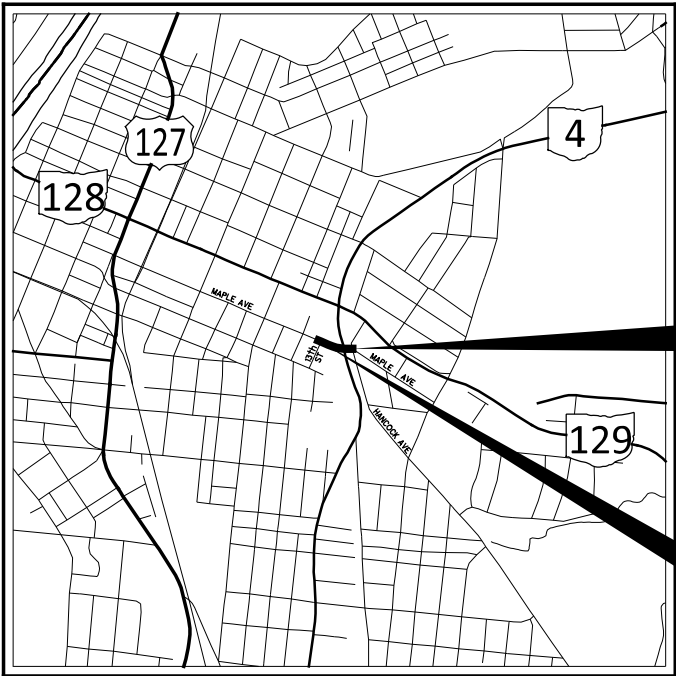




LOCATION MAP

LATITUDE: 39°23'39" LONGITUDE: -84°32'54"

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

DESIGN DESIGNATION

	MAPLE AVE	S ERIE BLVD.
CURRENT ADT (2024)	2871	18629
DESIGN YEAR ADT (2044)	3172	20583
DESIGN HOURLY VOLUME (2044)	327	1783
DIRECTIONAL DISTRIBUTION	48%	54%
TRUCKS (24 HOUR B&C)	N/A	2%
DESIGN SPEED	35 MPH	35 MPH
LEGAL SPEED	35 MPH	35 MPH
DESIGN FUNCTIONAL CLASSIFICATION:		
	MAJOR COLLECTOR	PRINCIPAL ARTERIAL
NHS PROJECT	NO	YES

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE REQUIRED

UNDERGROUND UTILITIES

Contact Two Working Days
Before You Dig

OHIO811.org
Before You Dig

OHIO 811. 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:

MEAD & HUNT

4700 LAKEHURST CT, SUITE 110
COLUMBUS OH, 43016



STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BUT-MAPLE AVE NS

CITY OF HAMILTON

BUTLER COUNTY

INDEX OF SHEETS:

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STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/19/24	MT-110.10	7/19/13			800-2023	7/19/24
BP-5.1	7/15/22					809	7/19/24
BP-7.1	7/19/24	TC-21.21	1/20/23			814	7/15/16
		TC-41.20	10/18/13			819	1/17/20
DM-4.3	1/15/16	TC-41.40	10/18/13			828	1/19/18
DM-4.4	1/15/16	TC-41.41	7/19/19			832	7/19/24
		TC-42.20	10/18/13			909	7/19/24
RM-2.1	7/19/13	TC-52.20	1/15/21			919	1/17/20
		TC-71.10	4/21/23			928	1/19/18
HL-30.11	7/21/23	TC-74.10	7/21/23				
		TC-81.22	7/21/23				
MT-95.31	7/19/19	TC-83.20	7/19/24				
MT-95.32	4/19/19	TC-85.20	4/21/23				
MT-97.10	4/19/19	TC-86.10	7/21/23				
MT-101.90	7/17/20						
MT-105.10	1/17/20						

FEDERAL PROJECT NUMBER

E210530

RAILROAD INVOLVEMENT

NORFOLK SOUTHERN RAILROAD DOT #524960Y

PROJECT DESCRIPTION

UPGRADE THE TRAFFIC SIGNAL AT SR4 (S ERIE BLVD) AND MAPLE AVE FOR RAILROAD PREEMPTION AND INTERCONNECTION WITH NORFOLK SOUTHERN GRADE CROSSING DOT #524960Y. INSTALLATION WILL INCLUDE ADA AND MUTCD COMPLIANCE.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.1 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.5 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)

2023 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.

Tammy K. Campbell, P.E.
District 08 Deputy Director

Pamela Boratyn
Director, Department of Transportation

ENGINEER'S SEAL

DEBORAH LYNN WEAVER
E-58498
REGISTERED PROFESSIONAL ENGINEER

Deb Weaver

Digitally signed by Deb Weaver
DN: cn=Deb Weaver
Date: 2025.01.13 11:35:32-09'00'

DESIGN AGENCY

CLIENT



DESIGNER

EGD

REVIEWER

MLV 11/05/24

PROJECT ID

115046

SHEET

P.01

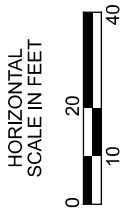
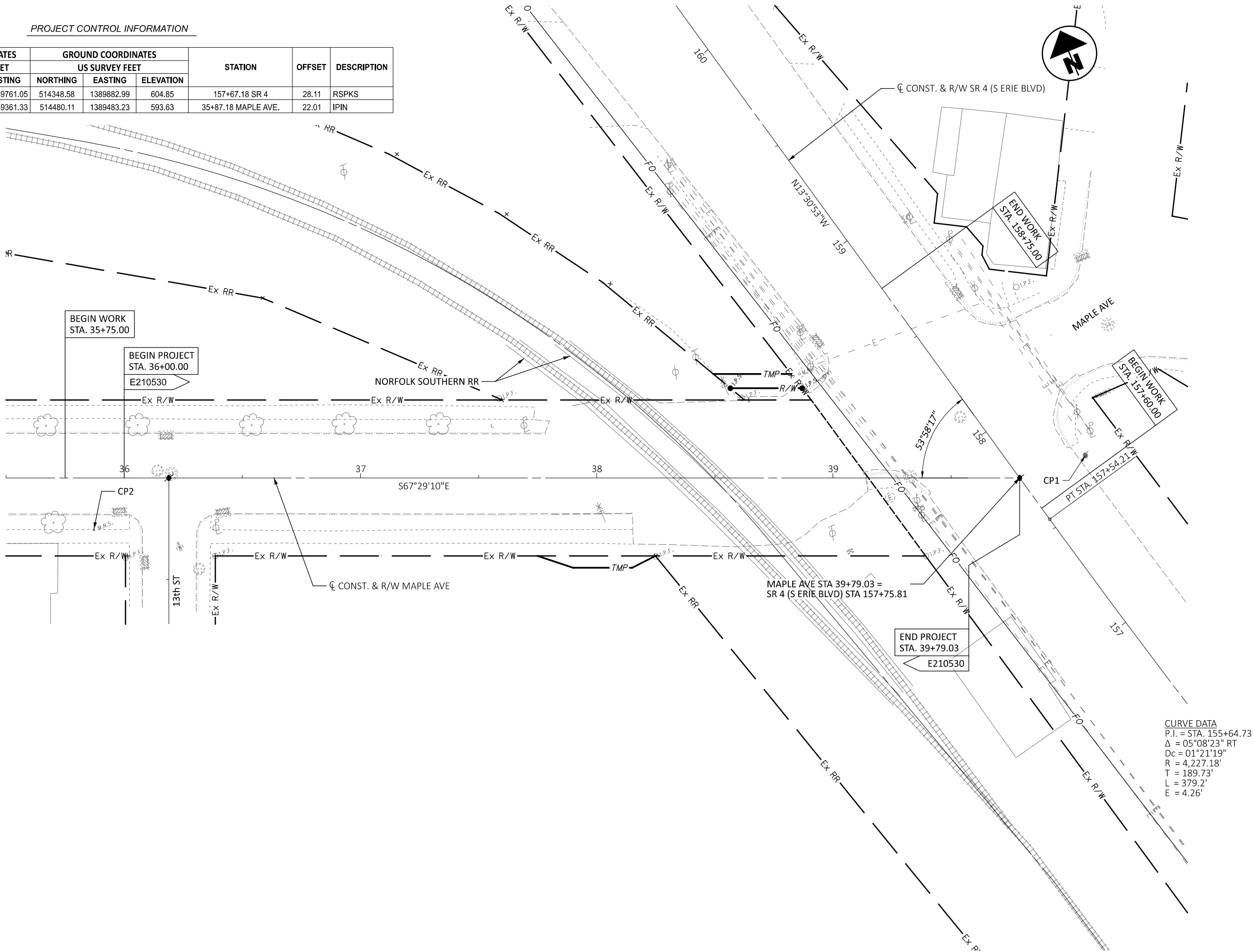
TOTAL

23

TITLE SHEET

PROJECT CONTROL INFORMATION

POINT NO.	GRID COORDINATES		GROUND COORDINATES			STATION	OFFSET	DESCRIPTION
	US SURVEY FEET		US SURVEY FEET					
	NORTHING	EASTING	NORTHING	EASTING	ELEVATION			
CP1	514303.46	1389761.05	514348.58	1389882.99	604.85	157+67.18 SR 4	28.11	RSPKS
CP2	514434.98	1389361.33	514480.11	1389483.23	593.63	35+87.18 MAPLE AVE.	22.01	IPIN



SCHEMATIC PLAN

DESIGN AGENCY
Mead & Hunt
CLIENT



DESIGNER
EGD

REVIEWER
MLV 11/05/24

PROJECT ID
115046

SHEET TOTAL
P.02 23

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

UTILITY CONTACTS ARE TO BE PROVIDED BY ODOT DISTRICT 8 UTILITY ENGINEER.

Duke Electric (Distribution)
2010 Dana Ave
Cincinnati, Ohio 45207
513-514-8209 (Chris Tepe)
Chris.Tepe@duke-energy.com

Duke Electric (Transmission)
139 East 4th Street, Room 552A
Cincinnati, Ohio 45202
Tim Meyer
tim.meyer@duke-energy.com

Cincinnati Bell Telephone (Aerial)
221 East Fourth Street, Bldg. 121-900
Cincinnati, Ohio 45201
513-566-8039
Nancy Morris
nancy.morris@cinbell.com

MCI/Verizon (Telephone)
8800 Governors Hill Drive
Cincinnati, Ohio 45129
bruce.turkiewicz@verizonwireless.com
254-721-8911

City of Hamilton (Municipal)
345 High Street
Hamilton, Ohio 45011
Rich Engle, PE, Director of Engineering
rich.engle@hamilton-oh.gov
scott.hoover@hamilton-oh.gov

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

ADDITIONAL PROJECT CONTACTS

LISTED BELOW IS INFORMATION FOR ADDITIONAL PROJECT CONTACTS:

Ohio Rail Development Commission
Allen Bell - Safety Manager
614-644-0313
allen.bell@dot.ohio.gov

Ohio Rail Development Commission
Heather Hamilton - Safety Division Coordinator
614-644-0307
heather.hamilton@dot.ohio.gov

Ohio Rail Development Commission Representative
Mott MacDonald
Zoltan Szabo
216-535-3642
zoltan.szabo@mottmac.com

ADDITIONAL PROJECT CONTACTS (CONT.)

Norfolk Southern Railroad
Aaron Pease
440-429-1960
aaron.pease@nscorp.com

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING. THIS ITEM HAS BEEN CARRIED TO THE ROADWAY SUBSUMMARY.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL	54 CU. YD.
659, SEEDING AND MULCHING	477 SQ. YD.
659, REPAIR SEEDING AND MULCHING	24 SQ. YD.
659, INTER-SEEDING	24 SQ. YD.
659, COMMERCIAL FERTILIZER	0.07 TON
659, LIME	0.10 ACRE
659, WATER	4 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS. THE SEEDING AND MULCHING QUANTITIES SHOWN ABOVE HAVE BEEN CARRIED TO THE ROADWAY SUBSUMMARY.

