CITY OF LORAIN
WATER MAIN REPLACEMENT PROGRAM
PHASE 2

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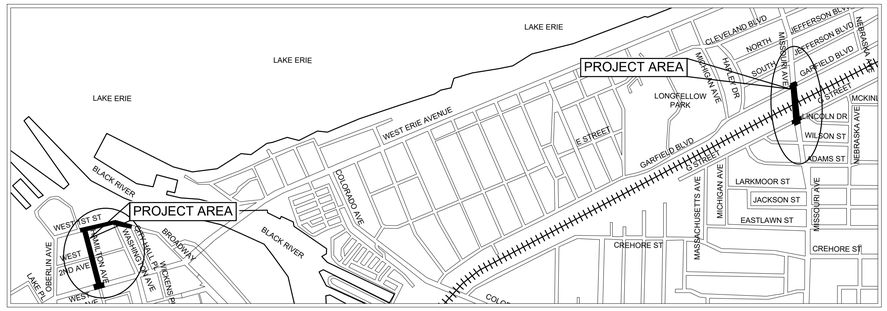
NORTH

VICINITY MAP

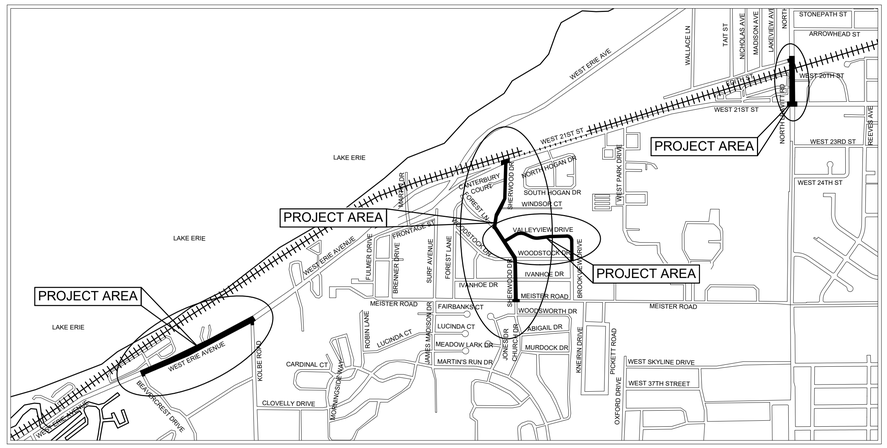
1" = 1000'



NORTH

VICINITY MAP

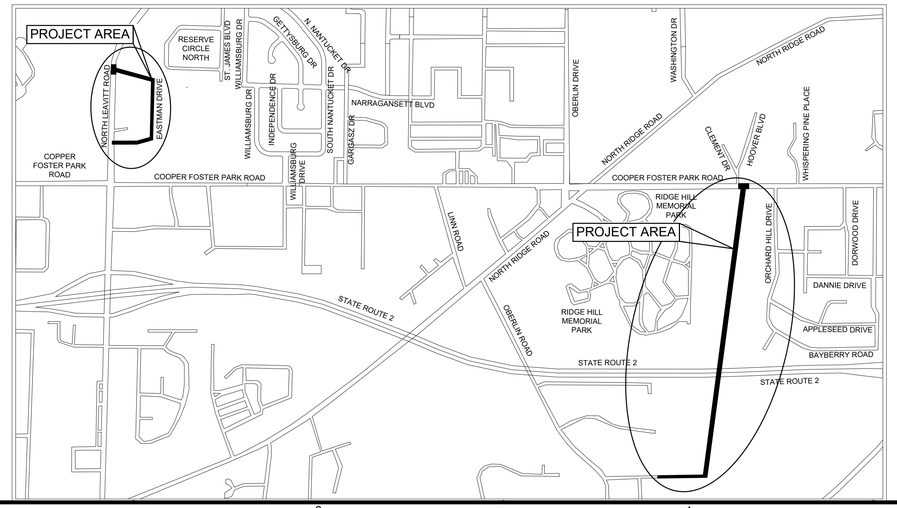
1" = 1200'



NORTH

VICINITY MAP

1" = 1000'



SIGNATURES AND APPROVALS

MAYOR - JACK W. BRADLEY — DATE

DIRECTOR OF PUBLIC SAFETY/SERVICE - REY CARRION — DATE

UTILITIES DIRECTOR - JOSEPH CARBONARO — DATE

CITY ENGINEER - DALE VANDERSOMMEN, P.E. — DATE

COUNCIL

JOEL ARREDONDO - PRESIDENT
MARY SPRINGOWSKI - COUNCIL AT-LARGE
SYLVIA DUVALL - COUNCIL AT-LARGE
TONY DIMACCHIA - COUNCIL AT-LARGE
BETH HENLEY - 1ST WARD
VICTORIA KEMPTON - 2ND WARD
PAMELA CARTER - 3RD WARD
DAN NUTT - 4TH WARD
JOANNE MOON - 5TH WARD
ANTONIO BAEZ - 6TH WARD
MARY SPELLACY - 7TH WARD
JOSHUA THORNSBERRY - 8TH WARD
BREANNA DULL - CLERK OF COUNCIL

CITY OF LORAIN OFFICIALS

JACK W. BRADLEY - MAYOR
REY CARRION - SAFETY/SERVICE DIRECTOR
JOSEPH CARBONARO - DIRECTOR OF UTILITIES
AVERY BROWN - WATER PLANT SUPERINTENDENT
JAMES MALICK - WATER DISTRIBUTION SUPERINTENDENT
DALE VANDERSOMMEN, P.E. - CITY ENGINEER
PATRICK RILEY - LAW DIRECTOR
JOSEPH KOZIURA - AUDITOR
TERRI SOTO - TREASURER

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SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
6402
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

TITLE SHEET

DRAWING NO.

G1

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6/9/2025 1:55 PM
Rawson, Burke

LORAIN WATER NOTES FOR WATER MAIN INSTALLATION AND/OR REPLACEMENT

DEVELOPERS, ENGINEERS, AND CONTRACTORS ARE TO ABIDE BY THE MOST CURRENT VERSION OF THE LORAIN WATER DEPARTMENT (LWD) NOTES AND DETAILS. THE MOST UP-TO-DATE VERSION CAN BE FOUND AT https://www.cityoflorain.org/537/City-of-Lorain-Standards

GENERAL:

1. ALL WATER WORK REQUIRED, WHETHER SHOWN ON THE PLANS OR AS DIRECTED BY LWD, SHALL BE AT THE EXPENSE OF THE PROJECT UNLESS OTHERWISE AGREED TO BY THE CITY OF LORAIN'S DIRECTOR OF PUBLIC UTILITIES.
2. THE INFORMATION SHOWN ON THE LORAIN'S SUMMARY OF WORK AND FEES INVOICE, AS-BUILT DRAWINGS, AND/OR GIS ARE TAKEN FROM EXISTING AVAILABLE RECORDS, AND THEIR ACCURACY IS NOT GUARANTEED.
3. THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING AT LEAST ONE (1) WEEK PRIOR TO STARTING CONSTRUCTION. ALL WATER WORK MUST BE INSPECTED BY LWD OR A REPRESENTATIVE WORKING ON THEIR BEHALF. TO SCHEDULE AN INSPECTION CALL JIM MALICK AT 440-204-2582. THE OPERATION OF ANY VALVE OR ALTERATION OF ANY PART OF THE WATER SYSTEM BY CONTRACTORS OR THEIR EMPLOYEES IS PROHIBITED WITHOUT THE SUPERVISION OF THE LWD INSPECTOR. SEE ALSO NOTE 20 REGARDING ADDITIONAL ADVANCE NOTIFICATION REQUIRED IN AREAS SUSPECTED TO CONTAIN LEAD SERVICE CONNECTION (ALL AREAS INSTALLED PRIOR TO 1954).
4. PRIOR TO REQUESTING CHLORINATION, THE CONTRACTOR SHALL SUPPLY THE LWD INSPECTOR WITH ASBUILT DRAWINGS. THESE SHALL BE REDLINED DRAWINGS SHOWING CHANGES MADE FROM THE APPROVED DESIGN DRAWINGS AND ACTUAL MEASUREMENTS. CHLORINATION SHALL NOT OCCUR BEFORE THESE DRAWINGS ARE SUBMITTED.
5. FOR THE PURPOSES OF CHLORINATION AND BACTERIOLOGICAL TESTING OF THE WATER MAINS THE CONTRACTOR SHALL PROVIDE AND INSTALL FLUSHING AND SAMPLING TAPS, AT EACH OF THE CHLORINATION PIT LOCATIONS SHOWN AND AT OTHER LOCATIONS DETERMINED BY LWD. FLUSHING / SAMPLING TAP SIZES ARE TO BE DETERMINED LWD. CHLORINATION PITS SHALL BE SIX (6) FOOT SQUARE AND ARE TO MEET OSHA STANDARDS. NO CUSTOMER TAPS SHALL BE INSTALLED PRIOR TO CHLORINATION.
6. A TWO YEAR WARRANTY, COMMENCING FROM THE DATE OF ACCEPTANCE OF THE FINAL CHLORINATION OF THE WATER MAIN INSTALLATION SHALL BE PROVIDED BY THE BUILDER/DEVELOPER AND/OR CONTRACTOR FOR ALL WATER MAINS AND SERVICE CONNECTION WORK PERFORMED BY THE CONTRACTOR, INCLUDING TAPS IF PERFORMED. SHOULD ANY LEAKS OCCUR AND REPAIRS BE REQUIRED DUE TO DEFECTIVE MATERIAL OR POOR WORKMANSHIP. A LETTER INDICATING THE COMMENCEMENT DATE AND END DATE OF THE WARRANTY SHALL BE INCLUDE WITH THE AS-BUILT SUBMISSION IN NOTE 12.
7. USE BACKFILL MATERIAL AS SPECIFIED AND COMPACT SUFFICIENTLY IN THOSE AREAS WHERE EXISTING MAINS AND WATER SERVICE CONNECTIONS ARE EXPOSED. (SEE LWD DETAIL WT-G01)
8. ALL MATERIALS, INCLUDING BUT NOT LIMITED TO WATER MAINS, FIRE HYDRANTS, VALVES, CONNECTION MATERIALS AND OTHER WATER APPURTENANCES, SHALL BE NEW AND UNUSED AND SHALL CONFORM TO THE MOST CURRENT LWD SPECIFICATIONS. ALL MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH LWD'S STANDARDS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING WATER MAINS AND APPURTENANCES THEREOF WHEN CONSTRUCTING OR CONNECTING THE NEW WATER MAIN. THIS SHALL INCLUDE LEADED JOINTS IN EXISTING FITTINGS WHICH MAY REQUIRE REPLACEMENT FITTINGS AT THE DISCRESION OF THE LWD. IF IT IS DETERMINED THEY WERE DISTURBED. ALL REPAIRS TO DAMAGED EXISTING FACILITIES SHALL BE MADE BY THE CONTRACTOR, AT THE PROJECT'S EXPENSE, TO THE SATISFACTION OF LWD.
10. ALL HYDROSTATIC PRESSURE TESTING SHALL BE DONE BY THE CONTRACTOR IN THE PRESENCE OF THE LWD INSPECTOR. THE HYDROSTATIC TEST PRESSURE SHALL BE 75 PSI ABOVE THE STATIC PRESSURE PREVAILING AT THE SITE, BUT IN NO CASE LESS THAN 150 PSI. THE PRESSURE TEST SHALL BE FOR A DURATION OF TWO (2) HOURS WITH THE PRESSURE BEING MAINTAINED WITHIN 5 PSI OF THE REQUIRED TEST PRESSURE. SHOULD THE PRESSURE TEST FAIL THE CONTRACTOR SHLWD AND REPEAT THE TWO (2) HOUR PRESSURE TEST.
11. ALL BURIED WATER MAINS, FITTINGS, VALVES, FIRE HYDRANT BRANCH PIPING AND APPURTENANCES SHALL BE ENCASED WITH V- BIO® ENHANCED POLYETHYLENE ENCASEMENT INSTALLED IN ACCORDANCE WITH THE MOST CURRENT REVISION OF ANSI/AWWA C- 105/A21.5 MODIFIED METHOD "A".
12. THE PROJECT'S PROFESSIONAL ENGINEER OR A DESIGNATED PROFESSIONAL SURVEYOR SHALL OBTAIN ACTUAL FIELD MEASUREMENTS OF THE MAIN DURING INSTALLATION AND SHALL FURNISH THE LWD INSPECTOR WITH AS-BUILT DRAWINGS MEETING LWD STANDARDS WITHIN 30 DAYS OF THE WATER MAIN GOING INTO SERVICE AND ALL TAPS/RETAPS BEING MADE. ONE HARD COPY AND ONE PDF COPY SHALL BE PROVIDED. DRAWINGS SHALL BE SIGNED, DATED, AND STAMPED WITH THE ENGINEER OR SURVEYOR'S SEAL. REDLINE DRAWINGS ARE NOT SUFFICIENT. LWD RESERVES THE RIGHT TO WITHHOLD PAYMENT AND/OR APPROVAL OF FUTURE WORK IF AS-BUILTS ARE NOT SUBMITTED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING MAIL SERVICE IN THE CONSTRUCTION AREA. PRIOR TO DISTURBING ANY MAILBOXES, THE CONTRACTOR SHALL CONTACT THE POSTAL AUTHORITIES PRIOR TO PERFORMING WORK AND SHALL TEMPORARILY RELOCATE MAILBOXES IN ACCORDANCE WITH POSTAL SERVICE REQUIREMENTS. THE CONTRACTOR SHALL RESTORE MAILBOXES TO THEIR ORIGINAL CONDITION AND LOCATION. COST OF SAME SHALL BE INCLUDED THE PRICE PER LINEAL FOOT OF WATER MAIN.
14. REFER TO DRAWINGS D1 - D16 FOR ADDITIONAL REQUIREMENTS.

WATER MAINS:

1. ALL PIPE, UNLESS OTHERWISE APPROVED BY LWD, SHALL BE:

   DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED HAVING PUSH-ON JOINTS WITH RADIALLY COMPRESSED RUBBER RING GASKET AND INSTALLED AS PER THE MOST CURRENT REVISION OF AWWA C600.

   OR

   POLYVINAL CHLORIDE (PVC) PRESSURE PIPE IN ACCORDANCE WITH AWWA C-909-98 200 PSI OR BETTER. JOINTS SHALL BE MADE UTILIZING A STAB TYPE, RUBBER GASKETED BELL AND SPIGOT. SOLVENT CEMENT TYPE JOINTS WILL NOT BE PERMITTED. STANDARD PLASTIC TRACER TAPE IS TO BE BURIED DIRECTLY OVER THE MAIN AS INDICATED IN STANDARD DETAIL LWD-001.

   RESTRAINT JOINT REIBERLOK GASKET IS REQUIRED ON C-909 PIPE IN ADDITION TO BLOCKING.
2. CONTRACT SHALL PROCURE AND INSTALL PIPE MATERIAL AS INDICATED ON THE CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND STANDARD DETAILS. ANY VARIANCE SHALL REQUIRE WRITTEN APPROVAL BY THE DIRECTOR OF PUBLIC UTILITES.
3. ALL FITTINGS, UNLESS OTHERWISE CALLED FOR, SHALL BE APPROVED DUCTILE IRON, CLASS 350, CEMENT LINED OR FUSION BONDED EPOXY COATED. ALL FITTINGS AND PIPE CONNECTED TO FITTINGS SHALL BE RESTRAINED USING A "RETAINED" MECHANICAL JOINT CONFORMING TO THE MATERIAL AND PERFORMANCE REQUIREMENTS OF ANSI/AWWA C-110/A21.10 AND ANSI/AWWA C-111/A21.11, OR "COMPACT" FITTINGS IN ACCORDANCE WITH ANSI/AWWA C- 153/A21.53. EXCEPT FOR ANCHOR TEES, REDUCERS OR OTHER SPECIAL CIRCUMSTANCES WHEN APPROVED BY LWD. ALL FITTINGS ARE TO HAVE BELL ENDS.
4. ALL BOLTS AND NUTS ON ALL "RETAINED" MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING.
5. WHERE SHOWN ON THE PLANS, OR WHEN OTHERWISE CALLED FOR, PIPE AND FITTINGS SHALL HAVE AN APPROVED "TYPE I" OR "TYPE II" BOLTLESS RESTRAINED PUSH-ON JOINTS TO THE LIMITS SHOWN ON THE DRAWINGS.
6. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL PLUG ALL OPEN PIPE ENDS WITH WATER TIGHT PLUGS AS PER THE "PREVENTITIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION" SECTION OF THE MOST CURRENT REVISION OF AWWA C-651 AS TO PREVENT THE INFILTRATION OR INTRUSION OF ANY FOREIGN OBJECTS OR MATERIALS. DATE STAMPED DIGITAL PHOTOS SHALL BE PROVIDED FOR EACH WORKDAY DEMONSTRATING THAT PROPER AWWA C-651 METHODS WERE USED TO PLUG ALL OPEN WATER MAIN ENDS. EACH PHOTO SHALL CLEARLY IDENTIFY THE STATION AT WHICH THE PIPE IS PLUGGED. THE STATIONING SHALL BE SHOWN BY THE USE OF A STATION MARKER PLACED AT THE PLUGGED PIPE END. PHOTOS SHALL BE SUBMITTED ON A DAILY BASIS UNLESS OTHERWISE DEFINED BY THE LWD INSPECTOR OR ENGINEER. ALL PHOTOS TAKEN OVER THE COURSE OF THE PROJECT SHALL BE SUBMITTED BY THE CONTRACTOR AS PART OF THE AS-BUILT SUBMITTAL. PHOTOS ARE TO INCLUDE STATIONING MARKERS AND INCLUDE LATITUDE/LONGITUDE DATA SUCH THAT THEY CAN BE GEOREFERENCED. AS-BUILTS SHALL BE DEEMED INCOMPLETE WITHOUT SAID COLLECTION OF DIGITAL PHOTOS.

HYDRANTS:

1. IN ALL HYDRANT INSTALLATIONS THE CONTRACTOR SHALL FACE ALL HYDRANT'S 4" (STEAMER) NOZZLE TOWARD THE PAVEMENT PRIOR TO TESTING AND CHLORINATION OF WATER MAINS. ONLY MUELLER SUPER CENTURION 250 HYDRANTS OR AN APPROVED EQUAL WITH STORZ CONNECTION SHALL BE INSTALLED. FOR WORK OUTSIDE THE CITY OF LORAIN, CONTRACTOR SHALL CONSULT WITH THE LOCAL MUNICIPALITY'S ENGINEERING OR SERVICE DEPARTMENT TO OBTAIN APPROVED HYDRANT MAKE , MODEL, AND NOZZLE THREAD REQUIREMENTS IF NOT INDICATED ON THE APPROVED PLANS. ALL HYDRANTS SHALL BE FACTORY EQUIPPED WITH THE APPROPRIATE HYDRANT NOZZLE. HYDRANT BRANCHES SHALL BE FULLY RESTRAINED AND INSTALLED PER THE APPROPRIATE LWD HYDRANT DETAIL(S). HYDRANT BRANCH VALVES SHALL BE PLACED DIRECTLY AFTER THE HYDRANT TEE UNLESS OTHERWISE APPROVED BY THE INSPECTOR.

VALVES:

1. ALL VALVES SHALL BE MUELLER A2360 OR APPROVED EQUAL RESILIENT SEATED GATE VALVES AS PER THE MOST CURRENT VERSION OF AWWA C509 OR C515. VALVE OPERATING NUTS SHALL BE TAPERED (1 7/8" TO 2" FROM TOP TO BOTTOM) AND 2" DEEP. VALVES MORE THAN 10 YEARS OLD AT TIE IN POINTS TO EXISTING MAINS SHALL BE REPLACED AT THE PROJECT'S EXPENSE UNLESS OTHERWISE DIRECTED.

LEAD SERVICE CONNECTIONS:

1. LEAD SERVICES: A MINIMUM OF 45 DAYS BEFORE THE PRECONSTRUCTION MEETING, LWD SHALL PROVIDE A NOTICE TO ALL AFFECTED CUSTOMERS THAT THEIR WATER SERVICE LINE WILL BE DISTURBED. A MINIMUM OF 75 DAYS BEFORE THE PRECONSTRUCTION MEETING, THE CONTRACTOR OR ENGINEER SHALL PROVIDE LWD (AND THE LOCAL MUNICIPALITY OF OUTSIDE THE CITY OF LORAIN) A LIST OF ALL CUSTOMER ADDRESSES THAT WILL BE AFFECTED BY THE WATER MAIN REPLACEMENT PROJECT. FAILURE TO PROVIDE A LIST OF CUSTOMER ADDRESSES IN A TIMELY MANNER MAY RESULT IN PROJECT DELAYS. ANY CITY-OWNED LEAD SERVICE LINE ENCOUNTERED SHALL BE REPLACED WITH TYPE K COPPER. THE REPLACEMENT SERVICE LINE SHALL BE SIZE-ON-SIZE WITH A 1-INCH MINIMUM DIAMETER. IF A CUSTOMER-OWNED LEAD SERVICE LINE IS ENCOUNTERED, THE CONTRACTOR SHALL LEAVE A LWD-SUPPLIED CUSTOMER NOTIFICATION DOOR HANGER ON ALL ACCESSIBLE POINTS OF ENTRY TO THE HOME AND IMMEDIATELY NOTIFY THE LWD INSPECTOR. IF THE LWD INSPECTOR IS NOT AVAILABLE, CALL JIM MALICK AT 440-204-2582. CUSTOMERS WITH A CUSTOMER-OWNED LEAD SERVICE LINE SHALL NOT BE RECONNECTED TO THE NEW WATER MAIN WITHOUT EXPRESS WRITTEN APPROVAL FROM JIM MALICK, OR HIS APPROVED REPRESENTATIVE AT LWD. AS PART OF THIS CONTRACT, THE CONTRACTOR SHALL OFFER EACH CUSTOMER TO REPLACE LEAD SERVICES FROM THE CORPORATION STOP TO THE INLET STOP & WASTE VALVE INSIDE THE CUSTOMER'S HOME. IF THE REPLACEMENT IS NOT COVERED UNDER THE BID ITEMS, THE CONTRACTOR SHALL PROVIDE LWD (AND THE LOCAL MUNICIPALITY IF OUTSIDE THE CITY OF LORAIN) WITH A CHANGE ORDER AND COST ESTIMATES FOR THE CUSTOMER-OWNED LEAD SERVICE LINE REPLACEMENT. UPON APPROVAL FROM LWD (AND THE LOCAL MUNICIPALITY IF OUTSIDE THE CITY OF LORAIN), THE CONTRACTOR SHALL PERFORM THE REPLACEMENT OF THE CUSTOMER-OWNED LEAD SERVICE LINE. AS STATED ABOVE, CUSTOMERS WITH CUSTOMER-OWNED LEAD SERVICE LINES SHALL NOT BE RECONNECTED TO THE NEW WATER MAIN WITHOUT EXPRESS WRITTEN APPROVAL FROM JIM MALICK, OR HIS APPROVED REPRESENTATIVE AT LWD. IN THE EVENT THAT AN LWD WAIVER IS GRANTED SUCH THAT A CUSTOMER-OWNED LEAD SERVICE LINE IS NOT REPLACED, LWD SHALL SUPPLY THE CONTRACTOR WITH LEAD FILTERS AND PITCHERS THAT THE CONTRACTOR SHALL DISTRIBUTE TO EACH RESIDENCE WITHIN THE PROJECT AREA, INCLUDING TO ALL UNITS OF MULTI-UNIT HOUSING BUILDINGS. THE FILTERS SHALL BE POUR-THROUGH PITCHER TYPE LEAD FILTERS THAT ARE NSF/ANSI-53 CERTIFIED TO REMOVE LEAD. THE PITCHER, A 3-MONTH SUPPLY OF FILTERS, AND LWD-SUPPLIED USE INSTRUCTIONS AND OTHER APPLICABLE MATERIALS SHALL BE DISTRIBUTED. RECORDS OF RESIDENTS WHO RECEIVED AND WHO REFUSED THE FILTERS SHALL BE PROVIDED BY THE CONTRACTOR TO LWD (AND THE LOCAL MUNICIPALITY IF OUTSIDE THE CITY OF LORAIN). AT THE BEGINNING OF THE DAY THAT A CUSTOMER IS SCHEDULED TO BE CONNECTED TO THE NEW WATER MAIN, THE CONTRACTOR SHALL DISTRIBUTE THE APPROPRIATE LWD- SUPPLIED CUSTOMER NOTIFICATION DOOR HANGER AND OTHER APPLICABLE MATERIALS ON ALL ACCESSIBLE POINTS OF ENTRY TO THE HOME AND IN A PROMINENT LOCATION AT ALL MULTI-UNIT HOUSING BUILDINGS. THE APPROPRIATE DOOR NOTIFICATION WILL BE DETERMINED BY (1) WHETHER A CUSTOMER- OWNED LEAD SERVICE LINE REMAINS IN THE PROJECT AREA AND (2) THE TYPE OF MATERIAL OF THE INDIVIDUAL CUSTOMER-OWNED SERVICE LINE.
2. DIELECTRIC COUPLINGS: IN THE EVENT THAT AN LWD WAIVER IS GRANTED SUCH THAT A CUSTOMER-OWNED LEAD SERVICE LINE IS NOT REPLACED, AND A NEW SERVICE IS CONNECTED TO A CUSTOMER-OWNED LEAD SERVICE LINE, A DIELECTRIC COUPLING SHALL BE PROVIDED TO TRANSITION FROM THE NEW MATERIALS TO THE LEAD PIPE. THE MODEL COUPLING USED IS SUBJECT TO APPROVAL FROM LWD. HARCO - PHILMAC UTC OR APPROVED EQUAL.

GENERAL SERVICE CONNECTIONS:

1. AS PART OF THE ASBUILT SUBMISSION IN NOTE 12, THE CONTRACTOR SHALL PROVIDE A TABLE SHOWING ALL EXISTING CONNECTIONS, IDENTIFIED BY LOCATION AND ADDRESS, SHOWING THE FOUND CONNECTION MATERIAL FOR BOTH THE CITYSIDE AND OWNERSIDE CONNECTION, AS WELL AS THE NEW CONNECTION MATERIAL FOR ALL CONNECTIONS REPLACED. THE TABLE SHALL ALSO NOTE ANY REVISED CONNECTION MEASUREMENTS AND SIZES. A SAMPLE TABLE WILL BE PROVIDED UPON REQUEST. THE SUBMISSION SHALL BE IN MICRSOFT EXCEL FORMAT. LWD SHALL REQUIRE THE DELIVERY AND ACCEPTANCE OF THIS TABLE BEFORE THE PRESSURE TEST AND CHLORINATION / DISINFECTION OF THE MAIN WILL BE PERMITTED.
2. NEW WATER SERVICE CONNECTIONS LOCATIONS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT PART OF THE WATER MAIN APPROVAL. THE SPECIFIC LOCATION FOR EACH CONNECTION WILL BE DETERMINED BY CONTRACTOR PERFORMING TAPS OR OUPS LOCATION REQUEST. ALL FEES CAN BE OBTAINED FROM THE LORAIN ENGINEERING OFFICE AT 440-204-2003. ACCOUNTS SHALL BE INITIATED IN THE LAND OWNER'S NAME AS PART OF THE PERMITTING PROCESS. ALL RESPONSIBILITIES ASSOCIATED WITH EACH WATER SERVICE, INCLUDING, THE OWNER SIDE INSPECTIONS, METER SET/METER PIPING INSPECTION AND THE METER INSTALLATION SHALL BE THE RESPONSIBILITY OF SAID OWNER. METERS INSTALLATIONS WILL NOT BE AUTHORIZED TO BE INSTALLED UNTIL ALL INSPECTIONS HAVE BEEN COMPLETED. ESTIMATED BILLS MAY ENSUE IF A HOME IS IDENTIFIED AS HAVING WATER SERVICE BUT NO METER HAS BEEN INSTALLED. IF NEW OWNERS, ONCE PARCELS ARE SOLD OFF AND TRANSFER TITLE, DO NOT CONTACT LWD TO ESTABLISH ACCOUNTS IN THEIR NAME, ACCOUNTS AND THEIR ASSOCIATED BILLS WILL REMAIN IN THE NAME OF THE LAST OWNER OF RECORD WHICH MAY BE THE DEVELOPER OR BUILDER. IT IS THE RESPONSIBILITY OF THE NEW OWNER TO TRANSFER ACCOUNTS INTO THEIR NAME WHEN THE PROPERTIES LEGALLY TRANSFER. UPON TRANSFER OF PROPERTY, SELLER OF PROPERTY MUST COMMUNICATE ALL UNCOMPLETED PORTIONS OF THE REFERENCED RESPONSIBILITIES TO THE NEW OWNER.
3. ONE-INCH SERVICE CONNECTIONS SHALL BE PERMITTED TO SERVICE NEW HOMES (AS SHOWN ON APPROVED WATER MAIN EXTENSION PLANS) BASED ON THE FOLLOWING CRITERIA:
   - 3.1. PEAK FLOW DEMANDS DO NOT EXCEED 25 GPM FOR AN INDIVIDUAL HOME/UNIT. INCLUSIVE OF ALL USAGE (DOMESTIC AND/OR IRRIGATION),
   - 3.2. LENGTH OF ONE INCH CONNECTION DOES NOT EXCEED 75 FEET AS MEASURED FROM THE MAIN TO THE POINT OF ENTRY INTO THE PROPOSED HOME/UNIT.
   - 3.3. THE CONNECTIONS DO NOT INCLUDE LIMITED AREA OR NFPA 13D SPRINKLER SYSTEMS
   - 3.4. ANY SERVICE REQUESTS DIFFERING FROM THE STATED CRITERIA SHALL REQUIRE THE SUBMITTAL OF A WATER SERVICE APPLICATION FOR EACH WATER SERVICE REQUESTED.
   - 3.5. ALL CURB VALVE BOXES & METER VAULTS WILL BE INSTALLED IN GRASS AREAS WHEN POSSIBLE. CURB VALVES SHALL BE PLACED APPROXIMATELY 2 FEET OFF THE CURB OR AS CLOSE TO THE MAIN AS POSSIBLE IF THE MAIN IS LOCATED 2-FEET OFF THE CURB, WITHIN THE TREELAWN. CURB VALVES IN EASEMENTS SHALL BE PLACED APPROXIMATELY 3 FEET OFF THE WATER MAIN. IF VALVE BOXES OR METER VAULTS ARE INSTALLED OUTSIDE OF A DEDICATED RIGHT OF WAY OR EASEMENT FOR THE PURPOSES OF WATER SUPPLY, A STANDARD LORAIN EASEMENT FOR A VAULT SHALL BE PROVIDED.

EMERGENCIES:

1. IF A WATER MAIN OR SERVICE CONNECTION BREAK OCCURS DURING OR OUTSIDE OF CONSTRUCTION AND EMERGENCY ASSISTANCE IS REQUIRED, PLEASE NOTIFY LWD AT:
   - 440-204-2285 - DURING WORKING HOURS
   - 440-204-2280 - AFTER WORKING HOURS

LINE LABEL KEY

LINE TYPE	LABEL EXISTING	LABEL PROPOSED
SANITARY SEWER	SAN	SAN
STORM SEWER	STM	ST
WATER MAIN	W	W
WATER MAIN TO BE ABANDONED	W	
GAS MAIN	GAS	G
CONSTRUCTION LIMITS		
ROADWAY		
PROPERTY LINE	P	
RIGHT-OF-WAY	R/W	
ALIGNMENT	12+34	
CENTERLINE	℄	

LEGEND

DESCRIPTION	EXISTING	PROPOSED
SANITARY & STORM MANHOLE	○	●
CATCH BASIN	▤	■
CURB INLET	▤	
CLEANOUT	○	•
HYDRANT	⬡	●+
VALVE	⋈	⫼
FLUSH PIPE	○	•
ELECTRIC BOX	EB	
POWER POLE		
LIGHT POLE		
SIGN	┼ ▬ ⊕	▬
BOLLARDS	○	•
TREE		
CONTOUR	723	723
SOIL BORING	TH#4	
TEMPORARY BENCH MARK	△	

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020 www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO · KEVIN D. CODIN · 64026 · REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

GENERAL NOTES I

DRAWING NO.

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3/6/2025 1:10 PM Pawar, Sayali

SURVEYOR'S NOTES:

1. SURVEY PREPARED BY KS ASSOCIATES, INC.
2. VERTICAL DATUM IS NAVD 1988.
3. PERTINENT RECORDS USED ARE AS SHOWN HEREON.
4. THIS MAP AND THE SURVEY ON WHICH IT IS BASED HAVE BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND ARE NOT INTENDED TO REFLECT ALL EASEMENTS, ENCUMBRANCES, OR OTHER CIRCUMSTANCES AFFECTING THE TITLE TO THE PROPERTY SHOWN HEREON.
5. THE UTILITIES, SEWERS AND THEIR LOCATIONS SHOWN HEREON ARE DERIVED FROM A COMBINATION OF FIELD SURVEYING OF VISIBLE UTILITY STRUCTURES, AVAILABLE PLANS AND A LEVEL C SUBSURFACE UTILITY INVESTIGATION. ACTUAL LOCATION OF UTILITIES MAY VARY FROM THE DEPICTED LOCATIONS. OTHER UNKNOWN UTILITIES MAY EXIST AND NECESSARY PRECAUTIONS SHOULD BE FOLLOWED WHEN EXCAVATING. ADDITIONAL INVESTIGATION SUCH AS VIDEOTAPING PIPE RUNS, NON-DESTRUCTIVE EXPOSURE OF UTILITIES MAY DETERMINE THE UNKNOWN UTILITY INFORMATION. CONTACT OHIO UTILITIES PROTECTION SERVICE (OUPS) AT 1-800-362-2764 PRIOR TO EXCAVATION.
6. PROPERTY LINES AND RIGHT OF WAY LINES ARE SHOWN FROM LORAIN GIS INFORMATION AND ARE NOT INTENDED TO REPRESENT A COMPLETE BOUNDARY SURVEY.

EASTMAN:
1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS PERFORMED ON (12-07-23).
2. AS OF (FEBRUARY 21, 2024), THE FOLLOWING COMPANIES HAVE RESPONDED TO THE INITIAL OUPS REQUEST: A334102395, A335000072 FOR UTILITY PLANS: BREEZELINE, BRIGHTSPEED, CENTURYLINK, CITY OF LORAIN UTILITIES DEPARTMENT, COLUMBIA GAS OF OHIO, OHIO EDISON, TIME WARNER CABLE.

LEAVITT:
1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS PERFORMED ON (NOVEMBER 15, 2023).
2. AS OF JANUARY 5, 2024, THE FOLLOWING COMPANIES HAVE RESPONDED TO THE INITIAL OUPS REQUEST A333200419-00A FOR UTILITY PLANS: CENTURYLINK, CITY OF LORAIN, COLUMBIA GAS, FIRST ENERGY, JOB 8, & WINDSTREAM.

MISSOURI:
1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS PERFORMED ON (NOVEMBER 15, 2023).
2. AS OF JANUARY 29, 2024, THE FOLLOWING COMPANIES HAVE RESPONDED TO THE INITIAL OUPS REQUEST A333200405-00A FOR UTILITY PLANS: CENTURYLINK, CITY OF LORAIN, COLUMBIA GAS, FIRST ENERGY, JOB 8, & WINDSTREAM.

SHERWOOD & VALLEYVIEW:
1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS PERFORMED ON (12-07-23).
2. AS OF (JANUARY 10, 2024), THE FOLLOWING COMPANIES HAVE RESPONDED TO THE INITIAL OUPS REQUEST: A331900736, A331900759, A331900783, A331900824, A331900847, A331900879, A331900908, A331900918, A331900930, A331900951, A331900977, A331901006, A331901024, A331901140, A331901145, A333200437, A333200444, A333200456, A333200466, A333200469, A333200472, A333200477, A333200488, A333200493, A333200500, A333200505, A333200516, A333200521, A333200522, A333200526 FOR UTILITY PLANS: BRIGHTSPEED, CHARTER COMMUNICATIONS, CITY OF LORAIN UTILITIES DEPARTMENT, COLUMBIA GAS OF OHIO, CENTURYLINK, JOB 8 LLC., OHIO EDISON, WINDSTREAM, ZAYO FIBER SOLUTIONS.

WEST ERIE:
1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS PERFORMED ON (12-08-23).
2. AS OF (FEBRUARY 20, 2024), THE FOLLOWING COMPANIES HAVE RESPONDED TO THE INITIAL OUPS REQUEST: A334102444, A334102455, A335000073, A335000074 FOR UTILITY PLANS: BRIGHTSPEED, CENTURYLINK, CITY OF LORAIN UTILITIES DEPARTMENT, COLUMBIA GAS OF OHIO, OHIO EDISON, RURAL LORAIN WATER, TIME WARNER CABLE, WINDSTREAM, ZAYO FIBER SOLUTIONS.

HAMILTON:
1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS PERFORMED ON (FEBRUARY 5, 2024).
2. AS OF MARCH 12, 2024, THE FOLLOWING COMPANIES HAVE RESPONDED TO THE INITIAL OUPS REQUEST A400802530-00A & A400802542 FOR UTILITY PLANS: BRIGHTSPEED, CITY OF LORAIN, COLUMBIA GAS, & FIRST ENERGY.

BOREMAN:
1. HORIZONTAL DATUM IS OHIO STATE PLANE, NORTH ZONE NAD83(2011) GRID NORTH BASED ON GPS OBSERVATIONS PERFORMED ON (2-02-24).
2. AS OF (MARCH 2, 2024), THE FOLLOWING COMPANIES HAVE RESPONDED TO THE INITIAL OUPS REQUEST: A400400676, A400802622, A400802622, A400802653, A400802653, B400400275, B400400280 FOR UTILITY PLANS: BREEZELINE, BRIGHTSPEED, CENTURYLINK, CITY OF LORAIN UTILITIES DEPARTMENT, COLUMBIA GAS OF OHIO, OHIO EDISON, TIME WARNER CABLE.

BENCHMARKS:

EASTMAN BENCHMARKS:

BM 601:
BENCHTIE SET IN NORTHEAST FACE OF TELEPHONE POWER POLE LOCATED IN FRONT OF RESIDENCE #5021 EASTMAN DRIVE.
ELEV=623.73

BM 602:
BENCHTIE SET IN NORTHWEST FACE OF TELEPHONE POWER POLE LOCATED IN FRONT OF CATCH BASIN SQUARE #25627.
ELEV=623.21

BM 603:
BENCHTIE SET IN EAST FACE OF TELEPHONE POWER POLE LOCATED IN FRONT OF RESIDENCE #5513 EASTMAN DRIVE MAILBOX.
ELEV=625.26

BM 604:
BENCHTIE SET IN EAST FACE OF TELEPHONE POWER POLE LOCATED IN FRONT OF RESIDENCE #5623 EASTMAN DRIVE.
ELEV=628.06

BM 605:
BENCHTIE SET IN NORTH FACE OF TELEPHONE POWER POLE #0911 LOCATED NORTHWEST CORNER OF COOPER FOSTER PARK ROAD AND LIBERTY BELL DRIVE.
ELEV=631.52

BM 650:
TOP OF NORTH WEST ANCHOR BOLT FOR SIGNAL POLE, LOCATED EAST SIDE OF LEAVITT ROAD, NORTH OF WALGREENS ENTRANCE.
ELEV=625.58

LEAVITT BENCHMARKS:

BM 600:
RAILROAD SPIKE ON THE WEST SIDE OF TELEPHONE POWER POLE #38DE1C-2 LOCATED ON THE EAST SIDE OF THE INTERSECTION OF LEAVITT ROAD AND EDITH STREET.
ELEV=608.31

BM 601:
RAILROAD SPIKE ON THE WEST WIDE OF TELEPHONE POWER POLE #CNTV500003 LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF LEAVITT ROAD AND WEST 20TH STREET.
ELEV=609.57

BM 602:
BENCH TIE IN THE NORTH SIDE OF TELEPHONE POWER POLE #45462 LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF LEAVITT ROAD AND WEST 21ST STREET.
ELEV=609.26

MISSOURI BENCHMARKS:

BM 601:
BENCH TIE SET IN THE WEST SIDE OF TELEPHONE POWER POLE #36DB3A-52 ON THE NORTHEAST CORNER OF MISSOURI AVE AND GARFIELD BLVD.
ELEV=602.25

BM 602:
BENCH TIE SET IN THE EAST SIDE OF TELEPHONE POWER POLE #36DB/3D-23 ON THE NORTHWEST CORNER OF MISSOURI AVE AND G ST.
ELEV=604.60

SHERWOOD & VALLEYVIEW BENCHMARKS:

BM 601:
BENCH TIE SET ON WEST FACE OF TELEPHONE POWER POLE #38DF/1B-4 LOCATED AT THE NORTHEAST CORNER OF SHERWOOD DRIVE AND MEISTER ROAD.
ELEV=609.66

BM 602:
BENCH TIE SET ON WEST FACE OF TELEPHONE POWER POLE #38DF/4C-33 LOCATED AT THE NORTHEAST CORNER OF SHERWOOD DRIVE AND IVANHOE DRIVE.
ELEV=607.43

BM 603:
BENCH TIE SET ON NORTHWEST FACE OF TELEPHONE POWER POLE #38DF/4C-22 LOCATED AT THE SOUTHEAST CORNER OF SHERWOOD DRIVE AND WOODSTOCK DRIVE.
ELEV=605.80

BM 604:
BENCH TIE SET ON WEST FACE OF TELEPHONE POWER POLE #38DF/4C-10 LOCATED AT THE NORTH CORNER OF SHERWOOD DRIVE AND VALLEYVIEW DRIVE.
ELEV=598.57

BM 605:
BENCH TIE SET ON NORTHEAST FACE OF TELEPHONE POWER POLE #38DF/4C-5 LOCATED AT THE SOUTHWEST CORNER OF SHERWOOD DRIVE AND ROBINHOOD DRIVE.
ELEV=586.41

BM 606:
BENCH TIE SET ON EAST FACE OF TELEPHONE POWER POLE #38DF/4B-32 LOCATED AT THE NORTHWEST CORNER OF SHERWOOD DRIVE AND WINDSOR COURT.
ELEV=587.11

BM 607:
BENCH TIE SET ON EAST FACE OF TELEPHONE POWER POLE #38DF/4B-22 LOCATED AT THE SOUTHWEST CORNER OF SHERWOOD DRIVE AND WEST 21ST STREET.
ELEV=600.76

BM 608:
BENCH TIE SET ON NORTH FACE OF TELEPHONE POWER POLE #38DF/4C-17 LOCATED IN FRONT BETWEEN RESIDENCE #3827 AND #3815 VALLEYVIEW DRIVE.
ELEV=605.80

BM 609:
BENCH TIE SET ON WEST FACE OF TELEPHONE POWER POLE #38DF/4D-6 LOCATED AT THE SOUTHEAST CORNER OF SHERWOOD DRIVE AND WOODSTOCK DRIVE.
ELEV=608.24

BENCHMARKS:

WEST ERIE BENCHMARKS:

BM 600:
BENCHTIE SET IN SOUTH FACE OF LIGHT POLE LOCATED NORTHWEST OF WEST ERIE AVENUE AND KOLBE ROAD.
ELEV=601.34

BM 601:
BENCHTIE SET IN SOUTH FACE OF TELEPHONE POWER POLE LOCATED IN FRONT OF RESIDENCE #552a0 WEST ERIE AVENUE.
ELEV=598.84

BM 602:
BENCHTIE SET IN NORTH FACE OF TELEPHONE POWER POLE LOCATED SOUTHEAST OF WEST ERIE AVENUE AND BEAVERCREST DRIVE.
ELEV=596.02

BM 603:
BENCHTIE SET IN SOUTH FACE OF POWER LIGHT POLE # 39DG-2/D-7 LOCATED IN FRONT OF RESIDENCE #5780 WEST ERIE AVENUE.
ELEV=592.48

HAMILTON BENCHMARKS:

BM 601:
BENCH TIE SET IN THE NORTH SIDE OF TELEPHONE POWER POLE #37DD/1C-57 ON THE NORTHWEST CORNER OF HAMILTON AVE AND W. ERIE AVE.
ELEV=587.62

BM 602:
BENCH TIE SET IN THE EAST SIDE OF TELEPHONE POWER POLE #F2684 ON THE SOUTHWEST CORNER OF HAMILTON AVE AND W. 2ND ST.
ELEV=592.61

BM 603:
BENCH TIE SET IN THE WEST SIDE OF TELEPHONE POWER POLE #1100-23 37DD/2A-1 ON THE NORTH SIDE OF THE INTERSECTION OF HAMILTON AVE AND W. 1ST ST.
ELEV=590.86

BM 604:
MAG NAIL SET IN WEST SIDE OF A TELEPHONE POWER POLE ON THE NORTH SIDE OF THE INTERSECTION OF W. 1ST ST AND WASHINGTON AVE.
ELEV=587.10

BM 605:
SQUARE CUT INTO THE SOUTHWEST SIDE OF A LIGHT POLE ON THE NORTH SIDE OF THE INTERSECTION OF W. 1ST ST AND CITY HALL PLACE.
ELEV=583.67

BOREMAN BENCHMARKS:

BM 601:
BENCH TIE SET ON NORTH FACE OF TELEPHONE POWER POLE #40DD/4B-21 LOCATED SOUTHWEST ON PROPERTY OF BORMAN FARMS ON COOPER FOSTER ROAD.
ELEV=687.98

BM 609:
SQUARE CUT ON TOP OF CONCRETE CASTING FOR SANITARY MANHOLE #28129 LOCATED ON PROPERTY OF AMHERST HAMPSHIRE FARMS.
ELEV=703.40

BM 610:
BENCH TIE SET ON WEST FACE OF POWER POLE #D63434 205620 LOCATED AT THE END OF KAY DRIVE.
ELEV=706.91

BM 611:
RAILROAD SPIKE SET ON SOUTH FACE OF TELEPHONE POWER POLE LOCATED AT NORTHEAST CORNER OF KAY DRIVE AND OBERLIN ROAD.
ELEV=706.20

BM 612:
BENCH TIE SET ON NORTH FACE OF TELEPHONE POWER POLE #F1428 LOCATED AT SOUTHWEST CORNER OF HIDDEN TREE LANE AND OBERLIN ROAD.
ELEV=711.83

CONTROL POINT					
STREET	POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
EASTMAN DRIVE	200	639881.788	2048408.311	616.96	CNPT IPINS
	201	639821.35	2048833.33	621.375	CNPT IPINS
	202	639273.663	2048908.224	626.769	CNPT IPINS
	203	638969.774	2048907.059	627.658	CNPT IPINS
	204	638744.461	2048999.049	621.935	CNPT IPINS
	205	638514.35	2049062.616	624.555	CNPT IPINS
	206	638357.467	2049172.881	629.239	CNPT IPINS
	207	638270.439	2049145.523	630.348	CNPT MAGS
	400	638535.076	2048922.51	616.273	IPIPE 7/8IN
	401	638537.885	2048919.573	616.363	IPIPE 7/8IN
	402	638341.872	2049266.686	630.367	IPIPE 7/8IN
	403	638655.312	2049265.302	628.672	IPIPE 7/8IN
	404	638262.841	2049177.614	629.313	MONBOX IPIN 1IN
	405	638197.799	2049177.726	629.25	MONBOX IPIN 5/8IN BRAMHALL
	406	638821.521	2048926.878	620.205	IPIN 3/4IN
	407	638848.818	2048955.294	621.205	IPIN 3/4IN
	408	638964.302	2048929.458		IPIPE 7/8IN
	409	639480.842	2048933.426	624.26	IPIN 5/8IN
	410	639264.568	2048935.011	625.504	IPIPE 7/8IN
	411	639779.905	2048942.532	622.702	IPIN 5/8IN KS ASSOC
	412	639765.607	2048842.506	621.179	IPIN 3/4IN
	413	639978.584	2048647.375	621.164	IPIPE 1.5IN
	414	640086.967	2048672.594	621.832	IPIPE 1.5IN
	415	640082.442	2048700.105	620.171	IPIPE 1IN
	416	640125.064	2048722.085	619.943	IPIPE 3/4IN
	417	639874.567	2048623.035	623.374	IPIPE 1.5IN
	418	640142.159	2048373.196	619.629	IPIPE 3/4IN
	419	640121.802	2048470.831	620.748	IPIN 5/8IN
	420	640016.631	2048437.788	616.424	IPIPE 3/4IN
	421	639067.665	2048350.832	622.031	MONBOX IPIN 1IN
	422	640032.211	2048395.703	617.197	MONBOX IPIN 1IN
	423	640361.379	2048516.038	619.319	MONBOX IPIN 1IN
	424	638301.797	2048333.648	628.072	MONBOX IPIN 1IN
	24472	638333.333	2049080.519	626.235	CNPT SPIKESET
	24629	638673.056	2049019.76	622.224	CNPT SPIKESET
	24705	638872.514	2048935.681	622.661	CNPT SPIKESET
	25211	639517.03	2048880.272	623.202	CNPT SPIKESET
	25650	639862.428	2048629.465	623.201	CNPT MAGS
	26390	640038.857	2048435.7	618.027	CNPT SPIKESET
	26391	640154.13	2048319.37	619.407	CNPT SPIKESET
LEAVITT ROAD	200	650829.101	2050073.613	607.66	CNPT MAGS
	201	650205.044	2050142.904	608.295	CNPT MAGS
	202	650497.024	2050076.114	608.532	CNPT MAGS
	21482	650158.773	2050103.797	608.128	MONBOX NOT OPENED
MISSOURI AVENUE	200	659091.203	2065291.367	601.443	CNPT IPINS
	201	658730.26	2065290.325	608.398	CNPT MAGS
	202	658428.726	2065364.9	604.116	CNPT IPINS
	20001	658971.856	2065305.142	601.611	CNPT DRILLHS
	100201	658730.183	2065290.325	608.292	CNPT MAGS
	100202	658428.722	2065364.861	604.011	CNPT IPINS
SHERWOOD & VALLEYVIEW	200	646802.745	2045429.87	609.404	CNPT IPINS
	201	647560.489	2045417.887	605.224	CNPT IPINS
	202	647214.1	2045427.521	607.031	CNPT MAGS
	203	647843.202	2045224.966	597.021	CNPT MAGS
	204	648066.459	2045059.153	586.276	CNPT MAGS
	205	648452.515	2045207.793	586.432	CNPT MAGS
	206	648881.514	2045315.347	600.791	CNPT MAGS
	207	649178.724	2045263.196	595.236	CNPT IPINS
	208	647934.586	2045552.028	601.662	CNPT IPINS
	209	647852.482	2045938.479	605.392	CNPT IPINS
	210	647889.159	2046420.632	606.588	CNPT IPINS
	211	647514.192	2046462.669	608.021	CNPT IPINS
	10993	647367.338	2045494.42	607.239	CNPT
	11562	648285.706	2045121.934	585.85	CNPT
	11617	648239.204	2045079.095	585.072	MAGS
	11626	648262.557	2045199.821	585.333	MAGS

CONTROL POINT					
STREET	POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
WEST ERIE	200	646550.904	2041015.101	600.135	CNPT IPINS
	201	646220.123	2040416.873	598.85	CNPT IPINS
	202	645957.99	2039860.847	593.5416	CNPT IPINS
	203	645691.83	2039291.005	597.0144	CNPT IPINS
	204	645368.866	2038708.786	590.7284	CNPT IPINS
	16034	645940.747	2039673.778	593.148	CNPT MAGS
	16081	645847.169	2039829.812	591.157	CNPT MAGS
	16287	645840.7	2039518.139	595.314	CNPT MAGS
	30255	645464.205	2038736.738	591.664	CNPT HUB
HAMILTON AVENUE	200	656228.245	2055467.398		CNPT MAGS
	201	656569.62	2055404.933	591.29	CNPT MAGS
	202	656994.321	2055273.248		CNPT IPINS
	203	657105.877	2055695.321		CNPT MAGS
	204	657045.16	2055931.859		CNPT MAGS
	205	656228.245	2055467.398		CNPT MAGS
	206	656569.62	2055404.933	591.29	CNPT MAGS
	207	656994.321	2055273.248		CNPT IPINS
	208	657105.877	2055695.321		CNPT IPINS
	209	657045.16	2055931.859		CNPT MAGS
	400	656597.551	2055384.137	591.171	MONBOX BDSK CUT
	401	656597.551	2055384.137	591.171	MONBOX BDSK CUT
	2000	656228.184	2055467.41	587.038	CNPT MAGS
	2001	656569.62	2055404.933	591.289	CNPT MAGS
	2002	656228.184	2055467.41	587.038	CNPT MAGS
	2003	656569.62	2055404.933	591.289	CNPT MAGS
	2005	657045.141	2055931.958	582.517	CNPT MAGS
	40713	656993.313	2055445.869	584.627	CNPT
	41843	656993.313	2055445.869	584.627	CNPT
BOREMAN'S FARM	200	638274.395	2057581.187	691.075	CNPT IPINS
	201	638271.028	2056745.748	687.111	CNPT IPINS
	202	637595.2	2056749.164	688.927	CNPT IPINS
	203	636910.137	2056743.194	692.145	CNPT IPINS
	204	636415.804	2056715.444	696.37	CNPT IPINS
	205	635962.05	2056515.046	699.4	CNPT IPINS
	206	635761.053	2056463.292	703.957	CNPT IPINS
	207	635582.297	2056463.34	700.885	CNPT IPINS
	208	634819.987	2056207.777	701.31	CNPT IPINS
	209	634283.137	2056045.605	705.46	CNPT MAGS
	210	634268.469	2055693.469	705.495	CNPT MAGS
	211	634254.299	2055271.934	706.861	CNPT IPINS
	212	633874.301	2055232.479	710.915	CNPT IPINS
	400	635811.936	2056541.084	700.465	IPIPE 3/4IN
	401	635811.926	2056461.479	700.734	IPIPE 3/4IN
	26560	638278.54	2057075.764	689.59	CNPT MAGS
	27101	637768.06	2056805.824	689.618	CNPT SPIKESET
	27102	637694.969	2056752.65	688.55	CNPT SPIKESET
	27647	637242.797	2056743.855	690.483	CNPT TEMP
	27741	636546.483	2056728.737	696.244	CNPT SPIKESET
	28013	635654.583	2056479.141	704.036	CNPT MAGS
	28475	634545.88	2056162.866	704.344	CNPT SPIKESET
	28476	634390.812	2056077.649	704.407	CNPT SPIKESET
	29148	634241.657	2055437.82	705.72	CNPT MAGS
	29895	634309.541	2056096.756	706.93	CNPT MAGS
	29897	634357.053	2056147.545	706.234	CNPT SPIKESET

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CORN
E-8406
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SURVEYOR'S NOTES, BENCHMARKS, & CONTROL POINTS

DRAWING NO.

G3

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3/6/2025 1:10 PM Pawar, Sayali

BID ITEM	ODOT REF.	ITEM DESCRIPTION	UNIT	SECTION A - EASTMAN	SECTION B - LEAVITT	SECTION B - MISSOURI	SECTION C - SHERWOOD	SECTION C - VALLEYVIEW	SECTION D - WEST ERIE	SECTION E - HAMILTON	SECTION F - BOREMAN	TOTAL
01	614	MAINTENANCE OF TRAFFIC	LS	-	-	-	-	-	-	-	-	1
02	638	REPLACE WATER MAIN WITH NEW 8-INCH DIAMETER	LF	1,310	58	85	2,418	1,559	7	0	0	5,437
03	638	REPLACE WATER MAIN WITH NEW 12-INCH DIAMETER	LF	0	1,818	387	0	0	2,206	112	0	4,523
04	638	REPLACE WATER MAIN WITH NEW 16-INCH DIAMETER	LF	0	0	0	0	0	0	21	139	160
05	638	REPLACE WATER MAIN WITH NEW 18-INCH DIAMETER	LF	0	0	0	0	0	0	45	0	45
06	SPECIAL	TRENCHLESS INSTALLATION OF NEW 8-INCH DIAMETER WATER MAIN VIA HORIZONTAL DIRECTIONAL DRILLING	LF	0	0	0	0	0	0	0	0	0
07	SPECIAL	EXCAVATION OF ACCESS PITS FOR HORIZONATAL DIRECTIONAL DRILLING, INCLUDING PAVEMENT AND FILL REMOVAL AND DISPOSAL	EA	0	0	0	0	0	0	0	0	0
08	SPECIAL	TRENCHLESS INSTALLATION OF NEW 8-INCH DIAMETER WATER MAIN VIA JACK AND BORE	LF	0	0	0	0	0	0	0	0	0
09	SPECIAL	TRENCHLESS INSTALLATION OF NEW 12-INCH DIAMETER WATER MAIN VIA JACK AND BORE	LF	0	82	72	0	0	0	0	0	154
10	SPECIAL	TRENCHLESS INSTALLATION OF NEW 16-INCH DIAMETER WATER MAIN VIA JACK AND BORE	LF	0	0	0	0	0	0	0	261	261
11	SPECIAL	EXCAVATION OF ACCESS PITS FOR JACK AND BORE TRENCHLESS INSTALLATION, INCLUDING PAVEMENT AND FILL REMOVAL AND DISPOSAL	EA	0	2	2	0	0	0	0	3	7
12	SPECIAL	REHABILITATION OF 16-INCH WATER MAIN WITH PRESSURE CURED-IN PLACE PIPE (CIPP)	LF	0	0	0	0	0	0	866	0	866
13	SPECIAL	REHABILITATION OF 18-INCH STEEL WATER MAIN WITH PRESSURE CURED-IN PLACE PIPE (CIPP)	LF	0	0	0	0	0	0	617	0	617
14	SPECIAL	EXCAVATION OF ACCESS PITS FOR CIPP RELINING, INCLUDING PAVEMENT AND FILL REMOVAL AND DISPOSAL	EA	0	0	0	0	0	0	6	0	6
15	638	ABANDON WATER MAIN IN PLACE	LF	1,150	717	541	2,415	1,596	2,146	0	0	8,565
16	SPECIAL	REMOVE AND REPLACE HYDRANT WITH NEW 6-INCH HYDRANT ASSEMBLY	EA	0	0	1	0	4	2	1	0	8
17	SPECIAL	INSTALL NEW 6-INCH HYDRANT ASSEMBLY	EA	4	1	1	8	2	7	0	2	25
18	638	REPLACE WATER SERVICE CONNECTIONS WITH NEW 1-INCH COPPER (LONG SIDE)	EA	2	0	0	8	22	0	0	0	32
19	638	REPLACE WATER SERVICE CONNECTIONS WITH NEW 1-INCH COPPER (SHORT SIDE)	EA	10	11	0	24	13	2	0	0	60
20	638	REPLACE WATER SERVICE CONNECTIONS WITH NEW 2-INCH COPPER	EA	0	0	0	0	0	1	0	0	1
21	638	REPLACE PROPERTY OWNER'S LEAD WATER SERVICE CONNECTION UP TO 100 LINEAR FEET (OWNER SIDE)	EA	5	5	5	5	5	5	5	5	40
22	638	REPLACE PROPERTY OWNER'S LEAD WATER SERVICE CONNECTION LENGTH EXCEEDING 100 LINEAR FEET (OWNER SIDE)	LF	100	100	100	100	100	100	100	100	800
23	638	PENETRATE WALL AND CONNECT TO FIRST FITTING INSIDE OF BUILDING WHEN REPLACING PROPERTY OWNER'S LEAD WATER SERVICE CONNECTION	EA	5	5	5	27	17	5	5	5	74
24	SPECIAL	INSTALL 8-INCH DIAMETER GATE VALVE AND VALVE BOX	EA	2	2	2	5	4	1	0	0	16
25	SPECIAL	INSTALL 12-INCH DIAMETER GATE VALVE AND VALVE BOX	EA	0	3	4	0	0	4	2	0	13
26	SPECIAL	INSTALL 16-INCH DIAMETER GATE VALVE AND VALVE BOX	EA	0	0	0	0	0	0	3	7	10
27	SPECIAL	INSTALL 18-INCH DIAMETER GATE VALVE AND VALVE BOX	EA	0	0	0	0	0	0	2	0	2
28	608	REMOVE AND REPLACE CONCRETE SIDEWALK, ITEM 608	SF	0	0	48	0	0	0	29	0	77
29	608	REMOVE AND REPLACE CURB RAMP, ITEM 608	EA	0	0	2	1	0	0	1	0	4
30	452	REMOVE AND REPLACE DRIVEWAY APRON, ITEM 452	SF	463	0	0	0	0	321	670	0	1,454
31	SPECIAL	TYPE "A" PAVEMENT REPLACEMENT (CONCRETE) ROADWAY	SY	52	0	378	123	0	0	0	0	553
32	SPECIAL	TYPE "B" PAVEMENT REPLACEMENT (ASPHALT) ROADWAY	SY	1,117	424	0	1,584	1,320	1,212	88	0	5,745
33	609	CONCRETE CURB, INCLUDING REMOVAL.	LF	0	6	72	54	36	0	37	0	205
34	640	PAVEMENT MARKINGS, ITEM 640	LS	-	-	-	-	-	-	-	-	1
35	630	REMOVE, STORE, AND RE-ERECT SIGNS	EA	0	0	0	0	1	2	0	0	3
36	SPECIAL	UTILITY POLE SUPPORT ALLOWANCE	ALLOW	-	-	-	-	-	-	-	-	$20,000.00
37	201	CLEARING AND GRUBBING	SY	0	0	0	0	0	0	0	0	0
38	SPECIAL	PRE- AND POST CONSTRUCTION DOCUMENTATION	LS	-	-	-	-	-	-	-	-	1
39	SPECIAL	RECORD DOCUMENTS - AS BUILT DRAWINGS	LS	-	-	-	-	-	-	-	-	1
40	623	CONSTRUCTION LAYOUT AND STAKING	LS	-	-	-	-	-	-	-	-	1
41	SPECIAL	ALTERNATE - TEMPORARY BYPASS WATER MAINS, HYDRANTS, AND SERVICES CONNECTIONS FOR WATER MAINS TO BE REPLACED - SHERWOOD	LS	-	-	-	-	-	-	-	-	1
42	SPECIAL	ALTERNATE - TEMPORARY BYPASS WATER MAINS, HYDRANTS, AND SERVICES CONNECTIONS FOR WATER MAINS TO BE REPLACED - VALLEYVIEW	LS	-	-	-	-	-	-	-	-	1
43	SPECIAL	ALTERNATE - REHABILITATION OF EXISTING WATER MAIN WITH CLOSE FIT (COMPRESSION) HDPE LINING - HAMILTON	LS	-	-	-	-	-	-	-	-	1
44	SPECIAL	ALTERNATE - REHABILITATION OF EXISTING WATER MAIN WITH PRESSURE CURED-IN PLACE PIPE (CIPP) - BOREMAN	LS	-	-	-	-	-	-	-	-	1
45	SPECIAL	ALTERNATE - REHABILITATION OF EXISTING WATER MAIN WITH CLOSE FIT (COMPRESSION) HDPE LINING - BOREMAN	LS	-	-	-	-	-	-	-	-	1
46	SPECIAL	DEDUCT ALTERNATE – NON-PREFORM 16" WATER MAIN VIA JACK AND BORE – BOREMAN	LS	-	-	-	-	-	-	-	-	1
47	SPECIAL	ALTERNATE – INSTALLATION OF WATERMAIN LOOP THROUGH EASEMENT USING HDD UNDER CREEK – EASTMAN	LS	-	-	-	-	-	-	-	-	1

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COON
84026
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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QUANTITIES SHEET

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G4

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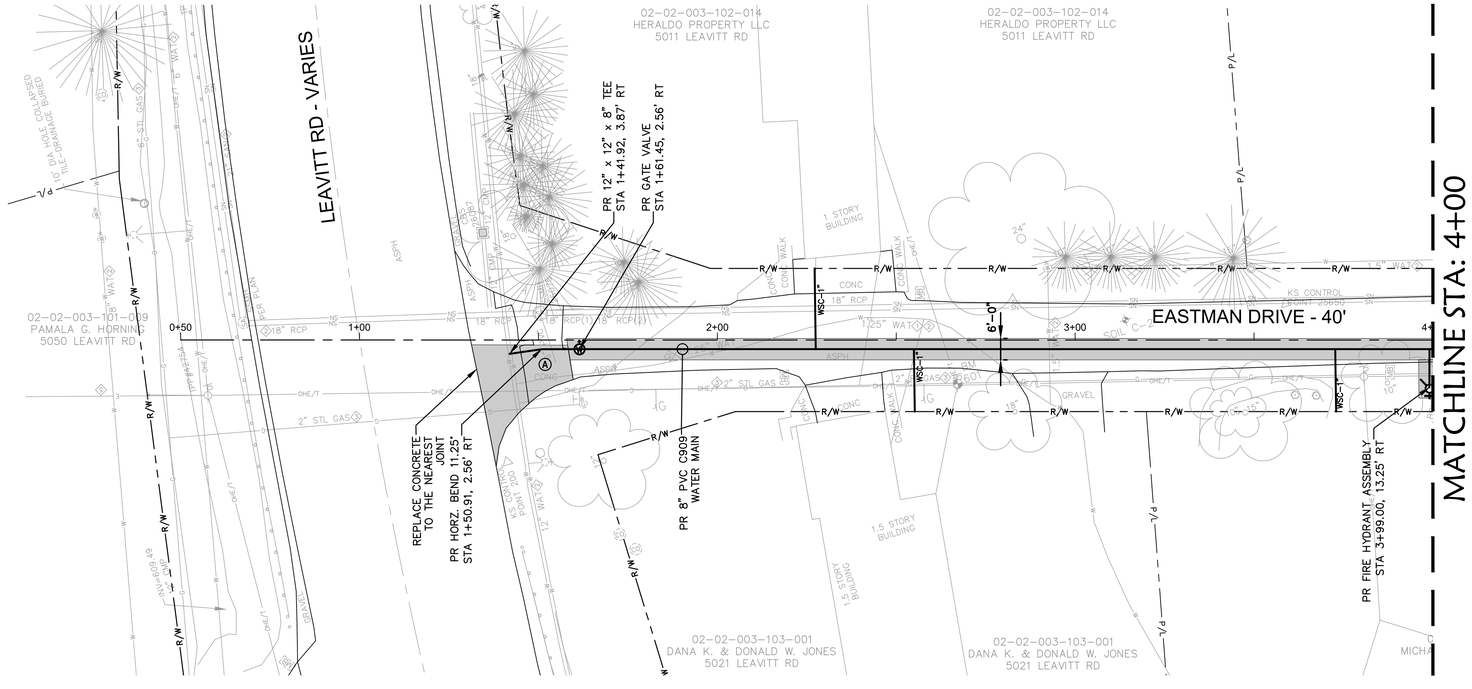
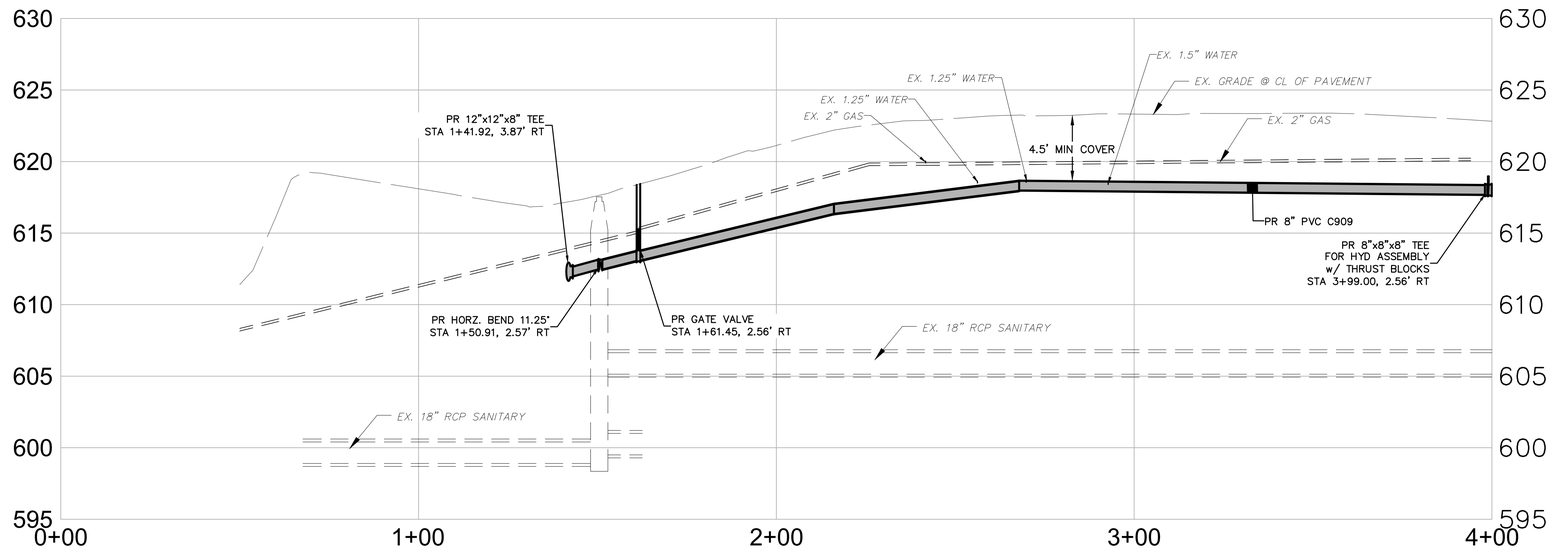


EASTMAN DRIVE

SCALE: 1" = 20'



EASTMAN DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 26075
RIM=617.54
INV=599.5± 18" RCP SE (1)
INV=605.14 18" RCP SE (2)
INV=611.99 6" PVC S
INV=598.9± 18" RCP NW

CBS 26087
RIM=616.16
INV=609.76 12" RCP NE
INV=609.66 12" RCP SW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR EASTMAN DRIVE VARIES FROM SHEET 1.5" TO 3.5" ASPHALT PAVEMENT OVER VARYING 3.5" TO 10.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. PER RECORD INFORMATION, EXISTING RESIDENTIAL WATER SERVICE CONNECTIONS ARE LOCATED ON THE SOUTH AND WEST WALLS OF EACH HOME. PRIOR TO INSTALLING ANY WATER SERVICE CONNECTIONS ON EASTMAN DRIVE, CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF WATER SERVICE CONNECTION FOR INSTALLATION AND PROPOSED ROUTING WITH EACH PROPERTY OWNER.

KEY NOTES:

Ⓐ KEEP EXISTING WATER MAIN LIVE DURING CONSTRUCTION AND COORDINATE TIMING FOR ABANDONING WITH THE CITY OF LORAIN.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COON
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

EASTMAN - PLAN & PROFILE 0+50 TO 4+00

DRAWING NO.

E1

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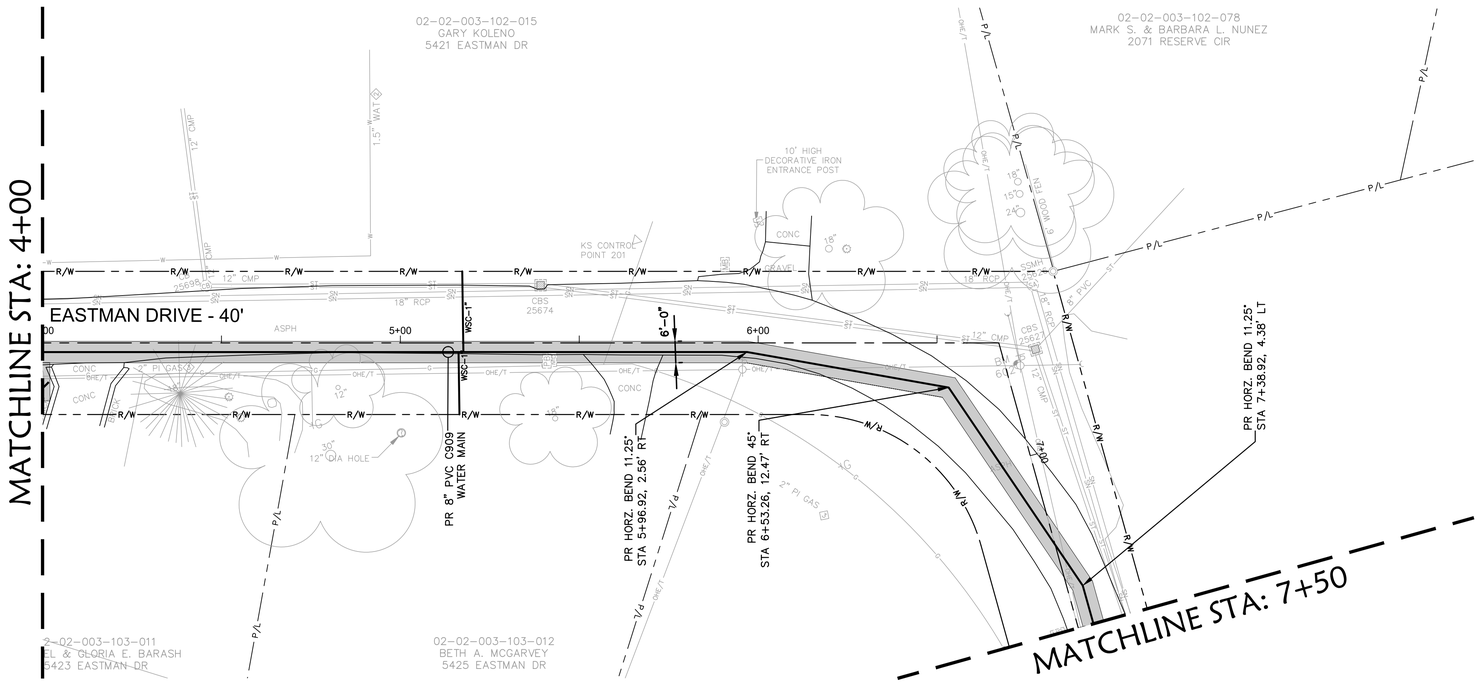
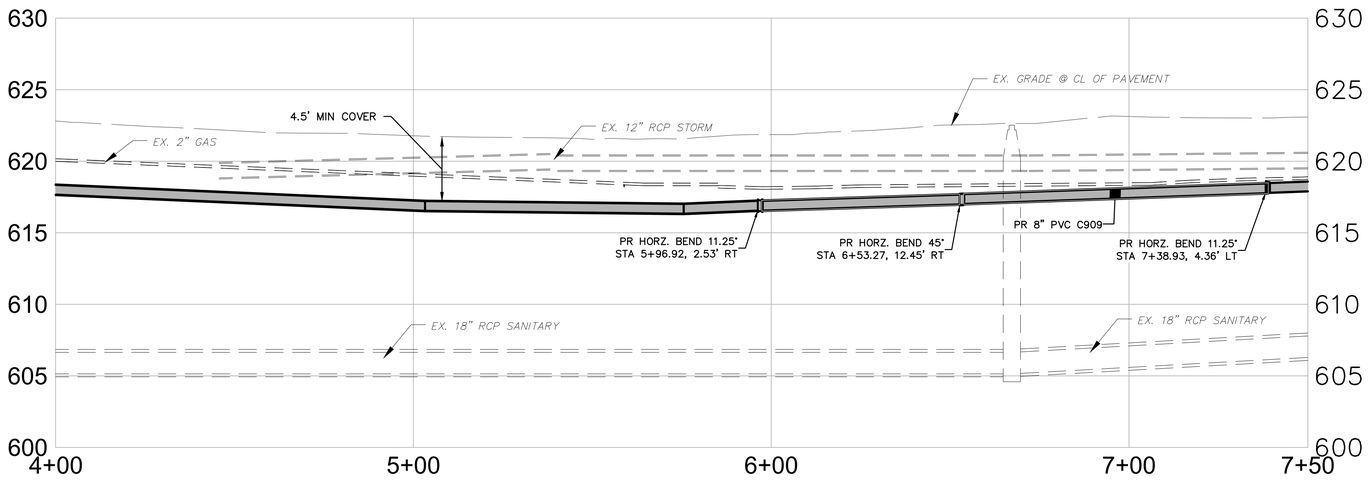


EASTMAN DRIVE

SCALE: 1" = 20'



EASTMAN DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 25626
RIM=622.52
18" SAN NW
18" RCP S
UNABLE TO OPEN

CBS 25627
RIM=622.31
INV=619.61 8" PVC NE
INV=619.36 12" CMP S
INV=619.46 12" CMP W

CBS 25674
RIM=620.96
INV=618.38 12"x10" BRICK OPENING SE
INV=618.36 12"x10" BRICK OPENING NW
12" CMP LIKELY RECESSED AT BOTH OPENINGS

CB 25698
RIM=621.34
INV=618.84 12" CMP NE & SE

GENERAL NOTES:

1. EXISTING PAVEMENT FOR EASTMAN DRIVE VARIES FROM SHEET 1.5" TO 3.5" ASPHALT PAVEMENT OVER VARVING 3.5" TO 10.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. PER RECORD INFORMATION, EXISTING RESIDENTIAL WATER SERVICE CONNECTIONS ARE LOCATED ON THE SOUTH AND WEST WALLS OF EACH HOME. PRIOR TO INSTALLING ANY WATER SERVICE CONNECTIONS ON EASTMAN DRIVE, CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF WATER SERVICE CONNECTION FOR INSTALLATION AND PROPOSED ROUTING WITH EACH PROPERTY OWNER.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COON
E-84062
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
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OSBORN PROJ NO.	J20221302.000

EASTMAN - PLAN & PROFILE 4+00 TO 7+50

DRAWING NO.

E2

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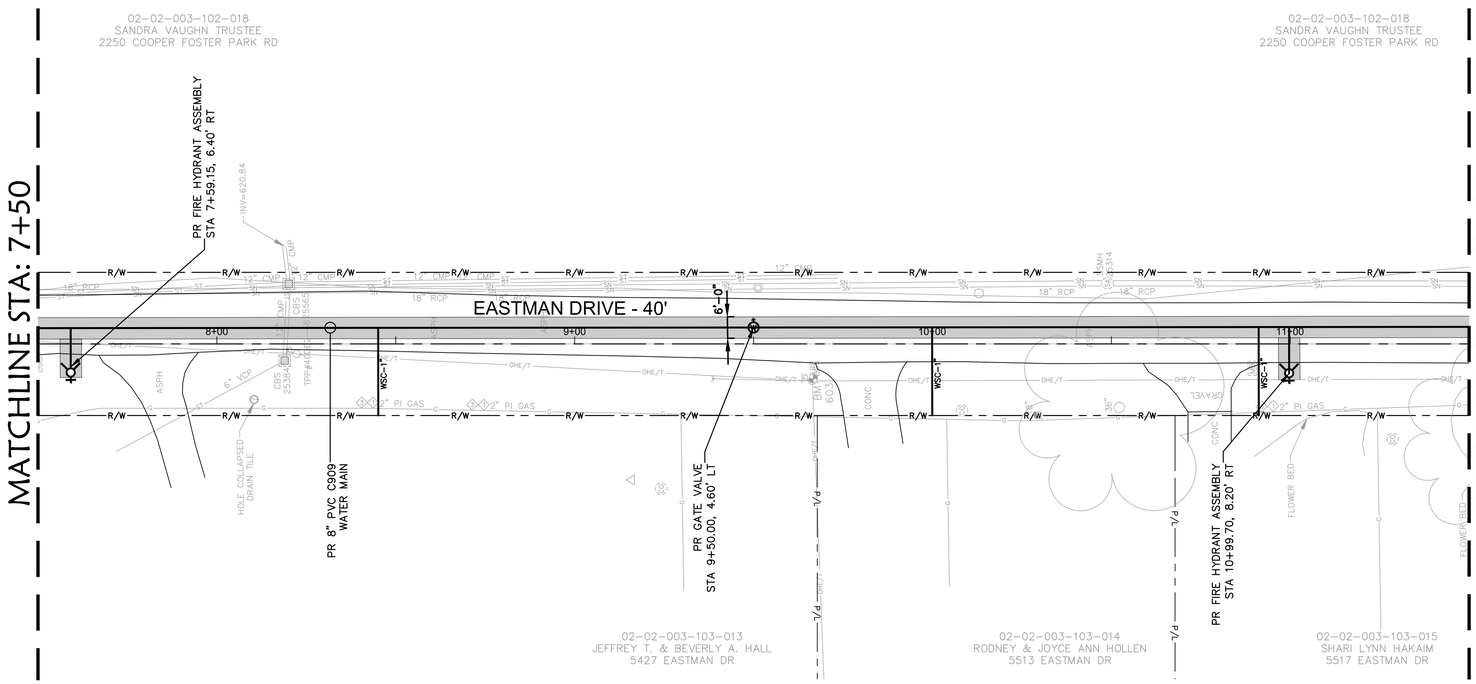
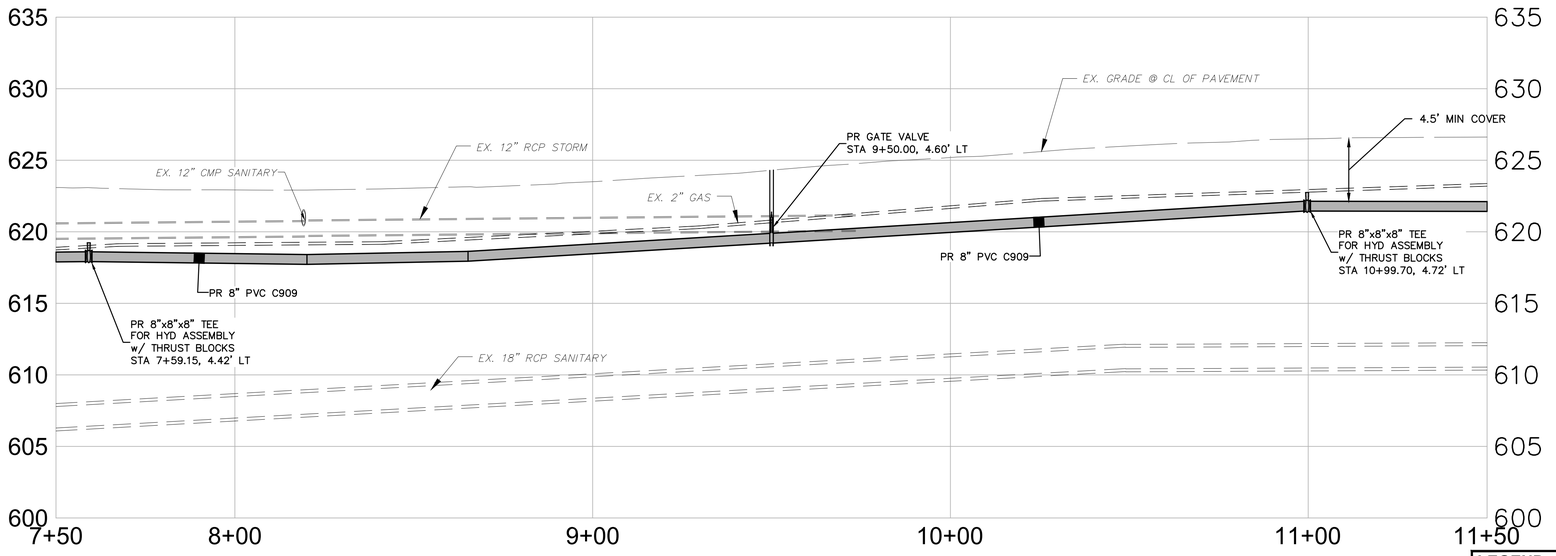


EASTMAN DRIVE

SCALE: 1" = 20'



EASTMAN DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 25314
RIM=625.98
INV=610.44 18" RCP N
INV=610.42 18" RCP S

CBS 25384
RIM=622.51
INV=620.61 12" CMP E
INV=620.61 6" VCP NW

CBS 25565
RIM=622.36
INV=619.71 12" CMP N
INV=620.11 12" CMP S
INV=620.06 12" CMP W
INV=620.16 12" CMP E

GENERAL NOTES:

1. EXISTING PAVEMENT FOR EASTMAN DRIVE VARIES FROM SHEET 1.5" TO 3.5" ASPHALT PAVEMENT OVER VARYING 3.5" TO 10.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
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LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

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- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

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LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COON
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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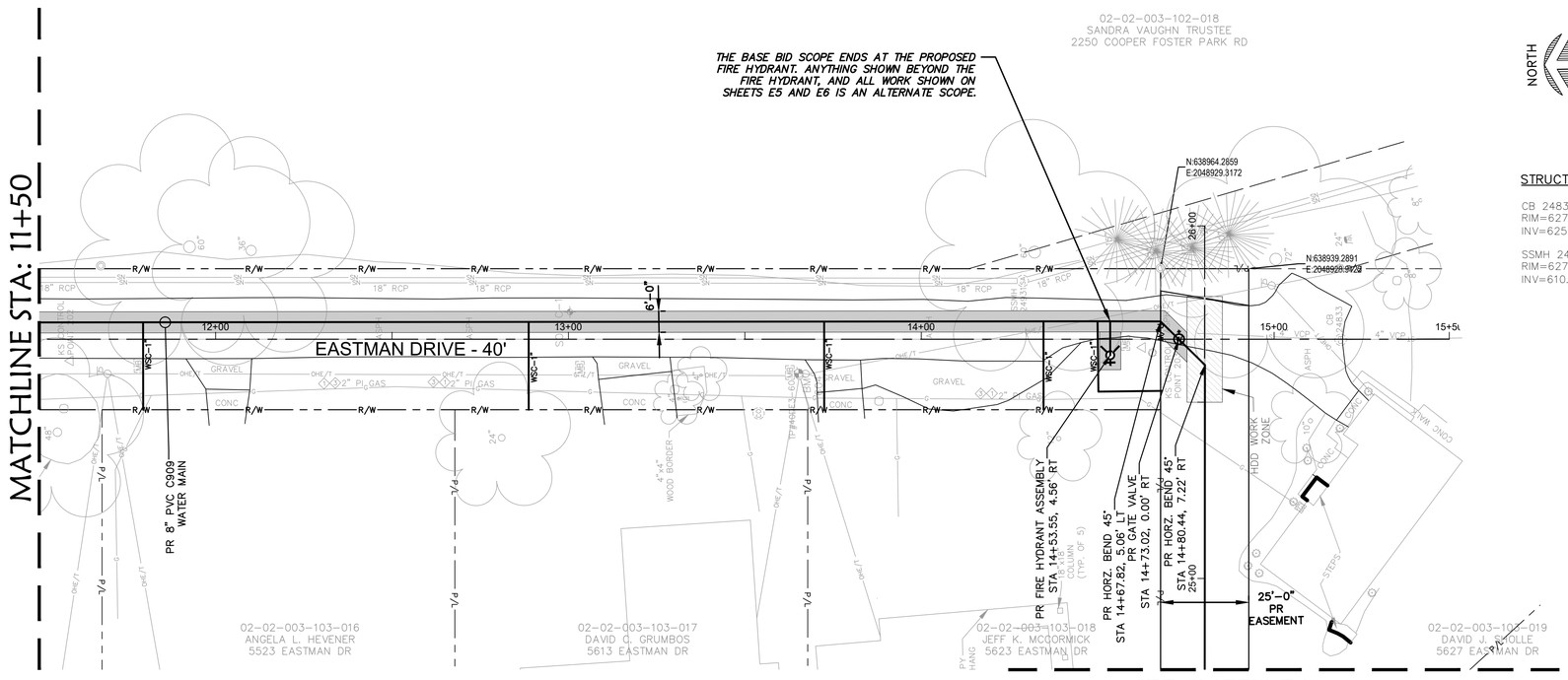
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

EASTMAN - PLAN & PROFILE 7+50 TO 11+50

DRAWING NO.
E3

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_PH2\Drawings\Civil\J20221302.000_C E3 - EASTMAN P&P.dwg
6/10/2025 1:27 PM Coon, Kevin



EASTMAN DRIVE

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

(IN FEET)

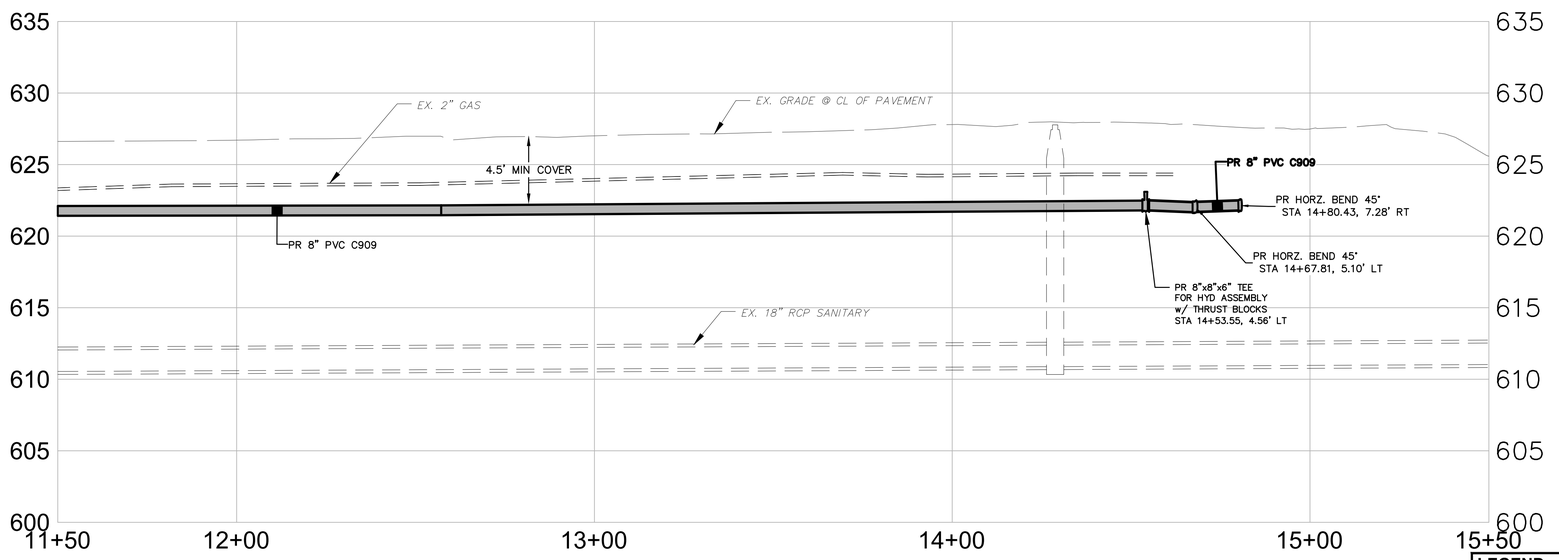
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CB 24833
RIM=627.06
INV=625.06 4" VCP N & S

SSMH 24931
RIM=627.78
INV=610.88 18" RCP N & SE



EASTMAN DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

GENERAL NOTES:

1. EXISTING PAVEMENT FOR EASTMAN DRIVE VARIES FROM SHEET 1.5" TO 3.5" ASPHALT PAVEMENT OVER VARYING 3.5" TO 10.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. PER RECORD INFORMATION, EXISTING RESIDENTIAL WATER SERVICE CONNECTIONS ARE LOCATED ON THE SOUTH AND WEST WALLS OF EACH HOME. PRIOR TO INSTALLING ANY WATER SERVICE CONNECTIONS ON EASTMAN DRIVE, CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF WATER SERVICE CONNECTION FOR INSTALLATION AND PROPOSED ROUTING WITH EACH PROPERTY OWNER.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODN
E-84052
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

EASTMAN - PLAN & PROFILE 11+50 TO 15+50

DRAWING NO.

E4

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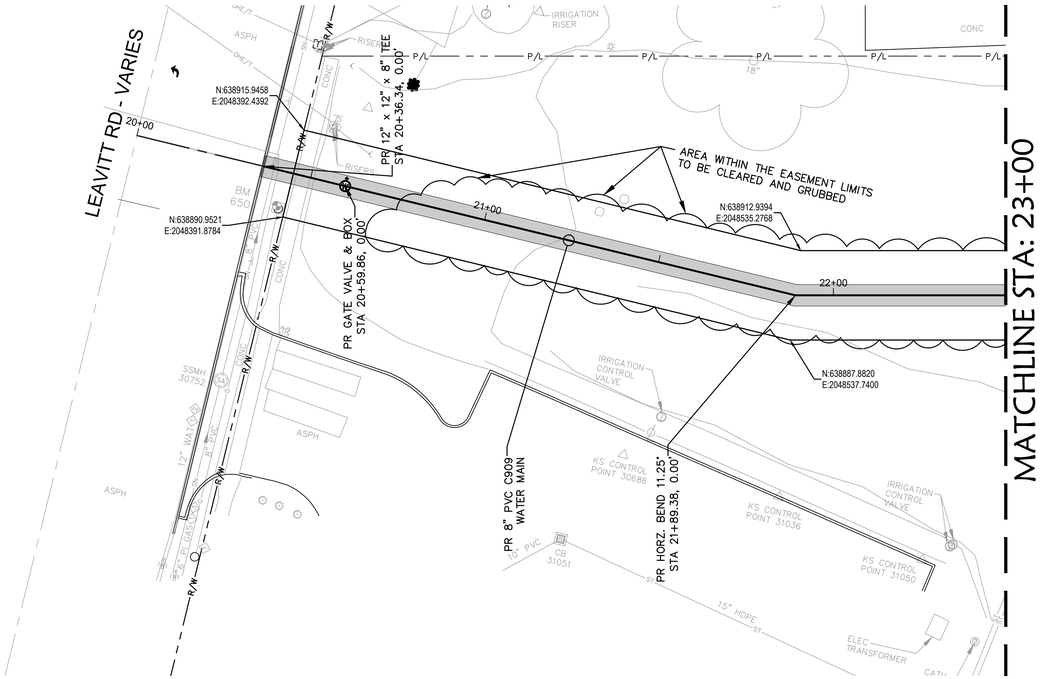
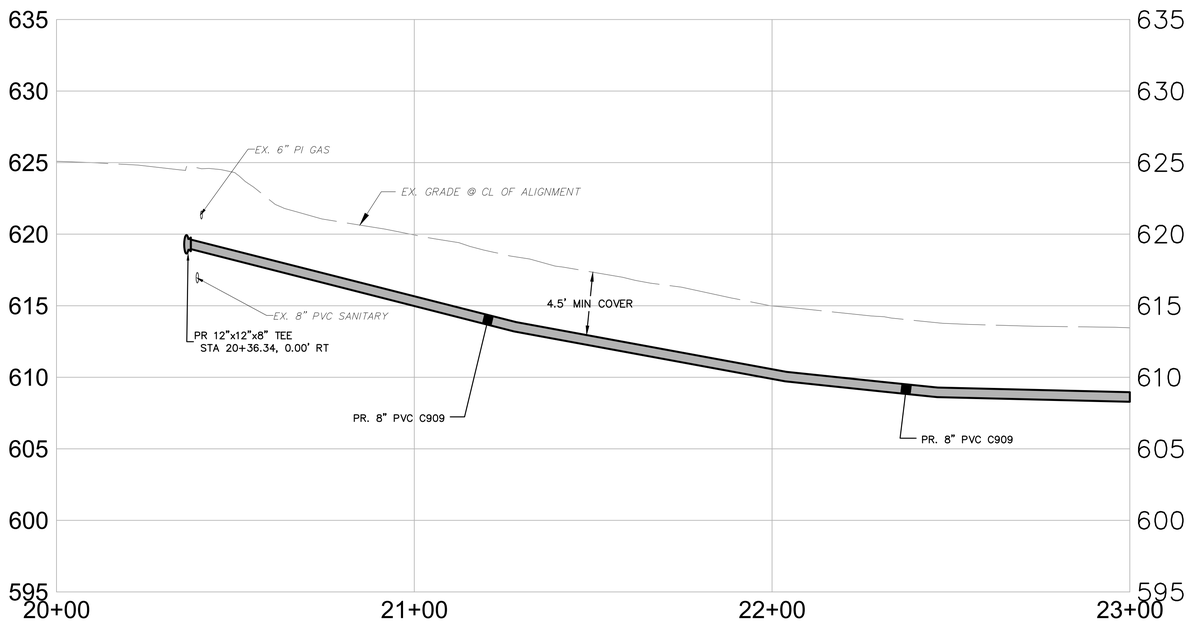
6/10/2025 1:28 PM Coon, Kevin



EASTMAN DRIVE

SCALE: 1" = 20'



EASTMAN DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 24639
RIM=621.04
INV=611.24 18" RCP NW
INV=611.29 18" RCP SE

GENERAL NOTES:

1. EXISTING PAVEMENT FOR EASTMAN DRIVE VARIES FROM SHEET 1.5" TO 3.5" ASPHALT PAVEMENT OVER VARYING 3.5" TO 10.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COON
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

EASTMAN - ALTERNATE PLAN & PROFILE 20+00 TO 23+00

DRAWING NO.

