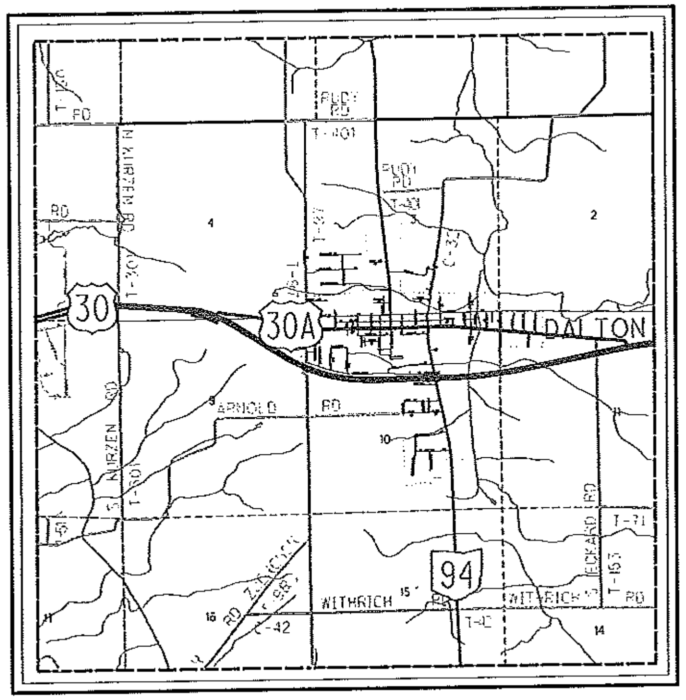
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

WAY-30-23.33

VILLAGE OF DALTON
SUGAR CREEK TOWNSHIP
WAYNE COUNTY



LOCATION MAP

LATITUDE: N 40°47'45" LONGITUDE: W 81°42'25"

SCALE IN MILES: 0 0.5 1 1.5 2

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

DESIGN DESIGNATION

CURRENT ADT (2019)	17,000
DESIGN YEAR ADT (2039)	17,000
DESIGN HOURLY VOLUME (2039)	1,500
DIRECTIONAL DISTRIBUTION	0.52
TRUCKS (24 HOUR B&C)	0.16
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION: OTHER PRINCIPAL ARTERIAL	
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE REQUIRED

INDEX OF SHEETS:

PROJECT DESCRIPTION

THIS PROJECT WILL CLOSE THE MEDIAN ON US 30 AT WENGER ROAD TO RESTRICT THROUGH TRAFFIC. ALSO THE EB LEFT TURN LANE AT US 30 & ALT 30 WILL BE EXTENDED AND A U-TURN LOON WILL BE CONSTRUCTED AT US 30 & SR 94.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.39 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.13 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A ACRES (NOI NOT REQUIRED)

LIMITED ACCESS

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

2016 SPECIFICATIONS

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

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

APPROVED [signature]
DATE 02/04/19 DISTRICT DEPUTY DIRECTOR

APPROVED [signature]
DATE 2/13/19 DIRECTOR, DEPARTMENT OF TRANSPORTATION

UNDERGROUND UTILITIES

OHIO811.org
Before You Dig

ENGINEERS SEAL (ALL EXCEPT TRAFFIC SIGNAL)

STATE OF OHIO — CRAIG A. DEVORE E-70370 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: [signature]
DATE: 2-1-2019

ENGINEERS SEAL (TRAFFIC SIGNAL ONLY)

STATE OF OHIO — MICHAEL A. HOBBS E-68713 — REGISTERED PROFESSIONAL ENGINEER

SIGNED: [signature]
DATE: January 31, 2019

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	7/18/14	HL-40.20	7/20/18	MT-120.00	1/19/18	TC-84.21	10/18/13	800	1/18/19
		HL-50.11	1/16/15			TC-85.21	1/20/17	809	1/18/19
CB-1.2	1/15/16	HL-60.11	7/21/17	TC-21.10	7/21/17	TC-85.22	1/19/18	825	1/18/19
		HL-60.12	7/15/16	TC-21.20	7/20/18			832	10/19/18
MH-1.1	1/15/16	HL-60.31	1/18/19	TC-22.20	1/17/14	ITS-10.10	7/20/18	861	1/16/15
				TC-41.10	7/19/13	ITS-10.11	7/20/18		
DM-4.3	1/15/16	MT-95.30	7/21/17	TC-42.20	10/18/13	ITS-12.50	1/18/19		
		MT-95.40	1/20/17	TC-51.11	1/15/16	ITS-13.10	7/17/15		
RM-4.1	7/21/17	MT-95.45	7/21/17	TC-52.10	10/18/13	ITS-14.10	7/17/15		
RM-4.2	4/18/14	MT-97.10	7/18/14	TC-52.20	7/20/18	ITS-15.10	7/17/15		
RM-4.6	7/19/13	MT-99.20	7/20/18	TC-71.10	1/19/18				
HL-20.11	4/21/17	MT-99.30	1/19/18	TC-81.10	7/15/16				
HL-30.11	1/18/19	MT-101.70	7/20/18	TC-82.10	1/18/19				
HL-30.21	1/17/14	MT-101.75	7/15/16	TC-83.10	1/19/18				
HL-30.22	1/17/14	MT-101.90	7/21/17	TC-83.20	7/21/17				
HL-40.10	1/20/17	MT-105.10	7/19/13	TC-84.20	10/18/13				

PLANS PREPARED BY:

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT THREE
PLANNING AND ENGINEERING

FEDERAL PROJECT NO. E160850

PID NO. 102109

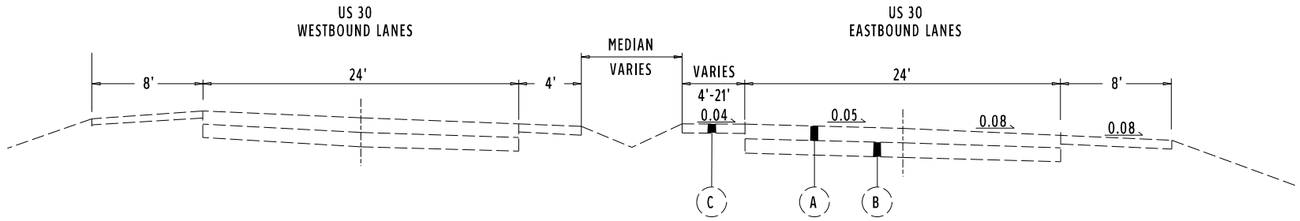
CONSTRUCTION PROJECT NO.

WAY-30-23.33

I:\ProjectData\102109\Design\Roadway\Sheets\102109_GB001.dgn Sheet 2/7/2019 6:57:14 AM meppley

2 / 46	WAY-30-23.33	SCHEMATIC VIEW

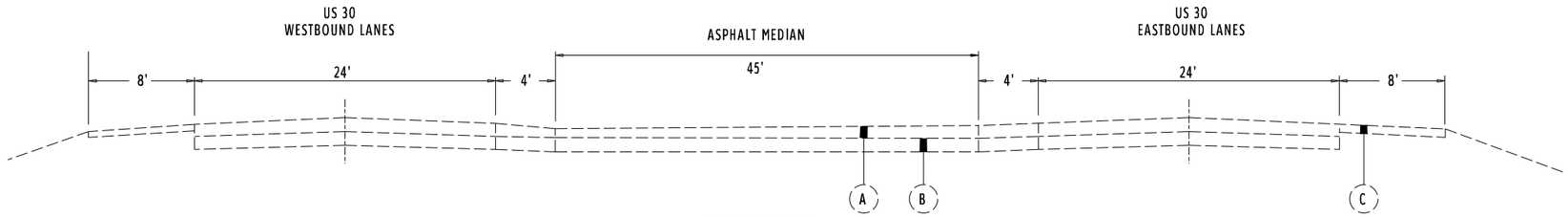
CALCULATED MAE
CHECKED CAD



TYPICAL SECTION 1

US-30 at OLD LINCOLN WAY

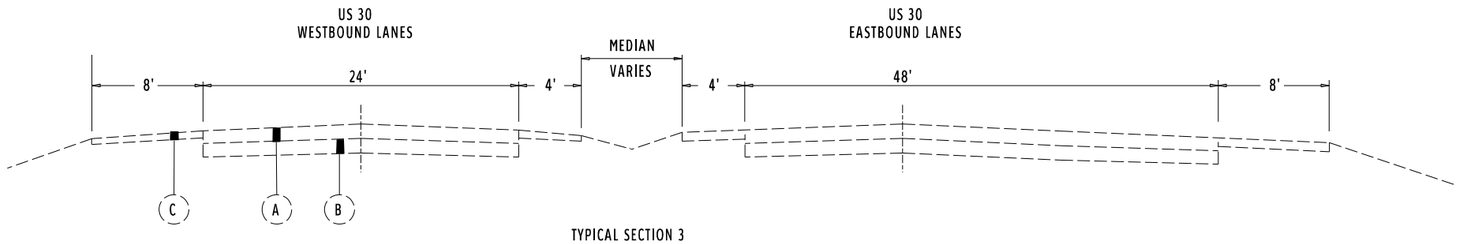
STA. 1158+00.00 to STA. 1163+00.00



TYPICAL SECTION 2

US-30 at WENGER RD

STA. 1189+00.00 to STA. 1193+00.00



TYPICAL SECTION 3

US-30 at SR-94

STA. 1225+00.00 to STA. 1228+00.00

LEGEND

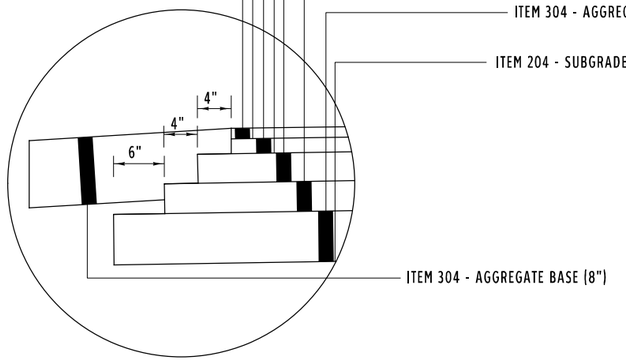
(A) EXISTING 7.5" ASPHALT CONCRETE

(B) EXISTING 9" CONCRETE BASE

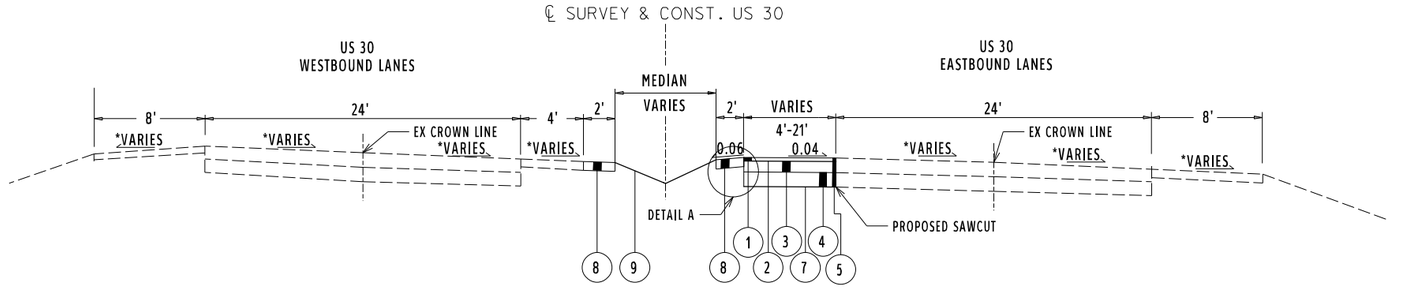
(C) EXISTING 6.5" ASPHALT CONCRETE

EXISTING TYPICAL SECTIONS

WAY-30-23.33



DETAIL A

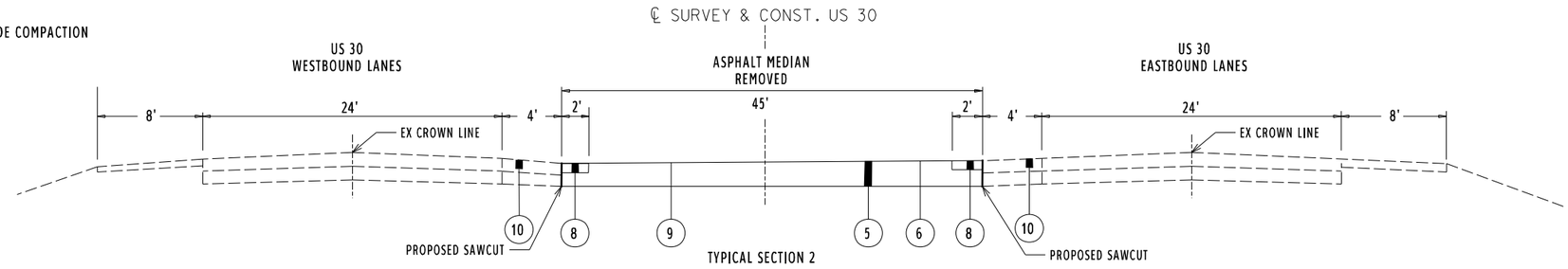


TYPICAL SECTION 1

US-30 at OLD LINCOLN WAY

STA. 1158+69.29 to STA. 1161+37.14

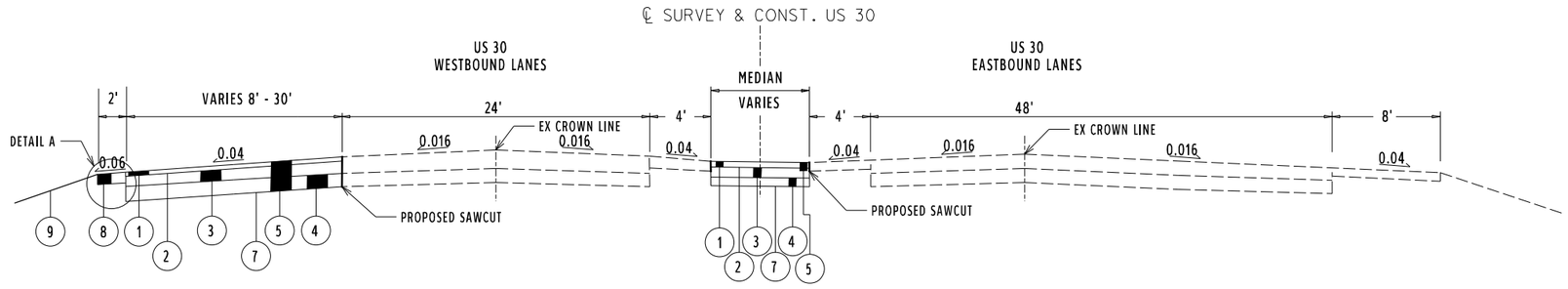
*SEE CROSS SECTIONS



TYPICAL SECTION 2

US-30 at WENGER RD

STA. 1190+57.39 to STA. 1192+00.00



TYPICAL SECTION 3

US-30 at SR-94

STA. 1225+77.31 to STA. 1227+08.59

LEGEND

1	ITEM 442 - 3" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (448)
2	ITEM 407 - TACK COAT (0.08 GAL/SY 1ST LIFT, 0.05 GAL/SY 2ND LIFT)
3	ITEM 301 - 7" ASPHALT CONCRETE BASE, PG64-22
4	ITEM 304 - 6" AGGREGATE BASE
5	ITEM 202 - PAVEMENT REMOVED
6	ITEM 690 - SPECIAL - GEORUNNER PORTABLE CONSTRUCTION MATS
7	ITEM 204 - SUBGRADE COMPACTION
8	ITEM 304 - 8" AGGREGATE BASE
9	ITEM 659 - SEEDING AND MULCHING
10	ITEM 618 - RUMBLE STRIP (ASPHALT CONCRETE)

PROPOSED TYPICAL SECTIONS

WAY-30-23.33

UTILITIES

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

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.

CABLE
ARMSTRONG UTILITIES
1141 LAFAYETTE RD
MEDINA, OH 44256
330.802.5991

COMMUNICATION
AT&T OHIO
50 W. BOWERY ST
AKRON, OH 44308
330.384.3561

GAS
COLUMBIA GAS OF OHIO
1020 W. STATE ST
SALEM, OH 44460
419.957.6633

TRAFFIC
ODOT DISTRICT THREE
906 CLARK AVENUE
ASHLAND, OH 44805
419.207.7045

CITY
CITY OF ORRVILLE UTILITIES
207 NORTH MAIN STREET
ORRVILLE, OH 44667
330.684.5000

ELECTRIC
OHIO EDISON
1717 ASHLAND ROAD
MANSFIELD, OH 44905
419.521.6275

GAS
NORTHEAST OHIO NATURAL GAS
9081 STATE ROUTE 250
STRASBURG, OH 44680
330.878.5589

THE AFOREMENTIONED UTILITY COMPANIES AND AGENCIES HAVE VARIOUS FACILITIES IN THE AREA THAT WILL REMAIN IN PLACE DURING CONSTRUCTION.

EXTREME CAUTION SHOULD BE EXERCISED IN AREAS WITH UTILITIES. SECTIONS 105.07 AND 107.16 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS REQUIRE, AMONG OTHER THINGS, THAT THE CONTRACTOR COOPERATE WITH ALL UTILITIES LOCATED WITHIN THE LIMITS OF THIS CONSTRUCTION PROJECT AND TAKE RESPONSIBILITY FOR THE PROTECTION OF THE UTILITY PROPERTY AND SERVICES.

OHIO EDISON HAS A 12,470 VOLT DISTRIBUTION CONDUCTOR THAT CROSSES US ROUTE 30. THE HIGHWAY CONTRACTOR WILL NEED TO USE EXTREME CAUTION WHILE WORKING AROUND THEIR ENERGIZED CONDUCTOR. THE HIGHWAY CONTRACTOR MUST KNOW & COMPLY WITH OCCUPATIONAL SAFETY HEALTH ADMINISTRATION (OSHA) STANDARD 1926.1408 SUBPART CC POWER LINE SAFE-WORKING CLEARANCES BETWEEN PERSONS OR ANY CONDUCTIVE OBJECT AND THE ENERGIZED BARE WIRES. THE CONDUCTORS ARE RATED BELOW 50 KV. THE HIGHWAY CONTRACTOR WILL NEED TO HOLD THE EXISTING POWER POLE AT STA. 1226+80 LT. US ROUTE 30 WB LANES.

CONSTRUCTION NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE PROJECT ENGINEER A MINIMUM OF TWENTY ONE (21) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE RESTRICTIONS, LANE CLOSURES, AND OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THIS INFORMATION TO THE FOLLOWING:

DISTRICT PUBLIC INFORMATION OFFICE (PIO) BY EMAIL AT D03.PIO@DOT.OHIO.GOV

DISTRICT PERMIT SECTION BY FAX AT (614) 887-4318 OR EMAIL AT LOUIS.TUMBLIN@DOT.OHIO.GOV

CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OR EMAIL AT HAULING.PERMITS@DOT.OHIO.GOV

THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS, VIA MEDIA SOURCES.

EXISTING PLANS

EXISTING PLANS ENTITLED WAY-30-22.10 MAY BE INSPECTED IN THE ODOT DISTRICT 3 OFFICE IN ASHLAND.

SURVEYING PARAMETERS

PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 43 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 STANDARD VRS AVERAGE
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING
ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID 12A

HORIZONTAL POSITIONING
REFERENCE FRAME: NAD83(2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE - NORTH ZONE (3401)
COMBINED SCALE FACTOR: UNITLESS GRID TO GROUND PROJECT ADJUSTMENT FACTOR (PAF) MULTIPLIER = 1.00010052. GRID (METERS) TO PROJECT GROUND (U.S. SURVEY FEET) MULTIPLIER = 3.28116311.

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 823, THE DEPARTMENT'S MAPPING AND SURVEY SPECIFICATION, AND STANDARD CONSTRUCTION DRAWING RM-1.1. PROVIDE DELIVERABLES ACCORDING TO THE DEPARTMENT'S MAPPING AND SURVEY SPECIFICATION TO THE PROJECT ENGINEER.

UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

REVIEW OF DRAINAGE FACILITIES

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 NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED 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.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

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.

ROUNDING

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

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448)

ALL OPEN TRANSVERSE JOINTS SHALL BE TAPERED TO MEET EXISTING PAVEMENT BEFORE INTRODUCING TRAFFIC. A "BUMP" SIGN (W-8-1-36) SHALL BE ERECTED AT ANY TRANSVERSE JOINT LEFT OPEN OVER NIGHT, INCLUDING A SPEED ADVISORY SIGN. THESE SIGNS SHALL BE REMOVED IMMEDIATELY AFTER JOINT HAS BEEN CLOSED. PLACEMENT OF SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

CARE SHALL BE TAKEN TO MATCH EXISTING PAVEMENT ELEVATIONS AT EXISTING PAVED BERMS, DRIVES, INTERSECTIONS, ETC.

CALCULATED MAE CHECKED CAD

GENERAL NOTES

WAY-30-23.33

ITEM 659 - SEEDING AND MULCHING

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

659 - SEEDING AND MULCHING	1040 SQ. YD.
659 - COMMERCIAL FERTILIZER	0.14 TON
659 - LIME	0.21 ACRE
659 - WATER	5.76 M GAL.
659 - REPAIR SEEDING AND MULCHING	52 SQ. YD.
659 - INTER SEEDING	52 SQ. YD.
659 - TOPSOIL	115 CU. YD.
659 - SOIL ANALYSIS TEST	2 EACH

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS. QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY.

SURFACE PROTECTION MATS

THE SURFACE PROTECTION SYSTEM IS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. THE MATS WILL BE ANCHORED AS NEEDED AND AS DIRECTED BY THE PROJECT ENGINEER.

THE FOLLOWING ITEMS SHALL BE USED TO INSTALL THE SURFACE PROTECTION SYSTEM ACCORDING TO THE DETAILS AS SHOWN ON THIS SHEET AND TO RESTORE THE AREA TO ITS PRE-CONSTRUCTION CONDITION. THE SURFACE PROTECTION SYSTEM SHALL BE INSTALLED IN THE AREAS IDENTIFIED IN THE PLAN VIEW ON SHEET 22 AND ON THE CROSS SECTIONS.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE PERTINENT ITEM. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 690, SPECIAL - GEORUNNER PORTABLE CONSTRUCTION MATS 376 SY

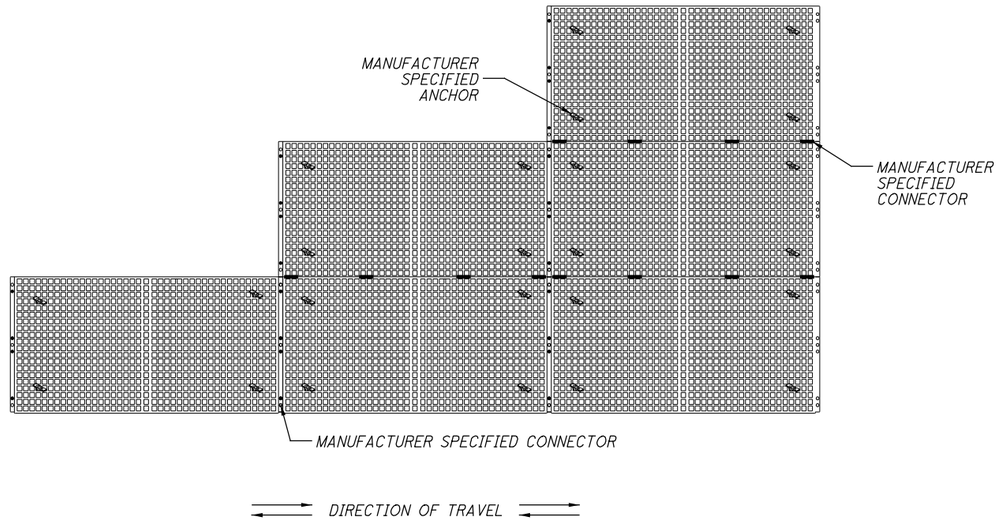
ITEM SPECIAL - MISC. GEORUNNER PORTABLE CONSTRUCTION MATS

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING THE GEORUNNER PORTABLE CONSTRUCTION MATS, MANUFACTURED BY PRESTO PRODUCTS COMPANY, PO BOX 2399, APPLETON, WI, 54912-2399, 800-558-3525. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERES SPECIFIED DETAILS INCLUDING, BUT NOT LIMITED TO CONNECTION DEVICE(S).

ODOT WILL ACCEPT AN ALTERNATIVE IF THE FOLLOWING CONDITIONS ARE MET:

1) THE SYSTEM IS SIMILAR TO THE BASIC GEOMETRY, AND COMPONENTS OF GEORUNNER (I.E. DESIGNED TO PROTECT GRASS AREAS FROM VEHICLE TRAFFIC, REDUCE MUD TRACKING, ETC.).
2) MATERIAL SHALL BE CONSTRUCTED OF POLYMER.
3) MINIMUM TENSILE STRENGTH SHALL BE 3,000 POUNDS.
2) CONNECTIONS BETWEEN THE INDIVIDUAL MATS ARE REQUIRED.
3) A SAMPLE OF THE MATERIAL IS SUBMITTED FOR ODOT REVIEW, MINIMUM SIZE 3'X3'.
4) MANUFACTURERS SPECIFICATIONS ARE SUBMITTED.
5) DOCUMENTATIONS (PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER) STATING THAT THE SYSTEM IS EQUIVALENT TO OR EXCEEDS THE SPECIFICATIONS OF THE GEORUNNER.

THE ODOT PROJECT ENGINEER WILL REVIEW ALL OF THE SUPPLIED INFORMATION AND MAKE A DETERMINATION IF THE MATERIAL IS EQUIVALENT OR EXCEEDS THE GEORUNNER. IF THE ALTERNATIVE DOES MEET THE ABOVE, THEN THE PROJECT ENGINEER WILL APPROVE THE USE OF THE ALTERNATIVE.