ITEM 609 COMBINATION CURB AND GUTTER TYPE 2, AS PER PLAN

THE INTENT OF THIS ITEM IS REMOVE EXISTING CURB RAMPS AND REPLACE WITH NEW CURB AND SIDEWALK WHERE INDICATED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE EXISTING RAMP, WALK AND/OR CURB IN A MANNER THAT DOES NOT DAMAGE OTHER AREAS MEANT TO REMAIN IN PLACE. RESTORATION TO EXISTING PAVEMENT AREAS IN FRONT OF THE PROPOSED CURB SHALL BE INCLUDED IN THIS PAY ITEM. RESTORATION SHALL BE MADE UP TO AND INCLUDE THE SURFACE COURSE. ALL WORK, LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 609, COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN

ITEM 609 COMBINATION CURB AND GUTTER TYPE 4, AS PER PLAN

THE INTENT OF THIS ITEM IS REMOVE EXISTING CURB RAMPS AND REPLACE WITH NEW CURB AND SIDEWALK WHERE INDICATED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE EXISTING RAMP, WALK AND/OR CURB IN A MANNER THAT DOES NOT DAMAGE OTHER AREAS MEANT TO REMAIN IN PLACE. RESTORATION TO EXISTING PAVEMENT AREAS IN FRONT OF THE PROPOSED CURB SHALL BE INCLUDED IN THIS PAY ITEM. RESTORATION SHALL BE MADE UP TO AND INCLUDE THE SURFACE COURSE. ALL WORK, LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 609, COMBINATION CURB AND GUTTER, TYPE 4, AS PER PLAN

ITEM 608 - CURB RAMP, AS PER PLAN

THE INTENT OF THIS ITEM IS TO INSTALL ADA CURB RAMPS WHERE INDICATED IN THIS SET OF PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE EXISTING WALK AND/OR CURB AND GUTTER IN A MANNER THAT DOES NOT DAMAGE OTHER AREAS MEANT TO REMAIN IN PLACE (SEE CURRENT STANDARD DRAWING BP-7.1). AS THESE INSTALLATIONS ARE BEING MADE TO FIT EXISTING CONDITIONS, VARIATIONS FROM STANDARD MAY OCCUR. ANY DEVIATIONS FROM DETAIL IN THESE PLANS MUST FIRST BE APPROVED BY THE ENGINEER. PAVEMENT RESTORATION IS INCLUDED UNDER PAVEMENT REPAIR, AS PER PLAN. ALL WORK, LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 608, CURB RAMP, AS PER PLAN.

TRUNCATED DOMES SHALL BE 24"x48", COLONIAL RED ARMOR-TILE TACTILE SYSTEMS CAST IN PLACE TILES OR EJ DURALAST OR NEENAH FOUNDRY DETECTABLE WARNING PL.

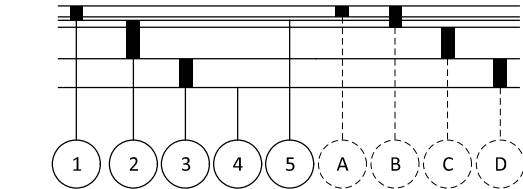
PAVEMENT REPAIR, AS PER PLAN

PAVEMENT REPAIR SHALL CONSIST OF PAVEMENT REMOVED AND REPLACED TO CORRECT COUNTER SLOPE AND/OR CROSS SLOPE AT PROPOSED CURB RAMP BASES, INSTALL NEW CURB WHERE RAMPS ARE TO BE REMOVED, AND/OR FOR EASE OF CONSTRUCTION.

REFER TO THE TYPICAL SECTION BELOW FOR PAVEMENT BUILD-UP.

PAYMENT FOR PAVEMENT REPAIR, AS PER PLAN, INCLUDING THE PAVEMENT REMOVAL, ARE INCLUDED IN THE SQ FT ITEM, CURB RAMP, AS PER PLAN AND COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN.

TYPICAL SECTION: PAVEMENT REPAIR, AS PER PLAN



- 1 ITEM 441 - 2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22
- 2 ITEM 452 - 8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P
- 3 ITEM 304 - 6" AGGREGATE BASE
- 4 ITEM 204 - SUBGRADE COMPACTION
- 5 ITEM 407 - TACK COAT (0.07 GAL/SY)
- A ITEM 442 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448)
- B ITEM 442 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448), AS PER PLAN (COURSE AGGREGATE MUST BE 100% CRUSHED)
- C ITEM 301 - 8-3/4"± ASPHALT CONCRETE BASE
- D ITEM 304 - 6" AGGREGATE BASE

NOTE, THE EXISTING PAVEMENT BUILD-UP SHOWN HERE IS FOR SR 4 (S ERIE BLVD) EXISTING PAVEMENT BUILD-UP INFORMATION ON MAPLE AVE WAS NOT FOUND. REGARDLESS OF MATERIAL FOUND, BACKFILL AS SHOWN IN TYPICAL SECTION ABOVE.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET P.02 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT REAL TIME NETWORK (2011)
MONUMENT TYPE: B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: 12B

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE - SOUTH ZONE
COMBINED SCALE FACTOR: 0.9999122650
PROJECT ADJUSTMENT FACTOR: 1.000087743
ORIGIN OF COORDINATE
SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER WITH 72- HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

CONSTRUCTION NOISE

THIS PROJECT WILL COMPLY WITH ALL LOCAL NOISE ORDINANCES.

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
2. COMPACT THE SUBGRADE ACCORDING TO C&MS 204.03.
3. PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO C&MS 204.06.
4. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITION:

NEW SIGNAL INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE FOR POLICE SERVICES AND MAINTENANCE SERVICES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PEDESTRIAN TRAFFIC AT ALL TIMES.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION (CONT)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 6 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00 AM TO 8:00 AM AND 3:00 PM TO 6:00 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, FLAGGER CONTROL PER SCD MT-97.10, MT-95.31 AND MT-35.32.

A MINIMUM OF 1 SIDEWALK SHALL BE MAINTAINED AT ALL TIMES. THE SOUTHERN SIDEWALK/RAMPS SHALL BE COMPLETED BEFORE REMOVING THE NORTHERN CROSSWALK ACROSS SR 4.

LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WHICH THE CONTRACTOR HAS A FULL COMPLEMENT OF EMPLOYEES AND EQUIPMENT ACTIVELY REMOVING AND/OR PLACING PAVEMENT MATERIALS.

IF IT IS NECESSARY TO STOP ALL TRAFFIC THE WORK SHALL BE SO ARRANGED THAT THE STOPPAGE IS LESS THAN TEN (10) MINUTES IN ANY ONE (1) THIRTY (30) MINUTE PERIOD. NO STOPPAGE OF TRAFFIC SHALL OCCUR FOR THE ERECTION OF SIGNAL SUPPORTS OR HANGING SIGNAL HEADS WITHOUT A LAW ENFORCEMENT OFFICER WITH PATROL CAR AT THE SITE FOR ASSISTANCE IN CONTROLLING TRAFFIC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE SERVICES AND SCHEDULING OF SAID LAW ENFORCEMENT OFFICER WITH PATROL CAR.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE

OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

LANE CLOSURES SHALL NOT BE PERMITTED ON MONDAYS THROUGH FRIDAYS, FROM 6 AM TO 9 AM AND 3 PM TO 6PM.

ITEM 614, MAINTAINING TRAFFIC (CONT)

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED IN THE PLANS.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME FRAME TABLE		
ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS AND PIO
LANE CLOSURES AND RESTRICTIONS	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION AND TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

WINDOW CONTRACT TABLE

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

DESCRIPTION OF CRITICAL WORK	CALENDAR DAYS TO COMPLETE
ALL WORK ON PROJECT	60 DAYS

THE CONSTRUCTION COMPLETION DATE IS 11/01/2025.

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.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

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 THE 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 WHICH 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 24 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. THE QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW REFLECTIVE SHEETING SURFACES OF 9" BY 15" MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN 12 HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE. ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.) THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN (CONT)

APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE, AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 8 SIGN MONTHS ASSUMING 4 PCMS SIGNS FOR 2 MONTHS. A QUANTITY OF 8 SNMT HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 900, RAILROAD FLAGGING SERVICES

FLAGGING FOR WORK ON RAILROAD RIGHT OF WAY SHALL BE COORDINATED, OBTAINED AND PAID FOR BY THE CONTRACTOR. FLAGGING SHALL BE PROVIDED BY THE CONTRACTOR WHENEVER REQUIRED BY THE NORFOLK SOUTHERN SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTEREST. NORFOLK SOUTHERN SHALL APPROVE THE FLAGGING SERVICE PROVIDER AND THEIR STAFF.

NORFOLK SOUTHERN HAS THE SOLE AUTHORITY TO DETERMINE THE NEED FOR PROTECTION SERVICES TO PROTECT ITS OPERATIONS IN GENERAL. THE REQUIREMENTS OF SUCH SERVICES WILL BE WHENEVER THE CONTRACTOR'S PERSONNEL OR EQUIPMENT ARE OR ARE LIKELY TO BE, WORKING ON THE RAILROAD'S RIGHT OF WAY, OR ACROSS, OVER, ADJACENT TO, OR UNDER A TRACK, OR WHEN SUCH WORK HAS DISTURBED OR IS LIKELY TO DISTURB A RAILROAD STRUCTURE OR THE RAILROAD ROADBED OR SURFACE AND ALIGNMENT OF ANY TRACK TO SUCH EXTENT THAT THE MOVEMENT OF TRAINS MUST BE CONTROLLED BY FLAGGING.

THE TOTAL DOLLARS IN THE ESTIMATED QUANTITIES IS BASED UPON AN ESTIMATE OF TOTAL FLAGGING DOLLARS NEEDED TO COMPLETE THE PLANNED WORK.

ONLY THE FOLLOWING CERTIFIED FLAGGING PROVIDERS ARE ACCEPTABLE BY NORFOLK SOUTHERN:

RAILROAD CONSULTANTS
STEVE LLOYD (VP BUSINESS DEVELOPMENT)
(615) 542-8901

RAILPROS
1320 GREENWAY DR., SUITE 490
IRVING, TX 75038
(877) 315-0513
HTTP://WWW.RAILPROS.COM/SERVICES-CATEGORY/FIELD-SERVICES/

R&R CONSULTING TEAM
DAVID N. CRAFT
CO-OWNER & PRESIDENT
R&R CONSULTING TEAM, LLC

PO BOX 4739
HARRISBURG, PA 17111
717-497-4373 (CELL)
775-521-2495 (E-FAX)
DCRAFT@RRCONSULTINGTEAM.COM
WWW.RRCONSULTINGTEAM.COM

PAYMENT FOR CERTIFIED FLAGGING PROVIDERS WILL BE MADE PER ITEM 900, RAILROAD FLAGGING SERVICES, EACH BASED UPON THE INVOICES RECEIVED FROM THE FLAGGING SERVICE FOR THE DOLLARS USED, INCLUDING A FIVE PERCENT MARKUP FOR CONTRACTOR OVERHEAD FOR ADMINISTERING THE CONTRACT WITH THE FLAGGING SERVICE.

IN THE EVENT THE PROJECT IS DELAYED DUE TO RAILROAD FLAGGER AVAILABILITY, THE CONTRACTOR WILL PROVIDE DOCUMENTATION SUPPORTING THEIR EFFORTS TO SCHEDULE A FLAGGER FROM THE FLAGGING SERVICE.