E5

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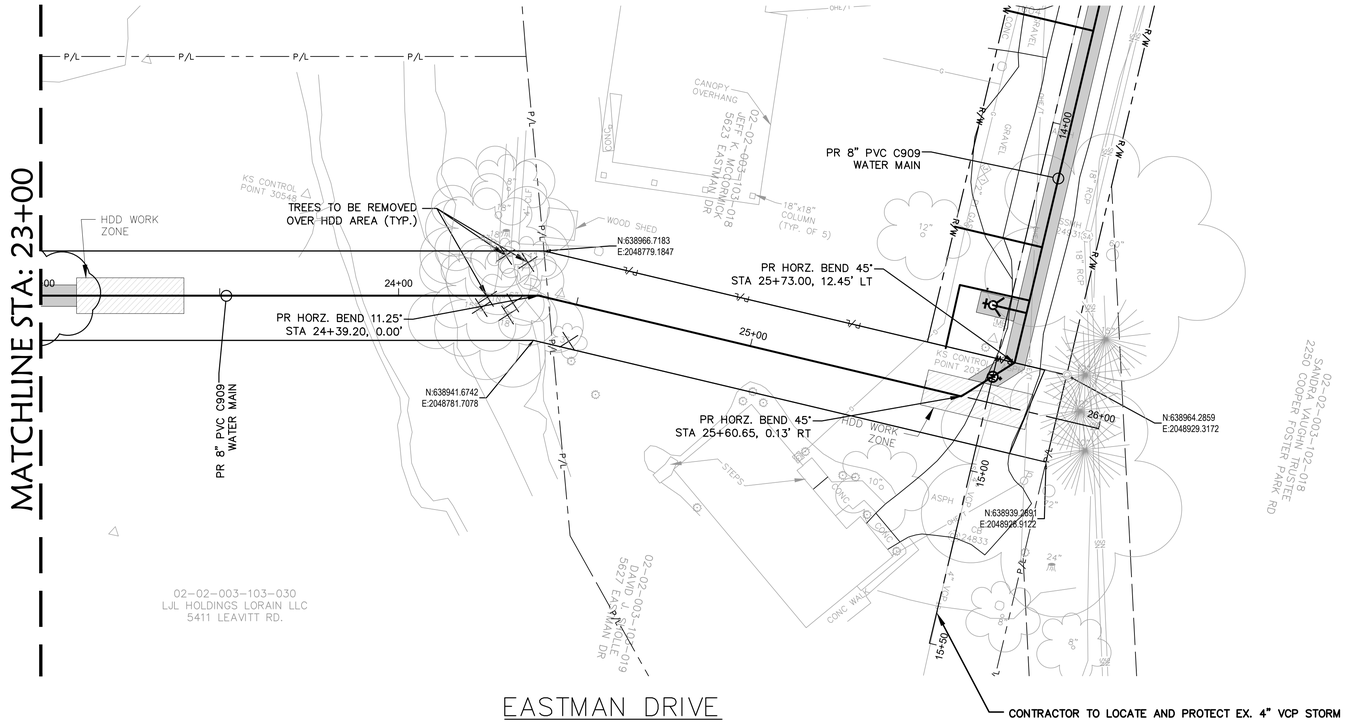
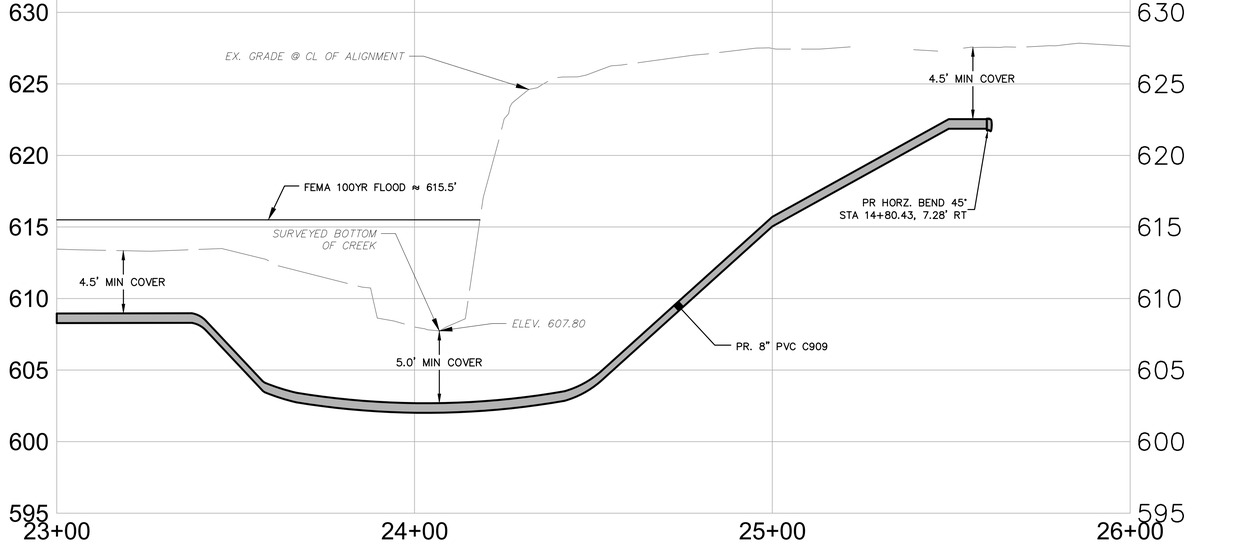


EASTMAN DRIVE

SCALE: 1" = 20'



EASTMAN DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

CB 24304

SSMH 24305
RIM=630.20
INV=618.90 15" RCP E & W
INV=618.90 10" RCP S

STMH 24308
RIM=630.28
INV=620.71 42" HDPE E
INV=618.45 42" HDPE NW

SSMH 24309
RIM=630.35
INV=619.17 18" RCP E
INV=619.10 18" RCP NW

CI 24311
RIM=629.93
INV=626.33 12" CPP W
INV=626.83 6" PVC SW
(DOUBLE GRATE)
BOTTOM=626.43

STMH 24416
RIM=628.03
INV=617.79 18" PVC SE
INV=614.34 42" HDPE SE
INV=620.21 12" PVC SE
INV=614.30 42" HDPE NW

SSMH 24486
RIM=619.08
INV=611.98 18" RCP SE & NW

CB 24833
RIM=627.06
INV=625.06 4" VCP N & S

GENERAL NOTES

1. EXISTING PAVEMENT FOR EASTMAN DRIVE VARIES FROM SHEET 1.5" TO 3.5" ASPHALT PAVEMENT OVER VARYING 3.5" TO 10.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
4. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.
5. NO TREES SHALL BE REMOVED EXCEPT DURING THE PERIOD BETWEEN OCTOBER 1 AND MARCH 31 PER FEDERAL REGULATORY REQUIREMENTS. NO TREES SHALL BE REMOVED WITHOUT EXPLICIT WRITTEN PERMISSION PROVIDED TO THE CONTRACTOR BY THE OWNER. THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT. ANY TREE CLEARING FROM APRIL 1 TO SEPTEMBER 30 WILL REQUIRE EMERGENT SURVEYS FOR ALL SITES.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COON
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

EASTMAN - ALTERNATE PLAN & PROFILE 23+00 TO 26+00

DRAWING NO.

E6

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_Ph2\Drawings\Civil\J20221302.000_C E6 - EASTMAN P&P.dwg
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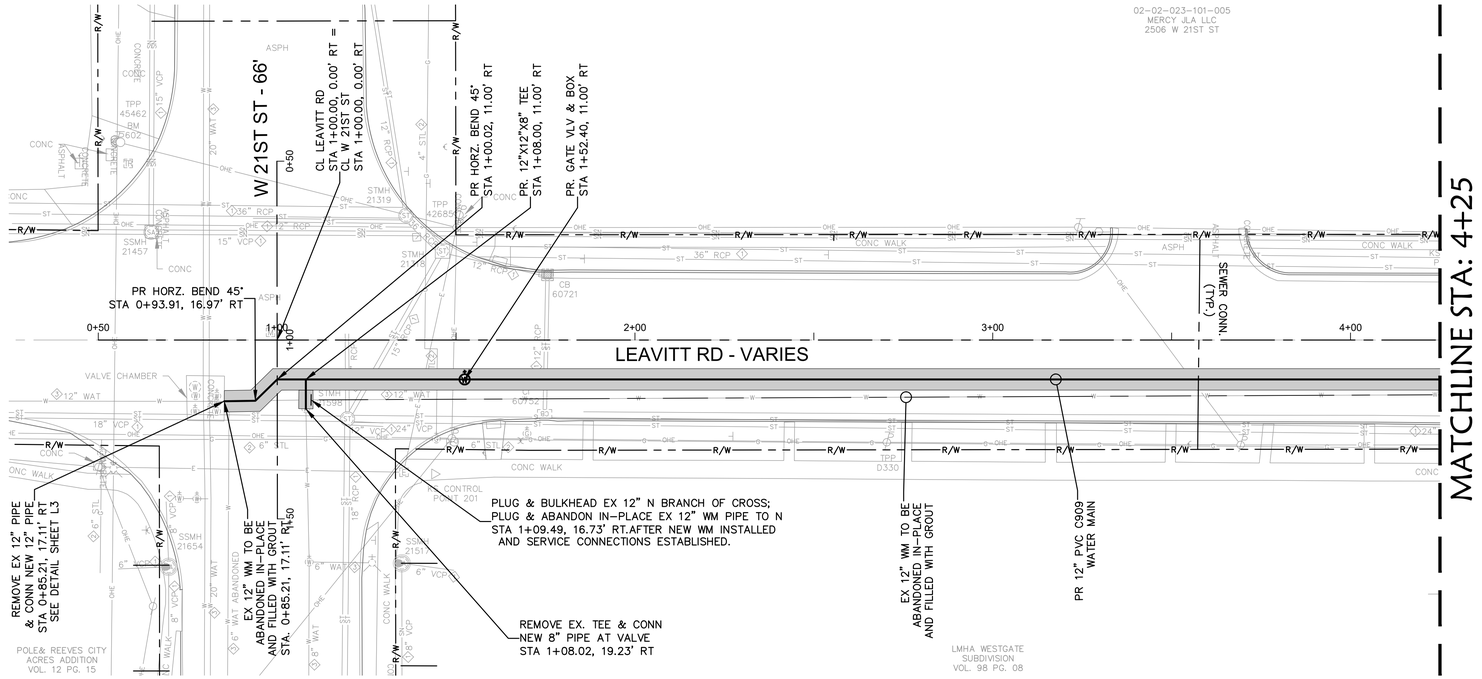
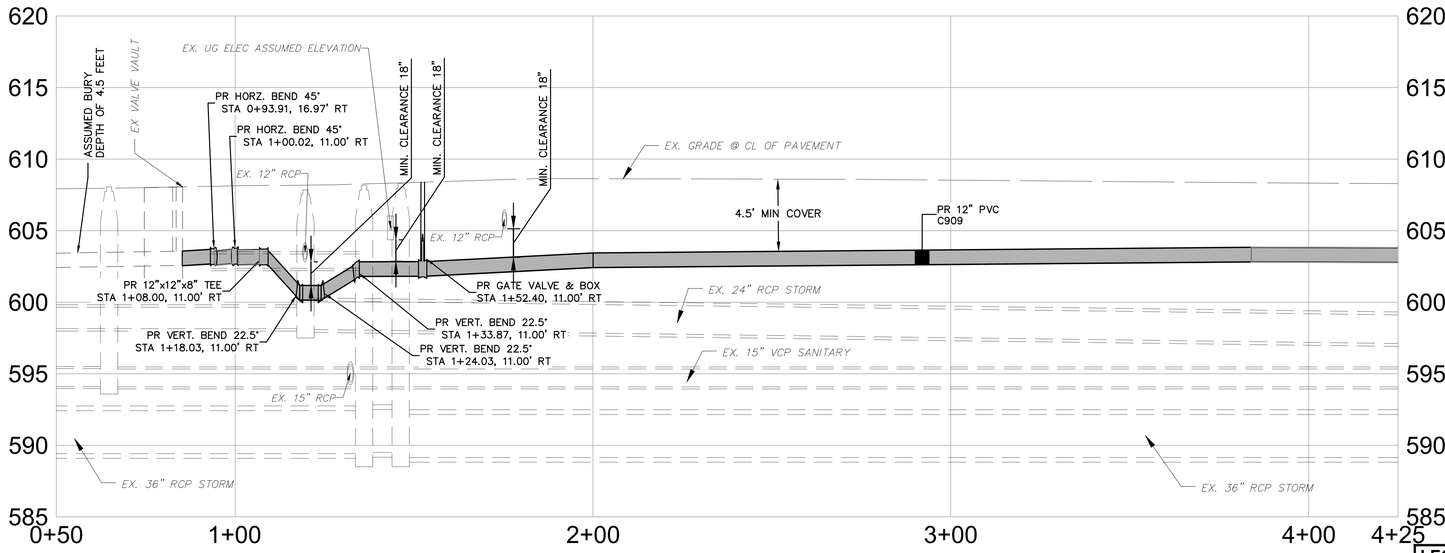


LEAVITT ROAD

SCALE: 1" = 20'



LEAVITT ROAD PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

STMH 21318
RIM=608.30
INV=604.35 12" RCP NE
INV=589.15 36" RCP NE
INV=589.55 36" RCP SW

STMH 21319
RIM=608.17
INV=589.02 36" RCP NE
INV=589.42 36" RCP SE
INV=602.37 12" RCP SE
INV=602.44 12" RCP SW

SSMH 21457
RIM=608.07
INV=594.08 15" VCP NE
INV=594.11 15" VCP SW
INV=594.60 15" VCP

SSMH 21517
RIM=607.92
INV=601.14 6" VCP NE
INV=601.12 8" VCP E

STMH 21598
RIM=607.85
INV=598.10 24" VCP NE
INV=598.68 18" VCP SE
INV=598.15 18" VCP SW
INV=602.70 12" RCP W
INV=599.08 15" RCP NW
INV=602.10 12" VCP NE
(PLUGGED)

SSMH 21654
RIM=607.92
INV=601.17 8" VCP SW
INV=600.99 8" VCP E
INV=601.40 6" VCP SE

CB 60721
RIM=608.37
INV=605.02 12" RCP SE,SW

CI 60752
RIM=608.03
INV=605.61 8" PVC NW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR LEAVITT ROAD IS SHEET 7" ASPHALT & 6" CONCRETE COMBINED PAVEMENT OVER 6" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD FOR ASPHALT & POOR FOR CONCRETE PAVEMENT. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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OSBORN PROJ NO.	J20221302.000

LEAVITT - PLAN & PROFILE 0+50 TO 4+25

DRAWING NO.

L1

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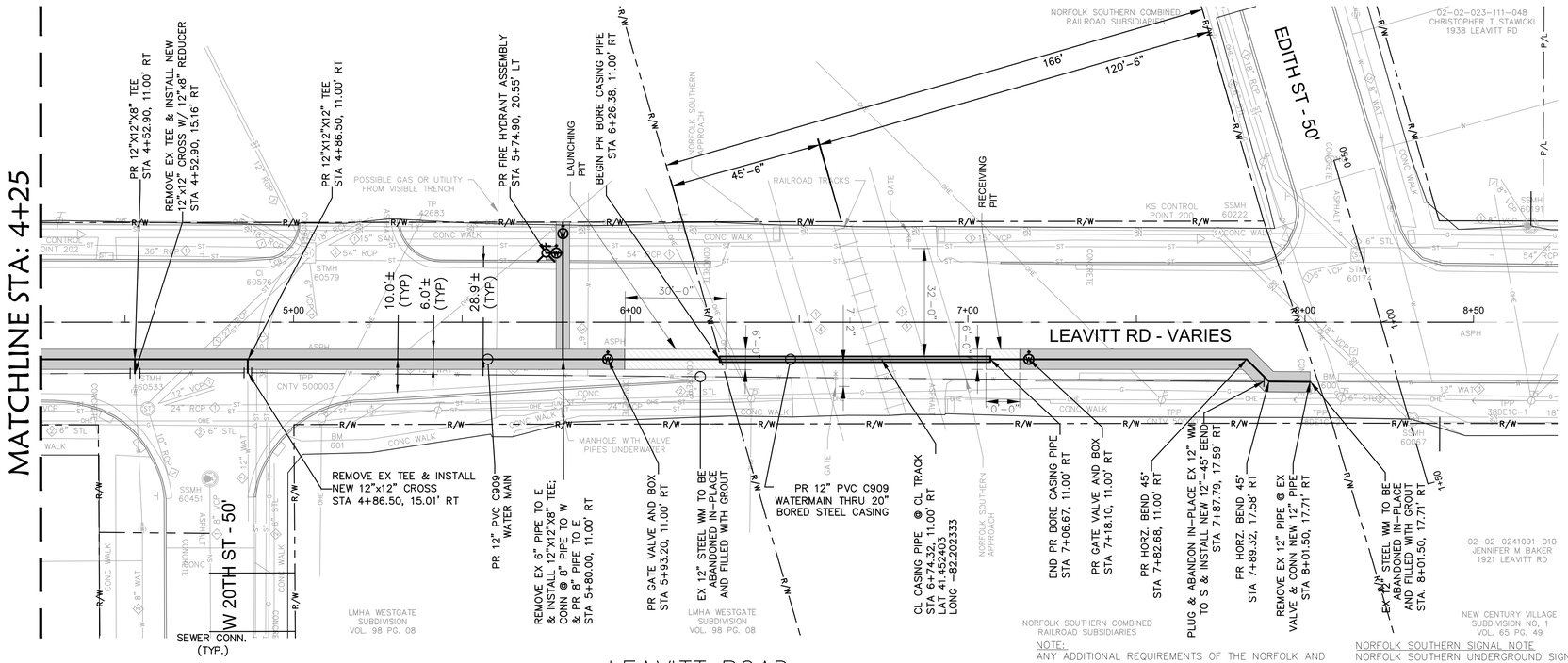


LEAVITT ROAD

SCALE: 1" = 20'

NOTE:
ANY ADDITIONAL REQUIREMENTS OF THE NORFOLK AND SOUTHERN RAILROAD, INCLUDING BUT NOT LIMITED TO POTHOLING AND SAFETY FLAGGER SHALL BE INCLUDED IN THE COST OF THE CASING PIPE BORED AND JACKED, COMPLETE AS PER INSTALLATION.

NORFOLK SOUTHERN SIGNAL NOTE
NORFOLK SOUTHERN UNDERGROUND SIGNAL AND COMMUNICATION SYSTEM CONDUIT LOCATIONS ARE UNKNOWN. CONTACT NORFOLK SOUTHERN COMMUNICATION AND SIGNAL DIVISION TO LOCATE IN THE FIELD. NORFOLK SOUTHERN IS NOT PART OF THE OUPS LOCATING SYSTEM AND NEEDS TO BE CONTACTED SEPARATELY PRIOR TO CONSTRUCTION

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 60067
RIM=606.66
INV=592.58 18" VCP NE
INV=592.61 18" VCP SW

STMH 60174
RIM=606.21
INV=585.61 54" RCP NE
INV=602.79 6" VCP SE
INV=585.61 54" RCP SW
INV=593.69 18" RCP SW

SSMH 60191
RIM=606.14
INV=597.19 8" VCP NE
INV=597.29 8" VCP SE
INV=597.68 8" VCP SW

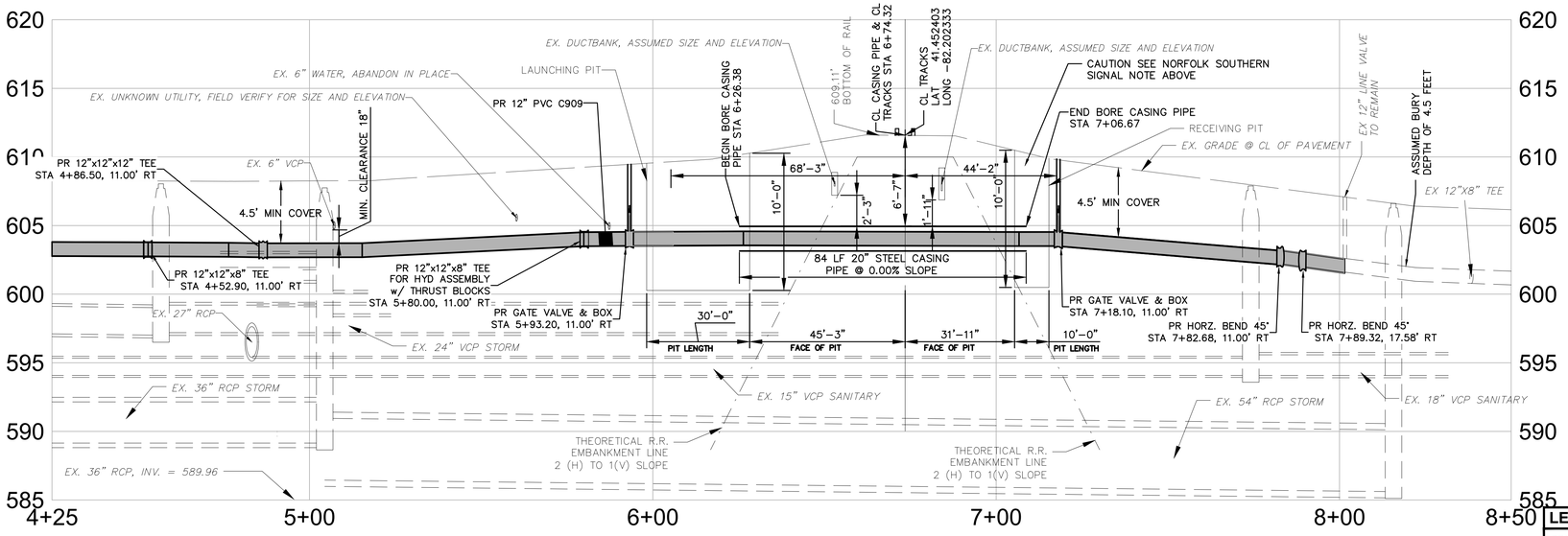
SSMH 60222
RIM=607.43
CANNOT OPEN

SSMH 60451
RIM=607.78
INV=599.73 8" VCP NE

STMH 60533
RIM=608.05
INV=597.20 27" RCP NW
INV=603.51 12" RCP NW
INV=597.20 24" RCP NE
INV=602.97 10" RCP NE
INV=597.01 24" VCP SW

CI 60576
RIM=607.81
INV=601.96 12" RCP SE

STMH 60579
RIM=607.75
INV=586.45 54" RCP NE
INV=603.40 6" VCP NE
INV=589.98 36" RCP SE
INV=593.94 27" RCP SE
INV=587.60 36" RCP SW
INV=601.65 12" RCP SE
INV=599.30 18" RCP SW
INV=601.95 12" RCP SW
INV=598.57 18" RCP NW



LEAVITT ROAD PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GENERAL NOTES:

1. EXISTING PAVEMENT FOR LEAVITT ROAD IS SHEET 7" ASPHALT & 6" CONCRETE COMBINED PAVEMENT OVER 6" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD FOR ASPHALT & POOR FOR CONCRETE PAVEMENT. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
4. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:
WSC = WATER SERVICE CONNECTION
ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO KEVIN D. CODIN 84026 REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

LEAVITT - PLAN & PROFILE 4+25 TO 8+50

DRAWING NO.
L2

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C L2 - LEAVITT P&P.dwg
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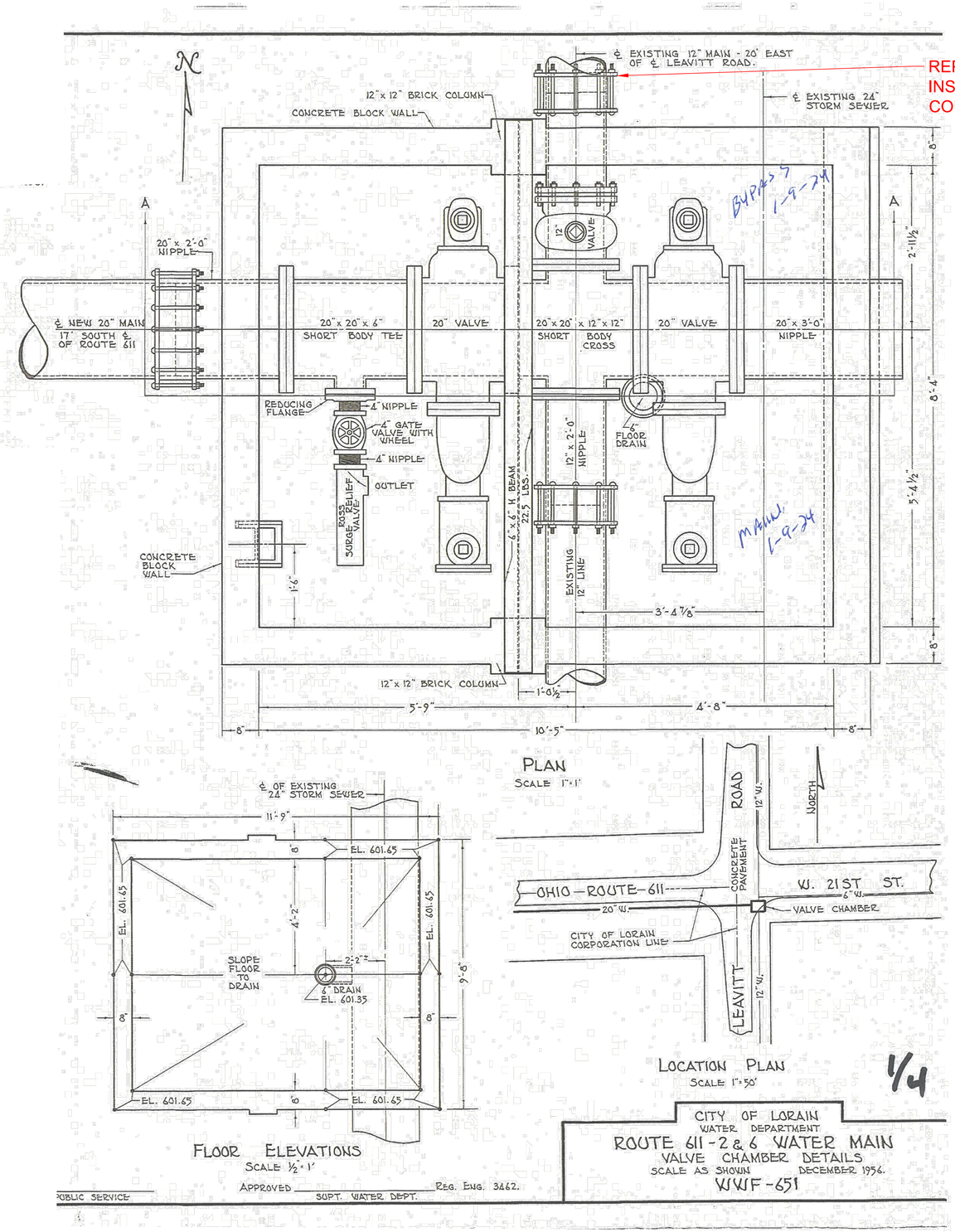

LEAVITT ROAD—VALVE CHAMBER DETAILS

NOT TO SCALE

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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DRAWN BY	BYR
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

LEAVITT - DETAILS

DRAWING NO.

L3

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C L3 - LEAVITT DETAILS.dwg
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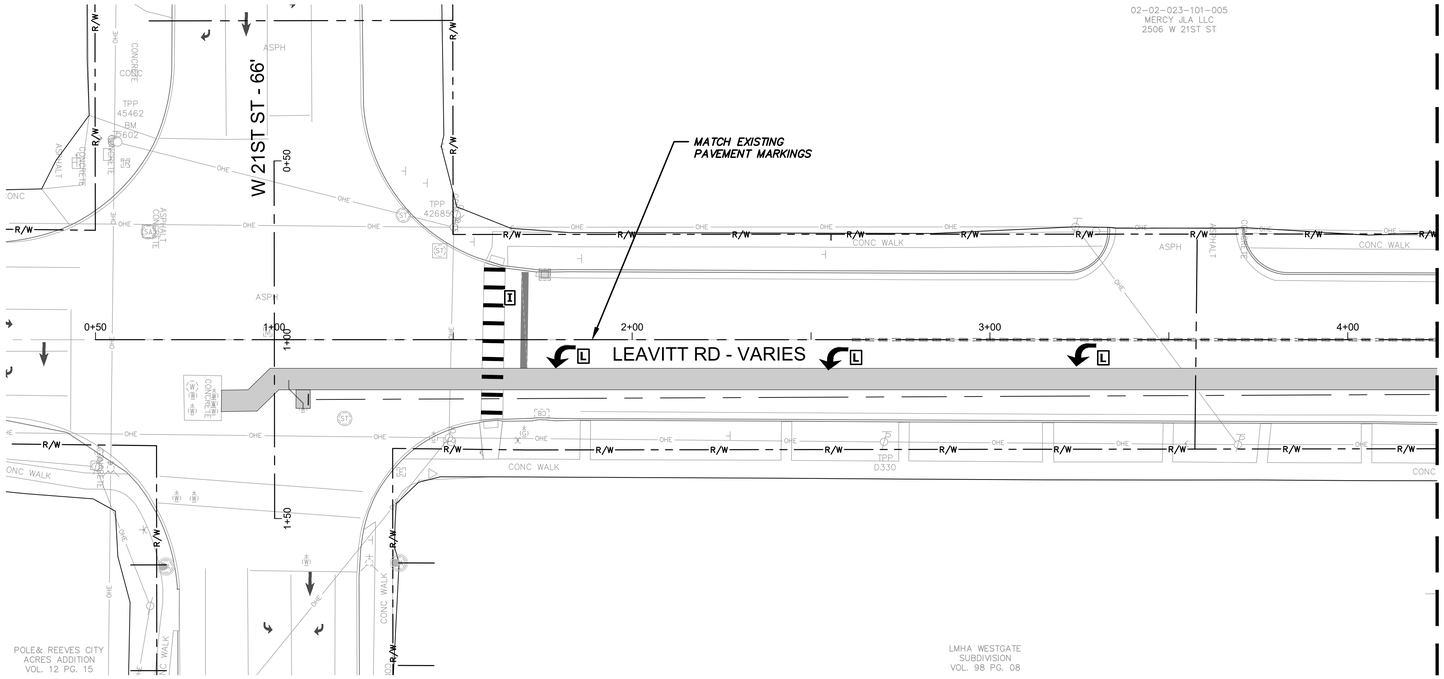

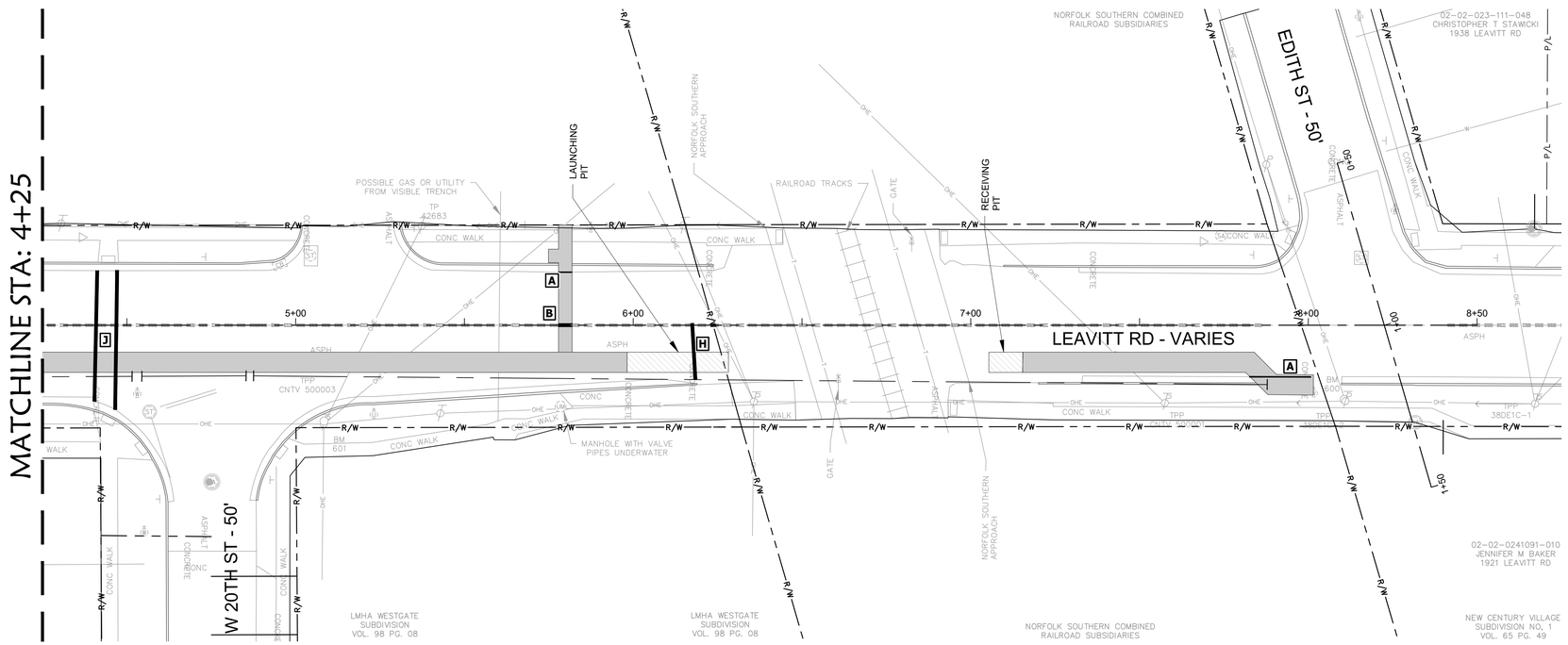

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

NOTES

1. *THIS PAVEMENT STRIPING RESTORATION PLAN AS DEVELOPED BY THE ENGINEER IS TO BE USED AS A GUIDELINE FOR THE CONTRACTOR.*
2. *DISTANCE BETWEEN PAVEMENT LINES SHOULD BE MEASURED FROM THE NEAREST CURB TO THE ROADWAY CENTERLINE.*
3. *ALL PERMANENT MARKINGS ON ASPHALT PAVEMENT SHALL BE THERMOPLASTIC PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
4. *ALL PERMANENT MARKINGS ON CONCRETE AND/OR BRICK PAVEMENT SHALL BE EPOXY PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
5. *ALL PAVEMENT MARKINGS SHALL CONFORM TO THE CITY OF LORAIN TRAFFIC STANDARDS AND ODOT ITEM 640.*
6. *FOR ADDITIONAL INFORMATION ON PAVEMENT MARKINGS, REFER TO "PART 3 - MARKINGS" OF OMUTCD (2012 EDITION) AND "PART 3 - MARKINGS" OF ODOT TRAFFIC ENGINEERING MANUAL (ITEM - JANUARY 2024 REVISION).*

CODED NOTES

X	NAME	COLOR	WIDTH
A	EDGE LINE	WHITE	4"
B	CENTER LINE - SOLID, DOUBLE	YELLOW	4"
C	CENTER LINE - SOLID/DASHED COMBO, DOUBLE	YELLOW	4"
D	CHANNELIZING LINE	WHITE	8"
E	LANE LINE - DOTTED	WHITE	4" **
F	TRANSVERSE LINE	YELLOW	24"
G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A

** - at 10' centers*
*** - 3' long, 9' gaps*
**** - 24" wide steps w/ 24" gaps*

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COBN
E-84062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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OSBORN PROJ NO.	J20221302.000

LEAVITT - PAVEMENT MARKING

DRAWING NO.

L4

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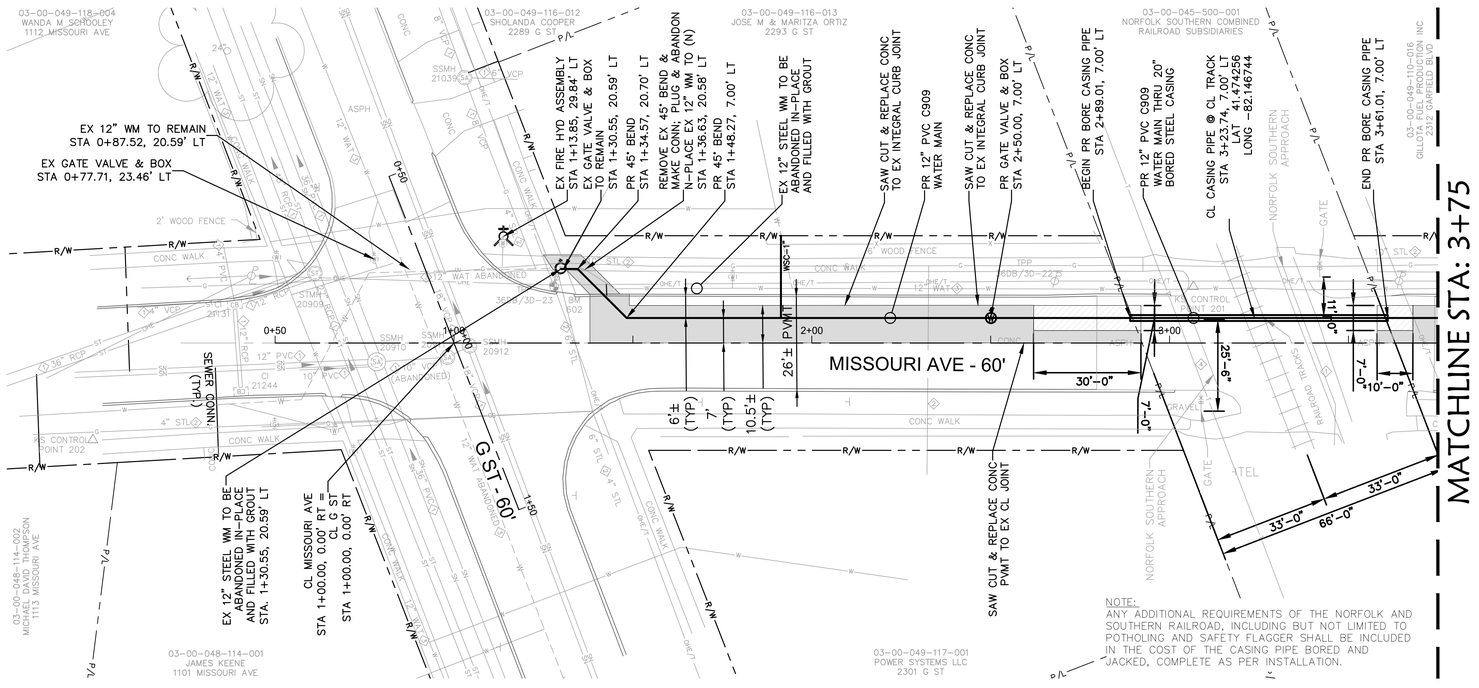
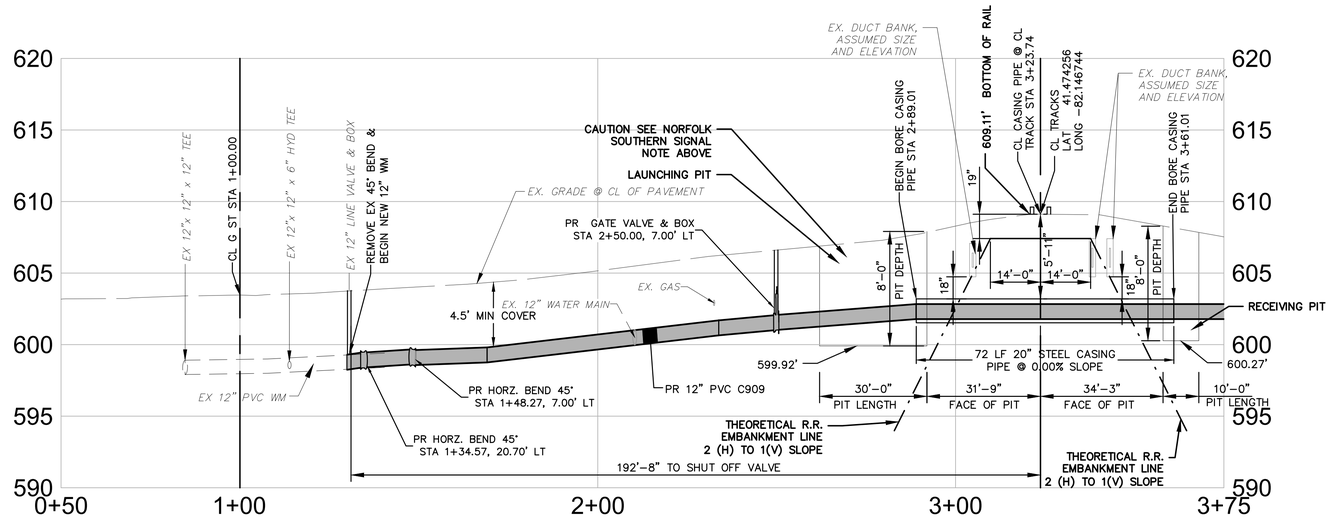


MISSOURI AVENUE

SCALE: 1" = 20'



MISSOURI AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

STMH 20909
RIM=603.05
INV=592.65 27" RCP NE
INV=599.32 12" RCP SE
INV=590.22 36" RCP SE
INV=589.31 48" RCP SW

SSMH 20910
RIM=603.24
INV=590.74 12" PVC NW PLUGGED
INV=590.84 12" PVC SE
INV=587.24 10" PVC SE
INV=585.00 36" PVC NE
INV=584.94 36" PVC SW

SSMH 20911
RIM=603.40
INV=590.50 10" VCP NW
INV=590.90 10" VCP SE
(PLUGGED –APPEARS ABANDONED)

SSMH 20912
RIM=603.43
INV=583.87 18" VCP NE
INV=583.47 18" VCP SW

SSMH 21039
RIM=604.24
INV=596.54 6" VCP NW
INV=596.41 8" VCP NE
INV=596.36 8" VCP SW

CI 21131
RIM=602.71
INV=599.76 12" RCP NW,SE
INV=601.41 4" PVC SW
INV=601.21 4" VCP NE
BOTTOM=599.71

CI 21244
RIM=602.76
FULL OF DEBRIS–NO PIPES VISIBLE

GENERAL NOTES

1. EXISTING PAVEMENT FOR MISSOURI AVENUE IS SHEET 7.5" CONCRETE PAVEMENT OVER 4.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
4. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-84026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

MISSOURI - PLAN & PROFILE 0+50 TO 3+75

DRAWING NO.

M1

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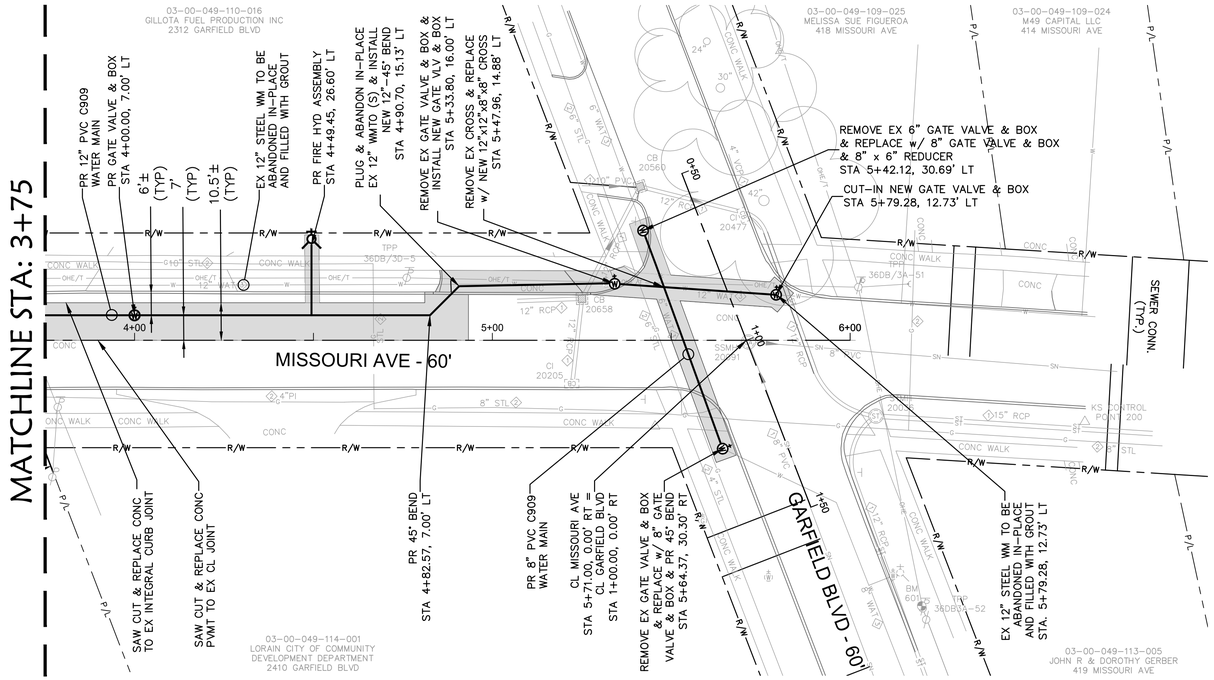
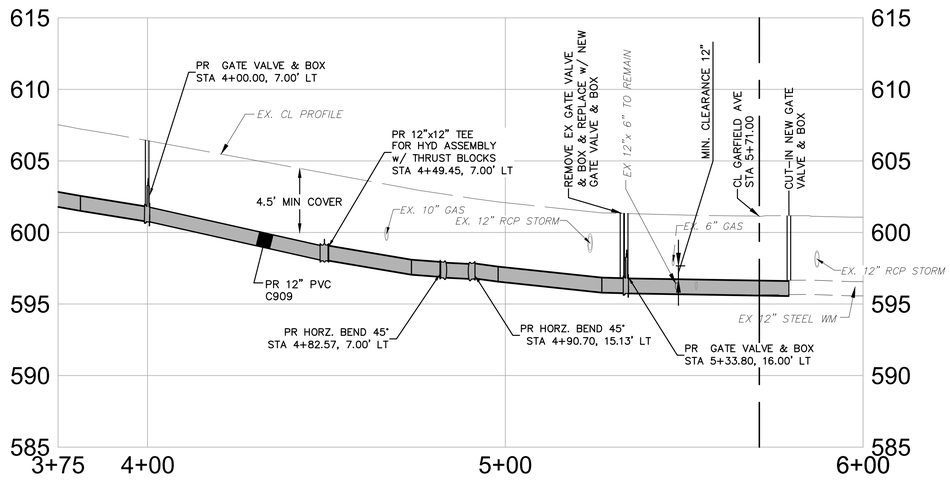


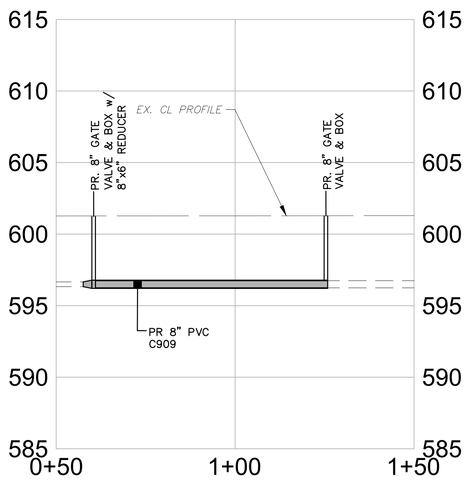
MISSOURI AVENUE

SCALE: 1" = 20'



MISSOURI AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'



GARFIELD BOULEVARD PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

STMH 20036
RIM=601.09
INV=596.79 15" RCP NW
INV=597.09 12" RCP NE,SW

SSMH 20091
RIM=601.13
INV=590.93 8" PVC NE
INV=590.27 8" PVC NW

CI 20205
RIM=601.21
INV=598.71 12" PVC NW
DEBRIS FILLED -UNABLE TO DETERMINE IF OTHER PIPES POSSIBLE BOTTOM=598.7

CI 20477
RIM=600.52
INV=597.81 12" RCP NE
INV=597.82 12" RCP SW
INV=599.22 4" PVC NE
INV=598.72 4" VCP SW
BOTTOM=597.82

CB 20560
RIM=600.56
INV=598.11 12" RCP NE
INV=598.46 10" PVC SE
INV=598.16 10" PVC SE
BOTTOM=598.06

CB 20658
RIM=601.10
INV=598.65 12" RCP SE
INV=598.64 12" RCP NW
INV=598.80 12" RCP SE

GENERAL NOTES

1. EXISTING PAVEMENT FOR MISSOURI AVENUE IS SHEET 7.5" CONCRETE PAVEMENT OVER 4.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
6400
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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OSBORN PROJ NO.	J20221302.000

MISSOURI - PLAN & PROFILE 3+75 TO 6+00

DRAWING NO.

M2

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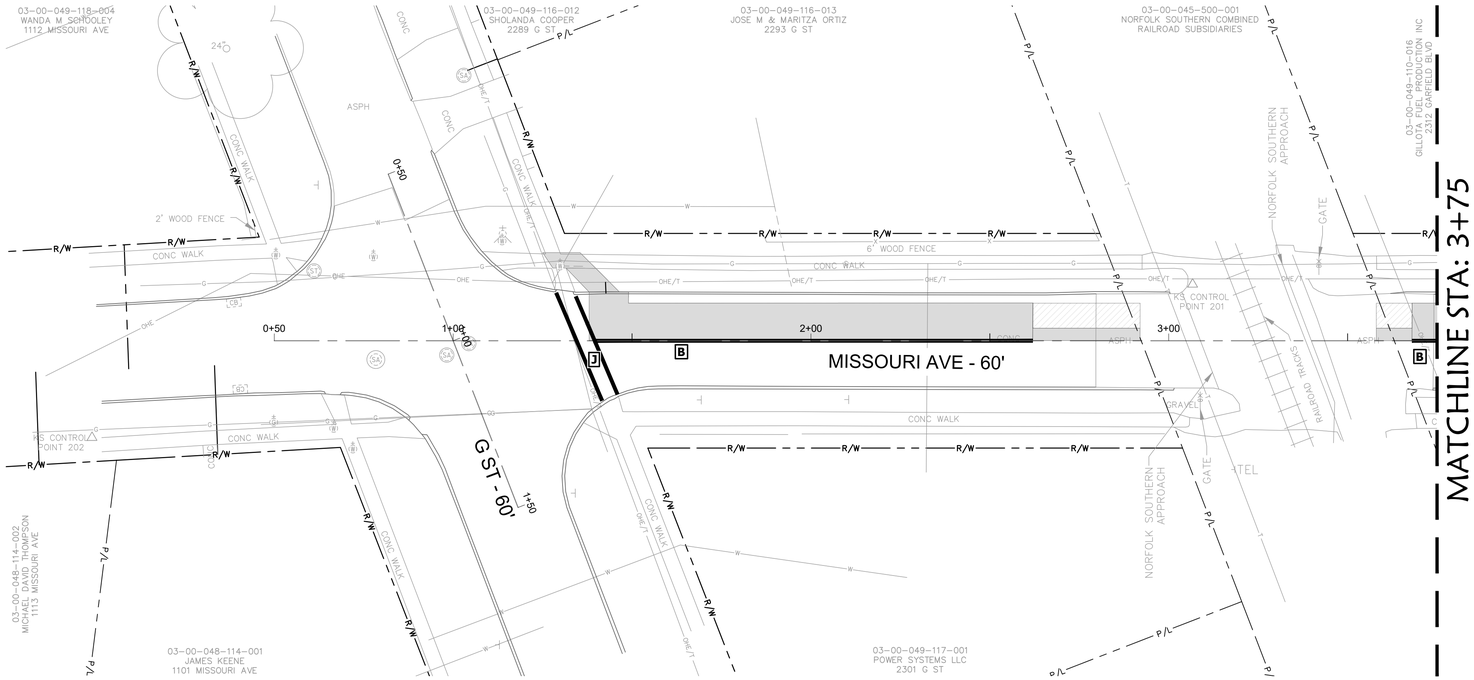
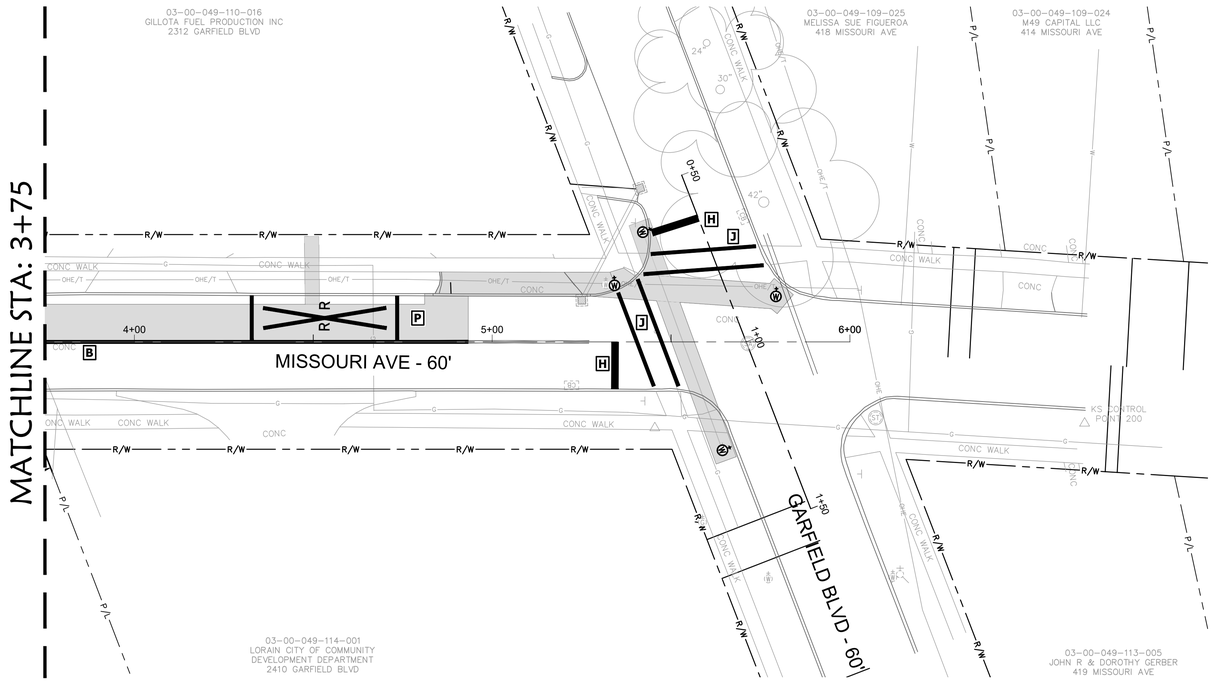




NORTH

GRAPHIC SCALE

20 0 10 20

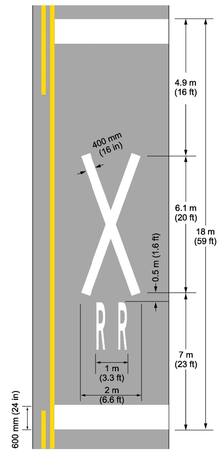
(IN FEET)

1 inch = 20 ft.

NOTES

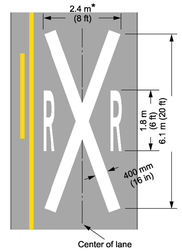
1. *THIS PAVEMENT STRIPING RESTORATION PLAN AS DEVELOPED BY THE ENGINEER IS TO BE USED AS A GUIDELINE FOR THE CONTRACTOR.*
2. *DISTANCE BETWEEN PAVEMENT LINES SHOULD BE MEASURED FROM THE NEAREST CURB TO THE ROADWAY CENTERLINE.*
3. *ALL PERMANENT MARKINGS ON ASPHALT PAVEMENT SHALL BE THERMOPLASTIC PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
4. *ALL PERMANENT MARKINGS ON CONCRETE AND/OR BRICK PAVEMENT SHALL BE EPOXY PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
5. *ALL PAVEMENT MARKINGS SHALL CONFORM TO THE CITY OF LORAIN TRAFFIC STANDARDS AND ODOT ITEM 640.*
6. *FOR ADDITIONAL INFORMATION ON PAVEMENT MARKINGS, REFER TO "PART 3 - MARKINGS" OF OMUTCD (2012 EDITION) AND "PART 3 - MARKINGS" OF ODOT TRAFFIC ENGINEERING MANUAL (ITEM - JANUARY 2024 REVISION).*

Figure 8B-7. Examples of Highway-Rail Grade Crossing Pavement Markings



Highway-rail grade crossing alternative (narrow) pavement markings

Note: Refer to Figure 8B-6 for placement



Highway-rail grade crossing pavement markings

*Width may vary according to lane width

CODED NOTES

X	NAME	COLOR	WIDTH
A	EDGE LINE	WHITE	4"
B	CENTER LINE - SOLID, DOUBLE	YELLOW	4"
C	CENTER LINE - SOLID/DASHED COMBO, DOUBLE	YELLOW	4"
D	CHANNELIZING LINE	WHITE	8"
E	LANE LINE - DOTTED	WHITE	4" **
F	TRANSVERSE LINE	YELLOW	24"
G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A
P	HIGHWAY-RAIL GRADE CROSSING	WHITE	

** - at 10' centers*
*** - 3' long, 9' gaps*
**** - 24" wide steps w/ 24" gaps*

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CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN R. COBN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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MISSOURI - PAVEMENT MARKING

DRAWING NO.

M3

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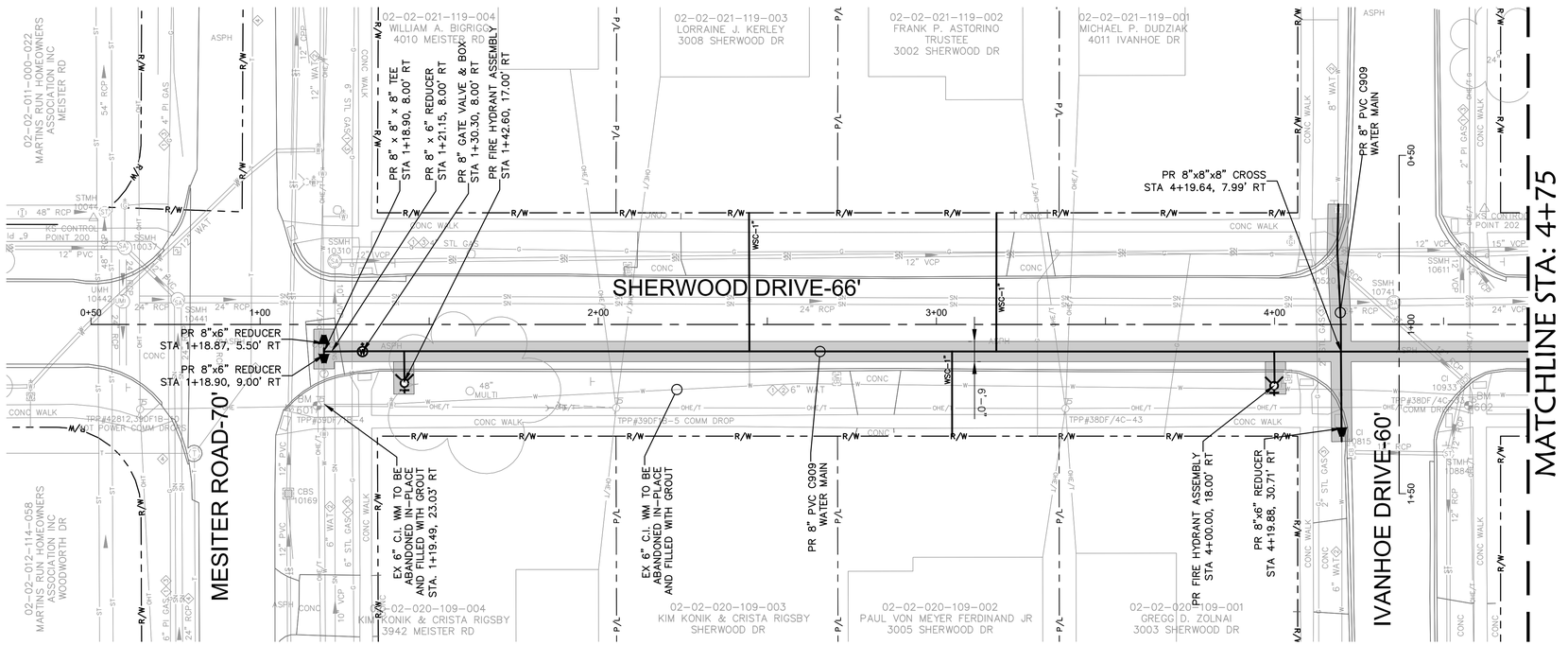
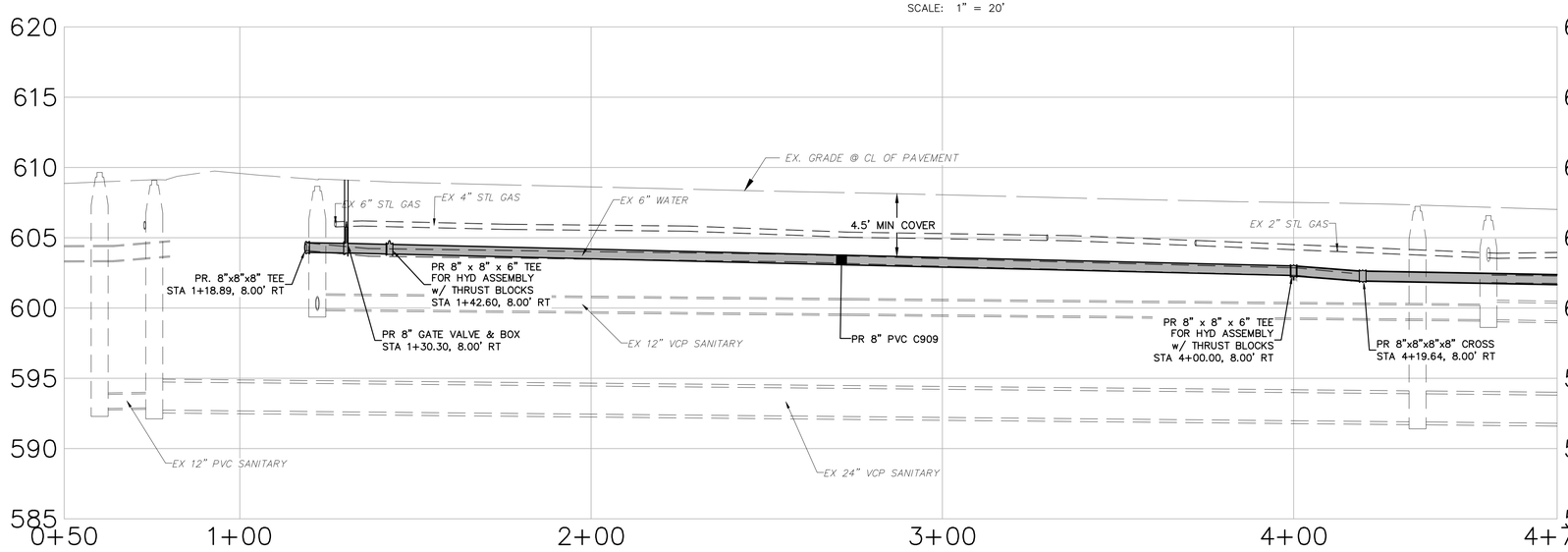


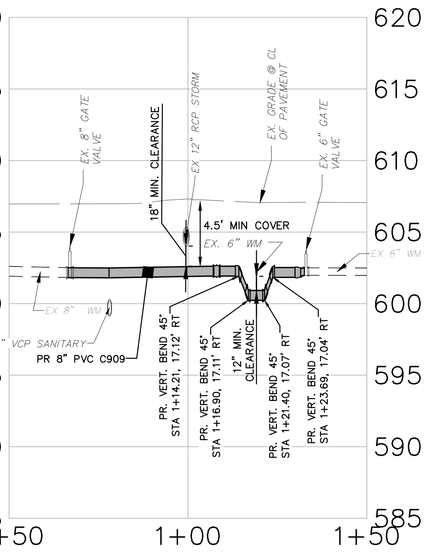
SHERWOOD DRIVE

SCALE: 1" = 20'



SHERWOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'



IVANHOE DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 10037
RIM=609.75
INV=592.84 12" PVC NE
INV=592.91 12" PVC S

STMH 10044
RIM=609.45
INV=595.47 48" RCP E
INV=594.88 48" RCP S
INV=594.60 54" RCP W

CBS 10169
RIM=608.61
INV=607.49 12" PVC W
INV=607.54 12" PVC E
BOTTOM=607.41

SSMH 10310
RIM=608.66
INV=599.91 12" VCP N
INV=599.91 10" VCP E

SSMH 10441
RIM=609.10
INV=592.74 24" RCP N
INV=592.75 24" RCP E
INV=592.67 24" RCP S
INV=592.91 12" PVC SW

CI 10520
RIM=606.62
INV=604.52 12" RCP NE
BOTTOM=604.42

SSMH 10611
RIM=606.57
INV=603.31 12" VCP NE
INV=599.90 12" VCP E
INV=599.17 12" VCP S
INV=599.17 15" VCP N

SSMH 10741
RIM=607.23
INV=591.90 24" VCP N
INV=591.90 24" RCP S

CI 10815
RIM=606.38
INV=604.11 12" RCP N
BOTTOM=603.98

STMH 10884
RIM=607.13
INV=603.53 12" RCP E
INV=603.71 12" RCP S
INV=603.59 12" RCP NW
BOTTOM=603.53

CI 10933
RIM=606.38
INV=603.98 12" RCP SE
INV=603.88 12" RCP SW
BOTTOM=603.88

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - PLAN & PROFILE 0+50 TO 4+75

DRAWING NO.

S1

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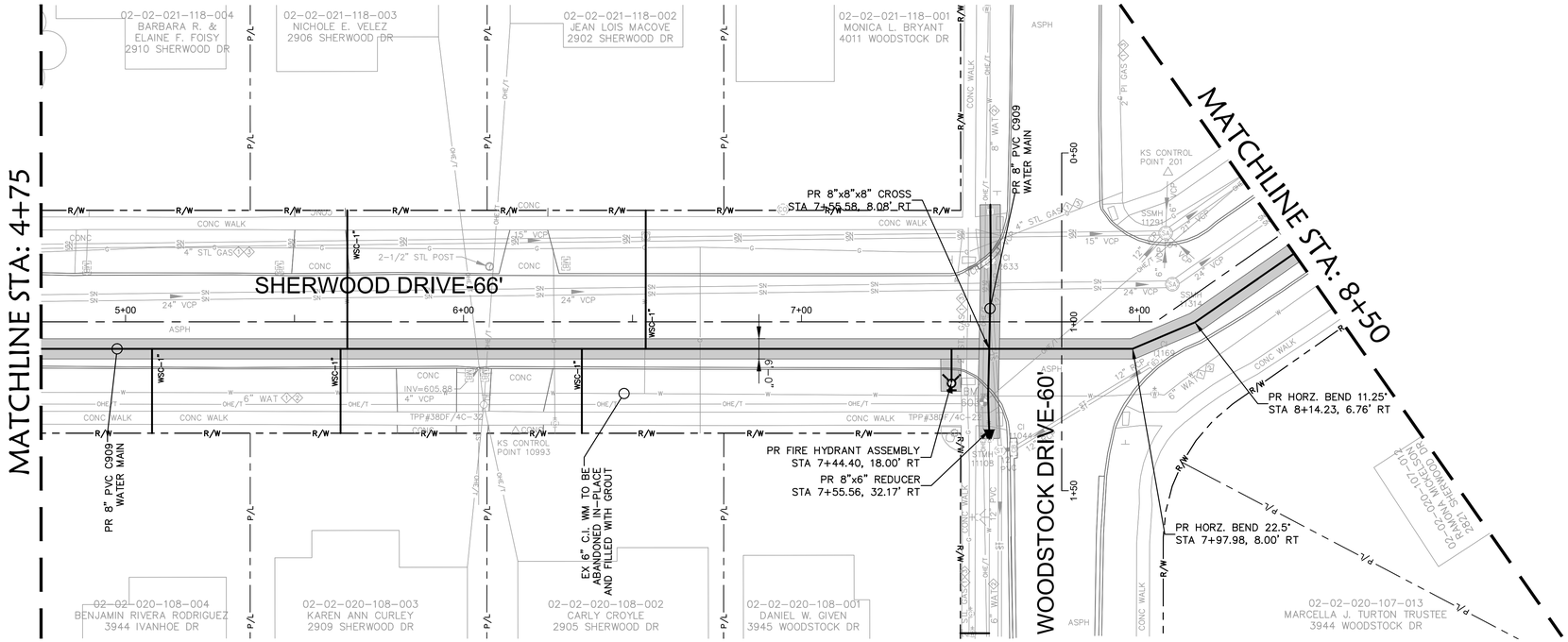
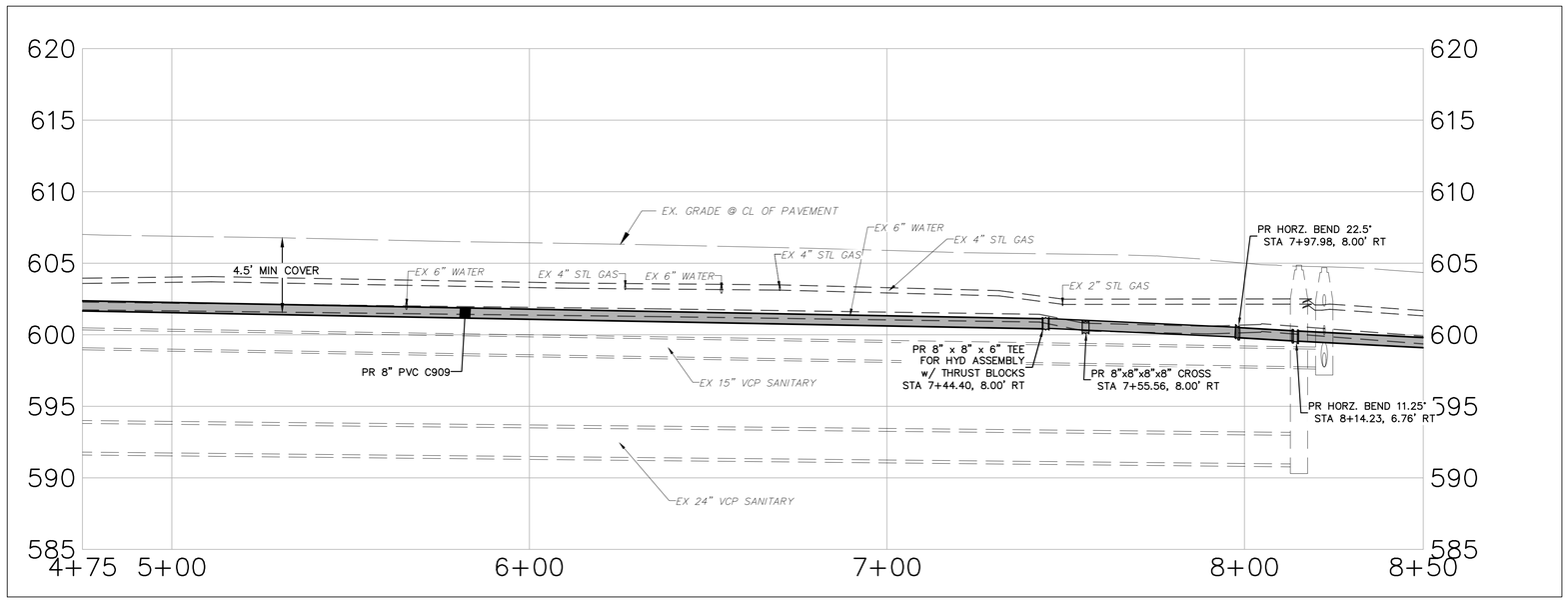


SHERWOOD DRIVE

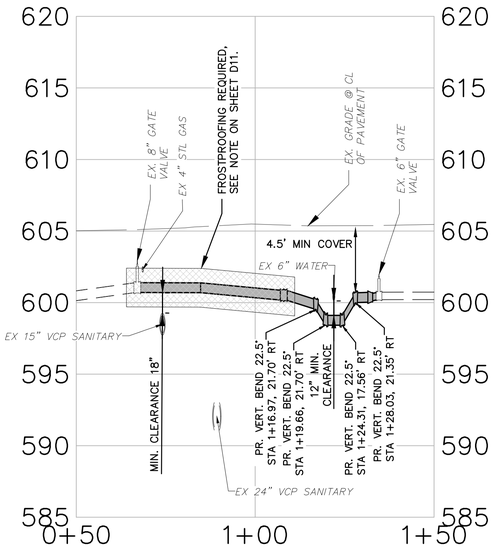
SCALE: 1" = 20'



SHERWOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.



WOODSTOCK DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CI 11044
RIM=604.60
INV=601.92 12" RCP NW
INV=601.90 12" PVC SE
BOTTOM=601.90

STMH 11108
RIM=605.14
INV=601.84 12" PVC E
INV=602.57 12" VCP W
INV=602.06 12" PVC NW

CI 11169
RIM=604.53
INV=602.53 12" RCP SE

SSMH 11291
RIM=604.69
INV=597.74 21" VCP NW
INV=597.74 15" VCP S
INV=597.75 12" VCP SE
INV=599.99 6" VCP E
INV=601.99 10" VCP NE
INV=600.16 6" VCP W

SSMH 11314
RIM=604.87
INV=590.97 24" VCP S
INV=590.85 24" VCP NW

CI 12633
RIM=604.78
INV=602.91 12" VCP NE
INV=603.23 4" VCP NW
INV=603.33 4" VCP SE (PLUGGED
BOTTOM=602.88

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO KEVIN D. CODIN E-64062 REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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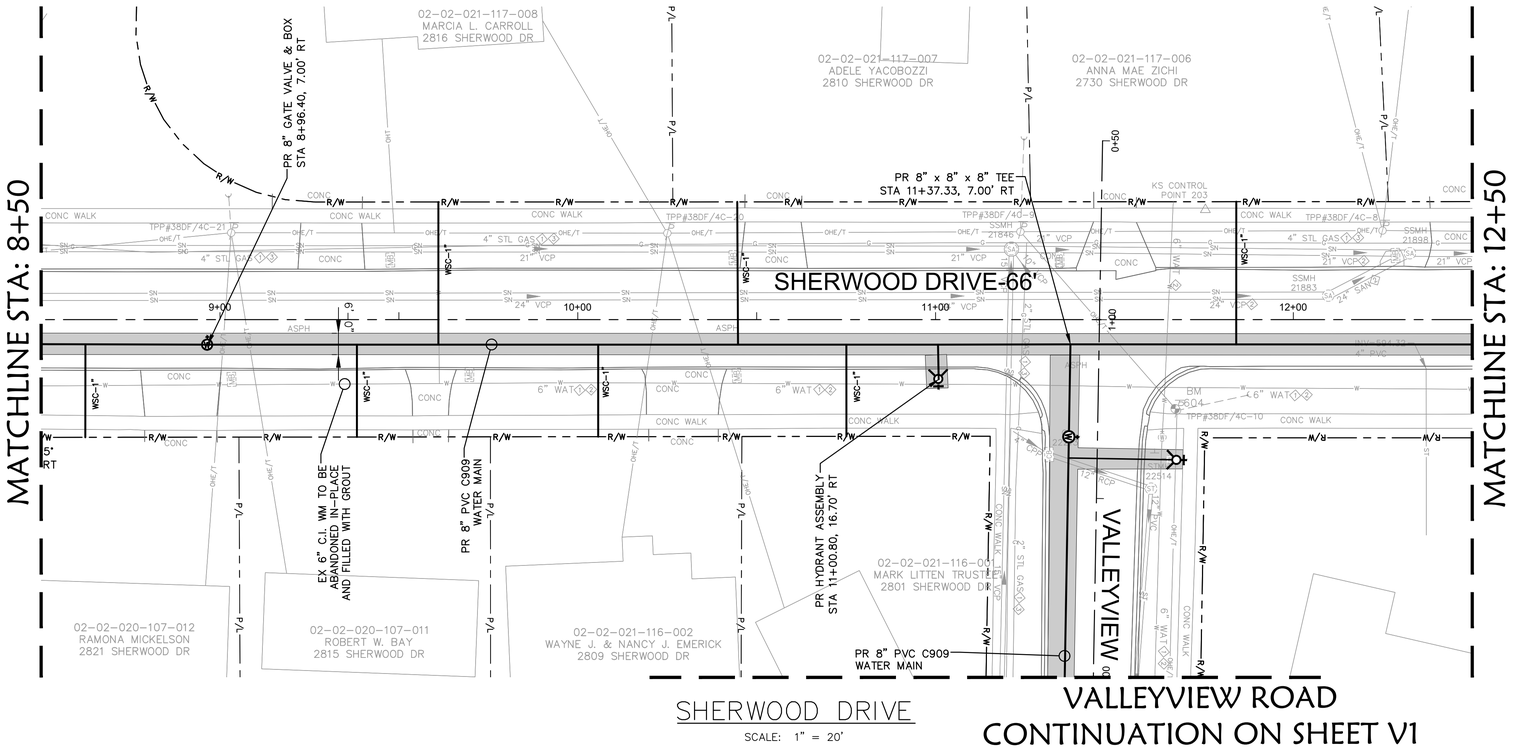
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - PLAN & PROFILE 4+75 TO 8+50

DRAWING NO.

S2

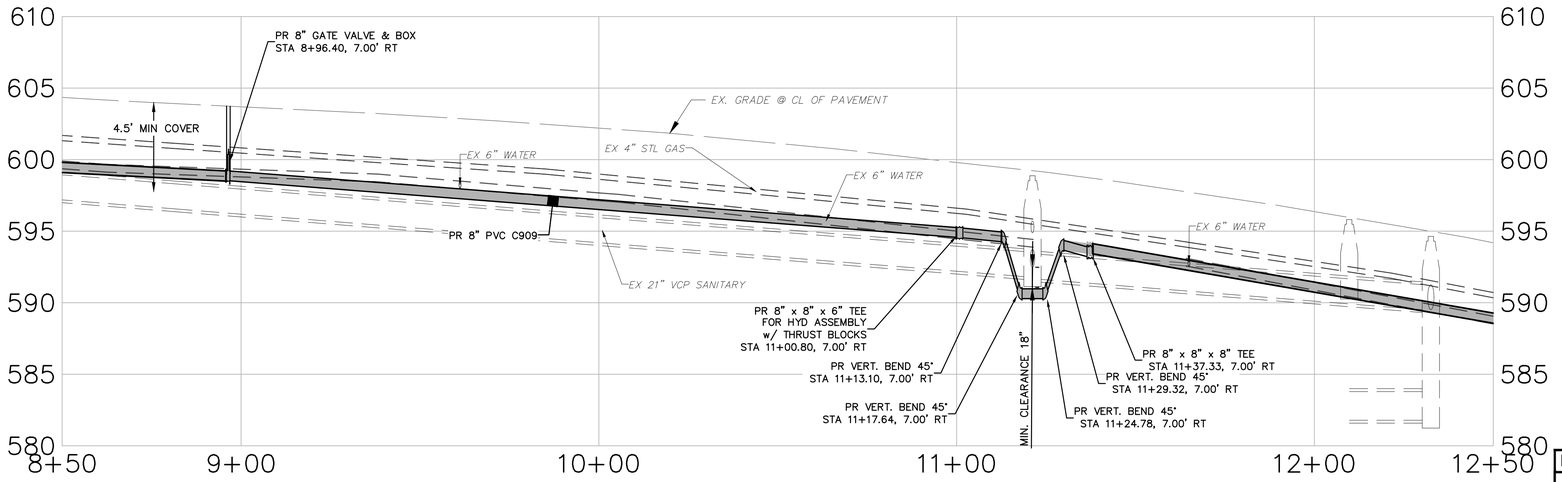
P:\Lorain - City Of\J20221302.000_Water_Main_Repl_PH2\Drawings\Civil\J20221302.000_C S2 - SHERWOOD P&P.dwg
3/7/2025 7:11 PM Pawar, Sayali



SHERWOOD DRIVE

SCALE: 1" = 20'

VALLEYVIEW ROAD
CONTINUATION ON SHEET V1



SHERWOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 21846
RIM=598.88
INV=591.68 21" VCP NW
INV=594.88 10" VCP NE
INV=592.48 15" VCP NE
INV=591.78 21" VCP SE

SSMH 21883
RIM=595.81
COULD NOT OPEN

SSMH 21898
RIM=594.64
COULD NOT OPEN

CI 22213
RIM=597.92
INV=596.07 12" RCP NW
INV=596.92 4" CPP S
BOTTOM=595.82

STMH 22514
RIM=598.48
INV=595.53 12" PVC NE
INV=595.68 12" RCP SE

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. EXISTING PAVEMENT FOR VALLEYVIEW ROAD IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
3. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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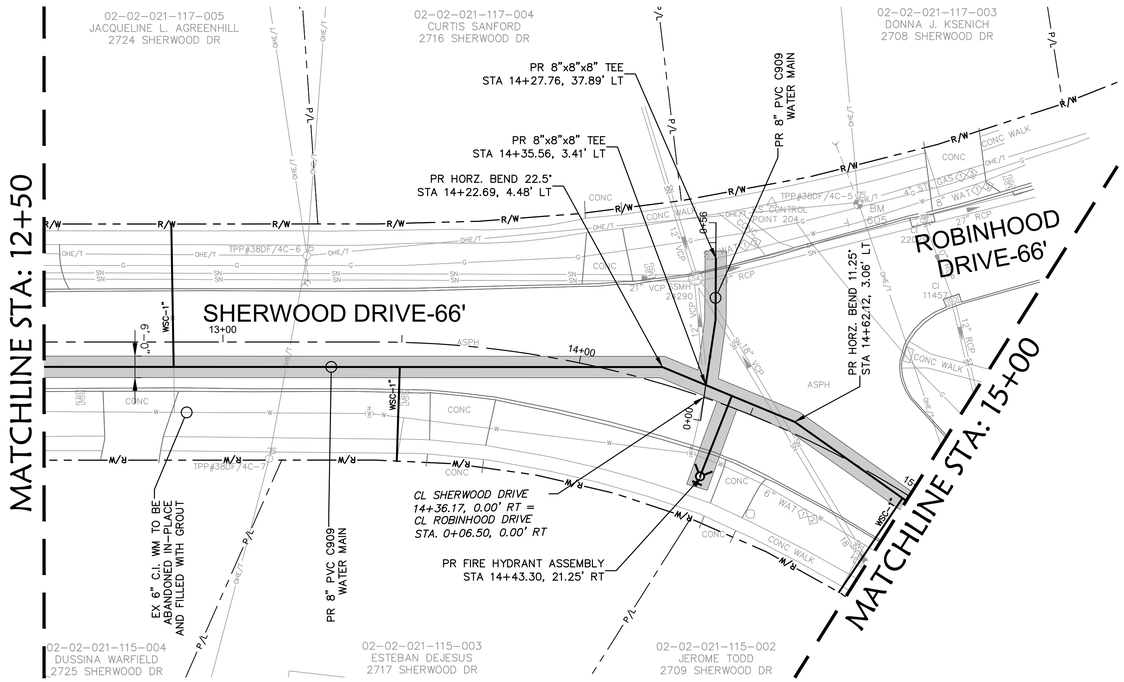
OSBORN PROJ NO.	J20221302.000

SHERWOOD - PLAN & PROFILE 8+50 TO 12+50

DRAWING NO.

S3

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_Ph2\Drawings\Civil\J20221302.000_C S3 - SHERWOOD P&P.dwg
3/7/2025 5:52 PM Duffy, Alex



SHERWOOD DRIVE

SCALE: 1" = 20'

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

STRUCTURE TABLE

CI 11457
RIM=585.42
INV=581.72 12" RCP NE
INV=581.72 10" RCP SW
BOTTOM=581.72

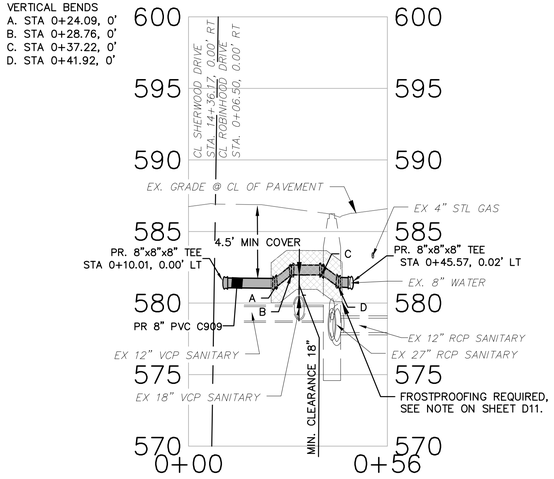
CI 22029
RIM=585.25
INV=582.05 10" RCP NE

SSMH 24290
RIM=586.15
INV=578.82 18" VCP NE
INV=578.75 12" VCP NE
INV=577.61 21" VCP SE
INV=578.94 12" VCP SW
INV=577.38 27" RCP NW

GENERAL NOTES:

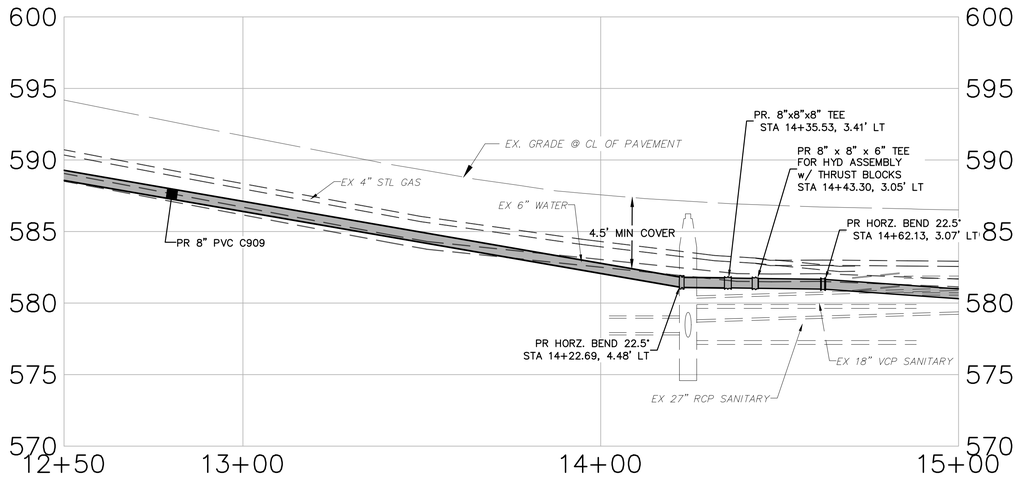
1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

PR 8" – 11.25°
VERTICAL BENDS
A. STA 0+24.09, 0'
B. STA 0+28.76, 0'
C. STA 0+37.22, 0'
D. STA 0+41.92, 0'



ROBINHOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'



SHERWOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - PLAN & PROFILE 12+50 TO 15+00

DRAWING NO.

S4

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_PH2\Drawings\Civil\J20221302.000_C S4 - SHERWOOD P&P.dwg
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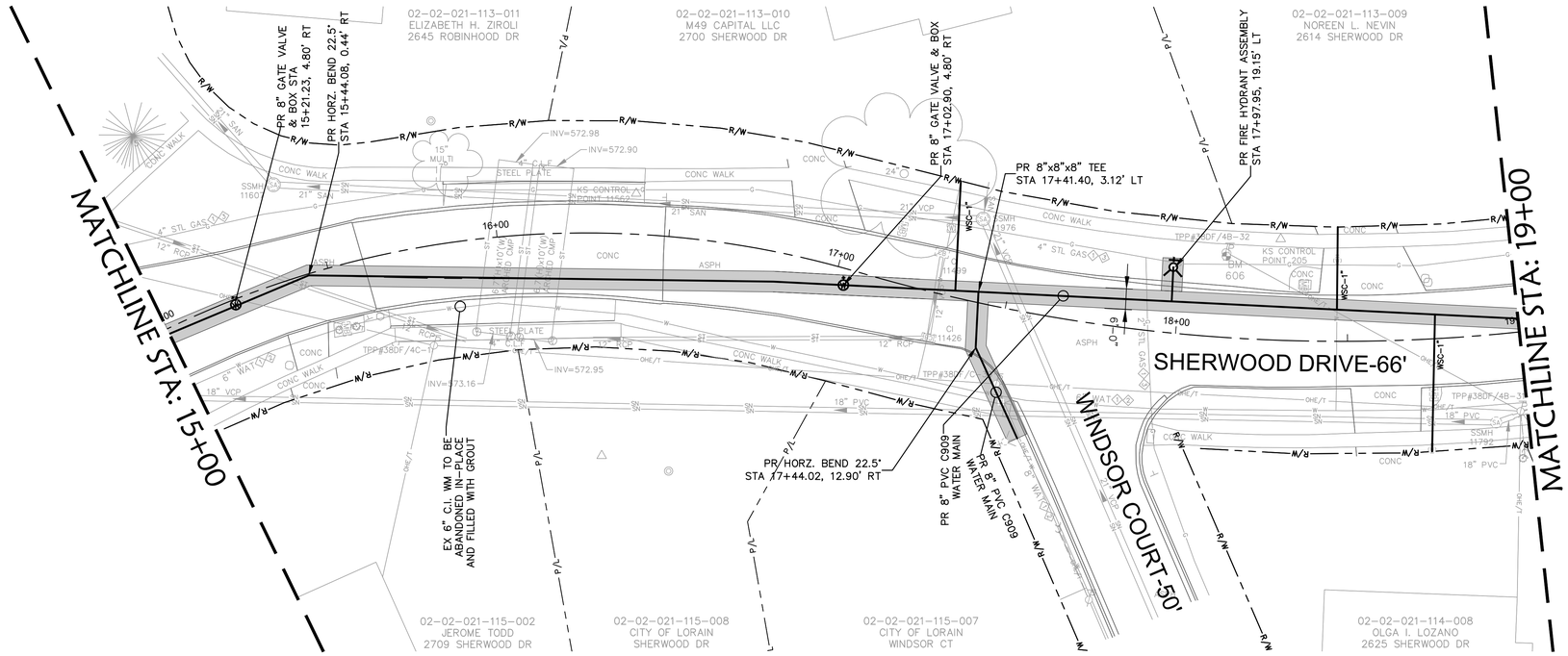
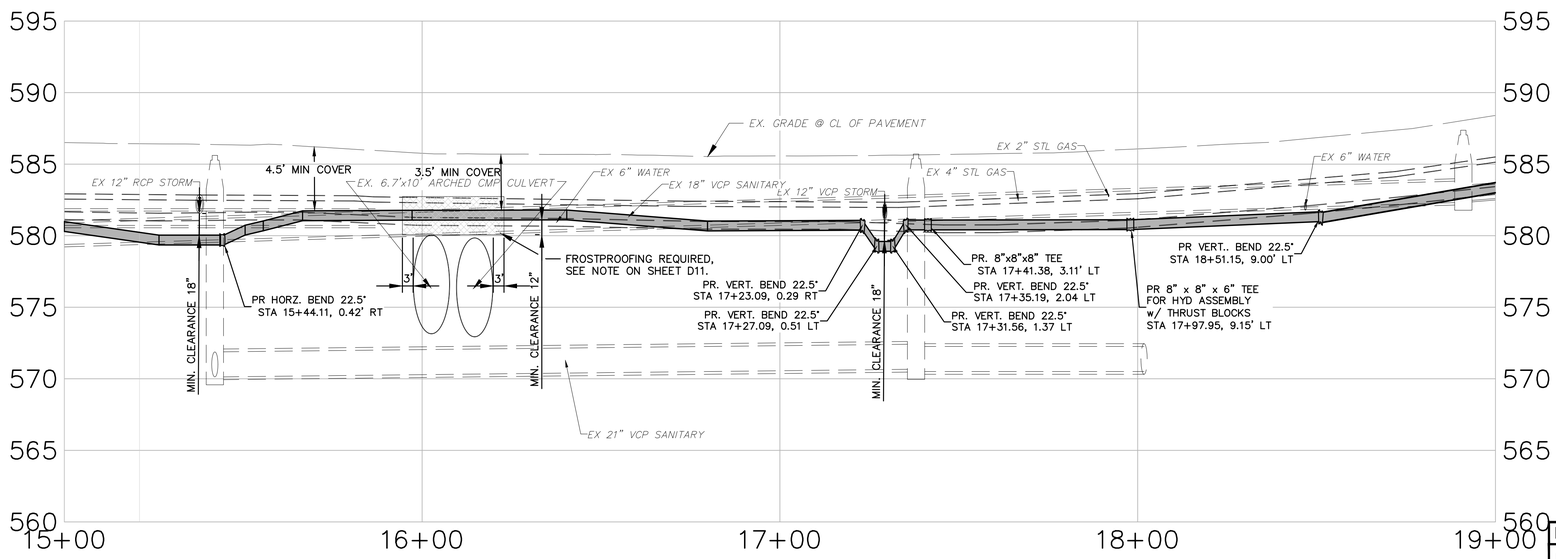


SHERWOOD DRIVE

SCALE: 1" = 20'



SHERWOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CI 11426
RIM=584.78
INV=581.23 12" RCP S
INV=581.23 12" VCP NW

CI 11499
RIM=584.85
INV=581.61 12" RCP SE
BOTTOM=581.61

SSMH 11607
RIM=585.61
INV=570.13 21" SAN NE & SW

SSMH 11792
RIM=587.37
INV=582.42 18" PVC N
INV=582.33 18" PVC SW

SSMH 11976
RIM=585.71
INV=570.51 21" VCP E
INV=570.67 21" VCP SW
INV=572.81 SAN NW
(RECESSED)

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
4. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-84026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
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SHERWOOD - PLAN & PROFILE 15+00 TO 19+00

DRAWING NO.

S5

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_PH2\Drawings\Civil\J20221302.000_C S5 - SHERWOOD P&P.dwg
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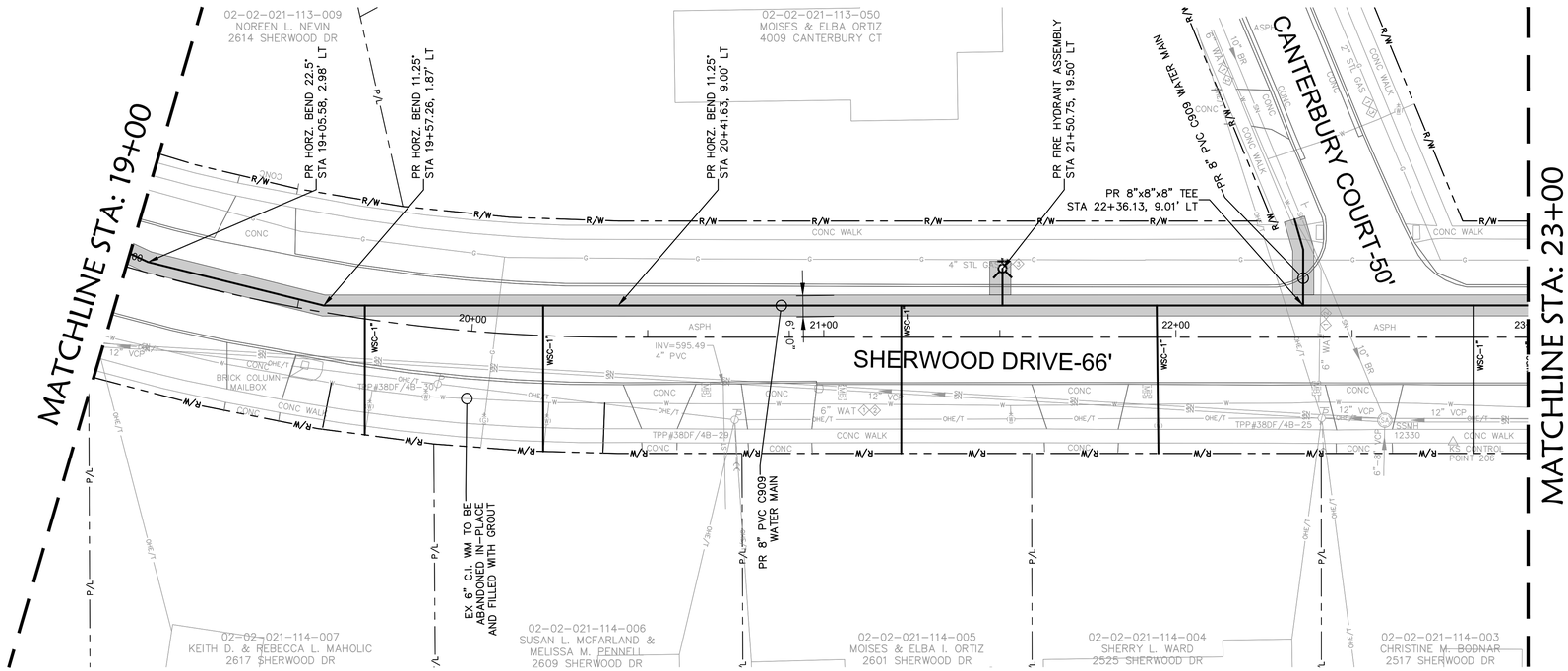
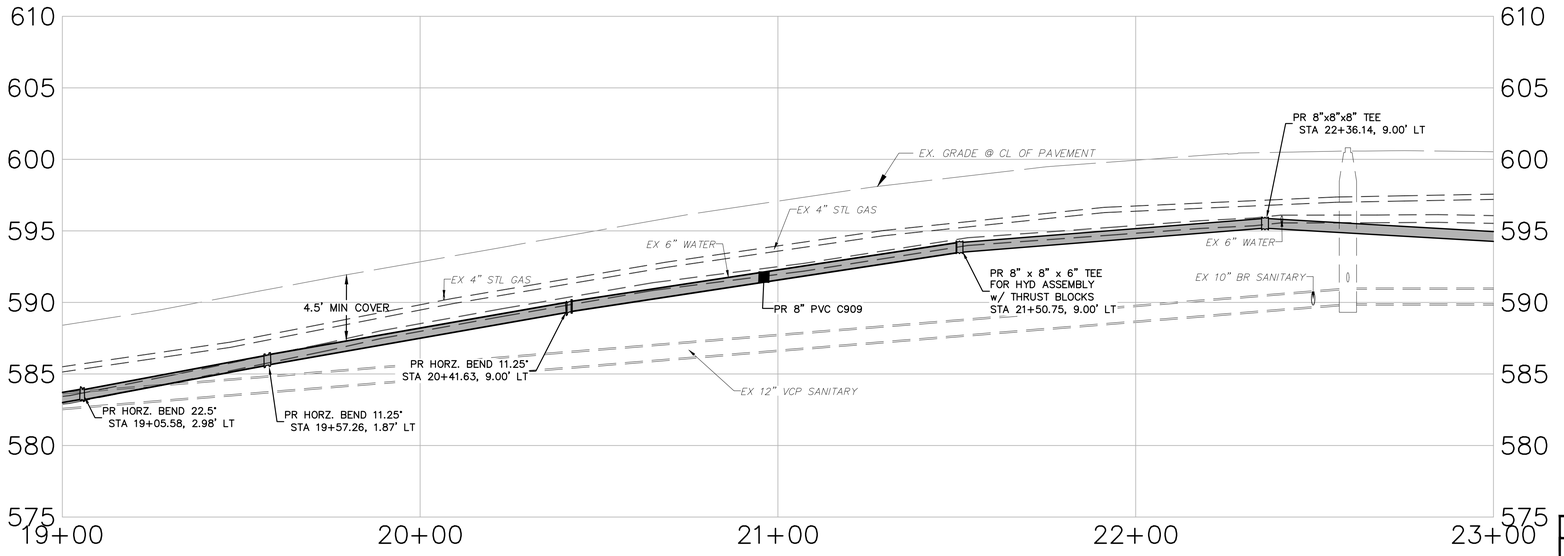


SHERWOOD DRIVE

SCALE: 1" = 20'



SHERWOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 12330
RIM=600.82
INV=589.91 12" VCP N
INV=589.91 12" VCP SW
INV=589.86 10" BR SW
(RECESSED)
INV=591.42 6"-8" VCP E

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

CITY OF LORAIN
WATER MAIN REPLACEMENT PROGRAM PHASE 2

OSBORN ENGINEERING
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200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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SHERWOOD - PLAN & PROFILE 19+00 TO 23+00

DRAWING NO.
S6

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_Ph2\Drawings\Civil\J20221302.000_C S6 - SHERWOOD P&P.dwg
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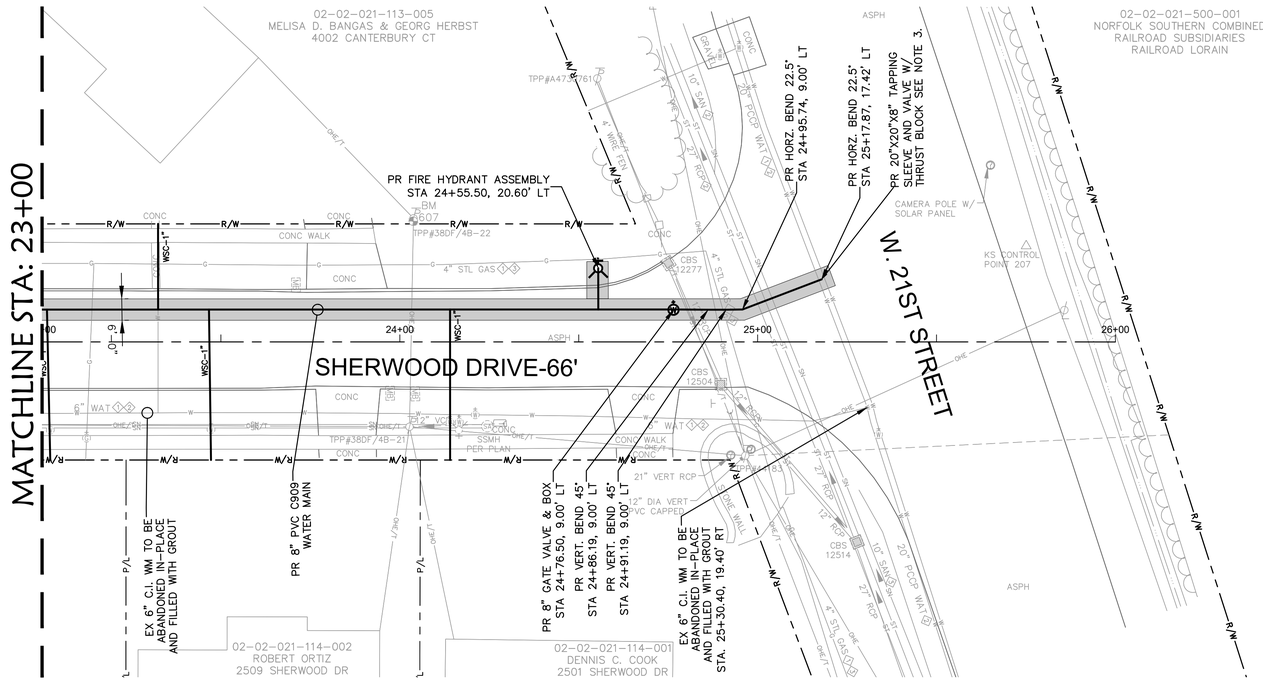
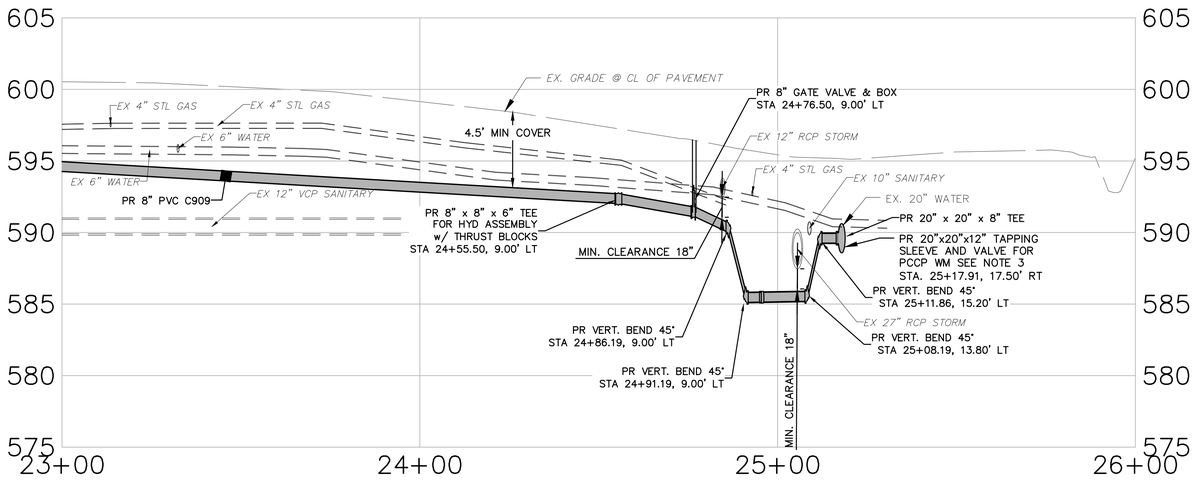


SHERWOOD DRIVE

SCALE: 1" = 20'



SHERWOOD DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CBS 12277
RIM=595.54
INV=593.49 12" RCP NE
BOTTOM=593.54
TOP OF WATER=593.84

CBS 12504
RIM=595.97
INV=591.32 12" RCP NE
(RECESSED)
INV=592.71 12" RCP SW
BOTTOM=591.32

CBS 12514
RIM=593.53
INV=587.73 27" RCP NE
INV=590.68 12" RCP SW
INV=587.73 27" RCP SW
BOTTOM=587.73

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. TAPPING SLEEVE SHALL BE JCM 415, SMITH-BLAIR 625 OR APPROVED EQUAL. FURNISH AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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(216) 861-2020 www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - PLAN & PROFILE 23+00 TO 26+00

DRAWING NO.

