

CITY OF MANSFIELD
WATERLINE REPLACEMENT
RICHLAND COUNTY
STATE OF OHIO
2025

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CITY OFFICIALS

JODIE A. PERRY	MAYOR
ROBERT P. BIANCHI	CITY ENGINEER
LOUIS M. ANDRES	PUBLIC WORKS DIRECTOR
ROELIFF E. HARPER	LAW DIRECTOR
KELLY BLANKENSHIP	FINANCE DIRECTOR

COUNCIL MEMBERS

PHILLIP SCOTT	PRESIDENT OF COUNCIL
LAURA BURNS	1ST WARD
CHERYL MEIER	2ND WARD
ELEAZER AKUCHIE	3RD WARD
ANTOINETTE DALEY	4TH WARD
AURELIO DIAZ	5TH WARD
DEBORAH MOUNT	6TH WARD
DAVID FALQUETTE	AT LARGE
SHARI ROBERTSON	AT LARGE

UNDERGROUND UTILITIES
Contact Two Working Days
Before You Dig


OHIO811.org
Before You Dig

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

52 N. Diamond Street
Mansfield, OH 44902
T: (419) 525-0093

5065 Oberlin Avenue
Lorain, OH 44053
T: (440) 444-1022

526 E. Broad Street
Elyria, OH 44035
T: (440) 323-9608


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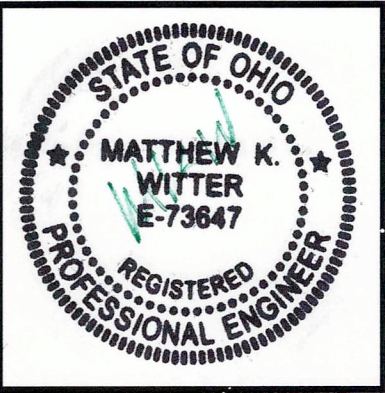
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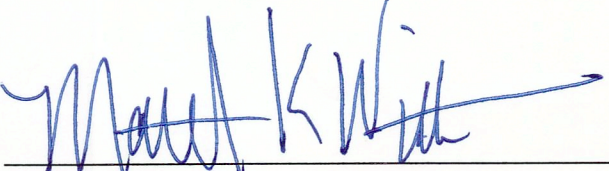

ROBERT P. BIANCHI, P.E.
CITY ENGINEER

2/26/2025
DATE

REVISIONS

REVISION NAME	DATE	BY	SYMBOL
Addendum 1	3/12/2025	BDM	
Addendum 2	3/17/2025	BDM	




MATTHEW K. WITTER, P.E.

2-25-2025
DATE


K.E. McCARTNEY & ASSOCIATES
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DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

TITLE SHEET



DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\V\W\0172 - MAN - 2025 Waterline Replacement\Plan Sheets\W1-172_I.dwg 1 W1-172_I 1 Feb 25, 2025 - 1:03pm

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\W\WTO172 - MAN - 2025 Waterline Replacement\Plan Sheets\WT-172_GN - WATERLINE GENERAL NOTES\ Mar 17, 2025 - 2:07pm

GENERAL:

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DETAILED PLANS AND SHALL MEET THE RULES AND REGULATIONS OF THE CITY OF MANSFIELD, THE OHIO ENVIRONMENTAL PROTECTION AGENCY, THE OHIO DEPARTMENT OF HEALTH, AND ALL OTHER GOVERNING CODES AND AGENCIES UNLESS HERE-IN-AFTER AMENDED. IN CASE OF CONFLICT BETWEEN APPLICABLE RULES, REGULATIONS, STANDARDS OR REQUIREMENTS, THE MOST STRINGENT SHALL APPLY.

ENGINEER:

ENGINEER AS USED IN THESE NOTES IS DEFINED AS THE CITY ENGINEER OR PEOPLE UNDER HIS DIRECT SUPERVISION.

SPECIFICATIONS:

THE CONSTRUCTION SPECIFICATIONS SHALL BE THE JANUARY 1, 2023 EDITION OF THE "STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS", INCLUDING SUPPLEMENTAL SPECIFICATIONS AND STANDARD DRAWINGS, AS MODIFIED HEREIN OR IN THE TECHNICAL SPECIFICATIONS AND BID DOCUMENTS. THE CONTRACTOR SHALL OBTAIN AT HIS EXPENSE, COPIES OF ALL STATE OF OHIO SPECIFICATIONS.

UNDERGROUND UTILITIES:

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT BUT THE ENGINEER AND OWNER DO NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE UTILITY AS TO LINE AND GRADE BEFORE STARTING ANY OPERATION THAT INTERFERES WITH THE UTILITY. AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY SHOWN IN THE PLANS. THE OWNER OF THE UNDERGROUND UTILITY SHALL WITHIN FORTY-EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, AFTER NOTICE IS RECEIVED, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR LOCATION TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION. SEE GENERAL NOTES SHEET OF ROADWAY WORK FOR LIST OF UTILITIES.

SEWER REPAIR OPERATION
CITY OF MANSFIELD
480 PARK AVE. EAST
MANSFIELD, OHIO 44905
419-755-9806

WATER REPAIR OPERATIONS
CITY OF ENGINEER,
480 PARK AVE. EAST
MANSFIELD, OHIO 44905
419-755-9806

COLUMBIA GAS OF OHIO
1021 N. MAIN ST.
MANSFIELD, OHIO 44903
419-528-1137

SIGN AND SIGNAL OPERATIONS
CITY OF MANSFIELD
480 PARK AVE. EAST
MANSFIELD, OHIO 44905
419-755-9806

OHIO EDISON
1717 ASHLAND RD
MANSFIELD, OHIO 44902
419-521-6177

TIME WARNER
1575 LEXINGTON AVE.
MANSFIELD, OHIO 44907
419-756-5319

ROADWAY LIMITS:

THE CONTRACTOR SHALL COMPLY WITH ALL CURRENT STATE OF OHIO LEGAL ROAD LIMITS (AND ALL POSTED REDUCED ROAD LIMITS) FOR ALL VEHICLES USED ON THIS PROJECT.

WORK IN EASEMENTS:

NO WORK SHALL BE PERFORMED ON ANY PORTIONS OF THE PROJECT ON ANY PROPERTY REQUIRING EASEMENT OR WORK AGREEMENT WITHOUT THE WRITTEN AUTHORIZATION OF THE CITY ENGINEER.

PROTECTION AND RESTORATION OF PROPERTY AS PER PLAN:

THE CONTRACTOR SHALL USE CARE TO PROTECT PUBLIC AND PRIVATE PROPERTY AS PER ITEM 107.10 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

OHIO E.P.A. REQUIREMENTS:

IN REFERENCE TO THE 2018 EDITION OF THE RECOMMENDED STANDARDS FOR WATER WORKS (COMMONLY REFERRED TO AS THE "TEN STATE STANDARDS") THE FOLLOWING SHALL APPLY:

- (1) REF. 8.1 - EXCEPT AS OTHERWISE NOTED, ALL MATERIALS UTILIZED ON THIS PROJECT SHALL COMPLY WITH THE LATEST REVISION OF THE APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS.
- (2) REF. 8.2.1 - THE NORMAL WORKING PRESSURE OF ALL WATER MAINS WILL BE NO LESS THAN 35 P.S.I.
- (3) REF. 8.7.3 - ALL WATER MAINS (INCLUDING SERVICE CONNECTIONS) SHALL BE INSTALLED WITH A MINIMUM OF 4.5 FEET OF GROUND COVER, AS MEASURED FROM THE TOP OF THE PIPE TO FINISHED GRADE. THIS ALSO APPLIES TO SERVICE CONNECTION "GOOSENECKS".
- (4) REF. 8.8.2 - A TEN (10) FOOT HORIZONTAL SEPARATION MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE SHALL BE MAINTAINED BETWEEN ANY EXISTING OR PROPOSED WATER MAINS AND SANITARY SEWERS AND STORM SEWERS.
- (5) REF. 8.8.3 - WATER MAINS CROSSING EITHER ABOVE OR BELOW A SEWER SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES (MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE) AT CROSSINGS. ONE FULL LENGTH OF WATER MAIN SHALL BE LOCATED SUCH THAT BOTH JOINTS ARE LOCATED AS FAR FROM THE SEWER AS POSSIBLE. STRUCTURAL SUPPORTS FOR THE WATER MAIN AND/OR SEWER PIPE WILL BE REQUIRED TO MAKE THE COMPLETED INSTALLATION FIRM AND WELL SUPPORTED.
- (6) REF. 8.6.6 - NO WATER MAINS OR APPURTENANCES TO THE POTABLE WATER SYSTEM SHALL BE ALLOWED TO DIRECTLY ENTER OR CONTACT A SANITARY OR STORM SEWER OR MANHOLE. A SUITABLE AIR-GAP SHALL BE PROVIDED WHERE ITEMS SUCH AS TANK DRAINS, ETC. MUST BE INSTALLED.
- (7) REF. 8.11.2 - INDIVIDUAL BOOSTER PUMPS WILL NOT BE ALLOWED FOR ANY INDIVIDUAL RESIDENTIAL SERVICE FROM THE PUBLIC WATER SYSTEM.

ITEM 614—MAINTAINING TRAFFIC, AS PER PLAN:

LOCAL TRAFFIC SHALL HAVE ACCESS TO THEIR RESPECTIVE RESIDENCES AT ALL TIMES EXCEPT DURING RECONSTRUCTION OF DRIVEWAYS, PAVING OPERATION AND OTHER CONSTRUCTION OPERATION WHICH REQUIRES THE CLOSING OF DRIVEWAYS FOR SAFETY REASONS DURING THE ACTUAL HOURS OF CONSTRUCTION. THE CONTRACTOR SHALL GIVE 24 HOUR PRIOR NOTICE TO EACH PROPERTY OWNER BEFORE CLOSING ANY PRIVATE DRIVEWAY. NO PRIVATE DRIVEWAY MAY BE CLOSED FOR MORE THAN SEVEN (7) CONSECUTIVE HOURS AND SHALL BE OPEN TO TRAFFIC AT THE END OF EACH WORKING DAY. WHEN CONSTRUCTION OPERATIONS REQUIRE CLOSING OF ANY STREETS OR ALLEYS FOR TRAFFIC, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THE ENGINEER FORTY-EIGHT (48) HOURS PRIOR TO ANY CHANGE IN TRAFFIC PATTERNS, AND IN ALL CASES SHALL BE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.

TEMPORARY SURFACES WHERE EXCAVATIONS ARE LOCATED IN STREETS, DRIVEWAYS, AND PARKING AREAS SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR AND SHALL BE FULLY MAINTAINED WITH MATERIALS OF COMPARABLE QUALITY (ASPHALT, COLD PATCH, ETC.) TO MINIMIZE INCONVENIENCE TO THE PUBLIC. ALL CONSTRUCTION SIGNS AND TEMPORARY TRAFFIC CONTROL AND PROTECTIVE DEVICES SHALL BE ERECTED AND MAINTAINED IN ACCORDANCE WITH "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS". THE COST FOR ALL THE ABOVE WORK SHALL BE INCLUDED WITH THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN.

ANY PAVEMENT MARKINGS OR STRIPING THAT IS DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED UTILIZING ODOT "ITEM 642—TRAFFIC PAINT" FOLLOWING APPROVAL OF THE ENGINEER. ALL COST ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE LUMP SUM COST FOR ITEM 614—MAINTAINING TRAFFIC. SEPARATE PAYMENT SHALL NOT BE MADE.

MISCELLANEOUS WATERLINE NOTES:

1. EXISTING WATER VALVES SHALL ONLY BE OPERATED BY CITY OF MANSFIELD PERSONNEL.
2. THE CONTRACTOR SHALL INCLUDE IN THE UNIT BID PRICE FOR ITEM W-1, "WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE", THE COST FOR ABANDONING AND/OR REMOVING EXISTING WATER MAINS, VALVES AND HYDRANTS AS SHOWN ON THE PLANS AS WELL AS ANY COSTS ASSOCIATED WITH THRUST BLOCKS, CAPS OR OTHER APPURTENANT FITTINGS NECESSARY FOR THE ABANDONMENT AND/OR REMOVAL.
3. ALL PROPOSED WATER MAINS, VALVES, HYDRANTS, AND SERVICE BRANCHES SHALL BE TESTED AND DISINFECTED PRIOR TO TAKING THE PROPOSED ABANDONED WATER MAINS OUT OF SERVICE.

POWER & TELEPHONE POLES:

THE CONTRACTOR SHALL PROVIDE LINE TRUCKS AND PERSONNEL FOR HOLDING POWER AND TELEPHONE POLES WHEN EXCAVATING WITHIN 10 FEET OF THESE EXISTING UTILITIES. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE VARIOUS BID ITEMS, SEPARATE PAYMENT WILL NOT BE MADE.

FLUSHING & DISINFECTION WATER:

THE CITY OF MANSFIELD WILL FURNISH WATER FOR FLUSHING AND DISINFECTION OF ALL WATERLINE EXTENSIONS AND REPLACEMENTS.

PROTECTION OF MONUMENTS, PROPERTY CORNER MARKERS, ETC.:

MONUMENTS, PROPERTY CORNER MARKERS, UTILITY MARKERS, ETC. SHALL NOT BE DISTURBED BY THE CONTRACTOR. IN THE EVENT IT IS NECESSARY TO REMOVE THESE ITEMS, THE CONTRACTOR SHALL AT HIS EXPENSE, PROPERLY REFERENCE THE POINTS AND SHALL RESET SAME AFTER CONSTRUCTION HAS BEEN COMPLETED IN THE AREA.

DUST CONTROL:

THE CONTRACTOR SHALL PROVIDE CALCIUM CHLORIDE AND WATER TO BE USED, AS DIRECTED BY THE ENGINEER OR HIS AUTHORIZED REPRESENTATIVE, FOR DUST CONTROL. ALL SURFACES SHALL BE WATERED PRIOR TO MECHANICAL SWEEPING IN RESIDENTIAL AREAS. COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE OF WATER MAIN, SEPARATE PAYMENT WILL NOT BE MADE.

DEWATERING:

THE CONTRACTOR SHALL AT ALL TIMES DURING CONSTRUCTION, PROVIDE PROPER AND SATISFACTORY MEANS AND DEVICES FOR THE REMOVAL OF ALL WATER ENTERING THE EXCAVATION AND SHALL REMOVE SUCH WATER AS FAST AS IT MAY COLLECT IN SUCH A MANNER AS NOT TO INTERFERE WITH THE EXECUTION OF THE WORK AT NO COST TO THE OWNER.

ROCK EXCAVATION:

THE CONTRACTOR SHALL PERFORM HIS OWN SUBSURFACE INVESTIGATION TO DETERMINE SOIL PROFILES. ALL ROCK ENCOUNTERED SHALL BE REMOVED TO LINES AND GRADES AS SPECIFIED UNDER THIS CONTRACT. ALL ROCK EXCAVATION SHALL BE BY THE MECHANICAL METHOD ONLY. EXCAVATION BY BLASTING / USING EXPLOSIVES IS NOT ACCEPTABLE. ALL ROCK EXCAVATION IS UNCLASSIFIED, AND THERE WILL BE NO ADDITIONAL PAYMENT FOR ROCK REMOVAL.

ITEM 207 - TEMPORARY SEDIMENT AND EROSION CONTROLS, AS PER PLAN:

INCLUDED UNDER THIS ITEM SHALL BE THE MOST CURRENT "RAINWATER AND DEVELOPMENT MANUAL - OHIO STANDARDS FOR STORM WATER MANAGEMENT, LAND DEVELOPMENT AND URBAN STREAM PROTECTION", TO BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE. STORM DRAIN INLET PROTECTION SHALL CONSIST OF GEOTEXTILE BARRIER SUPPORTED AROUND OR ACROSS THE INLETS AS DETAILED WITHIN THE ABOVE MANUAL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT AND MAINTAIN ALL SEDIMENT BARRIERS AND EROSION CONTROLS AT ALL TIMES. PROPER CONTROL OF SOIL EROSION AND SEDIMENTATION SHALL BE PROVIDED.

ITEM 659 - SEEDING AND MULCHING:

RESTORATION OF SEEDED AREAS SHALL BE DONE IN ACCORDANCE WITH O.D.O.T. ITEM 603.12 LAWN AREAS SHALL BE SEEDED PER ITEM 659 "SEEDING AND MULCHING" URBAN AREAS. A MINIMUM THICKNESS OF 2" OF TOPSOIL, COMPLYING WITH ODOT ITEM 659.05, SHALL BE PLACED IN ALL AREAS TO BE SEEDED. THE COST OF SEEDING, MULCHING, AND RESEEDING SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 659, SEEDING & MULCHING.

CLEARING & GRUBBING:

THIS ITEM (LUMP SUM) SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS TO REMOVE AND DISPOSE OF ALL TREES, STUMPS, SHRUBS, LANDSCAPING, PLANTERS, TIES, ROCKS AND OTHER OBSTRUCTIONS NECESSARY TO COMPLETE THE WORK. PRIOR TO REMOVAL OF ANY MISCELLANEOUS OBSTRUCTIONS, WHICH MAY BE PERSONAL PROPERTY, THE CONTRACTOR SHALL CONTACT THE PROPERTY OWNER FORTY-EIGHT (48) HOURS IN ADVANCE OF THE NEED FOR REMOVAL TO GIVE THE PROPERTY OWNER THE OPPORTUNITY TO REMOVE THE OBSTRUCTION.

REMOVE AND RESET:

MAIL BOXES, PAPER BOXES, RAILROAD TIES, STEPS/STAIRS, FENCE, SMALL SHRUBS, HEDGES, LANDSCAPING, LAWN ORNAMENTS AND SPRINKLER SYSTEMS LOCATED WITHIN THE WORK LIMITS FOR THE CONSTRUCTION SHALL BE CAREFULLY REMOVED, STORED AND RESET OR REPLACED PER THE APPROVAL OF THE ENGINEER. PRIOR TO BEGINNING WORK, THE CONTRACTOR, SUPERINTENDENT OR HIS/HER REPRESENTATIVE, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY SHALL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT-OF-WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE. ANY ITEMS DAMAGED WILL BE REPLACED IN KIND OR AS DIRECTED BY THE PROJECT ENGINEER. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE OF ITEM W-1 WATER MAINS AND FITTINGS. SEPARATE PAYMENT WILL NOT BE MADE.

EXCESS EXCAVATION:

ALL EXCESS EXCAVATION, SURPLUS MATERIAL AND RUBBISH SHALL BE DISPOSED OF BY THE CONTRACTOR PER ITEM 603.01 AND 105.16.

PAVEMENT OPENING:

THE CONTRACTOR SHALL SAW CUT THE ASPHALT, CONCRETE, OR BRICK PAVEMENTS AT A MINIMUM DEPTH OF 12" BEFORE STARTING EXCAVATION.

ESTIMATED QUANTITIES:

THE ESTIMATED PLAN QUANTITIES ARE FOR COMPETITIVE BIDDING AND ARE NOT NECESSARILY THE FINAL PAY QUANTITIES. FINAL FIELD MEASUREMENTS AND CALCULATIONS SHALL DETERMINE FINAL PAY QUANTITY.

ELEVATION DATUM:

ALL ELEVATIONS ARE ORTHOMETRIC HEIGHTS USING THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND THE GEOID12 GEOID. HORIZONTAL POSITIONS ARE BASED ON THE OHIO STATE PLANE NORTH ZONE, A LAMBERT CONFORMAL CONIC MAP PROJECTION, THE NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011)), AND THE GR580 ELLIPSOID.

JOINT RESTRAINT:

ALL OTHER PLUGS, BENDS OR WATER MAIN JOINTS HAVING A DEFLECTION OF 11 1/4 DEGREE OR GREATER SHALL BE CONCRETE THRUST BLOCKED. COST OF ALL JOINT RESTRAINTS AND THRUST BLOCKS SHALL BE INCLUDED IN THE UNIT BID PRICE OF WATER MAIN. SEPARATE PAYMENT WILL NOT BE MADE.

VALVE BOX AND HYDRANT REMOVAL:

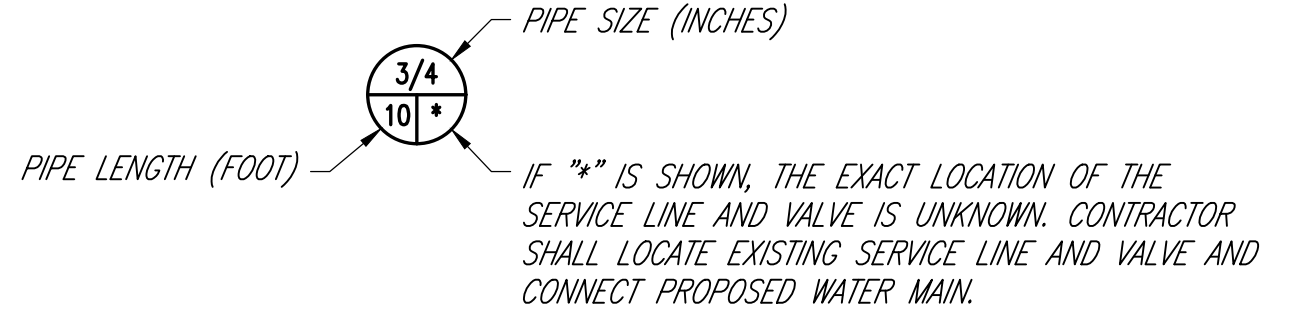
EXCAVATION SHALL BE BACK-FILLED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS. PAYMENT SHALL BE INCLUDED UNDER VARIOUS BID ITEMS OF 638 - WATER MAINS. SEPARATE PAYMENT WILL NOT BE MADE.

STORM SEWERS, DRAINS AND TILES:

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED, AS DIRECTED BY THE ENGINEER, TO REPAIR AND REPLACE MISCELLANEOUS CONDUITS NOT SHOWN ON THE PLANS. REPLACEMENT SHALL BE IN KIND OR BETTER.

611	4" OR 6" CONDUIT REPLACEMENT	500 FT.
611	8" OR 10" CONDUIT REPLACEMENT	500 FT.
611	12" OR 15" CONDUIT REPLACEMENT	250 FT.

SERVICE LINE SYMBOL:



SERVICE LINES FOR UTILITIES SHOWN IN THE PROFILE VIEW OF THESE DRAWINGS ARE FOR ILLUSTRATIVE PURPOSES ONLY AND DO NOT INCLUDE ALL SERVICE LINES. EXACT LOCATIONS AND DEPTHS TO BE DETERMINED BY THE CONTRACTOR PRIOR TO INSTALLATION.

PROPOSED WATER MAIN/SERVICE LOCATIONS:

PROPOSED LOCATIONS FOR WATER MAIN AND SERVICE LINES, INCLUDING VALVE AND FITTING LOCATIONS, ARE SHOWN ON THE PLANS TO MINIMIZE CONFLICTS WITH PROPOSED ROADWAY/LANDSCAPING/SIGNAL/LIGHTING PLANS. CONTRACTOR TO VERIFY THAT THE PROPOSED LOCATION DO NOT INTERFERE WITH PROPOSED WORK AND PLAN ACCORDINGLY FOR ANY CHANGES BEING MADE TO PROPOSED ROADWAY WORK.

EXISTING WATERLINE MATERIALS:

EXISTING WATER MAINS IN THE CITY OF MANSFIELD ARE TYPICALLY CAST IRON/DUCTILE IRON. HOWEVER, CONTRACTOR SHALL EXCAVATE AND VERIFY THE EXISTING WATER MAIN AND SERVICE LINE MATERIALS AND SIZE AT ALL TIE-IN LOCATIONS TO VERIFY THE CORRECT FITTINGS ARE ORDERED AND ON SITE AND TO AVOID ORDERING THE INCORRECT FITTINGS.

PRE-CONSTRUCTION VIDEO:

THE CONTRACTOR SHALL PROVIDE A PRE-CONSTRUCTION VIDEO TAPE SURVEY OF THE PROJECT AREA PRIOR TO COMMENCING ANY WORK. THE COST OF THIS TAPE SHALL BE INCLUDED IN THE BID PRICE OF ITEM 638 WATER MAINS.

MOBILIZATION:

MOBILIZATION SHALL BE PER ODOT ITEM 624.

CONSTRUCTION STAKING:

COORDINATES, BEARINGS, STATIONS AND/OR OFFSETS HAVE BEEN SHOWN ON THESE DRAWINGS FOR HORIZONTAL CONTROL. THE ENGINEER WILL PROVIDE AN ELECTRONIC FILE OF CONTROL POINT COORDINATES AND CONSTRUCTION DRAWINGS TO BE USED BY THE CONTRACTOR FOR CONSTRUCTION LAYOUT AND STAKING. THE COST FOR ALL STAKING SHALL BE INCLUDED WITH THE LUMP SUM PRICE FOR ITEM 623-CONSTRUCTION LAYOUT STAKING.

CONTINGENCY:

CONTINGENCY QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER FOR SERVICES OUTSIDE OF THE SCOPE OF SERVICES INCLUDED AS PART OF THIS PROJECT. CONTRACTOR SHALL SUBMIT IN WRITING FOR APPROVAL BY THE ENGINEER THE COSTS ASSOCIATED WITH THE REQUESTED SERVICES PRIOR TO COMMENCEMENT OF SAID SERVICES.

ADA CURB RAMP:

THE CURB RAMPS HAVE NOT BEEN INDIVIDUALLY DETAILED IN THE PROJECT PLANS. THIS DOES NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO CONSTRUCT ALL CURB RAMP ITEMS TO CURRENT ADA STANDARDS. THE PLAN QUANTITIES FOR CURB RAMPS ARE ESTIMATES AND FIELD ADJUSTMENTS MAY BE WARRANTED PENDING APPROVAL OF THE ENGINEER.

THIS ITEM SHALL INCLUDE ANY CURB INSTALLED WITHIN THE LIMITS OF A NEW CURB RAMP. IN ADDITION, THIS ITEM SHALL INCLUDE THE CURB SECTION BEFORE AND AFTER THE CURB RAMP TO MAINTAIN POSITIVE DRAINAGE. CURB RAMPS SHALL BE 4 INCHES THICK.

A. PAYMENT

PAYMENT SHALL BE MADE AT THE UNIT PRICE FOR EACH "ADA CURB RAMP" AND SHALL INCLUDE THE LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS TO CONSTRUCT AN ADA COMPLIANT CURB RAMP AS DEFINED IN THIS NOTE.

THIS PAY ITEM SHALL COVER ALL THE INDIVIDUAL COMPONENTS TO PROVIDE AN ADA CURB RAMP. THIS SHALL INCLUDE BUT IS NOT LIMITED TO:

1. ITEM 202, CURB REMOVED
2. ITEM 608, CURB RAMP
3. ITEM 608, TRUNCATED DOMES
4. ITEM 609, CURB TYPE 6

THE SCHEDULE BELOW PROVIDES AN APPROXIMATE ESTIMATION OF THE CURB RAMP AREA FOR EACH CURB RAMP BEING REPLACED BUT IS NOT EXACT. CONTRACTOR SHALL EXAMINE EACH ADA CURB RAMP PRIOR TO SUBMITTING A BID TO DETERMINE THE FINAL AREA REQUIRED TO CONSTRUCT THE ADA CURB RAMP PER ADA STANDARDS. ADDITIONAL PAYMENT IF THE FINAL AREA OF THE ADA RAMP DOES NOT MATCH THE ESTIMATED AREA WILL NOT BE MADE.

SHEET NUMBER	STATION	ESTIMATED AREA (SF)
10	103+37.59, 23.23' LT. W. 4TH ST.	98
17	119+47.95, 26.59' LT. W. 3RD ST.	205
17	119+54.86, 25.65' RT. W. 3RD ST.	92
21	100+63.48, 26.07' RT. BUCKINGHAM AVE	69
21	105+86.35, 27.12' RT. BUCKINGHAM AVE	56
26	312+57.57, 26.30' RT. ORCHARD ST.	135
29	200+46.08, 11.46' LT. MARLOW PL.	99
41	211+69.28, 21.27' RT. MENDOTA ST.	50
44	406+20.58, 20.61' RT. W BLANCHE ST.	66
44	409+47.99, 22.60' LT. W BLANCHE ST.	48
46	500+53.32, 17.66' RT. S. FOSTER ST.	144

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

GENERAL NOTES

2

49



DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE: _____

REV NO

DATE

REMARKS

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\M\W\172 - MAN - 2025 Waterline Replacement\Plan Sheets\WT-172-WL_SPEC.dwg,3 WT-172-WL_SPEC - WATERLINE SPECIFICATIONS - 1\, Mar 12,2025 - 8:49am

WATERWORK NOTES

ALL WATERWORK, INCLUDING RECONNECTION OF WATER SERVICES, ADVANCED NOTIFICATION REQUIREMENTS, COORDINATING THE WORKING OF VALVES FOR SHUTOFFS, AND ALL OTHER ITEMS PERTAINING TO THE WATER MAIN, SHALL BE FULLY COORDINATED WITH THE CITY OF MANSFIELD WATER DEPARTMENT AND ENGINEERING DEPARTMENT. ONLY CITY OF MANSFIELD WATER DEPARTMENT PERSONNEL SHALL OPERATE PUBLIC WATER MAIN VALVES.

ALL WATER MAIN MATERIAL SHALL CONFORM TO THE FOLLOWING STANDARDS AND CITY SPECIFICATIONS:

ITEM	CITY SPECIFICATION
WATER MAIN	W-1
JOINTS	W-1
CEMENT MORTAR LINING	W-1
FITTINGS	W-1
TAPPING SLEEVES	W-3
GATE VALVES/BOXES	W-2
COMBINATION AIR VALVES	W-9
HYDRANTS	W-6
DISINFECTION	W-1
HYDROSTATIC TESTING	W-1
SERVICE BRANCHES	W-5
CORPORATION STOPS	W-6
CURB STOPS/BOXES	W-7
INSTALLATION	AS PER ITEM

ALL WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 4.5 FEET OF GROUND COVER, AS MEASURED FROM THE TOP OF THE PIPE TO FINISHED GRADE.

THE NORMAL WORKING PRESSURE OF ALL WATER MAINS SHALL BE NO LESS THAN 35 P.S.I.

A TEN (10) FOOT HORIZONTAL SEPARATION MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE SHALL BE MAINTAINED BETWEEN ANY EXISTING OR PROPOSED WATER MAINS AND SANITARY SEWERS AND STORM SEWERS.

WATER MAINS CROSSING EITHER ABOVE OR BELOW A SEWER SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES (MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE). AT CROSSINGS, ONE FULL LENGTH OF WATER MAIN SHALL BE INSTALLED SUCH THAT BOTH JOINTS ARE LOCATED AS FAR FROM THE SEWER AS POSSIBLE. STRUCTURAL SUPPORTS FOR THE WATER MAIN AND/OR SEWER PIPE WILL BE REQUIRED TO MAKE THE COMPLETE INSTALLATION FIRM AND WELL SUPPORTED.

NO WATER MAINS OR APPURTENANCES TO THE POTABLE WATER SYSTEM SHALL BE ALLOWED TO DIRECTLY ENTER OR CONTACT A SANITARY OR STORM SEWER OR MANHOLE. A SUITABLE AIR-GAP SHALL BE PROVIDED WHERE ITEMS SUCH AS TANK DRAINS, ETC. MUST BE INSTALLED.

THE CONTRACTOR SHALL INCLUDE IN THE UNIT BID PRICE FOR ITEM W-1, "WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE", THE COST FOR ABANDONING AND/OR REMOVING EXISTING WATER MAINS, VALVES AND HYDRANTS AS SHOWN ON THE PLANS AS WELL AS ANY COST ASSOCIATED WITH THRUST BLOCKS, CAPS OR OTHER APPURTENANT FITTINGS NECESSARY FOR THE ABANDONMENT AND/OR REMOVAL.

ITEM W-1: WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE, ALL DUCTILE IRON PIPE INCLUDING EXCAVATION, BEDDING, BACKFILLING (INCLUDING STRUCTURAL BACKFILL), POLYETHYLENE ENCASEMENT, FURNISHING AND INSTALLING ALL PIPE AND FITTINGS CALLED FOR OR ORDERED, INCLUDING GASKETS, MECHANICAL JOINT RESTRAINTS, BOLTS, NUTS, THRUST BLOCKING, TIED JOINTS, TESTING, DISINFECTION, ETC.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

PIPE

PIPE FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.51 (AWWA C151)	AMERICAN NATIONAL STANDARD FOR DUCTILE-IRON PIPE, CENTRIFUGALLY CAST, FOR WATER
ANSI A21.50 (AWWA C150)	AMERICAN NATIONAL STANDARD FOR THICKNESS DESIGN OF DUCTILE-IRON PIPE
PIPE SHALL BE MANUFACTURED FROM THE FOLLOWING COMPANIES: MCWANE DUCTILE, U.S. PIPE AND/OR AMERICAN.	
OUTSIDE COATING SHALL BE AN ASPHALTIC COATING APPROXIMATELY ONE MIL THICK. THE PIPE SHALL BE CEMENT-MORTAR LINED AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATION OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:	
ANSI A21.4 (AWWA C104)	AMERICAN NATIONAL STANDARD FOR CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS FOR WATER.

ITEM W-1: WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE (CONTINUED:)

JOINTS

UNLESS OTHERWISE SPECIFIED, PIPE JOINTS SHALL BE PUSH-ON JOINTS AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATION OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.11 (AWWA C111)	AMERICAN NATIONAL STANDARD FOR RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS.
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THE PUSH-ON JOINTS SHALL BE FASTITE, TYTON, OR AN APPROVED EQUAL.

MECHANICAL JOINTS SHALL CONFORM WITH THE FOLLOWING SPECIFICATION OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.11 (AWWA C111)	AMERICAN NATIONAL STANDARD FOR RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS.
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MECHANICAL JOINTS SHALL BE USED ON ALL FITTINGS, VALVES AND HYDRANTS.

THE MECHANICAL JOINTS SHALL BE MEGALUG®, TR FLEX®, FLEX-RING®, HDSS®, FAST-GRIP®, SURE STOP 350® OR AN APPROVED EQUAL. MEGALUG® SHALL ONLY BE USED AT FITTINGS AND VALVES. TIE RODS ARE NOT A PERMISSIBLE MECHANICAL JOINT.

THE RESTRAINED LENGTH SHALL BE 30 FEET IN ALL DIRECTIONS OF THE FITTING, EXCEPT FOR DEAD ENDS AND VALVES. THE RESTRAINED LENGTH FOR DEAD ENDS AND VALVES SHALL BE 50 FEET. ALL JOINTS WITHIN THE RESTRAINED LENGTH SHALL BE MECHANICALLY RESTRAINED. THE CONTRACTOR SHALL REMOVE ANY SLACK WITHIN THE RESTRAINED JOINT PRIOR TO INSTALLING THE SUCCEEDING PIPE.

THRUST BLOCKING SHALL ONLY BE USED WHERE SPECIFIED IN THE PLAN.

MECHANICAL JOINTS SHALL HAVE THE SAME PRESSURE RATING AS THE PIPE OR FITTINGS OF WHICH THEY ARE A PART.

WHERE FLANGED JOINTS ARE SPECIFIED, THE JOINTS SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

FLANGED JOINT - FITTINGS:

ANSI A21.53 (AWWA C153)	AMERICAN NATIONAL STANDARD FOR DUCTILE-IRON COMPACT FITTINGS FOR WATER SERVICE.
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FLANGED JOINT - PIPE:

ANSI A21.15 (AWWA C115)	AMERICAN NATIONAL STANDARD FOR FLANGED DUCTILE-IRON PIPE WITH THREADED FLANGES
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BOLT CIRCLE AND BOLT HOLES SHALL MATCH THOSE OF ANSI B16.1 CLASS 125.

FITTINGS

FITTINGS SHALL BE DUCTILE IRON AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.53 (AWWA C153)	AMERICAN NATIONAL STANDARD FOR DUCTILE-IRON COMPACT FITTINGS FOR WATER SERVICE.
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OUTSIDE COATING SHALL BE AN ASPHALTIC COATING APPROXIMATELY ONE MIL THICK. THE FITTING SHALL BE CEMENT-MORTAR LINED AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATION OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.4 (AWWA C104)	AMERICAN NATIONAL STANDARD FOR CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS FOR WATER.
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THE JOINT SHALL CONFORM WITH THE FOLLOWING SPECIFICATION OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.11 (AWWA C111)	AMERICAN NATIONAL STANDARD FOR RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS.
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ITEM W-1: WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE (CONTINUED:)

POLYETHYLENE ENCASEMENT

POLYETHYLENE ENCASEMENT SHALL BE WRAPPED AROUND ALL WATER MAIN AND FITTINGS IMMEDIATELY BEFORE INSTALLATION AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.5 (AWWA C105)	POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON PIPE SYSTEMS
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THE POLYETHYLENE ENCASEMENT SHALL BE V-BIO®, OR AN APPROVED EQUAL AND SHALL BE INSTALLED USING MODIFIED METHOD A IN WET TRENCH CONDITIONS, REGARDLESS OF THE PRESENCE OF GROUNDWATER.

TAPE SHALL BE APPLIED AT 2-FOOT INTERVALS ALONG THE BARREL OF THE PIPE. NYLON CABLE "ZIP" TIES ARE PERMISSIBLE IN LIEU OF TAPE EXCEPT FOR THE END OF THE POLYTHENE JUST BEYOND THE HOME LINE. THE CABLE SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50 LBS.

NON-ABRASIVE SLING MATERIAL SHALL BE USED TO LIFT THE PIPE. CHAINS ARE NOT PERMISSIBLE.

SPECIAL CARE SHALL BE TAKEN TO PREVENT DAMAGE TO THE POLYETHYLENE ENCASEMENT WHEN PLACING BACKFILL.

THICKNESS CLASS

PIPE AND FITTINGS FURNISHED UNDER THIS ITEM SHALL BE OF THE THICKNESS CLASS 53.

CHANGES IN GRADE AND ALIGNMENT

WHENEVER CHANGES IN GRADE AND ALIGNMENT SHOWN ON THE DRAWINGS ARE NOT STANDARD FITTING DEFLECTIONS, THE CONTRACTOR WILL BE PERMITTED TO USE A COMBINATION OF STANDARD FITTINGS AND DEFLECTIONS IN THE ADJOINING LENGTHS OF PIPE.

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

INSPECTION

PIPE AND FITTINGS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER AFTER DELIVERY TO THE JOB SITE. NO BROKEN, CRACKED, IMPERFECTLY COATED OR LINED, OR OTHERWISE UNSATISFACTORY PIPE SHALL BE USED IN THE WORK. PIPE AND FITTINGS REJECTED BY THE ENGINEER SHALL BE PROMPTLY REMOVED FROM THE SITE OF THE WORK AND NOT AGAIN OFFERED FOR USE.

TRENCH DEWATERING

WHERE WATER IS ENCOUNTERED IN THE TRENCH, REMOVE IT DURING PIPE-LAYING OPERATIONS AND MAINTAIN THE TRENCH WATER FREE UNTIL THE ENDS OF THE PIPE ARE SEALED AND PROVISIONS ARE MADE TO PREVENT FLOATING OF THE PIPE. DO NOT ALLOW TRENCH WATER OR OTHER DELETERIOUS MATERIALS TO ENTER THE PIPE AT ANY TIME.

EXISTING SYSTEMS

DO NOT OPERATE ANY VALVE OR OTHER CONTROL ON THE EXISTING WATER SYSTEM. THE CITY OF MANSFIELD WATER REPAIR PERSONNEL WILL OPERATE ALL VALVES, HYDRANTS AND SERVICE STOPS.

PIPE HANDLING

HANDLE PIPE IN A MANNER THAT WILL PREVENT DAMAGE TO THE PIPE, PIPE LINING, OR COATING. LOAD, UNLOAD, AND PLACE PIPE AND FITTINGS USING HOISTS AND SLINGS IN A MANNER THAT WILL AVOID SHOCK OR DAMAGE. DO NOT DROP, SKID, OR ROLL PIPE OR FITTINGS AGAINST OTHER PIPE.

PIPE CUTTING

WHENEVER IT BECOMES NECESSARY TO CUT A LENGTH OF PIPE, MAKE THE PIPE ENDS SQUARE WITH THE LONGITUDINAL AXIS OF THE PIPE AND OTHERWISE SMOOTH SO THAT GOOD CONNECTIONS CAN BE MADE. CUT PIPE USING CUTTERS RECOMMENDED BY THE MANUFACTURER. DO NOT CUT DUCTILE IRON PIPE WITH AN OXYACETYLENE TORCH. FILE OR GRIND FIELD-CUT PIPE LENGTHS TO OBTAIN A CHAMFER ON THE OUTSIDE OF THE PIPE, ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. REMOVE ROUGH OR SHARP EDGES FROM THE CUT END.

PIPE LAYING

ENSURE THAT PIPE AND FITTINGS ARE CLEAN WHEN LAID. DIRT AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE INSIDE OF THE ITEM TO BE INSTALLED BEFORE LOWERING INTO THE TRENCH. THE INTERIOR OF SUCH ITEMS SHALL BE KEPT CLEAN DURING THE SUBSEQUENT CONSTRUCTION OPERATIONS.

PLACE THE PIPE ON THE TRENCH BOTTOM OR BEDDING. AFTER THE PIPE HAS BEEN ALIGNED AND JOINTED, SECURE THE PIPE IN PLACE WITH APPROVED BACKFILL MATERIAL. AT TIMES WHEN PIPE LAYING IS NOT IN PROGRESS, CLOSE THE OPEN ENDS OF THE PIPE WITH A WATERTIGHT PLUG.

JOINTS AND JOINTING MATERIALS SHALL BE CAREFULLY CLEANED OF ALL FOREIGN MATTER PRIOR TO THE JOINING OF THE PIPE. PIPE ENDS AND RUBBER GASKET SHALL BE COMPLETELY LUBRICATED WITH AN APPROVED LUBRICANT AS RECOMMENDED BY THE PIPE MANUFACTURER. LUBRICANT FOR RUBBER JOINTS SHOULD BE KEPT IN A SANITARY CONDITION.

