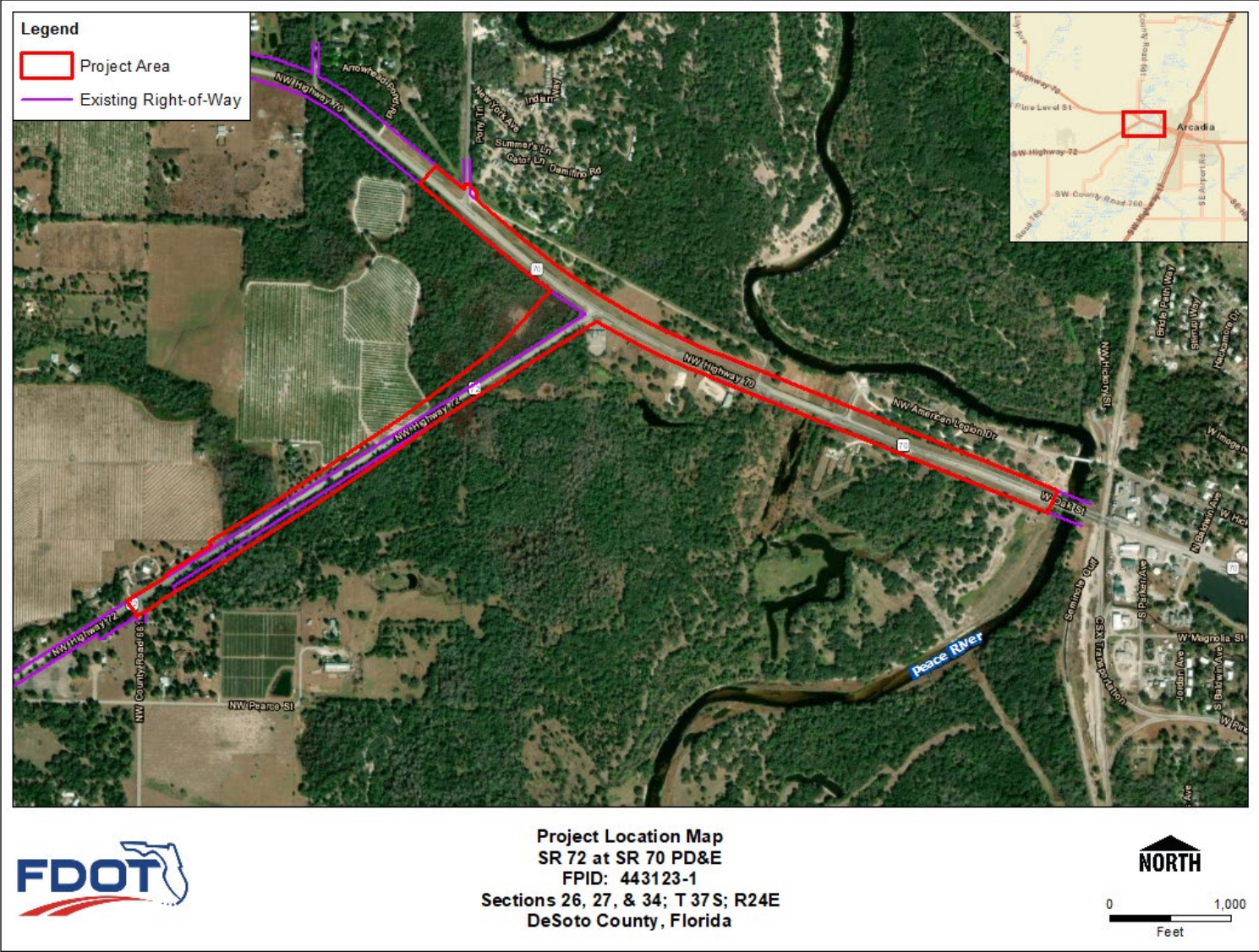
The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) study for proposed improvements, including consideration of a single lane roundabout at the intersection of State Road (SR) 70 and SR 72 west of Arcadia, Florida. The project location map is depicted in Figure 1. Figure 2 depicts the current and anticipated right-of-way (R/W).

Figure 1 - Project Location Map



This project involves raising and realigning SR 72 for approximately 0.85 miles between County Road (CR) 661 and SR 70. The SR 70 alignment will also be raised above historic flood levels and will require roughly a 1.05 mile of raising and reconstruction of SR 70 from CR 661 to the Peace River Bridge. A roundabout is proposed in lieu of the stop-controlled intersection. The proposed project would improve the overall safety and operations of both roadway facilities by mitigating the risk of flood damage to the road, reducing unplanned road closures due to severe flooding, and improve the overall safety of the intersection. Multi-modal improvements, including a shared use path are proposed as additional safety improvements. Drainage for the SR 70 portion of the project will maintain existing open roadside ditches and existing inlets at the bridges. No additional stormwater treatment is proposed for SR 70. The SR 72 portion of the project will utilize an open swale system with conveyance to a single dry detention swale located in the southern quadrant of the roundabout area. Offsite water will utilize existing cross-drains and will bypass the proposed treatment swale.

Figure 2 - Project Footprint Map



1.2 Purpose & Need

The purpose of this PD&E study is the analysis of alternatives to address needs identified within the study area and any potential impacts of projects that address the needs of the area. Evaluation of alternatives to address the safe operation of the SR 72 and SR 70 intersection and facilities within the area are the foundation of the study. The area has FDOT facilities that have been greatly impacted by flooding and there are numerous safety concerns with existing infrastructure. The study evaluates resilient design alternatives to alleviate flooding on SR 72 and SR 70 caused by the Peace River. Severe storms and historic flooding have been known to inundate segments of SR 72 and SR 70, making them impassable. This consequently restricts mobility in the region, makes a Strategic Intermodal Systems (SIS) and Evacuation Route (SR 70) impassable, affects safety, and reduces emergency response for the local area. As part of this study, the potential engineering and environmental effects have been evaluated, including the need for R/W. Alternatives will be resiliency focused and include evaluation of roadway profiles of SR 72 and SR 70 in the locations where flooding is most prevalent and safety improvements where need exists.

SR 70 provides intrastate travel between the City of Fort Pierce, St Lucie County on the east coast to the City of Bradenton, Manatee County on the west coast and spans five counties. SR 72 is an alternative route to the coast starting from its Eastern terminus at SR 70 and is the most direct route to Siesta Key, Sarasota, and Venice in Sarasota County. Maintaining access to this route is crucial for commerce, safety, and the overall transportation network and regional connectivity.

The segment of SR 72 between CR 661 and SR 70 has been prone to severe flooding over the years. The Federal Emergency Management Agency's (FEMA) effective Flood Insurance Rate Maps (FIRMs), dated November 6, 2013, depict Zone AE, A, and X floodplain limits within the project proximity. The Zone AE floodplains, which are areas that have a 1% chance of annual flooding, are consistent with the Peace River and its overbank area. This riverine floodplain encroaches into the SR 72 and SR 70 R/W and has a Base Flood Elevation (BFE) of 25.0 feet and 26.0 feet. The Zone A floodplains, which are areas that have a 1% annual chance of flooding, but do not have an established BFE are located along the western portion of SR 72 within the project limits. Several publications and other historical records have shown this portion of the roadway frequently inundating during hurricane season. A shallow base clearance coupled with repeated flooding, decreases the overall service life of the roadway and leads to more unscheduled repairs and maintenance. The project area is within an open basin where runoff flows via sheet flow to roadside ditches and through existing cross drains in a general southeast direction towards the Peace River. There is currently no existing permit for the area and the runoff is untreated prior to discharge. Frequent flooding restricts regional travel as well as adversely affects access and mobility for the local community. Public safety is at notable risk during these flooding events as

it can delay emergency response from first responders, restrict access to important shelters, hospitals, or medical facilities and restrict access to other goods and necessities.

The intersection of SR 72 and SR 70 is current a T-intersection, stop controlled at the terminus of SR 72 where it intersects with SR 70. SR 72 has a high level of truck traffic due to citrus fruit being brought from regional groves to the Peace River Citrus Products facility, located approximately 0.70 miles southwest of the project limits on SR 72. The truck traffic from this facility and other regional agricultural or rural-residential uses creates a high number of large-vehicle turning movements at the intersection of SR 72 and SR 70.

Further complicating the safety of this intersection is the presence of the Sunoco Gas Station at the south corner, with large, full access driveways on SR 72 and SR 70. The driveway apron on SR 72 is located approximately 65 feet from the SR 70 intersection and the apron on SR 70 is located within approximately 10 feet of the return radius of the intersection of SR 72. The proximity of these driveways to the intersection increases the potential for crashes. The spacing between these two driveways are too close together and do not meet the separation requirements per FDM Table 201.4.2. A review of the crash data indicates a need for this intersection be evaluated by this PD&E. The data shows that a high number of crashes that occur result in injury.

The final element analyzed is the lack of bicycle and pedestrian connectivity in the area. The DeSoto Veterans Memorial Park is located adjacent to the project area on the north side of SR 70 and the Peace River Campground and Canoe Rental business is located the northwest of the project area. Each of these recreation facilities creates non-vehicular demand, primarily for visiting the Sunoco Gas Station. No pedestrian pathways connect to the store and no crossing facilities exist at the SR 72 and SR 70 intersection or within the project area. Crash data shows a pedestrian fatality occurred within the project area along SR 70 in 2016 in an area with no pedestrian facilities where a pedestrian was struck while walking along the westbound SR 70 shoulder.

The design of the Preferred Alternative is on-going. Phase II plans are anticipated to be submitted for Department review on September 19, 2023. Phase IV plans are anticipated in May of 2024, Right-of-Way Clear is set for April 14, 2026, and the Production Date is December 4, 2026.

1.3 Commitments

- Unavoidable impacts to wood stork SFH will be mitigated in accordance with the CWA Section 404(b)(1) and within the appropriate CFA or mitigation bank.
- To assure the protection of the eastern indigo snake during construction, the FDOT will incorporate the most current version of USFWS guidelines "Standard Protection Measures for the Eastern Indigo Snake" during the construction phase.

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- The tricolored bat is not currently protected but is a candidate for federal listing. Should this species become listed during later project phases, the FDOT will initiate consultation with the USFWS.

1.4 Alternatives Analysis Summary

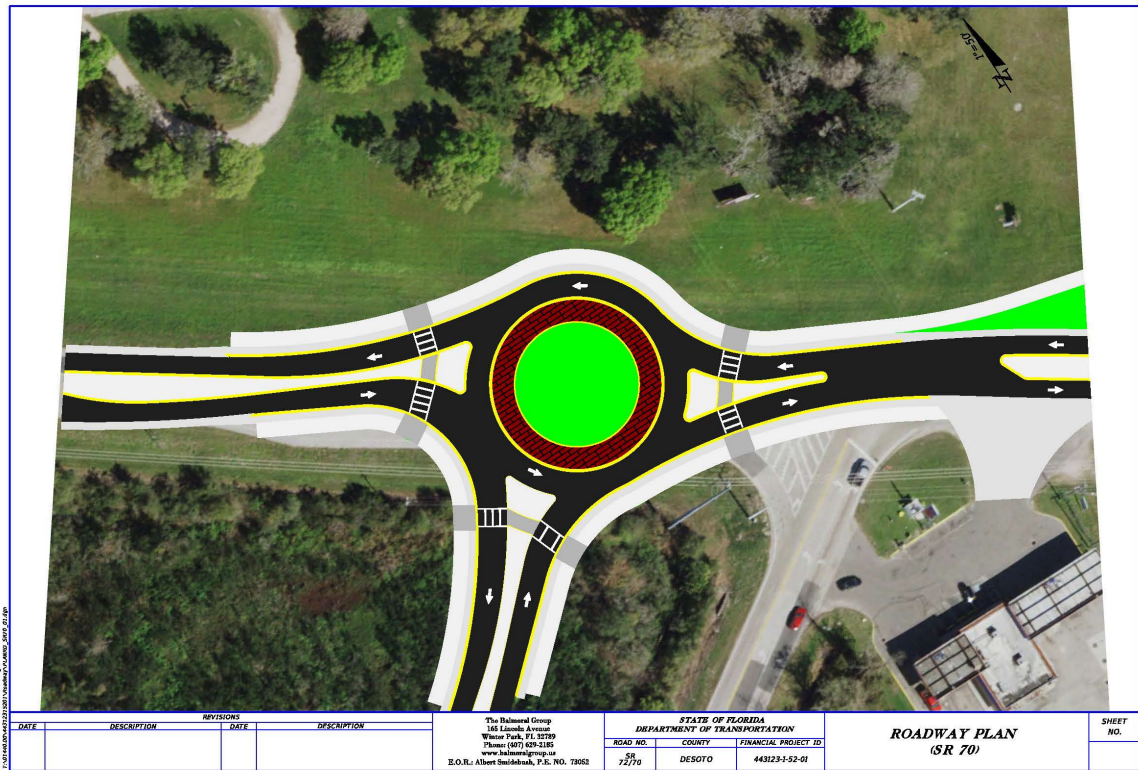
Two alternatives were evaluated, No-Build and Build. The No-Build alternative proposes no changes to the alignments and horizontal or vertical geometry and no improvements to operations or safety. However, there would be no existing right-of-way or environmental impacts. The Build alternative proposes a roundabout to the west of the existing SR 70/SR 72 intersection. This requires the re-alignment of SR 72 and includes raising the roadway profiles above historic storm event levels to mitigate roadway flooding. The roundabout increases safety for all user compared to the existing condition. The Build alternative will require additional right-of-way and impacts wetlands and flood plains. The construction cost for the Build Alternative is approximately \$10.2 million.

1.5 Description of Preferred Alternative

Based on the evaluation of the alternatives described in Section 4.0, the Build Alternative is recommended as the Preferred Alternative as it best satisfies the Purpose and Need of the project considering the engineering and environmental constraints and impacts.

The Preferred Alternative involves raising the profile of SR 72 and SR 70 above the 100-year storm event elevation. SR 72 will be re-aligned to the west of the current location to provide a single-lane roundabout instead of the stop-controlled intersection at SR 70. Both SR 70 and SR 72 will have two 12-foot lanes with 10-foot shoulders (5-foot paved). Severe storms have been known to inundate the roadway causing damage to the road, resulting in temporary closures. Any unexpected closures can adversely impact the safety of the community, delay emergency vehicles, and disrupt intrastate travel. Raising the roadway profile will mitigate roadway flooding and reduce roadway closures. The roundabout intersection was found to reduce the number of expected crashes and reduce the severity of the crashes and was found to operate with less delay and a better level of service than a traffic signal. To enhance multi-modal connectivity, the multi-use path on the north side of SR 70 will be extended from the Peace River Relief Bridge to the proposed roundabout. Due to the proposed shift to the west in the alignment of SR 72, right-of-way takes are required, impacting 11 properties for an approximate total of 11.58 acres.

Figure 3 - SR 72 & SR 70 Roundabout



Following a Context Classification/ Typical Section meeting held on May 12, 2023, it was decided the limits for the C2T – Rural Town classification on SR 70 would be revised from MP 12.060 to MP 12.260. It was also determined that the Design Speeds on SR 70 will be revised to 50 mph within the C2-Rural Classification and 45 mph within the C2T-Rural Town classification. Both typical sections will remain as a two-lane undivided roadway with flush shoulders and roadside ditches on each side. A new dry detention pond is proposed on the SW corner of SR 72 and SR 70.

Figure 4 - SR 72 Typical Section

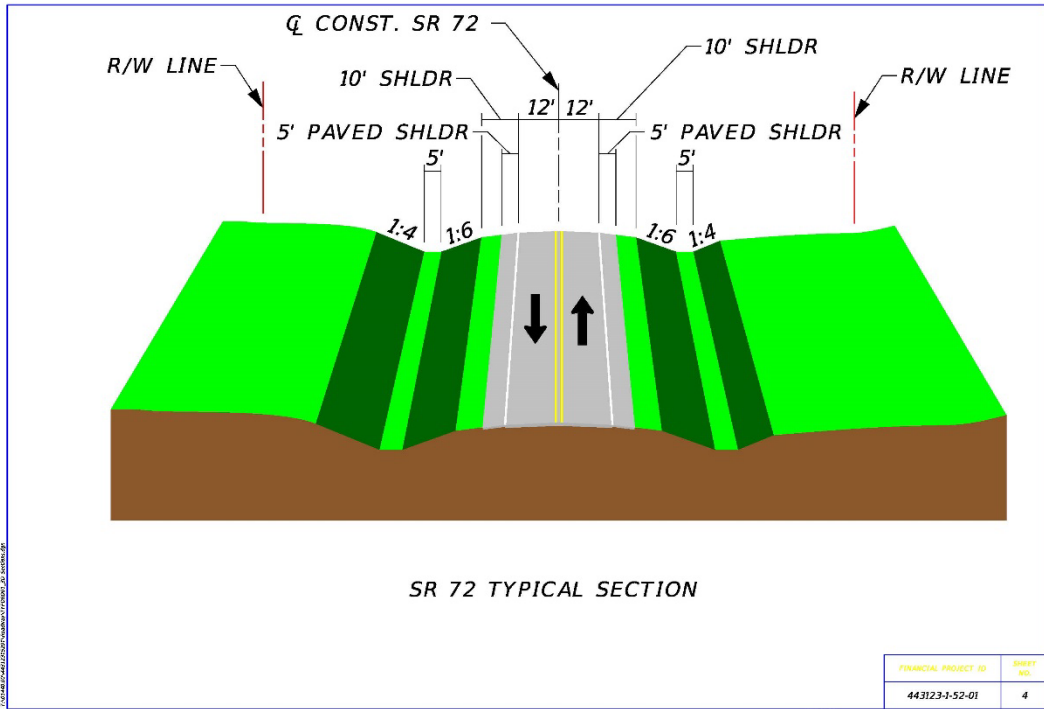
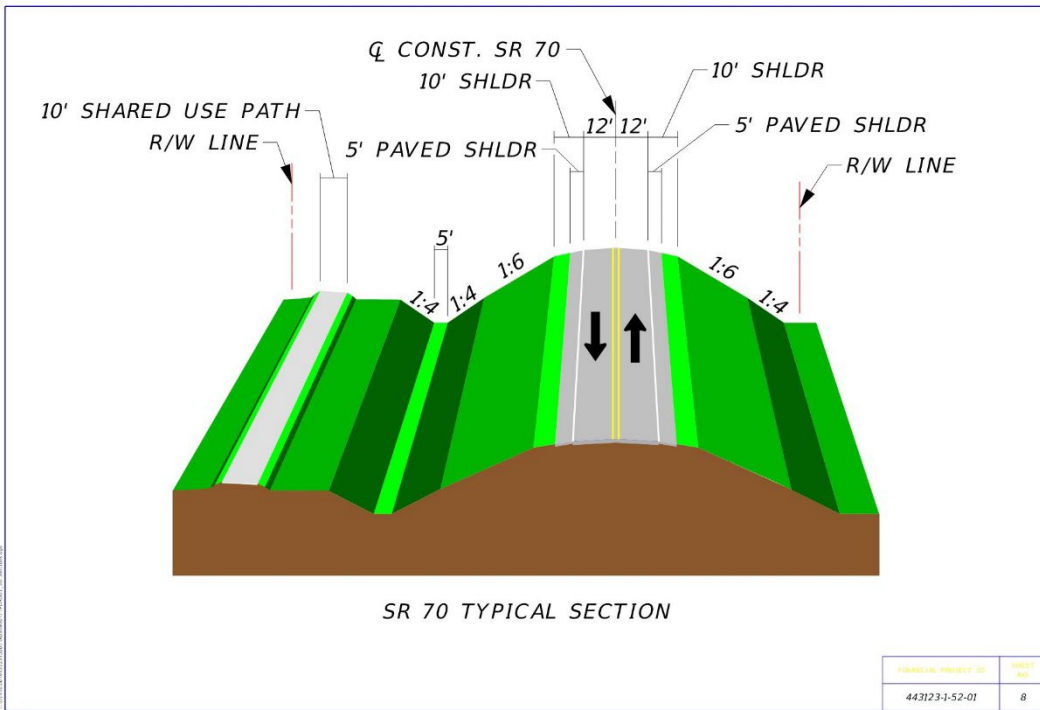


Figure 5 - SR 70 Typical Section



The **Preferred Alternative Conceptual Plan Set (Appendix B)** and **Typical Section Package (Appendix C)** are discussed further in Section 6.

1.6 List of Technical Documents

- Phase 1 Roundabout Feasibility Screening – Dated August 29, 2014
- Pavement Survey and Evaluation Report (SR 72) – Dated January 22, 2020
- Subsurface Soil Exploration – Dated April 23, 2020
- Context Classification Request – Dated June 29, 2020
- Context Classification Review Comments – Dated September 21, 2020
- Traffic Signal Warrant Analysis – Dated March 2021
- Intersection Control Evaluation (ICE) Stage 1 Memo – Dated November 30, 2021
- Intersection Control Evaluation (ICE) Stage 1 Form – Dated December 7, 2021
- Pavement Survey and Evaluation Report (SR 70) – Dated December 17, 2021
- Utility Assessment Package
- Public Involvement Plan (PIP)
- Comments & Coordination Report
- Public Hearing Transcript
- Conceptual Drainage Report (CDR)
- Location Hydraulics Report (LHR)
- Water Quality Impact Evaluation (WQIE)
- Natural Resources Evaluation (NRE)
- Cultural Resources Assessment Survey (CRAS)
- Farmland Evaluation Technical Memorandum
- Noise Study Report (NSR)
- Contamination Screening Evaluation Report (CSER)

2.0 EXISTING CONDITIONS

2.1 Previous Planning Studies

Two reports were previously completed regarding the use of a roundabout at the SR 70/SR 72 intersection. The first report was the “Phase 1 Roundabout Feasibility Screening” completed on August 29, 2014. This report indicated that a single-lane roundabout, from a planning-level analysis, is sufficient to serve existing traffic volumes and provides safety benefits over the current stop-controlled intersection. The report went on to identify that there would be right-of-way and environmental impacts and that further discussion with the Department would be necessary.

The second report performed is the “Stage 1 ICE Analysis” completed on November 30, 2021. This report compared the construction of a signalized intersection against a roundabout at the SR 70/SR 72 intersection. The capacity analysis showed both options would operate effectively with volume-to-capacity ratios less than 0.75 for all peak periods. However, the safety analysis concluded that a roundabout would be the safer option for both vehicles and any pedestrians or bicyclists.

2.2 Existing Roadway Conditions

2.2.1 Roadway Typical Sections

Within the project limits, SR 72 is a rural two-lane undivided roadway with a posted speed limit of 60 mph that is reduced to 45 mph approaching the SR 70 intersection. The typical section consists of 12-foot travel lanes, and ten-foot outside shoulders (five feet paved). There are no designated bicycle or pedestrian facilities.

Within the project limits, SR 70 is a rural two-lane undivided roadway with a posted speed limit of 45 mph throughout the project limits. The typical section consists of 12-foot travel lanes, and ten-foot outside shoulders (five feet paved). There are no existing designated bicycle or pedestrian facilities. This section of SR 70 is listed as an emerging SIS facility.

There are no ongoing or scheduled improvements for these two corridors within the project limits.

2.2.2 Roadway Functional & Context Classifications

Per FDM 201.1, functional classification, and context classification are established design controls for facilities on the State Highway System. These two elements establish the geometric and operational characteristics and criteria of the roadway. The functional classification (**Table 1**) is based on vehicular travel characteristics and the degree of access provided to adjacent properties. Context Classification (**Table 2**) establishes design criteria based on environmental conditions and the surrounding land use to harmonize the roadway characteristics and features with the intended land uses (i.e. existing and planned). SR 70 is a Hurricane Evacuation Route and a Strategic Intermodal System (SIS) corridor.

Table 1 – Functional Classification

Roadway Name	Urban or Rural	Functional Class
SR 72	Rural	Minor Arterial
SR 70	Rural	Principal Arterial

Table 2 – Context Classification

Roadway Name	FDOT Context Class
SR 72	C2 – Rural
SR 70	C2 – Rural

2.2.3 Access Management Classification

Under Florida Statutes 335.18, the legislature authorized FDOT to develop rules to administer the “State Highway System Access Management Act”. These rules regulate access to the state highway system to preserve the functional integrity of the system. FDOT uses seven access classifications numbered one thru seven as defined in Rule 14-97. In general, as the access classification increases so does the number of access points and connections to the facility. On the other hand, speed is inversely related, and as the access classification increases the speed of the facility decreases.

Table 3 lists access classification for the roadways under consideration.

Table 3 – Access Classification

Roadway Name	Access Classification
SR 72	04
SR 70	03

2.2.4 Right-of-Way

Right-of-way mapping and other pertinent survey data was obtained from the FDOT Survey and Mapping database, Desoto County property appraiser maps, and field survey. Within the project limits, SR 72 has a 100-foot right-of-way, which is centered on the road. SR 70 has a 200-foot right-of-way with 132 feet north of the baseline of survey and 68 feet south of the baseline of survey.

2.2.5 Adjacent Land Use

Along SR 72, the land uses along the existing R/W are primarily Agricultural and Rural Residential. Along SR 70, the land uses along the existing R/W are Agricultural, Recreation, and Commercial. The south side of the intersection of SR 72 & SR 70 has Gas Station/Convenience store. **Figure 6, Figure 7, and Figure 8** depict the land uses, as defined by the Florida Land Cover Classification System (FLUCCS) adjacent to the project area.

