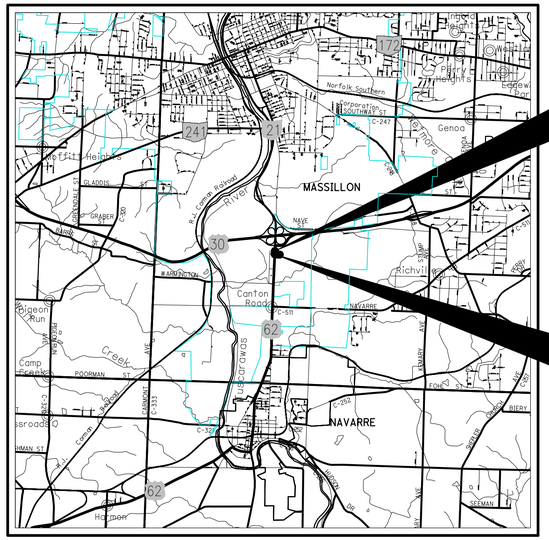
STATE OF OHIO

STARK COUNTY

ERIE AVE/ORTT ST IMPROVEMENTS



LOCATION MAP

LATITUDE: 40° 45′ 24″ LONGITUDE: 81° 30′ 59″

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED

INTERSTATE HIGHWAY

FEDERAL ROUTES

STATE ROUTES

COUNTY & TOWNSHIP ROADS

OTHER ROADS

DESIGN DESIGNATION

	ERIE ST	ORTT DR
DESIGN SPEED	55 MPH	25 MPH
LEGAL SPEED	50 MPH	25 MPH
DESIGN FUNCTIONAL CLASSIFICATION	03 PRINCIPAL ARTERIAL	07 LOCAL

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE DEVELOPMENT OF ORTT ST ALONG S.R. 21, AN ADDITION OF A RIGHT TURN LANE AND A RIGHT IN-RIGHT OUT TURN ACCESS TO THE PROPOSED SITE WORK. THE WORK WILL INCLUDE DRAINAGE, PAVEMENT MARKING AND SIGNAL IMPROVEMENTS.

PROJECT EARTH DISTURBED AREA

PROJECT EARTH DISTURBED AREA:	0.97 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.00 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	0.97 ACRES

2019 SPECIFICATIONS

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

INDEX OF SHEETS:

DEVELOPER INFORMATION:

ABC DEVELOPMENT, LLC
1247 MEDINA ROAD
MEDINA, OH 44256

CONTACT: BOB ACCIARRI
PHONE: 216-244-0380
E-MAIL: BACCIARRI@ABCDEVELOPMENT.COM

PLAN PREPARED BY:

GPD GROUP®
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax: 330.572.2101

UNDERGROUND UTILITIES

CONTACT TWO WORKING DAYS BEFORE YOU DIG

OHIO811.org Before You Dig

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

ENGINEERS SEAL:

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

SIGNED: Michael A Hobbs

DATE: 01/31/2023

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	1/21/22	MT-95.31	7/19/19	TC-12.31	4/15/22	TC-81.22	7/15/22			800	7/15/22	
BP-4.1	7/19/13	MT-95.32	4/19/19	TC-16.22	7/16/21	TC-85.20	7/20/18			816	10/18/19	
BP-5.1	7/15/22	MT-97.10	4/19/19	TC-21.21	1/20/23					821	4/20/12	
		MT-97.11	1/20/17	TC-41.10	7/19/13					832	7/15/22	
CB-3A	7/16/21	MT-99.20	4/19/19	TC-41.20	10/18/13					907	10/18/19	
CB-7	7/16/21	MT-101.90	7/17/20	TC-41.30	10/18/13					921	4/20/12	
		MT-105.10	1/17/20	TC-41.40	10/18/13							
DM-1.1	7/17/20			TC-42.10	10/18/13							
DM-1.2	7/16/21	RM-3.1	7/20/18	TC-42.20	10/18/13							
DM-4.4	1/15/16			TC-51.11	1/15/16							
				TC-51.12	1/15/16							
MH-3	7/16/21			TC-52.10	10/18/13							
				TC-52.20	1/15/21							
HL-30.11	1/15/21			TC-65.10	1/17/14							
HL-30.22	1/15/21			TC-65.11	7/15/22							
				TC-71.10	7/15/22							

FEDERAL PROJECT NO. N/A

PID NO. N/A

CONSTRUCTION PROJECT NO. N/A

RAILROAD INVOLVEMENT NONE

ERIE AVE/ORTT ST IMPROVEMENTS

O:\2020\20201170\09_Massillon\dwg\Roadway\Sheets\20201170GT001.dwg 31-Jan-23 2:45 PM

CONTROL POINT

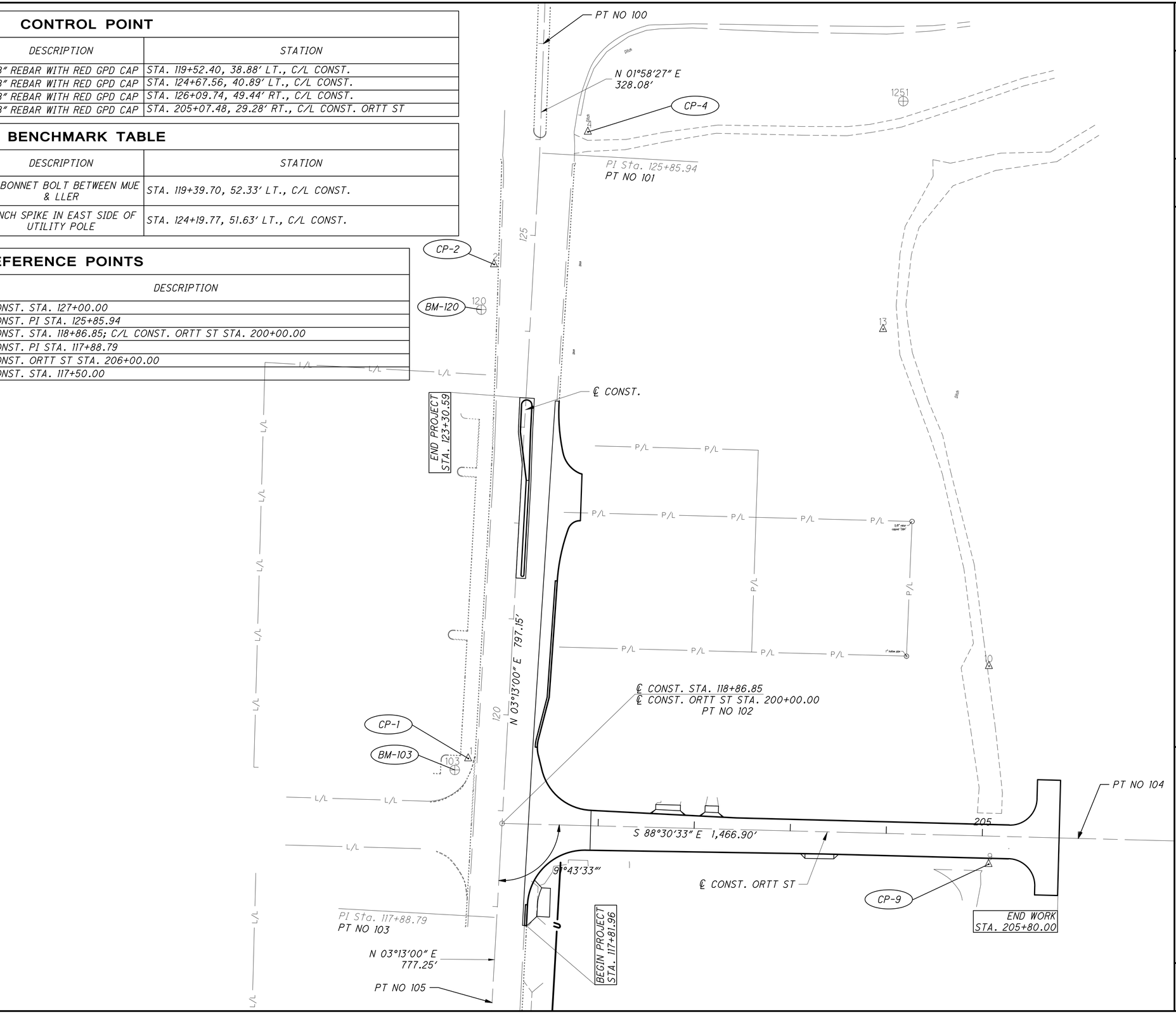
CONTROL POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	STATION
CP-1	398730.3530	2240957.1510	988.236	5/8" REBAR WITH RED GPD CAP	STA. 119+52.40, 38.88' LT., C/L CONST.
CP-2	399244.8180	2240984.0520	990.254	5/8" REBAR WITH RED GPD CAP	STA. 124+67.56, 40.89' LT., C/L CONST.
CP-4	399382.7970	2241081.7550	988.440	5/8" REBAR WITH RED GPD CAP	STA. 126+09.74, 49.44' RT., C/L CONST.
CP-9	398620.2600	2241498.8380	984.074	5/8" REBAR WITH RED GPD CAP	STA. 205+07.48, 29.28' RT., C/L CONST. ORTT ST

BENCHMARK TABLE

CONTROL POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	STATION
BM-103	398718.4320	2240943.0110	988.901	NW BONNET BOLT BETWEEN MUE & LLER	STA. 119+39.70, 52.33' LT., C/L CONST.
BM-120	399197.7030	2240970.6530	992.197	BENCH SPIKE IN EAST SIDE OF UTILITY POLE	STA. 124+19.77, 51.63' LT., C/L CONST.

REFERENCE POINTS

POINT NUMBER	NORTHING	EASTING	DESCRIPTION
100	399474.7095	2241035.4500	C/L CONST. STA. 127+00.00
101	399360.7156	2241031.5207	C/L CONST. PI STA. 125+85.94
102	398662.7328	2240992.2937	C/L CONST. STA. 118+86.85; C/L CONST. ORTT ST STA. 200+00.00
103	398564.8189	2240986.7909	C/L CONST. PI STA. 117+88.79
104	398647.1238	2241592.0907	C/L CONST. ORTT ST STA. 206+00.00
105	398476.1730	2240981.8090	C/L CONST. STA. 117+50.00



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JMB
CHECKED JJS

SCHEMATIC PLAN
BEGIN TO END

ERIE AVE/ORTT ST IMPROVEMENTS

2
48

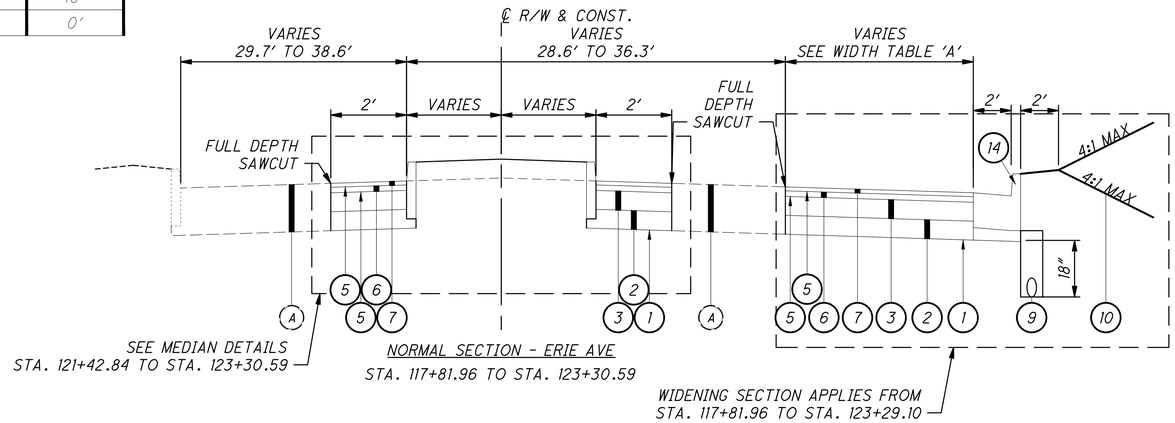
WIDTH TABLES

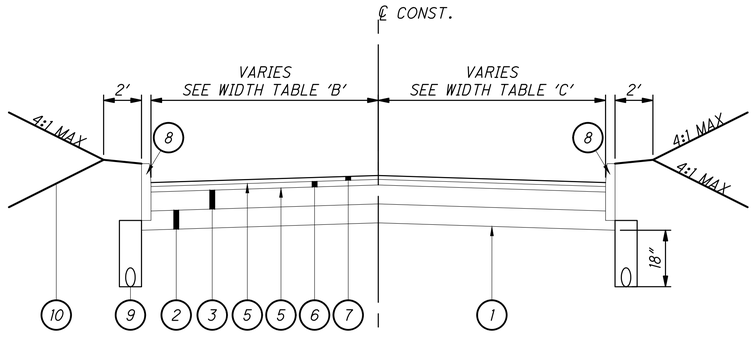
WIDTH 'A'			
BEGIN	END	WIDTH	WIDTH
117+81.96	119+70.84	2'	2'
119+70.84	120+20.82	2'	11.5'
120+20.82	121+42.20	11.5'	12'

WIDTH 'B'			
BEGIN	END	WIDTH	WIDTH
200+92.24	202+43.91	16'	12'
202+43.91	205+28.00	12'	12'

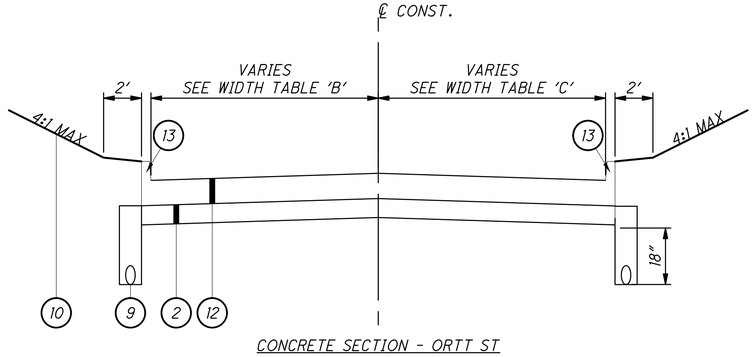
WIDTH 'C'			
BEGIN	END	WIDTH	WIDTH
200+87.92	203+34.01	25.5'	23'
203+34.01	205+28.00	23'	23'

WIDTH 'D'			
BEGIN	END	WIDTH	WIDTH
121+44.83	121+46.32	0'	3'
121+46.32	122+44.84	3'	3'
122+44.84	122+94.90	3'	10'
122+94.90	123+23.01	10'	10'
123+23.01	123+28.60	3'	0'





ASPHALT SECTION - ORTT ST
STA. 200+92.24 TO STA. 205+80.50



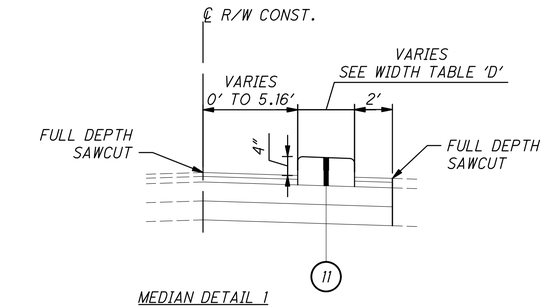
CONCRETE SECTION - ORTT ST
STA. 200+29.29 TO STA. 200+92.24

EXISTING LEGEND

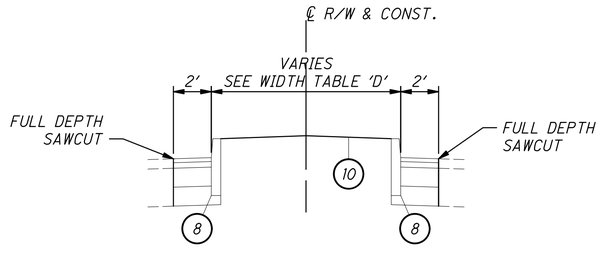
(A) ASPHALT CONCRETE PAVEMENT

PROPOSED LEGEND

(1) ITEM 204 - SUBGRADE COMPACTION / PROOF ROLLING
(2) ITEM 304 - 6" AGGREGATE BASE, AS PER PLAN (LIMESTONE)
(3) ITEM 301 - 6" ASPHALT CONCRETE BASE, (449), PG64-22
(4) NOT USED
(5) ITEM 407 - TRACKLESS TACK COAT (0.055 GAL./S.Y.)
(6) ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, (448), TYPE 2
(7) ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, (448), TYPE 1, PG70-22M
(8) ITEM 609 - CURB, TYPE 6
(9) ITEM 605 - 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC
(10) ITEM 659 - SEEDING AND MULCHING, AS PER PLAN
ITEM 659 - TOPSOIL
(11) ITEM 609 - CONCRETE MEDIAN
(12) ITEM 452 - 8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1
(13) ITEM 609 - CURB, TYPE 2-A
(14) ITEM 609 - CURB, TYPE 2



MEDIAN DETAIL 1
STA. 121+44.83 TO STA. 122+44.84
HEIGHT OF MEDIAN TO TAPER FROM 4" TO 2" IN 10'
PER ODOT SCD-3.1



MEDIAN DETAIL 2
STA. 122+44.84 TO STA. 123+28.60

CALCULATED JMB
CHECKED JJS

TYPICAL SECTIONS

ERIE AVE/ORTT ST IMPROVEMENTS

3
48

GENERAL

ROUNDING

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

UTILITIES

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

WATER:
AQUA AMERICA
870 3RD ST. NW
MASSILON, OHIO 44647
PHONE: 330-832-5764 X50650
EMAIL: DLSNYDER@AQUAAMERICA.COM

SANITARY SEWER:
STARK COUNTY SANITARY
ENGINEERING DEPARTMENT
1701 MAHONING RD. NE, P.O. BOX 9972
CANTON, OH 44711-0972
PHONE: 330-451-2335
EMAIL: TBDAVIS@STARKCOUNTYOHIO.GOV

STORM SEWER:
STARK COUNTY SUBDIVISION ENGINEER
ATTN: CURTIS BUNGARD
201 3RD STREET NE
CANTON, OHIO 44702
PHONE: 330-451-7366
FAX: 330-451-7990
EMAIL: CDBUNGARD@STARKCOUNTYOHIO.GOV

ELECTRIC:
OHIO EDISON
ATTN: CHAD UHLMAN
2600 SOUTH ERIE ST.
MASSILLON, OH 44646
PHONE: 330-301-6316

TELEPHONE:
ATTN: CHRIS EMRICH
AT&T OHIO
50 WEST BOWERY ST.
4TH FLOOR
AKRON, OH 44308
CE314@ATT.COM

GAS (MAIN):
DOMINION ENERGY OHIO
ATTN: ADAM KEARNS
320 SPRINGSIDE DRIVE, SUITE 320
AKRON, OHIO 44333
PHONE: 330-620-9127
EMAIL: ADAM.J.KEARNS@DOMINIONENGERGY.COM

GAS (PRIVATE)
SOUND ENERGY COMPANY, INC.
ATTN: TYLER LEVENGOOD
PHONE: 330-260-0788
EMAIL: TYLER@SOUNDENERGYOIL.COM

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.

SURVEYING PARAMETERS

THE SURVEY WAS OBTAINED FROM NEFF AND ASSOCIATES.

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET XX 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: GPS
MONUMENT TYPE: 5/8" X 30" REBAR WITH RED "GPD" CAP

VERTICAL POSITIONING
ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID12B

HORIZONTAL POSITIONING
REFERENCE FRAME: NAD83 (2011)
ELLIPSOID: NAD83
MAP PROJECTION: LAMBERT
COORDINATE SYSTEM: OHIO STATE PLAN, NORTH ZONE
COMBINED SCALE FACTOR: 1.00000000000
ORIGIN OF COORDINATE SYSTEM: 0,0

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

DOMINION ENERGY OHIO GAS LINE

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF DOMINION'S PIPELINE(S), IN COMPLIANCE TO 29 CFR, PART 1926, SUBPART P, (SAFE EXCAVATION AND SHORING). ONE-FOOT MINIMUM VERTICAL AND HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN DOMINION ENERGY OHIO'S (DEO) EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY DEO FACILITY (PIPELINES, ETC.) OR APPURTENANCE (PIPE COATING, TRACER WIRE, CATHODIC PROTECTION TEST STATION WIRES & DEVICES, VALVE BOXES, ETC.). DEO FACILITIES MUST BE PROTECTED WITH A TARP DURING BRIDGE CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE AND LIABLE FOR ENSURING THAT ALL DEO EXISTING FACILITIES, ABOVE AND BELOW GROUND, REMAIN UNDAMAGED, ACCESSIBLE AND IN WORKING ORDER. THE CROSSING OF DEO'S PIPELINE WITH ANOTHER STEEL FACILITY MAY CREATE A POTENTIAL CORROSION ISSUE FOR THE PROPOSED FACILITY AND THE EXISTING DEO FACILITY. PLEASE CONTACT DOMINION'S CORROSION DEPARTMENT: DAVE CUTLIP (330-266-2121), RICK MCDONALD (330-266-2122), OR AL HUMRICHOUSER (330-478-3757).

EROSION CONTROL

SEEDING AND MULCHING

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

FOR SEEDING AND MULCHING QUANTITIES, SEE CROSS-SECTIONS SHEETS 18-27.

ITEM 832 - EROSION CONTROL

ALL SOIL AND SEDIMENT CONTROL MEASURES AS SPECIFIED HEREIN OR DIRECTED BY THE ENGINEER SHALL BE IN PLACE PRIOR TO ANY CLEARING, GRUBBING, EXCAVATION, GRADING, OR MILLING OPERATIONS, AND INSTALLATIONS OF PROPOSED STRUCTURES OR UTILITIES. THESE CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE AREA IS STABILIZED AS ACCEPTED BY THE ENGINEER.

ROADWAY

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.

CLEARING AND GRUBBING

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

ITEM 203 - ROADWAY, MISC.: PRECONSTRUCTION VIDEO RECORDING

THE CONTRACTOR SHALL SUBMIT A DVD RECORDING OF THE CONSTRUCTION LIMITS TO THE CITY OF BARBERTON PRIOR TO ANY WORK PERFORMED. THE RECORDING SHALL TAKE SPECIAL NOTE OF ALL SURFACE FEATURES INCLUDING DRIVEWAYS, TREES, FENCES, LANDSCAPING FEATURES AND PLANTERS. THE RECORDING WILL BE USED TO ASSIST THE ENGINEER IN THE CASE THAT PROPERTY OWNERS CLAIM DAMAGE HAS BEEN DONE TO THE PROPERTY BY THE CONTRACTOR DURING CONSTRUCTION. AREAS THAT HAVE BEEN DAMAGED DUE TO CONTRACTOR NEGLIGENCE AS DETERMINED BY THE ENGINEER SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY OR TO THE PROPERTY OWNER.

ITEM SPECIAL - SURVEY CONTROL VERIFICATION

THE CONTRACTOR SHALL PERFORM THIS WORK TO VERIFY THE PROVIDED SURVEY CONTROL. THE CONTRACTOR WILL PERFORM THE VERIFICATION USING ONE OF THE TWO METHODS BELOW DEPENDENT UPON THE CONTRACTOR'S CHOSEN MEANS OF SURVEY CONTROL TO BE USED ON THE PROJECT. THE WORK SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF AN OHIO LICENSED SURVEYOR.

1) IF USING GPS DEVICES TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL
   - A) LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.
   - B) PERFORM A SITE CALIBRATION UTILIZING THE AVAILABLE HORIZONTAL AND VERTICAL CONTROL POINTS PROVIDED IN THE PLAN.
   - C) PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.

2) IF USING CONVENTIONAL SURVEY INSTRUMENTATION TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL
   - A) LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.
   - B) LOCATE AND OBSERVE ANGLE AND DISTANCE TO ALL AVAILABLE HORIZONTAL CONTROL POINTS PROVIDED IN THE PLAN.
   - C) PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.

CALCULATED JMB
CHECKED LJS

GENERAL NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.

2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING.

UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05.

IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

3. COMPACT THE SUBGRADE ACCORDING TO 204.03.

4. THE CONTRACTOR WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.

5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.

6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.

7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

DRAINAGE

CROSSING AND CONNECTION TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

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

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION ON ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT BID FOR THE PERTINENT 611 ITEM.

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 THE FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS 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 MENTION 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 CONTRACTORS OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAVEMENT

UNSTABLE OR UNSUITABLE SOILS FOR PAVEMENT STABILIZATION

THE FOLLOWING ITEMS AND QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO ADDRESS UNSTABLE OR UNSUITABLE SOILS ENCOUNTERED IN AREAS OF PAVEMENT CONSTRUCTION:

ITEM 204, EXCAVATION OF SUBGRADE	100 CY
ITEM 204, GRANULAR MATERIAL, TYPE B	100 CY
ITEM 204, GEOTEXTILE FABRIC	700 SY

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT ON ERIE ST TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AT GUTTER LINE.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M, AS PER PLAN

703.05 DO NOT USE COARSE AGGREGATE FROM A SOURCE DESIGNATED 'SR' OR 'SRH' ACCORDING TO THE OFFICE OF MATERIALS MANAGEMENT (OMM) IN ANY JOB MIX FORMULA (JMF) FOR THIS ITEM.

CALCULATED JMB
CHECKED LJS

GENERAL NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

SANITARY

1. SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF CONSTRUCTION.

2. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED. ADOPTED DECEMBER 27, 1968.

3. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH THE CONSTRUCTION ENGINEER OF THE STARK COUNTY SANITARY ENGINEERING DEPARTMENT (330-451-2310). A MINIMUM OF 72 HOUR NOTICE IS REQUIRED.

4. THE CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS ALONG THE ROUTE OF THE SANITARY SEWER AT LEAST 3 DAYS PRIOR TO THE START OF SANITARY SEWER CONSTRUCTION.

5. THE CONTRACTOR SHALL ALERT THE UTILITIES PROTECTION SERVICE AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION.

6. APPROVAL BY THE STARK COUNTY SANITARY ENGINEERING DEPARTMENT CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS OR SPECIFICATIONS.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY MAINTAINING EXISTING SANITARY FLOW DURING THE CONSTRUCTION AND TESTING OF THE PROPOSED IMPROVEMENTS. THE CONTRACTOR'S METHODS FOR MAINTAINING FLOW MUST BE APPROVED BY THE STARK COUNTY SANITARY ENGINEERING DEPARTMENT AT THE PRE-CONSTRUCTION MEETING.

8. ALL ROUGH GRADING TO WITHIN 6" OF FINISHED GRADE SHALL BE COMPLETED WITHIN THE RIGHTS-OF-WAY AND EASEMENTS PRIOR TO SANITARY SEWER CONSTRUCTION.

9. BULKHEADS SHALL BE ERECTED IN EXISTING MANHOLES WHERE TAPS FOR NEW LOCAL SEWERS ARE MADE AND SHALL REMAIN IN PLACE UNTIL THE NEW SEWERS ARE COMPLETE, TESTED AND APPROVED. IN CASES WHERE A BULKHEAD WOULD INTERRUPT THE FLOW FROM EXISTING SERVICE CONNECTIONS, THE BULKHEAD SHALL BE PLACED IN THE FIRST NEW MANHOLE UPSTREAM OF THE EXISTING MANHOLE.

10. MINIMUM CLEARANCE BETWEEN SANITARY SEWERS AND WATERLINES SHALL BE 18 INCHES VERTICALLY AND 10 FEET HORIZONTALLY.

11. MINIMUM NOMINAL PIPE DIAMETER OR SANITARY SERVICE SEWERS AND BUILDING SEWERS (LATERALS) SHALL BE 6". PIPES SHALL BE LAID AT NO LESS THAN 1.0% GRADE.

12. NO CHANGES TO SANITARY SERVICE SEWER AND BUILDING SEWER (LATERAL) LOCATIONS SHALL BE MADE WITHOUT THE APPROVAL OF THE STARK COUNTY SANITARY ENGINEER.

13. FOR NEW SUBDIVISION CONSTRUCTION, SANITARY BUILDING SEWERS (LATERALS) SHALL EXTEND 15 FEET INTO EACH LOT WHEN THE LOCAL SEWER IS IN A STREET RIGHT OF WAY OR SHALL TERMINATE AT THE EASEMENT LINE WHEN THE LOCAL SEWER IS IN AN EASEMENT. FOR OTHER SEWER CONSTRUCTION, SERVICE AND BUILDING SEWERS SHALL TERMINATE AT THE RIGHT OF WAY LINE OR THE EASEMENT LINE, WHICHEVER IS APPLICABLE.

14. SERVICE SEWER STACKS SHALL BE EPOXY LINED DUCTILE IRON PIPE IN ACCORDANCE WITH ITEM 11 OF THE STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS, REGARDLESS OF LOCAL SEWER MATERIAL. A CAST IRON TEE SHALL BE INSTALLED IN THE LOCAL SEWER.

15. MINIMUM COVER OVER SANITARY SEWERS SHALL BE 4 FEET.

16. ACCEPTABLE SANITARY SEWER PIPE MATERIALS ARE:

PIPE	JOINTS	INSTALLATION
PVC SMOOTH EXTERIOR: ASTM D-3034	ASTM D-3212	ASTM D-2321
PVC WATER PIPE: AWWA C-900	AWWA C-110/C-111	AWWA C-151
DIP (CL 52): AWWA C - 151	AWWA C-110/C-111	AWWA C-151

17. ALL SANITARY SEWERS, 8 INCHES IN DIAMETER AND LARGER, SHALL PASS AN INTERNAL TELEVISION INSPECTION. THE CONTRACTOR SHALL PROVIDE A COMPLETE INTERNAL INSPECTION VIDEOTAPE TO THE STARK COUNTY SANITARY ENGINEERING DEPARTMENT. THE VIDEOTAPING PROCEDURE SHALL BE IN ACCORDANCE WITH STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS.

18. A DEFLECTION TEST SHALL BE REQUIRED FOR ALL FLEXIBLE PIPE OF 8 INCHES IN DIAMETER AND LARGER. THE TEST SHALL BE CONDUCTED AT LEAST 30 DAYS AFTER COMPLETION OF BACKFILL AND SHALL BE IN ACCORDANCE WITH STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS. THE ALLOWABLE DEFLECTION RATE SHALL NOT EXCEED FIVE PERCENT (5%). TESTING SHALL BE IN ACCORDANCE WITH APPENDIX C OF THE STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS.

19. ALL SANITARY SEWERS MUST PASS A LOW PRESSURE AIR TEST, WHICH SHALL BE CONDUCTED IN ACCORDANCE WITH STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS. THE MAXIMUM ALLOWABLE TEST LEAKAGE SHALL BE 100 GAL/INCH OF DIAMETER/MILE/DAY. THIS TEST SHALL CONFORM TO ASTM F-1417.

20. MANHOLE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF ASTM C-478 AND C-443. ALL MANHOLES SHALL BE AIR/VACUUM TESTED IN ACCORDANCE WITH AND MEET ALL THE REQUIREMENTS OF ASTM C-1244.

21. CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE DRILLED, WITH BENCHES AND CHANNELS FORMED AND REPAIRED AS NECESSARY. FLEXIBLE GASKETS CONFORMING TO ASTM C-923 (A-LOK, KOR-N-SEAL, OR APPROVED EQUAL) SHALL SEAL THE SPACE BETWEEN THE PIPE AND THE MANHOLE WALL.