ITEM W-1: WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE (CONTINUED:)

PIPE LAYING ON CURVES

IF THE PIPE IS SHOWN CURVED IN THE CONTRACT DOCUMENTS, CONSTRUCT THE CURVES BY SPECIAL FITTINGS OR BY DEFLECTING THE JOINTS ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. DO NOT MAKE JOINT DEFLECTIONS AT VALVES.

WHEN RUBBER-GASKETED PIPE IS LAID ON A CURVE, JOIN THE PIPE IN A STRAIGHT ALIGNMENT AND THEN DEFLECT IT TO THE CURVED ALIGNMENT. MAKE TRENCHES WIDER ON CURVES FOR THIS PURPOSE.

THRUST BLOCKING

WHERE SPECIFIED IN THE PLAN, CONSTRUCT THE THRUST BLOCKING BY PLACING READY-MIXED CLASS "C" CONCRETE BETWEEN FIRM ORIGINAL UNDISTURBED EARTH AND THE FITTING TO BE ANCHORED. PLACE AND SHAPE THE THRUST BLOCKING MEETING THE BEARING AREA IN ACCORDANCE WITH STANDARD DRAWING "TYPICAL THRUST BLOCK DETAILS", WITH THE THRUST FORCE CONTAINED BY THE BLOCKING. USE POLYETHYLENE ENCASEMENT AROUND THE FITTING TO FORM A BOND BREAKER BETWEEN THE CONCRETE AND THE FITTING.

EXCAVATION

EXCAVATE THE TRENCH A SUITABLE DISTANCE IN ADVANCE OF PIPE LAYING TO ENSURE PROPER CLEARANCE BETWEEN THE WATERLINE AND ANY UTILITY CROSSING OR UNDERGROUND STRUCTURE. SUITABLY BRACE AND SUPPORT UTILITIES AND STRUCTURES.

TRENCHES SHALL BE DUG TO THE SIZE, LINE, GRADE AND DEPTH SPECIFIED IN THE CONTRACT DOCUMENTS AND SHALL BE DUG ALONG THE CENTERLINE OF THE PIPE.

ENSURE THAT CLEARANCE ON EITHER SIDE OF THE PIPE IS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

PILE EXCAVATED MATERIAL IN A MANNER THAT WILL NOT ENDANGER THE WORK OR OBSTRUCT SIDEWALKS AND DRIVEWAYS. KEEP GUTTERS CLEAR OR MAKE OTHER SATISFACTORY PROVISIONS FOR DRAINAGE. DO NOT OBSTRUCT NATURAL WATER-COURSES.

FURNISH, PLACE, AND MAINTAIN SUCH SHEETING AND BRACING AS MAY BE REQUIRED. IMMEDIATELY BACKFILL AND COMPACT VOIDS APPEARING OUTSIDE OF SHEETING. DO NOT REMOVE SHEETING AND BRACING UNTIL SUFFICIENT BACKFILL HAS BEEN PLACED TO PROVIDE AMPLE SUPPORT TO THE SIDES OF THE EXCAVATION.

ALL SHEETING AND BRACING SHALL BE REMOVED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WHEN SHEETING IS DIRECTED TO BE LEFT IN PLACE, CUT IT OFF AT LEAST 2 FEET BELOW THE PROPOSED FINISHED SURFACE OR SUBGRADE IN PAVED AREAS.

ANY SHEETING AND BRACING THAT IS DIRECTED BY THE ENGINEER TO BE LEFT IN PLACE, THE CITY WILL PAY FOR SHEETING AND BRACING AS A SEPARATE ITEM OF THE WORK.

REMOVE ANY UNSUITABLE MATERIAL EXPOSED IN THE BED FOR THE WIDTH OF THE TRENCH AND A DEPTH OF AT LEAST 6 INCHES, INCLUDING A SIMILAR CLEARANCE FOR BELLS. REPLACE THE UNSUITABLE MATERIAL WITH APPROVED STRUCTURAL BACKFILL. REMOVE ANY ROCK OR SHALE EXPOSED IN THE BED TO A DEPTH OF AT LEAST 6 INCHES. REPLACE THE ROCK OR SHALE WITH APPROVED STRUCTURAL BACKFILL. NO SEPARATE PAYMENT SHALL BE MADE FOR THE REMOVAL OF THE UNSUITABLE MATERIAL AND SHALL BE PERFORMED AT THE CONTRACTORS EXPENSE. HOWEVER, THE CITY WILL PAY FOR THE ADDITIONAL STRUCTURAL BACKFILL UNDER THE APPROPRIATE CONTRACT ITEM, OR AS MAY OTHERWISE BE PROVIDED IN THE CONTRACT.

PIPE EMBEDMENT

PIPE EMBEDMENT MATERIAL SHALL BE AASHTO M43 STANDARD SIZE NO. #57 OR #67 CRUSHED GRADED GRAVEL OR LIMESTONE AGGREGATE.

IF USING TRENCH BOXES, CONFIGURE THE TRENCH BOX SO THAT THE PIPE EMBEDMENT IS COMPACTED DIRECTLY AGAINST THE UNDISTURBED EARTH.

BEDDING

PROVIDE, PLACE AND COMPACT BEDDING IN ACCORDANCE WITH THE STANDARD DETAIL "TYPICAL TRENCH FOR WATER MAINS". SHAPE THE BEDDING WITH RECESSES TO RECEIVE THE PIPE BELLS AT EACH JOINT, BUT MAKE THEM NO LONGER THAN NECESSARY FOR JOINT ASSEMBLY AND ASSURANCE THAT THE PIPE BARREL WILL BE FLAT ON THE TRENCH BOTTOM. THE MIDDLE OF THE BEDDING SHALL BE LOOSELY PLACED TO ALLOW THE PIPE TO SEAT ITSELF.

HAUNCHING

HAUNCHING MATERIAL SHALL BE SHOVEL SLICED TO FILL VOIDS AND PROPERLY ORIENTATED AND TAMPED IN PLACE. THE ENGINEER MAY REQUIRE THE USE OF MECHANICAL COMPACTING EQUIPMENT IN CONJUNCTION WITH SHOVEL SLICING TO MANIPULATE THE MATERIAL PROPERLY INTO THE HAUNCH OF THE PIPE.

INITIAL BACKFILL

INITIAL BACKFILL MATERIAL SHALL BE PLACED AND PROPERLY ORIENTATED AND COMPACTED WITH VIBRATING PLATE EQUIPMENT OR OTHER APPROVED MECHANICAL COMPACTING DEVICES.

FINAL BACKFILL

PROVIDE, PLACE AND COMPACT FINAL BACKFILL IN ACCORDANCE WITH THE STANDARD DETAIL "TYPICAL TRENCH FOR WATER MAINS".



DESIGNED BY: M. WITTER
DRAWN BY: J.C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE: _____

REV NO

DATE

REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

WATERLINE SPECIFICATIONS - 1

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DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\W\WTO172 - MAN - 2025 Waterline Replacement\Plan Sheets\WT-172-WL_SPEC.dwg 4 WT-172-WL_SPEC - WATERLINE SPECIFICATIONS - 2\ Mor 17:2025 - 12:46pm

ITEM W-1: WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE (CONTINUED:)

STRUCTURAL BACKFILL MATERIAL:

FURNISH STRUCTURAL BACKFILL MATERIAL CONFORMING TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION NO. 703.11, STRUCTURAL BACKFILL TYPE 1, 304 GRADATION. MATERIAL SHALL BE FURNISHED FROM THE TOP OF PIPE EMBEDMENT TO THE PAVEMENT SUBGRADE.

STRUCTURAL BACKFILL COMPACTION:

COMPACT BACKFILL IN LIFTS NOT TO EXCEED 8 INCHES USING MECHANICAL DEVICES, HOE PACKS, JUMPING JACKS, HAND DEVICES, VIBRATING PLATES, OR OTHER EQUIPMENT AS NECESSARY.

THE CITY WILL PERFORM COMPACTION TESTING AS NECESSARY TO ENSURE AT LEAST 96 PERCENT OF THE MAXIMUM DRY DENSITY IS ACHIEVED.

IF USING TRENCH BOXES, CONFIGURE THE TRENCH BOX SO THAT THE STRUCTURAL BACKFILL IS COMPACTED DIRECTLY AGAINST THE UNDISTURBED EARTH.

NON-STRUCTURAL BACKFILL MATERIAL:

FURNISH NON-STRUCTURAL BACKFILL MATERIAL CONFORMING TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION NO. 203.02R. MATERIAL SHALL BE FURNISHED FROM THE TOP OF PIPE EMBEDMENT TO FOUR INCHES BELOW FINISHED GRADE.

NON-STRUCTURAL BACKFILL COMPACTION:

COMPACT BACKFILL IN LIFTS APPROPRIATE FOR ENSURING AT LEAST 96 PERCENT OF AASHTO T 99 IS ACHIEVED THROUGHOUT THE BACKFILL STRATA.

USE MECHANICAL DEVICES SUCH AS HOE PACKS, JUMPING JACKS, HAND DEVICES, VIBRATING PLATES, OR OTHER EQUIPMENT AS NECESSARY.

THE CITY WILL PERFORM COMPACTION TESTING AS NECESSARY.

GENERAL:

THE ENGINEER MAY ADJUST THE LIFT THICKNESS TO OBTAIN THE REQUIRED COMPACTION, FILL ALL THE VOIDS, ACHIEVE THE PROPER SEATING OF THE MATERIAL, AND ACHIEVE THE PROPER STABILITY OF THE MATERIAL AND THE TRENCH.

HYDROSTATIC TESTING

HYDROSTATIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C600 INSTALLATION OF DUCTILE IRON WATER MAINS AND THEIR APPURTENANCES

APPLY A HYDROSTATIC TEST TO THE WHOLE SYSTEM OR TO ALL INDIVIDUAL VALVED-OFF SECTIONS OF THE MAINS WHERE WORK HAS BEEN PERFORMED.

BEFORE THE TEST PRESSURE IS APPLIED, CARE SHALL BE TAKEN TO INSURE THE REMOVAL OF AIR FROM THE PIPE AT HIGH POINTS AND TO SEE THAT CAPS AND PLUGS AND EXPOSED PORTIONS OF THE LINE ARE SECURELY BRACED.

THE HYDROSTATIC PRESSURE SHALL BE AT LEAST 1.5 TIMES THE WORKING PRESSURE OF THE PIPE AT THE POINT OF TESTING, BUT NOT LESS THAN 150 PSI.

AFTER THE PIPE IS BROUGHT UP TO TEST PRESSURE, IT SHALL BE HELD AT THIS PRESSURE FOR A PERIOD OF AT LEAST TWO HOURS.

THE QUANTITY OF MAKE-UP WATER NEEDED TO MAINTAIN THE PIPE AT THE TEST PRESSURE SHALL BE ACCURATELY MEASURED TO DETERMINE THE AMOUNT OF LEAKAGE. ENSURE THAT THE QUANTITY OF WATER LOST FROM THE PIPE DOES NOT EXCEED THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY AWWA C600.

IF THE AMOUNT OF LEAKAGE EXCEEDS THE MAXIMUM ALLOWED, THE CONTRACTOR SHALL LOCATE AND REPAIR THE LEAKS AND AGAIN TEST THE PIPE. THIS PROCEDURE SHALL BE CONTINUED UNTIL THE AMOUNT OF LEAKAGE DOES NOT EXCEED THE ALLOWABLE LIMIT.

NO TAPS SHALL BE ALLOWED ON ANY WATERLINE UNTIL IT IS APPROVED AND ACCEPTED BY THE ENGINEER.

THE CONTRACTOR SHALL FURNISH A SUITABLE PRESSURE GAUGE, APPROVED BY THE ENGINEER. IN ADDITION, THE CONTRACTOR SHALL SUPPLY THE TEST PUMP AND ALL OTHER NECESSARY EQUIPMENT, TOOLS, AND LABOR REQUIRED TO PROPERLY CONDUCT THE TEST. WATER FOR FILLING THE TEST SECTIONS WILL BE SUPPLIED BY THE CITY WITHOUT CHARGE.

NO TESTING SHALL BE DONE EXCEPT IN THE PRESENCE OF THE ENGINEER AND UNDER HIS OR HER DIRECTION.

ITEM W-1: WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE (CONTINUED:)

DISINFECTING PIPE

PRIOR TO PLACING ANY INSTALLED PIPES IN SERVICE, THE CONTRACTOR SHALL DISINFECT THE PIPE WITH CHLORINE OR A CHLORINE COMPOUND IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C651 DISINFECTING WATER MAINS

AFTER HYDROSTATIC TESTING, THE LINES SHALL BE THOROUGHLY FLUSHED AND DRAINED. THE PIPE SHALL THEN BE FILLED WITH WATER AT A SLOW RATE AND CHLORINE INTRODUCED DURING THE FILLING PROCESS. CHLORINE SHALL BE ADDED IN A MANNER TO INSURE UNIFORM DISTRIBUTION AND THOROUGH MIXING. THE RATE OF APPLICATION SHALL BE SUCH AS TO PROVIDE A MINIMUM OF 50 PARTS PER MILLION OF AVAILABLE CHLORINE IN ALL PARTS OF THE PIPES BEING DISINFECTED.

CHLORINE BEING USED AS A DISINFECTING AGENT MAY BE EITHER LIQUID CHLORINE OR BE AN ANHYDROUS CALCIUM HYPOCHLORITE COMPOUND, SUCH AS "HTH" OR AN APPROVED EQUAL. LIQUID CHLORINE SHALL BE APPLIED THROUGH A SUITABLE CHLORINE FEEDING MACHINE AND INJECTION NOZZLE. ANHYDROUS CALCIUM HYPOCHLORITE SHALL BE FED AS A SOLUTION USING A SUITABLE INJECTION PUMP.

ALL PIPES SHALL BE COMPLETELY FILLED WITH THE CHLORINE SOLUTION WHICH SHALL REMAIN IN THE PIPE FOR A 24 HOUR PERIOD.

DURING THE 24 HOUR DISINFECTING PERIOD, ALL VALVES SHALL BE OPERATED FROM THE FULLY OPEN TO THE FULLY CLOSED POSITION A MINIMUM OF FIVE TIMES TO INSURE CONTACT BETWEEN THE CHLORINE AND ALL INTERIOR PARTS OF THE VALVE.

AT THE END OF THE 24 HOUR PERIOD, CHLORINE RESIDUALS TAKEN AT ANY POINT ALONG THE LINE BEING DISINFECTED SHALL BE NOT LESS THAN 25 PARTS PER MILLION.

SHOULD THE CHLORINE RESIDUAL AT THE END OF THE 24 HOUR PERIOD BE LESS THAN 25 PARTS PER MILLION, THE LINE SHALL BE DRAINED AND THE PROCESS OF DISINFECTION BE REPEATED UNTIL A 25 PART PER MILLION RESIDUAL AT THE END OF A 24 HOUR PERIOD IS ATTAINED.

FOLLOWING THE DISINFECTING PERIOD, THE PIPE AND APPURTENANCES SHALL BE FLUSHED CLEAN OF CHLORINE SOLUTION. THE REPLACEMENT OF WATER THROUGHOUT THE ENTIRE LENGTH OF PIPE SHALL, UPON TEST, BE EQUAL IN QUALITY TO THE WATER FROM THE EXISTING SYSTEM.

TWENTY FOUR HOURS LATER, THE CITY WILL COLLECT SAMPLES OF WATER FOR BACTERIOLOGICAL TESTING. TWENTY FOUR HOURS OR MORE AFTER THAT, A SECOND SET OF SAMPLES WILL BE TAKEN. SAMPLES FOR BACTERIA TESTING WILL BE TAKEN MONDAY THROUGH WEDNESDAY MORNINGS ONLY.

IN THE EVENT THE BACTERIOLOGICAL TEST IS UNSATISFACTORY, THE CONTRACTOR SHALL REPEAT THE ENTIRE DISINFECTING AND BACTERIOLOGICAL TESTING PROCESS UNTIL A SATISFACTORY TEST IS ACHIEVED.

THE CONTRACTOR SHALL FURNISH ALL CHLORINE, CHLORINE FEEDING EQUIPMENT, CHLORINE RESIDUAL TESTING EQUIPMENT, TOOLS, LABOR, ETC. FOR DISINFECTING THE PIPE LAID UNDER THIS CONTRACT, IN ACCORDANCE WITH THE PROCEDURES AS OUTLINED ABOVE. WATER FOR DISINFECTION WILL BE SUPPLIED BY THE CITY WITHOUT CHARGE.

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-1, "WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE" BY THE LINEAL FOOTAGE OF PIPE INSTALLED AND SHALL BE MEASURED ALONG THE AXIS OF THE PIPE AND MEASURED THROUGH VALVES AND FITTINGS. ALL FITTINGS SHALL BE INCLUDED IN THE UNIT PRICE BID. NO SEPARATE PAYMENT WILL BE MADE FOR FITTINGS.

BASIS OF PAYMENT

PAYMENT FOR ITEM W-1, "WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE" SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR EXCAVATION, BEDDING, BACKFILLING (INCLUDING STRUCTURAL BACKFILL WHERE SPECIFIED), POLYETHYLENE ENCASEMENT (WHERE SPECIFIED), FURNISHING AND INSTALLING ALL PIPE AND FITTINGS CALLED FOR OR ORDERED, INCLUDING GASKETS, MECHANICAL JOINT RESTRAINTS, BOLTS, NUTS, THRUST BLOCKING, TIED JOINTS, TESTING, DISINFECTION, ETC., AND SHALL INCLUDE ALL LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
W-1	LF	3 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE
W-1	LF	8 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE
W-1	LF	10 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE
W-1	LF	12 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE

ITEM W-2: GATE VALVES AND VALVE BOXES

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE, ALL VALVES AND VALVE BOXES SHOWN ON THE DRAWINGS.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

VALVES

VALVES FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C509 RESILIENT-SEATED GATE VALVES FOR WATER SUPPLY SERVICE

UPON DELIVERY AT THE WORK SITE, OPEN VALVES TO PREVENT THE COLLECTION OF WATER IN THE VALVE. CLEAN THE INTERIORS OF VALVES OF ALL FOREIGN MATTER AND INSPECT THEM IN BOTH THE OPEN AND CLOSED POSITION BEFORE INSTALLATION.

GATE VALVES SHALL BE FURNISHED WITH NON-RISING STEMS (NRS). ALL VALVES SHALL OPEN BY TURNING THE STEM IN A COUNTER-CLOCKWISE DIRECTION. VALVES SHALL HAVE MECHANICAL JOINT ENDS. VALVES SHALL BE FURNISHED WITH A 2 INCH SQUARE OPERATING NUT. THE OPERATING NUT SHALL BE MARKED INDICATING THE DIRECTION TO OPEN WITH THE WORD "OPEN" AND AN ARROW.

WITH THE VALVE OPENED, AN UNOBSTRUCTED WATERWAY SHALL BE AFFORDED, THE DIAMETER OF WHICH IS NOT LESS THAN THE FULL NOMINAL DIAMETER OF THE VALVE. THE SEAT AREA SHALL BE FREE OF ALL POCKETS, CAVITIES AND DEPRESSIONS.

ONLY 316 STAINLESS STEEL NUTS AND BOLTS SHALL BE USED.

VALVES SHALL BE SUPPLIED WITH O-RING SEALS AT ALL PRESSURE RETAINING JOINTS. NO FLAT GASKETS SHALL BE ALLOWED.

THE NON-RISING STEM SHALL BE CAST COPPER ALLOY WITH INTEGRAL COLLARS. ALL STEMS SHALL OPERATE WITH COPPER ALLOY STEM NUTS INDEPENDENT OF THE WEDGE.

THE VALVES SHALL HAVE AN IRON BODY, BONNET, AND O-RING PLATE. THE WEDGE SHALL BE FULLY ENCAPSULATED WITH RUBBER.

THE SEALING RUBBER SHALL BE PERMANENTLY BONDED TO THE WEDGE PER ASTM D429.

ALL NRS SHALL HAVE TWO O-RINGS LOCATED ABOVE THRUST COLLAR AND ONE BELOW. THE UPPER O-RINGS SHALL BE REPLACEABLE WITH VALVE FULLY OPENED AND SUBJECTED TO FULL PRESSURE. THE STEMS ON 2 INCH TO 12 INCH NRS VALVES SHALL HAVE A LOW TORQUE THRUST BEARING LOCATED BOTH ABOVE AND BELOW THE STEM COLLAR TO REDUCE FRICTION DURING OPERATION.

THE BODY, BONNET AND O-RING PLATE SHALL BE COATED BOTH ON THE INTERIOR AND EXTERIOR WITH FUSION BONDED EPOXY. EPOXY SHALL BE CERTIFIED PER NSF 61 AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C550 PROTECTIVE INTERIOR COATINGS FOR VALVES AND HYDRANTS

EACH VALVE SHALL HAVE THE MANUFACTURER'S NAME, THE PRESSURE RATING, AND THE YEAR IN WHICH IT WAS MANUFACTURED CAST ON THE BODY. PRIOR TO SHIPMENT FROM THE FACTORY, EACH VALVE SHALL BE HYDROSTATICALLY PRESSURE TESTED.

VALVE BOXES

SHALL BE CAST IRON, BUFFALO STYLE, TWO-PIECE, FIVE AND ONE QUARTER INCH SLIDING TYPE SHAFT. EACH BOX SHALL BE FURNISHED WITH A LID HAVING THE WORD "WATER" CAST THEREON.

OUTSIDE COATING SHALL BE AN ASPHALTIC COATING APPROXIMATELY ONE MIL THICK.

CENTER THE VALVE BOX AND SET IT IN A VERTICAL POSITION DIRECTLY OVER THE VALVE NUT IN SUCH A MATTER THAT THE BOX DOES NOT TRANSMIT SHOCK OR STRESS TO THE VALVE. SET THE BASE OF THE VALVE BOX FIRST, AND SUPPORT IT WITH MINIMUM BACKFILL AT LEAST TWO INCHES IN THICKNESS. DO NOT ALLOW THE BASE TO REST DIRECTLY ON THE VALVE OR MAIN.

SPECIAL CARE SHALL BE EXERCISED TO PREVENT DISPLACEMENT OF THE BOX. CAREFULLY TAMP BACKFILL AROUND THE VALVE BOX TO A DISTANCE OF THREE FEET ON ALL SIDES OR TO THE UNDISTURBED FACE OF THE TRENCH IF CLOSER. SET THE VALVE BOX COVER FLUSH WITH THE GROUND LINE OR FINISHED PAVED SURFACE.

A TWELVE-INCH (12") WIDE CLASS C CONCRETE COLLAR SHALL BE POURED AROUND ALL VALVE BOXES LOCATED WITHIN ASPHALT PAVEMENT REPAIR AREAS AS OUTLINED IN THE "STREET RESTORATION SCHEDULE" AND AS SHOWN IN THE "VALVE BOX AND COLLAR" DETAIL.

CONCRETE COLLARS ARE NOT REQUIRED IN LOCATIONS WHERE TYPE A2 CONCRETE PAVEMENT RESTORATION IS CALLED FOR IN THE "STREET RESTORATION SCHEDULE".

THE BOX SHALL BE CLEANED OF ALL STONES AND DEBRIS WHICH MAY INTERFERE WITH THE OPERATION OF THE VALVE

ITEM W-2: GATE VALVES AND VALVE BOXES (CONTINUED:)

EXCAVATION, BEDDING AND BACKFILLING

EXCAVATION, BEDDING AND BACKFILLING SHALL BE PERFORMED, MEASURED AND PAID FOR UNDER ITEM W-1, "WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE". NO ADDITIONAL PAYMENT WILL BE MADE FOR EXCAVATION, BEDDING AND BACKFILLING FOR GATE VALVES AND VALVE BOXES.

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-2 "GATE VALVE AND VALVE BOX" SEPARATELY AS A COMPLETE ITEM BY THE NUMBER OF EACH.

BASIS OF PAYMENT

PAYMENT FOR ITEM W-2 "GATE VALVE AND VALVE BOX" SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND INSTALLING THE VALVE AND VALVE BOX CALLED FOR IN THE CONTRACT DOCUMENTS AND SHALL INCLUDE ALL LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
W-2	EA	8 INCH GATE VALVE AND VALVE BOX
W-2	EA	10 INCH GATE VALVE AND VALVE BOX
W-2	EA	12 INCH GATE VALVE AND VALVE BOX

ITEM W-3: TAPPING SLEEVE, VALVE AND VALVE BOX

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE ALL TAPPING SLEEVES INCLUDING THE ASSOCIATED VALVES AND VALVE BOXES AS SHOWN ON THE DRAWINGS.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) AND THE AMERICAN WATER WORKS ASSOCIATION (AWWA) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

TAPPING SLEEVE

TAPPING SLEEVES FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C223 FABRICATED STEEL AND STAINLESS STEEL TAPPING SLEEVES

TAPPING SLEEVE SHALL BE THE FOLLOWING MODEL, OR APPROVED EQUAL:

1) SMITH-BLAIR MODEL #665 TAPPING SLEEVE

TAPPING SLEEVE SHALL BE FURNISHED WITH A MECHANICAL JOINT OUTLET.

INSTALLATION

BOLT THE TAPPING SLEEVE AROUND THE EXISTING MAIN, ASSEMBLE THE TAPPING VALVE, AND DRILL A HOLE THROUGH THE MAIN WALL THROUGH THE VALVE, ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

ITEM W-3: TAPPING SLEEVE, VALVE AND VALVE BOX (CONTINUED:)

TAP

THE TAP SHALL BE MADE BY QUALIFIED PERSONNEL USING AN APPROVED PIPE TAPPING MACHINE.

GATE VALVE AND VALVE BOX

PROVIDE GATE VALVE AND VALVE BOX ACCORDING TO SPECIFICATION: W-2, "GATE VALVES AND VALVE BOXES".

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-3, "TAPPING SLEEVE, VALVE AND VALVE BOX", SEPARATELY AS A COMPLETE ITEM BY THE NUMBER OF EACH.

BASIS OF PAYMENT

PAYMENT FOR ITEM W-3, "TAPPING SLEEVE, VALVE AND VALVE BOX" SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND INSTALLING TAPPING SLEEVES, AND THE ASSOCIATED GATE VALVE AND VALVE BOX AS SHOWN ON THE DRAWINGS AND FOR FURNISHING ALL LABOR, TOOLS, AND EQUIPMENT (INCLUDING TAPPING EQUIPMENT) NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
W-3	EA	4"x4" TAPPING SLEEVE, 4" GATE VALVE AND VALVE BOX
W-3	EA	6"x6" TAPPING SLEEVE, 6" GATE VALVE AND VALVE BOX
W-3	EA	8"x8" TAPPING SLEEVE, 8" GATE VALVE AND VALVE BOX
W-3	EA	12"x8" TAPPING SLEEVE, 8" GATE VALVE AND VALVE BOX
W-3	EA	14"x8" TAPPING SLEEVE, 8" GATE VALVE AND VALVE BOX
W-3	EA	16"x8" TAPPING SLEEVE, 8" GATE VALVE AND VALVE BOX



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE: _____	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

WATERLINE SPECIFICATIONS - 2

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\W\WTD172 - MAN - 2025 Waterline Replacement\Plan Sheets\WT-172-WL_SPEC.dwg, 5 WT-172-WL_SPEC - WATERLINE SPECIFICATIONS - 3\, Mar 12, 2025 - 8:49am

ITEM W-4: CUTTING-IN SLEEVE, VALVE AND VALVE BOX

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE ALL CUTTING-IN SLEEVES INCLUDING THE ASSOCIATED VALVES AND VALVE BOXES AS SHOWN ON THE DRAWINGS.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) AND THE AMERICAN WATER WORKS ASSOCIATION (AWWA) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

CUTTING-IN SLEEVE

CUTTING-IN SLEEVES FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C219 BOLTED, SLEEVE-TYPE COUPLINGS FOR PLAIN-END PIPE

CUTTING-IN SLEEVE SHALL BE THE FOLLOWING MODEL, OR APPROVED EQUAL:

- 1) HYMAX GRIP MJ CUT-IN SLEEVE

CUTTING-IN SLEEVE SHALL BE FURNISHED WITH MECHANICAL JOINT TYPE.

INSTALLATION

INSTALL THE SLEEVE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

GATE VALVE AND VALVE BOX

PROVIDE GATE VALVE AND VALVE BOX ACCORDING TO SPECIFICATION: W-2, "GATE VALVES AND VALVE BOXES".

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-4, "CUTTING-IN SLEEVE, VALVE AND VALVE BOX", SEPARATELY AS A COMPLETE ITEM BY THE NUMBER OF EACH.

BASIS OF PAYMENT

PAYMENT FOR ITEM W-4, "CUTTING-IN SLEEVE, VALVE AND VALVE BOX" SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND INSTALLING CUTTING-IN SLEEVES, AND THE ASSOCIATED GATE VALVE AND VALVE BOX AS SHOWN ON THE DRAWINGS AND FOR FURNISHING ALL LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
W-4	EA	4" CUTTING-IN SLEEVE, 4"x8" REDUCER, 4" VALVE AND VALVE BOX
W-4	EA	6" CUTTING-IN SLEEVE, 6"x8" REDUCER, 6" VALVE AND VALVE BOX
W-4	EA	8" CUTTING-IN SLEEVE, 8" VALVE AND VALVE BOX
W-4	EA	10" CUTTING-IN SLEEVE, 10"x8" REDUCER, 6" VALVE AND VALVE BOX
W-4	EA	12" CUTTING-IN SLEEVE, 12"x8" REDUCER, 12" VALVE AND VALVE BOX

ITEM W-5: COPPER SERVICE BRANCH

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE COPPER SERVICE BRANCHES WITH FITTINGS AND COUPLINGS AS NECESSARY, INCLUDING EXCAVATION AND BACKFILLING AND/OR DIRECTIONAL DRILLING AS SHOWN ON THE DRAWINGS.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

PIPE

COPPER SERVICE BRANCHES FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS:

ASTM B 88 STANDARD SPECIFICATION FOR SEAMLESS COPPER WATER TUBE

COPPER SHALL BE TYPE K TUBE, EITHER COIL TYPE (TEMPER O60 ANNEALED) OR DRAWN TYPE (TEMPER H) MATERIAL AND HAVE A MINIMUM WORKING PRESSURE OF 150 PSI.

FITTINGS

FITTINGS FURNISHED SHALL BE HIGH-QUALITY COPPER BRASS FITTINGS AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C800 UNDERGROUND SERVICE LINES AND FITTINGS

UNION FITTINGS SHALL BE THE FOLLOWING MODEL, OR APPROVED EQUAL:

- 1) THE MULLER CO., #H-15400

POLYETHYLENE ENCASEMENT

POLYETHYLENE ENCASEMENT SHALL BE WRAPPED AROUND THE FIRST THREE FEET OF THE COPPER SERVICE BRANCH AND SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE AMERICAN WATER WORKS ASSOCIATION:

ANSI A21.5 POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON (AWWA C105) PIPE SYSTEMS

THE POLYETHYLENE ENCASEMENT SHALL BE V-BIO[®], OR AN APPROVED EQUAL.

TAPE SHALL BE APPLIED TO ADEQUATELY ATTACH THE ENCASEMENT TO THE SERVICE BRANCH TO ENSURE VOIDS ARE NOT PRESENT. NYLON CABLE "ZIP" TIES ARE PERMISSIBLE IN LIEU OF TAPE. THE CABLE SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50 LBS. SPECIAL CARE SHALL BE TAKEN TO PREVENT DAMAGE TO THE POLYETHYLENE ENCASEMENT WHEN PLACING BACKFILL.

ITEM W-5: COPPER SERVICE BRANCH (CONTINUED:)

INSTALLATION

INSTALL COPPER SERVICE BRANCHES IN ACCORDANCE WITH STANDARD DETAIL "TYPICAL SERVICE LINE INSTALLATION".

ALL SERVICE BRANCHES UNDER PAVED AREAS SHALL BE INSTALLED BY MEANS OF DIRECTIONAL DRILLING OR GROUND PIERCING/PUSHING. TRENCH EXCAVATION UNDER PAVED AREAS IS NOT PERMITTED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

DIRECTIONAL DRILLING AND/OR GROUND PIERCING/PUSHING SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATION.

TRENCH EXCAVATION AND BACKFILL

UNDER THE DIRECTION OF THE ENGINEER, EXCAVATE THE TRENCH AND BACKFILL ACCORDING TO SPECIFICATION: W-1, "WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE".

EXISTING SERVICE BRANCH MATERIAL

IF NOT OTHERWISE PROVIDED FOR REPLACEMENT IN THE PLAN AND AN EXISTING SERVICE BRANCH BETWEEN THE CORPORATION STOP AND CURB BOX IS FOUND TO BE LEAD OR GALVANIZED PIPE, THE CONTRACTOR SHALL REPLACE THE ENTIRE SERVICE BRANCH WITH COPPER BETWEEN THE CORPORATION STOP AND CURB BOX IN ACCORDANCE WITH THESE SPECIFICATIONS.

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-5, "COPPER SERVICE BRANCH", BY THE LINEAL FOOTAGE OF PIPE INSTALLED AND SHALL BE MEASURED ALONG THE AXIS OF THE PIPE AND MEASURED THROUGH VALVES AND FITTINGS. ALL FITTINGS SHALL BE INCLUDED IN THE UNIT PRICE BID. NO SEPARATE PAYMENT WILL BE MADE FOR FITTINGS.

BASIS OF PAYMENT

PAYMENT FOR ITEM W-5, "COPPER SERVICE BRANCH" SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR EXCAVATION, BACKFILLING (INCLUDING STRUCTURAL BACKFILL WHERE SPECIFIED), FURNISHING AND INSTALLING ALL PIPE AND FITTINGS CALLED FOR OR ORDERED, AND SHALL INCLUDE ALL LABOR, TOOLS, AND EQUIPMENT (INCLUDING DIRECTIONAL DRILLING EQUIPMENT) NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
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W-5	LF	¾" INCH COPPER SERVICE BRANCH
W-5	LF	1 ½" INCH COPPER SERVICE BRANCH
W-5	LF	2" INCH COPPER SERVICE BRANCH

ITEM W-6: SERVICE TAP AND CORPORATION STOP

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE ALL CORPORATION STOPS AS SHOWN ON THE DRAWINGS.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

CORPORATION STOPS FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

CORPORATION STOPS

AWWA C800 UNDERGROUND SERVICE LINE VALVES AND FITTINGS

CORPORATION STOPS SHALL BE THE FOLLOWING MODEL, OR APPROVED EQUAL:

- 1) THE FORD METER BOX CO. #F1000-3*-Q-NL
*NUMBER DESIGNATION DEPENDENT ON CORPORATION STOP SIZE (¾" AS SHOWN)

INSTALLATION

INSTALL CORPORATION STOPS IN ACCORDANCE WITH STANDARD DETAIL "TYPICAL SERVICE LINE INSTALLATION".

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-6, "CORPORATION STOP", SEPARATELY AS A COMPLETE ITEM BY THE NUMBER OF EACH.

ITEM W-6: SERVICE TAP AND CORPORATION STOP (CONTINUED:)

BASIS OF PAYMENT

PAYMENT FOR ITEM W-6, "CORPORATION STOP" SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND INSTALLING CORPORATION STOPS AS SHOWN ON THE DRAWINGS, AND FOR FURNISHING ALL LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
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W-6	EA	¾" SERVICE TAP & CORPORATION STOP
W-6	EA	1 ½" SERVICE TAP & CORPORATION STOP
W-6	EA	2" SERVICE TAP & CORPORATION STOP

ITEM W-7: CURB STOP AND CURB BOX

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE ALL CURB STOPS AND CURB BOXES AS SHOWN ON THE DRAWINGS, INCLUDING EXCAVATION AND BACKFILLING.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

CURB STOPS

CURB STOPS FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C800 UNDERGROUND SERVICE LINE VALVES AND FITTINGS

INSTALL CURB STOPS IN ACCORDANCE WITH STANDARD DETAIL "TYPICAL SERVICE LINE INSTALLATION".

CURB STOPS SHALL BE THE FOLLOWING MODEL, OR APPROVED EQUAL:

COPPER TO COPPER:

- 1) THE MUELLER CO., MARK II ORISEAL #H-15209N (CTSXCXTS)

COPPER TO IRON:

- 1) THE FORD METER BOX CO., #B41-333*-Q-NL (CTSXFIP)

*NUMBER DESIGNATION DEPENDENT ON CURB STOP SIZE (¾" AS SHOWN)

CURB BOX

CURB BOXES FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C800 UNDERGROUND SERVICE LINE VALVES AND FITTINGS

CURB BOXES SHALL BE FURNISHED WITH A BRASS PENTAGON PLUG AND CAST IRON LID WITH THE WORD "WATER" CAST THEREON.

CURB BOXES SHALL BE THE FOLLOWING MODEL, OR APPROVED EQUAL:

FOR ¾" CURB STOP:	MUELLER CO. #H-10306
FOR 1 ½" CURB STOP:	MUELLER CO. #H-10310
FOR 2" CURB STOP:	MUELLER CO. #H-10310

INSTALLATION

INSTALL CURB BOXES IN ACCORDANCE WITH STANDARD DETAIL "TYPICAL SERVICE LINE INSTALLATION". ENSURE THE CURB BOX IS CENTERED VERTICALLY OVER THE CURB STOP OPERATING NUT SUCH THAT THE CURB BOX PROVIDES MAXIMUM PROTECTION FOR THE CURB STOP. ENSURE THE BASE OF THE CURB BOX REST FIRMLY ON A SOLID CONCRETE BLOCK AND DOES NOT TRANSMIT LOADS TO THE CURB STOP.

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-7, "CURB STOP AND CURB BOX", AS A COMPLETE ITEM BY THE NUMBER OF EACH.

BASIS OF PAYMENT

PAYMENT FOR ITEM W-7, "CURB STOP AND CURB BOX" SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND INSTALLING CURB STOPS AND CURB BOXES, CONCRETE BLOCK AS SHOWN ON THE DRAWINGS INCLUDING EXCAVATION AND BACKFILLING, AND FOR FURNISHING ALL LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
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W-7	EA	¾" CURB STOP AND CURB BOX
W-7	EA	1 ½" CURB STOP AND CURB BOX
W-7	EA	2" CURB STOP AND CURB BOX

ITEM W-8: HYDRANT ASSEMBLY, C-31, TYPE A OR B

ITEM W-8: HYDRANT ASSEMBLY AIR RELEASE, C-31A, TYPE A OR B

ITEM W-8: HYDRANT ASSEMBLY BLOW-OFF, C-31B, TYPE A OR B

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE IN PLACE ALL FIRE HYDRANT COMPONENTS, INCLUDING ANCHORING TEE OR ANCHORING ELBOW, ANCHORING COUPLING, ANCHORING PIPE ADAPTER, HARDWOOD AND/OR CONCRETE BACKING, GATE VALVE AND VALVE BOX AS SHOWN ON THE DRAWINGS, INCLUDING EXCAVATION, BEDDING, AND BACKFILLING.

THE CURRENT AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATIONS AS AMENDED TO DATE SHALL GOVERN AND ARE HEREBY MADE A PART OF THIS CONTRACT FOR THE APPROPRIATE ITEMS.

MATERIALS

HYDRANTS FURNISHED SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION:

AWWA C502 STANDARD FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE

HYDRANTS SHALL BE THE FOLLOWING MODEL OR APPROVED EQUAL AND SHALL BE RATED FOR 250PSI WORKING PRESSURE:

- 1) MUELLER SUPER CENTURION: #A423, 5-1/4" MAIN VALVE OPENING 3-WAY

THE FOLLOWING FEATURES SHALL BE INCLUDED:

- 2 x 2-1/2" HOSE NOZZLE WITH NATIONAL STANDARD THREAD
- 1 x 4-1/2" PUMPER NOZZLE WITH NATIONAL STANDARD THREAD
- 7/8" SQUARE OPERATING NUT, OPEN RIGHT (CLOCKWISE)
- THE WORD "OPEN" WITH ARROW SHOWING DIRECTION TO TURN OPERATING NUT
- 6" MECHANICAL JOINT SHOE
- BODY PAINTED YELLOW WITH WHITE BONNET AND CAPS
- GROUNDLINE BREAKABLE SAFETY FLANGE
- GROUNDLINE BREAKABLE SAFETY VALVE STEM COUPLING
- DESIGNED TO ENSURE NOZZLES ABILITY TO POINT IN ANY EIGHT DIRECTIONS (45 DEGREE INTERVALS)

NOTE: NOZZLE CAP CHAINS ARE NOT TO BE FURNISHED.

EXCAVATION AND DRAINAGE PIT

EXCAVATE ACCORDING TO SPECIFICATION: W-1, "WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE". EXCAVATE A DRAINAGE PIT A MINIMUM OF 2 FEET IN DIAMETER AND A MINIMUM OF 1 FOOT DEEP BELOW THE HYDRANT AND FILL IT WITH GRANULAR MATERIAL IN ACCORDANCE WITH STANDARD DETAIL "HYDRANT ASSEMBLY".

SETTING FIRE HYDRANT

PROVIDE AN UNOBSTRUCTED AREA AROUND THE HYDRANT AS PER THE DIMENSIONS SHOWN IN STANDARD DETAIL "HYDRANT ASSEMBLY". SET THE SAFETY BREAK-AWAY FLANGE 2 INCHES ABOVE FINISHED GRADE. USE HARDWOOD AND/OR CONCRETE BACKING IN ACCORDANCE WITH STANDARD DETAIL "HYDRANT ASSEMBLY".

BACKFILL EXCAVATED AREA IN ACCORDANCE WITH STANDARD DETAIL "HYDRANT ASSEMBLY".

COVER ANY HYDRANT NOT IN SERVICE WITH A BURLAP OR STURDY OPAQUE PLASTIC BAG.

DEPTH OF BURY

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING FIRE HYDRANTS HAVING THE PROPER BURY DEPTH.

FIRE HYDRANT CONNECTIONS

CONSTRUCT HYDRANT CONNECTIONS IN ACCORDANCE WITH STANDARD DETAIL "HYDRANT ASSEMBLY".