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GENERAL NOTES

WAY-30-23.33

ITEM 614 - MAINTAINING TRAFFIC: GENERAL

ONE 11' LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES. ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, PLAN DETAILS, STANDARD DRAWINGS, AND AS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE SECTION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES CURRENT EDITION WITH THE LATEST REVISIONS. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED ON THIS PLAN.

THE FOLLOWING REQUIREMENTS SHALL ALSO APPLY:
THE CONTRACTOR SHALL SUBMIT, IN WRITING, A SCHEDULE OF OPERATIONS TO THE ENGINEER AND RECEIVE APPROVAL BEFORE WORK IS STARTED ON THE PROJECT. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL COORDINATE THE MAINTENANCE OF TRAFFIC OPERATIONS WITH THE LOCAL STATE HIGHWAY PATROL.

NIGHT WORK IS PERMITTED.

THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL PAVEMENT THROUGHOUT THE PROJECT UNDER ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC DURING THE PERIOD FROM THE START OF WORK TO THE COMPLETION OF ALL WORK.

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 - MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	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 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 $50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

ITEM 614 - MAINTAINING TRAFFIC

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 WHEN THEY ARE NOT APPLICABLE, WITH THE APPROVAL OF THE ENGINEER.

IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE OMUTCD, AND SUCH FAILURE RESULTS IN A CONDITION AT THE WORK SITE WHICH IS UNSAFE FOR TRAFFIC, THE ENGINEER SHALL SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS.

ALL MAINTENANCE OF TRAFFIC SIGNS ARE PAID UNDER ITEM 614 - MAINTAINING TRAFFIC.

LANE CLOSURE DISINCENTIVE

A LANE CLOSURE IS DEFINED AS ANY RESTRICTION OF A LANE OF TRAFFIC INCLUDING, BUT NOT LIMITED TO, SET UP AND TEAR DOWN OF TRAFFIC CONTROL ZONES. THE CONTRACTOR WILL BE ASSESSED A DISINCENTIVE FEE IN THE AMOUNT OF $50.00 PER MINUTE THAT LANES ARE CLOSED TO TRAFFIC DURING TIMES DESIGNATED AS 'LANE CLOSURE NOT PERMITTED' AS STATED IN THESE PLANS AND ON THE ODOT PLCM WEB SITE AT http://plcm.dot.state.oh.us.

OVERNIGHT TRENCH CLOSING

NO TRENCH SHALL BE LEFT OPEN OVERNIGHT. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH SHALL BE COVERED OR BACKFILLED TO A DEPTH OF NO MORE THAN 1 1/2 INCHES BELOW THE EXISTING PAVEMENT, OR AS DIRECTED BY THE ENGINEER.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT UNIT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE AND BERM WIDENING SHALL BE PERFORMED ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED AT ALL TIMES WITH DRUMS OR BARRICADES.

PLACEMENT OF THE PROPOSED BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL BY THE ENGINEER.

SEQUENCE OF CONSTRUCTION

ALL WORK AT THE US 30 INTERSECTIONS WITH US 30A (STA. 1158+50 - 1161+86) AND SR 94 (STA. 1225+62 - 1228+39), INCLUDING GRADING, DRAINAGE, PAVEMENT, PAVEMENT MARKING, SIGNING, AND SIGNALS SHALL BE COMPLETED PRIOR TO THE CLOSURE OF THE US 30 AND WENGER RD INTERSECTION (STA. 1190+44 - 1192+19) OR AS DIRECTED BY THE ENGINEER.

ITEM 622 - PORTABLE BARRIER, 32", AS PER PLAN

ITEM 622 - PORTABLE BARRIER, 32" SHALL HAVE A GLARE SCREEN ATTACHED TO THE TOP AS PER STANDARD CONSTRUCTION DRAWING MT-101.70. THE GLARE SCREEN SHALL BE INCIDENTAL TO THE BARRIER. THE CONTRACTOR HAS THE OPTION TO USE ITEM 622 PORTABLE BARRIER, 50" WITHOUT A GLARE SCREEN.

ITEM 614 - BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET. AN ESTIMATED QUANTITY OF 30 EACH OF ITEM 614 BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL) AND 30 EACH OF ITEM 614 - OBJECT MARKER, ONE-WAY HAVE BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY.

ITEM 614 - WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL)

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 PRODUCTS WEB PAGE.

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 FOR 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.

CALCULATED MAE CHECKED CAD

MAINTENANCE OF TRAFFIC

WAY-30-23.33

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER (AND OFFICIAL PATROL CAR WITH MOUNTED EMERGENCY FLASHING LIGHTS) SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS AS DIRECTED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.

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

DURING A TRAFFIC SIGNAL INSTALLATION.

LAW ENFORCEMENT OFFICERS (LEO'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE. 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.

LEO'S 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 CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES AND PROVIDE 72 HOURS ADVANCE NOTICE AS REQUIRED BY THE HIGHWAY PATROL LISTED BELOW:

STATE HIGHWAY PATROL
1786 DOVER ROAD
WOOSTER, OH 44691
330-264-0575

LAW ENFORCEMENT OFFICERS 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
120 HOURS

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

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, THEY MAY DO SO AT THEIR OWN EXPENSE.

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(S) ON SITE FOR THE DURATION OF THE PROJECT. THE SIGN(S) SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR (OFFICE OF MATERIALS MANAGEMENT). THE APPROVED LIST OF PORTABLE CHANGEABLE MESSAGE SIGNS CAN BE FOUND ON THE ODOT WEB SITE BY CLICKING ON THE SERVICES MENU, THEN CLICKING ON MATERIALS MANAGEMENT. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FT AND 475 FT 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(S) SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHALL BE DELINEATED ON A PERMANENT BASIS BY AFFIXING CONSPICUITY TAPE CONFORMING TO CMS 614.03 IN A CONTINUOUS LINE ON THE FACE OF THE TRAILER AS SEEN BY ONCOMING ROAD USERS.

THE PROBABLE PCMS LOCATIONS WILL BE DETERMINED BY THE ENGINEER PRIOR TO BEGINNING WORK ON THIS PROJECT. PLACEMENT, OPERATIONS, MAINTENANCE, AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AD 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 TO FACE AWAY FROM TRAFFIC AND SHALL DISPLAY A MINIMUM OF ONE YELLOW RETROREFLECTIVE SHEETING SURFACE, A MINIMUM OF 9 INCHES BY 15 INCHES IN 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 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 PREPROGRAMMED 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 PREPROGRAMMED 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 REVISION TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA LINK 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 CMS 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.

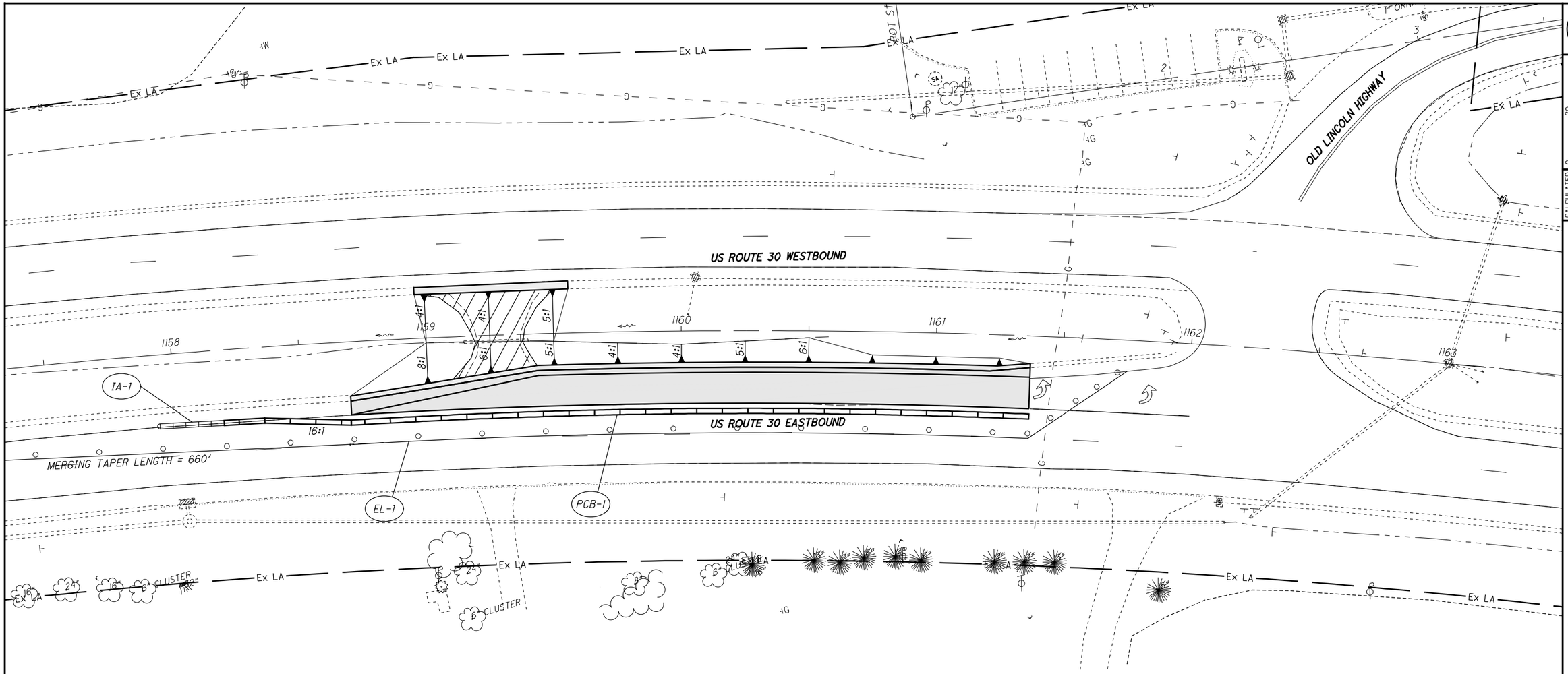
PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE, AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK. THE CONTRACTOR SHALL ONLY BE PAID FOR PCMS UNITS WHEN THEY ARE IN OPERATION ON THE PROJECT AS SPECIFIED IN THE PLANS OR BY THE ENGINEER.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 8 SIGN-MONTH

CALCULATED MAE
CHECKED CAD

MAINTENANCE OF TRAFFIC

WAY-30-23.33



ITEM	QUANTITY	UNIT	DESCRIPTION
614	1	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
614	0.18	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT
622	320	FT	PORTABLE BARRIER, 32", AS PER PLAN

ALL QUANTITIES CARRIED TO GENERAL SUMMARY

LEGEND

- IMPACT ATTENUATOR
- 32" PORTABLE CONCRETE BARRIER
- TRAFFIC BARREL

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

MAINTENANCE OF TRAFFIC US 30 & OLD LINCOLN WAY

WAY-30-23.33

9
46

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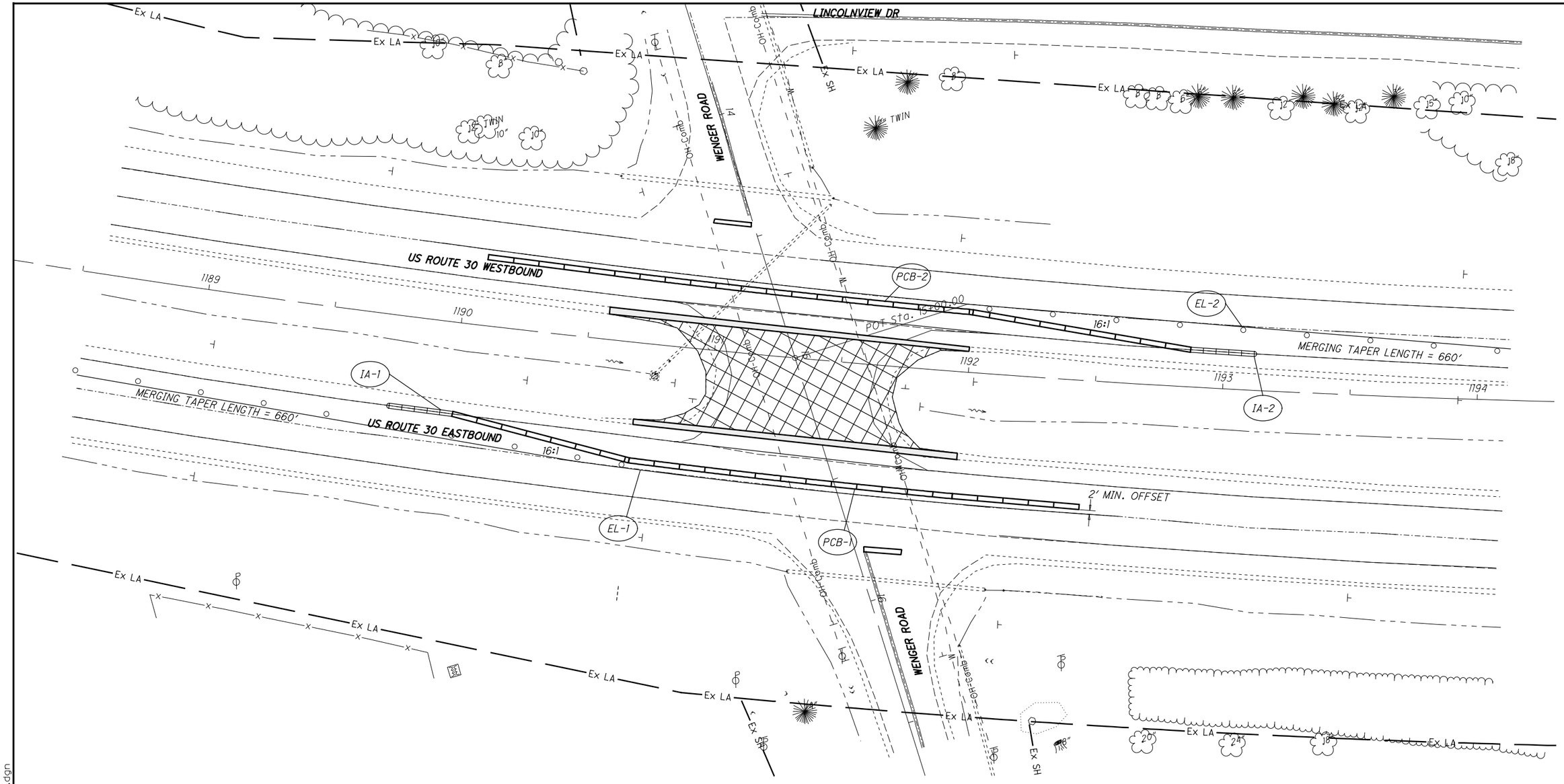

ITEM	QUANTITY	UNIT	DESCRIPTION
614	2	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
614	0.33	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT
622	530	FT	PORTABLE BARRIER, 32", AS PER PLAN

ALL QUANTITIES CARRIED TO GENERAL SUMMARY

LEGEND

- IMPACT ATTENUATOR
- 32" PORTABLE CONCRETE BARRIER
- TRAFFIC BARREL

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

MAINTENANCE OF TRAFFIC
US 30 & WENGER RD

WAY-30-23.33

10
46

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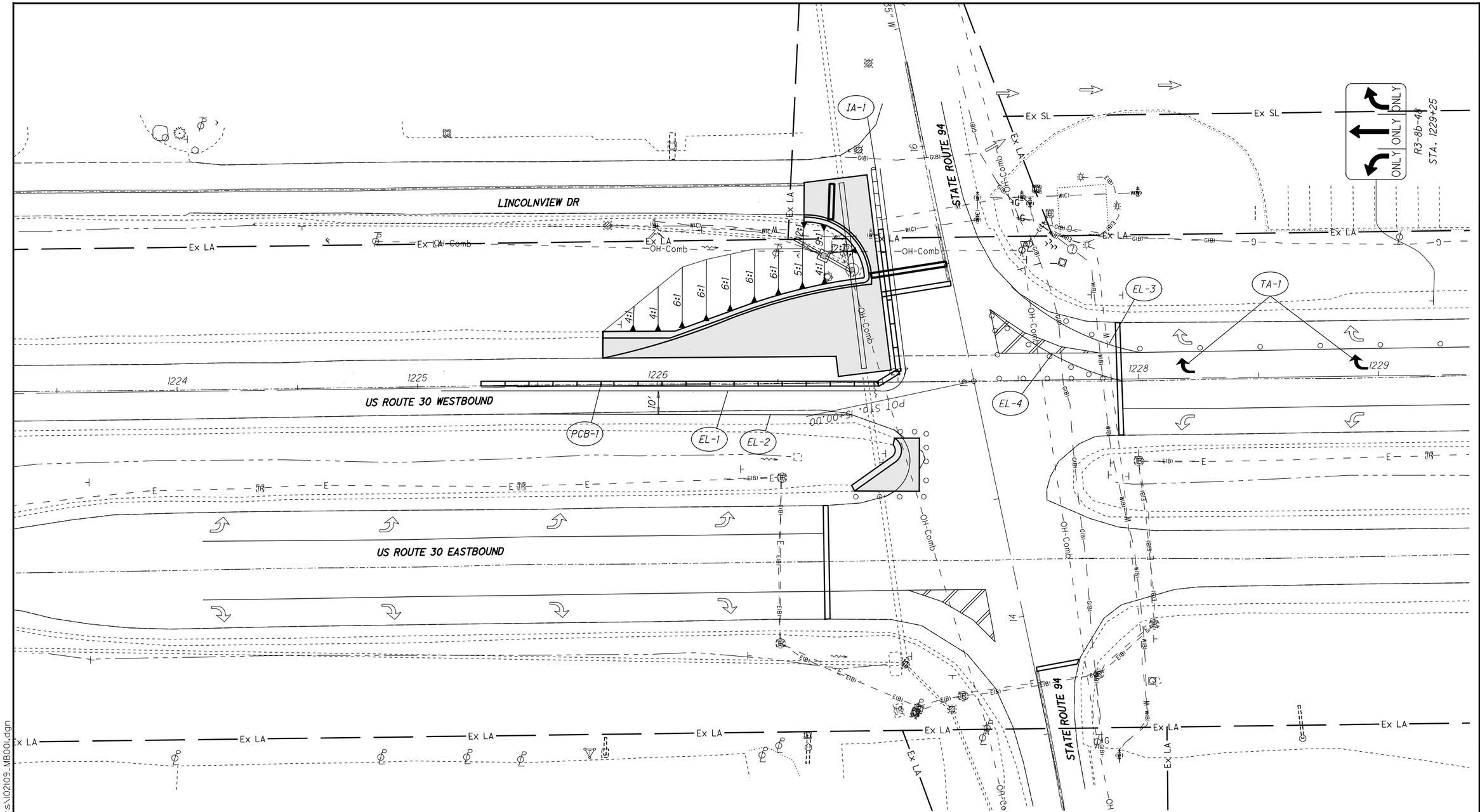

ITEM	QUANTITY	UNIT	DESCRIPTION
614	1	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)
614	0.10	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT
614	2	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT
622	240	FT	PORTABLE BARRIER, 32", AS PER PLAN
630	10	SF	SIGN, FLAT SHEET
630	32	FT	GROUND MOUNTED SUPPORT, NO. 3 POST

ALL QUANTITIES CARRIED TO GENERAL SUMMARY

LEGEND

- IMPACT ATTENUATOR
- 32" PORTABLE CONCRETE BARRIER
- TRAFFIC BARREL

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

MAINTENANCE OF TRAFFIC
US 30 & SR 94

WAY-30-23.33

11
46

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SHEET NUM.													PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	7	8	9	10	11	14	33	34	35	37	38	39	01/SAF/OT	02/SAF/OT						
																			ROADWAY	
						946							946		202	23000	946	SY	PAVEMENT REMOVED	
						79							79		202	35100	79	FT	PIPE REMOVED, 24" AND UNDER	
						40							40		202	35200	40	FT	PIPE REMOVED, OVER 24"	
						96							96		203	10000	96	CY	EXCAVATION	
						116							116		203	20000	116	CY	EMBANKMENT	
						752							752		204	10000	752	SY	SUBGRADE COMPACTION	
376													376		SPECIAL	69098300	376	SY	GEORUNNER PORTABLE CONSTRUCTION MATS	6
																			EROSION CONTROL	
2													2		659	00100	2	EACH	SOIL ANALYSIS TEST	
115													115		659	00300	115	CY	TOPSOIL	
1,040													1,040		659	10000	1,040	SY	SEEDING AND MULCHING	
52													52		659	14000	52	SY	REPAIR SEEDING AND MULCHING	
52													52		659	15000	52	SY	INTER-SEEDING	
0.14													0.14		659	20000	0.14	TON	COMMERCIAL FERTILIZER	
0.21													0.21		659	31000	0.21	ACRE	LIME	
5.76													5.76		659	35000	5.76	MGAL	WATER	
													10,000		832	30000	10,000	EACH	EROSION CONTROL	
																			DRAINAGE	
						28							28		611	04600	28	FT	12" CONDUIT, TYPE C	
						37							37		611	10400	37	FT	24" CONDUIT, TYPE B	
						42							42		611	13400	42	FT	30" CONDUIT, TYPE B	
						1							1		611	98510	1	EACH	CATCH BASIN, NO. 2-3	
						1							1		611	99574	1	EACH	MANHOLE, NO. 3	
																			PAVEMENT	
						146							146		301	46000	146	CY	ASPHALT CONCRETE BASE, PG64-22	
						125							125		304	20000	125	CY	AGGREGATE BASE (6.00")	
						43							43		304	20000	43	CY	AGGREGATE BASE (8.00")	
						158							158		407	10000	158	GAL	TACK COAT	
						63							63		442	20000	63	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448)	5
						86							86		618	40100	86	FT	RUMBLE STRIPS, (ASPHALT CONCRETE)	
																			TRAFFIC CONTROL	
					32		79	96					207		630	03100	207	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
									32				32		630	06400	32	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, S4X7.7	
									2				2		630	09000	2	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	
							26	29					55		630	80100	55	SF	SIGN, FLAT SHEET	
									27				27		630	80200	27	SF	SIGN, GROUND MOUNTED EXTRUSHEET	
									2				2		630	84500	2	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
							1	10	5				16		630	84900	16	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
							1	8	8				17		630	86002	17	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
									2				2		630	86102	2	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	
							0.05	0.05	0.04				0.14		642	00094	0.14	MILE	EDGE LINE, 6"	
								141	40				181		642	30000	181	FT	REMOVAL OF PAVEMENT MARKING	
							2						2		642	30020	2	EACH	REMOVAL OF PAVEMENT MARKING	
							250	264					514		644	00404	514	FT	CHANNELIZING LINE, 12"	
								37	47				84		644	00500	84	FT	STOP LINE	
								171					171		644	00700	171	FT	TRANSVERSE/DIAGONAL LINE	
							4						4		644	01300	4	EACH	LANE ARROW	
																			TRAFFIC SIGNALS	
											20			20	611	00400	20	FT	4" CONDUIT, TYPE E	38
												27		27	625	25400	27	FT	CONDUIT, 2", 725.04	
												36		36	625	25600	36	FT	CONDUIT, 4", 725.04	
												27		27	625	29000	27	FT	TRENCH	
												1		1	625	30706	1	EACH	PULL BOX, 725.08, 24"	

CALCULATED MAE
CHECKED CAD

GENERAL SUMMARY

WAY-30-23.33

SHEET NUM.													PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	7	8	9	10	11	14	33	34	35	37	38	39	01/SAF/OT	02/SAF/OT						
																			TRAFFIC SIGNALS	
												5		5	625	32000	5	EACH	GROUND ROD	
												27		27	625	36000	27	FT	PLASTIC CAUTION TAPE	
												1		1	625	76000	1	EACH	ARC FLASH CALCULATIONS AND LABEL, (LOCATION) POWER SERVICE	
												1		1	625	76000	1	EACH	ARC FLASH CALCULATIONS AND LABEL, (LOCATION) TRAFFIC SIGNAL CONTROLLER CABINET	
												4		4	630	79500	4	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
					10							64		74	630	80100	74	SF	SIGN, FLAT SHEET	
												4		4	631	92001	4	EACH	SIGN FLASHER ASSEMBLY, AS PER PLAN	38
												12		12	632	05007	12	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY,	36
																			POLYCARBONATE, AS PER PLAN, BLACK	
												2		2	632	05011	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 2-WAY,	36
																			POLYCARBONATE, AS PER PLAN, BLACK	
												16		16	632	25000	16	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
												587		587	632	30200	587	FT	MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES	
												587		587	632	30600	587	FT	TETHER WIRE, WITH ACCESSORIES	
												1,404		1,404	632	40500	1,404	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
												938		938	632	40700	938	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
												4		4	632	64000	4	EACH	STRAIN POLE FOUNDATION	
												52		52	632	68300	52	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
												294		294	632	69800	294	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
												1		1	632	70001	1	EACH	POWER SERVICE, AS PER PLAN	37
												4		4	632	83400	4	EACH	STRAIN POLE, TYPE TC-81.10, DESIGN 14	
												1		1	632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	37
											LUMP			LUMP	632	90300	LS		SIGNALIZATION, MISC.: REMOVE EXISTING CABLE & ABANDON CONDUIT	38
										1				1	632	90400	1	EACH	SIGNALIZATION, MISC.: TEST HOLE PERFORMED	37
												1		1	633	01501	1	EACH	CONTROLLER UNIT, TYPE TS2/A1, WITH CABINET, TYPE TS2, AS PER PLAN	37
												1		1	633	67101	1	EACH	CABINET FOUNDATION, AS PER PLAN	37
												1		1	633	67201	1	EACH	CONTROLLER WORK PAD, AS PER PLAN	37
												1		1	633	68511	1	EACH	COMMUNICATIONS, AS PER PLAN	37
												1		1	633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	37
												1		1	809	60000	1	EACH	CCTV IP-CAMERA SYSTEM, DOME-TYPE	
												2		2	809	69000	2	EACH	ADVANCE RADAR DETECTION	
												4		4	809	69100	4	EACH	STOP-BAR RADAR DETECTION	
																			MAINTENANCE OF TRAFFIC	
		120											120		614	11110	120	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
			1	2	1								4		614	12336	4	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
	30												30		614	13310	30	EACH	BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)	
	30												30		614	13350	30	EACH	OBJECT MARKER, ONE WAY	
		8											8		614	18601	8	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	8
			0.18	0.33	0.1								0.61		614	22360	0.61	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	
					2								2		614	30650	2	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT	
			320	530	240								1,090		622	41001	1,090	FT	PORTABLE BARRIER, 32", AS PER PLAN	7
																			INCIDENTALS	
													LUMP	LUMP	614	11000	LS		MAINTAINING TRAFFIC	
													3	1	619	16000	4	MNTH	FIELD OFFICE, TYPE A	
													LUMP	LUMP	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
													LUMP	LUMP	624	10000	LS		MOBILIZATION	

