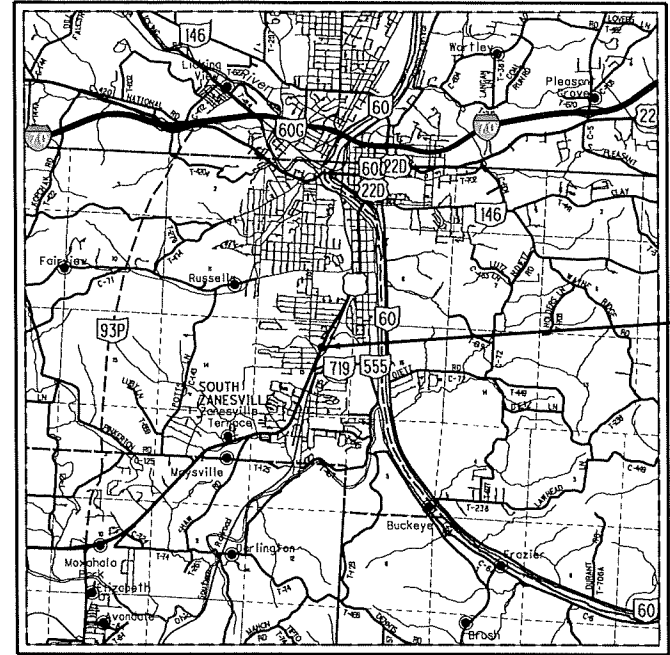


STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

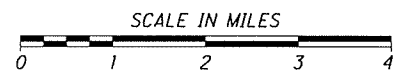
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CITY OF ZANESVILLE
SPRINGFIELD TOWNSHIP
MUSKINGUM COUNTY



LOCATION MAP

LATITUDE: 39°54'45" LONGITUDE: -82°00'54"



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

DESIGN DESIGNATION (TAKEN FROM MUS-22-8.71)

CURRENT ADT (2023)	7,600
DESIGN YEAR ADT (2043)	9,100
DESIGN HOURLY VOLUME (2043)	650
DIRECTIONAL DISTRIBUTION	0.54
TRUCKS (24 HOUR B&C)	6%
DESIGN SPEED	35 MPH
LEGAL SPEED	35 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
URBAN PRINCIPLE ARTERIAL	
NHS PROJECT	NO

DESIGN EXCEPTIONS

LANE WIDTH 8/02/2021

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:
OHIO DEPARTMENT OF
TRANSPORTATION DISTRICT 5

INDEX OF SHEETS:

TITLE SHEET	1
TYPICAL SECTION	2
GENERAL NOTES	3-
MAINTENANCE OF TRAFFIC	
GENERAL SUMMARY	
ROADWAY SUBSUMMARY	
PAVEMENT CALCULATIONS	
PLAN AND PROFILE	
CROSS SECTIONS	
CULVERT DETAILS	
TRAFFIC CONTROL	
RIGHT OF WAY	

PROJECT DESCRIPTION

REPLACE THE EXISTING SINGLE SLAB
BRIDGE WITH A PRECAST REINFORCED
CONCRETE BOX CULVERT.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.17 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	N/A ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A ACRES

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.

Stage 2 Complete 8 / 17 / 2021

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1-17-20	MT-95.40	1-17-20	TC-41.20	RM-4.2	10-24-19	
		MT-95.41	1-17-20	TC-61.30			
DM-1.1	7-17-20	MT-95.50	7-21-17	TC-65.10	1-17-14		
DM-4.3	1-15-16	MT-95.60	4-19-19	TC-65.11	7-21-17		
DM-4.4	1-15-16	MT-95.61	1-17-20				
		MT-96.20	7-15-16				
		MT-97.11	1-20-17				
		MT-99.20	4-19-19				
		MT-101.70	1-17-20				
		MT-101.75	1-17-20				
		MT-101.90	7-17-20				
		MT-102.10	1-17-20				
		MT-105.10	1-17-20				

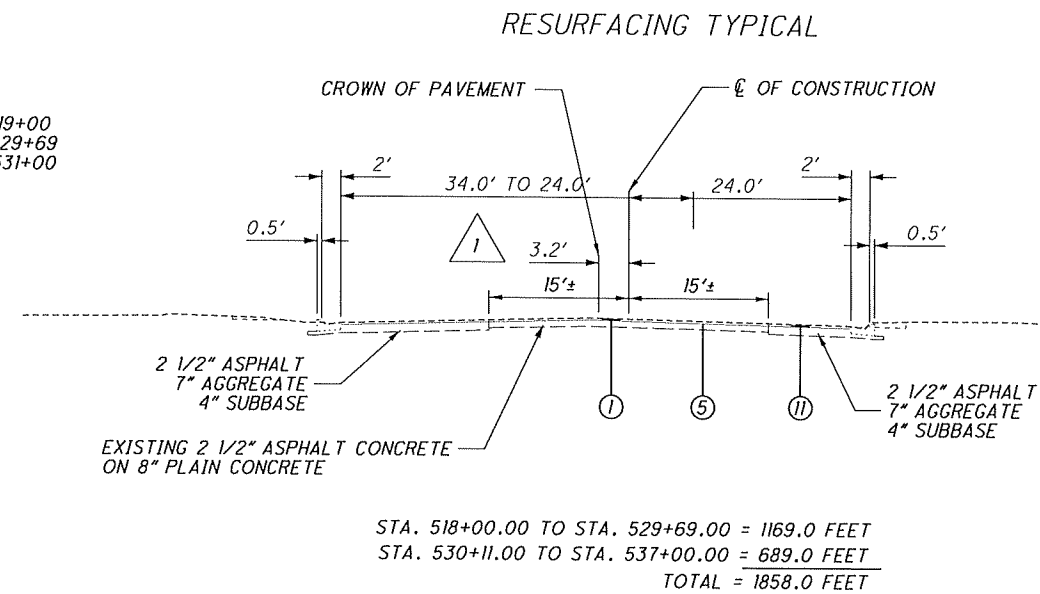
APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF
TRANSPORTATION

FEDERAL PROJECT NO.	E191207
PID NO.	8809
CONSTRUCTION PROJECT NO.	
RAILROAD INVOLVEMENT	NONE
MUS-22-9.95	
1 0	

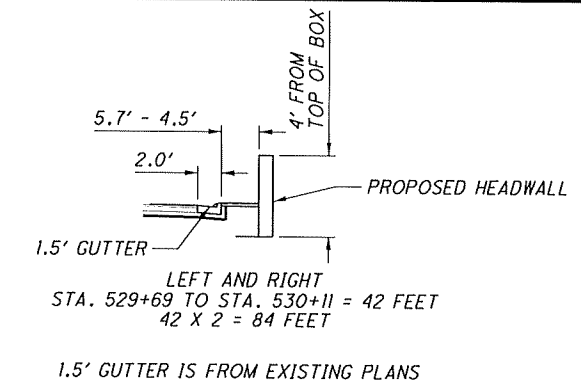
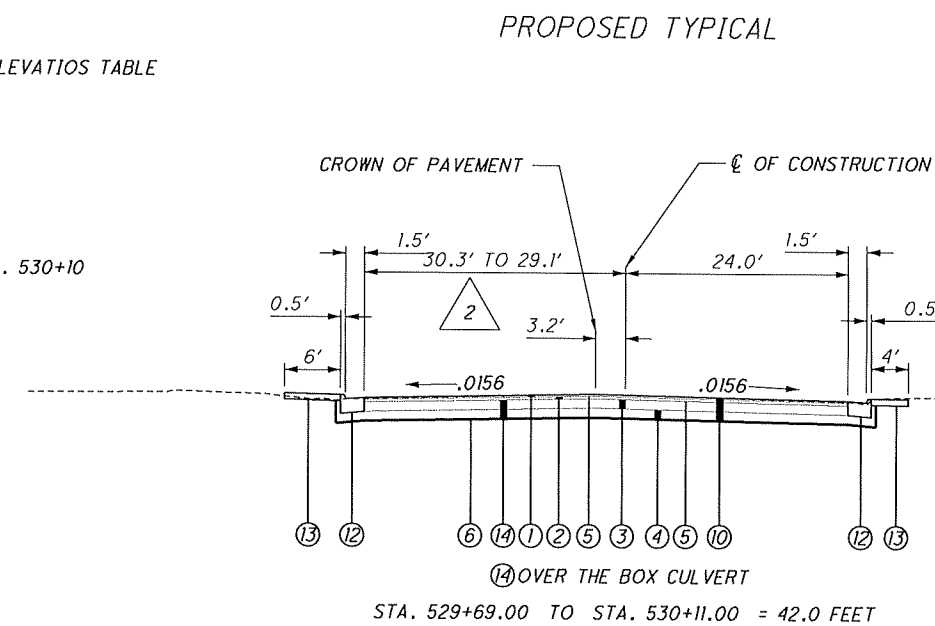
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- 1 PAVEMENT TAPERS FROM 31.5' AT STA. 518+00 TO 34.0' AT STA. 519+00
PAVEMENT TAPERS FROM 34.0' AT STA. 528+10 TO 28.4' AT STA. 529+69
PAVEMENT TAPERS FROM 27.0' AT STA. 530+10 TO 24.0' AT STA. 531+00



ADD PAVEMENT ELEVATIOS TABLE

- 2 PAVEMENT TAPERS FROM 28.4' AT STA. 529+69 TO 27.0' AT STA. 530+10



AT THE LOCATION OF THE BOX CULVERT,
301 WILL BE PLACED DIRECTLY ON THE BOX.
TYPE 3 WATERPROOFING TO BE USED.

- 1 ITEM 441 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG64-22
2 ITEM 441 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
3 ITEM 301 6" ASPHALT CONCRETE BASE, PG64-22
4 ITEM 304 6" AGGREGATE BASE
5 ITEM 407 NON-TRACKING TACK COAT
6 ITEM 204 SUBGRADE COMPACTION
7 ITEM 659 SEEDING AND MULCHING, CLASS 2

LEGEND

- 8 ITEM 203 EMBANKMENT
9 ITEM 606 GUARDRAIL, TYPE MGS (WILL BE SHOWN IF NOT USING HEADWALL)
10 ITEM 202 PAVEMENT REMOVED
11 ITEM 254 PAVEMENT PLANING (1 1/4" DEEP)
12 ITEM 609 COMBINATION CURB AND GUTTER, TYPE 2
13 ITEM 608 4" CONCRETE WALK
14 ITEM 301 ASPHALT CONCRETE BASE, PG64-22 (VARIABLE THICKNESS)

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ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UNDERGROUND UTILITIES

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.

UTILITIES

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

AMERICAN ELECTRIC POWER COMPANY (DISTRIBUTION)
77 HOPEWELL DRIVE
HEATH, OHIO 43056
ATTN: PAUL PAXTON
740-348-5322
ptpaxton@aep.com

AT&T OHIO
160 NORTH SIXTH STREET
ZANESVILLE, OHIO 43701
ATTN: BARRETT TAMASOVICH
740-454-3552
BT2178@att.com

COLUMBIA GAS OF OHIO
2429 NORTH LINDEN AVENUE
ZANESVILLE, OHIO 43701
ASSOCIATE FIELD ENGINEER I
ATTN: SCOTT BURNHAM
740-647-9338
sburnham@nisource.com

CITY OF ZANESVILLE WATER
14 BUCKEYE DRIVE
ZANESVILLE, OHIO 43701
ATTN: PAUL MILLS
740-455-0631 EXT. 2
Paul.Mills@coz.org

CITY OF ZANESVILLE
DIVISION OF WASTE WATER
1730 MOXAHALA AVENUE
ZANESVILLE, OHIO 43701
ATTN: SCOTT BROWN
740-455-0641
Scott.Brown@coz.org

SPECTRUM CABLE TV
4547 NORTH LEEDOM RD.
CHANDLERSVILLE, OHIO 43727
ATTN: BRAD ST. CLAIR
740-303-3100
740-819-3083
Bradley.stclair@charter.com

CONTRACTOR'S USE OF ODOT RIGHT-OF-WAY

THE CONTRACTOR IS REQUIRED TO HIRE A CULTURAL RESOURCE ENVIRONMENTAL CONSULTANT PER CONSTRUCTION AND MATERIAL SPECIFICATIONS IN 105.16. PERFORM A CULTURAL RESOURCE INVESTIGATION FOR ALL WASTE AND BORROW AREAS OFF THE RIGHT-OF-WAY.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

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.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CONTROL POINT LIST

NAME-----US STATE PLANE 1983
DATUM-----NAD 1983 (CONUS)
ZONE-----OHIO SOUTH 3402
GEOID-----GEOID12B (CONUS)
VERTICAL DATUM---NAVD 88

SV1 TOP OF 1 INCH REBAR W/ALUMINUM O.D.O.T CAP;
37.07 FEET LEFT OF EXISTING S.R. 22
CENTERLINE STATION 530+22.08
ELEV. = 732.579
NORTHING - 697,277.663
EASTING - 2,104,603.675

SV2 TOP OF 1 INCH REBAR W/ALUMINUM O.D.O.T CAP;
53.28 FEET RIGHT OF EXISTING S.R. 22
CENTERLINE STATION 529+79.66
ELEV. = 731.313
NORTHING - 697,203.415
EASTING - 2,104,670.378

OEPA NOTIFICATION OF DEMOLITION AND RENOVATON

AN ASBESTOS SURVEY FOR THE MUS-22-9.95 BRIDGE SCHEDULED FOR DEMOLITION WORK WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. A COPY OF THE ASBESTOS SURVEY REPORT FOR THE BRIDGE HAS BEEN INCLUDED IN THE PLAN PACKAGE FOR THIS PROJECT. THE ASBESTOS SURVEY REPORT DID NOT IDENTIFY THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIALS. (THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE (OAC) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.)

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED BY THE ASBESTOS HAZARD EVALUATION SPECIALIST, HAS BEEN INCLUDED AT THE END OF THE ASBESTOS SURVEY REPORT. THE CONTRACTOR SHALL COMPLETE AND SIGN THE FORMS AND SUBMIT IT TO:

OHIO EPA, SEDO
2195 FRONT STREET
LOGAN OHIO 43138
ATTN: KRISTIN PARRISH
(740) 380-5267

AT LEAST 10 WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION WORK, THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED AND SIGNED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORMS SHALL INCLUDE AT A MINIMUM: 1) THE ODOT PROJECT NUMBER, 2) THE CONTRACTORS NAME, ADDRESS AND TELEPHONE NUMBER, 3) THE SCHEDULED DATES FOR THE START AND COMPLETION OF BRIDGE DEMOLITION WORK.

BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORMS. PAYMENTS FOR THIS WORK SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED.

ITEM 621 RAISED PAVEMENT MARKER REMOVED

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS TO REMOVE RAISED PAVEMENT MARKERS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF THE RAISED PAVEMENT MARKERS AS PER ITEM 621.

ITEM 621 RAISED PAVEMENT MARKER REMOVED
QUANTITY CARRIED TO GENERAL SUMMARY.