22. ANY MANHOLE DROP ATTACHMENTS SHALL BE "OUTSIDE" TYPE.

23. MANHOLE TOP OF CASTING ELEVATIONS MAY REQUIRE ADJUSTMENT DURING SITE GRADING. MANHOLE COVERS MAY NOT BE BURIED. UPON COMPLETION OF CONSTRUCTION AND RESTORATION, ALL MANHOLES, PROPOSED AND EXISTING, SHALL BE IN CONFORMANCE IN ALL RESPECTS WITH STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS AND DETAILS.

24. ALL SANITARY SEWER TRENCHES BENEATH PROPOSED OR EXISTING PAVEMENT SHALL BE COMPACTED IN LIFTS, IN A MANNER AND WITH MATERIAL AS SPECIFIED BY THE STARK COUNTY SANITARY ENGINEERING DEPARTMENT AND ALL APPLICABLE ODOT SPECIFICATIONS.

CALCULATED JMB
CHECKED LJS

GENERAL NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

STARK COUNTY SUBDIVISION ENGINEERING DEPARTMENT STANDARD GENERAL NOTES

1. CONSTRUCTION AND MATERIALS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE 2019 EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE CURRENT STARK COUNTY SUBDIVISION REGULATIONS. WHERE CONFLICTS OCCUR BETWEEN THE ABOVE, THE STARK COUNTY SUBDIVISION ENGINEER SHALL DETERMINE THE GOVERNING AUTHORITY.

   ANY DEFECTS IN THE CONSTRUCTION INCLUDING MATERIALS AND/OR WORKMANSHIP SHALL BE REPLACED OR CORRECTED BY REMOVAL AND REPLACEMENT OR OTHER APPROVED METHOD PRIOR TO ACCEPTANCE BY THE STARK COUNTY SUBDIVISION ENGINEER.

2. THE STARK COUNTY SUBDIVISION ENGINEER SHALL NOT BE HELD LIABLE FOR DAMAGES OF ANY TYPE WHICH MAY OCCUR AS A RESULT OF ERROR AND/OR OMMISSIONS IN THE ENGINEERING DESIGN DATA PRESENTED BY THE DEVELOPER'S ENGINEER NOR SHALL THE STARK COUNTY SUBDIVISION ENGINEER BE HELD LIABLE FOR DAMAGES RESULTING FROM THE DEVELOPER'S CONTRACTOR NOT COMPLYING WITH THE APPROVED PLANS OR BY USING CONSTRUCTION METHODS OR MATERIALS NOT APPROVED BY THE STARK COUNTY SUBDIVISION ENGINEER.

3. THE DEVELOPER'S ENGINEER CERTIFIES THAT ALL DESIGN DATA AND CALULATIONS PERTAINING TO THESE IMPROVEMENT PLANS ARE CORRECT AND CONFORM TO THE CURRENT DESIGN CRITERIA. THE STARK COUNTY SUBDIVISION ENGINEER IN APPROVING THESE PLANS AND DEDICATION PLAT THEREOF, DOES NOT IN ANY WAY RELIEVE THE DEVELOPER'S ENGINEER OF HIS RESPONSIBILITY FOR ACCURATE AND COMPLETE ENGINEERING DESIGN RELATIVE TO THE PLANS.

4. ANY EXISTING HORIZONTAL AND VERTICAL CONTROL MONUMENTS AFFECTED BY THIS PROJECT SHALL BE REMOVED AND REPLACED TO THEIR ORIGINAL REFERENCE LOCATIONS AND ELEVATIONS BY THE DEVELOPER'S CONTRACTOR.

5. THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES, BUILDINGS, ROADWAYS, STRUCTURES AND OTHER SITE CONDITIONS RESULTING FROM HIS WORK TO THE CONDITION EXISTING PRIOR TO CONSTRUCTION UNLESS NOTED OTHERWISE ON THESE CONSTRUCTION DRAWINGS.

6. ALL EXISTING ROAD SURFACES, EASEMENTS OR RIGHT-OF-WAY AREAS DISTRUBED BY THE CONSTRUCTION OF ANY PART OF THIS IMPROVEMENT SHALL BE RESTORED COMPLETELY BY THE DEVELOPER'S CONTRACTOR TO THE BEFORE CONSTRUCTION CONDITION OR BETTER WHEN ORDERED TO DO SO BY THE STARK COUNTY SUBDIVISION ENGINEER.

7. THE DEVELOPER'S CONTRACTOR MUST CONTACT THE STARK COUNTY SUBDIVISION ENGINEER (PHONE: 330-451-7403) TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES.

8. DURING THE PROJECT, THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE STARK COUNTY SUBDIVISION ENGINEER OF WHEN THEIR WORK FORCES ARE PERFORMING ANY CONSTRUCTION ACTIVITIES AT THE SITE. FAILURE OF THE DEVELOPER'S CONTRACTOR TO PROVIDE THESE NOTICES MAY RESULT IN THE INSTALLED WORK NOT BEING ACCEPTED AS WELL AS HAVING TO BE REINSTALLED. THE PROJECT'S PERFORMANCE BOND SHALL NOT BE RELEASED UNTIL ALL OF THE PROJECT'S PUBLIC IMPROVEMENTS ARE CONSTRUCTED TO THE SATISFACTION OF THE SUBDIVISION ENGINEER.

9. ALL KNOWN UTILITIES HAVE BEEN SHOWN ON THE PLANS. THE DEVELOPER'S CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. EXISTING APPURTENANCES TO REMAIN SUCH AS UTILITY POLES, VALVE BOXES, ETC. SHALL REMAIN UNDISTURBED BY THE DEVELOPER'S CONTRACTOR DURING CONSTRUCTION.

10. THE DEVELOPER'S CONTRACTOR SHALL CONTACT THE UTILITIES PROTECTION SERVICE (PHONE: 1-800-362-2764) AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION OR CONSTRUCTION IS INITIATED OR ANY UNDERGROUND WORK IS COMMENCED IN EXISTING STREETS TO ARRANGE FOR UTILITY VERIFICATION AND CONSTRUCTION INSPECTION SERVICES RESPECTIVELY.

    PUBLIC UTILITIES IN THE PROJECT AREA AND THEIR RESPECTIVE OWNERS ARE SHOWN ON SHEET 4.

11. THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH ODOT ITEM 207 AND REQUIREMENTS OF THE STARK COUNTY SOIL AND WATER CONSERVATION SERVICE. THE DEVELOPER'S CONTRACTOR ON A DAILY BASIS SHALL CLEAN ALL EXISTING STREETS OF MUD AND DIRT RESULTING FROM HIS WORK DURING THE CONSTRUCTION PHASE.

12. ALL STORM SEWER CONSTRUCTION INCLUDING EXCAVATING, CONDUIT BEDDING, PIPE COVER AND BACKFILLING SHALL CONFORM TO ODOT ITEM 611.

13. BEFORE ACCEPTANCE OF THE ROAD PAVEMENT SUBGRADES BY THE STARK COUNTY SUBDIVISION ENGINEER, SUBGRADES SHALL BE COMPACTED AND TESTED IN ACCORDANCE WITH ODOT ITEM 204. WHEREVER UNSTABLE SOIL SUBGRADE CONDITIONS ARE ENCOUNTERED, ADDITIONAL WORK ON THE SUBGRADES SHALL BE DONE BY THE DEVELOPER'S CONTRACTOR AND PAID FOR BY THE DEVELOPER UNTIL SUCH CONDITIONS ARE CORRECTED AND APPROVED BY THE STARK COUNTY SUBDIVISION ENGINEER.

    SUBGRADE TESTING AND/OR PROOF ROLLING MUST BE WITNESSED AND APPROVED BY THE STARK COUNTY SUBDIVISION ENGINEER PRIOR TO THE PLACEMENT OF THE PAVEMENT MATERIALS.

14. FOR ALL REQUIRED ODOT PAVEMENT RELATED ITEMS, THE DEVELOPER'S CONTRACTOR SHALL PROVIDE MATERIALS OBTAINED FROM A SOURCE APPROVED BY THE OHIO DEPARTMENT OF TRANSPORTATION.

    NO ASPHALT PAVEMENT, CONCRETE PAVEMENT OR CONCRETE CURBS SHALL BE PLACED ON FROZEN PAVEMENT, BASE OR SUBBASE.

15. TOPSOIL AND EXISTING VEGETATION SHALL BE STRIPPED FROM THE PROPOSED PAVEMENT AREAS AND A MINIMUM OF THREE (3) FEET PAST THE EDGE OF PROPOSED PAVEMENT AREAS. THE DEVELOPER'S CONTRACTOR SHALL LEGALLY DISPOSE OF REMOVED TOPSOIL AND VEGETATION.

    OTHER EXCAVATION REQUIRED SHALL BE BASED UPON THE LINES AND GRADES GIVEN IN THE PLANS AND BE LEGALLY DISPOSED OF BY THE DEVELOPER'S CONTRACTOR.

16. A ROAD OPENING PERMIT WILL BE REQUIRED FOR ANY NEW SUBDIVISION STREET THAT CONNECTS TO AN EXISTING PUBLIC ROADWAY BEFORE ACCESS IS GRANTED FOR CONSTRUCTION PURPOSES.

17. THE DEVELOPER'S CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY CONSTRUCTION PERMITS.

18. THE DEVELOPER'S CONTRACTOR SHALL MAINTAIN TRAFFIC ON EXISTING ROADWAYS AT ALL TIMES DURING THE CONSTRUCTION PERIOD.

19. IF ANY CHANGE IN THE WORK SCHEDULE BECOMES NECESSARY, IT WILL BE THE RESPONSIBILITY OF THE DEVELOPER'S CONTRACTOR TO NOTIFY THE STARK COUNTY SUBDIVISION INSPECTOR TO AVOID UNNECESSARY INSPECTION COSTS.

20. AT THE COMPLETION OF CONSTRUCTION, THE DEVELOPER'S CONTRACTOR SHALL VERIFY THAT THE LINES AND GRADES SHOWN ON THE IMPROVEMENT PLANS FOR THE STORM WATER MANAGEMENT BASIN ARE MET. REGRADE ANY AREAS WHERE SEDIMENTATION OR EROSION HAS OCCURRED DURING THE CONSTRUCTION PERIOD AND HAS REDUCED THE BASIN'S REQUIRED STORAGE CAPACITY. THE DEVELOPER'S CONTRACTOR SHALL RESEED AND MULCH ALL REGRADED AREAS IN ACCORDANCE WITH ODOT ITEM 659.

21. THE DEVELOPER'S CONTRACTOR SHALL INSURE THAT ALL NEW UTILITY LINES REQUIRED UNDER PROPOSED PAVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF THE SUBGRADE PREPARATION. BACKFILL OF EXCAVATIONS FOR TRENCHES UNDER PROPOSED PAVEMENTS AND A MINIMUM OF THREE (3) FEET PAST THE BACK OF CURB SHALL CONFORM TO ODOT ITEM 611.

22. THE COMPLETE RIGHT-OF-WAY SHALL BE GRADED AS SHOWN ON THE TYPICAL SECTION. DURING THE LOT DEVELOPMENT AND HOUSE BUILDING PHASE, THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING THE TYPICAL SECTION BETWEEN THE BACK OF CONCRETE CURB AND THE RIGHT-OF-WAY LINE.

23. THE CONTRACTOR SHALL FURNISH AND INSTALL 2"X2" WOOD STAKES WITH A THREE FOOT HEIGHT AT THE ENDS OF WATER, SANITARY SEWER AND STORM SEWER LATERALS SERVING EACH LOT. STAKES SHALL BE PAINTED BLUE FOR WATER LATERALS, GREEN FOR SANITARY SEWER LATERALS AND WHITE FOR STORM SEWER LATERALS.

    IN ADDITION, THE SAME SIZE STAKES SHALL BE PLACED AT EACH END OF PIPE SLEEVES INSTALLED UNDER STREET PAVEMENTS FOR THE GAS SERVICE LINES AS WELL AS SLEEVES FOR THE ELECTRIC/TELEPHONE/CABLE TV SERVICE LINES. STAKES SHALL BE PAINTED YELLOW FOR THE GAS SLEEVES AND RED FOR THE ELECTRIC/TELEPHONE/CABLE TV SLEEVES.

24. STREET SAFETY SIGNS SHALL BE MADE OF MATERIALS AND CONSTRUCTED IN ACCORDANCE WITH ODOT ITEM 630. STREET NAME SIGNS SHALL BE MADE OF MATERIALS AND CONSTRUCTED IN ACCORDANCE WITH THE LOCAL TOWNSHIP ROAD DEPARTMENT HAVING JURISDICTION. ALL SIGNS ARE THE RESPONSIBILITY OF THE DEVELOPER.

CALCULATED JMB
CHECKED LJS

GENERAL NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

SEQUENCE OF CONSTRUCTION

PRE-PHASE 1
THE CONTRACTOR SHALL INSTALL THE TEMPORARY SIGNAL FOR THE ERIE AVE SW / ORTT ST SW INTERSECTION, WHICH SHALL REMAIN IN PLACE UNTIL THE PROPOSED SIGNAL IMPROVEMENTS ARE FULLY OPERATIONAL.

THE CONTRACTOR SHALL INSTALL THE TEMPORARY SIGNAL DURING OFF-PEAK HOURS WHILE MAINTAINING TRAFFIC IN ACCORDANCE WITH MT-95.31.

PHASE 1
FOR THE DURATION OF THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL PERMANENTLY CLOSE THE SOUTHBOUND LEFT TURN LANE AT THE ERIE AVE SW / ORTT ST SW INTERSECTION AND THE INSIDE, EASTBOUND LEFT TURN LANE ON THE COMMERCIAL DRIVE UTILIZING DRUMS. ACCESS TO THE RESIDENTIAL PROPERTY ON ORTT ST SW SHALL REMAIN DURING CONSTRUCTION AT ALL TIMES.

THE CONTRACTOR SHALL CLOSE THE NORTHBOUND INSIDE LANE ON ERIE AVE SW FROM STA. 110+80 TO STA. 114+00 IN ACCORDANCE WITH MT-95.32. THE CONTRACTOR SHALL MAINTAIN THE EXISTING NORTHBOUND LEFT TURN LANE THE ERIE AVE SW / ORTT ST SW INTERSECTION.

A SINGLE 10' LANE SHALL BE MAINTAINED NORTH OF THE ERIE AVE SW / ORTT ST SW INTERSECTION AS SHOWN IN THE TYPICAL SECTIONS THROUGH THE WORK ZONE LIMITS FOR THE MEDIAN CONSTRUCTION. NORTHBOUND ERIE AVE SW SHALL REOPEN TO EXISTING LANE CONFIGURATION UTILIZING A 50' DIVERGE TAPER FROM STA. 123+50 TO STA. 124+00.

THE CONTRACTOR SHALL CLOSE THE SOUTHBOUND INSIDE LANE ON ERIE AVE SW FROM STA. 123+50 TO STA. 129+50 IN ACCORDANCE WITH MT-95.32. A SINGLE 12' LANE SHALL BE MAINTAINED AS SHOWN IN THE TYPICAL SECTIONS THROUGH THE WORK ZONE LIMITS FOR THE MEDIAN CONSTRUCTION. SOUTHBOUND ERIE AVE SW SHALL REOPEN TO EXISTING LANE CONFIGURATION UTILIZING A 50' DIVERGE TAPER FROM STA. 122+50 TO STA. 123+00.

THE CONTRACTOR SHALL CONSTRUCT THE MEDIAN ON ERIE AVE SW WHICH SHALL INCLUDE ALL ROADWAY AND UTILITY IMPROVEMENTS.

PHASE 2
THE CONTRACTOR SHALL CLOSE THE NORTHBOUND OUTSIDE LANE ON ERIE AVE SW FROM STA. 113+80 TO STA. 117+00 IN ACCORDANCE WITH MT-95.31. THE CONTRACTOR SHALL MAINTAIN THE EXISTING NORTHBOUND LEFT TURN LANE THE ERIE AVE SW / ORTT ST SW INTERSECTION.

THE CONTRACTOR SHALL INSTALL TEMPORARY EDGE LINE BASED ON THE LOCATION OF THE PROPOSED NORTHBOUND CENTER LINE PER PERMANENT TRAFFIC CONTROL PLAN IN ORDER TO SHIFT TRAFFIC AWAY FROM THE NEWLY INSTALLED MEDIAN. A SINGLE 10' LANE SHALL BE MAINTAINED NORTH OF THE ERIE AVE SW / ORTT ST SW INTERSECTION AS SHOWN IN THE TYPICAL SECTIONS THROUGH THE WORK ZONE LIMITS FOR THE ROAD WIDENING FOR THE DEDICATED RIGHT TURN LANE. NORTHBOUND ERIE AVE SW SHALL REOPEN TO EXISTING LANE CONFIGURATION UTILIZING A 50' DIVERGE TAPER FROM STA. 124+00 TO STA. 124+50.

SOUTHBOUND ERIE AVE SW SHALL REMAIN OPEN TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONSTRUCT ALL ROADWAY AND UTILITY IMPROVEMENTS TO THE EAST SIDE OF ERIE AVE SW. THE ORTT ST SW INTERSECTION RETURNS SHALL BE CONSTRUCTED IN THIS PHASE.

PHASE 3
THE CONTRACTOR SHALL CONSTRUCT ALL TRAFFIC SIGNAL IMPROVEMENTS AT THE ERIE AVE SW / ORTT ST SW INTERSECTION. THE TEMPORARY SIGNAL SHALL NOT BE TAKEN OUT OF SERVICE UNTIL THE PROPOSED TRAFFIC SIGNAL IS FULLY OPERATIONAL AND ALL TESTING HAS BEEN COMPLETED. THE CONTRACTOR SHALL INSTALL THE SIGNAL DURING OFF-PEAK HOURS WHILE MAINTAINING TRAFFIC IN ACCORDANCE WITH MT-95.31.

THE CONTRACTOR SHALL PLACE ALL FINAL PAVEMENT MARKINGS DURING OFF-PEAK HOURS WHILE MAINTAINING TRAFFIC IN ACCORDANCE WITH MT-99.20.

ITEM 614 - MAINTAINING TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS AND THE FOLLOWING:

1. THE CONTRACTOR SHALL INFORM THE CITY OF MASSILLON (330)-830-1722 AND OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 4 (330)-786-2208, AT LEAST FOURTEEN (14) DAYS PRIOR TO THE BEGINNING OF WORK.
2. A MINIMUM OF ONE TEN FOOT LANE IN EACH DIRECTION SHALL BE MAINTAINED ON THE EXISTING PAVEMENT DURING CONSTRUCTION, AT ALL TIMES.
3. LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WHICH THE CONTRACTOR HAS A FULL COMPLIMENT OF EMPLOYEES AND EQUIPMENT ACTIVELY REMOVING AND/OR PLACING PAVEMENT MATERIALS.
4. ALL FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT OPERATIONS SHALL BE COMPLETED THE SAME DAY THE EXCAVATION IS MADE. IF THE CONTRACTOR CANNOT COMPLETE THE WORK, THE EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS PER STANDARD CONSTRUCTION DRAWING MT-101.90.
5. 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 RESTRICTION 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.
6. IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL AS SET FORTH IN THESE PLANS AND PROVISIONS OF THE OMUTCD AND THE 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.
7. TRUCK MOUNTED ATTENUATORS [TMA'S] SHALL BE USED AS SHOWN IN THE STANDARD CONSTRUCTION DRAWINGS.
8. WHEN LANE CLOSURES ARE REQUIRED, 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, AS DETERMINED BY THE ENGINEER.
9. NO DAILY LANE CLOSURE SHALL BE IMPLEMENTED DURING THE HOURS OF 6:00AM TO 8:00AM AND 3:00PM TO 6:00PM WEEKDAYS. 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, AS DETERMINED BY THE ENGINEER. LANE RESTRICTIONS AND LANE REDUCTIONS SHALL BE SIGNED AND DELINEATED PER SCD MT-97.10 OR AS APPROVED BY THE ENGINEER.
10. FOR ROUTES NOT ON THE PERMITTED LANE CLOSURE CHART, ONLY DURING OFF-PEAK PERIODS (IE ANY PERIOD OTHER THAN 6:00-8:00AM AND 3:00-6:00PM) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.

ITEM 614 - MAINTAINING TRAFFIC

11. IN ADDITION TO THE REQUIREMENTS OF 614.11 WORK ZONE PAVEMENT MARKINGS, AT THE END OF EACH DAY OF WORK, THE CONTRACTOR SHALL REPLACE (WITH WORK ZONE MARKINGS) ALL LANE, CENTER, STOP OR CHANNELIZING LINES THAT WERE REMOVED OR COVERED DURING THE PAVEMENT REMOVAL OF REPLACEMENT OPERATIONS. QUANTITIES FOR SUCH PLACEMENT ARE CARRIED AS PART OF THE ITEMS LISTED UNDER 614 WORK ZONE PAVEMENT MARKINGS.
12. PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATIONS DIFFERENCES.
13. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL FLAGS, FLAGGERS, WATCHERS, BARRICADES, SIGNS, SIGN SUPPORTS AND INCIDENTALS RELATED TO TRAFFIC CONTROL.
14. ACCESS SHALL BE MAINTAINED AT ALL TIME TO PROPERTIES ON THE EASTERN SIDE OF ERIE STREET.

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

WORK HOUR DESCRIPTIONS

1. OFF-PEAK HOURS ARE DEFINED AS ANY PERIOD OTHER THAN 6:00-8:00AM AND 3:00-6:00PM (MONDAY THRU FRIDAY) AND LEGAL HOLIDAYS.
2. NIGHT TIME HOURS ARE DEFINED AS BETWEEN 8:00PM - 6:00AM.

WORK ZONE PAVEMENT MARKINGS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR BIDDING PURPOSES AS AN ESTIMATE OF THE TYPE AND QUANTITY OF VARIOUS WORK ZONE PAVEMENT MARKINGS AND SHALL BE INSTALLED PER C&MS 614.11 AS DIRECTED BY THE ENGINEER.

ITEM 614 - WORK ZONE EDGE LINE, CLASS I, 4" 0.65 MILE

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES, AS SHOWN ON MT-101.90. PLACEMENT OF PROPOSED BASE MATERIAL SHALL NOW FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. 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 THE APPROVAL OF THE ENGINEER. THE BASE WIDENING ON THIS PROJECT WILL BE COMPLETED TO A DEPTH OF 3 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF THE WORK DAY. NO TRENCH WILL BE LEFT OPEN OVERNIGHT. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING WILL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

ITEM SPECIAL - WORK ZONE TRAFFIC SIGNAL

UNDER THIS ITEM OF WORK, THE CONTRACTOR SHALL FURNISH, INSTALL, RELOCATE, MODIFY AND SUBSEQUENTLY REMOVE: TEMPORARY SIGNAL SUPPORTS, DOWN GUYS, GROUND RODS, SIGNAL CABLE, POWER CABLE, SERVICE CABLE, CONDUIT RISERS, MESSENGER WIRE, SIGNAL HEADS, COVERING OF VEHICULAR SIGNAL HEADS AND A TEMPORARY CONTROLLER AS NEEDED TO RENDER A FULLY FUNCTIONAL TEMPORARY SIGNALIZED INTERSECTION.

ALL METHODS OF TRAFFIC CONTROL SHALL BE APPROVED BY THE ENGINEER AND SHALL BE IN PLACE AND OPERATING PRIOR TO THE DEACTIVATION AND REMOVAL AND/OR RELOCATION OF ANY EXISTING SIGNAL EQUIPMENT. REFERENCE IS MADE TO THE REQUIREMENTS OF ITEM 614. ALL MODIFICATIONS TO SIGNALIZATION SHALL BE DONE UNDER THE PROTECTION OF A LAW ENFORCEMENT OFFICER.

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE POWER TO THE TRAFFIC SIGNAL CONTROLLER FORM THE PROPOSED OR EXISTING POWER SOURCES AS DETERMINED BY CONSTRUCTION SEQUENCING. IT SHALL ALSO INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO FURNISH, INSTALL, MODIFY, REMOVE, STORE, ERECT, RELOCATE, ADJUST AND REPAIR TEMPORARY TRAFFIC SIGNAL ITEMS AS DESCRIBED ABOVE.

ALL COSTS FOR THE ABOVE WORK SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 614 - WORK ZONE TRAFFIC SIGNAL, AS PER PLAN AND SHALL BE PER EACH INTERSECTION.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL, WORK ZONE TRAFFIC SIGNAL 1 EACH

DUST CONTROL

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

ITEM 616, WATER 10 MGAL

ACCESS TO PROPERTIES

ACCESS SHALL BE MAINTAINED TO ALL RESIDENTIAL AND COMMERCIAL PROPERTIES EXCEPT WHEN A DRIVEWAY MUST BE CLOSED FOR CONSTRUCTION. ALL RESIDENTS AND PROPERTY OWNERS SHALL BE PROVIDED WRITTEN NOTIFICATION BY THE CONTRACTOR A MINIMUM OF 72 HOURS PRIOR TO THE CLOSURE. THE NOTICE SHALL LIST THE TIME THE CLOSURE WILL BE IN EFFECT AND SHALL LIST 24-HOUR EMERGENCY PHONE NUMBERS OF THE CONTRACTOR RESPONSIBLE FOR THE CLOSURE. THE TIMES SHALL BE COORDINATED WITH EACH RESIDENT AND PROPERTY OWNER. INDIVIDUAL DRIVE CLOSURES SHALL BE KEPT TO THE MINIMUM TIME NEEDED FOR CONSTRUCTION ACTIVITIES. EVERY EFFORT MUST BE MADE TO ACCOMMODATE THE RESIDENT OR OWNER'S NEED FOR ACCESS. ACCESS MAY BE MAINTAINED WITH THE USE OF ASPHALT, AGGREGATE, OR STEEL PLATES.

WHERE A DRIVEWAY IS WIDE ENOUGH, THE CONTRACTOR SHALL CONSTRUCT THE DRIVEWAY PART-WIDTH WHILE MAINTAINING TWO-WAY TRAFFIC. WHERE A PROPERTY HAS MORE THAN ONE DRIVEWAY, DRIVES SHALL BE CONSTRUCTED ONE AT A TIME.

ALL LABOR AND MATERIALS REQUIRED FOR THE WORK DESCRIBED ABOVE SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

CALCULATED BEB CHECKED AKF

MAINTENANCE OF TRAFFIC NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

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

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

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

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

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

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

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

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

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

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

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

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 40 HOURS

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

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

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 INSTALLATION 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 ACCEPTABLE.

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 ACCEPTABLE.

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 CITY OF MASSILLON POLICE DEPARTMENT FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY 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 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00AM TO 9:00AM AND 3:00PM TO 6:00PM, 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 OFF-DUTY CITY OF MASSILLON POLICE, HIRED BY THE CONTRACTOR.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BECOVERED 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.