GATE VALVE AND VALVE BOX

PROVIDE GATE VALVE AND VALVE BOX ACCORDING TO SPECIFICATION: W-2, "GATE VALVE AND VALVE BOX".

MATERIALS APPROVED FOR USE

ALL MATERIALS SHALL BE FURNISHED ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (QPL).

METHOD OF MEASUREMENT

THE CITY WILL MEASURE ITEM W-8, "HYDRANT ASSEMBLY", VARIOUS SETTINGS AND TYPES, SEPARATELY AS A COMPLETE ITEM BY THE NUMBER OF EACH.

BASIS OF PAYMENT

PAYMENT FOR ITEM W-8 "HYDRANT ASSEMBLY", VARIOUS SETTINGS AND TYPES, SHALL BE AT THE CONTRACT UNIT PRICE BID, WHICH PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING AND INSTALLING ALL FIRE HYDRANT COMPONENTS, INCLUDING ANCHORING TEE OR ANCHORING ELBOW, ANCHORING COUPLING, ANCHORING PIPE ADAPTER, HARDWOOD AND/OR CONCRETE BACKING, GATE VALVE AND VALVE BOX AS SHOWN ON THE DRAWINGS, INCLUDING EXCAVATION, BEDDING, AND BACKFILLING AND FOR FURNISHING ALL LABOR, TOOLS, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM.

ITEM	UNIT	DESCRIPTION
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W-8	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B
W-8	EA	HYDRANT ASSEMBLY, AIR RELEASE, C-31A, TYPE A OR B
W-8	EA	HYDRANT ASSEMBLY, BLOW-OFF, C-31B, TYPE A OR B



DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE: _____

REV NO

DATE

REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

WATERLINE SPECIFICATIONS - 3

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\WT-172_GENSUM.dwg 6 WT-172_GENSUM - WATERLINE GENERAL SUMMARY_ Mar 17,2025 - 2:07pm

- 

SURVEY SPIKE SET
3" LONG STAMPED "SURVEY MARKER"



IRON PIN SET-5/8" REBAR
W/CAP STAMPED "McCARTNEY S-7921"



M.N.S. MAGNAIL SPIKE SET-2" LONG



MONUMENT BOX FOUND



I.P.F. IRON PIN FOUND-UNLESS NOTED



RAILROAD SPIKE FOUND



BENCHMARK



EX. STORM SEWER MANHOLE



EX. UNKNOWN UTILITY BOX



EX. TELEPHONE BOX/PED.



EX. TELEPHONE MANHOLE



EX. TELEPHONE/POWER POLE



EX. TELEPHONE/POWER/LIGHT POLE



EX. TELEPHONE POLE



EX. LIGHT POLE



EX. POWER POLE



GUY ANCHOR (DEAD MAN)



EX. WATER VALVE



EX. WATER VALVE (REMOVE)



EX. FIRE HYDRANT



EX. FIRE HYDRANT (REMOVE)



EX. SERVICE STOP



EX. SERVICE STOP (REMOVE)



EX. ELECTRIC METER



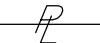
EX. UNKNOWN VALVE



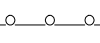
PROPOSED SANITARY MANHOLE



PROPOSED WATER VALVE



PROPOSED PROPERTY LINE



EX. GUARDRAIL



CUT & PLUG EX. WATER MAIN
WITH THRUST BLOCK



CUT & PLUG EX. WATER MAIN
- ABBREVIATIONS
- AC - ACRES

CB - CATCH BASIN

CL - CENTERLINE

CY - CUBIC YARD

DIA. - DIAMETER

EA - EACH

EL - ELEVATION

EOP - EDGE OF PAVEMENT

EX - EXISTING

FL - FLOW LINE

FT - FEET

HWL - HIGH WATER LEVEL

INV - INVERT

LF - LINEAR FEET

LS - LUMP SUM

LWL - LOW WATER LEVEL

MEX - MATCH EXISTING

MIN. - MINIMUM

NO. - NUMBER

PR - PROPOSED

PS - PUMP STATION

R - RADIUS

SAN - SANITARY

SPEC - SPECIFICATIONS

STD. - STANDARD

T/C - TOP OF CASTING

TG - TOP OF GRATE

TOC - TOP OF CONCRETE

TYP. - TYPICAL

WWTP - WASTEWATER TREATMENT PLANT
- CIVIL DRAWING SYMBOLS
- 

FO

EX. FIBER OPTIC CABLE



Ex. R/W

EX. RIGHT OF WAY



UT ESMT

PROPOSED UTILITY EASEMENT



EX. STORM SEWER



EX. SANITARY SEWER



EX. WATER LINE



EX. GAS LINE



EX. ELECTRIC LINE



EX. TELEPHONE LINE



EX. FENCE



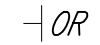
EX. SANITARY MANHOLE



EX. CATCH BASIN



EX. CLEAN-OUT



EX. PUBLIC SIGN



EX. SHRUB



EX. STUMP



EX. TREE



EX. POST



EX. MAILBOX



EX. LANDSCAPING STONE



EX. AIR CONDITIONING UNIT



EX. GAS VALVE



EX. GAS METER



EX. GAS LINE MARKER



PROPOSED WATER LINE



PROPOSED FORCE MAIN



PROPOSED ELECTRIC LINE



PROPOSED SANITARY SEWER

DRAWING SHEET SYMBOLOGY

SHEET KEYNOTE



SHEET KEYNOTES DETAIL SPECIFIC NOTES OR INSTRUCTIONS FOR A PARTICULAR PART OF A DRAWING. KEYNOTES APPLY TO THE DRAWING SHEET ON WHICH IT IS SHOWN ONLY.

PIPING CALLOUTS



PIPE INSIDE DIAMETER, UNLESS OTHERWISE NOTED.



2" UV (24)

MATERIAL GROUP NUMBER, SPECIFIES SPECIFIC MATERIAL TYPE. IF OMITTED, SEE PIPING SCHEDULE FOR APPLICABLE MATERIALS PER FLUID TYPE.



FLUID ABBREVIATION, SEE PIPING SCHEDULE

SECTION IDENTIFICATION



SECTION LETTER; SEQUENTIAL PER AREA DESIGNATION AND DISCIPLINE



SHEET ON WHICH SECTION IS DRAWN



SHEET ON WHICH SECTION IS CUT

GENERAL SUMMARY

REF	AREA							ITEM	TOTAL	UNITS	DESCRIPTION	REF
	GN	1	2	3	4	5	6					
1	1							624	1	LS	MOBILIZATION	1
2	1							201	1	LS	CLEARING AND GRUBBING	2
3	1							207	1	LS	TEMPORARY SOIL EROSION AND SEDIMENT CONTROL	3
4	1							659	1	LS	SEEDING AND MULCHING	4
5	1							623	1	LS	CONSTRUCTION LAYOUT STAKING	5
6	1							614	1	LS	MAINTAINING TRAFFIC, AS PER PLAN	6
7	500							611	500	LF	4"-6" CONDUIT REPLACEMENT	7
8	500		15	10	75			611	600	LF	8"-10" CONDUIT REPLACEMENT	8
9	250	5	20		35	5	5	611	320	LF	12"-18" CONDUIT REPLACEMENT	9
10					2		1	604	3	EA	2-2B CATCH BASIN	10
11		944	2976	2761	3632	2756	1169	W-1	14238	LF	8" WATER MAIN & FITTINGS - CLASS 53 DIP	11
12			4	1	6	2	1	W-2	14	EA	8" GATE VALVE & VALVE BOXES	12
13			1				1	W-3	2	EA	4" X 4" TAPPING SLEEVE, 4" GATE VALVE & VALVE BOX	13
14		1					1	W-3	2	EA	6" X 6" TAPPING SLEEVE, 6" GATE VALVE & VALVE BOX	14
15		1					1	W-3	2	EA	8" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	15
16		1						W-3	1	EA	12" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	16
17				1			1	W-3	2	EA	14" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	17
18			1			2		W-3	3	EA	16" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	18
19			2	3	6	4		W-4	15	EA	4" CUT-IN SLEEVE, 4" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	19
20			1	1	2			W-4	4	EA	6" CUT-IN SLEEVE, 6" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	20
21				2	3			W-4	5	EA	8" CUT-IN SLEEVE, 8" GATE VALVE & VALVE BOX	21
22				1				W-4	1	EA	10" CUT-IN SLEEVE, 10" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	22
23			2					W-4	2	EA	12" CUT-IN SLEEVE, 12" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	23
24		490	1052	831	1763	1716	424	W-5	6276	LF	3/4" SERVICE BRANCH PIPE-TYPE K COPPER	24
25		22	38	29	72	66	23	W-6	250	EA	3/4" SERVICE TAP AND CORP STOP	25
26		22	38	29	72	66	23	W-7	250	EA	3/4" CURB STOP AND CURB BOX	26
27			16		17	45		W-5	78	LF	1 1/2" SERVICE BRANCH PIPE-TYPE K COPPER	27
28			1		1	1		W-6	3	EA	1 1/2" SERVICE TAP AND CORP STOP	28
29			1		1	1		W-7	3	EA	1 1/2" CURB STOP AND CURB BOX	29
30			33		37			W-5	70	LF	2" SERVICE BRANCH PIPE-TYPE K COPPER	30
31			1		1			W-6	2	EA	2" SERVICE TAP AND CORP STOP	31
32			1		1			W-7	2	EA	2" CURB STOP AND CURB BOX	32
33		2	4	4	7	4	2	W-8	23	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B	33
34			2	2	1	2		W-8	7	EA	AIR RELEASE HYDRANT ASSEMBLY, C-31A, TYPE A OR B	34
35		1	1	1	3	2	2	W-8	10	EA	BLOW-OFF HYDRANT ASSEMBLY, C-31B, TYPE A OR B	35
36		20	393	79	1127	2219	650	609	4488	LF	TYPE 6 CURB	36
37		469	15	600	192	1156	529	SPEC	2961	SY	TYPE A2 CONCRETE PAVEMENT REPLACEMENT	37
38		135	100	64	21	180	63	SPEC	563	SY	TYPE A3 CONCRETE PAVEMENT REPLACEMENT	38
39			1757	952	1845	735		SPEC	5289	SY	TYPE B ASPHALT PAVEMENT REPLACEMENT	39
40		1	2	3	1	2	1	SPEC	10	EA	ADA CURB RAMP	40
41		1						SPEC		LS	CONTINGENCY	41

DESIGNED BY: M. WITTER

DRAWN BY: C. OWENS

CHECKED BY: P. LEWIS

APPROVED BY: M. WITTER

ISSUED DATE: _____

REV NO

DATE

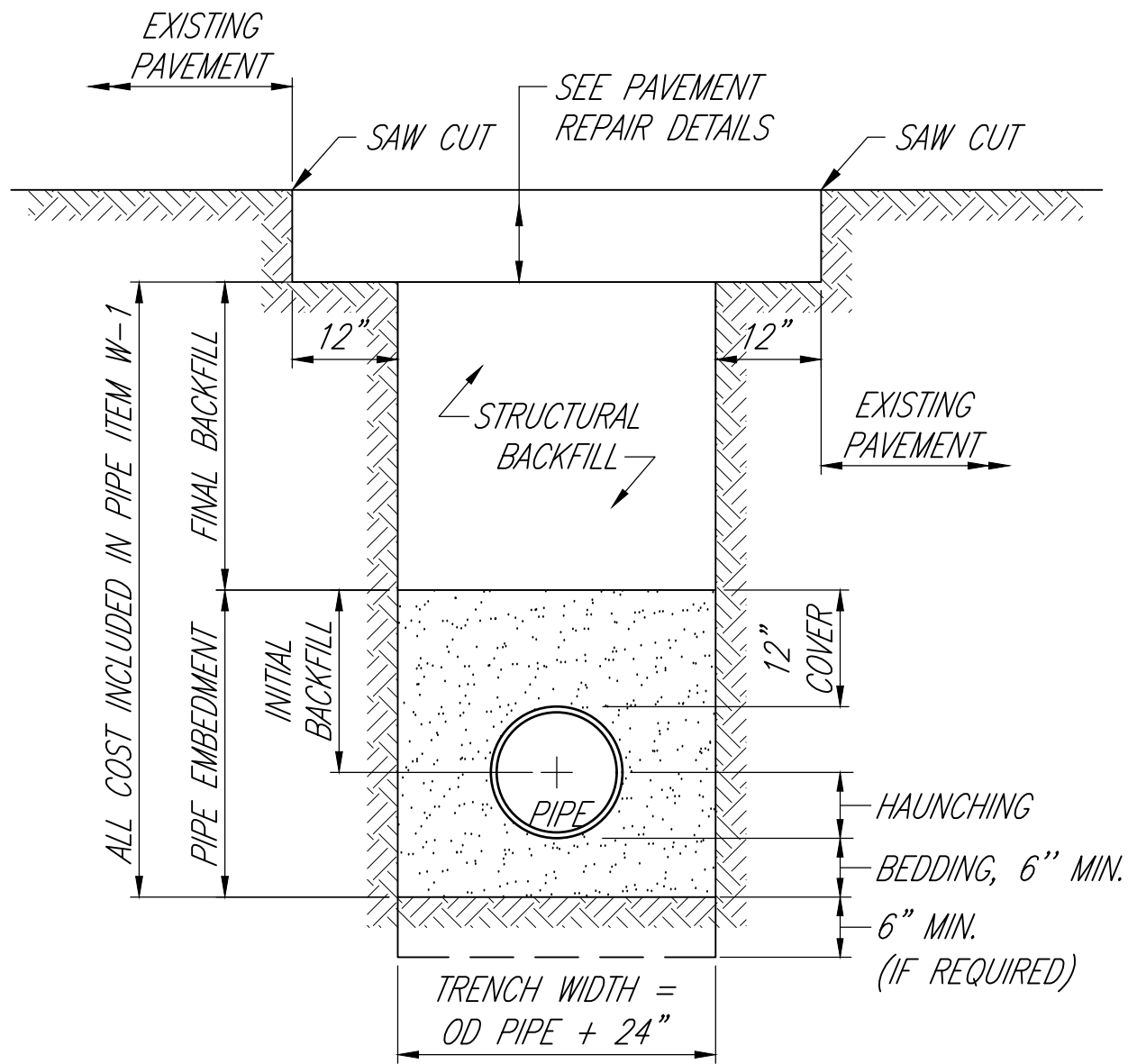
REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

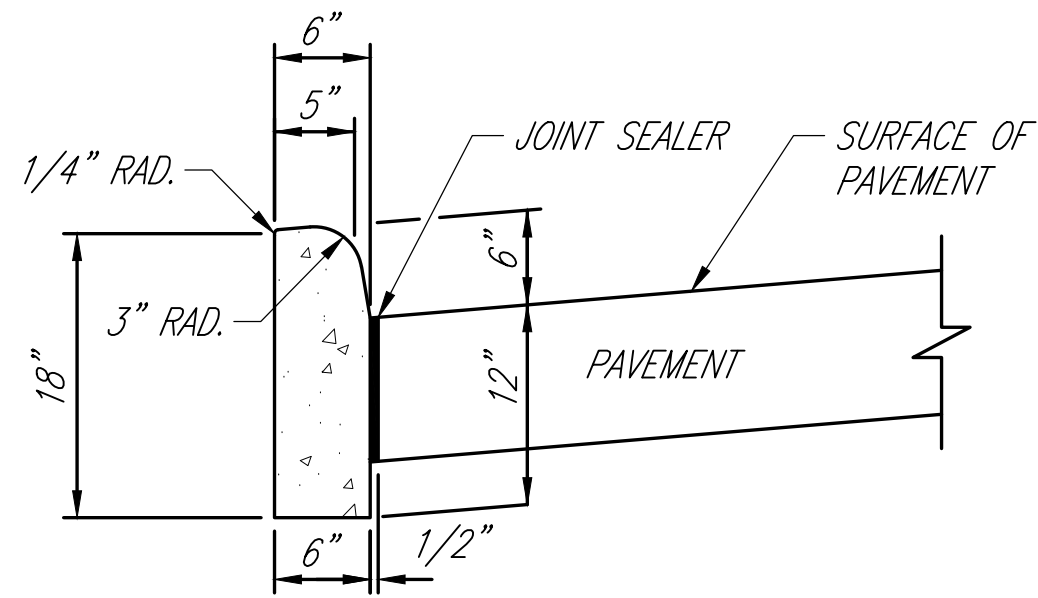
GENERAL SUMMARY &
ABBREVIATION AND SYMBOLS

6 / 49

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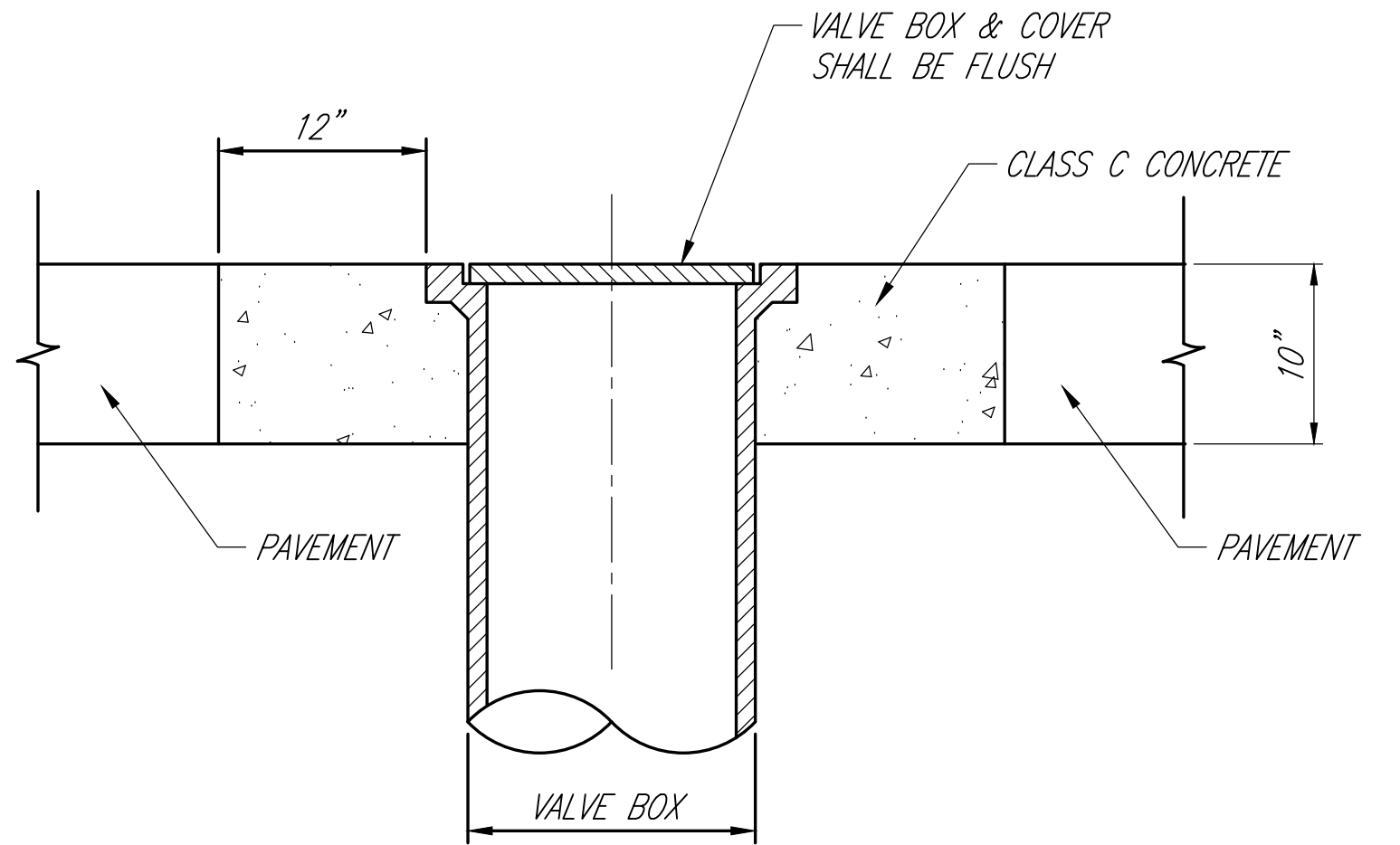


SPECIFICATION REF. : W-1
TYPICAL TRENCH FOR WATER MAINS
(STRUCTURAL BACKFILL)
NOT TO SCALE
MAX PAY WIDTH FOR PAVEMENT REPLACEMENT IS OD + 48"

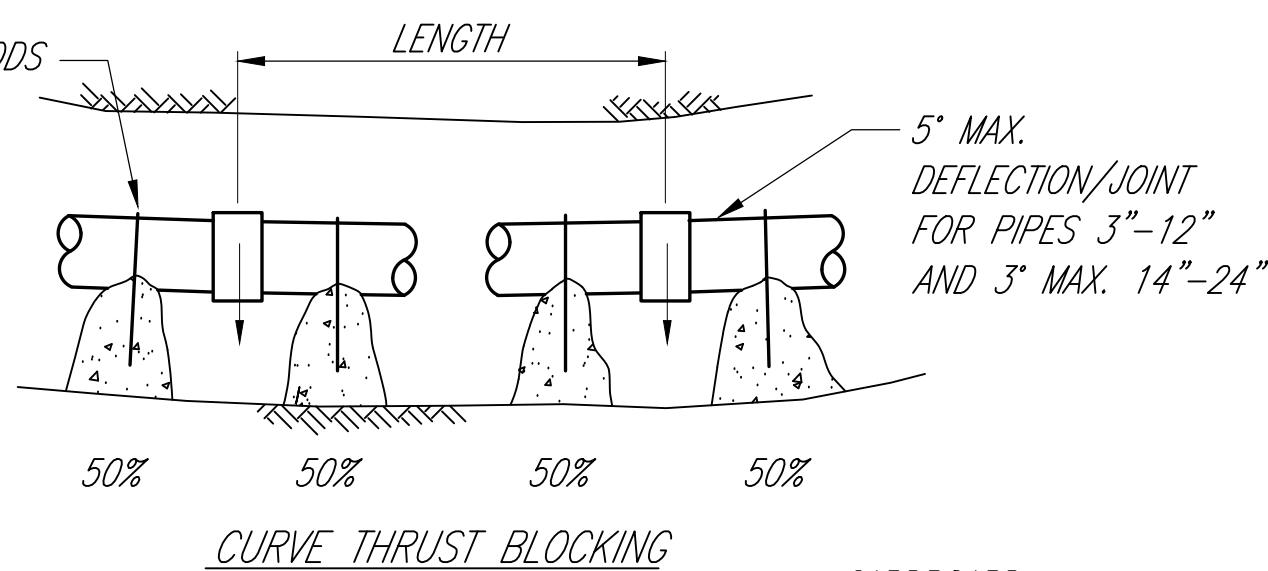
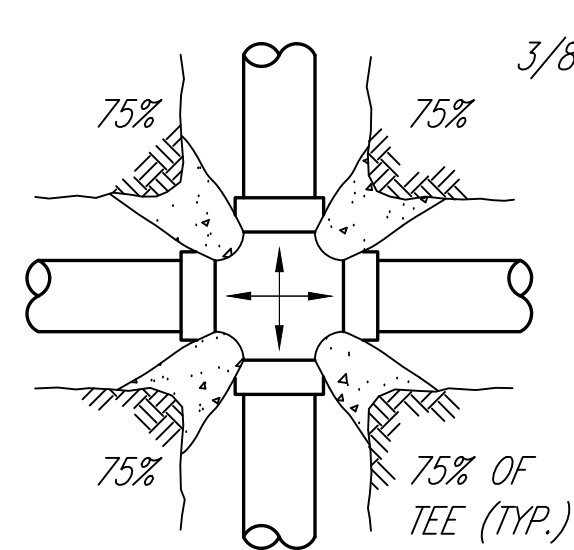
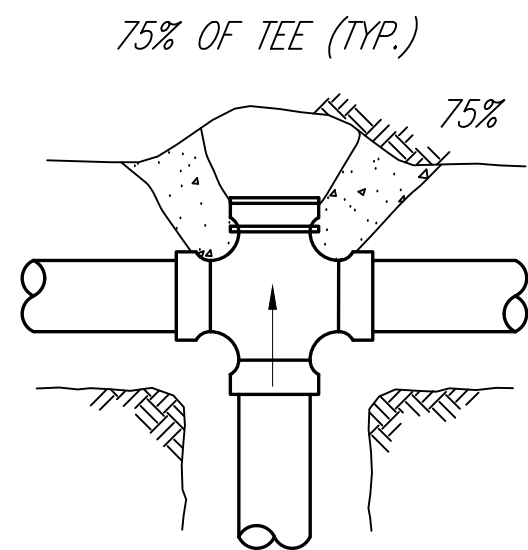
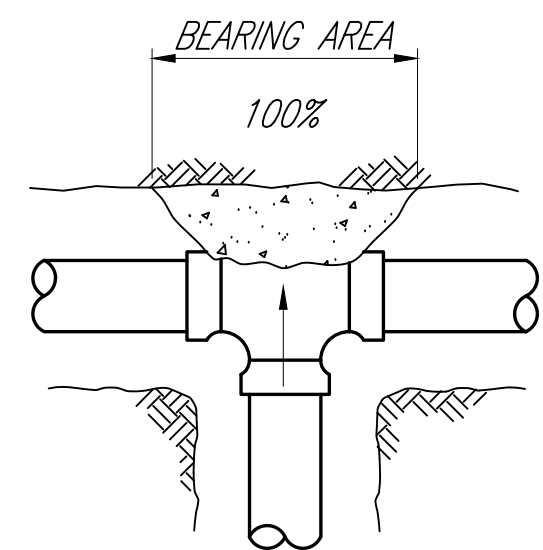


NOTES:
1. EXPANSION JOINT MATERIAL AND JOINT SEALER ARE NOT REQUIRED FOR THE PORTION OF THE CURB THAT IS ADJACENT TO A FLEXIBLE PAVEMENT TYPE. BOTH MATERIALS ARE REQUIRED, AS DETAILED, FOR THE FULL HEIGHT OF RIGID PAVEMENT AND CONCRETE BASES.

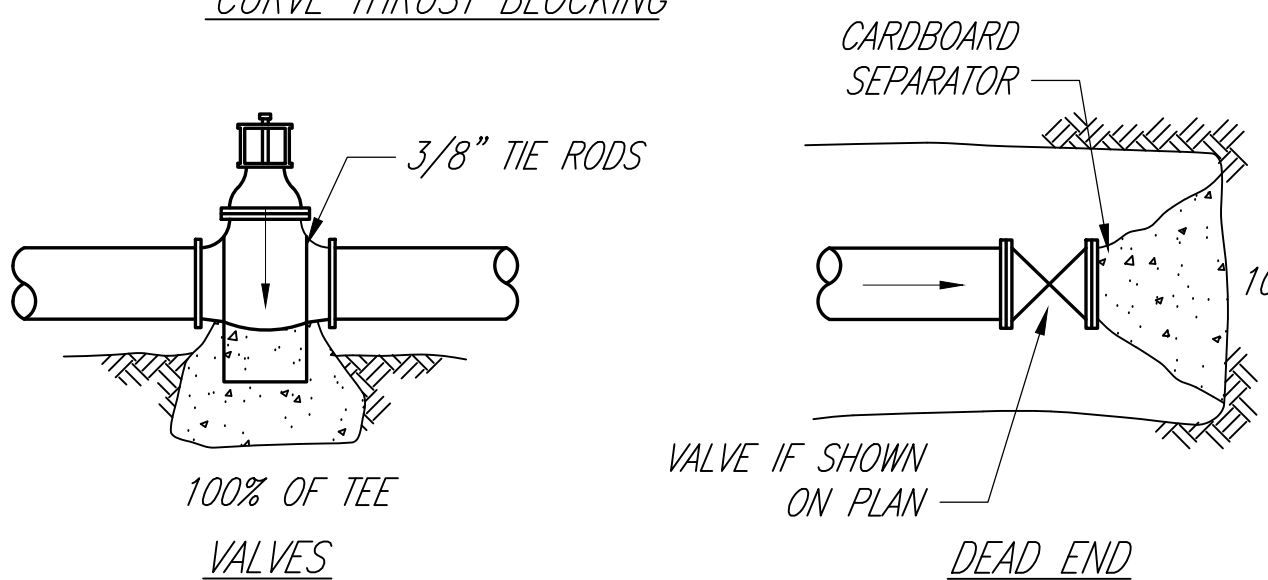
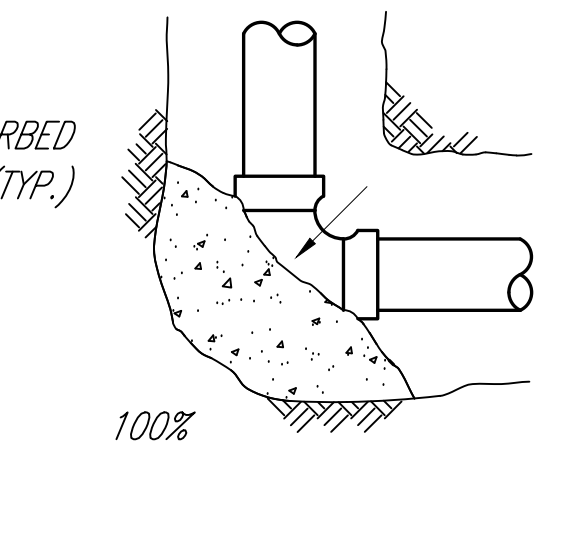
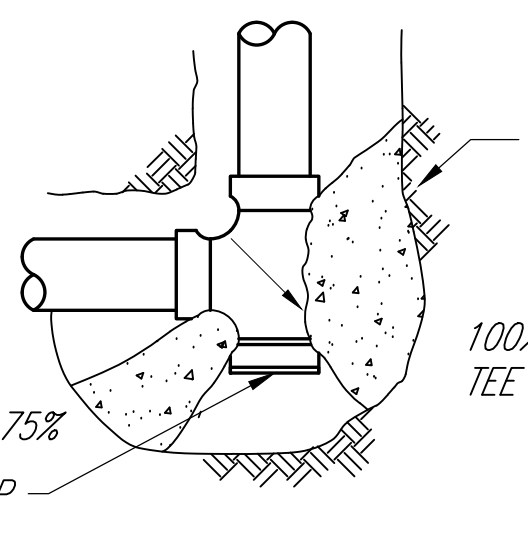
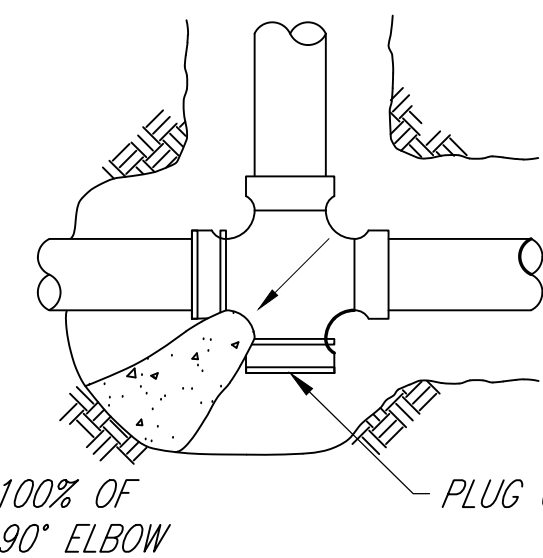
ITEM 609 - TYPE 6 CURB
NOT TO SCALE



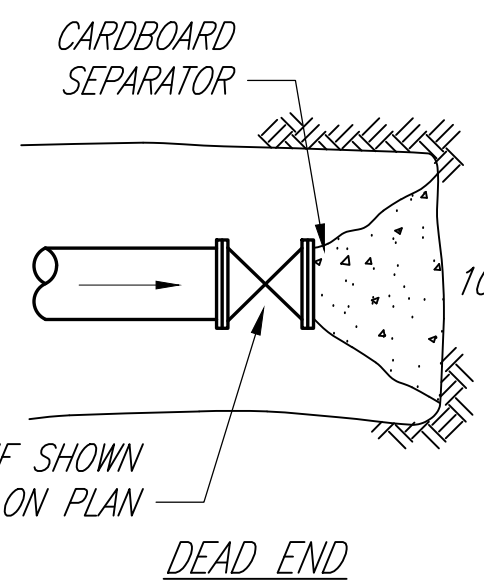
VALVE BOX AND COLLAR
NOT TO SCALE



CURVE THRUST BLOCKING



VALVES



DEAD END

NOTES:
THRUST DIRECTION

NOTE:
FIGURE (100%) AT THRUST BLOCK INDICATES PERCENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA.

SIZE OF PIPE (D)	DEGREE OF BEND			
	DEAD END OR TEE	90°	45°	22.5°
4"	19	27	15	7
6"	39	55	30	15
8"	67	94	51	26
10"	109	154	84	43
12"	155	218	119	61
14"	210	298	161	82
16"	275	383	209	106
18"	351	494	269	137
20"	434	611	333	169
24"	623	878	478	244

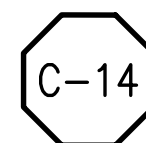
EXAMPLE:
8", 90° ELBOW, PRESSURE = 200 PSF
FROM TABLE: THRUST = 94X200 = 18,800lb.
ASSUME BEARING STRENGTH OF SOIL = 2,000PSF

$\frac{18,800}{2,000} = 9.4 \text{ SQ.FT.} = \text{BEARING AREA REQUIRED FOR THRUST BLOCK}$

SIDE THRUST PER 100 PSI PER DEGREE OF DEFLECTION			
SIZE OF PIPE (D)	SIDE THRUST-lb.	SIZE OF PIPE (D)	SIDE THRUST-lb.
4"	35	14"	377
6"	72	16"	486
8"	122	18"	665
10"	197	20"	790
12"	278	24"	1150

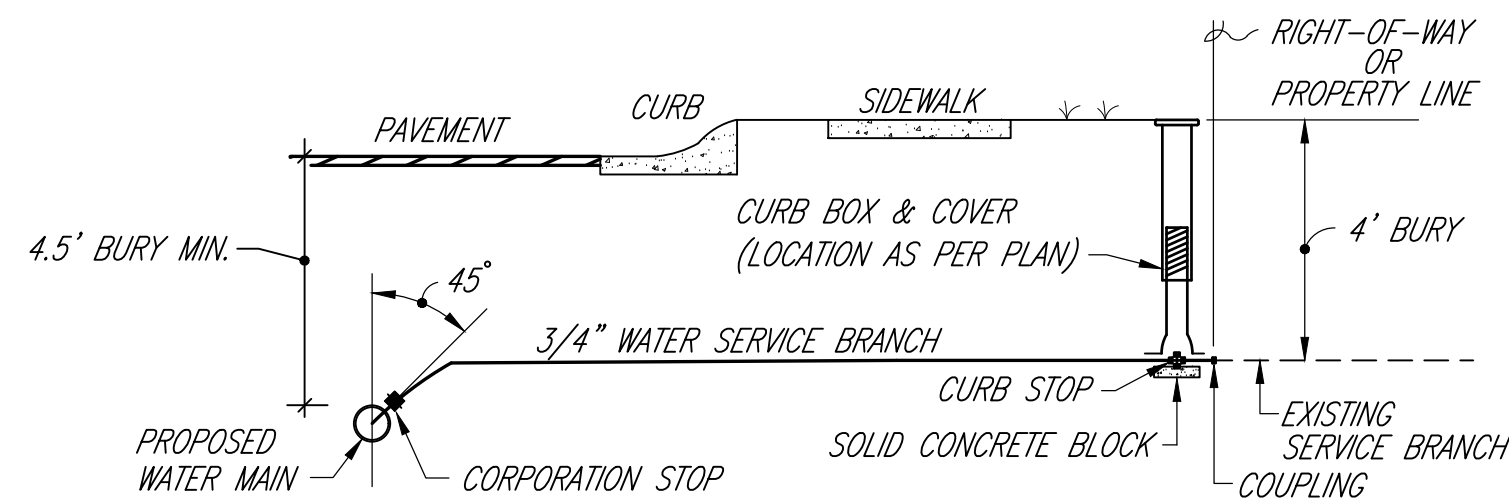
MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST

- NOTES:**
- IN USING THE ABOVE TABLES, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (i.e. HYDROSTATIC TEST PRESSURE POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT-OFF, ETC).
 - SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL IN THE ABSENCE OF A SOILS REPORT AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2,000 PSF.
 - WITH SOLVENT WELDED JOINTS.
 - USE LIGHTWEIGHT CONCRETE FOR HILL THRUST BLOCK.
 - CONCRETE FOR THRUST BLOCKS TO BE 2,000 PSI.



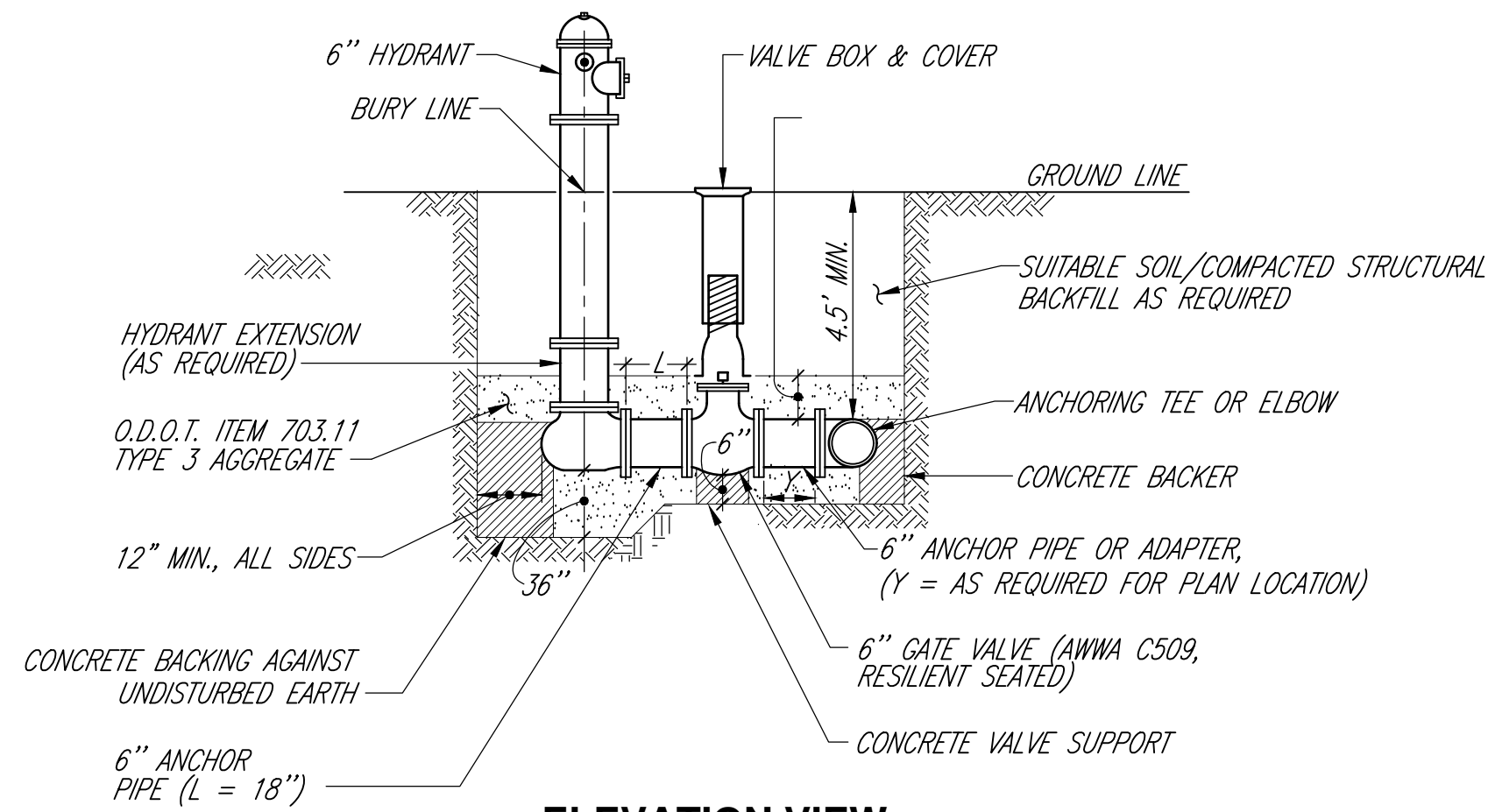
CONCRETE THRUST BLOCKS FOR BENDS
NOT TO SCALE

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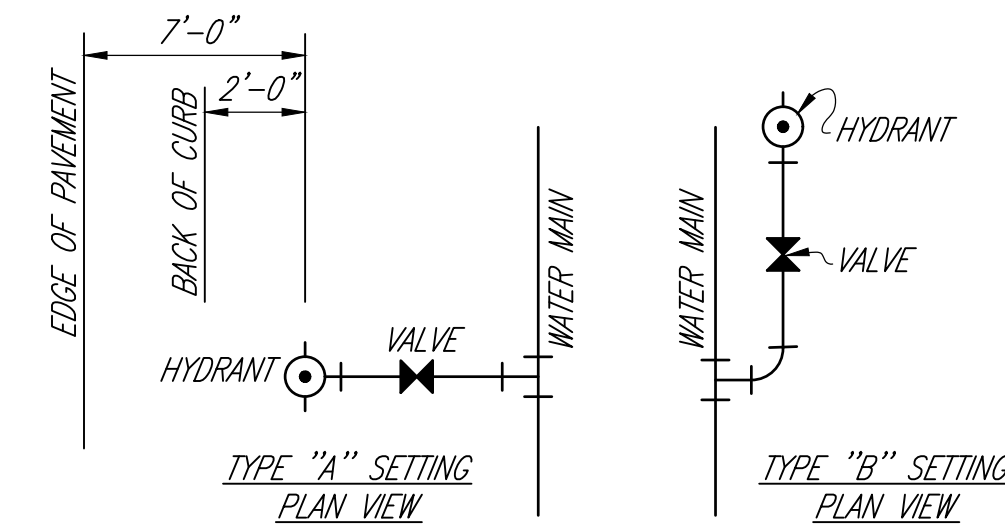
- NOTES:**
- CONTRACTOR SHALL PROVIDE A TAP AND CORPORATION STOP AT EACH SERVICE CONNECTION TO THE PROPOSED WATER MAINS. PAYMENT FOR SERVICE TAP AND CORPORATION STOP SHALL BE MADE AT THE UNIT BID PRICE FOR THAT ITEM.
 - PAYMENT FOR WATER SERVICE BRANCH SHALL BE MADE AT THE UNIT BID PRICE OF W-5, 3/4 INCH SERVICE BRANCH AND SHALL INCLUDE LOCATING THE EXISTING SERVICE LINE AND REMOVING THE EXISTING CURB BOX, SERVICE BRANCH, COUPLINGS, FITTINGS AND APPURTENANCES NEEDED TO COMPLETE THE INSTALLATION AS SHOWN ON THE PLANS PER APPROVAL OF THE ENGINEER.
 - PAYMENT FOR CURB STOP AND BOX SHALL BE MADE AT THE UNIT BID PRICE FOR THAT ITEM.
 - EX. SERVICE LOCATIONS THAT HAVE NOT BEEN LOCATED AS SHOWN IN THE PLANS SHALL BE LOCATED BY THE CITY OF MANSFIELD. CONTRACTOR SHALL COORDINATE LOCATING SERVICE LINES WITH THE CITY OF MANSFIELD WATER DEPARTMENT.