S7

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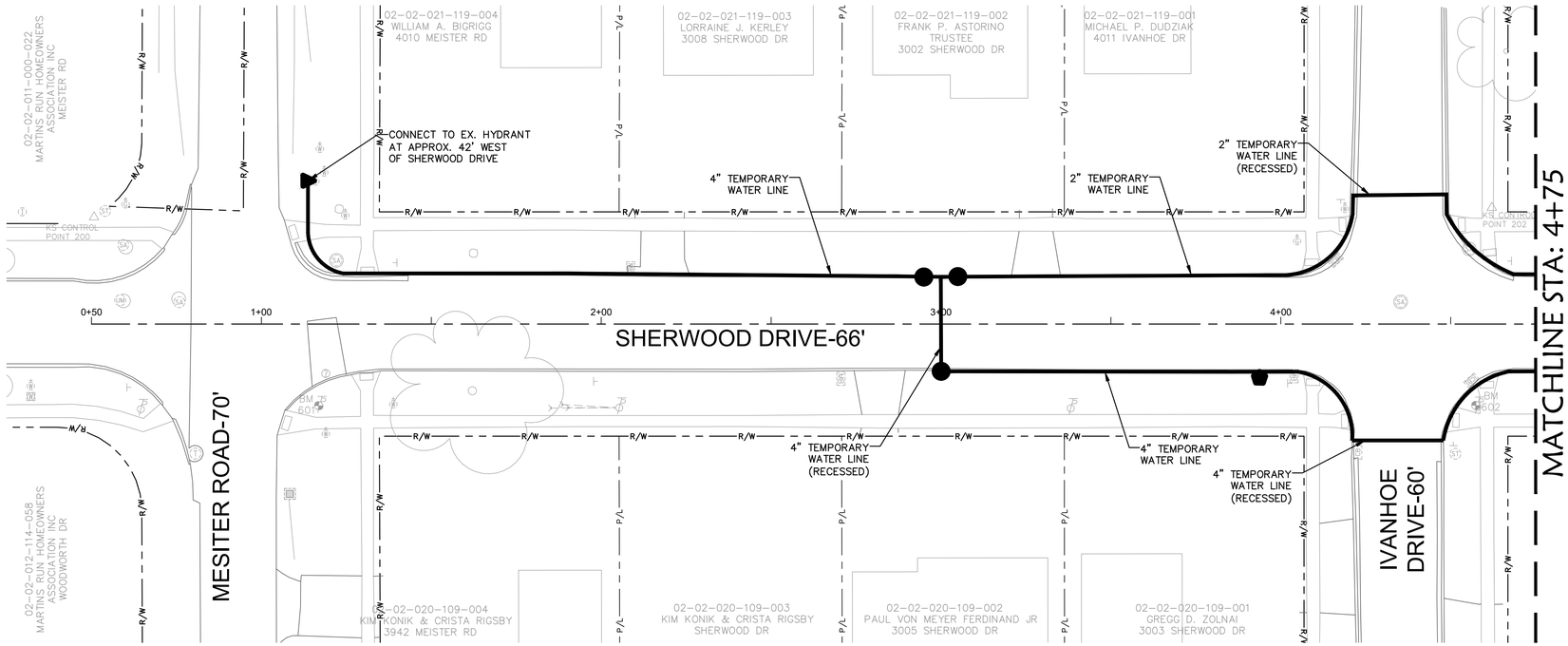
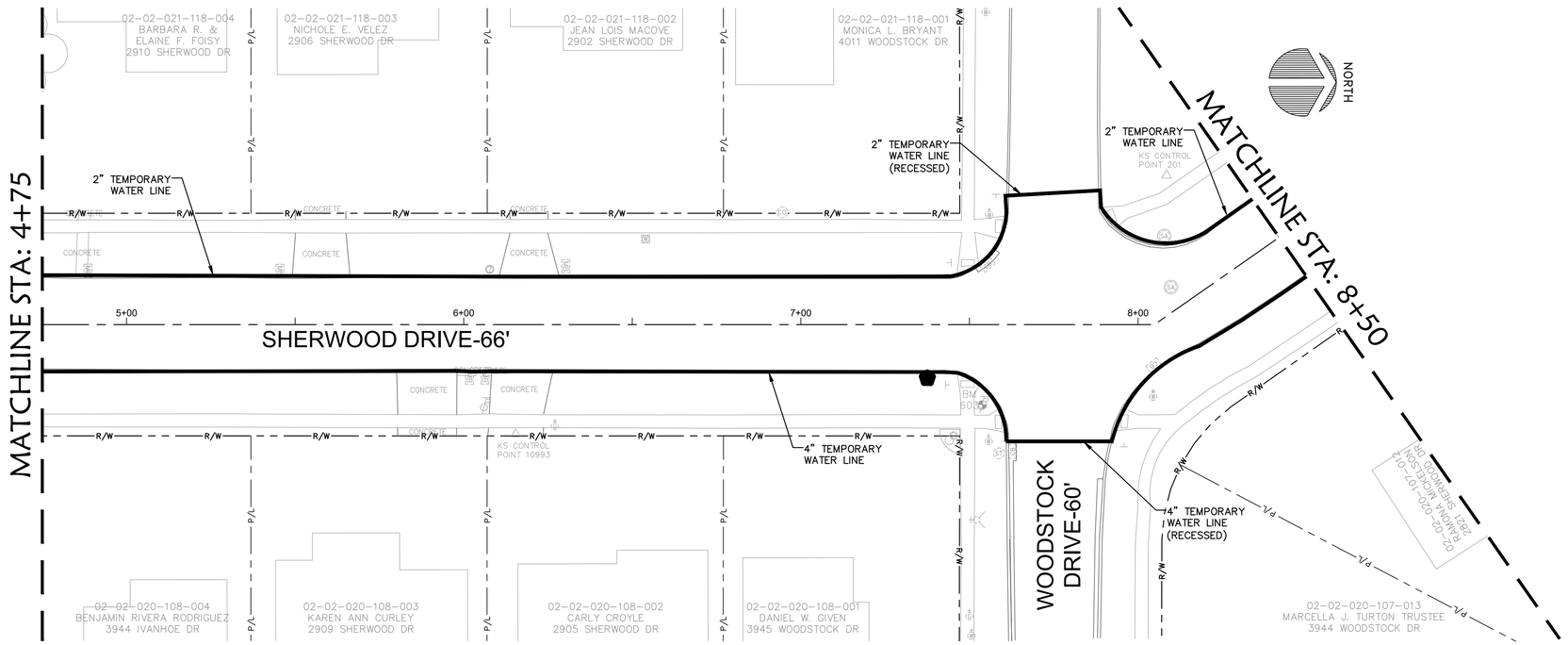
3/7/2025 5:55 PM Duffy, Alex



SHERWOOD DRIVE – BYPASS PLAN

SCALE: 1" = 20'



SHERWOOD DRIVE – BYPASS PLAN

SCALE: 1" = 20'

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

GENERAL NOTES:

1. IF THIS ALTERNATE IS APPROVED, THE CONTRACTOR SHALL REPLACE THE EXISTING WATER MAIN AS SPECIFIED IN THESE DOCUMENTS, IN THE SAME LOCATION AS THE EXISTING WATER MAIN. THE CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO THE RESTORATION LIMITS AND MOT AS APPLICABLE.
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY WATER SERVICE IN ACCORDANCE WITH LWD REQUIREMENTS. THE CONTRACTOR SHALL USE THIS SCHEMATIC PLAN AS A GUIDE AND WILL BE PERMITTED TO ADJUST OR MODIFY AS APPROVED BY THE ENGINEER.
3. THE CONTRACTOR SHALL ADJUST OR MODIFY THIS PLAN AS DIRECTED BY THE ENGINEER, CITY, OR FIRE DEPARTMENT AS REQUESTED TO PROVIDE ADEQUATE WATER AND FIRE SERVICE WITHIN THE PROJECT LIMITS AT NO ADDITIONAL COST TO THE CITY.
4. THE CONTRACTOR SHALL INSTALL TEMPORARY HYDRANTS PER THE LWD DETAILS AT OR NEAR THE EXISTING HYDRANTS ALONG SHERWOOD ROAD OR AS DIRECTED BY THE ENGINEER OR CITY.
5. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE CONNECTIONS TO ALL RESIDENCES UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
6. THE CONTRACTOR MAY BE REQUIRED TO INCREASE PIPING SIZE OR ADD ADDITIONAL CROSSINGS TO MAINTAIN THE REQUIRED FLOW AND PRESSURE TO THE SYSTEM AT NO ADDITIONAL COST TO THE CITY OR PROJECT.

LEGEND

- TEMPORARY HYDRANT
- FEED HYDRANT
- TEMPORARY VALVE (2"/4")
- BYPASS PIPE (2"/4")

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CORN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - ADD ALTERNATE BYPASS PLAN

DRAWING NO.
S8

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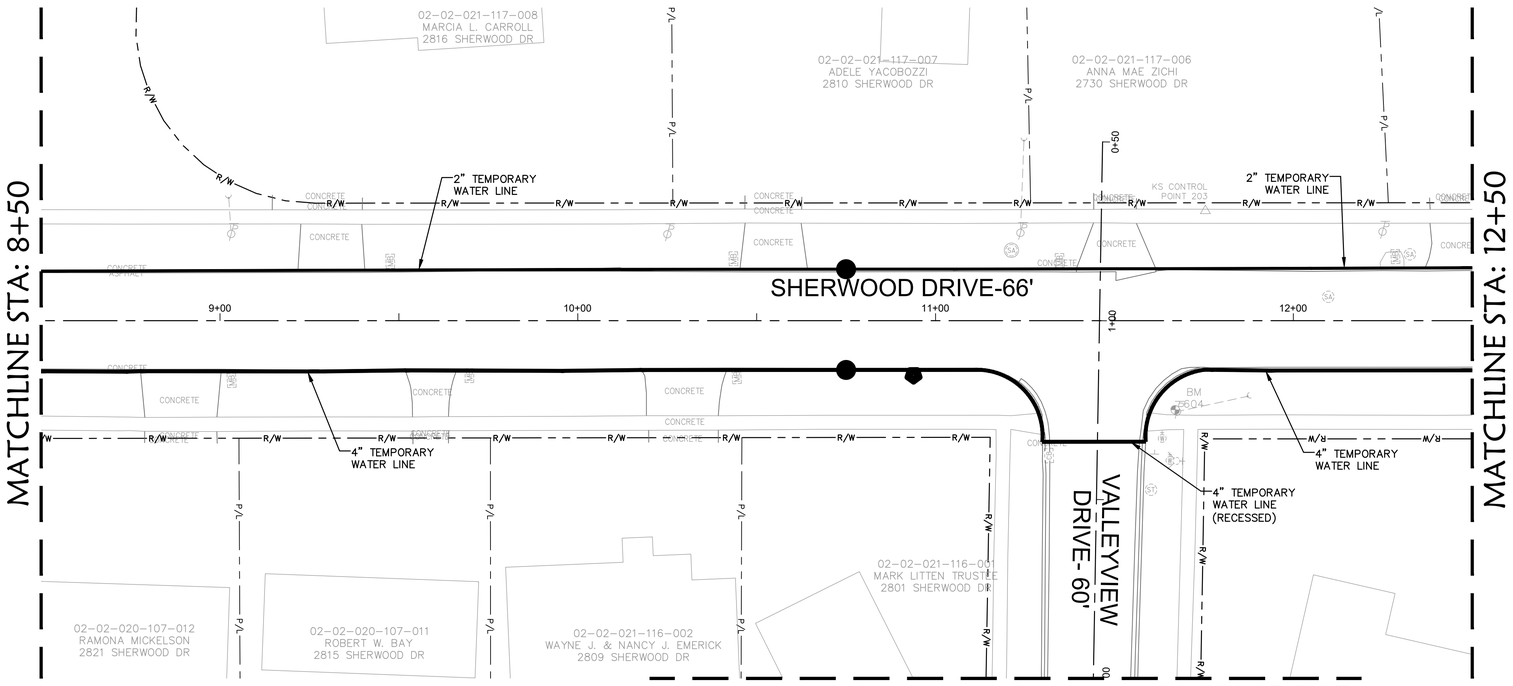
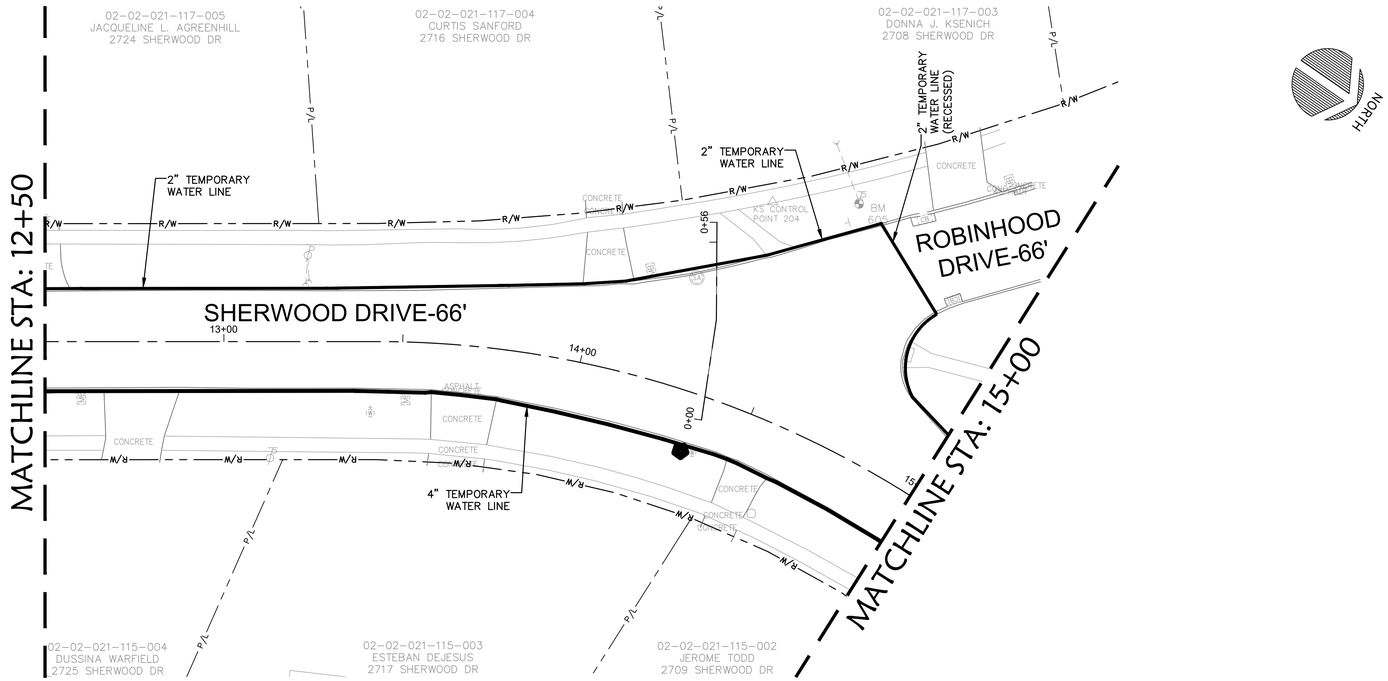


SHERWOOD DRIVE – BYPASS PLAN

SCALE: 1" = 20'

VALLEYVIEW ROAD
CONTINUATION ON SHEET V6



SHERWOOD DRIVE – BYPASS PLAN

SCALE: 1" = 20'

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

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LEGEND

- TEMPORARY HYDRANT
- FEED HYDRANT
- TEMPORARY VALVE (2"/4")
- BYPASS PIPE (2"/4")

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

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200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - ADD ALTERNATE BYPASS PLAN

DRAWING NO.

S9

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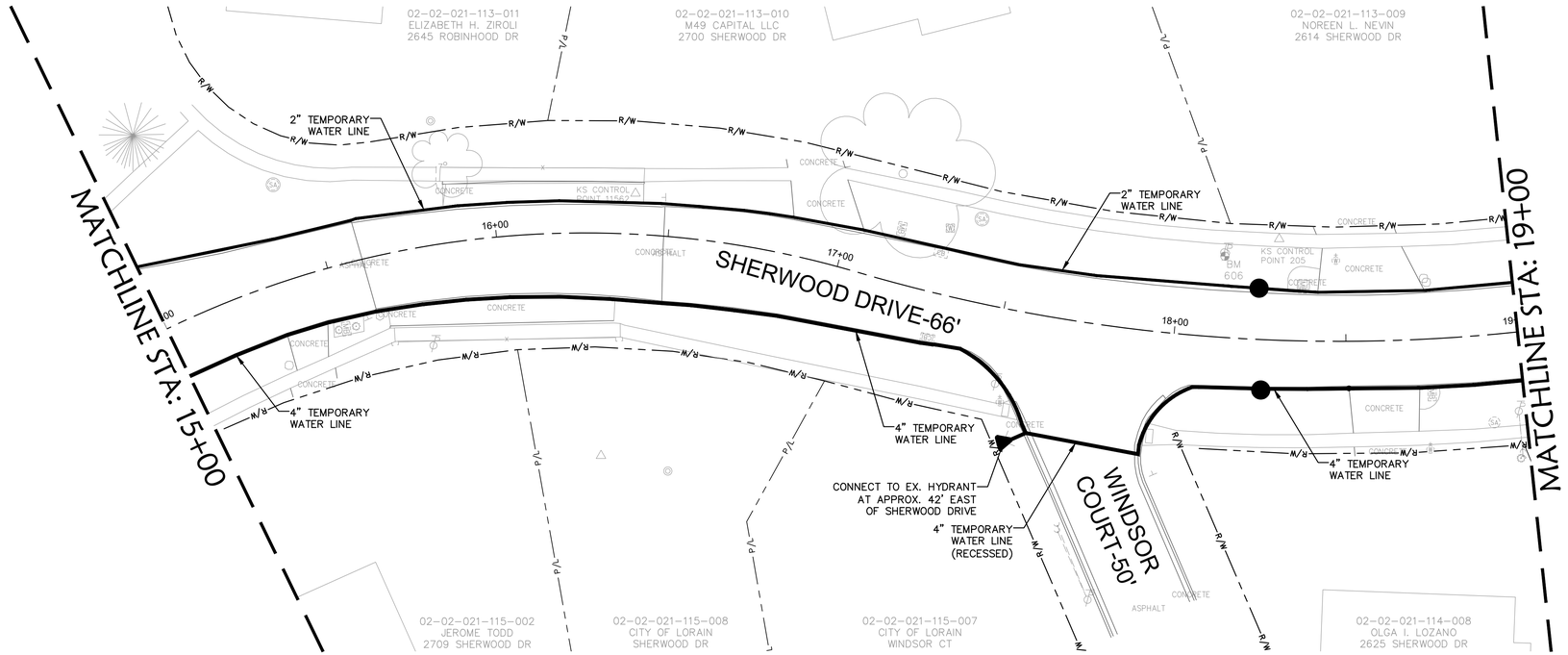
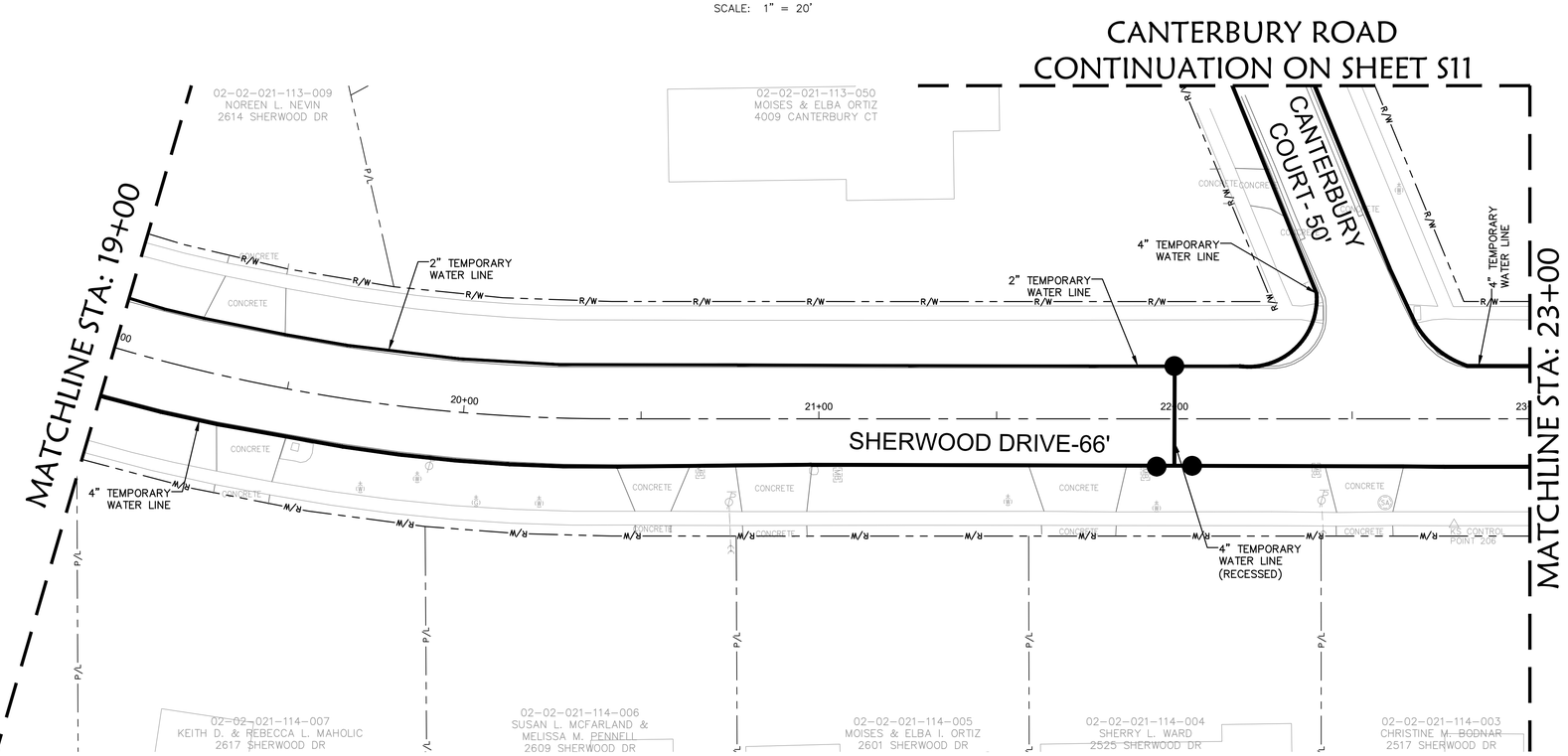


SHERWOOD DRIVE – BYPASS PLAN

SCALE: 1" = 20'



SHERWOOD DRIVE – BYPASS PLAN

SCALE: 1" = 20'

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

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5. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE CONNECTIONS TO ALL RESIDENCES UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
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LEGEND

- TEMPORARY HYDRANT
- FEED HYDRANT
- TEMPORARY VALVE (2"/4")
- BYPASS PIPE (2"/4")

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

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STATE OF OHIO
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E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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SHERWOOD - ADD ALTERNATE BYPASS PLAN

DRAWING NO.

S10

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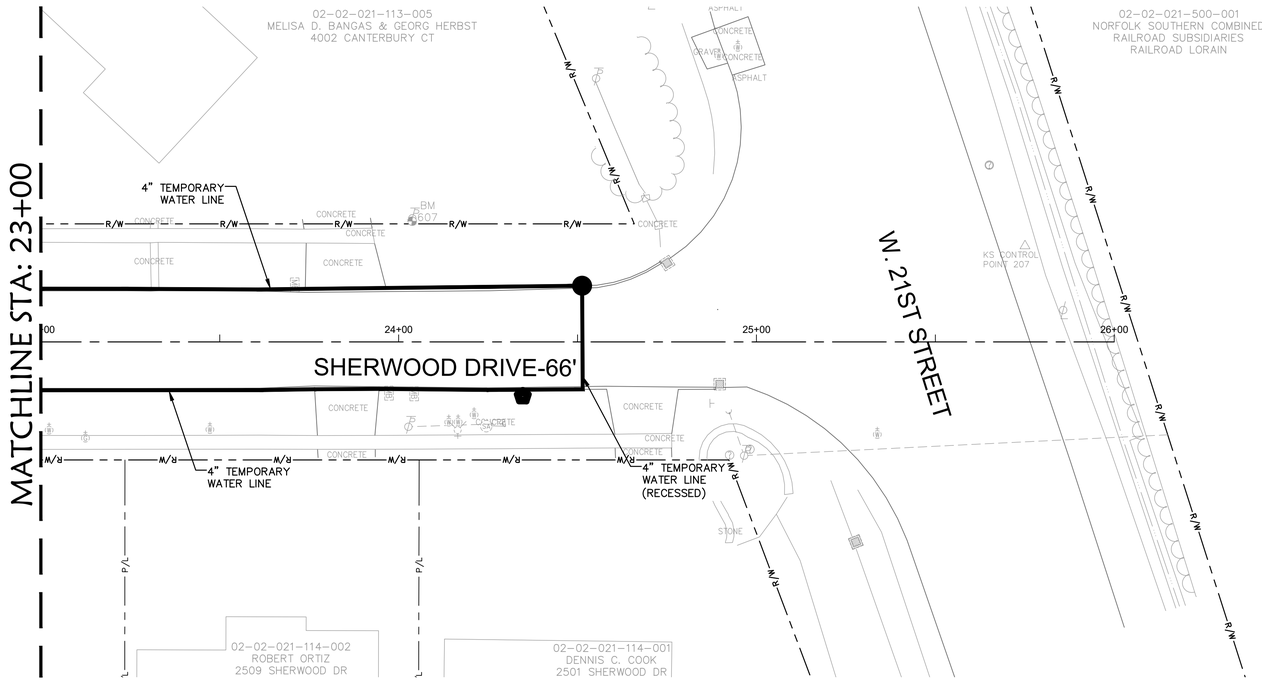
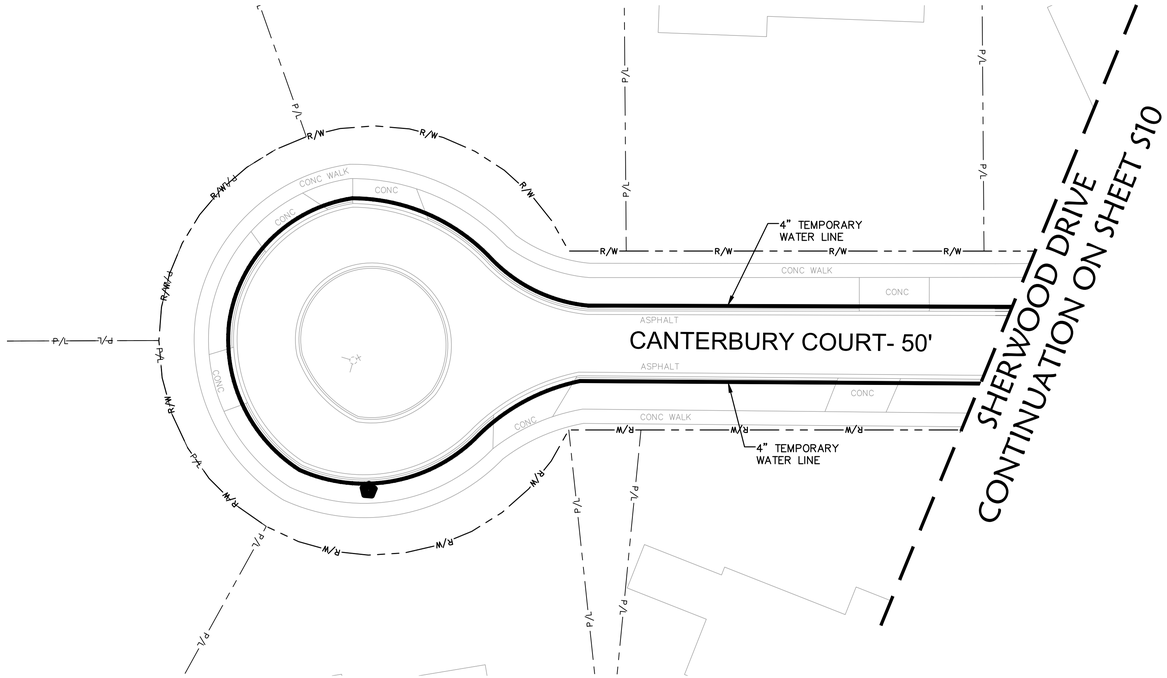


SHERWOOD DRIVE – BYPASS PLAN

SCALE: 1" = 20'



CANTERBURY COURT – BYPASS PLAN

SCALE: 1" = 20'

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

GENERAL NOTES:

1. IF THIS ALTERNATE IS APPROVED, THE CONTRACTOR SHALL REPLACE THE EXISTING WATER MAIN AS SPECIFIED IN THESE DOCUMENTS, IN THE SAME LOCATION AS THE EXISTING WATER MAIN. THE CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO THE RESTORATION LIMITS AND MOT AS APPLICABLE.
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4. THE CONTRACTOR SHALL INSTALL TEMPORARY HYDRANTS PER THE LWD DETAILS AT OR NEAR THE EXISTING HYDRANTS ALONG SHERWOOD ROAD AND CANTERBURY COURT OR AS DIRECTED BY THE ENGINEER OR CITY.
5. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE CONNECTIONS TO ALL RESIDENCES UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
6. THE CONTRACTOR MAY BE REQUIRED TO INCREASE PIPING SIZE OR ADD ADDITIONAL CROSSINGS TO MAINTAIN THE REQUIRED FLOW AND PRESSURE TO THE SYSTEM AT NO ADDITIONAL COST TO THE CITY OR PROJECT.

LEGEND

- TEMPORARY HYDRANT
- FEED HYDRANT
- TEMPORARY VALVE (2"/4")
- BYPASS PIPE (2"/4")

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - ADD ALTERNATE BYPASS PLAN

DRAWING NO.
S11

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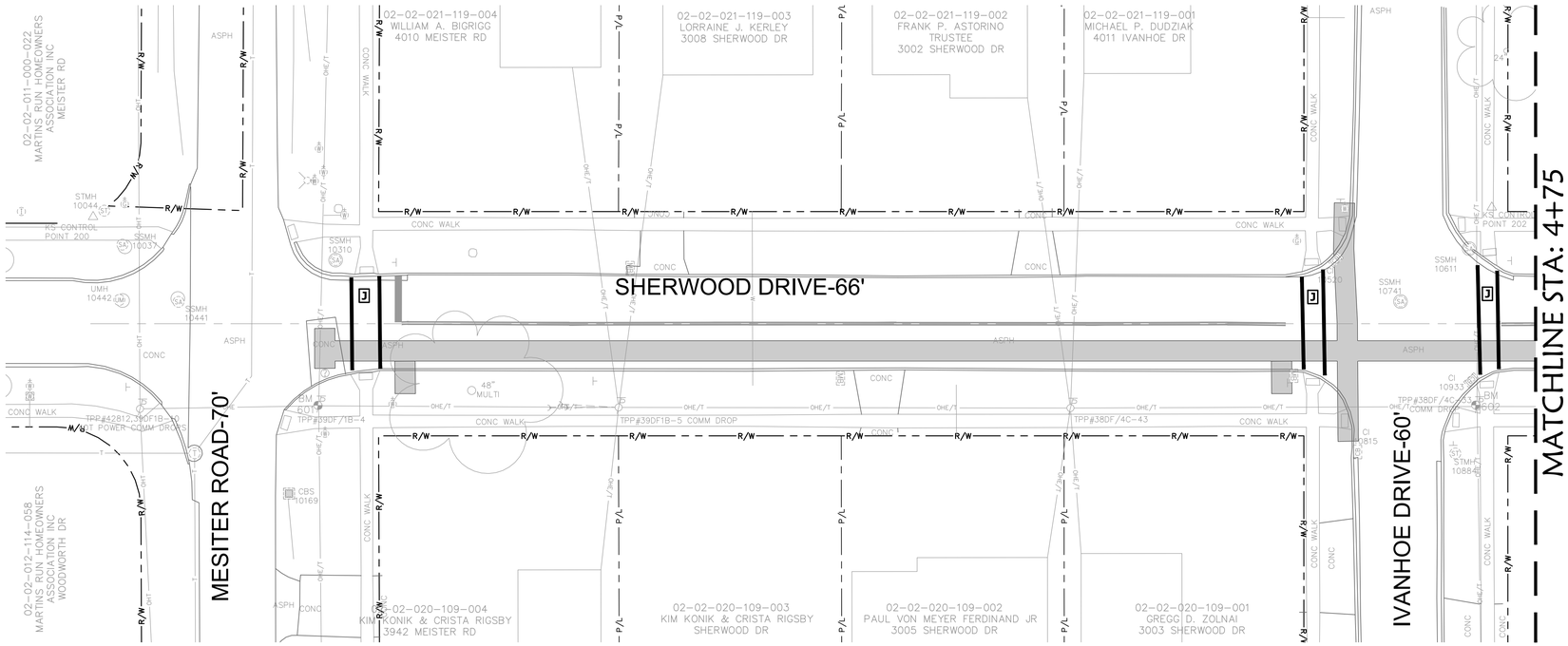

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

NOTES

1. *THIS PAVEMENT STRIPING RESTORATION PLAN AS DEVELOPED BY THE ENGINEER IS TO BE USED AS A GUIDELINE FOR THE CONTRACTOR.*
2. *DISTANCE BETWEEN PAVEMENT LINES SHOULD BE MEASURED FROM THE NEAREST CURB TO THE ROADWAY CENTERLINE.*
3. *ALL PERMANENT MARKINGS ON ASPHALT PAVEMENT SHALL BE THERMOPLASTIC PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
4. *ALL PERMANENT MARKINGS ON CONCRETE AND/OR BRICK PAVEMENT SHALL BE EPOXY PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
5. *ALL PAVEMENT MARKINGS SHALL CONFORM TO THE CITY OF LORAIN TRAFFIC STANDARDS AND ODOT ITEM 640.*
6. *FOR ADDITIONAL INFORMATION ON PAVEMENT MARKINGS, REFER TO "PART 3 - MARKINGS" OF OMUTCD (2012 EDITION) AND "PART 3 - MARKINGS" OF ODOT TRAFFIC ENGINEERING MANUAL (ITEM - JANUARY 2024 REVISION).*

CODED NOTES

X	NAME	COLOR	WIDTH
A	EDGE LINE	WHITE	4"
B	CENTER LINE - SOLID, DOUBLE	YELLOW	4"
C	CENTER LINE - SOLID/DASHED COMBO, DOUBLE	YELLOW	4"
D	CHANNELIZING LINE	WHITE	8"
E	LANE LINE - DOTTED	WHITE	4" **
F	TRANSVERSE LINE	YELLOW	24"
G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A

* - at 10' centers
** - 3' long, 9' gaps
*** - 24" wide steps w/ 24" gaps

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN R. COBN
64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - PAVEMENT MARKING 1

DRAWING NO.

S12

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3/7/2025 4:55 PM Pawar, Sayali

NOTES

1. *THIS PAVEMENT STRIPING RESTORATION PLAN AS DEVELOPED BY THE ENGINEER IS TO BE USED AS A GUIDELINE FOR THE CONTRACTOR.*
2. *DISTANCE BETWEEN PAVEMENT LINES SHOULD BE MEASURED FROM THE NEAREST CURB TO THE ROADWAY CENTERLINE.*
3. *ALL PERMANENT MARKINGS ON ASPHALT PAVEMENT SHALL BE THERMOPLASTIC PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
4. *ALL PERMANENT MARKINGS ON CONCRETE AND/OR BRICK PAVEMENT SHALL BE EPOXY PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
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6. *FOR ADDITIONAL INFORMATION ON PAVEMENT MARKINGS, REFER TO "PART 3 - MARKINGS" OF OMUTCD (2012 EDITION) AND "PART 3 - MARKINGS" OF ODOT TRAFFIC ENGINEERING MANUAL (ITEM - JANUARY 2024 REVISION).*

CODED NOTES

X	NAME	COLOR	WIDTH
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B	CENTER LINE - SOLID, DOUBLE	YELLOW	4"
C	CENTER LINE - SOLID/DASHED COMBO, DOUBLE	YELLOW	4"
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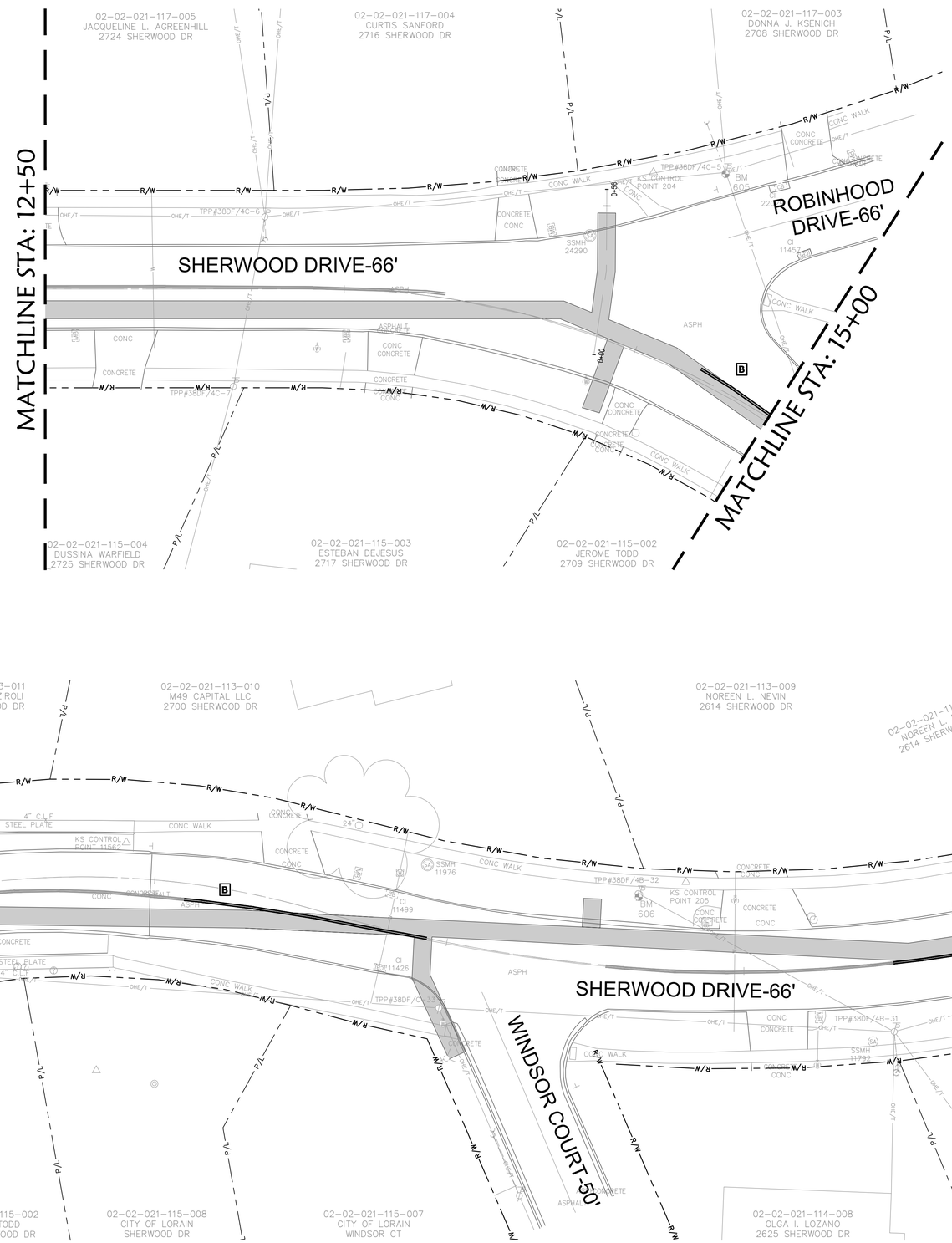
E	LANE LINE - DOTTED	WHITE	4" **
F	TRANSVERSE LINE	YELLOW	24"
G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A

** - at 10' centers*
*** - 3' long, 9' gaps*
**** - 24" wide steps w/ 24" gaps*



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WATER MAIN REPLACEMENT PROGRAM PHASE 2

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STATE OF OHIO
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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - PAVEMENT MARKING 2

DRAWING NO.

S13

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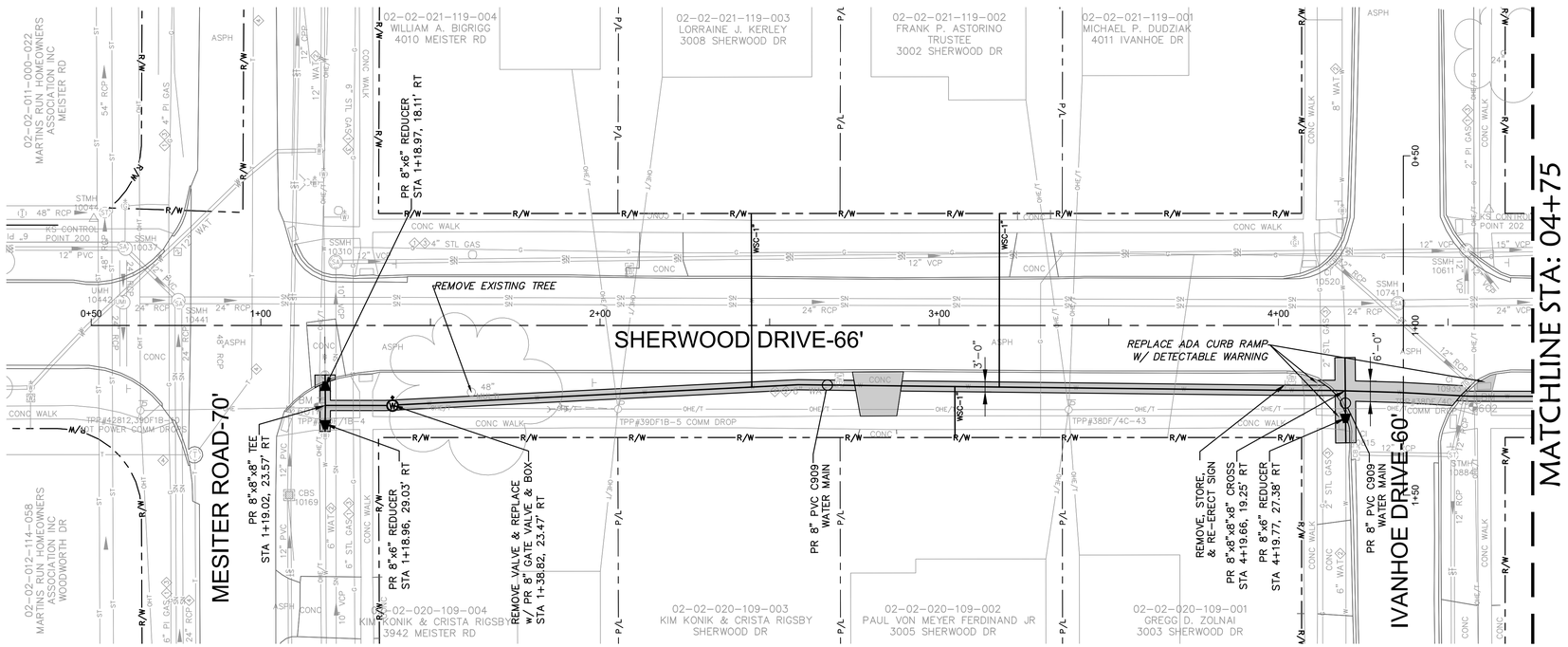
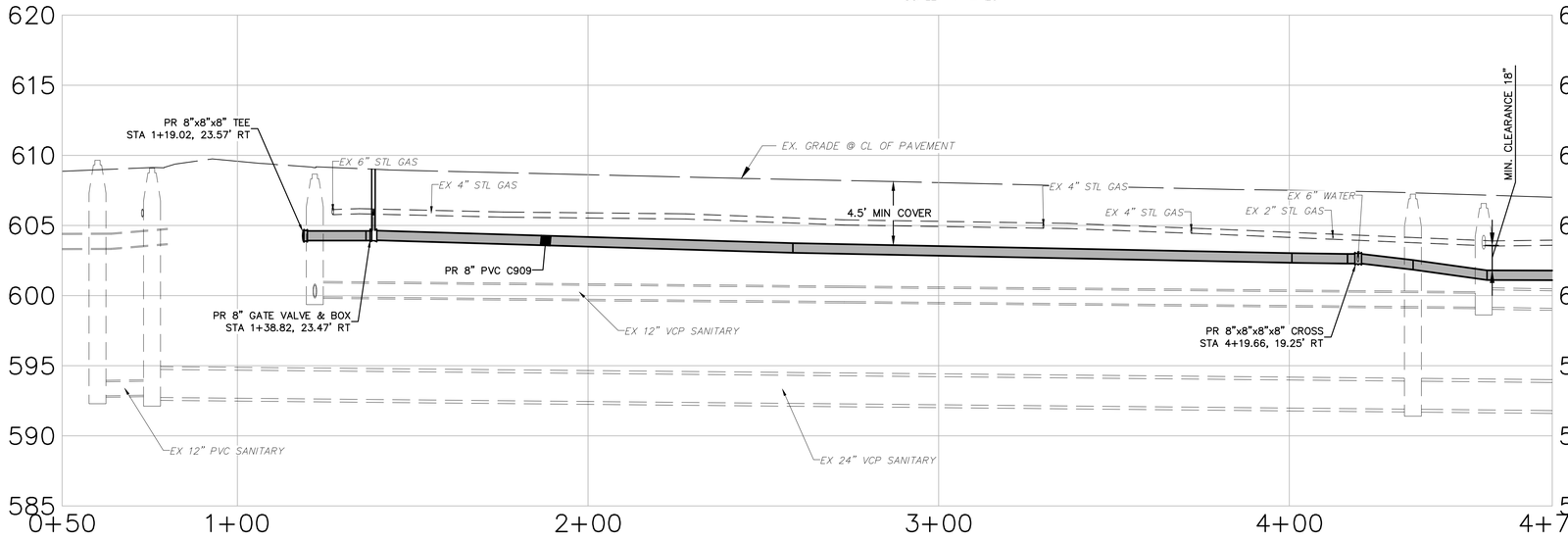


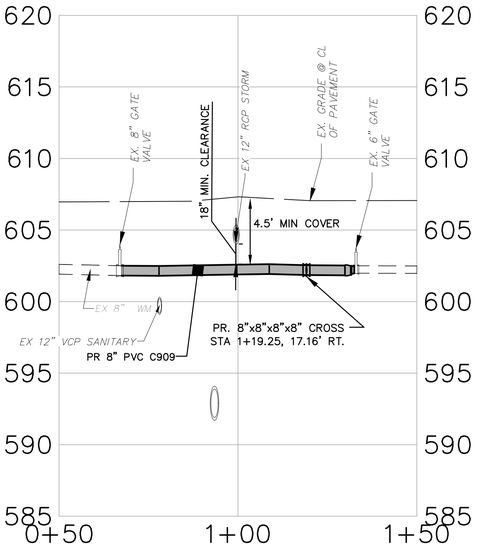
SHERWOOD DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'



SHERWOOD DRIVE PROFILE ALTERNATE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'



IVANHOE DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 10037
RIM=609.75
INV=592.84 12" PVC NE
INV=592.91 12" PVC S

STMH 10044
RIM=609.45
INV=595.47 48" RCP E
INV=594.88 48" RCP S
INV=594.60 54" RCP W

CBS 10169
RIM=608.61
INV=607.49 12" PVC W
INV=607.54 12" PVC E
BOTTOM=607.41

SSMH 10310
RIM=608.66
INV=599.91 12" VCP N
INV=599.91 10" VCP E

SSMH 10441
RIM=609.10
INV=592.74 24" RCP N
INV=592.75 24" RCP E
INV=592.67 24" RCP S
INV=592.91 12" PVC SW

CI 10520
RIM=606.62
INV=604.52 12" RCP NE
BOTTOM=604.42

SSMH 10611
RIM=606.57
INV=603.31 12" VCP NE
INV=599.90 12" VCP E
INV=599.17 12" VCP S
INV=599.17 15" VCP N

SSMH 10741
RIM=607.23
INV=591.90 24" VCP N
INV=591.90 24" RCP S

CI 10815
RIM=606.38
INV=604.11 12" RCP N
BOTTOM=603.98

STMH 10884
RIM=607.13
INV=603.53 12" RCP E
INV=603.71 12" RCP S
INV=603.59 12" RCP NW
BOTTOM=603.53

CI 10933
RIM=606.38
INV=603.98 12" RCP SE
INV=603.88 12" RCP SW
BOTTOM=603.88

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO THE NEAREST JOINT.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-84062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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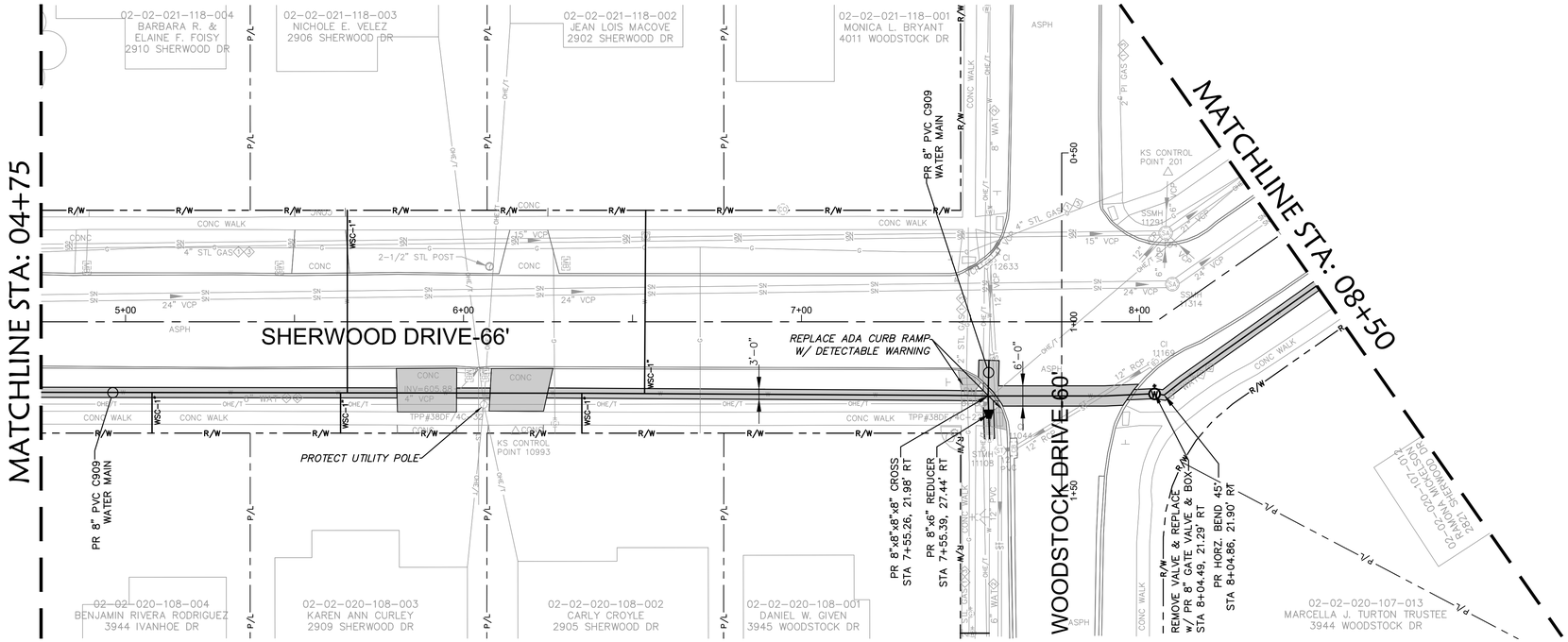
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - ALT PLAN & PROFILE 0+50 TO 4+75

DRAWING NO.

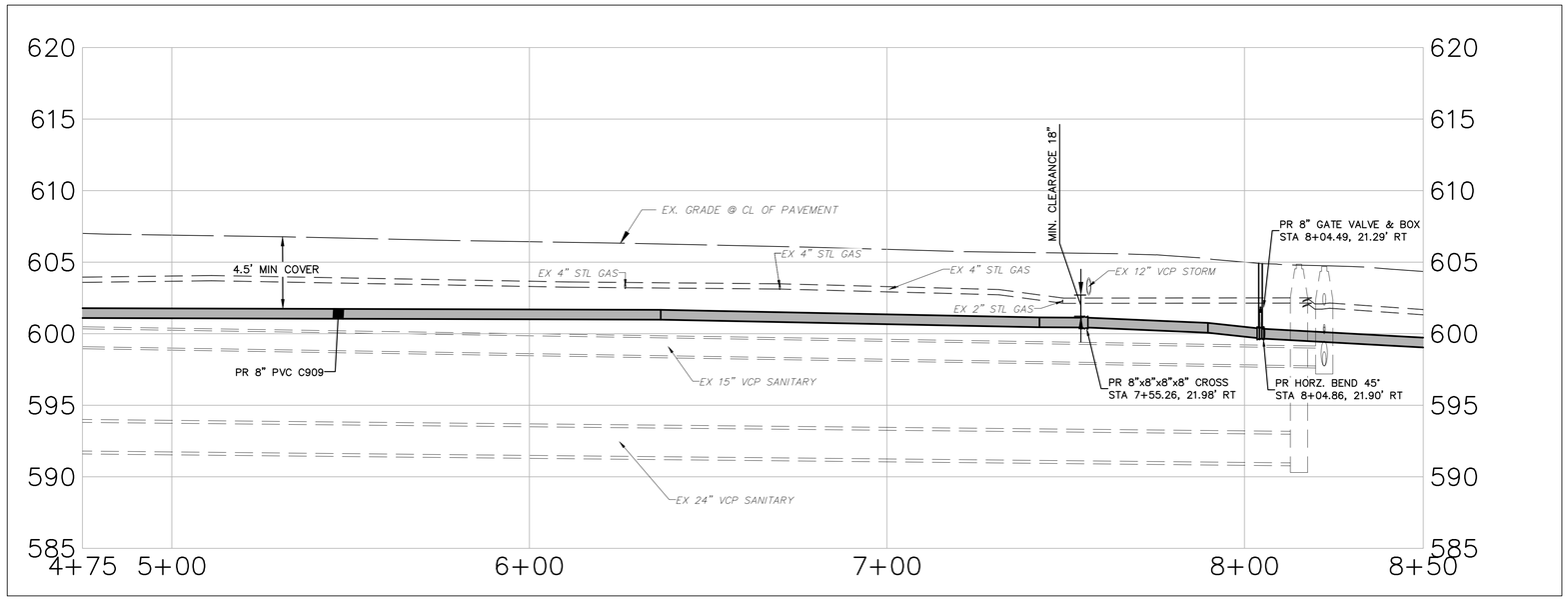
S14

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_PH2\Drawings\Civil\J20221302.000_C S14 - SHERWOOD ALT P&P.dwg
3/7/2025 7:09 PM Duffy, Alex



SHERWOOD DRIVE–ALTERNATE W/ BYPASS

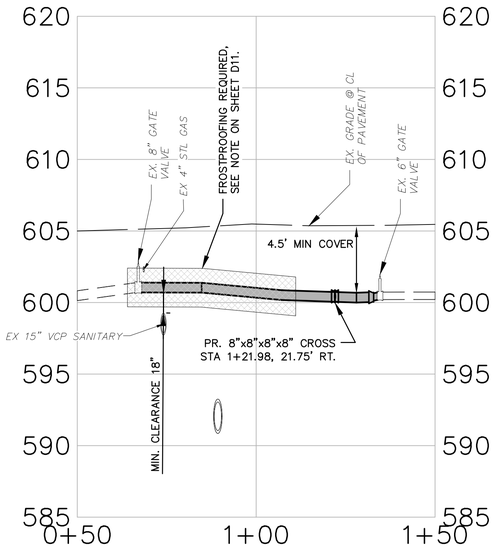
SCALE: 1" = 20'



SHERWOOD DRIVE ALT. PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.



WOODSTOCK DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CI 11044
RIM=604.60
INV=601.92 12" RCP NW
INV=601.90 12" PVC SE
BOTTOM=601.90

STMH 11108
RIM=605.14
INV=601.84 12" PVC E
INV=602.57 12" VCP W
INV=602.06 12" PVC NW

CI 11169
RIM=604.53
INV=602.53 12" RCP SE

SSMH 11291
RIM=604.69
INV=597.74 21" VCP NW
INV=597.74 15" VCP S
INV=597.75 12" VCP SE
INV=599.99 6" VCP E
INV=601.99 10" VCP NE
INV=600.16 6" VCP W

SSMH 11314
RIM=604.87
INV=590.97 24" VCP S
INV=590.85 24" VCP NW

CI 12633
RIM=604.78
INV=602.91 12" VCP NE
INV=603.23 4" VCP NW
INV=603.33 4" VCP SE (PLUGGED)
BOTTOM=602.88

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO THE NEAREST JOINT.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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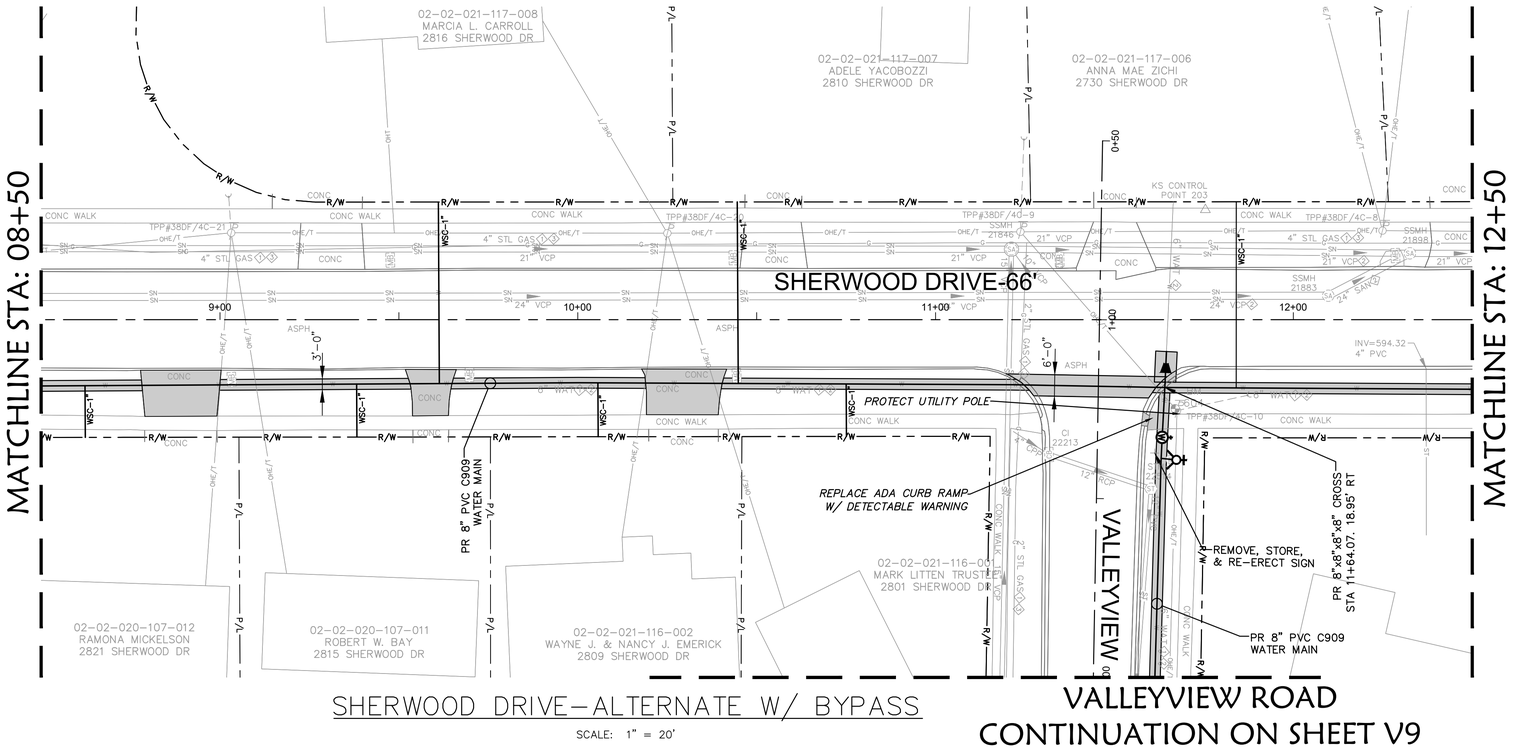
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - ALT PLAN & PROFILE 4+75 TO 8+50

DRAWING NO.

S15

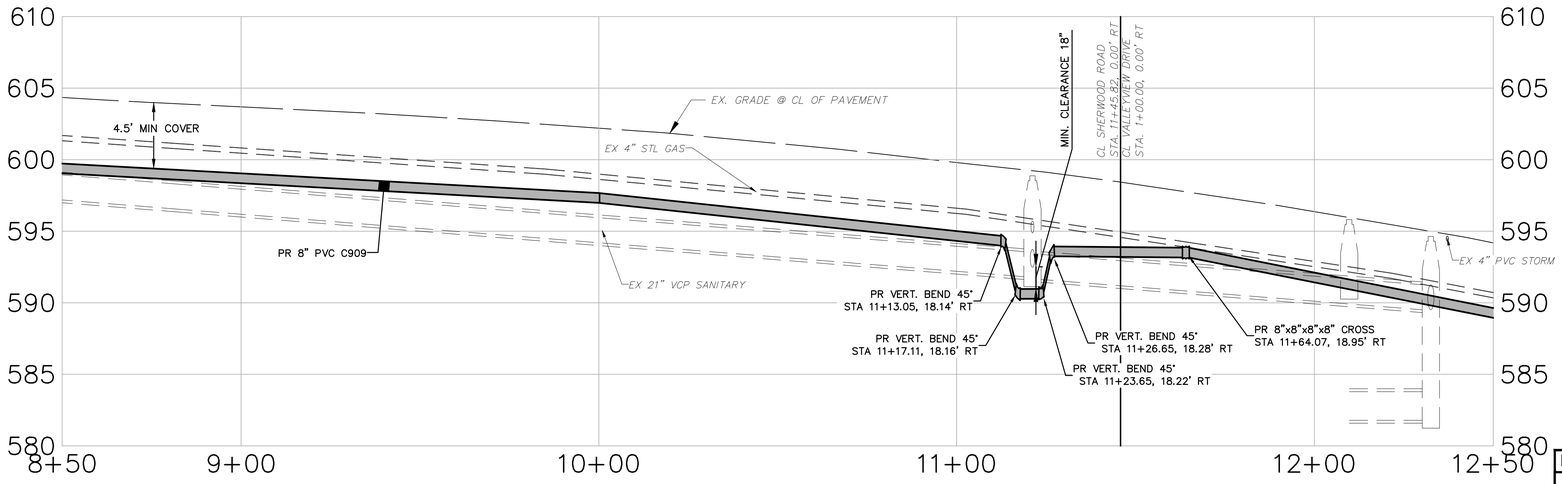
P:\Lorain - City Of\J20221302.000_Water_Main_Repl_PH2\Drawings\Civil\J20221302.000_C S15 - SHERWOOD ALT P&P.dwg
3/7/2025 7:10 PM Duffy, Alex



SHERWOOD DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'

VALLEYVIEW ROAD
CONTINUATION ON SHEET V9



SHERWOOD DRIVE ALT. PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 21846
RIM=598.88
INV=591.68 21" VCP NW
INV=594.88 10" VCP NE
INV=592.48 15" VCP NE
INV=591.78 21" VCP SE

SSMH 21883
RIM=595.81
COULD NOT OPEN

SSMH 21898
RIM=594.64
COULD NOT OPEN

CI 22213
RIM=597.92
INV=596.07 12" RCP NW
INV=596.92 4" CPP S
BOTTOM=595.82

STMH 22514
RIM=598.48
INV=595.53 12" PVC NE
INV=595.68 12" RCP SE

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. EXISTING PAVEMENT FOR VALLEYVIEW ROAD IS VARYING FROM 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
3. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
4. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO THE NEAREST JOINT.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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OSBORN PROJ NO.	J20221302.000

SHERWOOD - ALT PLAN & PROFILE 8+50 TO 12+50

DRAWING NO.

S16

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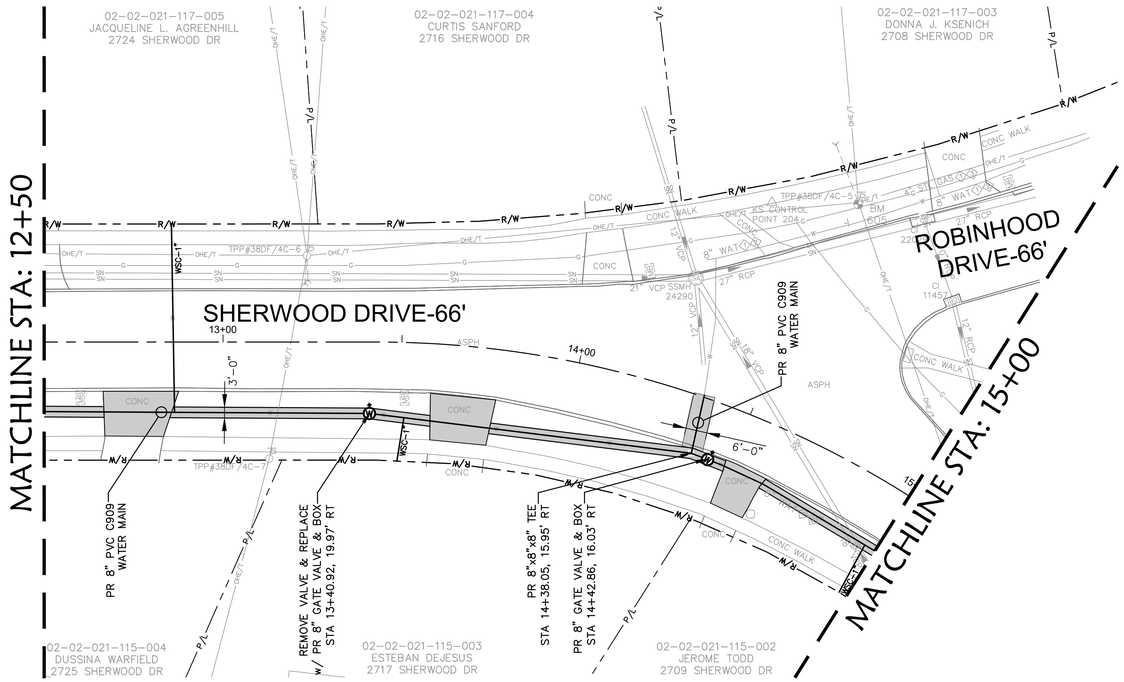
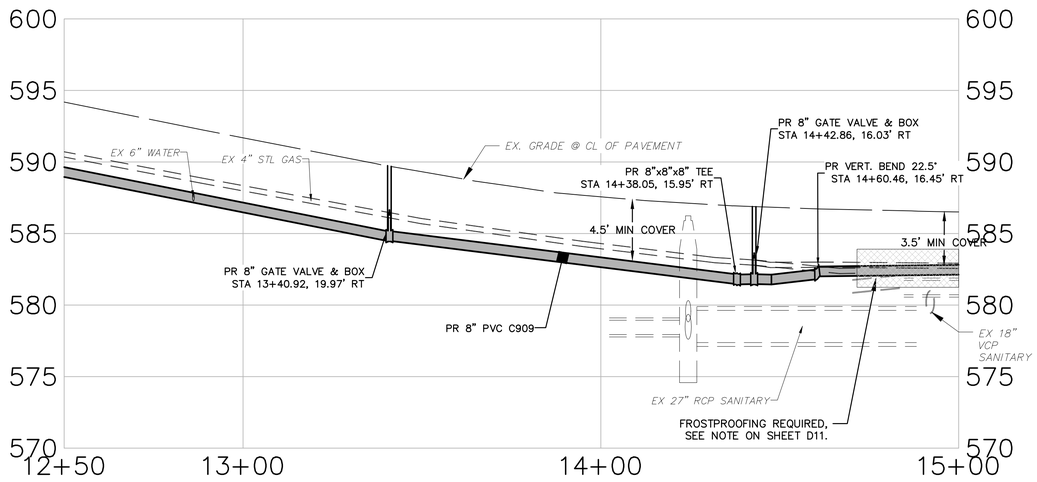
3/7/2025 4:57 PM Pawar, Sayali



SHERWOOD DRIVE—ALTERNATE W/ BYPASS

SCALE: 1" = 20'



SHERWOOD DRIVE ALT. PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CI 11457
RIM=585.42
INV=581.72 12" RCP NE
INV=581.72 10" RCP SW
BOTTOM=581.72

CI 22029
RIM=585.25
INV=582.05 10" RCP NE

SSMH 24290
RIM=586.15
INV=578.82 18" VCP NE
INV=578.75 12" VCP NE
INV=577.61 21" VCP SE
INV=578.94 12" VCP SW
INV=577.38 27" RCP NW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO THE NEAREST JOINT.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
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SHERWOOD - ALT PLAN & PROFILE 12+50 TO 15+00

DRAWING NO.
S17

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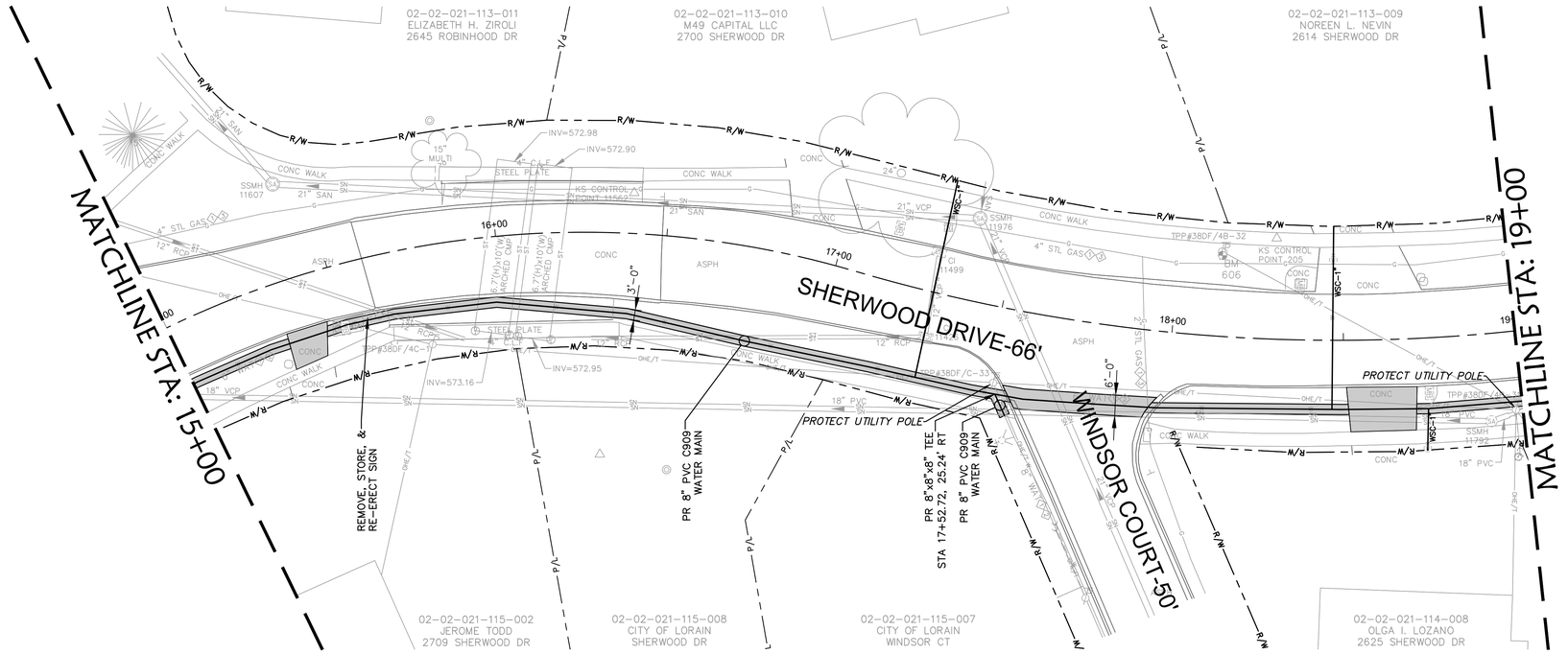
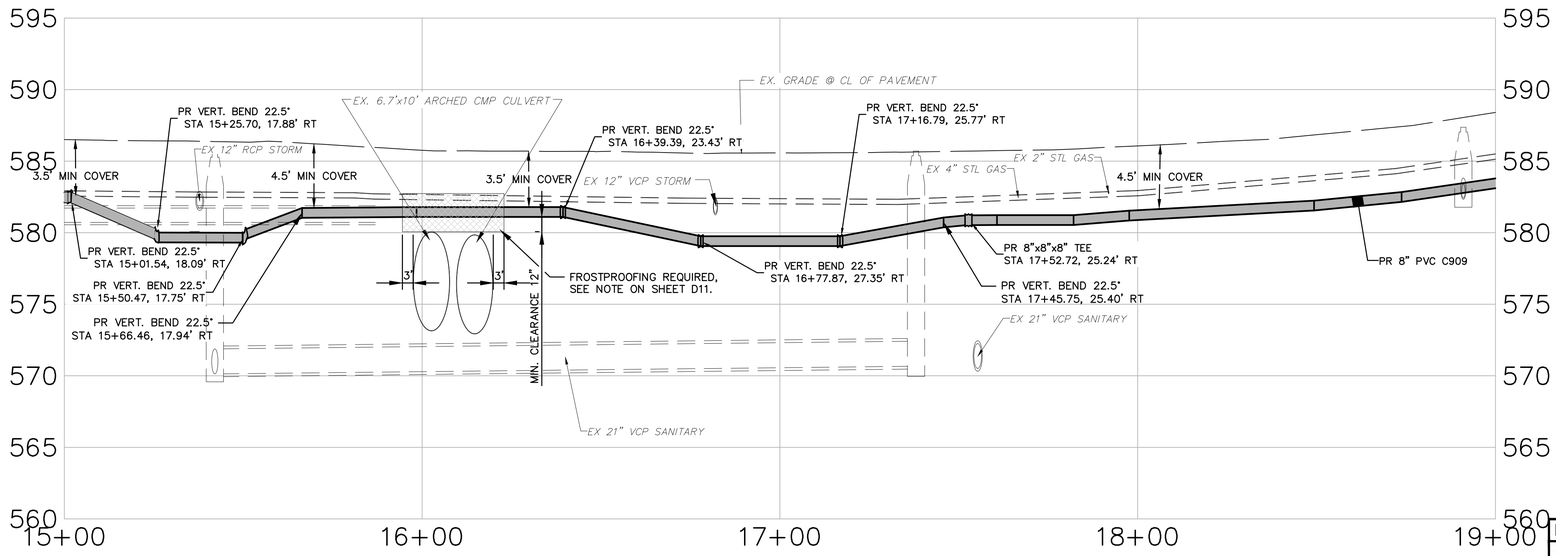
3/7/2025 4:58 PM Pawar, Sayali



SHERWOOD DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'



SHERWOOD DRIVE ALTERNATE PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CI 11426
RIM=584.78
INV=581.23 12" RCP S
INV=581.23 12" VCP NW

CI 11499
RIM=584.85
INV=581.61 12" RCP SE
BOTTOM=581.61

SSMH 11607
RIM=585.61
INV=570.13 21" SAN NE & SW

SSMH 11792
RIM=587.37
INV=582.42 18" PVC N
INV=582.33 18" PVC SW

SSMH 11976
RIM=585.71
INV=570.51 21" VCP E
INV=570.67 21" VCP SW
INV=572.81 SAN NW
(RECESSED)

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
4. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.
5. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO THE NEAREST JOINT.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-84026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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OSBORN PROJ NO.	J20221302.000

SHERWOOD - ALT PLAN & PROFILE 15+00 TO 19+00

DRAWING NO.

S18

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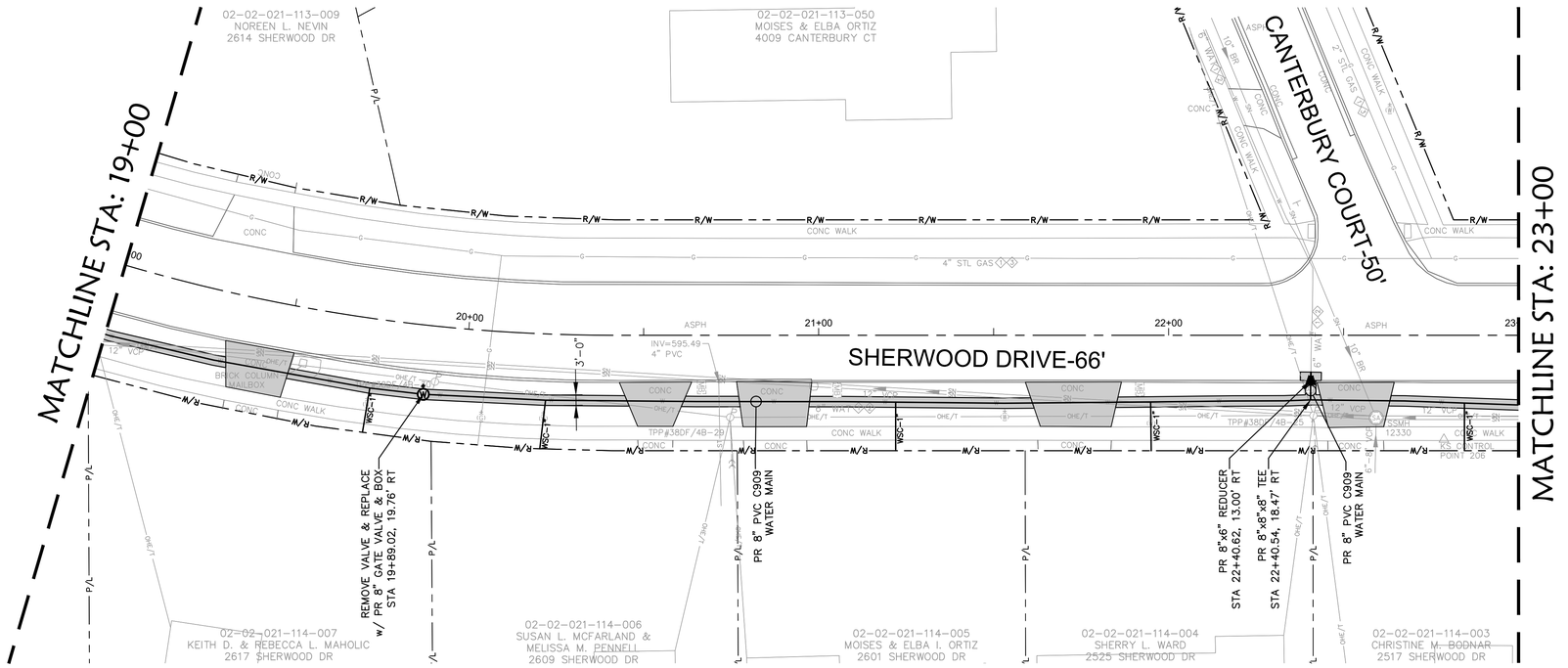
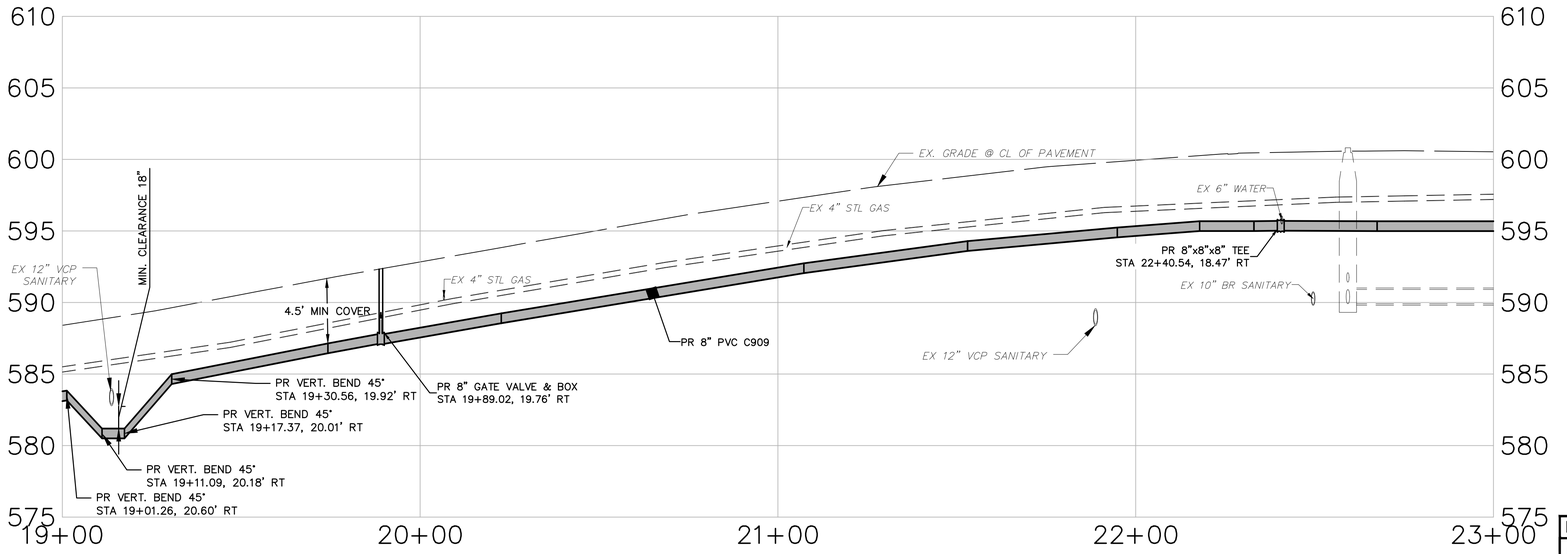


SHERWOOD DRIVE—ALTERNATE W/ BYPASS

SCALE: 1" = 20'



SHERWOOD DRIVE ALTERNATE W/ BYPASS PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 12330
RIM=600.82
INV=589.91 12" VCP N
INV=589.91 12" VCP SW
INV=589.86 10" BR SW
(RECESSED)
INV=591.42 6"-8" VCP E

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO THE NEAREST JOINT.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

SHERWOOD - ALT PLAN & PROFILE 19+00 TO 23+00

DRAWING NO.

S19

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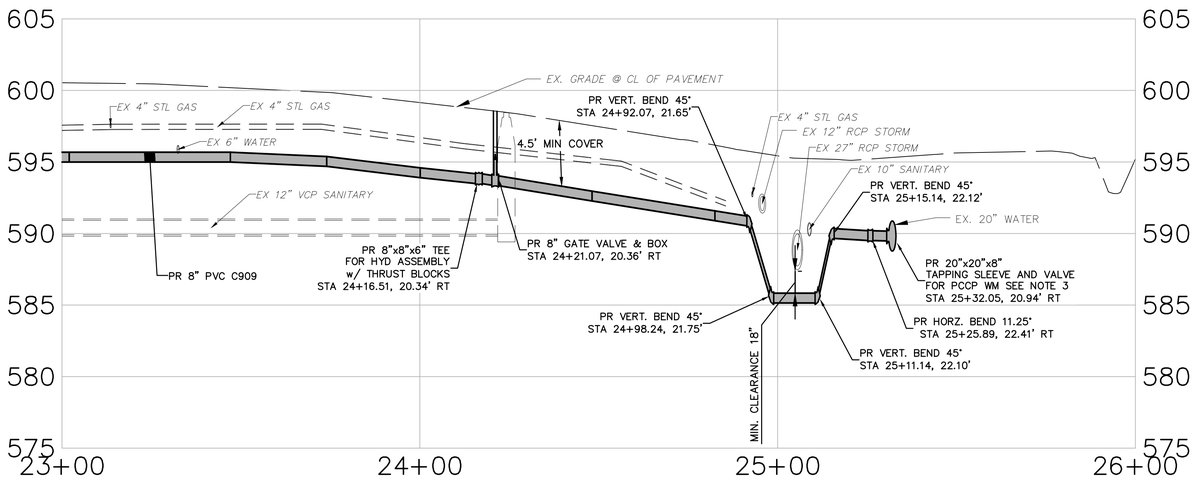
3/7/2025 6:19 PM Pawar, Sayali

SHERWOOD DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'



SHERWOOD DRIVE ALT. PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CBS 12277
RIM=595.54
INV=593.49 12" RCP NE
BOTTOM=593.54
TOP OF WATER=593.84

CBS 12504
RIM=595.97
INV=591.32 12" RCP NE
(RECESSED)
INV=592.71 12" RCP SW
BOTTOM=591.32

CBS 12514
RIM=593.53
INV=587.73 27" RCP NE
INV=590.68 12" RCP SW
INV=587.73 27" RCP SW
BOTTOM=587.73

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. TAPPING SLEEVE SHALL BE JCM 415, SMITH-BLAIR 625 OR APPROVED EQUAL. FURNISH AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. ALL CONCRETE SIDEWALK REPLACEMENT SHALL BE TO THE NEAREST JOINT.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

OSBORN ENGINEERING
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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
84026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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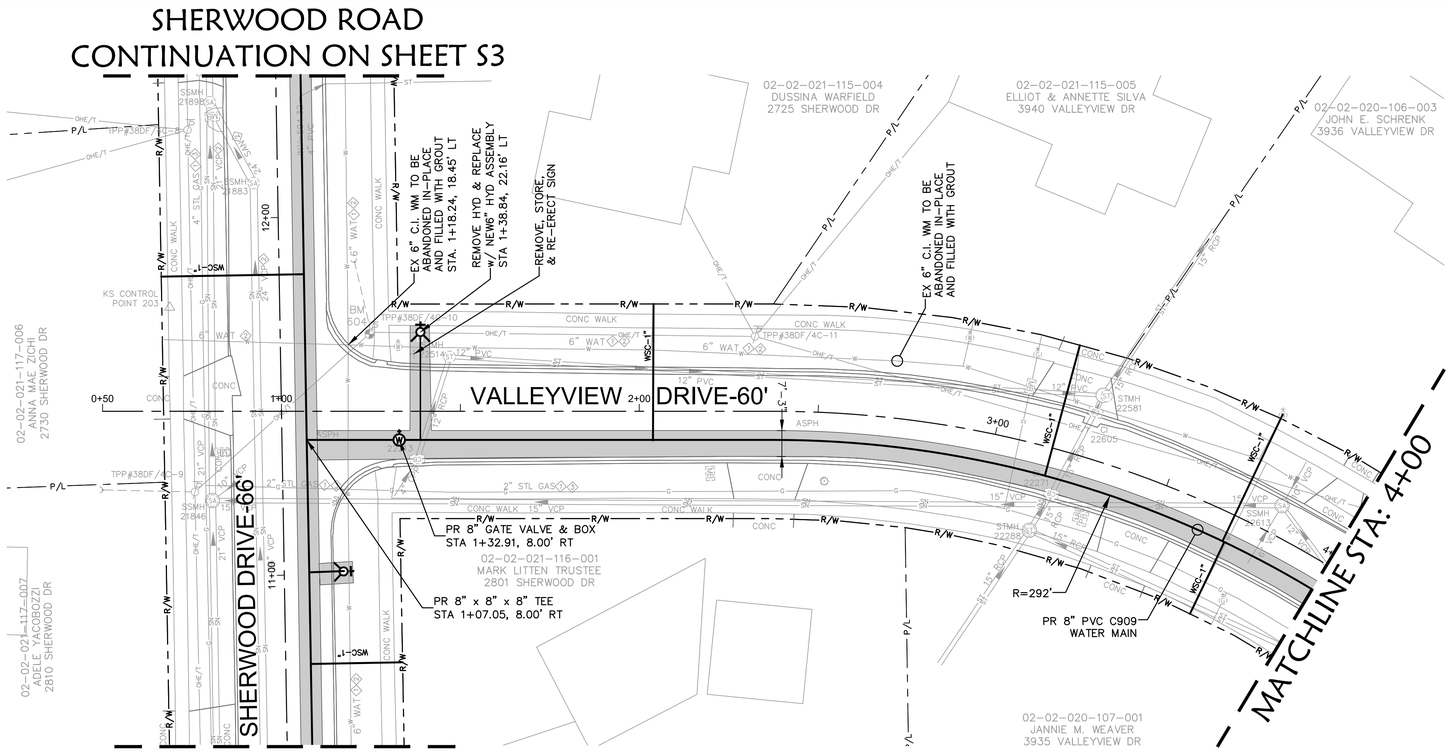
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

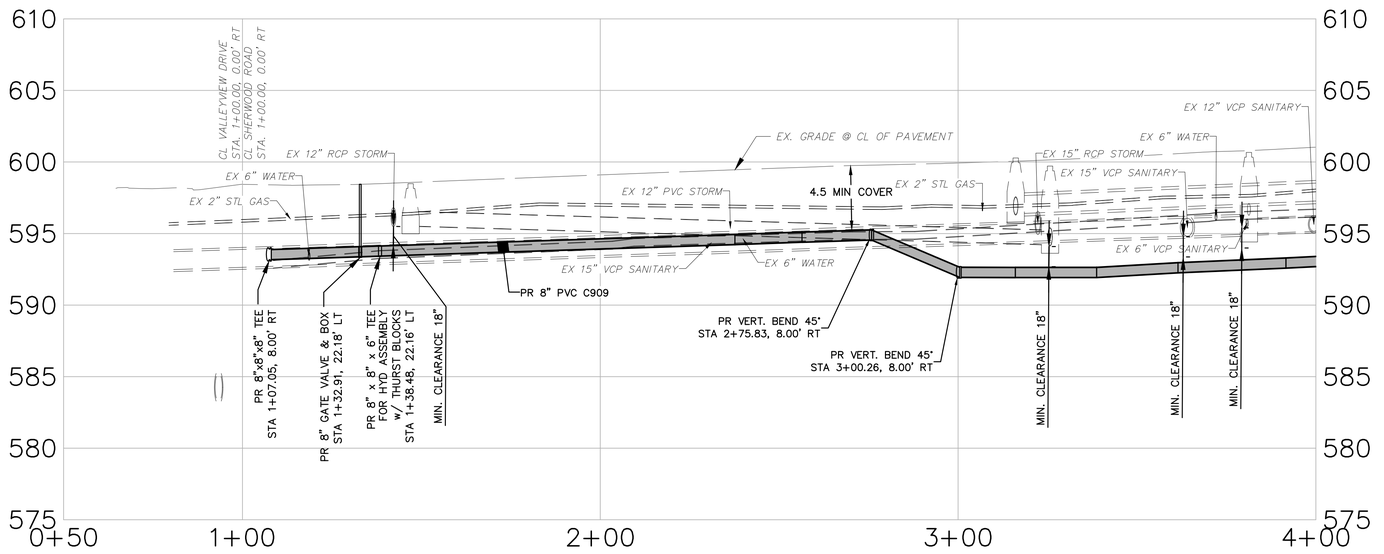
SHERWOOD - ALT PLAN & PROFILE 23+00 TO 26+00

DRAWING NO.
S20

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C S20 - SHERWOOD ALT P&P.dwg
3/7/2025 6:20 PM Pawar, Sayali



VALLEYVIEW DRIVE
SCALE: 1" = 20'



VALLEYVIEW DRIVE PROFILE
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 21846
RIM=598.88
INV=591.68 21" VCP NW
INV=594.88 10" VCP NE
INV=592.48 15" VCP NE
INV=591.78 21" VCP SE

SSMH 21883
RIM=595.81
COULD NOT OPEN

SSMH 21898
RIM=594.64
COULD NOT OPEN

CI 22213
RIM=597.92
INV=596.07 12" RCP NW
INV=596.92 4" CPP S
BOTTOM=595.82

CI 22271
RIM=599.50
INV=595.75 15" RCP N
INV=595.75 15" RCP S

STMH 22288
RIM=600.28
INV=596.28 15" RCP N
INV=596.38 15" RCP NE
INV=596.33 15" RCP SW

STMH 22514
RIM=598.48
INV=595.53 12" PVC NE
INV=595.68 12" RCP SE

STMH 22581
RIM=599.72
INV=594.12 15" RCP N
INV=594.17 15" RCP S
INV=594.22 12" PVC SW

STMH 22605
RIM=599.77
INV=594.47 15" RCP N
INV=594.77 15" RCP S

SSMH 22613
RIM=600.67
INV=596.27 10" VCP N
INV=594.97 12" VCP SE
INV=595.47 6" VCP S
INV=594.96 15" VCP SW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
3. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO KEVIN D. CODIN E-64026 REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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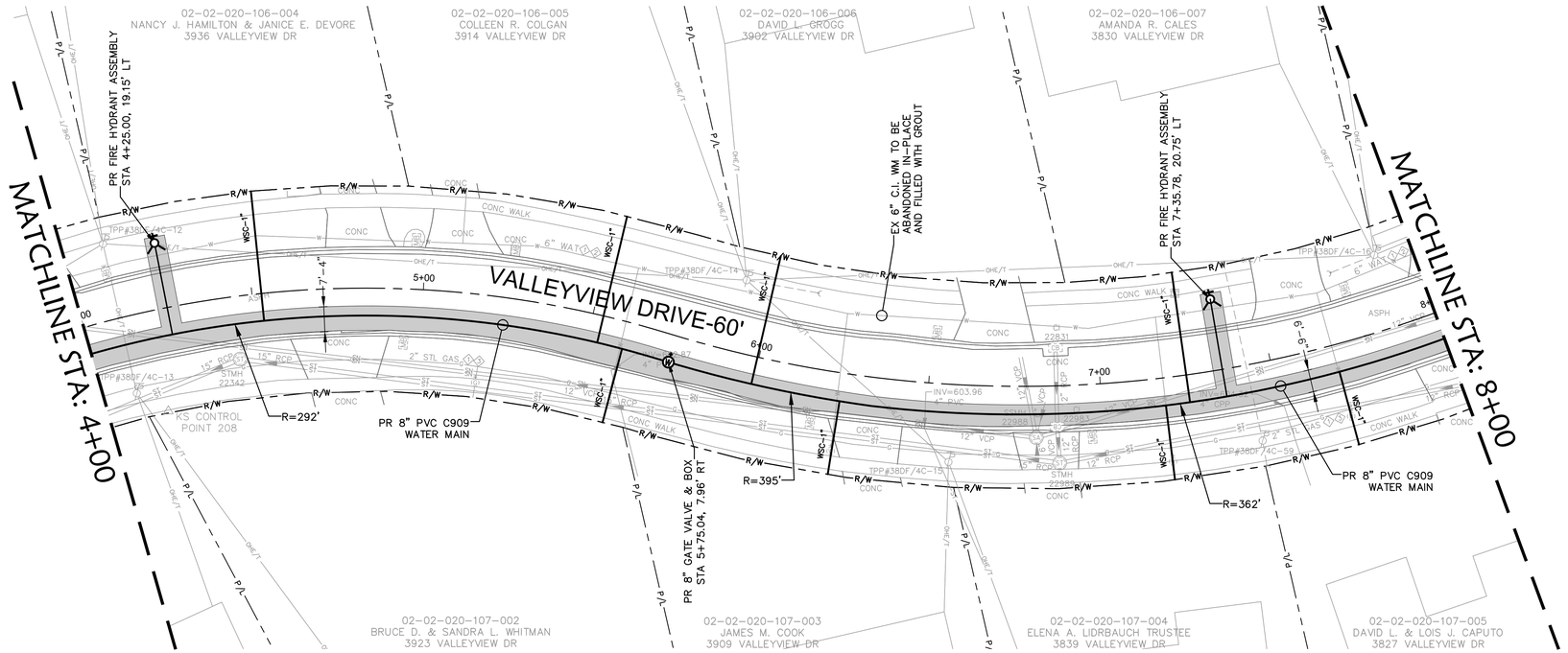
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - PLAN & PROFILE 0+50 TO 4+00

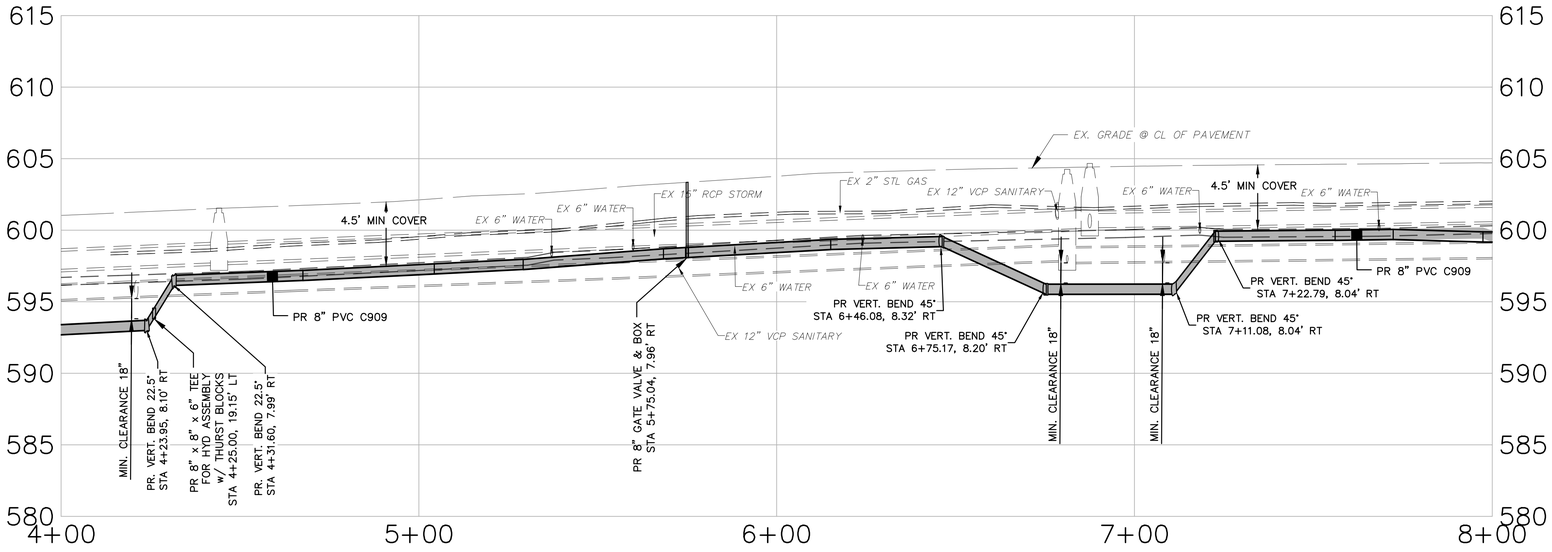
DRAWING NO.
V1

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_PH2\Drawings\Civil\J20221302.000_C V1 - VALLEYVIEW P&P.dwg
3/7/2025 6:12 PM Duffy, Alex



VALLEYVIEW DRIVE

SCALE: 1" = 20'



VALLEYVIEW DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

STMH 22342
RIM=601.55
INV=597.75 15" RCP SE
INV=597.74 15" RCP SW

CI 22831
RIM=604.03
INV=601.13 12" RCP SW
BOTTOM=601.13

CI 22983
RIM=603.99
INV=600.59 12" RCP NE
INV=600.59 12" RCP SE

SSMH 22988
RIM=604.25
INV=600.85 12" VCP N
INV=598.85 6" VCP NE
INV=597.90 12" VCP NE
INV=598.75 6" VCP SW
INV=597.90 12" VCP NW

STMH 22989
RIM=604.66
INV=600.76 12" RCP NE
INV=600.16 12" RCP E
INV=600.15 15" RCP NW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - PLAN & PROFILE 4+00 TO 8+00

DRAWING NO.
V2

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_Ph2\Drawings\Civil\J20221302.000_C V2 - VALLEYVIEW P&P.dwg
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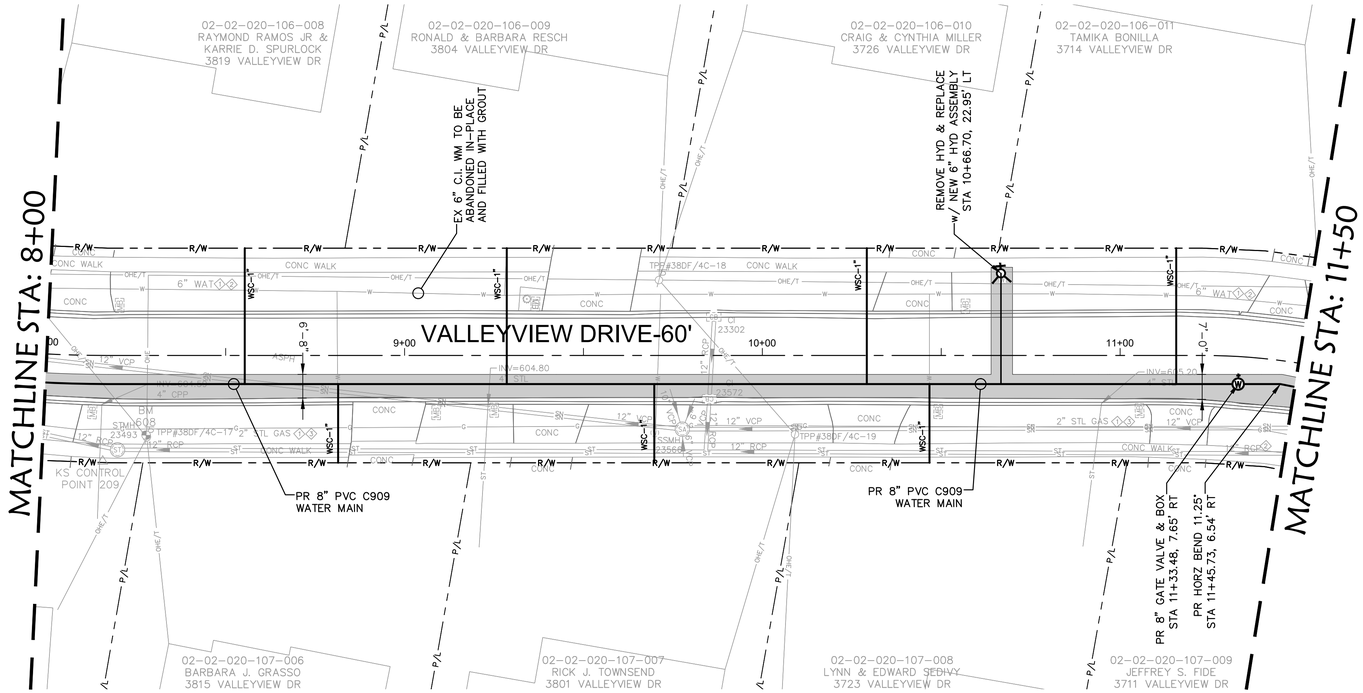
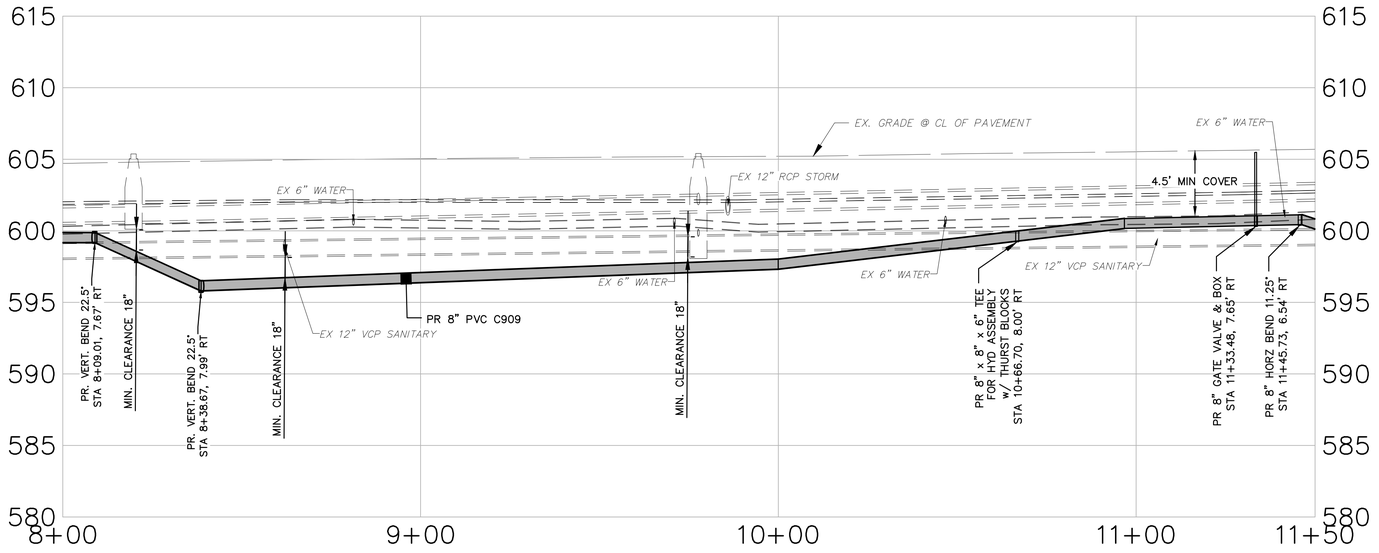


VALLEYVIEW DRIVE

SCALE: 1" = 20'



VALLEYVIEW DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

CI 23302
RIM=604.57
INV=601.27 12" RCP S
BOTTOM=601.27

STMH 23493
RIM=605.37
INV=600.67 12" RCP W
INV=600.66 12" RCP NE

SSMH 23566
RIM=605.41
INV=601.81 10" VCP NW
INV=599.61 6" VCP NE
INV=598.62 12" VCP NE
INV=599.61 6" VCP SE
INV=598.61 12" VCP SW

CI 23572
RIM=604.73
INV=601.23 12" RCP N
INV=601.13 12" RCP S
BOTTOM=601.13

GENERAL NOTES:

1. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - PLAN & PROFILE 8+00 TO 11+50

DRAWING NO.
V3

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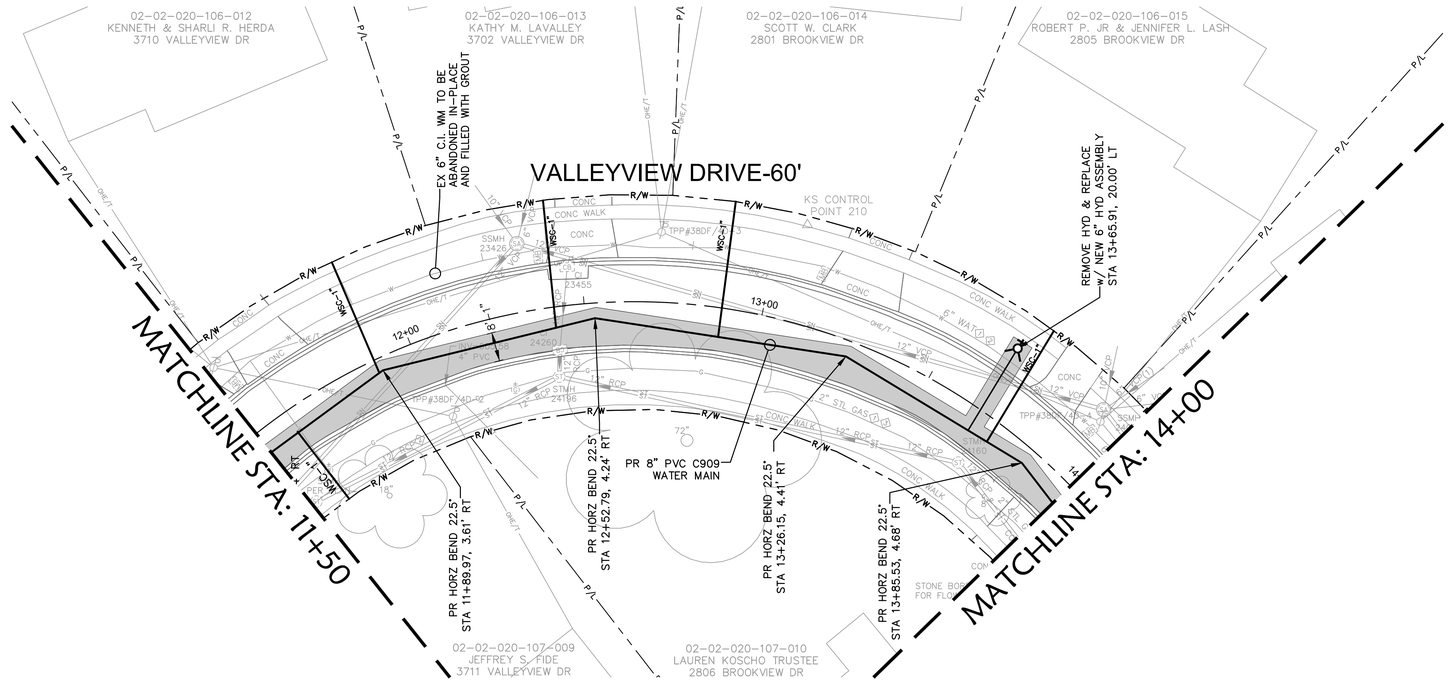
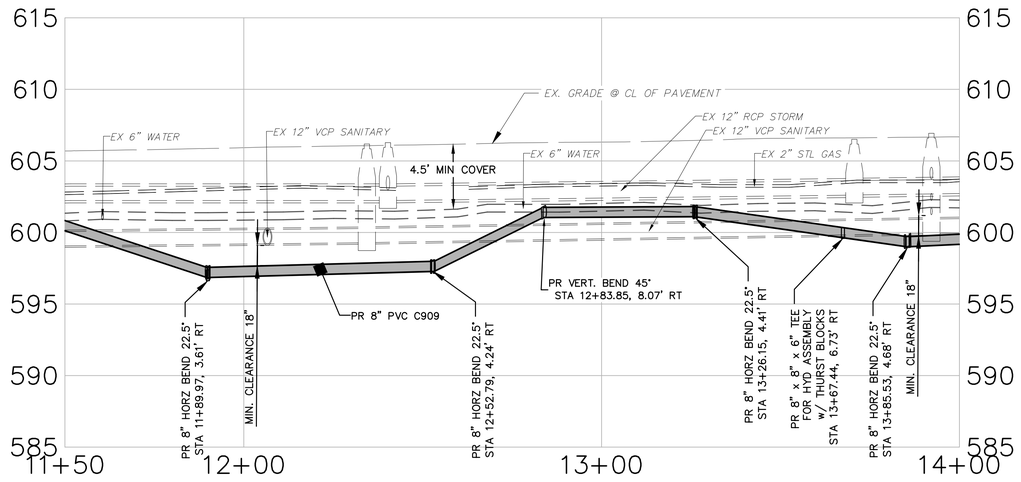


VALLEYVIEW DRIVE

SCALE: 1" = 20'



VALLEYVIEW DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 23426
RIM=606.18
INV=602.18 10" VCP N
INV=600.46 6" VCP NE
INV=599.29 12" VCP SE
INV=599.28 12" VCP SW

CI 23455
RIM=605.52
INV=602.27 10" RCP SW

SSMH 24035
RIM=606.93
INV=599.93 12" VCP NW
INV=603.73 10" VCP NE
INV=602.23 6" VCP SE (1)
INV=601.23 6" VCP SE (2)
INV=599.94 12" VCP S

STMH 24160
RIM=606.51
INV=602.61 12" RCP NW
INV=602.62 12" RCP S

STMH 24196
RIM=606.28
INV=602.23 12" RCP NW
INV=602.33 12" RCP NE
INV=602.33 12" RCP SE

CI 24260
RIM=605.45
INV=602.31 10" RCP NE
INV=602.30 12" RCP SW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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(216) 861-2020 www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - PLAN & PROFILE 11+50 TO 14+00

DRAWING NO.