CALCULATED BEB CHECKED AKF

MAINTENANCE OF TRAFFIC NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

SIGNAL TIMING CHART

INTERSECTION: ERIE AVE. SW / ORTT ST. SW
MAINTAINING AGENCY: CITY OF MASSILLON

START UP

START IN: YELLOW/RED FLASH
TIME FOR: FLASH , ALL RED (SEC.): 9, 6
FIRST PHASE(S): 2 & 6
COLOR DISPLAYED: GREEN

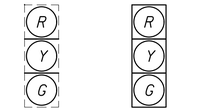
DUAL ENTRY: YES | PHASES: 2, 6
REST IN RED: RING 1 - | RING 2 -

OVERLAP	A	B	C	D
PHASES	-	-	-	-

INTERVAL OR FEATURE	CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)	1	2	3	4	5	6	7	8
DIRECTION	SB LT	NB	WB LT	EB	NB LT	SB	EB LT	WB
MINIMUM GREEN (INITIAL) (SEC.)	-	20	-	10	7	20	-	10
ADDED INITIAL *(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL *(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)	-	3.0	-	3.0	3.0	3.0	-	3.0
TIME BEFORE REDUCTION *(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)	-	60	-	30	20	60	-	30
MAXIMUM GREEN II (SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)	-	4.5	-	3.2	3.5	4.5	-	3.2
ALL RED CLEARANCE (SEC.)	-	1.0	-	2.1	2.8	1.0	-	2.1
DELAYED GREEN (LPI) # (SEC.)	-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY^ (SEC.)	-	-	-	-	-	-	-	-
WALK (SEC.)	-	-	-	-	-	-	-	-
PEDESTRIAN CLEARANCE (SEC.)	-	-	-	-	-	-	-	-
RECALL MAXIMUM (ON/OFF)	-	-	-	-	-	-	-	-
RECALL MINIMUM (ON/OFF)	-	ON	-	-	-	ON	-	-
RECALL PEDESTRIAN (ON/OFF)	-	-	-	-	-	-	-	-
MEMORY (ON/OFF)	-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS

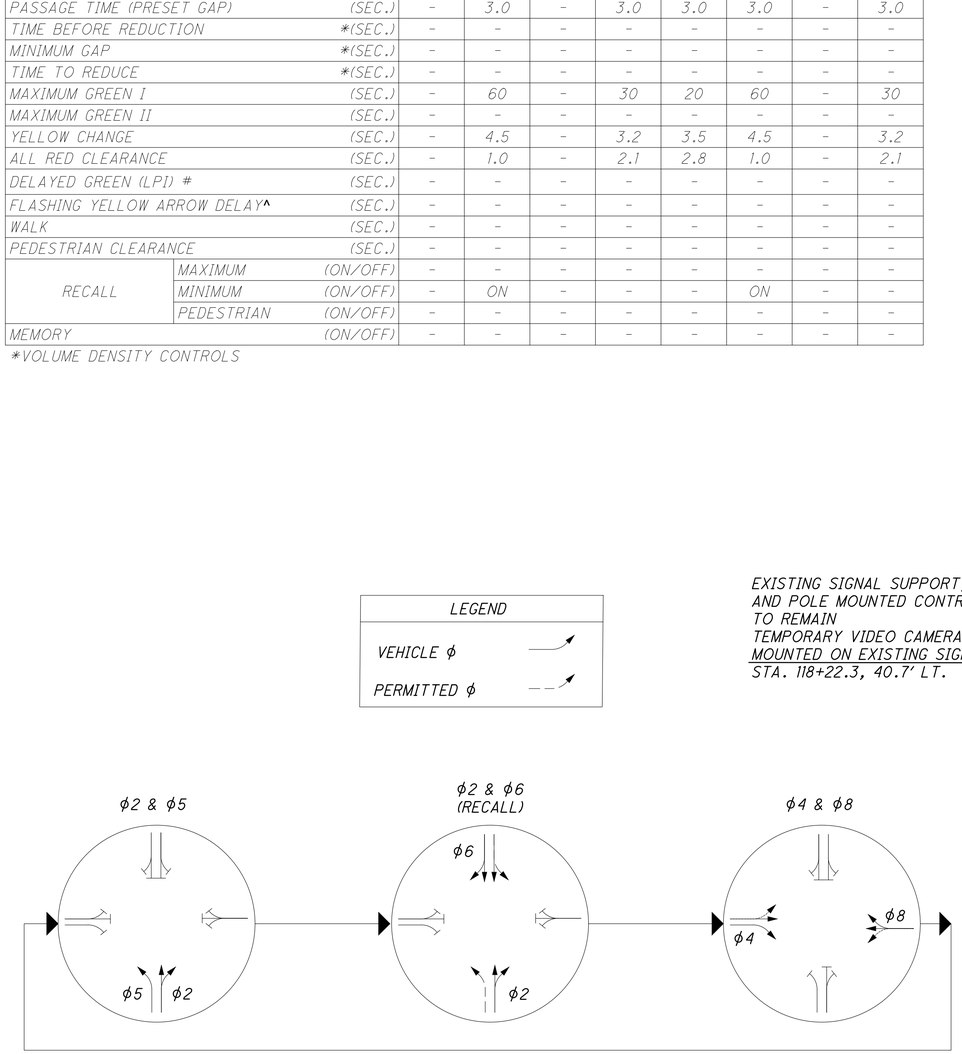
SIGNAL TYPES

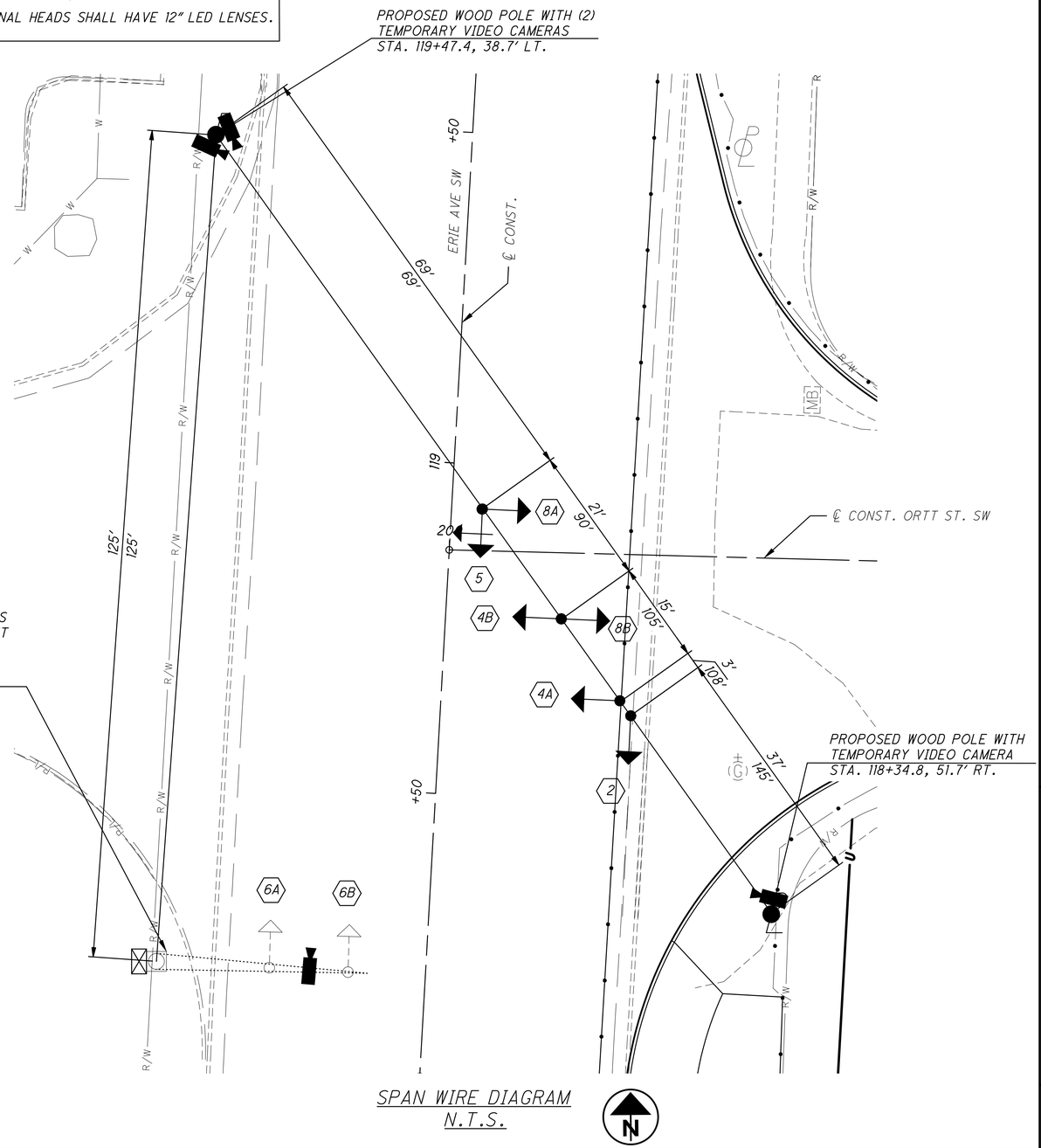


1. ALL SIGNAL HEADS SHALL HAVE 12" LED LENSES.

NOTES:

1. THE CONTRACTOR SHALL UTILIZE EXISTING VEHICULAR SIGNAL HEADS, AS NEEDED.
2. THE CONTRACTOR SHALL ADJUST VIDEO DETECTION CAMERAS AND ZONES AS NECESSARY.





SPAN WIRE DIAGRAM
N.T.S.

CALCULATED BEB
CHECKED AKF

TRAFFIC TEMPORARY SIGNAL - PHASE 1

MAINTENANCE OF TRAFFIC

ERIE AVE/ORTT ST IMPROVEMENTS

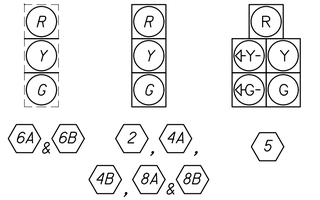
10
48

SIGNAL TIMING CHART

INTERSECTION: ERIE AVE. SW / ORTT ST. SW MAINTAINING AGENCY: CITY OF MASSILLON									
START UP START IN: YELLOW/RED FLASH TIME FOR: FLASH , ALL RED (SEC.): 9, 6 FIRST PHASE(S): 2 & 6 COLOR DISPLAYED: GREEN			DUAL ENTRY: YES		PHASES:		2, 6		
			REST IN RED:		RING 1 -		RING 2 -		
			OVERLAP			A	B	C	D
			PHASES			-	-	-	-
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.						
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			SB LT	NB	WB LT	EB	NB LT	SB	EB LT	WB
MINIMUM GREEN (INITIAL)		(SEC.)	-	20	-	10	7	20	-	10
ADDED INITIAL		*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL		*(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)		(SEC.)	-	3.0	-	3.0	3.0	3.0	-	3.0
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	-	60	-	30	20	60	-	30
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	-	4.5	-	3.2	3.5	4.5	-	3.2
ALL RED CLEARANCE		(SEC.)	-	1.0	-	2.1	2.8	1.0	-	2.1
DELAYED GREEN (LPI) #		(SEC.)	-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY^		(SEC.)	-	-	-	-	-	-	-	-
WALK		(SEC.)	-	-	-	-	-	-	-	-
PEDESTRIAN CLEARANCE		(SEC.)	-	-	-	-	-	-	-	-
RECALL	MAXIMUM	(ON/OFF)	-	-	-	-	-	-	-	-
	MINIMUM	(ON/OFF)	-	ON	-	-	-	ON	-	-
	PEDESTRIAN	(ON/OFF)	-	-	-	-	-	-	-	-
MEMORY		(ON/OFF)	-	-	-	-	-	-	-	-

*VOLUME DENSITY CONTROLS

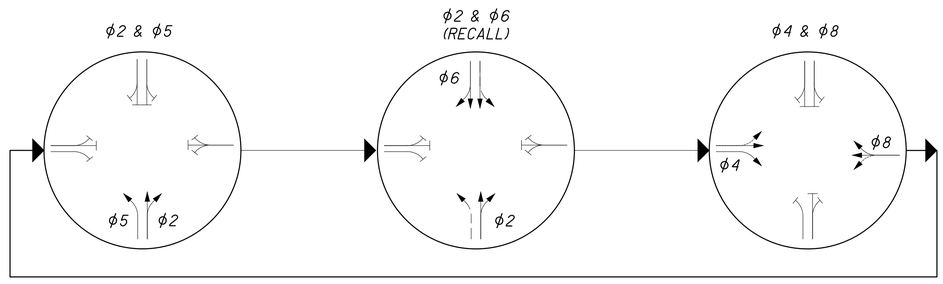
SIGNAL TYPES

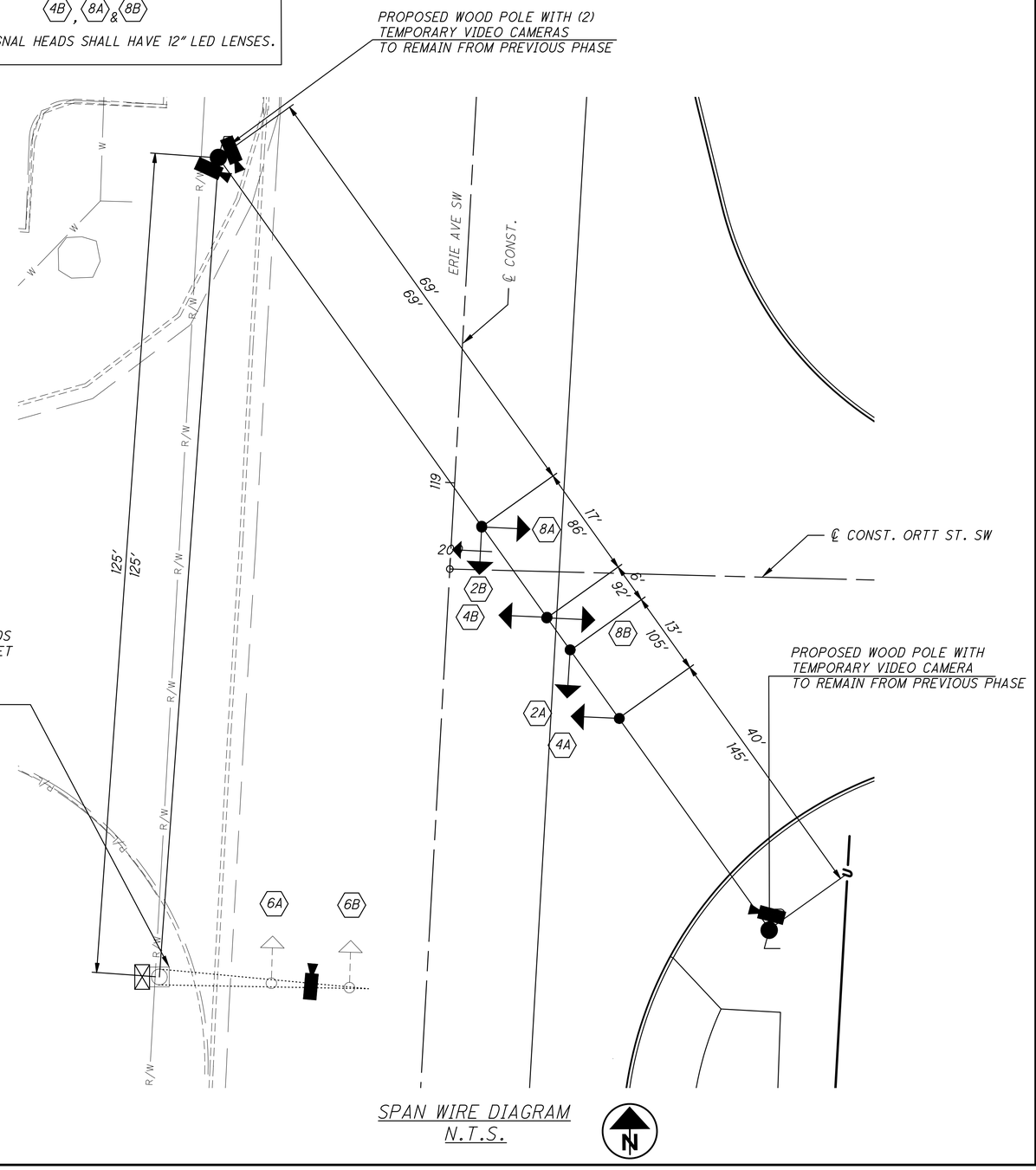


1. ALL SIGNAL HEADS SHALL HAVE 12" LED LENSES.

NOTES:

1. THE CONTRACTOR SHALL UTILIZE EXISTING VEHICULAR SIGNAL HEADS, AS NEEDED.
2. THE CONTRACTOR SHALL ADJUST VIDEO DETECTION CAMERAS AND ZONES AS NECESSARY.





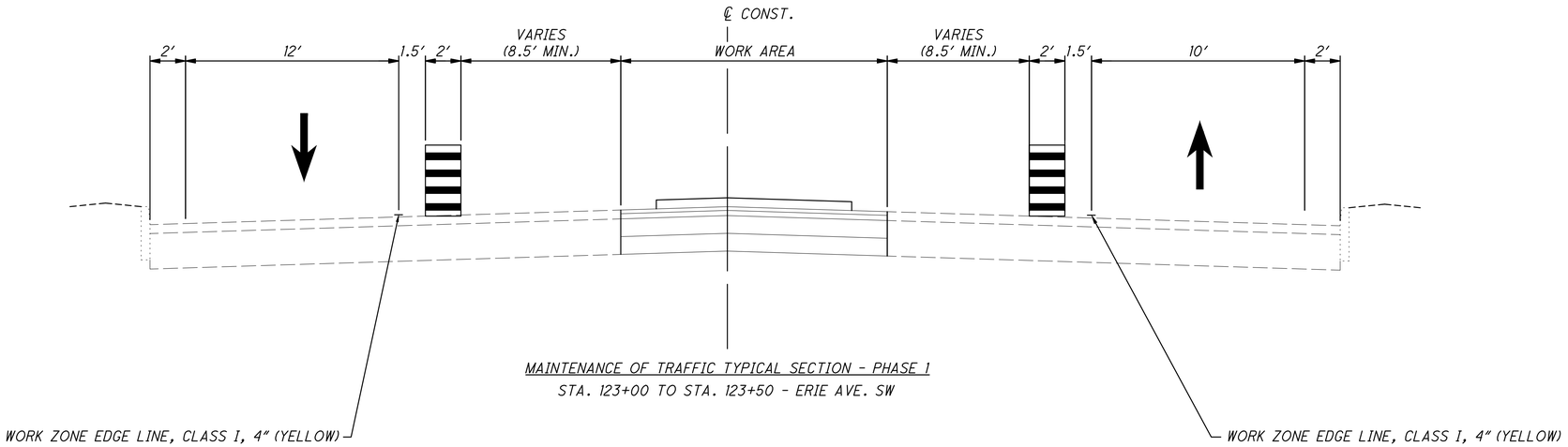
SPAN WIRE DIAGRAM
N.T.S.

CALCULATED BEB
CHECKED AKF

TRAFFIC TEMPORARY SIGNAL - PHASE 2

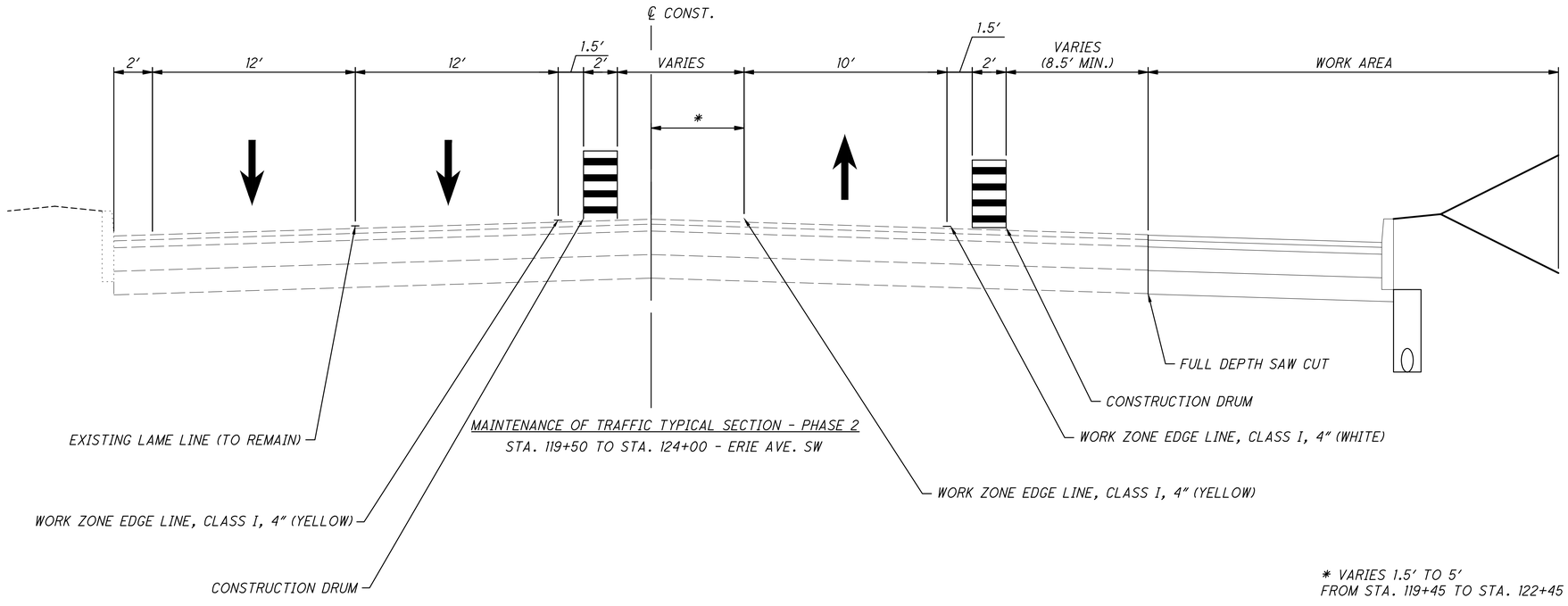
MAINTENANCE OF TRAFFIC

ERIE AVE/ORTT ST IMPROVEMENTS



MAINTENANCE OF TRAFFIC TYPICAL SECTION - PHASE 1

STA. 123+00 TO STA. 123+50 - ERIE AVE. SW



MAINTENANCE OF TRAFFIC TYPICAL SECTION - PHASE 2

STA. 119+50 TO STA. 124+00 - ERIE AVE. SW

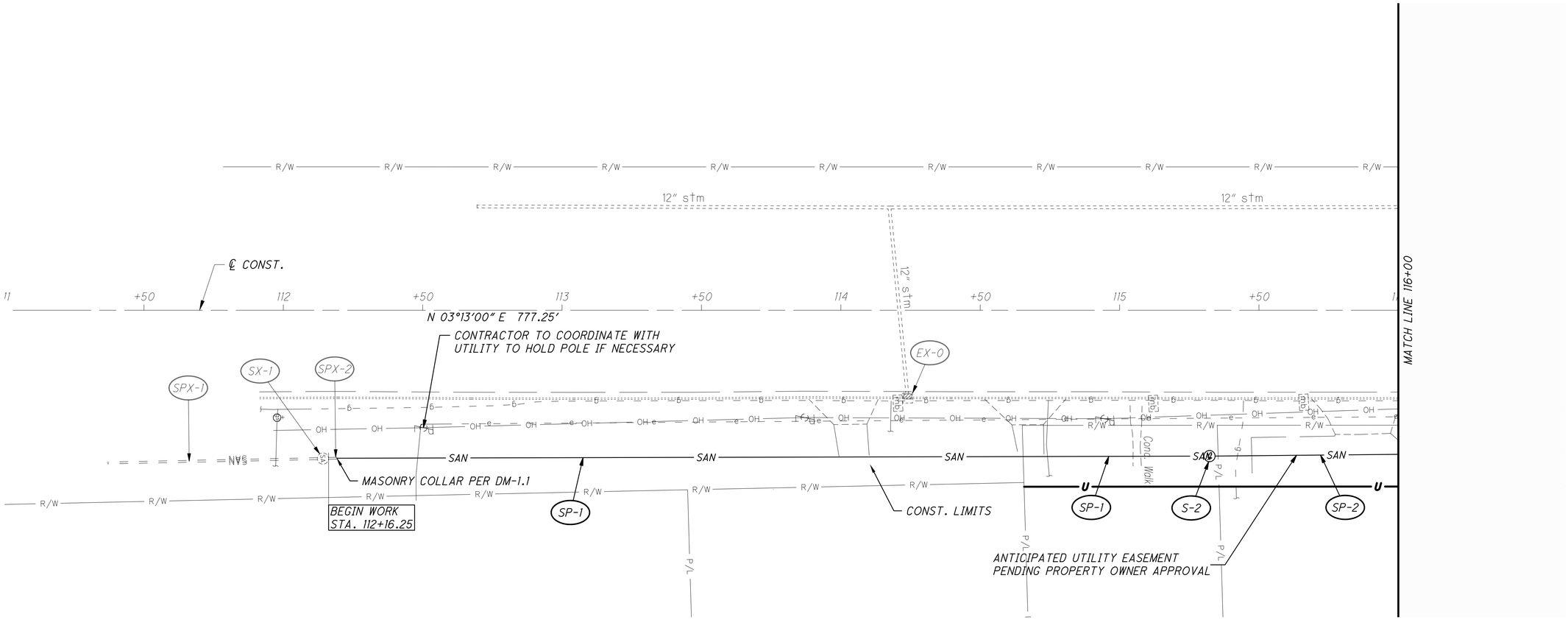
* VARIES 1.5′ TO 5′
FROM STA. 119+45 TO STA. 122+45

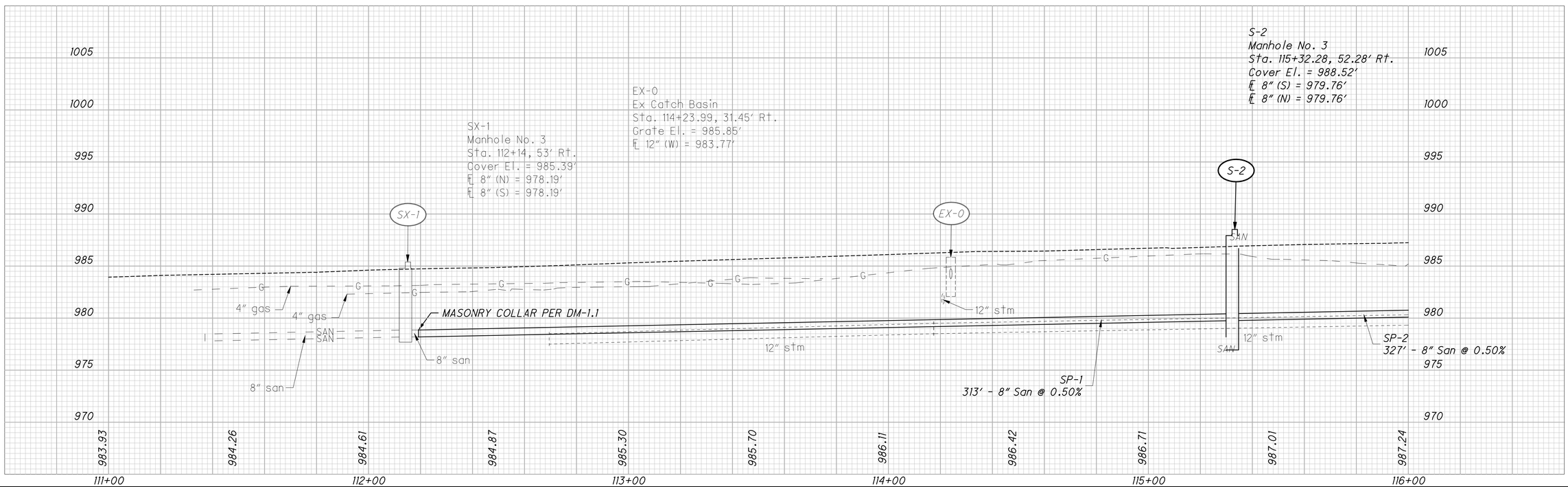
CALCULATED BEB
CHECKED AKF

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

ERIE AVE/ORTT ST IMPROVEMENTS

MAINTENANCE





HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

PLAN AND PROFILE - ERIE AVE
STA. 111+00 TO STA. 116+00

ERIE AVE/ORTT ST IMPROVEMENTS

X / X

13
48

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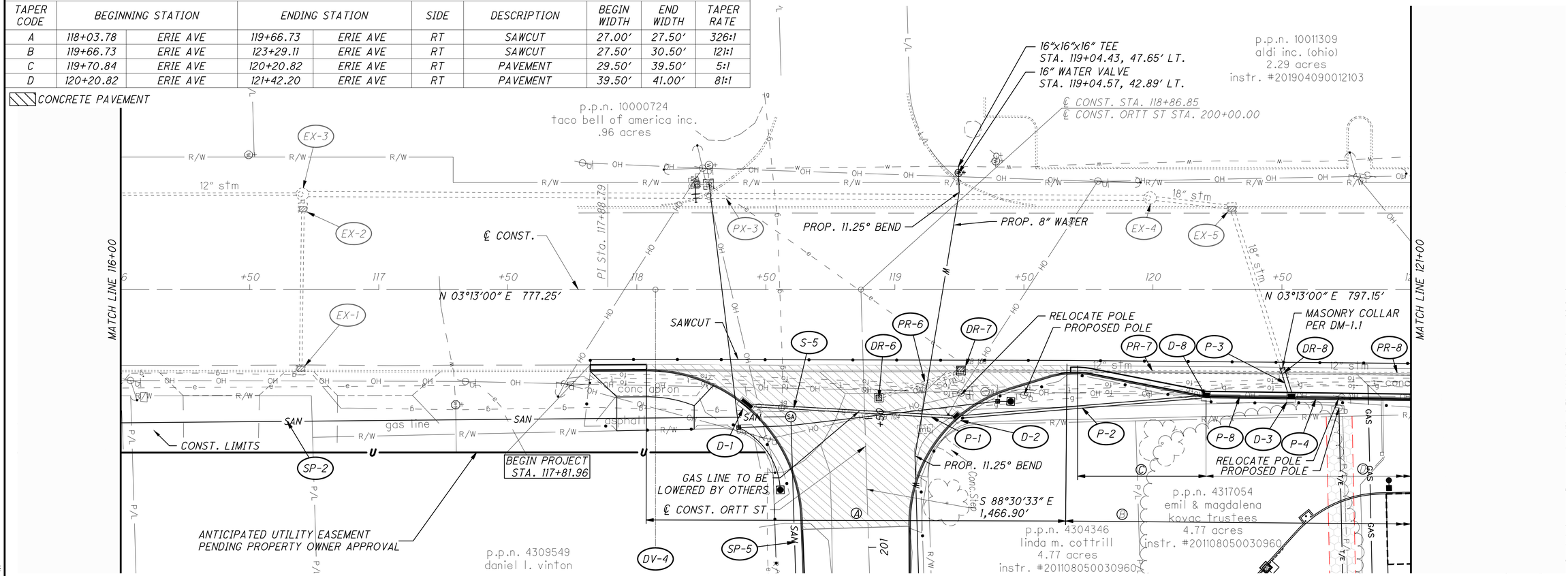
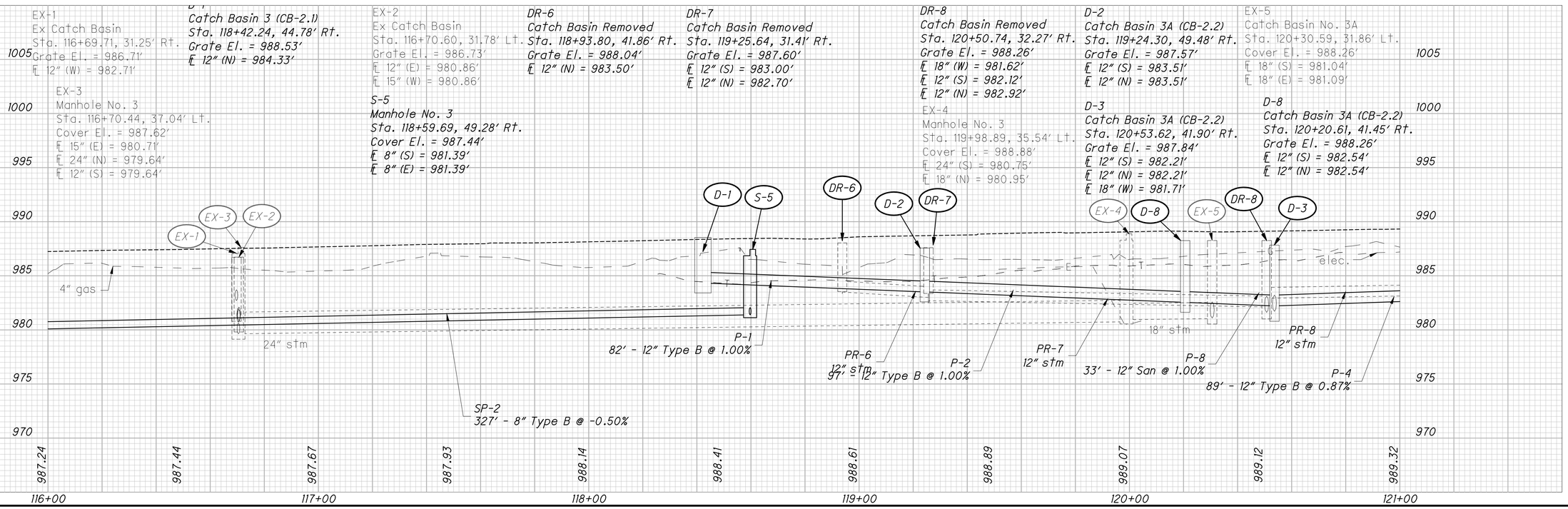
TAPER TABLE

TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
A	118+03.78	ERIE AVE	119+66.73	ERIE AVE	RT	SAWCUT	27.00′	27.50′	326:1
B	119+66.73	ERIE AVE	123+29.11	ERIE AVE	RT	SAWCUT	27.50′	30.50′	121:1
C	119+70.84	ERIE AVE	120+20.82	ERIE AVE	RT	PAVEMENT	29.50′	39.50′	5:1
D	120+20.82	ERIE AVE	121+42.20	ERIE AVE	RT	PAVEMENT	39.50′	41.00′	81:1

CONCRETE PAVEMENT





PLAN AND PROFILE - ERIE AVE
STA. 116+00 TO STA. 121+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