C-28 **TYPICAL WATER SERVICE INSTALLATION**
NOT TO SCALE

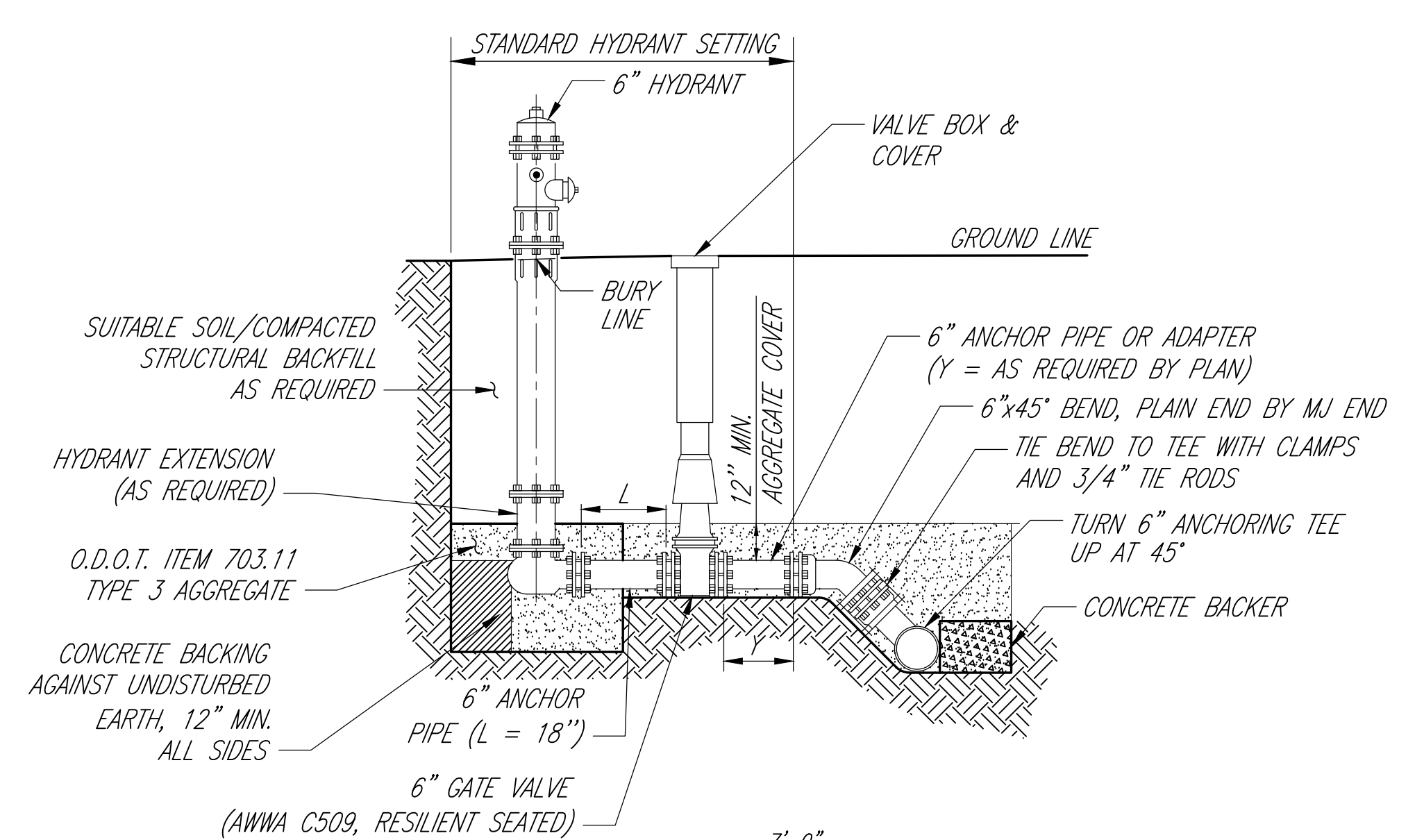


- NOTES:**
- PAYMENT FOR HYDRANT ASSEMBLY SHALL INCLUDE INSTALLATION, TEE, ANCHORING COUPLING, ANCHORING ELBOW, ANCHORING PIPE, VALVE, VALVE BOX & COVER, HYDRANT AND AGGREGATE. NO ADDITIONAL PAYMENT WILL BE MADE.
 - STATION OF HYDRANT ASSEMBLY SHOWN ON PLAN IS TO CENTER OF MAINLINE TEE.

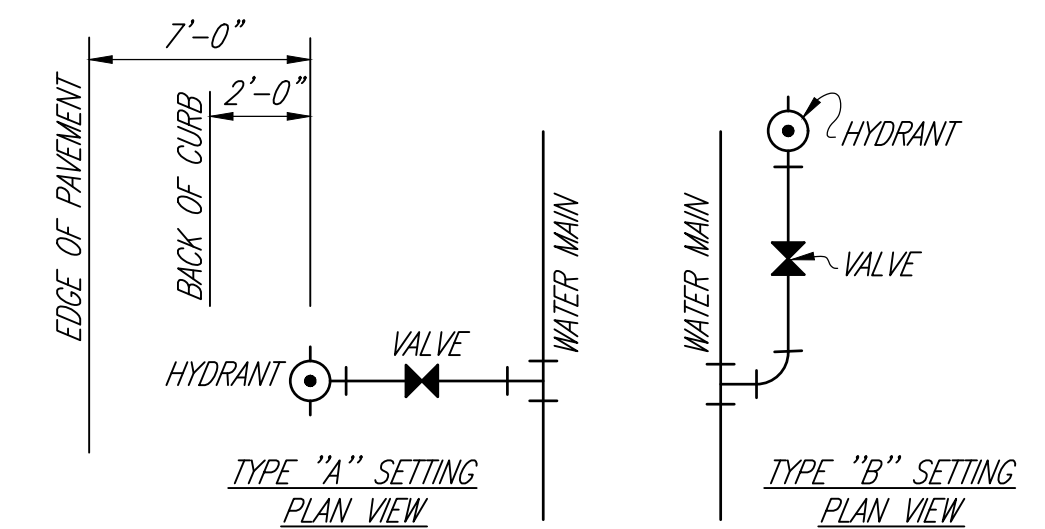
ELEVATION VIEW



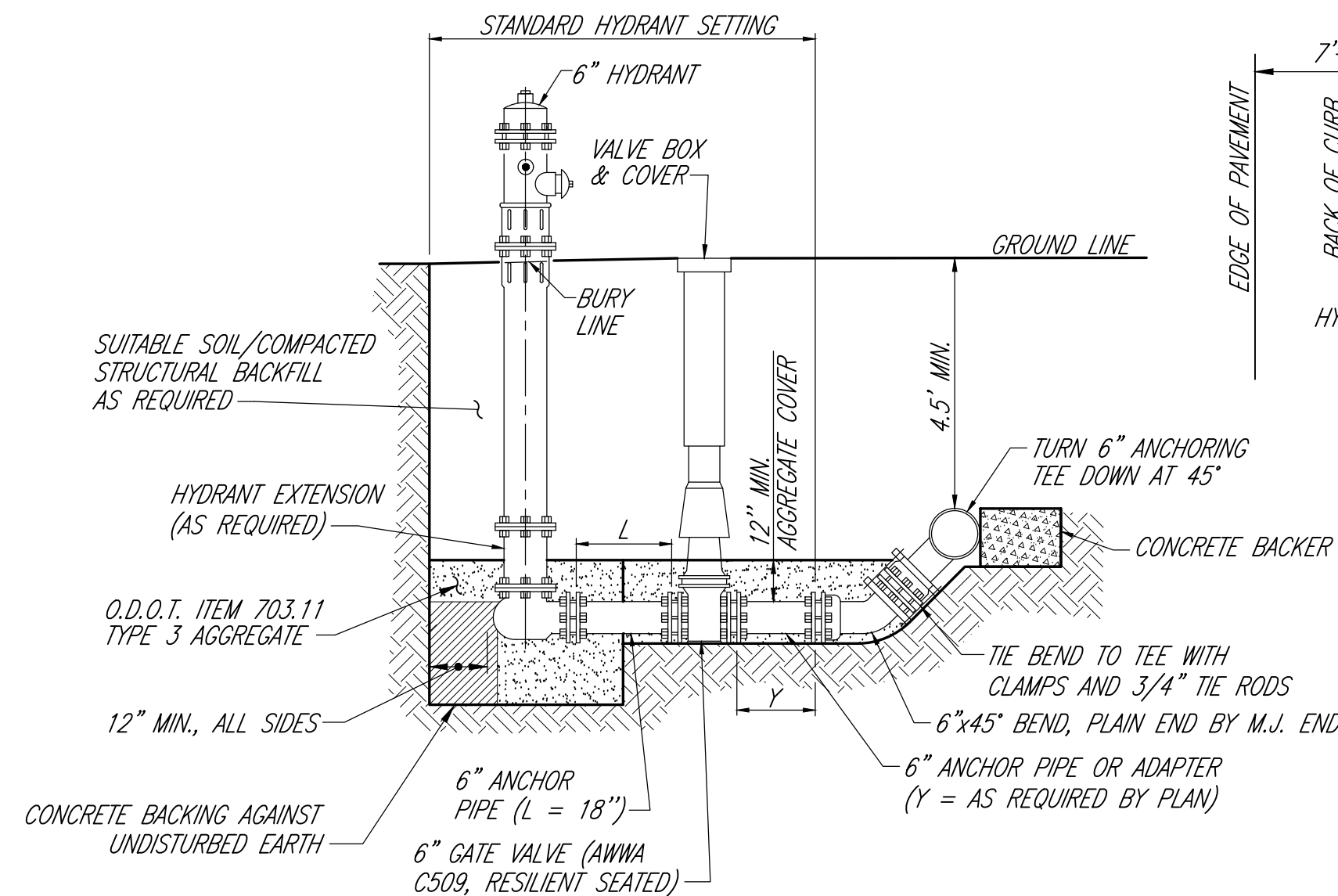
C-31 **DETAIL - HYDRANT ASSEMBLY**
NOT TO SCALE



- NOTES:**
- THE COST OF ALL WORK SHOWN AND DESCRIBED HEREIN, INCLUDING FURNISHING & INSTALLING THE ADDITIONAL BEND AND FITTINGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR WATER MAINS, NO SEPARATE PAYMENT WILL BE MADE.
 - STATION OF HYDRANT ASSEMBLY SHOWN ON PLAN IS TO CENTER OF MAINLINE TEE.

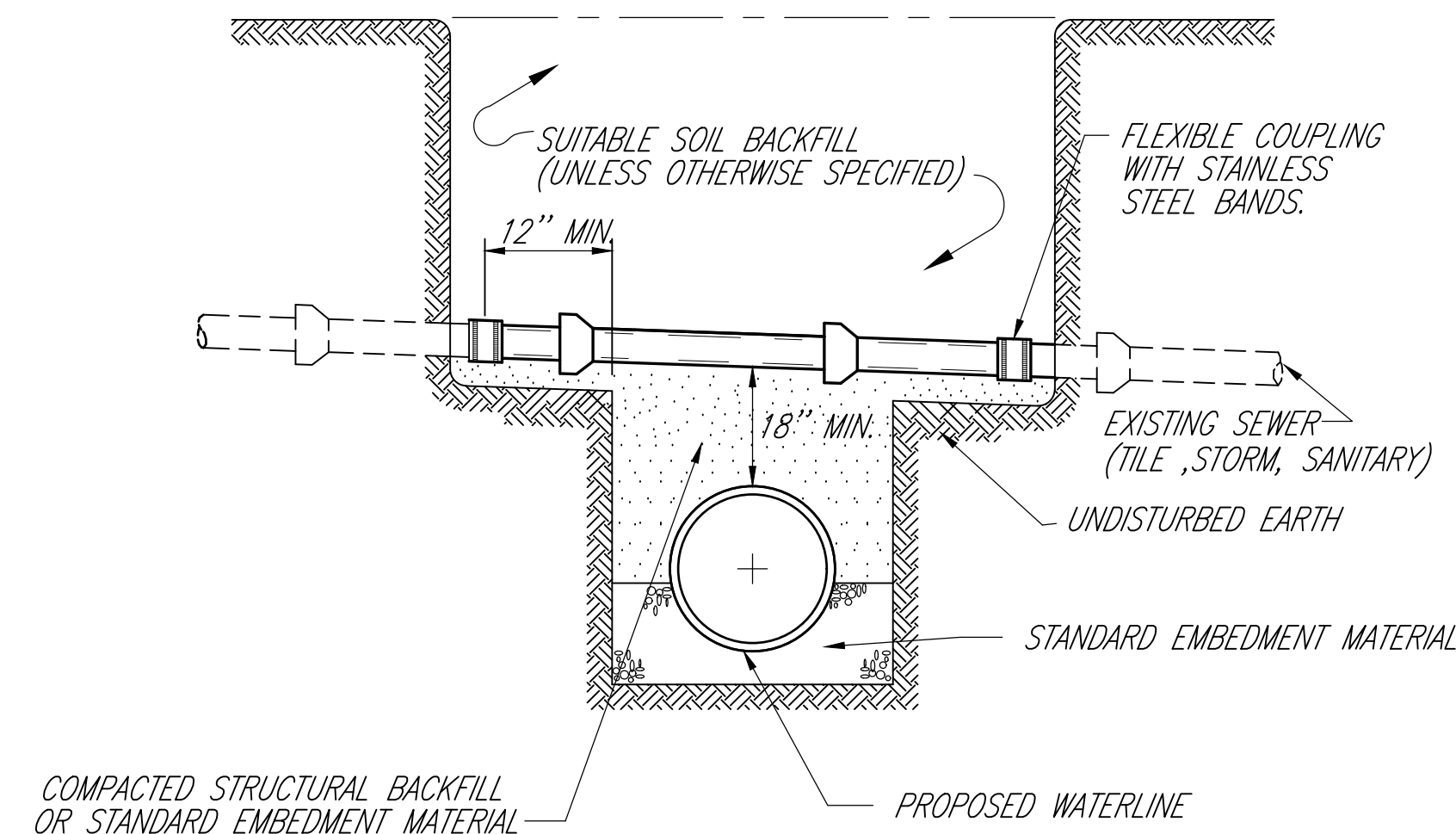


C-31A **TYPICAL AIR RELEASE HYDRANT SETTING DETAIL**
NOT TO SCALE



- NOTES:**
- THE COST OF ALL WORK SHOWN AND DESCRIBED HEREIN, INCLUDING FURNISHING & INSTALLING THE ADDITIONAL BEND AND FITTINGS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "HYDRANT ASSEMBLY, BLOW-OFF". NO SEPARATE PAYMENT WILL BE MADE.
 - STATION OF HYDRANT ASSEMBLY SHOWN ON PLAN IS TO CENTER OF MAINLINE TEE.

C-31B **TYPICAL BLOW-OFF HYDRANT SETTING DETAIL**
NOT TO SCALE

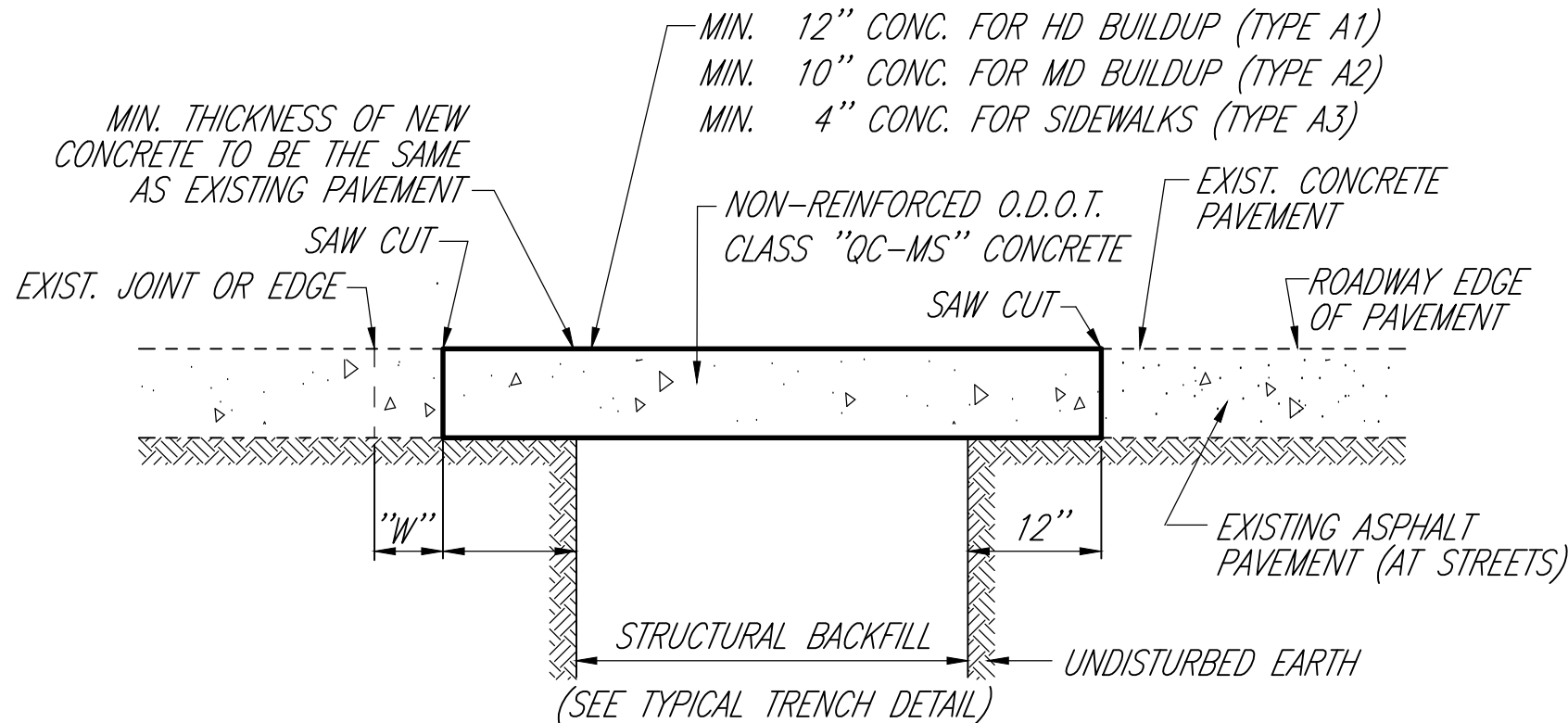


- NOTES:**
- ALL CONDUITS REPLACED UNDER ROADWAYS, BERMS, DRIVES AND PARKING AREAS SHALL BE EMBEDDED AND BACKFILLED AS CALLED FOR ON THE "TYPICAL TRENCH DETAIL FOR WATER MAINS AND STORM SEWERS".
 - PAYMENT FOR STRUCTURAL BACKFILL UNDER THE REPLACED CONDUIT SHALL BE PAID FOR UNDER BID ITEM FOR WATER MAIN AND FITTINGS.

C-33 **TYPICAL STORM SEWER AND TILE REPLACEMENT DETAIL**
NOT TO SCALE

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(CONCRETE SIDEWALKS, DRIVEWAYS AND STREETS)

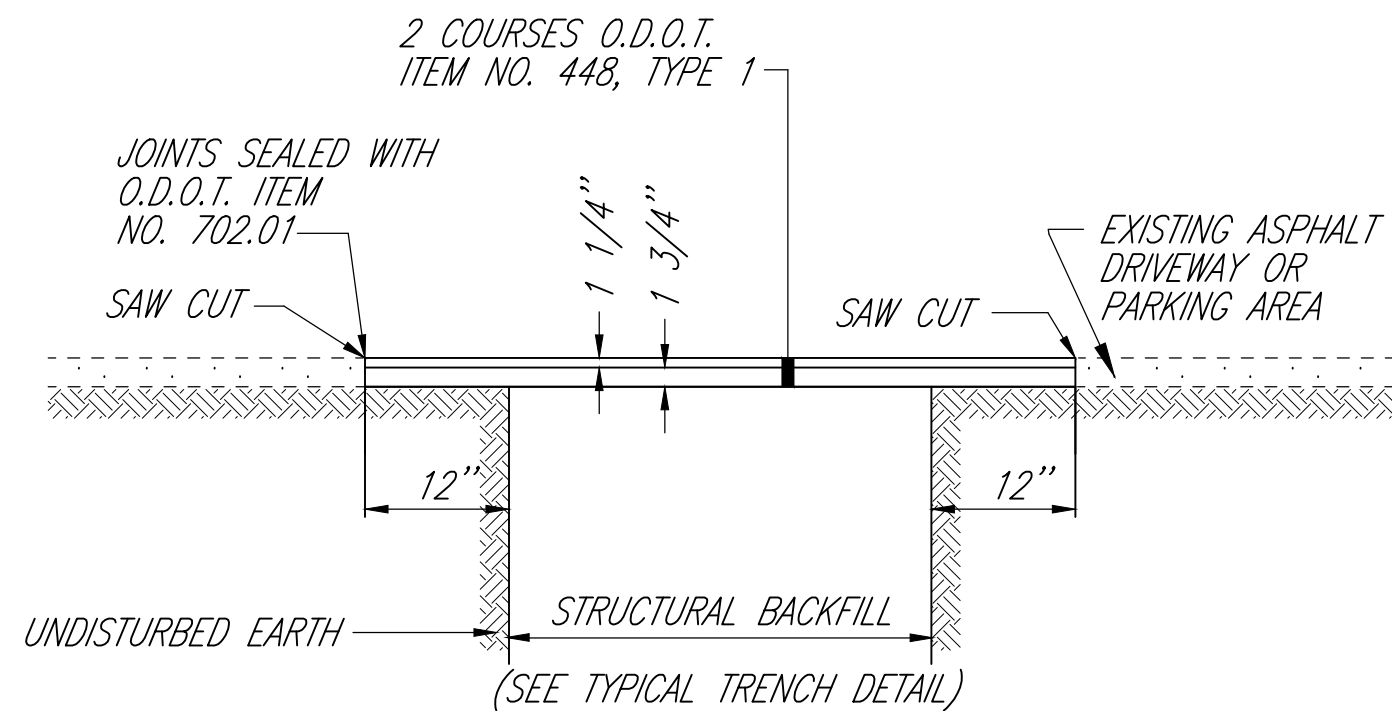


C-43 **TRENCH REPAIR & TYPE A CONCRETE PAVEMENT REPLACEMENT DETAIL**
NOT TO SCALE

NOTES:

1. SAW CUTS FOR TYPE A2 REPLACEMENTS SHALL BE PARALLEL AND PERPENDICULAR TO THE CENTERLINE OF DRIVE FOR THE FULL WIDTH REPLACED.
2. REPLACE TO EXISTING JOINT WHEN "W" MEASURES LESS THAN 2 FEET.
3. REPLACE TO EXISTING ROADWAY EDGE OF PAVEMENT WHEN THE CENTER OF THE TRENCH IS 5' OR LESS FROM THE ROADWAY EDGE OF PAVEMENT.
4. FINISH SURFACE SIMILAR TO SURROUNDING PAVEMENT.
5. DRIVE APRONS: PAYMENT FOR DRIVE APRONS TO BE INCLUDED UNDER PAY ITEM "CONCRETE PAVEMENT REPLACEMENT, TYPE A2". SEPARATE PAYMENT WILL NOT BE MADE. APRONS SHALL MEET ODOT ITEM 452. DO NOT REMOVE CURB EXCEPT AT WATER MAIN CROSSINGS.
6. COST FOR REMOVING EXISTING CONCRETE, EXPANSION JOINTS, AND ALL MATERIAL AND EQUIPMENT REQUIRED TO INSTALL CONCRETE SHALL BE INCLUDED WITH EACH INDIVIDUAL PAY ITEM FOR CONCRETE PAVEMENT, SEPARATE PAYMENT WILL NOT BE MADE.

(ASPHALT RESIDENTIAL DRIVEWAYS, PARKING AREAS)



NOTES:

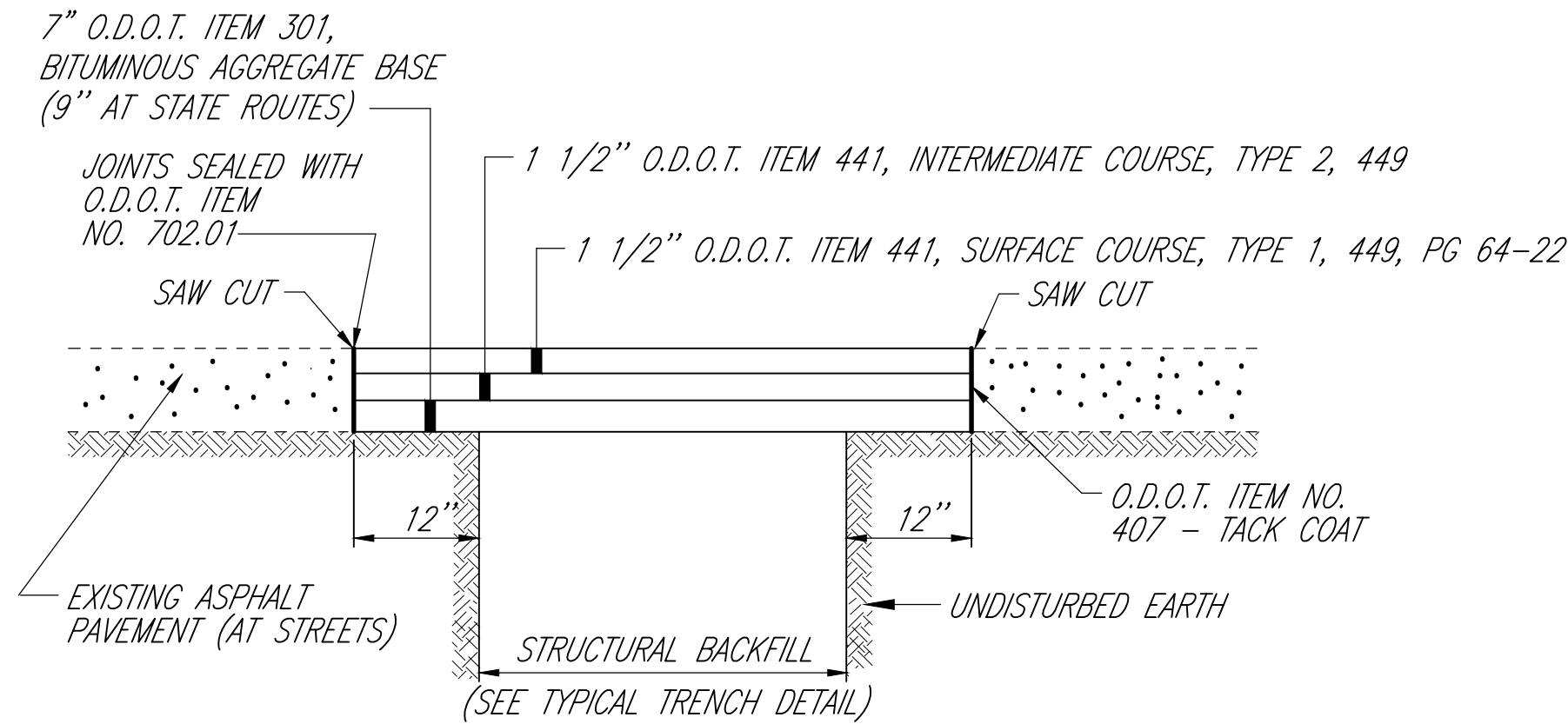
1. THE MAXIMUM PAYMENT LIMIT FOR ASPHALT REPLACEMENT IS PIPE O.D. + 48 INCHES. REPLACE PAVEMENT TO EDGE OF ROADWAY PAVEMENT IF THE CENTER OF THE TRENCH IS 5' OR LESS FROM THE ROADWAY EDGE OF PAVEMENT.

C-45 **TYPE C ASPHALT PAVEMENT REPLACEMENT DETAIL**
NOT TO SCALE

STREET RESTORATION SCHEDULE

AREA	STREET NAME	RANGE	TRENCH REPAIR TYPE
1	PARKWAY DR.	W. 4TH ST. TO PARK DR.	TYPE A2 CONCRETE PAVEMENT
1	WEST 4TH ST.	PARKWAY DR. TO WESTERN AVE.	TYPE A2 CONCRETE PAVEMENT
2	WEST 3RD ST.	WELDON AVE. TO SYCAMORE ST.	TYPE B ASPHALT PAVEMENT
3	BUCKINGHAM AVE.	BOWMAN ST. TO MULBERRY ST.	TYPE A2 CONCRETE PAVEMENT
3	N. MULBERRY ST.	BUCKINGHAM AVE. TO ORCHARD ST.	TYPE B ASPHALT PAVEMENT
3	ORCHARD ST.	MULBERRY ST. TO MAIN ST.	TYPE B ASPHALT PAVEMENT
4	MARLOW PLACE	FAIRLAWN AVE. TO MARLOW RD.	TYPE B ASPHALT PAVEMENT
4	MARLOW RD.	MARLOW RD. TO MAPLE ST.	TYPE B ASPHALT PAVEMENT
4	MARLOW RD.	MAPLE ST. TO MAPLE LAKE PARK DR.	TYPE B ASPHALT PAVEMENT
4	MAPLE LAKE PARK DR.	MARLOW RD. TO FAIRLAWN AVE.	TYPE A2 CONCRETE PAVEMENT
4	FAIRLAWN AVE.	MAPLE LAKE PARK DR. TO HIGHLAND AVE.	TYPE B ASPHALT PAVEMENT
4	HIGHLAND AVE.	FAIRLAWN AVE. TO DOLAN CT.	TYPE B ASPHALT PAVEMENT
5	WEST BLANCHE ST.	LEXINGTON AVE. TO STURGES AVE.	TYPE B ASPHALT PAVEMENT
5	STURGES AVE.	BLANCHE ST. TO MENDOTA ST.	TYPE A2 CONCRETE PAVEMENT
5	MENDOTA ST.	STURGES AVE. TO MULBERRY ST.	TYPE A2 CONCRETE PAVEMENT
6	SOUTH FOSTER ST.	HOME AVE. TO ARCH ST.	TYPE A2 CONCRETE PAVEMENT
6	MASON ST.	FOSTER ST. TO CLEVELAND AVE.	TYPE A2 CONCRETE PAVEMENT

(ASPHALT STREETS, BUSINESS DRIVES, STATE ROUTES, PARKING AREAS, RESIDENTIAL DRIVES)

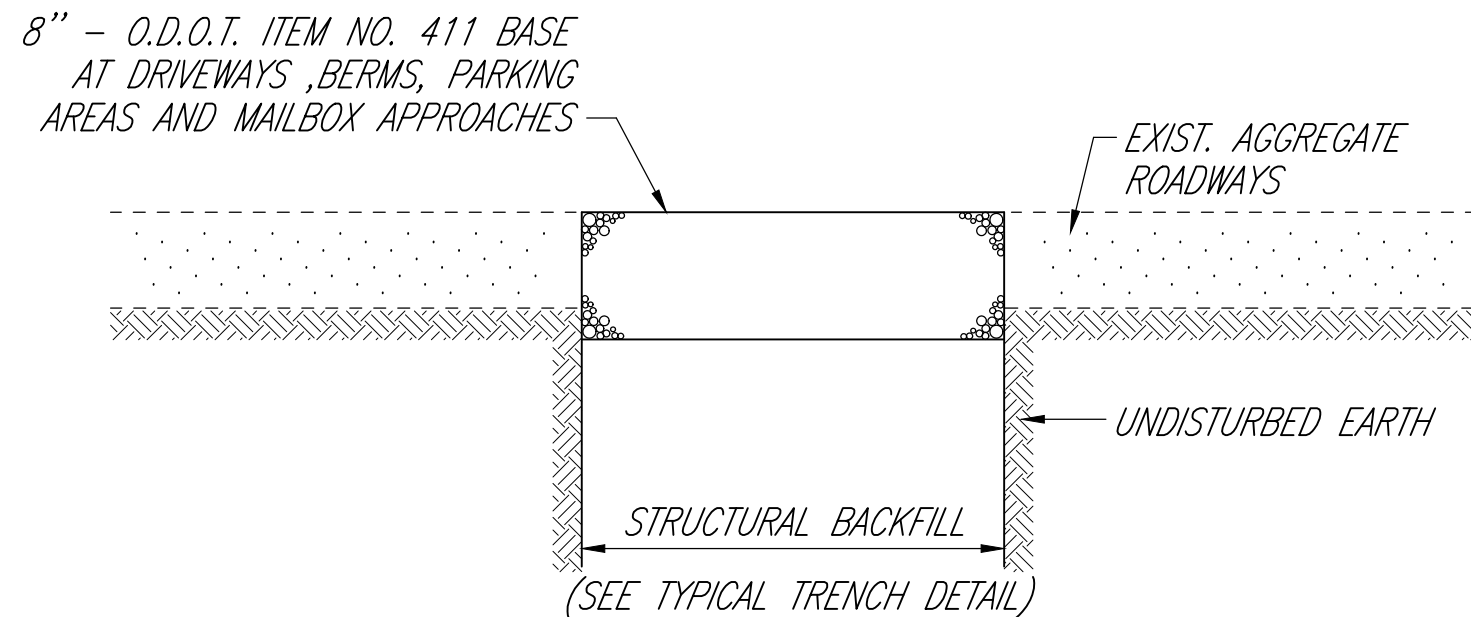


NOTES:

1. PLACE ITEM 301, BITUMINOUS AGGREGATE BASE IN TWO (2) 4" LIFTS AT STATE ROUTE LOCATIONS.
2. THE MAXIMUM PAYMENT LIMIT FOR ASPHALT REPLACEMENT IS PIPE O.D. + 48 INCHES.

C-44 **TYPE B ASPHALT PAVEMENT REPLACEMENT DETAIL**
NOT TO SCALE

(GRAVEL STREETS, DRIVEWAYS, BERMS & MAILBOX APPROACHES)



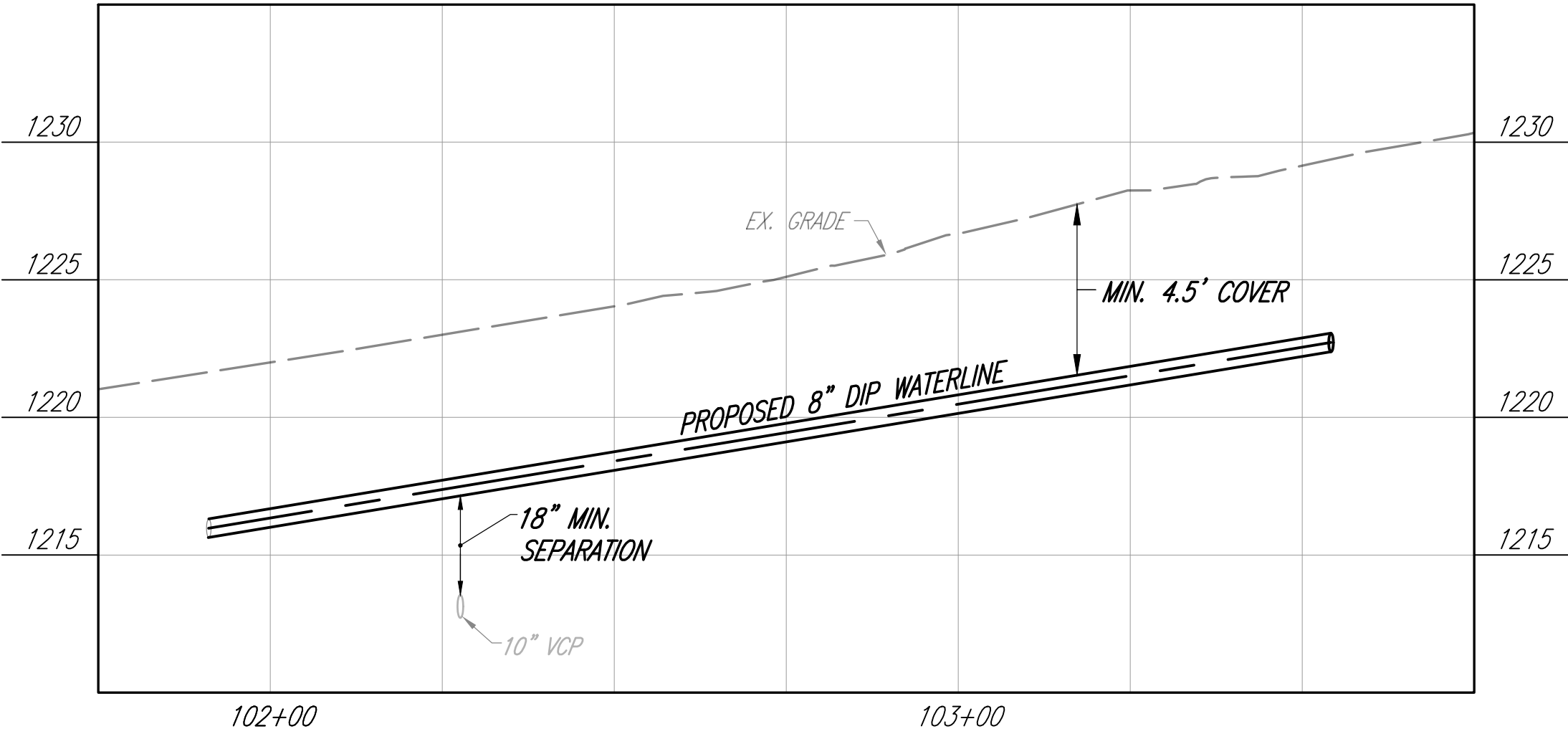
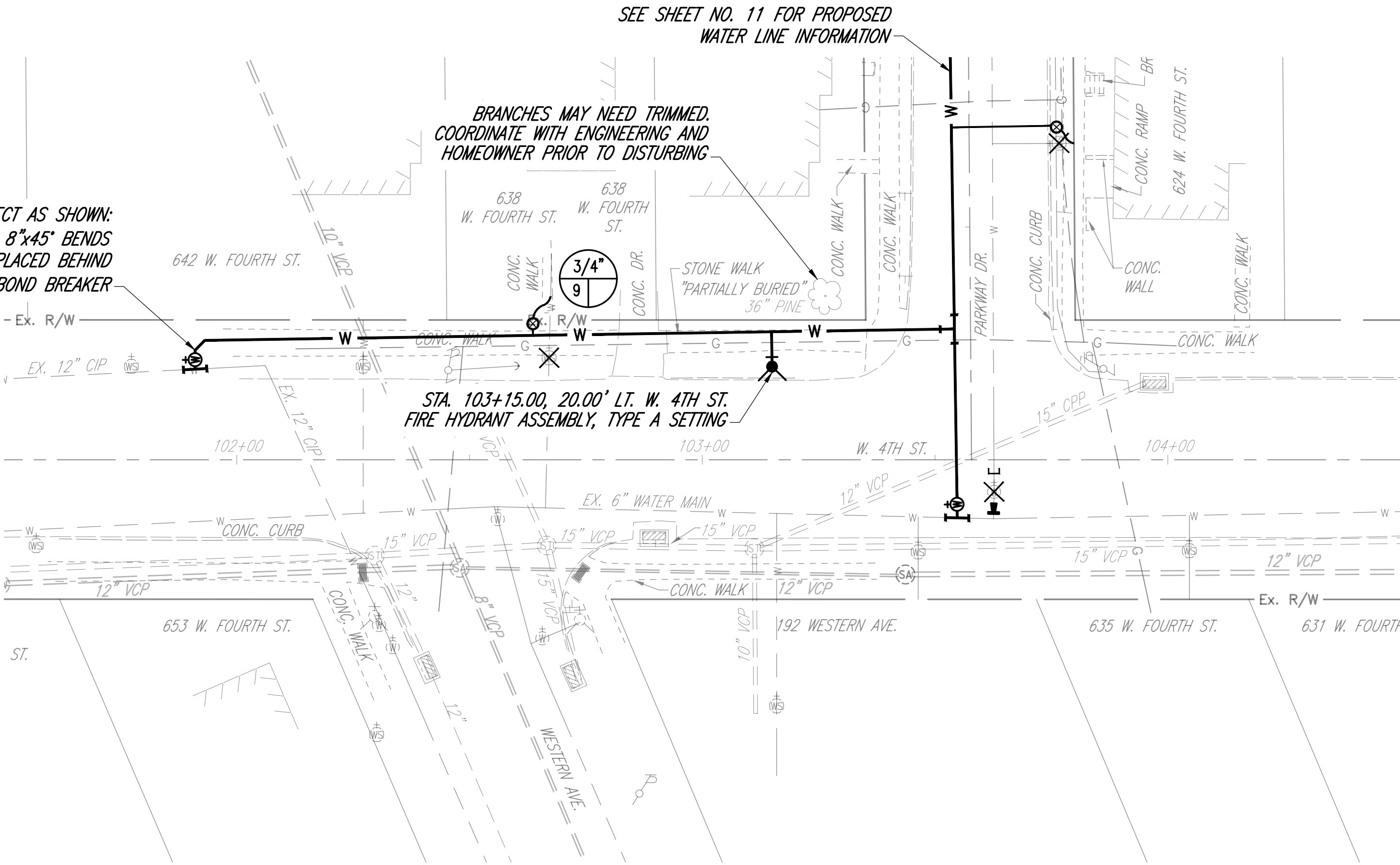
NOTES:

1. AGGREGATE MATERIAL TYPE SHALL MATCH EXISTING (GRAVEL, SLAG OR LIMESTONE).
2. FINAL BACKFILL AT MAILBOX APPROACHES SHALL BE SUITABLE SOIL OR GRANULAR BACKFILL COMPACTED IN 8 INCH LAYERS.