150 EACH

ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE DEPARTMENT:

THE CONTRACTOR SHALL PROVIDE AS-BUILT DATA FOR THE SPECIFIED COMPLETED CONSTRUCTION ITEMS IN OHIO STATE PLANE COORDINATES (GRID). THE CONSTRUCTION ITEMS SHALL BE LOCATED AS PER THE SURVEY FEATURE CODE LIST FOUND ON THE OHIO DEPARTMENT OF TRANSPORTATION OFFICE OF CADD & MAPPING SERVICES WEBSITE. AN EMAIL CONTAINING A COMMA DELIMITED ASCII FILE AND A SURVEYOR'S CERTIFICATION SHALL BE DELIVERED TO Cody.Gierhart@dot.ohio.gov AFTER ALL INFORMATION HAS BEEN COLLECTED. THE ASCII FILE SHALL INCLUDE A HEADER CONTAINING NAME OF SURVEYOR, DATE(S) OF COLLECTION, HORIZONTAL DATUM (I.E. NAD83 (2011), OHIO STATE PLANE COORDINATESYSTEM NORTH OR SOUTH), VERTICAL DATUM (I.E. NAVD 88, GEOID12A) AND METHOD OF COLLECTION (I.E. OHIO VRS, GPS RTK, TOTAL STATION, ETC.) AND BE IN A TABLE FORMAS FOLLOWS:

POINT NUMBER, NORTHING, EASTING, ELEVATION, FEATURE CODE, DESCRIPTION

BELOW IS A LIST OF THE ITEMS THE CONTRACTOR IS REQUIRED TO PROVIDE.
- CULVERT

THE ABOVE ITEM SHALL BE COLLECTED USING SURVEY GRADE EQUIPMENT MEETING THE REQUIREMENTS OF SECTION 400 IN THE OHIO DEPARTMENT OF TRANSPORTATION SURVEY & MAPPING SPECIFICATIONS MANUAL.

ALL COST ASSOCIATED WITH OBTAINING THE INFORMATION LISTED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN.

IN ADDITION TO THE ABOVE REQUIREMENTS, THE LOCATION OF THE PROPOSED CULVERT INSTALLATION SHALL BE STAKED BY THE CONTRACTOR PRIOR TO INSTALLATION ON THIS PROJECT. THE CONTRACTOR IS REQUIRED TO STAKE THE LOCATION TO INDICATE THE INLET/OUTLET ELEVATION/LOCATION FOR THE CULVERT. THIS WILL ALSO INCLUDE INDICATING THE TYPE OF END TREATMENT TO BE INSTALLED AT EACH LOCATION. THE CONTRACTOR SHALL STAKE EACH LOCATION AT LEAST TWO (2) DAYS PRIOR TO INSTALLATION.

PAYMENT FOR STAKING WILL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PERFORM THE WORK AS DESCRIBED ABOVE AND WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO PERFORM THE WORK AS DESCRIBED ABOVE.

ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN
LUMP

GENERAL NOTES

MUS-22-9.95

4
47

CALCULATED
RJG
CHECKED
HAG

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 6II CONDUIT ITEM.

IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET END.

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH
AND CARE OF PERMANENT SEEDED AREAS AS PER ITEM 659:

ITEM 659 COMMERCIAL FERTILIZER 0.X TON
XXX TON PER 7,410 SQ. YD. OF THE PERMANENT SEEDED AREA
XXX SQ.YD. ÷ 7,410 = 0.XX

ITEM 659 WATER X.0 M. GAL.
0.0054 M. GAL PER SQ. YD. OF THE PERMANENT SEEDED AREA
XXX SQ.YD. x 0.0054 = X.X

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 CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

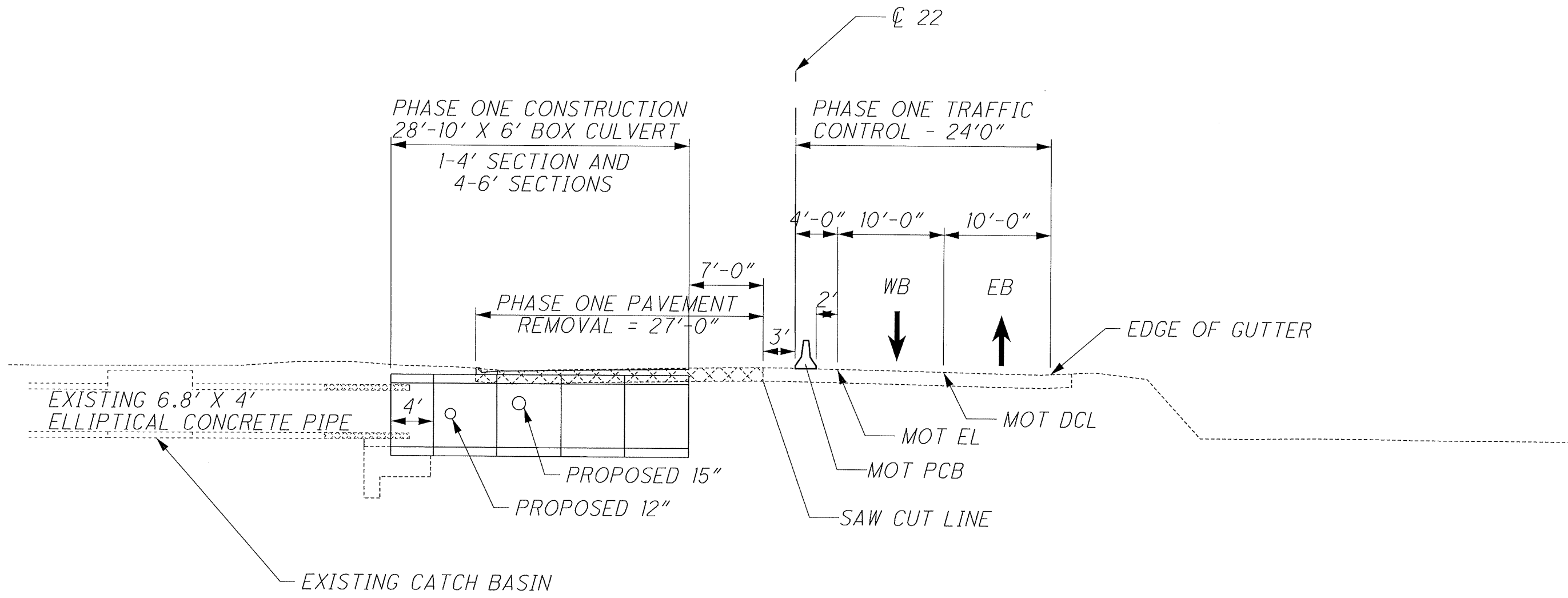
EXCAVATION AND EMBANKMENT QUANTITIES CARRIED FROM SHEET XX.

AN ESTIMATED QUANTITY FOR A 4" LAYER OF TOPSOIL HAS BEEN PROVIDED.
SEE CROSS SECTIONS FOR LOCATIONS.

ITEM 653 TOPSOIL FURNISHED AND PLACED 26 CU. YDS.
QUANTITY CARRIED FROM SHEET 34.

MOT PCB - MAINTENANCE OF TRAFFIC PORTABLE
 CONCRETE BARRIER (32")
 MOT EL - MAINTENANCE OF TRAFFIC EDGE LINE
 MOT DCL - MAINTENANCE OF TRAFFIC DOUBLE CENTER LINE
 [Hatched Box] - AREA OF REMOVAL

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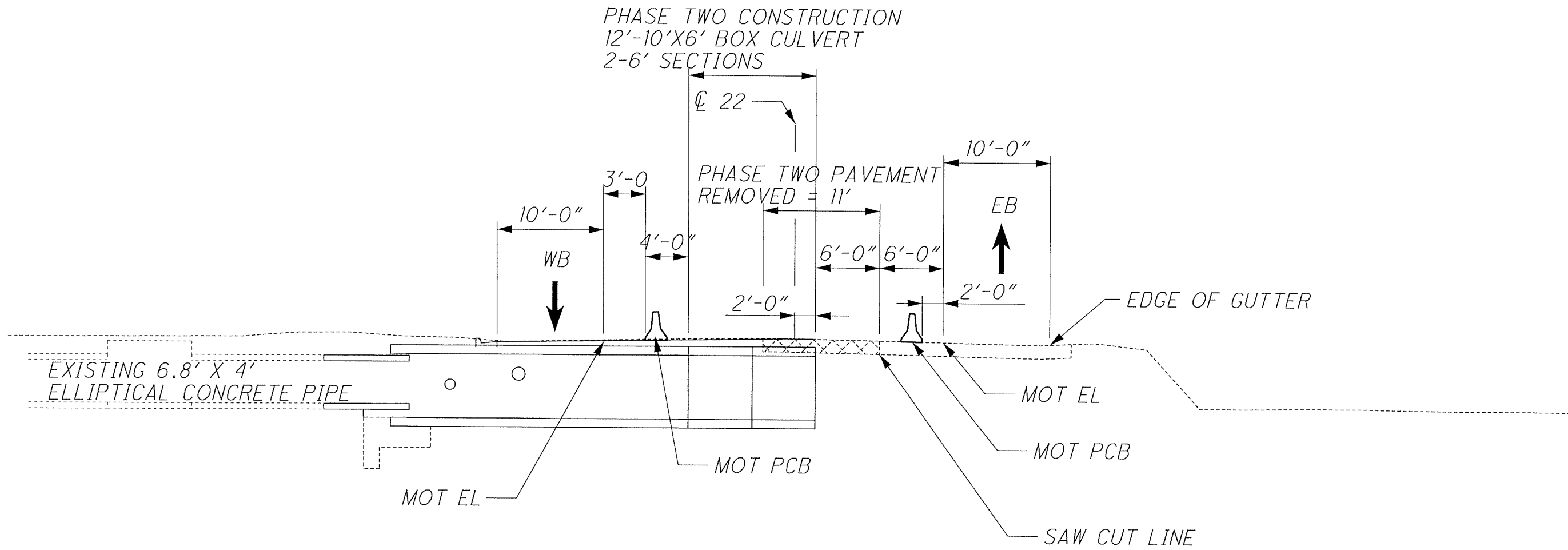
PHASE ONE MAINTENANCE OF TRAFFIC

MOT PCB - MAINTENANCE OF TRAFFIC PORTABLE
CONCRETE BARRIER (32")

MOT EL - MAINTENANCE OF TRAFFIC EDGE LINE

MOT DCL - MAINTENANCE OF TRAFFIC DOUBLE CENTER LINE

 - AREA OF REMOVAL



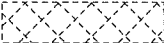
PHASE TWO MAINTENANCE OF TRAFFIC

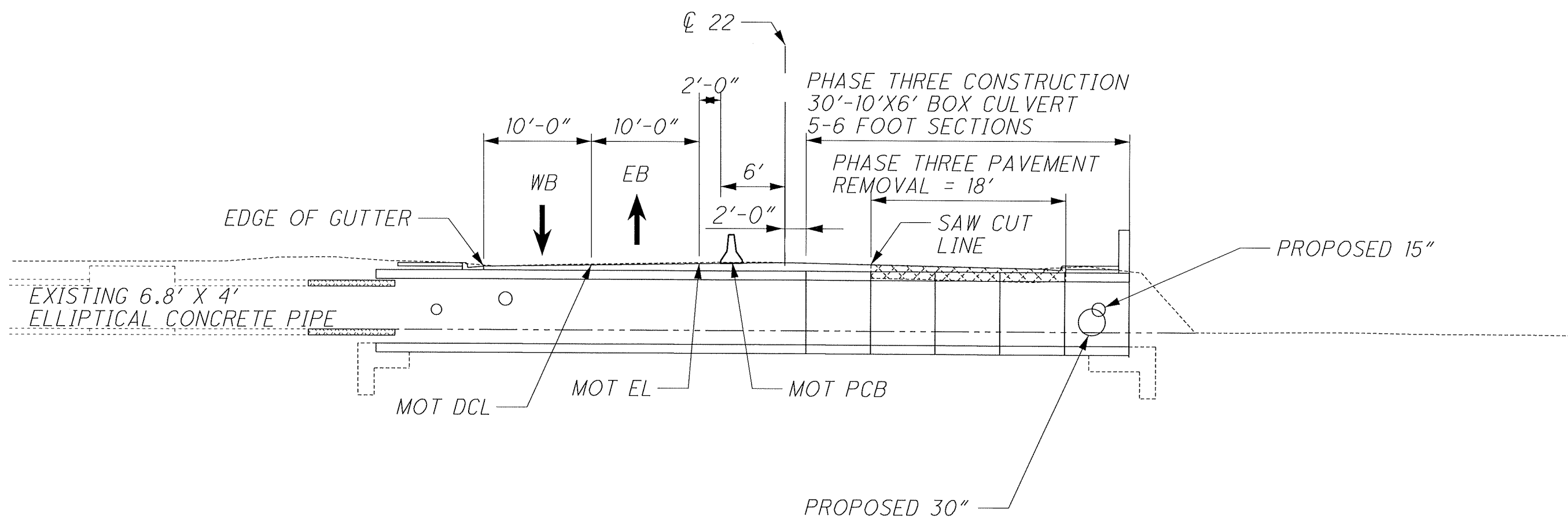
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MOT PCB - MAINTENANCE OF TRAFFIC PORTABLE
CONCRETE BARRIER (32")

MOT EL - MAINTENANCE OF TRAFFIC EDGE LINE

MOT DCL - MAINTENANCE OF TRAFFIC DOUBLE CENTER LINE

 - AREA OF REMOVAL



PHASE THREE MAINTENANCE OF TRAFFIC

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ITEM 614 MAINTAINING TRAFFIC

TRAFFIC SHALL BE MAINTAINED AS PER THE DETAIL SHEETS AND SPECIFICATIONS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE OPERATIONS SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS LATEST REVISION. IN ADDITION, THE FOLLOWING REQUIREMENTS SHALL APPLY:

THE CONTRACTOR SHALL SUBMIT, IN WRITING A SCHEDULE OF OPERATIONS TO THE DISTRICT DEPUTY DIRECTOR AND RECEIVE APPROVAL BEFORE WORK IS STARTED ON THE PROJECT.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR REPLACING NECESSARY TRAFFIC CONTROL DEVICES IMMEDIATELY, AS PER 614.03.

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR THE PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATON OF ALL REQUIRED TRAFFIC CONTROL DEVICES SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

DRUMS SHALL BE PROPERLY REFELCTORIZED (HIGH INTENSITY, FLORESCENT SHEETING) PLASTIC DRUMS AND WEIGHTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL INVOLVED IN PLACING AND REMOVING ITEM 622 PORTABLE CONCRETE BARRIER, 32".

THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.

TEMPORARY FEATHERS USING ITEM 441 WILL BE REQUIRED AT ANY LOCATION DESIGNATED BY THE PROJECT ENGINEER. THEY SHALL BE INSTALLED ACCORDING TO BP-3.1 AND REMOVED WHEN NO LONGER REQUIRED.