ERIE AVE/ORTT ST IMPROVEMENTS

X / X

14
48

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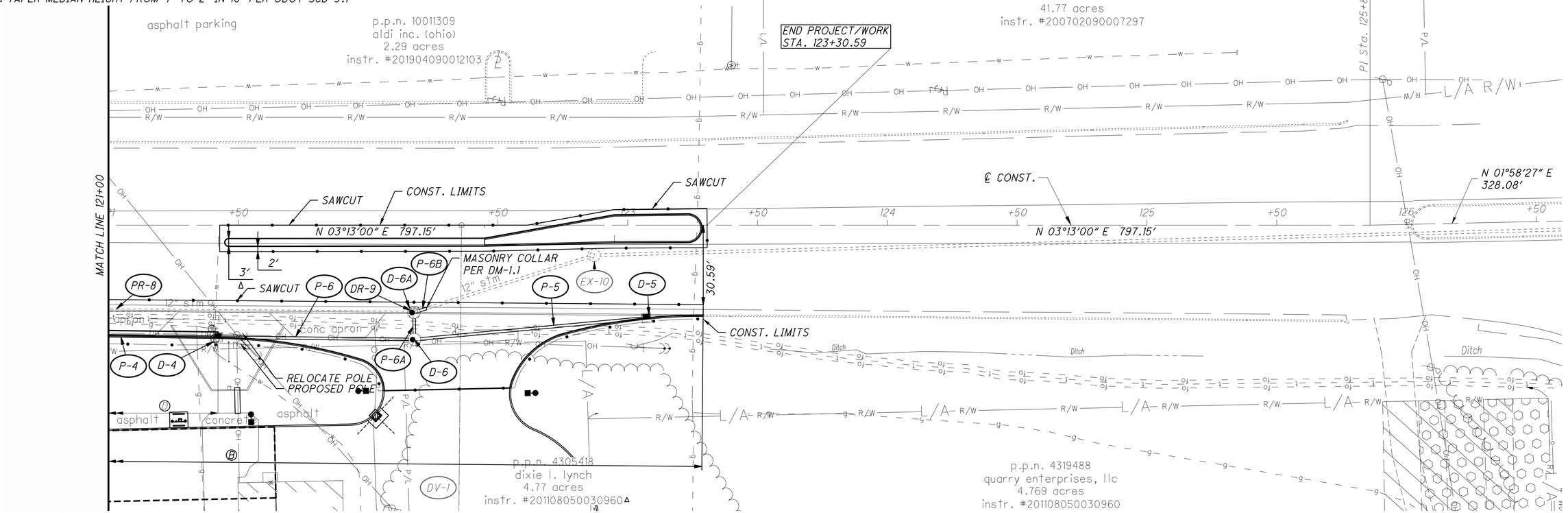
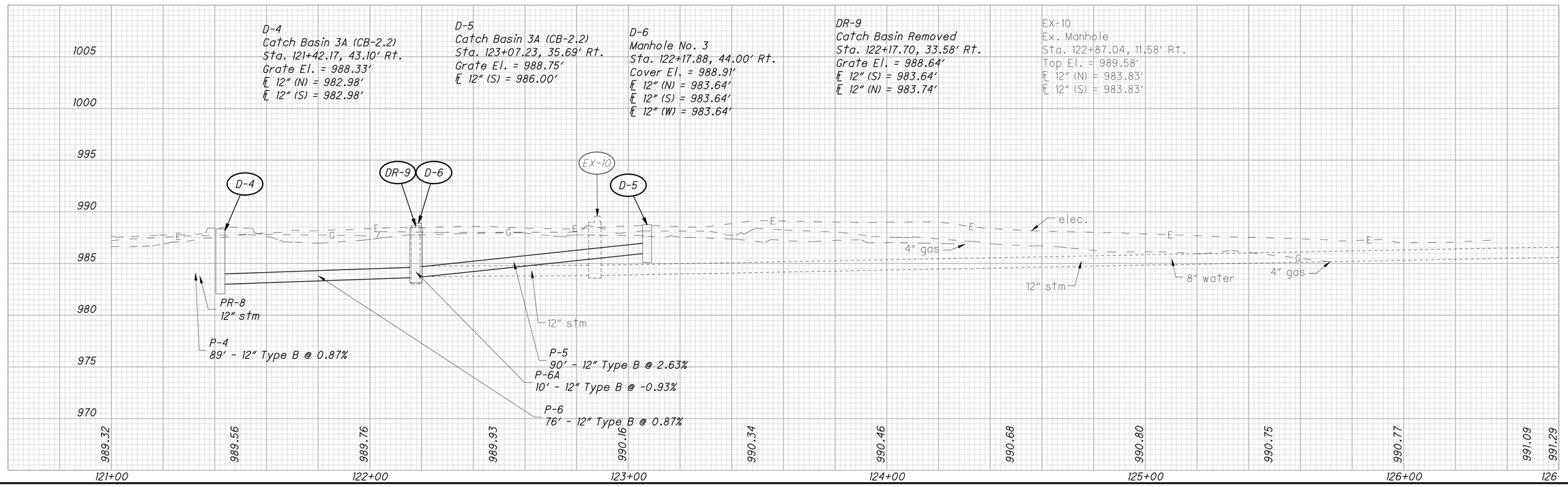
TAPER TABLE

TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
B	119+66.73	ERIE AVE	123+29.11	ERIE AVE	RT	SAWCUT	27.50′	30.50′	121:1
D	120+20.82	ERIE AVE	121+42.20	ERIE AVE	RT	PAVEMENT	39.50′	41.00′	81:1

Δ TAPER MEDIAN HEIGHT FROM 4″ TO 2″ IN 10′ PER ODOT SCD-3.1





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HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

PLAN AND PROFILE - ERIE AVE STA. 121+00 TO END

ERIE AVE/ORTT ST IMPROVEMENTS

X / X

15
48

TAPER TABLE								
TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
E	200+87.92	ORTT ST	203+34.01	ORTT ST	RT	PAVEMENT	25.50′	23.00′	98:1
F	200+92.24	ORTT ST	202+43.91	ORTT ST	LT	PAVEMENT	16.00′	12.00′	38:1

FOR WATER WORK PLAN AND PROFILE, SEE SHEET 36

℄ CONST.
11.25° DEFLECTION
STA. 119+24.95, 37.78′ LT.
8″ WATER VALVE
STA. 119+24.72, 45.29′ LT.
16″x16″x8″ TEE
STA. 119+24.64, 47.79′ LT.
℄ CONST. STA. 118+86.85
℄ CONST. ORTT ST STA. 200+00.00
N 03°13′00″ E 797.15′
GAS LINE TO BE LOWERED BY OTHERS
p.p.n. 4304346
linda m. cottrill
4.77 acres
instr. #201108050030960
PROPOSED POLE
RELOCATE POLE
11.25° DEFLECTION
STA. 200+65.00, 19.00′ LT.
Conc.Step
℄ CONST. ORTT ST
406′ PROP. 8″ WATER
S 88°30′33″ E 1,466.90′
asphalt/gravel uninproved roadway
LIGHT TO BE REMOVED PER C&MS 625.21
6′ Chain Link Fence
MATCH LINE 203+00
P.I. Sta. 117+88.79
p.p.n. 4309549
daniel l. vinton
CONCRETE PAVEMENT
P-1 P-2 D-1 D-2 DR-6 DR-7 PR-6 PR-7 S-5 SP-2 DV-4 DV-2 DV-3 SP-5 SP-6 S-6
CB 104 CB 106
12″ HDPE

DR-7
Catch Basin Removed
Sta. 119+25.64, 31.41′ Rt.
Grate El. = 987.60′
℄ 12″ (S) = 983.00′
℄ 12″ (N) = 982.70′

S-5
Manhole No. 3
Sta. 118+59.69, 49.28′ Rt.
Cover El. = 987.44′
℄ 8″ (S) = 981.39′
℄ 8″ (E) = 981.39′

DR-6
Catch Basin Removed
Sta. 118+93.80, 41.86′ Rt.
Grate El. = 988.04′
℄ 12″ (N) = 983.50′

D-1
Catch Basin No. 3
Sta. 118+42.24, 44.78′ Rt.
Grate El. = 987.13′
℄ 12″ (N) = 984.33′

D-2
Catch Basin No. 3A
Sta. 119+24.30, 49.48′ Rt.
Grate El. = 987.57′
℄ 12″ (S) = 983.51′
℄ 12″ (N) = 983.51′

987.54 987.85 988.49 989.10 989.50 989.73 989.95 990.16 990.06 989.92 989.66
988.28 988.36 989.17 989.63 990.01 990.16 989.84

K = 10.707
P.V.I. STA 200+52.01 ELEV = 987.26′
49.47′ VC
PVI STA = 200+27.27
ELEV = 987.76
SSD = 411.40′
K = 29.071
P.V.I. STA 201+35.00 ELEV = 989.39′
50.00′ VC
PVI STA = 202+27.22
ELEV = 990.18
SSD = 305.73′
K = 38.481
P.V.I. STA 203+17.34 ELEV = 989.71′
100.00′ VC
-2.05% 2.57% 0.85% -0.52%
4″ gas
elec.
tele.
SP-5
227′ - 8″ San @ 0.50%
SP-6
54′ - 6″ San @ 1.63%
18″ MIN.
PROP. 8″ WATER MAIN
DUCTILE IRON PIPE
CLASS 52, APP

S-6
Manhole No. 3
Sta. 202+75.00, 28.63′ Rt.
Cover El. = 989.57′
℄ 8″ (W) = 982.53′

1005 1000 995 990 985 980 975 970

200+00 201+00 202+00 203+00

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JMB
CHECKED JJS

PLAN AND PROFILE - ORTT ST
BEGIN WORK TO STA. 203+00

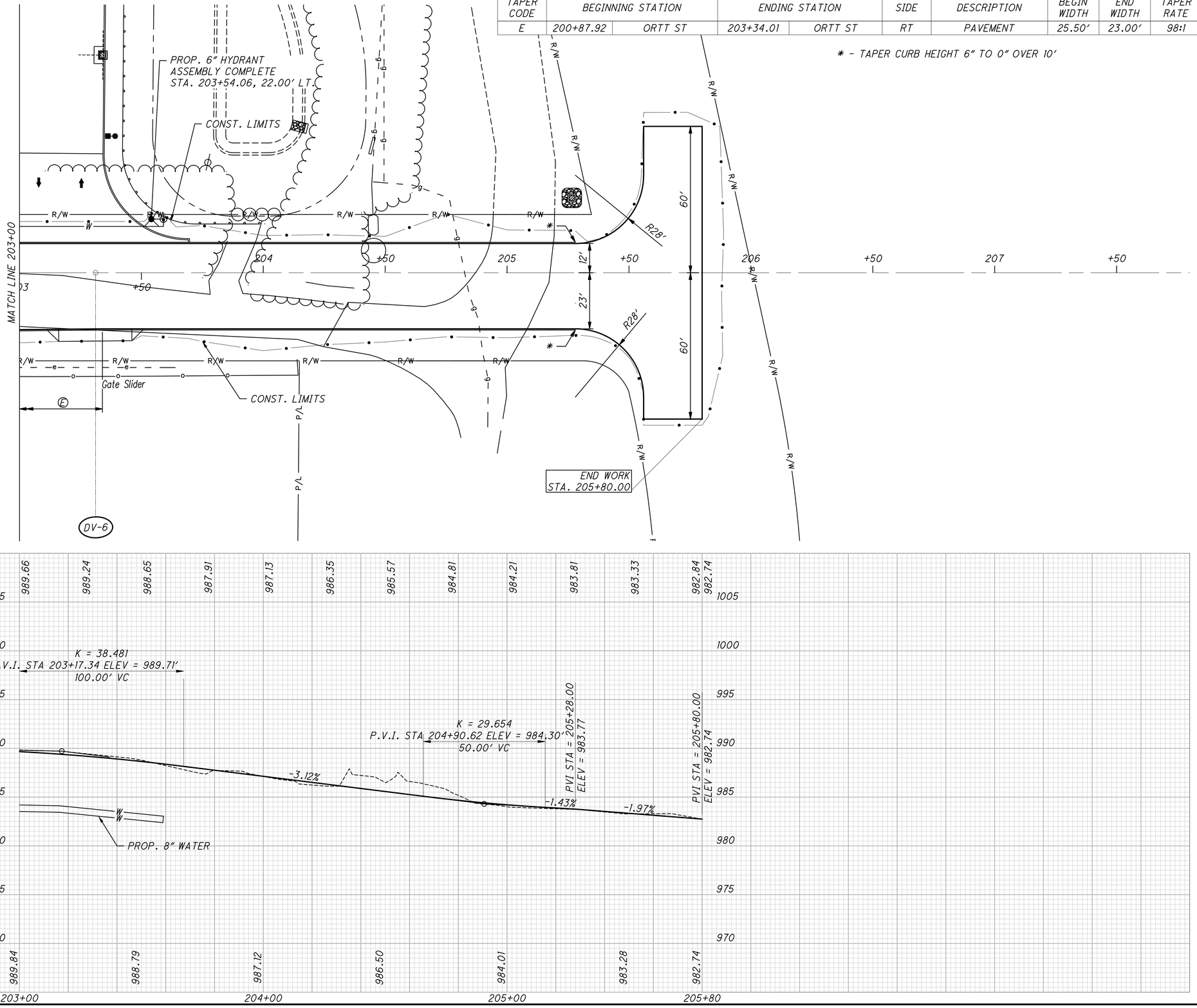
ERIE AVE/ORTT ST IMPROVEMENTS

X / X

16
48

TAPER TABLE									
TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
E	200+87.92	ORTT ST	203+34.01	ORTT ST	RT	PAVEMENT	25.50′	23.00′	98:1

* - TAPER CURB HEIGHT 6″ TO 0″ OVER 10′



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

PLAN AND PROFILE - ORTT ST
STA. 203+00 TO END WORK

ERIE AVE/ORTT ST IMPROVEMENTS

X / X

17
48

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SEEDING END WIDTH	SEEDING SQ. YDS.
17	30
13	
0	
	30

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

995
990
985
980
975

ex. 24" stm

25:1

SP-2
327' - 8" San @ 0.50%

118+00.00
987.66

995
990
985
980
975

ex. 24" stm

175:1

AH
BK
980

AH
980
BK

SP-2
327' - 8" San @ 0.50%

117+81.96
987.65
BEGIN PROJECT

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

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
7	7		
		5	4
7	1		
0	0		
		5	4

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ERIE AVE
STA. 117+50 TO STA. 118+03.73

ERIE AVE/ORTT ST IMPROVEMENTS

18
48

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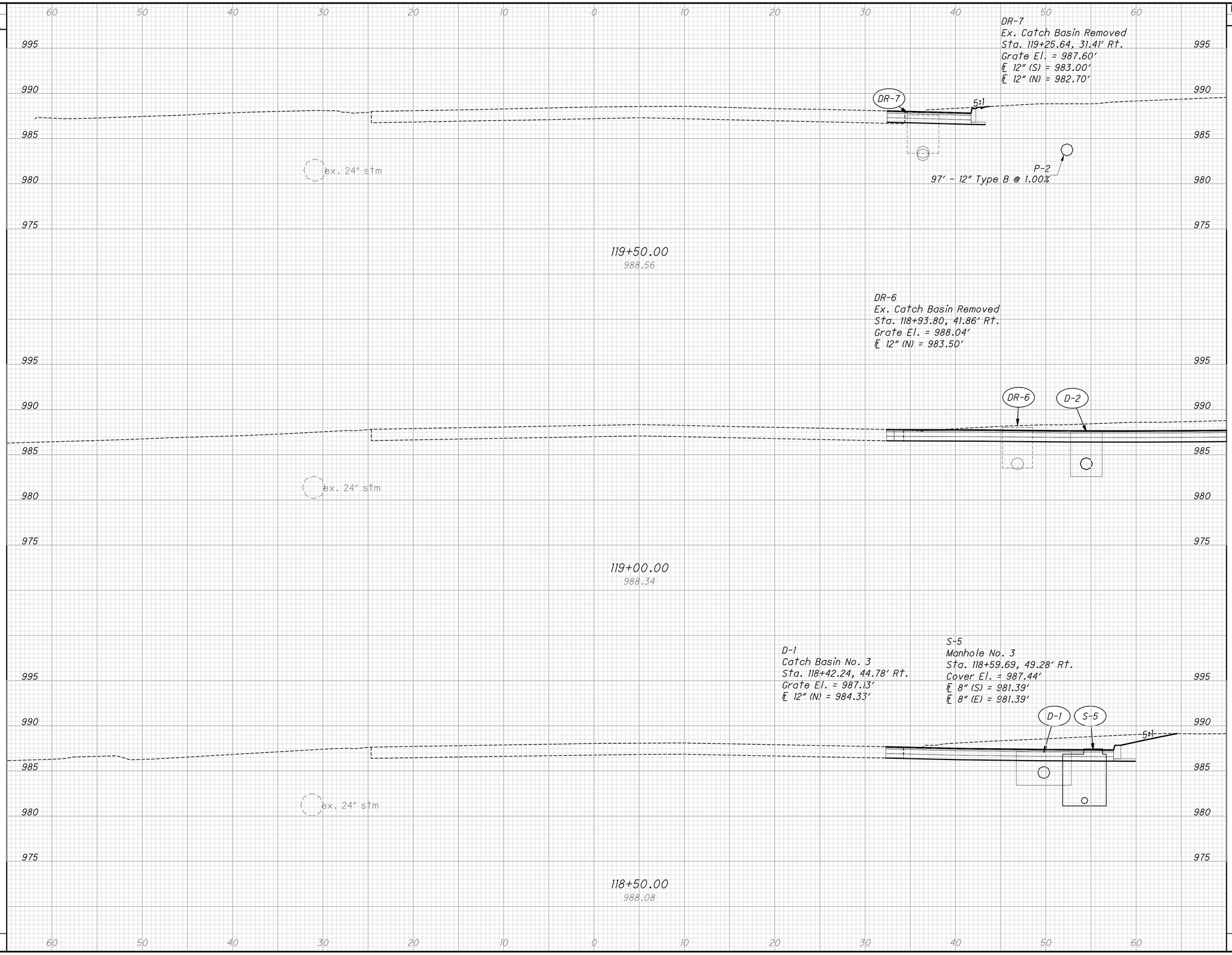
SEEDING END WIDTH	SEEDING SQ. YDS.
1	3
0	17
6	64
	84



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
17	0	80	0
69	0	120	0
61	0	63	8
		263	8

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ERIE AVE
STA. 118+50 TO 119+50

ERIE AVE/ORTT ST IMPROVEMENTS

19
48

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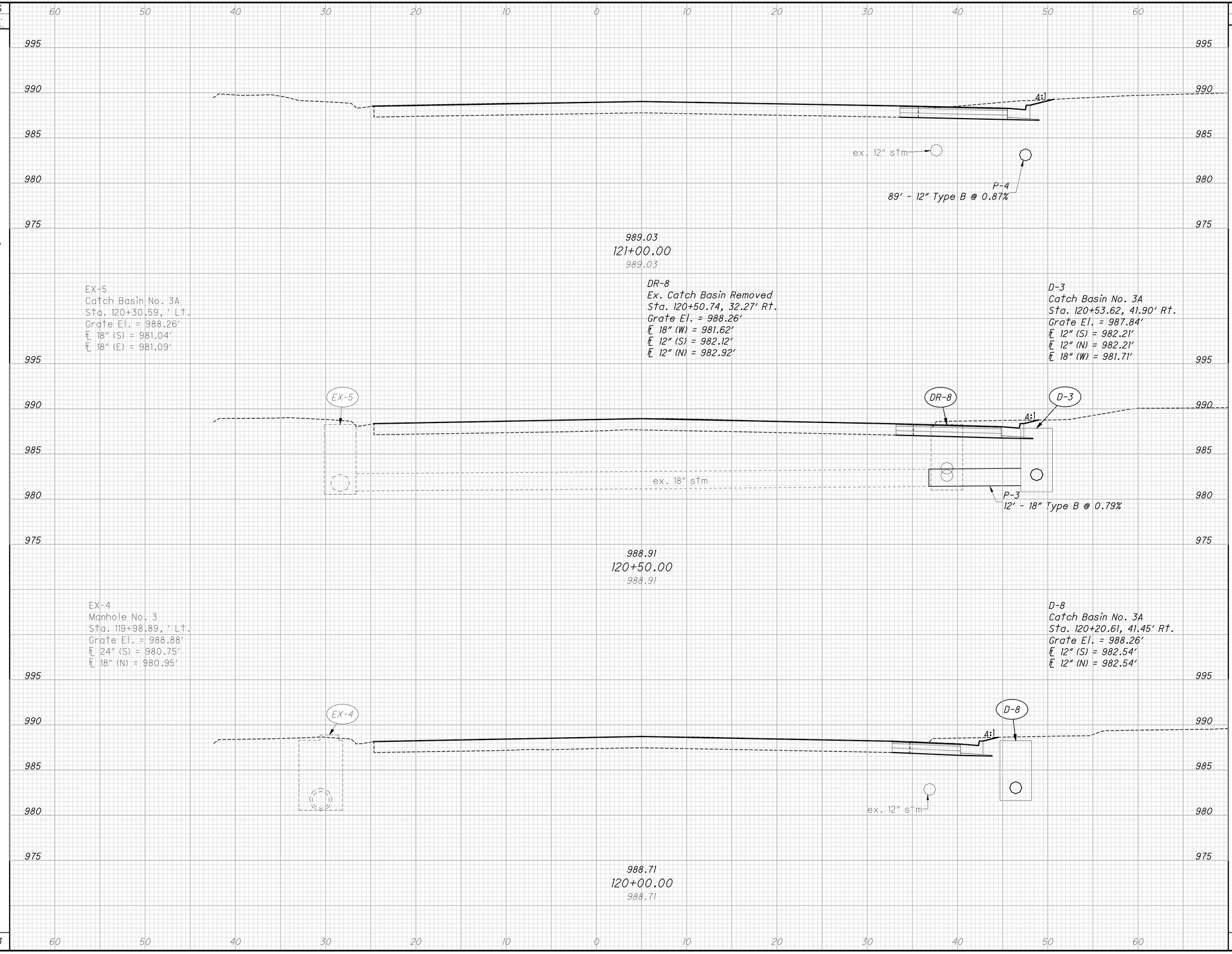
SEEDING END WIDTH	SEEDING SQ. YDS.
3	14
2	11
2	8
	33



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
26	0	49	0
27	0	44	0
20	0	35	0
		128	0

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ERIE AVE
STA. 120+00 TO STA. 121+00

ERIE AVE/ORTT ST IMPROVEMENTS

20
48

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SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
3	17	70	0	114	0
3	19	53	0	83	0
4	19	37	0	58	0
	55			255	0

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

995 990 985 980 975

ex. 12" stm

P-5
90' - 12" Type B @ 2.63%

989.63
122+50.00
989.64

DR-9
Ex. Catch Basin Removed
Sta. 122+17.70, 33.58' Rt.
Grate El. = 988.64'
℄ 12" (S) = 983.64'
℄ 12" (N) = 983.74'

D-6A
Manhole No. 3
Sta. 122+17.70, 33.58' Rt.
Cover El. = 988.99'
℄ 12" (E) = 983.74'
℄ 12" (N) = 983.74'

D-6
Manhole No. 3
Sta. 122+17.88, 44.00' Rt.
Cover El. = 988.91'
℄ 12" (N) = 983.64'
℄ 12" (S) = 983.64'
℄ 12" (W) = 983.64'

DR-9 D-6A D-6

P-6A
10' - 12" Type B @ 0.93%

989.47
122+00.00
989.47

D-4
Catch Basin No. 3A
Sta. 121+42.17, 43.10' Rt.
Grate El. = 988.33'
℄ 12" (N) = 982.98'
℄ 12" (S) = 982.98'

D-4
3:1

ex. 12" stm

989.27
121+50.00
989.27

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ERIE AVE
STA. 121+50 TO STA. 122+50

ERIE AVE/ORTT ST IMPROVEMENTS

21
48

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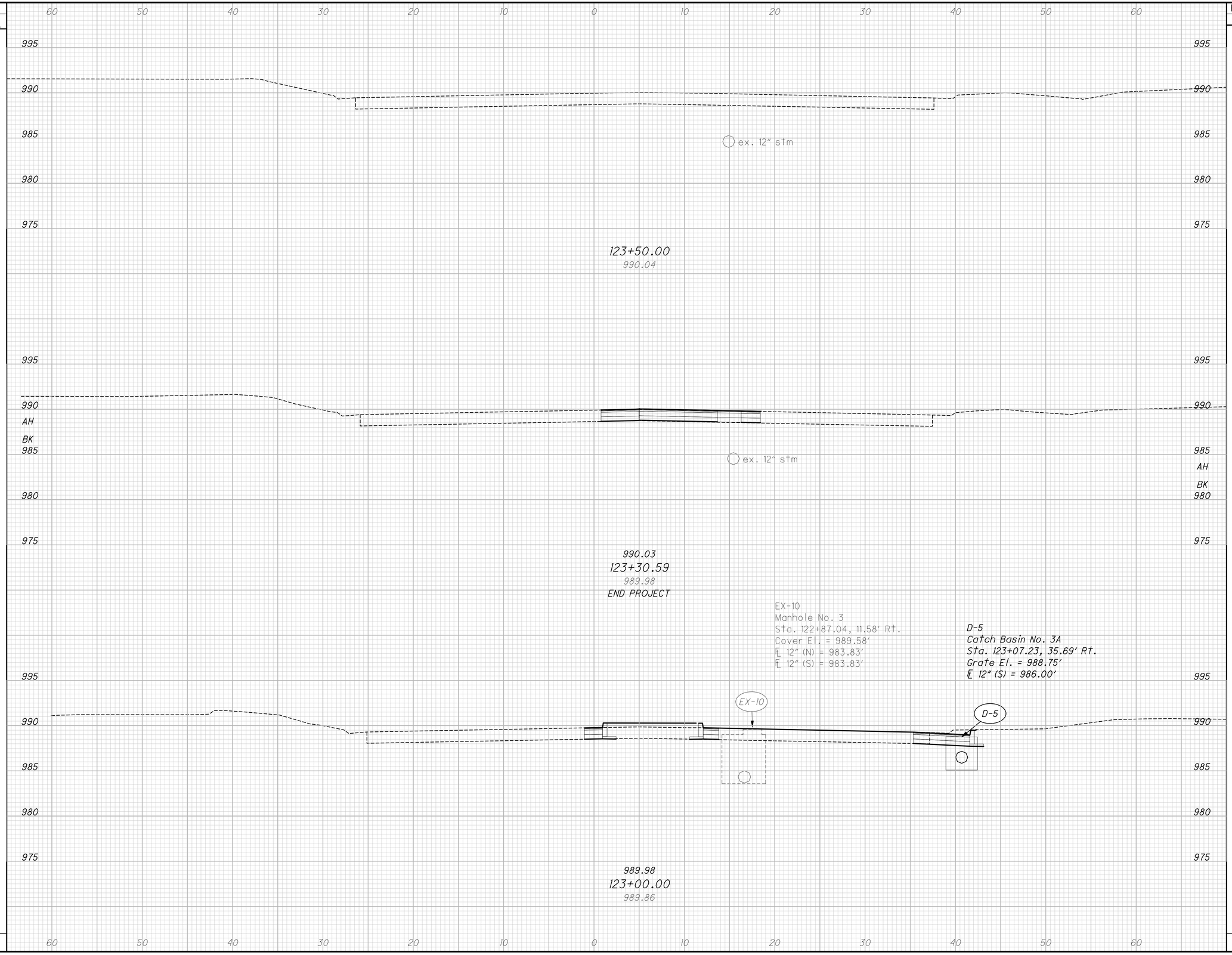
SEEDING	
END WIDTH	SQ. YDS.
0	
0	
	17
10	
	36
	53



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
19	0		
		29	0
31	0		
		94	0
		123	0

CALCULATED JMB
CHECKED JJS

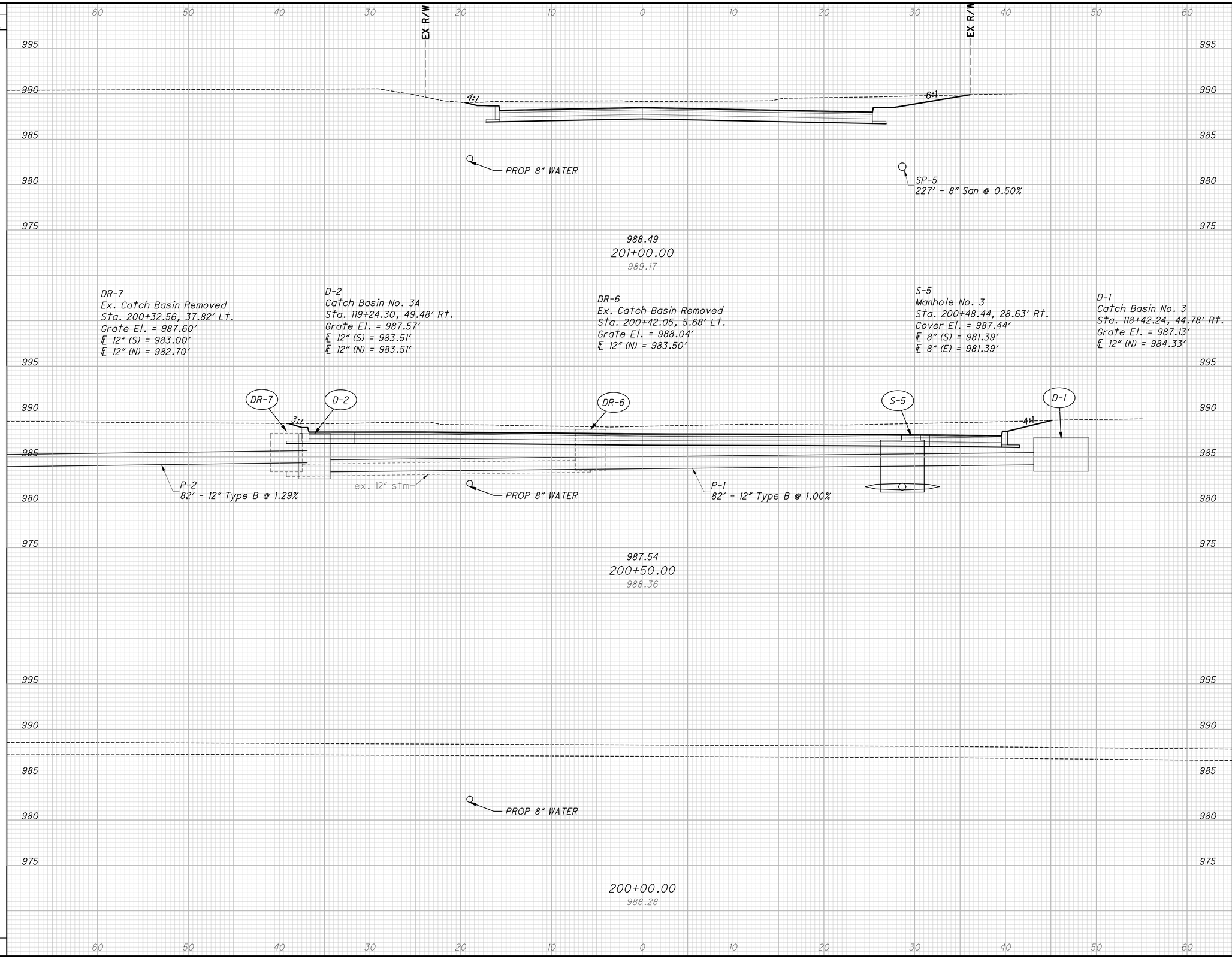
CROSS SECTIONS - ERIE AVE
STA. 123+00 TO STA. 123+50

ERIE AVE/ORTT ST IMPROVEMENTS

22
48

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
14	58	108	0	270	0
7	19	184	0	171	0
0	0	0	0	0	0
	77			441	0

