

**LOR-90-10.76 PID 107714  
MAINTENANCE OF TRAFFIC ALTERNATIVES ANALYSIS (MOTAA)**

Prepared for:  
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December 22, 2023



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## 1.0 INTRODUCTION

This Maintenance of Traffic Alternative Analysis (MOTAA) has been prepared at the request of the Ohio Department of Transportation (ODOT) District 3 as a part of the programmed widening and pavement replacement of Interstate Route (IR) 90, LOR-90-10.76 - PID 107714 located from State Route (SR) 611 in the City of Avon to the Turnpike Plaza in Elyria Township. The purpose of this MOTAA is to provide ODOT with information for use in determining the preferred means of maintaining traffic on IR-90 and affected ramps during construction. This MOTAA also identifies constraints for both MOT alternatives considered—part-width and crossover construction.

This MOTAA has been prepared per applicable guidelines set forward in the ODOT Traffic Engineering Manual (TEM), specifically laid out in Section 630-5.

## 2.0 BACKGROUND INFORMATION

The scope of this MOTAA was to compare two MOT alternatives.

Alternative 1 – Part-Width construction with two lanes maintained in each direction on SR-2 and IR-90 from the SR-2 interchange to SR-611 and one lane on IR-90 from the Turnpike Plaza to the SR-2 interchange.

Alternative 2 – Crossover construction with two lanes maintained in each direction on SR-2 and IR-90 from the SR-2 interchange to SR-611 and one lane on IR-90 from the Turnpike Plaza to the SR-2 interchange.

## 3.0 PERMITTED LANE CLOSURES

Permitted Lane Closure Schedules (PLCS) are used to indicate the hours when at least one (1) lane of traffic can be closed in a work zone without in-depth investigation. Permitted Lane Closures (PLC) vary throughout the work zone on IR-90 and SR-2.

IR-90 has three (3) different PLCS within the project limits: Turnpike to SR-2, SR-2 to SR-57, and SR-57 to SR-611. The span of IR-90 between the Ohio Turnpike Gate and SR-2 allows one (1) lane to be maintained year-round. From SR-2 to SR-57 and from SR-57 to SR-611 on IR-90, no lanes are permitted to be closed during peak hours, but overnight lane reductions are permitted.

SR-2 has one (1) PLCS within the project limits: from Oak Point Road to IR-90. During the week, no lane closures are permitted on SR-2. However, on weekends from 9AM to 2PM, lanes may be reduced to one (1) lane. Temporary pavement is used in conjunction with portable concrete barrier to maintain two (2) eastbound lanes of traffic, and two (2) westbound lanes of traffic.

Permitted Lane Closure Tables showing the aforementioned information can be found in **Appendix H**. Due to ODOT releasing new PLC Schedules in early 2024, these may be subject to change.

## 4.0 DESCRIPTION OF ALTERNATIVES

### 4.1 Introduction

Options to maintain traffic included Part-Width (Alternative 1) and Crossover (Alternative 2) Construction. Detours for SR-611, SR-254 and SR-57 exit and entrance ramps and the SR-2 to westbound IR-90 movement are described in more depth in Section 6.0. The closing of the westbound SR-2 to westbound IR-90 system interchange ramp in both alternatives received MOTEC approval.

### 4.2 Alternative 1 - Part-Width Construction

Alternative 1 – Part-Width construction will maintain two lanes of traffic in each direction on IR-90 during the main phases of construction with westbound and eastbound ramp detours where necessary prior to the IR-90 and SR-2 split. On IR-90 west of the split, a singular lane of traffic can be maintained in each direction outside of the westbound IR-90 over eastbound SR-2 bridge closure. On SR-2 west of the split, eastbound traffic can be maintained via splitting the lanes under the IR-90 overpass and the SR-2 westbound diverging lanes; westbound traffic can be maintained utilizing temporary pavement.

Advantages of Alternative 1 include easier design and does not include crossovers apart from the SR-2 eastbound lane split and IR-90 eastbound west of the split.

The primary disadvantage of part-width construction is the amount of temporary pavement required to maintain the required number of lanes during construction. The existing outside shoulder does not satisfy the requirements for constant traffic loading and will need to be replaced with temporary pavement prior to the mainline construction. In addition to the outside shoulder needing to be replaced with temporary pavement, additional temporary pavement is required on the inside shoulder and in the median as well in areas such as through the IR-90 split and on SR-2 after the IR-90 split. Other disadvantages include difficulty constructing due to the number of MOT phases.

### 4.3 Alternative 2 - Crossover Construction

Alternative 2 – Crossover construction will maintain two lanes in each direction on IR-90 with westbound and eastbound ramp detours where necessary prior to the IR-90 and SR-2 split. On IR-90 west of the split, a singular lane of traffic can be maintained in each direction, outside of the westbound IR-90 over eastbound SR-2 bridge closure. On SR-2 west of the split, two lanes of traffic will be maintained in both directions. However, due to horizontal constraints on the eastbound bridge, this section will need to be constructed part-width.

Advantages of Alternative 2 include limited temporary pavement required during construction, more space for work to be performed, reduced number of phases for construction, easier and higher quality construction and the safest work zone for construction workers and the travelling public.

The primary disadvantage of crossover construction would be the construction and removal of crossovers during MOT phasing and the need to shift ramps at least once during construction phasing where they cross over the mainline.



## 5.0 SEQUENCE OF CONSTRUCTION

Both alternatives must be constructed across two and a half (2.5) years beginning in March of 2025 and ending in July of 2027. The existing roadway alignments will be maintained. Any ramp and gore work must maintain the ramps part-width with evening closures permissible.

Due to the length of the project (8 miles) it may be beneficial to break the project up into two phases to mitigate the potential for excessive delays or provide relief points. The first phase would start at SR-611 and end at SR-254, and the second phase would continue from SR-254 and end at Middle Ridge Road on SR-2 and the Turnpike Plaza on IR-90.

### 5.1 Alternative 1 – Part-Width Construction

Alternative 1 is comprised of three (3) to four (4) MOT Phases. East of the IR-90 and SR-2 split, the MOT scheme requires four (4) phases. On SR-2 west of the IR-90 and SR-2 split, the MOT scheme requires three (3) phases for bridge work, and four (4) phases for pavement work. On IR-90 west of the IR-90 and SR-2 split, the MOT scheme requires three (3) phases for pavement and bridge work.

Phase 1 – Due to the substandard pavement on the shoulder throughout the project length, the existing outside shoulder must be removed and replaced with temporary pavement that can withstand long-term traffic loading. The outside shoulder is 10' wide for a majority of the corridor. Replacing the existing outside shoulder reduces the amount of temporary pavement used in the graded median.

Beginning at the IR-90 and SR-2 split, the temporary pavement on the outside shoulder increases to 18'. On SR-2 west of the IR-90 and SR-2 split, the outside shoulders will be replaced with temporary pavement and have 11' of additional temporary pavement placed adjacent to assist in maintaining two (2) lanes of traffic. On IR-90 west of the SR-2 split, the westbound lanes will remain as is. Eastbound traffic will be reduced to one (1) 11' lane with 4' inside shoulders and 2' outside shoulders for evening closures. The 10' outside shoulder will be replaced with temporary pavement.

East of the IR-90 and SR-2 split on both eastbound and westbound lanes, there will be part-width ramp work and outside lane closures. Due to the PLCS, the outside lane closures and shoulder replacement will need to be done in the evening.

Phase 2 – East of the IR-90 and SR-2 split, both eastbound and westbound directions will have two (2) lanes with reduced lane widths of 11' and reduced shoulder widths of varying sizes. The existing pavement will be sawcut 2' off the face of the placed portable barrier (PB). The existing pavement inside of the PB will be removed and replaced with 26' of permanent pavement and 4' of additional temporary pavement. Temporary grading for a singular ditch will be maintained during construction to allow for positive drainage away from the roadway.

On IR-90 west of the SR-2 split, westbound lanes will be closed and traffic will follow the detour outlined in Sections 6.11. The existing westbound pavement will be removed and replaced. Eastbound traffic will maintain one (1) 11' lane with 2' shoulders on either side. 19' of existing outside pavement will be removed and replaced eastbound. Additionally, the westbound IR-90 bridge deck and railings over Murray Ridge Road will be removed and replaced; the eastbound IR-90 bridge deck and railings over Murray Ridge Road will be partially removed and replaced.

On SR-2 west of the IR-90 split, eastbound and westbound traffic will maintain two (2) 11' lanes with 2' shoulders on either side. Additionally, the two (2) lanes of eastbound traffic will be split ahead of the LOR-02-10.46 Bridge. One (1) lane will remain on the SR-2 eastbound pavement and one (1) will be crossed over to the SR-2 westbound pavement. Traffic will utilize the existing and temporary pavement to the outside and PB will be placed to the inside shoulders and existing pavement sawcut 2' from the inside face of the PB. 19' of existing pavement to the inside of the PB will be removed and replaced and an additional 11' of temporary pavement will be placed along the permanent pavement in the eastbound and westbound direction. Existing and temporary grading will be maintained for positive drainage away from the roadway.

Phase 3 – East of the IR-90 and SR-2 split, both directions of traffic will shift to the inside lanes upon completion of the inside permanent and temporary pavement. During this phase, reduced lane widths of 11' and shoulders will continue to be maintained. The remaining existing pavement and temporary pavement placed in Phase 1 will be removed and replaced with 30' of permanent pavement. The temporary ditch constructed in Phase 2 will continue to be maintained.

On IR-90 west of the SR-2 split, the westbound lanes will be re-opened. Eastbound traffic will move onto the inside pavement and will continue to have a reduced lane width of 11' with an inside 4' shoulder and 2' outside shoulder. The remaining 17' of existing and temporary pavement will be removed and replaced in the eastbound direction. The remaining eastbound IR-90 bridge deck and railings over Murray Ridge Road will be replaced.

On SR-2 west of the IR-90 split, eastbound and westbound traffic will be moved to the inside pavement constructed in Phase 2 and will continue to have a reduced lane widths of 11' and 2' shoulders. The temporary pavement placed during Phase 1 will be removed and the remaining pavement in both directions will be removed and replaced with 17' of permanent pavement. The eastbound lane split described in Phase 2 will continue to be utilized through the IR-90 and SR-2 split in this phase.

Phase 4 – During the last phase of construction, both eastbound and westbound directions east of the IR-90 and SR-2 split, will increase to three lanes, and return to a normal width of 12'. The outside shoulders will also be returned to normal width. Construction barrels will be placed in the inside shoulders 2' off the edge of the inside lane in both directions to allow for removal of the remaining temporary pavement and for permanent grading to be performed in the median.

On SR-2 west of the IR-90 SR-2 split, both eastbound and westbound directions return to two lanes with a normal width of 12'. The outside shoulder westbound is 10' and eastbound is 8'. The eastbound and westbound inside shoulders have a width of 4'. Construction barrels will be placed in the inside shoulders 2' off the edge of the inside lane in both directions to allow for removal of the remaining temporary pavement and for permanent grading to be performed in the median.



## 5.2 Alternative 2 – Crossover Construction

Alternative 2 is comprised of two (2) to four (4) MOT Phases. However, due to SR-2 not being widened there is a phase prior to mainline construction which needs to be completed to replace the outside shoulder with temporary—similar to Alternative 1. There are also nine (9) crossover locations across the span of the work zone. The crossover locations and descriptions of their uses can be found in **Appendix G**.

**Phase 1** – Beginning at the IR-90 and SR-2 split, in both the eastbound and westbound directions, temporary pavement must be placed in the existing shoulders due to existing substandard pavement; the westbound shoulders are 12' and will need an additional 6' of temporary pavement and the eastbound shoulders are 10'.

On SR-2 west of the IR-90 split, in both directions the outside 8' shoulder needs to be replaced with temporary pavement due to existing substandard pavement, an additional 13' of temporary pavement will be placed beyond the shoulder. Eastbound and westbound traffic will be reduced to one (1) 12' lane and a construction barrel will be placed 2' off the lane line. Due to the PLCS, the outside lane closure and shoulder replacement will need to be done in the evening.

On IR-90 west of the SR-2 split, westbound lanes will be closed, and traffic will follow the detours outlined in Sections 6.10. The existing westbound pavement will be removed and replaced. Eastbound traffic will maintain existing conditions. Additionally, the westbound IR-90 bridge deck and railings over Murray Ridge Road will be removed and replaced.

**Phase 2** – For both eastbound and westbound directions east of the IR-90 and SR-2 split, two lanes of traffic will be maintained with reduced lane widths of 11'. In the westbound direction, the existing outside shoulder width will be maintained. On the inside shoulder, portable barrier (PB) will be placed along the edge of shoulder to protect work occurring in the median within the clear zone. In the eastbound direction, the existing outside shoulder will also be maintained. PB will be placed 2' off the edge of the inside lane and existing pavement sawcut 2' off the inside face of the PB. Existing pavement will be removed and replaced with 18' of permanent pavement and 6' of temporary pavement. Temporary grading for a singular ditch will be maintained during construction to allow for positive drainage away from the roadway.

On IR-90 west of the SR-2 split, the westbound lanes will be re-opened. However, IR-90 eastbound traffic will be crossed over to the westbound pavement. Both eastbound and westbound will maintain one (1) 11' lane with 2' inside and outside shoulder widths. The existing eastbound pavement will be removed and replaced. Additionally, the eastbound IR-90 bridge deck and railings over Murray Ridge Road will be removed and replaced.

On SR-2 west of the IR-90 split, eastbound and westbound traffic will maintain two (2) 11' lanes with 2' shoulders on either side. Additionally, the two (2) lanes of eastbound traffic will be split ahead of the LOR-02-10.46 Bridge. One (1) lane will remain on the SR-2 eastbound pavement and one (1) will be crossed over to the SR-2 westbound pavement. Traffic will utilize the existing and temporary pavement to the outside and PB will be placed to the inside shoulders and existing pavement sawcut 2' from the inside face of the PB. 19' of existing pavement to the inside of the PB will be removed and replaced and an additional 11' of temporary pavement will be placed along the permanent pavement in the eastbound and westbound direction.

Existing and temporary grading will be maintained for positive drainage away from the roadway. Due to the horizontal constraint presented by the LOR-02-10.46 and Murray Ridge Road Bridges in the eastbound direction, SR-2 will need to be constructed part-width west of LOR-02-10.46 bridge.

**Phase 3** – Upon completion of the widening of the pavement in the eastbound direction, westbound traffic will be crossed over to the eastbound pavement. Crossover points can be seen in **Appendix G**. All lanes of traffic will maintain widths of 11'. The median will be protected with construction barrels offset 2' from the edge of the inside shoulder.

East of the IR-90 and SR-2 split, two lanes of traffic in each direction will be maintained and the existing westbound pavement will be removed and replaced with 56' of permanent pavement with permanent grading will be performed where appropriate in the median. During this phase, there may be periodic ramp closures. However, for the majority of construction, ramps will be able to access all points via crossovers as outlined in **Appendix G**.

On SR-2 west of the IR-90 split, eastbound and westbound traffic will be moved to the inside pavement constructed in Phase 2 and will continue to have a reduced lane widths of 11' and 2' shoulders. The temporary pavement placed during Phase 1 will be removed and the remaining pavement in both directions will be removed and replaced with 17' of permanent pavement. The eastbound lane split described in Phase 2 will not be utilized and all construction under the westbound IR-90 bridge is expected to be complete to allow eastbound and westbound traffic to function.

**Phase 4** – After completion of the permanent pavement in the westbound lanes, both directions of traffic will crossover to the new westbound pavement. All lanes of traffic will continue to maintain widths of 11'. The median will be protected with construction barrels placed along the inside of the edge of shoulder.

East of the IR-90 and SR-2 split, the existing pavement and temporary pavement in the eastbound direction will be removed and permanent pavement will be placed with a width of 38' to the outside of the permanent pavement previously placed in Phase 1 and any remaining permanent grading will be performed.

On SR-2 west of the IR-90 SR-2 split, both eastbound and westbound directions return to two lanes with a normal width of 12'. The outside shoulder westbound is 10' and eastbound is 8'. The eastbound and westbound inside shoulders have a width of 4'. Construction barrels will be placed in the inside shoulders 2' off the edge of the inside lane in both directions to allow for removal of the remaining temporary pavement and for permanent grading to be performed in the median.



## 6.0 DETOURS

### 6.1 SR-611 Westbound Entrance Ramp

The SR-611 westbound entrance ramp will not have any pavement work during this project apart from where proposed work needs to tie into existing conditions. For both the part-width and crossover alternatives, if a closure is needed it shall be an overnight closure. While the SR-611 westbound entrance ramp is closed, the SR-83 westbound entrance ramp must remain open.

The proposed detour for the IR-90 westbound entrance ramp at SR-611 has traffic head east on IR-90 at SR-611. The detour will continue eastbound on IR-90 and exit at SR-83. At the SR-83 exit, the detour will turn left and head north on SR-83. The detour then turns left onto IR-90 westbound from SR-83. This detour route is 4.0 miles and 5 minutes long.

### 6.2 SR-611 Eastbound Exit Ramp

The SR-611 eastbound exit ramp will not have any pavement work during this project apart from where proposed work needs to tie into existing conditions. For both the part-width and crossover alternatives, if a closure is needed it shall be an overnight closure. While the SR-611 eastbound exit ramp is closed, the SR-83 eastbound exit ramp must remain open.

The proposed detour for the IR-90 eastbound exit ramp at SR-611 will continue eastbound on IR-90 and exit at SR-83. At the SR-83 exit, the detour will turn left and head north on SR-83. The detour then turns left onto IR-90 westbound from SR-83 and continues west to the SR-611 exit. This detour route is 4.0 miles and 7 minutes long.

### 6.3 SR-254 Eastbound Exit Ramp

The SR-254 eastbound exit ramp will have existing pavement removed and replaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days and take place during Phase 3. While the SR-254 eastbound exit ramp is closed, the SR-57 eastbound exit ramp must remain open.

The proposed detour for the IR-90 eastbound exit ramp at SR-254 will leave IR-90 at the eastbound SR-611 exit ramp. At the SR-611 exit, the detour will turn left and head north on SR-611. The detour then turns left onto IR-90 westbound from SR-611 and continues to the westbound SR-254 exit. This detour route is 6.8 miles and 8 minutes long.

### 6.4 SR-254 Eastbound Entrance Ramp

The SR-254 eastbound entrance ramp will have the existing pavement removed and replaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days. For the part-width alternative, this work would take place during Phase 3 and for the crossover alternative would take place during Phase 2.

The proposed detour for the IR-90 eastbound entrance ramp at SR-254 will continue to travel eastbound on SR-254 until the SR-301 intersection. At the SR-301 intersection, the detour turns left and heads north on SR-301. The detour then turns right and heads south on SR-611 until the IR-90 eastbound entrance ramp. At the IR-90 eastbound entrance ramp, the detour turns left. This detour is 6.8 miles and 8 minutes long.

### 6.5 SR-254 Westbound Exit Ramp

The SR-254 westbound exit ramp will have the existing pavement removed and replaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days. For the part-width alternative, this work would take place during Phase 3 and for the crossover alternative would take place during Phase 2. While the SR-254 westbound exit ramp is closed, the SR-611 westbound exit ramp must remain open.

The proposed detour for the IR-90 westbound exit ramp at SR-254 will leave IR-90 at the westbound SR-57 exit ramp. The detour will turn left onto SR-57 traveling south. The detour then turns left onto IR-90 eastbound. The detour will travel east on IR-90 until the SR-254 exit. This detour is 5.4 miles and 7 minutes long.

### 6.6 SR-254 Westbound Entrance Ramp

The SR-254 westbound entrance ramp will have the existing pavement removed and replaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days. For the part-width alternative, this work would take place during Phase 3 and for the crossover alternative would take place during Phase 2. While the SR-254 eastbound entrance ramp is closed, the SR-57 westbound entrance ramp must remain open.

The proposed detour for the IR-90 westbound entrance ramp at SR-254 will continue to travel westbound on SR-254 until the SR-57 intersection. At the SR-57 intersection, the detour turns left and heads south on SR-57 until arriving at the westbound SR-57 entrance ramp to IR-90. The detour will turn right on IR-90. This detour is 3.1 miles and 7 minutes long.

### 6.7 SR-57 Eastbound Exit Ramp

The asphalt portion of the SR-57 eastbound exit ramp will be resurfaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days. For the part-width and crossover alternatives, this work would take place during Phase 2. While the SR-57 eastbound exit ramp is closed, the SR-254 eastbound exit ramp must remain open.

The proposed detour for the IR-90 eastbound exit ramp at SR-57 will depart IR-90 at the eastbound SR-254 exit ramp. At the SR-254 intersection, the detour will turn left and head west on SR-254. The detour will turn left onto IR-90 westbound. The detour will head west on IR-90 until the SR-57 exit. This detour is 5.4 miles and 7 minutes long.

### 6.8 SR-57 Eastbound Entrance Ramp

The asphalt portion of the SR-57 eastbound entrance ramp will be resurfaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days. For the part-width alternative, this work would take place during Phase 2 and for the crossover alternative would take place during Phase 3. While the SR-57 eastbound entrance ramp is closed, the SR-254 eastbound entrance ramp must remain open.



The proposed detour for the IR-90 eastbound entrance ramp at SR-57 will follow SR-57 north until the SR-254 intersection. At the SR-254 intersection, the detour turns right and heads east on SR-254. The detour then continues east until it encounters the SR-254 eastbound entrance ramp to IR-90. The detour route will turn left onto IR-90 eastbound. This detour is 3.1 miles and 7 minutes long.

### 6.9 SR-57 Westbound Exit Ramp

The asphalt portion of the SR-57 westbound exit ramp will be resurfaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days. For the part-width and crossover alternatives, this work would take place during Phase 2. While the SR-57 westbound exit ramp is closed, the SR-254 westbound exit ramp must remain open.

The proposed detour for the IR-90 westbound exit ramp at SR-57 will continue on IR-90 beyond SR-57 and continue onto SR-2. The detour will depart SR-2 at the westbound SR-58 exit ramp. At the SR-58 exit, the detour will make a left and travel south on SR-58. The detour will then turn left onto SR-2 eastbound and continue onto IR-90 eastbound until the SR-57 exit. This detour is 10.3 miles and 10 minutes long.

### 6.10 SR-57 Westbound Entrance Ramp

The SR-57 westbound entrance ramp will have the existing asphalt pavement removed and replaced during this project. This work is expected to be performed utilizing a part-width construction method. For the part-width and crossover alternatives, if a short-term closure is needed it shall be a maximum of 14 days. For the part-width alternative, this work would take place during Phase 2 and for the crossover alternative would take place during Phase 3. While the SR-57 westbound entrance ramp is closed, the SR-254 westbound entrance ramp must remain open.

The proposed detour for the IR-90 westbound entrance ramp at SR-57 will follow SR-57 north until the SR-254 intersection. At the SR-254 intersection, the detour turns right and heads east on SR-254. The detour then continues east until it encounters the SR-254 westbound entrance ramp to IR-90. The detour route will turn right onto IR-90 westbound. This detour is 2.7 miles and 6 minutes long.

### 6.11 Westbound SR-2 to Westbound IR-90

The westbound SR-2 ramp to westbound IR-90 ramp will have the existing pavement removed and replaced during this project. This work is expected to be performed utilizing a 90-day closure. While this movement is closed, the SR-57 westbound exit ramp must remain open.

The proposed detour for SR-2 westbound to IR-90 westbound split will depart SR-2/IR-90 at the westbound SR-57 exit ramp. At the SR-57 intersection, the detour will turn left and head south on SR-57. The detour will continue south until it encounters the IR-80 entrance ramp. The detour route will turn right onto the IR-80 entrance ramp and enter IR-80 westbound. This detour is 4.6 miles and 7 minutes long.

### 6.12 Murray Ridge Road

The IR-90 bridge over Murray Ridge Road deck and railing will be removed and replaced during this project. This work is expected to be performed utilizing a 240-day closure of Murray Ridge Road.

The proposed detour for northbound traffic on Murray Ridge Road will head south on Murray Ridge Road and turn left onto Griswold Road and head east. The detour will continue east on Griswold Road until the Lake Avenue intersection. At the Lake Avenue intersection traffic will turn left and head west on Lake Avenue until the Murray Ridge Road intersection. At the Murray Ridge Road intersection traffic will turn left and head south.

The proposed detour for southbound traffic on Murray Ridge Road will head north on Murray Ridge Road and turn right onto Lake Avenue and head east until the Griswold Road intersection. At the Griswold Road intersection, traffic will turn right and head west on Griswold Road. The detour will travel west until the Murray Ridge Road intersection. At the Murray Ridge Road intersection, traffic will turn left and head south.

The detour routes listed are 3.3 miles and 6 minutes long.

## 7.0 COST COMPARISON

The cost differences between the part-width alternative and the crossover alternative are substantial. Part-width construction alternative will cost approximately \$23,817,000 to construct and the crossover construction alternative will cost approximately \$13,914,000. Many of the costs between the alternatives are the same or similar. However, the temporary pavement needed to construct the part-width alternative is the primary difference between the two costs. The temporary pavement cost for part-width construction is roughly \$12.7 million, whereas the temporary pavement cost for the crossover alternative is only \$6.1 million. There are other incurred costs with the crossover alternative such as additional pavement marking, impact attenuators, and lighting costs, but not enough to make a substantial dent in the temporary pavement needed for part-width construction. See **Appendix D** for the Cost Comparison Table.

8.0 ROAD USER COST WORKSHEETS

8.1 SR-611 Westbound Entrance Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	4,498	593
Time to Drive Normal Route (Min):	1	1
Time to Drive Detour Route (Min):	6	6
Duration of Closure (Days):	1	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	5	5
Delay (Hours):	0.083	0.083
Delay Cost per Vehicle:	\$2.14	\$5.77
Delay Cost per Day:	\$9,621.95	\$3,424.09
Delay Cost for Closure Duration:	\$9,622	\$3,424
<b>Total Delay Cost for Closure Duration:</b>	<b>\$13,046</b>	
<b>Average Delay Cost per Day:</b>	<b>\$13,046</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 611 WB Entrance Ramp detour using EB SR 90 to NB SR 83 to WB IR 90. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022

8.2 SR-611 Eastbound Exit Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	4,491	491
Time to Drive Normal Route (Min):	3	3
Time to Drive Detour Route (Min):	7	7
Duration of Closure (Days):	1	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	4	4
Delay (Hours):	0.067	0.067
Delay Cost per Vehicle:	\$1.71	\$4.62
Delay Cost per Day:	\$7,685.58	\$2,268.10
Delay Cost for Closure Duration:	\$7,686	\$2,268
<b>Total Delay Cost for Closure Duration:</b>	<b>\$9,954</b>	
<b>Average Delay Cost per Day:</b>	<b>\$9,954</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 611 EB Exit Ramp detour using EB SR 90 to NB SR 83 to WB IR 90. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022



8.3 SR-254 Eastbound Exit Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
ADT of Detoured Section:	Car	B/C Truck
Time to Drive Normal Route (Min):	5,272	180
Time to Drive Detour Route (Min):	3	3
Duration of Closure (Days):	8	8
	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	5	5
Delay (Hours):	0.083	0.083
Delay Cost per Vehicle:	\$2.14	\$5.77
Delay Cost per Day:	\$11,277.66	\$1,039.35
Delay Cost for Closure Duration:	\$157,887	\$14,551
<b>Total Delay Cost for Closure Duration:</b>	<b>\$172,438</b>	
<b>Average Delay Cost per Day:</b>	<b>\$12,317</b>	

Notes (description, detour route, project phase reference, etc, as applicable) :	
SR 254 EB Exit Ramp detour using EB IR 90 to WB SR 611 to WB IR 90. Traffic from 2022 TIMS count.	

Form Version Date: 2/9/2022

8.4 SR-254 Eastbound Entrance Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
ADT of Detoured Section:	Car	B/C Truck
Time to Drive Normal Route (Min):	6,503	163
Time to Drive Detour Route (Min):	1	1
Duration of Closure (Days):	10	10
	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	9	9
Delay (Hours):	0.150	0.150
Delay Cost per Vehicle:	\$3.85	\$10.39
Delay Cost per Day:	\$25,039.75	\$1,694.14
Delay Cost for Closure Duration:	\$350,557	\$23,718
<b>Total Delay Cost for Closure Duration:</b>	<b>\$374,275</b>	
<b>Average Delay Cost per Day:</b>	<b>\$26,734</b>	

Notes (description, detour route, project phase reference, etc, as applicable) :	
SR 254 EB Entrance Ramp detour using SR 254 EB to SR 301 NB to SR 611 EB. Traffic from 2022 TIMS count.	

Form Version Date: 2/9/2022

8.5 SR-254 Westbound Exit Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	7,315	117
Time to Drive Normal Route (Min):	3	3
Time to Drive Detour Route (Min):	7	7
Duration of Closure (Days):	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	4	4
Delay (Hours):	0.067	0.067
Delay Cost per Vehicle:	\$1.71	\$4.62
Delay Cost per Day:	\$12,518.38	\$540.46
Delay Cost for Closure Duration:	\$175,257	\$7,566
<b>Total Delay Cost for Closure Duration:</b>	<b>\$182,824</b>	
<b>Average Delay Cost per Day:</b>	<b>\$13,059</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 254 WB Exit Ramp detour using WB IR 90 to SB SR 57 to EB IR 90. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022

8.6 SR-254 Westbound Entrance Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	4,479	135
Time to Drive Normal Route (Min):	1	1
Time to Drive Detour Route (Min):	7	7
Duration of Closure (Days):	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	6	6
Delay (Hours):	0.100	0.100
Delay Cost per Vehicle:	\$2.57	\$6.93
Delay Cost per Day:	\$11,497.57	\$935.42
Delay Cost for Closure Duration:	\$160,966	\$13,096
<b>Total Delay Cost for Closure Duration:</b>	<b>\$174,062</b>	
<b>Average Delay Cost per Day:</b>	<b>\$12,433</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 254 WB Entrance Ramp detour using WB SR 254 to SB SR 57. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022



8.7 SR-57 Eastbound Exit Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	9,131	509
Time to Drive Normal Route (Min):	1	1
Time to Drive Detour Route (Min):	7	7
Duration of Closure (Days):	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	6	6
Delay (Hours):	0.100	0.100
Delay Cost per Vehicle:	\$2.57	\$6.93
Delay Cost per Day:	\$23,439.23	\$3,526.87
Delay Cost for Closure Duration:	\$328,149	\$49,376
<b>Total Delay Cost for Closure Duration:</b>	<b>\$377,525</b>	
<b>Average Delay Cost per Day:</b>	<b>\$26,966</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 57 EB Exit Ramp detour using EB IR 90 to WB SR 254 to WB IR 90. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022

8.8 SR-57 Eastbound Entrance Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	6,545	373
Time to Drive Normal Route (Min):	1	1
Time to Drive Detour Route (Min):	7	7
Duration of Closure (Days):	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	6	6
Delay (Hours):	0.100	0.100
Delay Cost per Vehicle:	\$2.57	\$6.93
Delay Cost per Day:	\$16,800.98	\$2,584.52
Delay Cost for Closure Duration:	\$235,214	\$36,183
<b>Total Delay Cost for Closure Duration:</b>	<b>\$271,397</b>	
<b>Average Delay Cost per Day:</b>	<b>\$19,386</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 57 EB Entrance Ramp detour using NB SR 57 to EB SR 254. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022

8.9 SR-57 Westbound Exit Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	5,087	353
Time to Drive Normal Route (Min):	1	1
Time to Drive Detour Route (Min):	10	10
Duration of Closure (Days):	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	9	9
Delay (Hours):	0.150	0.150
Delay Cost per Vehicle:	\$3.85	\$10.39
Delay Cost per Day:	\$19,587.46	\$3,668.91
Delay Cost for Closure Duration:	\$274,224	\$51,365
<b>Total Delay Cost for Closure Duration:</b>	<b>\$325,589</b>	
<b>Average Delay Cost per Day:</b>	<b>\$23,256</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 57 WB Exit Ramp detour using WB SR 2 to SB SR 58 to EB SR 2. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022

8.10 SR-57 Westbound Entrance Ramp

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	8,861	516
Time to Drive Normal Route (Min):	1	1
Time to Drive Detour Route (Min):	6	6
Duration of Closure (Days):	14	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	5	5
Delay (Hours):	0.083	0.083
Delay Cost per Vehicle:	\$2.14	\$5.77
Delay Cost per Day:	\$18,955.12	\$2,979.48
Delay Cost for Closure Duration:	\$265,372	\$41,713
<b>Total Delay Cost for Closure Duration:</b>	<b>\$307,084</b>	
<b>Average Delay Cost per Day:</b>	<b>\$21,935</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 57 WB Entrance Ramp detour using NB SR 57 to EB SR 254. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022



8.11 SR-2 Westbound to IR-90 Westbound

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	2,355	1,451
Time to Drive Normal Route (Min):	4	4
Time to Drive Detour Route (Min):	7	7
Duration of Closure (Days):	90	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	3	3
Delay (Hours):	0.050	0.050
Delay Cost per Vehicle:	\$1.28	\$3.46
Delay Cost per Day:	\$3,022.64	\$5,027.00
Delay Cost for Closure Duration:	\$272,037	\$452,430
<b>Total Delay Cost for Closure Duration:</b>	<b>\$724,467</b>	
<b>Average Delay Cost per Day:</b>	<b>\$8,050</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
SR 2 WB to IR 90 WB detour using SB SR 57 to WB IR-80/90. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022

8.12 Murray Ridge Road

Work Zone User Cost Calculations		
Detour (Using Actual Drive Time)		
Project ID:	107714	
County-Route-Section:	LOR-90-10.76	
User Input:		
Construction Calendar Year:	2025	
	Car	B/C Truck
ADT of Detoured Section:	1,753	49
Time to Drive Normal Route (Min):	1	1
Time to Drive Detour Route (Min):	6	6
Duration of Closure (Days):	240	
Calculated Values:		
User Cost per Vehicle per Hour:	\$25.67	\$69.29
Delay (Min):	5	5
Delay (Hours):	0.083	0.083
Delay Cost per Vehicle:	\$2.14	\$5.77
Delay Cost per Day:	\$3,749.95	\$282.93
Delay Cost for Closure Duration:	\$899,988	\$67,904
<b>Total Delay Cost for Closure Duration:</b>	<b>\$967,893</b>	
<b>Average Delay Cost per Day:</b>	<b>\$4,033</b>	

**Notes** (description, detour route, project phase reference, etc, as applicable) :  
Murray Ridge Road detour using Griswold Road to Lake Avenue to Murray Ridge Road. Same for reverse direction. Traffic from 2022 TIMS count.

Form Version Date: 2/9/2022

## 9.0 Summary

In summary, the following information was determined from this MOTAA:

- Part-width construction will require a great deal of temporary pavement in the median and outside shoulders to construct, which will severely impact costs.
- Part-width construction will require three (3) to four (4) phases to construct.
- Crossover construction will require two (2) to four (4) phases to construct.
- Crossover construction will require some additional pavement and lighting throughout the work zone.
- The Crossover alternative offers the safest work zone between the two alternatives.
- Both Crossover and Part-Width alternatives have MOTEC approval for the westbound SR-2 to westbound IR-90 system interchange ramp.
- Both Crossover and Part-Width alternatives have similar PB requirements.



## Appendices

Appendix A: Work Zone Constraints (Form 696-1a)

Work Zone Constraints		
Constraint	Work Zone Alternatives	
	Part-Width	Crossover
Ability to meet Work Zone Policy	<b>Impact: Medium</b>	<b>Impact: Medium</b>
	During Phase 1, nightly lane closures will need to occur to place temporary pavement. Additionally, the westbound SR-2 to westbound IR-90 system interchange ramp will be closed for a portion of construction and have MOTEC approval.	During Phase 1, nightly lane closures will need to occur to place temporary pavement. Additionally, the westbound SR-2 to westbound IR-90 system interchange ramp will be closed for a portion of construction and have MOTEC approval.
Ability to Maintain All Accesses	<b>Impact: Medium</b>	<b>Impact: Medium</b>
	While ramps are open for a majority of construction phases, there are ramp closures throughout the work zone as listed in the Ramp Information Table. Due to these closures, detours are described in Section 6 and shown in Appendix H. Ramp closures will need to be sequenced such that there are not successive ramps closed at the same time to ensure efficient emergency vehicle access.	Apart from the westbound SR-2 to IR-90 system interchange ramp, all ramps will remain open throughout all phases of construction via crossovers. However, in order to construct mainline pavement where ramps cross, ramps will need to be shifted at least once. Any service ramp work that needs to be performed will be done within the allowed closure window in the Ramp Information Table or via part-width construction to maintain access.
Ability to Provide Required On-Ramp Merge Decision Sight Distance	<b>Impact: Medium</b>	<b>Impact: Low</b>
	Ramp widths will be reduced to ensure there is enough horizontal clearance on the mainline for two (2) lanes to be maintained. Given the design of the ramps and MOT standards, Decision Sight Distance may not be sufficient in the all work zones per SCD MT-98 Series.	Ramp widths will be reduced to ensure there is enough horizontal clearance on the mainline for two (2) lanes to be maintained. Given the design of the ramps and MOT standards, Decision Sight Distance will be sufficient in the work zones. Additionally, in phases where traffic is on the opposite side of the ramp and must utilize a crossover, Decision Sight Distance will be sufficient.
Right-of-Way Impacts	<b>Impact: None</b>	<b>Impact: None</b>
	No Right-of-Way impacts are expected on this project	No Right-of-Way impacts are expected on this project
Environmental Impacts	<b>Impact: None</b>	<b>Impact: None</b>
	No environmental impacts are expected on this project	No environmental impacts are expected on this project
Bridge Widths	<b>Impact: None</b>	<b>Impact: None</b>
	Bridge widths will not be impacted by this project	Bridge widths will not be impacted by this project



Significant Impacts for Construction Duration and/or Construction Costs	<b>Impact: High</b>	<b>Impact: Medium</b>
	High quantities of temporary pavement add extra phases add significant costs to this alternative. Temporary pavement alone adds millions of dollars to the cost. Due to the amount of temporary pavement being placed and removed, there is a significant amount of time being spent in early phasing that may cause delays on mainline permanent pavement placement.	The work zone requires a total of 9 crossovers adding almost \$400,000 to the cost of the project in addition to extra impact attenuators. However, the crossovers should not add additional time to the construction timeline.
Significant impacts to earthwork, retaining walls, shoulder buildup, pier clearances, profile differences, etc.	<b>Impact: Medium</b>	<b>Impact: Medium</b>
	Due to the nature of this project and adding an additional lane to the inside, the existing mounded median with two ditches is no longer feasible and will need to be replaced with new median grading and a singular ditch	Due to the nature of this project and adding an additional lane to the inside, the existing mounded median with two ditches is no longer feasible and will need to be replaced with new median grading and a singular ditch
Ability to Maintain Existing Drainage and Lighting Systems	<b>Impact: Medium</b>	<b>Impact: Medium</b>
	Existing lighting systems should not be impacted by this project. Existing drainage systems will be modified from two (2) ditches to a singular ditch in the median	Existing lighting systems should not be impacted by this project. However, in the areas where crossovers occur, temporary lighting will be placed. Existing drainage systems will be modified from two (2) ditches to a singular ditch in the median
Constructability; and Construction Equipment Access	<b>Impact: Medium</b>	<b>Impact: Low</b>
	Due to the amount of temporary pavement required, constructability for this alternative is a bit more difficult. Additionally, equipment is restricted to the median only and outside shoulders only at any given time. Because of this, if equipment needs to be moved from one side to another it could be more difficult or require extra equipment on site.	Crossover construction prior to construction may be challenging. However, due to having unrestricted access on one side of the roadway at any time, crossover construction allows more flexibility and ease of access for construction equipment and more seamless construction.
Location of Crossovers (e.g., Can crossovers be located near the project?)	<b>Impact: None</b>	<b>Impact: Medium</b>
	Part-width construction does not require crossovers	There are nine (9) crossovers suggested for this project. Appendix G contains a crossover location map
What are the Access Impacts to Important Traffic Generators such as Hospitals, Fire Departments, Industries, Sports Arenas, etc.	<b>Impact: Medium</b>	<b>Impact: Medium</b>
	All major hospitals are to the east of the project and would be minimally impacted by ramp closures. Lorain County Community College would be impacted by SR-254 ramp closures. There is a fire department and Elyria Hospital located off of SR-57 which would be impacted by ramp closures. The Lake Erie Crushers' Stadium is located off of SR-611 and would be minimally impacted by ramp closures	All major hospitals are to the east of the project and would be minimally impacted by ramp closures. Lorain County Community College would be impacted by SR-254 ramp closures. There is a fire department and Elyria Hospital located off of SR-57 which would be impacted by ramp closures. The Lake Erie Crushers' Stadium is located off of SR-611 and would be minimally impacted by ramp closures
For Concrete Pavements, the Longitudinal Joints must be Located at the Lane Lines.	<b>Impact: None</b>	<b>Impact: None</b>
	Not applicable to this project	Not applicable to this project
Exit Ramps - Can the existing number of ramp lanes be maintained?	<b>Impact: None</b>	<b>Impact: None</b>
	When ramps are under construction, part-width access must be maintained at all times to maintain one (1) lane, plus turn lanes at ramp termini where feasible.	When ramps are under construction, part-width access must be maintained at all times to maintain one (1) lane, plus turn lanes at ramp termini where feasible.

\* All constraints that require any additions need to have a cost estimate associated with the alternative.

Appendix B: Bridge Information (Form 696-2a)

Description								Part-Width Construction			Crossover Construction		
BRIDGE NAME	STATION (APPROX.)	EXTENT OF WORK	TYPE OF BRIDGE	LENGTH OF BRIDGE (FT)	EXISTING PIER SPACING	EXISTING BRIDGE WIDTH (FT)	FUTURE BRIDGE WIDTH (FT)	WIDTH NEEDED FOR PART-WIDTH (FT)	COST OF 32" PCB BRIDGE MOUNTED	COST OF ADDITIONAL BRIDGE WIDENING	WIDTH NEEDED FOR CROSSOVER (FT)	COST OF 32" PCB BRIDGE MOUNTED	COST OF ADDITIONAL BRIDGE WIDENING
French Creek (L)	967+00	Deck Sealing	Overpass	105	32-40-32	87.65' - 89.90'	87.65' - 89.90'	87.65' - 89.90'	\$0	N/A	87.65' - 89.90'	\$0	N/A
French Creek (R)	967+00	Deck Sealing	Overpass	105	32-40-32	72.58' - 76.21'	72.58' - 76.21'	72.58' - 76.21'	\$0	N/A	72.58' - 76.21'	\$0	N/A
NS Railroad (L)	928+00	N/A	Overpass	160.75	48-66.75-48	60'	60'	60'	\$0	N/A	60'	\$0	N/A
NS Railroad (R)	928+00	N/A	Overpass	173.8	50.5-69.25-50.5	60'	60'	60'	\$0	N/A	60'	\$0	N/A
Ford Road (L)	746+50	Deck Sealing & Rail Repair	Overpass	151.5	43.75-64-43.75	62'	62'	62'	\$0	N/A	62'	\$0	N/A
Ford Road (R)	746+50	Deck Sealing & Rail Repair	Overpass	179	52.5-73.5-53	62'	62'	62'	\$0	N/A	62'	\$0	N/A
Black River (L)	737+50	Deck Sealing & Rail Repair	Overpass	363	122.17-140-101.17	64'	64'	64'	\$0	N/A	64'	\$0	N/A
Black River (R)	737+50	Deck Sealing & Rail Repair	Overpass	363	122.17-140-101.17	64'	64'	64'	\$0	N/A	64'	\$0	N/A
West River Road (L)	700+00	Deck Sealing	Overpass	98	93.5	68'	68'	68'	\$0	N/A	68'	\$0	N/A
West River Road (R)	700+00	Deck Sealing	Overpass	98.1	93.5	68'	68'	68'	\$0	N/A	68'	\$0	N/A
SR-57 (L)	682+00	Deck Sealing	Overpass	182	88.5-88.5	60'	60'	60'	\$0	N/A	60'	\$0	N/A
SR-57 (R)	682+00	Deck Sealing	Overpass	182	88.5-88.5	60'	60'	60'	\$0	N/A	60'	\$0	N/A
CSX Railroad (L)	619+50	Deck Sealing & Rail Repair	Overpass	145	43-57-43	60'	60'	60'	\$0	N/A	60'	\$0	N/A
CSX Railroad (R)	619+50	Deck Sealing & Rail Repair	Overpass	145	43-57-43	60'	60'	60'	\$0	N/A	60'	\$0	N/A
Lake Avenue (L)	613+25	Deck Sealing & Rail Repair	Overpass	166.6	48-68.5-48	60'	60'	60'	\$0	N/A	60'	\$0	N/A
Lake Avenue (R)	613+25	Deck Sealing & Rail Repair	Overpass	163	47-67-47	60'	60'	60'	\$0	N/A	60'	\$0	N/A
SR-2	577+50	N/A	Overpass	227	60.47-93-64.96	41'	41'	41'	\$0	N/A	41'	\$0	N/A
Murray Ridge Road (L)	565+85	Deck Replacement	Overpass	129	35.5-51-40.5	42'	42'	42'	\$0	N/A	42'	\$0	N/A
Murray Ridge Road (R)	565+60	Deck Replacement	Overpass	122	35-50-35	42'	42'	42'	\$3,294	N/A	42'	\$0	N/A
Murray Ridge Road (L) (SR 2)	564+30	N/A	Overpass	166.8	49-68.5-49	50'	50'	50'	\$0	N/A	50'	\$0	N/A
Murray Ridge Road (R) (SR 2)	564+50	N/A	Overpass	170.4	49-68.5-49	50'	50'	50'	\$0	N/A	50'	\$0	N/A
LOR-02-10.46 (L)	552+50	N/A	Overpass	178.4	54-68-54	50'	50'	50'	\$0	N/A	50'	\$0	N/A
LOR-02-10.46 (R)	552+50	N/A	Overpass	178.4	54-68-54	40'	40'	40'	\$0	N/A	40'	\$0	N/A
								<b>Total PCB Costs</b>	<b>\$3,294</b>		<b>Total PCB Costs</b>	<b>\$0</b>	



Appendix C: Ramp Information (Form 696-3a)

RAMP DESIGNATION	NUMBER OF LANES	RAMP VOLUME (% TRUCKS)	RAMP CLOSURE														DETOUR		
			PART-WIDTH								CROSSOVER								
			PHASE 1		PHASE 2		PHASE 3		PHASE 4		PHASE 1		PHASE 2		PHASE 3				
			DURATION OF CLOSURE	DECISION SIGHT DISTANCE (FT)	DURATION OF CLOSURE	DECISION SIGHT DISTANCE (FT)	DURATION OF CLOSURE	DECISION SIGHT DISTANCE (FT)	DURATION OF CLOSURE	DECISION SIGHT DISTANCE (FT)	DURATION OF CLOSURE	DECISION SIGHT DISTANCE (FT)	DURATION OF CLOSURE	DECISION SIGHT DISTANCE (FT)	DURATION OF CLOSURE	DECISION SIGHT DISTANCE (FT)			
IR-90 WB Entrance Ramp from SR 611	1	5091 (12%)	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	EB IR-90 to NB SR-83 to WB IR-90
IR-90 EB Exit Ramp to SR 611	1	4982 (10%)	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	Overnight	1220'	EB IR-90 to NB SR-83 to WB IR-90
IR-90 EB Exit Ramp to SR 254	1	5452 (3%)	N/A	800'	N/A	800'	14	800'	N/A	800'	N/A	800'	N/A	800'	14	800'	14	800'	EB IR-90 to WB SR-611 to WB IR-90
IR-90 EB Entrance Ramp from SR 254	1	6666 (2%)	N/A	1220'	N/A	1220'	14	1220'	N/A	1220'	N/A	1220'	14	1220'	N/A	1220'	N/A	1220'	EB SR-254 to NB SR-301 to SR-611 EB to EB IR-90
IR-90 WB Exit Ramp to SR 254	1	7431 (2%)	N/A	800'	N/A	800'	14	800'	N/A	800'	N/A	800'	14	800'	N/A	800'	N/A	800'	WB IR-90 to SB SR-57 to EB IR-90
IR-90 WB Entrance Ramp from SR 254	1	4614 (3%)	N/A	1220'	N/A	1220'	14	1220'	N/A	1220'	N/A	1220'	14	1220'	N/A	1220'	N/A	1220'	WB SR-254 to SB SR-57
IR-90 EB Exit Ramp to SR 57	1	9640 (5%)	N/A	800'	14	800'	N/A	800'	N/A	800'	N/A	800'	14	800'	N/A	800'	N/A	800'	EB IR-90 to WB SR-254 to WB IR-90
IR-90 EB Entrance Ramp from SR 57	1	6918 (5%)	N/A	1220'	14	1220'	N/A	1220'	N/A	1220'	N/A	1220'	N/A	1220'	14	1220'	14	1220'	NB SR-57 to EB SR-254
IR-90 WB Exit Ramp to SR 57	1	5440 (6%)	N/A	800'	14	800'	N/A	800'	N/A	800'	N/A	800'	14	800'	N/A	800'	N/A	800'	WB SR-2 to SB SR-58 to EB SR-2
IR-90 WB Entrance ramp from SR 57	1	9337 (6%)	N/A	1220'	14	1220'	N/A	1220'	N/A	1220'	N/A	1220'	N/A	1220'	14	1220'	14	1220'	NB SR-57 to EB SR-254

Appendix D: Cost Comparison Table (Form 696-4a)

Part-Width Construction				
Item	Quantity	Unit	Unit Price	Total
Work Zone Traffic Signals	1	Each	\$20,000.00	\$20,000.00
Work Zone Lane Line, Class I, 6", 642 Paint	32.88	Mile	\$760.00	\$24,987.88
<b>Mainline IR-90</b>	<b>27.27</b>	<b>Mile</b>		
Phase 1	0.00	Mile		
Phase 2	13.64	Mile		
Phase 3	13.64	Mile		
Phase 4	0.00	Mile		
<b>SR-2 after IR-90 Split</b>	<b>4.85</b>	<b>Mile</b>		
Phase 1	0.00	Mile		
Phase 2	2.42	Mile		
Phase 3	2.42	Mile		
Phase 4	0.00	Mile		
<b>IR-90 after SR-2 Split</b>	<b>0.00</b>	<b>Mile</b>		
Phase 1	0.00	Mile		
Phase 2	0.00	Mile		
Phase 3	0.00	Mile		
<b>Crossover Lane Lines</b>	<b>0.76</b>	<b>Mile</b>		
Work Zone Edge Line, Class I, 6", 642 Paint	70.68	Mile	\$1,500.00	\$106,022.73
<b>Mainline IR-90</b>	<b>54.55</b>	<b>Mile</b>		
Phase 1	0.00	Mile		
Phase 2	27.27	Mile		
Phase 3	27.27	Mile		
Phase 4	0.00	Mile		
<b>SR-2 after IR-90 Split</b>	<b>9.70</b>	<b>Mile</b>		
Phase 1	0.00	Mile		
Phase 2	4.85	Mile		
Phase 3	4.85	Mile		
Phase 4	0.00	Mile		
<b>IR-90 after SR-2 Split</b>	<b>4.92</b>	<b>Mile</b>		
Phase 1	0.00	Mile		
Phase 2	2.46	Mile		
Phase 3	2.46	Mile		
<b>Crossover Edge Lines</b>	<b>1.52</b>	<b>Mile</b>		
Crossover with Lighting	2	Each	\$46,000.00	\$92,000.00
Law Enforcement Officer with Patrol Car for Assistance	1,000	Hour	\$80.00	\$80,000.00

Temporary Pavement	55,125	Cu Yd	\$230.00	\$12,678,681.85
<b>Mainline IR-90</b>	<b>35,296</b>	<b>Cu Yd</b>		
<b>Pavement at IR-90/SR-2 Split</b>	<b>1,776</b>	<b>Cu Yd</b>		
<b>IR-90 after SR-2 Split</b>	<b>2,112</b>	<b>Cu Yd</b>		
<b>SR-2 after IR-90 Split</b>	<b>15,645</b>	<b>Cu Yd</b>		
<b>Pavement already widened</b>	<b>296</b>	<b>Cu Yd</b>		
<b>Crossover</b>	<b>296</b>	<b>Cu Yd</b>		
Portable Barrier, Unanchored	206,678	Feet	\$15.00	\$3,100,170.00
<b>Mainline IR-90</b>	<b>144,000</b>	<b>Feet</b>		
Phase 1	0	Feet		
Phase 2	72,000	Feet		
Phase 3	72,000	Feet		
Phase 4	0	Feet		
<b>SR-2 after IR-90 Split</b>	<b>28,800</b>	<b>Feet</b>		
Phase 1	0	Feet		
Phase 2	12,800	Feet		
Phase 3	16,000	Feet		
Phase 4	0	Feet		
<b>IR-90 after SR-2 Split</b>	<b>26,000</b>	<b>Feet</b>		
Phase 1	0	Feet		
Phase 2	13,000	Feet		
Phase 3	13,000	Feet		
<b>Crossover</b>	<b>8,000</b>	<b>Feet</b>		
Portable Barrier, Anchored	122	Feet	\$27.00	\$3,294.00
Phase 1	0	Feet		
Phase 2	122	Feet		
Phase 3	0	Feet		
Phase 4	0	Feet		
Work Zone Impact Attenuator	40	Each	\$2,300.00	\$92,000.00
Subtotal				\$16,198,000
30% Contingency				\$4,860,000
Subtotal				\$21,058,000
13.10% Inflation for 2025-2027 construction				\$2,759,000
Total				\$23,817,000
Construction Duration				28 Months






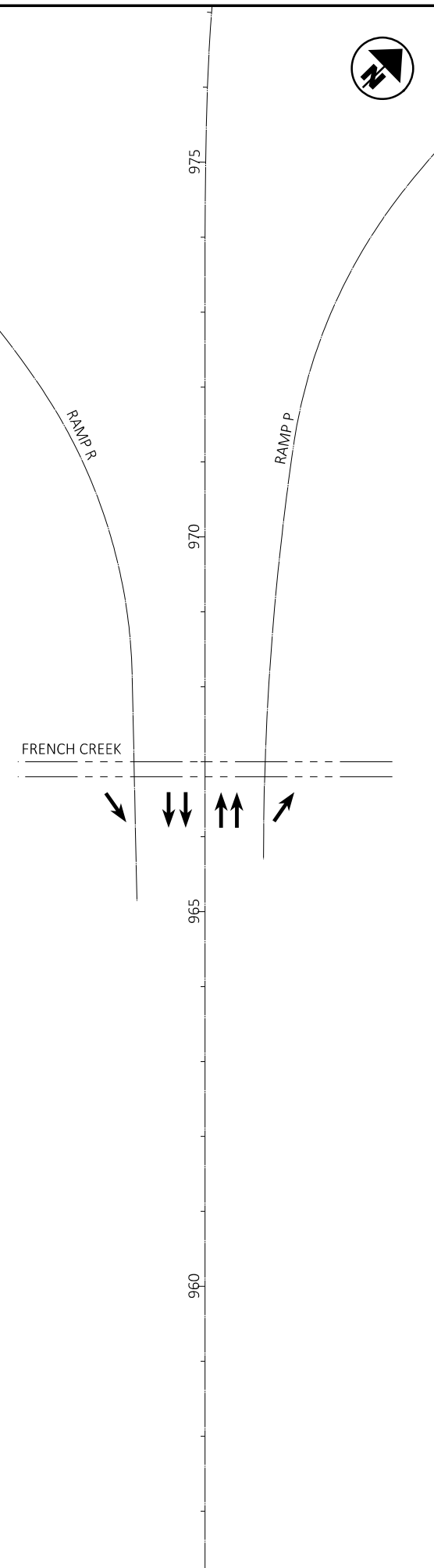
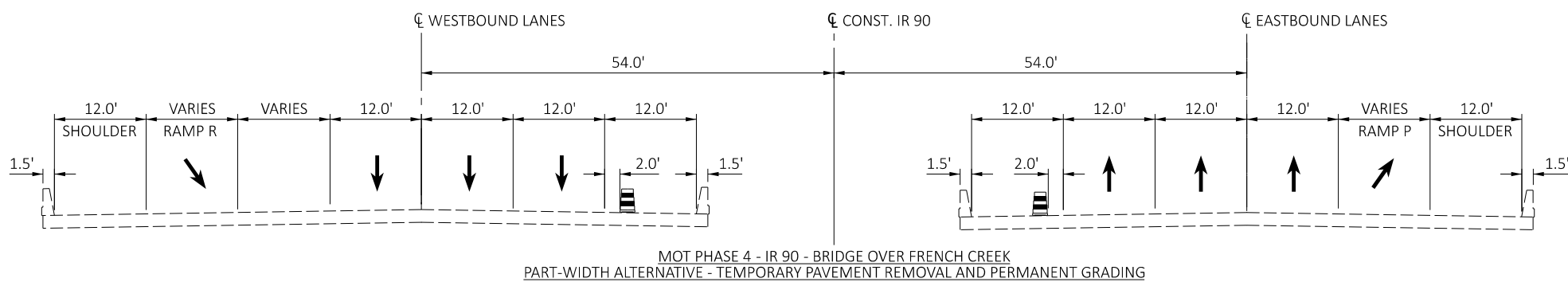
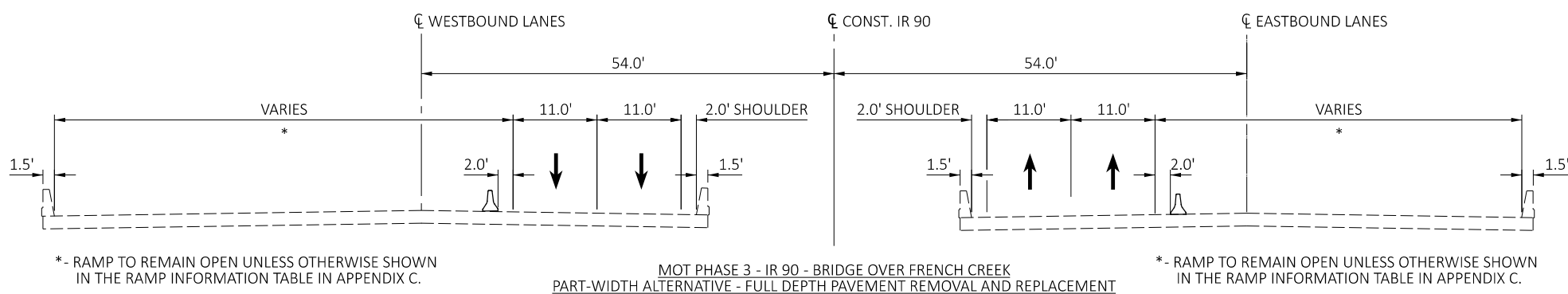
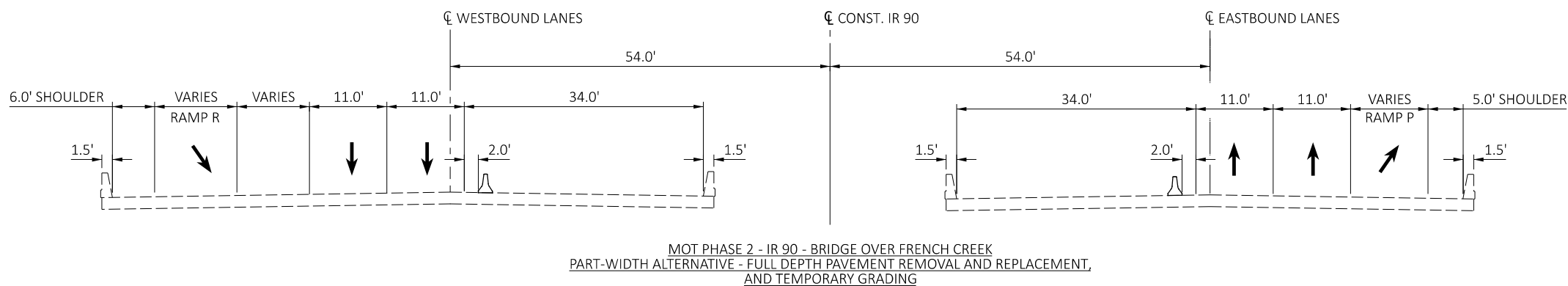
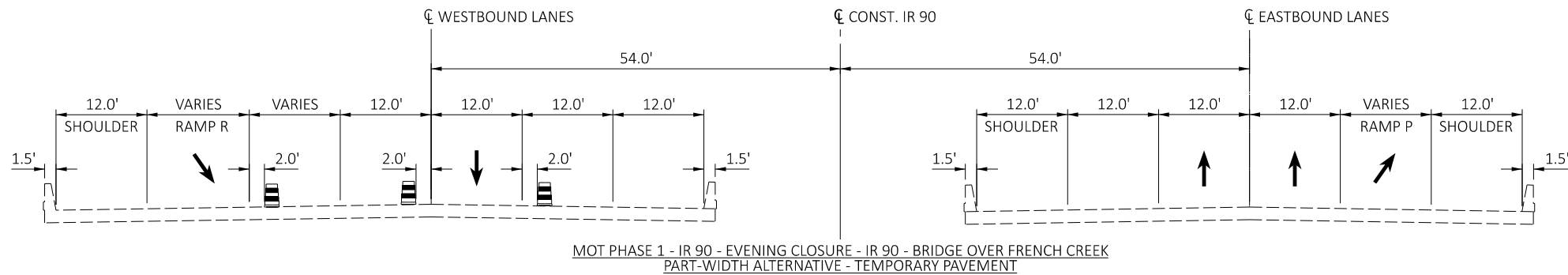
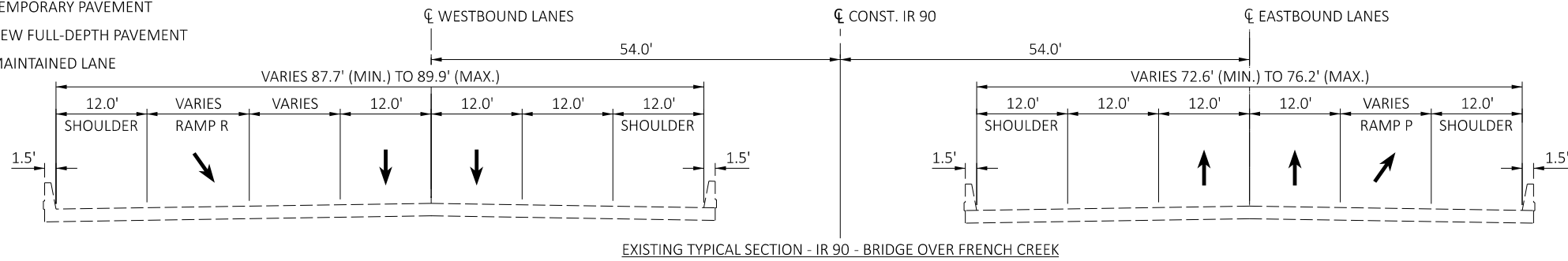
Cross Over Construction				
Item	Quantity	Unit	Unit Price	Total
Work Zone Traffic Signals	1	Each	\$20,000.00	\$20,000.00
Work Zone Lane Line, Class I, 6", 642 Paint	35.15	Mile	\$760.00	\$26,715.15
<b>Mainline IR-90</b>	27.27	Mile		
Phase 1	6.82	Mile		
Phase 2	6.82	Mile		
Phase 3	13.64	Mile		
<b>SR-2 after IR-90 Split</b>	4.85	Mile		
Phase 1	2.42	Mile		
Phase 2	2.42	Mile		
Phase 3	0.00	Mile		
<b>IR-90 after SR-2 Split</b>	0.00	Mile		
Phase 1	0.00	Mile		
Phase 2	0.00	Mile		
<b>Crossover Lane Lines</b>	3.03	Mile		
Work Zone Edge Line, Class I, 6", 642 Paint	75.98	Mile	\$1,500.00	\$113,977.27
<b>Mainline IR-90</b>	47.73	Mile		
Phase 1	6.82	Mile		
Phase 2	13.64	Mile		
Phase 3	27.27	Mile		
<b>SR-2 after IR-90 Split</b>	9.70	Mile		
Phase 1	4.85	Mile		
Phase 2	4.85	Mile		
Phase 3	0.00	Mile		
<b>IR-90 after SR-2 Split</b>	4.92	Mile		
Phase 1	0.00	Mile		
Phase 2	4.92	Mile		
<b>Crossover Edge Lines</b>	13.64	Mile		
Crossover with Lighting	9	Each	\$46,000.00	\$414,000.00
Law Enforcement Officer with Patrol Car for Assistance	800	Hour	\$80.00	\$64,000.00

Temporary Pavement	26,395	Cu Yd	\$230.00	\$6,070,824.44
<b>Mainline IR-90</b>	7,331	Cu Yd		
<b>Pavement at IR-90/SR-2 Split</b>	2,234	Cu Yd		
<b>IR-90 after SR-2 Split</b>	0	Cu Yd		
<b>SR-2 after IR-90 Split</b>	15,645	Cu Yd		
<b>Pavement already widened</b>	296	Cu Yd		
<b>Crossover</b>	1,185	Cu Yd		
Portable Barrier, Unanchored	180,140	Feet	\$15.00	\$2,702,100.00
<b>Mainline IR-90</b>	109,640	Feet		
Phase 1	37,640	Feet		
Phase 2	36,000	Feet		
Phase 3	36,000	Feet		
<b>SR-2 after IR-90 Split</b>	38,500	Feet		
Phase 1	0	Feet		
Phase 2	16,000	Feet		
Phase 3	16,000	Feet		
<b>IR-90 after SR-2 Split</b>	6,500	Feet		
Phase 1	0	Feet		
Phase 2	6,500	Feet		
<b>Crossover</b>	32,000	Feet		
Portable Barrier, Anchored	0	Feet	\$27.00	\$0.00
Phase 1	0	Feet		
Phase 2	0	Feet		
Phase 3	0	Feet		
Work Zone Impact Attenuator	22	Each	\$2,300.00	\$50,600.00
<b>Subtotal</b>				\$9,463,000
<b>30% Contingency</b>				\$2,839,000
<b>Subtotal</b>				\$12,302,000
<b>13.10% Inflation for 2025-2027 construction</b>				\$1,612,000
<b>Total</b>				\$13,914,000
<b>Construction Duration</b>				26 Months

Appendix E: Part-Width MOT Typical Sections

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






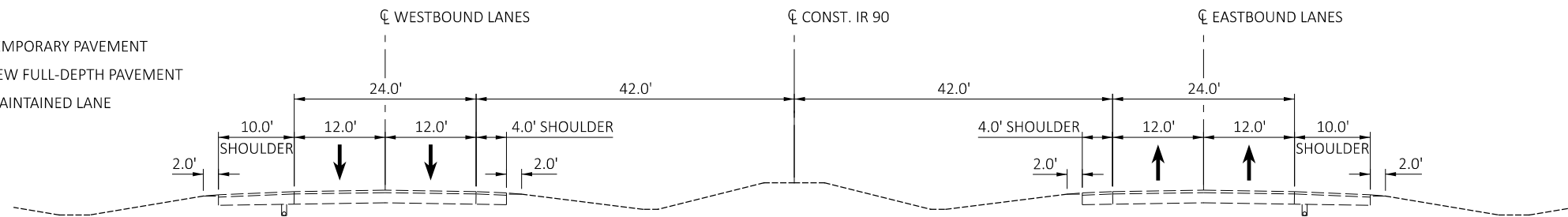
MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER FRENCH CREEK

DESIGN AGENCY	
	
CHAGRIN VALLEY ENGINEERING, LTD.	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.01	27

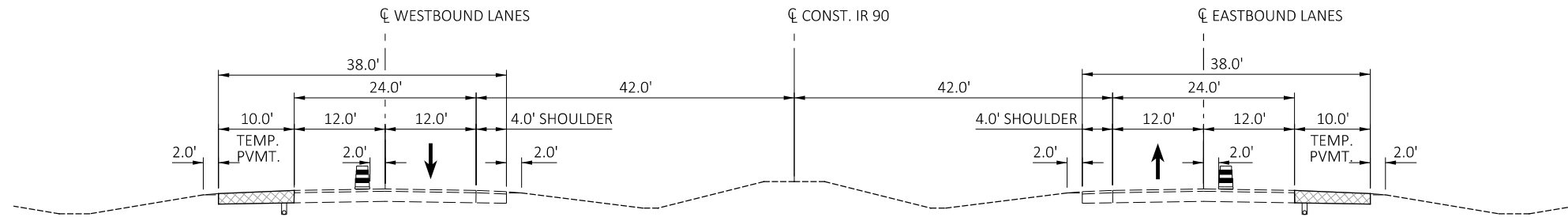


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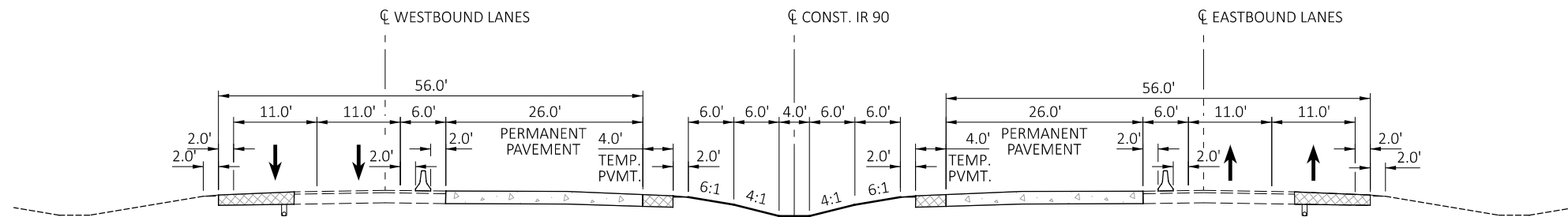
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



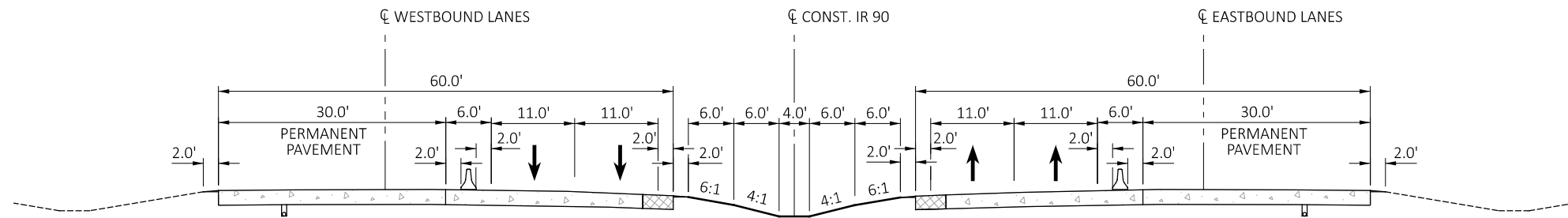
EXISTING TYPICAL SECTION - IR 90 - BETWEEN SR 254 AND SR 611



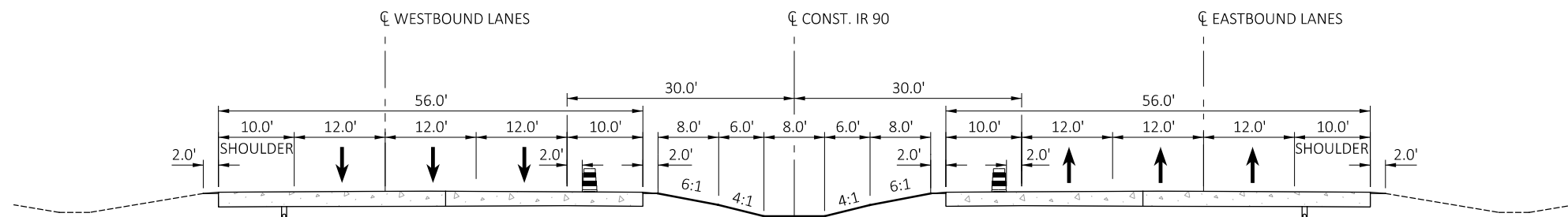
MOT PHASE 1 - EVENING CLOSURE - IR 90 - BETWEEN SR 254 AND SR 611  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



MOT PHASE 2 - IR 90 - BETWEEN SR 254 AND SR 611  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, TEMPORARY PAVEMENT, AND TEMPORARY GRADING



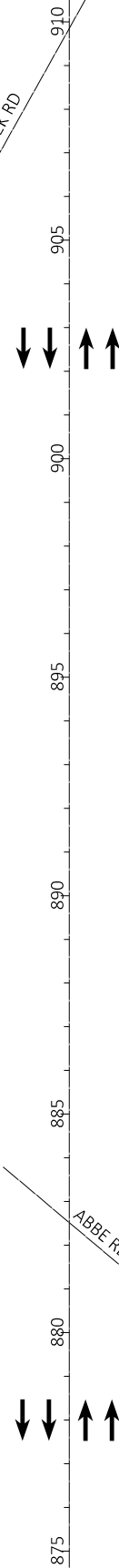
MOT PHASE 3 - IR 90 - BETWEEN SR 254 AND SR 611  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - BETWEEN SR 254 AND SR 611  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



