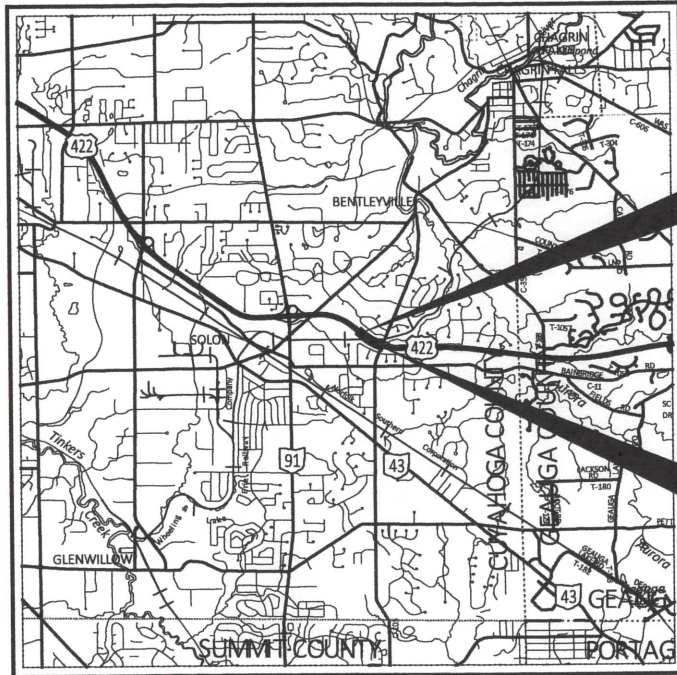


STATE OF OHIO DEPARTMENT OF TRANSPORTATION CUY-US 422-18.74

SLIDE REPAIR CITY OF SOLON CUYAHOGA COUNTY



LOCATION MAP

LATITUDE: 41°23'32"N LONGITUDE: 81°25'24"W



| | |
|-------------------------|-------|
| PORTION TO BE IMPROVED | ===== |
| INTERSTATE HIGHWAY | ===== |
| FEDERAL ROUTES | ===== |
| STATE ROUTES | ===== |
| COUNTY & TOWNSHIP ROADS | ===== |
| OTHER ROADS | ===== |

DESIGN DESIGNATION

| | |
|-----------------------------------|--------|
| CURRENT ADT (2023) | 30,800 |
| DESIGN YEAR ADT (2043) | 39,800 |
| DESIGN HOURLY VOLUME (2043) | 4,000 |
| DIRECTIONAL DISTRIBUTION | 0.70 |
| TRUCKS (24 HOUR B&C) | 0.06 |
| DESIGN SPEED | 60 |
| LEGAL SPEED | 60 |
| DESIGN FUNCTIONAL CLASSIFICATION: | |
| 02 OTHER FREEWAY AND EXPRESSWAY | |
| NHS PROJECT | YES |

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE

UNDERGROUND UTILITIES
Contact Two Working Days
Before You Dig

OHIO811.org
Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:
ms consultants, inc.
CONSULTING ENGINEERS, ARCHITECTS & PLANNERS
333 E. FEDERAL STREET
YOUNGSTOWN, OHIO 44603

BEGIN PROJECT
STA. 2018+00.00

END PROJECT
STA. 2029+00.00

INDEX OF SHEETS:

| | |
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ENGINEER'S SEAL
TRAFFIC SHEETS 7-10; 31-33