CALCULATED JMB
CHECKED JJS



CROSS SECTIONS - ORTT ST
STA. 200+00 TO STA. 201+00

ERIE AVE/ORTT ST IMPROVEMENTS

23
48

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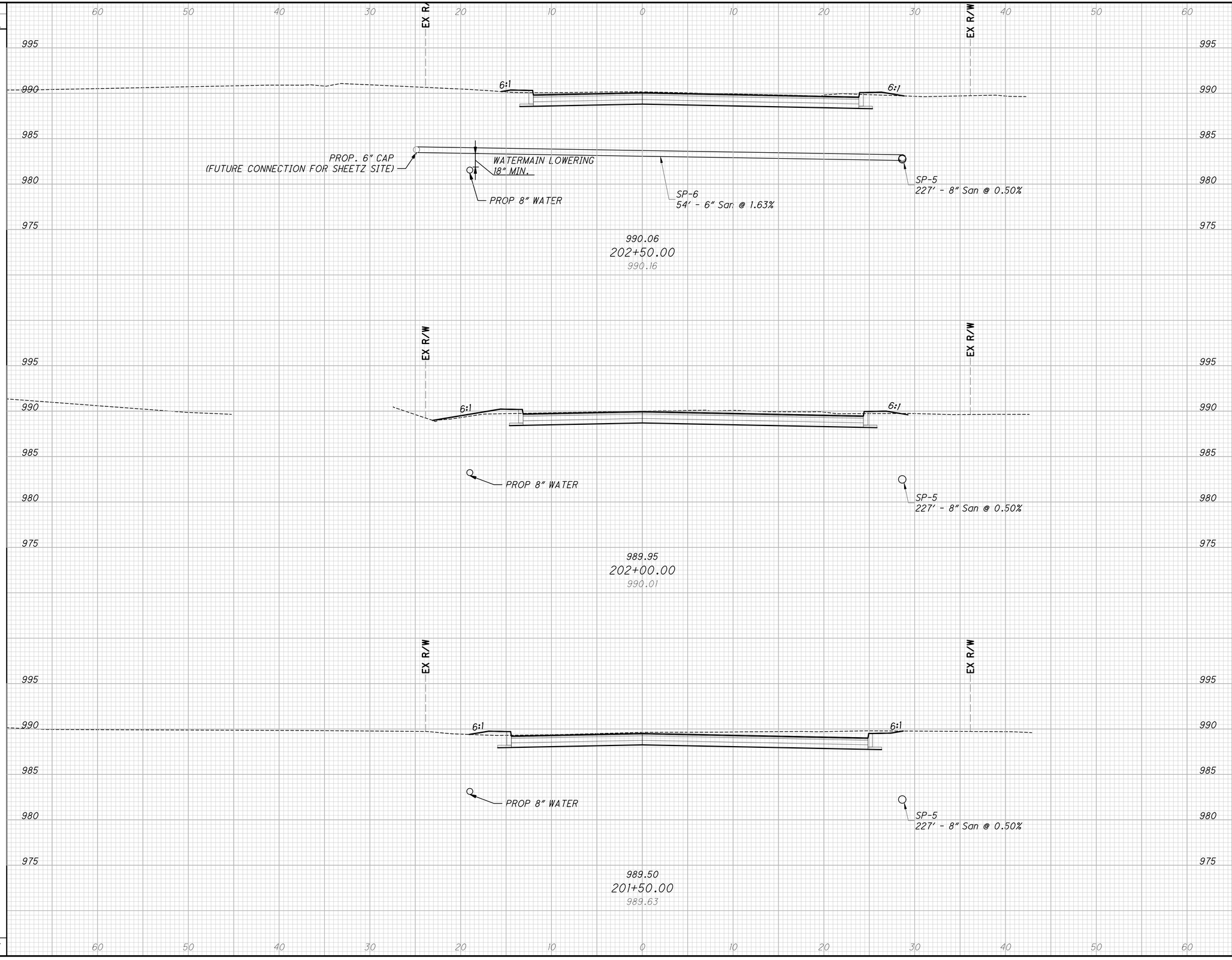
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
10	67	54	1	104	3
14	58	58	3	116	3
7	58	67	1	161	1
	183			381	7



CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ORTT ST
STA. 202+50 TO STA. 201+50

ERIE AVE/ORTT ST IMPROVEMENTS

24
48

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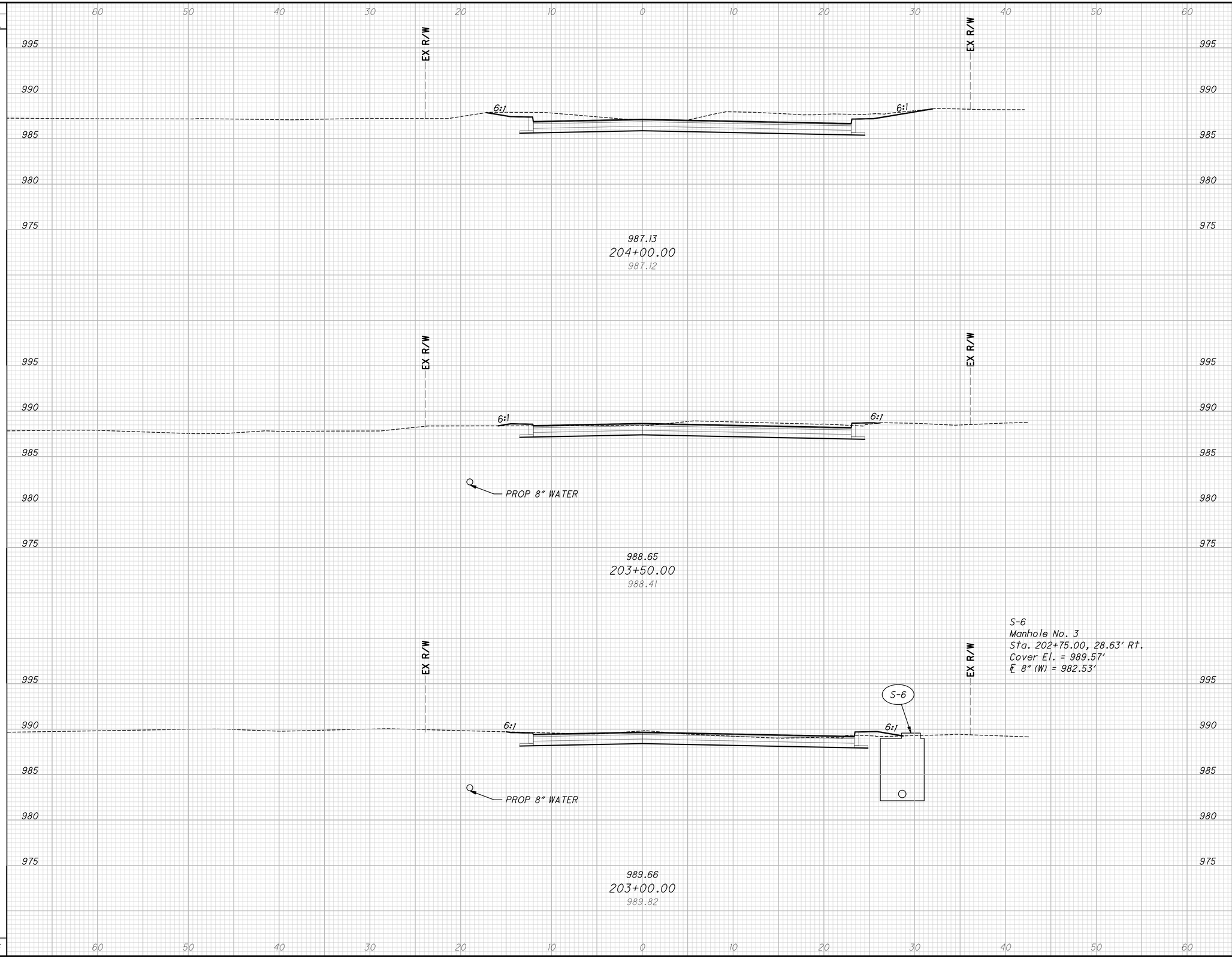
SEEDING END WIDTH	SEEDING SQ. YDS.
13	50
5	36
8	50
	136



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
75	0	118	1
53	1	91	2
45	1	92	2
		301	5

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ORTT ST STA. 203+00 TO STA. 204+00

ERIE AVE/ORTT ST IMPROVEMENTS

25
48

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SEEDING END WIDTH	SEEDING SQ. YDS.
3	31
8	42
7	56
	129

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

990 985 980 975 970 995

EX R/W

9:1 10:1 3:1

983.33
205+50.00
983.28

EX R/W EX R/W

6:1 6:1

984.21
205+00.00
984.01

EX R/W EX R/W

6:1 6:1

985.57
204+50.00
986.50

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
75	0	114	1
48	2	120	2
81	0	145	0
		379	3

CALCULATED JMB
CHECKED JJS

CROSS SECTIONS - ORTT ST
STA. 204+50 TO STA. 205+50

ERIE AVE/ORTT ST IMPROVEMENTS

26
48

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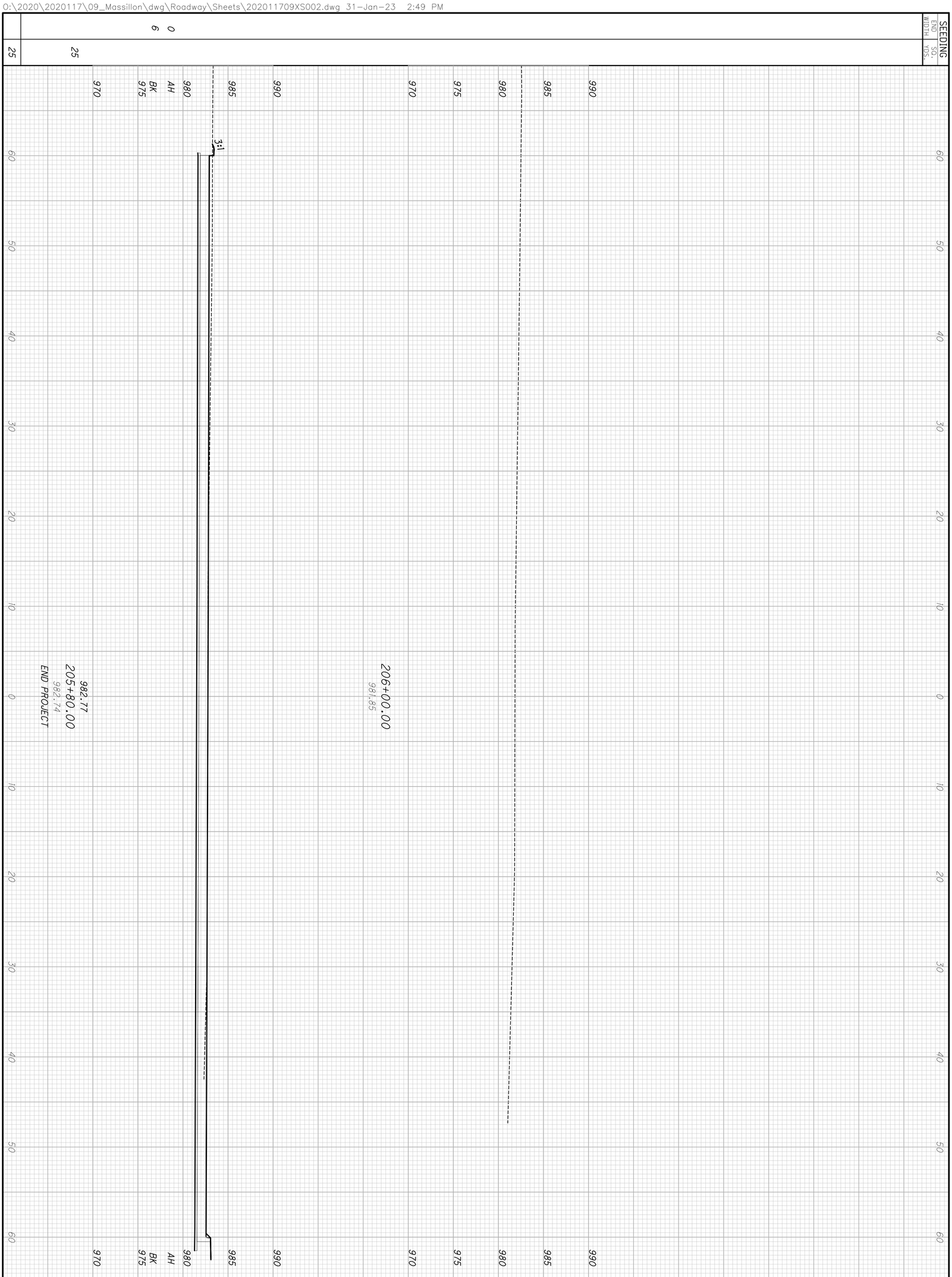
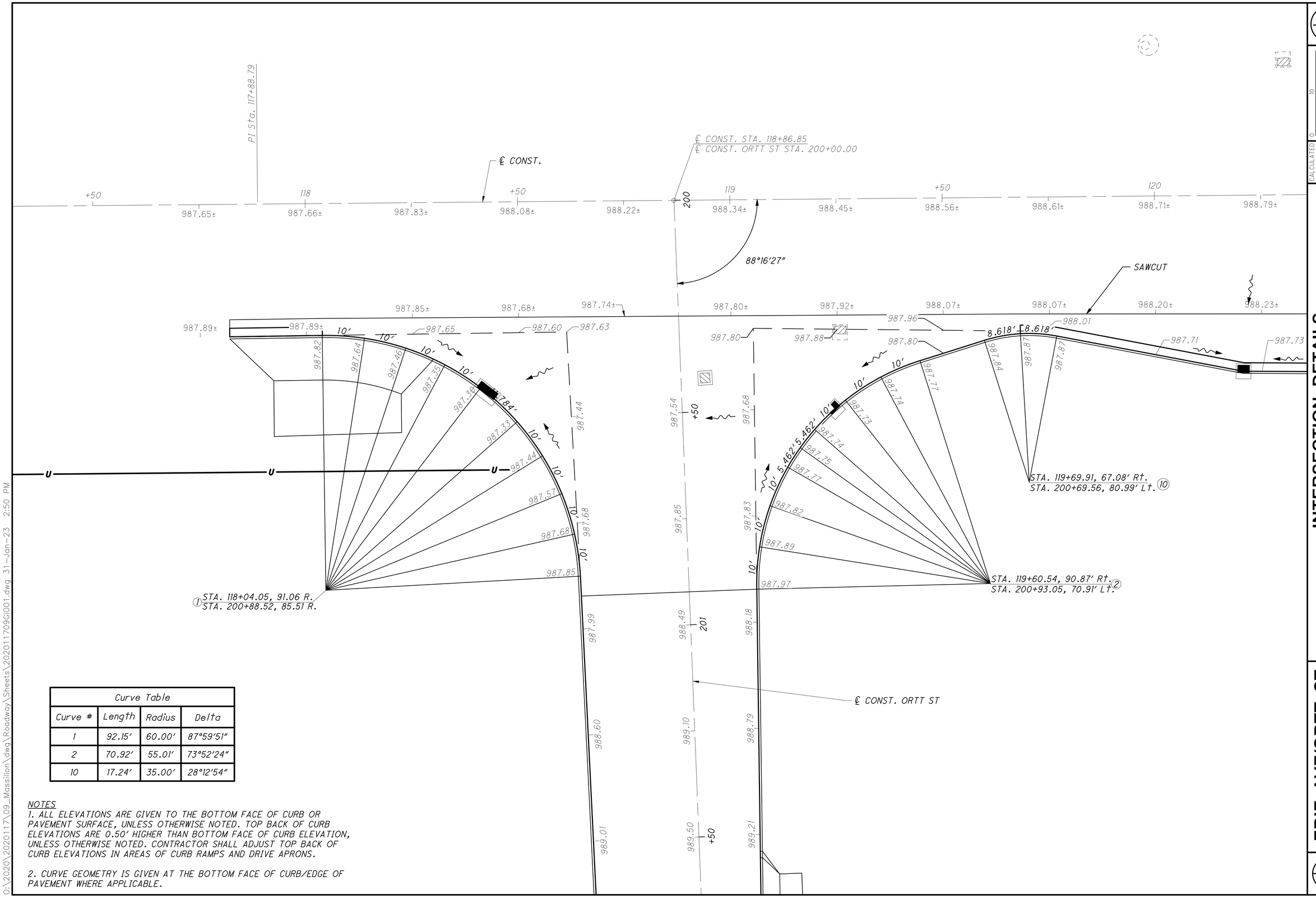


27 of 48	**ERIE AVE/ORTT ST IMPROVEMENTS**	**CROSS SECTIONS - ORTT ST** **STA. 205+80.50 TO STA. 206+00**

CALCULATED JMB
CHECKED JJS



Curve Table			
Curve #	Length	Radius	Delta
1	92.15'	60.00'	87°59'51"
2	70.92'	55.01'	73°52'24"
10	17.24'	35.00'	28°12'54"

NOTES

1. ALL ELEVATIONS ARE GIVEN TO THE BOTTOM FACE OF CURB OR PAVEMENT SURFACE, UNLESS OTHERWISE NOTED. TOP BACK OF CURB ELEVATIONS ARE 0.50' HIGHER THAN BOTTOM FACE OF CURB ELEVATION, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL ADJUST TOP BACK OF CURB ELEVATIONS IN AREAS OF CURB RAMPS AND DRIVE APRONS.

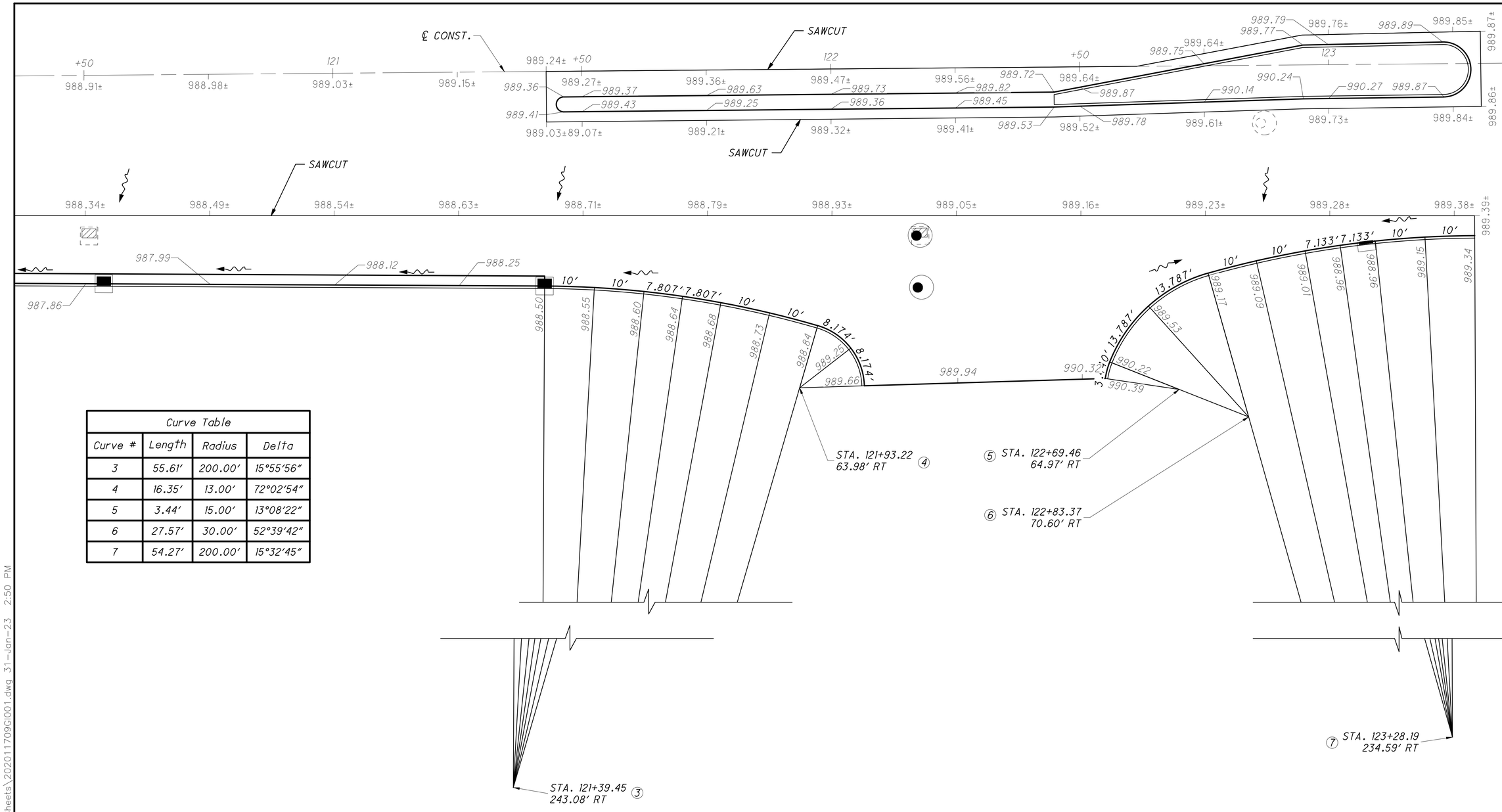
2. CURVE GEOMETRY IS GIVEN AT THE BOTTOM FACE OF CURB/EDGE OF PAVEMENT WHERE APPLICABLE.

CALCULATED JMB
CHECKED JJS

INTERSECTION DETAILS
ERIE AVE AND ORTT ST

ERIE AVE/ORTT ST IMPROVEMENTS

28
48



Curve Table			
Curve #	Length	Radius	Delta
3	55.61′	200.00′	15°55′56″
4	16.35′	13.00′	72°02′54″
5	3.44′	15.00′	13°08′22″
6	27.57′	30.00′	52°39′42″
7	54.27′	200.00′	15°32′45″

NOTES

1. ALL ELEVATIONS ARE GIVEN TO THE BOTTOM FACE OF CURB OR PAVEMENT SURFACE, UNLESS OTHERWISE NOTED. TOP BACK OF CURB ELEVATIONS ARE 0.50′ HIGHER THAN BOTTOM FACE OF CURB ELEVATION, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL ADJUST TOP BACK OF CURB ELEVATIONS IN AREAS OF CURB RAMPS AND DRIVE APRONS.

2. CURVE GEOMETRY IS GIVEN AT THE BOTTOM FACE OF CURB/EDGE OF PAVEMENT WHERE APPLICABLE.

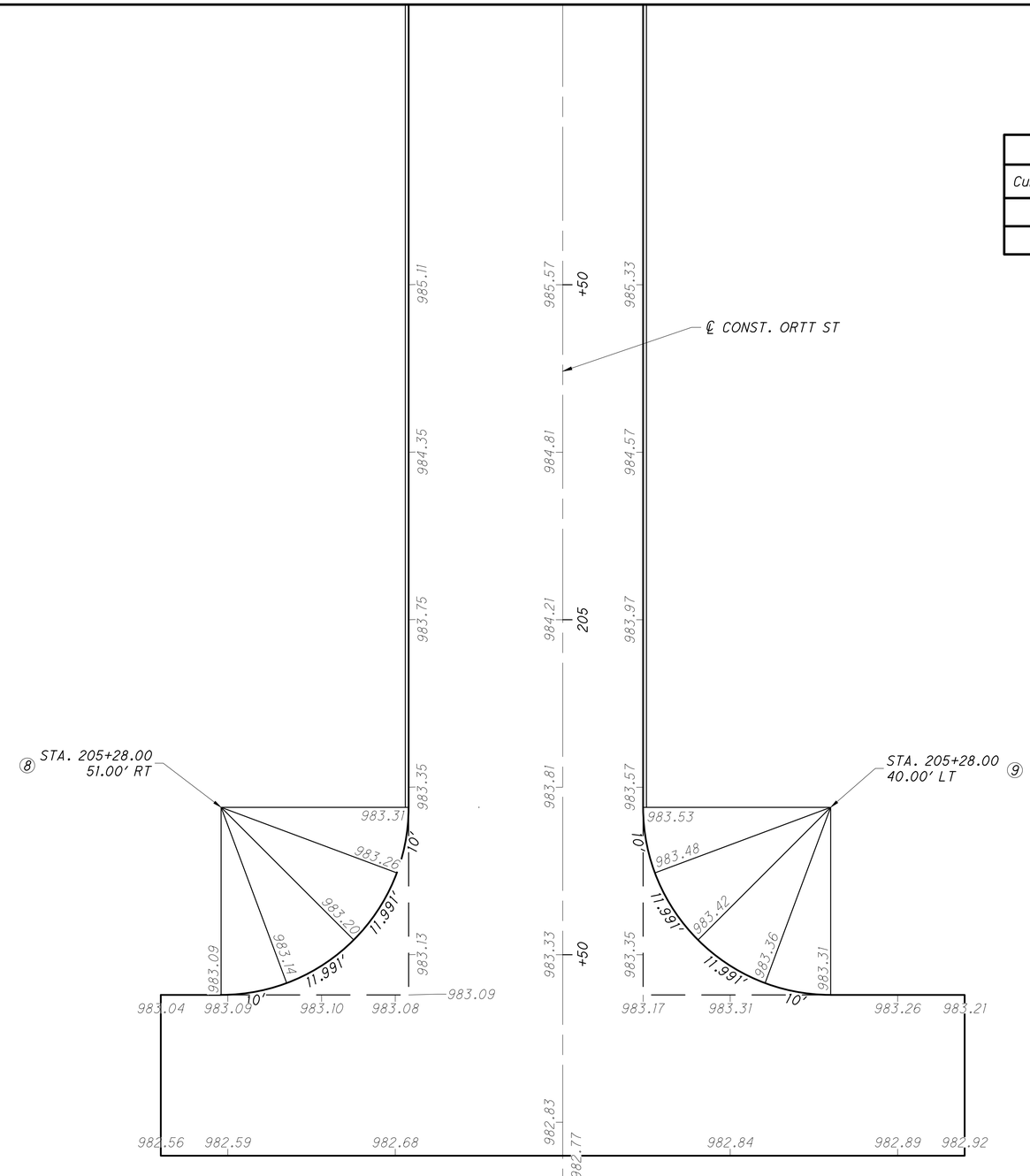
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

INTERSECTION DETAILS
ERIE AVE CURB AND SAWCUT LINE

ERIE AVE/ORTT ST IMPROVEMENTS

Curve Table			
Curve #	Length	Radius	Delta
8	43.98′	28.00′	89°59′54″
9	43.98′	28.00′	89°59′57″



NOTES

1. ALL ELEVATIONS ARE GIVEN TO THE BOTTOM FACE OF CURB OR PAVEMENT SURFACE, UNLESS OTHERWISE NOTED. TOP BACK OF CURB ELEVATIONS ARE 0.50′ HIGHER THAN BOTTOM FACE OF CURB ELEVATION, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL ADJUST TOP BACK OF CURB ELEVATIONS IN AREAS OF CURB RAMPS AND DRIVE APRONS.