V4

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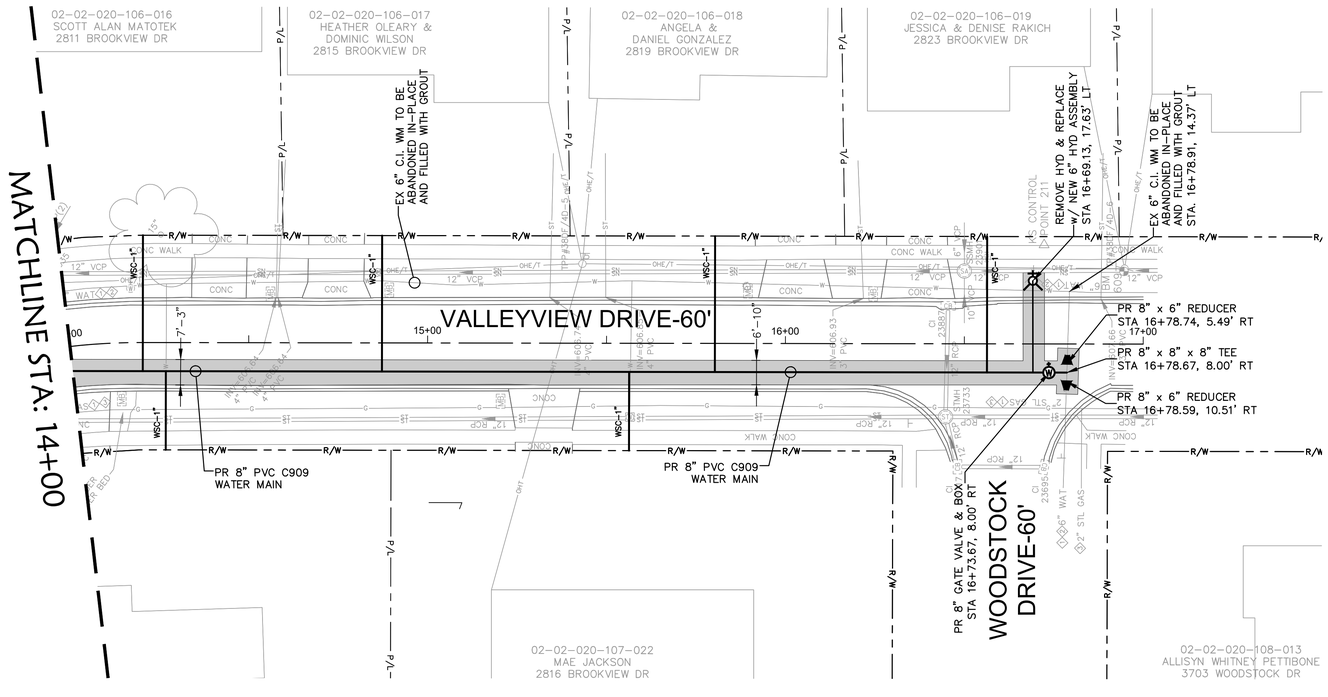
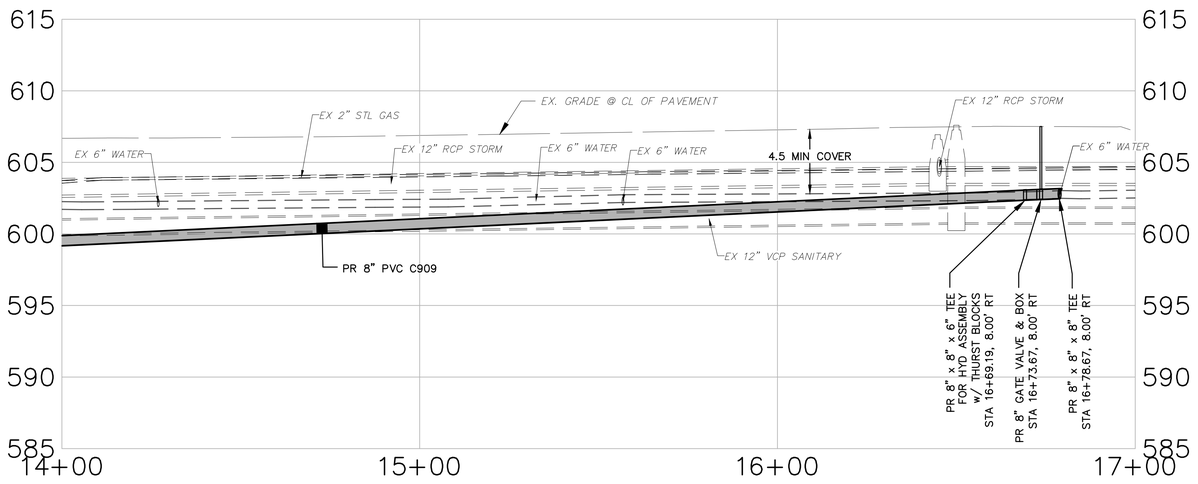


VALLEYVIEW DRIVE

SCALE: 1" = 20'



VALLEYVIEW DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 23426
RIM=606.18
INV=602.18 10" VCP N
INV=600.46 6" VCP NE
INV=599.29 12" VCP SE
INV=599.28 12" VCP SW

CI 23455
RIM=605.52
INV=602.27 10" RCP SW

SSMH 24035
RIM=606.93
INV=599.93 12" VCP NW
INV=603.73 10" VCP NE
INV=602.23 6" VCP SE (1)
INV=601.23 6" VCP SE (2)
INV=599.94 12" VCP S

STMH 24160
RIM=606.51
INV=602.61 12" RCP NW
INV=602.62 12" RCP S

STMH 24196
RIM=606.28
INV=602.23 12" RCP NW
INV=602.33 12" RCP NE
INV=602.33 12" RCP SE

CI 24260
RIM=605.45
INV=602.31 10" RCP NE
INV=602.30 12" RCP SW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020
www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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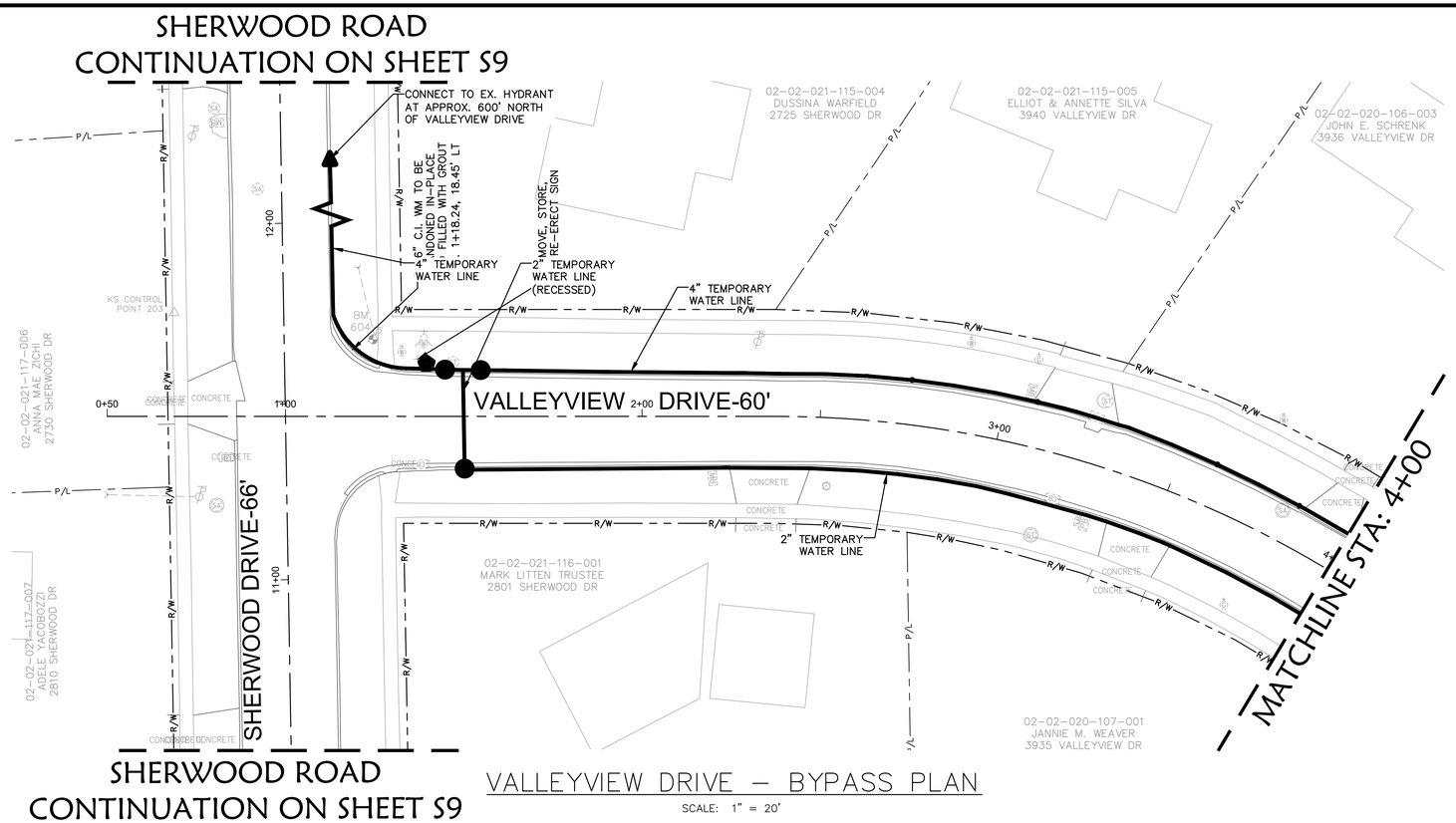
DRAWN BY	SUP
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - PLAN & PROFILE 14+00 TO 17+00

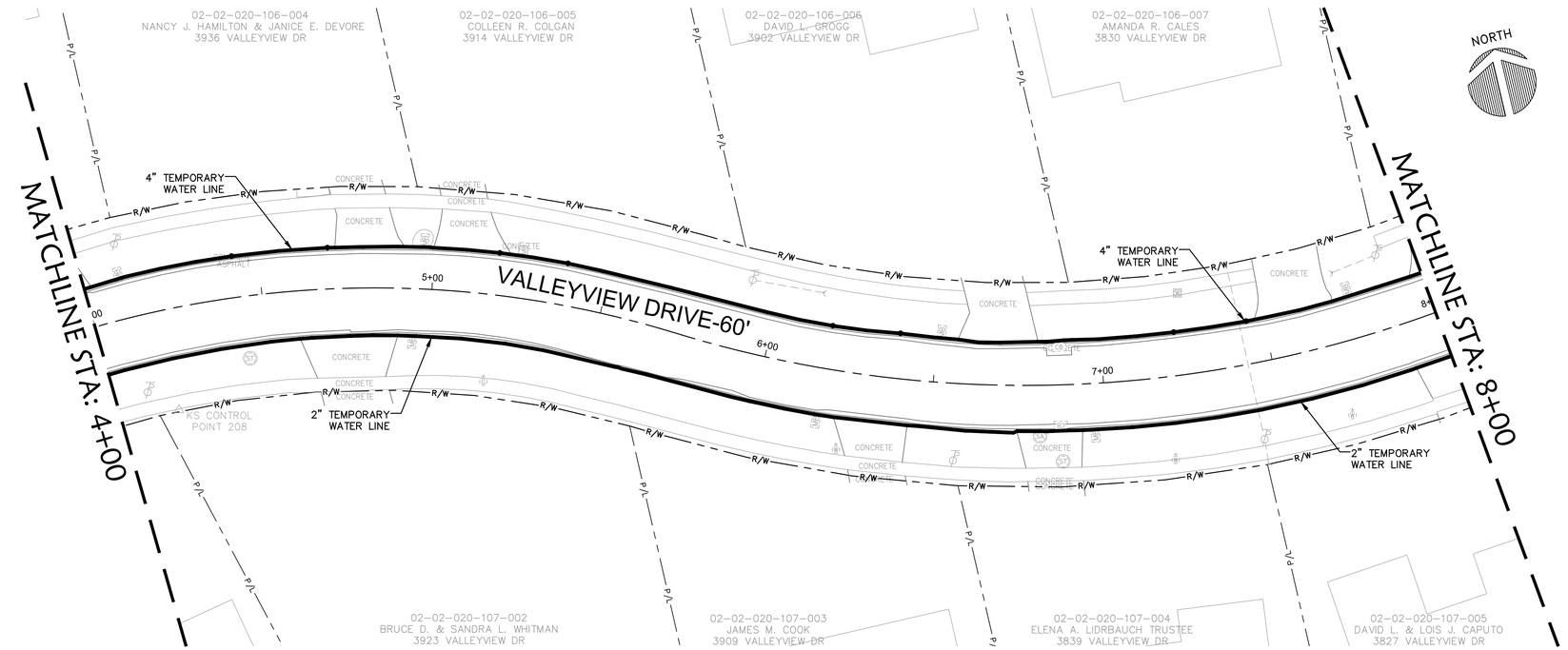
DRAWING NO.
V5

P:\Lorain - City Of\J20221302.000_Water_Main_Repl_Ph2\Drawings\Civil\J20221302.000_C V5 - VALLEYVIEW P&P.dwg
3/7/2025 6:15 PM Duffy, Alex



VALLEYVIEW DRIVE – BYPASS PLAN

SCALE: 1" = 20'



VALLEYVIEW DRIVE – BYPASS PLAN

SCALE: 1" = 20'

GENERAL NOTES:

1. IF THIS ALTERNATE IS APPROVED, THE CONTRACTOR SHALL REPLACE THE EXISTING WATER MAIN AS SPECIFIED IN THESE DOCUMENTS, IN THE SAME LOCATION AS THE EXISTING WATER MAIN. THE CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO THE RESTORATION LIMITS AND MOT AS APPLICABLE.
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY WATER SERVICE IN ACCORDANCE WITH LWD REQUIREMENTS. THE CONTRACTOR SHALL USE THIS SCHEMATIC PLAN AS A GUIDE AND WILL BE PERMITTED TO ADJUST OR MODIFY AS APPROVED BY THE ENGINEER.
3. THE CONTRACTOR SHALL ADJUST OR MODIFY THIS PLAN AS DIRECTED BY THE ENGINEER, CITY, OR FIRE DEPARTMENT AS REQUESTED TO PROVIDE ADEQUATE WATER AND FIRE SERVICE WITHIN THE PROJECT LIMITS AT NO ADDITIONAL COST TO THE CITY.
4. THE CONTRACTOR SHALL INSTALL TEMPORARY HYDRANTS PER THE LWD DETAILS AT OR NEAR THE EXISTING HYDRANTS ALONG VALLEYVIEW DRIVE OR AS DIRECTED BY THE ENGINEER OR CITY.
5. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE CONNECTIONS TO ALL RESIDENCES UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
6. THE CONTRACTOR MAY BE REQUIRED TO INCREASE PIPING SIZE OR ADD ADDITIONAL CROSSINGS TO MAINTAIN THE REQUIRED FLOW AND PRESSURE TO THE SYSTEM AT NO ADDITIONAL COST TO THE CITY OR PROJECT.

LEGEND

- TEMPORARY HYDRANT
- FEED HYDRANT
- TEMPORARY VALVE (2"/4")
- BYPASS PIPE (2"/4")

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64062
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ADD ALTERNATE BYPASS PLAN

DRAWING NO.

V6

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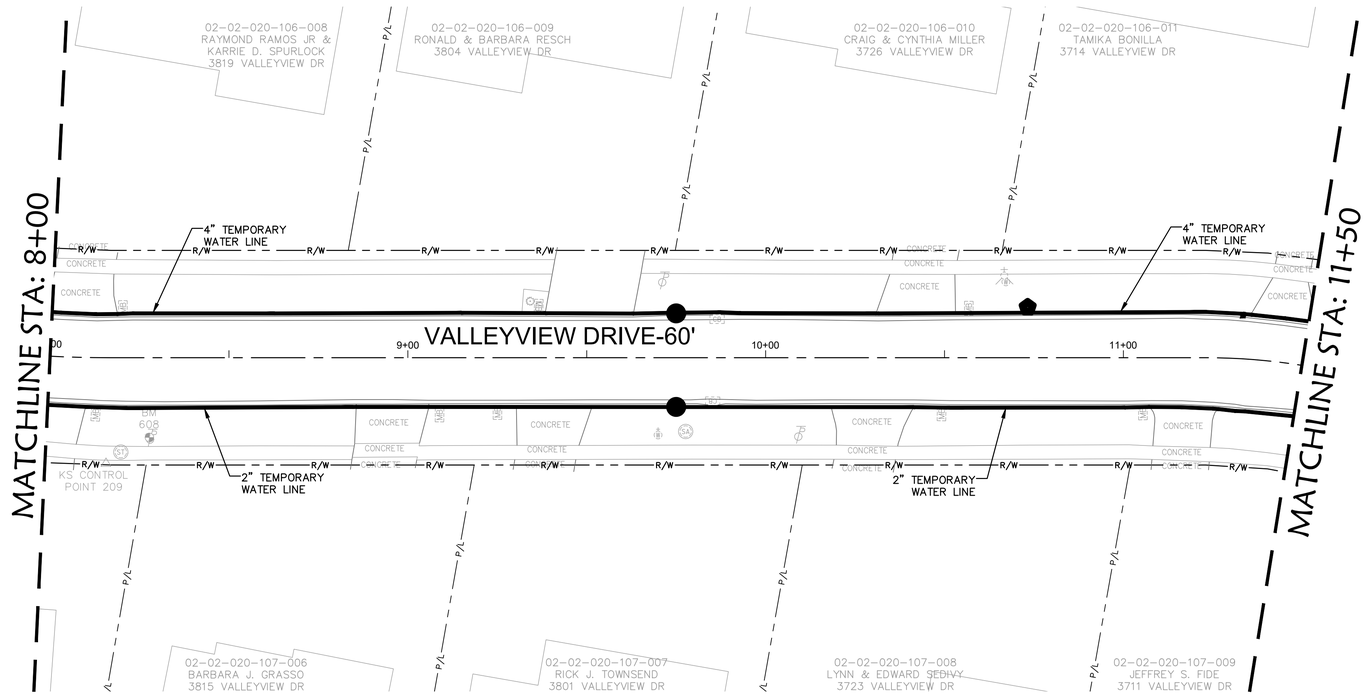
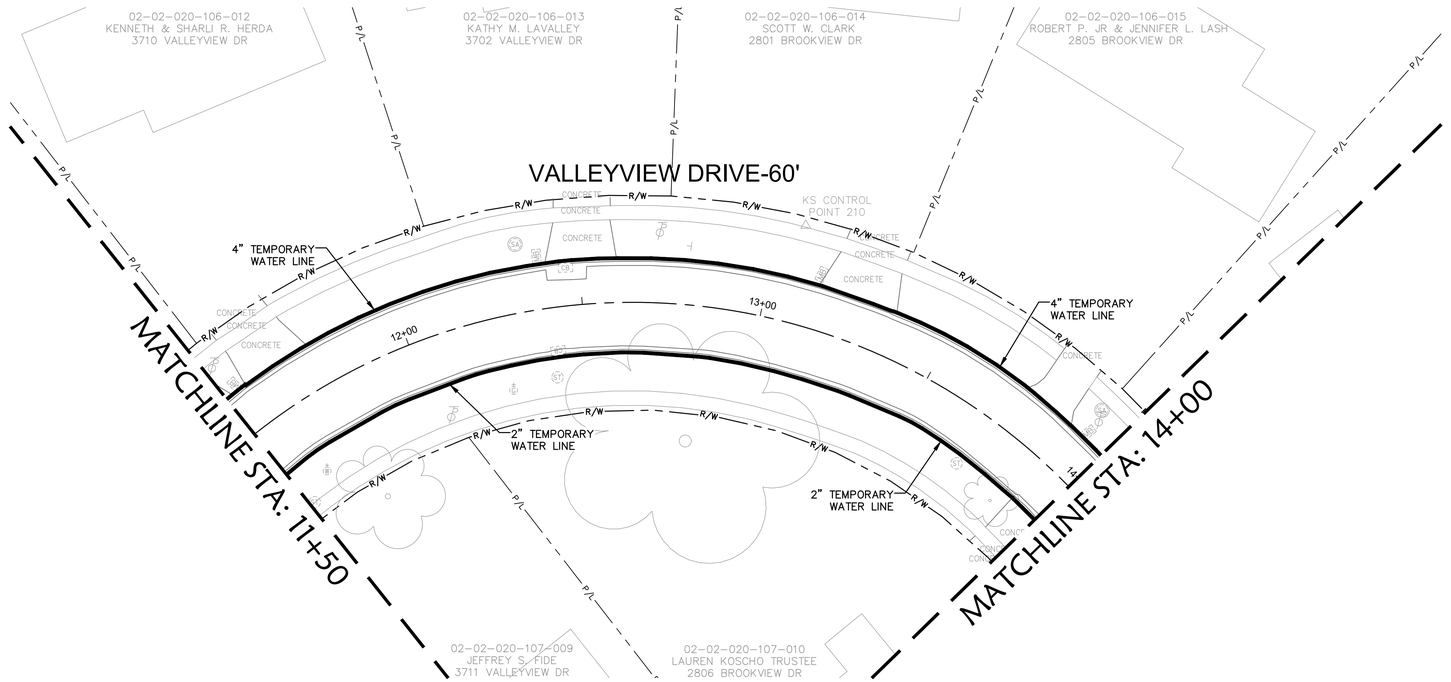
3/7/2025 5:11 PM Pawar, Sayali



VALLEYVIEW DRIVE – BYPASS PLAN

SCALE: 1" = 20'



VALLEYVIEW DRIVE – BYPASS PLAN

SCALE: 1" = 20'

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

GENERAL NOTES:

1. IF THIS ALTERNATE IS APPROVED, THE CONTRACTOR SHALL REPLACE THE EXISTING WATER MAIN AS SPECIFIED IN THESE DOCUMENTS, IN THE SAME LOCATION AS THE EXISTING WATER MAIN. THE CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO THE RESTORATION LIMITS AND MOT AS APPLICABLE.
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LEGEND

- TEMPORARY HYDRANT
- FEED HYDRANT
- TEMPORARY VALVE (2"/4")
- BYPASS PIPE (2"/4")

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
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03/06/2025

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OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ADD ALTERNATE BYPASS PLAN

DRAWING NO.

V7

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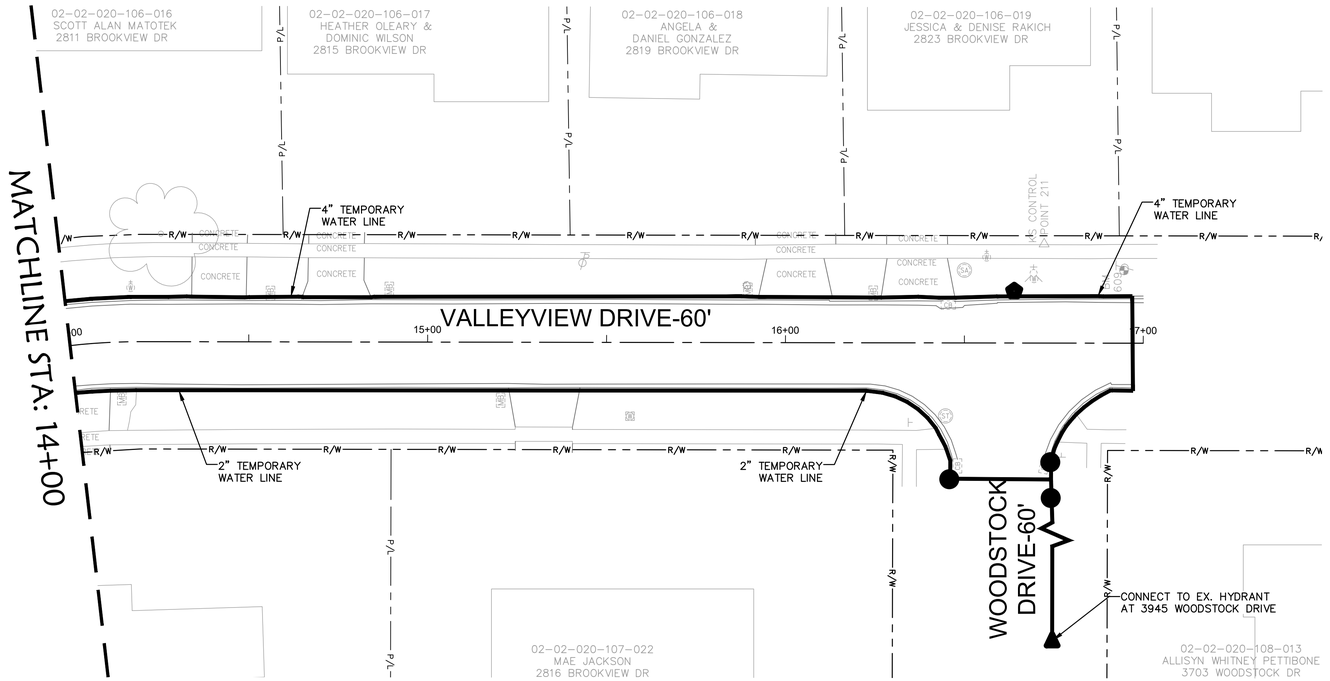

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

VALLEYVIEW DRIVE – BYPASS PLAN

SCALE: 1" = 20'

GENERAL NOTES:

1. IF THIS ALTERNATE IS APPROVED, THE CONTRACTOR SHALL REPLACE THE EXISTING WATER MAIN AS SPECIFIED IN THESE DOCUMENTS, IN THE SAME LOCATION AS THE EXISTING WATER MAIN. THE CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS TO THE RESTORATION LIMITS AND MOT AS APPLICABLE.
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LEGEND

- TEMPORARY HYDRANT
- FEED HYDRANT
- TEMPORARY VALVE (2"/4")
- BYPASS PIPE (2"/4")

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ADD ALTERNATE BYPASS PLAN

DRAWING NO.

V8

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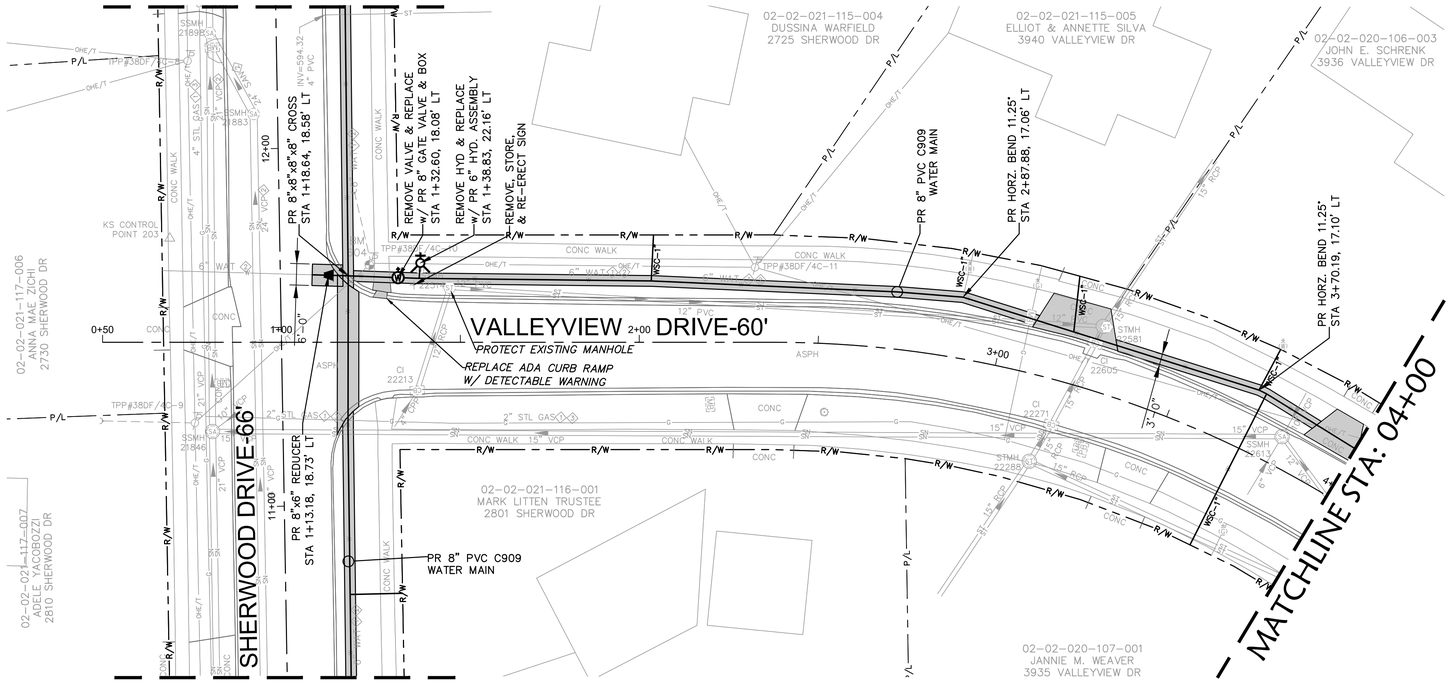
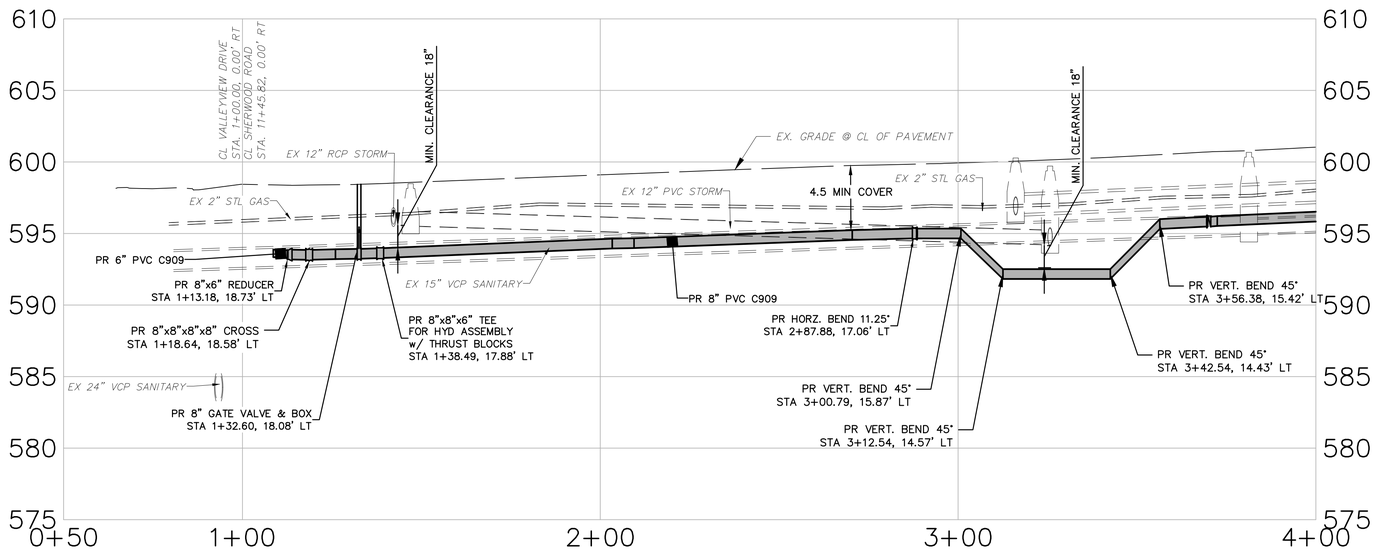


VALLEYVIEW DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'



VALLEYVIEW DRIVE ALTERNATE PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 21846
RIM=598.88
INV=591.68 21" VCP NW
INV=594.88 10" VCP NE
INV=592.48 15" VCP NE
INV=591.78 21" VCP SE

SSMH 21883
RIM=595.81
COULD NOT OPEN

SSMH 21898
RIM=594.64
COULD NOT OPEN

CI 22213
RIM=597.92
INV=596.07 12" RCP NW
INV=596.92 4" CPP S
BOTTOM=595.82

CI 22271
RIM=599.50
INV=595.75 15" RCP N
INV=595.75 15" RCP S

STMH 22288
RIM=600.28
INV=596.28 15" RCP N
INV=596.38 15" RCP NE
INV=596.33 15" RCP SW

STMH 22514
RIM=598.48
INV=595.53 12" PVC NE
INV=595.68 12" RCP SE

STMH 22581
RIM=599.72
INV=594.12 15" RCP N
INV=594.17 15" RCP S
INV=594.22 12" PVC SW

STMH 22605
RIM=599.77
INV=594.47 15" RCP N
INV=594.77 15" RCP S

SSMH 22613
RIM=600.67
INV=596.27 10" VCP N
INV=594.97 12" VCP SE
INV=595.47 6" VCP S
INV=594.96 15" VCP SW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR SHERWOOD DRIVE IS VARYING FROM SHEET 3.5" TO 4.25" ASPHALT PAVEMENT OVER 8.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
3. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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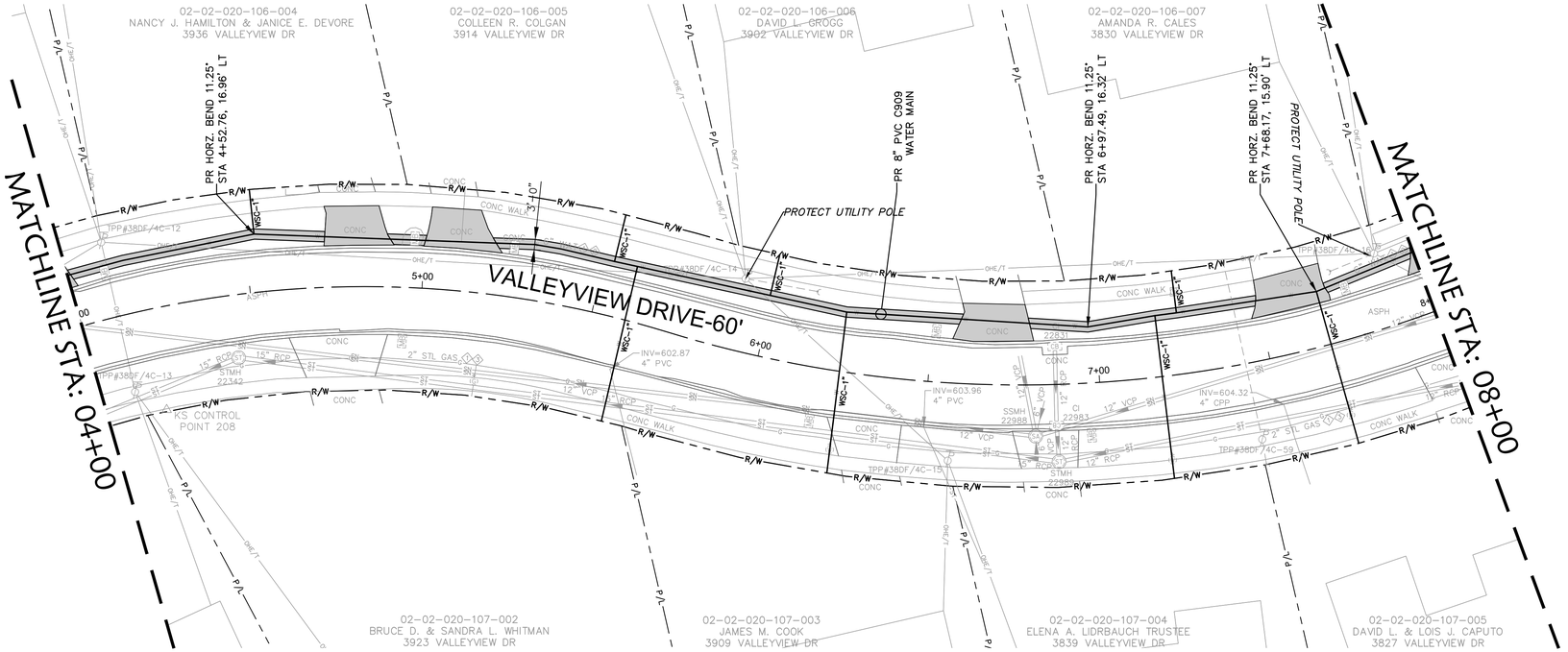
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ALT PLAN & PROFILE 0+50 TO 4+00

DRAWING NO.

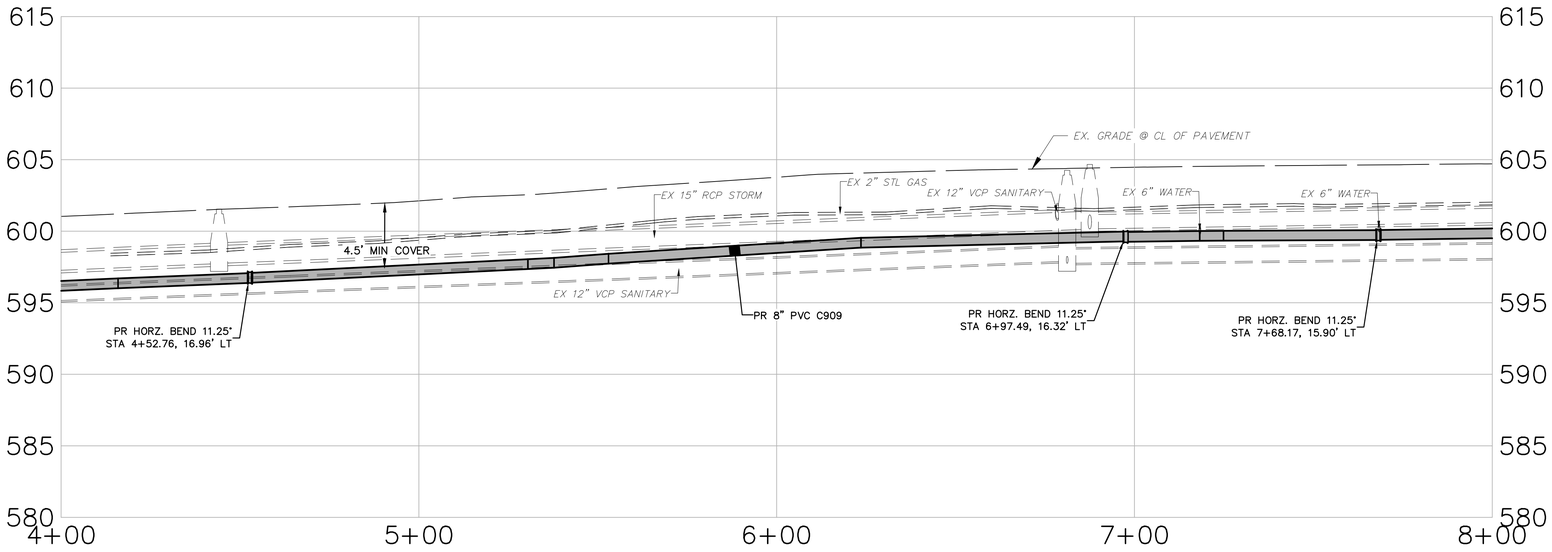
V9

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C V9 - VALLEYVIEW ALT P&P.dwg
3/7/2025 6:21 PM Pawar, Sayali



VALLEYVIEW DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'



VALLEYVIEW DRIVE ALT. PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

STMH 22342
RIM=601.55
INV=597.75 15" RCP SE
INV=597.74 15" RCP SW

CI 22831
RIM=604.03
INV=601.13 12" RCP SW
BOTTOM=601.13

CI 22983
RIM=603.99
INV=600.59 12" RCP NE
INV=600.59 12" RCP SE

SSMH 22988
RIM=604.25
INV=600.85 12" VCP N
INV=598.85 6" VCP NE
INV=597.90 12" VCP NE
INV=598.75 6" VCP SW
INV=597.90 12" VCP NW

STMH 22989
RIM=604.66
INV=600.76 12" RCP NE
INV=600.16 12" RCP E
INV=600.15 15" RCP NW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-84062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ALT PLAN & PROFILE 4+00 TO 8+00

DRAWING NO.

V10

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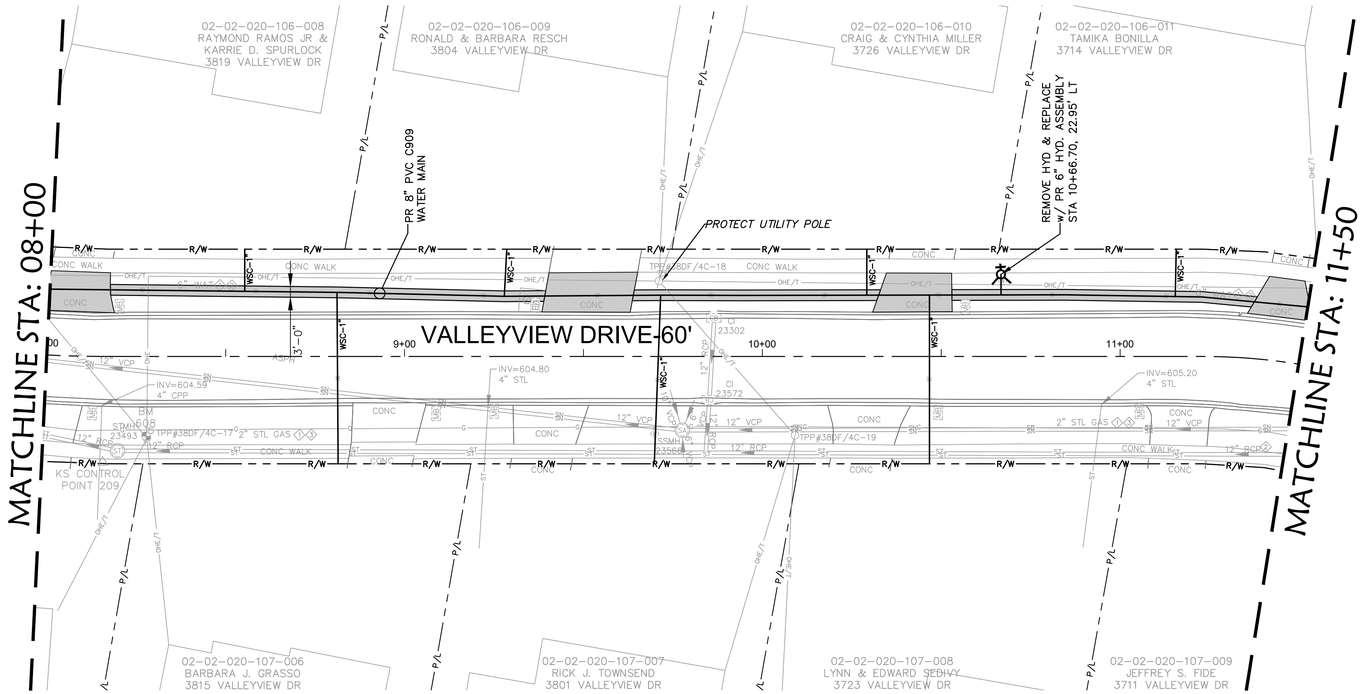
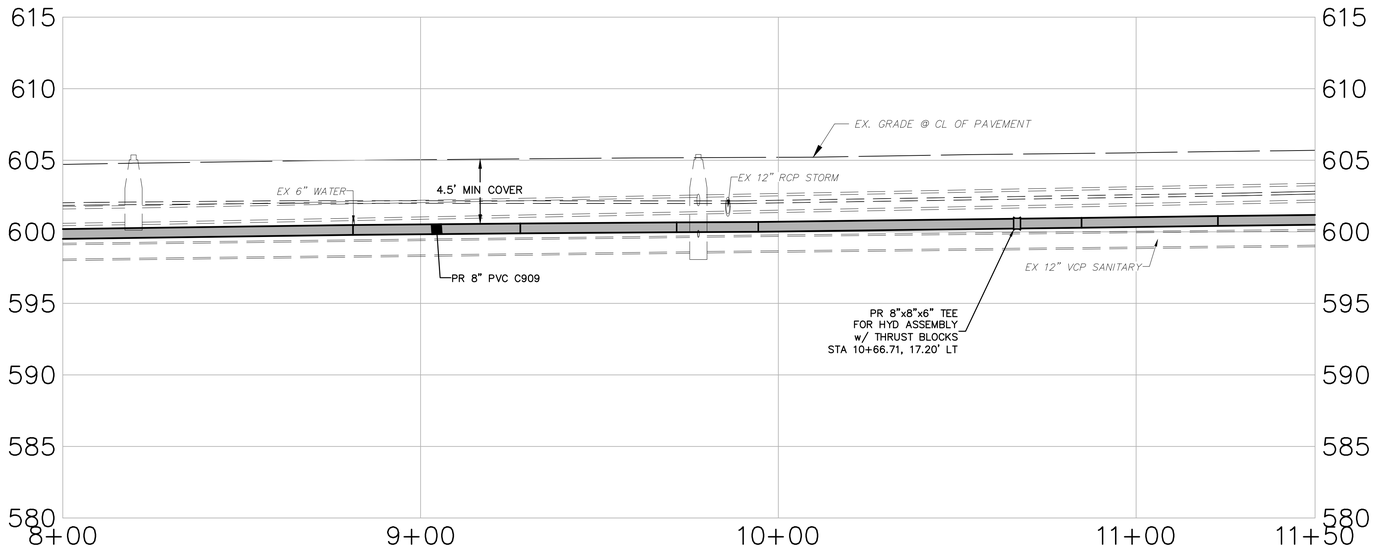
3/7/2025 6:15 PM Pawar, Sayali



VALLEYVIEW DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'



VALLEYVIEW DRIVE ALT. PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

CI 23302
RIM=604.57
INV=601.27 12" RCP S
BOTTOM=601.27

STMH 23493
RIM=605.37
INV=600.67 12" RCP W
INV=600.66 12" RCP NE

SSMH 23566
RIM=605.41
INV=601.81 10" VCP NW
INV=599.61 6" VCP NE
INV=598.62 12" VCP NE
INV=599.61 6" VCP SE
INV=598.61 12" VCP SW

CI 23572
RIM=604.73
INV=601.23 12" RCP N
INV=601.13 12" RCP S
BOTTOM=601.13

GENERAL NOTES:

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LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
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- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

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SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

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(440) 204-2003

STATE OF OHIO
KEVIN D. CORN
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REGISTERED PROFESSIONAL ENGINEER
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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ALT PLAN & PROFILE 8+00 TO 11+50

DRAWING NO.

V11

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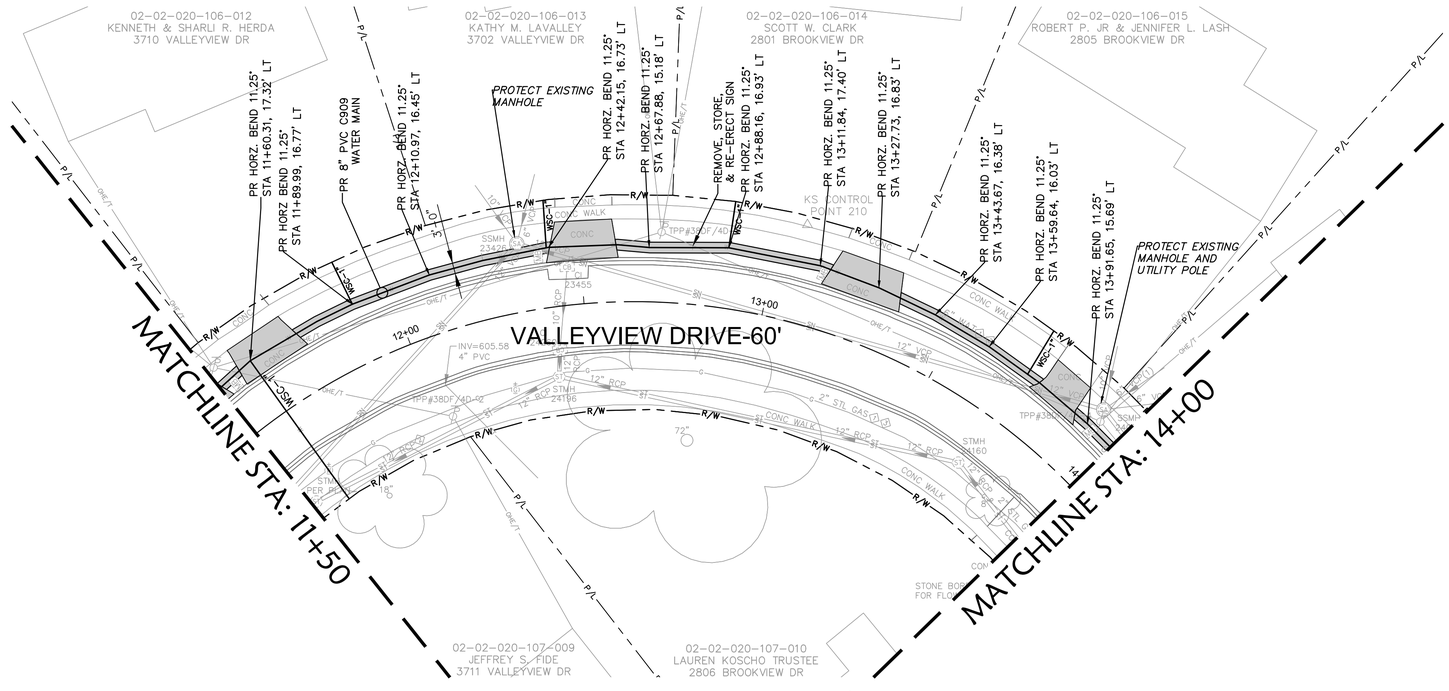
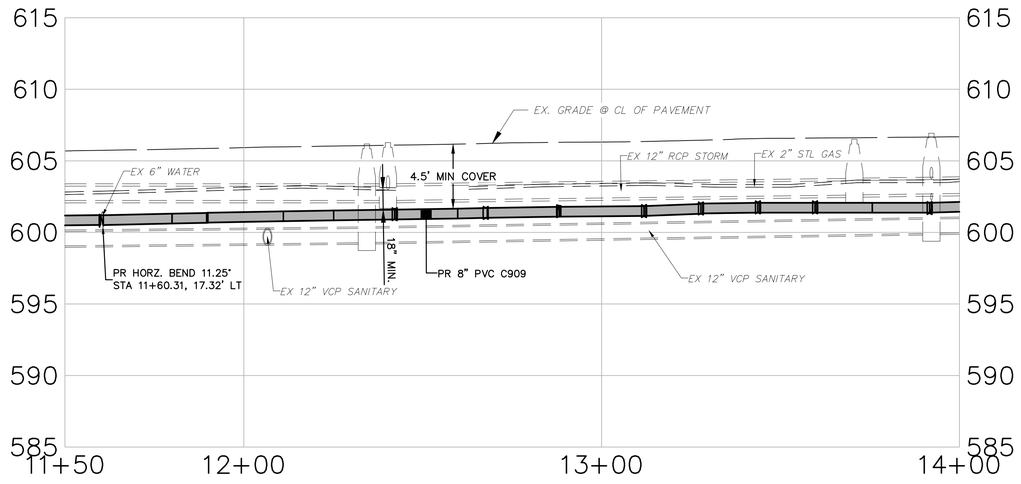
3/7/2025 5:14 PM Pawar, Sayali



VALLEYVIEW DRIVE—ALTERNATE W/ BYPASS

SCALE: 1" = 20'



VALLEYVIEW DRIVE ALT. PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 23426
RIM=606.18
INV=602.18 10" VCP N
INV=600.46 6" VCP NE
INV=599.29 12" VCP SE
INV=599.28 12" VCP SW

CI 23455
RIM=605.52
INV=602.27 10" RCP SW

SSMH 24035
RIM=606.93
INV=599.93 12" VCP NW
INV=603.73 10" VCP NE
INV=602.23 6" VCP SE (1)
INV=601.23 6" VCP SE (2)
INV=599.94 12" VCP S

STMH 24160
RIM=606.51
INV=602.61 12" RCP NW
INV=602.62 12" RCP S

STMH 24196
RIM=606.28
INV=602.23 12" RCP NW
INV=602.33 12" RCP NE
INV=602.33 12" RCP SE

CI 24260
RIM=605.45
INV=602.31 10" RCP NE
INV=602.30 12" RCP SW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COON
E-84060
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ALT PLAN & PROFILE 11+50 TO 14+00

DRAWING NO.

V12

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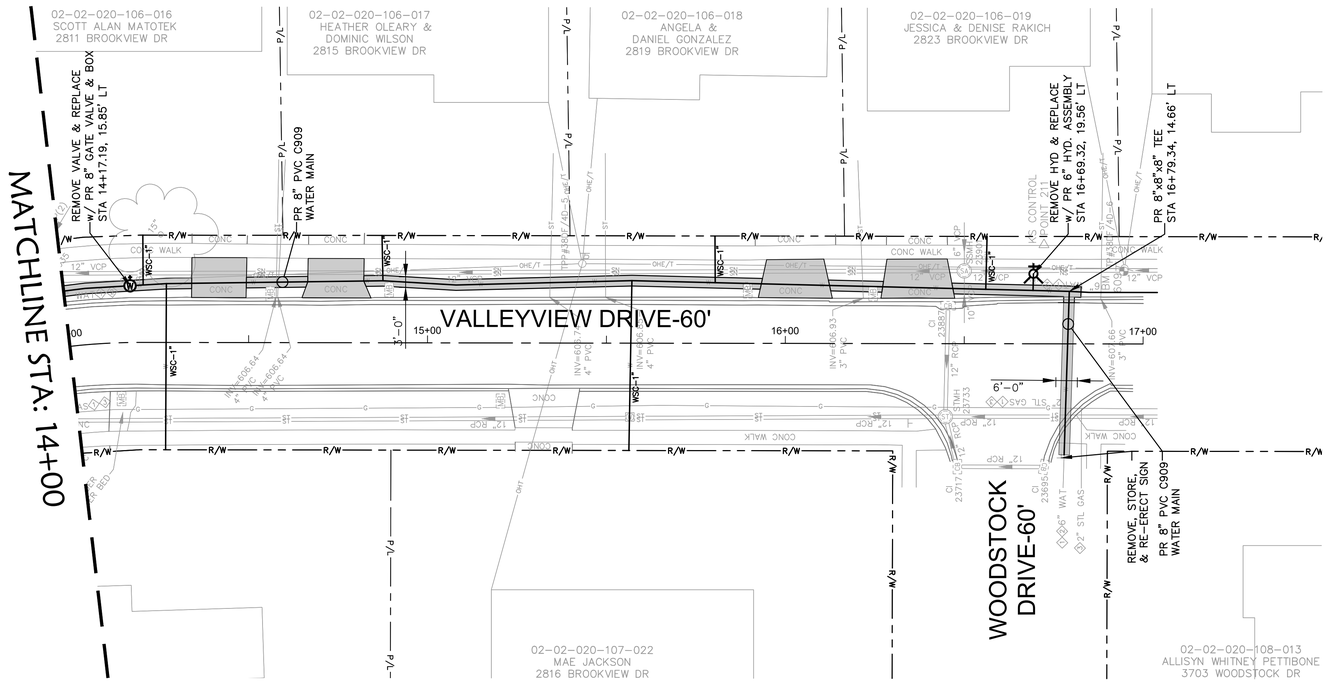
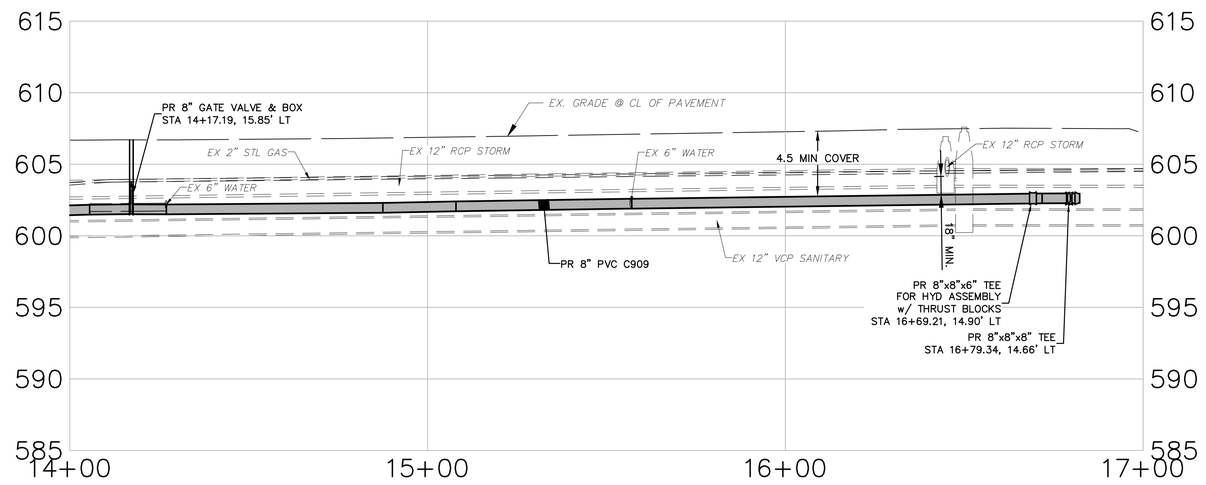
3/7/2025 5:15 PM Pawar, Sayali



VALLEYVIEW DRIVE–ALTERNATE W/ BYPASS

SCALE: 1" = 20'



VALLEYVIEW DRIVE ALTERNATE PROFILE W/ BYPASS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 23426
RIM=606.18
INV=602.18 10" VCP N
INV=600.46 6" VCP NE
INV=599.29 12" VCP SE
INV=599.28 12" VCP SW

CI 23455
RIM=605.52
INV=602.27 10" RCP SW

SSMH 24035
RIM=606.93
INV=599.93 12" VCP NW
INV=603.73 10" VCP NE
INV=602.23 6" VCP SE (1)
INV=601.23 6" VCP SE (2)
INV=599.94 12" VCP S

STMH 24160
RIM=606.51
INV=602.61 12" RCP NW
INV=602.62 12" RCP S

STMH 24196
RIM=606.28
INV=602.23 12" RCP NW
INV=602.33 12" RCP NE
INV=602.33 12" RCP SE

CI 24260
RIM=605.45
INV=602.31 10" RCP NE
INV=602.30 12" RCP SW

GENERAL NOTES:

1. EXISTING PAVEMENT FOR VALLEYVIEW DRIVE IS VARYING FROM SHEET 4.5" TO 5" ASPHALT PAVEMENT OVER VARYING 6" TO 7.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO POOR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COBN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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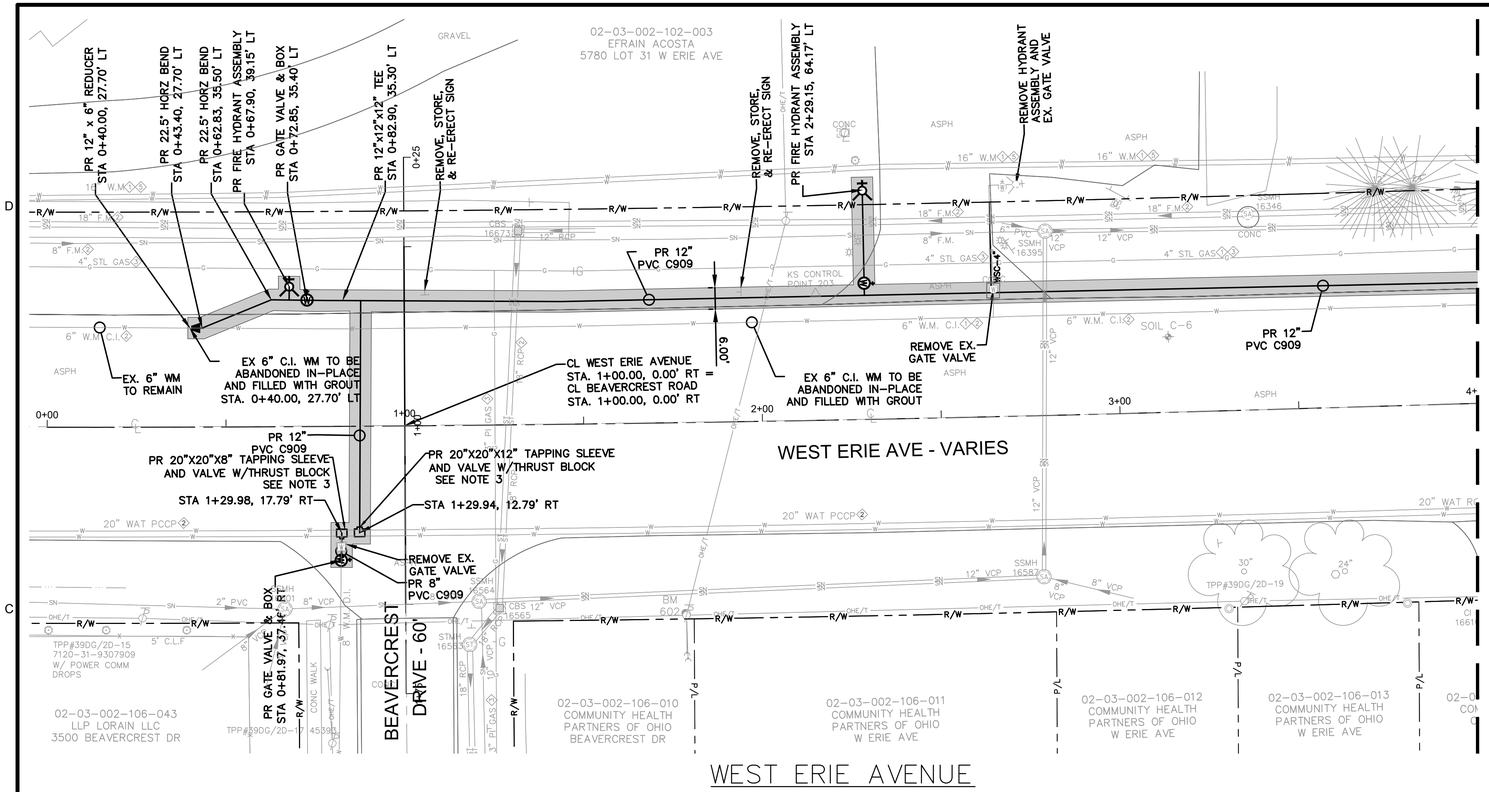
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

VALLEYVIEW - ALT PLAN & PROFILE 14+00 TO 17+00

DRAWING NO.

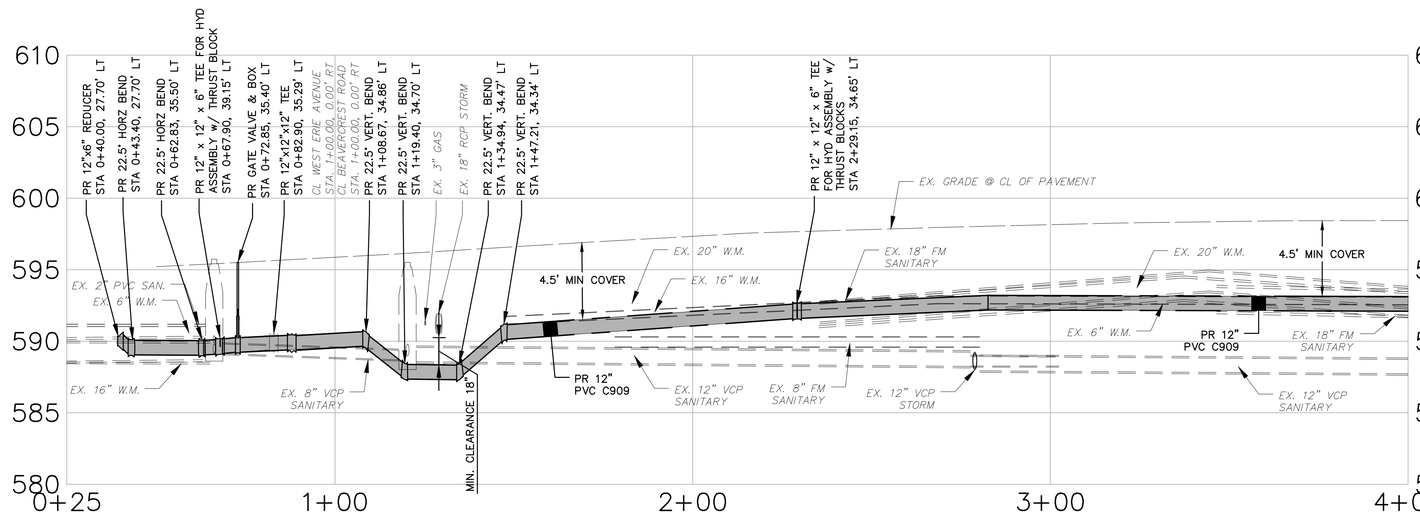
V13

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C V13 - VALLEYVIEW ALT P&P.dwg
3/7/2025 5:15 PM Pawar, Sayali



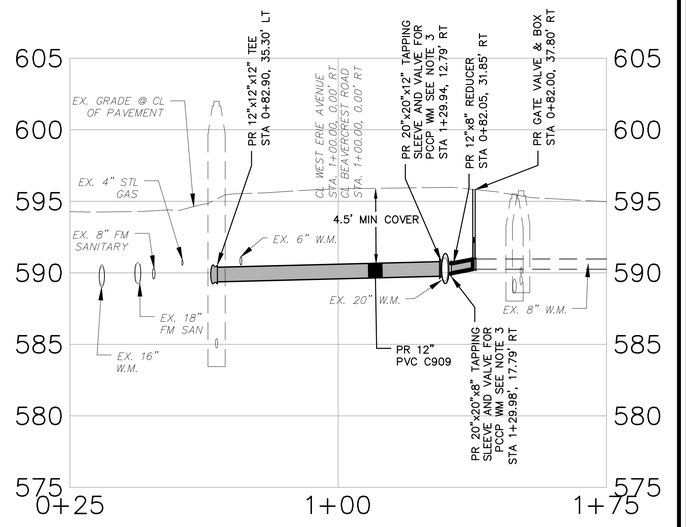
WEST ERIE AVENUE

SCALE: 1" = 20'



WEST ERIE AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'



BEAVERCREST DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 16395
RIM=598.71
INV=588.01 12" VCP SE
INV=589.61 8" VCP SW
TOP OF PIPE=590.91 6" PVC SW
INV=587.93 12" VCP NE

SSMH 16501
RIM=595.74
INV=589.89 6" VCP SE
INV=589.42 8" VCP SW
INV=589.16 8" VCP NE
TOP OF PIPE=591.19 2" PVC SW

STMH 16563
RIM=595.13
INV=590.95 18" RCP NE & SE
BOTTOM=590.95
TOP OF WATER=591.93

SSMH 16564
RIM=595.52
INV=588.57 12" VCP NE
INV=588.68 10" VCP SE
INV=588.97 8" VCP SW

CBS 16565
RIM=594.72
INV=590.97 18" RCP SW & NW
BOTTOM=590.97
TOP OF WATER=591.92

SSMH 16587
RIM=596.42
INV=588.24 12" VCP SW
INV=587.97 12" VCP NW
INV=588.27 8" VCP NE

CBS 16673

GENERAL NOTES

1. EXISTING PAVEMENT FOR WEST ERIE AVENUE IS VARYING FROM SHEET 7" TO 11.5" ASPHALT PAVEMENT OVER 8.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. TAPPING SLEEVE SHALL BE JCM 415, SMITH-BLAIR 625 OR APPROVED EQUAL. FURNISH AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODN 64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

WEST ERIE - PLAN & PROFILE 0+00 TO 4+00

DRAWING NO.

W1

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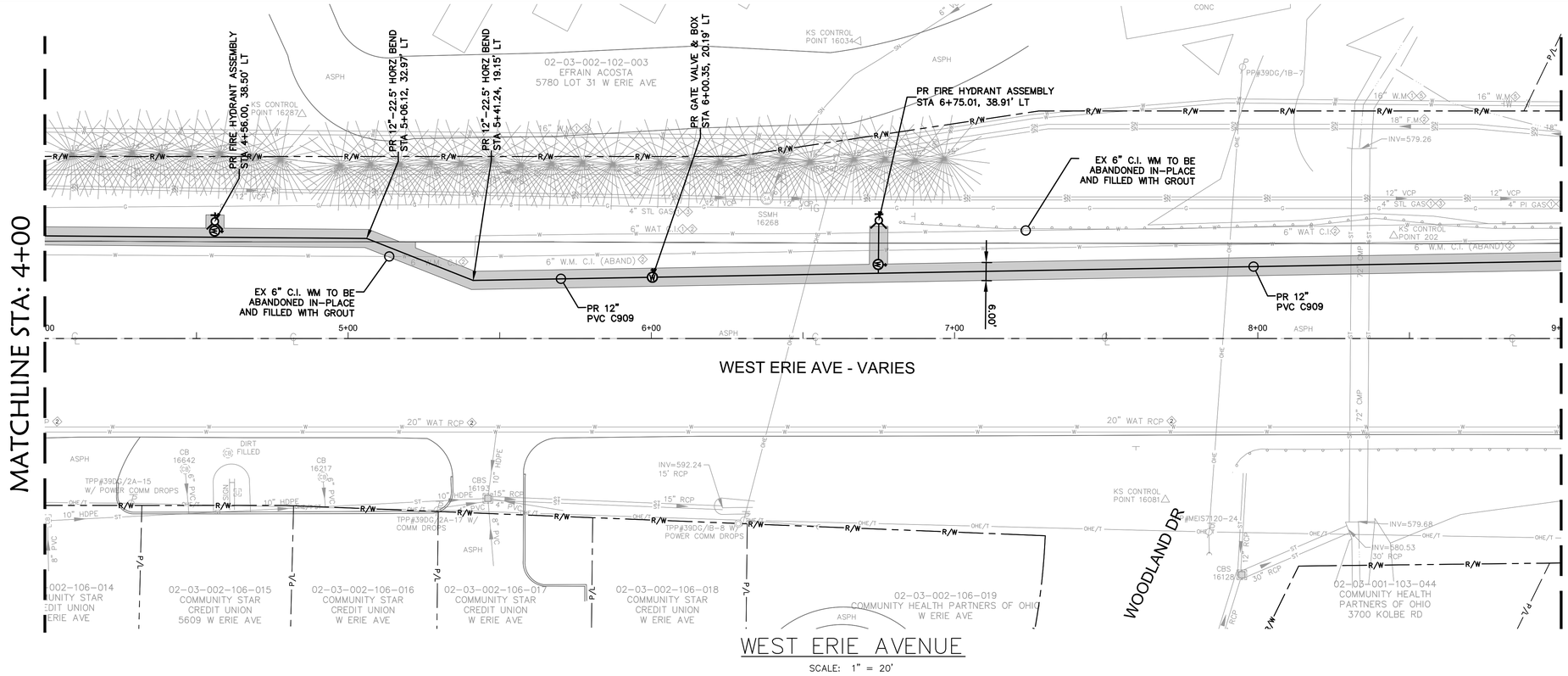

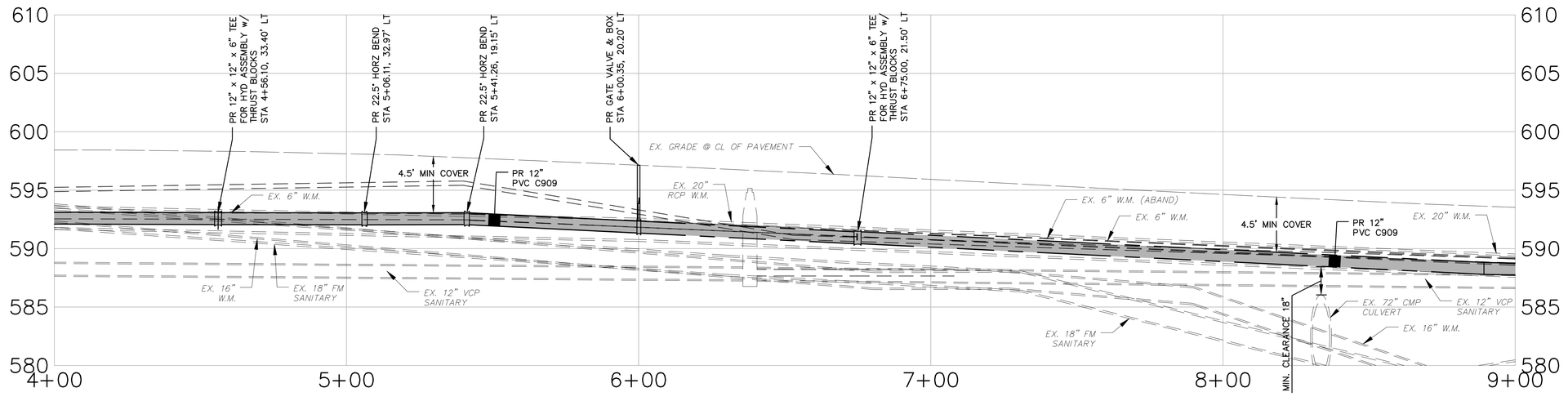

WEST ERIE AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

CBS 16128
RIM=584.24
INV=581.02 24" RCP SE
INV=580.59 30" RCP NE
INV=580.71 12" RCP NW
(RECESSED)

CBS 16193
RIM=596.81
INV=592.70 10" HDPE SW
INV=594.29 4" PVC SW
INV=594.26 4" PVC NW
INV=592.36 15" RCP NE
INV=594.31 4" PVC NE
INV=592.85 8" PVC SE
BOTTOM=591.91
TOP OF WATER=592.81

CB 16217
RIM=596.73
INV=593.73 6" PVC SE

SSMH 16268
RIM=595.16
INV=587.33 12" VCP SW
INV=587.69 6" VCP NE
INV=587.31 12" VCP NE

GENERAL NOTES

1. EXISTING PAVEMENT FOR WEST ERIE AVENUE IS VARYING FROM SHEET 7" TO 11.5" ASPHALT PAVEMENT OVER 8.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO KEVIN D. CODIN 84026 REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

WEST ERIE - PLAN & PROFILE 4+00 TO 9+00

DRAWING NO.

W2

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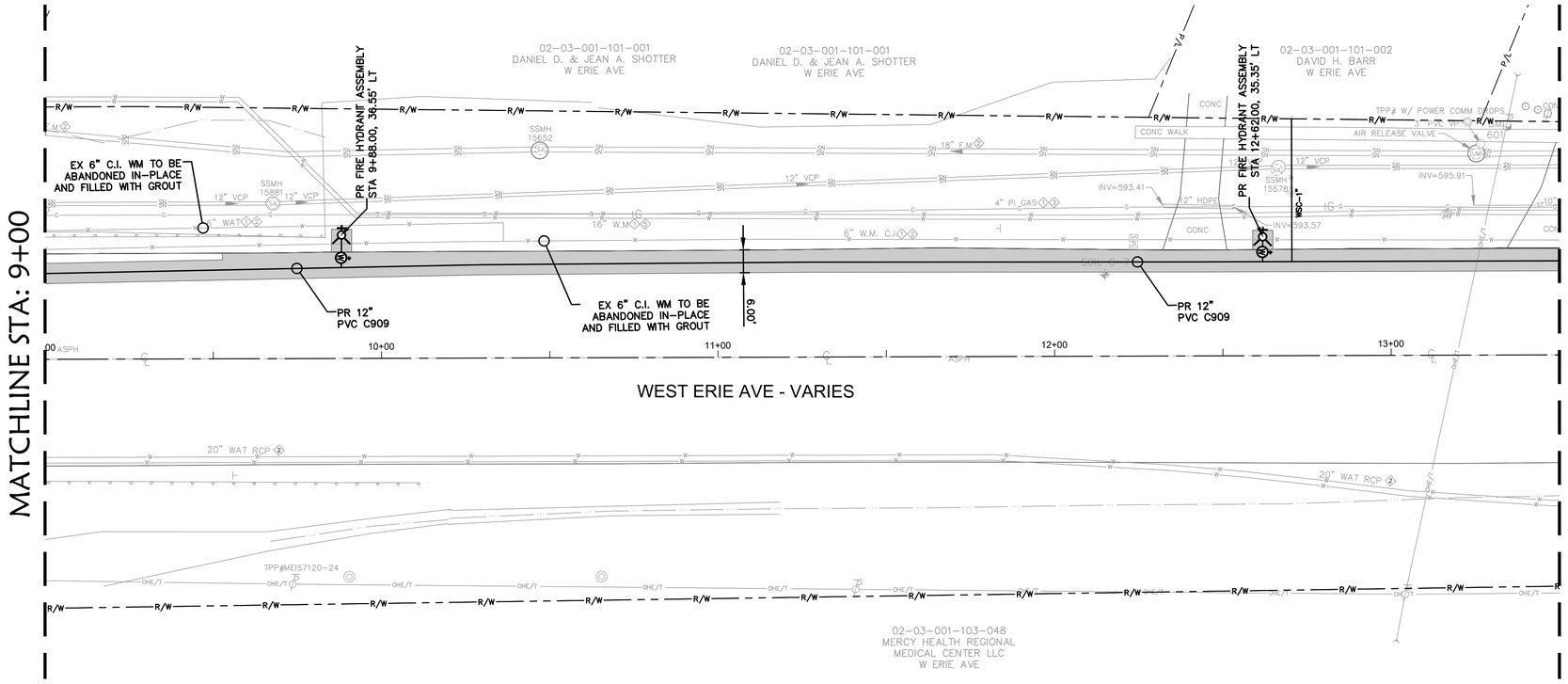
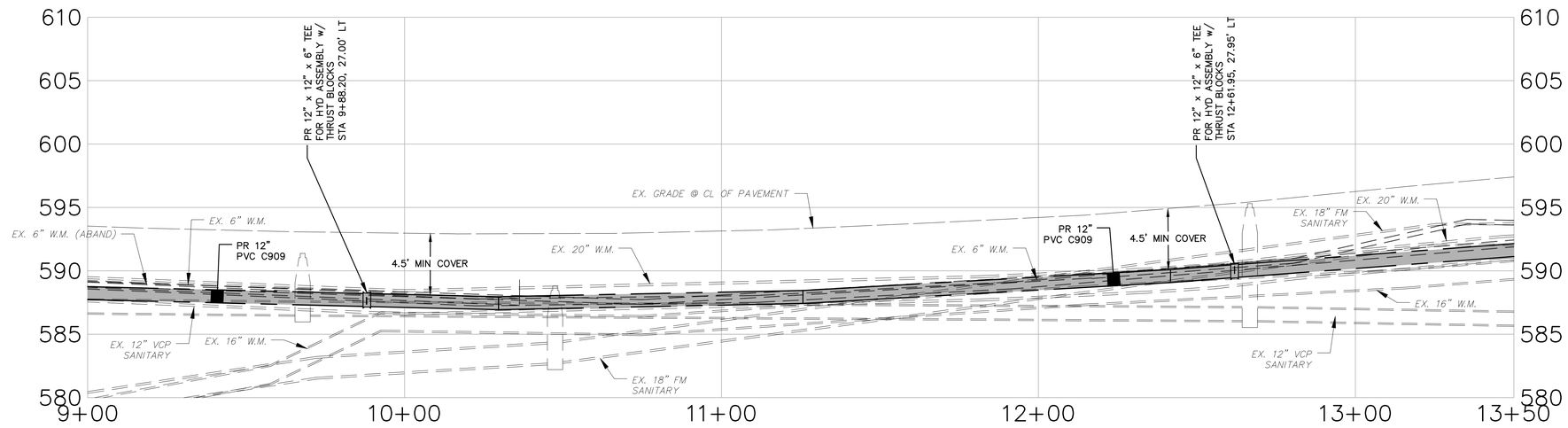


WEST ERIE AVENUE

SCALE: 1" = 20'



WEST ERIE AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 inch = 5 ft.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 15652
RIM=588.80
FULL OF WATER

SSMH 15578
RIM=595.23
INV=586.08 12" VCP SW & NE

SSMH 15881
RIM=591.37
INV=586.52 12" VCP SW & NE

GENERAL NOTES

1. EXISTING PAVEMENT FOR WEST ERIE AVENUE IS VARYING FROM SHEET 7" TO 11.5" ASPHALT PAVEMENT OVER 8.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. IF TRENCH RESTORATION LIMITS ARE LESS THAN 2 FEET FROM EDGE OF PAVEMENT, CONTRACTOR TO RESTORE ROADWAY TO EDGE OF PAVEMENT.

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO KEVIN D. CODY E-64026 REGISTERED PROFESSIONAL ENGINEER

03/06/2025

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A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

WEST ERIE - PLAN & PROFILE 9+00 TO 13+50

DRAWING NO.

W3

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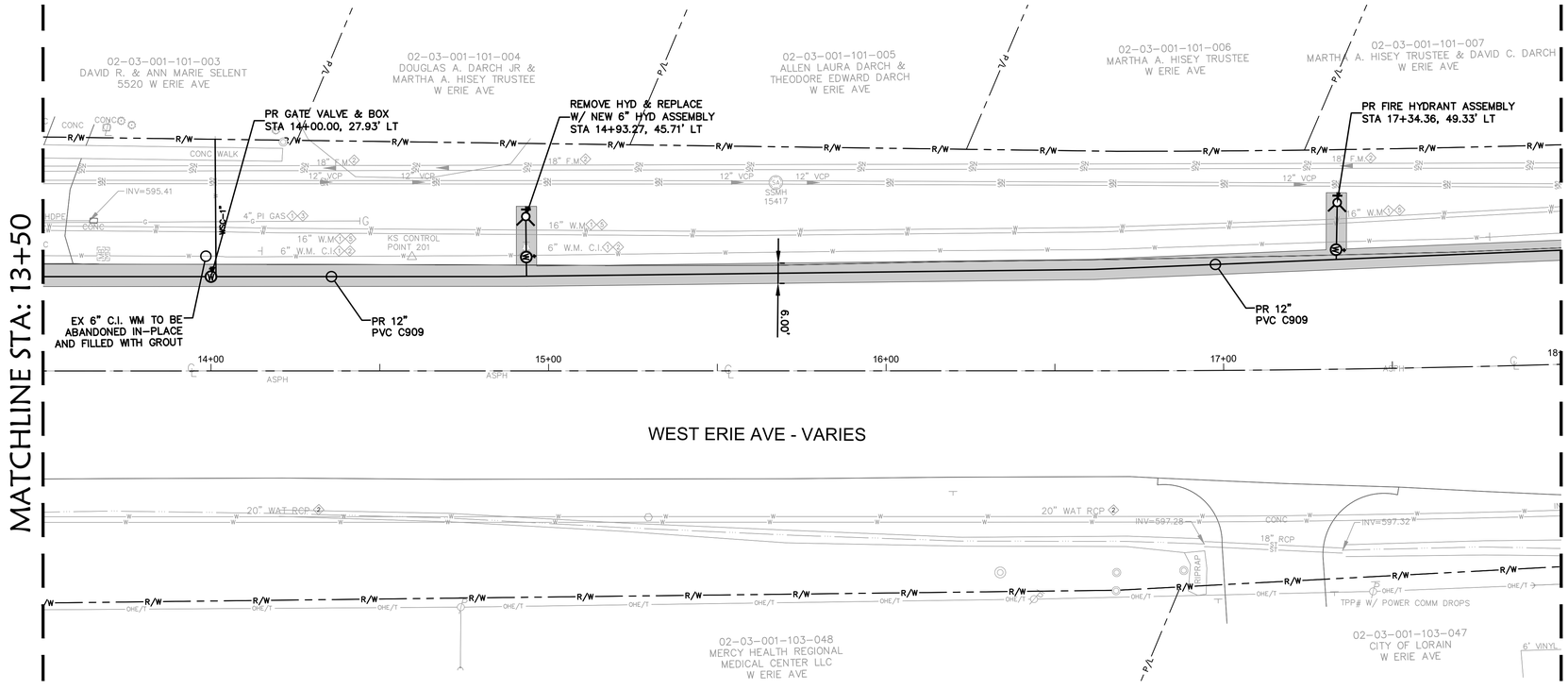
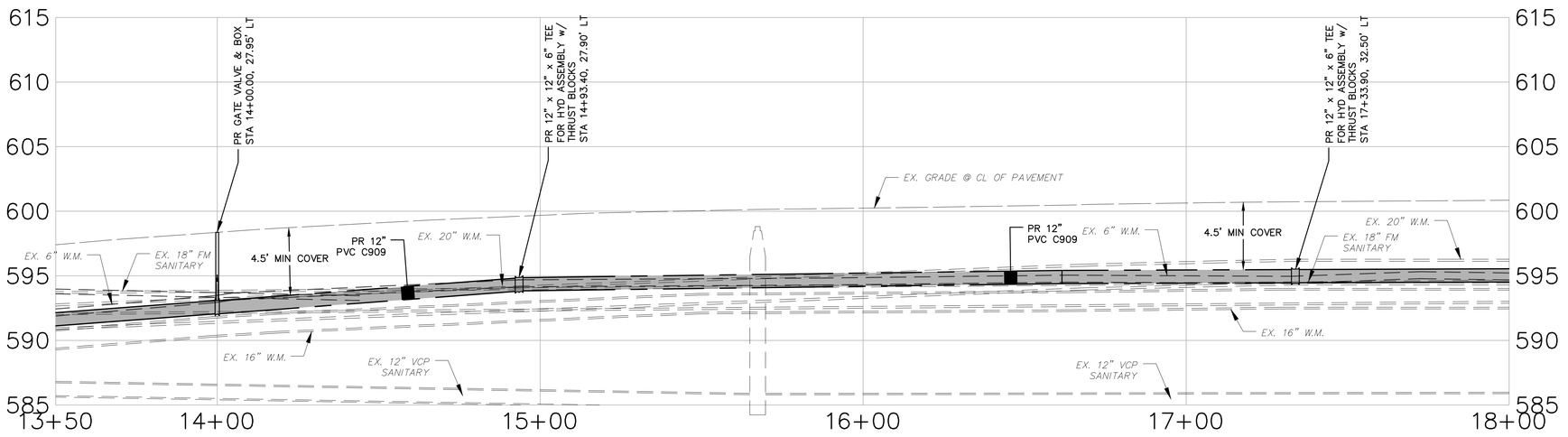
3/7/2025 5:17 PM
Pawar, Sayali



WEST ERIE AVENUE

SCALE: 1" = 20'



WEST ERIE AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 15417
RIM=598.82
INV=585.52 12" VCP SW
INV=585.42 12" VCP NE

GENERAL NOTES

1. EXISTING PAVEMENT FOR WEST ERIE AVENUE IS VARYING FROM SHEET 7" TO 11.5" ASPHALT PAVEMENT OVER 8.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. IF TRENCH RESTORATION LIMITS ARE LESS THAN 2 FEET FROM EDGE OF PAVEMENT, CONTRACTOR TO RESTORE ROADWAY TO EDGE OF PAVEMENT.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

OSBORN ENGINEERING
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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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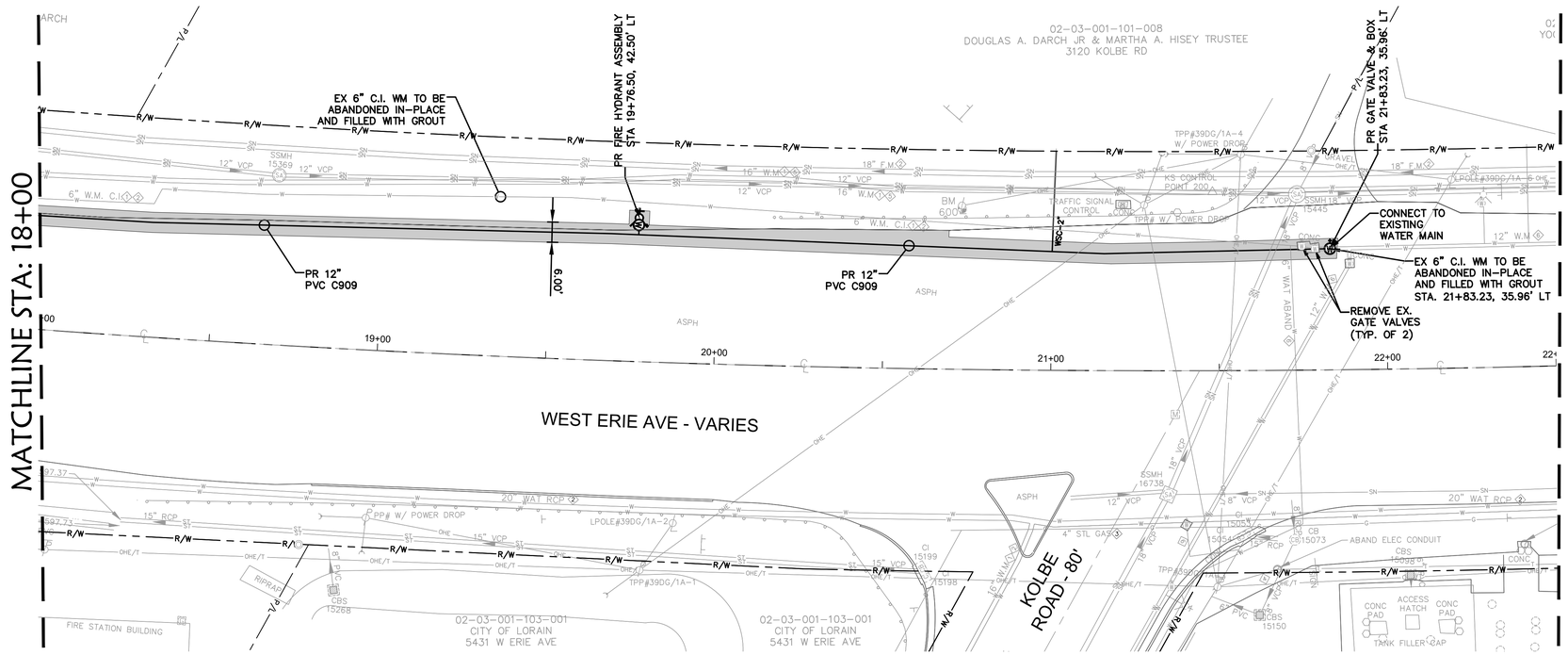
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

WEST ERIE - PLAN & PROFILE 13+50 TO 18+00

DRAWING NO.