C-46 **TYPE D GRANULAR PAVEMENT REPLACEMENT DETAIL**
NOT TO SCALE

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FIELD LOCATE EX. 12" CAST IRON WATER MAIN & CONNECT AS SHOWN:
12"x8" TAPPING SLEEVE, 8" GATE VALVE, VALVE BOX, (2) 8"x45" BENDS
RESTRAINED JOINTS. THRUST BLOCK TO BE PLACED BEHIND
EX. 12" WATER MAIN W/BOND BREAKER

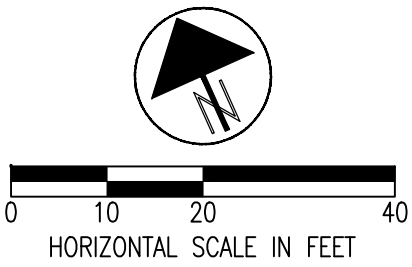


DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE:

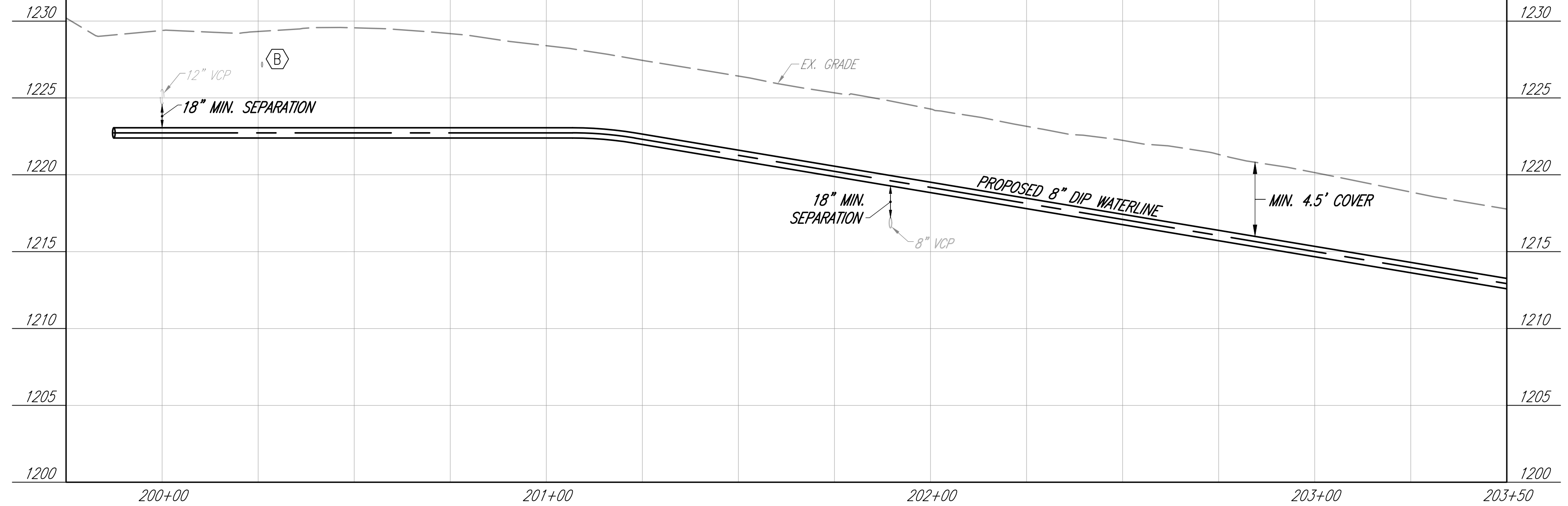
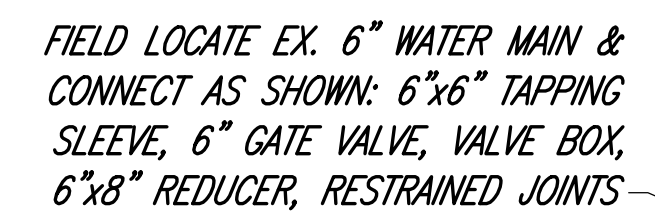
REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 1
W. 4th St.
STA. 101+50 TO STA. 104+50



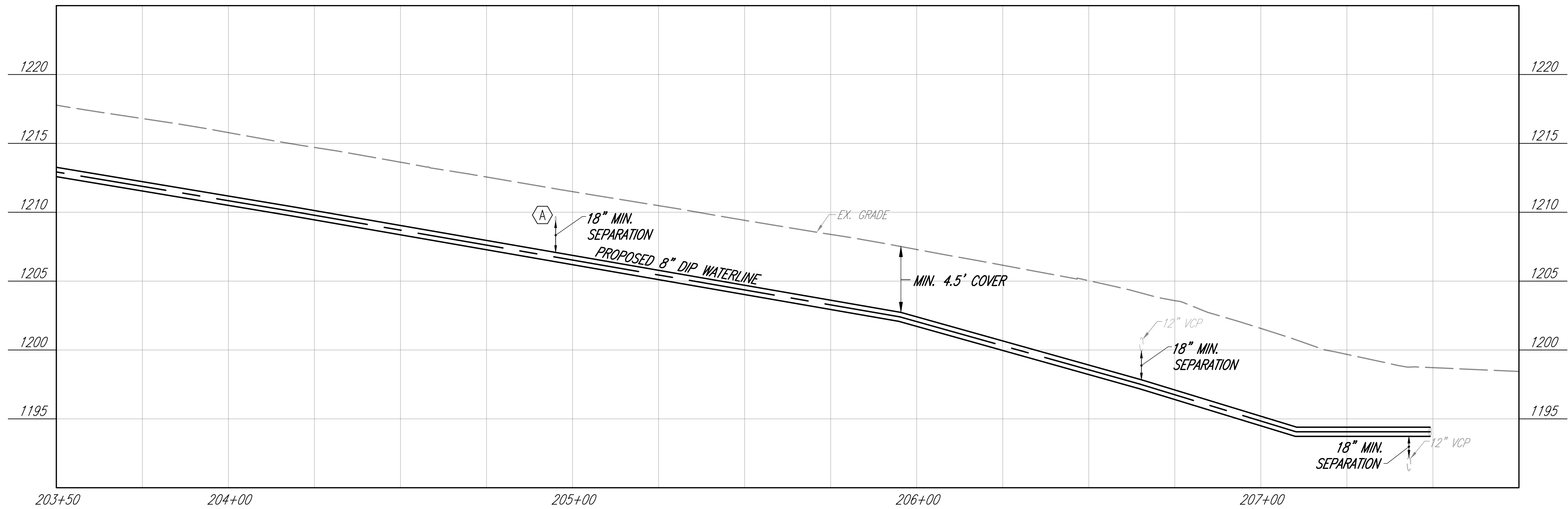
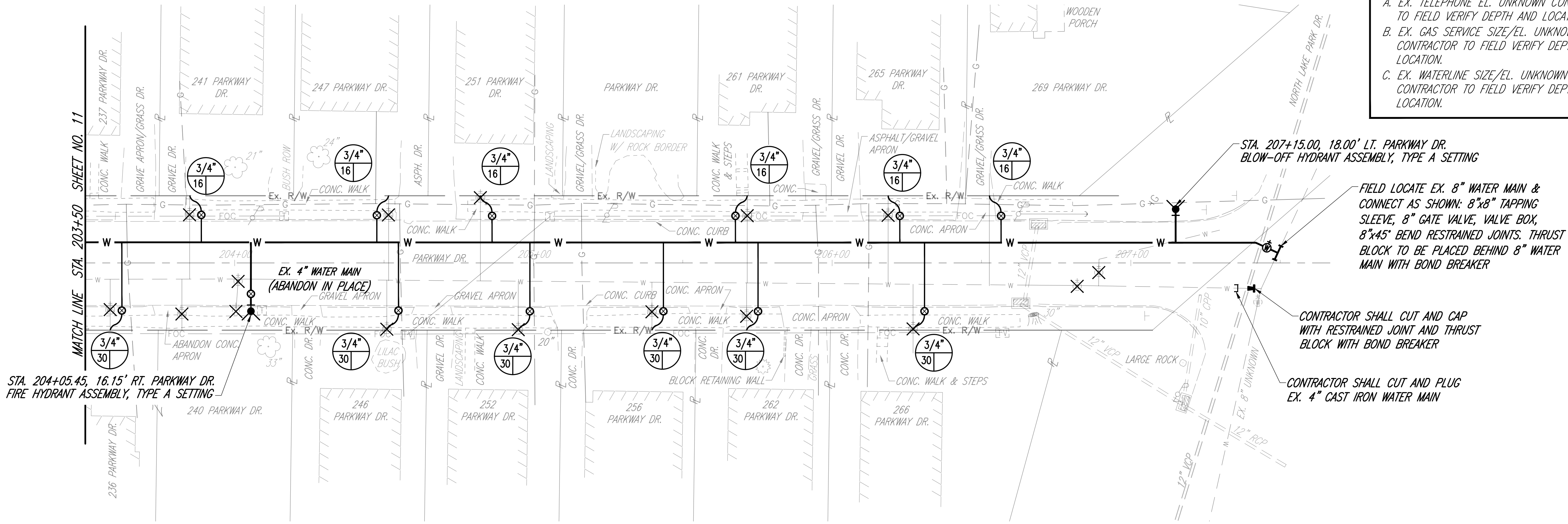
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



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SHEET KEYNOTES

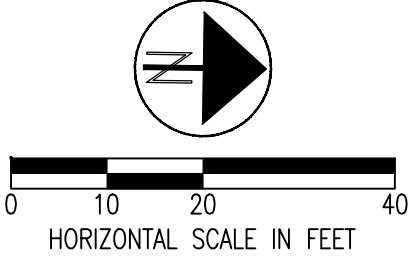
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 1
PARKWAY DR.
STA. 203+50 TO STA. 207+50



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AREA 1 SUB-SUMMARY

REF	SHEET NUMBER							ITEM	TOTAL	UNITS	DESCRIPTION	REF
					10	11	12					
8								611		LF	8"-10" CONDUIT REPLACEMENT	8
9							5	611	5	LF	12"-18" CONDUIT REPLACEMENT	9
10								604		EA	2-2B CATCH BASIN	10
11					173	366	405	W-1	944	LF	8" WATER MAIN & FITTINGS - CLASS 53 DIP	11
												12
13								W-3		EA	4" X 4" TAPPING SLEEVE, 4" GATE VALVE & VALVE BOX	13
14						1		W-3	1	EA	6" X 6" TAPPING SLEEVE, 6" GATE VALVE & VALVE BOX	14
15							1	W-3	1	EA	8" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	15
16					1			W-3	1	EA	12" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	16
17								W-3		EA	14" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	17
18								W-3		EA	16" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	18
19								W-4		EA	4" CUT-IN SLEEVE, 4" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	19
20								W-4		EA	6" CUT-IN SLEEVE, 6" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	20
21								W-4		EA	8" CUT-IN SLEEVE, 8" GATE VALVE & VALVE BOX	21
22								W-4		EA	10" CUT-IN SLEEVE, 10" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	22
23								W-4		EA	12" CUT-IN SLEEVE, 12" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	23
24					9	205	276	W-5	490	LF	3/4" SERVICE BRANCH PIPE-TYPE K COPPER	24
25					1	9	12	W-6	22	EA	3/4" SERVICE TAP AND CORP STOP	25
26					1	9	12	W-7	22	EA	3/4" CURB STOP AND CURB BOX	26
27								W-5		LF	1 1/2" SERVICE BRANCH PIPE-TYPE K COPPER	27
28								W-6		EA	1 1/2" SERVICE TAP AND CORP STOP	28
29								W-7		EA	1 1/2" CURB STOP AND CURB BOX	29
30								W-5		LF	2" SERVICE BRANCH PIPE-TYPE K COPPER	30
31								W-6		EA	2" SERVICE TAP AND CORP STOP	31
32								W-7		EA	2" CURB STOP AND CURB BOX	32
33					1		1	W-8	2	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B	33
34								W-8		EA	AIR RELEASE HYDRANT ASSEMBLY, C-31A, TYPE A OR B	34
35							1	W-8	1	EA	BLOW-OFF HYDRANT ASSEMBLY, C-31B, TYPE A OR B	35
36					10		10	609	20	LF	TYPE 6 CURB	36
37					18	206	245	SPEC	469	SY	TYPE A2 CONCRETE PAVEMENT REPLACEMENT	37
38					84	25	26	SPEC	135	SY	TYPE A3 CONCRETE PAVEMENT REPLACEMENT	38
39								SPEC		SY	TYPE B ASPHALT PAVEMENT REPLACEMENT	39
40					1			SPEC	1	EA	ADA CURB RAMP	40
41												41



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE: _____	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 1 SUB-SUMMARY

- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

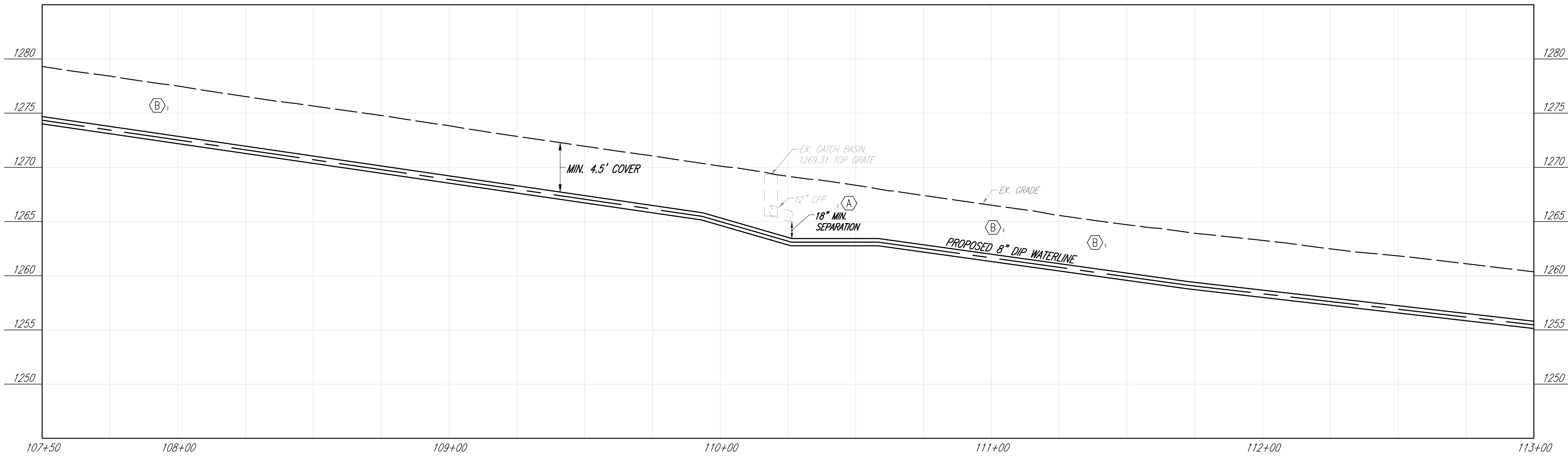
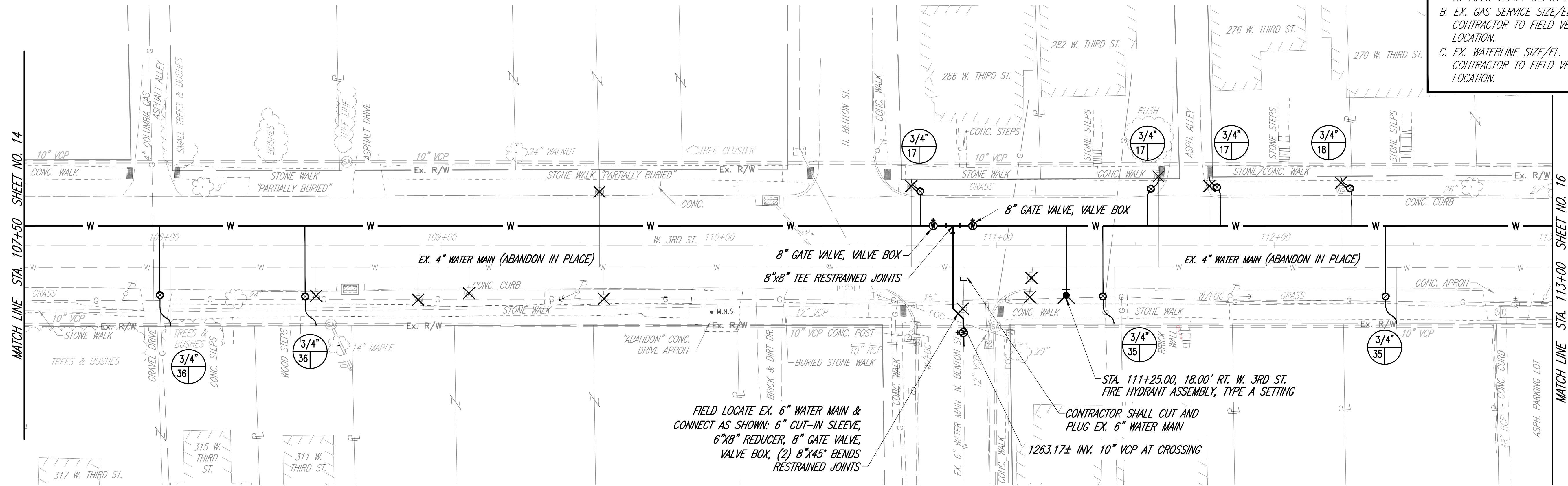


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- SHEET KEYNOTES
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

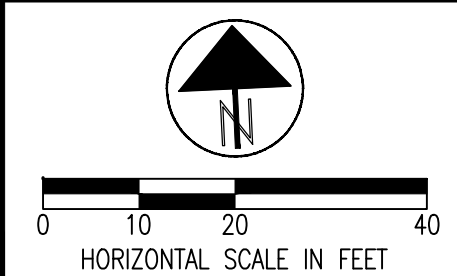
C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



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DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

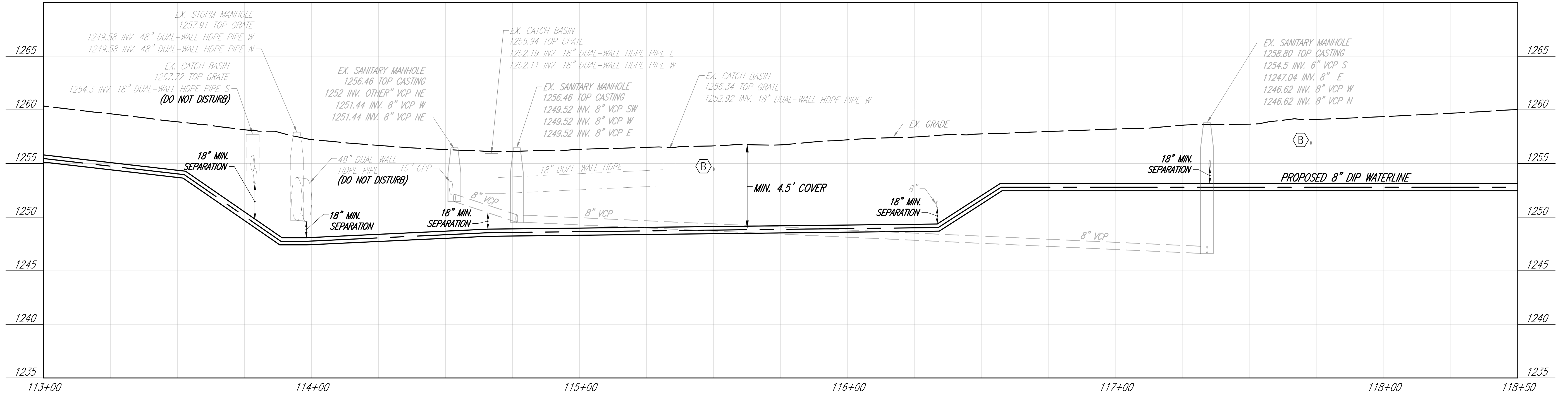
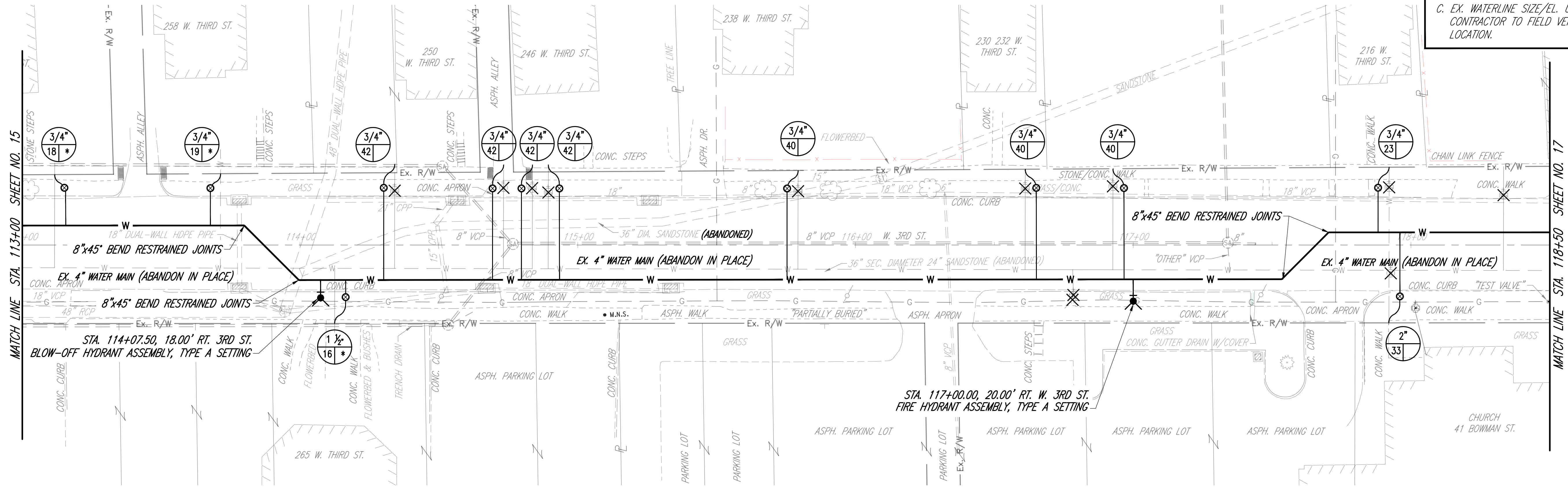
AREA 2
WEST 3RD ST.
STA. 107+50 TO STA. 113+00



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SHEET KEYNOTES

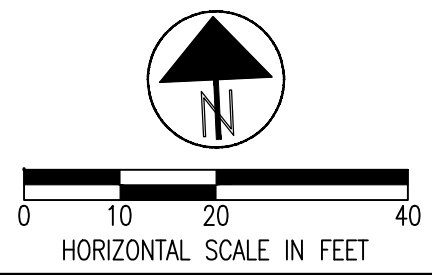
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

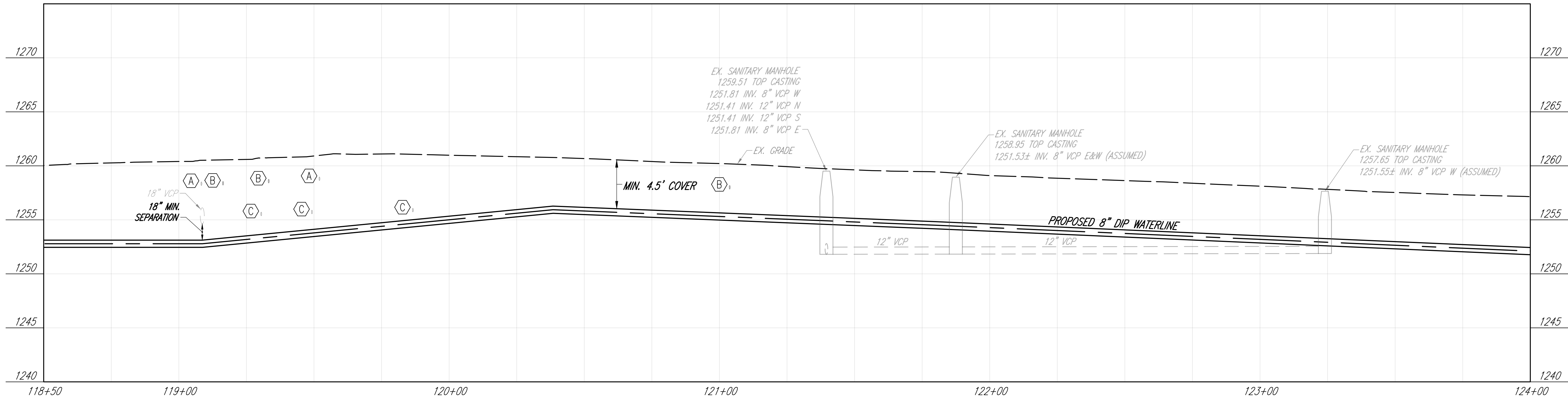
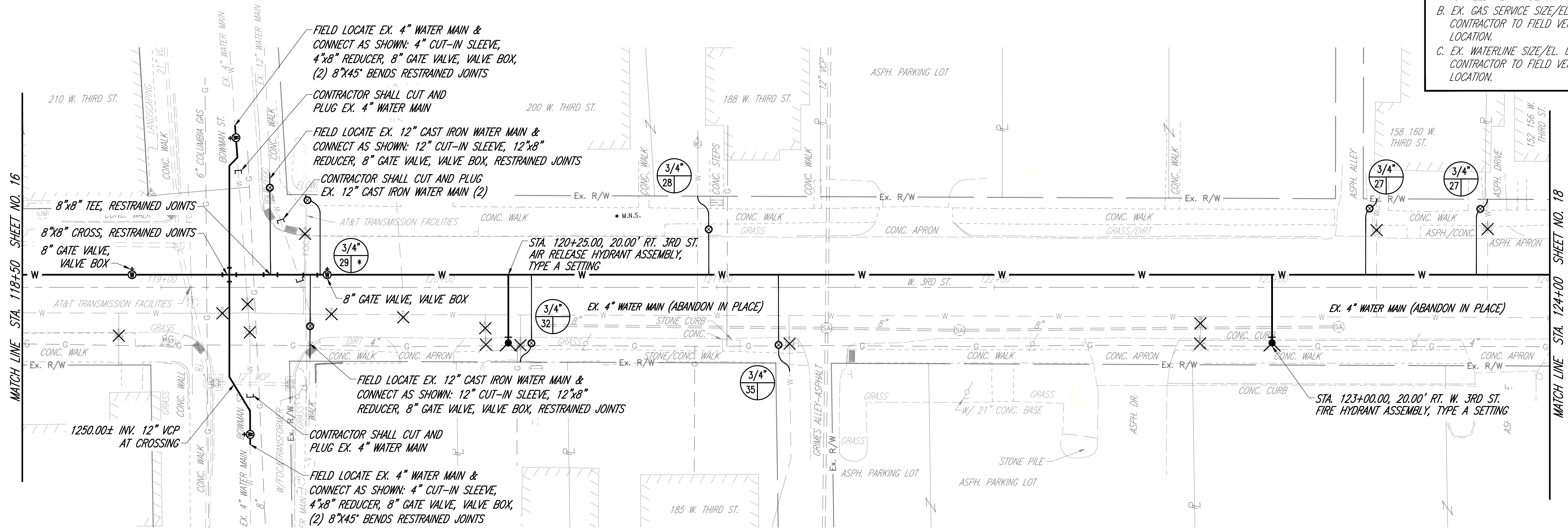
AREA 2
WEST 3RD ST.
STA. 113+00 TO STA. 118+50



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SHEET KEYNOTES

- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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ISSUED DATE:

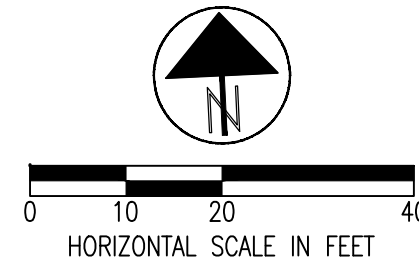
REV NO

DATE

REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 2
WEST 3RD ST.
STA. 118+50 TO STA. 124+00



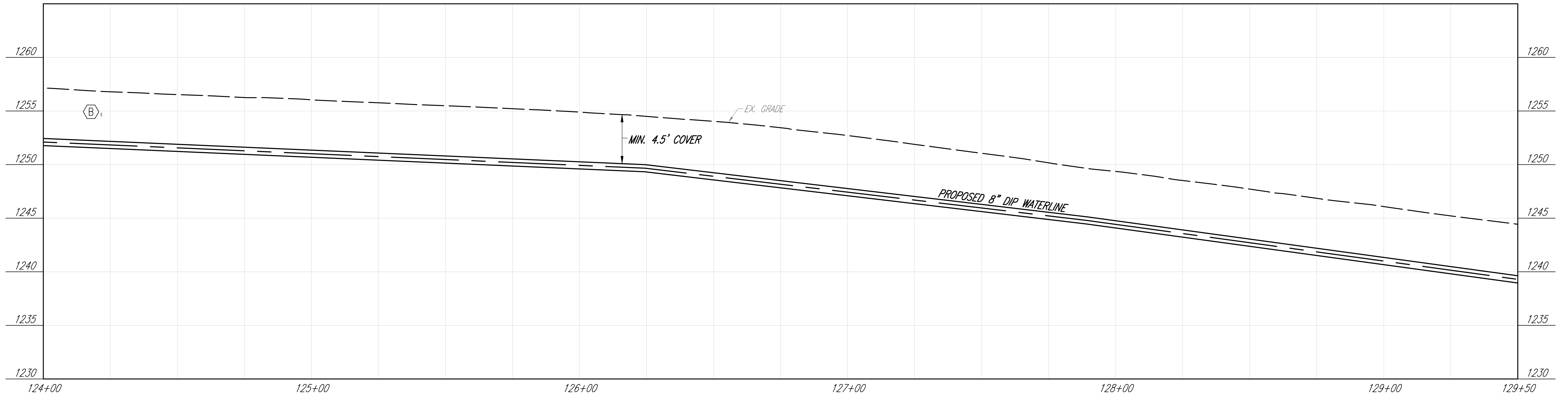
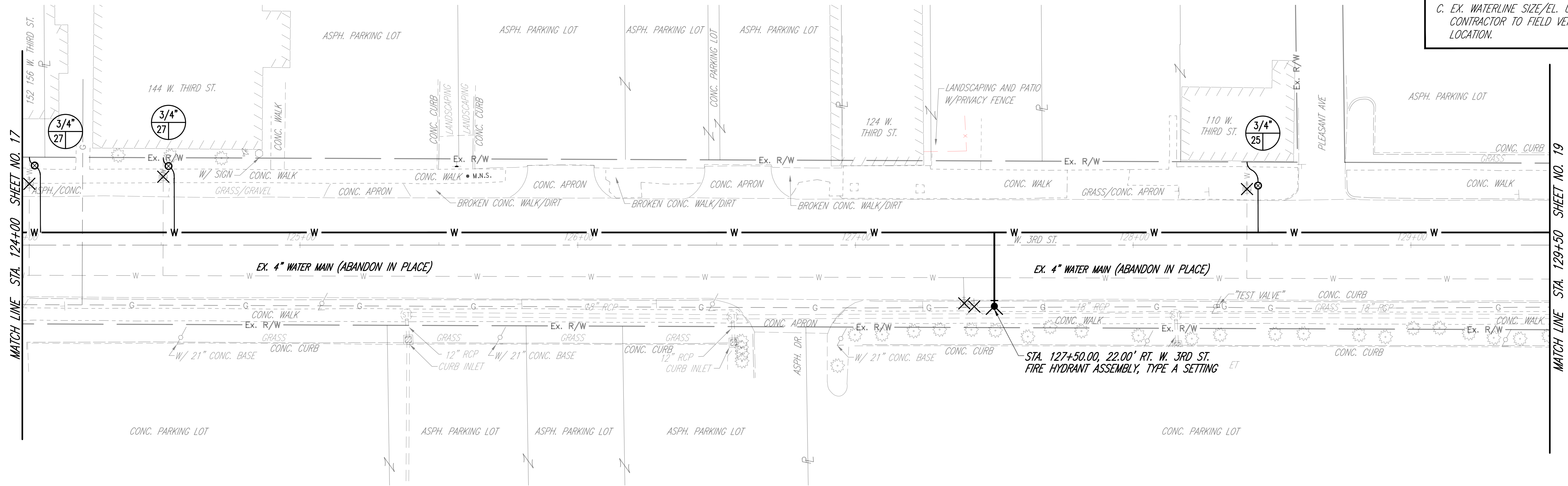
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49

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SHEET KEYNOTES

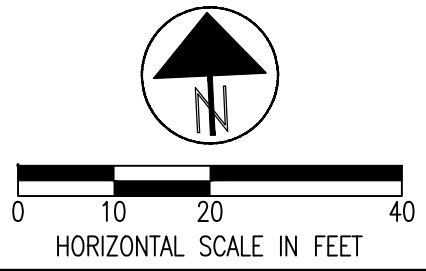
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 2
WEST 3RD ST.
STA. 124+00 TO STA. 129+50

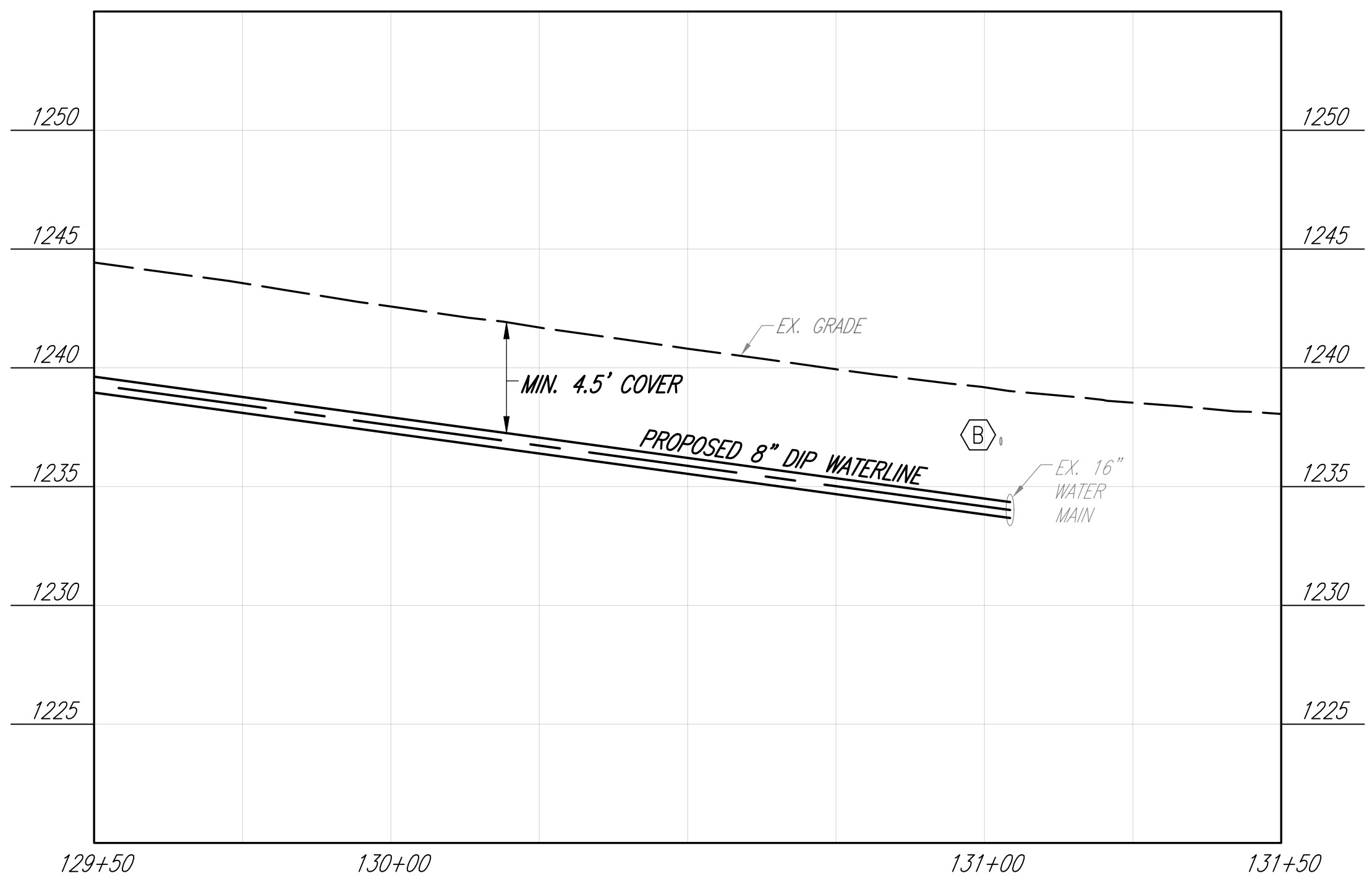
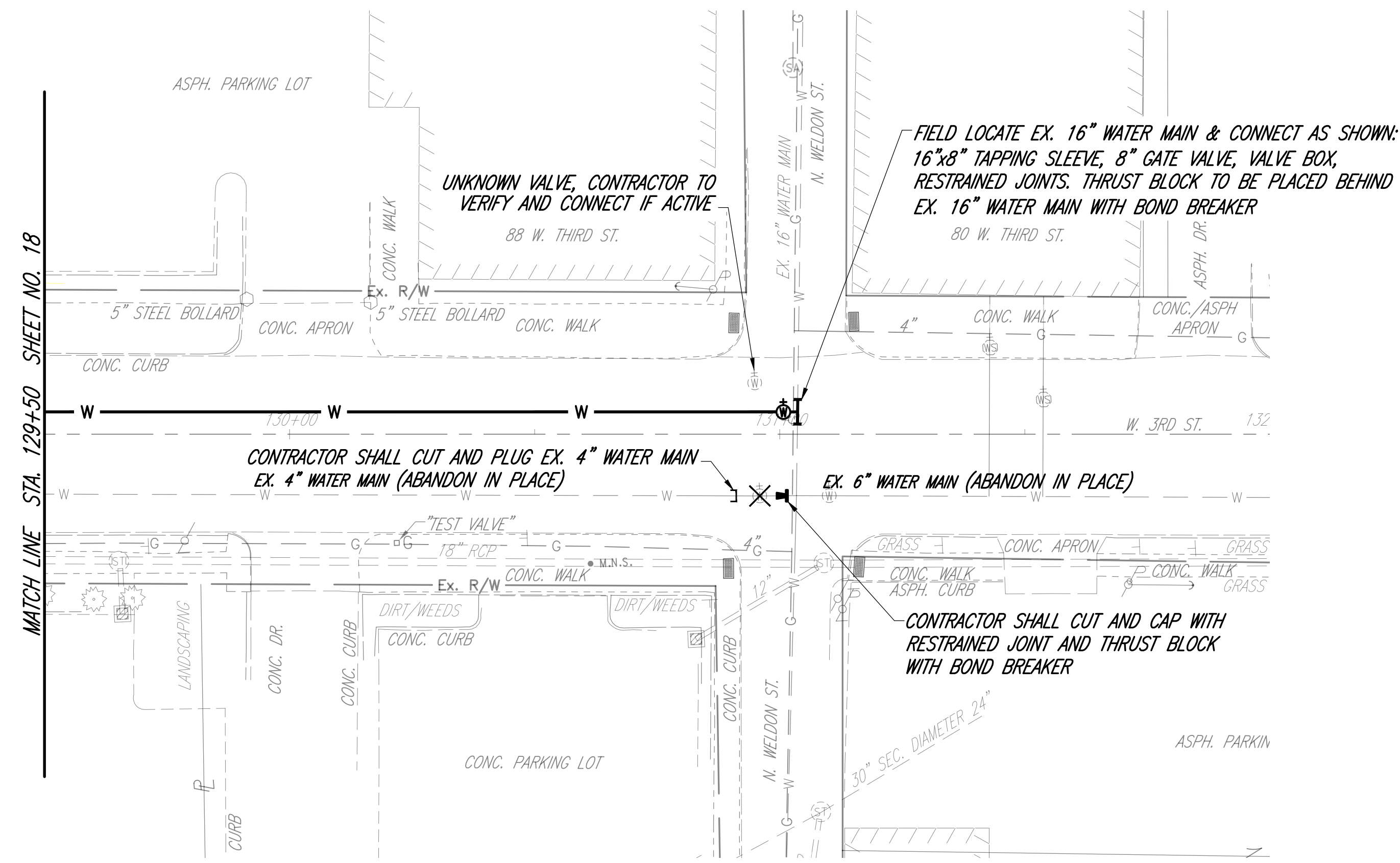


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- SHEET KEYNOTES
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

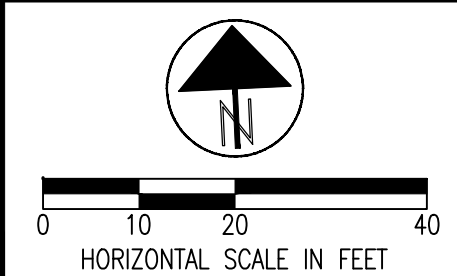
C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



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ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 2
WEST 3RD ST.
STA. 129+50 TO STA. 131+50