THE PLANS INDICATE THE MINIMUM SIGNAGE WHICH MUST BE INSTALLED AND/OR MAINTAINED DURING ALL PHASES OF CONSTRUCTION.

EXISITING SIGNS OR CONTRACTOR SUPPLIED SIGNS SHALL BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION.

ANY CONFLICTING SIGNS AND PAVEMENT MARKINGS WHETHER INSIDE OR OUTSIDE THE WORK LIMITS SHALL BE REMOVED OR COVERED AND TEMPORARY SIGNS AND MARKINGS ERECTED AND PLACED WHEN APPLICABLE BY THE CONTRACTOR.

THE ENGINEER SHALL RECORD INSTALLATION AND REMOVAL OF PROPOSED SIGNS, COVERED OR REMOVED AND UNCOVERED OR REERECTED SIGNS IN THE PROJECT DIARY.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 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 AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC, UNLESS ITEMIZED SEPARATELY IN THE PLAN.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) AS PER CMS 2016 501.05.B.2.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 614 MAINTAINING TRAFFIC LS

ITEM 614 MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES ON S.R. 16 SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANE(S) ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY (THANKSGIVING ONLY)	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$150 FOR EACH MINUTE THE ABOVE DESCRIBED LANE RESTRICTIONS ARE VIOLATED.

MAINTAINING EXISTING DRIVES

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENCE AND COMMERCIAL DRIVES TO THE FULLEST EXTENT POSSIBLE. IT IS UNDERSTOOD THAT FOR SHORT PERIODS OF TIME, THE FULL ACCESS TO A DRIVEWAY MAY NOT BE POSSIBLE. THE CONTRACTOR SHALL MAKE ACCOMODATIONS TO THE RESIDENCE/ BUSINESS OWNER SO THAT DURING THESE SHORT INTERVALS, THE HOME OR BUSINESS OWNER CAN STILL HAVE ACCESS TO PARK NEAR THEIR RESIDENCE OR BUSINESS.

BEFORE ACCESS TO A DRIVEWAY IS INTERRUPTED, THE CONTRACTOR SHALL GIVE PRIOR NOTICE TO THE OCCUPANT OF THE PROPERTY 72 HOURS BEFORE THE WORK IS STARTED.

THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT U.S. MAIL OR ANY OTHER DELIVERY WITHIN THE PROJECT LIMITS IS NOT DISRUPTED BY CONSTRUCTION OPERATIONS.

ITEM 614 - BUSINESS ENTRANCE (M4-H15) SIGN, AS PER PLAN

THE BUSINESS ENTRANCE (M4-H15) SIGN SHOULD BE PROVIDED AT EACH TEMPORARILY RELOCATED COMMERCIAL DRIVEWAY FOR WHICH THE RELOCATION IS NOT OBVIOUS TO THE MOTORIST. THE PROJECT ENGINEER SHALL DETERMINE WHETHER OR NOT THE DRIVEWAY RELOCATION IS, OR IS NOT, OBVIOUS AND WHETHER OR NOT A SIGN SHOULD BE PROVIDED. ONLY ONE SIGN PER BUSINESS SHALL BE PERMITTED. THE SIGN SHALL BE 36 INCH X 48 INCH IN SIZE WITH TYPE G OR TYPE H ORANGE RETROREFLECTIVE SHEETING. THE SIGN LEGEND SHALL BE PLACED ON BOTH SIDES OF THE SIGN (BACK TO BACK). THE SIGN SHALL HAVE THE STANDARD M4-H15 LEGEND WITH THE WORD "BUSINESS" ON THE TOP LINE, EXCEPT UNDER UNUSUAL CIRCUMSTANCES WHERE IT MAY NOT BE INTUITIVE THAT A DRIVEWAY SERVES A SPECIFIC BUSINESS. IN SUCH UNUSUAL CASES, THE ACTUAL BUSINESS NAME MAY BE SUBSTITUTED FOR THE WORD "BUSINESS".

THE SIGN SHALL BE MOUNTED ON TWO #3 POSTS OR ON TEMPORARY POSTS IN ACCORDANCE WITH SCD MT-105.10 AND IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION. THE SIGN SHALL BE CLEARLY VISIBLE AND SHALL CLEARLY IDENTIFY THE LOCATION OF THE DRIVEWAY. THE SIGN SHOULD BE POSITIONED AT 90 DEGREES TO THE DIRECTION(S) OF TRAFFIC. THE SIGN MAY NEED TO BE MOVED FOR EACH PHASE OF THE MAINTENANCE OF TRAFFIC OPERATIONS.

PAYMENT FOR ALL COSTS ASSOCIATED WITH MANUFACTURING, MOUNTING, RELOCATING, AND REMOVING THE SIGN, INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT SHALL BE INCLUDED IN THE CONTRACT PRICE PER EACH FOR ITEM 614-BUSINESS ENTRANCE SIGN.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS ITEM:

ITEM 614, BUSINESS ENTRANCE SIGN 6 EACH

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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 FLAGGER BE USED.

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

- A. DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- B. DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL 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)
- C. 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)

IN GENERAL, LEOs SHOULD BE POSOTIONED 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 APPOROPRIATE.

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.

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. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. 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 QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 30 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 INLCUDED WITH THE UNIT PRICE BID FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODCUTS WEBPAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST OF THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

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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 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 TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
ROAD CLOSURES	>= 2 WEEKS	21 DAYS
	> 12 HOURS & < 2 WEEKS	14 DAYS
	<= 12 HOURS	4 DAYS
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 DAYS
	< 2 WEEKS	5 DAYS
START OF CONST. & TRAFFIC PATTERN CHANGE	N/A	14 DAYS

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

DELINEATION OF PORTABLE BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB CONCRETE BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS: ALONG TAPERS AND TRANSITION AREAS; OR ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, 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.

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 2 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 PRE-CONSTRUCTION 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 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 2 SNMT

ASSUMING 2 PCMS FOR 1 MONTH

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ADVANCE SIGNING

ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE. ADVANCE SIGNING SHALL CONFORM TO THE MT SERIES OF STANDARD DRAWINGS. ADDITIONAL SIGNS MAY BE REQUIRED FOR MAJOR CLOSURES AT THE DISCRETION OF THE ENGINEER. THESE SIGNS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

OVERLAYING EXISTING SIGNS

MAINTENANCE OF TRAFFIC PLANS SHALL INCLUDE OVERLAYING EXISTING ROADWAY SIGNS THAT CONFLICT WITH MAINTENANCE OF TRAFFIC SIGNS IN WORK ZONES. DRAWINGS OF OVERLAYS SHALL BE SUBMITTED TO THE ENGINEER FOR APPORVAL.

PAYMENT FOR OVERLAYING EXISTING SIGNS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

SIGNS/SIGN SUPPORTS

TEMPORARY SIGN INSTALLATIONS SHALL BE IN ACCORDANCE WITH PLAN: CONFORMANCE OF WORK ZONE DEVICES WITH NCHRP 350. TEMPORARY SIGN SUPPORTS SHALL BE IN ACCORDANCE WITH SCD MT-105.10.

PAYMENT FOR TEMPORARY SIGNS/SIGN SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

COVERING SIGNS

WHERE THE PLANS CALL FOR OR AS DIRECTED BY THE PROJECT ENGINEER FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE IS STRICTLY PROHIBITED.

COST FOR THE WORK AS DESCRIBED ABOVE SHALL BE PAID WITH THE LUMP SUM CONTRACT PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

ITEM 614 REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614 REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 REPLACEMENT DRUM 10 EACH

ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES)

A MINIMUM OF ___ LANE(S) OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, ITEM 502 STRUCTURE FOR MAINTAINING TRAFFIC, ITEM 615 PAVEMENT FOR MAIN-TAINING TRAFFIC, ITEM 615 ROADS FOR MAINTAINING TRAFFIC, AND TEMPORARY SURFACES USING ITEMS 410 AND 614.

ITEM 614, MAINTAINING TRAFFIC (LANE CLOSURE/REDUCTION REQUIRED)

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.

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.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) _____ OF THE PLAN. 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.

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 _____ HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.)

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN CONTINUED

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.

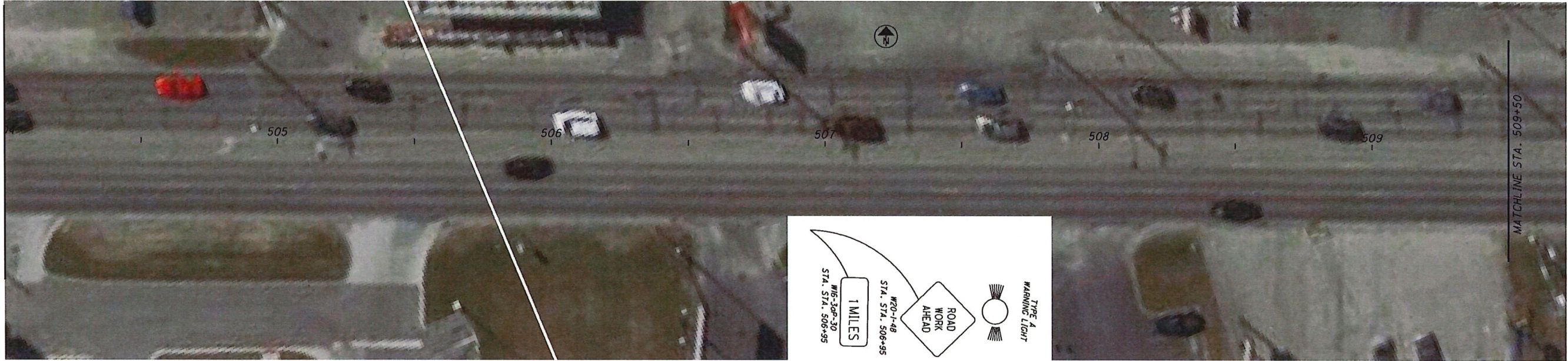
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THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

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 _____ SIGN MONTH ASSUMING _____ PCMS SIGN(S) FOR _____ MONTH(S)

MATCHLINE STA. 504+00



MATCHLINE STA. 509+50

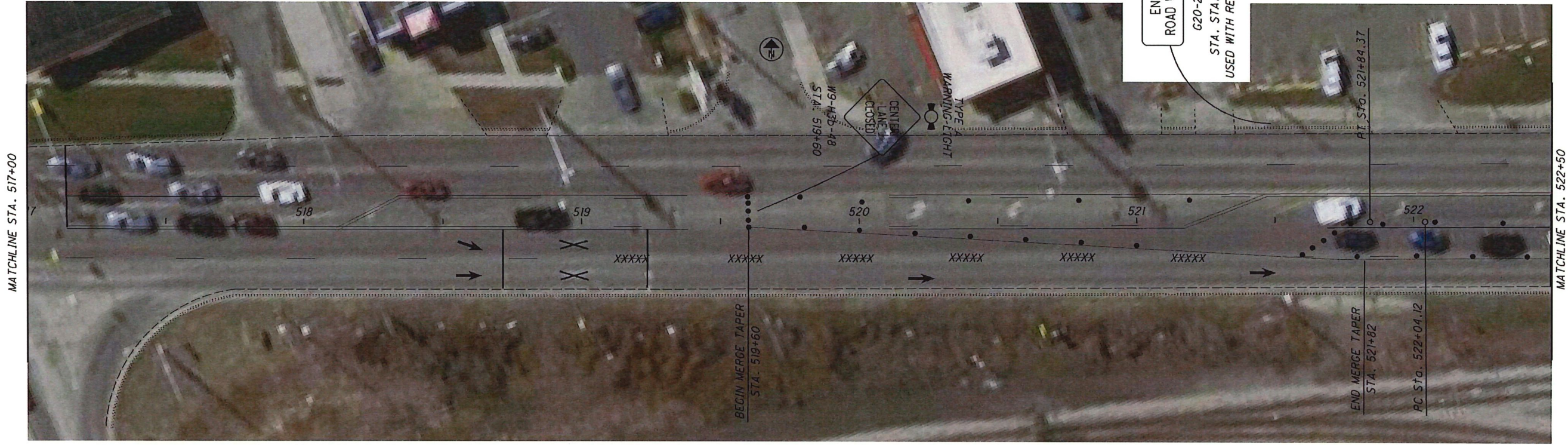
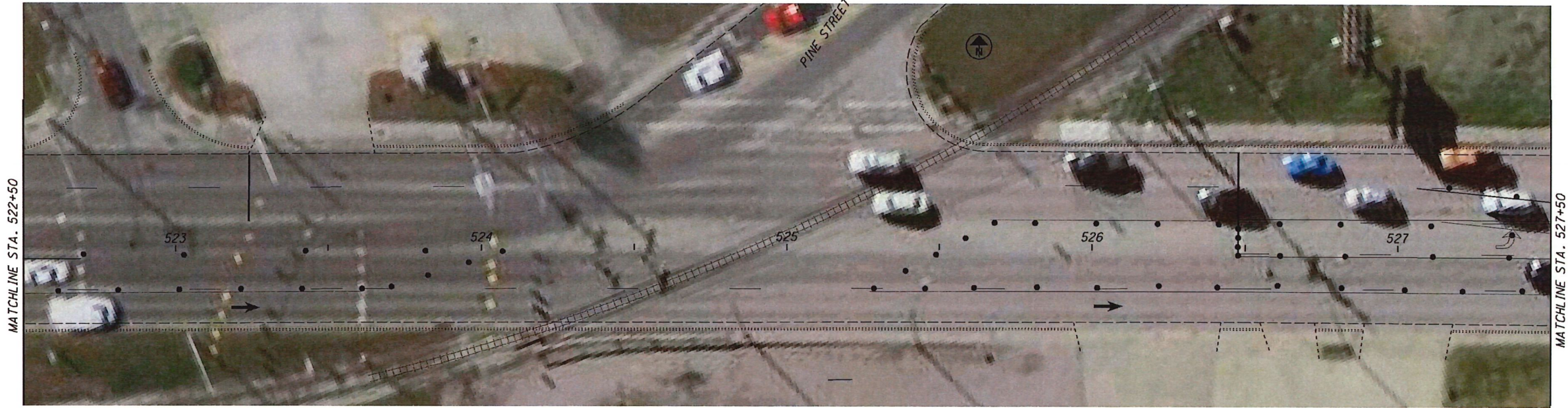