2. CURVE GEOMETRY IS GIVEN AT THE BOTTOM FACE OF CURB/EDGE OF PAVEMENT WHERE APPLICABLE.

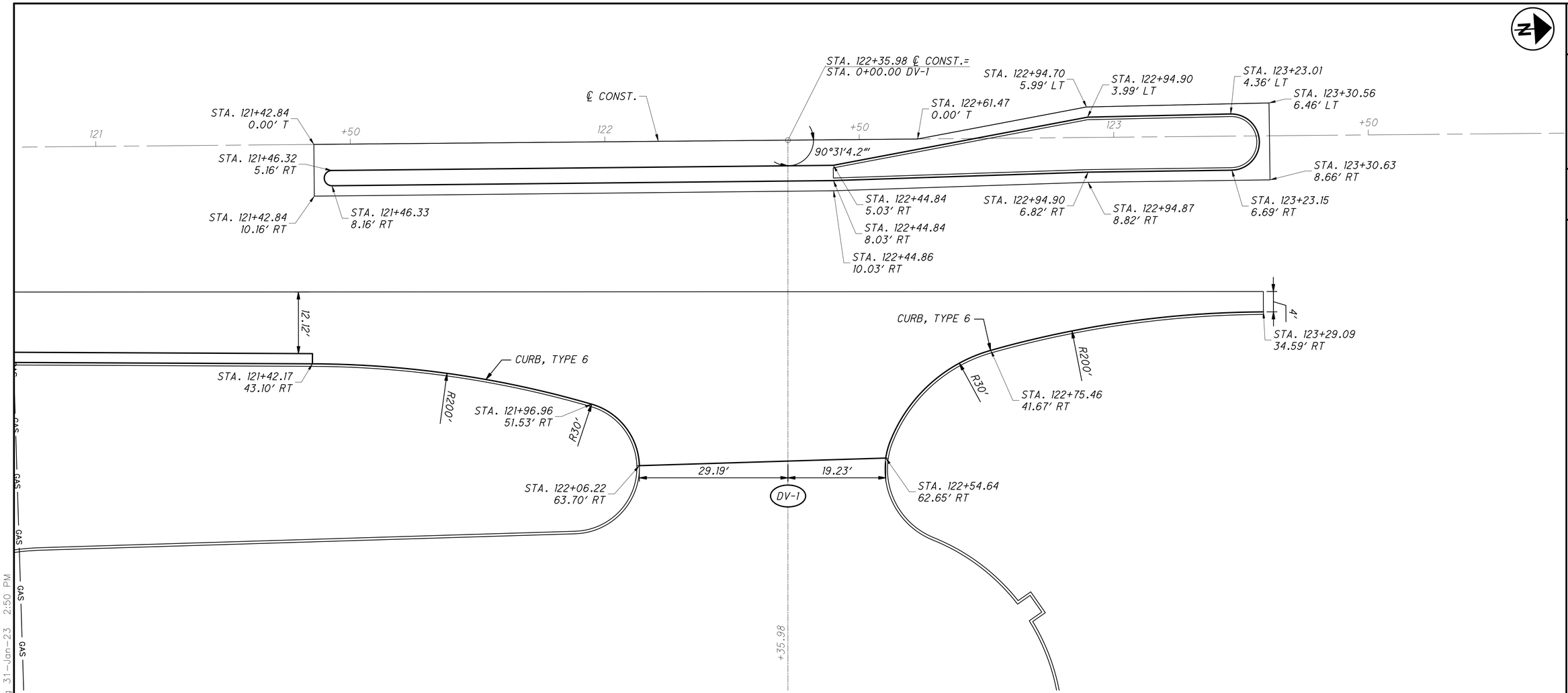
HORIZONTAL SCALE IN FEET
0 5 10 20

CALCULATED JMB
CHECKED JJS

INTERSECTION DETAILS
ORTT ST HAMMERHEAD

ERIE AVE/ORTT ST IMPROVEMENTS

30
48



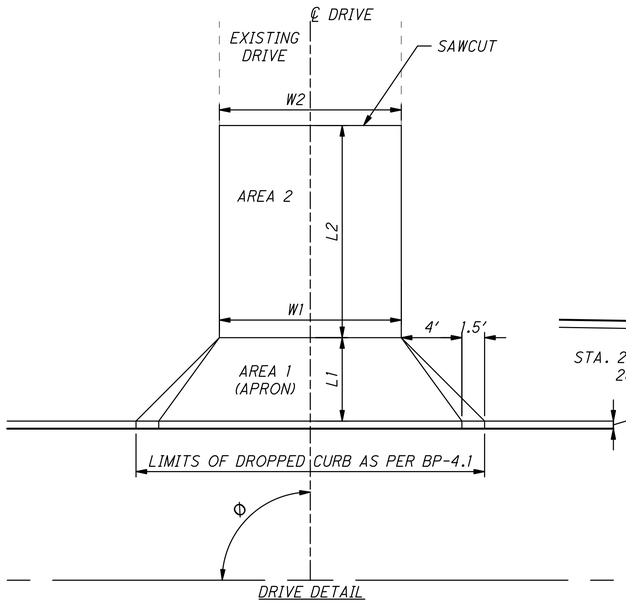
HORIZONTAL SCALE IN FEET
0 5 10 20

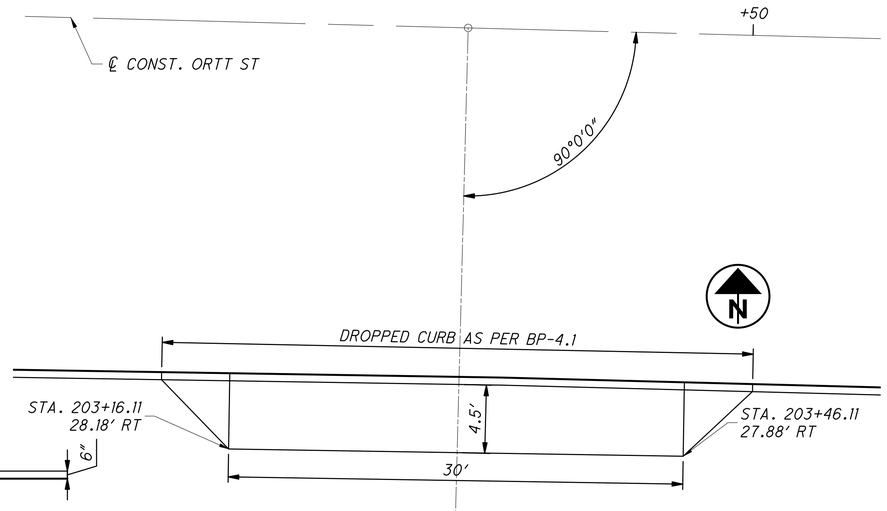
CALCULATED JMB
CHECKED JJS

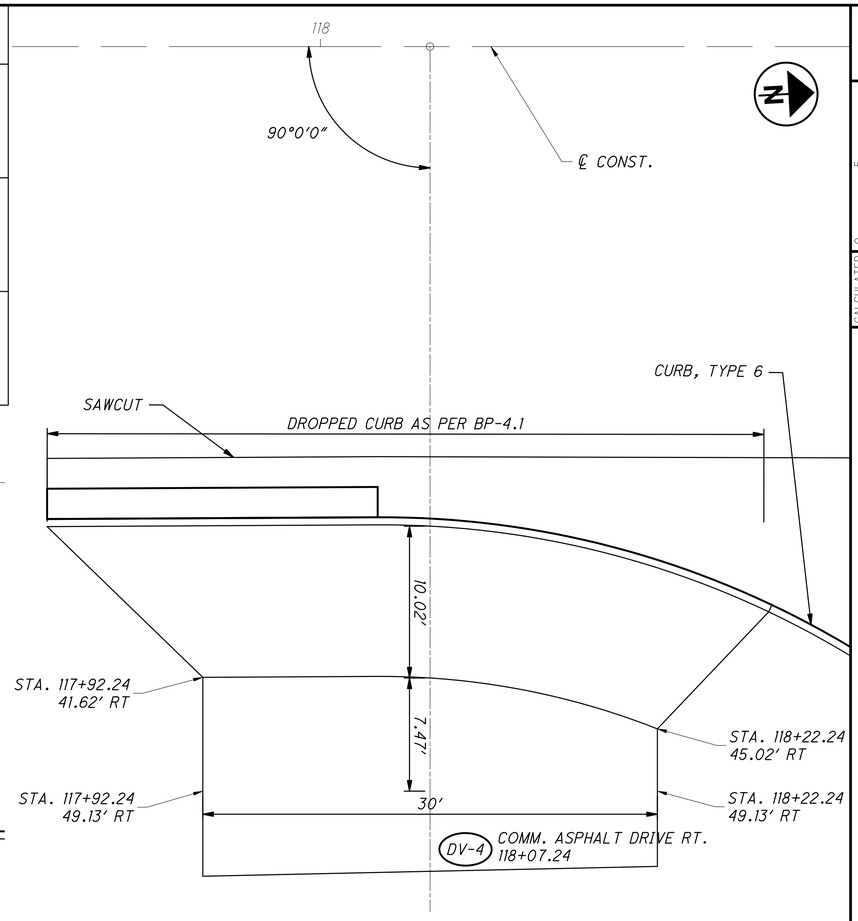
DRIVE DETAILS
DV-1

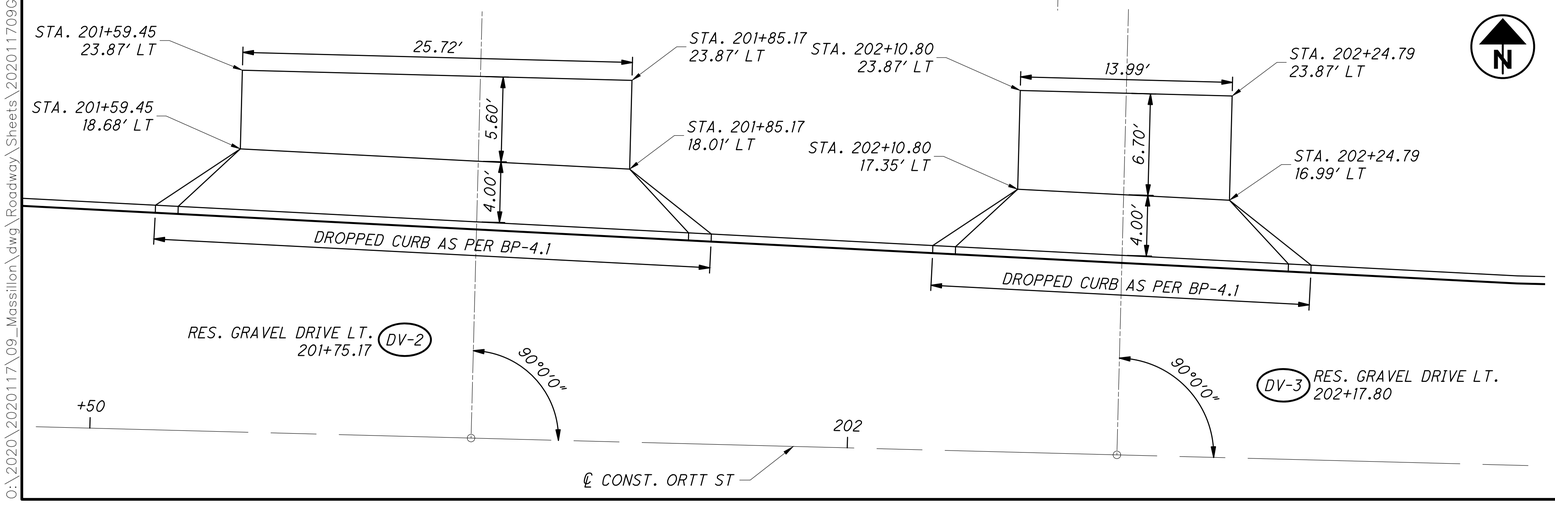
ERIE AVE/ORTT ST IMPROVEMENTS

EXISTING MATERIAL	USAGE	INSIDE LIMITS OF APRON (AREA 1)	OUTSIDE LIMITS OF APRON (AREA 2)
GRAVEL	RESIDENTIAL	6" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS 4" ITEM 304 AGGREGATE BASE ITEM 204 SUBGRADE COMPACTION	8" ITEM 304 AGGREGATE BASE ITEM 204 SUBGRADE COMPACTION
ASPHALT	COMMERCIAL	8" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS 4" ITEM 304 AGGREGATE BASE ITEM 204 SUBGRADE COMPACTION	1¼" ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS) ITEM 407 NON-TRACKING TACK COAT (0.055 GAL/SY) 1¾" ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), (DRIVEWAYS) 8" ITEM 304 AGGREGATE BASE ITEM 204 SUBGRADE COMPACTION
GRAVEL	COMMERCIAL	8" ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS 4" ITEM 304 AGGREGATE BASE ITEM 204 SUBGRADE COMPACTION	12" ITEM 304 AGGREGATE BASE ITEM 204 SUBGRADE COMPACTION









HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED JMB
CHECKED JJS

DRIVE DETAILS
DV-2 TO DV-6

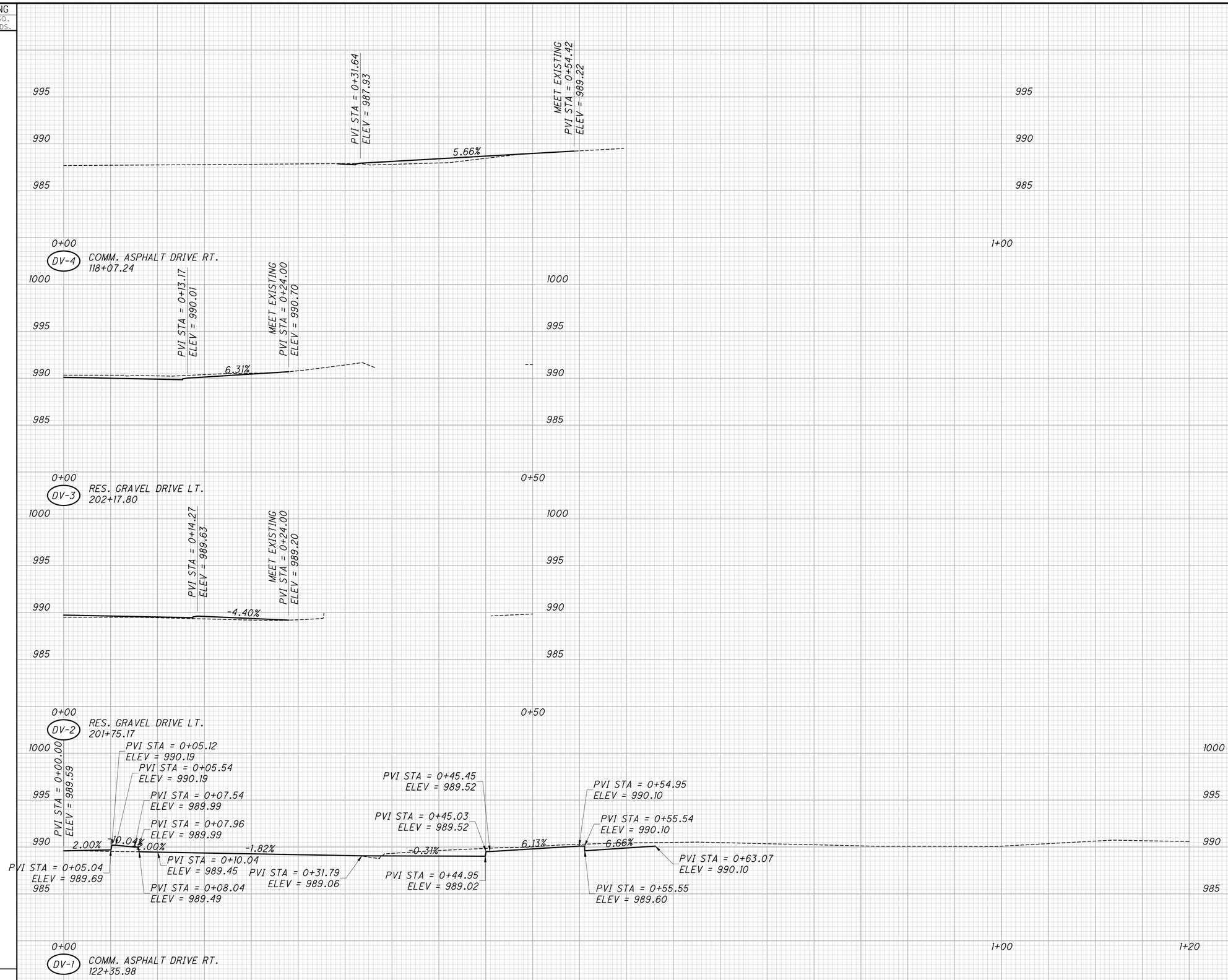
ERIE AVE/ORTT ST IMPROVEMENTS

32
48

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JMB
CHECKED JJS



DRIVE PROFILES
DV-1 TO DV-4

ERIE AVE/ORTT ST IMPROVEMENTS

33
48

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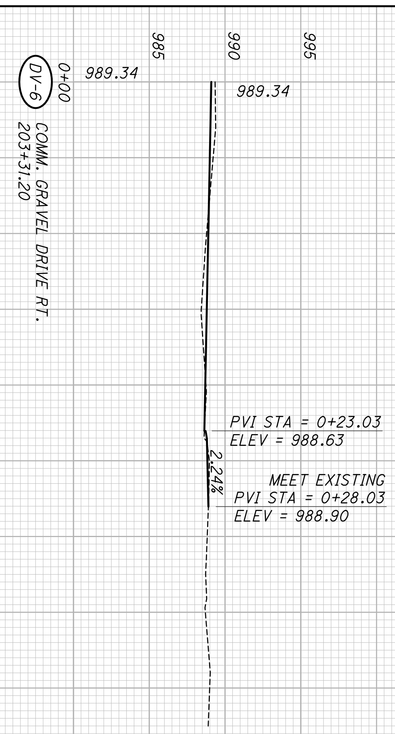
SEEDING
END WIDTH
SQ. YDS.



END AREA
CUT
FILL
VOLUME
CUT
FILL

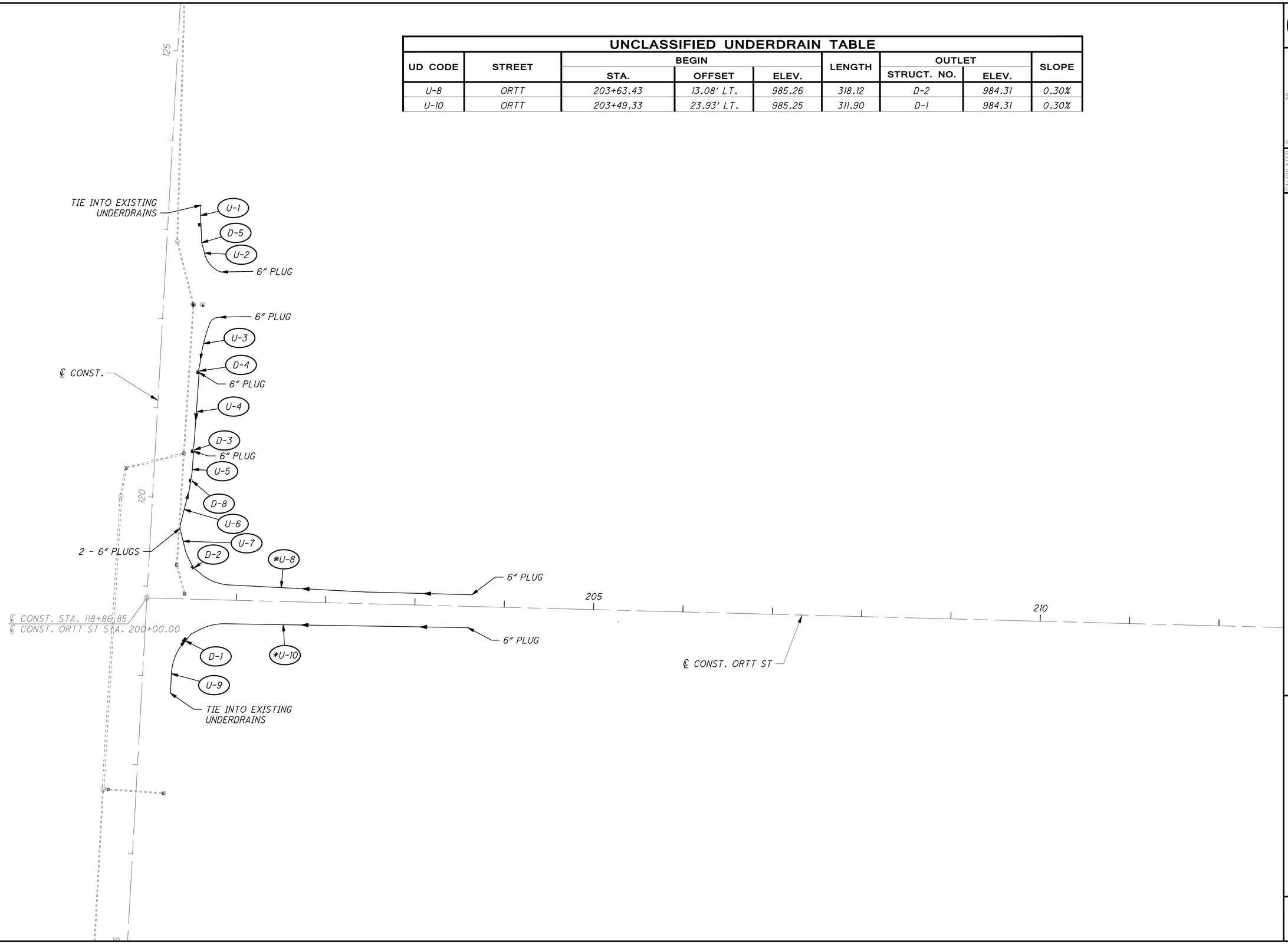
34
48

ERIE AVE/ORTT ST IMPROVEMENTS

DRIVE PROFILES
DV-6

CALCULATED JMB
CHECKED JJS

UNCLASSIFIED UNDERDRAIN TABLE								
UD CODE	STREET	BEGIN			LENGTH	OUTLET		SLOPE
		STA.	OFFSET	ELEV.		STRUCT. NO.	ELEV.	
U-8	ORTT	203+63.43	13.08' LT.	985.26	318.12	D-2	984.31	0.30%
U-10	ORTT	203+49.33	23.93' LT.	985.25	311.90	D-1	984.31	0.30%



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

UNDERDRAIN SCHEMATIC PLAN

ERIE AVE/ORTT ST IMPROVEMENTS

35
48

A-1 16"x16"x8" TEE
STA. 119+24.64, 47.79' LT.

A-2 8" 11.25° BEND
STA. 119+24.95, 37.78' LT.

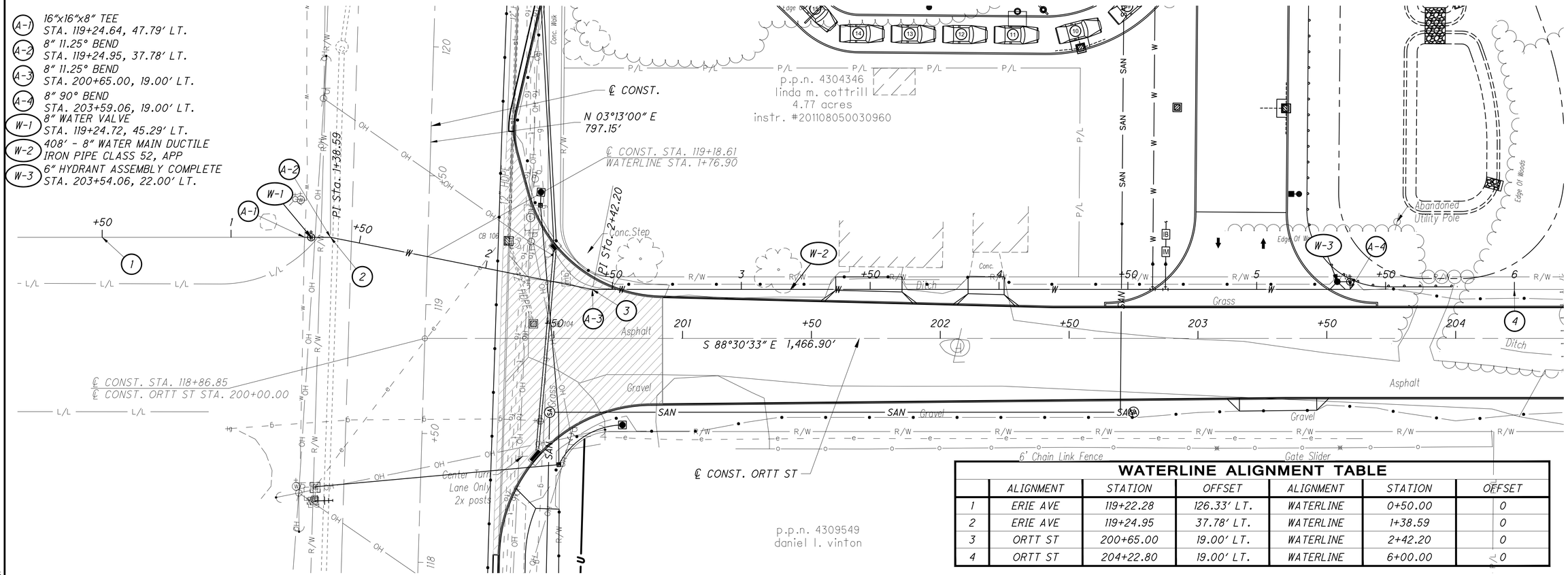
A-3 8" 11.25° BEND
STA. 200+65.00, 19.00' LT.

A-4 8" 90° BEND
STA. 203+59.06, 19.00' LT.

W-1 8" WATER VALVE
STA. 119+24.72, 45.29' LT.

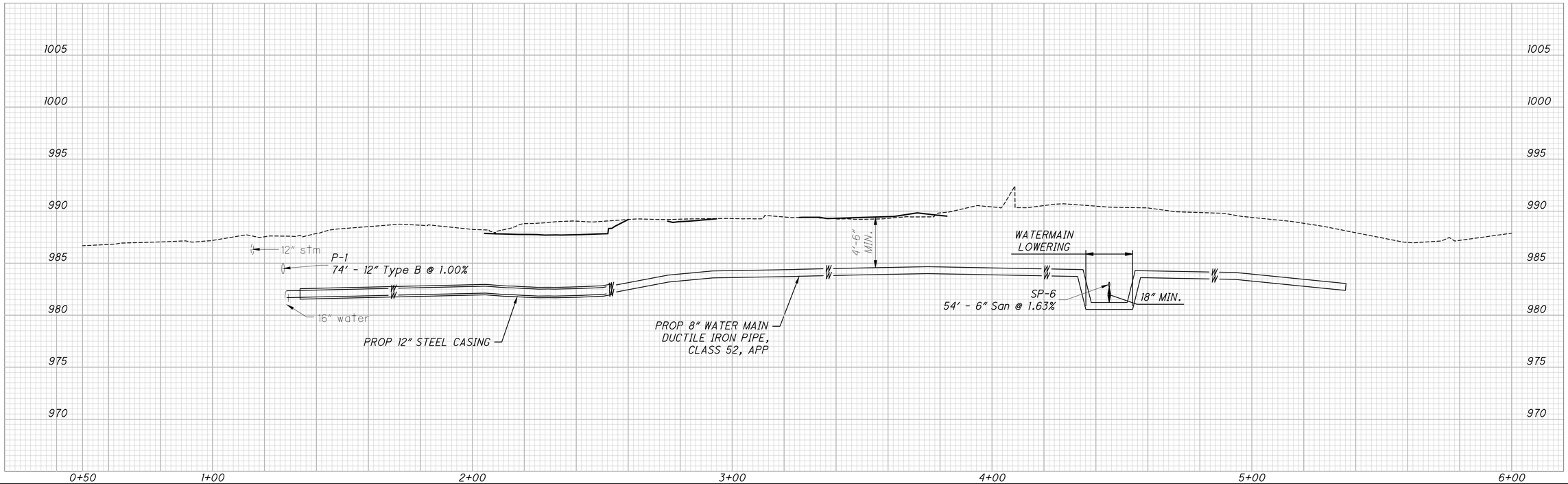
W-2 408' - 8" WATER MAIN DUCTILE IRON PIPE CLASS 52, APP

W-3 6" HYDRANT ASSEMBLY COMPLETE
STA. 203+54.06, 22.00' LT.



WATERLINE ALIGNMENT TABLE

	ALIGNMENT	STATION	OFFSET	ALIGNMENT	STATION	OFFSET
1	ERIE AVE	119+22.28	126.33' LT.	WATERLINE	0+50.00	0
2	ERIE AVE	119+24.95	37.78' LT.	WATERLINE	1+38.59	0
3	ORTT ST	200+65.00	19.00' LT.	WATERLINE	2+42.20	0
4	ORTT ST	204+22.80	19.00' LT.	WATERLINE	6+00.00	0



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JMB
CHECKED JJS

WATER WORK PLAN AND PROFILE

ERIE AVE/ORTT ST IMPROVEMENTS

X / X

36
48

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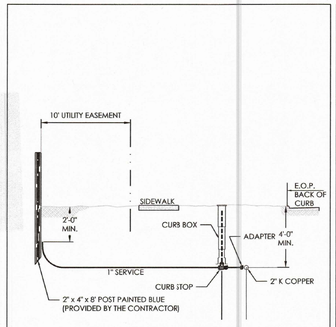
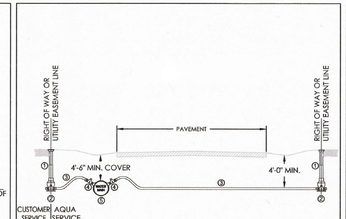


PROFILE

TYPICAL PRE-TAP CUL-DE-SAC LOTS — DRAWING NUMBER: SD-102



FITTINGS AND TYPE OF MATERIALS REQUIRED BY AQUA OHIO, INC.

1. CURB BOX
2. 1" BRASS CURB STOP
3. SERVICE LINE
4. 1" BRASS CORPORATION STOP 4
5. MAXIMUM DIRECT TAP SHALL BE 1" FOR 8" AND 12" DIA. D.I.P. AND 2" FOR 16" DIA. D.I.P. BRASS SERVICE SADDLE WITH STAINLESS STEEL STRAP TO BE USED OTHERWISE

*** RESIDENTS TO BE NOTIFIED BEFORE SHUT OFF**

TYPICAL SERVICE LINE INSTALLATION — DRAWING NUMBER: SD-103

- FIELD-LOK GASKETS OR OTHER APPROVED PIPE RESTRAINT SYSTEMS WILL BE USED TO RESTRAIN PIPE, OR WITH PRIOR APPROVAL BY AQUA FOR THE FOLLOWING SITUATIONS:
  1. FOR VERTICAL BENDS IN LIEU OF DEAD MAN CONCRETE RESTRAINT
  2. FOR VERTICAL AND HORIZONTAL BENDS INSTALLED IN POOR SOIL CONDITIONS
  3. FOR HYDRANTS OR BENDS WITH SLOPING GROUND BEHIND THE POINT OF THRUST

NOTE: MEG-A-LUGS OR APPROVED EQUAL SHALL BE USED TO RESTRAIN FITTINGS AND VALVES

- THRUST BLOCKS WILL NORMALLY BE USED FOR ALL HORIZONTAL BENDS. THE CONTRACTOR WILL GET WRITTEN PRIOR APPROVAL FROM AQUA TO SUBSTITUTE A RESTRAINT SYSTEM IN LIEU OF THRUST BLOCKING FOR HORIZONTAL BENDS.
- CONTRACTOR WILL SUPPLY ALL FIELD-LOK GASKETS

LINEAR FEET OF MECHANICAL PIPE RESTRAINT REQUIRED (EITHER SIDE OF FITTING)

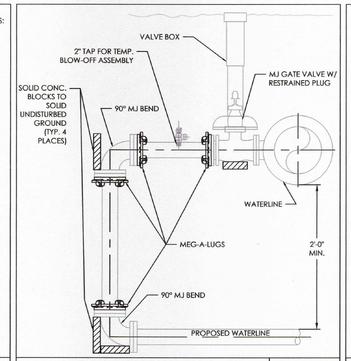
PIPE DIA. (IN.)	DEAD END	90°	45°	22.5°	11.25°	VERT. UP	VERT. DOWN	TEE BRANCH
4	36	16	8	0	0	4	16	18
6	60	28	13	0	0	10	24	35
8	108	54	18	0	0	18	36	90
12	162	90	36	18	0	36	72	144
16	214	118	49	23	12	12	21	200
24	304	165	68	33	16	16	30	289

CONSTRUCTION CRITERIA:

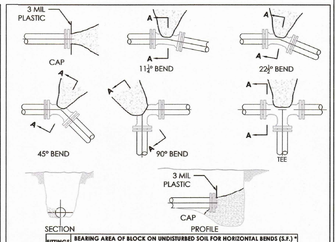
1. FOR WORKING AND/OR TEST PRESSURES< 150 PSI.
2. TYPE 2 TRENCH WITH MINIMUM OF 4.0 FT. OF COVER
3. POLYWRAPPED PIPE
4. 18 FT. PIPE LENGTHS
5. FITTINGS RESTRAINED WITH MEG-A-LUGS OR APPROVED EQUAL

NOTE: IF FIELD CONDITIONS DO NOT CONFORM TO THE NOTED CONSTRUCTION CRITERIA, THE CONTRACTOR SHALL GET WRITTEN APPROVAL FROM AQUA FOR THE NUMBER OF RESTRAINED JOINTS.

THRUST RESTRAINT WITH FIELD-LOK GASKETS — DRAWING NUMBER: SD-104



BACKSIDE TAP DETAIL — DRAWING NUMBER: SD-105



FITTINGS SIZES	BEARING AREA OF BLOCK ON UNDISTURBED SOIL FOR HORIZONTAL BENDS (S.F.) *				
	TEES & ENDS	90° BEND	45° BEND	22½° BEND	11¼° BEND
4	1.5	2	1.5	1.5	1.5
6	3	4	2	1.5	1.5
8	4.5	7	3.5	2	1.5
10	7.5	10.5	5	3	1.5
12	10.5	15	8	4	2.5

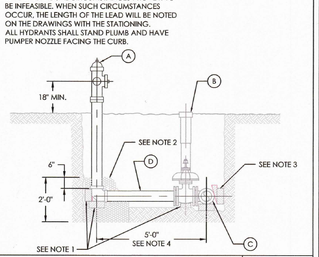
* AND VERTICAL BENDS UP

NOTES:
1. ALL BLOCKING SHALL BE POURED AGAINST FIRM, UNDISTURBED SOIL.
2. BEARING AREA AT FITTINGS NOT GIVEN IN BEARING TABLE SHALL BE AS DIRECTED BY THE ENGINEER.
3. WHEN POURING AGAINST PLUGS AND BLIND FLANGES SET A PIECE OF 3 MIL PLASTIC AGAINST FITTING, TO KEEP CONCRETE OFF BOLTS.
4. LAYOUT TO BE APPROVED BY ENGINEER PRIOR TO CONCRETE POUR.
5. BASED ON 150 PSI STATIC PRESSURE PLUS 50 PSI WATER HAMMER AND 2000 PSF SOIL BEARING.
6. PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE AFTER CONCRETE IS POURED.
7. THRUST BLOCK DETAILS ARE SHOWN AS MINIMUM AND MAY REQUIRE ADDITIONAL BLOCKING.
8. CONCRETE CINDER BLOCKS MAY BE USED IN PLACE OF POURED CONCRETE FOR WATER MAINS 12" AND SMALLER.