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AREA 2 SUB-SUMMARY

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REF		14	15	16	17	18	19					
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9		5	5	5	5			611	20	LF	12"-18" CONDUIT REPLACEMENT	9
10								604		EA	2-2B CATCH BASIN	10
11		439	595	565	668	550	159	W-1	2976	LF	8" WATER MAIN & FITTINGS - CLASS 53 DIP	11
12			2		2			W-2	4	EA	8" GATE VALVE & VALVE BOXES	12
13			1					W-3	1	EA	4" X 4" TAPPING SLEEVE, 4" GATE VALVE & VALVE BOX	13
14								W-3		EA	6" X 6" TAPPING SLEEVE, 6" GATE VALVE & VALVE BOX	14
15								W-3		EA	8" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	15
16								W-3		EA	12" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	16
17								W-3		EA	14" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	17
18							1	W-3	1	EA	16" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	18
19					2			W-4	2	EA	4" CUT-IN SLEEVE, 4" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	19
20			1					W-4	1	EA	6" CUT-IN SLEEVE, 6" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	20
21								W-4		EA	8" CUT-IN SLEEVE, 8" GATE VALVE & VALVE BOX	21
22								W-4		EA	10" CUT-IN SLEEVE, 10" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	22
23					2			W-4	2	EA	12" CUT-IN SLEEVE, 12" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	23
24		320	211	264	178	79		W-5	1052	LF	3/4" SERVICE BRANCH PIPE-TYPE K COPPER	24
25		9	10	10	6	3		W-6	38	EA	3/4" SERVICE TAP AND CORP STOP	25
26		9	10	10	6	3		W-7	38	EA	3/4" CURB STOP AND CURB BOX	26
27				16				W-5	16	LF	1 1/2" SERVICE BRANCH PIPE-TYPE K COPPER	27
28				1				W-6	1	EA	1 1/2" SERVICE TAP AND CORP STOP	28
29				1				W-7	1	EA	1 1/2" CURB STOP AND CURB BOX	29
30				33				W-5	33	LF	2" SERVICE BRANCH PIPE-TYPE K COPPER	30
31				1				W-6	1	EA	2" SERVICE TAP AND CORP STOP	31
32				1				W-7	1	EA	2" CURB STOP AND CURB BOX	32
33			1	1	1	1		W-8	4	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B	33
34		1				1		W-8	2	EA	AIR RELEASE HYDRANT ASSEMBLY, C-31A, TYPE A OR B	34
35				1				W-8	1	EA	BLOW-OFF HYDRANT ASSEMBLY, C-31B, TYPE A OR B	35
36		5	5	368	10	5		609	393	LF	TYPE 6 CURB	36
37		15						SPEC	15	SY	TYPE A2 CONCRETE PAVEMENT REPLACEMENT	37
38		21	20	27	21	11		SPEC	100	SY	TYPE A3 CONCRETE PAVEMENT REPLACEMENT	38
39		256	342	357	394	318	90	SPEC	1757	SY	TYPE B ASPHALT PAVEMENT REPLACEMENT	39
40					2			SPEC	2	EA	ADA CURB RAMP	40
41												41

2



DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE:

REV NO

DATE

REMARKS

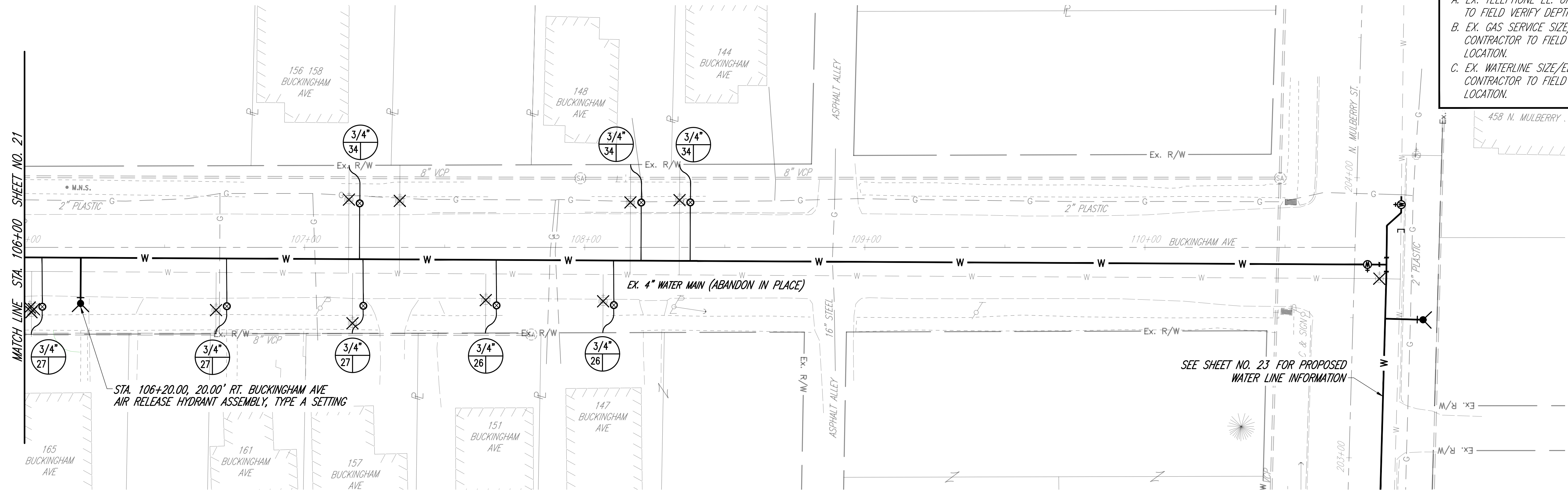
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 2 SUB-SUMMARY

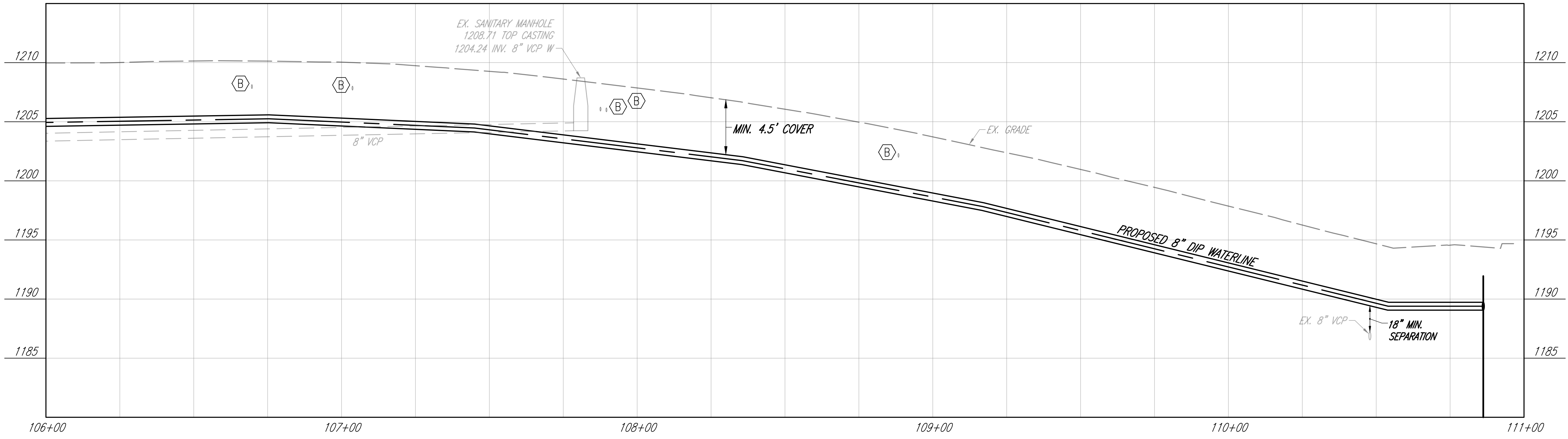
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



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- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

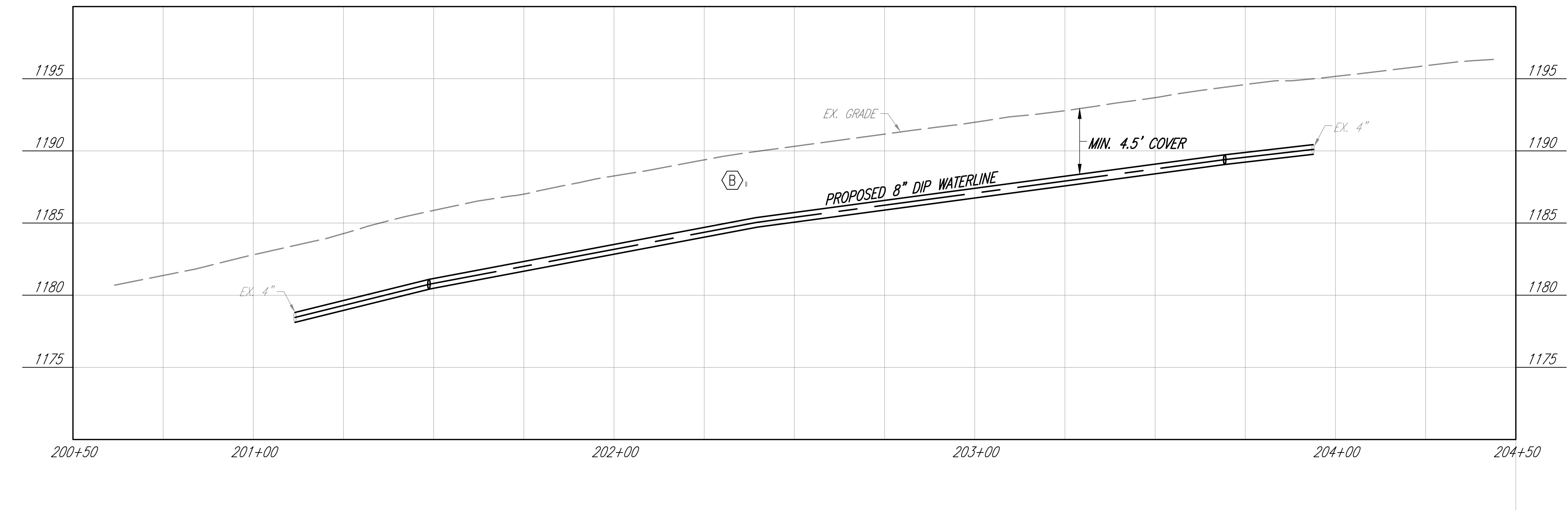
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 3
BUCKINGHAM AVE
STA. 106+00 TO STA. 111+00

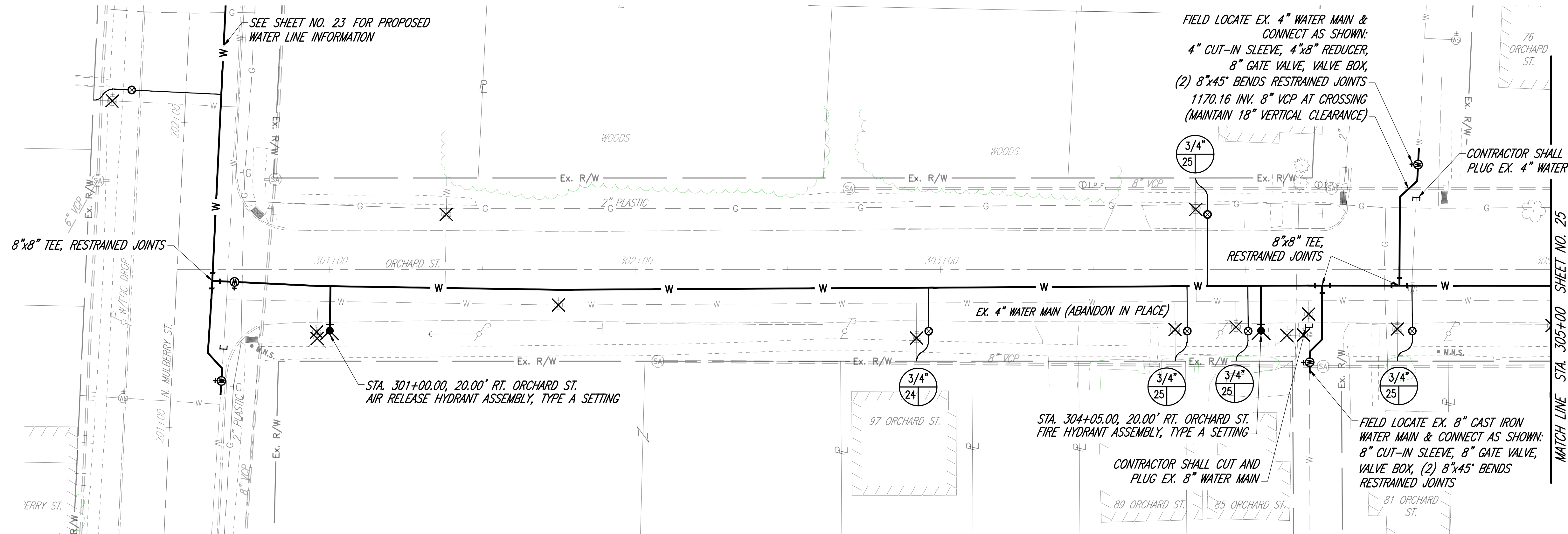
HORIZONTAL SCALE IN FEET

22 / 49

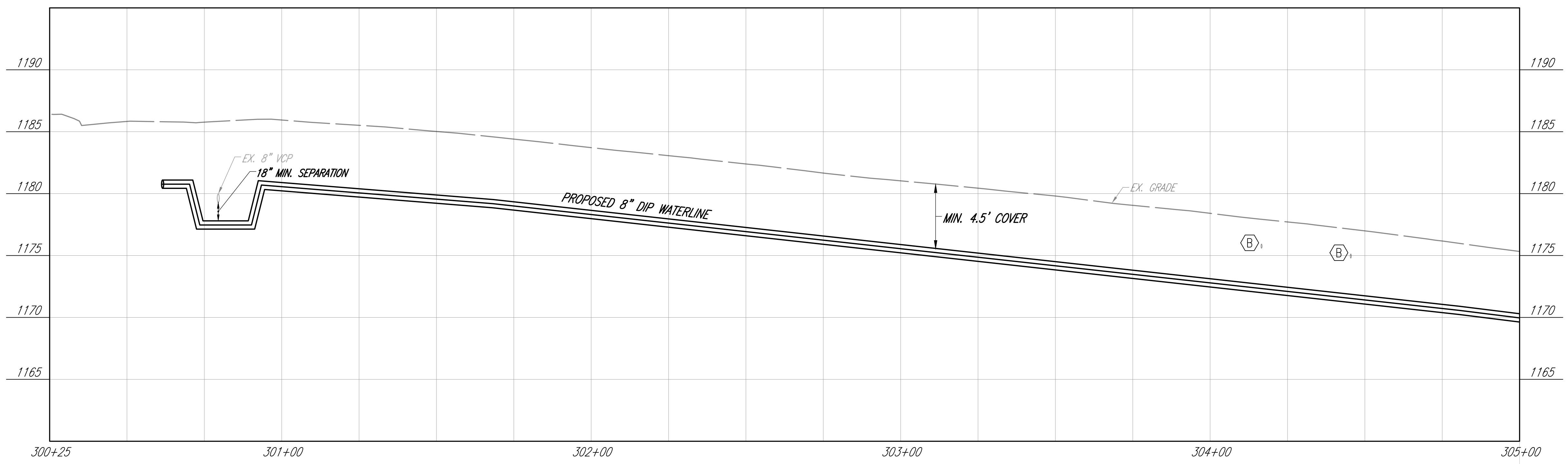
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 3\WT-172_AREA 3-PP.dwg\24 WT-172_A3-PP ORCHARD ST Feb 25,2025 - 12:58pm



- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



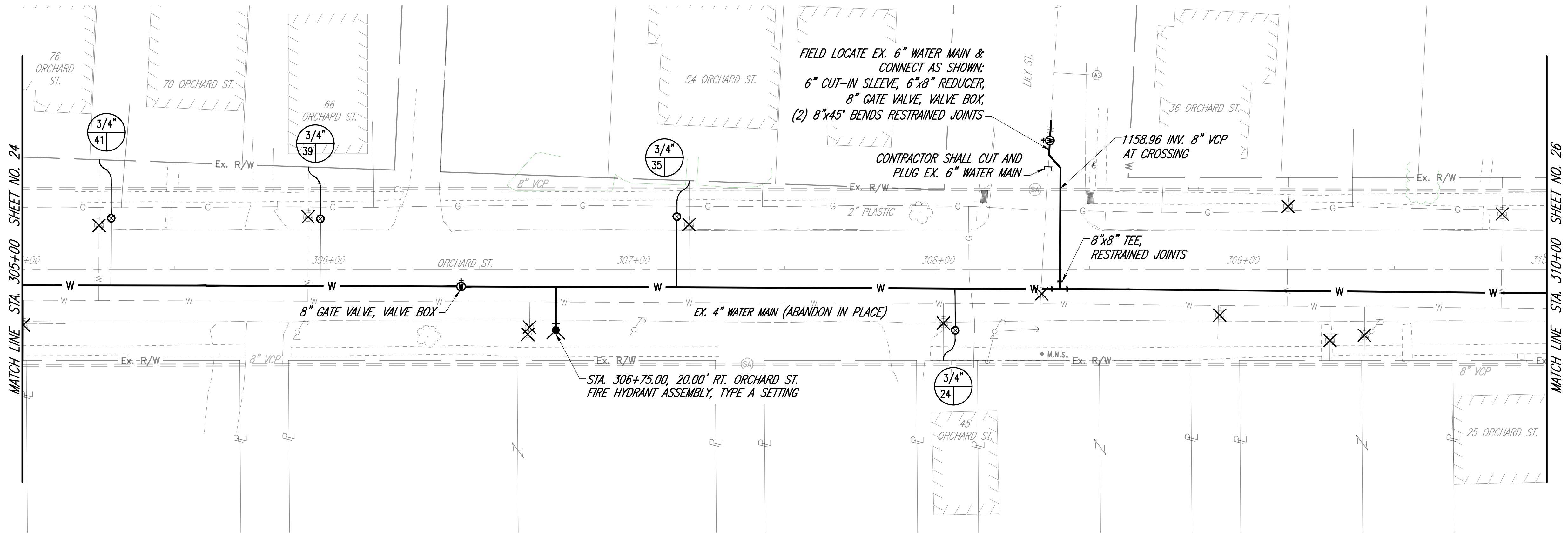
DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

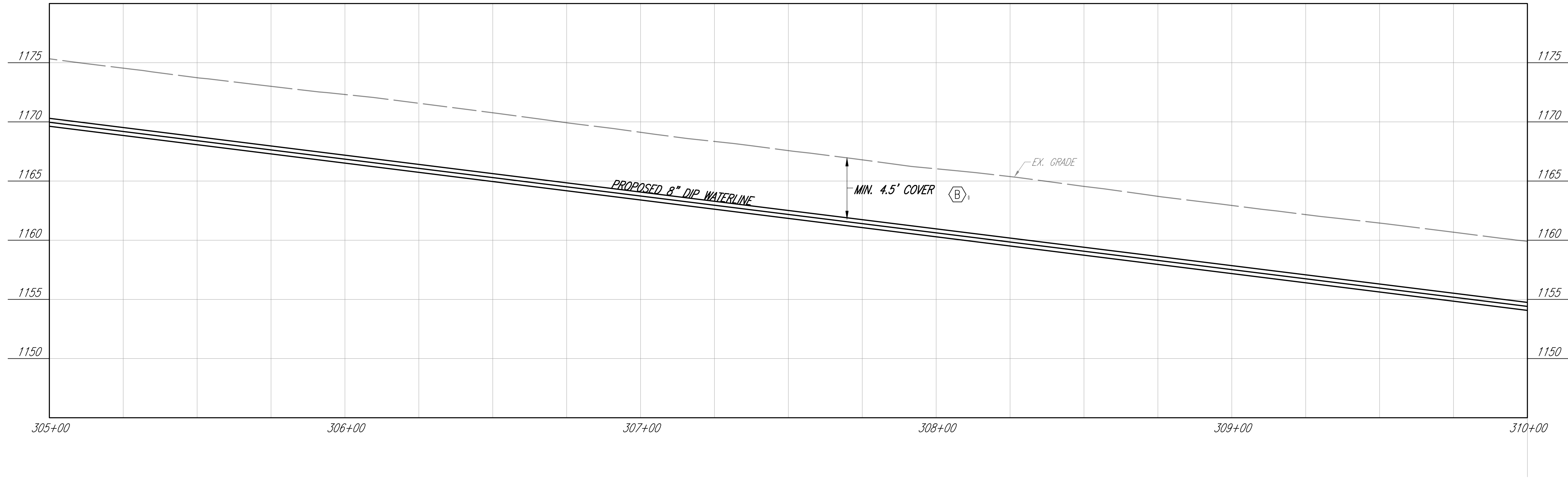
AREA 3
ORCHARD ST.
STA. 300+25 TO STA. 305+00

24 / 49

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 3\WT-172_AREA 3-PP.dwg\25 WT-172_A3-PP ORCHARD ST Feb 25,2025 - 12:58pm



- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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 - C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 3
ORCHARD ST.
STA. 305+00 TO STA. 310+00

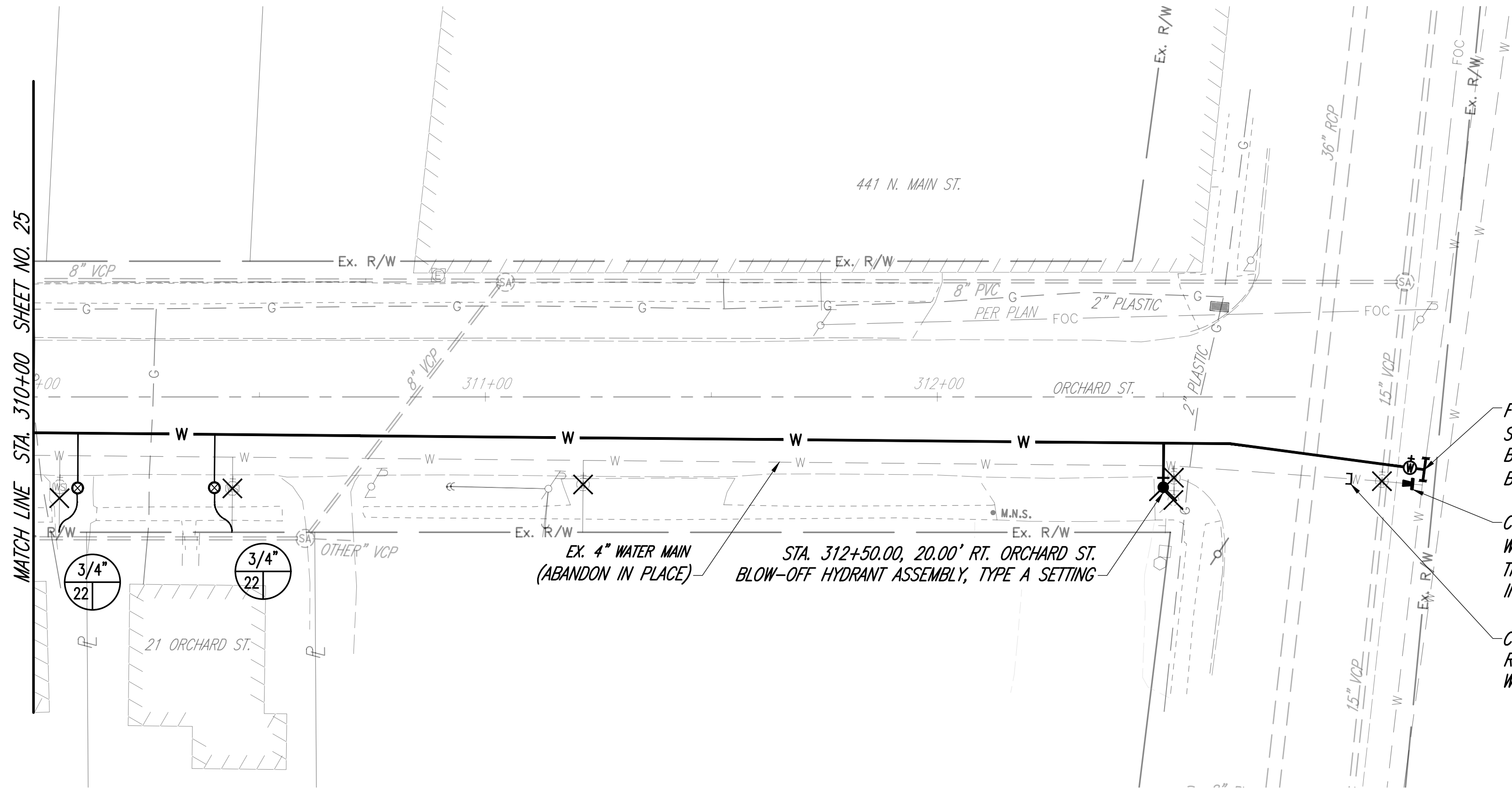
0 10 20 40
HORIZONTAL SCALE IN FEET

25 / 49

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WT\WTD172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 3\WT-172_AREA 3-PP.dwg\26 WT-172_A3-PP ORCHARD ST\ Feb 25,2025 - 12:57pm

SHEET KEYNOTES

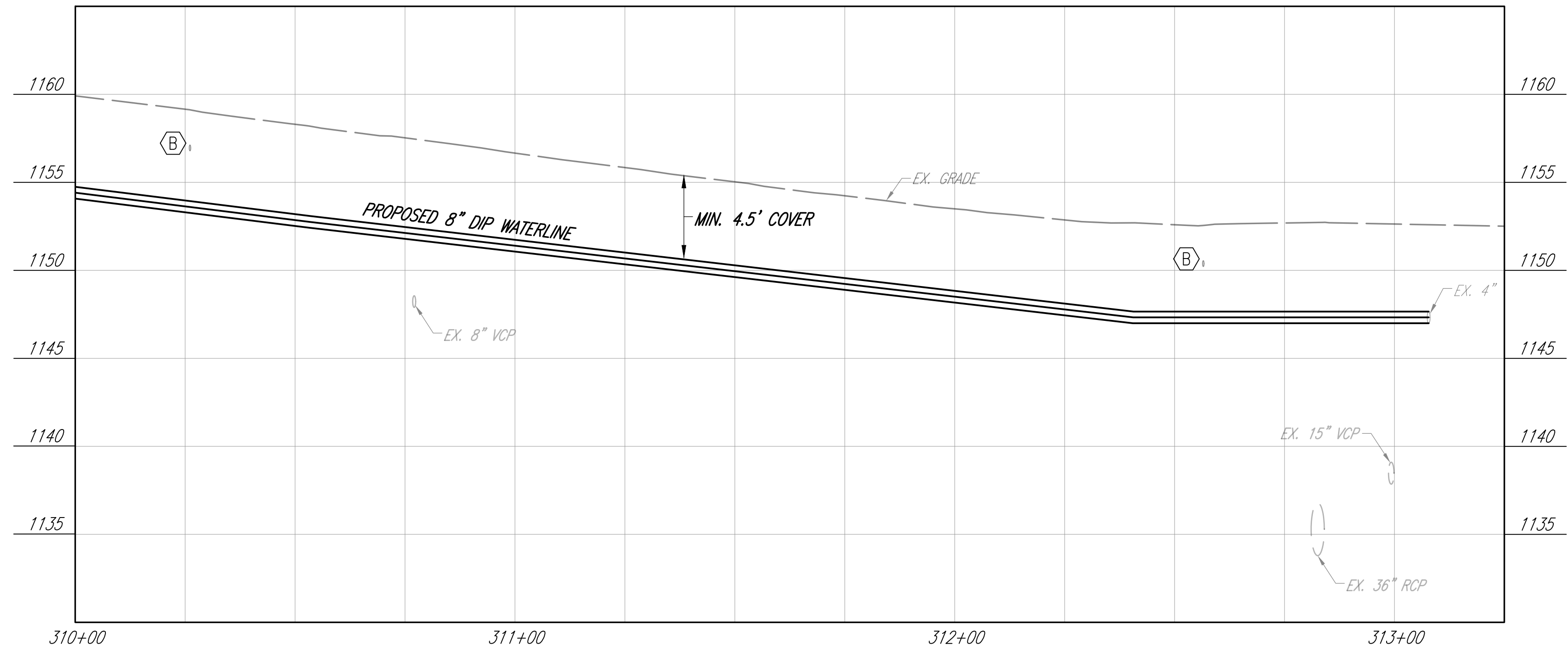
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



FIELD LOCATE EX. 14" WATER MAIN & CONNECT AS SHOWN: 14"x8" TAPPING SLEEVE, 8" GATE VALVE, VALVE BOX, RESTRAINED JOINTS. THRUST BLOCK TO BE PLACED BEHIND EX. 14" WATER MAIN WITH BOND BREAKER

CONTRACTOR SHALL CUT AND CAP WITH MECHANICAL JOINT/RESTRAINED THE EXISTING 4" WATER MAIN AND INSTALL THRUST BLOCK

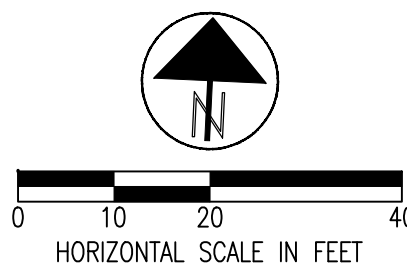
CONTRACTOR SHALL CUT AND CAP WITH RESTRAINED JOINT AND THRUST BLOCK WITH BOND BREAKER



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 3
ORCHARD ST.
STA. 310+00 TO STA. 313+00



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AREA 3 SUB-SUMMARY

REF	SHEET NUMBER							ITEM	TOTAL	UNITS	DESCRIPTION	REF
		21	22	23	24	25	26					
8					10			611	10	LF	8"-10" CONDUIT REPLACEMENT	8
9								611		LF	12"-18" CONDUIT REPLACEMENT	9
10								604		EA	2-2B CATCH BASIN	10
11		603	486	286	516	557	313	W-1	2761	LF	8" WATER MAIN & FITTINGS - CLASS 53 DIP	11
12						1		W-2	1	EA	8" GATE VALVE & VALVE BOXES	12
13								W-3		EA	4" X 4" TAPPING SLEEVE, 4" GATE VALVE & VALVE BOX	13
14								W-3		EA	6" X 6" TAPPING SLEEVE, 6" GATE VALVE & VALVE BOX	14
15								W-3		EA	8" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	15
16								W-3		EA	12" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	16
17							1	W-3	1	EA	14" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	17
18								W-3		EA	16" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	18
19				2	1			W-4	3	EA	4" CUT-IN SLEEVE, 4" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	19
20					1			W-4	1	EA	6" CUT-IN SLEEVE, 6" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	20
21		1			1			W-4	2	EA	8" CUT-IN SLEEVE, 8" GATE VALVE & VALVE BOX	21
22		1						W-4	1	EA	10" CUT-IN SLEEVE, 10" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	22
23								W-4		EA	12" CUT-IN SLEEVE, 12" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	23
24		228	235	61	124	139	44	W-5	831	LF	3/4" SERVICE BRANCH PIPE-TYPE K COPPER	24
25		8	8	2	5	4	2	W-6	29	EA	3/4" SERVICE TAP AND CORP STOP	25
26		8	8	2	5	4	2	W-7	29	EA	3/4" CURB STOP AND CURB BOX	26
27								W-5		LF	1 1/2" SERVICE BRANCH PIPE-TYPE K COPPER	27
28								W-6		EA	1 1/2" SERVICE TAP AND CORP STOP	28
29								W-7		EA	1 1/2" CURB STOP AND CURB BOX	29
30								W-5		LF	2" SERVICE BRANCH PIPE-TYPE K COPPER	30
31								W-6		EA	2" SERVICE TAP AND CORP STOP	31
32								W-7		EA	2" CURB STOP AND CURB BOX	32
33		1		1	1	1		W-8	4	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B	33
34			1		1			W-8	2	EA	AIR RELEASE HYDRANT ASSEMBLY, C-31A, TYPE A OR B	34
35							1	W-8	1	EA	BLOW-OFF HYDRANT ASSEMBLY, C-31B, TYPE A OR B	35
36		5	5	49	10	5	5	609	79	LF	TYPE 6 CURB	36
37		325	275					SPEC	600	SY	TYPE A2 CONCRETE PAVEMENT REPLACEMENT	37
38		25	23	3	11		2	SPEC	64	SY	TYPE A3 CONCRETE PAVEMENT REPLACEMENT	38
39				164	296	314	178	SPEC	952	SY	TYPE B ASPHALT PAVEMENT REPLACEMENT	39
40		2					1	SPEC	3	EA	ADA CURB RAMP	40
41												41

2



DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE:

REV NO

DATE

REMARKS

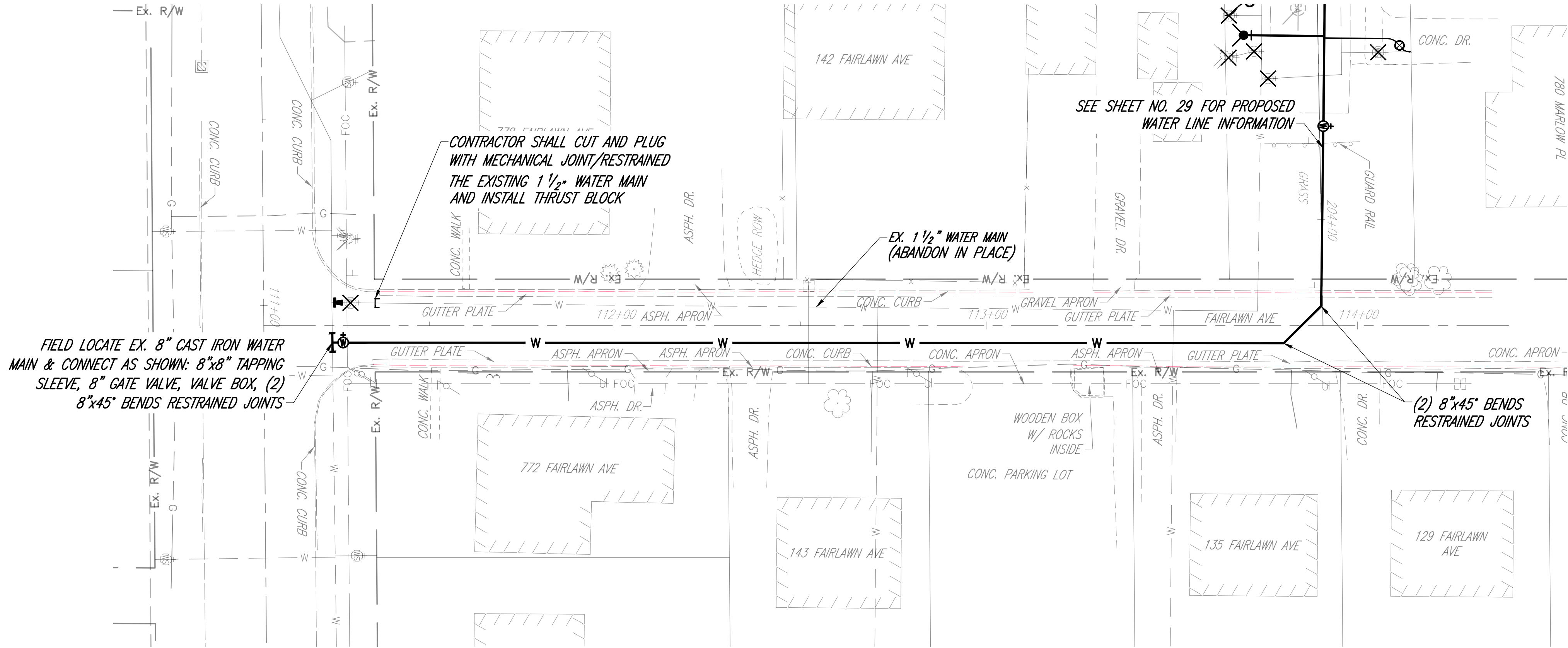
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 3 SUB-SUMMARY

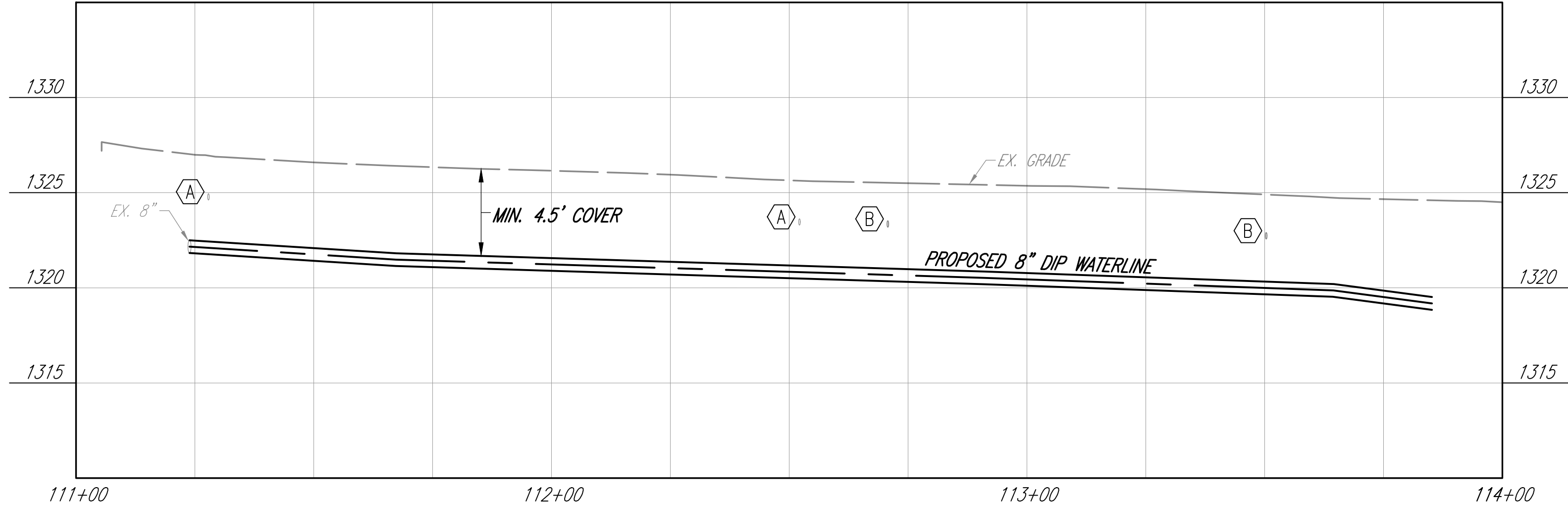
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49

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WT\WTD172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 4\WT-172_A4-PP.dwg\28 WT-172_A4-PP FAIRLAWN AVE\ Feb 25,2025 - 12:56pm



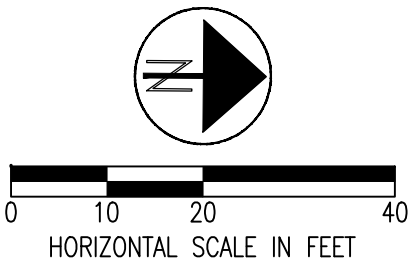
- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

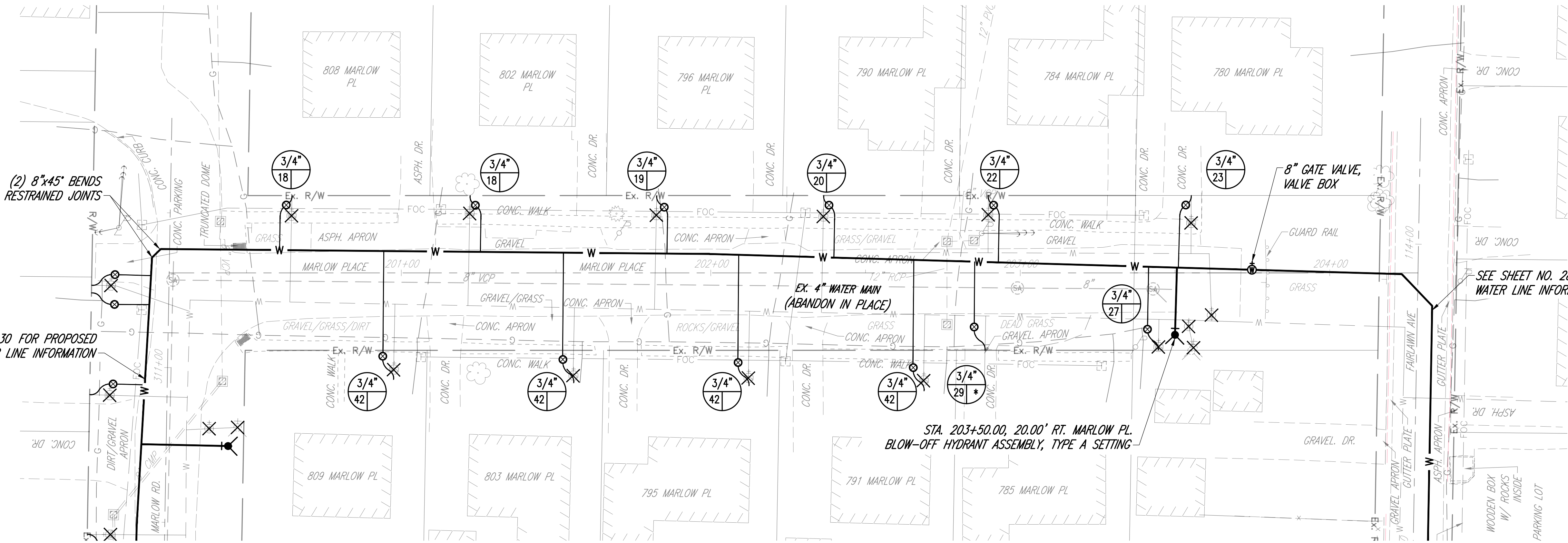
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 4
MARLOW PL.
STA. 111+00 TO STA. 114+00