SIGNED: *James M. Lacher III*
DATE: 06-01-2022

ENGINEER'S SEAL
ROADWAY SHEETS 1-6; 11-30

SIGNED: *Steven W. Gealy*
DATE: 06-01-2022

| STANDARD CONSTRUCTION DRAWINGS | | | | | | SUPPLEMENTAL SPECIFICATIONS | | SPECIAL PROVISIONS | |
|--------------------------------|---------|-----------|---------|-----------|----------|-----------------------------|----------|--------------------|--|
| BP-1.1 | 7/28/00 | F-3.1 | 7/19/13 | MT-101.75 | 1/17/20 | 800-2019 | 7/15/22 | | |
| BP-2.1 | 1/21/22 | F-3.3 | 7/19/13 | MT-101.90 | 7/17/20 | 832 | 10/19/18 | | |
| BP-2.2 | 1/15/21 | F-3.4 | 7/19/13 | MT-102.10 | 1/17/20 | 902 | 7/19/19 | | |
| BP-3.1 | 1/21/22 | | | MT-102.30 | 10/16/15 | | | | |
| BP-4.1 | 7/19/13 | MGS-1.1 | 7/16/21 | MT-105.10 | 1/17/20 | | | | |
| BP-5.1 | 1/21/22 | MGS-2.1 | 1/19/18 | | | | | | |
| BP-9.1 | 1/18/19 | MGS-4.3 | 1/18/13 | TC-21.21 | 7/16/21 | | | | |
| CB-3A | 7/16/21 | HW-2.1 | 7/20/18 | TC-41.10 | 7/19/13 | | | | |
| | | HW-2.2 | 7/20/18 | TC-42.10 | 10/18/13 | | | | |
| DM-1.1 | 7/17/20 | | | TC-61.30 | 7/19/19 | | | | |
| DM-1.2 | 7/16/21 | MT-95.30 | 7/19/19 | TC-64.10 | 7/16/21 | | | | |
| DM-4.3 | 1/15/16 | MT-95.45 | 1/17/20 | TC-65.11 | 7/21/17 | | | | |
| DM-4.4 | 1/15/16 | MT-99.20 | 4/19/19 | | | | | | |
| | | MT-99.30 | 1/17/20 | | | | | | |
| F-1.1 | 7/19/13 | MT-101.70 | 1/17/20 | | | | | | |

FEDERAL PROJECT NUMBER

NON-FEDERAL

RAILROAD INVOLVEMENT

N/A

PROJECT DESCRIPTION

REPAIR OF TWO EMBANKMENT SLOPE FAILURE LOCATIONS ALONG US 422 LOCATED WEST AND EAST OF THE MAINLINE BRIDGES OVER THE ABANDONED B & O RAILROAD (STRUCTURES CUY-422-18.94 L & R). ALSO INCLUDED IS GUARDRAIL REPLACEMENT, REBUILDING THE EXISTING SHOULDER WHERE REQUIRED AND MAINTENANCE OF TRAFFIC.

EARTH DISTURBED AREAS

| | |
|--|-------------------------------|
| PROJECT EARTH DISTURBED AREA: | 1.7 ACRES |
| ESTIMATED CONTRACTOR EARTH DISTURBED AREA: | 0.3 ACRES |
| NOTICE OF INTENT EARTH DISTURBED AREA: | N/A (NOI NOT REQUIRED)* |
| | * ROUTINE MAINTENANCE PROJECT |

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED: *[Signature]*
DATE: 6/14/22 DISTRICT DEPUTY DIRECTOR

APPROVED: _____
DATE: _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

TITLE SHEET

DESIGN AGENCY

DESIGNER: SWG
REVIEWER: JDK 03/11/22
PROJECT ID: 115759
SHEET TOTAL: 1 49

CUY-422-18.74

MODEL: Sheet PAPER: SIZE: 34x22 (in.) DATE: 6/31/2022 TIME: 2:36:43 PM USER: speasy
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ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

- FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).
- FOR OPERATIONS WITHOUT POSITIVE PROTECTION OCCURRING WITHIN 10 FEET OF AN OPEN TRAVELED LANE THAT MEET ALL OF THE FOLLOWING CRITERIA:
 - ON A MULTI-LANE DIVIDED INTERSTATE, OTHER FREEWAY OR EXPRESSWAY; AND
 - AN AUTHORIZED SPEED LIMIT OF 45 MPH OR GREATER THAT IS IN EFFECT AT THE TIME OF THE OPERATION;
 - AADT OF 50,000 (OR AADT OF 30,000 WITH 25% OR HIGHER PERCENT TRUCKS)

"WITHOUT POSITIVE PROTECTION" MEANS USE OF DRUMS, CONES, SHADOW VEHICLE, ETC, WITHOUT PROTECTION FROM PORTABLE BARRIER OR OTHER RIGID BARRIER ALONG THE WORK AREA. THIS PHRASE DOES NOT APPLY TO CASES WHERE POSITIVE PROTECTION IS REQUIRED. MOBILE OPERATIONS ARE REGARDED AS "WITHOUT POSITIVE PROTECTION". FOR WORK ZONES USING A COMBINATION OF BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES (CONES, DRUMS, ETC), THE DESIGNATION SHALL BE BASED UPON THE TYPE OF DEVICES USED IN THE AREA THAT WORKERS ARE LOCATED.