FRENCH CREEK RD



ABBE RD

MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BETWEEN SR 254 AND SR 611

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

CWP 12/14/23




PROJECT ID

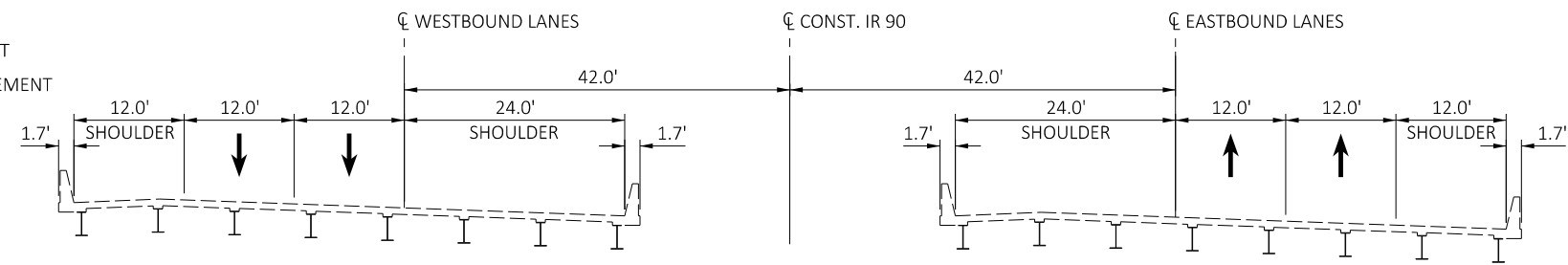
107714

SHEET TOTAL

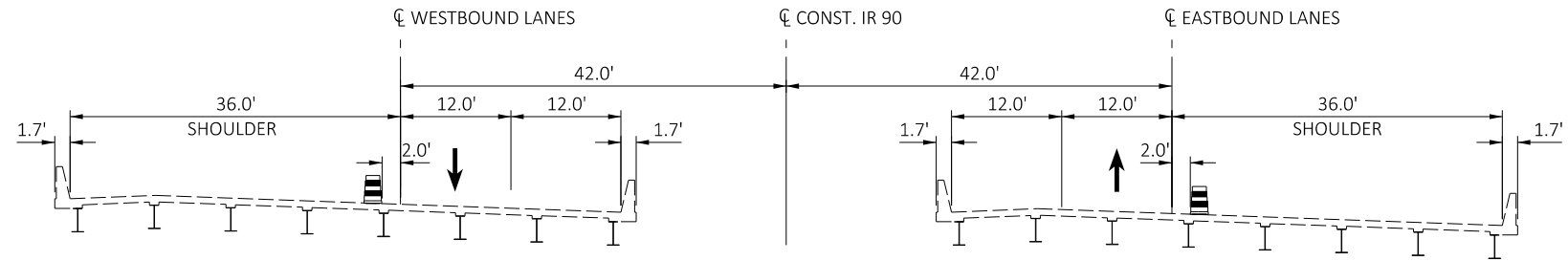
P.02 27

LEGEND

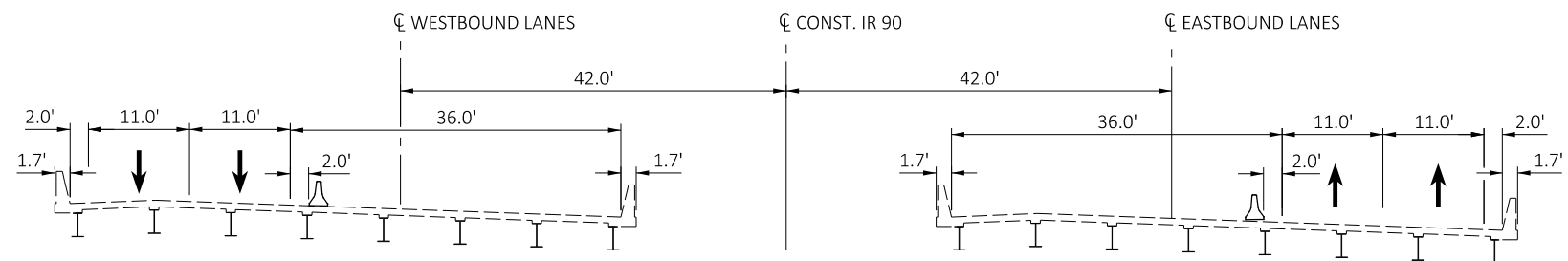
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



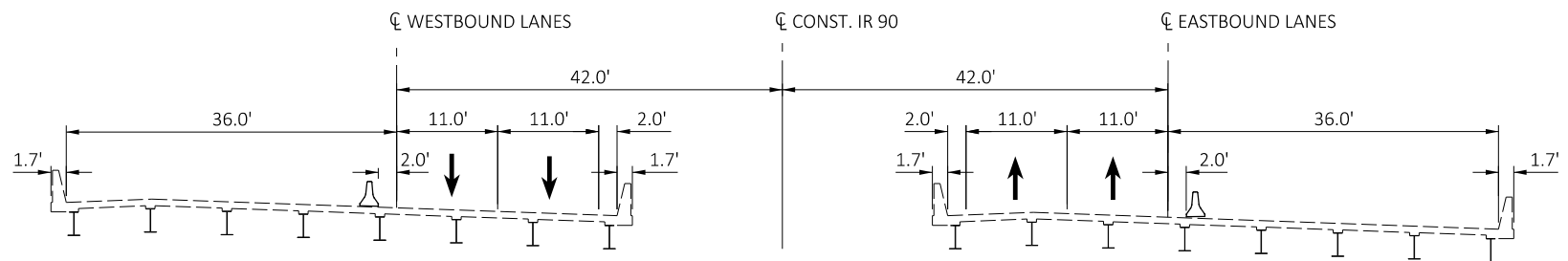
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER NS RAILROAD



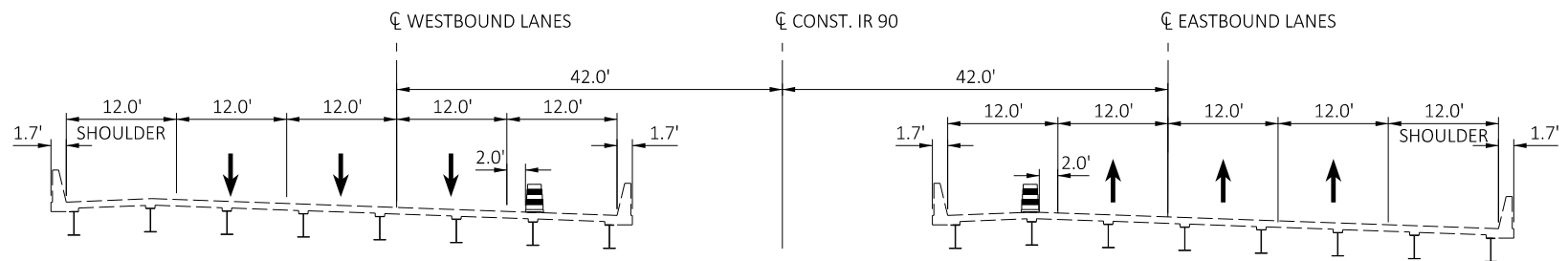
MOT PHASE 1 - EVENING CLOSURE - IR 90 - BRIDGE OVER NS RAILROAD  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



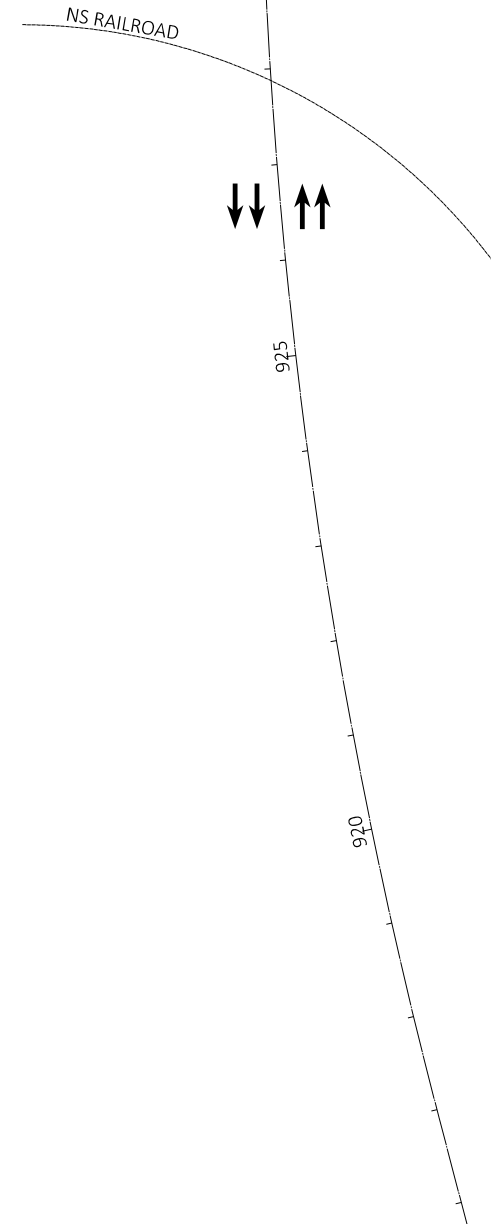
MOT PHASE 2 - IR 90 - BRIDGE OVER NS RAILROAD  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND  
REPLACEMENT, TEMPORARY PAVEMENT AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - BRIDGE OVER NS RAILROAD  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - BRIDGE OVER NS RAILROAD  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER NS RAILROAD

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

CWP 12/14/23




PROJECT ID

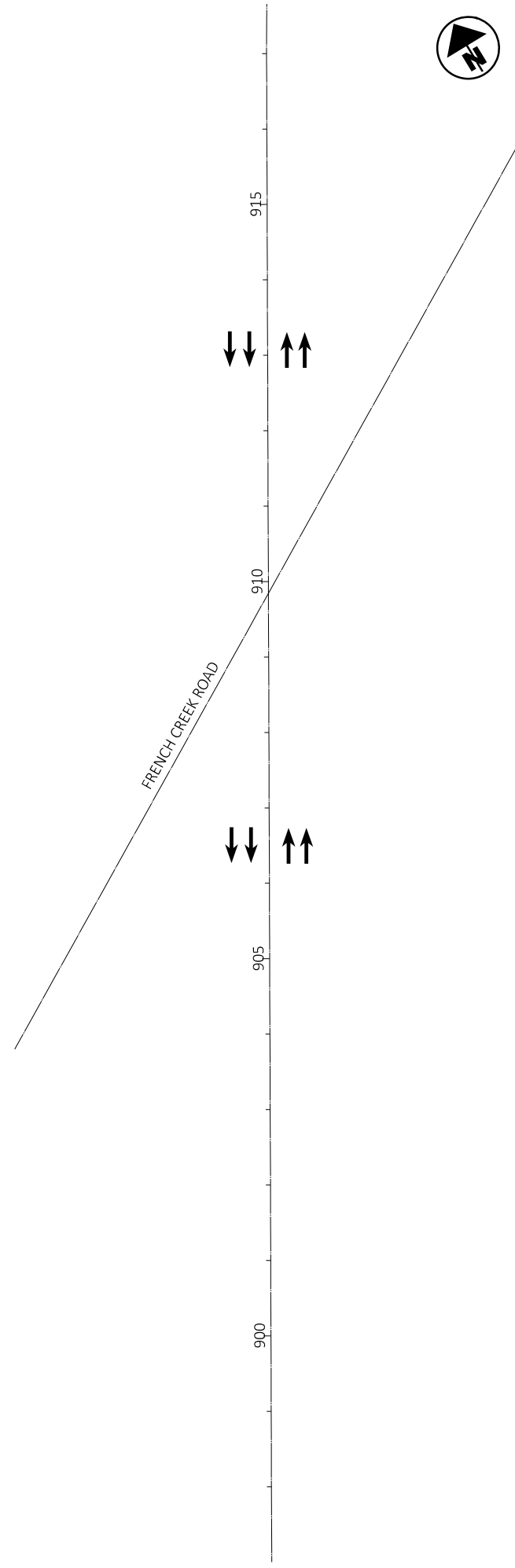
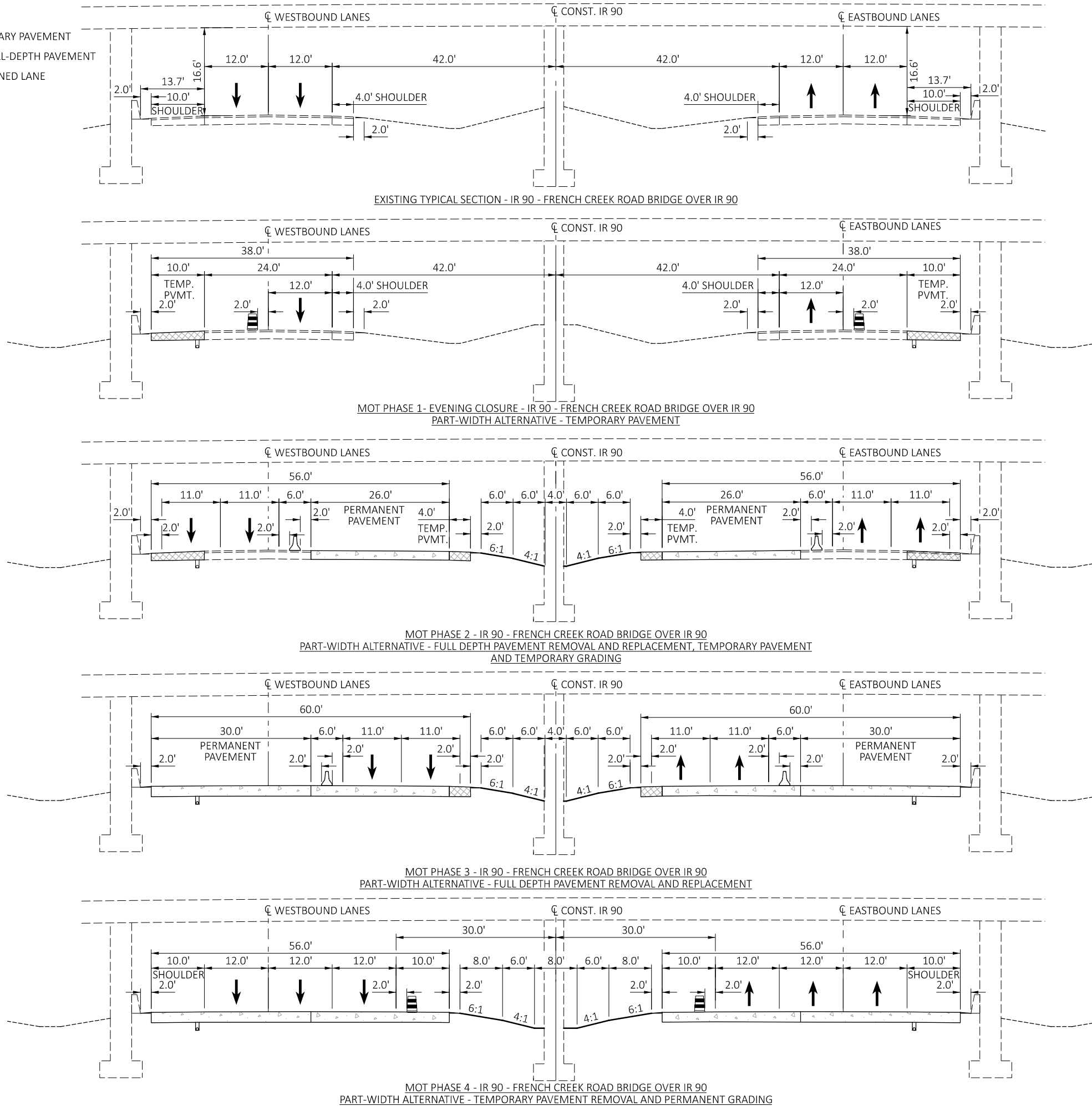
107714

SHEET TOTAL

P.03 | 27

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






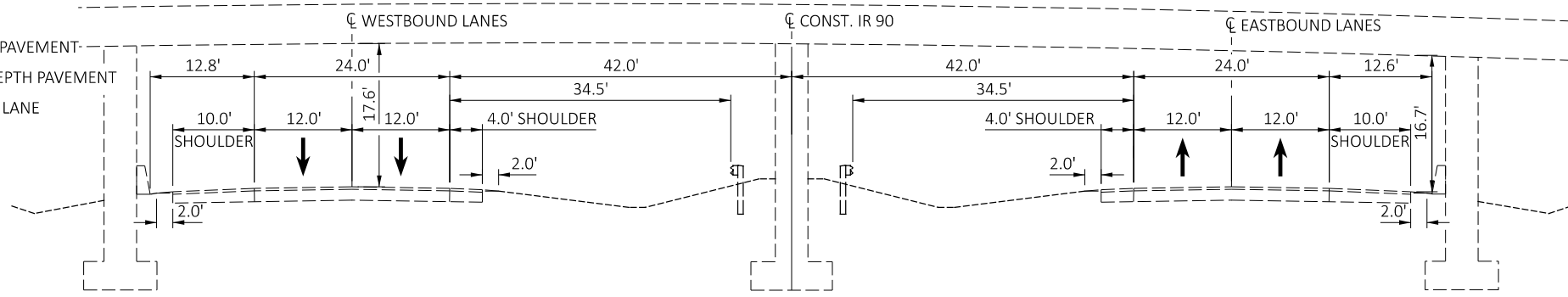
MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - FRENCH CREEK ROAD BRIDGE OVER IR 90

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.04	27

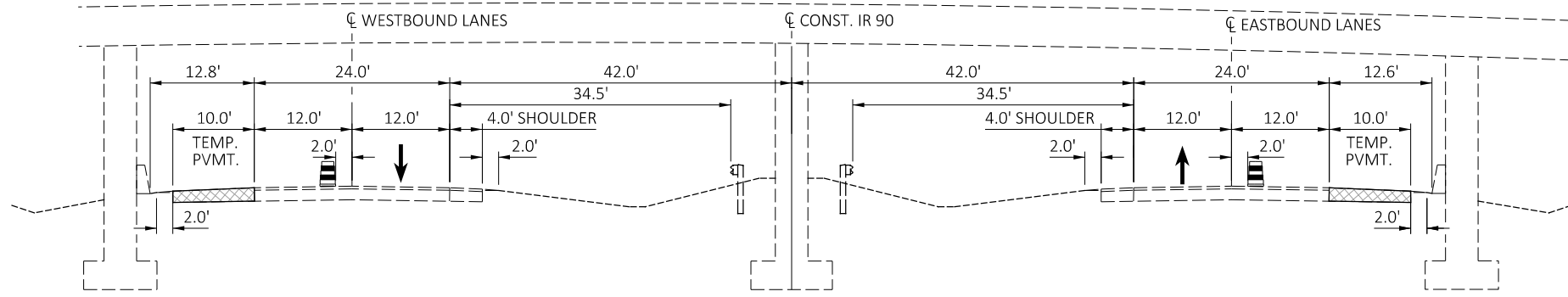


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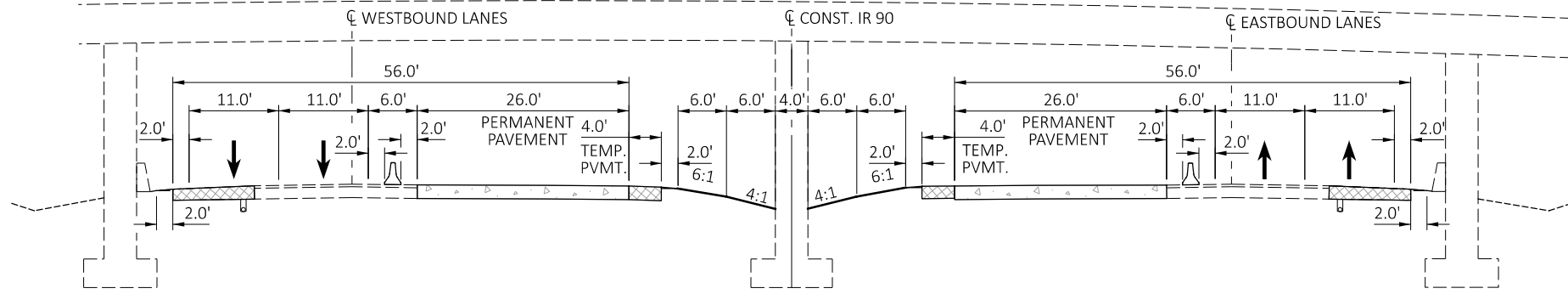
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



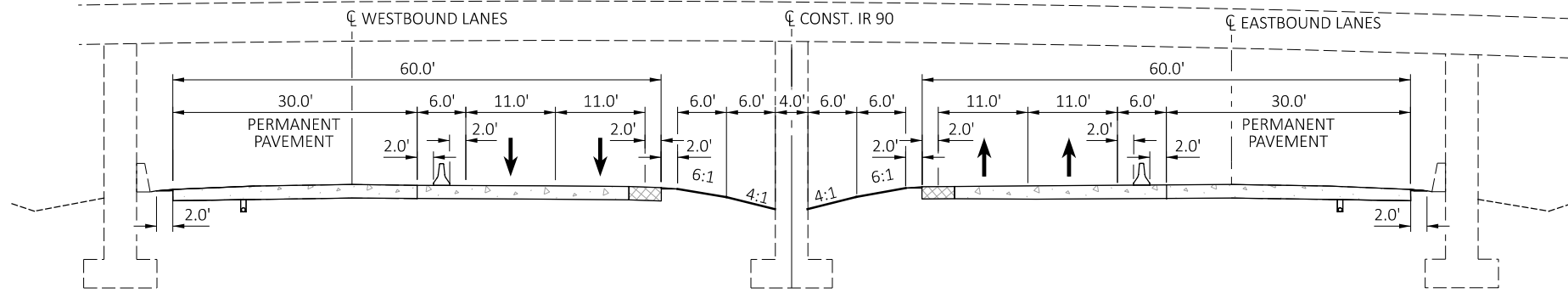
EXISTING TYPICAL SECTION - IR 90 - ABBE ROAD BRIDGE OVER IR 90



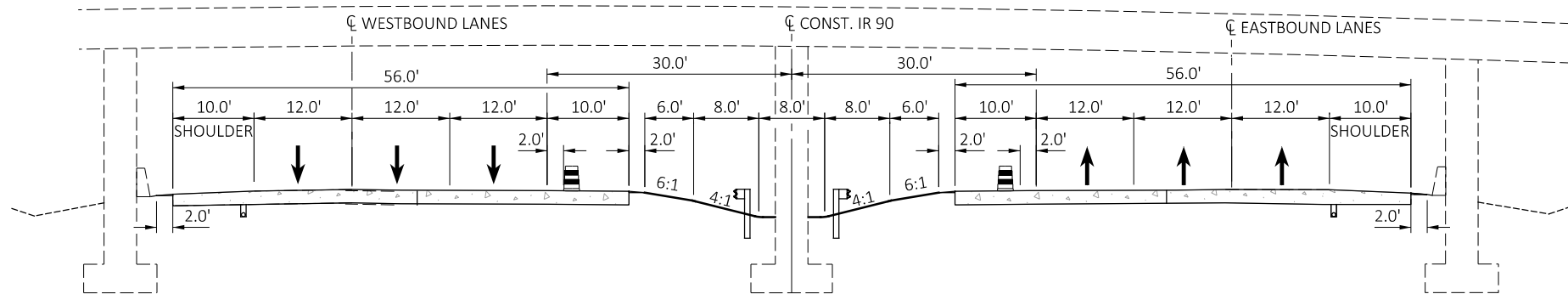
MOT PHASE 1 - EVENING CLOSURE - IR 90 - ABBE ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



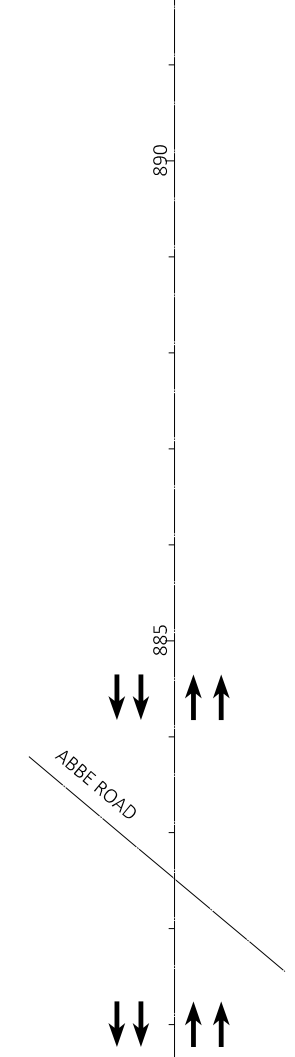
MOT PHASE 2 - IR 90 - ABBE ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, TEMPORARY PAVEMENT AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - ABBE ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - ABBE ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - ABBE ROAD BRIDGE OVER IR 90

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

CWP 12/14/23




PROJECT ID

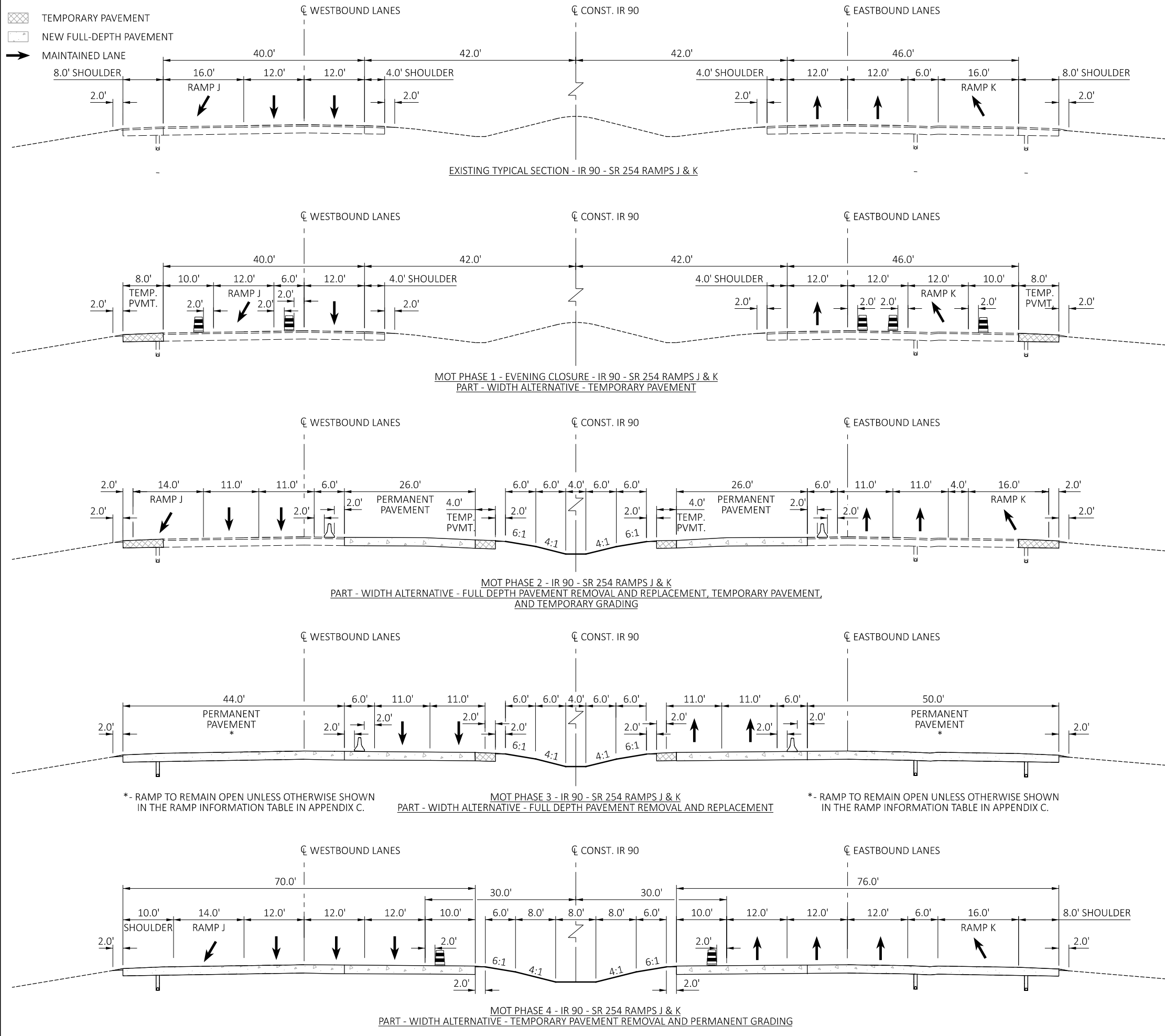
107714

SHEET TOTAL

P.05 27

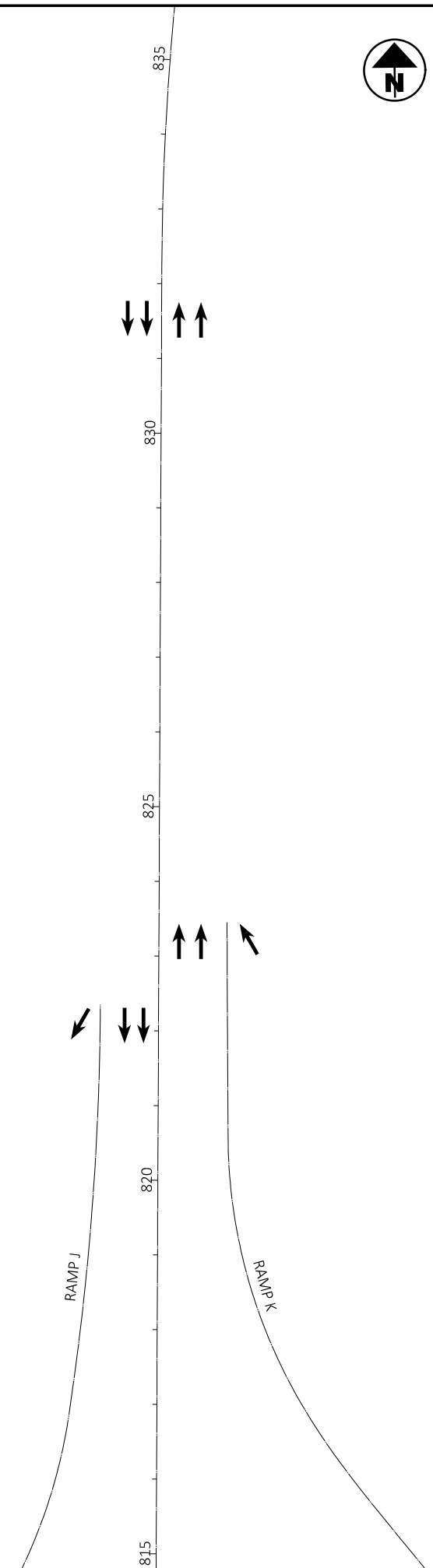
LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



\* - RAMP TO REMAIN OPEN UNLESS OTHERWISE SHOWN IN THE RAMP INFORMATION TABLE IN APPENDIX C.

\* - RAMP TO REMAIN OPEN UNLESS OTHERWISE SHOWN IN THE RAMP INFORMATION TABLE IN APPENDIX C.






MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - SR 254 RAMPS J & K

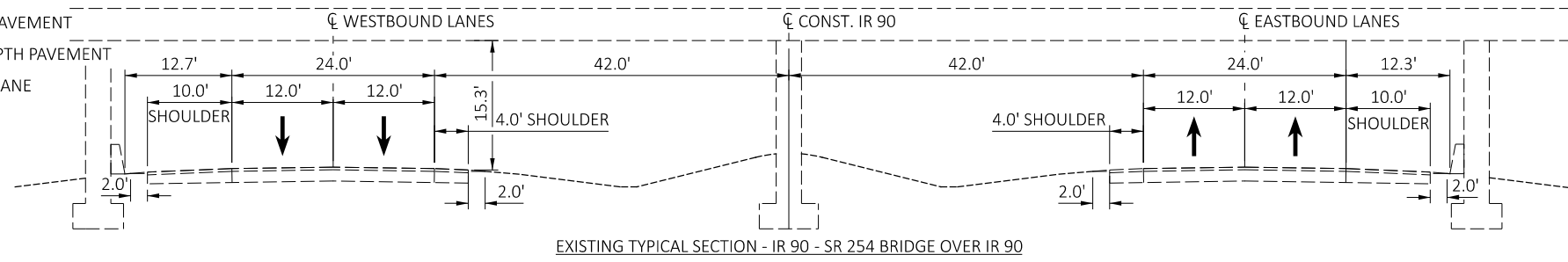
DESIGN AGENCY



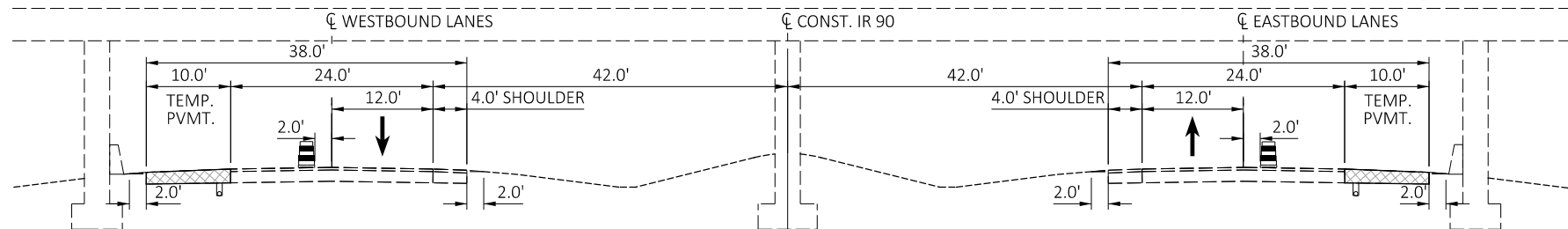
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.06	27

LEGEND

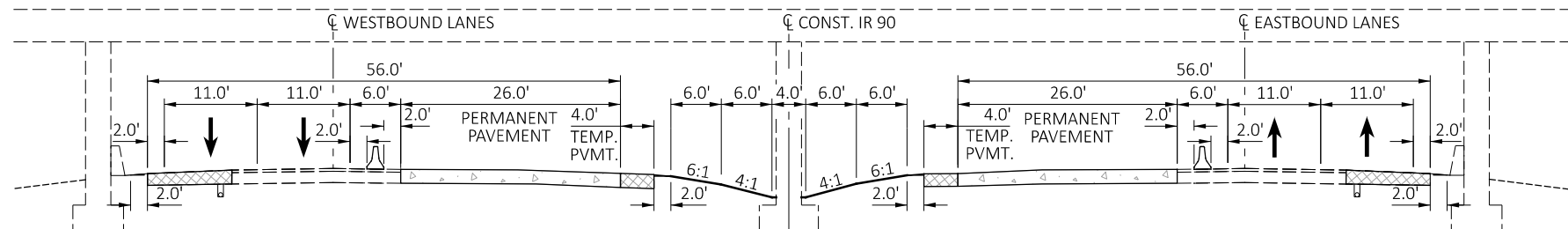
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



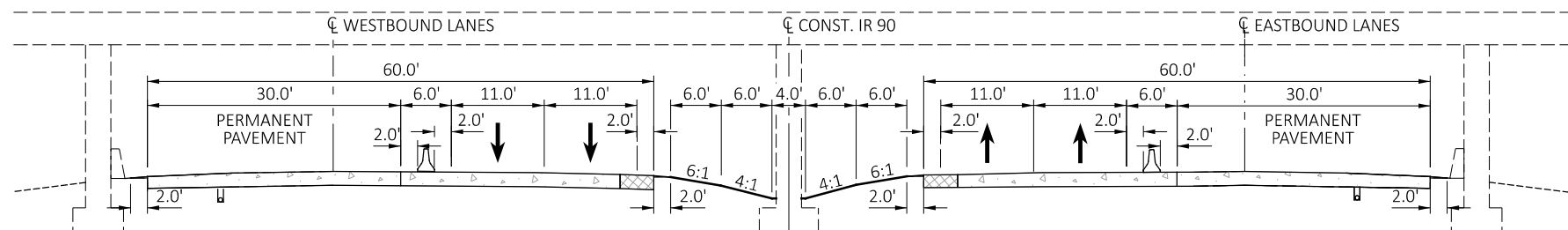
EXISTING TYPICAL SECTION - IR 90 - SR 254 BRIDGE OVER IR 90



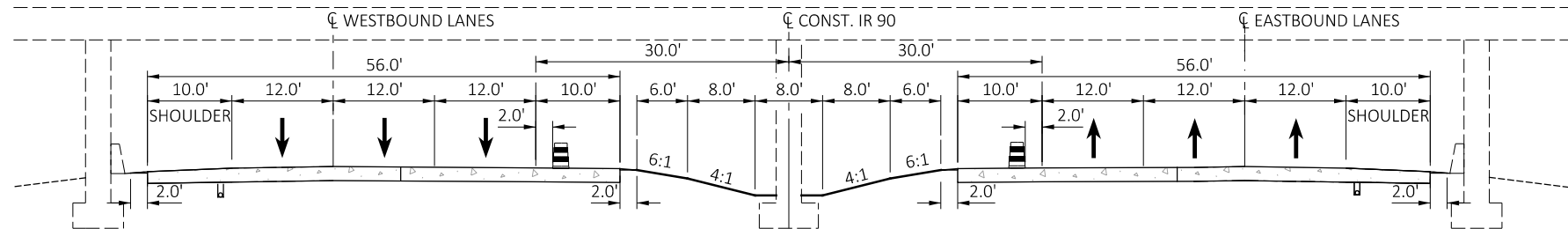
MOT PHASE 1 - EVENING CLOSURE - IR 90 - SR 254 BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



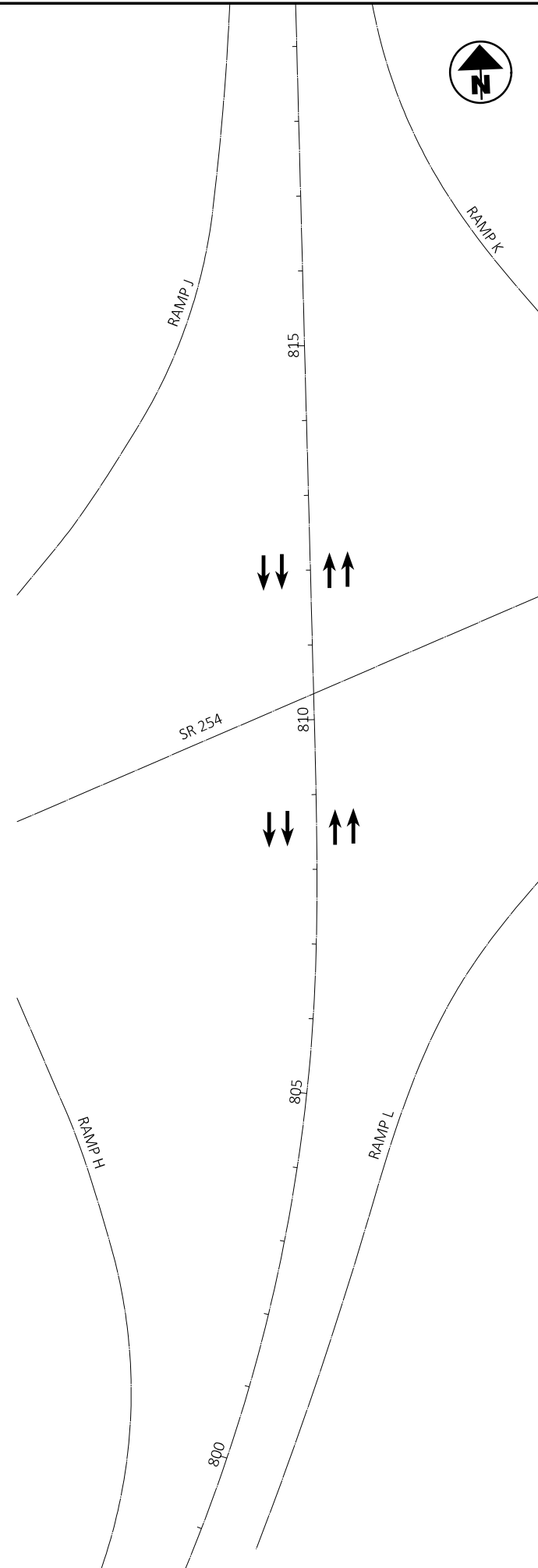
MOT PHASE 2 - IR 90 - SR 254 BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, TEMPORARY PAVEMENT AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - SR 254 BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - SR 254 BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - SR 254 BRIDGE OVER IR 90

DESIGN AGENCY






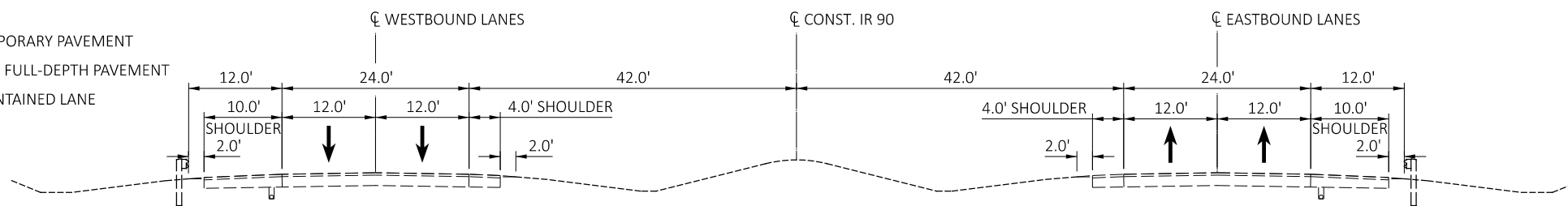
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.07	27



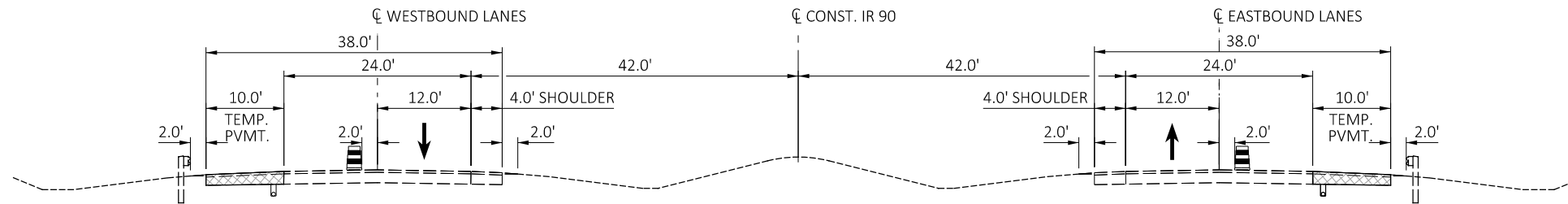


LEGEND

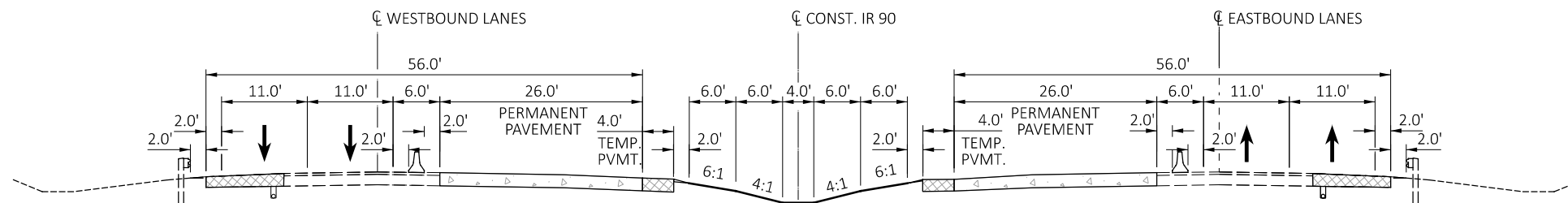
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



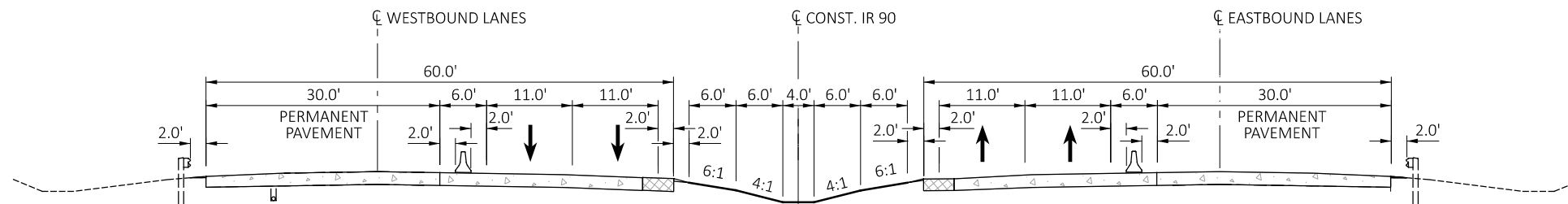
EXISTING TYPICAL SECTION - IR 90 - BETWEEN SR 57 AND SR 254



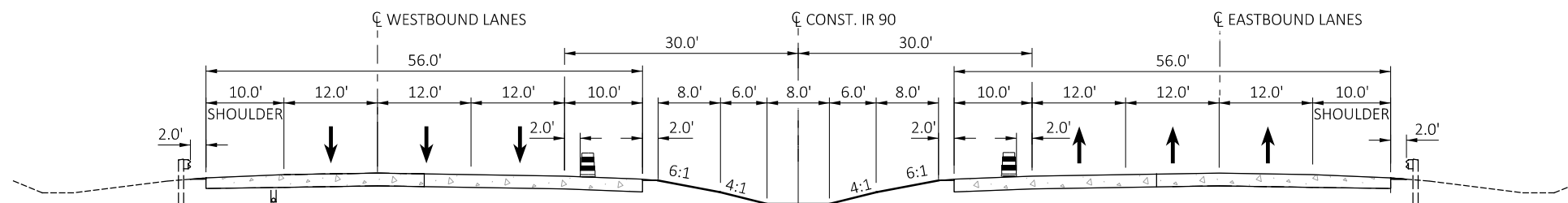
MOT PHASE 1 - EVENING CLOSURE - IR 90 - BETWEEN SR 57 AND SR 254  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



MOT PHASE 2 - IR 90 - BETWEEN SR 57 AND SR 254  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, TEMPORARY PAVEMENT AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - BETWEEN SR 57 AND SR 254  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - BETWEEN SR 57 AND SR 254  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADNG



780

775

770

765

GULF ROAD

MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BETWEEN SR 57 AND SR 254

DESIGN AGENCY



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SHEET

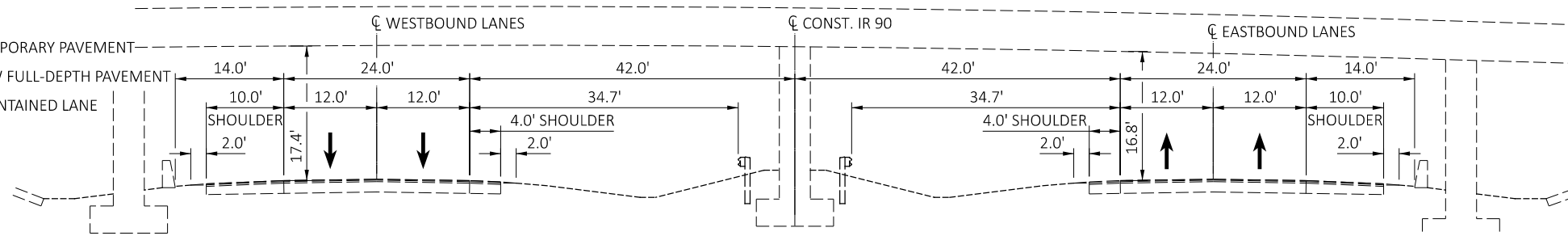
P.09

TOTAL

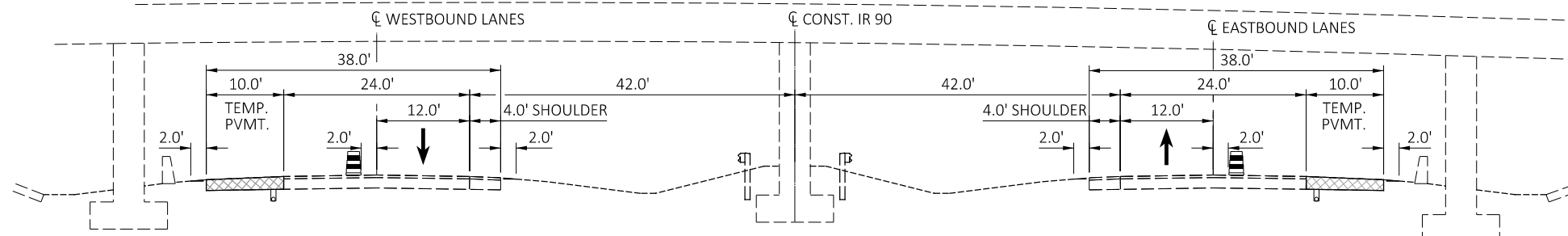
27

LEGEND

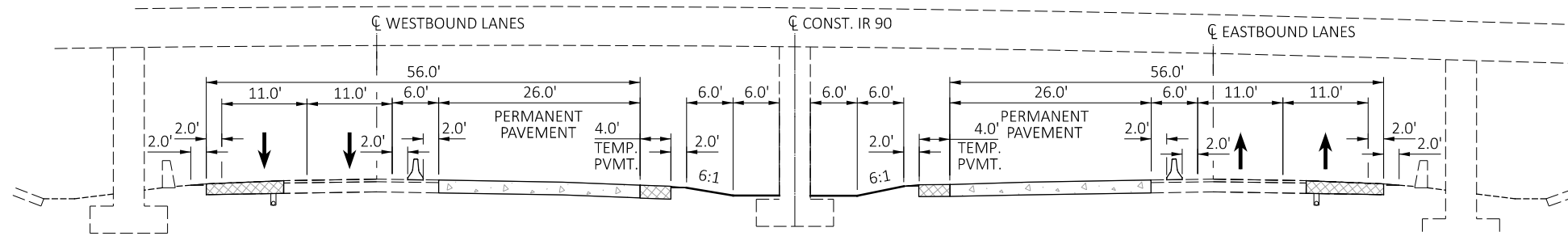
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



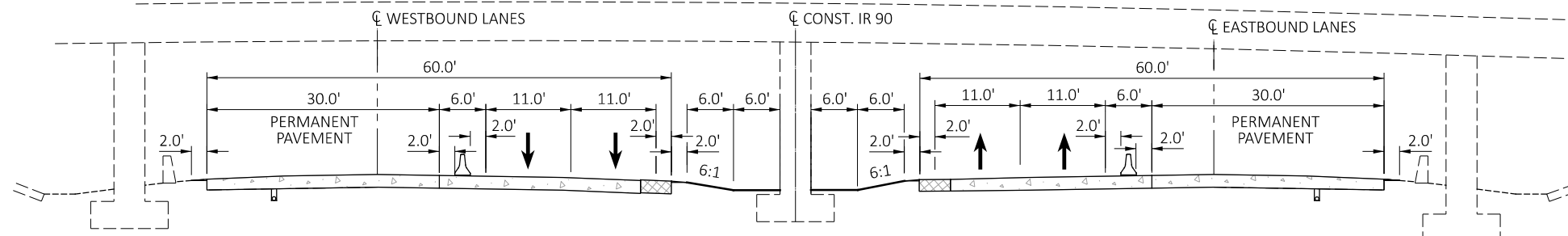
EXISTING TYPICAL SECTION - IR 90 - GULF ROAD BRIDGE OVER IR 90



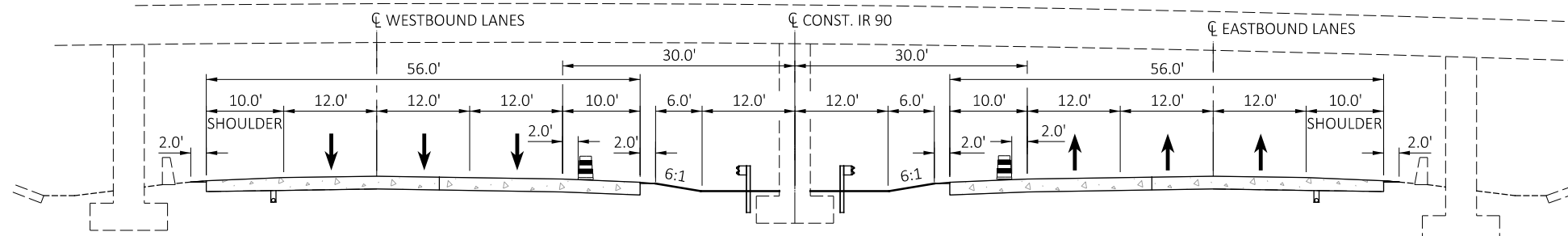
MOT PHASE 1 - EVENING CLOSURE - IR 90 - GULF ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



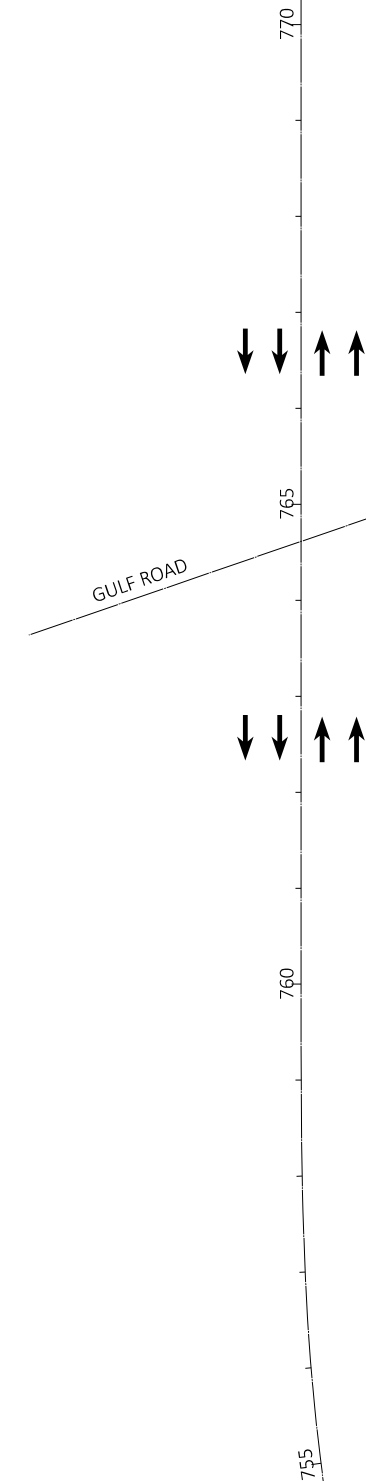
MOT PHASE 2 - IR 90 - GULF ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - GULF ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - GULF ROAD BRIDGE OVER IR 90  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - GULF ROAD BRIDGE OVER IR 90




DESIGN AGENCY

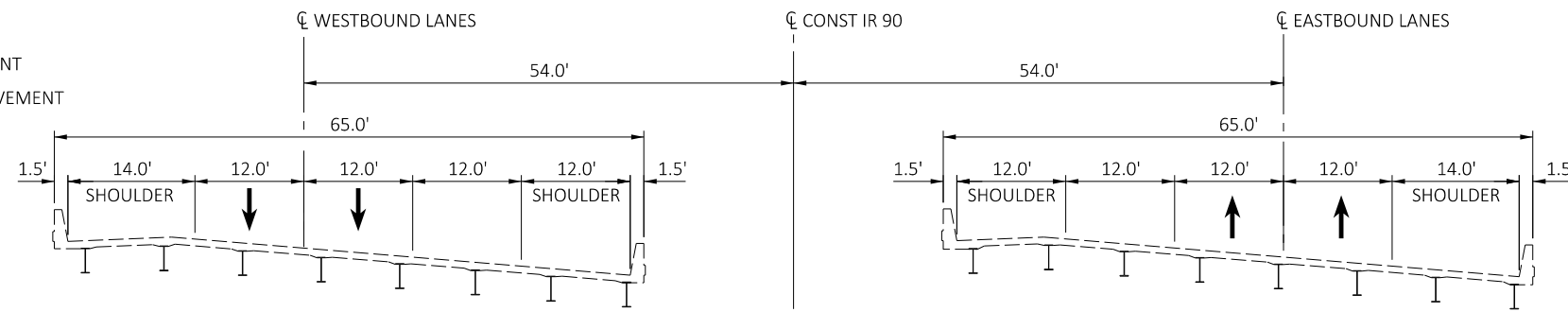


DESIGNER	SHT
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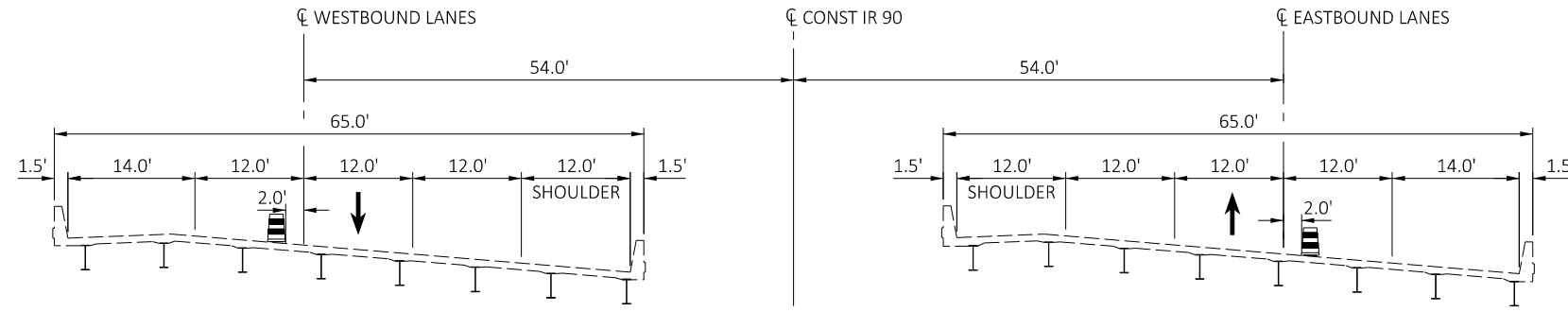


LEGEND

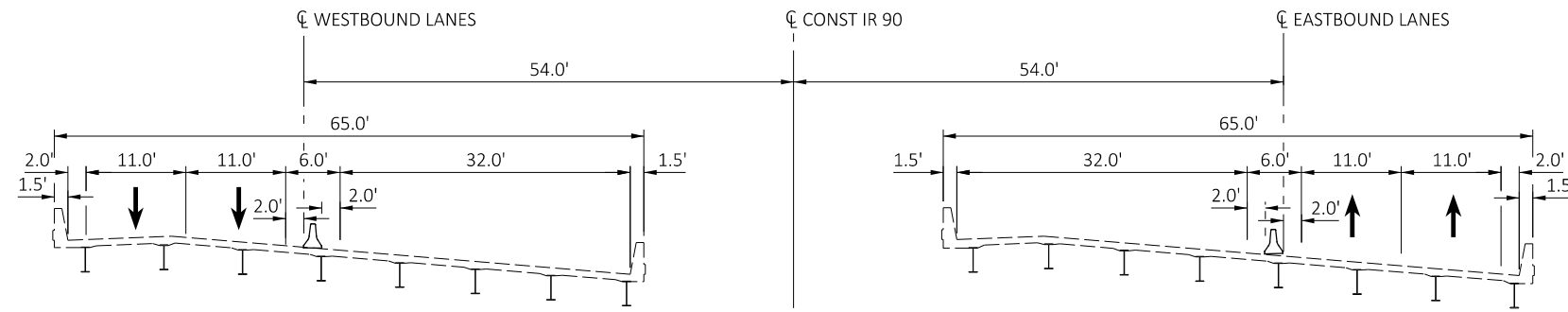
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



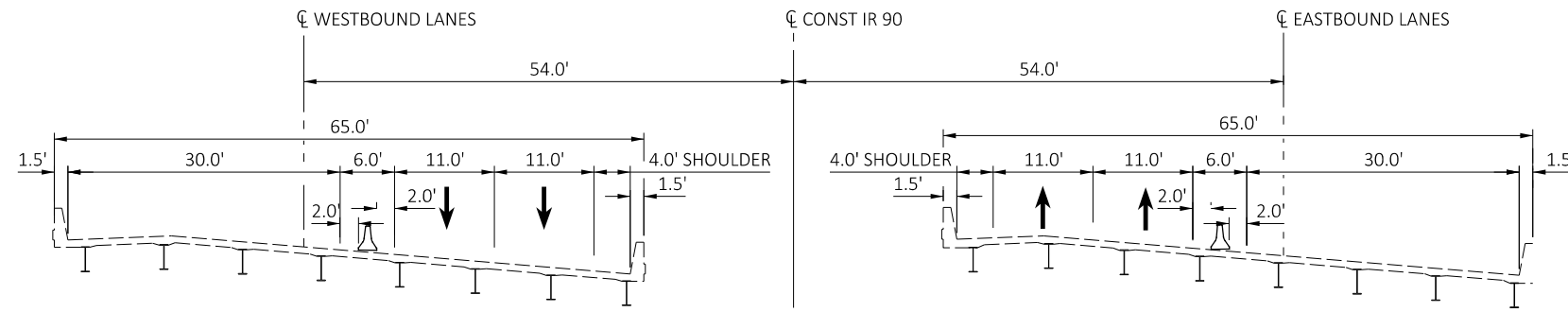
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER FORD ROAD



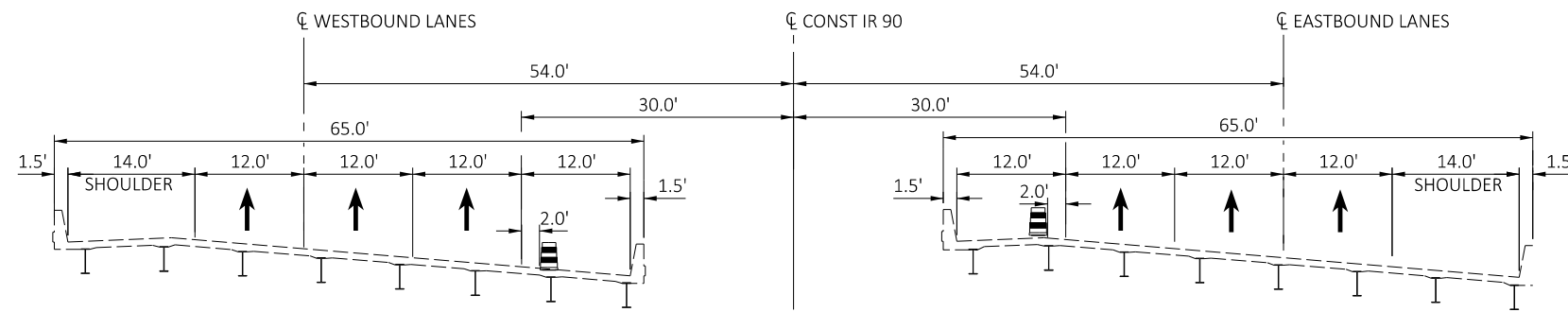
MOT PHASE 1 - EVENING CLOSURE - IR 90 - BRIDGE OVER FORD ROAD  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT CLOSURE



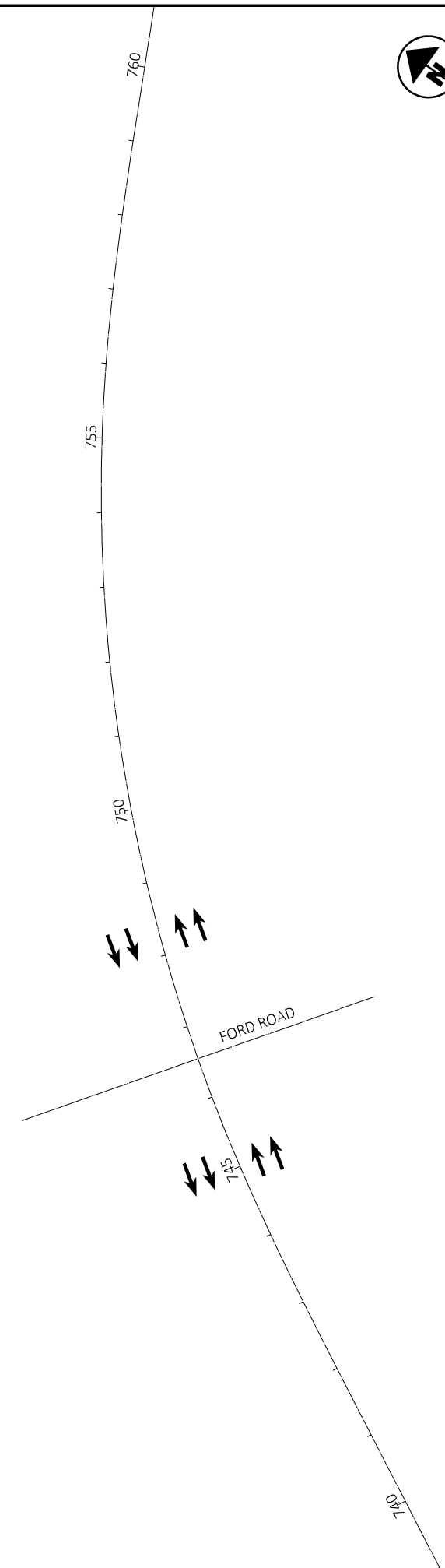
MOT PHASE 2 - IR 90 - BRIDGE OVER FORD ROAD  
FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - BRIDGE OVER FORD ROAD  
PART - WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - BRIDGE OVER FORD ROAD  
PART - WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER FORD ROAD

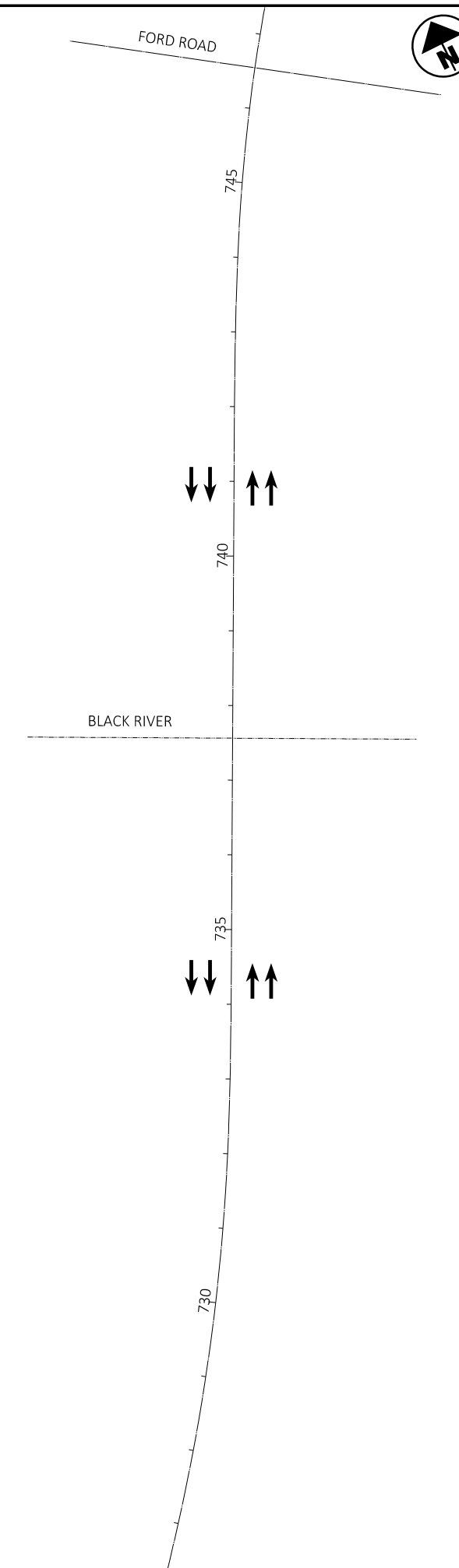
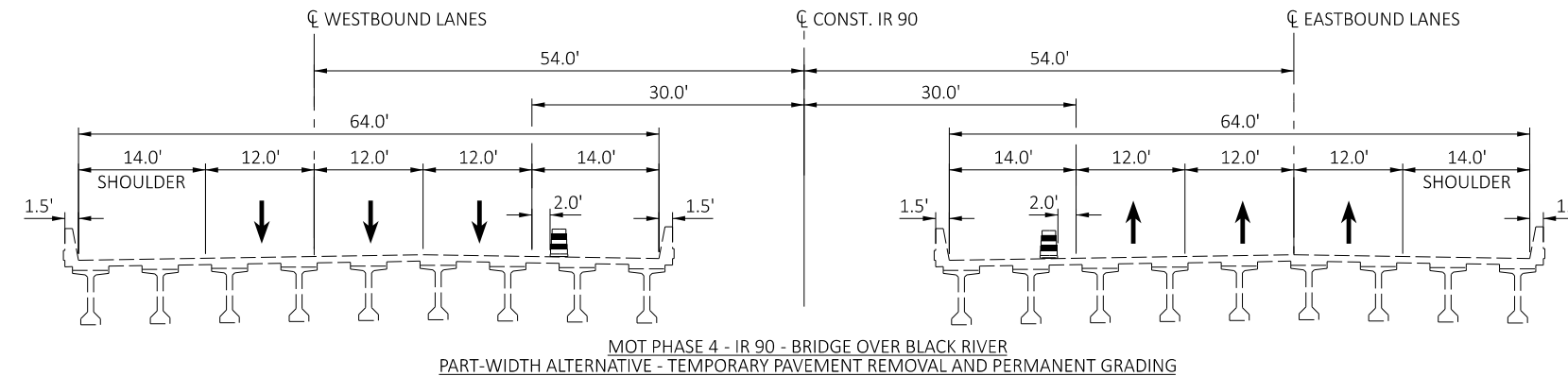
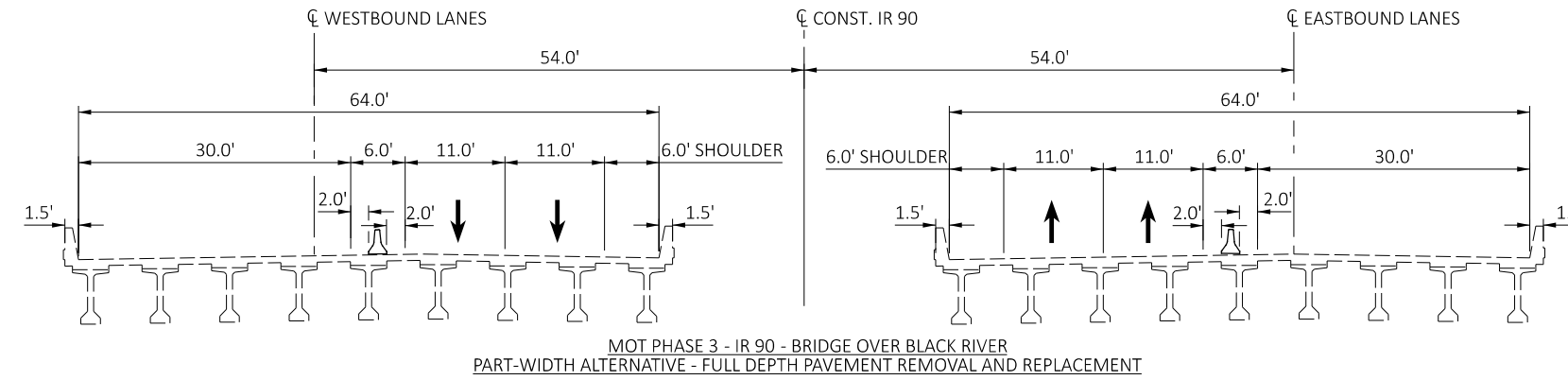
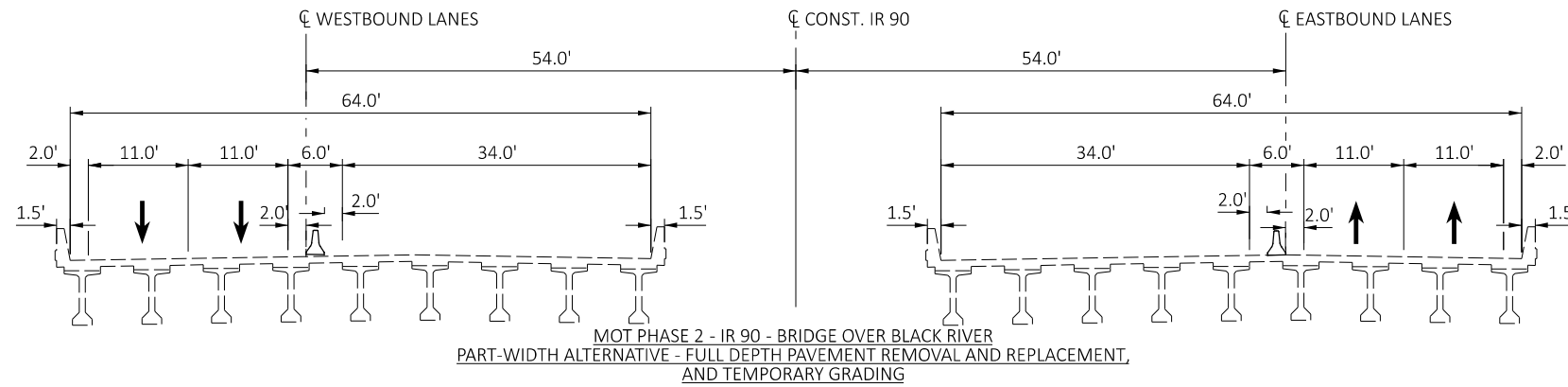
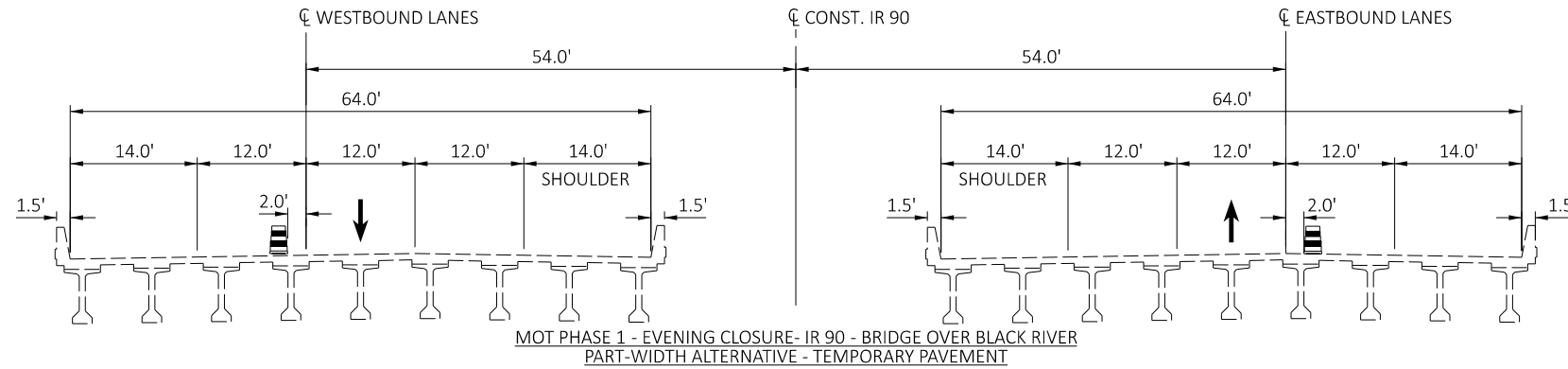
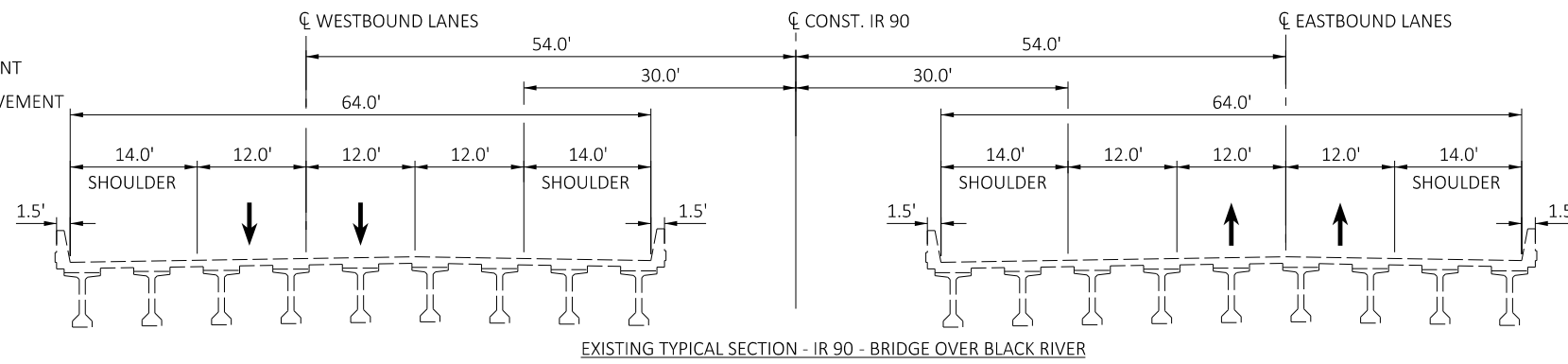
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP 12/14/23
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SHEET	TOTAL
P.11	27