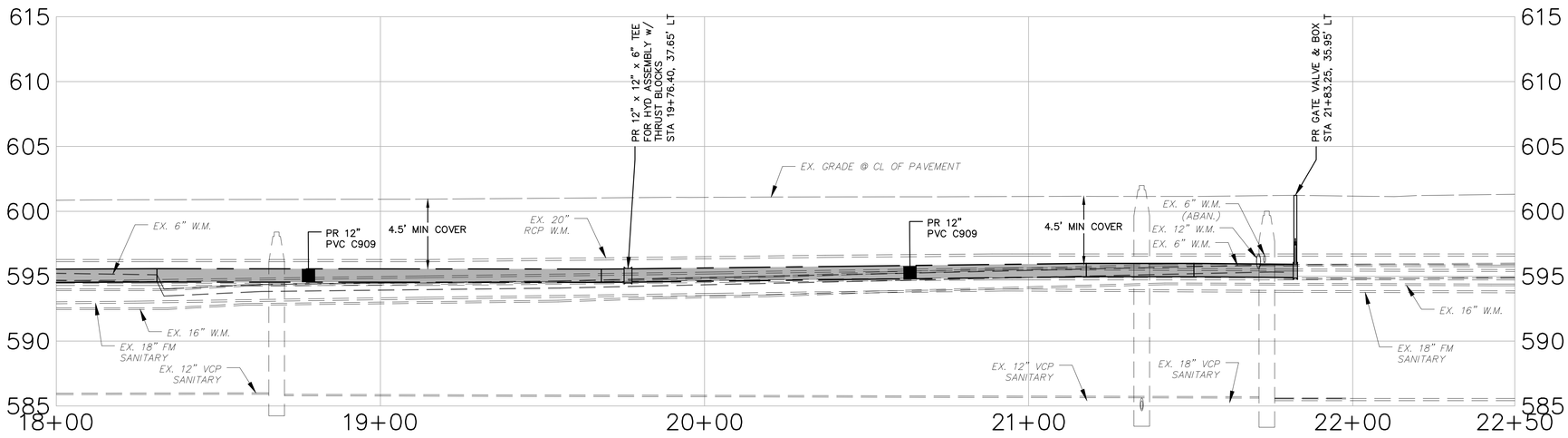
W4

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C W4 - WEST ERIE P&P.dwg
3/7/2025 5:17 PM Pawar, Sayali



WEST ERIE AVENUE

SCALE: 1" = 20'



WEST ERIE AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

CB 15073
RIM=601.70
INV=599.45 8" RCP NW (RECESSED)
INV=598.60 8" VCP S
BOTTOM=598.50
TOP OF WATER=599.05

CBS 15150
RIM=602.16
INV=599.61 8" RCP NW
INV=599.06 6" PVC SW

CI 15199
RIM=600.58
INV=598.08 15" VCP SW (DUAL GRATES)
BOTTOM=598.08
TOP OF WATER=598.68

CBS 15268
RIM=600.67
INV=598.52 8" PVC NW
BOTTOM=596.17
TOP OF WATER=598.67
TOP OF 6" RIM=600.27 6" VERTICAL

SSMH 15369
RIM=598.41
INV=584.91 12" VCP SW
INV=584.79 12" VCP NE

SSMH 15445
RIM=600.01
INV=584.87 8" VCP N
INV=583.91 18" VCP NE
INV=583.95 18" VCP SE
INV=584.61 12" VCP SW

SSMH 16738
RIM=601.99
INV=583.99 18" VCP NW
INV=584.74 8" VCP NE
INV=584.02 18" VCP SE
INV=584.62 12" VCP SW

GENERAL NOTES

1. EXISTING PAVEMENT FOR WEST ERIE AVENUE IS VARYING FROM SHEET 7" TO 11.5" ASPHALT PAVEMENT OVER 8.5" BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR TO GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. IF TRENCH RESTORATION LIMITS ARE LESS THAN 2 FEET FROM EDGE OF PAVEMENT, CONTRACTOR TO RESTORE ROADWAY TO EDGE OF PAVEMENT.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

NORTH

OSBORN ENGINEERING
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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODN
E-84062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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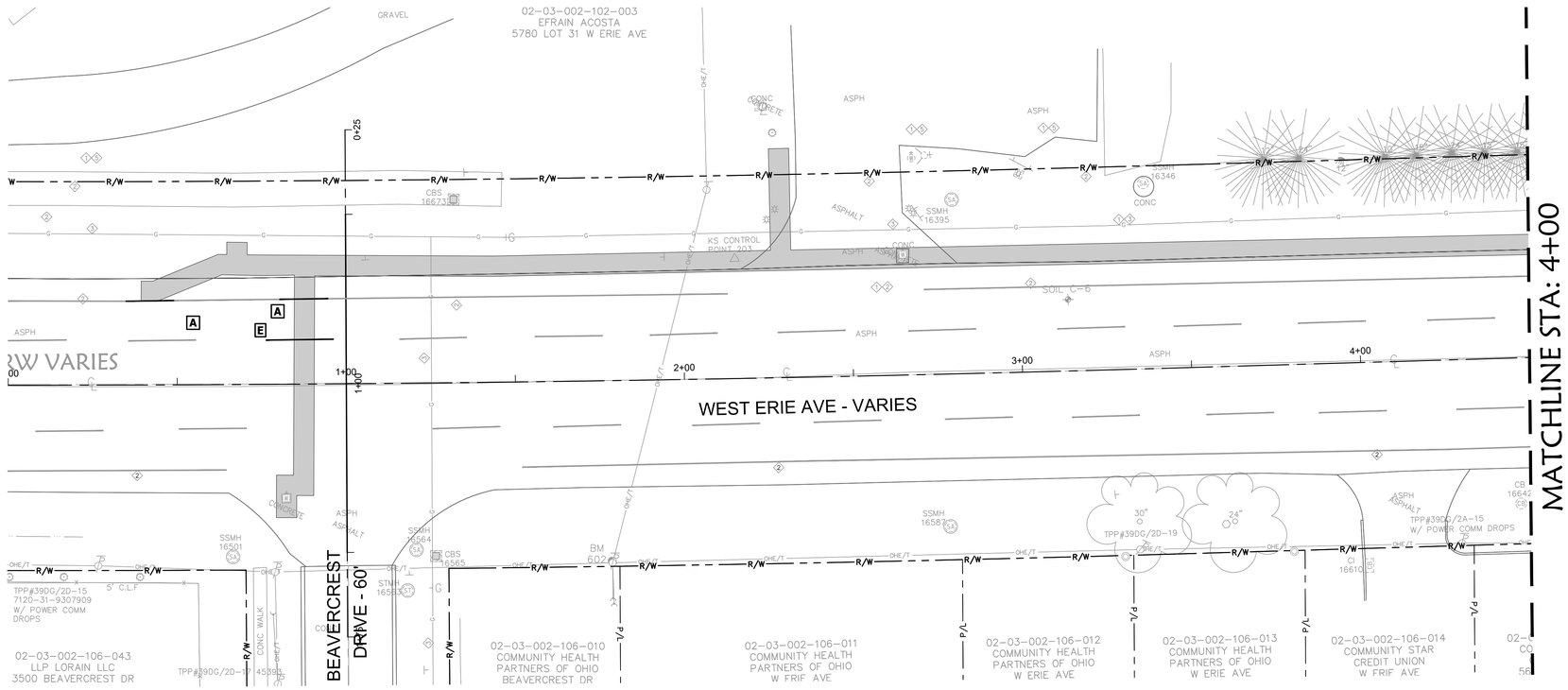
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

WEST ERIE - PLAN & PROFILE 18+00 TO 22+50

DRAWING NO.

W5

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C W5 - WEST ERIE P&P.dwg
3/7/2025 5:18 PM Pawar, Sayali



NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

NOTES

1. *THIS PAVEMENT STRIPING RESTORATION PLAN AS DEVELOPED BY THE ENGINEER IS TO BE USED AS A GUIDELINE FOR THE CONTRACTOR.*
2. *DISTANCE BETWEEN PAVEMENT LINES SHOULD BE MEASURED FROM THE NEAREST CURB TO THE ROADWAY CENTERLINE.*
3. *ALL PERMANENT MARKINGS ON ASPHALT PAVEMENT SHALL BE THERMOPLASTIC PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
4. *ALL PERMANENT MARKINGS ON CONCRETE AND/OR BRICK PAVEMENT SHALL BE EPOXY PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
5. *ALL PAVEMENT MARKINGS SHALL CONFORM TO THE CITY OF LORAIN TRAFFIC STANDARDS AND ODOT ITEM 640.*
6. *FOR ADDITIONAL INFORMATION ON PAVEMENT MARKINGS, REFER TO "PART 3 - MARKINGS" OF OMUTCD (2012 EDITION) AND "PART 3 - MARKINGS" OF ODOT TRAFFIC ENGINEERING MANUAL (ITEM - JANUARY 2024 REVISION).*

CODED NOTES

X	NAME	COLOR	WIDTH
A	EDGE LINE	WHITE	4"
B	CENTER LINE - SOLID, DOUBLE	YELLOW	4"
C	CENTER LINE - SOLID/DASHED COMBO, DOUBLE	YELLOW	4"
D	CHANNELIZING LINE	WHITE	8"
E	LANE LINE - DOTTED	WHITE	4" **
F	TRANSVERSE LINE	YELLOW	24"
G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A

** - at 10' centers*
*** - 3' long, 9' gaps*
**** - 24" wide steps w/ 24" gaps*

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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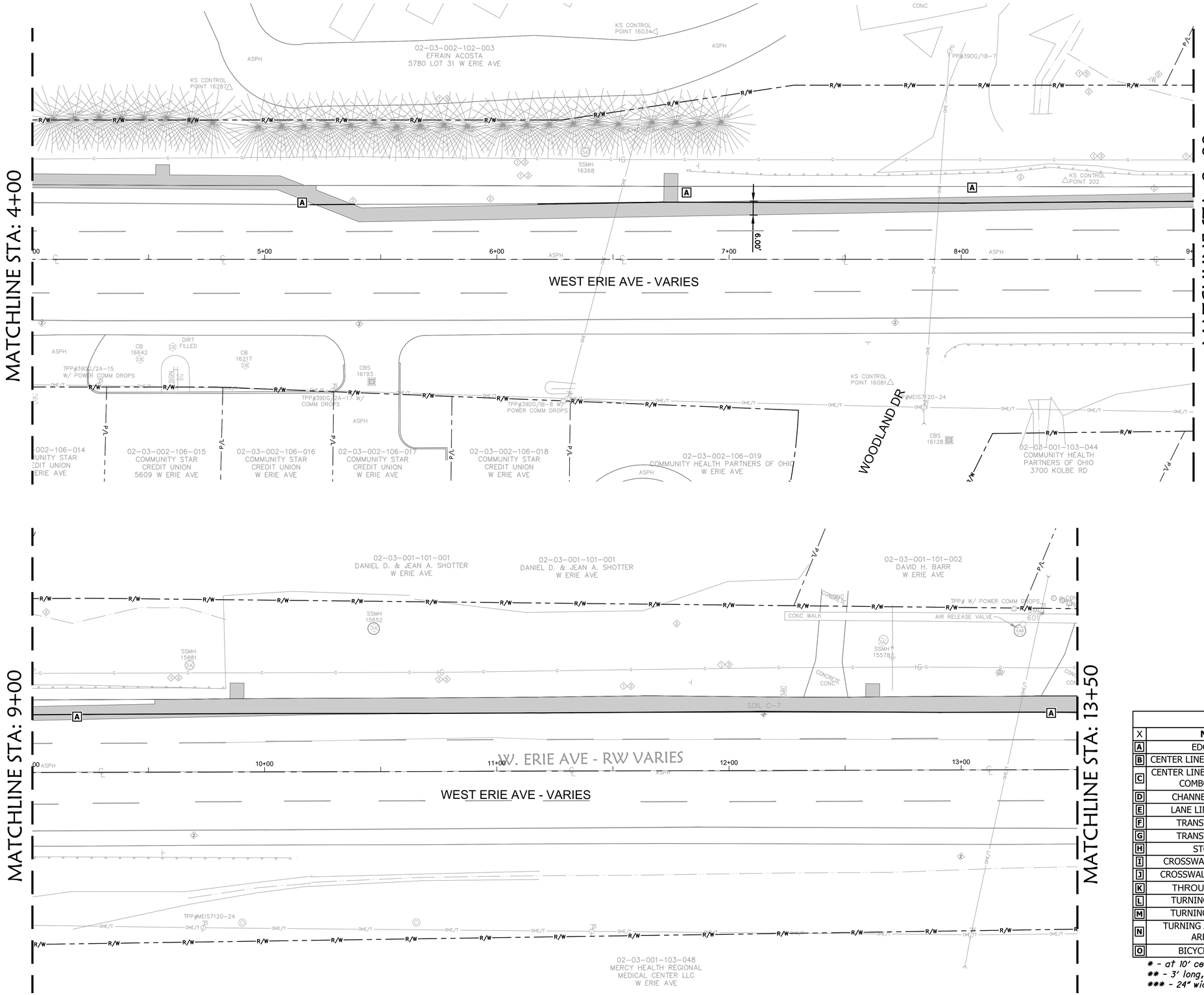
WEST ERIE - PAVEMENT MARKING 1

DRAWING NO.

W6

P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C W7 - WEST ERIE PAVEMENT MARKING.dwg
3/7/2025 5:18 PM Pawar, Sayali



NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

NOTES

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4. *ALL PERMANENT MARKINGS ON CONCRETE AND/OR BRICK PAVEMENT SHALL BE EPOXY PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
5. *ALL PAVEMENT MARKINGS SHALL CONFORM TO THE CITY OF LORAIN TRAFFIC STANDARDS AND ODOT ITEM 640.*
6. *FOR ADDITIONAL INFORMATION ON PAVEMENT MARKINGS, REFER TO "PART 3 - MARKINGS" OF OMUTCD (2012 EDITION) AND "PART 3 - MARKINGS" OF ODOT TRAFFIC ENGINEERING MANUAL (ITEM - JANUARY 2024 REVISION).*

CODED NOTES

X	NAME	COLOR	WIDTH
A	EDGE LINE	WHITE	4"
B	CENTER LINE - SOLID, DOUBLE	YELLOW	4"
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D	CHANNELIZING LINE	WHITE	8"
E	LANE LINE - DOTTED	WHITE	4" **
F	TRANSVERSE LINE	YELLOW	24"
G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A

** - at 10' centers*
*** - 3' long, 9' gaps*
**** - 24" wide steps w/ 24" gaps*

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO KEVIN D. CODIN 64026 REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
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OSBORN PROJ NO.	J20221302.000

WEST ERIE - PAVEMENT MARKING 2

DRAWING NO.

W7

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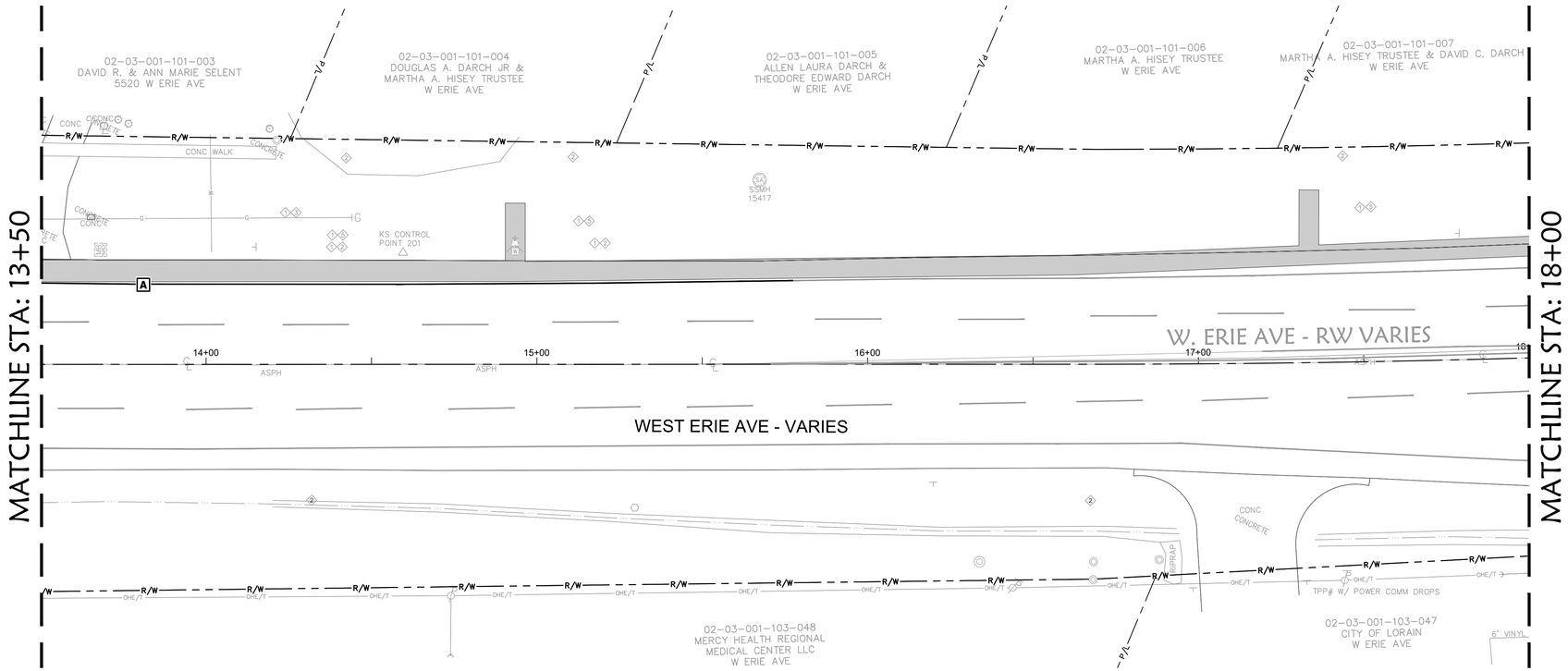

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

NOTES

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X	NAME	COLOR	WIDTH
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G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A

** - at 10' centers*
*** - 3' long, 9' gaps*
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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

WEST ERIE - PAVEMENT MARKING 3

DRAWING NO.

W8

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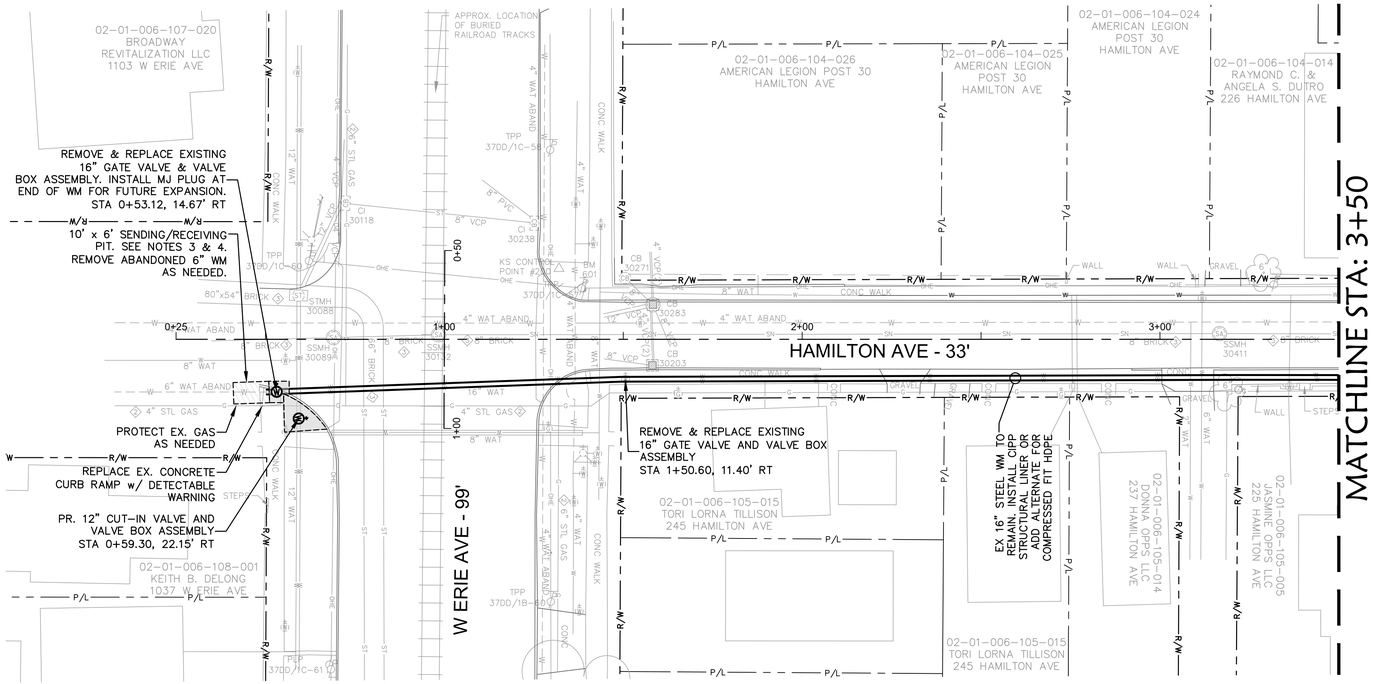
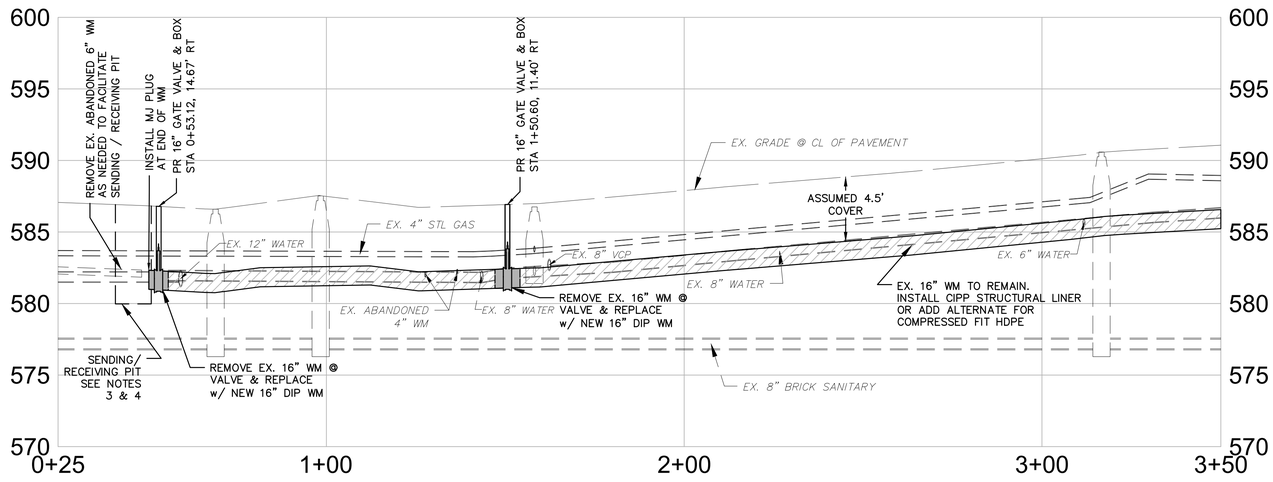
3/7/2025 5:18 PM Pawar, Sayali



HAMILTON AVENUE

SCALE: 1" = 20'



HAMILTON AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

STMH 30088
RIM=586.72
INV=575.56 36" BRICK NW,SE

SSMH 30089
RIM=586.59
FULL OF WATER
BOTTOM=576.99

CI 30118
RIM=587.24
INV=584.84 4" VCP NE
INV=584.94 4" VCP SW
INV=582.76 12" VCP

CB 30203
RIM=586.75
INV=581.95 8" VCP SE
BOTTOM=581.75

CI 30238
RIM=587.14
INV=583.32 12" VCP SE TOP OF TRAP
INV=584.92 4" VCP NE
INV=583.64 4" VCP NE
INV=585.09 4" VCP SW
INV=583.49 4" VCP SW
INV=582.37 8" VCP NE
RESISTANCE=581.94

CB 30271
RIM=587.00
INV=585.15 8" PVC NE
BOTTOM=584.80

CB 30283
RIM=586.55
INV=583.65 8" VCP SE
INV=584.75 8" PVC SW
BOTTOM=583.65

SSMH 30411
RIM=590.60
FULL OF WATER
BOTTOM=577.40

GENERAL NOTES:

1. EXISTING PAVEMENT IS SHEET 3" ASPHALT & 4" CONCRETE COMBINED PAVEMENT OVER 1" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
3. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
4. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

CITY OF LORAIN
SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

HAMILTON - PLAN & PROFILE 0+25 TO 3+50

DRAWING NO.

H1

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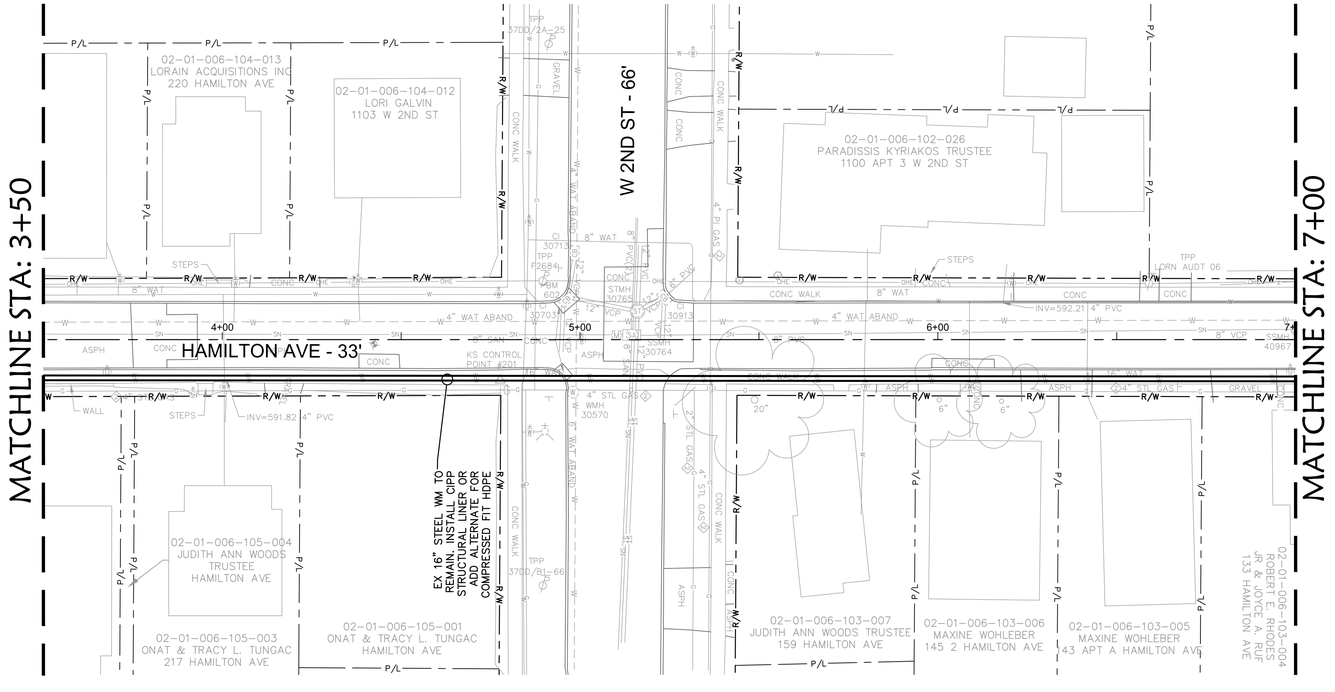
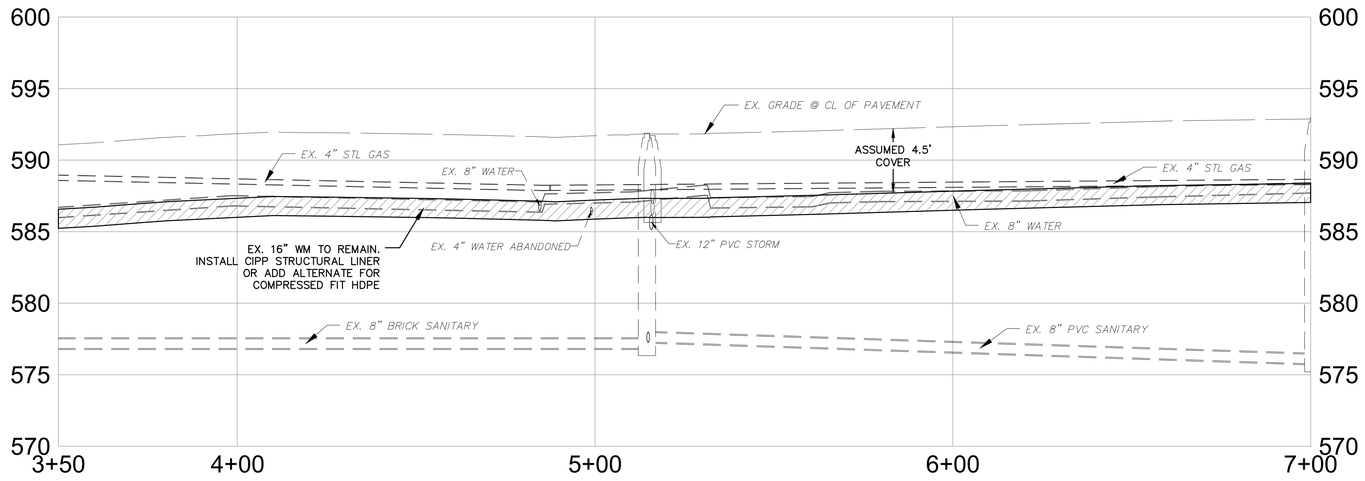


HAMILTON AVENUE

SCALE: 1" = 20'



HAMILTON AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CI 30703
RIM=591.51
INV=587.76 12" VCP NE
INV=587.71 12" VCP NW
INV=587.56 12" VCP NE

CI 30713
RIM=591.78
INV=588.08 12" VCP SE
BOTTOM=587.88

SSMH 30764
RIM=591.89
INV=576.79 8" PVC NW
INV=577.29 8" NE
INV=576.84 8" SE
INV=579.12 8" PVC SW
INV=583.01 8" PVC SW

STMH 30765
RIM=591.72
INV=585.34 12" PVC NE,SW
INV=586.29 12" PVC SW
INV=586.19 12" PVC NW

CI 30913
RIM=591.71
INV=587.19 12" VCP NE
INV=586.96 12" VCP SE
INV=589.66 6" PVC NW

SSMH 40967
RIM=593.00
INV=575.76 8" VCP NW,SE

GENERAL NOTES:

1. EXISTING PAVEMENT IS SHEET 3" ASPHALT & 4" CONCRETE COMBINED PAVEMENT OVER 1" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODN
E-64062
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

HAMILTON - PLAN & PROFILE 3+50 TO 7+00

DRAWING NO.

H2

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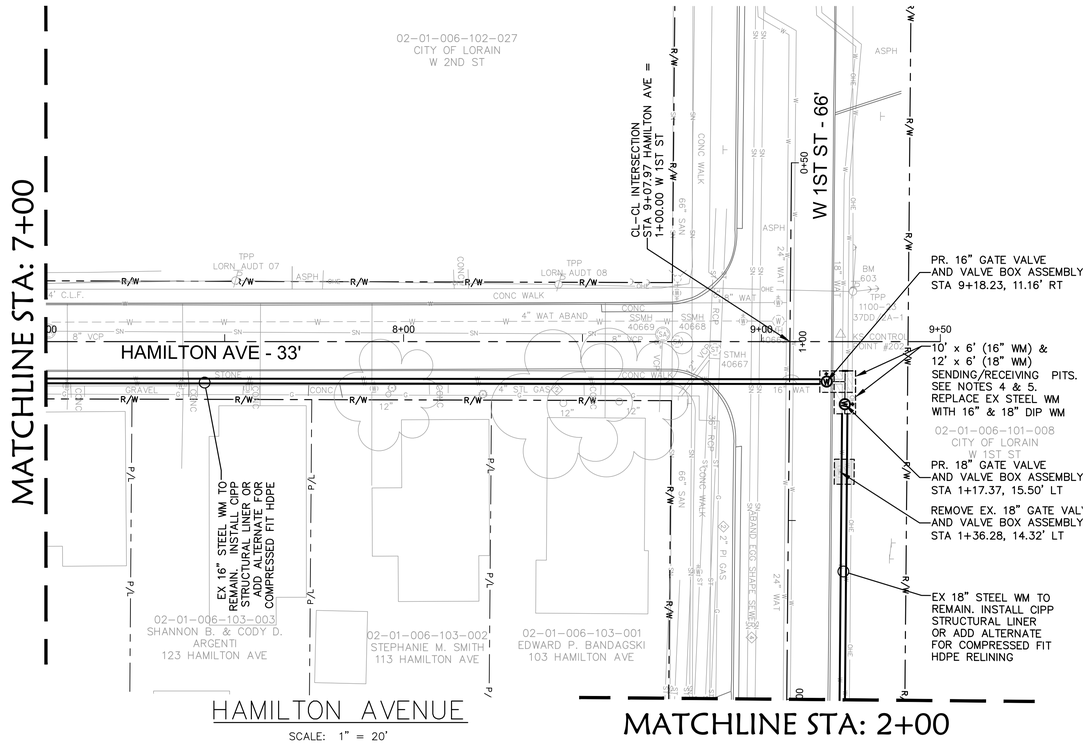
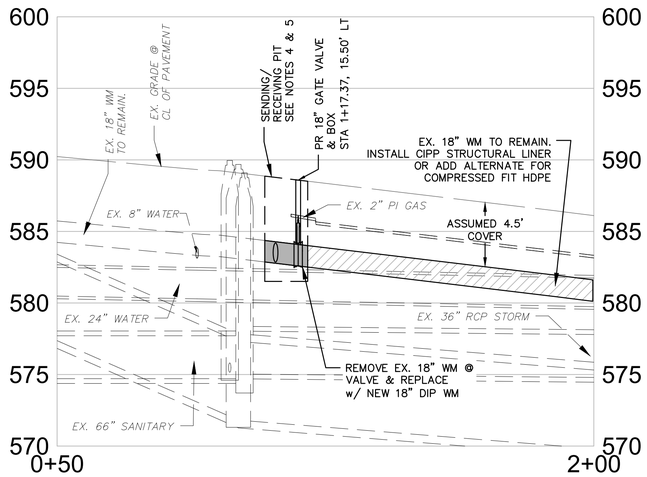
3/7/2025 5:13 PM Pawar, Sayali

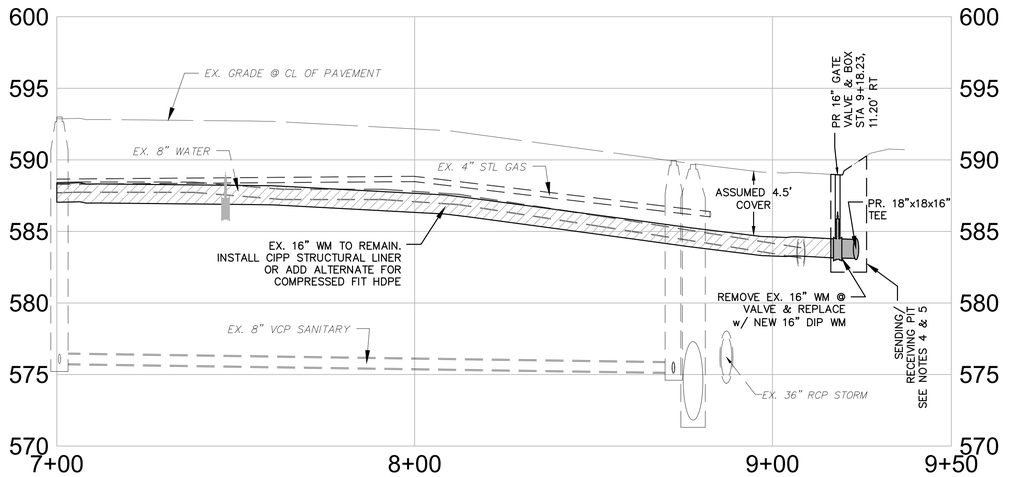




WEST 1ST PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.



HAMILTON AVENUE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

STMH 40667
RIM=589.10
INV=575.03 36" RCP NE,SW
INV=583.80 12" VCP SE

SSMH 40668
RIM=589.77
INV=571.81 6" RCP NE
INV=571.87 6" RCP SW

SSMH 40669
RIM=589.96
INV=575.16 8" VCP SE
INV=575.15 8" VCP NE

GENERAL NOTES:

1. EXISTING PAVEMENT FOR HAMILTON AVENUE IS SHEET 3" ASPHALT & 4" CONCRETE COMBINED PAVEMENT OVER 1" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. EXISTING PAVEMENT FOR WEST 1ST STREET IS SHEET 1.5" ASPHALT & 8" CONCRETE COMBINED PAVEMENT OVER 1.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR FOR ASPHALT & GOOD FOR CONCRETE PAVEMENT. REFER TO REPORT DATED FEBRUARY 2, 2024.
3. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
4. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
5. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

HAMILTON & W 1ST INTERSECTION - PLAN & PROFILE

DRAWING NO.

H3

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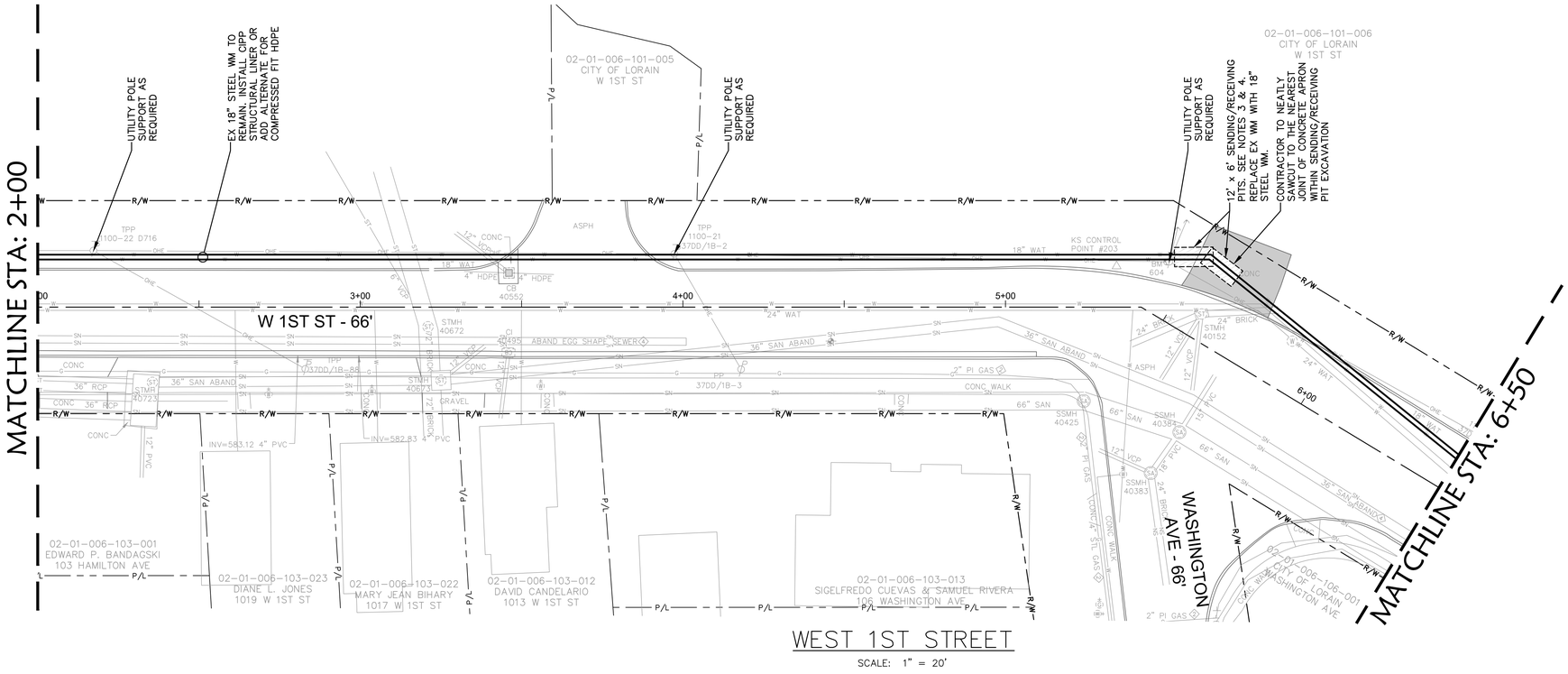

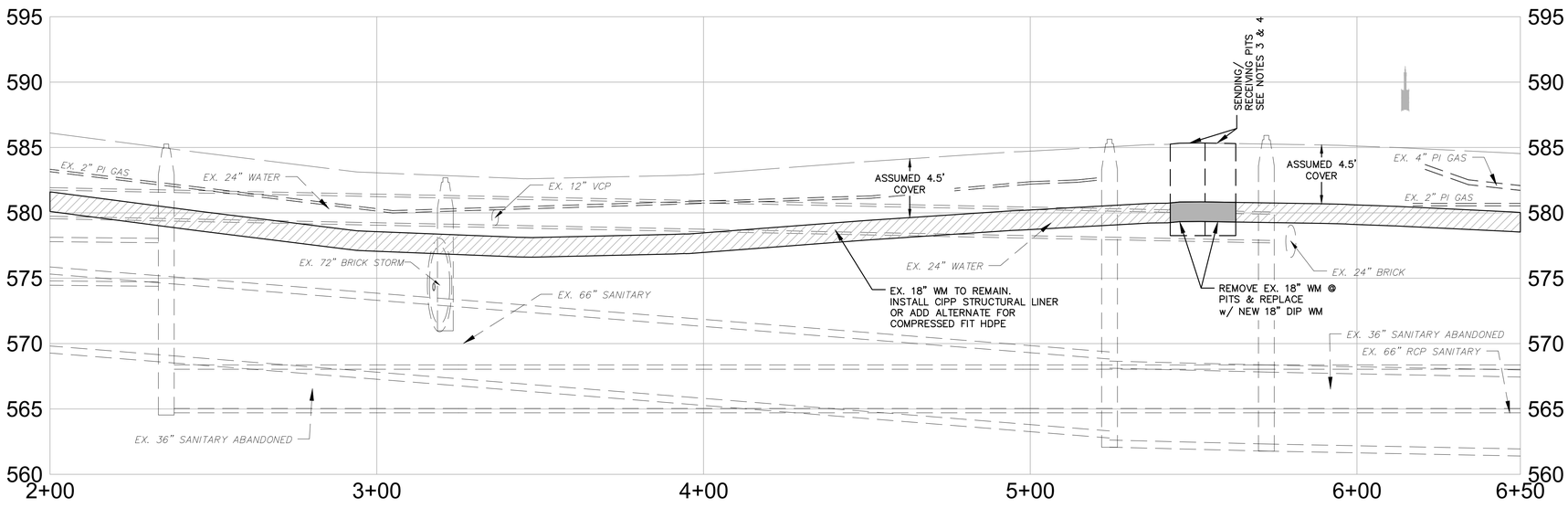

WEST 1ST STREET PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

STMH 40152
RIM=585.05
INV=576.83 24" BRICK NE,SW
INV=578.91 12" VCP SE
INV=580.03 12" VCP SW

SSMH 40383
RIM=586.41
INV=576.97 24" BRICK SE
INV=582.54 12" VCP NW
INV=576.92 18" PVC NE

SSMH 40384
RIM=585.92
INV=562.32 66" SAN NW
UNABLE TO SEE PIPE
INV=574.94 15" PVC NE
UNABLE TO SEE PIPE
INV=562.32 66" SAN SE
INV=575.48 15" PVC SW

SSMH 40425
RIM=585.63
INV=562.62 66" SAN NE,SW
RECESSED

CI 40495
RIM=582.17
INV=578.47 12" VCP SE
RECESSED
BOTTOM=578.47

CB 40552
RIM=582.43
INV=579.43 12" VCP NW
INV=580.83 4" HDPE NE,SW
BOTTOM=579.13

STMH 40672
RIM=582.68
INV=571.48 6' BRICK SE
RECESSED
INV=575.09 6" VCP NW
RECESSED
TOP OF WATER=572.68
BOTTOM=571.48
LARGE STRUCTURE-UNABLE TO DETERMINE SIZE OR OTHER PIPES

STMH 40673
RIM=583.18
INV=572.68 6' BRICK NW,SE
INV=575.78 12" VCP NE

STMH 40723
RIM=585.26
INV=565.04 SW UNABLE TO OBTAIN PIPE SIZE/MATERIAL
573.66 6" STEEL VERTICAL PIPE
INV=574.71 36" RCP SW
INV=565.13 36" RCP SW
INV=565.04 NE UNABLE TO OBTAIN PIPE SIZE/MATERIAL
INV=573.78 SW RECESSED UNABLE TO OBTAIN PIPE SIZE/MATERIAL
INV=577.26 12" PVC SE
BOTTOM=564.66

GENERAL NOTES:

1. EXISTING PAVEMENT IS SHEET 1.5" ASPHALT & 8" CONCRETE COMBINED PAVEMENT OVER 1.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR FOR ASPHALT & GOOD FOR CONCRETE PAVEMENT. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.
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LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

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LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
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OSBORN PROJ NO.	J20221302.000

W 1ST - PLAN & PROFILE 2+00 TO 6+50

DRAWING NO.

H4

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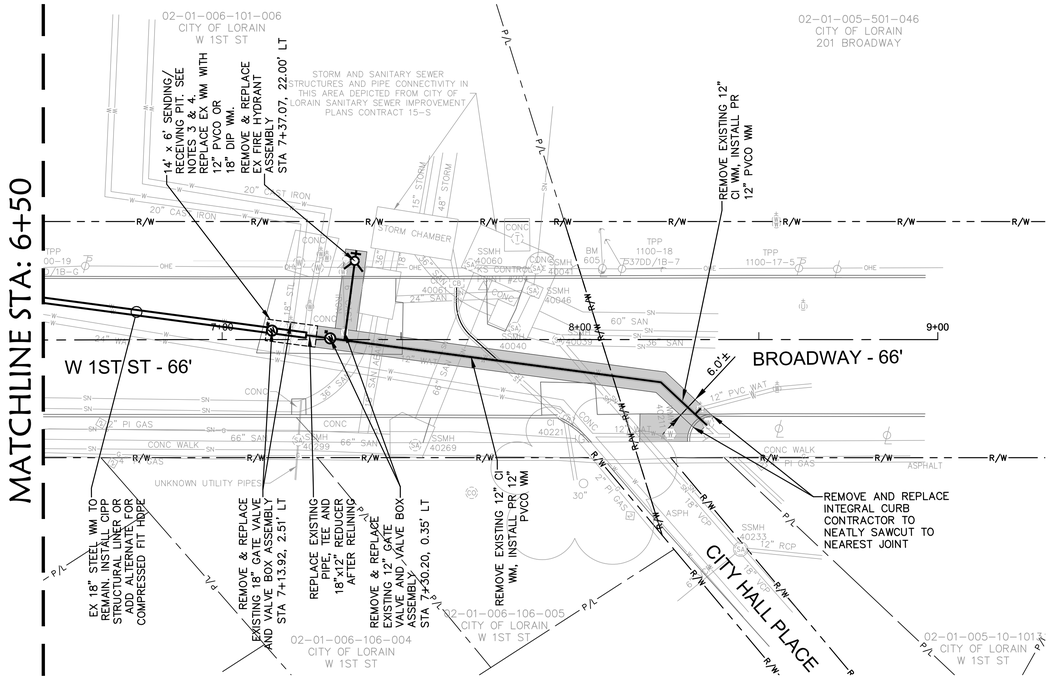
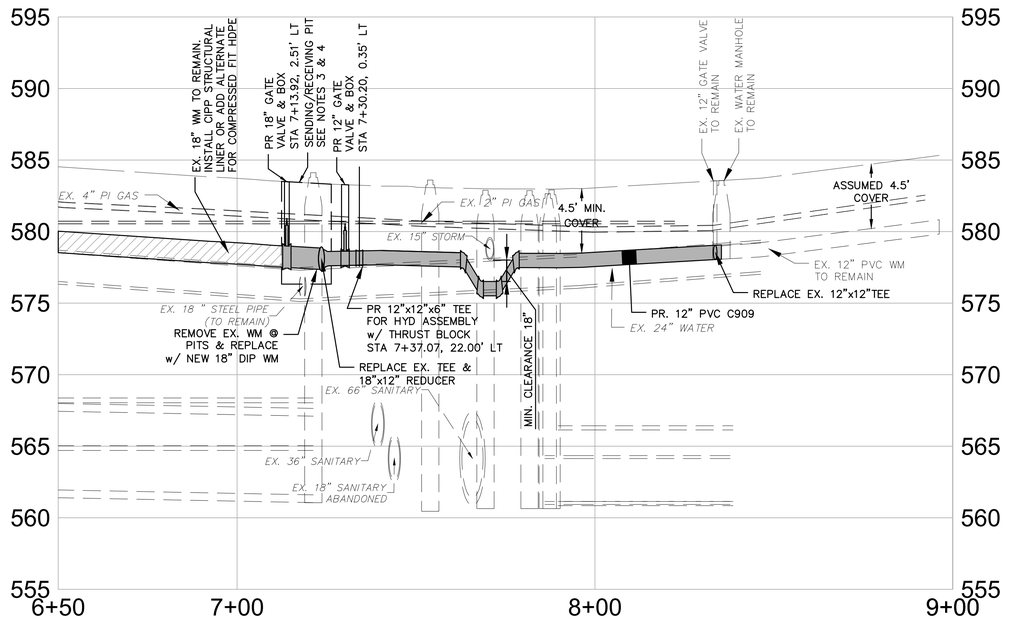
3/7/2025 5:20 PM Pawar, Sayali



WEST 1ST STREET

SCALE: 1" = 20'



WEST 1ST STREET PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 40039
RIM=583.02
UNABLE TO OPEN

SSMH 40040
RIM=582.87
UNABLE TO OPEN

SSMH 40041
RIM=582.91
INV=568.41 5'x12' CONC SW
LARGE STRUCTURE – HEAVY FLOW
UNABLE TO PROVIDE DETAILS

SSMH 40046
RIM=582.65
UNABLE TO OPEN

SSMH 40060
RIM=582.89
BOTTOM=561.14
LARGE STRUCTURE – HEAVY FLOW
UNABLE TO PROVIDE DETAILS

CI 40061
RIM=582.34
INV=577.99 15" PVC NE,SE

CI 40221
RIM=582.59
INV=578.24 12" PVC SW
INV=578.14 15" PVC NW

SSMH 40233
RIM=583.63
INV=576.90 6" VCP SW
INV=574.81 18" VCP NW
INV=578.09 12" RCP SE PLUGGED
INV=574.90 18" VCP SE

SSMH 40269
RIM=583.60
INV=561.00 66" SAN NE,NW
RECESSED
UNABLE TO SEE OTHER PIPES

SSMH 40299
RIM=584.12
INV=561.60 66" SAN NW,SE
572.72 TOP OF 2" PIPE PASSING THROUGH STRUCTURE
571.52 TOP OF 6-8" PIPE PASSING THROUGH STRUCTURE
UNABLE TO SEE OTHER PIPES

GENERAL NOTES:

1. EXISTING PAVEMENT IS SHEET 1.5" ASPHALT & 8" CONCRETE COMBINED PAVEMENT OVER 1.5" AGGREGATE BASE PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS FAIR FOR ASPHALT & GOOD FOR CONCRETE PAVEMENT. REFER TO REPORT DATED FEBRUARY 2, 2024.
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LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
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- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

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- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

W 1ST - PLAN & PROFILE 6+50 TO 9+00

DRAWING NO.

H5

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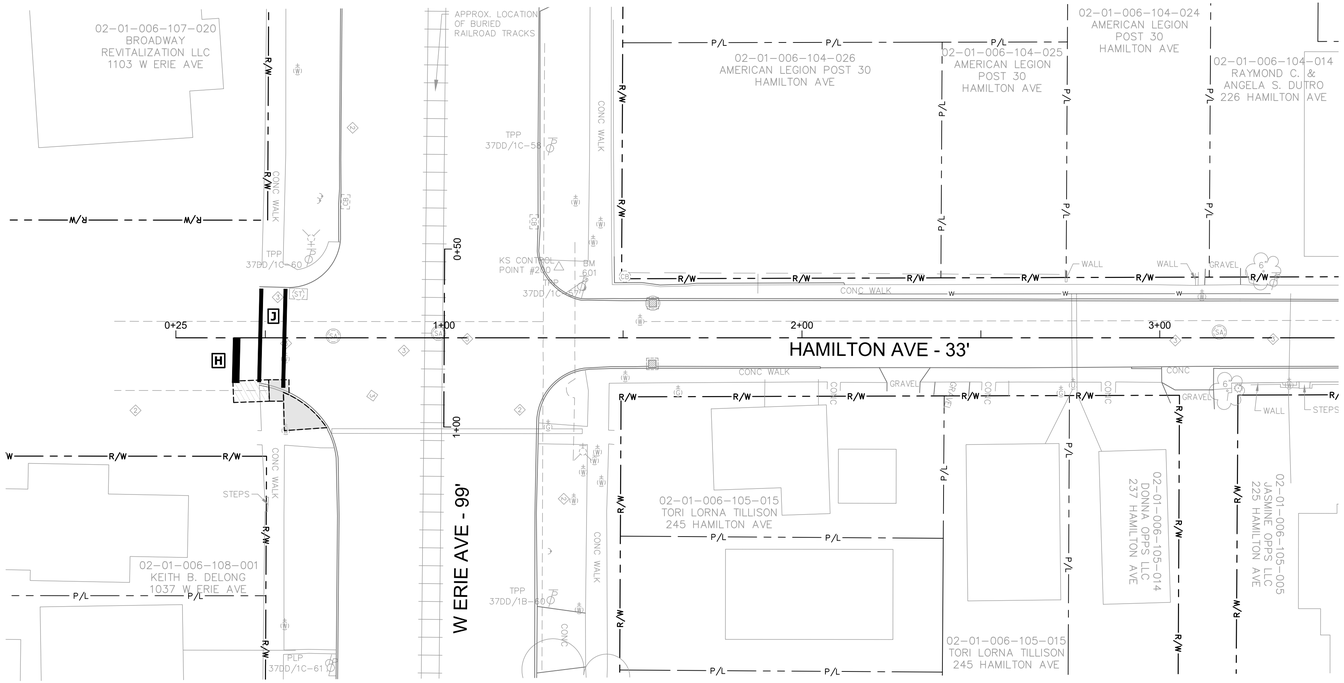
3/7/2025 5:20 PM Pawar, Sayali



GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

NOTES

1. *THIS PAVEMENT STRIPING RESTORATION PLAN AS DEVELOPED BY THE ENGINEER IS TO BE USED AS A GUIDELINE FOR THE CONTRACTOR.*
2. *DISTANCE BETWEEN PAVEMENT LINES SHOULD BE MEASURED FROM THE NEAREST CURB TO THE ROADWAY CENTERLINE.*
3. *ALL PERMANENT MARKINGS ON ASPHALT PAVEMENT SHALL BE THERMOPLASTIC PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
4. *ALL PERMANENT MARKINGS ON CONCRETE AND/OR BRICK PAVEMENT SHALL BE EPOXY PAINT PER CITY OF LORAIN TRAFFIC STANDARDS.*
5. *ALL PAVEMENT MARKINGS SHALL CONFORM TO THE CITY OF LORAIN TRAFFIC STANDARDS AND ODOT ITEM 640.*
6. *FOR ADDITIONAL INFORMATION ON PAVEMENT MARKINGS, REFER TO "PART 3 - MARKINGS" OF OMUTCD (2012 EDITION) AND "PART 3 - MARKINGS" OF ODOT TRAFFIC ENGINEERING MANUAL (ITEM - JANUARY 2024 REVISION).*

CODED NOTES

X	NAME	COLOR	WIDTH
A	EDGE LINE	WHITE	4"
B	CENTER LINE - SOLID, DOUBLE	YELLOW	4"
C	CENTER LINE - SOLID/DASHED COMBO, DOUBLE	YELLOW	4"
D	CHANNELIZING LINE	WHITE	8"
E	LANE LINE - DOTTED	WHITE	4" **
F	TRANSVERSE LINE	YELLOW	24"
G	TRANSVERSE LINE	WHITE	24" *
H	STOP BAR	WHITE	24"
I	CROSSWALK W/ LADDER	WHITE	24" ***
J	CROSSWALK W/O LADDER	WHITE	12"
K	THROUGH ARROW	WHITE	N/A
L	TURNING ARROW (L)	WHITE	N/A
M	TURNING ARROW (R)	WHITE	N/A
N	TURNING AND THROUGH ARROW (L)	WHITE	N/A
O	BICYCLE SYMBOL	WHITE	N/A

** - at 10' centers*
*** - 3' long, 9' gaps*
**** - 24" wide steps w/ 24" gaps*

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

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LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COBN
E-64062
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

HAMILTON - PAVEMENT MARKING 1

DRAWING NO.

H6

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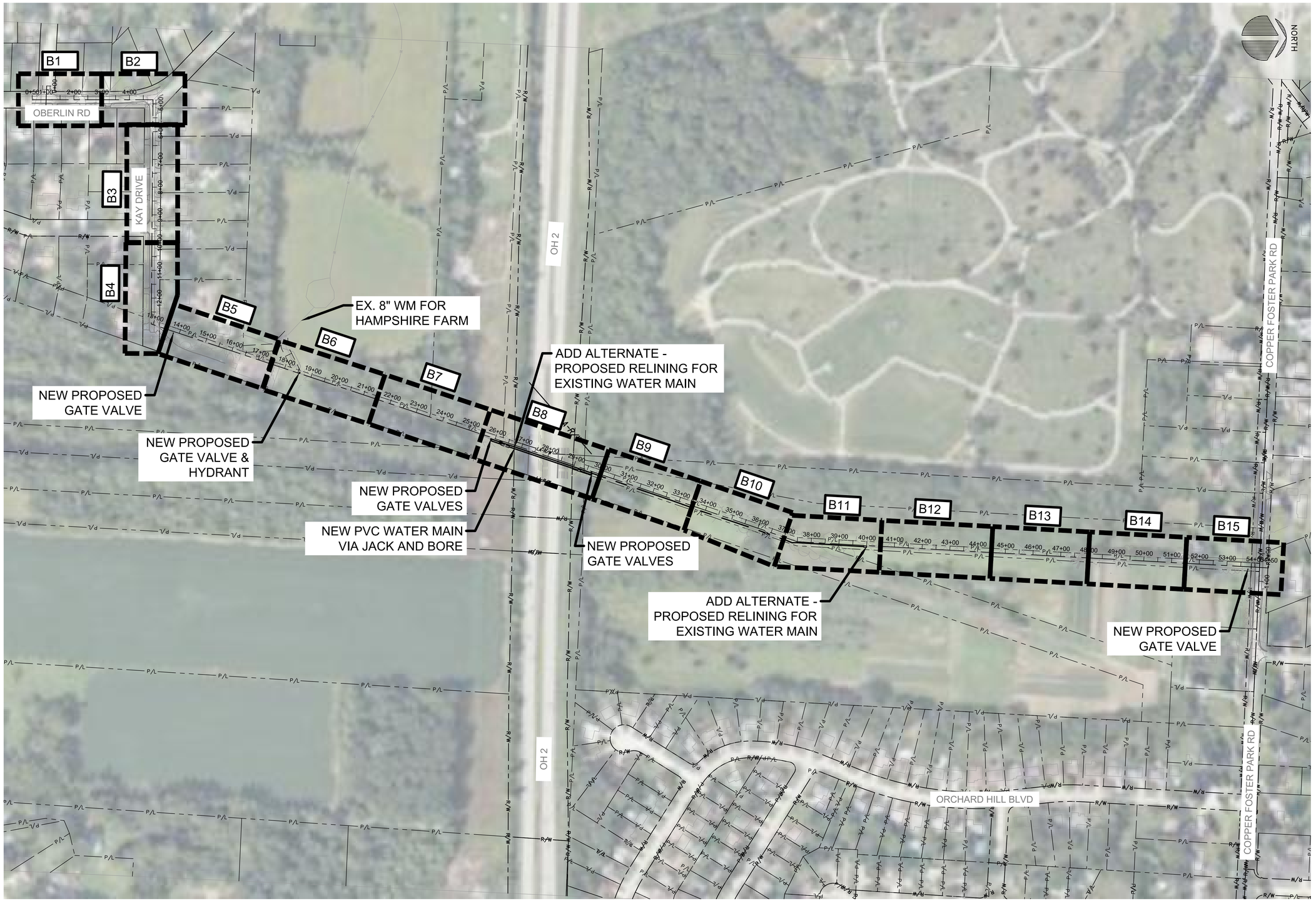

BOREMAN'S FARM – OVERVIEW MAP

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

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OSBORN PROJ NO.	J20221302.000

BOREMAN'S FARM OVERVIEW MAP

DRAWING NO.

B0

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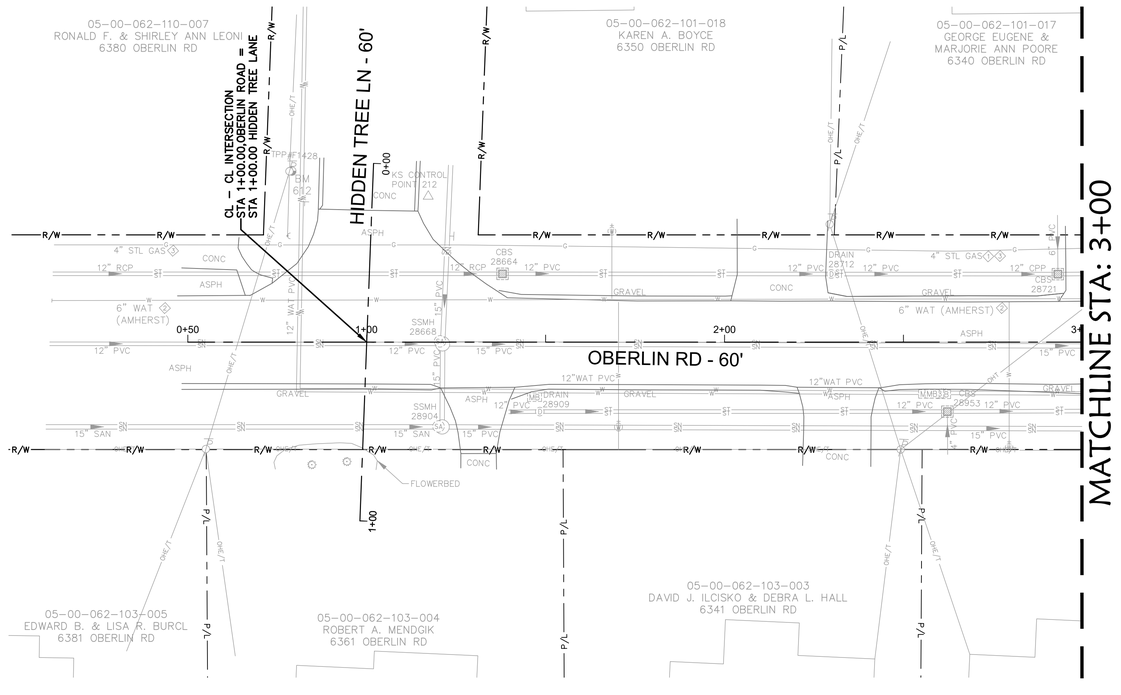
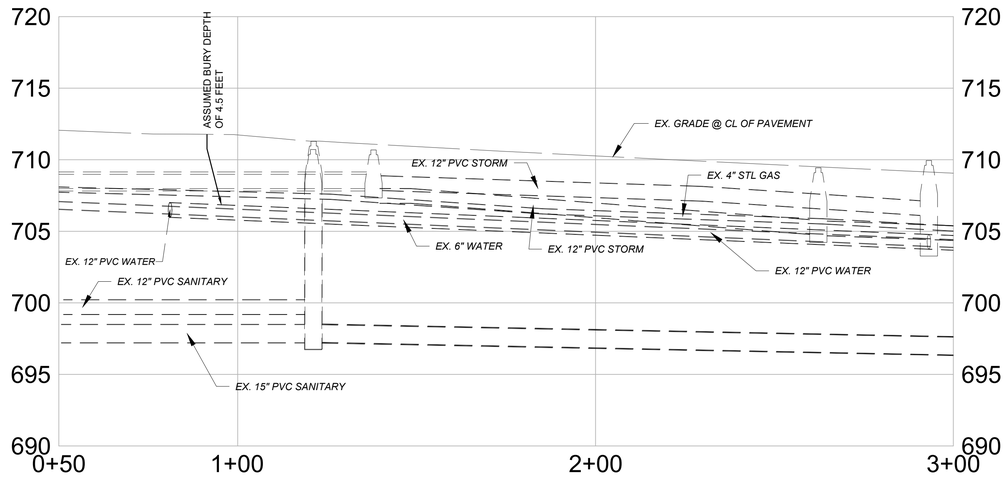


OBERLIN ROAD

SCALE: 1" = 20'



OBERLIN ROAD PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

CBS 28664
RIM=709.68
INV=707.88 12" PVC N
INV=707.98 12" RCP S

SSMH 28668
RIM=711.30
INV=697.26 15" PVC N
INV=697.34 15" PVC E
INV=699.20 12" PVC S
INV=697.33 15" PVC W

DRAIN 28712
RIM=709.22
INV=707.12 12" PVC N & S
FULL OF GRAVEL

CBS 28721
RIM=708.56
INV=703.77 12" CPP N
INV=706.08 12" CPP S
INV=706.69 6" PVC W

SSMH 28904
RIM=710.72
INV=697.22 15" PVC N
INV=699.31 15" SAN S
INV=697.44 15" PVC W

DRAIN 28909
RIM=709.71
INV=706.97 12" PVC N & S

CBS 28953
RIM=708.50
INV=704.72 12" PVC N
INV=706.45 4" PVC E
INV=704.75 12" PVC S

GENERAL NOTES:

1. EXISTING PAVEMENT FOR BOREMAN'S IS SHEET 8" ASPHALT PAVEMENT WITH PARTIAL RECOVERY PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

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- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

BOREMAN - PLAN & PROFILE 0+50 TO 3+00

DRAWING NO.

B1

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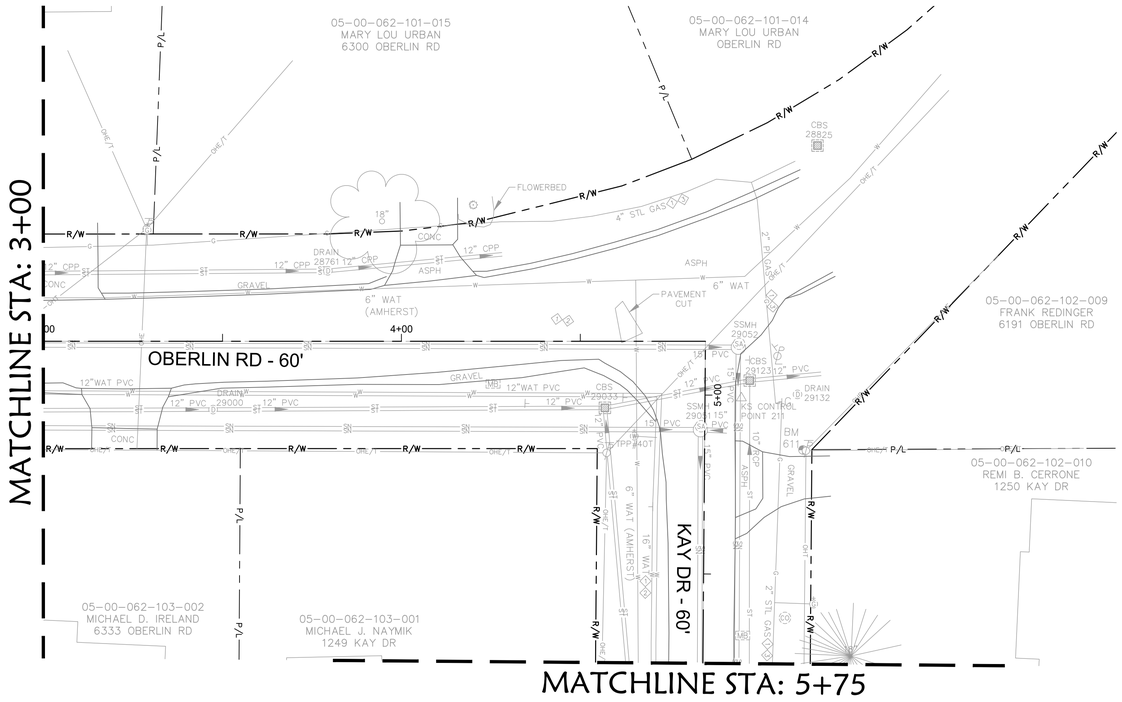


GRAPHIC SCALE

NORTH

20 0 10 20

(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

DRAIN 28761
RIM=706.00
INV=703.25 12" CPP NW

CBS 28825
RIM=704.73
BURIED

DRAIN 29000
RIM=707.24
INV=703.94 12" PVC N & S

CBS 29033
RIM=705.68
INV=702.97 12" PVC NW
INV=703.33 12" PVC NE
INV=702.98 12" PVC S

SSMH 29051
RIM=706.84
INV=695.26 15" PVC N
INV=695.11 15" PVC E
INV=695.31 15" PVC S

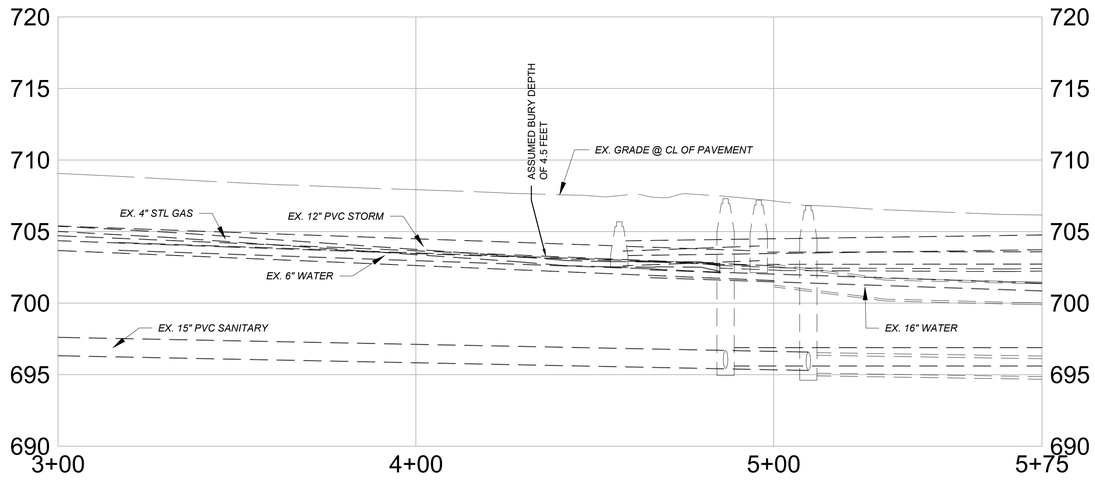
SSMH 29052
RIM=707.34
INV=695.44 15" PVC S
INV=695.62 15" PVC E

CBS 29123
RIM=705.98
INV=702.62 12" PVC NW
INV=702.72 10" RCP E
INV=702.63 12" PVC S

DRAIN 29132
RIM=705.28
12" PVC VERTICAL

OBERLIN ROAD

SCALE: 1" = 20'



OBERLIN ROAD PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
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LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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BOREMAN - PLAN & PROFILE 3+00 TO 5+75

DRAWING NO.

B2

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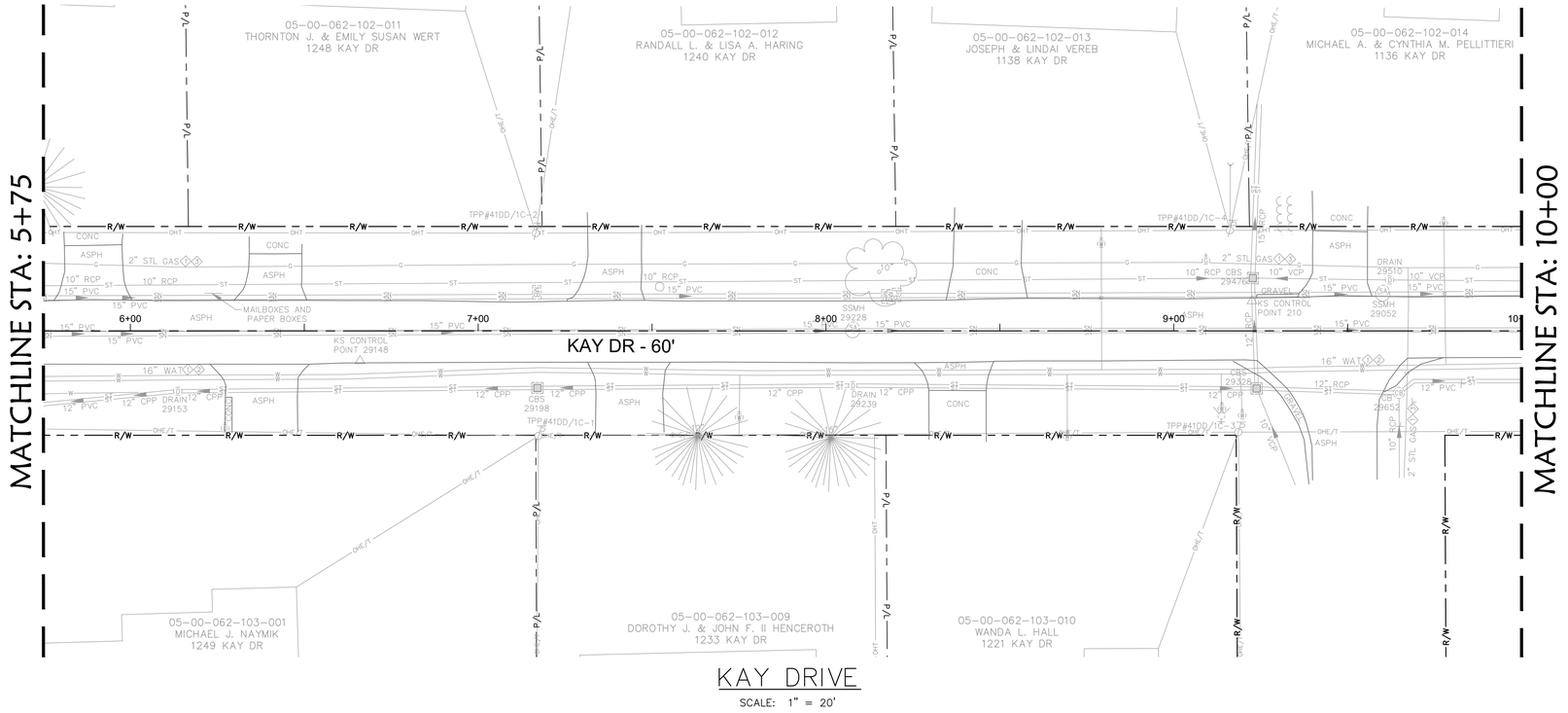


NORTH

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 29052
RIM=707.34
INV=695.44 15" PVC S
INV=695.62 15" PVC E

DRAIN 29153
RIM=705.38
INV=703.88 12" CPP SW & E

CBS 29198
RIM=704.83
INV=702.98 12" CPP E
INV=703.03 12" CPP W

SSMH 29228
RIM=705.55
INV=693.98 15" PVC W & E

DRAIN 29239
RIM=703.78
INV=702.78 12" CPP W & E

CBS 29328
RIM=704.58
INV=702.73 12" RCP N
INV=702.88 12" RCP E
INV=702.90 12" CPP W
INV=702.88 10" VCP SE

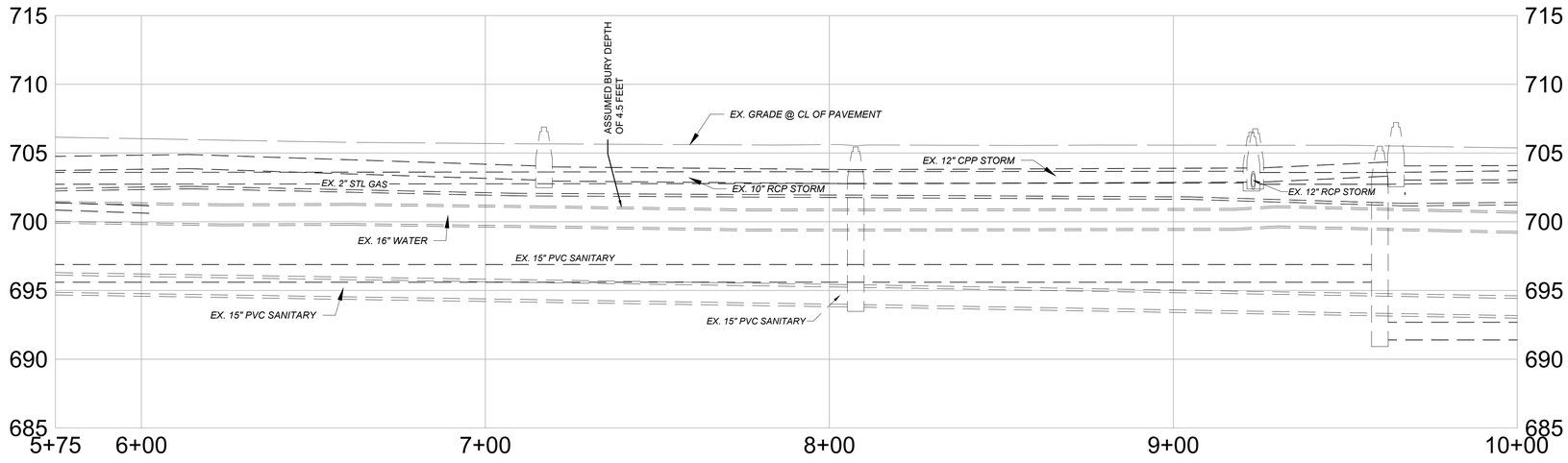
CBS 29476
RIM=704.51
INV=702.30 15" RCP N
INV=702.74 10" VCP E
INV=702.31 12" RCP S
INV=702.83 10" RCP W

DRAIN 29510

CB 29652
RIM=704.76
INV=703.05 12" PVC NE
INV=703.16 10" RCP S
INV=703.36 12" RCP W
TOP OF WATER=703.41

GENERAL NOTES:

1. EXISTING PAVEMENT FOR BOREMAN'S IS SHEET 8" ASPHALT PAVEMENT WITH PARTIAL RECOVERY PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.



KAY DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
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BOREMAN - PLAN & PROFILE 5+75 TO 10+00

DRAWING NO.

B3

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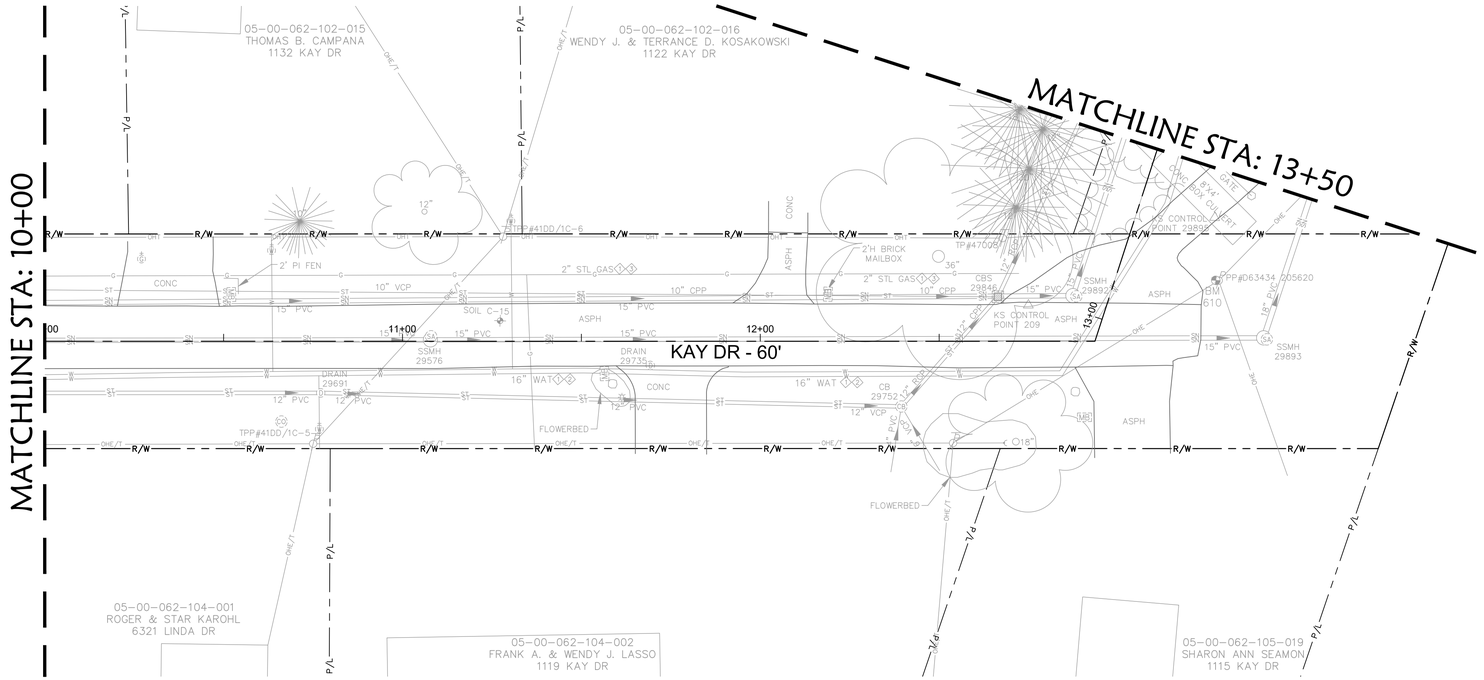


KAY DRIVE

SCALE: 1" = 20'

NORTH

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

STRUCTURE TABLE

SSMH 29576
RIM=705.02
INV=692.63 15" PVC E
INV=692.72 15" PVC W

DRAIN 29691
RIM=704.32
INV=703.13 12" PVC E & W

DRAIN 29735

CB 29752
RIM=705.14
INV=703.04 12" RCP NE (RECESSED)
INV=703.45 6" VCP SE
INV=703.81 4" PVC SW
INV=703.39 12" VCP W (RECESSED)
BOTTOM=703.04
TOP OF WATER=703.51

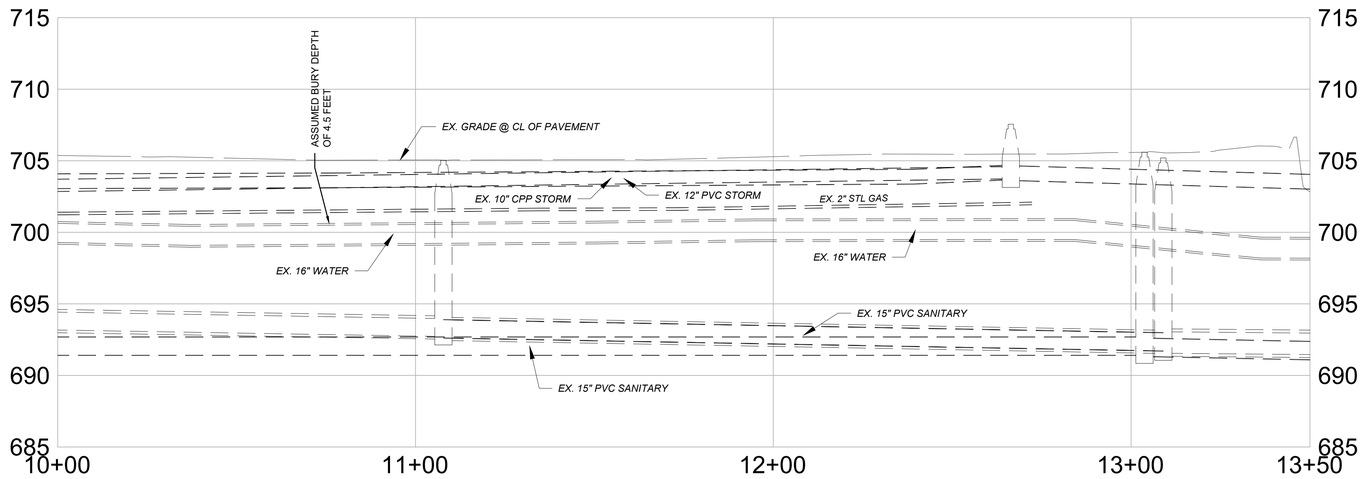
CBS 29846
RIM=705.14
INV=703.64 12" RCP NE
INV=703.69 12" CPP SW
INV=703.75 12" CPP W
BOTTOM=703.59

SSMH 29892
RIM=705.44
INV=691.34 15" PVC NE
INV=691.42 15" PVC W

SSMH 29893
RIM=705.57
INV=691.55 18" PVC N
INV=691.72 15" PVC W

GENERAL NOTES:

1. EXISTING PAVEMENT FOR BOREMAN'S IS SHEET 8" ASPHALT PAVEMENT WITH PARTIAL RECOVERY PER RECORD - CONTRACTOR TO FIELD VERIFY. PAVEMENT CONDITION PER PROFESSIONAL SERVICE INDUSTRIES, INC. REPORT IS GOOD. REFER TO REPORT DATED FEBRUARY 2, 2024.
2. ALL PROPOSED WATER SERVICE CONNECTION SHALL BE 1-INCH COPPER TYPE K UNLESS OTHERWISE NOTED.



KAY DRIVE PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

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LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

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BOREMAN - PLAN & PROFILE 10+00 TO 13+50

DRAWING NO.

B4

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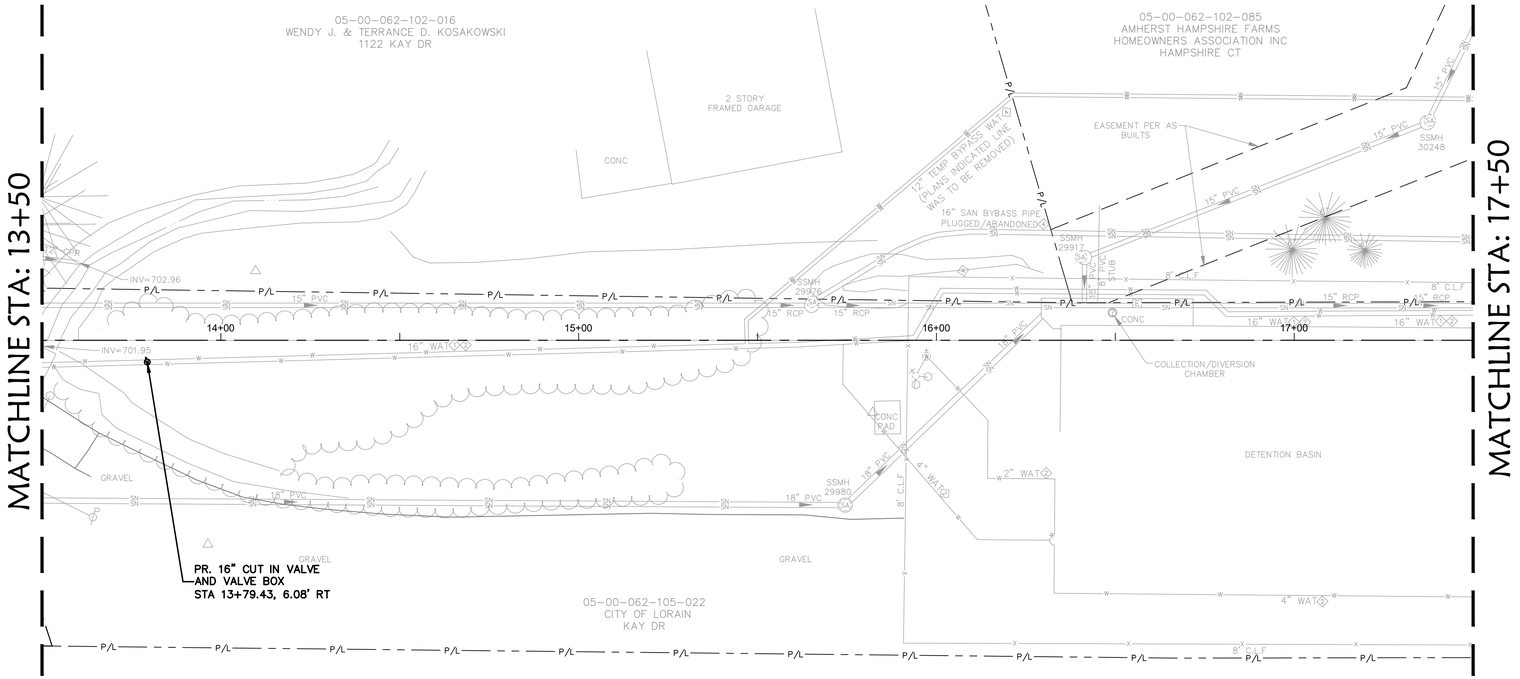


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

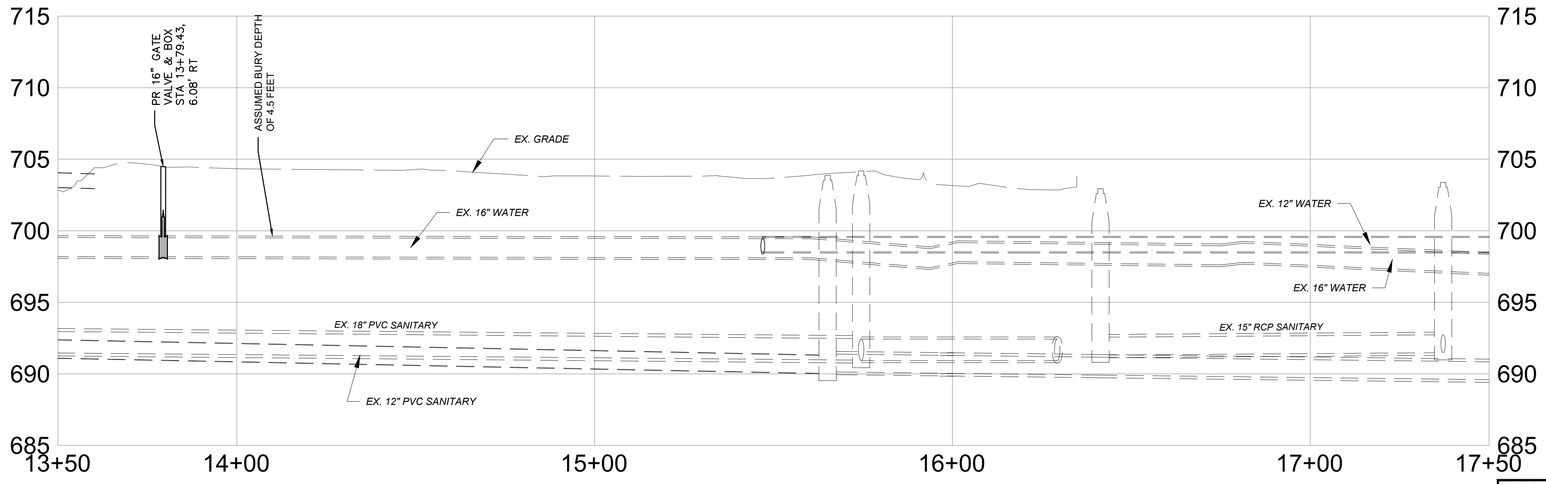
STRUCTURE TABLE

SSMH 29917
RIM=702.95
INV=691.40 15" PVC SW
INV=691.31 15" PVC NE

SSMH 29976
RIM=703.86
INV=690.14 15" RCP NE
INV=690.03 15" RCP SW

SSMH 29980
RIM=704.81
INV=690.93 18" PVC NW
INV=690.96 18" PVC SW

SSMH 30248
RIM=702.20
INV=691.48 15" PVC NW
INV=691.48 15" PVC S



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
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03/06/2025

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BOREMAN - PLAN & PROFILE 13+50 TO 17+50

DRAWING NO.

B5

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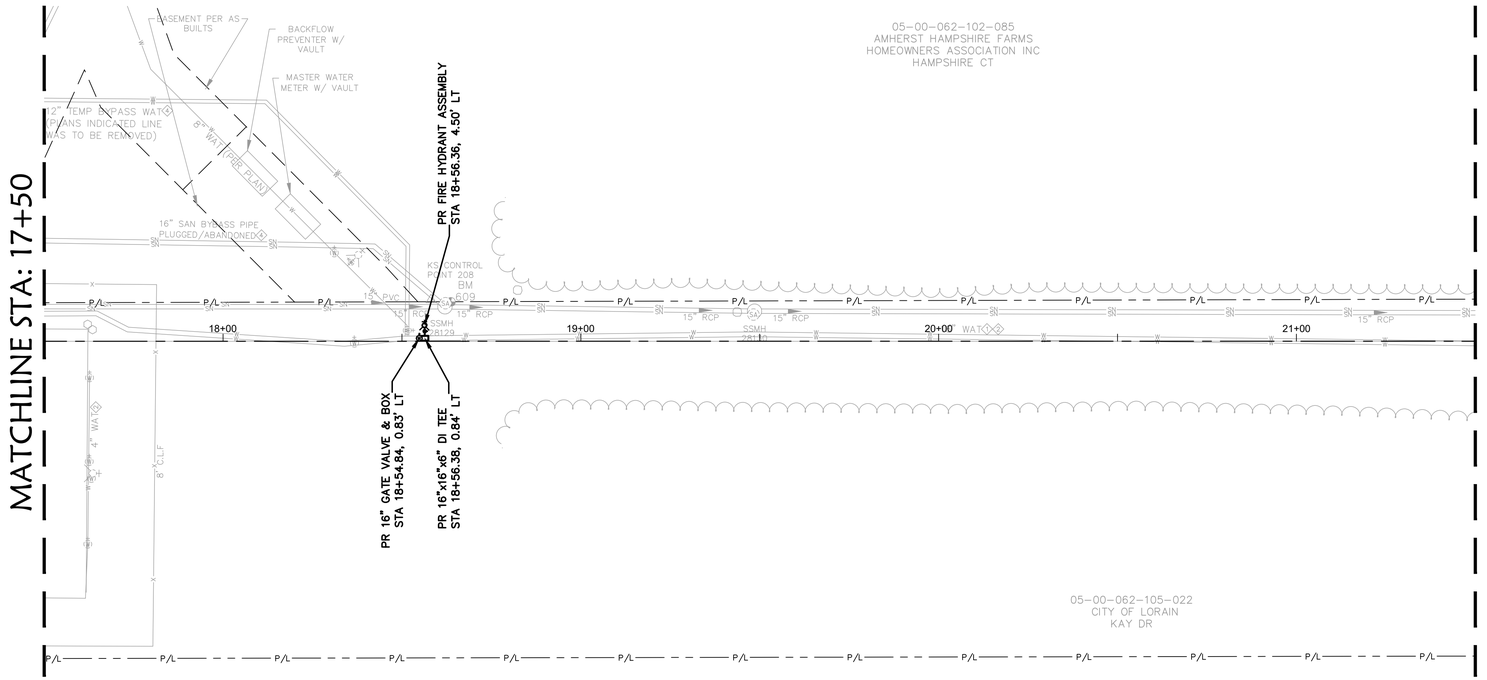


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

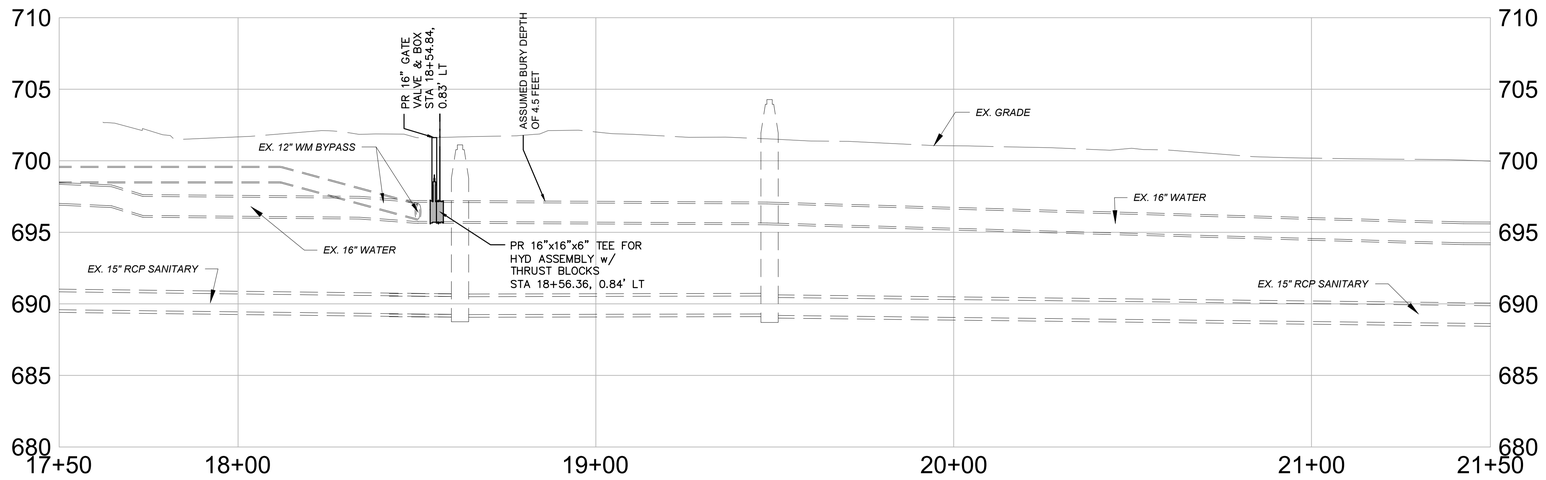
(IN FEET)

1 inch = 20 ft.