Figure 6 – FLUCCS Map 1

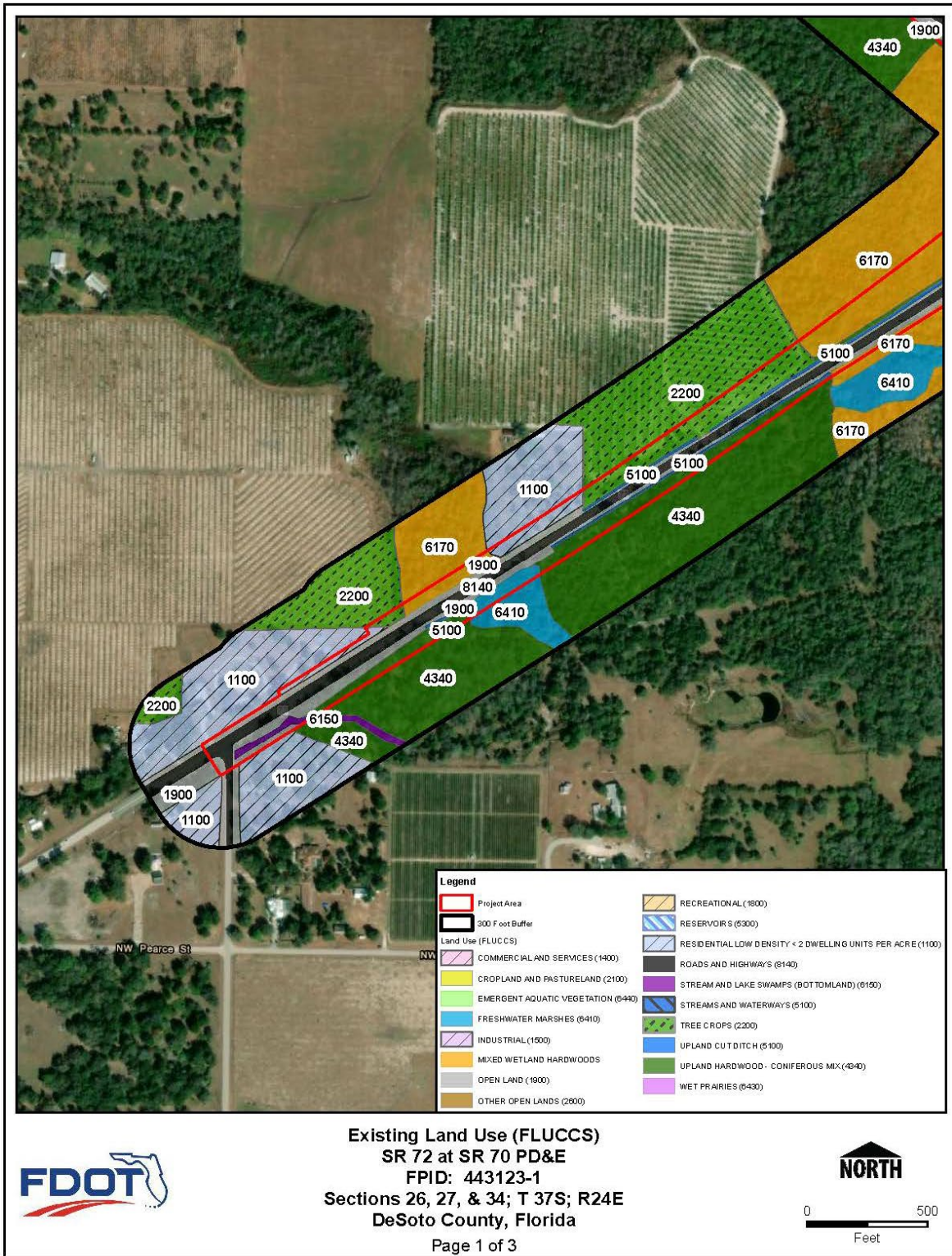
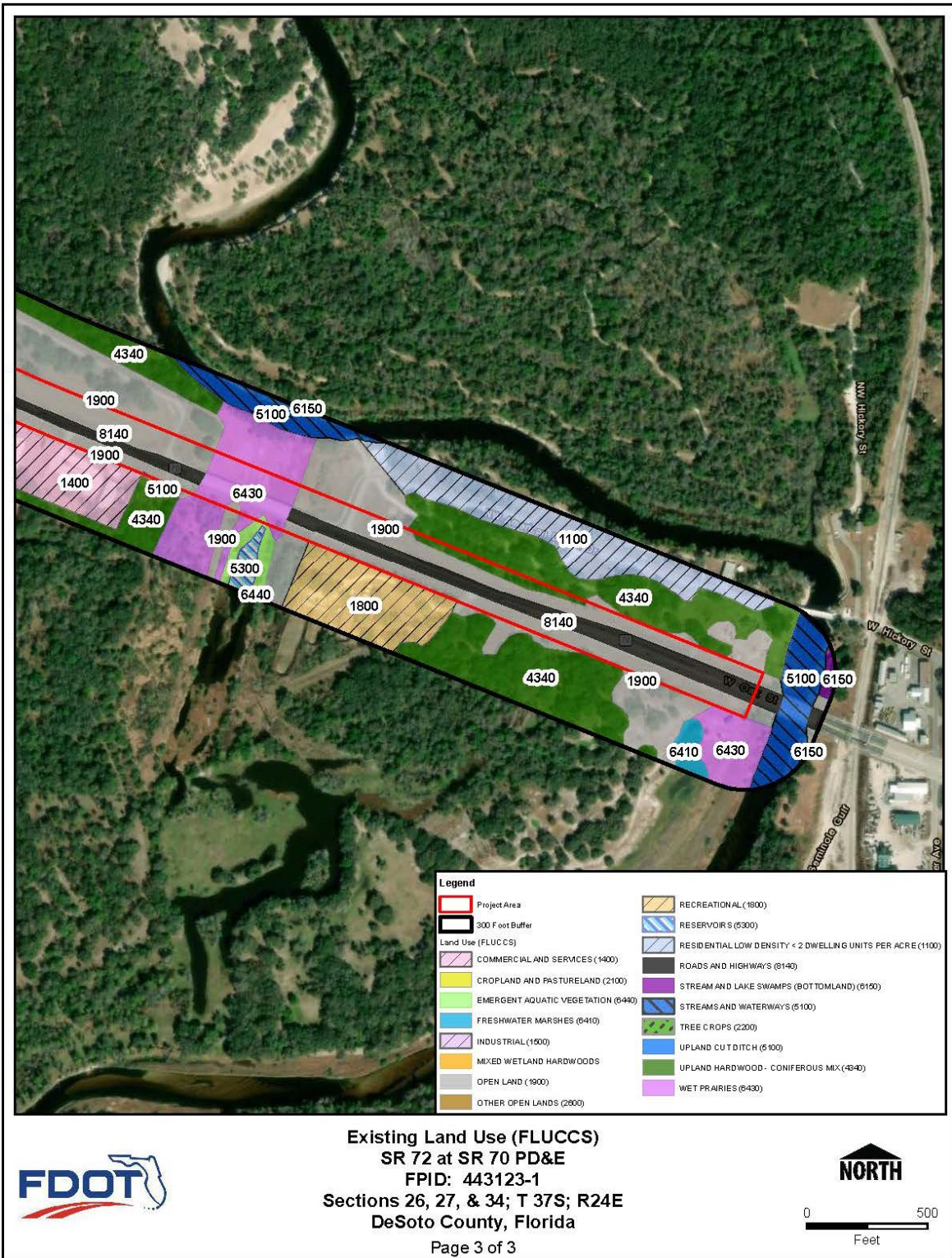


Figure 8 – FLUCCS Map 3



2.2.6 Pavement Type and Condition

A Pavement Survey and Evaluation Report was performed for SR 72 on January 22, 2020. Based on the core data, the overall pavement condition was noted as fair but top-down cracking extending full depth was observed for a majority of the cores. It should be noted that damage from 2022 Hurricane Ian required the partial reconstruction of SR 72 within the project limits. The emergency repairs were completed in the winter of 2022-23. Pavement conditions before the reconstruction of SR 72 are presented below in **Table 4**. It should be noted that the pavement evaluation report had recommended full pavement reconstruction as an option for this segment due to the severe cracking observed.

Table 4 – SR 72 Pavement Rankings

Pavement Type	Age	Crack	Ride	Rut
Asphalt	22 years	7	7.5	10

A Pavement Survey and Evaluation Report was performed for SR 70 on December 17, 2021. Based on the core data, the overall pavement condition was noted as poor to fair with top-down, bottom-up, and fatigue cracking. Pavement conditions are presented below in **Table 5**.

Table 5 – SR 70 Pavement Rankings

Pavement Type	Age	Crack	Ride	Rut
Asphalt	19 years	6	7.3	8

2.2.7 Existing Design and Posted Speed

Design Speed is a principal design control that regulates the selection of many of the project standards and criteria used for design. The selection of an appropriate design speed must consider many factors and must follow FDM 201.5.1 design speed selection process. Per FDM 201.5, both roadways are categorized as High-Speed facilities. The following design speeds in **Table 6** were based on As-Builts.

Table 6 – Existing Roadway Speeds

Roadway Name	Design Speed (mph)	Posted Speed (mph)
SR 72	65	45/55 (CMP 10.806) 60/55 (CMP 10.556)
SR 70	65	45

CMP = County Mile Post

2.2.8 Horizontal Alignment

Within the project limits, SR 72 has a linear alignment and SR 70 has a curved alignment. SR 70 has one horizontal curve. The horizontal alignment for SR 70 is summarized in **Table 7**.

Based on field measurements, SR 72 cross slopes vary from 0.5% to 3.7%, and SR 70 cross slopes vary from 1.1% to 2.2%. SR 70 is superelevated at 3.7% within the project limits.

Table 7 – SR 70 Horizontal Alignment

PC Station	PT Station	Curve Radius (ft)	Curve Length (ft)	Super-elevation Rate
607+83.18	625+84.33	5,729.58	1801.15	3.7%

2.2.9 Vertical Alignment

The vertical alignment for SR 72 and SR 70 was determined from a 3D Digital Terrain Model (DTM). Best-fit profiles were generated for each roadway. All elevations are in feet and based on the North American Vertical Datum of 1988 (NAVD 88). The SR 72 profile gradually transitions from elevation 51 near CR 661 to elevation 22.5 just south of SR 70. The SR 70 profile gradually transitions from elevation 42 near Arrowhead Pond Road to elevation 26.5 just south of Bradenton Road. The vertical alignment for this project is summarized in Table 8.

Table 8 - Vertical Alignment

Roadway	Number of Curves	Max. Grade (%)
SR 72	2	1.83
SR 70	6	2.24

2.2.10 Multi-modal Facilities

There are no sidewalks, crosswalks, multi-use paths, or other similar types of facilities present within the project area except for pedestrian paths on both sides of the Peace River Relief Bridge and pathways within the DeSoto Veterans Memorial Park, which connect to the City of Arcadia via a pedestrian bridge over the Peace River, north of the project area.

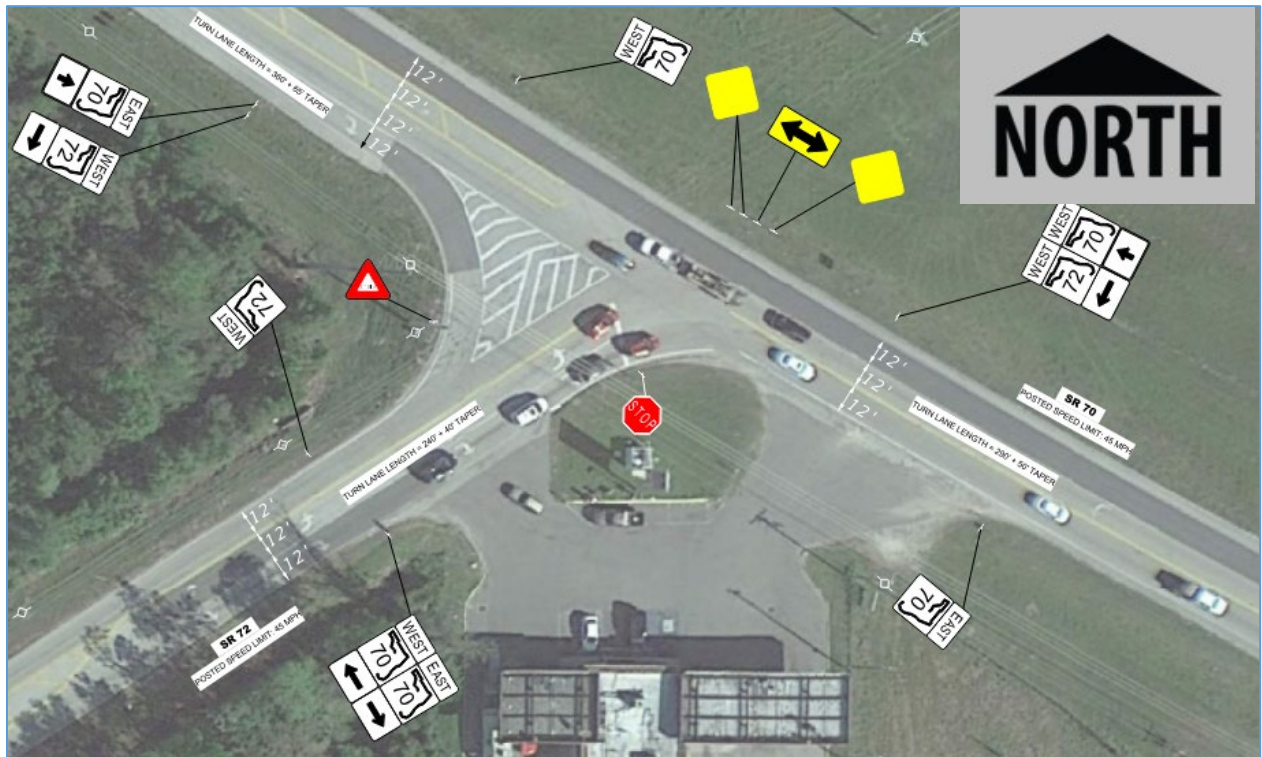
Per FDM 223.2, paved shoulders are classified as bicycle facilities. 5-foot paved shoulders are provided on both SR 70 and SR 72. These facilities are unmarked.

No transit facilities or transit routes are present within the project area. No bus stops, transfer centers, or park-and-ride lots are present within the project area.

2.2.11 Intersections

SR 72 and SR 70 intersect as a 3-legged intersection (T-intersection). SR 72 is stop-controlled and SR 70 is free-flow. Along SR 70, there is a left-turn storage lane on the east leg of the intersection and a channelized right-turn lane on the west leg. The channelized right turn is yield-controlled. SR 72 has a dedicated left-turn storage lane and a dedicated right-turn lane. Street termination signing and channelizing markings are provided at the intersection. **Figure 9** shows the conditions diagram of the site. The gas station provides access for both roadways, and the driveways are within the intersection influence area.

Figure 9 – Site Condition (SR 72 & SR 70)



2.2.12 Physical or Operational Restrictions

Along the south side of SR 70, Florida Power & Light (FPL) has both overhead distribution and transmission power lines. The transmission lines are on large concrete poles running along the right-of-way line. Additionally, there are two bridges along SR 70; the Peace River Relief Bridge (Bridge #040002) and the Peace River Bridge (Bridge #040023). The Peace River Relief Bridge carries two (2) 12'-0" wide travel lanes (one in each direction), 10'-0" wide outside shoulders, 1'-6" wide F-shape concrete traffic railing barriers, 6'-0" wide sidewalks, and 10 ½" wide pedestrian/bicycle railings (triple bullet railings mounted on an 8" wide by 2'-0" high concrete parapet) along the coping lines. The Peace River Bridge carries four (4) 12'-0" wide travel lanes (two in each direction), a 4'-0" wide concrete traffic separator, 10'-0" wide outside shoulders, 1'-6" wide F-shape concrete traffic railing barriers, 6'-0" wide sidewalks, and 10 ½" wide pedestrian/bicycle railings (triple bullet railings mounted on an 8" wide by 2'-0" high concrete parapet) along the coping lines.

There are no physical or operational restrictions along SR 72.

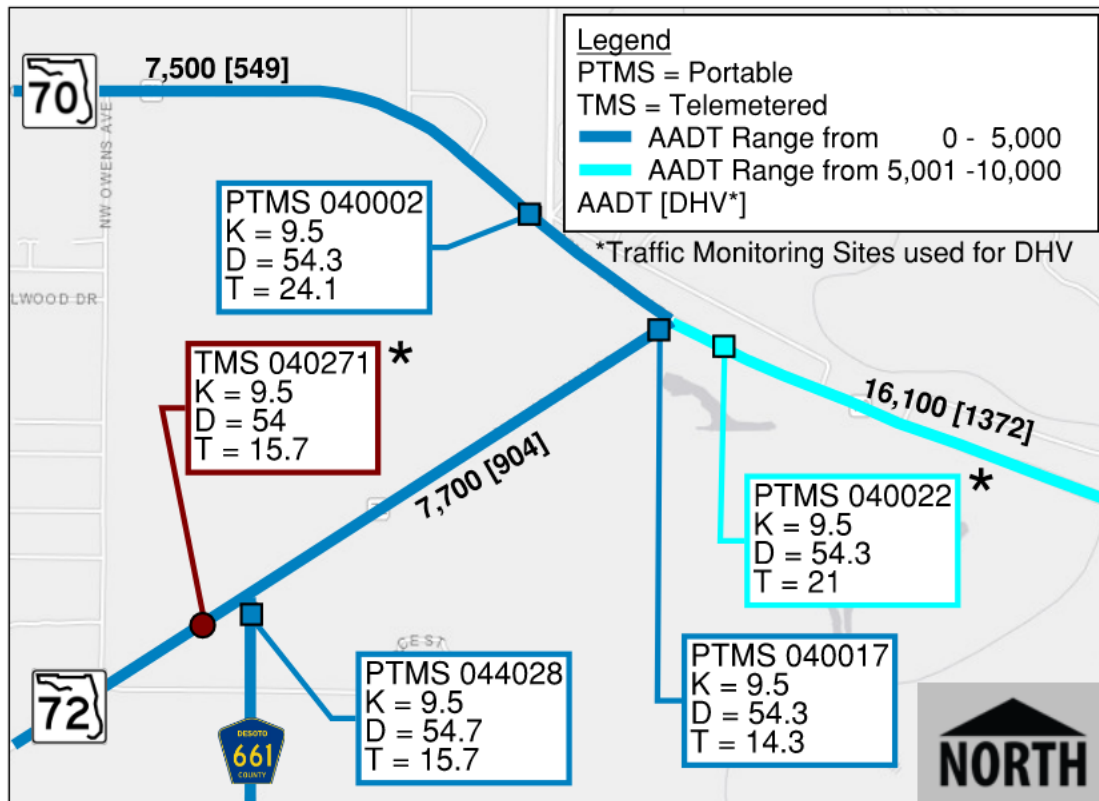
2.2.13 Traffic Data

The FDOT Florida Traffic Online web application was used to determine the traffic volumes and operational conditions for both SR 72 and SR 70. There are four portable traffic monitoring sites (PTMS) and one telemetered traffic monitoring site (TMS) within the project limits as shown in **Figure 10**. All traffic data is from 2022 and includes Annual Average Daily Traffic (AADT) in **Table 9**, Design Hourly Volumes (DHV), Directional Design Hourly Volumes (DDHV), Truck factors (T), Distribution factor (D), and standard K factors. Based on hourly counts at these sites, the SR 70 peak hours are from 7 am to 8 am and 4:45 pm to 5:45 pm, and the SR 72 peak hours are from 7:45 am to 8:45 am and 3:45 pm to 4:45 pm. Peak hour design volumes (DHV and DDHV) were reported for SR 72 in the afternoon (DHV = 904 & DDHV = 460), and SR 70 east of SR 72 in the afternoon (DHV = 1372, and DDHV = 748). Truck traffic was observed as being rather high (>10%) for both segments and will impact design considerations.

Table 9 – Historical AADT

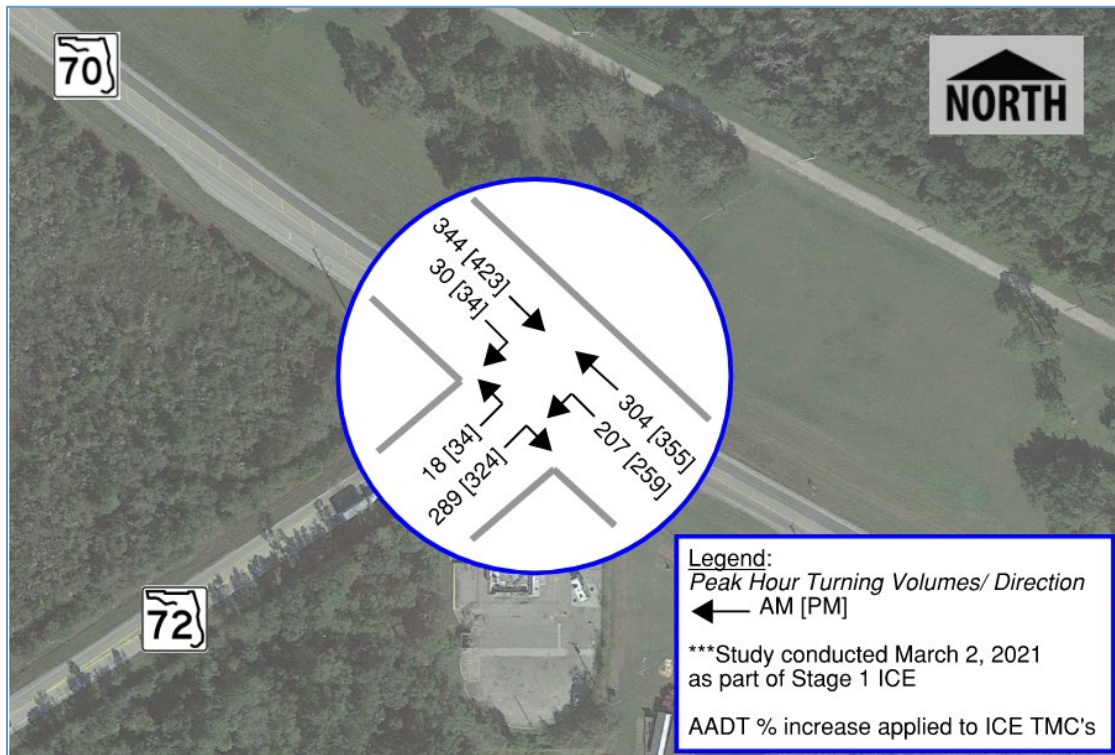
Year	AADT			
	SR 70		SR 72	
	PTMS 040022	PTMS 040002	TMS 040271	PTMS 040017
2022	16,100	7,500	7,030	7,700
2021	14,900	7,100	6,724	7,300
2020	13,500	6,700	6,081	6,800
2019	14,600	7,300	6,137	7,000
2018	14,000	7,700	6,055	7,600

Figure 10 – Traffic Monitoring Sites and Traffic Data



Turning movement counts (TMCs) were extracted from the 2021 Stage 1 Intersection Control Evaluation (ICE, November 2021) analysis (**Figure 11**). The ICE (November 2021) analysis performed TMCs on Tuesday, March 2, 2021, for the morning peak hours of 7 am to 8 am, and the afternoon peak hours of 5 pm to 6 pm. Historical AADT shows an overall increase in traffic volumes between 2021 and 2022. There was a 7% increase in traffic volume along SR 70 (E of SR 72), a 5% increase in traffic volumes along SR 70 (W of SR 72), and a 5% increase in traffic volumes along SR 72. Peak hours differ slightly between the ICE (November 2021) and 2022 FTE traffic counts.

Figure 11 – Turning Movement Counts



2.2.14 Roadway Operational Conditions

An intersection delay study was also performed as part of the ICE (November 2021) Analysis (**Table 10**). The study was conducted on March 2, 2021. The study points out that for comparison purposes an average control delay for this type of intersection under signal control is 60 seconds. The signal warrant for which the delay study was conducted was unsatisfactory based on the following results. A summary of the signal warrants performed by the ICE (November 2021) study is presented in **Table 11**.

Table 10 – Summary of Delay Study

7:00 AM - 8:00 AM	Westbound	Northbound	
	Left	Left	Right
Volume (veh/ hr)	193	18	275
Max Queue (veh)	4	2	7
Avg Delay per Vehicle (seconds)	7	30	16
Max Delay per Vehicle (seconds)	31	108	62
Total Delay (veh-sec)	1,353	528	4,167
Total Delay (veh-hrs)	0.39	0.20	1.18
4:00 PM - 5:00 PM (WB Left) 5:00 PM - 6:00 PM (NB Both)	Westbound	Northbound	
	Left	Left	Right
Volume (veh/ hr)	282	32	308
Max Queue (veh)	6	3	7
Avg Delay per Vehicle (seconds)	9	39	22
Max Delay per Vehicle (seconds)	42	152	79
Total Delay (veh-sec)	2,444	1,228	6,631
Total Delay (veh-hrs)	0.69	0.34	1.85

*Intended for Signal Warrant 3 (Peak Hour)

Table 11 – Signal Warrant Summary

Warrant		Applicable	Satisfied
1A	Minimum Vehicular Volume	Yes	No
1B	Interruption of Continuous Traffic	Yes	No
2	Four-Hour Vehicular Volume	Yes	Yes
3	Peak Hour	No	No
4	Pedestrian Volume	Yes	No
5	School Crossing	No	No
6	Coordinated Signal System	No	No
7	Crash Experience	Yes	No
8	Roadway Network	Yes	Yes
9	Grade Crossing	No	No

FDOT has enacted a policy for planning, designing, and operating the SHS at an acceptable Level of Service (LOS) for the traveling public. Florida's LOS Policy (Topic No. 000-525-006) outlines the motorized vehicle peak hour LOS threshold for urbanized areas (LOS D) and outside urbanized areas (LOS C). The peak hour traffic volumes were compared to FDOT's Generalized Service Volume Tables (2023 Multimodal Quality/ Level of Service Handbook) and it was found that within the project limits SR 72 operates at LOS C, SR 70 (W of SR 72) operates at a LOS C, and SR 70 (E of SR 72) operates at LOS C. It should be noted that this segment of SR 70 is listed as an emerging SIS.

2.2.15 Managed Lanes

No managed lanes are present within the project area.

2.2.16 Crash Data

The most recent five years of recorded crash data were reviewed for the intersection of SR 72 and SR 70 using Signal4 Analytics (**Table 12**). The crash period was from January 2018 to March 2023. A total of 72 crashes were reported at this intersection. There was one fatality reported involving a pedestrian walking the westbound shoulder at night [2021_87289752]. The pedestrian was struck by a careless driver resulting in the fatality. There were 5 crashes resulting in incapacitating injuries and 20 possible injury crashes. There was only one non-motorist crash reported which resulted in a fatality. 84% of the crashes occurred during the day. 10 wet weather crashes were reported with only one wet road surface condition listed as a contributing cause. Hydroplaning was not identified as the contributing cause. Angle, Left Turn, and Right Turn collisions (33) accounted for the most frequent collision types, and front-to-rear collisions (23) were the second most frequent. A brief review of the long forms found that 10 of the 32 angle collisions were influenced by entering and exiting traffic from the gas station. Crashes involving these driveways were mainly contributed to improper turns. There were no other discernable trends regarding crashes at this intersection.

Table 12 - Crash Data Statistics (2018 to 2023)

Crash Type	2018	2019	2020	2021	2022	2023 [^]	Total
Angle	2	-	-	1	-	3	6
Animal	1	-	-	-	-	-	1
Left Turn	2	5	3	7	6	3	26
Off-Road	-	1	-	-	-	-	1
Other	2	1	2	2	-	-	7
Rear End	5	6	4	3	5	-	23
Right Turn	-	-	1	-	-	-	1
Rollover	1	1	-	-	-	-	2
Sideswipe	3	-	1	-	-	1	4
Total:	14	11	13	11	11	7	72
Fatalities	-	-	-	1	-	-	1
Incapacitating Injuries	2	2	-	-	-	1	5

[^]Crash data available from Jan. 1st to March 12th, 2023

2.2.17 Railroad Crossings

There are no railroad crossings or railroad facilities located within the project area.

2.2.18 Drainage

The project area is within an open basin where runoff flows via sheet flow to roadside ditches and through existing cross drains in a general southeast direction towards the Peace River. There are four cross drains which convey flow from the north side of SR 72 to the south side, towards the Peace River. Contributing areas were delineated by utilizing CatchmentSIM (CSIM) software and available LiDAR, reviewing existing permits and plans, and field reconnaissance. Interconnected Channel and Pond Routing (ICPR) Model software was used to determine peak flows and peak stages at the existing cross drains. Actual rainfall data from Hurricane Irma (2017) and Hurricane Ian (2022) was used to calibrate and model results.