LEGEND




- TEMPORARY PAVEMENT
- NEW FULL-DEPTH PAVEMENT
- MAINTAINED LANE

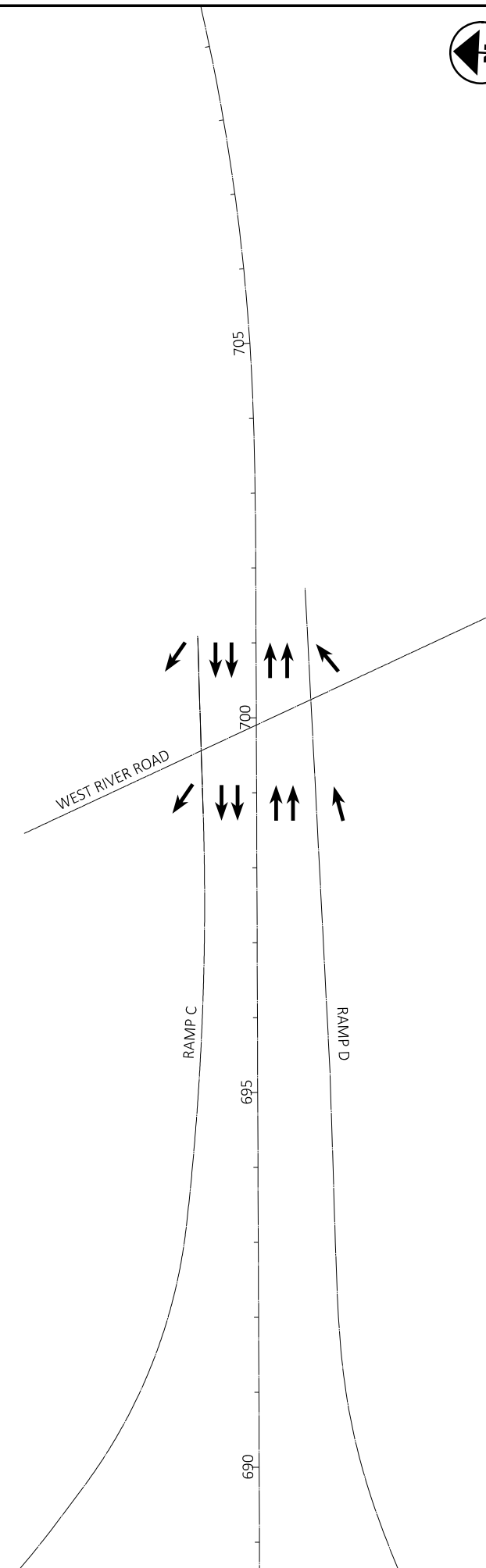
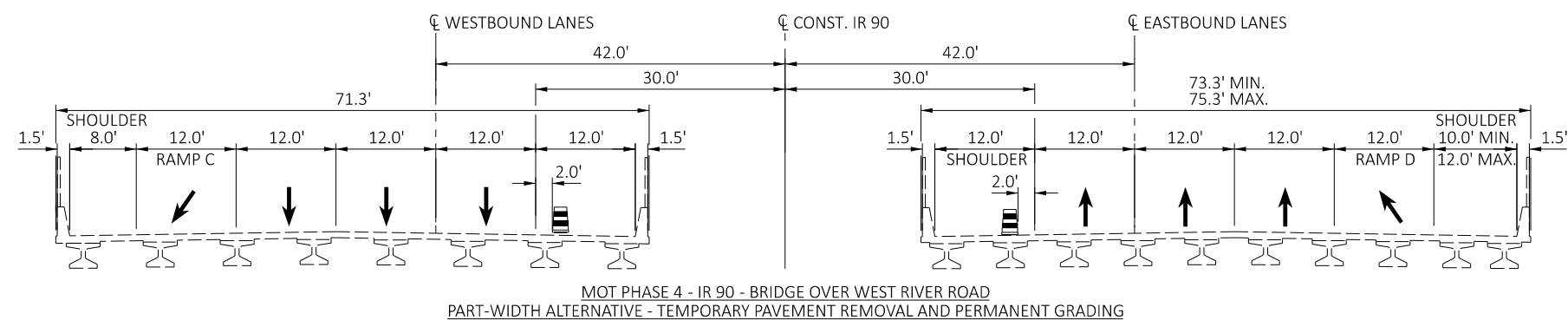
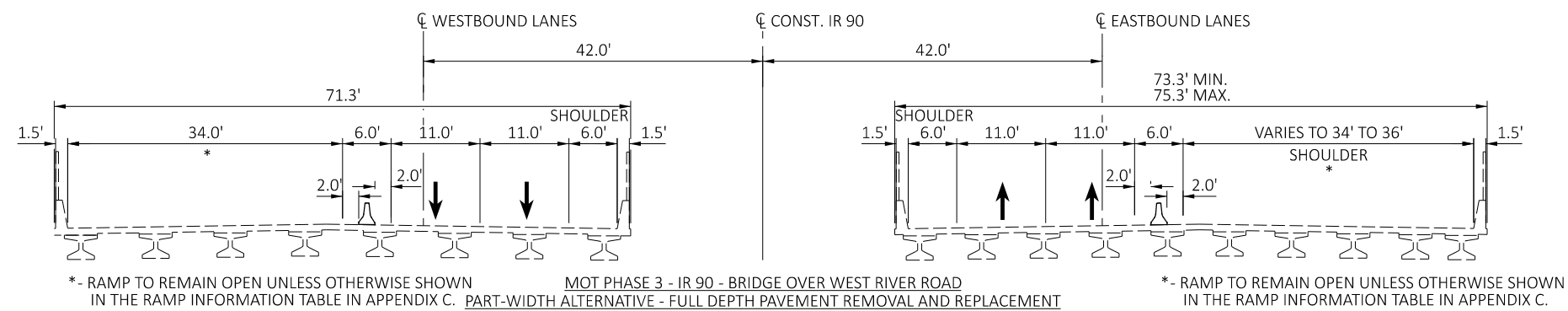
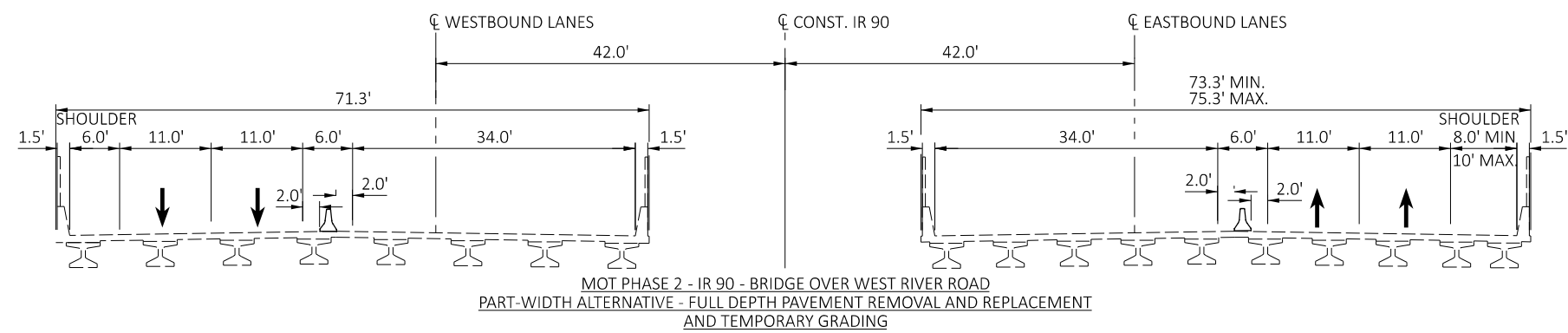
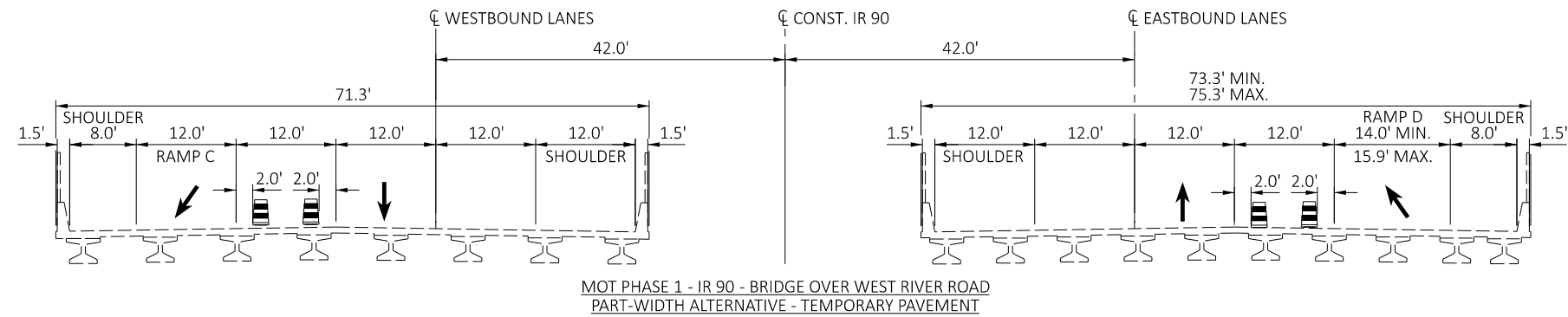
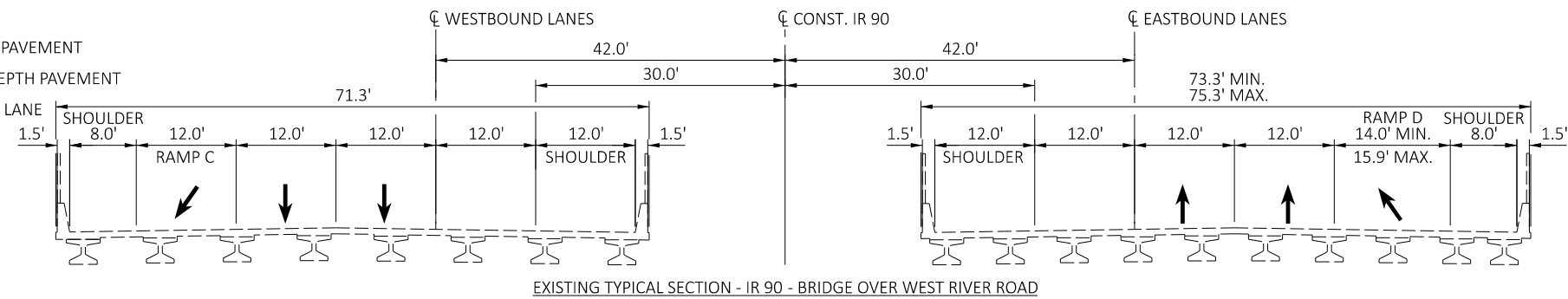


MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER BLACK RIVER

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.12	27

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






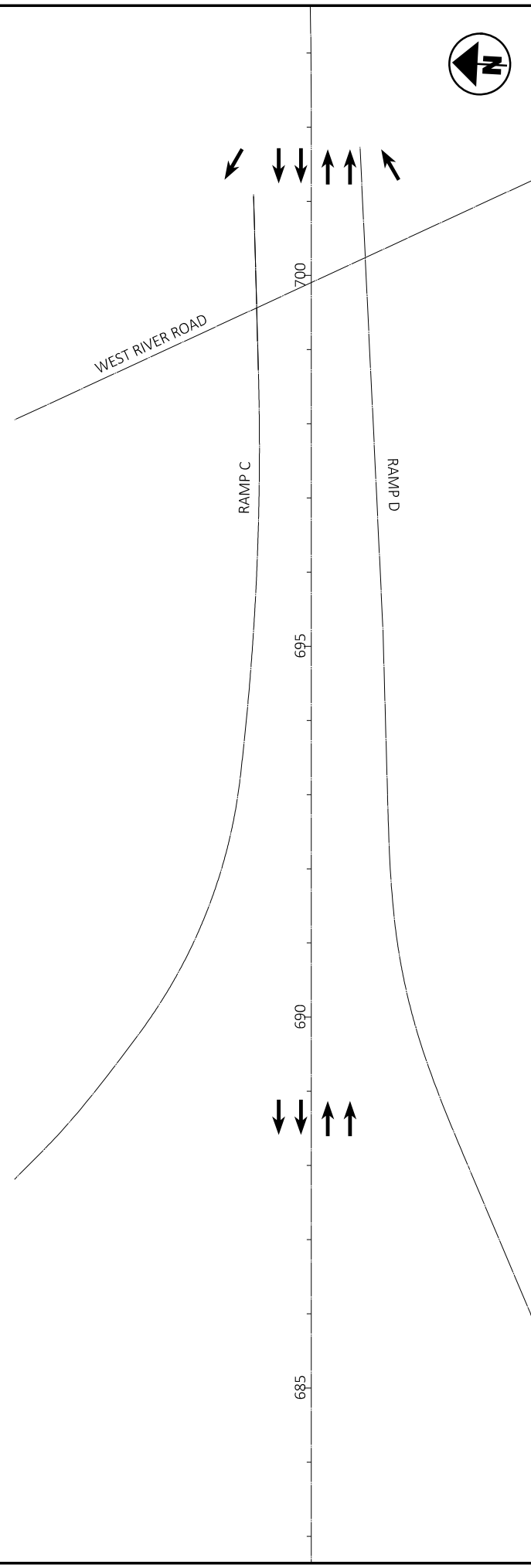
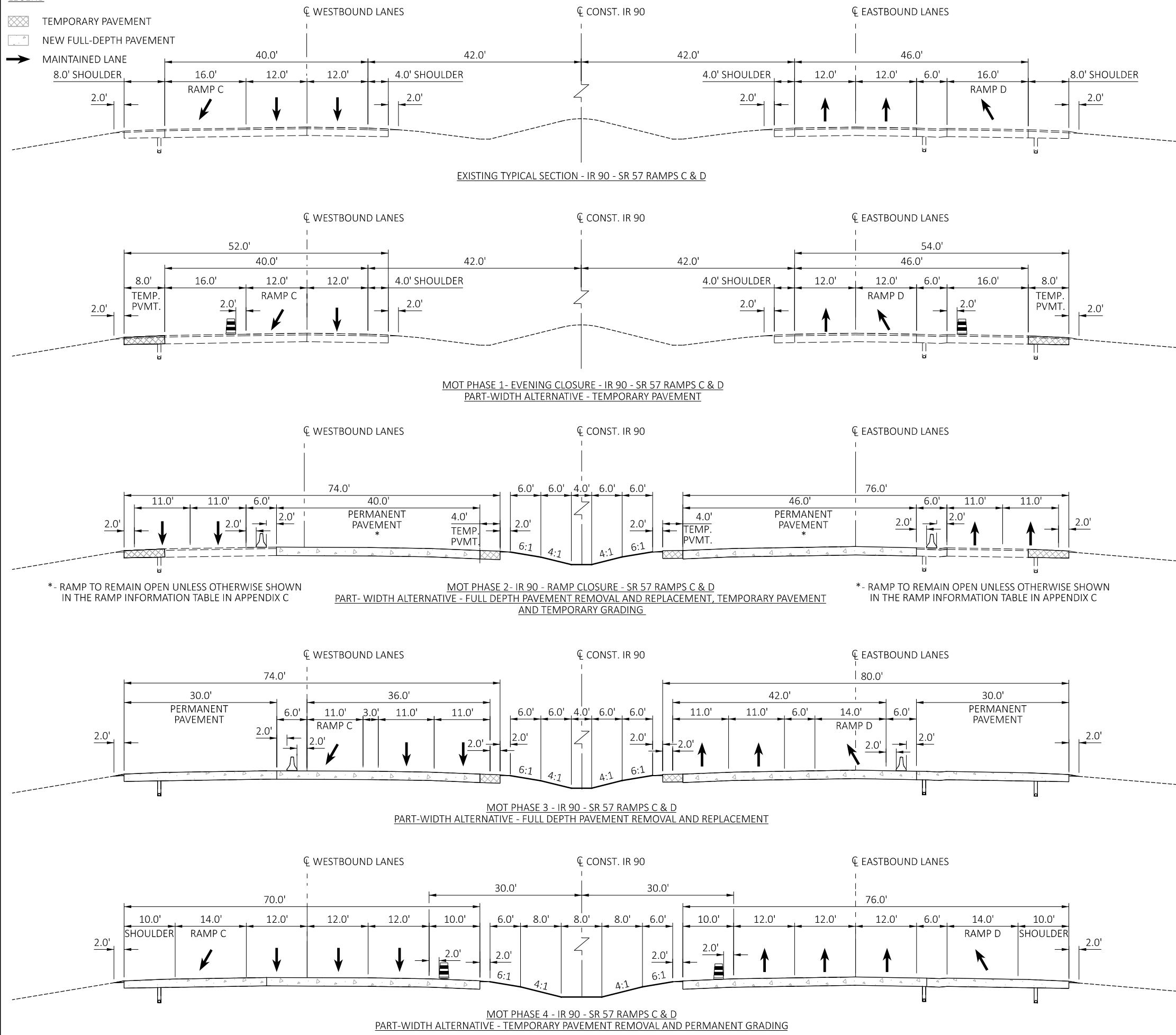
MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER WEST RIVER ROAD

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.13	27



LEGEND




-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE

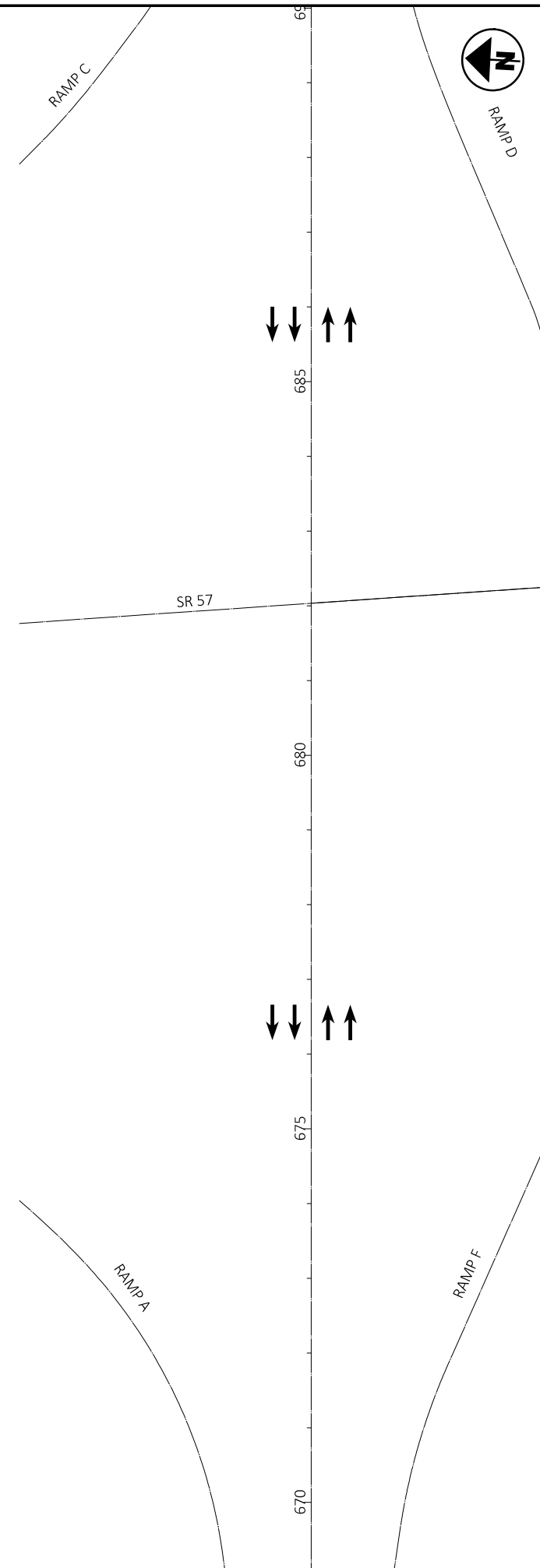
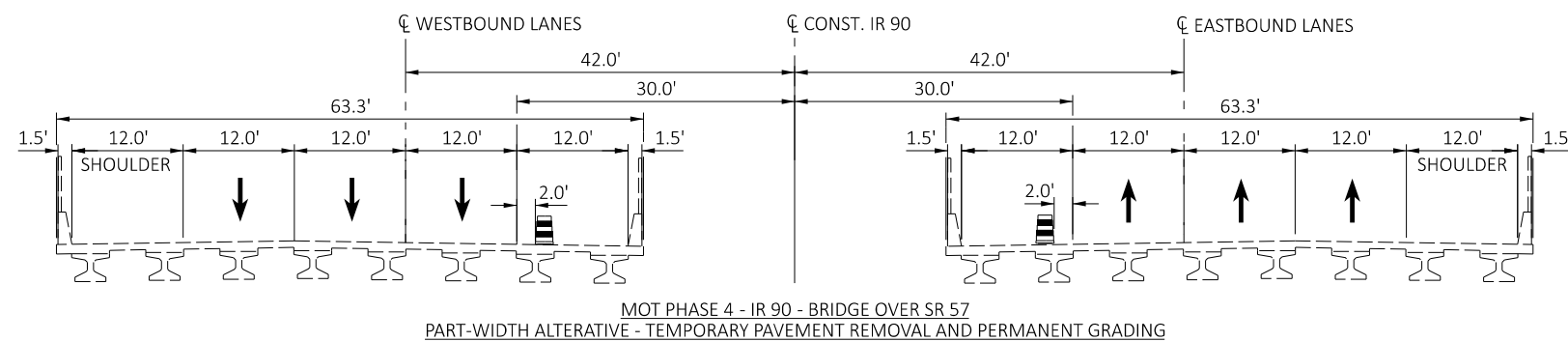
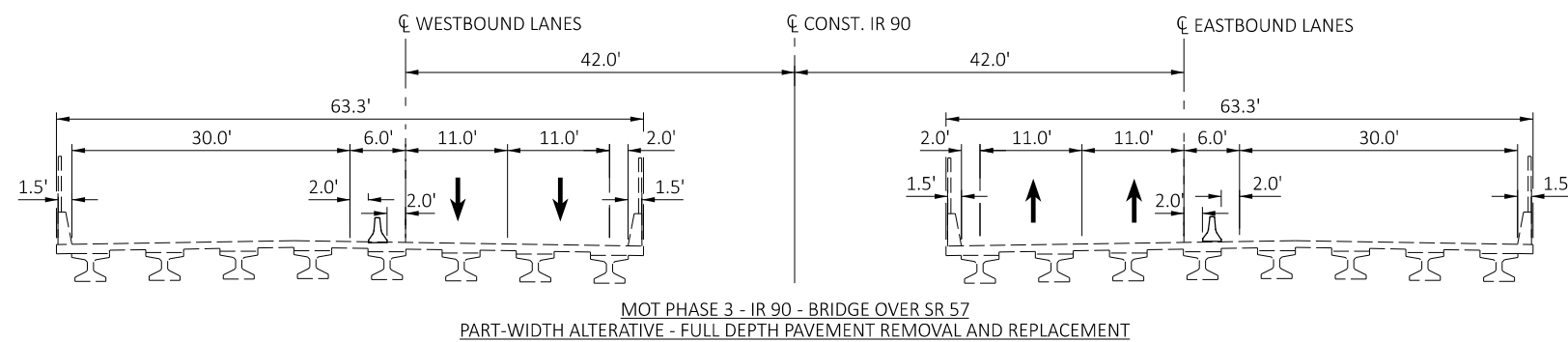
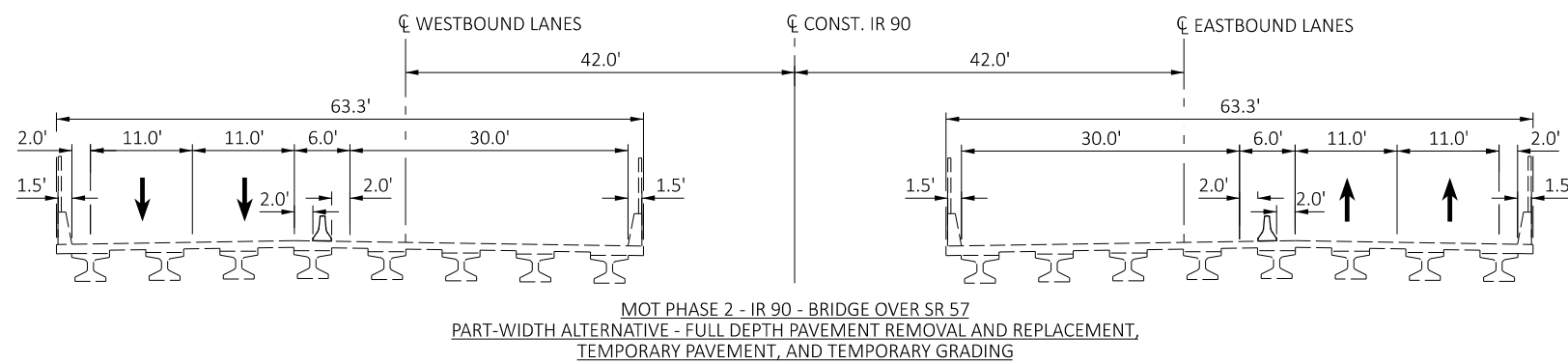
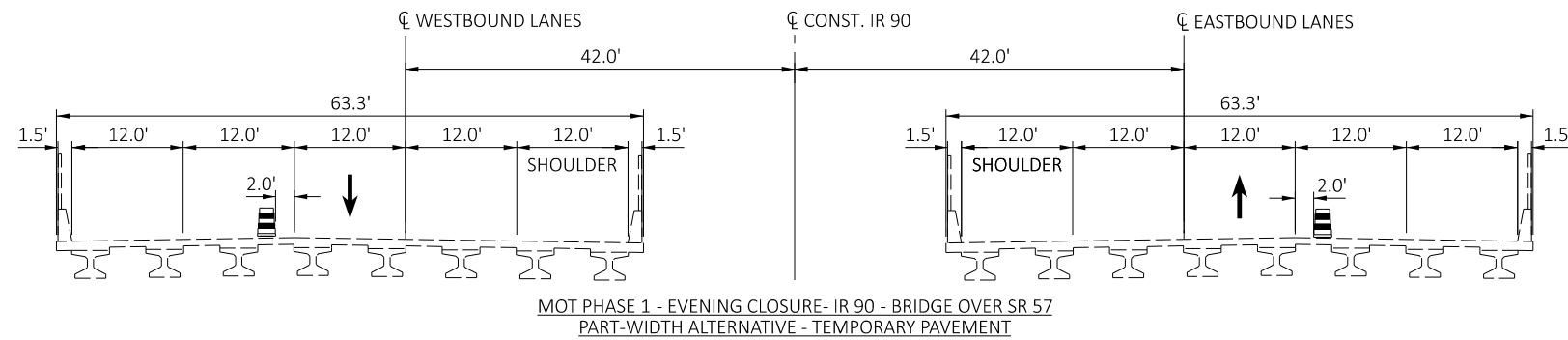
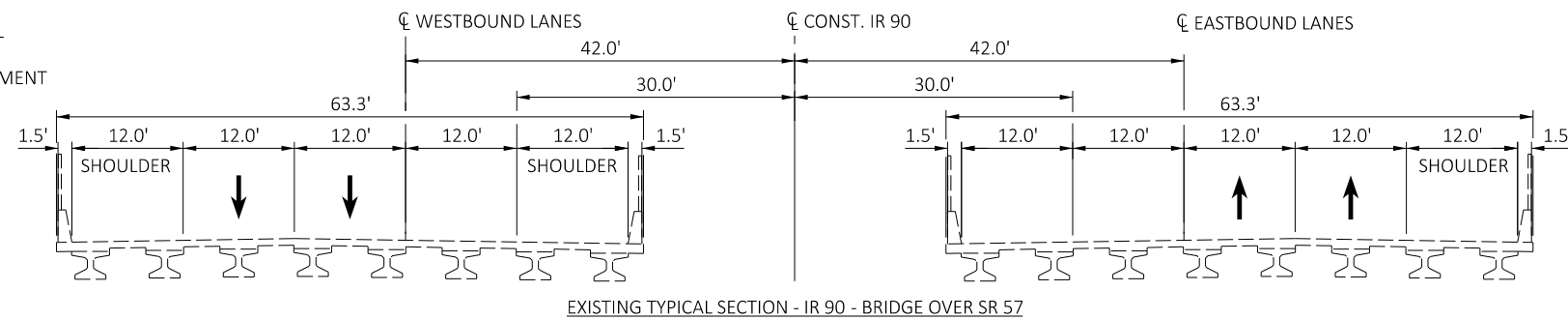


MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - SR 57 RAMPS C & D

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
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SHEET TOTAL	P.14   27

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE

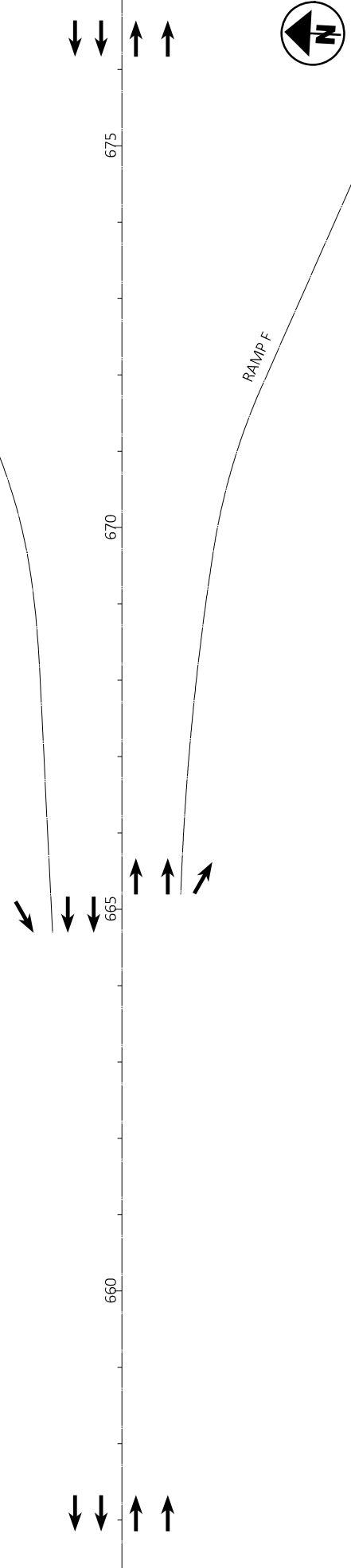
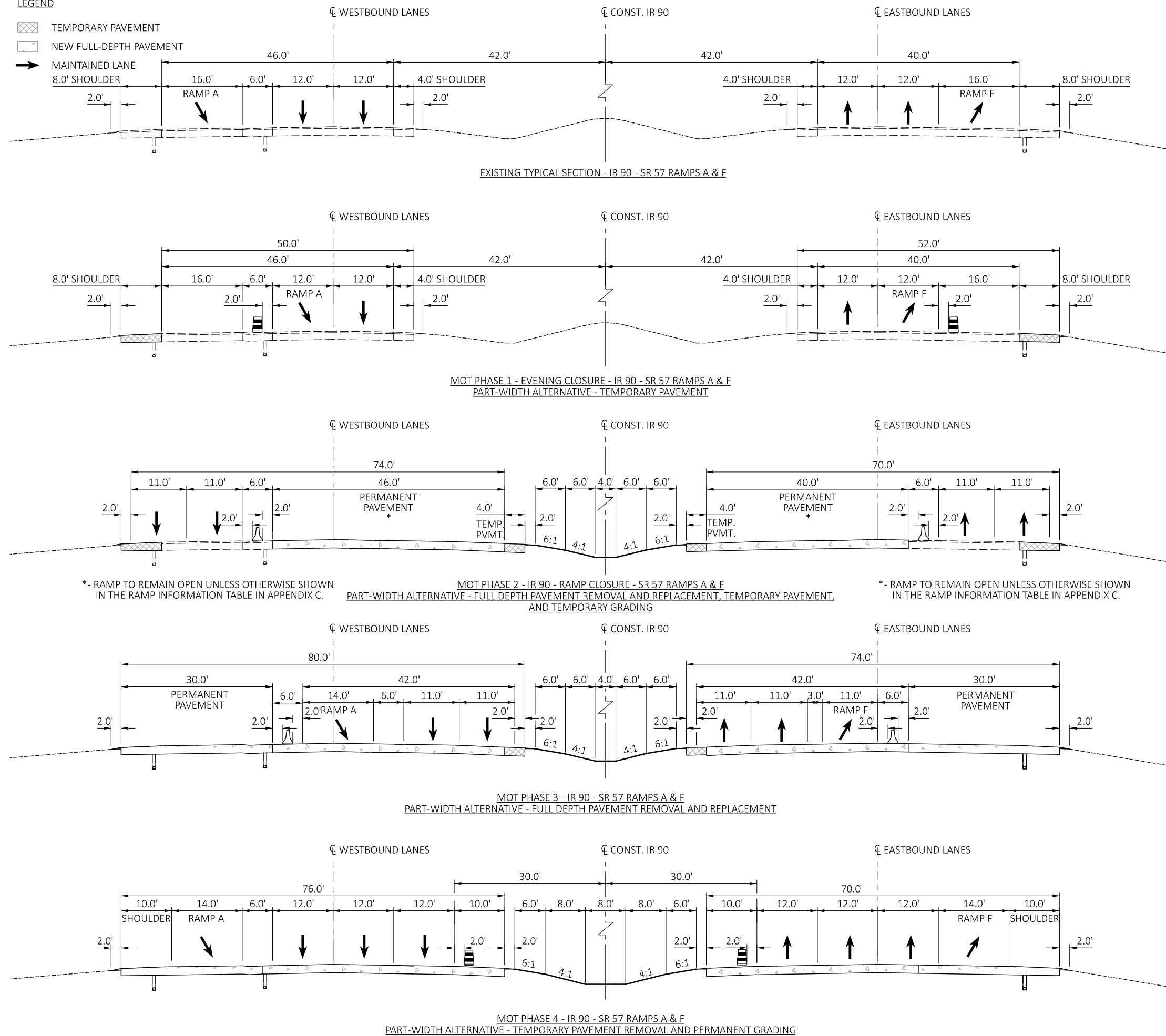


MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER SR 57

DESIGN AGENCY	
	
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DESIGNER	SHT
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SHEET	TOTAL
P.15	27

LEGEND




- TEMPORARY PAVEMENT
- NEW FULL-DEPTH PAVEMENT
- MAINTAINED LANE
- 8.0' SHOULDER

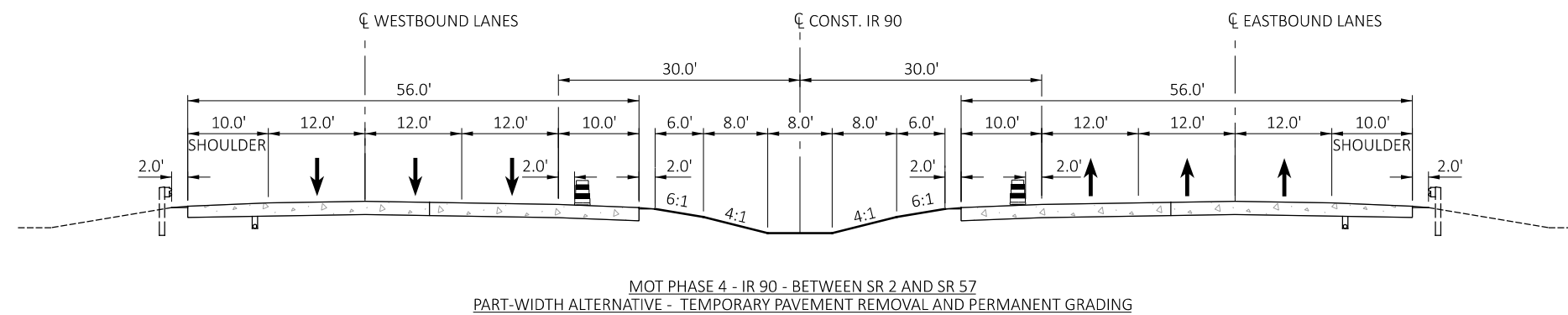
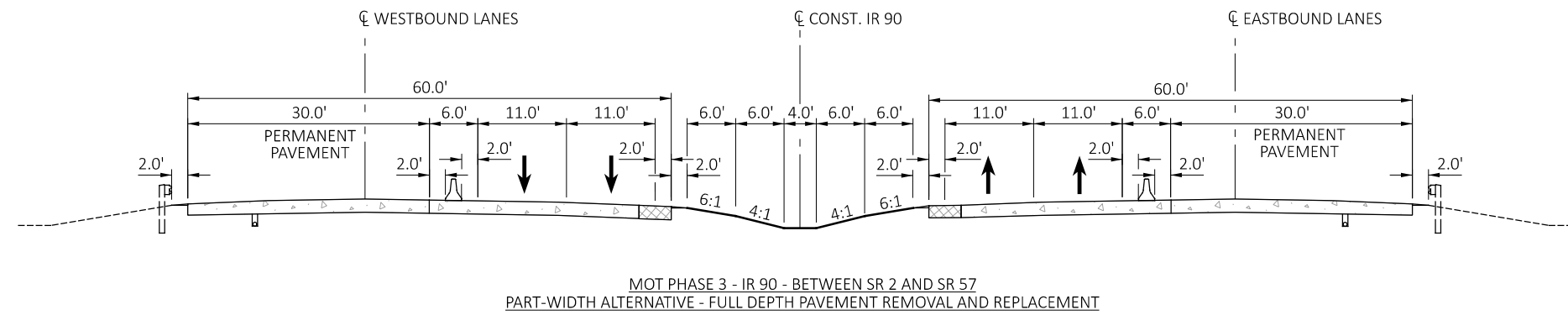
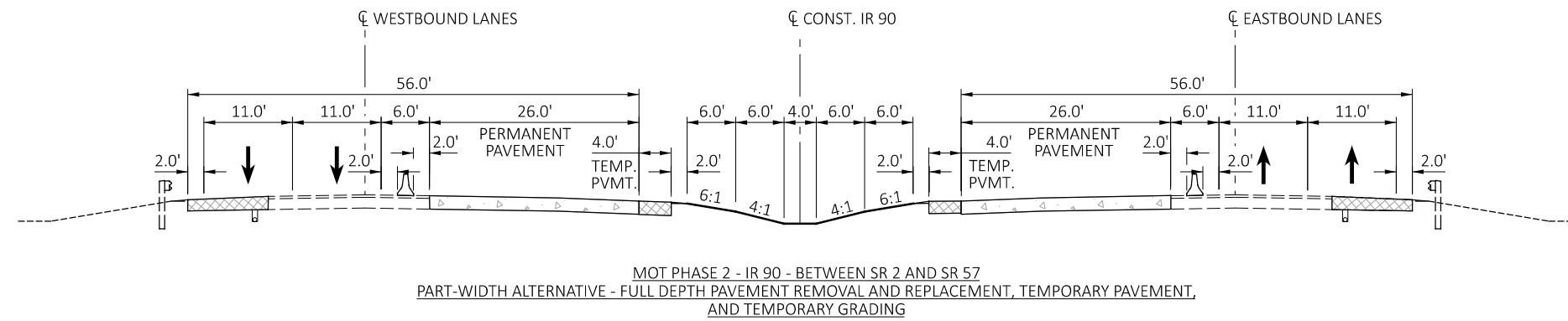
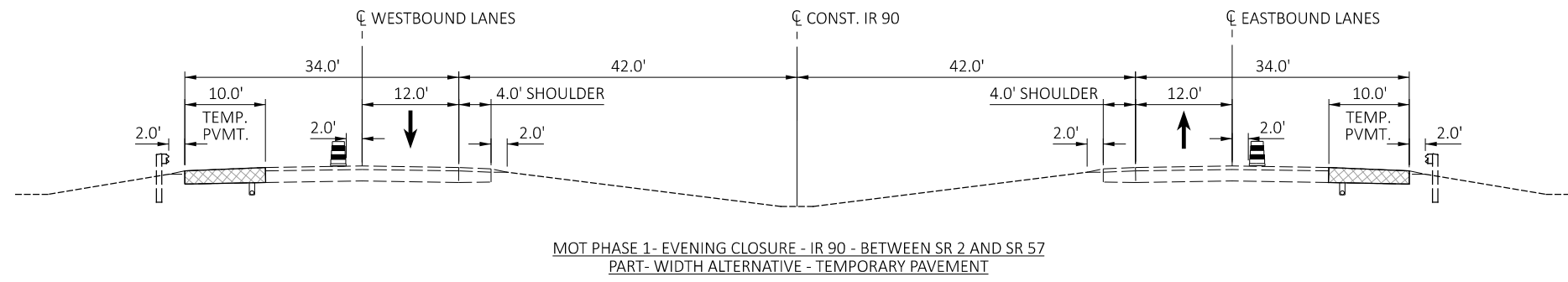
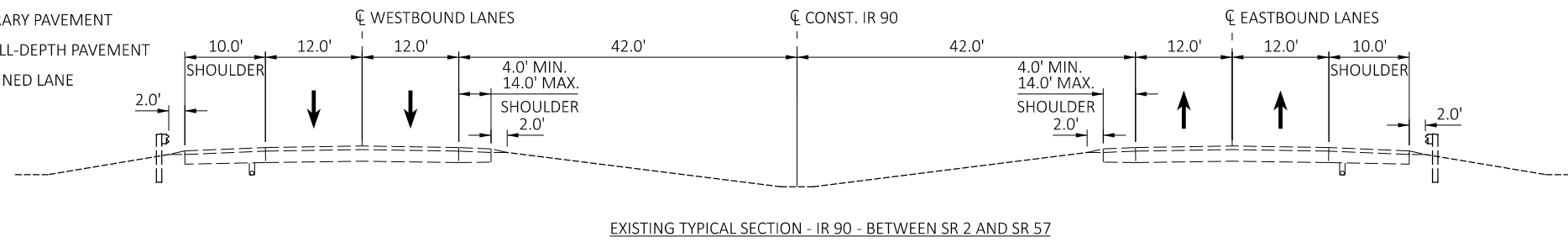


MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - SR 57 RAMPS A & F

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
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TOTAL	27

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



645

640

635



630

MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BETWEEN SR 2 AND SR 57

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

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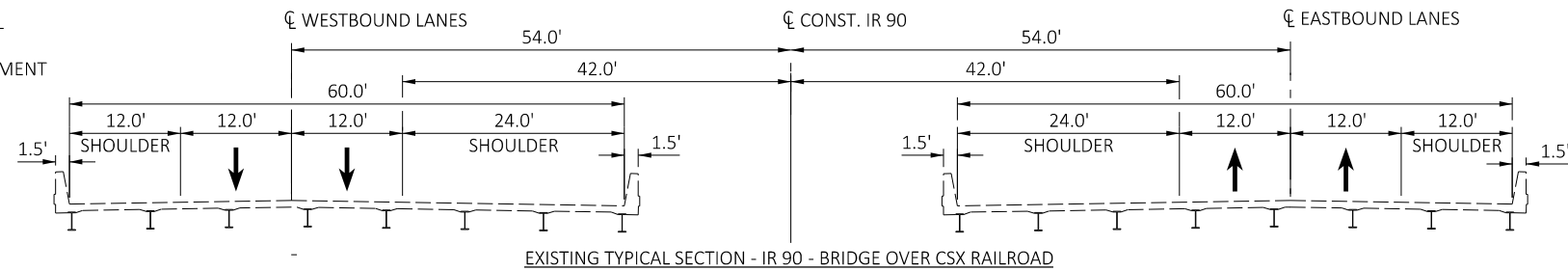
SHEET TOTAL

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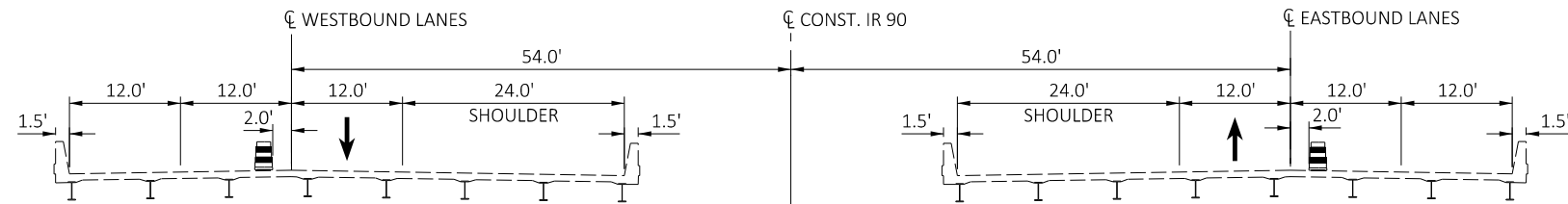


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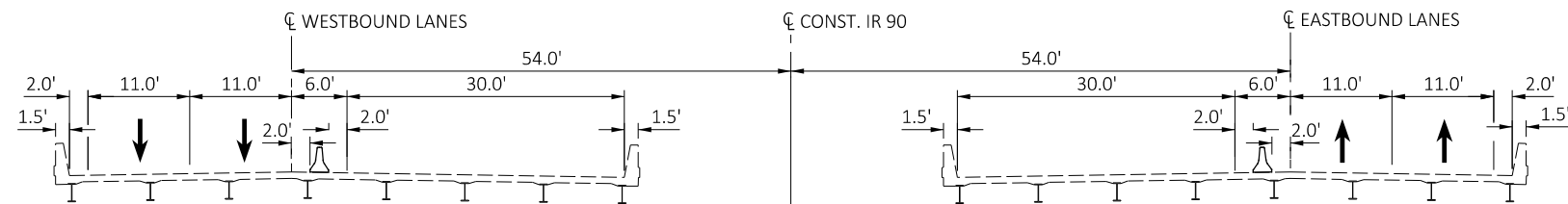
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



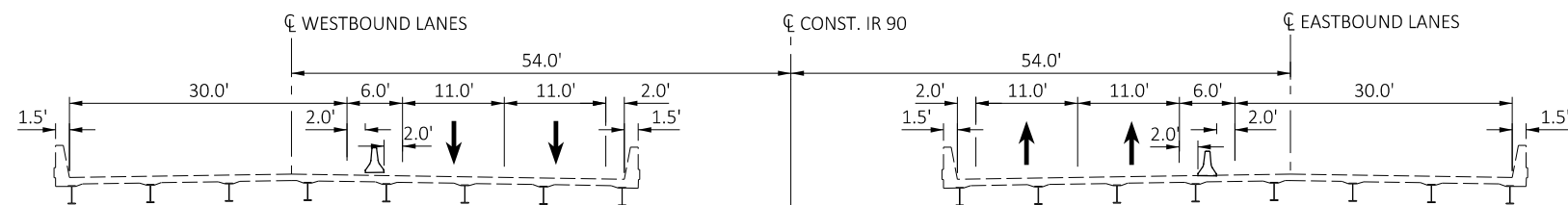
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER CSX RAILROAD



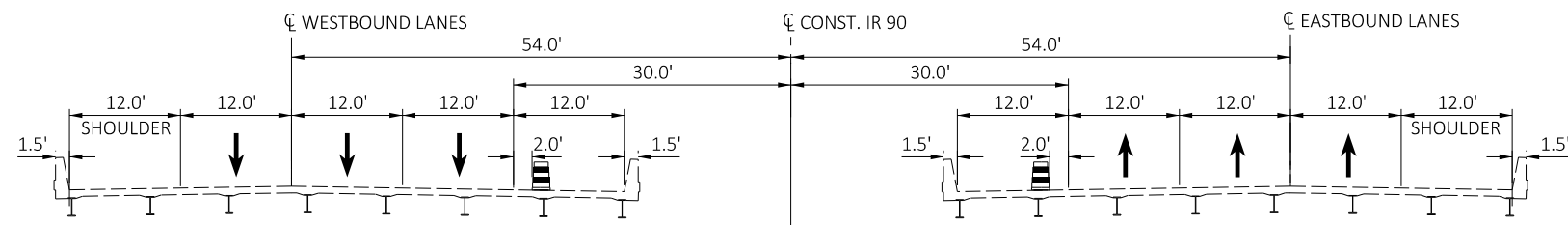
MOT PHASE 1 - EVENING CLOSURE - IR 90 - BRIDGE OVER CSX RAILROAD  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



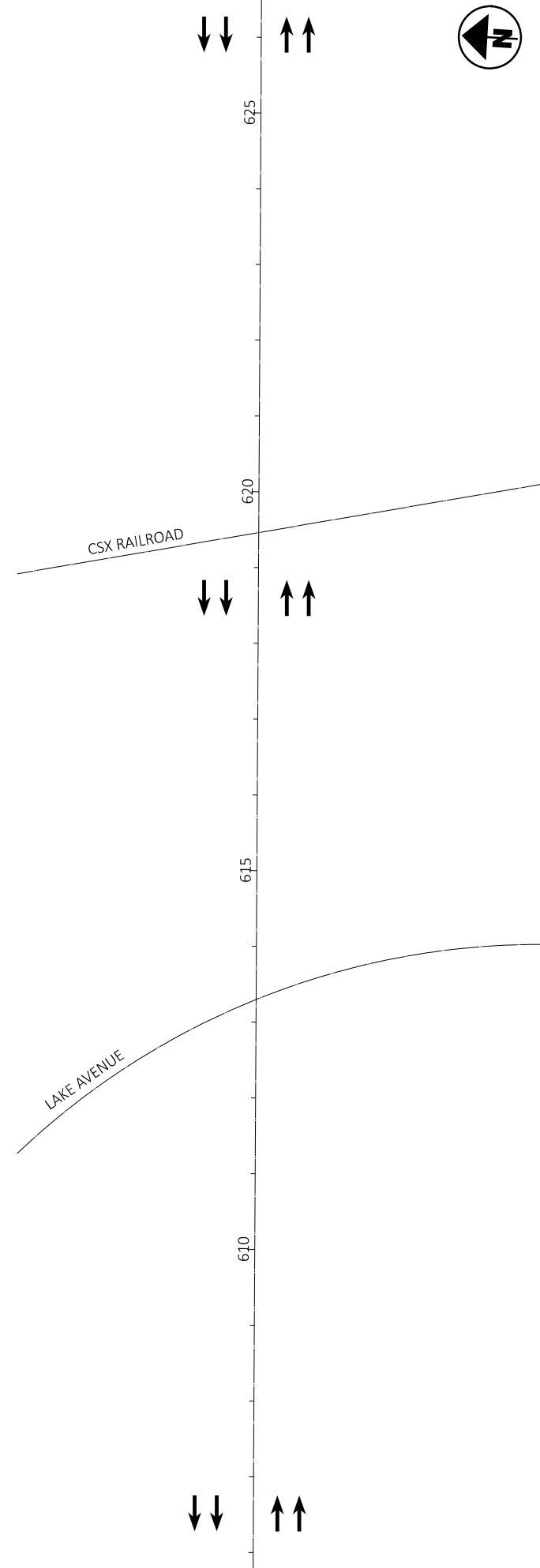
MOT PHASE 2 - IR 90 - BRIDGE OVER CSX RAILROAD  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, TEMPORARY PAVEMENT  
AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - BETWEEN SR 254 AND SR 611  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - BETWEEN SR 254 AND SR 611  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER CSX RAILROAD

DESIGN AGENCY



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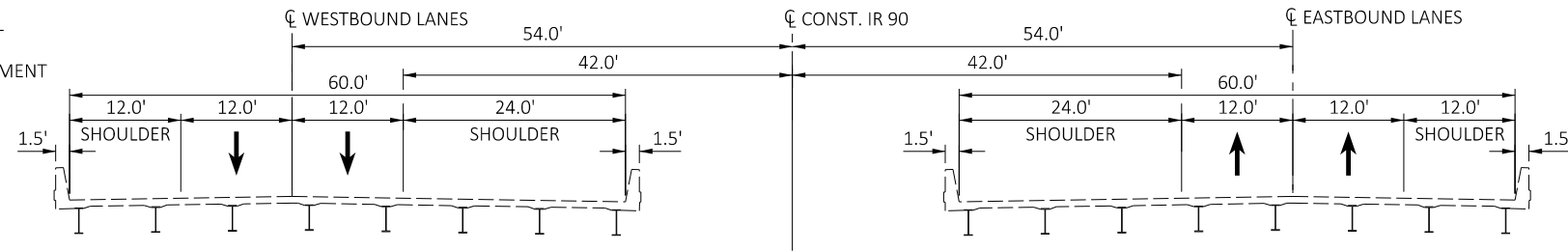
107714

SHEET TOTAL

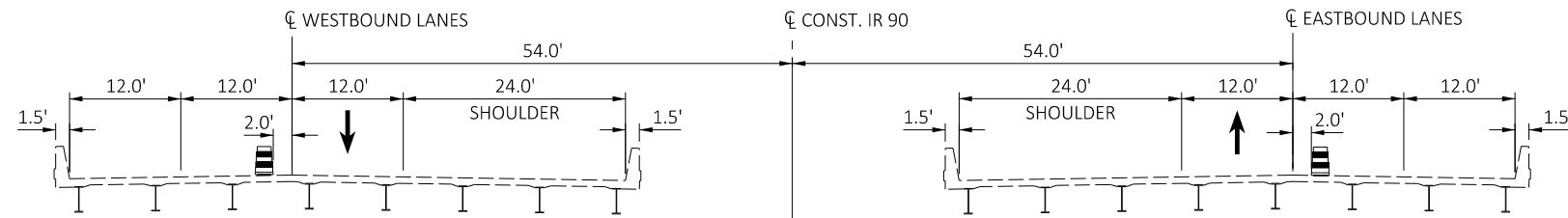
P.18 | 27

LEGEND

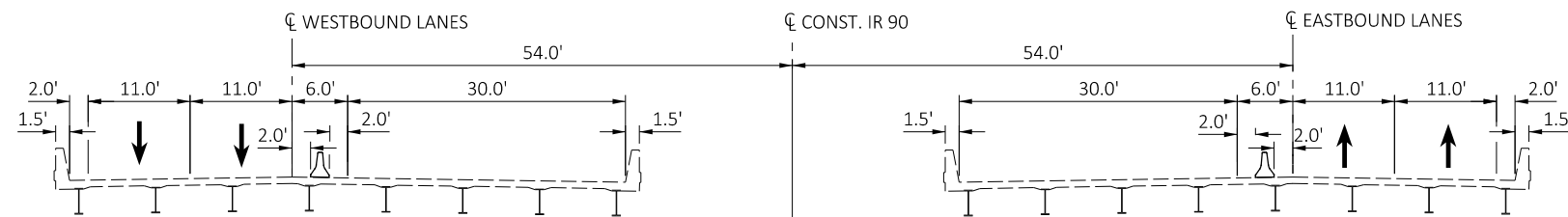
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



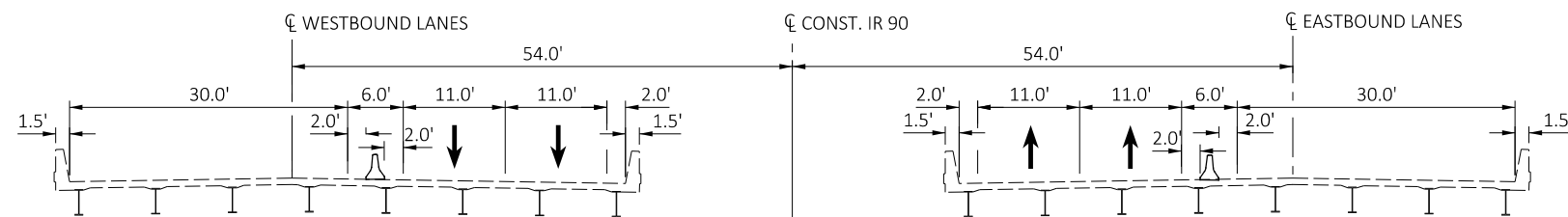
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER LAKE AVENUE



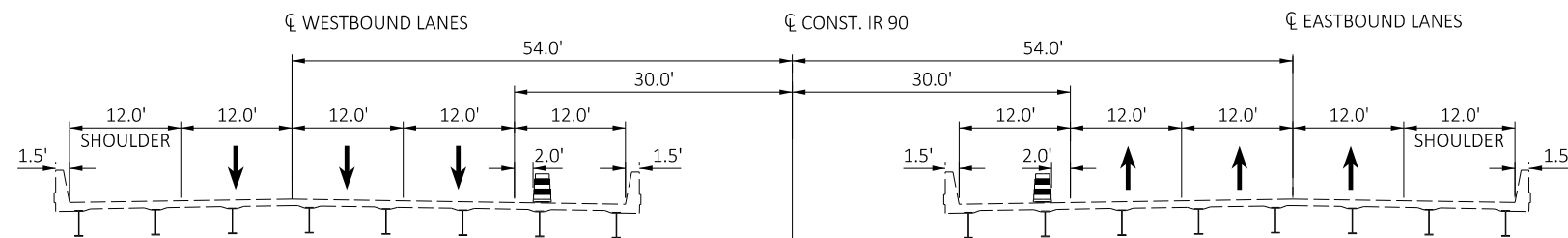
MOT PHASE 1 - EVENING CLOSURE - IR 90 - BRIDGE OVER LAKE AVENUE  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



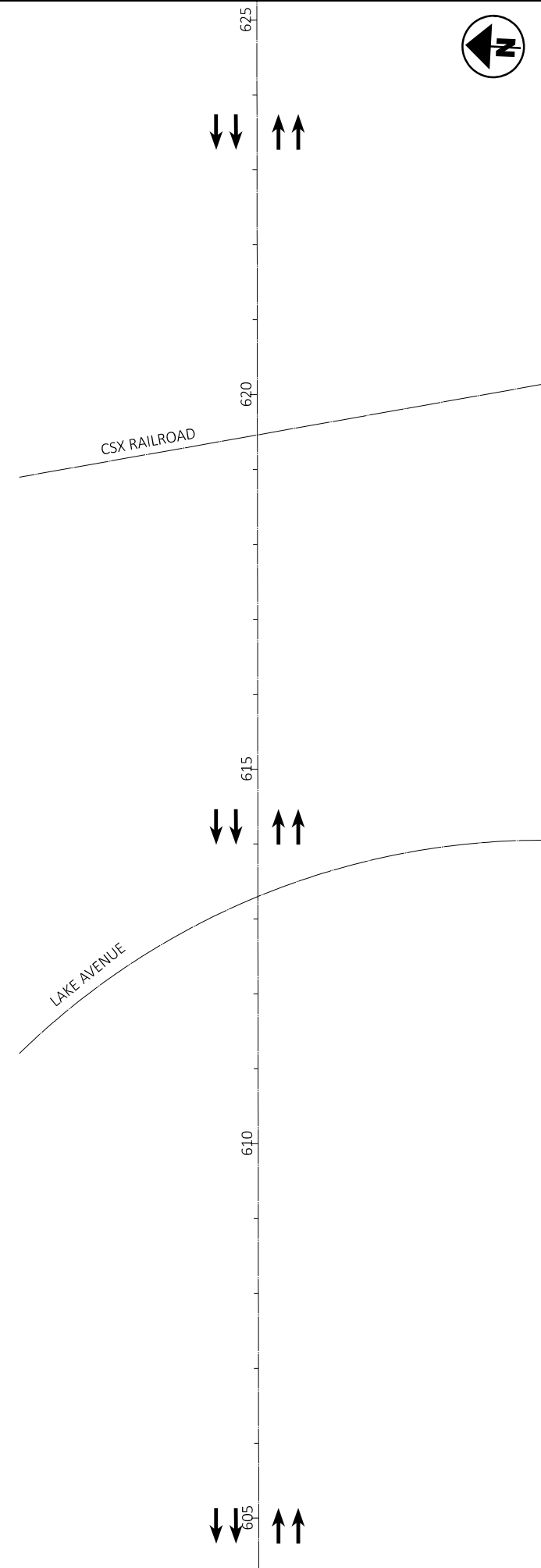
MOT PHASE 2 - IR 90 - BRIDGE OVER LAKE AVENUE  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 3 - IR 90 - BRIDGE OVER LAKE AVENUE  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 - BRIDGE OVER LAKE AVENUE  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING






MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER LAKE AVENUE

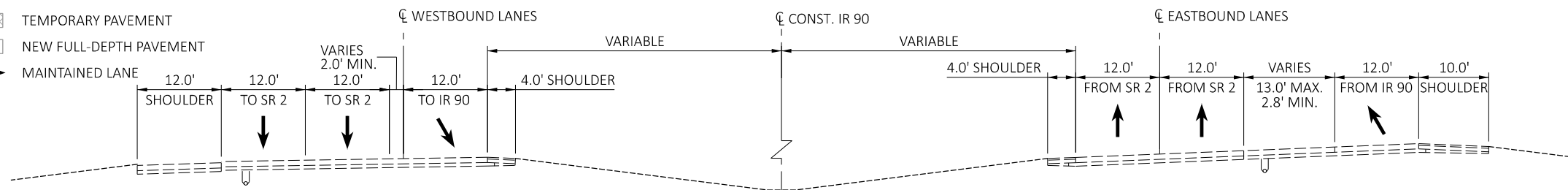
DESIGN AGENCY



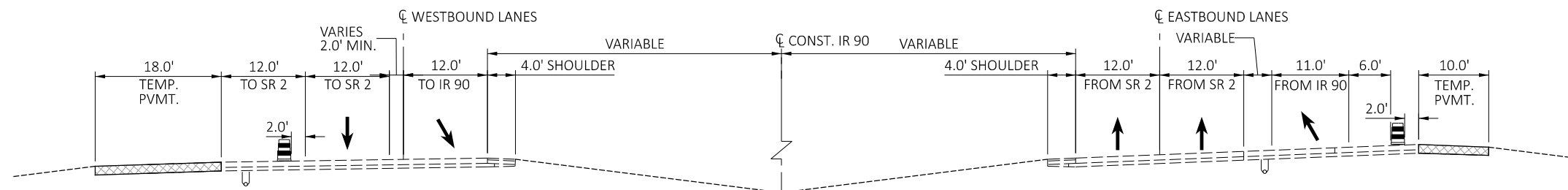
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.19	27

LEGEND

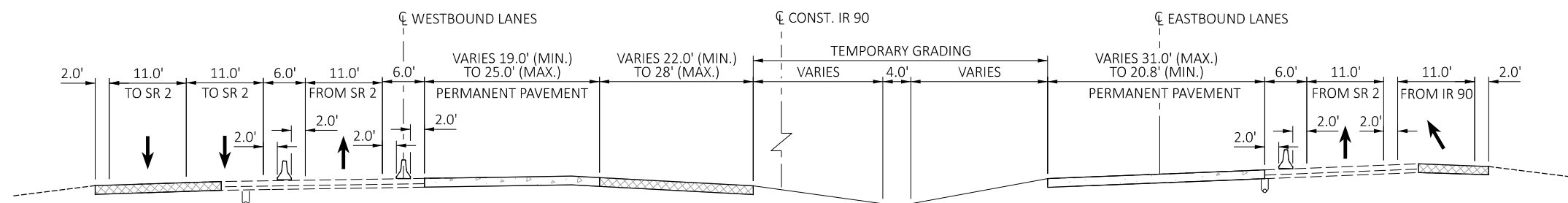
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



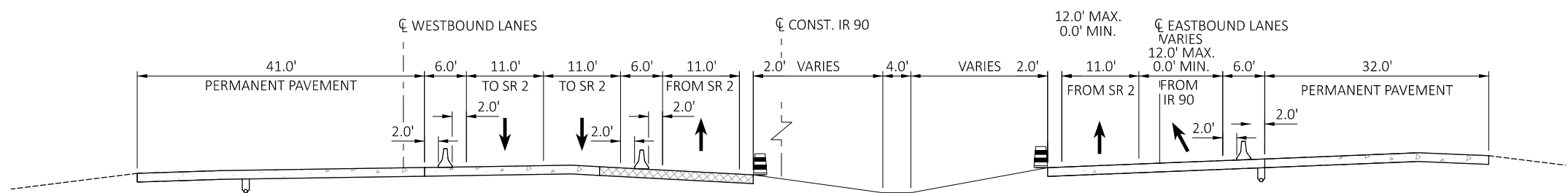
EXISTING TYPICAL SECTION - IR 90 & SR 2 - MERGE AND DIVERGE POINTS



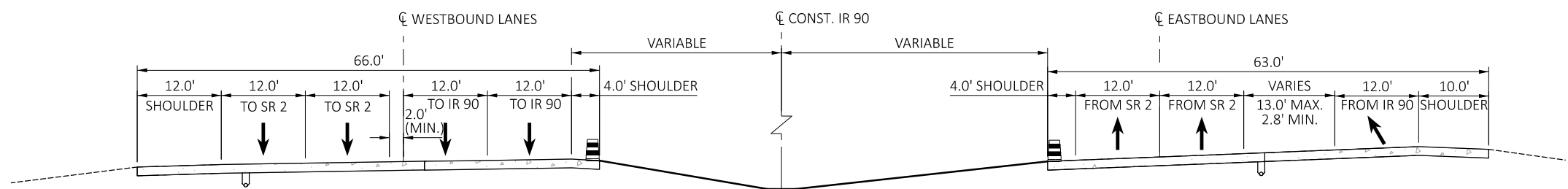
MOT PHASE 1 - EVENING CLOSURE - IR 90 & SR 2 - MERGE AND DIVERGE POINTS  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



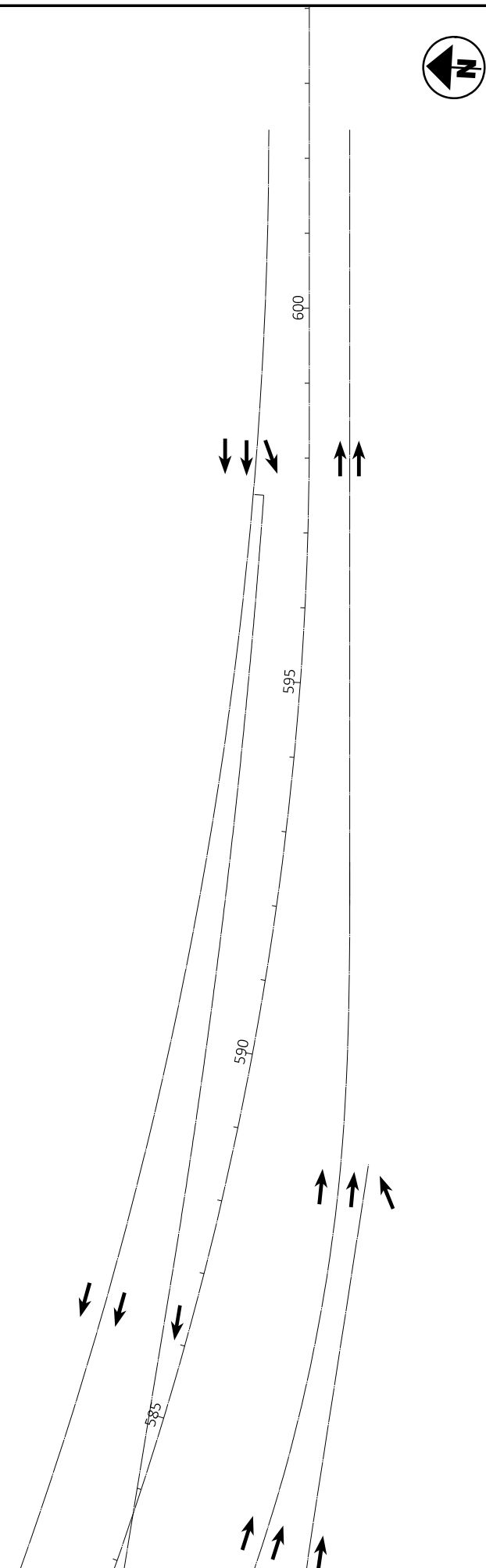
MOT PHASE 2 - IR 90 & SR 2 - MERGE AND DIVERGE POINTS  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL  
AND REPLACEMENT AND PERMANENT GRADING



MOT PHASE 3 - IR 90 & SR 2 - MERGE AND DIVERGE POINTS  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 4 - IR 90 & SR 2 - MERGE AND DIVERGE POINTS  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND PERMANENT GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 - SR 2 MERGE & DIVERGE LANES

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

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PROJECT ID

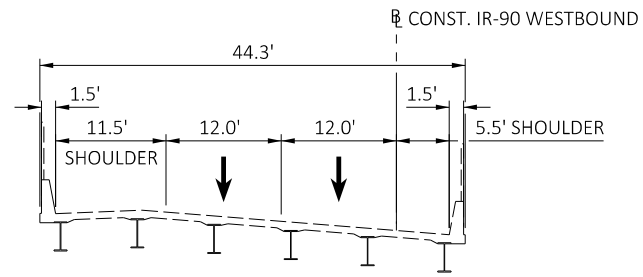
107714

SHEET TOTAL

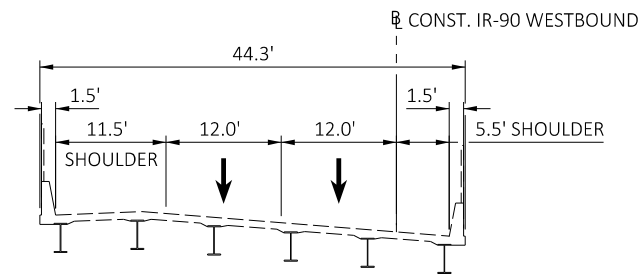
P.20 27

LEGEND

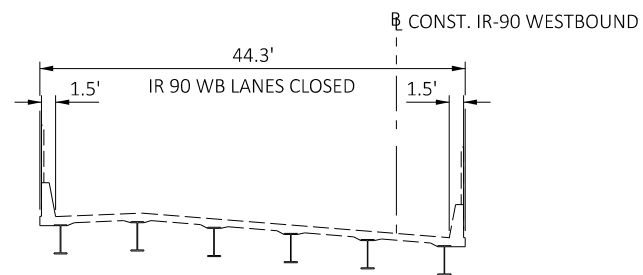
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



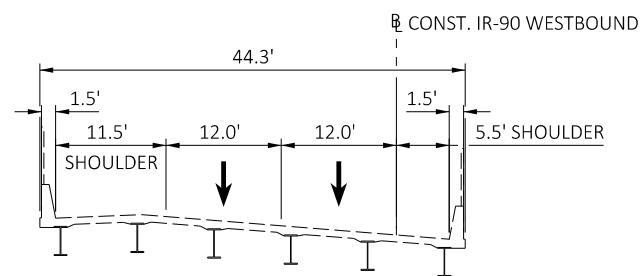
EXISTING TYPICAL SECTION - IR 90 WB - BRIDGE OVER SR 2