STRUCTURE TABLE

SSMH 28129
RIM=704.00
INV=689.25 15" RCP NE
INV=689.26 15" RCP SW
INV=689.75 15" PVC SW
(PARTIALLY PLUGGED)

SSMH 28130
RIM=700.80
INV=689.20 15" RCP NE
INV=689.30 15" RCP SW



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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BOREMAN - PLAN & PROFILE 17+50 TO 21+50

DRAWING NO.

B6

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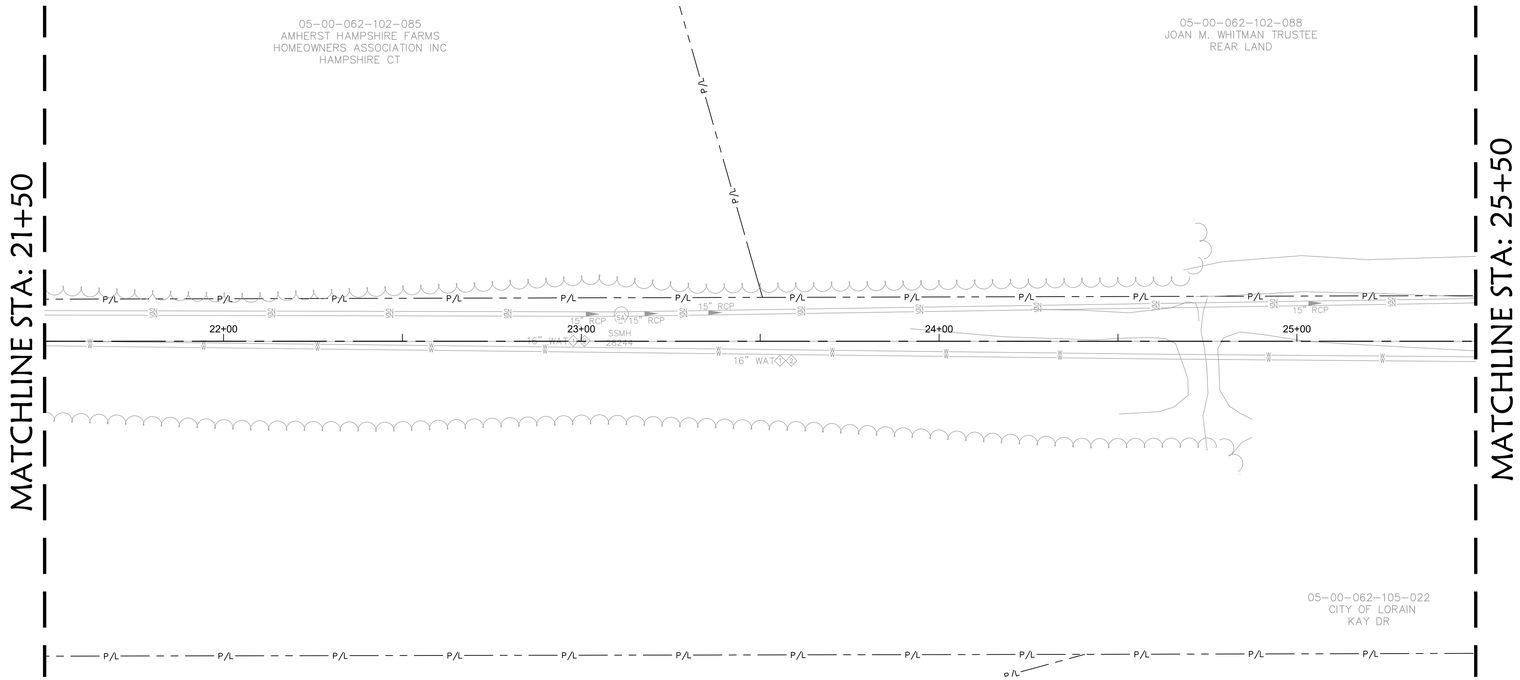


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

NORTH

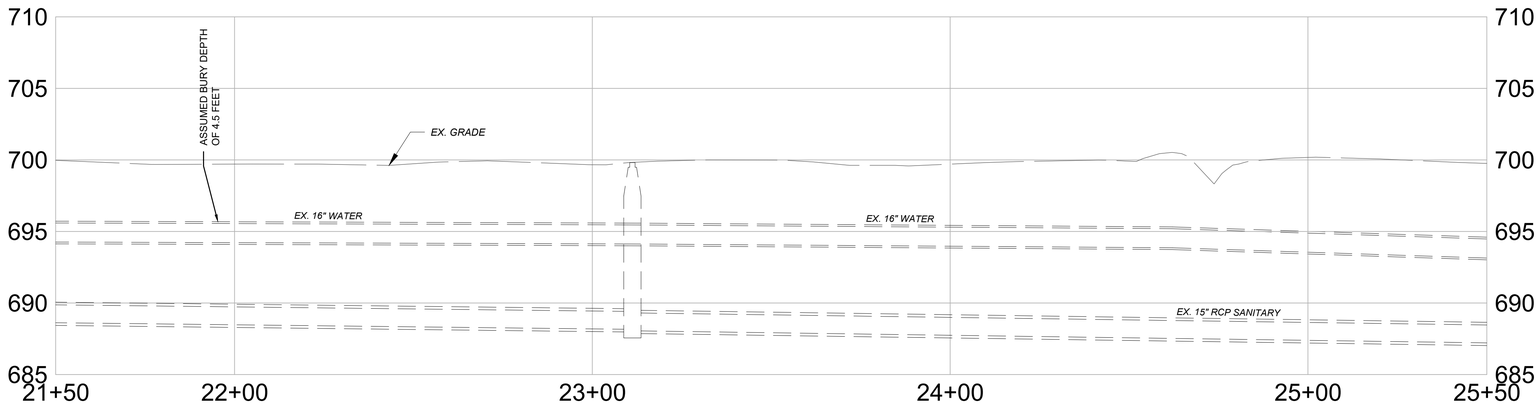
20 0 10 20

(IN FEET)

1 inch = 20 ft.

STRUCTURE TABLE

SSMH 28244
RIM=699.46
INV=688.06 15" RCP NE
INV=688.16 15" RCP SW



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

SEAL OF THE CITY OF LORAIN 1834 OHIO

OSBORN ENGINEERING
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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

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BOREMAN - PLAN & PROFILE 21+50 TO 25+50

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B7

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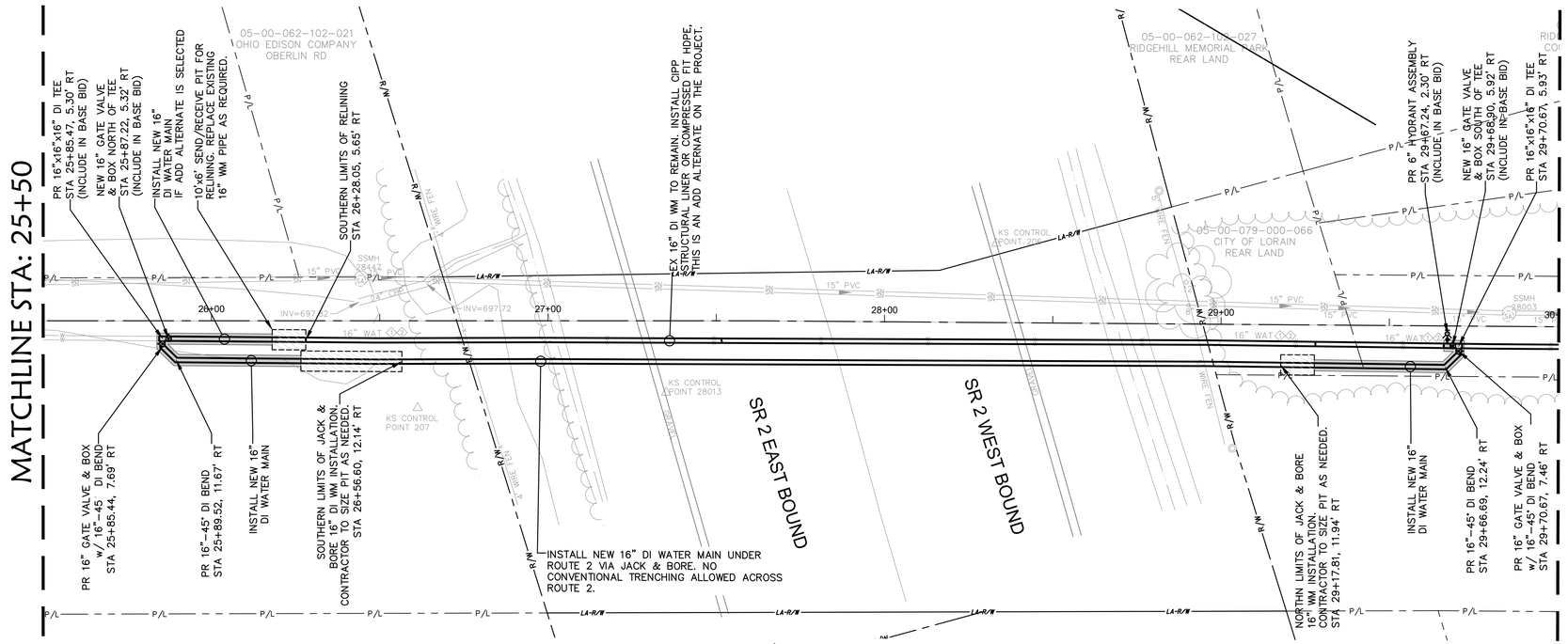
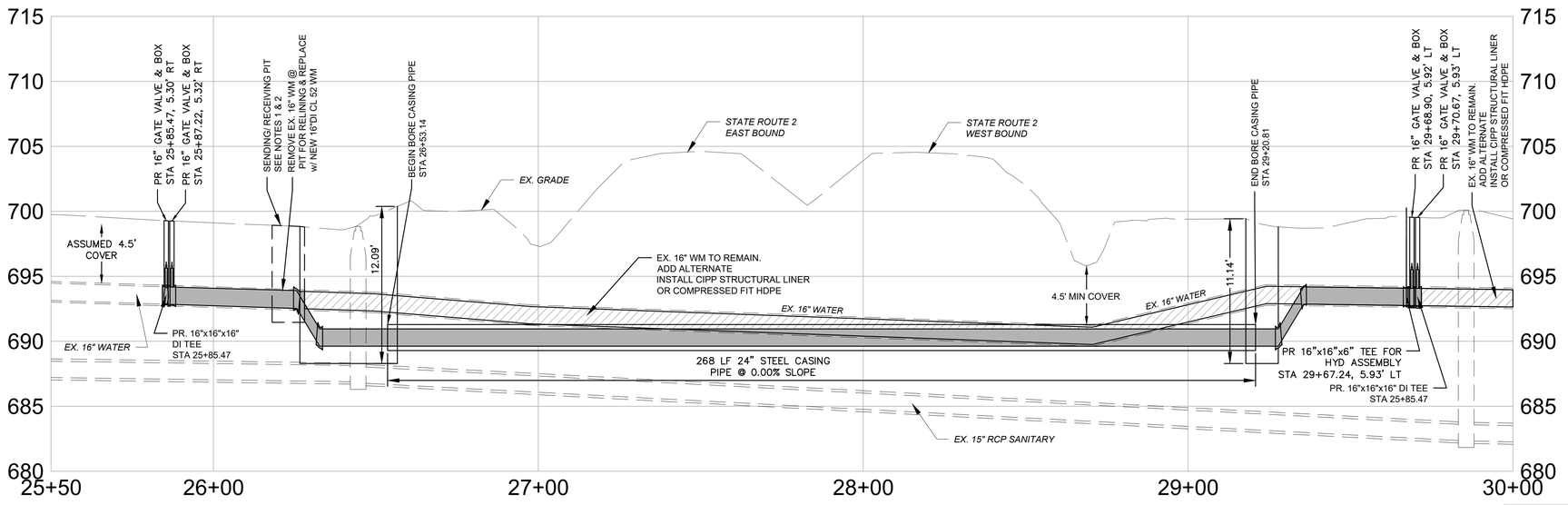


BOREMAN'S FARM

SCALE: 1" = 20'



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE
5 0 2.5 5
(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE
NORTH
20 0 10 20
(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 28447
RIM=699.80
INV=686.80 15" PVC NE
INV=686.88 15" PVC SW

GENERAL NOTES:

1. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
2. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.

LEGEND

PROPOSED:
- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

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(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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BOREMAN - PLAN & PROFILE 25+50 TO 30+00

DRAWING NO.
B8

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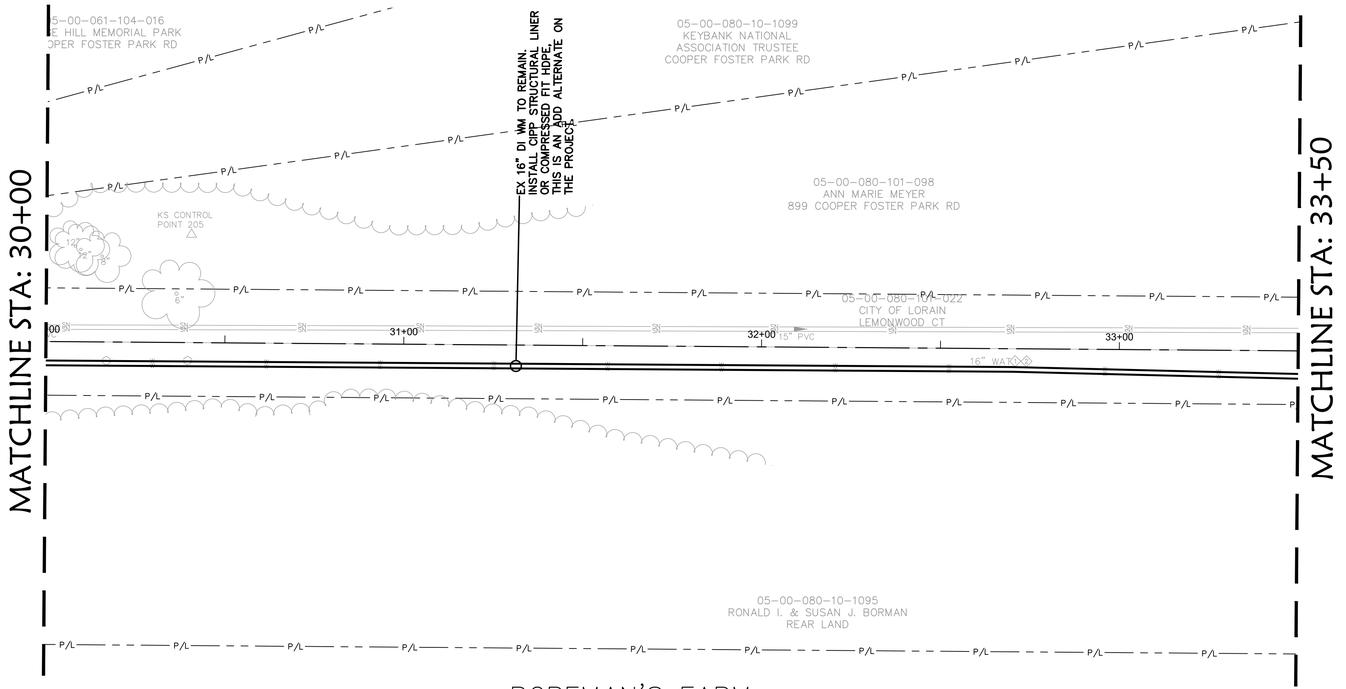


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

NORTH

20 0 10 20

(IN FEET)

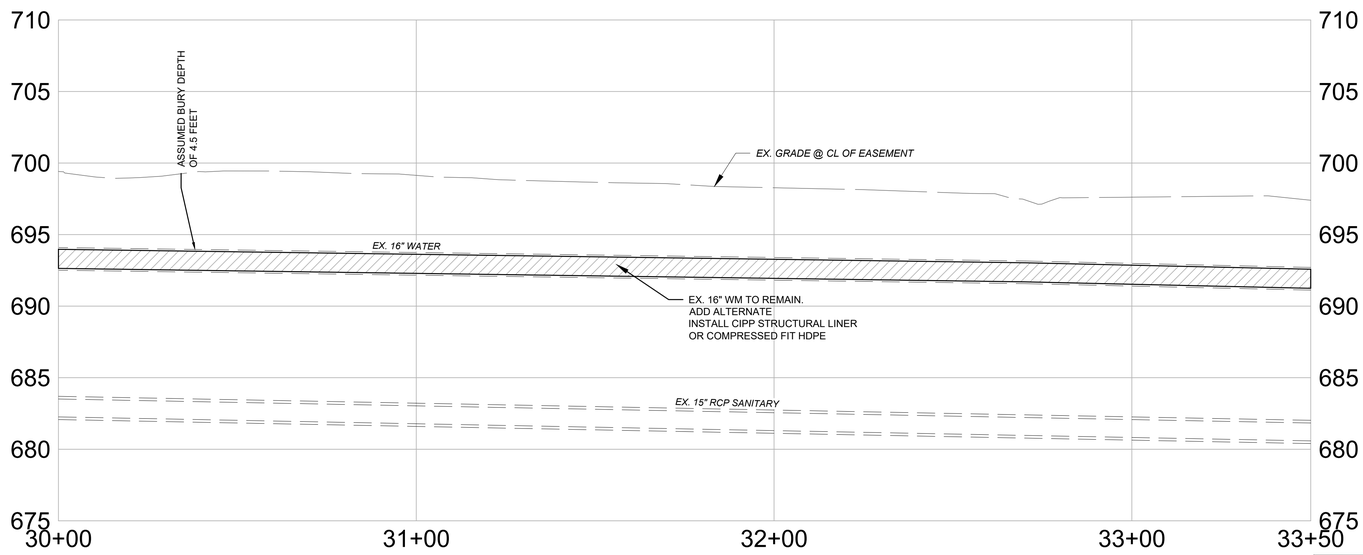
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 28003
RIM=700.41
INV=682.33 15" PVC NE & SW

GENERAL NOTES:

1. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
2. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

WSC = WATER SERVICE CONNECTION

ALL PROPOSED WSC'S SHALL BE 1" COPPER, TYPE K UNLESS OTHERWISE NOTED. INSTALL NEW VALVE CURB BOX.

- TRENCH RESTORATION LIMITS
- SENDING & RECEIVING PITS

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STATE OF OHIO
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BOREMAN - PLAN & PROFILE 30+00 TO 33+50

DRAWING NO.

B9

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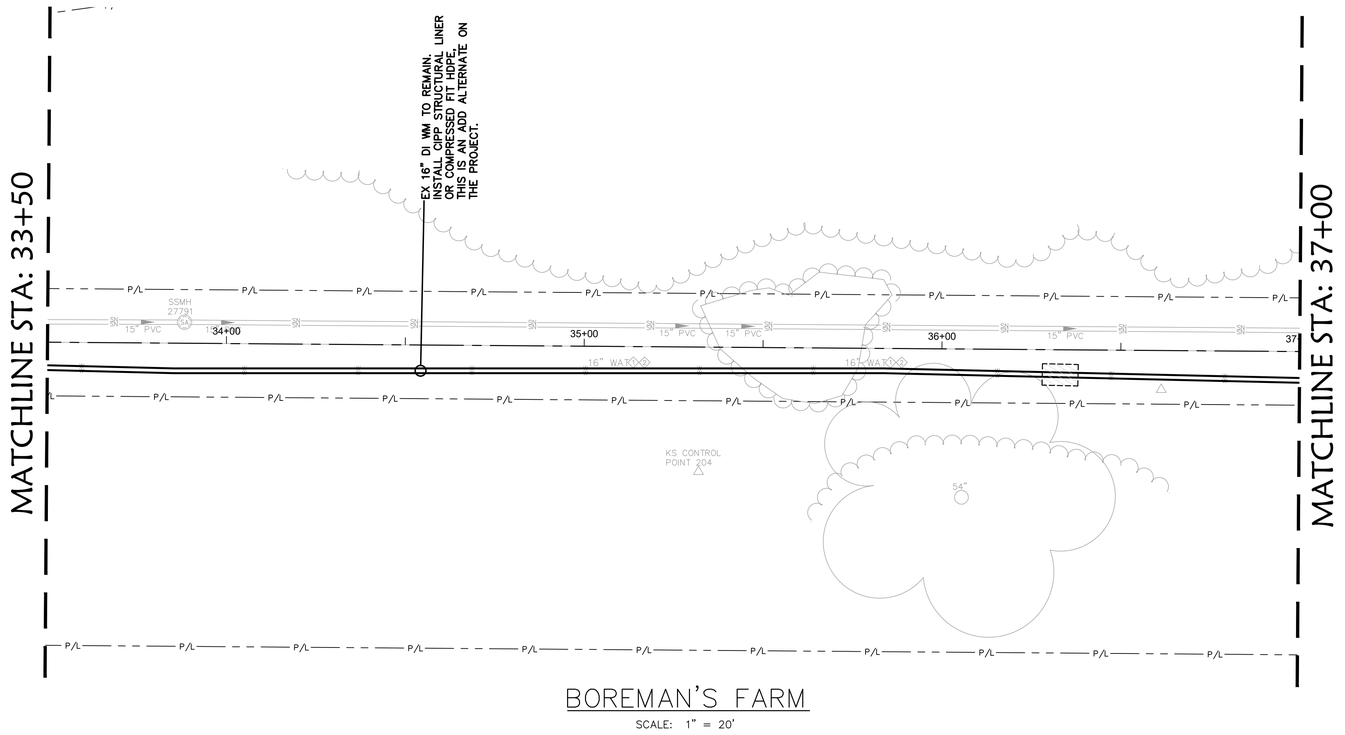
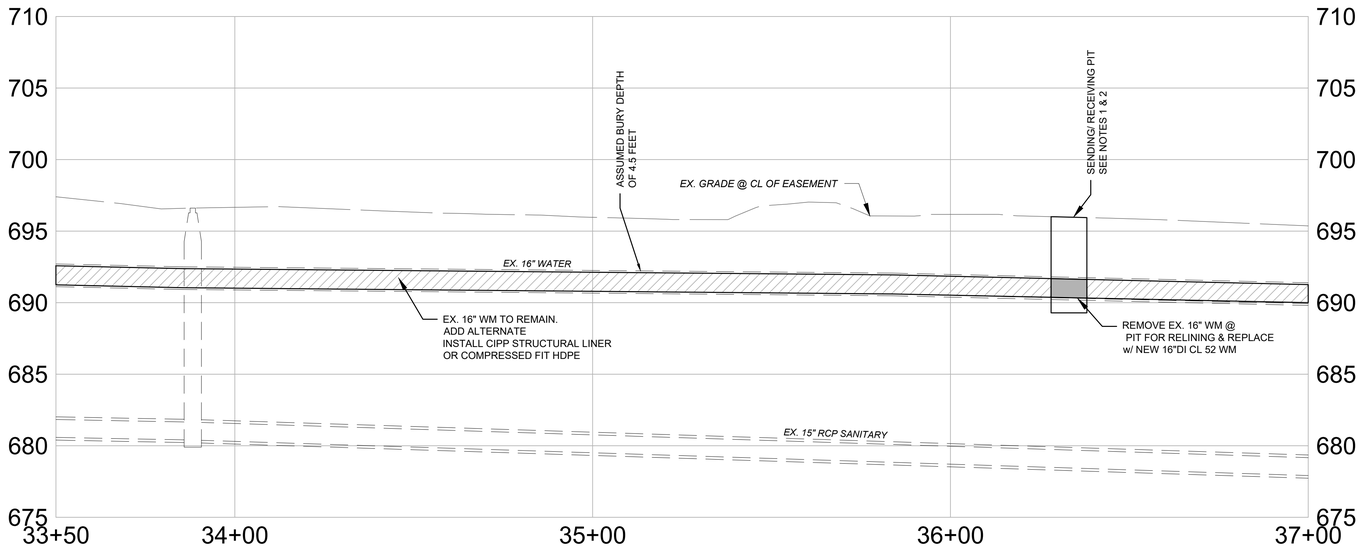


BOREMAN'S FARM

SCALE: 1" = 20'



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 inch = 5 ft.

GRAPHIC SCALE

NORTH

20 0 10 20

(IN FEET)
1 inch = 20 ft.

STRUCTURE TABLE

SSMH 27791
RIM=696.42
INV=680.40 15" PVC NE & SW

GENERAL NOTES:

1. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
2. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING UTILITIES AND COORDINATING WITH UTILITY OWNERS REGARDING TEMPORARY RELOCATION OR PROTECTION IN PLACE WITHIN LIMITS OR IN PROXIMITY OF SENDING/RECEIVING PITS.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

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BOREMAN - PLAN & PROFILE 33+50 TO 37+00

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B10

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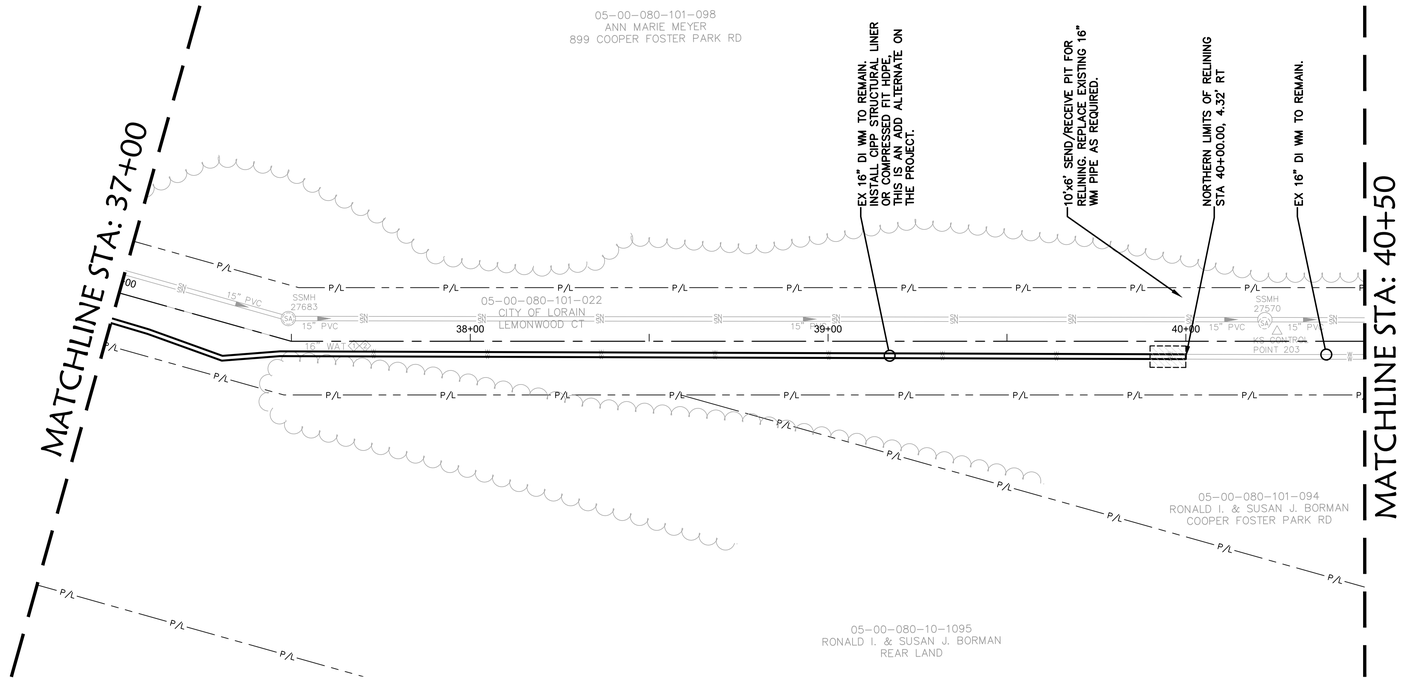

BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

(IN FEET)

1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 27570
RIM=691.96
INV=677.54 15" PVC N. & S

SSMH 27683

GENERAL NOTES:

1. LIMITS OF SENDING/RECEIVING PITS ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR ACTUAL LOCATION AND SIZING OF PITS. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF RESTORATION LIMITS AND MOT.
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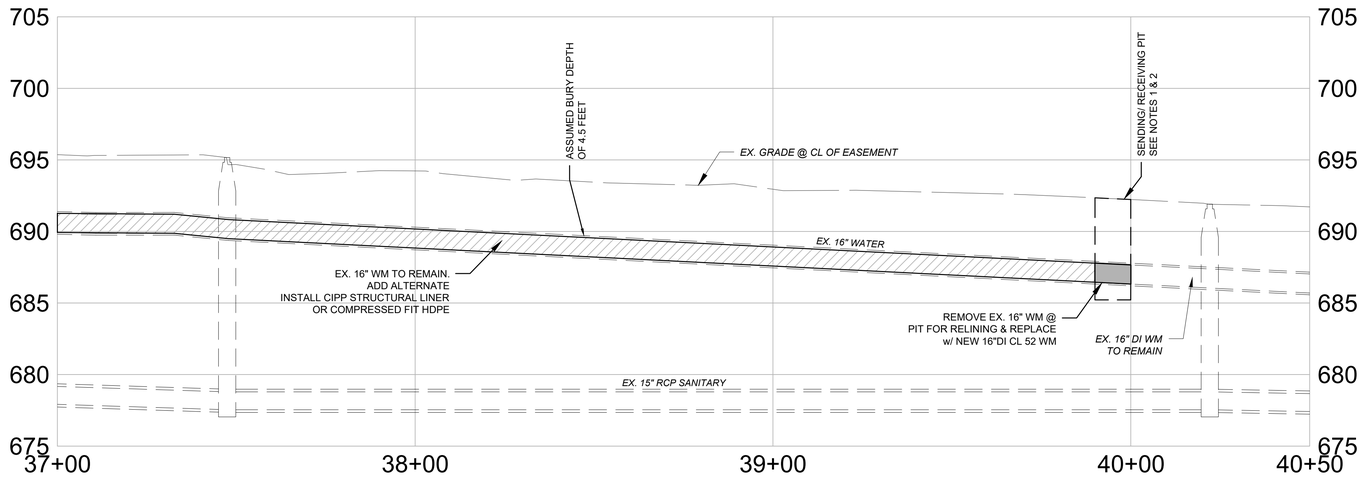

BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

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BOREMAN - PLAN & PROFILE 37+00 TO 40+50

DRAWING NO.

B11

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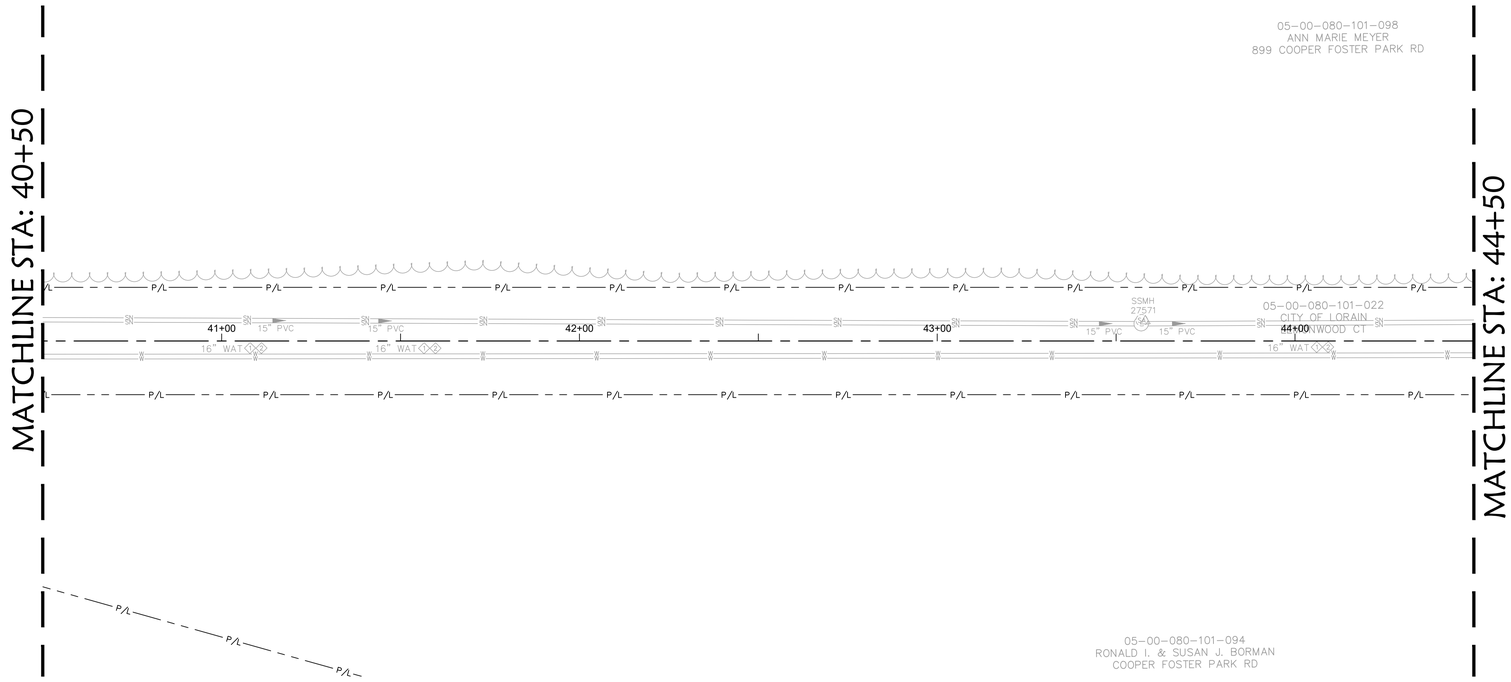


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

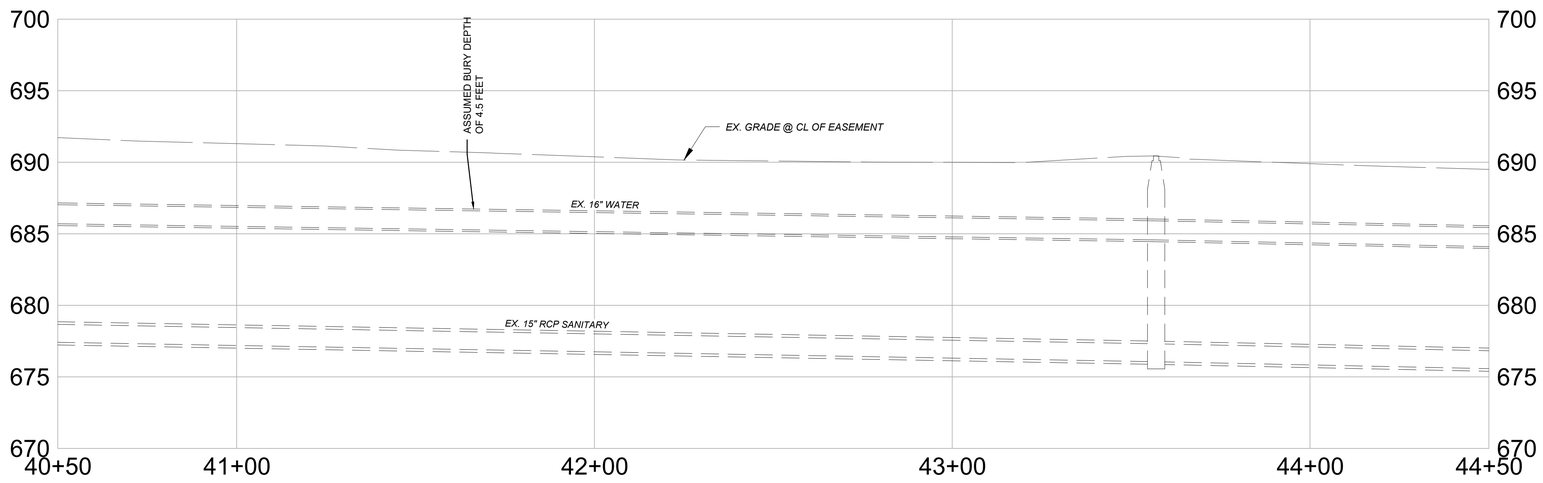
(IN FEET)

1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 27571
RIM=690.48
INV=676.06 15" PVC N. & S



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

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- SENDING & RECEIVING PITS

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BOREMAN - PLAN & PROFILE 40+50 TO 44+50

DRAWING NO.

B12

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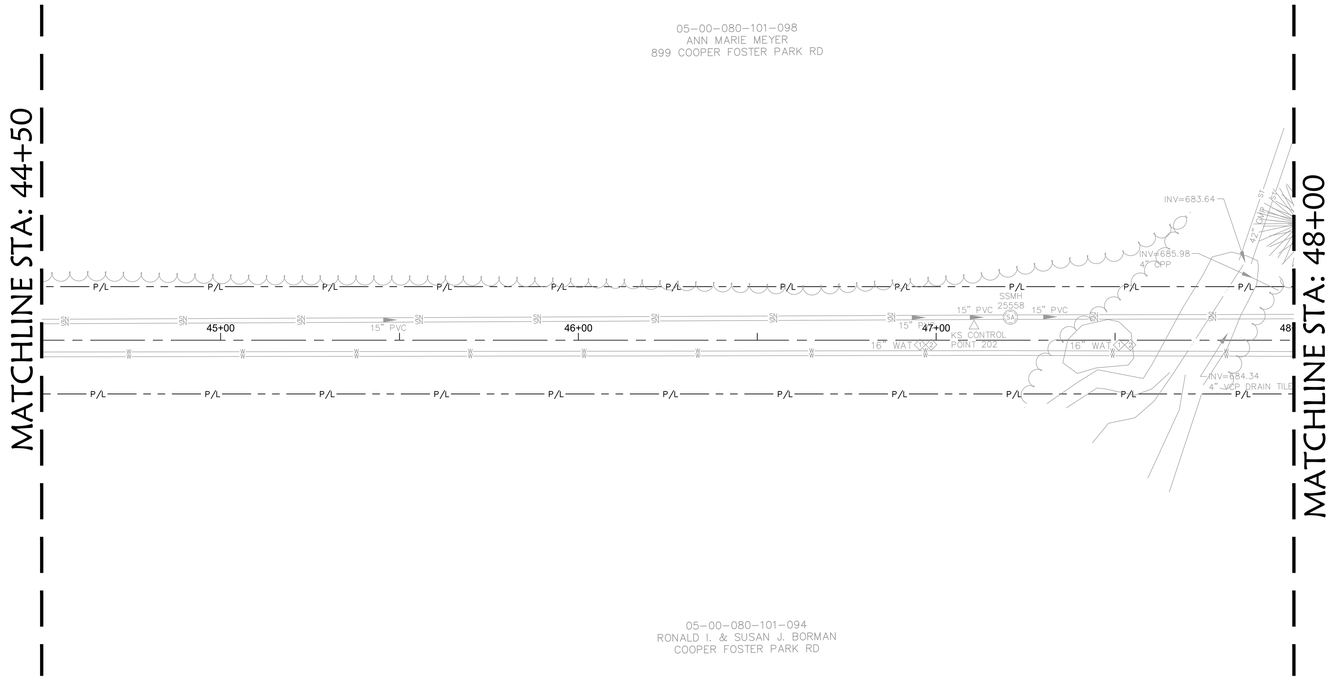


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

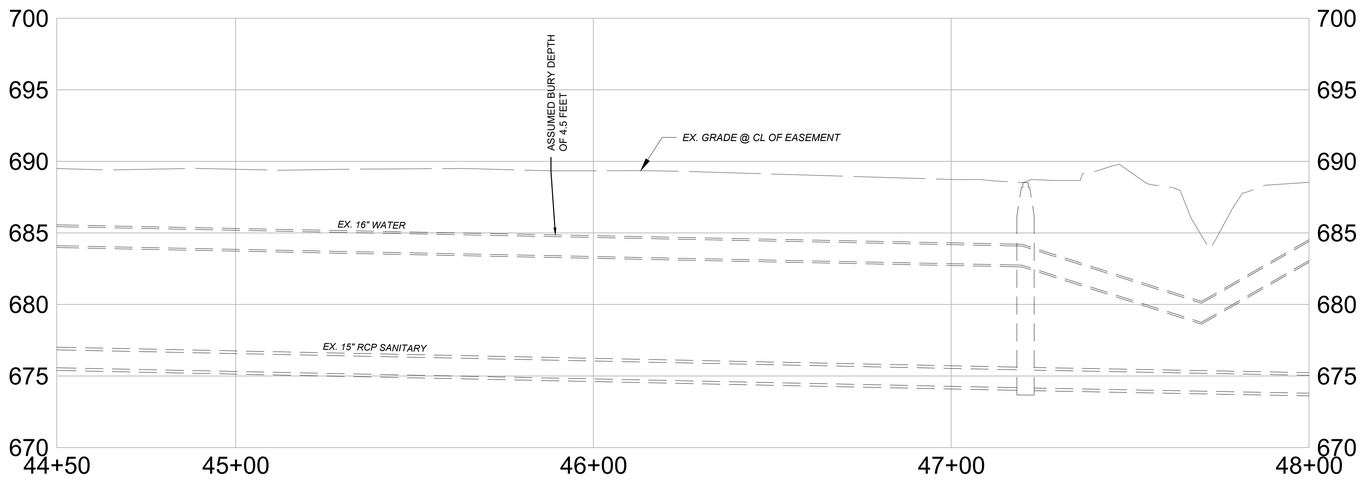
(IN FEET)

1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 25558
RIM=688.42
INV=674.17 15" PVC N & S



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

KEYNOTES:

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BOREMAN - PLAN & PROFILE 44+50 TO 48+00

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B13

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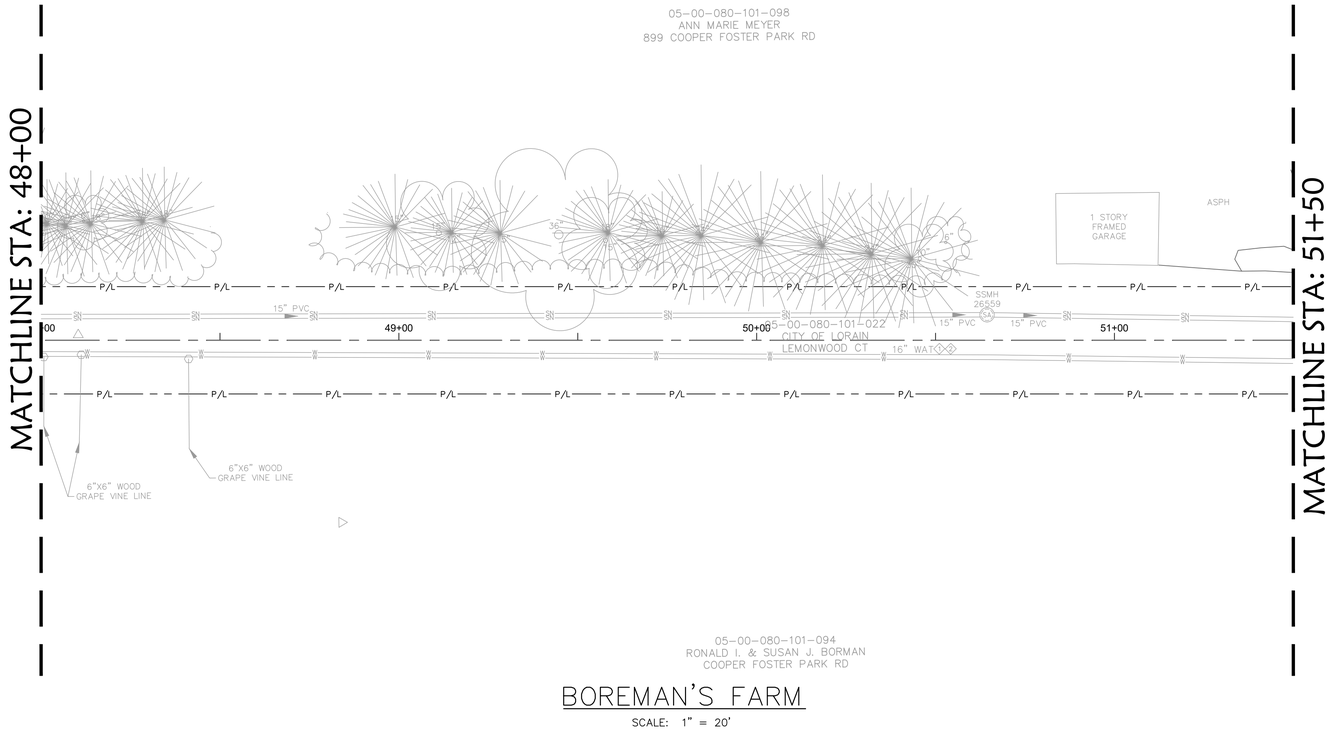


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

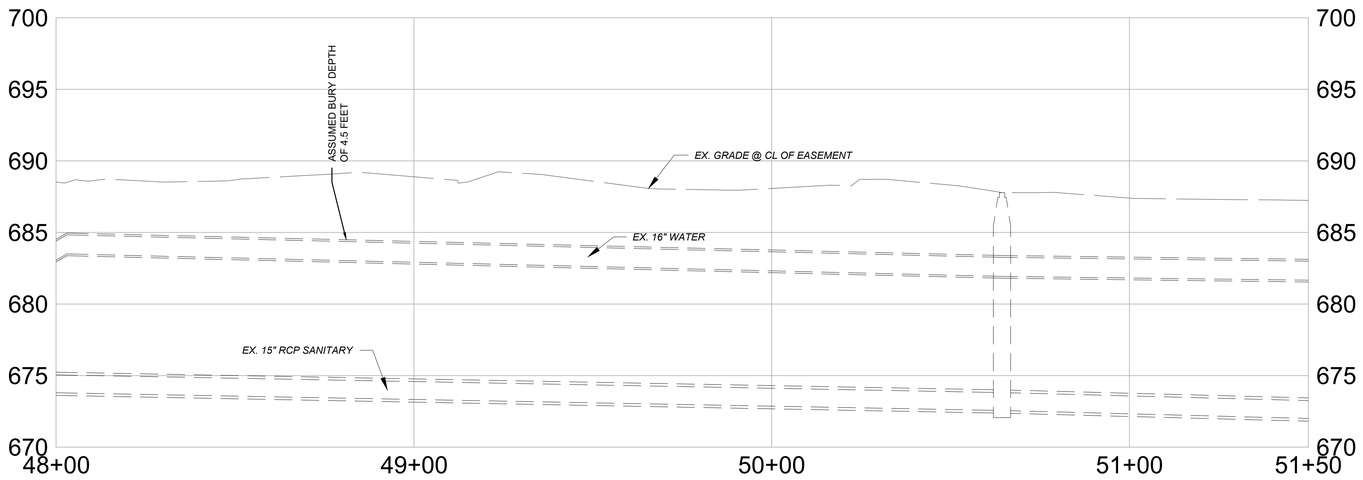
(IN FEET)

1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 26559
RIM=687.80
INV=672.56 15" PVC N. & S



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

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BOREMAN - PLAN & PROFILE 48+00 TO 51+50

DRAWING NO.

B14

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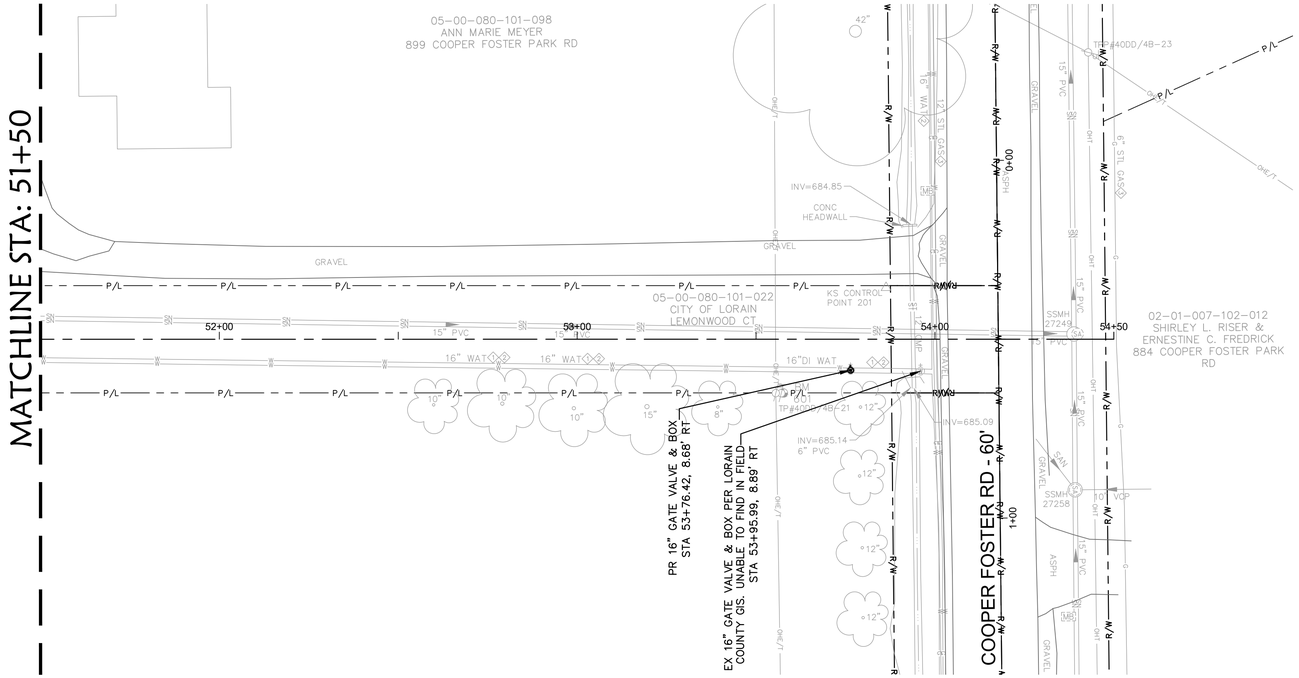


BOREMAN'S FARM

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20

(IN FEET)

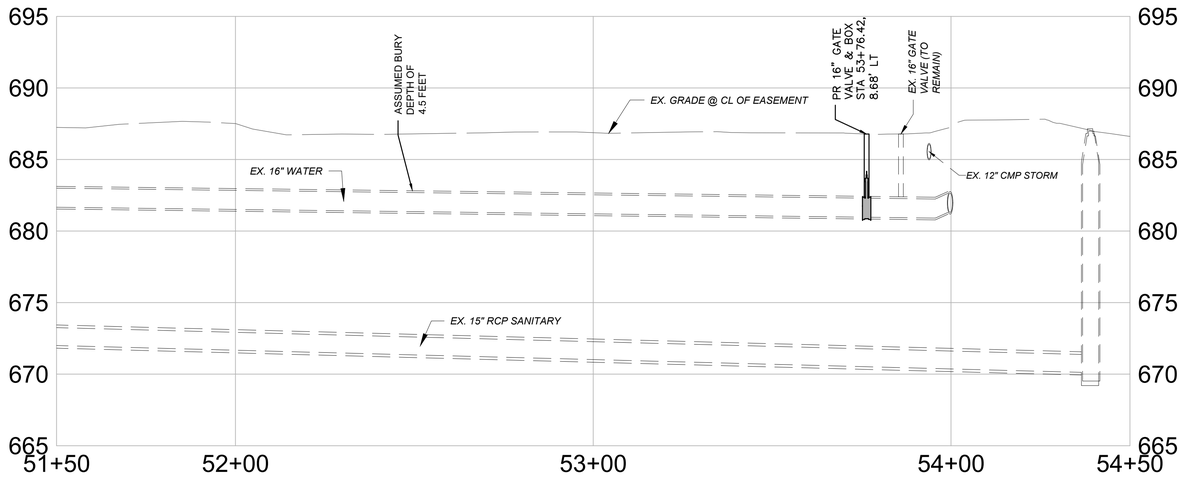
1 inch = 20 ft.

NORTH

STRUCTURE TABLE

SSMH 27249
RIM=686.98
INV=670.02 15" PVC E
INV=670.11 15" PVC S
INV=669.70 15" PVC W

SSMH 27258
RIM=686.80
INV=671.32 10" VCP N
INV=670.28 15" VCP E
INV=677.40 SAN SW
INV=670.14 15" VCP W



BOREMAN'S FARM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)

1 inch = 5 ft.

LEGEND

PROPOSED:

- WATER MAIN
- SERVICE CONNECTION
- RELINE EXISTING STEEL W.M.
- CIPP STRUCTURAL LINER OR COMPRESSED FIT HDPE
- WATER VALVE
- FIRE HYDRANT
- REDUCER

EXISTING: SEE GENERAL NOTES

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BOREMAN - PLAN & PROFILE 51+50 TO 54+50

DRAWING NO.

B15

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OMUTCD Typical Application Guidance Table

Street	Section	See Detail TA-10 (Sht TC3)	See Detail TA-18 (Sht TC4)	See Detail TA-22 (Sht TC5)	See Detail TA-26 (Sht TC6)	See Detail TA-27 (Sht TC7)	See Detail TA-30 (Sht TC10)	See Detail TA-33 (Sht TC11)	See Detail TA-46 (Sht TC12)	Detail	Notes
Eastman Drive	Eastman Drive intersection, southeast corner					X					None
	Eastman Drive between Leavitt Road and Station 14+67.82'		X								Moving closure
	Leavitt Road north of Walgreens parking lot.			X							
Leavitt Road	Center of intersection of W 21st Street and Leavitt Road				X						
	W 21st Street intersection, northeast corner					X					
	Leavitt Road between W 21st Street and W 20th Street	X									Moving closure
	W 20th Street intersection southeast corner					X					
	W 20th Street intersection northeast corner					X					
	Leavitt Road between W 20th Street to Edith Street								X		
Missouri Avenue	G Street intersection, northwest corner					X					
	Missouri Avenue between G Street and Garfield Boulevard								X		Moving closure
	Garfield Boulevard intersection, southeast corner					X					
Sherwood Drive	Meister Road intersection, northeast corner					X					
	Sherwood Drive between Meister Road and Forest Lane	X									Moving closure
	Ivanhoe Drive intersection, southeast corner					X					
	Ivanhoe Drive intersection, northeast corner					X					
	Woodstock Drive intersection, southeast corner					X					
	Woodstock Drive intersection, northeast corner					X					
	Valleyview Drive intersection, southeast corner					X					
	Valleyview Drive intersection, northeast corner					X					
	Forest Lane intersection, southeast corner					X					
	Forest Lane intersection, northeast corner					X					
	Sherwood Drive between Forest Lane and Windsor Court									X	MOT Plan Sheet TC13
	Sherwood Drive between Windsor Court and W 21st Street	X									Moving closure
	Windsor Court intersection, southwest corner					X					
	Windsor Court intersection, northwest corner					X					
	Canterbury Court intersection, southwest corner					X					
	Canterbury Court intersection, northwest corner					X					
	W 21st Street intersection, southwest corner					X					
Valleyview Drive	Sherwood Drive intersection, southeast corner					X					
	Valleyview Drive between Sherwood Drive and Woodstock Drive	X									Moving closure
	Woodstock Drive intersection, northwest corner					X					
	Woodstock Drive intersection, southwest corner					X					
West Erie Avenue	Beavercrest Drive intersection, southwest corner					X					
	Beavercrest Drive intersection, interior lanes of West Erie Avenue						X				Additional signage required for speed and volume
	West Erie Avenue between Beavercrest Drive and Kolbe Road							X			Moving closure
	Kolbe Road intersection, northwest corner			X							Provide sufficient lane taper for lane closure
Hamilton Avenue	West Erie intersection, southeast corner					X					
	Hamilton Avenue STA. 1+50 to facilitate installation of cut in valves or access	X									
	W 1st Street intersection, north side					X					
	W 1st Street intersection of City Hall Place to 100' north	X									Moving closure for pit installation and trenching

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MAINTENANCE OF TRAFFIC SUMMARY TABLE

DRAWING NO.

TC1

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Table 6H-2. Meaning of Symbols on Typical Application Diagrams

	Arrow board		Shadow vehicle
	Arrow board support or trailer (shown facing down)		Sign (shown facing left)
	Changeable message sign or trailer		Surveyor
	Channelizing device		Temporary barrier
	Crash cushion		Temporary barrier with warning light
	Direction of temporary traffic detour		Traffic or pedestrian signal
	Direction of traffic		
	Flagger		Truck-mounted attenuator
	High-level warning device (Flag tree)		Type 3 barricade
	Longitudinal channelizing device		Warning light
	Luminaire		Work space
	Pavement markings that should be removed for a long-term project		Work Vehicle

Table 6H-3. Meaning of Letter Codes on Typical Application Diagrams

Road Type	Distance Between Signs (Feet) **		
	A	B	C
Urban (low speed) *	100	100	100
Urban (high speed) *	350	350	350
Rural	500	500	500
Expressway / Freeway	1,000	1,500	2,640

* Speed category to be determined by highway agency.

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The “first sign” is the sign in a three-sign series that is closest to the TTC zone. The “third sign” is the sign that is furthest upstream from the TTC zone.)

Table 6H-4. Formulas for Determining Taper Lengths

Speed (S)	Taper Length (L) in Feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	L =WS

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

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Notes for Figure 6H-10—Typical Application 10
Lane Closure on a Two-Lane Road Using Flaggers

Option:

1. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).
2. The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short-duration operations.
3. Flashing warning lights and/or flags may be used to call attention to the advance warning signs. A BE PREPARED TO STOP sign may be added to the sign series.

Guidance:

4. *The buffer space should be extended so that the two-way traffic taper is placed before a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger and a queue of stopped vehicles.*

Standard:

5. **At night, flagger stations shall be illuminated, except in emergencies.**

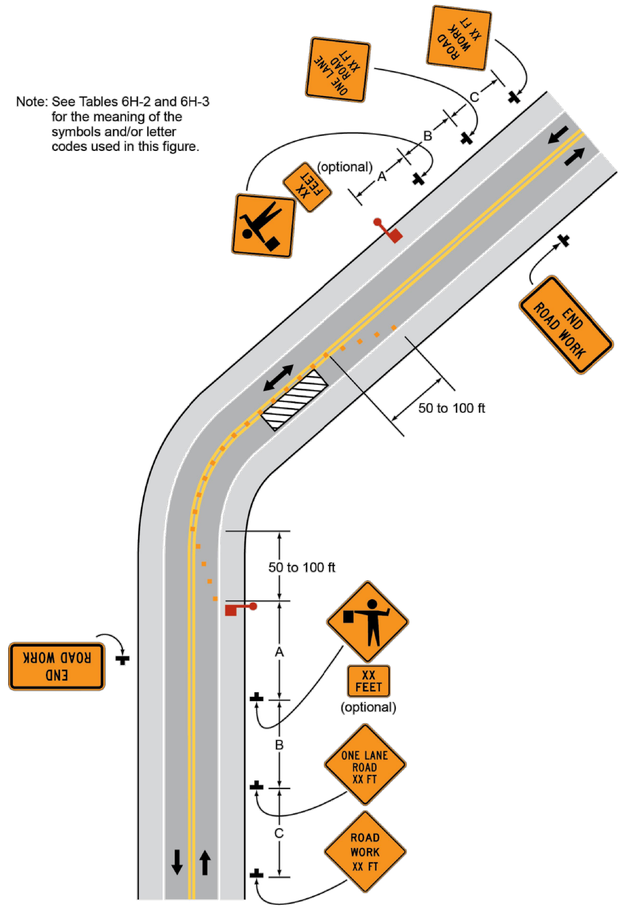
Guidance:

6. *When used, the BE PREPARED TO STOP sign should be located between the Flagger sign and the ONE LANE ROAD sign.*
7. *When a grade crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the grade crossing, the TTC zone should be extended so that the transition area precedes the grade crossing.*
8. *When a grade crossing equipped with active warning devices exists within the activity area, provisions should be made for keeping flaggers informed as to the activation status of these warning devices.*
9. *When a grade crossing exists within the activity area, drivers operating on the left-hand side of the normal center line should be provided with comparable warning devices as for drivers operating on the right-hand side of the normal center line.*
10. *Early coordination with the railroad company or light rail transit agency should occur before work starts.*

Option:

11. A flagger or a uniformed law enforcement officer may be used at the grade crossing to minimize the probability that vehicles are stopped within 15 feet of the grade crossing, measured from both sides of the outside rails.

Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)



Typical Application 10

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Notes for Figure 6H-18—Typical Application 18
Lane Closure on a Minor Street

Standard:

1. This TTC shall be used only for low-speed facilities having low traffic volumes.

Option:

2. Where the work space is short, where road users can see the roadway beyond, and where volume is low, vehicular traffic may be self-regulating.

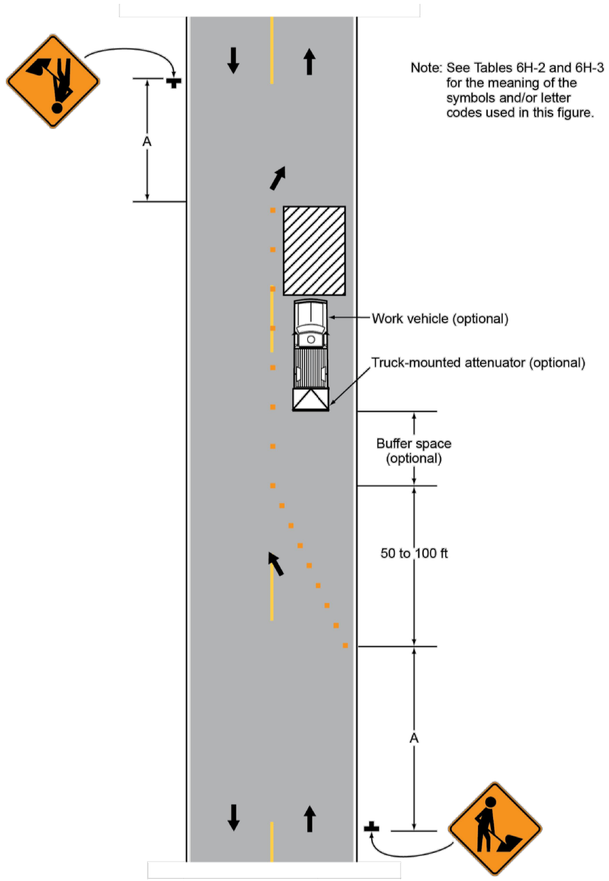
Standard:

3. Where vehicular traffic cannot effectively self-regulate, one or two flaggers shall be used as illustrated in Figure 6H-10.

Option:

4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. A truck-mounted attenuator may be used on the work vehicle and the shadow vehicle.

Figure 6H-18. Lane Closure on a Minor Street (TA-18)



Typical Application 18

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Notes for Figure 6H-22—Typical Application 22
Right-Hand Lane Closure on the Far Side of an Intersection

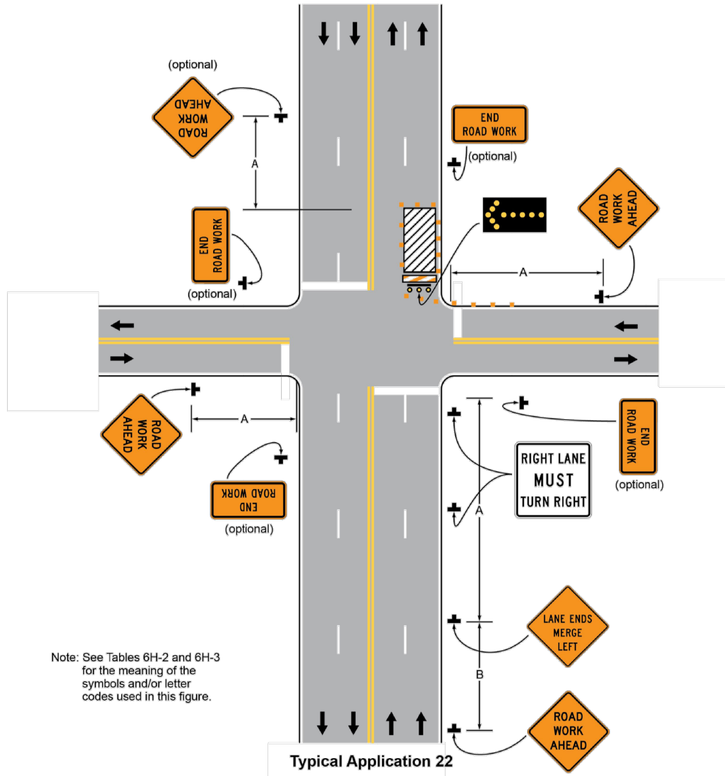
Guidance:

1. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure 6H-29.*

Option:

2. The normal procedure is to close on the near side of the intersection any lane that is not carried through the intersection. However, when this results in the closure of a right-hand lane having significant right turning movements, then the right-hand lane may be restricted to right turns only, as shown. This procedure increases the through capacity by eliminating right turns from the open through lane.
3. For intersection approaches reduced to a single lane, left-turning movements may be prohibited to maintain capacity for through vehicular traffic.
4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. Where the turning radius is large, it may be possible to create a right-turn island using channelizing devices or pavement markings.

Figure 6H-22. Right-Hand Lane Closure on the Far Side of an Intersection (TA-22)



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Notes for Figure 6H-26—Typical Application 26
Closure in the Center of an Intersection

Guidance:

1. *All lanes should be a minimum of 10 feet in width as measured to the near face of the channelizing devices.*
2. *The shifting taper should be approximately L in length where speeds are 50 mph or greater (see Table 6C-3).*

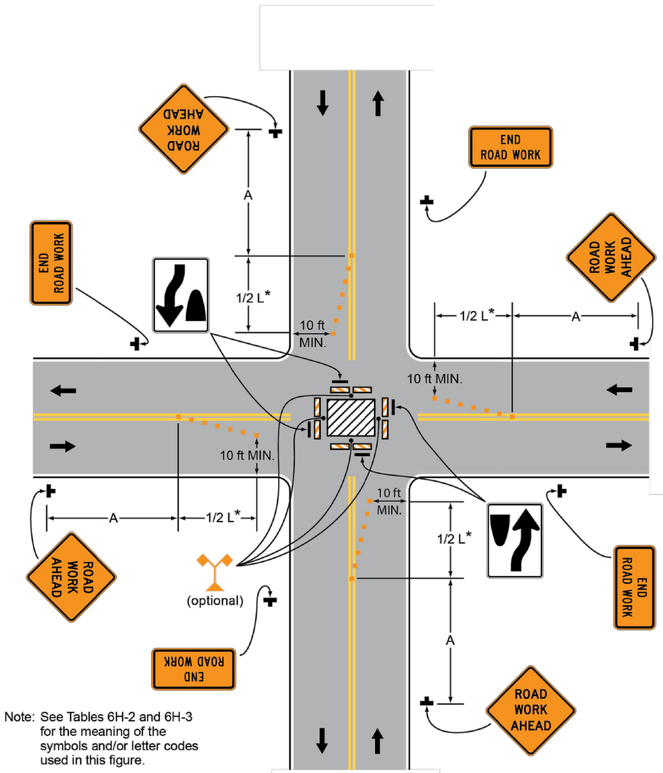
Option:

3. A high-level warning device may be placed in the work space, if there is sufficient room.
4. For short-term use on low-volume, low-speed roadways with vehicular traffic that does not include longer and wider heavy commercial vehicles, a minimum lane width of 9 feet may be used.
5. Flashing warning lights and/or flags may be used to call attention to advance warning signs.
6. Unless the streets are wide, it may be physically impossible to turn left, especially for large vehicles. Left turns may be prohibited as required by geometric conditions.
7. For short-duration work operations, the channelizing devices may be eliminated if a vehicle displaying high-intensity rotating, flashing, oscillating, or strobe lights is positioned in the work space.
8. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

9. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

Figure 6H-26. Closure in the Center of an Intersection (TA-26)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

* See Note 2.

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Notes for Figure 6H-27—Typical Application 27
Closure at the Side of an Intersection

Guidance:

1. *The situation depicted can be simplified by closing one or more of the intersection approaches. If this cannot be done, and/or when capacity is a problem, through vehicular traffic should be directed to other roads or streets.*
2. *Depending on road user conditions, flagger(s) or uniformed law enforcement officer(s) should be used to direct road users within the intersection.*

Standard:

3. At night, flagger stations shall be illuminated, except in emergencies.

Option:

4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. For short-duration work operations, the channelizing devices may be eliminated if a vehicle displaying high-intensity rotating, flashing, oscillating, or strobe lights is positioned in the work space.
6. A BE PREPARED TO STOP sign may be added to the sign series.

Guidance:

7. *When used, the BE PREPARED TO STOP sign should be located before the Flagger symbol sign.*
8. *ONE LANE ROAD AHEAD signs should also be used to provide adequate advance warning.*

Support:

9. Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

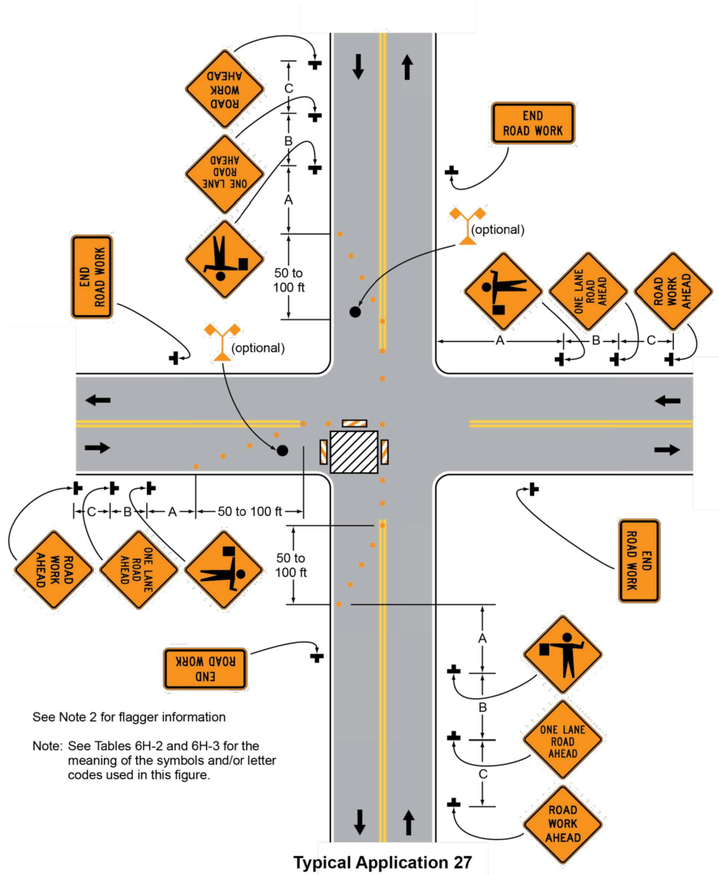
Option:

10. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

11. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

Figure 6H-27. Closure at the Side of an Intersection (TA-27)



See Note 2 for flagger information

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 27

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Notes for Figure 6H-28—Typical Application 28
Sidewalk Detour or Diversion

Standard:

1. **When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.**

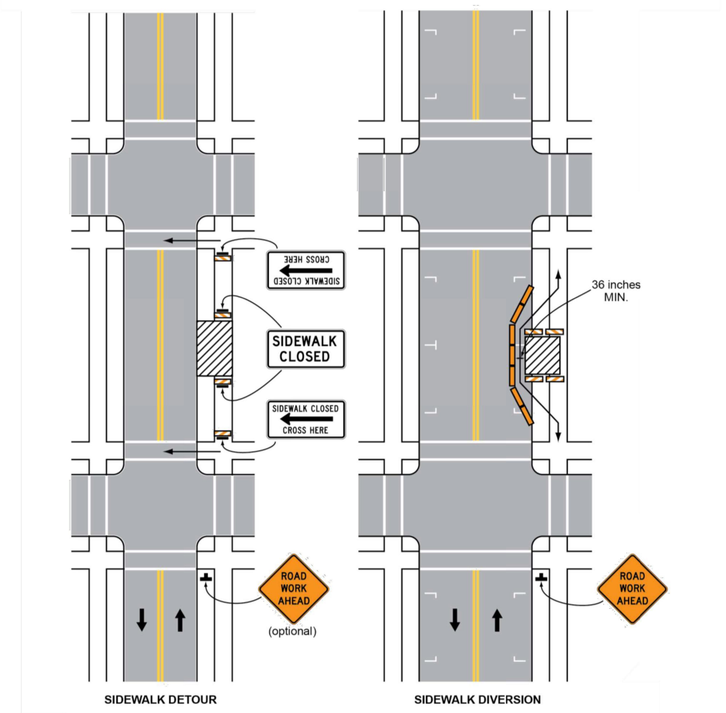
Guidance:

2. *Where high speeds are anticipated, a temporary traffic barrier and, if necessary, a crash cushion should be used to separate the temporary sidewalks from vehicular traffic.*
3. *Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.*

Option:

4. Street lighting may be considered.
5. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS signs, may be used to control vehicular traffic.
6. For nighttime closures, Type A Flashing warning lights may be used on barricades that support signs and close sidewalks.
7. Type C Steady-Burn or Type D 360-degree Steady-Burn warning lights may be used on channelizing devices separating the temporary sidewalks from vehicular traffic flow.
8. Signs, such as KEEP RIGHT (LEFT), may be placed along a temporary sidewalk to guide or direct pedestrians.

Figure 6H-28. Sidewalk Detour or Diversion (TA-28)



Typical Application 28

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

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Notes for Figure 6H-29—Typical Application 29
Crosswalk Closures and Pedestrian Detours

Standard:

1. **When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.**
2. **Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk.**

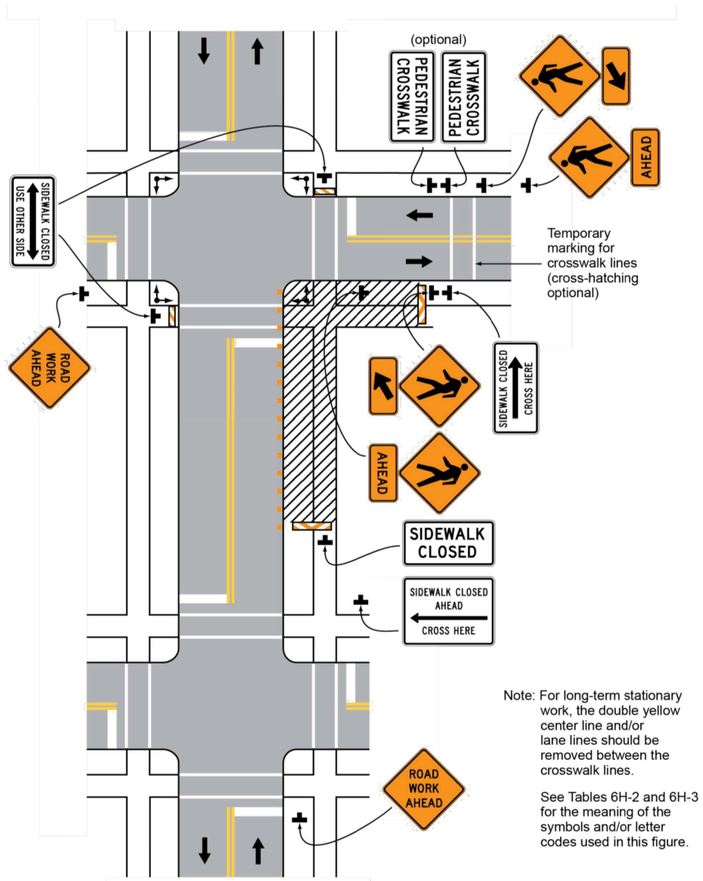
Guidance:

3. *Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.*
4. *Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.*

Option:

5. Street lighting may be considered.
6. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS signs, may be used to control vehicular traffic.
7. For nighttime closures, Type A Flashing warning lights may be used on barricades supporting signs and closing sidewalks.
8. Type C Steady-Burn or Type D 360-degree Steady-Burn warning lights may be used on channelizing devices separating the work space from vehicular traffic.
9. In order to maintain the systematic use of the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs in a jurisdiction, the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs may be used in TTC zones.

Figure 6H-29. Crosswalk Closures and Pedestrian Detours (TA-29)



Note: For long-term stationary work, the double yellow center line and/or lane lines should be removed between the crosswalk lines.

See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 29

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Notes for Figure 6H-30—Typical Application 30
Interior Lane Closure on a Multi-lane Street

Guidance:

1. *This information applies to low-speed, low-volume urban streets. Where speed or volume is higher, additional signing such as Lane Ends (W4-2) should be used.*

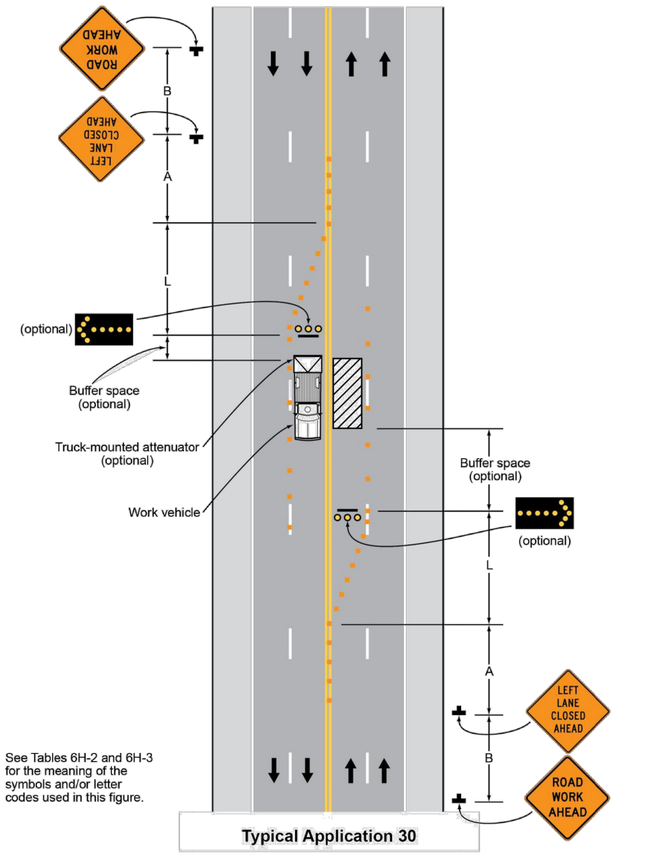
Option:

2. The closure of the adjacent interior lane in the opposing direction may not be necessary, depending upon the activity being performed and the work space needed for the operation.
3. Shadow vehicles with a truck-mounted attenuator may be used.

Standard:

4. When an additional sign is used (see Note 1), the signs shown shall be relocated to accommodate standard sign spacing for the added sign.

Figure 6H-30. Interior Lane Closure on a Multi-lane Street (TA-30)



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Notes for Figure 6H-33—Typical Application 33
Stationary Lane Closure on a Divided Highway

Standard:

1. **This information also shall be used when work is being performed in the lane adjacent to the median on a divided highway. In this case, the LEFT LANE CLOSED signs and the corresponding Lane Ends signs shall be substituted.**
2. **When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.**

Guidance:

3. *When paved shoulders having a width of 8 feet or more are closed, channelizing devices should be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.*

Option:

4. A truck-mounted attenuator may be used on the work vehicle and/or shadow vehicle.

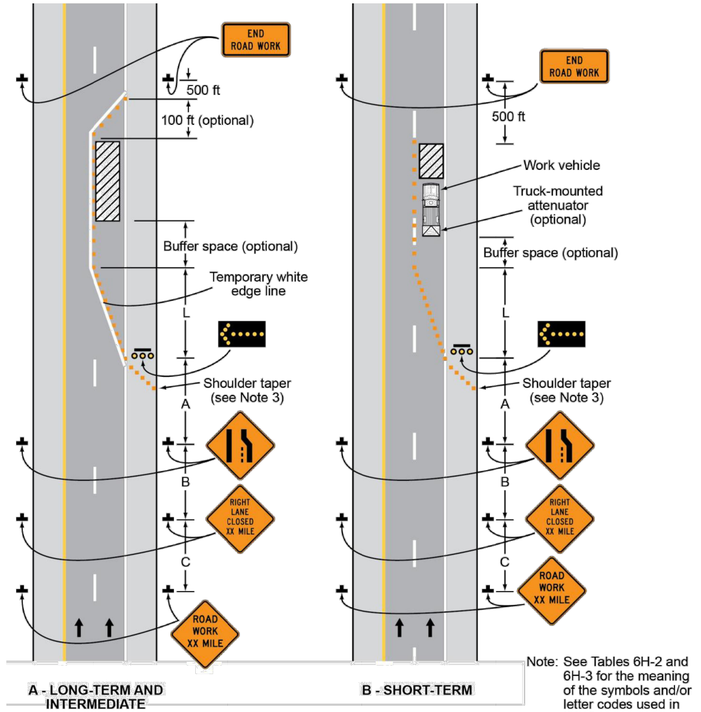
Support:

5. Where conditions permit, restricting all vehicles, equipment, workers, and their activities to one side of the roadway might be advantageous.

Standard:

6. **An arrow board shall be used when a freeway lane is closed. When more than one freeway lane is closed, a separate arrow board shall be used for each closed lane.**

Figure 6H-33. Stationary Lane Closure on a Divided Highway (TA-33)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 33

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3/7/2025 5:30 PM Pawar, Sayali

Notes for Figure 6H-46—Typical Application 46
Work in the Vicinity of a Grade Crossing

Guidance:

1. *When grade crossings exist either within or in the vicinity of roadway work activities, extra care should be taken to minimize the probability of conditions being created, by lane restrictions, flagging, or other operations, where vehicles might be stopped within the grade crossing, considered as being 15 ft on either side of the closest and farthest rail.*

Standard:

2. **If the queuing of vehicles across active rail tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the highway-rail grade crossing to prevent vehicles from stopping within the grade crossing (as described in Note 1), even if automatic warning devices are in place.**

Guidance:

3. *Early coordination with the railroad company or light rail transit agency should occur before work starts.*
4. *In the example depicted, the buffer space of the activity area should be extended upstream of the grade crossing (as shown) so that a queue created by the flagging operation will not extend across the grade crossing.*
5. *The DO NOT STOP ON TRACKS sign should be used on all approaches to a highway-rail grade crossing within the limits of a TTC zone.*

Option:

6. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
7. A BE PREPARED TO STOP sign may be added to the sign series.

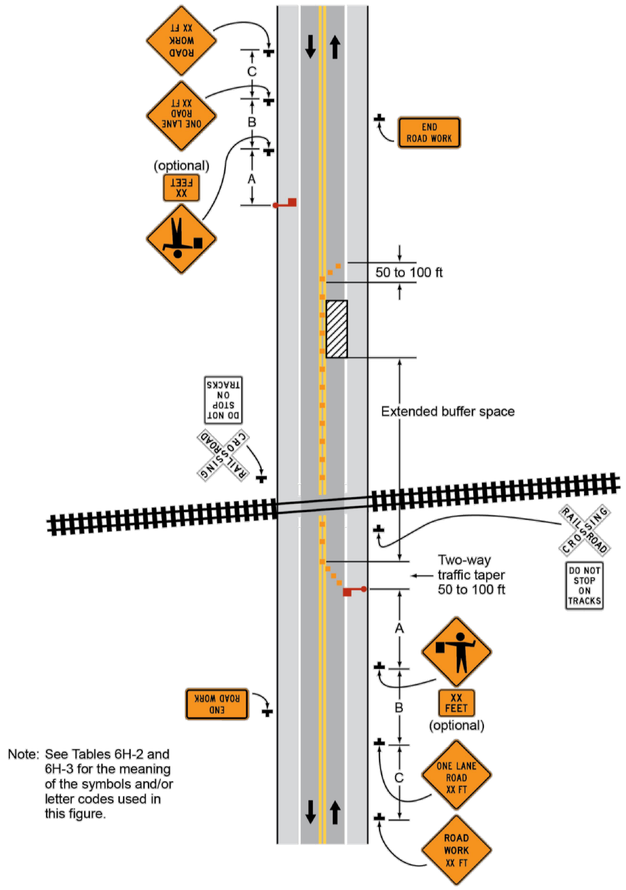
Guidance:

8. *When used, the BE PREPARED TO STOP sign should be located before the Flagger symbol sign.*

Standard:

9. **At night, flagger stations shall be illuminated, except in emergencies.**

Figure 6H-46. Work in the Vicinity of a Grade-Crossing (TA-46)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 46

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64082
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

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MAINTENANCE OF TRAFFIC GENERAL TA-46 DETAIL

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TC12

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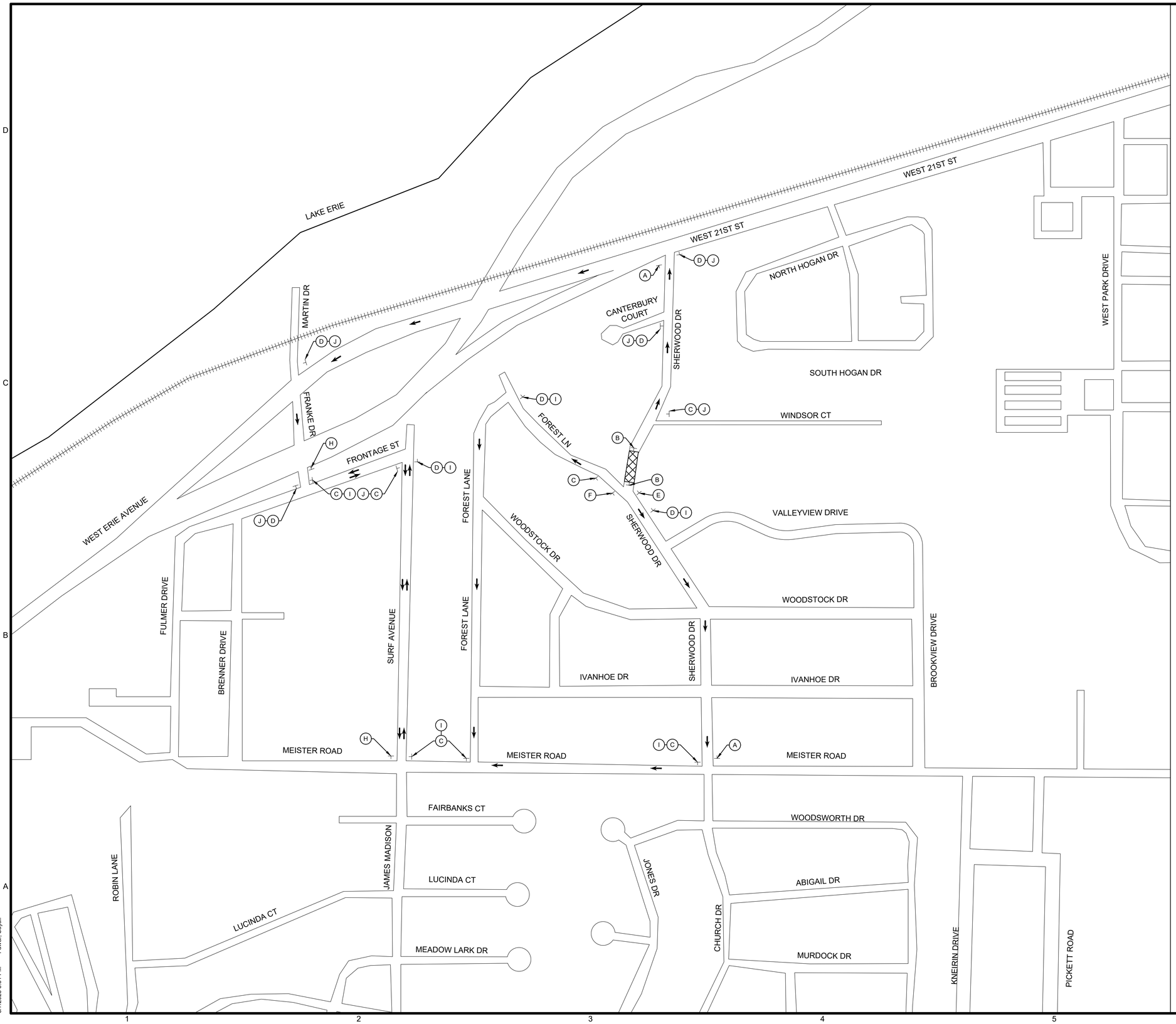

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NORTH

GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.

X OUMTCD SIGN

A
BRIDGE OUT
XX MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3B (60 x 30)

B
ROAD CLOSED
R11-2 (48 x 30)
D3-1 (24 x 8)
STREET NAME

C
DETOUR
M4-9R (30 x 24)
D3-1 (24 x 8)
STREET NAME

D
DETOUR
M4-9L (30 x 24)

E
R3-1 (36 x 36)

F
R3-2 (36 x 36)

G
ROAD CLOSED AHEAD
W20-3 (36 x 36)

H
END DETOUR
M4-8a (24 x 18)
D3-1 (24 x 8)

I
W 21ST STREET

J
D3-1 (24 x 8)
MEISTER ROAD

LEGEND
- SINGLE POST SIGN
- DIRECTION OF DETOURED TRAVEL
- WORK AREA

GENERAL NOTES:

1. THIS DETOUR PLAN AS DEVELOPED BY THE ENGINEER IS TO BE USED AS A GUIDELINE FOR THE CONTRACTOR. DETOUR PLAN SHALL BE PROVIDED BY THE CONTRACTOR FOR APPROVAL BY THE CITY OF LORAIN.
2. TYPICAL SIGN SPACING IS 100' UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF THE PROPOSED ADVANCED WARNING SIGNS.
4. FLUORESCENT ORANGE TYPE G SIGN SHEETING SHALL BE USED FOR ALL DETOUR AND CONSTRUCTION WARNING SIGNS.
5. CONTRACTOR SHALL MAINTAIN LOCAL ACCESS TO ALL BUSINESS, RESIDENTS, SCHOOLS, EMERGENCY VEHICLES AND ALL SIDE STREETS AT ALL TIMES.
6. CONTRACTOR SHALL PROVIDE DRIVE ACCESS TO RESIDENTS AT 2709 SHERWOOD DRIVE AND 2700 SHERWOOD DRIVE AS APPLICABLE.
7. ADVANCE WARNING SIGNS SHALL BE ERECTED DURING THE CONSTRUCTION OF WATER MAIN TO BE JACKED AND BORED UNDER THE EXISTING CULVERT. CONTRACTOR SHALL ADD ANY ADDITIONAL SIGNS IF NECESSARY.
8. SEE SHEET S5 FOR DETAILED VIEW OF THE WATER MAIN WORK.

SEAL OF THE CITY OF LORAIN 1834 OHIO

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

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MAINTENANCE OF TRAFFIC SHERWOOD DR DETOUR

DRAWING NO.

TC13

GENERAL

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF LORAIN CODIFIED ORDINANCE 1529, OHIO EPA STORMWATER REGULATIONS, AND ODOT ITEM 832. ALL STORMWATER BEST MANAGEMENT PRACTICES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION. DEVELOPMENT SITES LESS THAN ONE (1) ACRE IN SIZE: ALL CONSTRUCTION ACTIVITY WITHIN THE CITY WITH LESS THAN ONE (1) ACRE IN SIZE OF DISTURBED AREA SHALL BE REQUIRED TO MAINTAIN COMPLIANCE WITH THE FOLLOWING MINIMUM STANDARDS:

1. CONSTRUCTION ENTRANCE: A CONSTRUCTION ENTRANCE INSTALLED AND MAINTAINED TO THE STANDARDS OF THE CURRENT OHIO DEPARTMENT OF NATURAL RESOURCES' RAINWATER AND LAND DEVELOPMENT MANUAL IS REQUIRED AT ALL ACCESS POINTS USED BY VEHICULAR TRAFFIC OR CONSTRUCTION EQUIPMENT.
2. INLET PROTECTION: CITY APPROVED INLET PROTECTION IS REQUIRED ON ALL EXISTING OR PROPOSED STORM SEWER INLETS IN THE VICINITY OF THE CONSTRUCTION SITE THAT MAY RECEIVE SITE RUNOFF.
3. PERIMETER CONTROL: MUST BE INSTALLED AND MAINTAINED ALONG THE EDGE OF THE CONSTRUCTION SITE TO PREVENT OR FILTER SURFACE RUNOFF LEAVING THE CONSTRUCTION SITE. THE TYPE OF PERIMETER CONTROL USED SHALL BE DETERMINED BASED ON SITE AND LOCATION.
4. SITE STABILIZATION: TEMPORARY AND PERMANENT STABILIZATION MUST BE IMPLEMENTED ON ALL SITES PER THE STANDARDS IN THE CURRENT STORM WATER DISCHARGES FROM SMALL AND LARGE CONSTRUCTION ACTIVITIES - OHIO GENERAL NPDES PERMIT.
5. SPILL PREVENTION/CONTAINMENT: ALL SITES SHALL IMPLEMENT MEASURES FOR PREVENTING, CONTROLLING OR CONTAINING SPILLS OF FUEL, LUBRICANTS, TEMPORARY SANITARY TOILETS, OR OTHER POLLUTANTS AND PROTECTION POTENTIAL POLLUTANTS FROM CONTACT WITH PRECIPITATION OR RUNOFF.
6. STAGING AREA AND CONCRETE WASHOUT: ALL SITES MUST HAVE A CONTAINMENT AREA DESIGNATED FOR TRASH DISPOSAL, VEHICLE MAINTENANCE, MATERIAL STORAGE, AND CONCRETE WASHOUT. SHOULD THE USE OF A PREDEFINED BERMED CONTAINMENT AREA OR APPROVED WASHOUT DEVICE BE TECHNICALLY INFEASIBLE DUE TO THE PROJECT SIZE, THE DISPOSAL METHOD AND/OR LOCATION MUST BE PRE-APPROVED BY THE CITY ENGINEER OR HIS/HER DESIGNEE.
7. STREET SWEEPING: ALL PAVED SURFACES AFFECTED BY THE CONSTRUCTION SITE MUST BE SWEPT AT THE END OF EACH WORK DAY AND DURING THE DAY AS NEEDED WHEN SEDIMENT AND OTHER MATERIALS ARE TRACED OR DISCHARGED INTO THEM. STREET WASHING SHALL BE ALLOWED ONLY AFTER SHOVELING OR SWEEPING HAS REMOVED MOST OF THE SEDIMENT AND APPROVED STORM SEWER INLET PROTECTION IS PROPERLY INSTALLED ,UNLESS END OF SEWER SEDIMENT PONDS EXIST AND ARE PROPERLY FUNCTIONING.

NOTE 1 THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE. WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
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STANDARD DESIGNS
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TEMPORARY SEEDING SPECIFICATIONS

TEMPORARY SEEDING SPECIES SELECTION

SEEDING DATES	SPECIES	LB./1000 FT2	LB./ACRE
MARCH 1 TO AUGUST 15			
	OATS	3	128 (4 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	KENTUCKY BLUEGRASS	1.25	55
	PERENNIAL RYEGRASS	3.25	142
	CREEPING RED FESCUE	0.4	17
	KENTUCKY BLUEGRASS	0.4	17
AUGUST 16 TO NOVEMBER 1			
	OATS	3	128 (3 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	RYE	3	112 (2 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	WHEAT	3	120 (2 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYE	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	40
	PERENNIAL RYEGRASS	3.25	40
	CREEPING RED FESCUE	0.4	40
	KENTUCKY BLUEGRASS	0.4	
NOVEMBER 2 TO FEBRUARY 28	USE MULCH ONLY OR DORMANT SEEDING		

NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED.

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.
2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING.
3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
4. SOIL AMENDMENTS—TEMPORARY VEGETATION SEEDING RATE SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
5. SEEDING METHOD—SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

NOTE 1 THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE. WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
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TEMPORARY SEEDING SPECIFICATIONS CONT'D.

MULCHING FOR TEMPORARY SEEDING

1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH, WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDING MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE, VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
2. MATERIALS: STRAW-IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 LBS./1,000 SQ. FT. (2-3 BALES).
   HYDROSEEDERS-IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2000 LBS./AC. OR 46 LB./1,000 SQ. FT.
   OTHER-OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTING APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TON/AC.
3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
   MECHANICAL-A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT TO A LENGTH OF APPROXIMATELY 6 INCHES.
   MULCH NETTING-NETTING SHALL BE USED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.
   SYNTHETIC BINDERS-SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TRACK OR EQUIVALENT MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
   WOOD-CELLULOSE FIBER-WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WT. OF 750 LB./AC. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./100 GAL.

PERMANENT SEEDING SPECIFICATIONS

SITE PREPARATION

1. SUBSOILER, PLOW, OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. (MAXIMIZING INFILTRATION WILL HELP CONTROL BOTH RUNOFF RATE AND WATER QUALITY.) SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.
2. THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.
3. TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

SEEDBED PREPARATION

1. LIME-AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 POUNDS PER 1,000-SQ. FT. OR 2 TONS PER ACRE.
2. FERTILIZER-FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST IN PLACE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 POUNDS PER 1,000-SQ. FT. OR 1000 POUNDS PER ACRE OF A 10-10-10 OR 12-12-12 ANALYSES.
3. THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.

SEEDING DATES AND SOIL CONDITIONS

SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING OCCURS OUTSIDE OF THE ABOVE SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF 80% GERMINATION. TILLAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT SEEDING.

NOTE 1 THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE. WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
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PERMANENT SEEDING SPECIFICATIONS CONT'D.

DORMANT SEEDING

1. SEEDING SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER.
2. THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":
   FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, AND BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
   FROM NOVEMBER 20 THROUGH MARCH 15, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
   APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.
   WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE SEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A CULTIPACKER, ROLLER, OR LIGHT DRAG. ON SLOPING LAND, SEEDING OPERATIONS SHOULD BE ON THE CONTOUR WHERE FEASIBLE.