During the design phase, the cross-drain facilities will be prepared in accordance with the FDOT Drainage Manual (Topic No. 625-040-002). Proposed conceptual modeling was performed to estimate proposed cross drain sizes. One cross drain size is proposed to be increased to provide sufficient capacity for a wildlife feature. A Location Hydraulic Report (LHR, August 2023) is attached to this document and provides greater detail of the proposed stormwater improvements. It is expected that the proposed improvements will include extension, modification, or replacement of existing drainage structures, which will perform hydraulically in a manner equal to or greater than the existing structures, and backwater surface elevations are not expected to increase. Thus, there will be no significant adverse impacts on natural and beneficial floodplain values. As a result, there will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

The project site is located within the Peace River above Joshua Creek watershed (WBID #1623C). This is not a tidal basin. It is listed on the FDEP verified list for fecal coliform impairment, but no nutrient impairments. The Peace River is not an Outstanding Florida Water (OFW). **Figure 12** depicts the drainage map related to the project area.

The Peace River crosses SR 70 in two locations directly downstream of the project area.

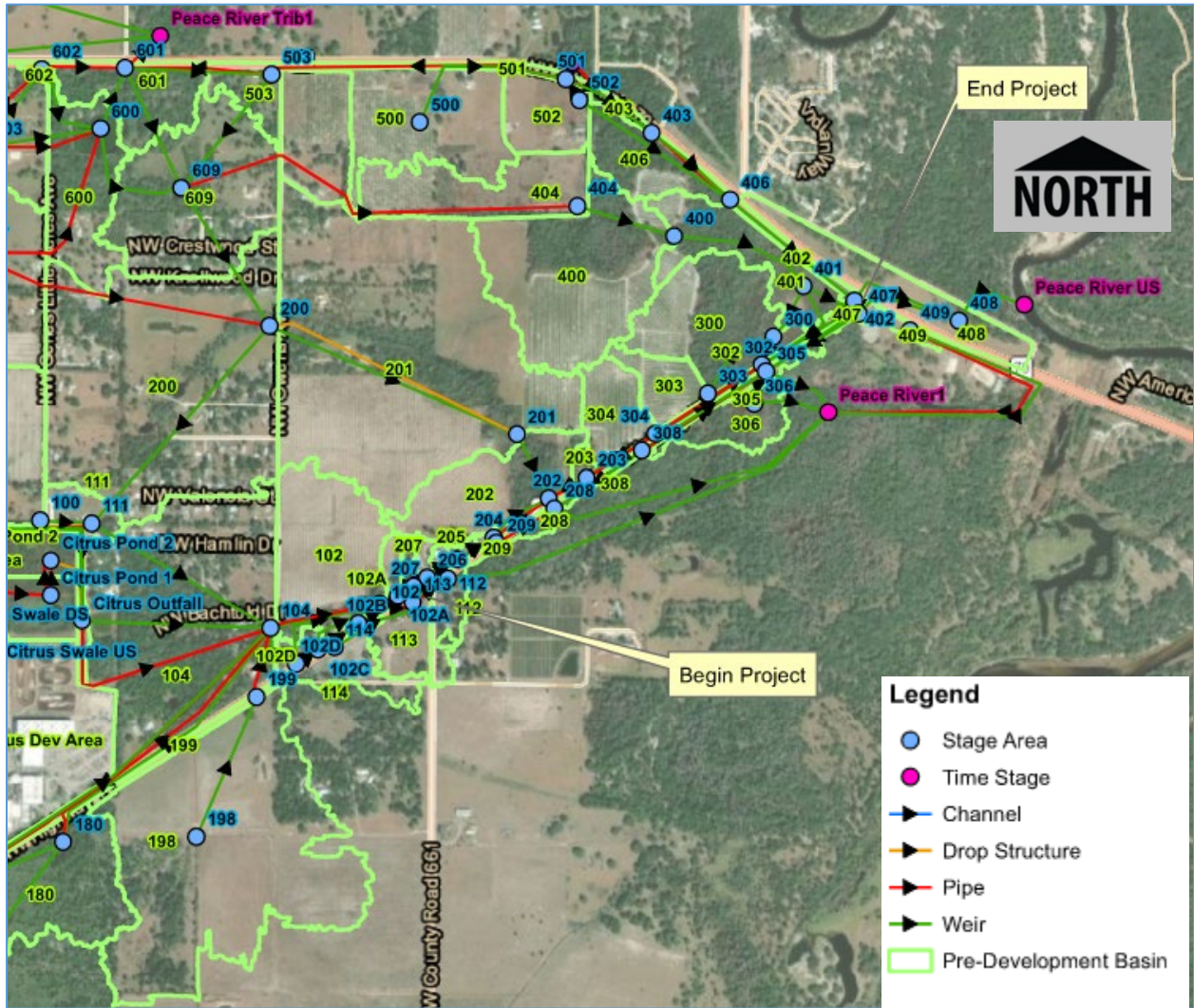
- SR 70 over Peace River Relief Bridge No. 040002, 14 span, 600 feet long
- SR 70 over Peace River Bridge No. 040023, 7 span, 320 feet long

Coordination has been ongoing with the Florida Department of Transportation (FDOT) Maintenance. This study area has known local flooding issues with significant flooding during Hurricane Ian and Hurricane Irma.

The FEMA effective FIRM's, dated November 6, 2013, depict Zone AE, A, and X floodplain limits within the project proximity. The Zone AE floodplains, which are areas that have a 1% chance of annual flooding, are consistent with the Peace River and its overbank area. This riverine floodplain encroaches into the SR 72 and S.R 70 right-of-way and has a Base Flood Elevation (BFE) of 25.0 feet and 26.0 feet. The Zone A floodplains, which are areas that have a 1% annual chance of flooding, but do not have an established BFE are located along the western portion of SR 72 within the project limits. The FEMA Floodplain Map is included in the LHR (August 2023).

Improvements at the Peace River bridge and relief bridge along SR 70 are discussed in the Bridge Hydraulic Technical Memorandum (August 2023).

Figure 12 – Drainage Map



2.2.19 Lighting

No roadway lighting is present within the project area.

2.2.20 Utilities

Seven (7) Utility Agency Owners (UAO) located within the FDOT R/W were contacted as a part of the Utilities Assessment. Three (3) of the UAO's will relocate, with no cost to FDOT.

A Utilities Assessment Package Technical Report (August 2023) with more detailed utility information was created for this PD&E study. Table 13 shows the UAO's present within the FDOT R/W.

Table 13 - Sunshine 811 Design Ticket UAO's

Utility Owner	Facilities
CenturyLink (Local)	Fiber, Telephone
CenturyLink (National)	Fiber
City of Arcadia	Water, Sewer
Comcast	CATV
FP&L Distribution	Electric (<50kV)
FP&L Transmission	Electric (230kV)
Florida Public Utilities	Gas

CenturyLink (Local)

CenturyLink Local marked-up utilities on both SR 72 and SR 70. The facilities consist of buried copper (50 Pair and 24 Gauge) and buried fiber optic (144 Fiber Strand). The fiber optic cable is located on the north side of SR 72 and begins 900 feet east of CR 661 and runs west. The buried copper line is located on the north side of SR 72. Approximately 900 feet, north of CR 661, a second buried copper line is introduced. Both lines run towards the SR 70 intersection. At the intersection, one buried copper line crosses SR 70, then runs east. The other line remains on the south side of SR 70 and runs to the west. Along the south side of SR 70, a buried copper line runs from the beginning project limits to the east, terminating at the gas station in the southwest corner of the SR 72 intersection. Two additional buried copper lines run along the north side of SR 70, starting at CR 661 and proceeding east throughout the project limits. There are four locations where the buried copper crosses SR 70; at CR 661, at SR 72, west of the Peace River Relief Bridge, and east of the Peace River Relief Bridge. A buried fiber run is located on the north side of SR 70, running east and west throughout the project limits.

CenturyLink (National)

CenturyLink National has facilities on both SR 72 & SR 70. There are 12-1.25" HDPE conduits located on the south side of SR 72 starting at County Road 661 and continuing east to SR 70. At

the intersection of SR 70, these lines cross SR 70, and run east and west along the north side of the road.

City of Arcadia

The City of Arcadia has facilities on SR 70. There is a 4" force main attached to the north side of the Relief Canal Bridge. Immediately after the bridge, the force main diverges toward the right-of-way. The City of Arcadia has provided written documentation stating they anticipate no impacts to their facilities.

Comcast

Comcast has responded with no facilities within our project limits.

FP&L Distribution

FP&L Distribution has facilities on both SR 72 and SR 70. There is an overhead distribution line (<50kV) located on the north side of SR 72 that runs east and west. This line crosses SR 70, and continues east. There is also an overhead distribution line (<50kV) along SR 70 located on the south side that begins approximately 200 feet west of SR 72, and continues east passed the Relief Canal Bridge. Several communication lines share the pole and need to be separately coordinated.

FP&L Transmission

FP&L Transmission has facilities on SR 70. There is an overhead transmission line (230kV TX) located on the south side that runs east and west. The transmission line runs adjacent to the distribution line and does not share its pole with distribution or any communication lines. It should be noted that a transmission pole exists on the SW corner of SR 72 and SR 70.

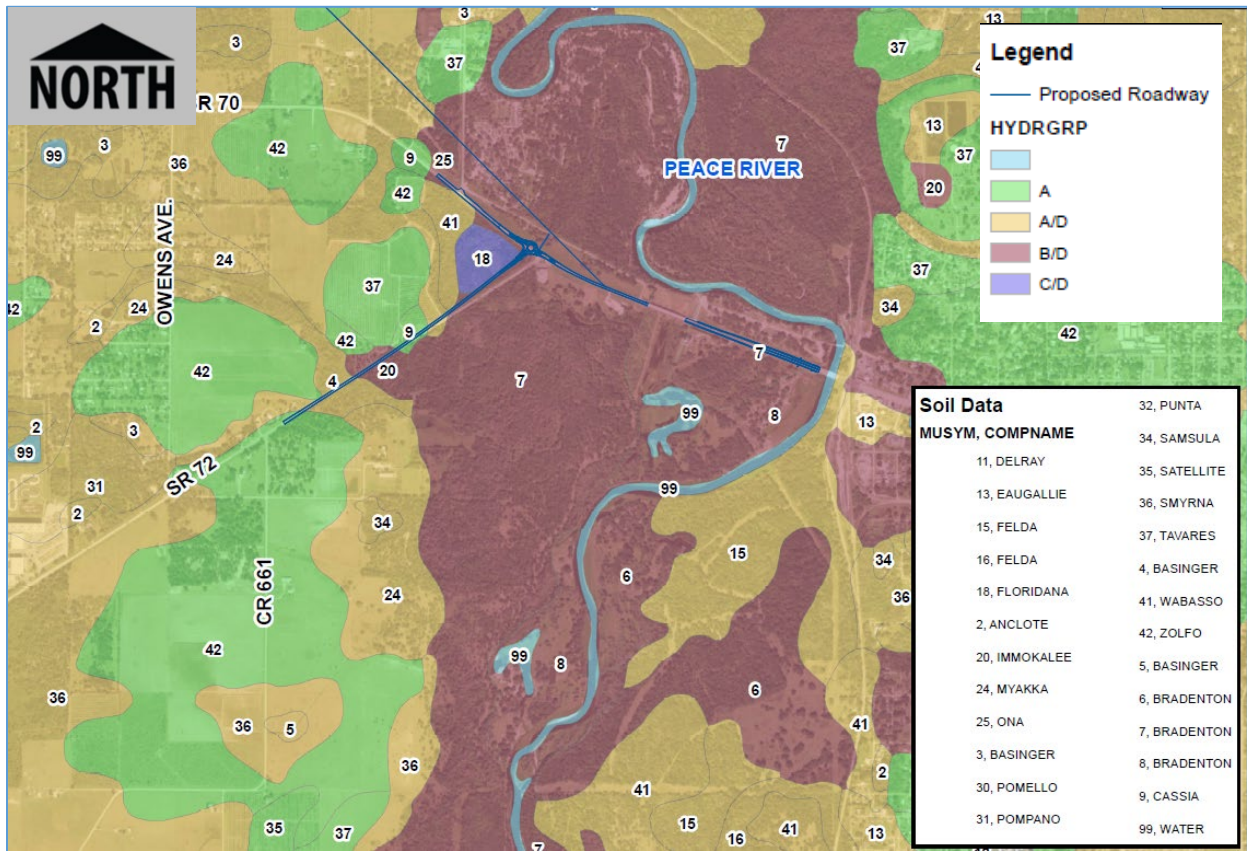
Florida Public Utilities

Florida Public Utilities has facilities on both SR 70 and SR 72. There is a 4" steel high-pressure gas main located on the north side of SR 72 that runs east and west. At the intersection of SR 70, the gas main splits off with one line running west along the south side of SR 70, and the other line crossing under SR 70 and continuing east on the north side of SR 70.

2.2.21 Soils and Geotechnical Data

U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) data was used to identify the soil types within and adjacent to the proposed project on the SR 72 and SR 70 corridors, as depicted in **Figure 13**. The majority of the project is within Type B/D soils which means the undrained areas have soils with a Type D classification, which are soils having a very slow infiltration rate (high runoff potential).

Figure 13 – Soils Map



2.2.22 Aesthetics Features

The only scenic views or aesthetic features within or near the project area would be located within the privately-owned Peace River Campground or the pedestrian bridge over the Peace River from Arcadia into the DeSoto Veterans Memorial Park, owned and maintained by DeSoto County.

2.2.23 Traffic Signs

There are no overhead signs within the project limits. In general, junction signing, street termination signing, route confirmation markers (i.e. State Route signs, posted speed), and traffic control signing are used within the project limits.

2.2.24 Noise Walls and Perimeter Walls

There are no noise or perimeter walls present within the project area.

2.2.25 Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features

There are no ITS or TSM&O features located within the project area.

2.3 Existing Bridges and Structures

There is one bridge within the project limits, the Peace River Relief Bridge. FDOT Bridge #040002 is a fourteen (14) span prestressed concrete AASHTO Type II beam superstructure (40'-0" each span) carrying SR 70 Eastbound and Westbound over the Peace River Relief Channel. The bridge carries two (2) 12'-0" wide travel lanes (one in each direction), 10'-0" wide outside shoulders, 1'-6" wide F-shape concrete traffic railing barriers, 6'-0" wide sidewalks, and 10 ½" wide pedestrian/bicycle railings (triple bullet railings mounted on an 8" wide by 2'-0" high concrete parapet) along the coping lines. The F-shape traffic barriers at the approach and trailing ends of the bridge terminate at the end of the approach slabs and have W-beam guardrails attached to them. Hazard markers are installed at the bridge approach and trailing ends. The bridge was originally constructed in 1961, and reconstructed in 1995. The bridge was last inspected on May 20, 2022. Its sufficiency rating was 78.4 and has a health index of 86.6.

2.4 Existing Environmental Features

Protected Species and Habitat

The project area was assessed for the presence of suitable habitat for federal- and/or state-listed protected species. Based on this evaluation, the project area does not contain federally designated critical habitat for any species. A total of seven (7) federally listed wildlife species, four (4) state listed wildlife species, five (5) non-listed protected wildlife species, and one (1) candidate species for federal listing were identified as potentially occurring within the project area based on documented geographic distribution and suitable habitat. Additionally, five (5) state listed plant species were identified as potentially occurring in the project area based on known distribution and habitat.

Field surveys were conducted to assess potential habitat and document protected species within and adjacent to the project area. Acoustic surveys were conducted to detect Florida bonneted bats (*Eumops floridanus*). No protected wildlife or plant species were observed in or adjacent to the project area during field surveys or recorded during acoustic surveys. Calls identified as tricolored bat (*Perimyotis subflavus*), a candidate for federal listing, were recorded during the acoustic surveys. Provided Best Management Practices (BMPs) are implemented, and appropriate mitigation is applied, impacts are not anticipated to any of the protected species assessed.

Wetlands

Field surveys were conducted to identify and delineate wetlands within the project area. Six wetlands were identified accounting for 8.88 acres and four surface waters were identified accounting for 0.89 acres. Wetland areas within the project area are high to moderate quality with some indicators of disturbance and low to moderate coverage of nuisance and exotic species present.

3.0 FUTURE CONDITIONS

Roadway Context Classification

For SR 72, the Roadway Context Classification was coordinated from the Context Classification Request Memo and through coordination with District One during the Context Zone and Typical Section meeting held on May 4, 2022. The Context Classification Request Memo indicated a classification of C2T – Rural Town. This presented a challenge as the design speeds for this roadway (65 mph) exceeded the allowable design speed for a C2T classification. During this meeting, it was agreed to revise the context classification to C2 – Rural and keep the Design Speed at 65 mph.

For SR 70, the Roadway Context Classification was coordinated from the approved Typical Section Package under FPID 445473-1 and through coordination with District One during the Context Zone and Typical Section meeting held on September 2, 2022. The approved Typical Section Package called for a Context Classification of C2 – Rural. This presented a challenge as the minimum design speed (55mph) for a C2 classification exceeds the design speed (45 mph) for the roadway segment between MP 12.091 and MP 12.260. During this meeting, it was agreed to revise the context classification to C2T – Rural Town for this segment of SR 70. The other segments of SR 70 would remain classified as C2 - Rural. It was agreed to utilize a C2-Rural classification with a Design Speed of 60 mph between MP 11.235 to MP 12.040 and a C2T-Rural Town classification with a Design Speed of 45 mph between MP 12.040 to MP 12.060.

A third Context Zone and Typical Section meeting was held on May 12, 2023. The Context Classification of C2 – Rural was re-confirmed for both SR 72 and SR 70. It was decided the limits for the C2T – Rural Town classification on SR 70 would be revised from MP 12.060 to MP 12.260. It was also determined that the Design Speeds on SR 70 will be revised to 50 mph within the C2-Rural Classification and 45 mph within the C2T-Rural Town classification.

Future Traffic

An increase in traffic volumes is anticipated along both SR 70 and SR 72. Design year traffic volumes were developed as part of the ICE evaluation. The existing AADT (2021) was 14,000 vehicles and is projected to increase to 25,600 in the design year. The peak hours in the design year for each approach is as follows: SR 70 eastbound: AM Peak is 355, PM Peak is 477; SR 70 westbound: AM Peak is 477, PM Peak is 573; SR 72: northbound: AM Peak is 292, PM Peak is 240.

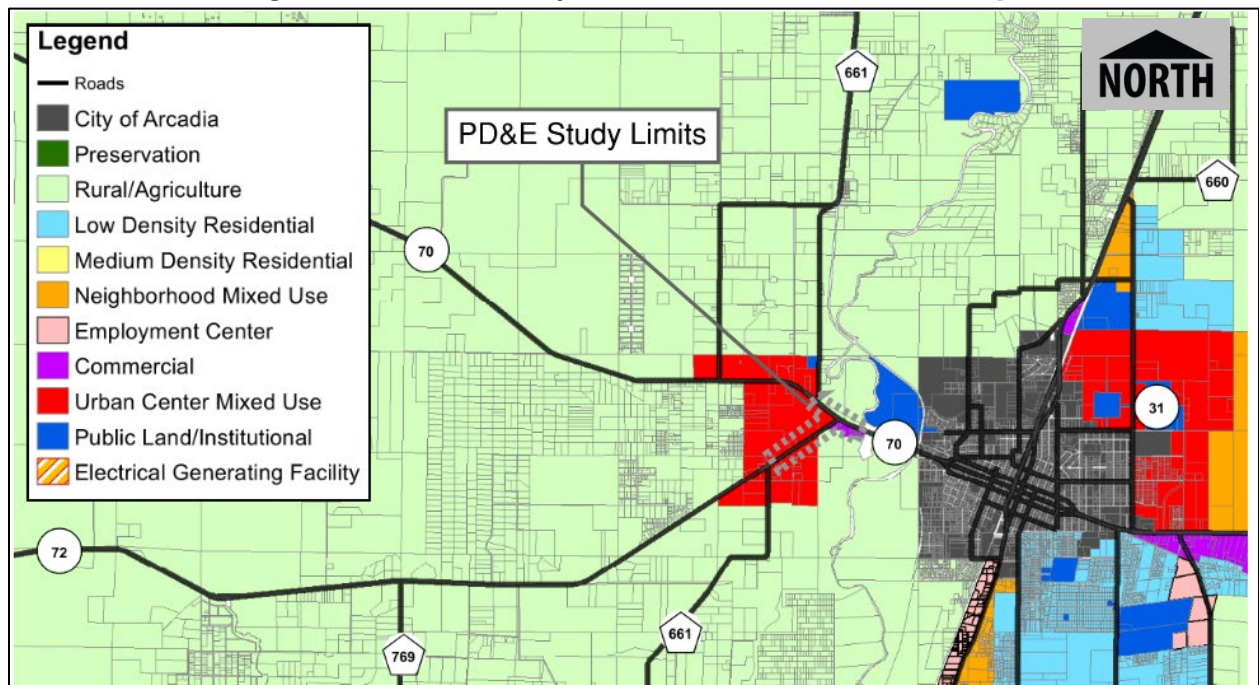
Future Conditions

The Strategic Intermodal System Long Range Cost Feasible Plan FY 2029 – 2045 has identified SR 70 from the Manatee County line to the West of the Peace River Bridge (American Legion Road)

for capacity improvements. This segment is programmed for PD&E in FY 2028/2029 to 2034/2035, and for design in FY 2035/2036 to FY 2044/2045. Any alternatives evaluated will consider the future conditions, and be developed to integrate with those future improvements in mind.

Existing land use in the vicinity of this intersection is fairly undeveloped. The most recent DeSoto County Comprehensive Plan (**Figure 14**) shows urban center mixed-use zoning for parcels within the project limits. It can be extrapolated that existing controls at this intersection will most likely be inadequate in the future. Therefore, a solution for managing future traffic needs should justifiably be integrated into the purpose and need of this project.

Figure 14- DeSoto County Interim 2040 Future Land Use Map



4.0 DESIGN CONTROLS & CRITERIA

4.1 Design Controls

Table 14 lists the design controls used to establish the proposed improvements for the SR 72 & SR 70 study corridor based on the *2023 FDOT Design Manual (FDM)* and *Section 3.2.3.5 of Part 2 Chapter 3 of the PD&E Manual*.

Table 14 - Design Control

Design Control	SR 72	SR 70	Source
Context Classification	C2 - Rural	C2 – Rural/ C2T – Rural Town	Context Class Memorandum
Design Year Period	20 Years	20 Years	FDM 201.3, New Construction
Access Management	Class 04	Class 03	TDA
SIS Corridor	No	Yes	SLD 04040 SLD 04060
Design Speed	65 mph	50 mph / 45 mph	Approved TSP on 05/2023
Design Vehicle	WB-62FL	WB-62FL	FDM 201.6

4.2 Design Criteria

The design criteria used to establish the proposed improvements for the SR 72 & SR 70 study corridor adhere to the 2023 FDM and are listed in **Table 15**.

Table 15 - Design Criteria

Design Criteria			SR 72	SR 70	Source
Typical Section	Travel Lane Width		12 ft	12 ft	FDM Tbl. 210.2.1, Note (2)
	Auxiliary Lane Width		12 ft	12 ft	FDM Tbl. 210.2.1
	Two-Lane Cross Slope		0.020 ft/ft	0.020 ft/ft	FDM Tbl. 210.2.3, Standard
	Outside Shoulder Cross Slope		0.060 ft/ft	0.060 ft/ft	FDM Tbl. 210.2.3, Standard
	Shoulder Width	Outside	Full	10 ft	10 ft
Paved			5 ft	5 ft	

Design Criteria		SR 72	SR 70	Source	
Typical Section	Border Width	40 ft	40 ft	FDM Tbl. 210.7.1	
	Clearzone Width	36 ft	24 ft	FDM Tbl. 215.2.1	
	Roadside Slope	<u>Front Slope</u> Fill Height 0-5' = 1:6 Fill Height 5-10' = 1:6 to CZ, then 1:4 Fill Height 10-20' = 1:6 to CZ, then 1:3 Fill Height >20 = 1:2 with guardrail <u>Back Slope</u> All fill heights = 1:4 or 1:3 with standard trapezoidal ditch and 1:6 front slopes		FDM Tbl. 215.2.3 CZ= Clearzone Slope Rates = Vertical: Horizontal	
Horizontal	Deflection (without curve)	0°45'00"	0°45'00"	FDM 210.8.1	
	Min. Stopping Sight Distance (SSD)	≤ 2%	645 ft	645 ft	FDM Tbl. 210.11.1 4% Max grade when truck volume ≥10%
		3%	682 ft	682 ft	
		4%	696 ft	696 ft	SSD downgrade values listed
	Length of Curve	Desirable	975 ft	975 ft	FDM Tbl. 210.8.1
		Minimum	400 ft	400 ft	
	Max. Radius (e = NC)	13,164 ft	13,165 ft	FDM Tbl. 210.9.1	
Min. Radius (e _{max} = 0.10)	1,146 ft	1,146 ft			
Vertical	Max. Grade (Flat Terrain)	3%	3%	FDM Tbl. 210.10.1	
	Max. Change in Grade without Vertical Curve	0.30%	0.30%	FDM Tbl. 210.10.2	
	Crest Curve	K Value	313	313	FDM Tbl. 210.10.3
		Min. Length	450 ft	450 ft	FDM Tbl. 210.10.4
	Sag Curve	K Value	157	157	FDM Tbl. 210.10.3
		Min. Length	350 ft	350 ft	FDM Tbl. 210.10.4
Min. SSD	See Minimum SSD under Horizontal Design Elements				

Design Criteria		SR 72	SR 70	Source	
Shared Use Path	Design Speed	18 mph		FDM 224.9	
	Paved Width	10 ft		FDM 224.4	
	Max. Grade (Flat Terrain)	5%		FDM 224.6	
	Horizontal Clearance	4 ft		FDM 224.7	
	Max. Curvature (Cross Slope = +2%)	74 ft		FDM Tbl. 224.10.1	
	Max. Curvature (Cross Slope = -2%)	86 ft		FDM Tbl. 224.10.2	
	Separation from Roadway	5 ft from the shoulder break		FDM 224.12	
Roundabout	High-Speed Approach Geometry		AR1-2200 ft, AR2-950 ft, AR3-75 ft Tan1-100 ft, Tan2-50 ft	FDM 213.3.1, Chicane Req'd	
	Control Vehicle		WB-62FL	FDM 213.7.1	
	Fastest Path		25 mph	FDM 213.6	
	Inscribed Circle Diameter	Single	120 ft to 160 ft		FDM 213.3
		Two Lane	160 ft to 200 ft		

Legend

- FDM = 2023 FDOT Design Manual
- SLD = Straight Line Diagram
- TDA = FDOT's Transportation Data and Analytics Clearinghouse
- TSP = Typical Section Package

5.0 ALTERNATIVES ANALYSIS

5.1 No-Build (No-Action) Alternative

The no-build alternative would leave SR 70 and SR 72 in their current condition. Both roadways would be susceptible to flooding as the profiles would no longer be raised. Since both SR 70 and SR 72 are within the FEMA floodplain, roadway flooding would continue to occur during heavy storm events. This was witnessed in 2022 after Hurricane Ian, when both roadways were inundated with water for multiple days, cutting off access to homes and businesses and restricting transit of goods. Additionally, the T-intersection would remain, with SR 72 being stop-controlled. Leaving this intersection as-is is not as safe an intersection as a roundabout. Additionally, damage to the roadway would likely occur, requiring continued maintenance to keep these roadways open and functional. The no-build alternative would not provide any safety or resiliency (roadway flooding) improvements, however, additional right-of-way would not be needed (compared to build alternatives). Due to not providing any safety or resiliency improvements, the no-build alternative is not the preferred alternative.