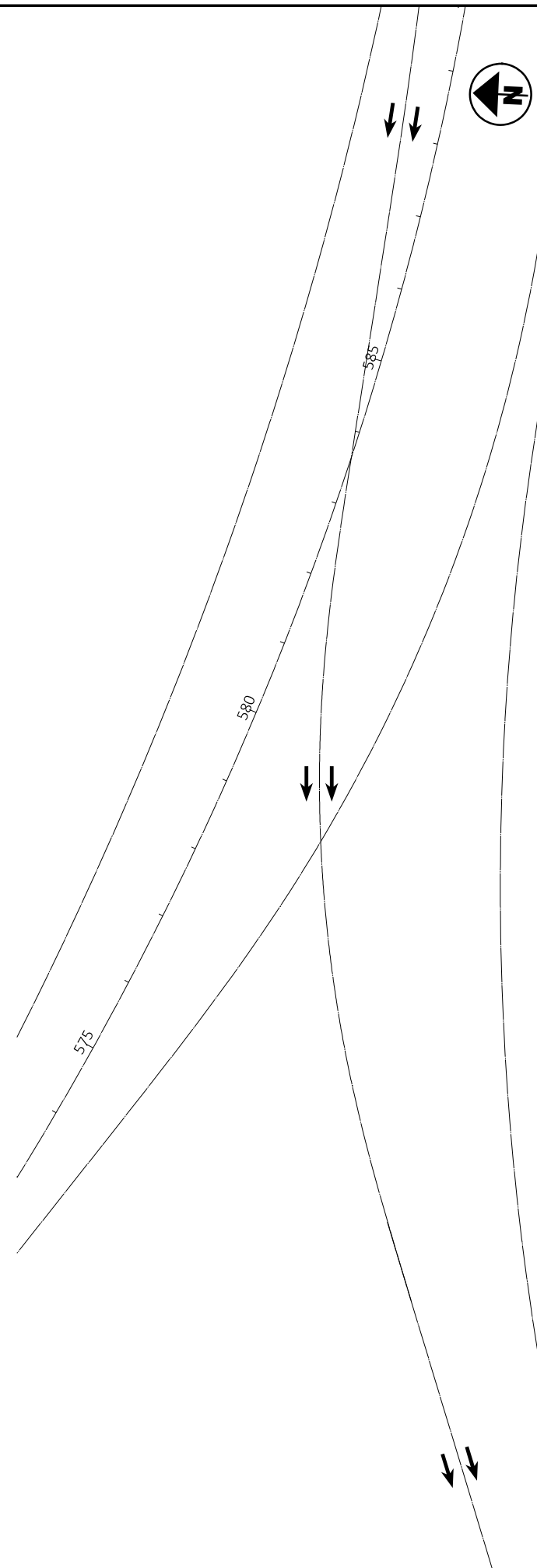
MOT PHASE 1 - EVENING CLOSURE - IR 90 WB - BRIDGE OVER SR 2  
PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



MOT PHASE 2 - IR 90 WB - BRIDGE OVER SR 2  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL  
AND REPLACEMENT



MOT PHASE 3 - IR 90 WB - BRIDGE OVER SR 2  
PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND

DESIGN AGENCY



DESIGNER  
SHT




REVIEWER  
CWP 12/14/23

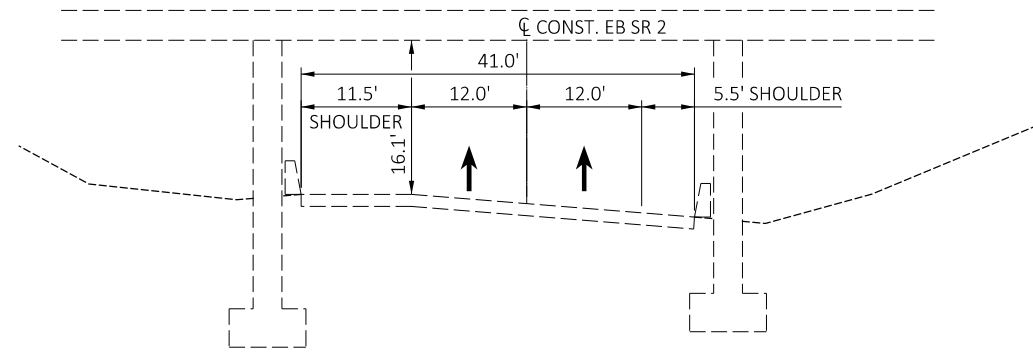
PROJECT ID  
107714

SHEET	TOTAL
P.21	27

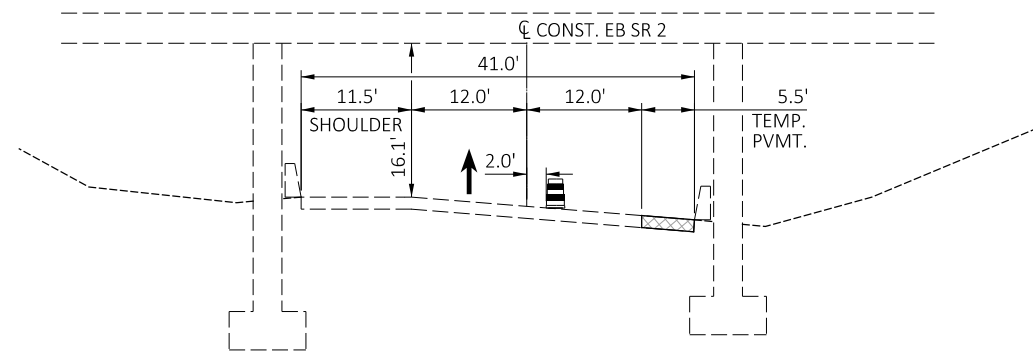


LEGEND

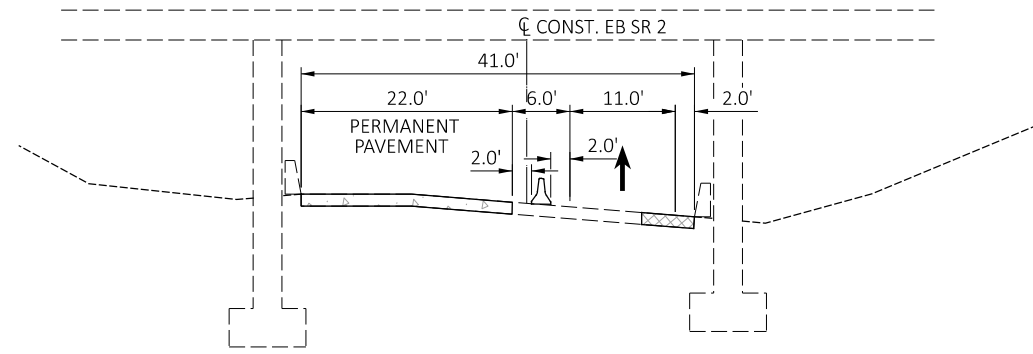
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



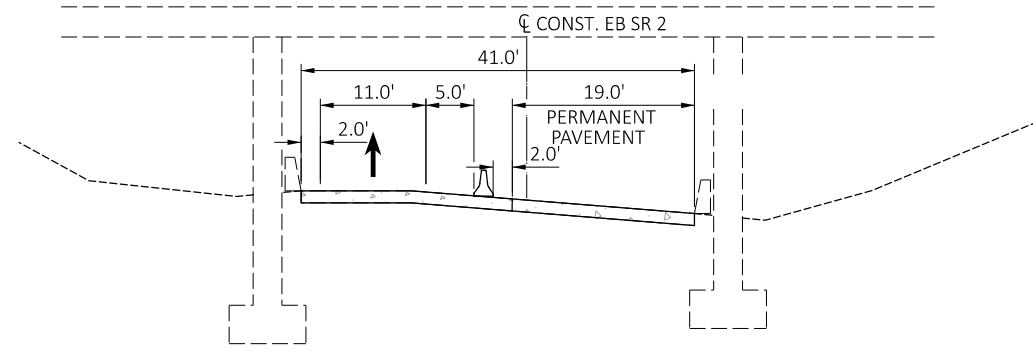
EXISTING TYPICAL SECTION - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND



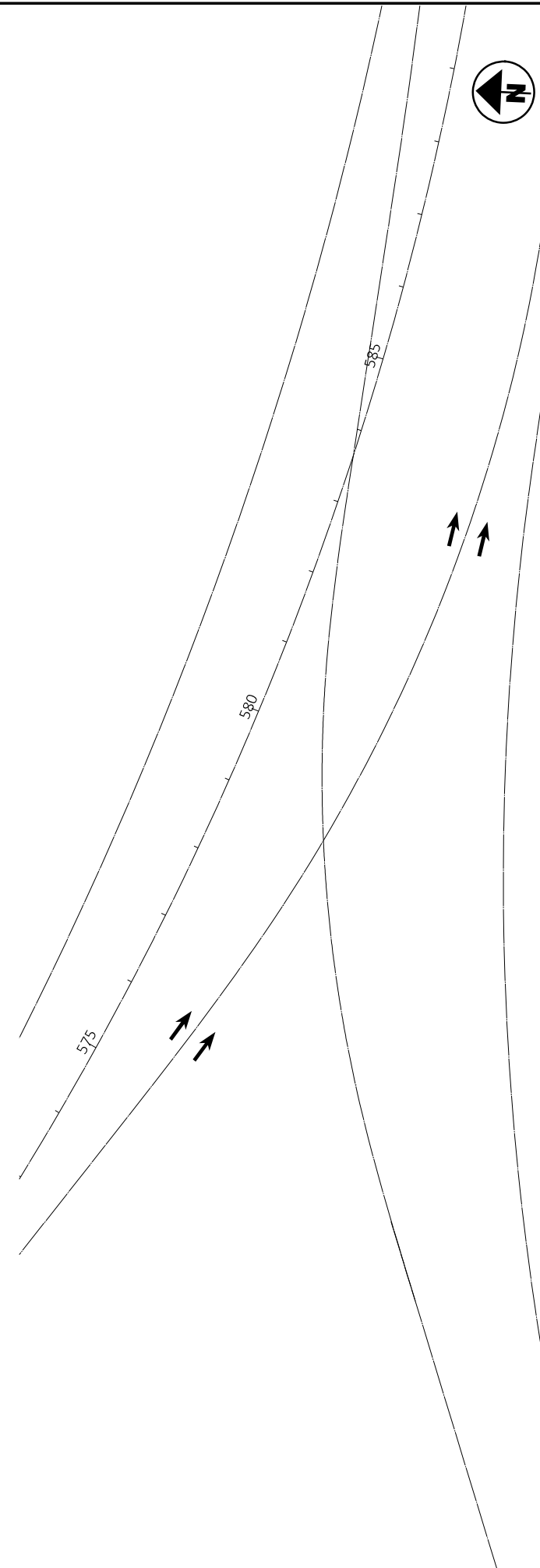
MOT PHASE 1 - EVENING CLOSURE - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND PART-WIDTH ALTERNATIVE - TEMPORARY PAVEMENT



MOT PHASE 2 - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND PART-WIDTH ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOTAA - TYPICAL SECTIONS - SR 2  
PART-WIDTH ALTERNATIVE - SR 2 UNDER IR 90 WB RAMP

DESIGN AGENCY






DESIGNER  
SHT

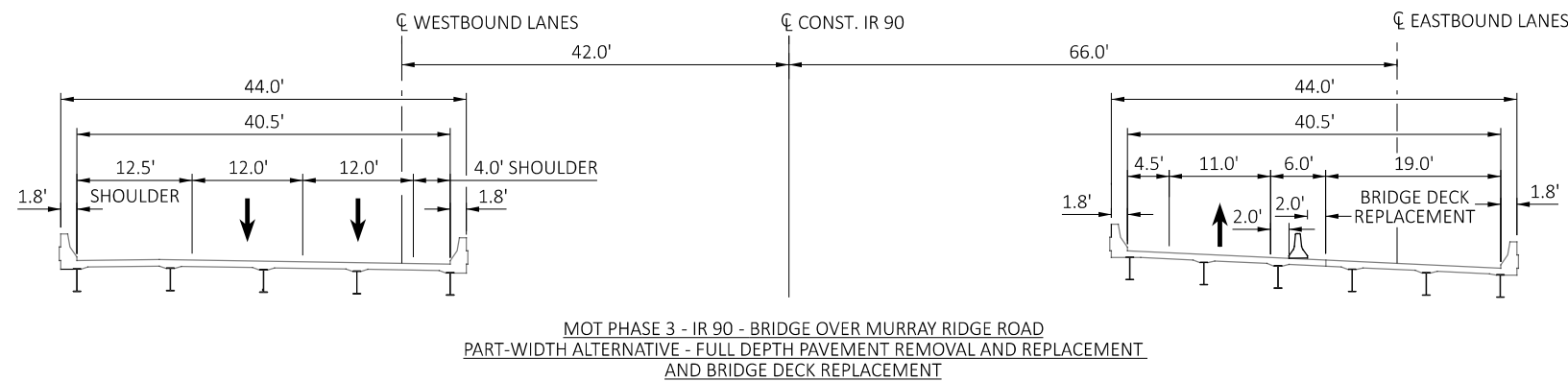
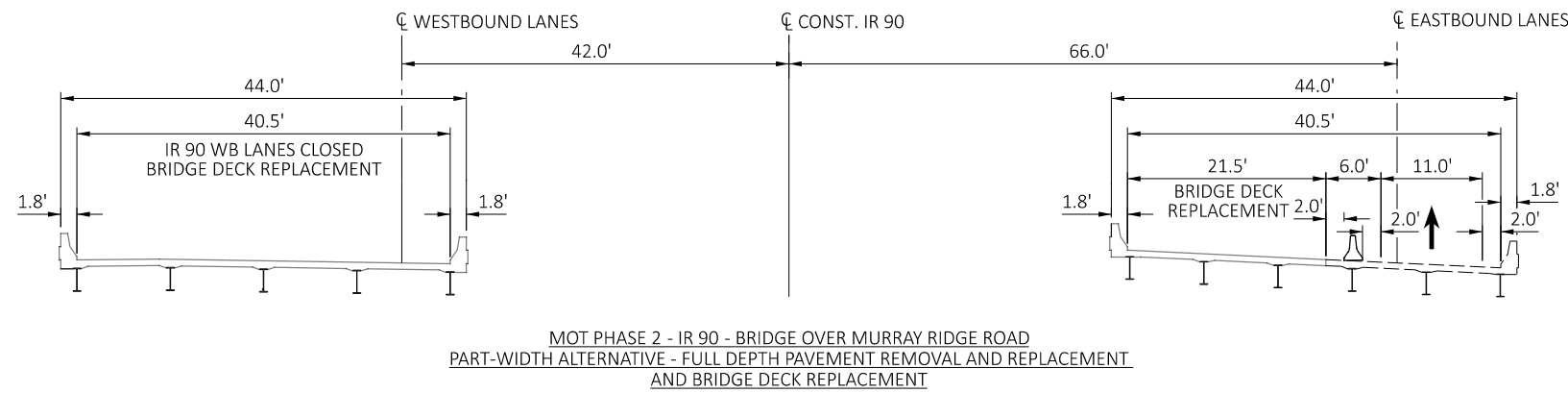
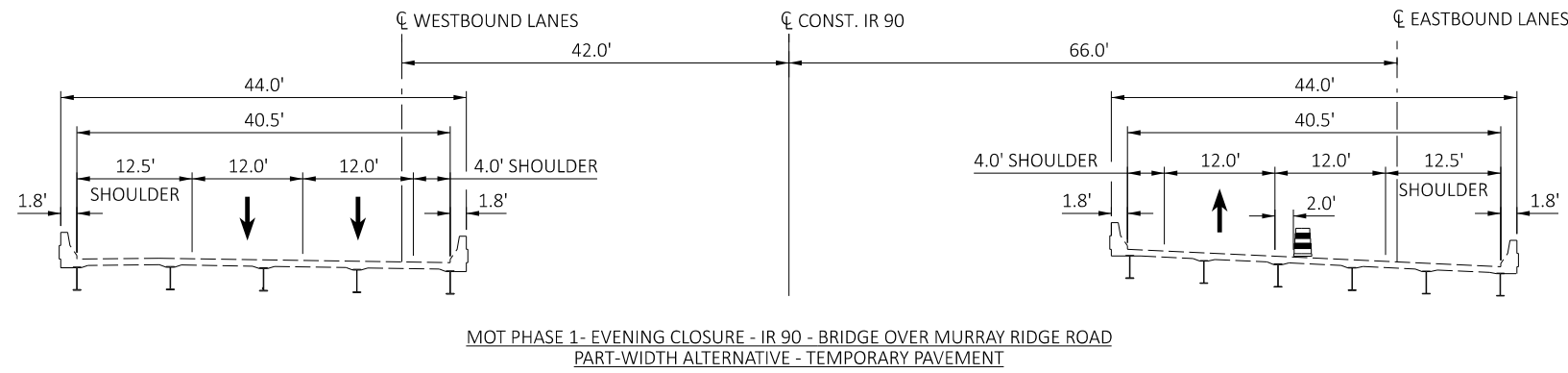
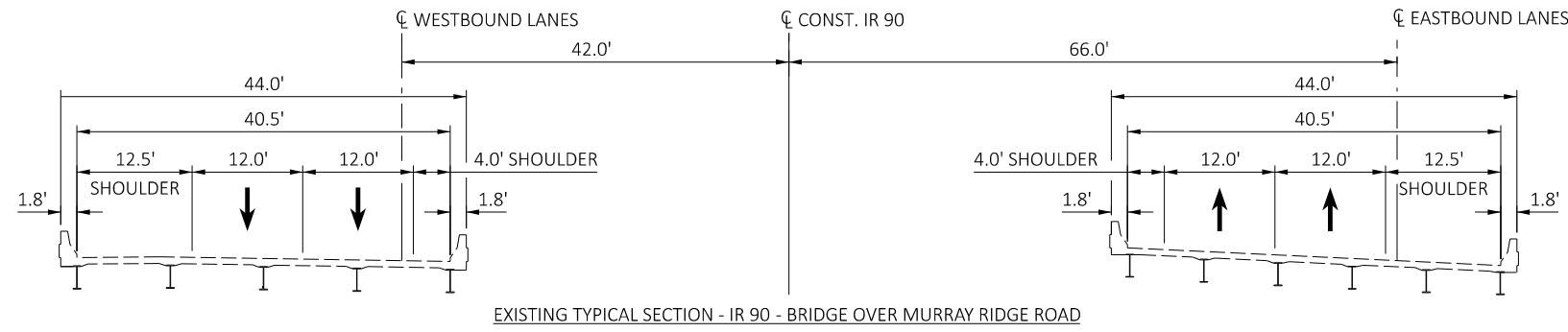
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET	TOTAL
P.22	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



MURRAY RIDGE ROAD

560

↑↑  
↓↓

555

550






MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BRIDGE OVER MURRAY RIDGE ROAD

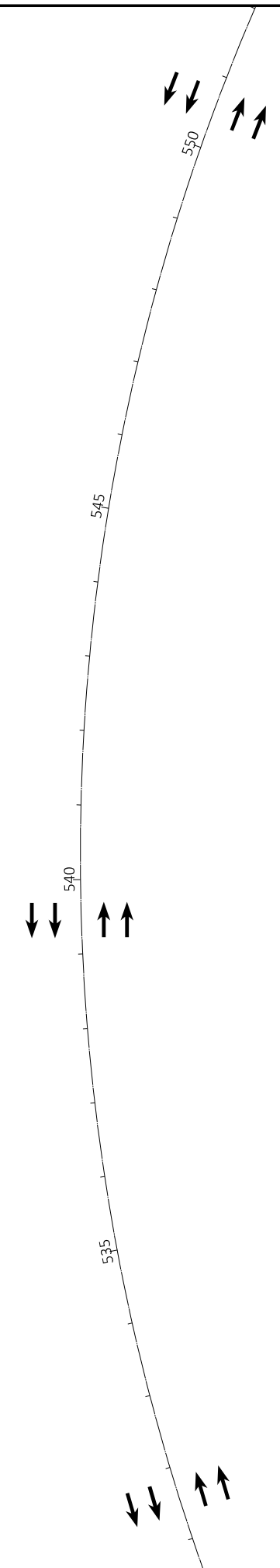
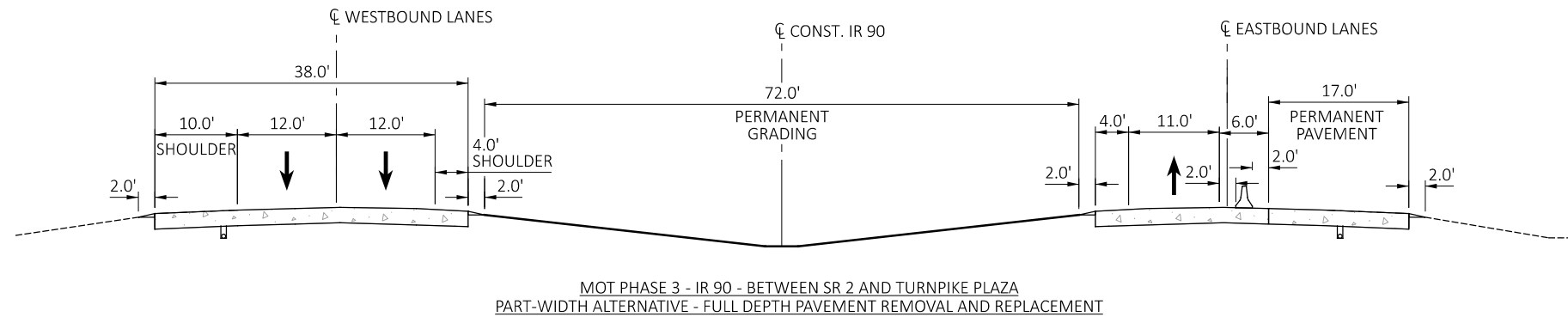
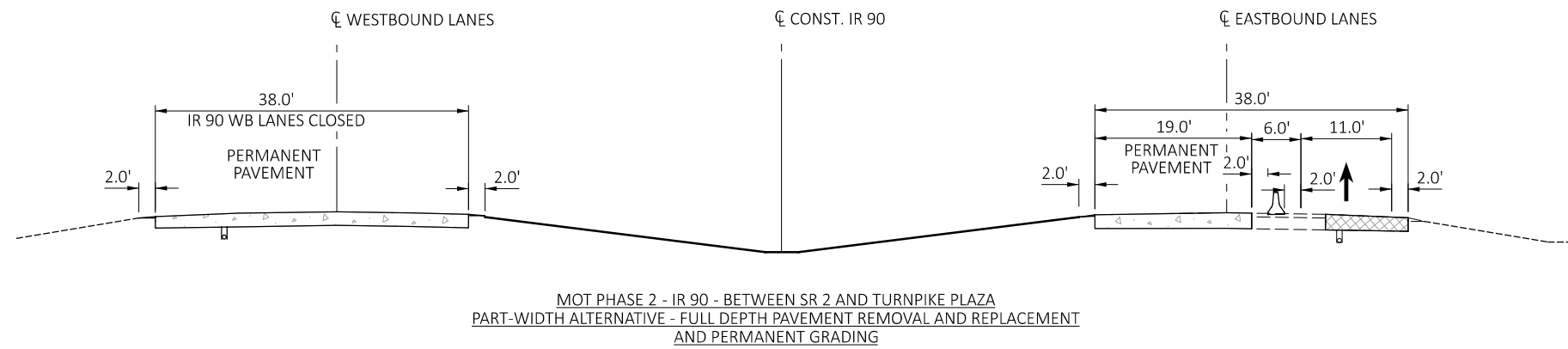
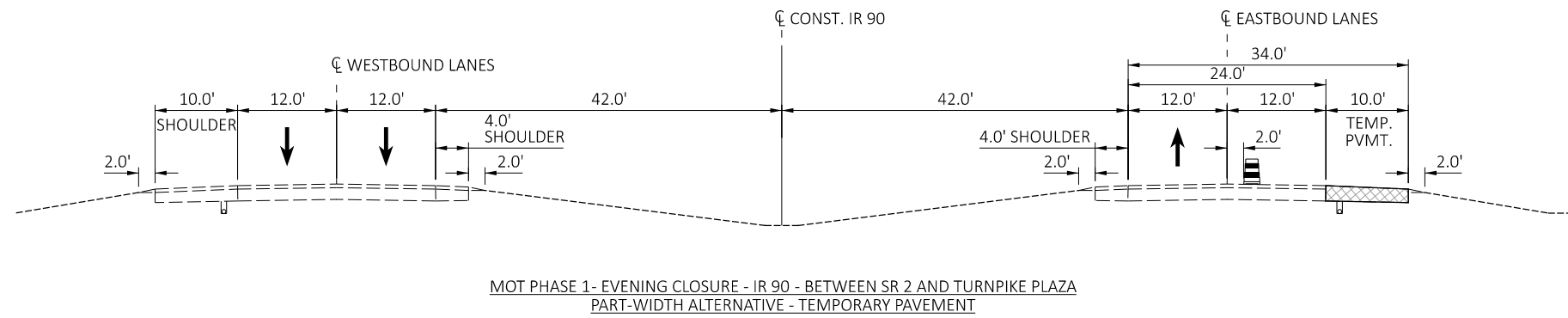
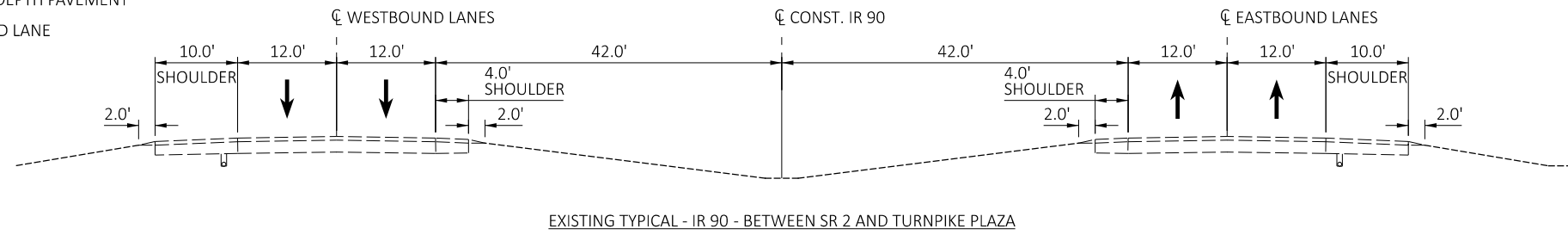
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.23	27

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






MOTAA - TYPICAL SECTIONS - IR 90  
PART-WIDTH ALTERNATIVE - IR 90 BETWEEN TURNPIKE PLAZA AND SR 2

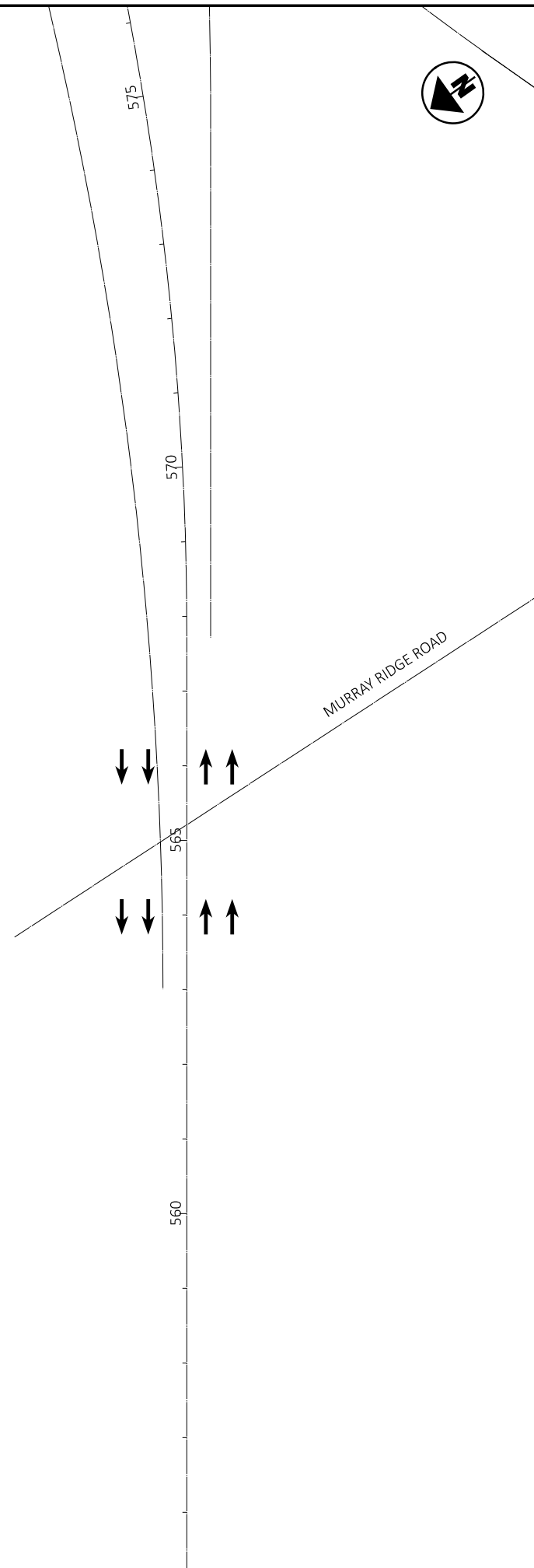
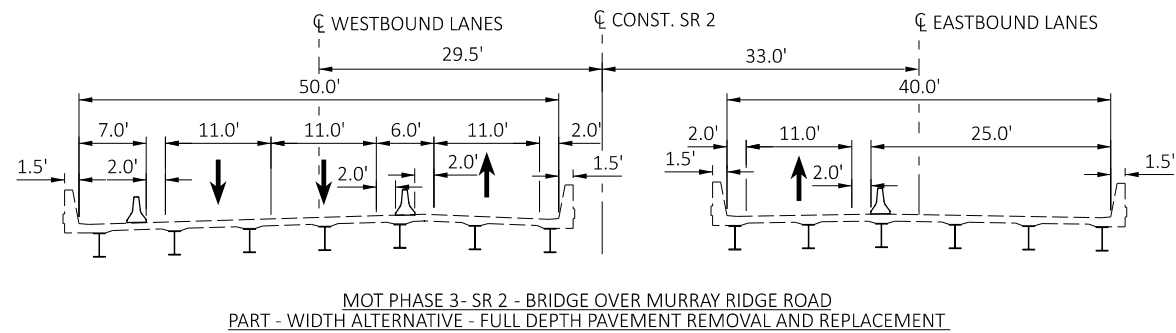
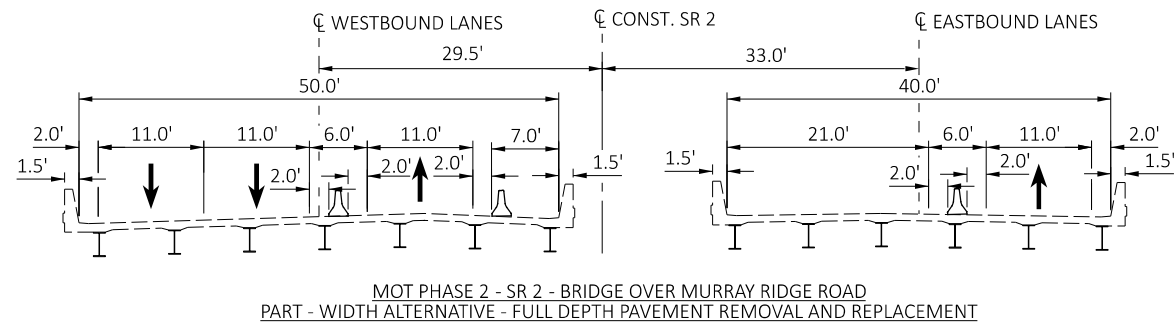
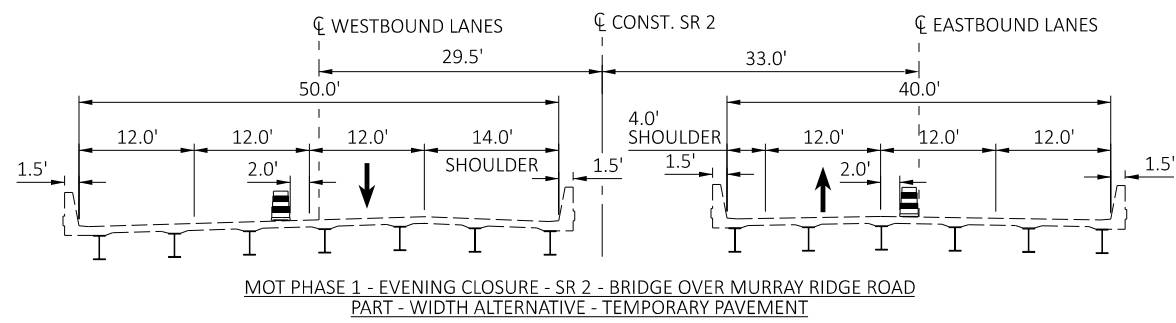
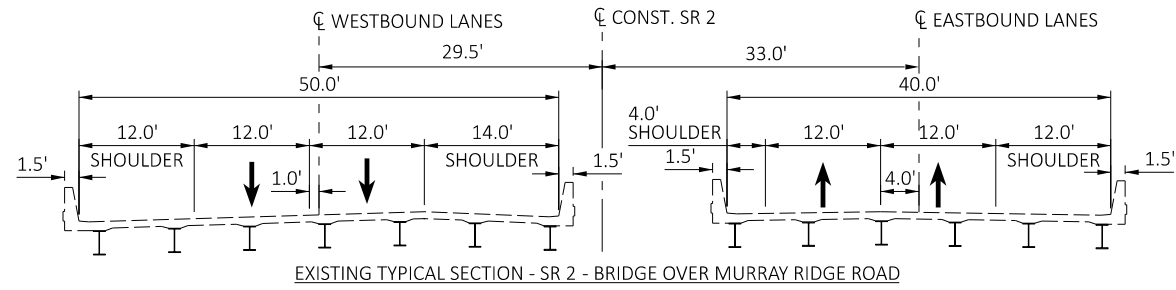
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.24	27

LEGEND




-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE

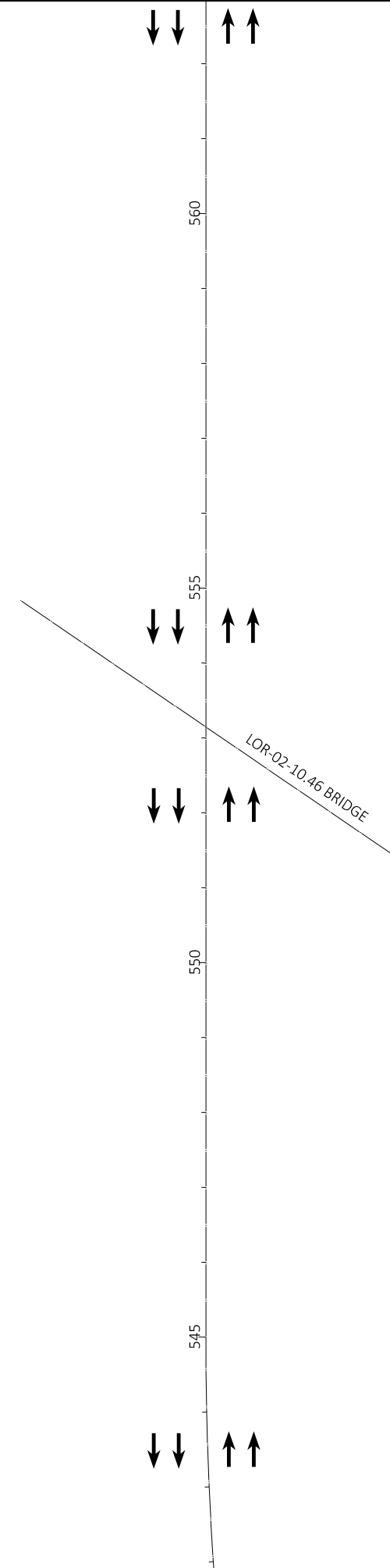
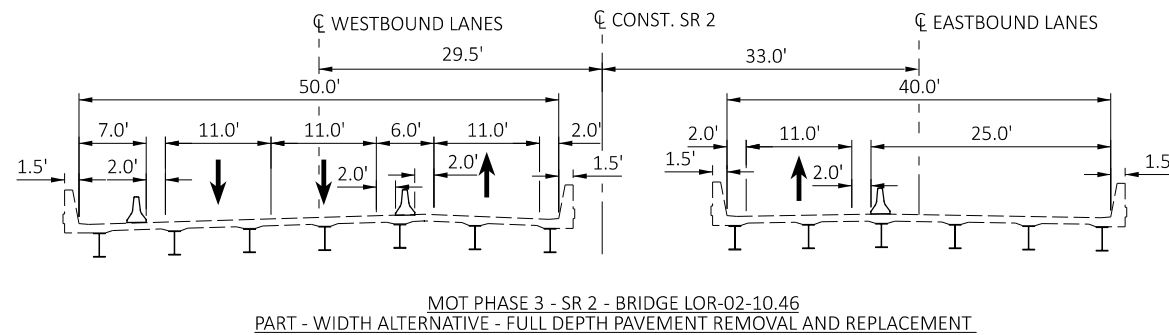
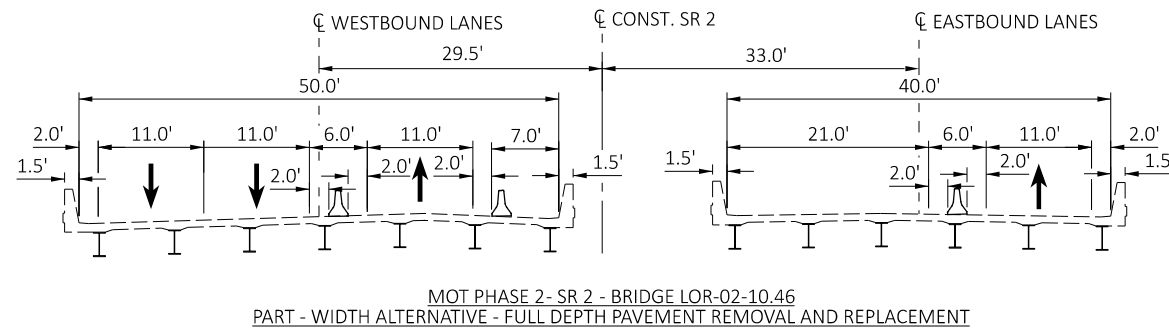
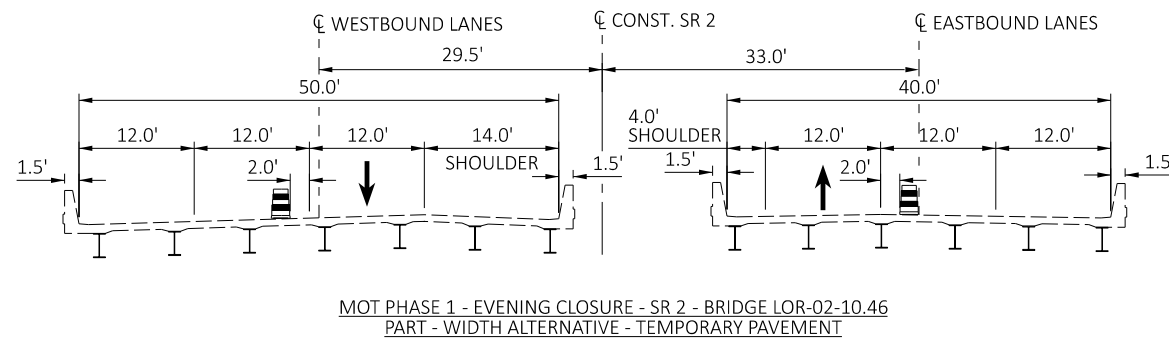
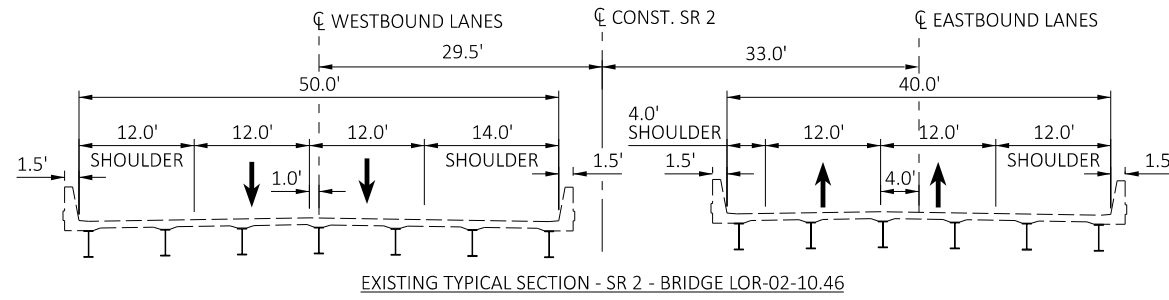


MOTAA - TYPICAL SECTIONS - SR 2  
PART-WIDTH ALTERNATIVE - SR 2 BRIDGE OVER MURRAY RIDGE ROAD

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	P.25
TOTAL	27

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






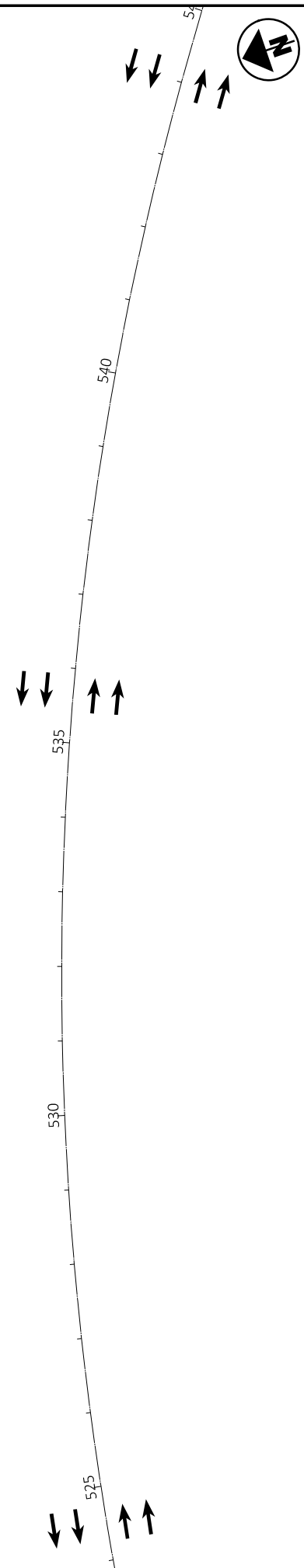
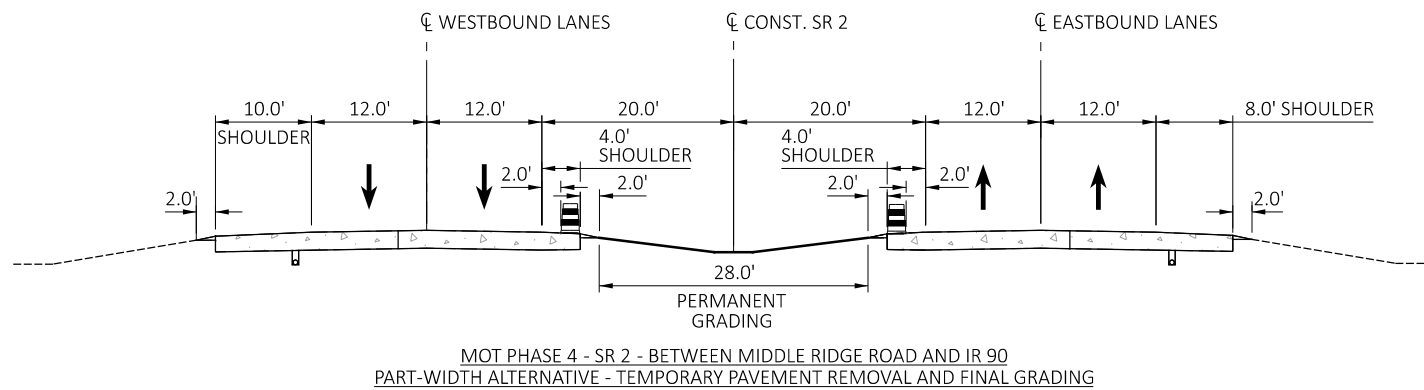
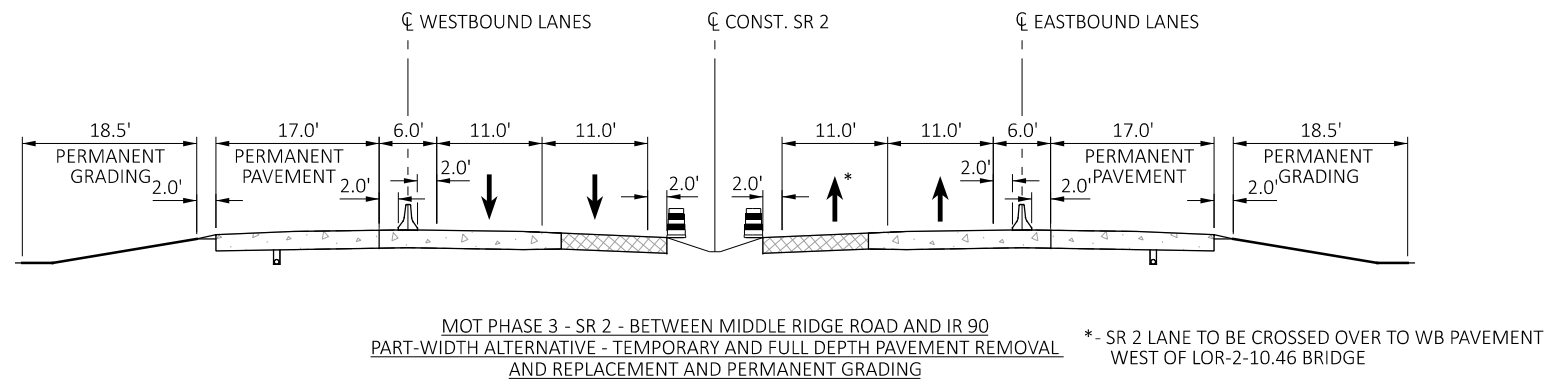
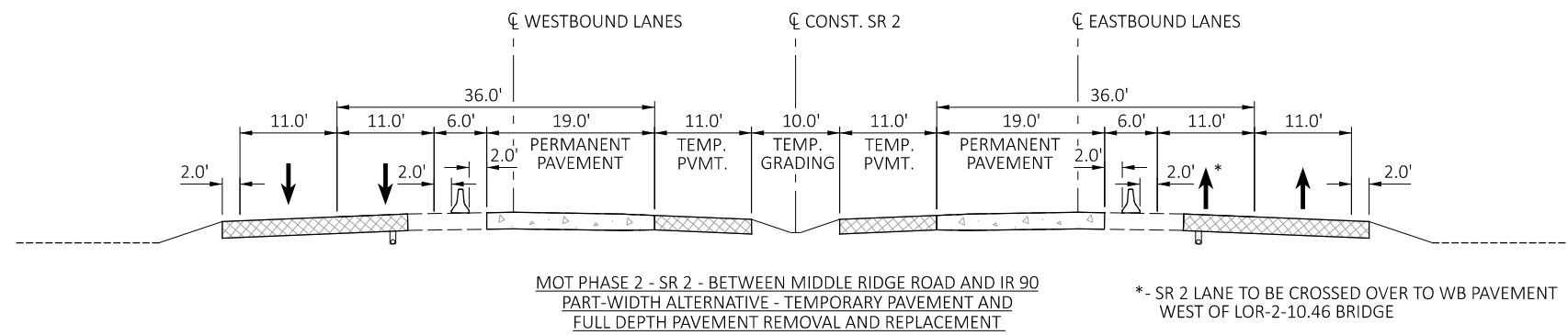
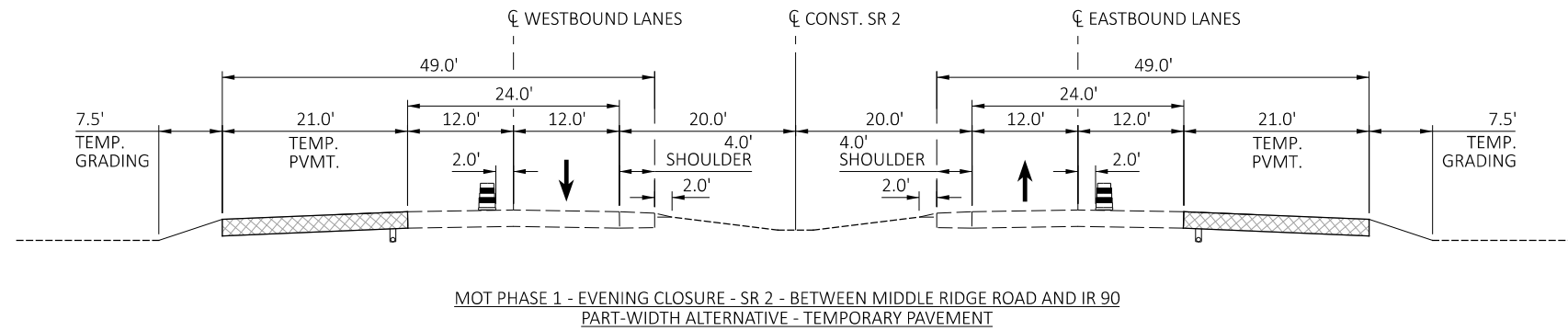
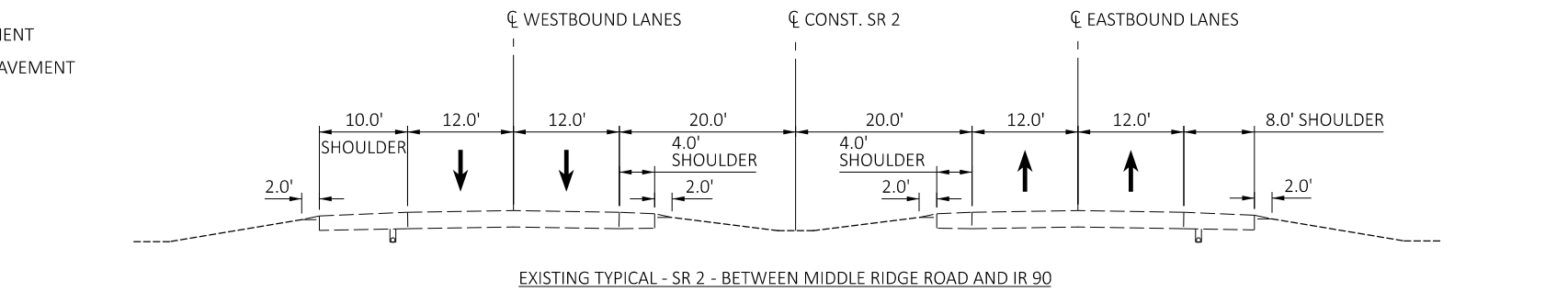
MOTAA - TYPICAL SECTIONS - SR 2  
PART-WIDTH ALTERNATIVE - SR 2 BRIDGE LOR-2-10.46

DESIGN AGENCY	
	
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DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.26	27



LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






MOTAA - TYPICAL SECTIONS - SR 2  
PART-WIDTH ALTERNATIVE - SR 2 BETWEEN MIDDLE RIDGE ROAD AND IR 90

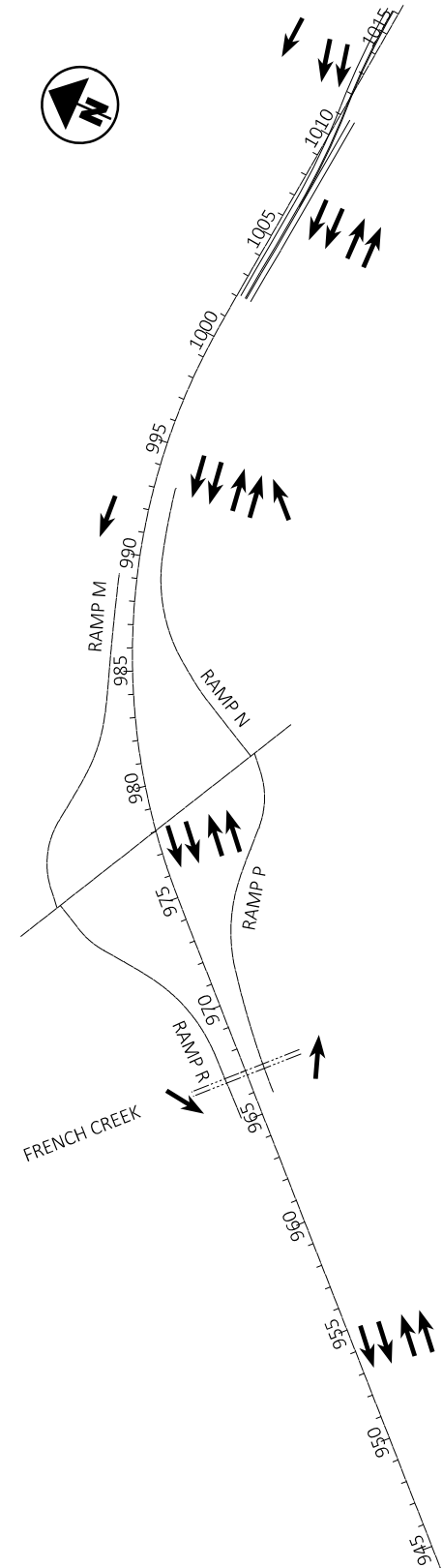
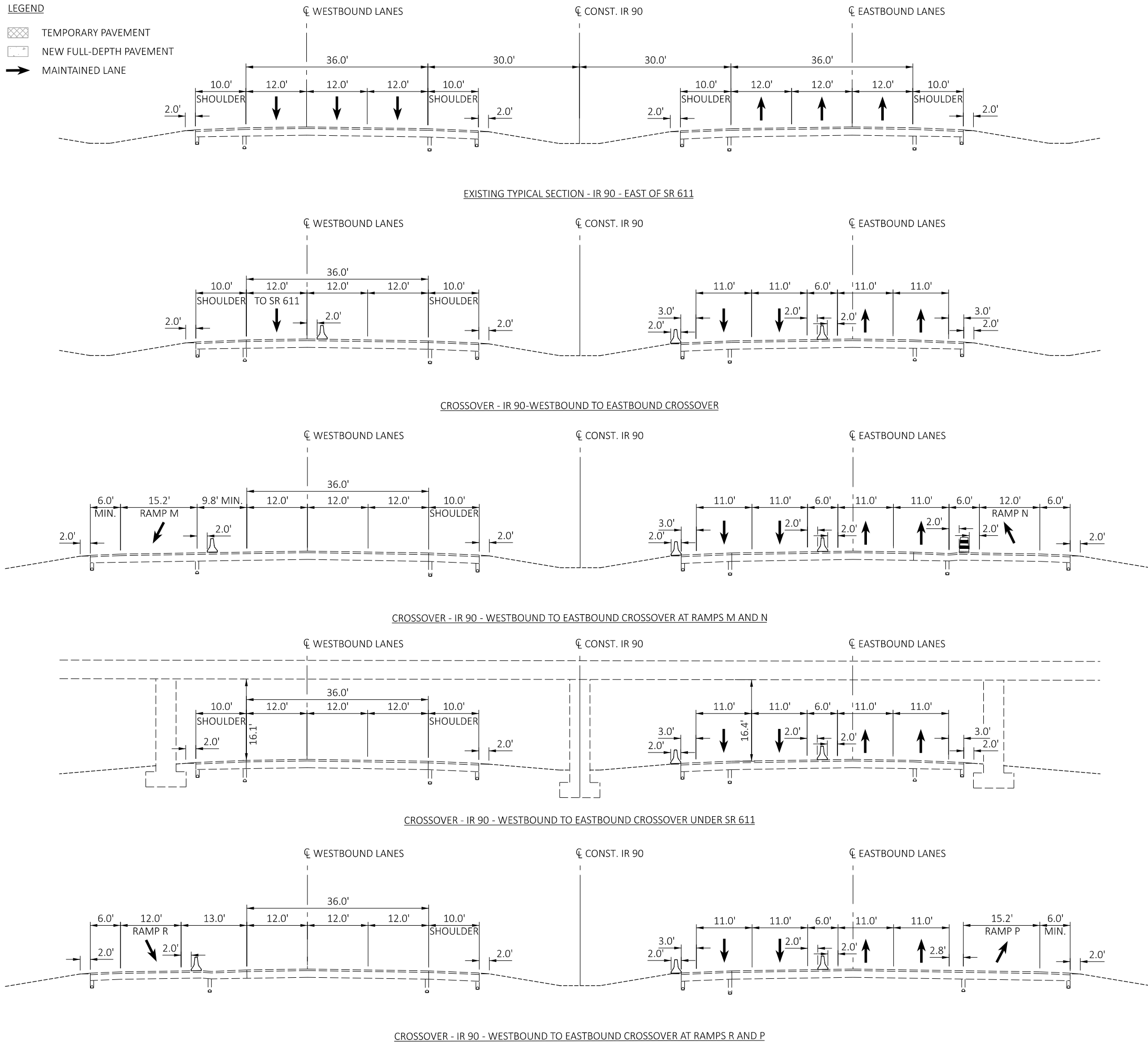
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET TOTAL	P.27 27




Appendix F: Crossover MOT Typical Sections

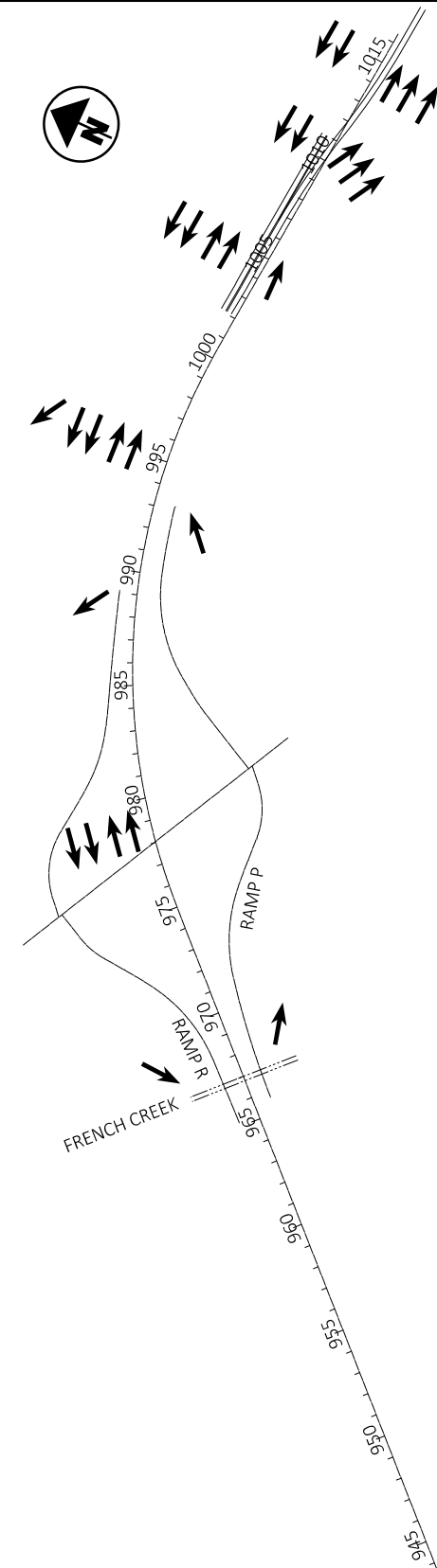
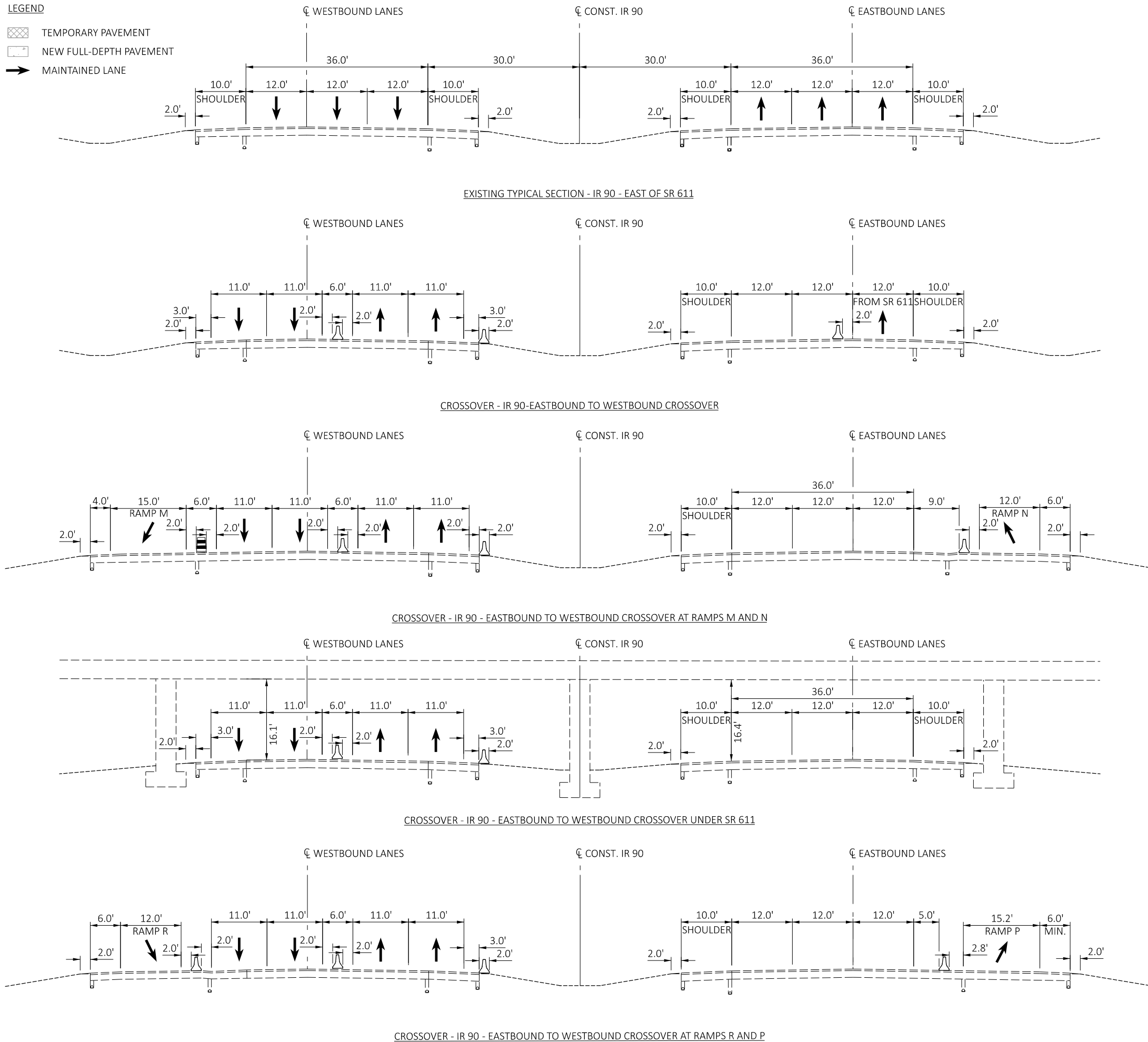
- LEGEND**
-  TEMPORARY PAVEMENT
  -  NEW FULL-DEPTH PAVEMENT
  -  MAINTAINED LANE



**MOTAA - TYPICAL SECTIONS - IR 90**  
**CROSSOVER ALTERNATIVE - WESTBOUND CROSSOVER - IR 90 AND SR 611**

DESIGN AGENCY	
	
<b>CHAGRIN VALLEY ENGINEERING, LTD.</b>	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.01	29




- LEGEND**
-  TEMPORARY PAVEMENT
  -  NEW FULL-DEPTH PAVEMENT
  -  MAINTAINED LANE

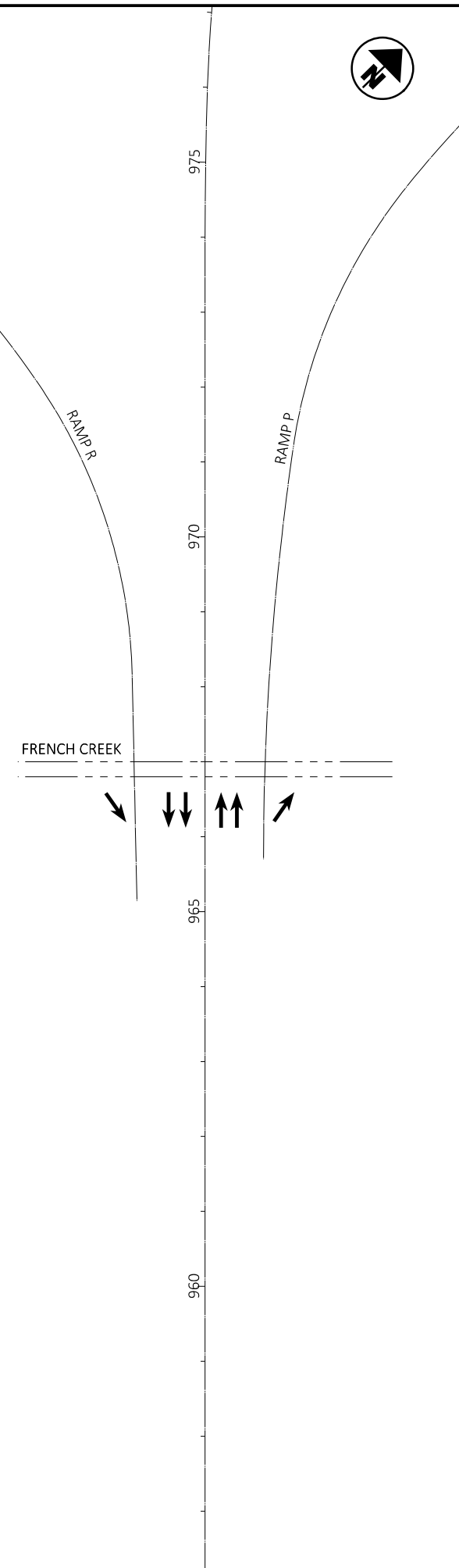
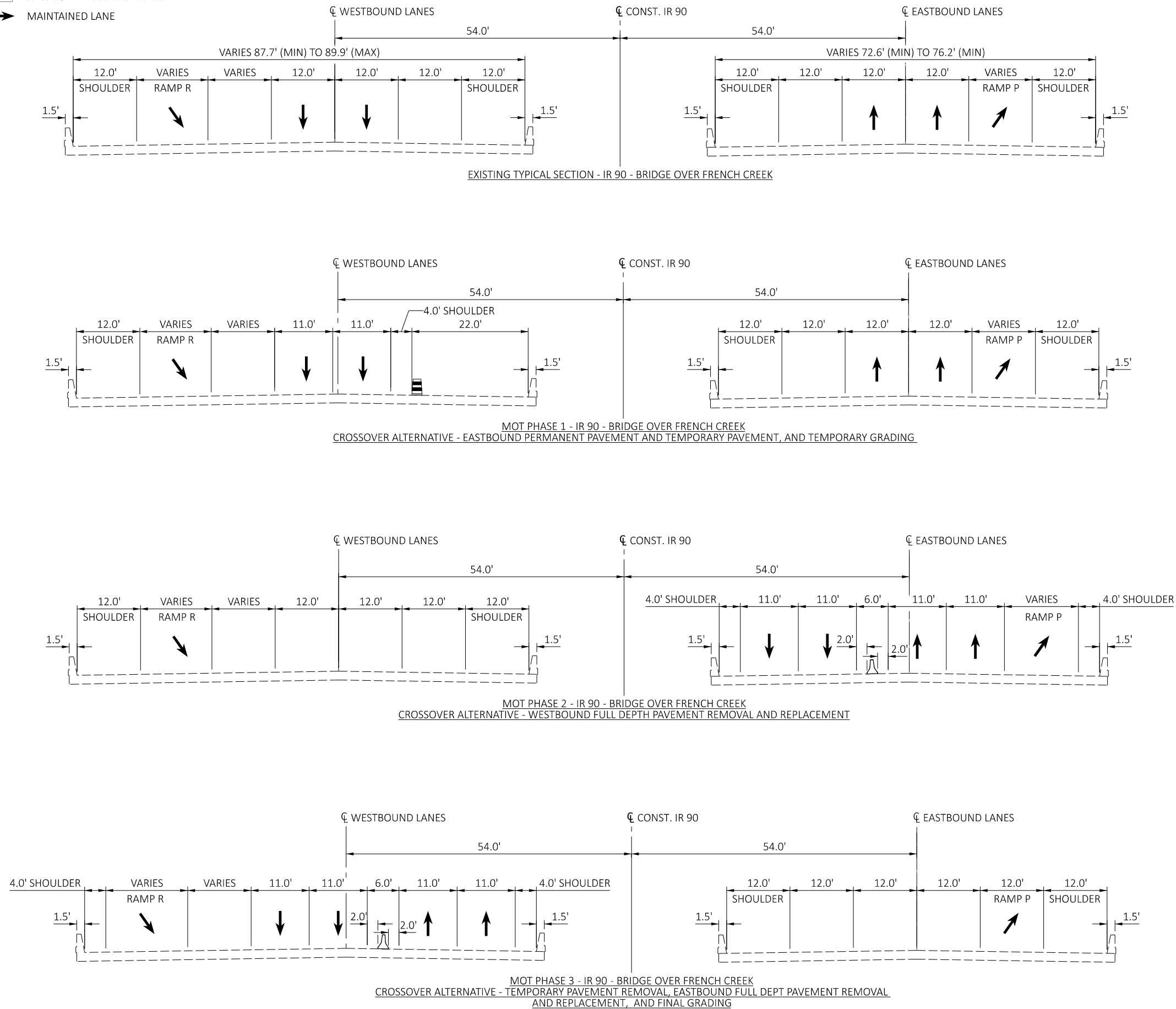


MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - EASTBOUND CROSSOVER - IR 90 AND SR 611

DESIGN AGENCY	
	
CHAGRIN VALLEY ENGINEERING, LTD.	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.02	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






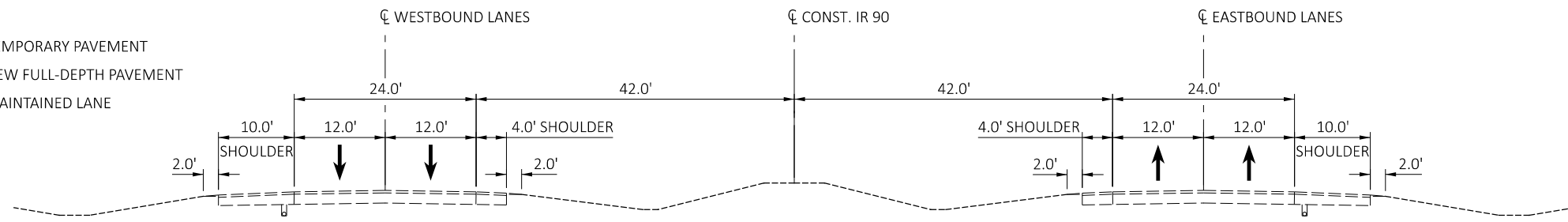
MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER FRENCH CREEK

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET TOTAL	P.03 29

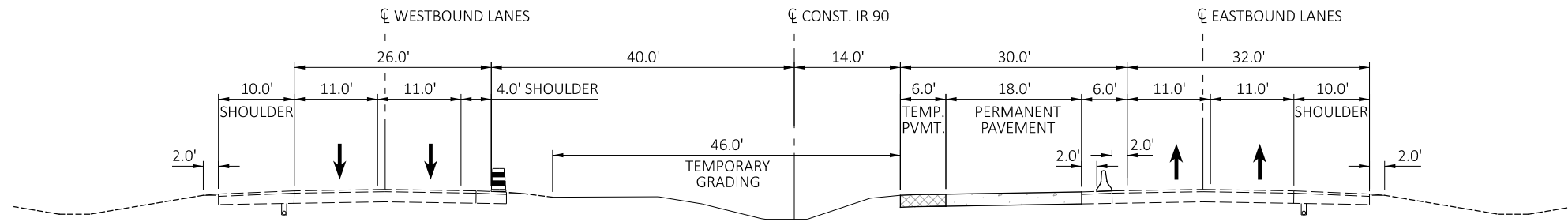


LEGEND

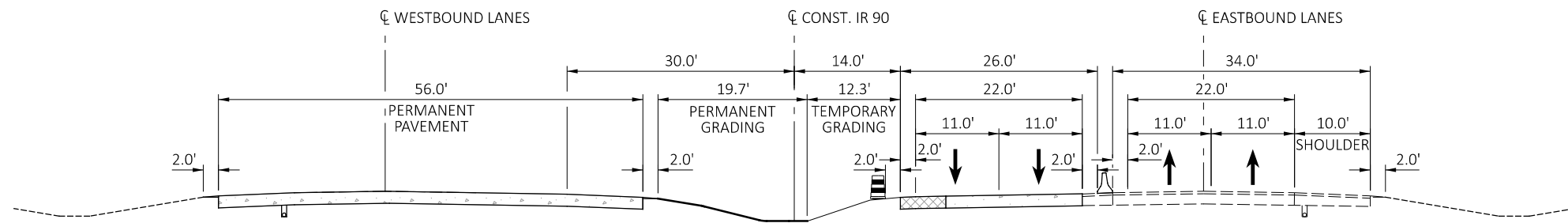
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



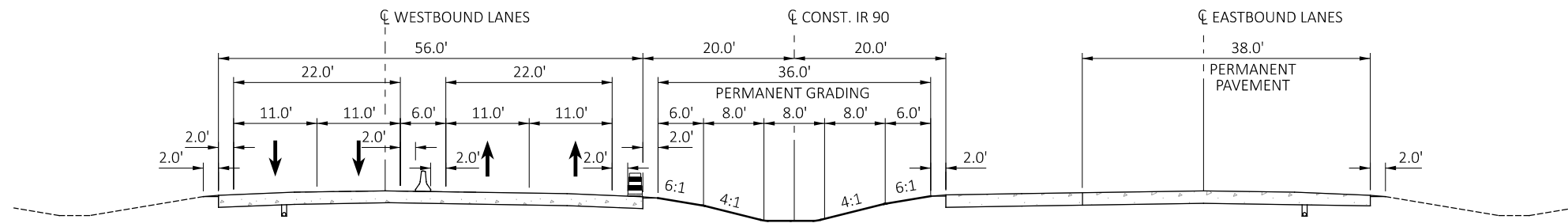
EXISTING TYPICAL SECTION - IR 90 - BETWEEN SR 254 AND SR 611