MULCHING

1. MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. DORMANT SEEDING SHALL BE MULCHED. 100% OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIAL.
2. MATERIALS
   STRAW-IF STRAW IS USED IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF 2 TONS PER ACRE OR 90 POUNDS (TWO TO THREE BALES) PER 1,000-SQ. FT. THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY APPLIED SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000-SQ.FT. SECTIONS AND SPREAD TWO 45-LB. BALES OF STRAW IN EACH SECTION.
   HYDROSEEDERS-IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE APPLIED AT 2,000 LB./AC. OR 46 LB./1,000 SQ. FT.
   OTHER-OTHER ACCEPTABLE MULCHES INCLUDE ROLLED EROSION CONTROL MATTING OR BLANKETS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS PER ACRE.
3. STRAW AND MULCH ANCHORING METHODS
   STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER.
   MECHANICAL-A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN 6 INCHES.
   MULCH NETTING-NETTING SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.
   ASPHALT EMULSION-ASPHALT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURE OR AT THE RATE OF 160 GALLONS PER ACRE.
   SYNTHETIC BINDERS-SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUIVALENT MAY BE USED AT RATES SPECIFIED BY THE MANUFACTURER.
   WOOD CELLULOSE FIBER-WOOD CELLULOSE FIBER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER WITH THE MIXTURE CONTAINING A MAXIMUM OF 50 POUNDS CELLULOSE PER 100 GALLONS OF WATER.

IRRIGATION

PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY WEATHER OR ON ADVERSE SITE CONDITIONS, WHICH REQUIRE ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH.

IRRIGATION RATES SHALL BE MONITORED TO PREVENT EROSION AND DAMAGE TO SEEDED AREAS FROM EXCESSIVE RUNOFF.

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PERMANENT SEEDING - TABLE 1

SEED MIX	SEEDING RATE LBS./ACRE	SEEDING RATE LBS./1,000 SQ. FT.	NOTES:
GENERAL USE			
CREEPING RED FESCUE	20-40	1/2-1	FOR CLOSE MOWING & FOR WATERWAYS WITH
DOMESTIC RYEGRASS	10-20	1/4-1/2	<2.0 FT/SEC VELOCITY
KENTUCKY BLUEGRASS	20-40	1/2-1	
TALL FESCUE	40-50	1-1 1/4	
TURF-TYPE (DWARF) FESCUE	90	2 1/4	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40-50	1-1 1/4	
CROWN VETCH	10-20	1/4-1/2	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20-30	1/2-3/4	
FLAT PEA	20-25	1/2-3/4	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20-30	1/2-3/4	
ROAD DITCHES AND SWALES			
TALL FESCUE	40-50	1-1 1/4	
TURF-TYPE (DWARF) FESCUE	90	2 1/4	
KENTUCKY BLUEGRASS	5	0.1	
LAWNS			
KENTUCKY BLUEGRASS	100-120	2	
PERENNIAL RYEGRASS		2	
KENTUCKY BLUEGRASS	100-120	2	FOR SHADED AREAS
CREEPING RED FESCUE		1-1/2	

NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.

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NOTE 2 BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
EROSION CONTROL
GENERAL NOTES

DWG FILE: ER-1.4.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: ER-1.4

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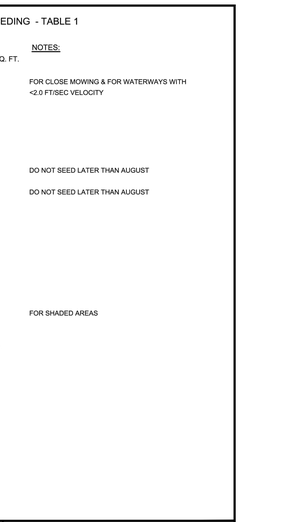

CONCRETE WASHOUT AREA INSTALLATION NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
2. THE CONCRETE WASHOUT AREA WILL BE CONSTRUCTED ABOVE GRADE OR BELOW GRADE AT THE OPTION OF THE CONTRACTOR. THE ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
3. THE CONCRETE WASHOUT AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. THE WASHOUT AREA MUST BE CLEANED, OR A NEW WASHOUT AREA MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
4. THE CONCRETE WASHOUT SIGN SHALL BE PLACED WITHIN 30' OF THE WASHOUT AREA. ADDITIONAL SIGNS SHOULD BE CONSTRUCTED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. THE CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 50' FROM STORM DRAIN INLETS, OPEN DISCHARGE FACILITIES, AND WATERCOURSES. EACH FACILITY SHOULD BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS TO PREVENT DISTURBANCE OR TRACKING. VEHICLE TRACKING CONTROL IS REQUIRED AT CONCRETE WASHOUT ENTRANCE IF ACCESS TO AREA IS OFF PAVEMENT.
6. PLASTIC LINING MATERIAL SHALL BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
7. WHEN THE CONCRETE WASHOUT AREA IS NO LONGER REQUIRED FOR WORK, THE HARDENED CONCRETE AND MATERIAL USED TO CONSTRUCT WASHOUT AREA SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED WASTE SITE.
8. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE ENGINEER.

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STANDARD DESIGNS
EROSION CONTROL
CONCRETE WASHOUT AREA

DWG FILE: ER-2.0.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: ER-2.0

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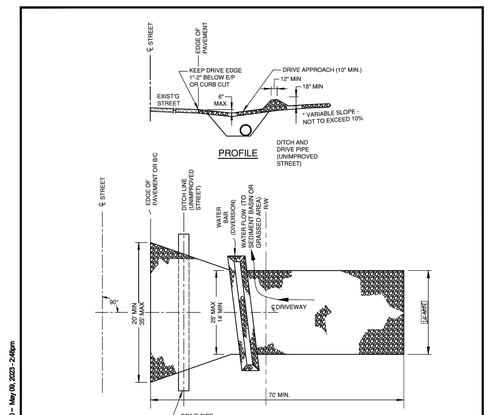

NOTES:

1. CURB CUTS AND DRIVE PIPES SHALL BE CONSTRUCTED PRIOR TO ANY CONSTRUCTION ACTIVITIES TAKING PLACE.
2. TEMPORARY DRIVES SHALL BE COORDINATED WITH PERMANENT DRIVE CONSTRUCTION.
3. STONE FOR CONSTRUCTION DRIVES SHALL MEET THE GRADATION FOR ODOT SIZE NO. 2 COARSE AGGREGATE, MINIMUM THICKNESS SHALL BE 10" FOR NON-RESIDENTIAL SITES, 6" FOR RESIDENTIAL.
4. A GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE ENTIRE DRIVE AREA PRIOR TO PLACING STONE. GEOTEXTILE MATERIAL SHALL MEET ODOT ITEM 712.09 TYPE B REQUIREMENTS.
5. THE CONSTRUCTION DRIVE SHALL BE MAINTAINED BY PERIODICALLY ADDING STONE AS CONDITIONS DEMAND.
6. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO THE CONSTRUCTION DRIVE AS MUCH AS POSSIBLE. MUD AND STONES WHICH ARE SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS OR OTHER SURFACES WHERE SEDIMENT CONTROLS WERE NOT ADEQUATE, SHALL BE REMOVED IMMEDIATELY BY SCRAPING OR SWEEPING.

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City of Lorain
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STANDARD DESIGNS
EROSION CONTROL
CONSTRUCTION DRIVE DETAIL

DWG FILE: ER-3.0.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: ER-3.0

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CITY OF LORAIN SEAL

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020 www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64402
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (SWPPP)

DRAWING NO.

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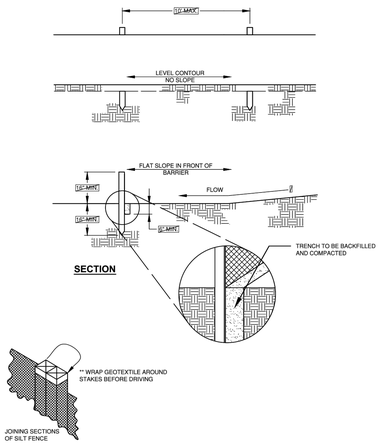

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City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
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STANDARD DESIGNS
EROSION CONTROL
SILT FENCE DETAIL

DWG FILE:	DRAWN BY:	APPROVED BY:	ISSUE DATE:	SCALE:	SHEET:
ER-4.0.dwg	EA	DV	08/19/2015	NONE	ER-4.0

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NOTES

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5' (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16" ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6" DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8" OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6" DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6". OVERLAP PRIOR TO DRIVING INTO THE GROUND (SEE DETAIL).
10. MAINTENANCE-SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
    1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED
    2) ACCUMULATED SEDIMENT SHALL BE REMOVED OR
    3) OTHER PRACTICES SHALL BE INSTALLED.
11. SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE.
12. SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

CRITERIA FOR SILT FENCE MATERIALS:
SILT FENCE FABRIC SHALL MEET THE REQUIREMENTS OF ODOT ITEM 712.09, TYPE C. THE LENGTH OF FENCE POSTS SHALL BE A MINIMUM OF 32". WOOD POSTS WILL BE 2" BY 2". NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10'. POSTS SHALL BE DRIVEN A MINIMUM 16" INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING THE FENCE DUE TO SEDIMENT/WATER LOADING.

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STANDARD DESIGNS
EROSION CONTROL
SILT FENCE DETAIL NOTES

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ER-4.1.dwg	EA	DV	08/19/2015	NONE	ER-4.1

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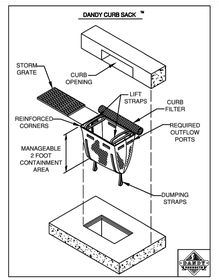

NOTE: THE DANDY CURB SACK™ WILL BE **MANUFACTURED IN THE U.S.A.** FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY CURB SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m² (gal/min/ft²)	2852 (70)
Permittivity	ASTM D 4491	Sec⁻¹	0.90

HI-FLOW DANDY CURB SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m² (gal/min/ft²)	5907 (145)
Permittivity	ASTM D 4491	Sec⁻¹	2.1

•NOTE: ALL DANDY SACKS™ CAN BE ORDERED WITH OUR OPTIONAL OIL ABSORBENT PILLOWS

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STANDARD DESIGNS
EROSION CONTROL
INLET PROTECTION WITH CURB

DWG FILE:	DRAWN BY:	APPROVED BY:	ISSUE DATE:	SCALE:	SHEET:
ER-5.0.dwg	EA	DV	08/19/2015	NONE	ER-5.0

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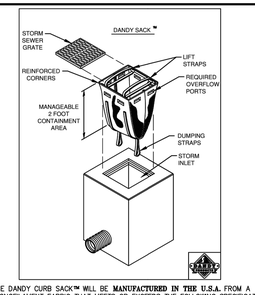

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REGULAR FLOW DANDY CURB SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
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Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
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Permittivity	ASTM D 4491	Sec⁻¹	0.90

HI-FLOW DANDY CURB SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
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Permittivity	ASTM D 4491	Sec⁻¹	2.1

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Phone: (440) 204-2003

STANDARD DESIGNS
EROSION CONTROL
INLET PROTECTION WITHOUT CURB

DWG FILE:	DRAWN BY:	APPROVED BY:	ISSUE DATE:	SCALE:	SHEET:
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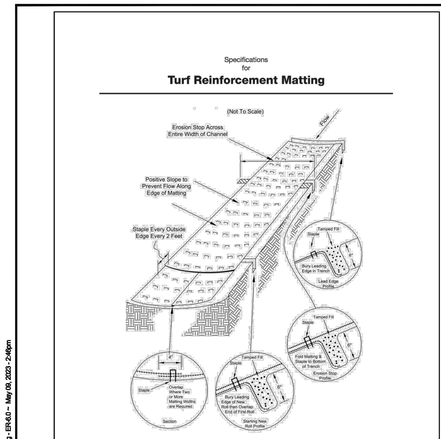

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City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
EROSION CONTROL
TURF REINFORCEMENT DETAIL

DWG FILE:	DRAWN BY:	APPROVED BY:	ISSUE DATE:	SCALE:	SHEET:
ER-6.0.dwg	VAN	DV	07/01/2016	NONE	ER-6.0

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THESE MEASURES ARE REQUIRED FOR INSTALLATION WITHIN THE CITY OF LORAIN AND ARE TO BE USED WHEN DISTURBED SOILS MAY BE PARTICULARLY DIFFICULT TO STABILIZE, INCLUDING THE FOLLOWING SITUATIONS:

1. EMBANKMENTS OF ALL STORMWATER MANAGEMENT BASINS BEING CONSTRUCTED WITHIN THE CITY
2. STEEP SLOPES
3. SLOPES WHERE THE EROSION POTENTIAL IS HIGH.
4. SLOPES AND DISTURBED SOILS WHERE MULCH MUST BE ANCHORED.
5. DISTURBED AREAS WHERE PLANTS ARE SLOW TO DEVELOP.
6. CHANNELS WITH FLOWS EXCEEDING 1.0 M/S (3.3 FT/S).
7. CHANNELS TO BE VEGETATED.
8. STOCKPILES.
9. SLOPES ADJACENT TO WATER BODIES

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STANDARD DESIGNS
EROSION CONTROL
TURF REINFORCEMENT NOTES

DWG FILE:	DRAWN BY:	APPROVED BY:	ISSUE DATE:	SCALE:	SHEET:
ER-6.0.dwg	VAN	DV	07/01/2016	NONE	ER-6.1

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1. WETLAND PROTECTION AREA SIGNS SHALL BE INSTALLED AT 75 FOOT INTERVALS AROUND THE PERIMETER OF WETLAND AREAS PRIOR TO THE START OF WORK UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF SIGN PANELS, POSTS, MISCELLANEOUS HARDWARE, AND LABOR FOR INSTALLATION AND UPKEEP OF SIGNAGE THROUGHOUT THE DURATION OF PROJECT.
3. WETLAND PROTECTION AREA SIGN PANELS ARE AVAILABLE FOR PURCHASE AT THE CITY OF LORAIN PUBLIC PROPERTIES DEPARTMENT.
4. ADDITIONAL SIGNAGE FOR RIPARIAN PROTECTION AREA, NO CUT ZONES, CONSERVATION AREA, AND OTHER ENVIRONMENTAL PROTECTION AREAS MAY BE REQUIRED AS DETERMINED BY ENGINEER.

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Phone: (440) 204-2003

STANDARD DESIGNS
EROSION CONTROL
WETLAND PROTECTION SIGN

DWG FILE:	DRAWN BY:	APPROVED BY:	ISSUE DATE:	SCALE:	SHEET:
ER-7.0.dwg	AJP	DV	5/9/2022	NONE	ER-7.0

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3/7/2025 5:31 PM Pawar, Sayali

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SEAL OF THE CITY OF LORAIN 1834 OHIO

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020 www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (SWPPP)

DRAWING NO.

D2

City of Lorain

STANDARD DETAILS - INDEX

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D4	06/20/2019	GN-2.2	GENERAL NOTES
D4	06/20/2019	GN-2.3	GENERAL NOTES
D4	04/20/2023	GN-2.4	GENERAL NOTES
D4	06/20/2019	GN-2.5	GENERAL NOTES
D4	04/25/2022	GN-2.6	GENERAL NOTES

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D1	05/19/2017	ER-3.0	CONSTRUCTION DRIVE DETAIL
##	05/19/2017	ER-4.0, 4.1	SILT FENCE DETAIL
##	05/19/2017	ER-5.0,	INLET PROTECTION WITH CURB
##	05/19/2017	ER-5.1	INLET PROTECTION WITHOUT CURB
##	07/09/2018	ER-6.0,	TURF REINFORCEMENT DETAIL
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	~~05/19/2017~~	~~PV-11.0~~	~~TEMPORARY TURN-AROUND DETAIL~~
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	~~05/19/2017~~	~~SS-2.0~~	~~GENERAL NOTES - SEWER TESTING~~
	~~05/19/2017~~	~~SS-2.1~~	~~GENERAL NOTES - SEWER TESTING~~
	~~02/04/2021~~	~~SS-3.0~~	~~GENERAL NOTES - MANHOLES~~
	~~05/19/2017~~	~~SS-4.0~~	~~VACUUM TEST TABLE~~
	~~07/05/2022~~	~~SS-5.0~~	~~STANDARD LATERAL CONNECTION~~
	~~05/19/2017~~	~~SS-5.1~~	~~DEEP LATERAL CONNECTION~~
	~~05/19/2017~~	~~SS-6.0~~	~~CLEANOUT DETAIL - IN GRASS~~
	~~07/05/2022~~	~~SS-6.1~~	~~TEST TEE DETAIL - IN GRASS~~
	~~05/19/2017~~	~~SS-7.0~~	~~CLEANOUT DETAIL - IN PAVEMENT~~
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	~~05/19/2017~~	~~SS-8.0~~	~~TYPICAL LATERAL PLAN~~
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D9	07/05/2022	ST-4.0	LATERAL DETAIL
D9	06/20/2019	ST-5.0	INLET TAP

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NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
12	02/05/2021	Revised for New Construction			
13	07/28/2022	Revised for New Construction			
14	04/20/2023	Revised for New Construction			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
GENERAL
INDEX

CAD FILE:	DRWN BY:	APPRV'D BY:	ISSUE DATE:	SCALE:	SHEET:
GN-1.0.dwg	EA	DV	08/19/2015	NONE	GN-1.0

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City of Lorain

STANDARD DETAILS - INDEX

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D1	05/24/2023	WT-G01	WATER MAIN TRENCH DETAIL
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D1	05/24/2023	WT-G03	TYPICAL FLUSHING ASSEMBLY DETAIL
D1	05/24/2023	WT-G04	PLUGGING ABANDONED WATER MAIN ENDS DETAIL
D1	05/24/2023	WT-G05	CUT-IN-VALVE DETAIL
D1	05/24/2023	WT-G06	THRUST BLOCKS: PIPE 16" DIAMETER OR LESS DETAIL
D1	05/24/2023	WT-G07	SLEEVE-IN INSTALLATION DETAIL
D1	05/24/2023	WT-G08	SPOOL PIECE INSTALLATION DETAIL
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D1	05/24/2023	WT-G20	CROSSING LARGE DITCHES OR SMALL STREAMS SECTION A-A - OPEN CUT
D1	05/24/2023	WT-C01	NEW 1" SERVICE CONNECTION DETAIL IN RIGHT-OF-WAY (LONG-SIDE)
D1	05/24/2023	WT-C02	TWO-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING DETAIL
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D1	05/24/2023	WT-C04	NEW WATER SERVICE CONNECTION FOR 1-1/2" & 2" DETAIL
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D1	05/24/2023	WT-H01	TYPICAL NEW HYDRANT INSTALLATION DETAIL "A"
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D1	05/24/2023	WT-H03	TYPICAL NEW HYDRANT INSTALLATION DETAIL "C"
D1	05/24/2023	WT-H04	ADJUSTING6" HYDRANT ELEVATION DETAIL
D1	05/24/2023	WT-H05	6" HYDRANT ELEVATION DETAIL
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D1	05/24/2023	WT-L02	LOWERING DETAIL
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D1	05/24/2023	WT-L04	LOWERING DETAIL UNDER OBSTRUCTIONS 24" IN DIA. & LARGER
D1	05/24/2023	WT-L05	LOWERING DETAIL UNDER OBSTRUCTIONS 24" AND SMALLER
D1	05/24/2023	WT-L06	LOWERING DETAIL UNDER OBSTRUCTIONS 24" AND LARGER
D1	05/24/2023	WT-M01	METER SETTINGS FOR 5/8", 3/4", & 1" METERS
D1	05/24/2023	WT-T01	CUT-IN TEE DETAIL METHOD NO. 1
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D1	05/24/2023	WT-T03	CUT-IN TEE DETAIL METHOD NO. 3
D1	05/24/2023	WT-W02	TRACER WIRE AT HYDRANT TEE DETAIL
D1	05/24/2023	WT-W03	TRACER WIRE AT LINE VALVE BOX DETAIL
D1	05/24/2023	WT-H08	CUT-IN HYDRANT DETAIL
D1	05/24/2023	WT-W01	TRACER WIRE AT HYDRANT DETAIL

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NO.	DATE	REVISION	NO.	DATE	REVISION
12	02/05/2021	Revised for New Construction			
13	05/09/2022	Revised for New Construction			
14	04/20/2023	Revised for New Construction			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
GENERAL
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CAD FILE:	DRWN BY:	APPRV'D BY:	ISSUE DATE:	SCALE:	SHEET:
GN-1.0.dwg	EA	DV	08/19/2015	NONE	GN-1.1

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (GENERAL)

DRAWING NO.

D3

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3/7/2025 5:32 PM Pawar, Sayali

GENERAL

1. ALL WORK AND MATERIALS FURNISHED SHALL BE IN ACCORDANCE WITH THE PLANS AND THE CURRENT EDITIONS OF THE "STATE OF OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS" AND THE "CITY OF LORAIN STANDARD DESIGNS", SHALL MEET AASHTO M306 STANDARDS AND SHALL BE MADE IN THE USA. CITY PLANS SUPERCEDE ODOT SPECS.
2. WHERE GROUND COVER IS DISTURBED DURING THE CONSTRUCTION, THE CONTRACTOR SHALL INSTALL ALL NECESSARY EROSION CONTROL AND DRAINAGE CONTROL DEVICES IN ACCORDANCE WITH REGULATIONS OF THE CITY OF LORAIN, AND THE OHIO EPA. THESE DEVICES SHALL BE ROUTINELY MONITORED AND MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL SATISFACTORY GROUND COVER HAS BEEN RE-ESTABLISHED. NO WORK SHALL BEGIN UNTIL ALL SUCH DEVICES ARE IN PLACE.
3. ALL DEVELOPMENTS INVOLVING UTILITY IMPROVEMENTS SHALL HAVE DETAILED DESIGN DRAWINGS PREPARED AND SEALED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER OR SURVEYOR. DRAWINGS SHALL BE SIGNED AND DATED BY THE PREPARING ENGINEER OR SURVEYOR OR WILL NOT BE CONSIDERED VALID. ELECTRONIC AS-BUILTS OF ALL IMPROVEMENTS SHALL BE PROVIDED AND SEALED BY A PROFESSIONAL SURVEYOR. AS-BUILT COMPATIBILITY WITH GIS IS REQUIRED.
4. CITY OF LORAIN STANDARD DESIGNS CONSTITUTE A MINIMUM DESIGN STANDARD. SPECIFIC PROJECTS MAY INVOLVE SPECIAL CIRCUMSTANCES WHICH REQUIRE MODIFICATION OF STANDARDS AND ADDITIONAL ENGINEERING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL DESIGN AND FOR OBTAINING APPROVAL OF ANY STANDARD DESIGNS MODIFICATIONS.
5. PAVEMENT MARKINGS WHICH ARE DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR IN ACCORDANCE WITH CITY OF LORAIN, ODOT, AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES REQUIREMENTS.
6. DOMESTIC IRON AND STEEL SHALL BE USED FOR ALL CASTINGS, FITTINGS AND STEEL PRODUCTS.
7. ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&DD) WASTE MUST BE DISPOSED OF IN AN OHIO EPA APPROVED C&DD LANDFILL AS REQUIRED BY OHIO REVISED CODE 3714.
8. AT THE END OF EACH DAY THE CONTRACTOR SHALL CLEAN ALL PUBLIC WALKS AND STREETS USED IN CONJUNCTION WITH THE PROJECT TO THE SATISFACTION OF THE ENGINEER.
9. ALL MATERIAL, I.E., MANHOLE FRAMES OR LIDS, FIRE HYDRANTS, INLET FRAMES OR GRATES AND MONUMENT BOXES DIRECTED TO BE SALVAGED SHALL BE DELIVERED ON WOOD PALLETS BY THE CONTRACTOR TO THE CITY OF LORAIN SEWER DEPARTMENT AT 6001 WEST ERIE AVENUE (ACCESS FROM OAK POINT ROAD, BEAR LEFT AT DRIVEWAY SPLIT). FOR EACH ITEM THAT IS TO BE SALVAGED AND NOT DELIVERED TO THE SEWER DEPARTMENT, THERE WILL BE A REASONABLE MONETARY SUM WITHHELD FROM THE CONTRACT PAYMENTS AND CHARGED AGAINST THE CONTRACTOR. CALL (440) 204-2200 TO MAKE ARRANGEMENTS FOR THE MATERIAL DELIVERY.
10. WHEN, FOR ANY REASON, THE WORK IS LEFT UNFINISHED FOR AN EXTENDED PERIOD OF TIME,AS DEFINED BY THE ENGINEERING DEPARTMENT, ALL TRENCHES AND EXCAVATIONS SHALL BE FULLY PROTECTED OR FILLED TO LEAVE THE SITE IN A GOOD AND SAFE CONDITION.
11. A PRECONSTRUCTION CONFERENCE SCHEDULED BY THE ENGINEER SHALL BE HELD PRIOR TO THE START OF ANY WORK.
12. THE ENGINEER SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF THE START OF ANY WORK UNDER THE CONTRACT IN ORDER TO SCHEDULE THE ASSIGNMENT OF AN INSPECTOR FOR THE WORK.
13. ALL SHOP DRAWINGS AND OTHER SUBMITTALS MUST BE CHECKED, APPROVED, AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER FOR REVIEW.
14. THE CONTRACTOR SHALL PROVIDE A PRECONSTRUCTION VIDEO TAPE SURVEY OF THE ENTIRE PROJECT AREA. ANY DAMAGE DEEMED TO BE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT HIS OWN EXPENSE. ALL COSTS ASSOCIATED FOR THIS WORK, INCLUDING THE VIDEOTAPE SURVEY, SHALL BE INCLUDED IN ITEM 624-MOBILIZATION.
15. EXISTING STREET RIGHT-OF-WAYS SHALL BE CONSIDERED TO BE THE PROJECT LIMITS FOR ALL STREETS IN THE CONTRACT.
16. ALL EXCAVATED MATERIALS SHALL BE DEPOSITED AT AN APPROVED DUMP SITE IN ACCORDANCE WITH ODOT 105.16.
17. FURNISH THE ENGINEER A PROGRESS SCHEDULE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

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City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
9	01/01/2019				
10	06/20/2019	NO. 10 & 15 CHANGED			
11	02/04/2020	PREVIOUS NO. 17 OMITTED			
11	02/04/2020	NO. 1 REVISED			

STANDARD DESIGNS
GENERAL
GENERAL NOTES

DWG'S): GN-2.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: GN-2.0

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GENERAL, CONT'D

19. THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED "AS DIRECTED BY ENGINEER" (ADBE) UNLESS AUTHORIZED BY THE PROJECT ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE DOCUMENTED AND THE CONTRACTOR SHALL BE PAID IN ACCORDANCE WITH THE CONTRACT UNIT PRICE FOR EACH APPLICABLE BID ITEM.
20. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES SHALL BE PROHIBITED WITHOUT AUTHORIZATION BY THE ENGINEER.
21. OPERATIONS ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE OF THE HOURS OF 7:00 AM TO 7:00 PM IS PROHIBITED.
22. VIOLATION OF ANY CITY ORDINANCE MAY RESULT IN THE ISSUANCE OF A STOP WORK ORDER.
23. ALL BACKFILL SHALL BE PREMIUM BACKFILL. BACKFILL SHALL BE IN ACCORDANCE WITH THE TRENCH DETAILS SHOWN HEREIN. ALL BACKFILL IN SEWER TRENCHES SHALL BE PLACED IN LAYERS SUFFICIENT TO MEET THE COMPACTION REQUIREMENTS OF 100%-MAXIMUM LABORATORY DRY DENSITY PER ASTM D-698 AND THOROUGHLY COMPACTED WITH MACHINE MOUNTED COMPACTION EQUIPMENT. THE PLACING OF BACKFILL MATERIAL SHALL BE CONTINUED UNTIL THE TRENCH IS ENTIRELY FILLED AND COMPACTED TO THE GRADE CALLED FOR ON THE CONTRACT DRAWINGS. COMPACTION TESTING OF THE BACKFILL MAY BE REQUIRED BY THE CITY. THE CONTRACTOR SHALL PAY FOR ALL LABORATORY TESTING COSTS OF BACKFILL MATERIAL. THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS OF WORK. ALL BACKFILL SHALL BE PLACED IN MAXIMUM 12" LIFTS AND COMPACTED.
24. THE CONTRACTOR SHALL RESTORE ALL DISTURBED LANDSCAPED AREAS, PAVEMENT SURFACES, SIDEWALKS AND DRIVEWAYS TO A CONDITION EQUAL TO, OR BETTER THAN THAT WHICH EXISTED PRIOR TO THE START OF WORK AS DECIDED BY ENGINEER. THE CONTRACTOR SHALL PERFORM ALL RESTORATION WITH MATERIALS IDENTICAL TO THE EXISTING SURFACE, INCLUDING, BUT NOT LIMITED TO ASPHALT AND CONCRETE PAVEMENT, ASPHALT, CONCRETE AND BRICK SIDEWALK, INTEGRAL CURB, AND SPECIAL SURFACES (SUCH AS COLORED OR TEXTURED) AS ENCOUNTERED. ALL DAMAGES TO OTHER EXISTING FACILITIES BY CONTRACTOR SHALL BE PAID BY THE EXPENSE OF THE CONTRACTOR.

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NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015				
7	01/01/2018				
9	01/01/2019				
11	02/04/2020	NO. 19 & 20 REMOVED			
13	05/02/2022	NO. 24 ADDED			

STANDARD DESIGNS
GENERAL
GENERAL NOTES

DWG'S): GN-2.1.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: GN-2.1

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ITEM 614 - MAINTAINING TRAFFIC

1. MAINTAIN THROUGH TRAFFIC AT ALL TIMES IN ACCORDANCE WITH ODOT ITEM 614 AND THE DETAILS AND NOTES ON THE STANDARD CONSTRUCTION DRAWINGS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN PEDESTRIAN, LOCAL ROADWAY AND DRIVEWAY ACCESS AT ALL TIMES. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY STONE DRIVES/WALKS WITH A MATERIAL WHICH IS APPROVED BY THE ENGINEER. THESE TEMPORARY STONE DRIVES SHALL BE MAINTAINED TO THE SATISFACTION OF THE ENGINEER. COST FOR ALL MATERIALS, LABOR AND EQUIPMENT FOR CONSTRUCTION MAINTENANCE AND SUBSEQUENT REMOVAL SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC.
3. PROVIDE STEEL PLATES ACROSS TRENCHES AS DIRECTED TO PROVIDE TEMPORARY VEHICLE OR PEDESTRIAN ACCESS TO RESIDENCES. ADDITIONAL ACCOMMODATIONS MAY BE REQUIRED TO PROVIDE ACCESSIBILITY FOR VEHICLES OF HANDICAPPED OR OTHER IDENTIFIED RESIDENTS.
4. LANE CLOSURES AND RESTRICTIONS ARE PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A LANE CLOSURE/TRAFFIC RESTRICTION REQUEST 48 HOURS IN ADVANCE OF ANY PLANNED IMPLEMENTATION SPECIFYING THE LIMITS AND DURATION OF THE WORK. SAID REQUEST SHALL INCLUDE A MAP DEPICTING THE LOCATION OF ALL TRAFFIC CONTROL DEVICES (SIGNS, DRUMS, ETC.). IF PERMITTED, THE ENGINEER WILL APPROVE THE LENGTH AND DURATION OF LANE CLOSURES AND/OR TRAFFIC RESTRICTIONS, WITH THE INTENT OF MINIMIZING THE IMPACT TO THE TRAVELING PUBLIC. THE ENGINEER WILL NOT PERMIT LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME. THE CONTRACTOR IS RESPONSIBLE FOR ERECTING ALL NECESSARY DETOUR SIGNS AND TRAFFIC CONTROL DEVICES. COSTS SHALL BE INCLUDED IN ITEM 614, MAINTENANCE OF TRAFFIC.
5. THE CONTRACTOR SHALL POST SIGNS 24 HOURS IN ADVANCE TO NOTIFY CITIZENS OF THE NEED FOR NO PARKING ON THE STREET DURING CONSTRUCTION HOURS. FAILURE TO PERFORM THIS POSTING, OR NOT TO PERFORM WORK IN THE SPECIFIED TIME OF THE SIGN POSTING, WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ALL TOWING FEES AND FINES RESULTING FROM THE FAILURE TO EXECUTE THE WORK AS PER THE SIGN POSTING.
6. FURNISH, ERECT, MAINTAIN, AND SUBSEQUENTLY REMOVE WORK ZONE TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (OMUTCD), ODOT ITEM 614, THE STANDARD CONSTRUCTION DRAWINGS AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.
7. FURNISH AND MAINTAIN ALL NECESSARY SAFEGUARDS SUCH AS TEMPORARY STRIPING, BARRICADES, LIGHTING, FLAGGERS, AND OTHER SUCH TRAFFIC CONTROL DEVICES IN THE WORK ZONE IN ACCORDANCE WITH ITEM 614-MAINTAINING TRAFFIC SO AS TO AVOID DAMAGE AND/OR INJURY TO VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION.
8. RELOCATE EXISTING TRAFFIC CONTROL DEVICES (SIGNS AND/OR TRAFFIC SIGNALS), LOCATED WITHIN THE WORK AREA, WHICH ARE REQUIRED FOR INTERIM OR PERMANENT TRAFFIC CONTROL, TO POINTS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR ERECTING ALL NECESSARY DETOUR SIGNS AND TRAFFIC CONTROL DEVICES. COSTS SHALL BE INCLUDED IN ITEM 614-MAINTENANCE OF TRAFFIC.
9. ALL STREET AND TRAFFIC SIGNS REMOVED DURING CONSTRUCTION SHALL BE REINSTALLED AS REQUIRED UPON COMPLETION OF THE PROJECT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING DUST, DIRT AND MUD DUE TO CONSTRUCTION IN THE PROJECT AREA DURING THE LIFE OF THE PROJECT. DUST CONTROL OPERATIONS SHALL BE PERFORMED BY THE CONTRACTOR AT THE TIME, LOCATION AND IN THE AMOUNT ORDERED BY THE ENGINEER AND SHALL BE IN ACCORDANCE WITH ITEM 616 OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. ONLY WATER SHALL BE USED FOR DUST CONTROL NEAR SURFACE WATER AND CATCH BASINS. THE COST FOR THESE OPERATIONS SHALL BE INCLUDED IN ITEM 614-MAINTENANCE OF TRAFFIC.
11. THE PROVISIONS OF THIS SECTION SHALL NOT IN ANY WAY RELIEVE "THE CONTRACTOR OF ANY OF HIS LEGAL RESPONSIBILITIES OR LIABILITIES FOR THE SAFETY OF THE PUBLIC. THE CONTRACTOR SHALL INDEMNIFY AND SAVE HARMLESS THE CITY OF LORAIN FROM ANY EXPENSE WHATSOEVER DUE TO HIS OPERATION OVER SAID ROADWAYS.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015				
9	01/01/2019	NO. 2 ADDED			
10	06/20/2019	NO. 15 REMOVED			

STANDARD DESIGNS
GENERAL
GENERAL NOTES

DWG'S): GN-2.2.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: GN-2.2

E:\Autocad - Blocks - Standards\OCIL STANDARDS\P14_2023 Updates\Updates\NewConstruction\Current_AutoCAD\1_general\GN-2.2.dwg - GN-2.2 - May 09, 2023 - 2:35pm

ITEM 614 - MAINTAINING TRAFFIC, CONT'D

12. THE CONTRACTOR SHALL CONTACT THE FOLLOWING ENTITIES PRIOR TO CHANGING THE CURRENT TRAFFIC CONFIGUARTION:

LORAIN CITY SCHOOLS TRANSPORTATION
SHONTEEA FORD
CHARLESTON ADMINISTRATION CENTER
2601 POLE AVE.
LORAIN, OHIO 44052
PH: 440-830-4047
EMAIL: SFORD@LORAIN.CSD.ORG

FIRST STUDENT
BRAD SPRAGUE
1800 COLORADO AVE.
LORAIN, OHIO 44052
PH: 440-288-2222 EXT. 222
EMAIL: BRAD.SPRAGUE@FIRSTGROUP.COM

LORAIN COUNTY TRANSIT
PAMELA NOVAK
226 MIDDLE AVE.
ELYRIA, OHIO 44035
PH: 440-309-5525
EMAIL: PNOVAK@LORAINCOUNTY.US

UNITED STATES POST OFFICE
CHARLES HIRSCH
3190 COLOADO AVENUE
LORAIN, OH 44052
PH: 440-288-8593
EMAIL: CHARLES.E.HIRSCH@USPS.GOV

REPUBLIC WASTE SERVICES
CHUCK ALLOMONG & TJ ROSE
PH: 440-458-5191
EMAIL: CALLOMONG@REPUBLICSERVICES.COM
TROSE2@REPUBLICSERVICES.COM

LORAIN ENGINEERING DEPARTMENT
DALE VANDERSOMMEN, PE - CITY ENGINEER
200 WEST ERIE AVENUE
LORAIN, OHIO 44052
PH: 440-204-2003

LORAIN CITY FIRE DEPARTMENT
CENTRAL FIRE STATION
1350 BROADWAY AVE.
LORAIN, OHIO 44052
PH: 440-204-2220

LORAIN POLICE DEPARTMENT
JAMES MCDANN, CHIEF
200 WEST ERIE AVENUE
LORAIN, OHIO 44052
PH: 440-204-2103

13. CONTRACTOR SHALL PROVIDE ENGINEER WITH A PLAN ON HOW DRIVE ACCESS WILL BE RESTORED AFTER PAVEMENT HAS CURED AND ITS MAINTENANCE. THE COST FOR THIS SHALL BE INCIDENTAL TO ITEM 614-MAINTENANCE OF TRAFFIC.
14. THE CONTRACTOR SHALL NOTIFY EACH RESIDENT OF ANY RESTRICTED ACCESS TO THEIR PROPERTY NO LATER THAN ONE (1) WEEK IN ADVANCE.
15. THE CONTRACTOR SHALL PROVIDE PERSONNEL TO DELIVER CORRESPONDENCE TO THE HOMEOWNERS AS NEEDED TO UPDATE RESIDENTS ON THE PROGRESS OF THE WORK. THE CONTRACTOR WILL PREPARE THIS CORRESPONDENCE AND THE ENGINEER WILL REVIEW AND APPROVE, PRIOR TO DELIVERY.
16. TEMPORARY CARDBOARD NO PARKING IN STREET OR TREELAWN SIGNS SHALL BE UTILIZED DURING CONSTRUCTION, ANY RESIDENT CARS THAT ARE PARKED IN THE TREELAWN (THE AREA BETWEEN THE CURB AND SIDEWALK) OR IN THE STREET WHERE PROHIBITED SHALL BE REPORTED FOR REMOVAL TO THE CITY OF LORAIN POLICE, TRAFFIC DIVISION. ANY CONTRACTOR PARKING ON THE TREELAWN WILL BE DOCUMENTED AND FULL RESTORATION WILL BE REQUIRED AT THE COST OF THE CONTRACTOR.

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City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015		11	02/04/2020	POST OFFICE ADDED
7	01/01/2018		11	02/04/2020	PREV. NO. 12 & 14 REMV.
9	01/01/2019				
10	06/20/2019	NO. 17 ADDED			
11	02/04/2020	NO. 14 CHANGED			
11	02/04/2020	POLICE CHIEF UPDATED			

STANDARD DESIGNS
GENERAL
GENERAL NOTES

DWG'S): GN-2.3.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: GN-2.3

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PAVEMENT MARKING

1. FURNISH AND INSTALL PAVEMENT MARKINGS IN ACCORDANCE WITH ODOT ITEM 640, THE STANDARD CONSTRUCTION DRAWINGS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION.

PROHIBITED CONSTRUCTION ACTIVITIES

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE OWNER.
2. LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS.
3. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA.
4. DISPOSING OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, OR ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS. THE USE OF EXPLOSIVES WITHIN CITY LIMITS, UNLESS A PERMIT IS ISSUED BY THE CITY.
5. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATIONS OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS OR OUTSIDE THE EASEMENT LIMITS.
6. PUMPING OF SEDIMENT LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE.
7. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE, OR ANY OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS OR INTO NATURAL OR MANMADE CHANNELS LEADING THERETO; PERMANENT OR UNSPECIFIED ALTERATION OF THE LOW LINE OF ANY STREAM.
8. STEEL TRACK CONSTRUCTION EQUIPMENT IS PROHIBITED ON ALL NEW PAVEMENT TO REMAIN.

RESTORATION

1. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REGRADED AND SEEDED AS PER CITY OF LORAIN CODIFIED ORDINANCE 1929, OHIO EPA STORMWATER REGULATIONS, AND ODOT ITEM 832.
2. HYDROSEEDING IS REQUIRED FROM MARCH 1ST THROUGH OCTOBER 30TH.
3. PAY LIMITS FOR TOPSOIL AND SEEDING AND MULCHING SHALL EXTEND FOUR (4) FEET BEHIND BACK OF CURB/EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE. ANY RESTORATION OUTSIDE OF THESE LIMITS IS THE RESPONSIBILITY OF THE CONTRACTOR.

SIGNS

1. FURNISH AND ERECT SIGNS IN ACCORDANCE WITH ODOT ITEM 630, THE STANDARD CONSTRUCTION DRAWINGS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISION.
2. PROPOSED SIGNS SHALL MATCH THE CHARACTERISTICS OF AN EXISTING SIGN IF IT IS TO REMAIN WITHIN THE PROJECT LIMITS UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THIS COORDINATION.

SURVEY

1. THE CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTS AND BENCHMARKS, PER ODOT 623.
2. DISTURBED PRIVATE RIGHT-OF-WAY MONUMENTS ON OR OUTSIDE THE PROJECT RIGHT-OF-WAY LIMITS AND NOT ENCLOSED WITHIN A TEMPORARY EASEMENT FOR THE PROJECT SHALL BE RESET OR REPLACED AT THE CONTRACTOR'S EXPENSE. PRIVATE RIGHT-OF-WAY MONUMENTS WITHIN THE PROJECT RIGHT-OF-WAY/TEMPORARY EASEMENTS WHICH ARE UNAVOIDABLY DISPLACED OR DAMAGED DURING THE CONTRACT WORK SHALL BE RESET OR REPLACED ALL AT THE DETERMINATION/DIRECTION OF THE ENGINEER.
3. MONUMENTS SHALL BE LEFT UNDISTURBED UNTIL THE CITY OF LORAIN ENGINEERING DEPARTMENT HAS CHECKED/VERIFIED THE REFERENCES PROVIDED BY THE CONTRACTOR'S SURVEYOR. IN ALL CASES THE CONTRACTOR SHALL CONTACT THE CITY OF LORAIN ENGINEERING DEPARTMENT AT 440-204-2003 NO LESS THAN TWO (2) WEEKS PRIOR TO THE DISTURBANCE OF ANY EXISTING MONUMENTS.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
9	01/01/2019				
10	06/20/2019	NO. 2 ADDED IN RESTORATION			
11	02/04/2020	NO. 3 IN RESTORATION REV.			
11	02/04/2020	PREV. NO. 3 IN SIGNS DELETED			
11	02/04/2020	NO. 1 IN SURVEY REVISED			
14	04/20/2023	NO. 8 IN PROHIBITIONS ADDED			

STANDARD DESIGNS
GENERAL
GENERAL NOTES

DWG'S): GN-2.4.dwg | DRAWN BY: RS | APPROVED BY: DV | ISSUE DATE: 10/27/2015 | SCALE: NONE | SHEET: GN-2.4

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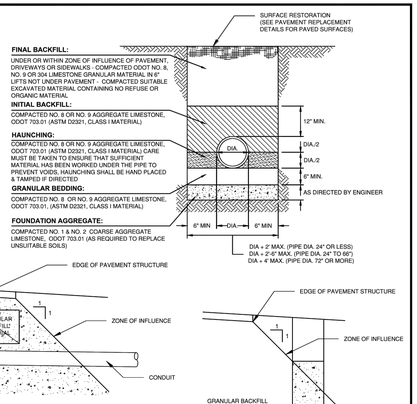
UNDERGROUND

1. WATER AND SANITARY SERVICES SHALL BE MARKED FOR THEIR LOCATION AT THE RIGHT-OF-WAY WITH A 4x4 TREATED WOOD POST. PLACE POST AT THE END OF THE LINE AND EXTEND VERTICALLY TO 3' MINIMUM ABOVE THE PROPOSED FINISH GRADE. POSTS SHALL BE MARKED FOR EITHER WATER OR SEWER AND SHALL REMAIN IN PLACE UNTIL SUCH TIME THE BUILDING CONNECTIONS ARE MADE.
2. LININGS OF ALL UTILITY PIPING AND STRUCTURES SHALL BE KEPT CLEAN AND FREE OF DEBRIS PRIOR TO AND DURING INSTALLATIONS. THE CONTRACTOR SHALL PROTECT FLOW LINES AND STRUCTURES FROM DEBRIS THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL FINAL APPROVAL IS GRANTED BY THE CITY LORAIN ENGINEERING DIVISION.
3. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEANWATER CONNECTIONS TO ANY SANITARY SEWER IS PROHIBITED.
4. DOWNSPOUT AND FOOTER DRAINS SHALL OUTLET INTO THE STORM SEWER, PROTRUDE THROUGH THE CURB OR SHALL DAYLIGHT ONTO THE PROPERTY ONTO SPLASH BLOCKS AND SHALL AT NO TIME BE CONNECTED TO THE SANITARY SEWER.
5. BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY, REPRESENTATIVES OF THE CITY AND THE CONTRACTOR SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE IN WRITING BY THE CITY.
6. ALL NEW CONDUITS, INLET, CATCH BASINS, AND MANHOLES CONSTRUCTED AS PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE CITY.
7. ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.
8. ALL BACKFILL UNDER OR WITHIN THE ZONE OF INFLUENCE OF ROADS, DRIVES, SIDEWALKS, AND PARKING LOTS SHALL BE GRANULAR BACKFILL PER SPECIFICATIONS.
9. PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION.
10. REVIEW OF DRAINAGE FACILITIES: BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY, REPRESENTATIVES OF THE CITY AND THE CONTRACTOR, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE IN WRITING BY THE CITY. ALL NEW CONDUITS, INLET, CATCH BASINS, AND MANHOLES CONSTRUCTED AS PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE CITY. ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT I



NOTES:

1. SUITABLE EXCAVATED MATERIAL SHALL CONSIST OF LOOSE FRIABLE SOIL FREE OF DEBRIS AND COMPACTED IN 6" LIFTS.
2. ALL PIPE BACKFILL SHALL BE TAMPED IN 6' LIFTS COMPACTED TO 98% OF STANDARD PROCTOR DENSITY.
3. ALL TRENCHES THROUGH A STREAM OR WATERWAY SHALL BE APPROVED BY THE CITY ENGINEER BEFORE CONSTRUCTION.
4. CLAY DAMS SHALL BE REQUIRED WHEN AND WHERE NECESSARY PER PLAN OR AS DIRECTED BY THE ENGINEER.
5. REFER TO GN 2.1 - GENERAL NOTE #25 FOR ADDITIONAL BACKFILL GUIDANCE.

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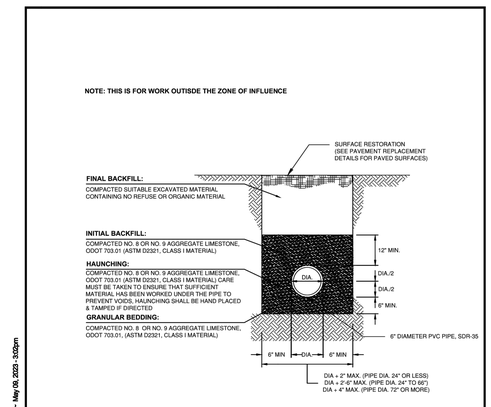
NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
7	01/01/2018				
8	06/12/2018				
9	01/01/2019				
14	04/20/2023	MAX TRENCH WIDTH CLARIFIED			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
MISCELLANEOUS
ROADWAY TRENCH DETAIL

DETAILS: MS-1.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: MS-1.0



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NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
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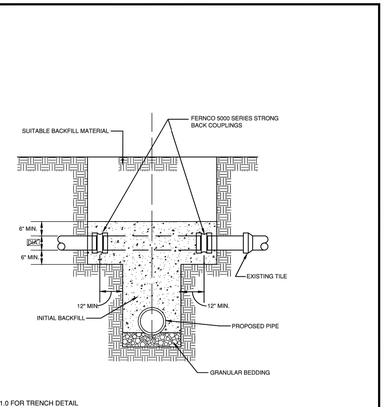
NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
MISCELLANEOUS
SERVICE LINE TRENCH DETAIL

DETAILS: MS-1.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: MS-1.1



NOTES:

1. REFER TO MS-1.0 FOR TRENCH DETAIL

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NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
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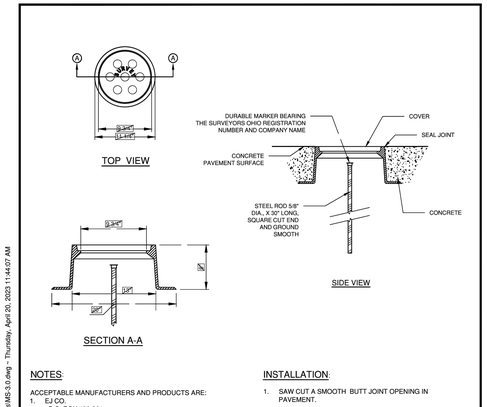
NO.	DATE	REVISION	NO.	DATE	REVISION
9	01/01/2019				

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
MISCELLANEOUS
TILE REPAIR DETAIL

DETAILS: MS-2.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: MS-2.0



NOTES:

ACCEPTABLE MANUFACTURERS AND PRODUCTS ARE:
1. EJ CO.
P.O. BOX 439-301
EAST JORDAN, MI. 49727
PRODUCT # **EJ 1578**
2. NEENAH R-1976
3. ALTERNATE PRODUCTS MAY BE SUBMITTED FOR APPROVAL.

INSTALLATION:

1. SAW CUT A SMOOTH BUTT JOINT OPENING IN PAVEMENT.
2. REMOVE DEBRIS AND PREPARE PAVEMENT OPENING FOR CASTING INSTALLATION.
3. INSTALL CASTING AND FINISH FLUSH WITH EXISTING PAVEMENT.
4. REFER TO CITY OF LORAIN STANDARD DESIGN, PAGE PV-13.0 FOR BLOCKOUT DETAIL.

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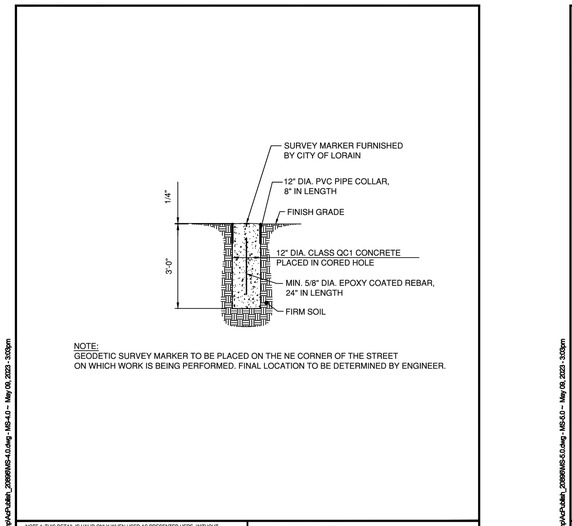
NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
10	6/20/2019	FILE PATH ADDED			
11	02/04/2020	NOTES NO. 1 CHANGED			
11	02/04/2020	NOTES NO. 2 ADDED			
14	04/20/2023	INSTALLATION NOTES			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
MISCELLANEOUS
MONUMENT BOX ASSEMBLY

DETAILS: MS-3.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: MS-3.0



NOTE:
GEODETIC SURVEY MARKER TO BE PLACED ON THE NE CORNER OF THE STREET ON WHICH WORK IS BEING PERFORMED. FINAL LOCATION TO BE DETERMINED BY ENGINEER.

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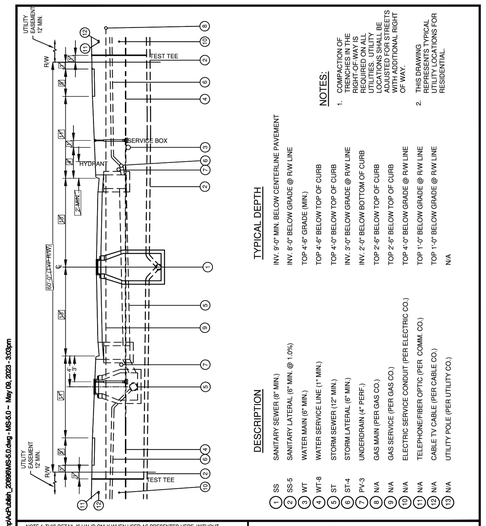
NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015				

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
MISCELLANEOUS
GEODETIC SURVEY MARKER

DETAILS: MS-4.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: MS-4.0



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NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015				
13	05/02/2022	UTILITY LOCATIONS			
14	04/20/2023	UTILITY LOCATIONS			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
MISCELLANEOUS
STREET UTILITY LOCATIONS

DETAILS: MS-5.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: MS-5.0

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3/7/2025 5:33 PM Pawar, Sayali

CITY OF LORAIN
OHIO
1834

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020
www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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DRAWN BY	BTC
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (MISCELLANEOUS)

DRAWING NO.

D5

GENERAL

1. COMPACTION OF TRENCHES IN THE RIGHT-OF-WAY IS REQUIRED FOR ALL UTILITIES. AREAS OF TIGHT EXCAVATION THAT DO NOT ALLOW FOR ODOT APPROVED COMPACTION DEVICES TO BE UTILIZED SHALL BE BACKFILLED WITH LOW STRENGTH MORTAR BACKFILL, TYPE 2 PER CURRENT ODOT CONSTRUCTION AND MATERIAL SPECIFICATION.
2. LIMESTONE SHALL BE USED FOR ALL AGGREGATE SUBBASE, FOR COARSE AGGREGATE IN ALL ASPHALT PAVEMENT SURFACE, AND FOR COARSE AGGREGATE IN CONCRETE.
3. NO VEHICULAR TRAFFIC SHALL BE PERMITTED ON A PREPARED AND APPROVED SUB-GRADE, SUB-BASE, OR PAVEMENT BASE.
4. ALL SAW CUTTING SHALL BE PERFORMED WITH A DIAMOND SAW BLADE AND INCLUDED FOR PAYMENT WITH THE COST OF THE PAVEMENT.
5. ANY ADJACENT FACILITIES DAMAGED AS RESULT OF THE CONTRACTOR'S NEGLIGENCE, AS DETERMINED BY THE ENGINEER, AND WHICH ARE NOT OTHERWISE DESIGNATED FOR REPLACEMENT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. IT IS RECOMMENDED CONTRACTOR VERIFY EXISTING PAVEMENT THICKNESS AND SECTION MAKE-UP PRIOR TO BID.
7. BASE PAVEMENT REPAIRS SHALL BE COMPLETED ONLY IF DIRECTED BY ENGINEER AFTER MILLING OPERATIONS HAVE BEEN COMPLETED. THE ENGINEERING DEPARTMENT WILL MARK BASE REPAIR AREAS WITHIN 72 HOURS, WEATHER DEPENDENT, AFTER THE THE STREET HAS BEEN SWEPT.
8. CONTRACTOR IS RESPONSIBLE FOR THE DEWATERING OF ANY REPAIR AREAS PRIOR TO PLACEMENT OF NEW PAVEMENT (BASE PAVEMENT OR FINISHED PAVEMENT).
9. FURNISH ALL AGGREGATE DIRECTLY TO THE PROJECT FROM AN APPROVED SOURCE. ONLY LIMESTONE AGGREGATE SHALL BE PERMITTED FOR USE.
10. SUBGRADE COMPACTION SHALL BE INCIDENTAL TO AND INCLUDED FOR PAYMENT WITH ITEM 452-DRIVEWAY APRON AND ITEM 608-WALKS, CURB RAMPS, AND STEPS, RESPECTIVELY.
11. ALL BACKFILL UNDER OR WITHIN THE ZONE OF INFLUENCE OF ROADS, DRIVES, SIDEWALKS, AND PARKING LOTS SHALL BE GRANULAR BACKFILL PER SPECIFICATIONS.

ASPHALT

1. GENERAL: THE MECHANICAL SPREADING AND FINISHING EQUIPMENT SHALL CONSIST OF SELF-POWERED PAVERS, CAPABLE OF SPREADING AND FINISHING THE MIXTURE TO THE LINE, GRADE AND CROWN SET BY THE ENGINEER. THE THICKNESS OF THE COURSES SHALL BE VARIED BY THE CONTRACTOR, AS REQUIRED, SO THAT THE WORK WILL BE COMPLETED WITHIN THE QUANTITY OF MATERIAL SET UP ON THE PLANS AND PROPOSAL. THE ENGINEER, HOWEVER, RESERVES THE RIGHT TO REQUIRE CHANGES IN THE THICKNESS OF COURSES, WHERE, IN HIS OPINION, THE SAME IS REQUIRED TO CAUSE THE WORK TO BE COMPLETED WITHIN THE SAID QUANTITIES. THIS RESERVATION, ON PART OF THE ENGINEER, SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY OF PROPERLY REGULATING USE OF MATERIALS AS ABOVE SPECIFIED. OVER RUNS IN SAID QUANTITIES WILL ONLY BE CONSIDERED WHERE WRITTEN SUPPLEMENTARY CONTRACTS FOR ADDITIONAL AMOUNT HAVE BEEN AGREED UPON PRIOR TO EXECUTION OF THE WORK. THE GUTTER SHALL BE FINISHED TO THE TRUE GRADE. ANY IRREGULARITIES SHALL BE CORRECTED TO ENSURE PROPER DRAINAGE. A WATER TEST MAY BE USED TO LOCATE SPOTS IN GUTTER REQUIRING CORRECTION.
2. SEALING GUTTERS AND EDGES: THE WIDTH OF THE GUTTER OR EDGE SURFACE TO BE SEALED SHALL BE 4" WHERE THE SURFACE IS BOUNDED BY RAISED CURB OR EDGE SEALED WHERE A BERM EXISTS, IN ACCORDANCE WITH ODOT SPECIFICATIONS. THE EDGES OF ALL CASTINGS, FEATHERED EDGES AND WHERE NEW SURFACE MEETS OLD PAVEMENTS SHALL BE PAINTED WITH SUITABLE ASPHALT MATERIAL. THE GUTTER OR EDGE SHALL BE SEALED IMMEDIATELY AFTER THE SURFACE COURSE IS PLACED ON EACH STREET. THE EDGE SEAL IS INTENDED TO FILL ANY VOIDS.

(CONTINUED ON NEXT PAGE)

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City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015				
2	04/18/2017				
3	01/01/2019				
11	02/05/2020	PREV. NO. 4 MOVED TO PV-5.1			
11	02/05/2020	NO. 7 REVISED			
11	02/05/2020	ASPHALT HEADING REV.			

STANDARD DESIGNS
PAVEMENT
GENERAL NOTES

DWG FILE: PV-1.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 02/05/2017 | SCALE: NONE
SHEET: PV-1.0

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ASPHALT, CONT'D

3. CLEANING OF PAVEMENT: THE STREET MUST BE SWEPT PRIOR TO BASE REPAIR MARK OUTS. CLEANING OF THE PAVEMENT PRIOR TO PAVING SHALL BE ACCOMPLISHED BY A SELF-CONTAINED VACUUM/SWEEPER WITH WATER SPRAYER FOR DUST CONTROL. THIS EQUIPMENT SHALL CLEAN THE PAVEMENT THE DAY OF PAVING TO THE SATISFACTION OF THE INSPECTOR.
4. ASPHALT BINDER PRICE ADJUSTMENT: THE PROVISIONS OF ODOT CMS 401.20, ASPHALT BINDER PRICE ADJUSTMENT IS NOT PART OF THIS CONTRACT. THE CONTRACTOR SHALL BID ACCORDINGLY.
5. SUBMITTAL OF ASPHALT TICKETS IS REQUIRED FOR PAYMENT OF ASPHALT ITEMS.
6. WARM MIX ASPHALT IS NOT PERMITTED. ONLY HOT MIX SHALL BE USED FOR SURFACE, INTERMEDIATE AND BASE COURSES.
7. ASPHALT TESTING SHALL BE PERFORMED BY AN INDEPENDENT OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CERTIFIED ASPHALT TESTING LABORATORY.
8. TESTING SHALL INCLUDE: BATCH PLANT, EXTRACTION/GRADATION, JMF REVIEW, FIELD DENSITY, TEMPERATURE AND CORING W/ DENSITY. TESTING SHALL BE PERFORMED ON ASPHALT INTERMEDIATE COURSES AND ASPHALT SURFACE COURSES. ASPHALT TESTING SHALL BE INCLUDED FOR PAYMENT WITH ITEM 441-ASPHALT INTERMEDIATE COURSE AND 441-ASPHALT SURFACE COURSE. ALL TEST REPORTS SHALL BE SUBMITTED TO THE CITY FOLLOWING EACH DAY OF PAVING.
9. RECLAIMED ASPHALT SHINGLES (RAS) ARE NOT PERMITTED IN ASPHALT PAVEMENT.

PORTLAND CEMENT CONCRETE

1. USE CONCRETE MIX CLASS QC1P FOR ROADWAY PAVEMENT AND QC MS DRIVEWAY APRONS. QC FS SHALL NOT BE USED UNLESS AS DIRECTED BY ENGINEER.
2. SAWED AND HAND-FORMED JOINTS SHALL BE SEALED WITH CMS 705.04 JOINT SEALER.
3. PAVEMENT GUTTER REINFORCING STEEL (#5X30" TIE BAR) SHALL BE INSTALLED IN ACCORDANCE WITH ODOT SCD BP-2.1 AND INCLUDED FOR PAYMENT WITH THE CONCRETE PAVEMENT.
4. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
5. ALL DROPS FOR DRIVEWAY APRONS SHALL BE INCLUDED IN THE COST OF THE CURB.
6. KEYWAYS ARE NOT REQUIRED PER CITY OF LORAIN, ODOT ITEM 452.
7. EXISTING DRIVE APRON REMOVAL/REPLACEMENT: IT IS INTENDED THAT EXISTING DRIVE APRONS REMAIN UNDISTURBED DURING ANY ADJACENT INTEGRAL CONCRETE CURB AND PAVEMENT REMOVAL/REPLACEMENTS. REMOVAL OF ADJACENT INTEGRAL CONCRETE CURB AND PAVEMENT SHALL BE IN A MANNER THAT WILL NOT DISTURB, DAMAGE OR UNDERMINE THE ABUTTING DRIVE APRONS. SAW CUTS ALONG THE BACK OF CURB SHALL BE REQUIRED TO FACILITATE THE CURB AND PAVEMENT REMOVALS. DRIVE APRONS WHICH ARE UNAVOIDABLY DAMAGED DURING THE REMOVAL/REPLACEMENT OF ANY ADJACENT INTEGRAL CONCRETE CURB AND PAVEMENT SHALL BE REPLACED, IN KIND, TO THE NEAREST JOINT OR THE LIMITS ESTABLISHED/DIRECTED BY THE ENGINEER. EXCEPT AS OTHERWISE DIRECTED BY THE ENGINEER, THE CONFIGURATIONS OF ANY REPLACED DRIVE APRON AREAS SHALL CONFORM, AS NEARLY AS POSSIBLE, TO EXISTING CONFIGURATIONS. RESIDENTIAL DRIVES, COMMERCIAL DRIVES, AND ALLEYS SHALL BE 8" THICK. CONCRETE MIX CLASS "QC MS" SHALL BE USED FOR ITEM 452-DRIVEWAY APRON. THE CONTRACTOR SHALL NOTIFY EACH RESIDENT OF ANY RESTRICTED ACCESS TO THEIR PROPERTY NO LATER THAN ONE (1) WEEK IN ADVANCE. ACCESS TO ALL PROPERTY SHALL BE MAINTAINED AT ALL TIMES.

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City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015		11	02/05/2020	ASPHALT HEADING REV.
2	02/12/2016		11	02/05/2020	PREV. NO. 8 REMOVED
7	01/01/2018		14	04/20/2023	UPDATE NOTE 7
8	07/01/2018				
9	01/01/2019				
10	06/20/2019	NO. 3 REVISED			

STANDARD DESIGNS
PAVEMENT
GENERAL NOTES

DWG FILE: PV-1.1.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE
SHEET: PV-1.1

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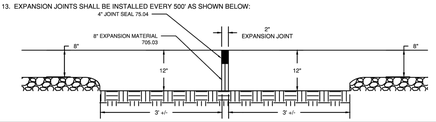
PORTLAND CEMENT CONCRETE, CONT'D

8. PARTIAL WIDTH CONSTRUCTION: POSITIVE DRAINAGE WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE INTENT OF THE METHOD REQUIRED TO REPLACE THIS PAVEMENT IS TO UTILIZE THE EXISTING ONE – HALF OF THE PAVEMENT TO PREVENT DAMAGE TO THE SUB-GRADE BY CONSTRUCTION TRAFFIC AND FOR RESIDENTS TO MAINTAIN REASONABLE PEDESTRIAN ACCESS TO THEIR RESIDENCE. THE CONTRACTOR IS REQUIRED TO KEEP OPEN ONE LANE OF TRAFFIC FOR USE BY RESIDENTS AND BUSINESSES AT ALL TIMES. THE EXISTING PAVEMENT WILL BE SAWED IN THE LONGITUDINAL DIRECTION TO ALLOW FOR HALF WIDTH REMOVAL. THE REMOVAL WIDTH WILL BE DETERMINED BY THE CONTRACTOR TO ALLOW FOR ACCESS FOR THEIR EQUIPMENT. THE REMOVAL AREA THEN IS TO BE EXCAVATED; SUB-GRADE COMPACTED BY APPROVED METHOD AND EQUIPMENT, AND ODOT #304 LIMESTONE PLACED AND COMPACTED, AS DIRECTED. ALL PERIMETER SAWING FOR REMOVAL AGAINST EXISTING PAVEMENT IS TO BE DIAMOND SAWED, OTHER TYPES OF SAWING IS PERMISSIBLE FOR REMOVAL OF INTERIOR MATERIAL TO BE REMOVED LATER. ALL SAWING IS INCIDENTAL TO THE PROJECT.
9. ITEM 499 CONCRETE - GENERAL: CONCRETE MIX DESIGNS SHALL BE LIMITED TO THE FOLLOWING CLASSES: QC 1; QC 1-P; QC MS; QC MISC.
10. ITEM 499 - MS CONCRETE FOR LARGE AREAS: THE PROJECT ENGINEER MAY ALLOW MS CONCRETE IN PLACE OF QC 1-P AS REQUIRED ON THE PROJECT. THE MIX DESIGN FOR THIS WELL GRADED QCMS IS AS FOLLOWS:
    TYPE I - 800 LBS
    WATER - 312 LBS
    #57 - 1347 LBS
    #8 - 165 LBS
    SAND - 1190 LBS
    AIR - 6%
11. CONCRETE STRENGTH: CLASS QC1, QC1P, AND QC-MS SHALL ATTAIN A MODULUS OF RUPTURE OF 600 POUNDS PER SQUARE INCH (2.8 MPa) WITHIN 5 DAYS. CITY OF LORAIN INSPECTORS WILL PREPARE TWO (2) BEAM SPECIMENS FOR EACH CONCRETE PLACEMENT. THE INSPECTOR WILL TEST ONE (1) BEAM SPECIMEN AFTER 5 DAYS OF CURE. IF THE TESTED BEAM SPECIMEN FAILS TO ATTAIN THE REQUIRED STRENGTH OF 600 PSI WITHIN 5 DAYS, THUS PROHIBITING THE CONCRETE PAVEMENT FROM BEING OPENED TO TRAFFIC, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN THE AMOUNT OF 10% OF THE CONTRACT BID ITEM AND ASSOCIATED QUANTITY THAT CONTAINED THE STRENGTH DEFICIENCY. LIQUIDATED DAMAGES WILL INCREASE 10% PER CALENDAR DAY THEREAFTER NOT TO EXCEED 50% OF THE CONTRACT BID ITEM AND ASSOCIATED QUANTITY CONTAINING THE DEFICIENCY. AFTER 5 DAYS, THE CONTRACTOR MAY TAKE POSSESSION OF THE SECOND BEAM SPECIMEN FOR ADDITIONAL TESTING BY AN ODOT PREQUALIFIED LABORATORY AT NO ADDITIONAL COST TO THE CITY. UPON USE OF THE SECOND BEAM SPECIMEN, IF FURTHER SPECIMENS ARE REQUIRED TO TEST CONCRETE STRENGTH THE CONTRACTOR MAY OBTAIN PAVEMENT CORES FROM THE PAVEMENT SECTION CONTAINING THE DEFICIENCY. ALL COSTS RELATED TO ACQUIRING THE PAVEMENT CORES, INCLUDING BUT NOT LIMITED TO REMOVAL, TESTING, REPLACEMENT AND RESTORATION, SHALL BE AT THE COST OF THE CONTRACTOR. IF THE DEFICIENCY REMAINS AFTER TWENTY EIGHT (28) DAYS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE AFFECTED CONCRETE PAVEMENT AT NO ADDITIONAL COST TO THE CITY. THE AFOREMENTIONED CONCRETE STRENGTH REQUIREMENTS AND LIQUIDATED DAMAGES SHALL BE APPLICABLE TO ALL FUTURE REPLACEMENTS OF THE CONCRETE PAVEMENT SECTIONS CONTAINING THE ORIGINAL DEFICIENCIES.
12. IF AT ANY TIME THE CONCRETE STRENGTH REQUIREMENTS ARE SATISFACTORILY MET AND THE CONTRACTOR FAILS TO OPEN THE CONCRETE PAVEMENT TO TRAFFIC BY THE END OF THE WORK DAY, THE CONTRACTOR SHALL INCUR LIQUIDATED DAMAGES AS STATED ABOVE.
13. EXPANSION JOINTS SHALL BE INSTALLED EVERY 500' AS SHOWN BELOW:



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NO.	DATE	REVISION	NO.	DATE	REVISION
7	01/01/2018		11	03/04/2020	NO. 10 REVISED
8	07/01/2018		14	04/20/2023	ADD QCMS TO NOTE 11
9	01/01/2019				
10	06/20/2019	NO. 11 ADDED			
11	02/19/2020	NO. 8 REVISED			
11	02/21/2020	EXP. JOINT DETAIL REV.			

STANDARD DESIGNS
PAVEMENT
GENERAL NOTES

DWG FILE: PV-1.2.dwg | DRAWN BY: RS | APPROVED BY: DV | ISSUE DATE: 10/27/2015 | SCALE: NONE
SHEET: PV-1.2

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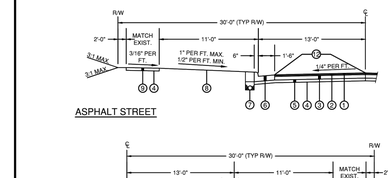
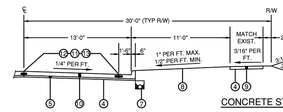


ASPHALT STREET



CONCRETE STREET

LEGEND

1	ITEM 441	1-1/4"	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22 (10% RAP MAX)	8	ITEM 659		SEEDING AND MULCHING
2	ITEM 441	1-3/4"	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22 (20% RAP MAX.)	9	ITEM 608	4"	CONCRETE SIDEWALK 6" DRIVE APPROACH AND 6" SIDEWALK BEHIND APPROACH, 6" CURB RAMPS
3	ITEM 301	9"	ASPHALT CONCRETE BASE	10	ITEM 452	8"	PLAIN PORTLAND CEMENT CONCRETE PAVEMENT WITH TYPE 2A INTEGRAL CURB, CLASS QC 1
4	ITEM 204	*	SUBGRADE COMPACTION AND PROOF ROLLING	11	ITEM 451.09		LONGITUDINAL & TRANSVERSE JOINTS PER ODOT SCD BP-2.1 AND 2.2; SAW CUT TRANSVERSE JOINTS ON 15' CENTERS AND AT RE-ENTRY CORNERS; #5 X 30" TIE BAR @ 30" C/C FOR LONGITUDINAL JOINTS
5	SUBBASE:			12	ITEM 451.16/705.04		JOINT SEALING; LONGITUDINAL, TRANSVERSE AND CURB & GUTTER JOINTS; 2" TO 4" BAND WHEN SEALING ASPHALT.
	ASPHALT	4"	304 LIMESTONE	13	ITEM 451.09		PAVEMENT GUTTER REINFORCING STEEL; SAW CUT; #5 X 30" TIE BAR @ 30" C/C PER ODOT SCD BP-2.1
	CONCRETE	3"	304 LIMESTONE				
6	ITEM 609	24"	COMBINATION CURB & GUTTER; MODIFIED TYPE 2, CLASS QC 1				
7	ITEM 605	4"	UNDERDRAINS (SEE DETAIL PV-3.0)				

NOTES

1. VERTICAL 6" CURB ROADWAY STANDARDS ARE AS FOLLOWS: TRAVEL LANE = 26' MINIMUM. BOC TO BOC 27' MINIMUM.
2. ROLLED 4" CURB ROADWAY STANDARDS ARE AS FOLLOWS: TRAVEL LANE = 26" MINIMUM. BOC TO BOC 27' 4" MINIMUM.
3. ADDITIONAL CURB DESIGNS CAN BE FOUND ON PV 5.0 AND PV 5.1.
4. CONCRETE SPECIFICATIONS: QC1P: ROADWAY; QCMS: BOXOUTS, DRIVEWAYS, SIDWALK WITHIN DRIVEWAY; QC1 OR QC MISC: WALK AND CURB RAMPS.

* WHERE GRANULAR FILL IS USED TO REPLACE SOFT SUBBASE AREAS, EXTEND CUT AND GRANULAR TO UNDERDRAIN.

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NO.	DATE	REVISION	NO.	DATE	REVISION
2	02/12/2016		11	03/04/2020	LEGEND NO. 12 REV.
4	04/18/2017		13	04/26/2022	CROSS SLOPE REV.
7	01/01/2018		13	07/28/2022	CONC. SUBBASE DEPTH
10	06/20/2019	NO. 4 CHANGED			
11	02/05/2020	DETAIL NO. 12 REVISED			
11	02/12/2020	SIDEWALK WIDTH REV.			

STANDARD DESIGNS
PAVEMENT
TYPICAL STREET-INDUSTRIAL/COMMERCIAL

DWG FILE: PV-2.1.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE
SHEET: PV-2.1

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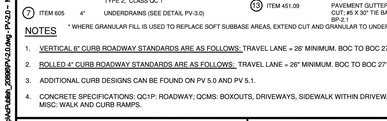
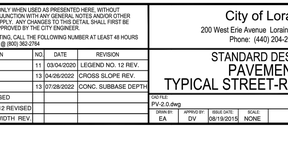


ASPHALT STREET



CONCRETE STREET

LEGEND

1	ITEM 441	1-1/4"	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22 (10% RAP MAX)	8	ITEM 659		SEEDING AND MULCHING
2	ITEM 441	1-3/4"	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22 (35% RAP MAX.)	9	ITEM 608	4"	CONCRETE SIDEWALK 6" DRIVE APPROACH AND 6" SIDEWALK BEHIND APPROACH, 6" CURB RAMPS
3	ITEM 301	9"	ASPHALT CONCRETE BASE	10	ITEM 451	10"	REINFORCED CONCRETE PAVEMENT WITH INTEGRAL CURB; TYPE 2A, CLASS QC 1. MIN. REINFORCEMENT WWF 6X6 - W4 X W4 WELDED WIRE MESH OR APPROVED FIBER.
4	ITEM 204	*	SUBGRADE COMPACTION AND PROOF ROLLING	11	ITEM 451.09		LONGITUDINAL & TRANSVERSE JOINTS PER ODOT SCD BP-2.1 AND 2.2; SAW CUT TRANSVERSE JOINTS ON 15' CENTERS AND AT RE-ENTRY CORNERS; #5 X 30" TIE BAR @ 30" C/C FOR LONGITUDINAL JOINTS
5	SUBBASE:			12	ITEM 451.16/705.04		JOINT SEALING; LONGITUDINAL, TRANSVERSE AND CURB & GUTTER JOINTS; 2" TO 4" BAND WHEN SEALING ASPHALT.
	ASPHALT	4"	304 LIMESTONE	13	ITEM 451.09		PAVEMENT GUTTER REINFORCING STEEL; SAW CUT; #5 X 30" TIE BAR @ 30" C/C PER ODOT SCD BP-2.1
	CONCRETE	3"	304 LIMESTONE				
6	ITEM 609	24"	COMBINATION CURB & GUTTER; MODIFIED TYPE 2; CLASS QC 1				
7	ITEM 605	4"	UNDERDRAINS (SEE DETAIL PV-3.0)				

* WHERE GRANULAR FILL IS USED TO REPLACE SOFT SUBBASE AREAS, EXTEND CUT AND GRANULAR TO UNDERDRAIN.

NOTES

1. VERTICAL 6" CURB ROADWAY STANDARDS ARE AS FOLLOWS: TRAVEL LANE = 26' MINIMUM. BOC TO BOC 27' MINIMUM.
2. ROLLED 4" CURB ROADWAY STANDARDS ARE AS FOLLOWS: TRAVEL LANE = 26" MINIMUM. BOC TO BOC 27' 4" MINIMUM.
3. ADDITIONAL CURB DESIGNS CAN BE FOUND ON PV 5.0 AND PV 5.1.
4. CONCRETE SPECIFICATIONS: QC1P: ROADWAY; QCMS: BOXOUTS, DRIVEWAYS, SIDWALK WITHIN DRIVEWAY; QC1 OR QC MISC: WALK AND CURB RAMPS.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
11	02/05/2020	CLEANOUT DETAIL REV.			
11	02/05/2020	NOTE NO. 1 REV.			
11	02/05/2020	CLEANOUT DETAIL REV.			
14	04/20/2023	ADD NOTE 2, NOTE 7			

STANDARD DESIGNS
PAVEMENT
UNDERDRAIN DETAIL

DWG FILE: PV-3.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE
SHEET: PV-3.0

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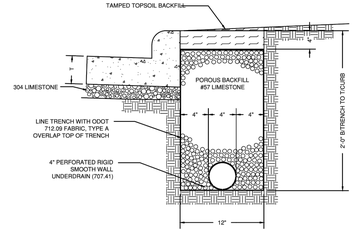
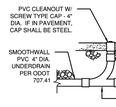


NOTES:

1. UNDERDRAINS ARE REQUIRED FOR ALL CONCRETE ROADWAY CONSTRUCTION, UNLESS APPROVED OTHERWISE, OR MODIFIED, BY THE CITY ENGINEER.
2. ALTERNATE DESIGN FOR UNDERDRAIN MAY BE ACCEPTED AS DECIDED BY ENGINEER OR AS PROVIDED IN PLANS.
3. UNDERDRAIN PIPING OR TUBING SHALL BE INSTALLED TRUE TO LINE AND GRADE SHOWN ON THE PLANS.
4. NO TRENCHING PERMITTED. COMPACT BOTTOM OF TRENCH.
5. UNDERDRAIN SHALL BE CONNECTED TO INLET/MH STRUCTURE.
6. UNDERDRAIN CLEANOUTS SHALL BE INSTALLED AT THREE HUNDRED (300) FEET INTERVALS, OR AS DIRECTED BY ENGINEER. CLEANOUTS SHALL BE INCLUDED FOR PAYMENT W/ 4" UNDERDRAIN.
7. UNDERDRAIN SHALL HAVE POSITIVE FLOW TOWARDS INLET/MANHOLE OR AS DIRECTED BY ENGINEER



UNDERDRAIN CLEANOUT

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
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City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

NO.	DATE	REVISION	NO.	DATE	REVISION
2	02/12/2016	LEGEND NO. 12 REV.			
4	04/18/2017	CROSS SLOPE REV.			
7	01/01/2018	CONC. SUBBASE DEPTH			
10	06/20/2019	NO. 4 CHANGED			
11	02/05/2020	DETAIL NO. 12 REVISED			
11	02/12/2020	SIDEWALK WIDTH REV.			

STANDARD DESIGNS
PAVEMENT
TYPICAL STREET-RESIDENTIAL

DWG FILE: PV-2.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE
SHEET: PV-2.0

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P:\lorain - City Of\j20221302.000_water_main_repl_ph2\Drawings\Civil\J20221302.000_C 79 - PVMT DETAILS.dwg
3/7/2025 5:34 PM Pawar, Sayali

1 2 3 4 5 6

CITY OF LORAIN
200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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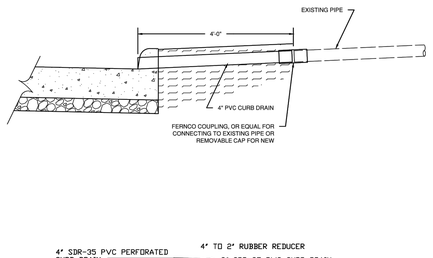
DRAWN BY	BTC
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (PAVEMENT)

DRAWING NO.

D6



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NO.	DATE	REVISION	NO.	DATE	REVISION
10	06/20/2019	ROLL CURB DETAIL ADDED			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
PAVEMENT
DRAIN THRU CURB DETAIL

DATA FILE: PV-4.0.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-4.0

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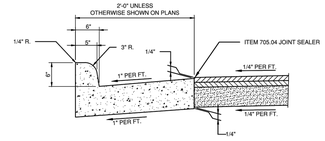

MODIFIED TYPE 2 CURB & GUTTER
FOR ASPHALT PAVEMENT

NOTES:

GENERAL: THIS DRAWING SHOWS MODIFIED TYPES OF CURB THAT MAY BE USED ON VARIOUS TYPES OF PAVEMENT. THE CONTRACT DOCUMENTS SPECIFY THE CURB TYPE TO BE USED. ALL OTHER CURBS SHALL BE IN ACCORDANCE WITH ODOT SCD BP-5.1.

JOINTS: 1" [25] EXPANSION JOINTS SHALL EXTEND UP TO THE TOP OF THE CURB AND SHALL BE CONSTRUCTED IN THE CURB AND GUTTER SECTION IN SUCH A MANNER THAT THE JOINT SEAL WILL EXTEND THE FULL WIDTH OF THE GUTTER AND INTO THE CURB FACE A SUFFICIENT DISTANCE TO SEAL THE JOINT TO AN ELEVATION OF AT LEAST 2" [50] ABOVE THE FLOW LINE OF THE GUTTER. DOWEL BARS SHALL BE USED IN THE CURB AND GUTTER SECTION AT EXPANSION JOINTS AND TO THE SURFACE OF THE PAVEMENT. TRANSVERSE EXPANSION JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF ITEM 705.03. EXPANSION JOINT MATERIAL SHALL BE GROUND DOWN AS NECESSARY TO PERMIT SEALING OF JOINTS WITH CMS 705.04 JOINT SEALER.

GUTTER PLATE THICKNESS: THICKNESS OF GUTTER PLATE "T" SHALL BE 9" [230] UNLESS OTHERWISE SHOWN ON THE PLANS.

TOLERANCES: DIMENSIONAL TOLERANCES ARE AS FOLLOWS:
CURBS: -0" TO +1/4 [-0 TO +6]
GUTTERS: 0 TO +3" [0 TO +12].

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NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
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STANDARD DESIGNS
PAVEMENT
CURB DETAIL

DATA FILE: PV-5.0.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-5.0

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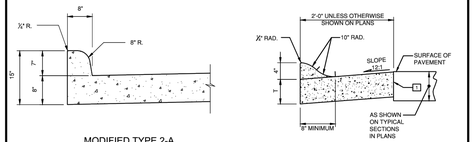


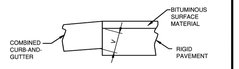
MODIFIED TYPE 2-A
INTEGRAL CURB

MODIFIED TYPE 3

FOR ADDITIONAL CURB DETAILS, SEE ODOT SCD BP-5.1.

LEGEND

T BUTT JOINTS SHALL BE PROVIDED BETWEEN COMBINED CURB-AND-GUTTER AND NEW OR EXISTING RIGID PAVEMENTS, WITH TIE BARS OR HOOK BOLTS PROVIDED AT INTERVALS OF 5' [1.5 M]. SEE SCD BP-2.1 FOR DETAILS OF TIE BARS AND HOOK BOLTS. IF THE COMBINED CURB-AND-GUTTER ADJOINS A NEW RIGID BASE OR AN EXISTING RIGID BASE OR PAVEMENT THAT IS TO BE SURFACED WITH BITUMINOUS MATERIAL, A BUTT JOINT SHALL ALSO BE PROVIDED. HOWEVER, TIE BARS OR HOOK BOLTS SHALL BE OMITTED WHEN THE VERTICAL OVERLAP ("H" IN DETAIL RIGHT) BETWEEN THE CURB-AND-GUTTER AND RIGID PAVEMENT IS LESS THAN 7" [175].



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NO.	DATE	REVISION	NO.	DATE	REVISION
1	04/18/2017				
11	02/05/2020	ADDED CURB NOTE			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
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STANDARD DESIGNS
PAVEMENT
CURB DETAILS

DATA FILE: PV-5.1.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-5.1

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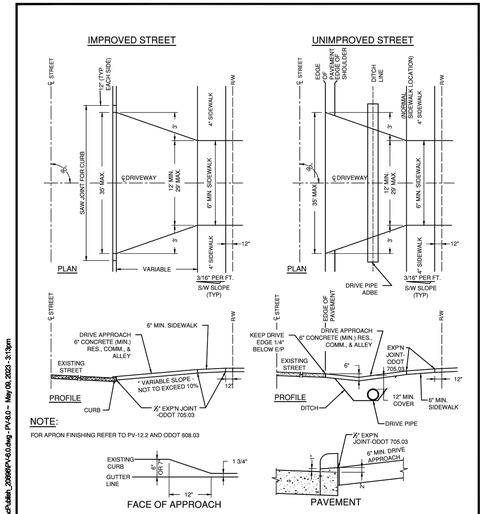

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NO.	DATE	REVISION	NO.	DATE	REVISION
11	02/05/2020	6" ALLEY NOTE ADDED			
11	02/21/2020	DETAILS REV.			
13	04/26/2022	CROSS SLOPE REV.			
14	04/20/2023	RES. & COMM. DRIVE			

City of Lorain
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Phone: (440) 204-2003

STANDARD DESIGNS
PAVEMENT
DRIVE APPROACH DETAILS

DATA FILE: PV-6.0.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-6.0

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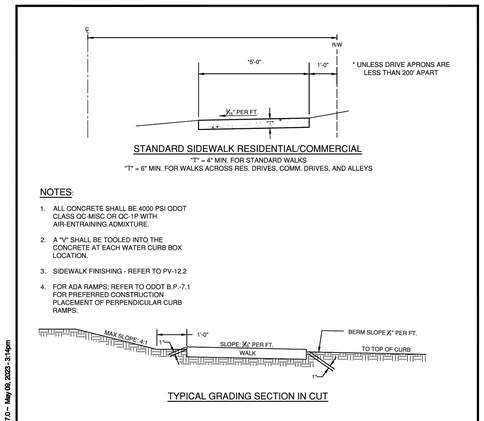

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NO.	DATE	REVISION	NO.	DATE	REVISION
10	06/20/2019	NO. 3 ADDED			
11	02/05/2020	ALLEY NOTE ADDED			
11	02/10/2020	ADA RAMP NOTE ADDED			
11	02/21/2020	WALK DETAIL REV.			
13	04/26/2022	CROSS SLOPE REV.			
14	04/20/2023	NOTE 1 & ALLEY DEPTH			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
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STANDARD DESIGNS
PAVEMENT
SIDEWALK DETAIL

DATA FILE: PV-7.0.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-7.0

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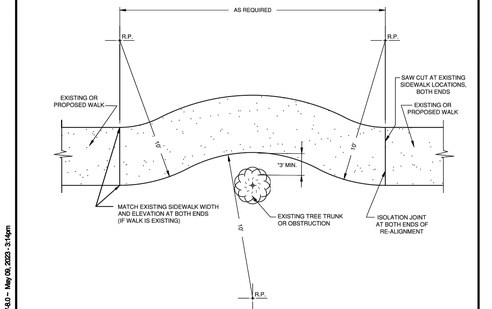

NOTES:

1. "OFFSET SHALL BE 3' MIN. FOR TREES, 1'-6" FOR OTHER OBSTRUCTIONS.
2. PROVIDE 1/4" SAW JOINTS AT APPROXIMATELY 5' SPACING, AND A MINIMUM OF 4' SPACING.
3. PROVIDE 1/4" EXPANSION JOINT WITH FILLER AT ALL ISOLATION JOINTS.

R.P. = RADIUS POINT

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NO.	DATE	REVISION	NO.	DATE	REVISION
13	04/26/2022	NOTE #2, MIN. SPACING			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
PAVEMENT
SIDEWALK REALIGNMENT DETAIL

DATA FILE: PV-8.0.dwg | DRAWN BY: EA | APPROV BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-8.0

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3/7/2025 5:34 PM Pawar, Sayali

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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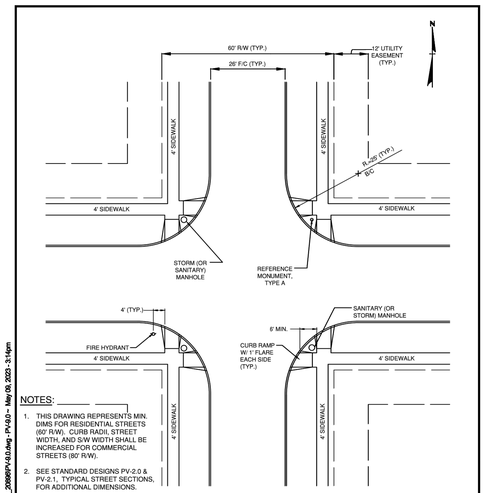
DRAWN BY	BTC
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (PAVEMENT)

DRAWING NO.

D7



NOTES:

1. THIS DRAWING REPRESENTS MIN. DIMS FOR RESIDENTIAL STREETS (60' R/W). CURB RADII, STREET WIDTH, AND S/W WIDTH SHALL BE INCREASED FOR COMMERCIAL STREETS (80' R/W).
2. SEE STANDARD DESIGNS PV-2.0 & PV-2.1, TYPICAL STREET SECTIONS, FOR ADDITIONAL DIMENSIONS.
3. SEE ODOT SCD BP-7.1 FOR CURB RAMP DETAILS.

NOTE 1 THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
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NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
PAVEMENT INTERSECTION DETAIL

DWG FILE: PV-9.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-9.0

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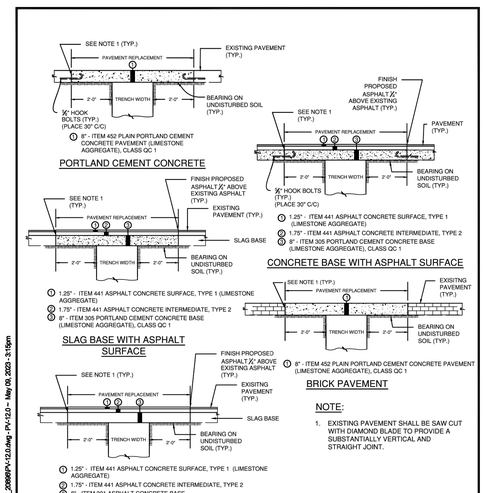

NOTE:

1. EXISTING PAVEMENT SHALL BE SAW CUT WITH DIAMOND BLADE TO PROVIDE A SUBSTANTIALLY VERTICAL AND STRAIGHT JOINT.

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NO.	DATE	REVISION	NO.	DATE	REVISION
7	01/01/2018				
9	01/01/2019				

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
PAVEMENT REPLACEMENT DETAIL

DWG FILE: PV-12.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-12.0

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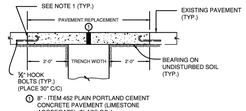
TYPICAL PAVEMENT REPLACEMENT DETAILS

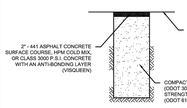
REPLACEMENT NOTES:

1. THE EXISTING PAVEMENT SHALL BE DIAMOND BLADE SAW CUT AT A DISTANCE OF 2' TO PROVIDE A SUBSTANTIALLY VERTICAL AND STRAIGHT JOINT BETWEEN THE EXISTING AND REPLACEMENT PAVEMENT.
2. ALL PAVEMENT AND SIDEWALK REPLACEMENT DETAILS SHOWN REPRESENT THE MINIMUM ACCEPTABLE REPAIR. IF EXISTING SURFACES EXCEED THESE DETAILS, THEN REPAIRED SURFACES SHALL MATCH THE EXISTING.
3. ALL EDGES OF PATCHED AREAS TO BE SEALED USING ITEM 451.16/705.04.
4. ALL CURB REPLACEMENT TO BE INCLUDED W/ PAVEMENT REPLACEMENT.
5. HOOK BOLTS SHALL BE EPOXY COATED.
6. THE EXISTING LONGITUDINAL AND TRANSVERSE JOINTS SHALL DETERMINE THE AREA OF PAVEMENT REPLACEMENT REQUIRED. WHENEVER A PROPOSED SAW CUT IS DISTANT LESS THEN FIVE (5) FT. FROM A LONGITUDINAL AND/OR A TRANSVERSE JOINT, THE PAVEMENT SHALL BE REPLACED TO THE EXISTING JOINT AND LIMITS OF ALL DESIGNATED BY THE ENGINEER IN THE FIELD.
7. ALL CONCRETE FOR STREETS AND CURBS SHALL BE ODOT CLASS QC1P.



REPLACEMENT DETAIL

TEMPORARY PAVEMENT DETAIL



TEMPORARY REPLACEMENT NOTES:

1. TEMPORARY PAVEMENT SHALL BE INSTALLED WHENEVER THE PERMANENT PAVEMENT WILL NOT BE INSTALLED WITHIN 14 DAYS OF PAVEMENT REMOVAL.
2. TEMPORARY PAVEMENT PATCHES SHALL BE MAINTAINED IN A DRIVABLE CONDITION.
3. TEMPORARY PAVEMENT PATCHES SHALL BE REPLACED WITH PERMANENT PAVEMENT RESTORATION AS SOON AS POSSIBLE.
4. TEMPORARY CONCRETE SHALL USE NO. 8 STONE.

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NO.	DATE	REVISION	NO.	DATE	REVISION
7	01/01/2018				
10	06/20/2019	NO. 7 CHANGED			
11	02/06/2020	REPL. DETAIL CHANGED			
11	02/06/2020	REPL. NOTE NO. 1 REV.			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
PAVEMENT REPLACEMENT DETAIL

DWG FILE: PV-12.1.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-12.1

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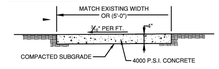
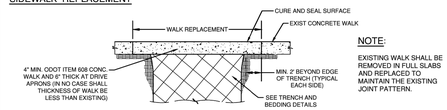
TYPICAL SIDEWALK DETAIL



NOTE:

WALK TO BE DIVIDED INTO EQUALLY SPACED BLOCKS AT APPROXIMATELY 5' INTERVALS. EXPANSION JOINT FILLER ½" THICK SHALL BE INSTALLED BETWEEN WALK AND ANY FIXED STRUCTURE EXTENDING FOR THE FULL DEPTH OF THE SIDEWALK. THE EXPANSION JOINT FILLER SHALL BE 1" THICK WHERE WALK IS INSTALLED AGAINST BACK OF CURB. SEE PV-7.

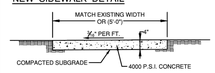
SIDEWALK REPLACEMENT



NOTE:

EXISTING WALK SHALL BE REMOVED IN FULL SLABS AND REPLACED TO MAINTAIN THE EXISTING JOINT PATTERN.

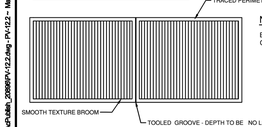
NEW SIDEWALK DETAIL



NOTE:

TOOL CONTROL JOINTS @ 5'-0" O.C.SURFACE FINISH WILL BE A SMOOTH TEXTURE BROOM PERPENDICULAR TO WALK FLOW WITH RE-TRACED PERIMITER USING AN APPROVED EDGING TOOL WITH A RADIUS OF ONE-QUARTER INCH AND INTERIOR JOINTS USING AN APPROVED GROOVING TOOL TO A DEPTH OF NOT LESS THAN ONE-QUARTER THE THICKNESS OF THE SLAB. REFER TO ODOT 608.03 C. PLACING AND FINISHING FOR WALKS, CURB RAMPS, STEPS AND APRONS.

NEW SIDEWALK FINISHING DETAIL



NOTE:

BROOM AND TOOL FINISHING FOR WALKS, CURB RAMPS, STEPS AND APRONS.

NOTE 1 THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2 BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
9	01/01/2019				
11	02/06/2020	NEW WALK DETAIL REV.			
11	02/21/2020	NEW WALK NOTE REV.			
11	09/24/2020	NEW FINISHING DETAIL			
13	04/26/2022	CROSS SLOPE REV.			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
SIDEWALK FINISHING DETAIL

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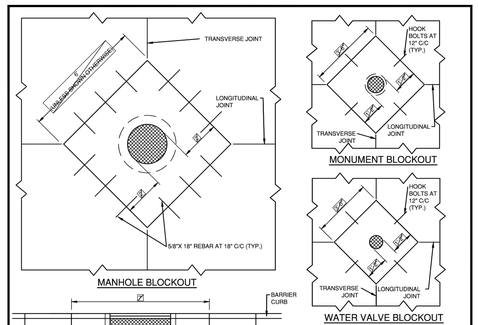

NOTES:

1. THE FOLLOWING CASTINGS ARE RECOMMENDED FOR USE: EJIW MANHOLE 1715, EJIW CATCH BASIN 7035 WITH M2 GRATE AND T1 BACK, EJIW MONUMENT BOX 1578, EJIW WATER VALVE 8560 OR APPROVED EQUALS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INVENTORY AND CONFIRM THE NUMBER AND TYPES OF CASTINGS REQUIRED BEFORE ORDERING.
2. BLOCKOUTS FOR STRUCTURES OCCURRING IN CONCRETE PAVEMENT SHALL BE INCLUDED FOR PAYMENT WITH CONCRETE PAVEMENT. WHEN BLOCKOUT IS ADJACENT TO ASPHALT CONCRETE PAVEMENT, OMIT THE DOWELS AND THE COST SHALL BE INCLUDED WITH STRUCTURE ADJUSTMENT OR RECONSTRUCTION.
3. MIX DESIGN QC MS SHALL BE USED FOR PLACEMENT OF BLOCKOUTS.
4. MONUMENT AND WATER VALVE BLOCKOUTS SHALL INCLUDE HOOK BOLTS TWELVE (12) INCHES ON CENTER FOR EACH SIDE OF THE BLOCKOUT.
5. CONCRETE BLOCKOUTS SHALL BE PLACED AT FINISH GRADE OF THE ROADWAY SURFACE.
6. PATCH SHALL BE EDGED TO A ½" RADIUS, PRIOR TO FINISHING TO MATCH EXISTING PAVEMENT.

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NO.	DATE	REVISION	NO.	DATE	REVISION
9	01/01/2019				
13	04/26/2022	REM. OF EXP. MATERIAL			

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STANDARD DESIGNS
PAVEMENT BLOCKOUT DETAILS

DWG FILE: PV-13.0.dwg | DRAWN BY: EA | APPROVED BY: DV | ISSUE DATE: 08/19/2015 | SCALE: NONE | SHEET: PV-13.0

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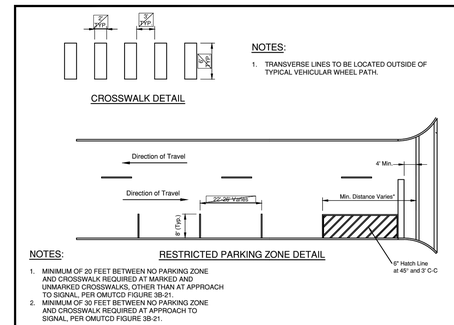

NOTES:

1. WIDTHS OF BIKE LANE AND BUFFER LANE MAY VARY. REFER TO PLAN DRAWINGS.
2. OMIT 6" HATCH LINE WHERE BIKE BUFFER IS LESS THAN 3' WIDE

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NO.	DATE	REVISION	NO.	DATE	REVISION

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Phone: (440) 204-2003

STANDARD DESIGNS
PAVEMENT PAVEMENT MARKING DETAILS

DWG FILE: PV-14.0.dwg | DRAWN BY: AP | APPROVED BY: VAN | ISSUE DATE: 04/05/2022 | SCALE: NONE | SHEET: PV-14.0

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3/7/2025 5:35 PM Pawar, Sayali

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CITY OF LORAIN
200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

OSBORN ENGINEERING
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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (PAVEMENT)

DRAWING NO.