CALCULATED MAE
CHECKED CAD

GENERAL SUMMARY

WAY-30-23.33

I:\ProjectData\102109\Design\Roadway\Sheets\102109_GG001.dgn

ROADWAY AND PAVEMENT QUANTITIES

LOCATION		LENGTH	LOCATION		202	203	203	204	301	304		407		442	618	202	202	611	611	611	611	611
STATION					PAVEMENT REMOVED	EXCAVATION	EMBANKMENT	SUBGRADE COMPACTION	ASPHALT CONCRETE BASE, PG64-22 (7.00")	AGGREGATE BASE (6.00")	AGGREGATE BASE (8.00")	TACK COAT (0.05 GAL/SY)	TACK COAT (0.08 GAL/SY)	ASPHALT COCNRETE SURFACE COURSE, 12.5MM, TYPE A (448), (1.50"X2)	RUMBLE STRIPS (ASPHALT CONCRETE)	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	CATCH BASIN, NO. 2-3	MANHOLE, NO. 3	24" CONDUIT, TYPE B	30" CONDUIT, TYPE B	12" CONDUIT, TYPE C
BEGIN	END	FT			SY	CY	CY	SY	CY	CY	CY	GAL	GAL	CY	FT	FT	FT	EACH	EACH	FT	FT	FT
1158+69.29	1161+37.14	267.85	EB		226	70	28	382	74.3	63.7	13.0	19.1	61.2	31.9								
1158+96.07	1159+56.01	59.94	MEDIAN/WB		96						4.3					26						
1190+57.39	1192+00.00	142.61	MEDIAN		376	4	0				15.4				86							
1225+77.31	1227+08.59	131.28	WB		232	22	88	336	65.3	56.0	8.1	16.8	53.7	28.0		53	40	1	1	37	42	28
1226+80.13	1227+08.59	28.46	MEDIAN		16			34	6.6	5.7	1.9	1.7	5.5	2.8								
TOTALS					946	96	116	752	146	125	43	38	120	63	86	79	40	1	1	37	42	28

ALL QUANTITIES CARRIED TO GENERAL SUMMARY

CALCULATED MAE | CHECKED CAD

ROADWAY SUBSUMMARY

WAY-30-23.33

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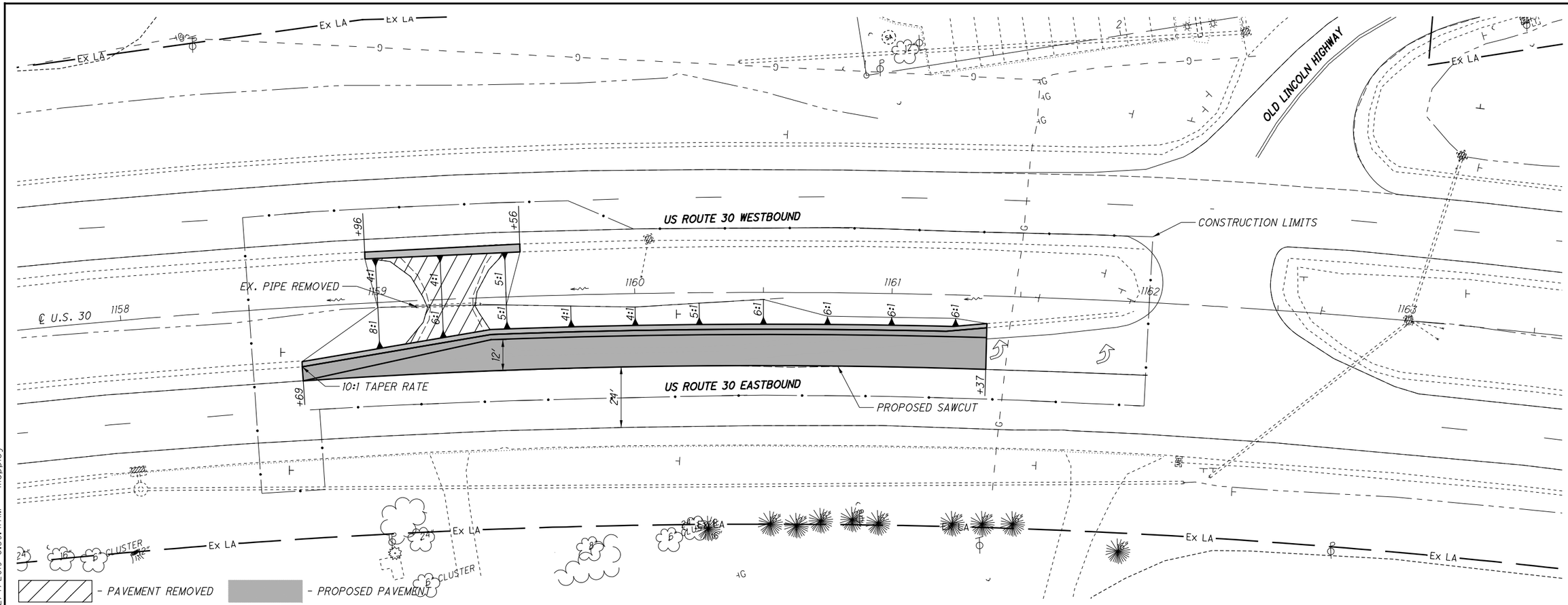
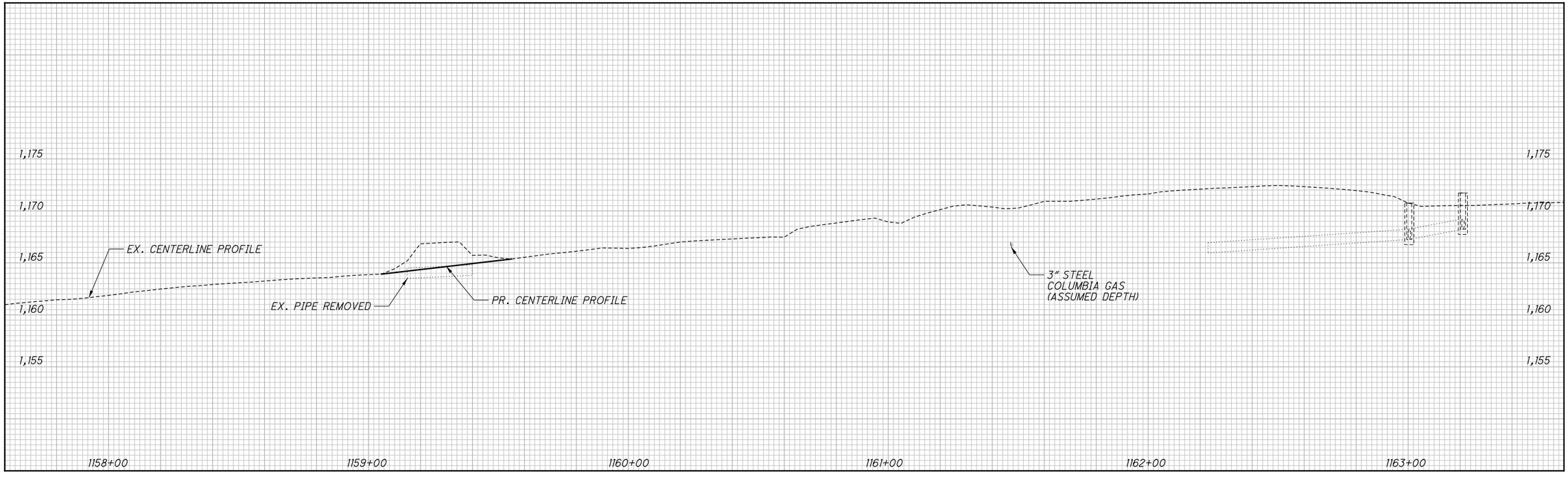




HORIZONTAL SCALE IN FEET
0 10 20 40

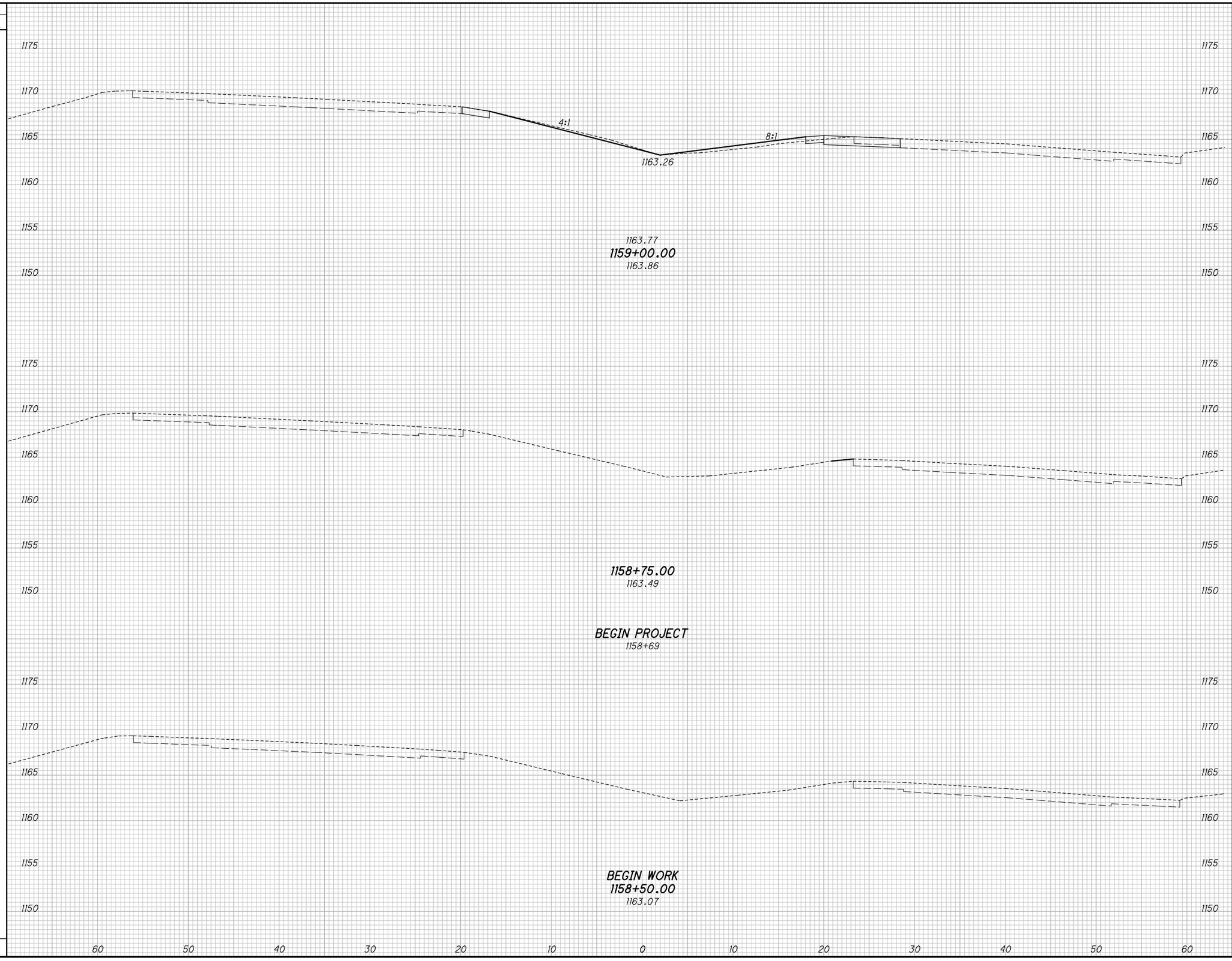
CALCULATED MAE
CHECKED CAD

PLAN AND PROFILE
US 30 & OLD LINCOLN WAY

WAY-30-23.33

15
46

I:\ProjectData\02109\Design\Roadway\Sheets\02109_GP001.dgn Old Lincoln Way Sheet 2/7/2019 6:59:41 AM meppley



SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
36		3	5		
	53			1	2
2		0	0		
	53			1	2

CALCULATED MAE
CHECKED CAD

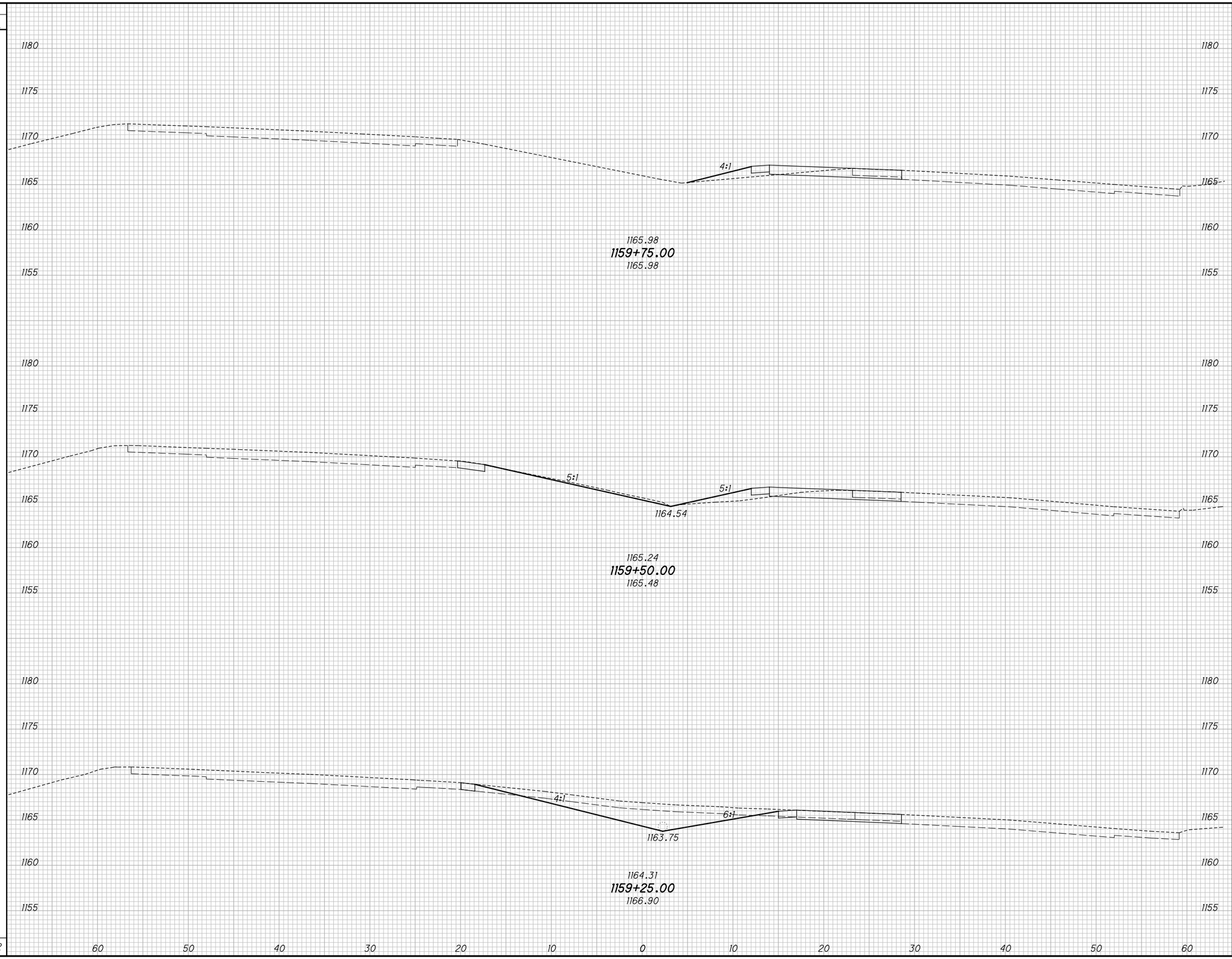
CROSS SECTIONS
STA. 1158+50.00 TO STA. 1159+00.00

WAY-30-23.33

16
46

I:\ProjectData\102109\Design\Roadway\Sheets\102109_XS001.dgn XS_SHEET_temporary_model_name_1 2/7/2019 6:59:42 AM meppley

SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
8	53	5	5	7	5
30	90	10	6	17	3
35	99	27	0	14	2
	242			38	10



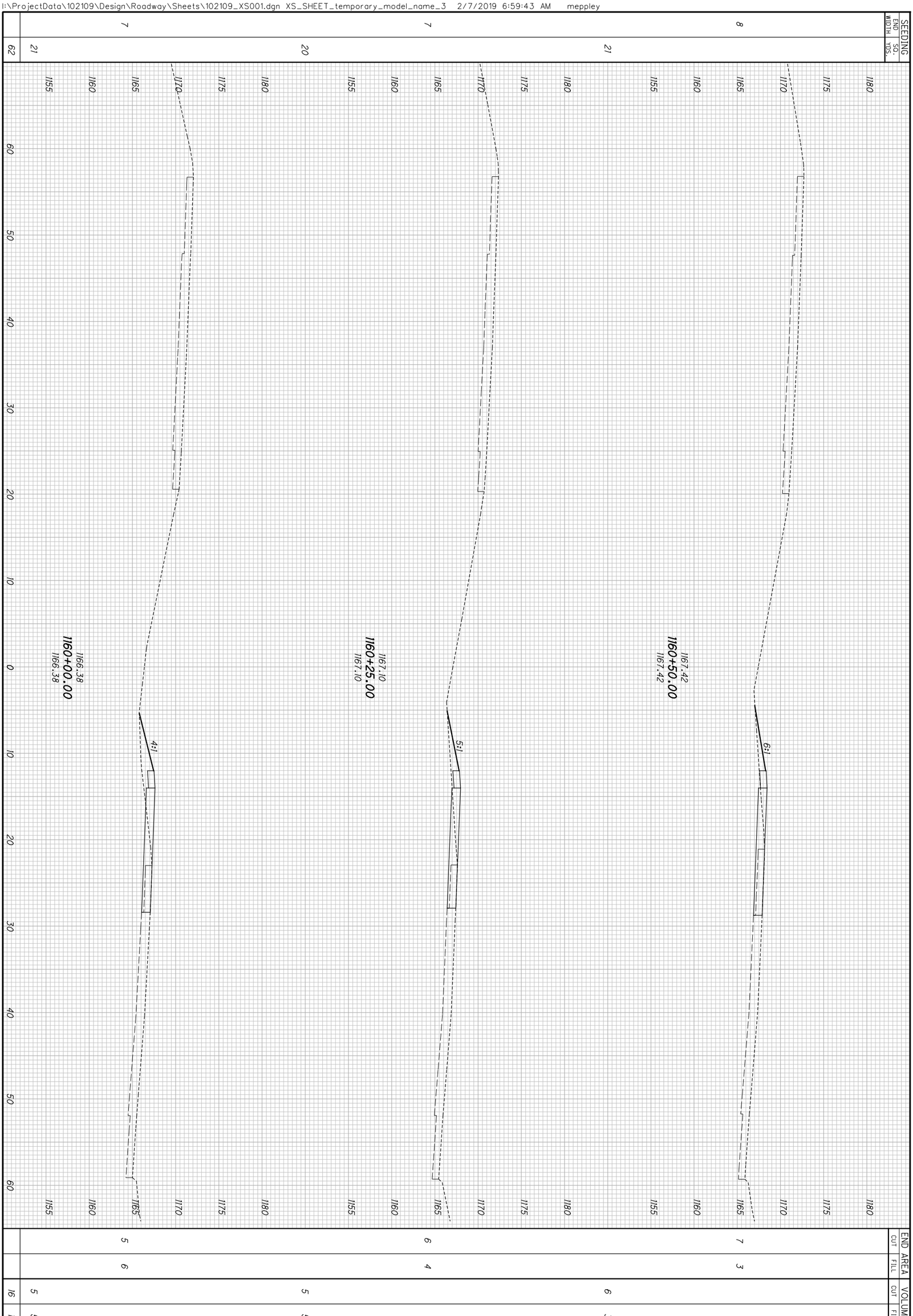
CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1159+25.00 TO STA. 1159+75.00

WAY-30-23.33

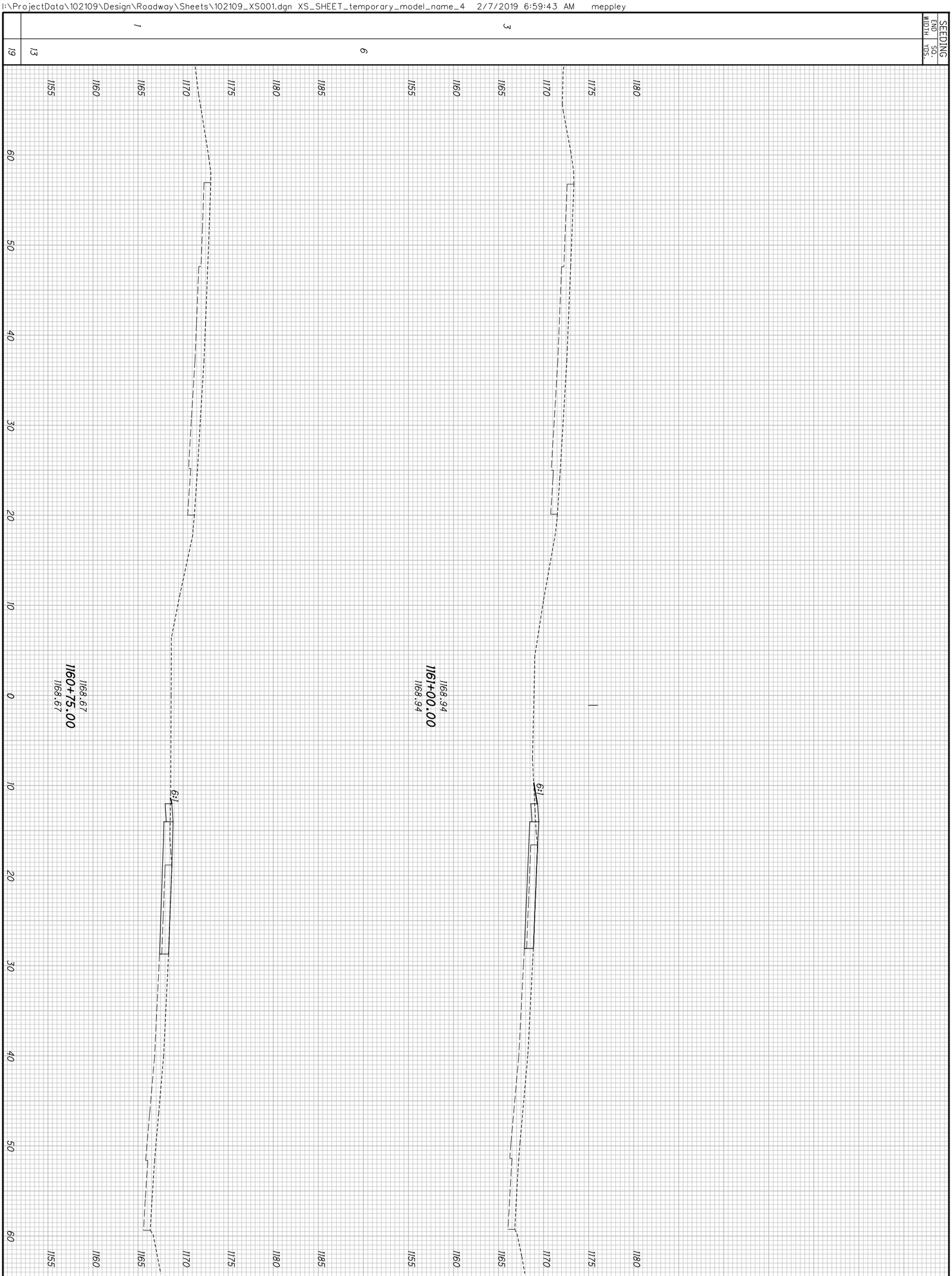
17
46

I:\ProjectData\102109\Design\Roadway\Sheets\102109_XS001.dgn XS_SHEET_temporary_model_name_3 2/7/2019 6:59:43 AM meppley



18 / 46	WAY-30-23.33
	CROSS SECTIONS STA. 1160+00.00 TO STA. 1160+50.00
	CALCULATED MAE CHECKED CAD

I:\ProjectData\102109\Design\Roadway\Sheets\102109_XS001.dgn XS_SHEET_temporary_model_name_4 2/7/2019 6:59:43 AM meppley