5.2 Transportation Systems Management and Operations (TSM&O) Alternative

There are no TSM&O or ITS facilities within or near the limits of the project, therefore no alternative was analyzed.

5.3 Multimodal Alternatives

As part of the build alternative, a 10-foot wide multi-use path is proposed on the north side of SR 70. This path will connect from CR 661, proceed eastward through the roundabout, then continue to the Peace River Relief Bridge to connect to the existing path. No other multimodal alternatives were analyzed.



5.4 Build Alternatives

The build alternative was derived from observations of roadway flooding as well as the ICE (November 2021) analysis. The roadway flooding led to the decision to evaluate raising the roadway profiles of SR 70 and SR 72 above the 100-year storm event. The ICE (November 2021) analysis concluded a roundabout would operate effectively in the design year and provide a greater safety benefit than a traffic signal. The initial roundabout location was located at the current SR 70/SR 72 intersection. This location impacted the existing gas station in the southeast quadrant of the intersection as well as the steel transmission power pole in the southwest quadrant which led to the evaluation of alternate roundabout locations. This led to shifting the roundabout to the west, away from the current intersection of SR 70 and SR 72, requiring greater R/W impacts. The final disposition of the roundabout for the build alternative was settled upon by shifting the roundabout westward enough to avoid impacting the transmission power pole.

Further shifting the roundabout to the west was disregarded to avoid further impacts to the right-of-way, wetlands, and floodplains. The proposed location allows for the roundabout to be constructed to provide a safer junction between SR 70 and SR 72, as well as allows for the roadway profiles to be raised to mitigate future roadway flooding. From a pedestrian/bicyclist standpoint, the roundabout provides safer crossing points for used. Dedicated pedestrian crossing will be provided in addition to a multi-use path that will be constructed along the north side of SR 70, connecting the roundabout to the existing path at the Peace River Relief Bridge. Intersection lighting will be constructed within the roundabout and approaches to the roundabout.

5.5 Comparative Alternatives Evaluation

Table 16 - Comparative Alternatives Matrix

Evaluation Criteria	No-Action Alternative	Build Alternative
Purpose and Need Met?		
Addresses roadway resiliency and long-term maintenance		
Enhances emergency evacuation and response		
Addresses roadway flooding on SR 72		
Addresses flooding of the SIS Facility (SR 70)		
Increases Intersection Safety at SR 72 and SR 70		
Creates connectivity for pedestrians and bicycles		
Project Costs		
Design Phase	\$0	\$1.155 million
ROW Acquisition	N/A	\$1.25 million
Construction	\$0	\$10.214 million
Construction Engineering and Inspection (CEI)	\$0	\$1.226 million
Wetland, Habitat, and Species Cost (# of credits)	N/A	5.3 forested wetland & 1.1 herbaceous wetland credits – Credits in Peace River Basin are approximately \$110,000 per credit. 6.4 credits x \$110,000 = \$704,000 cost for wetland mitigation credits.
Utility Relocation Cost	N/A	\$0 (3 relocations)
Potential Right-Of-Way Impacts		
Number of Parcels	0	12
Number of Relocations	0	0
Potential Environmental Impacts		
Archaeological/Historic Sites	None	(To be provided by FDOT District 1)
Parks, Recreational Areas, Protect Lands, Wildlife Refuges	None	(To be provided by FDOT District 1)
Wetlands and Other Surface Waters Impact (acres)	0	8.88 acres of primary wetland impacts 2.69 acres of secondary wetland impacts. 0.89 Acres of surface water impacts
Species Potential (Low/ Med/ High)	0	17 wildlife species (Low Impact) 5 plant species (Low Impact)
Floodplains Impact (acres)	N/A	Approximately 26 acres (Low Impact)

Evaluation Criteria	No-Action Alternative	Build Alternative
Potential Right-Of-Way Impacts		
Contamination/Hazardous Waste Sites (# of site)	0	To be provided by FDOT District 1
Noise Receptors	0	To be provided by FDOT District 1
Utility Impact (Low / Med/ High)	N/A	Low
Traffic Operations and Safety Impact		
Level of Service (LOS) (in 2045)	LOS F	LOS C
Safety (2045 Design Year, Predicted Crash Frequency)	9.52 crashes/ year	1.85 crashes/ year

5.6 Selection of the Preferred Alternative

The selection of the preferred alternative is based on which alternative best addresses the Purpose and Need of this Study. The Needs of this study are to identify a proposed design that addresses the roadway flooding and enhances roadway Operations and Safety. Although the No-Build alternative does not have any impacts Socially or Economically, or on Cultural, Natural, and Physical Environment, it does not meet the Need of this study as it does not provide any Safety or Operational Benefit and allows existing issues to remain. The Build alternative provides the best Safety, Resilient and Operational benefit for the community with many improvements to existing conditions and minimal impact and therefore has been selected as the preferred alternative.

6.0 AGENCY COORDINATION & PUBLIC INVOLVEMENT

6.1 Agency Coordination

District One representatives met with DeSoto County on August 24, 2022, to discuss the project concept and the need for the project. At the meeting, it was agreed that the Project would be brought before the DeSoto Board of County Commissioners (November 2023) prior to the Public Hearing (December 2023) and to bring the Project back before the Board (January 2024) after the Public Hearing to summarize any input received.

The Project will be brought before the Heartland Regional Transportation Planning Organization's: Governing Board (November 2023), Technical Advisory Committee (November 2023), and the Citizens Advisory Committee (November 2023).

6.2 Public Involvement

The purpose of the Public Involvement Plan (PIP, August 2023) created for this PD&E Study is to assist in providing information to and obtaining input from concerned citizens, agencies, private groups (residential/business), and governmental entities. The overall goal of this plan is to help ensure that the study reflects the values and needs of the communities it is designed to benefit. Public Input received was considered in the design of the Preferred Alternative. The PIP (August 2023) is available under a separate cover.

A Comments and Coordination Report, available under separate cover, summarizes the public meeting results and recommendations. The report also will contain the overall input provided through the other public involvement techniques utilized in the project development process.

A Public Hearing was held (December 2023). The meeting transcript is available under a separate cover.

6.3 Public Hearing

A Public Hearing was held (December 2023). Comments provided during the meeting..... (added in after meeting)

7.0 PREFERRED ALTERNATIVE

Based on the evaluation of the alternatives described in Section 4.0, the Build Alternative is recommended as the Preferred Alternative as it best satisfies the Purpose and Need of the project considering the engineering and environmental constraints and impacts. The scheduled public hearing in November of 2023 will determine which alternative is favored by the public and local government.

The Preferred Alternative involves raising the profile of SR 72 and SR 70 and realigning the SR 72 roadway to the west of the current location to provide a single-lane roundabout instead of the stop-controlled intersection. Severe storms have been known to inundate the roadway causing damage to the road, resulting in temporary closures. The eastern terminus for SR 72 is at SR 70. Any unexpected closures can adversely impact the safety of the community, delay emergency vehicles, and disrupt intrastate travel. The roundabout intersection was found to reduce the number of expected crashes and reduce the severity of the crashes and was found to operate with less delay and a better level of service than a traffic signal.

A Conceptual Drainage Report and Location Hydraulics Report are available under separate cover.

7.1 Typical Sections

7.1.1 Typical Sections

The following Figures depict multiple typical sections along SR 72 and SR 70 including one bridge typical. The main typical section for both SR 72 and SR 70 consists of two 12-foot lanes with 10-foot shoulders (5-foot paved) with various configurations of roadside and treatment ditches. A Typical Section Package is included as **Appendix C**.

Figure 15 - SR 72 Proposed Typical Section 1

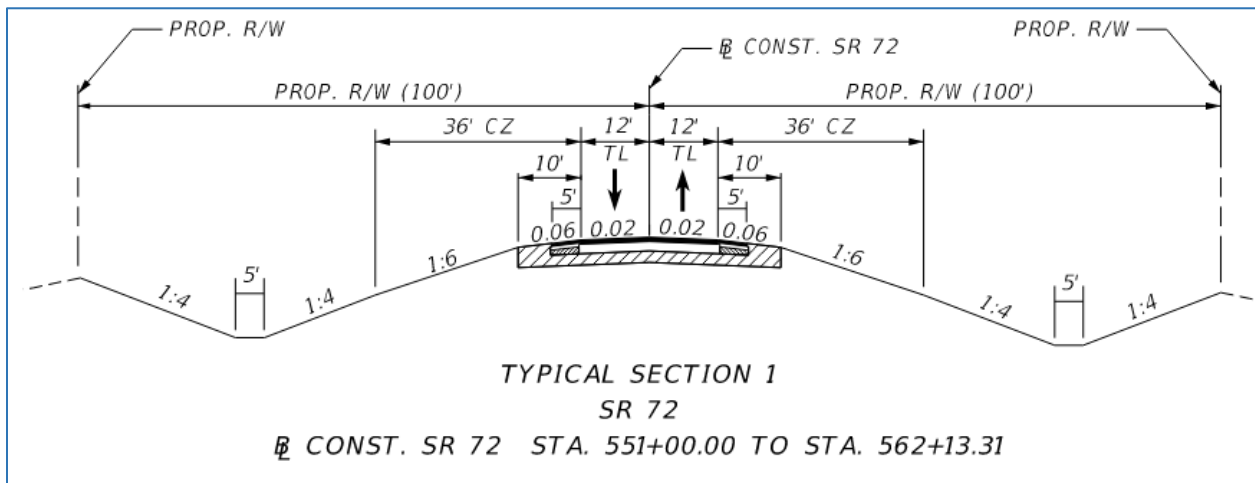


Figure 16 - SR 72 Proposed Typical Section 2

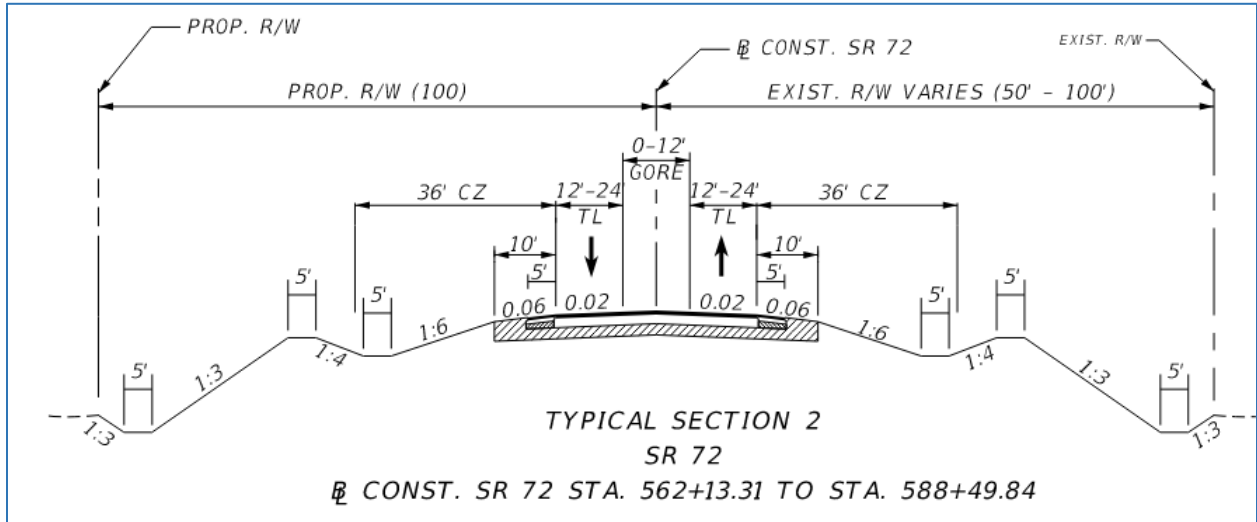


Figure 17 - SR 70 Proposed Typical Section 1

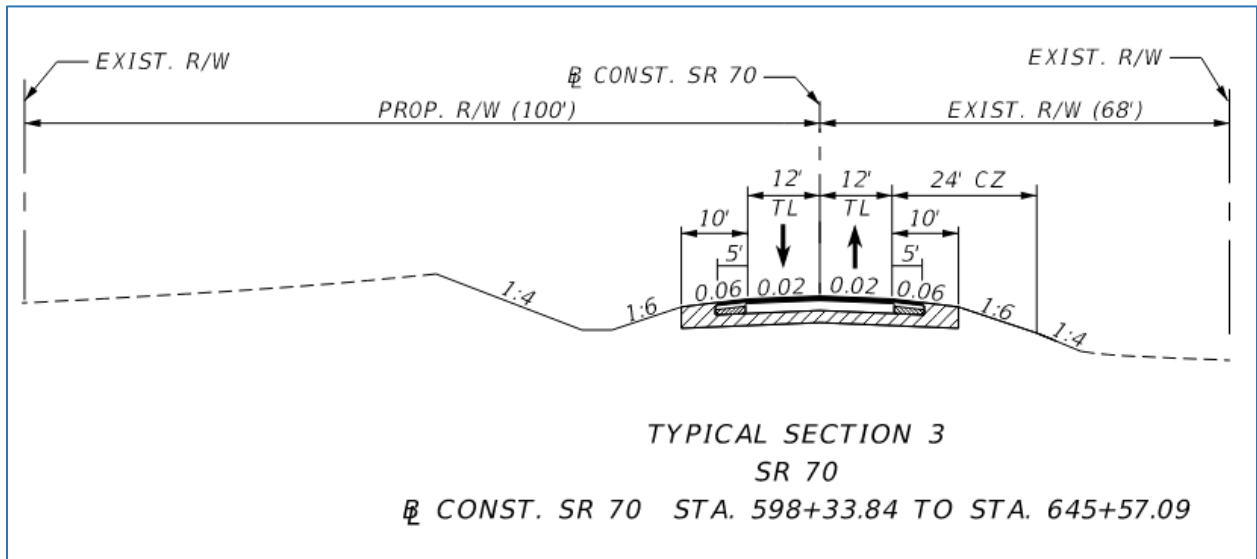
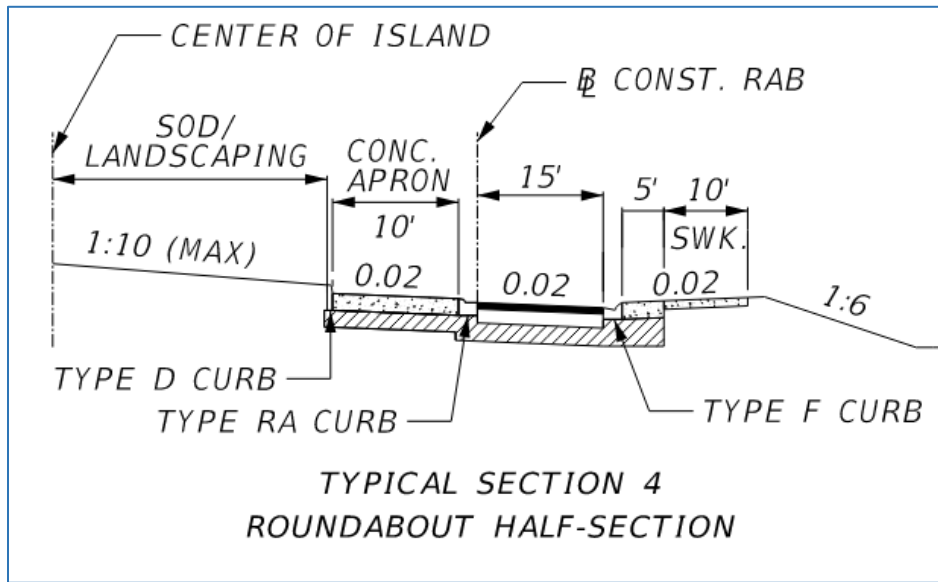


Figure 18 - Roundabout Proposed Typical Section 1



7.2 Access Management

There appears to be adequate space to make up for the grade difference between the existing gas station driveway and the proposed grade of SR 70. The driveway elevation at the RW line is approx. 26' and the proposed SR 70 grade is approx. 29.5'. Using a 6% longitudinal slope over roughly 60' (from RW to SR 70) we can make up the grade difference. FDM 214 allows for a 10% longitudinal slope for commercial drives. ADA standards will be integrated into the driveway design regardless of the type of driveway used (i.e. flared driveway or turnout).

7.3 Right of Way

The Preferred Alternative involves the realignment of SR 72 and a roundabout at the intersection of SR 72 & SR 70. No relocations would be required for the construction of the Preferred Alternative. Right-of-Way will be required for the construction of the Preferred Alternative, consisting of 11.58 acres, impacting 11 parcels.

7.4 Horizontal and Vertical Geometry

The horizontal vertical geometry for both SR 70 and SR 72 meets the design criteria under FDM 210. A minimum profile grade of 0.3% is utilized for both SR 70 and SR 72. This is to provide the minimum gutter grade in the event curb and gutter is added to the roadway in the future, eliminating the need for additional reconstruction or special gutter profiles.

The SR 72 alignment consists of one horizontal curve and five vertical curves; one crest curve and four sag curves.

The SR 70 alignment consists of three horizontal curves and nine vertical curves; three crest curves and six sag curves.

Table 17 - Preferred Alternative Horizontal Alignment

Roadway	PC Station	PT Station	Curve Radius (ft)	Degree of Curvature (D)	Curve Length (ft)	Super-elevation Rate
SR 72	562+13.31	586+36.49	23,000.00	00°14'57"	2,423.18	NC
SR 70	607+85.00	626+03.64	5,834.23	00°58'55"	1,818.64	N/A
SR 70	638+31.11	647+60.20	24,831.86	00°13'51"	929.09	NC
SR 70	647+60.20	656+20.08	24,831.86	00°13'51"	859.89	NC

Table 18 - Preferred Alternative Vertical Alignment

Roadway	VPC Station	VPT Station	Curve Type	K Value	Curve Length (ft)	Approach Grade (%)	Exit Grade (%)
SR 72	563+32.34	570+01.09	Sag	1,700.00	669	-0.530	-0.923
SR 72	573+51.09	577+03.05	Sag	565.00	352	-0.923	-0.300
SR 72	577+71.25	581+21.24	Sag	582.92	350	-0.300	+0.300
SR 72	581+21.24	585+71.24	Crest	749.47	450	+0.300	-0.300
SR 72	585+71.24	589+20.90	Sag	583.34	350	-0.300	+0.300
SR 70	598+33.84	602+22.07	Sag	157.64	388	-2.168	+0.294
SR 70	603+45.18	607+95.18	Crest	750.00	450	+0.300	-0.300
Roadway	VPC Station	VPT Station	Curve Type	K Value	Curve Length (ft)	Approach Grade (%)	Exit Grade (%)
SR 70	608+45.18	611+95.18	Sag	583.33	350	-0.300	+0.300
SR 70	616+95.18	620+45.18	Sag	583.33	350	-0.300	+0.300
SR 70	620+95.18	625+45.18	Crest	750.00	450	+0.300	-0.300
SR 70	625+76.72	629+26.72	Sag	452.80	350	-0.300	+0.473
SR 70	641+00.18	644+50.18	Sag	565.47	350	-0.314	+0.305
SR 70	644+51.61	649+01.61	Crest	750.00	450	+0.300	-0.300
SR 70	650+16.50	653+66.50	Sag	402.81	350	-0.300	+0.569

See **Appendix A** for Plans and Profiles containing additional geometry information.

7.5 Design Variations and Design Exceptions

No Design Variations or Design Exceptions are anticipated.

7.6 Multimodal Accommodations

Impacts on mobility, connectivity, and accessibility have been thoroughly evaluated as a part of this project assessment. Pedestrian facilities would be greatly improved due to this project. No pedestrian facilities currently exist in the project area, yet there is a campground and a community park within close proximity. Both of these facilities create pedestrian traffic to the Super Stop convenience store and there are no existing pedestrian facilities or pedestrian crossings to the location of the store. Within the facilities of the DeSoto Veterans Memorial Park, there is a meandering public path providing access through the site. The project design now incorporates a connection point to the path at the southwest corner of the property to a multi-use path that will parallel SR 70. The path within the park connects to a recently renovated pedestrian-only bridge that spans the Peace River and connects to the City of Arcadia, where pedestrian facilities currently exist. There is also a consistent pedestrian activity from the Peace River campground via a private pathway, but there is a gap in the pathway and the pedestrians cross a grassy area. This project proposes the acquisition of a pedestrian easement to provide a paved connection for the campground to access the new safe crossing facilities at the intersection. The creation of area-wide connectivity is very important because none currently exists, yet there is demand for connectivity. Traffic patterns are not anticipated to change as a result of the project, except that the roundabout will increase safety by slowing down traffic, especially eastbound traffic on SR-70 into Arcadia. Transportation-disadvantaged persons would now have safe access to the convenience store location, not only with facilities parallel to SR-70 but also with safe crossing facilities at the new roundabout intersection.

Because no transit routes or railroad facilities are present within the project area, the Preferred Alternative will not have any effect on multi-modal facilities. The Preferred Alternative will rebuild the roadways of SR 72 & SR 70 to their current 2-lane capacities, so there will be no impact on Truck Routes.

7.7 Intersection/ Interchange Concepts and Signal Analysis

A single-lane roundabout is proposed at the intersection of SR 70 and SR 72. A 150' inscribed circle diameter is proposed with a 15' travel lane and a 15' concrete apron. Chicanes and splitter islands are provided on all approaches. 10' sidewalks are provided within the immediate area of the intersection. 10' special emphasis crosswalks are provided on all legs of the intersection. AutoTurn was performed to ensure the roundabout could accommodate a WB 62-FL design vehicle.

The concept plans for the Preferred Alternative can be found in **Appendix A**.

7.8 Tolled Projects

No tolling is present in the project area.

7.9 Intelligent Transportation System and TSM&O Strategies

No TSM&O alternatives were considered for this project. There is no ITS or TSM&O infrastructure located within the project limits. As part of the design phase, we will coordinate with the District TSM&O Program Engineer on whether or not the roundabout will be monitored with CCTV cameras.

7.10 Landscape

Landscaping will be provided per FDM requirements. The landscape plan will be prepared during design.

7.11 Lighting

Per FDM requirements, lighting will be provided at the roundabout and a minimum of 200 feet in advance of the splitter islands along the approaches of SR 70 and SR 72. The lighting plan will be prepared during design.

7.12 Wildlife Crossings

No new wildlife crossings are proposed.

7.13 Permits

This project is likely to require environmental permits, coordination, and authorizations from the following agencies:

Southwest Florida Water Management District (SWFWMD)

- Environmental Resource Permit (ERP) - Wetland impacts will require an ERP, issued by SWFWMD under the authority of Part IV of Chapter 373, Florida Statutes (F.S.).

Florida Department of Environmental Protection (FDEP)

- State 404 Permit - Per the Retained Waters Screening Tool published by the FDEP, waters of the United States (WOTUS) within the project corridor are no longer under the jurisdiction of the US Army Corps of Engineers (USACE) but instead are considered state assumed waters pursuant to the State 404 Program (Chapter 62-331 F.A.C.). It is anticipated that impacts to wetlands will require a State 404 Permit pursuant to 62-331 F.A.C.
- National Pollutant Discharge Elimination System (NPDES) Permit - Construction activities that disturb 1.0 acre or more of land, or discharge stormwater to surface waters of the state, require an NPDES permit, issued by FDEP under the authority of section 403.0885, Florida Statutes F.S.

7.14 Drainage and Stormwater Management Facilities

The anticipated proposed improvements of SR 72 and SR 70 will include raising the roadway profile of both alignments. Some increase in impervious area is anticipated with the realignment

of SR 72 and the proposed roundabout. Proposed basins are anticipated to mimic existing basins with the established outfall locations remaining unchanged. Outfall sizes along SR 72 may change to accommodate an increase in flow through the cross drain, rather than roadway overtopping, and to allow for wildlife crossing. This is further discussed in the Location Hydraulics Report, under separate cover.

Within the project limits, roadway runoff along SR 72 will be conveyed primarily via roadside ditches to a dry retention pond, Pond 1, to provide treatment and attenuation before discharge. Off-site runoff is proposed to bypass the roadside ditches and will flow through the right-of-way utilizing the proposed cross drains at the existing locations. By maintaining separate systems for on-site runoff, the required treatment volume will only be sized for the on-site basin area.

Within the project limits, roadway runoff along SR 70 will maintain existing drainage patterns and utilize roadside ditches and shoulder gutters to directly discharge into the Peace River. Additional impervious area is not anticipated since most of the proposed work is milling and resurfacing. No proposed treatment is anticipated for this area.

The required treatment volume was estimated for the entire limits of the proposed work along SR 72. Treatment volume is governed by the greater of one inch of rainfall over the contributing area or half an inch of runoff over the drainage area. Since the runoff coefficient was estimated to be 0.50, the two criteria produce similar required treatment volumes for the proposed basin.

The existing and proposed basins are considered open with a positive outfall to Peace River. Per coordination at the SWFWMD meeting, the mean annual, 10-year, 25-year, and 100-year storm events will be modeled during design to identify any adverse impacts. For preliminary sizing, the 25-year/24-hour storm event was used to estimate the increase in runoff generated by the proposed condition.

7.15 Floodplain Analysis

The Peace River is a FEMA Regulatory floodway (**Figure 19**). The FEMA FIRM's, dated November 6, 2013, depict Zone AE, A, and X floodplain limits within the project proximity. The Zone AE floodplains, which are areas that have a 1% chance of annual flooding, are consistent with the Peace River and its overbank area. This riverine floodplain encroaches into the SR 72 and SR 70 right-of-way and has a Base Flood Elevation (BFE) of 25.0 feet and 26.0 feet. The Zone A floodplains, which are areas that have a 1% annual chance of flooding, but do not have an established BFE are located along the western portion of SR 72 within the project limits. Improvements at the Peace River bridge and relief bridge along SR 70 are discussed in the Bridge Hydraulic Technical Memorandum (under separate cover).