IF MULTIPLE ACTIVE LOCALIZED QUALIFYING WORK AREAS OCCUR WITHOUT POSITIVE PROTECTION, PER MAINLINE TRAFFIC DIRECTION, PROVIDE A UNIFORMED LEO AND OFFICIAL PATROL CAR IN ADVANCE OF:

- THE FIRST ACTIVE WORK AREA THAT DRIVERS WILL ENCOUNTER; OR
- THE ACTIVE WORK AREA LATERALLY CLOSEST TO THE OPEN TRAVELED LANE; OR
- OTHER LOCATION AS APPROVED BY THE ENGINEER. THE UNIFORMED LEO AND OFFICIAL PATROL CAR MAY RELOCATE AMONG THE LISTED LOCATIONS AS APPROPRIATE AS THE OPERATIONS PROCEED IN THE LOCALIZED QUALIFYING WORK AREAS.

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE THAT SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 48 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 618, RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN

MILL THE EXISTING ASPHALT SHOULDER 2 INCHES DEEP BY 2 FEET WIDE IN ORDER TO REMOVE THE EXISTING RUMBLE STRIPS ALONG THE INSIDE SHOULDER OF US 422 WESTBOUND IN THE AREA WHERE TRAFFIC IS SHIFTED ONTO THE SHOULDER. COAT ALL MILLED SURFACES, HORIZONTAL AND VERTICAL, WITH APPROVED AC LIQUID AND THEN PLACE 2 INCHES OF ITEM 441, ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (449), AS PER PLAN, PG70-22.

ONCE THE PROJECT IS COMPLETE, INSTALL NEW RUMBLE STRIPS AS PER THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 618.

ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING PAVEMENT, PLACEMENT OF THE SURFACE COURSE, AND INSTALLATION OF THE RUMBLE STRIPS SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT OF ITEM 618, RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN. SEE MAINTENANCE OF TRAFFIC SUBSUMMARY BELOW FOR QUANTITIES ASSOCIATED WITH THIS PAY ITEM.

LIMITATION ON DURATION OF PORTABLE BARRIER INSTALLATIONS

PORTABLE BARRIER INSTALLED BY THE PROJECT SHALL NOT BE IN PLACE FROM NOVEMBER 1 THROUGH APRIL 1.

SEQUENCE OF CONSTRUCTION

PRE-PHASE 1 (NO SHEETS PROVIDED)

1. USING SINGLE LANE CLOSURES IN ACCORDANCE WITH MT-095.30 AND THE PLCM, REMOVE THE EXISTING RUMBLE STRIPS ALONG THE INSIDE SHOULDER OF WESTBOUND US 422 IN THE AREA WHERE TRAFFIC WILL BE SHIFTED ONTO THE SHOULDER, AND REPLACE WITH ASPHALT CONCRETE.

PHASE 1

1. SHIFT THE WESTBOUND LANES OF US 422 IN ACCORDANCE WITH MT-102.10 AND PLACE PORTABLE BARRIER ALONG THE OUTSIDE SHOULDER TO THE LIMITS INDICATED IN THE PLANS.

2. REMOVE THE GUARDRAIL AND THE EXISTING BEAM MOUNTED SERVICE SIGN. REINSTALL THE BEAM MOUNTED SERVICE SIGN AT THE LOCATION INDICATED IN THE TRAFFIC CONTROL PLANS.

3. PERFORM SLOPE REMEDIATION AND RECONSTRUCT THE SHOULDER UP TO THE BASE COURSE AND REPLACE THE GUARDRAIL..

PHASE 2 (NO PLAN SHEETS PROVIDED)

1. USING SINGLE LANE CLOSURES IN ACCORDANCE WITH MT-095.30 AND THE PERMITTED LANE CLOSURE MAP (PLCM), REMOVE THE PORTABLE BARRIER AND PLACE INTERMEDIATE AND SURFACE PAVEMENT COURSES ALONG THE OUTSIDE SHOULDER OF WESTBOUND US 422. RESTORE THE TRAVEL LANES TO THEIR FINAL ALIGNMENT AND PLACE PERMANENT MARKINGS. INSTALL RUMBLE STRIPS ALONG THE INSIDE SHOULDER OF WESTBOUND US 422 IN THE AREA WHERE TRAFFIC WAS SHIFTED ONTO THE SHOULDER.