19 / 46	WAY-30-23.33
CROSS SECTIONS STA. 1160+75.00 TO STA. 1161+00.00	CALCULATED: MAE CHECKED: CAD

SEEDING	
END WIDTH	SQ. YDS.
0	4
	4

END AREA	
CUT	FILL
0	0

VOLUME	
CUT	FILL
2	1
2	1

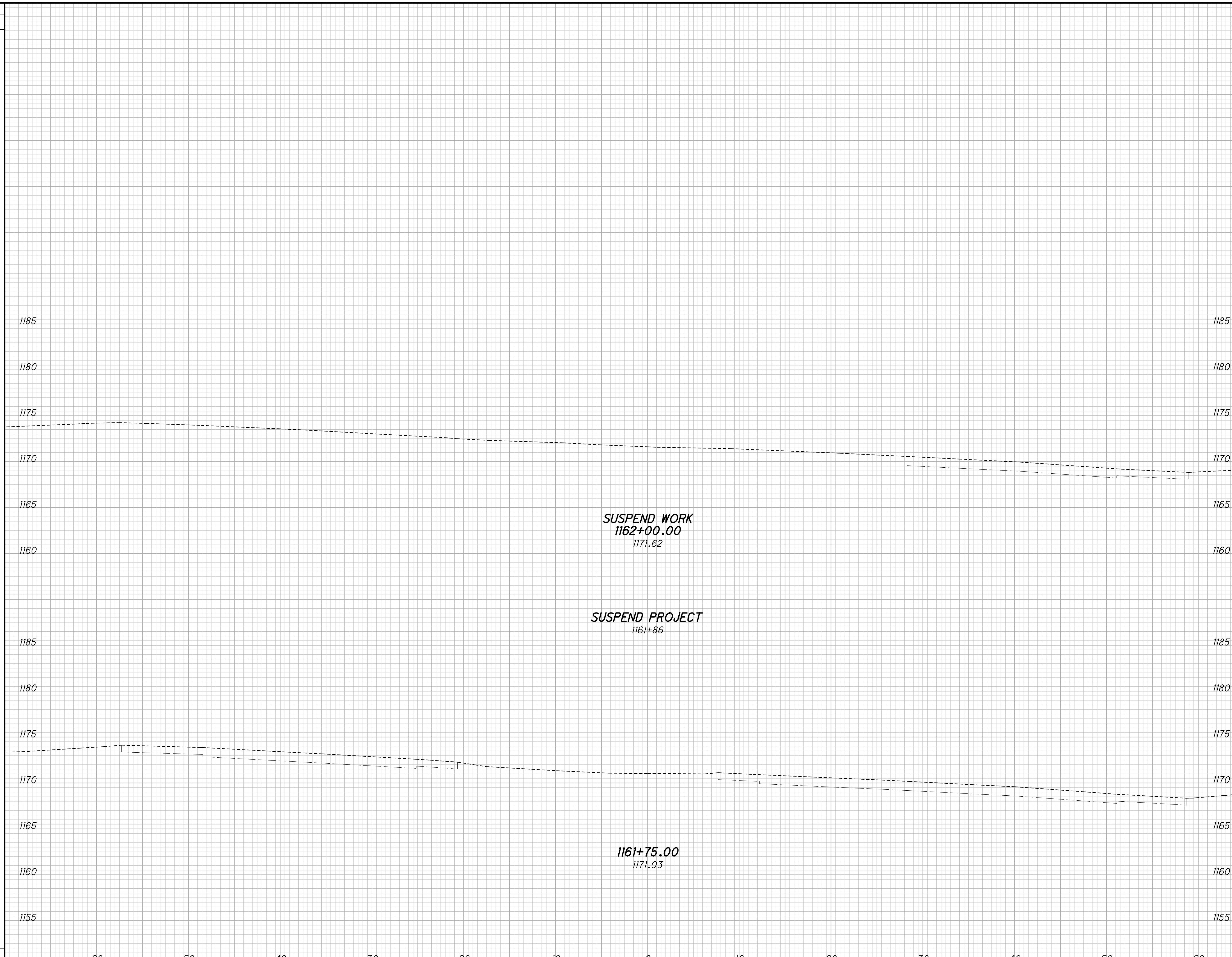
CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1161+25.00 TO STA. 1161+50.00

WAY-30-23.33

I:\ProjectData\102109\Design\Roadway\Sheets\102109_XS001.dgn XS_SHEET_temporary_model_name 2/7/2019 6:59:43 AM meppley

SEEDING	
END WIDTH	SQ. YDS.
	0



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		0	0

CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1161+75.00 TO STA. 1162+00.00

WAY-30-23.33

WENGER ROAD

US ROUTE 30 WESTBOUND

US ROUTE 30 EASTBOUND

℄ U.S. 30

EXISTING 12" PIPE

CONSTRUCTION LIMITS

POT Sta. 15+00.00

+57

+00

+17

+98

1189 1190 1191 1192 1193 1194

Ex LA

OH Comb

TWIN

- PROPOSED BERM

- GEORUNNER PORTABLE CONSTRUCTION MATS

1,180
1,175
1,170
1,165
1,160

WATER LINE
(ASSUMED DEPTH)

1189+00 1190+00 1191+00 1192+00 1193+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

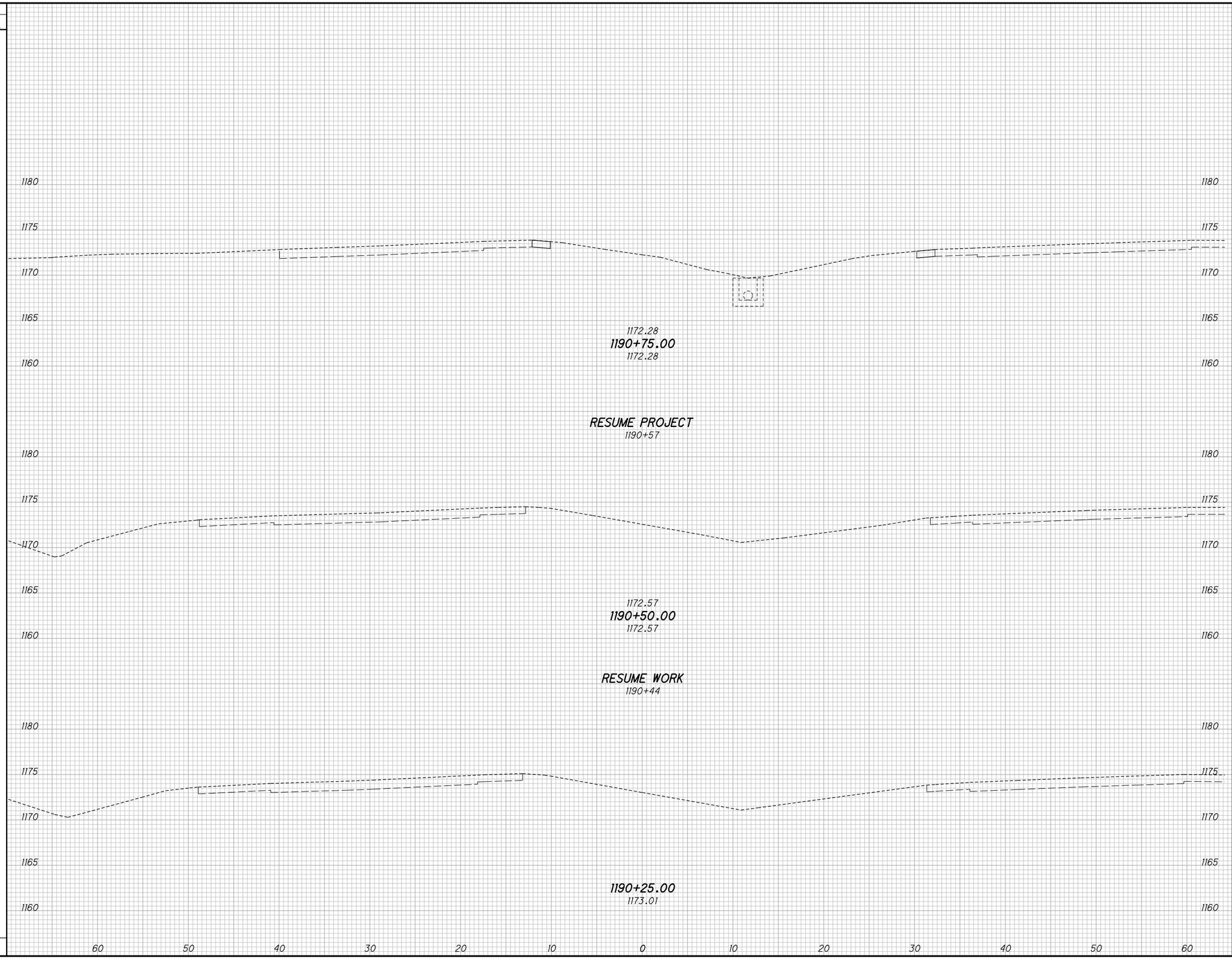
PLAN AND PROFILE
US 30 & WENGER ROAD

WAY-30-23.33

22
46

I:\Project Data\10209\Design\Roadway\Sheets\10209_GP001.dgn Wenger Sheet 2/7/2019 6:59:46 AM meppley

SEEDING	
END WIDTH	SQ. YDS.
0	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
3		2	
		2	0

CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1190+25.00 TO STA. 1190+75.00

WAY-30-23.33

23
46

I:\ProjectData\102109\Design\Roadway\Sheets\102109_XS002.dgn Sheet 2/7/2019 6:59:47 AM meppley

SEEDING END WIDTH	SEEDING SQ. YDS.
46	128
46	125
44	
61	314

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		2	
		2	0

CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1191+00.00 TO STA. 1191+50.00

1180
1175
1170
1165
1160

1171.95
1191+50.00
1171.95

1172.58
1191+25.00
1172.58

1172.97
1191+00.00
1172.97

– PAVEMENT REMOVED

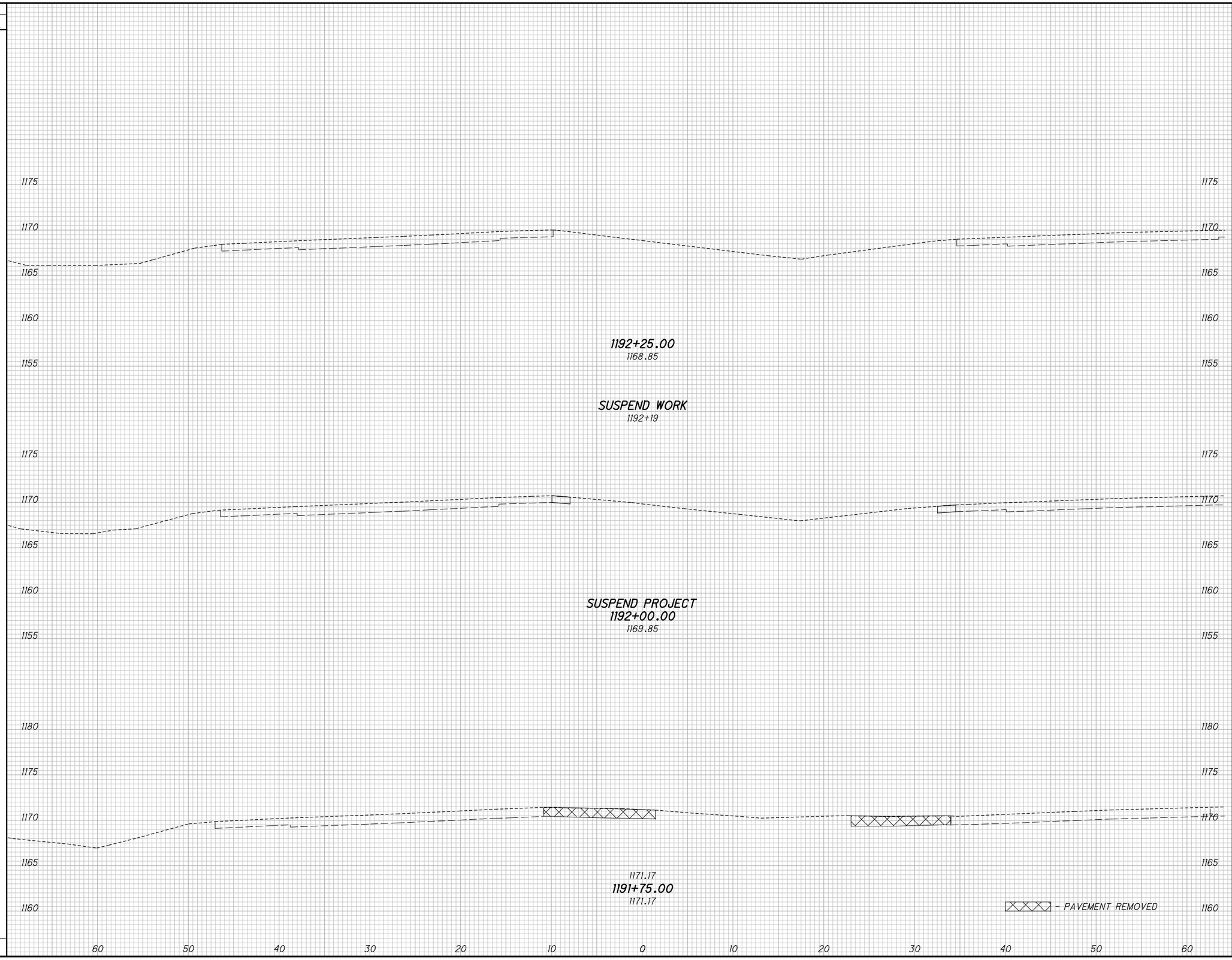
60 50 40 30 20 10 0 10 20 30 40 50 60

WAY-30-23.33

24
46

I:\ProjectData\102109\Design\Roadway\Sheets\102109_XS002.dgn Sheet 2/7/2019 6:59:47 AM meppley

SEEDING	
END WIDTH	SQ. YDS.
0	33
24	97
130	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		0	0

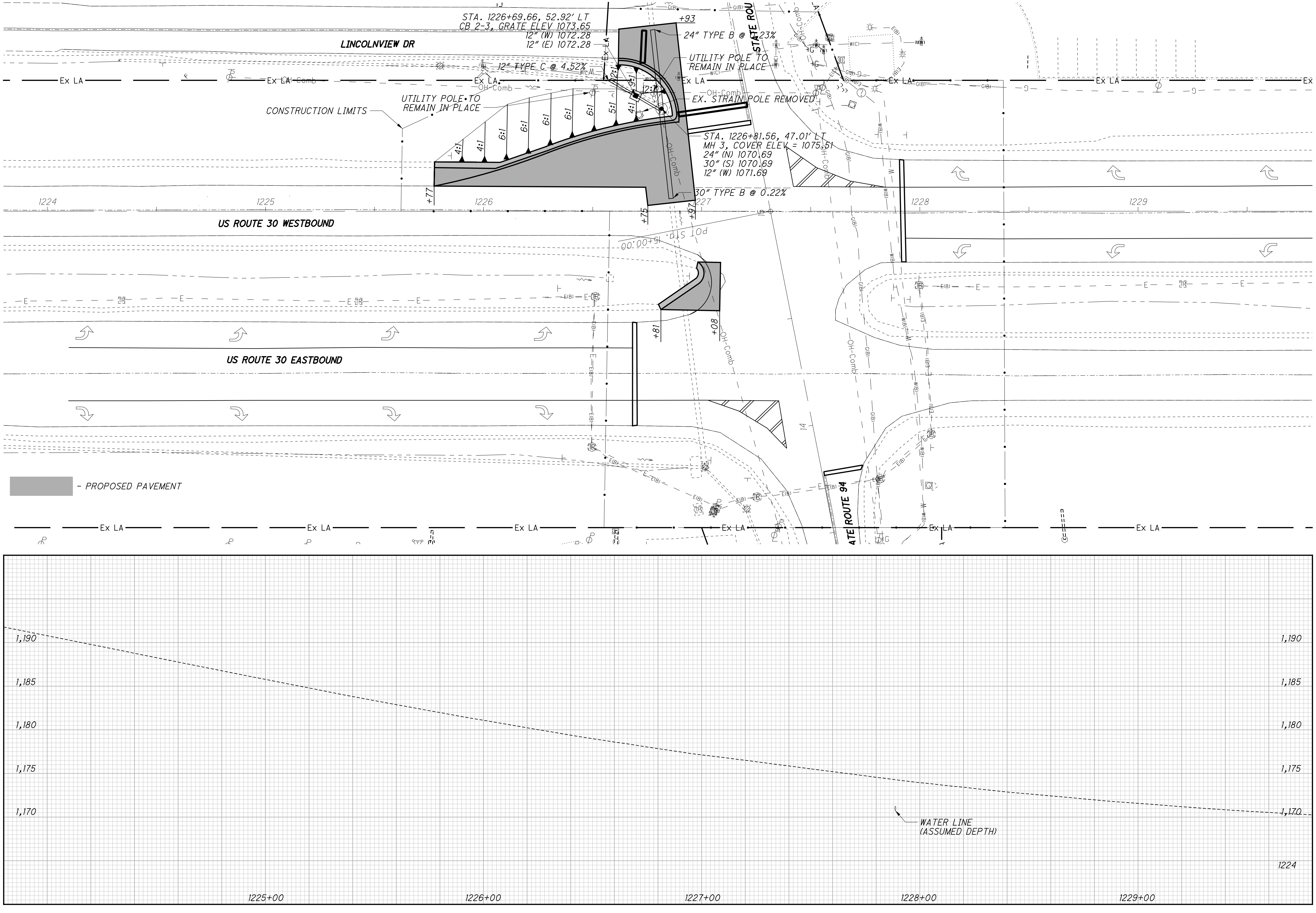
CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1191+75.00 TO STA. 1192+25.00

WAY-30-23.33

25
46

I:\ProjectData\102109\Design\Roadway\Sheets\102109_XS002.dgn Sheet 2/7/2019 6:59:48 AM mepley



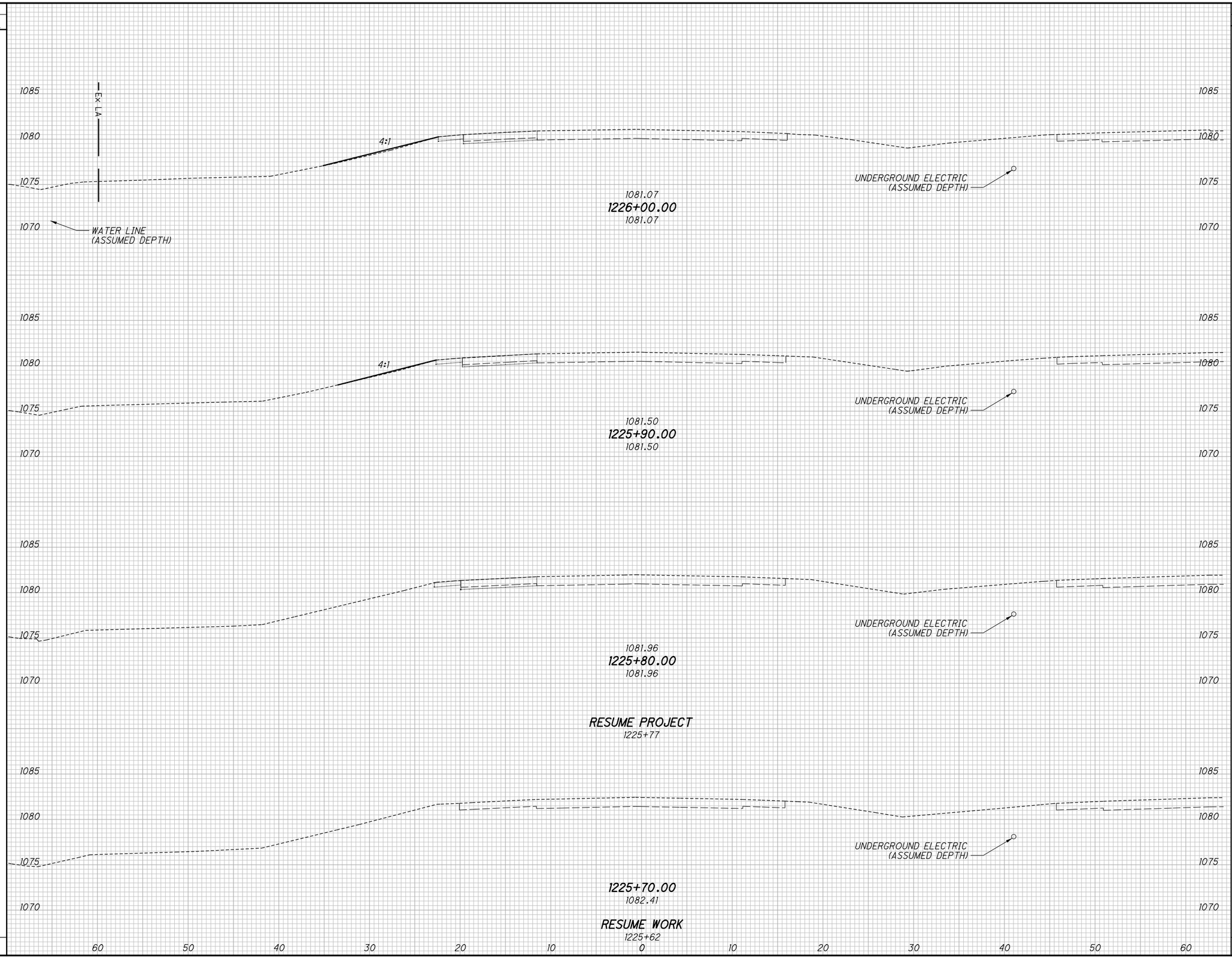
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

PLAN AND PROFILE
US 30 & SR 94

WAY-30-23.33

SEEDING	
END WIDTH	SQ. YDS.
13	13
11	6
0	0
0	0
0	19



END AREA	
CUT	FILL
1	1
1	1
1	0
0	0

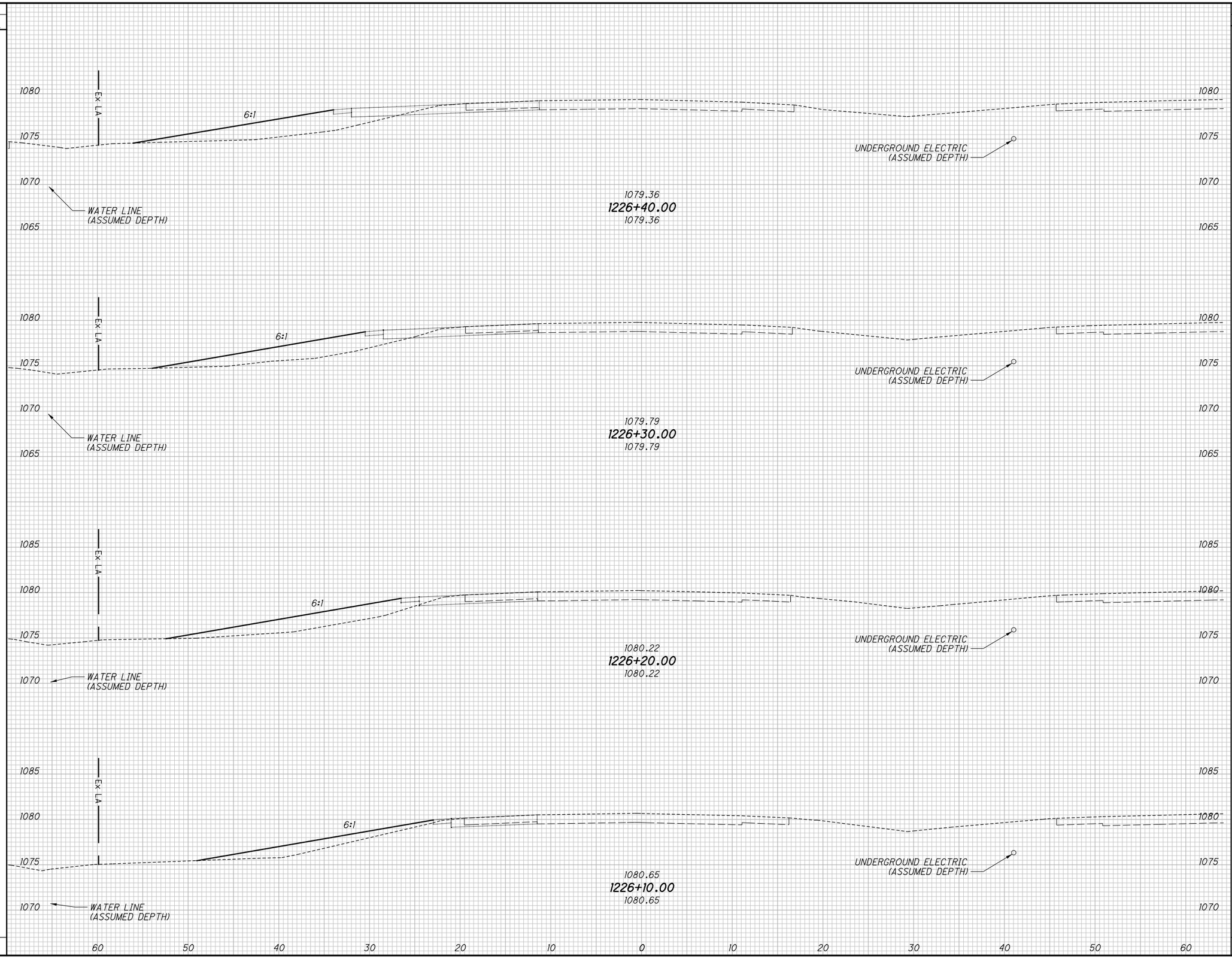
VOLUME	
CUT	FILL
1	1
1	1
1	0
3	2

CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1225+70.00 TO STA. 1226+00.00