CONCRETE THRUST BLOCKING DETAILS — DRAWING NUMBER: SD-106

NOTES:
1. SOLID CONCRETE BLOCK TO BE USED UNDER ALL TEES, VALVES, ALSO BEHIND AND UNDER HYDRANT ELBOW.
2. CLEAN CRUSHED STONE FILL AROUND HYDRANT DRAIN TO A DEPTH OF 2'-0".
3. SOLID CONCRETE BLOCK WITH OAK WEDGES, (BRACED AGAINST UNDISTURBED SOIL)
4. THE DISTANCE FROM THE CENTERLINE OF MAIN TO THE CENTERLINE OF HYDRANT WILL BE 5' EXCEPT WHEN INDIVIDUAL CIRCUMSTANCES PROVE IT TO BE INFEASIBLE. WHEN SUCH CIRCUMSTANCES OCCUR, THE LENGTH OF THE LEAD WILL BE NOTED ON THE DRAWINGS WITH THE STATIONING.
5. ALL HYDRANTS SHALL STAND PLUMB AND HAVE PUMPER NOZZLE FACING THE CURB.

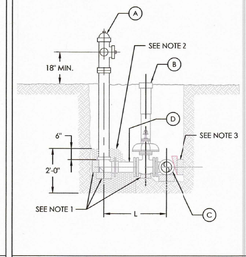
ITEM	DESCRIPTION
A	HYDRANT ASSEMBLY PER STANDARDS BY AQUA OHIO INC.
B	6" M.J. GATE VALVE. (3) PIECE VALVE BOX
C	ANCHOR TEE (CLOW F-1217)
D	6" DUCTILE IRON PIPE WITH MEGA-LUGS FOR RETAINERS



TYPICAL FIRE HYDRANT ASSEMBLY TYPE I — DRAWING NUMBER: SD-107

NOTES:
1. SOLID CONCRETE BLOCK TO BE USED UNDER ALL TEES, VALVES, ALSO BEHIND AND UNDER HYDRANT ELBOW.
2. CLEAN CRUSHED STONE FILL AROUND HYDRANT DRAIN TO A DEPTH OF 2'-0".
3. SOLID CONCRETE BLOCK WITH OAK WEDGES, (BRACED AGAINST UNDISTURBED SOIL)
4. ALL HYDRANTS SHALL STAND PLUMB AND HAVE PUMPER NOZZLE FACING THE CURB.

ITEM	DESCRIPTION
A	HYDRANT ASSEMBLY PER STANDARDS BY AQUA OHIO INC.
B	6" M.J. GATE VALVE. (3) PIECE VALVE BOX
C	ANCHOR TEE (CLOW F-1217)
D	M.J. ANCHOR COUPLING x 1'2"L

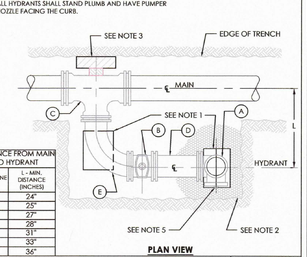


DISTANCE FROM MAIN TO HYDRANT	
MAIN LINE SIZE	L - MIN. DISTANCE (INCHES)
6"	38"
8"	40"
10"	42"
12"	43"
16"	46"
20"	48"
24"	51"

TYPICAL FIRE HYDRANT ASSEMBLY TYPE II — DRAWING NUMBER: SD-108

NOTES:
1. SOLID CONCRETE BLOCK TO BE USED UNDER ALL TEES, BENDS, ALSO BEHIND AND UNDER HYDRANT ELBOW.
2. CLEAN CRUSHED STONE FILL AROUND HYDRANT DRAIN TO A DEPTH OF 2'-0".
3. SOLID CONCRETE BLOCK WITH OAK WEDGES, (BRACED AGAINST UNDISTURBED SOIL)
4. THE DISTANCE FROM THE CENTERLINE OF MAIN TO THE CENTERLINE OF HYDRANT WILL BE 5' EXCEPT WHEN INDIVIDUAL CIRCUMSTANCES PROVE IT TO BE INFEASIBLE. WHEN SUCH CIRCUMSTANCES OCCUR, THE LENGTH OF THE LEAD WILL BE NOTED ON THE DRAWINGS WITH THE STATIONING.
5. ALL HYDRANTS SHALL STAND PLUMB AND HAVE PUMPER NOZZLE FACING THE CURB.

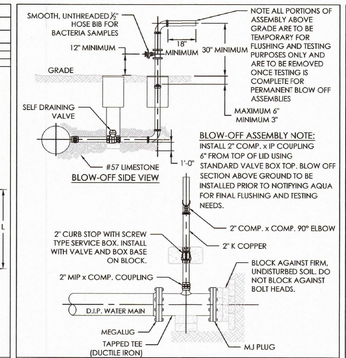
ITEM	DESCRIPTION
A	HYDRANT ASSEMBLY PER STANDARDS BY AQUA OHIO, INC.
B	6" M.J. GATE VALVE. (3) PIECE VALVE BOX
C	STANDARD M. J. TEE
D	MJ ANCHOR COUPLING (F-1311)
E	MJ ANCHOR ELBOW (F-1218)



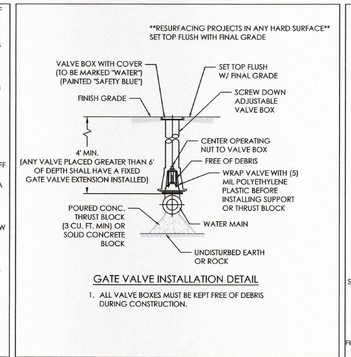
DISTANCE FROM MAIN TO HYDRANT	
MAIN LINE SIZE	L - MIN. DISTANCE (INCHES)
6"	24"
8"	25"
10"	27"
12"	28"
16"	31"
20"	33"
24"	36"

PLAN VIEW

TYPICAL FIRE HYDRANT ASSEMBLY TYPE III — DRAWING NUMBER: SD-109



2" ADAPTOR & BLOW OFF ASSEMBLY — DRAWING NUMBER: SD-110



GATE VALVE INSTALLATION DETAIL

1. ALL VALVE BOXES MUST BE KEPT FREE OF DEBRIS DURING CONSTRUCTION.

GATE VALVE INSTALLATION DETAIL — DRAWING NUMBER: SD-111

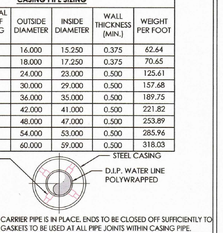
~PIPE CROSSING DATA SHEET~

PIPE DATA	CARRIER PIPE	CASING PIPE
MATERIAL	DUCTILE IRON	STEEL
PROCESS OF MANUFACTURE	SPIN CAST	ELECTRIC
WELD SPECIFICATION	ANSI A21.51	ASTM A53
GRADE OF CLASS	SEE SPEC	GRADE B TEST
PRESSURE	SEE SPEC	35,000 PSI. YIELD
TYPE OF JOINT	PUSH ON FIELD LOK RUBBER GASKET	WELDED
TYPE OF COATING	ASPHALTIC PRIMER	NONE
CATHODIC PROTECTION	NONE	NONE
SEAL AT END OF CASING	N/A	MOLDED SYN. RUBBER END SEAL
METHOD OF INSTALLATION	PUSH ON SKIDS	JACK AND BORE

CASING PIPE SIZING

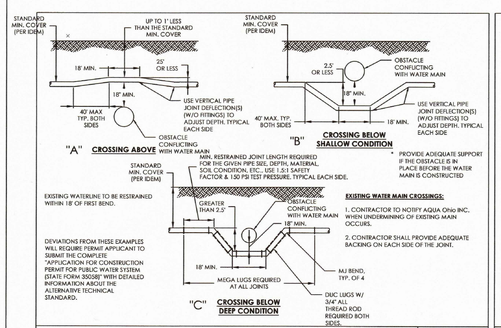
WATER MAIN SIZE	NOMINAL SIZE OF CASING PIPE	OUTSIDE DIAMETER	INSIDE DIAMETER	WALL THICKNESS (MIN.)	WEIGHT PER FOOT
6"	16"	16.000	15.250	0.375	62.64
8"	18"	18.000	17.250	0.375	70.65
12"	24"	24.000	23.000	0.500	125.61
16"	30"	30.000	29.000	0.500	157.68
20"	36"	36.000	35.000	0.500	189.75
24"	42"	42.000	41.000	0.500	221.82
30"	48"	48.000	47.000	0.500	253.89
36"	54"	54.000	53.000	0.500	285.96
42"	60"	60.000	59.000	0.500	318.03

SMITH-BLAIR CASING SPACERS @ 1/3 POINTS EACH PIPE LENGTH (2 PER LENGTH) (NOTE: AS AN ALTERNATIVE, P.S.I. OR CASCADE CASING SPACERS MAY BE USED)

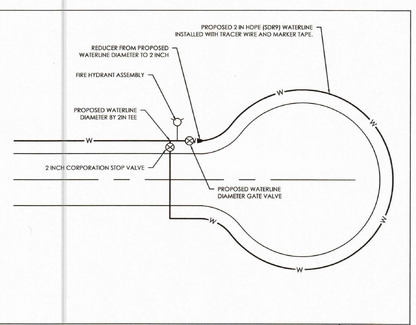


FILL CASING PIPE WITH SAND AFTER CARRIER PIPE IS IN PLACE. ENDS TO BE CLOSED OFF SUFFICIENTLY TO RETAIN THE SAND. FIELD-LOK GASKETS TO BE USED AT ALL PIPE JOINTS WITHIN CASING PIPE.

CASING PIPE DETAIL — DRAWING NUMBER: SD-112



DESIGN CRITERIA FOR UTILITY CONFLICTS/CROSSINGS — DRAWING NUMBER: SD-113



DESIGN CRITERIA FOR CUL-DE-SAC TIE-IN CONNECTION — DRAWING NUMBER: SD-114

AQUA OHIO, INC.
STARK REGIONAL DIVISION
1", 1-1/2" & 2" WATER SERVICE MATERIAL SPECIFICATIONS

AQUA PORTION OF SERVICE LINE

SERVICE SADDLES. Stainless steel, double stud, CC outlet, Smith-Blair model 372 or equal.

CORPORATION STOPS. Brass, ball valve, CC inlet, CTS compression outlet, Mueller model B-25008N or equal.

CURB STOPS. Brass, ball valve, CTS compression inlet and outlet, Mueller model B-25209N or equal.

CURB BOXES. Two piece, cast iron, 2-1/2" buffalo style, screw type for adjustable height, height range to be approximately 36" to 54" with cast iron lid and brass bolt, the word "WATER" to be cast on lid, General Foundries product no. 37093E or equal.

SERVICE LINES. Type K soft copper tubing is required.

CUSTOMER PORTION OF SERVICE LINE

1" customer service lines require type K copper tubing.

1-1/2" and 2" customer service lines may be type K copper tubing or as an alternate material, HDPE plastic, copper tube OD, SDR 9, 200 psi. HDPE needs SS stiffeners at each joint. A tracer wire and marking tape is recommended.

AQUA OHIO, INC.
STARK REGIONAL DIVISION
WATER MAIN MATERIAL SPECIFICATIONS

DUCTILE IRON PIPE. Type required: push-on joints, cement lined, thickness class 52 for 4 inch through 16 inch, manufacturing standards AWWA C150 and C151. Polyethylene encasement shall be installed on all ductile pipe and fittings.

4" THROUGH 16" GATE VALVES. Type required: resilient seat, iron body, stainless steel bonnet bolts and nuts, mechanical joint accessories, non-rising stem, for underground service, O-ring packing preferred, OPEN RIGHT (clockwise), 2 inch square operating nut, manufacturing standards and pressure ratings AWWA C509, Mueller A-2360 or equal.

FIRE HYDRANTS. Type required: post type, breakable flange design for traffic collisions, 5 1/4" diameter main valve, one 5" Storz connection and two 2 ½" hose nozzles, 6" MJ inlet, main valve to open left, direction of opening to be indicated with arrow cast on hydrant, to be designed for 5 foot trench, National Standard threads on nozzles, O-ring packing preferred, type 304 stainless steel bolts and nuts, operating nut and nut on caps: 1 ½" pentagon, color yellow paint on body trimmed with red paint on bonnet and caps, AWWA standard C502, Mueller Centurion A423-539382, US Pipe M-94 or Clow Medallion.

DUCTILE IRON FITTINGS. (tees, crosses, bends, reducers, sleeves, couplings and plugs.) Type required: mechanical joint, tees, crosses, bends and reducers are to be cement lined; working pressure rating 250 psi, manufacturing standards ANSI A21.53, ANSI A21.4 and ANSI A21.10. Compact style is acceptable. Retainer glands are required on all mechanical joints.

TAPPING SLEEVES. Type required: Stainless steel or ductile iron with MJ outlet, stainless steel bolts and nuts, manufacturing standards and pressure ratings AWWA specification C223.

2" WATER MAIN. 2" water main shall be soft drawn type "K" copper tubing or high density polyethylene plastic (HDPE), copper tube size, as called out on the plan. If HDPE is used, it shall be 200 psi, SDR 9 with marking tape and a 12 gage copper tracer wire laid in the trench. Brass compression fittings shall be used. Stainless steel stiffeners are necessary at each joint.

VALVE BOXES. Type required: two piece, cast iron, screw type for adjustable height, height range to be approximately 36 to 60 inches. They are to include a well fitting cast iron lid, the word "WATER" to be cast on lid.

POLYETHYLENE ENCASEMENT. Type required: Eight mil thick polyethylene tube manufactured in accordance with ANSI/AWWA C105/A21.5. Polyethylene adhesive tape, 1 ½" wide to seal joints.

BLOW OFF ASSEMBLIES. Type required: Kupferle Foundry TF500 or approved equal. Install in valve box. Install 2" curb stop with curb box ahead of each blow off.

NO.	DATE	REVISIONS	BY

DESIGNED: MAB	DATE: OCTOBER 2020
DRAWN: MAB	DATE: OCTOBER 2020
BACKGROUND: ATWELL FIELD SURVEY	

0' 20' 40' 60' 80'
SCALE: 1" = 20' UNLESS NOTED OTHERWISE

AQUA — An Essential Utilities Company

PREPARED BY:
SERVICE CENTER - ENGINEERING DEPT.
6650 SOUTH AVE., BOARDMAN OHIO 44512

DIVISION: STARK

AQUA OHIO WATERLINE DETAILS
AQUA OHIO, INC.

7/8

ERIE AVE/ORTT ST IMPROVEMENTS

37/48

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TRAFFIC CONTROL LEGEND	
◇	PROPOSED SIGN
◇	EXISTING SIGN TO REMAIN
◇	EXISTING SIGN TO BE REMOVED
⊤	SIGN SUPPORT
⌑	EXISTING RPM (RAISED PAVEMENT MARKER)
▬	PROPOSED RPM
S-#	PROPOSED SIGN
R-#	EXISTING SIGN TO BE REMOVED
CDS	CENTER LINE, DOUBLE SOLID
CH	CHANNELIZING LINE, 8"
LA	LANE ARROW
LL	LANE LINE
SL	STOP LINE
TY	TRANSVERSE/DIAGONAL LINE, YELLOW
TW	TRANSVERSE/DIAGONAL LINE, WHITE
CV	CHEVRON MARKING
EW	EDGE LINE, WHITE, 4"
EY	EDGE LINE, YELLOW, 4"

REMOVAL OF PAVEMENT MARKINGS

THE CONTRACTOR SHALL REMOVE THE EXISTING CONFLICTING PAVEMENT MARKINGS PER CONSTRUCTION AND MATERIALS SPECIFICATION (CURRENT VERSION) SECTION 614.11G. THE FOLLOWING LIMITS SHALL BE USED WHEN REMOVING THE EXISTING CONFLICTING PAVEMENT MARKINGS ON ERIE STREET:

CENTER LINE
- STA. 119+45 TO STA. 121+45 (RT) 199 FT
- STA. 120+43 TO STA. 122+80 (RT/LT) 237 FT

LANE LINE
- STA. 119+45 TO STA. 123+28 (RT) 383 FT

TRANSVERSE/DIAGONAL LINE
- STA. 122+16 TO STA. 122+80 (RT/LT) 95 FT

CHANNELIZING LINE
- STA. 119+45 TO STA. 120+43 (LT) 98 FT

LANE ARROW
- STA. 119+75 (CEN) 1 EACH
- STA. 120+13 (CEN) 1 EACH

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 644 - REMOVAL OF PAVEMENT MARKING 1012 FT
ITEM 644 - REMOVAL OF PAVEMENT MARKING 2 EACH

ITEM 630 - SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN

FLAT SHEET SIGNS SHALL BE RIGIDLY ATTACHED TO TRAFFIC SIGNAL MAST ARMS WITH THE SIGN CENTERED VERTICALLY ON THE ARM, USING THE SIGN BRACKET DETAIL ON STANDARD CONSTRUCTION DRAWING TC-16.22, OR ANOTHER METHOD OF RIGID ATTACHMENT AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ENSURE THAT THE SIGN FACE IS MOUNTED PERPENDICULAR (90 DEGREES) TO THE DIRECTION OF TRAFFIC.

PAYMENT FOR ITEM 630, SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND ALL PARTS NECESSARY TO ATTACH ONE SIGN.

MAINTENANCE OF TRAFFIC PAVEMENT MARKING RESTORATION

WHEN IT IS NECESSARY FOR MAINTENANCE OF TRAFFIC LIMITS TO EXCEED THE WORK LIMITS, THE CONTRACTOR SHALL BE RESPONSIBLE TO RESTORE PAVEMENT MARKINGS TO THEIR ORIGINAL STATE.

IN LIEU OF A PAVEMENT MARKING PLAN, THE CONTRACTOR SHALL, PRIOR TO THE START OF CONSTRUCTION, PREPARE AN INVENTORY AND LOG ALL EXISTING PAVEMENT MARKINGS FOR USE IN RESTORING THE MARKINGS AT THE END OF CONSTRUCTION. THE CONTRACTOR SHALL DELIVER TWO (2) COPIES OF THE INVENTORY AND LOG TO THE ENGINEER BEFORE BEGINNING ANY PAVEMENT REMOVALS.

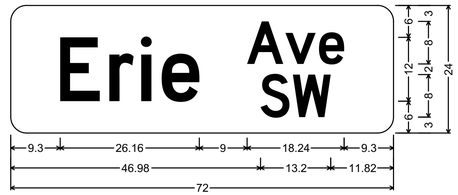
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE VARIOUS FINAL PAVEMENT MARKINGS, INCLUDING LOCATION OF NO PASSING ZONES, CENTER LINES, EDGE LINES AND STOP LINES ON THE FINAL SURFACE COURSE IN ACCORDANCE WITH SECTION 641.06.

UNLESS DIRECTED OTHERWISE BY THE ENGINEER, THE FINAL PAVEMENT MARKINGS SHALL BE RESTORED IN THEIR ORIGINAL PATTERNS AND LOCATION. FINAL LOCATION OF ALL PAVEMENT MARKINGS (PRE-LINE LAYOUT) SHALL BE APPROVED BY THE CITY OF MASSILLON IN THE FIELD.

THE COST OF LOGGING AND PREMARKING SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS PAVEMENT MARKINGS ITEMS. NO SEPARATE PAVEMENT WILL BE MADE.

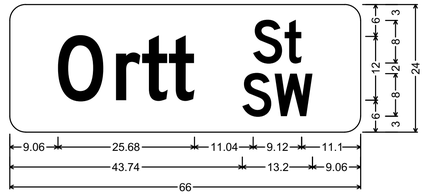
THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 644 - LANE LINE, 4" 0.02 MILE
ITEM 644 - CENTER LINE 0.23 MILE
ITEM 644 - CHANNELIZING LINE, 12" 732 FT



3.00" Radius, No border, White on Blue;
"Erie", D 2K; "Ave", D 2K; "SW", D 2K;
Table of widths and spaces

9.30	E 7.44	1.80	r 4.56	1.44	i 1.92	1.92	e 7.08	
	9.00	A 6.80	0.40	v 5.68	0.64	e 4.72	9.30	
46.98	S 5.44	0.64	W 7.12	11.82				



3.00" Radius, No border, White on Blue;
"Ortt", D 2K; "St", D 2K; "SW", D 2K;
Table of widths and spaces

9.06	O 8.52	2.40	r 4.56	0.36	t 4.80	0.24	t 4.80
	11.04	S 5.44	0.48	t 3.20	11.10		
43.74	S 5.44	0.64	W 7.12	9.06			

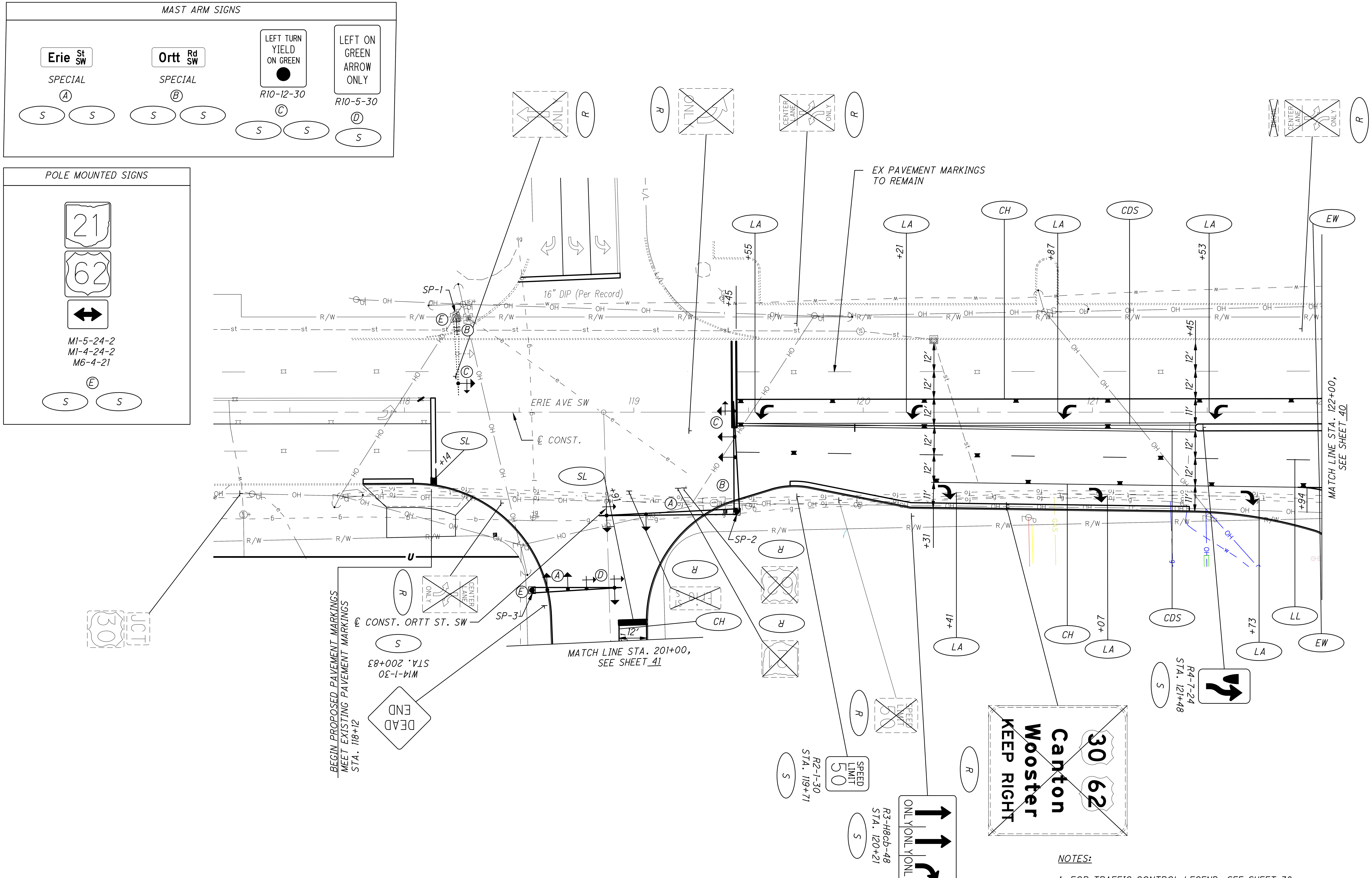
CALCULATED DLS
CHECKED AKF

TRAFFIC CONTROL NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

38
48

O:\2020\2020117\09_Massillon\dwg\Traffic\streets\20201170 9TN001.dwg 31-Jan-23 2:51 PM



MAST ARM SIGNS
Erie St SW
SPECIAL
Ortt Rd SW
SPECIAL
LEFT TURN YIELD ON GREEN
R10-12-30
LEFT ON GREEN ARROW ONLY
R10-5-30
POLE MOUNTED SIGNS
21
62
M1-5-24-2
M1-4-24-2
M6-4-21
EX PAVEMENT MARKINGS TO REMAIN
16" DIP (Per Record)
ERIE AVE SW
℄ CONST.
SP-1
SP-2
SP-3
MATCH LINE STA. 122+00, SEE SHEET 40
MATCH LINE STA. 201+00, SEE SHEET 41
℄ CONST. ORTT ST. SW
BEGIN PROPOSED PAVEMENT MARKINGS
MEET EXISTING PAVEMENT MARKINGS
STA. 118+12
W14-1-30
STA. 200+83
DEAD END
R2-1-30
STA. 119+71
SPEED LIMIT 50
R3-H8cb-48
STA. 120+21
ONLY ONLY ONLY
30 62 Canton Wooster KEEP RIGHT
R4-7-24
STA. 121+48
JCT 30

NOTES:

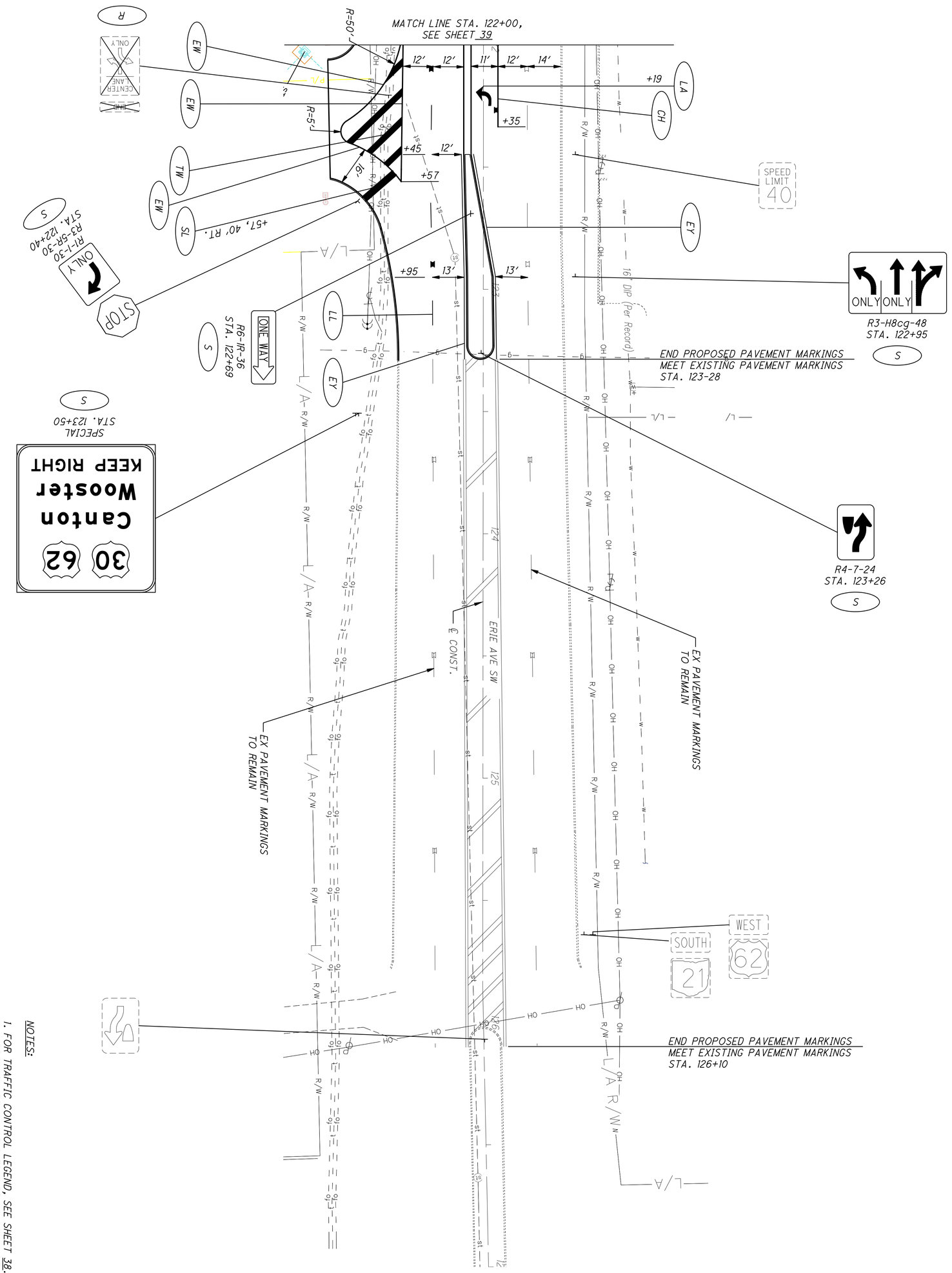
1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 38.
2. APPROXIMATELY 16 EXISTING RPM'S SHALL BE REMOVED. CONTRACTOR SHALL FIELD VERIFY THE EXACT NUMBER.
3. CONTRACTOR SHALL INSTALL PROPOSED RPM'S PER ODOT SCD'S TC-65.10 AND TC-65.11.
4. BEAM ELEVATION WILL BE PROVIDED WITH STAGE 3 SUBMITTAL.