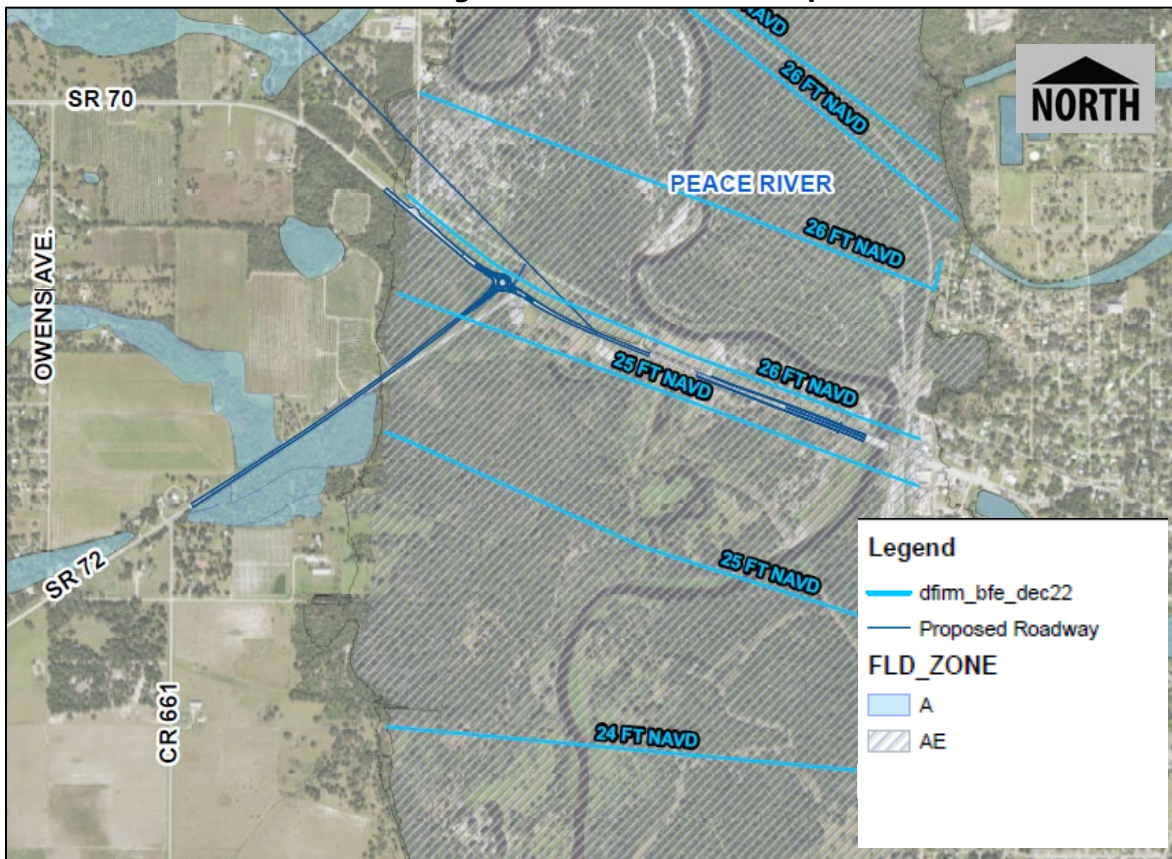
Per Part 2, Chapter 13 of the FDOT PD&E Manual, the LHR (August 2023), available under separate cover, has requirements for each level of significance of encroachment. This project qualifies as a

Minimal Encroachments level due to minimal impacts to floodplain encroachments. A proposed cross drain analysis was performed which sized the proposed cross drains to not have an adverse impact on the 100-year upstream stages. Roadway overtopping will be avoided with the raised roadway profile.

The project area is within an open basin where runoff flows via sheet flow to roadside ditches and through existing cross drains in a general southeast direction towards the Peace River. There are four cross drains which convey flow from the north side of SR 72 to the south side, towards the Peace River. Contributing areas were delineated by utilizing CatchmentSIM (CSIM) software and available LiDAR, reviewing existing permits and plans, and field reconnaissance. Interconnected Channel and Pond Routing (ICPR) Model software was used to determine peak flows and peak stages at the existing cross drains. Actual rainfall data from Hurricane Irma (2017) and Hurricane Ian (2022) was used to calibrate and model results.

During the design phase, the proposed cross drain facilities will be prepared in accordance with the FDOT Drainage Manual (Topic No. 625-040-002). Proposed conceptual modeling was performed to estimate proposed cross drain sizes. EX-0 remained unchanged and EX-3 is proposed to be removed (rerouted to CD-2). CD-1 size was increased to provide sufficient capacity for a wildlife crossing. CD-2 was upsized to maintain the upstream stage within the wetland. It is expected that the proposed improvements will include extension, modification, or replacement of existing drainage structures, which will perform hydraulically in a manner equal to or greater than the existing structures, and backwater surface elevations are not expected to increase. Thus, there will be no significant adverse impacts on natural and beneficial floodplain values. As a result, there will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

Figure 19 – FEMA Flood Map



7.16 Bridge and Structure Analysis

There is one existing bridge within the project limits. FDOT Bridge #040002 carries traffic over the Peace River Relief channel. The project limits end at the Peace River Bridge, therefore this structure is not part of the analysis.

Improvements to the existing Relief Bridge include upgrades to the guardrail connections and refreshing pavement markings. No new structures are proposed as part of the project improvements.

7.17 Transportation Management Plan

A multi-phase Traffic Control Plan is anticipated to maintain traffic through the work zone. The phasing scheme is described in further detail in Section 7.18. Traffic will be maintained by utilizing traffic diversions on the temporary pavement. A lane closure analysis was performed for both SR 70 and SR 72. Lane closures are restricted on SR 70 between 6:30 am and 7:30 pm. There are no lane closure restrictions along SR 72. Paved shoulders will be provided as part of the traffic diversions to allow bicyclists to traverse through the work zone. Work zone signs, channelizing devices, barrier wall, portable changeable message signs, and arrow boards will be used for motorist awareness in the work zone and provide safe work areas for the Contractor.

The Transportation Operations Plan is limited in scope due to the remote nature of the project. Many of the typical strategies listed per FMD Table 240.3.1 do not apply. Temporary barrier and crash cushions will be utilized as a Work Zone Traffic Management Strategy.

As part of the Public Information Plan, advanced warning to motorists will be provided through the use of Portable Changeable Message Signs. The signs will be placed along each leg of SR 70 and SR 72 to provide advanced warning for the start of construction, any lane shifts, closures, etc.

7.18 Constructability

The construction activities for the reconstruction of SR 70 and SR 72, along with the roundabout, can be phased in a manner that will not require detours.

Phase 1 consists of constructing traffic diversions along the east side of SR 72 and the north side of SR 70. The diversion along SR 72 will begin at the CR 661 intersection and extend northerly approximately 3,400 feet before tying back into the existing segment of SR 72. The diversion along SR 70 will begin just west of the CR 661 intersection and tie back into SR 70 at the Peace River Relief Bridge. Construction of the new alignment portions of SR 72 can begin during this phase.

Phase 2 consists of shifting traffic onto the traffic diversions constructed in Phase 1, and reconstruction of SR 72 and SR 70. Construction of the roundabout can begin during this phase.

Phase 3 consists of shifting SR 72 traffic onto the new alignment and removing the traffic diversion and remaining portions of the old SR 72 roadway. Traffic on SR 70 will remain on the traffic diversion as other portions of the roundabout are constructed.

Phase 4 consists of shifting SR 70 traffic onto the reconstructed roadway and removing the SR 70 traffic diversion. The roundabout will function as a T-intersection with SR 72 leg being stop controlled. The final portion of the roundabout will be constructed.

Phase 5 consists of the construction of the roundabout central and splitter islands per Developmental Standard Plan 102-690.

Phase 6 consists of the reconstruction of SR 70 between the Peace River Relief Bridge and the Peace River Bridge. This will require multiple sub-phases.

Phase 6a consists of removing the existing traffic separator and constructing temporary pavement. WB SR 70 traffic can be reduced to a single lane and shifted onto the temporary asphalt. The WB outside lane and shoulders of SR 70 will be constructed.

Phase 6b consists of constructing the inside lanes of both WB and EB SR 70. Temporary pavement will be constructed along the outside EB SR 70 lane. EB traffic will be shifted onto the temporary pavement. WB traffic will be shifted on the reconstructed portion of SR 70 in Phase 6a. Both EB and WB traffic will be reduced to a single lane.

Phase 6c consists of constructing the outside lane and shoulders of EB SR 70. Both EB and WB traffic will be reduced to a single lane and shifted onto the pavement constructed in Phases 6a and 6b. After the construction of all new pavement, the traffic separator can be constructed.

7.19 Construction Impacts

This project is not expected to create adverse impacts on air quality because the project area is in attainment for all National Ambient Air Quality Standards (NAAQS) and because the project is expected to improve the LOS and reduce delay and congestion on all facilities within the study area. Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to applicable FDOT Standard Specifications for Road and Bridge Construction.

The NRE prepared for this PD&E study is available under a separate cover and provides a description of the Wetlands evaluation process, exhibits, and detailed results of the evaluation. Field surveys were conducted to identify and delineate wetlands within the project area. Each wetland was classified according to the FLUCCS and according to the *Classification of Wetlands and Deepwater Habitats of the United States* (1979) utilized by the United States Fish and Wildlife Service (USFWS). **Table 19** provides a summary of the wetlands present within the project area.

Table 19 - Wetlands and Other Surface Waters in the Project Area

ID	CLASSIFICATION		IMPACTS (ACRES)	
	FLUCCS	USFWS*	PRIMARY	SECONDARY
Wetland 1	Stream (Bottomland) (6150)	R3UB2	0.04	0.05
Wetland 2	Mixed Wetland Hardwoods (6170)	PFO1	0.60	0.28
Wetland 3	Mixed Wetland Hardwoods (6170)	PFO1	0.46	0.20
Wetland 4	Mixed Wetland Hardwoods (6170)	PFO1	5.63	0.94
Wetland 5	Mixed Wetland Hardwoods (6170)	PFO1	0.43	0.80
Wetland 6	Wet Prairie (6430)	PEM1	1.72	0.42
Surface Water 1	Ditch (5100)	-	0.05	-
Surface Water 2	Ditch (5100)	-	0.09	-
Surface Water 3	Ditch (5100)	-	0.25	-
Surface Water 4	Ditch (5100)	-	0.50	-
TOTAL WETLAND IMPACTS			8.88	2.69
TOTAL SURFACE WATER IMPACTS			0.89	-

* **R3UB2** = Riverine, Upper Perennial, Unconsolidated Bottom, Sand; **PFO1** = Palustrine, Forested, Broad-Leaved Deciduous; **PEM1** = Palustrine, Emergent, Persistent

Compensatory wetland mitigation will likely be required for wetland impacts within the project area. Wetland mitigation options include the purchase of wetland mitigation credits through an approved wetland mitigation bank or the creation, restoration, or enhancement of wetlands within the project watersheds. A functional analysis was completed for each wetland in the project area, utilizing the Uniform Mitigation Assessment Method (UMAM). **Table 20** summarizes this functional analysis for each wetland in the project area.

Table 20 - Functional Analysis for Wetlands in the Project Area

WETLAND ID		Wetland 1	Wetland 2	Wetland 3	Wetland 4	Wetland 5	Wetland 6
WETLAND CLASSIFICATION	FLUCCS	6150	6170	6170	6170	6170	6430
	USFWS	R3UB2	PFO1	PF01	PFO1	PFO1	PEM1
UMAM SCORE	CURRENT CONDITIONS	0.8	0.7	0.8	0.7	0.8	0.7
	WITH PRIMARY IMPACT	0.0	0.0	0.0	0.0	0.0	0.0
	WITH SECONDARY IMPACT	0.8	0.7	0.8	0.7	0.7	0.6
IMPACTS (ACRES)	PRIMARY	0.04	0.60	0.46	5.63	0.43	1.72
	SECONDARY	0.05	0.28	0.20	0.94	0.80	0.42
FUNCTIONAL LOSS	WITH PRIMARY IMPACT	0.0	-0.4	-0.4	-4.1	-0.3	-1.1
	WITH SECONDARY IMPACT	0.0	0.0	0.0	-0.1	0.0	0.0
MITIGATION CREDITS REQUIRED	PER WETLAND	0.0	0.4	0.4	4.2	0.4	1.2
	PER WETLAND CLASSIFICATION	0.0	5.3				1.1

Protected Species & Habitat

The project area was assessed for the presence of suitable habitat for federal- and/or state-listed species per 50 Code of Federal Regulation (CFR) Part 402 of the ESA of 1973, as amended, Chapters 5B-40 and 68A-27 F.A.C., and Protected Species and Habitat of the FDOT PD&E Manual. The NRE prepared for this PD&E study is available under separate cover and describes the Protected Species and Habitat evaluation process, exhibits, and detailed results of the evaluation.

A Natural Resources Evaluation (NRE) was prepared for this PD&E study. The NRE (August 2023) available under separate cover, finds that the project area does not contain federally designated critical habitat for any species. A total of seven (7) federally listed wildlife species, four (4) state listed wildlife species, five (5) non-listed protected wildlife species, and one (1) candidate species for federal listing were identified as potentially occurring within the project area based on documented geographic distribution and suitable habitat. Appendix C of the NRE (August, 2023) contains species keys that were used to for effect determination. **Table 21** lists these wildlife species.

Five (5) state-listed plant species were identified as potentially occurring within the project area based on known species distribution and suitable habitat within the project area. These plant species are provided in **Table 22**.

Table 21 - Potentially Occurring Protected and Candidate Wildlife Species

Wildlife Species		Effect Determination*
Federally Listed Endangered		
Florida bonneted bat	<i>Eumops floridanus</i>	NE
Florida panther	<i>Puma concolor coryi</i>	NE
Federally Listed Threatened		
Audubon's crested caracara	<i>Polygorusplancus audubonii</i>	NE
eastern indigo snake	<i>Drymarchon corais couperi</i>	MANLAA
Florida manatee	<i>Trichechus manatus</i>	NE
Florida scrub-jay	<i>Amphelocoma coerulescens</i>	NE
wood stork	<i>Mycteria americana</i>	MANLAA
State Listed Threatened		
Florida sandhill crane	<i>Grus canadensis</i>	NEA
gopher tortoise	<i>Gopherus polyphemus</i>	NAEA
little blue heron	<i>Egretta caerulea</i>	NAEA
tricolored heron ¹	<i>Egretta tricolor</i>	NAEA
Not Listed		
bald eagle ^{2, 3}	<i>Haliaeetus leucocephalus</i>	no impacts anticipated
osprey ^{1, 2}	<i>Pandion haliaetus</i>	no impacts anticipated
roseate spoonbill ¹	<i>Platalea ajaja</i>	no impacts anticipated
white ibis ¹	<i>Eudocimus albus</i>	no impacts anticipated
snowy egret ¹	<i>Egretta thula</i>	no impacts anticipated
tricolored bat ⁴	<i>Perimyotis subflavus</i>	N/A

* NE = No Effect; MANLAA = May Affect, Not Likely to Adversely Affect; NEA = No Effect Anticipated; NAEA = No Adverse Effect Anticipated

1 - These species are included in the FWC's Imperiled Species Management Plan (ISMP).

2 - These species are federally protected under the Migratory Bird Treaty Act (MBTA).

3 - Bald Eagles are additionally protected under the Bald and Golden Eagle Protection Act (BGEPA) and the State Eagle Rule.

4 – Tricolored bats are not currently protected but are proposed for federal listing as endangered.

Table 22 - Potentially Occurring Protected Plant Species

Plant Species		Effect Determination*
State Listed Endangered		
Florida loosestrife	<i>Lythrum flagellare</i>	NEA
Jameson's waterlily	<i>Nymphaea jamesoniana</i>	NEA
cardinal airplant	<i>Tillandsia fasciculata</i>	NEA
giant airplant	<i>Tillandsia utriculata</i>	NEA
State Listed Threatened		
northern needleleaf	<i>Tillandsia balbisiana</i>	NEA

* NEA = No Effect Anticipated

7.20 Special Features

No special features are proposed for this alternative.

7.21 Utilities

Given the extent of the Build Alternative, impacts on utility service providers are anticipated. The UAP (August 2023) provide more detailed analysis of utility impacts. Listed providers in **Table 23** will be contacted as part of any ongoing project-related efforts. As of April 2023, all UAOs have responded to our request for information. The following information has been collected and addressed: It has been confirmed that neither Comcast nor the City of Arcadia facilities will be directly impacted by the Build Alternative. None of the UAOs indicated any future planned facilities. Plan mark-ups showing utility relocations were reviewed by the roadway designer. Mitigation measures in the form of maintenance access were taken to accommodate relocated utilities. Roadside ditches and other cut sections were modified to avoid impact to major facilities which include FP&L Transmission & Level3 (CenturyLink National). It should be noted that FP&L Transmission identified a 33' wide by 200' long easement in the NW quadrant starting at the intersection of the FDOT R/W Line and extending northerly along SR 70. The easement falls within the proposed right-of-way limits and will be impacted as part of this project. All other listed UAOs have determined possible or actual impact due to the project extent and will relocate. It is anticipated that the cost of relocation will be at the expense of the utility owner. Compensable property rights, relocation costs and scheduling are still being evaluated.

Table 23 - Utility Relocation

Utility Owner	Description	Relocation Cost
CenturyLink Local	CenturyLink Local will relocate their facilities from the north side of SR 72 to the south side adjacent to the right-of-way line. They will splice into an existing pull box located at the SW corner of SR 72 and SR 70. They will carry their line across SR 70 and splice their new line with the existing one using a new pull box. No other relocations are anticipated along SR 70.	\$0 cost to FDOT. UAO Cost Estimates Being Developed
FP&L Distribution	FP&L Distribution will relocate their facility on the north side of SR 72 as close to the proposed right-of-way line as is allowed. They will relocate across SR 70 and continue east. They will then cross SR 70 again, and tie into an existing pole.	\$0 cost to FDOT. UAO Cost Estimates Being Developed

Florida Public Utilities	RGB's have not been provided to our team but FPU has indicated a desire to leave their gas main in the existing location, which would be below the proposed pond. Coordination is ongoing.	\$0 cost to FDOT. UAO Cost Estimates Being Developed
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7.22 Cost Estimates

The project costs estimated for the Preferred Alternative are summarized in **Table 24**. The construction costs were prepared in February of 2023 using FDOT’s Long Range Estimating (LRE) program, and are provided in **Appendix F**.

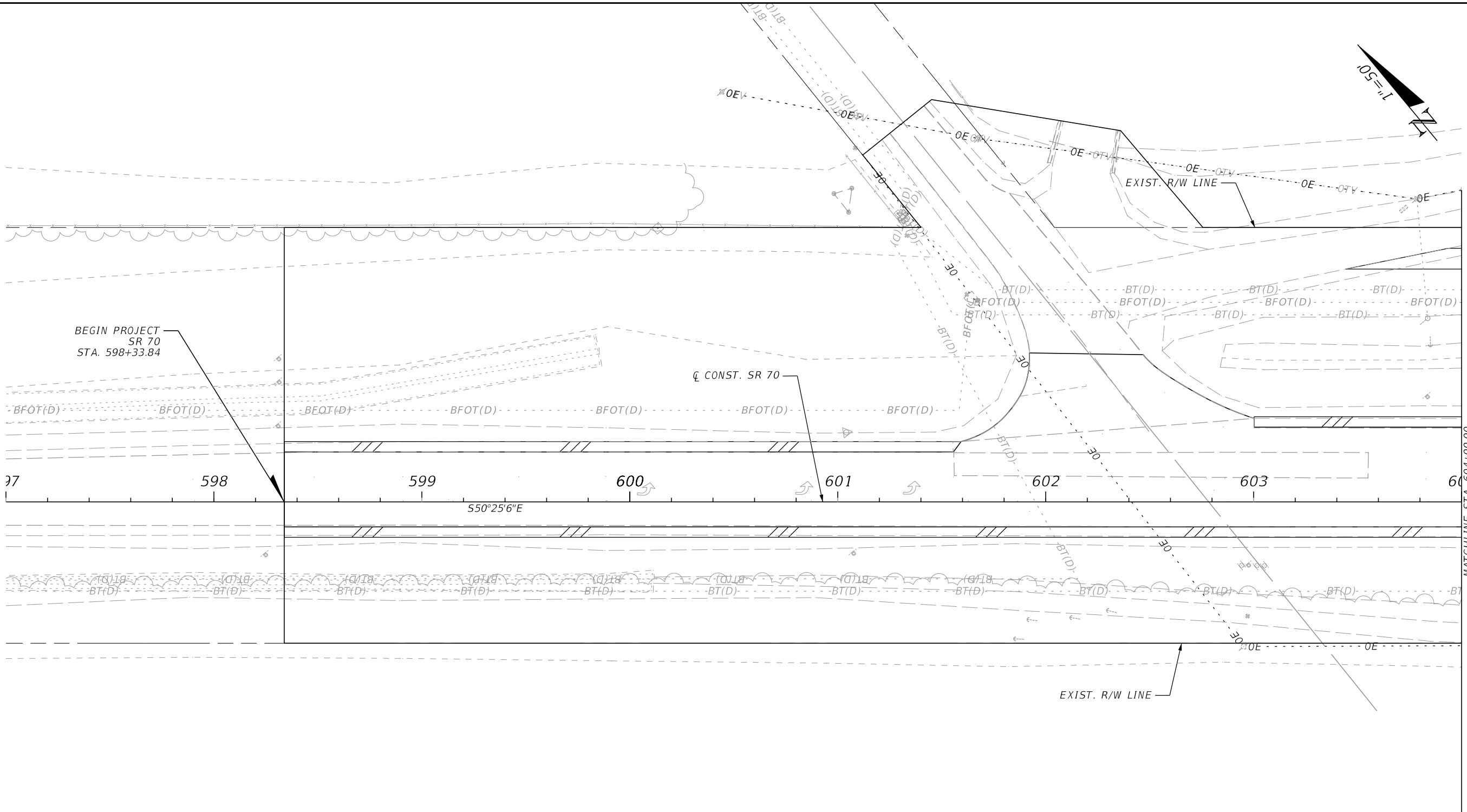
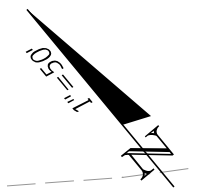
Table 24 – Project Cost Estimate

Estimated Project Costs (in millions)	No Action Alternative	Preferred Alternative
Design	\$ -	\$1,155,269
Right-of-Way	\$ -	\$1,250,000
Construction	\$ -	\$10,213,956
Construction Engineering & Inspection (CEI)	\$ -	\$1,225,675
Preliminary Estimate of Total Project Cost	\$ -	\$13,844,900

1. Right-of-Way cost estimate prepared by FDOT District One on 7/25/2023
2. Construction cost estimates prepared by FDOT District One on 2/8/2023
3. Design cost estimate based on current projects negotiated estimate
4. CEI cost estimate is assumed to be 12% of construction cost.

APPENDIX A

Preferred Alternative Conceptual Design Plan Set



MATCHLINE STA. 604+00.00
12' 12' 12' 12'

132'
68'

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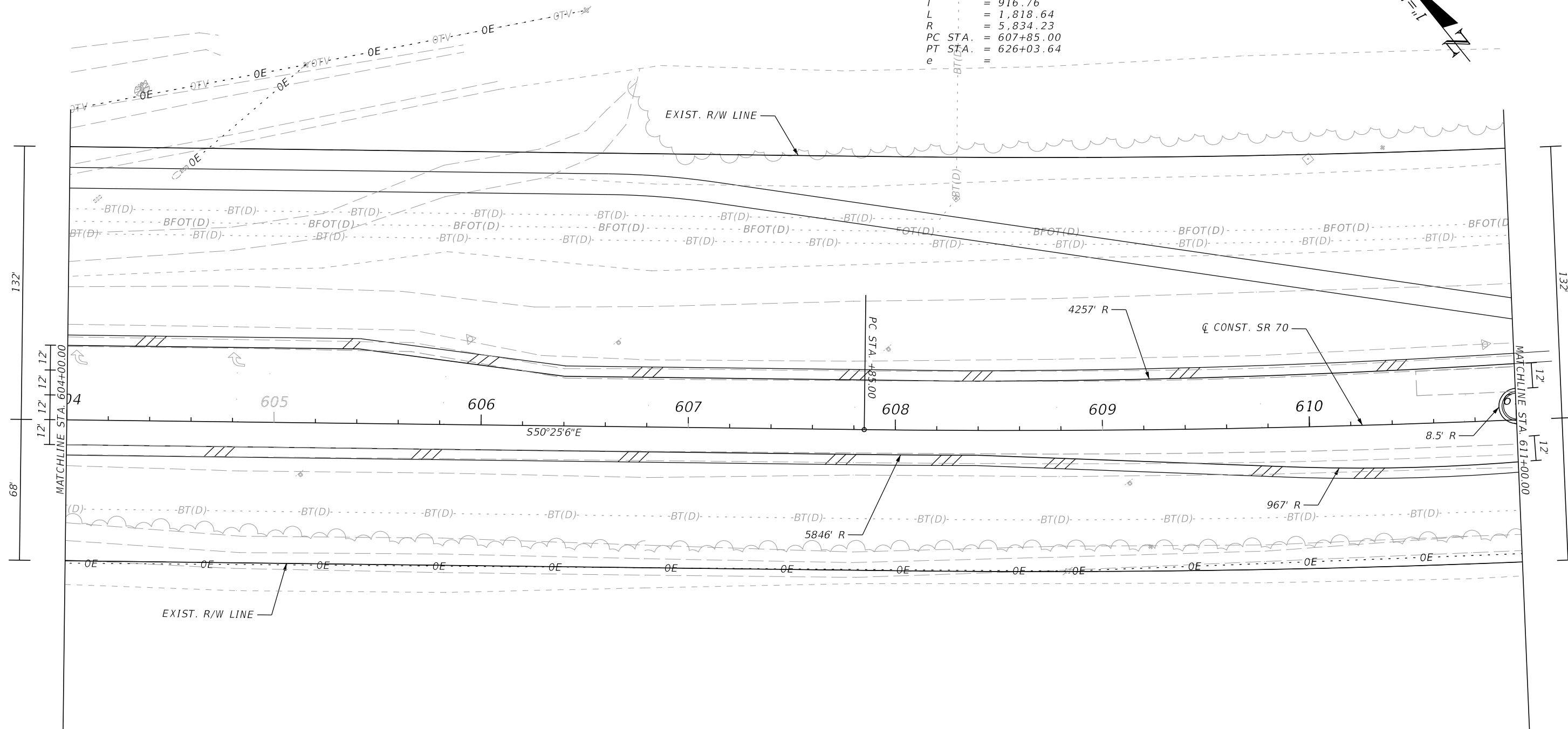
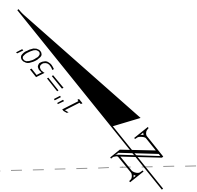
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SR 72/70	DESOTO	443123-1-52-01

ROADWAY PLAN
(SR 70)