DESIGN AGENCY
Mead & Hunt
CLIENT



DESIGNER
EGD

REVIEWER
MLV 11/05/24

PROJECT ID
115046

SHEET
P.05

TOTAL
23

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
						4	8		13		17		01/SAF/OT						
																		ROADWAY	
							LS						LS	201	11000	LS		CLEARING AND GRUBBING	
							37						37	202	23000	37	SY	PAVEMENT REMOVED	
							1,994						1,994	202	30000	1,994	SF	WALK REMOVED	
							194						194	202	32000	194	FT	CURB REMOVED	
							568						568	608	10000	568	SF	4" CONCRETE WALK	
							13						13	608	40000	13	FT	CONCRETE STEPS, TYPE A	
							924						924	608	52001	924	SF	CURB RAMP, AS PER PLAN	3
																		EROSION CONTROL	
							67						67	659	00300	67	CY	TOPSOIL	
							590						590	659	10000	590	SY	SEEDING AND MULCHING	
							24						24	659	14000	24	SY	REPAIR SEEDING AND MULCHING	
							24						24	659	15000	24	SY	INTER-SEEDING	
							0.09						0.09	659	20000	0.09	TON	COMMERCIAL FERTILIZER	
							0.1						0.1	659	31000	0.1	ACRE	LIME	
							5						5	659	35000	5	MGAL	WATER	
													2,000	832	30000	2,000	EACH	EROSION CONTROL	
																		DRAINAGE	
							1						1	611	99654	1	EACH	MANHOLE ADJUSTED TO GRADE	
																		PAVEMENT	
							89						89	609	12001	89	FT	COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN	3
							7						7	609	23001	7	FT	COMBINATION CURB AND GUTTER, TYPE 4, AS PER PLAN	3
							65						65	609	26000	65	FT	CURB, TYPE 6	
																		TRAFFIC CONTROL	
									12				12	630	03100	12	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
									1				1	630	79200	1	EACH	SIGN ATTACHMENT ASSEMBLY, MAST ARM	
									10				10	630	80100	10	SF	SIGN, FLAT SHEET	
									7				7	630	84900	7	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
									4				4	630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
									0.06				0.06	642	00300	0.06	MILE	CENTER LINE, TYPE 1	
									83				83	642	00400	83	FT	CHANNELIZING LINE, 8", TYPE 1	
									40				40	642	00500	40	FT	STOP LINE, TYPE 1	
									277				277	642	00620	277	FT	CROSSWALK LINE, 12", TYPE 1, WHITE	
									309				309	642	00630	309	FT	CROSSWALK LINE, 24", TYPE 1,WHITE	
									3				3	642	01300	3	EACH	LANE ARROW, TYPE 1	
									820				820	642	30000	820	FT	REMOVAL OF PAVEMENT MARKING	
									1				1	642	30020	1	EACH	REMOVAL OF PAVEMENT MARKING	
																		TRAFFIC SIGNALS	
											10		10	611	00400	10	FT	4" CONDUIT, TYPE E	
											35		35	625	25606	35	FT	CONDUIT, 4", 725.052	
											67		67	625	25908	67	FT	CONDUIT, JACKED OR DRILLED, 725.052, 4"	
											35		35	625	29000	35	FT	TRENCH	
											2		2	625	30706	2	EACH	PULL BOX, 725.08, 24"	
											1		1	625	31510	1	EACH	PULL BOX REMOVED	
											1		1	625	32000	1	EACH	GROUND ROD	
											35		35	625	36010	35	FT	UNDERGROUND WARNING/MARKING TAPE	
											1		1	632	03200	1	EACH	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 3 SECTION, 12" LENS, 1-WAY	
											1		1	632	03204	1	EACH	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 5 SECTION, 12" LENS, 1-WAY	
											4		4	632	05006	4	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	
											4		4	632	05086	4	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	
											10		10	632	25000	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
											904		904	632	40700	904	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
											1		1	632	64010	1	EACH	SIGNAL SUPPORT FOUNDATION	
											1		1	632	72111	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN	16
											1		1	632	90100	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	
											LS		LS	632	90300	LS		SIGNALIZATION, MISC.:, PULL EXISTING SIGNAL CABLE AND RE-PULL	15
											1		1	633	67201	1	EACH	CONTROLLER WORK PAD, AS PER PLAN	16
											1		1	633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	16

GENERAL SUMMARY

DESIGN AGENCY



CLIENT



DESIGNER

ARM

REVIEWER

SJS 11/05/24

PROJECT ID

115046

SHEET

P.06

TOTAL

23

MODEL: Sheet PAPER SIZE: 17x11 (in.) DATE: 1/10/2025 TIME: 4:00:34 PM USER: 02676
X:\34012500\20017.01\110988_VAR-STW GES ORDC 2020\115046_BUT-Maple Ave NS\400-Engineering\Roadway\Sheets\115046_GG002.dgn

[illegible]

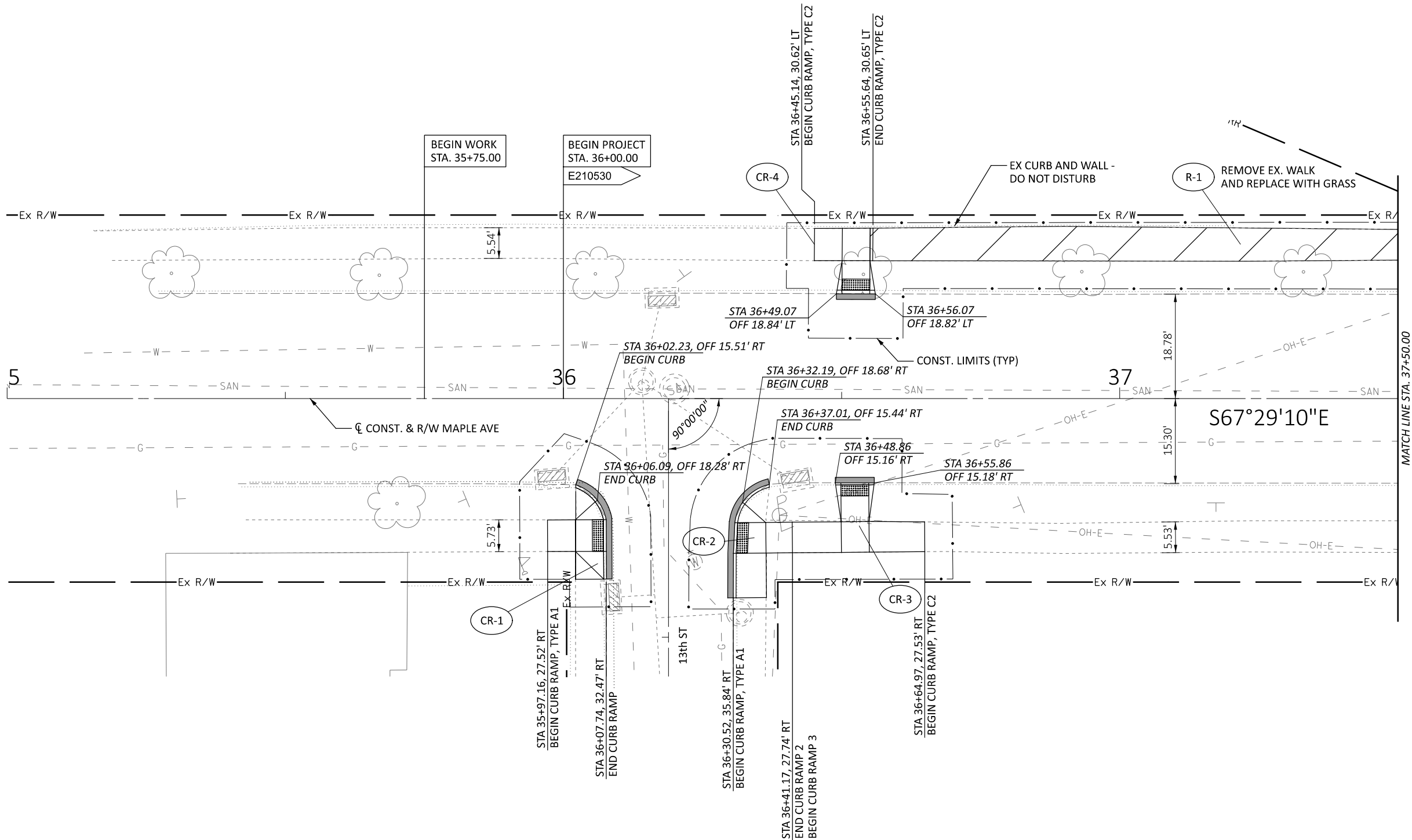
BUT-MAPLE AVENUE

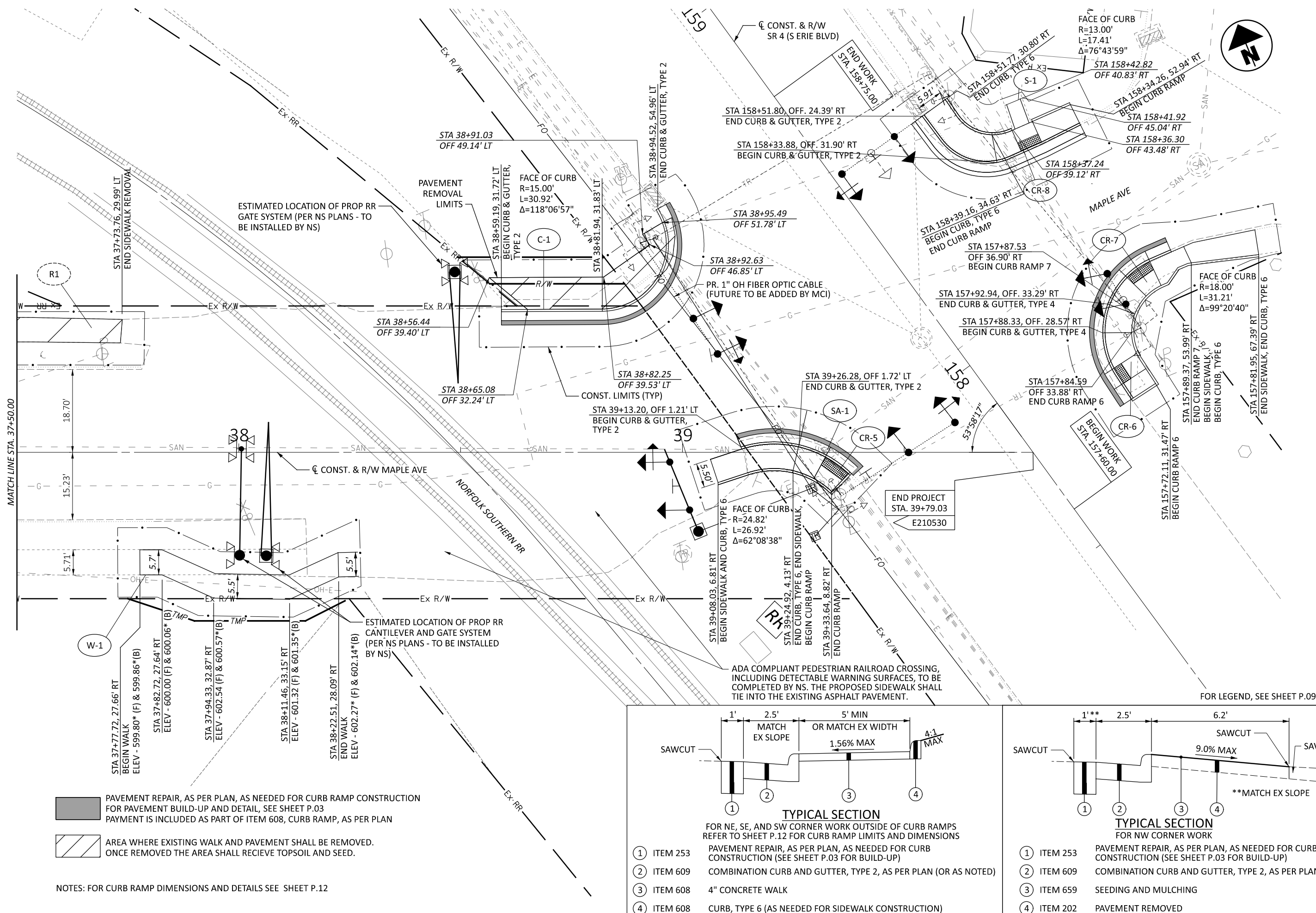
MODEL: Sheet PAPER SIZE: 17x11 (in.) DATE: 11/5/2024 TIME: 10:05:41 AM USER: 02686
X: 4012500020017.011110988 VAR-STW GES ORDC 2020115046 BUT-Maple Ave NS400-EngineeringRoadway\Sheets\115046_GS001.dgn