WAY-30-23.33

SEEDING	
END WIDTH	SQ. YDS.
23	
	26
24	
	28
27	
	30
27	
22	
	106



END AREA	
CUT	FILL
7	36
6	34
5	33
4	20
7	40

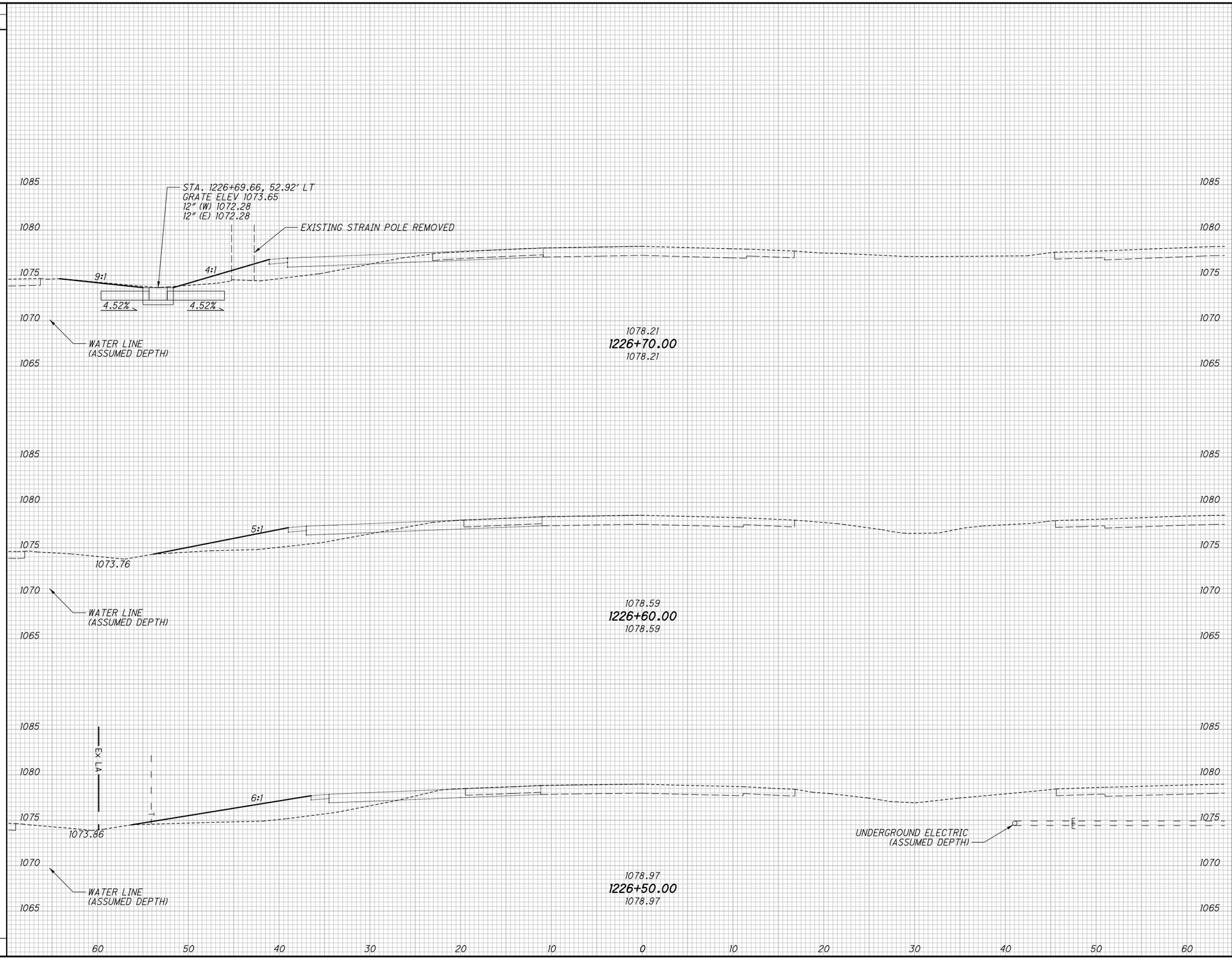
VOLUME	
CUT	FILL
2	13
2	13
2	10
1	4

CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1226+10.00 TO STA. 1226+40.00

WAY-30-23.33

SEEDING	
END WIDTH	SQ. YDS.
21	20
15	19
20	24
	63



END AREA	
CUT	FILL
6	20
8	24
7	33

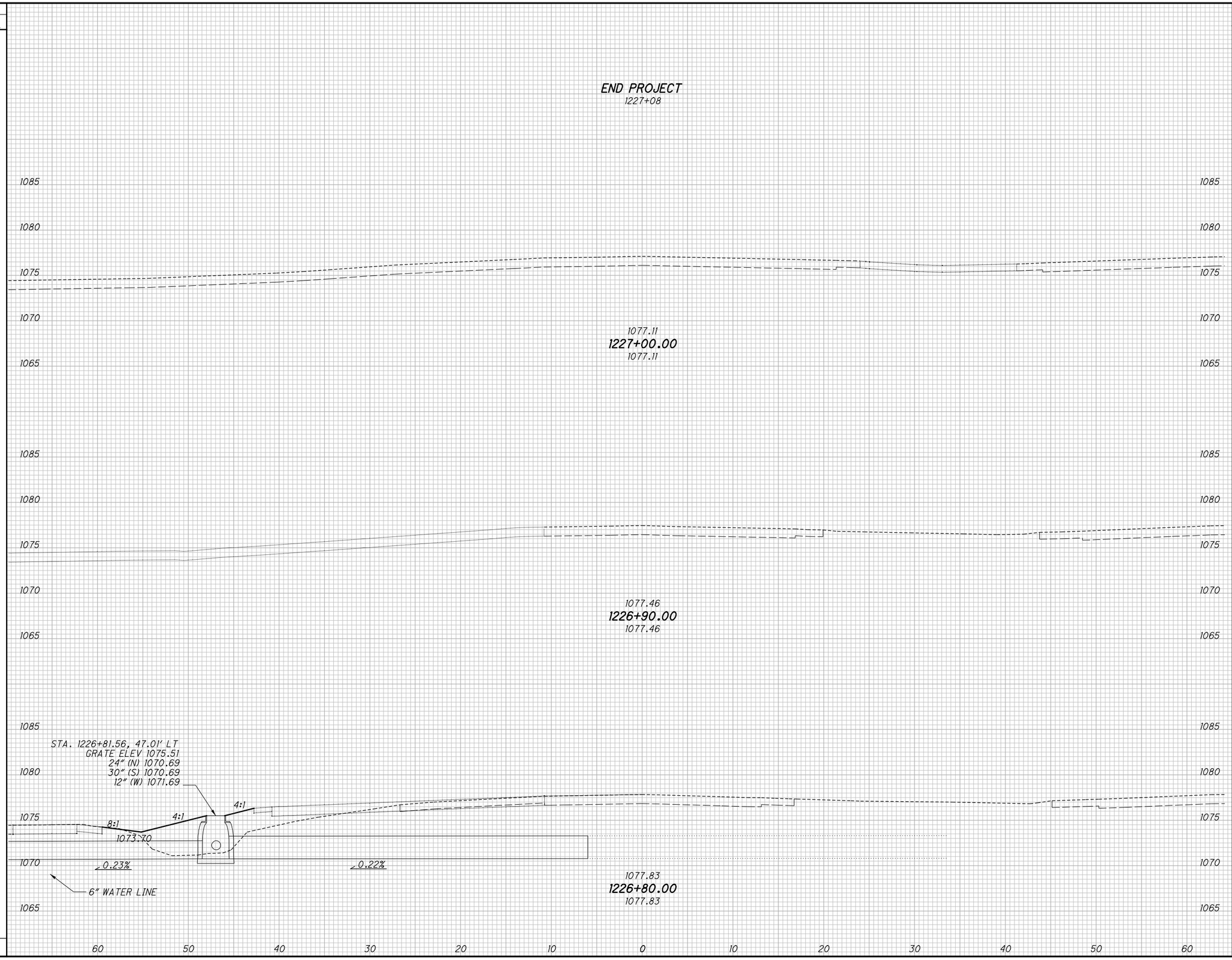
VOLUME	
CUT	FILL
3	8
3	11
3	13
9	32

CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1226+50.00 TO STA. 1226+70.00

WAY-30-23.33

SEEDING	
END WIDTH	SQ. YDS.
0	8
15	20
	28



END AREA	
CUT	FILL
0	0
3	26

VOLUME	
CUT	FILL
1	5
2	9
3	14

CALCULATED MAE
CHECKED CAD

CROSS SECTIONS
STA. 1226+80.00 TO STA. 1227+00.00

WAY-30-23.33

30
46

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SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED MAE
CHECKED CAD

END WORK
1228+39

1227+30.00
1076.17

1227+20.00
1076.49

1227+10.00
1076.80

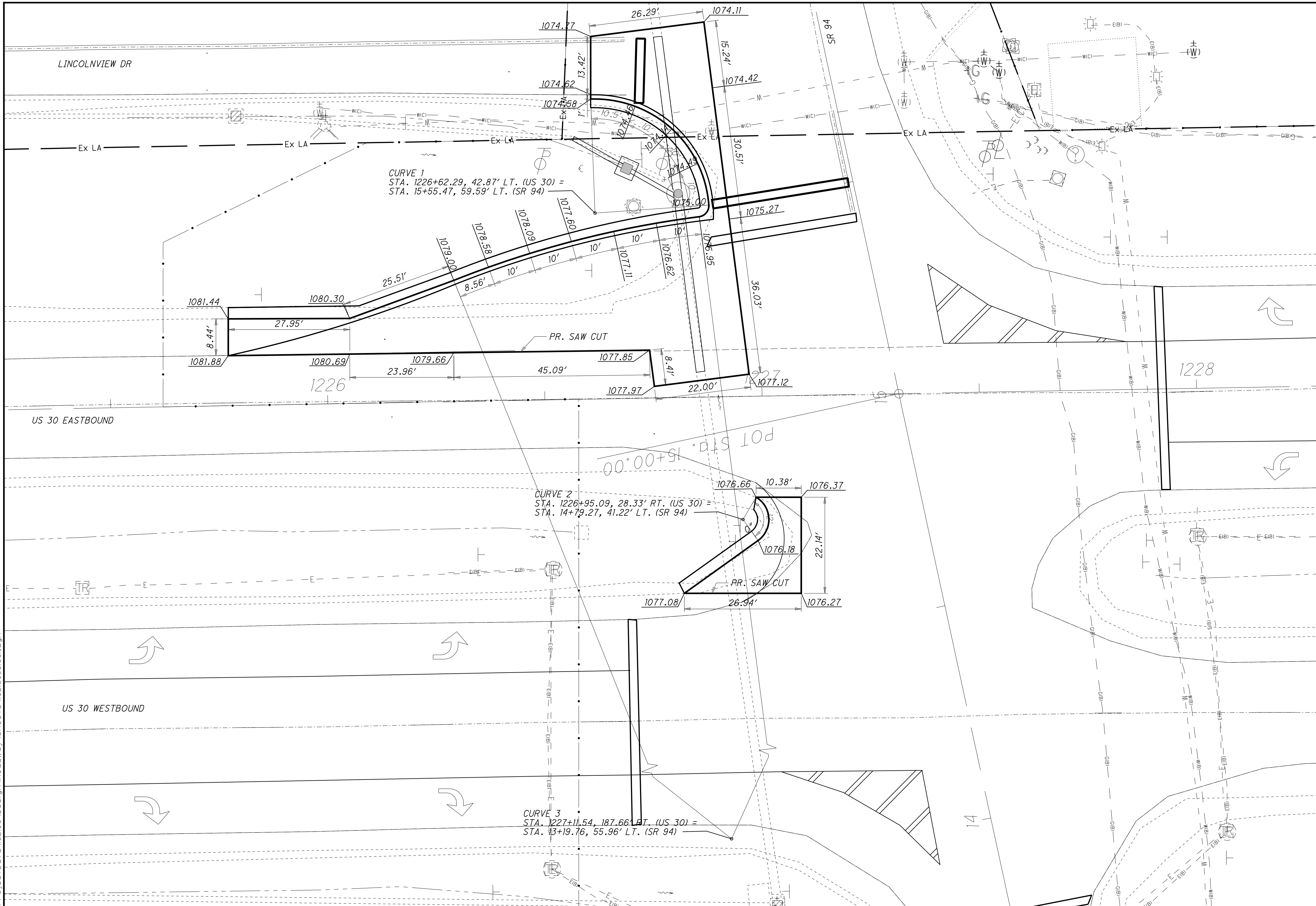
1085
1080
1075
1070
1065

60 50 40 30 20 10 0 10 20 30 40 50 60

CROSS SECTIONS

STA. 1227+10.00 TO STA. 1227+30.00

WAY-30-23.33



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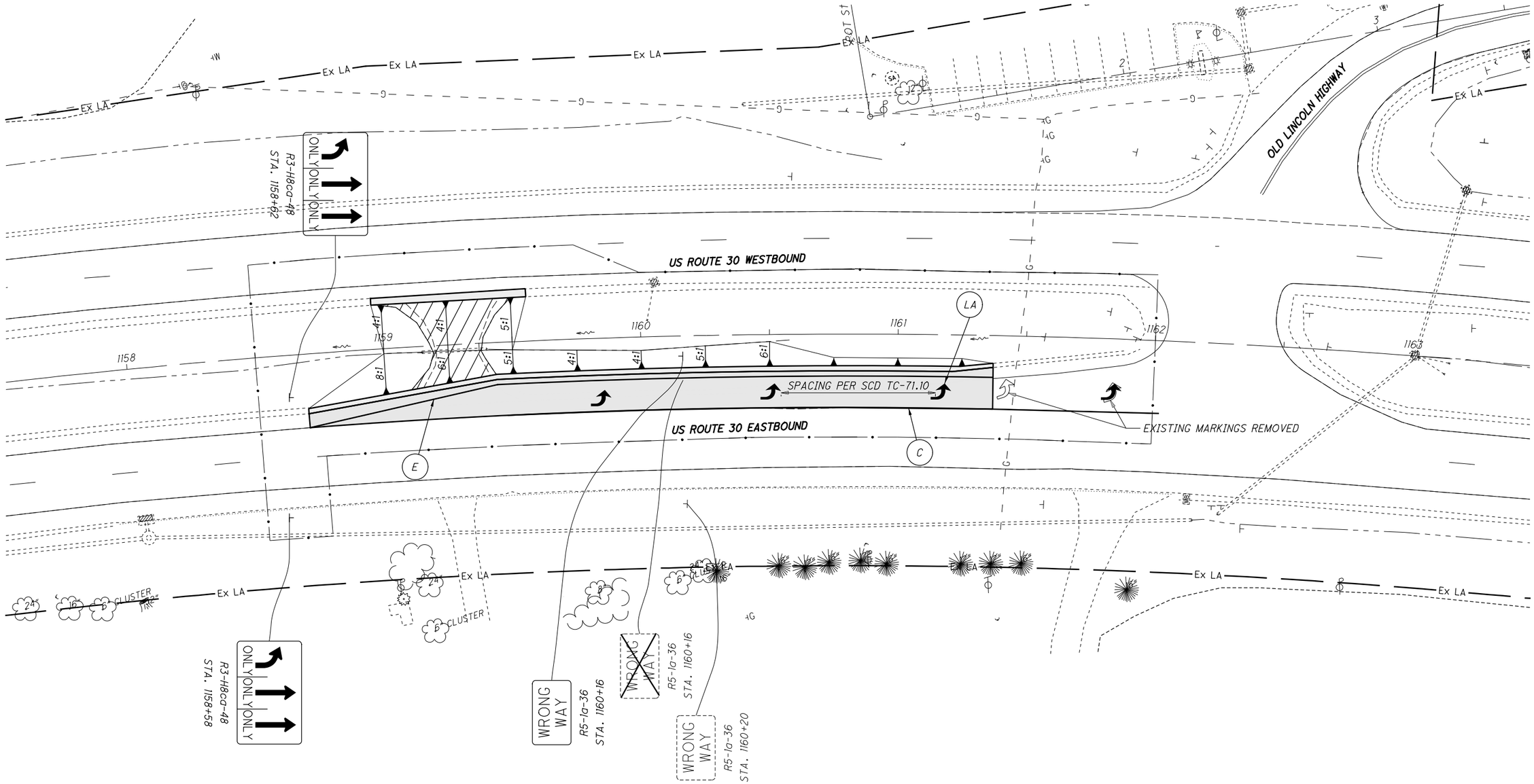
HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED MAE

CHECKED CAD

INTERSECTION DETAIL
US 30 & SR 94

WAY-30-23.33



ITEM	QUANTITY	UNIT	DESCRIPTION
Ⓒ	250	FT	CHANNELIZING LINE, 12"
Ⓔ	0.05	MILE	EDGE LINE, 6"
Ⓛⓐ	4	EACH	LANE ARROW
630	1	EACH	REMOVAL OF GROUND MOUNTED SUPPORT
630	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
630	26	SF	SIGN, FLAT SHEET
630	79	FT	GROUND MOUNTED SUPPORT, NO. 3 POST
642	2	EACH	REMOVAL OF PAVEMENT MARKING

ALL QUANTITIES CARRIED TO GENERAL SUMMARY.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

SIGNING & PAVEMENT MARKINGS
US 30 & OLD LINCOLN HIGHWAY

WAY-30-23.33

33
46

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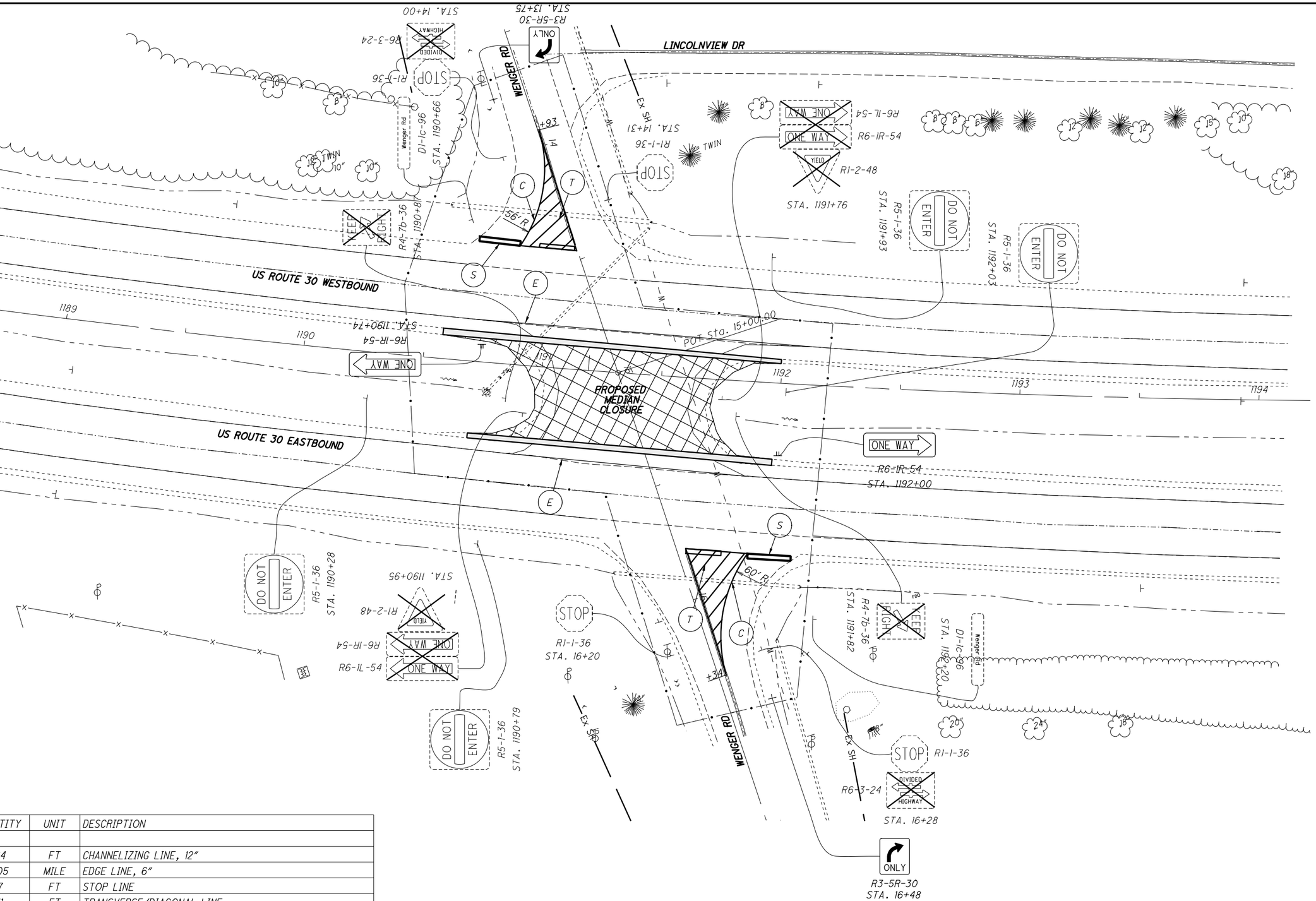


ITEM	QUANTITY	UNIT	DESCRIPTION
Ⓒ	264	FT	CHANNELIZING LINE, 12"
Ⓔ	0.05	MILE	EDGE LINE, 6"
Ⓢ	37	FT	STOP LINE
Ⓣ	171	FT	TRANSVERSE/DIAGONAL LINE
630	8	EACH	REMOVAL OF GROUND MOUNTED SUPPORT
630	10	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
630	29	SF	SIGN, FLAT SHEET
630	96	FT	GROUND MOUNTED SUPPORT, NO. 3 POST
642	141	FT	REMOVAL OF PAVEMENT MARKING

ALL QUANTITIES CARRIED TO GENERAL SUMMARY.

N

HORIZONTAL SCALE IN FEET
0 10 20 40

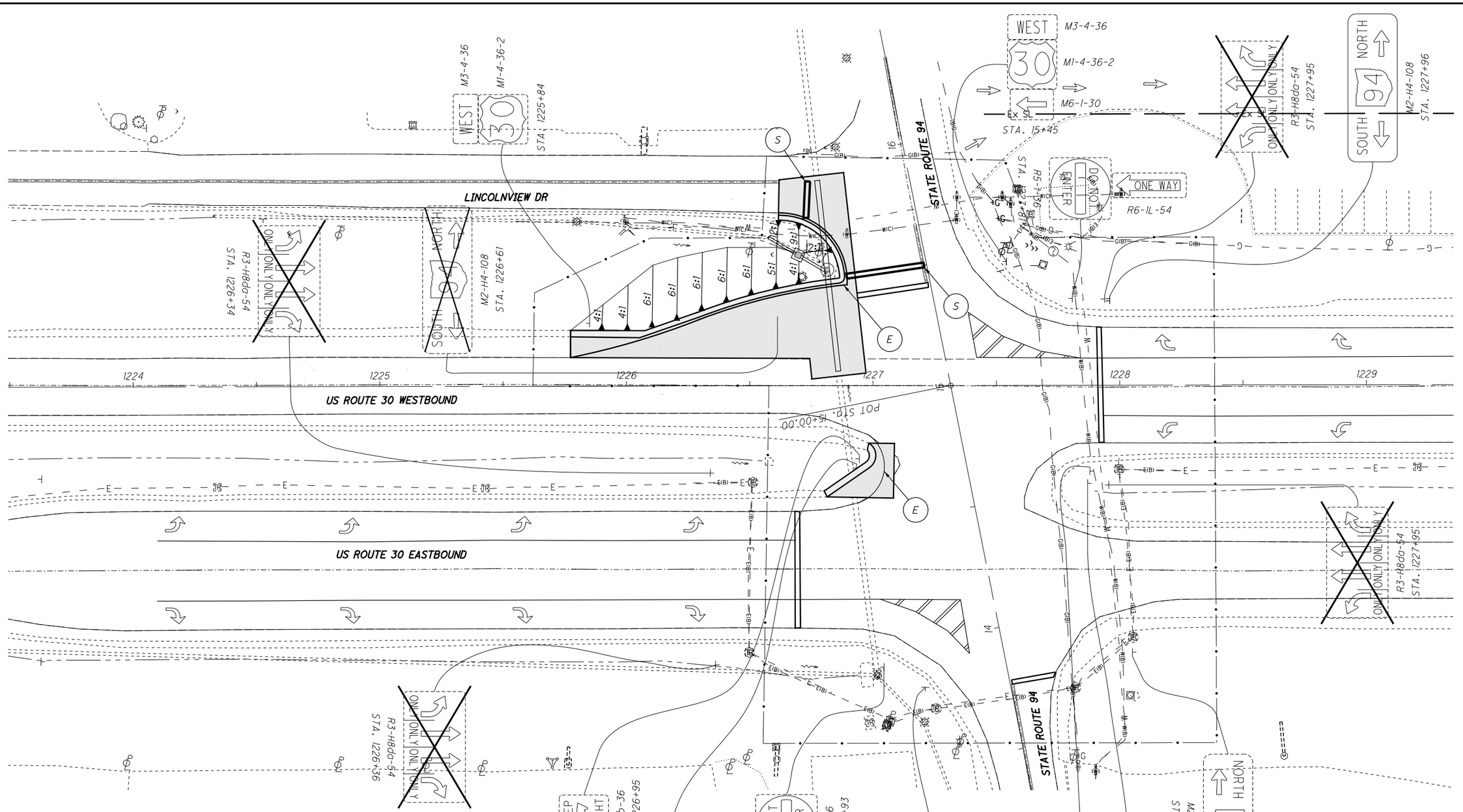
CALCULATED MAE
CHECKED CAD

SIGNING & PAVEMENT MARKINGS
US 30 & WENGER ROAD

WAY-30-23.33

34
46

I:\ProjectData\102109\Design\Roadway\Sheets\102109_GM001.dgn



ITEM	QUANTITY	UNIT	DESCRIPTION
(E)	0.04	MILE	EDGE LINE, 6"
(S)	47	FT	STOP LINE
630	8	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT
630	2	EACH	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT
630	5	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
630	27	SF	SIGN, GROUND MOUNTED EXTRUSHEET
630	32	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, S4X7.7
630	2	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION
630	2	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION
642	40	FT	REMOVAL OF PAVEMENT MARKING

ALL QUANTITIES CARRIED TO GENERAL SUMMARY.

I:\ProjectData\10209\Design\Roadway\Sheets\10209_GM001.dgn

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED MAE
CHECKED CAD

SIGNING & PAVEMENT MARKINGS
US 30 & WENGER ROAD

WAY-30-23.33

NOTIFICATION

THE CONTRACTOR SHALL GIVE THE DEPARTMENT, (419) 207-7174, 10 WORKING DAYS NOTICE PRIOR TO THE SIGNAL BEING PLACED IN OPERATION.

THE SIGNAL INSTALLATION SHALL BE INSPECTED BY ODOT PERSONNEL. ALL DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR AND APPROVED BY THE DEPARTMENT.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

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: CONTROLLERS AND ASSOCIATED EQUIPMENT AND DETECTOR UNITS.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE 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.

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 DISTRICT 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 DISTRICT 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 DEVICES FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL ENSURE 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 AFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS REMAINS ACTIVE. THE CONTRACTOR SHALL SHIFT SIGNAL HEADS AND DETECTION EQUIPMENT PER THE MAINTENANCE OF TRAFFIC PLANS TO MAINTAIN DETECTION FOR THE DURATION OF THE PROJECT.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDONED, 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 VEHICLE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL 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 USE WITH 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.