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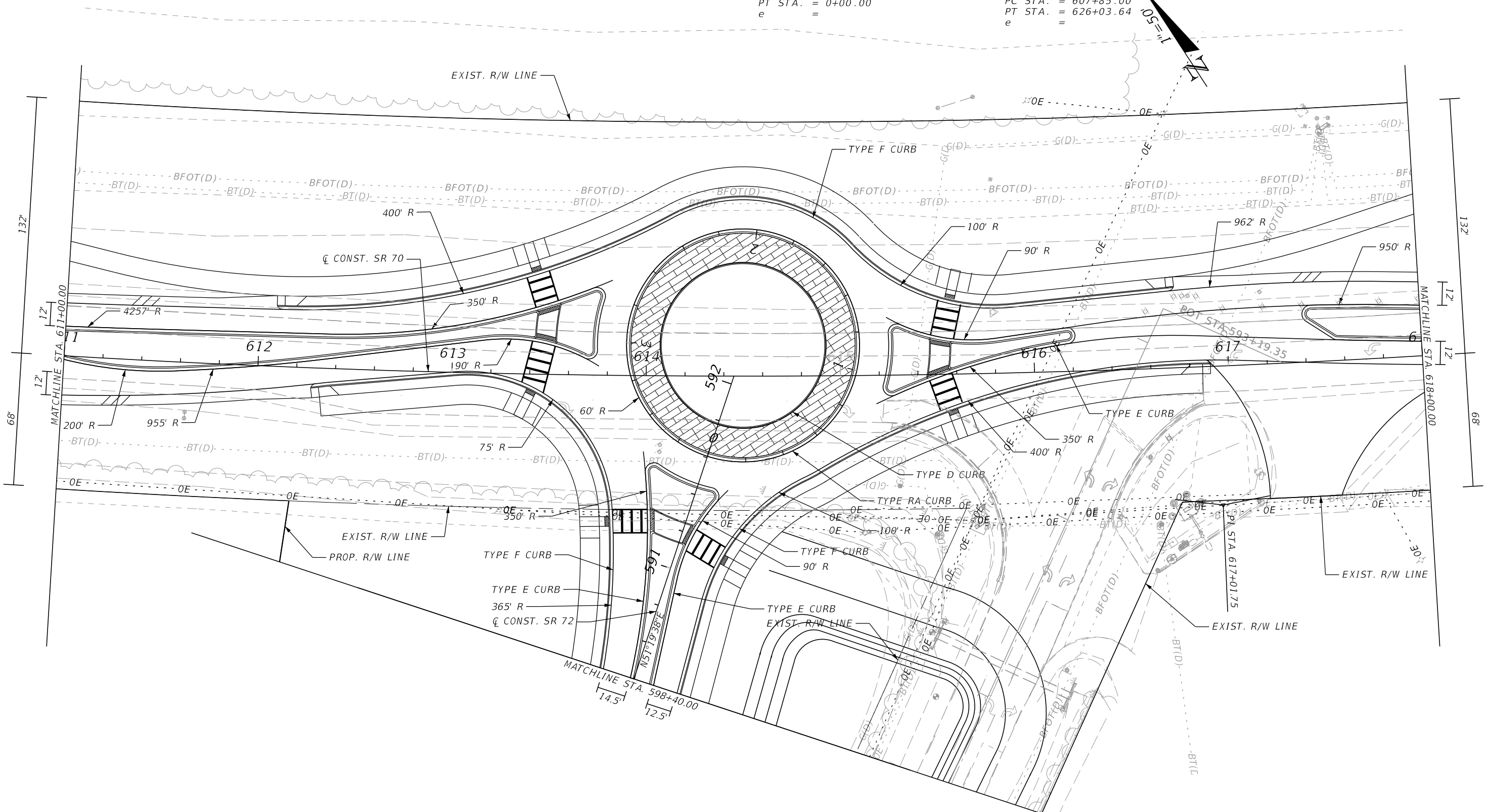
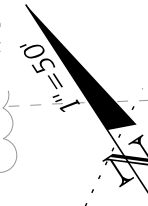
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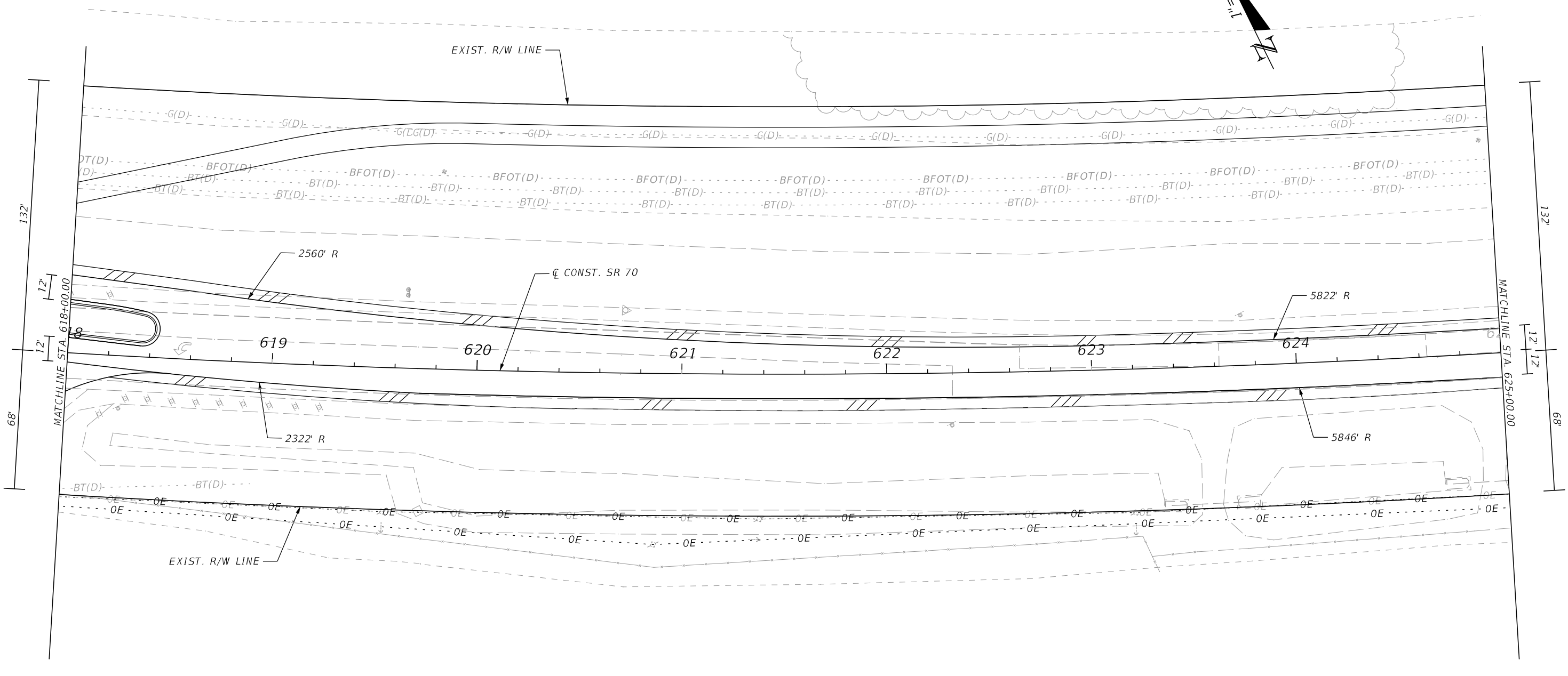
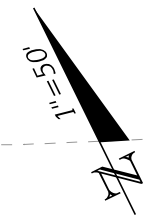
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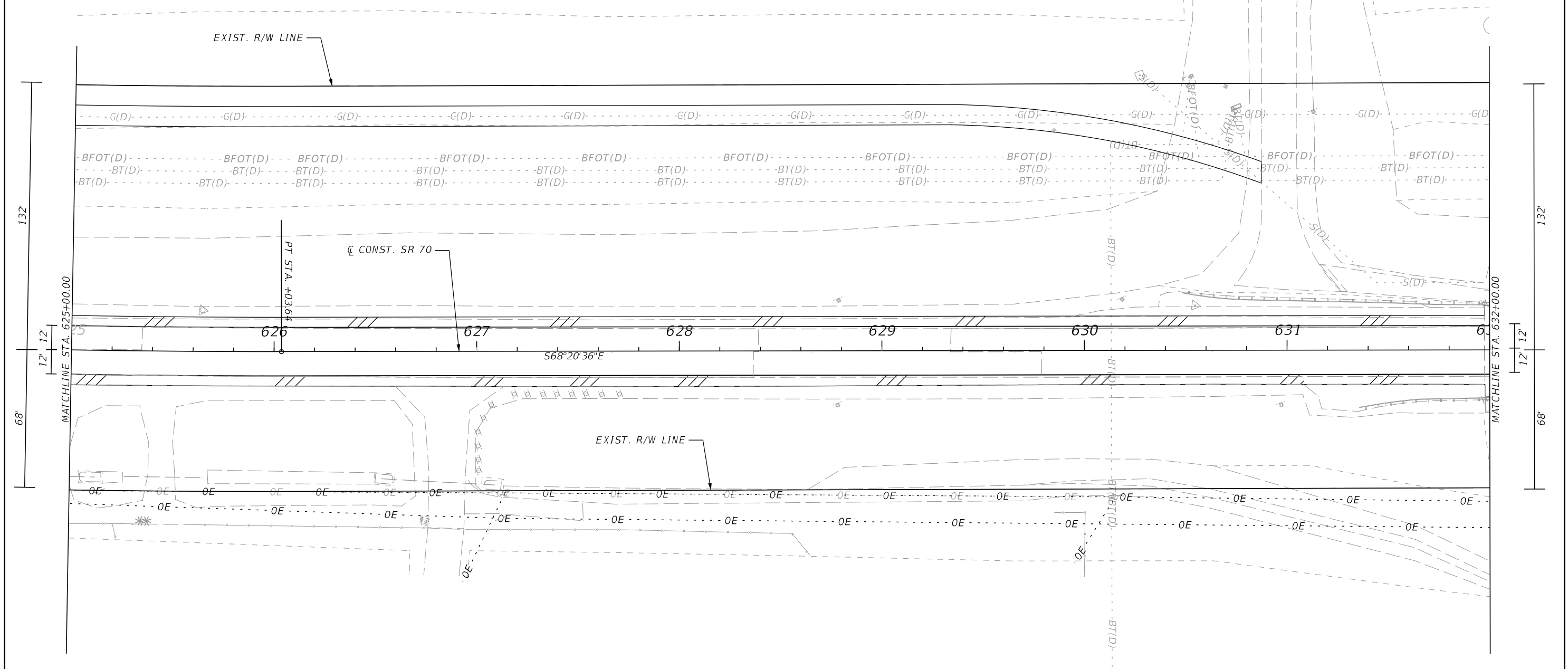
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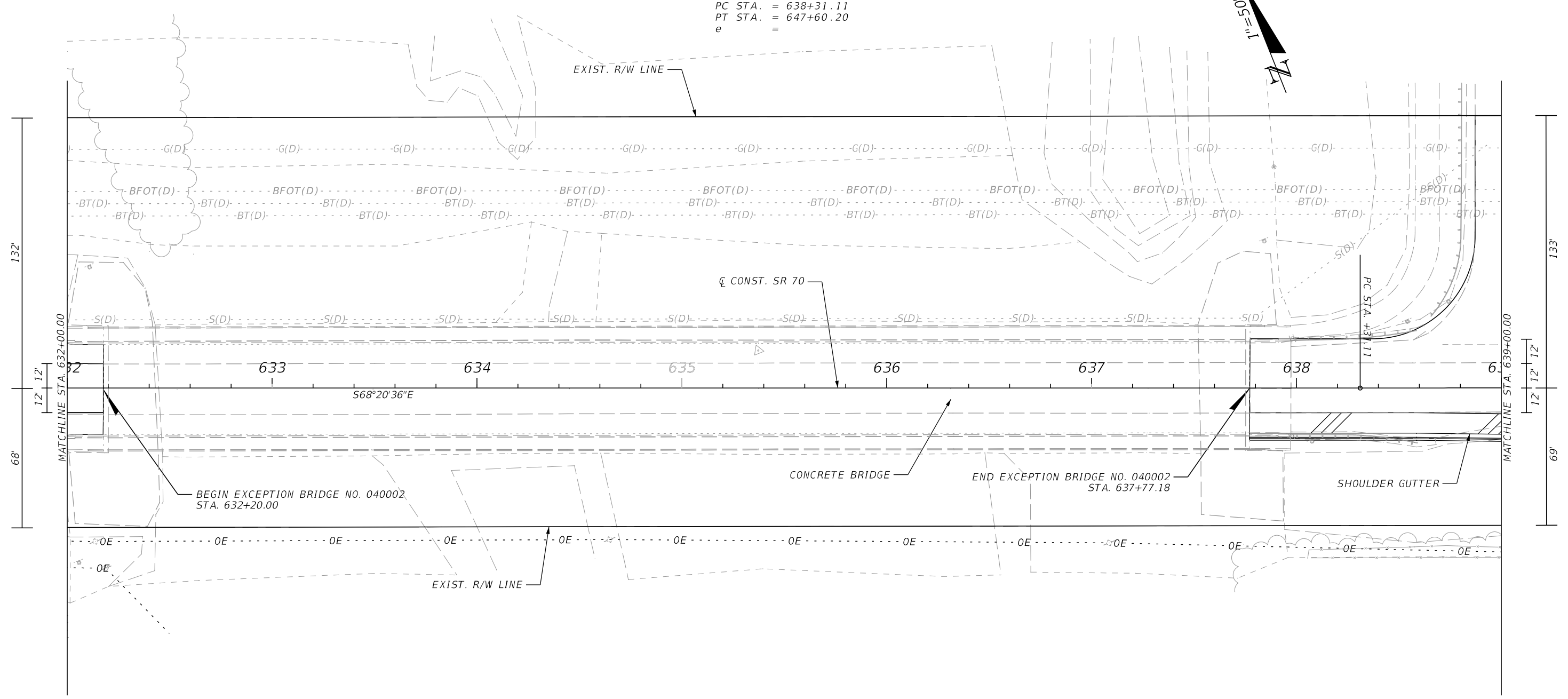
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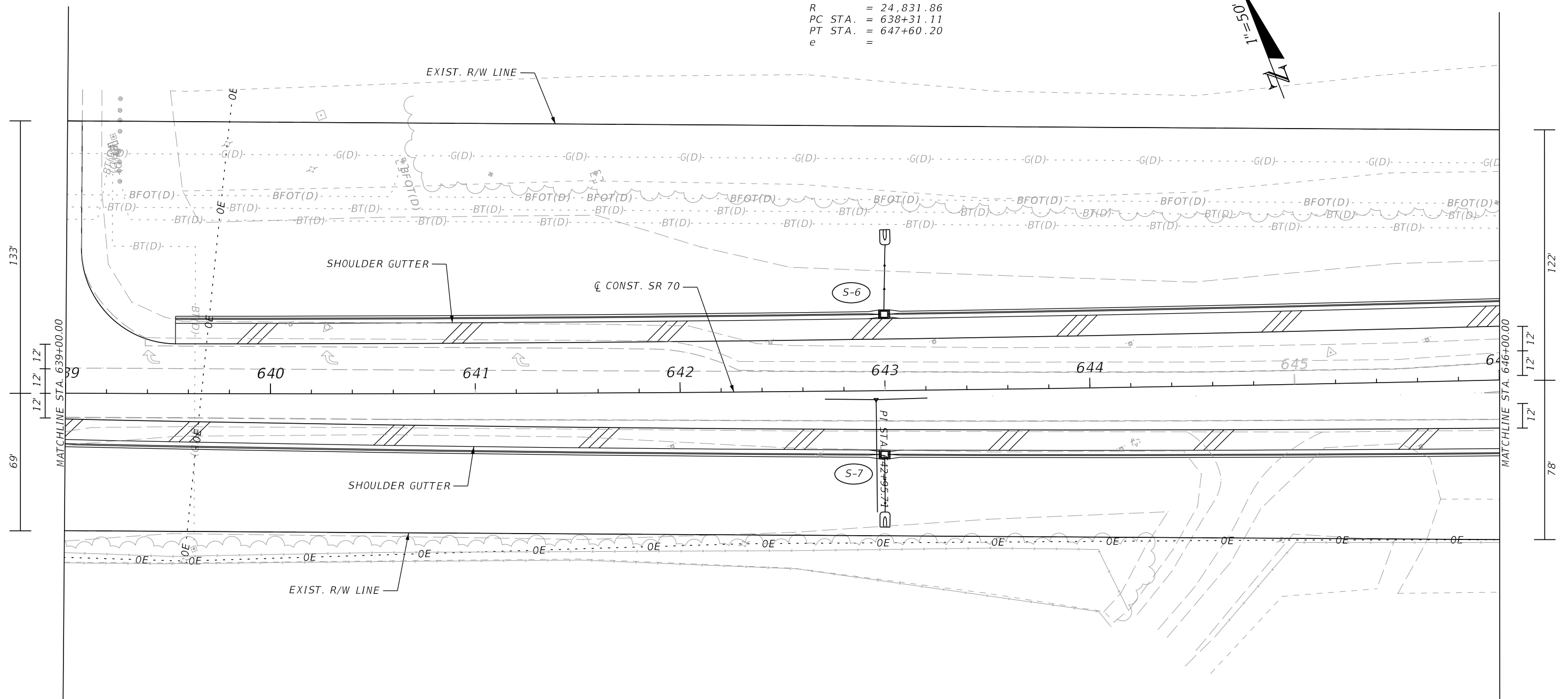
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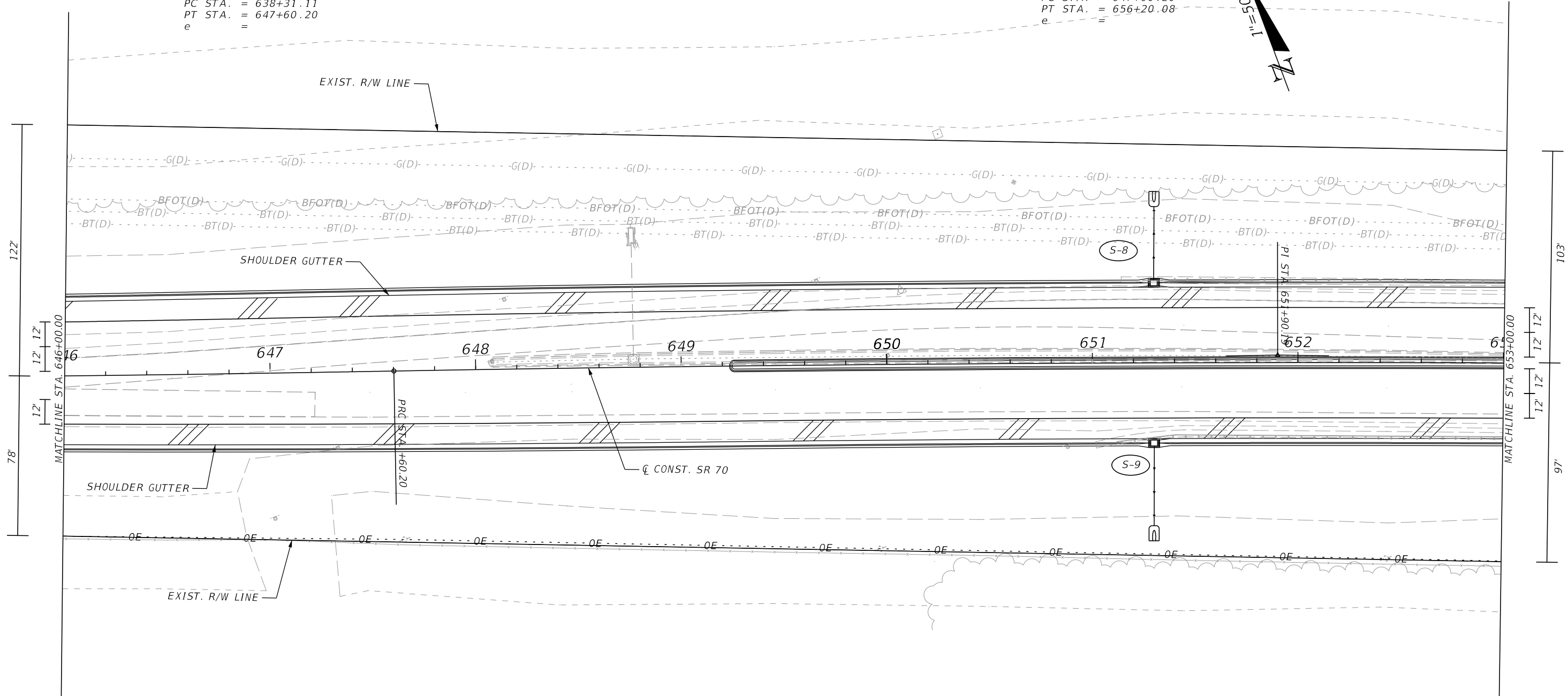
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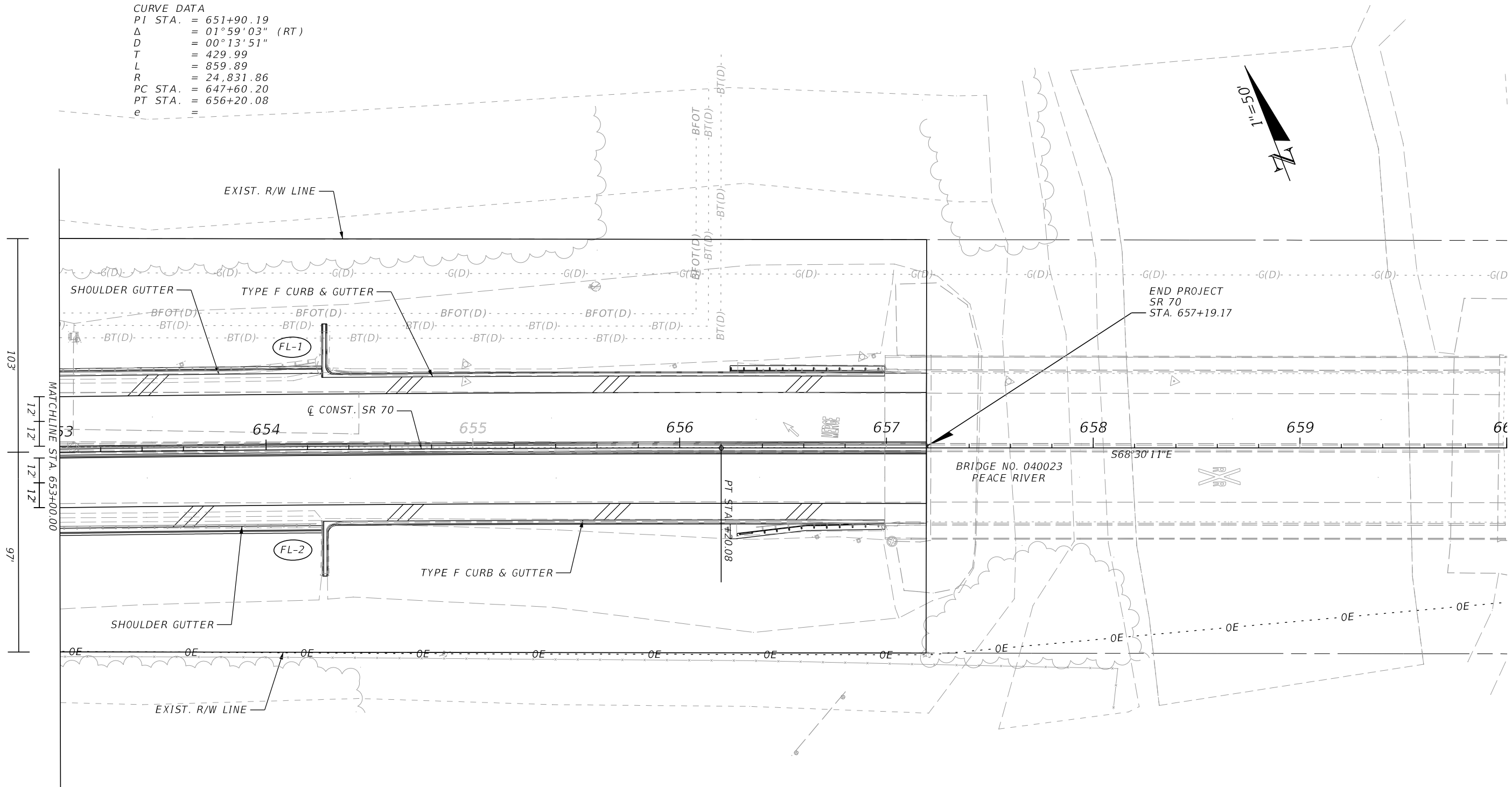
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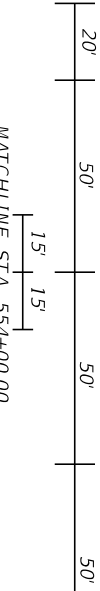
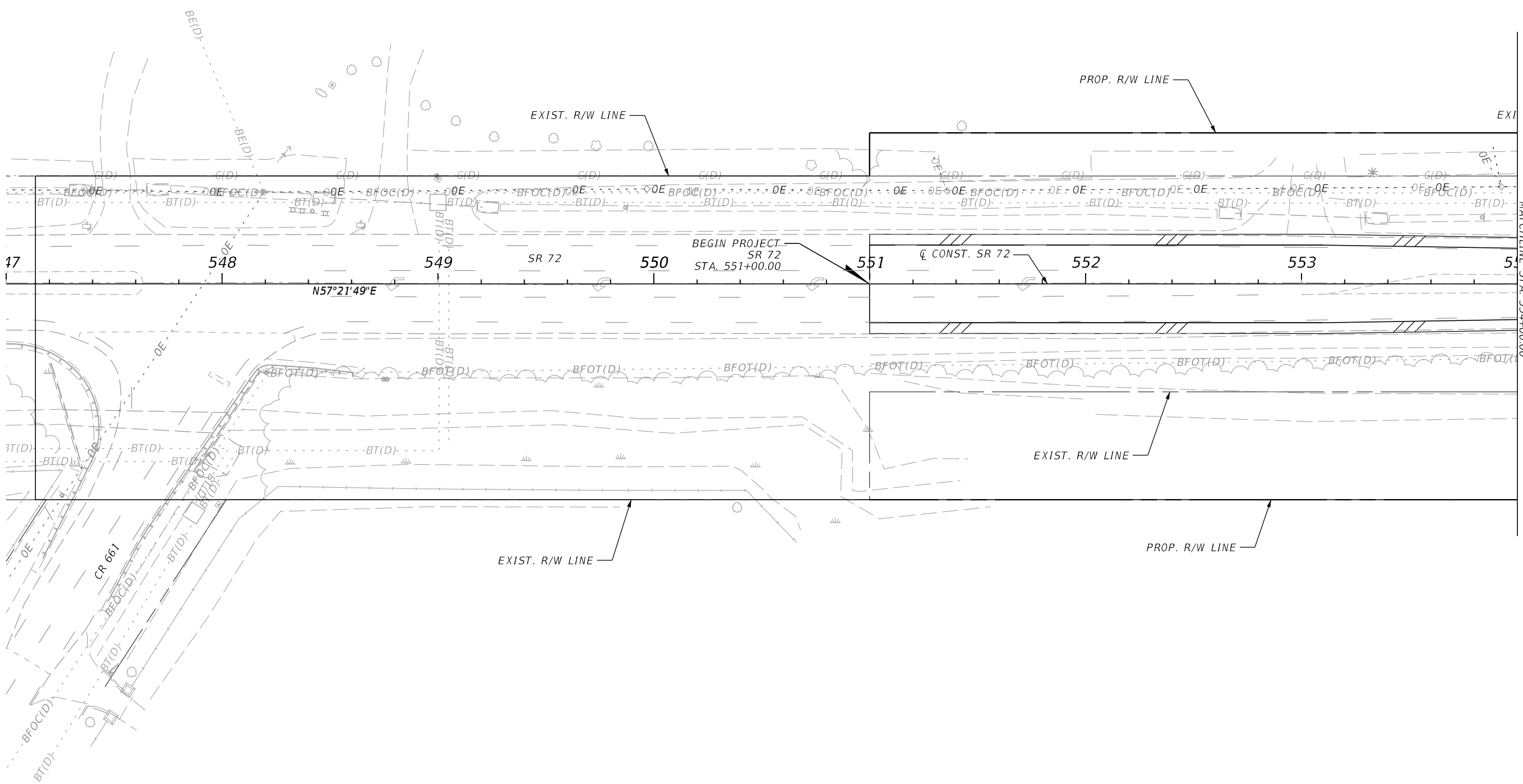
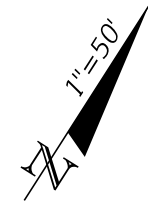
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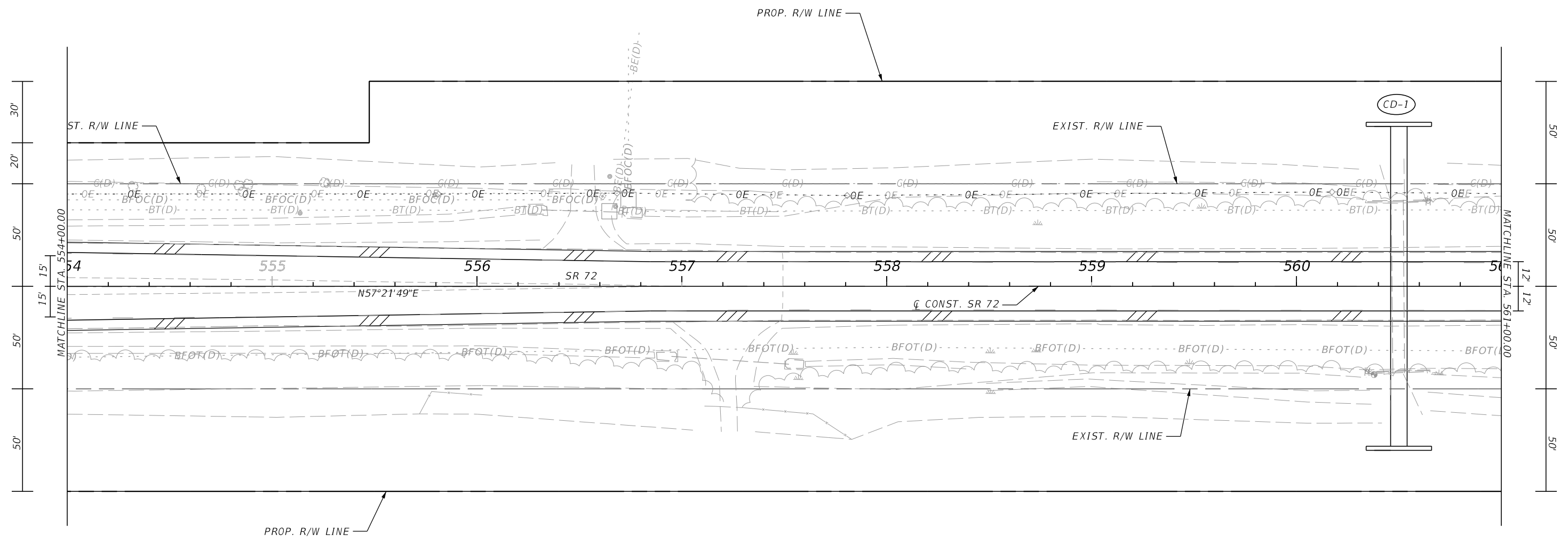
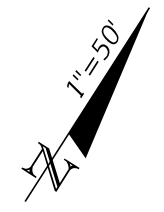
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SR 72