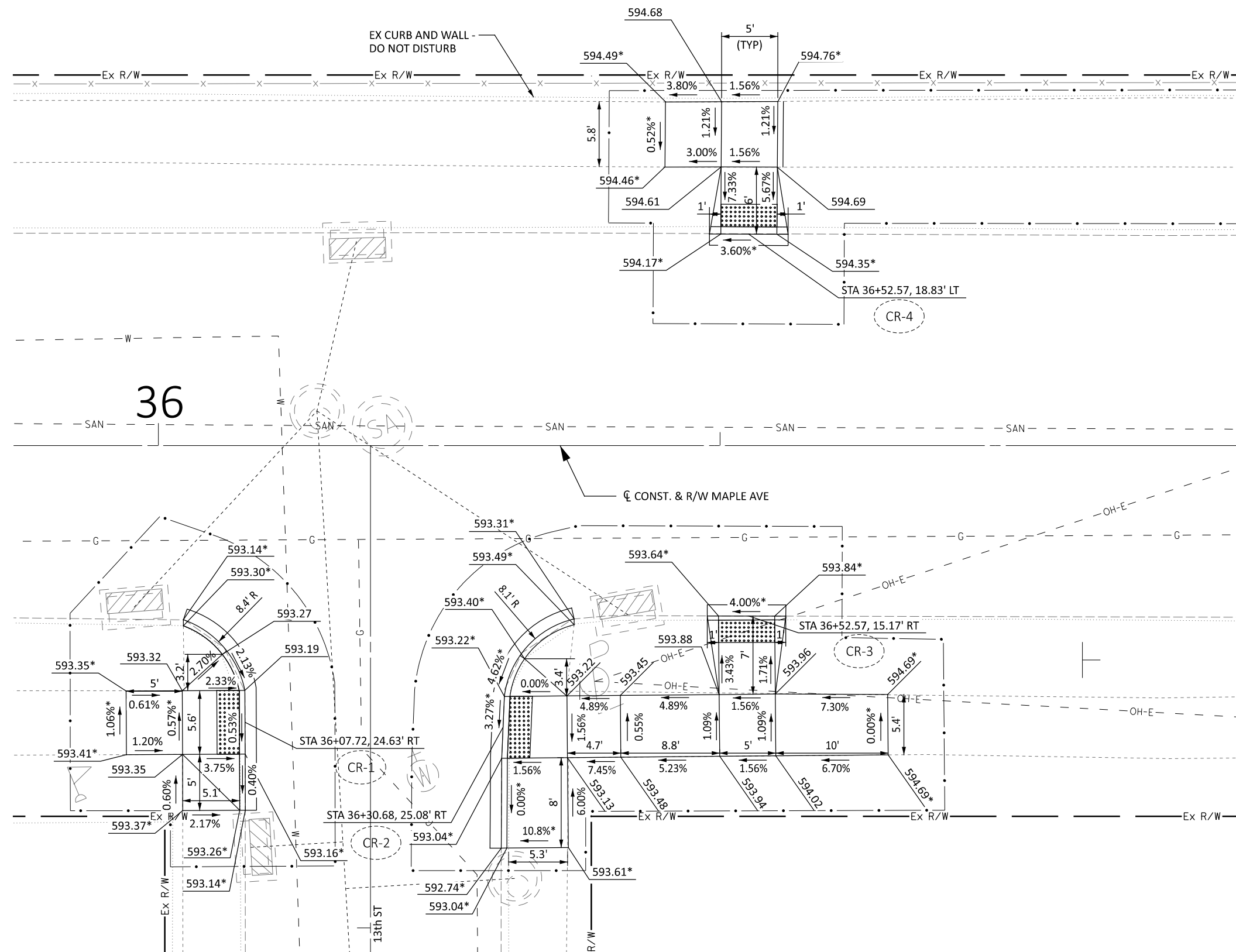
[illegible]

- PAVEMENT REPAIR, AS PER PLAN, AS NEEDED FOR CURB RAMP CONSTRUCTION
FOR PAVEMENT BUILD-UP AND DETAIL, SEE SHEET P.03
PAYMENT IS INCLUDED AS PART OF ITEM 608, CURB RAMP, AS PER PLAN
- AREA WHERE EXISTING WALK AND PAVEMENT SHALL BE REMOVED.
ONCE REMOVED THE AREA SHALL RECIEVE TOPSOIL AND SEED.

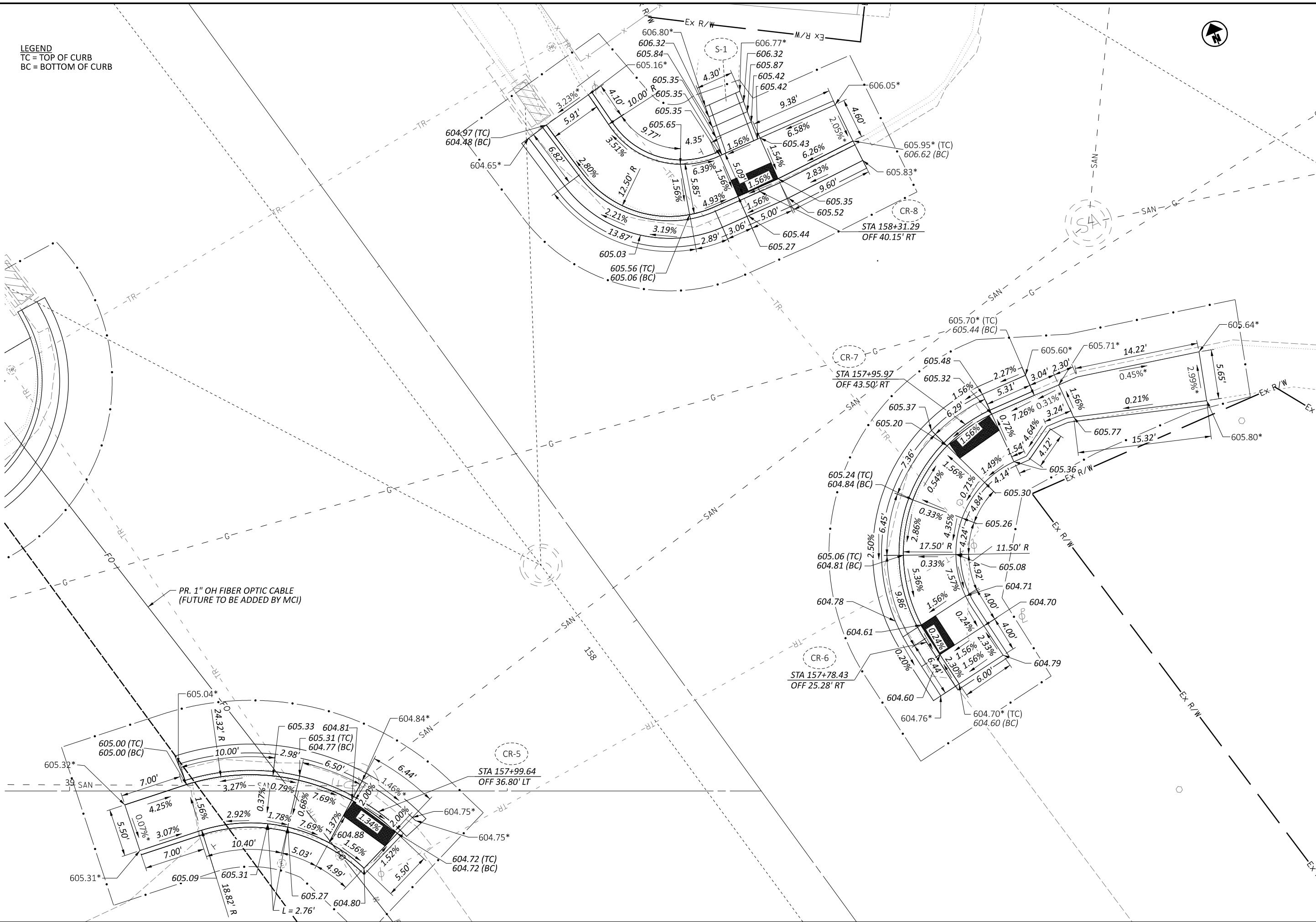
NOTES: FOR CURB RAMP DIMENSIONS AND DETAILS SEE SHEET P.11







LEGEND
TC = TOP OF CURB
BC = BOTTOM OF CURB



PLAN SHEET
S. ERIE BLVD/MAPLE AVE INTERSECTION CURB RAMP DETAILS



DESIGN AGENCY

Mead & Hunt

CLIENT



DESIGNER

ARM

REVIEWER

MLV 11/05/24

PROJECT ID

115046

SHEET

P.12

TOTAL

23

BUT-MAPLE AVENUE

MODEL: Sheet PAPER SIZE: 17x11 (in.) DATE: 11/5/2024 TIME: 10:05:48 AM USER: 02686
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REF NO.	SHEET NO.	STATION TO STATION				630	630	630	630	630	642	642	642	642	642	642	642												
						GROUND MOUNTED SUPPORT, NO. 3 POST	SIGN ATTACHMENT ASSEMBLY, MAST ARM	SIGN, FLAT SHEET	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	CENTER LINE, TYPE 1	CHANNELIZING LINE, 8", TYPE 1	STOP LINE, TYPE 1	CROSSWALK LINE, TYPE 1, 12" WHITE	CROSSWALK LINE, TYPE 1, 24" WHITE	LANE ARROW, TYPE 1	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING											
						FT	EACH	SF	EACH	EACH	MILE	FT	FT	FT	FT	EACH	FT	EACH											
				TO																									
CL1	14	35+72.20	LT		37+92.20	LT					0.04																		
CL2	14	35+72.20	LT		36+85.50	LT					0.02																		
CW1	14	36+07.70	RT		36+30.70	RT								50	48														
CW2	14	36+52.50	RT/LT											60	68														
CH1	14	37+09.50	RT		37+92.20	RT						83																	
A1	14	37+27.00	C/L													1													
A2	14	37+74.00	C/L													1													
SL1	14	37+92.20											22																
CW3	14	157+78.50	RT		158+00.30	LT								119	127														
CW4	14	157+98.00	RT		158+31.80	RT								48	66														
RCW5	14																383												
RCW6	14																198												
RCW7	14																124												
RCW8	14																78												
R1	14								2	1																			
R2	14								1	1																			
R3	14								2	1																			
R4	14								2	1																			
SL2	14	158+08.72	RT		158+26.50	RT							18																
RSL3	14																18												
RCL3	14																7												
RCH2	14																12												
R3	14	158+10.00	C/L													1													
RA4	14																	1											
S3	19	39+03.63	RT					1	5.0																				
S5	14	37+92.65	RT				12.0		5.0																				

TRAFFIC SUBSUMMARY

DESIGN AGENCY Mead & Hunt CLIENT	
	
DESIGNER TK	
REVIEWER DLW 11/05/24	
PROJECT ID 115046	
SHEET P.13	TOTAL 23

LEGEND			
RCW	PAVEMENT MARKING TO BE REMOVED	R	SIGN REMOVAL
CL	CENTER LINE, DOUBLE SOLID	S	SIGN, PROPOSED
CH	CHANNELIZING LINE, 8"	127	EXISTING SIGN
CW	CROSSWALK LINE		EXISTING SIGN TO BE REMOVED
SL	STOP LINE	DND	DO NOT DISTURB
A	LANE ARROW		
PROPOSED		EXISTING	
		ONE POST SIGN, GROUND MOUNTED	
		TWO POST SIGN, GROUND MOUNTED	

NOTES:

ALL EXISTING PAVEMENT MARKINGS SHALL REMAIN UNLESS OTHERWISE NOTED.
PROPOSED PAVEMENT MARKINGS SHALL BE ITEM 642 PAINT, TYPE 1 AND SHALL BE PLACED OVER EXISTING PAVEMENT MARKINGS.