      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.

GROUNDING AND BONDING (CONTINUED)

      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.

      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.

ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, (BY WAY), POLYCARBONATE, AS PER PLAN, BLACK

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.

2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

3. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

4. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH THE C&MS AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.

5. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. ALL MODULES SHALL BE LONG LIFE LED MODULES, WITH A MINIMUM 15-YEAR WARRANTY. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

6. SIGNAL HEADS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.117 INCHES.

7. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS UNLESS OTHERWISE SPECIFIED IN THE PLANS.

8. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.

9. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS OR TETHERED HEADS.

PAYMENT FOR ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), 12" LENS, (BY WAY), POLYCARBONATE, AS PER PLAN, BLACK SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

ITEM 632 - COVERING OF VEHICULAR SIGNAL HEAD

COVER VEHICULAR SIGNAL HEADS IF ERECTED AT INTERSECTIONS WHERE TRAFFIC IS MAINTAINED BEFORE ENERGIZING THE SIGNALS. USE A STURDY OPAQUE COVERING MATERIAL SPECIFICALLY MADE FOR USE WITH TRAFFIC SIGNALS, AND ENSURE THAT THE COLOR OF THE COVER IS DIFFERENT THAN THE SIGNAL HEAD, TAN OR BEIGE, SO THAT IT IS CLEAR TO DRIVERS THE HEADS ARE COVERED, NOT DARK. USE A METHOD OF COVERING TO COVER ATTACHMENT AND MATERIALS, INCLUDING BACKPLATES, AS APPROVED BY THE ENGINEER. COVERS ARE TO BE FREE OF TEXT, PICTURES, OR ANY TYPE OF ADVERTISING. MAINTAIN COVERS, AND REMOVE THEM WHEN DIRECTED BY THE ENGINEER.

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TRAFFIC SIGNAL GENERAL NOTES

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ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY THE DEPARTMENT IN ACCORDANCE WITH THE LISTING GIVEN HEREIN. THE CONTRACTOR SHALL CONTACT CHARLES LAUGHREY, ROADWAY SERVICES ENGINEER AT (419) 207-7162 TO ARRANGE A MUTUALLY AGREEABLE TIME TO DELIVER THE SIGNAL MATERIALS TO DISTRICT 3 HEADQUARTERS, LOCATED AT 906 NORTH CLARK AVENUE, ASHLAND, OHIO 44805.

ITEMS TO BE REUSED:
NONE

ITEMS TO BE STORED:
VEHICULAR SIGNAL HEADS - 8
POLE MOUNTED CONTROLLER - 1
RADAR DETECTION UNITS - 2

ITEMS TO BE DISPOSED:
SIGNS - 4
BEACONS FOR FLASHERS - 4

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

ITEM 632 - SIGNALIZATION, MISC.: TEST HOLE PERFORMED

IT IS ANTICIPATED THAT THE CONTRACTOR WILL ENCOUNTER UNDERGROUND UTILITIES WHILE EXCAVATING FOR SIGNAL SUPPORT FOUNDATIONS. IF, AFTER ACCURATELY IDENTIFYING THE PROPOSED LOCATION OF THE FOUNDATION, AS SHOWN IN THE PLAN, AND AFTER MODIFYING THAT LOCATION, IF NECESSARY, BASED ON THE FIELD MARKING OF UNDERGROUND UTILITY LOCATION, THE CONTRACTOR DISCOVERS A UTILITY CONFLICT DURING HIS EXCAVATION OPERATION, HE WILL BE COMPENSATED FOR THE LABOR AND EQUIPMENT COST ASSOCIATED FOR EACH PARTIAL FOUNDATION EXCAVATION ACCORDING TO HIS BID PRICE.

BEFORE THE CONTRACTOR BEGINS THE EXCAVATION AT THE MODIFIED LOCATION, HE SHALL VERIFY THAT THERE WILL BE NO OVERHEAD UTILITY CONFLICTS RESULTING FROM THE NEW SIGNAL SUPPORT LOCATION. NEW SUPPORT LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.

THE CONTRACTOR'S WORK UNDER THIS BID ITEM SHALL INCLUDE BACKFILLING, COMPACTING, AND RESTORATION OF THE EXCAVATION TO ITS ORIGINAL CONDITION.

EXCAVATIONS SHALL NOT BE LEFT OPEN OVERNIGHT.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID PER EACH ITEM 632 - SIGNALIZATION - MISC.: TEST HOLE PERFORMED. A QUANTITY OF 1 HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 632 - POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.24, THE CONTRACTOR SHALL PROVIDE THE METER, DISCONNECT SWITCH, POWER SERVICE CABLE #6 AWG, CONDUIT, CONDUIT RISER, WEATHERHEAD AND PULL BOXES AS NECESSARY TO PROVIDE POWER TO THE PROPOSED INSTALLATION. THE DISCONNECT SHALL BE LABELED "TRAFFIC" WITH ENGRAVED PLASTIC TABS. THE POWER SOURCE LOCATION SHALL BE AS DETERMINED IN THE FIELD BY THE ENGINEER. THE CONTRACTOR SHALL COORDINATE RELATED WORK WITH OHIO EDISON WHO WILL MAKE THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE THE POWER CABLE INTO OHIO EDISON CIRCUITRY. ANY FEES ASSOCIATED WITH OBTAINING POWER SHALL BE RESPONSIBILITY OF THE CONTRACTOR. POWER SUPPLIED SHALL BE 120 VOLTS.

THE COST FOR ALL NECESSARY ITEMS AND ASSOCIATED LABOR SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 632 - POWER SERVICE, AS PER PLAN.

POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM THE UTILITY POLE ON THE SOUTHWEST CORNER OF THE INTERSECTION AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

ITEM 632 - STRAIN POLE FOUNDATION

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

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 POLE FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

STRAIN POLE FOUNDATIONS

ELEVATIONS SHOWN IN THE PLANS FOR STRAIN POLE FOUNDATIONS ARE FOR COMPUTATIONAL PURPOSES ONLY. THE ACTUAL ELEVATION OF THE FOUNDATION SHALL BE IN ACCORDANCE WITH TRAFFIC SCD TC-21.20 PROVIDED THE EXISTING SLOPE IS LESS THAN 6:1.

AT LOCATIONS WHERE THE EXISTING SLOPE IS 6:1 OR GREATER, THE BURIED DEPTH OF FOUNDATION, AS SHOWN IN SCD TC-21.20 SHALL APPLY TO THE LOW SIDE OF THE SLOPE. THE TOP OF THE FOUNDATION SHALL BE SET 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE ADDITIONAL DEPTH OF FOUNDATION NECESSARY TO MEET THESE REQUIREMENTS SHALL BE ADDED TO THE FORMED TOP.

ITEM 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 DISTRICT 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 UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL 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 AND CENTERED ON THE TOP SURFACE OF THE UPS CABINET 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.

ITEM 633 - CABINET FOUNDATION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT C&MS 633 AND 733 AND SCD TC-83.20, THE CONTROLLER FOUNDATION SHALL BE CONSTRUCTED PER THE DETAIL ON SHEET 40 & 45

ITEM 633 - CONTROLLER WORK PAD, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT C&MS 633 AND 733 AND SCD TC-83.20, THE CONTROLLER WORK PAD SHALL BE CONSTRUCTED PER THE DETAILS ON SHEET 40.

ITEM 633 - CONTROLLER UNIT, TYPE TS2/A1, WITH CABINET, TYPE TS2, AS PER PLAN

THE EQUIPMENT PROVIDED AS PART OF THIS CONTRACT SHALL BE THE ON THE OFFICE OF TRAFFIC OPERATIONS TRAFFIC APPROVED PRODUCTS (TAP) LIST.

THE GROUND-MOUNTED CABINET SHALL BE A NEMA TS2 TYPE 1 CABINET SIZE 6 AND SHALL HAVE A MINIMUM OF TWO SHELVES AND SHALL INCLUDE A CABINET RISER.

THE CABINET SHALL BE FURNISHED WITH AN EDI MMU2-16LE CONFLICT MONITOR.

EACH CABINET SHALL COME EQUIPPED WITH TWO 16-CHANNEL CABINET DETECTOR RACKS (CDR) INCLUDING BUS INTERFACE UNITS (BIU). THE LOOP DETECTOR TERMINATION PANEL FOR THE SECOND DETECTOR RACK SHALL BE OMITTED.

THE CONTROLLER SHALL BE FURNISHED WITH AN ECONOLITE ATC COBALT CONTROLLER.

PAYMENT FOR ITEM 633 CONTROLLER UNIT, TYPE TS2/A1, WITH CABINET, TYPE TS2, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

ITEM 809 - ADVANCE RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

ITEM 809 - STOP-LINE RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 STOP-LINE RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

ITEM 633 - COMMUNICATIONS, AS PER PLAN

FURNISH A CELLULAR MODEM, 2 ANTENNAS WITH 10-FOOT CABLES, AND A 10' ETHERNET CABLE FOR REMOTE WIRELESS CELLULAR COMMUNICATION.

FOR NETWORK CONSISTENCY CELLULAR MODEMS SHALL BE THE SIERRA WIRELESS MODEM, AIRLINK GX450 ETHERNET WITH DC POWER CABLE-VERIZON-MODEL 1102361.

THIS ITEM SHALL INCLUDE THE FURNISHING OF A COMTROL ROCKETLINX ES8105 ETHERNET SWITCH OR APPROVED EQUAL WITH ALL AC POWER SUPPLIES NECESSARY TO FUNCTION.

THIS ITEM SHALL INCLUDE THE FURNISHING OF A MOUNTING BRACKET FOR THE ANTENNA WITH ALL NECESSARY HARDWARE INCLUDING BUT NOT LIMITED TO SPRING NUTS, WASHERS, AND BOLTS THAT INSTALLS TO THE MOUNTING CHANNEL ON THE SIDE OF THE SIGNAL CABINET.

THE CELLULAR MODEM EQUIPMENT AND ETHERNET SWITCH SHALL BE DELIVERED TO ALEX WEINANDY AT THE OFFICE OF TRAFFIC OPERATIONS FOR PROGRAMMING.

CONTACT INFO:
Alex.Weinandy@dot.ohio.gov
PHONE: 614-752-6968

THE CONTRACTOR SHALL PROVIDE THE MODEM SERIAL NUMBERS AND NECESSARY ESN NUMBERS FOR ODOT TO ESTABLISH WIRELESS SERVICE.

THE DEPARTMENT WILL MEASURE "COMMUNICATIONS, AS PER PLAN" BY THE NUMBER OF COMPLETE UNITS FURNISHED, RECEIVED, AND ACCEPTED BY ODOT DISTRICT TRAFFIC.

CALCULATED KJM CHECKED KMG

TRAFFIC SIGNAL GENERAL NOTES

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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, 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 PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT 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 DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

UNDERDRAINS FOR PULLBOXES

REFERENCE TRAFFIC SCD HL-30.11 FOR DETAILS ABOUT DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES 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 20 FT.

ITEM 632 - SIGNALIZATION, MISC.:
REMOVE EXISTING CABLE AND ABANDON CONDUIT

THE CONTRACTOR SHALL REMOVE ALL REMAINING SIGNAL CABLE UPON REMOVAL OF THE EXISTING FLASHING BEACONS. ALL REMOVED CABLE SHALL BE DISPOSED OF BY THE CONTRACTOR. ALL UNDERGROUND CONDUIT SHALL BE ABANDONED IN PLACE.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PERFORM THE ABOVE DESCRIBED WORK.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.

2. NEW OR REUSED SIGNAL/FLASHER 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 THESE 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 OR THE VILLAGE OF DALTON FOR POLICE SERVICES AND MAINTENANCE SERVICES BY OUTSIDE FORCES 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.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

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 FOUR (4) HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00 AM TO 9:00 AM AND 3:00 PM TO 6:00 PM, MONDAY THROUGH FRIDAY. 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, OR BY OFF-DUTY POLICE OFFICERS, HIRED BY THE CONTRACTOR.

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 631 - SIGN FLASHER ASSEMBLY, AS PER PLAN

THE CONTRACTOR SHALL FURNISH AND INSTALL SOLAR-POWERED SIGN FLASHER ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENTS OF C&MS 731.06 AND THE FOLLOWING:

RUN REQUIREMENTS OF THIS DEVICE ARE 24 HOURS PER DAY, 7 DAYS PER WEEK.

UTILIZE ENVIRONMENTALLY-SEALED, HIGH-EFFICIENCY LED LIGHT SOURCES FOR THIS SOLAR-POWERED APPLICATION.

HOUSE THE SOLAR POWER SUPPLY CONTROLLER AND BATTERY IN ONE OR TWO STAINLESS STEEL OR ALUMINUM ENCLOSURES WITH A MINIMUM NEMA 3 OR 3X RATING.

IF THE EXTERIOR SIZE OF THE ENCLOSURE NECESSARY TO MEET THE REQUIREMENTS BELOW IS LESS THAN 1000 CUBIC INCHES, A SINGLE POLYMER ENCLOSURE RATED NEMA 4 AND LISTED AS SUNLIGHT-RESISTANT MAY BE INSTALLED, WITH APPROVAL OF THE ENGINEER.

SEAL ENCLOSURE CONDUIT ENTRIES TO PREVENT INSECT AND/OR RODENT ENTRY. PROVIDE METAL ENCLOSURES WITH AN EXTERIOR OF BARE OR POWDER-COATED ALUMINUM, OR STAINLESS STEEL.

PROVIDE A LOCKING ENCLOSURE USING EITHER AN INTEGRATED LOCKING MECHANISM OR A PADLOCK PER C&MS 631.06.

SMALL ENCLOSURES OF 300 CUBIC INCHES OR LESS (EXTERIOR) MAY BE PROVIDED WITH SECURITY FASTENERS IN LIEU OF A LOCKING MECHANISM OR PADLOCK.

SEPARATE THE CONTROL ELECTRONICS AND BATTERY, IF CONTAINED WITHIN A SINGLE ENCLOSURE, TO PREVENT DAMAGE TO THE CONTROL ELECTRONICS IF THE BATTERY ENVELOPE IS COMPROMISED.

ITEM 631 - SIGN FLASHER ASSEMBLY, AS PER PLAN (CONTINUED)

PROVIDE SEALED GEL-CELL OR AGM (ABSORBED GLASS MAT) LEAD-ACID BATTERIES FOR ALL INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF 4 WATTS OR ABOVE, REGARDLESS OF DUTY CYCLE.

FOR INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF LESS THAN 4 WATTS, RECHARGEABLE NICD, LI-ION, OR NIMH BATTERIES MAY BE USED INSTEAD OF AGM OR GEL-CELL, IF APPROVED BY THE ENGINEER.

PROVIDE SIGNED COPIES FROM THE SOLAR PANEL AND/OR CONTROLLER MANUFACTURER OF ALL CALCULATIONS USED TO SIZE THE SOLAR PANEL AND BATTERIES.

INCLUDE IN THESE CALCULATIONS THE INSOLATION VALUE USED AND ITS REFERENCE SOURCE, THE SOLAR PANEL EFFICIENCY, CHARGER/CONTROLLER EFFICIENCY, INVERTER EFFICIENCY, PROPOSED LED LAMP AND/OR EQUIPMENT LOAD, AND A FIGURE REPRESENTING ANTICIPATED MISCELLANEOUS LOSSES.

SHOW CALCULATIONS DOCUMENTING A RESERVE CAPACITY OF TWO WEEKS OPERATION UNDER CONTINUOUS WORST-CASE (MINIMUM) INSOLATION FIGURES (USUALLY DECEMBER) FOR THE PROPOSED GEOGRAPHIC LOCATION, USING A PANEL ELEVATION ANGLE APPROPRIATE TO THE SITE, AT A SUSTAINED TEMPERATURE OF 25 DEGREES FAHRENHEIT (-4 DEGREES CELSIUS).

DELIVER A COPY OF THE CALCULATIONS TO THE ENGINEER AND ANOTHER COPY TO THE OFFICE OF ROADWAY ENGINEERING FOR APPROVAL.

PROVIDE DOCUMENTATION SHOWING THAT THE SOLAR PANEL MANUFACTURER TESTED THE PANEL ACCORDING TO IEC61215 OR EQUIVALENT APPROVED STANDARD. PROVIDE DOCUMENTATION SHOWING THAT SOLAR PANEL MOUNTING IS RATED FOR 90 MPH DESIGN WIND AND DESIGNED TO RESIST VANDALISM.

ENSURE NEC GROUNDING AND BONDING REQUIREMENTS ARE MET IF VOLTAGES OVER 50V AC OR DC ARE PRESENT.

PROVIDE A TIMER (IF REQUIRED) THAT SATISFIES THE REQUIREMENTS OF C&MS 731.10 AND IS LISTED ON THE ODOT QUALIFIED PRODUCTS LIST.

PROVIDE COMPLETE PHOTO-CONTROLLER SPECIFICATIONS, INCLUDING ON/OFF PHOTOMETRIC SWITCH POINTS (TYPICALLY GIVEN IN FOOT-CANDLES), IF A PHOTO-CONTROLLER IS UTILIZED.

THE SIGN FLASHER ASSEMBLY SHALL INCLUDE ONE (1) 12" LED FLASHING BEACON TO BE MOUNTED ABOVE THE SIGNAL AHEAD SIGN.

PAYMENT FOR ITEM 631 - SIGN FLASHER ASSEMBLY, AS PER PLAN SHALL BE MADE AT PRICE BID PER EACH. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY TO FURNISH THE ASSEMBLY COMPLETE IN PLACE, TESTED AND ACCEPTED.

ITEM 625 - ARC FLASH CALCULATIONS AND LABEL, POWER SERVICE

THE SPECIFICATIONS AND REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 825 SHALL APPLY TO THE POWER SERVICE FOR THE TRAFFIC SIGNAL.

ITEM 625 - ARC FLASH CALCULATIONS AND LABEL, TRAFFIC SIGNAL CONTROLLER CABINET

THE SPECIFICATIONS AND REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 825 SHALL APPLY TO THE TRAFFIC SIGNAL CONTROLLER CABINET.

CALCULATED K.JM CHECKED KMG

TRAFFIC SIGNAL GENERAL NOTES

WAY-30 AT S.R. 94

SHEET	LOCATION	625 CONDUIT, 2", 725.04 FT	625 CONDUIT, 4", 725.04 FT	625 TRENCH FT	625 PULL BOX, 725.08, 24" EACH	625 GROUND ROD EACH	625 PLASTIC CAUTION TAPE FT	625 ARC FLASH CALCULATIONS AND LABEL, POWER SERVICE EACH	625 ARC FLASH CALCULATIONS AND LABEL, TRAFFIC SIGNAL CONTROLLER CABINET EACH	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 SIGN, FLAT SHEET SF	631 SIGN FLASHER ASSEMBLY, AS PER PLAN EACH	632 VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, BLACK EACH	632 VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 2-WAY, POLYCARBONATE, AS PER PLAN, BLACK EACH	632 COVERING OF VEHICULAR SIGNAL HEAD EACH	632 MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES FT	632 TETHER WIRE, WITH ACCESSORIES FT	632 SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG FT	632 SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG FT	632 STRAIN POLE FOUNDATION EACH	632 POWER CABLE, 3 CONDUCTOR, NO. 6 AWG FT	632 SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG FT	632 POWER SERVICE, AS PER PLAN EACH	632 STRAIN POLE, TYPE TC-81.10, DESIGN 14 EACH
35	U.S. 30 / S.R. 94	27	36	27	1	5	27	1	1	4			12	2	16	587	587	1404	938	4	52	294	1	4
36	U.S. 30 / S.R. 94										64	4												
TOTALS CARRIED TO GENERAL SUMMARY		27	36	27	1	5	27	1	1	4	64	4	12	2	16	587	587	1404	938	4	52	294	1	4

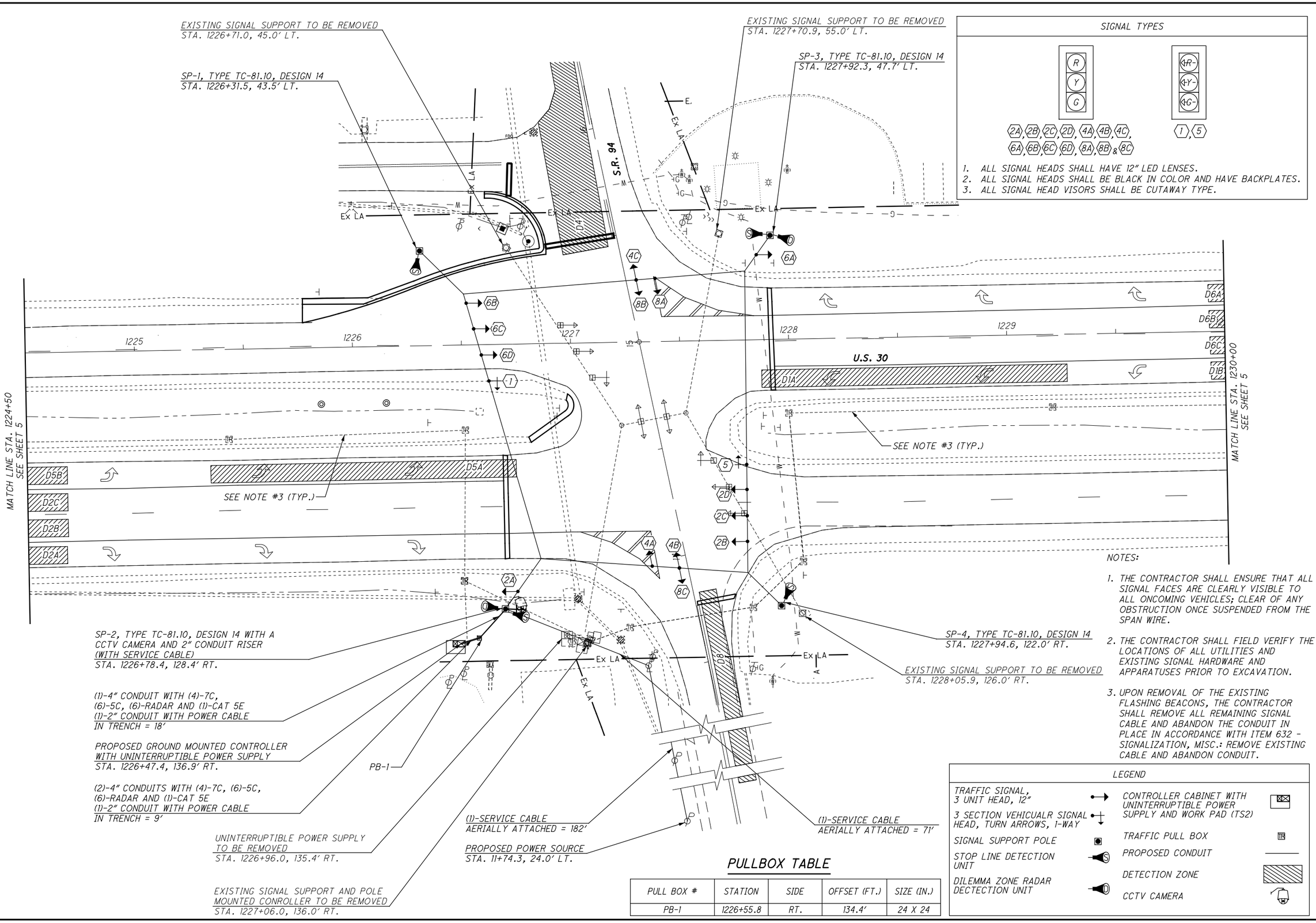
SHEET	LOCATION	632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN EACH	633 CONTROLLER UNIT, TYPE TS2/A1, WITH CABINET, TYPE TS2, AS PER PLAN EACH	633 CABINET FOUNDATION, AS PER PLAN EACH	633 CONTROLLER WORK PAD, AS PER PLAN EACH	633 COMMUNICATIONS, AS PER PLAN EACH	633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN EACH	809 CCTV IP-CAMERA SYSTEM, DOME-TYPE EACH	809 ADVANCE RADAR DETECTION EACH	809 STOP LINE RADAR DETECTION EACH
35	U.S. 30 / S.R. 94	1	1	1	1	1	1	1	2	4
36	U.S. 30 / S.R. 94									
TOTALS CARRIED TO GENERAL SUMMARY		1	1	1	1	1	1	1	2	4

CALCULATED KJM
CHECKED KMG

TRAFFIC SIGNAL SUBSUMMARY

WAY-30 AT S.R. 94

39
46



SIGNAL TYPES

R, Y, G

4R, 4Y, 4G

2A, 2B, 2C, 2D, 4A, 4B, 4C, 6A, 6B, 6C, 6D, 8A, 8B & 8C

1, 5

1. ALL SIGNAL HEADS SHALL HAVE 12" LED LENSES.
2. ALL SIGNAL HEADS SHALL BE BLACK IN COLOR AND HAVE BACKPLATES.
3. ALL SIGNAL HEAD VISORS SHALL BE CUTAWAY TYPE.

PULLBOX TABLE

PULL BOX #	STATION	SIDE	OFFSET (FT.)	SIZE (IN.)
PB-1	1226+55.8	RT.	134.4'	24 X 24

NOTES:

1. THE CONTRACTOR SHALL ENSURE THAT ALL SIGNAL FACES ARE CLEARLY VISIBLE TO ALL ONCOMING VEHICLES; CLEAR OF ANY OBSTRUCTION ONCE SUSPENDED FROM THE SPAN WIRE.
2. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL HARDWARE AND APPARATUSES PRIOR TO EXCAVATION.
3. UPON REMOVAL OF THE EXISTING FLASHING BEACONS, THE CONTRACTOR SHALL REMOVE ALL REMAINING SIGNAL CABLE AND ABANDON THE CONDUIT IN PLACE IN ACCORDANCE WITH ITEM 632 - SIGNALIZATION, MISC.: REMOVE EXISTING CABLE AND ABANDON CONDUIT.