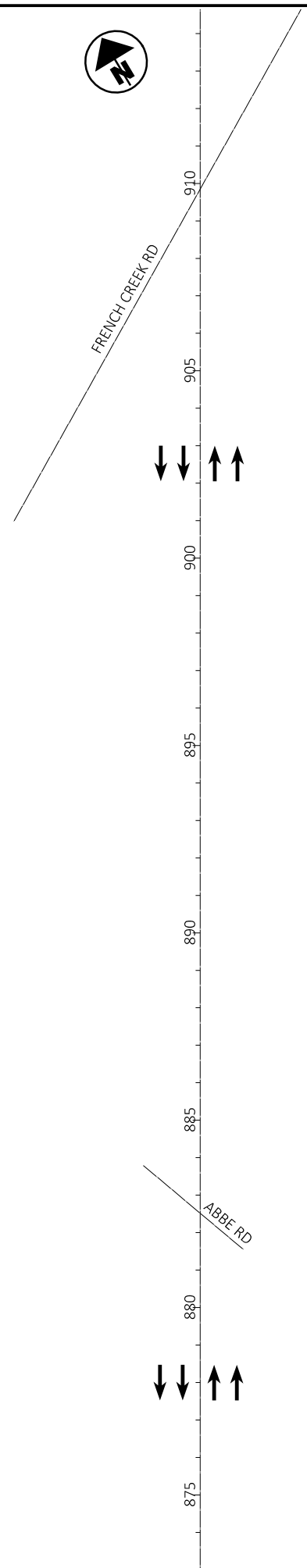
MOT PHASE 1 - IR 90 - BETWEEN SR 254 AND SR 611  
CROSSOVER ALTERNATIVE - EASTBOUND PERMANENT PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 2 - IR 90 - BETWEEN SR 254 AND SR 611  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - IR 90 - BETWEEN SR 254 AND SR 611  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING






MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BETWEEN SR 254 AND SR 611

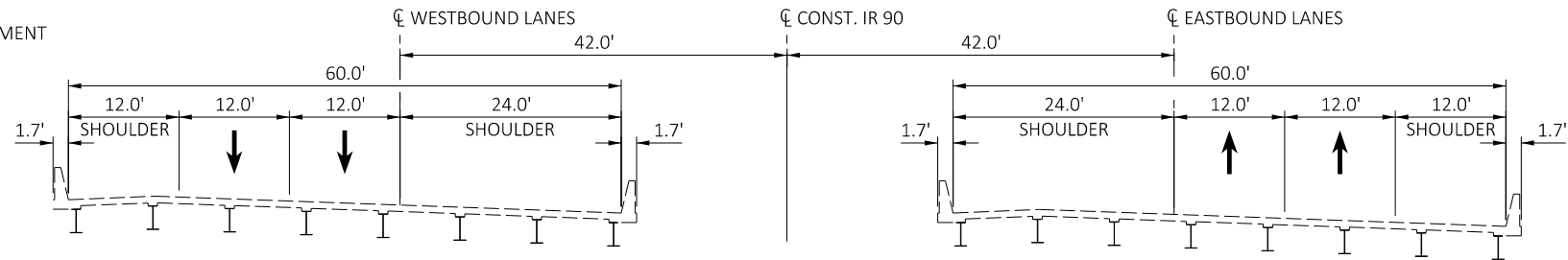
DESIGN AGENCY



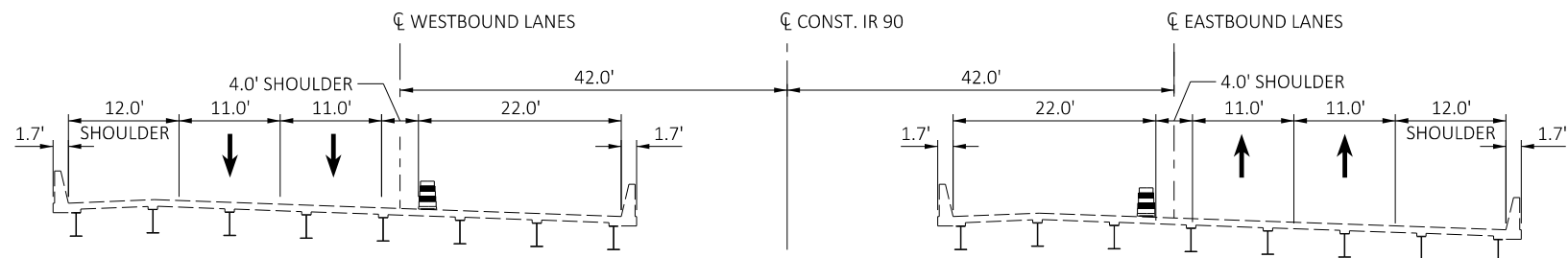
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.04	29

LEGEND

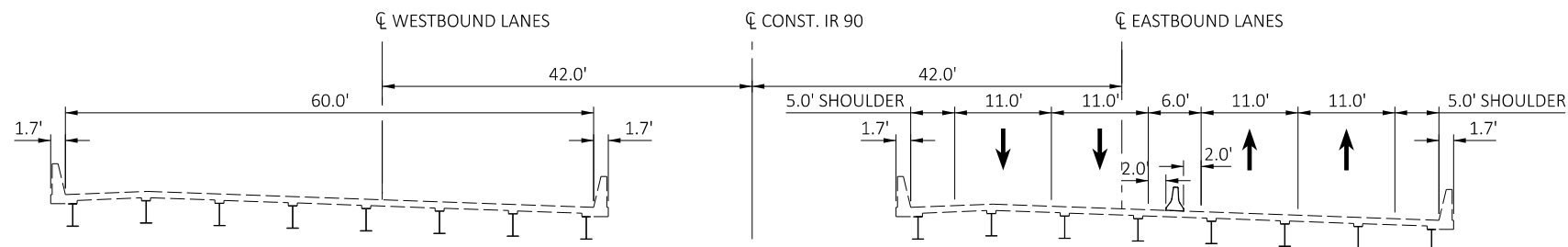
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



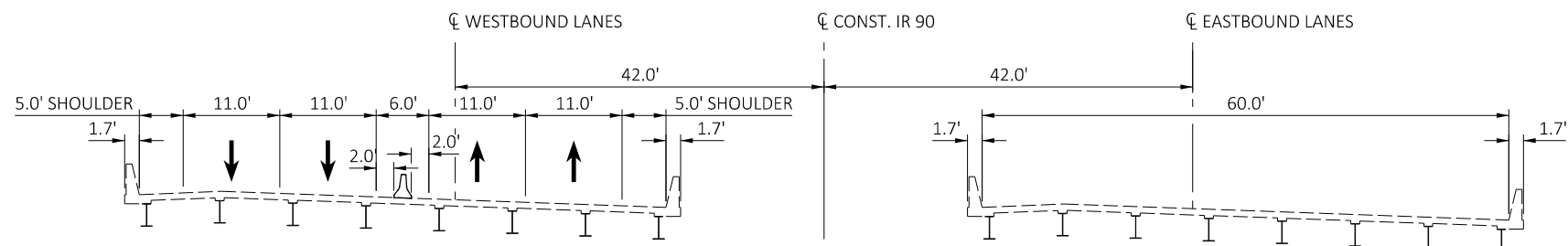
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER NS RAILROAD



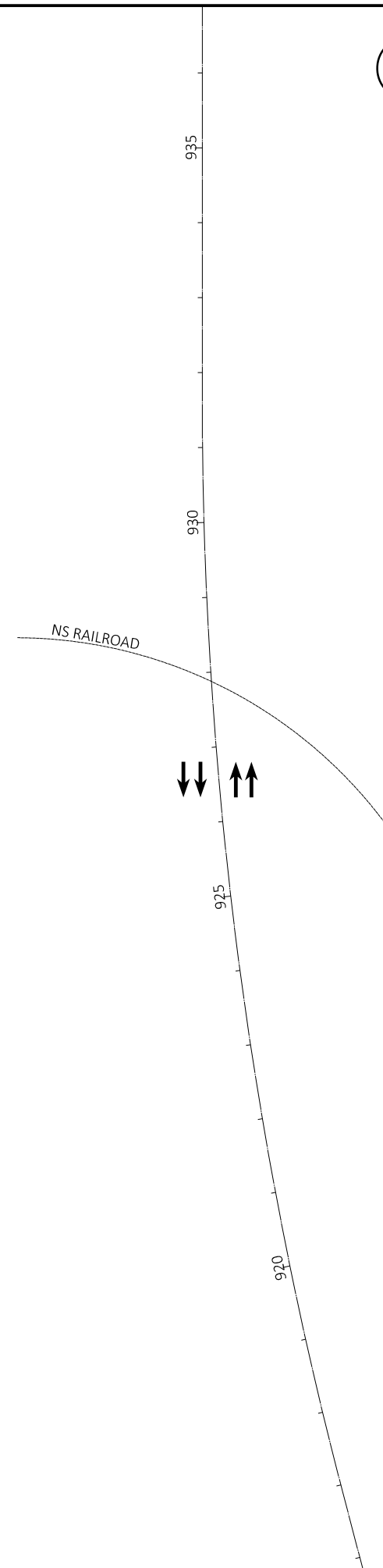
MOT PHASE 1 - IR 90 - BRIDGE OVER NS RAILROAD  
CROSSOVER ALTERNATIVE - EASTBOUND PERMANENT PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 2 - IR 90 - BRIDGE OVER NS RAILROAD  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - IR 90 - BRIDGE OVER NS RAILROAD  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER NS RAILROAD

DESIGN AGENCY






DESIGNER  
SHT

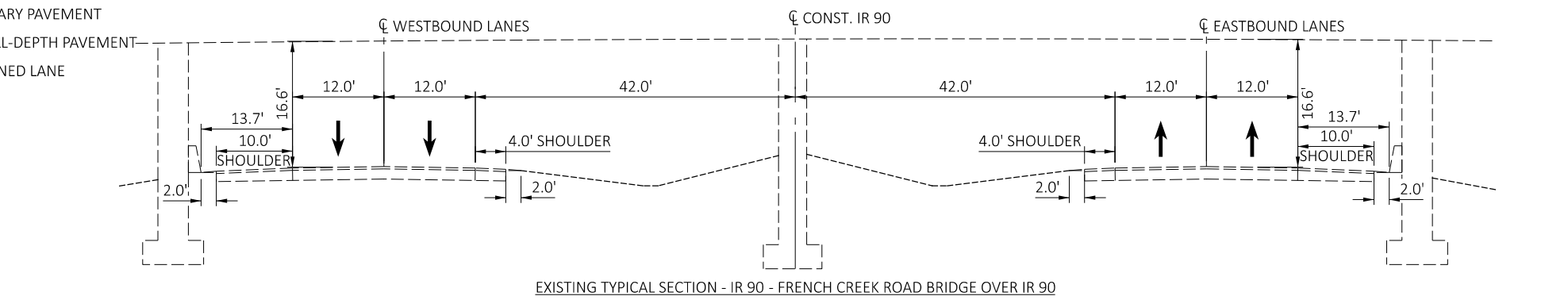
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

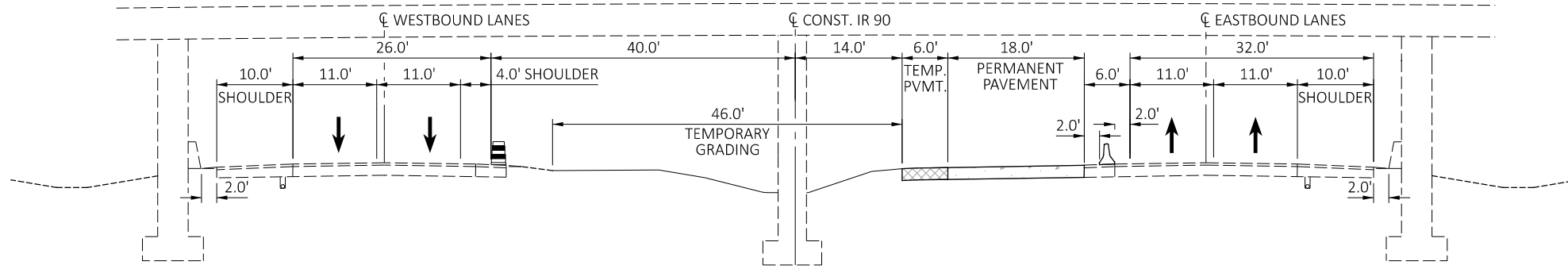
SHEET TOTAL  
P.05 29

LEGEND

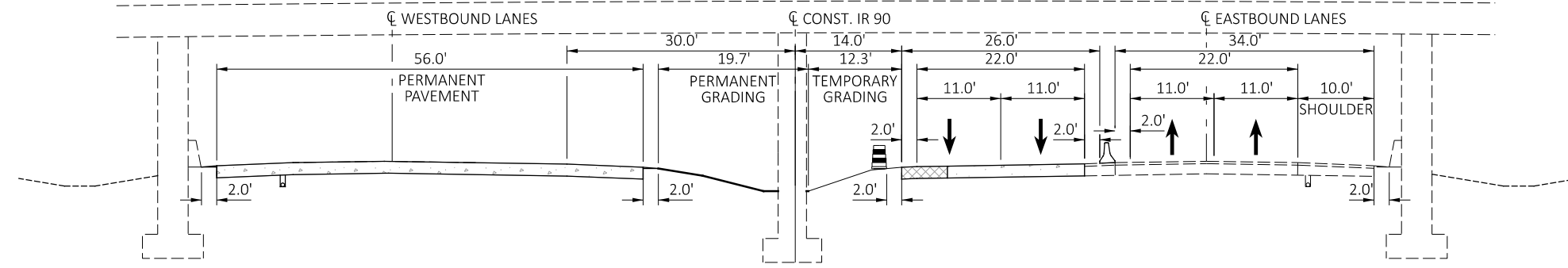
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



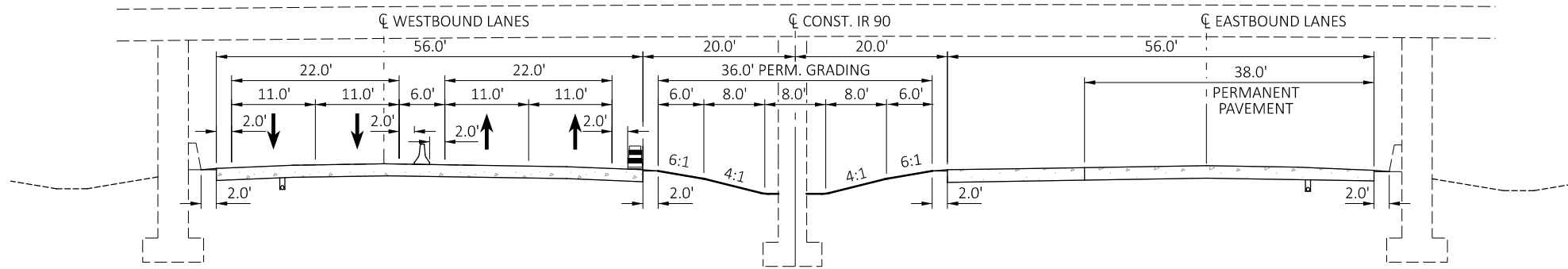
EXISTING TYPICAL SECTION - IR 90 - FRENCH CREEK ROAD BRIDGE OVER IR 90



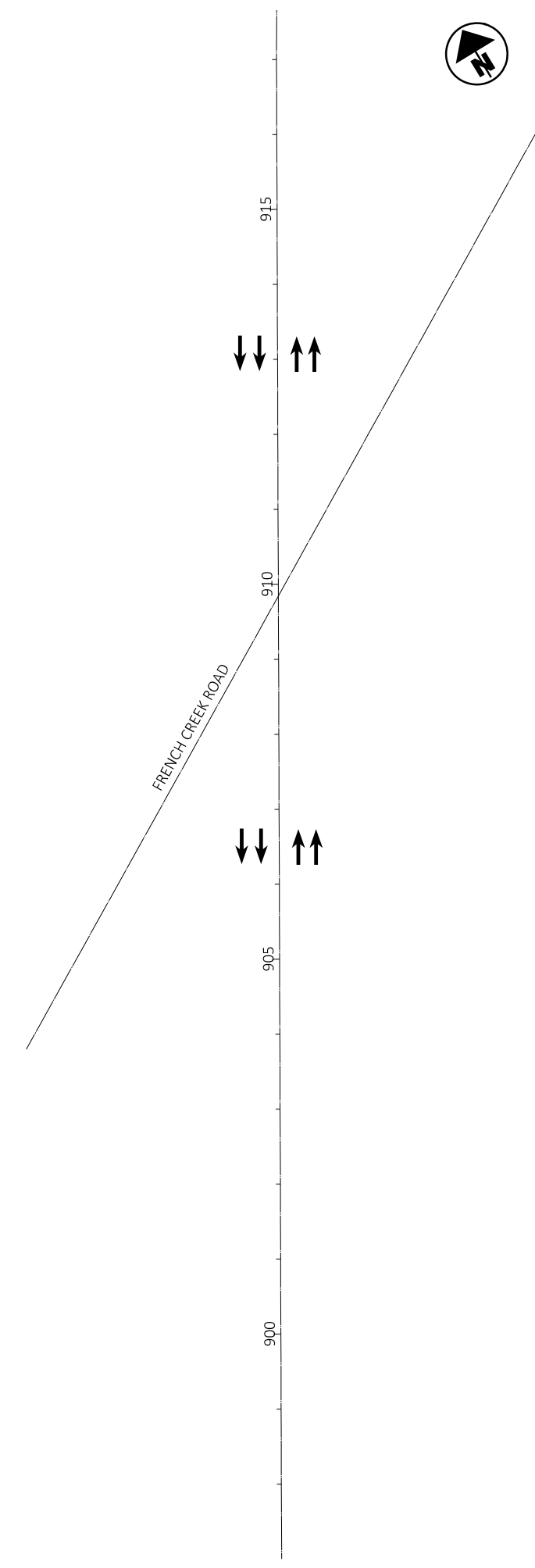
MOT PHASE 1 - IR 90 - FRENCH CREEK ROAD BRIDGE OVER IR 90  
CROSSOVER ALTERNATIVE - EASTBOUND PERMANENT PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 2 - IR 90 - FRENCH CREEK ROAD BRIDGE OVER IR 90  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - IR 90 - FRENCH CREEK ROAD BRIDGE OVER IR 90  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING






MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - FRENCH CREEK ROAD BRIDGE OVER IR 90

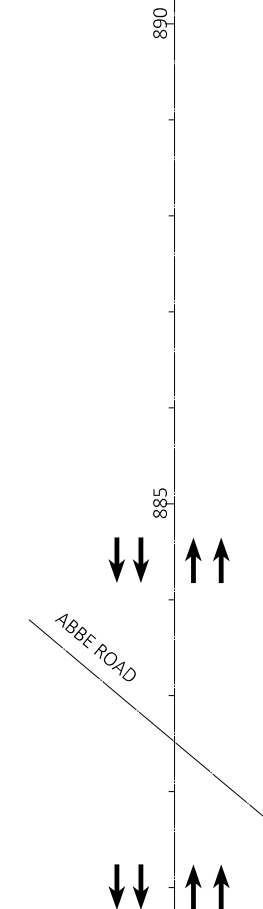
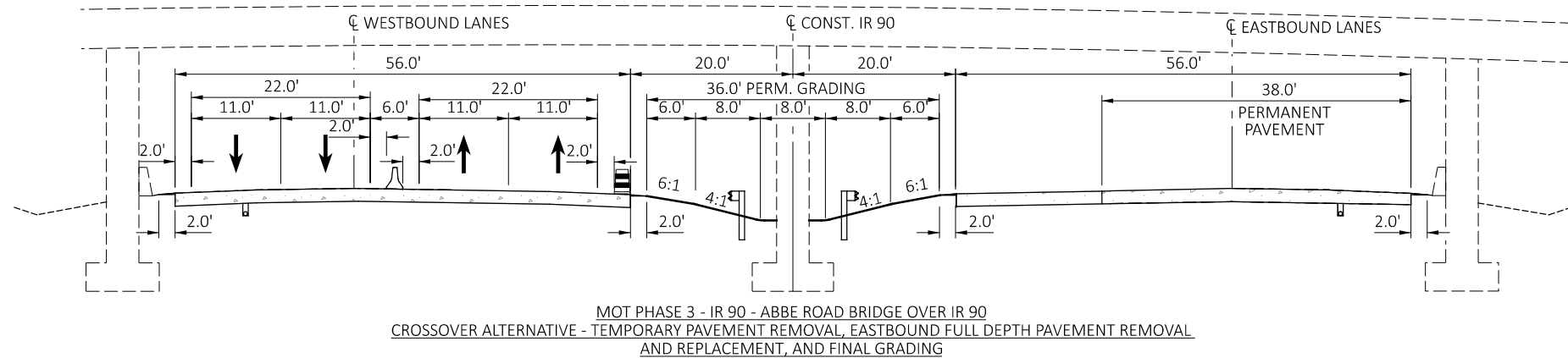
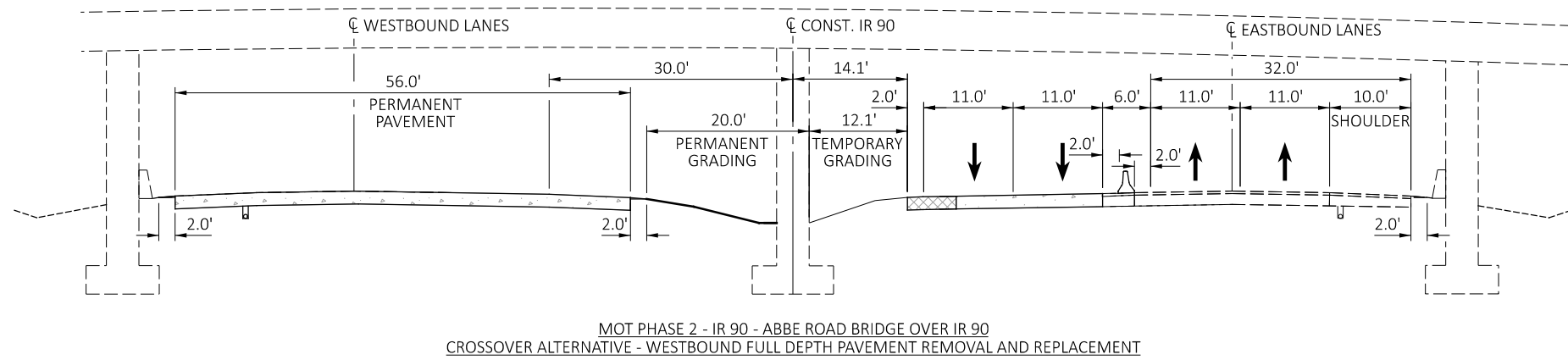
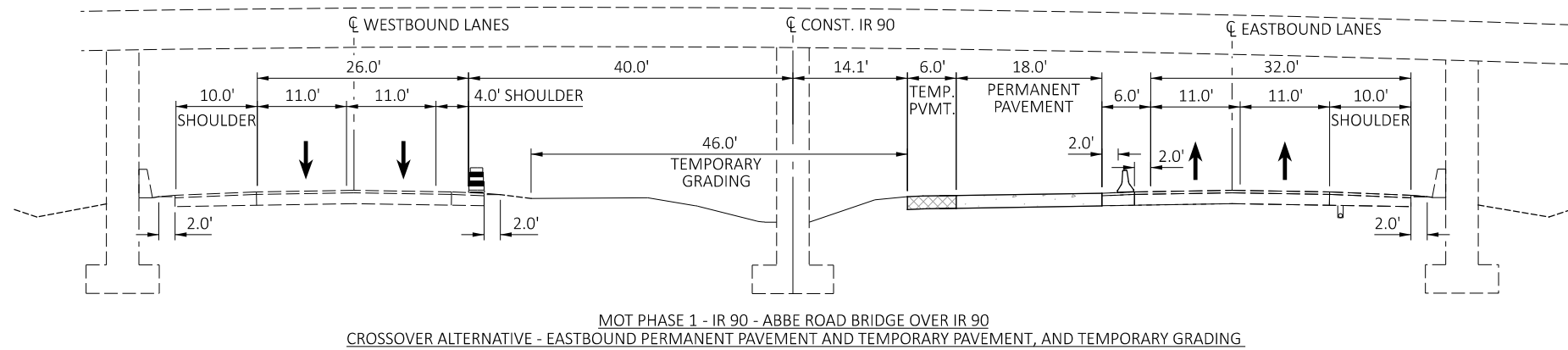
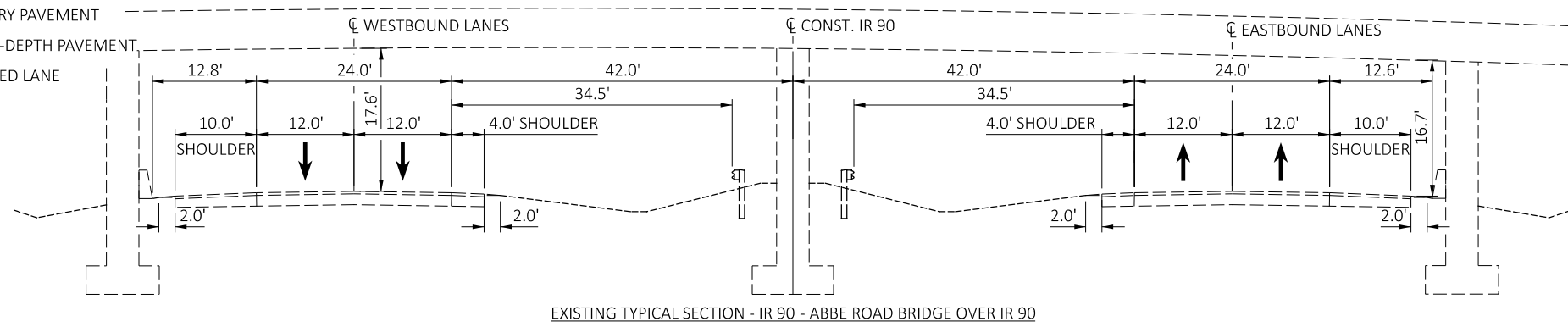
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP
PROJECT ID	107714
SHEET	TOTAL
P.06	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - ABBE ROAD BRIDGE OVER IR 90




DESIGN AGENCY

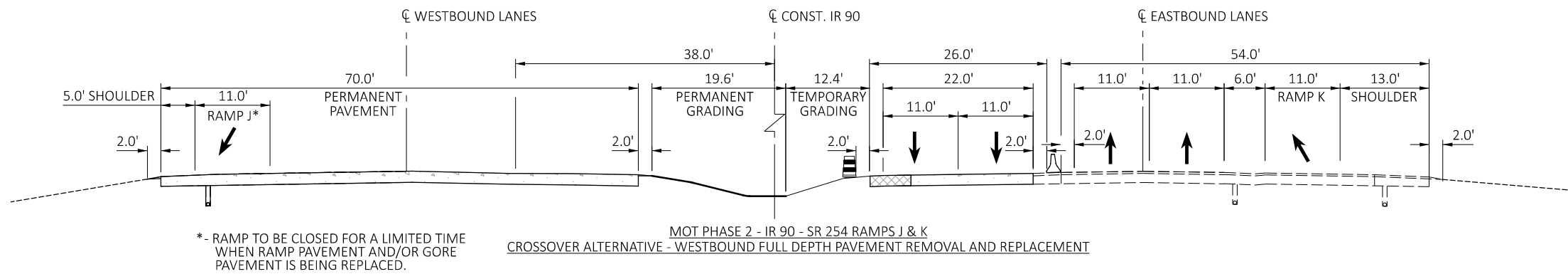
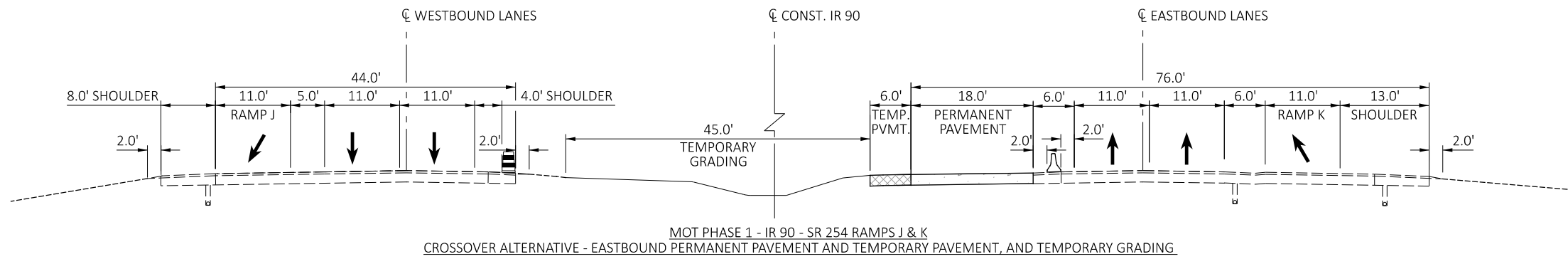
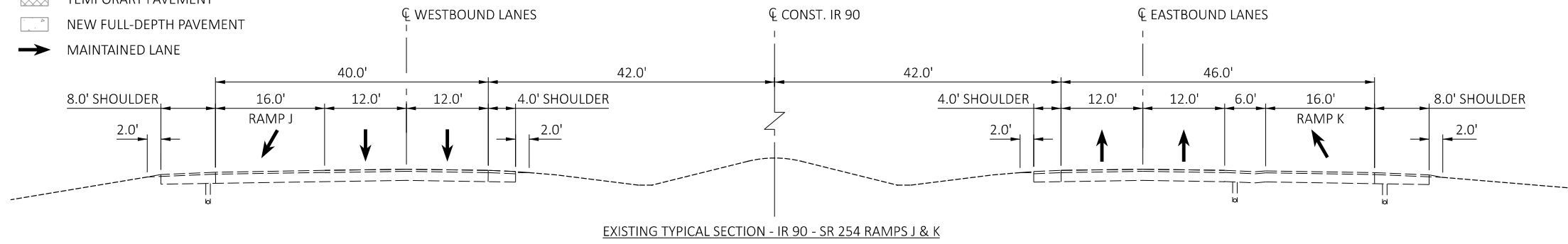


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ENGINEERING, LTD.

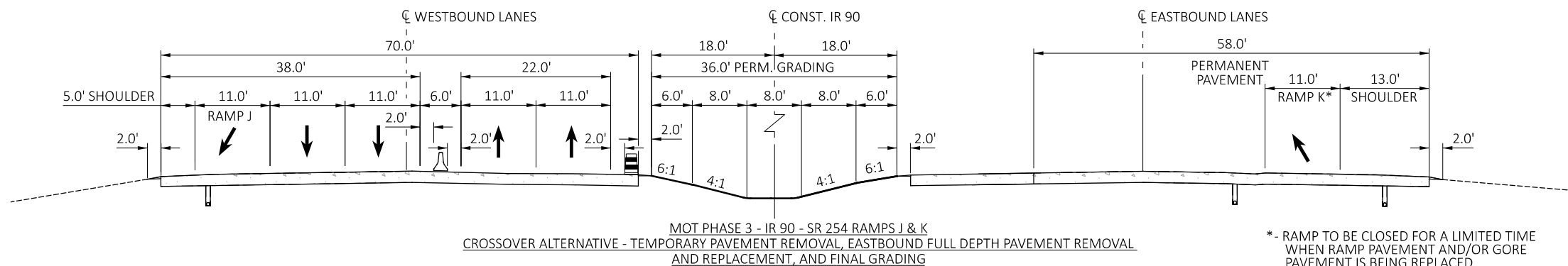
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.07	29

LEGEND

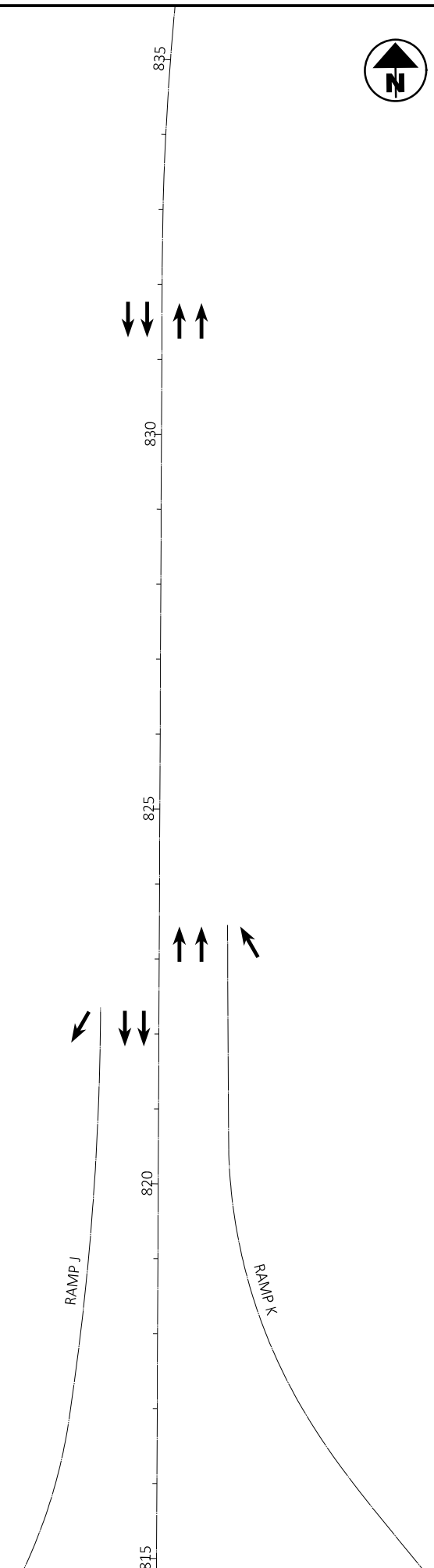
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.






\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.

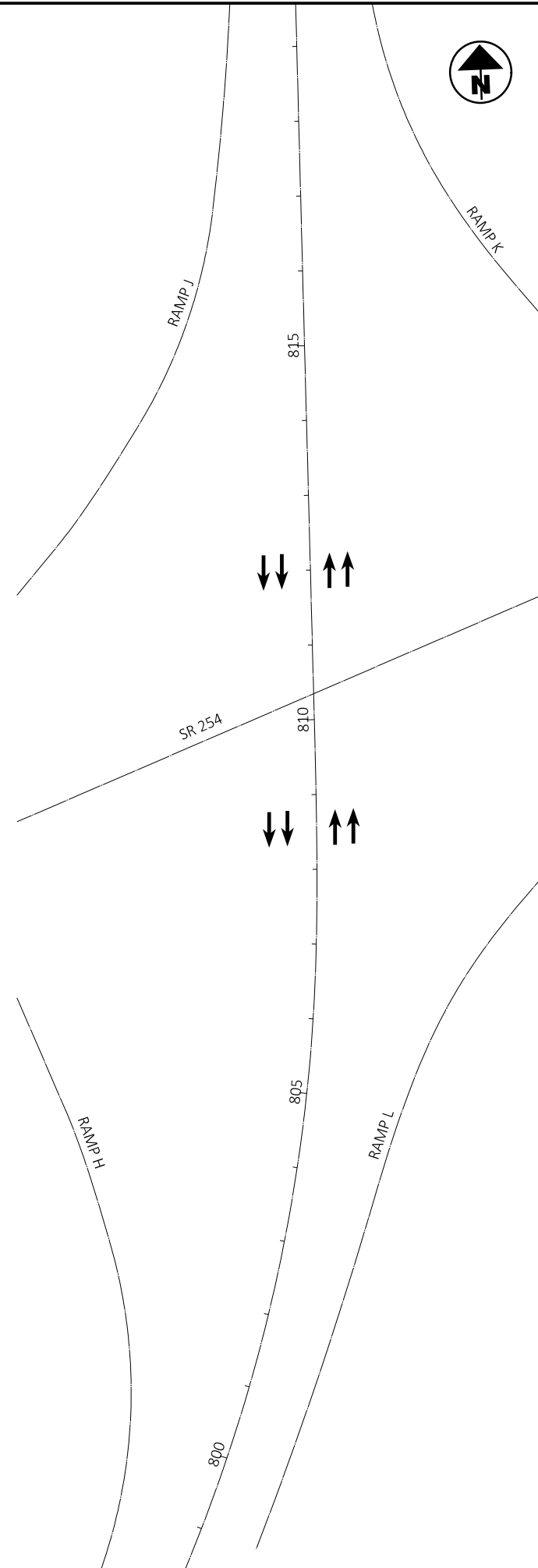
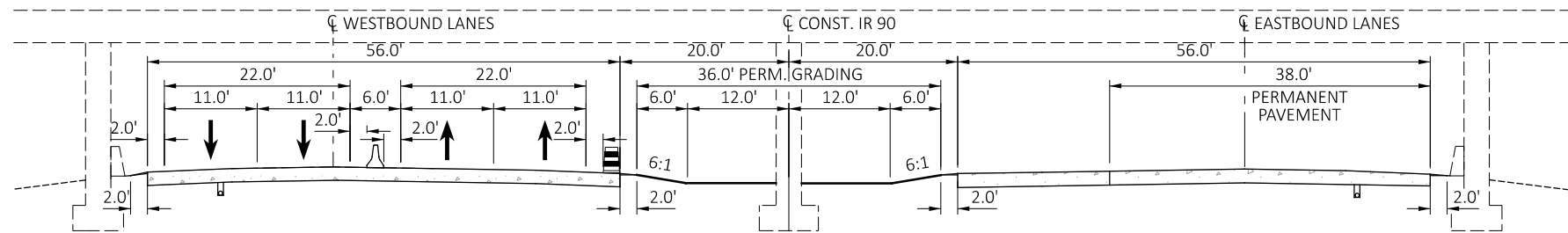
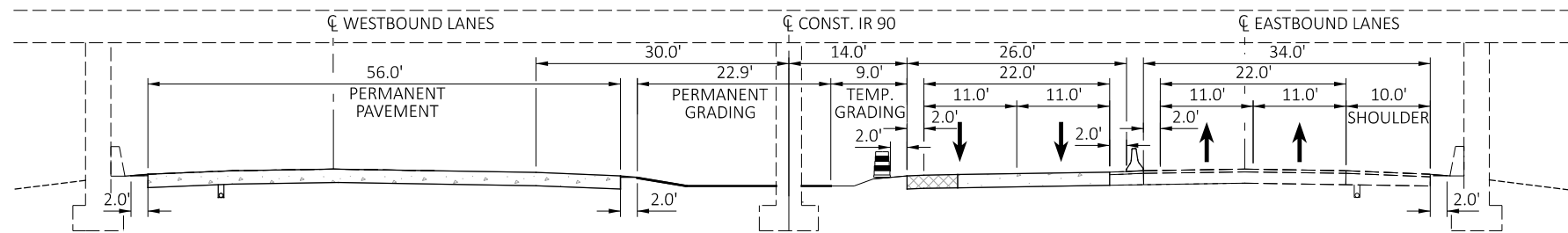
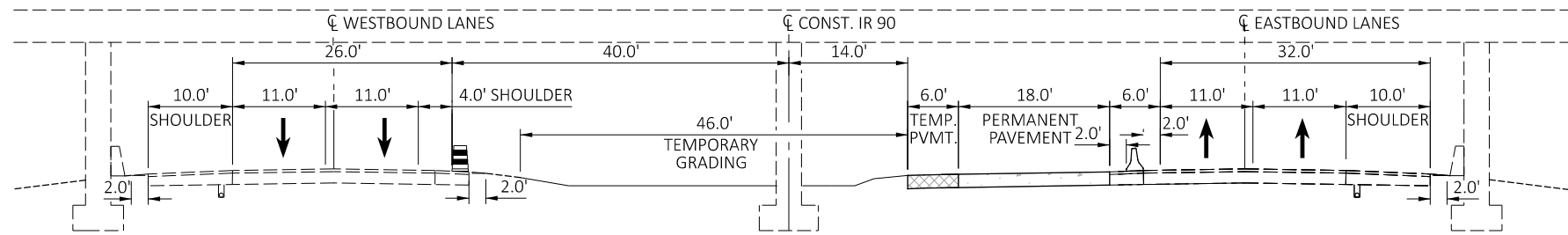
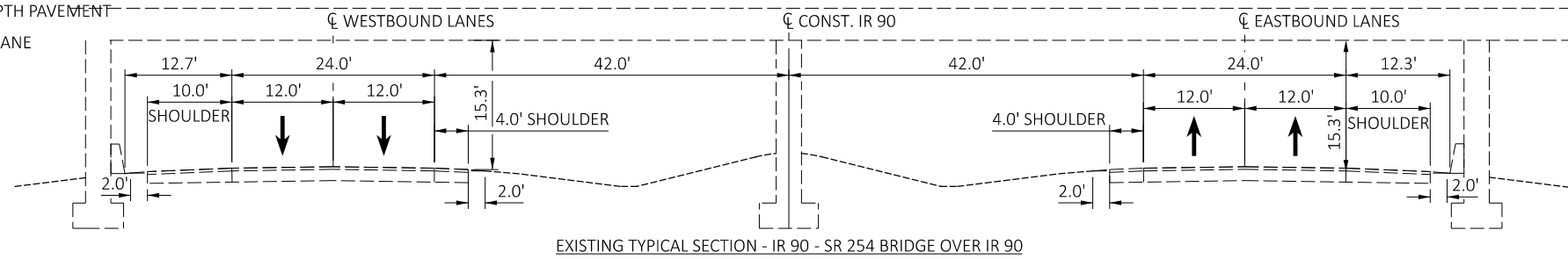


MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - SR 254 RAMPS J & K

DESIGN AGENCY	
	
CHAGRIN VALLEY ENGINEERING, LTD.	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.08	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - SR 254 BRIDGE OVER IR 90




DESIGN AGENCY

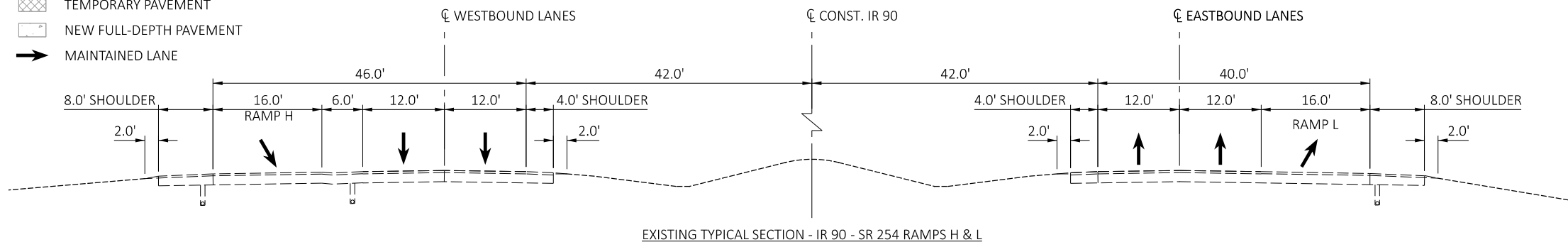


DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.09	29

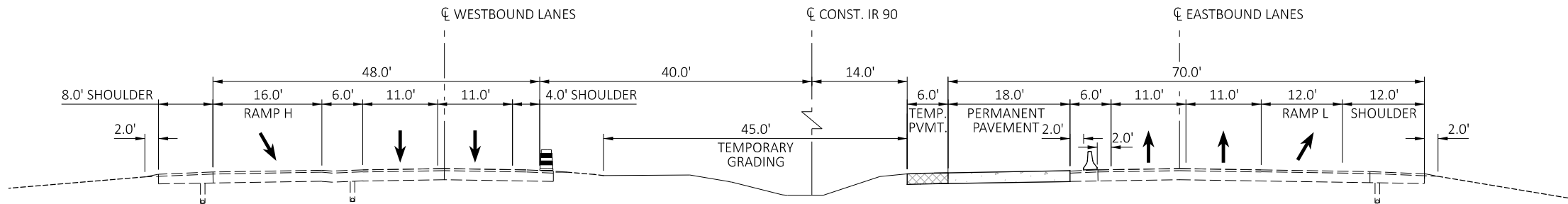


LEGEND

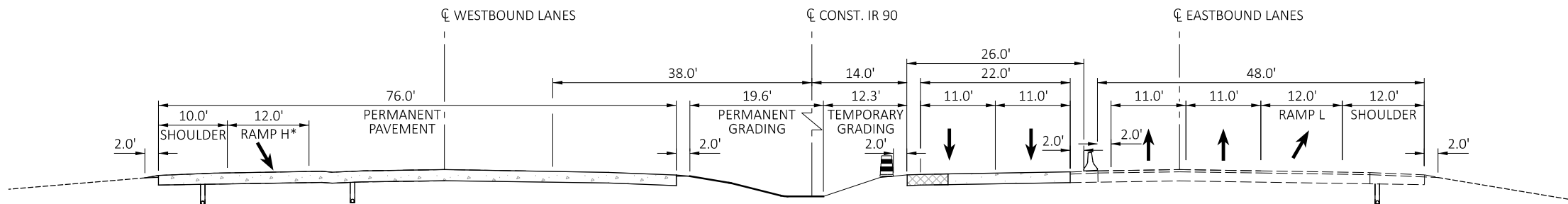
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-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



EXISTING TYPICAL SECTION - IR 90 - SR 254 RAMPS H & L

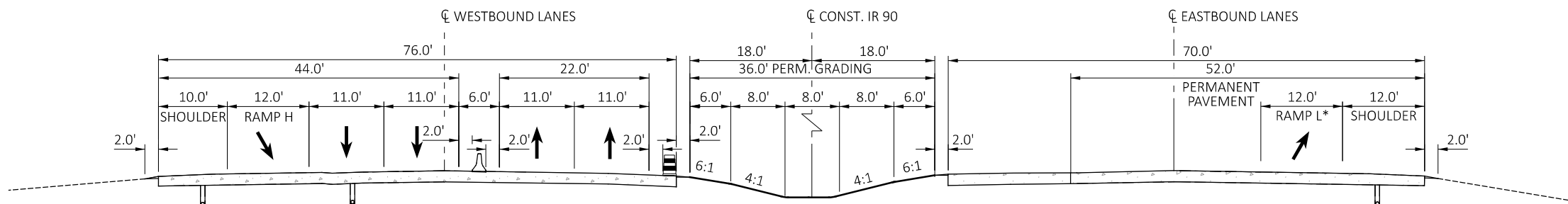


MOT PHASE 1 - IR 90 - SR 254 RAMPS H & L  
CROSSOVER ALTERNATIVE - EASTBOUND PERMANENT PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING



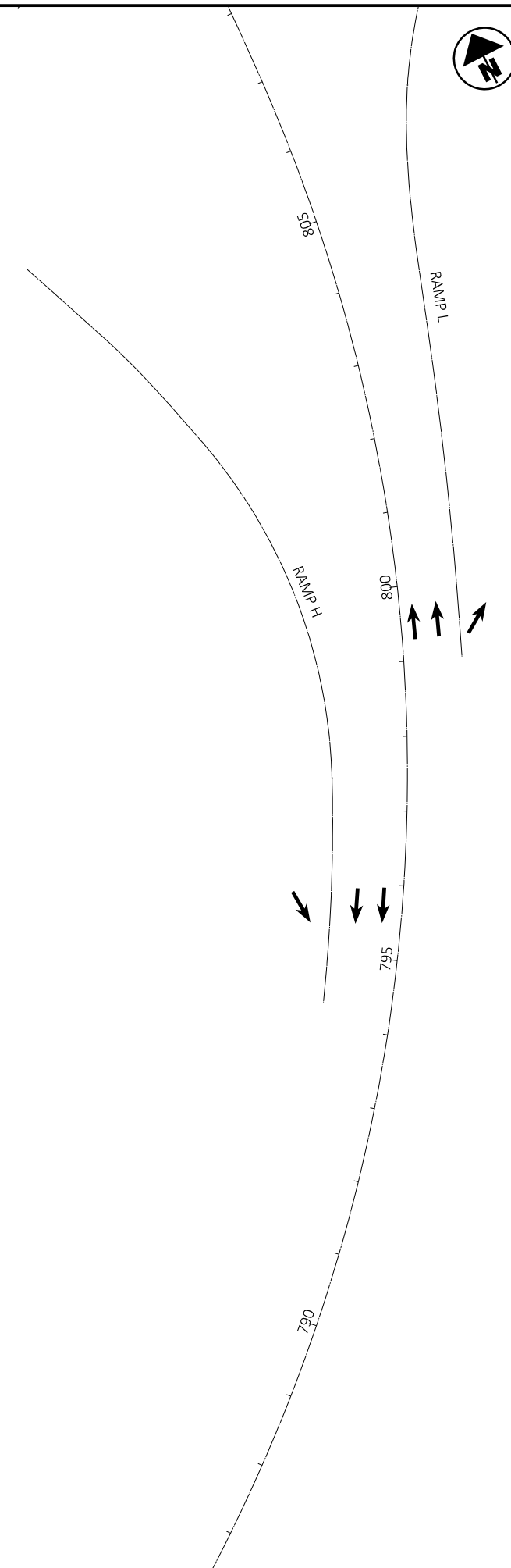
MOT PHASE 2 - IR 90 - SR 254 RAMPS H & L  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT

\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.



MOT PHASE 3 - IR 90 - SR 254 RAMPS H & L  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING

\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.






MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - SR 254 RAMPS H & L

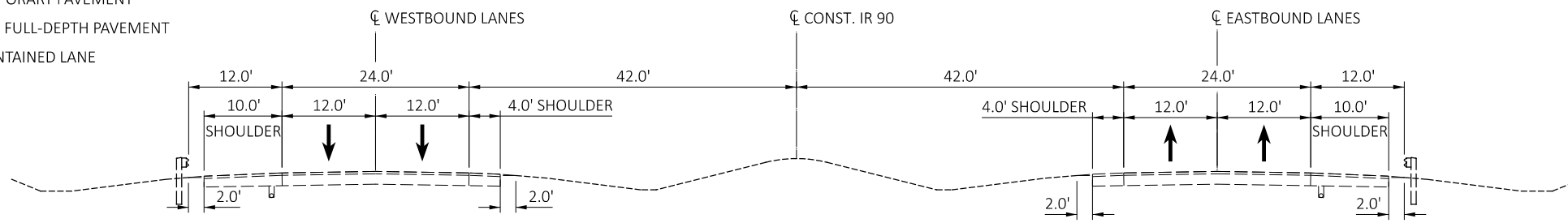
DESIGN AGENCY



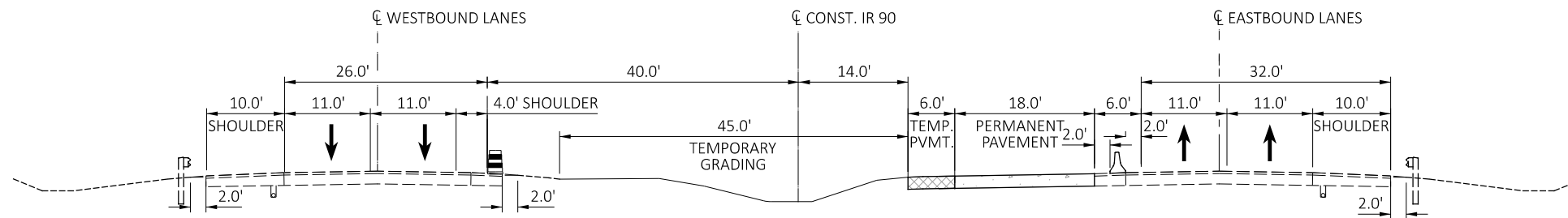
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET TOTAL	P.10 29

LEGEND

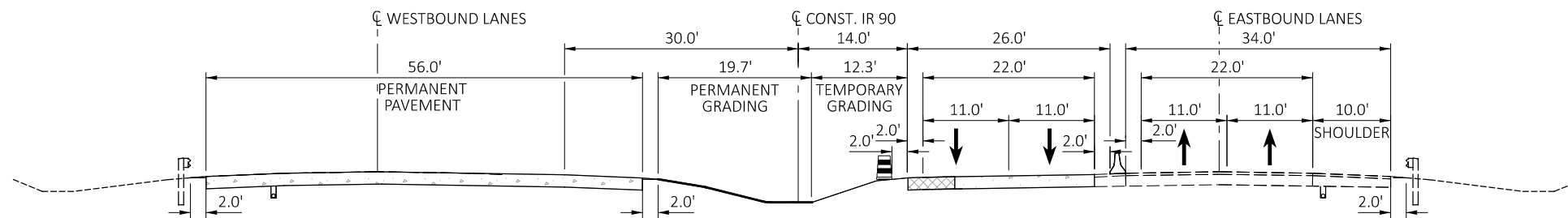
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



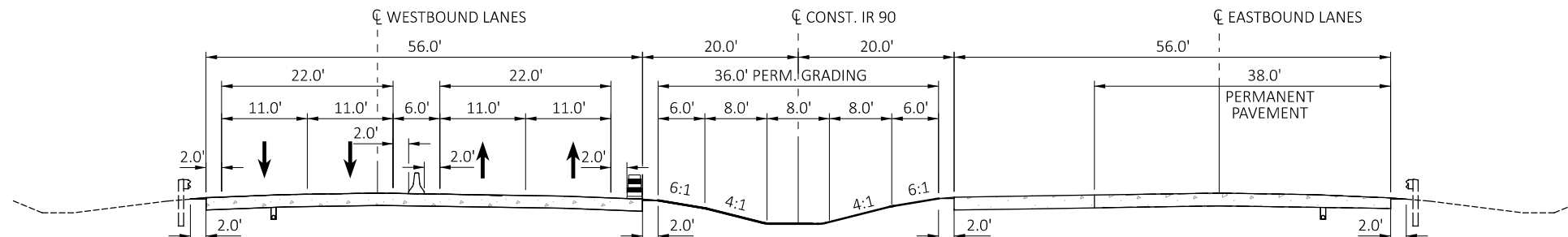
EXISTING TYPICAL SECTION - IR 90 - BETWEEN SR 57 AND SR 254



MOT PHASE 1 - IR 90 - BETWEEN SR 57 AND SR 254  
CROSSOVER ALTERNATIVE - EASTBOUND PERMANENT PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 2 - IR 90 - BETWEEN SR 57 AND SR 254  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - IR 90 - BETWEEN SR 57 AND SR 254  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING






780  
775  
770  
765

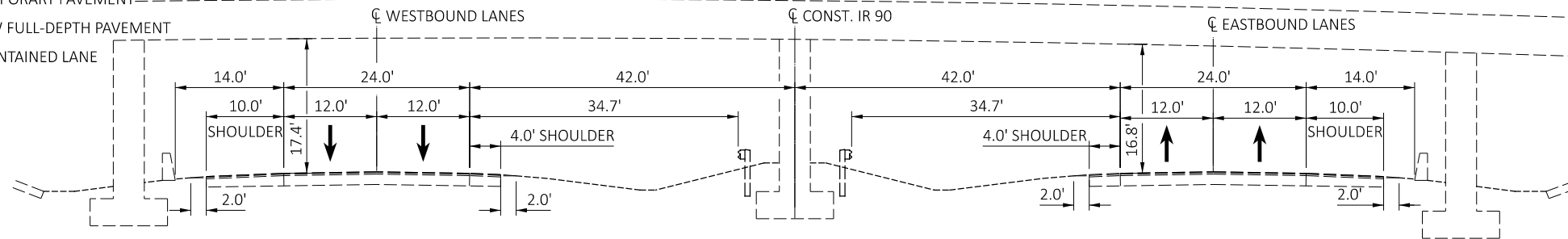
GULF ROAD

MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BETWEEN SR 57 AND SR 254

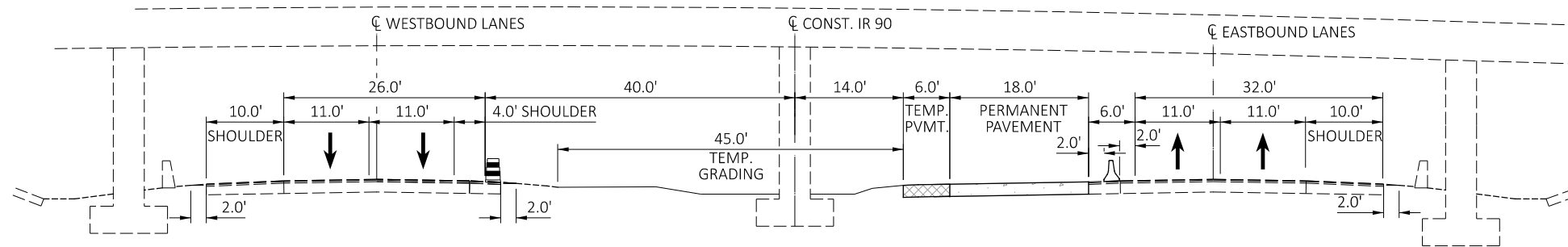
DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	P.11
TOTAL	29

LEGEND

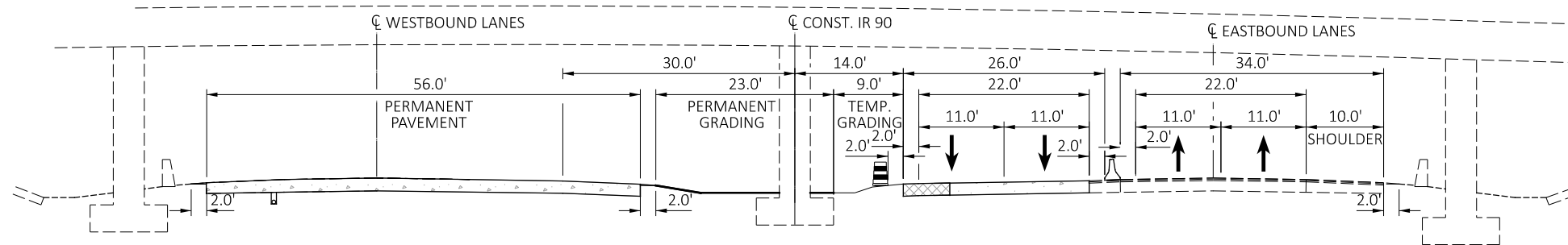
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



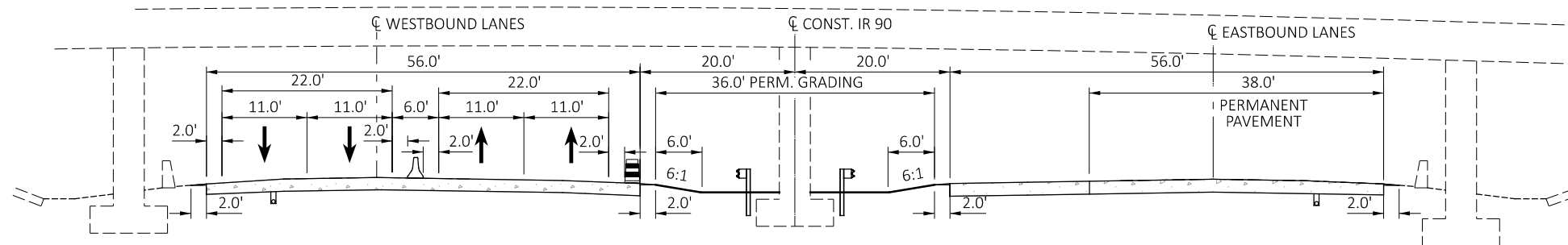
EXISTING TYPICAL SECTION - IR 90 - GULF ROAD BRIDGE OVER IR 90



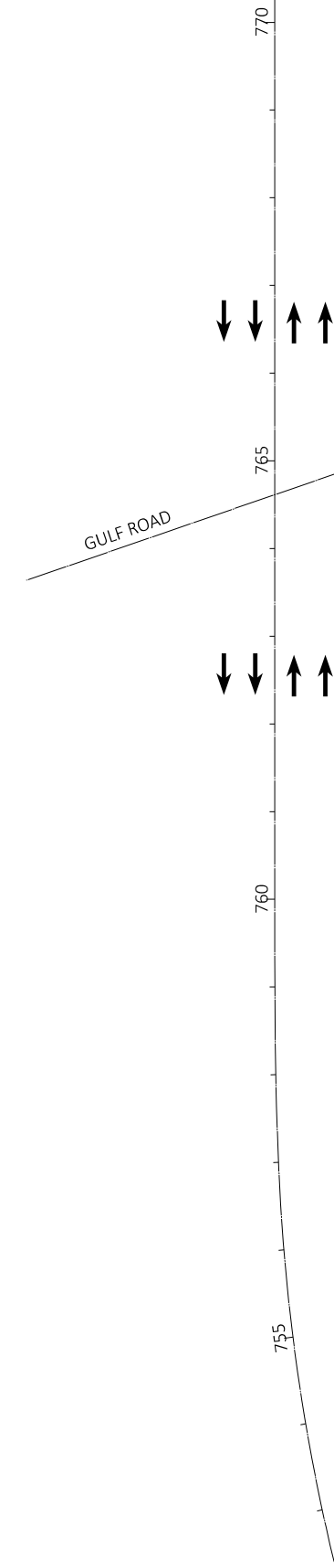
MOT PHASE 1 - IR 90 - GULF ROAD BRIDGE OVER IR 90  
CROSSOVER ALTERNATIVE - EASTBOUND PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 2 - IR 90 - GULF ROAD BRIDGE OVER IR 90  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - IR 90 - GULF ROAD BRIDGE OVER IR 90  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING






MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - GULF ROAD BRIDGE OVER IR 90

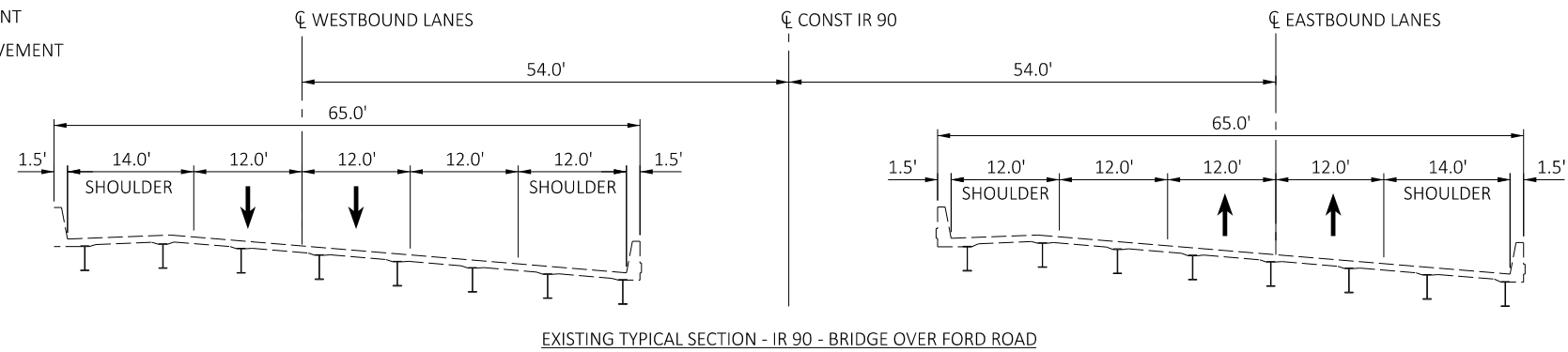
DESIGN AGENCY



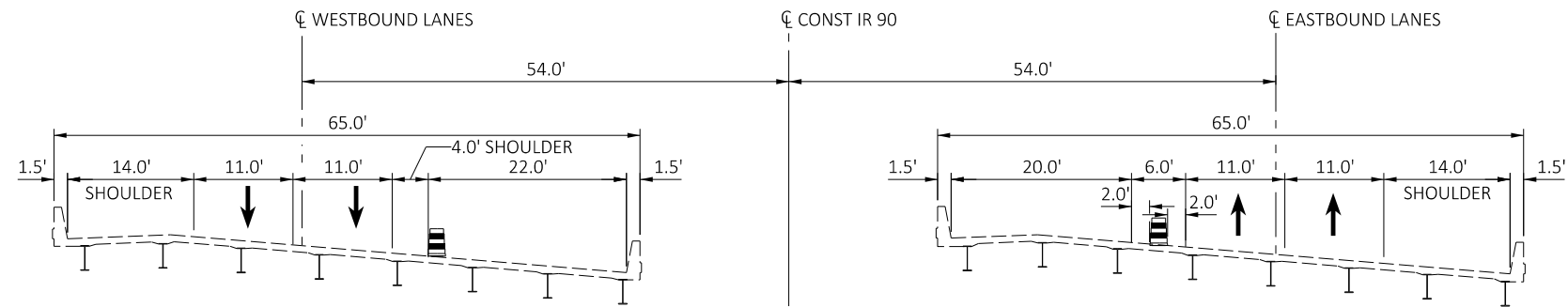
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.12	29

LEGEND

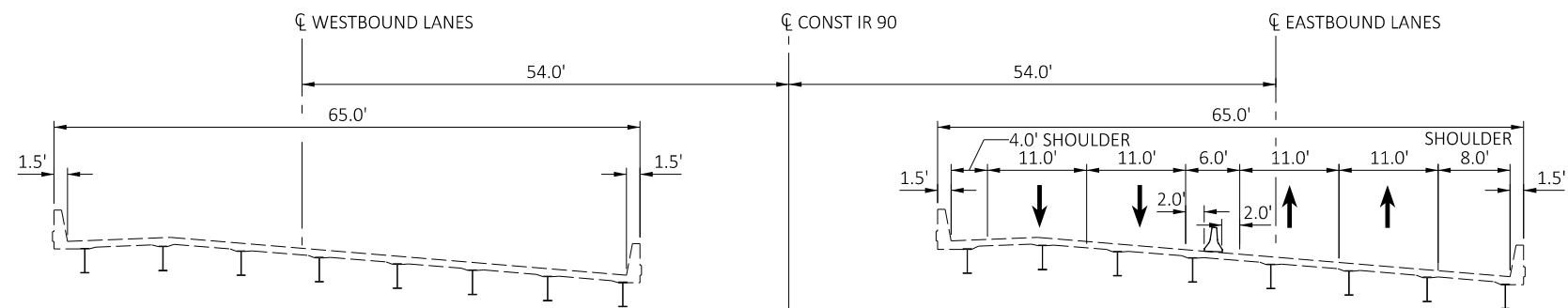
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



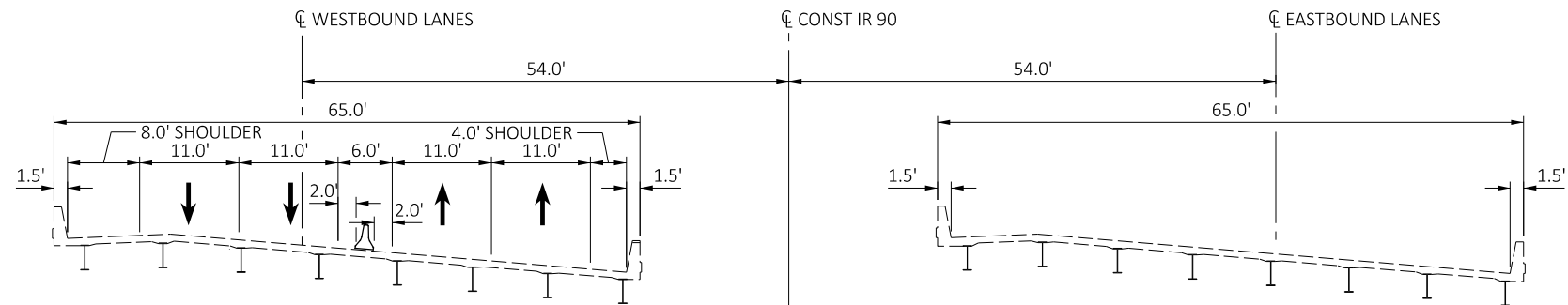
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER FORD ROAD



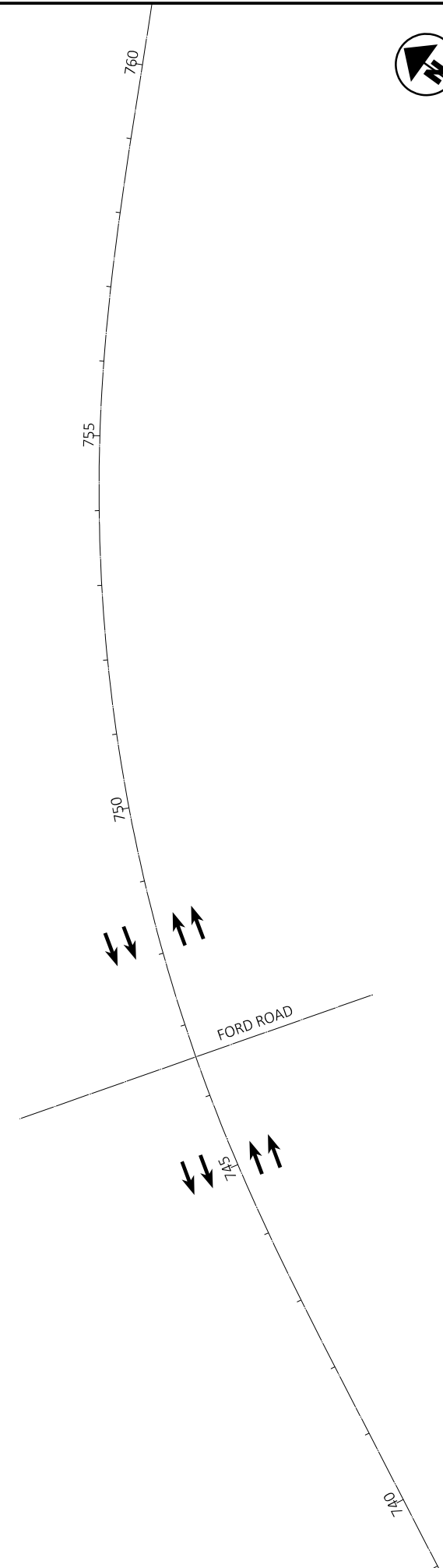
MOT PHASE 1 - IR 90 - BRIDGE OVER FORD ROAD  
CROSSOVER ALTERNATIVE - EASTBOUND PERMANENT PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING



MOT PHASE 2 - IR 90 - BRIDGE OVER FORD ROAD  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - IR 90 - BRIDGE OVER FORD ROAD  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING






MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER FORD ROAD

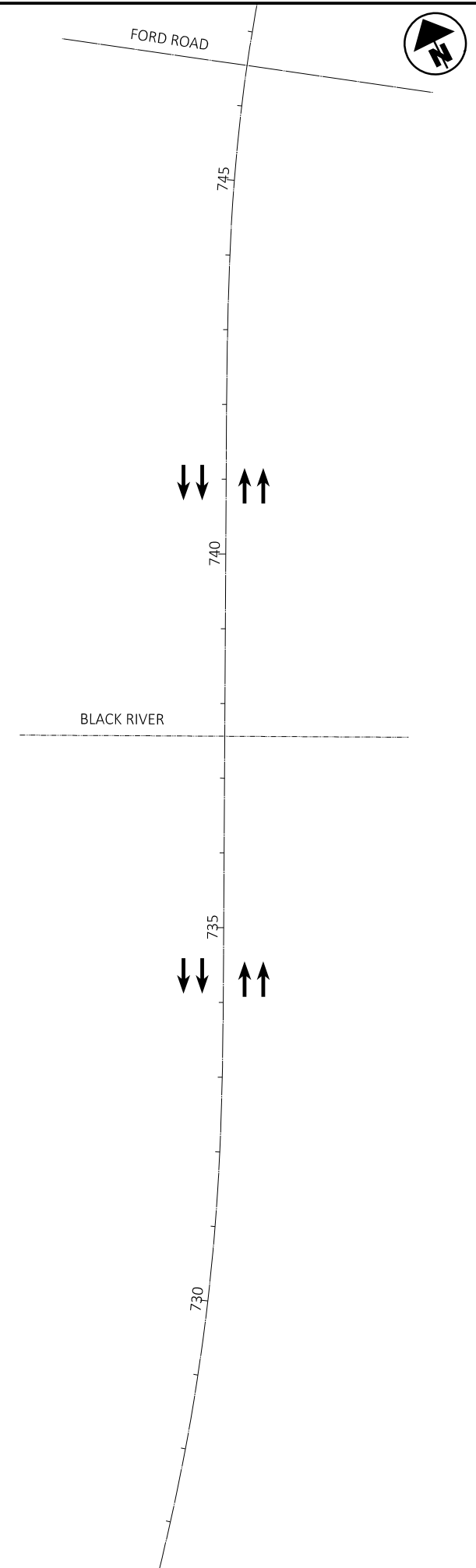
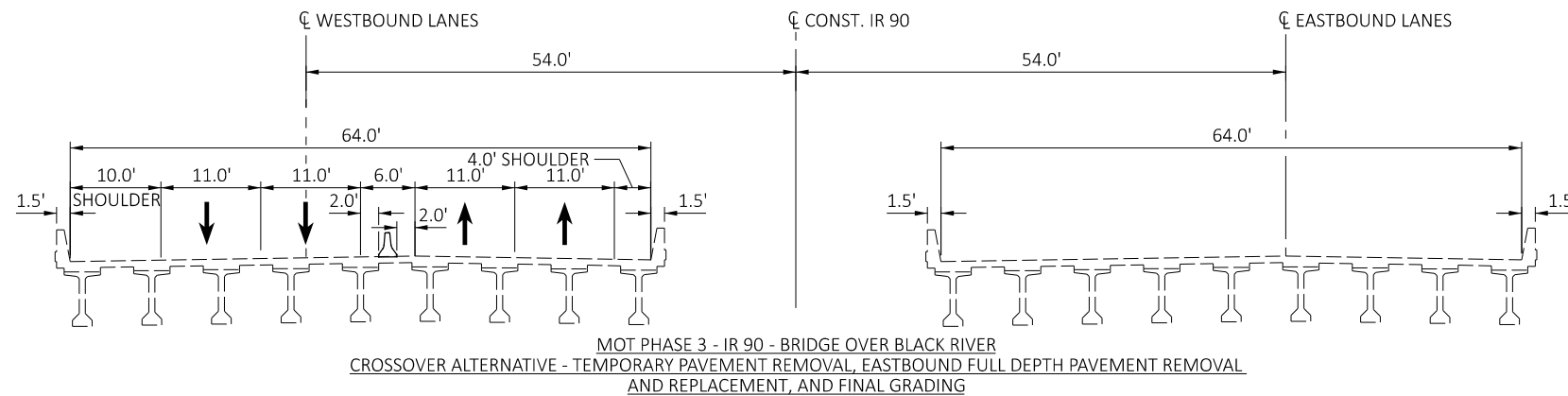
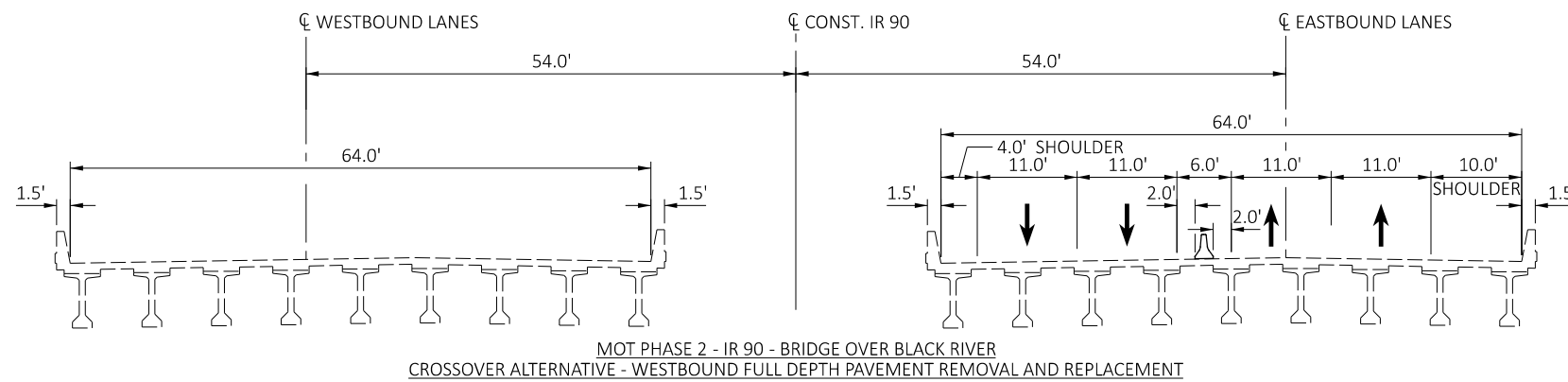
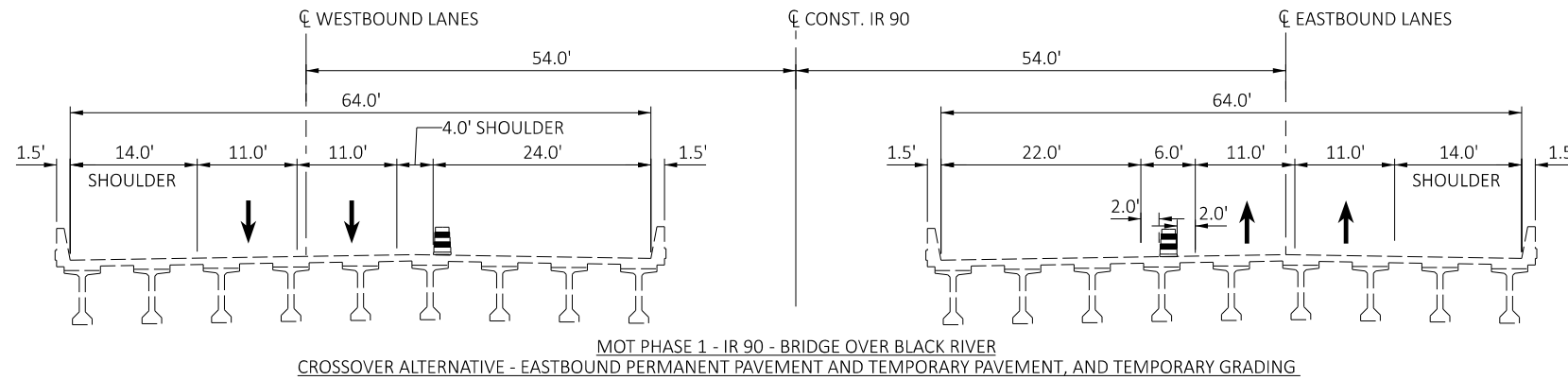
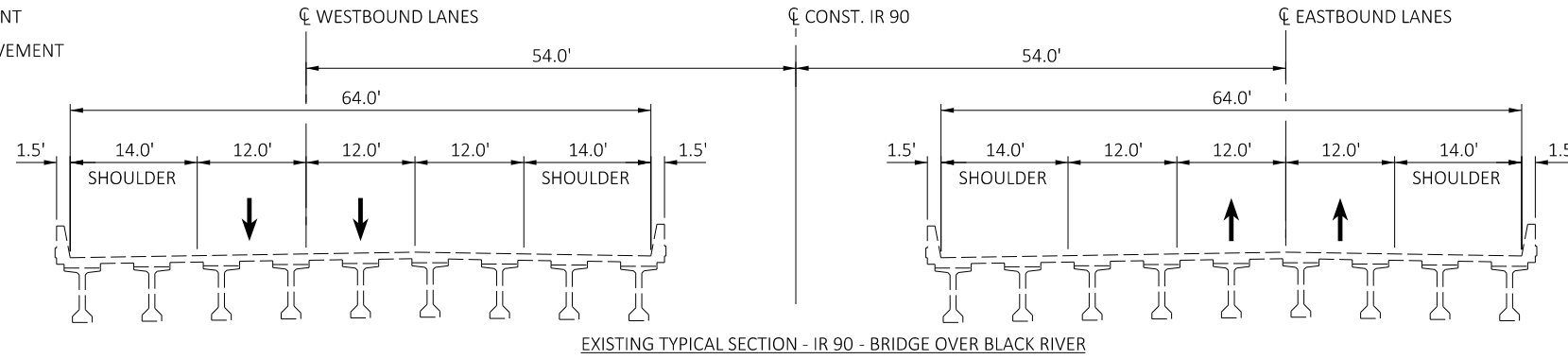
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.13	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER BLACK RIVER

DESIGN AGENCY






DESIGNER  
SHT

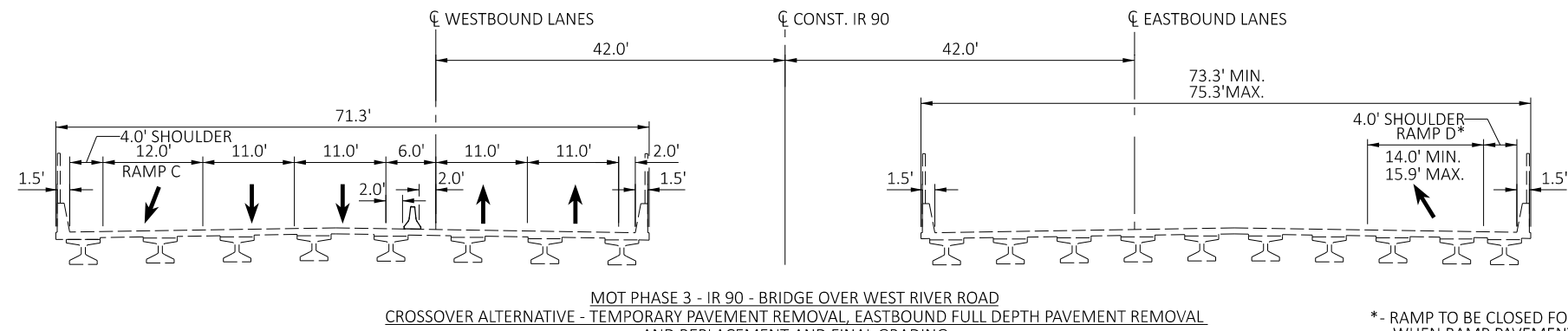
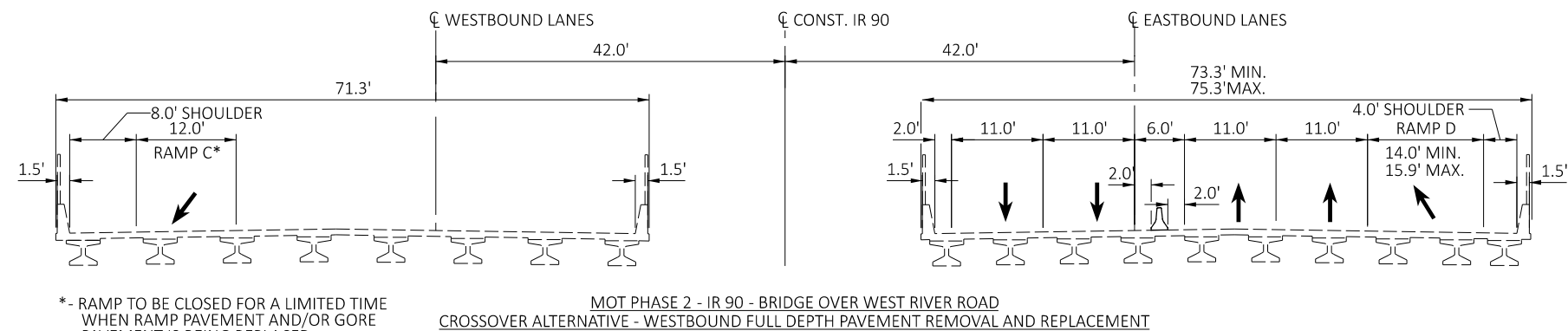
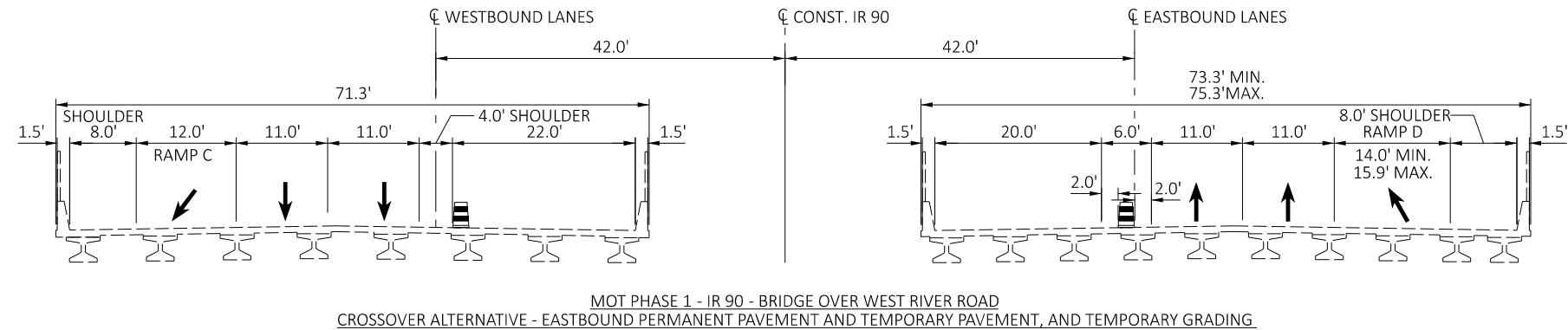
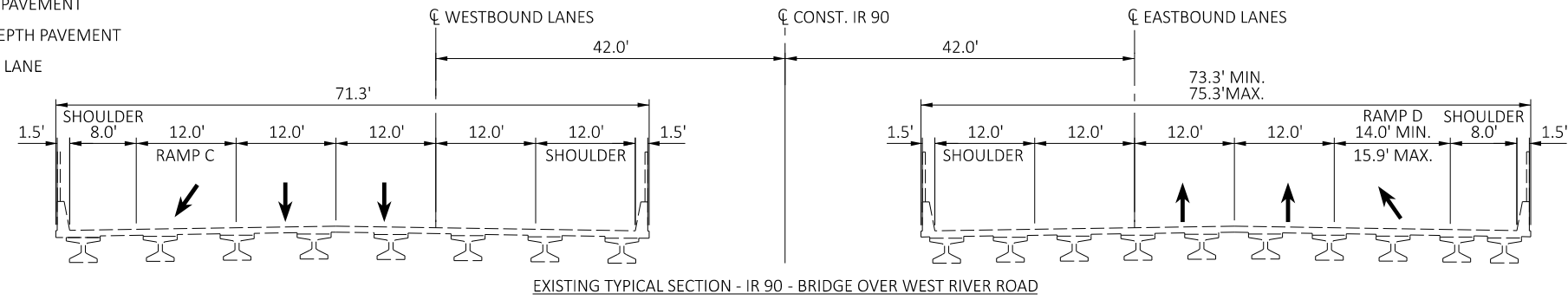
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET TOTAL  
P.14 29

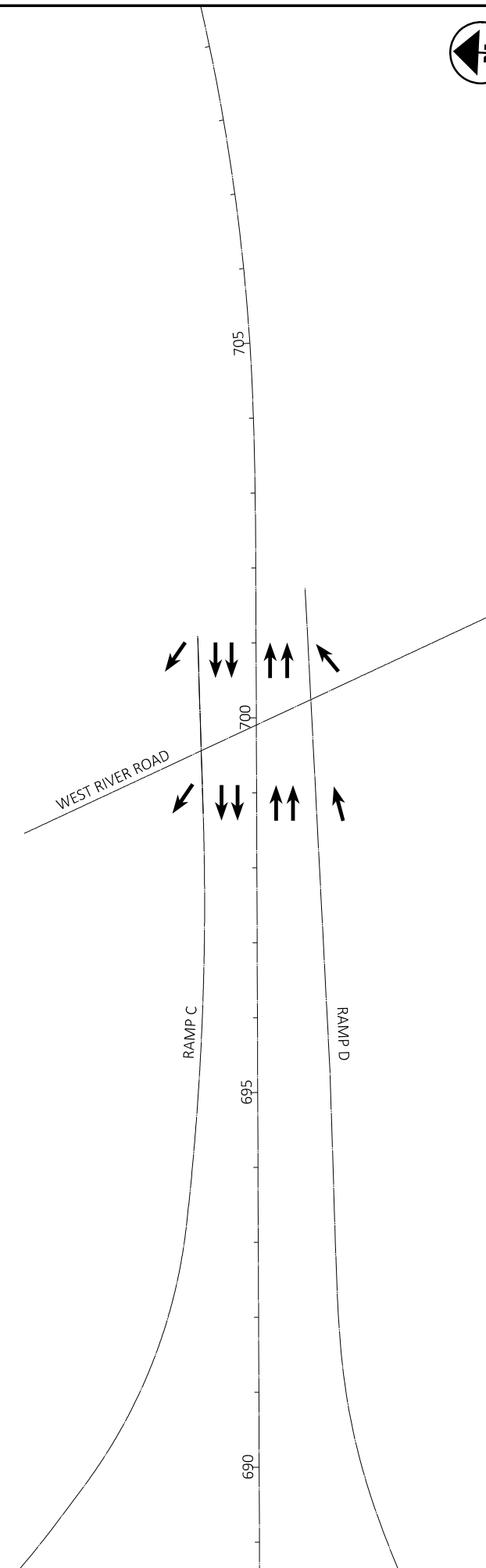
LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.

\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER WEST RIVER ROAD

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

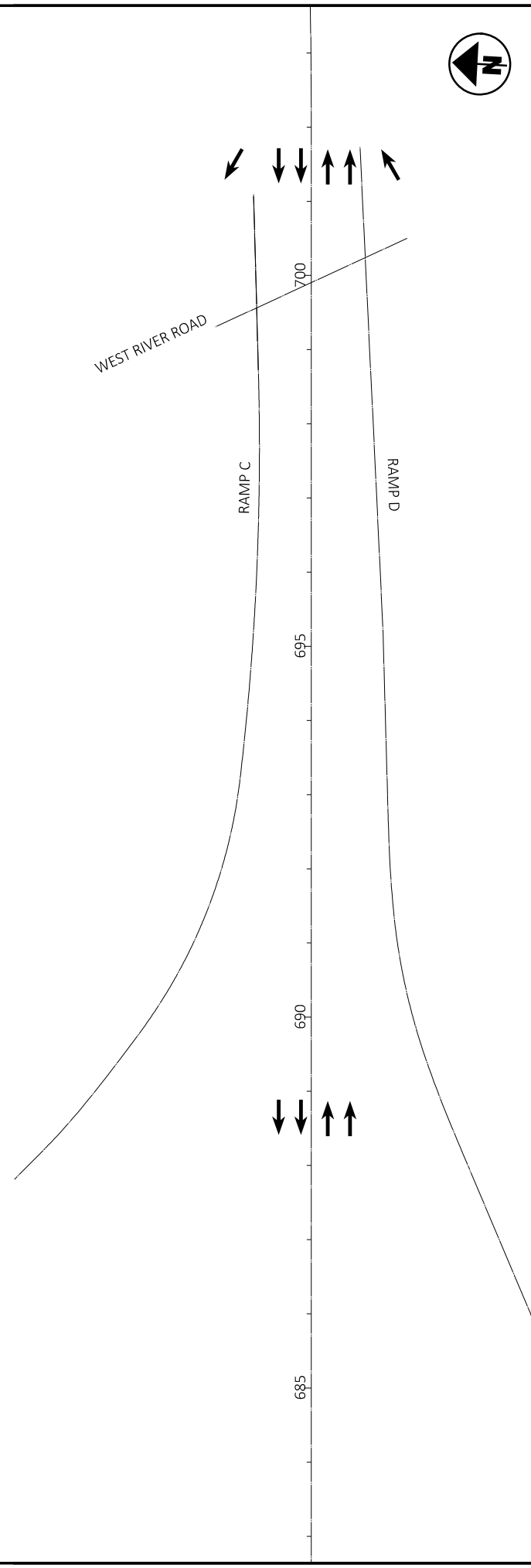
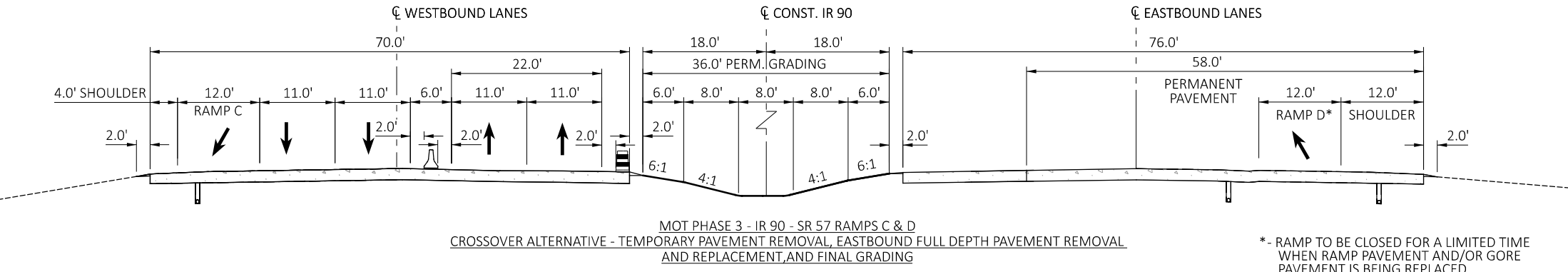
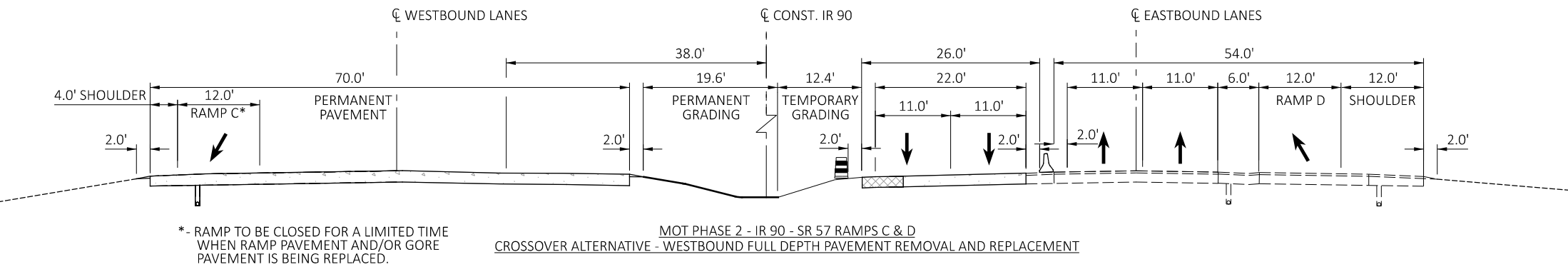
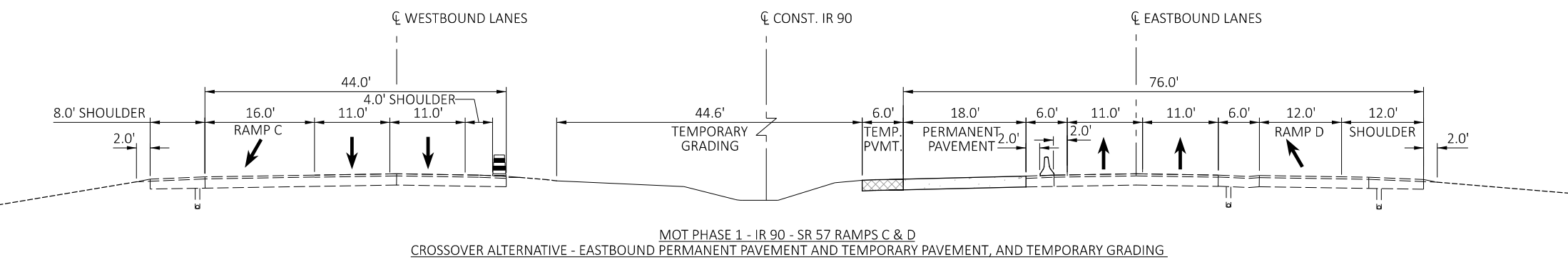
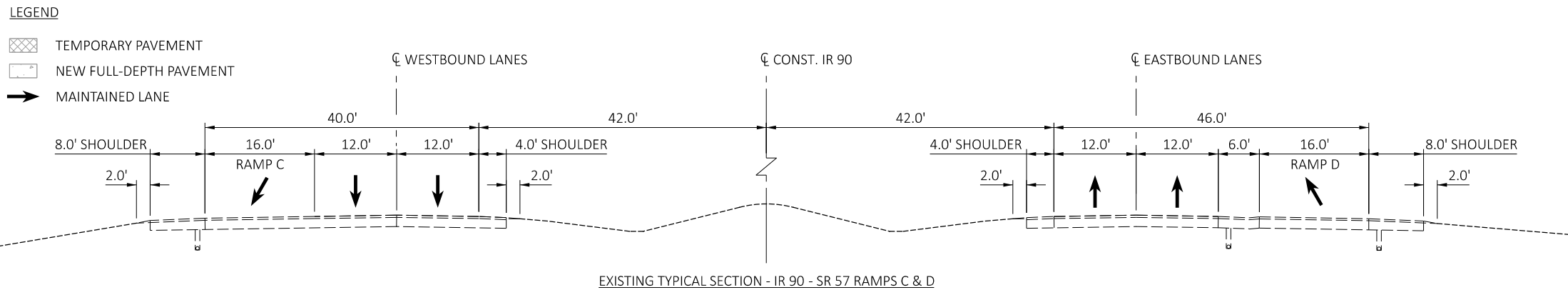
CWP 12/14/23

PROJECT ID

107714

SHEET TOTAL

P.15 29






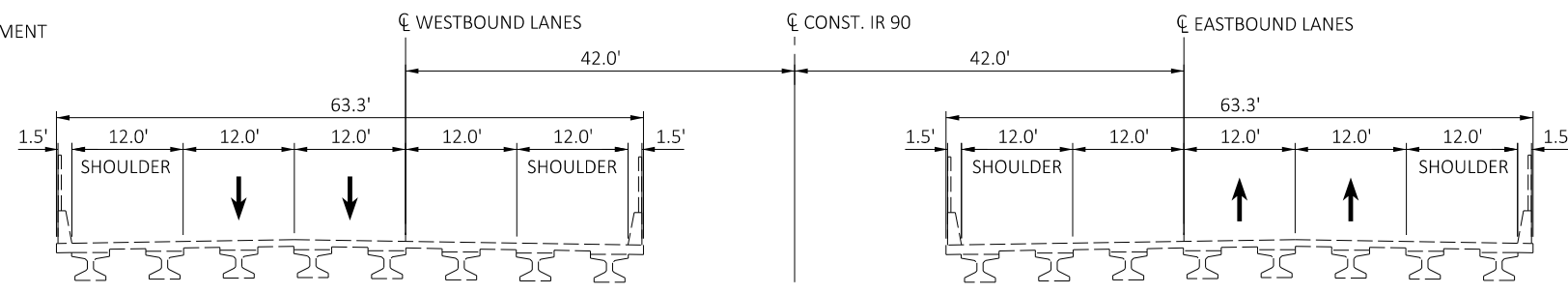
MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - SR 57 RAMPS C & D

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.16	29

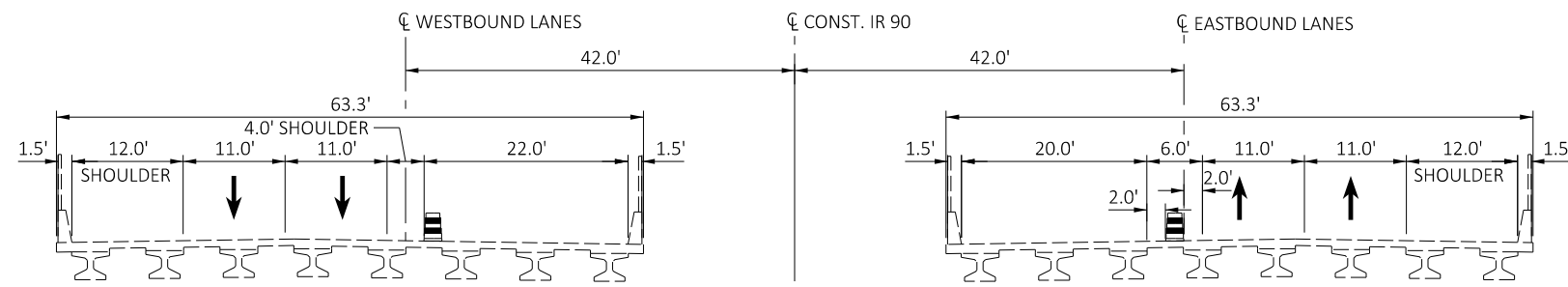


LEGEND

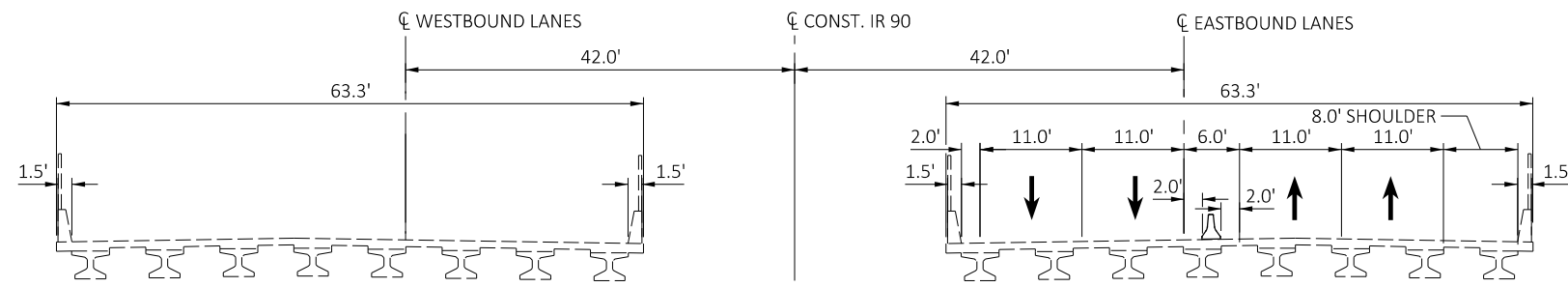
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



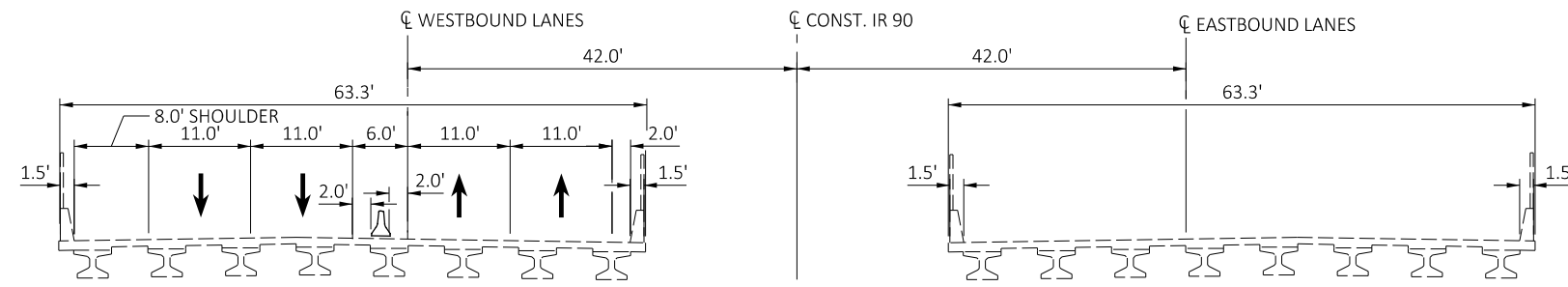
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER SR 57



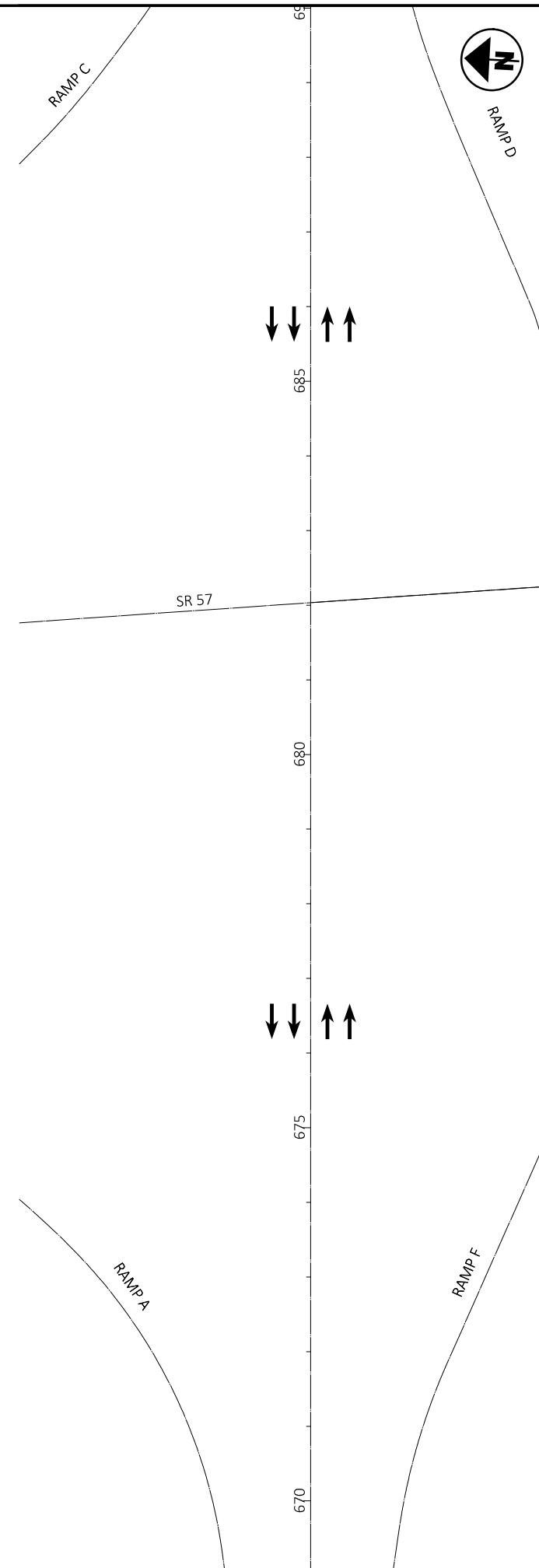
MOT PHASE 1 - IR 90 - BRIDGE OVER SR 57  
CROSSOVER ALTERNATIVE - EASTBOUND PERMANENT PAVEMENT AND TEMPORARY PAVEMENT, AND TEMPORARY GRADING.



MOT PHASE 2 - IR 90 - BRIDGE OVER SR 57  
CROSSOVER ALTERNATIVE - WESTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - IR 90 - BRIDGE OVER SR 57  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL, EASTBOUND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, AND FINAL GRADING



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER SR 57

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

CWP 12/14/23




PROJECT ID

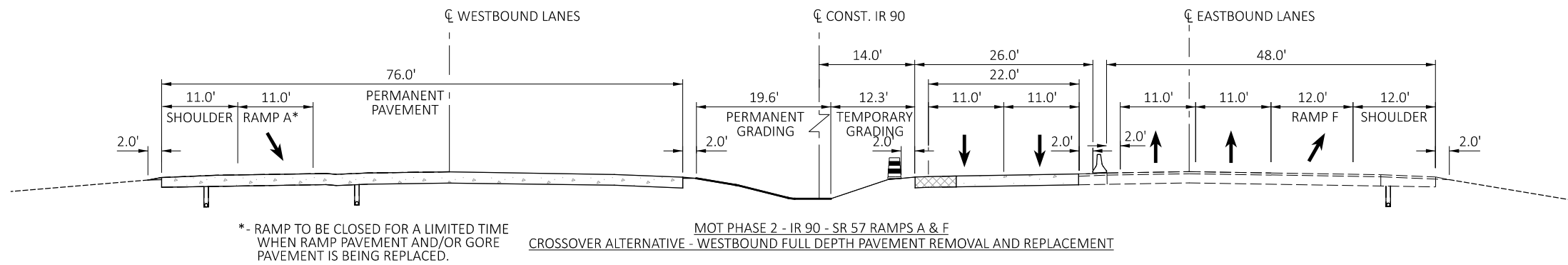
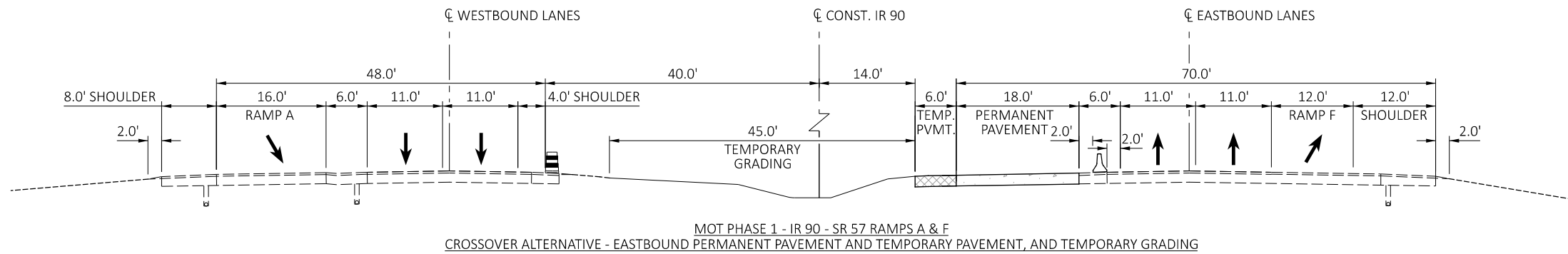
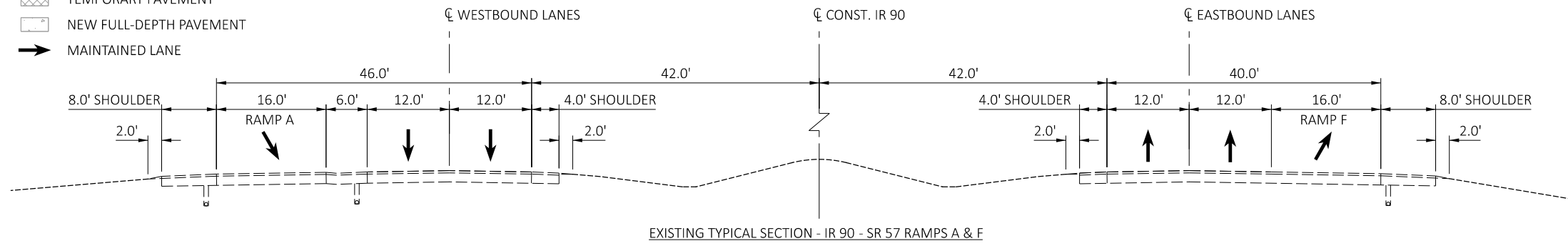
107714

SHEET TOTAL

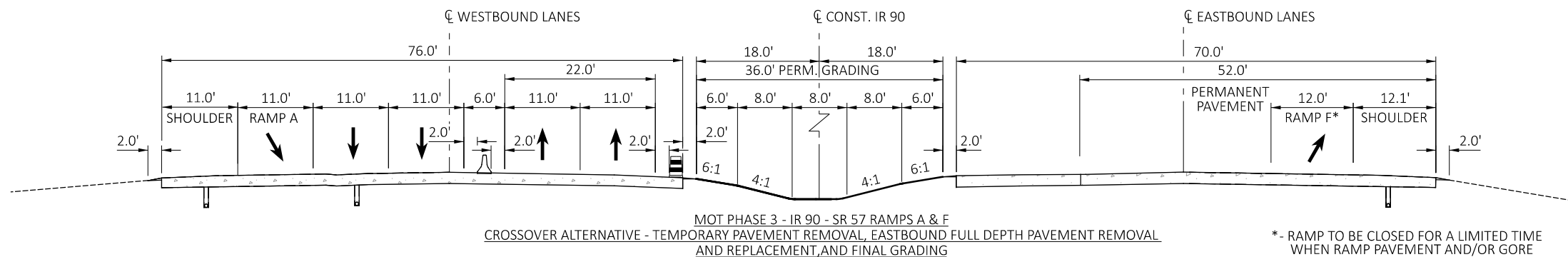
P.17 29

LEGEND

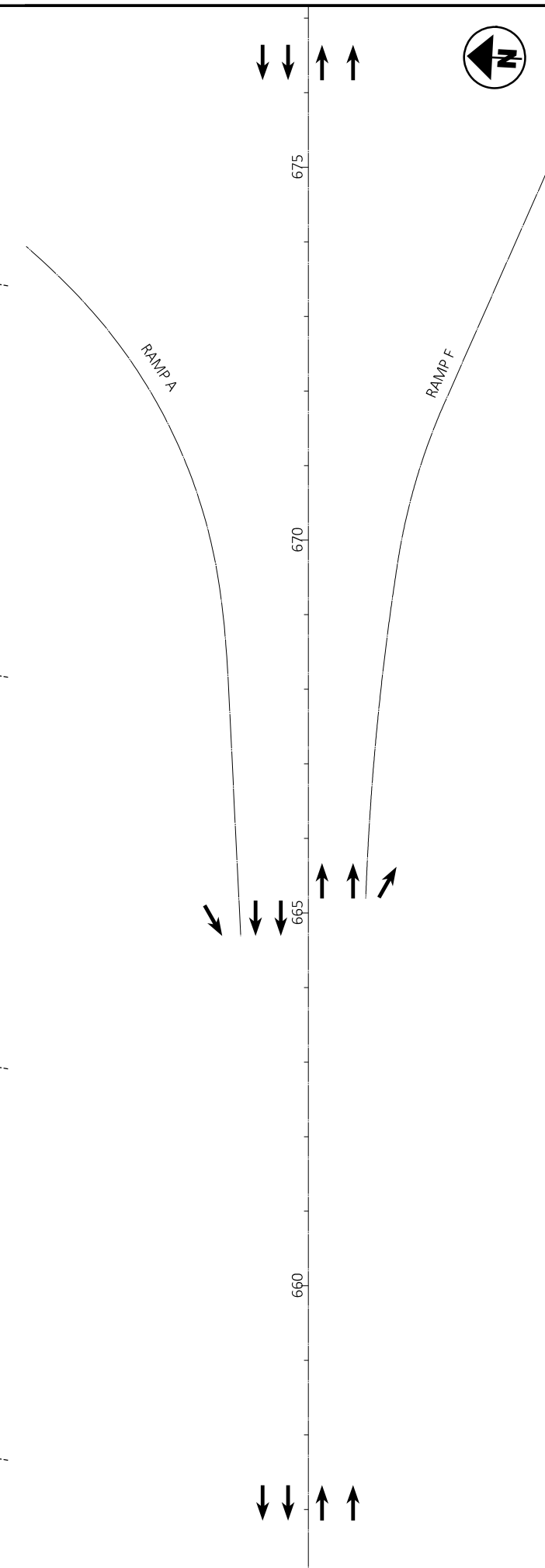
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.



\* - RAMP TO BE CLOSED FOR A LIMITED TIME WHEN RAMP PAVEMENT AND/OR GORE PAVEMENT IS BEING REPLACED.






MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - SR 57 RAMPS A & F

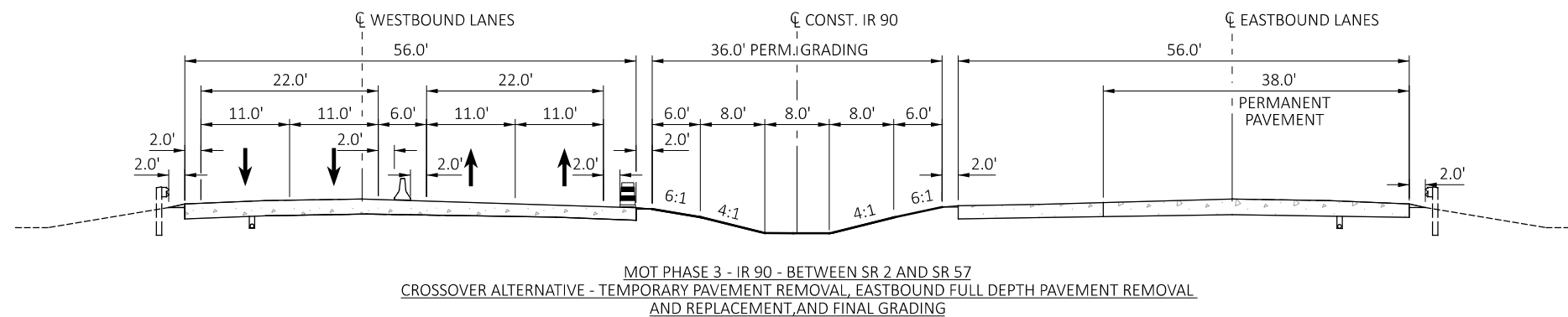
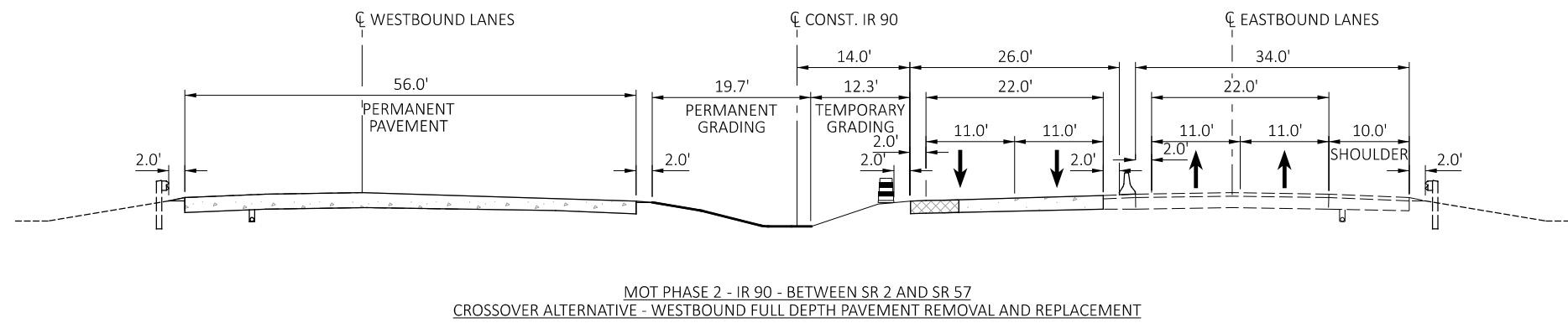
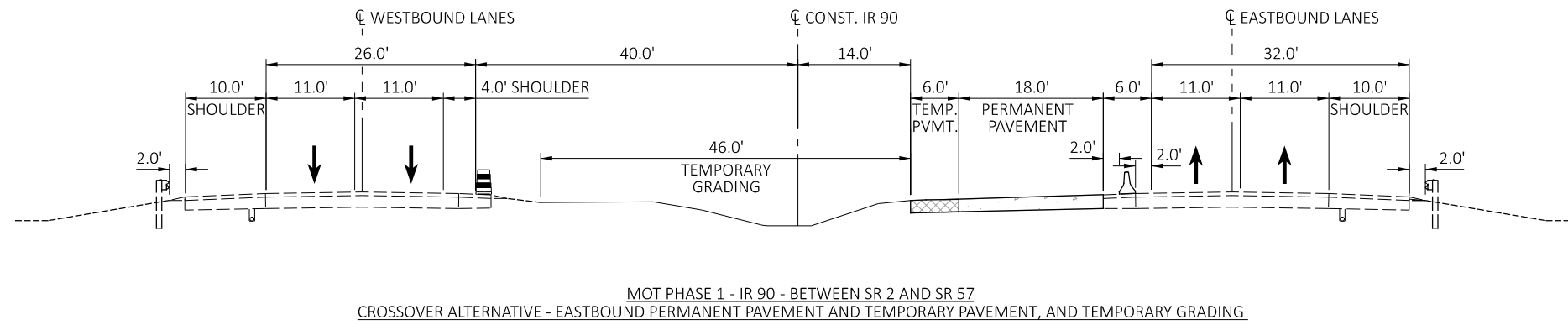
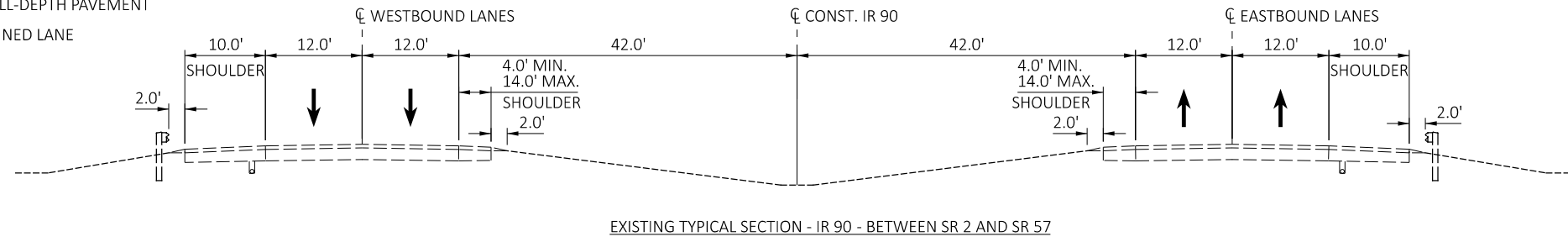
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.18	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



645

640




635

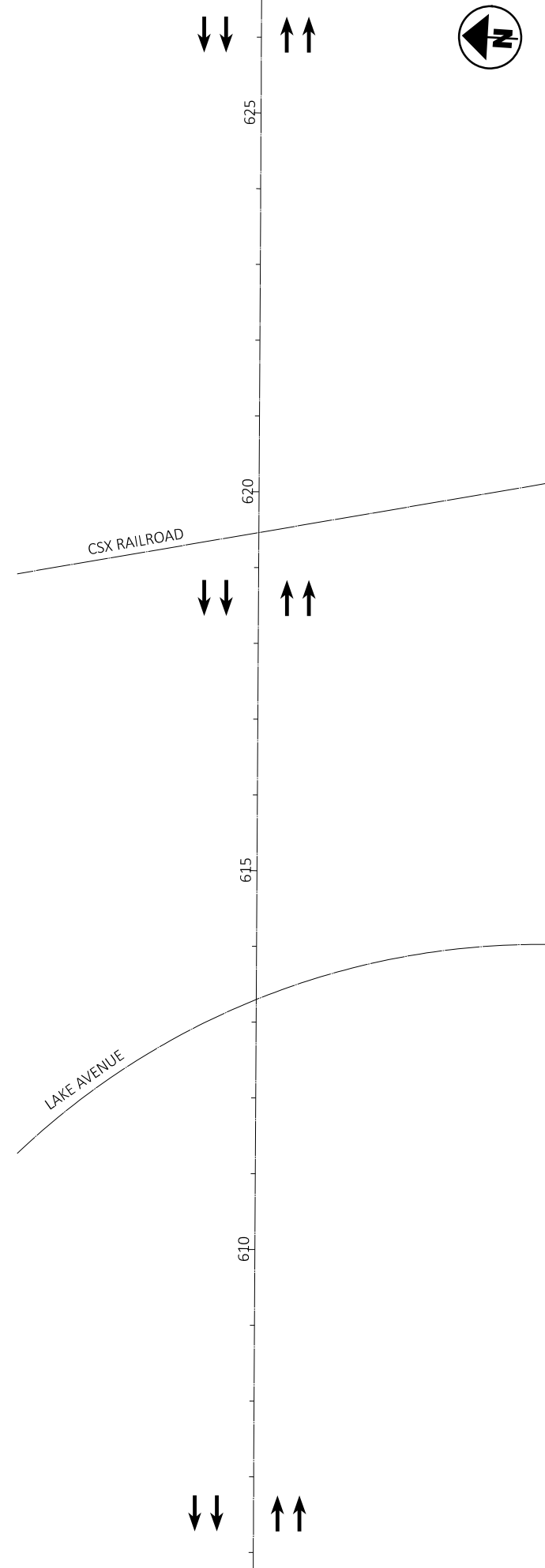
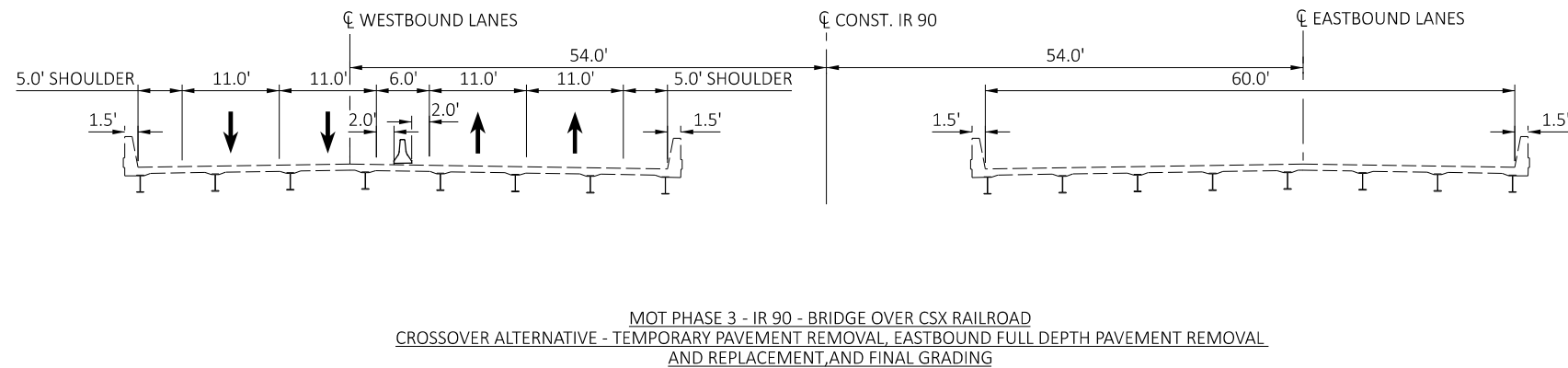
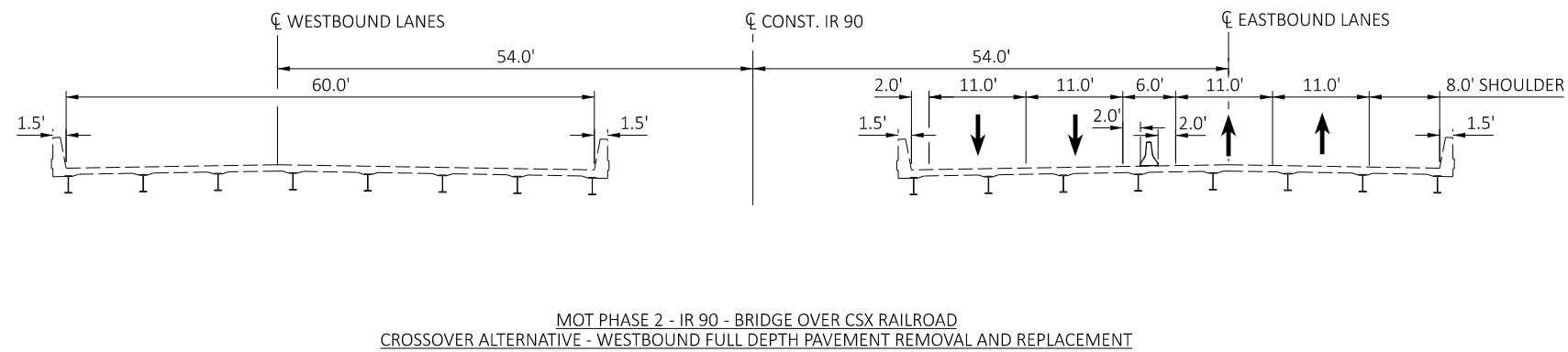
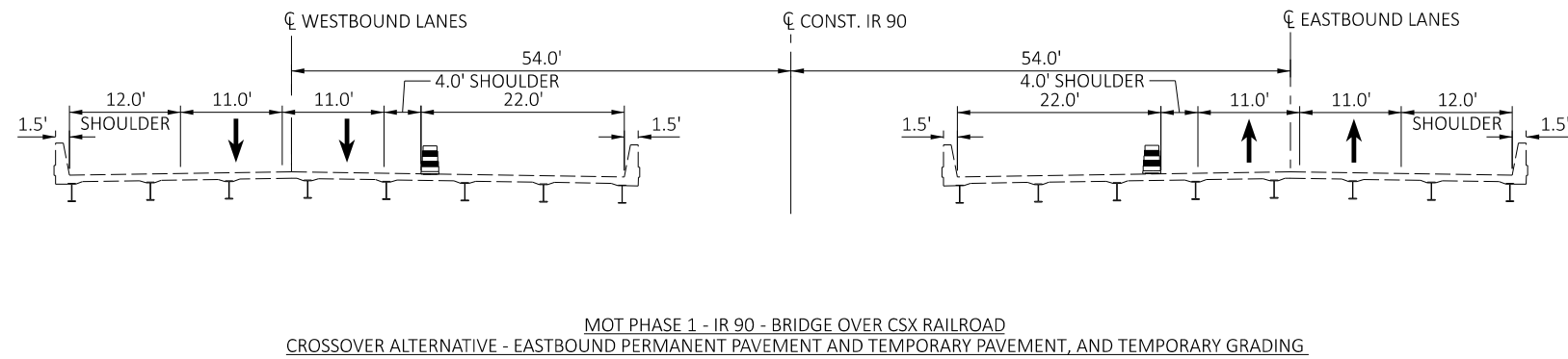
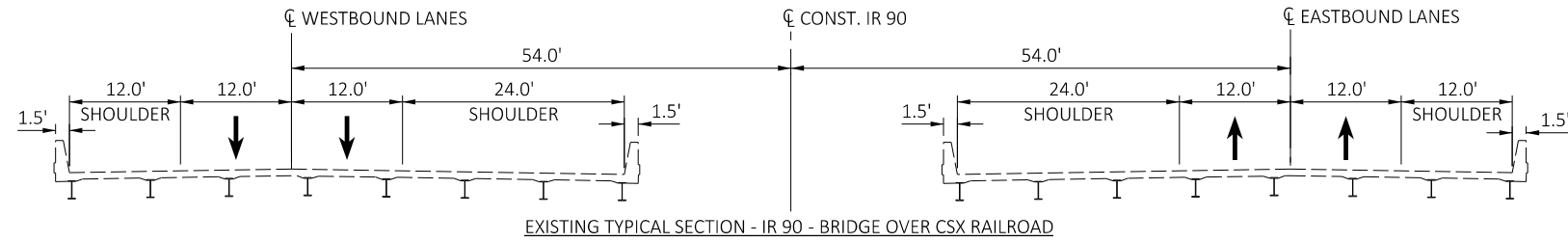
630

MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BETWEEN SR 2 AND SR 57

DESIGN AGENCY	
	
CHAGRIN VALLEY ENGINEERING, LTD.	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.19	29

LEGEND




-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE

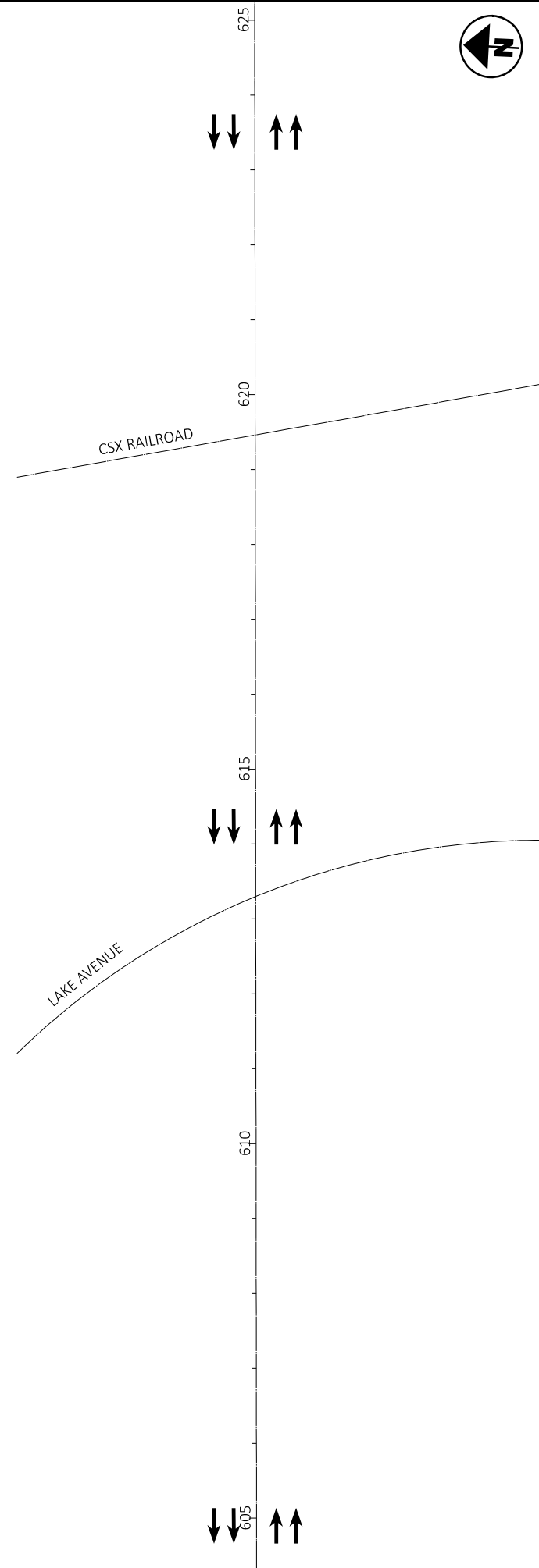
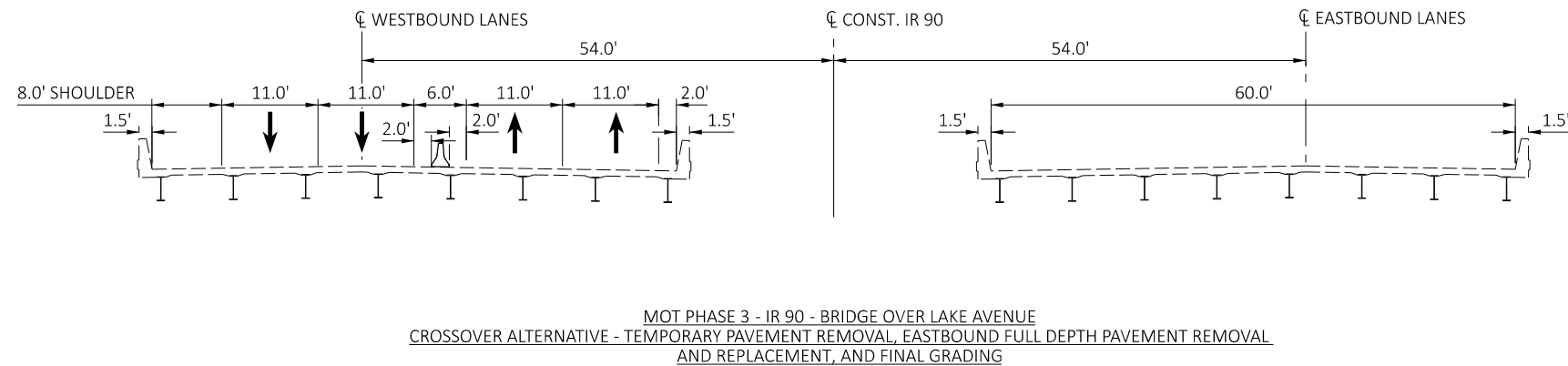
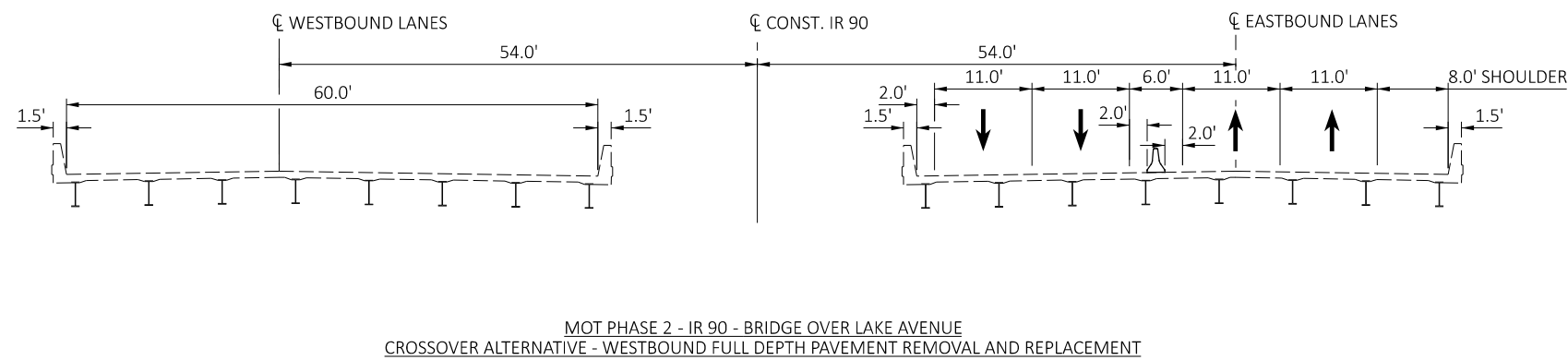
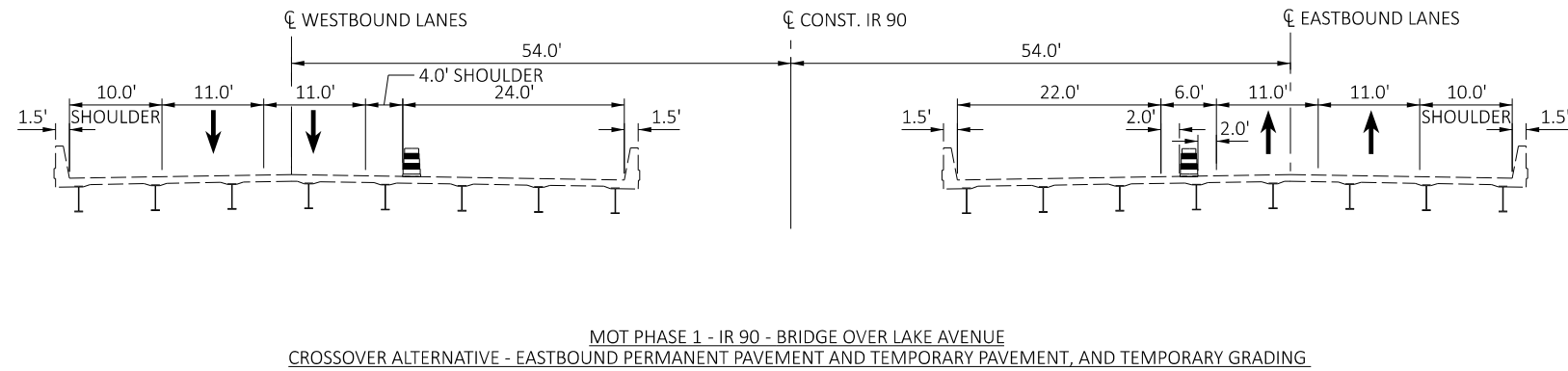
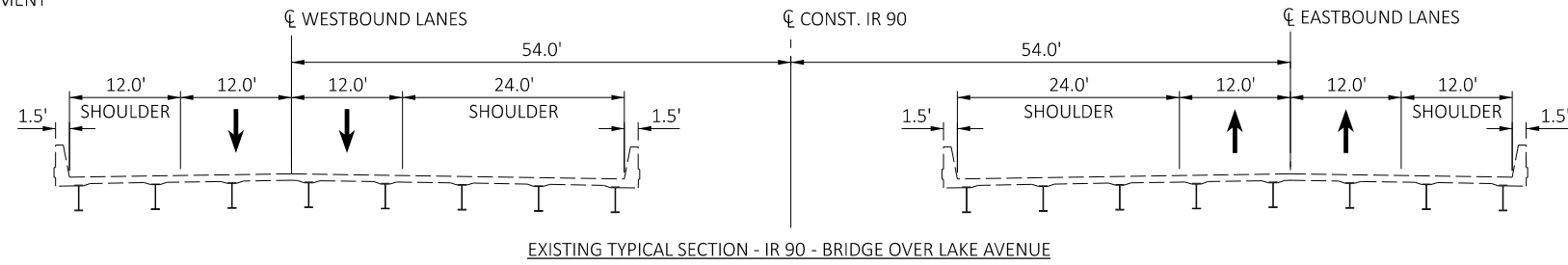


MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER CSX RAILROAD

DESIGN AGENCY	
	
CHAGRIN VALLEY ENGINEERING, LTD.	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.20	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER LAKE AVENUE

DESIGN AGENCY






DESIGNER  
SHT

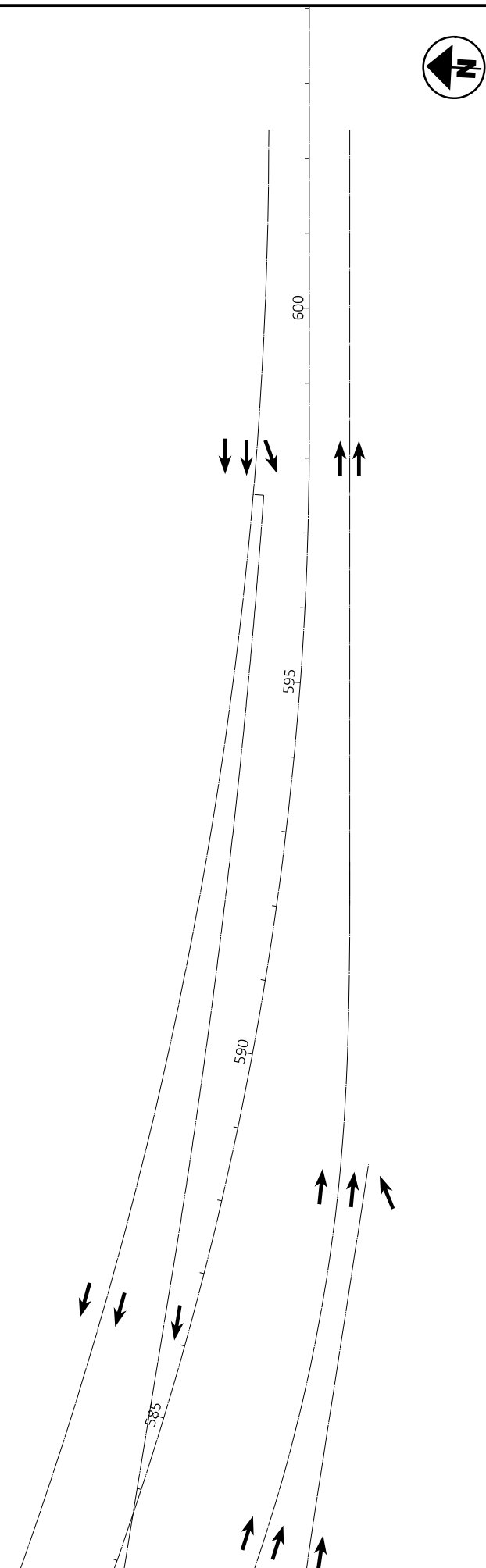
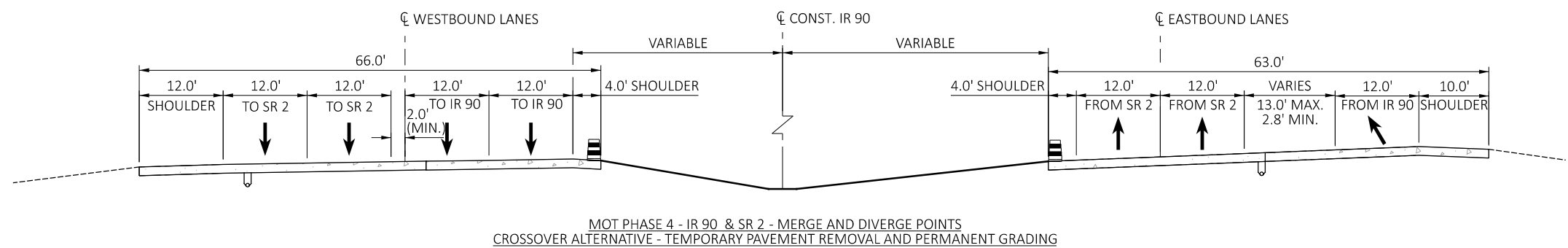
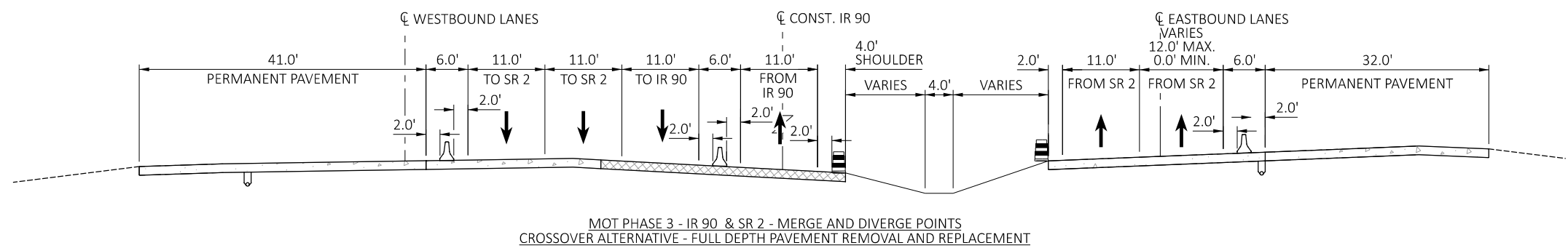
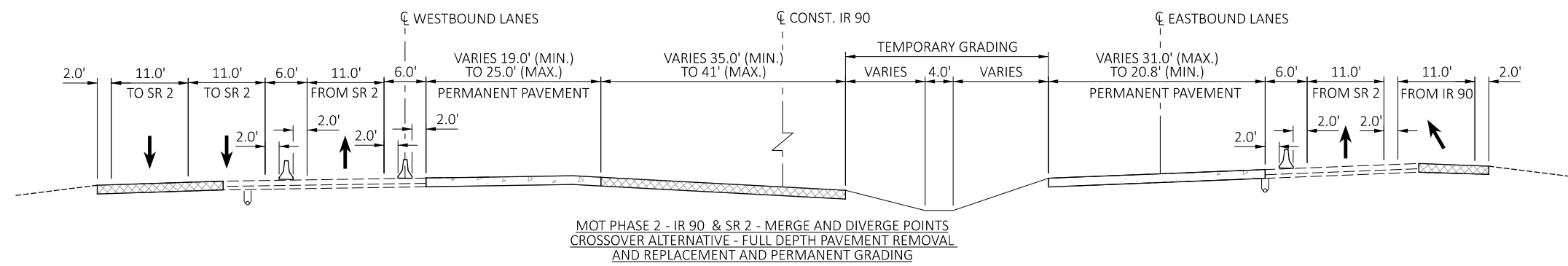
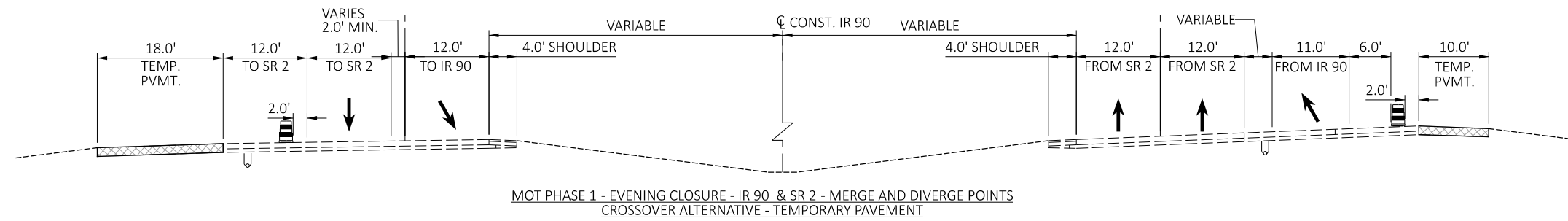
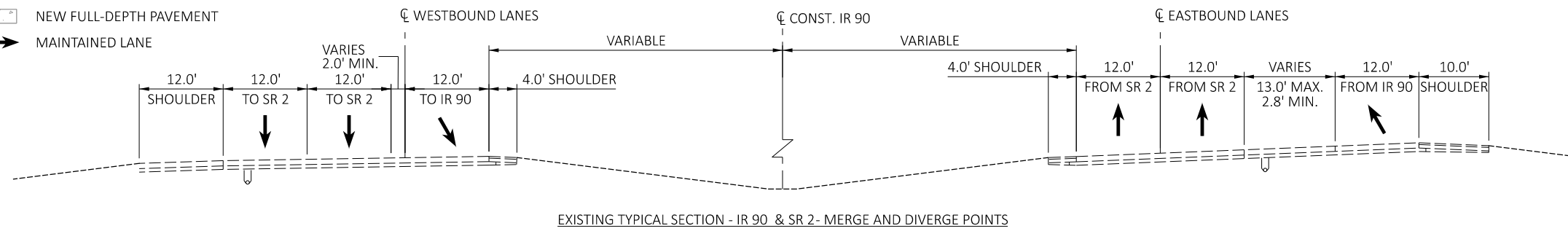
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET	TOTAL
P.21	29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 - SR 2 MERGE & DIVERGE LANES