PHASE 3 (PHASE 3 MAY BE CONCURRENT WITH PHASES 1 AND 2.)

1. CLOSE THE US 422 EASTBOUND OUTSIDE SHOULDER IN ACCORDANCE WITH MT-095.45. PLACE PORTABLE BARRIER FROM STA. 2025+40 TO STA. 2029+60. MAINTAIN A 2 FOOT MINIMUM OFFSET FROM TOE OF BARRIER TO THE EDGE LINE.

2. REMOVE THE GUARDRAIL AND PERFORM SLOPE REMEDIATION ACTIVITIES.

3. REPLACE THE GUARDRAIL AND REMOVE THE PORTABLE BARRIER.

MAINTENANCE OF TRAFFIC SUBSUMMARY

| REF NO. | SHEET NO. | STATION TO STATION | | | | 614 | 614 | 614 | 614 | 618 | 622 | 622 |
|---------|-----------|--|---|--|---|---|------------------------------|----------------------------|-----|------|-----|-----|
| | | WORK ZONE EDGE LINE, CLASS 1.6", 807 PAINT (WHITE) | WORK ZONE EDGE LINE, CLASS 1.6", 807 PAINT (YELLOW) | WORK ZONE CHANNELIZING LINE, CLASS 1, 12", 807 PAINT | WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL) | RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN | PORTABLE BARRIER, UNANCHORED | PORTABLE BARRIER, ANCHORED | | | | |
| | | FT/MI | FT/MI | FT | EACH | FT | FT | FT | FT | FT | FT | |
| CH1 | 9 | 2011+40.00 | LT | 2022+50.00 | LT | | | 1110 | | | | |
| WE1 | 9 | 2014+40.00 | LT | 2022+50.00 | LT | 810 | | | | | | |
| YE1 | 9 | 2014+40.00 | LT | 2022+50.00 | LT | | 810 | | 810 | | | |
| PB1 | 9 | 2016+80.00 | LT | 2022+04.00 | LT | | | | | | | 524 |
| PB2 | 9 | 2022+04.00 | LT | 2022+50.00 | LT | | | | | 46 | | |
| CH2 | 10 | 2022+50.00 | LT | 2029+50.00 | LT | | | 700 | | | | |
| WE2 | 10 | 2022+50.00 | LT | 2026+50.00 | LT | 400 | | | | | | |
| YE2 | 10 | 2022+50.00 | LT | 2026+50.00 | LT | | 400 | | 400 | | | |
| PB3 | 10 | 2022+50.00 | LT | 2022+70.00 | LT | | | | 1 | 20 | | |
| PB4 | 10A | 2025+40.00 | RT | 2029+60.00 | RT | | | | 1 | 420 | | |
| | | TOTAL FEET | | | | 1210 | 1210 | 1810 | | | | |
| | | TOTAL MILES | | | | 0.23 | 0.23 | | | | | |
| | | TOTALS CARRIED TO GENERAL SUMMARY | | | | 0.46 | | 1810 | 2 | 1210 | 486 | 524 |