LEGEND

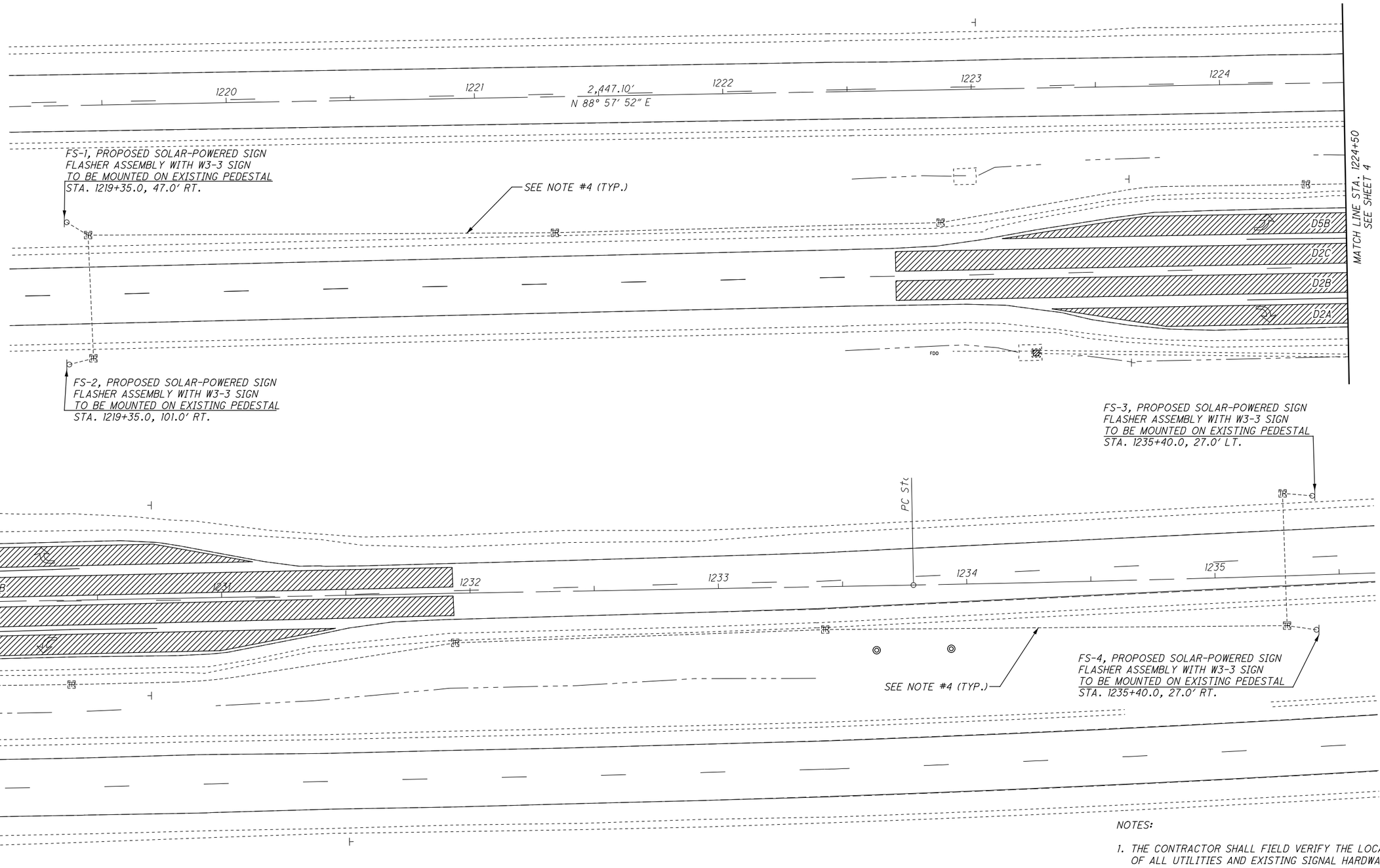
- TRAFFIC SIGNAL, 3 UNIT HEAD, 12"
- 3 SECTION VEHICUALR SIGNAL HEAD, TURN ARROWS, 1-WAY
- SIGNAL SUPPORT POLE
- STOP LINE DETECTION UNIT
- DILEMMA ZONE RADAR DECTECTION UNIT
- CONTROLLER CABINET WITH UNINTERRUPTIBLE POWER SUPPLY AND WORK PAD (TS2)
- TRAFFIC PULL BOX
- PROPOSED CONDUIT
- DETECTION ZONE
- CCTV CAMERA

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED K.JM | CHECKED KMG

TRAFFIC SIGNAL PLAN
U.S. 30 / S.R. 94
WAY-30 AT S.R. 94

40
46



NOTES:

1. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL HARDWARE AND APPARATUSES PRIOR TO EXCAVATION.
2. FOR LEGEND, SEE SHEET 35.
3. FOR SIGN FLASHER ASSEMBLY DETAIL, SEE SHEET 38.
4. UPON REMOVAL OF THE EXISTING FLASHING BEACONS, THE CONTRACTOR SHALL REMOVE ALL REMAINING SIGNAL CABLE AND ABANDON THE CONDUIT IN PLACE IN ACCORDANCE WITH ITEM 632 - SIGNALIZATION, MISC.: REMOVE EXISTING CABLE AND ABANDON CONDUIT.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED K.JM
CHECKED KMG

TRAFFIC SIGNAL PLAN
U.S. 30 / S.R. 94

WAY-30 AT S.R. 94

41
46

SIGNAL TIMING CHART

INTERSECTION: U.S. 30 / S.R. 94									
MAINTAINING AGENCY: OHIO DEPARTMENT OF TRANSPORTATION									
START UP			DUAL ENTRY: YES		PHASES:		2,4,6,8		
			REST IN RED:		RING 1 -		RING 2 -		
START IN: ALL RED			OVERLAP			A	B	C	D
TIME FOR FLASH OR ALL RED: 5									
FIRST PHASE(S): 2+6			PHASES			-	-	-	-
COLOR DISPLAYED: GREEN									
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.						
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			WB LT	EB	NB LT	SB	EB LT	WB	SB LT	NB
MINIMUM GREEN (INITIAL)		(SEC.)	7	20	-	10	7	20	-	10
ADDED INITIAL		*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL		(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)		(SEC.)	3.0	2.0	-	3.0	3.0	2.0	-	3.0
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	25	60	-	25	25	60	-	25
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	5.2	6.2	-	4.4	5.2	6.2	-	4.4
ALL RED CLEARANCE		(SEC.)	2.5	1.0	-	1.4	2.5	1.0	-	1.4
WALK		(SEC.)	-	-	-	-	-	-	-	-
PEDESTRIAN CLEARANCE		(SEC.)	-	-	-	-	-	-	-	-
RECALL	MAXIMUM	(ON/OFF)	-	-	-	-	-	-	-	-
	MINIMUM	(ON/OFF)	-	ON	-	-	-	ON	-	-
	PEDESTRIAN	(ON/OFF)	-	-	-	-	-	-	-	-
MEMORY		(ON/OFF)	-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS

NOTES:

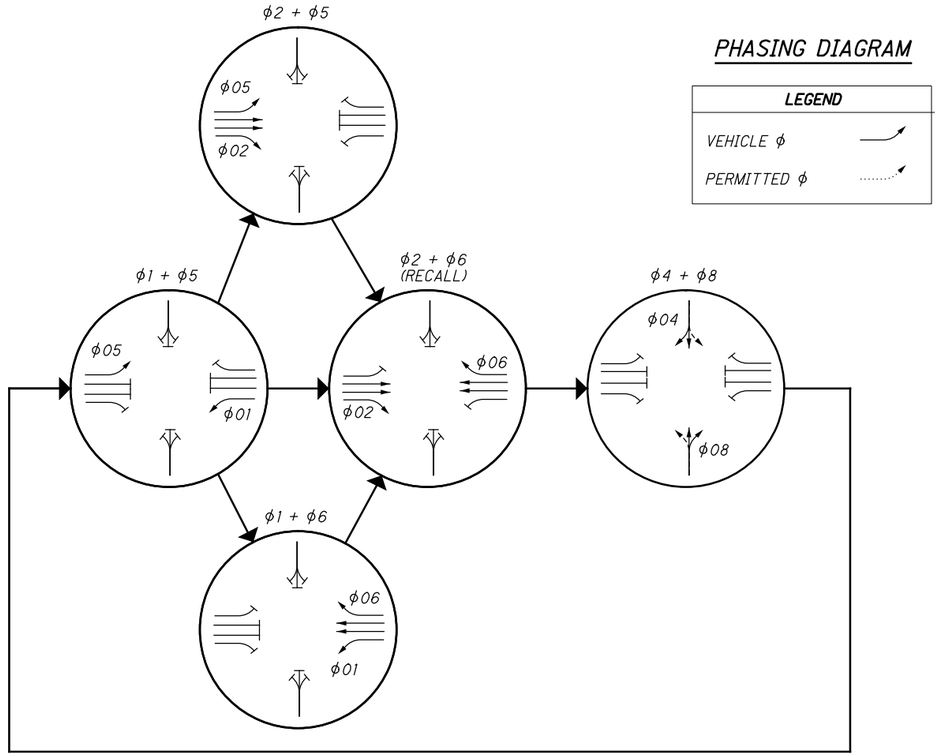
- RADAR DETECTION UNITS FOR DILEMMA ZONE DETECTION SHALL PLACE A CONSTANT CALL TO THE CONTROLLER WHEN VEHICLES TRAVEL TIMES TO THE STOP BAR ARE BETWEEN 2.5 AND 6 SECONDS. SPEED TRIGGER SHALL BE SET FOR VEHICLES TRAVELING 35 MPH AND GREATER.

- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.

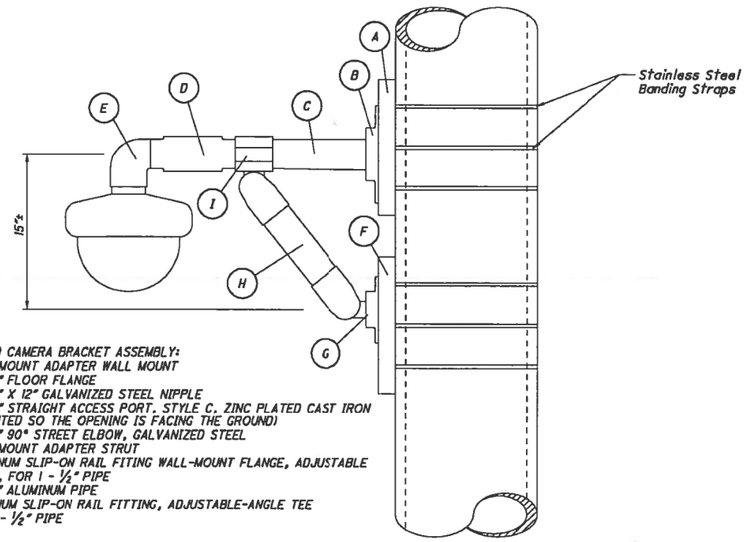
RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY PROGRAMMED IN CONTROLLER (SEC)	EXTENSION PROGRAMMED IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
D1A	WB LT	PRESENCE	ϕ1	-	-	-	STOP LINE	140
D1B	WB LT	PRESENCE	ϕ1	-	-	-	ADVANCE	MAX
D2A	EB RT	PRESENCE	ϕ2	-	-	-	ADVANCE	MAX
D2B	EB	PRESENCE	ϕ2	-	-	-	ADVANCE	200
D2C	EB	PRESENCE	ϕ2	-	-	-	ADVANCE	200
D4	SB	PRESENCE	ϕ4	10	-	ϕ4	STOP LINE	140
D5A	EB LT	PRESENCE	ϕ5	-	-	-	STOP LINE	140
D5B	EB LT	PRESENCE	ϕ5	-	-	-	ADVANCE	MAX
D6A	WB RT	PRESENCE	ϕ6	-	-	-	ADVANCE	MAX
D6B	WB	PRESENCE	ϕ6	-	-	-	ADVANCE	200
D6C	WB	PRESENCE	ϕ6	-	-	-	ADVANCE	200
D8	NB	PRESENCE	ϕ8	10	-	ϕ8	STOP LINE	140

PHASING DIAGRAM



CCTV MOUNTING DETAIL



POLE MOUNTED CAMERA BRACKET ASSEMBLY:
- A. POLE MOUNT ADAPTER WALL MOUNT
- B. 1 - ½" FLOOR FLANGE
- C. 1 - ½" X 12" GALVANIZED STEEL NIPPLE
- D. 1 - ½" STRAIGHT ACCESS PORT. STYLE C. ZINC PLATED CAST IRON (ORIENTED SO THE OPENING IS FACING THE GROUND)
- E. 1 - ½" 90° STREET ELBOW, GALVANIZED STEEL
- F. POLE MOUNT ADAPTER STRUT
- G. ALUMINUM SLIP-ON RAIL FITTING WALL-MOUNT FLANGE, ADJUSTABLE ANGLE, FOR 1 - ½" PIPE
- H. 1 - ½" ALUMINUM PIPE
- I. ALUMINUM SLIP-ON RAIL FITTING, ADJUSTABLE-ANGLE TEE FOR 1 - ½" PIPE

NOTES:
1. SHALL BE CAPABLE OF SUPPORTING CCTV ASSEMBLY UNITS UP TO 75 LBS.
2. ALL CONNECTION POINTS SHALL BE PROPERLY SEALED TO ENSURE WEATHER PROOF CABLE PATHWAY FROM SIGNAL POLE INTO CCTV ASSEMBLY UNIT.
3. PTFE ANTI-SIEZE THREAD SEALANT SHALL BE USED ON ALL FITTINGS
4. SCREWS NO SMALLER THAN ¼" - 20
5. LOCK AND FLAT WASHERS SHALL BE USED
6. NO EXPOSED CABLES - ALL CABLING SHALL BE HIDDEN BY BRACKET ASSEMBLY UNIT.
7. ALL HARDWARE SHALL BE STAINLESS STEEL.
8. ALL SCREWS SHALL BE HEX HEAD CAP SCREWS.

DETAIL POLE ADAPTERS AND BRACKET

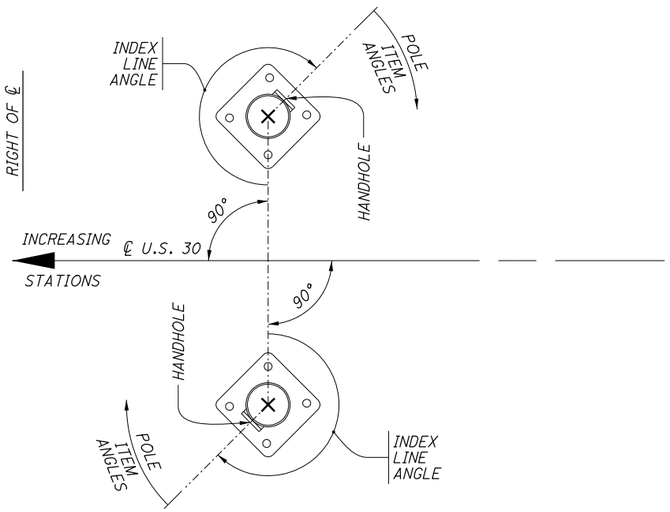
NOT TO SCALE

CALCULATED KJM | CHECKED KMG

TRAFFIC SIGNAL PLAN DETAILS
U.S. 30 / S.R. 94
WAY-30 AT S.R. 94

PLAN DETAILS FOR STRAIN POLES

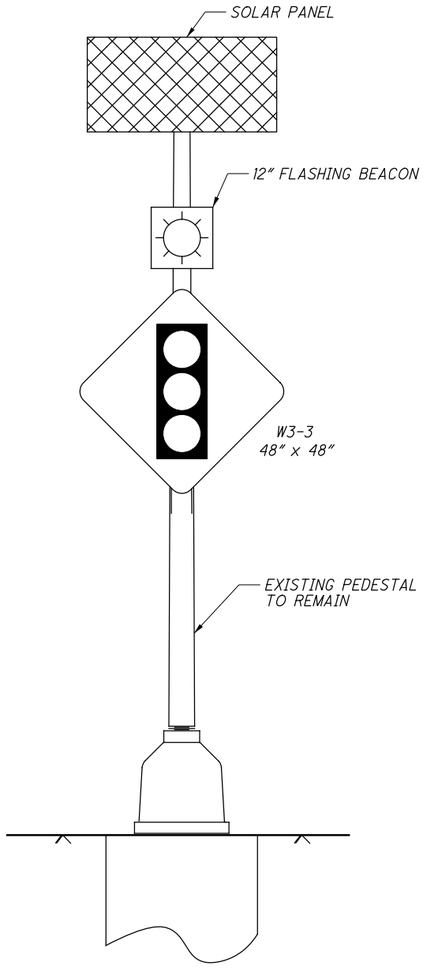
POLE NO.	DESIGN NO.	POLE HEIGHT (FT.)	FOUNDATION ELEV.	SPAN WIRE ATTACHED HEIGHT	CABLE ENTRANCE DISTANCE FROM TOP (IN.)	INDEX LINE ANGLE (DEG.)	ANGLES (DEG.) FROM INDEX LINE CABLE ENTRANCE
SP-1	14	33	1076.53	30.1	47	110	180
SP-2	14	31	1076.19	28.4	44	245	180
SP-3	14	33	1069.82	30.8	39	215	180
SP-4	14	31	1072.00	28.8	39	140	180



NOTES:

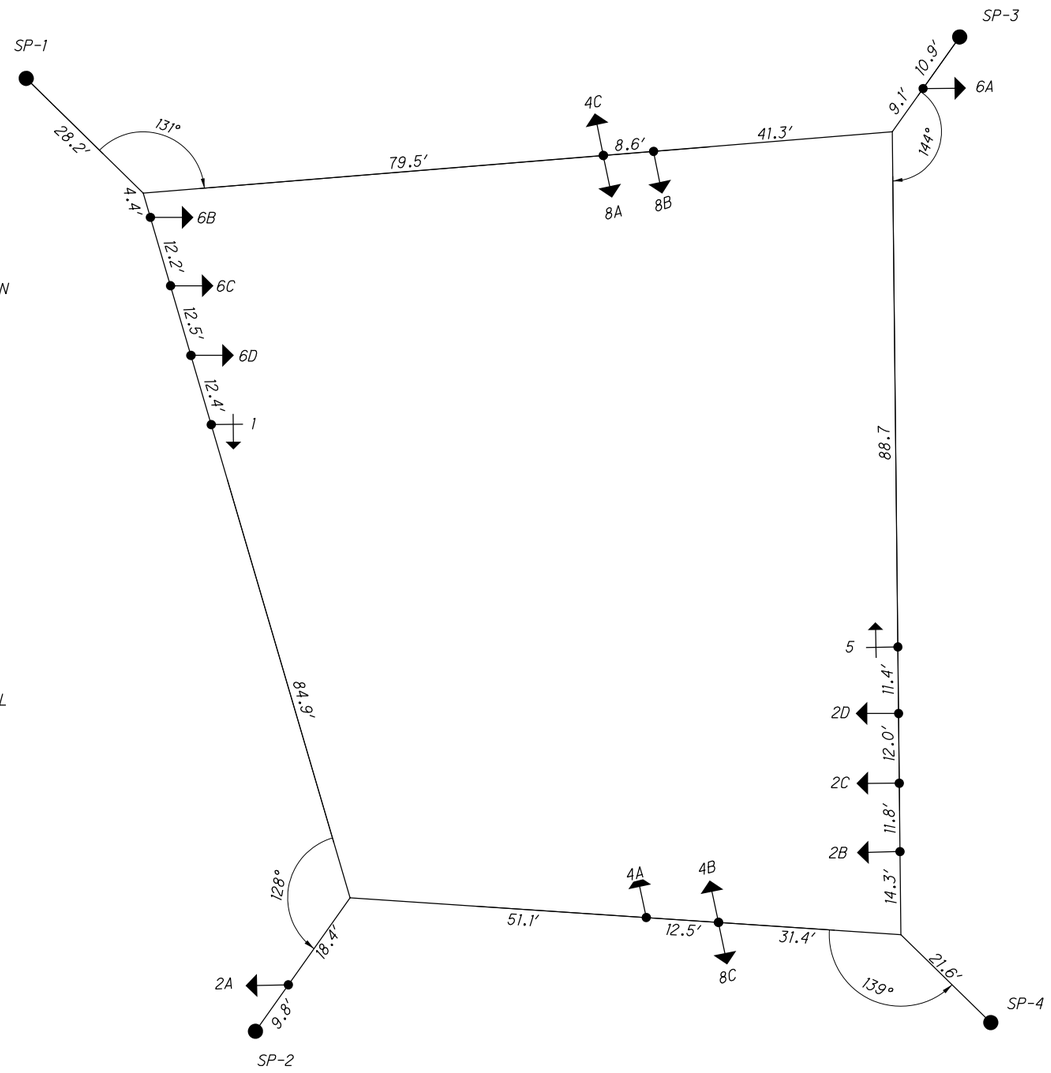
- ALL ANGLES ARE MEASURED CLOCKWISE.
- THE INDEX LINE GOES THROUGH THE CENTER OF THE HANDHOLE.

POLE DIAGRAM



SIGN FLASHER ASSEMBLY DETAIL

NOT TO SCALE



PLAN VIEW DETAIL

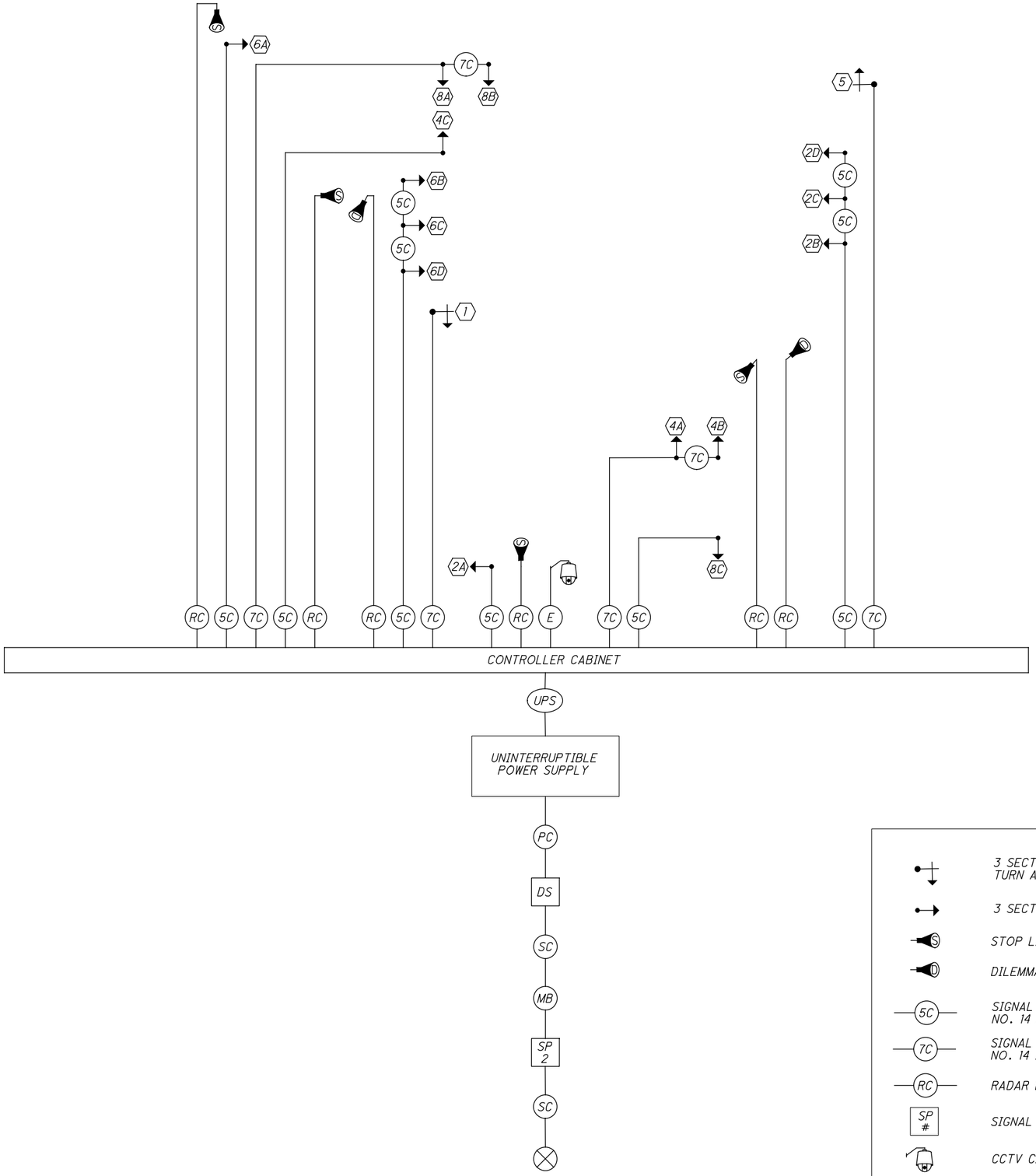
NOT TO SCALE

NOTES:

- 17' MIN TO 19' MAX CLEARANCE PER TC-85.22
- TETHERED PER TC-85.21
- FOUNDATIONS SHALL BE 2" (± 1") ABOVE GRADE PER TC-21.20

CALCULATED K.JM | CHECKED KMG

TRAFFIC SIGNAL PLAN DETAILS
WAY-30 AT S.R. 94
U.S. 30 / S.R. 94



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1 (WB LT)	<--R---	ϕ 1 R	R
	<--Y---	ϕ 1 Y	
	<--G---	ϕ 1 G	
2A, 2B, 2C, 2D (EB)	R	ϕ 2 R	R
	Y	ϕ 2 Y	
	G	ϕ 2 G	
4A, 4B, 4C (SB)	R	ϕ 4 R	R
	Y	ϕ 4 Y	
	G	ϕ 4 G	
5 (EB LT)	<--R---	ϕ 5 R	R
	<--Y---	ϕ 5 Y	
	<--G---	ϕ 5 G	
6A, 6B, 6C, 6D (WB)	R	ϕ 6 R	R
	Y	ϕ 6 Y	
	G	ϕ 6 G	
8A, 8B, 8C (NB)	R	ϕ 8 R	R
	Y	ϕ 8 Y	
	G	ϕ 8 G	
LS = LOAD SWITCH			