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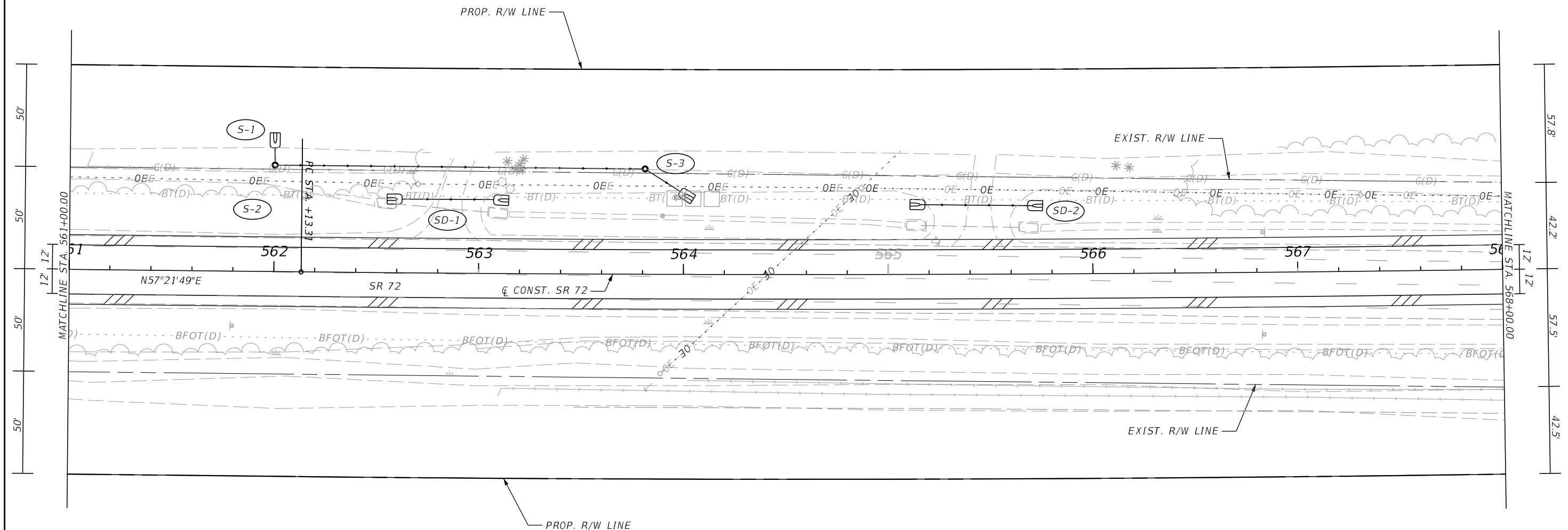
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PLAN SHEET (2)
SR 72

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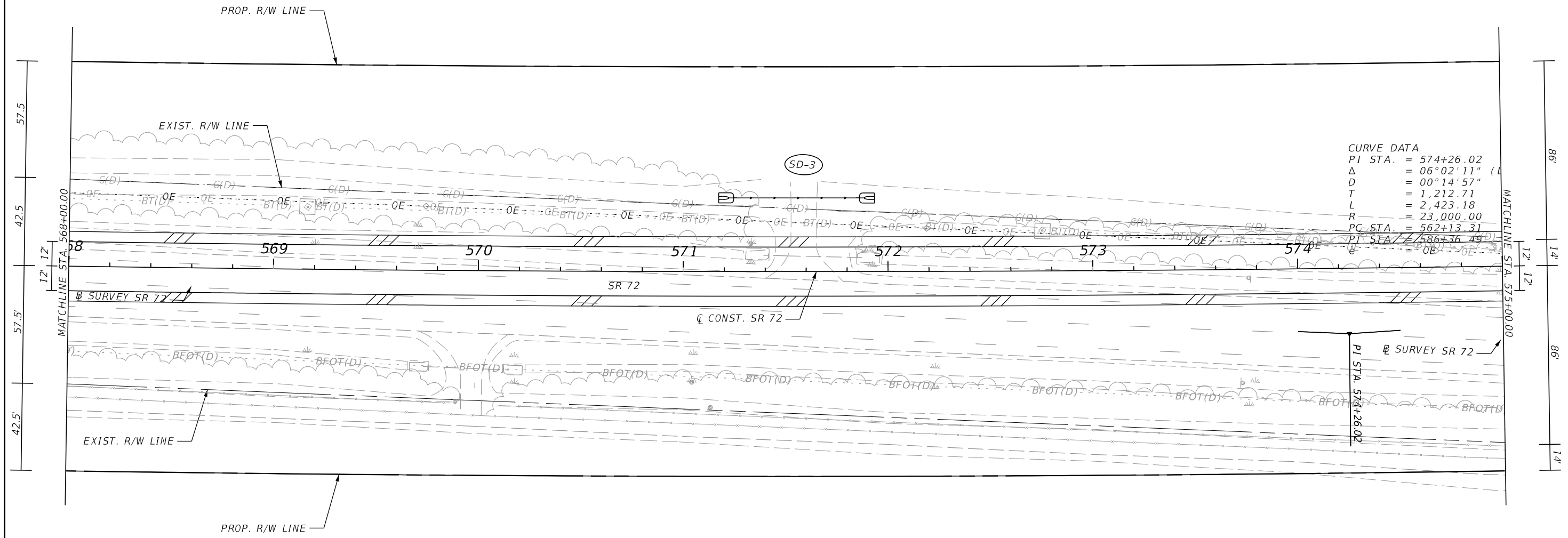
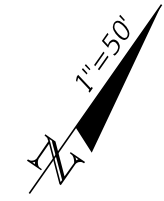
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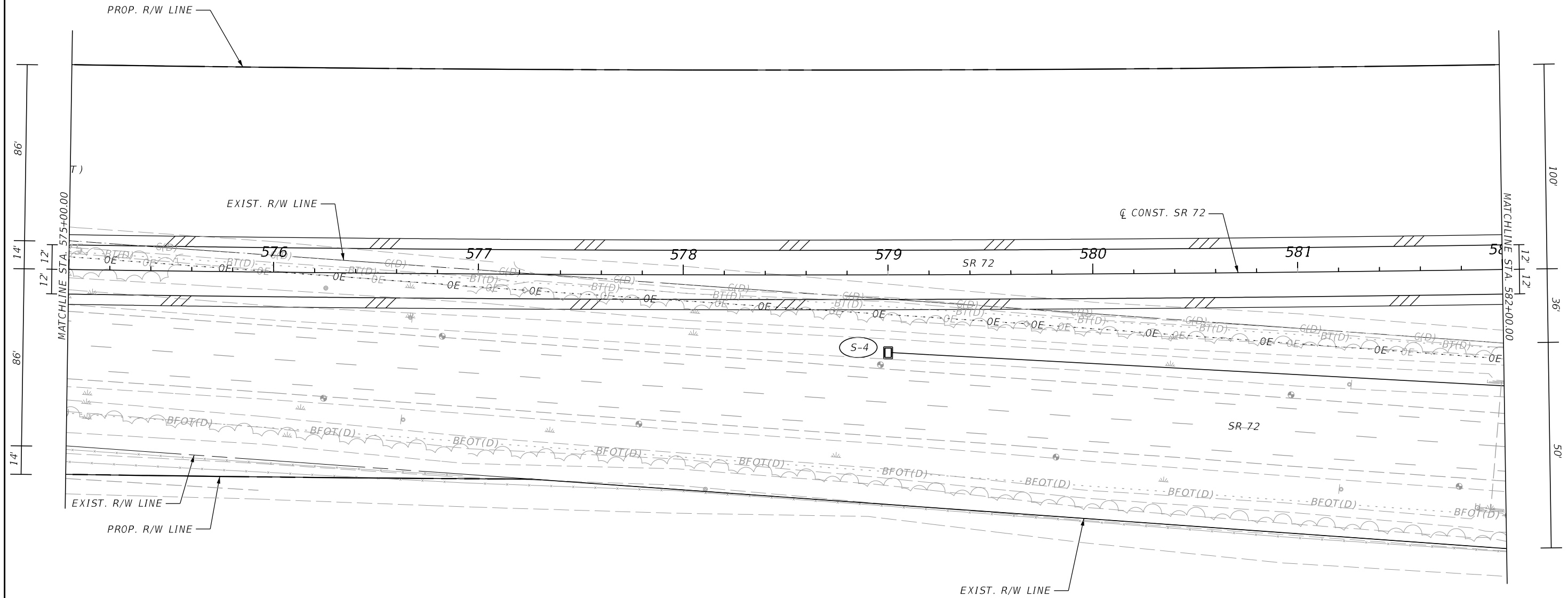
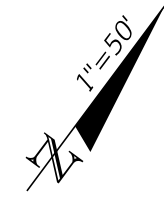
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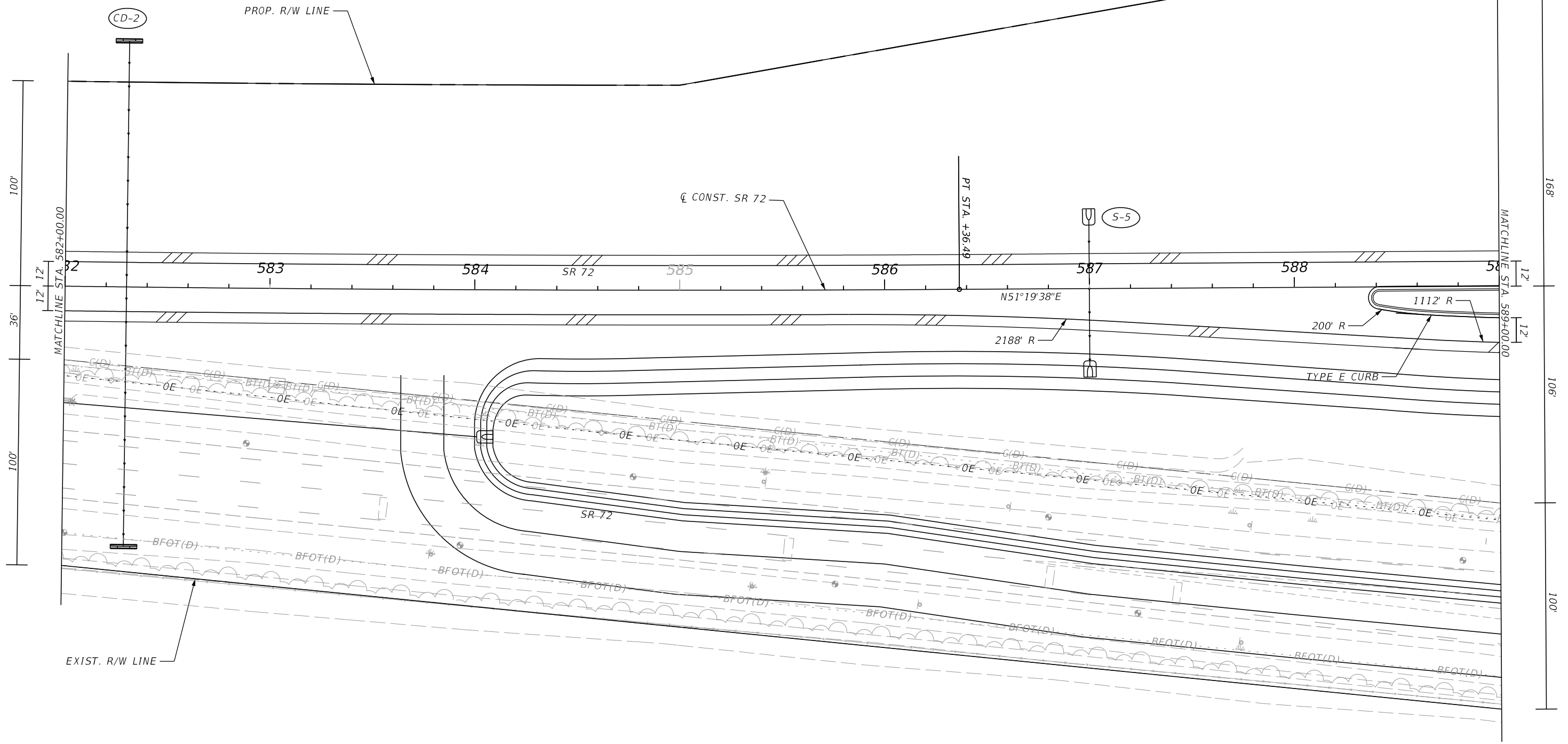
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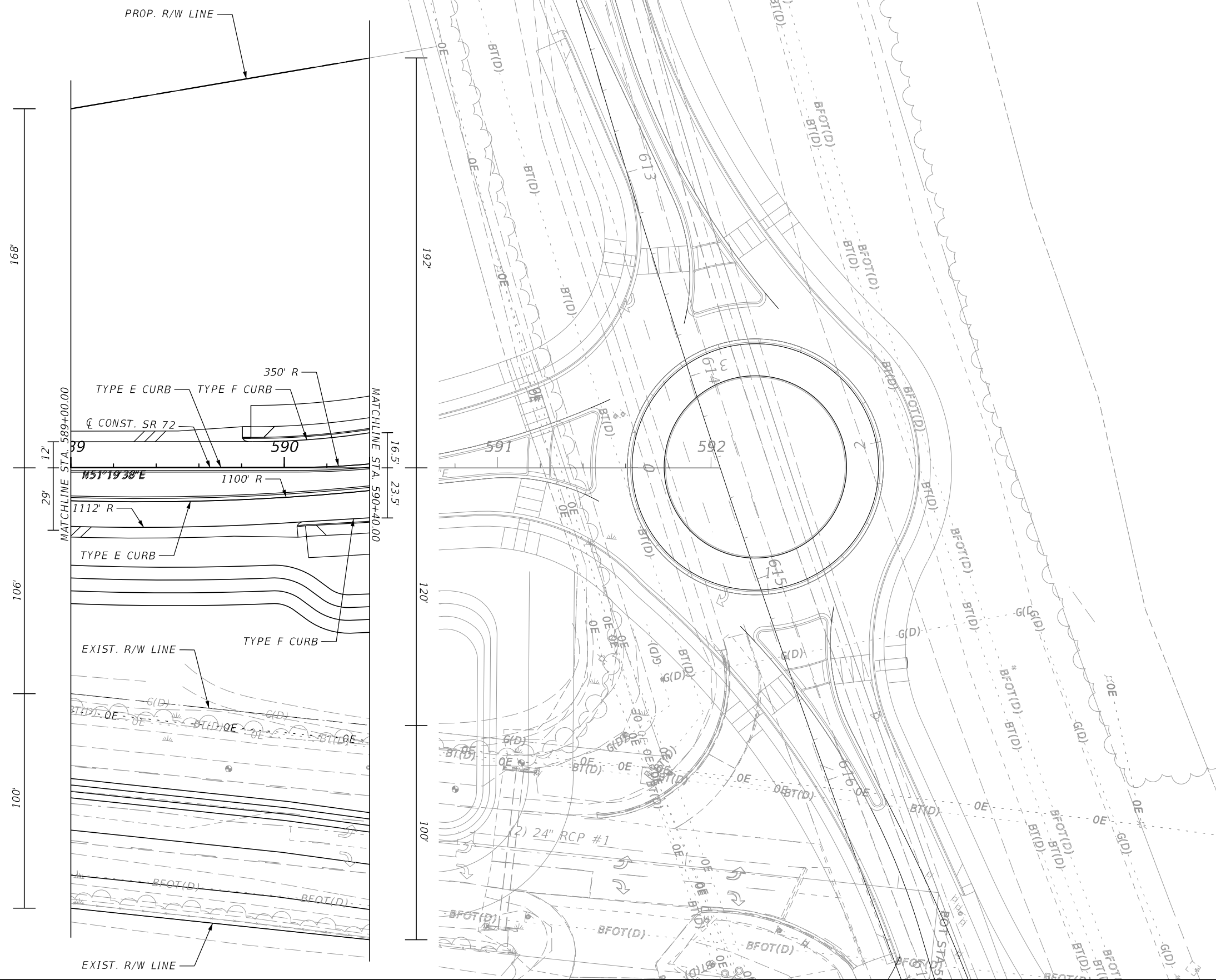
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8/11/2023 11:03:33 AM JKiriazes
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NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

The Balmoral Group
 165 Lincoln Avenue
 Winter Park, FL 32789
 Phone: (407) 629-2185
 www.balmoralgroup.us
 E.O.R.: Albert Smidebush, P.E. No. 73052

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 72	DESOTO	443123-1-32-01

PLAN SHEET (7)
SR 72

SHEET NO.

APPENDIX B

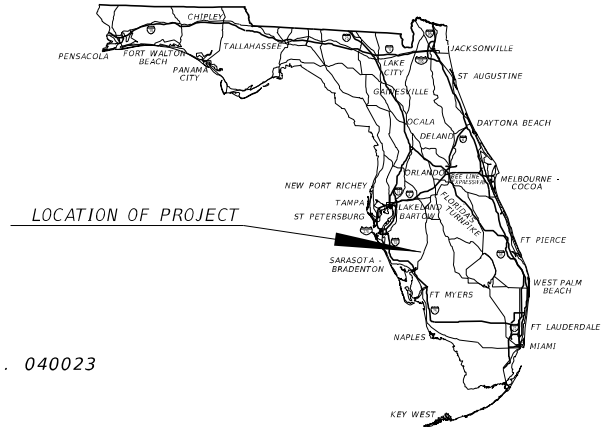
Typical Section Package

**STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION**

TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 443123-1-52-01
(FEDERAL FUNDS)
DESOTO COUNTY (04040 & 04060)
STATE ROAD NO. 70 & 72

ROUNDABOUT AT SR 70 & SR 72
RESURFACING OF SR 70 FROM CR 661 TO PEACE RIVER BRIDGE NO. 040023
RECONSTRUCTION OF SR 72 FROM CR 661 TO SR 70



LOCATION OF PROJECT

FDOT DISTRICT DESIGN ENGINEER



Kevin Ingle
2023.06.21
16:09:49-04'00'

CONCURRING WITH:
TYPICAL SECTION ELEMENTS
TARGET SPEED
DESIGN & POSTED SPEEDS

FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER

Steven A. Davis Jr.
Digitally signed by:
Steven A Davis Jr
Date: 2023.06.21
15:59:22 -04'00'

CONCURRING WITH:
TARGET SPEED
DESIGN & POSTED SPEEDS

FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

Nicole E Mills

DN: CN = Nicole E Mills
C = US O = FLORIDA
DEPARTMENT OF
TRANSPORTATION
Date: 2023.06.16 09:36:57 -04'00'

CONCURRING WITH:
CONTEXT CLASSIFICATION
TARGET SPEED

FDOT DISTRICT STRUCTURES DESIGN ENGINEER

Mark L. Peronto
Digitally signed
by Mark L Peronto
Date: 2023.06.21
15:08:27 -04'00'

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

FHWA TRANSPORTATION ENGINEER

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

NOT USED

CONCURRING WITH:

LOCAL TRANSPORTATION ENGINEER

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

NOT USED

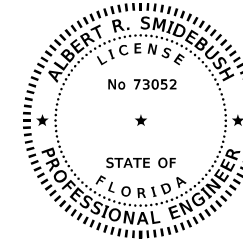
CONCURRING WITH:

INDEX OF SHEETS

SHEET NO	SHEET DESCRIPTION
1	KEY SHEET
2	TYPICAL SECTION NO. 1
3	TYPICAL SECTION NO. 2
4	TYPICAL SECTION NO. 3
5	TYPICAL SECTION NO. 4
6	TYPICAL SECTION NO. 5
7	TYPICAL SECTION NO. 6
8	TYPICAL SECTION NO. 7
9	TYPICAL SECTION NO. 8
10	TYPICAL SECTION NO. 9
11	TYPICAL SECTION NO. 10
12	TYPICAL SECTION NO. 11

PROJECT LOCATION URL:	https://tinyurl.com/443123SR72
PROJECT LIMITS:	SR 70 BEGIN MP 11.150 END MP 12.313 SR 72 BEGIN MP 10.208 END MP 10.974
EXCEPTIONS:	NONE
BRIDGE LIMITS:	SR 70 BEGIN MP 11.786 END MP 11.892
RAILROAD CROSSING:	NONE

APPROVED BY:



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY
Albert R Smidebush 2023.06.08
11:37:06-04'00'

ON THE DATE ADJACENT TO THE SEAL
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

THE BALMORAL GROUP
165 LINCOLN AVENUE
WINTER PARK, FL 32789
PHONE: (407) 629-2185
ALBERT R. SMIDEBUSH, P.E. NO. 73052

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SHEET NO.

1

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- () PRINCIPAL ARTERIAL () LOCAL
- (x) MINOR ARTERIAL

HIGHWAY SYSTEM

- () NATIONAL HIGHWAY SYSTEM
- () STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

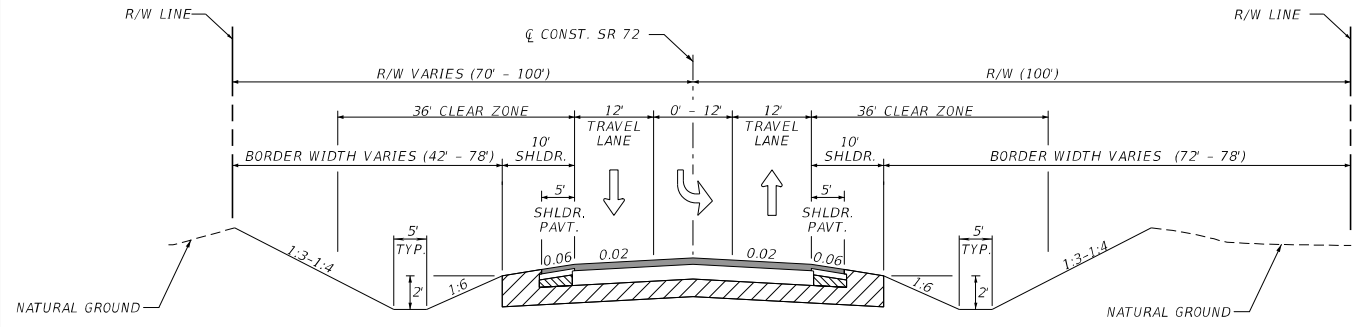
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 1



SR 72
MP 10.208 TO MP 10.318

NOT TO SCALE

SR 72 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 8600
 ESTIMATED OPENING YEAR = 2025 AADT = 7000
 ESTIMATED DESIGN YEAR = 2045 AADT = 15600
 K = 9.5% D = 53.2% T = 12.3% (24 HOUR)
 DESIGN HOUR T = 6.15%
 TARGET SPEED = 60 MPH
 DESIGN SPEED = 65 MPH
 POSTED SPEED = 60 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	2

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWAY. () MINOR COLLECTOR
- () PRINCIPAL ARTERIAL () LOCAL
- (x) MINOR ARTERIAL

HIGHWAY SYSTEM

- () NATIONAL HIGHWAY SYSTEM
- () STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

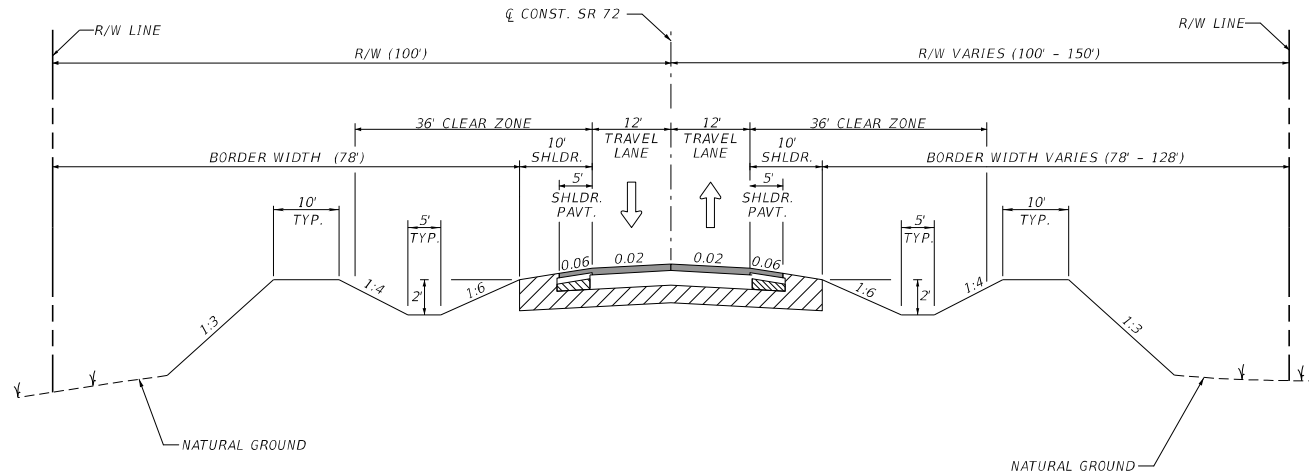
DESIGN EXCEPTIONS

NONE

DESIGN VARIATIONS

NONE

TYPICAL SECTION No. 2



SR 72
MP 10.318 TO MP 10.425
MP 10.709 TO MP 10.823

NOT TO SCALE

SR 72 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 8600
ESTIMATED OPENING YEAR = 2025 AADT = 7000
ESTIMATED DESIGN YEAR = 2045 AADT = 15600
K = 9.5% D = 53.2% T = 12.3% (24 HOUR)
DESIGN HOUR T = 6.15%
TARGET SPEED = 60 MPH
DESIGN SPEED = 65 MPH
POSTED SPEED = 60 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	3

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- () PRINCIPAL ARTERIAL () LOCAL
- (x) MINOR ARTERIAL

HIGHWAY SYSTEM

- () NATIONAL HIGHWAY SYSTEM
- () STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

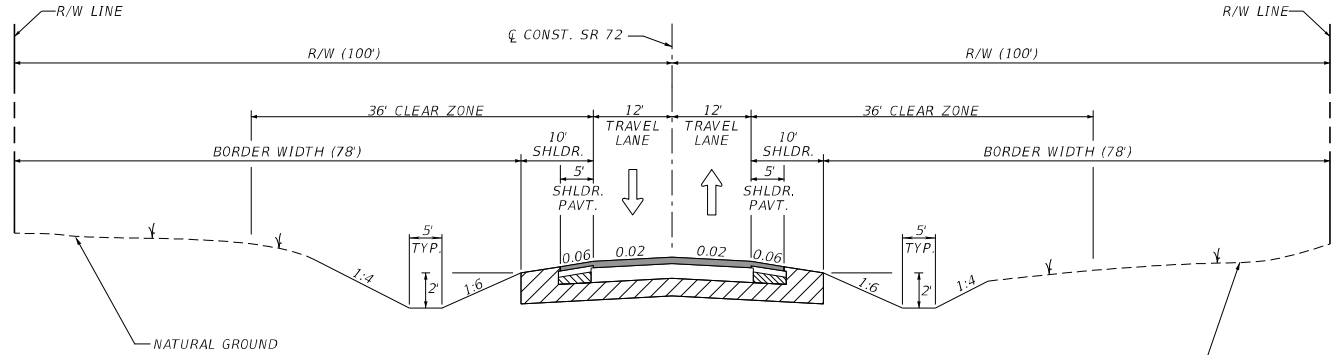
DESIGN EXCEPTIONS

NONE

DESIGN VARIATIONS

NONE

TYPICAL SECTION No. 3



SR 72
MP 10.425 TO MP 10.558

NOT TO SCALE

SR 72 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 8600
 ESTIMATED OPENING YEAR = 2025 AADT = 7000
 ESTIMATED DESIGN YEAR = 2045 AADT = 15600
 K = 9.5% D = 53.2% T = 12.3% (24 HOUR)
 DESIGN HOUR T = 6.15%
 TARGET SPEED = 60 MPH
 DESIGN SPEED = 65 MPH
 POSTED SPEED = 60 MPH

FINANCIAL PROJECT ID

443123-1-52-01

SHEET NO.