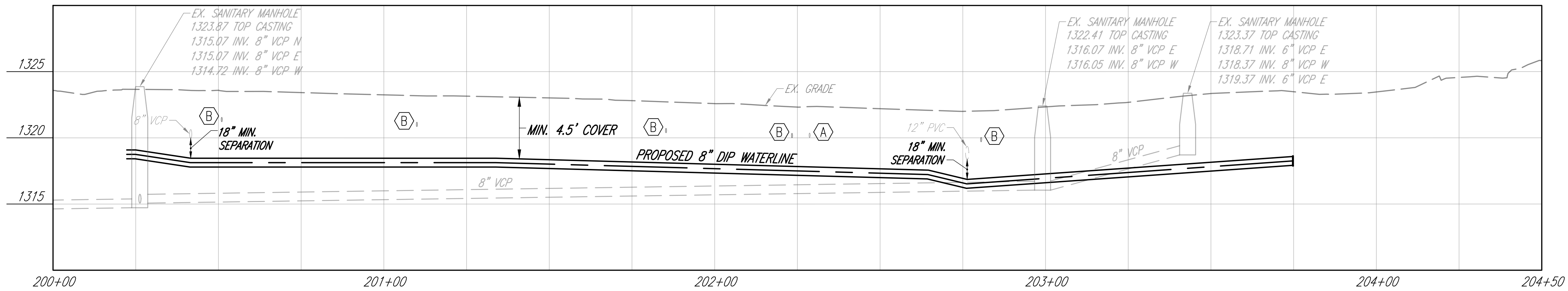
DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 4\WT-172_AREA 4-PP.dwg\29 WT-172_A4-PP MARLOW PL\ Feb 25,2025 - 12:58pm

SEE SHEET NO. 30 FOR PROPOSED WATER LINE INFORMATION



- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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STA. 203+50.00, 20.00' RT. MARLOW PL.
BLOW-OFF HYDRANT ASSEMBLY, TYPE A SETTING

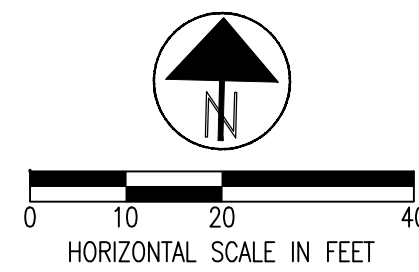


DESIGNED BY: M. WITTER
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CHECKED BY: P. LEWIS
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ISSUED DATE:

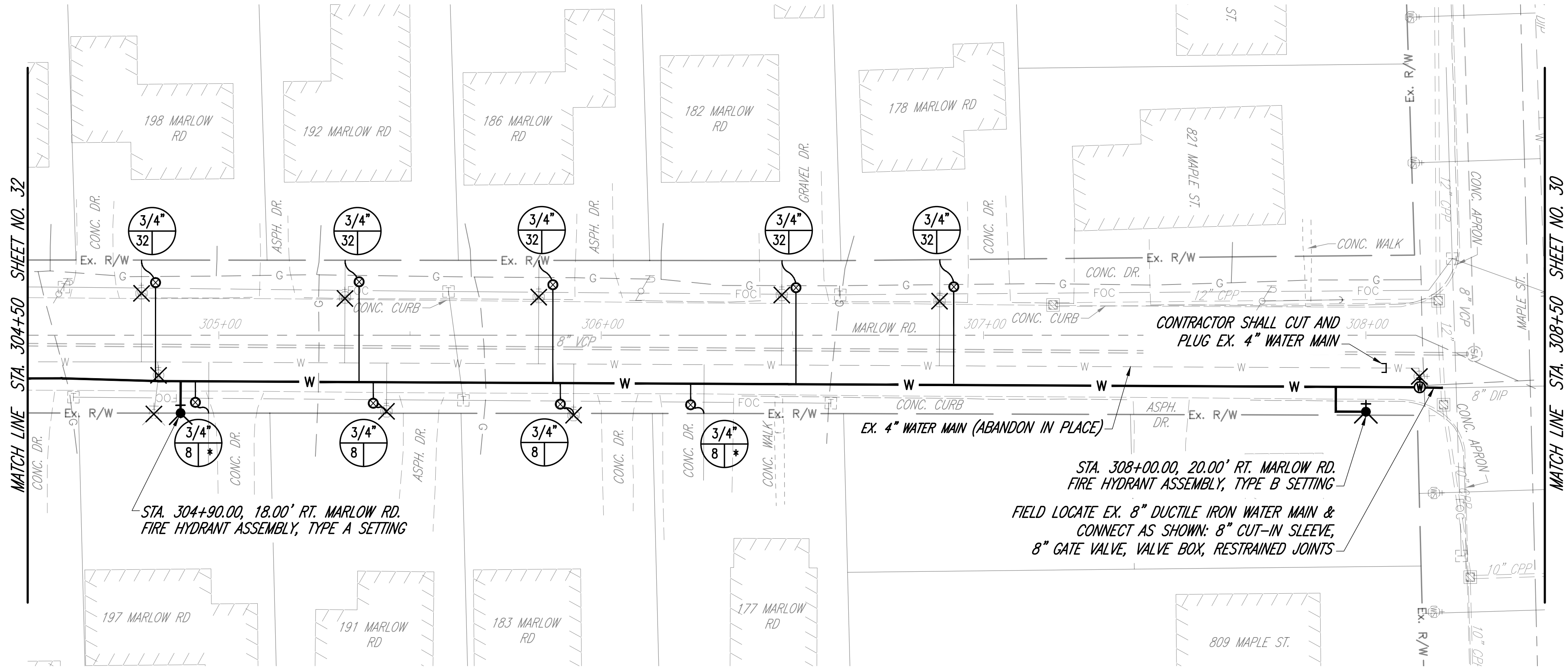
REV NO	DATE	REMARKS

**CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025**

**AREA 4
MARLOW PL.
STA. 200+00 TO STA. 204+50**

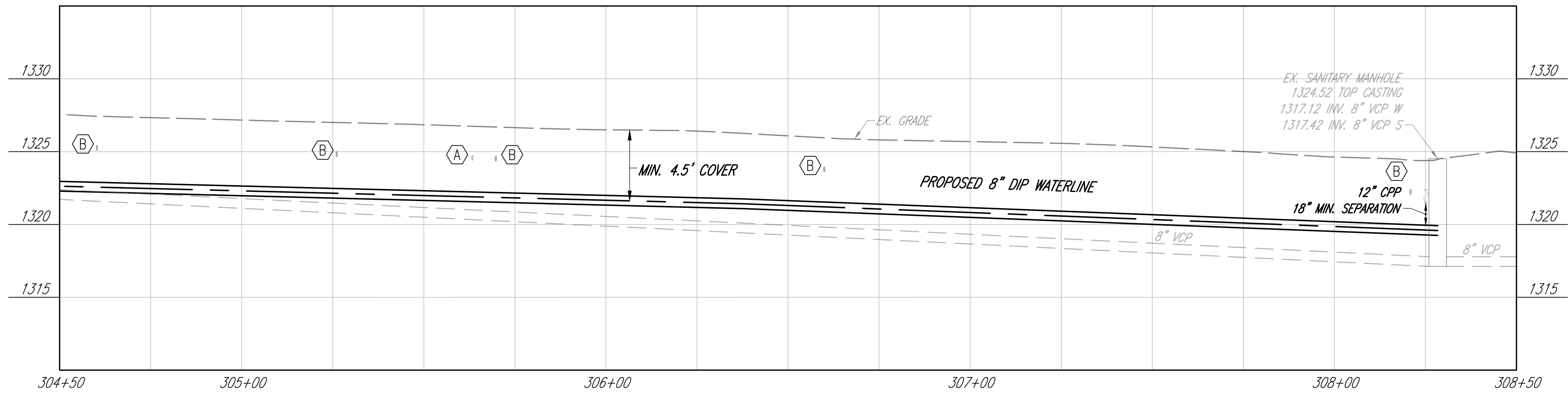


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SHEET KEYNOTES

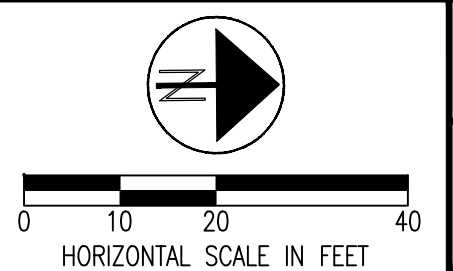
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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CHECKED BY: P. LEWIS			
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ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

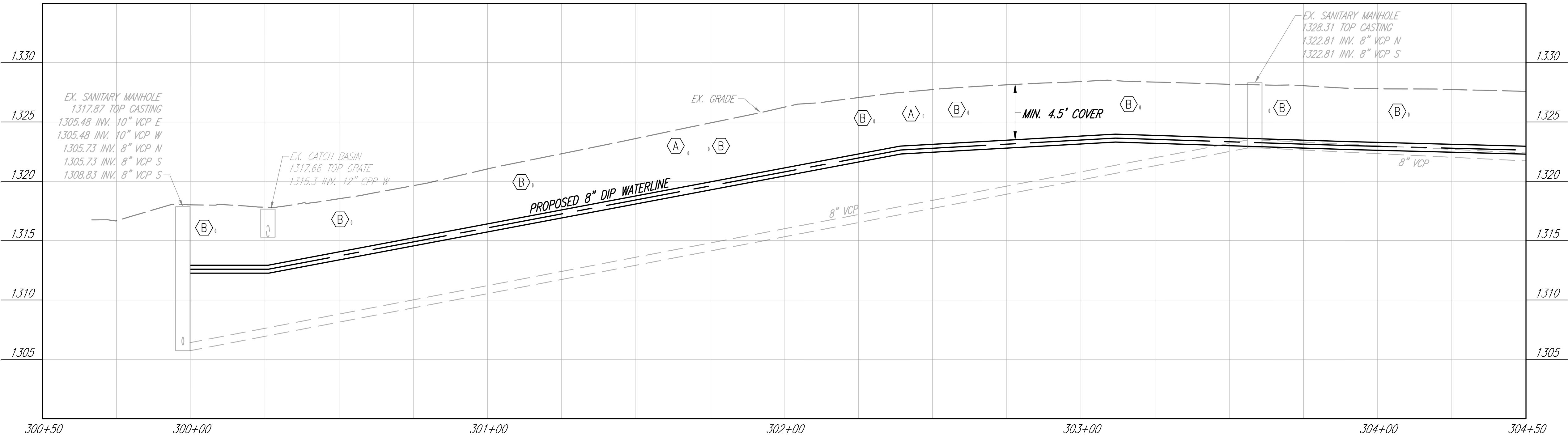
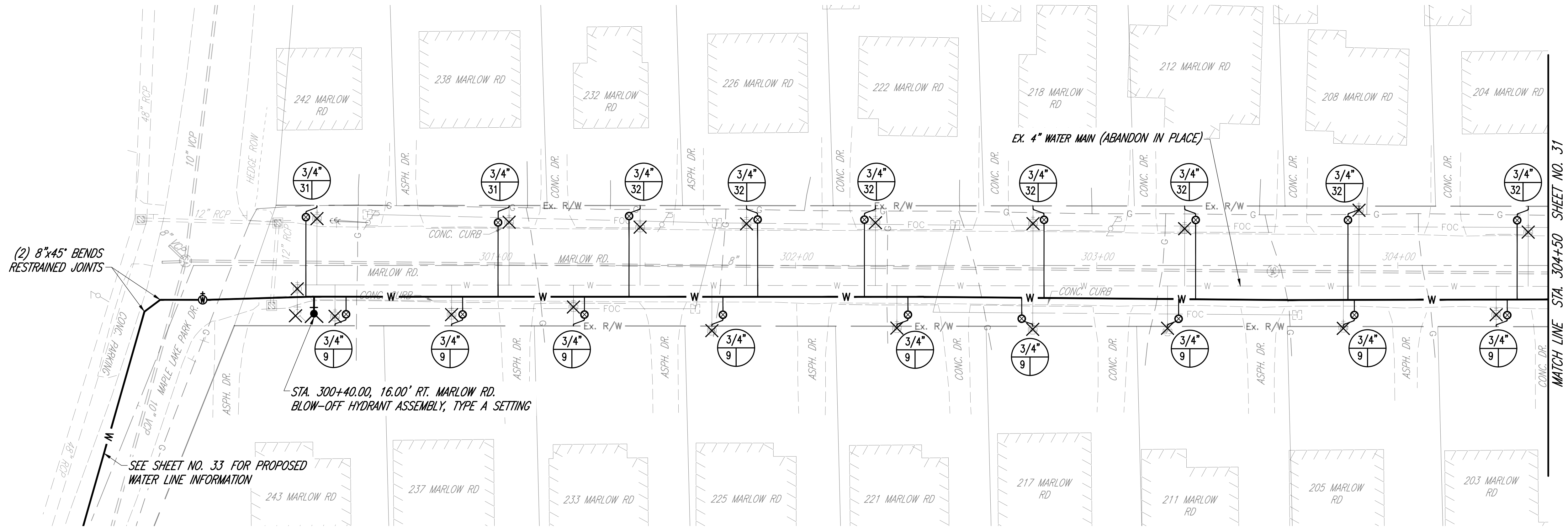
AREA 4
MARLOW RD.
STA. 304+50 TO STA. 308+50



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SHEET KEYNOTES

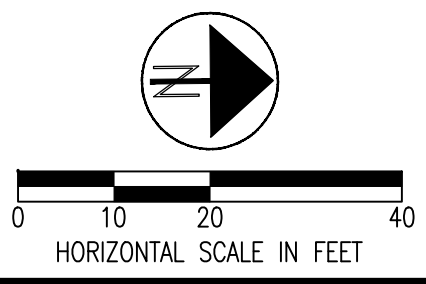
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

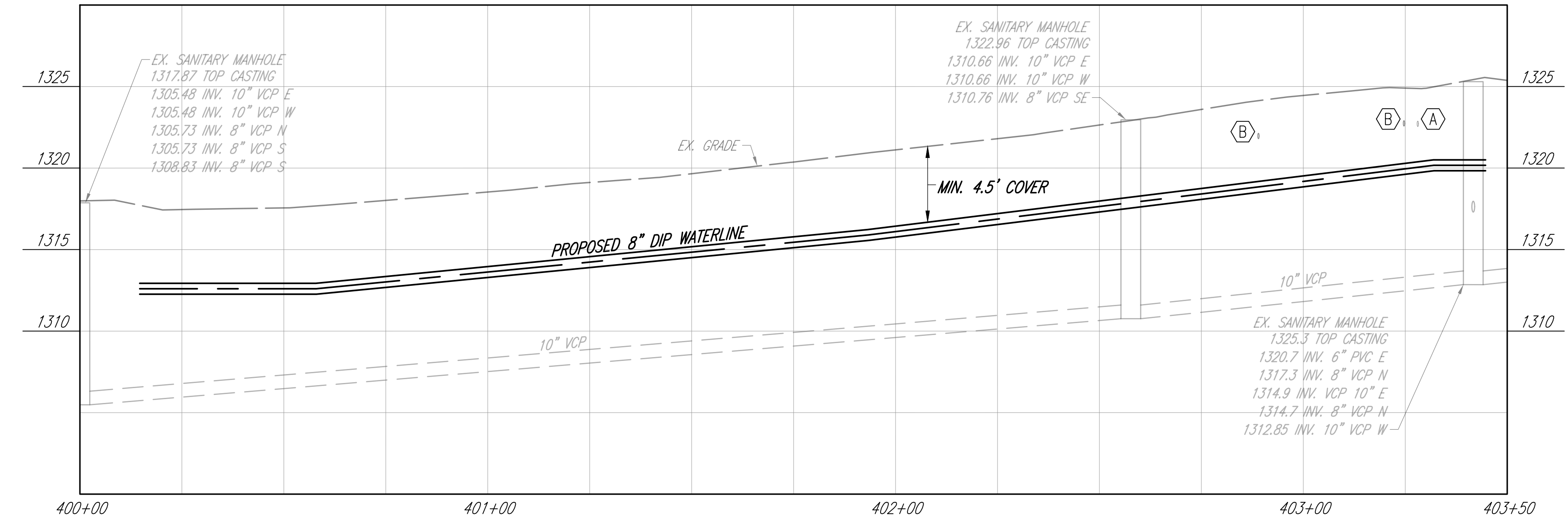


DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 4
MARLOW RD.
STA. 300+50 TO STA. 304+50

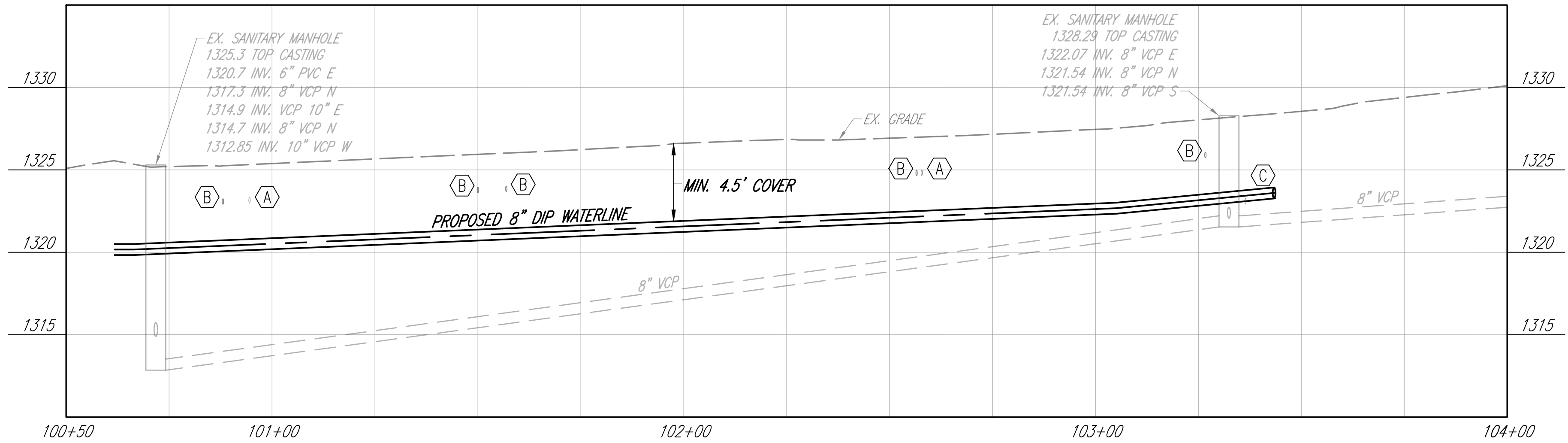
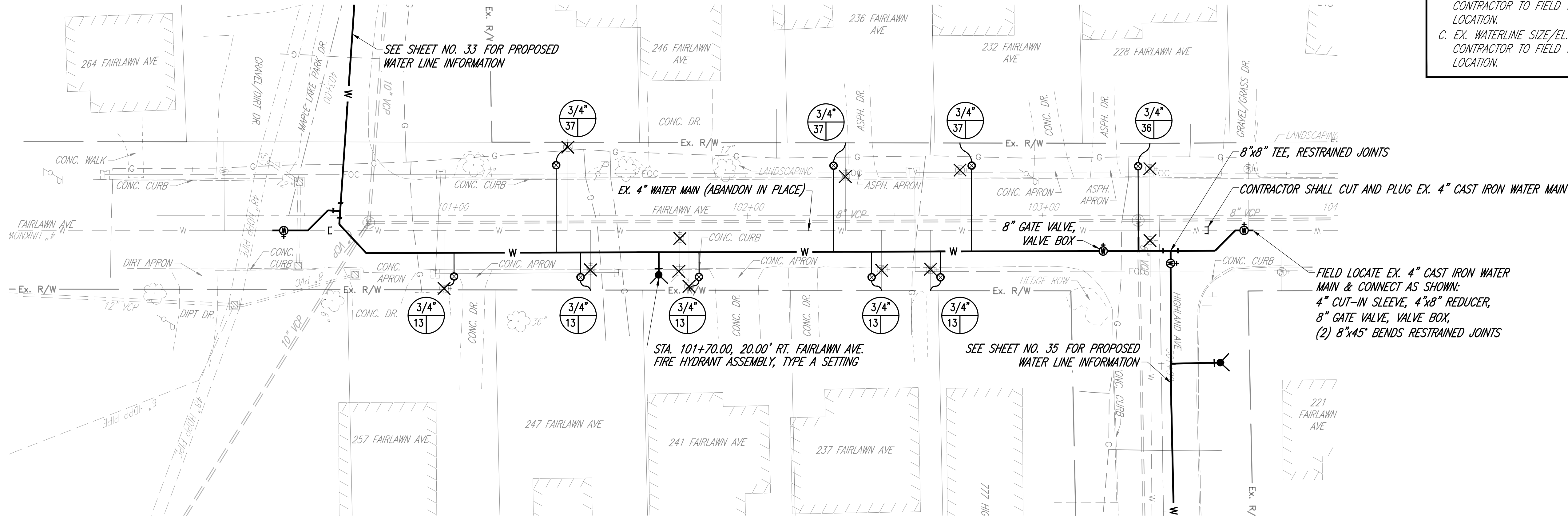




DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 4\WT-172_AREA 4-PP.dwg\34 WT-172_A4-PP FAIRLAWN AVE\ Feb. 25,2025 - 12:57pm

SHEET KEYNOTES

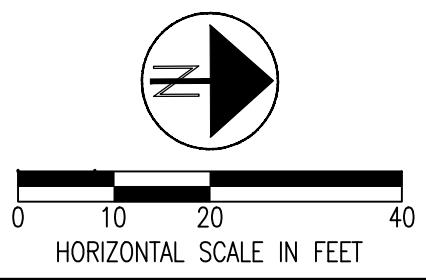
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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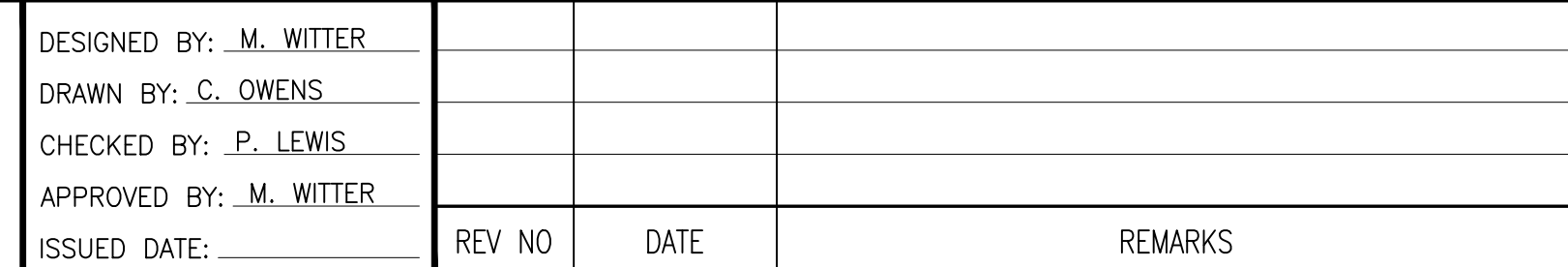


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APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

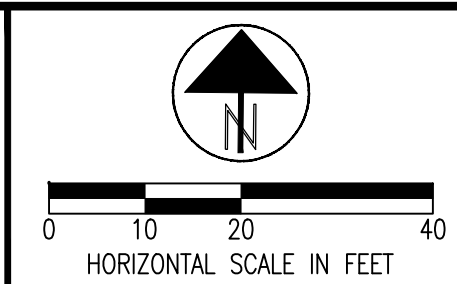
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 4
FAIRLAWN AVE.
STA. 100+50 TO STA. 104+00

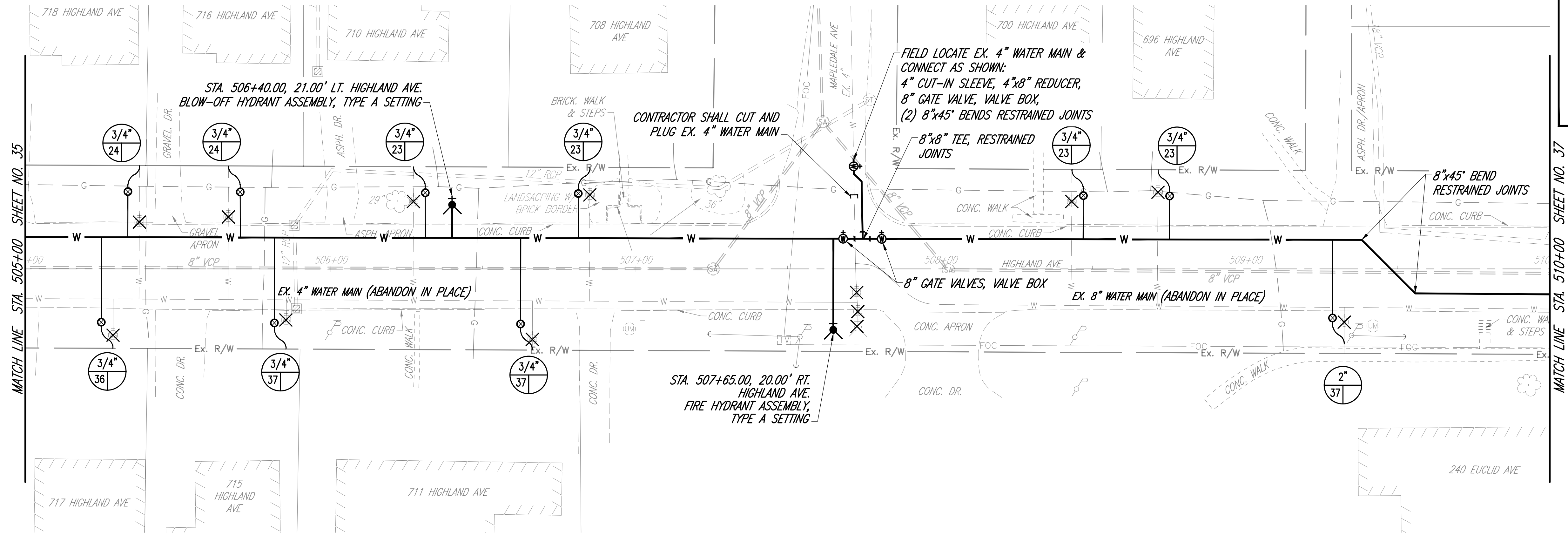




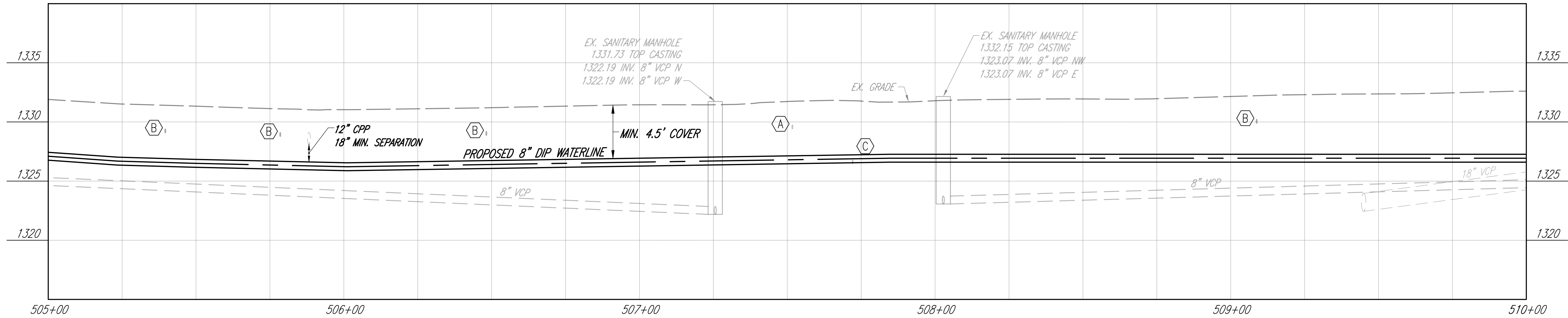
**AREA 4
HIGHLAND AVE.
STA. 500+00 TO STA. 505+00**



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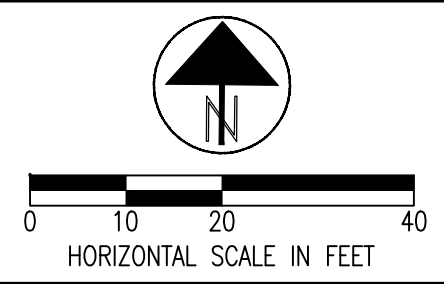
- SHEET KEYNOTES**
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 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
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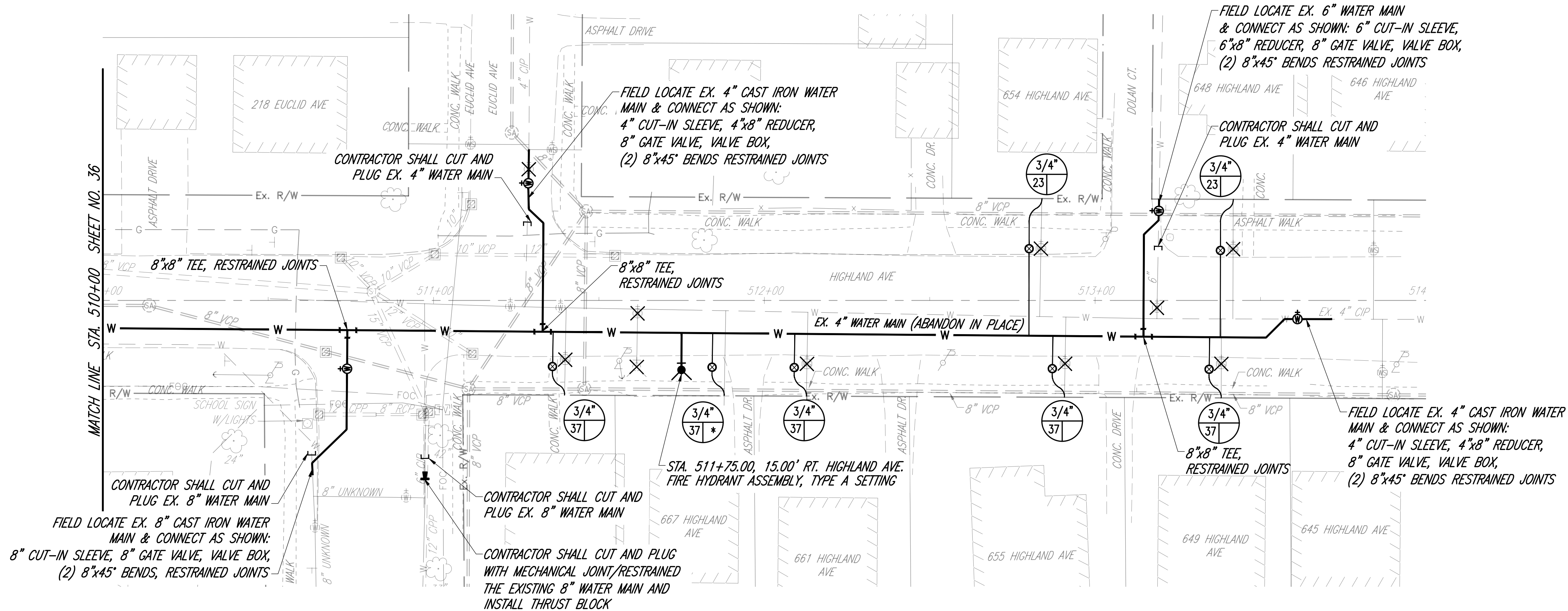
DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
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APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

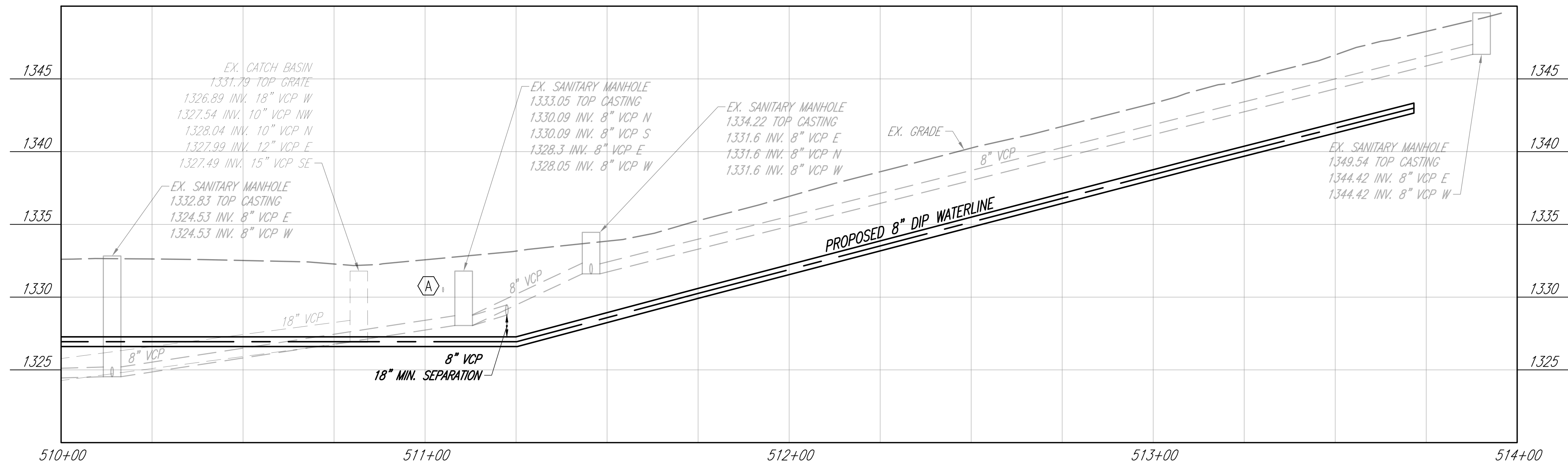
AREA 4
HIGHLAND AVE.
STA. 505+00 TO STA. 510+00



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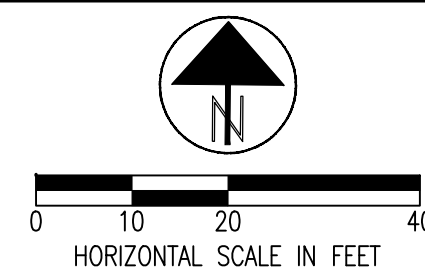
- SHEET KEYNOTES**
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DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
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APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 4
HIGHLAND AVE.
STA. 510+00 TO STA. 514+00



DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\VT\WTD172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 4\VT-172_AREA 4-SUM.dwg, 38 VT-172_A4 WATERLINE SUB-SUMMARY, Mor 17,2025 - 12:46pm

AREA 4 SUB-SUMMARY

	SHEET NUMBER										ITEM	TOTAL	UNITS	DESCRIPTION	REF
REF	28	29	30	31	32	33	34	35	36	37					
8		5	70								611	75	LF	8"-10" CONDUIT REPLACEMENT	8
9		5		10	10				10		611	35	LF	12"-18" CONDUIT REPLACEMENT	9
10			1		1						604	2	EA	2-2B CATCH BASIN	10
11		360	278	370	461	346	303	500	527	487	W-1	3632	LF	8" WATER MAIN & FITTINGS - CLASS 53 DIP	11
12		1			1		1	1	2		W-2	6	EA	8" GATE VALVE & VALVE BOXES	12
13											W-3		EA	4" X 4" TAPPING SLEEVE, 4" GATE VALVE & VALVE BOX	13
14											W-3		EA	6" X 6" TAPPING SLEEVE, 6" GATE VALVE & VALVE BOX	14
15											W-3		EA	8" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	15
16											W-3		EA	12" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	16
17											W-3		EA	14" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	17
18											W-3		EA	16" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	18
19						1	1	1	1	2	W-4	6	EA	4" CUT-IN SLEEVE, 4" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	19
20								1		1	W-4	2	EA	6" CUT-IN SLEEVE, 6" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	20
21			1	1						1	W-4	3	EA	8" CUT-IN SLEEVE, 8" GATE VALVE & VALVE BOX	21
22											W-4		EA	10" CUT-IN SLEEVE, 10" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	22
23											W-4		EA	12" CUT-IN SLEEVE, 12" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	23
24		317	64	192	367		212	130	250	231	W-5	1763	LF	3/4" SERVICE BRANCH PIPE-TYPE K COPPER	24
25		12	4	9	18		9	4	9	7	W-6	72	EA	3/4" SERVICE TAP AND CORP STOP	25
26		12	4	9	18		9	4	9	7	W-7	72	EA	3/4" CURB STOP AND CURB BOX	26
27		17									W-5	17	LF	1 1/2" SERVICE BRANCH PIPE-TYPE K COPPER	27
28		1									W-6	1	EA	1 1/2" SERVICE TAP AND CORP STOP	28
29		1									W-7	1	EA	1 1/2" CURB STOP AND CURB BOX	29
30									37		W-5	37	LF	2" SERVICE BRANCH PIPE-TYPE K COPPER	30
31									1		W-6	1	EA	2" SERVICE TAP AND CORP STOP	31
32									1		W-7	1	EA	2" CURB STOP AND CURB BOX	32
33			1	2			1	1	1	1	W-8	7	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B	33
34								1			W-8	1	EA	AIR RELEASE HYDRANT ASSEMBLY, C-31A, TYPE A OR B	34
35		1			1				1		W-8	3	EA	BLOW-OFF HYDRANT ASSEMBLY, C-31B, TYPE A OR B	35
36				284	299		5	10	240	289	609	1127	LF	TYPE 6 CURB	36
37						192					SPEC	192	SY	TYPE A2 CONCRETE PAVEMENT REPLACEMENT	37
38		21									SPEC	21	SY	TYPE A3 CONCRETE PAVEMENT REPLACEMENT	38
39		209	86	207	183		171	295	395	299	SPEC	1845	SY	TYPE B ASPHALT PAVEMENT REPLACEMENT	39
40		1									SPEC	1	EA	ADA CURB RAMP	40
41															41

2



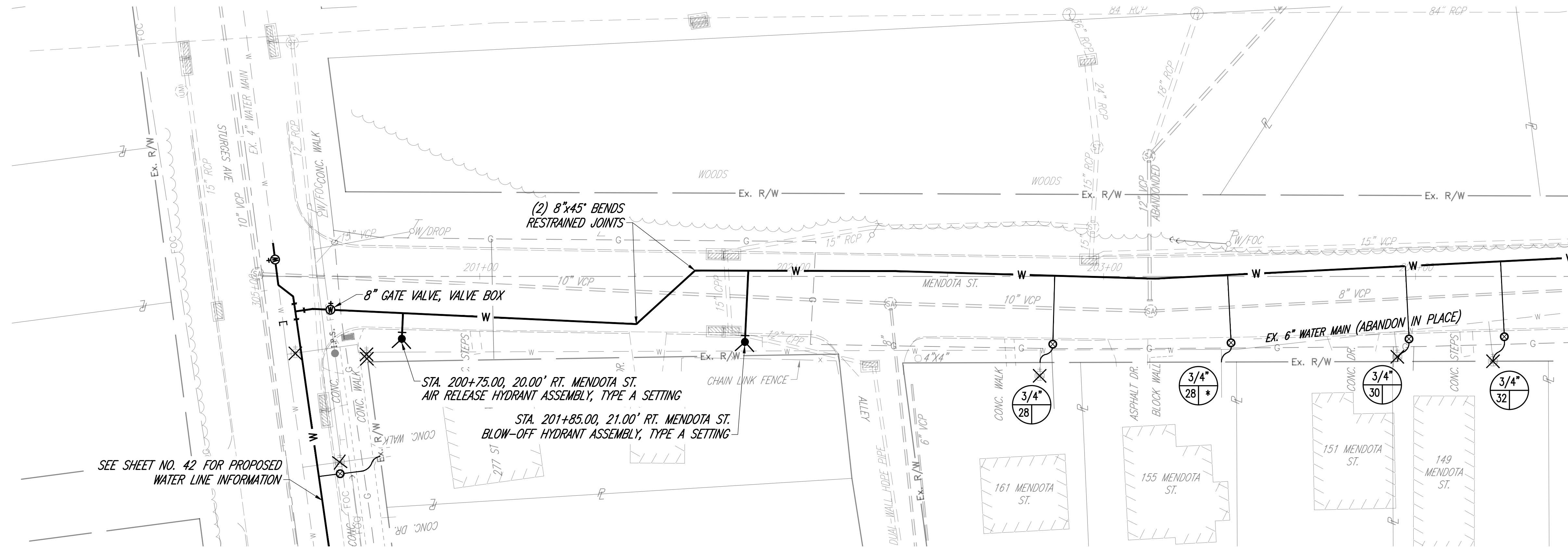
DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE: _____

REV NO	DATE	REMARKS
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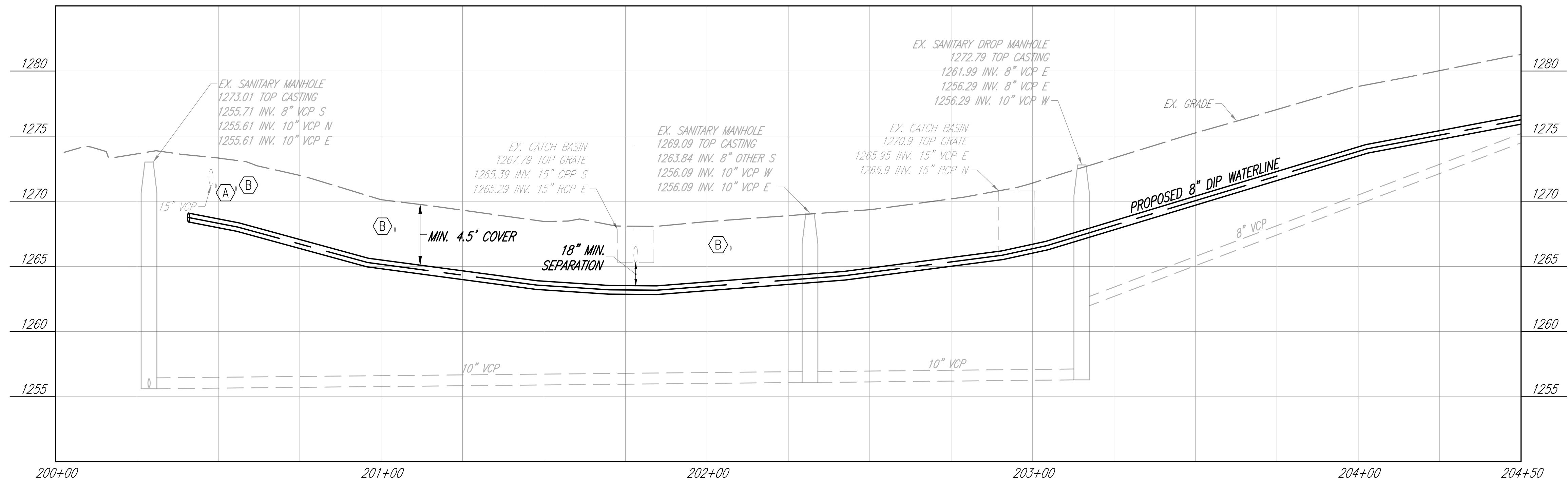
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 4 SUB-SUMMARY

DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 5\WT-172_AREA 5-PP.dwg\39 WT-172_A5-PP MENDOTA ST Feb 25,2025 - 12:59pm



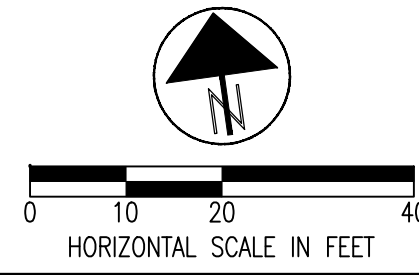
- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



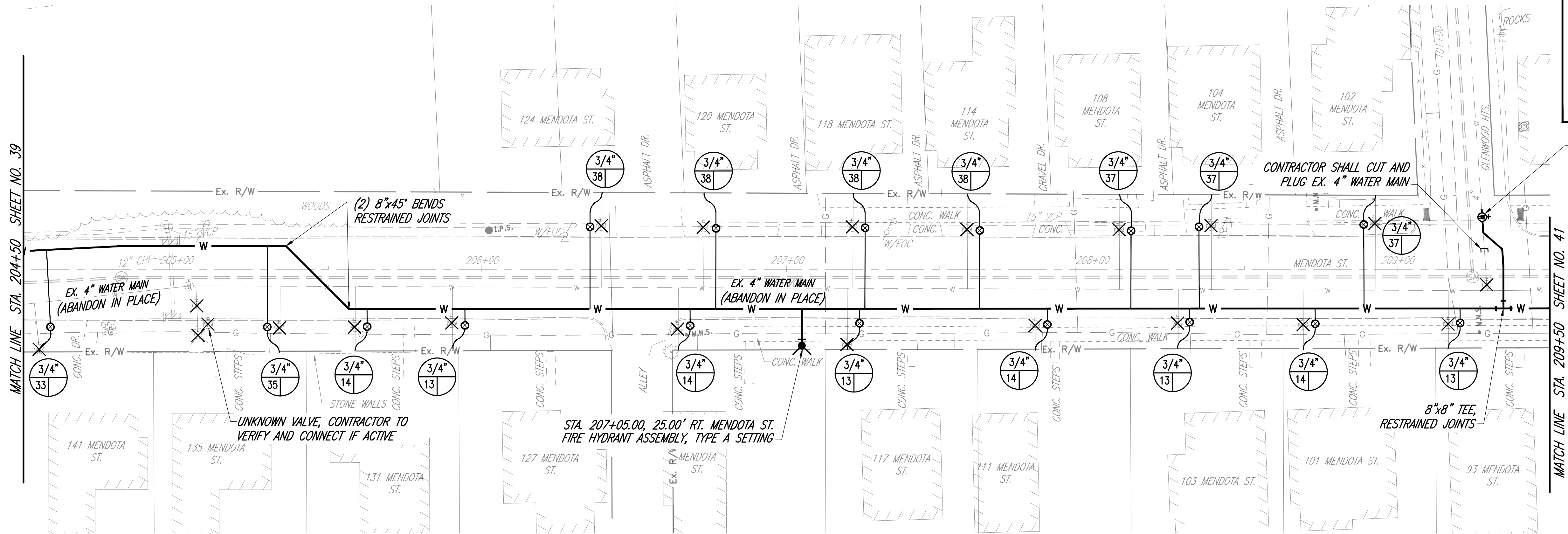
DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 5
MENDOTA ST.
STA. 200+00 TO STA. 204+50

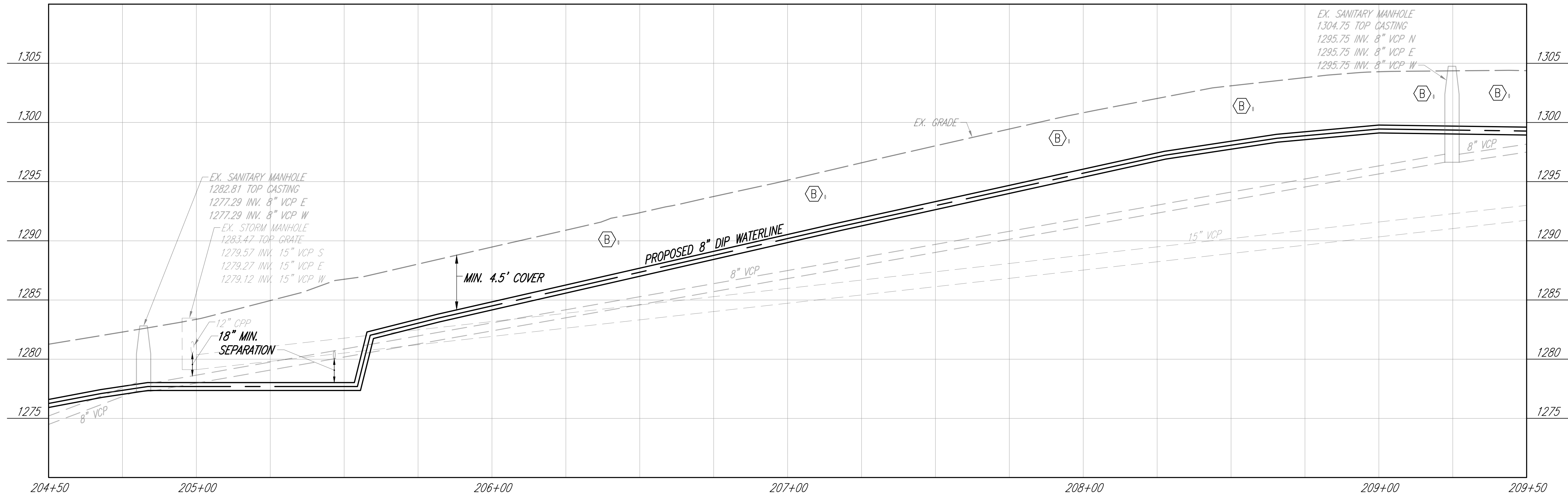


DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\MANSFIELD\2025 Waterline Replacement\Plan Sheets\AREA 5\WT-172_AREA 5-PP.dwg\40 WT-172_A5-PP MENDOTA ST Feb 25,2025 - 12:57pm



- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

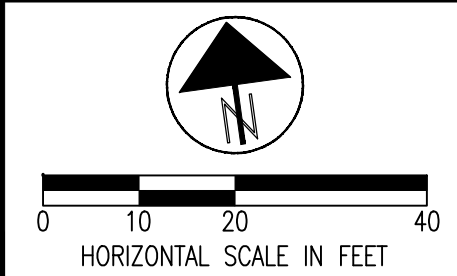
FIELD LOCATE EX. 4" WATER MAIN & CONNECT AS SHOWN:
4" CUT-IN SLEEVE, 4"x8" REDUCER,
8" GATE VALVE, VALVE BOX,
(2) 8"x45" BENDS RESTRAINED JOINTS

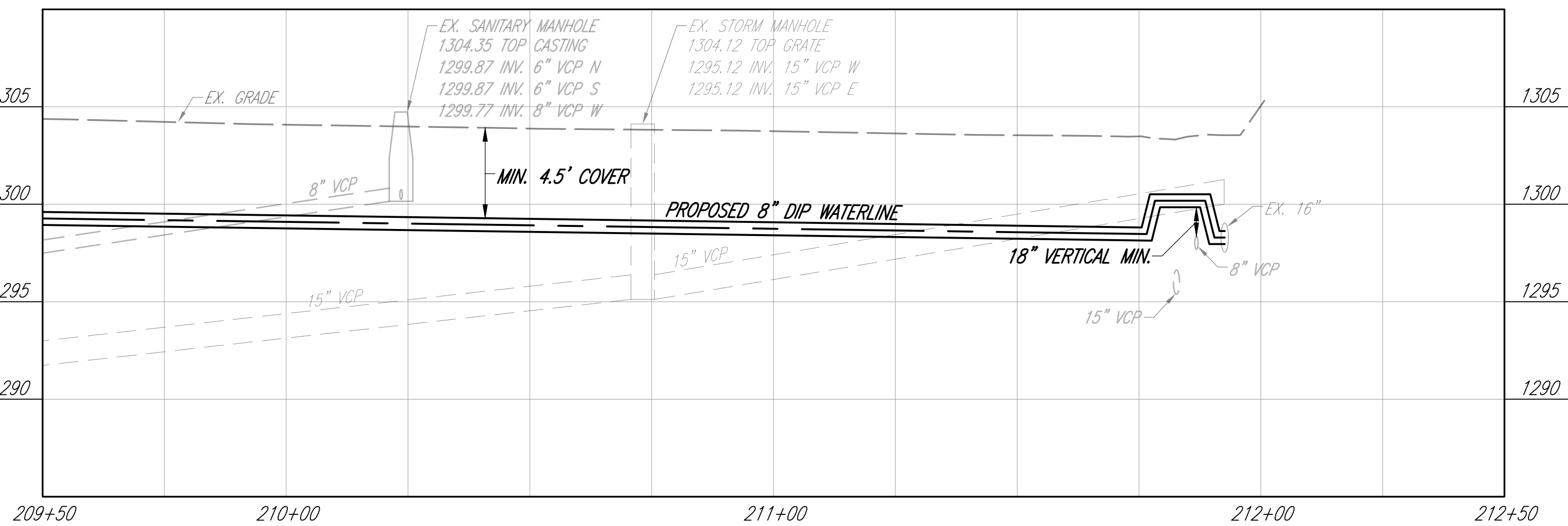


DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

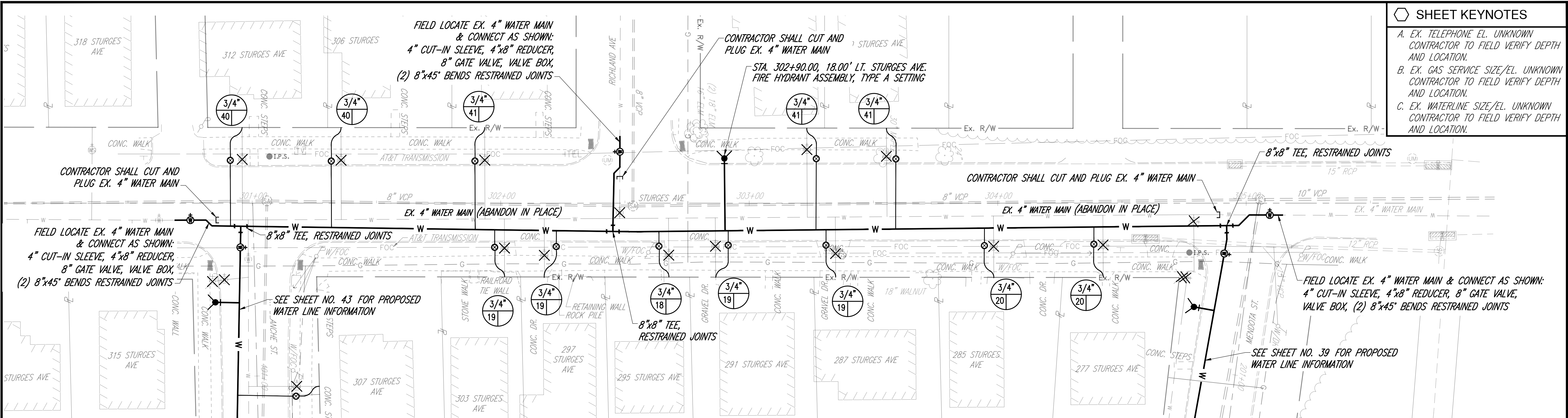
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 5
MENDOTA ST.
STA. 204+50 TO STA. 209+50

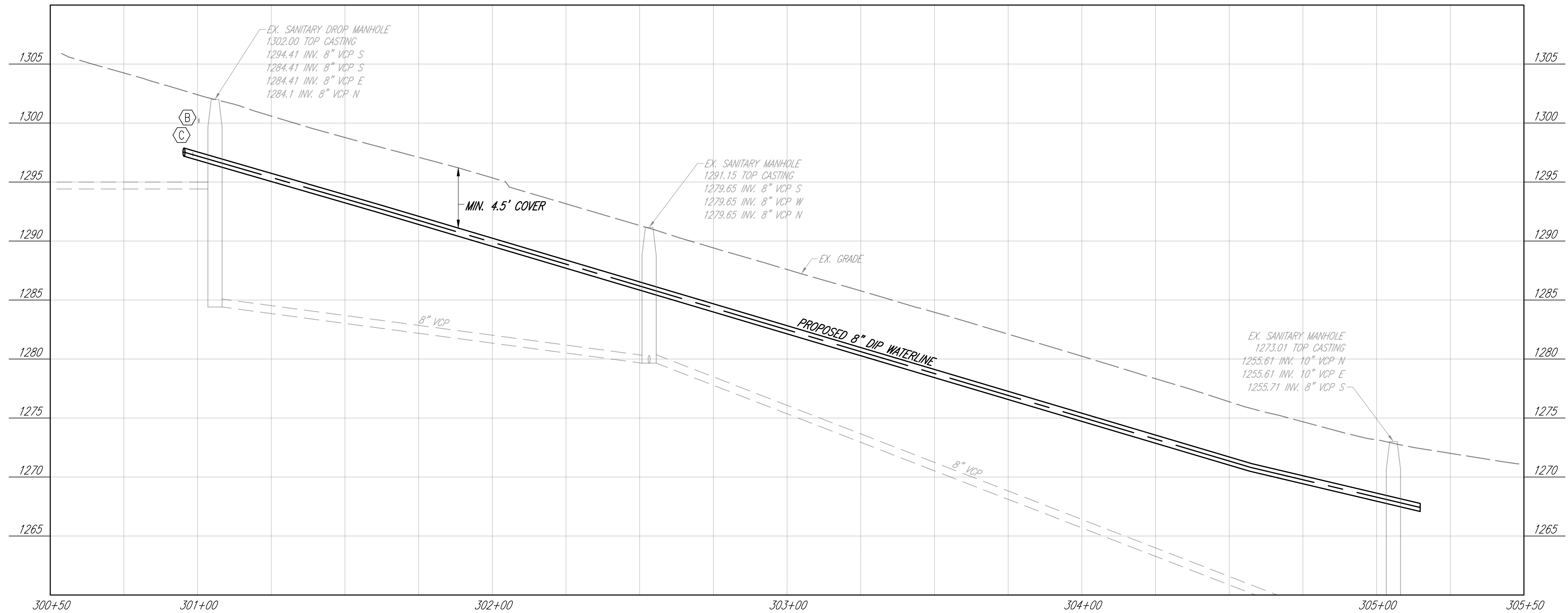




DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 5\WT-172_A5-PP.dwg\42 WT-172_A5-PP STURGES AVE Feb 25, 2025 - 12:57pm



- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN
CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN
CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - C. EX. WATERLINE SIZE/EL. UNKNOWN
CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.

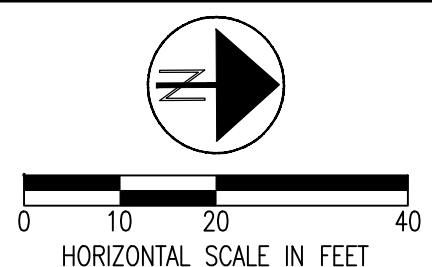


DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE:

REV NO	DATE	REMARKS

**CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025**

**AREA 5
STURGES AVE.
STA. 300+50 TO STA. 305+50**

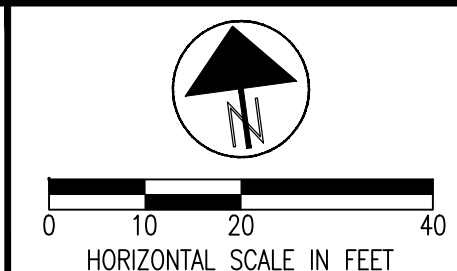


42 / 49

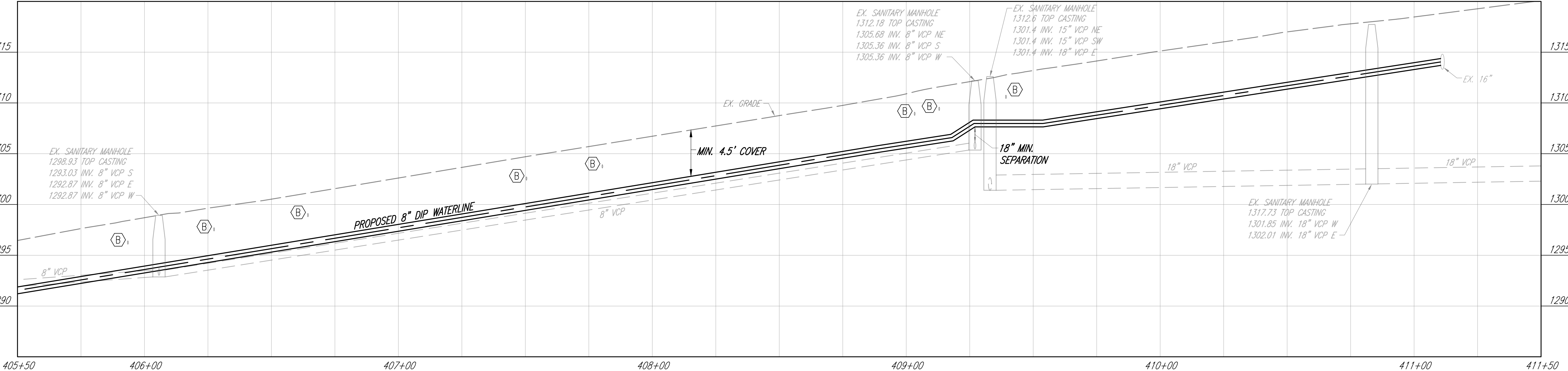
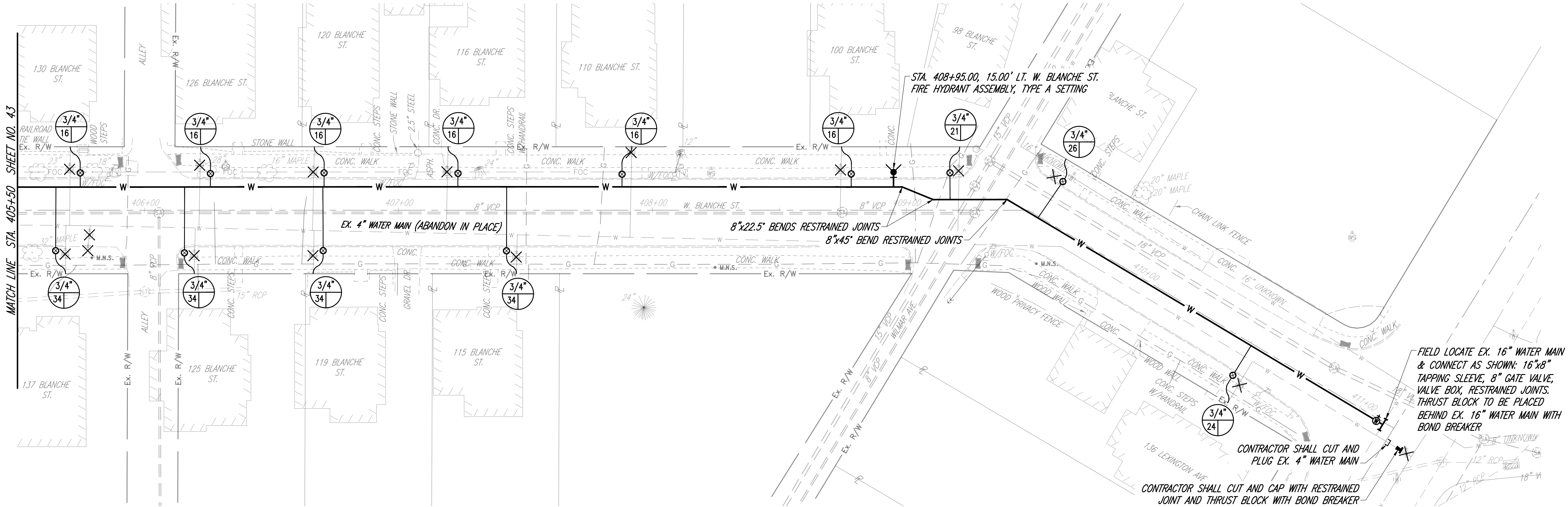


REV NO	DATE	REMARKS
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AREA 5
W. BLANCHE ST.
STA. 400+00 TO STA. 405+50



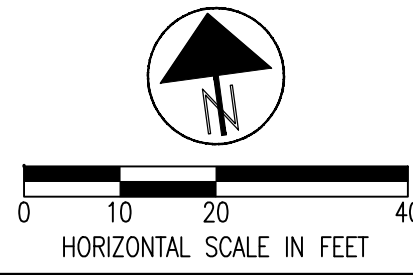
DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WORK\172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 5\WT-172_A5-PP.dwg\44 WT-172_A5-PP.dwg Feb 25, 2025 - 12:58pm



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 5
W. BLANCHE ST.
STA. 405+50 TO STA. 411+50



DRAFTED BY K.E. McCARTNEY & ASSOCIATES, Z:\WT\WTD172 - MAN - 2025 Waterline Replacement\Plan Sheets\AREA 5\WT-172_A5 WATERLINE SUB-SUMMARY\ Mar 17,2025 - 12:46pm

AREA 5 SUB-SUMMARY

REF	SHEET NUMBER									ITEM	TOTAL	UNITS	DESCRIPTION	REF
				39	40	41	42	43	44					
8										611		LF	8"-10" CONDUIT REPLACEMENT	8
9				5						611	5	LF	12"-18" CONDUIT REPLACEMENT	9
10										604		EA	2-2B CATCH BASIN	10
11				417	509	254	488	517	571	W-1	2756	LF	8" WATER MAIN & FITTINGS - CLASS 53 DIP	11
12				1				1		W-2	2	EA	8" GATE VALVE & VALVE BOXES	12
13										W-3		EA	4" X 4" TAPPING SLEEVE, 4" GATE VALVE & VALVE BOX	13
14										W-3		EA	6" X 6" TAPPING SLEEVE, 6" GATE VALVE & VALVE BOX	14
15										W-3		EA	8" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	15
16										W-3		EA	12" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	16
17										W-3		EA	14" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	17
18						1			1	W-3	2	EA	16" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	18
19					1		3			W-4	4	EA	4" CUT-IN SLEEVE, 4" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	19
20										W-4		EA	6" CUT-IN SLEEVE, 6" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	20
21										W-4		EA	8" CUT-IN SLEEVE, 8" GATE VALVE & VALVE BOX	21
22										W-4		EA	10" CUT-IN SLEEVE, 10" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	22
23										W-4		EA	12" CUT-IN SLEEVE, 12" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	23
24				118	439	164	337	339	319	W-5	1716	LF	3/4" SERVICE BRANCH PIPE-TYPE K COPPER	24
25				4	17	7	12	13	13	W-6	66	EA	3/4" SERVICE TAP AND CORP STOP	25
26				4	17	7	12	13	13	W-7	66	EA	3/4" CURB STOP AND CURB BOX	26
27								45		W-5	45	LF	1 1/2" SERVICE BRANCH PIPE-TYPE K COPPER	27
28								1		W-6	1	EA	1 1/2" SERVICE TAP AND CORP STOP	28
29								1		W-7	1	EA	1 1/2" CURB STOP AND CURB BOX	29
30										W-5		LF	2" SERVICE BRANCH PIPE-TYPE K COPPER	30
31										W-6		EA	2" SERVICE TAP AND CORP STOP	31
32										W-7		EA	2" CURB STOP AND CURB BOX	32
33					1	1	1		1	W-8	4	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B	33
34				1				1		W-8	2	EA	AIR RELEASE HYDRANT ASSEMBLY, C-31A, TYPE A OR B	34
35				1				1		W-8	2	EA	BLOW-OFF HYDRANT ASSEMBLY, C-31B, TYPE A OR B	35
36				392	468	216	366	453	324	609	2219	LF	TYPE 6 CURB	36
37				334	311	139	372			SPEC	1156	SY	TYPE A2 CONCRETE PAVEMENT REPLACEMENT	37
38					27	21	39	51	42	SPEC	180	SY	TYPE A3 CONCRETE PAVEMENT REPLACEMENT	38
39								386	349	SPEC	735	SY	TYPE B ASPHALT PAVEMENT REPLACEMENT	39
40									2	SPEC	2	EA	ADA CURB RAMP	40
41														41

2



DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE:

REV NO

DATE

REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 5 SUB-SUMMARY

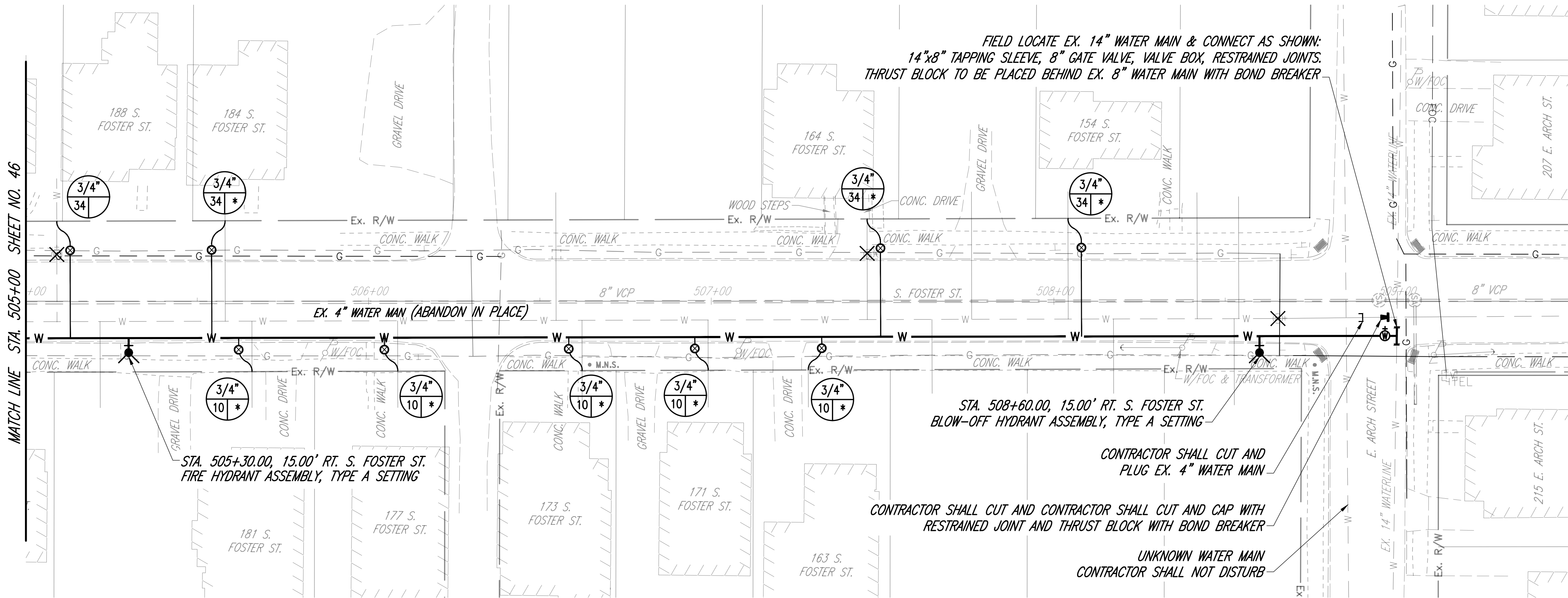
45

49

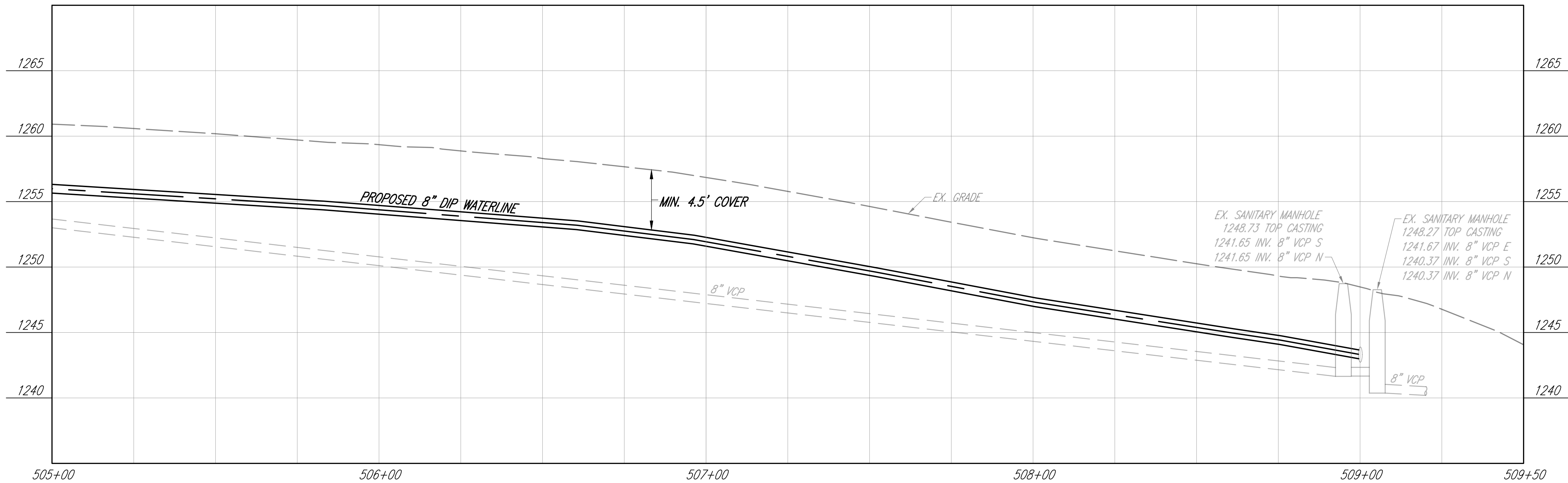
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



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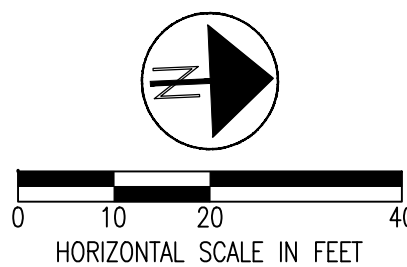
- SHEET KEYNOTES**
- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
 - C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



DESIGNED BY: M. WITTER			
DRAWN BY: C. OWENS			
CHECKED BY: P. LEWIS			
APPROVED BY: M. WITTER			
ISSUED DATE:	REV NO	DATE	REMARKS

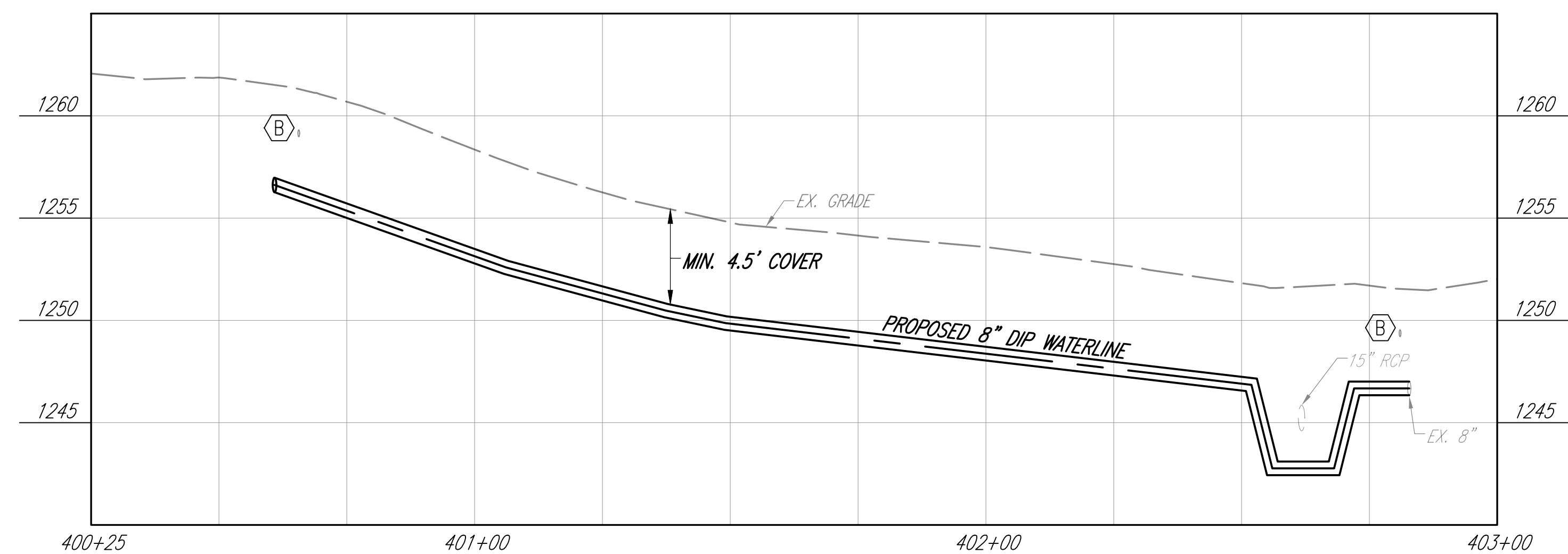
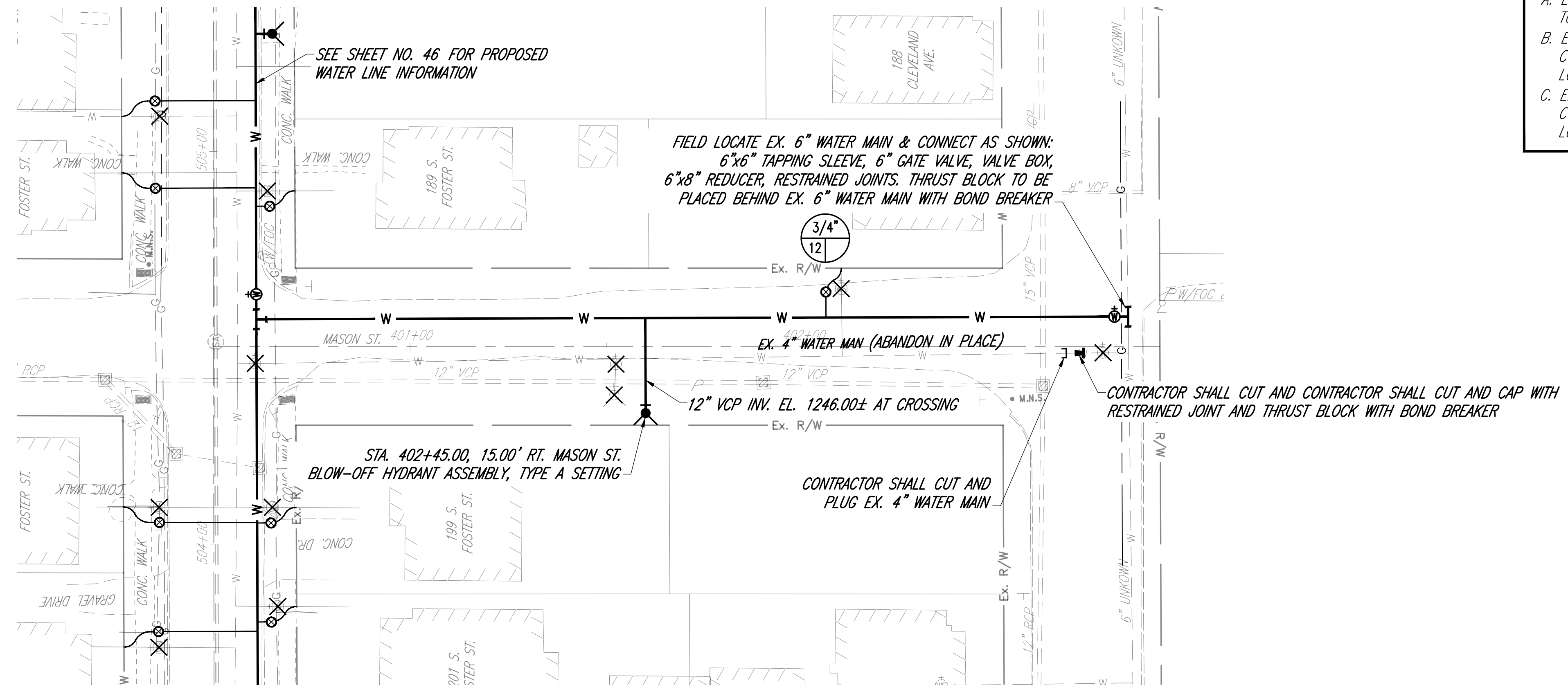
CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 6
S. FOSTER ST.
STA. 505+00 TO STA. 509+50



SHEET KEYNOTES

- A. EX. TELEPHONE EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- B. EX. GAS SERVICE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.
- C. EX. WATERLINE SIZE/EL. UNKNOWN CONTRACTOR TO FIELD VERIFY DEPTH AND LOCATION.



DESIGNED BY: M. WITTER
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APPROVED BY: M. WITTER
ISSUED DATE: _____

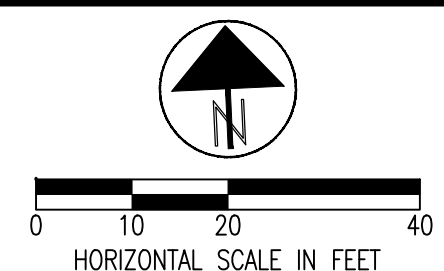
REV NO

DATE _____

REMARKS

**CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025**

AREA 6
MASON ST.
STA. 400+25 TO STA. 403+00



48

49

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AREA 6 SUB-SUMMARY

REF	SHEET NUMBER									ITEM	TOTAL	UNITS	DESCRIPTION	REF
							46	47	48					
8										611		LF	8"-10" CONDUIT REPLACEMENT	8
9									5	611	5	LF	12"-18" CONDUIT REPLACEMENT	9
10							1			604	1	EA	2-2B CATCH BASIN	10
11							531	408	230	W-1	1169	LF	8" WATER MAIN & FITTINGS - CLASS 53 DIP	11
12							1			W-2	1	EA	8" GATE VALVE & VALVE BOXES	12
13							1			W-3	1	EA	4" X 4" TAPPING SLEEVE, 4" GATE VALVE & VALVE BOX	13
14									1	W-3	1	EA	6" X 6" TAPPING SLEEVE, 6" GATE VALVE & VALVE BOX	14
15							1			W-3	1	EA	8" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	15
16										W-3		EA	12" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	16
17								1		W-3	1	EA	14" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	17
18										W-3		EA	16" X 8" TAPPING SLEEVE, 8" GATE VALVE & VALVE BOX	18
19										W-4		EA	4" CUT-IN SLEEVE, 4" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	19
20										W-4		EA	6" CUT-IN SLEEVE, 6" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	20
21										W-4		EA	8" CUT-IN SLEEVE, 8" GATE VALVE & VALVE BOX	21
22										W-4		EA	10" CUT-IN SLEEVE, 10" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	22
23										W-4		EA	12" CUT-IN SLEEVE, 12" X 8" REDUCER, 8" GATE VALVE & VALVE BOX	23
24							226	186	12	W-5	424	LF	3/4" SERVICE BRANCH PIPE-TYPE K COPPER	24
25							13	9	1	W-6	23	EA	3/4" SERVICE TAP AND CORP STOP	25
26							13	9	1	W-7	23	EA	3/4" CURB STOP AND CURB BOX	26
27										W-5		LF	1 1/2" SERVICE BRANCH PIPE-TYPE K COPPER	27
28										W-6		EA	1 1/2" SERVICE TAP AND CORP STOP	28
29										W-7		EA	1 1/2" CURB STOP AND CURB BOX	29
30										W-5		LF	2" SERVICE BRANCH PIPE-TYPE K COPPER	30
31										W-6		EA	2" SERVICE TAP AND CORP STOP	31
32										W-7		EA	2" CURB STOP AND CURB BOX	32
33							1	1		W-8	2	EA	HYDRANT ASSEMBLY, C-31, TYPE A OR B	33
34										W-8		EA	AIR RELEASE HYDRANT ASSEMBLY, C-31A, TYPE A OR B	34
35								1	1	W-8	2	EA	BLOW-OFF HYDRANT ASSEMBLY, C-31B, TYPE A OR B	35
36							353	297		609	650	LF	TYPE 6 CURB	36
37							220	175	134	SPEC	529	SY	TYPE A2 CONCRETE PAVEMENT REPLACEMENT	37
38							36	27		SPEC	63	SY	TYPE A3 CONCRETE PAVEMENT REPLACEMENT	38
39										SPEC		SY	TYPE B ASPHALT PAVEMENT REPLACEMENT	39
40							1			SPEC	1	EA	ADA CURB RAMP	40
41														41

2



DESIGNED BY: M. WITTER
DRAWN BY: C. OWENS
CHECKED BY: P. LEWIS
APPROVED BY: M. WITTER
ISSUED DATE: _____

REV NO

DATE

REMARKS

CITY OF MANSFIELD
WATERLINE REPLACEMENT
2025

AREA 6 SUB-SUMMARY

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