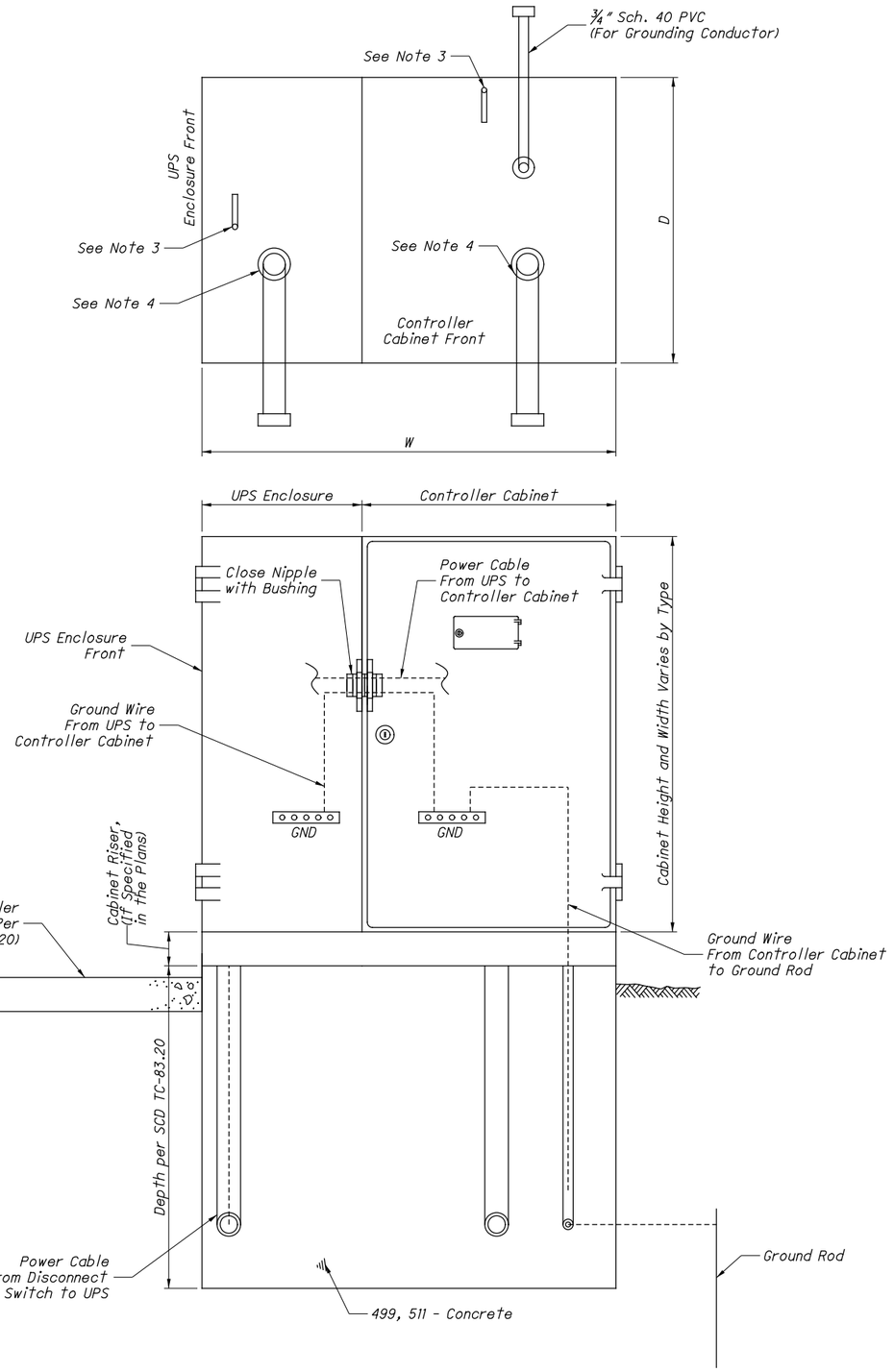
LEGEND

- 3 SECTION VEHICULAR SIGNAL HEAD, TURN ARROWS 1-WAY
- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- STOP LINE RADAR DETECTION UNIT
- DILEMMA ZONE RADAR DETECTION UNIT
- 5C — SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
- 7C — SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- RC — RADAR DETECTION CABLE
- SP # — SIGNAL SUPPORT POLE NO. __
- CCTV CAMERA
- POWER SOURCE
- E — ETHERNET CAT 5E ARMORED CABLE
- PC — POWER CABLE, 3 CONDUCTOR, NO. 6 AWG
- MB — METER BASE
- DS — SIGNAL DISCONNECT SWITCH
- UPS — UNINTERRUPTIBLE POWER SUPPLY CABLE
- SC — SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG

CALCULATED K.JM | CHECKED KMG

TRAFFIC SIGNAL PLAN DETAILS U.S. 30 / S.R. 94

WAY-30 AT S.R. 94



NOTES:

1. The Uninterruptible Power Supply (UPS) enclosure shall be mounted flush up against the traffic signal cabinet and sealed with silicone. The Contractor shall be responsible for providing the necessary power cable between the UPS unit and signal cabinet.
2. The UPS should be placed on the opposite side of the pull box on a 332/336 cabinet (per Standard Construction Drawing (SCD) TC-83.20). The UPS placement for a NEMA cabinet varies, placement should provide adequate access with respect to slope, guardrail spacing, etc.
3. The size, number, and location of anchor bolts shall be in accordance with the manufacturer's recommendations.
4. The size, number, and orientation of conduit ells shall be as shown in the plan, except that a ¾" schedule 40 PVC shall be installed in each foundation.
5. 1/2" preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
6. See SCD TC-83.20 for further details.

TYPE	W (IN.)	D (IN.)	FOUNDATION CONCRETE (CU. YD.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54

THIS DRAWING REPLACES PIS 208320 DATED 04-20-2012.

PLAN INSERT SHEET

UNINTERRUPTIBLE POWER SUPPLY (UPS) AND CONTROLLER CABINET FOUNDATION

PIS 208320

1/1

0/0

REVISION DATE	DESIGNED	OFFICE OF ROADWAY ENGINEERING
07-18-2014	XXX	
CHECKED	REVIEWED	
CHECKED	XXX	

CALCULATED ---
CHECKED ---

TRAFFIC SIGNAL PLAN INSERT SHEET

WAY-30 AT S.R. 94

45/46

PROJECT GROUND COORDINATES - US SURVEY FEET

Project coordinates (U.S. Survey Feet) are relative to State Plane Grid coordinates (meters) by a Project Adjustment Factor of: 3.28116311

C/L of Right-of-Way SR 030 — WAY-30-122.10-23.86N1952 WAY-30-17.03N1950 used for alignment

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE
CP01	1153+38.31	-60.44	LT	414125.489	2184857.219	1155.35	IPID
CP02	1170+48.70	-91.99	LT	413578.744	2186491.948	1179.92	IPID
CP03	1188+45.79	96.74	RT	412491.078	2187943.563	1182.01	IPID
CP04	1196+88.98	37.29	RT	412253.853	2188766.545	1150.86	IPID
CP05	1208+91.83	112.88	RT	412029.135	2189967.208	1126.43	IPID
CP06	1219+33.76	116.36	RT	412044.319	2191010.022	1110.60	IPID
CP07	1231+21.85	-60.35	LT	412242.478	2192194.727	1066.39	DRILLHS
CP08	1241+36.97	3.65	RT	412221.918	2193210.074	1065.94	IPINS
BM01	1163+65.00	-165.56	LT	413985.359	2185912.711	1178.11	BM
BM02	1176+43.47	-96.48	LT	413269.271	2186999.877	1180.19	GOVCON
BM03	1191+03.74	-158.98	LT	412621.896	2188280.952	1177.89	BM
BM04	1219+33.77	101.09	RT	412059.590	2191009.757	1110.14	BM

PROJECT CONTROL POINTS

STATE PLANE GRID COORDINATES

Horiz. Datum: NAD83 (2011) Ohio State Plane, North Zone (3401) Vert. Datum: NAVD88

CP04 defined by GPS from CORS using Geoid 12A. All other elevations are established by leveling from CP04.

DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)
SIZE=5/8 NAME=ODOT TRAV NOTE=YELLOW	CP01	126213.0150	665878.8806	352.152	414083.8668	2184637.6275
SIZE=3/4 NAME=3" ALUM CAP	CP02	126046.3835	666377.0970	359.639	413537.1764	2186272.1926
SIZE=5/8 NAME=ODOT TRAV	CP03	125714.8958	666819.5058	360.276	412449.6205	2187723.6619
SIZE=5/8 NAME=ODOT TRAV	CP04	125642.5965	667070.3260	350.783	412212.4188	2188546.5613
SIZE=5/8 NAME=ODOT TRAV PT NOTE=YELLOW	CP05	125574.1092	667436.2519	343.338	411987.7232	2189747.1031
SIZE=5/8 NAME=ODOT TRAV PT	CP06	125578.7369	667754.0705	338.512	412002.9061	2190789.8129
DRILL HOLE AND CROWS FOOT IN 6" CONC CURB	CP07	125639.1297	668115.1328	325.036	412201.0447	2191974.3982
SIZE=5/8 NAME=ODOT TRAV PT	CP08	125632.8639	668424.5802	324.899	412180.4877	2192989.6435
DESCRIPTION=CHISEL BOX IN H WALL	BM01	126170.3076	666200.5629	359.088	413943.7508	2185693.0134
DESCRIPTION=USGS CONC BENCHMARK NOTE=S279-1959	BM02	125952.0656	666531.8985	359.721	413227.7351	2186780.0703
DESCRIPTION=S FLANGE BOLT LOCATION=FIRE HYDRANT NOTE=N OF LINCOLNVIEW DR	BM03	125754.7652	666922.3317	359.021	412580.4255	2188061.0167
DESCRIPTION=X NE BOLT LOCATION=FLASHING SIGNAL SIGN	BM04	125583.3910	667753.9896	338.371	412018.1752	2190789.5477
	0	0.0000	0.0000	0.000	0.0000	0.0000

MONUMENTS TO BE SET DURING CONSTRUCTION

ITEM 623.05 MONUMENT ASSEMBLY	ITEM 623.05 REFERENCE MONUMENT

EXISTING MONUMENTATION CENTERLINE OF RIGHT OF WAY STATE ROUTE 030

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE
WAY0302101	OffChain	OffChain	RT	413708.617	2180016.166	1029.34	CMON
WAY0302102	OffChain	OffChain	RT	413900.627	2180755.835	1063.40	CMON
WAY0302103	OffChain	OffChain	RT	414080.248	2181453.538	1098.71	IPIPE
WAY0302201	1126+99.94	0.04	RT	414212.623	2182220.812	1122.56	CMON
WAY0302202	1134+47.37	0.91	RT	414213.588	2182967.332	1132.62	IPIPE
WAY0302203	1143+99.98	0.00	RT	414139.302	2183917.049	1138.86	CMON
WAY0302204	1154+25.52	0.00	LT	414058.353	2184939.383	1153.08	CMON
WAY0302205	1161+00.18	-0.07	LT	413926.831	2185599.521	1168.30	CMON
WAY0302206	1167+89.02	-0.17	LT	413637.481	2186222.846	1173.00	IPIPE
WAY0302301	1174+99.93	-0.15	LT	413262.994	2186821.127	1177.90	CMON
WAY0302302	1183+43.01	-0.16	LT	412818.917	2187543.764	1178.25	CMON
WAY0302303	1189+99.82	0.21	RT	412514.648	2188125.205	1173.51	CMON
WAY0302304	1196+84.29	26.39	RT	412265.597	2188764.746	1149.52	CMON
WAY0302305	1197+14.14	26.39	RT	412258.039	2188793.800	1148.40	CMON
WAY0302306	1202+85.41	26.16	RT	412151.009	2189357.949	1128.05	CMON
WAY0302307	1203+15.18	26.14	RT	412147.404	2189387.672	1127.61	CMON
WAY0302308	1209+17.69	26.03	RT	412116.297	2189992.406	1124.78	CMON
WAY0302309	1209+47.59	25.96	RT	412116.886	2190022.388	1124.71	CMON
WAY0302310	1217+84.95	26.02	RT	412131.956	2190859.602	1112.93	CMON
WAY0302311	1218+14.95	26.02	RT	412132.496	2190889.604	1112.17	CMON
WAY0302312	1225+85.34	25.96	RT	412146.480	2191659.863	1078.91	CMON
WAY0302313	1226+15.14	25.91	RT	412147.066	2191689.663	1077.93	CMON
WAY0302401	1233+63.29	25.99	RT	412160.511	2192437.688	1065.89	CMON
WAY0302402	1233+93.29	25.96	RT	412161.089	2192467.714	1065.84	CMON
WAY0302403	1239+84.97	25.96	RT	412187.870	2193060.071	1062.51	CMON
WAY0302404	1240+14.88	25.88	RT	412190.118	2193089.964	1062.63	CMON
WAY0302405	1247+00.92	-0.16	LT	412286.976	2193770.304	1069.57	CMON
WAY0302406	1253+59.01	0.00	RT	412393.068	2194419.681	1075.72	CMON
WAY0302407	1261+00.55	0.05	RT	412533.601	2195147.785	1082.41	CMON
WAY0302408	1268+99.98	-0.07	LT	412685.275	2195932.695	1086.28	CMON
WAY0302409	1277+53.82	0.00	RT	412847.079	2196771.063	1102.51	CMON
WAY0302501	1290+54.21	0.00	RT	413020.810	2198059.097	1127.59	CMON
WAY0302502	1300+00.39	-0.15	LT	413094.044	2199002.437	1134.22	CMON
WAY0302503	1310+01.51	-0.06	LT	413171.270	2200000.568	1113.89	CMON
WAY0302504	1319+01.22	-0.19	LT	413240.897	2200897.584	1108.19	CMON
WAY0302505	1327+91.16	-17.48	LT	413326.874	2201783.534	1104.83	CMON
WAY0302506	OffChain	OffChain	RT	413328.257	2201803.157	1104.65	CMON

EXISTING CENTERLINE CONTROL POINTS

Horiz. Datum: NAD83 (2011) Ohio State Plane, North Zone (3401) Vert. Datum: NAVD88

DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)
	WAY0302101	126085.9650	664403.4730	313.743	413667.037	2179797.061
	WAY0302102	126144.4840	664628.9020	324.126	413859.028	2180536.656
	WAY0302103	126199.2270	664841.5410	334.888	414038.631	2181234.289
	WAY0302201	126239.5710	665075.3831	342.157	414170.992	2182001.486
	WAY0302202	126239.8650	665302.9000	345.223	414171.957	2182747.931
	WAY0302203	126217.2250	665592.3450	347.125	414097.679	2183697.552
	WAY0302204	126192.5540	665903.9220	351.459	414016.738	2184719.784
	WAY0302205	126152.4700	666105.1120	356.098	413885.229	2185379.855
	WAY0302206	126064.2850	666295.0830	357.530	413595.908	2186003.118
GOOD	WAY0302301	125950.1525	666479.2494	359.024	413221.459	2186607.337
GOOD	WAY0302302	125814.8112	666697.6591	359.133	412777.426	2187323.503
BROKE - STRAIGHT	WAY0302303	125722.0790	666874.8647	357.688	412473.188	2187905.285
BROKE - STRAIGHT	WAY0302304	125646.1758	667069.7776	350.373	412224.162	2188544.762
GOOD	WAY0302305	125643.8723	667078.6325	350.033	412216.604	2188573.814
BROKE - GOOD	WAY0302306	125611.2529	667250.5682	343.829	412109.586	2189137.906
GOOD	WAY0302307	125610.1540	667259.6268	343.696	412105.980	2189167.626
GOOD	WAY0302308	125600.6736	667443.9317	342.835	412074.877	2189772.299
GOOD	WAY0302309	125600.8532	667453.0691	342.813	412075.466	2189802.277
GOOD	WAY0302310	125605.4461	667708.2269	339.222	412090.534	2190639.408
GOOD	WAY0302311	125605.6107	667717.3707	338.991	412091.074	2190669.407
BROKEN HARD	WAY0302312	125609.8725	667952.2233	328.854	412105.057	2191439.588
BROKEN - STRAIGHT	WAY0302313	125610.0511	667961.2045	328.553	412105.643	2191469.385
GOOD	WAY0302401	125614.1487	668189.1800	324.883	412113.086	2192217.335
GOOD	WAY0302402	125614.3249	668198.3310	324.869	412113.664	2192247.358
BROKE -STRAIGHT	WAY0302403	125622.4871	668378.8636	323.854	412146.443	2192839.655
BROKE - STRAIGHT	WAY0302404	125623.1722	668387.9743	323.890	412148.691	2192869.546
BROKE - STRAIGHT	WAY0302405	125652.6916	668595.3215	326.004	412245.539	2193549.817
GOOD	WAY0302406	125685.0251	668793.2319	327.881	412351.620	2194199.128
GOOD	WAY0302407	125727.8553	669015.1363	329.918	412492.139	2194927.160
BROKEN HARD	WAY0302408	125774.0812	669254.3532	331.099	412643.798	2195711.990
BROKEN - STRAIGHT	WAY0302409	125823.3941	669509.8627	336.046	412805.585	2196550.275
GOOD	WAY0302501	125876.3421	669902.4167	343.689	412979.299	2197838.179
GOOD	WAY0302502	125898.6616	670189.9184	345.711	413052.526	2198781.424
GOOD	WAY0302503	125922.1977	670494.1188	339.514	413129.744	2199779.455
BROKEN HARD	WAY0302504	125943.4180	670767.5025	337.776	413199.364	2200678.381
BROKEN HARD	WAY0302505	125969.6211	671037.5134	336.754	413285.332	2201562.242
BROKEN HARD	WAY0302506	125970.0428	671043.4938	336.698	413286.715	2201581.863

CENTERLINE OF RIGHT OF WAY & CONSTRUCTION STATE ROUTE 030

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE
CURACC01	1130+84.93	4583.66	RT	409645.156	2182605.340	0.00	CALPT
CURAPC01	1134+47.11	0.00	RT	414214.516	2182967.147	0.00	CALPT
CURAPI01	1126+83.93	-64.28	LT	414275.320	2182199.239	0.00	CALPT
CURAPT01	1119+20.75	0.00	RT	414081.770	2181453.640	0.00	CALPT
CURBCC02	1154+25.52	2864.79	RT	411202.502	2184713.251	0.00	CALPT
CURBPC02	1154+25.52	0.00	RT	414058.353	2184939.380	0.00	CALPT
CURBPI02	1161+06.98	-83.01	LT	414003.524	2185631.823	0.00	CALPT
CURBPT02	1167+88.43	0.00	RT	413637.643	2186222.259	0.00	CALPT
CURCCC03	1183+40.31	-4523.35	LT	416665.163	2189924.033	0.00	CALPT
CURCCPI03	1196+35.88	192.10	RT	412118.477	2188673.791	0.00	CALPT
CURCPC03	1183+40.31	0.00	RT	412820.204	2187541.389	0.00	CALPT
CLCL05	1191+31.70	0.00	RT	412464.165	2188247.036	0.00	CALPT
CURCPT03	1209+31.45	0.00	RT	412142.551	2190005.773	0.00	CALPT
CLCL06	1227+31.50	0.00	RT	412175.079	2191805.533	0.00	CALPT
CURDCC04	1233+78.54	-11459.16	LT	423644.056	2192245.396	0.00	CALPT
CURDPC04	1233+78.54	0.00	RT	412186.772	2192452.471	0.00	CALPT
CURDPI04	1243+67.84	42.84	RT	412204.693	2193444.065	0.00	CALPT
CURDPT04	1253+57.13	0.00	RT	412392.712	2194417.837	0.00	CALPT
CURECC05	1277+54.69	11459.16	RT	401595.901	2198944.365	0.00	CALPT
CUREPC05	1277+54.69	0.00	RT	412847.245	2196771.924	0.00	CALPT
CUREPI05	1284+04.55	-18.45	LT	412970.578	2197410.677	0.00	CALPT
CUREPT05	1290+54.40	0.00	RT	413020.825	2198059.285	0.00	CALPT

CENTERLINE ALIGNMENT

Horiz. Datum: NAD83 (2011) Ohio State Plane, North Zone (3401) Vert. Datum: NAVD88

DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)
CC	CURACC01	124847.5440	665192.5756	0.000	409603.984	2182385.975
PC	CURAPC01	126240.1479	665302.8436	0.000	414172.885	2182747.746
PI	CURAPI01	126258.6791	665068.8083	0.000	414233.683	2181979.915
PT	CURAPT01	126199.6909	664841.5720	0.000	414040.152	2181234.391
CC	CURBCC02	125322.1765	665835.0035	0.000	411161.174	2184493.674
PC	CURBPC02	126192.5539	665903.9210	0.000	414016.737	2184719.781
PI	CURBPI02	126175.8439	666114.9568	0.000	413961.915	2185412.154
PT	CURBPT02	126064.3343	666294.9039	0.000	413596.070	2186002.531
CC	CURCCC03	126987.0315	667423.0937	0.000	416623.286	2189703.933
PI	CURCCPI03	125601.3381	667042.0573	0.000	412077.057	2188453.816
PC	CURCPC03	125815.2035	666696.9351	0.000	412778.714	2187321.528
CL CL INTERSECTION @ WENGER ROAD						
PT	CURCPT03	125608.6751	667448.0055	0.000	412101.128	2189785.665
CL CL INTERSECTION @ SR94						
CC	CURDCC04	129113.9886	668130.5754	0.000	423601.478	2192025.063
PC	CURDPC04	125622.1522	668193.6855	0.000	412145.344	2192232.116
PI	CURDPI04	125627.6142	668495.8937	0.000	412163.264	2193223.611
PT	CURDPT04	125684.9165	668792.6699	0.000	412351.264	2194197.285
CC	CURECC05	122394.3727	670172.2197	0.000	401555.538	2198723.358
PC	CUREPC05	125823.4448	669510.1252	0.000	412805.752	2196551.136
PI	CUREPI05	125861.0327	669704.7979	0.000	412929.072	2197189.825
PT	CUREPT05	125876.3465	669902.4739	0.000	412979.314	2197838.367
	0	0.0000	0.0000	0.000	0.000	0.000

EXISTING MONUMENTATION CENTERLINE OF RIGHT OF WAY ALTERNATE 30

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE
MN109	1+00.00	0.00	RT	414010.703	2185614.550	0.00	CALPT
MN103	15+65.21	0.00	RT	413805.149	2187065.266	1177.83	IPIN

EXISTING CENTERLINE CONTROL POINTS

DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)
CALPT	MN109	126178.0318	666109.6925	0.000	413969.093	2185394.883
1.5" ROUND IRON BAR - CENTER OF WESTBOUND LANE	MN103	126115.3849	666551.8273	359.003	413763.559	2186845.453

EXISTING MONUMENTATION CENTERLINE OF RIGHT OF WAY WENGER ROAD

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE
CLWENGER02	1+38.73	0.00	RT	413825.339	2188230.462	0.00	CALPT
MN107	1+38.86	25.00	RT	413824.903	2188205.465	1171.27	IPIN
CLCL05	15+00.00	0.00	RT	412464.165	2188247.036	0.00	CALPT
MN104	28+27.47	0.00	RT	411136.799	2188263.199	1180.03	IPIN

EXISTING CENTERLINE CONTROL POINTS

DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)
25' OFF MN107	CLWENGER02	126121.5384	666906.9438	0.000	413783.747	2188010.532
5/8" REBAR	MN107	126121.4055	666899.3257	357.004	413783.311	2187985.538
CL CL INTERSECTION @ WENGER ROAD	CLCL05	125706.6935	666911.9952	0.000	412422.710	2188027.104
1" IRON PIN - 2" DEEP	MN104	125302.1520	666916.9210	359.675	411095.477	2188043.265

EXISTING MONUMENTATION CENTERLINE OF RIGHT OF WAY STATE ROUTE 94

NAME	STATION	OFFSET (US FT)	RT/LT	NORTH (US FT)	EAST (US FT)	ELEVATION (US FT)	FEATURE
MN105	5+16.33	0.00	RT	411213.656	2192013.571	1084.21	IPIPE
CLCL06	15+00.00	0.00	RT	412175.079	2191805.533	0.00	CALPT
MN106	18+31.98	0.00	RT	412499.554	2191735.322	1074.39	IPIPE

EXISTING CENTERLINE CONTROL POINTS

DESCRIPTION	NAME	NORTH (m)	EAST (m)	ORTHO HT (m)	NORTH (US FT)	EAST (US FT)
1" OD - 6" DEEP	MN105	125325.5759	668059.9219	330.469	411172.327	2191793.260
CL CL INTERSECTION @ SR94	CLCL06	125618.5887	667996.5183	0.000	412133.653	2191585.244
1.5" OD - 2" DEEP	MN106	125717.4789	667975.1199	327.476	412458.095	2191515.039

Grid to Ground Multiplier (1/CSF) = 1.00010052 State Plane Grid to Project Ground (same units)

Project Adjustment Factor (PAF) = 3.28116311 State Plane Grid (meters) to Project Ground (US Survey Feet)

English to metric conversion = 3.28083333 US Survey foor to meters conversion factor

PROJECT coordinates are scaled from GRID coordinates about the Ohio North Zone grid point N=0, E=0 (N 39° 27' 01.76097", W 89° 28' 32.98476")

Unitless Factor:
The Grid to Ground Multiplier for the project was computed by taking the inverse of the TBC-generated combined scale factor for: WAY0302303

Primary Project Control:
Horizontal control was positioned with a minimum of 5 VRS-derived GNSS observations. Vertical control was established by differential leveling.All positions are in conformance to the ODOT Surveying and Mapping Specifications.

CALCULATED MAE CHECKED CAD

PROJECT CONTROL TABLE

WAY-30-23.33

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