4

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- () PRINCIPAL ARTERIAL () LOCAL
- (x) MINOR ARTERIAL

HIGHWAY SYSTEM

- () NATIONAL HIGHWAY SYSTEM
- () STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

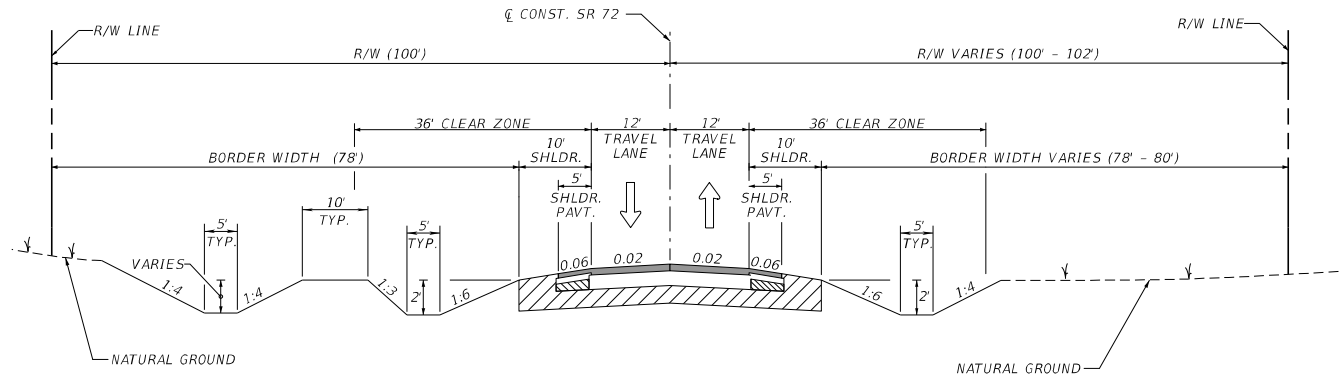
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 4



SR 72
MP 10.558 TO MP 10.709

NOT TO SCALE

SR 72 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 8600
 ESTIMATED OPENING YEAR = 2025 AADT = 7000
 ESTIMATED DESIGN YEAR = 2045 AADT = 15600
 K = 9.5% D = 53.2% T = 12.3% (24 HOUR)
 DESIGN HOUR T = 6.15%
 TARGET SPEED = 60 MPH
 DESIGN SPEED = 65 MPH
 POSTED SPEED = 60 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	5

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- () PRINCIPAL ARTERIAL () LOCAL
- (x) MINOR ARTERIAL

HIGHWAY SYSTEM

- () NATIONAL HIGHWAY SYSTEM
- () STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

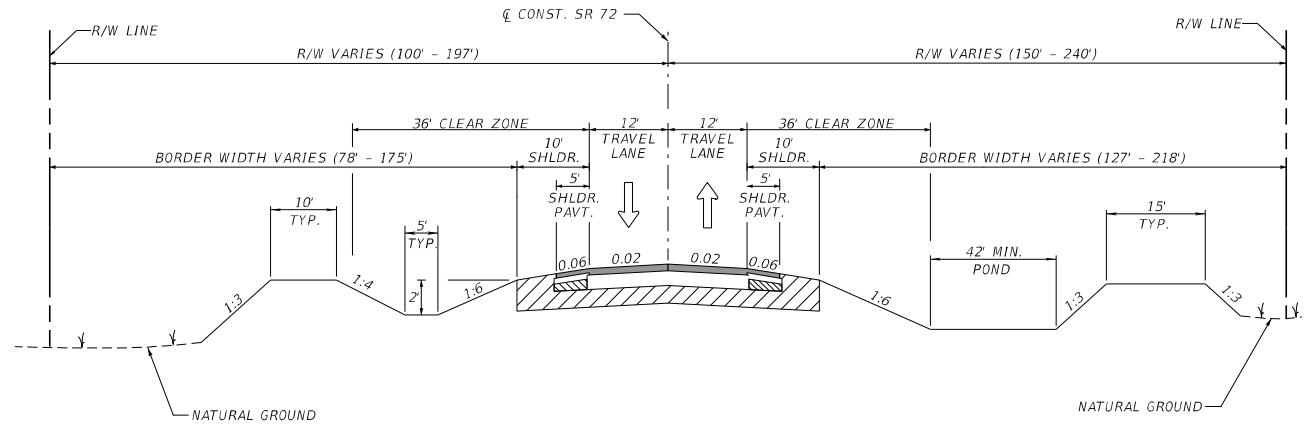
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 5



SR 72
MP 10.823 TO MP 10.974

NOT TO SCALE

SR 72 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 8600
 ESTIMATED OPENING YEAR = 2025 AADT = 7000
 ESTIMATED DESIGN YEAR = 2045 AADT = 15600
 K = 9.5% D = 53.2% T = 12.3% (24 HOUR)
 DESIGN HOUR T = 6.15%
 TARGET SPEED = 60 MPH
 DESIGN SPEED = 65 MPH
 POSTED SPEED = 60 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	6

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- (x) PRINCIPAL ARTERIAL () LOCAL
- () MINOR ARTERIAL

HIGHWAY SYSTEM

- (x) NATIONAL HIGHWAY SYSTEM
- (x) STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- (x) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- () 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

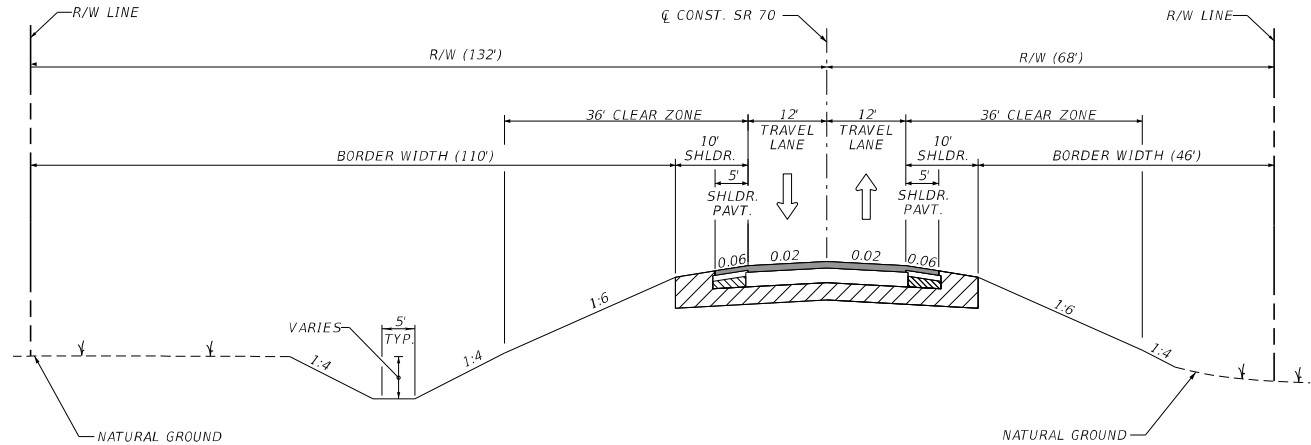
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 6



SR 70
MP 11.150 TO MP 11.497

NOT TO SCALE

SR 70 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 15200
 ESTIMATED OPENING YEAR = 2025 AADT = 14000
 ESTIMATED DESIGN YEAR = 2045 AADT = 25600
 K = 9% D = 54.1% T = 15.6% (24 HOUR)
 DESIGN HOUR T = 7.8%
 TARGET SPEED = 50 MPH
 DESIGN SPEED = 50 MPH
 POSTED SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	7

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- (x) PRINCIPAL ARTERIAL () LOCAL
- () MINOR ARTERIAL

HIGHWAY SYSTEM

- (x) NATIONAL HIGHWAY SYSTEM
- (x) STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- (x) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- () 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

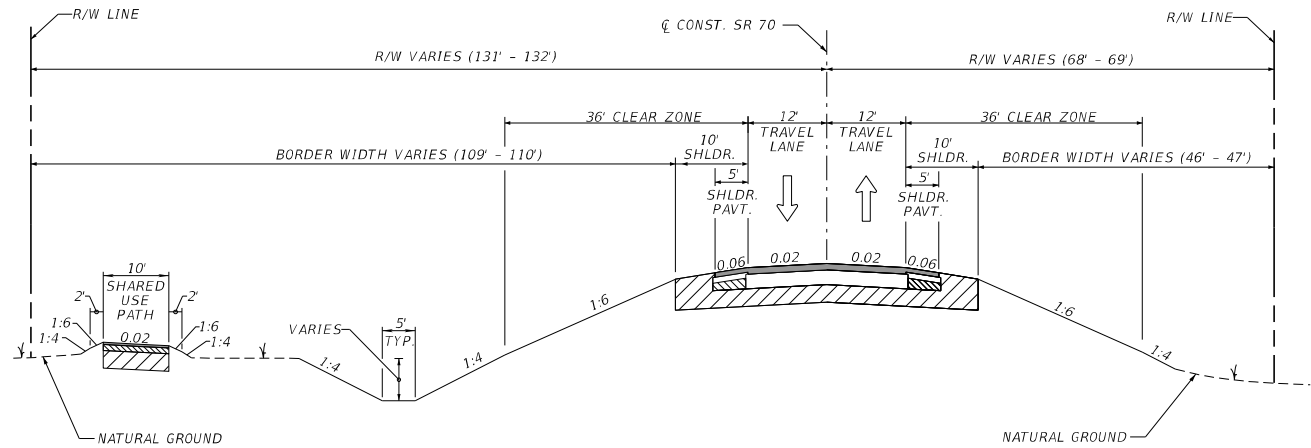
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 7



SR 70
MP 11.497 TO MP 11.786

NOT TO SCALE

SR 70 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 15200
 ESTIMATED OPENING YEAR = 2025 AADT = 14000
 ESTIMATED DESIGN YEAR = 2045 AADT = 25600
 K = 9% D = 54.1% T = 15.6% (24 HOUR)
 DESIGN HOUR T = 7.8%
 TARGET SPEED = 50 MPH
 DESIGN SPEED = 50 MPH
 POSTED SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	8

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- (x) PRINCIPAL ARTERIAL () LOCAL
- () MINOR ARTERIAL

HIGHWAY SYSTEM

- (x) NATIONAL HIGHWAY SYSTEM
- (x) STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- (x) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- () 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

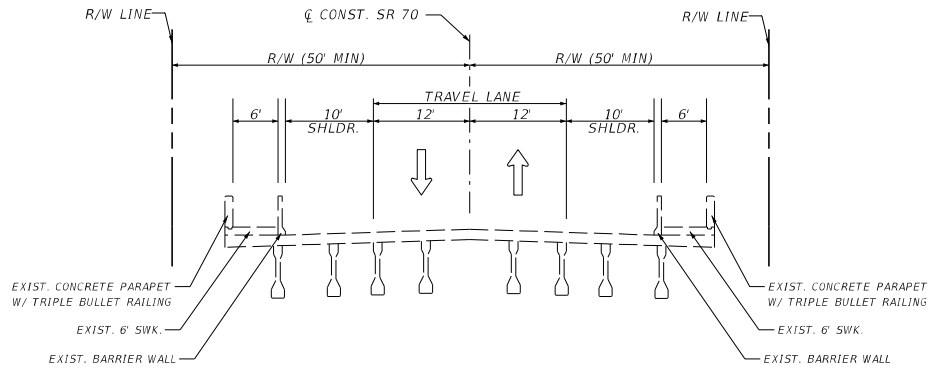
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 8



**SR 70
BRIDGE #040002
MP 11.786 TO MP 11.892**

NOT TO SCALE

SR 70 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 15200
 ESTIMATED OPENING YEAR = 2025 AADT = 14000
 ESTIMATED DESIGN YEAR = 2045 AADT = 25600
 K = 9% D = 54.1% T = 15.6% (24 HOUR)
 DESIGN HOUR T = 7.8%
 TARGET SPEED = 50 MPH
 DESIGN SPEED = 50 MPH
 POSTED SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	9

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- (x) C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- (x) PRINCIPAL ARTERIAL () LOCAL
- () MINOR ARTERIAL

HIGHWAY SYSTEM

- (x) NATIONAL HIGHWAY SYSTEM
- (x) STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

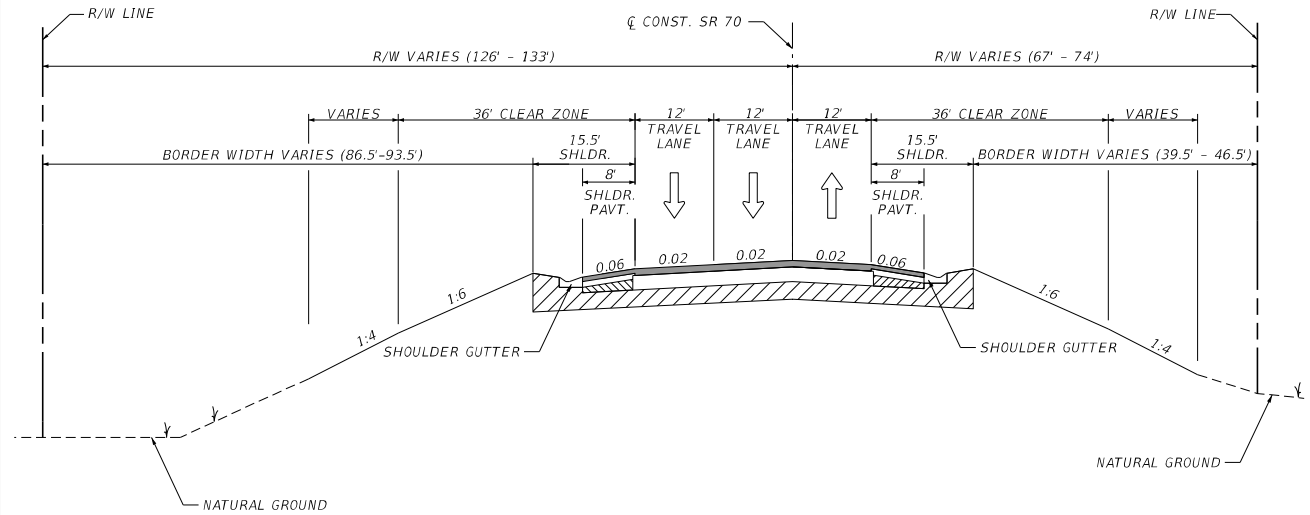
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 9



SR 70
MP 11.892 TO MP 12.060

NOT TO SCALE

SR 70 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 15200
 ESTIMATED OPENING YEAR = 2025 AADT = 14000
 ESTIMATED DESIGN YEAR = 2045 AADT = 25600
 K = 9% D = 54.1% T = 15.6% (24 HOUR)
 DESIGN HOUR T = 7.8%
 TARGET SPEED = 50 MPH
 DESIGN SPEED = 50 MPH
 POSTED SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	10

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- () C2 : RURAL () C4 : URBAN GENERAL
- (x) C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- (x) PRINCIPAL ARTERIAL () LOCAL
- () MINOR ARTERIAL

HIGHWAY SYSTEM

- (x) NATIONAL HIGHWAY SYSTEM
- (x) STRATEGIC INTERMODAL SYSTEM
- (x) STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- () 3 - RESTRICTIVE w/660 ft. Connection Spacing
- (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

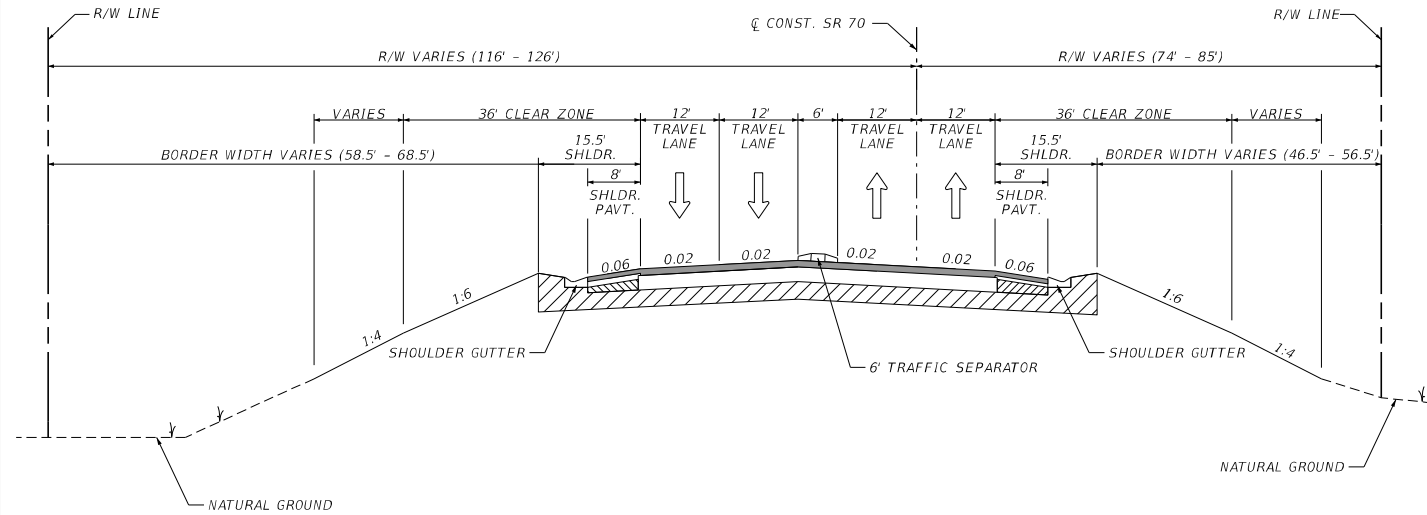
- (x) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

DESIGN EXCEPTIONS
NONE

DESIGN VARIATIONS
NONE

TYPICAL SECTION No. 10



SR 70
MP 12.060 TO MP 12.260

NOT TO SCALE

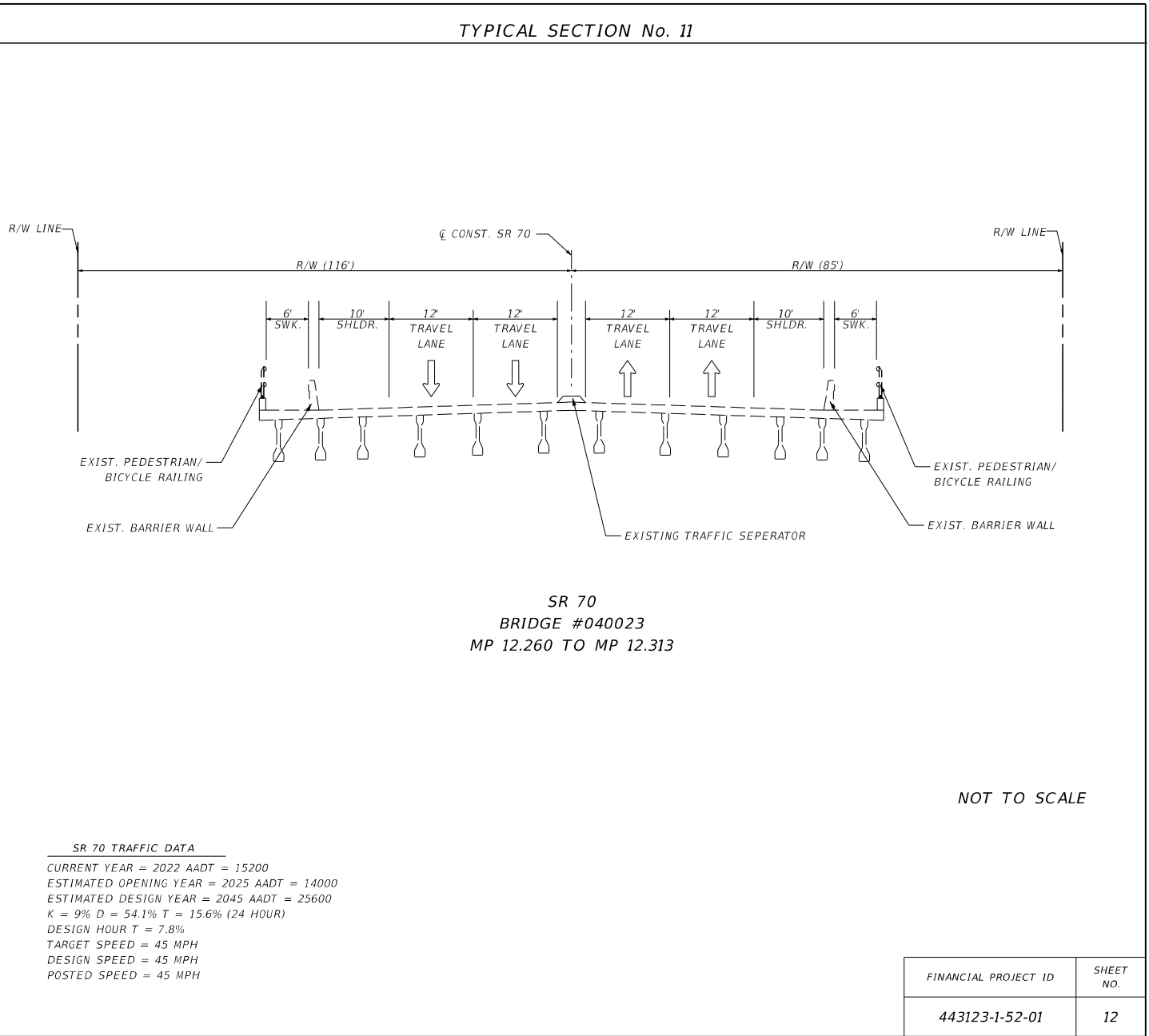
SR 70 TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 15200
 ESTIMATED OPENING YEAR = 2025 AADT = 14000
 ESTIMATED DESIGN YEAR = 2045 AADT = 25600
 K = 9% D = 54.1% T = 15.6% (24 HOUR)
 DESIGN HOUR T = 7.8%
 TARGET SPEED = 45 MPH
 DESIGN SPEED = 45 MPH
 POSTED SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
443123-1-52-01	11

5/17/2023 10:46:08 AM jrl/azs
 T:\014400\00\44312315\01\Recon\VT\PCRD01.dgn

PROJECT CONTROLS
<p style="text-align: center;"><u>CONTEXT CLASSIFICATION</u></p> <p>() C1 : NATURAL () C3C : SUBURBAN COMM. () C2 : RURAL () C4 : URBAN GENERAL (x) C2T : RURAL TOWN () C5 : URBAN CENTER () C3R : SUBURBAN RES. () C6 : URBAN CORE () N/A : L.A. FACILITY</p>
<p style="text-align: center;"><u>FUNCTIONAL CLASSIFICATION</u></p> <p>() INTERSTATE () MAJOR COLLECTOR () FREEWAY/EXPWY. () MINOR COLLECTOR (x) PRINCIPAL ARTERIAL () LOCAL () MINOR ARTERIAL</p>
<p style="text-align: center;"><u>HIGHWAY SYSTEM</u></p> <p>(x) NATIONAL HIGHWAY SYSTEM (x) STRATEGIC INTERMODAL SYSTEM (x) STATE HIGHWAY SYSTEM () OFF-STATE HIGHWAY SYSTEM</p>
<p style="text-align: center;"><u>ACCESS CLASSIFICATION</u></p> <p>() 1 - FREEWAY () 2 - RESTRICTIVE w/Service Roads () 3 - RESTRICTIVE w/660 ft. Connection Spacing (x) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing () 5 - RESTRICTIVE w/440 ft. Connection Spacing () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing () 7 - BOTH MEDIAN TYPES</p>
<p style="text-align: center;"><u>CRITERIA</u></p> <p>(x) NEW CONSTRUCTION / RECONSTRUCTION () RESURFACING (LA FACILITIES) () RRR (ARTERIALS & COLLECTORS)</p>
<p style="text-align: center;"><u>POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:</u></p> <p><u>DESIGN EXCEPTIONS</u> NONE</p> <p><u>DESIGN VARIATIONS</u> NONE</p>



NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61615-23.004, F.A.C.

APPENDIX C

Agency Coordination (TBD)