MATCHLINE STA. 515+00



MATCHLINE STA. 517+00

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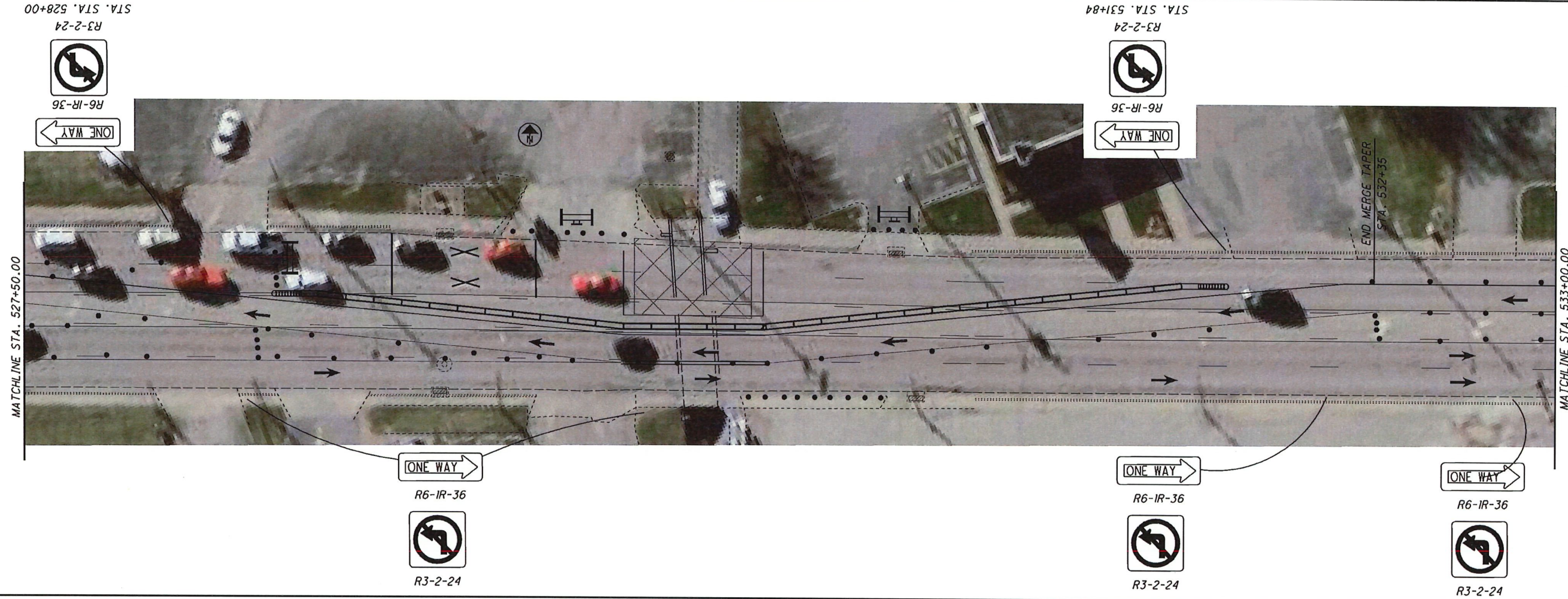
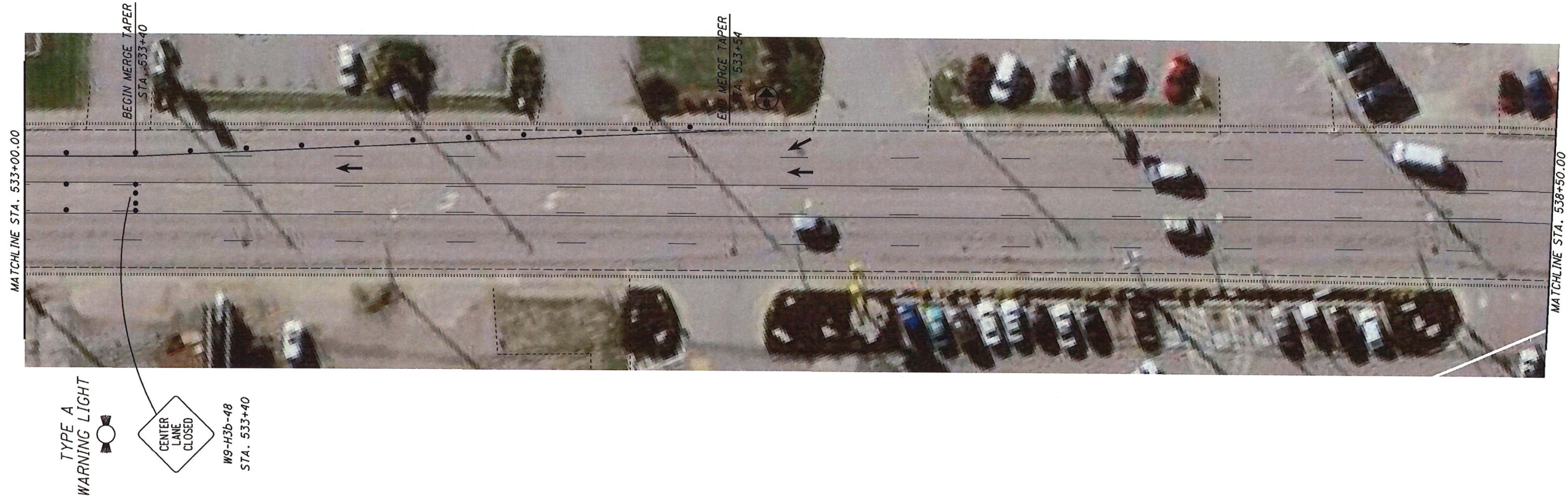


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MAINTENANCE OF TRAFFIC PHASE ONE
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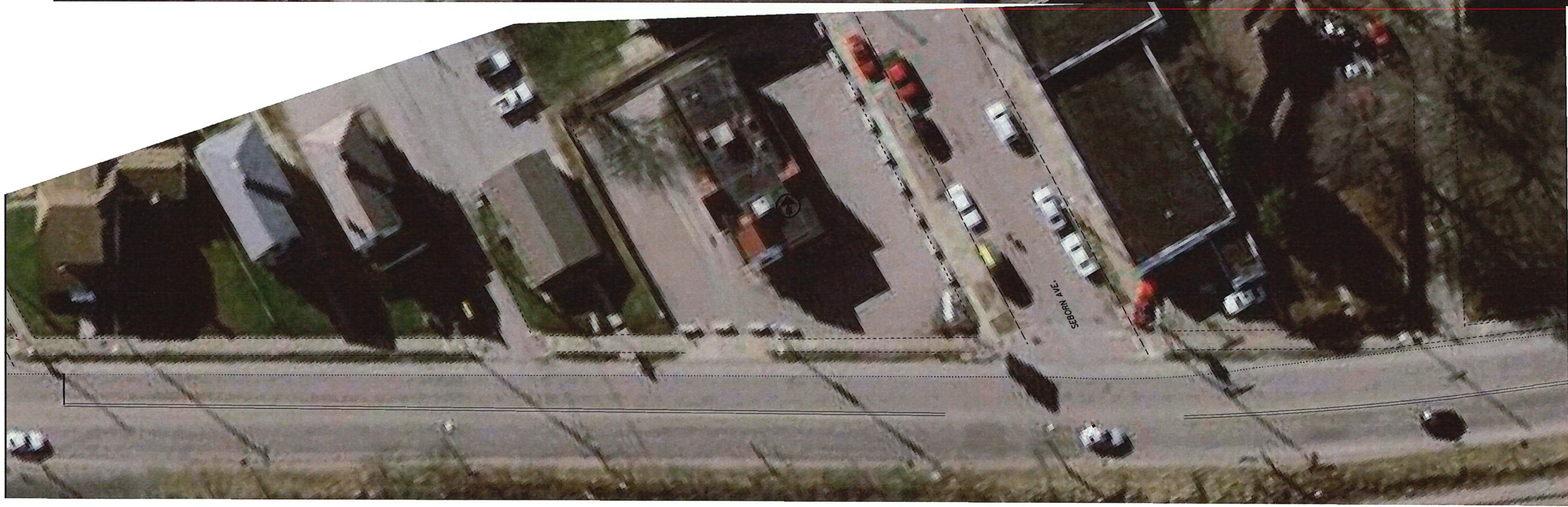
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MAINTENANCE OF TRAFFIC PHASE ONE
STA. 527+50.00 TO STA. 538+50.00

CALCULATED
RJG
CHECKED
HAG

0 0 0
HORIZONTAL
SCALE IN FEET

MATCHLINE STA. 554+00.00



MATCHLINE STA. 548+50.00



MATCHLINE STA. 554+00.00

TYPE A
WARNING LIGHT
ROAD
WORK
AHEAD
W20-I-48
STA. STA. 548+54
1
MILE
W16-3P-30
STA. STA. 548+54



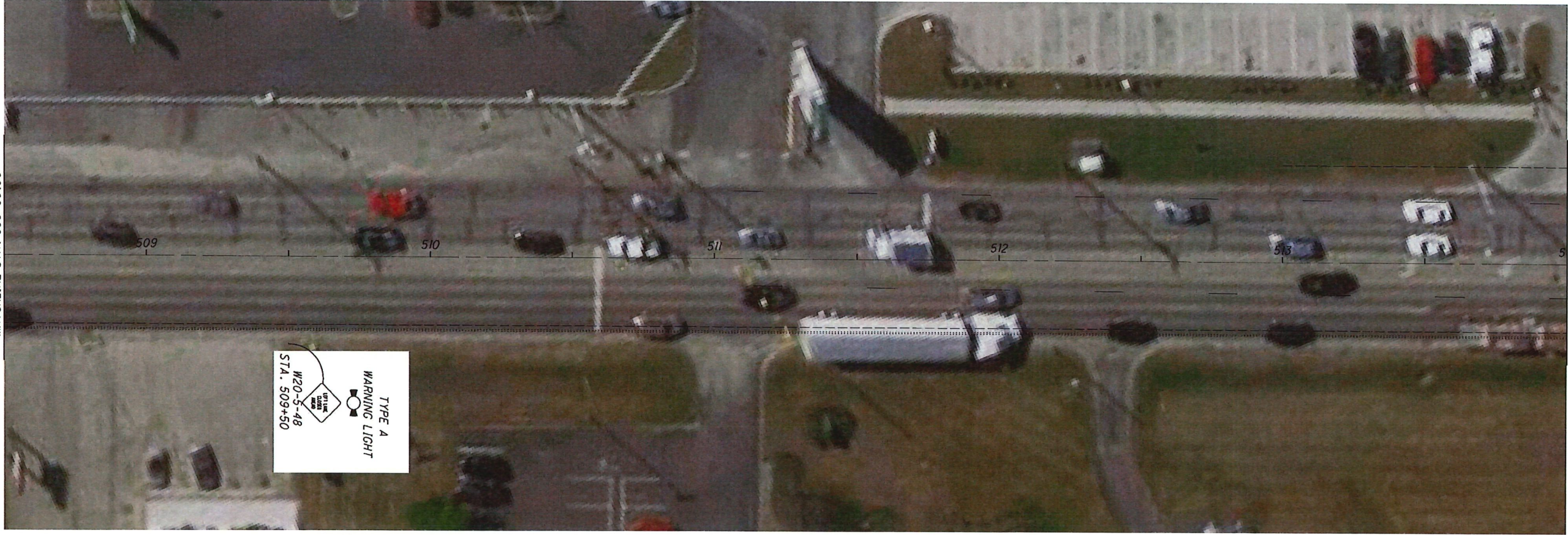
MUS-22-9.95

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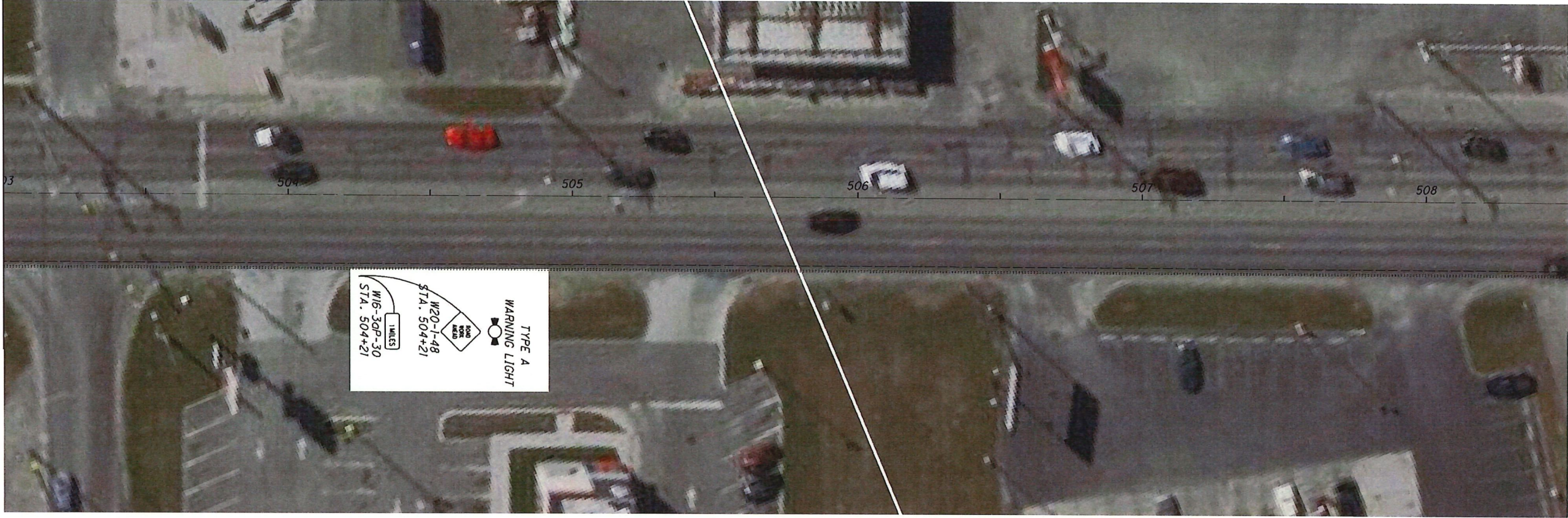
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RJG
CHECKED
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HORIZONTAL
SCALE IN FEET