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED DLS
CHECKED AKF

TRAFFIC CONTROL PLAN - ERIE AVE BEGIN TO STA. 122+00

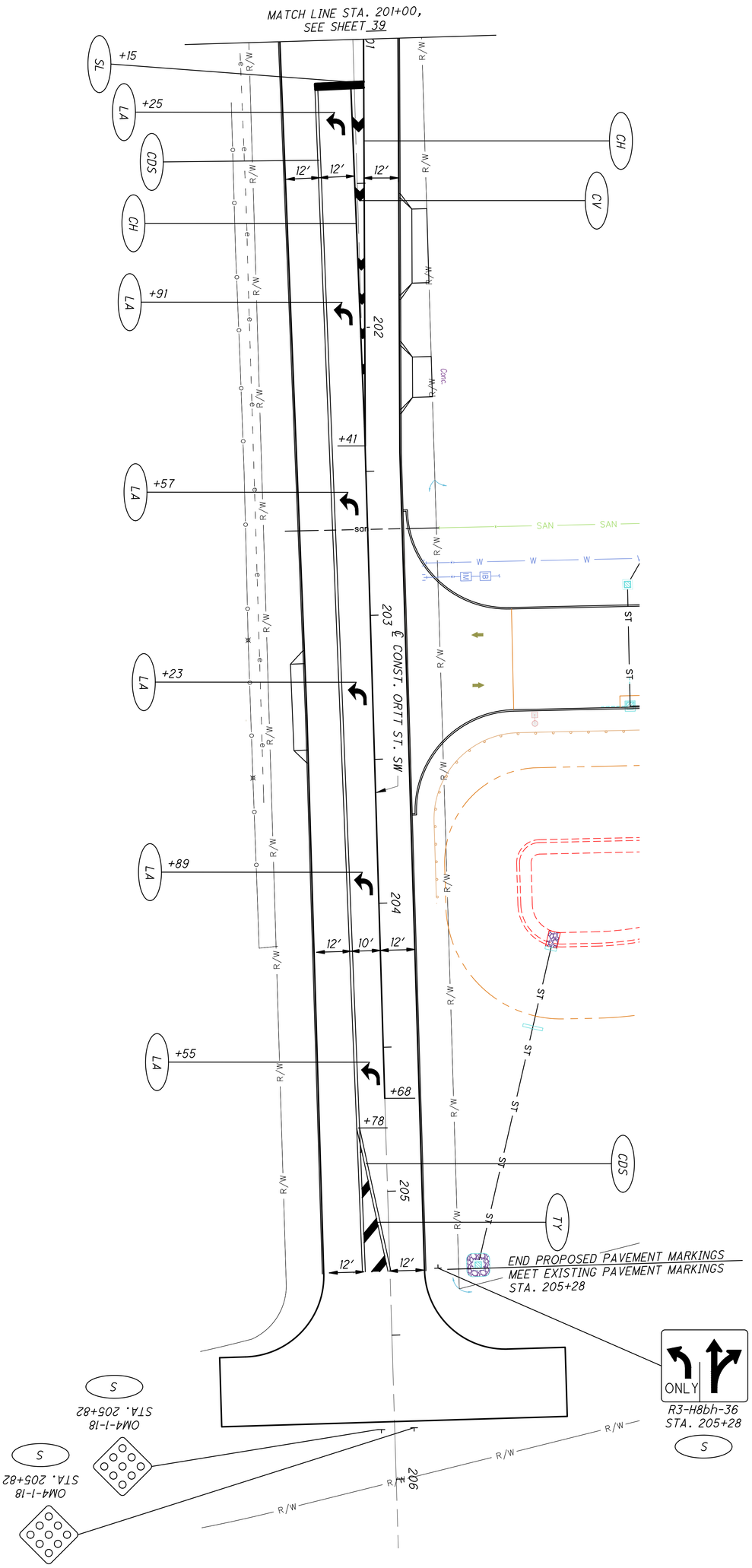
ERIE AVE/ORTT ST IMPROVEMENTS



NOTES:

1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 38.
2. APPROXIMATELY 16 EXISTING RPM'S SHALL BE REMOVED. CONTRACTOR SHALL FIELD VERIFY THE EXACT NUMBER.
3. CONTRACTOR SHALL INSTALL PROPOSED RPM'S PER ODOT SCD'S TC-65.10 AND TC-65.11.

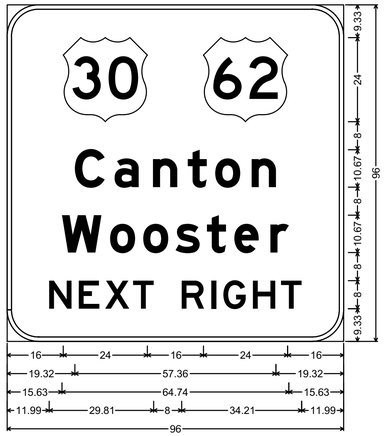
40 / 48	ERIE AVE/ORTT ST IMPROVEMENTS	TRAFFIC CONTROL PLAN - ERIE AVE STA. 122+00 TO END	CALCULATED DLS / CHECKED AKF	0 10 20 40 HORIZONTAL SCALE IN FEET



FOR TRAFFIC CONTROL LEGEND, SEE SHEET 39.

47 / 48	ERIE AVE/ORTT ST IMPROVEMENTS	TRAFFIC CONTROL PLAN - ORTT ST STA. 201+00 TO END	CALCULATED DLS · CHECKED AKF · 0 20 · 10 40 · HORIZONTAL SCALE IN FEET · N

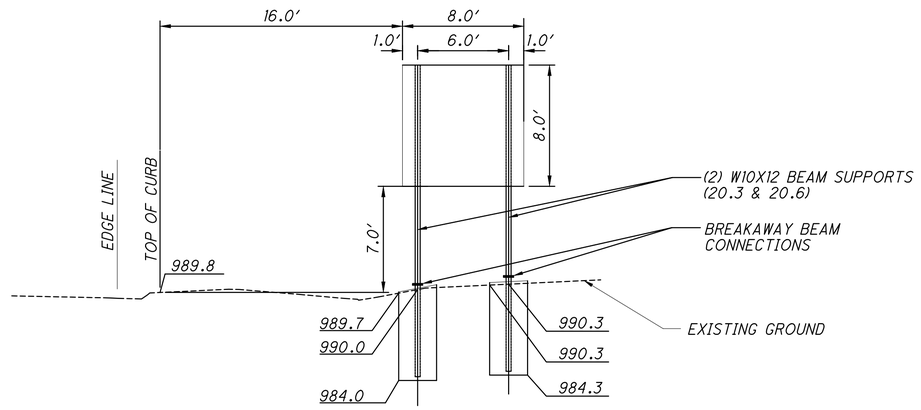
SIGN INFORMATION	
PANEL A	
DESIGN LEVEL:	3
SIGN DESIGNATION:	SPECIAL
TEXT FONT:	E MOD/E
PANEL SIZE:	8′ X 8′
BACKGROUND:	GREEN
FILL COLOR:	WHITE
PROPOSED BEAM INFORMATION	
TOTAL SIGN AREA:	64.0 SQ. FT.
DESIGN TYPE:	W10X12
SIZE:	9-7/8″ X 4″
FOUNDATION INFORMATION	
DIAMETER:	30″
DEPTH:	6.0′



PANEL A
N.T.S.

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS PRIOR TO THE ORDERING OF ANY MATERIALS.
2. ALL SIGNS ARE VIEWED IN THE DIRECTION OF TRAVEL.
3. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN FIELD PRIOR TO ANY EXCAVATION.



S — BEAM SUPPORT TYPE W10X12
STA. 123+50, US 62 NORTHBOUND

SEE SHEET 40 FOR PLAN VIEW.

CALCULATED DLS
CHECKED AKF

BEAM ELEVATION DETAIL

ERIE AVE/ORTT ST IMPROVEMENTS

CALCULATED JAH CHECKED KMG

NOTIFICATION

THE CONTRACTOR SHALL GIVE THE PROJECT ENGINEER AND THE CITY OF MASSILLON, 330-833-5746, 10 WORKING DAYS NOTICE PRIOR TO THE NEW SIGNAL BEING PLACED IN OPERATION.

THE SIGNAL INSTALLATION SHALL BE INSPECTED BY CITY OF MASSILLON PERSONNEL. ALL DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR AND APPROVED BY THE CITY OF MASSILLON.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 180 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 ALL ITEMS ASSOCIATED WITH THE TRAFFIC SIGNAL SYSTEMS.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE CITY OF MASSILLON 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.

WORK INSPECTION

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

SIGNAL ACTIVATION

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

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

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:

A. 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. 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:

GROUNDING AND BONDING (CONT.)

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.

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.

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 THE CITY OF MASSILLON.

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

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

ITEM 632 - 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 - TEST HOLE PERFORMED. A QUANTITY OF 1 HAS BEEN PROVIDED FOR THE PROJECT TO BE USED AS DIRECTED BY THE ENGINEER.

TRAFFIC SIGNAL NOTES

ERIE AVE/ORTT ST IMPROVEMENTS

ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN

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

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

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

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

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

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

ITEM 632 - SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 12, AS PER PLAN
ITEM 632 - SIGNAL SUPPORT, TYPE TC-12.31, DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 12, AS PER PLAN

THIS ITEM SHALL CONFORM TO ITEM 632.15 AND 732.11, EXCEPT THAT POLES SHALL BE TAPERED TUBES OF CONTINUOUS TAPER. POLES CONSISTING OF STRAIGHT SECTIONS WITH A TAPERED EFFECT ACCOMPLISHED BY THE USE OF REDUCERS SHALL NOT BE PERMITTED. POLES SHALL BE ROUND IN SHAPE. OCTAGON SHAPED POLES ARE NOT PERMITTED.

PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SIGNAL SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

ITEM 632 - SIGNALIZATION, MISC.: REMOVAL AND RE-ERECTION OF VIDEO DETECTION CAMERAS

IN ADDITION TO C&MS 632.26, THE CONTRACTOR SHALL REMOVE THE EXISTING SIGNAL EQUIPMENT, INCLUDING THE VIDEO DETECTION CAMERAS, MOUNTING HARDWARE, AND ALL ASSOCIATED CABLES, AND RE-ERECT THE EQUIPMENT AT THE LOCATIONS DETAILS IN THE TRAFFIC SIGNAL PLANS.

THE CONTRACTOR SHALL TAKE GREAT CARE AS TO NOT DAMAGE THE EXISTING SIGNAL EQUIPMENT, AS IT IS THE DESIGNER'S INTENT TO REUSE THE EQUIPMENT. IF IT IS DETERMINED BY THE ENGINEER THAT THE EXISTING EQUIPMENT DESIGNATED FOR REUSE HAS BEEN DAMAGED BY CONTRACTOR NEGLIGENCE, THEN THE EQUIPMENT SHALL BE REPLACED IN LIKE KIND AT THE COST OF THE CONTRACTOR.

NEW WIRING AND MOUNTING HARDWARE SHALL BE PROVIDED AS NECESSARY TO INSTALL THE EQUIPMENT AND CONNECT IT TO THE CONTROLLER CABINET. ANY NEW MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THIS PAY ITEM.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT BID PRICE AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND ANY NECESSARY HARDWARE TO INSTALL THE EQUIPMENT AND RETURN IT TO A FULLY OPERATIONAL STATUS.

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

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, CONTROLLER, PULL BOXES, 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 CITY OF MASSILLON. THE CONTRACTOR SHALL CONTACT THE CITY AT (330) 833-5746 TO ARRANGE A MUTUALLY AGREEABLE TIME TO DELIVER THE SIGNAL MATERIALS.

ITEMS TO BE REUSED:
- VIDEO DETECTION CAMERAS

REMOVED ITEMS SHALL BE DELIVERED OR DISPOSED OF SHALL BE PER THE REMOVAL CHART ON THE SIGNAL PLAN.

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.

ITEMS NOT SPECIFIED FOR STORAGE SHALL BE DISPOSED OF BY THE CONTRACTOR.

ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN

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 YELLOW 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. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE MAST ARM WITH THE YELLOW MODULE LOCATED IN FRONT OF THE MAST ARM.
5. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE THE CITY OF MASSILLON, 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.

PAYMENT FOR ITEM 632 - VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

ITEM 633 - CONTROLLER ITEM, MISC.: CABINET MODIFICATIONS

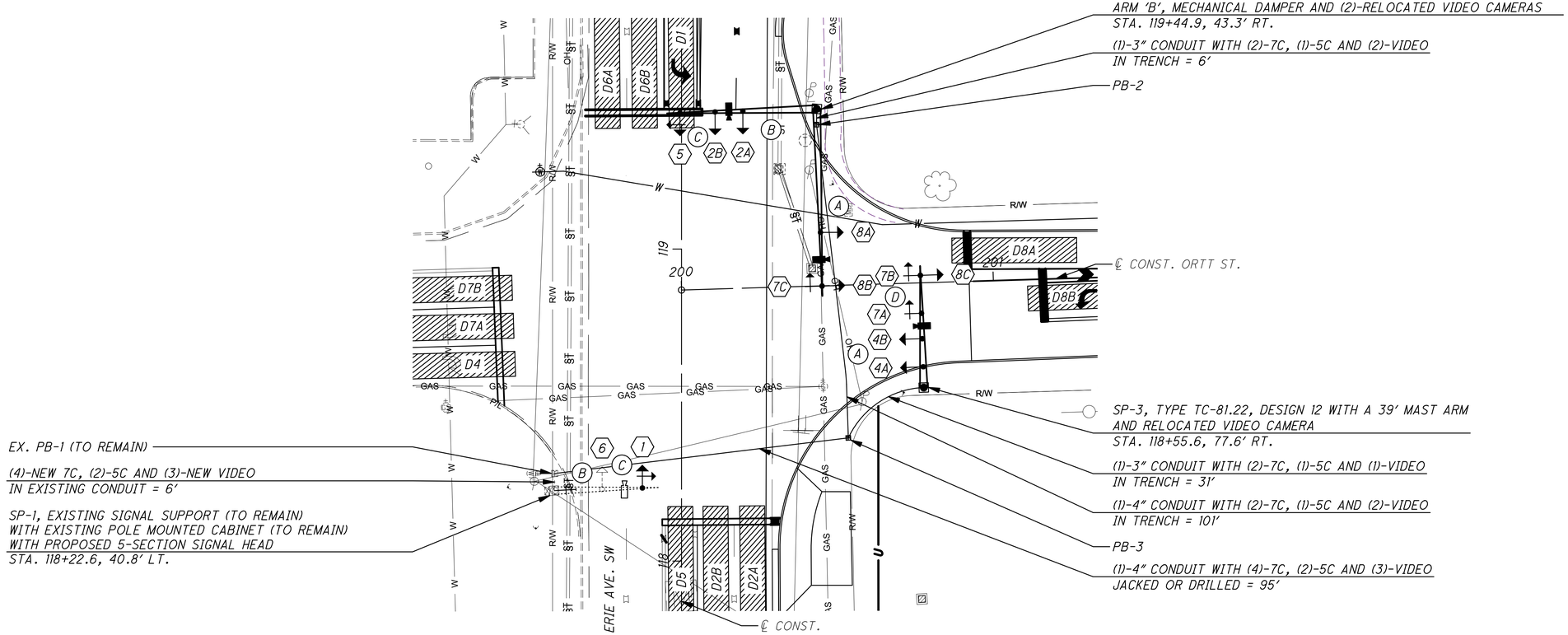
THE CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING THE EXISTING CONTROLLER TO INCORPORATE THE CHANGES IN THE DETAILED TRAFFIC SIGNAL PLANS. THESE CHANGES SHALL INCLUDE, BUT ARE NOT LIMITED TO, INSTALLING NEW LOAD SWITCHES, RECONNECTING THE RELOCATED VIDEO CAMERAS, AND UPDATING THE EXISTING CONTROLLER WITH THE NEW TIMINGS AND PHASING PROVIDED IN THE PLANS. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY LOAD SWITCHES, CABLES NOT INDIVIDUALLY QUANTIFIED, AND CABLE SPLICES TO RESTORE ALL SIGNAL EQUIPMENT TO WORKING ORDER.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO MODIFY THE CONTROLLER AS INDICATED IN THE PLANS AND RETURN THE TRAFFIC SIGNAL TO A FULLY OPERATIONAL STATUS.

CALCULATED JAH CHECKED KMG

TRAFFIC SIGNAL DETAILS

ERIE AVE/ORTT ST IMPROVEMENTS

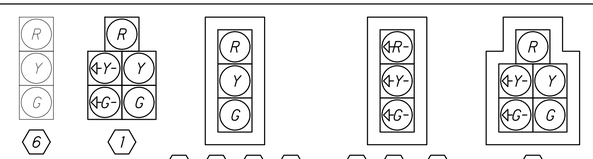


NOTES:
1. THE CONTRACTOR SHALL ENSURE THAT ALL SIGNAL FACES ARE CLEARLY VISIBLE TO ALL ONCOMING VEHICLES; CLEAR OF ANY OBSTRUCTION ONCE MOUNTED TO THE MAST ARMS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL EQUIPMENT PRIOR TO EXCAVATION.
3. FOR REFERENCE TO SIGNS (A), (B), (C) & (D), SEE SHEET 39.

REMOVAL CHART

QUANTITY	REMOVED ITEM DESCRIPTION	DISPOSED	REUSE
7	1-WAY VEHICULAR SIGNAL HEADS	X	
1	POLE MOUNTED CABINET & CONTROLLER		X
1	SIGNAL SUPPORTS	X	
2	MAST ARMS	X	
LUMP	VIDEO DETECTION SYSTEM		X
LUMP	SIGNAL CABLES	X	
LUMP	PULL BOXES	X	

SIGNAL TYPES



1. ALL PROPOSED SIGNAL HEADS SHALL HAVE 12" LED LENSES.
2. ALL PROPOSED SIGNAL HEADS SHALL BE YELLOW IN COLOR.
3. ALL PROPOSED HEADS, EXCEPT SIGNAL HEAD (1), SHALL HAVE BACKPLATES.
4. ALL PROPOSED SIGNAL HEAD VISORS SHALL BE CUTAWAY TYPE.

PULL BOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
EX. PB-1	118+28.1	LT	40.7'	EX
PB-2	119+39.9	RT	43.3'	18 X 18
PB-3	118+39.5	RT	53.5'	18 X 18

LEGEND

	PROP.	EXIST.
SIGNAL SUPPORT POLE	●	○
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"	●→	○→
TRAFFIC SIGNAL, 3 UNIT HEAD, 12" WITH ARROWS	●↓	
TRAFFIC SIGNAL, 5 UNIT HEAD, 12"	●↓→	
CONTROLLER CABINET		⋈
VIDEO DETECTION CAMERA	■	▭
DETECTION ZONE	▨	
TRAFFIC PULL BOX	PB	PB

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JAH
CHECKED KMG

TRAFFIC SIGNAL PLAN
ERIE AVE. / ORTT ST.

ERIE AVE/ORTT ST IMPROVEMENTS

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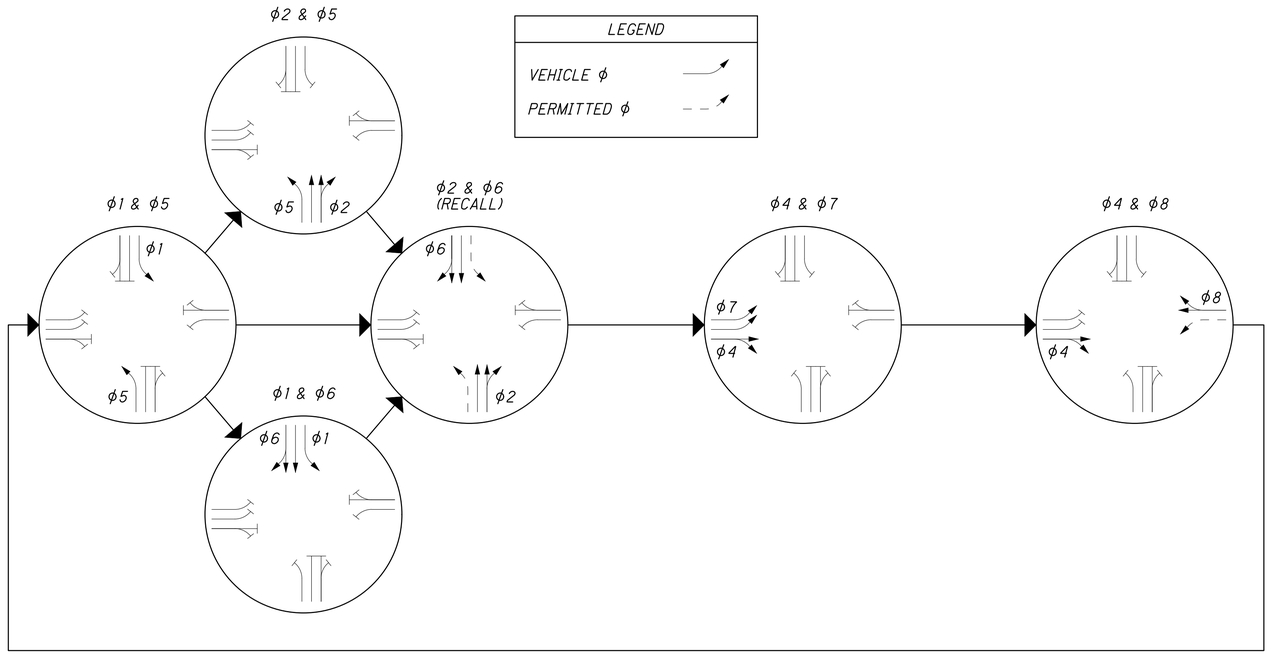
SIGNAL TIMING CHART

INTERSECTION: ERIE AVE. / ORTT ST. MAINTAINING AGENCY: CITY OF MASSILLON									
START UP START IN: ALL-RED FLASH TIME FOR: FLASH , ALL RED (SEC.): 9, 6 FIRST PHASE(S): 2 & 6 COLOR DISPLAYED: GREEN			DUAL ENTRY: YES	PHASES: 2, 4, 6, 8					
			REST IN RED:	RING 1 -			RING 2 -		
			OVERLAP		A	B	C	D	
			PHASES		-	-	-	-	
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.						
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8
DIRECTION			SB LT	NB	WB LT	EB	NB LT	SB	EB LT	WB
MINIMUM GREEN (INITIAL)		(SEC.)	7	20	-	10	7	20	7	10
ADDED INITIAL		*(SEC./ACTUATION)	-	-	-	-	-	-	-	-
MAXIMUM INITIAL		*(SEC.)	-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP)		(SEC.)	3.0	3.0	-	3.0	3.0	3.0	3.0	3.0
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	20	40	-	20	20	40	20	20
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	3.6	4.5	-	4.3	3.6	4.5	3.4	4.3
ALL RED CLEARANCE		(SEC.)	2.3	1.0	-	1.1	2.3	1.0	1.9	1.1
DELAYED GREEN (LPI) #		(SEC.)	-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY^		(SEC.)	-	-	-	-	-	-	-	-
WALK		(SEC.)	-	-	-	-	-	-	-	-
PEDESTRIAN CLEARANCE		(SEC.)	-	-	-	-	-	-	-	-
RECALL	MAXIMUM	(ON/OFF)	-	-	-	-	-	-	-	-
	MINIMUM	(ON/OFF)	-	ON	-	-	-	ON	-	-
	PEDESTRIAN	(ON/OFF)	-	-	-	-	-	-	-	-
MEMORY		(ON/OFF)	-	-	-	-	-	-	-	-

PHASING DIAGRAM



NOTES:

- ALL MOVEMENTS SHALL BE ACTUATED. THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- FOR PROTECTED/PERMISSIVE PHASES, IMPLEMENT CALL OMITS TO AVOID YELLOW BALL TRAP.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.

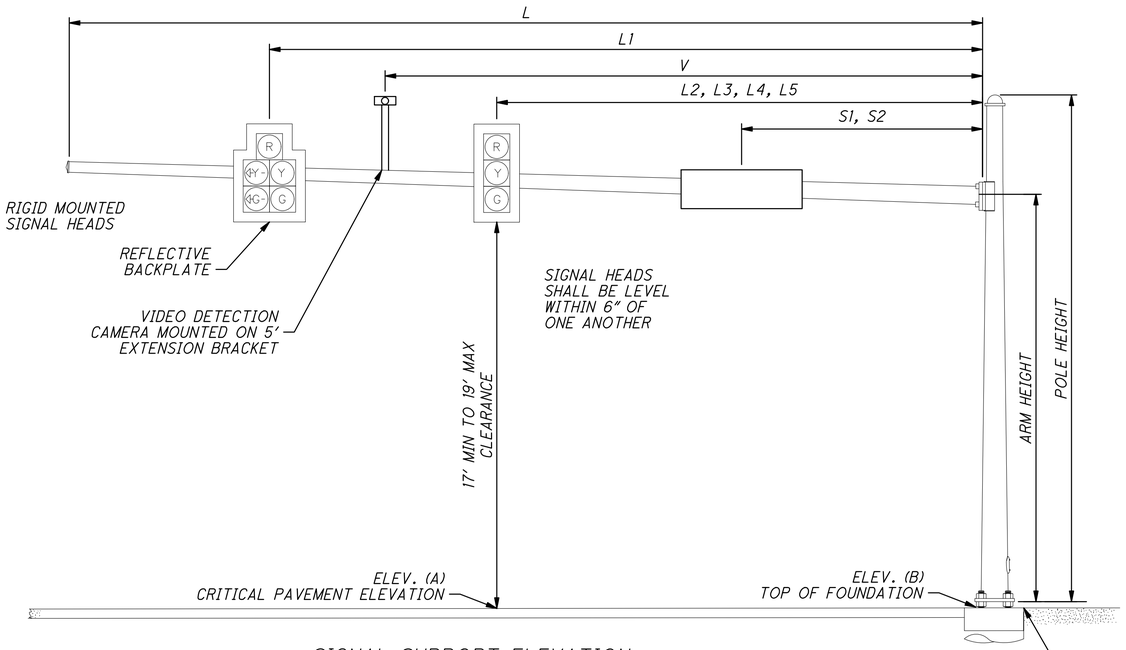
RADAR DETECTION CHART

DETECTION ZONE	SIZE	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY (SEC.)	DESCRIPTION
D1	8 X 40	PRESENCE	ϕ1	5	SB LEFT CALL
D2A	8 X 40	PRESENCE	ϕ2	-	NB CALL
D2B	8 X 40	PRESENCE	ϕ2	-	NB CALL
D4	8 X 40	PRESENCE	ϕ4	10	EB CALL
D5	8 X 40	PRESENCE	ϕ5	5	NB LEFT CALL
D6A	8 X 40	PRESENCE	ϕ6	-	SB CALL
D6B	8 X 40	PRESENCE	ϕ6	-	SB CALL
D7A	8 X 40	PRESENCE	ϕ7	-	EB LEFT CALL
D7B	8 X 40	PRESENCE	ϕ7	-	EB LEFT CALL
D8A	8 X 40	PRESENCE	ϕ8	10	WB CALL
D8B	8 X 40	PRESENCE	ϕ8	-	WB CALL

CALCULATED JAH
CHECKED KMG

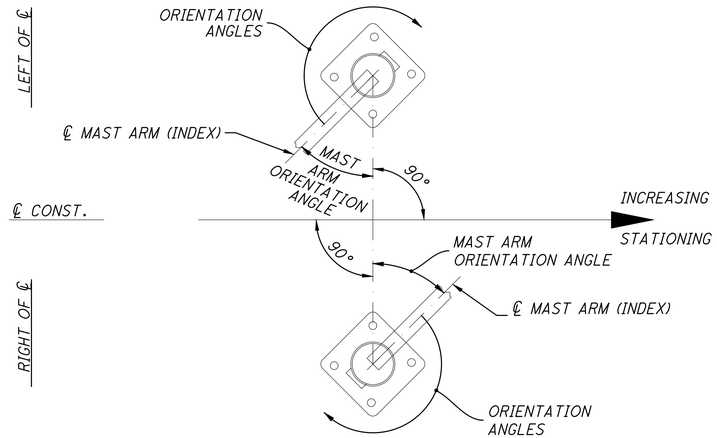
TRAFFIC SIGNAL DETAIL
ERIE AVE. / ORTT ST.

ERIE AVE/ORTT ST
IMPROVEMENTS



SIGNAL SUPPORT ELEVATION

(TYPICAL)



POLE ORIENTATION

MAST ARM TABLE

SUPPORT NO.	ARM	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS													MAST ARM A ANGLE	ORIENTATION ANGLES FROM MAST ARM A	
				A (Pavt. Elev.)	B (Top of Found.)	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	L5	S1	S2	V		MAST ARM B ANGLE	HANDHOLE
								FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG
SP-1	-	EX	EX	EX	EX	EX	EX	EX	EX	EX	28	EX	-	-	-	24	5	EX	EX	EX	EX
SP-2	A	119+44.9	43.3' RT.	987.71	989.18	TC-12.31	10	21	19.5	60	57	57	39.5	-	-	20	-	48.5	270	-	180
-	B	-	-	988.81	-	-	-	21	19.5	48	44	32.5	23.5	-	-	40	12	28	-	90	-
SP-3	-	118+55.6	77.6' RT.	987.94	989.27	TC-81.22	12	21	19.5	39	36	36	24	15.5	6.5	30	11	20	90	-	180

CALCULATED JAH
CHECKED KMG

TRAFFIC SIGNAL DETAIL
ERIE AVE. / ORTT ST.

ERIE AVE/ORTT ST IMPROVEMENTS

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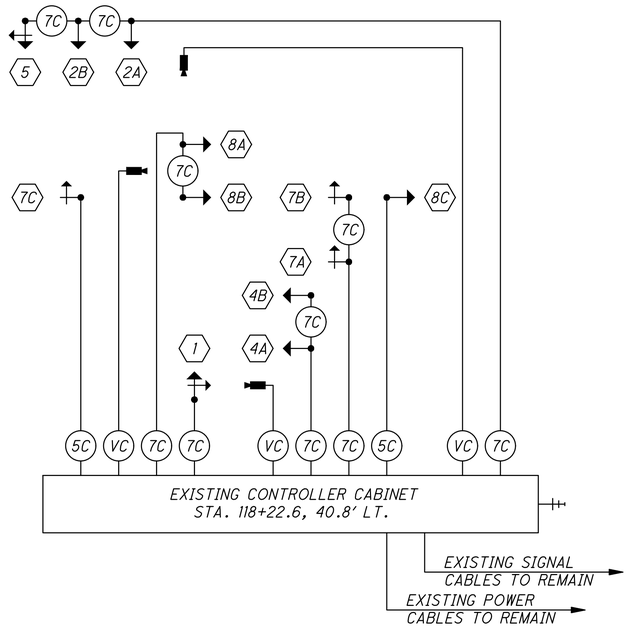
WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1 (SB LT)	R	ϕ6 R	Y
	Y	ϕ6 Y	
	G	ϕ6 G	
	<--Y---	ϕ1 Y	
	<--G---	ϕ1 G	
2A, 2B (NB)	R	ϕ2 R	Y
	Y	ϕ2 Y	
	G	ϕ2 G	
4A, 4B (EB)	R	ϕ4 R	R
	Y	ϕ4 Y	
	G	ϕ4 G	
5 (NB LT)	R	ϕ2 R	Y
	Y	ϕ2 Y	
	G	ϕ2 G	
	<--Y---	ϕ5 Y	
	<--G---	ϕ5 G	
7A, 7B, 7C (EB LT)	<--R---	ϕ7 R	R
	<--Y---	ϕ7 Y	
	<--G---	ϕ7 G	
8A, 8B, 8C (WB)	R	ϕ8 R	R
	Y	ϕ8 Y	
	G	ϕ8 G	
LS = LOAD SWITCH			

LEGEND

- 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- 3 SECTION VEHICULAR SIGNAL HEAD WITH ARROWS, 1-WAY
- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- VIDEO DETECTION CAMERA
- SPREAD SPECTRUM RADIO
- (VC) VIDEO CAMERA CABLE
- (7C) SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG

CALCULATED JAH
CHECKED KMG

TRAFFIC SIGNAL DETAIL
ERIE AVE. / ORTT ST.

ERIE AVE/ORTT ST
IMPROVEMENTS

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