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

CWP 12/14/23




PROJECT ID

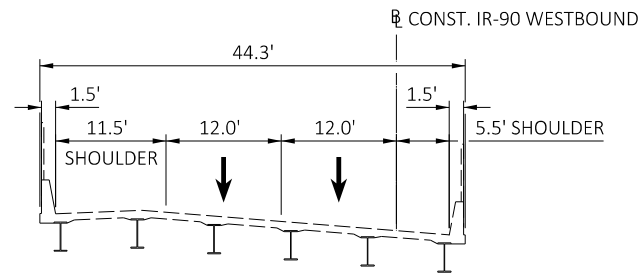
107714

SHEET TOTAL

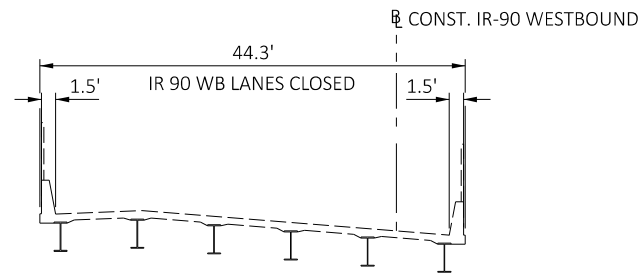
P.22 29

LEGEND

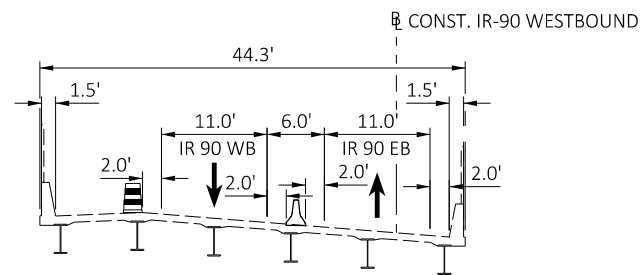
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-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



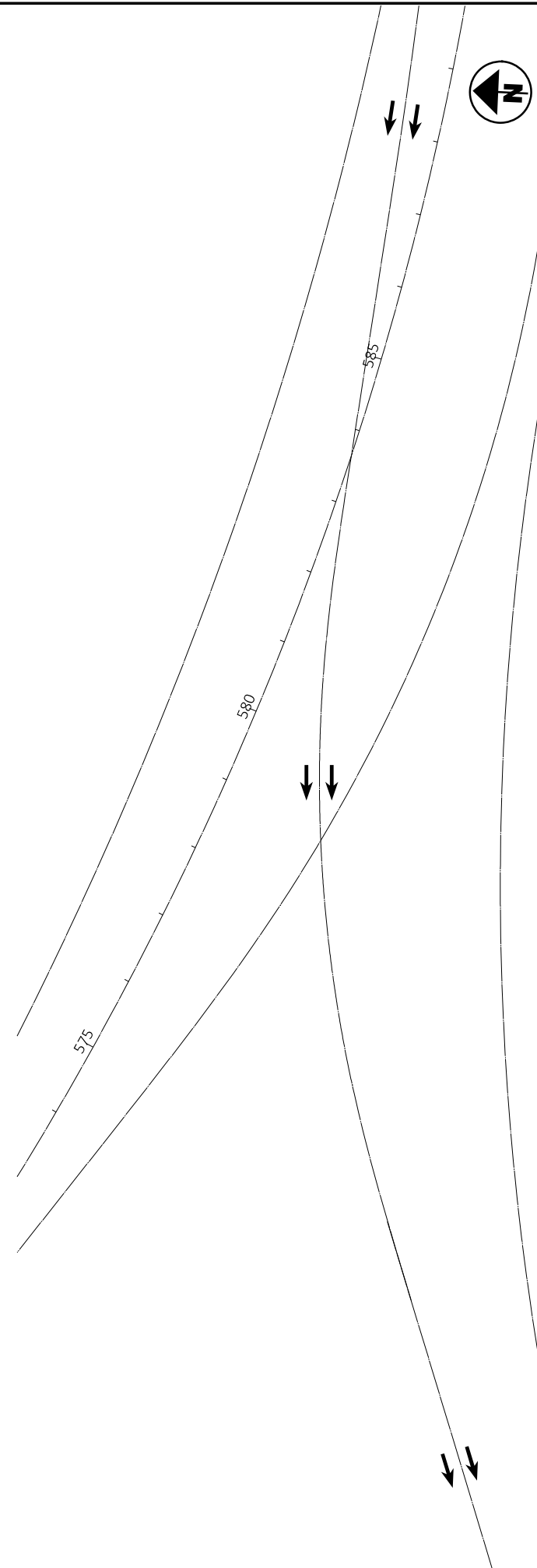
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER SR 2



MOT PHASE 2 - IR 90 WB - BRIDGE OVER SR 2  
CROSSOVER ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL  
AND REPLACEMENT



MOT PHASE 3 - IR 90 WB - BRIDGE OVER SR 2  
CROSSOVER ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND




DESIGN AGENCY

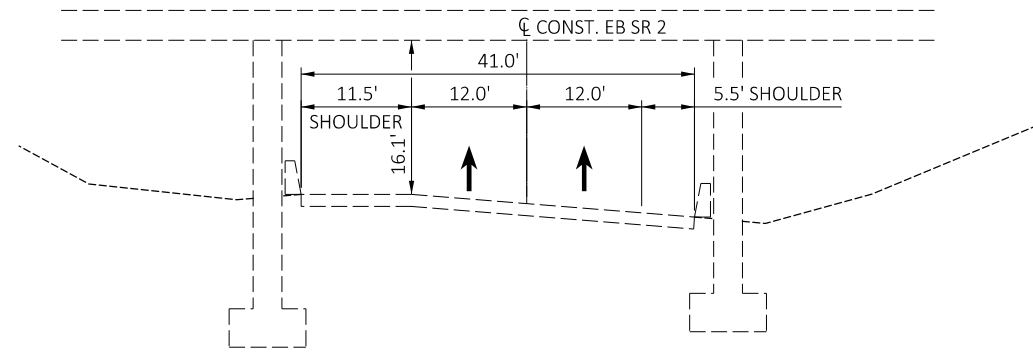


DESIGNER	SHT
REVIEWER	12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.23	29

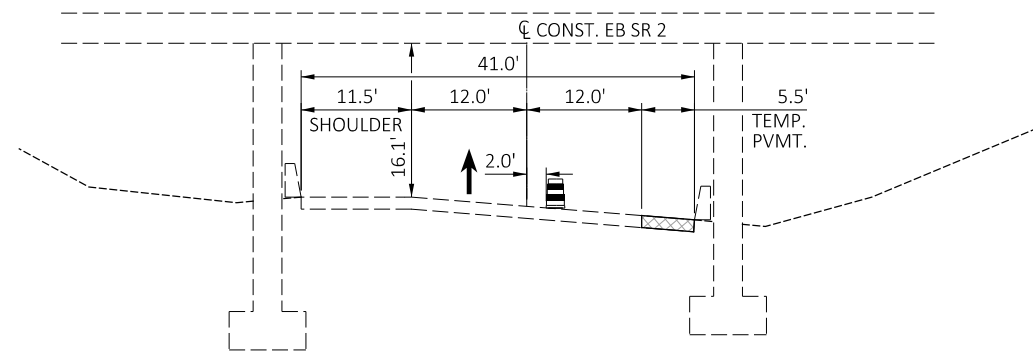


LEGEND

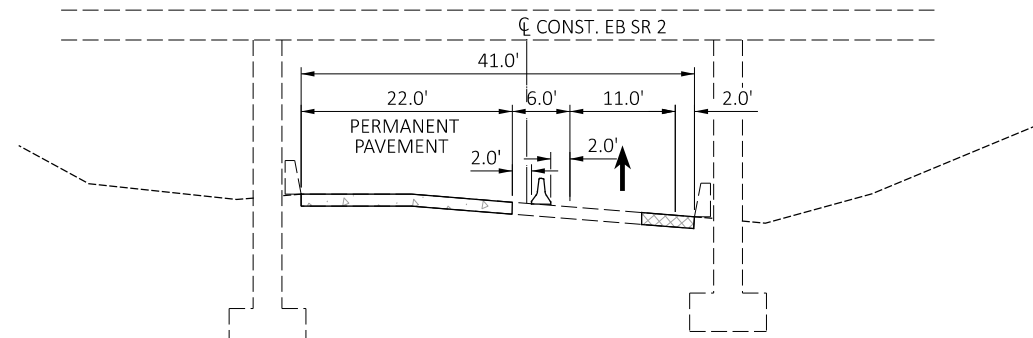
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



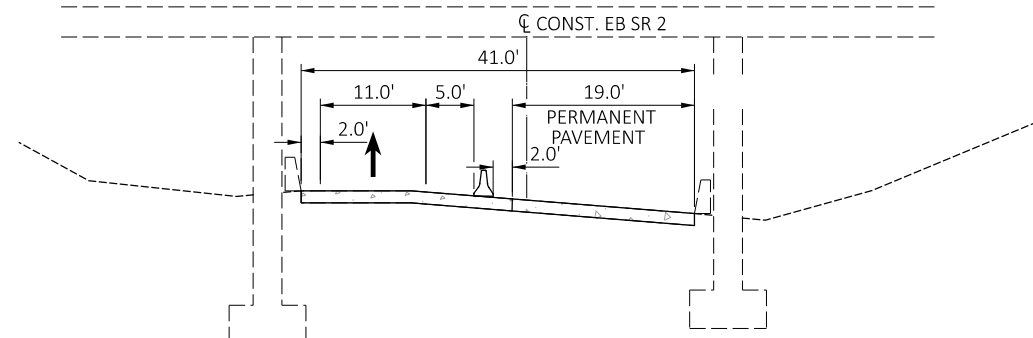
EXISTING TYPICAL SECTION - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND



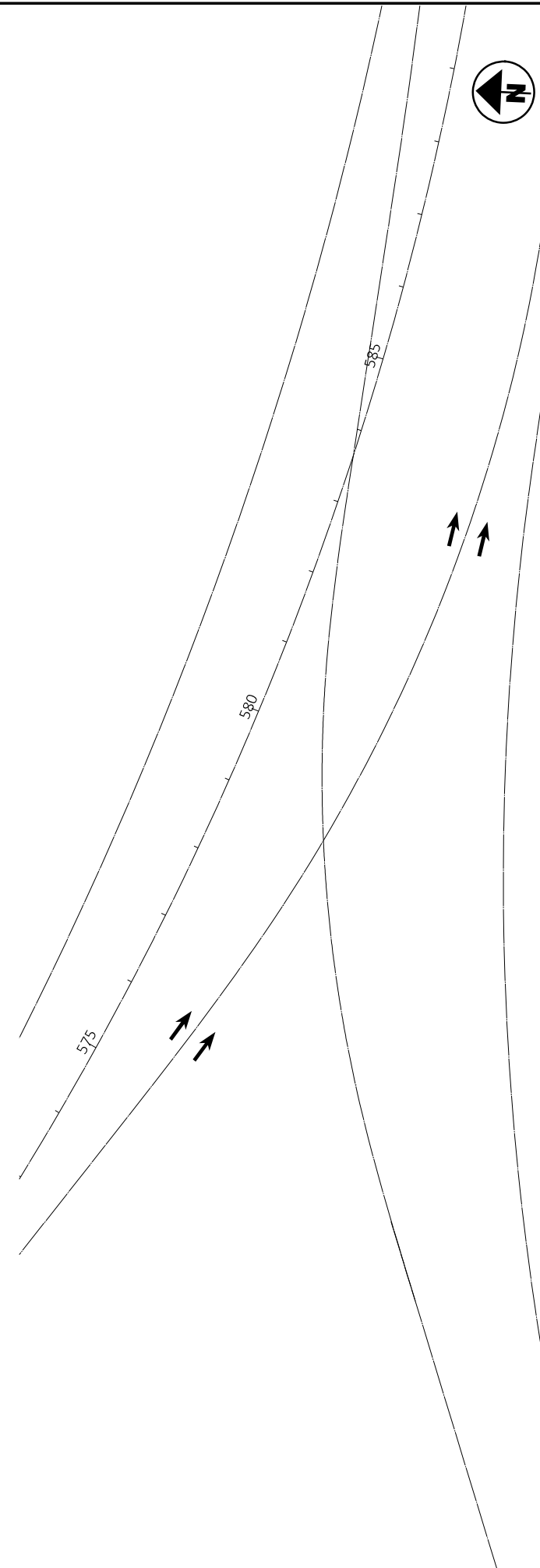
MOT PHASE 1 - EVENING CLOSURE - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT



MOT PHASE 2 - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND CROSSOVER ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOT PHASE 3 - SR 2 - IR 90 WESTBOUND BRIDGE OVER SR 2 EASTBOUND CROSSOVER ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT



MOTAA - TYPICAL SECTIONS - SR 2  
CROSSOVER ALTERNATIVE - SR 2 UNDER IR 90 WB RAMP

DESIGN AGENCY






DESIGNER  
SHT

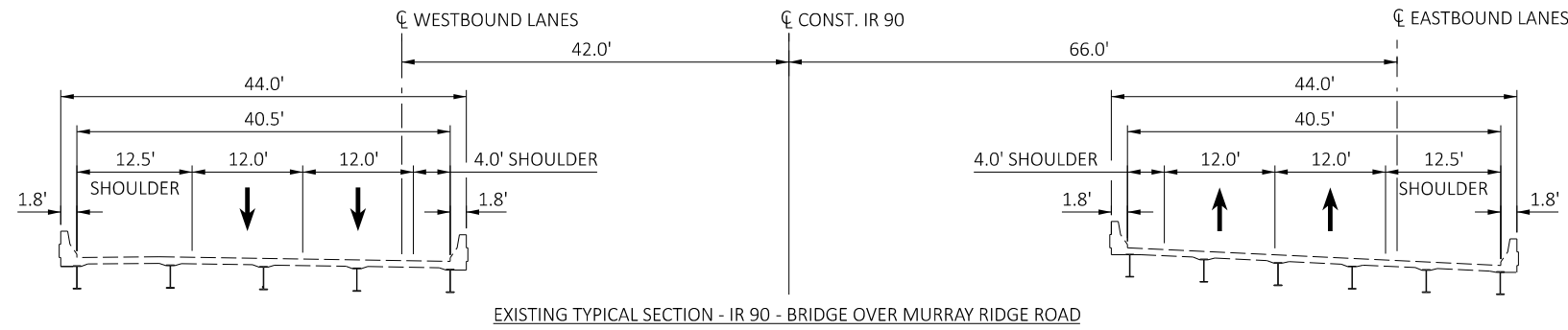
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

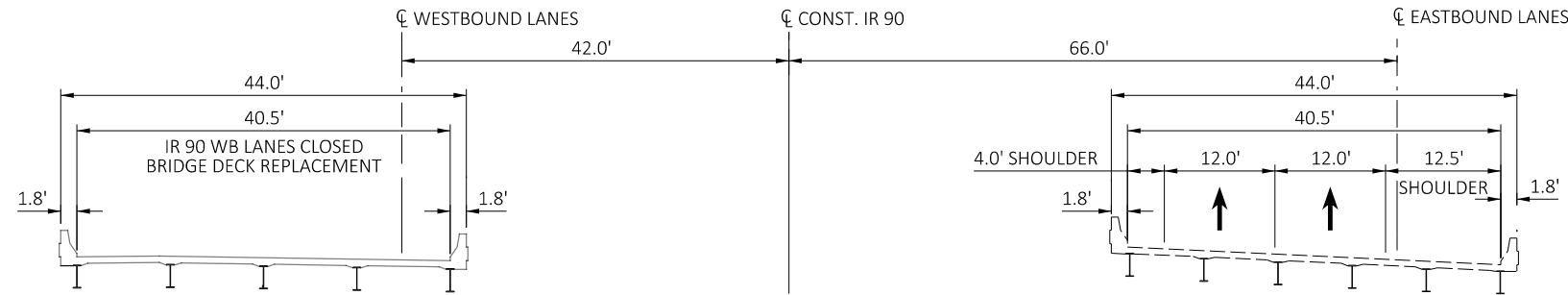
SHEET	TOTAL
P.24	29

LEGEND

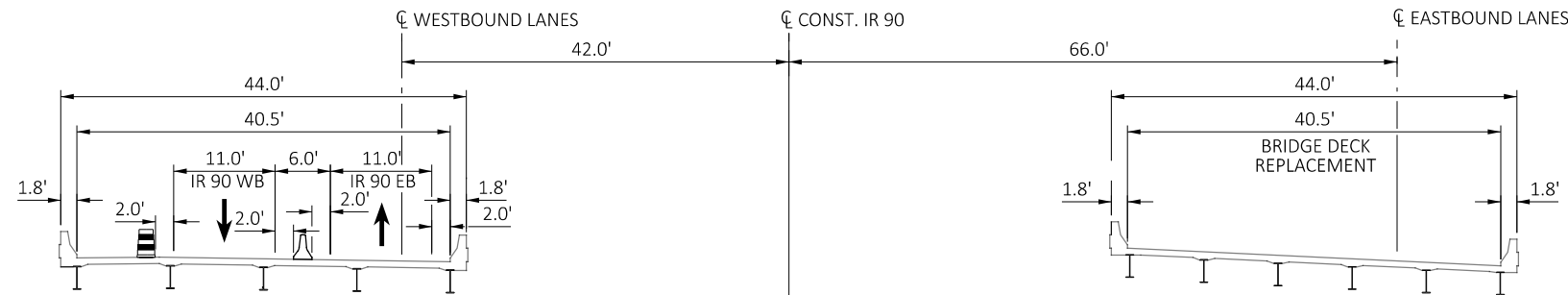
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-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



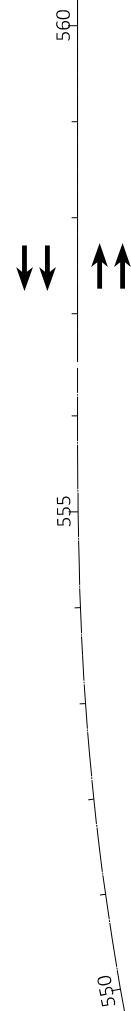
EXISTING TYPICAL SECTION - IR 90 - BRIDGE OVER MURRAY RIDGE ROAD



MOT PHASE 1 - IR 90 - BRIDGE OVER MURRAY RIDGE ROAD  
CROSSOVER ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT  
AND BRIDGE DECK REPLACEMENT



MOT PHASE 2 - IR 90 - BRIDGE OVER MURRAY RIDGE ROAD  
CROSSOVER ALTERNATIVE - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT  
AND BRIDGE DECK REPLACEMENT






MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BRIDGE OVER MURRAY RIDGE ROAD

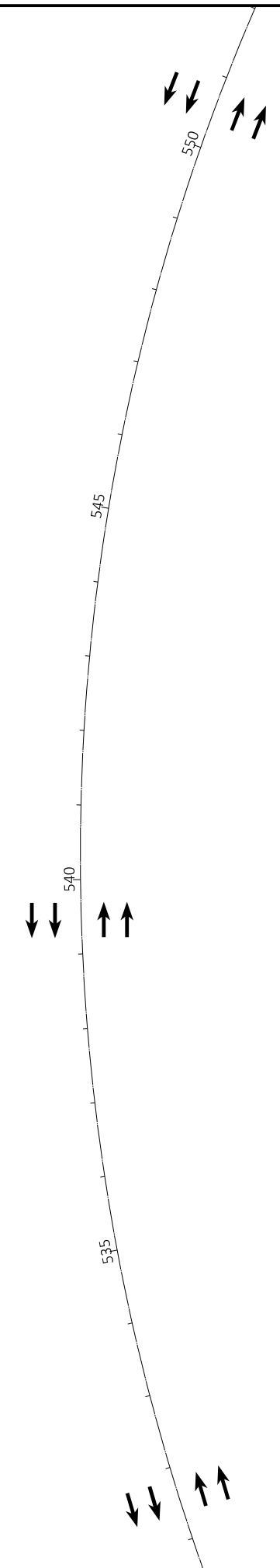
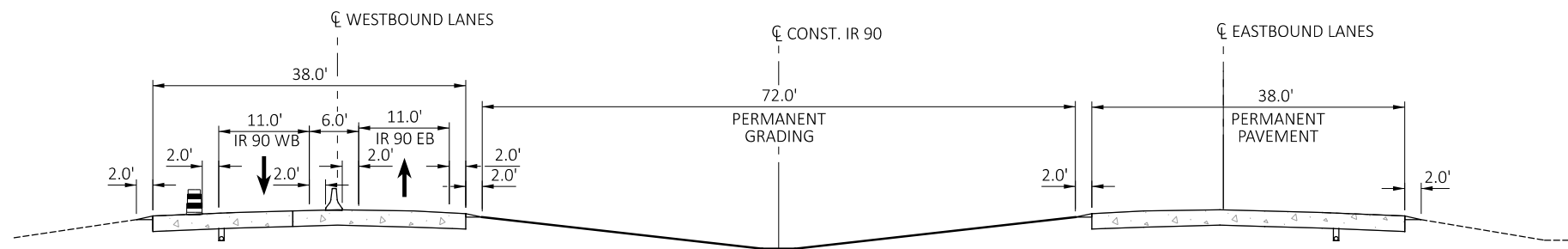
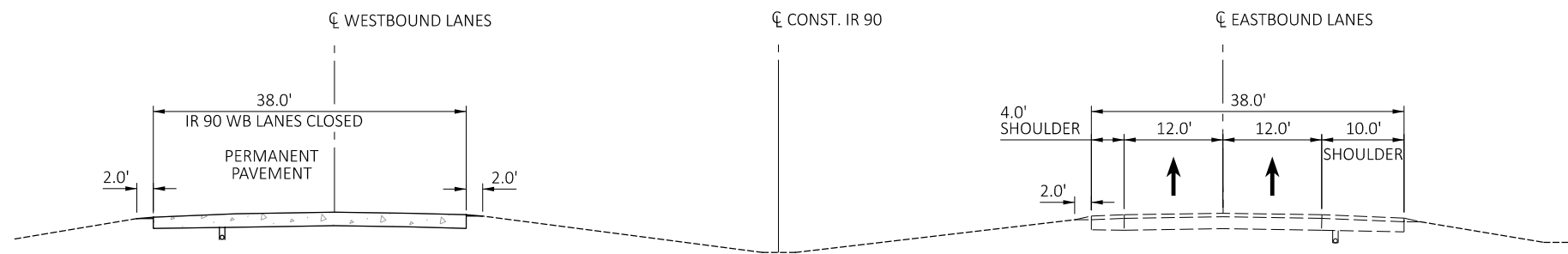
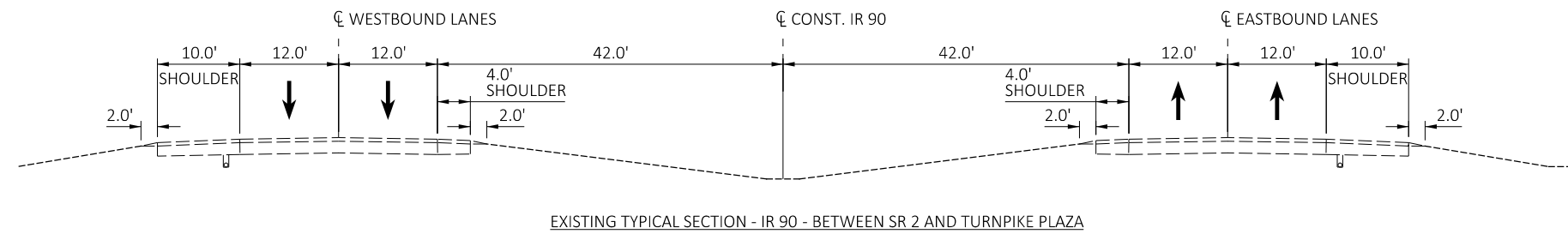
DESIGN AGENCY



DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.25	29

LEGEND




-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE

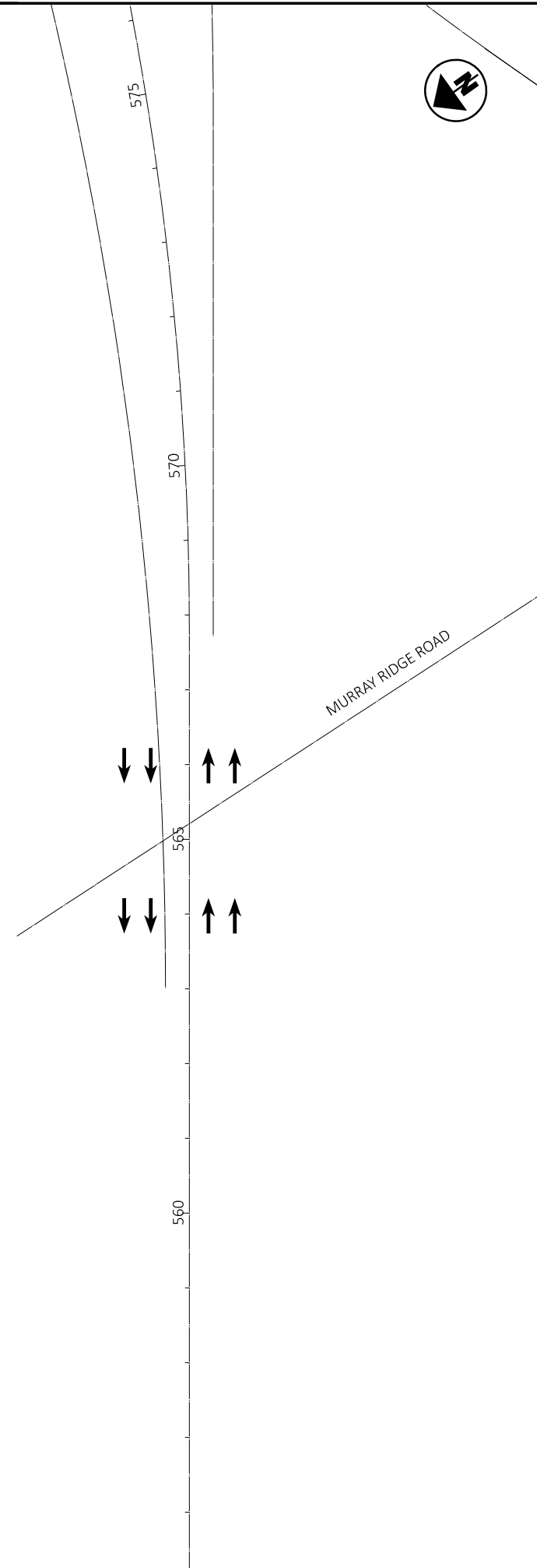
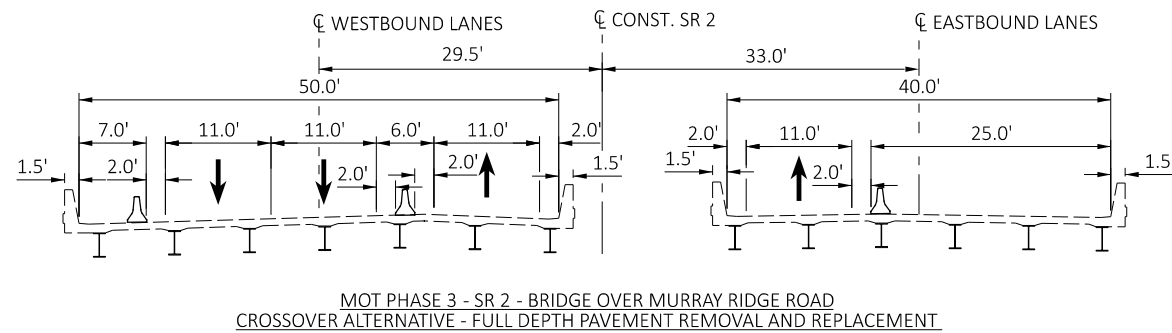
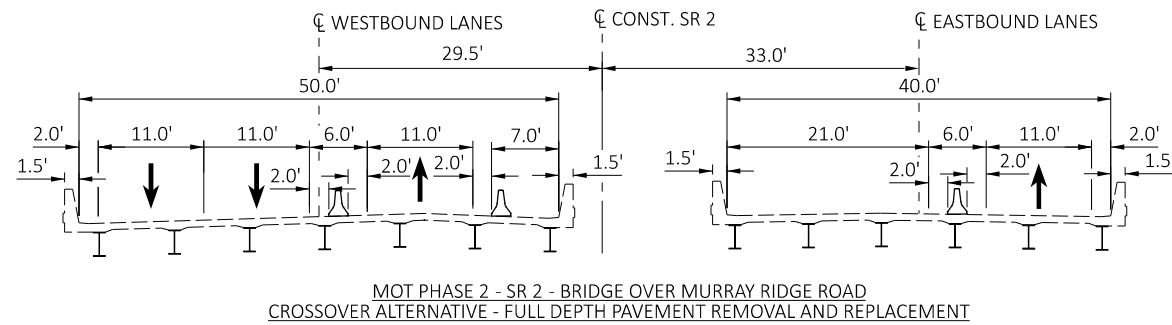
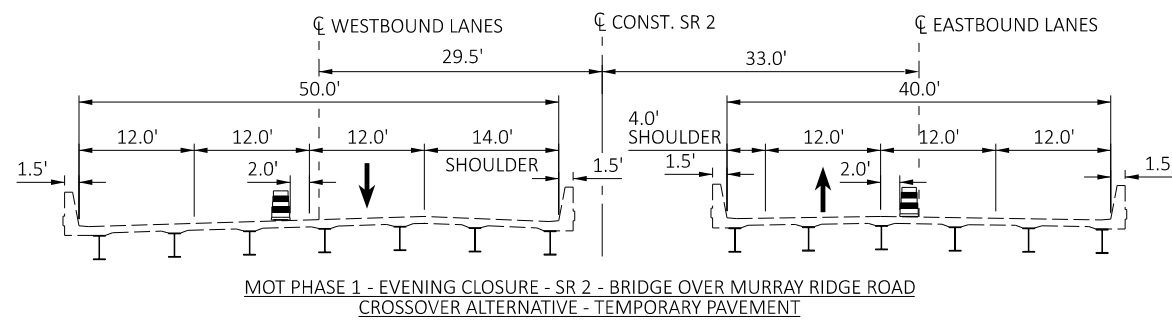
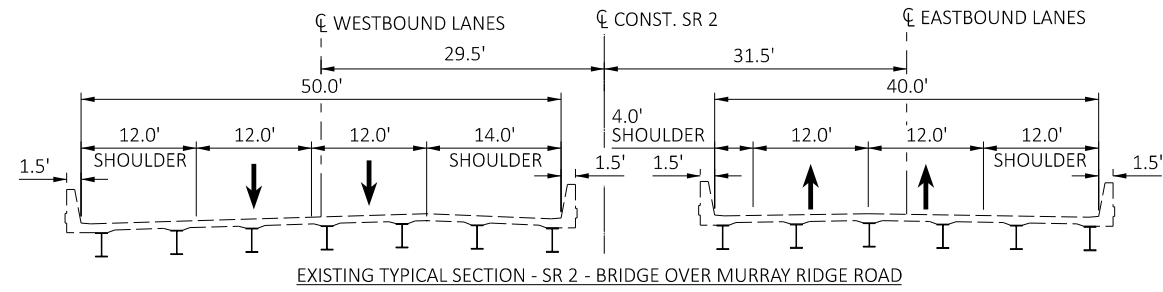


MOTAA - TYPICAL SECTIONS - IR 90  
CROSSOVER ALTERNATIVE - IR 90 BETWEEN TURNPIKE PLAZA AND SR 2

DESIGN AGENCY	
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET TOTAL	P.26 29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



MOTAA - TYPICAL SECTIONS - SR 2  
CROSSOVER ALTERNATIVE - SR 2 BRIDGE OVER MURRAY RIDGE ROAD

DESIGN AGENCY






DESIGNER  
SHT

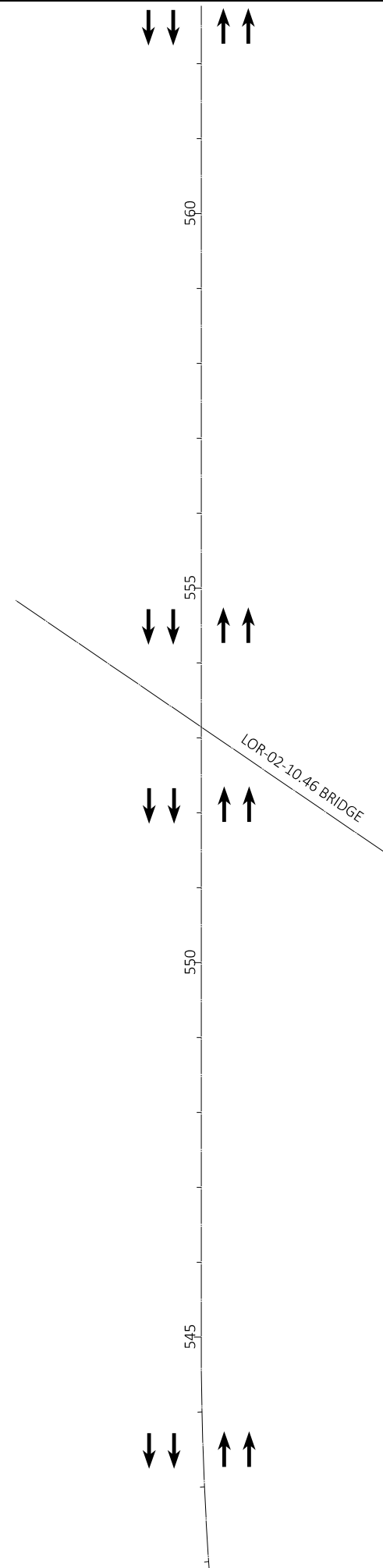
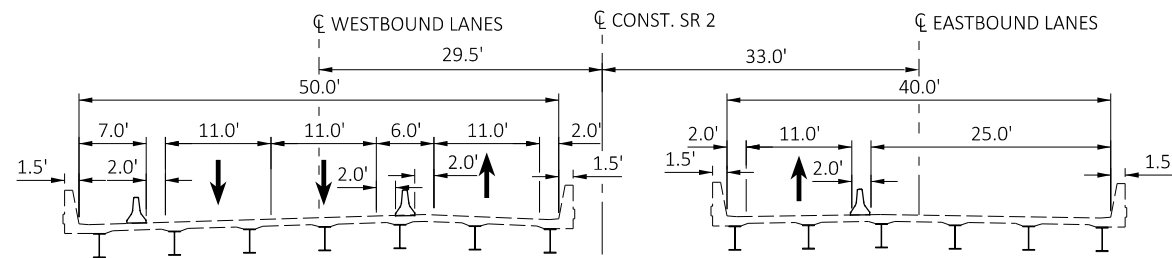
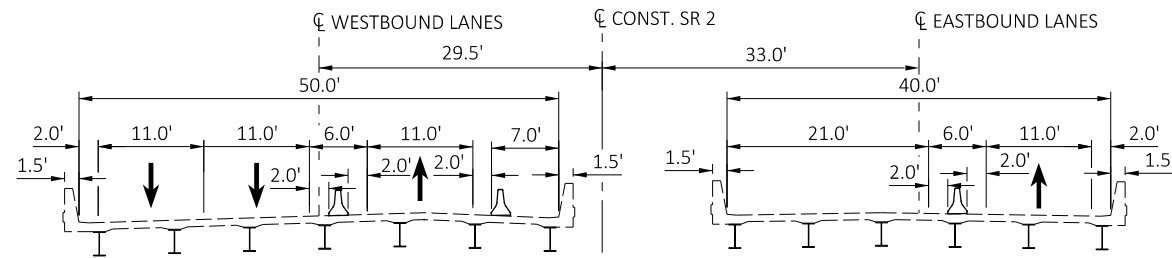
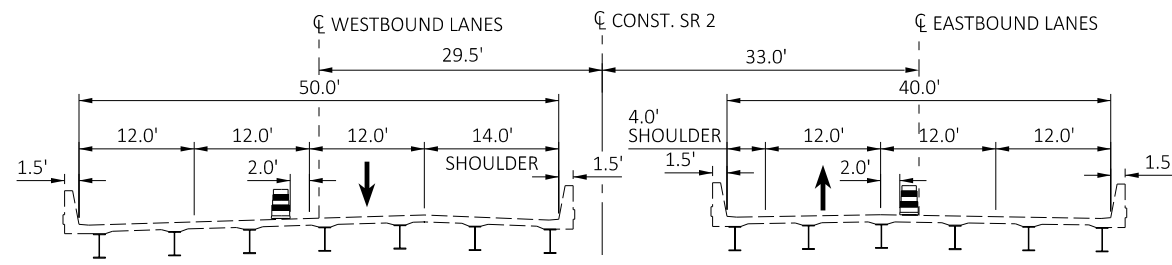
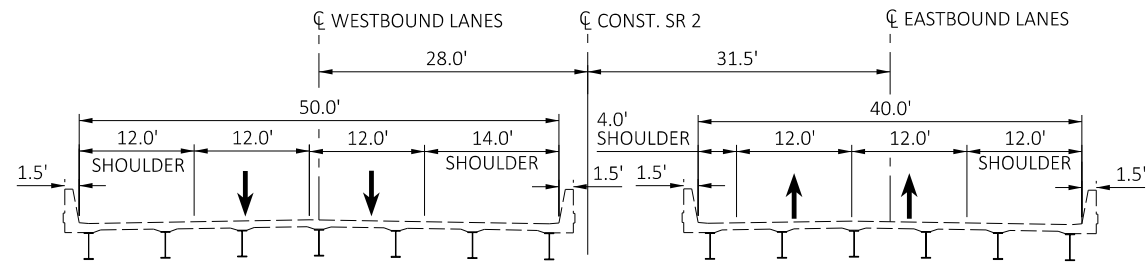
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET TOTAL  
P.27 29

LEGEND

-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE






MOTAA - TYPICAL SECTIONS - SR 2  
CROSSOVER ALTERNATIVE - SR 2 BRIDGE LOR-2-10.46

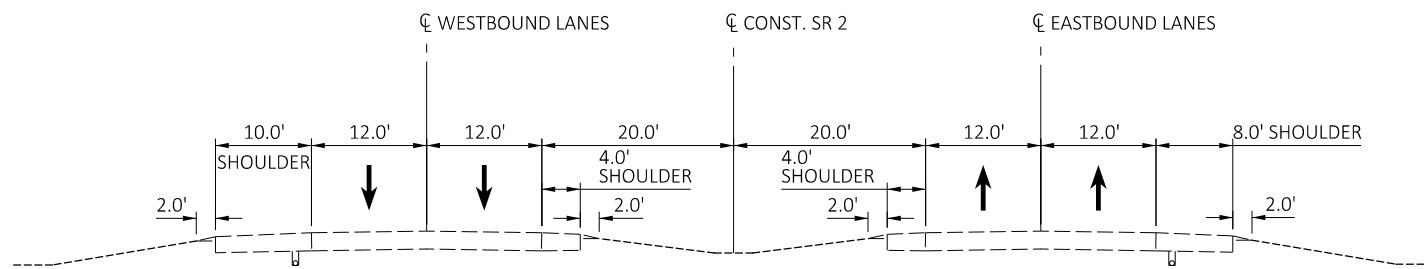
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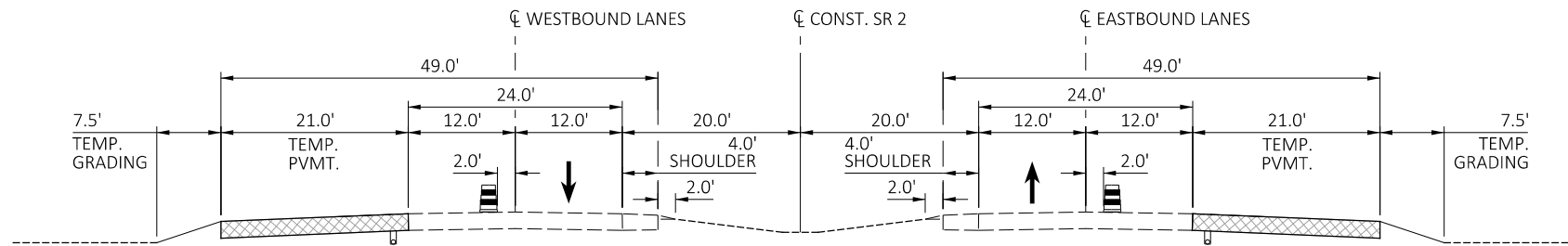
DESIGNER	SHT
REVIEWER	CWP 12/14/23
PROJECT ID	107714
SHEET	TOTAL
P.28	29

LEGEND

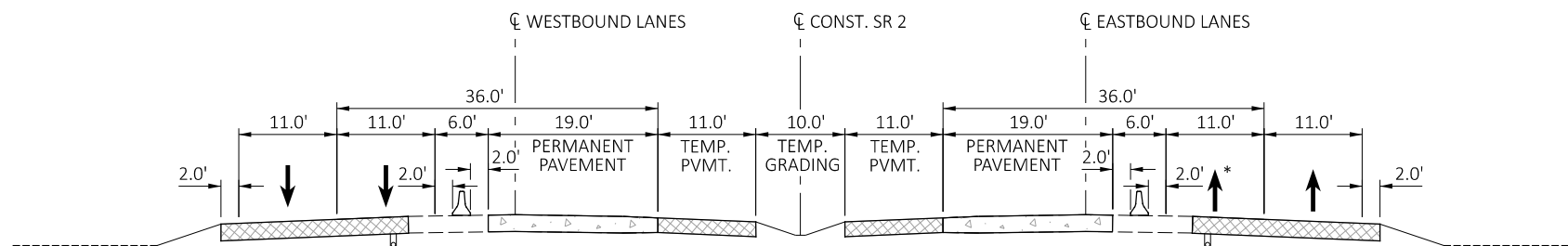
-  TEMPORARY PAVEMENT
-  NEW FULL-DEPTH PAVEMENT
-  MAINTAINED LANE



EXISTING TYPICAL - SR 2 - BETWEEN MIDDLE RIDGE ROAD AND IR 90

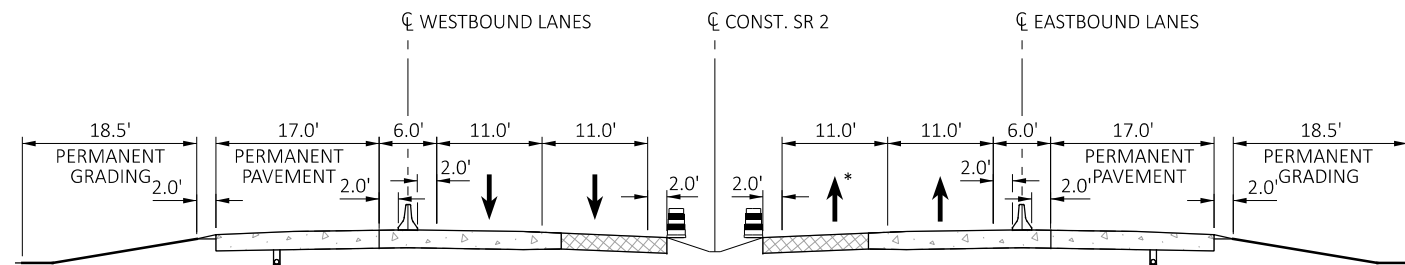


MOT PHASE 1 - EVENING CLOSURE - SR 2 - BETWEEN MIDDLE RIDGE ROAD AND IR 90  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT



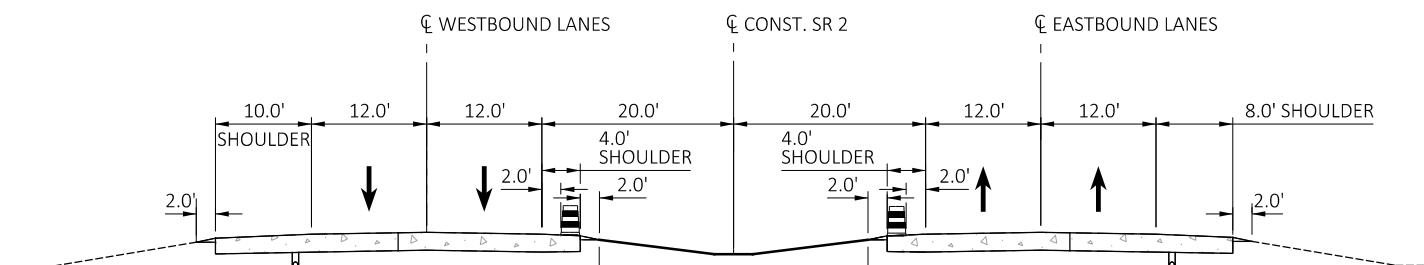
MOT PHASE 2 - SR 2 - BETWEEN MIDDLE RIDGE ROAD AND IR 90  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT AND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT

\* - SR 2 LANE TO BE CROSSED OVER TO WB PAVEMENT WEST OF LOR-2-10.46 BRIDGE

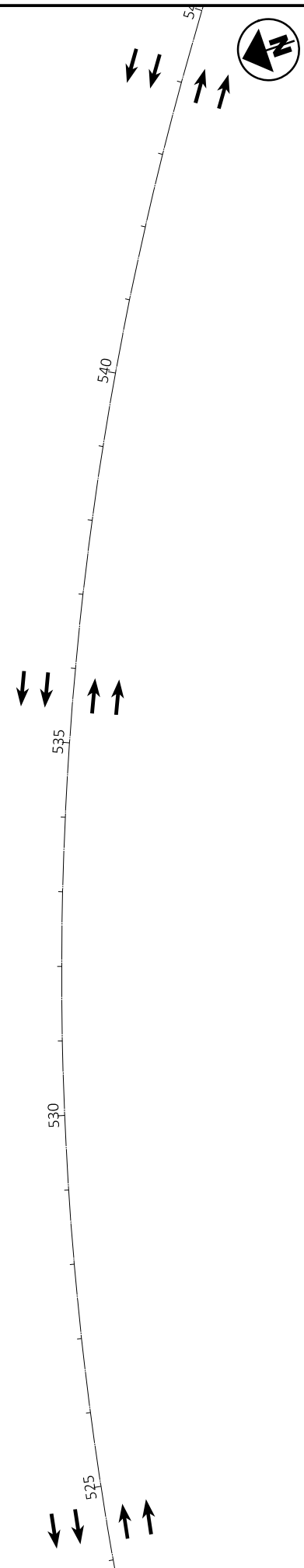


MOT PHASE 3 - SR 2 - BETWEEN MIDDLE RIDGE ROAD AND IR 90  
CROSSOVER ALTERNATIVE - TEMPORARY AND FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT AND PERMANENT GRADING

\* - SR 2 LANE TO BE CROSSED OVER TO WB PAVEMENT WEST OF LOR-2-10.46 BRIDGE



MOT PHASE 4 - SR 2 - BETWEEN MIDDLE RIDGE ROAD AND IR 90  
CROSSOVER ALTERNATIVE - TEMPORARY PAVEMENT REMOVAL AND FINAL GRADING



MOTAA - TYPICAL SECTIONS - SR 2  
CROSSOVER ALTERNATIVE - SR 2 BETWEEN MIDDLE RIDGE ROAD AND IR-90

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

CWP 12/14/23

PROJECT ID

107714

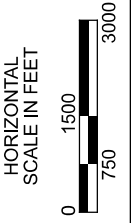
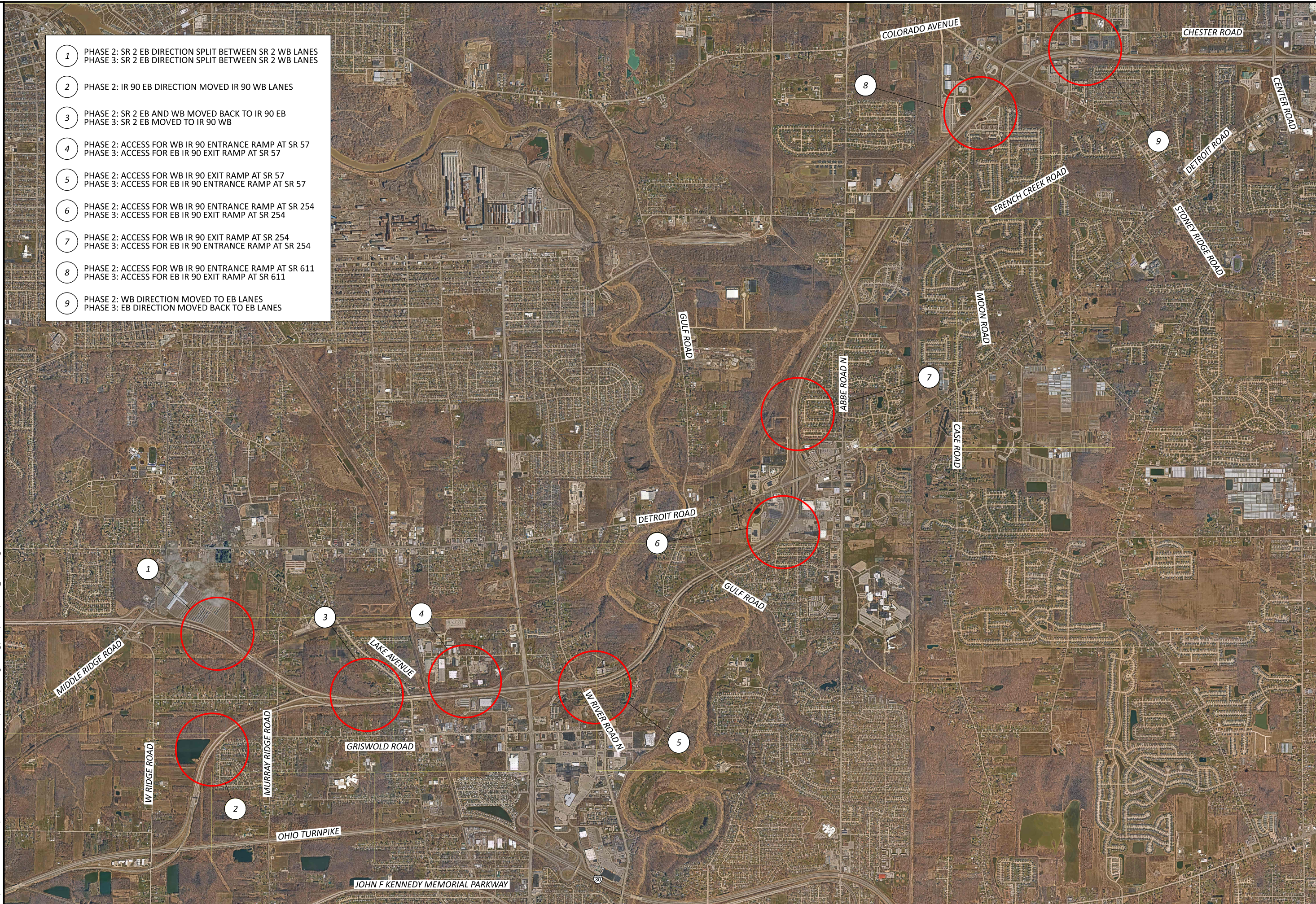
SHEET TOTAL

P.29 29

Appendix G: Crossover Locations



- 1 PHASE 2: SR 2 EB DIRECTION SPLIT BETWEEN SR 2 WB LANES  
PHASE 3: SR 2 EB DIRECTION SPLIT BETWEEN SR 2 WB LANES
- 2 PHASE 2: IR 90 EB DIRECTION MOVED IR 90 WB LANES
- 3 PHASE 2: SR 2 EB AND WB MOVED BACK TO IR 90 EB  
PHASE 3: SR 2 EB MOVED TO IR 90 WB
- 4 PHASE 2: ACCESS FOR WB IR 90 ENTRANCE RAMP AT SR 57  
PHASE 3: ACCESS FOR EB IR 90 EXIT RAMP AT SR 57
- 5 PHASE 2: ACCESS FOR WB IR 90 EXIT RAMP AT SR 57  
PHASE 3: ACCESS FOR EB IR 90 ENTRANCE RAMP AT SR 57
- 6 PHASE 2: ACCESS FOR WB IR 90 ENTRANCE RAMP AT SR 254  
PHASE 3: ACCESS FOR EB IR 90 EXIT RAMP AT SR 254
- 7 PHASE 2: ACCESS FOR WB IR 90 EXIT RAMP AT SR 254  
PHASE 3: ACCESS FOR EB IR 90 ENTRANCE RAMP AT SR 254
- 8 PHASE 2: ACCESS FOR WB IR 90 ENTRANCE RAMP AT SR 611  
PHASE 3: ACCESS FOR EB IR 90 EXIT RAMP AT SR 611
- 9 PHASE 2: WB DIRECTION MOVED TO EB LANES  
PHASE 3: EB DIRECTION MOVED BACK TO EB LANES



CROSSOVER LOCATION MAP

DESIGN AGENCY



DESIGNER

SHT

REVIEWER

CWP 12/14/23

PROJECT ID

107714

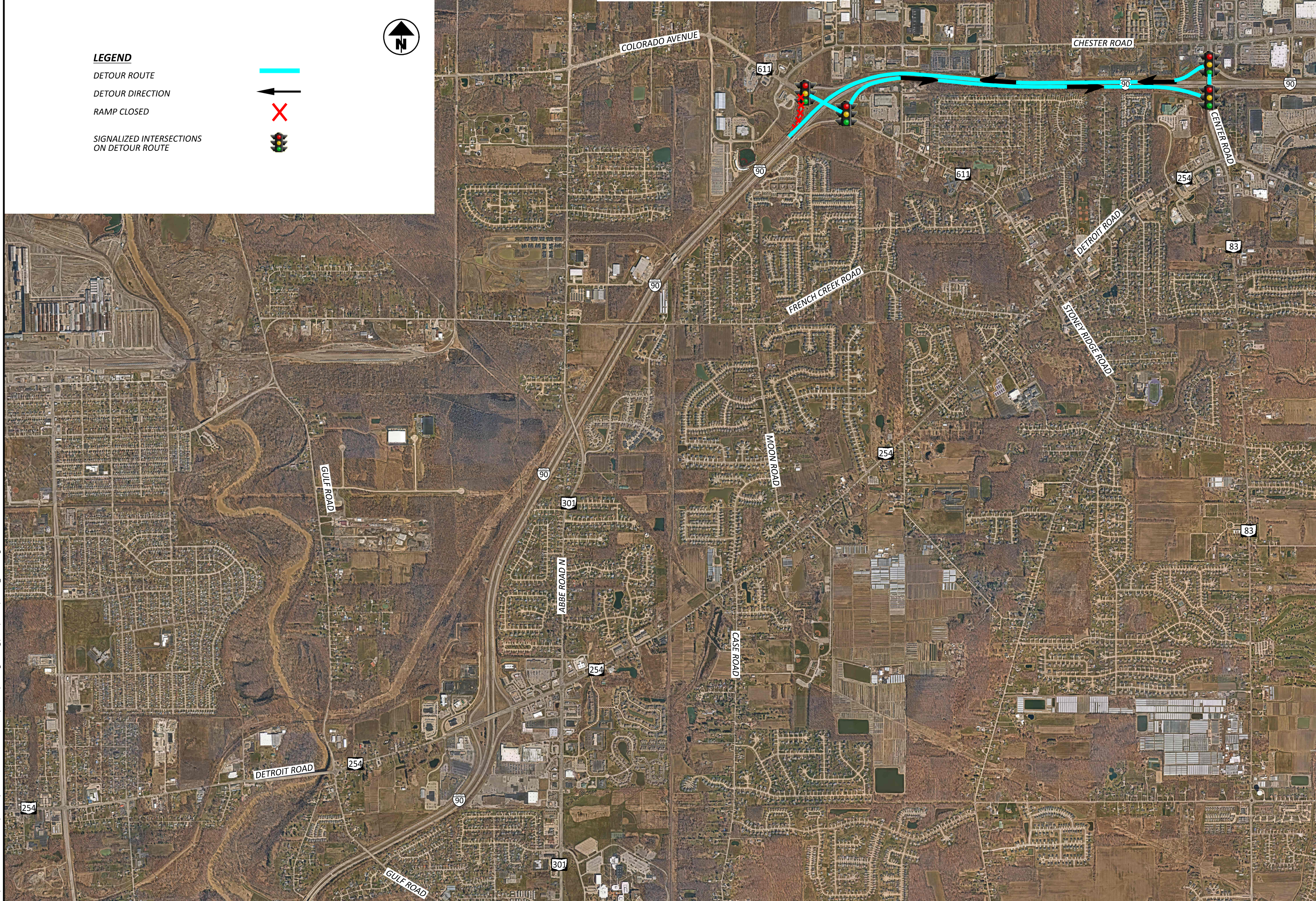
SHEET TOTAL

P.01 | 01



Appendix H: Detour Maps





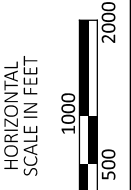
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

RAMP CLOSED

SIGNALIZED INTERSECTIONS ON DETOUR ROUTE



DETOUR EXHIBIT  
SR 611 WB ENTRANCE RAMP

DESIGN AGENCY



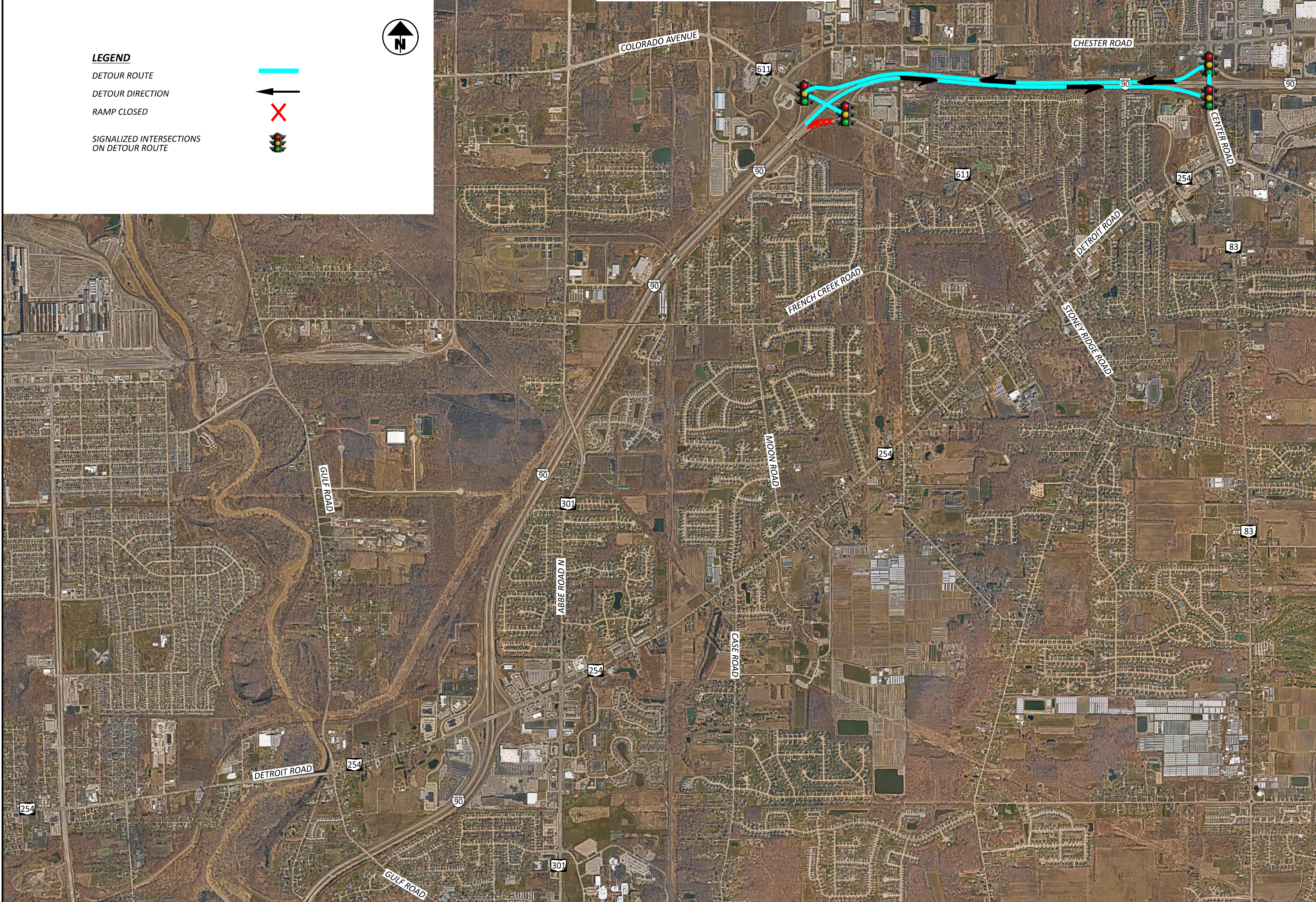
DESIGNER  
SAF

REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET	TOTAL
P.01	12





**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

RAMP CLOSED

SIGNALIZED INTERSECTIONS  
ON DETOUR ROUTE



DETOUR EXHIBIT  
SR 611 EB EXIT RAMP

DESIGN AGENCY



DESIGNER

SAF

REVIEWER

CWP 12/14/23

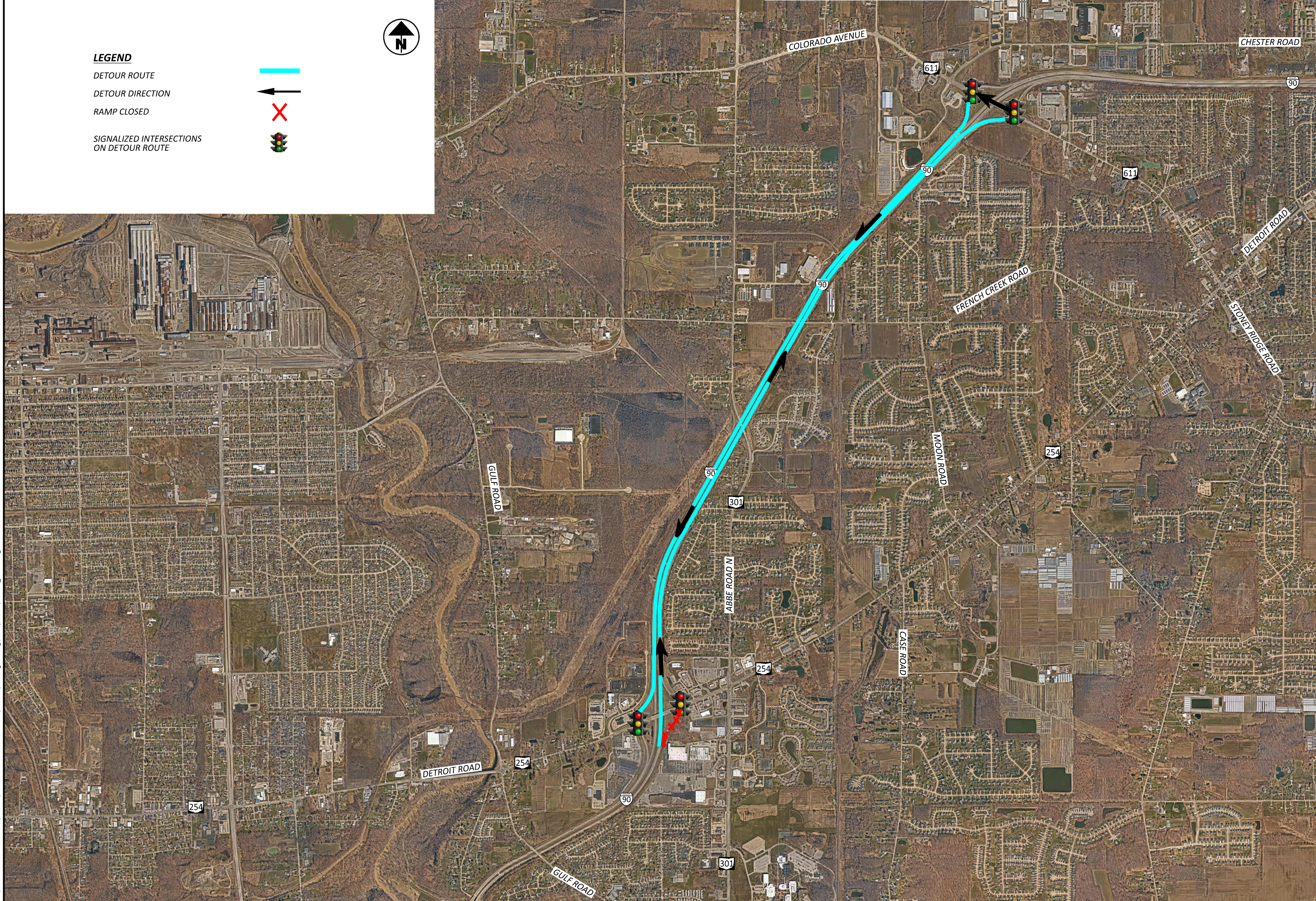
PROJECT ID

107714

SHEET TOTAL

P.02 12





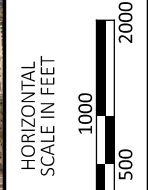
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

RAMP CLOSED

SIGNALIZED INTERSECTIONS  
ON DETOUR ROUTE



DETOUR EXHIBIT  
SR 254 EB EXIT RAMP

DESIGN AGENCY



DESIGNER

SAF

REVIEWER

CWP 12/14/23

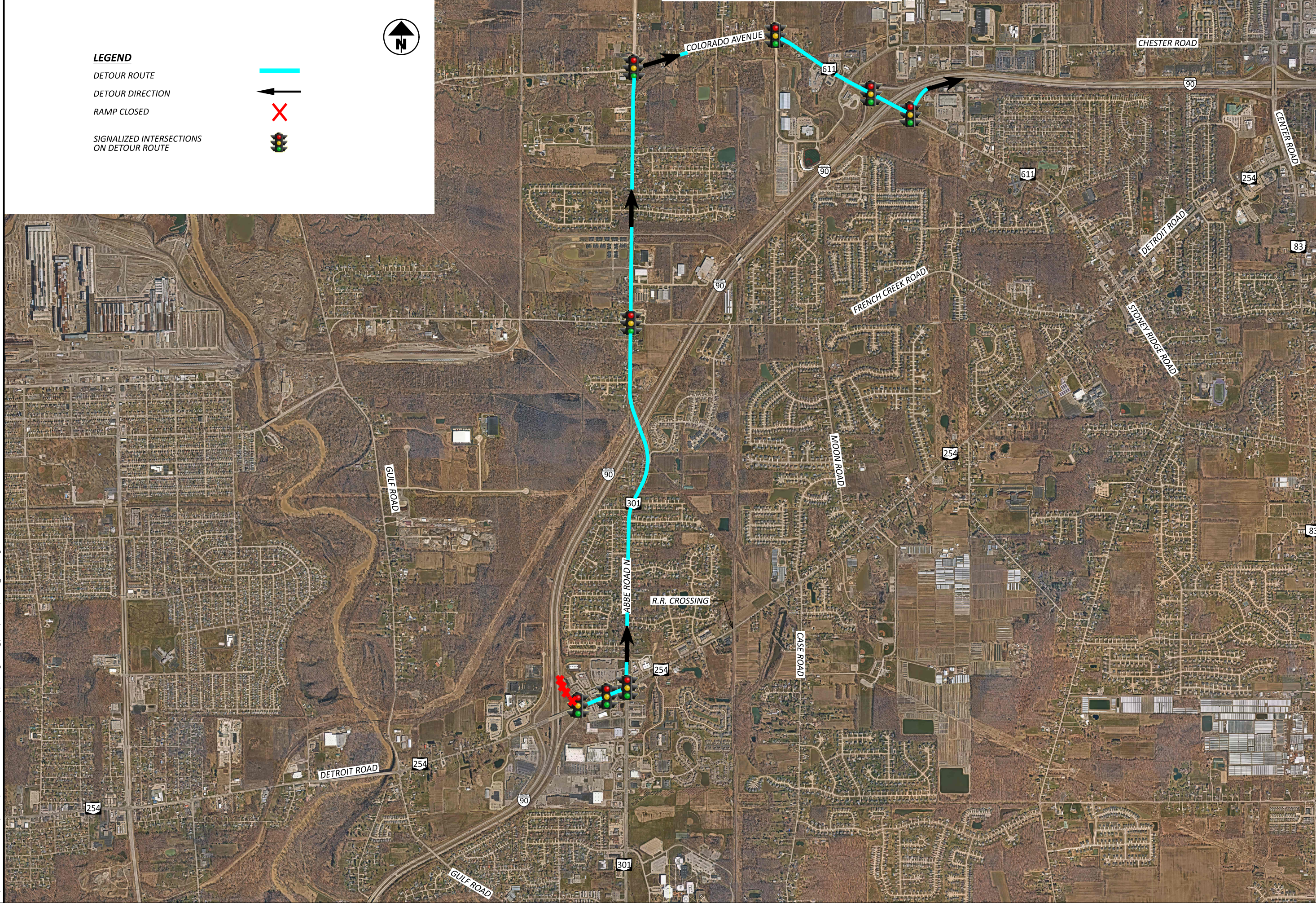
PROJECT ID

107714

SHEET TOTAL

P.03 12





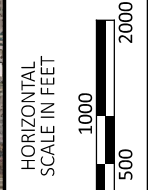
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

RAMP CLOSED

SIGNALIZED INTERSECTIONS  
ON DETOUR ROUTE

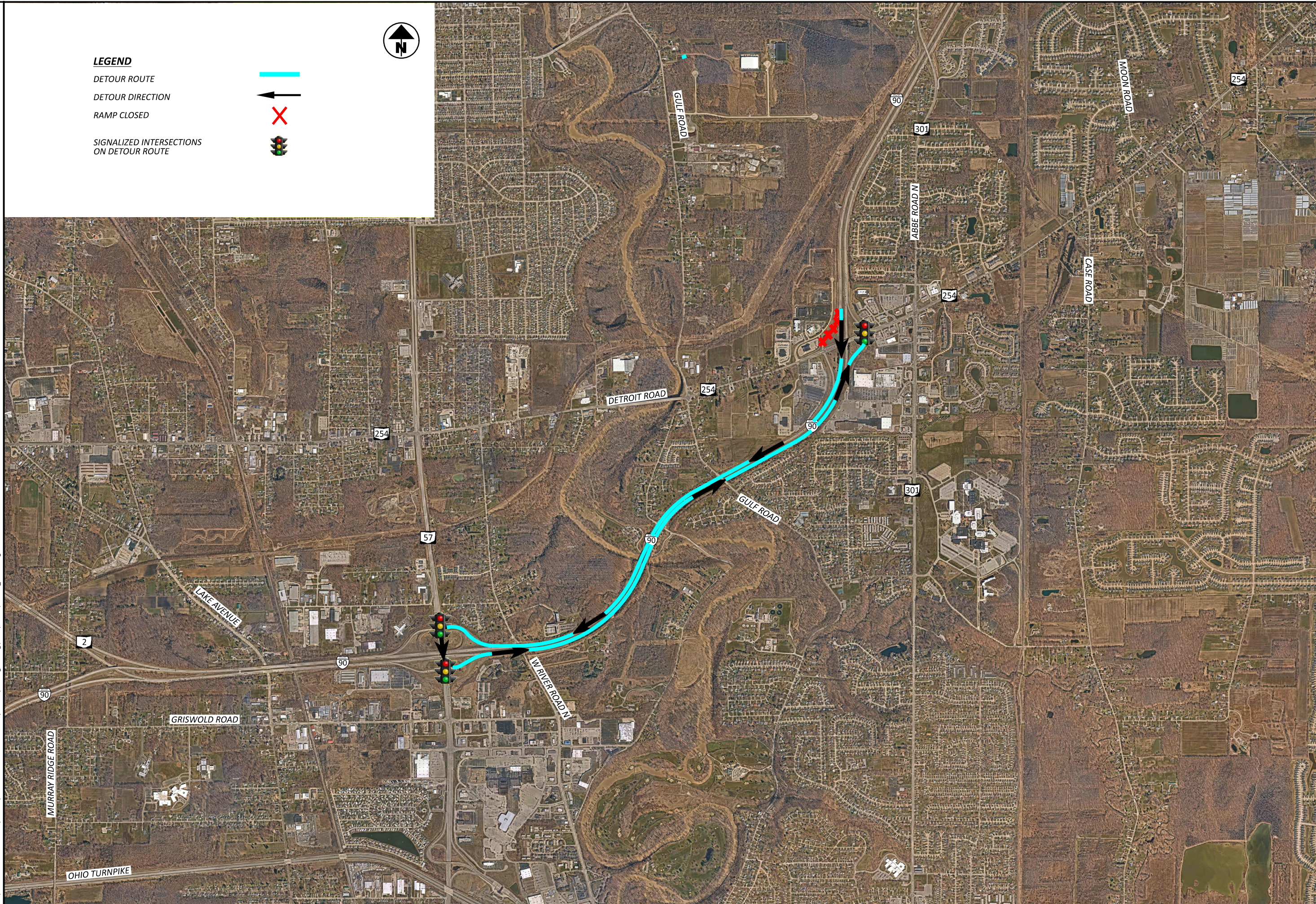


DETOUR EXHIBIT  
SR 254 EB ENTRANCE RAMP



DESIGNER	SAF
REVIEWER	CWP
DATE	12/14/23
PROJECT ID	107714
SHEET	P.04
TOTAL	12





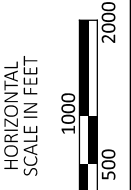
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