MATCHLINE STA. 508+50.00



MATCHLINE STA. 514+00.00



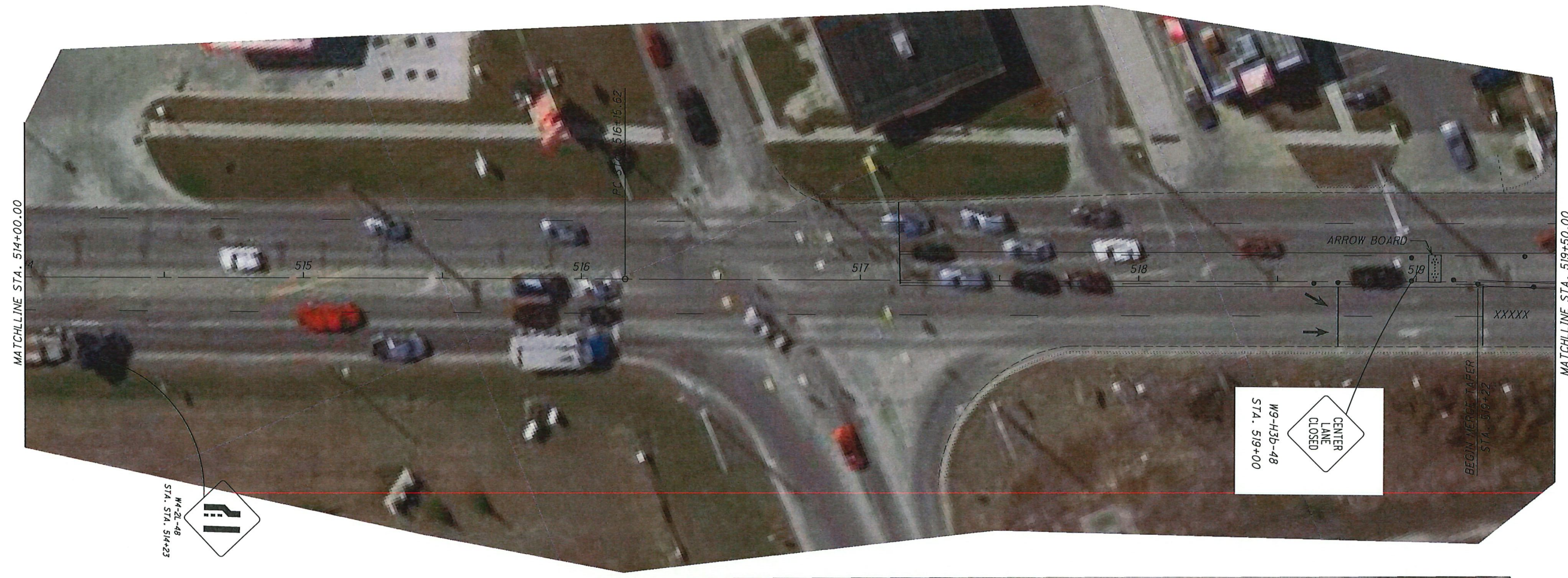
MATCHLINE STA. 508+50.00



CTY-RTE-SECTION

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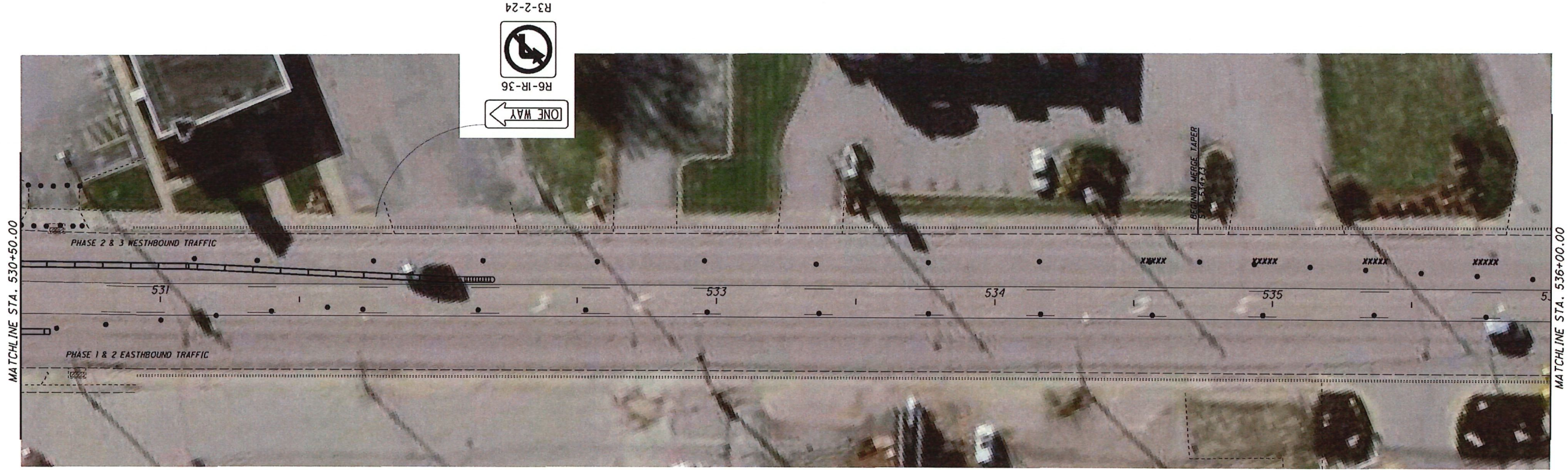
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RJG
CHECKED
HAG

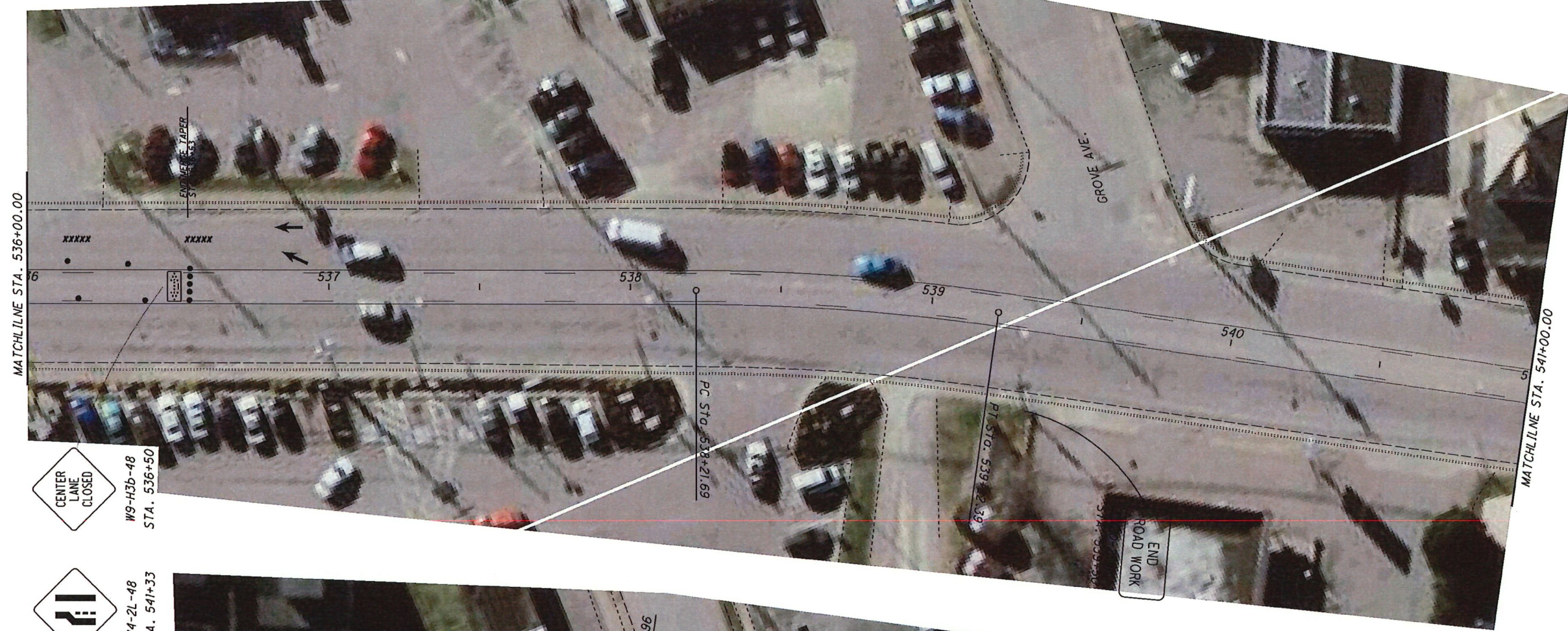


MAINTENANCE OF TRAFFIC PHASE TWO
STA. 514+00.00 TO STA. 525+50.00

CALCULATED	
RJG	
CHECKED	
HAG	







MUS-22-9.95

MAINTENANCE OF TRAFFIC PHASE TWO
STA. 536+00.00 TO STA. 546+00.00

CALCULATED
RJC
CHECKED
HAG



HORIZONTAL
SCALE IN FEET



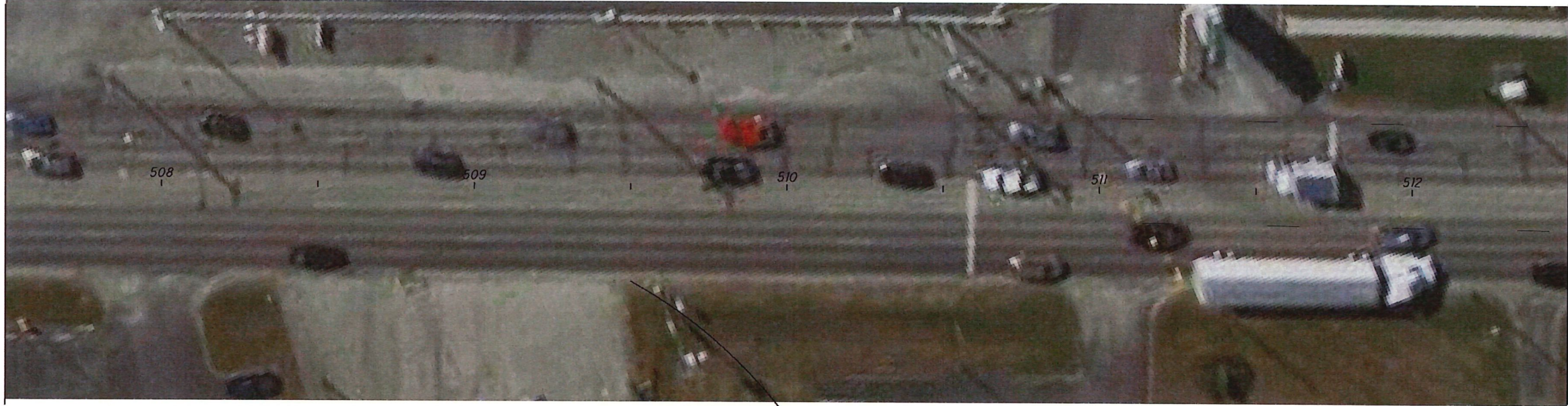
MUS-22-9.95

MAINTENANCE OF TRAFFIC
STA. 546+00.00 TO STA. 551+00.00

CALCULATED	RJG
CHECKED	HAG

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HORIZONTAL
SCALE IN FEET

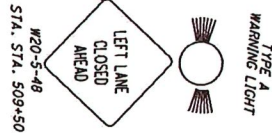
MATCHLINE STA. 507+50.00

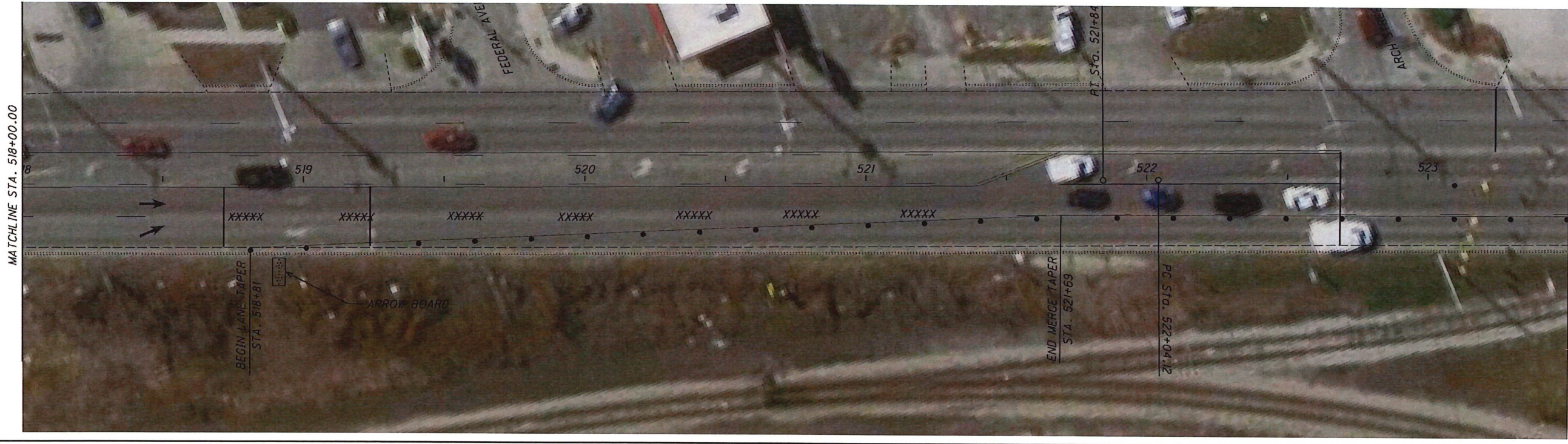


MATCHLINE STA. 512+50.00



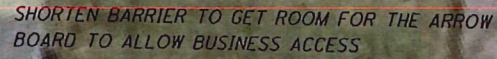
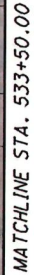
MATCHLINE STA. 507+50.00