ALL CROSSWALKS ARE 10' WIDE UNLESS OTHERWISE NOTED ON THE PLANS.
SEE TRAFFIC SIGNAL PLANS FOR SIGNS ATTACHED TO THE MAST ARMS.

PEDESTRIAN SIGNS SHOULD BE MOUNTED ON THE EXISTING SIGNAL SUPPORTS PERPENDICULAR TO THE CROSSWALKS.

PEDESTRIAN SIGNS



R9-3-18
4 EACH



MAPLE AVE & ERIE BLVD
SIGNING AND PAVEMENT MARKING PLAN

DESIGN AGENCY

Mead & Hunt

CLIENT



DESIGNER

EGD

REVIEWER

DLW 11/05/24

PROJECT ID

115046

SHEET

P.14

TOTAL

23

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE CITY OF HAMILTON ENGINEER. THE CITY OF HAMILTON ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE CITY OF HAMILTON ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL THE CITY OF HAMILTON TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY CITY OF HAMILTON TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. THE CITY OF HAMILTON SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY.

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/ INTERCONNECT EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

625 ARC FLASH CALCULATIONS AND LABEL, SIGNAL CONTROLLER

FOR THE FOLLOWING LOCATION(S), PERFORM AND SUBMIT ARC FLASH HAZARD CALCULATIONS, PREPARE THE NECESSARY LABEL, AND AFIX THE LABEL TO THE ELECTRICAL DEVICE PER SS 825.

LOCATIONS:
- SIGNAL CONTROLLER

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.

A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.

B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.

C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.

D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.

F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

2. CONDUITS.

A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR SWITCH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.

B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.

C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

3. WIRE FOR GROUNDING AND BONDING.

A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:

I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.

GROUNDING AND BONDING (CONT)

II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.

4. GROUND ROD.

A. A 3/4-INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.

B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

6. POWER SERVICE AND DISCONNECT SWITCH.

A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.

B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

GROUNDING AND BONDING (CONT)

II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, PEDESTRIAN SIGNAL HEADS, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS.

REMOVED ITEMS LISTED BELOW SHALL BE DELIVERED TO THE CITY OF HAMILTON FACILITY PROVIDED HERE.

SIGNAL HEADS
PEDESTRIAN SIGNAL HEADS

THE CONTRACTOR SHALL PLUG HOLES IN THE EXISTING SIGNAL SUPPORTS WHERE PEDESTRIAN SIGNAL HEADS AND PUSHBUTTONS ARE REMOVED.

REMOVED ITEMS SHALL BE DELIVERED TO THE CITY OF HAMILTON FACILITY WHOSE ADDRESS IS LISTED BELOW:

CITY OF HAMILTON SIGNAL SHOP
M-F, 9 AM - 2 PM
ATTN: BRET NOONAN
PHONE: 513-785-7267

IN THE EVENT THE ITEMS LISTED HERE FOR SALVAGE ARE NOT WANTED BY THE LOCAL AGENCY, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT. THE COST OF PLUGGING THE HOLES ON THE EXISTING SIGNAL SUPPORTS SHALL BE INCLUDED IN PAYMENT WITH THE REMOVAL ITEMS.

SIGNAL INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER, CITY OF HAMILTON TRAFFIC ENGINEER AND ORDC WITH 72-HOUR NOTICE OF THE FINAL SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE. THIS IS FOR THE PURPOSE OF TESTING THE TRAFFIC SIGNAL AND THE RAILROAD SIGNAL EQUIPMENT INTERFACE. A REPRESENTATIVE FROM ORDC SHALL BE ON SITE TO OVERSEE THE FINAL INSPECTION AND CONFIRM THAT THE TRAFFIC SIGNAL AND THE RAILROAD DEVICES ARE WORKING PER THE REQUIREMENTS SET FORTH IN THE TEM FOR RAILROAD PREEMPTION.

THIS INSPECTION WILL BE IN ADDITION TO THE FINAL SIGNAL INSPECTION. PAYMENT FOR THE SECOND INSPECTION SHALL BE INCLUDED IN PAYMENT WITH ITEM 819 RAILROAD PREEMPTION INTERFACE.

632 SIGNALIZATION MISC.: PULL EXISTING SIGNAL CABLE AND RE-PULL

CONTRACTOR SHALL BE RESPONSIBLE TO DISCONNECT EXISTING SIGNAL CABLE FROM THE CONTROLLER AND PULL BACK TO EXISTING PULL BOX PB-2. THEN THE CONTRACTOR SHALL RE-PULL THE SIGNAL CABLE TO THE CONTROLLER AND COMPLETE CONNECTIONS. ANY EXISTING SIGNAL CABLE THAT IS NOT USED SHALL BE REMOVED. THE SIGNAL CABLE SHALL NOT BE SPLICED.

ALL THE WORK DESCRIBED ABOVE SHALL BE COMPLETED UNDER THE LUMP SUM BID OF ITEM 632 FINALIZATION MISC.: PULL EXISTING SIGNAL CABLE AND RE-PULL.

633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, POLE ATTACHMENT HARDWARE WILL BE INCLUDED FOR POLE-MOUNTED CABINETS, AND A CABINET RISER (8-INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE CITY OF HAMILTON TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY-DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

THE CABINET SHALL HAVE A DOOR STOP MECHANISM AND THERMOSTATICALLY CONTROLLED FAN. THE CABINET SHALL INCLUDE A BATTERY BALANCING DEVICE THAT REGULATES THE BATTERIES AND OPTIMIZES PERFORMANCE.

AFTER FOUR (4) HOURS OF BATTERY RUNTIME, THE SYSTEM SHALL BE PROGRAMMED TO SWITCH THE INTERSECTION FROM FULL OPERATION TO CONTROLLER AUTOMATIC FLASH OPERATION THROUGH THE MONITOR. THE CONTROLLER SHALL BE PROGRAMMED SO THAT FLASH OPERATION SHALL BEGIN ONCE THE INTERSECTION RUNS MINOR STREET GREEN (TYP. PH. 4 &8), ALL-RED CLEARANCE, AND THEN FLASH OPERATION.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL OR THROUGH THE CONTROLLER WITH A C11 TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED MODULE SHOULD BE PLACED ON THE SIDE OF THE UPS CABINET FACING TOWARDS THE MAINLINE ROADWAY AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY," WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

828 LED BLANKOUT SIGN (NO TURN - TRAIN)

THE CONTRACTOR SHALL PROVIDE AND INSTALL A SOLID FILLED RED SYMBOL, SOLID FILLED WHITE ARROW NO RIGHT TURN SYMBOL AND A NO LEFT TURN SYMBOL SIGN ON THE TRAFFIC SIGNAL MAST ARM AT THE LOCATIONS INDICATED ON THE PLANS. THE SYMBOL SIGN SHALL BE A WEATHER TIGHT NEMA ENCLOSURE. THE FOLLOWING SPECIFICATIONS SHALL APPLY:

VOLTAGE: 120V
ILLUMINATION: LED
SYMBOL HEIGHT: 20.0"
CABINET SIZE: 30"H x 24"W x 5.5" D
FINISH: BLACK
WARRANTY: 5 YEARS



THE SIGNS SHALL BE WIRED TO ACTIVATE DURING THE RAILROAD PREEMPTION PHASES AND REMAIN ON FOR THE ENTIRE RAILROAD PREEMPTION CYCLE.

THE MAST ARM MOUNTING BRACKET SHALL BE SUPPLIED BY THE SIGN MANUFACTURER AND INSTALLED BY THE CONTRACTOR. THE SIGN SHALL BE ACTIVATED (ON) WHEN THE CONTROLLER RECEIVES A RAILROAD PREEMPTION CALL. THE REMAINING TIME THE SIGN SHALL BE BLANK OR OFF.

PAYMENT FOR THE ABOVE ITEM SHALL BE PAID AT THE UNIT PRICE BID PER EACH FOR ITEM 828, LED BLANKOUT SIGN, LED BLANKOUT SIGN COMPLETE. PRICE SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, MOUNTING HARDWARE FOR RIGID MOUNTING, POWER CABLE AND ALL INCIDENTALS TO COMPLETE THE WORK.

DETECTION MAINTENANCE

IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND CITY OF HAMILTON TRAFFIC ENGINEER.

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE CITY TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDON, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

632 SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD. THEN THE CONTRACTOR SHALL MEET THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORTS.

DUE TO THE FURTHER POSSIBILITY OF CONFLICT WITH EXISTING OR PROPOSED UNDERGROUND OBSTRUCTIONS (INCLUDING THE POSSIBILITY OF UNRECORDED OBSTRUCTIONS) WHICH COULD AFFECT THE LOCATION OF THE FOUNDATION FOR THIS ITEM, AND CONSEQUENTLY, THE DESIGN OF THE SUPPORT AND/OR ARMS, THE CONTRACTOR SHALL NOT PLACE FINAL ORDERS FOR THE ITEM UNTIL THE FOUNDATIONS HAVE BEEN INSTALLED, AT FINAL GRADE, AND THE CONTRACTOR HAS RECEIVED, FROM ENGINEER, WRITTEN NOTICE TO PROCEED WITH THE ORDERS FOR THE ITEM.

IF ANY FOUNDATION LOCATIONS MUST BE ADJUSTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND MAINTAINING AGENCY, WHO WILL DETERMINE THE REVISED LOCATION AND IF NEEDED, THE SUPPORT DESIGN. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR DETERMINING THE REVISED DESIGN. THE ENGINEER WILL INFORM THE CONTRACTOR OF ANY CHANGES NECESSARY AND AUTHORIZE THE CONTRACTOR TO ORDER THE SUPPORT.

THE CONTRACTOR SHALL, WHEN DEVELOPING THE PROGRESS SCHEDULE, AND THOSE OF SUBCONTRACTORS, ENSURE THAT THE FOUNDATIONS ARE INSTALLED AT THE EARLIEST TIME AS IS FEASIBLE AND PRACTICAL, AND SHALL INCLUDE SUFFICIENT TIME IN THE PROGRESS SCHEDULE FOR ORDERING, MANUFACTURING, DELIVERY, AND INSTALLATION OF THE SUPPORT ITEMS AFTER THE FOUNDATIONS ARE IN PLACE.