DESIGN AGENCY

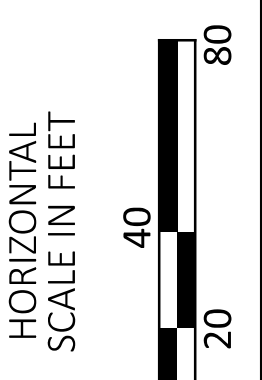
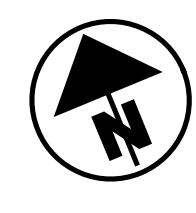
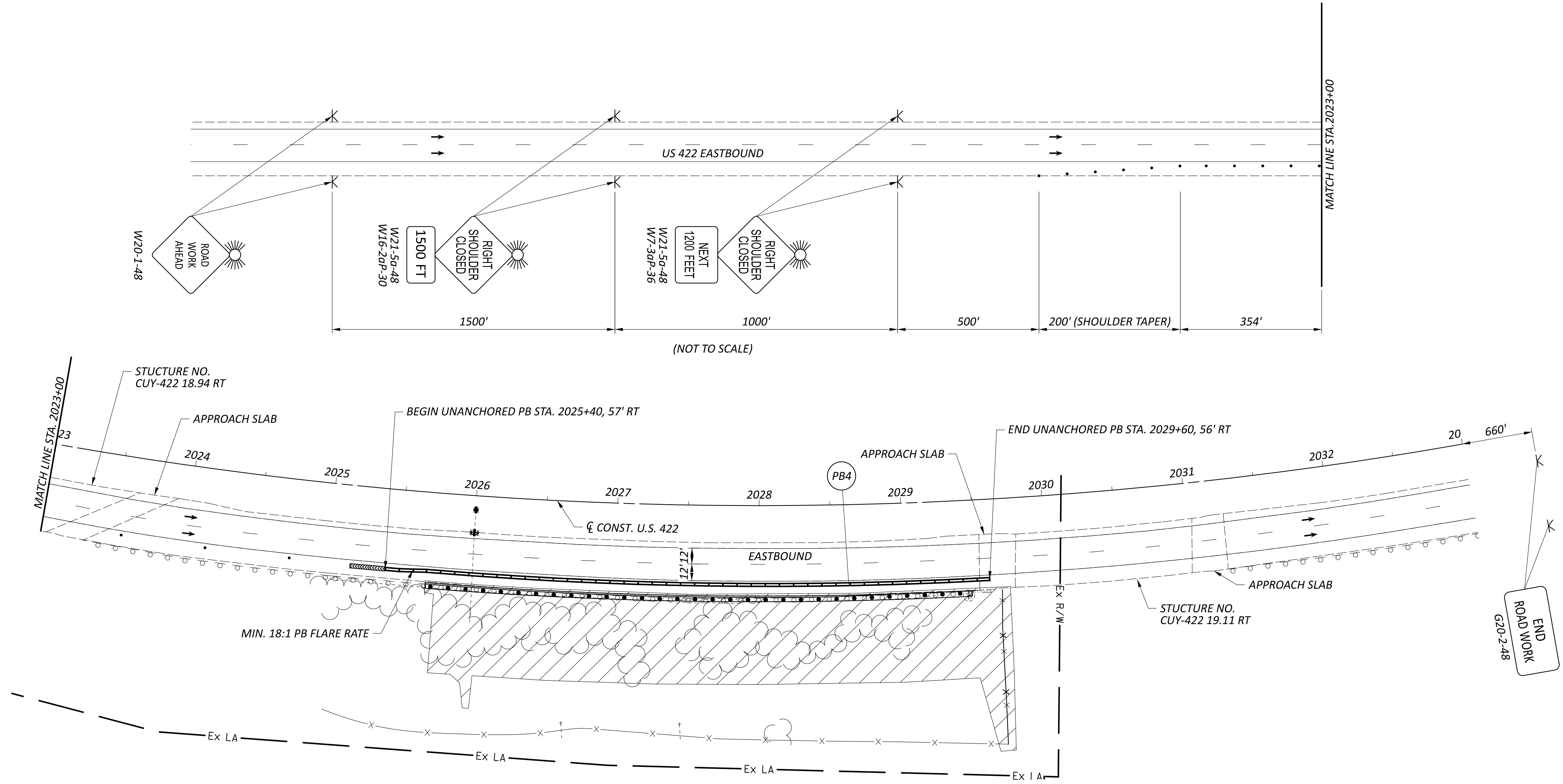


DESIGNER
KMC

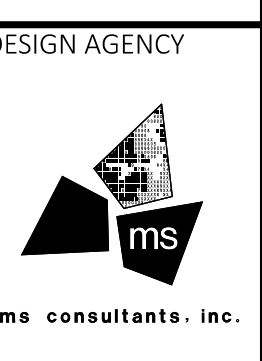
REVIEWER
JML 01/31/22

PROJECT ID
115759

SHEET TOTAL
8 41



MAINTENANCE OF TRAFFIC - PHASE 3
U.S. 422 EASTBOUND, BEGIN PROJECT TO END PROJECT



| | |
|------------|-------------|
| DESIGNER | JML |
| REVIEWER | KWR 9/22/22 |
| PROJECT ID | 115759 |
| SHEET | TOTAL |
| 10A | 41 |