W4-2L-48
STA. 513+81

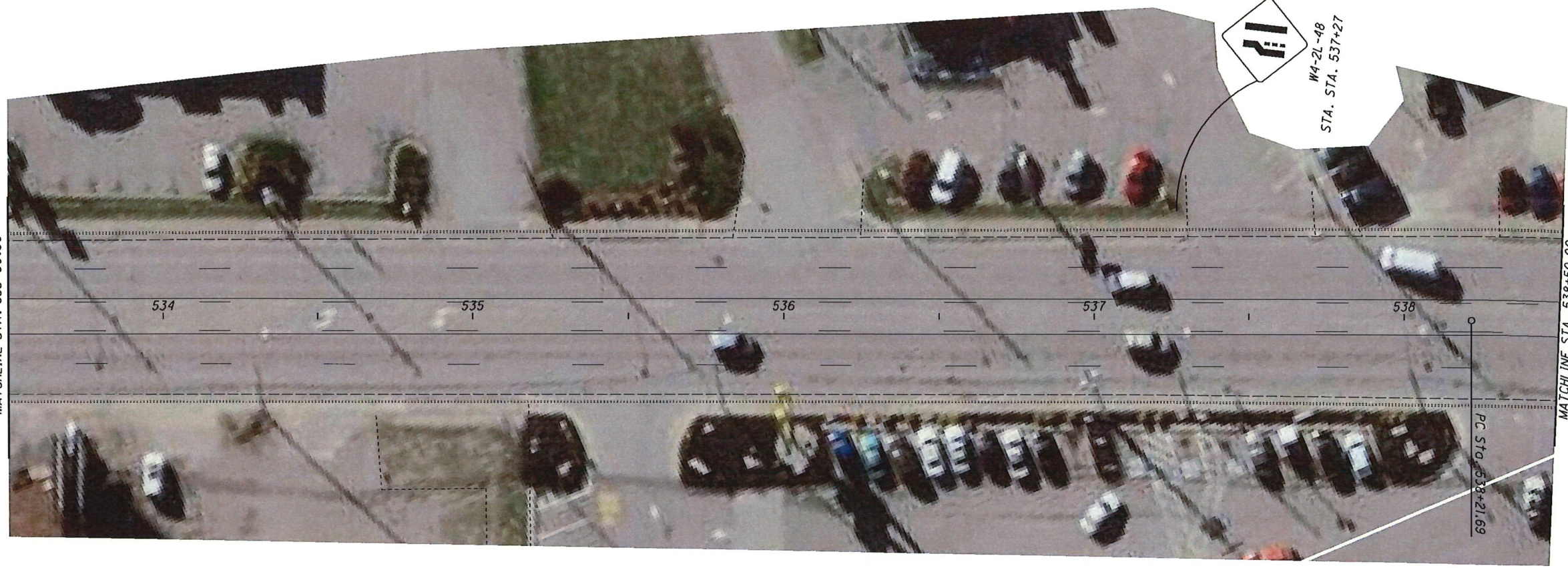




MATCHLINE STA. 538+50.00



MATCHLINE STA. 533+50.00



MUS-22-9.95

MAINTENANCE OF TRAFFIC PHASE THREE
STA. 533+50.00 TO STA. 544+00.00

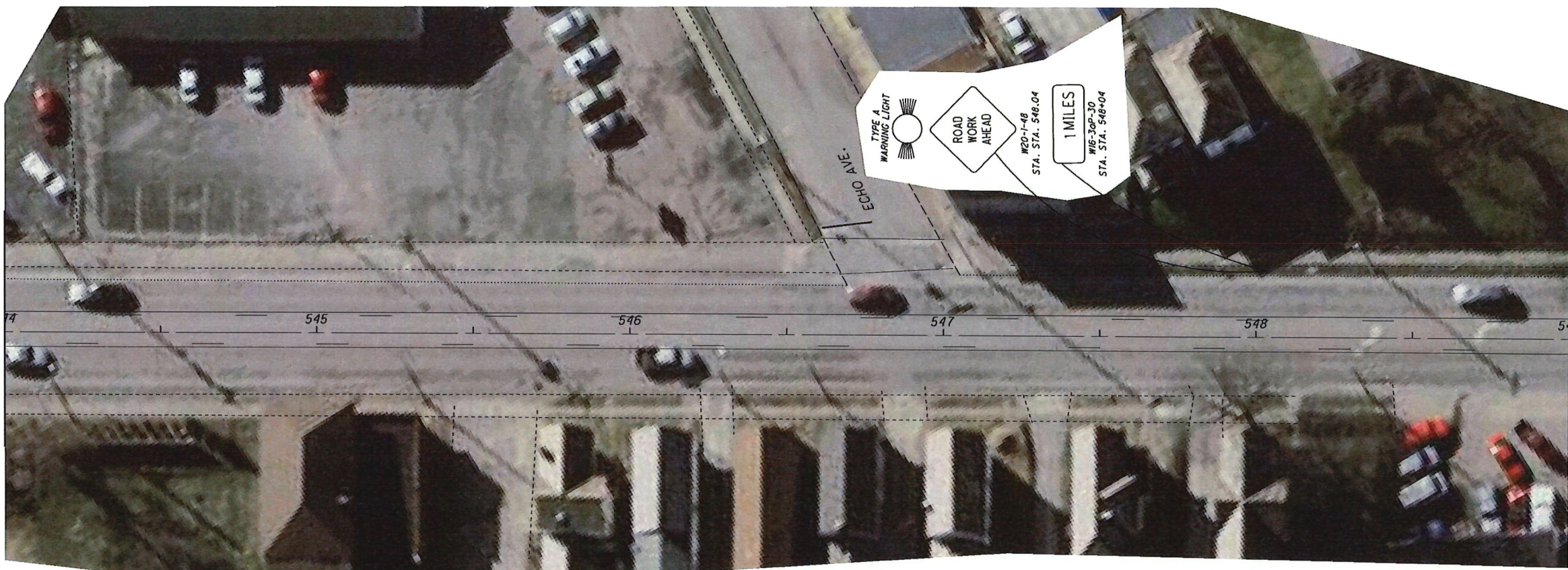
CALCULATED
RJC
CHECKED
HAG

0 0 0
HORIZONTAL
SCALE IN FEET

MATCHLINE STA. 549+00.00



MATCHLINE STA. 544+00.00



MATCHLINE STA. 549+00.00



MUS-22-9.95

MAINTENANCE OF TRAFFIC PHASE THREE
STA. 544+00.00 TO STA. 554+50.00

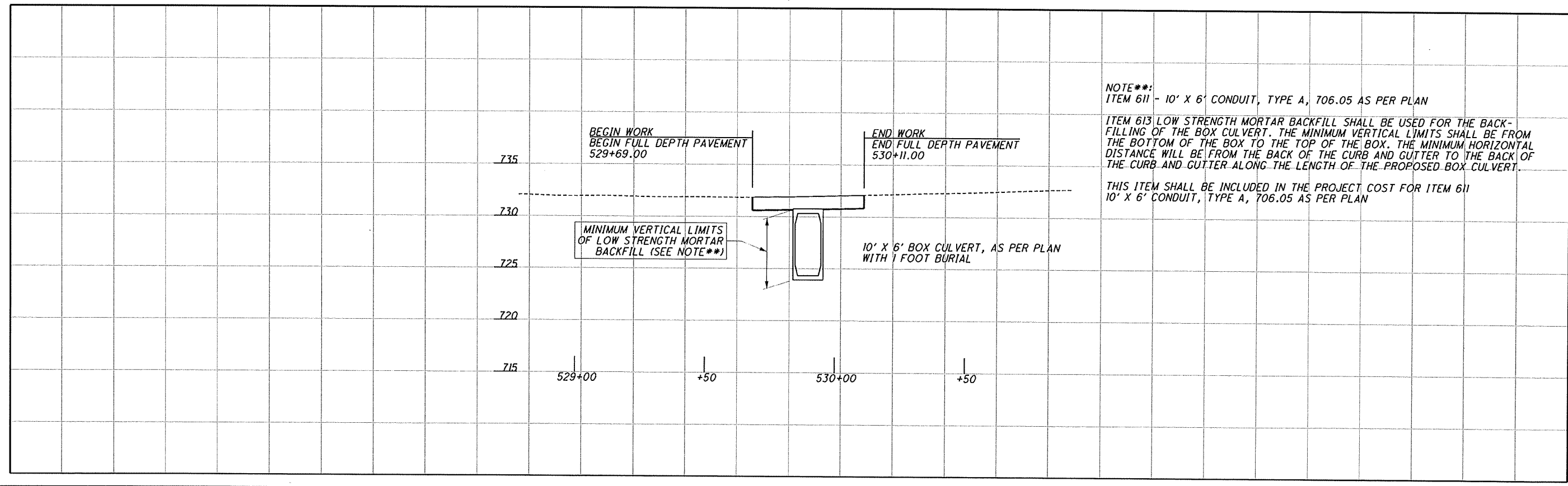
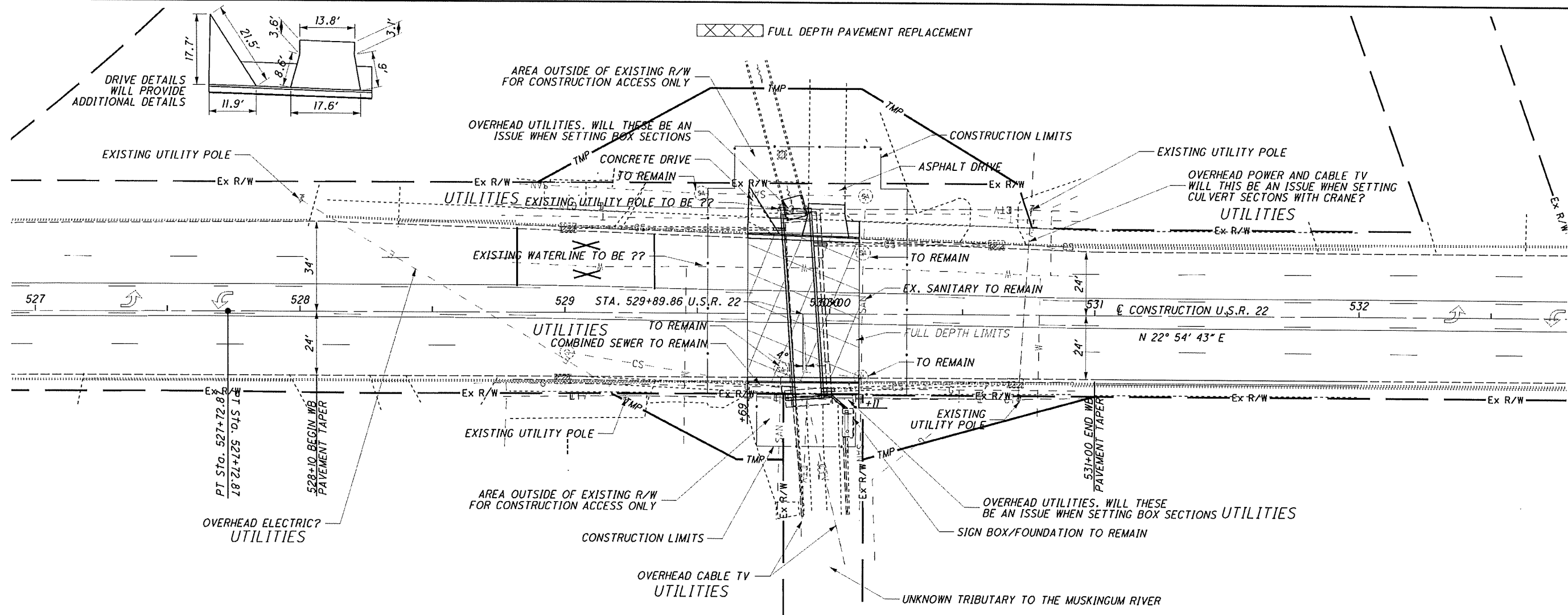
CALCULATED
RJG
CHECKED
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HORIZONTAL
SCALE IN FEET

[illegible]

$$\frac{29}{47}$$

$$\frac{28}{47}$$

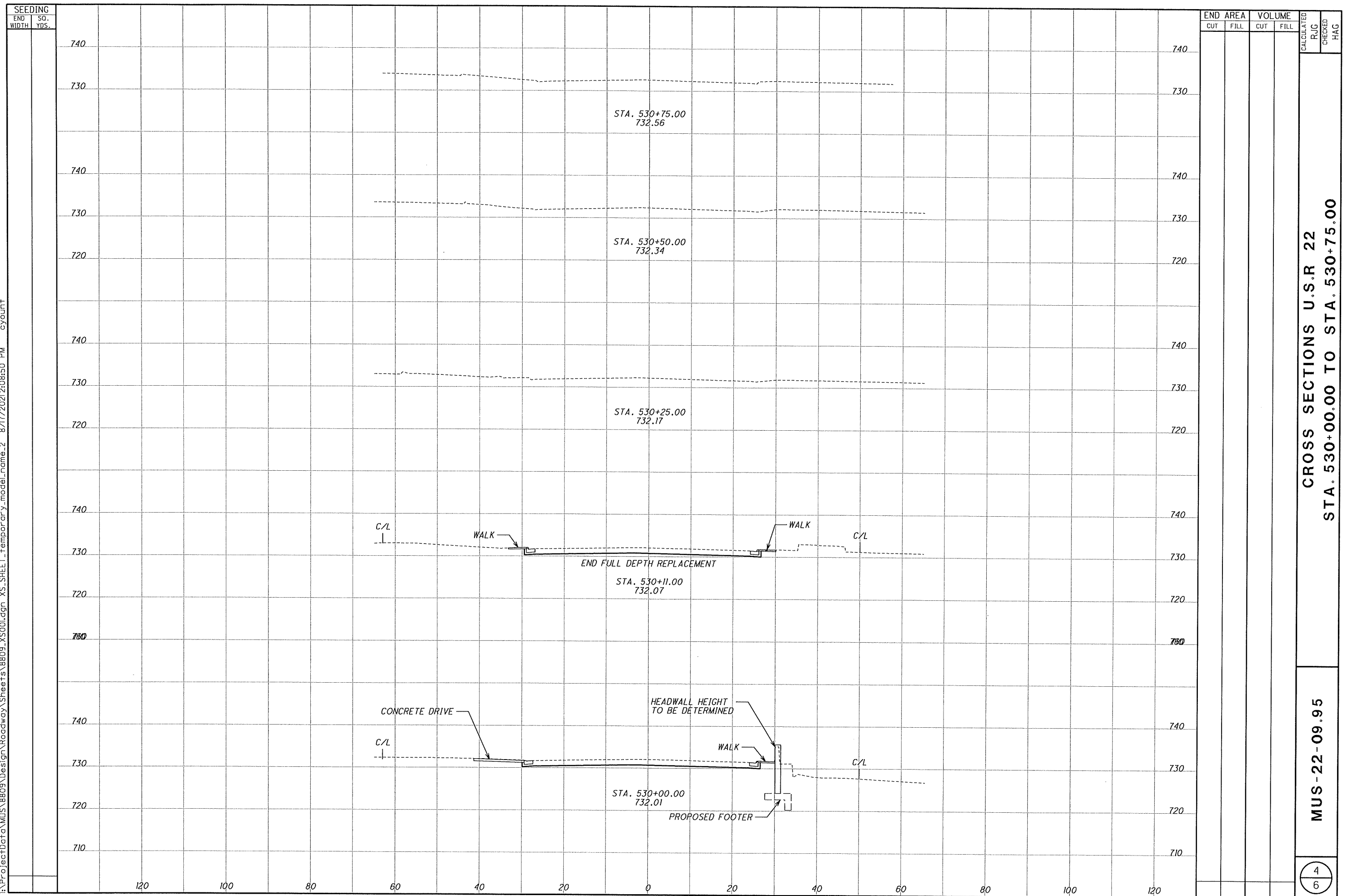


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CROSS SECTIONS U.S.R 22
STA. 529+00.00 TO STA. 529+75.00

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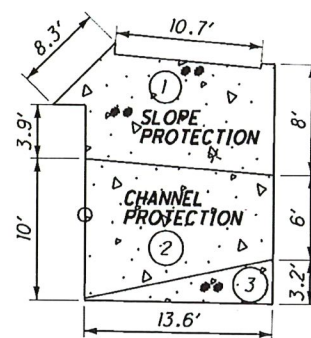


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UTILITIES TURNED OFF TO PROVIDE A CLEARER PICTURE.
SEE PLAN AND PROFILE SHEET FOR LOCATION OF THE EXISTING UTILITIES

STARTED WITH A 4 FOOT BOX LENGTH. THEN USED 6 FOOT LENGTHS.
STARTING WITH A 4 FOOT SECTION PLACES THE PROPOSED EXTENSION
OF THE EXISTING CONDUITS INTO A BOX SECTION AND NOT INTO A JOINT