RAMP CLOSED

SIGNALIZED INTERSECTIONS  
ON DETOUR ROUTE



DETOUR EXHIBIT  
SR 254 WB EXIT RAMP

DESIGN AGENCY



DESIGNER  
SAF

REVIEWER  
CWP 12/14/23

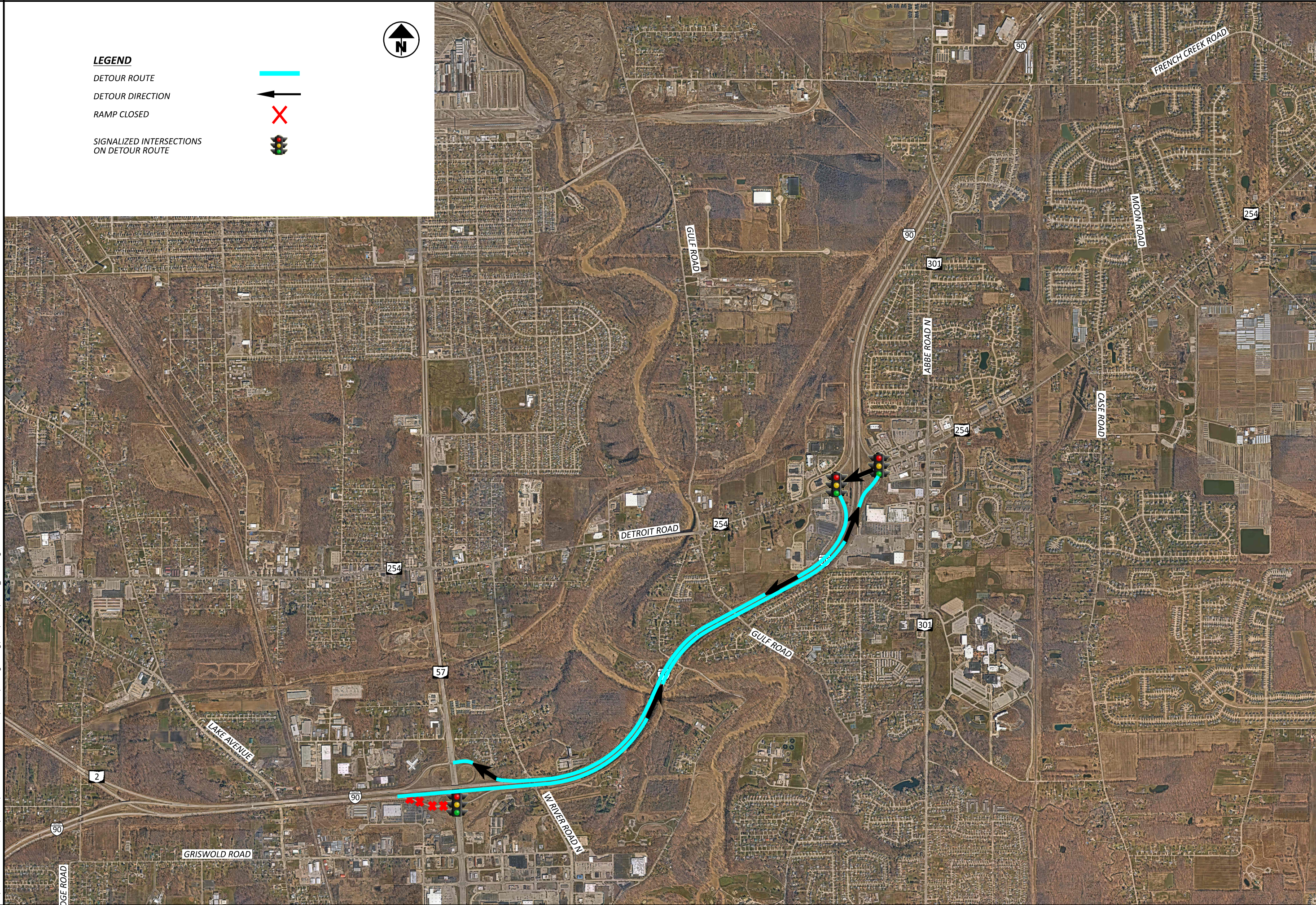
PROJECT ID  
107714

SHEET	TOTAL
P.05	12

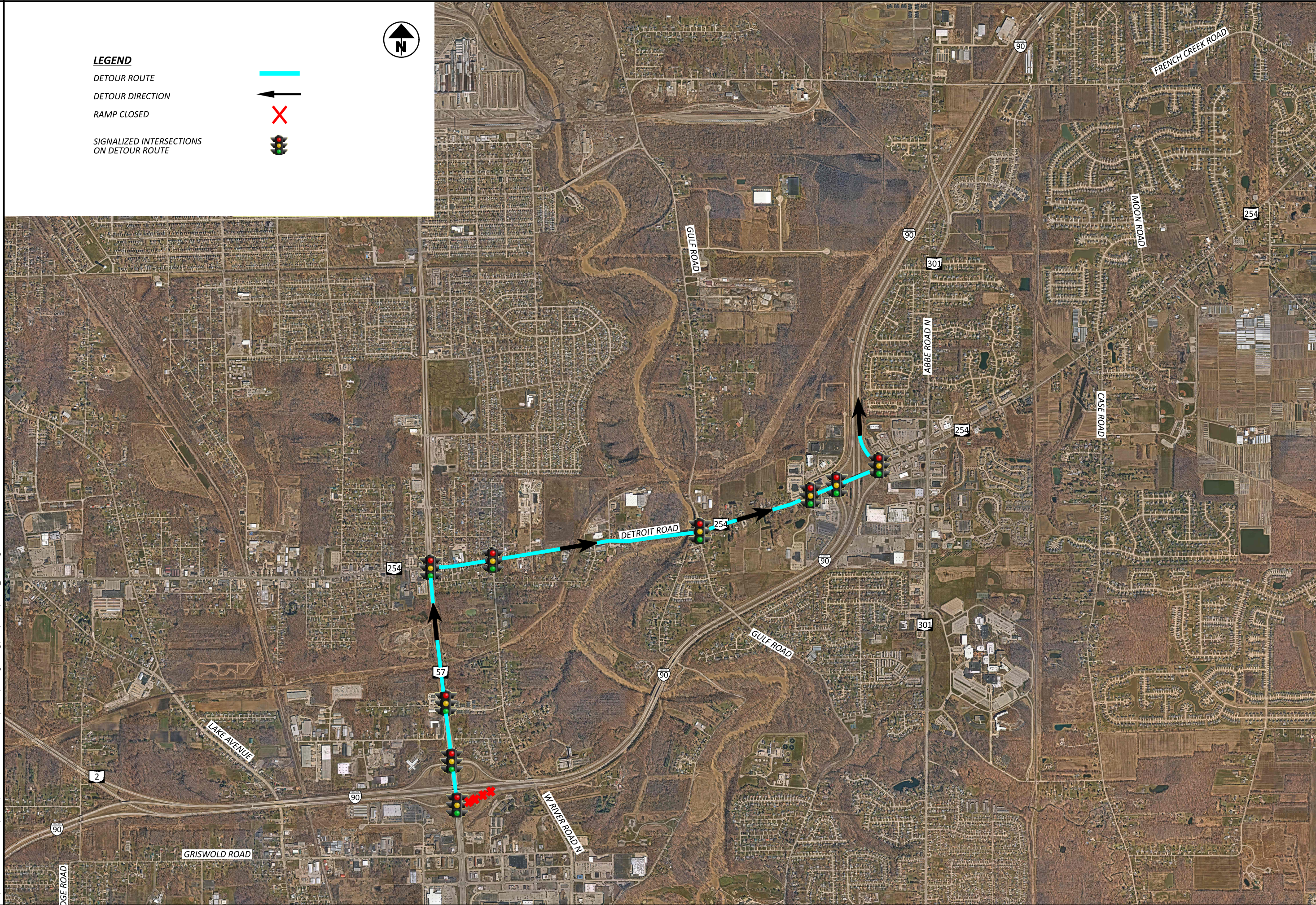












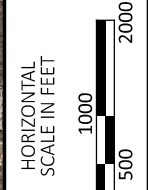
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

RAMP CLOSED

SIGNALIZED INTERSECTIONS ON DETOUR ROUTE



DETOUR EXHIBIT  
SR 57 EB ENTRANCE RAMP

DESIGN AGENCY



DESIGNER

REVIEWER

PROJECT ID

SHEET TOTAL

P.08	12
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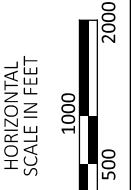
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

RAMP CLOSED

SIGNALIZED INTERSECTIONS ON DETOUR ROUTE



DETOUR EXHIBIT  
SR 57 WB EXIT RAMP

DESIGN AGENCY



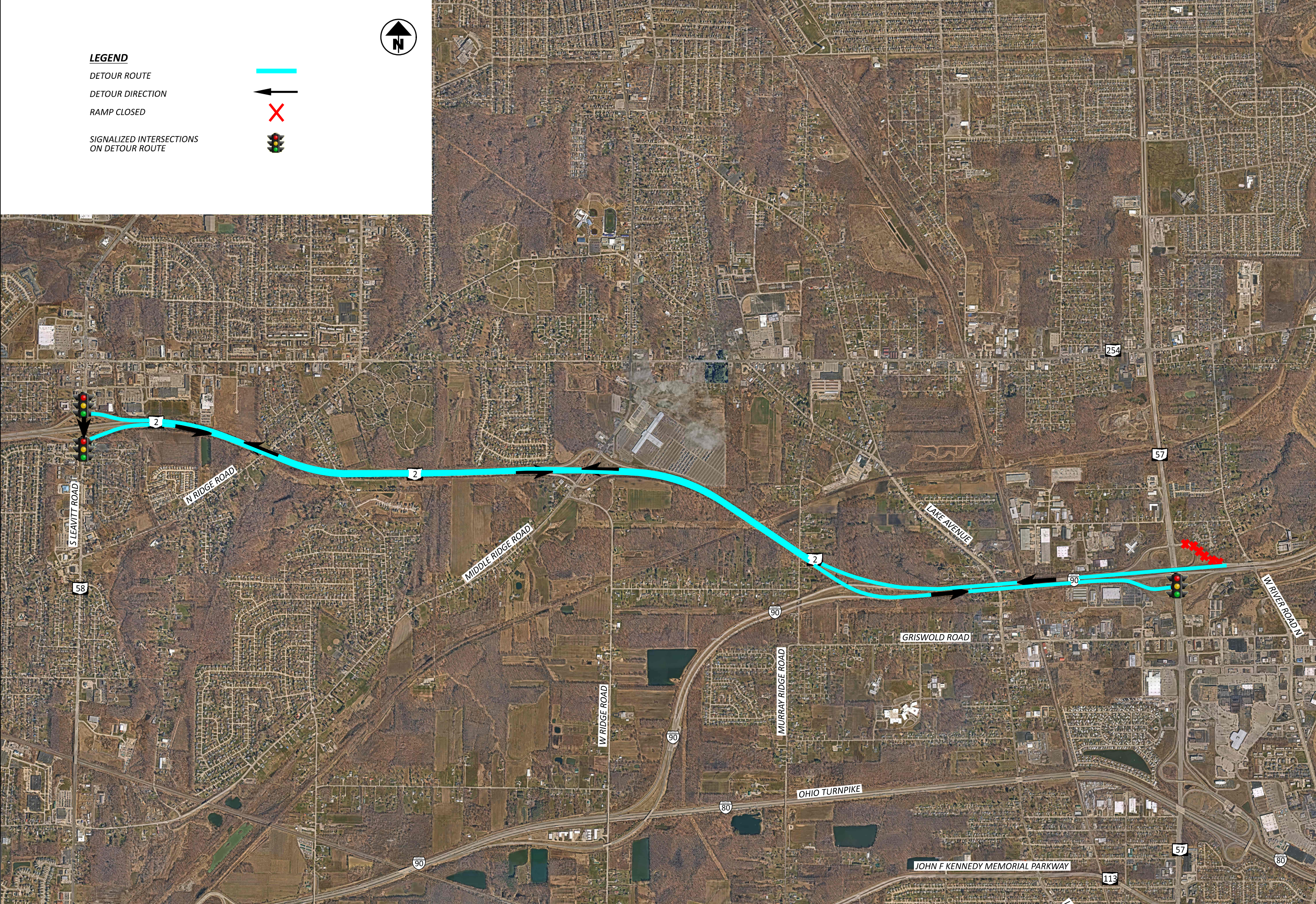
CHAGRIN VALLEY ENGINEERING, LTD.

DESIGNER  
SAF

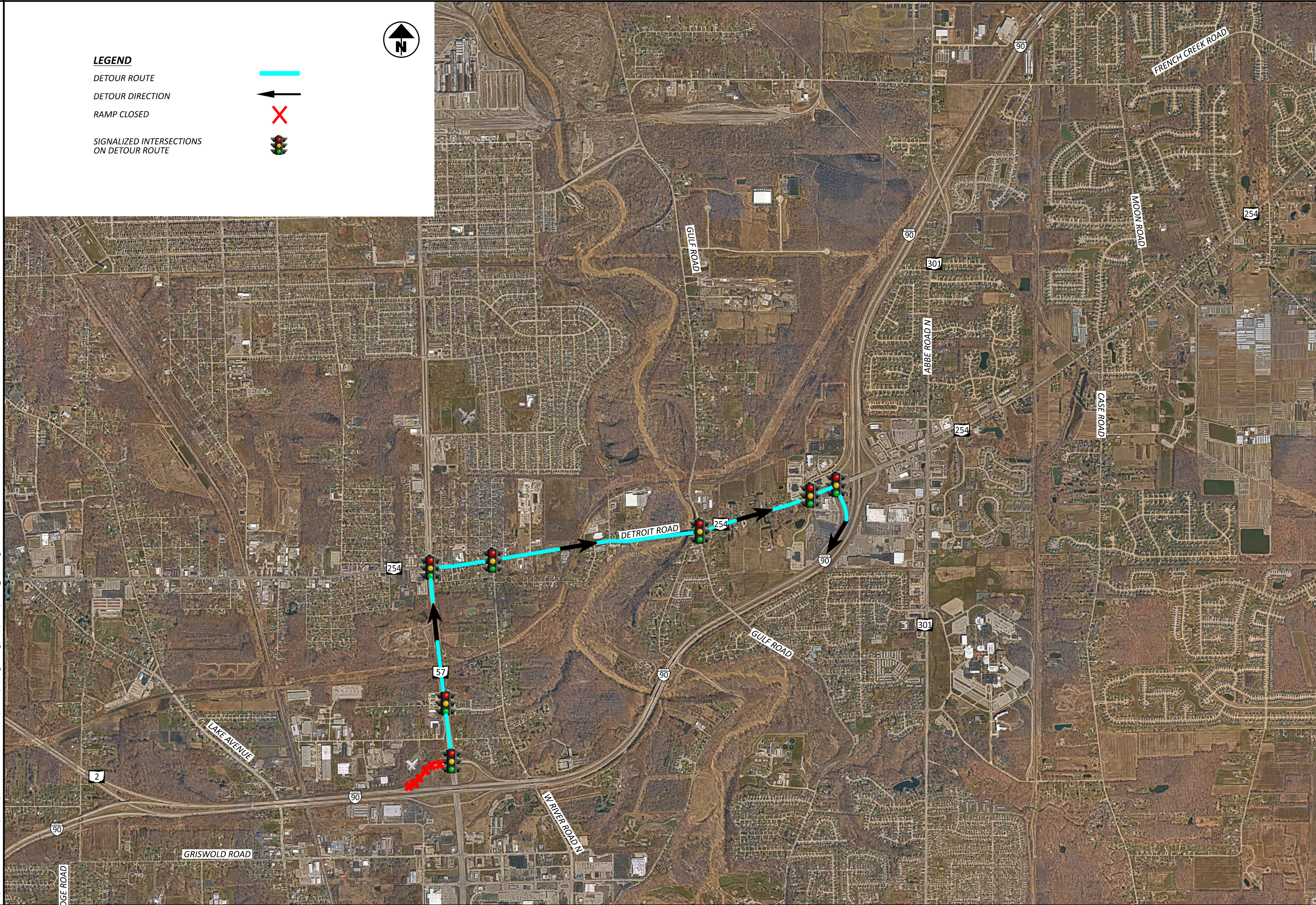
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET TOTAL  
P.09 12







**LEGEND**

DETOUR ROUTE



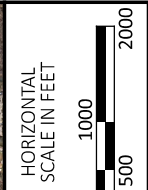
DETOUR DIRECTION



RAMP CLOSED



SIGNALIZED INTERSECTIONS ON DETOUR ROUTE



DETOUR EXHIBIT  
SR 57 WB ENTRANCE RAMP

DESIGN AGENCY



DESIGNER

SAF

REVIEWER

CWP 12/14/23

PROJECT ID

107714

SHEET TOTAL

P.10 12



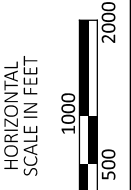
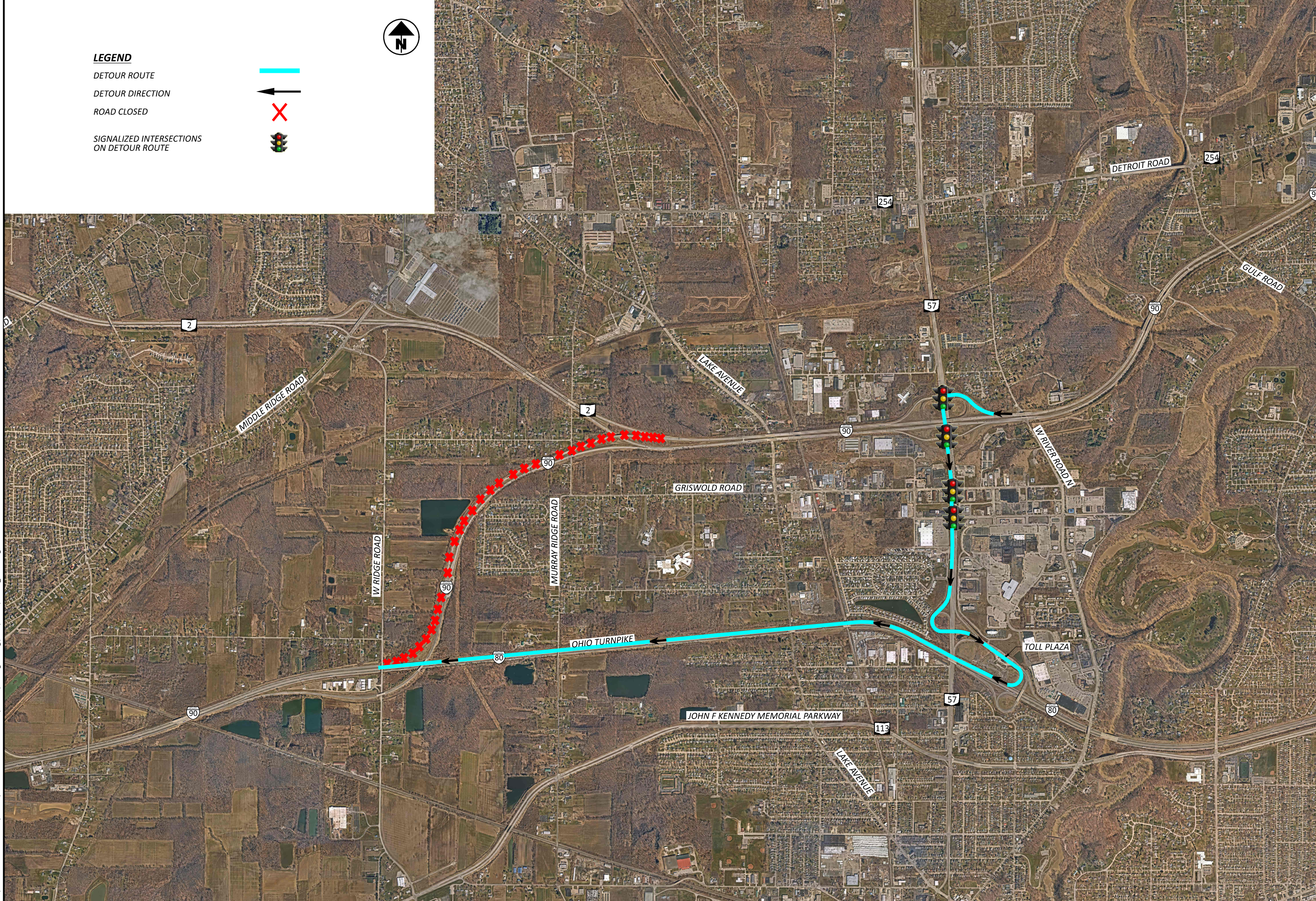
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

ROAD CLOSED

SIGNALIZED INTERSECTIONS ON DETOUR ROUTE



DETOUR EXHIBIT  
WB SR 2 RAMP TO WB IR 90

DESIGN AGENCY



DESIGNER  
SAF

REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET	TOTAL
P.11	12



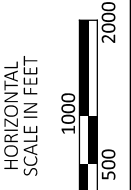
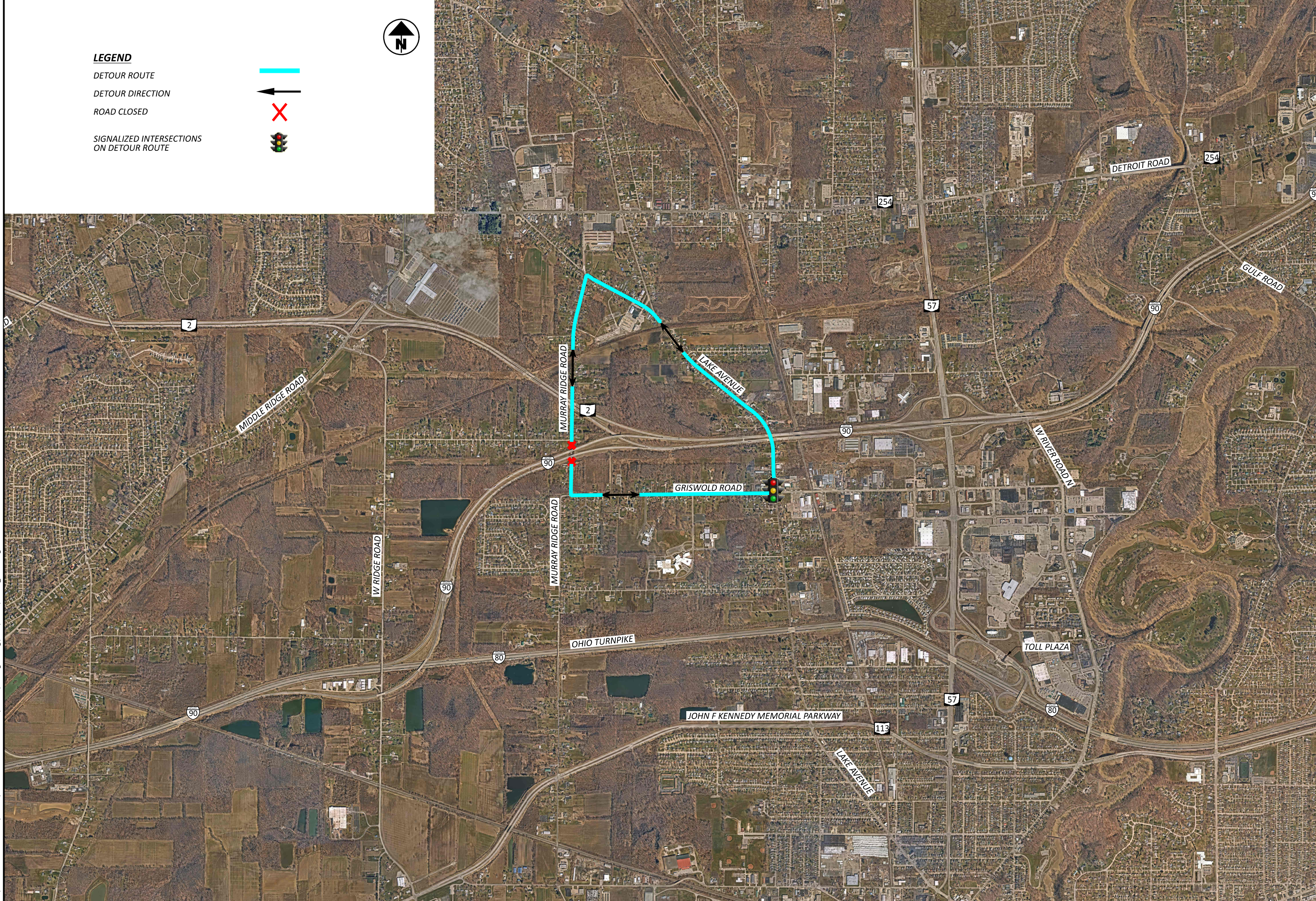
**LEGEND**

DETOUR ROUTE

DETOUR DIRECTION

ROAD CLOSED

SIGNALIZED INTERSECTIONS ON DETOUR ROUTE



DETOUR EXHIBIT  
MURRAY RIDGE ROAD

DESIGN AGENCY



CHAGRIN VALLEY ENGINEERING, LTD.

DESIGNER  
SAF

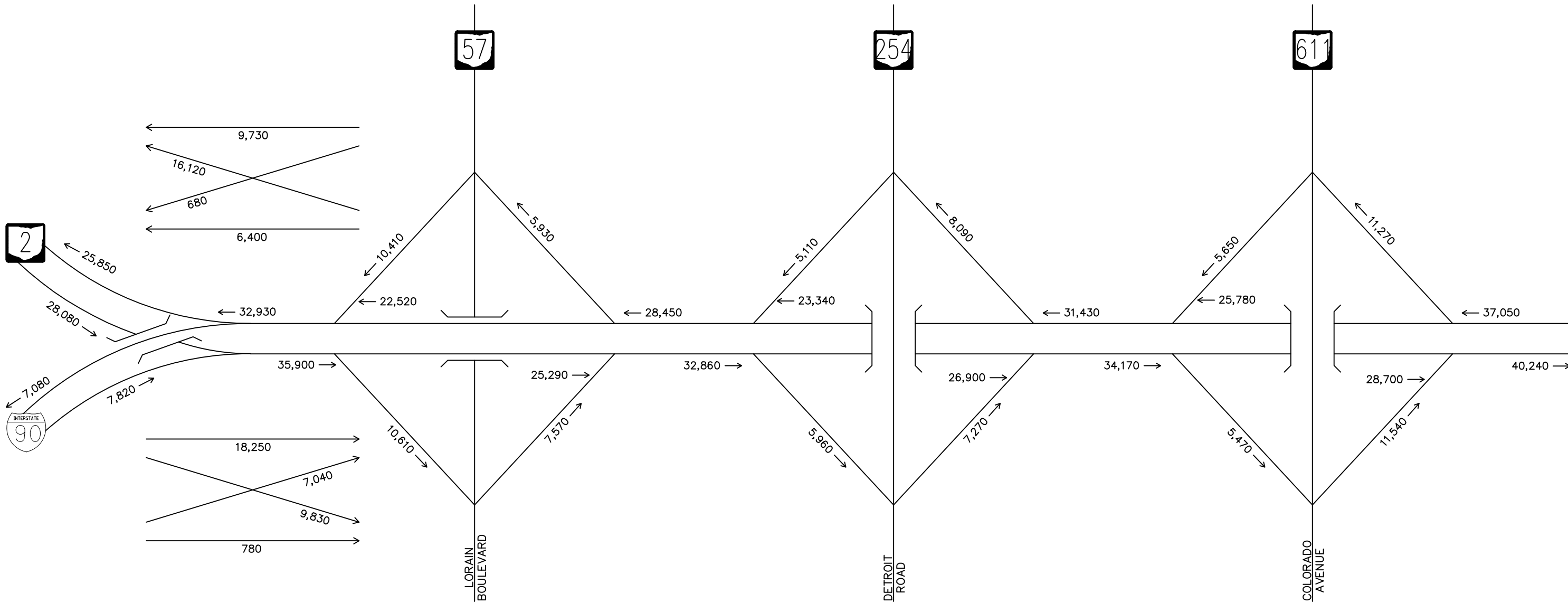
REVIEWER  
CWP 12/14/23

PROJECT ID  
107714

SHEET TOTAL  
P.12 12



Appendix I: Certified Traffic



Drawing File: C:\2020\2020086 CADOT D12-03 Traffic TO 03-01 LOR-90 Certified Traffic Design\Traffic\Study\Figures\4-Lane Volume\PLATE 1 - 2020 ADT.dwg Layout: PLATE 1  
Date: Jun 07, 2022 Time: 2:06 pm User: bferrell

**NOTE:**  
COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED  
PER ODOT MODELING AND FORECASTING GUIDANCE.




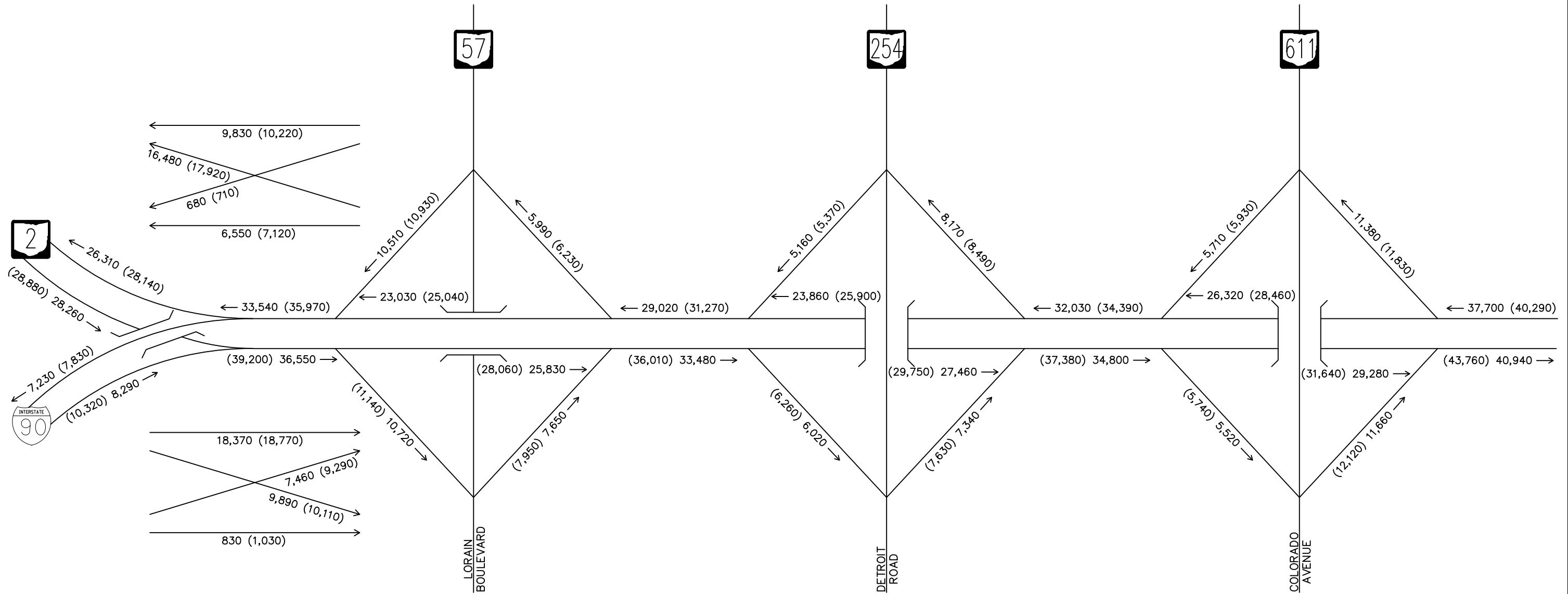
PLATE 1

EXISTING YEAR 2020  
ADT

MARCH 2021 (REV. JANUARY 2022)







Drawing File: C:\2020\20200808\_CDOT\21-03-Traffic\Traffic\Design\Traffic\Study\Figures\4-Lane\_Volumes\PLATE 3 - 2025 & 2045 ADT.dwg Layout: PLATE 3  
 Date: Jun 07, 2022 Time: 2:19 pm User: j...  
 Technician: bferrell

**NOTE:**  
 COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED  
 PER ODOT MODELING AND FORECASTING GUIDANCE.

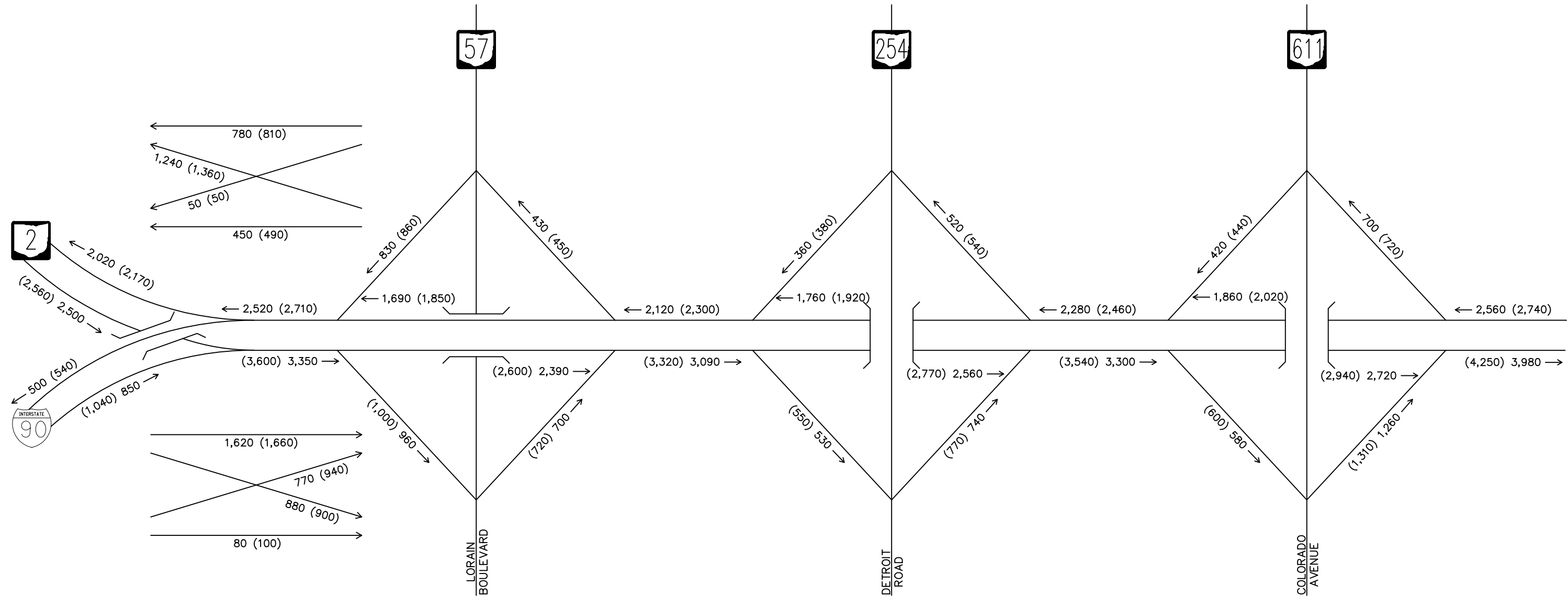
**LEGEND**  
 ## - YEAR 2025 VOLUME  
 (##) - YEAR 2045 VOLUME

**PLATE 3**

YEAR 2025 / YEAR 2045  
 ADT  
 4 LANES

MARCH 2021 (REV. JANUARY 2022)



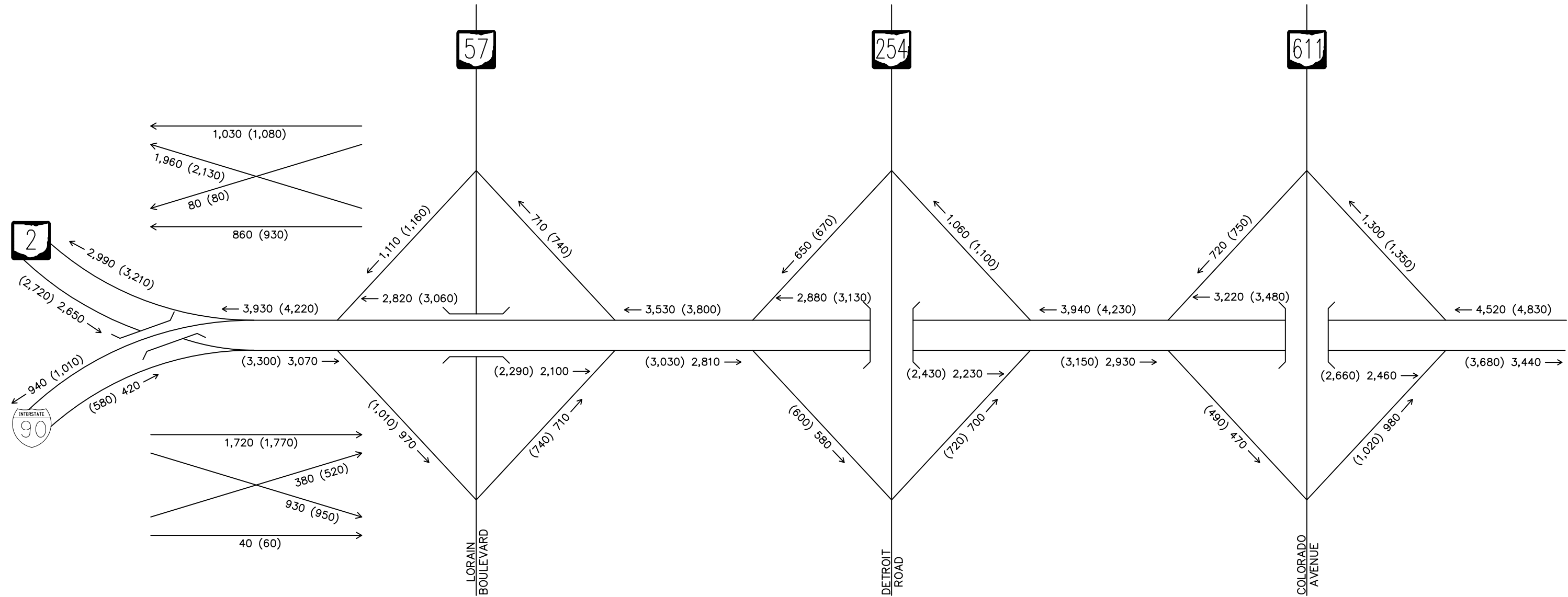


Drawing File: C:\2020\2020080 CADOT D\F-03 Traffic TO\05-01 LOR-90 Certified Traffic Design\Traffic\Study\Figures\4-Lane Volume\PLATE 4 - 2025 & 2045 AM DHV.dwg Layout: PLATE 4  
 Date: Jun 07, 2022 Time: 2:26 pm User: J

**NOTE:**  
 COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED  
 PER ODOT MODELING AND FORECASTING GUIDANCE.

**LEGEND**  
 ## - YEAR 2025 VOLUME  
 (##) - YEAR 2045 VOLUME

**PLATE 4**  
 YEAR 2025 / YEAR 2045  
 AM DHV  
 4 LANES  
 MARCH 2021 (REV. JANUARY 2022)



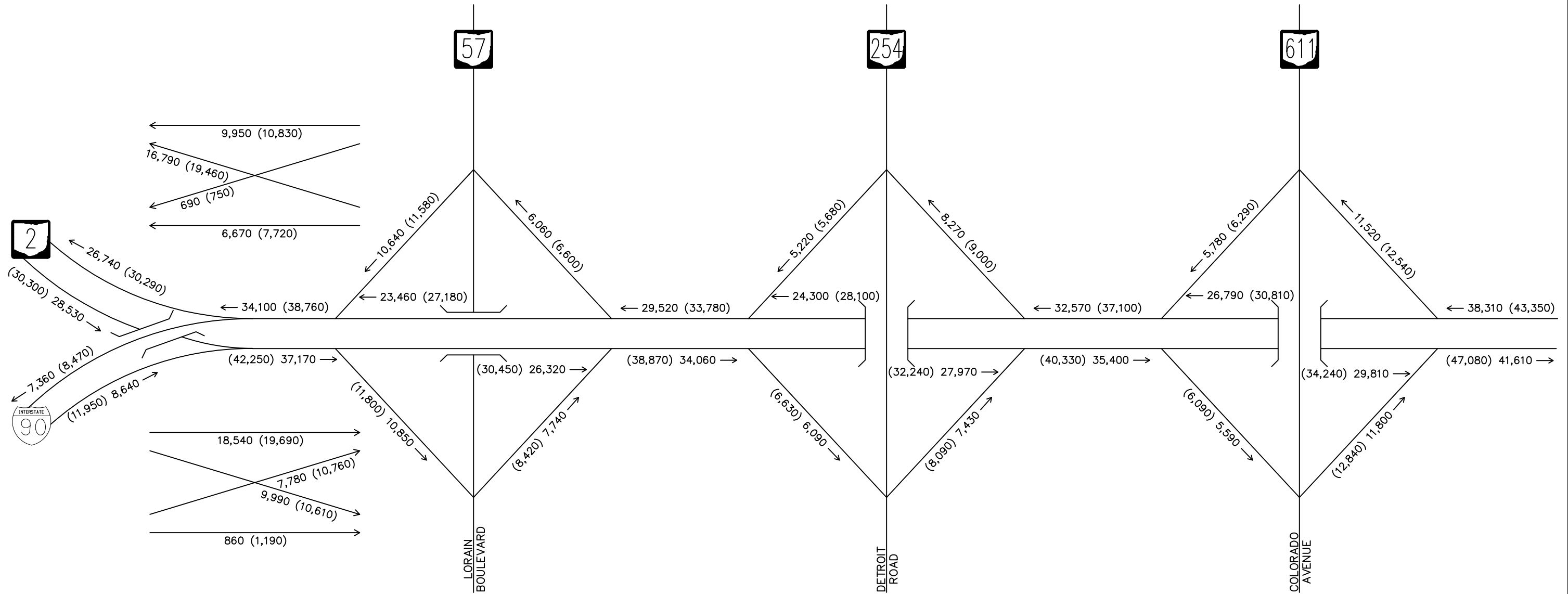
Drawing File: C:\2020\20200808\_CDOT\217-03\_Traffic\TO\05-01\_LOR-90\_Certified\_Traffic\Design\Traffic\Study\Figures\4-Lane\_Volumes\PLATE 5 - 2025 & 2045 PM DHV.dwg  
 Layout: PLATE 5  
 Date: Jun 07, 2022 Time: 2:30 pm  
 Technician: bferrell

**NOTE:**  
 COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED  
 PER ODOT MODELING AND FORECASTING GUIDANCE.

**LEGEND**  
 ## - YEAR 2025 VOLUME  
 (##) - YEAR 2045 VOLUME

**PLATE 5**  
 YEAR 2025 / YEAR 2045  
 PM DHV  
 4 LANES  
 MARCH 2021 (REV. JANUARY 2022)



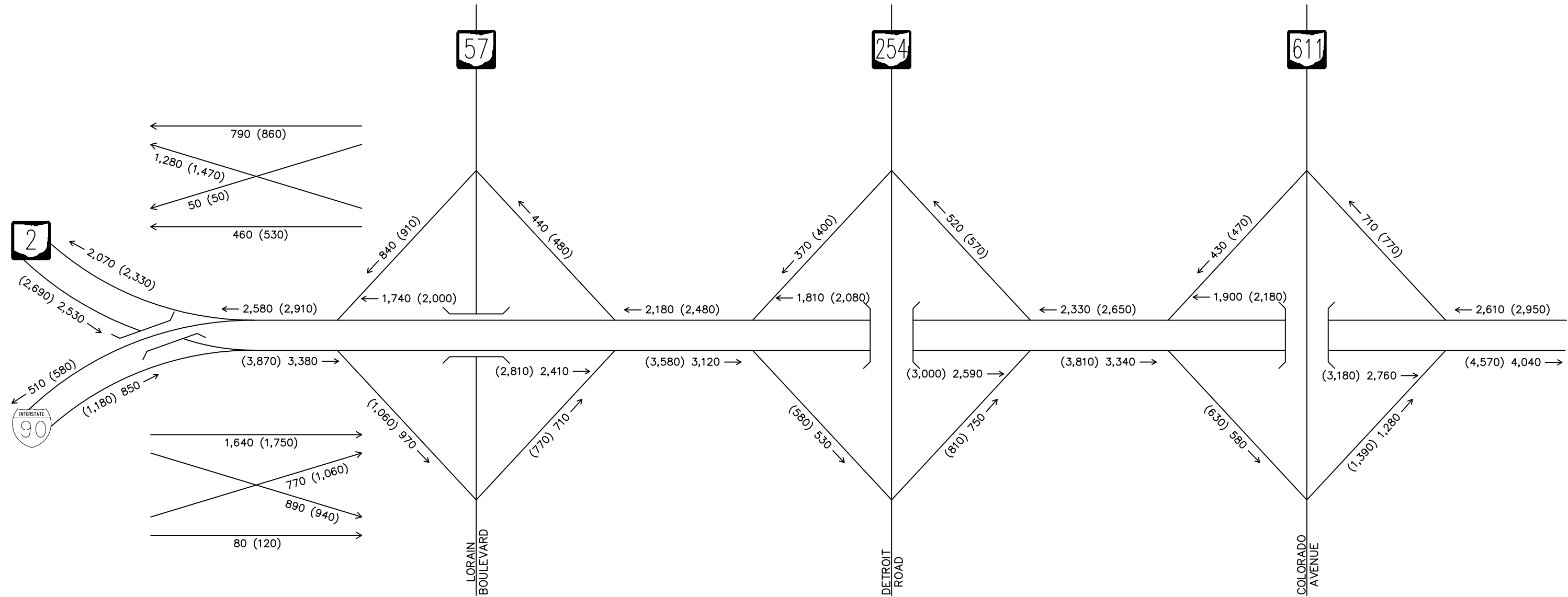


Drawing File: C:\2020\2020080 CADOT D12-03 Traffic TO\05-01 LOR-90 Certified Traffic\Design\Figures\6-Lane Volume\PLATE 6 - 2025 & 2045 ADT.dwg Layout: PLATE 6  
 Date: Jan 10, 2022 Time: 9:20 am User: j...  
 Technician: bferrell

**NOTE:**  
 COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED  
 PER ODOT MODELING AND FORECASTING GUIDANCE.

**LEGEND**  
 ## - YEAR 2025 VOLUME  
 (##) - YEAR 2045 VOLUME

PLATE 6
YEAR 2025 / YEAR 2045 ADT 6 LANES
JANUARY 2022



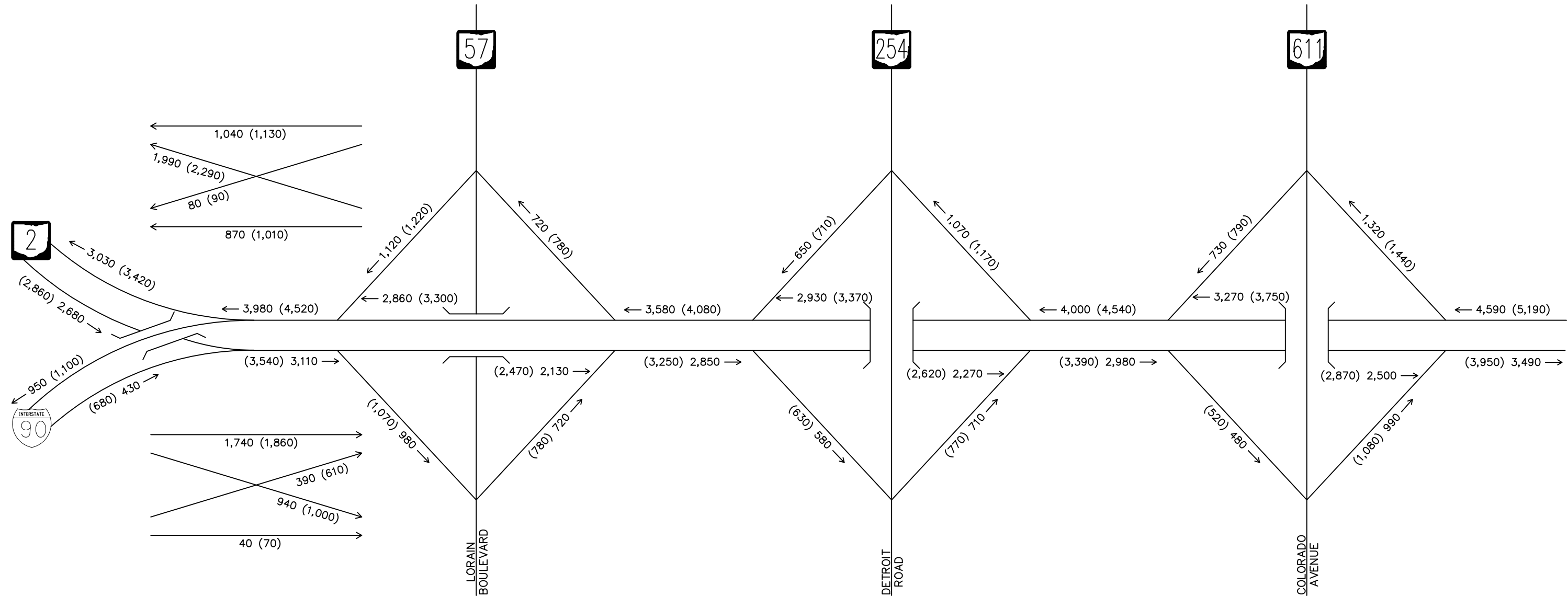
Drawing File: C:\2020\2020080 CADOT D72-03 Traffic TO\03-01 LOR-90 Certified Traffic\Design\Traffic\Study\Figures\6-Lane Volume\PLATE 7 - 2025 & 2045 AM DHV.dwg Layout: PLATE 7  
 Date: Jan 10, 2022 Time: 9:25 am Title: 0  
 Technician: bferrell

**NOTE:**  
 COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED  
 PER ODOT MODELING AND FORECASTING GUIDANCE.

**LEGEND**  
 ## - YEAR 2025 VOLUME  
 (##) - YEAR 2045 VOLUME

<b>PLATE 7</b>
YEAR 2025 / YEAR 2045 AM DHV 6 LANES
JANUARY 2022



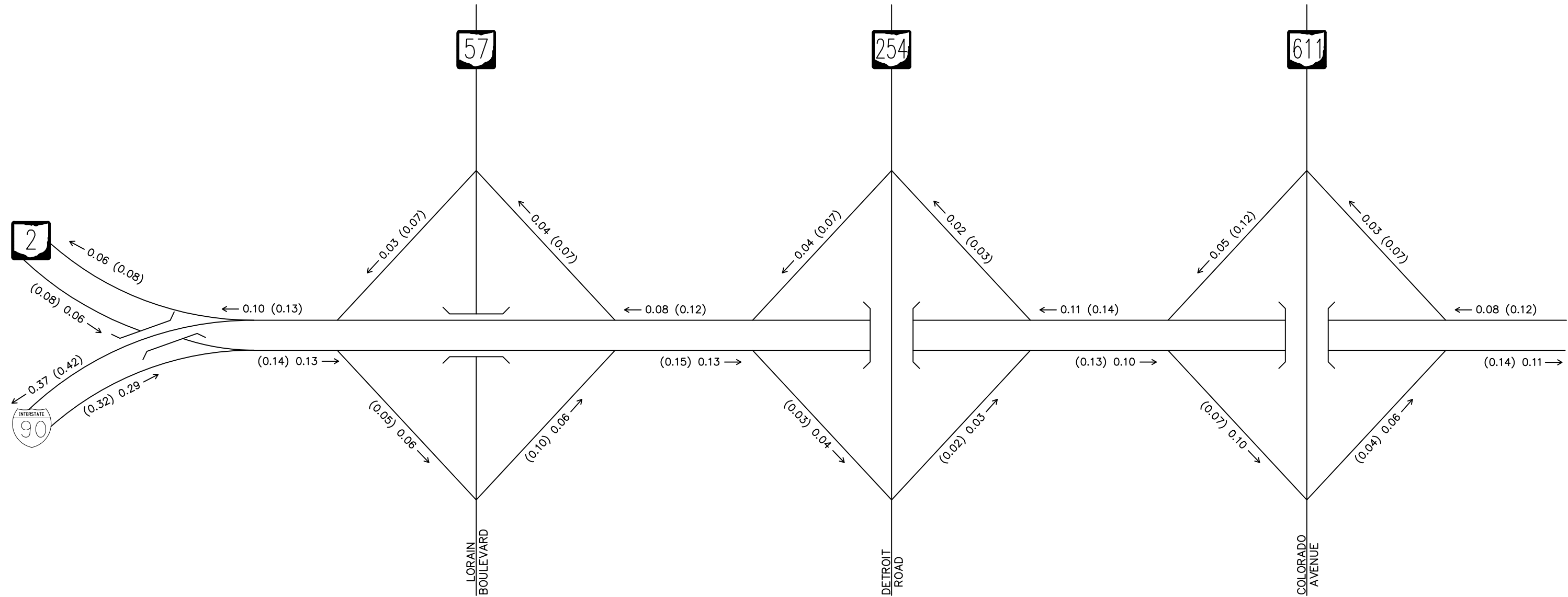


**NOTE:**  
 COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED PER ODOT MODELING AND FORECASTING GUIDANCE.

**LEGEND**  
 ## - YEAR 2025 VOLUME  
 (##) - YEAR 2045 VOLUME

**PLATE 8**  
 YEAR 2025 / YEAR 2045  
 PM DHV  
 6 LANES  
 JANUARY 2022

Drawing File: C:\2020\2020080 CADOT D12-03 Traffic TO\03-01 LOR-90 Certified Traffic\Design\Traffic\Study\Figures\6-Lane Volume\PLATE 8 - 2025 & 2045 PM DHV.dwg Layout: PLATE 8  
 Date: Jan 10, 2022 Time: 9:25 am User: j...  
 Technician: bferrell



Drawing File: C:\2020\20200808\_0001 D:\2020\Traffic\Study\Figures\Attachment H - TD & T24 Values.dwg Layout: PLATE 4  
 Date: Jun 04, 2022 Time: 9:17 am  
 Technician: bferrell

**NOTE:**  
 COUNTS COLLECTED DURING COVID-19 PANDEMIC AND FACTORED  
 PER ODOT MODELING AND FORECASTING GUIDANCE.

**LEGEND**  
 ## - TD  
 (##) - T24

ATTACHMENT H

TD & T24 VALUES

MARCH 2021



Appendix J: Permitted Lane Closure Tables

District: 3 County: LOR Route: IR-90 DIR: BOTH Calculation Year: 2016 Section: SR 57 to SR 611

COUNTY BEGIN LOG	13.200	Calculation Method	B	ATR-Hourly Breakdowns (with similar functionality)	ATR#	728	
COUNTY END LOG	18.820					2015	
STATE BEGIN LOG	145.680	Road Class	URBAN	(Urban or Rural)	ATR Year	2015	
STATE END LOG	151.300						2
		Terrain	LEVEL			Percent Trucks	12
		Lanes per direction	2			Annualized ADT	51660

Seasonal Traffic Adjustment			
	Weekday	Weekend	
ATR	63778	48280	Summer
ATR	62241	46964	Spring/Fall
ATR	56152	40047	Winter
Capacity	1490	per lane	

There shall be no lane closures on Holidays or Holiday weekends. The following are considered holidays. Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas and New Years. No lane closures are allowed after 12:00 noon on the weekday preceding a holiday. For holiday weekends no lane closures are allowed after 12:00 noon on the day preceding the Holiday weekend until 6:00 AM the day after the holiday weekend. (Ex. Holiday falls on a Monday then no lane closures from 12:00 noon on Friday until 6:00 AM Tuesday.) For Thanksgiving holiday no lane closures are allowed after 6:00 AM on the Wednesday preceding Thanksgiving until 6:00 AM on the following Monday. \*\*\*NOTE: If no lane closure tables load upon opening this segment (or if they load but they are blank) do not make assumptions on when lane closures are permitted. Please contact the District Work Zone Traffic Manager (DWZTM) responsible for this district for information on how to proceed.\*\*\*

Ratio of Lanes	Traffic Volume per open lane					
Season	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	281	449	212	323	191	276
1-2AM	160	250	156	194	141	165
2-3AM	138	143	123	144	111	123
3-4AM	147	129	138	117	125	100
4-5AM	275	155	240	131	216	112
5-6AM	710	296	684	265	617	226
6-7AM	* 1607	524	* 1507	446	1360	380
7-8AM	* 2036	704	* 2106	685	* 1900	584
8-9AM	* 1694	1009	* 1755	866	* 1583	739
9-10AM	* 1517	1304	1426	1174	1287	1001
10-11AM	* 1603	* 1534	1407	1368	1270	1166
11-12PM	* 1688	* 1601	* 1569	* 1539	1416	1313
12-1PM	* 1769	* 1631	* 1742	* 1693	* 1572	1444
1-2PM	* 1833	* 1567	* 1775	* 1720	* 1601	1467
2-3PM	* 1988	* 1633	* 2045	* 1746	* 1845	1489
3-4PM	* 2368	* 1649	* 2433	* 1775	* 2195	* 1513
4-5PM	* 2597	* 1694	* 2669	* 1762	* 2408	* 1503
5-6PM	* 2426	* 1614	* 2627	* 1648	* 2370	1406
6-7PM	* 2019	1427	* 2000	* 1558	* 1805	1329
7-8PM	1358	1152	1183	1183	1067	1009
8-9PM	1153	1037	1144	987	1032	842
9-10PM	985	1059	923	914	833	780
10-11PM	885	894	727	708	656	604
11-12AM	654	684	528	534	477	455

Legend  
 \* = Lane Closure(s) Not Permitted

2:1 : Ratio Of Lanes  
 2 : Available Lanes  
 1 : Lanes Open

Season	Period
Summer	June 1 - Aug 31
Spring/Fall	Mar 1 - May 31 & Sept 1 - Nov 30
Winter	Dec 1 - Feb 29

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Ratio of Lanes	2:0					
Season	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
2-3AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
3-4AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
4-5AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
5-6AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
6-7AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
7-8AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
8-9AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
9-10AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
10-11AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
11-12PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
12-1PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
2-3PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
3-4PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
4-5PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
5-6PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
6-7PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
7-8PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
8-9PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
9-10PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
10-11PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
11-12AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted

3.01: For any Maintenance lane(s) closure or any Construction project lane(s) closure, outside of plan note times, a Lane Closure Application request form must be submitted to the Work Zone Traffic Manager and the Highway Management Administrator for approval.  
 3.02: 3.01 cont. (a) The request must be submitted, in writing, three(3) working days in advance of the lane(s) closure. Traffic flow must be monitored and lanes re-opened if any backup begins to occur.  
 3.03: 3.01 cont. (b) In addition a copy of the request form must be submitted to the Roadway Services Manager for ODOT maintenance work or to the Construction Engineer for construction projects. See Special Notes for Holidays or Special Events info.



**ODOT Permitted Lane Closure**

[Print](#)

District: 3    County: LOR    Route: IR-90    DIR: BOTH    Calculation Year: 2016    Section: SR 2 to SR 57

COUNTY BEGIN LOG	11.960	Calculation Method	<b>B</b>	ATR-Hourly Breakdowns (with similar functionality)	ATR#	<b>728</b>
COUNTY END LOG	13.200					ATR Year
STATE BEGIN LOG	144.440	Road Class	<b>URBAN</b>	(Urban or Rural)	Percent Trucks	12
STATE END LOG	145.680					Terrain
		Lanes per direction	<b>2</b>			

Seasonal Traffic Adjustment			
	Weekday	Weekend	
ATR	72198	54654	Summer
ATR	70458	53164	Spring/Fall
ATR	63565	45333	Winter
Capacity	1490	per lane	

There shall be no lane closures on Holidays or Holiday weekends. The following are considered holidays. Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas and New Years. No lane closures are allowed after 12:00 noon on the weekday preceding a holiday. For holiday weekends no lane closures are allowed after 12:00 noon on the day preceding the Holiday weekend until 6:00 AM the day after the holiday weekend. (Ex. Holiday falls on a Monday then no lane closures from 12:00 noon on Friday until 6:00 AM Tuesday.) For Thanksgiving holiday no lane closures are allowed after 6:00 AM on the Wednesday preceding Thanksgiving until 6:00 AM on the following Monday. \*\*\*NOTE: If no lane closure tables load upon opening this segment (or if they load but they are blank) do not make assumptions on when lane closures are permitted. Please contact the District Work Zone Traffic Manager (DWZTM) responsible for this district for information on how to proceed.\*\*\*

Ratio of Lanes	Traffic Volume per open lane					
Season	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	319	508	240	366	217	312
1-2AM	181	284	176	219	159	187
2-3AM	156	162	139	164	125	139
3-4AM	166	146	156	132	141	113
4-5AM	311	175	271	149	245	127
5-6AM	804	335	774	300	699	256
6-7AM	* 1819	593	* 1706	504	* 1539	430
7-8AM	* 2305	797	* 2384	775	* 2151	661
8-9AM	* 1917	1143	* 1987	981	* 1792	836
9-10AM	* 1718	1476	* 1615	1329	1457	1133
10-11AM	* 1815	* 1736	* 1593	* 1548	1437	1320
11-12PM	* 1911	* 1812	* 1777	* 1743	* 1603	1486
12-1PM	* 2002	* 1847	* 1972	* 1917	* 1779	* 1634
1-2PM	* 2075	* 1774	* 2009	* 1947	* 1813	* 1660
2-3PM	* 2250	* 1849	* 2315	* 1977	* 2089	* 1685
3-4PM	* 2680	* 1866	* 2754	* 2009	* 2485	* 1713
4-5PM	* 2940	* 1917	* 3021	* 1995	* 2726	* 1701
5-6PM	* 2747	* 1827	* 2974	* 1866	* 2683	* 1591
6-7PM	* 2285	* 1615	* 2264	* 1764	* 2043	* 1504
7-8PM	* 1537	1304	1339	1339	1208	1142
8-9PM	1305	1174	1295	1118	1168	953
9-10PM	1115	1199	1045	1035	943	882
10-11PM	1002	1012	823	802	742	684
11-12AM	740	774	598	605	540	516

Legend  
\* = Lane Closure(s) Not Permitted

2:1 : Ratio Of Lanes  
 2 : Available Lanes  
 1 : Lanes Open

Season	Period
Summer	June 1 - Aug 31
Spring/Fall	Mar 1 - May 31 & Sept 1 - Nov 30
Winter	Dec 1 - Feb 29

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Ratio of Lanes	Traffic Volume per open lane					
Season	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
2-3AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
3-4AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
4-5AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
5-6AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
6-7AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
7-8AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
8-9AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
9-10AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
10-11AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
11-12PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
12-1PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
2-3PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
3-4PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
4-5PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
5-6PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
6-7PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
7-8PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
8-9PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
9-10PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
10-11PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
11-12AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted

3.01: For any Maintenance lane(s) closure or any Construction project lane(s) closure, outside of plan note times, a Lane Closure Application request form must be submitted to the Work Zone Traffic Manager and the Highway Management Administrator for approval.  
 3.02: 3.01 cont. (a) The request must be submitted, in writing, three(3) working days in advance of the lane(s) closure. Traffic flow must be monitored and lanes re-opened if any backup begins to occur.  
 3.03: 3.01 cont. (b) In addition a copy of the request form must be submitted to the Roadway Services Manager for ODOT maintenance work or to the Construction Engineer for construction projects. See Special Notes for Holidays or Special Events info.

[Home Search](#)

**ODOT Permitted Lane Closure**

[Print](#)

District: 3    County: LOR    Route: IR-90    DIR: BOTH    Calculation Year: 2016    Section: Turnpike Gate 142 to SR 2

COUNTY BEGIN LOG	9.480	Calculation Method	<b>B</b>	ATR-Hourly Breakdowns (with similar functionality)	ATR#	<b>728</b>	
COUNTY END LOG	11.960						Road Class
STATE BEGIN LOG	141.960	Terrain	<b>LEVEL</b>	Lanes per direction	<b>2</b>	Percent Trucks	<b>24</b>
STATE END LOG	144.440						

Seasonal Traffic Adjustment			
	Weekday	Weekend	
ATR	9383	7103	Summer
ATR	9157	6909	Spring/Fall
ATR	8261	5891	Winter
Capacity	1390	per lane	

There shall be no lane closures on Holidays or Holiday weekends. The following are considered holidays. Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas and New Years. No lane closures are allowed after 12:00 noon on the weekday preceding a holiday. For holiday weekends no lane closures are allowed after 12:00 noon on the day preceding the Holiday weekend until 6:00 AM the day after the holiday weekend. (Ex. Holiday falls on a Monday then no lane closures from 12:00 noon on Friday until 6:00 AM Tuesday.) For Thanksgiving holiday no lane closures are allowed after 6:00 AM on the Wednesday preceding Thanksgiving until 6:00 AM on the following Monday. \*\*\*NOTE: If no lane closure tables load upon opening this segment (or if they load but they are blank) do not make assumptions on when lane closures are permitted. Please contact the District Work Zone Traffic Manager (DWZTM) responsible for this district for information on how to proceed.\*\*\*

Ratio of Lanes	Traffic Volume per open lane					
Season	2:1		2:0			
	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	41	66	31	48	28	41
1-2AM	23	37	23	28	21	24
2-3AM	20	21	18	21	16	18
3-4AM	22	19	20	17	18	15
4-5AM	40	23	35	19	32	16
5-6AM	104	44	101	39	91	33
6-7AM	236	77	222	66	200	56
7-8AM	300	104	310	101	280	86
8-9AM	249	148	258	127	233	109
9-10AM	223	192	210	173	189	147
10-11AM	236	226	207	201	187	172
11-12PM	248	236	231	226	208	193
12-1PM	260	240	256	249	231	212
1-2PM	270	231	261	253	236	216
2-3PM	292	240	301	257	271	219
3-4PM	348	243	358	261	323	223
4-5PM	382	249	393	259	354	221
5-6PM	357	237	386	242	349	207
6-7PM	297	210	294	229	265	195
7-8PM	200	169	174	174	157	148
8-9PM	170	153	168	145	152	124
9-10PM	145	156	136	134	123	115
10-11PM	130	132	107	104	96	89
11-12AM	96	101	78	79	70	67

Legend  
\* = Lane Closure(s) Not Permitted

2:1 : Ratio Of Lanes  
 2 : Available Lanes  
 1 : Lanes Open

Season	Period
Summer	June 1 - Aug 31
Spring/Fall	Mar 1 - May 31 & Sept 1 - Nov 30
Winter	Dec 1 - Feb 29

Last Updated : 04/08/16 1:59 PM

Ratio of Lanes	2:0					
Season	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
2-3AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
3-4AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
4-5AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
5-6AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
6-7AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
7-8AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
8-9AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
9-10AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
10-11AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
11-12PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
12-1PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
2-3PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
3-4PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
4-5PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
5-6PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
6-7PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
7-8PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
8-9PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
9-10PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
10-11PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
11-12AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted

3.04: Daytime lane closure permitted without Lane Closure Application request form approval. However, traffic flow must be monitored and lanes re-opened if any backup begins to occur.

[Home](#)   [Search](#)




District: 3 County: LOR Route: SR-2 DIR: BOTH Calculation Year: 2016 Section: Oak Point Road to IR 90

COUNTY BEGIN LOG	5.850	Calculation Method	D	ADT using statewide distribution	ATR#	0
COUNTY END LOG	11.140					ADT Year
STATE BEGIN LOG	162.720	Road Class	URBAN	(Urban or Rural)	Percent Trucks	7
STATE END LOG	168.010					Terrain
Lanes per direction		2		Annualized ADT		54370

Seasonal Traffic Adjustment			
	Weekday	Weekend	
ADT	67123	50813	Summer
ADT	65506	49427	Spring/Fall
ADT	59098	42147	Winter
Capacity	1490	per lane	

There shall be no lane closures on Holidays or Holiday weekends. The following are considered holidays. Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas and New Years. No lane closures are allowed after 12:00 noon on the weekday preceding a holiday. For holiday weekends no lane closures are allowed after 12:00 noon on the day preceding the Holiday weekend until 6:00 AM the day after the holiday weekend. (Ex. Holiday falls on a Monday then no lane closures from 12:00 noon on Friday until 6:00 AM Tuesday.) For Thanksgiving holiday no lane closures are allowed after 6:00 AM on the Wednesday preceding Thanksgiving until 6:00 AM on the following Monday. \*\*\*NOTE: If no lane closure tables load upon opening this segment (or if they load but they are blank) do not make assumptions on when lane closures are permitted. Please contact the District Work Zone Traffic Manager (DWZTM) responsible for this district for information on how to proceed.\*\*\*

Ratio of Lanes	Traffic Volume per open lane					
Season	2:1		2:0			
	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	302	229	295	222	266	190
1-2AM	201	152	197	148	177	126
2-3AM	168	127	164	124	148	105
3-4AM	168	127	164	124	148	105
4-5AM	302	229	295	222	266	190
5-6AM	805	610	786	593	709	506
6-7AM	* 1678	1270	* 1638	1236	1477	1054
7-8AM	* 2450	* 1855	* 2391	* 1804	* 2157	* 1538
8-9AM	* 2114	* 1601	* 2063	* 1557	* 1862	1328
9-10AM	* 1712	1296	* 1670	1260	* 1507	1075
10-11AM	* 1645	1245	* 1605	1211	1448	1033
11-12PM	* 1745	1321	* 1703	1285	* 1537	1096
12-1PM	* 1846	1397	* 1801	1359	* 1625	1159
1-2PM	* 1879	1423	* 1834	1384	* 1655	1180
2-3PM	* 2114	* 1601	* 2063	* 1557	* 1862	1328
3-4PM	* 2450	* 1855	* 2391	* 1804	* 2157	* 1538
4-5PM	* 2618	* 1982	* 2555	* 1928	* 2305	* 1644
5-6PM	* 2618	* 1982	* 2555	* 1928	* 2305	* 1644
6-7PM	* 1947	1474	* 1900	1433	* 1714	1222
7-8PM	1410	1067	1376	1038	1241	885
8-9PM	1175	889	1146	865	1034	738
9-10PM	973	737	950	717	857	611
10-11PM	738	559	721	544	650	464
11-12AM	537	407	524	395	473	337

Legend  
 = Lane Closure(s) Not Permitted

2:1 : Ratio Of Lanes  
 2 : Available Lanes  
 1 : Lanes Open

Season	Period
Summer	June 1 - Aug 31
Spring/Fall	Mar 1 - May 31 & Sept 1 - Nov 30
Winter	Dec 1 - Feb 29

Last Updated : 04/08/16 1:59 PM

Ratio of Lanes	2:0					
Season	Summer Weekday	Summer Weekend	Spring/Fall Weekday	Spring/Fall Weekend	Winter Weekday	Winter Weekend
	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
Hour of the Day	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN	MON-FRI	SAT-SUN
0-1AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
2-3AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
3-4AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
4-5AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
5-6AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
6-7AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
7-8AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
8-9AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
9-10AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
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11-12PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
12-1PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
1-2PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
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10-11PM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
11-12AM	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted

3.01: For any Maintenance lane(s) closure or any Construction project lane(s) closure, outside of plan note times, a Lane Closure Application request form must be submitted to the Work Zone Traffic Manager and the Highway Management Administrator for approval.  
 3.02: 3.01 cont. (a) The request must be submitted, in writing, three(3) working days in advance of the lane(s) closure. Traffic flow must be monitored and lanes re-opened if any backup begins to occur.  
 3.03: 3.01 cont. (b) In addition a copy of the request form must be submitted to the Roadway Services Manager for ODOT maintenance work or to the Construction Engineer for construction projects. See Special Notes for Holidays or Special Events info.

Appendix K: Business Plan Inflation Calculator



# FY 2024-2028 Business Plan Inflation Calculator:

[Not sure if you have the latest calculator? Click here.](#)

Last Modified: 7/20/2023

Today's Date:  
December 14, 2023

Please Enter Values in the Yellow Areas Only:

**Estimation Start Date:**

Less than or Equal to Today's Date  
(mm/dd/yyyy)

12/14/2023

Start Date:

**Enter Construction Mid-Point Date:**

(cannot exceed 12/14/2048)  
(mm/dd/yyyy)

5/15/2026

Construction Mid-Point Date:

**Present-Day Estimated Cost:**

\$1,000.00

Estimated Dollar Amount:

Estimate Start Date to Construction Mid-Point Date:

29

Months

Inflation - Start to Mid-Point of Construction:

(compounded growth rate)

Inflated Dollar Amount:

**Business Plan**

13.1%

\$1,131.12

Estimator's Name: Chagrin Valley Engineering

County - Route - Section: LOR-90-10.76

PID: 107714

Estimator's Notes: Begin Construction - April 1, 2025  
End Construction - July 1, 2027  
Midpoint Construction - May 15, 2026