NO PAYMENTS FOR DELIVERED MATERIALS FOR THE FOUNDATION OR SUPPORT ITEMS SHALL BE MADE UNTIL THE FOUNDATIONS ARE IN PLACE, AND IF CHANGES IN THE DESIGN OF THIS ITEM ARE REQUIRED, NO PAYMENT SHALL BE MADE FOR THE ITEMS MANUFACTURED TO THE ORIGINAL DESIGN.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

819 RAILROAD PREEMPTION INTERFACE, EXISTING SIGNAL POLE SP-3

INSTALL AN INDICATOR PANEL PER CMS 819.09 ON EXISTING SIGNAL POLE SP-3. THE INDICATOR PANEL SHALL BE FACING THE TRAFFIC SIGNAL CABINET. MOUNT THE INDICATOR PANEL NO LESS THAN TEN FEET ABOVE THE ROADWAY LEVEL. ALSO, LOCATE THE INDICATORS SO AS TO PROVIDE MINIMAL VISIBILITY TO ROADWAY USERS AT OR APPROACHING THE INTERSECTION.

THE CONTRACTOR SHALL SCHEDULE A FINAL FIELD TEST, AFTER THE 10-DAY SIGNAL BURN TEST, WITH THE RAILROAD OWNER, OHIO RAIL DEVELOPMENT COMMISSION REPRESENTATIVE AND THE SIGNAL CONTRACTOR . THE FINAL FIELD TEST SHALL INCLUDE CHECKING THAT THE SIGNAL IS CONNECTED TO THE RAILROAD CONTROLLER AND OPERATES PER THE PLANS DURING A PREEMPTION CALL.

PAYMENT- ALL MATERIALS AND COST FOR THIS ITEM SHALL BE COMPLETE AND INCLUDED IN ITEM 819 - RAILROAD PREEMPTION INTERFACE, EXISTING SIGNAL POLE SP-3 1 EACH.

UNDERDRAINS FOR PULL BOXES

REFERENCE TRAFFIC SCD HL-30.11 FOR DETAILS ABOUT DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED 20 FEET. THE FOLLOWING ESTIMATED QUANTITY IS CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 611 4" CONDUIT, TYPE E 10 FT.

633 CONTROLLER ITEM MISC.: REPROGRAM SIGNAL CONTROLLERS

THIS ITEM SHALL CONSIST OF MAKING THE NECESSARY ADJUSTMENTS TO THE SIGNAL CONTROLLER HARDWARE AND SOFTWARE AT THE INTERSECTION OF MAPLE AVENUE AND ERIE BOULEVARD TO OPERATE AS DESCRIBED IN THESE PLANS.

THE SIGNAL HARDWARE AND SOFTWARE OF THE CONTROLLER SHALL BE MODIFIED TO INCORPORATE THE NEW SIGNAL HEADS, REMOVAL OF THE EASTBOUND AND SOUTHBOUND PEDESTRIAN HEADS AND PUSHBUTTONS, AND ADDITION OF NEW ADVANCED PREEMPTION FOR RAILROAD TO REPLACE ANY EXISTING RAILROAD PREEMPTION. THIS MAY INCLUDE INSTALLING NEW LOAD SWITCHES, WIRING THE CONTROLLER FOR NEW SIGNAL HEADS, MAKING ANY NECESSARY REVISIONS TO THE CONFLICT MONITOR, AND UPDATING THE TIMING AND OTHER CONTROLLER SETTINGS AS REQUIRED.

THE WORK DESCRIBED IN THIS NOTE AND THE REQUIRED TESTING PER CMS 633 AND 733 SHALL BE INCLUDED IN THE LUMP SUM BID ITEM 633 CONTROLLER ITEM MISC.: REPROGRAM SIGNAL CONTROLLERS.

633 CONTROLLER WORK PAD, AS PER PLAN

THE CONTROLLER WORK PAD IS INTENDED TO BE INSTALLED AT THE EXISTING CABINET TO PROVIDE A CLEAR SPACE FOR SIGNAL MAINTENANCE PERSONNEL TO ACCESS AND SERVICE THE CONTROLLER. IT SHALL BE INSTALLED AT THE EXISTING CABINET, AND ORIENTED ADJACENT TO THE CABINET DOOR. THE WORK PAD SHALL MEASURE 36" DEEP BY 70" WIDE

632 SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN

THE SIGNAL SUPPORT SHALL BE PAINTED "BLACK" TO MATCH EXISTING SIGNAL SUPPORTS. ALL MATERIALS AND WORK ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN PAYMENT WITH ITEM 632, SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN.

SHEET NO.	LOCATION	625	625	611	625	625	625	625	625				632	632	632	632	632	632	632	632	632	632	633	633	633		633		819	828	828													
		CONDUIT, 4", 725.052	TRENCH	4" CONDUIT, TYPE E	PULL BOX, 725.08, 24"	PULL BOX REMOVED	GROUND ROD	UNDERGROUND WARNING/MARKING TAPE	CONDUIT, JACKED OR DRILLED, 725.052, 4"				VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 3 SECTION, 12" LENS, 1-WAY	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 5 SECTION, 12" LENS, 1-WAY	COVERING OF VEHICULAR SIGNAL HEAD	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		SIGNAL SUPPORT FOUNDATION	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN		REMOVAL OF TRAFFIC SIGNAL INSTALLATION	SIGNALIZATION, MISC.;; PULL EXISTING SIGNAL CABLE AND RE-PULL	CONTROLLER WORK PAD, AS PER PLAN	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN		CONTROLLER ITEM, MISC.;; REPROGRAM SIGNAL CONTROLLER		RAILROAD PREEMPTION INTERFACE, EXISTING SIGNAL POLE SP-3	LED BLANKOUT SIGN, ("NO RIGHT TURN - TRAIN", 30"X24")	LED BLANKOUT SIGN, ("NO LEFT TURN - TRAIN", 30"X24")												
		FT	FT	FT	EACH	EACH	EACH	FT	FT				EACH	EACH	EACH	EACH	EACH	FT		EACH	EACH		EACH	LUMP	EACH	EACH		EACH		EACH	EACH	EACH												
18	SOUTHEAST CORNER					1																																						
19	SP-5													1	1	2																												
19	SP-5 TO PB-4																133																											
19	SP-4												1	1		2																												
19	SP-4 TO PB-4																81																											
19	PB-4 TO PB-1																154																											
19	SP-1												1	1		2																												
19	SP-1 TO PB-1																77																											
19	PB-1 TO PB-2								67								216						LS																					
19	SP-2						1						1	1		2			1	1																								
19	SP-2 TO PB-2	27	27					27									89																											
19	SP-3												1	1		2																												
19	SP-3 TO PB-2				1												79																											
19	PB-2 TO CONTROLLER																75																											
19	CONTROLLER																																											
19	CONTROLLER TO PB-3	8	8		1			8																		1	1																	
15,16	SIGNAL NOTES			10																				1					1		1													

SIGNAL SUBSUMMARY

DESIGN AGENCY
Mead & Hunt

CLIENT

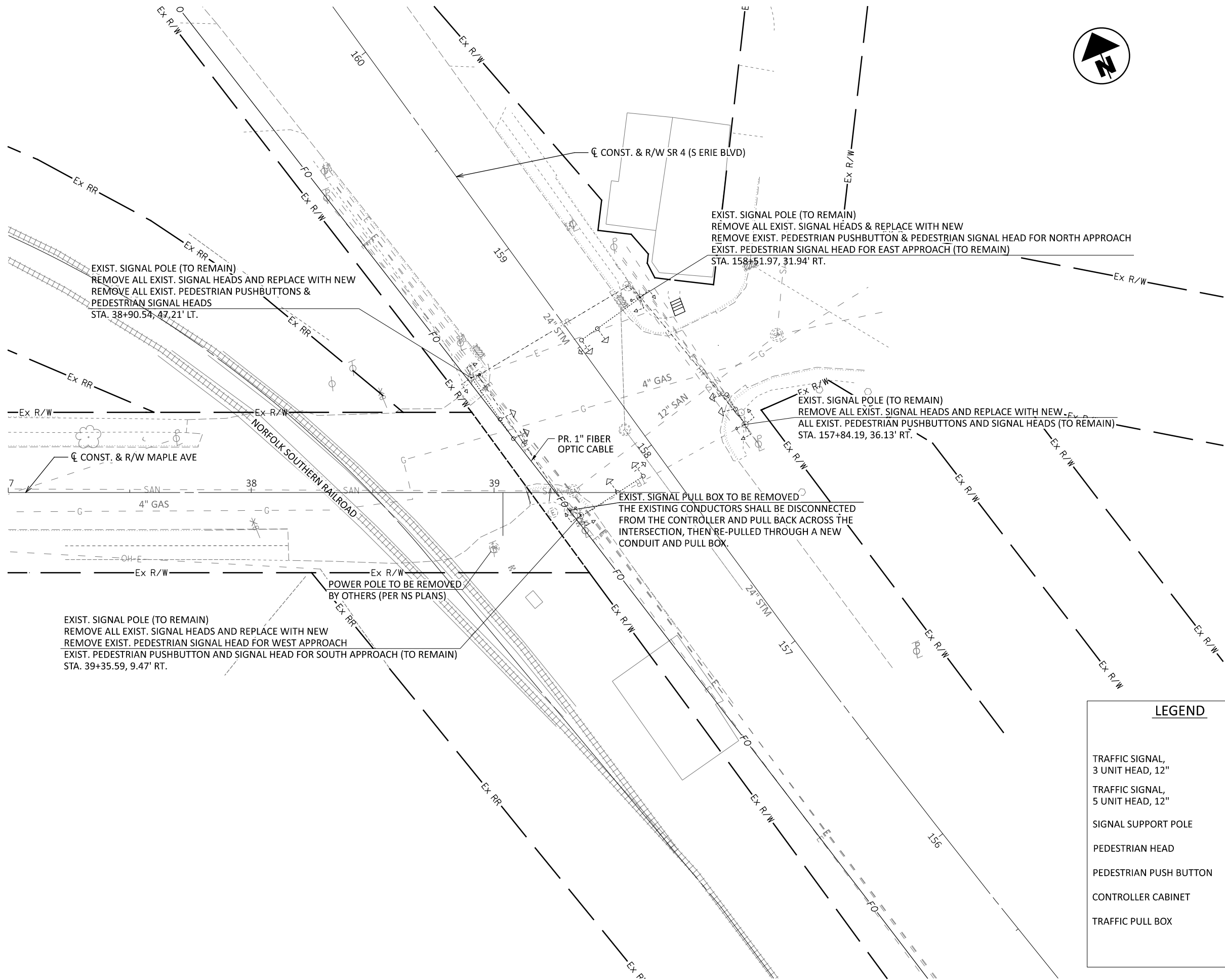

DESIGNER
TK

REVIEWER
MLV 11/05/24

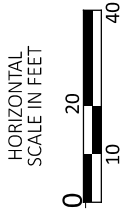
PROJECT ID
115046

SHEET
P.17

TOTAL
23



LEGEND	
EXIST	
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"	
TRAFFIC SIGNAL, 5 UNIT HEAD, 12"	
SIGNAL SUPPORT POLE	
PEDESTRIAN HEAD	
PEDESTRIAN PUSH BUTTON	
CONTROLLER CABINET	
TRAFFIC PULL BOX	