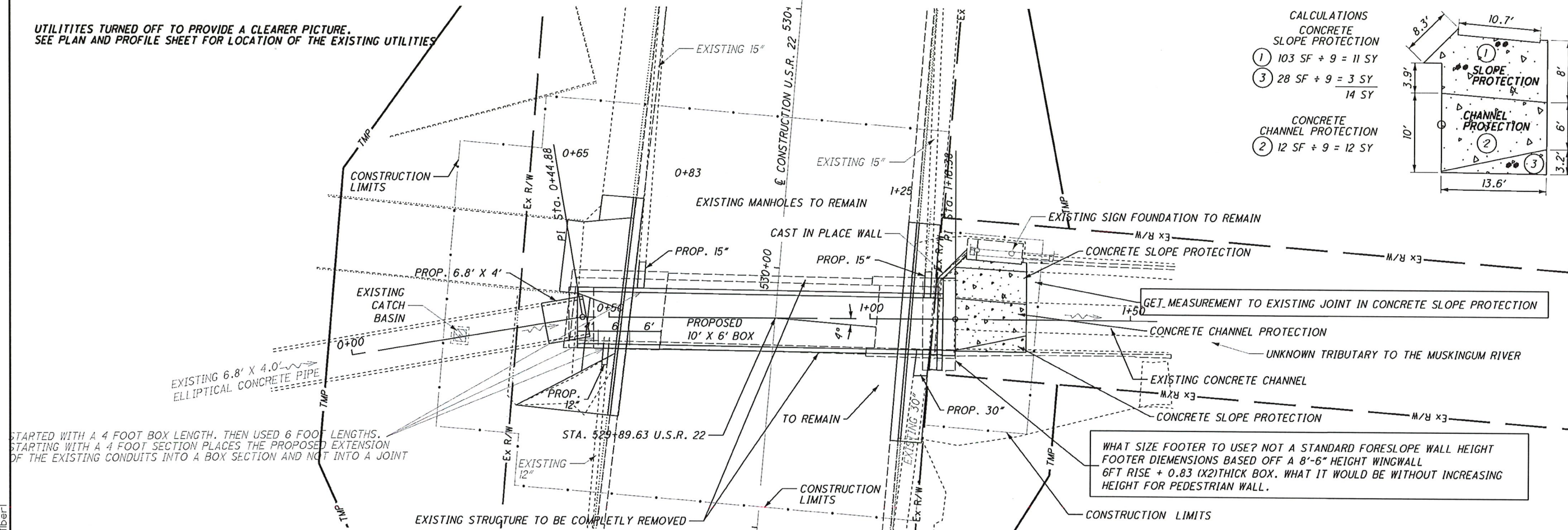
CALCULATIONS
CONCRETE
SLOPE PROTECTION
① $103 \text{ SF} \div 9 = 11 \text{ SY}$
③ $28 \text{ SF} \div 9 = 3 \text{ SY}$
14 SY
CONCRETE
CHANNEL PROTECTION
② $12 \text{ SF} \div 9 = 12 \text{ SY}$



CULVERT DETAIL - U.S.R. 22
STA. 529+90.40

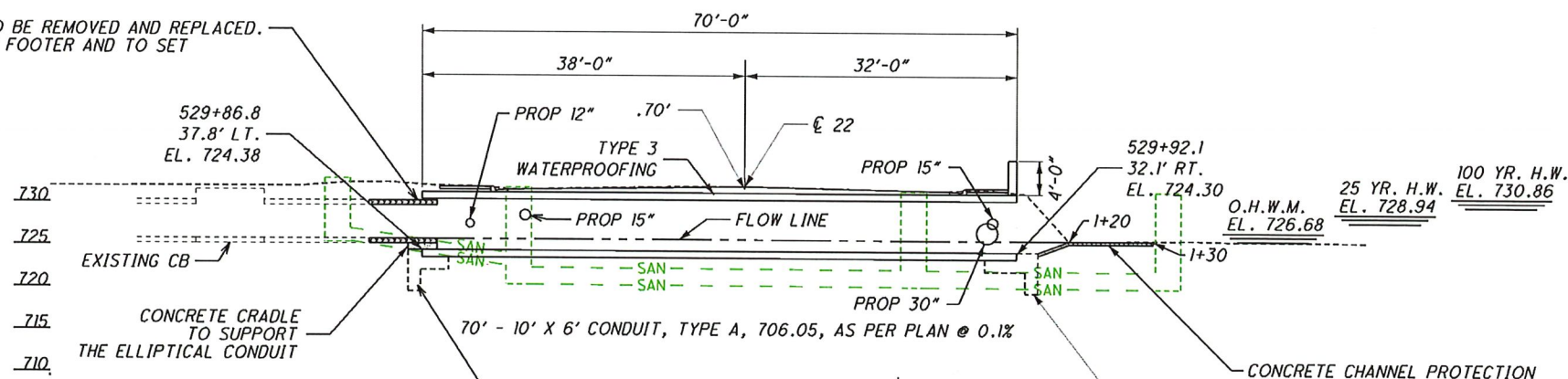
MUS-22-09.95

5
6

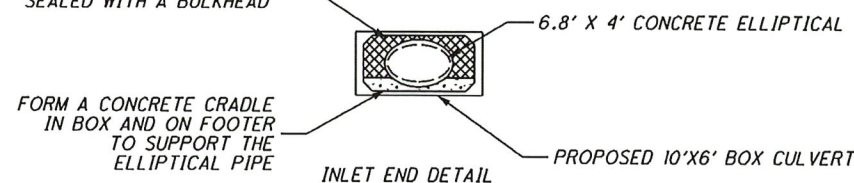


WHAT SIZE FOOTER TO USE? NOT A STANDARD FORESLOPE WALL HEIGHT
FOOTER DIMENSIONS BASED OFF A 8'-6" HEIGHT WINGWALL
6FT RISE + 0.83 (X2)THICK BOX. WHAT IT WOULD BE WITHOUT INCREASING
HEIGHT FOR PEDESTRIAN WALL.

FIRST SECTION OF EXISTING ELLIPTICAL TO BE REMOVED AND REPLACED.
TO ALLOW FOR THE CONSTRUCTION OF THE FOOTER AND TO SET
THE FIRST BOX SECTION.



AREA BETWEEN PROPOSED
BOX AND ELLIPTICAL TO BE
SEALED WITH A BULKHEAD



NEED FOR CUTOFF WALL? NOT A TYPICAL
INLET CONDITION.
THE FOOTER DIMENSIONS BASED
OFF OF SMALLEST BOX SIZE FOR
A TYPE B HEADWALL

SEE NOTE IN PLAN VIEW

EXISTING STRUCTURE	
TYPE:	SLAB BRIDGE
SKEW:	0°
ALIGNMENT:	TANGENT
SFN:	6000428

PROPOSED STRUCTURE	
TYPE:	REINFORCED CONCRETE BOX CULVERT
NEW SFN:	X
SPAN:	10'
RISE:	6'
LENGTH:	70'
ROADWAY:	4-12' MAX/9.5' MIN LANES & 1-10' CENTER LANE W/1.5' CURB AND GUTTER
LOADING:	HL-93
SKEW:	5°00'
ALIGNMENT:	TANGENT

HYDRAULIC DATA	
DRAINAGE AREA:	115 ACRES
Q_{25}	148 CFS
Q_{100}	230 CFS
V_{25}	9.35 FPS
V_{100}	11.2 FPS

GENERAL NOTES

DESIGN SPECIFICATIONS: THIS STANDARD DRAWING CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2014, INCLUDING THE 2015 & 2016 INTERM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN DATA: THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL, $\phi = 30^\circ$
TOTAL UNIT WEIGHT OF BACKFILL SOIL = 120 PCF
INTERNAL ANGLE OF FRICTION (DRAINED), FOUNDATION SOIL, $\phi = 28^\circ$
UNDRAINED SHEAR STRENGTH (COHESIVE), FOUNDATION SOIL, $S = 1500$ PSF
UNIT WEIGHT OF CONCRETE = 150 PCF
HEIGHT OF LIVE LOAD SURCHARGE = 2 FT

CONCRETE CLASS OC1 - COMPRESSIVE STRENGTH 4000 PSI
(FOOTING, WINGWALL AND FORESLOPE WALL)

REINFORCING STEEL - ASTM A615, A616, OR A617
GRADE 60 MINIMUM YIELD STRENGTH
60,000 PSI (ALL REINFORCING SHALL BE EPOXY COATED)

FORESLOPE WALL ANCHOR DOWELS: ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH SPECIFIED ON SHEET 38. PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

THREADED INSERTS OR NON-PROTUDING MECHANICAL CONNECTORS CAPABLE OF DEVELOPING AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCEMENT SHOWN ARE AN ACCEPTABLE ALTERNATIVE TO RESIN BONDING. MAINTAIN MINIMUM COVERAGE OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB. MECHANICAL CONNECTORS SHALL HAVE AN "L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. THE DEPARTMENT WILL CONSIDER PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS AS INCIDENTAL TO ITEM 611.

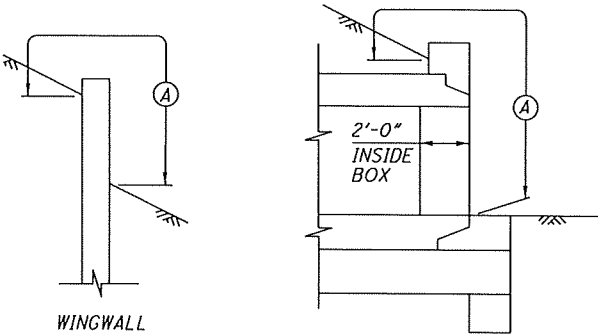
BACKFILL LIMITATION: WHEN THE DESIGN HEIGHT IS GREATER THAN 10 FEET, THE BACKFILL BEHIND THE WINGWALLS SHALL NOT BE PLACED HIGHER THAN THE ELEVATION OF THE SOIL ABOVE THE TOE. WHEN THE SOIL ABOVE THE TOE IS AT ITS FINISHED ELEVATION, THE REMAINDER OF THE BACKFILL MAY BE PLACED.

POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ALL EXPOSED FORESLOPE WALL, WINGWALL CONCRETE AND FACE AND INTERIOR OF BOX SIDES, TOP AND BOTTOM FOR 2 FEET, SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DETAIL BELOW, PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).



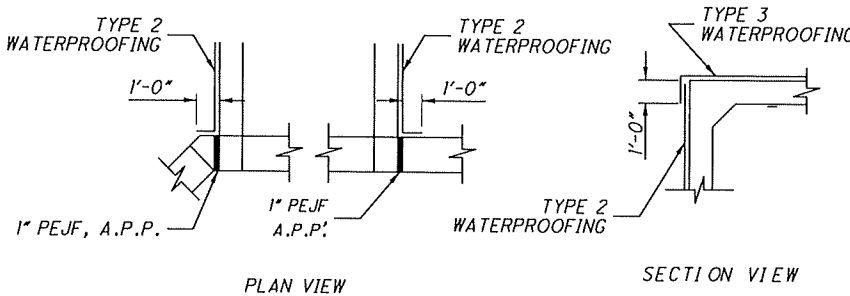
(A) - SEAL ENTIRE CONCRETE SURFACE AREA

WATERPROOFING DETAILS

WATERPROOFING: TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

IF PAVEMENT IS NOT PLACED DIRECTLY ON TOP OF THE CULVERT, TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

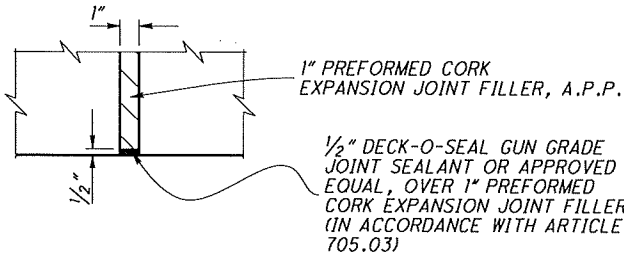
IF PAVEMENT IS TO BE PLACED DIRECTLY ON TOP OF THE CULVERT, TYPE 3 WATERPROOFING, PER CMS 512 AND 711.29 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDE FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 3 WATERPROOFING.



ITEM 516 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

ALL 1" P.E.J.F. CALLED FOR IN THE PLANS SHALL BE PREFORMED CORK JOINT FILLER (IN ACCORDANCE WITH ARTICLE 705.03). RECESS JOINT FILLER 1/2" FOR ALL JOINTS (SEE DETAIL). SEAL ALL JOINTS THAT ARE ABOVE GRADE WITH DECK-O-SEAL GUN GRADE-JOINT SEALANT OR AN APPROVED EQUAL. THE COLOR SHALL BE STONE GRAY. APPROVED MANUFACTURER'S APPLICATION METHODS SHALL BE FOLLOWED DURING SURFACE PREPARATION AND APPLICATION FOR MAXIMUM EFFECTIVENESS.

DECK-O-SEAL
P.O. BOX 397
HAMPSHIRE, IL 60140
PHONE: 800-542-7665



PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 516 - 1" PEJF, A.P.P., SQ.FT., AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK DESCRIBED.