D8

STORM SEWER

1. STORM PIPE: THE MINIMUM SIZE STORM SEWER PIPE SHALL BE 12" DIAMETER. ALL STORM SEWER SHALL BE PLACED PER THE TYPICAL DETAILS. WHERE STORM AND SANITARY SEWERS CROSS, ALIGN JOINTS EQUIDISTANT FROM THE CROSS AND EXTEND PREMIUM, GASKETED JOINTS 10' IN EACH DIRECTION.
2. STORM PIPE MATERIAL: 12" AND 15" PIPE SHALL CONFORM TO ODOT 611. MATERIAL SPECS AS FOLLOWS: REINFORCED CONCRETE PIPE - ODOT 706.02, ASTM C14-2, W/ GASKETED JOINTS PER ASTM C361 OR C443. 18" AND LARGER PIPE SHALL CONFORM TO CDOT 611, MATERIAL SPECS AS FOLLOWS: REINFORCED CONCRETE SEWER PIPE - ODOT 706.02, ASTM C76, CLASS 3, 4 OR 5 BASED ON LOADING CONDITIONS, WITH GASKETED JOINTS PER ASTM C361 OR C443. COVER OVER STORM PIPES SHALL BE PER ODOT L&D VOLUME 2 SECTION 1104.2.
3. MANHOLE PIPE CONNECTIONS: STORM SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE MADE WITH CLASS C CONCRETE COLLAR SEALS, A MIN. 6" THICK AROUND THE PIPE.
4. DRIVE PIPE: RCP UNDER DRIVES AT UNIMPROVED ROADS. MINIMUM 12" DIAMETER PIPE, OR AS APPROVED BY THE CITY ENGINEER. MINIMUM 12" COVER, OR AS APPROVED BY THE CITY ENGINEER.
5. HEADWALLS: POURED IN PLACE, REINFORCED CONCRETE OR PRECAST CONCRETE, PER ODOT SCD HW-2.2 OR HW-1.1 AND ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS, ITEM 602.
6. ROCK CHANNEL PROTECTION: TYPE A, B, OR C ROCK OR STONE, WITH FILTER FABRIC, PER ODOT CONSTRUCTION & MATERIAL SPECS ITEM 601; OF THE SIZE, THICKNESS AND LENGTH AS SPECIFIED IN FIGURE 1107-1 "ROCK CHANNEL PROTECTION AT CULVERT AND STORM SEWER OUTLETS", CDOT LOCATION AND DESIGN MANUAL VOL. 2 - DRAINAGE DESIGN. ROCK CHANNEL PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER THE INSTALLATION OF THE PERTINENT STORM STRUCTURE OR HEADWALL.
7. ITEM 611 - PIPE CULVERTS, SEWERS, DRAINS, AND DRAINAGE STRUCTURES - THE FOLLOWING SECTIONS SHALL BE EXCLUDED:
   - 611.04.B - INSTALLATION PLAN
   - 611.04.C - CONSTRUCTION INSPECTION FORMS
   - 611.04.D - PERFORMANCE REPORT
   - 611.12 - PERFORMANCE INSPECTION
   - 611.13 - CONDUIT EVALUATION
   - 611.14 - DRAINAGE STRUCTURE EVALUATION
8. REFER TO GN 2.1 - GENERAL NOTE #25 FOR ADDITIONAL BACKFILL GUIDANCE.
9. CATCH BASIN ADJUST/RECONSTRUCT - ANY PIPE REQUIRING REPLACEMENT DURING ADJUSTMENT OR RECONSTRUCT OF CATCH BASIN SHALL BE INCLUDED IN ITEM COST.

NOTE:

LIFT HOLES IN REINFORCED CONCRETE PIPE SHALL BE PLUGGED WITH CEMENT/CONCRETE PLUGS PRIOR TO BACKFILL.

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NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015				
7	01/01/2018				
10	06/30/2019	NO. 2 CHANGED			
11	02/07/2020	NO. 9 ADDED			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
STORM SEWER
GENERAL NOTES

CAD FILE: ST-1.0.dwg | DRWN BY: EA | APPRVD BY: DV | ISSUE DATE: 06/19/2015 | SCALE: NONE | SHEET: ST-1.0

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A. CONSTRUCTION:

1. MANHOLES SHALL BE IN ACCORDANCE WITH ODOT SCD MH-1.1, MH-1.2, MH-1.3 OR MH-3.1 AND SHALL BE INCLUDED FOR PAYMENT WITH ITEM 611.
2. ALL NEW MANHOLES SHALL BE 48" MINIMUM INSIDE DIAMETER, PRE-CAST CONCRETE CONFORMING TO ASTM C478. PRE-CAST BASES SHALL BE 6" MINIMUM.
3. NEW MANHOLES PLACED OVER EXISTING SEWER LINES, REFERRED TO AS DOGHOUSE MANHOLES, SHALL HAVE CAST-IN-PLACE CONCRETE BASES WITH REINFORCEMENT; REBAR #4@12" O/C EACH WAY. BASES SHALL BE CLASS QC1 CONCRETE WITH A MINIMUM THICKNESS OF 10".
4. MANHOLES WITH PRE-CAST CONCRETE BASES SHALL BE PLACED ON A COMPACTED GRAVEL BED OF NO. 57 AGGREGATE, HAVING A MINIMUM THICKNESS OF 3".
5. RUBBER O-RING GASKETS SHALL BE USED BETWEEN PRE-CAST MANHOLE SECTIONS, MEETING ASTM C443. APPLY MASTIC TAR STRIP BETWEEN SECTIONS.
6. THE CENTERLINE OF THE MANHOLE SHALL BE LOCATED OVER THE CENTERLINE OF THE MAIN SEWER, WHENEVER POSSIBLE.
7. MANHOLE STEPS MAY BE REINFORCED POLYPROPYLENE PLASTIC, 16" O/C MAXIMUM AND IN PROPER ALIGNMENT.
8. THE FRAMES SHALL BE SET EVEN AND FLUSH WITH THE INTERIOR WALLS OF THE MANHOLE.
9. GRADE ADJUSTMENT RINGS SHALL BE PRE-CAST CONCRETE ONLY AND CONFORMING TO ASTM C478 GRADE RINGS. A MAXIMUM 12" OF ADJUSTMENT RINGS MAY BE USED FOR CONCRETE STRUCTURES. ONLY MASONRY CLAY-SOLID BRICK (ASTM C-32, GRADE S.S.) SHALL BE USED FOR EXISTING STRUCTURE ADJUSTMENTS.

B. CASTINGS:

1. APPROVED MANHOLE FRAMES AND LIDS ARE EAST JORDAN #1715 OR EQUAL. 1710Z MAY BE SUBSTITUTED; OR NEENAH R-1782.
2. FRAMES SHALL BE SET LEVEL, EXCEPT SET TO GRADE WHEN WITHIN THE PAVEMENT. LIDS SHALL BE FITTED AND FINISHED TO PROVIDE A FIRM AND EVEN SEAT IN THE FRAME.
3. FRAMES AND LIDS SHALL BE FITTED, MATCHED AND MARKED PRIOR TO DELIVERY TO THE PROJECT.
4. THE FRAME SHALL BE SET ON A MASTIC STRIP AROUND IT'S PERIMETER AND MORTARED TO THE SEAT OF THE CONCRETE STRUCTURE.
5. ANY SUBSTITUTIONS OF EQUAL QUALITY AND DIMENSIONS SHALL FIRST BE APPROVED BY THE CITY ENGINEER PRIOR TO PROCUREMENT.
6. ALL LIDS SHALL BE CAST WITH THE WORDS "STORM"; USE CITY OF LORAIN MANHOLE COVERS.
7. ALL CASTINGS AND LIDS SHALL MEET OR EXCEED ODOT H20 LOADING AND AASHTO M306 REQUIREMENTS.

C. PAYMENT:

1. PAYMENT SHALL BE FOR THE MANHOLE COMPLETE IN PLACE, EXCAVATION AND BACKFILL INCLUDED.

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NO.	DATE	REVISION	NO.	DATE	REVISION
9	01/01/2019				
11	02/10/2020	CASTINGS NO. 1 & 6 REV.			
11	02/10/2020	CAST. OLD NO. 7 REM.			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
STORM SEWER
GENERAL NOTES-MANHOLES

CAD FILE: ST-2.0.dwg | DRWN BY: EA | APPRVD BY: DV | ISSUE DATE: 06/19/2015 | SCALE: NONE | SHEET: ST-2.0

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A. CONSTRUCTION:

1. CATCH BASINS SHALL BE IN ACCORDANCE WITH ODOT SCD CB-2-2A, CB-2-2B, OR CB-2-2C.
2. INLETS AND CATCH BASINS MAY BE CAST-IN-PLACE OR PRE-CAST CONCRETE. CAST-IN-PLACE CONCRETE SHALL BE CLASS QC1. REINFORCED PRE-CAST CONCRETE SHALL BE AS SPECIFIED.
3. MINIMUM WALL THICKNESS OF CAST-IN-PLACE INLETS AND BASINS SHALL BE 8". MINIMUM WALL THICKNESS OF PRE-CAST INLETS AND BASINS SHALL BE 6".
4. MINIMUM THICKNESS FOR BASES OF INLETS AND BASINS SHALL BE 6", CAST-IN-PLACE AND PRE-CAST.
5. CATCH BASINS & INLETS WITH PRE-CAST CONCRETE BASES SHALL BE PLACED ON A COMPACTED GRAVEL BED OF NO. 57 AGGREGATE, HAVING A MINIMUM THICKNESS OF 3".
6. CONCRETE BLOCK IS NOT PERMITTED MATERIALS FOR THE CONSTRUCTION OR MODIFICATION OF INLETS AND CATCH BASINS; ONLY MASONRY CLAY-SOLID BRICK (ASTM C-32, GRADE S. S.) SHALL BE USED.
7. FRAMES SHALL BE SET EVEN AND FLUSH WITH THE INTERIOR WALLS OF THE INLETS AND BASINS.
8. DOUBLE INLETS SHALL BE LOCATED AT ALL SAG VERTICAL CURVES. UNDERDRAINS SHALL DRAIN TO THE SIDES, SOLID PIPE SHALL BE PROVIDED A MINIMUM OF 10' FROM THE WALLS, OR AS DIRECTED BY THE CITY ENGINEER.
9. INVERTS SHALL BE FORMED IN ALL INLET AND BASIN STRUCTURES TO PROVIDE POSITIVE FLOW. USE CLASS QC1 CONCRETE TO FORM INVERTS.
10. ALL PIPING THROUGH CATCH BASIN WALLS SHALL BE SEALED WITH A CLASS QC1 CONCRETE COLLAR A MIN. OF 6" THICK.

B. CASTINGS:

1. APPROVED FRAMES/GRATES FOR BASINS AND INLETS ARE SHOWN BELOW:

STRUCTURE TYPE	NEENAH		EJ		
	FRAME	GRATE	FRAME	GRATE	BACK
SINGLE CURB INLET (MOD. NO. 3A CB)	R-3246-CL	C	7035	M2	T1-BARRIER CURB T2-ROLL CURB OR DRIVE APRON
DOUBLE CURB INLET (MOD. NO. 3 CB)			7036	M2	T1-BARRIER CURB T2-ROLL CURB OR DRIVE APRON
SINGLE CURB INLET (< 3'X2')	R-3030	A	7010 7020	M1 M2	T1-BARRIER CURB T4-ROLL CURB

NOTE: 7010 ALTERNATE IS 7020, M2, T1-BARRIER

2. ALL GRATES WITHIN THE PAVEMENT SHALL BE BICYCLE-SAFE AND SET CORRECTLY WITH THE DIRECTION OF WATER FLOW.
3. THE FRAME AND GRATE SHALL BE FITTED AND FINISHED TO PROVIDE A FIRM AND EVEN SEAT IN THE FRAME.
4. BASINS AND INLETS SHALL BE PLACED TRUE TO LINE AND GRADE, PER PLAN.
5. THE FRAMES AND GRATES SHALL BE FITTED, MATCHED AND MARKED PRIOR TO DELIVERY TO THE PROJECT.
6. ANY SUBSTITUTIONS OF EQUAL QUALITY AND DIMENSIONS SHALL FIRST BE APPROVED BY THE CITY ENGINEER PRIOR TO PROCUREMENT.
7. ALL FRAMES AND GRATES SHALL MEET OR EXCEED AASHTO M306.
8. ALL CASTINGS SHALL HAVE THE WORDS "DUMP NO WASTE" AND "DRAINS TO WATERWAY" ALONG WITH A FISH LOGO CAST INTO THE GRATE AND/OR CURB BOX.

C. PAYMENT:

1. THE PAVEMENT BLOCK-OUT SHALL BE PLACED AFTER THE CASTING HAS BEEN SET, BUT WILL BE PAID FOR AS THOUGH PART OF THE CONCRETE PAVEMENT.
2. NO DEDUCTION SHALL BE MADE IN QUANTITIES OF PAVEMENT BECAUSE OF THE CASTING.

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NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
11	02/07/2020	CONST. NO. 6 REV.			
11	02/07/2020	CASTINGS CHART REV.			
11	02/07/2020	CASTINGS NO. 7 REV.			
13	01/21/2022	CONST. NO. 1 REV.			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
STORM SEWER
GENERAL NOTES-CATCH BASINS & INLETS

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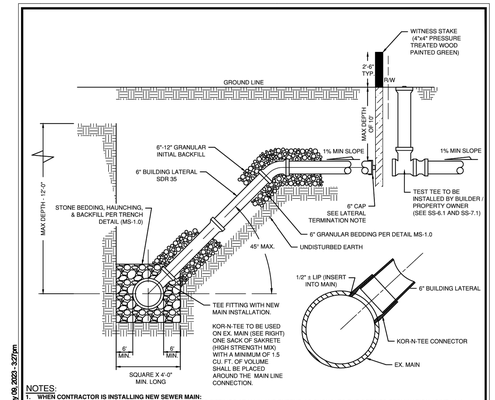

NOTES:

1. **WHEN CONTRACTOR IS INSTALLING NEW SEWER MAIN:**
   - 1.1. ALL LATERALS SHALL BE INSTALLED WITH IN-LINE TEE FITTINGS AT MAIN AND EXTEND AS SHOWN TO THE DEFINED TERMINATION JOINT. ALL LATERALS NOTED ON PLANS SHALL BE PRESSURE TESTED WITH MAIN AND MARKED WITH WITNESS STAKE AS SHOWN.
   - 1.2. LATERAL INSTALLATION SHALL BE INSPECTED BY AN AUTHORIZED CITY OF LORAIN INSPECTOR.
   - 1.3. THE TEST PLUG SHALL BE YELLOW IN COLOR AND JOINED BY MEANS OF AN INTEGRAL BELL WITH A ELASTOMERIC GASKET JOINT AND BE APPROVED BY THE ENGINEER.
   - 1.4. A PIECE OF FERROUS MATERIAL HAVING A VOLUME OF 1.5 CUBIC INCHES SHALL BE PLACE OVER THE TOP OF THE TEST PLUG AND BACKFILLED WITH 6" TO 12" OF TOPSOIL. ANY TEST PLUG LOCATED IN A PAVED AREA SHALL BE APPROVED BY THE CITY ENGINEER BEFORE CONSTRUCTION IS TO BEGIN.
2. **WHEN LATERALS ARE INSTALLED ON EXISTING SEWERS:**
   - 2.1. NO WORK MAY BE PERFORMED PRIOR TO ISSUANCE OF SEWER SERVICE PERMIT BY ENGINEERING DEPARTMENT.
   - 2.2. ALL WORK IS TO BE INSPECTED AS PER CODIFIED ORDINANCE 913.036 SEWER CONNECTION INSPECTION. INSPECTIONS CAN BE SCHEDULED WITH ENGINEERING DEPARTMENT (440-204-2003).
   - 2.3. HOLES IN EXISTING MAINS FOR INSTALLATION OF KOR-N-TEE CONNECTOR SHALL BE CORE DRILLED USING HOLESAWS OR CORING MACHINES TO ENSURE A CLEAN, ROUND, SMOOTH HOLE.
   - 2.4. CONTRACTOR WILL INSTALL LATERAL AND TEST TEE, AND SERVICE INTO HOME/BUILDING. NO WITNESS STAKE IS REQUIRED.
3. THE TEST TEE RISER SECTION SHALL BE INSTALLED WHEN THE CONNECTION IS EXTENDED TO THE HOME OR BUILDING.

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NO.	DATE	REVISION	NO.	DATE	REVISION
1	2/5/2021	EXT OF TERMINATION LOCATION			
13	7/5/2022	CLARIFICATION OF ORDINANCE IN NOTE 2.2			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
STORM SEWER
STANDARD LATERAL CONNECTION

CAD FILE: ST-4.0.dwg | DRWN BY: EA | APPRVD BY: DV | ISSUE DATE: 06/19/2015 | SCALE: NONE | SHEET: ST-4.0

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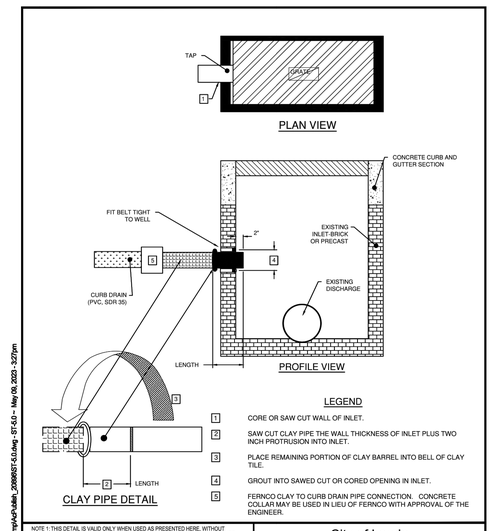

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NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
STORM SEWER
INLET TAP

CAD FILE: ST-5.0.dwg | DRWN BY: EA | APPRVD BY: DV | ISSUE DATE: 06/19/2015 | SCALE: NONE | SHEET: ST-5.0

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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DETAILS (STORM SEWER)

DRAWING NO.

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GENERAL - MATERIAL

NOTE: ALL MATERIALS SHALL BE "LEAD FREE" PER SAFE DRINKING WATER ACT.

1. MAIN LINES: PVC PLASTIC, AWWA C909, PRESSURE CLASS 235. RUBBER GASKETED JOINTS, AWWA C111. 6" MINIMUM DIAMETER FOR DISTRIBUTION LINE.
2. FITTINGS: DUCTILE IRON, CEMENT LINED, FULL OR COMPACT BODY, MECHANICAL JOINT, AWWA C110 OR C153 WITH 316 STAINLESS STEEL BOLTS. ALL FITTINGS SHALL BE POLYETHYLENE ENCASED, AWWA C105.
3. THRUST RESTRAINT: MECH. JOINTS W/ EBAA IRON SERIES 19MJ AND PIPE JOINTS WITH EBAA IRON SERIES 1900 RESTRAINERS (STAINLESS STEEL BOLTS).
4. TAPPING SLEEVE SHALL BE SMITH-BLAIR STYLE 665 (STAINLESS STEEL) OR MUELLER H-304L (STAINLESS STEEL WITH STAINLESS STEEL FLANGE AND MJ OUTLET FOR STANDARD GATE VALVE). ALL TAPS SHALL BE MADE BY THE CONTRACTOR UNDER THE SUPERVISION OF AUTHORIZED CITY PERSONNEL, AND IN ACCORDANCE WITH CITY STANDARDS.
5. BACKFILL: 4'-6" MINIMUM COVER ON MAIN LINE. REFER TO GN 2.1 - GENERAL NOTE #25 FOR ADDITIONAL BACKFILL GUIDANCE.
6. MAIN LINE VALVES: MUELLER A-2360 WITH 316 STAINLESS STEEL FASTENERS, OPEN LEFT, RESILIENT WEDGE, MECHANICAL JOINT. MAIN LINE OFFSETS LOCATED AT 7' OR GREATER DEPTH SHALL HAVE VALVES LOCATED ON EITHER SIDE OF OFFSET; VALVE EXTENSIONS SHALL BE UTILIZED SO THAT VALVE KEY REQUIRED FOR O&M IS MAXIMUM 5'. ALSO, NO TAPS MAY BE MADE BETWEEN VALVES ON AN OFFSET.
7. INSERTION VALVES: TEAM INSERT VALVE WITH STAINLESS STEEL FASTENERS. ONE CUBIC YARD OF ODOT 613 LOW STRENGTH MORTAR SHALL BE INSTALLED AROUND THE INSERTION VALVE PRIOR TO CLOSING THE VALVE. INSERTION VALVES SHALL NOT BE INSTALLED WITHIN 6 FEET OF AN EXISTING JOINT.
8. TEMPORARY LINESTOPS: DUCTILE IRON OR STAINLESS STEEL TAPPING SLEEVES WITH STAINLESS STEEL FASTENERS WITH SHUT OFF WEDGE VALVE BY HYDROSTOP, EZ VALVE OR APPROVED EQUAL. ONE CUBIC YARD OF ODOT 613 LOW STRENGTH MORTAR SHALL BE INSTALLED AROUND THE LINE STOP PRIOR TO CLOSING THE VALVE. LINESTOPS SHALL NOT BE INSTALLED WITHIN 6 FEET OF AN EXISTING JOINT.
9. VALVE BOX: EAST JORDAN IRON WORKS 8560 SERIES THREE PIECE WITH DROP LID.
10. HYDRANTS: MUELLER SUPER CENTURION 250; A-423, 5'-0" BURY, TWO 2-1/2" NST HOSE OUTLETS AND ONE 5" STORZ OUTLET, OPEN LEFT, WITH 316 STAINLESS STEEL BOLTS. HYDRANTS SHALL BE PAINTED RED BARRELS AND WHITE DOMES.
11. COPPER SERVICE: TYPE K COPPER, 1" MINIMUM.
12. HIGH DENSITY POLYETHYLENE SERVICE: POLYFLEX TUBING (CTS) WITH 200 WITH PSI RATING AND CONFORMING TO ASTM D2737, AWWA, C901 AND NSF STANDARDS 14 AND 61. STAINLESS STEEL SLEEVES SHALL BE USED AT EACH CONNECTION POINT. TRACER WIRE SHALL BE INSTALLED CHECK CONDUCTIVITY, 2" MINIMUM.
13. CURB STOP: MUELLER H-15204 1" MINIMUM FOR COPPER OR MUELLER H-15209 2" MINIMUM FOR HDPE, OR EQUIVALENT MODEL APPROVED BY ENGINEER.
14. CURB BOX: MUELLER H-10334 CURB BOX, 60"; 89376 LID, BRASS MACHINE THREADS. MUELLER H-10336 CURB BOX FOR 1-1/2" AND 2" SERVICES, OR EQUIVALENT MODEL APPROVED BY ENGINEER.
15. CORPORATION STOP: MUELLER B-1500 WITH AWWA TAPER INLET THREADS, 1" MINIMUM, OR EQUIVALENT MODEL APPROVED BY ENGINEER.
16. COUPLING: MUELLER H-15400 UNION, STRAIGHT THREE PART, FOR COPPER OR MUELLER H-15403 FOR HDPE. SMITH-BLAIR, INC. 400 SERIES BETWEEN NEW COPPER AND EXISTING GALVANIZED WATER SERVICE.
17. BRASS PLUGS: MUELLER H-10033 1" BRASS PLUGS, WHEN NECESSARY.
18. SERVICE SADDLE: MUELLER BR-2-B SERIES WITH AWWA TAPER OUTLET THREADS.
19. TRACER TAPE: NYLON REINFORCED METALIZED FOIL CORE LAMINATED BETWEEN TWO LAYERS OF INERT PLASTIC FILM. 3" WIDE BY 5 MILS. THICK WITH WARNING MESSAGE "CAUTION WATERLINE BURIED BELOW" REPEATED EVERY 30'. REEF INDUSTRIES TERRA TAPE SENTRY LINE 1350 OR APPROVED EQUAL.
20. TRACER WIRE: COPPERHEAD STEEL CORE COPPER CLAD REINFORCED #12 AWG WITH 30 MIL. HIGH DENSITY POLYETHYLENE COATING. BLUE IN COLOR WITH APPROVED MOISTURE TIGHT SPLICE KITS.

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NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
14	04/20/2023	NOTE 13, 14, 15			

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
WATERLINE
GENERAL NOTES

DATA	DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
WT-N01.dwg	GS	DV	04/25/2022	NONE	WT-N01

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GENERAL

1. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE EXISTING MAIN AND SERVICE CONNECTIONS DURING CONSTRUCTION. ANY BREAKS IN THE MAIN OR CONNECTIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT DURING THE ENTIRE TIME THE EXISTING MAIN IS IN SERVICE.
2. THE LOCATION AND ELEVATION OF EXISTING SANITARY AND STORM SEWER TAPS ARE UNKNOWN. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS TO PROVIDE EIGHTEEN (18) INCHES OF VERTICAL CLEARANCE FOR PERPENDICULAR SANITARY SEWER CONNECTIONS AND TWELVE (12) INCHES OF CLEARANCE FOR STORM SEWER CONNECTIONS.
3. WATER LINES SHALL BE INSTALLED WITH A MINIMUM COVER OF 4'-6" FEET BELOW EXISTING GRADE OR 4'-6" FEET BELOW LEVEL OF EDGE OF ADJACENT PAVEMENT WHICHEVER RESULTS IN THE LOWER ELEVATION.
4. A MINIMUM OF 35 PSI SHALL BE MAINTAINED TO THE CURB STOPS DURING NORMAL OPERATING CONDITIONS.
5. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.
6. THE CONTRACTOR SHALL PERFORM PRESSURE TEST, CHLORINATION OF LINE, CHLORINATION TESTS, AND DISINFECTION TESTS. THE CONTRACTOR SHALL FURNISH ALL NECESSARY TEMPORARY CONNECTIONS FOR THE REQUIRED TESTING. THE CONTRACTOR SHALL PROVIDE TEMPORARY CAPS OR PLUGS ON THE PROPOSED WATERLINE AS NECESSARY FOR TESTING. PRESSURE TESTS SHALL BE UNDER THE SUPERVISION OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
7. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO OPEN AND CLOSE WATER VALVES.
8. FIRE HYDRANTS THAT ARE LOCATED WITHIN 10 FEET OF A STORM OR SANITARY SEWER SHALL HAVE THE HYDRANT DRAINS PLUGGED.
9. WATERLINE PIPE AND FITTING JOINTS SHALL BE RESTRAINED IN ACCORDANCE WITH THE RESTRAINED JOINT TABLE.
10. PRIOR TO FINAL WALK-THROUGH, THE CONTRACTOR SHALL VERIFY THAT ALL GATE VALVES AND CURB STOPS ARE OPERABLE AND IN THE CORRECT OPEN OR CLOSED POSITION BY PHYSICALLY CHECKING ALL VALVES IN THE PRESENCE OF THE ENGINEER'S REPRESENTATIVE WITH A VALVE WRENCH.
11. ALL WATERLINES TO BE ABANDONED IN PLACE SHALL BE PLUGGED AND FILLED.
12. WATERLINES SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 18 INCHES AND 10 FEET HORIZONTAL SEPARATION FROM ANY SANITARY SEWER OR STORM SEWER.
13. THE CONTRACTOR SHALL REMOVE ALL ABANDONED CASTINGS FOR MANHOLES, METERS AND VALVES TO A MINIMUM OF ONE (1) FOOT BELOW GRADE AND FILL THE STRUCTURE WITH COMPACTED SAND OR LOW STRENGTH MORTAR (LSM). IF THE CASTING IS IN A PAVED AREA THE PAVEMENT SHALL BE REMOVED 1'-6" BEYOND THE CASTING AND REPLACED ACCORDING TO THE PAVEMENT REPLACEMENT STANDARD DETAILS.
14. THE CONTRACTOR SHALL REMOVE EXISTING HYDRANT AND HYDRANT VALVE ASSEMBLIES IN ONE PIECE, PALLETIZE AND DELIVER TO THE CITY'S WATER DISTRIBUTION STORAGE AREA FOR DISASSEMBLY BY CITY WORKERS. AFTER THE HYDRANT ASSEMBLY IS REMOVED THE REMAINING LINE TO THE MAIN SHALL BE PLUGGED.
15. CONTRACTOR SHALL PERFORM THE CONSTRUCTION USING THE FOLLOWING SEQUENCE OF CONSTRUCTION FOR EACH PROJECT AREA:
    15.1. INSTALL PROPOSED WATERLINES, VALVES, HYDRANTS, SERVICE TAP ASSEMBLIES, CURB STOPS AND WATER SERVICE PIPE.
    15.2. PRESSURE TEST THE WATERLINE IN ACCORDANCE WITH AWWA C-600.
    15.3. DISINFECT THE WATERLINE IN ACCORDANCE WITH AWWA C-651.
    15.4. CHARGE THE NEWLY INSTALLED WATERLINE AND SWITCH OVER SERVICES FROM THE OLD WATERLINE TO THE NEW WATERLINE. FOR EACH SERVICE SWITCHOVER, THE SERVICE SHALL BE SWITCHED FROM A CHARGED OLD WATERLINE TO A CHARGED NEW WATERLINE.
    15.5. MAKE RECONNECTION OF THE NEW WATERLINE IN ACCORDANCE WITH AWWA C-651, SECTION 9. DISCONNECT AND ABANDON THE OLD WATERLINE.
    15.6. COMPLETE SURFACE RESTORATION.
16. WINTER FLUSHING OF WATER MAINS: THE CONTRACTOR SHALL PROVIDE MEASURES TO PREVENT WATER FLUSHED FROM WATER MAINS FROM FREEZING AND ACCUMULATING IN PAVED AREAS.

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NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION
1	10/27/2015				
2	01/01/2018				

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
WATERLINE
GENERAL NOTES

DATA	DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
WT-1.1.dwg	EA	DV	09/19/2015	NONE	WT-N02

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A. PRESSURE TESTING:

1. PRESSURE TESTING OF ALL NEW WATER MAINS SHALL BE IN ACCORDANCE WITH CURRENT AWWA C-600 STANDARDS AND REGULATIONS.
2. AFTER EXPELLING ALL TRAPPED AIR IN THE LINE, THE TEST PRESSURE SHALL BE 150 PSI OR 50% ABOVE THE NORMAL OPERATING PRESSURE, WHICHEVER IS GREATER.
3. DURATION OF THE LEAKAGE TEST SHALL NOT BE LESS THAN 2 HOURS UNDER PRESSURE. ALLOWABLE LEAKAGE SHALL NOT EXCEED 10.49 GALLONS PER INCH OF PIPE DIAMETER PER MILE OF PIPE PER 24 HOUR PERIOD.
4. THE CONTRACTOR SHALL PERFORM ALL TESTING IN THE PRESENCE OF THE CITY ENGINEER OR REPRESENTATIVE, EXCEPT FIRELINE TESTING AS NOTED ABOVE.
5. FAILURES SHALL BE FOUND AND CORRECTED AND THE TEST REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.

B. DISINFECTION PROCEDURES:

1. ALL NEW MAINS OR SECTIONS OF MAINS ARE REQUIRED TO HAVE 1" TAPS WITHIN 50' OF THE INFLUENT END, EVERY 500' TO 700', AND AT THE END OF THE MAIN. EACH TAP IS REQUIRED TO HAVE A BRONZE STANDARD HOSE BIBB (OR SIMILAR) FOR THE PURPOSE OF STERILIZATION AND COLLECTION OF SAMPLES. A TEST HOSE BIBB CAN BE INCORPORATED INTO A FLUSHING ASSEMBLY IF APPROVED. CHLORINE OR BACTERIA TESTING WILL NOT BE PERMITTED FROM A FIRE HYDRANT. WATER PLANT PERSONNEL WILL HAVE FINAL APPROVAL OF THE LOCATION OF ALL CHLORINE AND BACTERIA TESTING TAPS.
2. ANY NEW LINE LESS THAN 100' IN LENGTH MAY REQUIRE ONLY ONE TAP TO BE PLACED AT THE EFFLUENT END OF THE LINE WITH APPROVAL OF WATER PLANT PERSONNEL.
3. A RESIDUAL OF 25 MG/L OR GREATER OF CHLORINE MUST BE PRESENT AT THE INFLUENT, AT THE DESIGNATED TAPS, AND AT THE END OF THE MAIN OR BRANCH. THE CONTRACTOR WILL NOTIFY THE WATER PLANT PERSONNEL AT 440-204-2280 TO HAVE THE HIGH CHLORINE RESIDUAL LEVEL CHECKED.
4. AFTER 24 HOURS, WATER PLANT PERSONNEL OR THE CITY INSPECTOR WILL AGAIN CHECK THE DESIGNATED TAPS TO SEE IF THE REQUIRED 10 MG/L CHLORINE RESIDUAL IS STILL PRESENT. IF IT IS NOT PRESENT, RECHLORINATION WILL BE NECESSARY. (THE CITY INSPECTOR WILL REQUIRE THE PRESSURE TEST TO BE COMPLETED PRIOR TO THE FLUSHING OF THE CHLORINE FROM THE NEW MAIN.)
5. THE NEW MAIN CAN THEN BE FLUSHED TO BRING THE CHLORINE LEVEL BACK TO NORMAL CITY WATER. THE LEVEL WILL BE CHECKED BY WATER PLANT PERSONNEL TO SEE IF ADDITIONAL FLUSHING IS NECESSARY.
6. FLUSHING WATER WITH HIGH LEVELS OF CHLORINE SHALL BE NEUTRALIZED PRIOR TO DISCHARGE TO WATERS OF THE STATE.
7. BACTERIA SAMPLES WILL BE TAKEN AT THE EARLIEST CONVENIENT TIME BY WATER PLANT PERSONNEL, AFTER 24 HOURS ANOTHER BACTERIA SAMPLE WILL BE TAKEN FROM THE SAME LOCATION(S). THE NEW MAIN INFLUENT VALVES ARE TO REMAIN CLOSED UNTIL ALL BACTERIA TESTING RESULTS ARE ACQUIRED. IT IS REQUIRED THAT ALL BACTERIA SAMPLES BE NEGATIVE.
8. WHEN ALL OF THE ABOVE REQUIREMENTS ARE MET, THE CORPORATION STOPS MUST BE REMOVED AND BRASS PLUGS INSERTED. THE CITY INSPECTOR MUST WITNESS THIS. THE NEW MAIN WILL THEN BE ACCEPTED FOR USE.
9. ALL WATERMAIN DISINFECTION SHALL BE IN ACCORDANCE WITH AWWA C-651.

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NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
WATERLINE
GENERAL NOTES-WATERLINE TESTING

DATA	DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
WT-N03.dwg	EA	DV	04/25/2022	NONE	WT-N03

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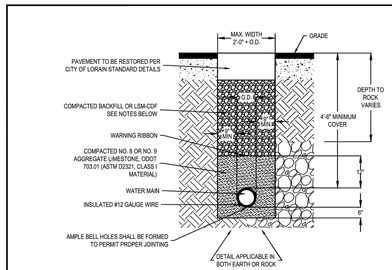

WATER MAIN TRENCH DETAILS

- NOT TO SCALE -

NOTES:
1. WHEN INSTALLING AWWA C-909 PVC PIPE:
   A. INSTALL A WARNING RIBBON ONE-FOOT ABOVE WATER MAIN AND CENTERED ON IT.
   B. INSTALL AN INSULATED #12 GAUGE TRACER WIRE. WIRE SHALL BE SECURED TO WATER MAIN AT 5-FOOT INTERVALS USING TAPE OR PLASTIC TIES. WIRE SHALL HAVE SUFFICIENT SLACK (APPROXIMATELY 5%) TO ALL FOR INSERTION OF FUTURE TAP SADDLES.
2. PREMIUM LIMESTONE BACKFILL GRADED PER ODOT 304.02 SHALL BE USED UNDER ALL EXISTING OR FUTURE PAVEMENTS, SIDEWALKS, DRIVES AND OUTSIDE OF PAVEMENT WITHIN THE ZONE OF INFLUENCE AS DEFINED IN MS-1.0. NO SLAG IS PERMITTED
3. LOW STRENGTH MORTAR/CONTROLLED DENSITY FILL (LSM-CDF) "FLOWABLE FILL" SHALL BE USED WHEN REQUIRED BY CITY ENGINEER
4. ALL PIPE BACKFILL AND BEDDING SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
5. MINIMUM COMPACTION FOR ALL SAND BEDDING, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% OF STANDARD PROCTOR. NO OVER-COMPACTION. CARE SHALL BE TAKEN AT PIPE JOINTS AS TO KEEP THE POINT JOINT CLEAN AND FREE FROM CONTAMINATION BY BEDDING MATERIAL.
6. CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING, SO AS TO AVOID SCRAPING THE EXTERIOR OF PIPE, DAMAGING COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME.
7. PAVEMENT, SIDEWALK AND DRIVES REPAIRS NECESSITATED BY TRENCH ARE TO BE MADE IN ACCORDANCE WITH CITY OF LORAIN STANDARD DETAILS AND SPECIFICATIONS.
8. ALL EXCAVATION SHALL BE IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.

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STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

WATER MAIN TRENCH DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-G01
REV. DATE	REV. DATE	REV. DATE	REV. DATE	

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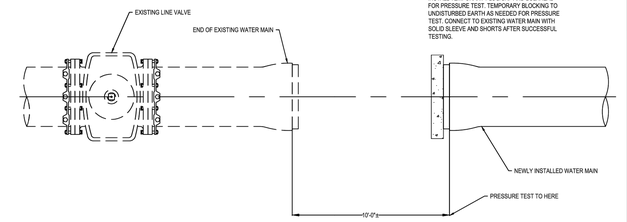

NOTE:
PRESSURE TESTING OF WATER MAINS:
WHERE NEW/EXTENDED WATER MAINS ARE CONNECTED TO AN EXISTING WATER MAIN FOR PRESSURE TEST, RESULTING IN FAILURE OF THE PRESSURE TEST OR ANY DAMAGE TO THE EXISTING WATER MAIN , OR ITS APPURTENANCES, THE REPAIR THEREOF SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ALL REPAIRS SHALL BE DONE TO THE SATISFACTION OF THE LORAIN WATER DEPARTMENT.

ALTERNATE PRESSURE TESTING DETAIL

- NOT TO SCALE -

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

ALTERNATE PRESSURE TESTING DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-G02
REV. DATE	REV. DATE	REV. DATE	REV. DATE	

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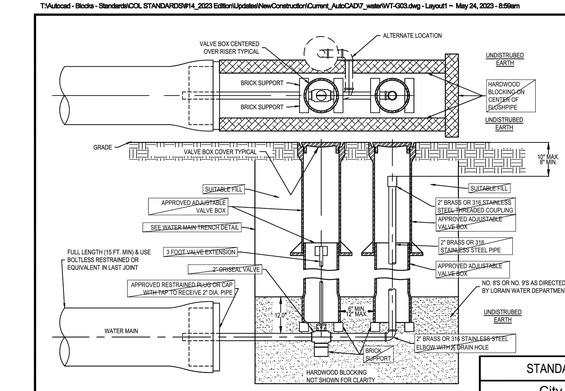

TYPICAL FLUSHING ASSEMBLY

- NOT TO SCALE -

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

TYPICAL FLUSHING ASSEMBLY DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-G03
REV. DATE	REV. DATE	REV. DATE	REV. DATE	

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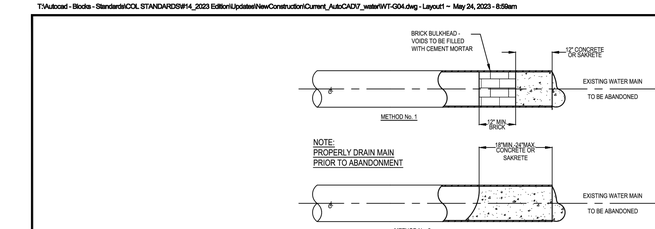
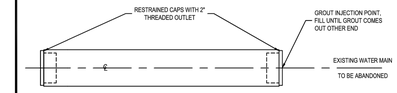


PLUGGING ABANDONED WATER MAIN ENDS (WITHOUT GROUT)

- NOT TO SCALE -

NOTE:
PROPERLY DRAIN MAIN
PRIOR TO ABANDONMENT



PLUGGING ABANDONED WATER MAIN ENDS (WITH GROUT)

- NOT TO SCALE -

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

PLUGGING ABANDONED WATER MAIN ENDS DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-G04
REV. DATE	REV. DATE	REV. DATE	REV. DATE	

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SEAL OF THE CITY OF LORAIN OHIO 1834

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Ohio | Florida | Michigan | Tennessee
(216) 861-2020
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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. COBIN
64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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DRAWN BY	BTC
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (WATERLINE)

DRAWING NO.

D10

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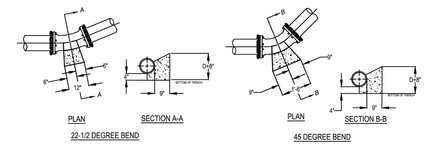
3/7/2025 5:58 PM Pawar, Sayali

T:\Autocad - Blocks - Standards\COL STANDARDS\#14_2023 Edition\Updates\NewConstruction\Current_AutoCAD\7_water\WT-G06.dwg - Layout1 ~ May 24, 2023 - 9:02am



- NOT TO SCALE -
D = PIPE DIAMETER

NOTE 1: ALL DIMENSIONS SHOWN HEREON ARE MINIMUM; THRUST BLOCK SHALL BE POURED TO UNDISTURBED EARTH.

NOTE 2: ALL CONCRETE FOR THRUST BLOCKS SHALL BE CLASS QC 1 HAVING 4,000 PSI 28 DAY COMPRESSIVE STRENGTH.

NOTE 3: DO NOT COVER BOLTS WITH CONCRETE ON MECHANICAL JOINTS.

NOTE 4: USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.

THRUST BLOCKS: 16" DIAMETER OR LESS DETAIL

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
THRUST BLOCKS: PIPE 16" DIAMETER OR LESS DETAIL				
DRAWN BY: DU (REV. DATE)	APPROV BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-G06

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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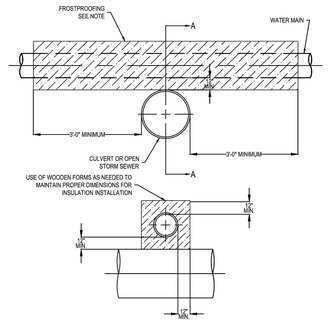

SECTION A-A

MINIMUM ONE (1) FOOT FROSTPROOFING INSULATION ENVELOPE REQUIRED WITH WATER MAIN LAID WITH LESS THAN FOUR (4) FT. COVER; CROSSING OVER STORM SEWERS 24" AND LARGER; OR CROSSING UNDER OPEN END CULVERTS, OR OTHERWISE DIRECTED BY LORAIN WATER DEPARTMENT. IN NO CASE SHALL THE MAINS BE LAID WITH LESS THAN 3'-6" OF COVER IN UNPAVED AREAS & 3'-0" TO BOTTOM OF SLAB IN PAVED AREAS.
NOTE:
COMPACTED "WITCOLITE" INSULATION AS MANUFACTURED BY PIONEER PRODUCTS, DIVISION OF WITCO CHEMICAL COMPANY, INC. OR "GISULATE 500 XR" AS MANUFACTURED BY AMERICAN THERMAL PRODUCTS, INC.

TYPICAL FROSTPROOFING DETAIL

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TYPICAL FROSTPROOFING DETAIL				
DRAWN BY: DU (REV. DATE)	APPROV BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-G09

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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"CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 316 EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

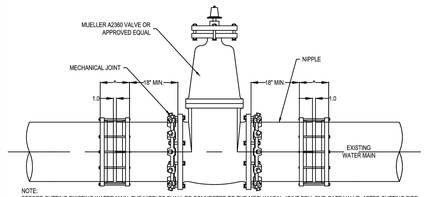
MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE SMITH-BLAIR 421 OR 441 STRAIGHT AND TRANSITION COUPLINGS.

ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE PROTECTED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

LORAIN WATER DEPARTMENT WILL DETERMINE THE FIELD LOCATION OF THE CUT-IN-VALVE ASSEMBLY. THE LORAIN WATER DEPARTMENT WILL ALSO SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY.

THE CONTRACTOR SHALL DO ALL PIPE CUTTING AND INSTALLATION. HOWEVER, THE INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY SHALL BE DONE UNDER THE SUPERVISION OF THE LORAIN WATER DEPARTMENT.



NOTE:
BEFORE CUTTING EXISTING WATER MAIN, THE NIPPLES SHALL BE CONNECTED TO THE MECHANICAL JOINT BELL END GATE VALVE. AFTER CUTTING PIPE, FINAL CONNECTIONS SHALL BE MADE WITH COUPLINGS/SOLID SLEEVES AS SPECIFIED.

CUT-IN-VALVE DETAIL

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
CUT-IN-VALVE DETAIL				
DRAWN BY: DU (REV. DATE)	APPROV BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-G05

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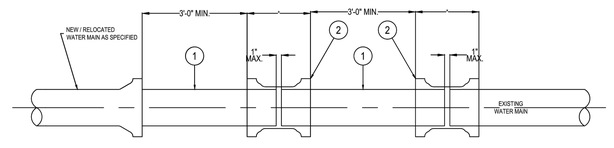

SLEEVE-IN INSTALLATION DETAIL

- NOT TO SCALE -

1) PLAIN END x PLAIN END PVC PIPE AS SPECIFIED (CUT TO SUIT).

2) *CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 316, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE SMITH-BLAIR 421 OR 441 STRAIGHT AND TRANSITION COUPLINGS.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE PROTECTED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
SLEEVE-IN INSTALLATION DETAIL				
DRAWN BY: DU (REV. DATE)	APPROV BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-G07

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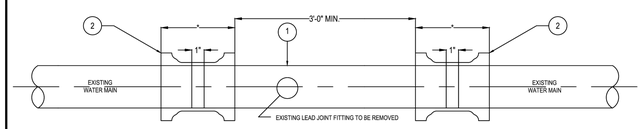

SPOOL PIECE INSTALLATION DETAIL

-NOT TO SCALE-

1) PLAIN END x PLAIN END PVC C900 PIPE AS SPECIFIED (CUT TO SUIT).

2) *CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 316, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE SMITH-BLAIR 421 OR 441 STRAIGHT AND TRANSITION COUPLINGS.

3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE PROTECTED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

STANDARD DETAILS				
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SPOOL PIECE INSTALLATION DETAIL				
DRAWN BY: DU (REV. DATE)	APPROV BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-G08

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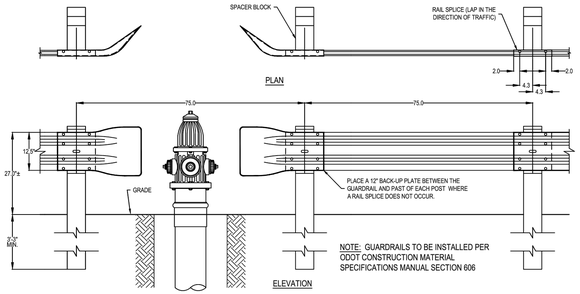
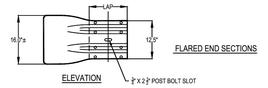
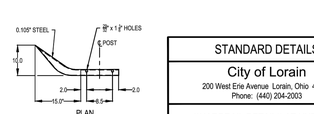


NOTE: GUARDRAILS TO BE INSTALLED PER ODOT CONSTRUCTION MATERIAL SPECIFICATIONS MANUAL SECTION 606



FLARED END SECTIONS



GUARDRAIL DETAILS AT HYDRANT

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
GUARDRAIL DETAILS AT HYDRANT				
DRAWN BY: DU (REV. DATE)	APPROV BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-G10

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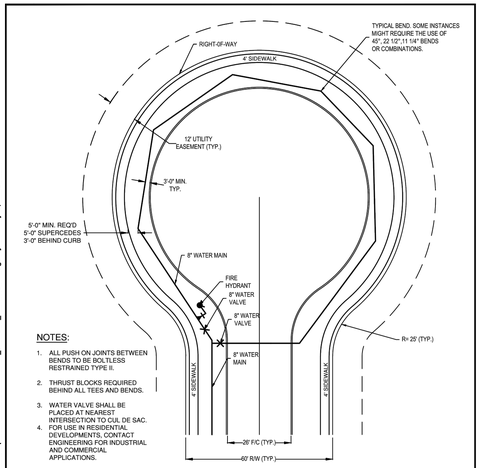

NOTES:
1. ALL PUSH ON JOINTS BETWEEN BENDS TO BE BOLTLESS RESTRAINED TYPE II.
2. THRUST BLOCKS REQUIRED BEHIND ALL TEES AND BENDS.
3. WATER VALVE SHALL BE PLACED AT NEAREST INTERSECTION TO CUL DE SAC.
4. FOR USE IN RESIDENTIAL DEVELOPMENTS, CONTACT ENGINEERING FOR INDUSTRIAL AND COMMERCIAL APPLICATIONS.

STANDARD CUL-DE-SAC HYDRANT LOOP SCHEMATIC DETAIL

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
STANDARD CUL-DE-SAC HYDRANT LOOP SCHEMATIC DETAIL				
DRAWN BY: DU (REV. DATE)	APPROV BY: (REV. DATE)	ISSUE DATE: (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-G11

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

SEAL OF THE CITY OF LORAIN OHIO 1834

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODY
E-84062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (WATERLINE)

DRAWING NO.

D11

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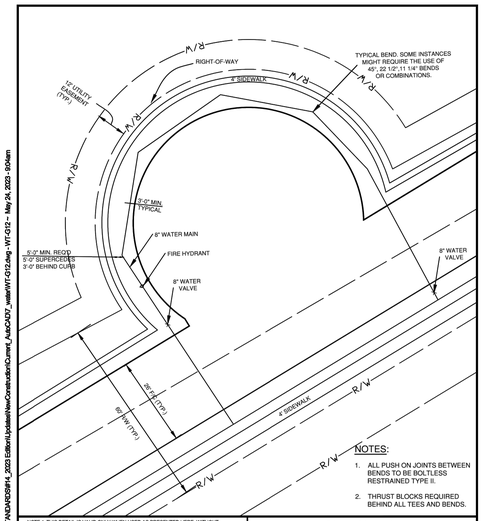
3/7/2025 5:36 PM Pawar, Sayali



NOTES:

1. ALL PUSH ON JOINTS BETWEEN BENDS TO BE BOLTLESS RESTRAINED TYPE II.
2. THRUST BLOCKS REQUIRED BEHIND ALL TEES AND BENDS.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
WATER LINE
BUMP OUT HYDRANT/LOOP SCHEMATIC

DGN'D: WT-G12.dwg	DRWN BY: VAN	APPRD BY: DV	ISSUE DATE: 04/25/2022	SCALE: NONE	SHEET: WT-G12

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PVC AND DUCTILE IRON PIPE RESTRAINT JOINT TABLE						
	DIAMETER OF PIPE					
FITTING TYPE	4"	6"	8"	10"	12"	16"
HORIZONTAL 90°	13'	18'	24'	28'	33'	43'
HORIZONTAL 45°	6'	8'	10'	12'	14'	18'
HORIZONTAL 22½°	3'	4'	5'	6'	7'	9'
HORIZONTAL 11¼°	2'	2'	3'	3'	4'	5'
VALVE / PLUG	29'	40'	53'	64'	76'	99'
TEE	24'	35'	48'	58'	70'	92'
VERTICAL 22½°	7'	10'	13'	16'	19'	25'
VERTICAL 11¼°	4'	5'	7'	8'	10'	12'

NOTES:

1. RESTRAINED LENGTHS IN TABLE ARE MINIMUM VALUES.
2. ALL JOINTS WITHIN THE SPECIFIED LENGTH SHALL BE RESTRAINED. LENGTH OF RESTRAINT FOR TEES APPLIES TO BRANCH, ASSUMING JOINTS ON RUN ARE RESTRAINED AND CONNECTED TO A MINIMUM OF 1' OF PIPE IN EACH DIRECTION WITHOUT JOINTS.
3. VALVES AND BENDS SHALL BE RESTRAINED WITHIN THE LENGTHS INDICATED ABOVE IN BOTH DIRECTIONS.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

STANDARD DESIGNS
WATERLINE
RESTRAINED PIPE JOINT TABLE

DGN'D: WT-3.0.dwg	DRWN BY: EA	APPRD BY: DV	ISSUE DATE: 08/19/2015	SCALE: NONE	SHEET: WT-G13

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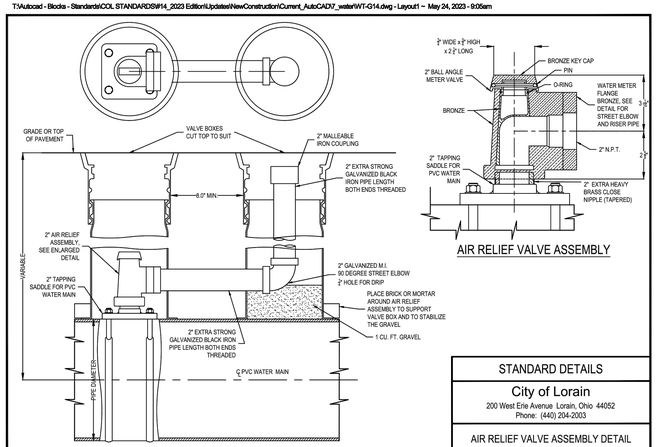

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STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
AIR RELIEF VALVE ASSEMBLY DETAIL

DRWN BY: DU	APPROV BY: GS	ISSUE DATE: 4/25/22	SCALE: NONE	SHEET: WT-G14
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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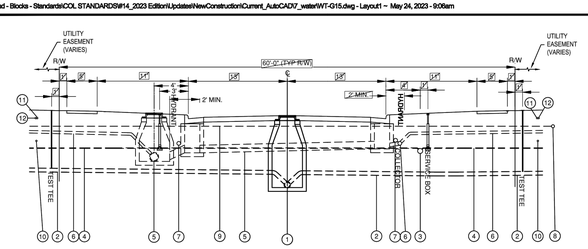

DESCRIPTION

1	SS	SANITARY SEWER (8" MIN.)	INV. 9'-0" MIN. BELOW CENTERLINE PAVEMENT
2	SS-8	SANITARY LATERAL (6" MIN. @ 1.0%)	INV. 8'-0" BELOW GRADE @ R/W LINE
3	WT	WATER MAIN (6" MIN.)	TOP 4'-6" GRADE (MIN.)
4	WT-9	WATER SERVICE LINE (1" MIN.)	TOP 4'-6" BELOW TOP OF CURB
5	ST	STORM SEWER (12" MIN.)	TOP 4'-0" BELOW TOP OF CURB
6	ST-13	STORM LATERAL (6" MIN.)	INV. 3'-0" BELOW GRADE @ R/W LINE
7	PV-4	UNDERDRAIN (4" PERF.)	INV. 2'-0" BELOW BOTTOM OF CURB
8	N/A	GAS MAIN (PER GAS CO.)	TOP 2'-6" BELOW TOP OF CURB
9	N/A	GAS SERVICE (PER GAS CO.)	TOP 2'-6" BELOW TOP OF CURB
10	N/A	ELECTRIC SERVICE CONDUIT (PER ELECTRIC CO.)	TOP 4'-0" BELOW GRADE @ R/W LINE
11	N/A	TELEPHONE CABLE (PER TELEPHONE CO.)	TOP 1'-0" BELOW GRADE @ R/W LINE
12	N/A	CABLE TV CABLE (PER CABLE CO.)	TOP 1'-0" BELOW GRADE @ R/W LINE
13	N/A	UTILITY POLE (PER UTILITY CO.)	N/A

TYPICAL DEPTH

NOTES:

1. COMPACTION OF TRENCHES IN THE RIGHT-OF-WAY IS REQUIRED ON ALL UTILITIES. UTILITY LOCATIONS SHALL BE ADJUSTED FOR STREETS WITH ADDITIONAL RIGHT OF WAY.
2. THIS DRAWING REPRESENTS TYPICAL UTILITY LOCATIONS FOR RESIDENTIAL.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
ROW CROSS SECTION FOR NEW CONSTRUCTION DETAIL

DRWN BY: DU	APPROV BY: GS	ISSUE DATE: 5/9/2022	SCALE: NONE	SHEET: WT-G15
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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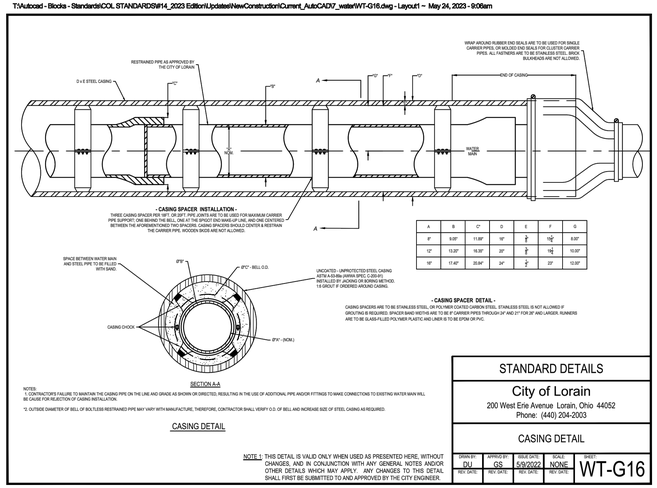

A	B	C	D	E	F	G
8"	9.05"	11.95"	16"	8"	10½"	8.05"
12"	13.25"	16.35"	20"	8"	14½"	10.85"
16"	17.45"	20.84"	24"	8"	22"	12.95"

NOTES:
1. CONTRACTOR'S FAILURE TO MAINTAIN THE CASING PIPE ON THE LINE AND GRADE AS SHOWN OR DIRECTED, RESULTING IN THE USE OF ADDITIONAL PIPE AND/OR FITTINGS TO MAKE CONNECTIONS TO EXISTING WATER MAIN WILL BE CAUSE FOR REJECTION OF CASING INSTALLATION.
*D: OUTSIDE DIAMETER OF BELL OF BOLTLESS RESTRAINED PIPE MAY VARY WITH MANUFACTURE, THEREFORE, CONTRACTOR SHALL VERIFY O.D. OF BELL AND INCREASE SIZE OF STEEL CASING AS REQUIRED.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
CASING DETAIL

DRWN BY: DU	APPROV BY: GS	ISSUE DATE: 5/9/2022	SCALE: NONE	SHEET: WT-G16
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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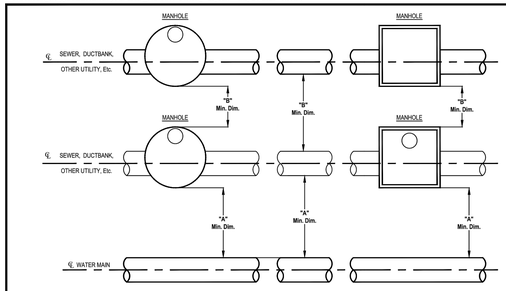

HORIZONTAL CLEARANCE	STORM SEWER	SANITARY SEWER	GAS, DUCTBANK, OTHER UTILITY, Etc.
"A"	10'-0" MIN.	10-0" MIN.	5'-0" MIN.
"B"	10'-0" MIN.	10-0" MIN.	5'-0" MIN.

HORIZONTAL CLEARANCE FOR UTILITIES
NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
HORIZONTAL CLEARANCE FOR UTILITIES DETAIL

DRWN BY: DU	APPROV BY: GS	ISSUE DATE: 5/9/2022	SCALE: NONE	SHEET: WT-G17
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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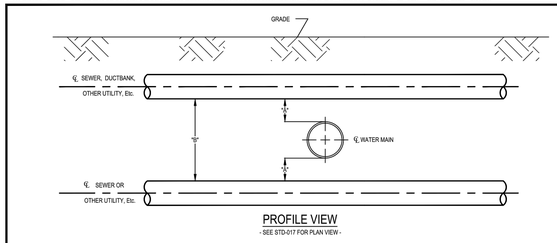

VERTICAL CLEARANCE	SANITARY SEWER LESS THAN 24"	SANITARY SEWER 24" & LARGER	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY LESS THAN 24"	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY 24" & LARGER	REMARKS
"A"	18" Min.	18" Min.	18" Min.	18" Min.	IF CANNOT ACHIEVE MIN. CLEARANCE WATER MAIN TO BE LOWERED
"B"	12" Min.	18" Min.	12" Min.	18" Min.	

VERTICAL CLEARANCE FOR UTILITIES
NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
VERTICAL CLEARANCE FOR UTILITIES DETAIL

DRWN BY: DU	APPROV BY: GS	ISSUE DATE: 5/9/2022	SCALE: NONE	SHEET: WT-G18
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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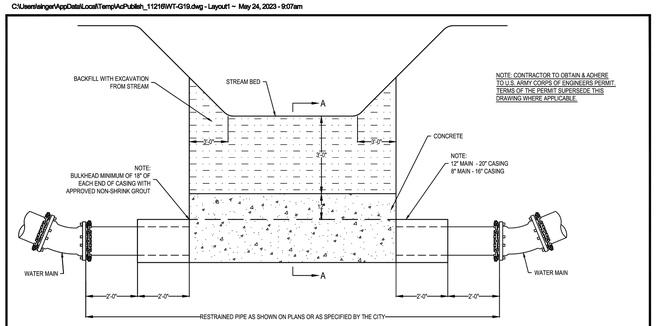

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
CROSSING LARGE DITCHES OR SMALL STREAMS PROFILE - OPEN CUT METHOD

DRWN BY: DU	APPROV BY: GS	ISSUE DATE: 5/9/2022	SCALE: NONE	SHEET: WT-G19
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64062
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (WATERLINE)

DRAWING NO.
D12

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3/7/2025 5:37 PM Pawar, Sayali

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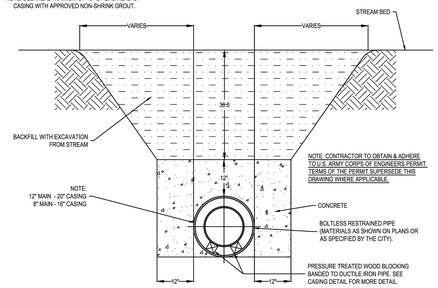

CROSSING LARGE DITCHES OR SMALL STREAMS SECTION A-A - OPEN CUT METHOD

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
CROSSING LARGE DITCHES OR SMALL STREAMS SECTION A-A - OPEN CUT				
DRAWN BY: DU REV. DATE:	APPROVED BY: GS REV. DATE:	ISSUE DATE: 5/9/2022 REV. DATE:	SCALE: NONE REV. DATE:	SHEET: WT-G20

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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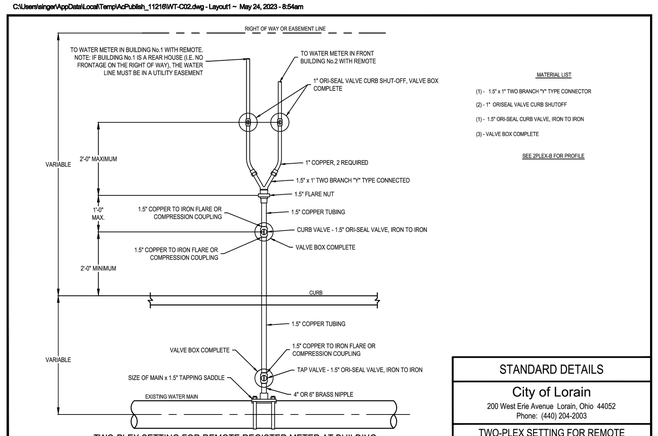

TWO-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING

MATERIAL LIST

(1) - 1.5" x 1" TWO BRANCH "Y" TYPE CONNECTOR

(2) - 1" ORISEAL VALVE CURB SHUTOFF

(1) - 1.5" ORI-SEAL CURB VALVE, IRON TO IRON

(3) - VALVE BOX COMPLETE

SEE 2PLEX-8 FOR PROFILE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TWO-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING DETAIL				
DRAWN BY: DU REV. DATE:	APPROVED BY: GS REV. DATE:	ISSUE DATE: 5/9/2022 REV. DATE:	SCALE: NONE REV. DATE:	SHEET: WT-C02

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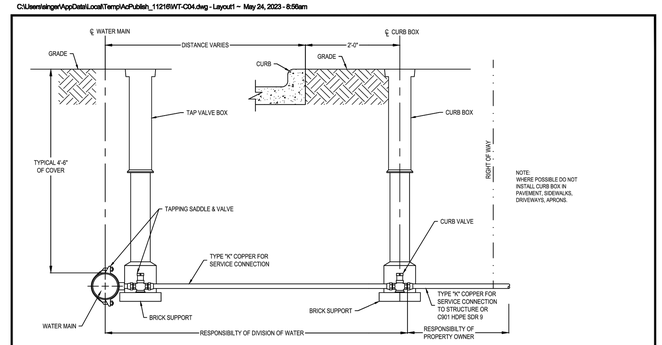

NOTE: WHERE POSSIBLE DO NOT INSTALL CURB BOX IN PAVEMENT, SIDEWALKS, DRIVEWAYS, APRONS.

NEW WATER SERVICE CONNECTION FOR 1-1/2" & 2"

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
NEW WATER SERVICE CONNECTION FOR 1-1/2" & 2" DETAIL				
DRAWN BY: DU REV. DATE:	APPROVED BY: GS REV. DATE:	ISSUE DATE: 5/9/2022 REV. DATE:	SCALE: NONE REV. DATE:	SHEET: WT-C04

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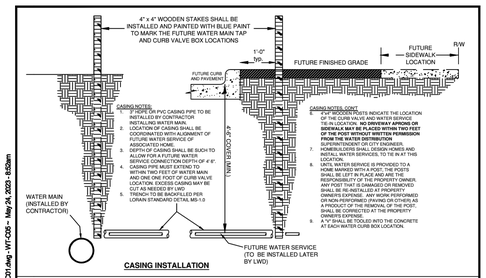
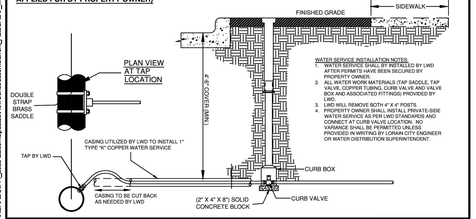


CASING INSTALLATION

WATER SERVICE INSTALLATION (PERFORMED BY LWD WHEN SERVICE APPLIED FOR BY PROPERTY OWNER)



WATER SERVICE INSTALLATION NOTES:
1. WATER SERVICE SHALL BY INSTALLED BY LWD AFTER PERMITS HAVE BEEN SECURED BY PROPERTY OWNER.
2. LWD WILL PROVIDE MATERIALS (TAP SADDLE, TAP VALVE, COPPER TUBING, CURB VALVE AND VALVE BOX AND ASSOCIATED FITTINGS) PROVIDED BY LWD.
3. LWD WILL REMOVE BOTH 2" X 4" POSTS.
4. ALL WORK PERFORMED ON THE PRIVATE-SIDE WATER SERVICE AS PER LWD STANDARDS AND CONNECT AT CURB VALVE LOCATION. NO VARIANCE SHALL BE PERMITTED UNLESS PROVIDED IN WRITING BY LORAIN CITY ENGINEER OR WATER DISTRIBUTION SUPERINTENDENT.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
STANDARD DESIGNS WATER SERVICE CONNECTION NEW "LONG-SIDE" SERVICE				
DATE FILE: WT-C05.dwg				SHEET: WT-C01
DRAWN BY: GS	APPROVED BY: DV	ISSUE DATE: 04/25/2022	SCALE: NONE	

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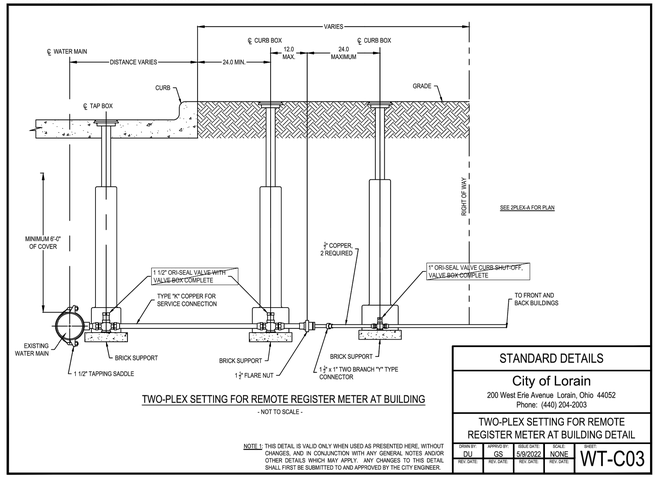

TWO-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING

- NOT TO SCALE -

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TWO-PLEX SETTING FOR REMOTE REGISTER METER AT BUILDING DETAIL				
DRAWN BY: DU REV. DATE:	APPROVED BY: GS REV. DATE:	ISSUE DATE: 5/9/2022 REV. DATE:	SCALE: NONE REV. DATE:	SHEET: WT-C03

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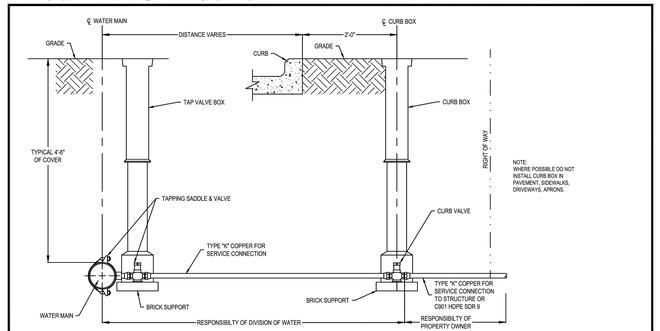

NOTE: WHERE POSSIBLE DO NOT INSTALL CURB BOX IN PAVEMENT, SIDEWALKS, DRIVEWAYS, APRONS.

NEW WATER SERVICE CONNECTION FOR 1-1/2" & 2"

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
NEW WATER SERVICE CONNECTION FOR 1-1/2" & 2" DETAIL				
DRAWN BY: DU REV. DATE:	APPROVED BY: GS REV. DATE:	ISSUE DATE: 5/9/2022 REV. DATE:	SCALE: NONE REV. DATE:	SHEET: WT-C05

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

OSBORN ENGINEERING
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www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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DRAWN BY	BTC
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (WATERLINE)

DRAWING NO.

D13

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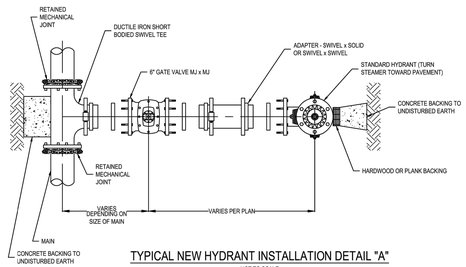

TYPICAL NEW HYDRANT INSTALLATION DETAIL "A"

- NOT TO SCALE -

NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-105/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TYPICAL NEW HYDRANT INSTALLATION DETAIL "A"				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H01

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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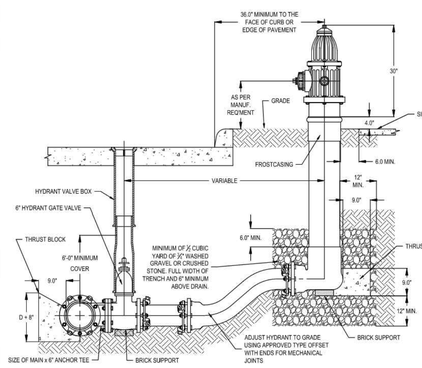

ADJUSTING 6" HYDRANT ELEVATION

NOT TO SCALE

NOTE:
IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-105/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

ALL FIRE HYDRANTS AND VALVE BOXES SHALL BE SECURELY BRACED WHEN SET AND BACKFILLED. ALL FIRE HYDRANTS, VALVES, VALVE BOXES AND FITTINGS SHALL MEET THE LATEST STANDARD SPECIFICATIONS FOR CONSTRUCTING WATER MAINS AND APPURTENANCES OF THE LORAIN WATER DEPARTMENT.

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
ADJUSTING 6" HYDRANT ELEVATION DETAIL				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H04

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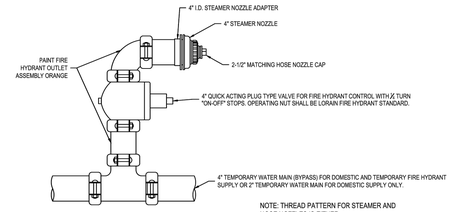

NOTE: THREAD PATTERN FOR STEAMER AND HOSE NOZZLES IS EITHER LORAIN STANDARD OR NATIONAL STANDARD THREAD (NST)

TEMPORARY WATER MAIN & HYDRANT CONNECTION ASSEMBLY-C OUTLET END

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TEMPORARY WATER MAIN AND HYDRANT ASSEMBLY DETAIL "C"				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H07

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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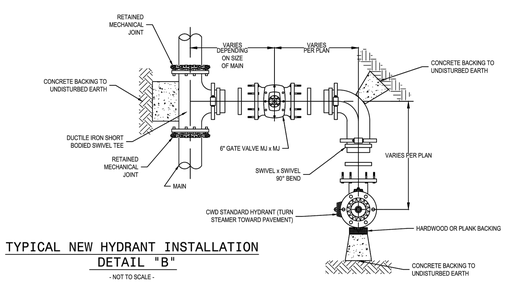

TYPICAL NEW HYDRANT INSTALLATION DETAIL "B"

- NOT TO SCALE -

NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TYPICAL NEW HYDRANT INSTALLATION DETAIL "B"				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H02

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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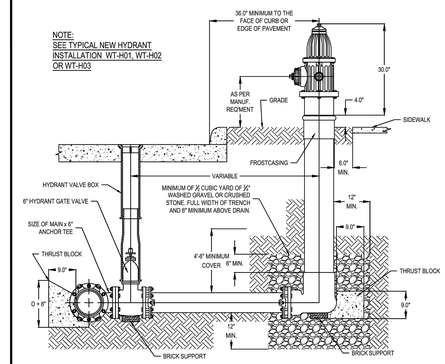
NOTE:
SEE TYPICAL NEW HYDRANT INSTALLATION WT-H01, WT-H02 OR WT-H03



6" HYDRANT ELEVATION

NOT TO SCALE

NOTE:
IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-105/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

ALL FIRE HYDRANTS AND VALVE BOXES SHALL BE SECURELY BRACED WHEN SET AND BACKFILLED. ALL FIRE HYDRANTS, VALVES, VALVE BOXES AND FITTINGS SHALL MEET THE LATEST STANDARD SPECIFICATIONS FOR CONSTRUCTING WATER MAINS AND APPURTENANCES OF THE LORAIN WATER DEPARTMENT.

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
6" HYDRANT ELEVATION DETAIL				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 4/25/22 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H05

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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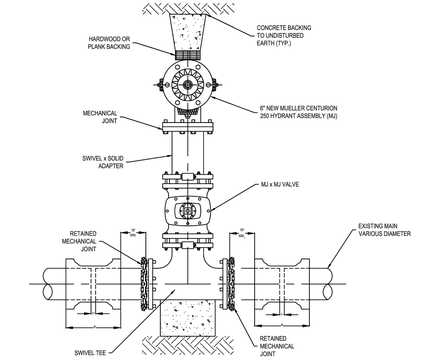

- NOT TO SCALE -

*CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS. COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/18, TYPE 316, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS. MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM A536). THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE SMITH-BLAIR 441 OR 421 STRAIGHT AND TRANSITION COUPLINGS. ROD AND CLAMP COMPRESSION COUPLING AS DIRECTED BY LWD. ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE PROTECTED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

CUT-IN HYDRANT DETAIL"

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
CUT-IN HYDRANT DETAIL"				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 5/8/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H08

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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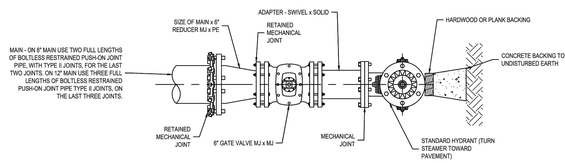

TYPICAL NEW HYDRANT INSTALLATION DETAIL "C"

NOT TO SCALE

NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TYPICAL NEW HYDRANT INSTALLATION DETAIL "C"				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 5/9/2022 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H03

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

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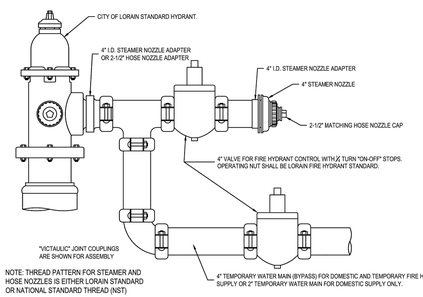

TEMPORARY WATER MAIN & HYDRANT CONNECTION ASSEMBLY-A

TO PROVIDE SIMULTANEOUS SERVICE IN EXISTING HYDRANT AND TEMPORARY BYPASS MAIN

- NOT TO SCALE -

STANDARD DETAILS				
City of Lorain 200 West Erie Avenue Lorain, Ohio 44052 Phone: (440) 204-2003				
TEMPORARY WATER MAIN AND HYDRANT ASSEMBLY DETAIL "A"				
DRAWN BY: DU (REV. DATE)	APPROVED BY: GS (REV. DATE)	ISSUE DATE: 4/25/22 (REV. DATE)	SCALE: NONE (REV. DATE)	SHEET: WT-H06

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

SEAL OF THE CITY OF LORAIN 1834 OHIO

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020
www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
64026
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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DRAWN BY	BTC
CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (WATERLINE)

DRAWING NO.

D14

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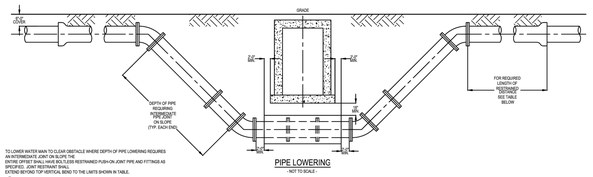

PIPE LOWERING
- NOT TO SCALE -

TO LOWER WATER MAIN TO CLEAR OBSTACLE WHERE DEPTH OF PIPE LOWERING REQUIRES AN INTERMEDIATE JOINT ON SLOPE THE FOLLOWING LENGTHS OF RESTRAINED PUSH-ON JOINT PIPE AND FITTINGS AS SPECIFIED. JOINT RESTRAINT SHALL EXTEND BEYOND TOP VERTICAL BEND TO THE LIMITS SHOWN IN TABLE.

Ⓒ CALCULATIONS FOR RESTRAINED LENGTHS INCLUDE 1½ PSI FOR TESTING.

DIAMETER	BEND	STATIC PRESSURE Ⓒ	* RESTRAINED LENGTHS
8"	11°15'	0 to 275 PSI	ONE (1)
	22°30'	0 to 250 PSI	ONE (1)
		251 to 275 PSI	TWO (2)
	45°	0 to 125 PSI	ONE (1)
		126 to 275 PSI	TWO (2)
12"	11°15'	0 to 275 PSI	ONE (1)
	22°30'	0 to 165 PSI	ONE (1)
		166 to 275 PSI	TWO (2)
	45°	0 to 65 PSI	ONE (1)
		66 to 215 PSI	TWO (2)
		166 to 275 PSI	THREE (3)
16"	11°15'	0 to 275 PSI	ONE (1)
	22°30'	0 to 115 PSI	ONE (1)
		116 to 275 PSI	TWO (2)
	45°	0 to 45 PSI	ONE (1)
		46 to 165 PSI	TWO (2)
		166 to 275 PSI	THREE (3)

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
PIPE LOWERING DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-L01
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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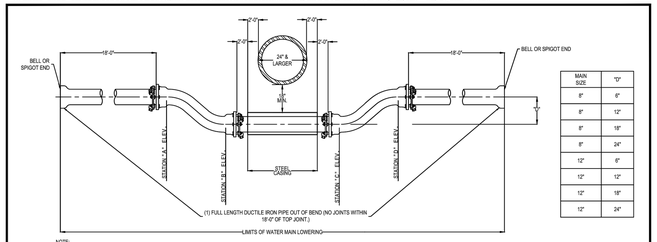


MAIN SIZE	"D"
8"	6"
8"	12"
8"	18"
8"	24"
12"	6"
12"	12"
12"	18"
12"	24"

NOTE:
1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINE RETAINED MECHANICAL JOINT FITTINGS.
* ALL FITTINGS MUST FOLLOW ANSI/AWWA C110/A21.10 FOR FULL BODY FITTINGS AND ANSI/AWWA C153/A221.5 FOR COMPACT FITTINGS.ALL FITTINGS ARE NOT AVAILABLE FROM ALL APPROVED MANUFACTURES.

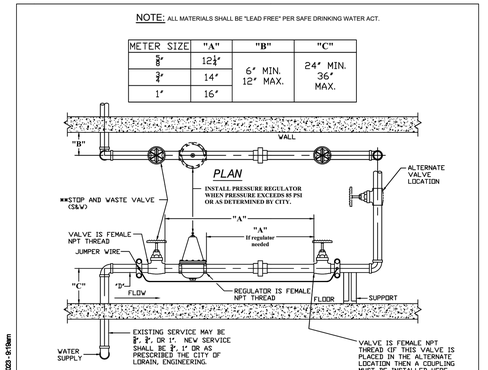
2) WHERE LENGTH OF LOWERING UNDER OBSTRUCTION(S) REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.

DETAIL FOR WATER MAIN LOWERING USING MECHANICAL JOINT OFFSETS
UNDER OBSTRUCTIONS 24" AND LARGER IN DIAMETER OR WIDTH FOR "NEW CONSTRUCTION"
- NOT TO SCALE -

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
LOWERING DETAIL UNDER OBSTRUCTIONS 24" IN DIA. & LARGER

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-L04
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	



METER SIZE	"A"	"B"	"C"
5/8"	12 1/2"	6' MIN. 12' MAX.	24" MIN. 36" MAX.
3/4"	14"		
1"	16"		

NOTES: IF METER SIZE IS REDUCED FROM THE INCOMING LINE SIZE, THE APPROPRIATE REDUCTION SHOULD TAKE PLACE AT OR UPSTREAM OF POINT "D".

METER SETTING SHALL BE PLACED IN AN UNOBSTRUCTED AREA. METER SETTINGS MAY NOT BE INSTALLED IN CRAWL SPACES.

BALL VALVES MAY BE USED IN PLACE OF STOP AND WASTE VALVES.

IF PROPERTY RECEIVING WATER SERVICE HAS MORE THAN 2 UNITS OR AN IRRIGATION SYSTEM, AN APPROVED BACKFLOW PREVENTION DEVICE IS REQUIRED. FOR TYPE AND MODEL OF BACKFLOW DEVICE REQUIRED, CONTACT THE BACKFLOW UNIT OF WATER DISTRIBUTION AT 440-204-2285.

NEW METER INSTALLATIONS SHALL BE RADIO FREQUENCY TRANSMITTED AND DO NOT REQUIRE A COMMUNICATION WIRE BETWEEN THE METER AND ENDPOINT DEVICE ON OUTSIDE OF HOUSE.

WHEN REQUIRED BY THE CITY, A 3 CONDUCTOR, 22 GAUGE WIRE SHALL BE INSTALLED TO BE INSTALLED BETWEEN THE METER AND ENDPOINT DEVICE ON OUTSIDE OF HOUSE.

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
NOTE 2: BEFORE ANY EXCAVATING, CALL THE FOLLOWING NUMBERS AT LEAST 48 HOURS IN ADVANCE: O.U.P.S. @ (800) 362-2764.

NO.	DATE	REVISION	NO.	DATE	REVISION

City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
STANDARD DESIGNS
WATER
Meter Settings for 5/8", 3/4" & 1" Meters

DATA FILE: WT-M01.dwg				SHEET
DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	WT-M01
GS	DV	04/25/2022	NONE	

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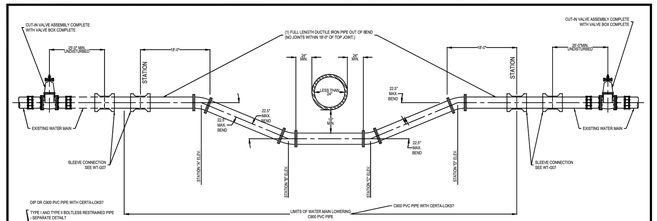

NOTE:
1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED OR FUSION BONDED EPOXY COATED RETAINED MECHANICAL JOINT FITTINGS.

2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS ALL HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE II.

3) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C" THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.

4) WHERE EXISTING WATER MAIN IS SIX (6)-INCHES IN DIAMETER THE PIPE LOWERING SHALL BE MADE WITH PIPE AND FITTINGS NO LESS THAN EIGHT (8)-INCH IN DIAMETER WITH REDUCERS INSTALLED AT STATIONS "E" AND "F". THE REDUCERS SHALL BE RETAINED MECHANICAL JOINT WITH SMALL END OF REDUCER PLAIN END FOR CONNECTION WITH SLEEVES OR COMPRESSION COUPLINGS.

5) ALL EXISTING WATER SERVICE CONNECTIONS BETWEEN THE CUT-IN-VALVE ASSEMBLIES SHALL BE MAINTAINED BY "TEMPORARY SERVICE CONNECTIONS" PROVIDED AND MAINTAINED BY THE CONTRACTOR.

6) EXISTING WATER SERVICE CONNECTIONS NEEDED TO BE RETAPPED AND RECONNECTED WILL ONLY BE PERMITTED BETWEEN STATIONS "A" AND "E" AND STATIONS "D" AND "F". NO RETAPPING OF SERVICE CONNECTIONS WILL BE ALLOWED BETWEEN STATIONS "A" AND "D".

DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR "EXISTING CONSTRUCTION"
- NOT TO SCALE -

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
LOWERING DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-L02
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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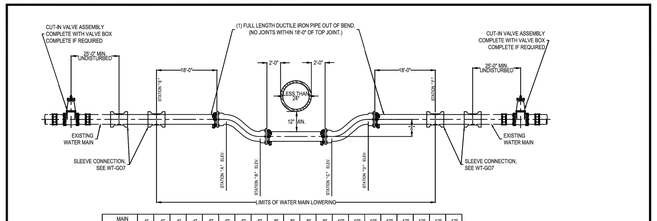

MAIN SIZE	4"	4"	4"	4"	6"	6"	6"	6"	8"	8"	8"	8"	10"	10"	10"	10"	12"	12"	12"	12"
"X"	6"	12"	18"	24"	6"	12"	18"	24"	6"	12"	18"	24"	6"	12"	18"	24"	6"	12"	18"	24"

NOTE:
1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED RETAINED MECHANICAL JOINT FITTINGS.
* ALL FITTINGS MUST FOLLOW ANSI/AWWA C110/A21.10 FOR FULL BODY FITTINGS AND ANSI/AWWA C153/A221.5 FOR COMPACT FITTINGS. ALL FITTINGS ARE NOT AVAILABLE FROM ALL APPROVED MANUFACTURES.

2) WHERE LENGTH OF LOWERING UNDER OBSTRUCTION(S) REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.

3) WHERE EXISTING WATER MAIN IS SIX (6)-INCHES IN DIAMETER THE PIPE LOWERING SHALL BE MADE WITH PIPE AND FITTINGS NO LESS THAN EIGHT (8)-INCH IN DIAMETER WITH REDUCERS INSTALLED AT STATIONS "E" AND "F". THE REDUCERS SHALL BE RETAINED MECHANICAL JOINT WITH SMALL END OF REDUCER PLAIN END FOR CONNECTION WITH SLEEVES OR COMPRESSION COUPLINGS.

4) ALL EXISTING WATER SERVICE CONNECTIONS BETWEEN THE CUT-IN-VALVE ASSEMBLIES SHALL BE MAINTAINED BY "TEMPORARY SERVICE CONNECTIONS" PROVIDED AND MAINTAINED BY THE CONTRACTOR.

5) EXISTING WATER SERVICE CONNECTIONS NEEDED TO BE RETAPPED AND RECONNECTED WILL ONLY BE PERMITTED BETWEEN STATIONS "A" AND "E" AND STATIONS "D" AND "F". NO RETAPPING OF SERVICE CONNECTIONS WILL BE ALLOWED BETWEEN STATIONS "A" AND "D".

DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH
USING MECHANICAL OFFSETS FOR "EXISTING MAINS"
- NOT TO SCALE -

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
LOWERING DETAIL UNDER OBSTRUCTIONS 24" AND SMALLER

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-L05
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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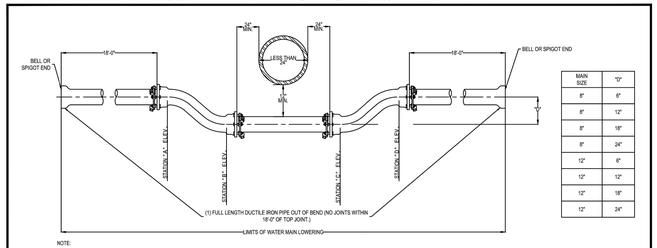

MAIN SIZE	"D"
8"	6"
8"	12"
8"	18"
8"	24"
12"	6"
12"	12"
12"	18"
12"	24"

NOTE:
1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINE RETAINED MECHANICAL JOINT FITTINGS.
* ALL FITTINGS MUST FOLLOW ANSI/AWWA C110/A21.10 FOR FULL BODY FITTINGS AND ANSI / AWWA C153/A221.5 FOR COMPACT FITTINGS.ALL FITTINGS ARE NOT AVAILABLE FROM ALL APPROVED MANUFACTURES.

2) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS(S) REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", AND PIPE JOINTS ARE AS INDICATED IN NOTE "1" ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.

DETAIL FOR WATER MAIN LOWERING USING MECHANICAL JOINT OFFSETS
UNDER OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR "NEW CONSTRUCTION"
- NOT TO SCALE -

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
LOWERING DETAIL UNDER OBSTRUCTIONS 24" IN DIAMETER OR LESS

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-L03
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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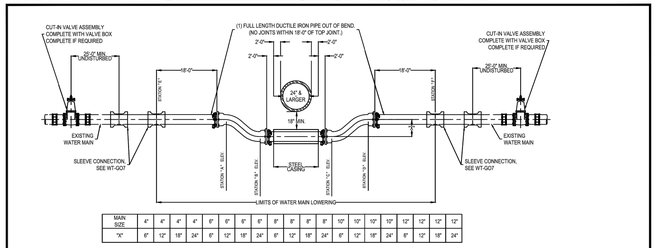

MAIN SIZE	4"	4"	4"	4"	6"	6"	6"	6"	8"	8"	8"	8"	10"	10"	10"	10"	12"	12"	12"	12"
"X"	6"	12"	18"	24"	6"	12"	18"	24"	6"	12"	18"	24"	6"	12"	18"	24"	6"	12"	18"	24"

NOTE:
1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED RETAINED MECHANICAL JOINT FITTINGS.
* ALL FITTINGS MUST FOLLOW ANSI/AWWA C110/A21.10 FOR FULL BODY FITTINGS AND ANSI/AWWA C153/A221.5 FOR COMPACT FITTINGS. ALL FITTINGS ARE NOT AVAILABLE FROM ALL APPROVED MANUFACTURES.

2) WHERE LENGTH OF LOWERING UNDER OBSTRUCTIONS(S) REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.

3) WHERE EXISTING WATER MAIN IS SIX (6)-INCHES IN DIAMETER THE PIPE LOWERING SHALL BE MADE WITH PIPE AND FITTINGS NO LESS THAN EIGHT (8)-INCH IN DIAMETER WITH REDUCERS INSTALLED AT STATIONS "E" AND "F". THE REDUCERS SHALL BE RETAINED MECHANICAL JOINT WITH SMALL END OF REDUCER PLAIN END FOR CONNECTION WITH SLEEVES OR COMPRESSION COUPLINGS.

4) ALL EXISTING WATER SERVICE CONNECTIONS BETWEEN THE CUT-IN-VALVE ASSEMBLIES SHALL BE MAINTAINED BY "TEMPORARY SERVICE CONNECTIONS" PROVIDED AND MAINTAINED BY THE CONTRACTOR.

5) EXISTING WATER SERVICE CONNECTIONS NEEDED TO BE RETAPPED AND RECONNECTED WILL ONLY BE PERMITTED BETWEEN STATIONS "A" AND "E" AND STATIONS "D" AND "F". NO RETAPPING OF SERVICE CONNECTIONS WILL BE ALLOWED BETWEEN STATIONS "A" AND "D".

DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS 24" & LARGER IN DIAMETER OR WIDTH
USING MECHANICAL OFFSETS FOR "EXISTING MAINS"
- NOT TO SCALE -

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS
City of Lorain
200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003
LOWERING DETAIL UNDER OBSTRUCTIONS 24" AND LARGER

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	SHEET
DU	GS	5/9/2022	NONE	WT-L06
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

CITY OF LORAIN
200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020
www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

STATE OF OHIO
KEVIN D. CODIN
REGISTERED PROFESSIONAL ENGINEER
03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY KDC
CLIENT PROJ NO. -
OSBORN PROJ NO. J20221302.000

DETAILS (WATERLINE)

DRAWING NO.
D15

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3/7/2025 5:38 PM Pawar, Sayali

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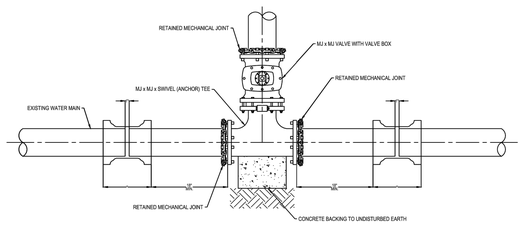
1.) * CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN). DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

2.) COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/A194, TYPE 316, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

3.) MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

4.) THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE SMITH-BLAIR 421 OR 441 STRAIGHT AND TRANSITION COUPLINGS.

5.) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE PROTECTED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".



CUT-IN TEE DETAIL METHOD No.1

NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS

City of Lorain

200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

CUT-IN TEE DETAIL METHOD NO. 1

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	NAME
DU	GS	4/25/22	NONE	WT-T01
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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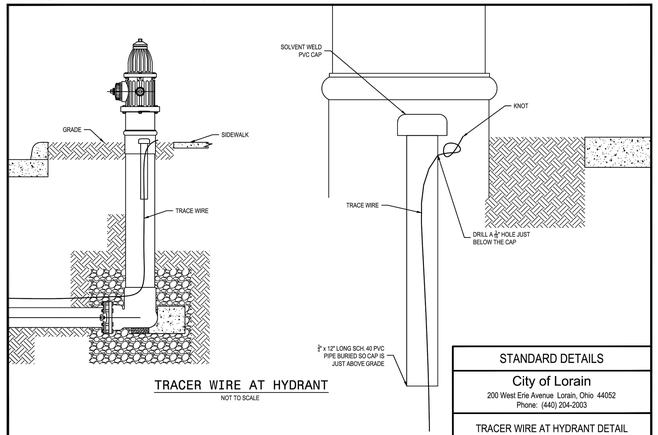

TRACER WIRE AT HYDRANT

NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS

City of Lorain

200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

TRACER WIRE AT HYDRANT DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	NAME
DU	GS	5/9/2022	NONE	WT-W01
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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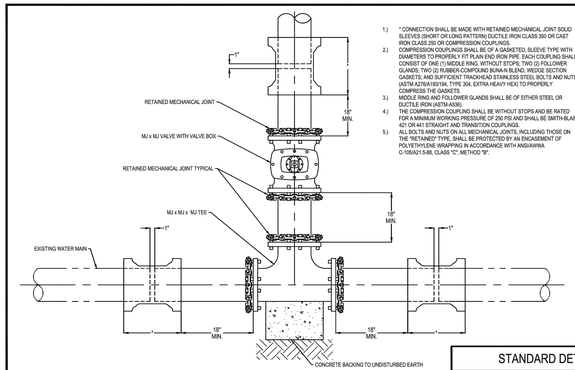

1.) * CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

2.) COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/A194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

3.) MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

4.) THE COMPRESSION COUPLING SHALL BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE SMITH-BLAIR 421 OR 441 STRAIGHT AND TRANSITION COUPLINGS.

5.) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE PROTECTED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

CUT-IN TEE DETAIL METHOD No. 2

NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS

City of Lorain

200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

CUT-IN TEE DETAIL METHOD NO. 2

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	NAME
DU	GS	4/25/22	NONE	WT-T02
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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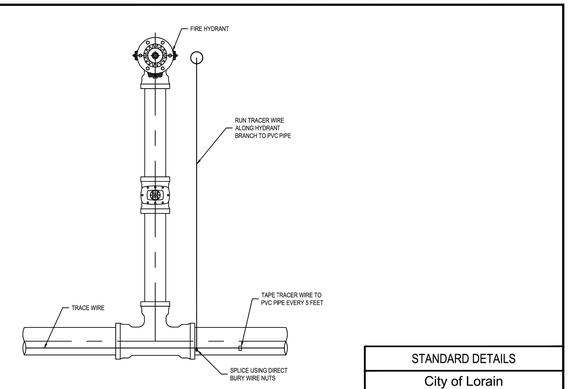

TRACER WIRE AT HYDRANT TEE

NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS

City of Lorain

200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

TRACER WIRE AT HYDRANT TEE DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	NAME
DU	GS	5/9/2022	NONE	WT-W02
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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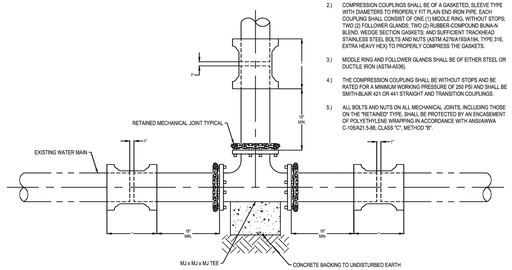

1.) * CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

2.) COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/A194, TYPE 316, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

3.) MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

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5.) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE PROTECTED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

CUT-IN TEE DETAIL METHOD No. 3

NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS

City of Lorain

200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

CUT-IN TEE DETAIL METHOD NO. 3

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	NAME
DU	GS	4/25/22	NONE	WT-T03
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

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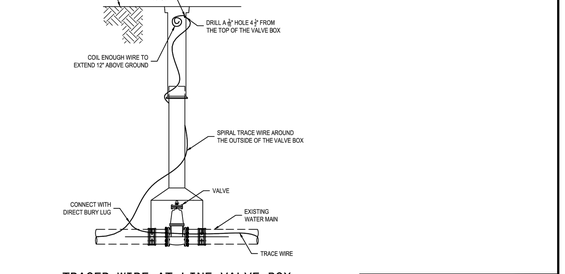

TRACER WIRE AT LINE VALVE BOX

NOT TO SCALE

NOTE 1: THIS DETAIL IS VALID ONLY WHEN USED AS PRESENTED HERE, WITHOUT CHANGES, AND IN CONJUNCTION WITH ANY GENERAL NOTES AND/OR OTHER DETAILS WHICH MAY APPLY. ANY CHANGES TO THIS DETAIL SHALL FIRST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

STANDARD DETAILS

City of Lorain

200 West Erie Avenue Lorain, Ohio 44052
Phone: (440) 204-2003

TRACER WIRE AT LINE VALVE BOX DETAIL

DRAWN BY	APPROVED BY	ISSUE DATE	SCALE	NAME
DU	GS	5/9/2022	NONE	WT-W03
REV. DATE:	REV. DATE:	REV. DATE:	REV. DATE:	

SEAL OF THE CITY OF LORAIN 1834 OHIO

OSBORN ENGINEERING
Ohio | Florida | Michigan | Tennessee
(216) 861-2020
www.osborn-eng.com

WATER MAIN REPLACEMENT PROGRAM PHASE 2

CITY OF LORAIN

200 W. ERIE AVENUE
LORAIN, OHIO
(440) 204-2003

STATE OF OHIO
KEVIN D. CODIN
E-64062
REGISTERED PROFESSIONAL ENGINEER

03/06/2025

TAG	ISSUED	DATE
A	FOR BID	03/06/25

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CHECKED BY	KDC
CLIENT PROJ NO.	-
OSBORN PROJ NO.	J20221302.000

DETAILS (WATERLINE)

DRAWING NO.

D16

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3/7/2025 5:38 PM Pawar, Sayali

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