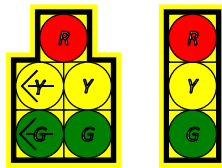


MAPLE AVE & ERIE BLVD
TRAFFIC SIGNAL REMOVAL PLAN



DESIGNER	MLV
REVIEWER	DLW
PROJECT ID	115046
SHEET	P.18
TOTAL	23

SIGNAL HEADS



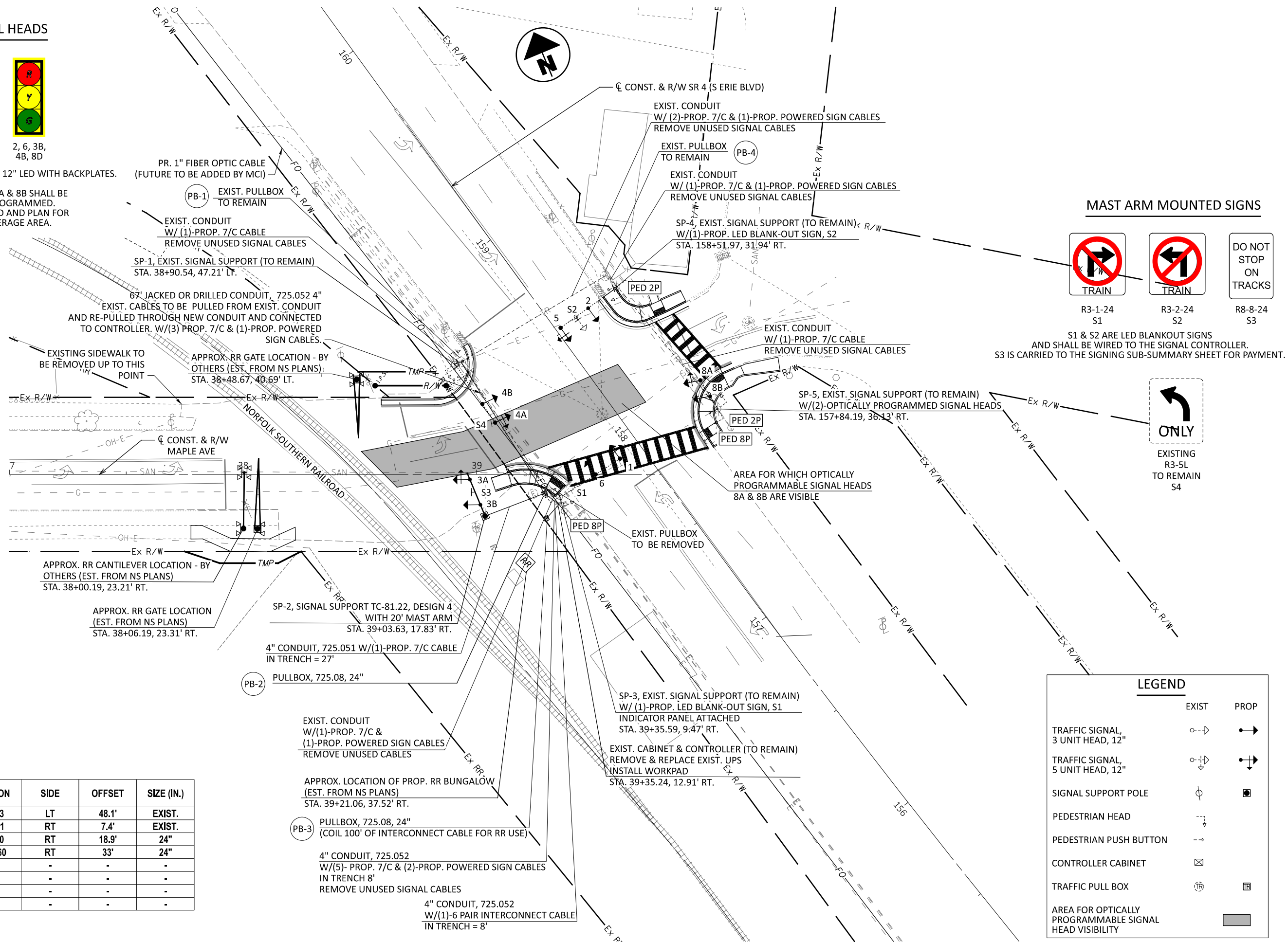
1, 5, 3A,
4A, 8A

2, 6, 3B,
4B, 8D

ALL SIGNAL HEADS SHALL BE 12" LED WITH BACKPLATES.

SIGNAL HEADS 8A & 8B SHALL BE
OPTICALLY PROGRAMMED.
REFER TO LEGEND AND PLAN FOR
SIGNAL COVERAGE AREA.EXISTING PEDESTRIAN
SIGNAL HEADS TO REMAIN

PED 2P PED 8P



PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB-1	38+93	LT	48.1'	EXIST.
PB-2	39+31	RT	7.4'	EXIST.
PB-3	39+30	RT	18.9'	24"
PB-4	158+60	RT	33'	24"
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

HORIZONTAL
SCALE IN FEET
0 10 20 40MAPLE AVE & ERIE BLVD
TRAFFIC SIGNAL PLANDESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER

MLV

REVIEWER

DLW 11/05/24

PROJECT ID

115046

SHEET

P.19

TOTAL

23

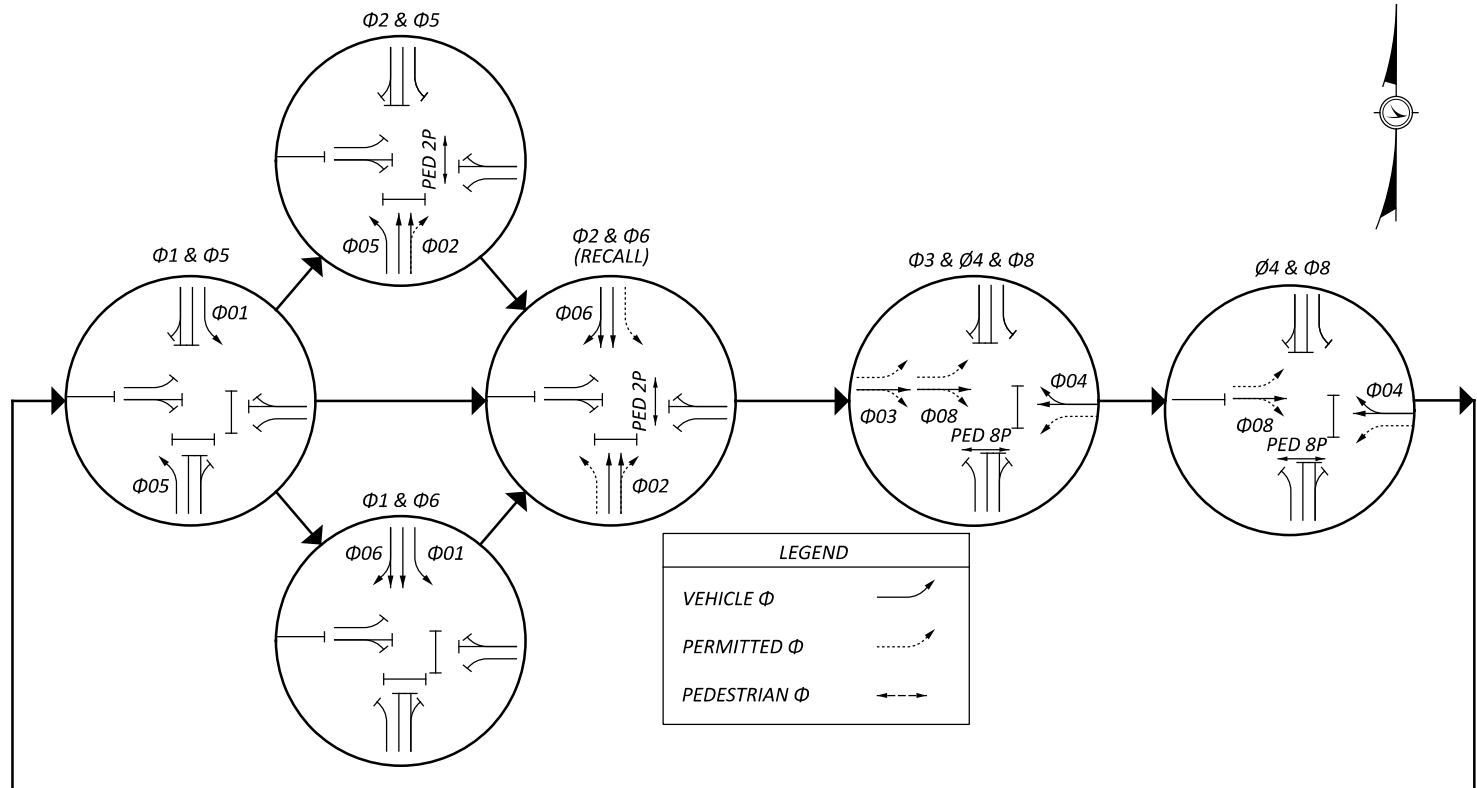
SIGNAL TIMING CHART

INTERSECTION: MAPLE AVENUE AND ERIE BOULEVARD										
MAINTAINING AGENCY: CITY OF HAMILTON										
<u>START UP</u> START IN: ALL RED TIME FOR FLASH OR ALL RED: 4 sec FIRST PHASE(S): 2+6 COLOR DISPLAYED: YELLOW			DUAL ENTRY: YES		PHASES:		2+6, 4+8			
			REST IN RED:		RING 1		-	RING 2		-
			OVERLAP				A	B	C	D
			PHASES				-	-	-	-
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			SB LT	NB	-	WB	NB LT	SB	-	EB
MINIMUM GREEN (INITIAL) (SEC.)			6	35	-	12	6	35	-	12
ADDED INITIAL *(SEC./ACTUATION)			-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)			-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)			2	-	-	2	2	-	-	2
TIME BEFORE REDUCTION *(SEC.)			-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)			-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)			-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)			9	45	-	35	9	45	-	35
MAXIMUM GREEN II (SEC.)			-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)			4	4	-	4	4	4	-	4
ALL RED CLEARANCE (SEC.)			1	2	-	1	1	2	-	1
WALK (SEC.)			-	7	-	-	-	-	-	7
PEDESTRIAN CLEARANCE (SEC.)			-	16	-	-	-	-	-	20
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	OFF	ON	-	OFF	
	MINIMUM (ON/OFF)	OFF	OFF	-	OFF	OFF	OFF	-	OFF	
	PEDESTRIAN (ON/OFF)	OFF	ON	-	OFF	OFF	OFF	-	ON	
MEMORY (ON/OFF)			OFF	OFF	-	OFF	OFF	OFF	-	OFF
*VOLUME DENSITY CONTROLS										

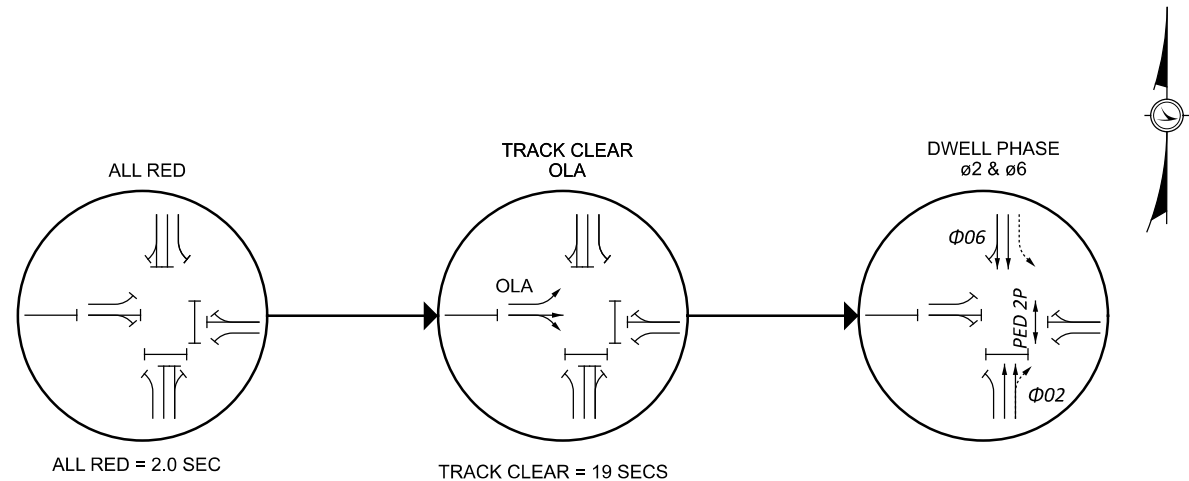
NOTES:

- SIGNAL TIMING SHALL MATCH EXISTING WITH TWO EXCEPTIONS - PEDESTRIAN TIMING SHOULD BE ELIMINATED ON THE APPROACHES WHERE EXISTING CROSSWALKS ARE TO BE REMOVED, AND RAILROAD PREEMPTION "TRACK CLEAR TIME" SHOULD MATCH THAT PROVIDED IN THESE PLANS. THE TIMINGS LISTED ABOVE ARE AS PROVIDED BY CITY OF HAMILTON IN DECEMBER 2021. ANY SIGNAL TIMING ADJUSTMENTS THAT HAVE BEEN MADE SINCE THIS DATE SUPERSEDE THE TIMINGS PROVIDED HERE.
- FOR PROTECTED/PERMISSIVE PHASES, IMPLEMENT CALL OMITS TO AVOID YELLOW BALL TRAP.
- ENABLE $\Phi 1$ AND $\Phi 5$ DETECTOR SWITCHING TO ALLOW $\Phi 1$ AND $\Phi 5$ TO EXTEND $\Phi 2$ and $\Phi 6$ WHEN ALLOCATED GREEN TIME FOR LEFT TURN PHASES ARE EXHAUSTED.
- COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL GO TO ZERO ON YELLOW PER OMUTCD FIGURE 4E-2.
- FOR ANY ENTRY TO FLASHING OPERATION, PROGRAMMING SHALL RUN MINOR STREET GREEN (TYP. $\Phi 3$ & $\Phi 4$ & $\Phi 8$), ALL-RED CLEARANCE, AND THEN FLASHING OPERATION.
- NEW PRE-SIGNAL (SP-2) WILL OPERATE UNDER $\Phi 3$ EXCEPT DURING PREEMPTION OPERATION. DURING PREEMPTION THE SIGNAL WILL DISPLAY ALL RED.

PHASING DIAGRAM



PREEMPTION PHASING DIAGRAM

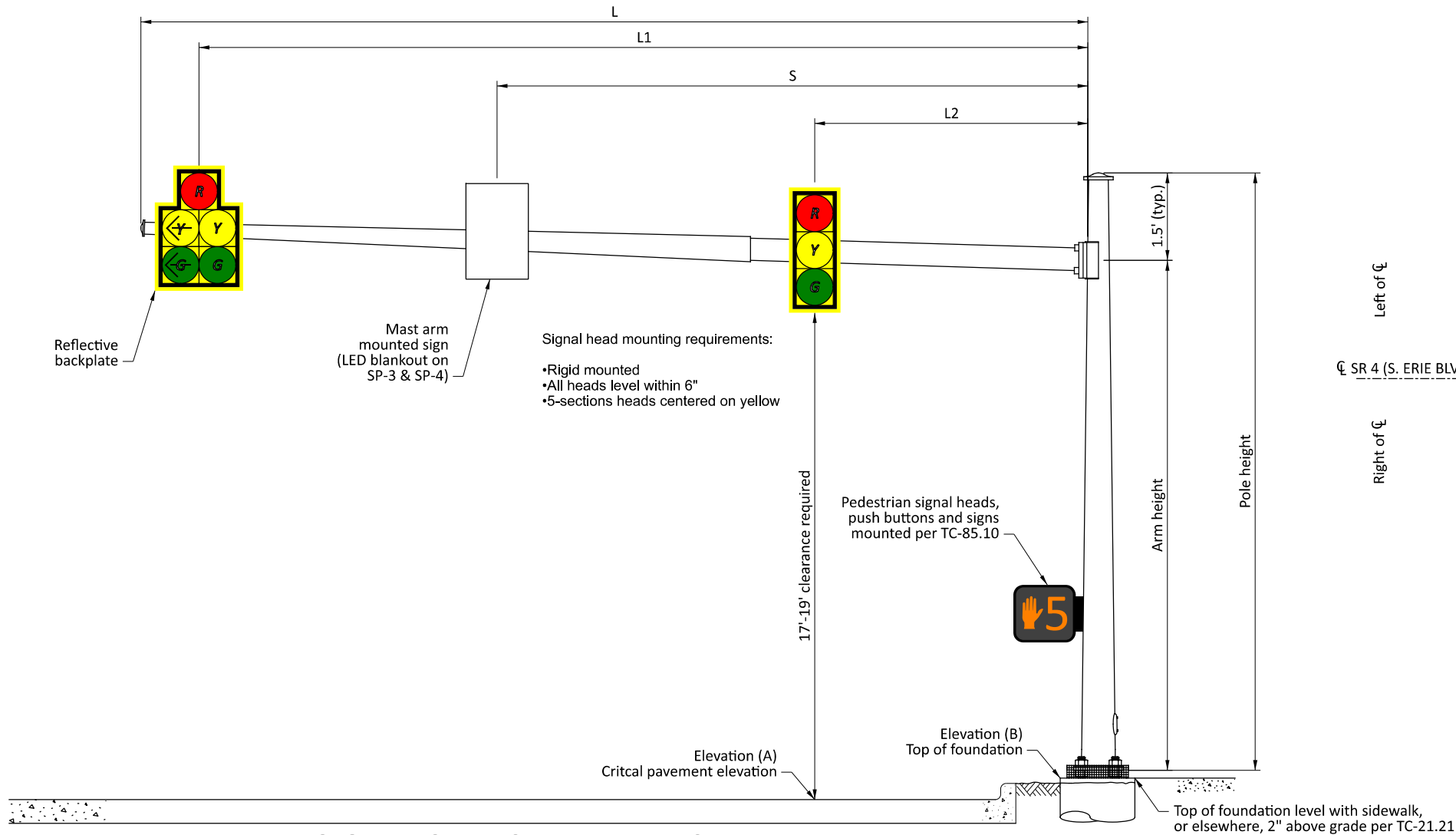


THE PRE-SIGNAL (3A & 3B) SHALL DISPLAY "ALL RED" DURING THE PREEMPTION OPERATION. PEDESTRIAN PHASES OPERATING DURING THE PREEMPTION CALL SHALL BE TERMINATED.

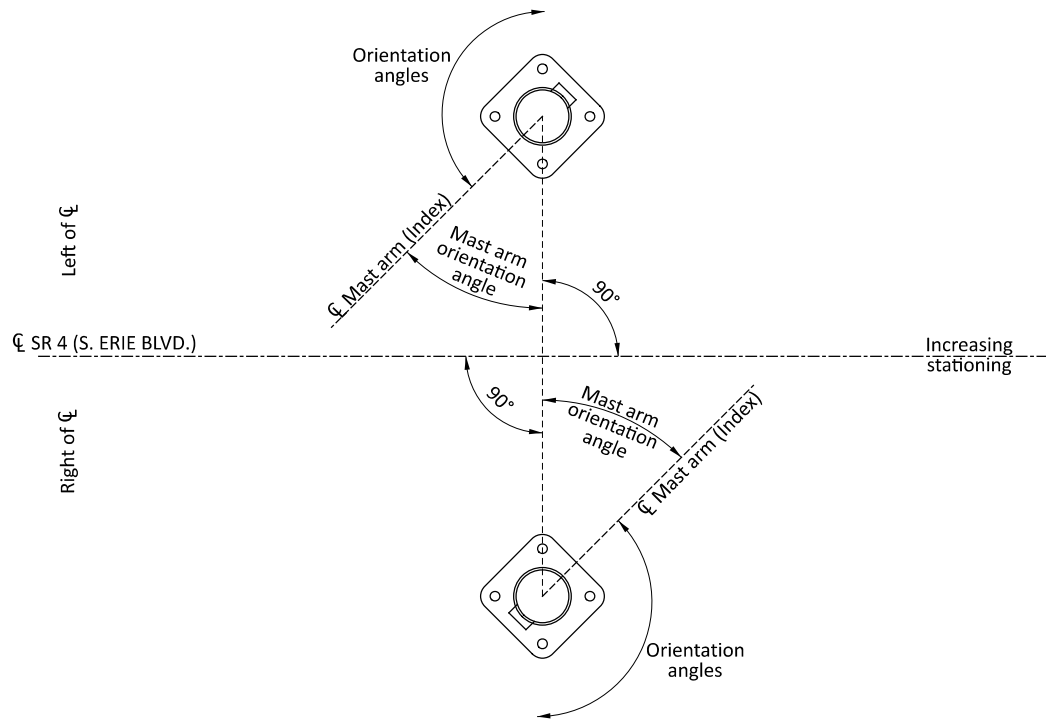
LEGEND	
VEHICLE Φ	
PERMITTED Φ	



LED BLANKOUT SIGNS S1 & S2
SHALL BE ACTIVE DURING
ALL PHASES OF PREEMPTION



SIGNAL SUPPORT ELEVATION



POLE ORIENTATION

MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS										ORIENTATION ANGLES FROM MAST ARM A									
			A (Pavt. Elev.)	B (Top of Found.)	DESIGN TYPE	DESIGN NO.*	POLE HEIGHT	ARM HEIGHT	L **	L1	L2		S		MAST ARM A ANGLE		PEDESTRIAN SIGNAL	PEDESTRIAN PUSHBUTTON	POWER SERVICE			HANDHOLE	CABLE ENTRANCE 12" FROM TOP	
SP-1	38+90.54	47.21' LT	Exist.	Exist.	TC-81.21	2 (Exist.)	Exist.	Exist.	31	30	20	-	30 (Exist. DND)	-	Exist.	-	-	-	Exist.	-	-	-	Exist.	Exist.
SP-2	39+03.63	17.83' RT	605.37	605.55	TC-81.22	4	22	20.5	19	16	4	-	10	-	284	-	-	-	-	-	-	180	-	
SP-3	39+35.59	9.47' RT	Exist.	Exist.	TC-81.21	2 (Exist.)	Exist.	Exist.	31	30	18	-	7	-	Exist.	-	Exist.	Exist.	-	-	-	Exist.	-	
SP-4	158+51.97	31.94' RT	Exist.	Exist.	TC-81.21	2 (Exist.)	Exist.	Exist.	30	29	14	-	21	-	Exist.	-	Exist.	-	-	-	-	Exist.	-	
SP-5	157+84.19	36.13' RT	Exist.	Exist.	TC-81.21	2 (Exist.)	Exist.	Exist.	15	14	6	-	-	-	Exist.	-	Exist.	Exist.	-	-	-	Exist.	-	

*Existing signal plans are not available. Existing pole design numbers assumed based on 15" measured bolt circle on all poles.
**Existing mast arms to remain. Lengths listed here are per field measurements.

NOTE:
EXISTING LOOP L8 AND L4 IS SHOWN AS EXISTING, BUT WERE NOT LOCATED IN THE FIELD. ACCORDING TO THE EXSTING TIMING PLANS THE SIGNAL IS SEMI-ACTUATED AND THEREFORE DETECTION WOULD BE PRESENT ON MAPLE AVENUE .

LS 12 & LS 13 ONLY ACTIVATED DURING THE DWELL OF PREEMPTION - LED GREEN/YELLOW BALL
LS 14 ONLY ACTIVATED DURING TRACK CLEAR OF THE PREEMPTION - LED GREEN/YELLOW ARROW & GREEN/YELLOW BALL
LS 15 ONLY ACTIVATED DURING ALL PHASES OF PREEMPTION - LED BLANKOUT SIGNS S1 & S2

TRAFFIC SIGNAL DETAILS