EPOXY COATED REINFORCING STEEL
X,XXX LBS FROM SHEET XX

REVISE AFTER BRIDGES HAS COMPLETED DESIGN

CLASS OC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING

WW #1 - (11.7')(1')(3')+27 = 1.3 CU YDS
WW #2 - (9')(1)(9.9')+27 = 3.3 CU YDS
(9')(1.7+2)+27 = 0.3 CU YDS
TOTAL - 1.3 + 3.3 + 0.3 = 4.9 CU YDS

CLASS OC1 CONCRETE, HEADWALL
HW - (12'X4'X1')+27 = 1.8 CU YDS

1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN
11.8 X 1.0 X 2 = 23.6 USE 24 SQ FT

CLASS OC1 CONCRETE, FOOTING

INLET
FOOTING - (11.7' X 4.75' X 1.5') + 27 = 3.1 CU YDS
(11.7' X 1.7' X 0.83') + 27 = 0.6 CU YDS
CUTOFF WALL - (11.7' X 2.5' X 1.5') + 27 = 1.6 CU YDS

OUTLET
FOOTING - (14.7' X 2.5' X 1.5') + 27 = 2.0 CU YDS
(14.7' X 2.5' X 0.83') + 27 = 1.1 CU YDS
CUTOFF WALL - (14.7' X 2.5' X 1.5') + 27 = 2.0 CU YDS
TOTAL = 3.1 + 0.6 + 1.6 + 2.0 + 1.1 + 2.0 = 10.4 CU YDS

SEALING OF CONCRETE SURFACES (OUTLET ONLY)

WW#1 - (3x4)+(1x3)+(3x4)+9 = 3 SQ YDS
WW#2 - (9.9x6.5)+(11.7+2)x6.5+(1x6.5)+(2.3x6.5)+(11.7+2)x6.5)+9 = 10.8 SQ YDS
BOX - INSIDE-(2x8x2)+(4x2x2)+(1.4x2x4)+9 = 6.6 SQ YDS
FACE-(1x31)+9 = 3.5 SQ YDS
* AREA BY COMPUTER
FORESLOPE WALL - (12)(9)+9 = 12.0
TOTAL = 3 + 10.8 + 6.6 + 3.5 = 23.9 SQ YD USE 24 SQ YDS

TYPE 2 WATERPROOFING
72 X 8.0 + 9 = 64.0 SQ YDS
64.0 X 2 = 128.0 SQ YDS

TYPE 3 WATERPROOFING
70 X 15.0 + 9 = 116.7 SQ YDS
USE 117.0 SQ YDS

WILL THIS BE NEEDED? NIKUNJ

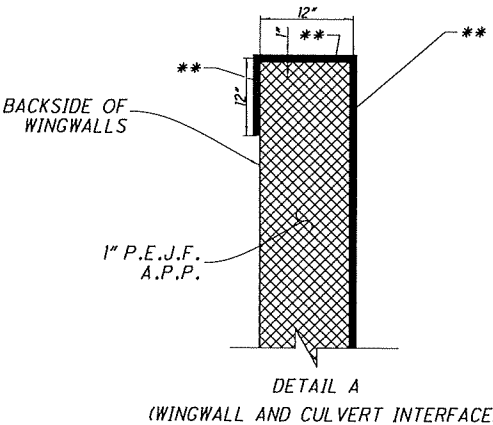
203 EXCAVATION
2(1.5 X 23.2 X 4.75)/27 = 12.2 CU YDS

204 GRANULAR MATERIAL, TYPE C
2(1 X 23.2 X 4.75)/27 = 8.2 CU YDS

304 AGGREGATE BASE
2(0.5 X 23.2 X 4.75)/27 = 4.1 CU YDS

QUANTITIES CARRIED TO GENERAL SUMMARY

ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION
202	11200	LS		PORTIONS OF STRUCTURE REMOVED
203	10000	X	CY	EXCAVATION
204	30020	X	CY	GRANULAR MATERIAL, TYPE C
304	20000	X	CY	AGGREGATE BASE
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING
503	21300	LS		UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)
509	10000	1800	LB	EPOXY COATED REINFORCING STEEL
511	46010	4.9	CY	CLASS OC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING
511	46510	10.4	CY	CLASS OC1 CONCRETE, FOOTING
511	46610	1.8	CY	CLASS OC1 CONCRETE, HEADWALL
512	10100	24	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	33000	128	SY	TYPE 2 WATERPROOFING
512	33010	117	SY	TYPE 3 WATERPROOFING
516	13601	24	SF	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN
518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC
611	95801	70	FT	12' X 6' CONDUIT, TYPE A, 706.05, AS PER PLAN,



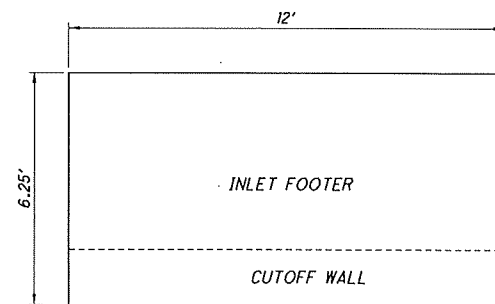
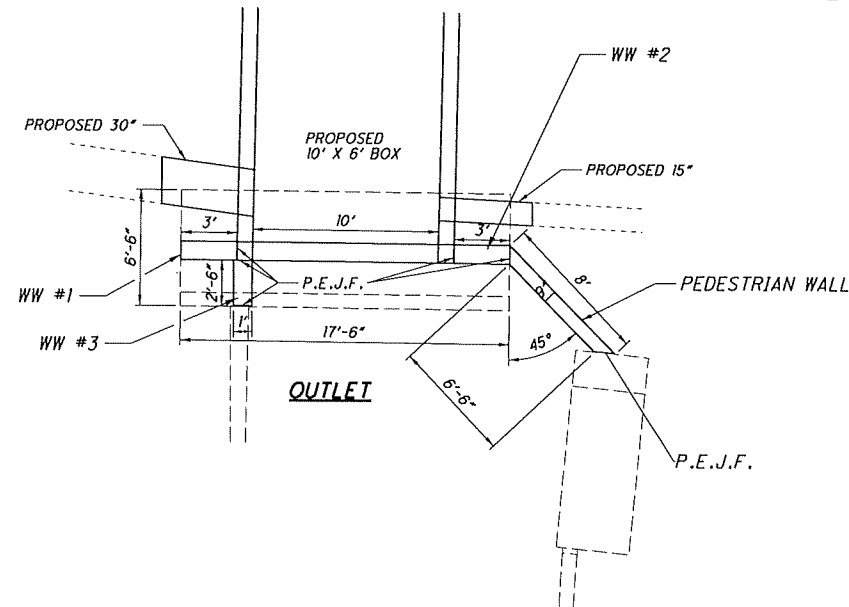
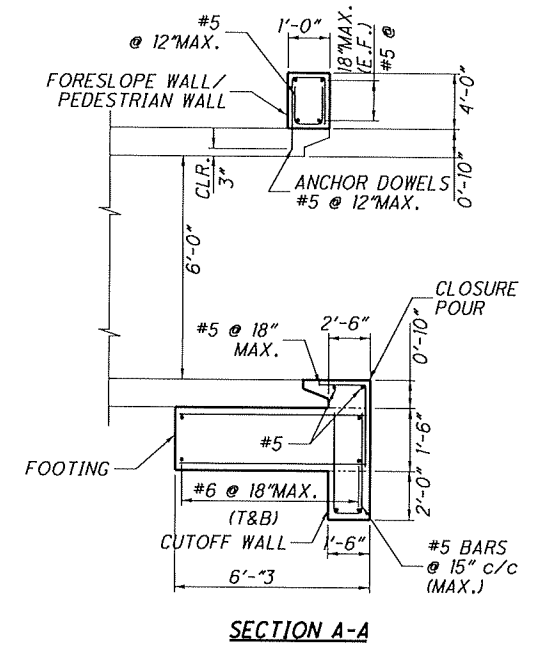
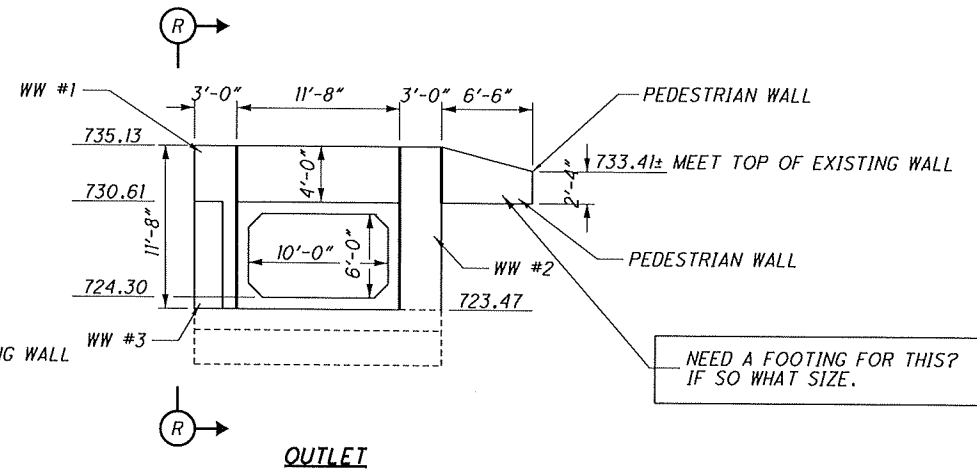
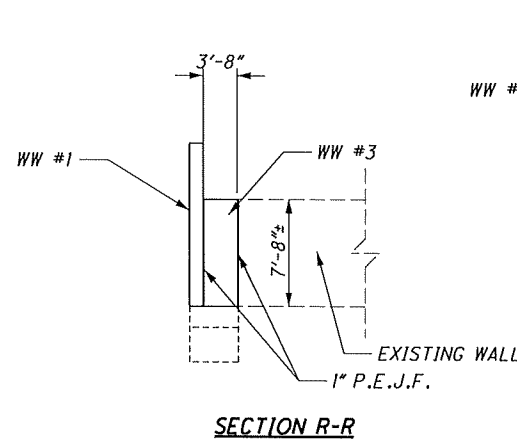
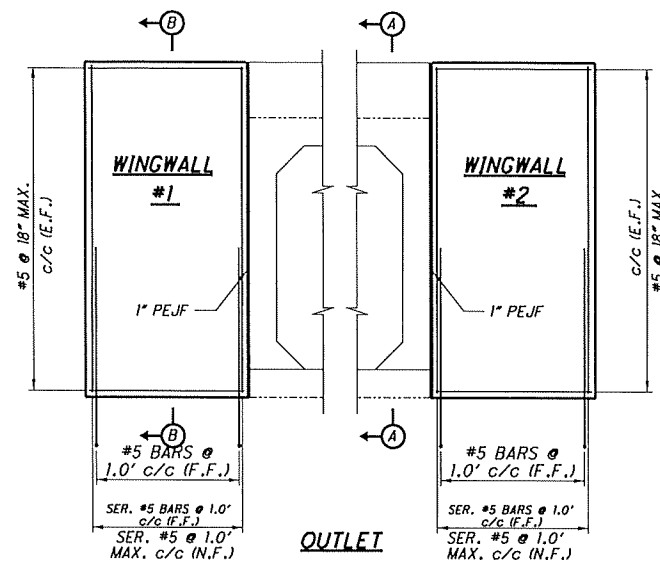
** - ALL EXPOSED SURFACES OF THE 1" P.E.J.F. A.P.P. AS SHOWN, SHALL BE FILLED AS PER ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN

CALCULATED
RIG
CHECKED
HAG

MUS-22-9.95 NOTES & QUANTITIES

MUS-22-9.95

0
0



DESIGN, RESTEEL, NEEDS DESIGNED BY BRIDGES

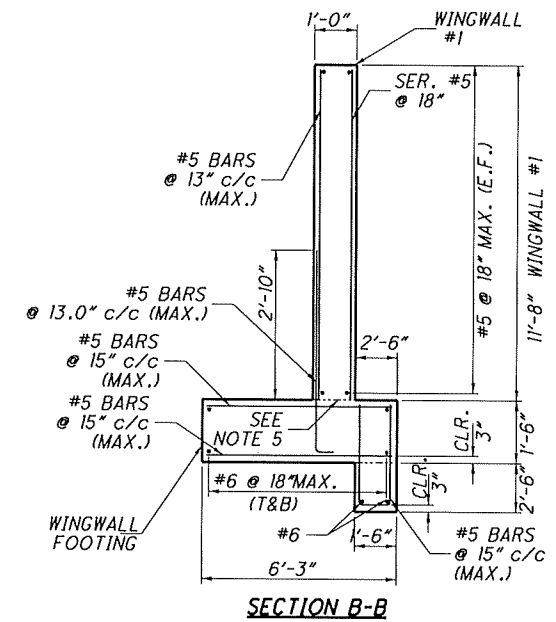
YES IT DOES

STAGE TWO REVIEW

NOTES

1. FOR SECTIONS A-A, B-B AND F-F AND VIEW C-C, SEE SHEET 5/5.
2. FOR FOOTING DESIGNS, SEE SHEET 5/5.
3. FOR FORESLOPE WALL REINFORCING AND QUANTITIES, SEE SHEET 5/5.
4. POROUS BACKFILL NOT SHOWN FOR CLARITY.

* INCLUDES FOOTING AND CUTOFF WALL CONCRETE AND REINFORCING WITHIN THE LIMITS OF THE BOX CULVERT PER LINEAR FOOT. TO OBTAIN THE TOTAL QUANTITY, MULTIPLY THIS VALUE/FOOT BY [BOX SPAN + 2x (BOX WALL THICKNESS)].



BOX CULVERT DETAILS
STA. S.L.M. 9.95

MUS-22-9.95

CALCULATED
RJC
CHECKED
HAG
HORIZONTAL
SCALE IN FEET

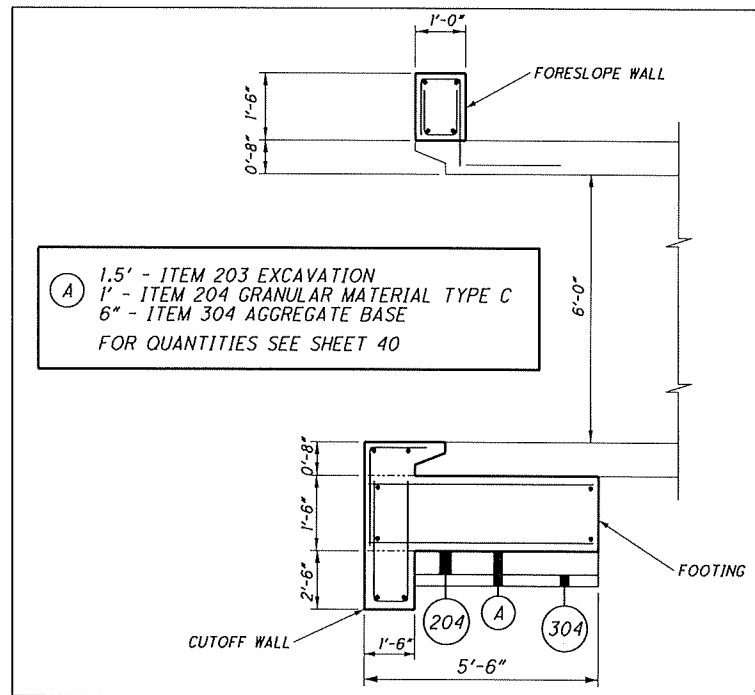
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MAY NEED AFTER GETTING NIKUNJ COMMENTS

OUTLET FOOTER DETAILS



EXCAVATION/FILL UNDER INLET & OUTLET FOOTERS



INLET FOOTER DETAILS

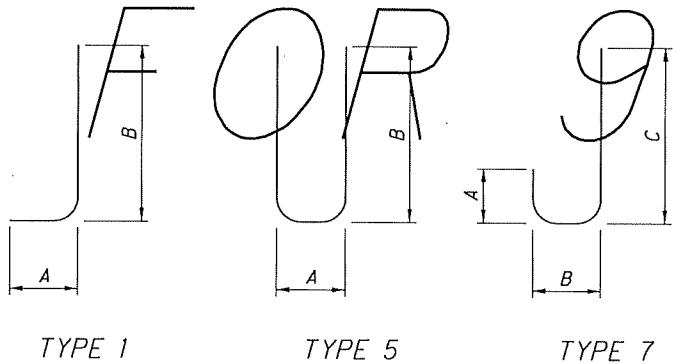


OUTLET FOOTER DETAILS

INLET FOOTER DETAILS

SHEET NEEDS REVISED FOR 9.95

TOTAL WW1 AND WW2 = 1571
TOTAL WW1 AND WW2 = 1571
TOTAL = 3142
QUANTITY CARRIED TO SHEET 40



**CROSS SECTIONS - CHANNEL
STA. 1+13.89 TO STA. 1+30.00**

MUS-22-9.95

